

KIC 008604993

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})
008604993-01	OBS	7066.01	6.570421	134.019540	60000.5	4.457	2283.6	2138.5	0.91	5812	32.63	189.44
008604993-02	OBS	No	6.570430	137.349935	22319.1	4.263	861.2	776.6	0.91	5812	23.87	189.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008604993-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
008604993-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

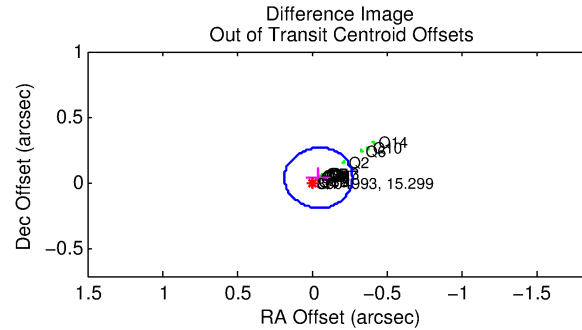
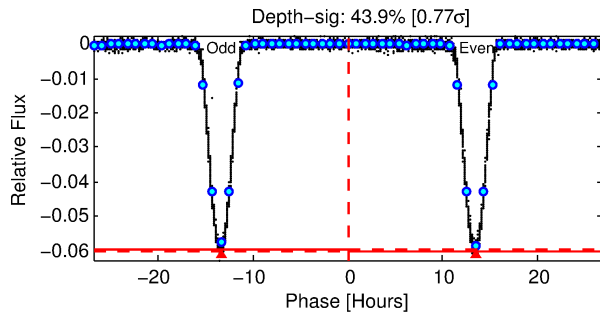
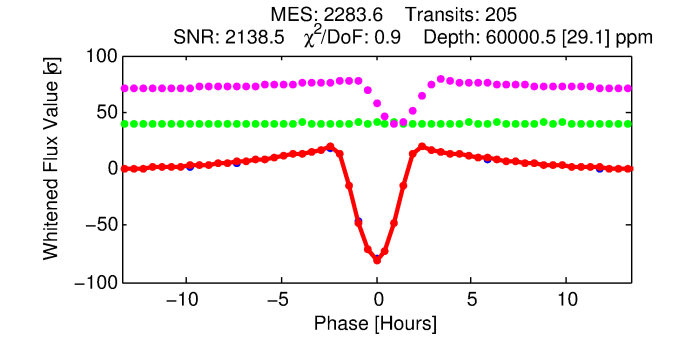
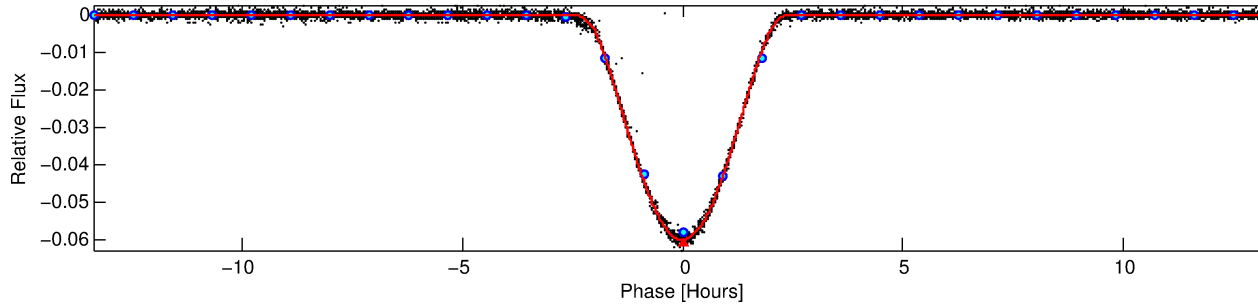
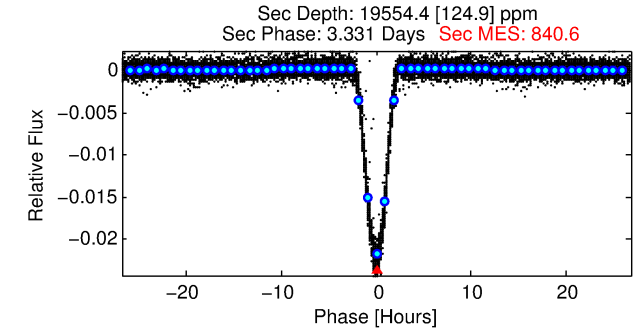
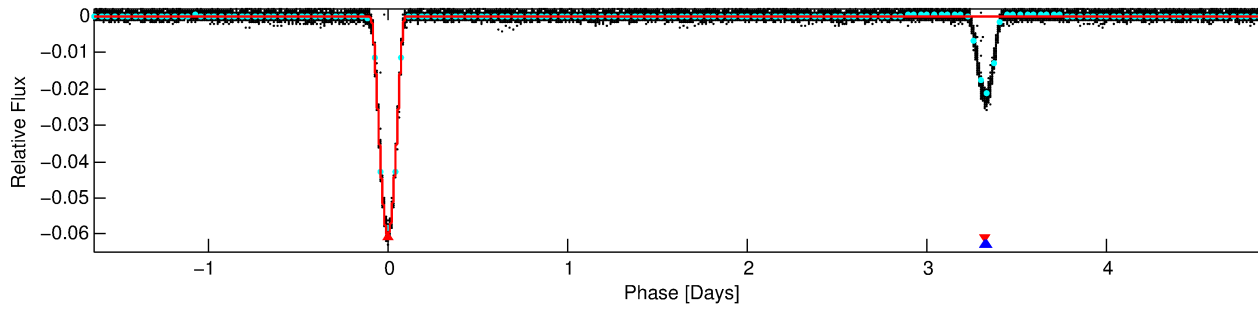
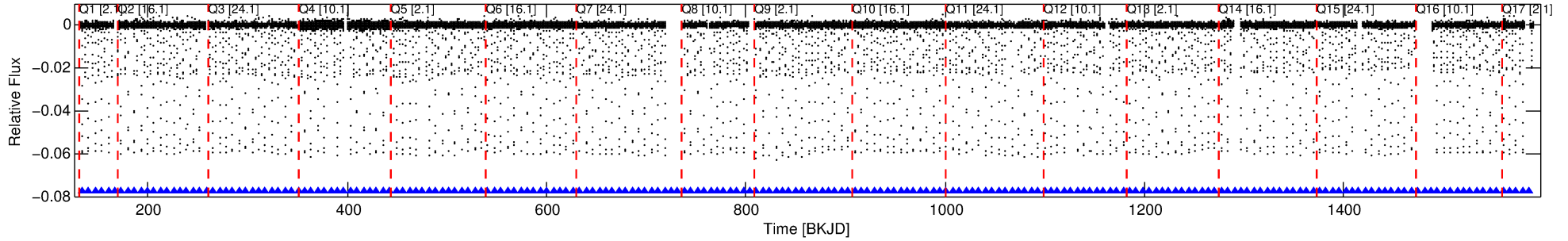
Ephemeris Match Information For 008604993-01

No Significant Match Found

DV One-Page Summary

KIC: 8604993 Candidate: 1 of 2 Period: 6.570 d
KOI: K07066.01 Corr: 0.999

Kp: 15.30 R*: 0.91 Rs Teff: 5812.0 K Logg: 4.48 Fe/H: -0.220



DV Fit Results:

Period = 6.57042 [0.00000] d
Epoch = 134.0195 [0.0000] BKJD
Rp/R* = 0.3293 [0.0061]
a/R* = 10.86 [0.01]
b = 0.92 [0.01]
Seff = 189.44 [66.29]
Teq = 946 [83] K
Rp = 32.63 [8.90] Re
a = 0.0667 [0.0153] AU
Ag = 44.95 [15.07] [2.92σ]
Teffp = 3787 [108] K [20.92σ]

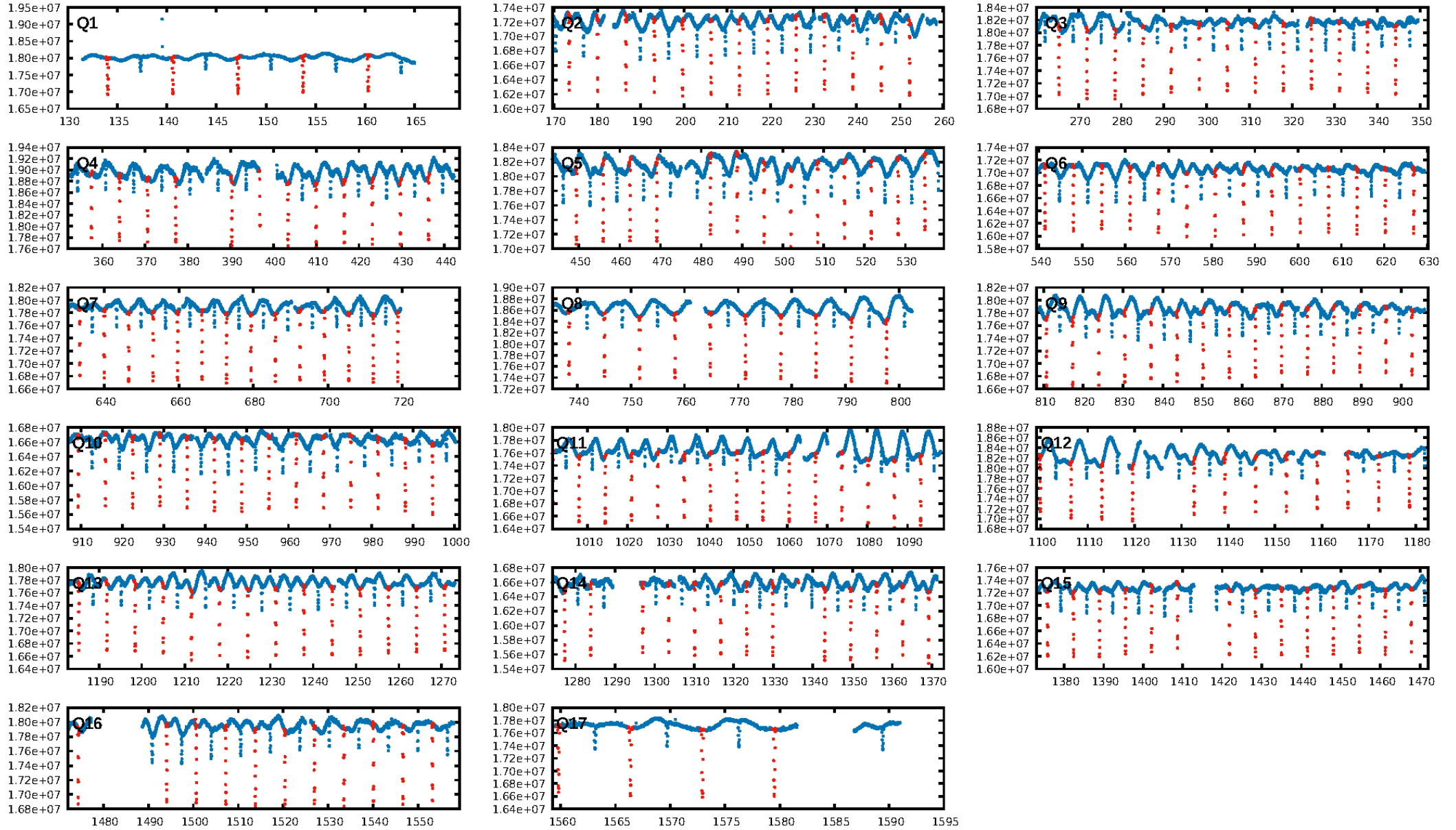
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [196/196]
GhostDiagnostic-chr: 3.479
Centroid-sig: 0.0%
Centroid-so: 0.299 arcsec [59.33σ]
OotOffset-rm: 0.063 arcsec [0.83σ]
KicOffset-rm: 0.072 arcsec [0.99σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

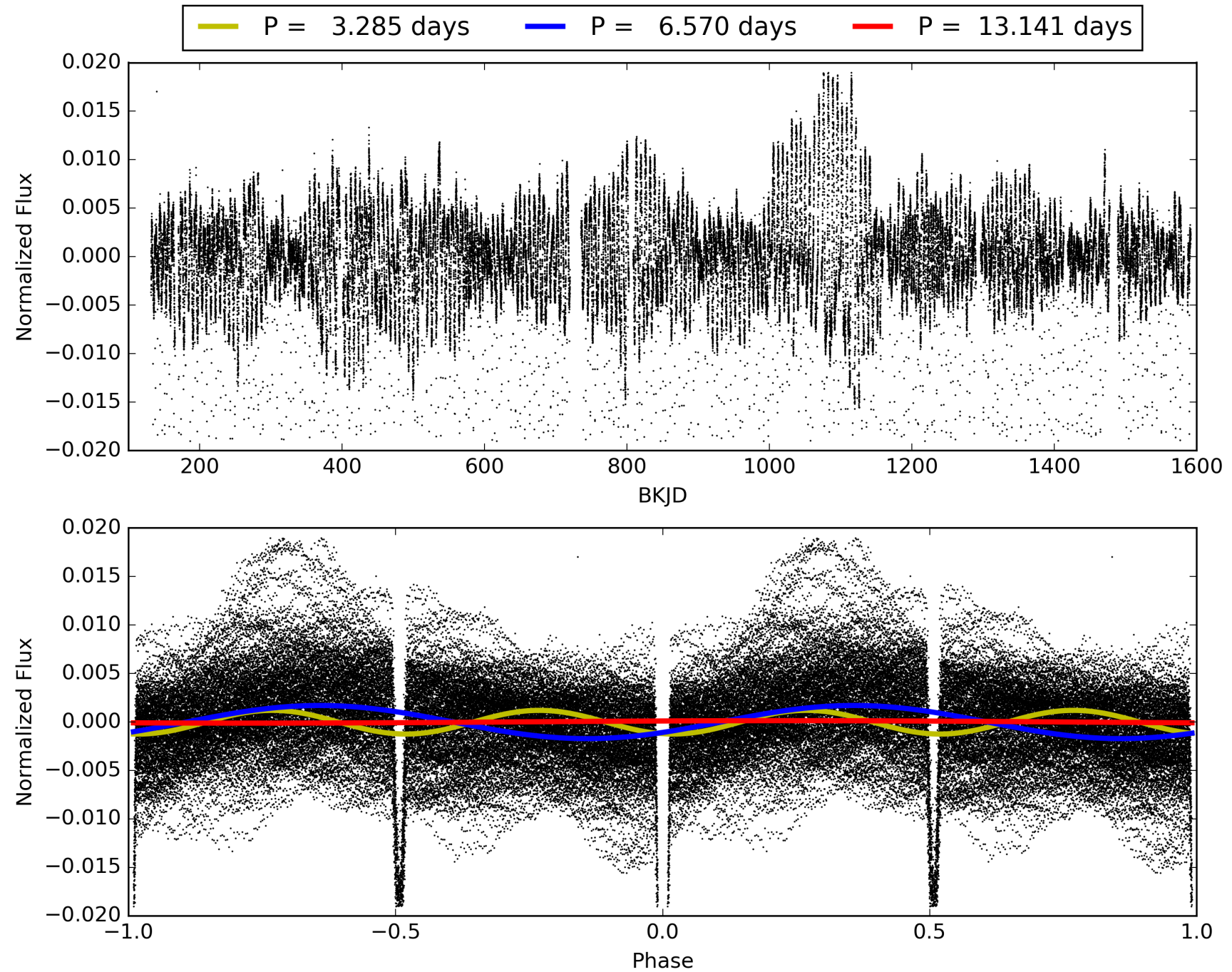
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 02:21:17 Z

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

TCE 008604993-01, PDC Light Curves

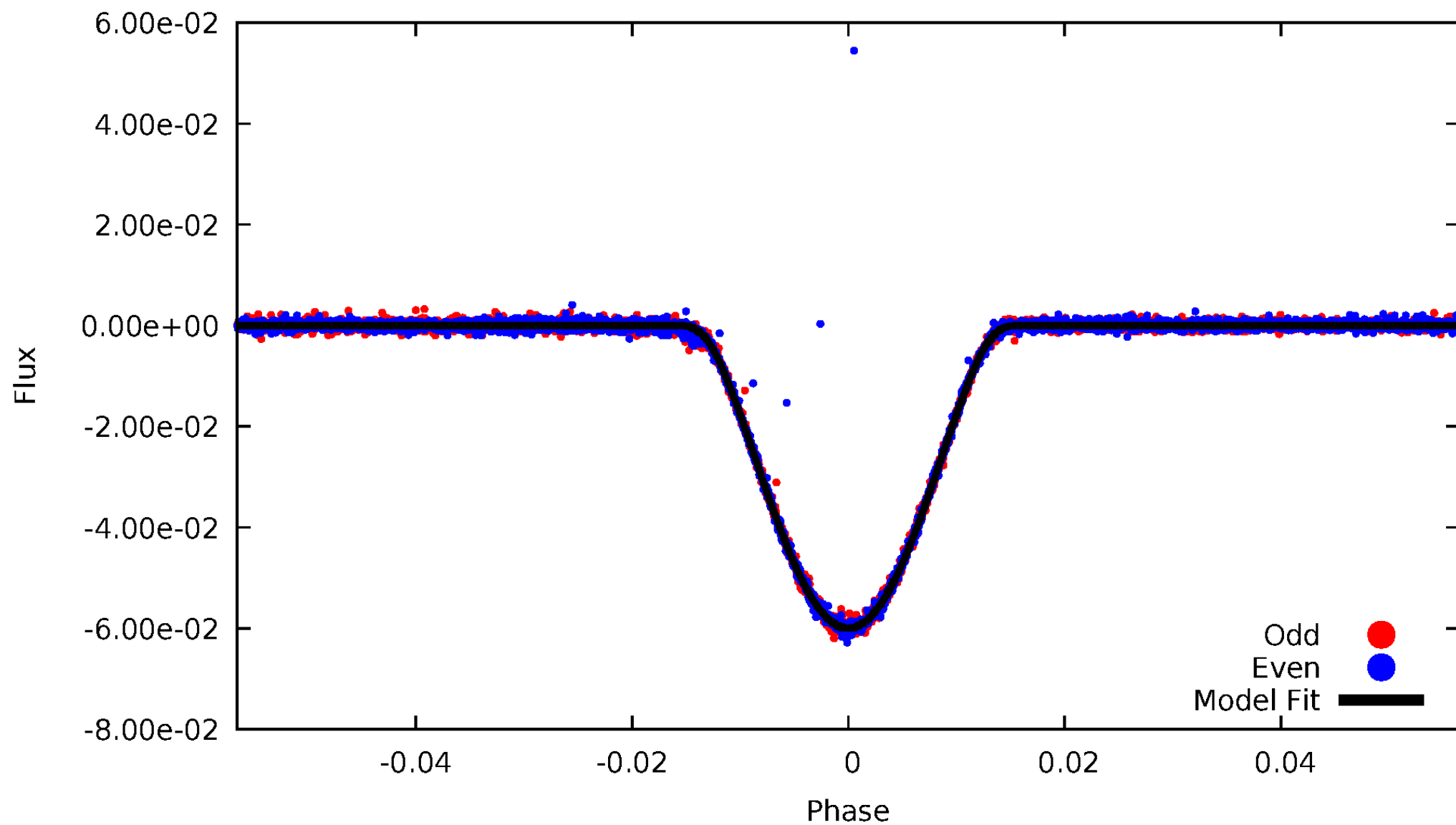


TCE 008604993-01



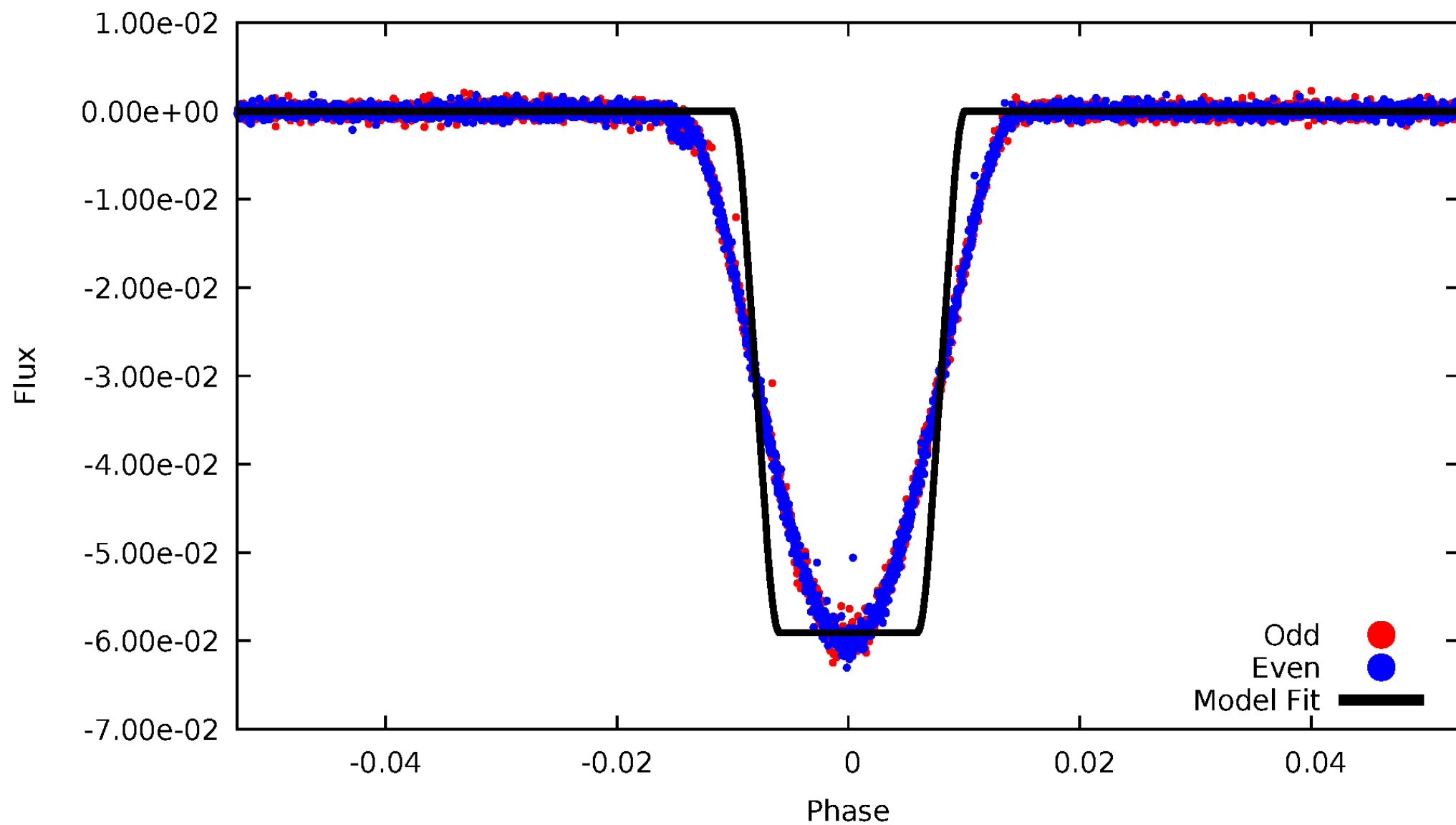
DV Odd/Even

TCE 008604993-01



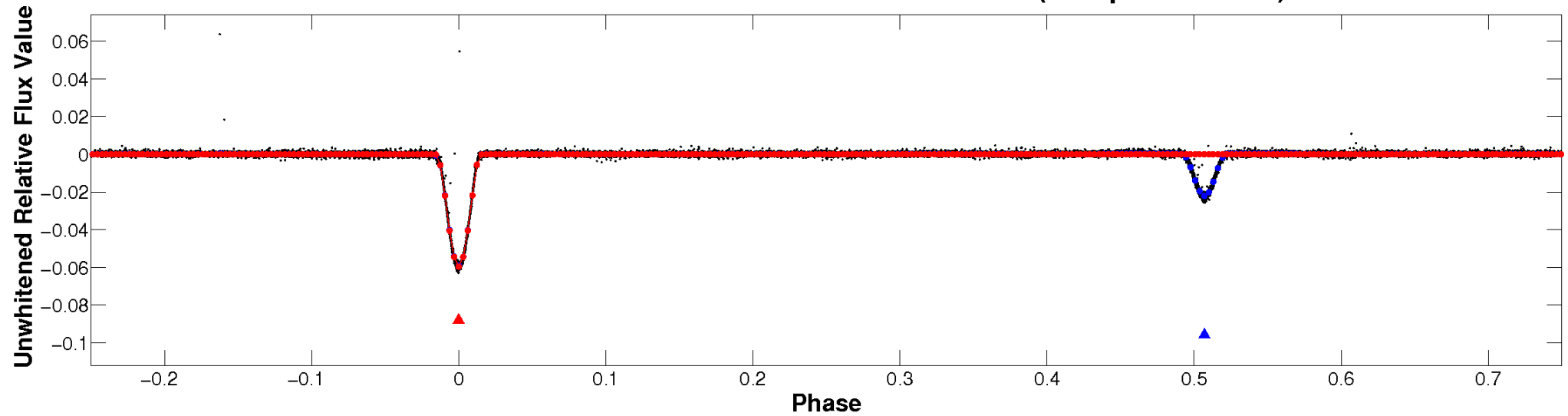
ALT Odd/Even

TCE 008604993-01

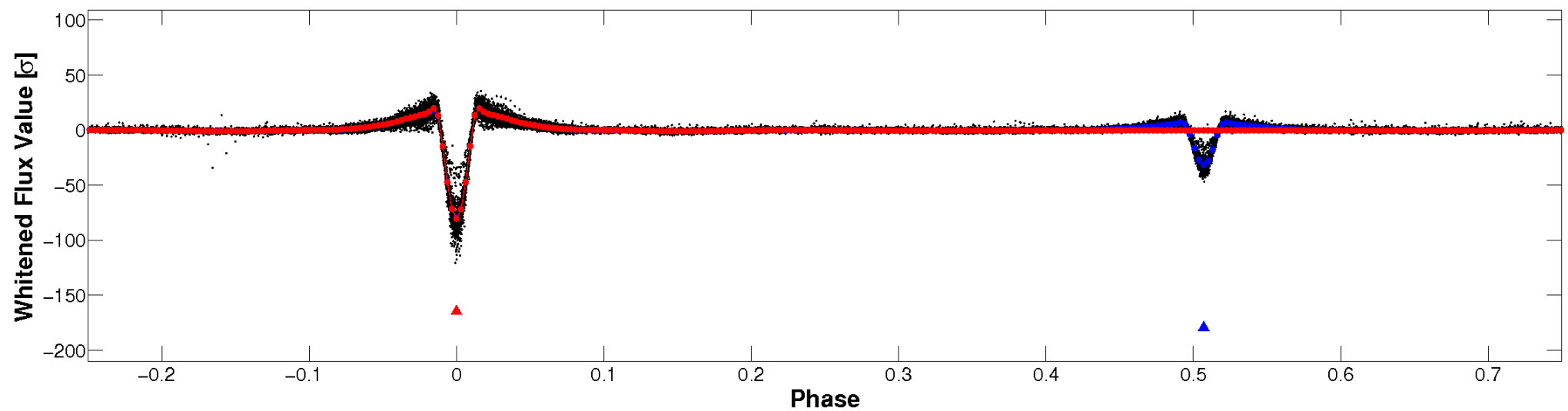


Non-Whitened Vs. Whitened Light Curve

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

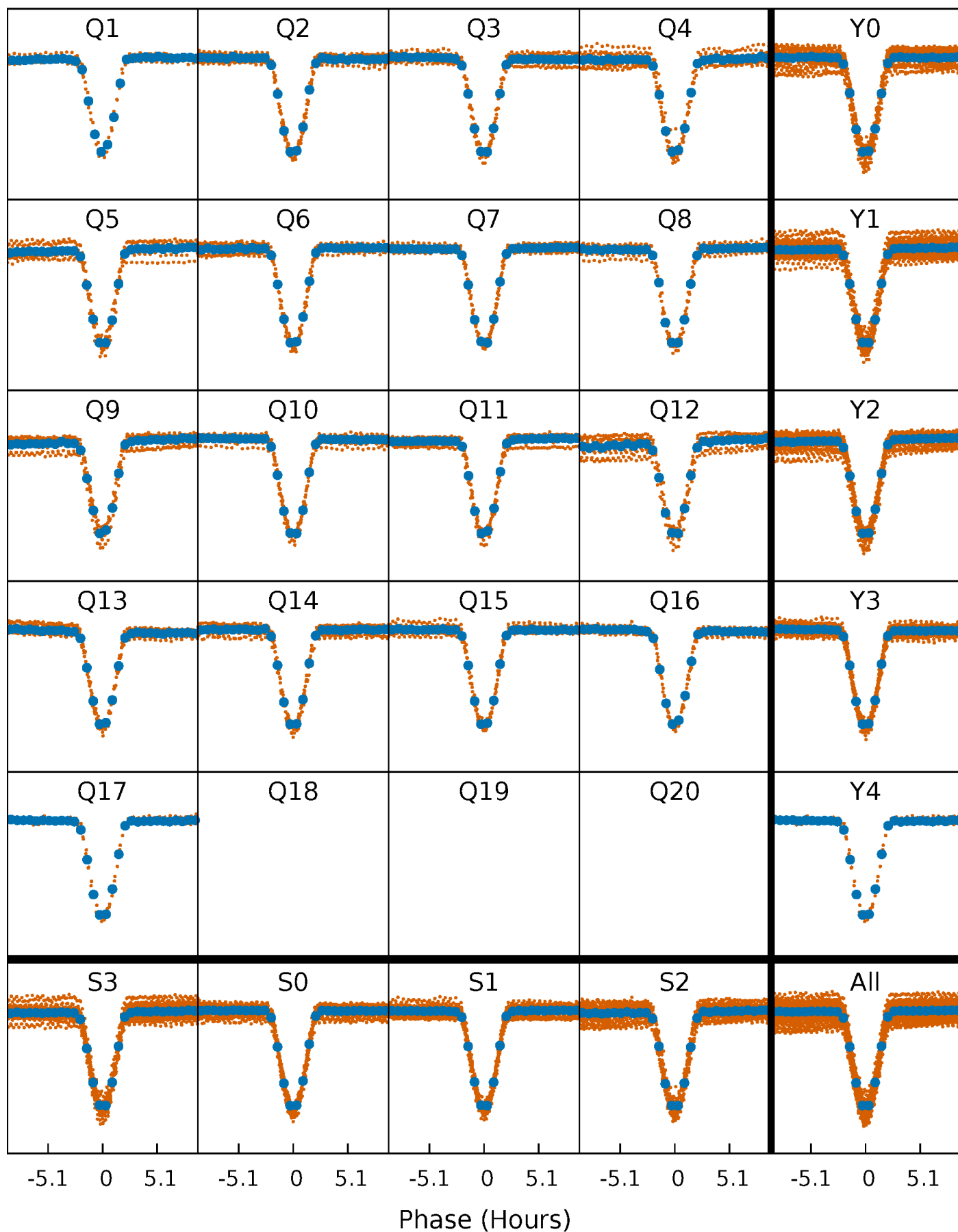


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



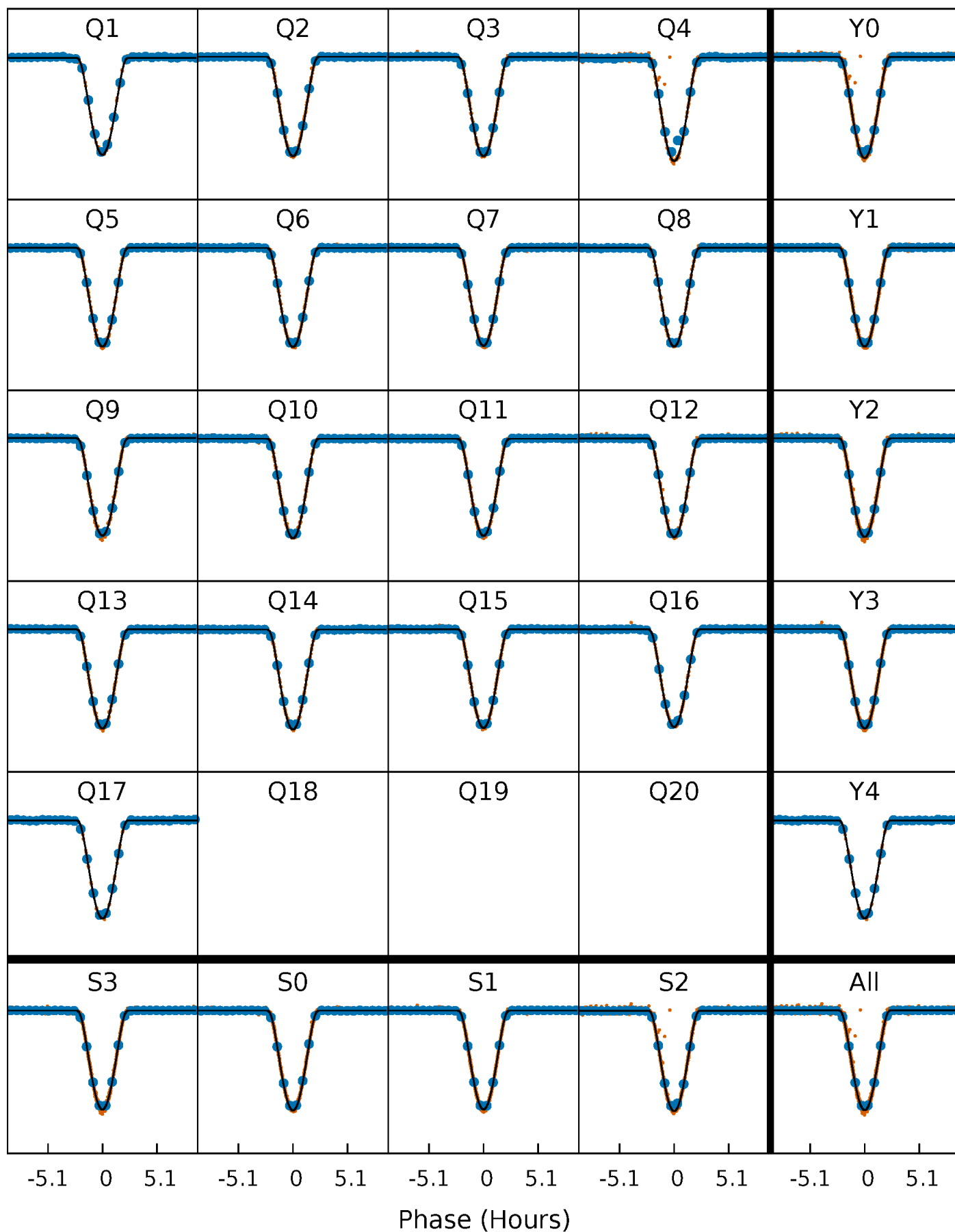
PDC Quarter-Phased Transit Curves

TCE 008604993-01 P= 6.570421 Days $T_0=134.019540$ (BKJD)



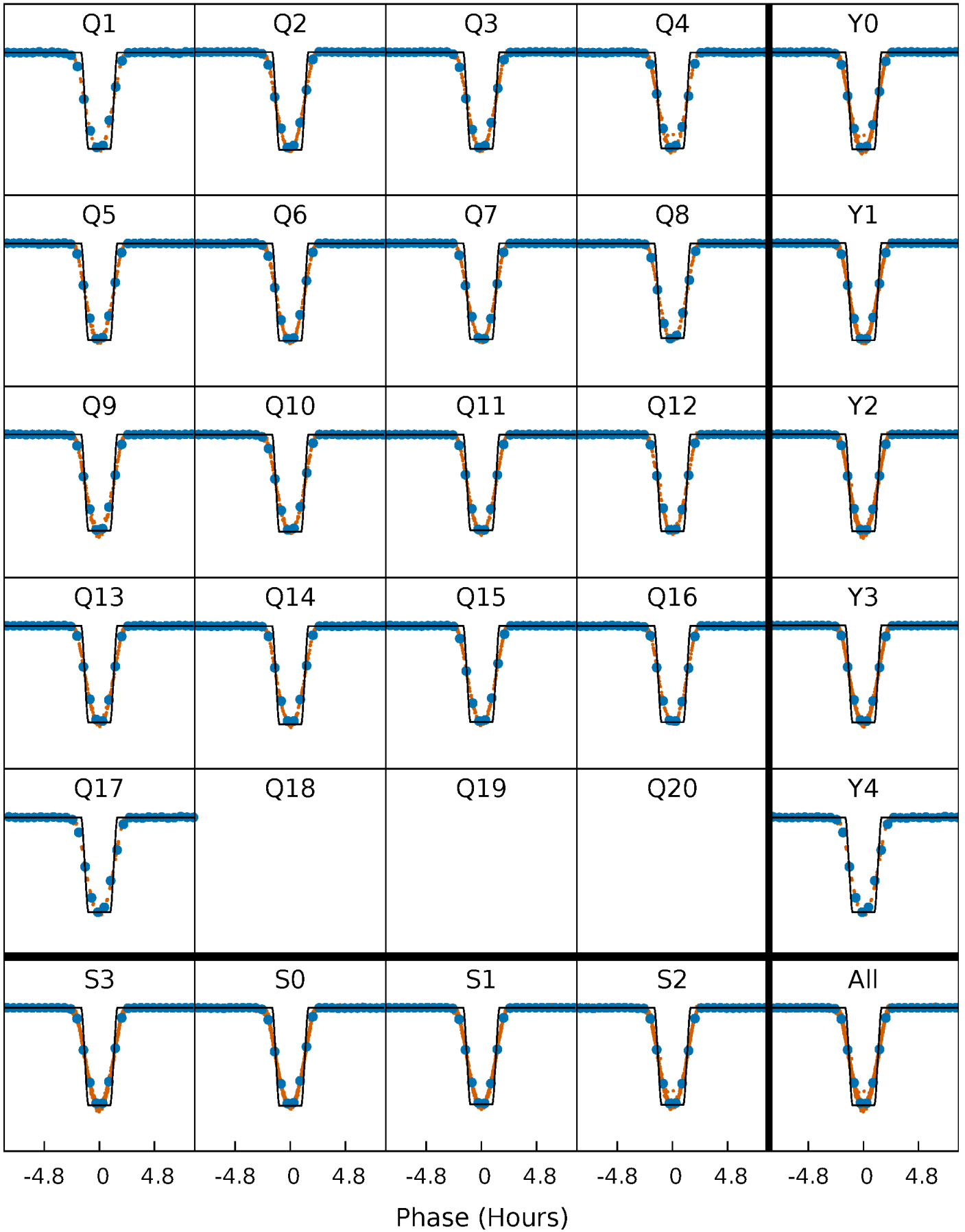
DV Quarter-Phased Transit Curves

TCE 008604993-01 P= 6.570421 Days $T_0=134.019540$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

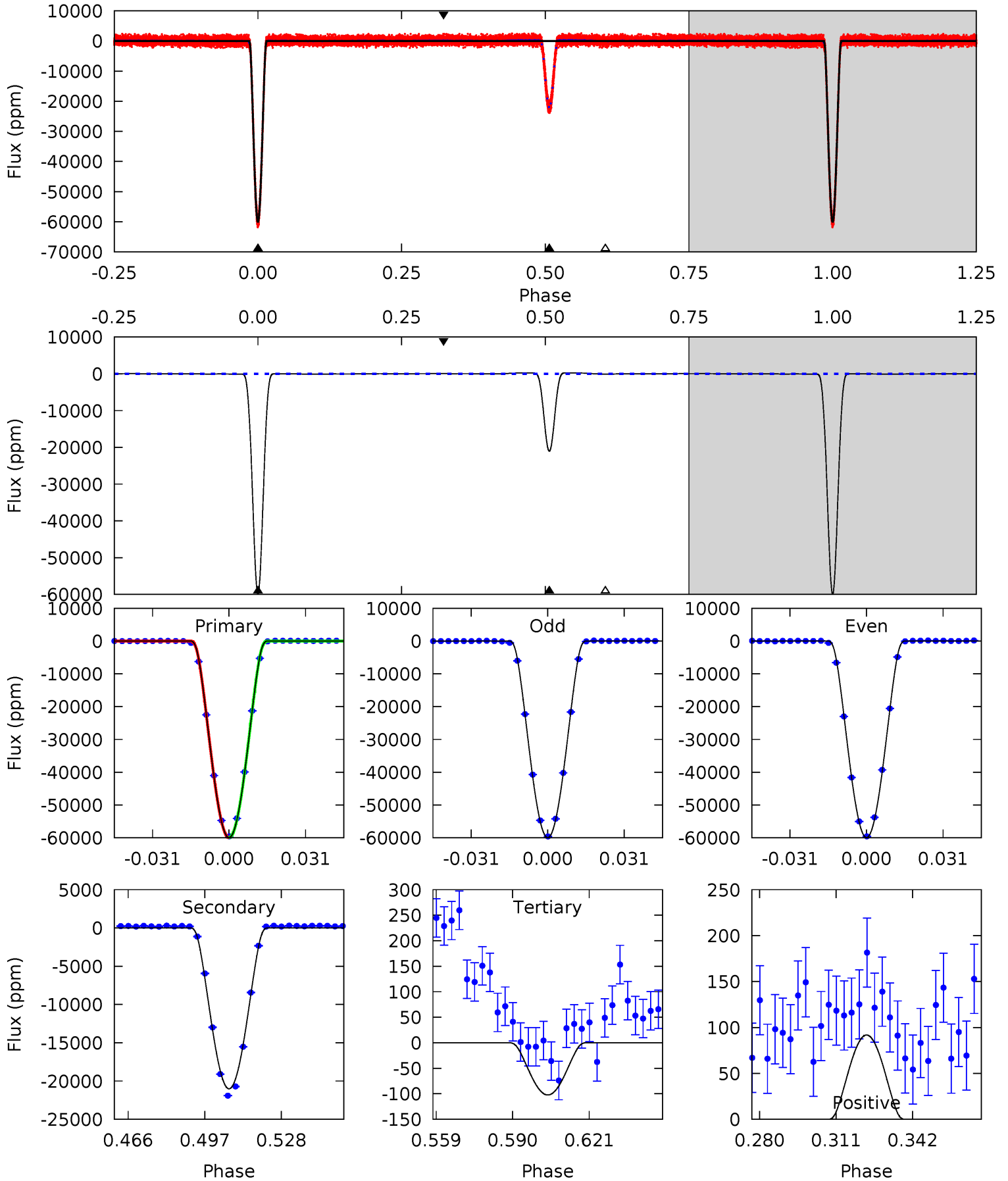
TCE 008604993-01 P= 6.570410 Days $T_0=134.020771$ (BKJD)



DV Model-Shift Uniqueness Test

008604993-01, P = 6.570421 Days, E = 127.449119 Days

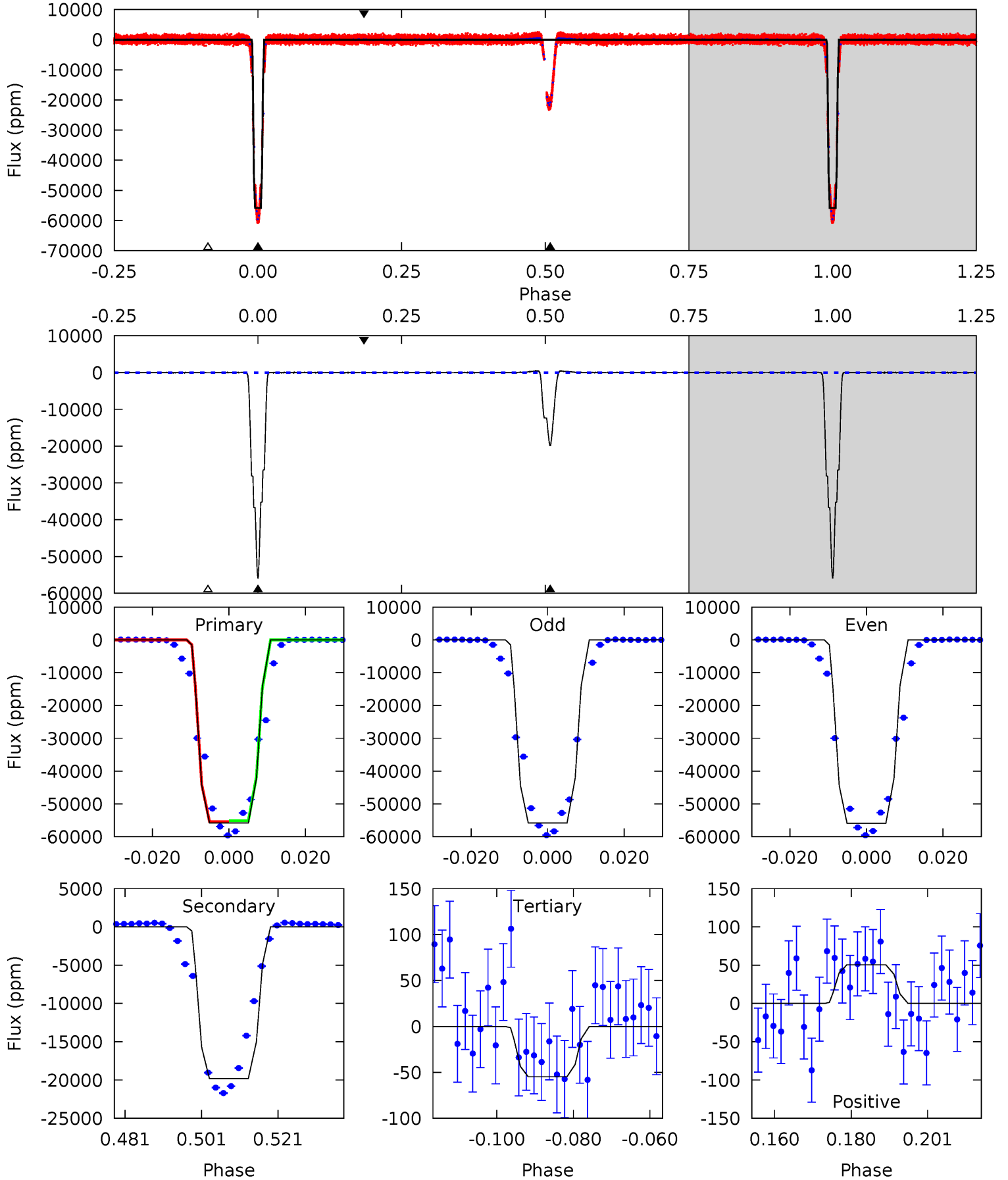
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4650	1630	7.93	7.12	4.80	2.16	5.87	4642	4643	1622	1623	0.77	0.99	0.00	0.10



Alt Model-Shift Uniqueness Test

008604993-01, P = 6.570410 Days, E = 127.450361 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3095	1099	3.03	2.80	4.89	2.33	3.95	3092	3092	1096	1096	3.56	1.00	0.01	7.53



Stellar Parameters For KIC 008604993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5812^{+156}_{-156}	$4.484^{+0.065}_{-0.182}$	$-0.220^{+0.300}_{-0.300}$	$0.908^{+0.247}_{-0.106}$	$0.916^{+0.111}_{-0.101}$	$1.724^{+0.575}_{-0.849}$
	+3%/-3%	+1%/-4%	+136%/-136%	+27%/-12%	+12%/-11%	+33%/-49%
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 008604993-01 / KOI 7066.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21014 ± 13	$33.09^{+4.74}_{-2.51}$	1341^{+86}_{-58}	4152^{+82}_{-89}	47^{+7}_{-10}
Alt.	-19825 ± 18	$24.64^{+3.72}_{-2.04}$	1343^{+83}_{-63}	4595^{+114}_{-114}	81^{+13}_{-18}

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

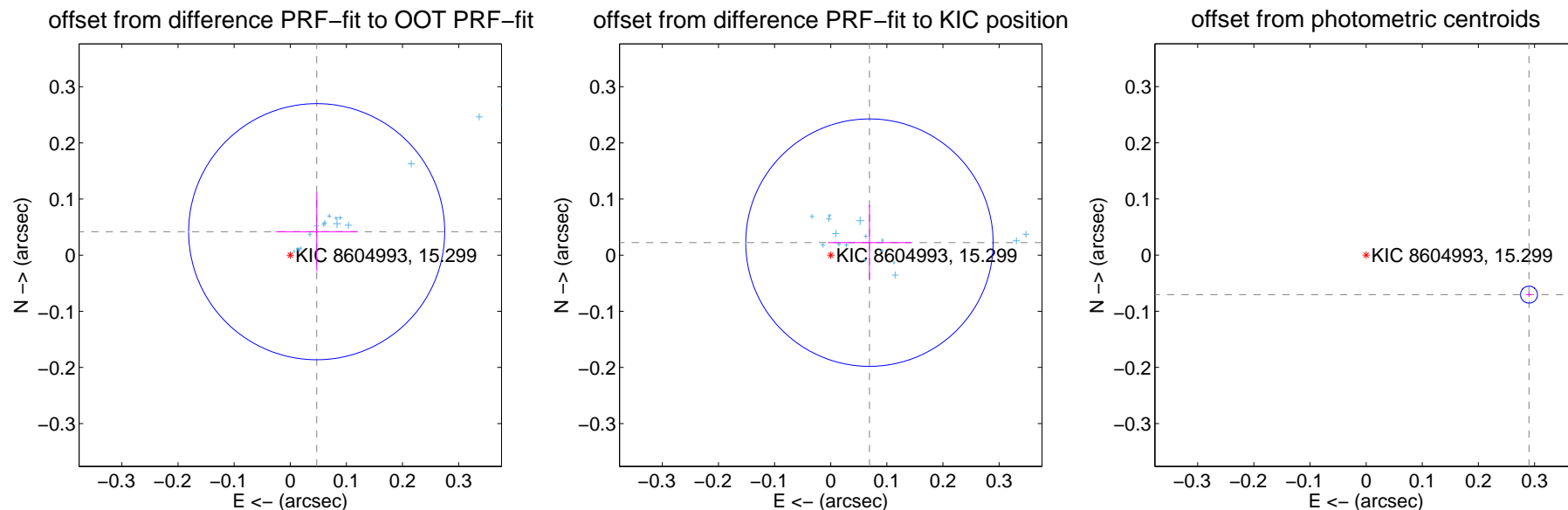
DV Centroid Data

Supplemental centroid analysis for 008604993-01. Kepler magnitude: 15.30. Transit SNR 2138.48

There are 17 quarters with good PRF difference image offsets

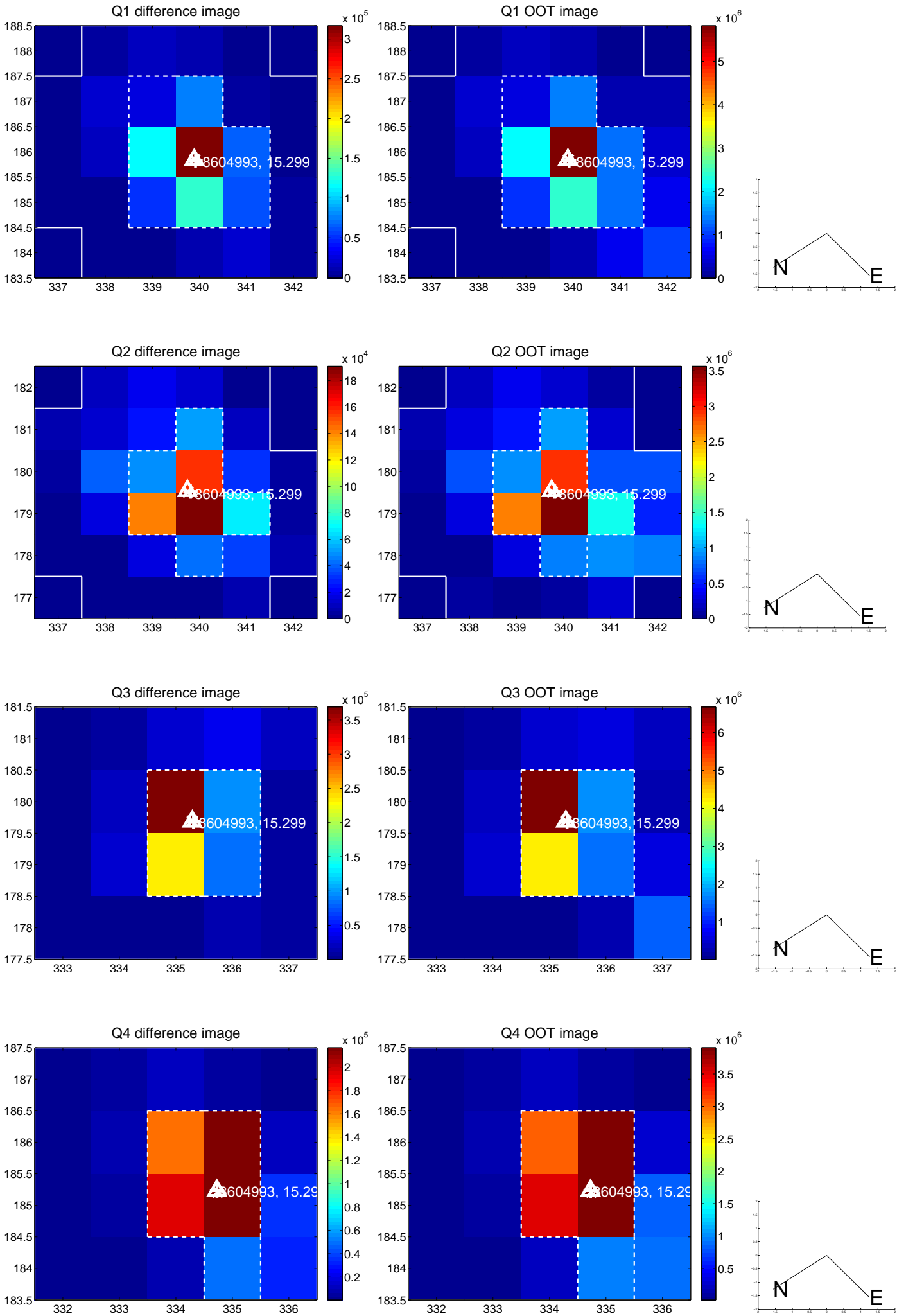
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.063 ± 0.076	0.83	-0.047 ± 0.073	0.042 ± 0.070
PRF-fit source offset from KIC position	0.072 ± 0.073	0.99	-0.069 ± 0.074	0.022 ± 0.067
photometric centroid source offset	0.30 ± 0.01	59.33	-0.29 ± 0.01	-0.07 ± 0.00

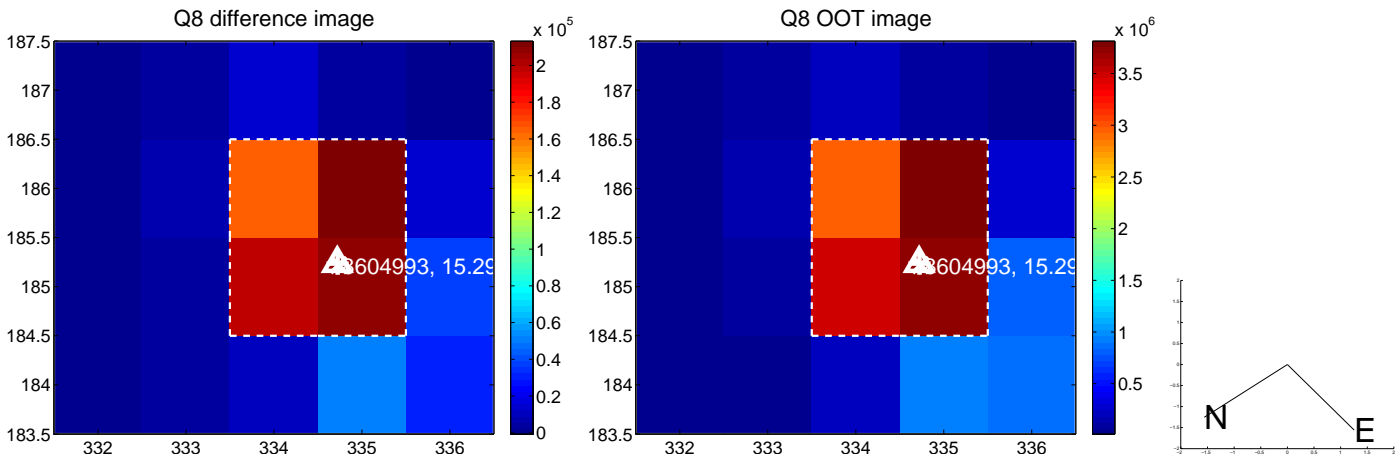
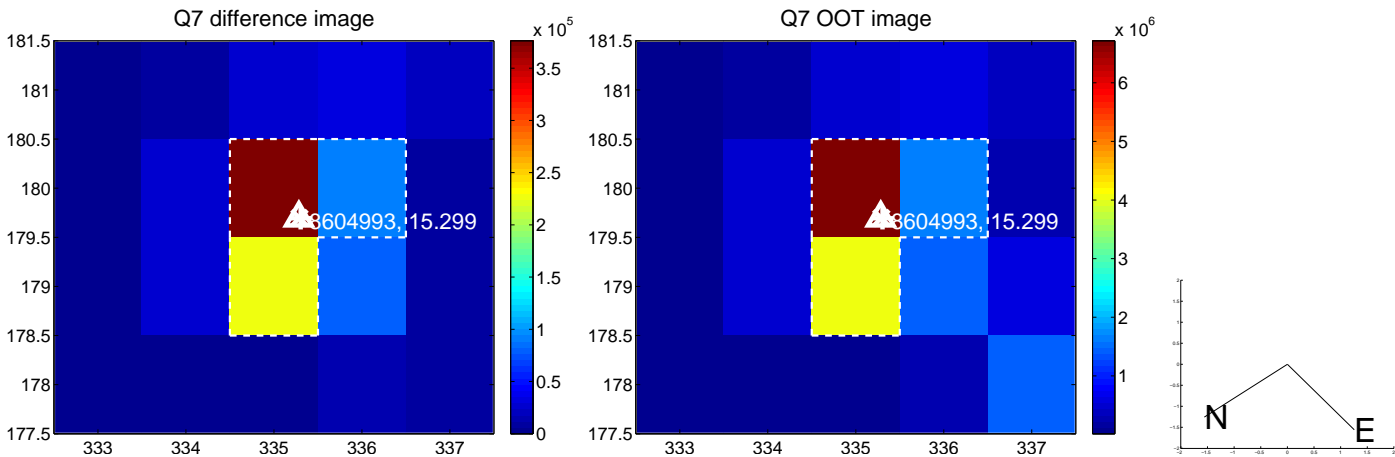
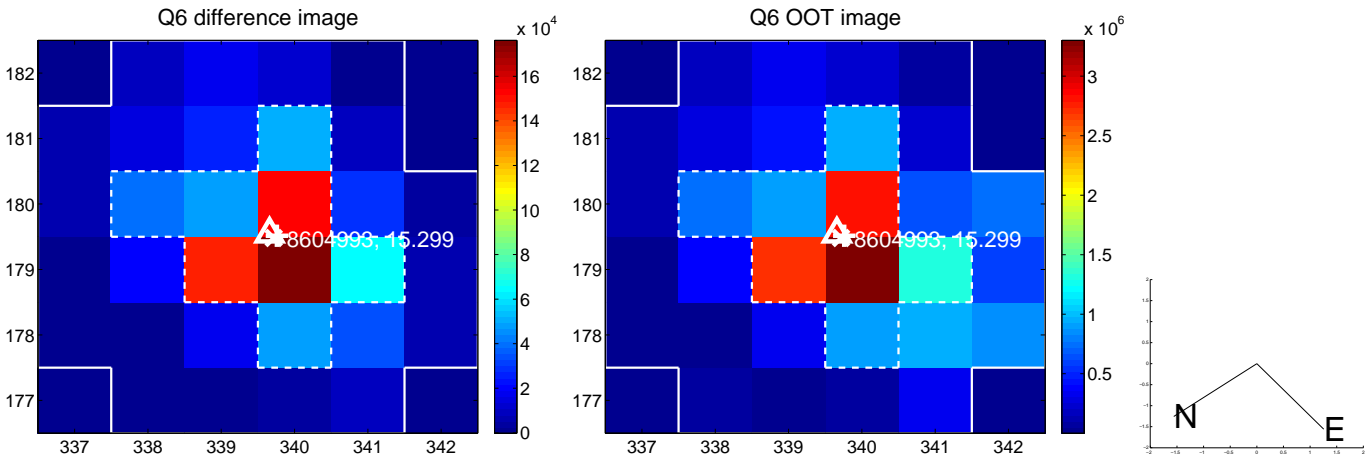
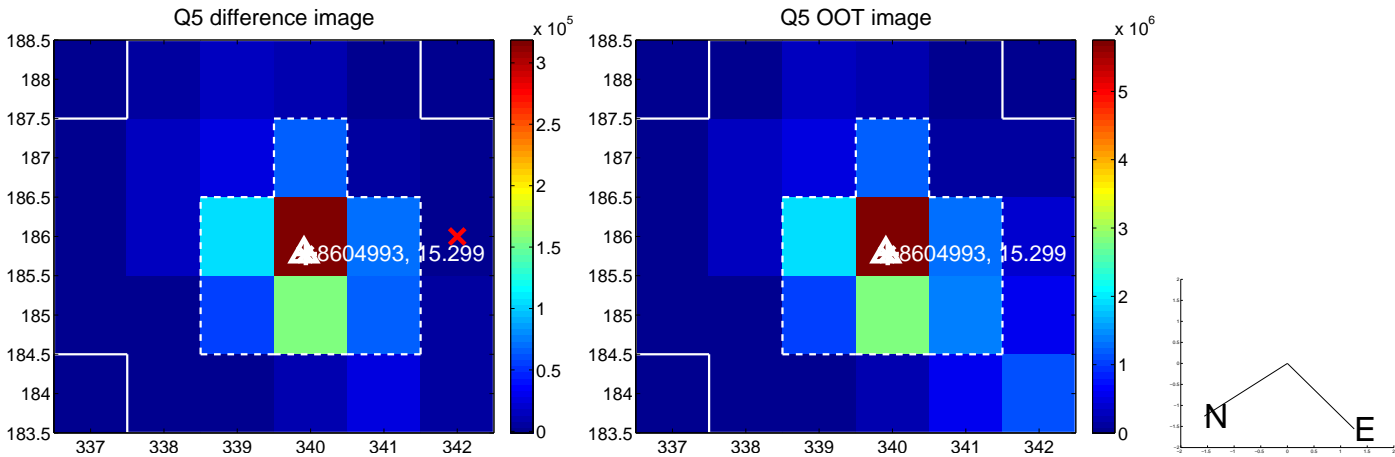


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

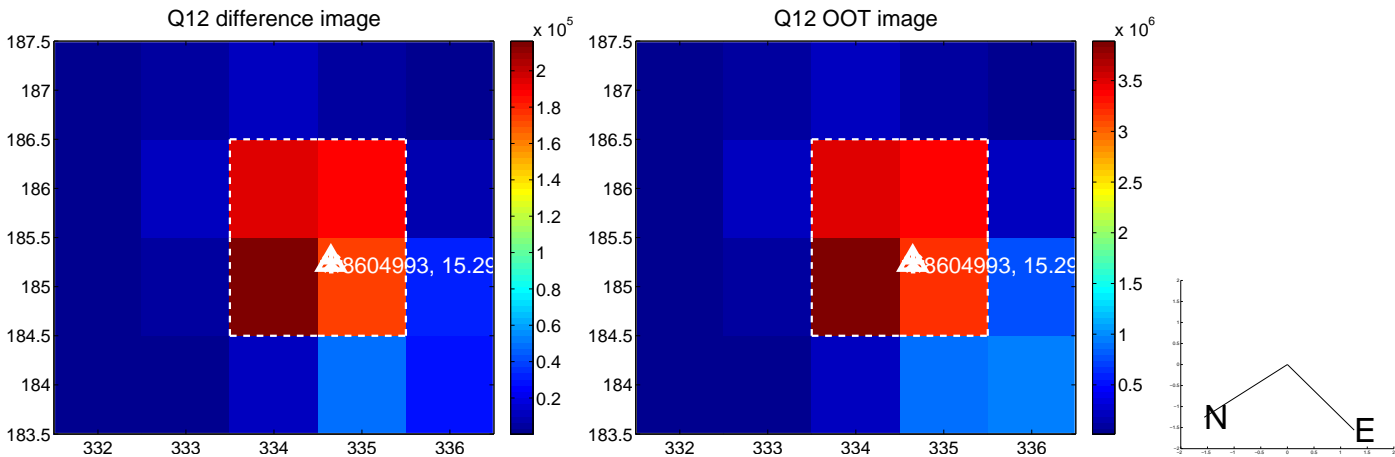
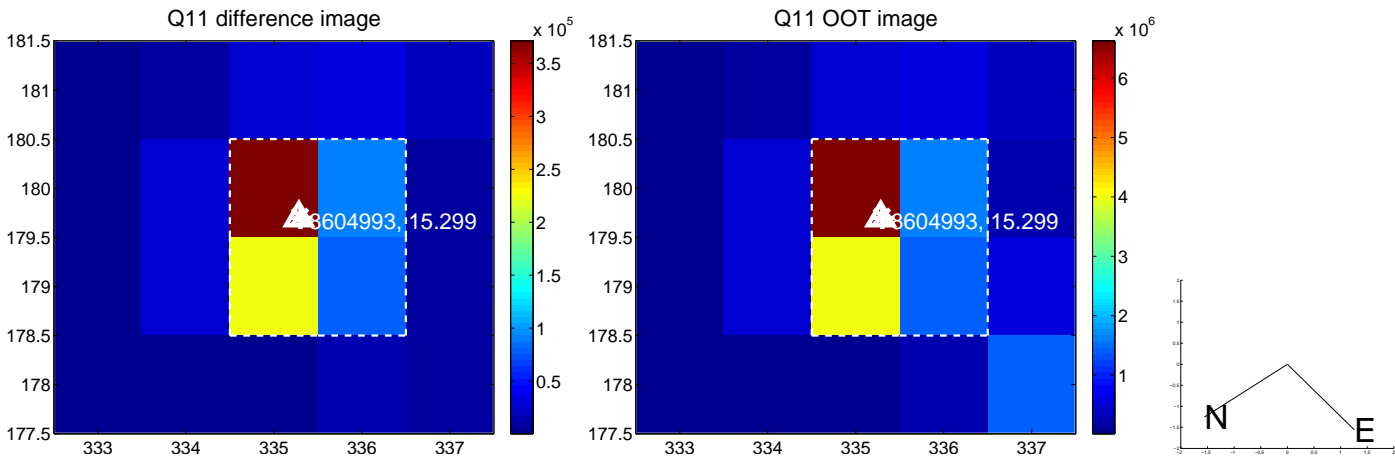
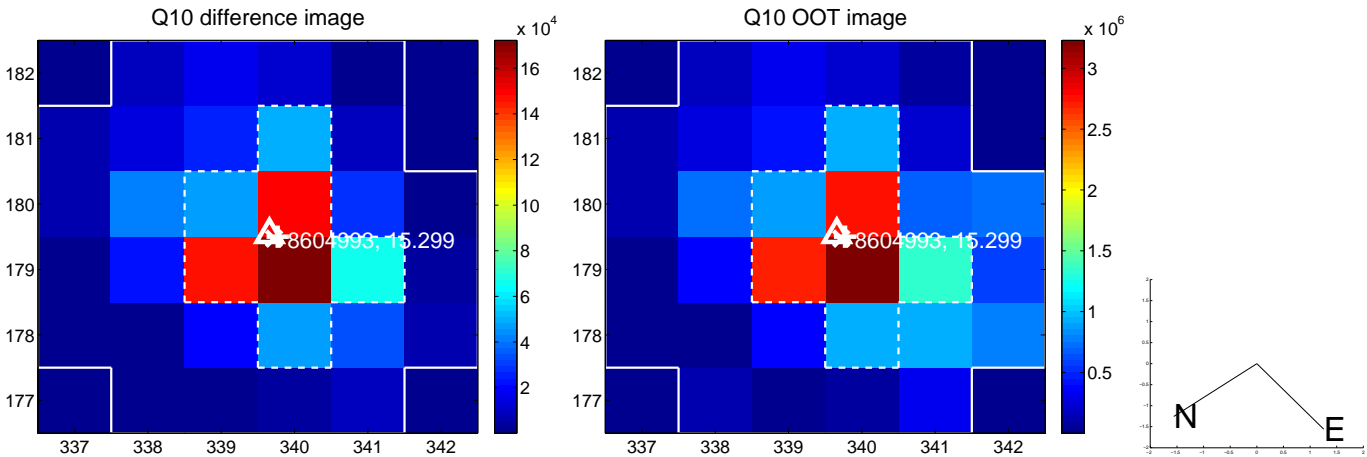
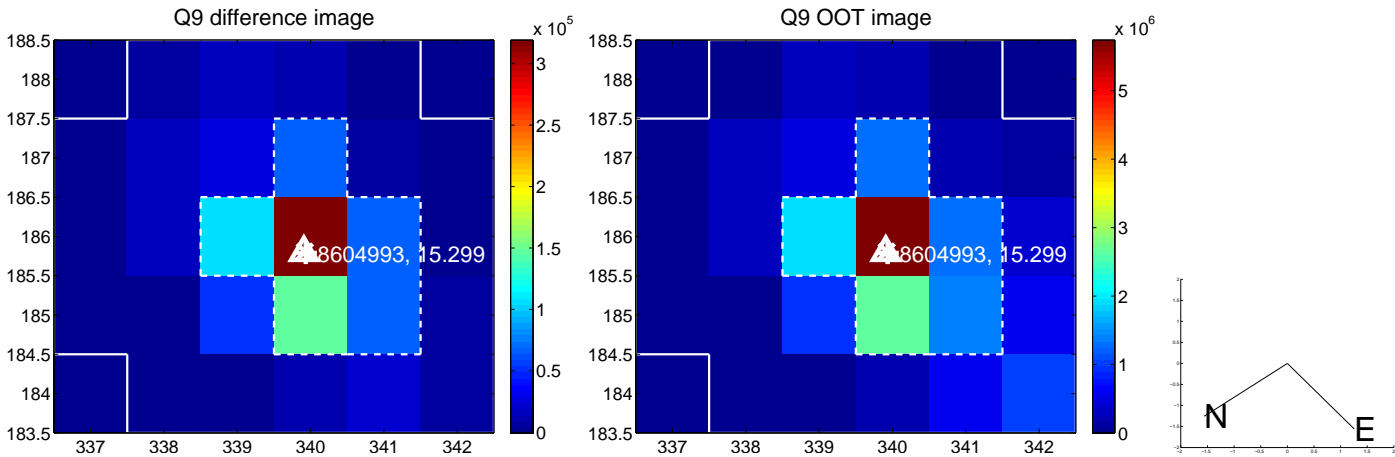
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



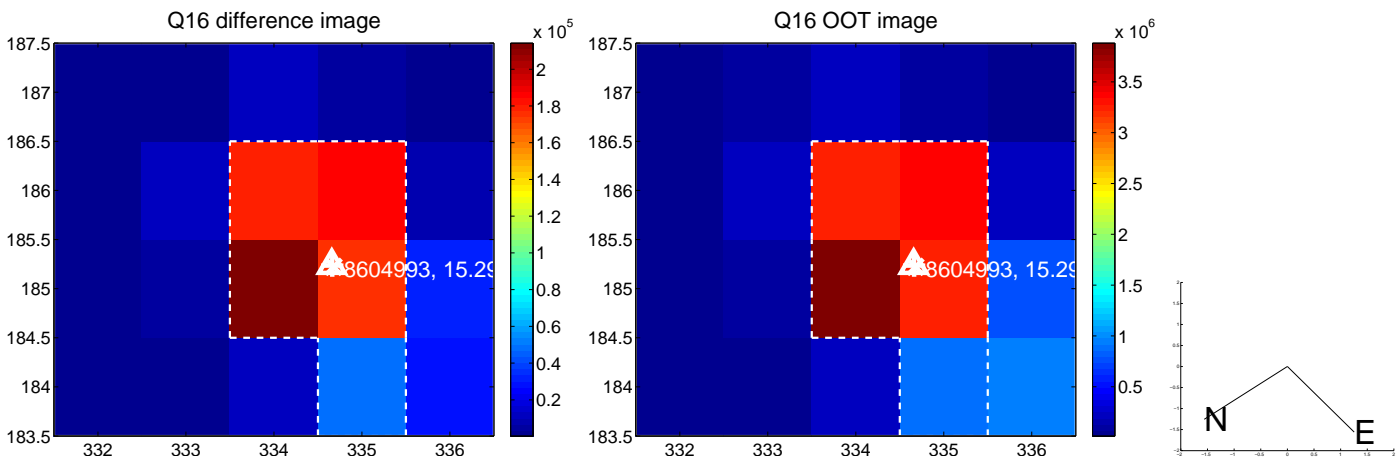
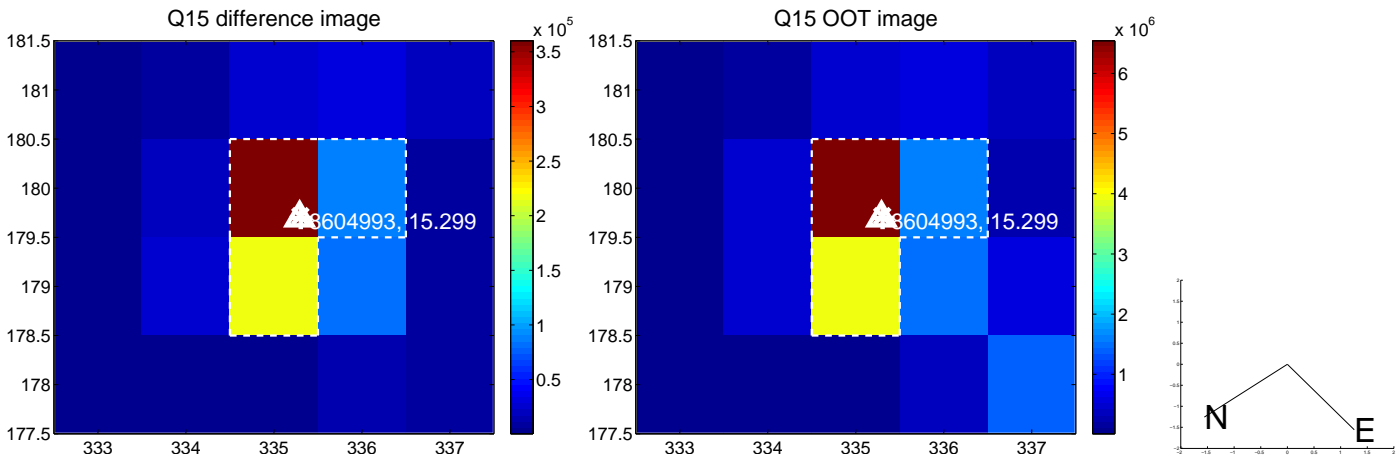
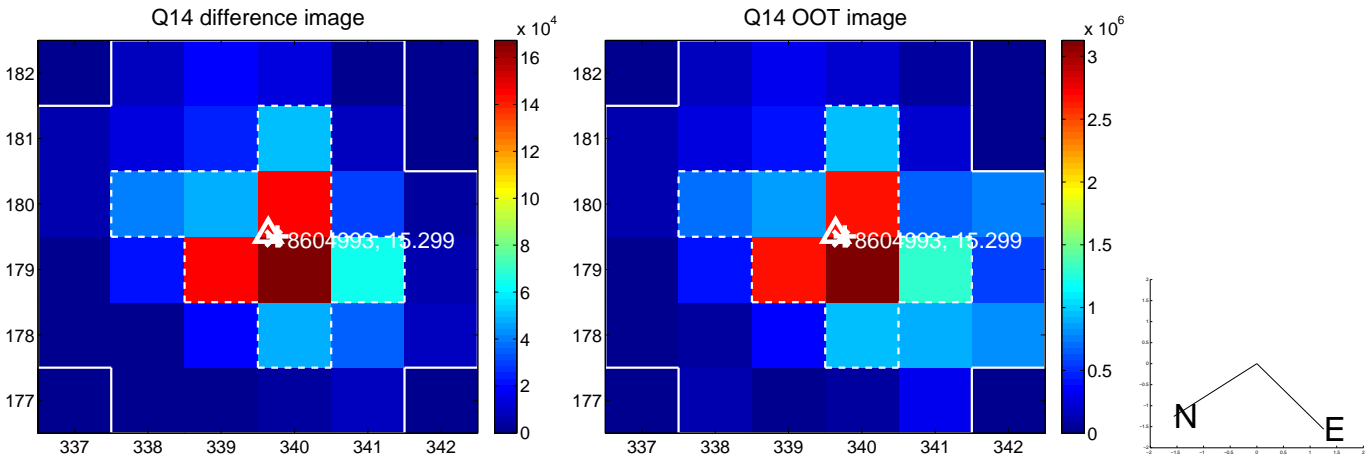
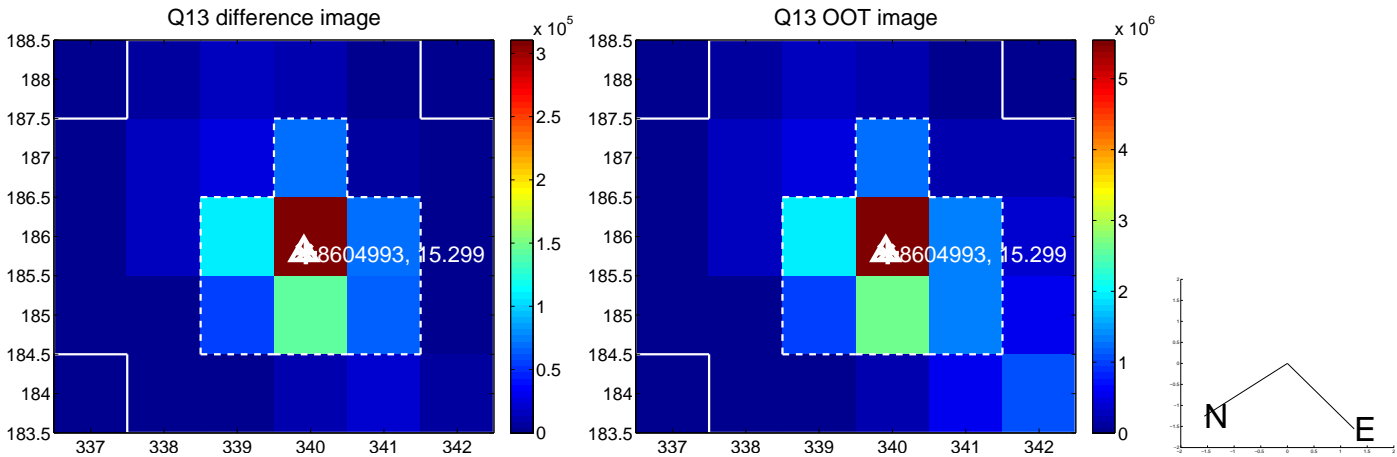
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



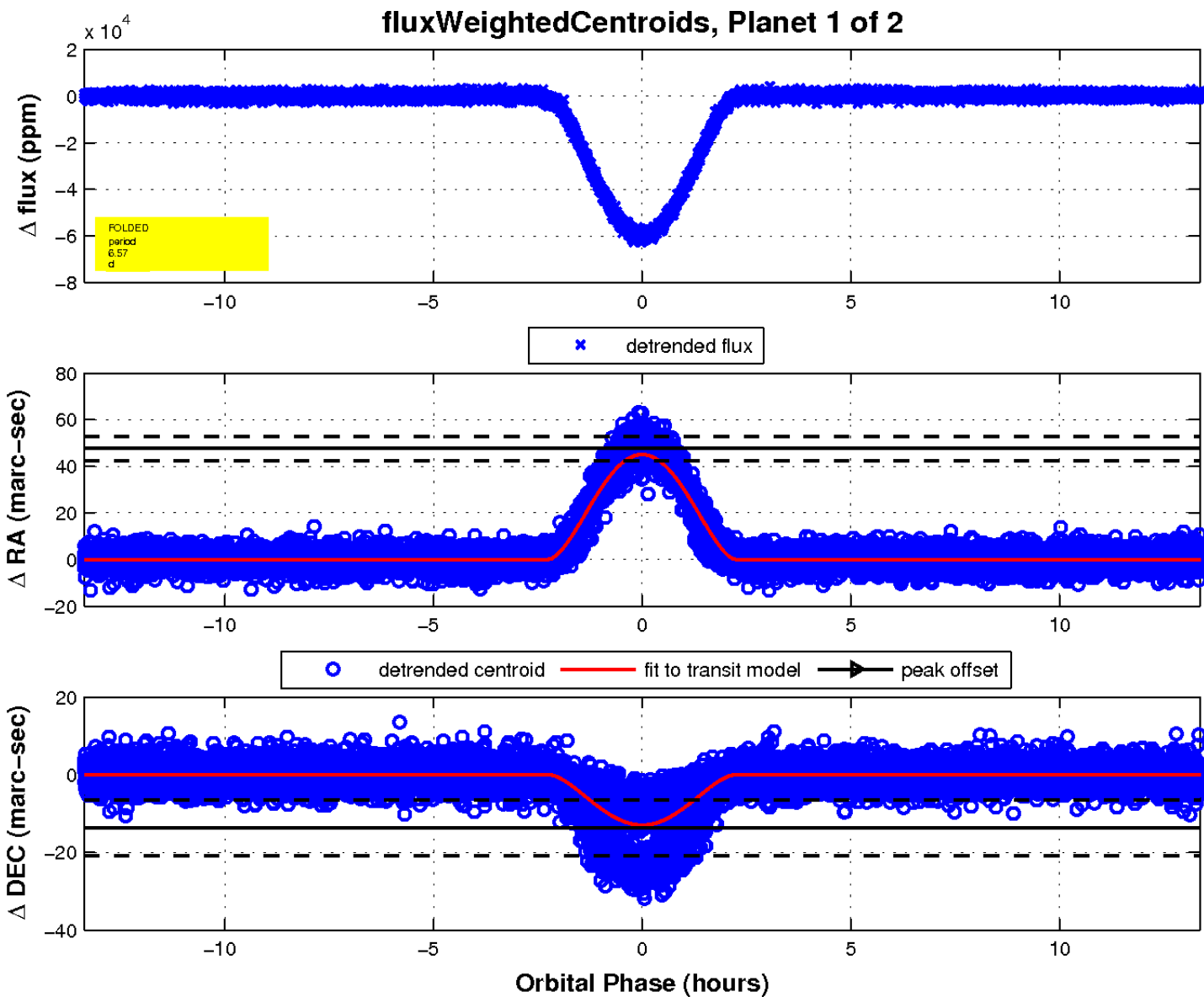
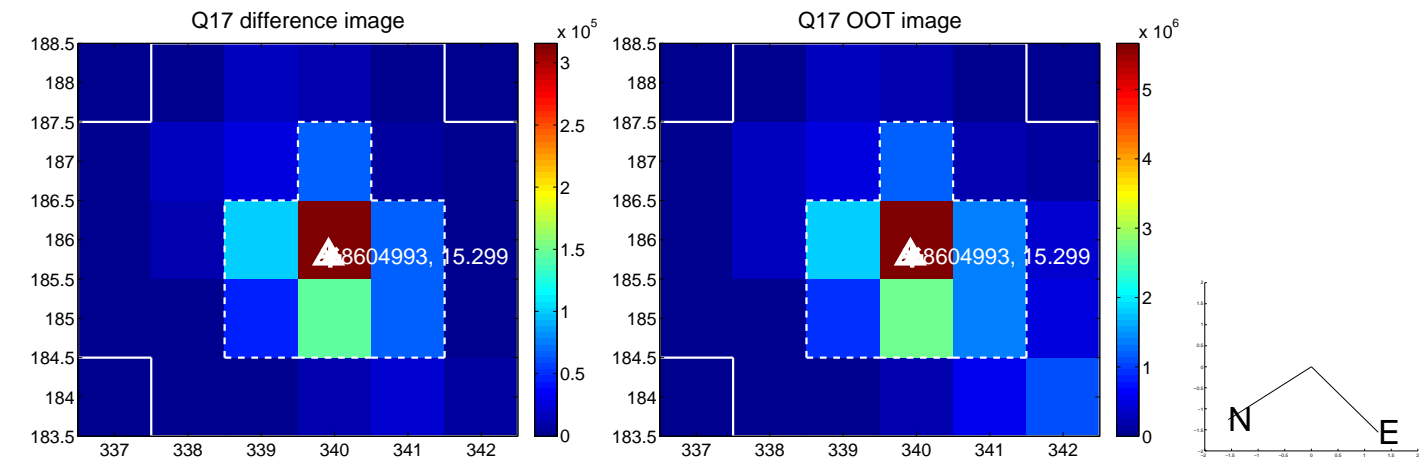
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

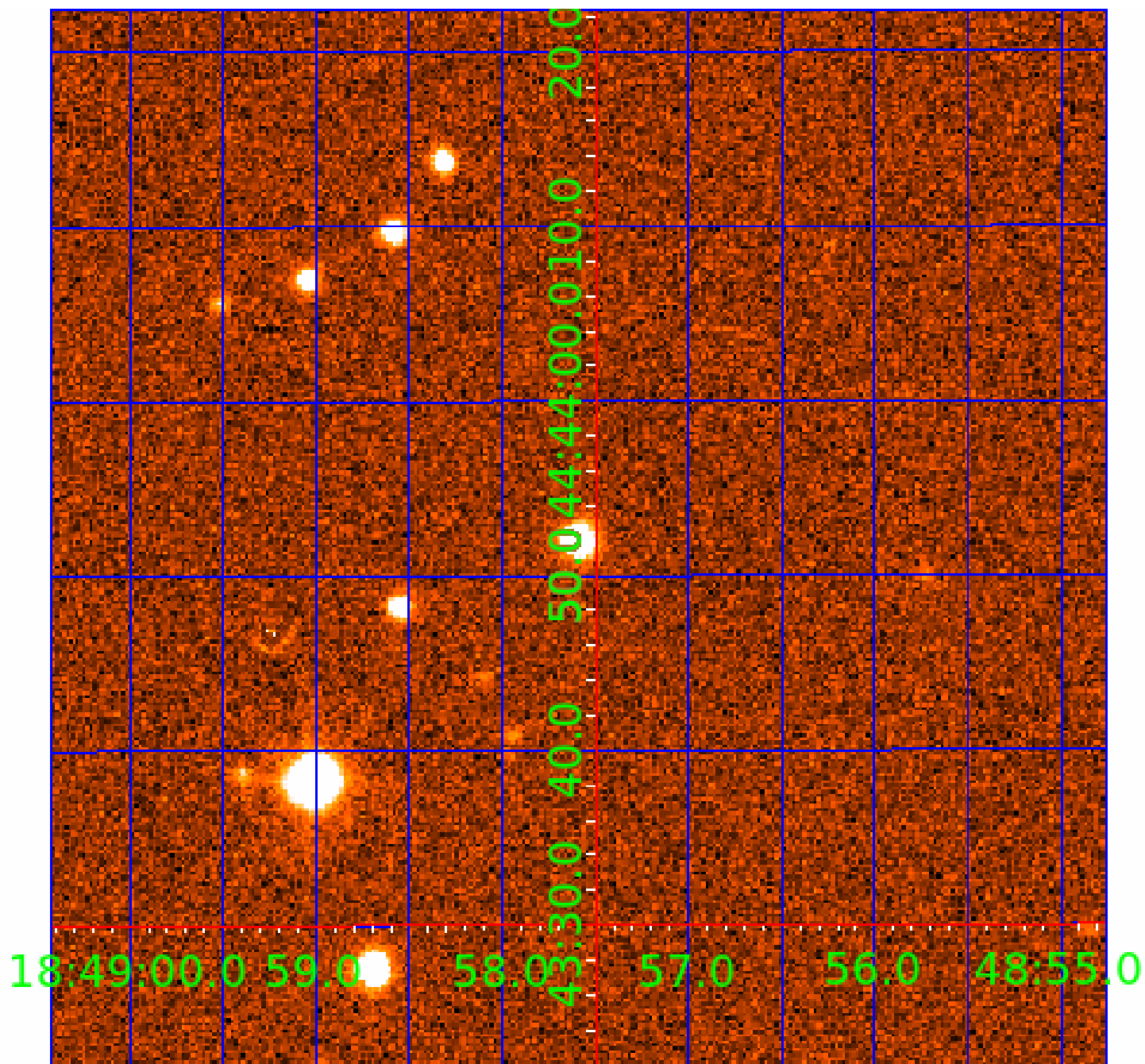


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008604993

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})
008604993-01	OBS	7066.01	6.570421	134.019540	60000.5	4.457	2283.6	2138.5	0.91	5812	32.63	189.44
008604993-02	OBS	No	6.570430	137.349935	22319.1	4.263	861.2	776.6	0.91	5812	23.87	189.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008604993-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
008604993-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 008604993-02

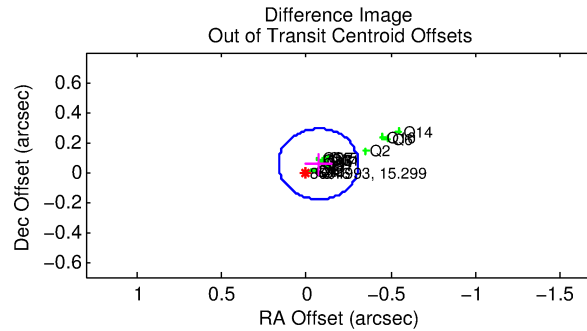
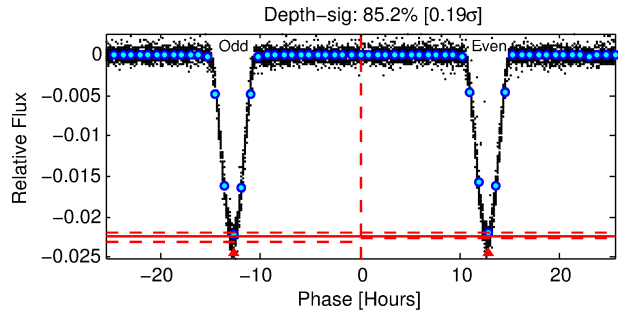
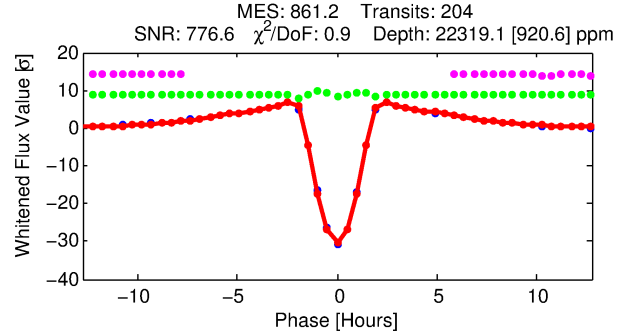
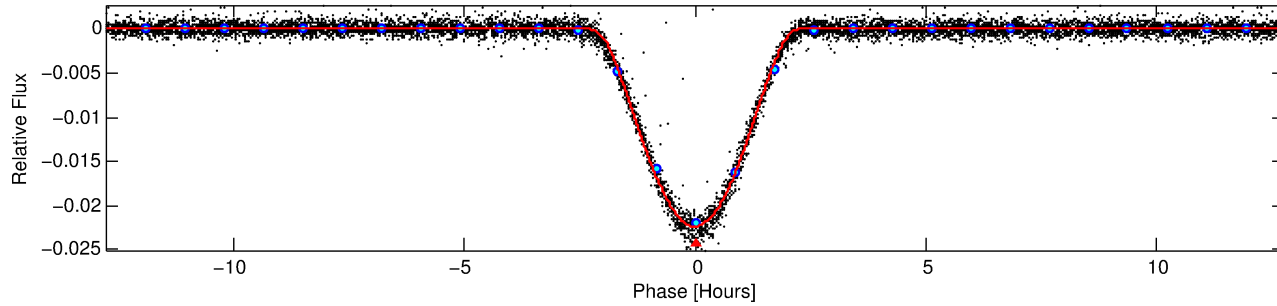
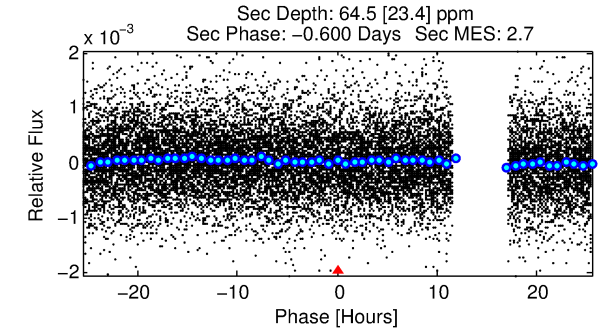
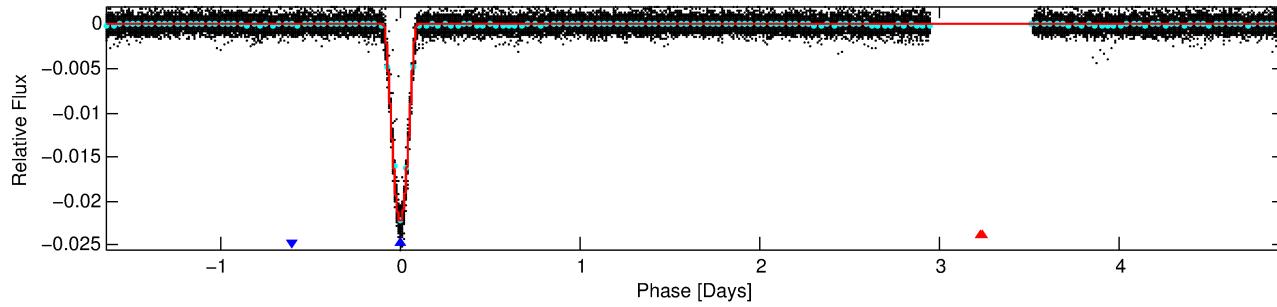
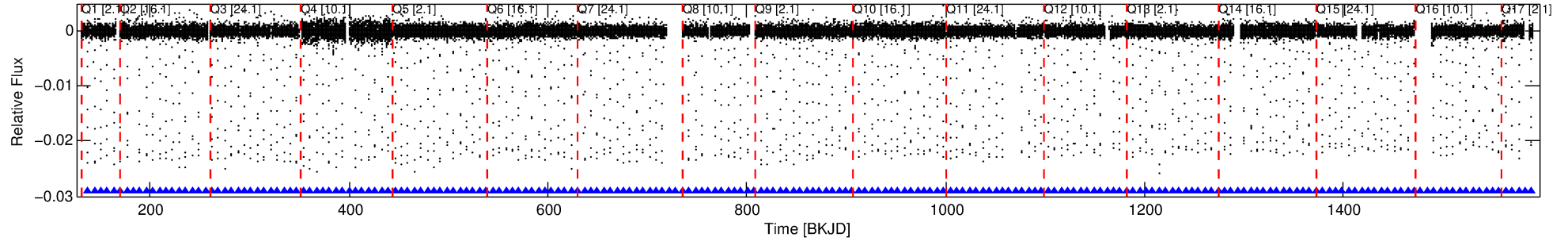
No Significant Match Found

DV One-Page Summary

KIC: 8604993 Candidate: 2 of 2 Period: 6.570 d

KOI: K07066 Corr: No Ephemeris Match

Kp: 15.30 R*: 0.91 Rs Teff: 5812.0 K Logg: 4.48 Fe/H: -0.220



DV Fit Results:

Period = 6.57043 [0.00000] d
Epoch = 137.3499 [0.0001] BKJD
Rp/R* = 0.2409 [0.0173]
a/R* = 8.72 [0.05]
b = 1.00 [0.03]
Seff = 189.44 [66.29]
Teq = 946 [83] K
Rp = 23.87 [6.72] Re
a = 0.0667 [0.0153] AU
Ag = 0.28 [0.14] [-5.08σ]
Teff = 1061 [108] K [0.85σ]

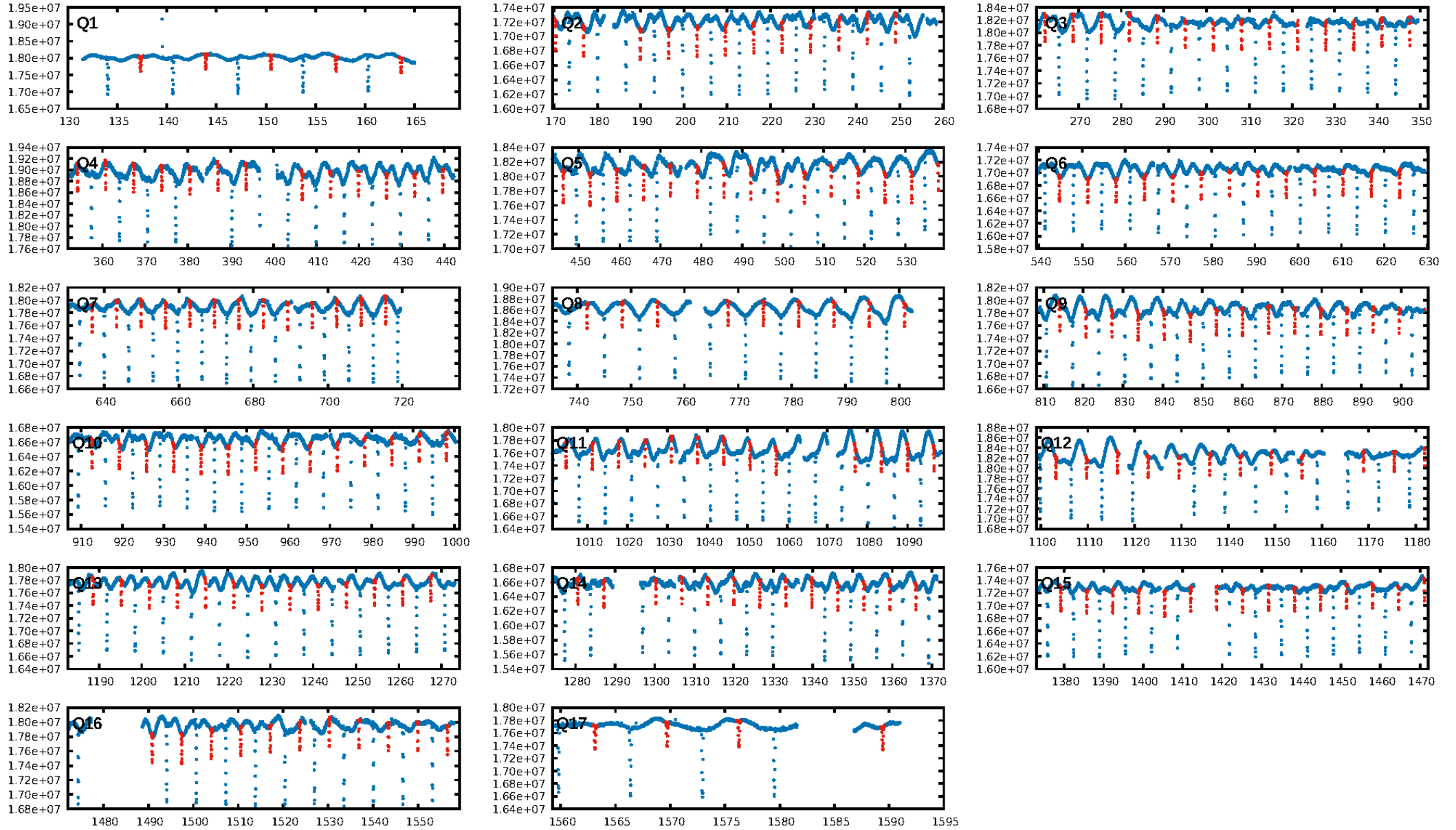
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [195/195]
GhostDiagnostic-chr: 2.823
Centroid-sig: 0.0%
Centroid-so: 0.330 arcsec [24.43σ]
OotOffset-rm: 0.090 arcsec [1.15σ]
KicOffset-rm: 0.116 arcsec [1.53σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

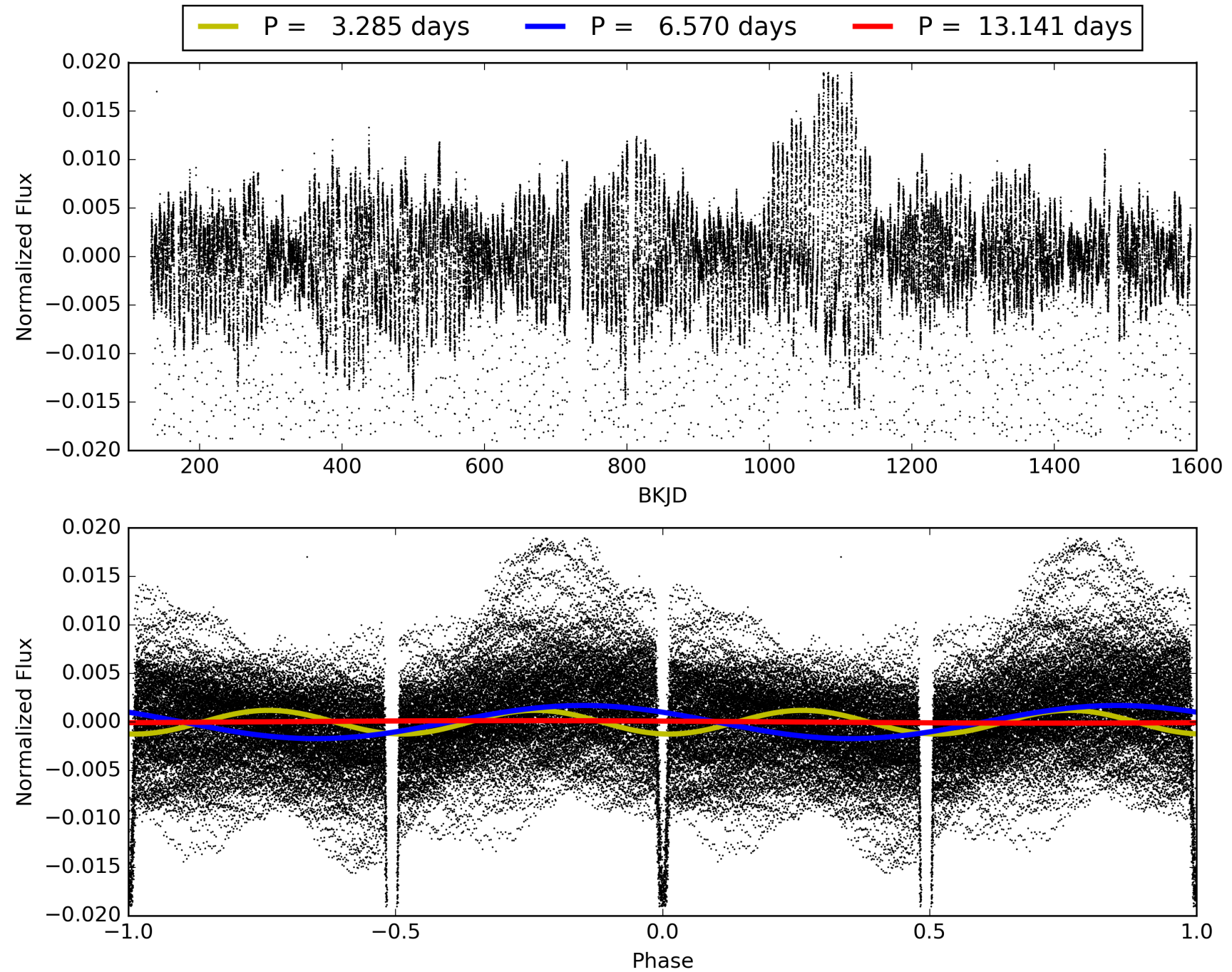
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 02:21:23 Z

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

TCE 008604993-02, PDC Light Curves

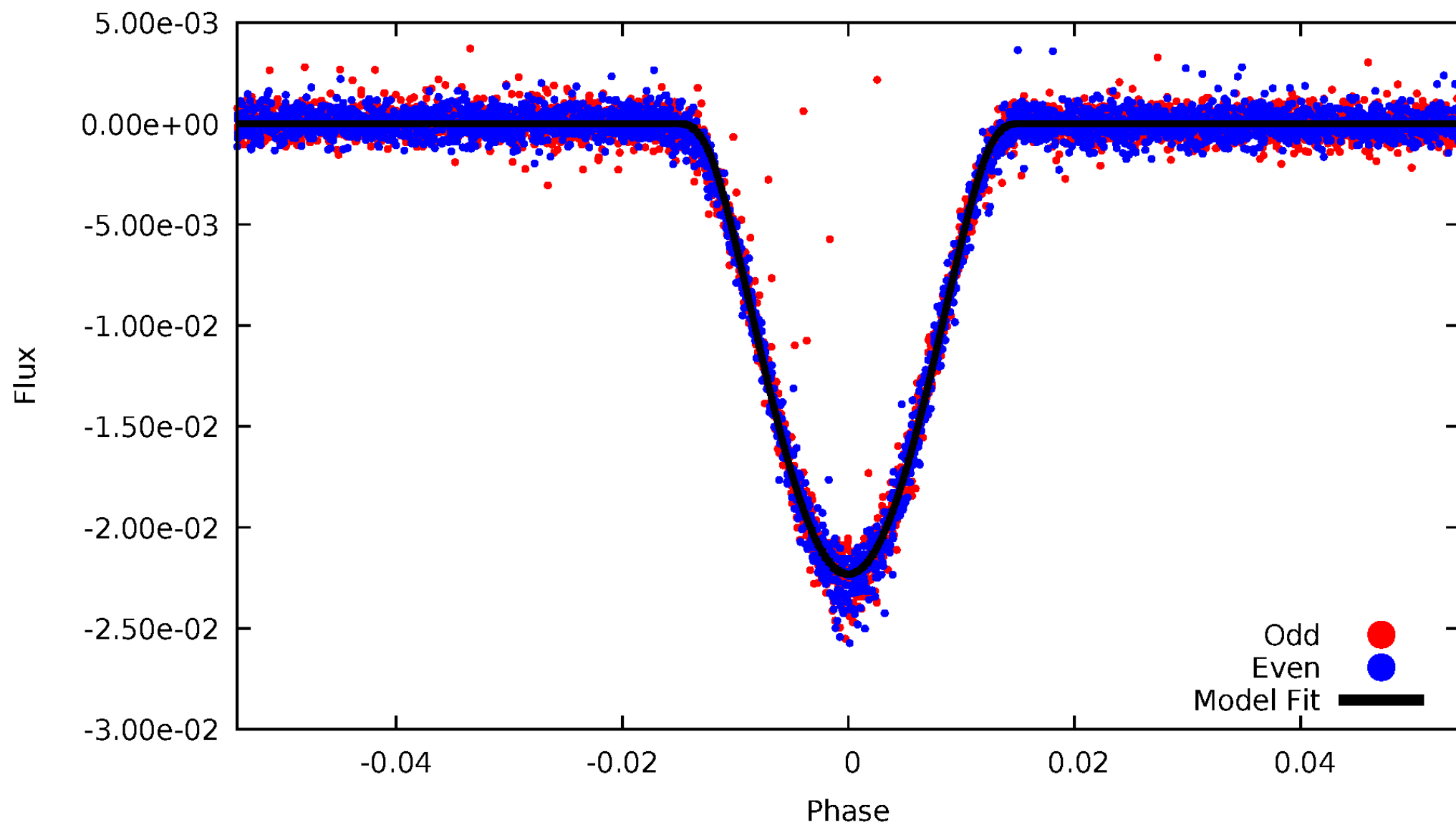


TCE 008604993-02



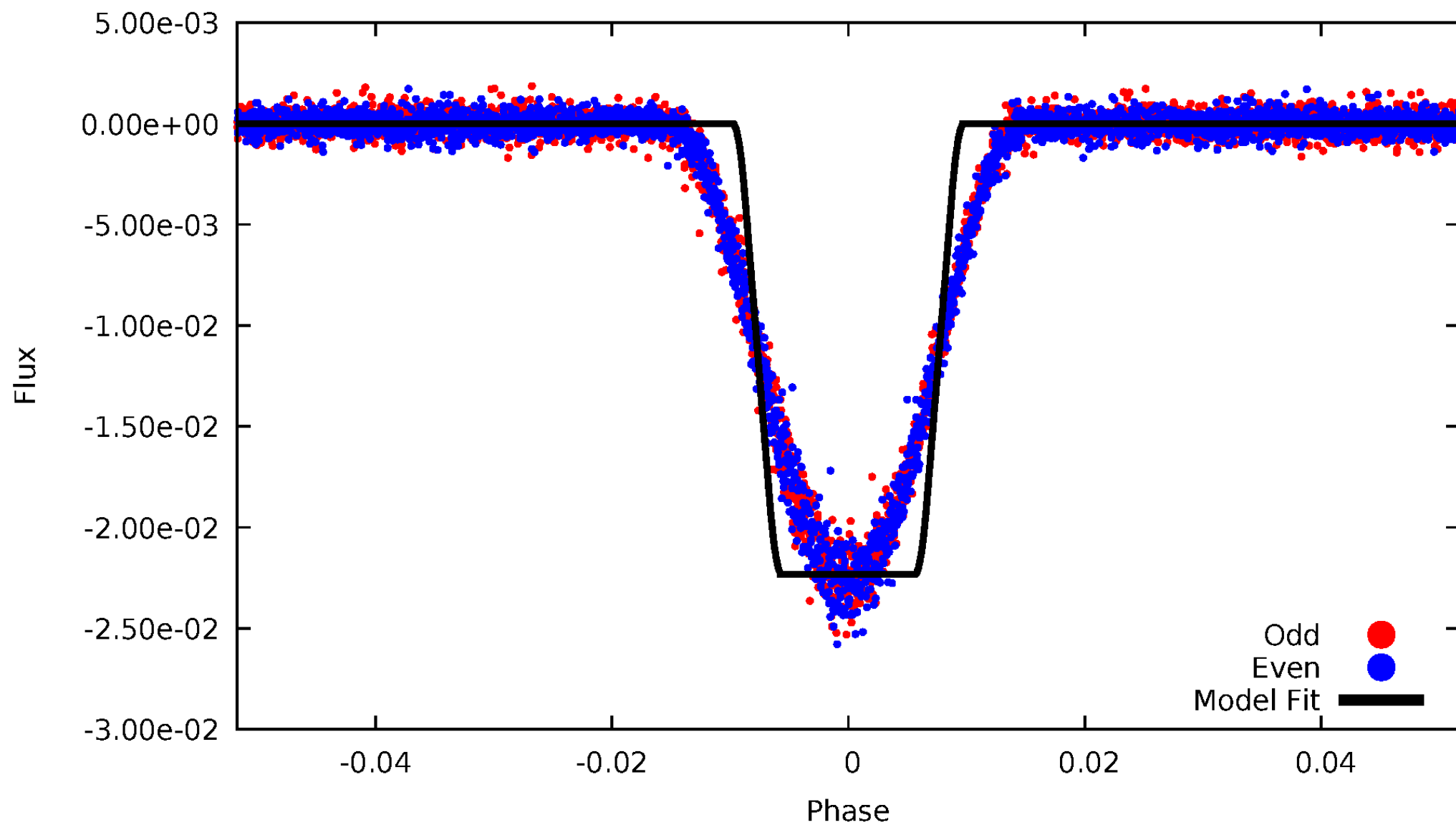
DV Odd/Even

TCE 008604993-02



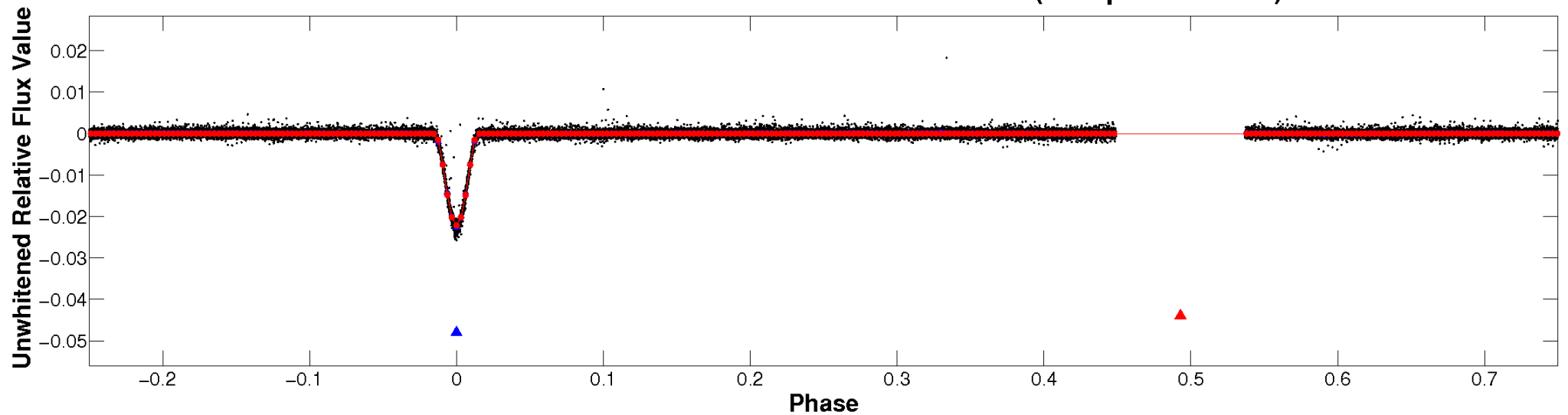
ALT Odd/Even

TCE 008604993-02

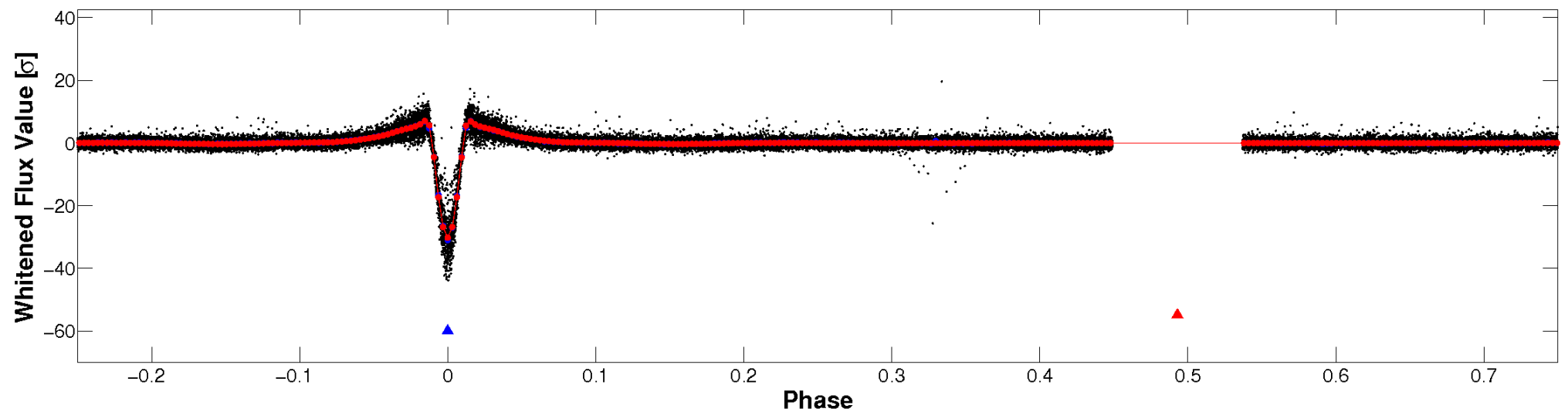


Non-Whitened Vs. Whitened Light Curve

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

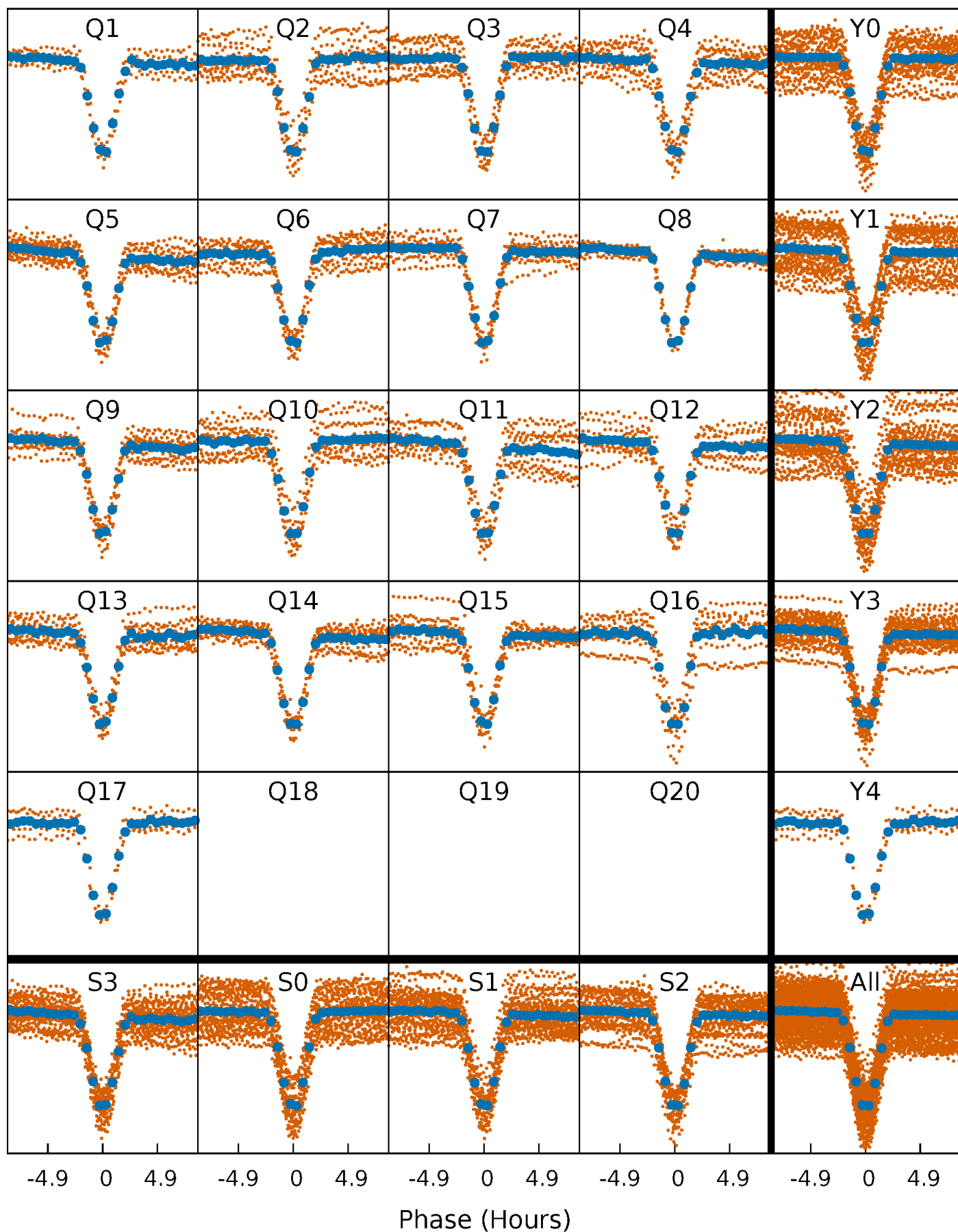


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



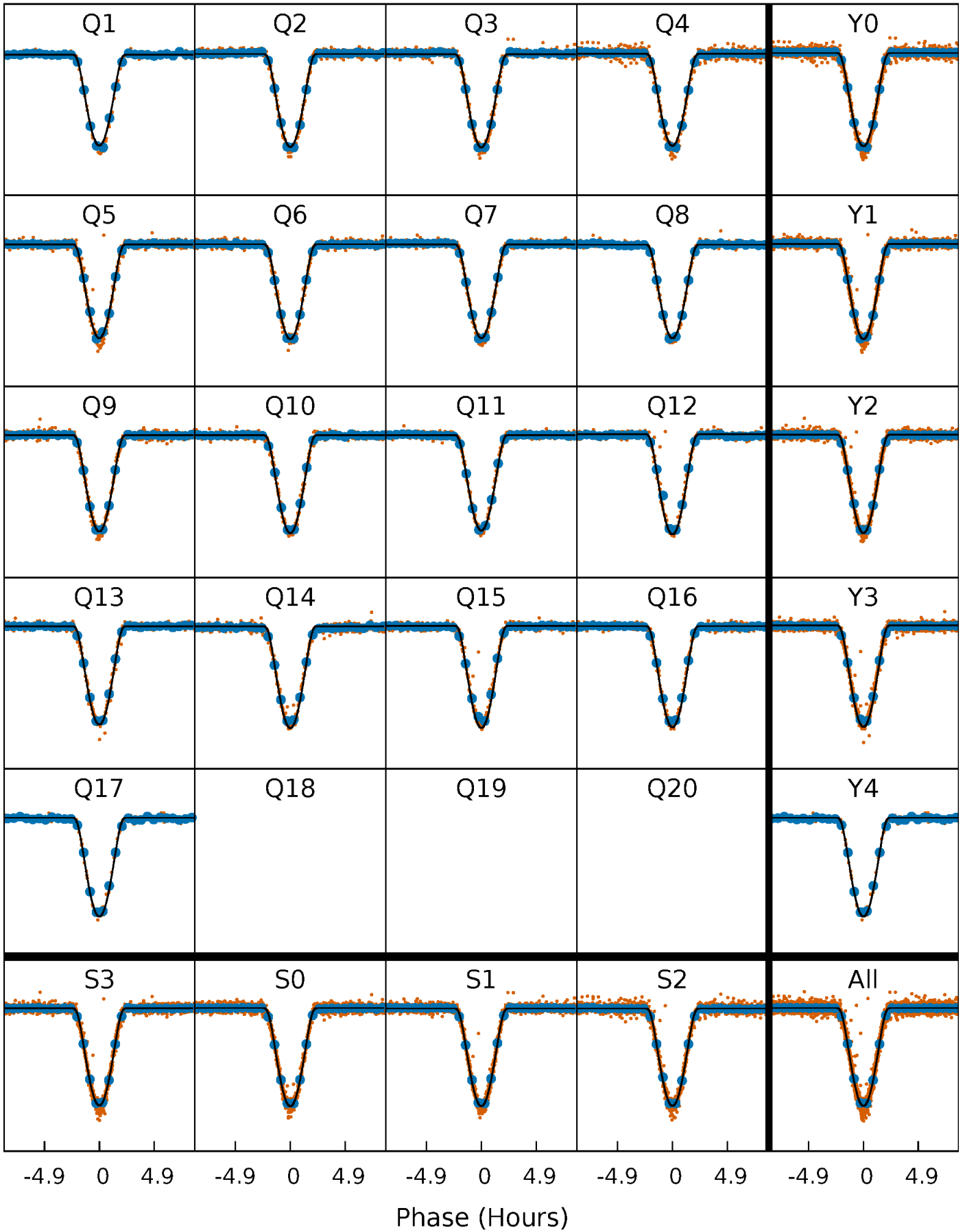
PDC Quarter-Phased Transit Curves

TCE 008604993-02 P= 6.570430 Days $T_0=137.349935$ (BKJD)



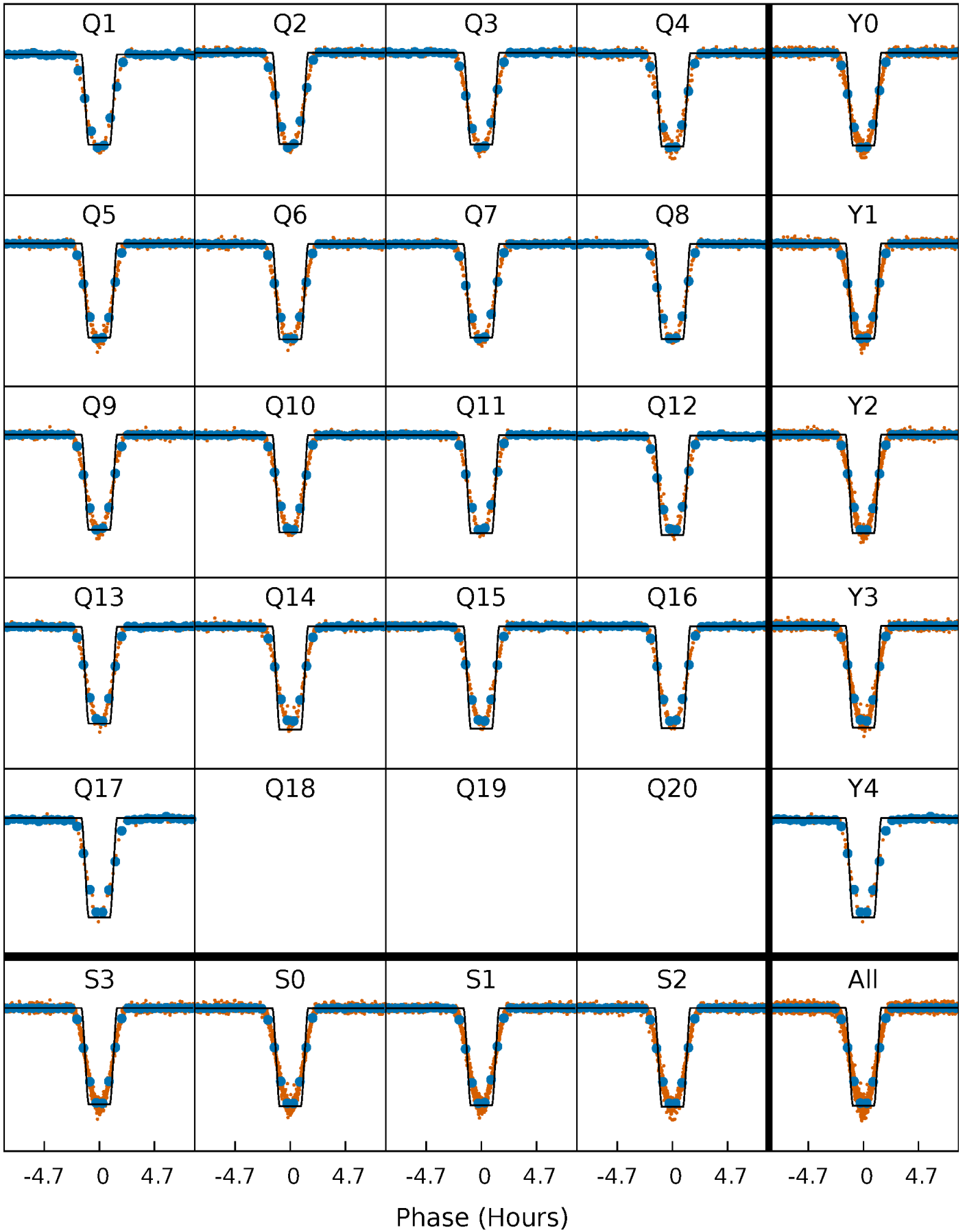
DV Quarter-Phased Transit Curves

TCE 008604993-02 P= 6.570430 Days $T_0=137.349935$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

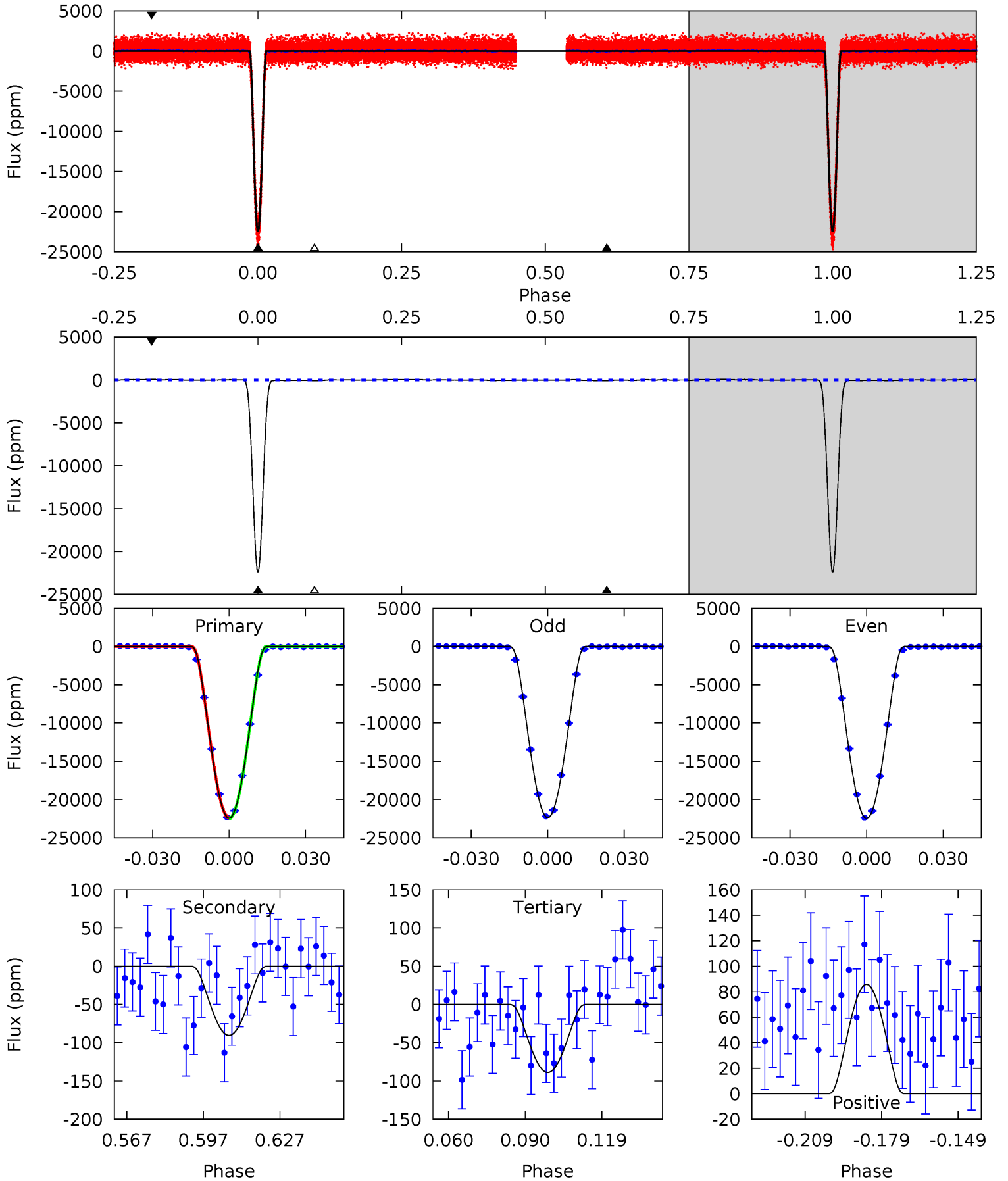
TCE 008604993-02 P= 6.570410 Days $T_0=137.352140$ (BKJD)



DV Model-Shift Uniqueness Test

008604993-02, P = 6.570430 Days, E = 130.779505 Days

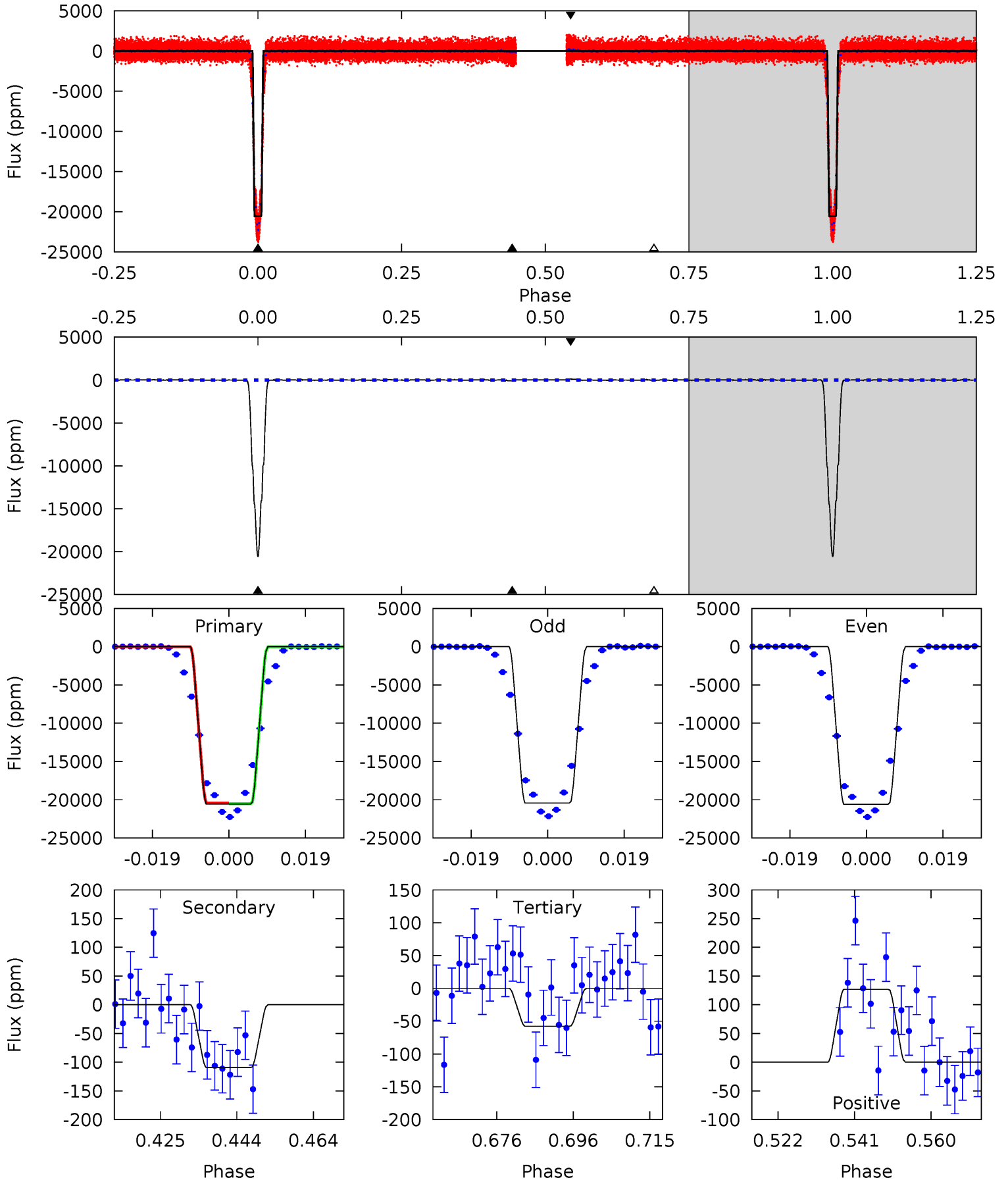
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1738	7.00	6.88	6.65	4.81	2.17	3.08	1731	1731	0.12	0.36	4.17	0.99	0.00	3.31



Alt Model-Shift Uniqueness Test

008604993-02, P = 6.570410 Days, E = 130.781730 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1265	6.73	3.56	7.81	4.90	2.34	1.31	1261	1257	3.17	-1.08	5.46	1.00	0.01	3.05



Stellar Parameters For KIC 008604993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5812^{+156}_{-156}	$4.484^{+0.065}_{-0.182}$	$-0.220^{+0.300}_{-0.300}$	$0.908^{+0.247}_{-0.106}$	$0.916^{+0.111}_{-0.101}$	$1.724^{+0.575}_{-0.849}$
	+3%/-3%	+1%/-4%	+136%/-136%	+27%/-12%	+12%/-11%	+33%/-49%
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 008604993-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-90 ± 13	$24.60^{+4.10}_{-2.63}$	1346^{+90}_{-61}	1773^{+162}_{-3512}	$0.358^{+0.097}_{-0.101}$
Alt.	-109 ± 16	$15.26^{+2.47}_{-2.07}$	1339^{+83}_{-61}	2329^{+103}_{-119}	$1.114^{+0.441}_{-0.324}$

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 $A_{obs} \gg 1.0$

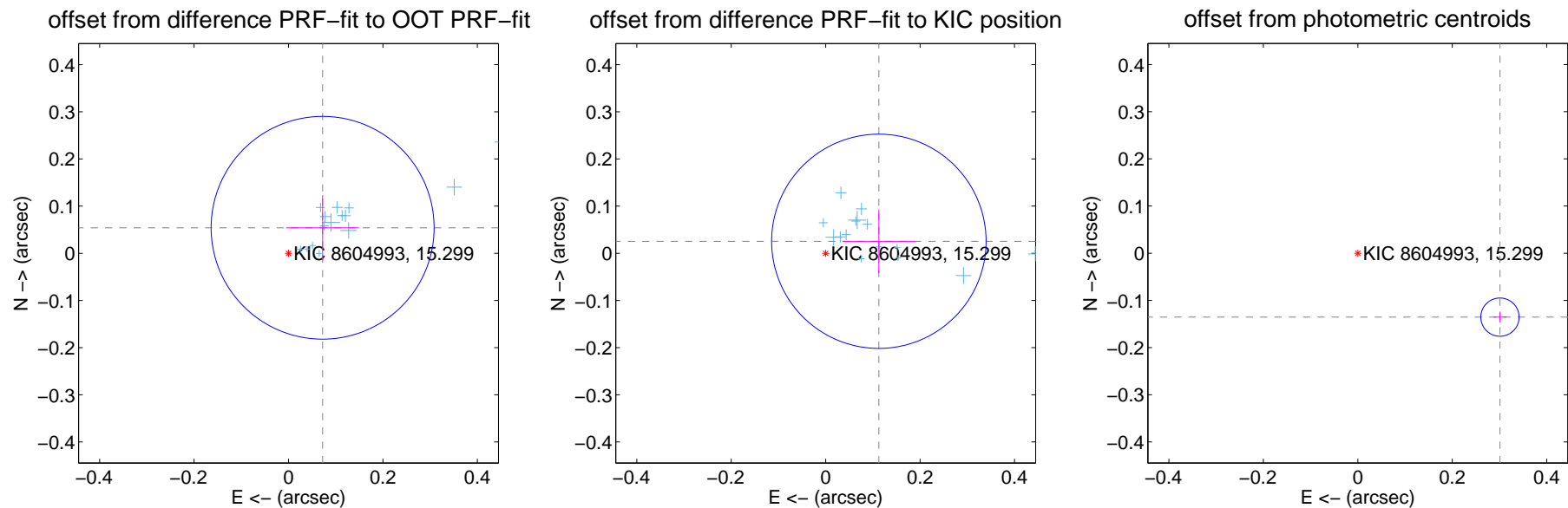
DV Centroid Data

Supplemental centroid analysis for 008604993-02. Kepler magnitude: 15.30. Transit SNR 776.65

There are 17 quarters with good PRF difference image offsets

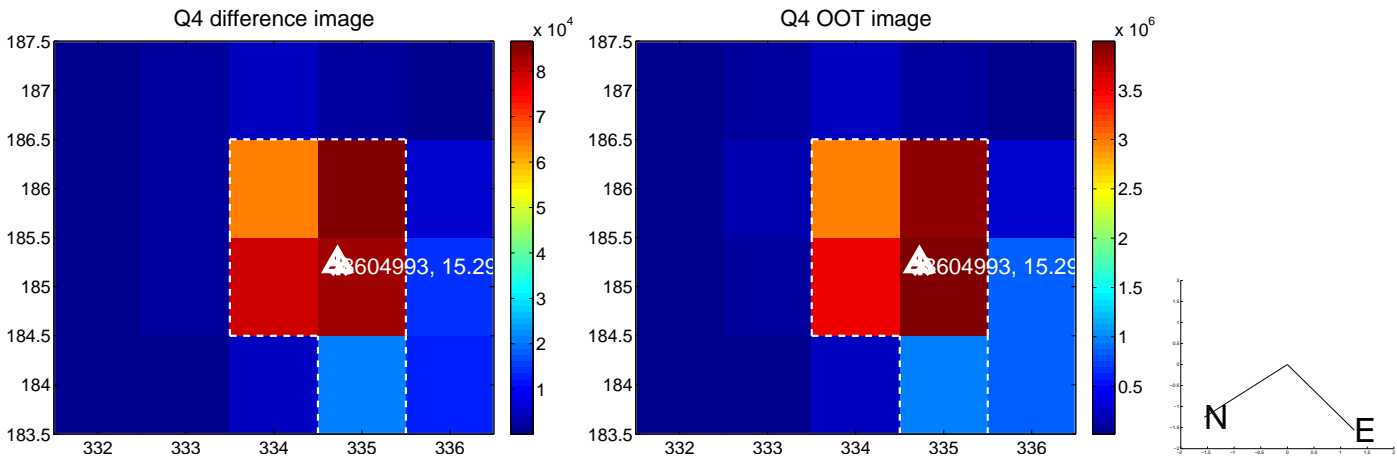
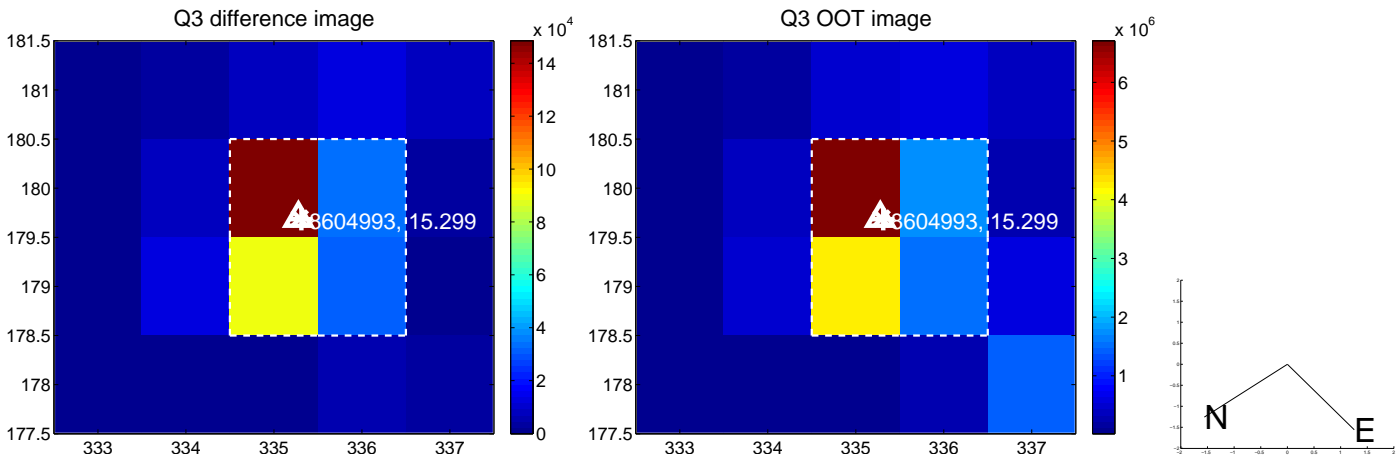
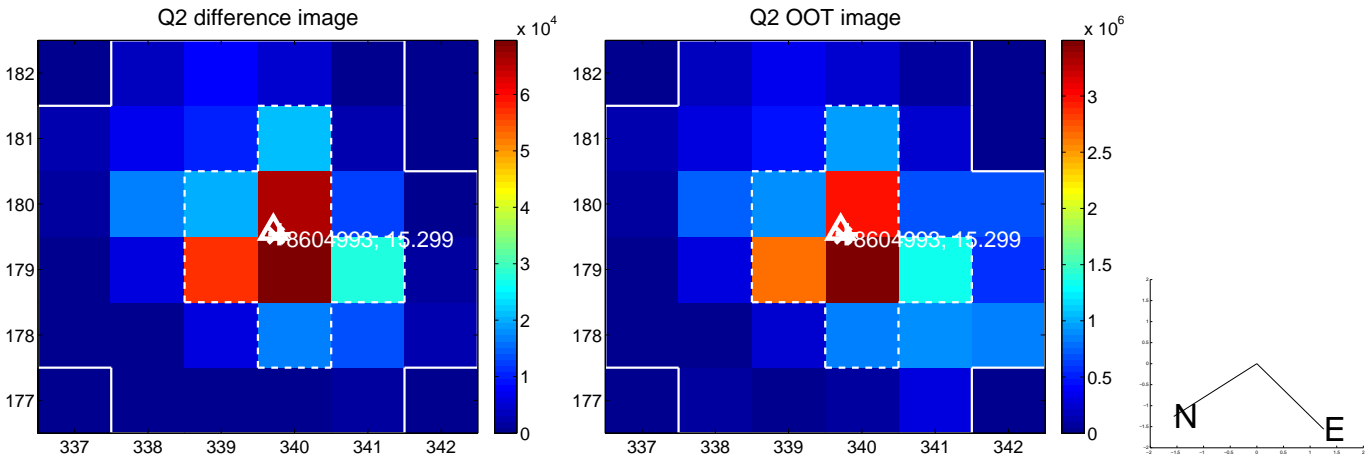
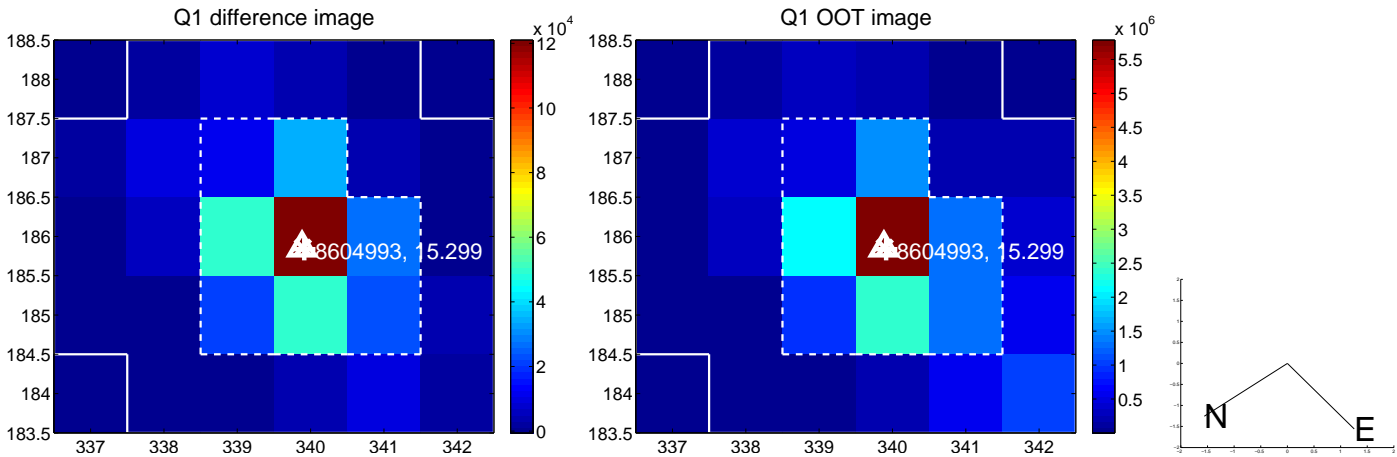
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.090 ± 0.079	1.15	-0.072 ± 0.077	0.054 ± 0.069
PRF-fit source offset from KIC position	0.116 ± 0.076	1.53	-0.113 ± 0.077	0.025 ± 0.067
photometric centroid source offset	0.33 ± 0.01	24.43	-0.30 ± 0.01	-0.14 ± 0.01

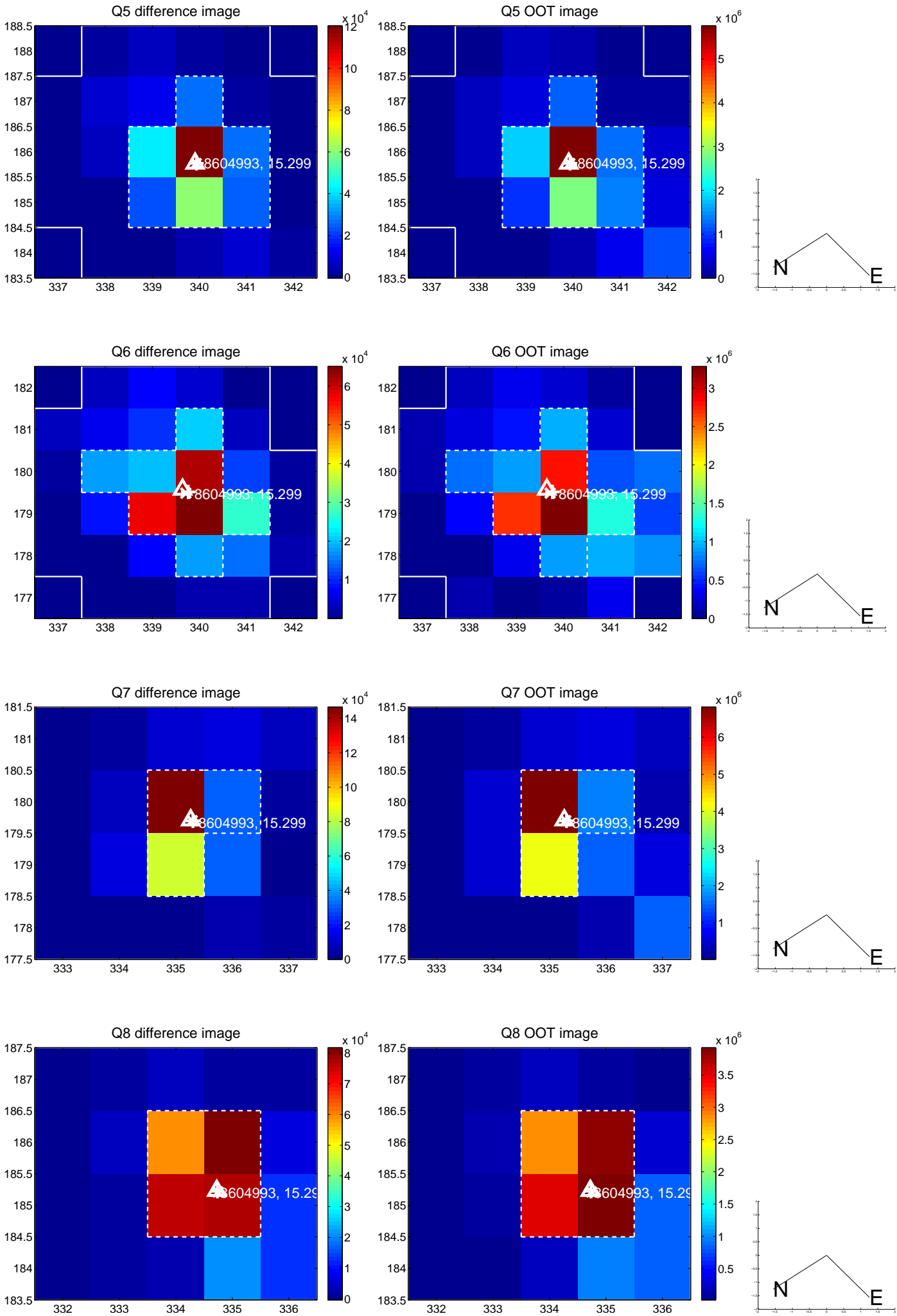


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

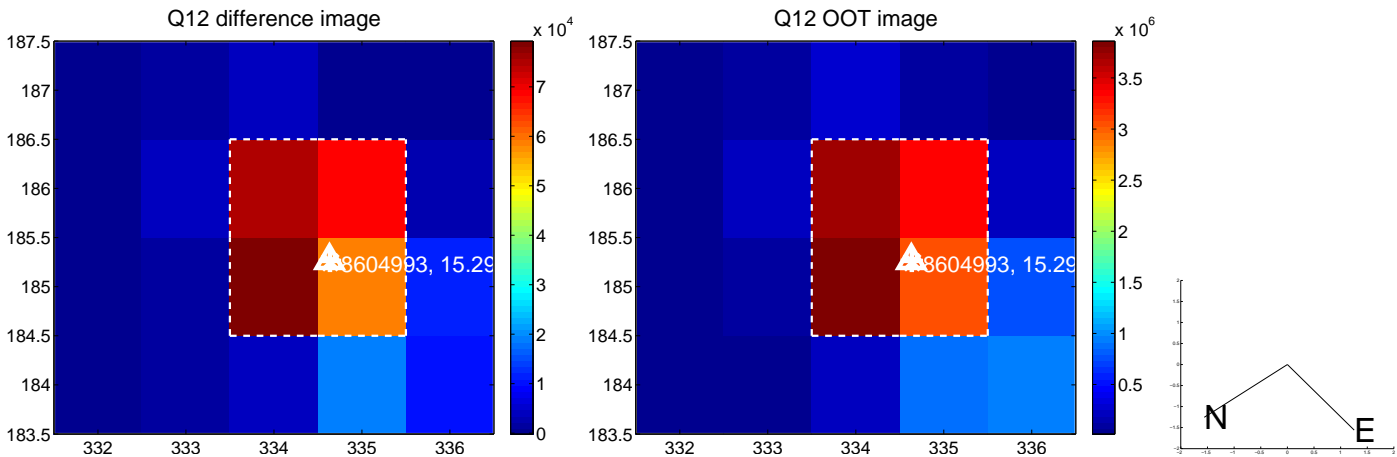
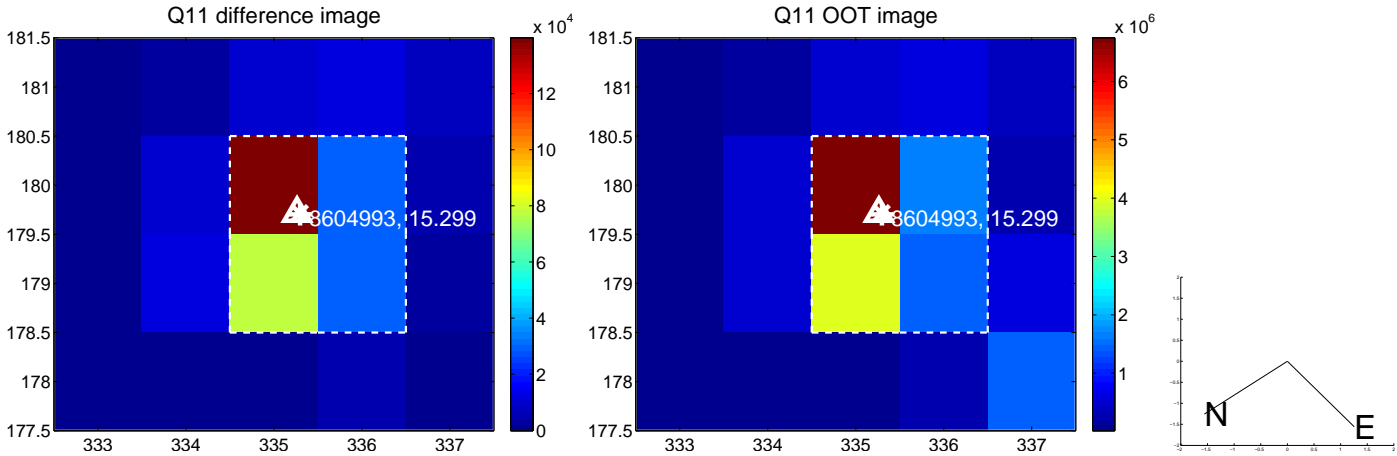
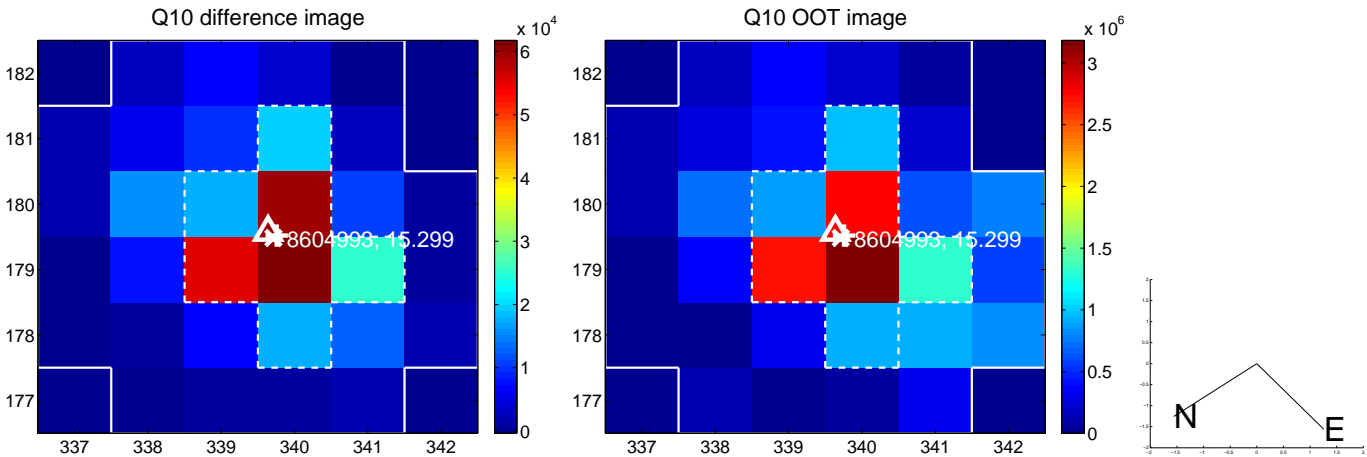
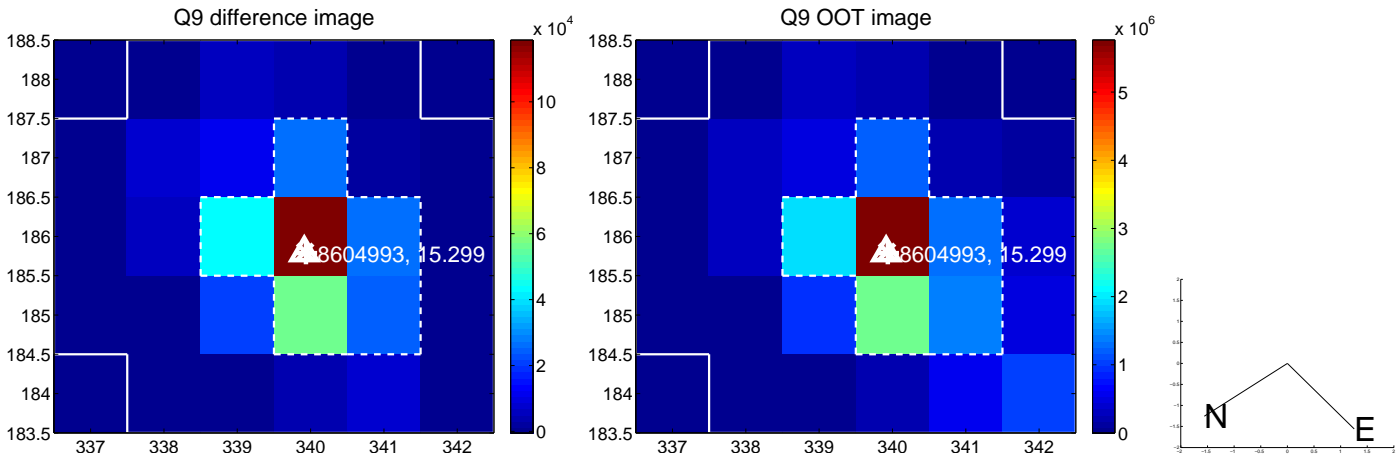
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



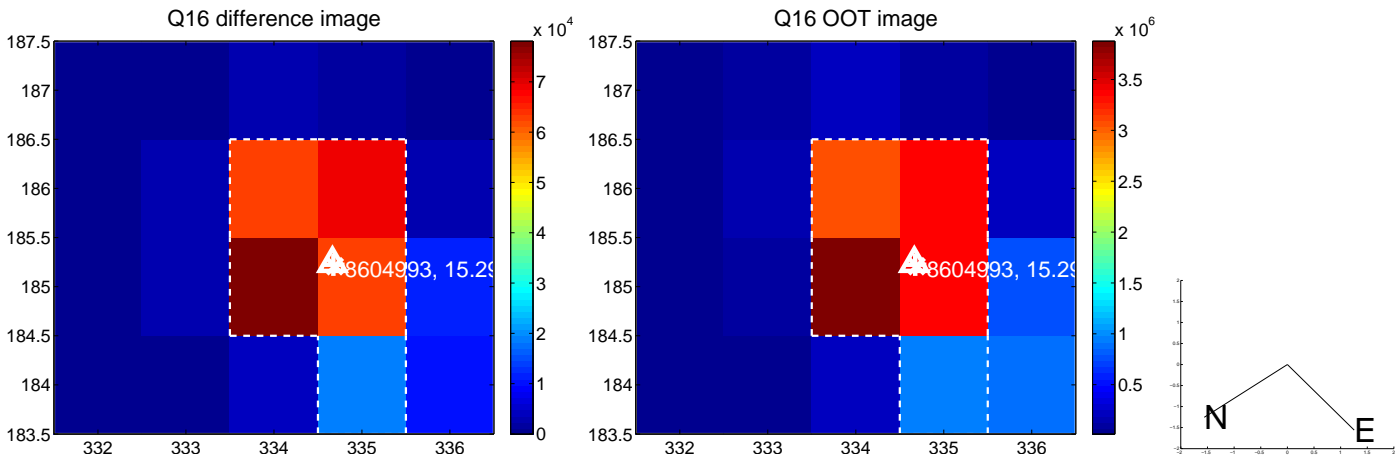
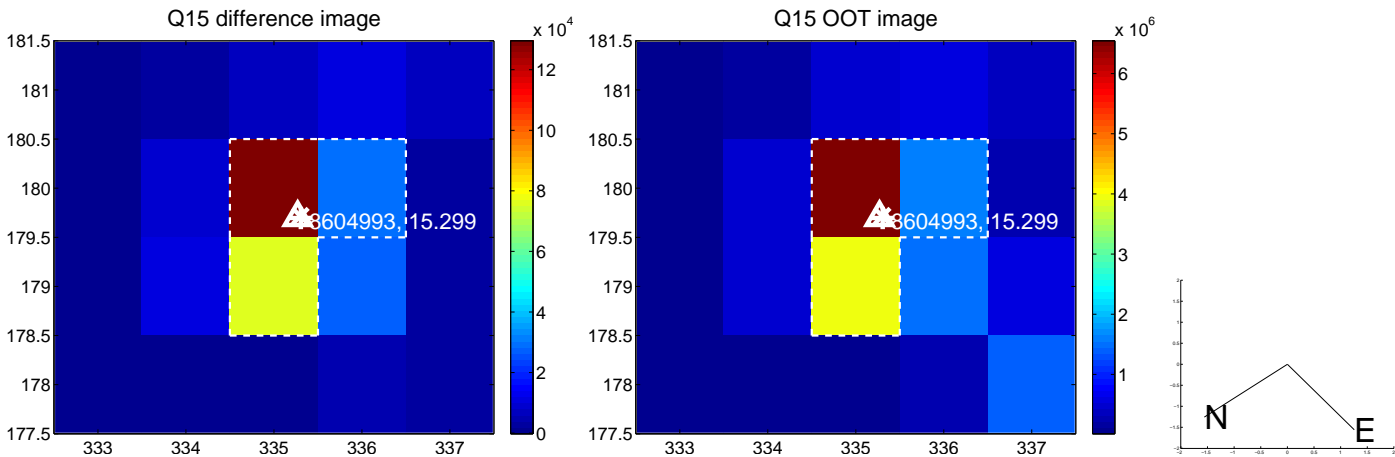
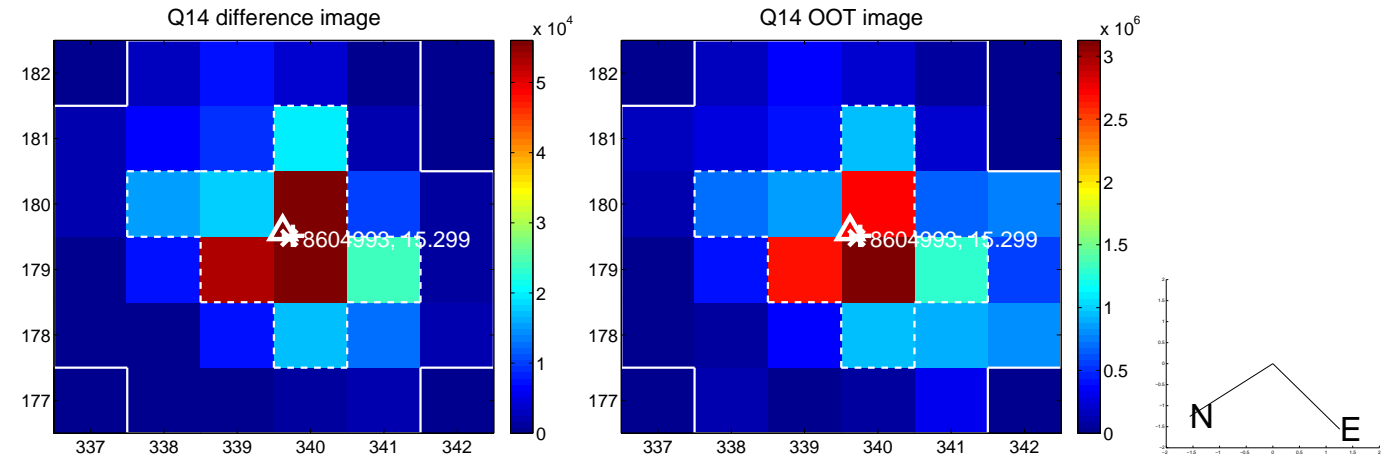
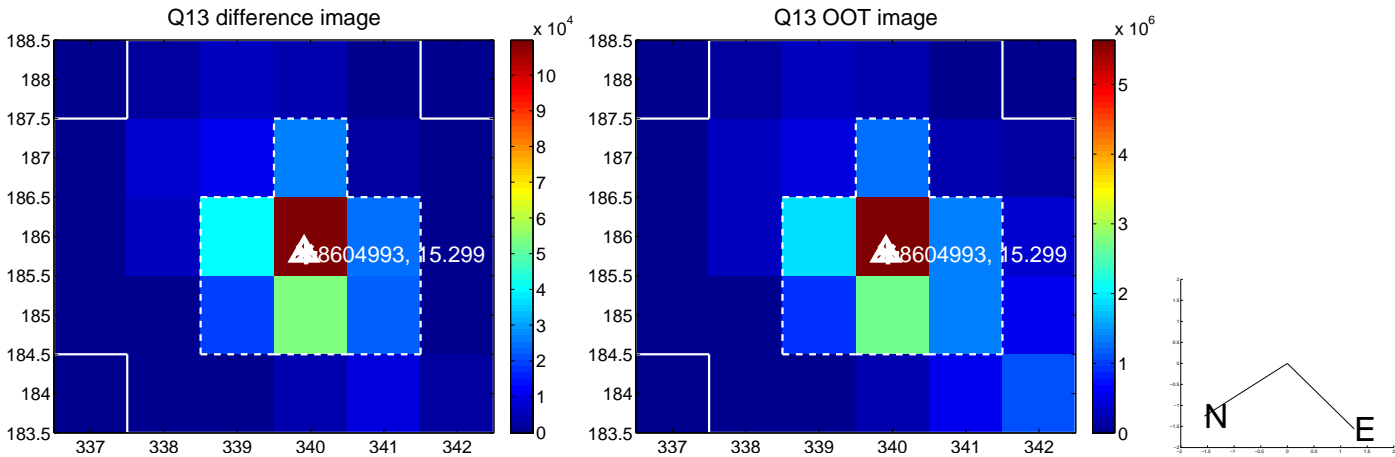
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



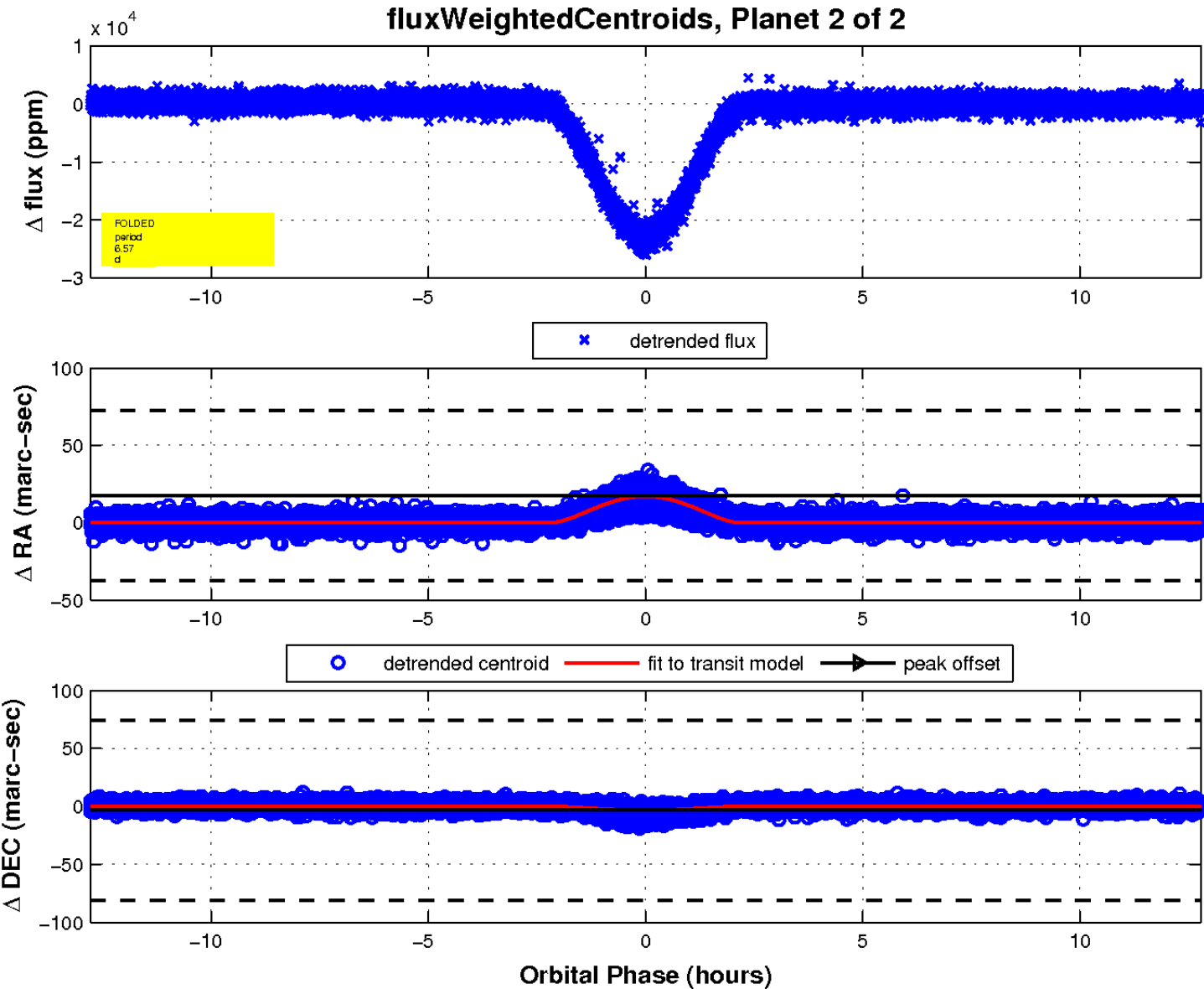
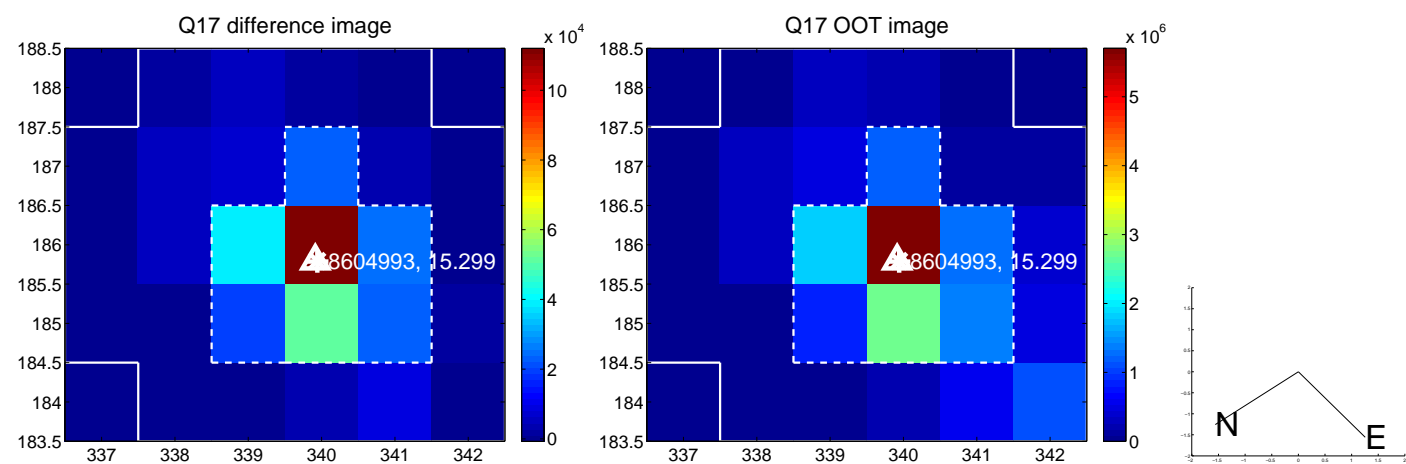
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

