

KIC 005344895

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})
005344895-01	OBS	No	447.199472	190.182690	1154.0	4.107	17.1	8.2	0.74	4472	2.55	0.18
005344895-02	OBS	No	445.915640	150.306620	657.7	5.164	14.3	4.2	0.74	4472	2.30	0.18
005344895-03	OBS	No	311.776645	342.766361	977.9	5.741	15.6	5.9	0.74	4472	2.29	0.30
005344895-04	OBS	No	420.249825	253.825315	150.9	3.466	14.7	1.3	0.74	4472	1.11	0.20
005344895-05	OBS	No	478.179544	138.472760	1436.7	7.161	14.6	8.3	0.74	4472	2.73	0.17
005344895-06	OBS	No	334.937198	245.436207	1370.3	4.851	13.7	7.9	0.74	4472	2.88	0.27
005344895-07	OBS	No	317.909115	424.173270	2149.2	27.421	12.7	8.6	0.74	4472	3.25	0.29
005344895-08	OBS	No	164.027661	177.751020	2296.3	119.094	12.8	8.1	0.74	4472	3.78	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005344895-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
005344895-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005344895-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005344895-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

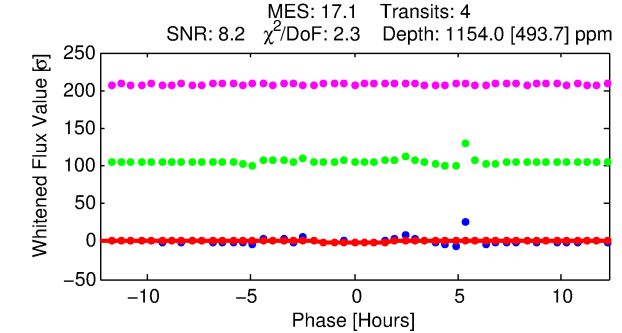
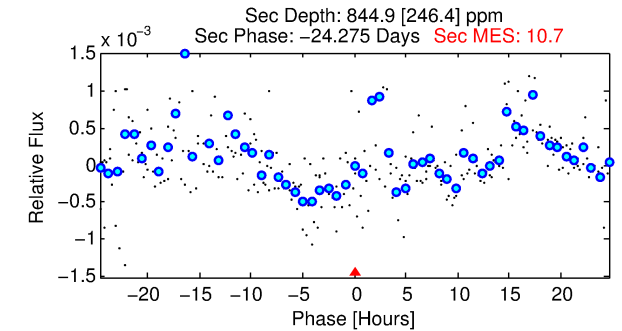
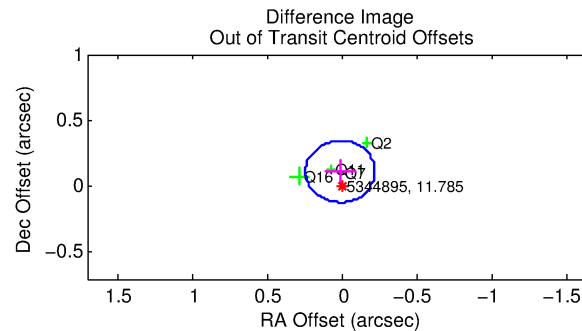
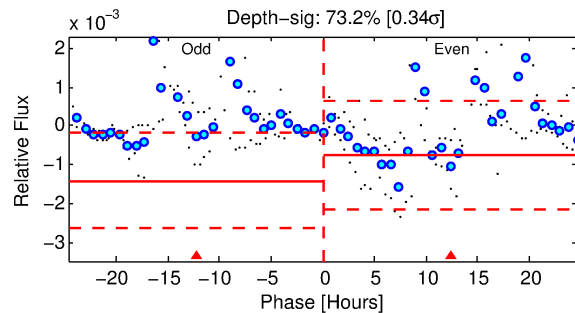
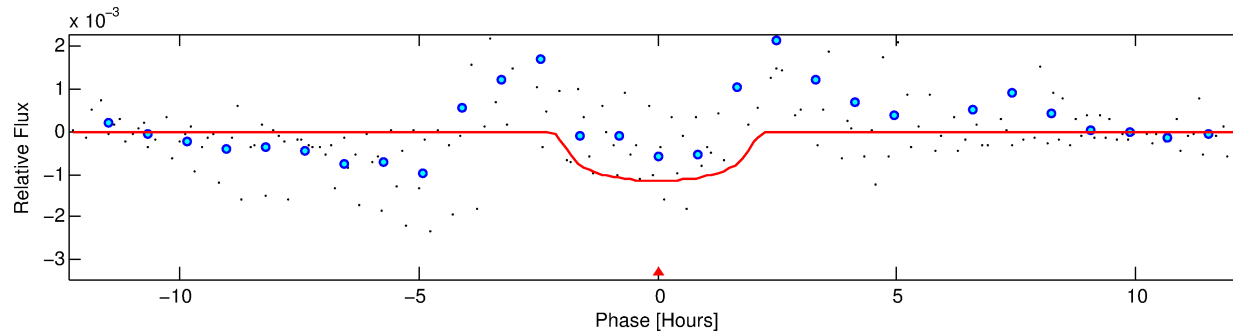
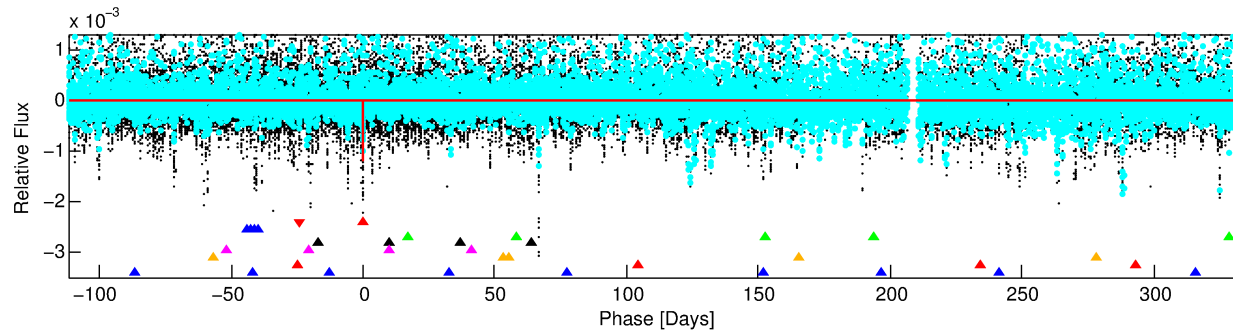
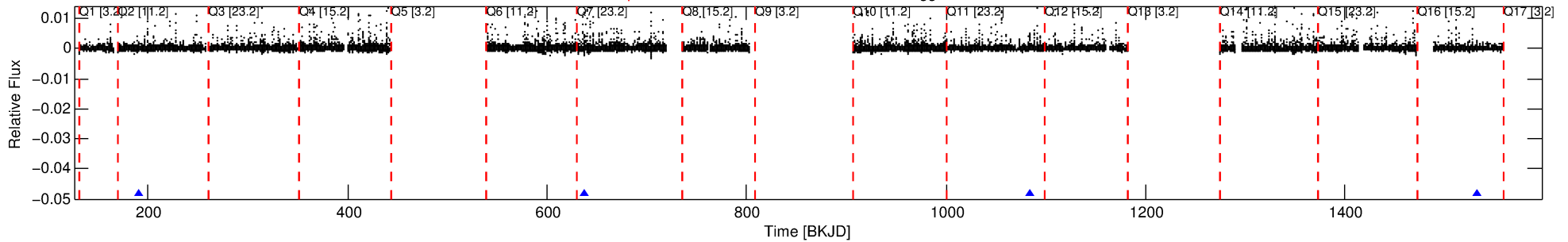
Ephemeris Match Information For 005344895-01

No Significant Match Found

DV One-Page Summary

KIC: 5344895 Candidate: 1 of 8 Period: 447.199 d

Kp: 11.78 R*: 0.74 Rs Teff: 4472.0 K Logg: 4.57 Fe/H: 0.340



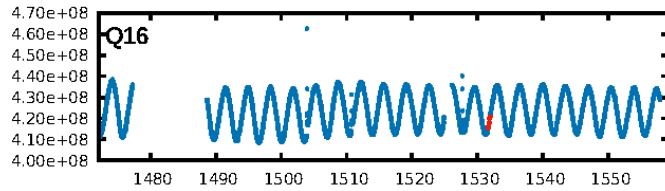
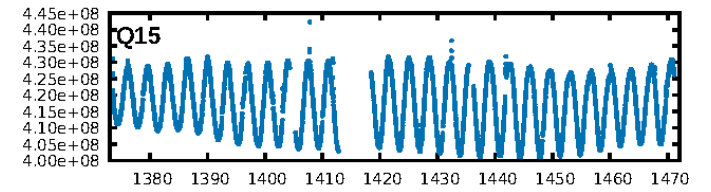
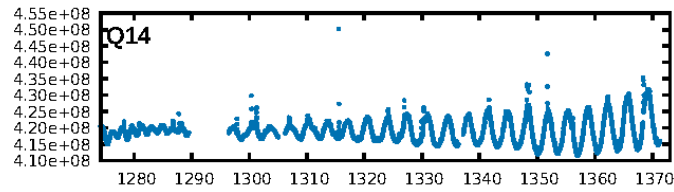
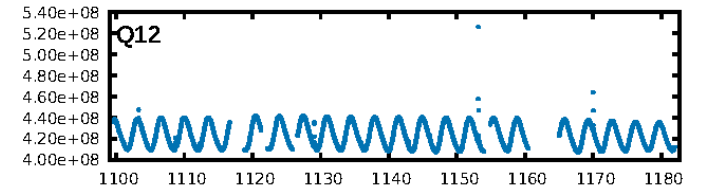
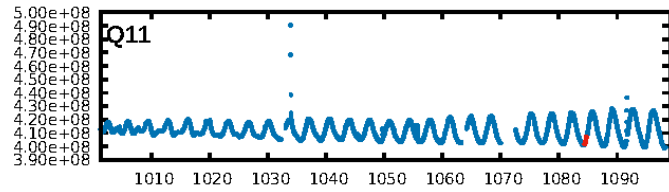
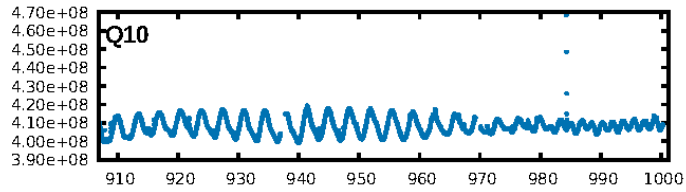
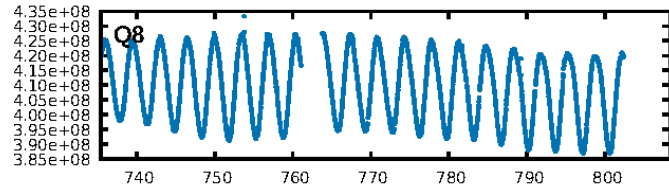
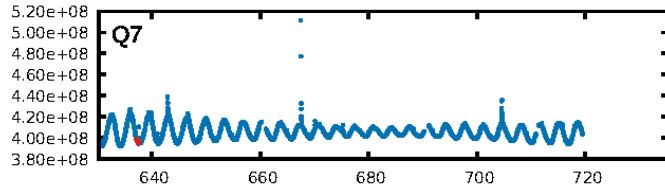
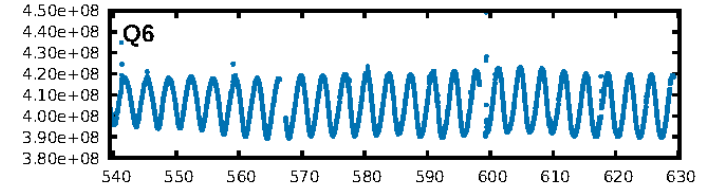
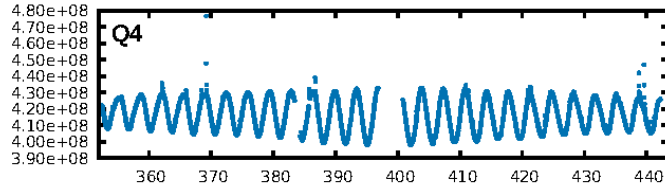
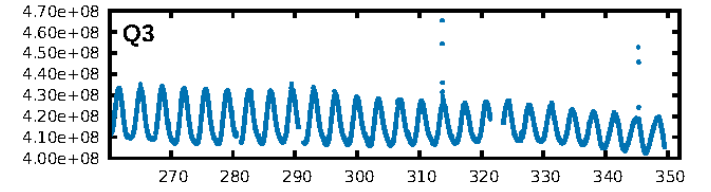
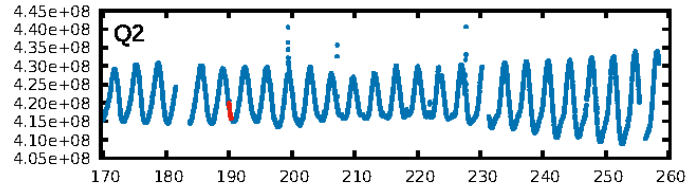
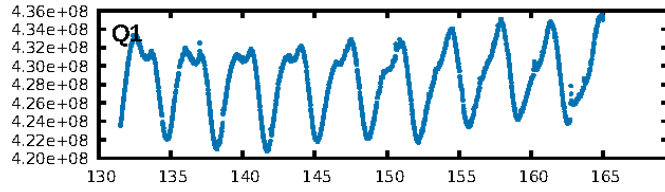
DV Fit Results:

Period = 447.19947 [0.00707] d
Epoch = 190.1827 [0.0136] BKJD
Rp/R* = 0.0316 [0.0734]
a/R* = 721.15 [4877.20]
b = 0.56 [8.51]
Seff = 0.18 [0.03]
Teq = 167 [7] K
Rp = 2.55 [5.93] Re
a = 1.0324 [0.0755] AU
Ag = 76116.28 [354282.77] [0.21σ]
Teffp = 4289 [4992] K [0.83σ]

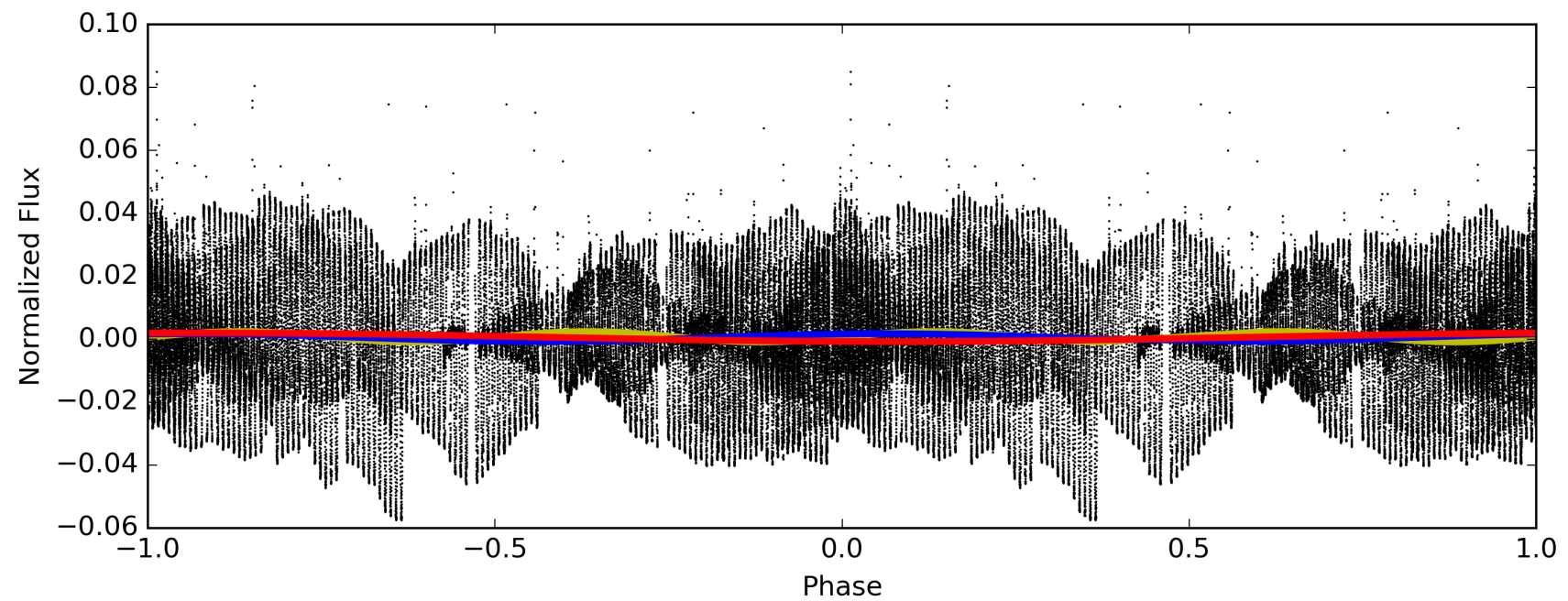
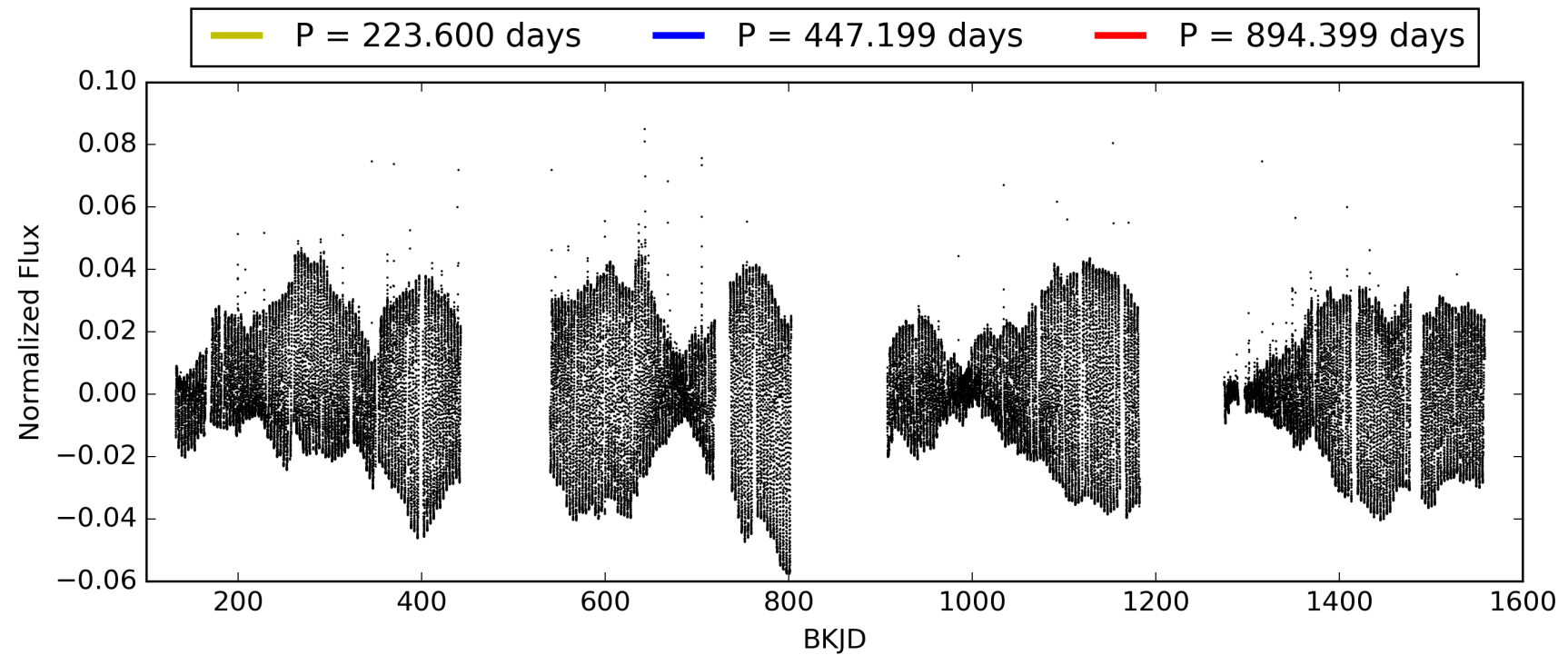
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.67σ]
LongPeriod-sig: 100.0% [90.07σ]
ModelChiSquare2-sig: 17.1%
ModelChiSquareGof-sig: 13.3%
Bootstrap-pfa: 2.43e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3057
Centroid-sig: 77.7%
Centroid-so: 0.369 arcsec [1.70σ]
OotOffset-rm: 0.113 arcsec [1.45σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-rm: 0.569 arcsec [8.20σ]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 005344895-01, PDC Light Curves

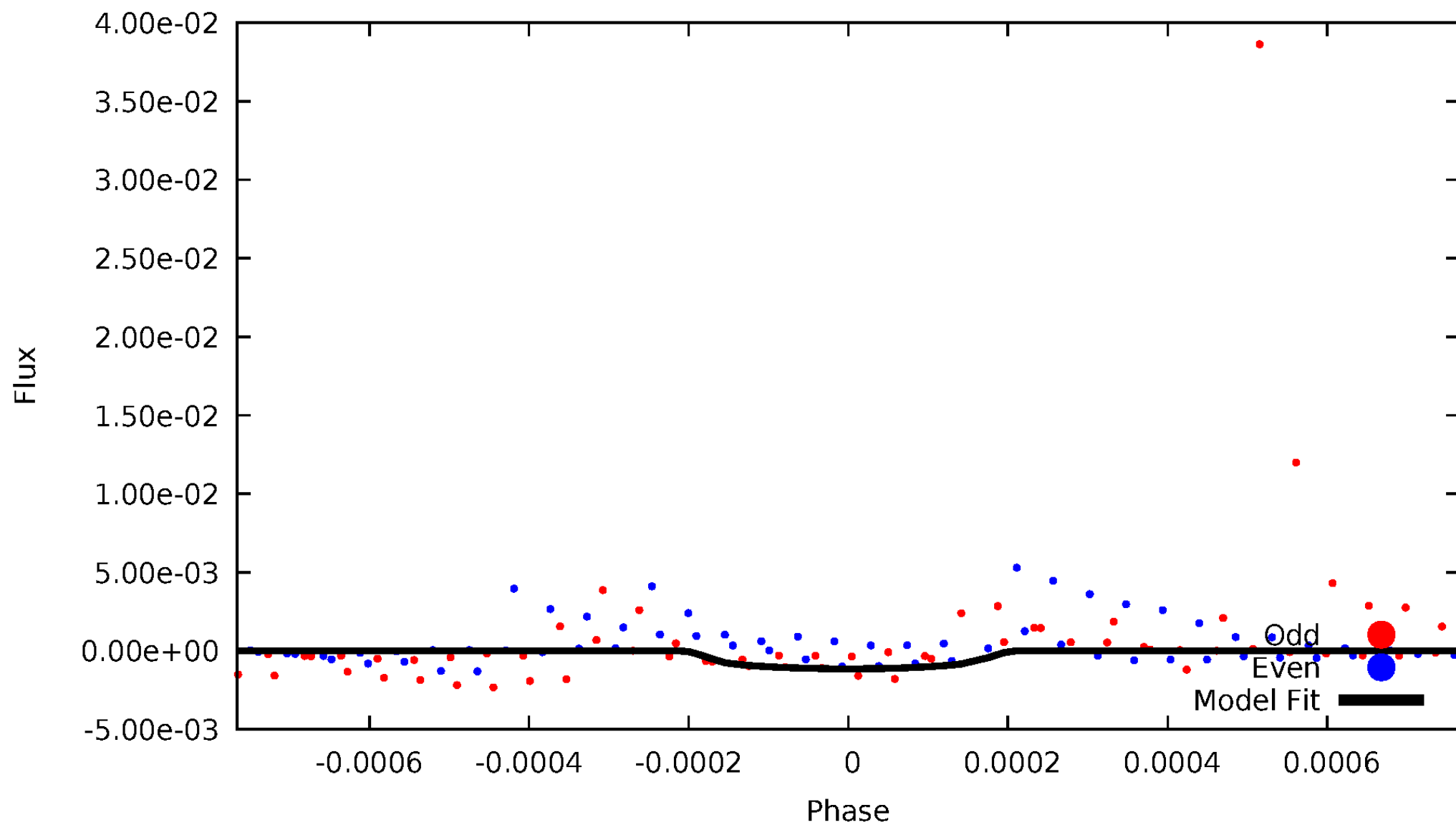


TCE 005344895-01



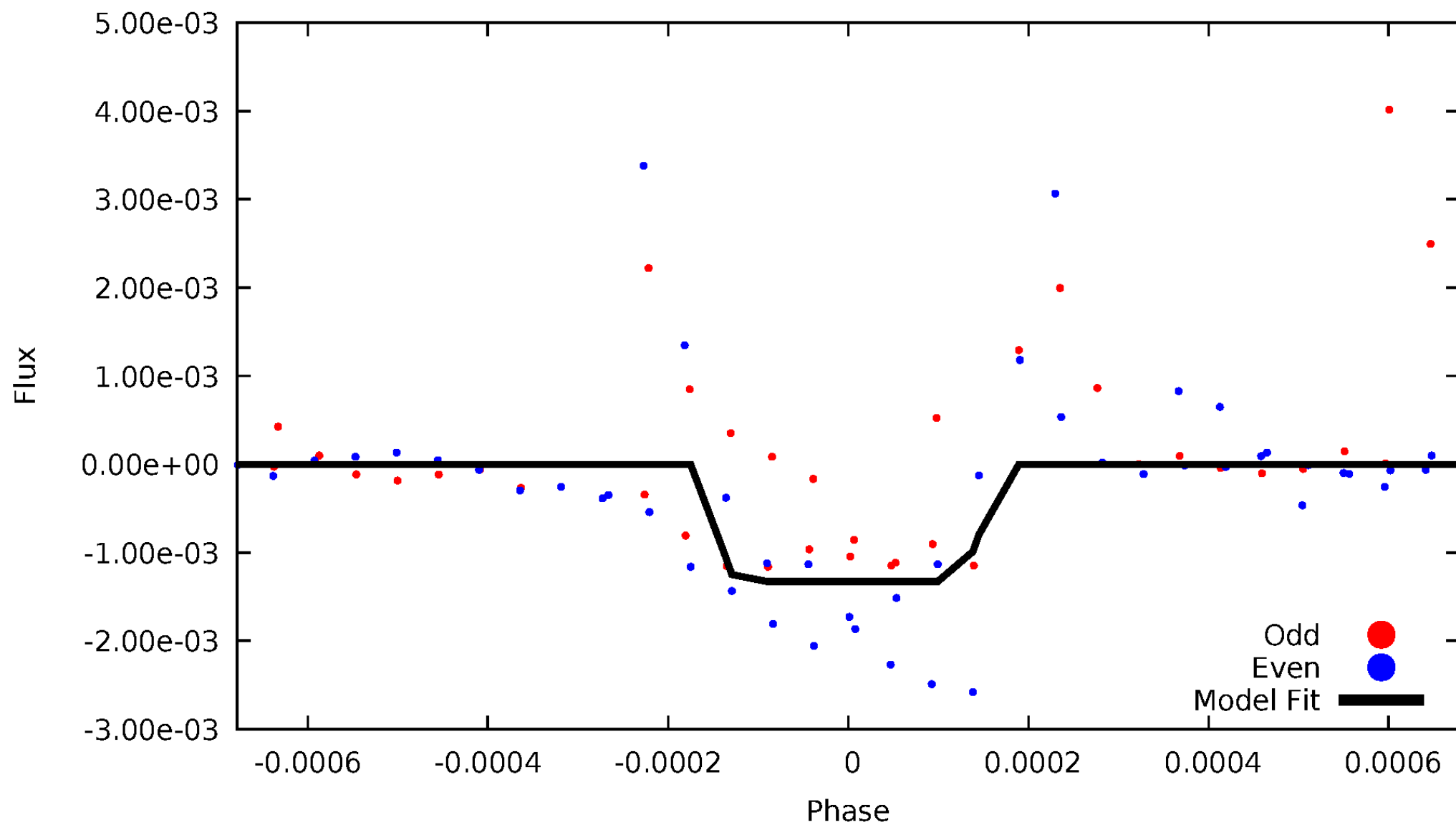
DV Odd/Even

TCE 005344895-01



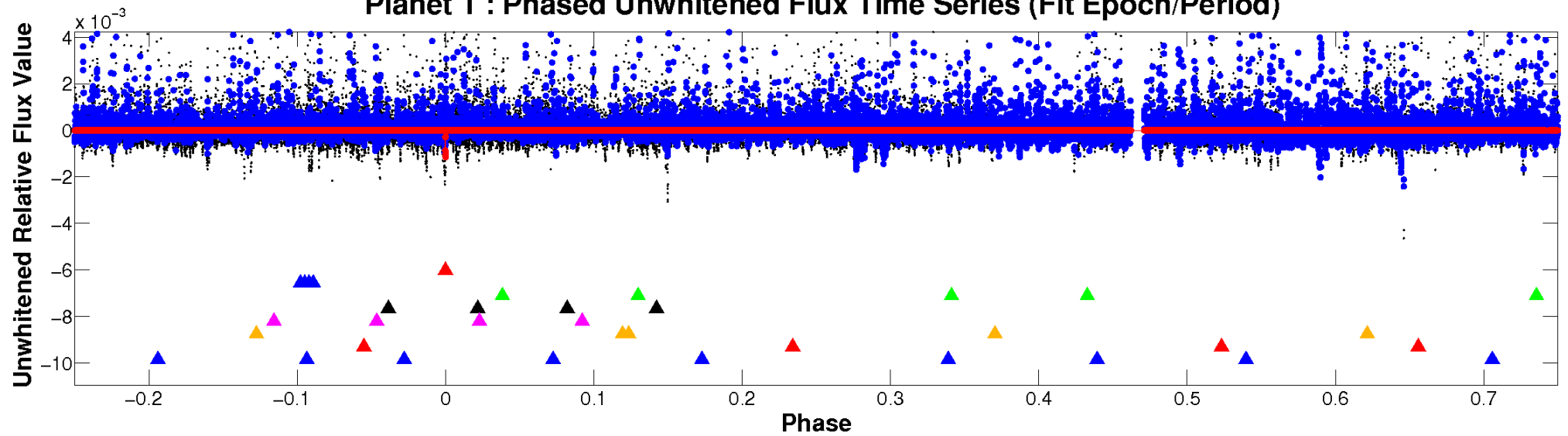
ALT Odd/Even

TCE 005344895-01

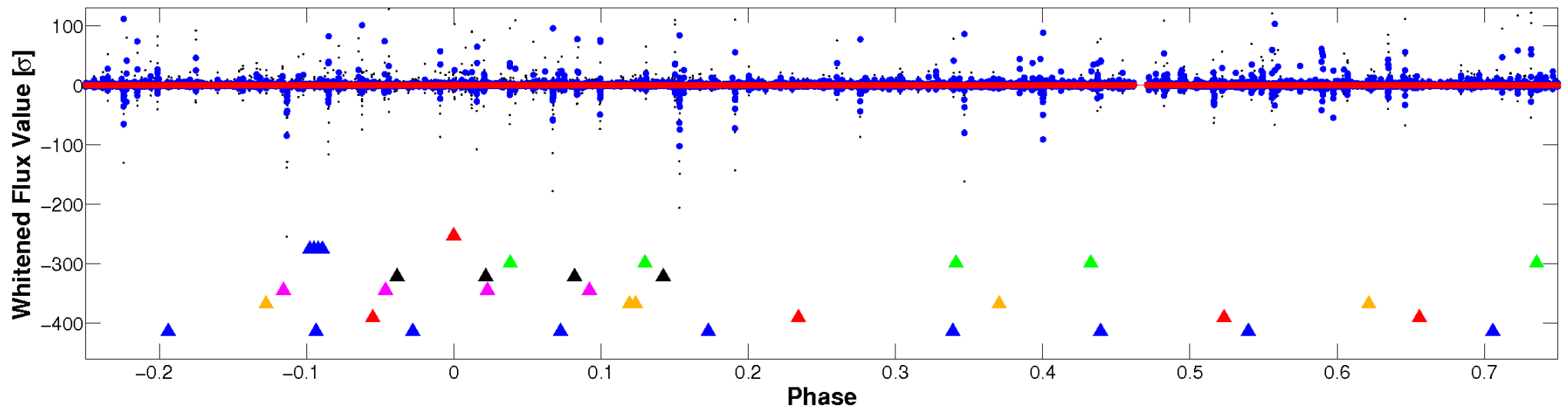


Non-Whitened Vs. Whitened Light Curve

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

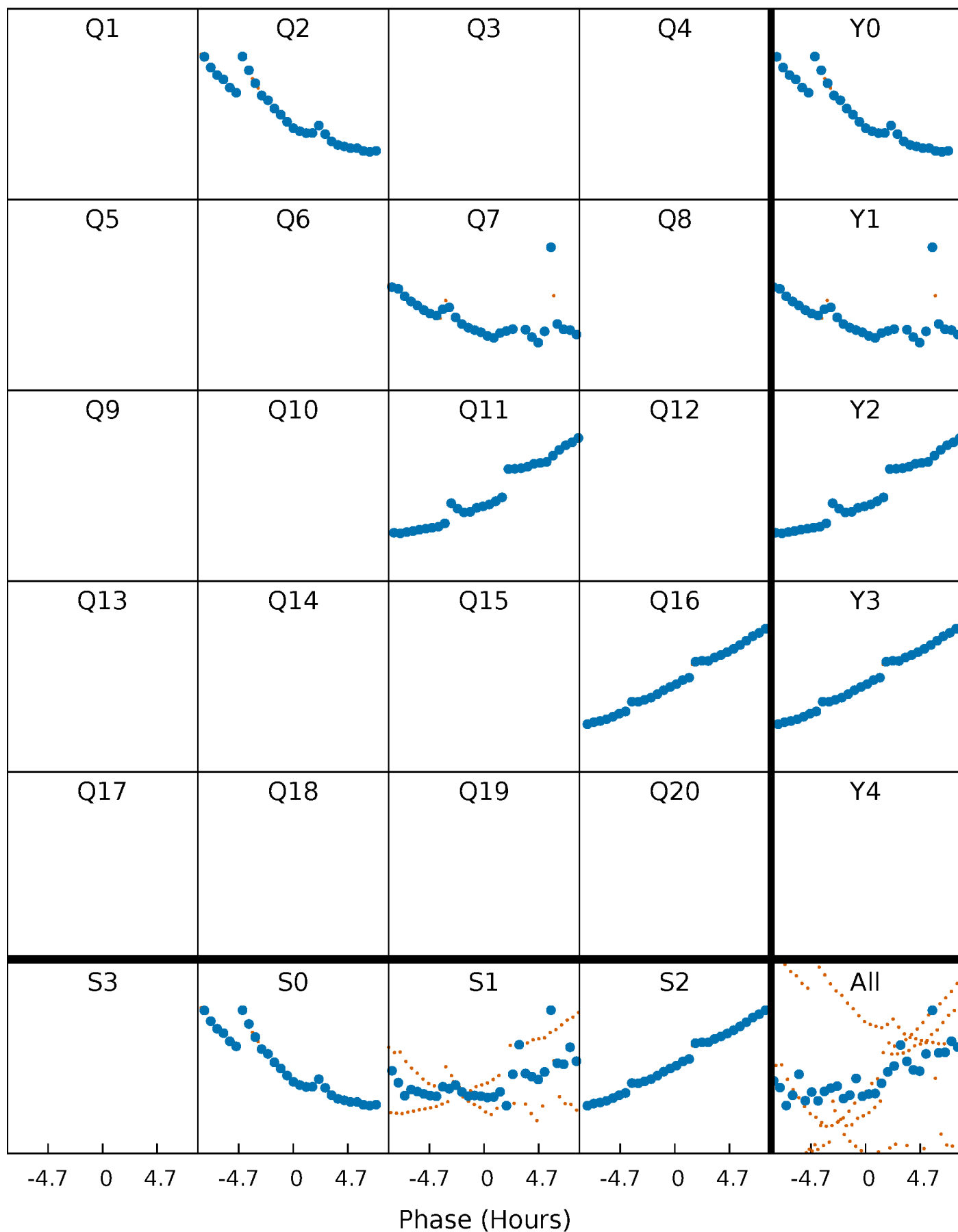


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



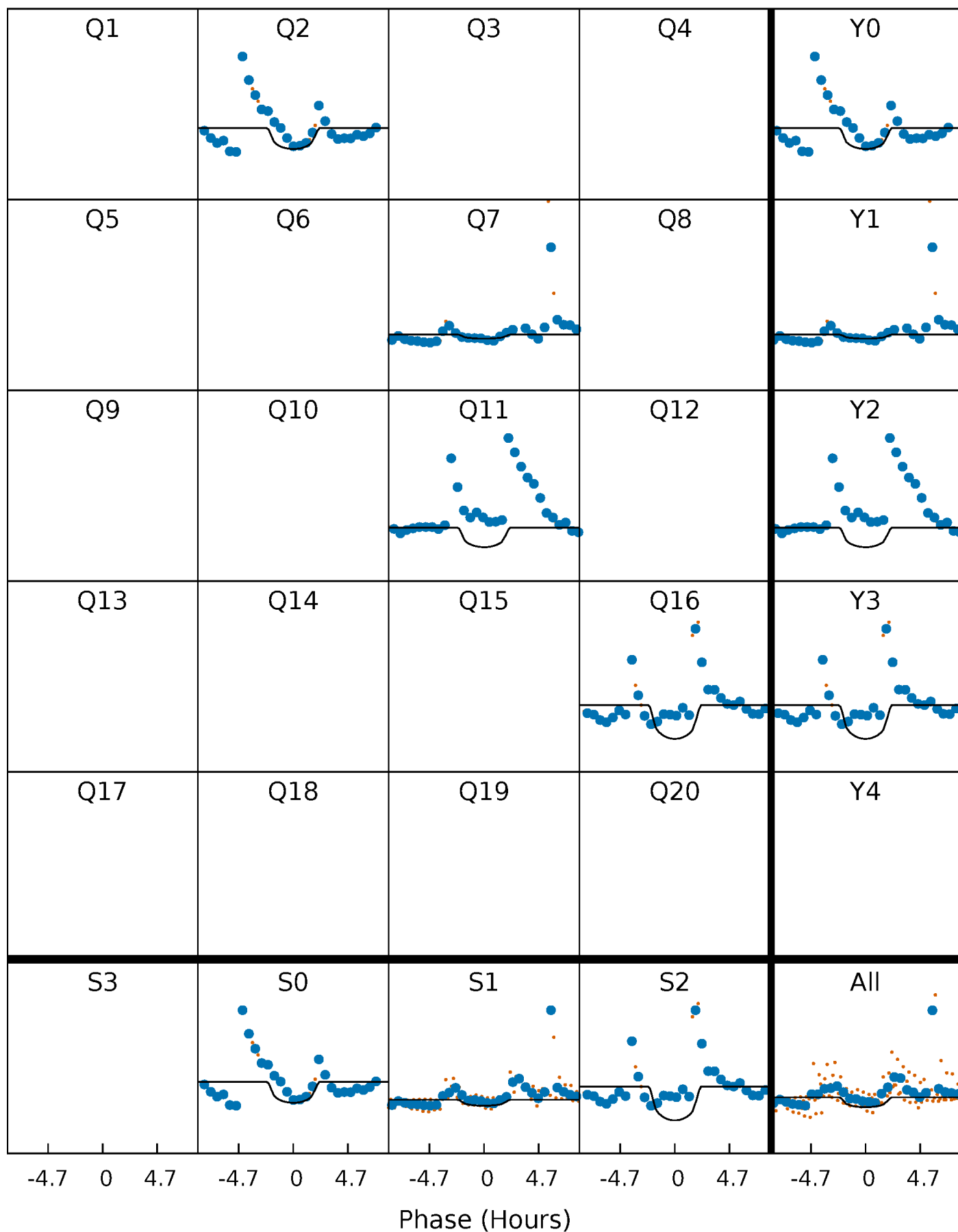
PDC Quarter-Phased Transit Curves

TCE 005344895-01 P=447.199472 Days $T_0=190.182690$ (BKJD)



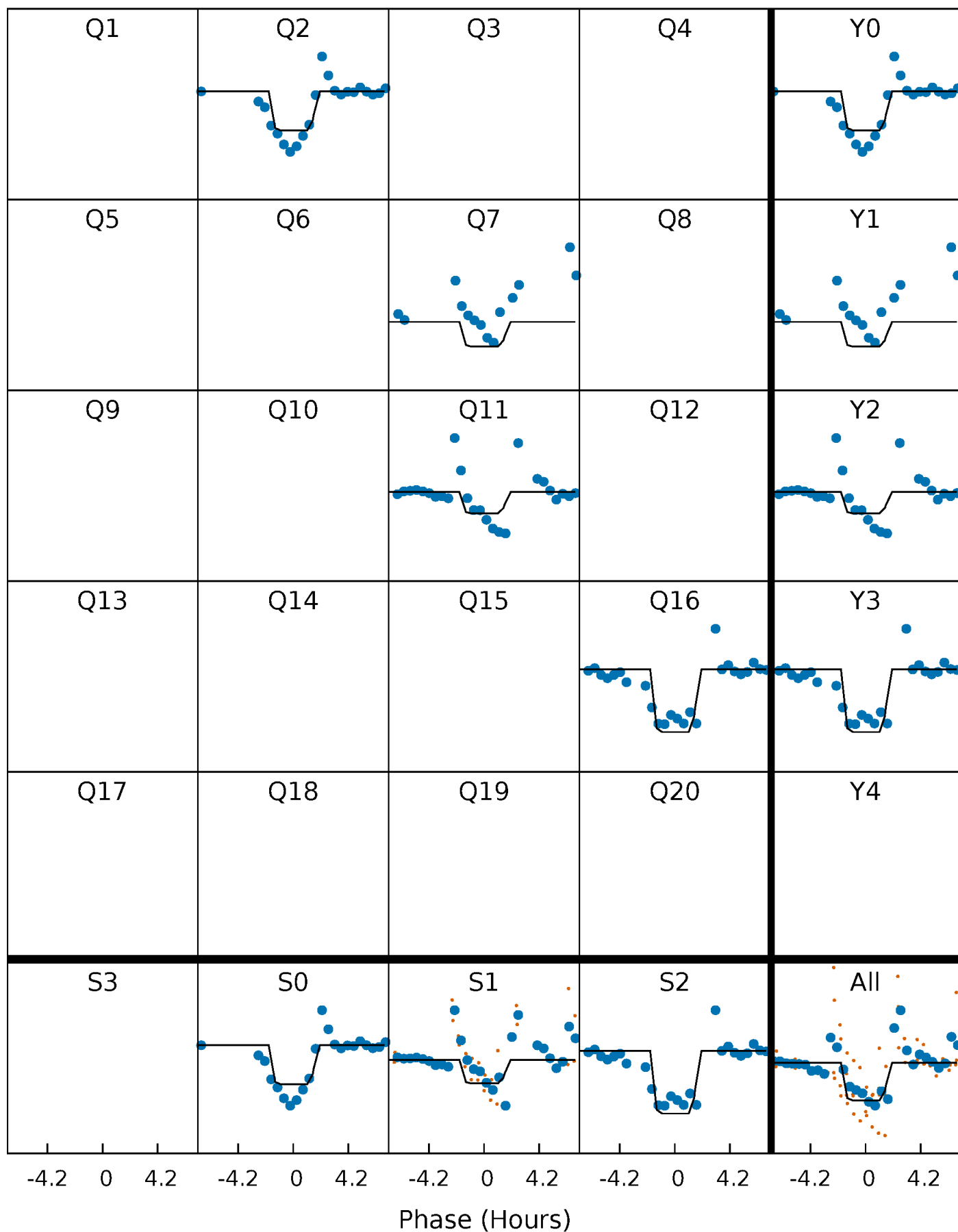
DV Quarter-Phased Transit Curves

TCE 005344895-01 P=447.199472 Days $T_0=190.182690$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

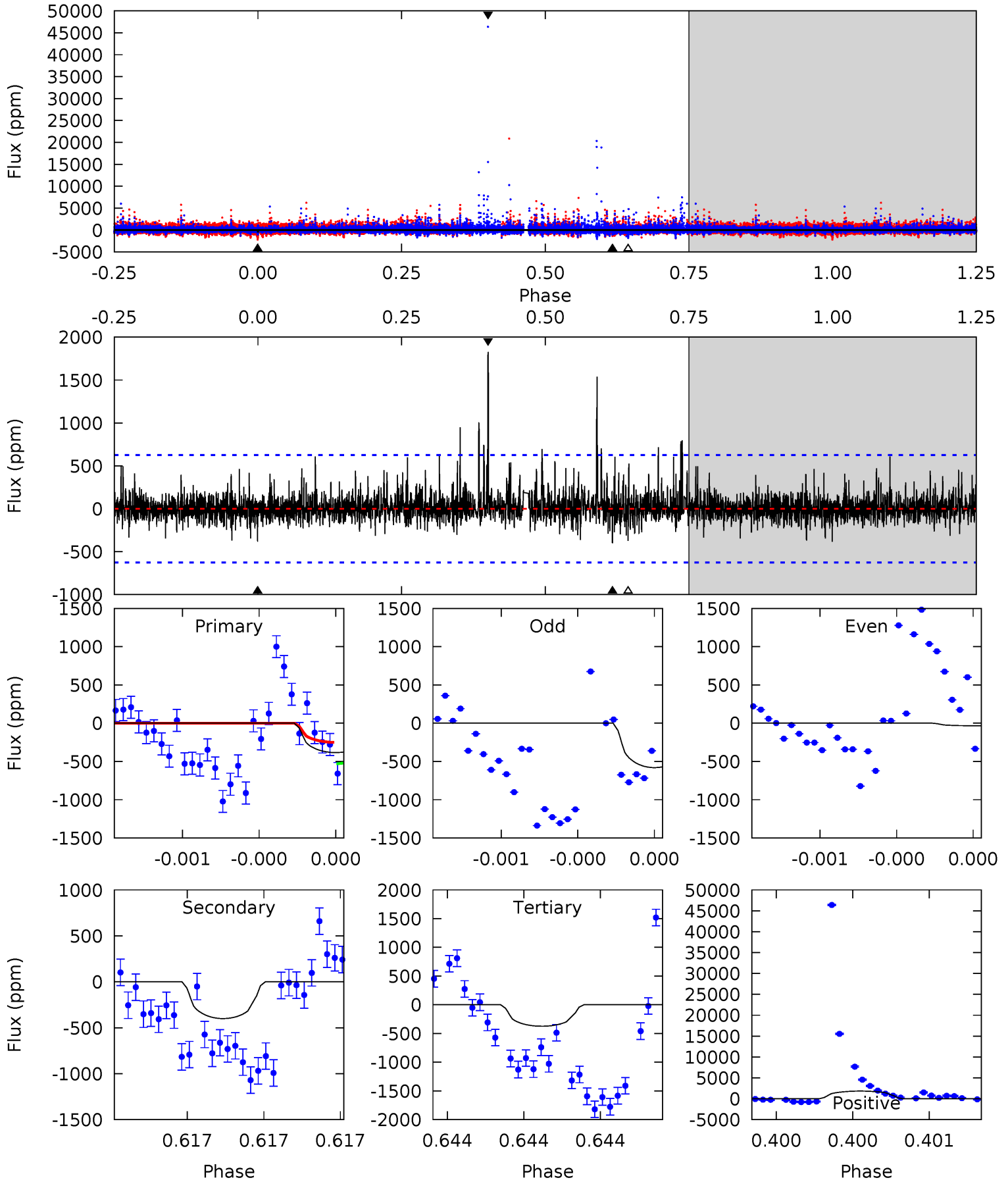
TCE 005344895-01 P=447.188461 Days $T_0=190.196285$ (BKJD)



DV Model-Shift Uniqueness Test

005344895-01, P = 447.199472 Days, E = 190.182690 Days

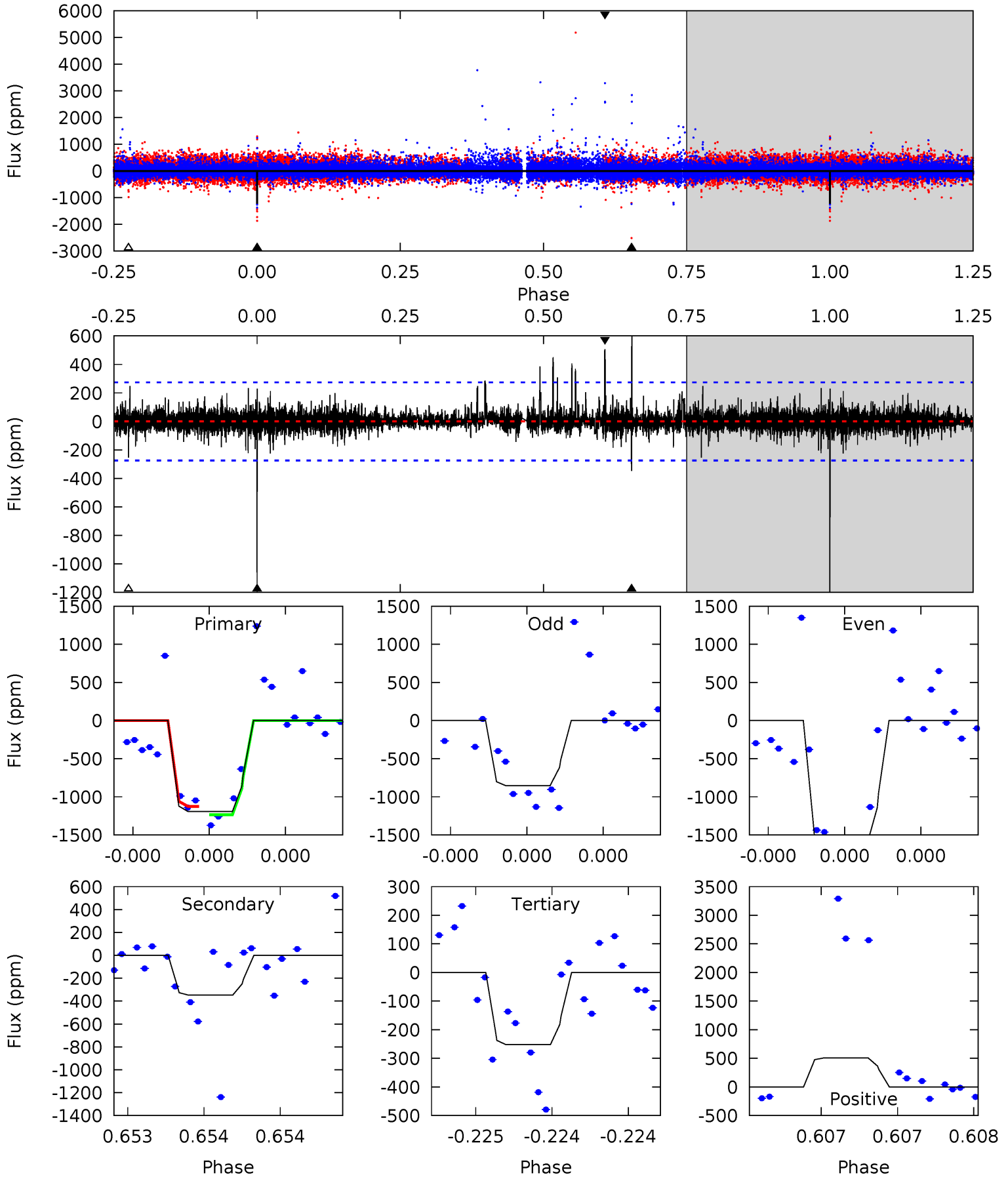
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.45	3.60	3.36	16.4	5.61	3.54	1.18	0.09	-13.0	0.24	-12.8	1.12	1.10	0.82	1.26



Alt Model-Shift Uniqueness Test

005344895-01, P = 447.188461 Days, E = 190.196285 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	7.16	5.21	10.4	5.65	3.59	0.96	19.4	14.2	1.96	-3.28	6.11	0.87	0.33	0



Stellar Parameters For KIC 005344895

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4472^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.740^{+0.025}_{-0.063}$	$0.733^{+0.041}_{-0.046}$	$2.545^{+0.645}_{-0.185}$
	+3%/-3%	+1%/-0%	+29%/-88%	+3%/-9%	+6%/-6%	+25%/-7%
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 005344895-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-400 ± 111	$5.22^{+4.61}_{-3.62}$	231^{+8}_{-7}	3022^{+1443}_{-500}	8373^{+87540}_{-6161}
Alt.	-347 ± 48	$5.11^{+4.86}_{-3.50}$	232^{+7}_{-9}	2996^{+1355}_{-488}	7837^{+69873}_{-5846}

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

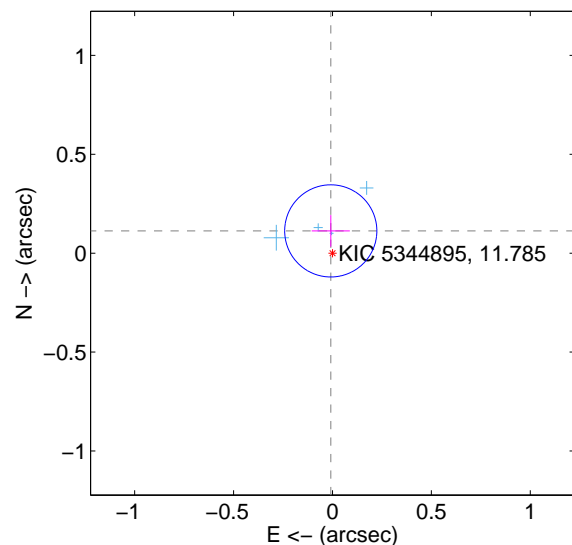
Supplemental centroid analysis for 005344895-01. **Kepler magnitude: 11.79.** Transit SNR 8.24

There are 4 quarters with good PRF difference image offsets

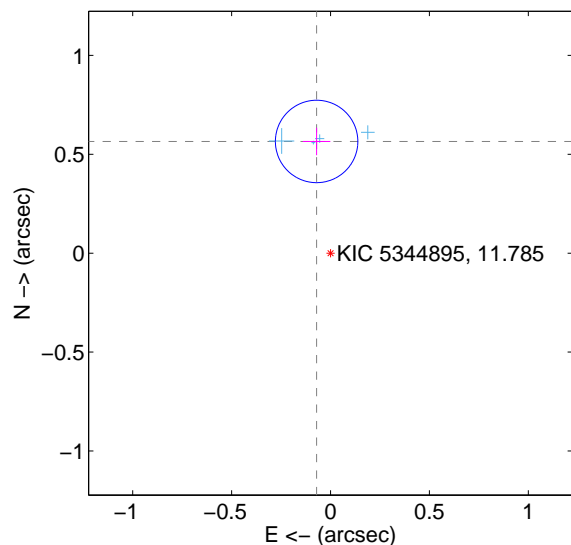
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.113 ± 0.078	1.45	0.009 ± 0.096	0.113 ± 0.080
PRF-fit source offset from KIC position	0.569 ± 0.069	8.20	0.070 ± 0.069	0.565 ± 0.069
photometric centroid source offset	0.37 ± 0.22	1.70	-0.00 ± 0.19	0.37 ± 0.22

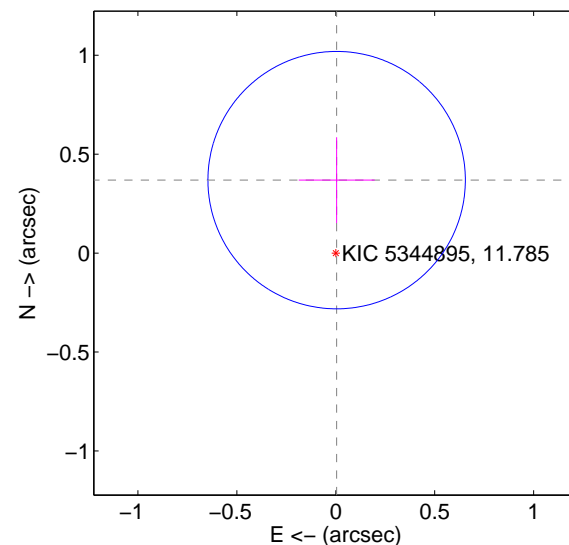
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

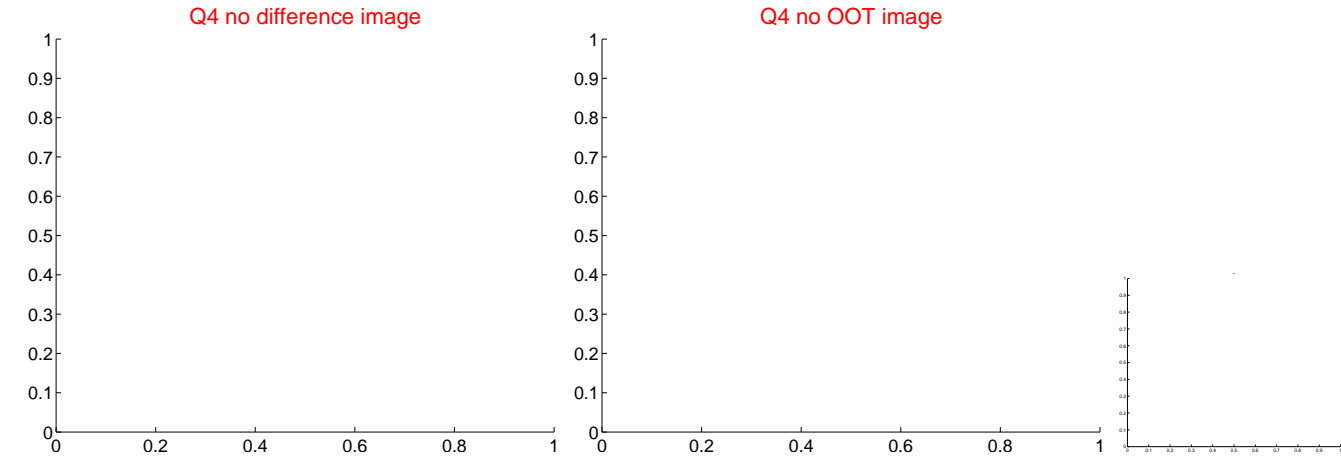
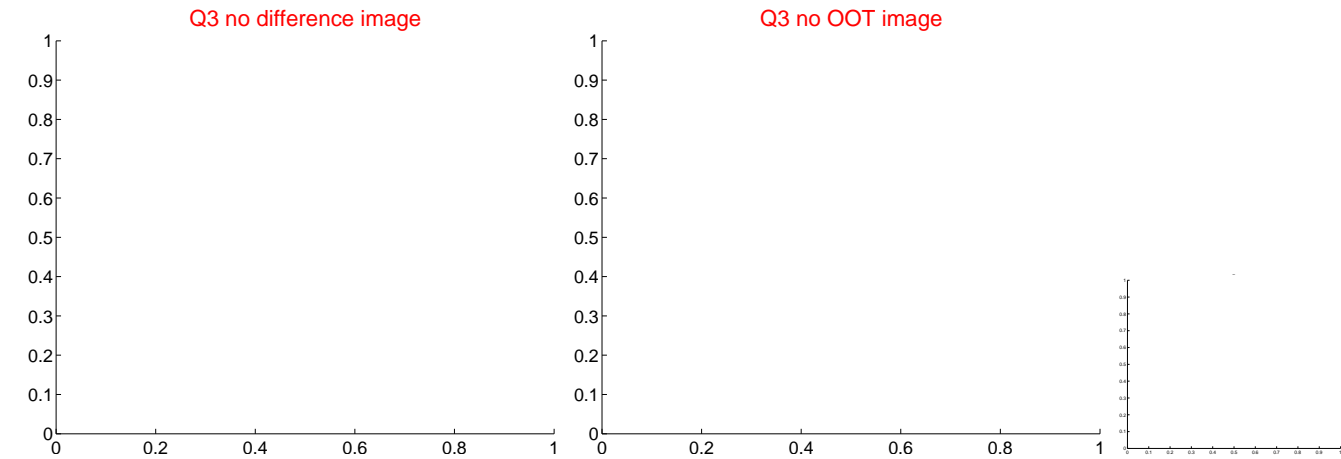
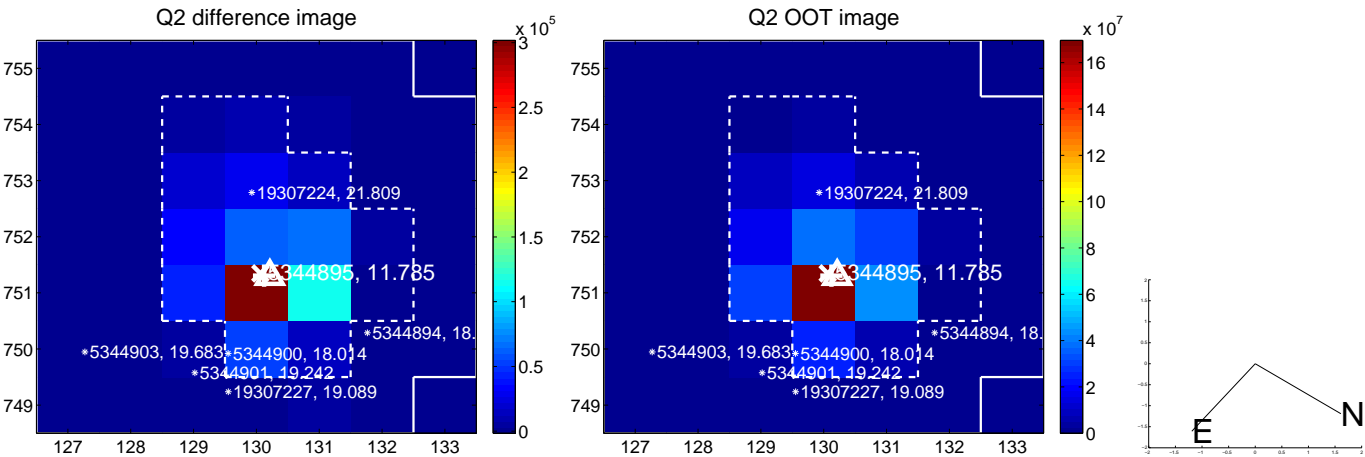


offset from photometric centroids



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

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



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Q5 no difference image



Q5 no OOT image



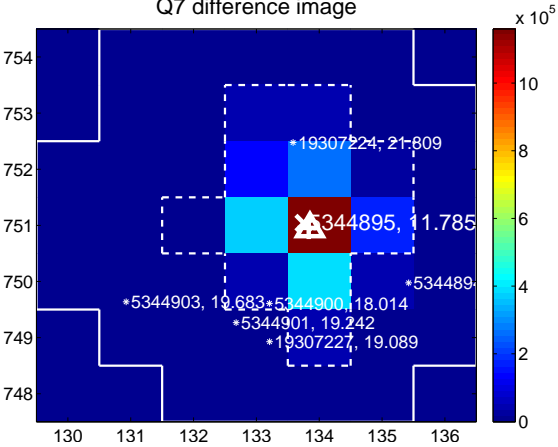
Q6 no difference image



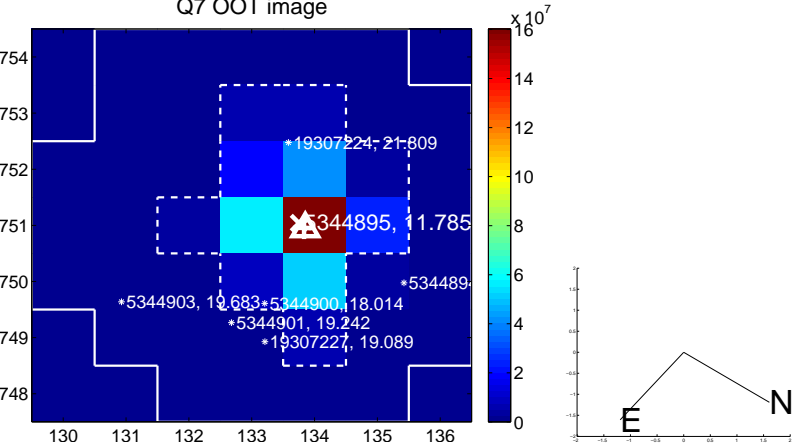
Q6 no OOT image



Q7 difference image



Q7 OOT image



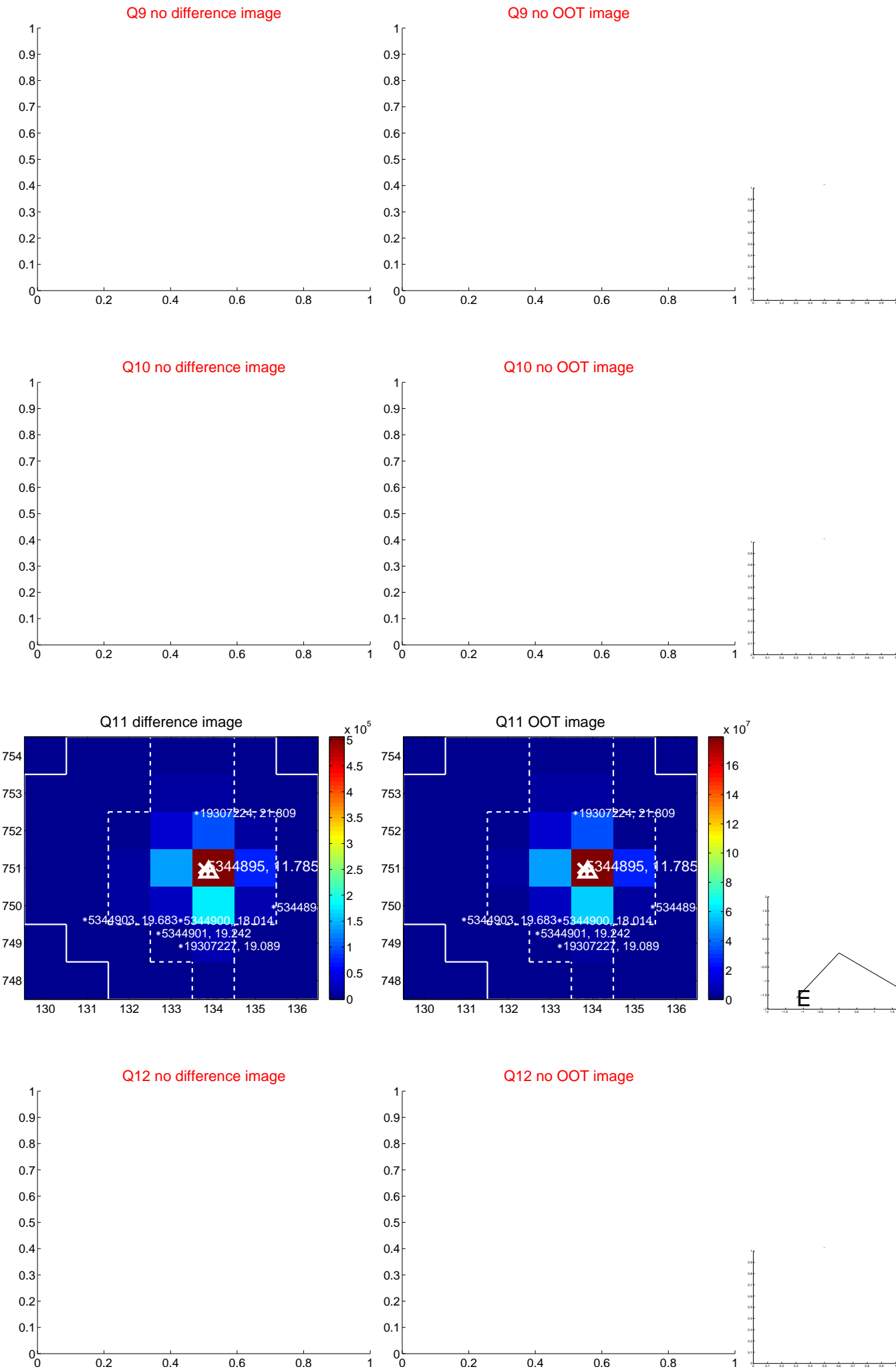
Q8 no difference image



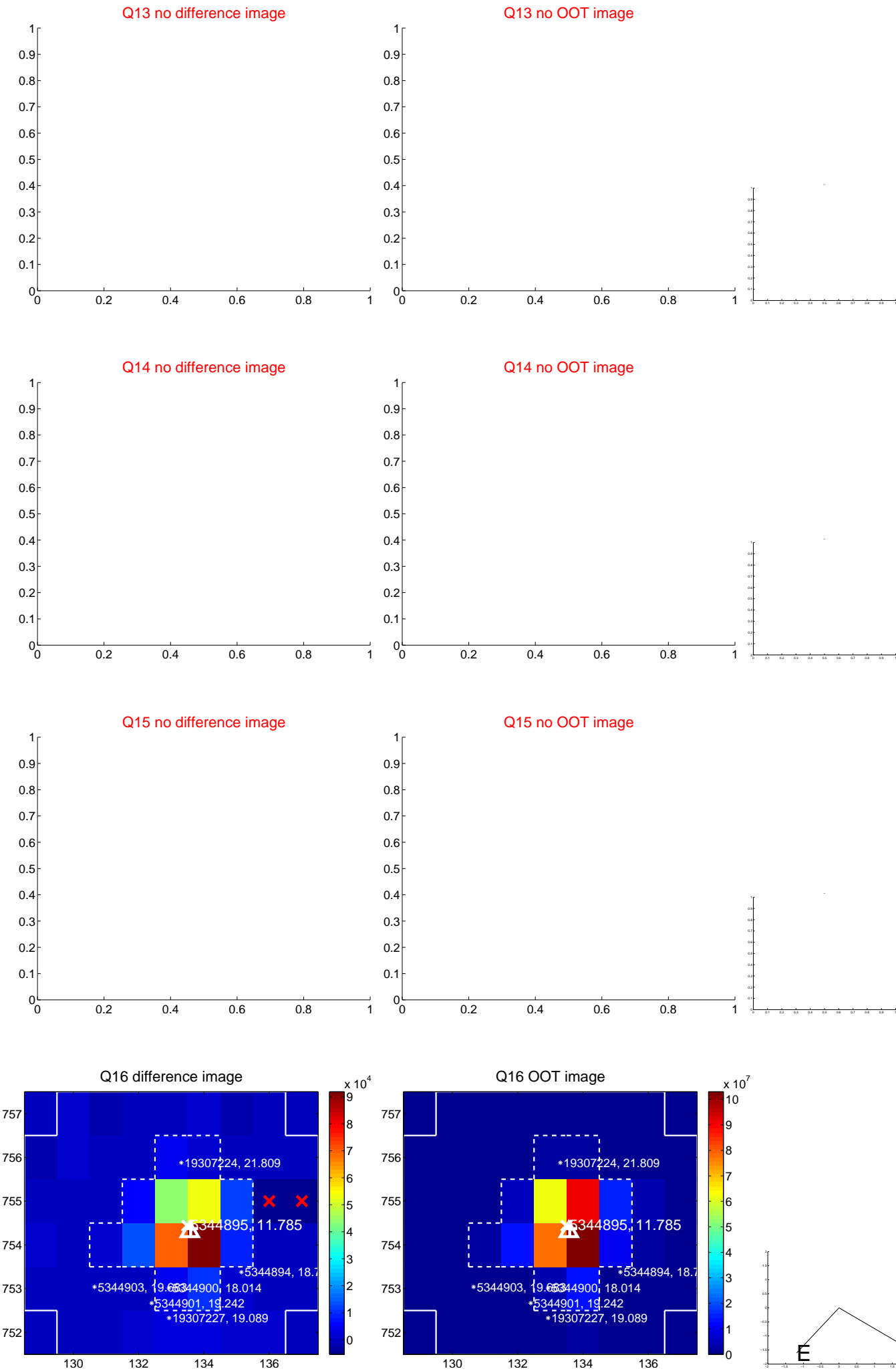
Q8 no OOT image



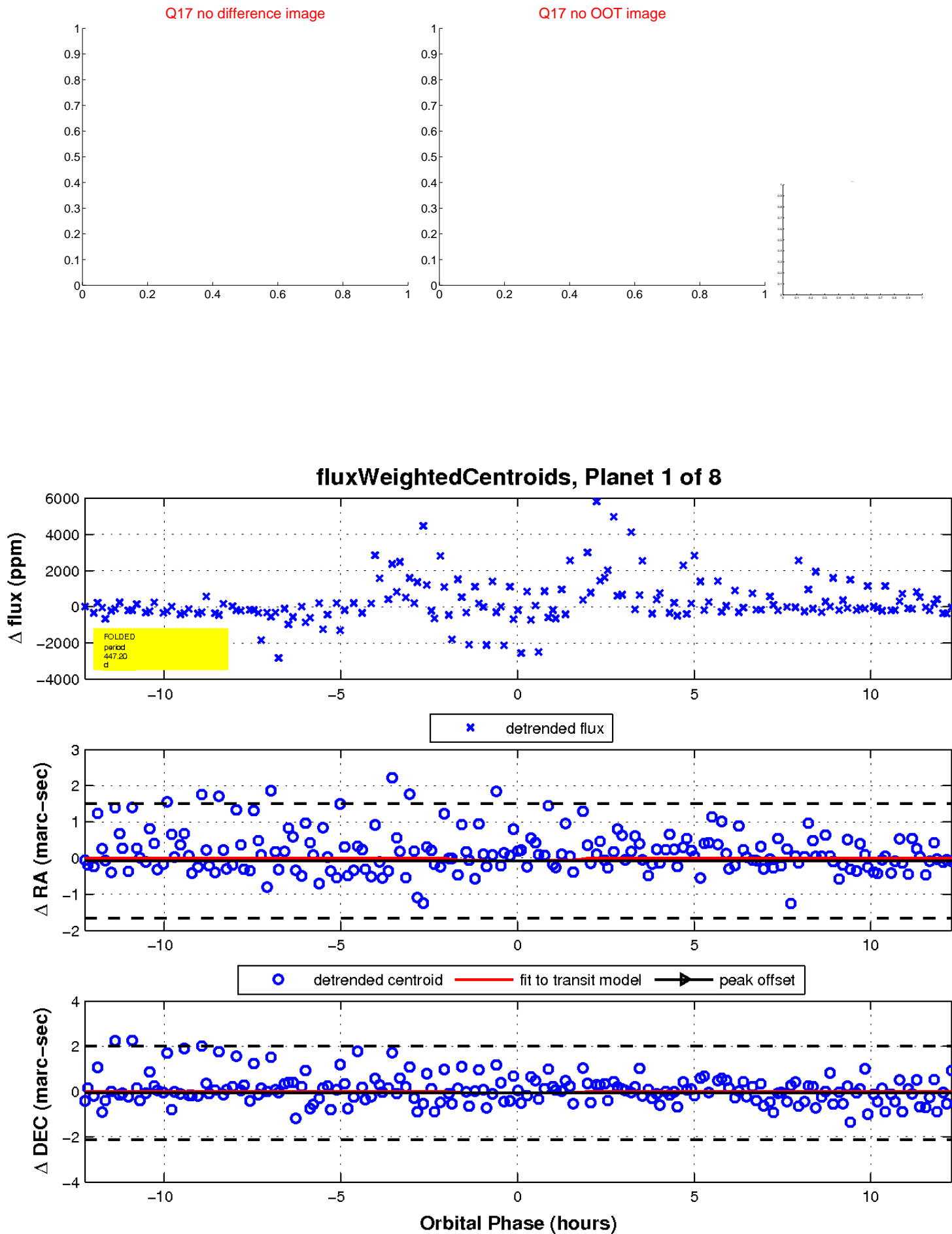
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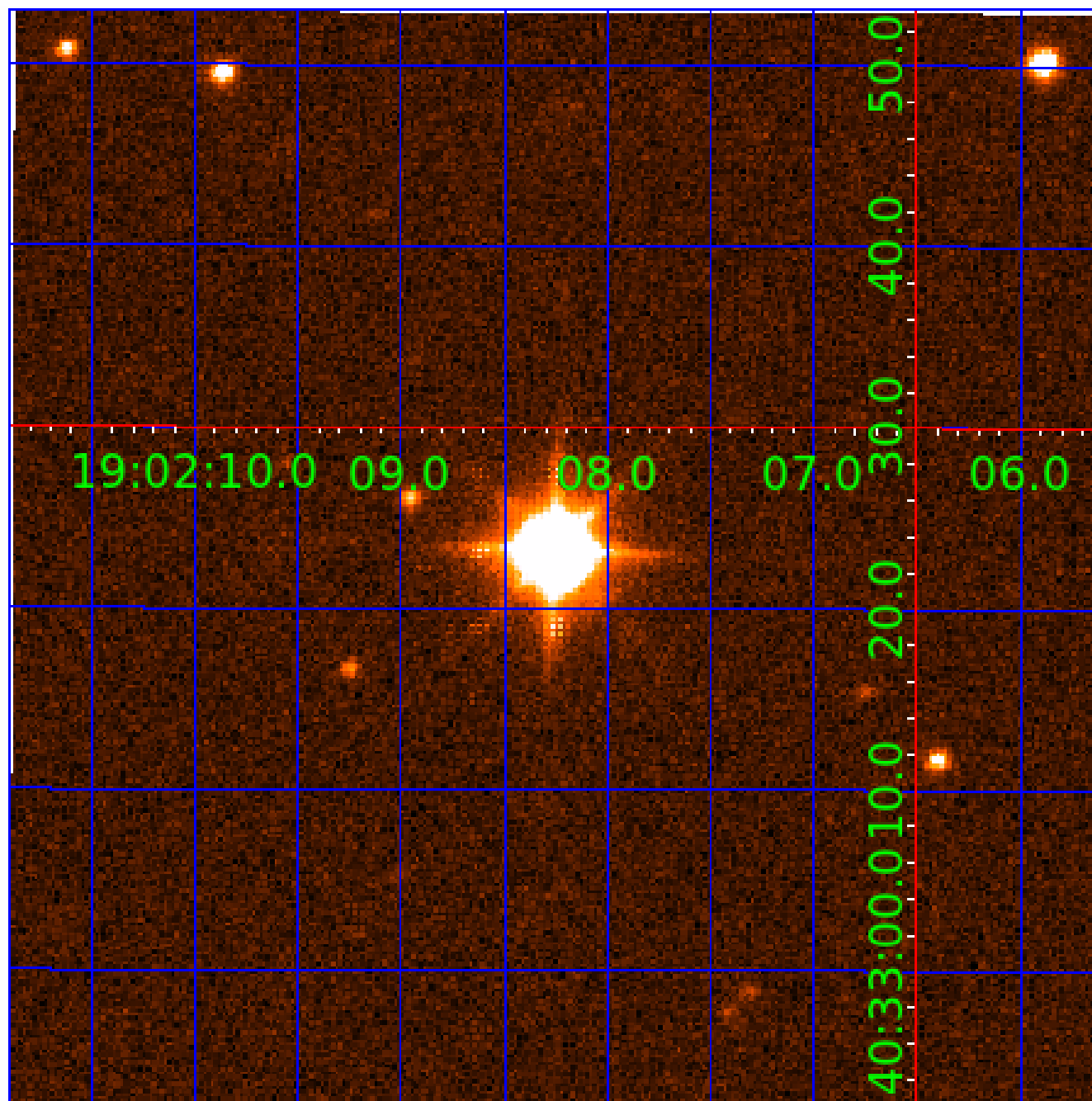


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UKIRT Image

Declination



KIC 005344895

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005344895-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005344895-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005344895-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

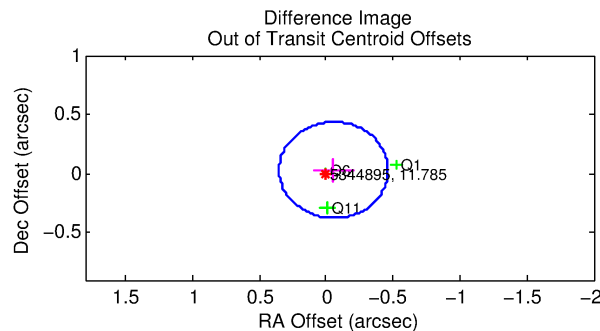
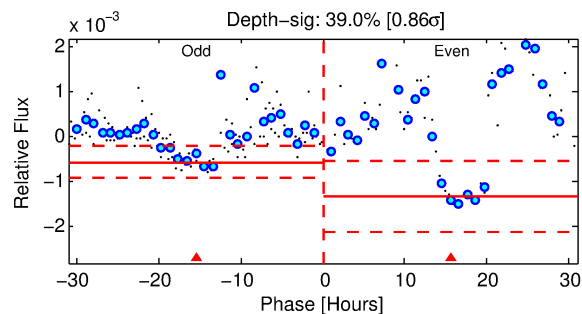
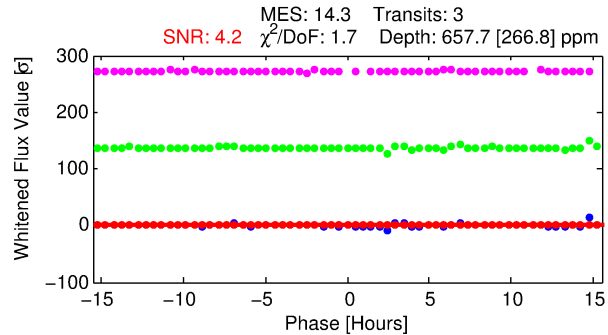
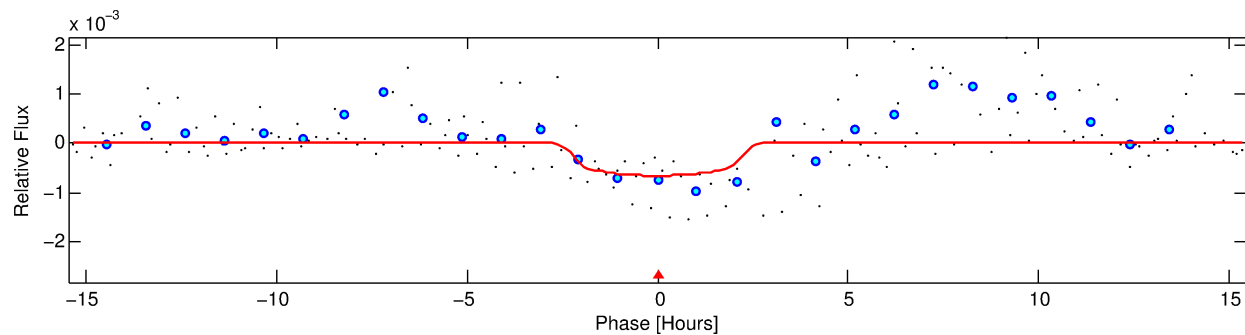
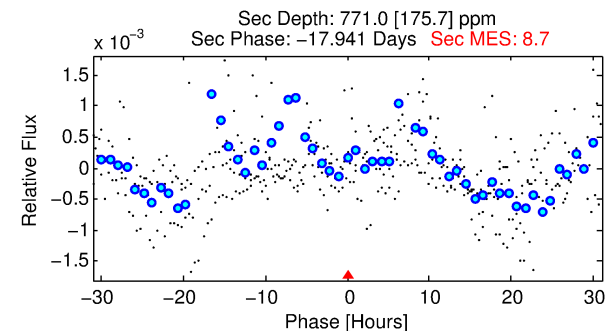
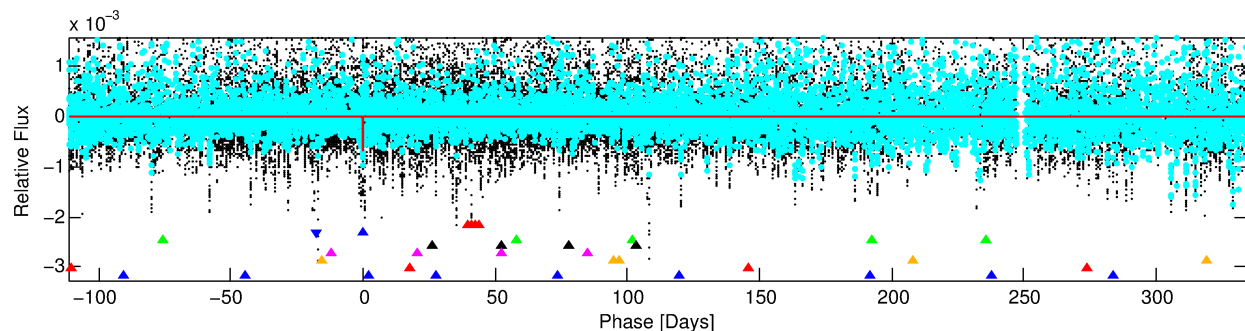
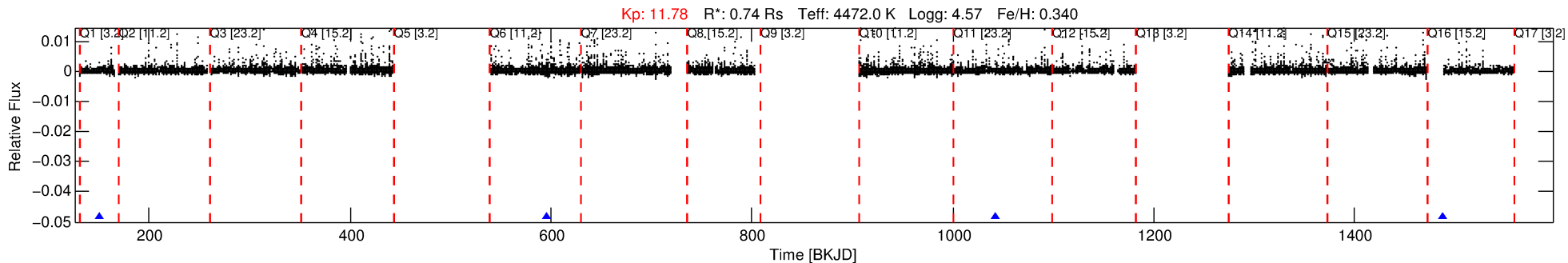
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005344895-02

No Significant Match Found

DV One-Page Summary

KIC: 5344895 Candidate: 2 of 8 Period: 445.916 d



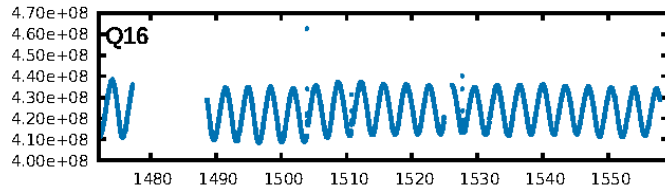
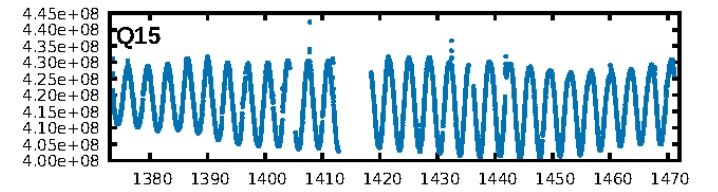
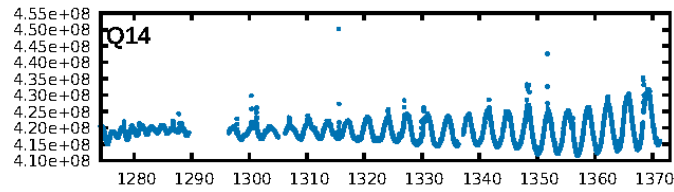
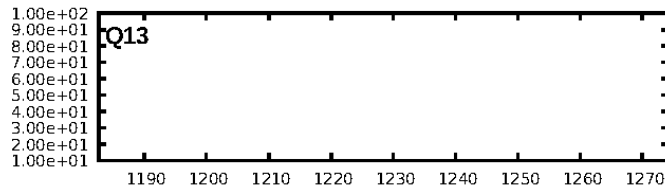
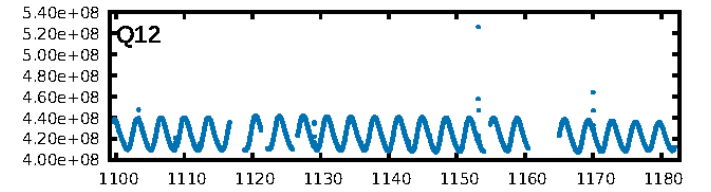
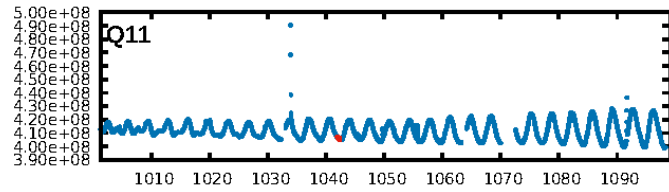
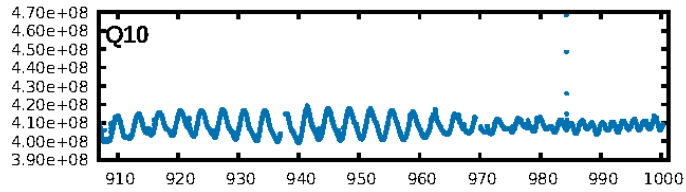
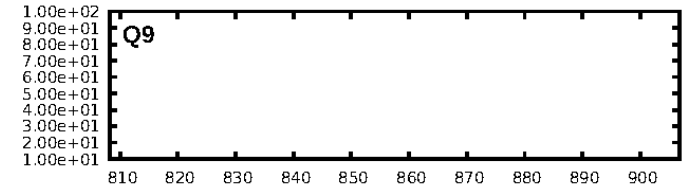
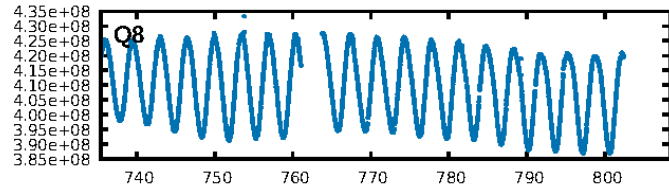
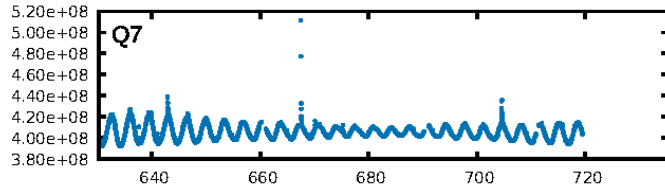
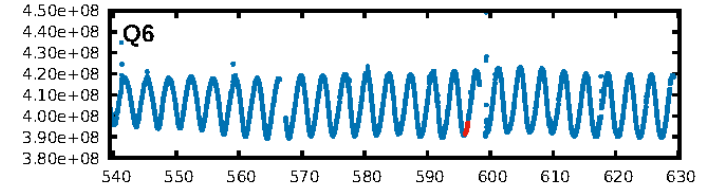
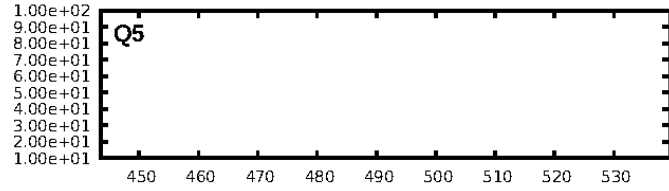
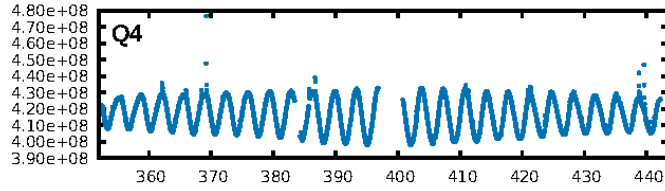
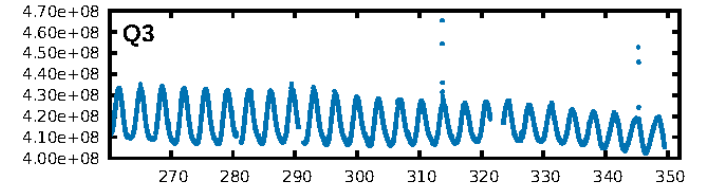
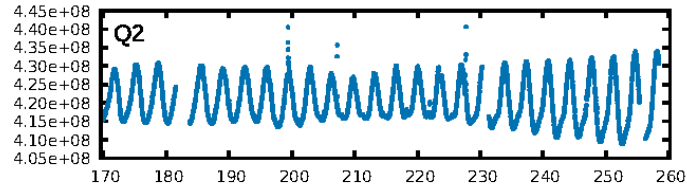
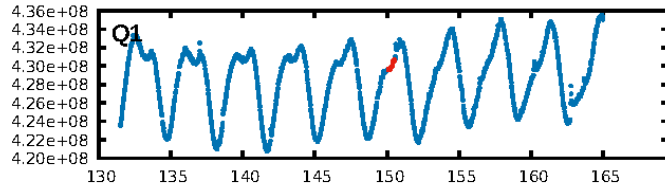
DV Fit Results:

Period = 445.91564 [0.01082] d
Epoch = 150.3066 [0.0139] BKJD
Rp/R* = 0.0285 [0.0118]
a/R* = 350.71 [386.96]
b = 0.88 [0.29]
Seff = 0.18 [0.03]
Teq = 167 [7] K
Rp = 2.30 [0.97] Re
a = 1.0304 [0.0753] AU
Ag = 85198.06 [73888.07] [1.15 σ]
Teffp = 4416 [959] K [4.43 σ]

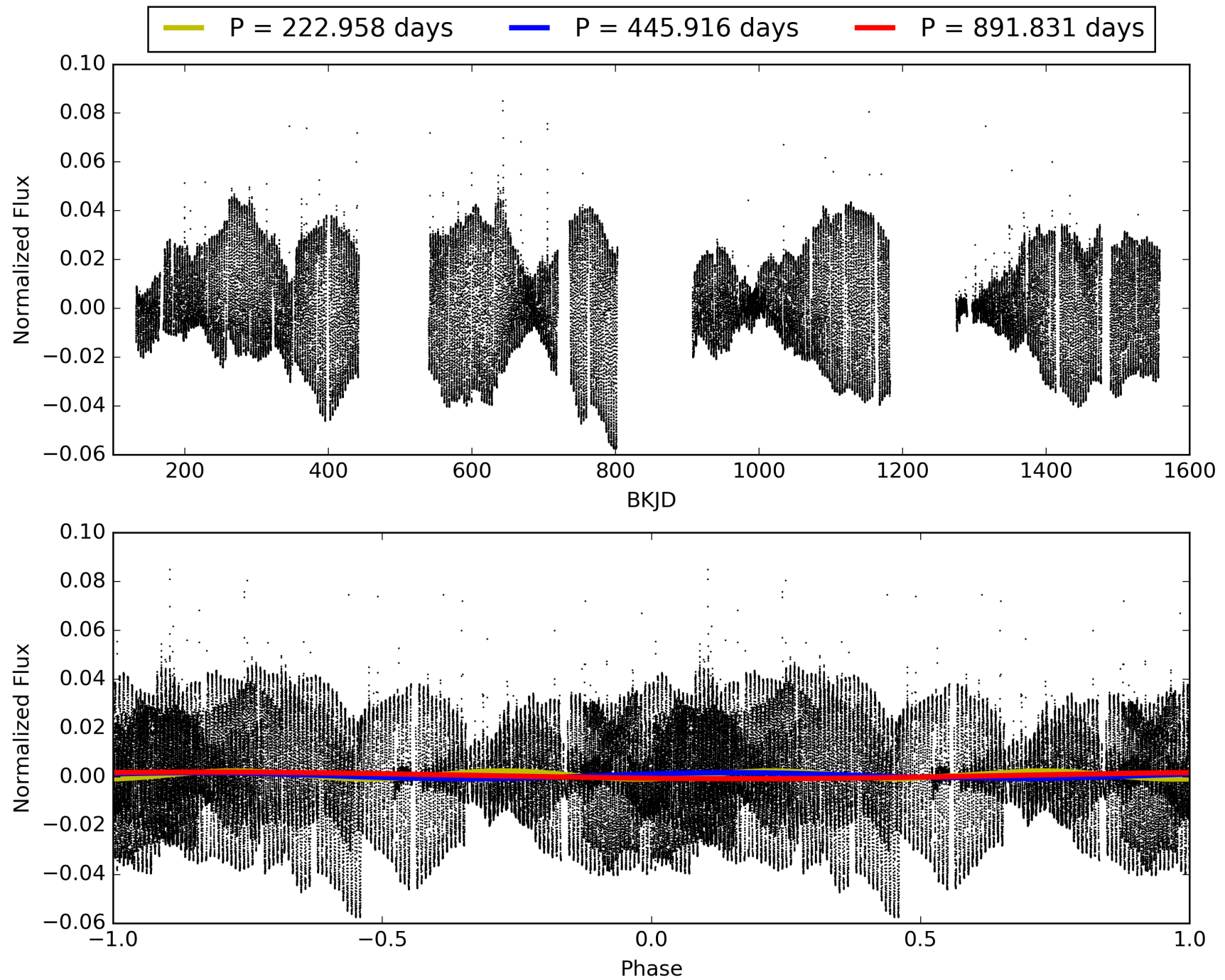
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [99.04 σ]
LongPeriod-sig: 100.0% [4.67 σ]
ModelChiSquare2-sig: 34.0%
ModelChiSquareGof-sig: 93.5%
Bootstrap-pfa: 3.07e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -4.598
Centroid-sig: 23.4%
Centroid-so: 0.601 arcsec [1.46 σ]
OotOffset-rm: 0.063 arcsec [0.46 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.410 arcsec [3.91 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 005344895-02, PDC Light Curves

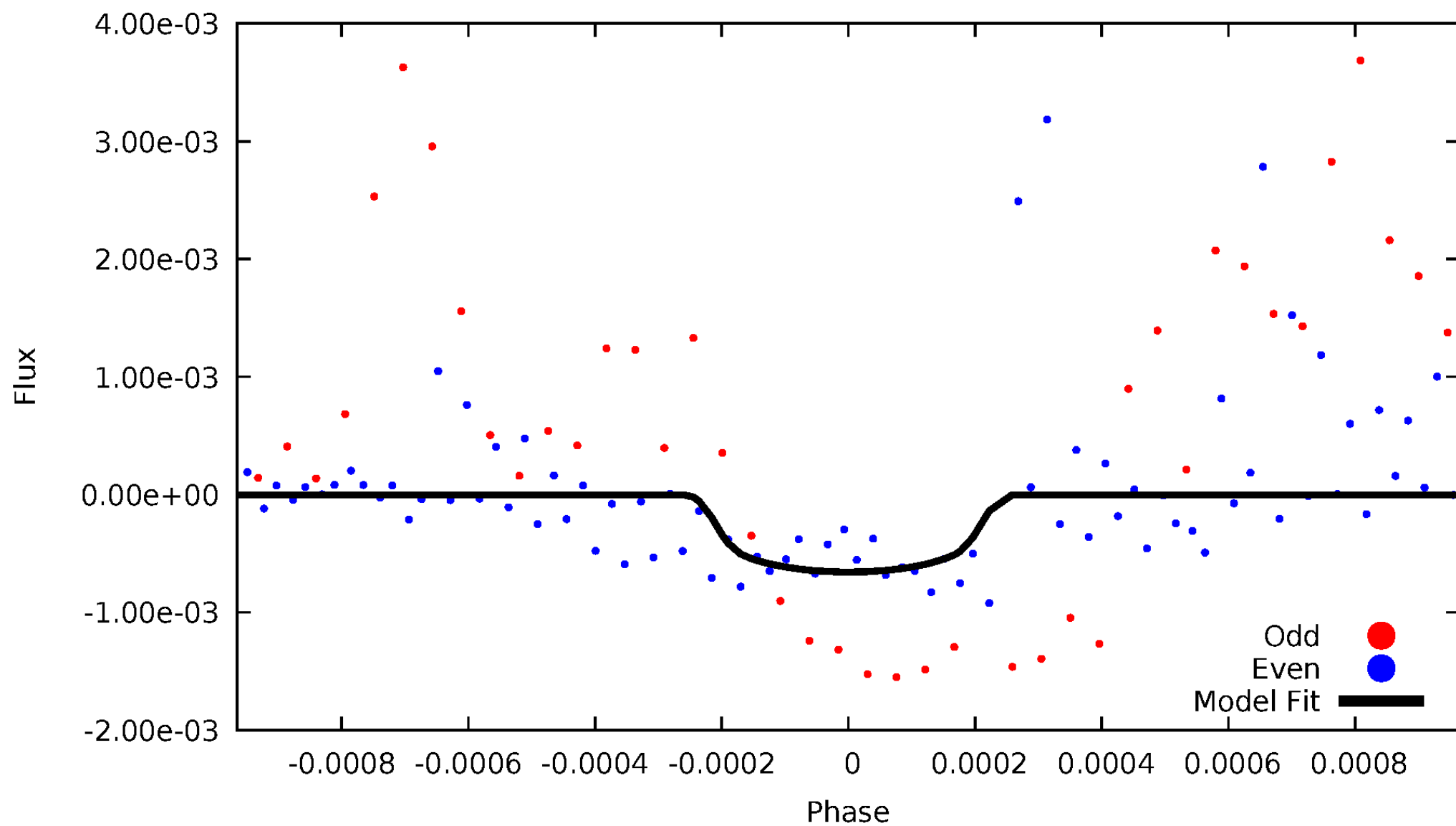


TCE 005344895-02



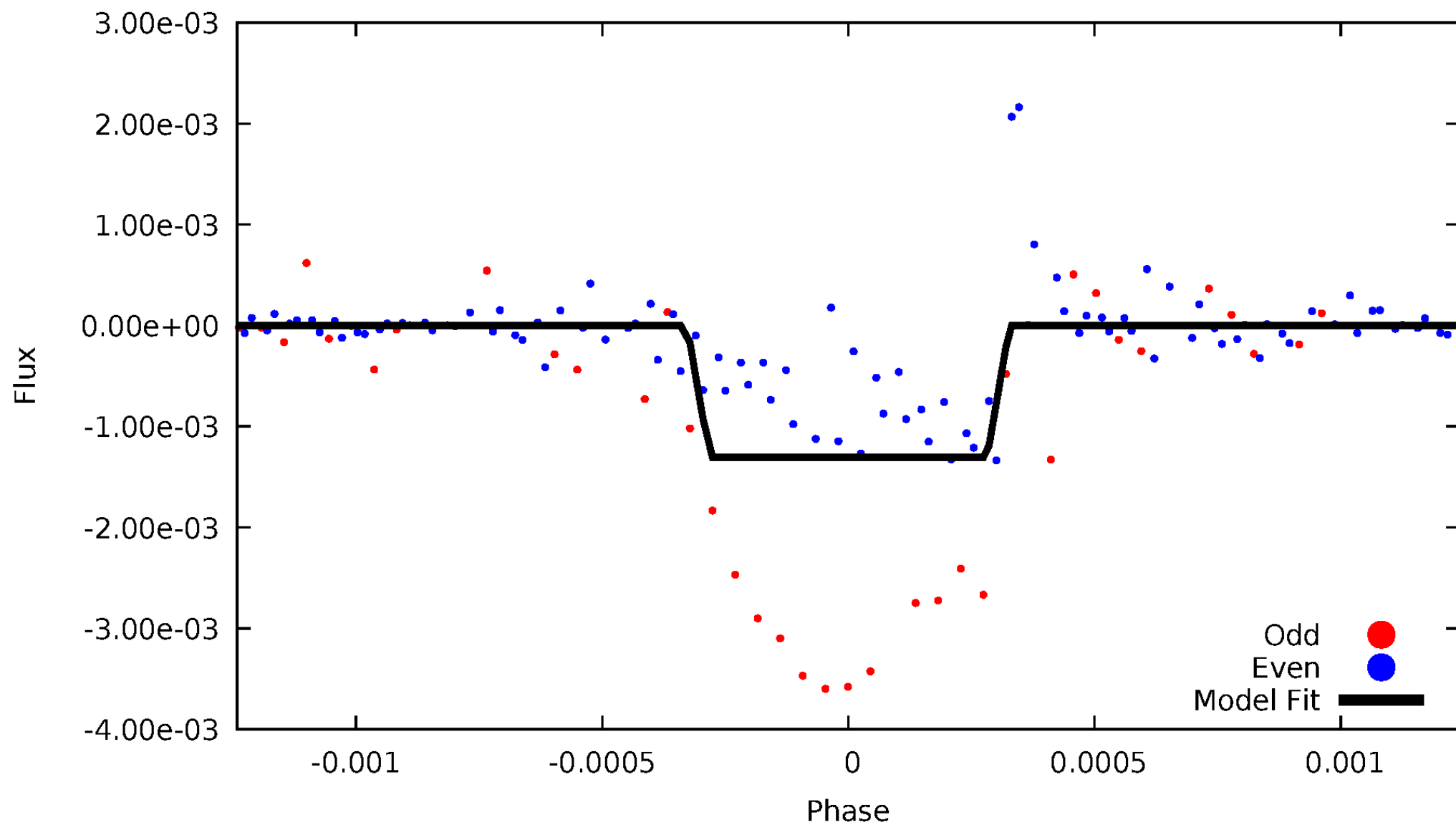
DV Odd/Even

TCE 005344895-02



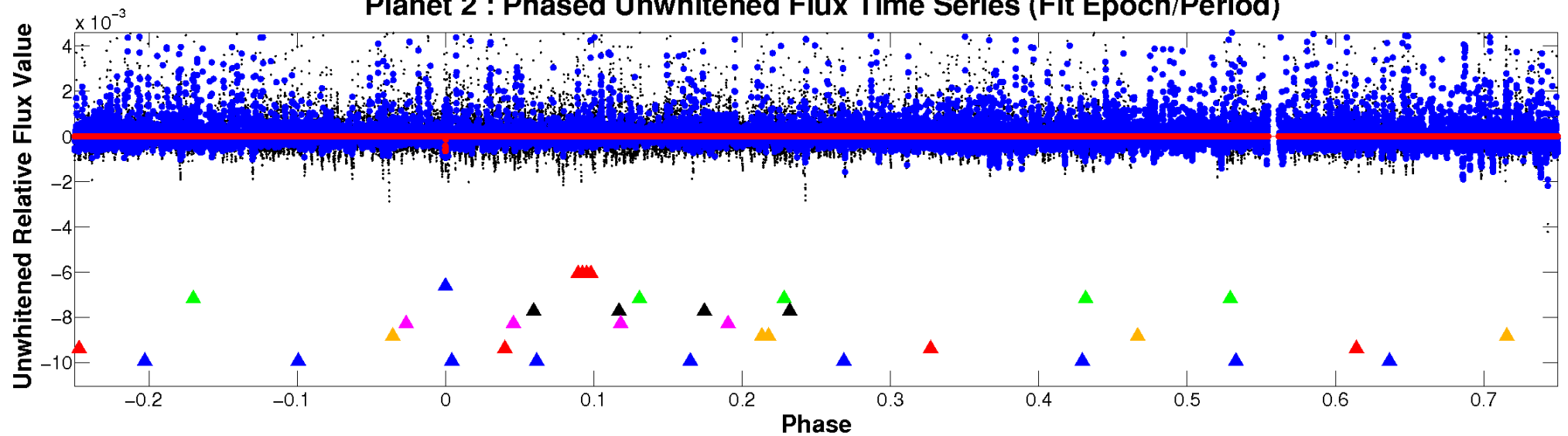
ALT Odd/Even

TCE 005344895-02

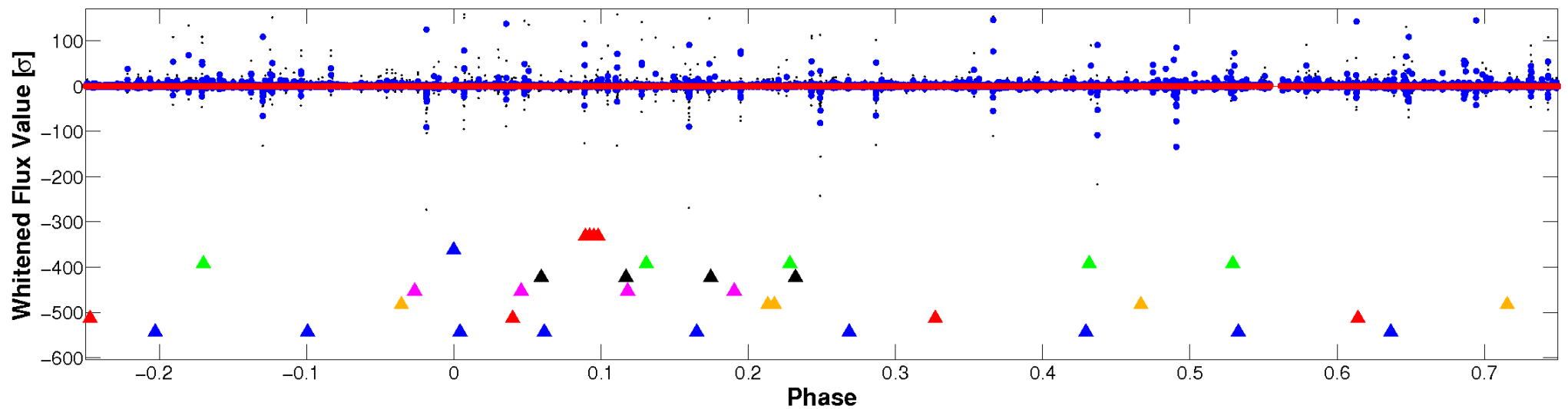


Non-Whitened Vs. Whitened Light Curve

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

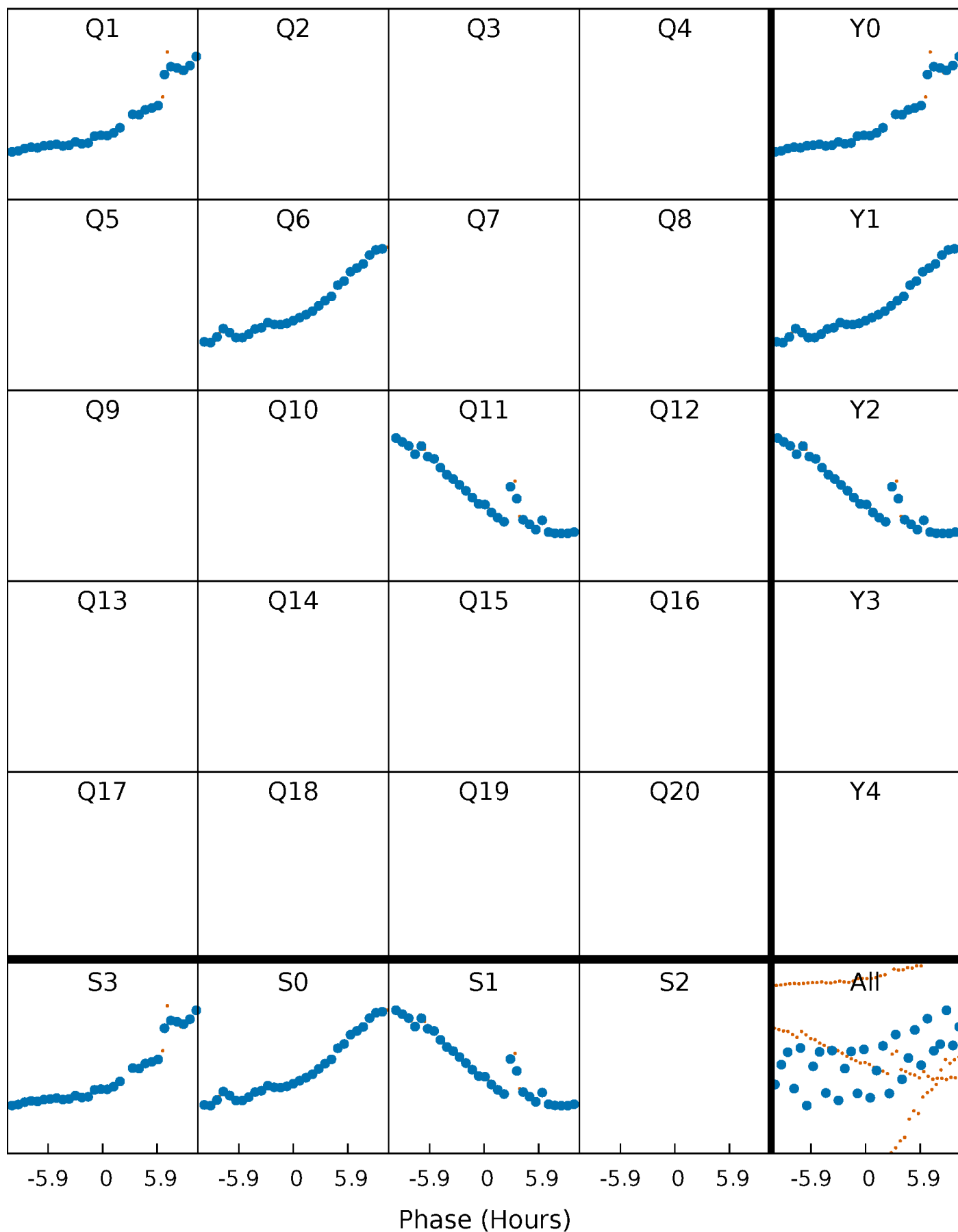


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



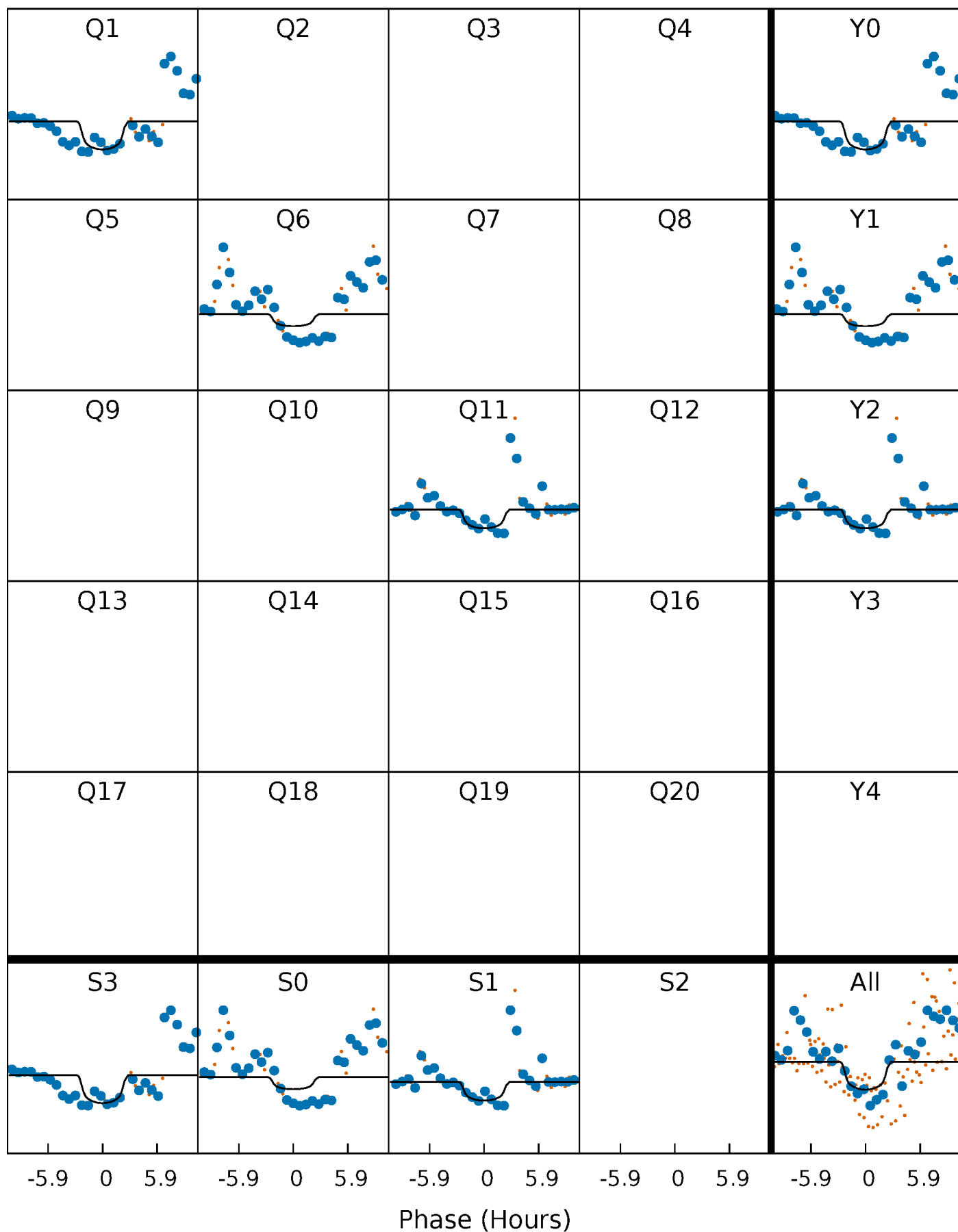
PDC Quarter-Phased Transit Curves

TCE 005344895-02 P=445.915640 Days $T_0=150.306620$ (BKJD)



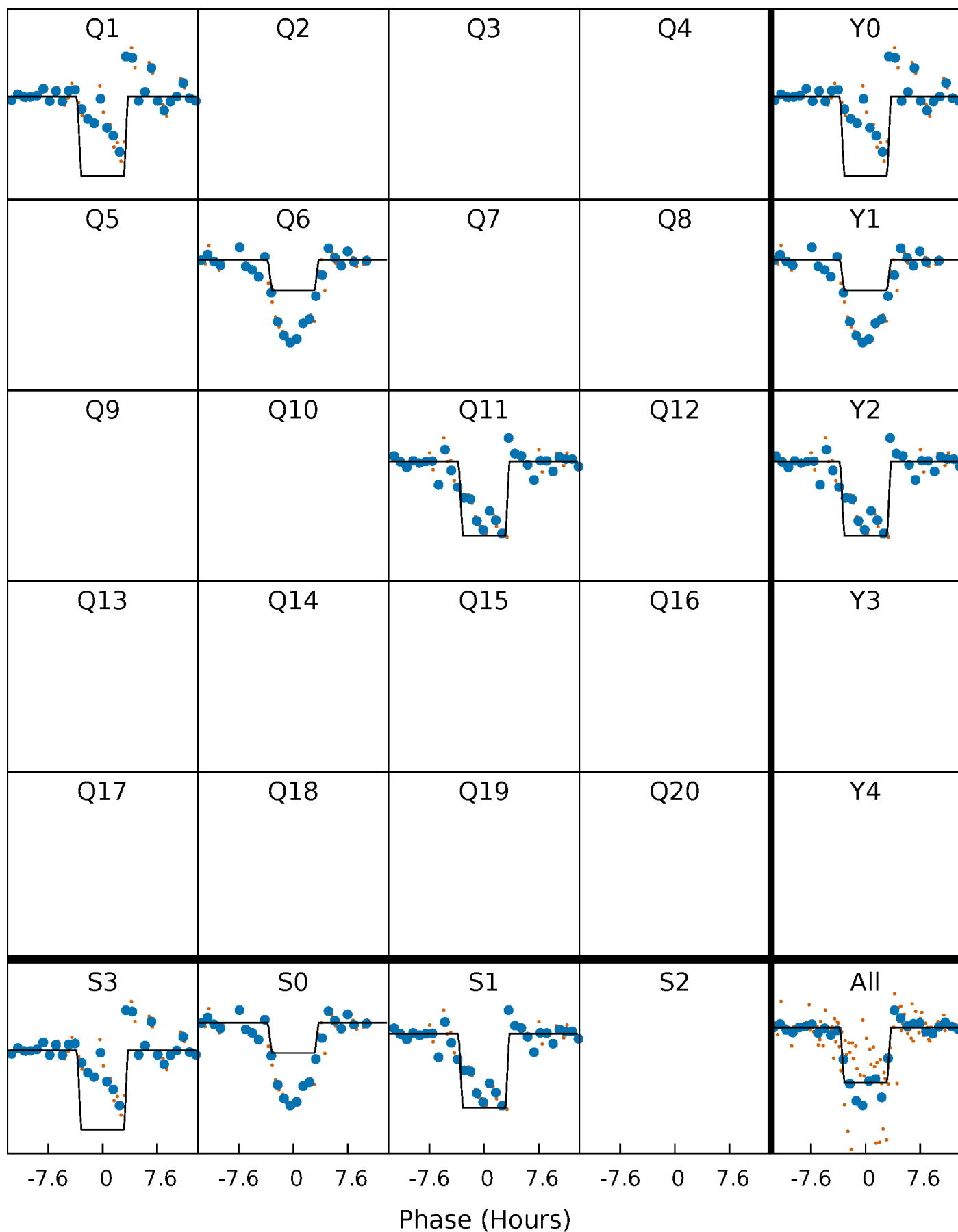
DV Quarter-Phased Transit Curves

TCE 005344895-02 $P=445.915640$ Days $T_0=150.306620$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

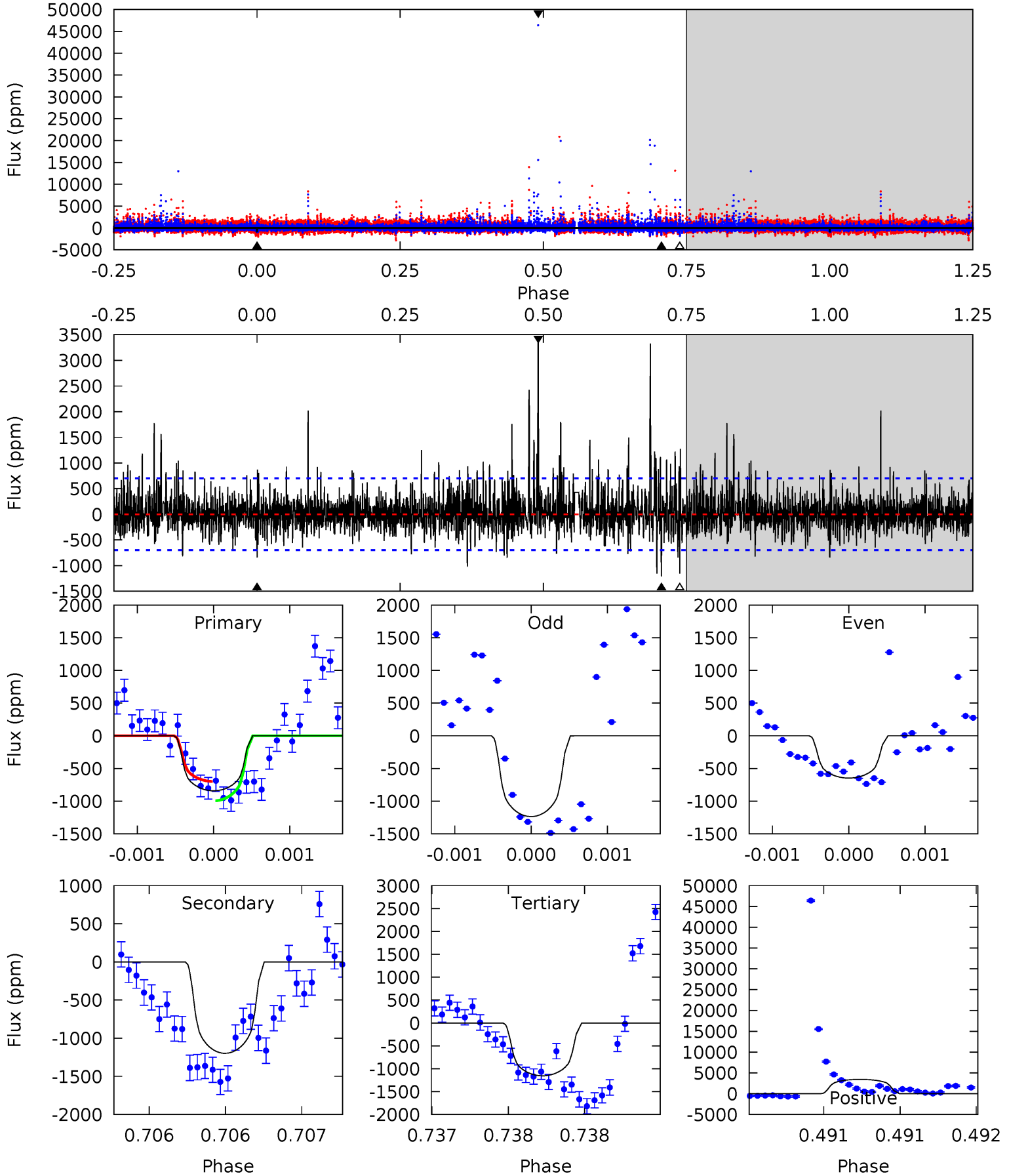
TCE 005344895-02 P=445.826223 Days $T_0=150.450676$ (BKJD)



DV Model-Shift Uniqueness Test

005344895-02, P = 445.915640 Days, E = 150.306620 Days

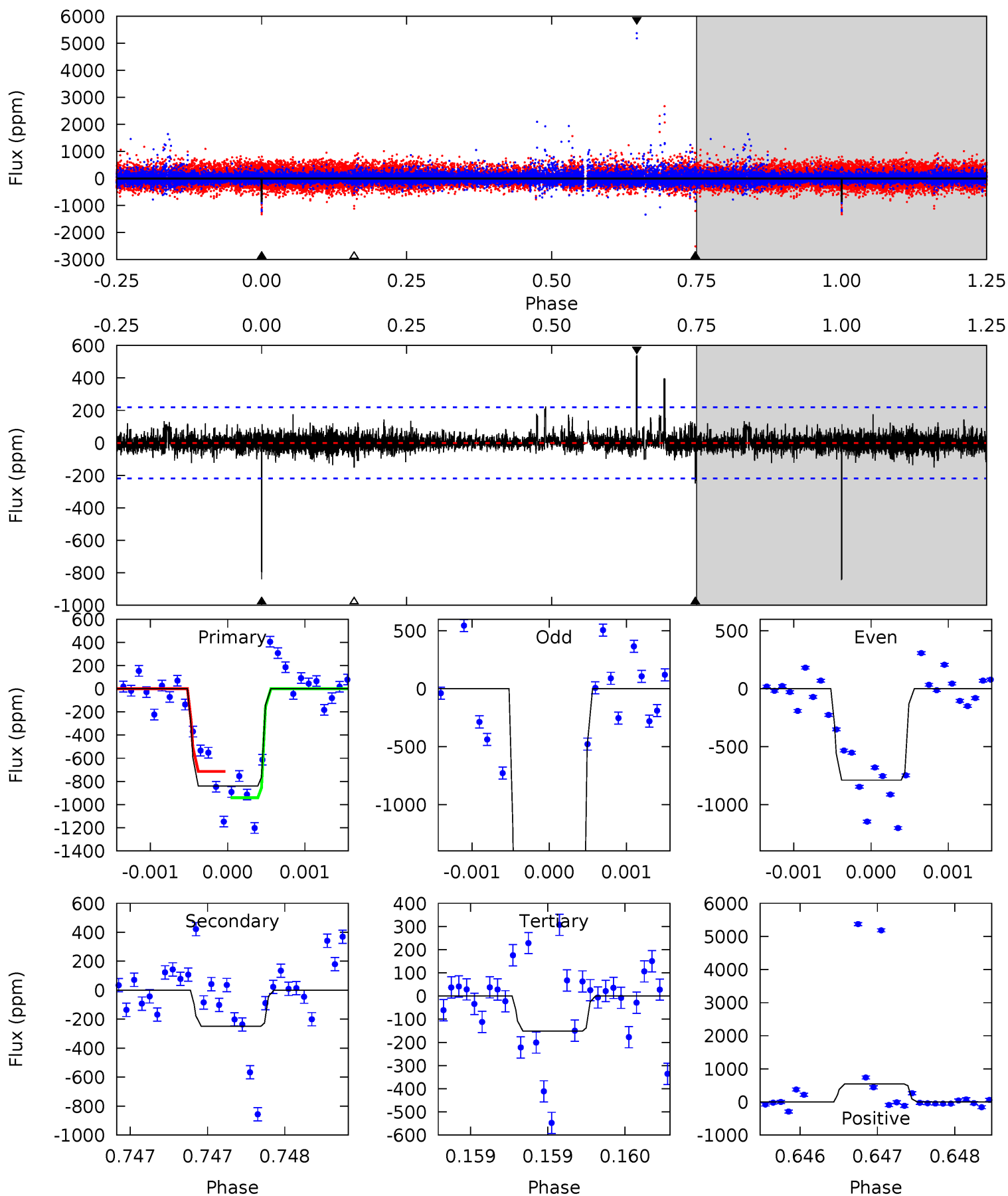
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.71	9.55	9.20	27.5	5.57	3.48	2.39	-2.49	-20.8	0.35	-17.9	1.06	1.29	0.74	1.18



Alt Model-Shift Uniqueness Test

005344895-02, P = 445.826223 Days, E = 150.450676 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	6.28	3.82	13.6	5.53	3.41	0.88	17.3	7.50	2.46	-7.36	30.1	1.44	0.39	0



Stellar Parameters For KIC 005344895

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4472^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.740^{+0.025}_{-0.063}$	$0.733^{+0.041}_{-0.046}$	$2.545^{+0.645}_{-0.185}$
	+3%/-3%	+1%/-0%	+29%/-88%	+3%/-9%	+6%/-6%	+25%/-7%
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 005344895-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1198 ± 125	$2.28^{+0.93}_{-0.96}$	232^{+8}_{-8}	4841^{+1296}_{-635}	$132909^{+270945}_{-64263}$
Alt.	-249 ± 40	$2.95^{+0.92}_{-0.97}$	232^{+7}_{-8}	3350^{+448}_{-285}	16671^{+21675}_{-7256}

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

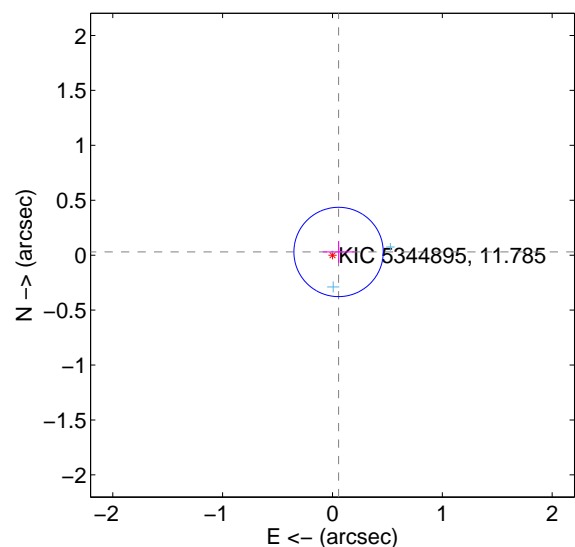
Supplemental centroid analysis for 005344895-02. **Kepler magnitude: 11.79.** Transit SNR 4.24

There are 3 quarters with good PRF difference image offsets

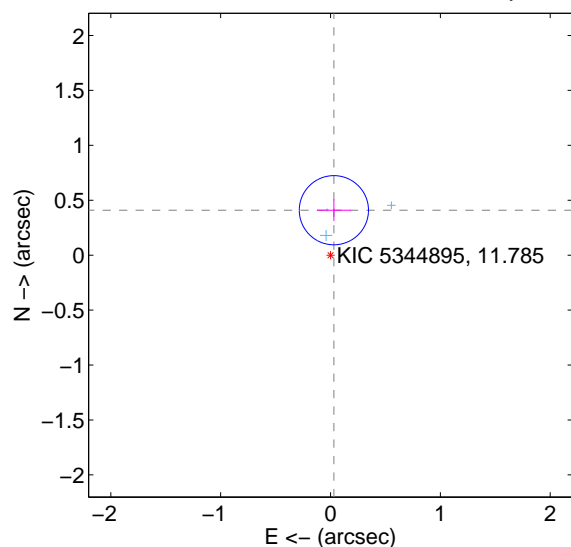
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.063 ± 0.136	0.46	-0.056 ± 0.144	0.029 ± 0.099
PRF-fit source offset from KIC position	0.410 ± 0.105	3.91	-0.031 ± 0.155	0.409 ± 0.099
photometric centroid source offset	0.60 ± 0.41	1.46	0.21 ± 0.34	0.56 ± 0.42

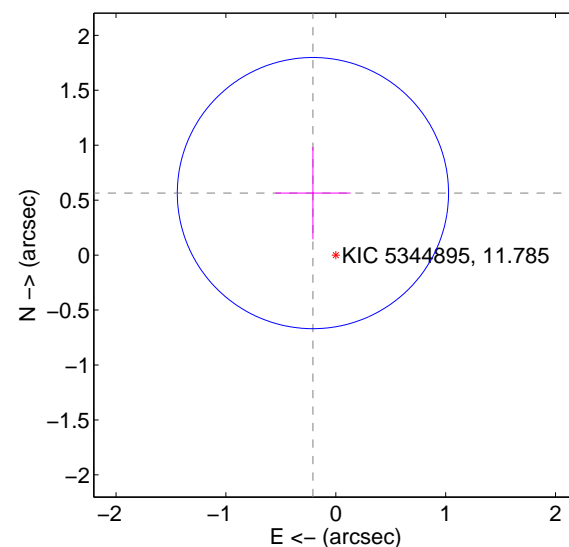
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

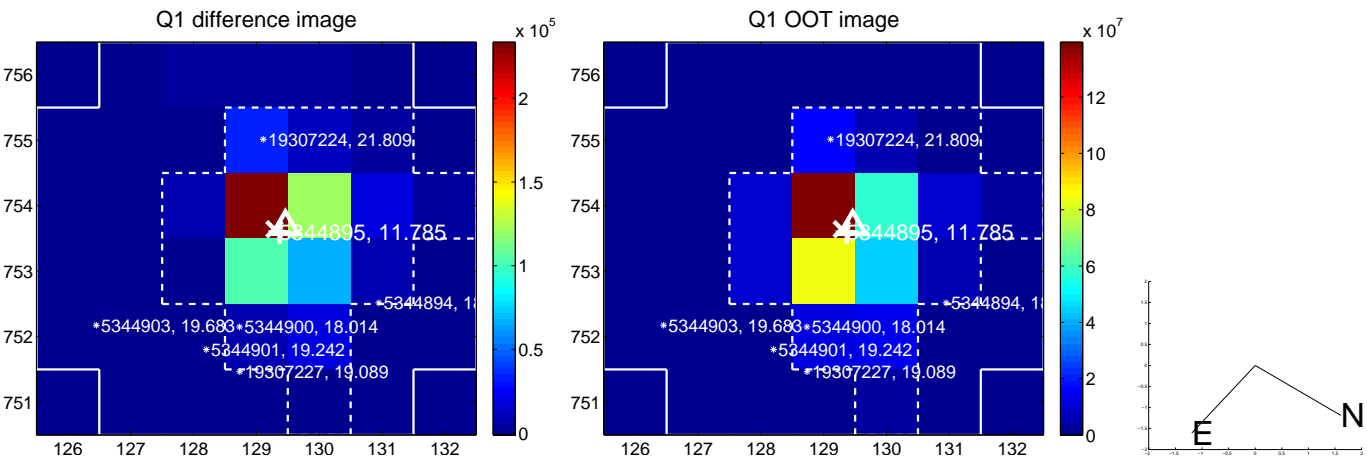


offset from photometric centroids

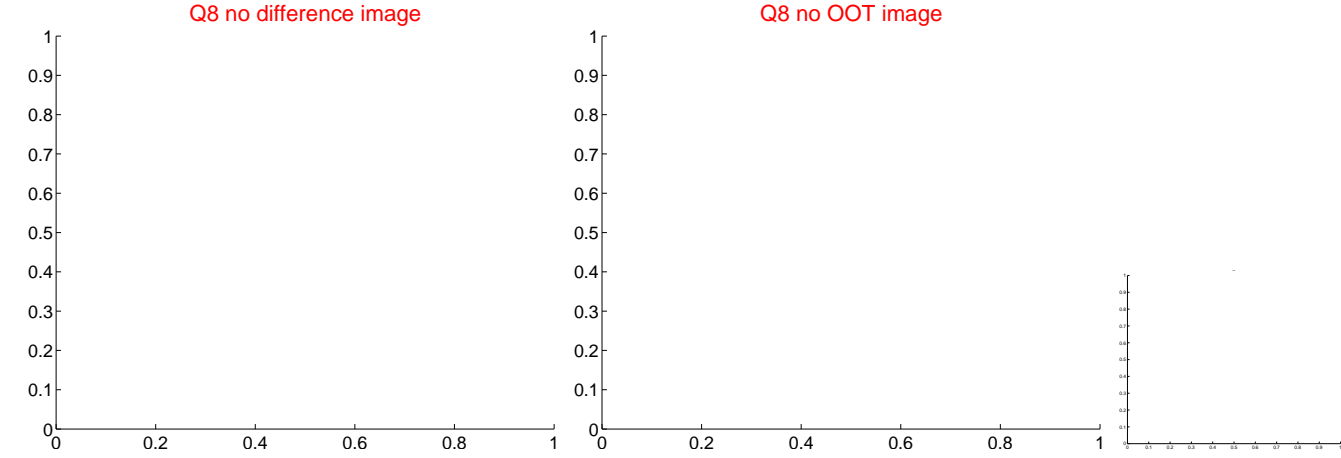
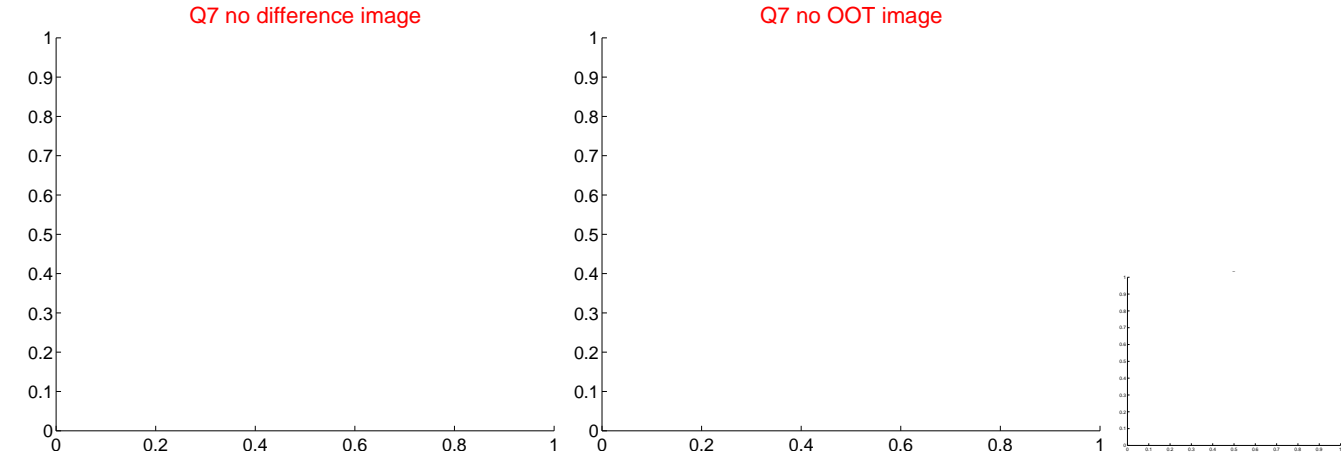
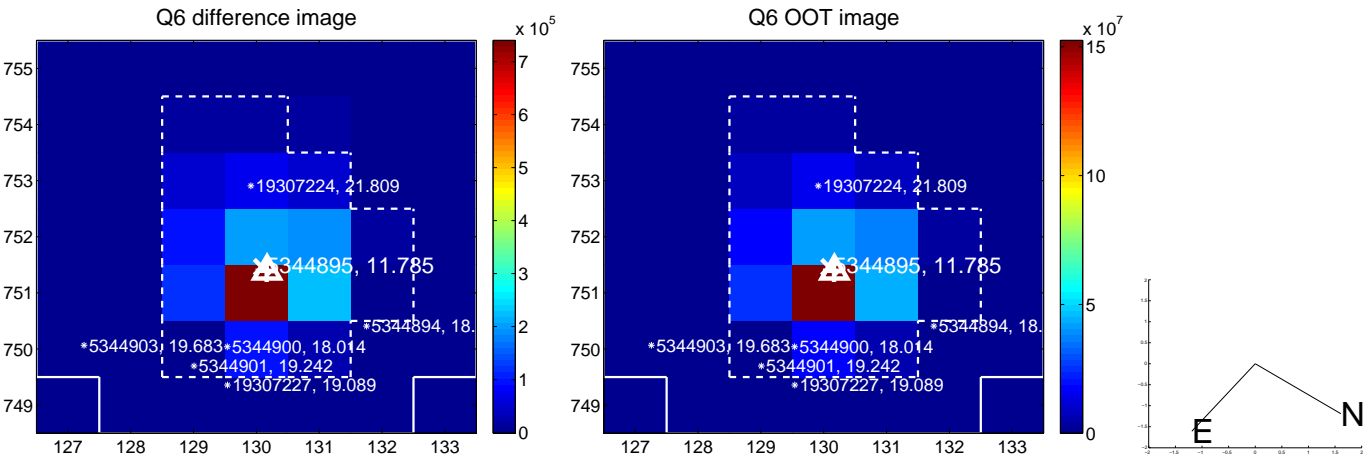


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



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



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

Q9 no difference image



Q9 no OOT image



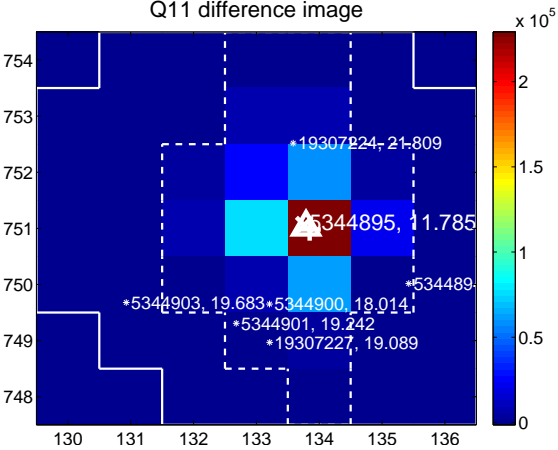
Q10 no difference image



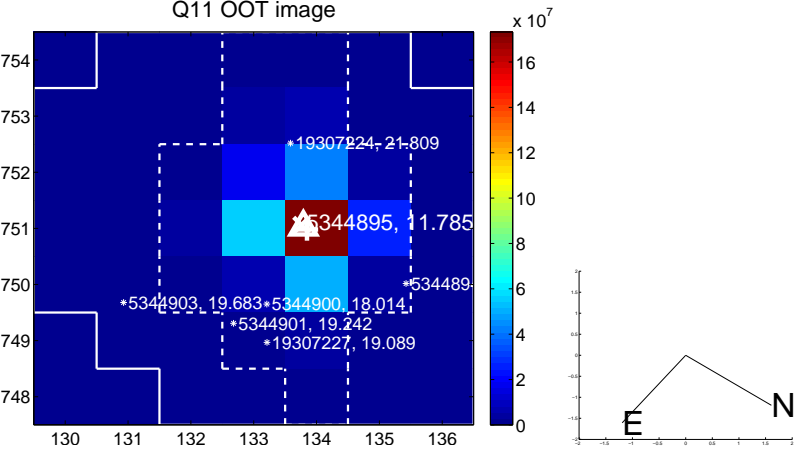
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



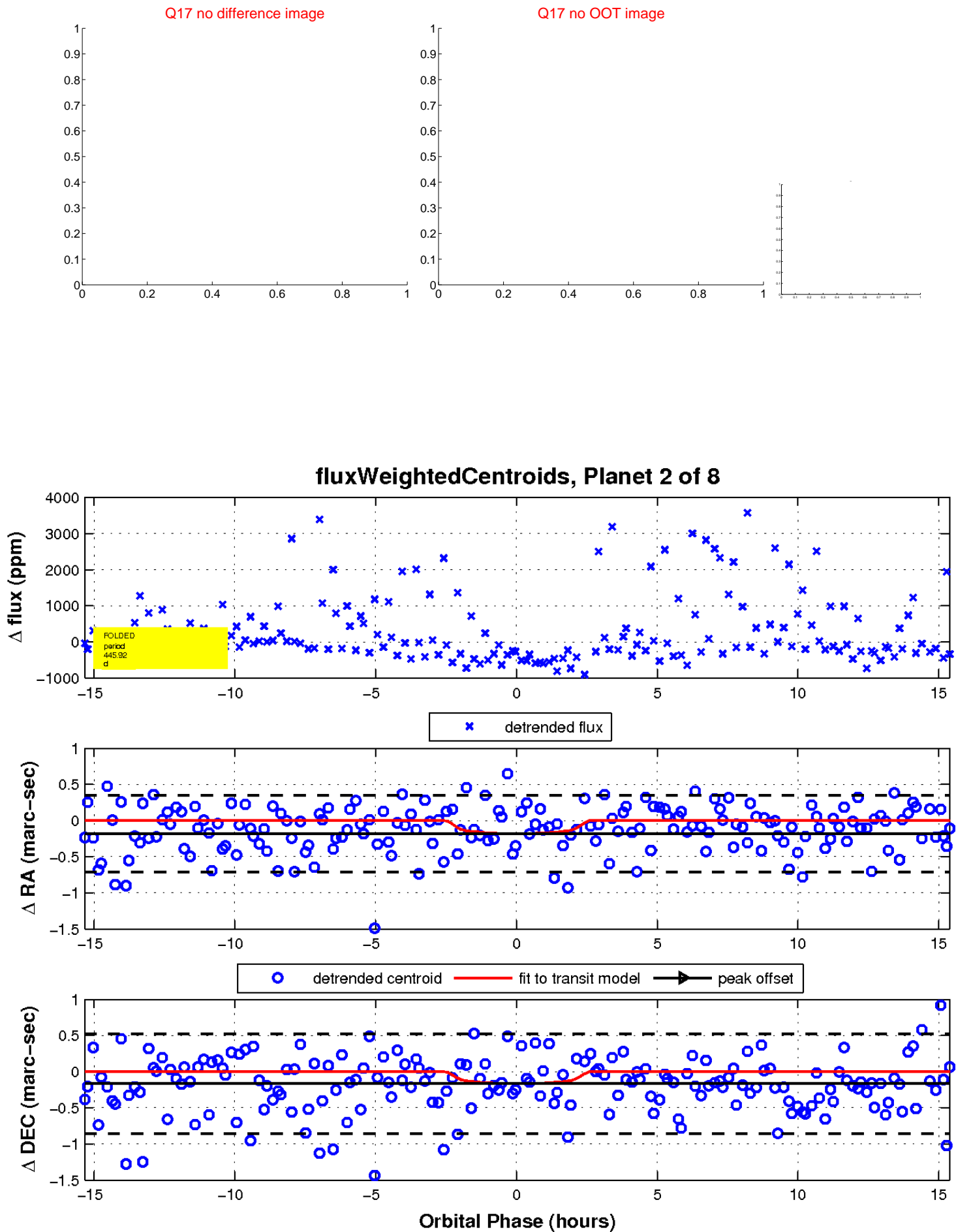
Q12 no OOT image



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

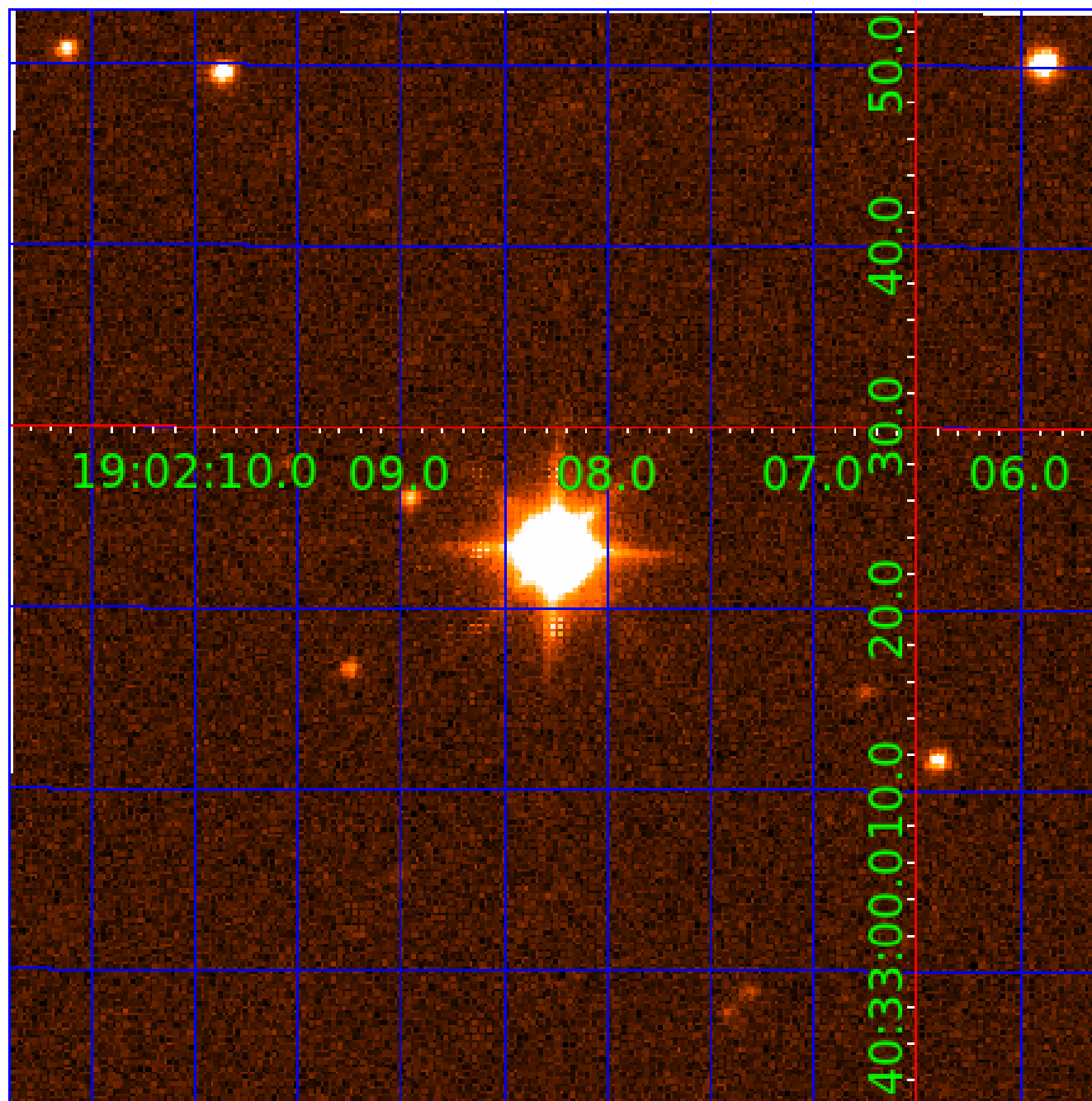


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005344895

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})
005344895-01	OBS	No	447.199472	190.182690	1154.0	4.107	17.1	8.2	0.74	4472	2.55	0.18
005344895-02	OBS	No	445.915640	150.306620	657.7	5.164	14.3	4.2	0.74	4472	2.30	0.18
005344895-03	OBS	No	311.776645	342.766361	977.9	5.741	15.6	5.9	0.74	4472	2.29	0.30
005344895-04	OBS	No	420.249825	253.825315	150.9	3.466	14.7	1.3	0.74	4472	1.11	0.20
005344895-05	OBS	No	478.179544	138.472760	1436.7	7.161	14.6	8.3	0.74	4472	2.73	0.17
005344895-06	OBS	No	334.937198	245.436207	1370.3	4.851	13.7	7.9	0.74	4472	2.88	0.27
005344895-07	OBS	No	317.909115	424.173270	2149.2	27.421	12.7	8.6	0.74	4472	3.25	0.29
005344895-08	OBS	No	164.027661	177.751020	2296.3	119.094	12.8	8.1	0.74	4472	3.78	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005344895-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
005344895-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005344895-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005344895-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

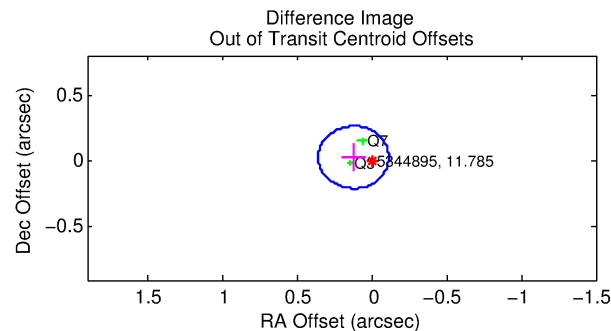
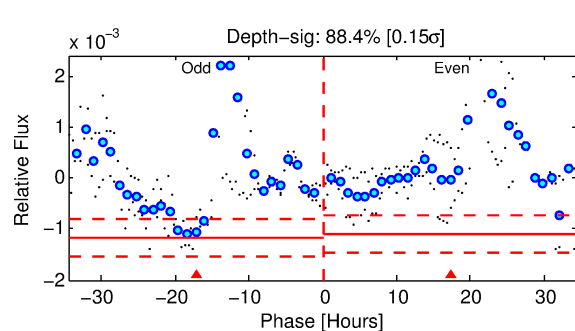
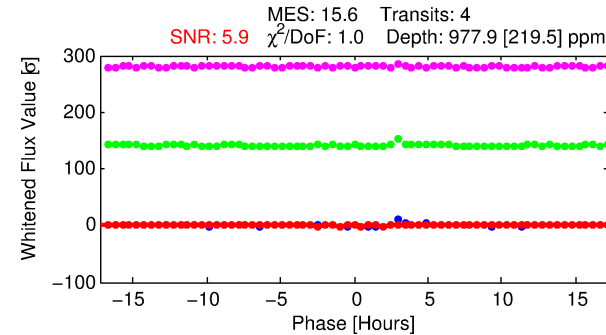
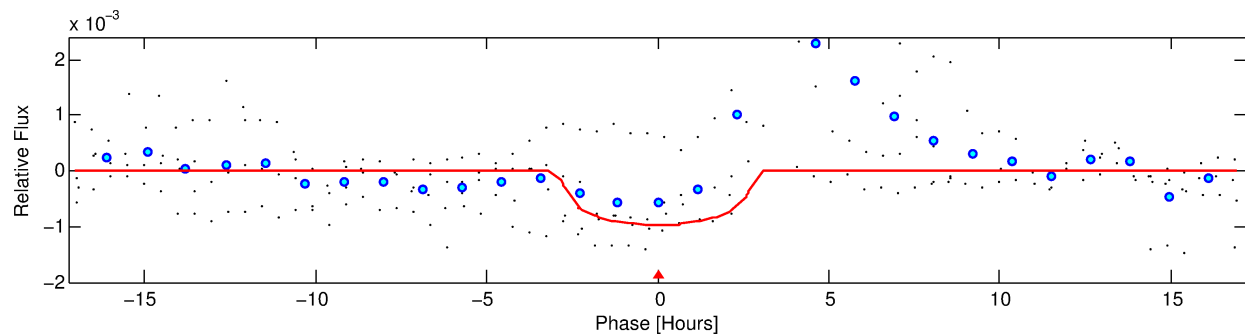
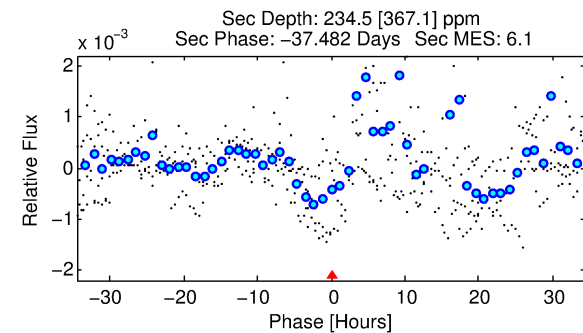
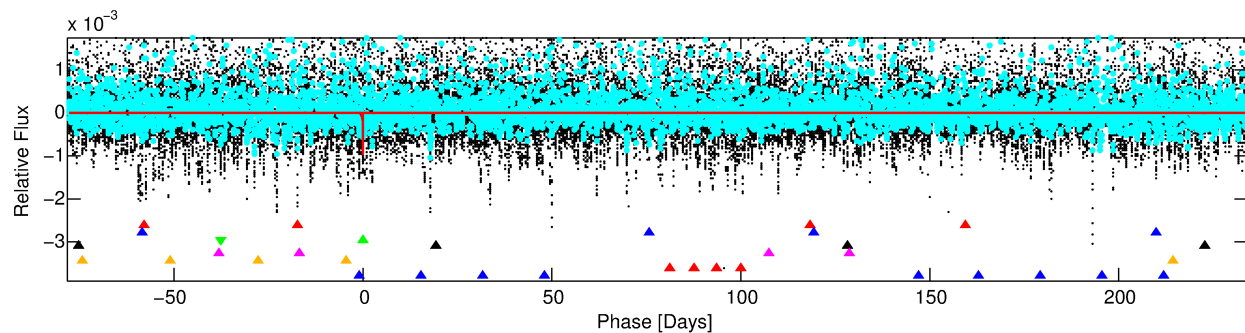
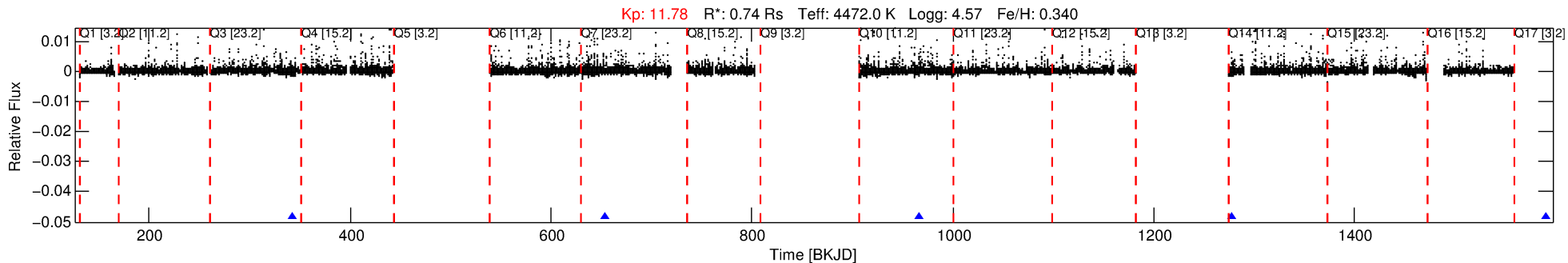
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005344895-03

No Significant Match Found

DV One-Page Summary

KIC: 5344895 Candidate: 3 of 8 Period: 311.777 d



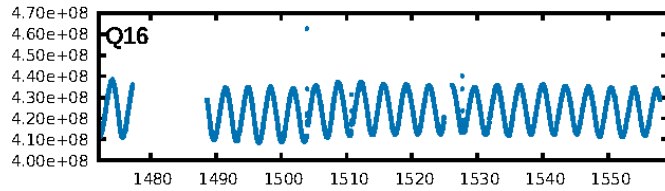
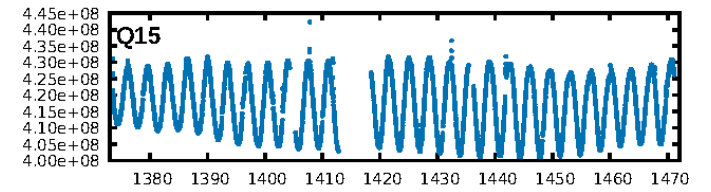
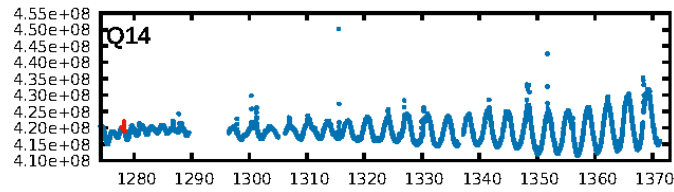
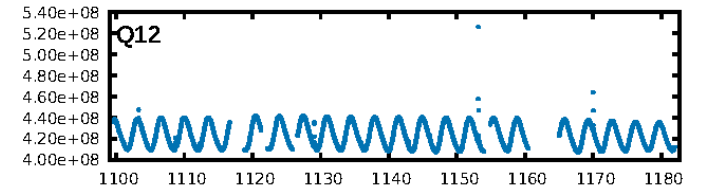
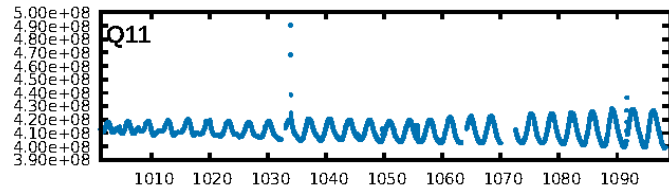
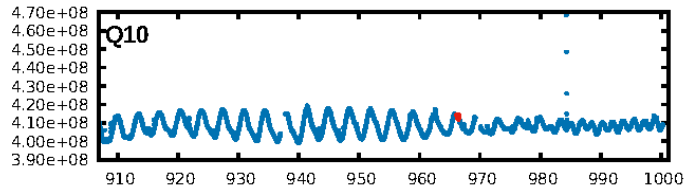
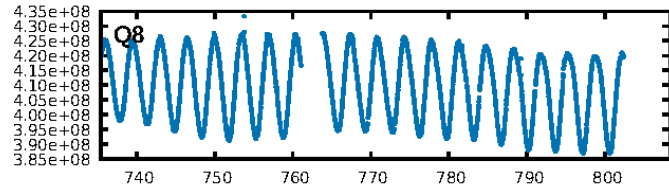
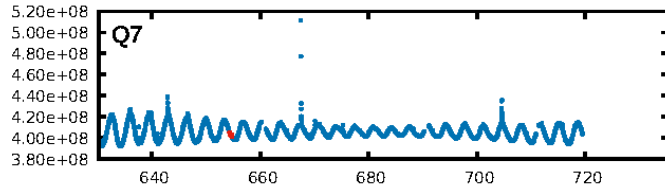
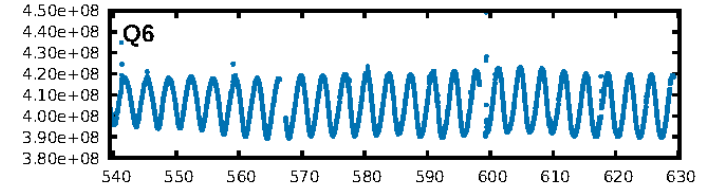
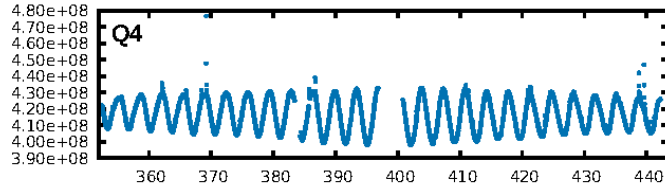
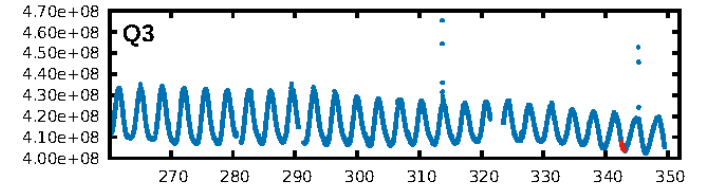
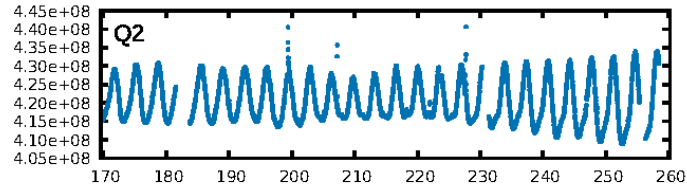
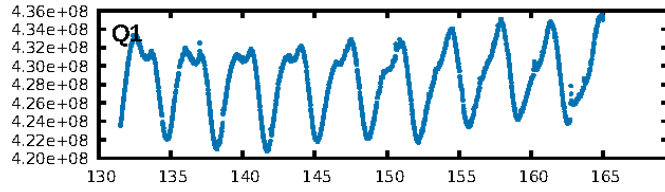
DV Fit Results:

Period = 311.77665 [0.00327] d
Epoch = 342.7664 [0.0071] BKJD
Rp/R* = 0.0283 [0.0239]
a/R* = 384.71 [952.31]
b = 0.44 [4.55]
Seff = 0.30 [0.05]
Teq = 188 [8] K
Rp = 2.29 [1.94] Re
a = 0.8117 [0.0593] AU
Ag = 16279.71 [37561.82] [0.43 σ]
Teffp = 3290 [1898] K [1.63 σ]

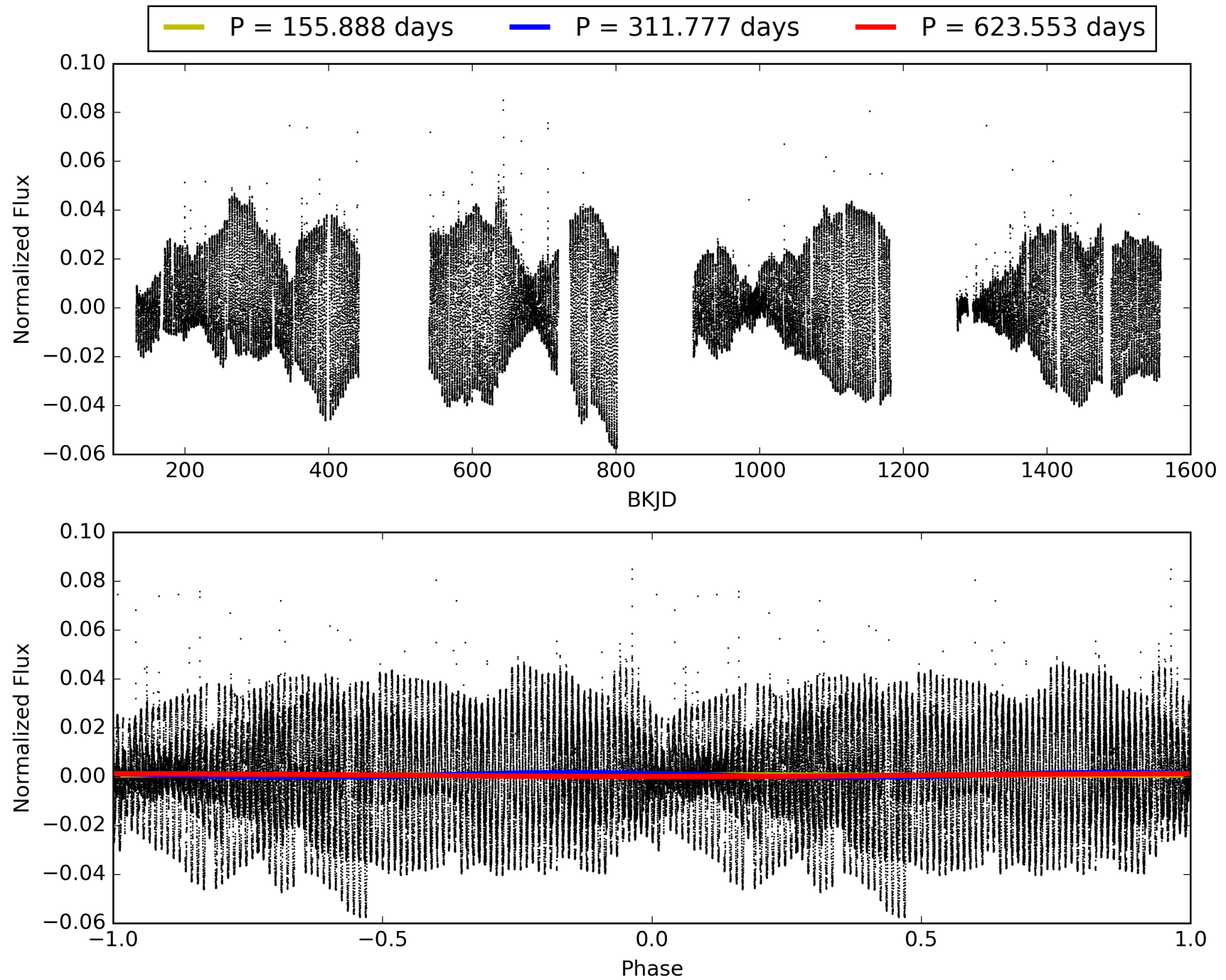
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.74 σ]
LongPeriod-sig: 100.0% [5.25 σ]
ModelChiSquare2-sig: 32.6%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 4.85e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2081
Centroid-sig: 10.7%
Centroid-so: 0.580 arcsec [2.47 σ]
OotOffset-rm: 0.125 arcsec [1.59 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 0.444 arcsec [3.52 σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.50 [1/2]

TCE 005344895-03, PDC Light Curves

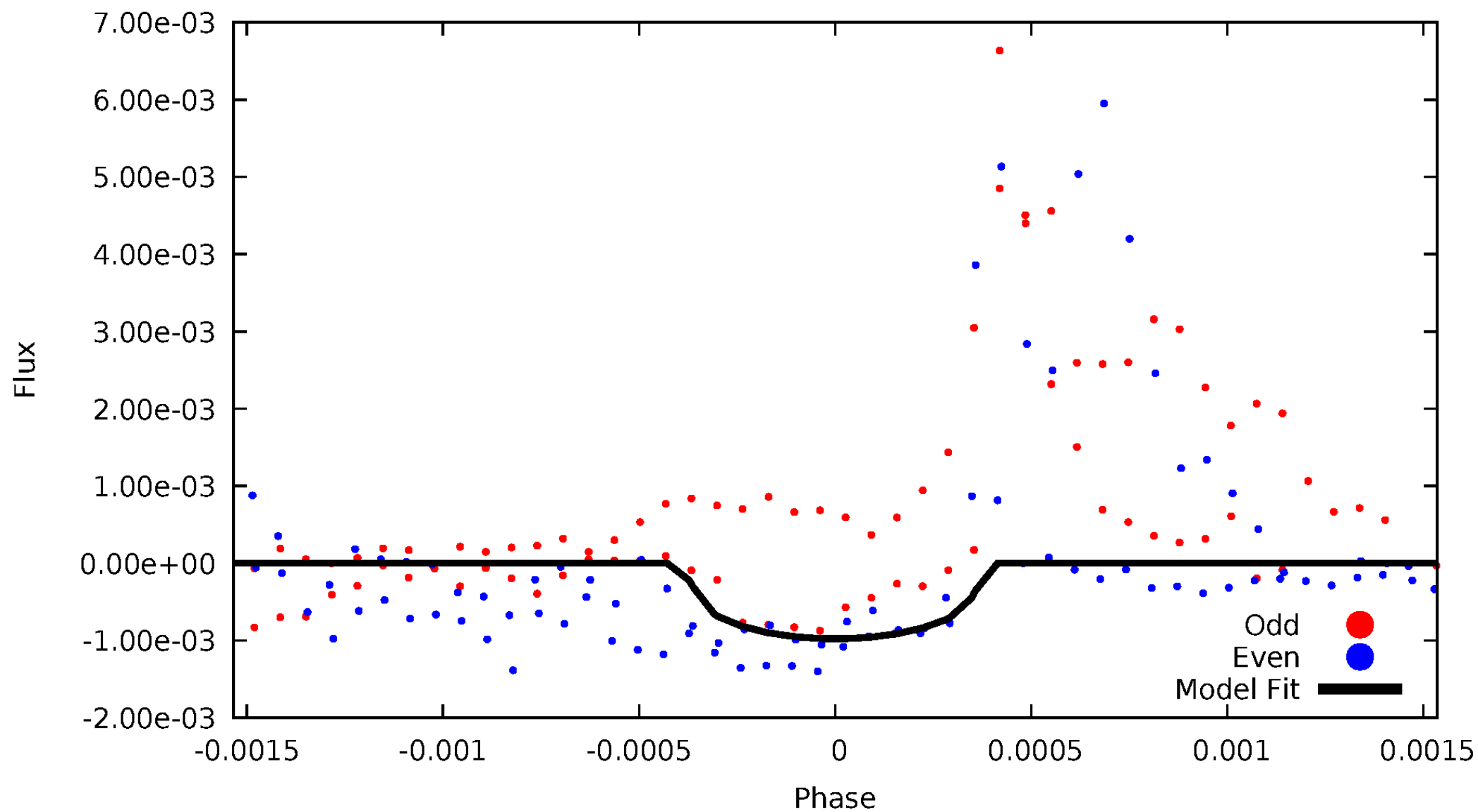


TCE 005344895-03



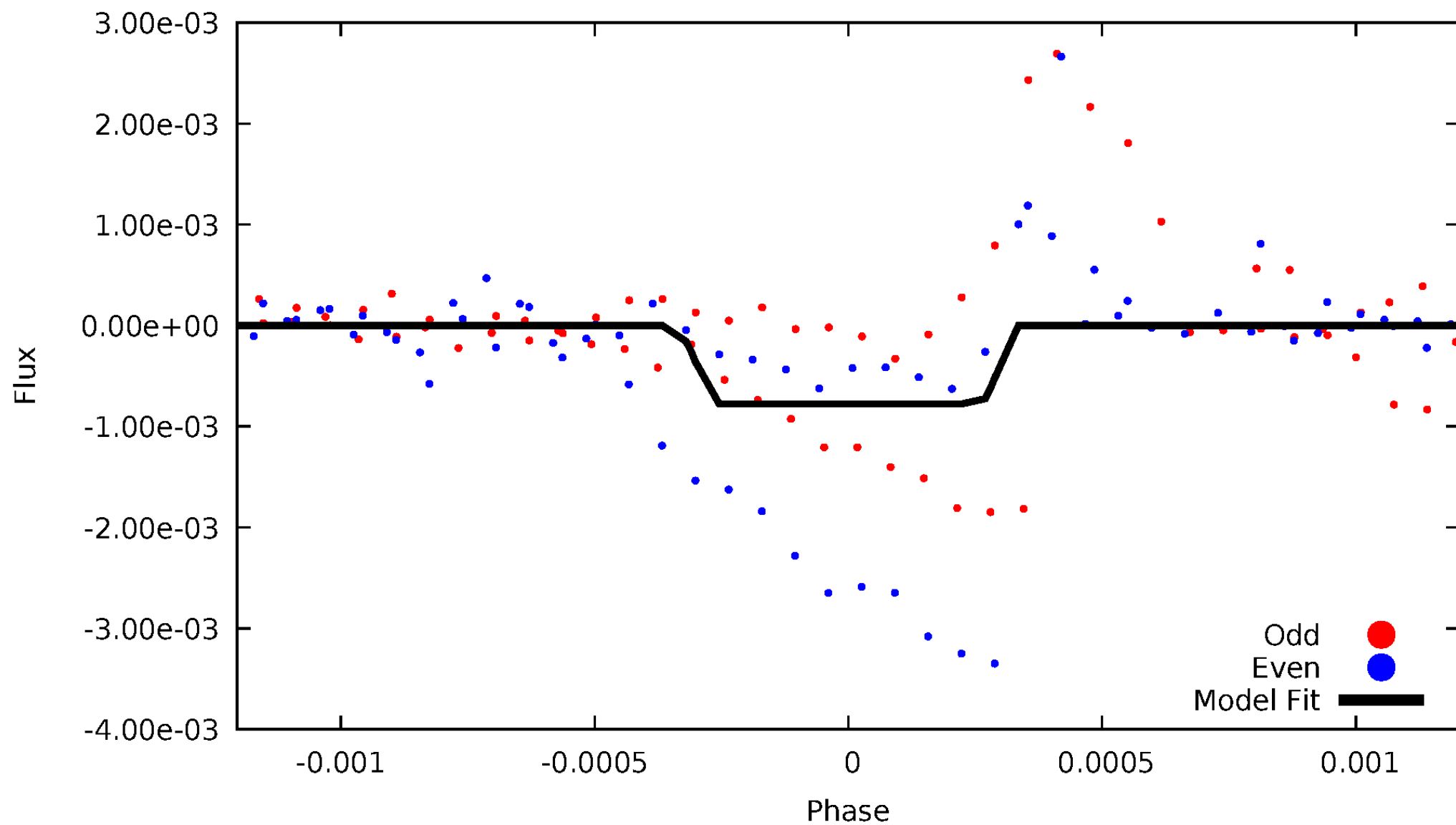
DV Odd/Even

TCE 005344895-03



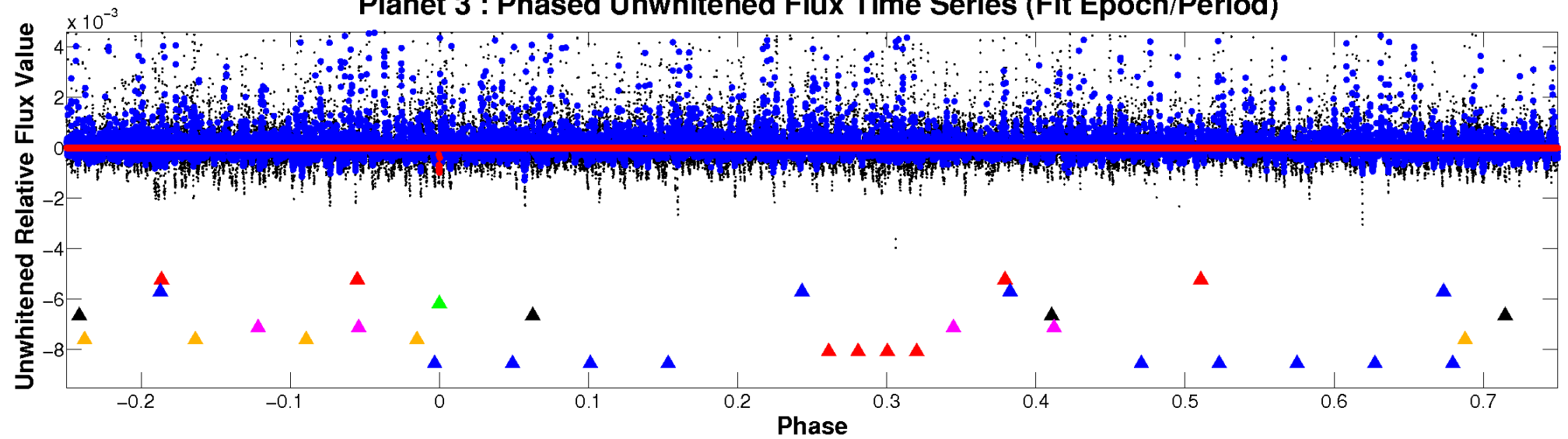
ALT Odd/Even

TCE 005344895-03

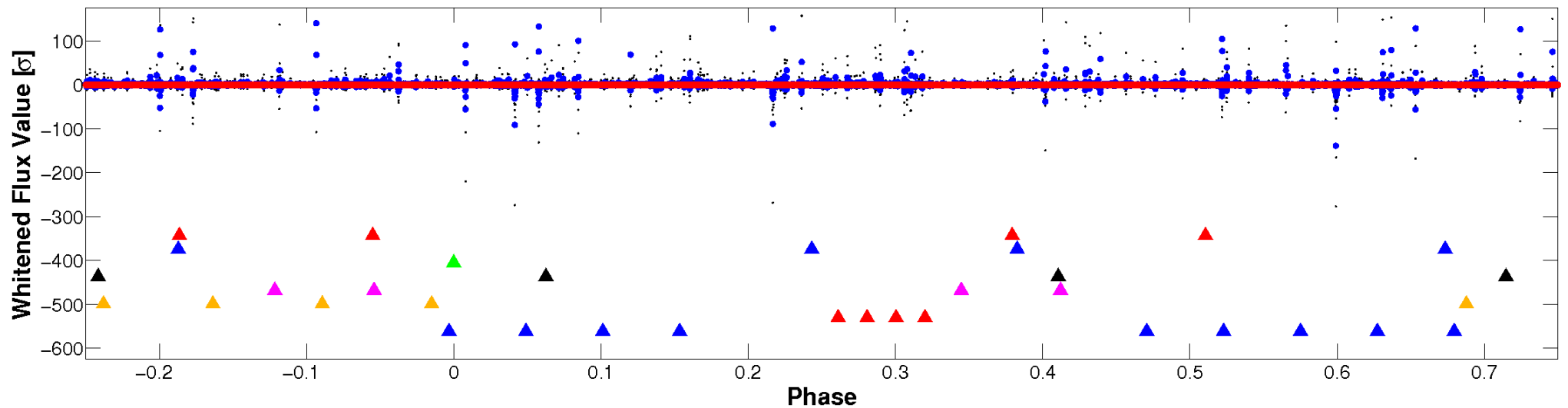


Non-Whitened Vs. Whitened Light Curve

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

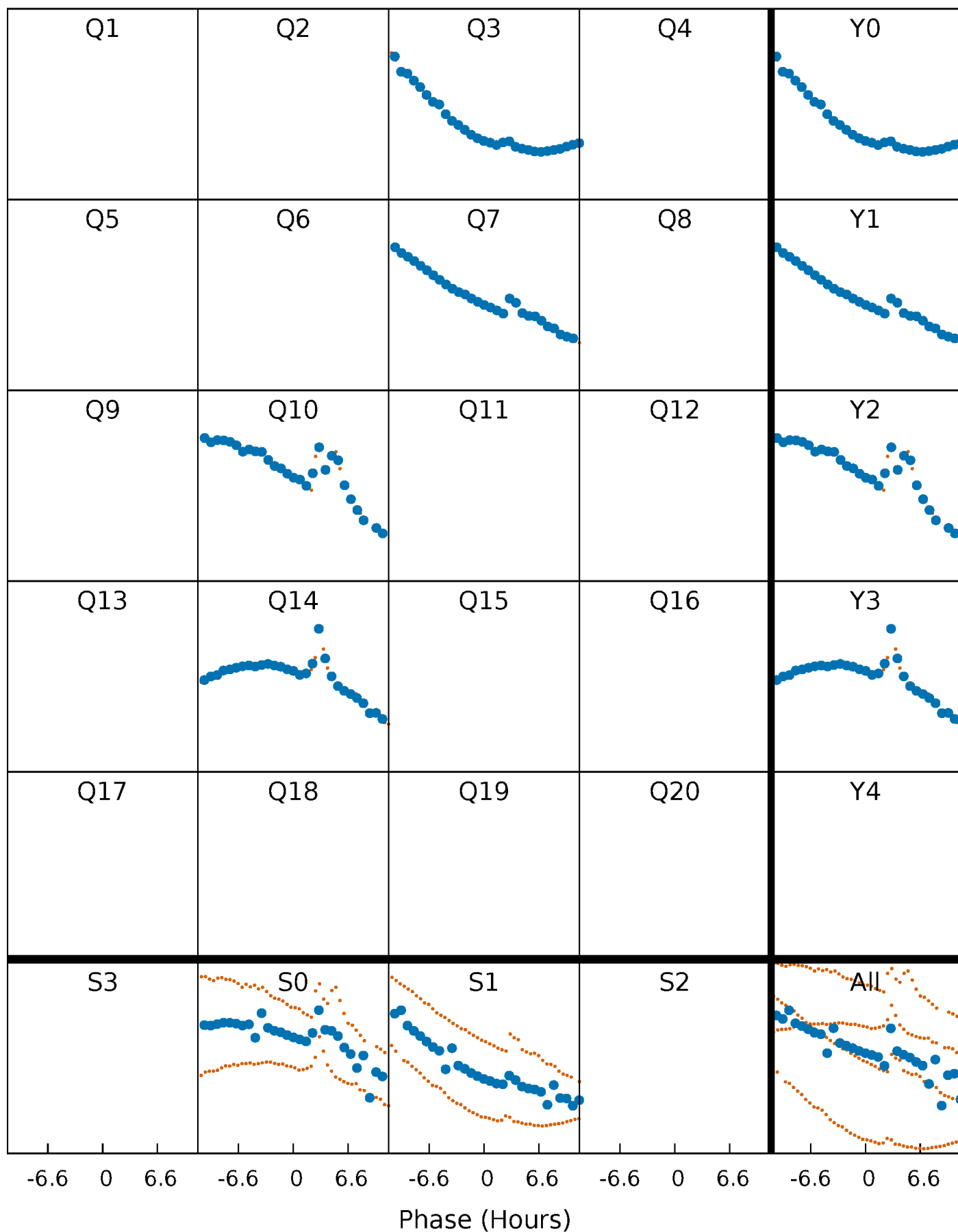


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



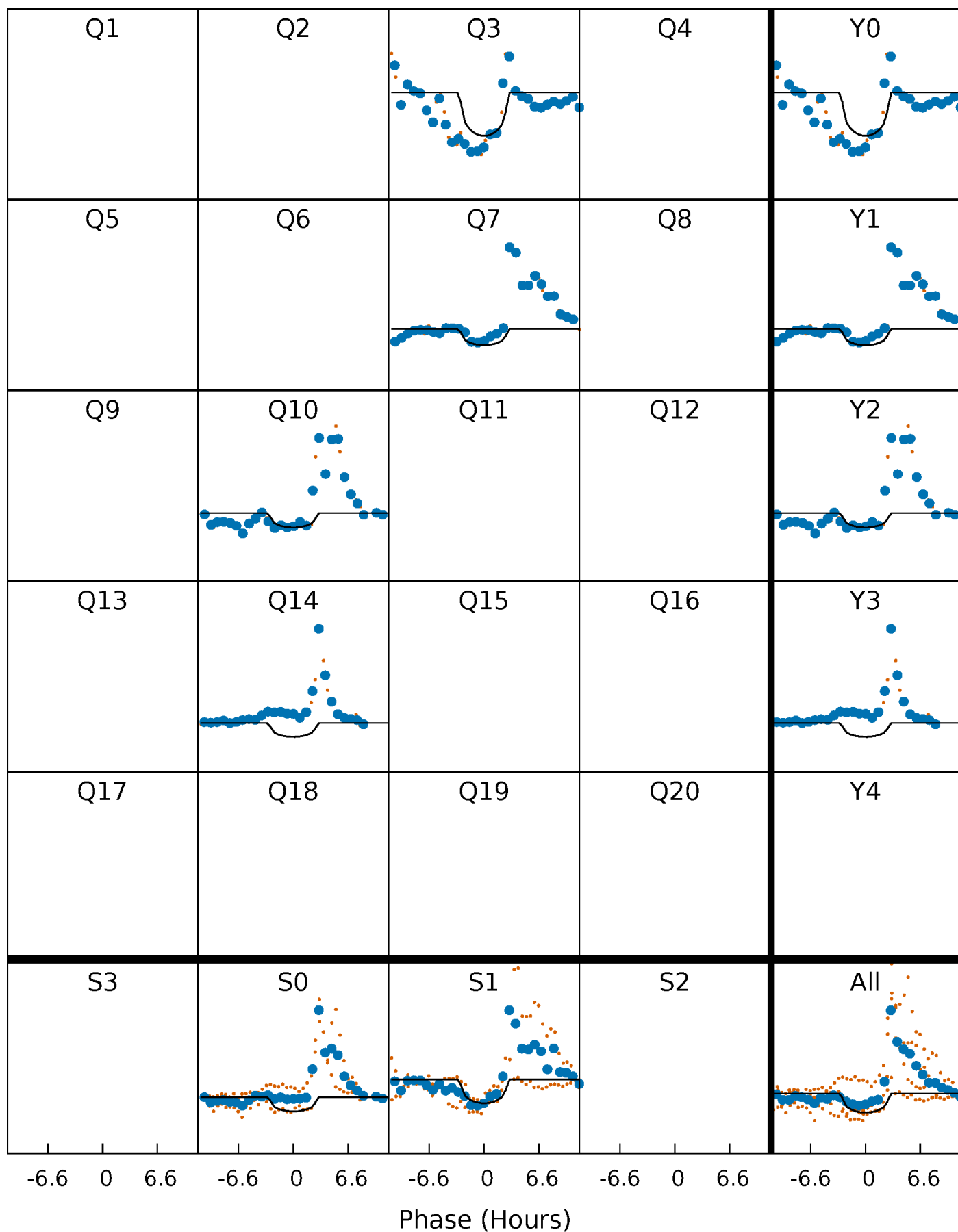
PDC Quarter-Phased Transit Curves

TCE 005344895-03 $P=311.776645$ Days $T_0=342.766361$ (BKJD)



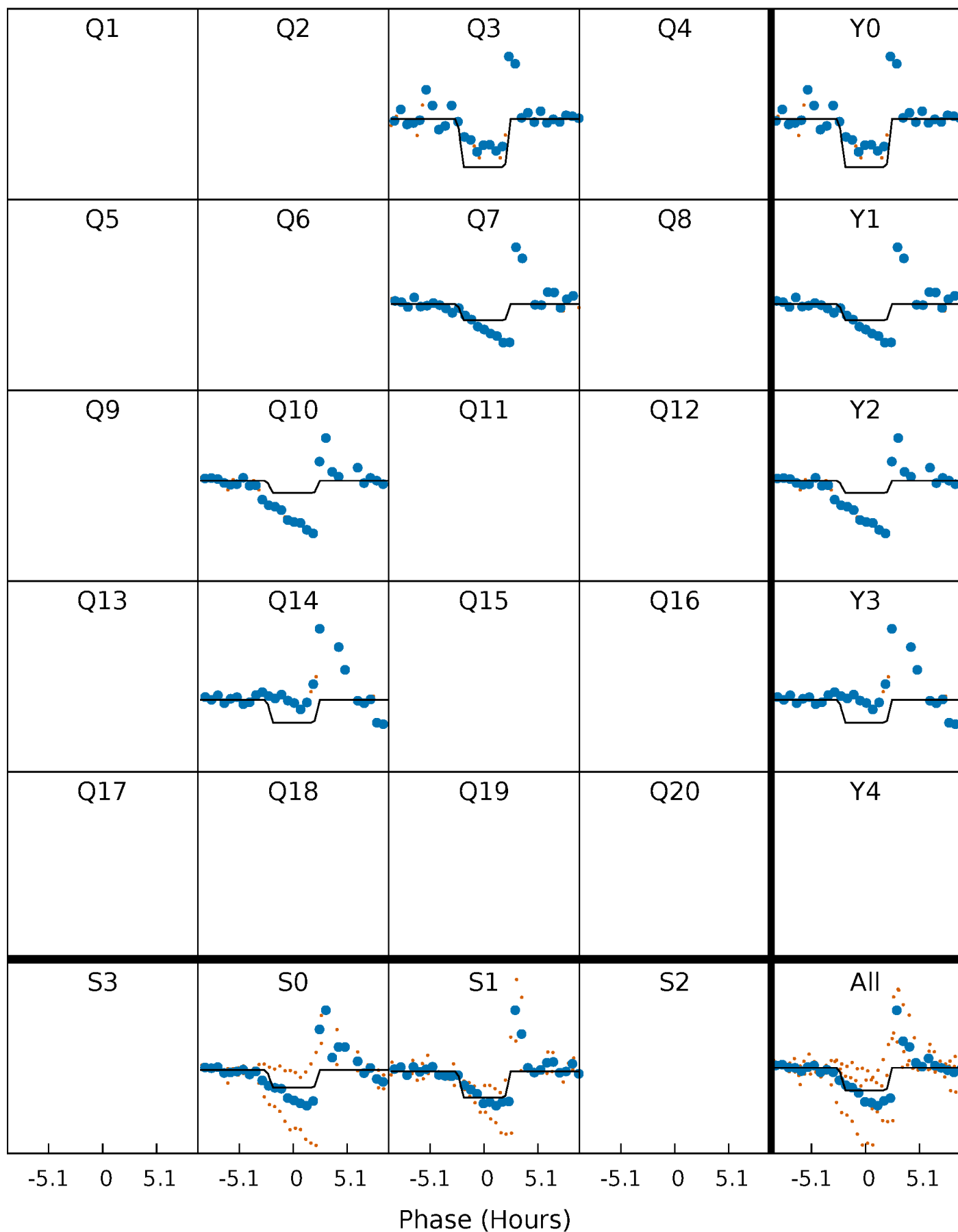
DV Quarter-Phased Transit Curves

TCE 005344895-03 $P=311.776645$ Days $T_0=342.766361$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

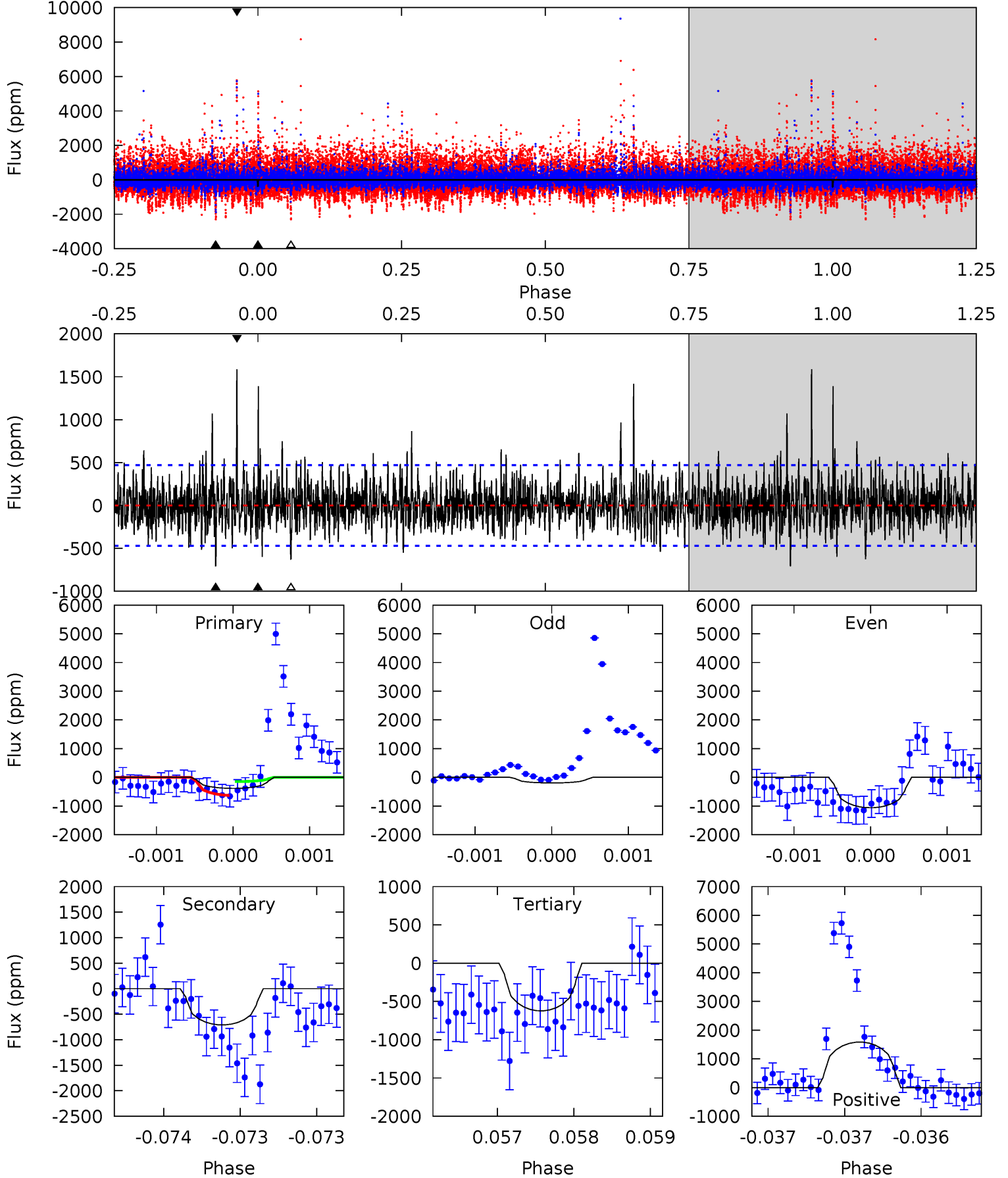
TCE 005344895-03 $P=311.775259$ Days $T_0=342.770358$ (BKJD)



DV Model-Shift Uniqueness Test

005344895-03, P = 311.776645 Days, E = 30.989716 Days

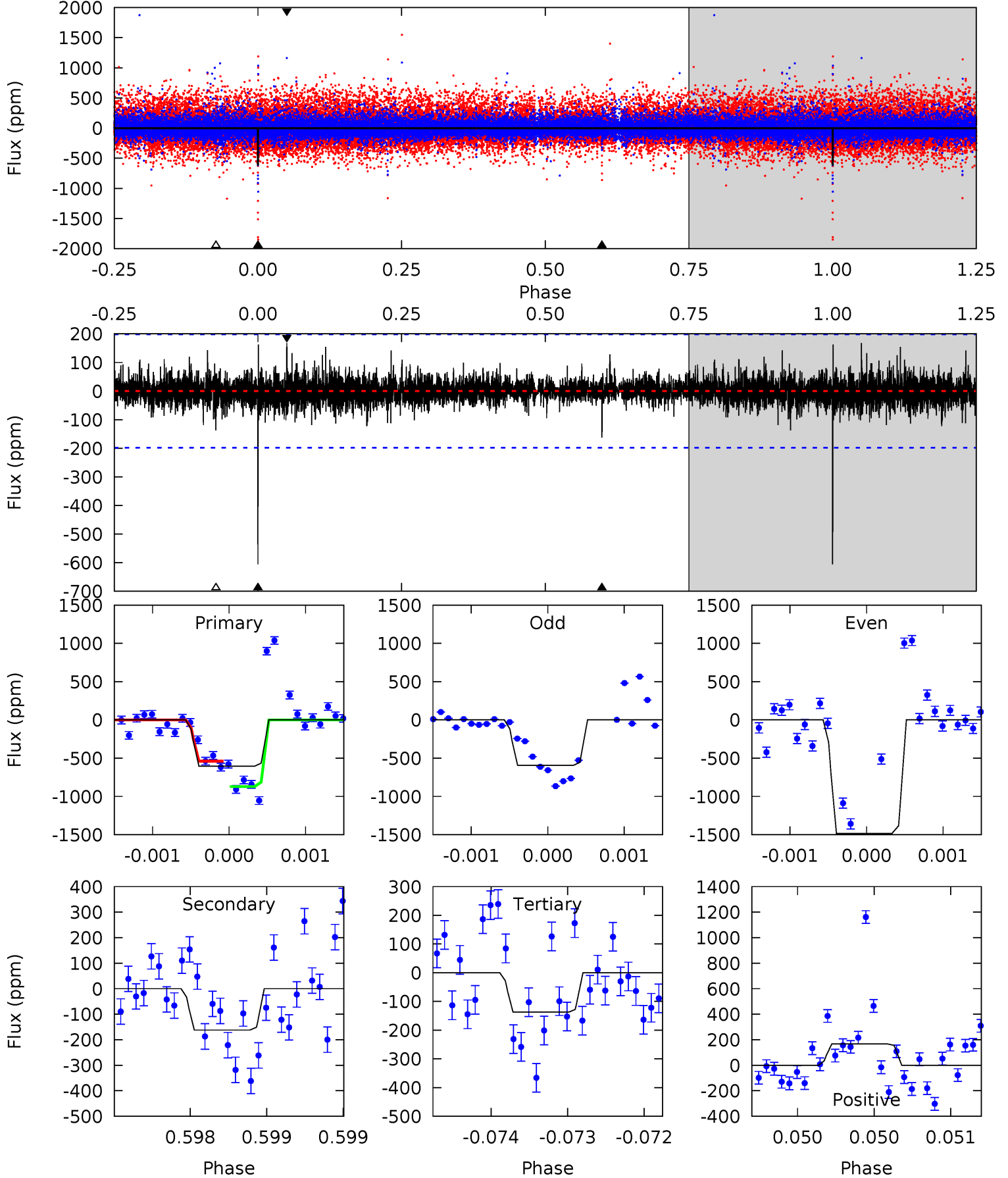
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.51	8.29	7.27	18.5	5.50	3.36	2.38	-2.77	-14.0	1.01	-10.2	2.15	0.57	0.69	2.84



Alt Model-Shift Uniqueness Test

005344895-03, P = 311.775259 Days, E = 30.995099 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	4.52	3.83	4.67	5.53	3.41	0.82	13.1	12.2	0.69	-0.15	11.3	1.27	0.22	0



Stellar Parameters For KIC 005344895

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4472^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.740^{+0.025}_{-0.063}$	$0.733^{+0.041}_{-0.046}$	$2.545^{+0.645}_{-0.185}$
	+3%/-3%	+1%/-0%	+29%/-88%	+3%/-9%	+6%/-6%	+25%/-7%
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 005344895-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-709 ± 86	$2.57^{+1.96}_{-1.54}$	261^{+9}_{-9}	4131^{+1940}_{-699}	$39512^{+194411}_{-27012}$
Alt.	-162 ± 36	$2.54^{+1.81}_{-1.58}$	261^{+8}_{-9}	3265^{+1314}_{-478}	8906^{+55143}_{-5923}

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 $A_{obs} \gg 1.0$

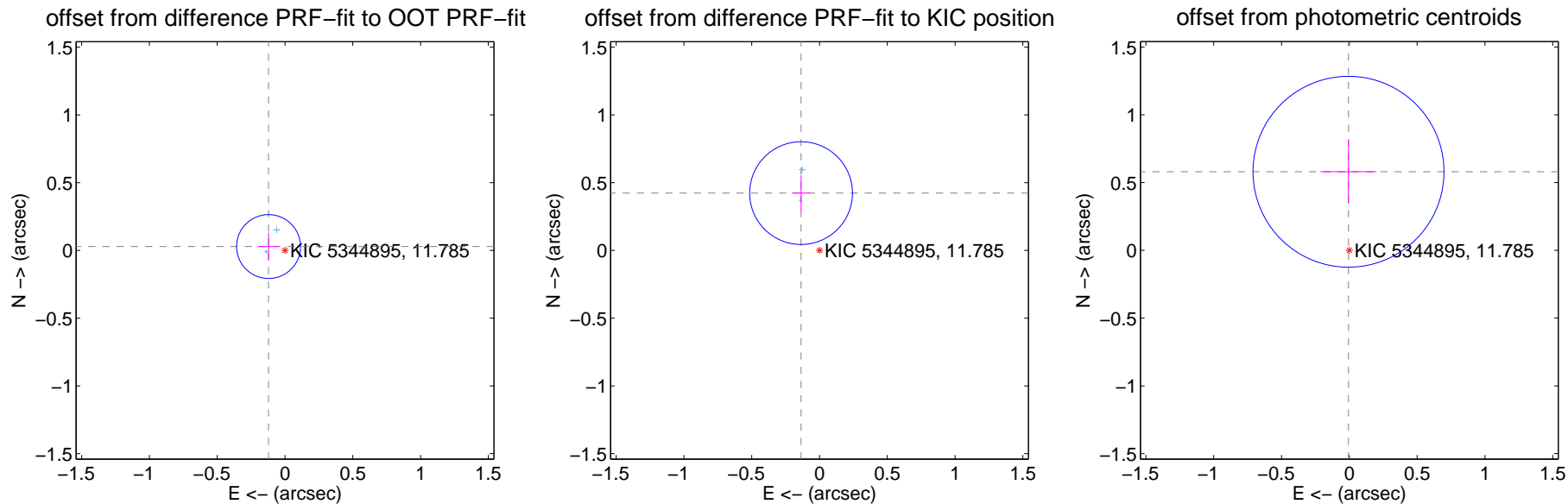
DV Centroid Data

Supplemental centroid analysis for 005344895-03. **Kepler magnitude: 11.79.** Transit SNR 5.86

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.125 ± 0.079	1.59	0.121 ± 0.077	0.029 ± 0.104
PRF-fit source offset from KIC position	0.444 ± 0.126	3.52	0.136 ± 0.067	0.423 ± 0.131
photometric centroid source offset	0.58 ± 0.23	2.47	0.01 ± 0.21	0.58 ± 0.23



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

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

Q1 no difference image



Q1 no OOT image



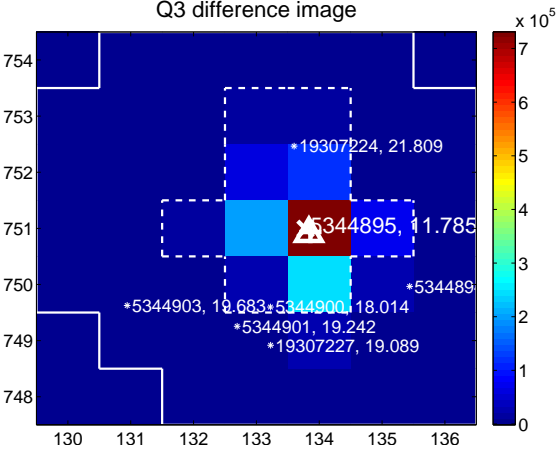
Q2 no difference image



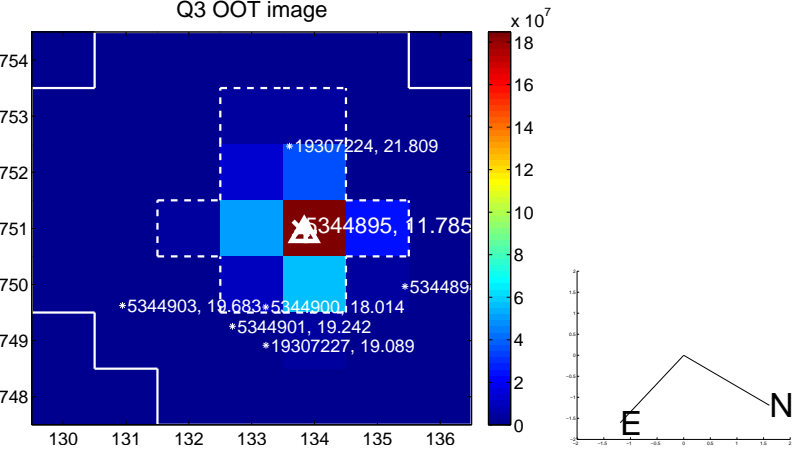
Q2 no OOT image



Q3 difference image



Q3 OOT image



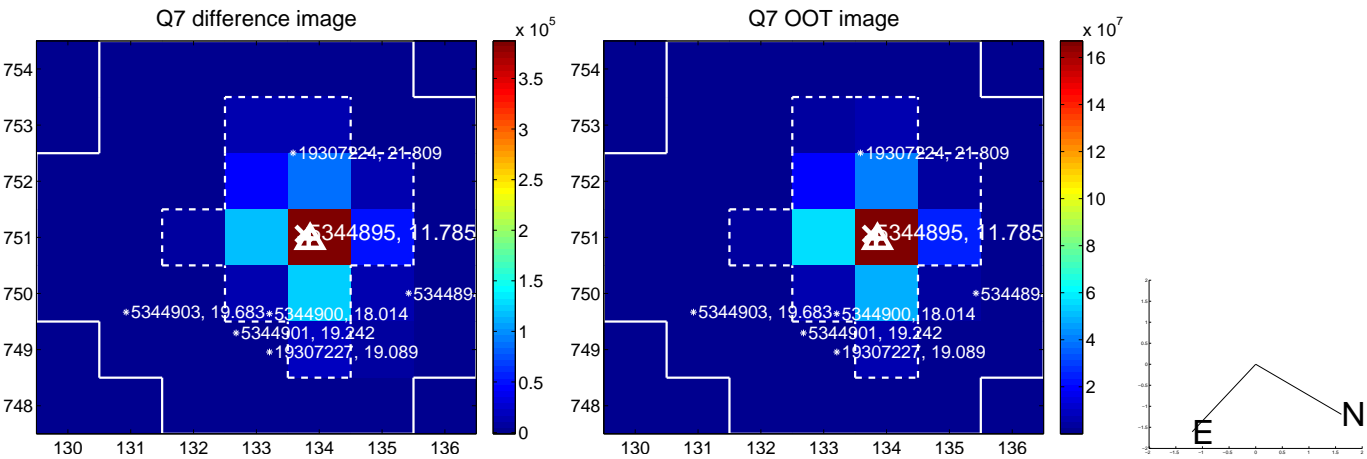
Q4 no difference image



Q4 no OOT image



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



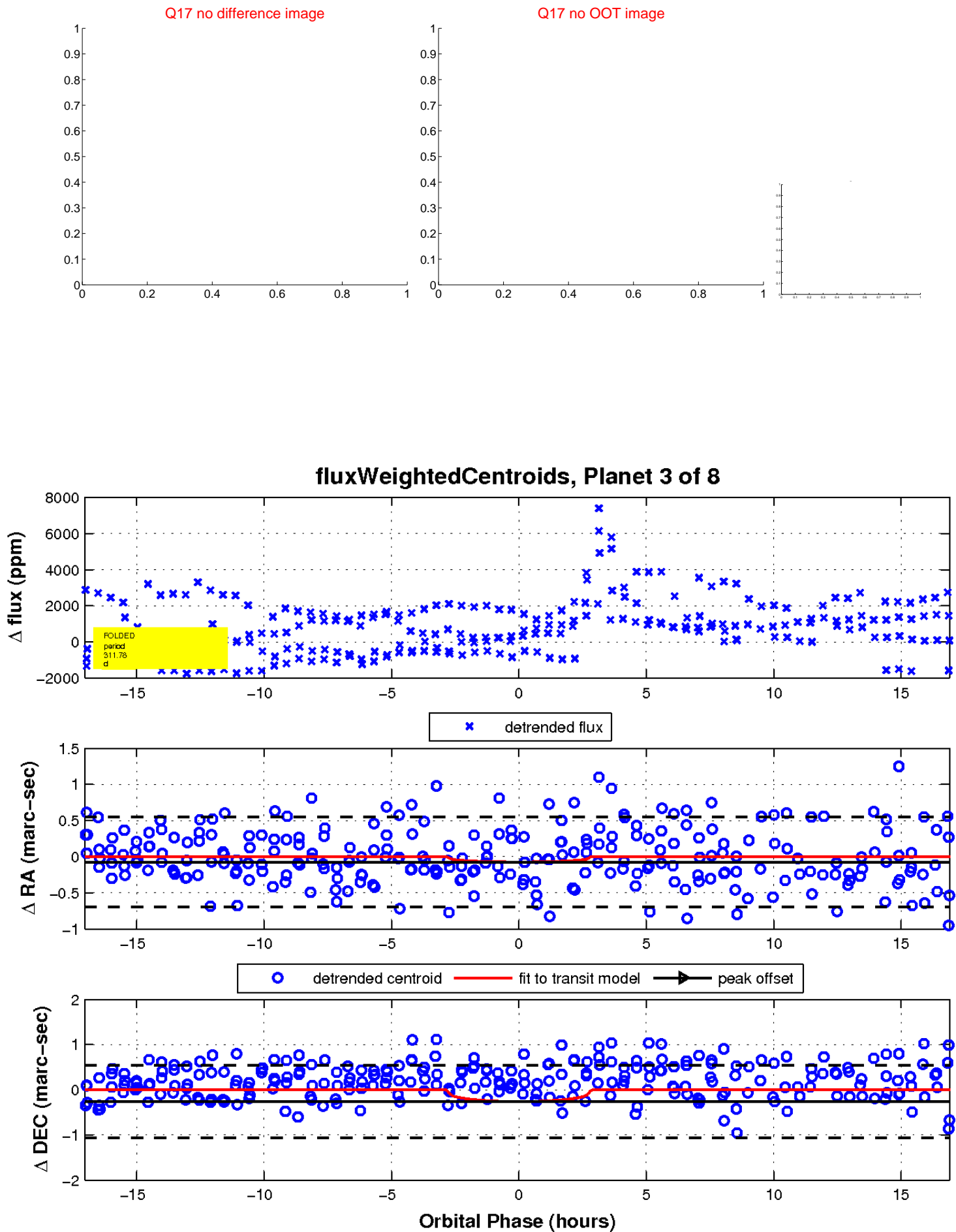
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

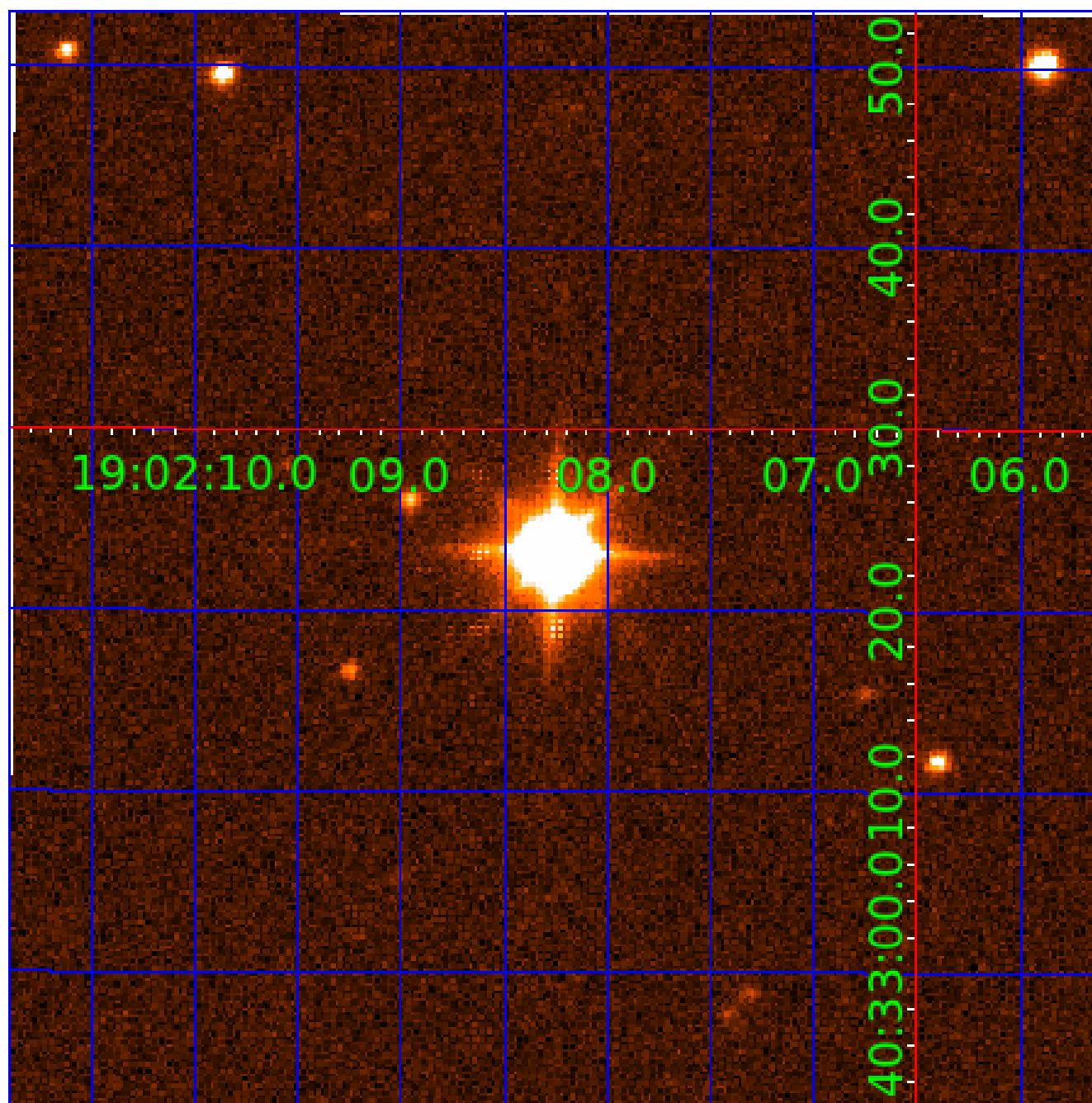


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005344895

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})
005344895-01	OBS	No	447.199472	190.182690	1154.0	4.107	17.1	8.2	0.74	4472	2.55	0.18
005344895-02	OBS	No	445.915640	150.306620	657.7	5.164	14.3	4.2	0.74	4472	2.30	0.18
005344895-03	OBS	No	311.776645	342.766361	977.9	5.741	15.6	5.9	0.74	4472	2.29	0.30
005344895-04	OBS	No	420.249825	253.825315	150.9	3.466	14.7	1.3	0.74	4472	1.11	0.20
005344895-05	OBS	No	478.179544	138.472760	1436.7	7.161	14.6	8.3	0.74	4472	2.73	0.17
005344895-06	OBS	No	334.937198	245.436207	1370.3	4.851	13.7	7.9	0.74	4472	2.88	0.27
005344895-07	OBS	No	317.909115	424.173270	2149.2	27.421	12.7	8.6	0.74	4472	3.25	0.29
005344895-08	OBS	No	164.027661	177.751020	2296.3	119.094	12.8	8.1	0.74	4472	3.78	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005344895-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
005344895-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005344895-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005344895-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

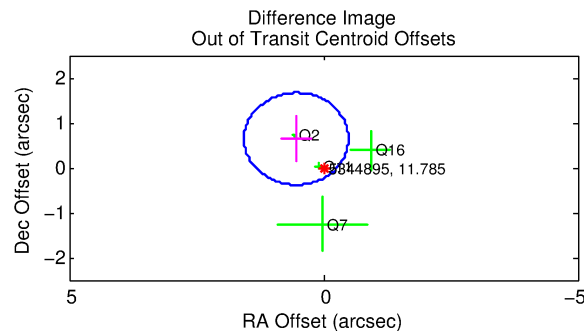
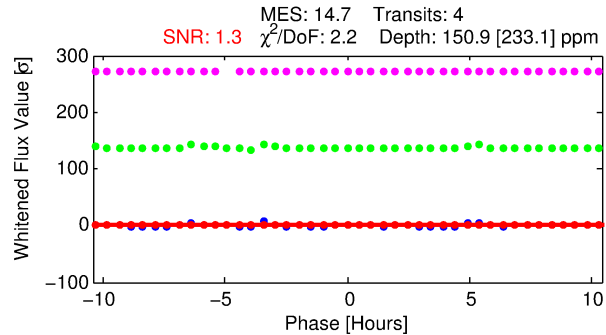
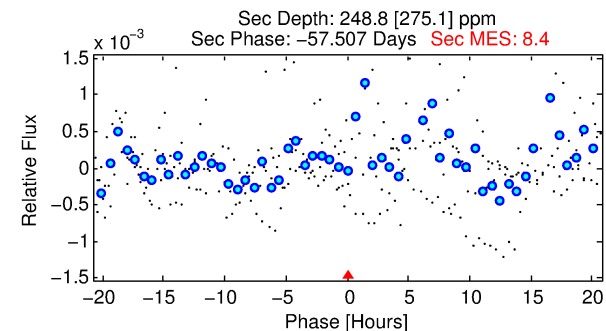
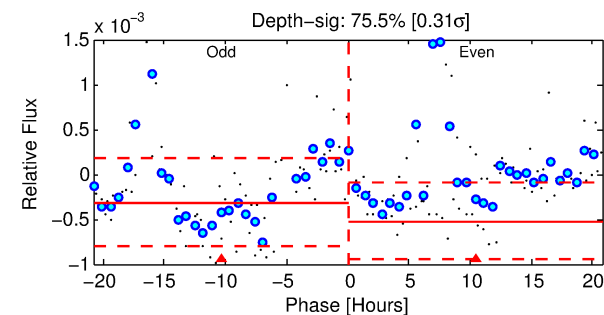
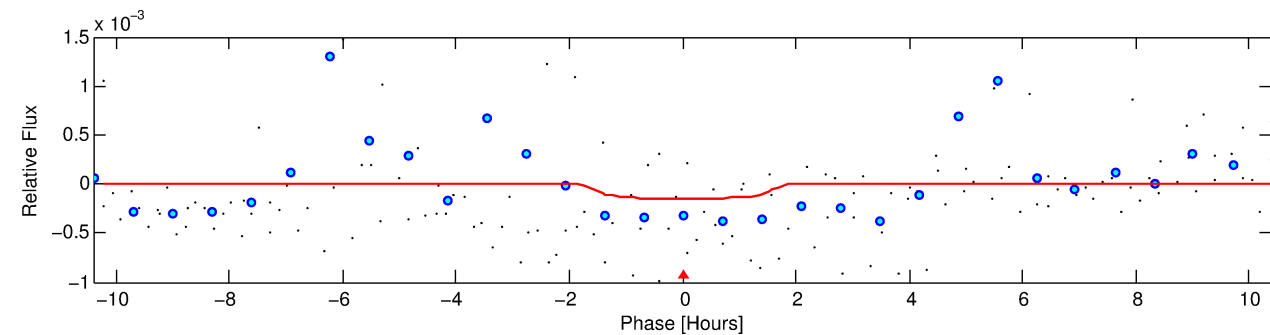
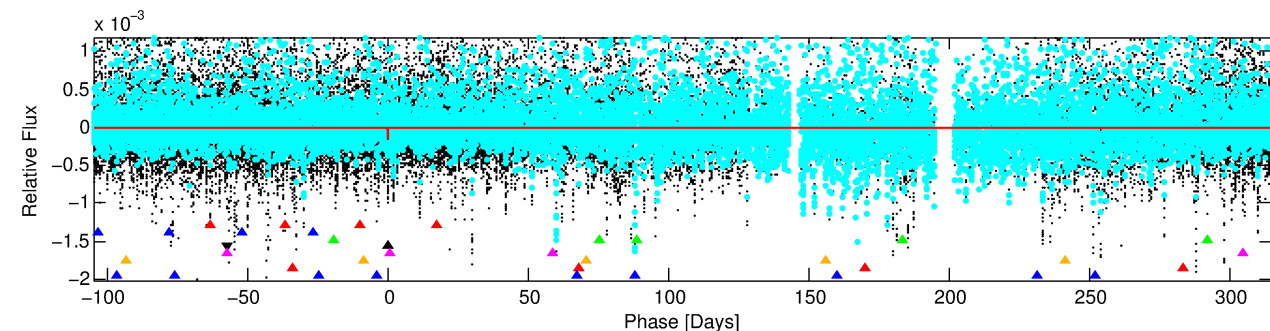
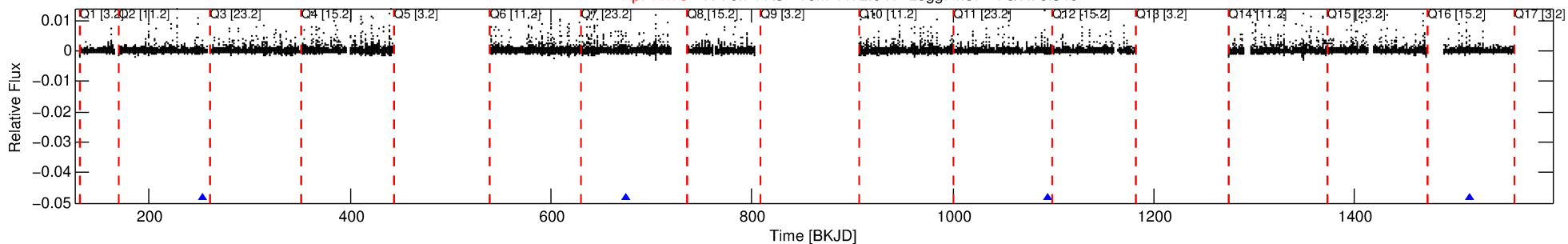
Ephemeris Match Information For 005344895-04

No Significant Match Found

DV One-Page Summary

KIC: 5344895 Candidate: 4 of 8 Period: 420.250 d

Kp: 11.78 R*: 0.74 Rs Teff: 4472.0 K Logg: 4.57 Fe/H: 0.340



DV Fit Results:

Period = 420.24982 [0.02387] d
Epoch = 253.8253 [0.0480] BKJD
Rp/R* = 0.0138 [0.0617]
a/R* = 451.09 [7006.53]
b = 0.89 [3.74]
Seff = 0.20 [0.03]
Teq = 171 [7] K
Rp = 1.11 [4.98] Re
a = 0.9905 [0.0724] AU
Ag = 108524.06 [978885.28] [0.11σ]
Teffp = 4785 [10791] K [0.43σ]

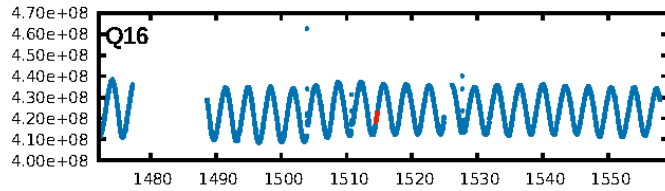
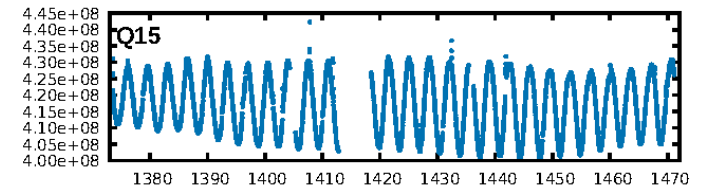
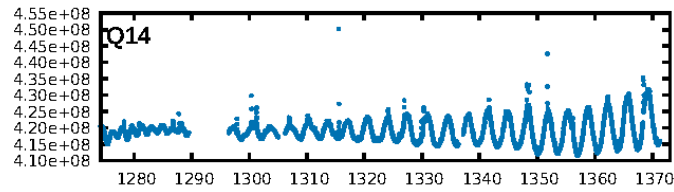
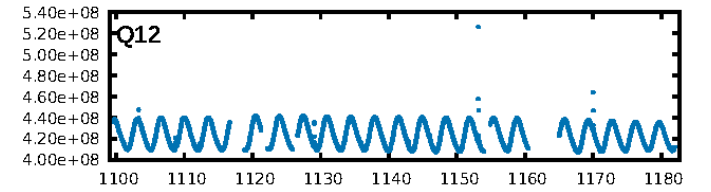
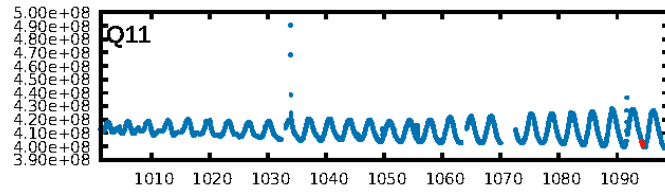
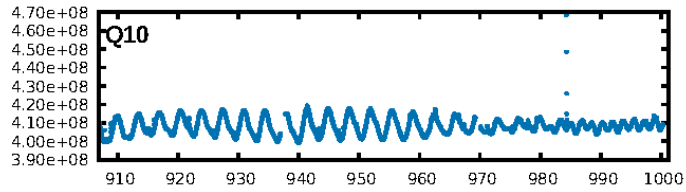
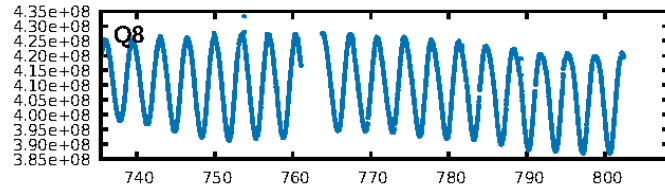
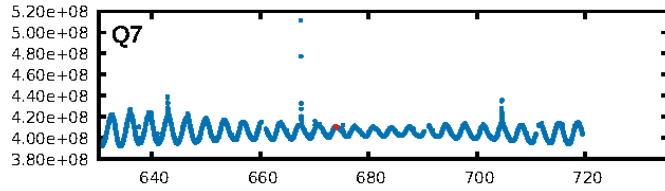
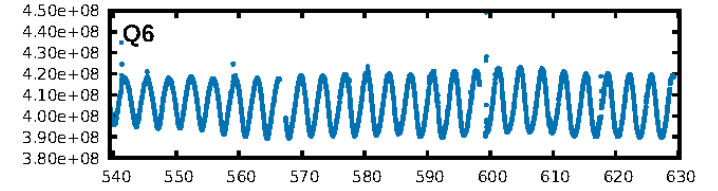
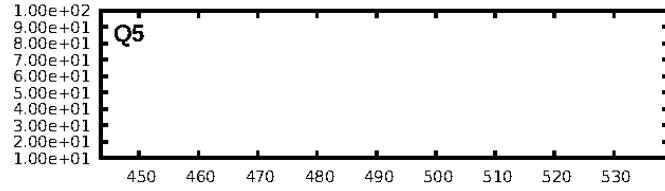
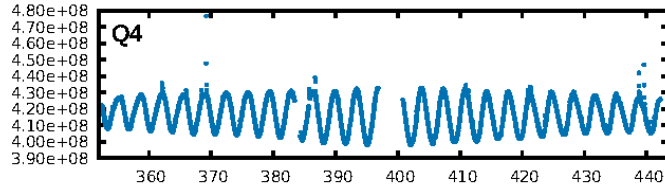
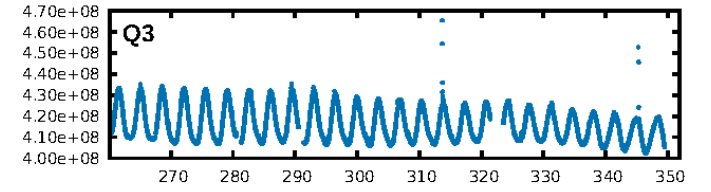
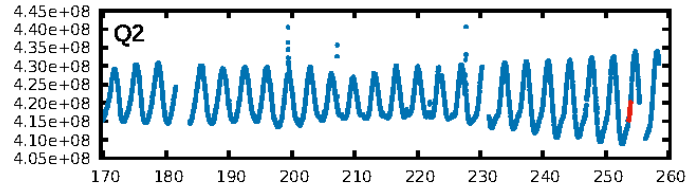
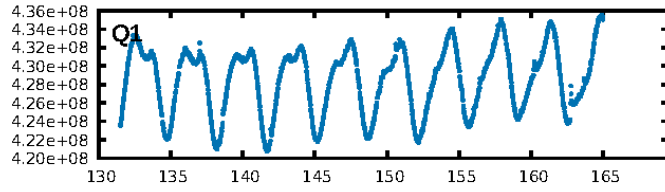
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [343.43σ]
LongPeriod-sig: 100.0% [99.04σ]
ModelChiSquare2-sig: 91.3%
ModelChiSquareGof-sig: 66.3%
Bootstrap-pfa: 2.98e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.525
Centroid-sig: 48.9%
Centroid-so: 1.103 arcsec [0.72σ]
OotOffset-rm: 0.838 arcsec [2.45σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-rm: 1.070 arcsec [3.58σ]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

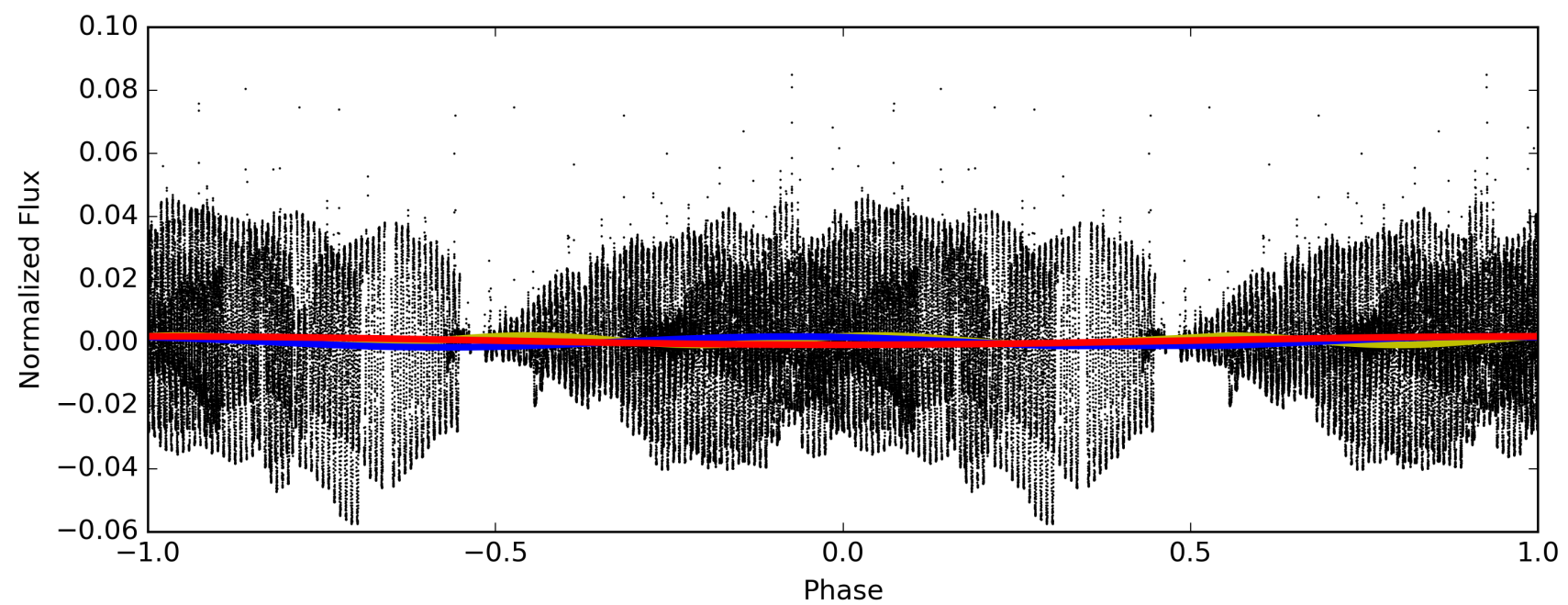
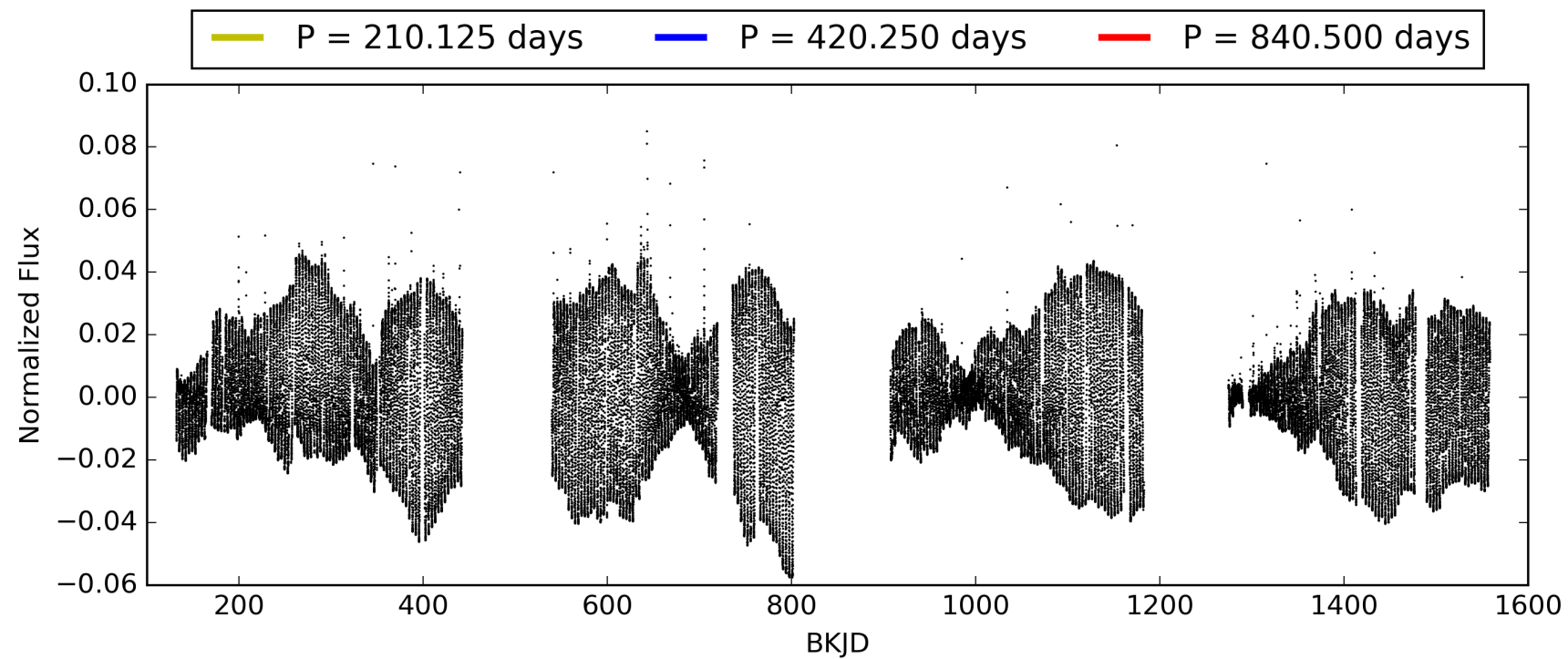
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:05:53 Z

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

TCE 005344895-04, PDC Light Curves

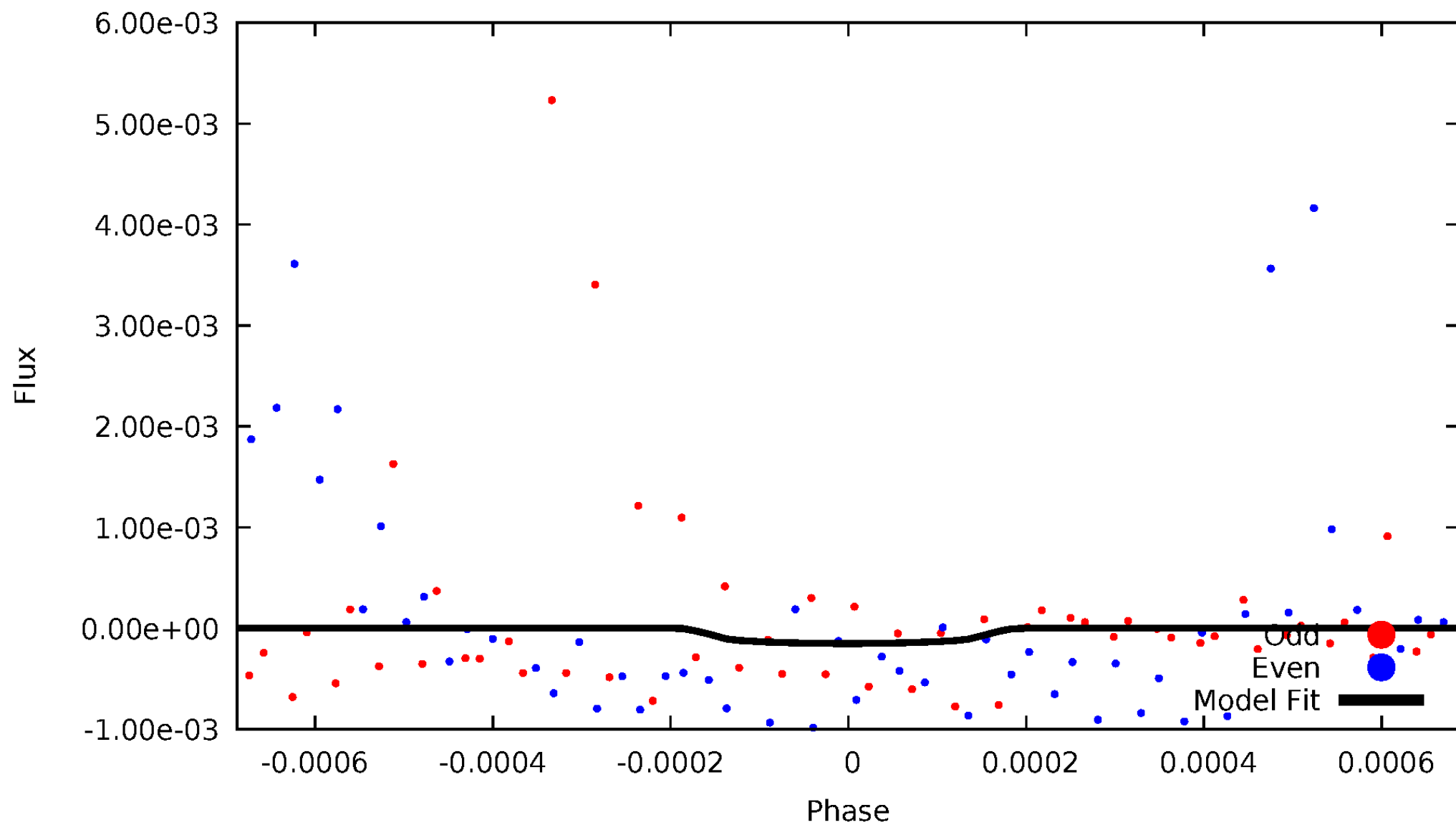


TCE 005344895-04



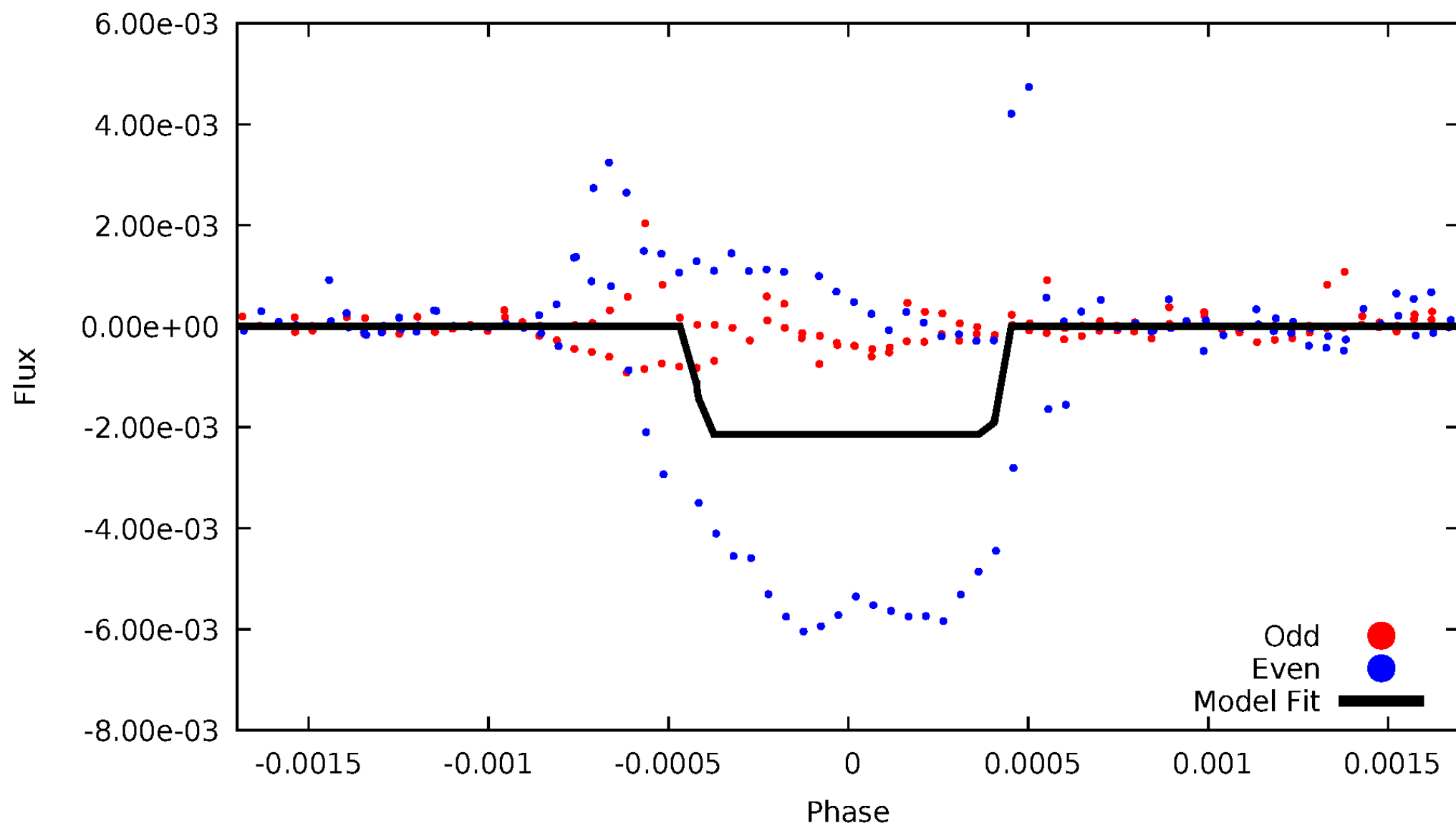
DV Odd/Even

TCE 005344895-04



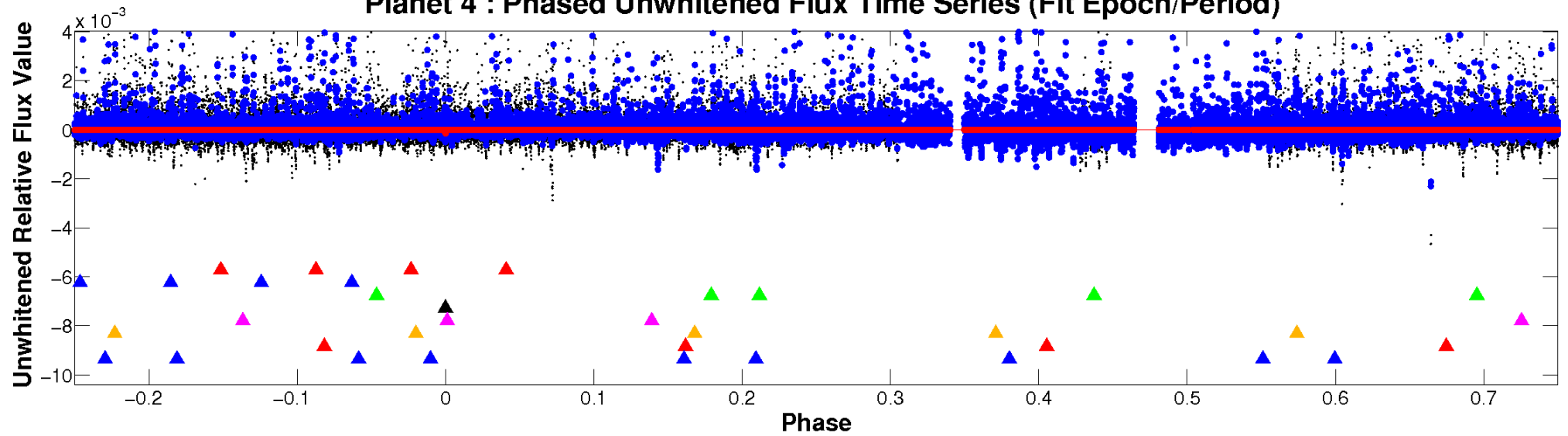
ALT Odd/Even

TCE 005344895-04

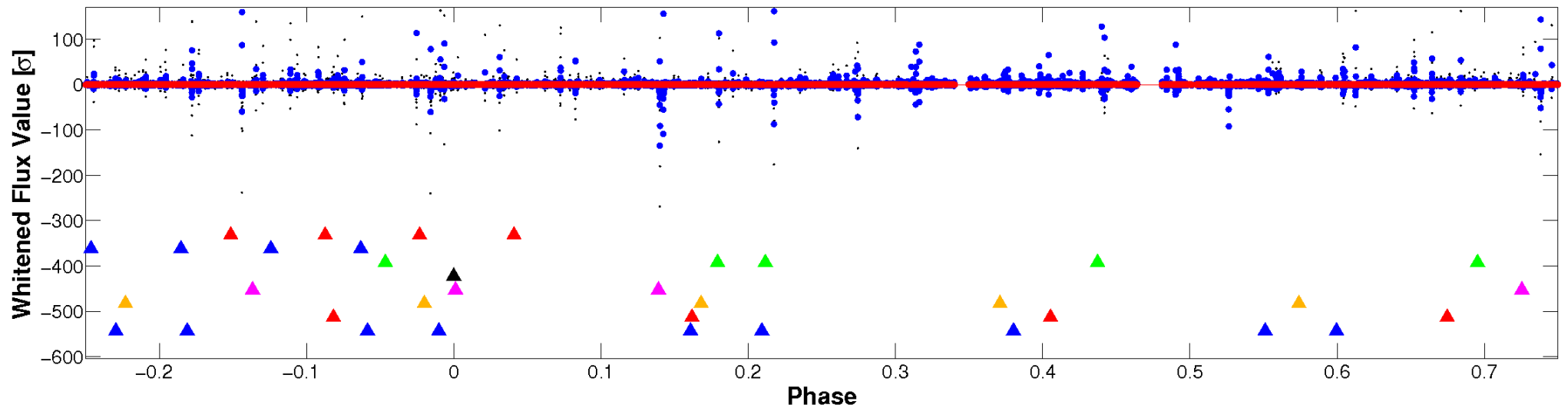


Non-Whitened Vs. Whitened Light Curve

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

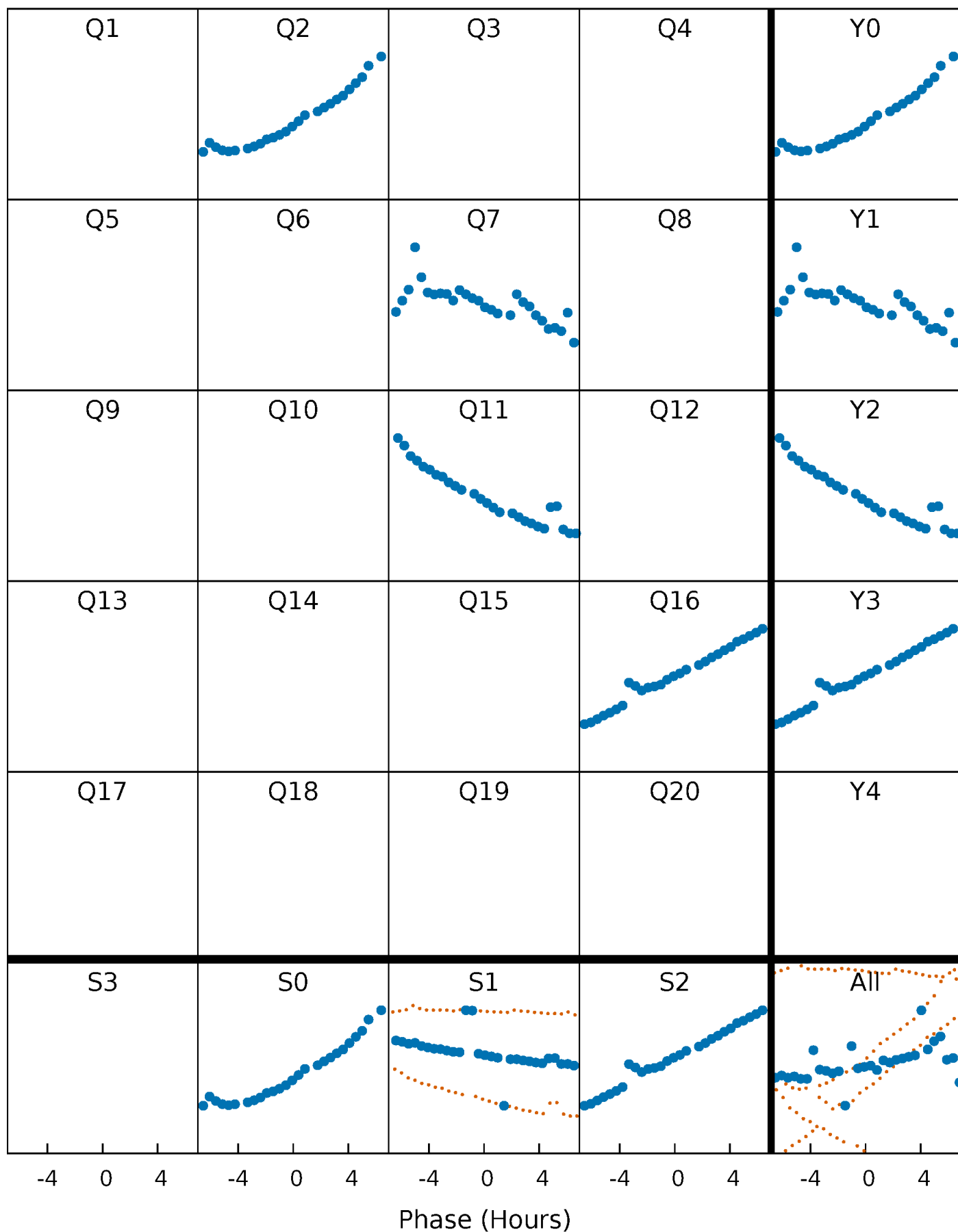


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



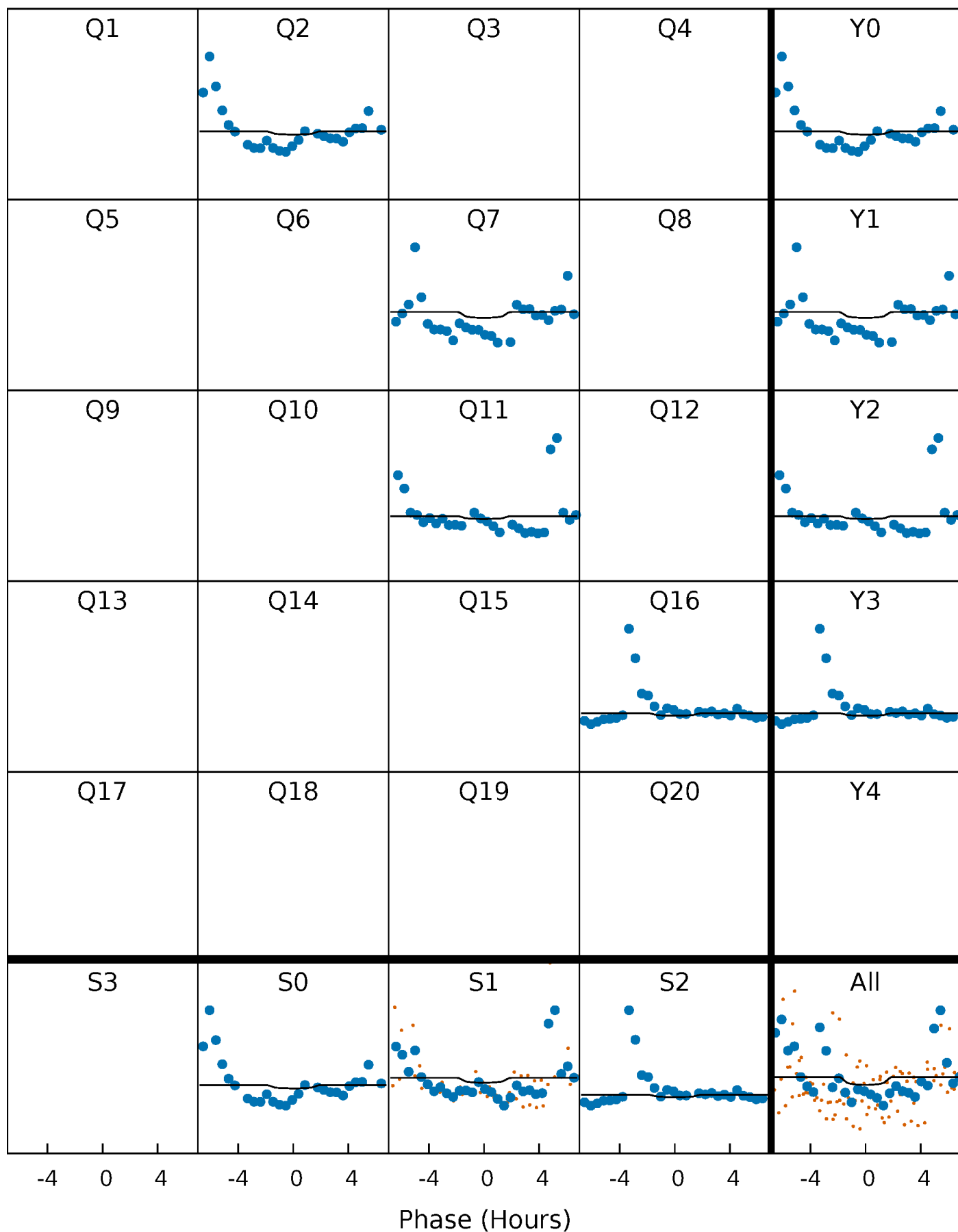
PDC Quarter-Phased Transit Curves

TCE 005344895-04 P=420.249825 Days $T_0=253.825315$ (BKJD)



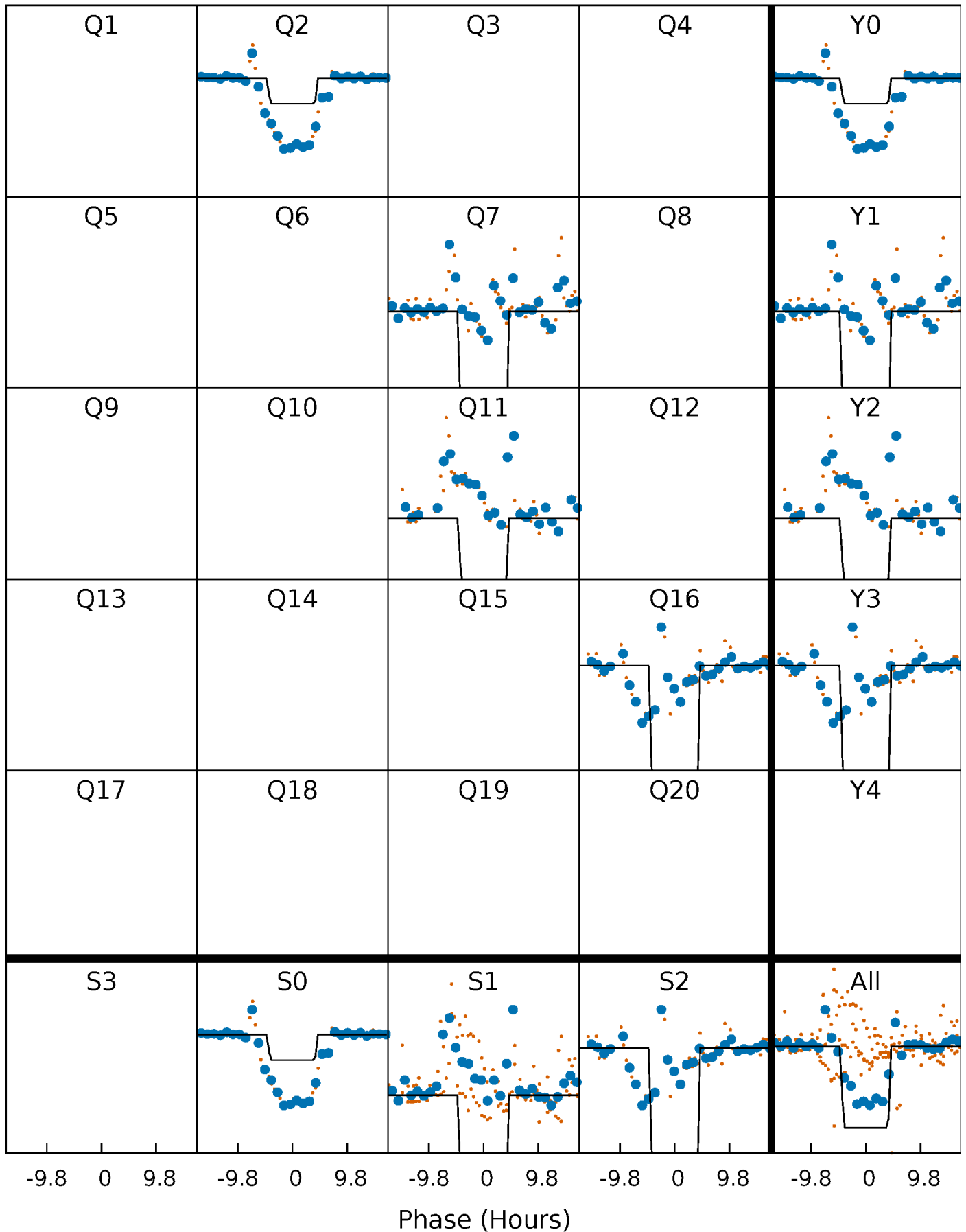
DV Quarter-Phased Transit Curves

TCE 005344895-04 $P=420.249825$ Days $T_0=253.825315$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

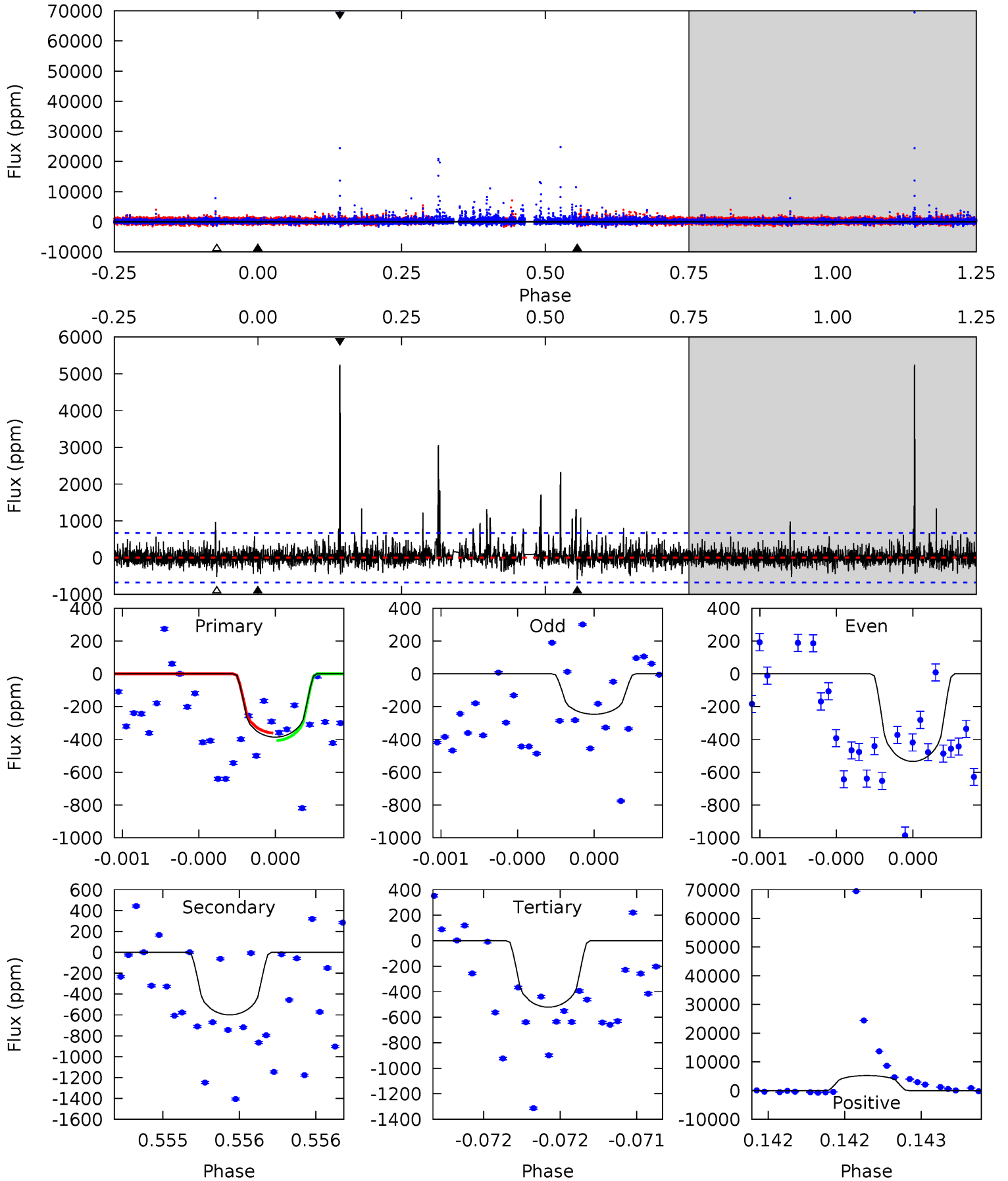
TCE 005344895-04 P=420.236595 Days $T_0=253.861039$ (BKJD)



DV Model-Shift Uniqueness Test

005344895-04, P = 420.249825 Days, E = 253.825315 Days

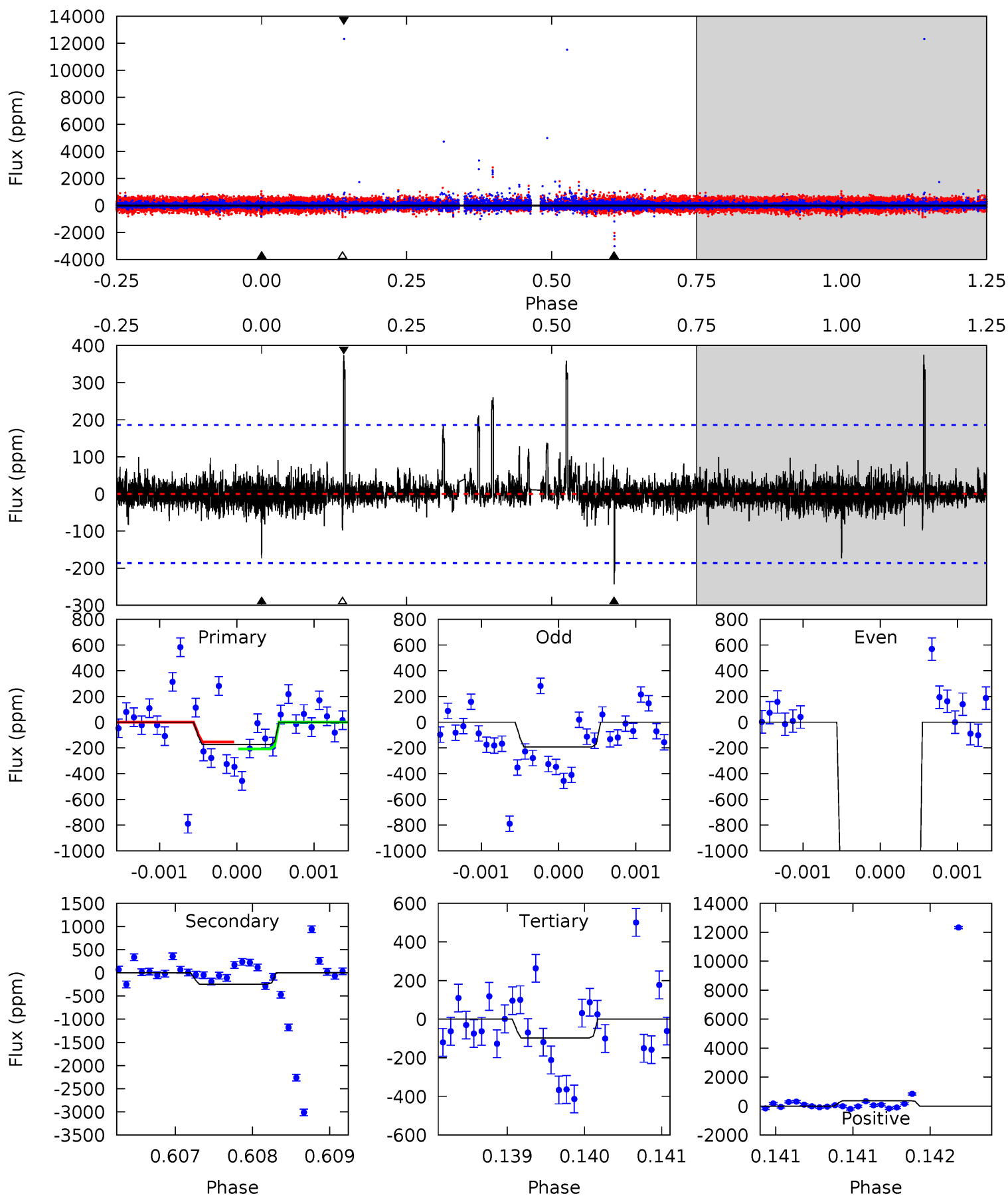
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.24	5.03	4.37	44.0	5.63	3.56	1.78	-1.13	-40.7	0.66	-38.9	0.83	0.79	0.90	0.19



Alt Model-Shift Uniqueness Test

005344895-04, P = 420.236595 Days, E = 253.861039 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.11	7.19	2.88	11.0	5.48	3.34	0.83	2.23	-5.90	4.30	-3.82	40.4	7.33	0.61	0



Stellar Parameters For KIC 005344895

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4472^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.740^{+0.025}_{-0.063}$	$0.733^{+0.041}_{-0.046}$	$2.545^{+0.645}_{-0.185}$
	+3%/-3%	+1%/-0%	+29%/-88%	+3%/-9%	+6%/-6%	+25%/-7%
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 005344895-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-599 ± 119	$3.87^{+4.07}_{-2.73}$	236^{+8}_{-7}	3516^{+2069}_{-656}	$22008^{+215565}_{-16789}$
Alt.	-244 ± 34	$5.05^{+4.50}_{-3.20}$	236^{+8}_{-8}	2839^{+959}_{-404}	5135^{+31132}_{-3605}

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

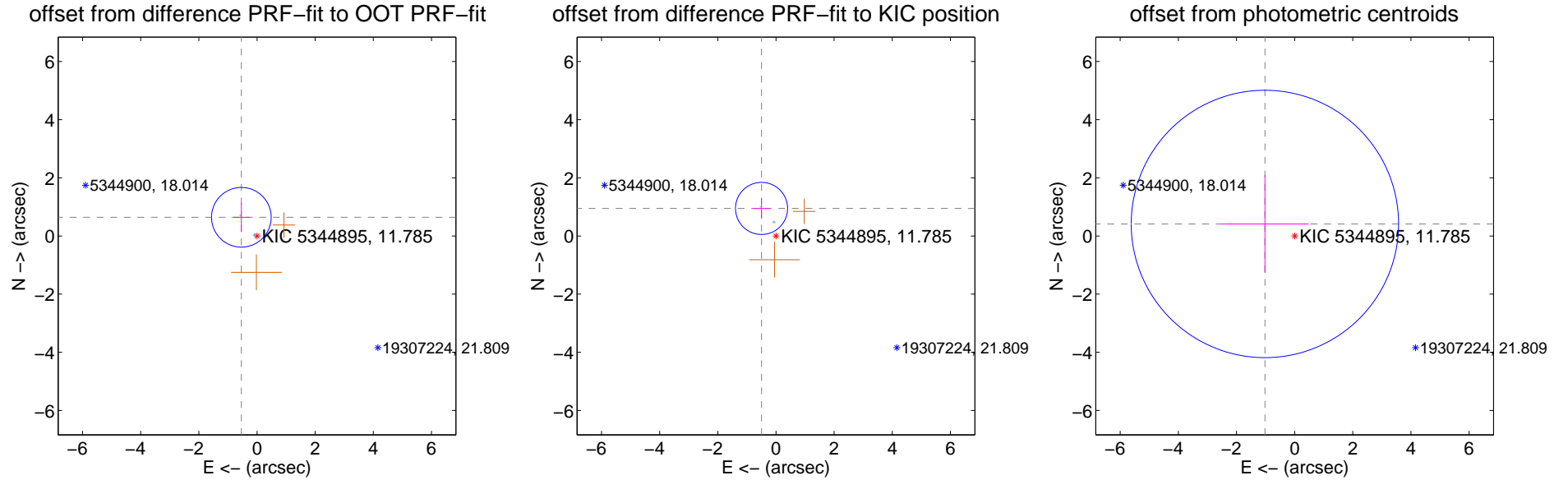
DV Centroid Data

Supplemental centroid analysis for 005344895-04. **Kepler magnitude: 11.79.** Transit SNR 1.33

There are 2 quarters with good PRF difference image offsets

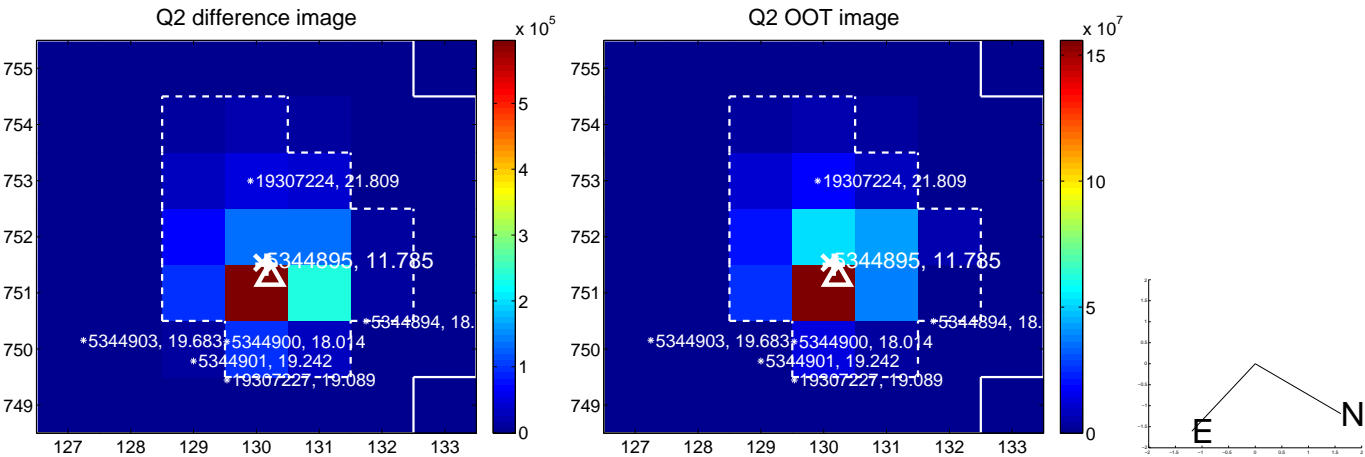
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.838 ± 0.342	2.45	0.538 ± 0.290	0.643 ± 0.508
PRF-fit source offset from KIC position	1.070 ± 0.299	3.58	0.497 ± 0.280	0.947 ± 0.350
photometric centroid source offset	1.10 ± 1.53	0.72	1.02 ± 1.51	0.41 ± 1.68



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

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



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

Q5 no difference image



Q5 no OOT image



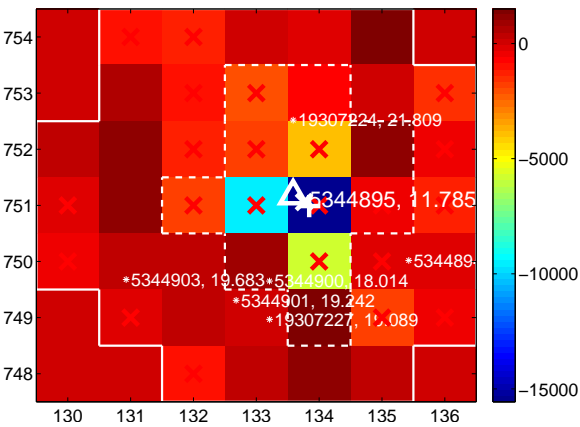
Q6 no difference image



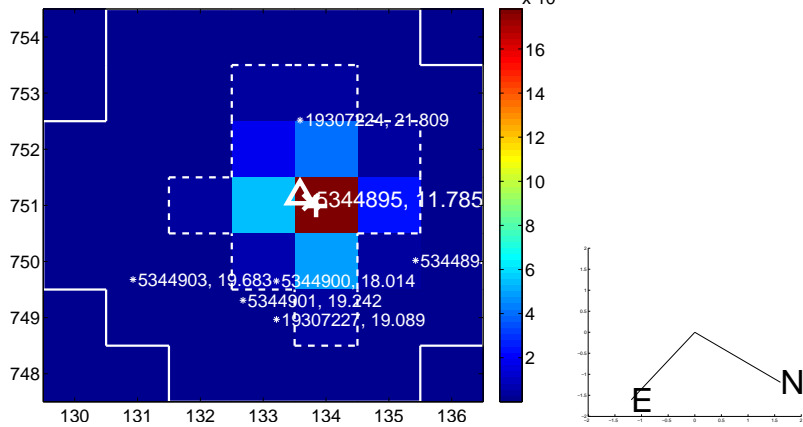
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



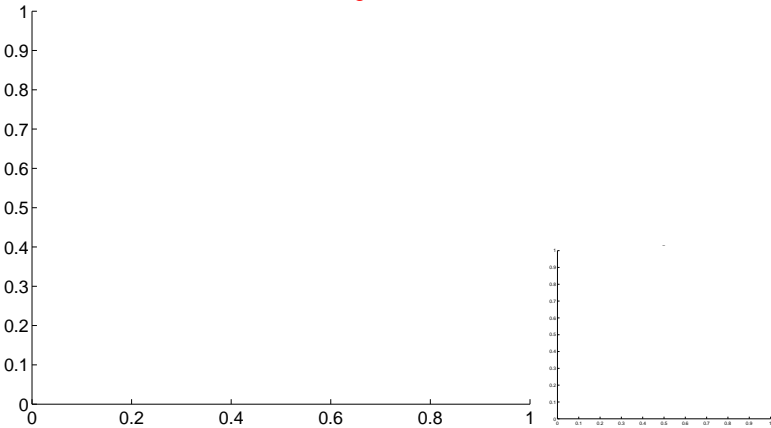
Q9 no OOT image



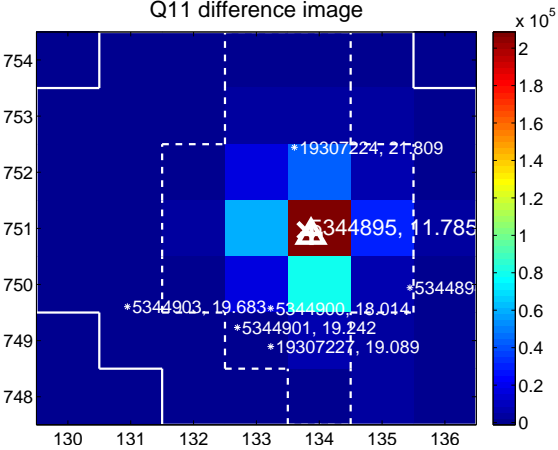
Q10 no difference image



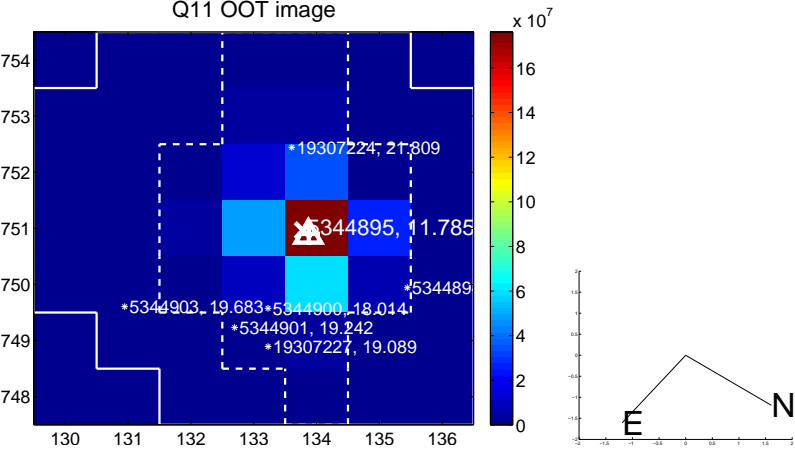
Q10 no OOT image



Q11 difference image



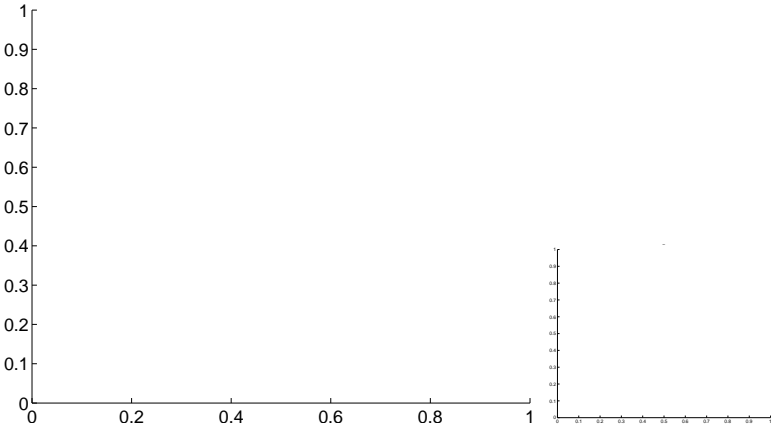
Q11 OOT image



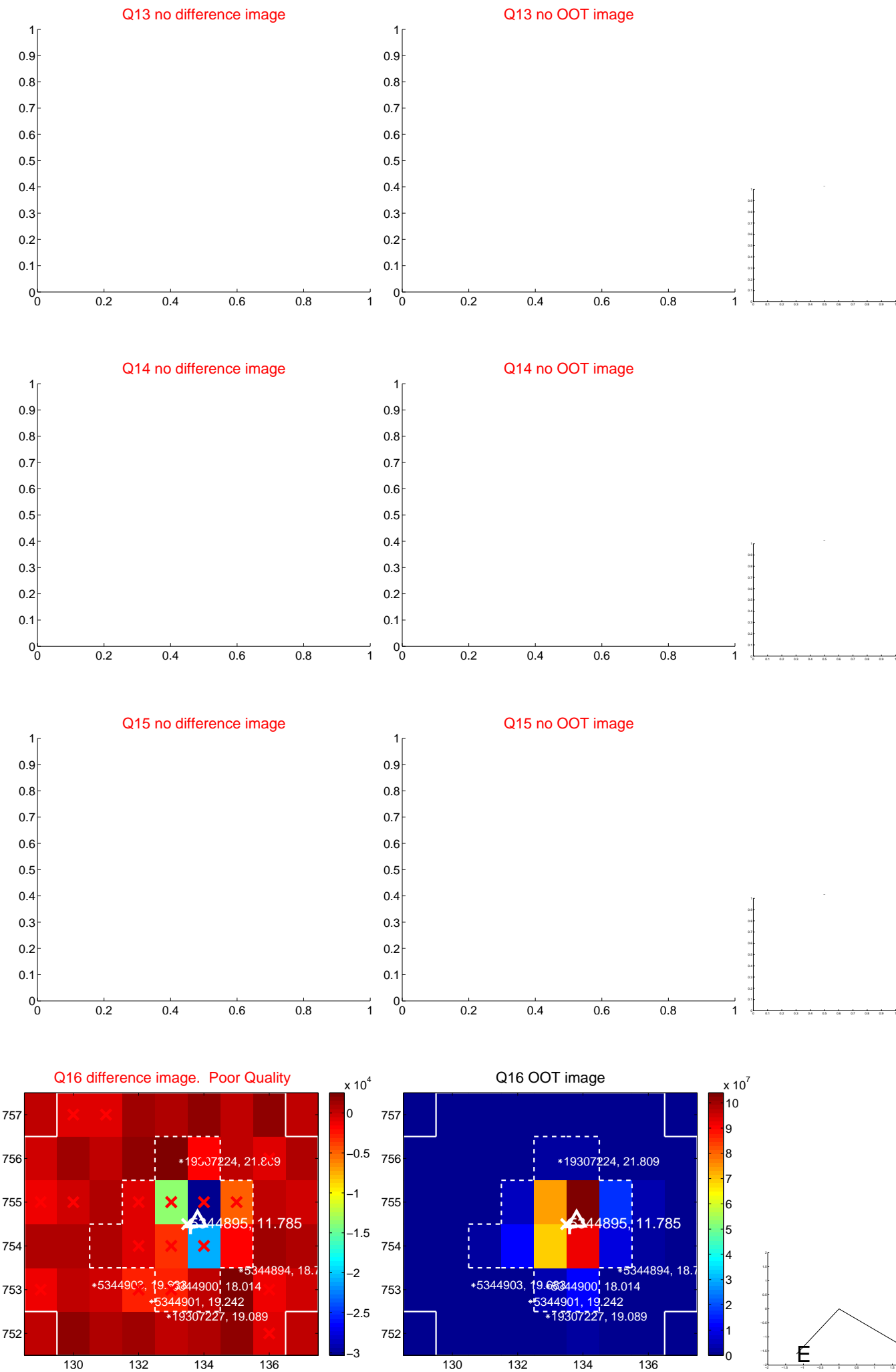
Q12 no difference image



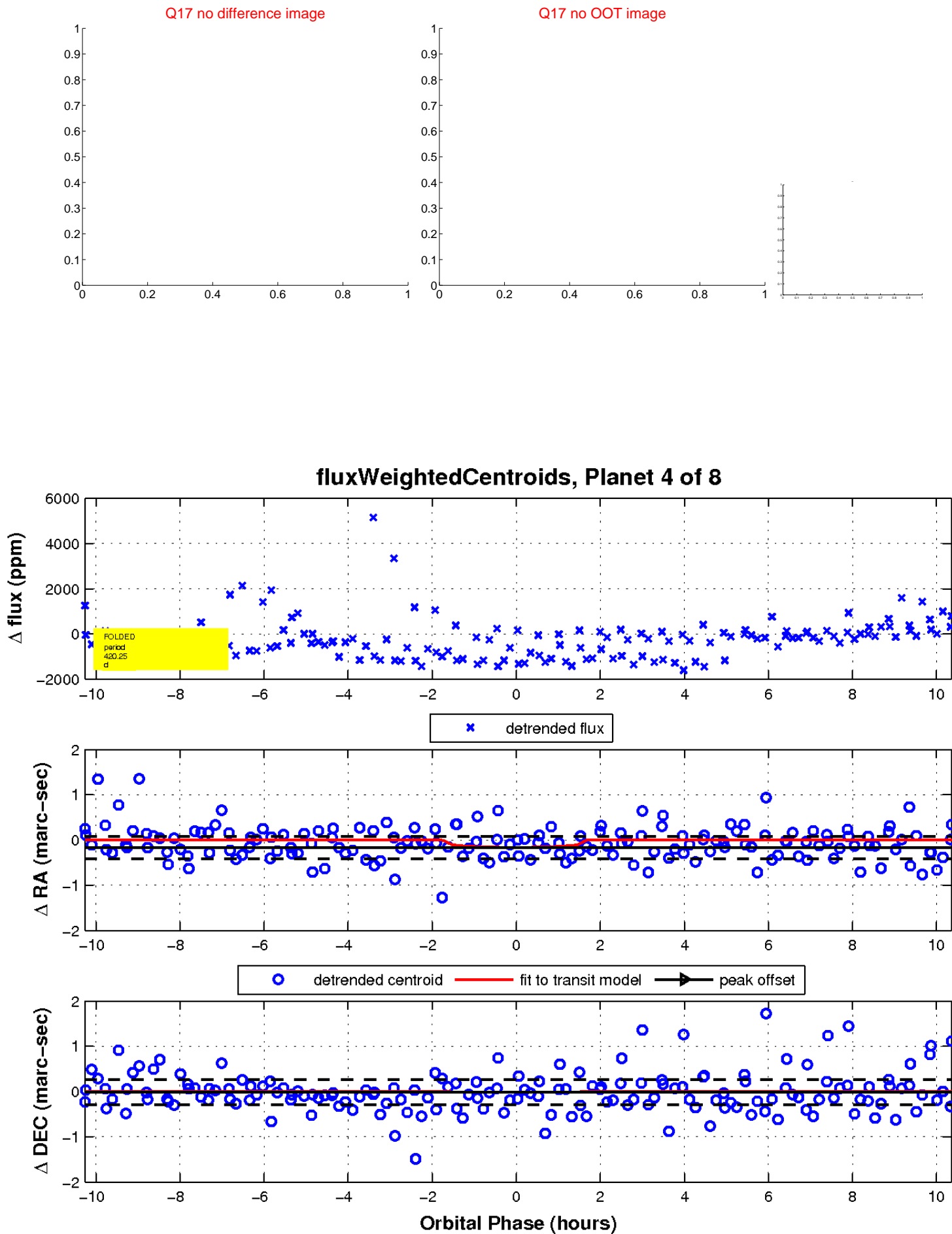
Q12 no OOT image



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

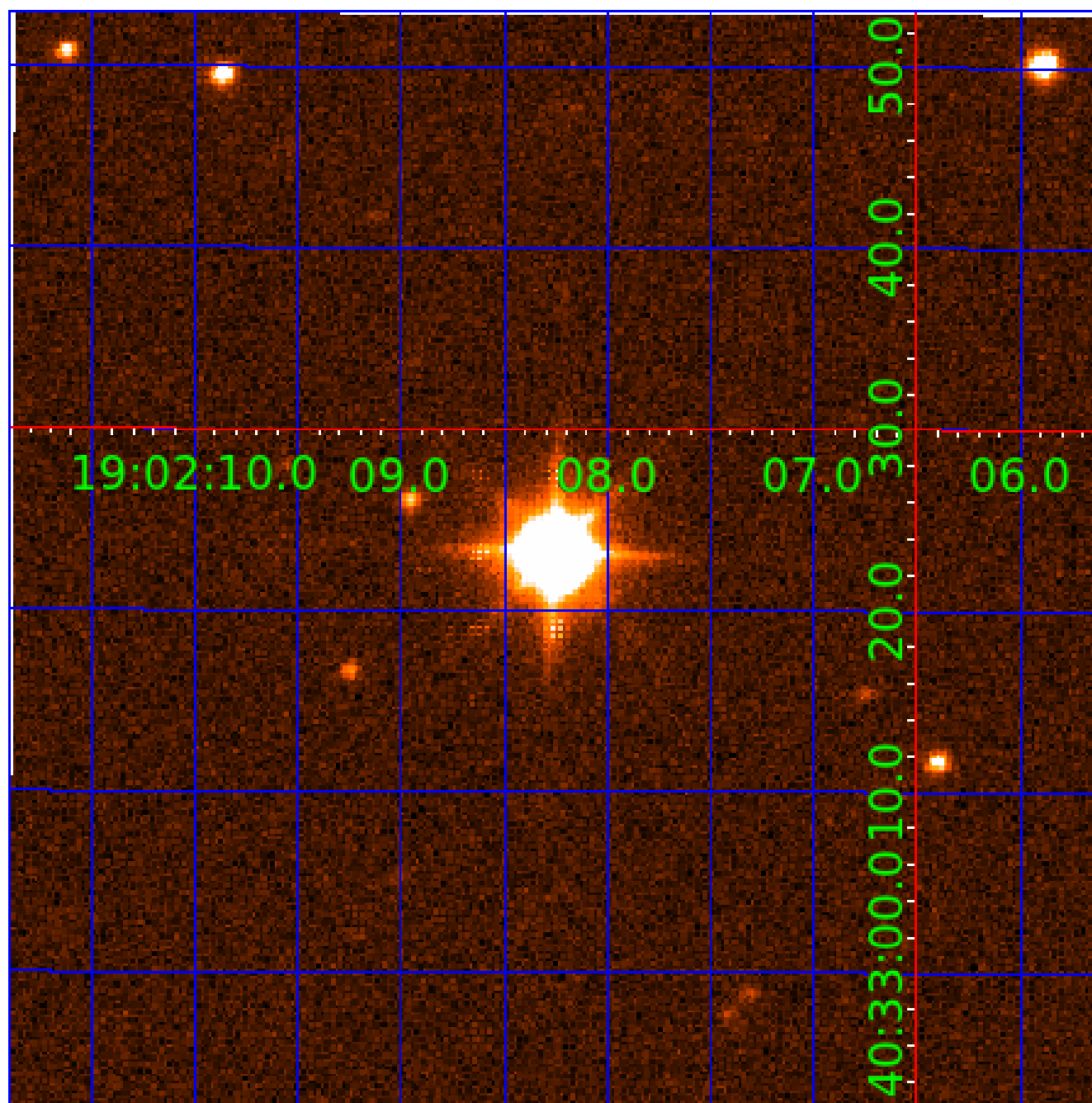


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005344895

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})
005344895-01	OBS	No	447.199472	190.182690	1154.0	4.107	17.1	8.2	0.74	4472	2.55	0.18
005344895-02	OBS	No	445.915640	150.306620	657.7	5.164	14.3	4.2	0.74	4472	2.30	0.18
005344895-03	OBS	No	311.776645	342.766361	977.9	5.741	15.6	5.9	0.74	4472	2.29	0.30
005344895-04	OBS	No	420.249825	253.825315	150.9	3.466	14.7	1.3	0.74	4472	1.11	0.20
005344895-05	OBS	No	478.179544	138.472760	1436.7	7.161	14.6	8.3	0.74	4472	2.73	0.17
005344895-06	OBS	No	334.937198	245.436207	1370.3	4.851	13.7	7.9	0.74	4472	2.88	0.27
005344895-07	OBS	No	317.909115	424.173270	2149.2	27.421	12.7	8.6	0.74	4472	3.25	0.29
005344895-08	OBS	No	164.027661	177.751020	2296.3	119.094	12.8	8.1	0.74	4472	3.78	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005344895-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
005344895-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005344895-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005344895-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

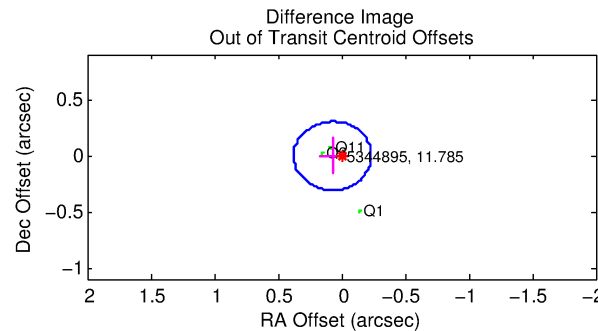
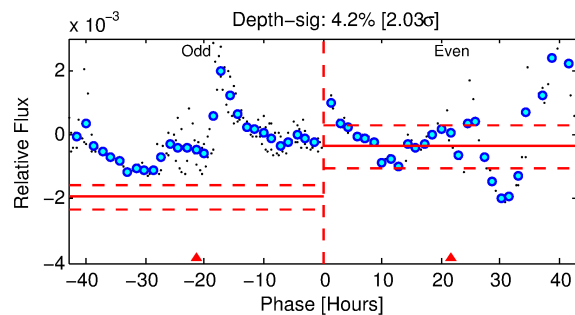
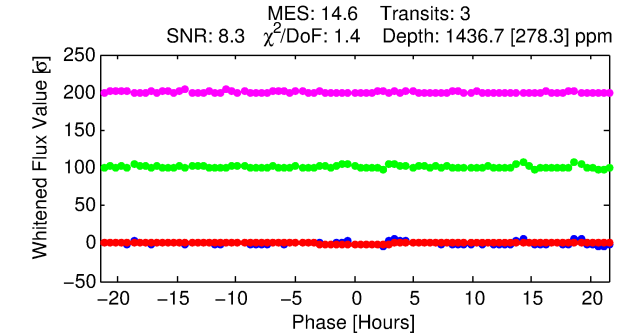
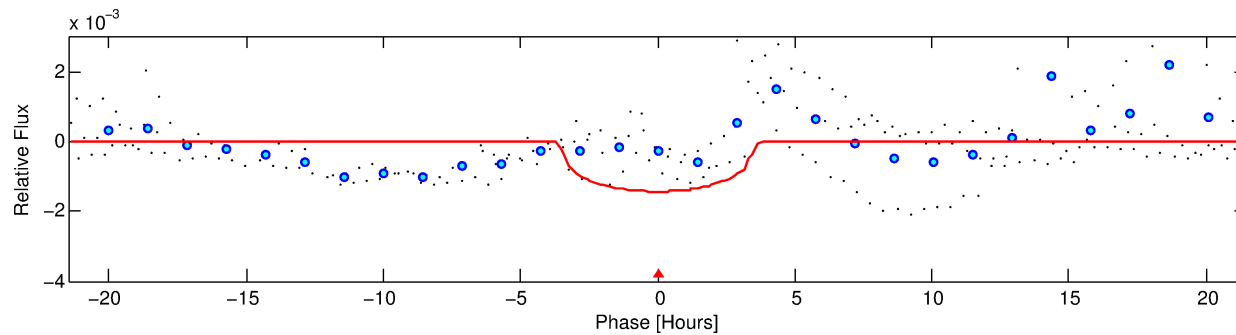
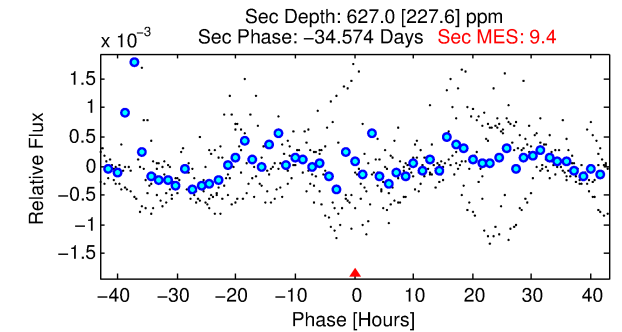
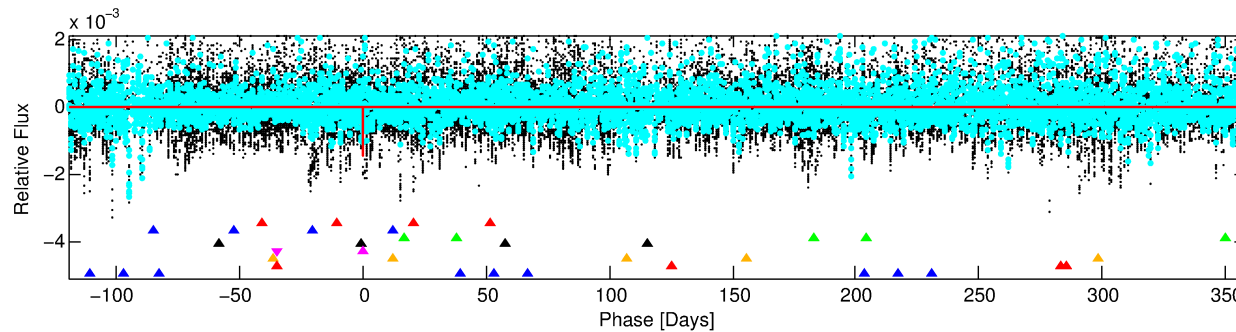
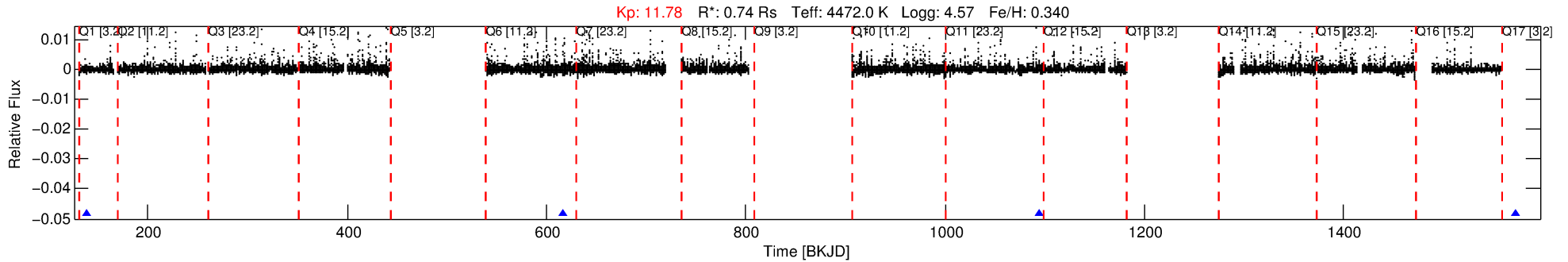
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005344895-05

No Significant Match Found

DV One-Page Summary

KIC: 5344895 Candidate: 5 of 8 Period: 478.180 d



DV Fit Results:

Period = 478.17954 [0.00510] d
Epoch = 138.4728 [0.0065] BKJD
Rp/R* = 0.0338 [0.0220]
a/R* = 494.65 [933.49]
b = 0.36 [4.67]
Seff = 0.17 [0.03]
Teq = 163 [7] K
Rp = 2.73 [1.79] Re
a = 1.0796 [0.0789] AU
Ag = 53996.53 [73293.94] [0.74σ]
Teffp = 3850 [1307] K [2.82σ]

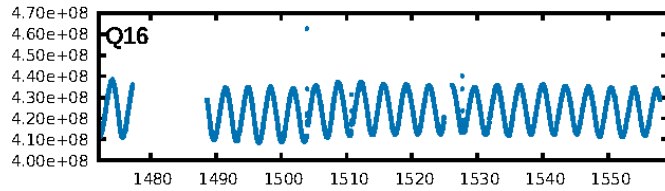
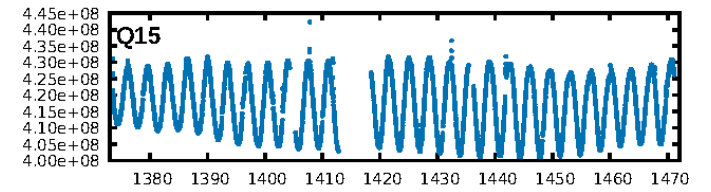
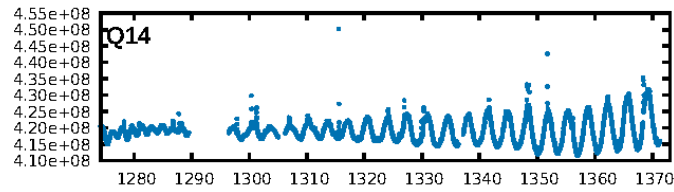
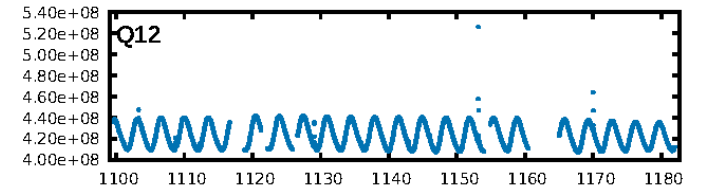
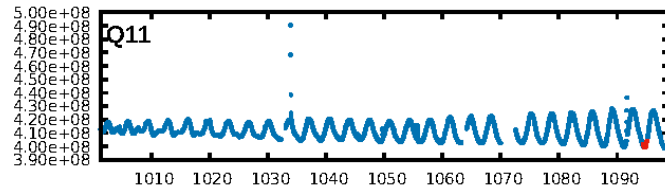
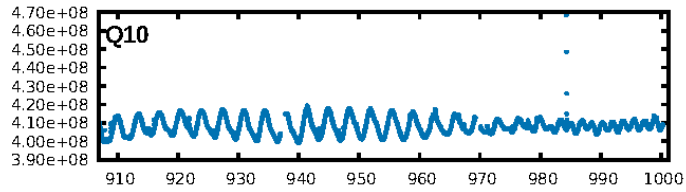
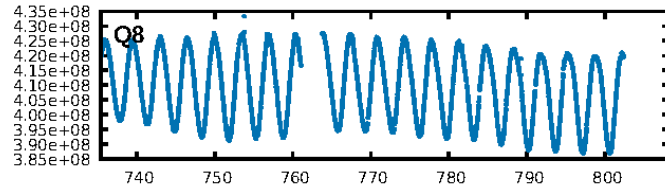
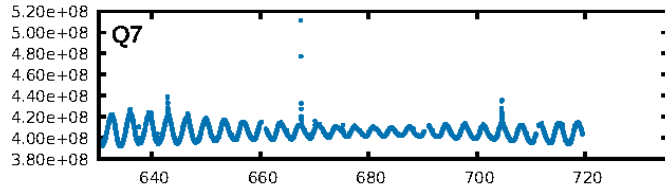
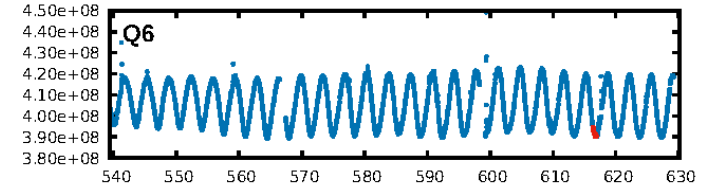
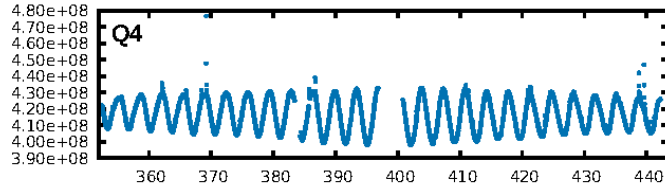
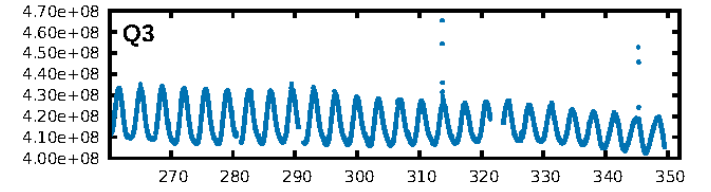
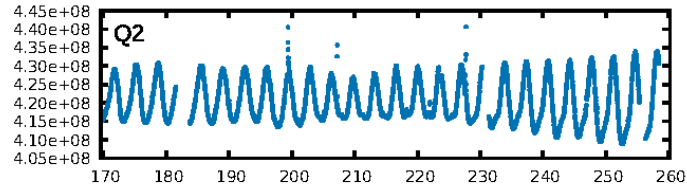
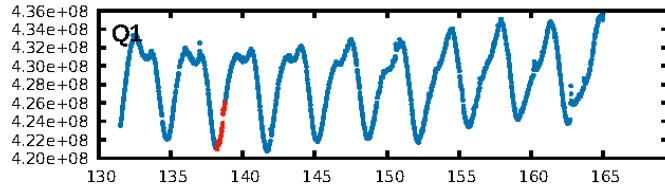
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [90.07σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.3%
ModelChiSquareGof-sig: 58.5%
Bootstrap-pfa: 4.80e-10
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.3771
Centroid-sig: 7.5%
Centroid-so: 0.455 arcsec [2.49σ]
OotOffset-rm: 0.071 arcsec [0.70σ]
KicOffset-rm: 0.419 arcsec [2.27σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

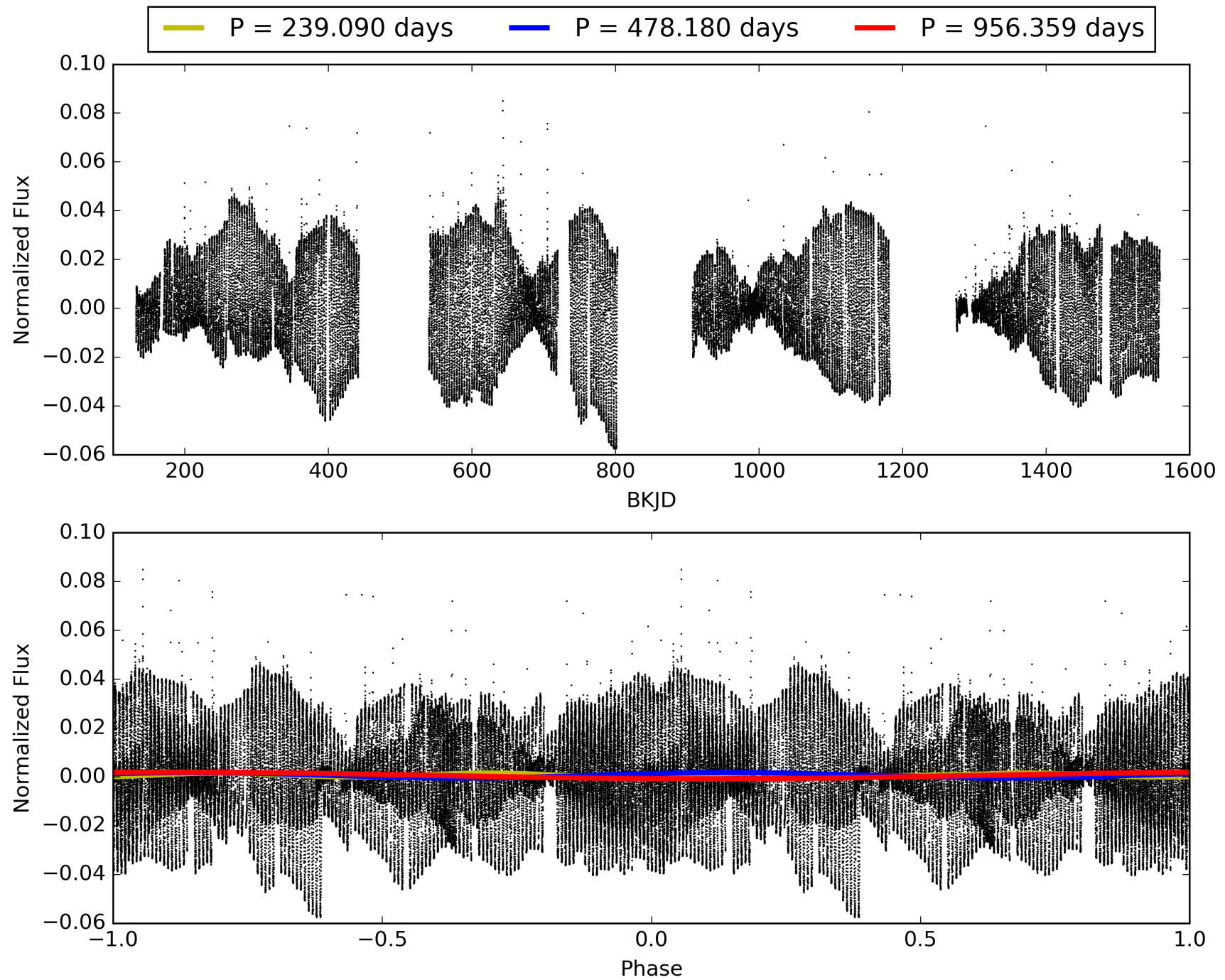
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:06:03 Z

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

TCE 005344895-05, PDC Light Curves

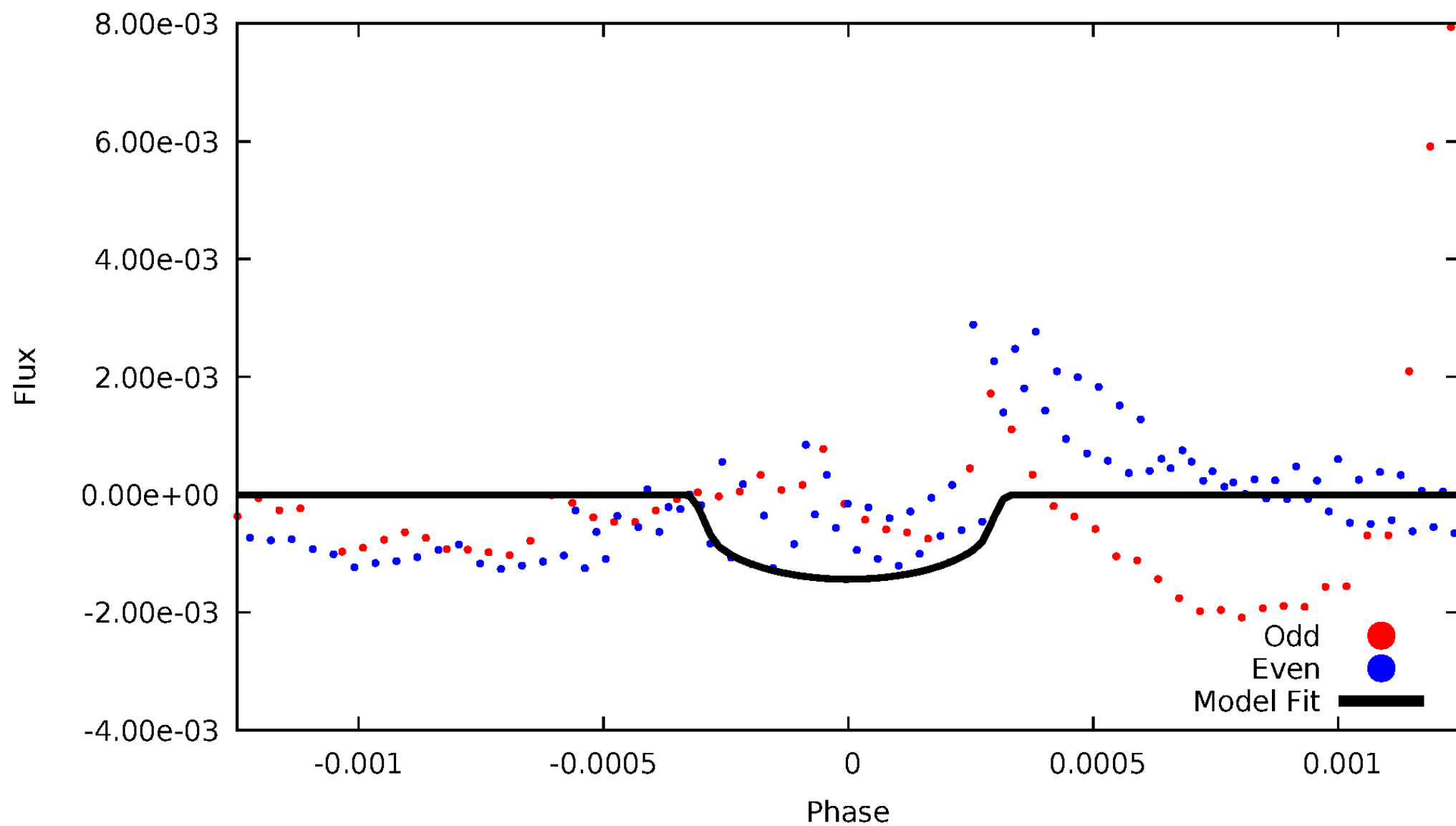


TCE 005344895-05



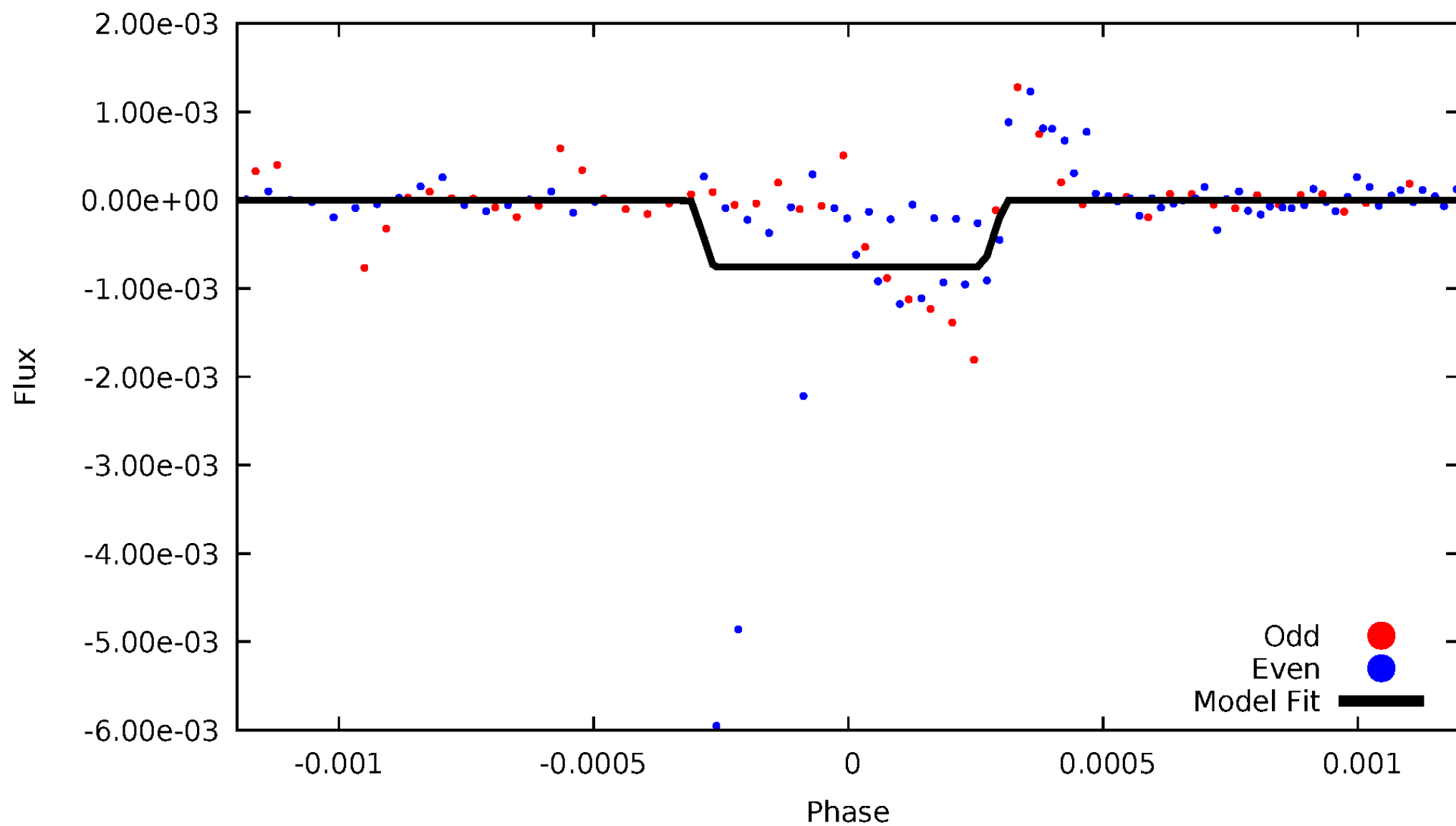
DV Odd/Even

TCE 005344895-05



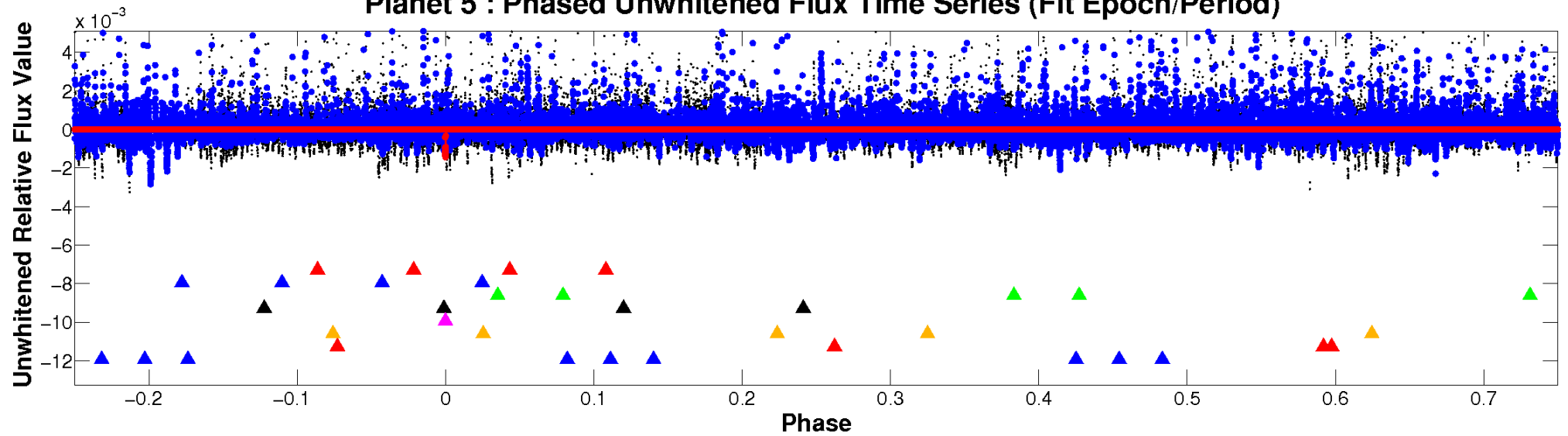
ALT Odd/Even

TCE 005344895-05

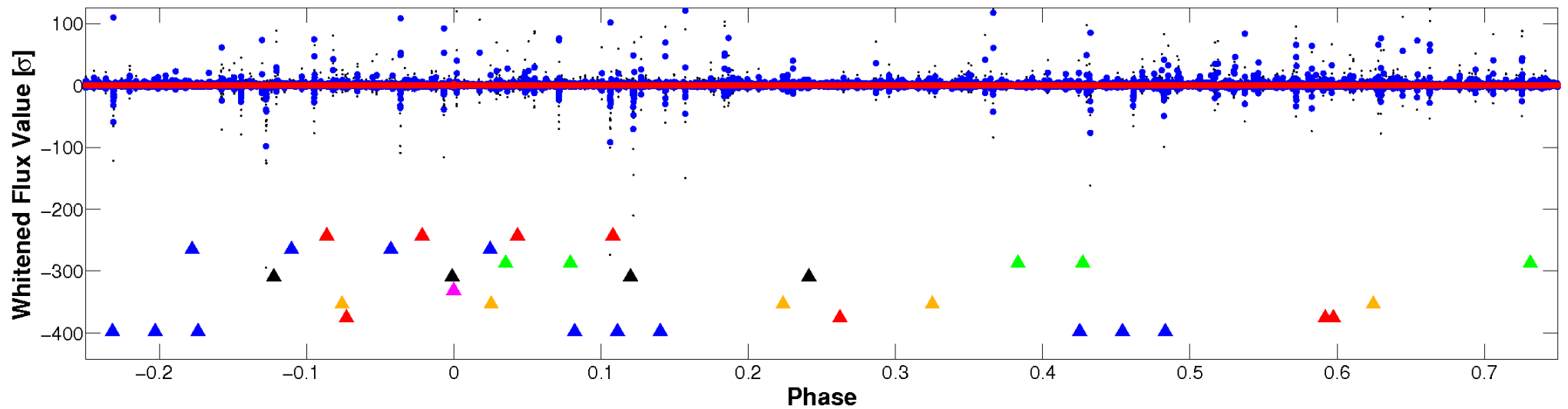


Non-Whitened Vs. Whitened Light Curve

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

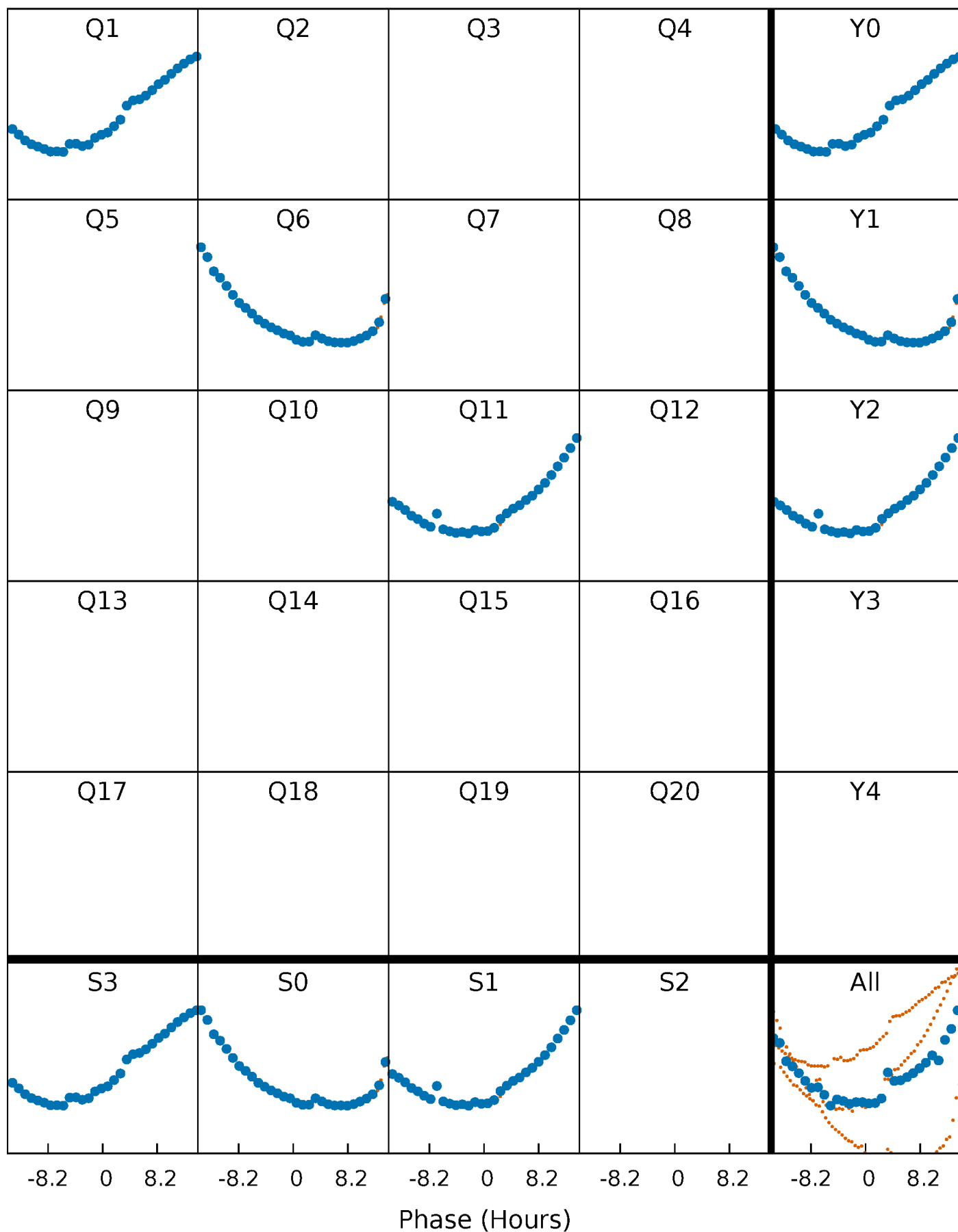


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



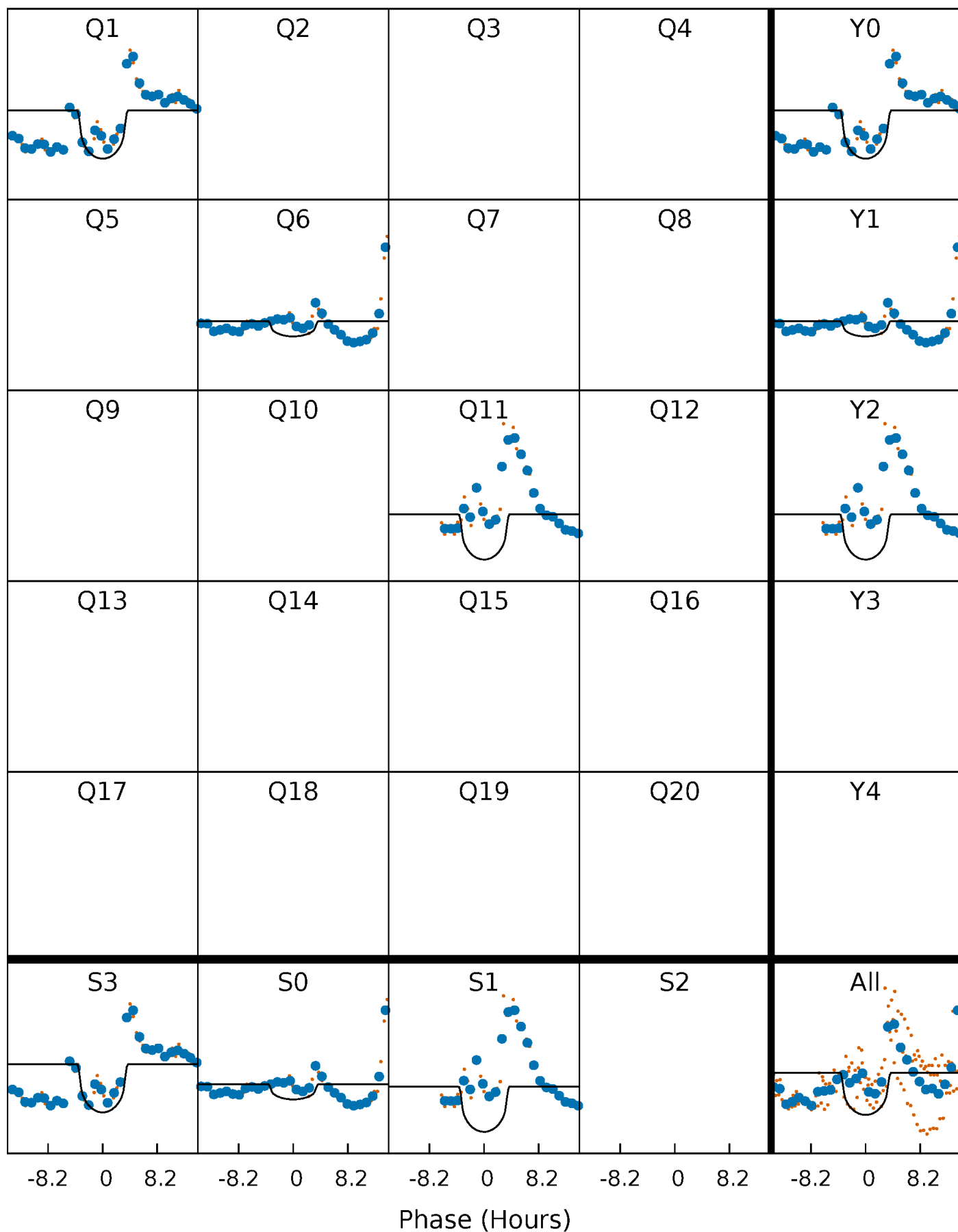
PDC Quarter-Phased Transit Curves

TCE 005344895-05 $P=478.179545$ Days $T_0=138.472760$ (BKJD)



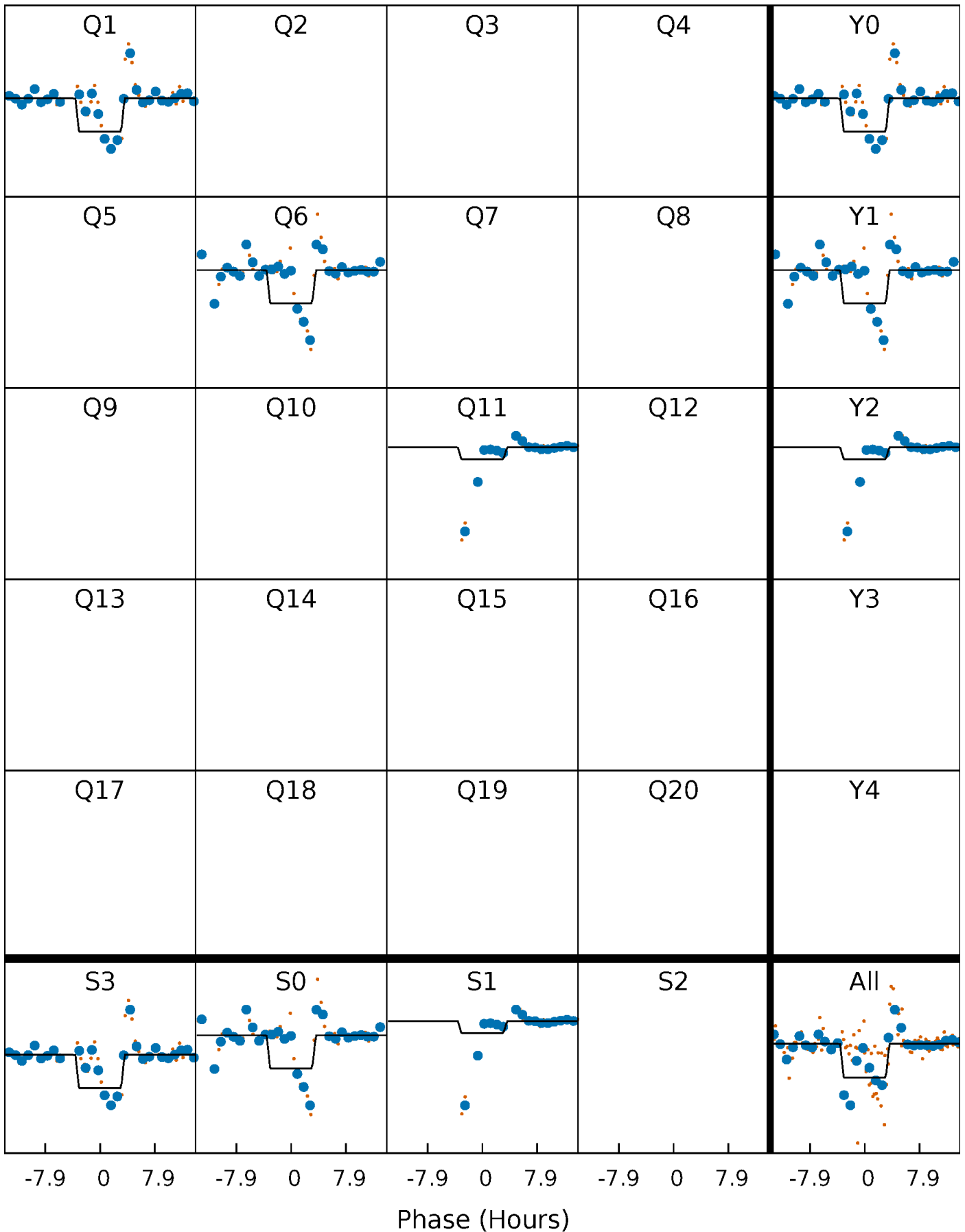
DV Quarter-Phased Transit Curves

TCE 005344895-05 $P=478.179545$ Days $T_0=138.472760$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

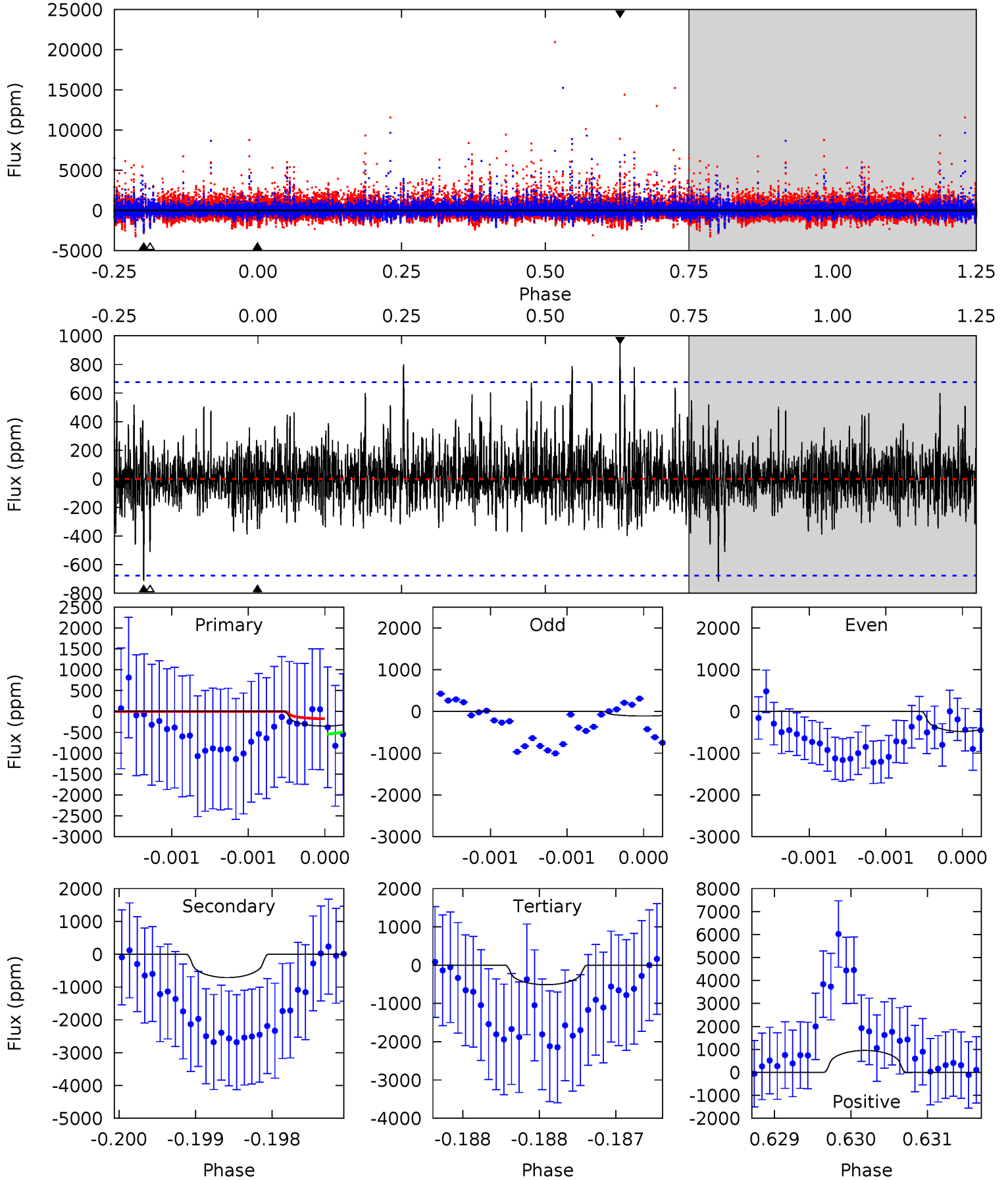
TCE 005344895-05 $P=478.158926$ Days $T_0=138.473613$ (BKJD)



DV Model-Shift Uniqueness Test

005344895-05, P = 478.179545 Days, E = 138.472760 Days

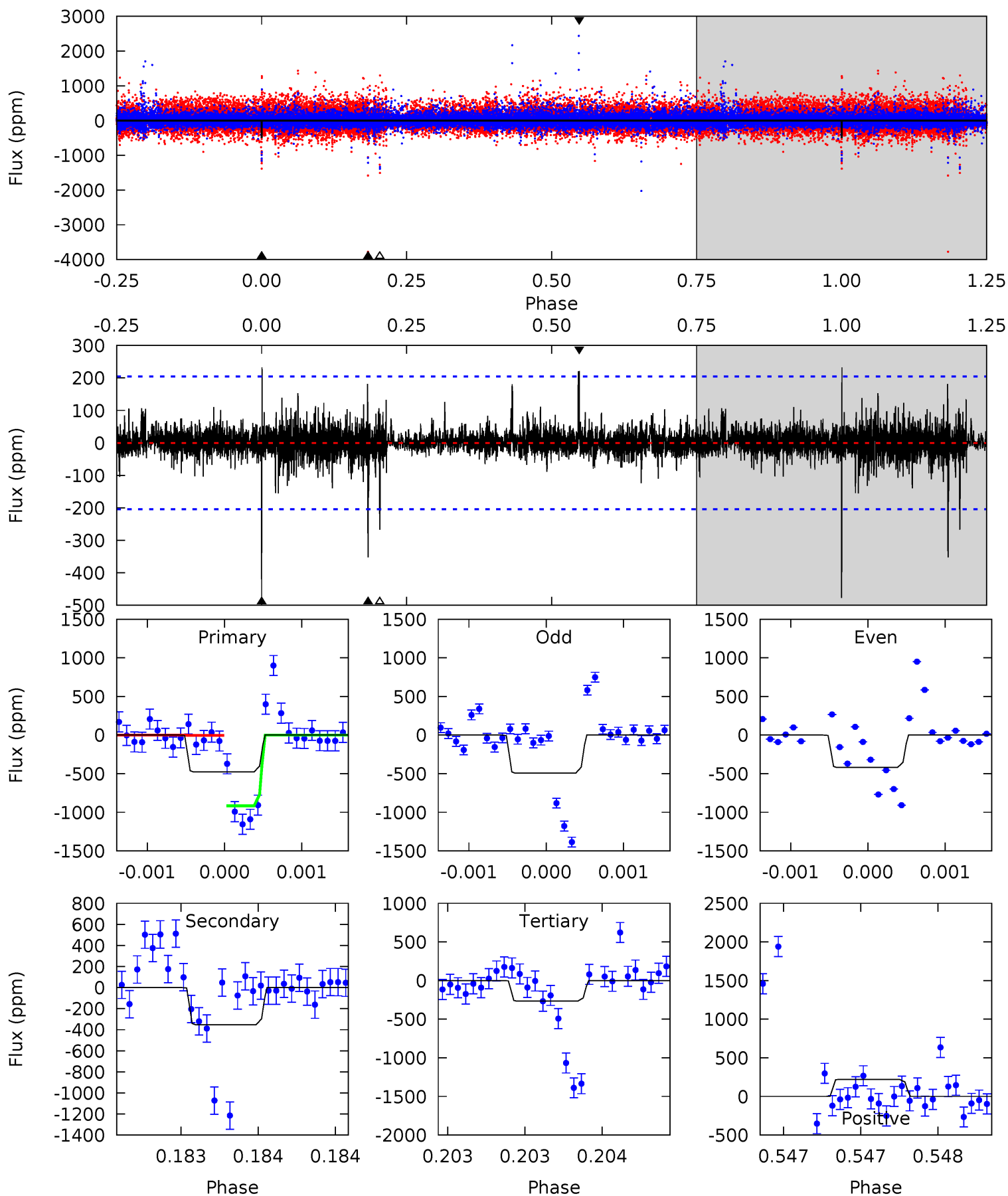
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.87	5.83	4.17	7.81	5.53	3.42	1.22	-1.30	-4.93	1.66	-1.98	0.68	2.44	0.57	1.50



Alt Model-Shift Uniqueness Test

005344895-05, P = 478.158926 Days, E = 138.473613 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	9.55	7.24	6.01	5.54	3.43	0.78	5.70	6.93	2.31	3.54	0.85	1.55	0.33	12.4



Stellar Parameters For KIC 005344895

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4472^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.740^{+0.025}_{-0.063}$	$0.733^{+0.041}_{-0.046}$	$2.545^{+0.645}_{-0.185}$
	+3%/-3%	+1%/-0%	+29%/-88%	+3%/-9%	+6%/-6%	+25%/-7%
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 005344895-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-712 ± 122	$2.80^{+1.83}_{-1.64}$	226^{+8}_{-8}	4045^{+1683}_{-641}	$57250^{+266627}_{-36023}$
Alt.	-352 ± 37	$2.46^{+1.58}_{-1.44}$	226^{+7}_{-8}	3733^{+1383}_{-543}	$37203^{+170002}_{-23434}$

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

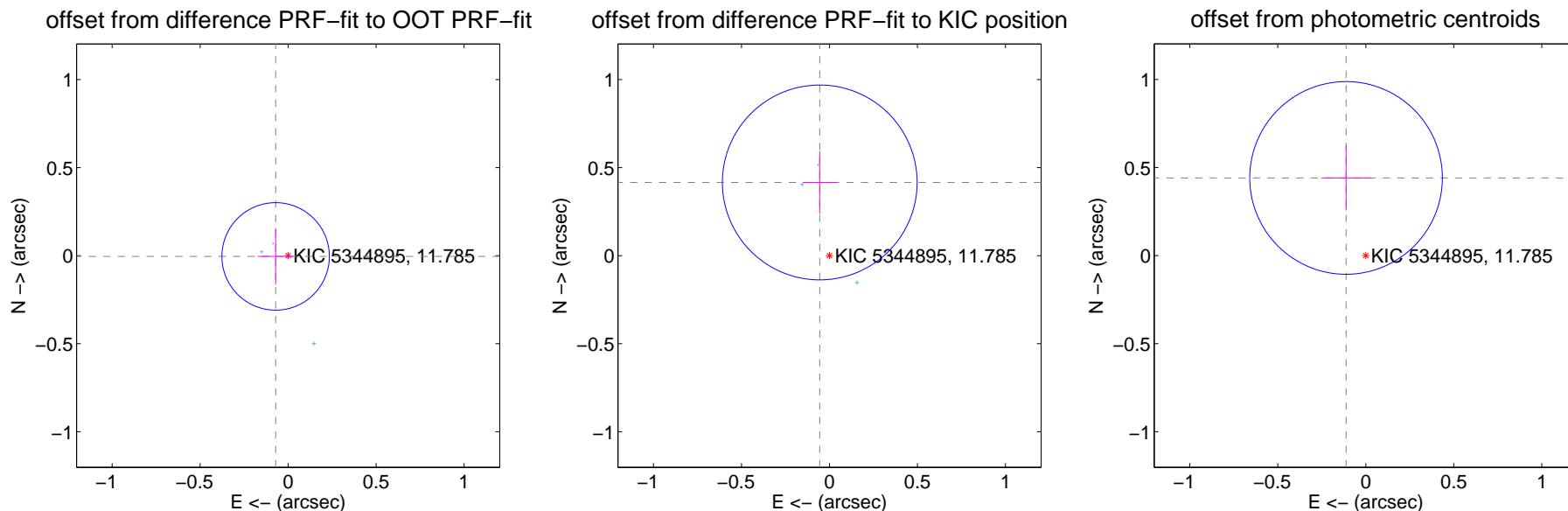
DV Centroid Data

Supplemental centroid analysis for 005344895-05. **Kepler magnitude: 11.79.** Transit SNR 8.28

There are 3 quarters with good PRF difference image offsets

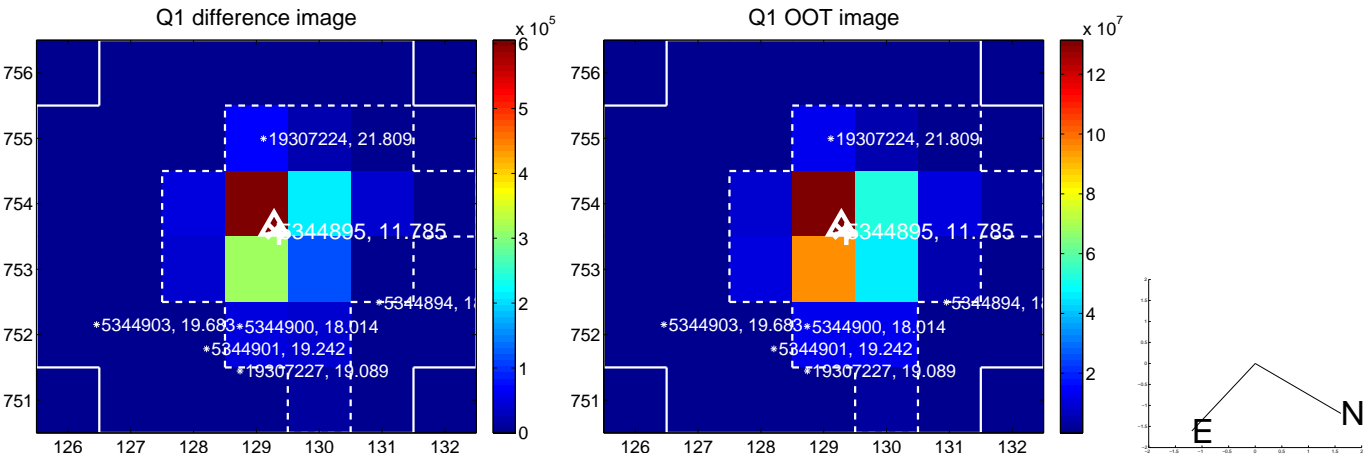
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.071 ± 0.102	0.70	0.071 ± 0.102	-0.004 ± 0.160
PRF-fit source offset from KIC position	0.419 ± 0.184	2.27	0.055 ± 0.096	0.416 ± 0.178
photometric centroid source offset	0.45 ± 0.18	2.49	0.11 ± 0.14	0.44 ± 0.18

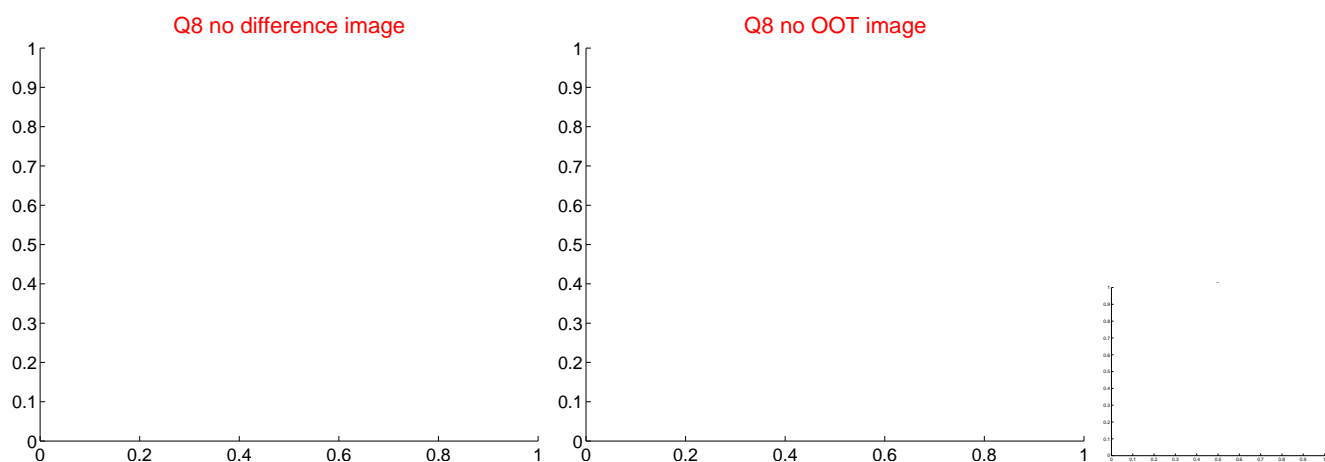
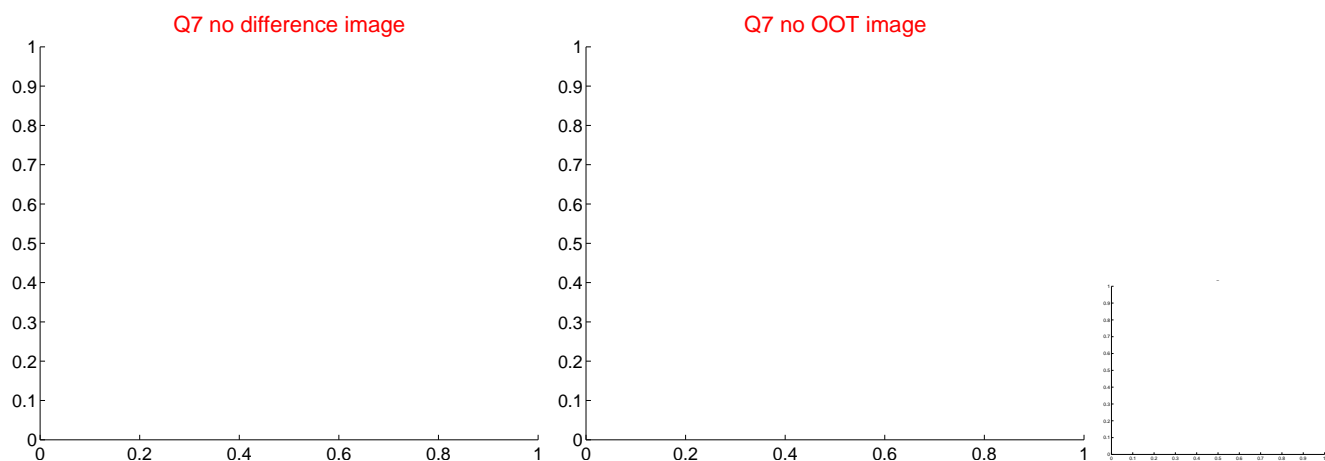
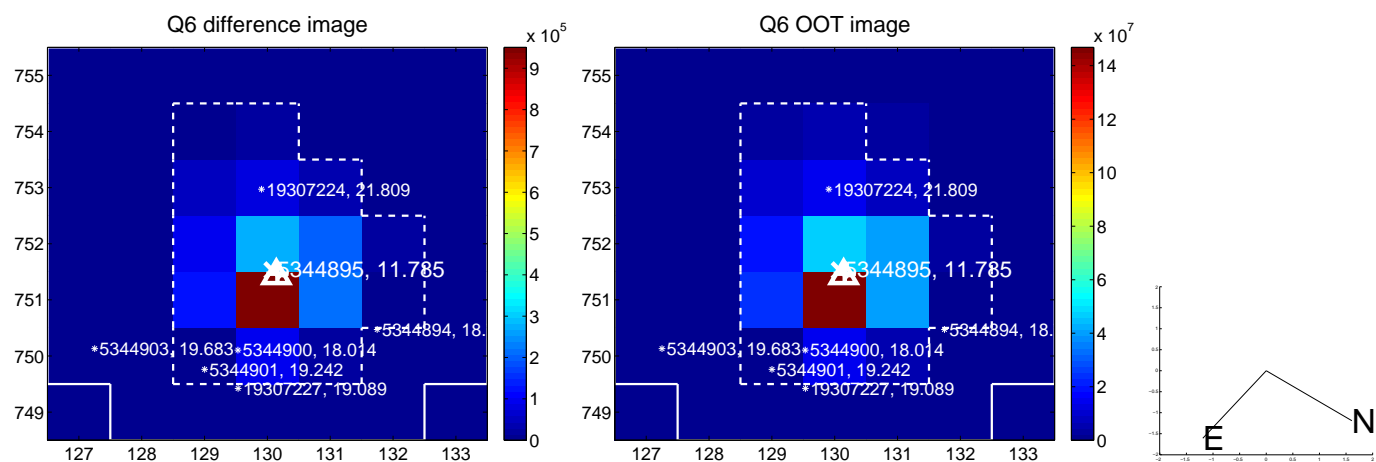
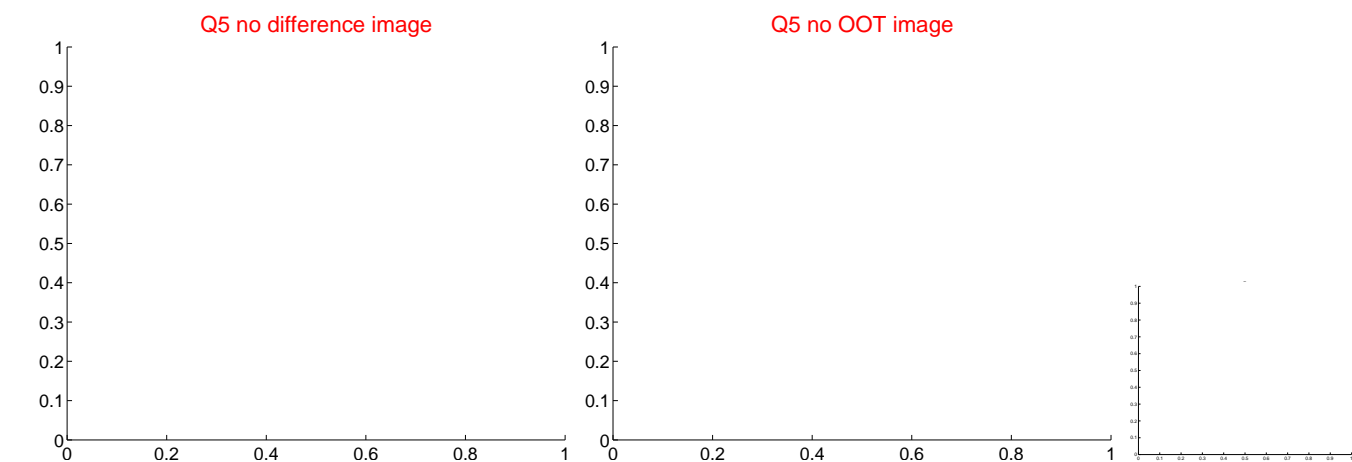


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



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



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

Q9 no difference image



Q9 no OOT image



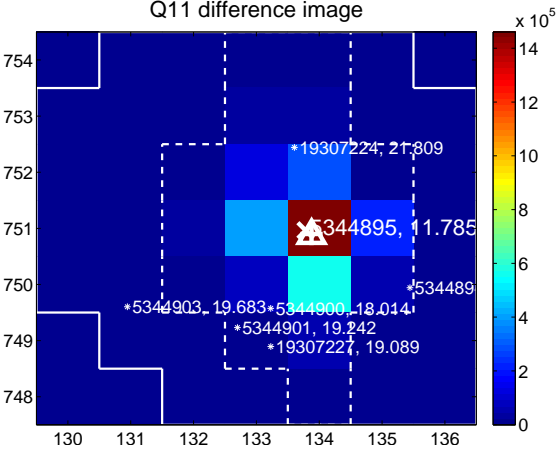
Q10 no difference image



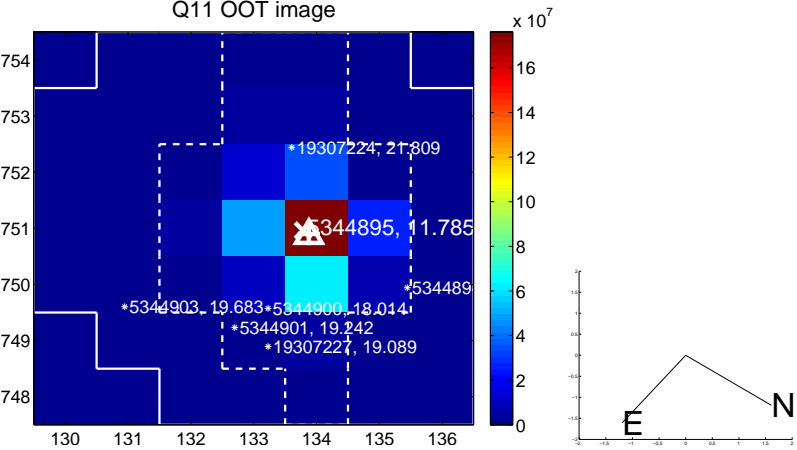
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



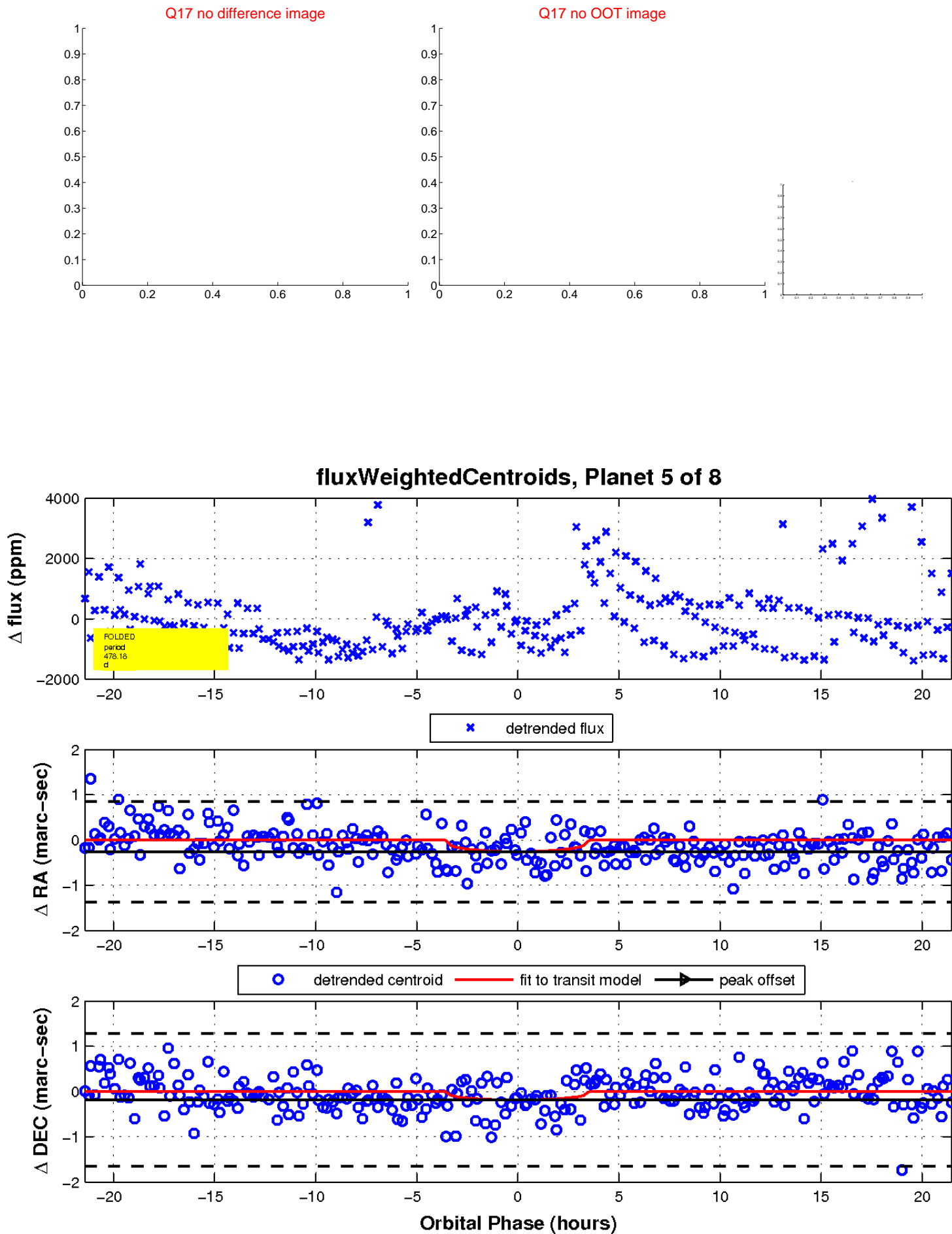
Q12 no OOT image



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

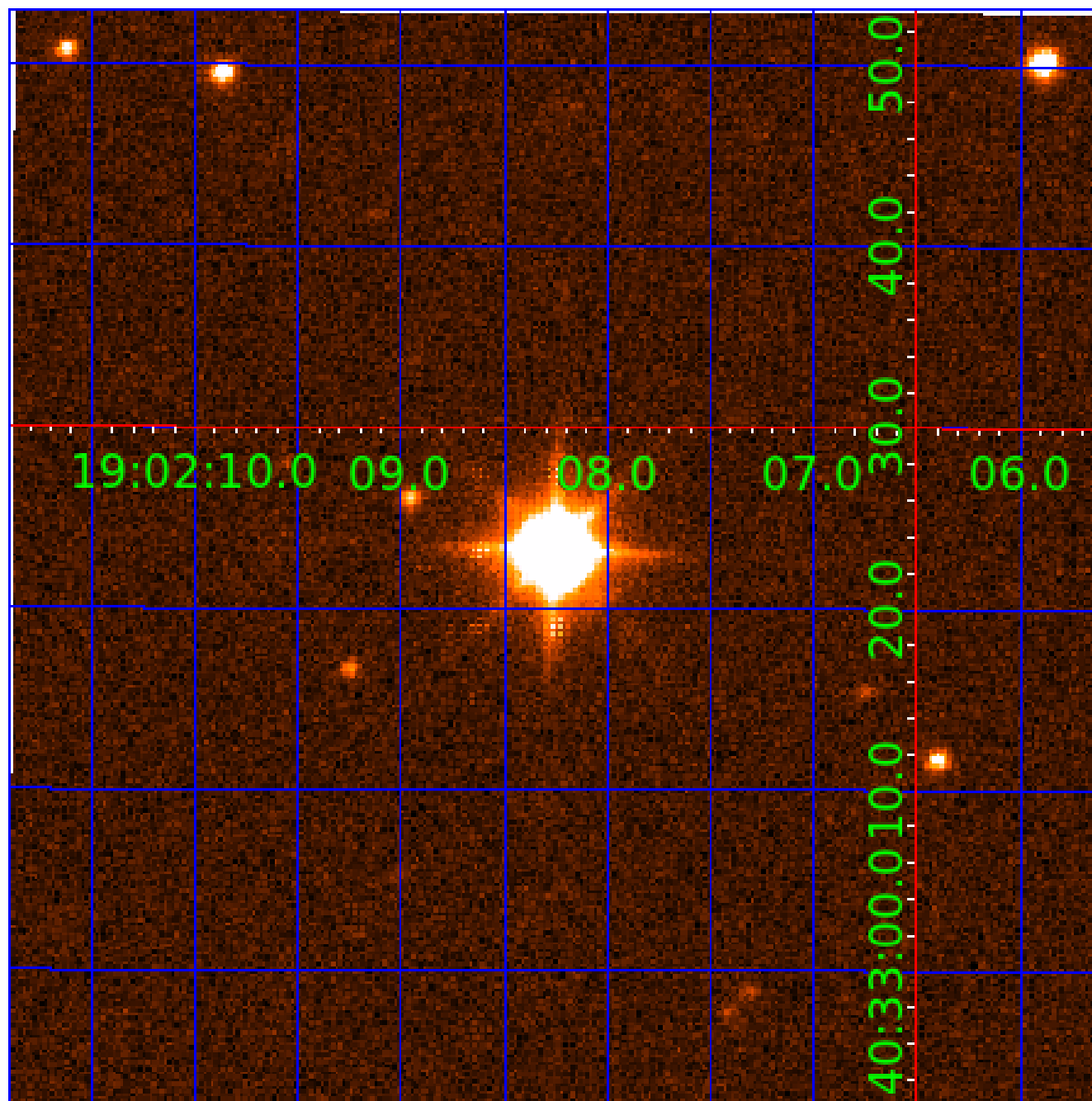


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005344895

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})
005344895-01	OBS	No	447.199472	190.182690	1154.0	4.107	17.1	8.2	0.74	4472	2.55	0.18
005344895-02	OBS	No	445.915640	150.306620	657.7	5.164	14.3	4.2	0.74	4472	2.30	0.18
005344895-03	OBS	No	311.776645	342.766361	977.9	5.741	15.6	5.9	0.74	4472	2.29	0.30
005344895-04	OBS	No	420.249825	253.825315	150.9	3.466	14.7	1.3	0.74	4472	1.11	0.20
005344895-05	OBS	No	478.179544	138.472760	1436.7	7.161	14.6	8.3	0.74	4472	2.73	0.17
005344895-06	OBS	No	334.937198	245.436207	1370.3	4.851	13.7	7.9	0.74	4472	2.88	0.27
005344895-07	OBS	No	317.909115	424.173270	2149.2	27.421	12.7	8.6	0.74	4472	3.25	0.29
005344895-08	OBS	No	164.027661	177.751020	2296.3	119.094	12.8	8.1	0.74	4472	3.78	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005344895-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
005344895-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005344895-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005344895-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

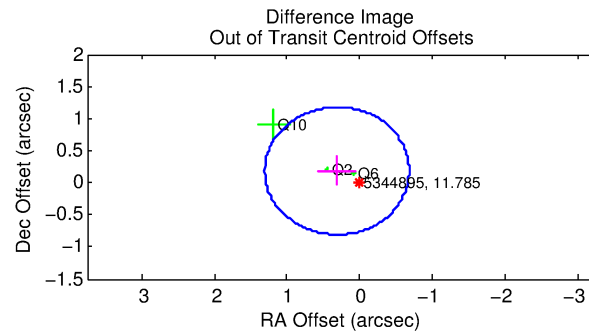
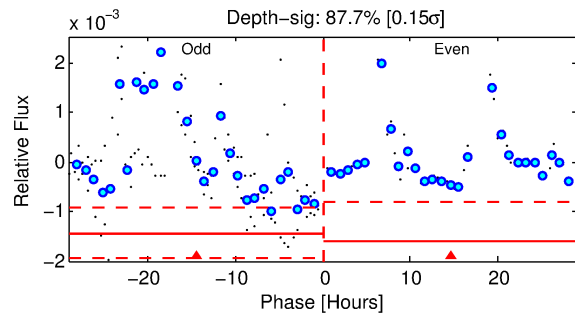
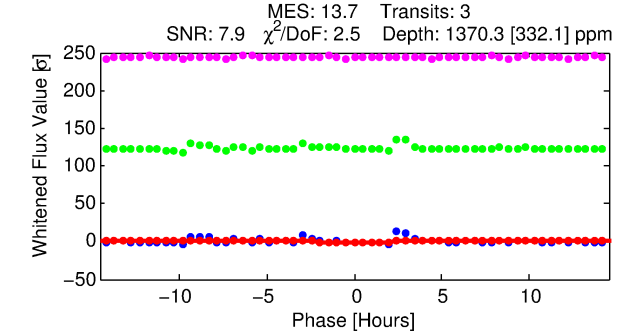
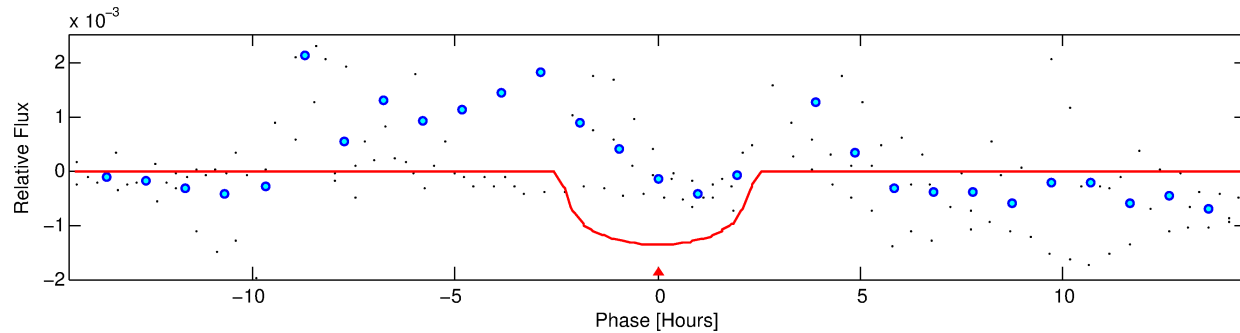
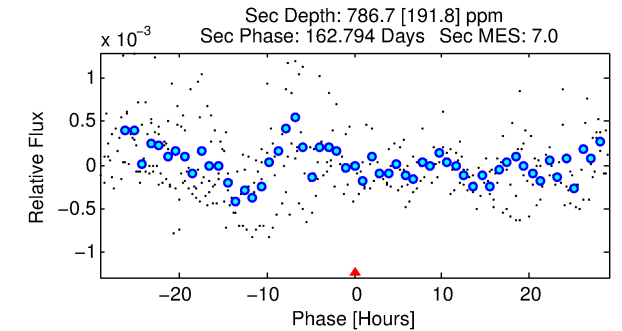
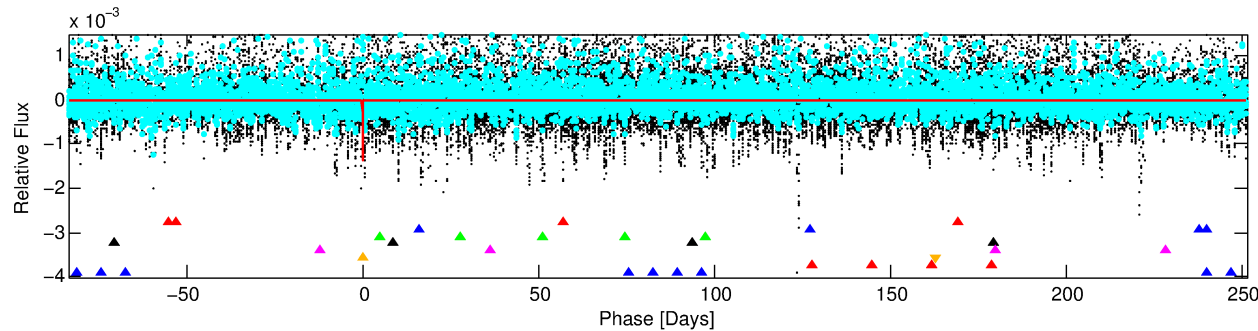
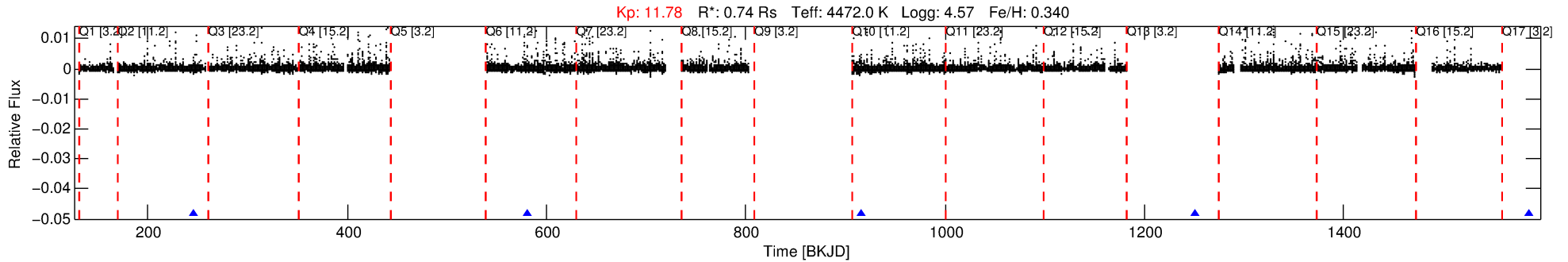
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005344895-06

No Significant Match Found

DV One-Page Summary

KIC: 5344895 Candidate: 6 of 8 Period: 334.937 d



DV Fit Results:

Period = 334.93720 [0.00880] d
Epoch = 245.4362 [0.0103] BKJD
Rp/R* = 0.0357 [0.0304]
a/R* = 419.84 [1052.37]
b = 0.66 [2.16]
Seff = 0.27 [0.04]
Teq = 184 [7] K
Rp = 2.88 [2.47] Re
a = 0.8515 [0.0622] AU
Ag = 37856.30 [65342.45] [0.58σ]
Teffp = 3967 [1712] K [2.21σ]

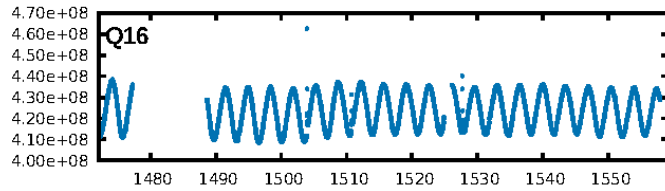
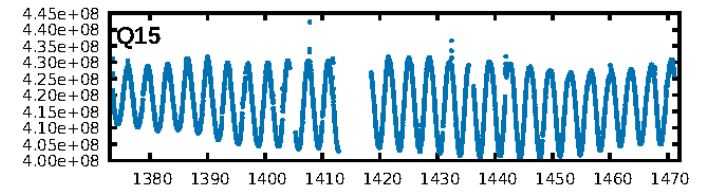
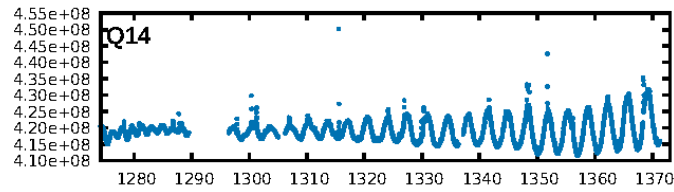
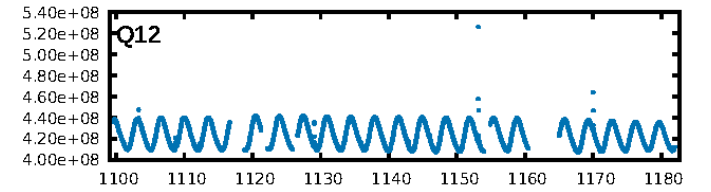
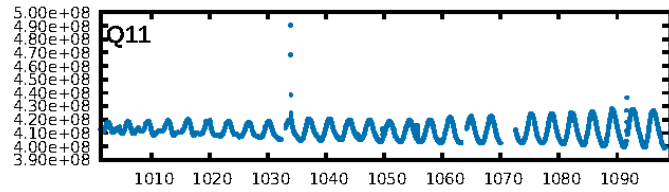
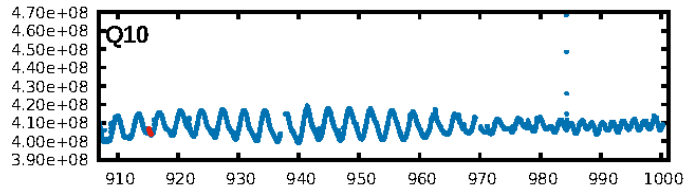
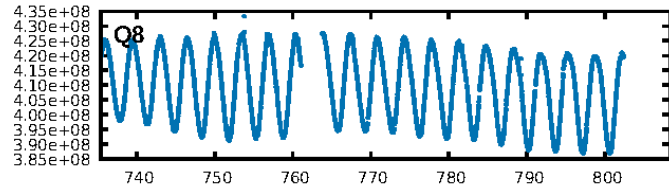
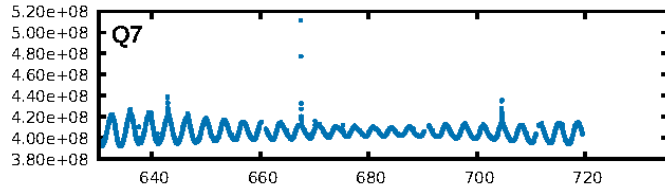
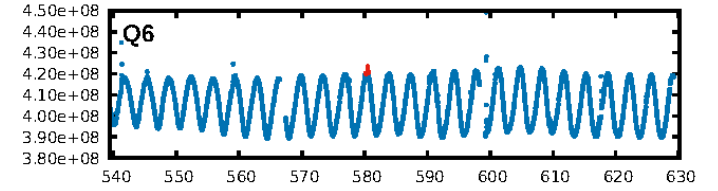
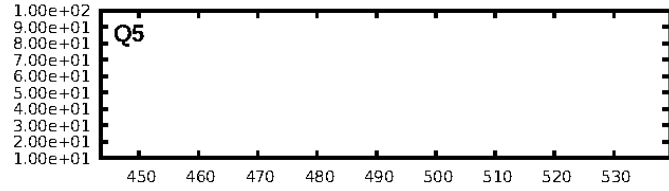
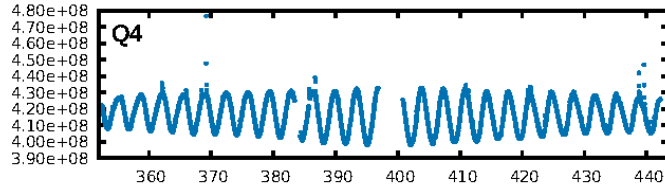
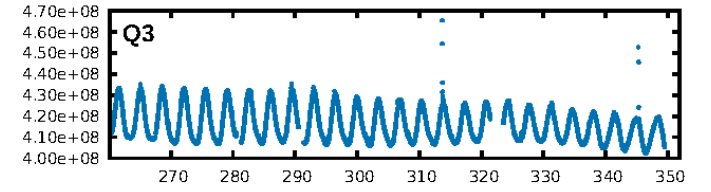
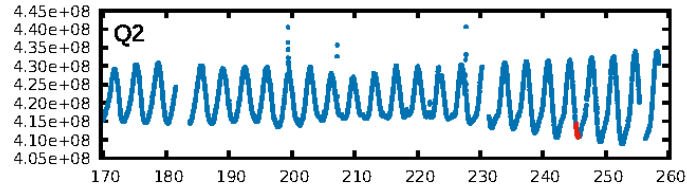
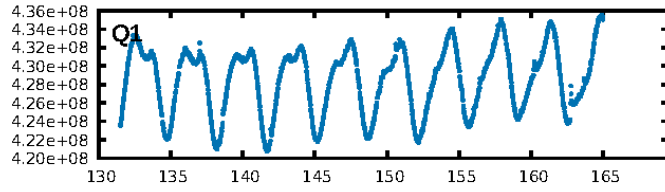
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.68σ]
LongPeriod-sig: 100.0% [343.43σ]
ModelChiSquare2-sig: 43.2%
ModelChiSquareGof-sig: 29.4%
Bootstrap-pfa: 3.69e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.7961
Centroid-sig: 52.1%
Centroid-so: 0.393 arcsec [1.48σ]
OotOffset-rm: 0.364 arcsec [1.10σ]
KicOffset-rm: 0.581 arcsec [1.54σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

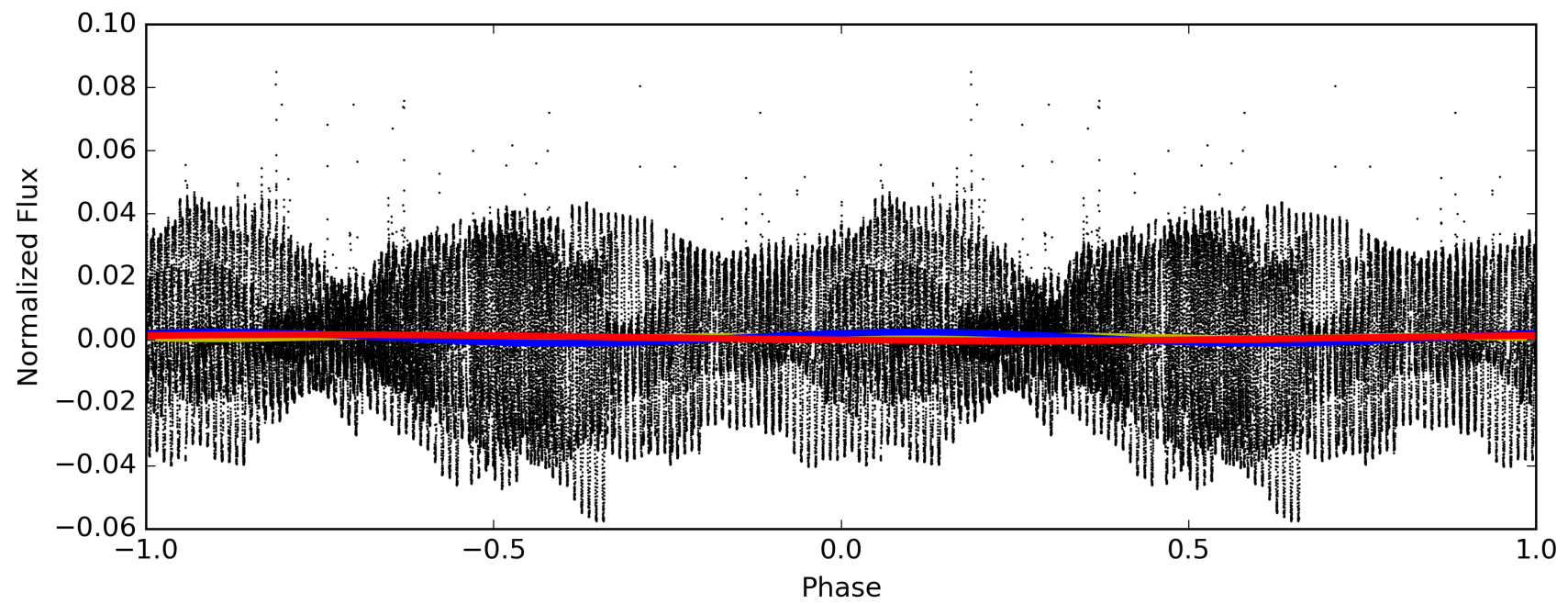
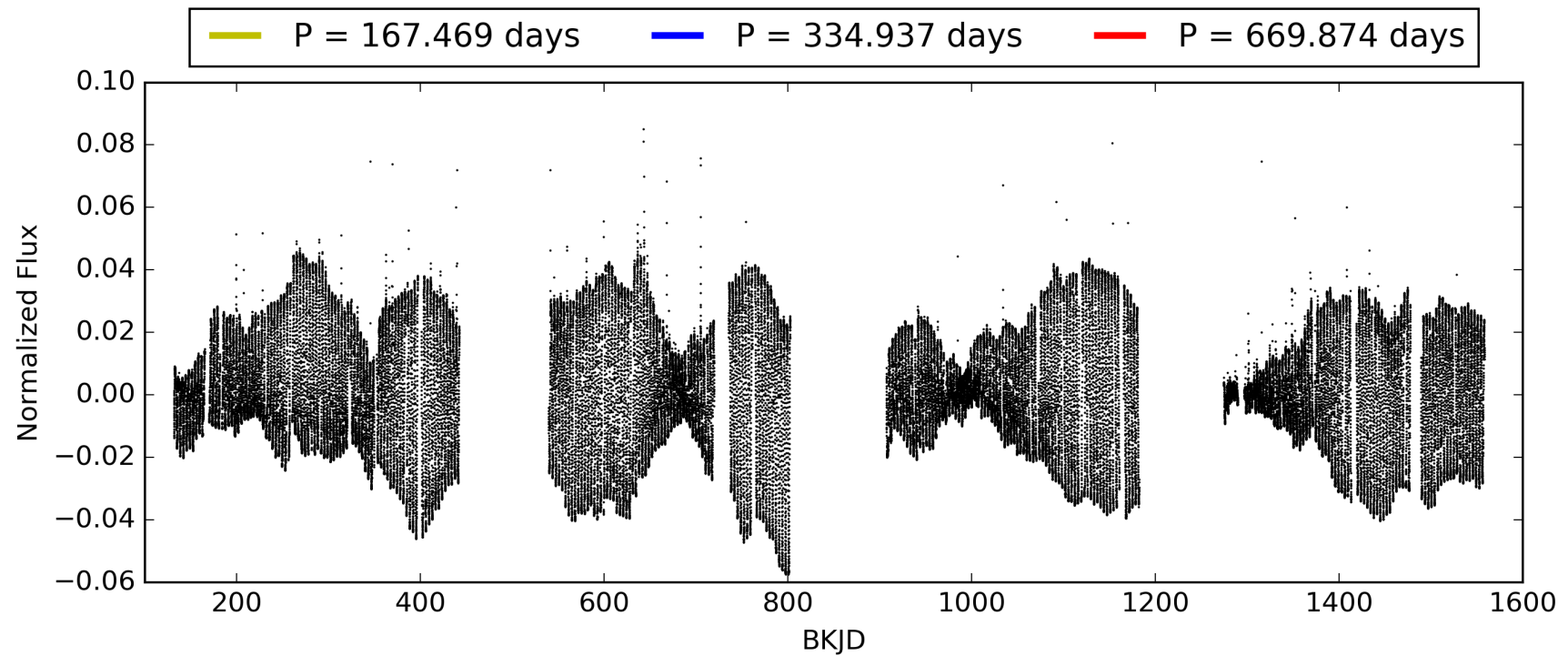
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:06:13 Z

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

TCE 005344895-06, PDC Light Curves

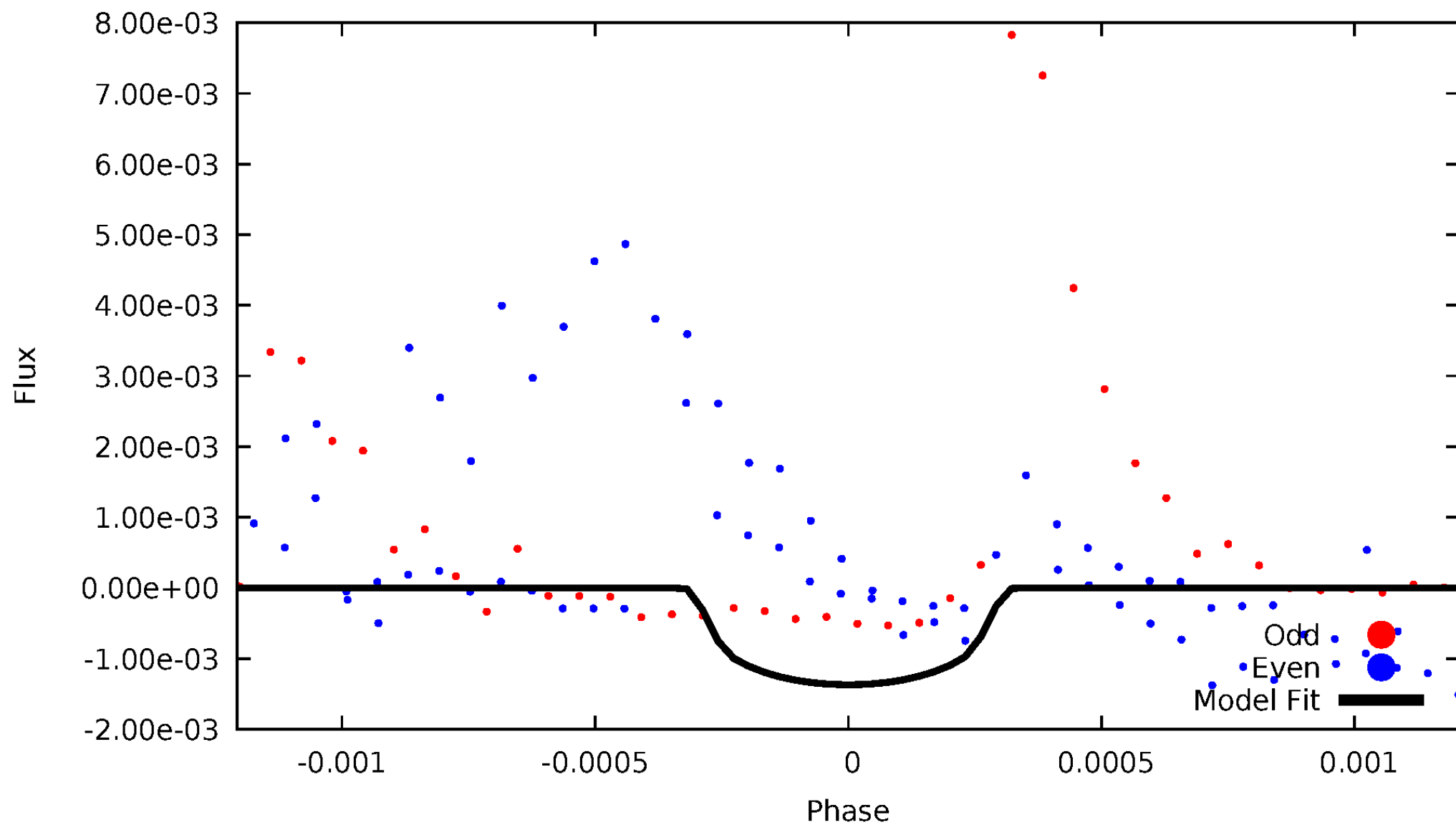


TCE 005344895-06



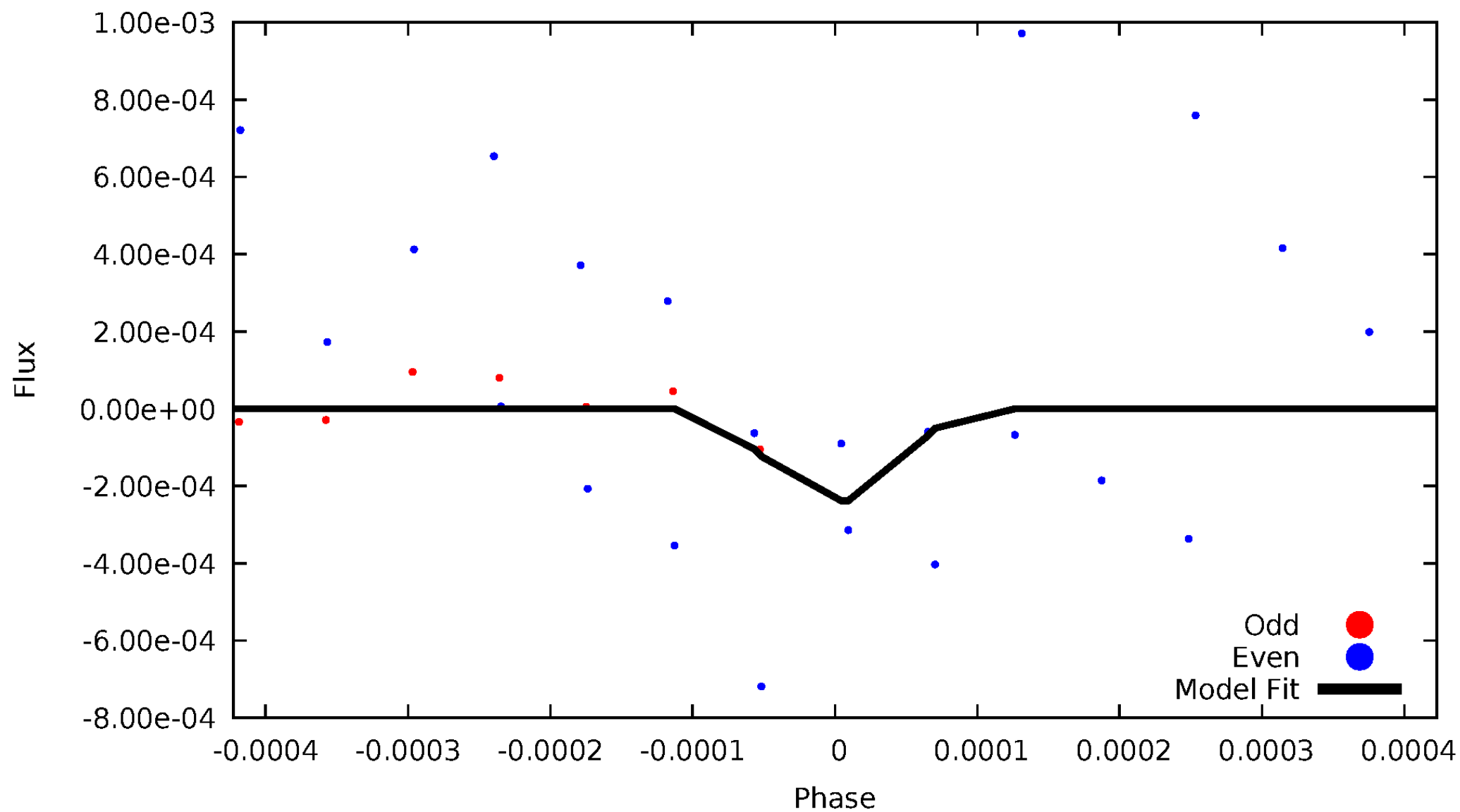
DV Odd/Even

TCE 005344895-06



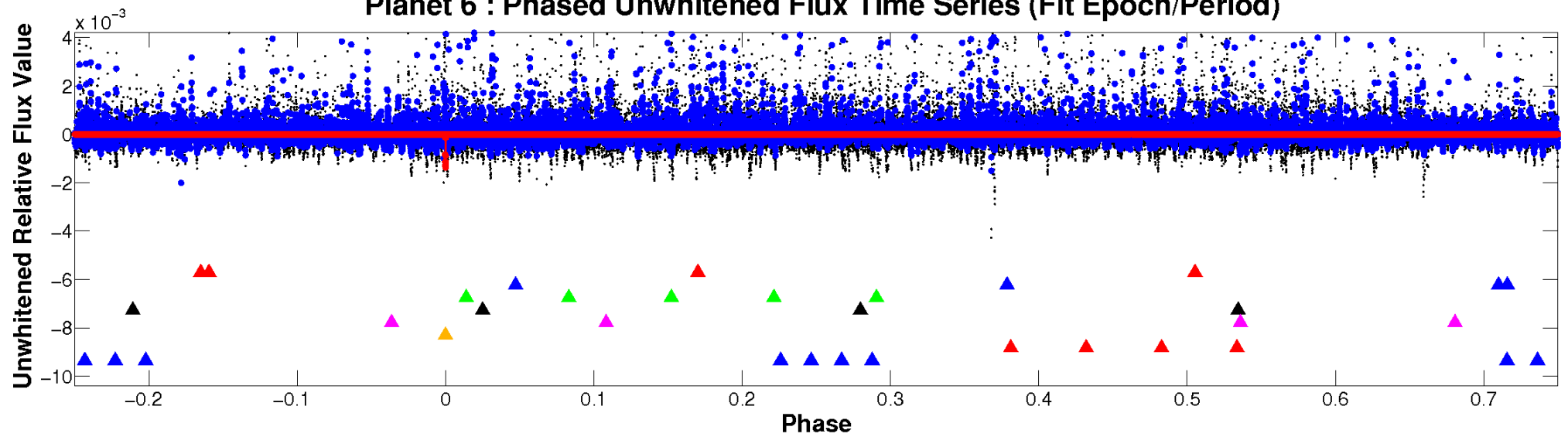
ALT Odd/Even

TCE 005344895-06

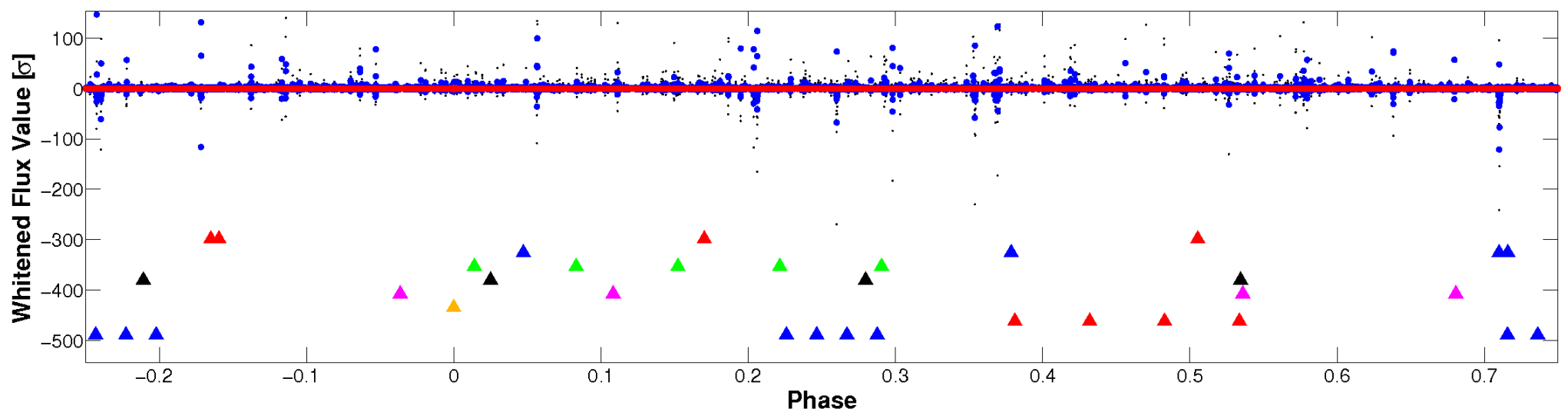


Non-Whitened Vs. Whitened Light Curve

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

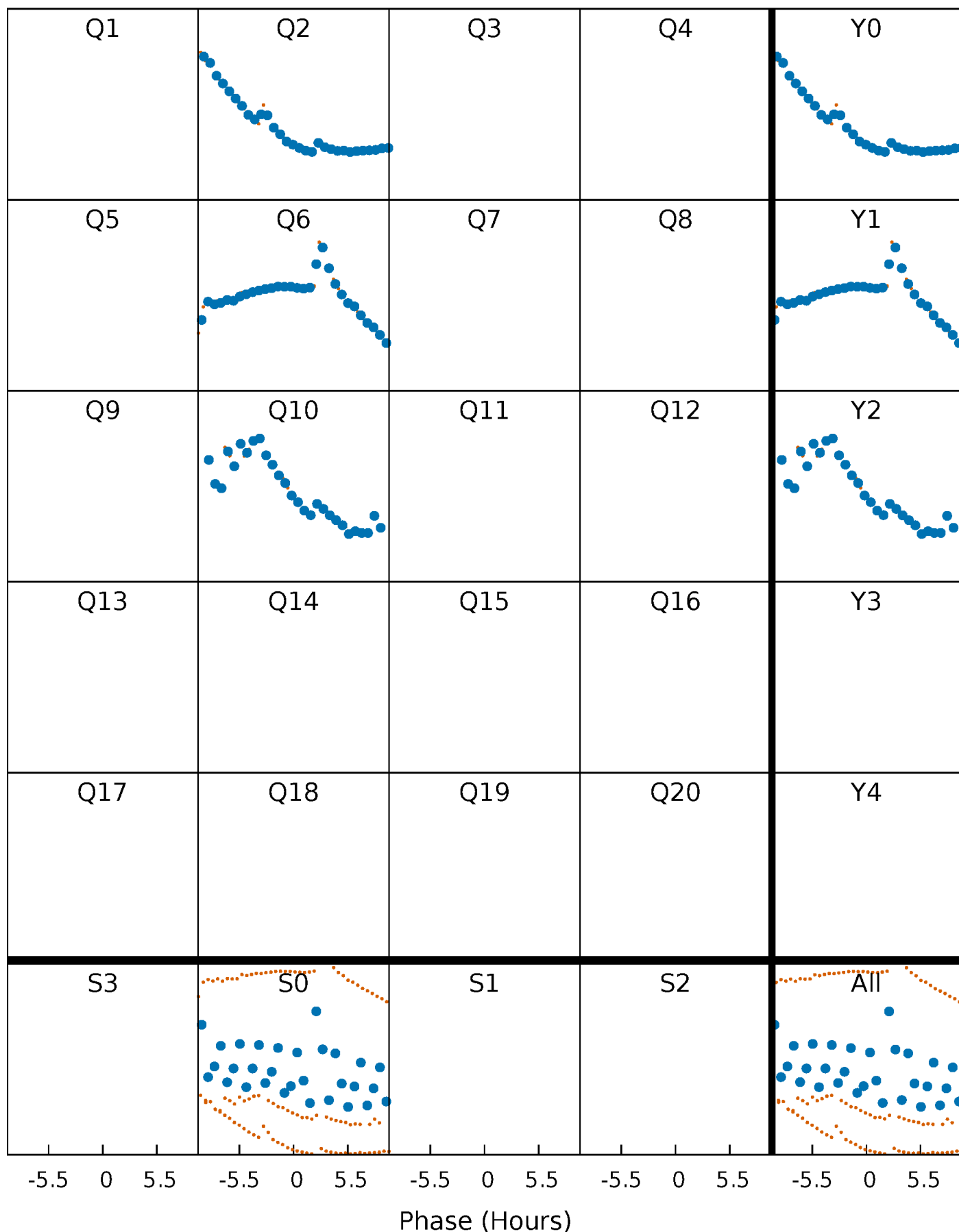


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



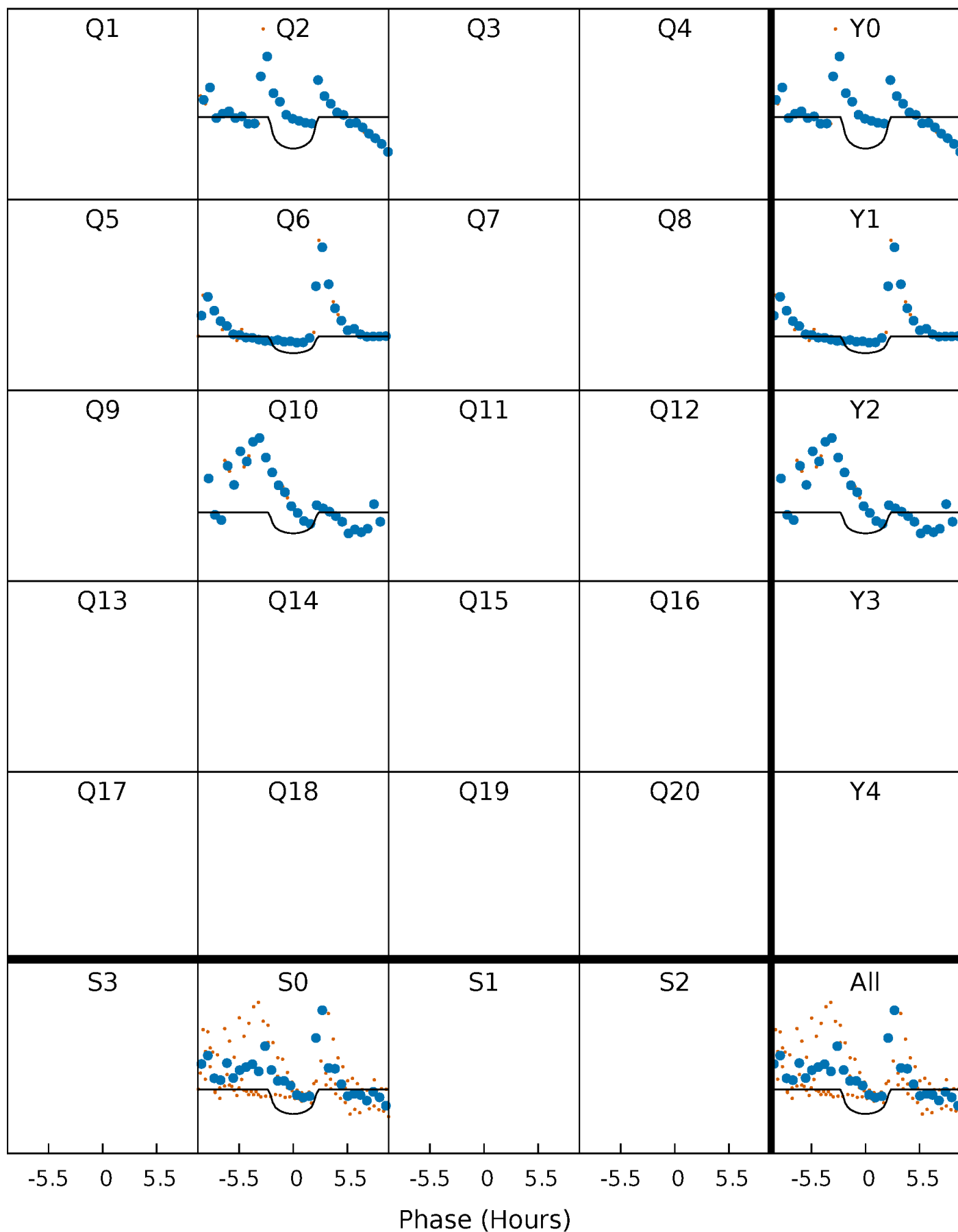
PDC Quarter-Phased Transit Curves

TCE 005344895-06 P=334.937198 Days $T_0=245.436206$ (BKJD)



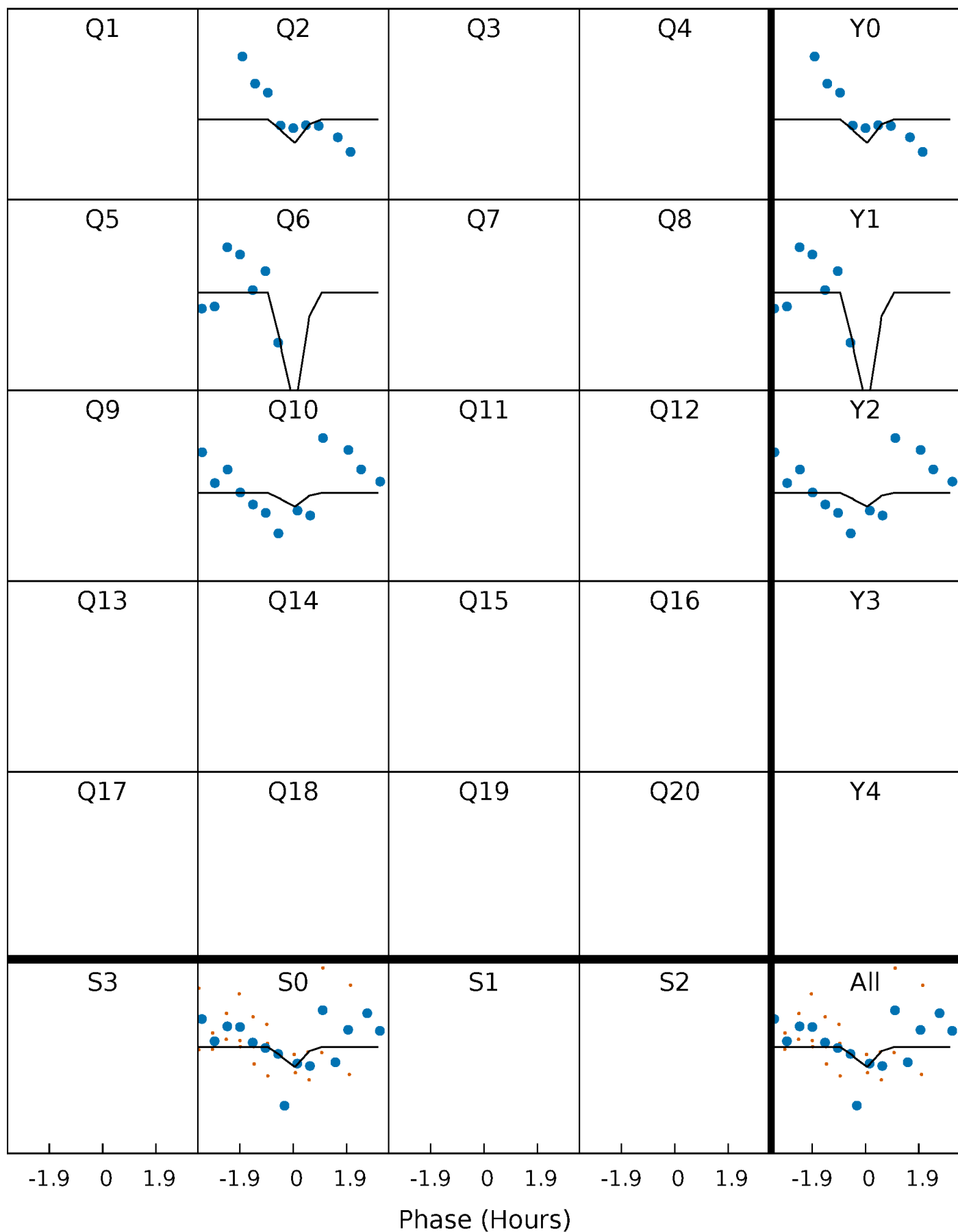
DV Quarter-Phased Transit Curves

TCE 005344895-06 P=334.937198 Days $T_0=245.436206$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

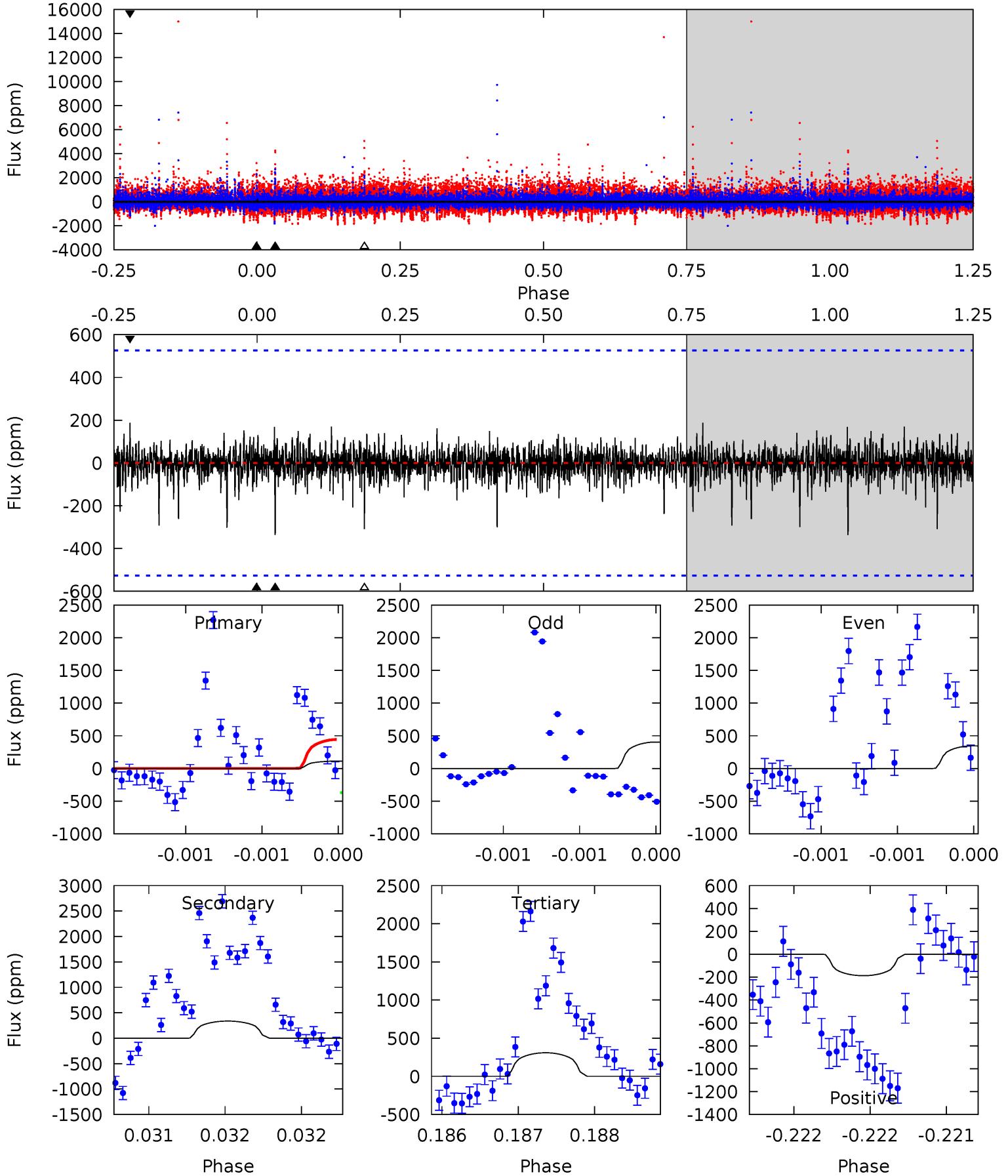
TCE 005344895-06 P=334.967349 Days $T_0=245.429694$ (BKJD)



DV Model-Shift Uniqueness Test

005344895-06, P = 334.937198 Days, E = 245.436206 Days

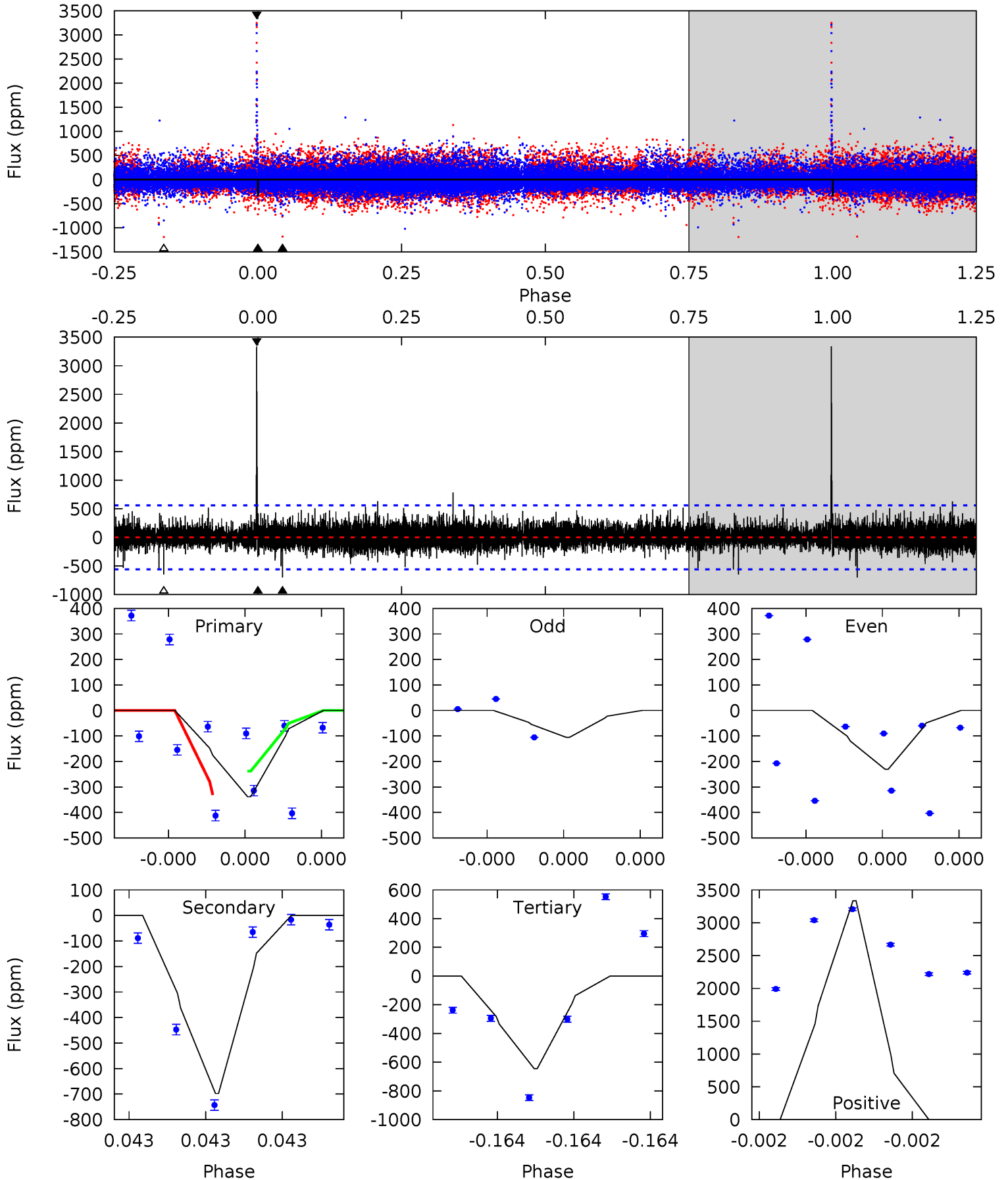
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.19	3.53	3.25	1.97	5.53	3.41	0.52	-2.05	-0.77	0.29	1.57	0.11	0.85	0.36	0.39



Alt Model-Shift Uniqueness Test

005344895-06, P = 334.967349 Days, E = 245.429694 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.52	7.26	6.70	34.7	5.81	3.84	1.24	-3.19	-31.2	0.55	-27.5	0.71	1.00	0.83	0.44



Stellar Parameters For KIC 005344895

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4472^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.740^{+0.025}_{-0.063}$	$0.733^{+0.041}_{-0.046}$	$2.545^{+0.645}_{-0.185}$
	+3%/-3%	+1%/-0%	+29%/-88%	+3%/-9%	+6%/-6%	+25%/-7%
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 005344895-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-336 ± 95	$3.07^{+2.18}_{-1.79}$	255^{+8}_{-9}	3450^{+1217}_{-528}	14453^{+67568}_{-9813}
Alt.	-698 ± 96	$2.26^{+1.97}_{-1.51}$	255^{+8}_{-9}	4383^{+2809}_{-858}	$55933^{+416595}_{-40068}$

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

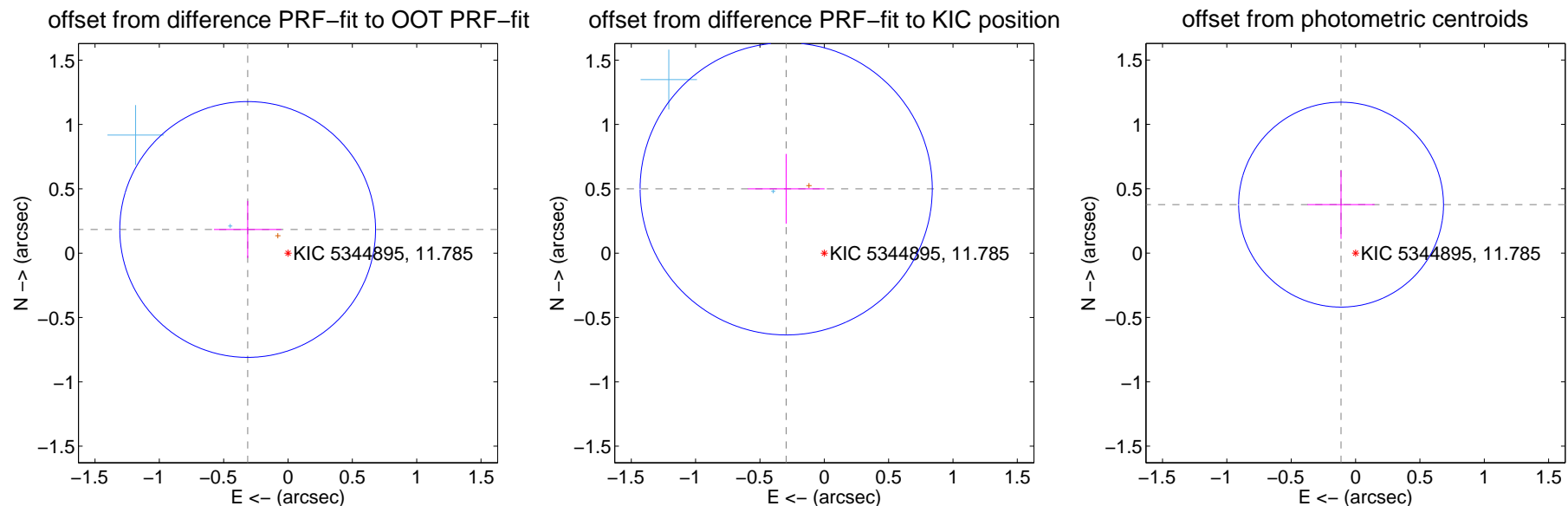
DV Centroid Data

Supplemental centroid analysis for 005344895-06. **Kepler magnitude: 11.79.** Transit SNR 7.90

There are 2 quarters with good PRF difference image offsets

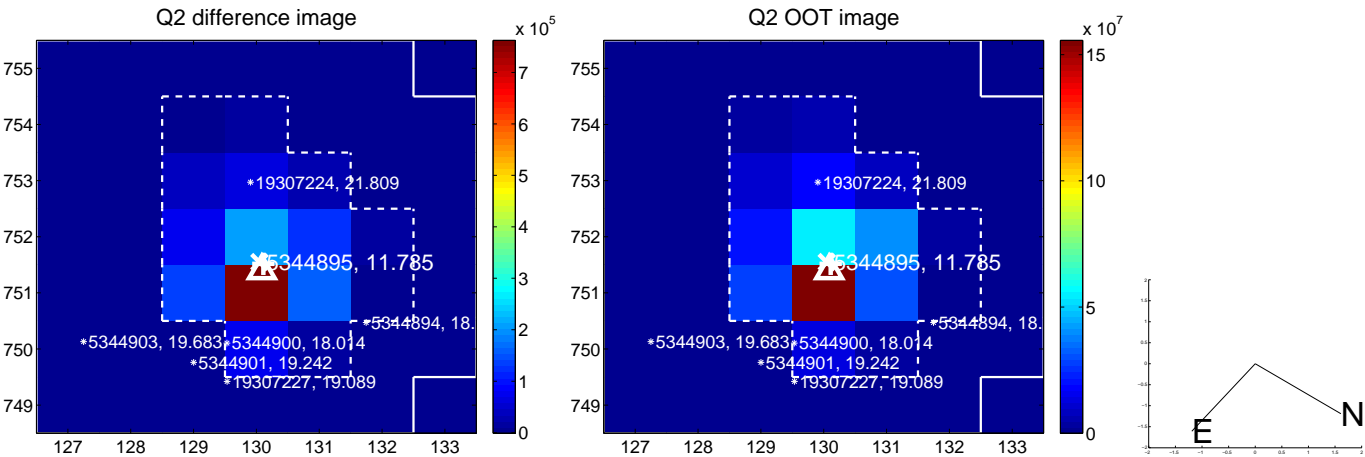
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.364 ± 0.331	1.10	0.314 ± 0.262	0.184 ± 0.222
PRF-fit source offset from KIC position	0.581 ± 0.378	1.54	0.296 ± 0.298	0.500 ± 0.272
photometric centroid source offset	0.39 ± 0.27	1.48	0.11 ± 0.26	0.38 ± 0.27

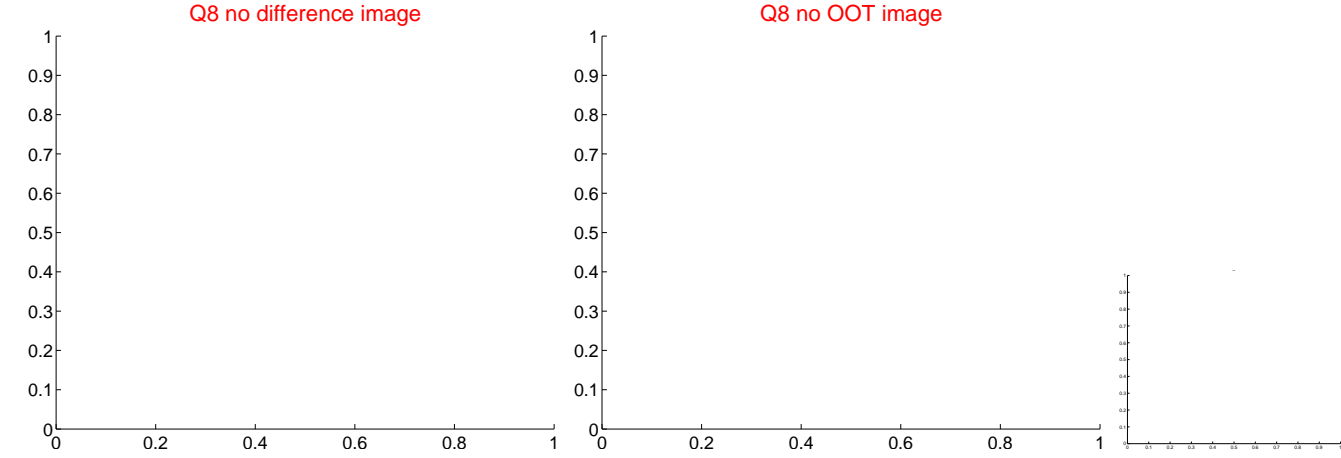
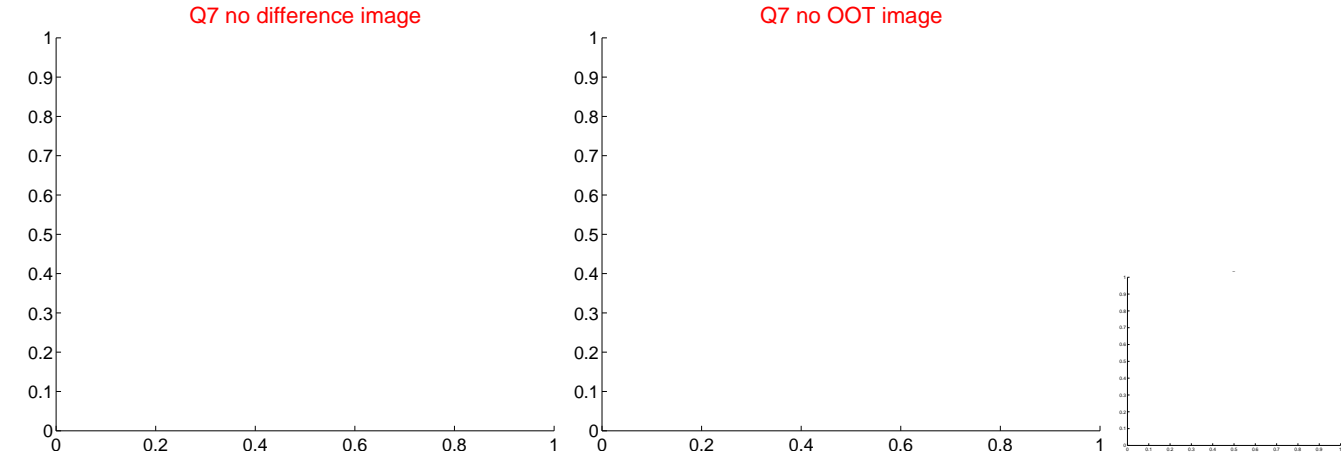
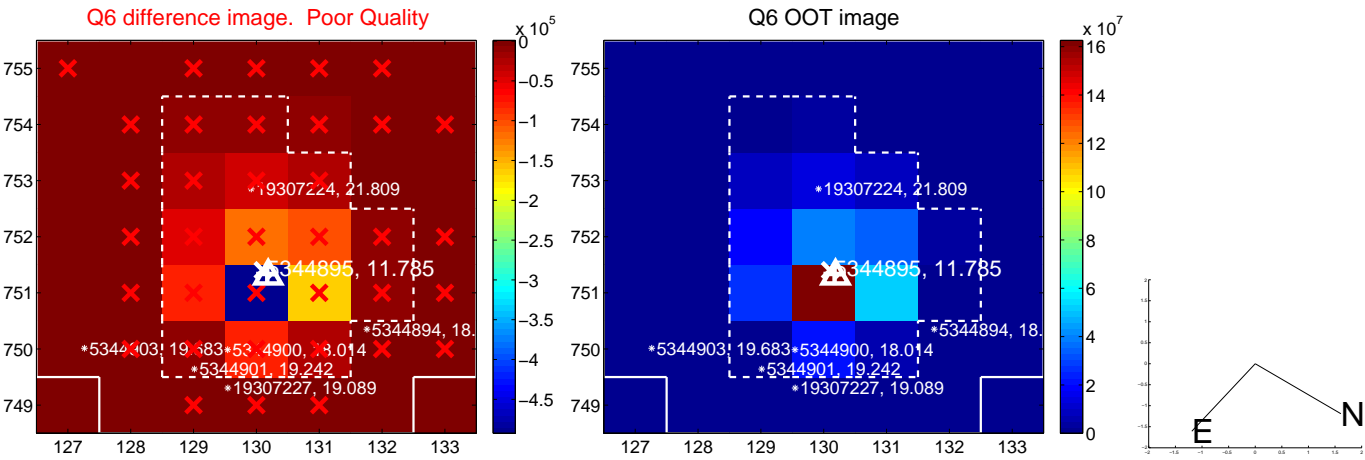


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

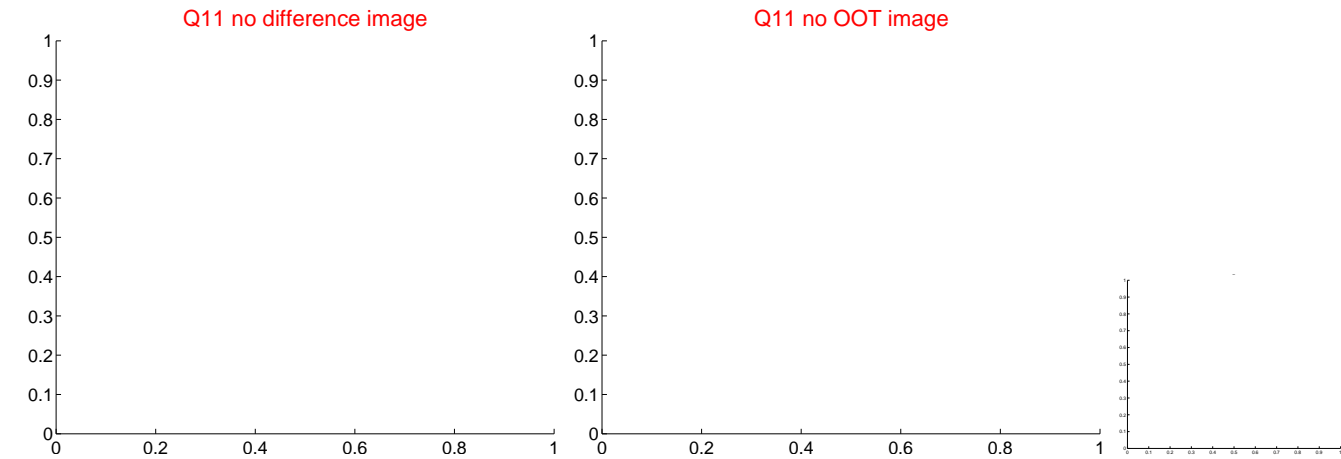
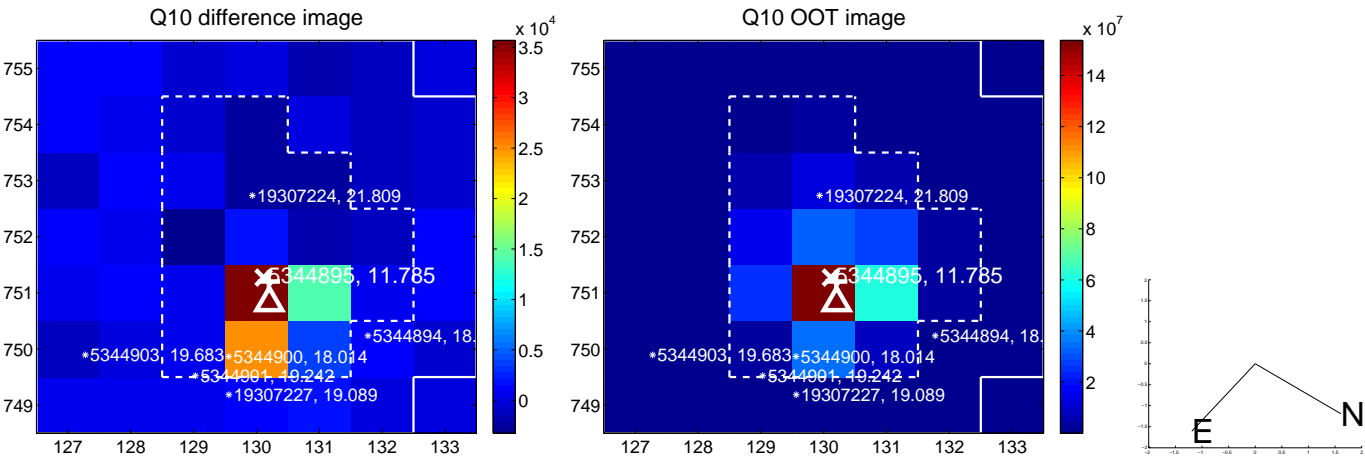
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



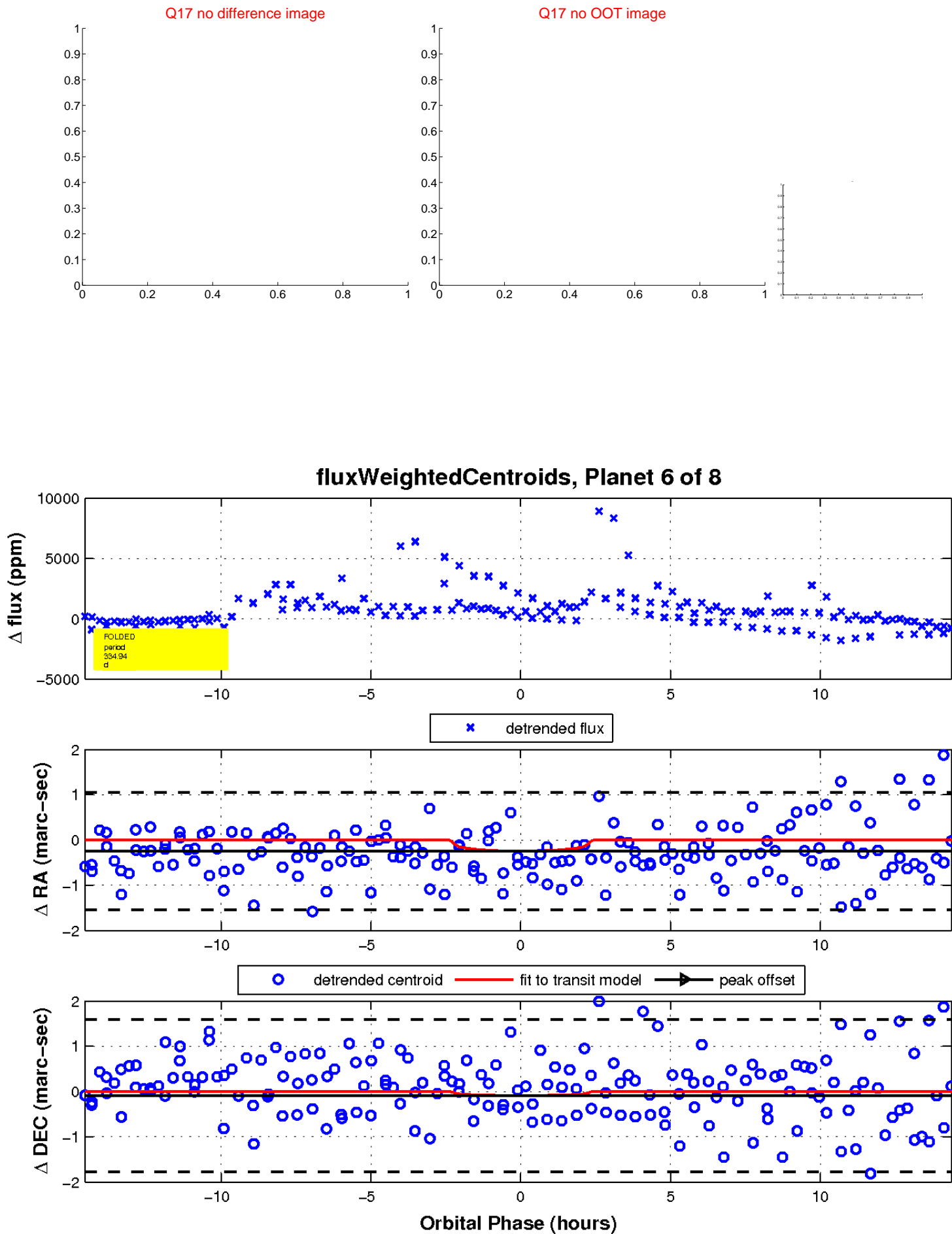
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

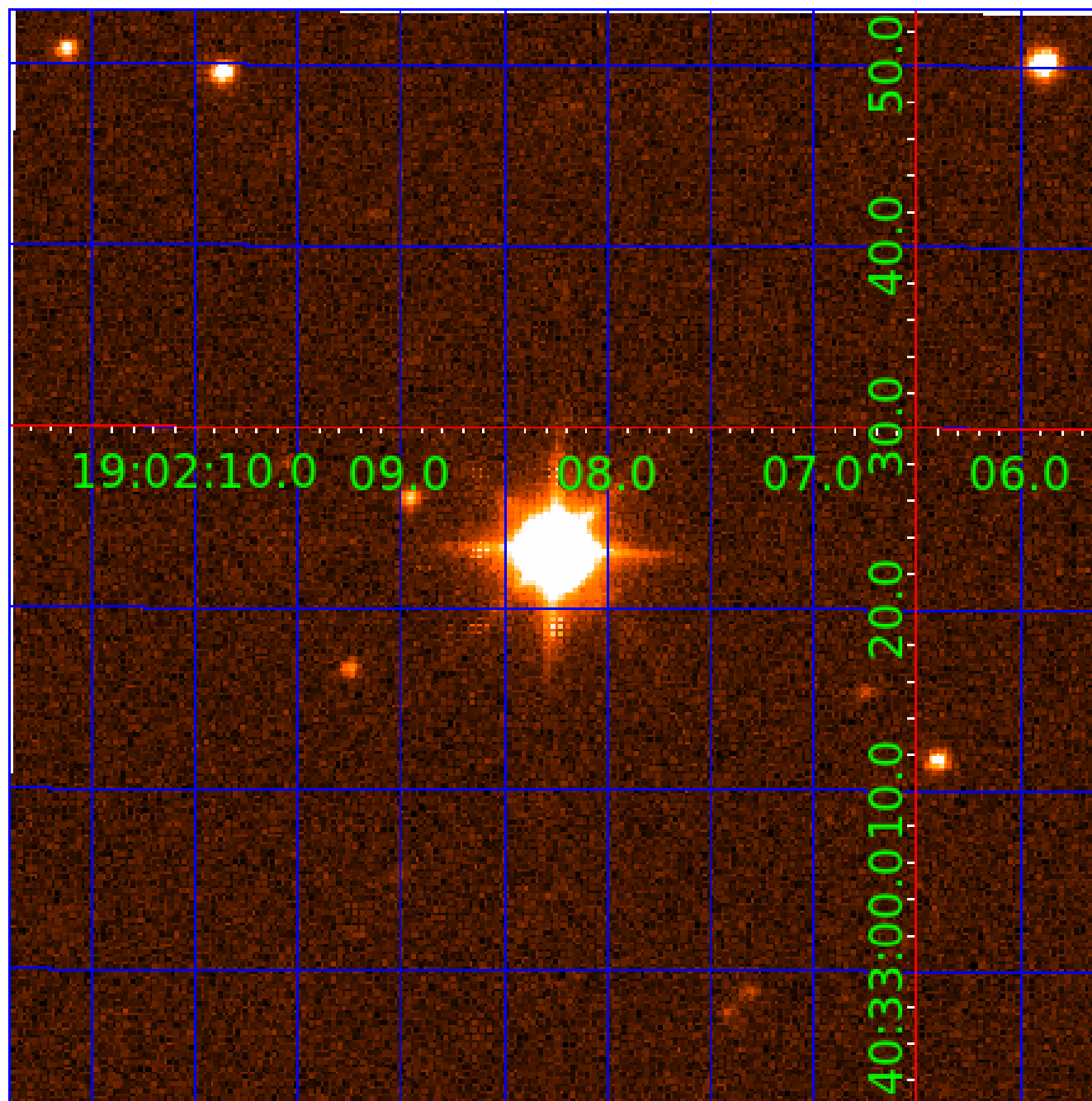


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005344895

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})
005344895-01	OBS	No	447.199472	190.182690	1154.0	4.107	17.1	8.2	0.74	4472	2.55	0.18
005344895-02	OBS	No	445.915640	150.306620	657.7	5.164	14.3	4.2	0.74	4472	2.30	0.18
005344895-03	OBS	No	311.776645	342.766361	977.9	5.741	15.6	5.9	0.74	4472	2.29	0.30
005344895-04	OBS	No	420.249825	253.825315	150.9	3.466	14.7	1.3	0.74	4472	1.11	0.20
005344895-05	OBS	No	478.179544	138.472760	1436.7	7.161	14.6	8.3	0.74	4472	2.73	0.17
005344895-06	OBS	No	334.937198	245.436207	1370.3	4.851	13.7	7.9	0.74	4472	2.88	0.27
005344895-07	OBS	No	317.909115	424.173270	2149.2	27.421	12.7	8.6	0.74	4472	3.25	0.29
005344895-08	OBS	No	164.027661	177.751020	2296.3	119.094	12.8	8.1	0.74	4472	3.78	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005344895-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
005344895-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005344895-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005344895-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

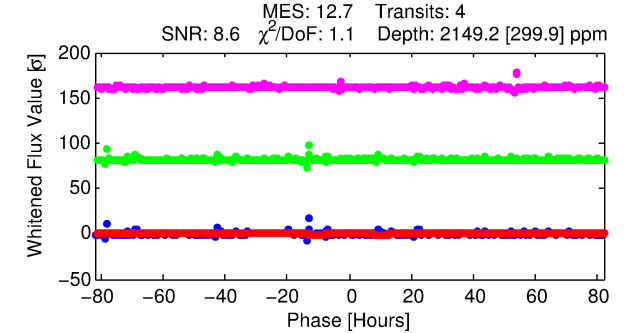
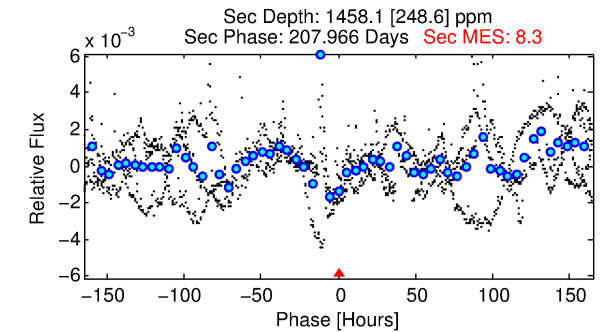
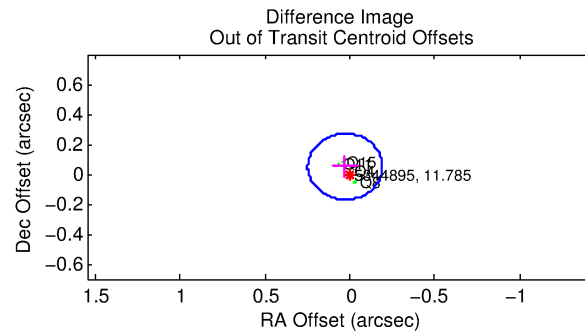
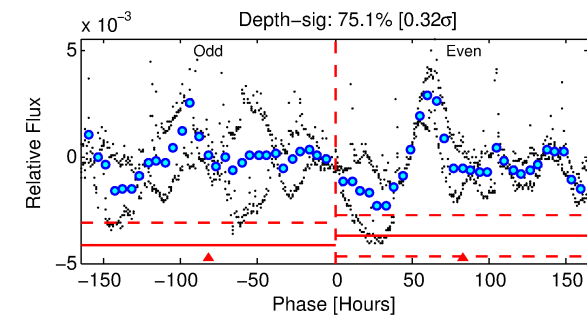
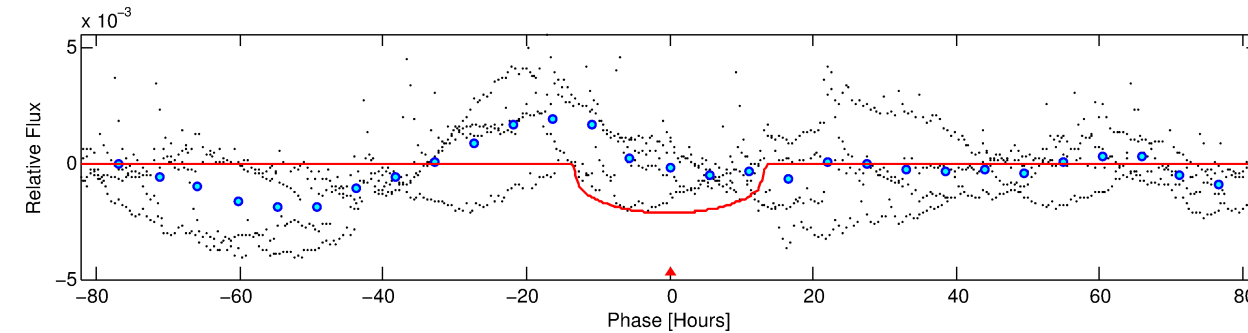
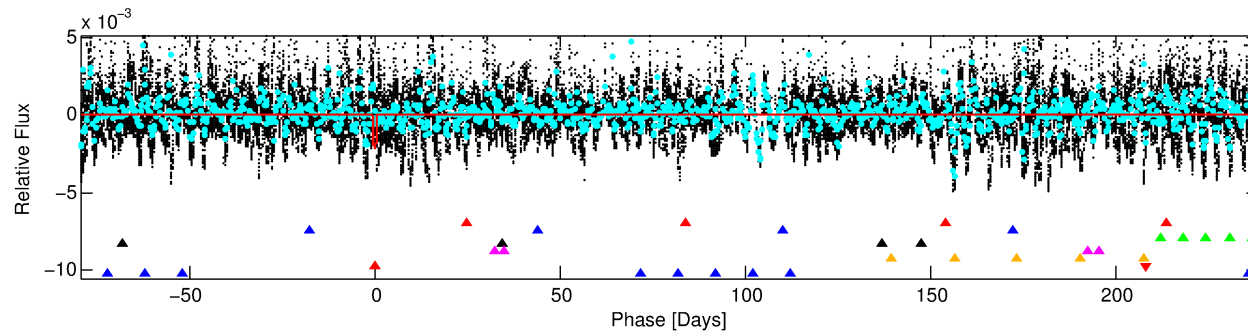
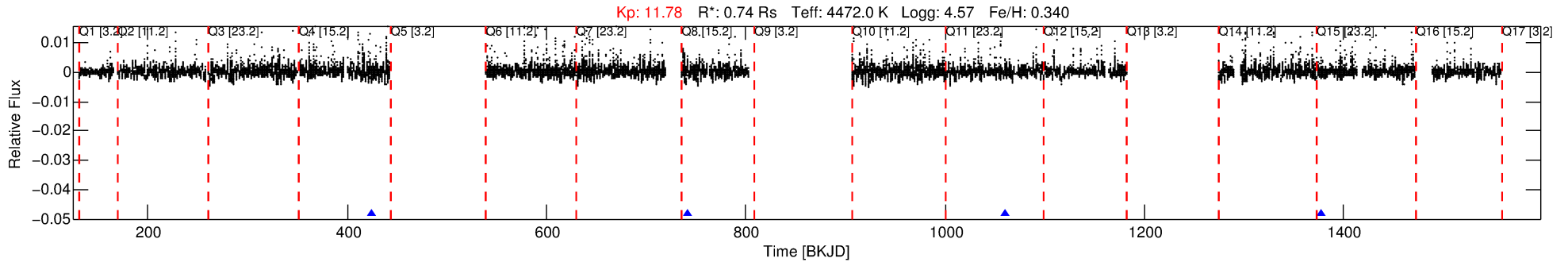
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005344895-07

No Significant Match Found

DV One-Page Summary

KIC: 5344895 Candidate: 7 of 8 Period: 317.909 d



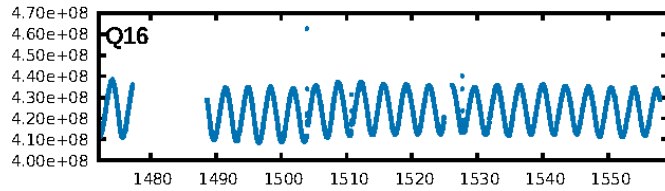
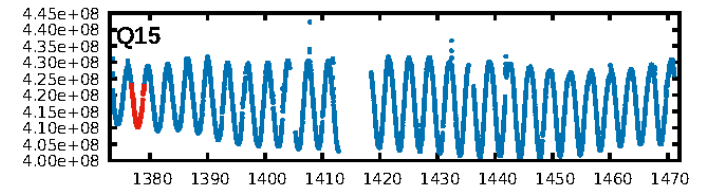
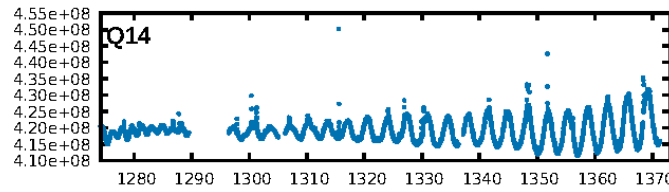
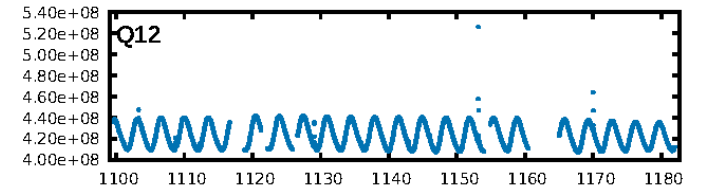
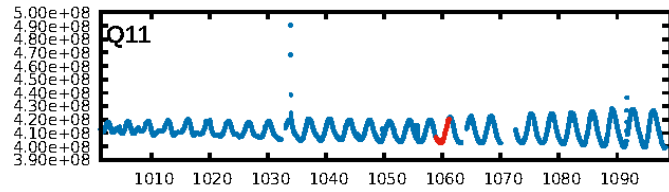
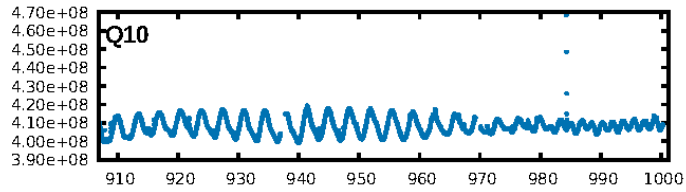
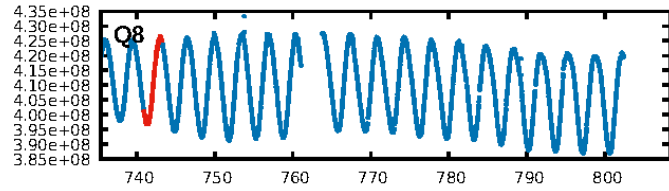
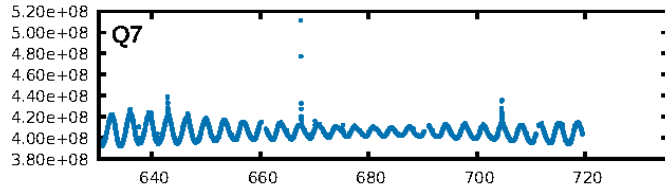
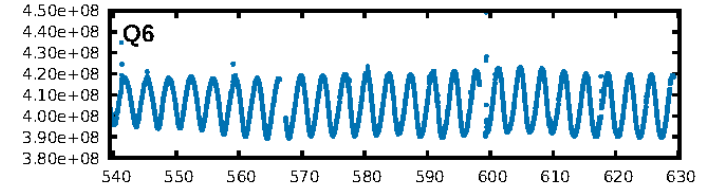
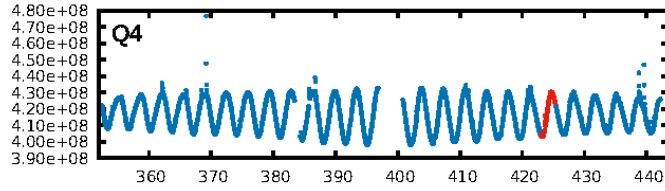
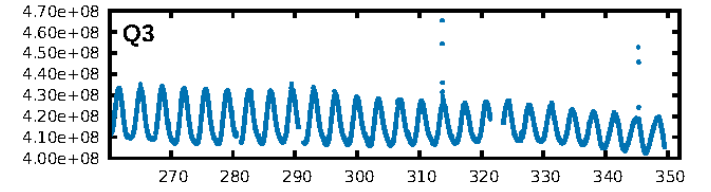
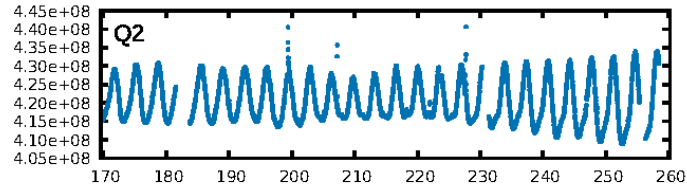
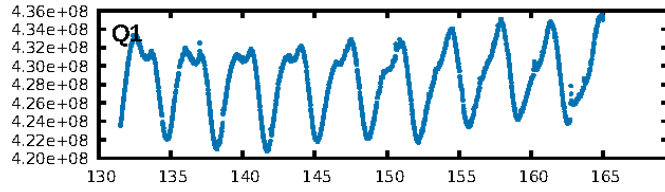
DV Fit Results:

Period = 317.90912 [0.00391] d
Epoch = 424.1733 [0.0079] BKJD
Rp/R* = 0.0403 [0.0041]
a/R* = 92.14 [18.22]
b = 0.01 [18.62]
Seff = 0.29 [0.05]
Teq = 187 [7] K
Rp = 3.26 [0.43] Re
a = 0.8223 [0.0601] AU
Ag = 51191.88 [14629.47] [3.50σ]
Teffp = 4352 [315] K [13.21σ]

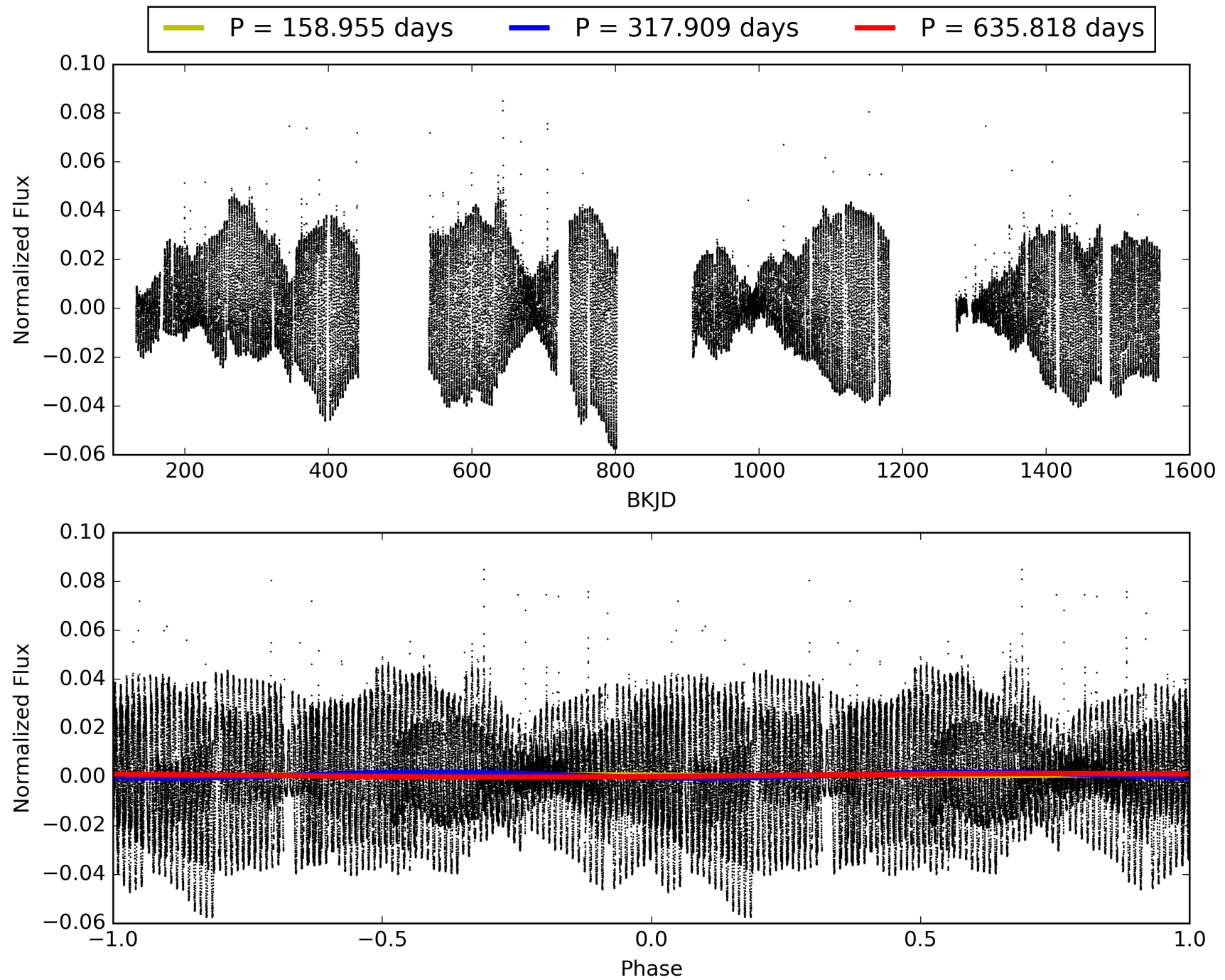
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.25σ]
LongPeriod-sig: 100.0% [14.68σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.57e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.166
Centroid-sig: 18.8%
Centroid-so: 0.319 arcsec [2.64σ]
OotOffset-rm: 0.058 arcsec [0.80σ]
OotOffset-st: 0/2/2/0 [4]
KicOffset-rm: 0.516 arcsec [5.29σ]
KicOffset-st: 0/2/2/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 005344895-07, PDC Light Curves

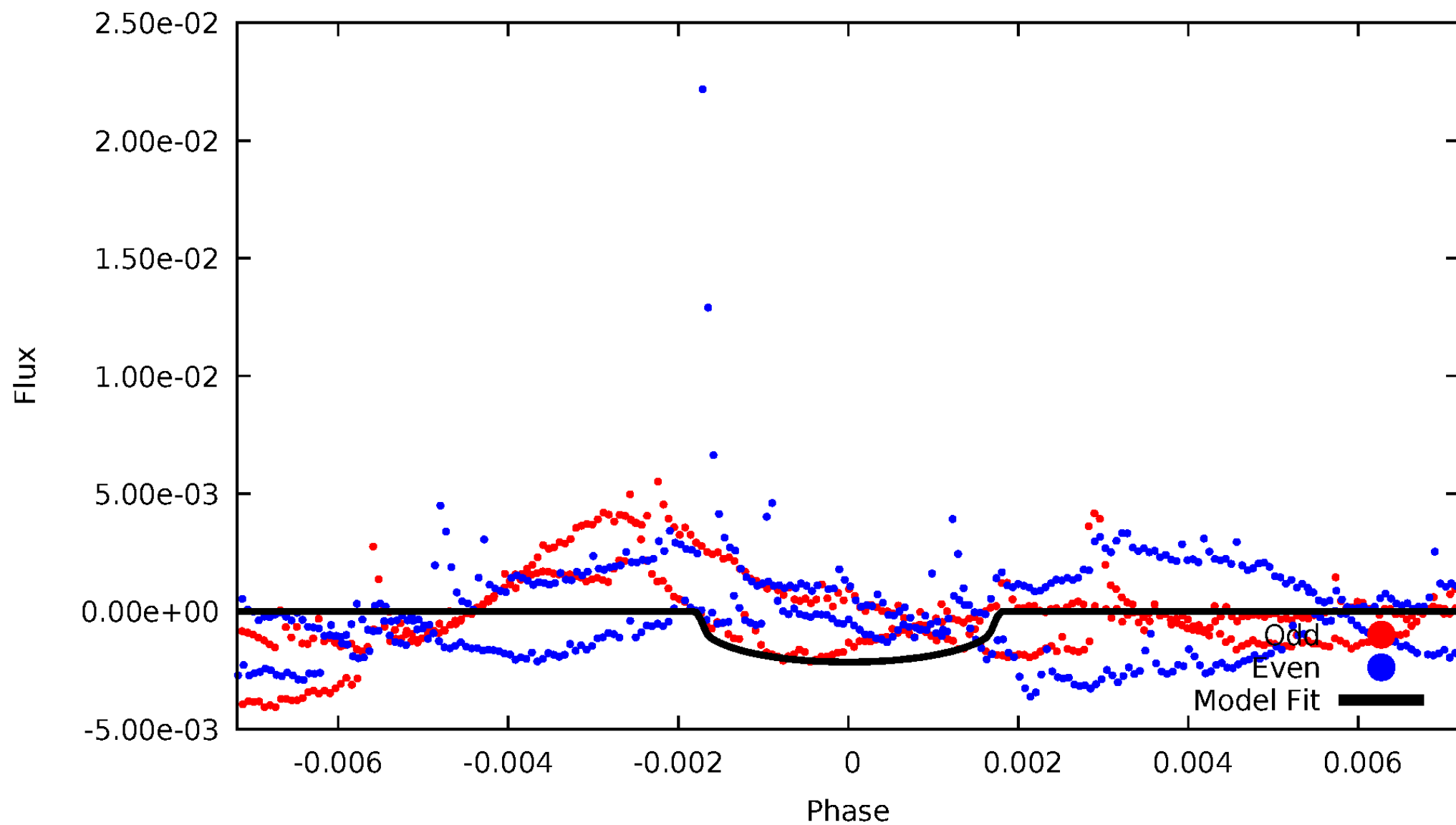


TCE 005344895-07



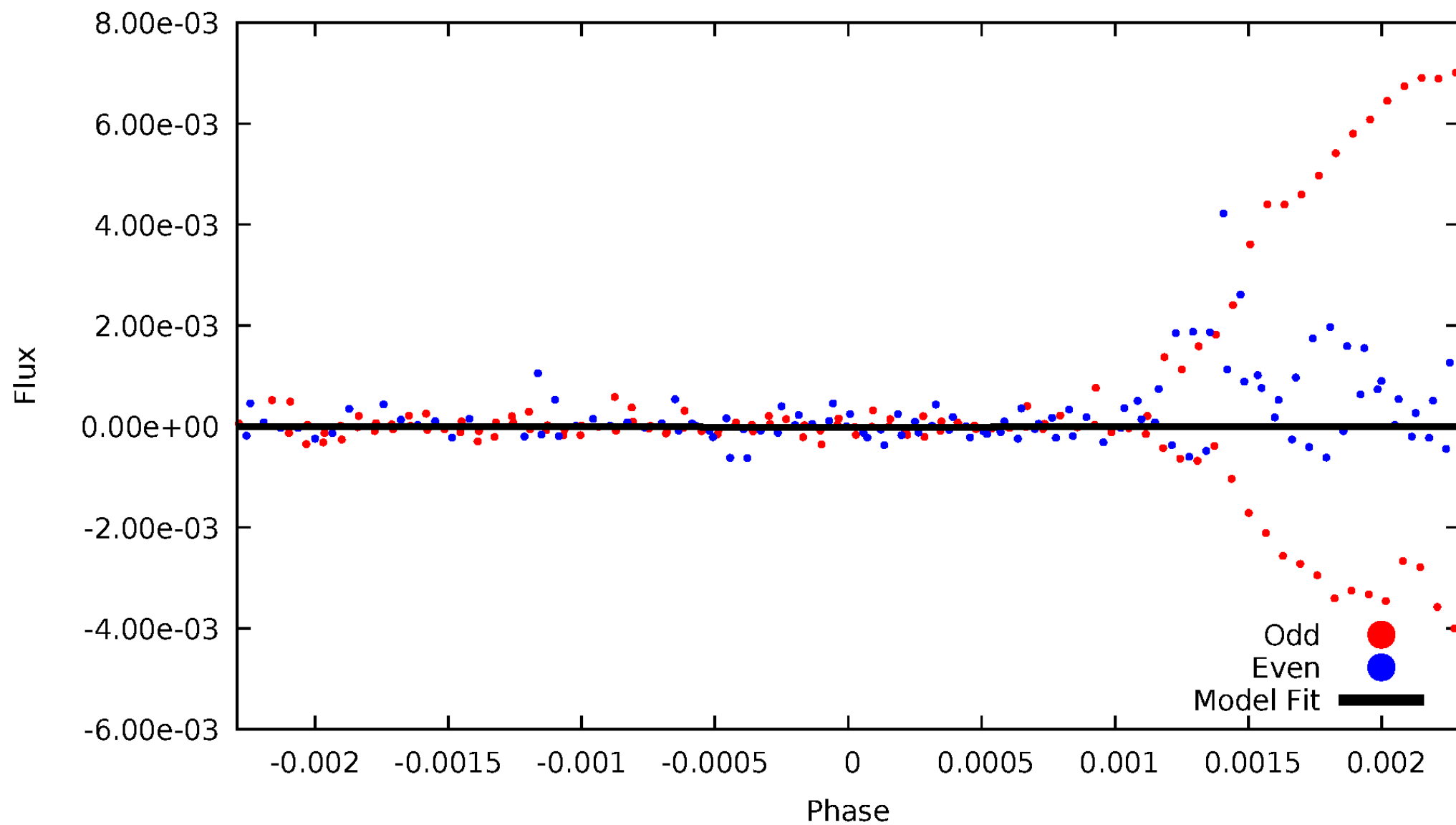
DV Odd/Even

TCE 005344895-07

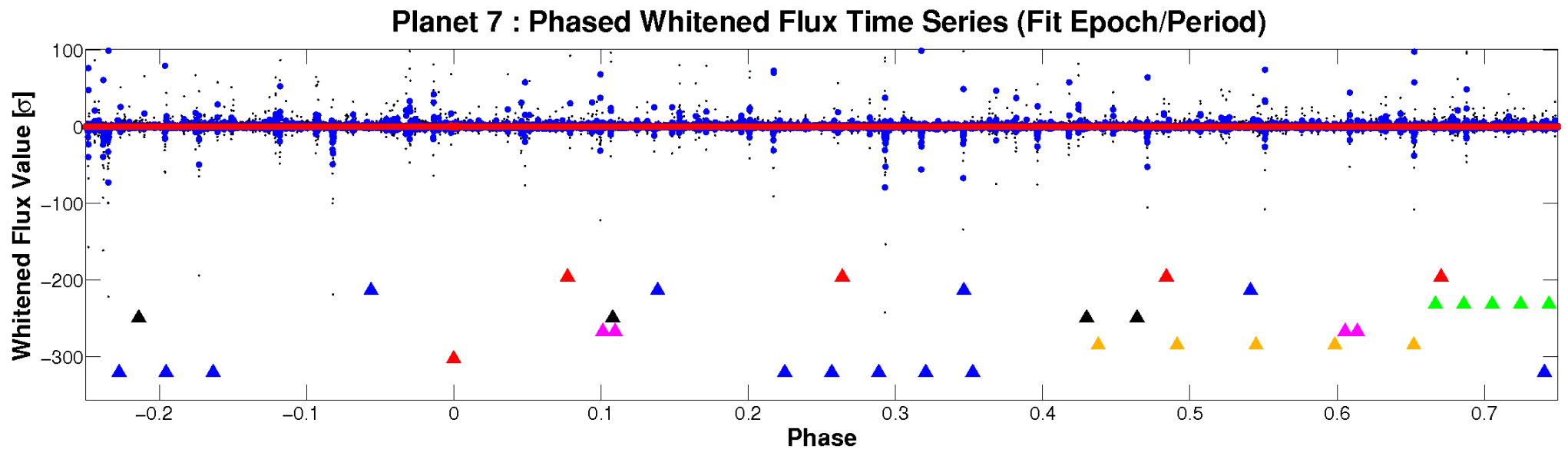
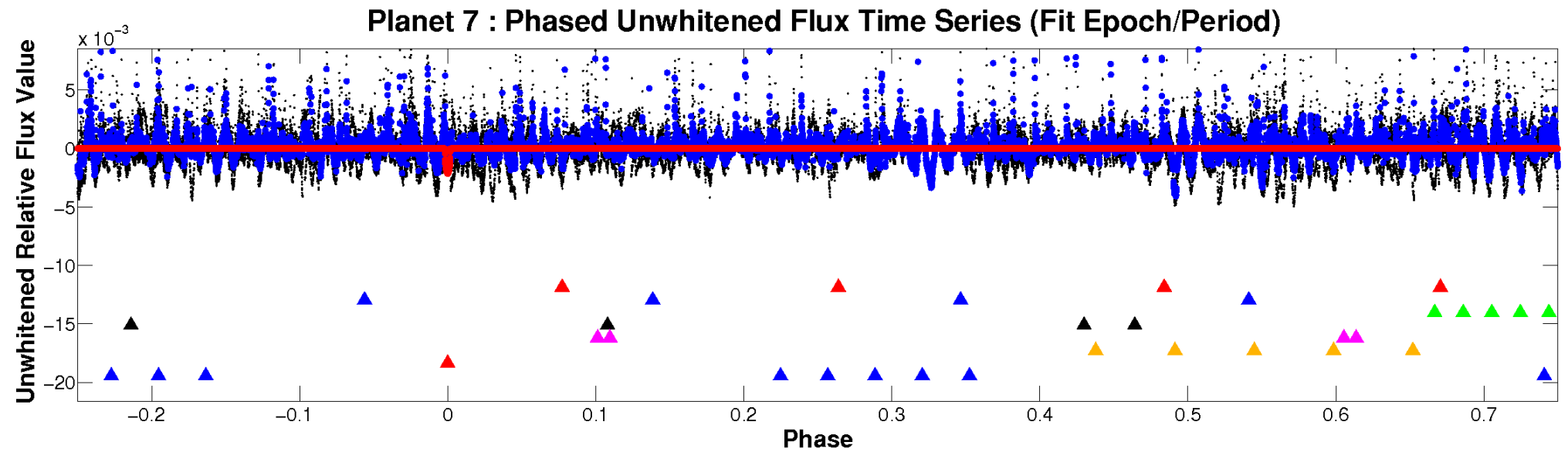


ALT Odd/Even

TCE 005344895-07

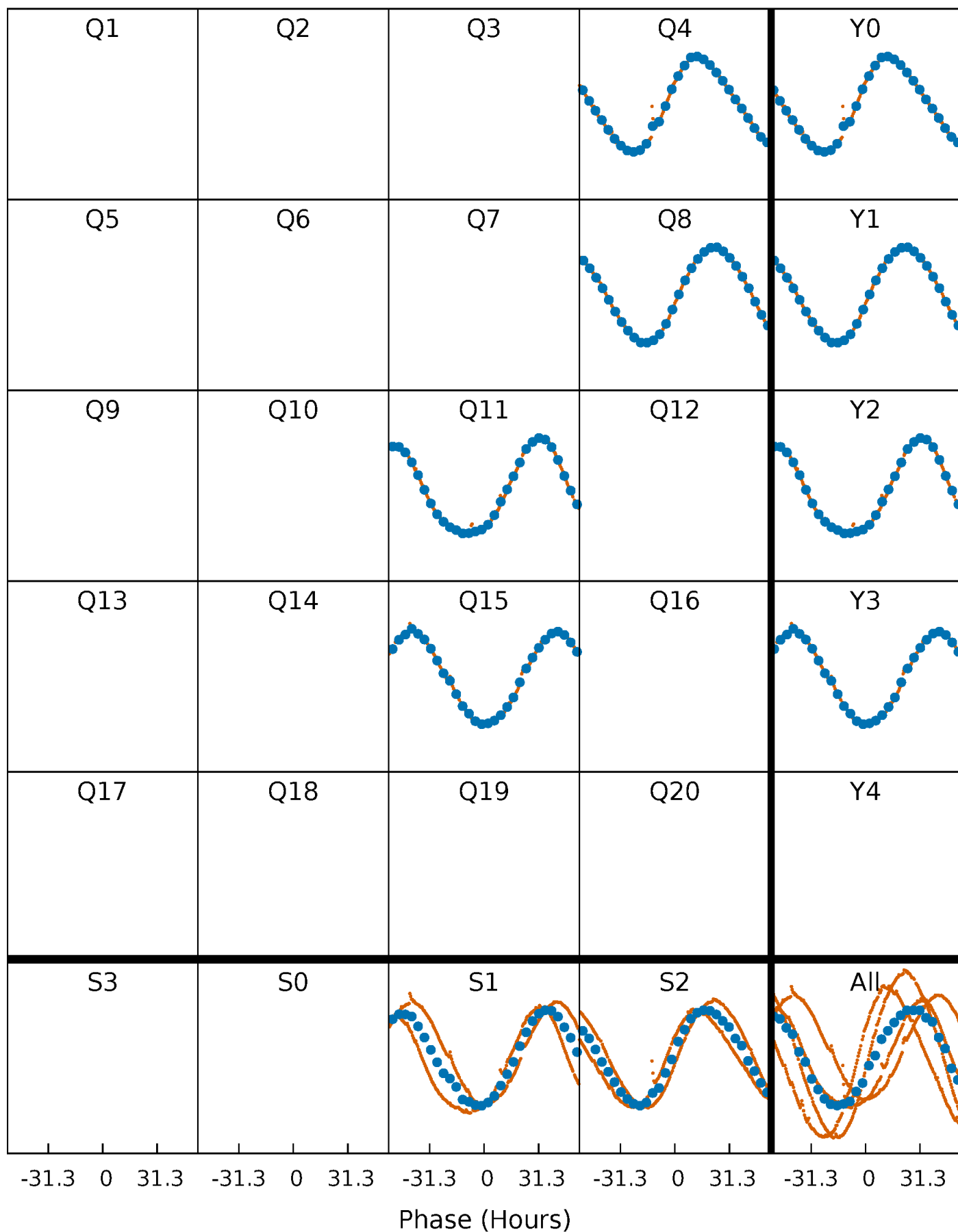


Non-Whitened Vs. Whitened Light Curve



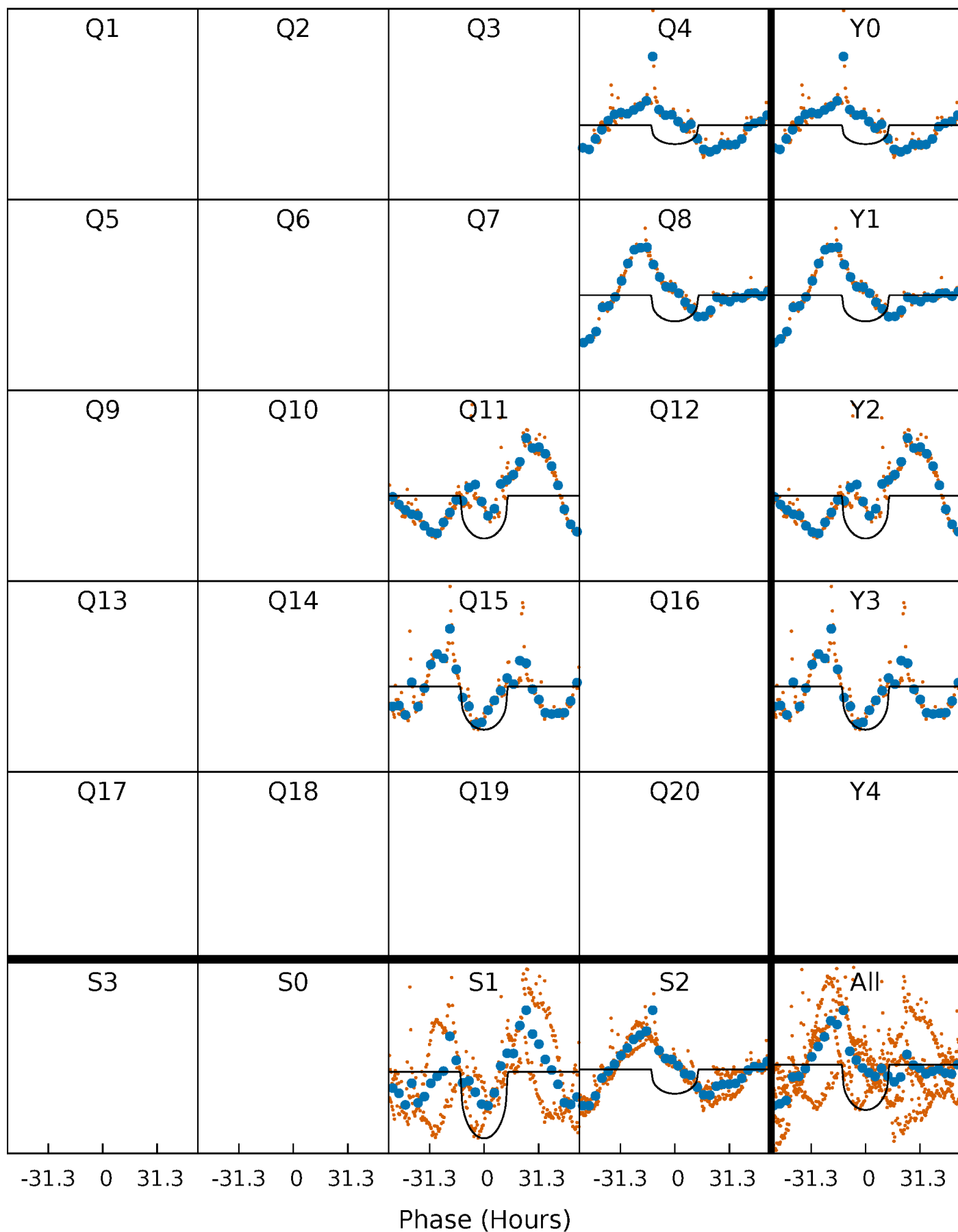
PDC Quarter-Phased Transit Curves

TCE 005344895-07 $P=317.909115$ Days $T_0=424.173270$ (BKJD)



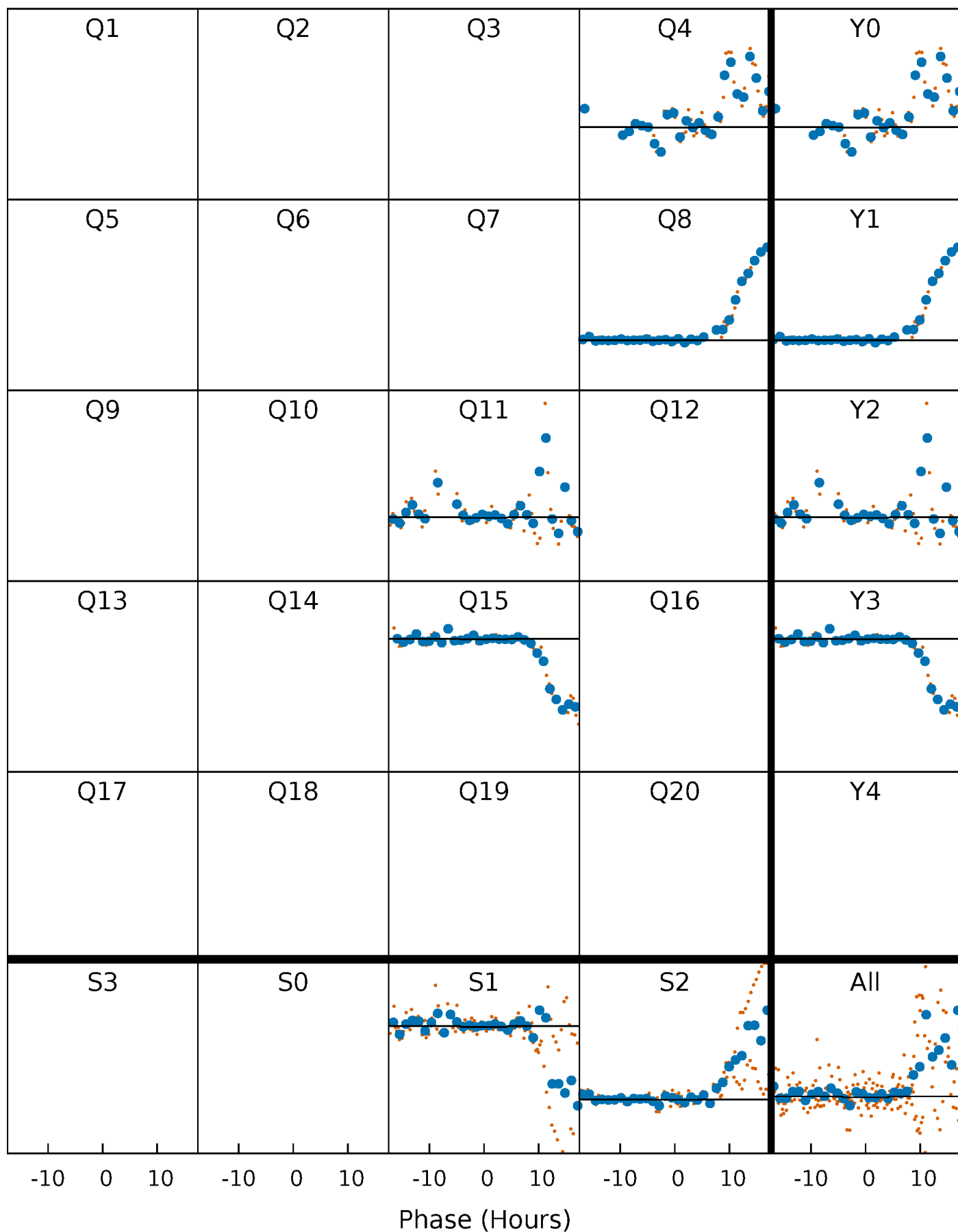
DV Quarter-Phased Transit Curves

TCE 005344895-07 $P=317.909115$ Days $T_0=424.173270$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

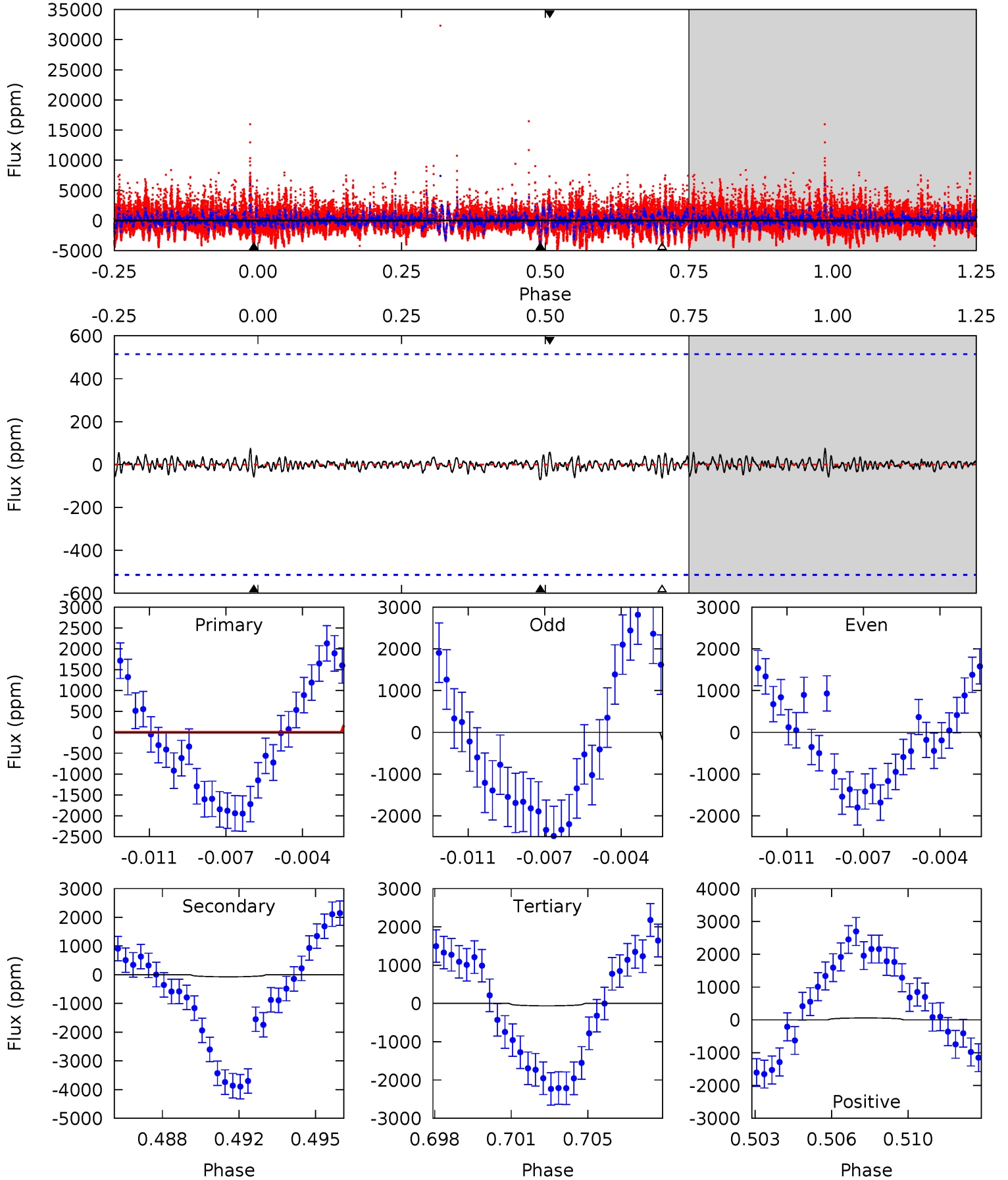
TCE 005344895-07 $P=317.878082$ Days $T_0=424.178000$ (BKJD)



DV Model-Shift Uniqueness Test

005344895-07, P = 317.909115 Days, E = 106.264155 Days

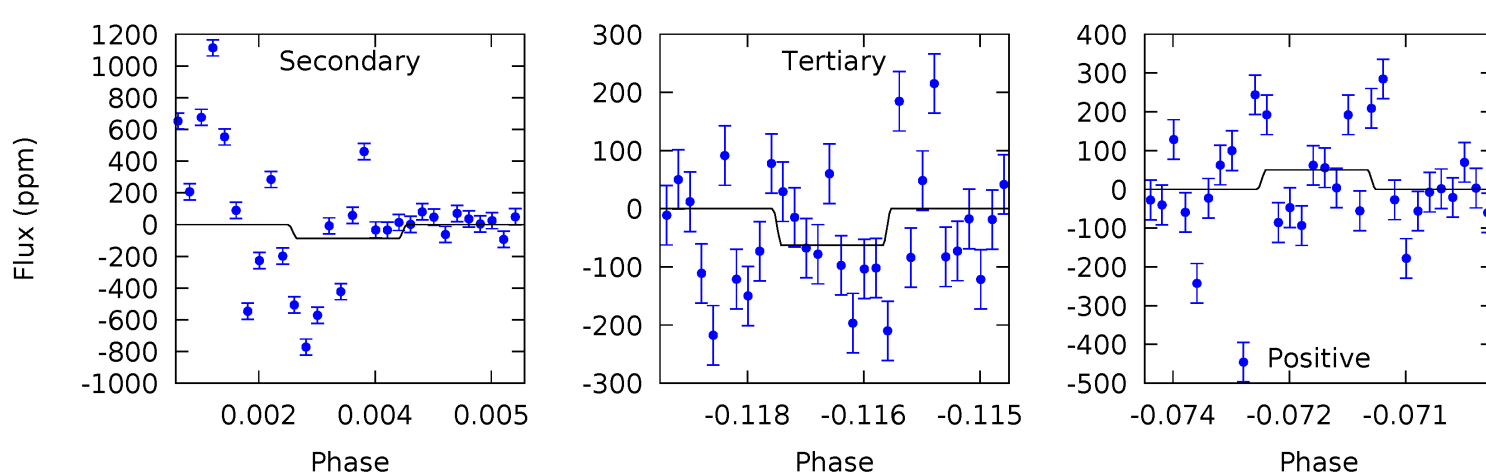
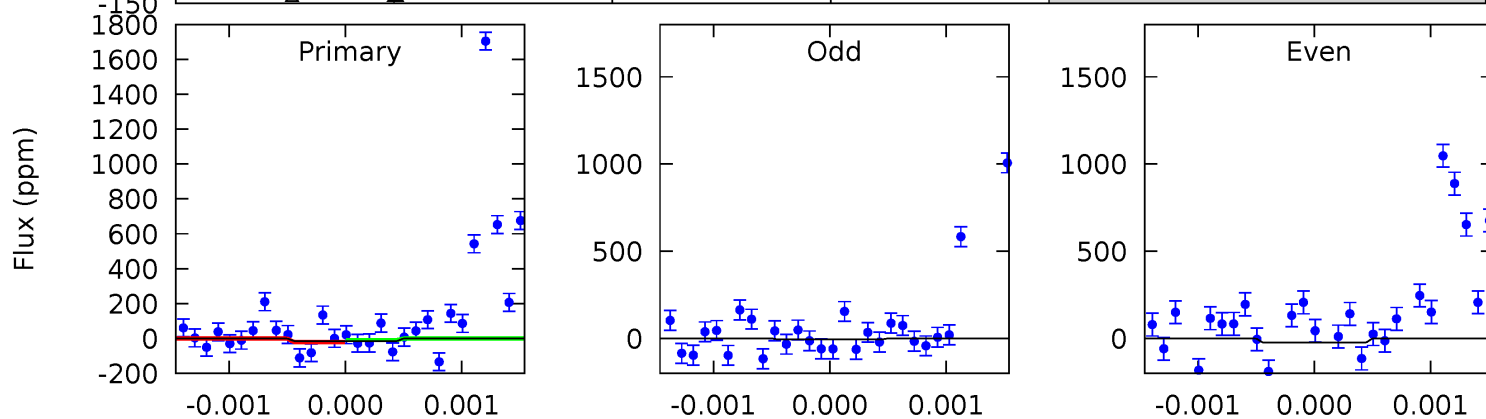
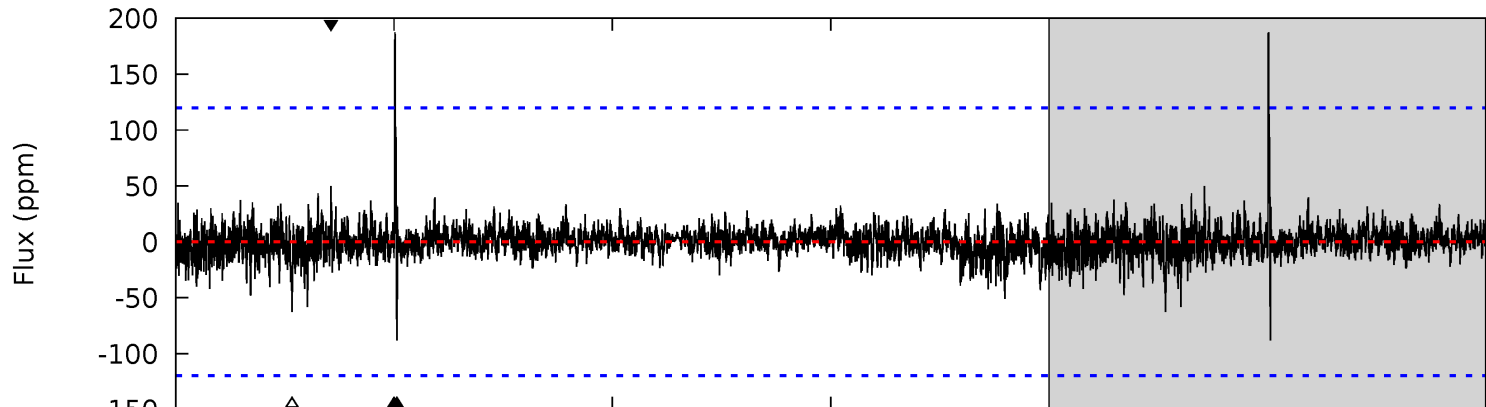
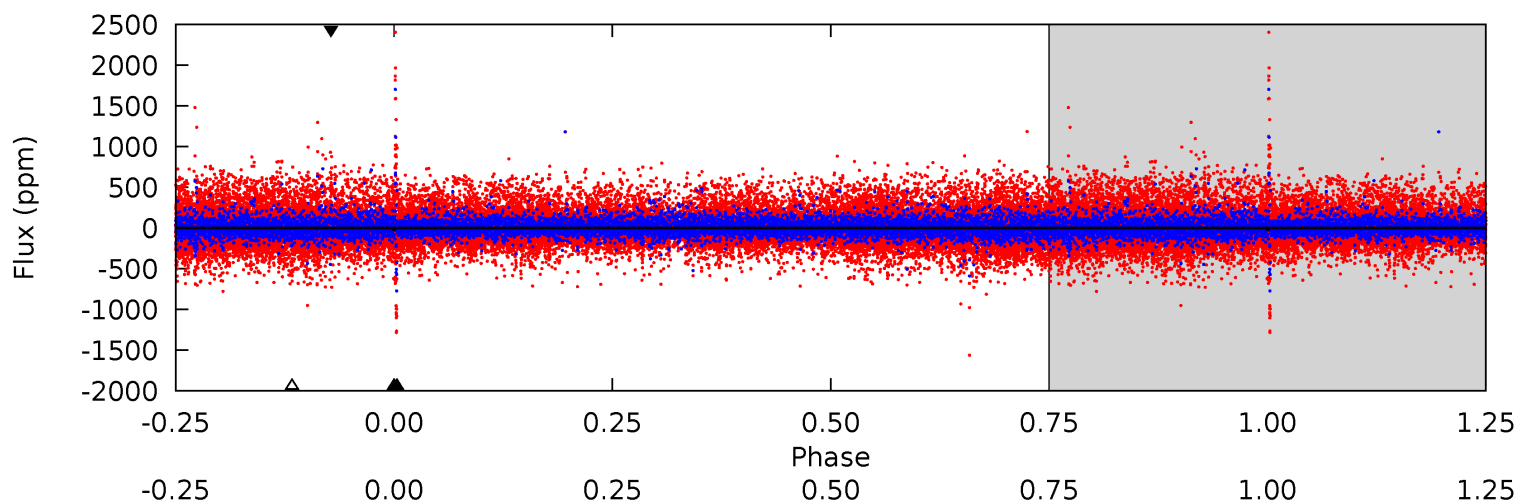
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.58	0.71	0.64	0.58	5.22	2.91	0.18	-0.06	-0.00	0.08	0.13	0.42	0.20	0.51	0.47



Alt Model-Shift Uniqueness Test

005344895-07, P = 317.878082 Days, E = 106.299918 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.66	3.98	2.84	2.26	5.42	3.24	0.50	-2.17	-1.60	1.15	1.72	0.30	1.89	0.68	0.27



Stellar Parameters For KIC 005344895

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4472^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.740^{+0.025}_{-0.063}$	$0.733^{+0.041}_{-0.046}$	$2.545^{+0.645}_{-0.185}$
	+3%/-3%	+1%/-0%	+29%/-88%	+3%/-9%	+6%/-6%	+25%/-7%
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 005344895-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-70 ± 99	$3.23^{+0.32}_{-0.36}$	259^{+9}_{-9}	2706^{+369}_{-5115}	2490^{+3632}_{-3426}
Alt.	-88 ± 22	$0.39^{+0.28}_{-0.24}$	259^{+9}_{-9}	5909^{+4689}_{-1289}	$218061^{+1384296}_{-144871}$

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

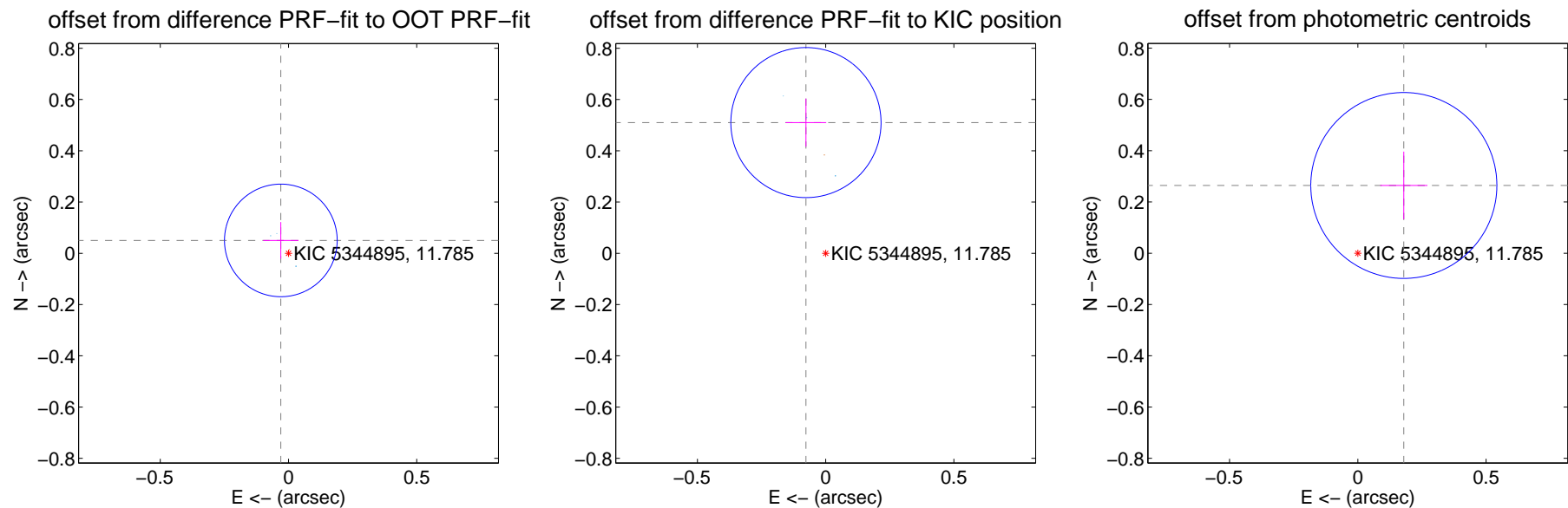
DV Centroid Data

Supplemental centroid analysis for 005344895-07. **Kepler magnitude: 11.79.** Transit SNR 8.64

There are 3 quarters with good PRF difference image offsets

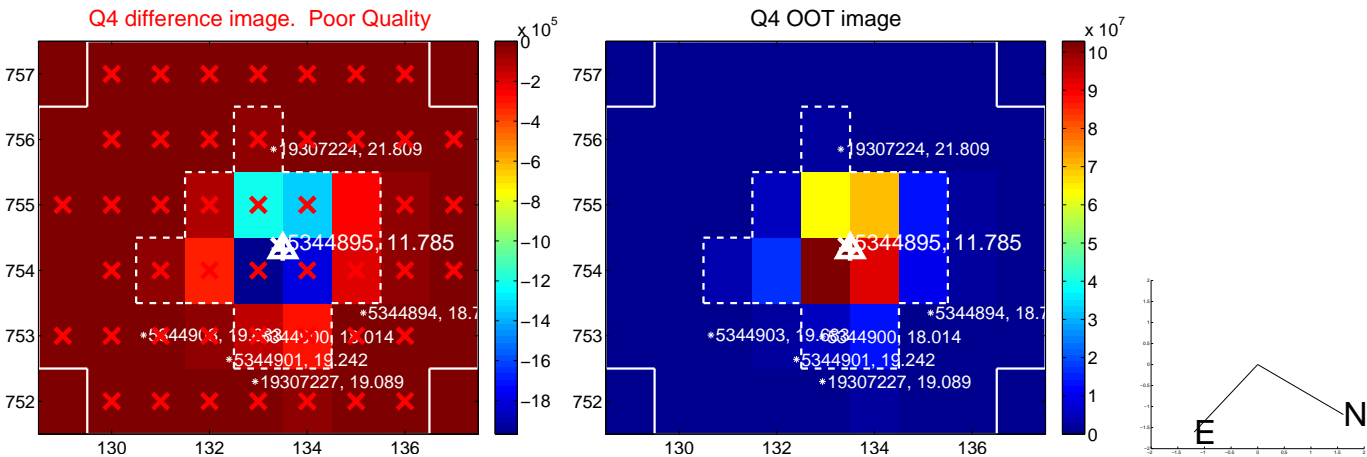
The direct PRF centroid is offset from the target star catalog position by about 0.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.058 ± 0.073	0.80	0.030 ± 0.069	0.050 ± 0.072
PRF-fit source offset from KIC position	0.516 ± 0.098	5.29	0.077 ± 0.079	0.510 ± 0.094
photometric centroid source offset	0.32 ± 0.12	2.64	-0.18 ± 0.09	0.26 ± 0.13

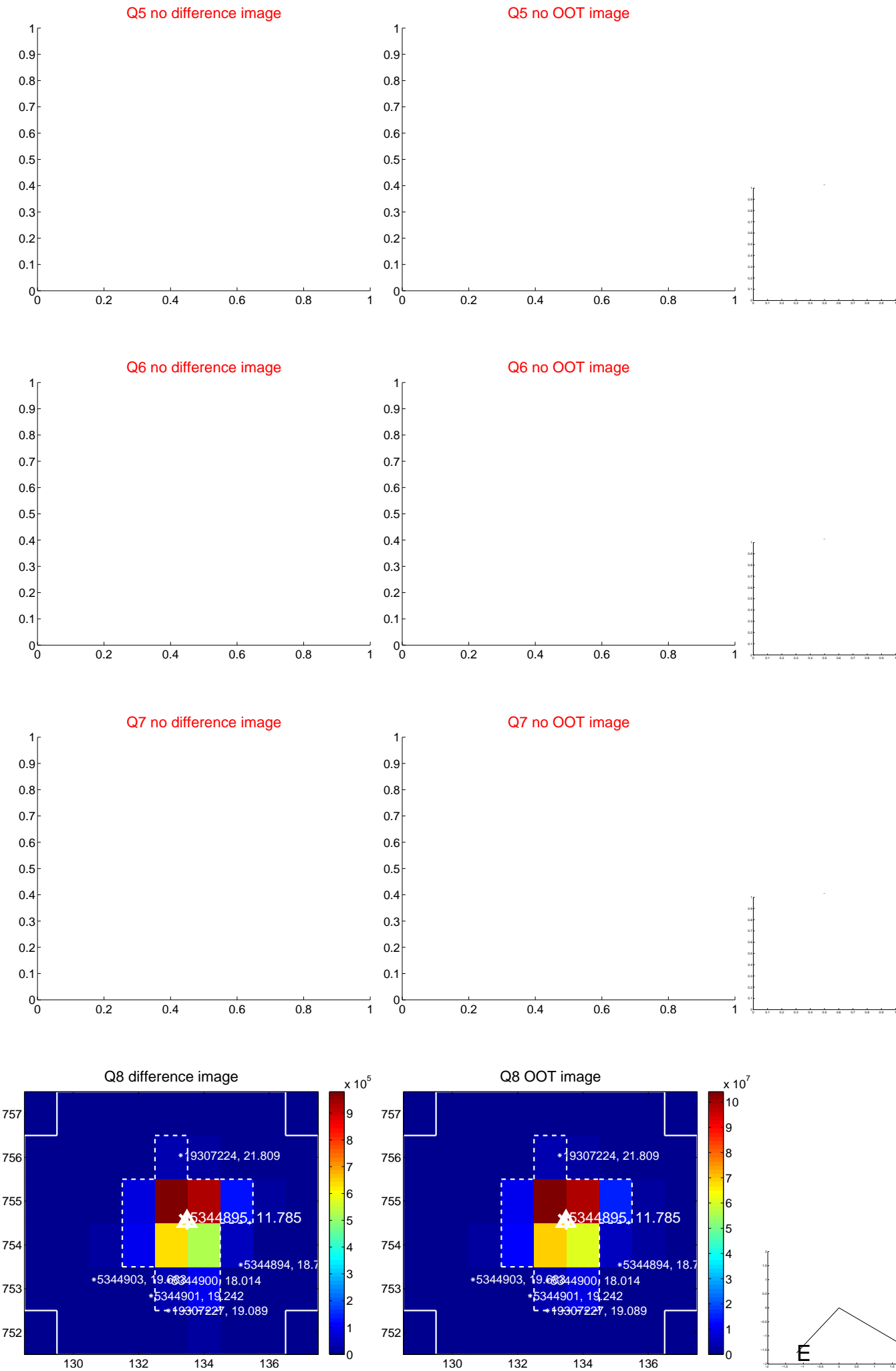


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

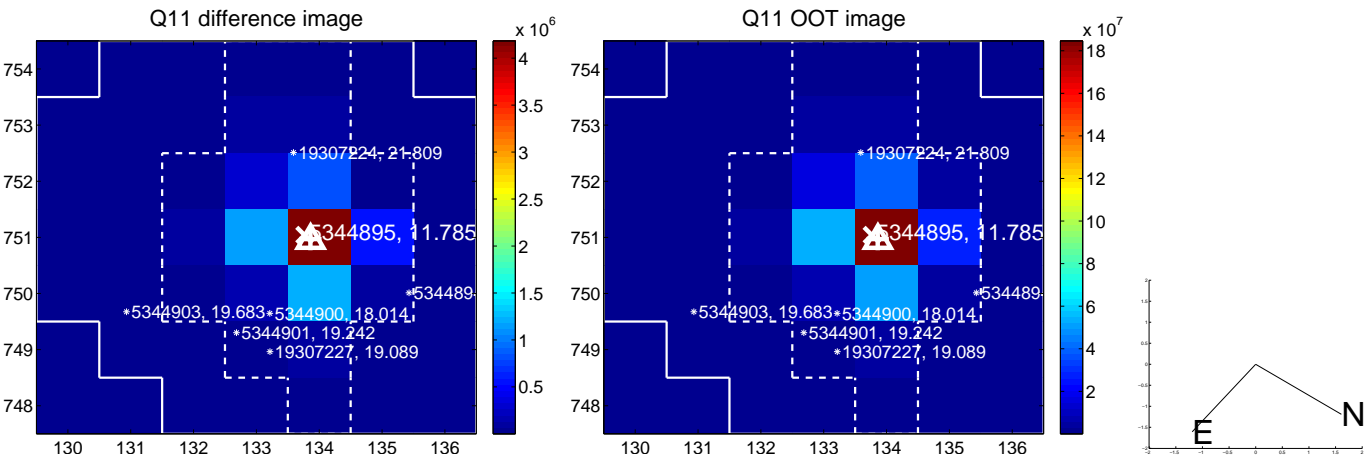
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



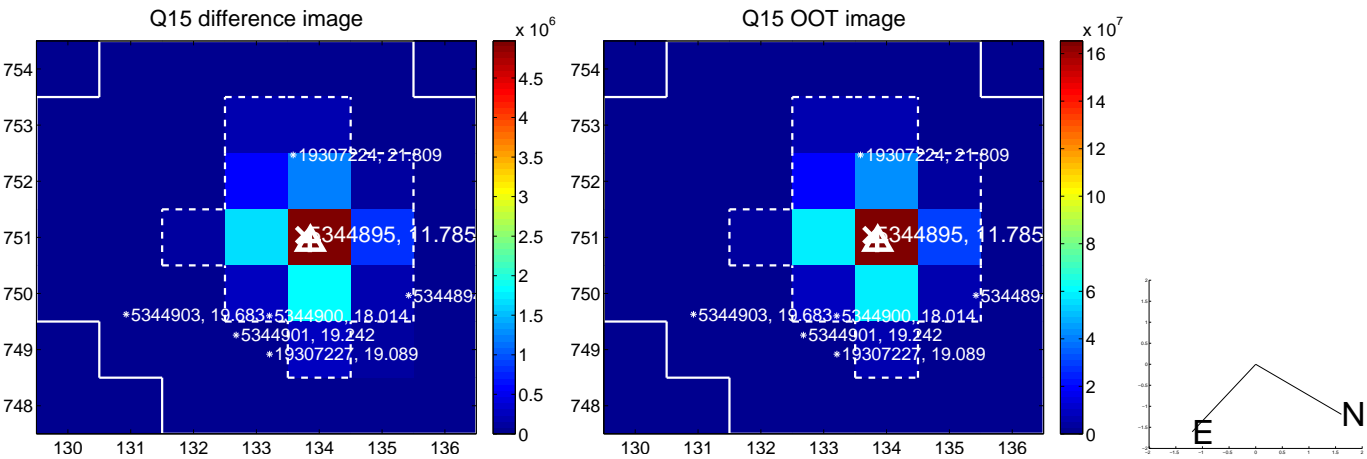
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



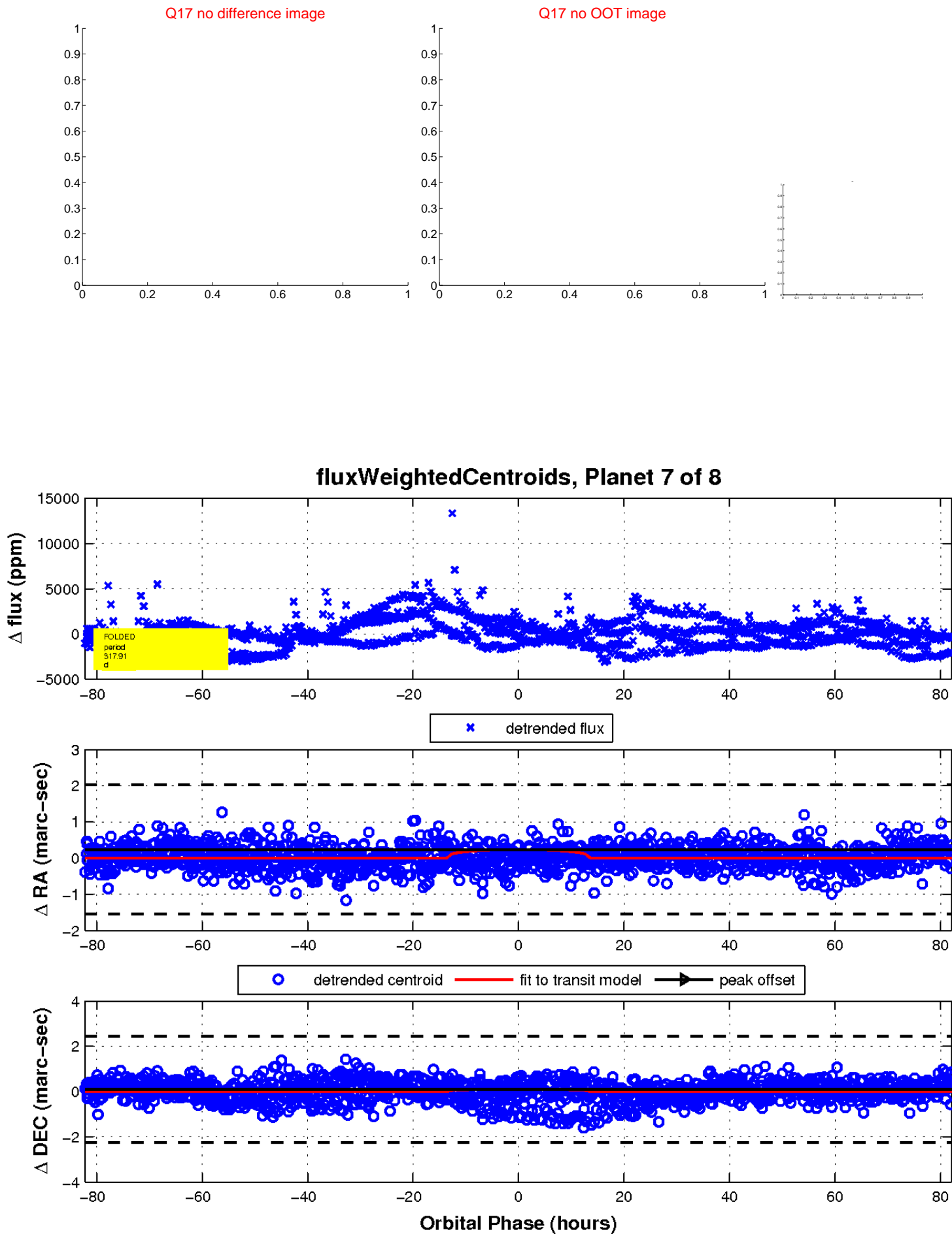
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

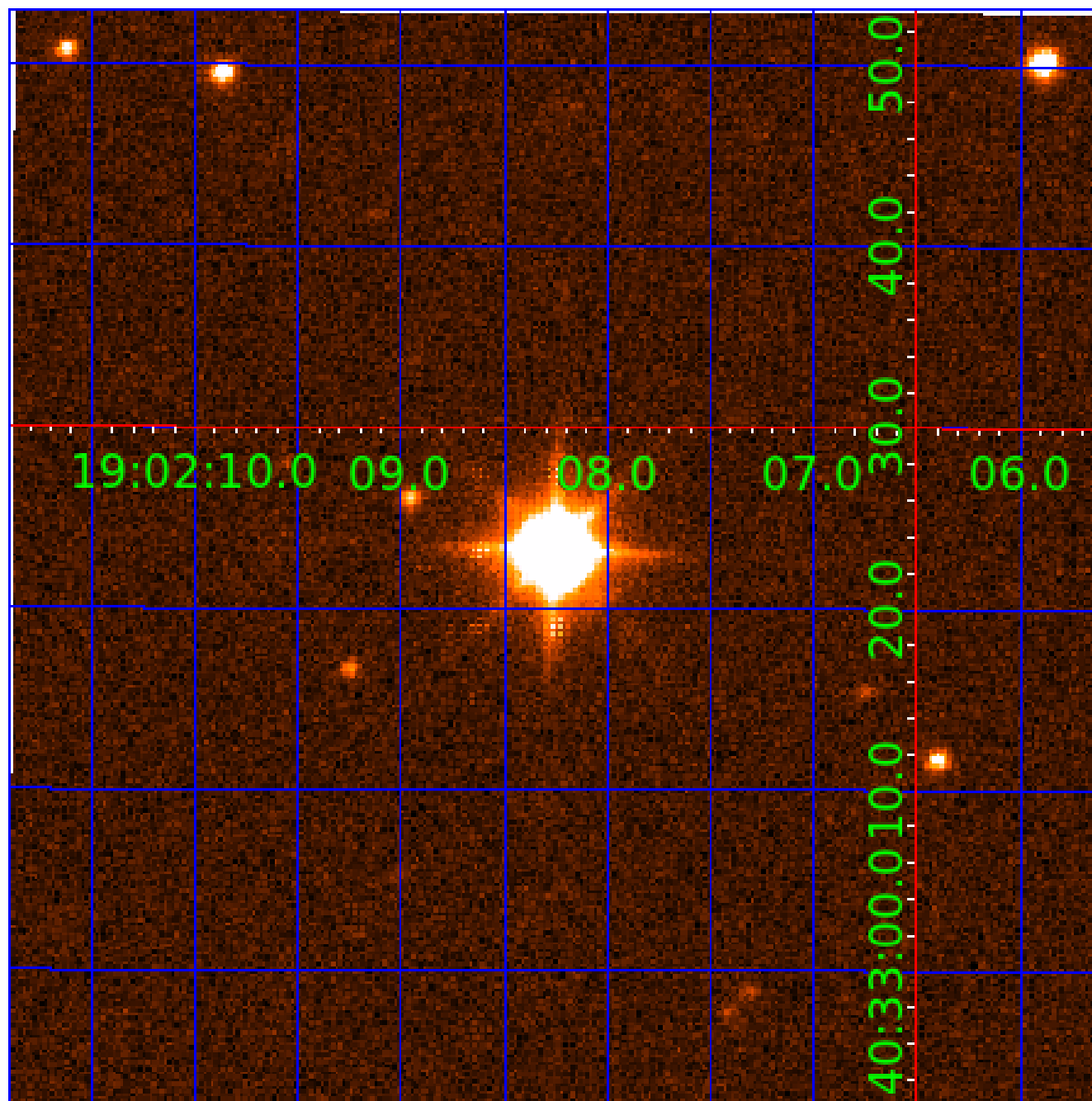


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005344895

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})
005344895-01	OBS	No	447.199472	190.182690	1154.0	4.107	17.1	8.2	0.74	4472	2.55	0.18
005344895-02	OBS	No	445.915640	150.306620	657.7	5.164	14.3	4.2	0.74	4472	2.30	0.18
005344895-03	OBS	No	311.776645	342.766361	977.9	5.741	15.6	5.9	0.74	4472	2.29	0.30
005344895-04	OBS	No	420.249825	253.825315	150.9	3.466	14.7	1.3	0.74	4472	1.11	0.20
005344895-05	OBS	No	478.179544	138.472760	1436.7	7.161	14.6	8.3	0.74	4472	2.73	0.17
005344895-06	OBS	No	334.937198	245.436207	1370.3	4.851	13.7	7.9	0.74	4472	2.88	0.27
005344895-07	OBS	No	317.909115	424.173270	2149.2	27.421	12.7	8.6	0.74	4472	3.25	0.29
005344895-08	OBS	No	164.027661	177.751020	2296.3	119.094	12.8	8.1	0.74	4472	3.78	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005344895-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
005344895-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005344895-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005344895-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005344895-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
005344895-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

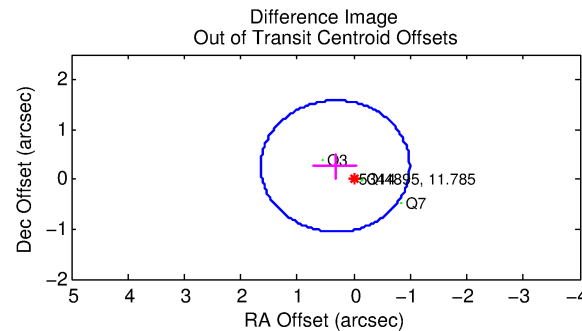
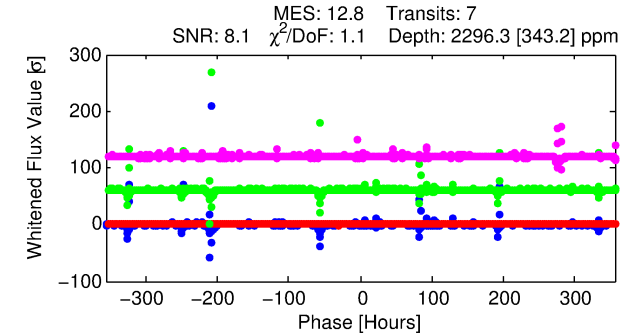
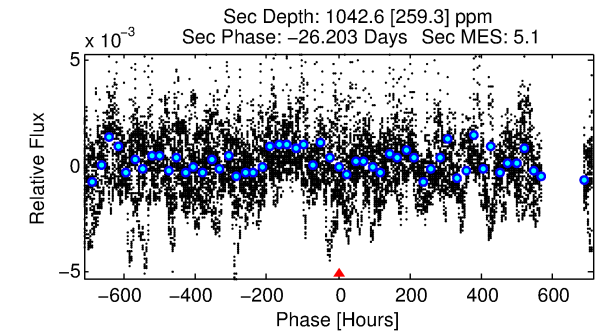
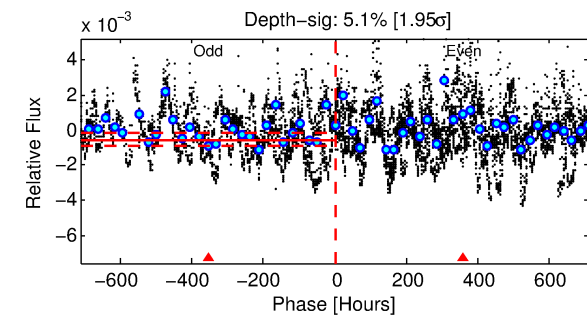
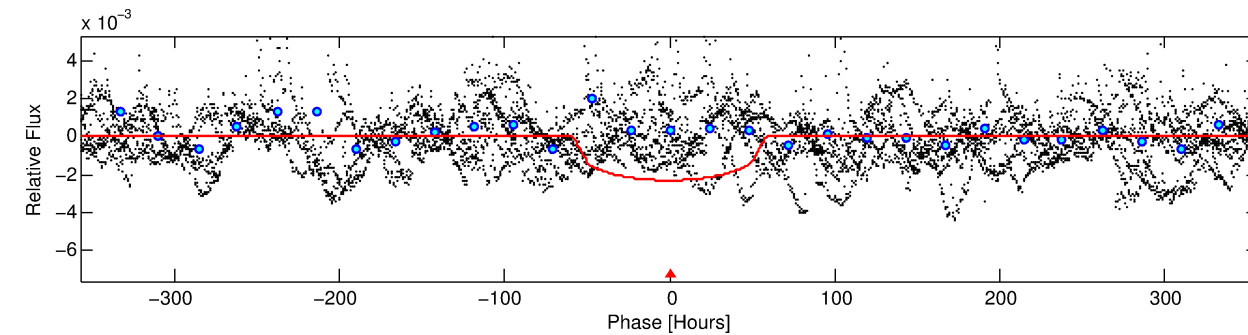
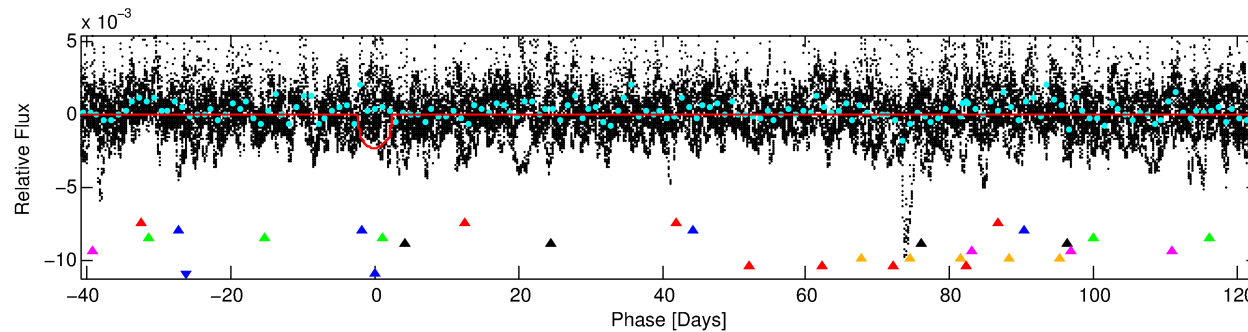
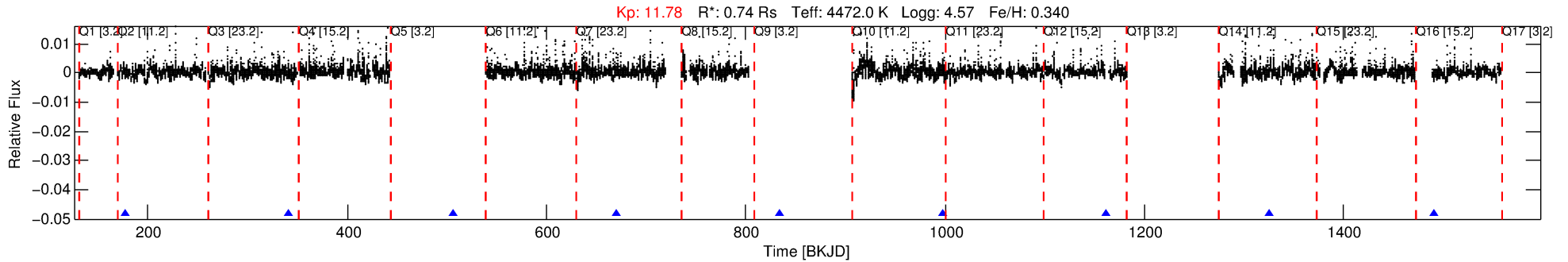
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005344895-08

No Significant Match Found

DV One-Page Summary

KIC: 5344895 Candidate: 8 of 8 Period: 164.028 d



DV Fit Results:

Period = 164.02766 [0.06983] d
Epoch = 177.7510 [0.2842] BKJD
Rp/R* = 0.0468 [0.0041]
a/R* = 8.25 [1.48]
b = 0.70 [0.12]
Seff = 0.70 [0.11]
Teq = 233 [9] K
Rp = 3.78 [0.46] Re
a = 0.5290 [0.0387] AU
Ag = 11229.22 [3613.69] [3.11σ]
Teffp = 3714 [302] K [11.52σ]

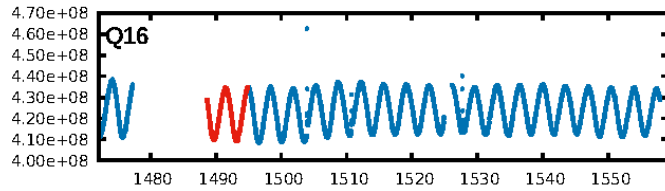
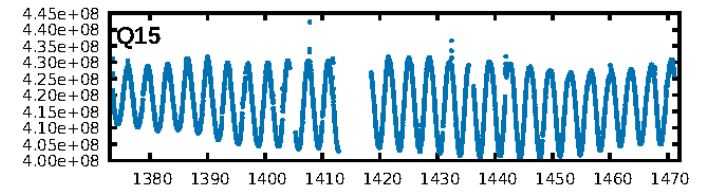
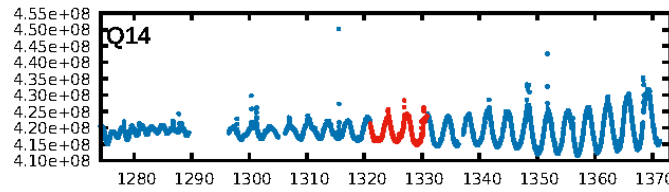
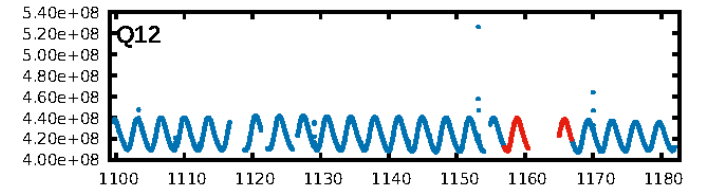
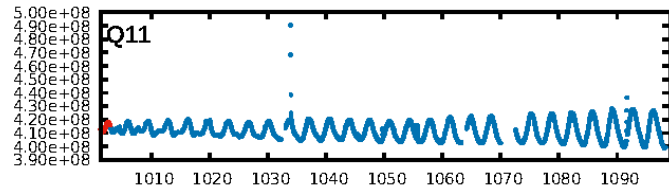
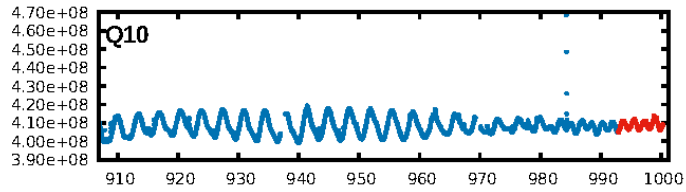
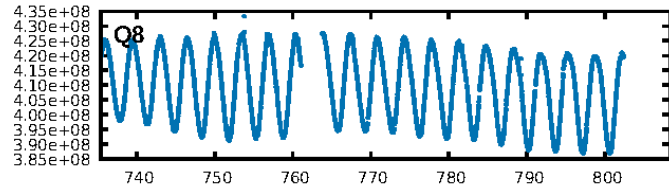
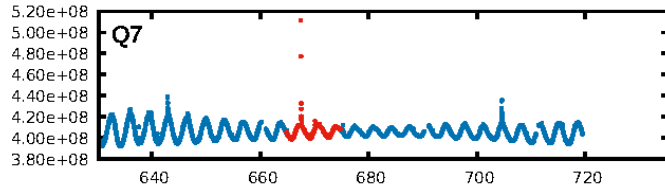
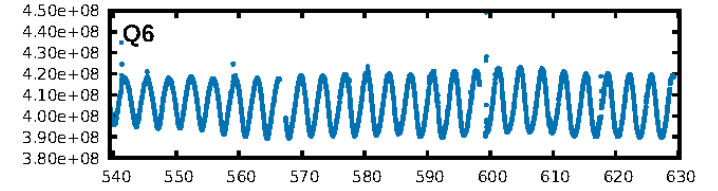
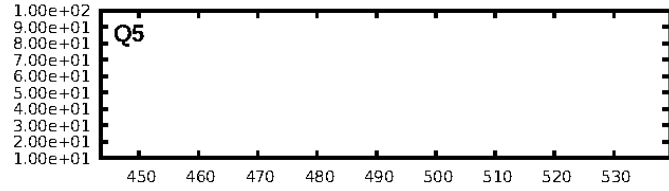
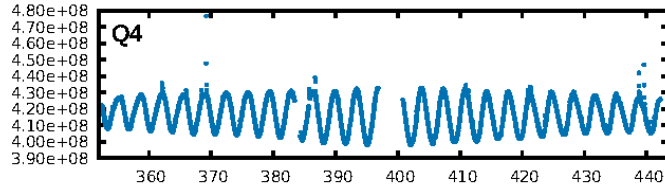
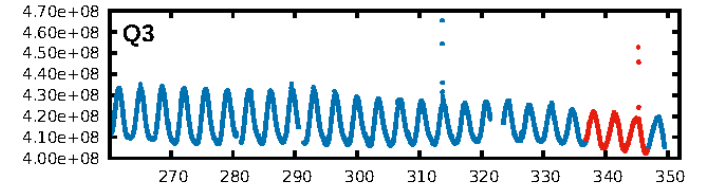
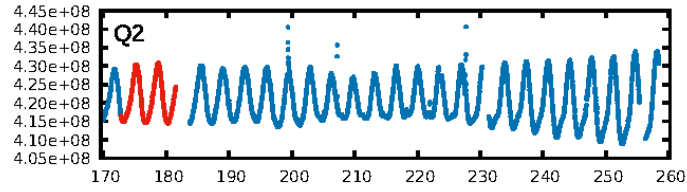
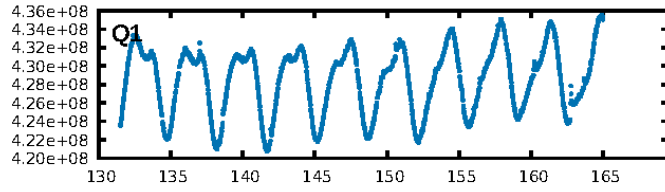
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [29.74σ]
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.09e-09
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 4.053
Centroid-sig: 1.8%
Centroid-so: 0.311 arcsec [7.92σ]
OotOffset-rm: 0.418 arcsec [0.95σ]
KicOffset-rm: 0.749 arcsec [2.23σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.33 [1/3]

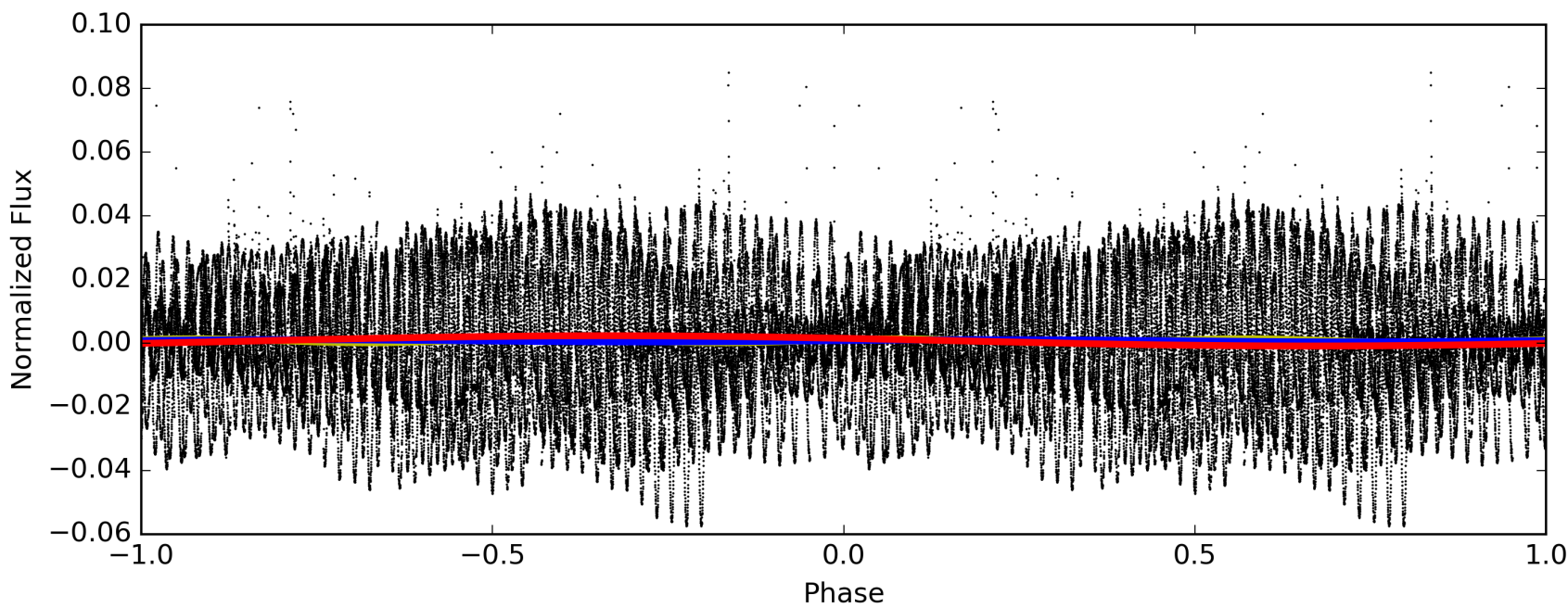
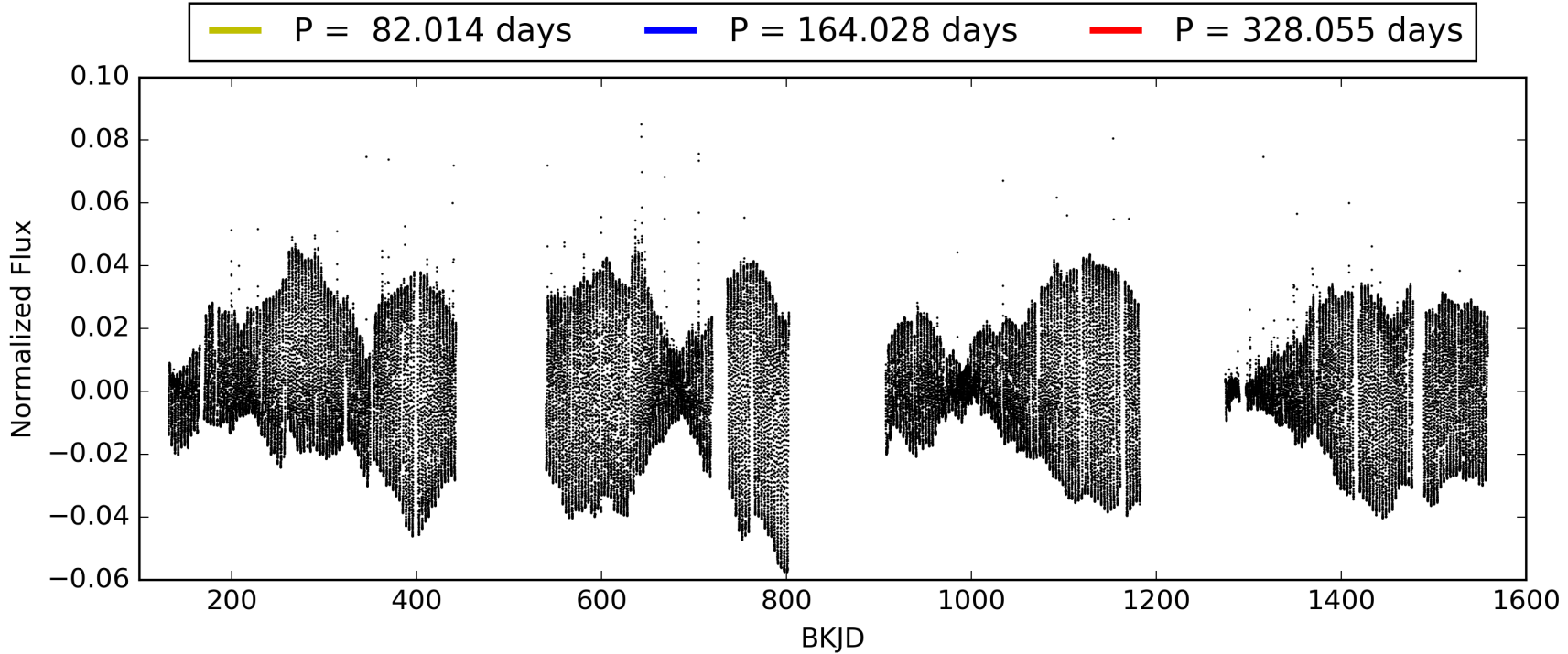
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:06:29 Z

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

TCE 005344895-08, PDC Light Curves

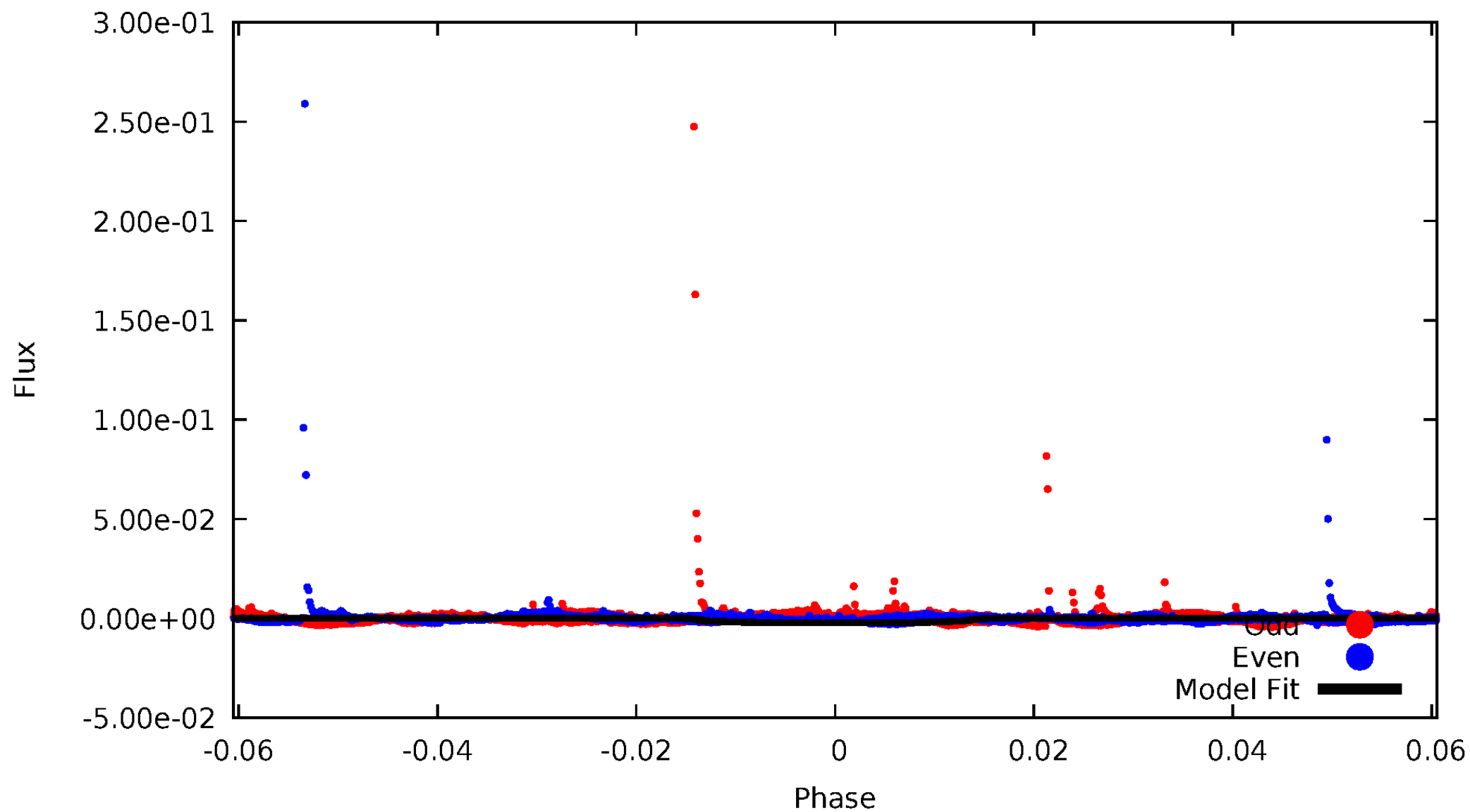


TCE 005344895-08



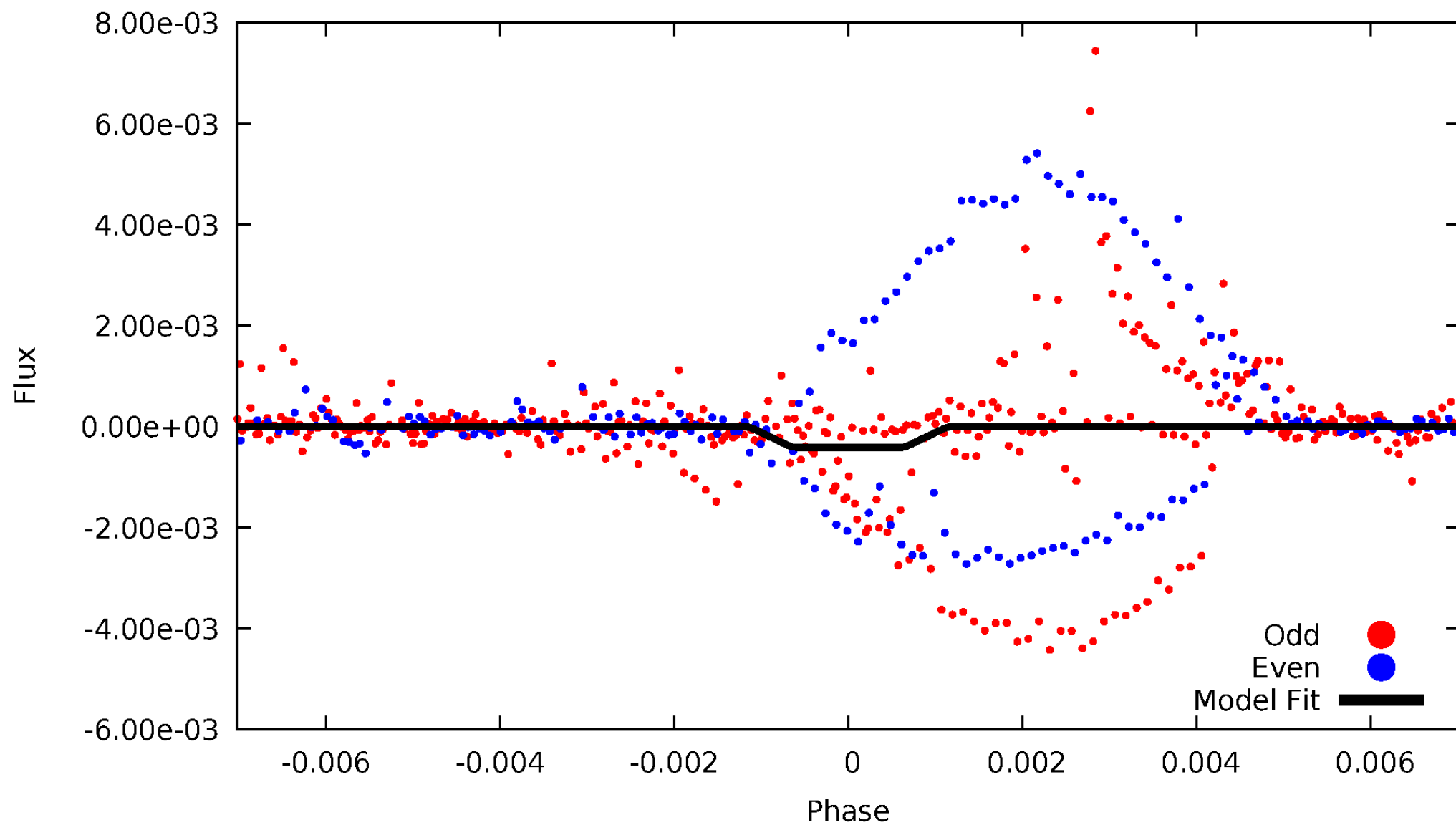
DV Odd/Even

TCE 005344895-08



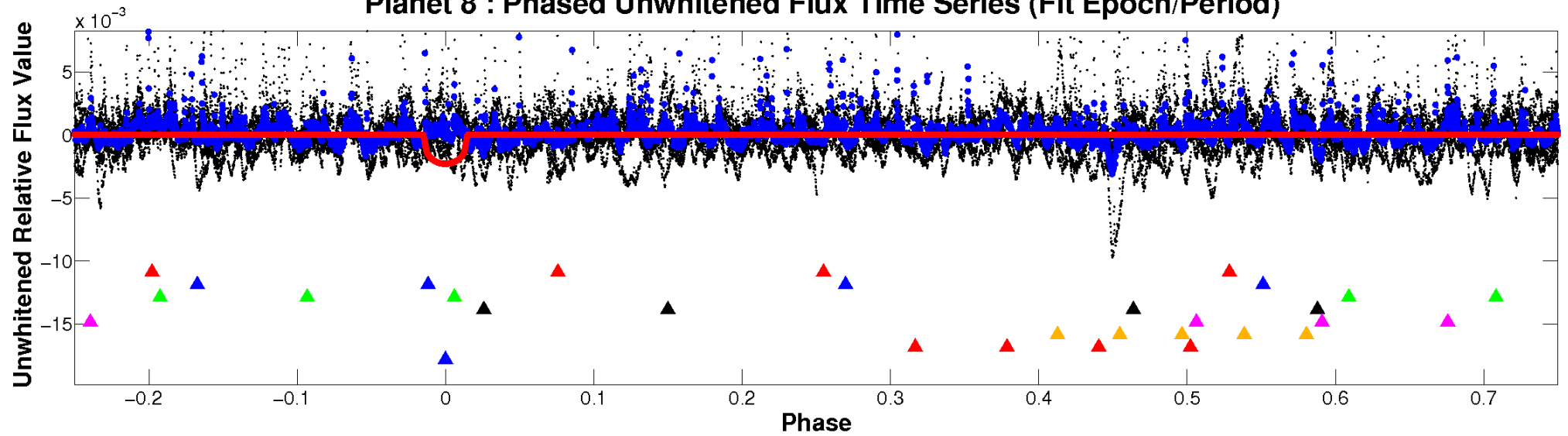
ALT Odd/Even

TCE 005344895-08

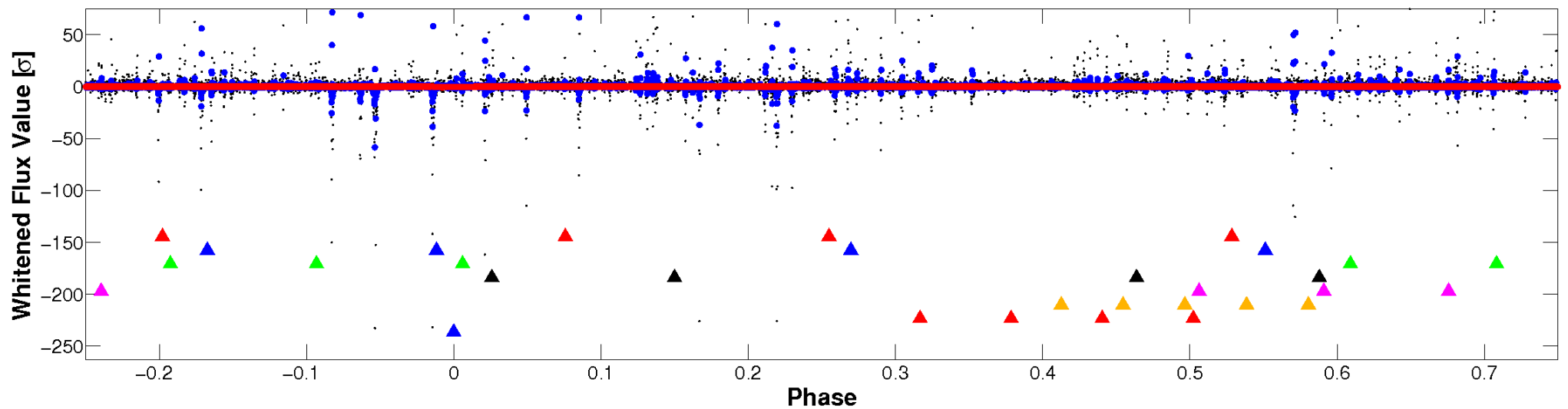


Non-Whitened Vs. Whitened Light Curve

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

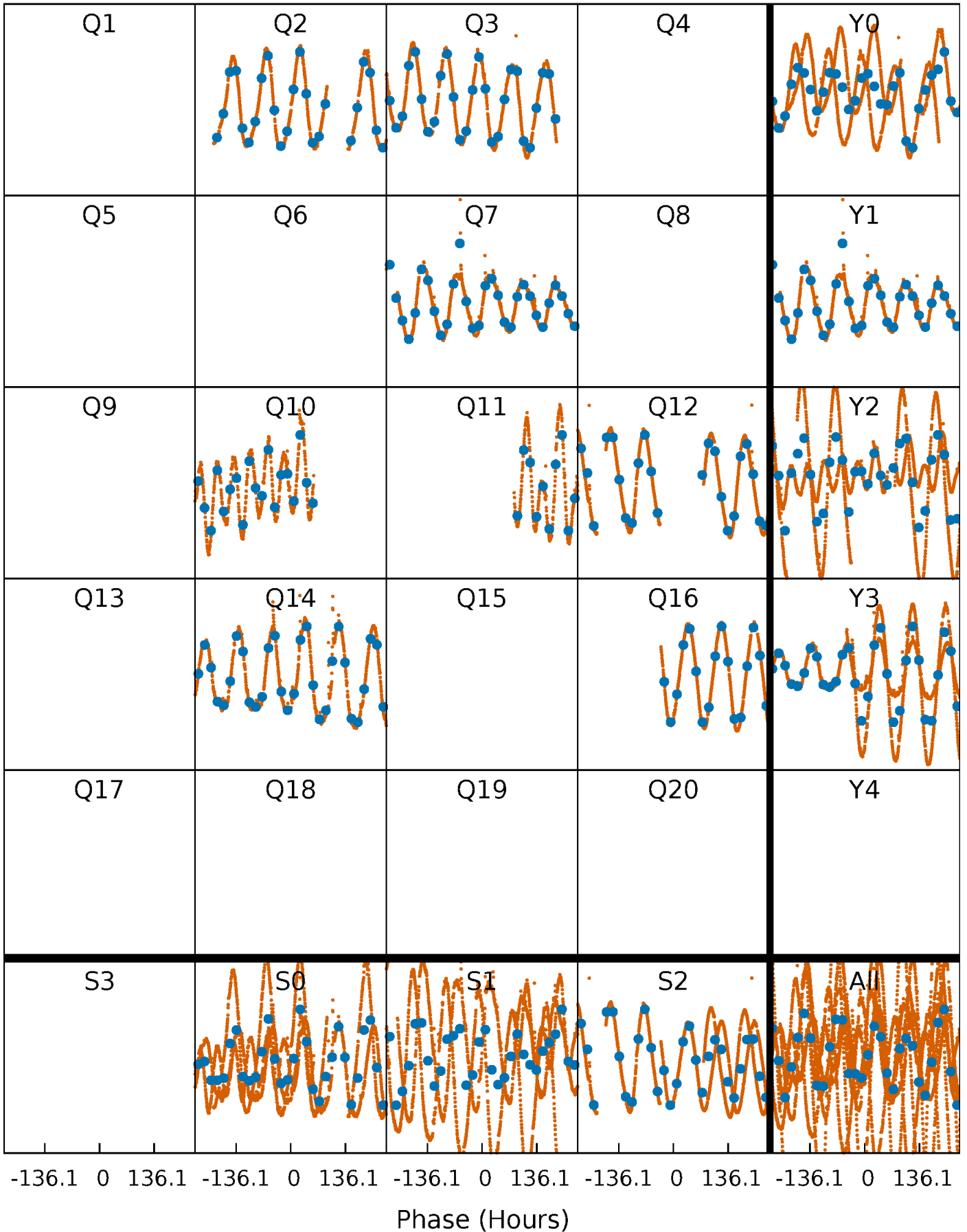


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



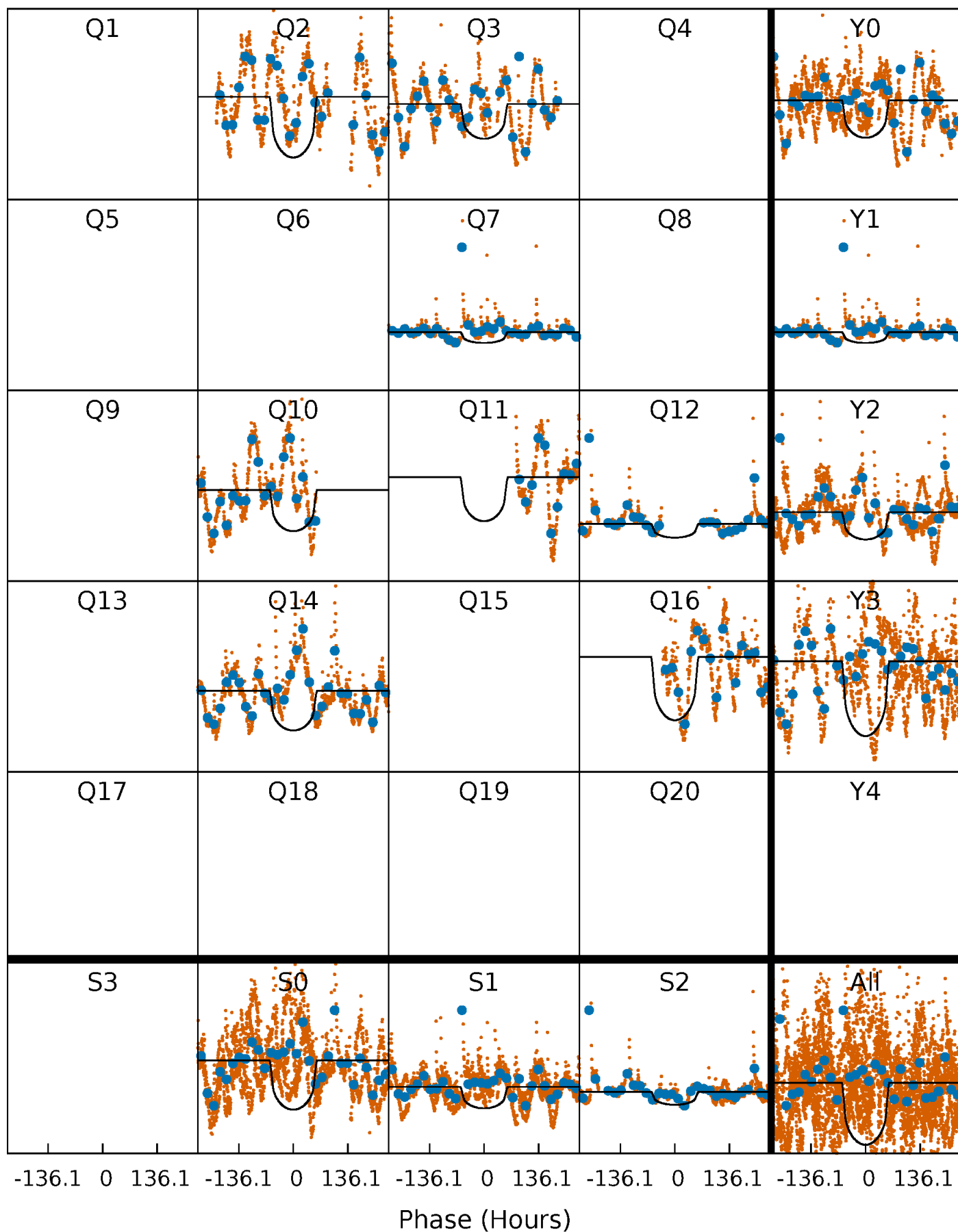
PDC Quarter-Phased Transit Curves

TCE 005344895-08 P=164.027661 Days $T_0=177.751020$ (BKJD)



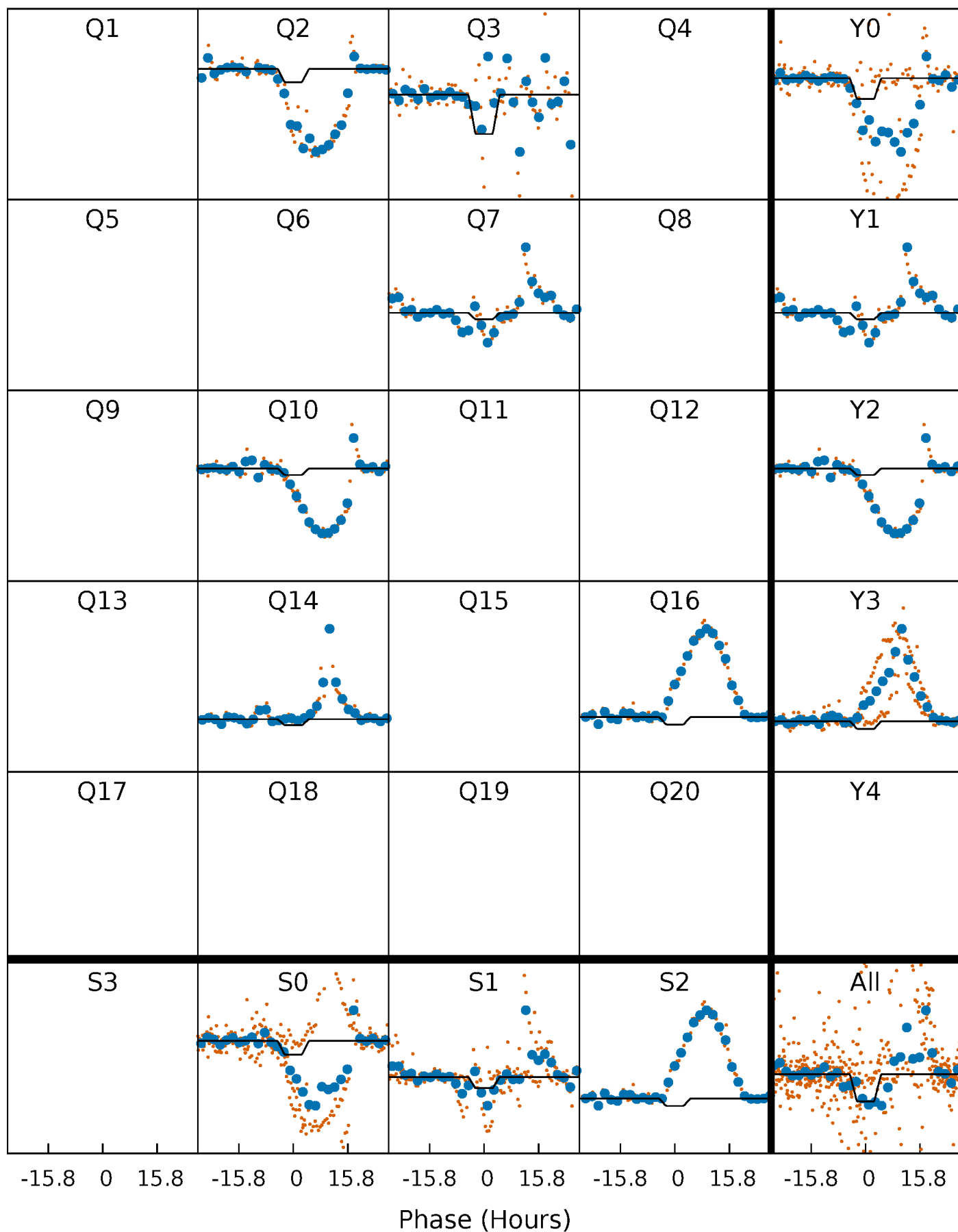
DV Quarter-Phased Transit Curves

TCE 005344895-08 P=164.027661 Days $T_0=177.751020$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

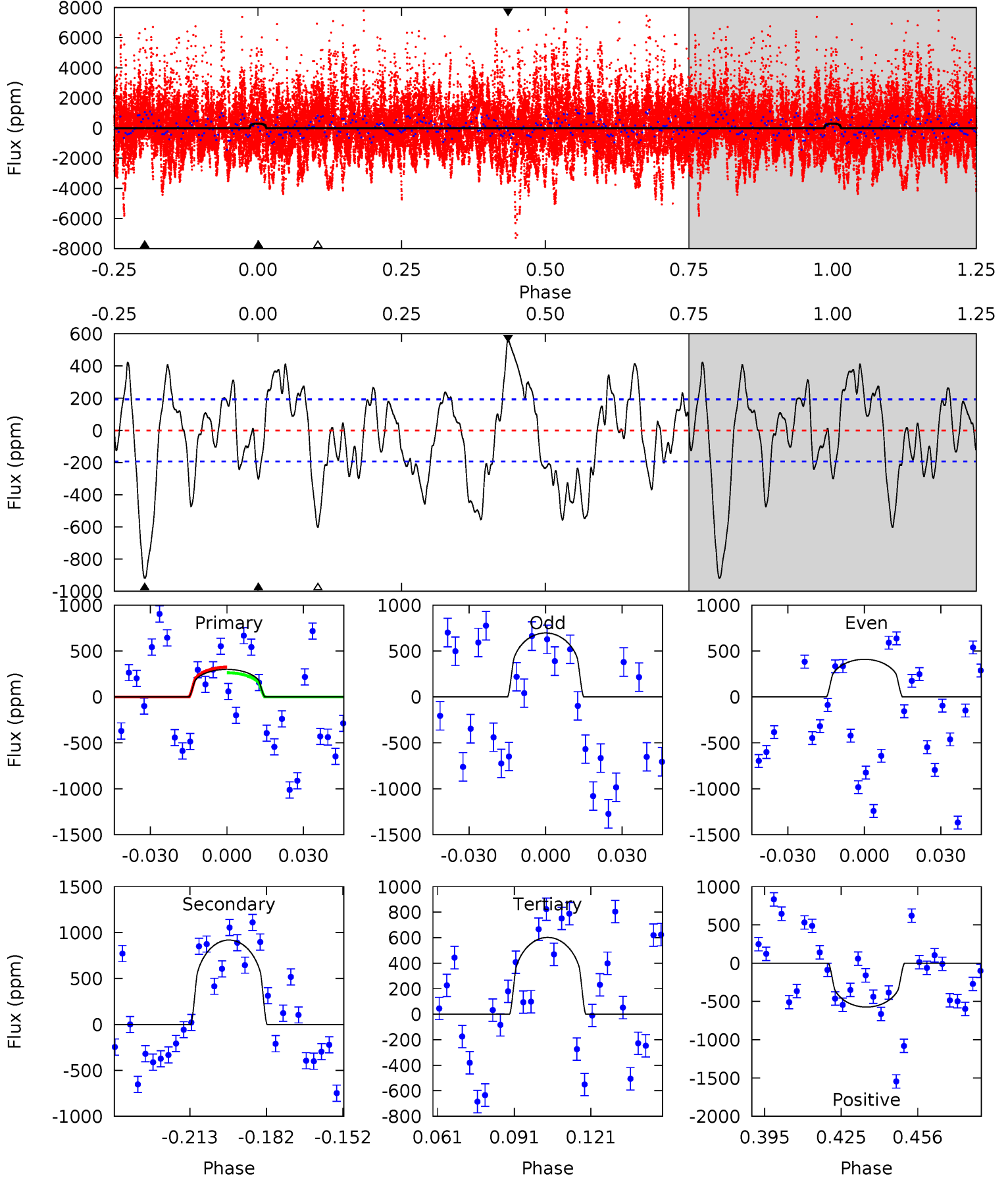
TCE 005344895-08 P=164.197277 Days $T_0=177.103698$ (BKJD)



DV Model-Shift Uniqueness Test

005344895-08, P = 164.027661 Days, E = 13.723359 Days

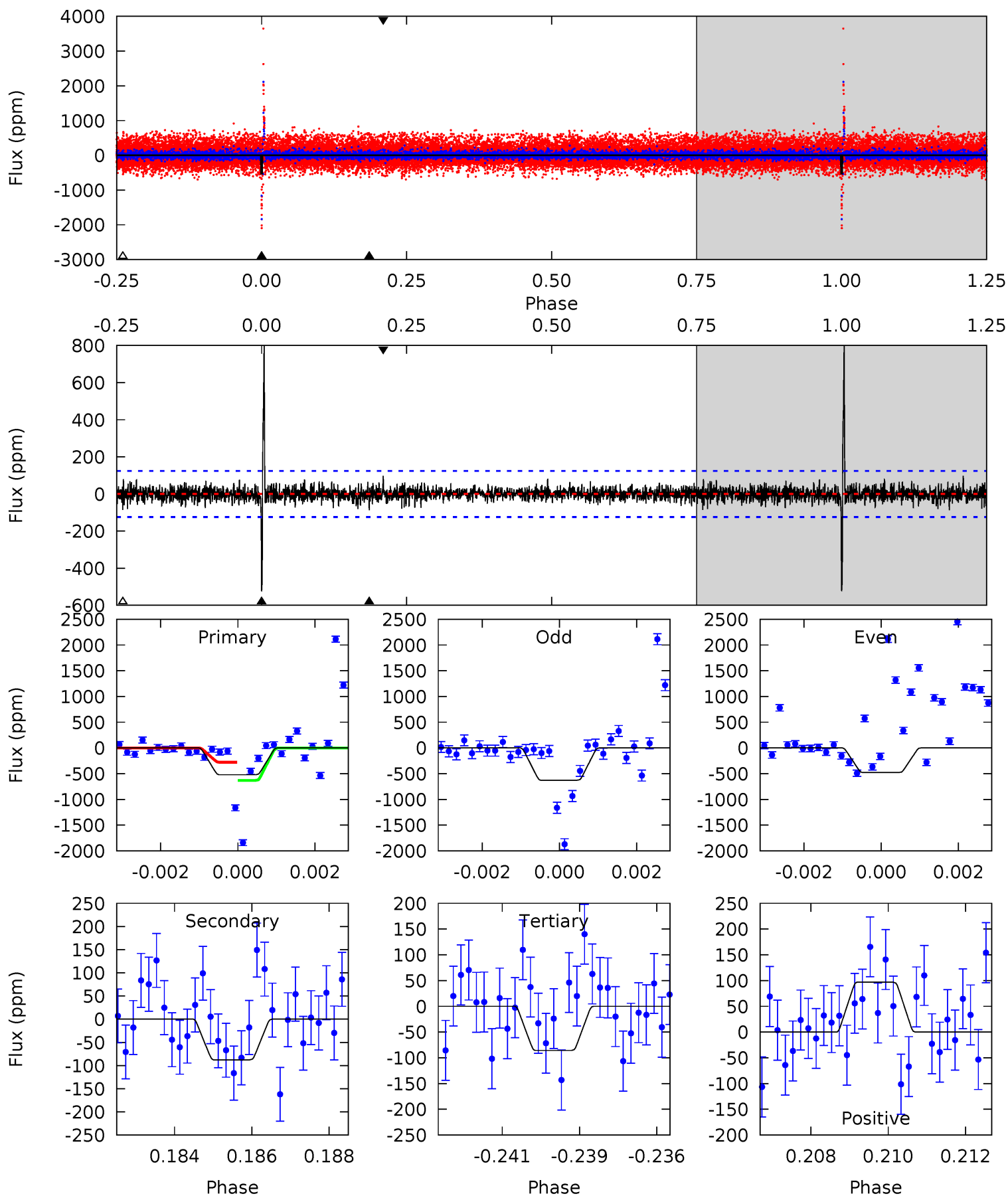
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.49	22.9	15.0	14.3	4.81	2.17	6.31	-7.52	-6.81	7.90	8.61	3.13	1.31	0.38	0.78



Alt Model-Shift Uniqueness Test

005344895-08, $P = 164.197277$ Days, $E = 12.906421$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	3.73	3.65	4.12	5.29	3.04	1.33	18.5	18.0	0.08	-0.39	3.63	0.75	0.60	0



Stellar Parameters For KIC 005344895

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4472^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.740^{+0.025}_{-0.063}$	$0.733^{+0.041}_{-0.046}$	$2.545^{+0.645}_{-0.185}$
	+3%/-3%	+1%/-0%	+29%/-88%	+3%/-9%	+6%/-6%	+25%/-7%
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 005344895-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-918 ± 40	$3.73^{+0.35}_{-0.37}$	323^{+11}_{-10}	3816^{+175}_{-147}	10243^{+2380}_{-1699}
Alt.	-88 ± 24	$1.64^{+0.33}_{-0.32}$	323^{+11}_{-11}	3402^{+279}_{-241}	5027^{+3105}_{-1841}

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

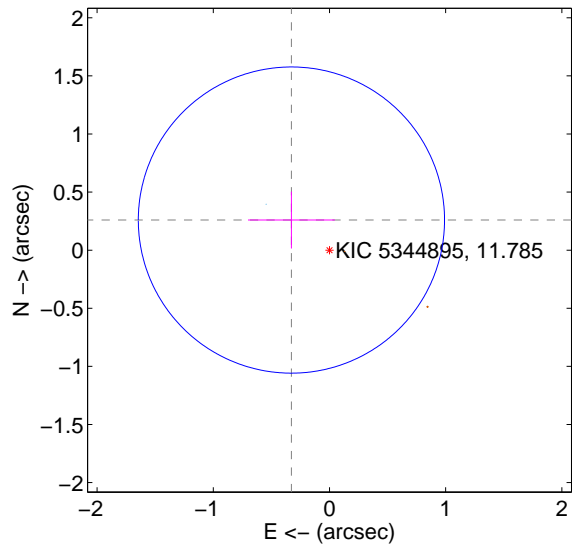
Supplemental centroid analysis for 005344895-08. **Kepler magnitude: 11.79.** Transit SNR 8.06

There are 1 quarters with good PRF difference image offsets

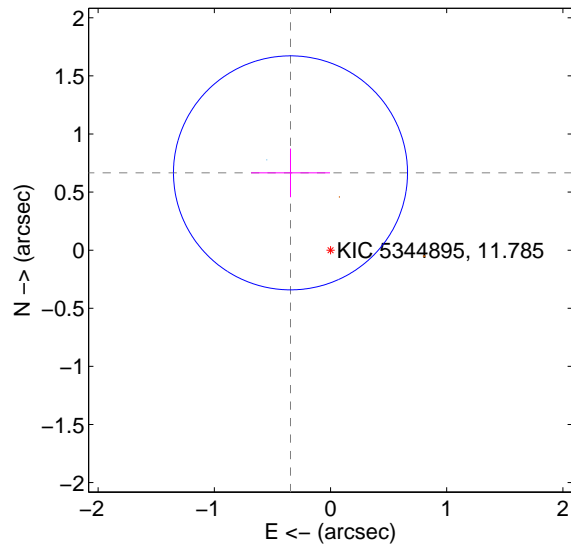
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.418 ± 0.439	0.95	0.327 ± 0.373	0.259 ± 0.245
PRF-fit source offset from KIC position	0.749 ± 0.336	2.23	0.344 ± 0.340	0.665 ± 0.209
photometric centroid source offset	0.31 ± 0.04	7.92	-0.12 ± 0.03	0.29 ± 0.04

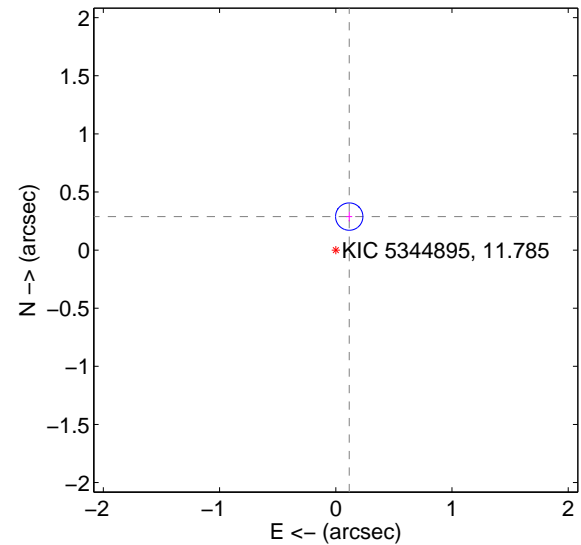
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

Q1 no difference image



Q1 no OOT image



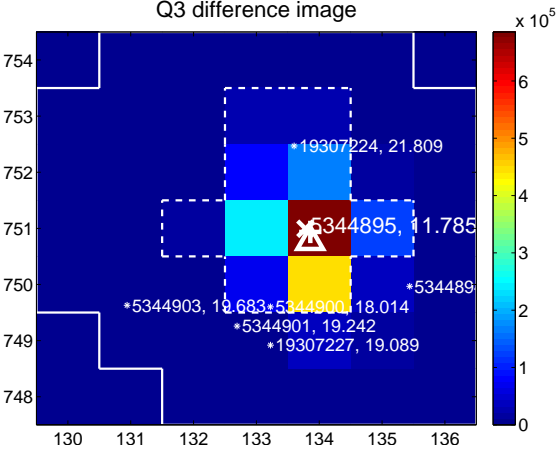
Q2 no difference image



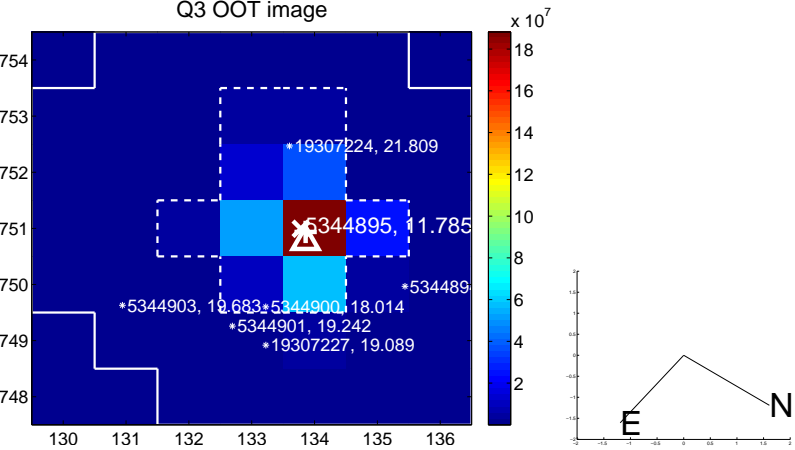
Q2 no OOT image



Q3 difference image



Q3 OOT image



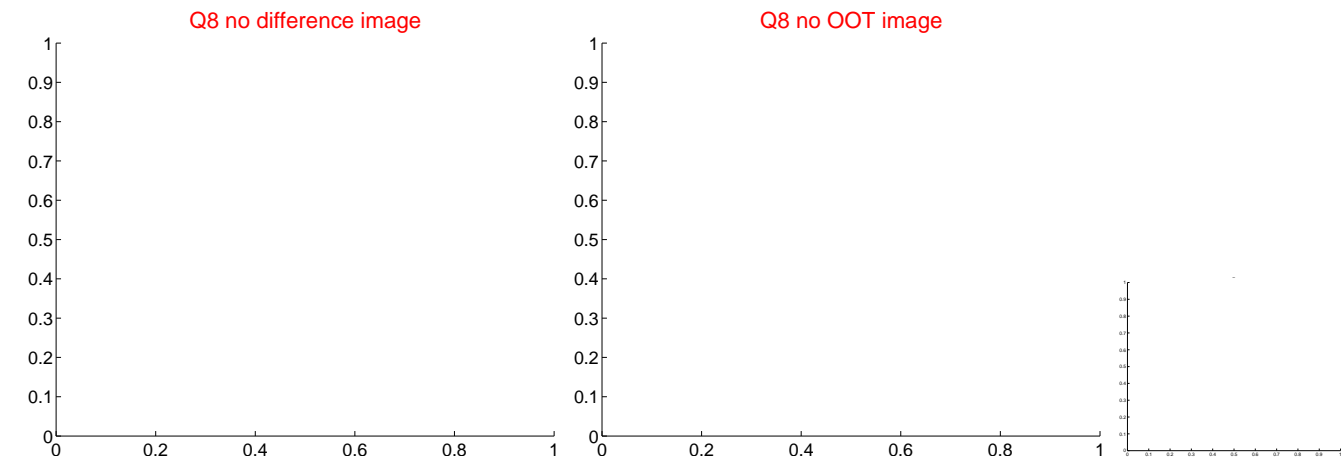
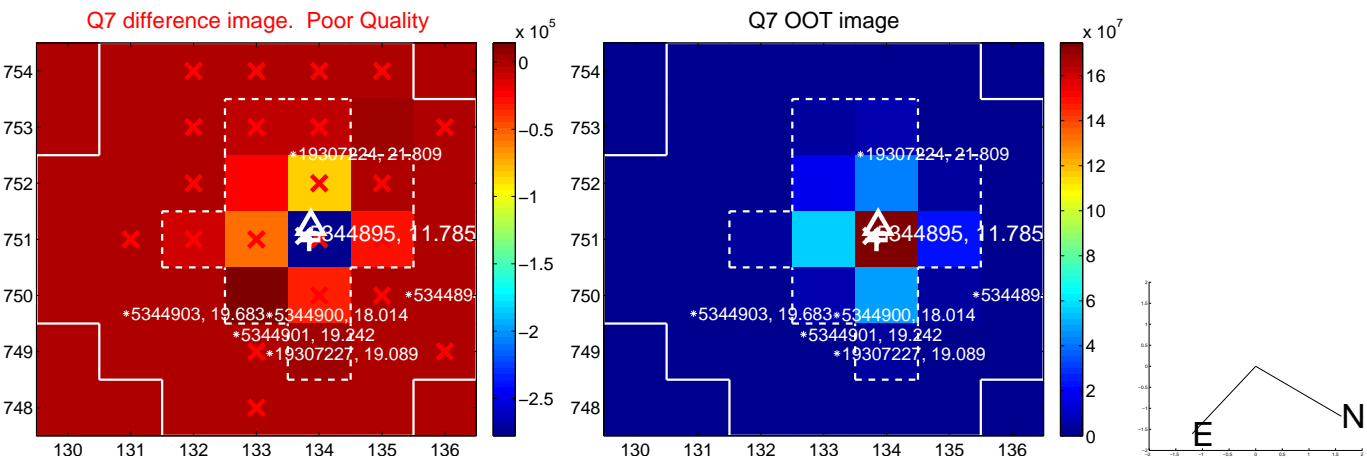
Q4 no difference image



Q4 no OOT image



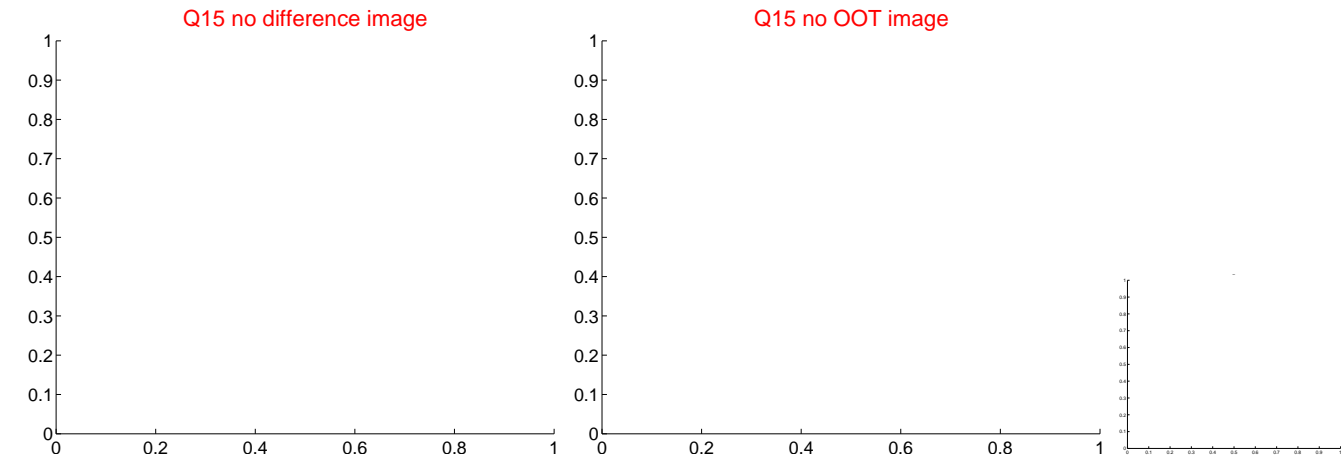
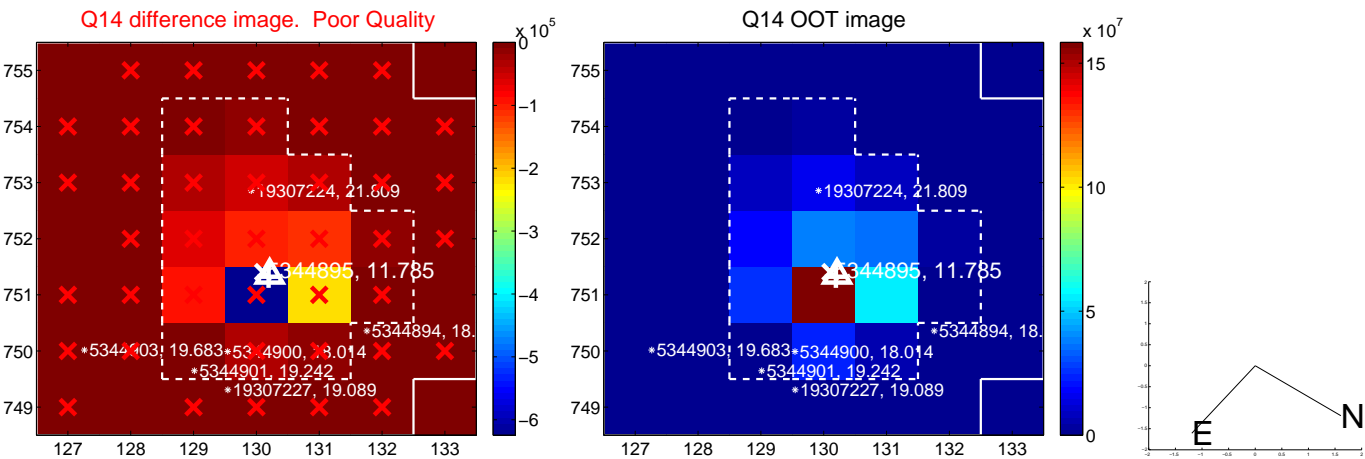
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



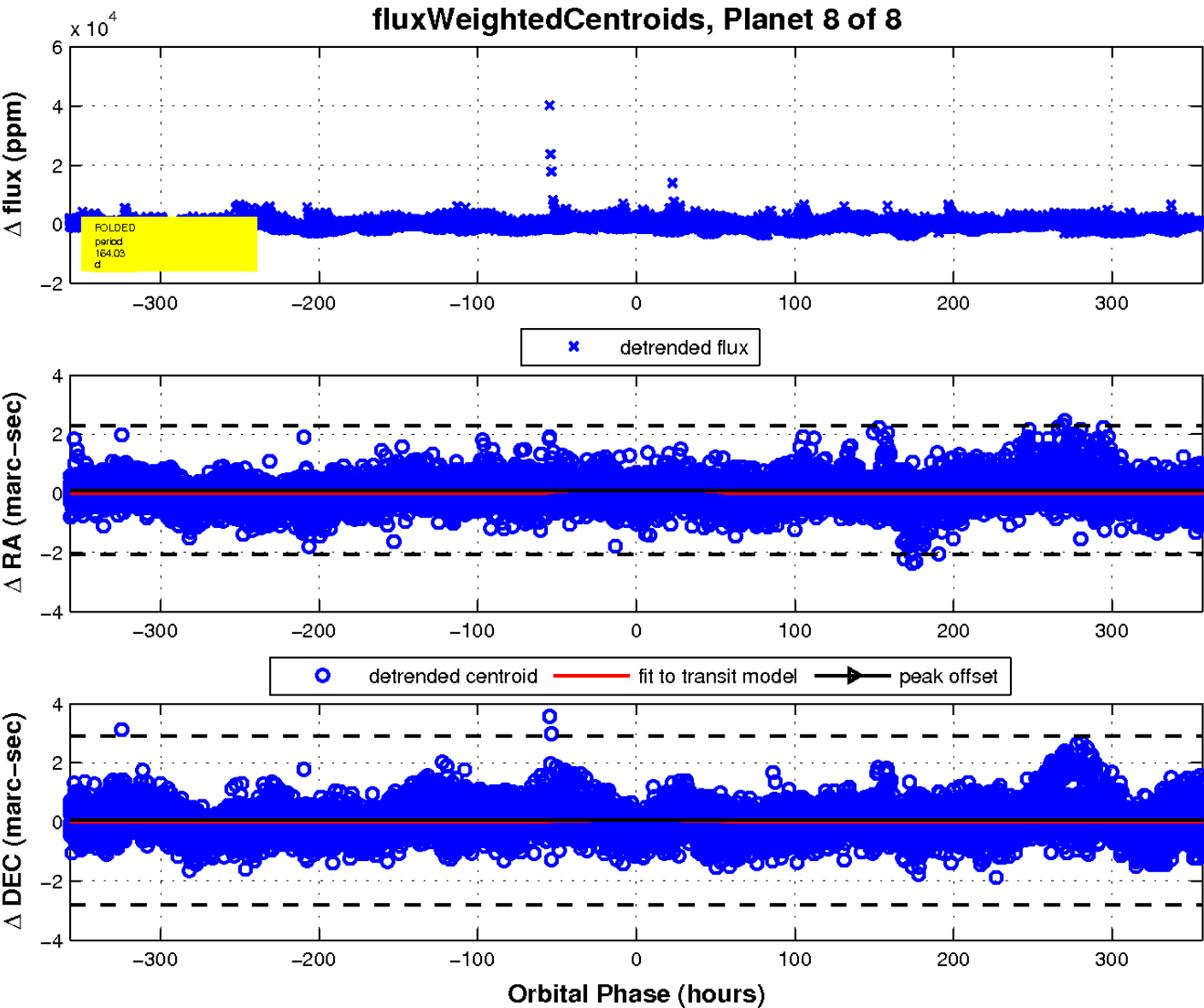
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

