

KIC 009674592

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})
009674592-01	OBS	3729.02	6.873681	132.456609	8945.8	5.495	304.6	165.5	0.81	5662	13.79	128.94
009674592-02	OBS	3729.01	6.873668	136.139401	8083.5	7.152	304.2	171.3	0.81	5662	13.10	128.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009674592-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
009674592-02	OBS	FP	0.00	1	0	1	0	SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

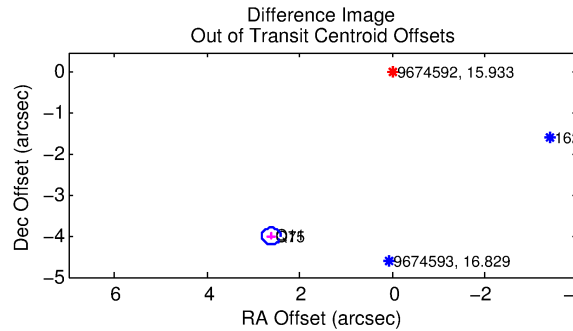
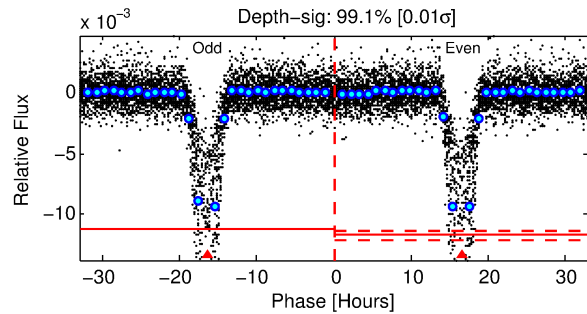
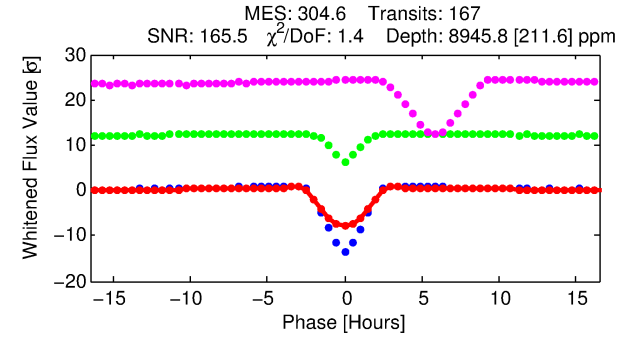
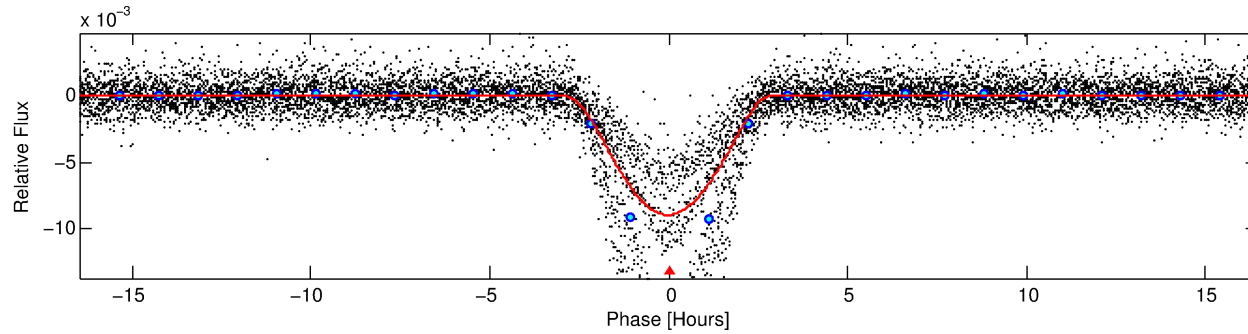
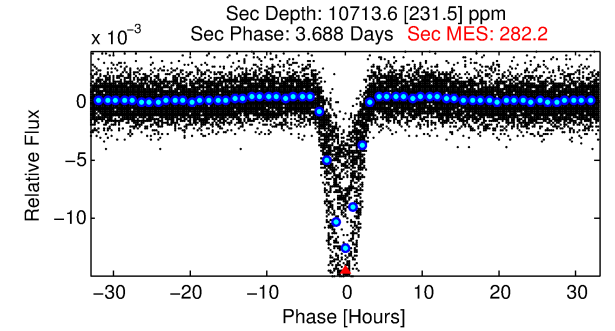
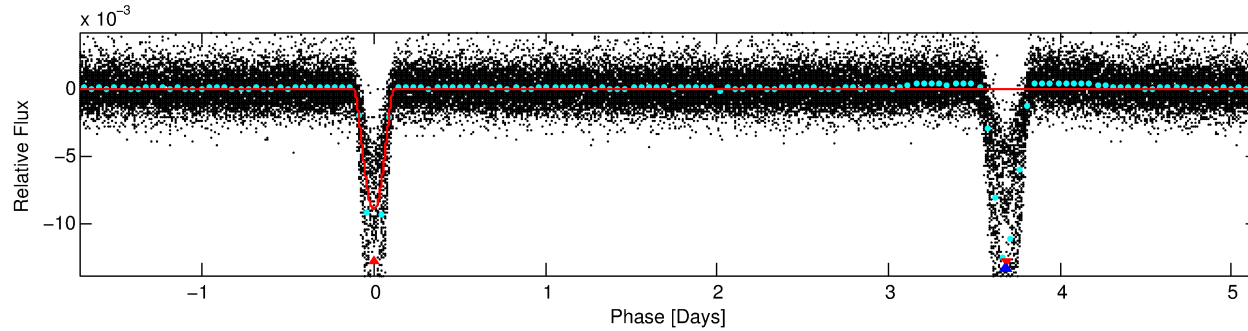
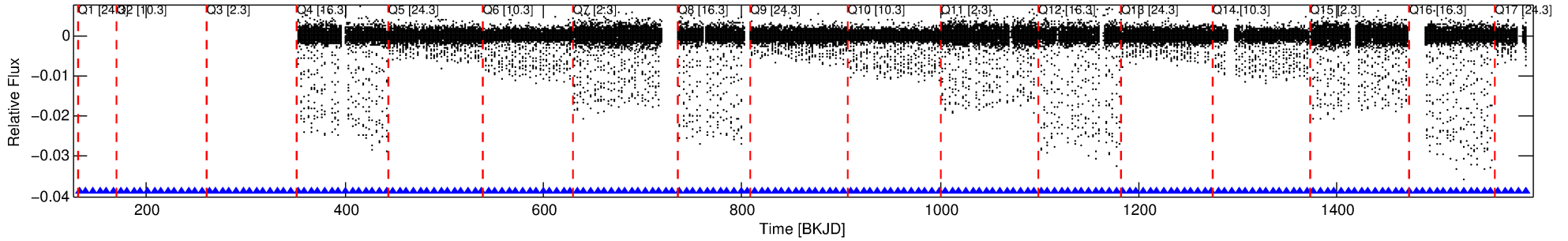
Ephemeris Match Information For 009674592-01

No Significant Match Found

DV One-Page Summary

KIC: 9674592 Candidate: 1 of 2 Period: 6.874 d
KOI: K03729.02 Corr: 0.939

Kp: 15.93 R*: 0.81 Rs Teff: 5662.0 K Logg: 4.58 Fe/H: -0.260



DV Fit Results:

Period = 6.87368 [0.00001] d
Epoch = 132.4566 [0.0009] BKJD
Rp/R* = 0.1569 [0.0488]
a/R* = 5.67 [0.25]
b = 1.00 [0.07]
Seff = 128.94 [41.36]
Teq = 859 [69] K
Rp = 13.79 [5.40] Re
a = 0.0680 [0.0137] AU
Ag = 143.53 [98.70] [1.44σ]
Teffp = 4598 [731] K [5.09σ]

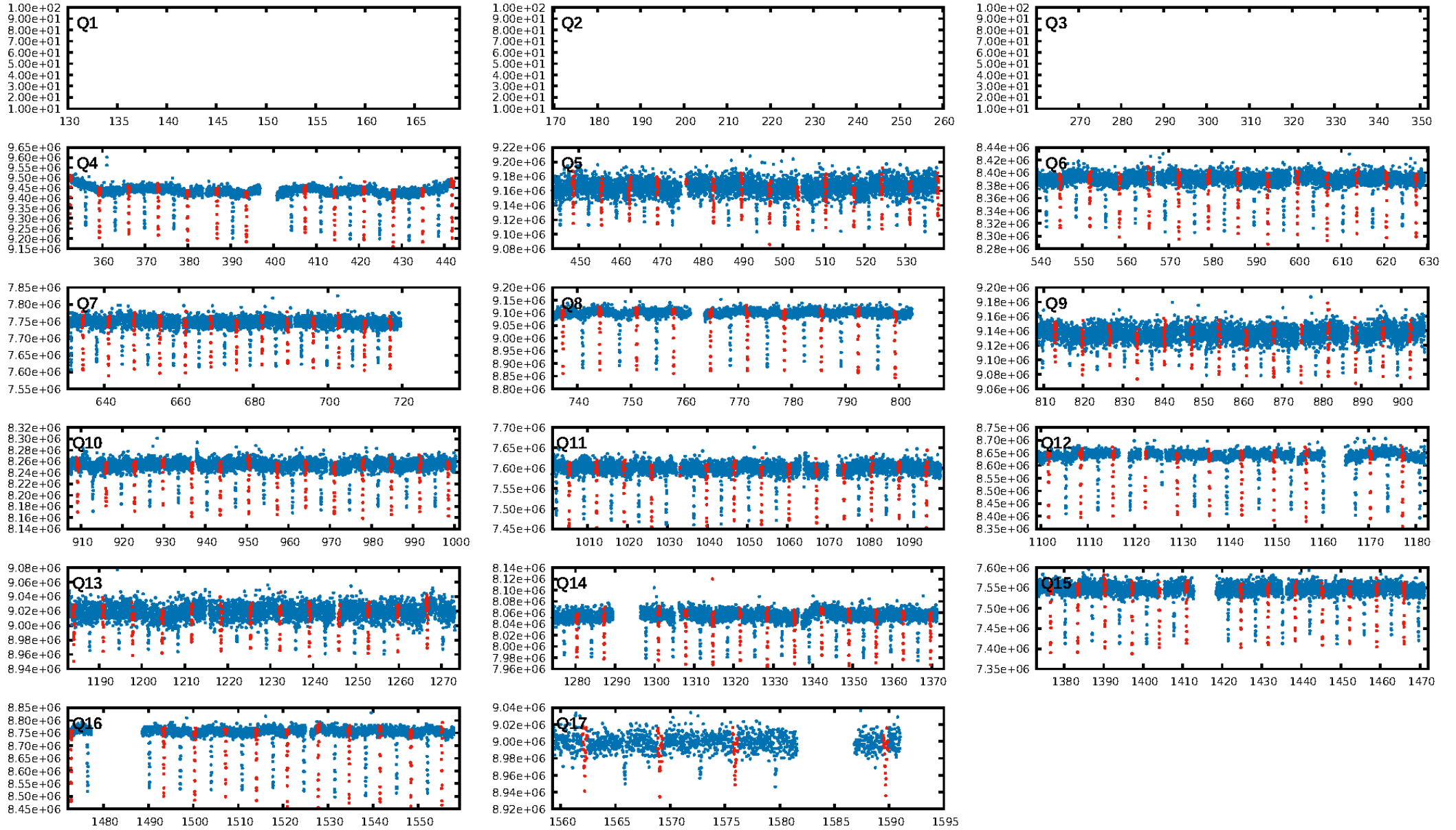
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 6.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [163/163]
GhostDiagnostic-chr: -0.2848
Centroid-sig: 0.0%
Centroid-so: 17.582 arcsec [322.79σ]
OotOffset-rm: 4.783 arcsec [70.83σ]
KicOffset-rm: 5.590 arcsec [78.14σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [14/14]

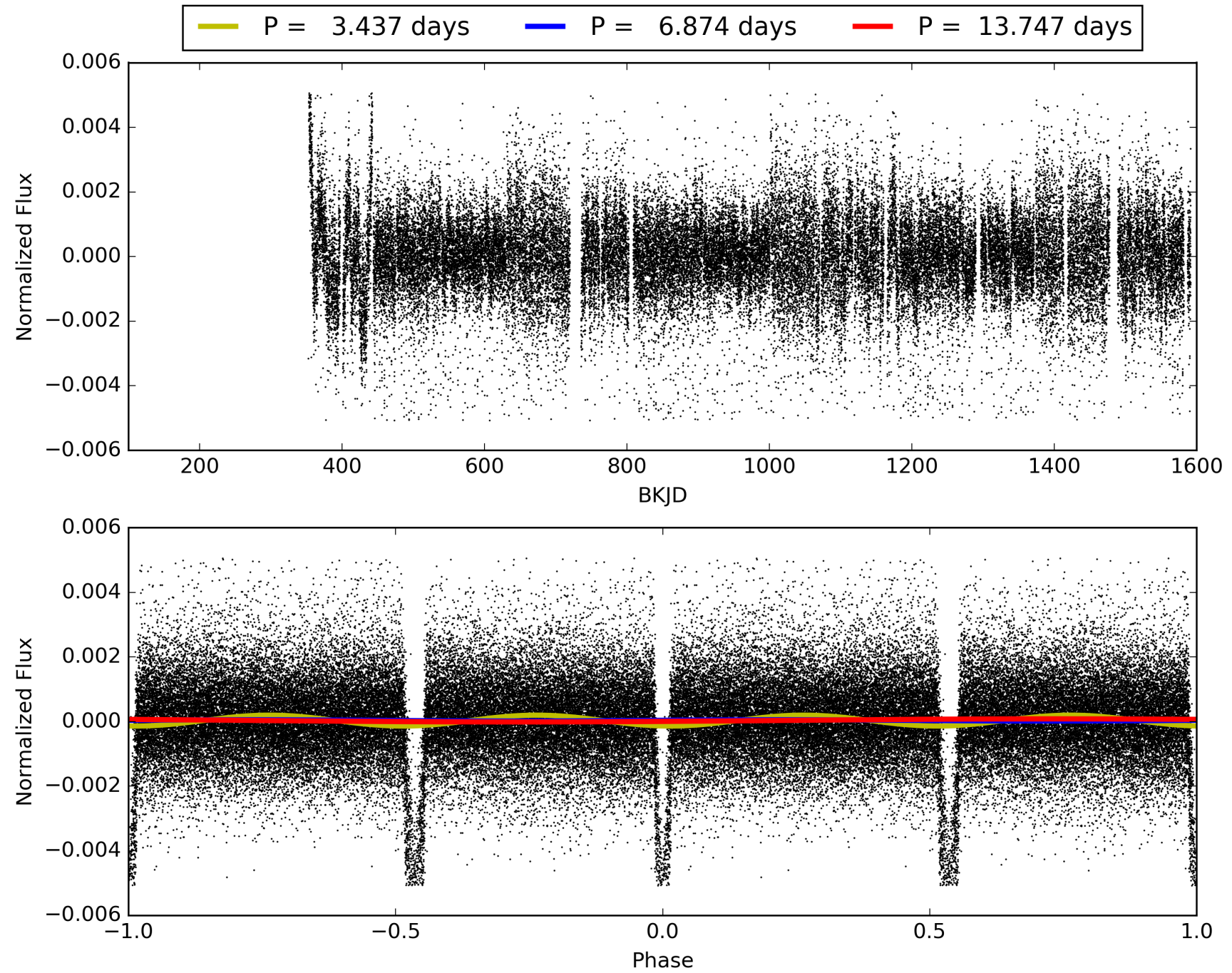
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:16:51 Z

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

TCE 009674592-01, PDC Light Curves

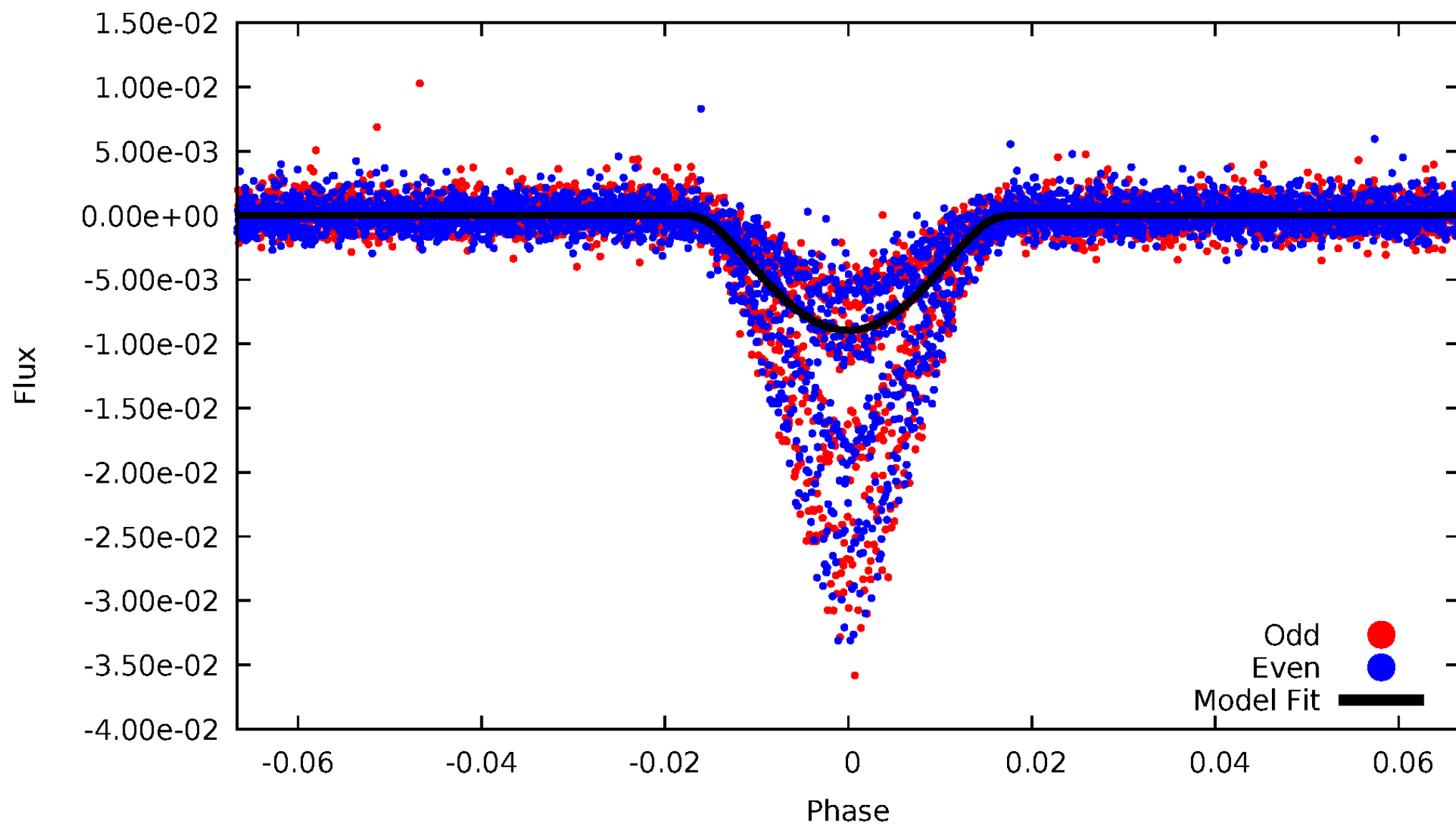


TCE 009674592-01



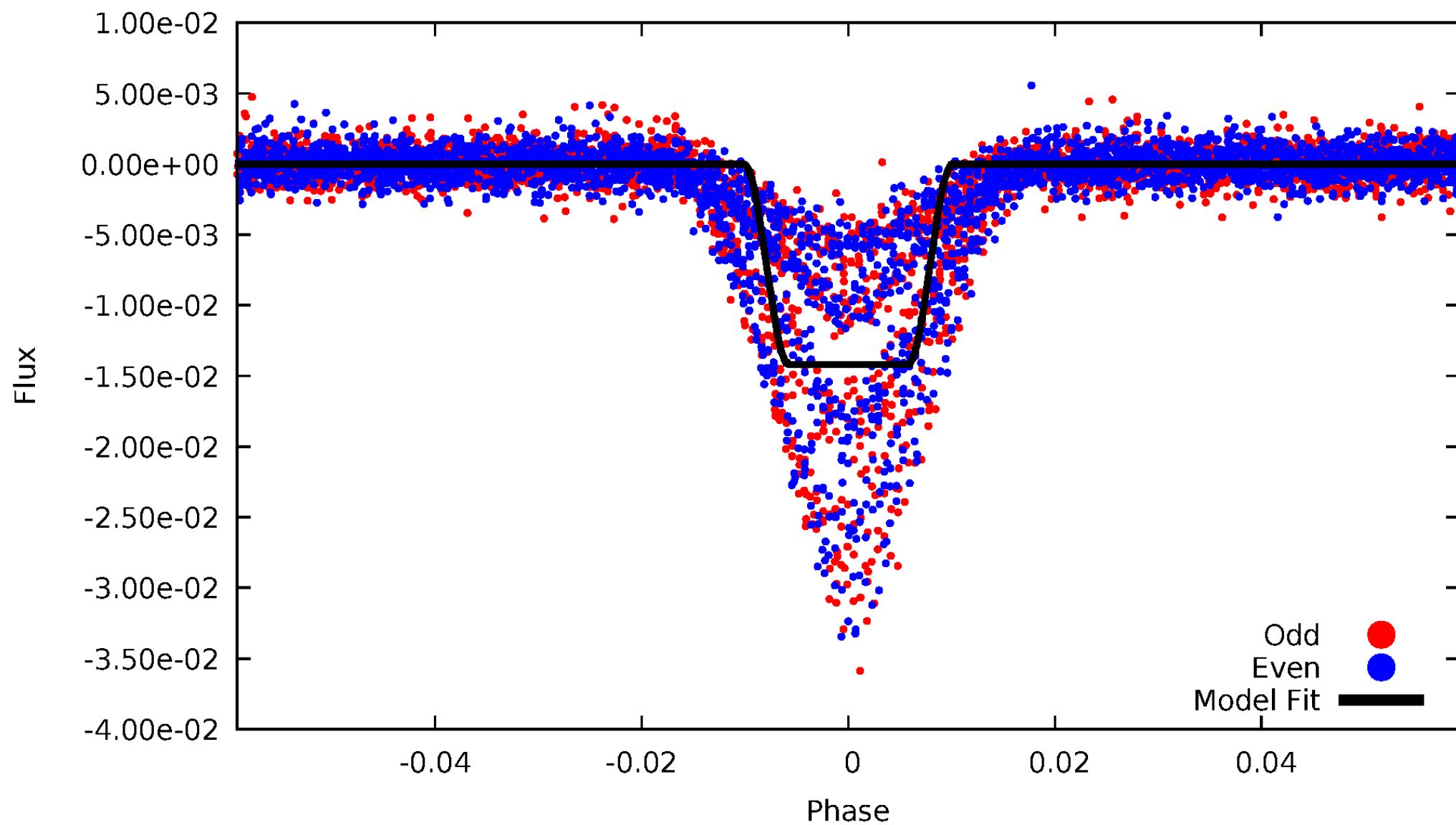
DV Odd/Even

TCE 009674592-01



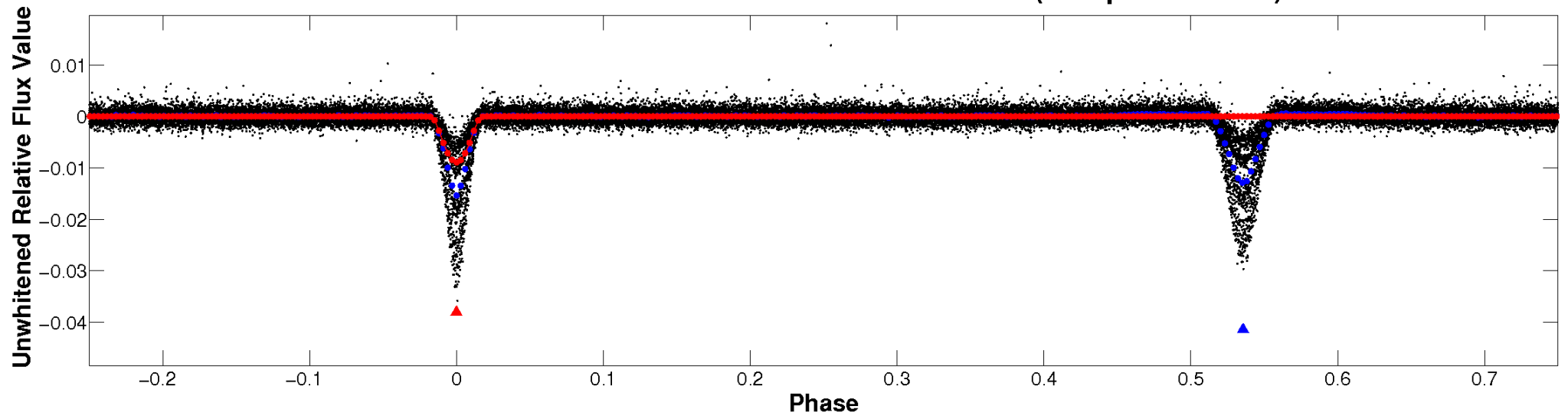
ALT Odd/Even

TCE 009674592-01

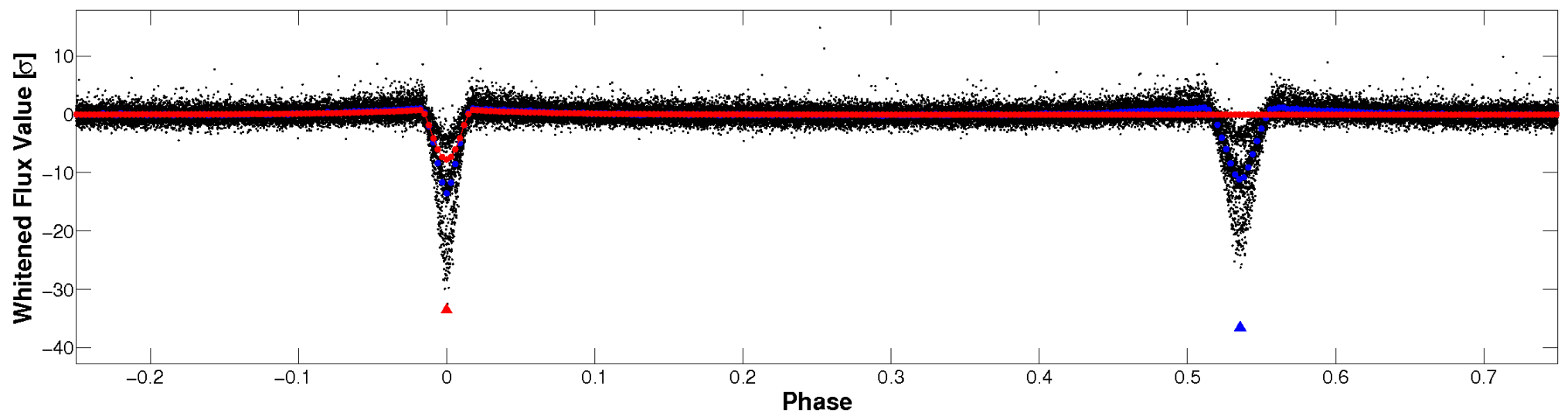


Non-Whitened Vs. Whitened Light Curve

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

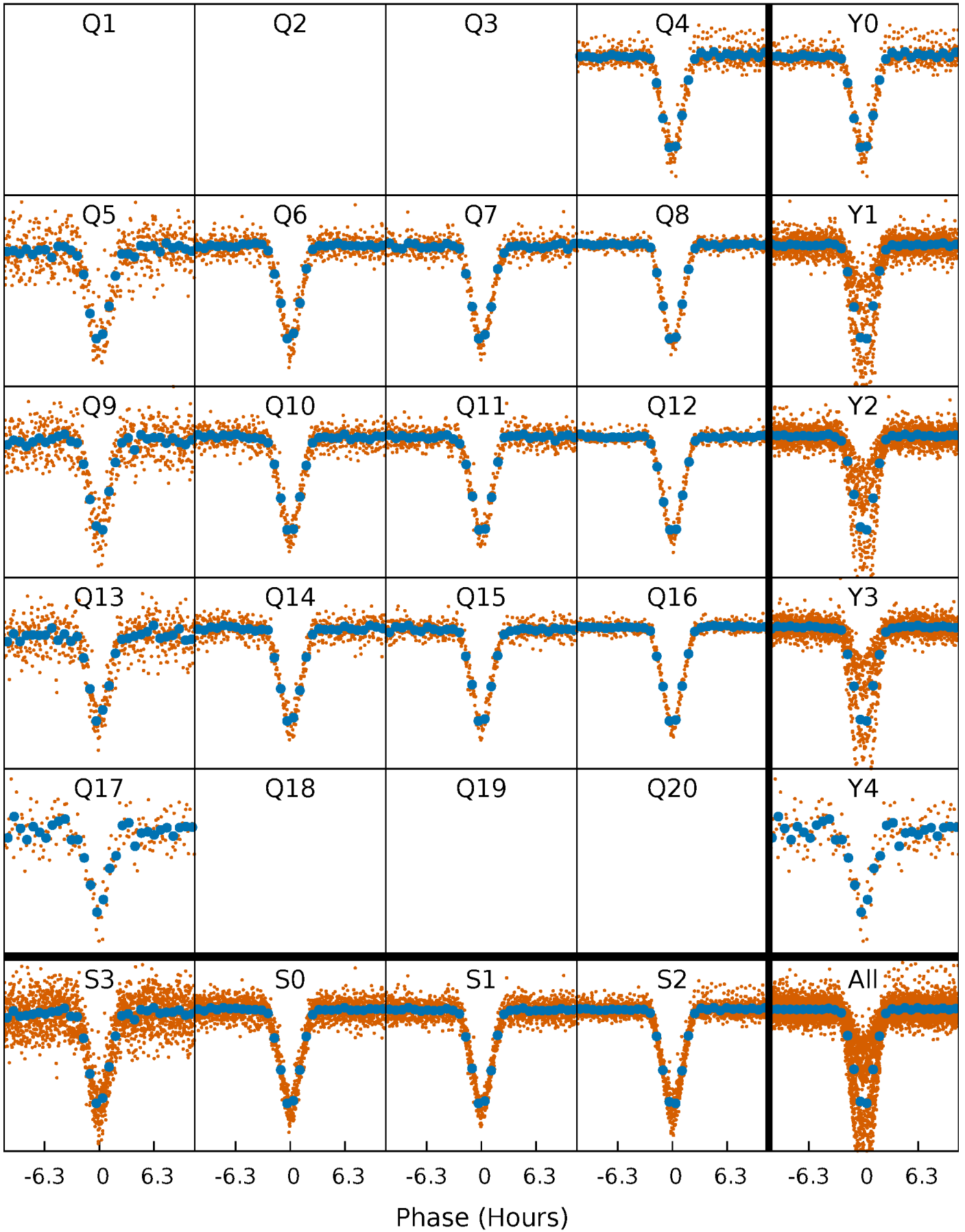


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



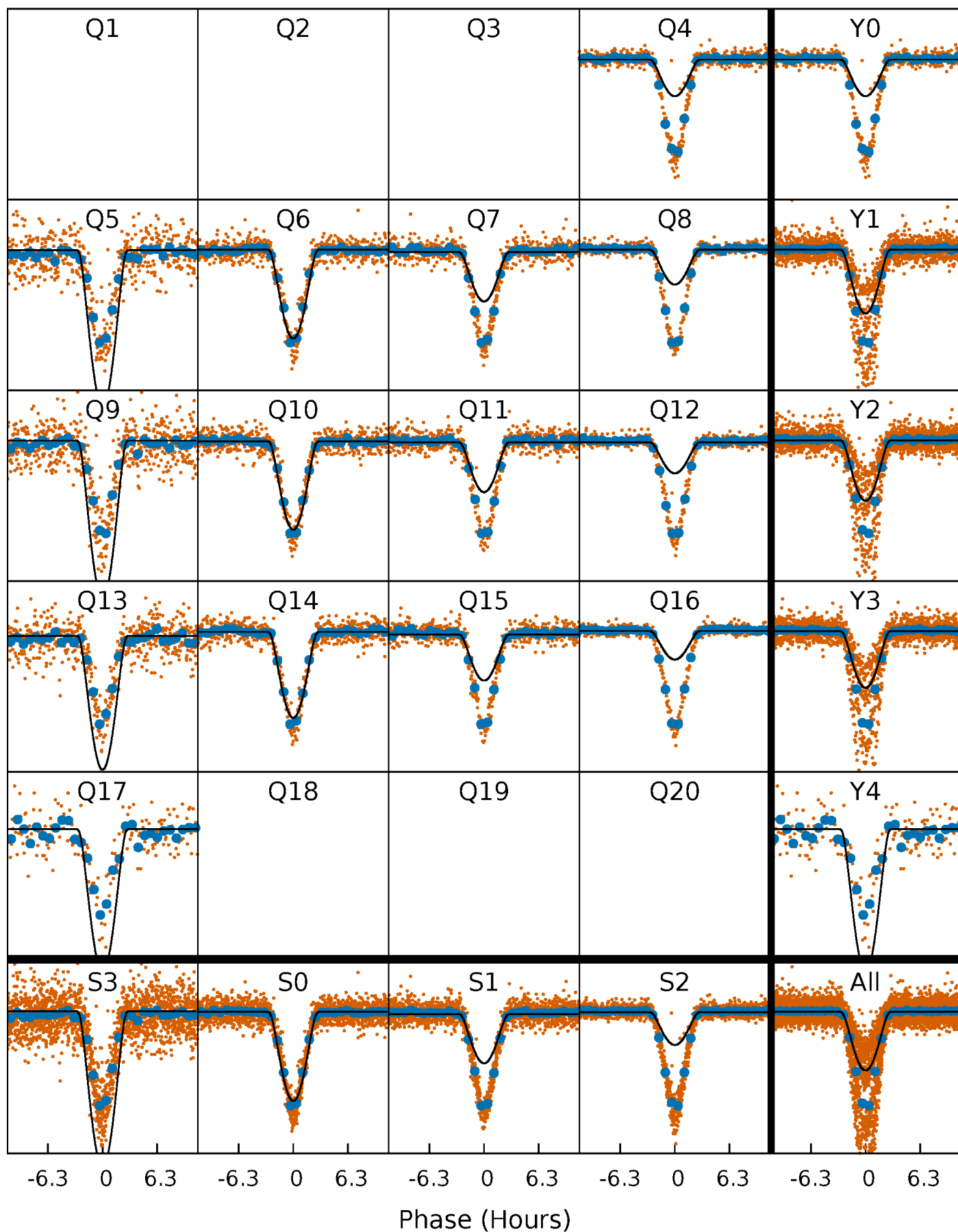
PDC Quarter-Phased Transit Curves

TCE 009674592-01 P= 6.873681 Days $T_0=132.456609$ (BKJD)



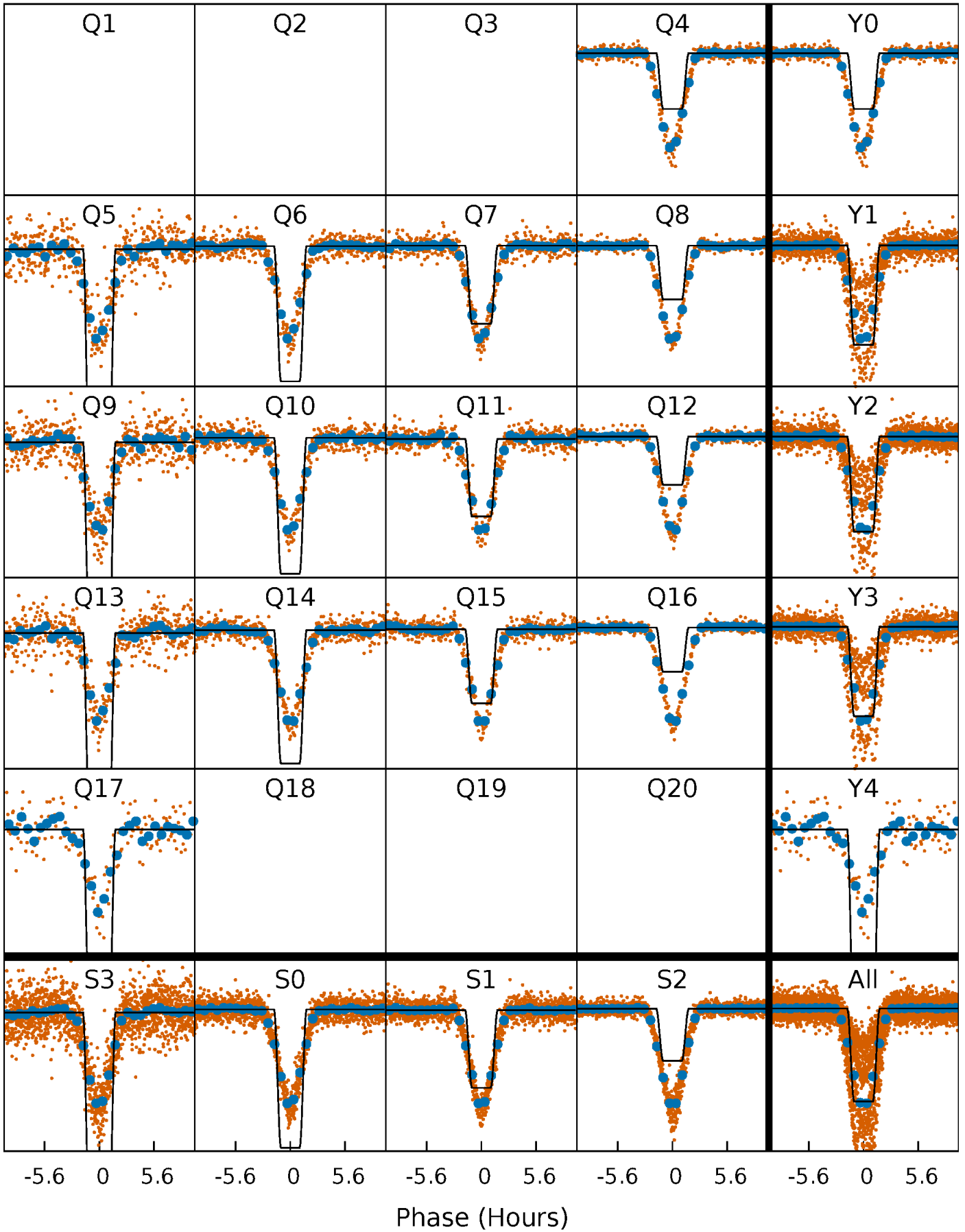
DV Quarter-Phased Transit Curves

TCE 009674592-01 P= 6.873681 Days $T_0=132.456609$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

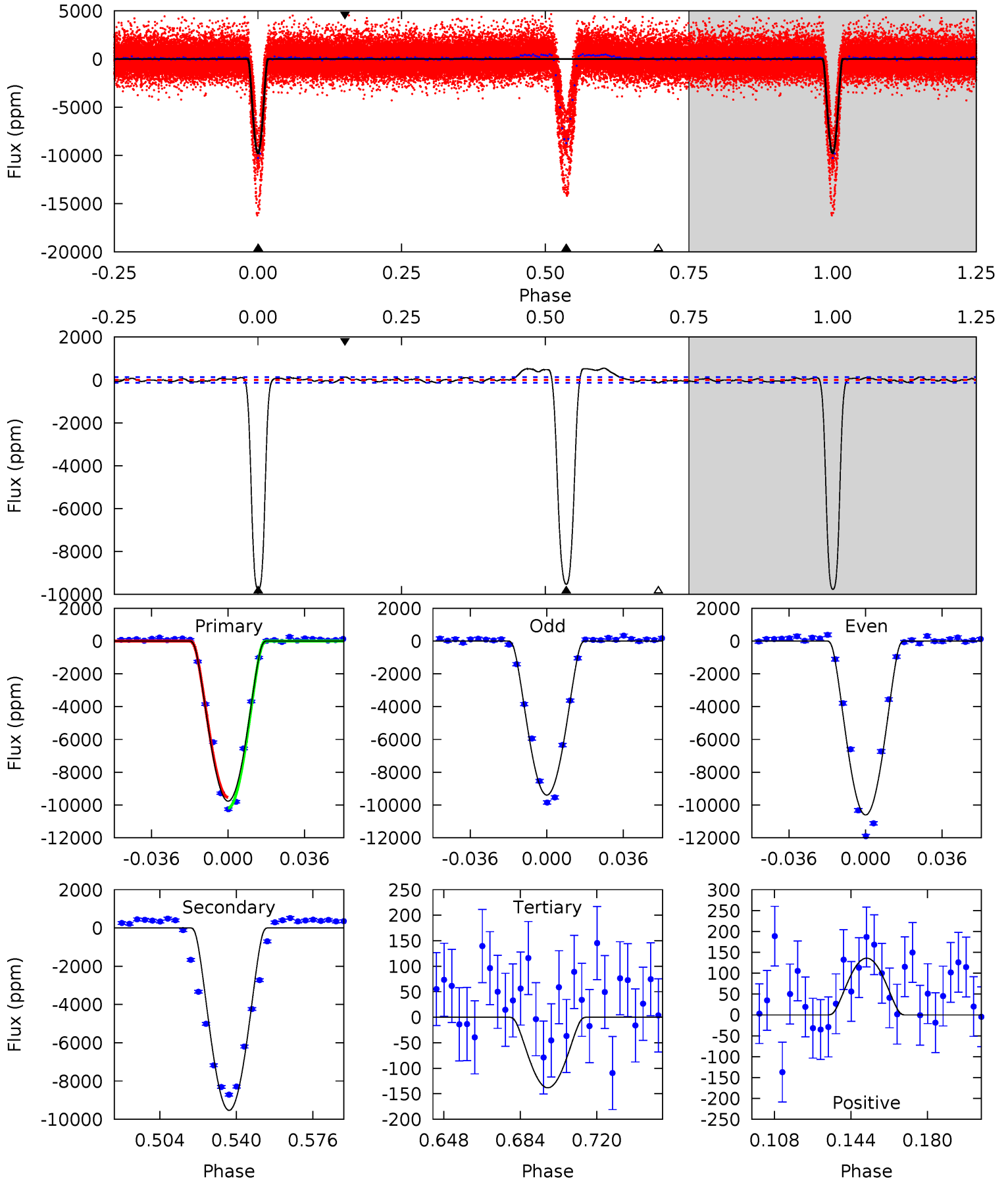
TCE 009674592-01 P= 6.873639 Days $T_0=132.462061$ (BKJD)



DV Model-Shift Uniqueness Test

009674592-01, P = 6.873681 Days, E = 132.456609 Days

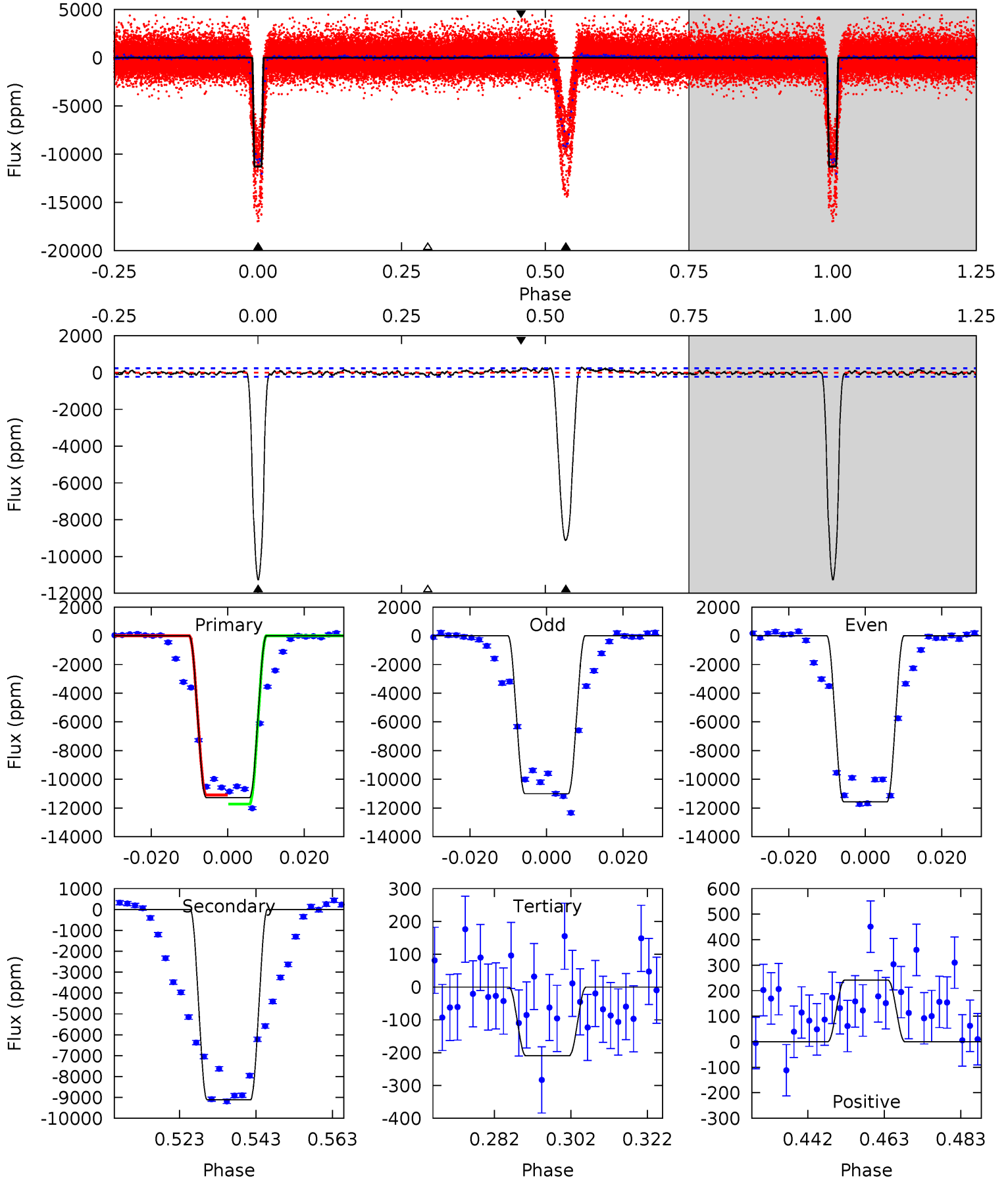
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
351.2	342.8	4.97	4.89	4.77	2.10	5.65	346.3	346.3	337.8	337.9	21.8	1.35	0.05	0



Alt Model-Shift Uniqueness Test

009674592-01, P = 6.873639 Days, E = 132.462061 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
239.5	193.6	4.44	5.12	4.89	2.32	1.88	235.1	234.4	189.2	188.5	5.97	1.12	0.02	0



Stellar Parameters For KIC 009674592

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5662^{+186}_{-186}	$4.575^{+0.040}_{-0.160}$	$-0.260^{+0.300}_{-0.300}$	$0.805^{+0.192}_{-0.069}$	$0.899^{+0.088}_{-0.107}$	$2.426^{+0.502}_{-1.042}$
	+3%/-3%	+1%/-3%	+115%/-115%	+24%/-9%	+10%/-12%	+21%/-43%
Source	KIC0	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 009674592-01 / KOI 3729.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9531 ± 28	$14.19^{+4.74}_{-4.70}$	1225^{+72}_{-52}	4651^{+888}_{-479}	120^{+147}_{-52}
Alt.	-9114 ± 47	$11.26^{+4.41}_{-4.21}$	1224^{+67}_{-58}	5081^{+1216}_{-650}	186^{+268}_{-92}

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 $A_{obs} \gg 1.0$

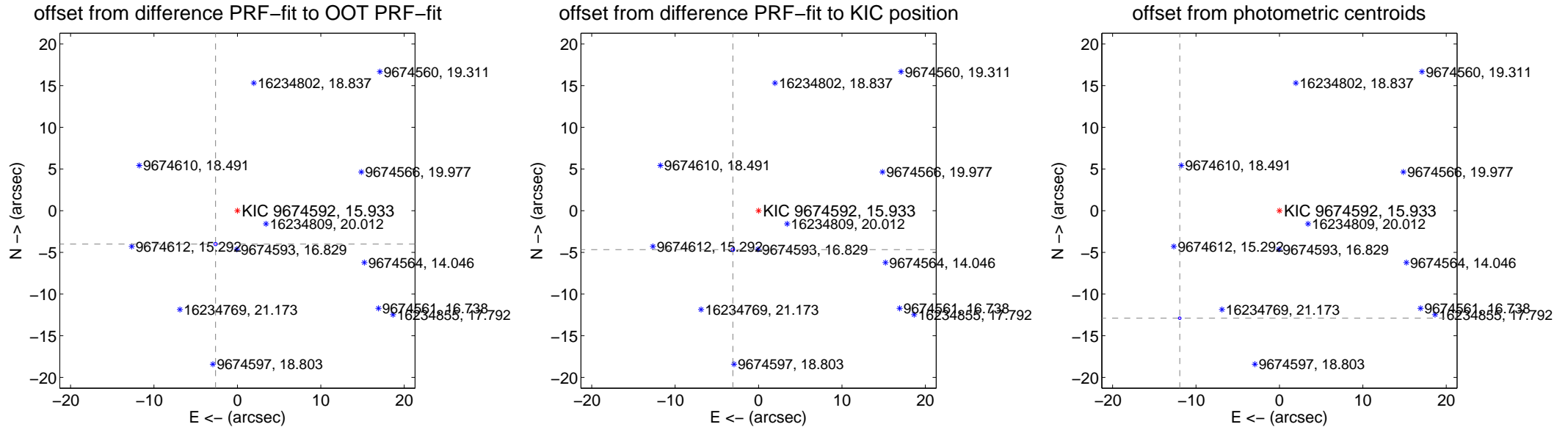
DV Centroid Data

Supplemental centroid analysis for 009674592-01. Kepler magnitude: 15.93. Transit SNR 165.55

There are 3 quarters with good PRF difference image offsets

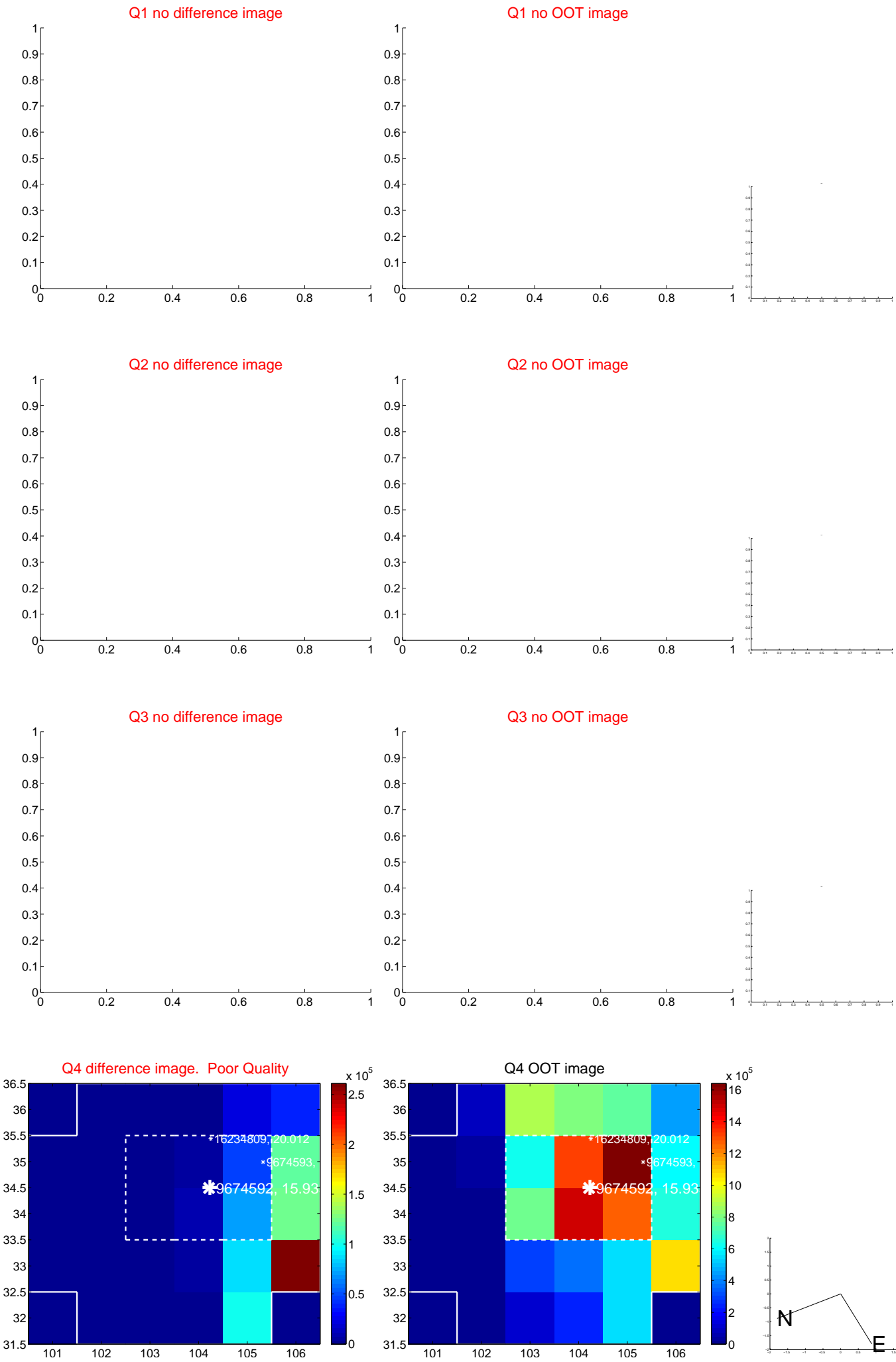
The direct PRF centroid is offset from the target star catalog position by about 0.79 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.783 \pm 0.068	70.83	2.618 \pm 0.067	-4.003 \pm 0.068
PRF-fit source offset from KIC position	5.590 \pm 0.072	78.14	3.075 \pm 0.069	-4.668 \pm 0.072
photometric centroid source offset	17.58 \pm 0.05	322.79	11.95 \pm 0.05	-12.90 \pm 0.05

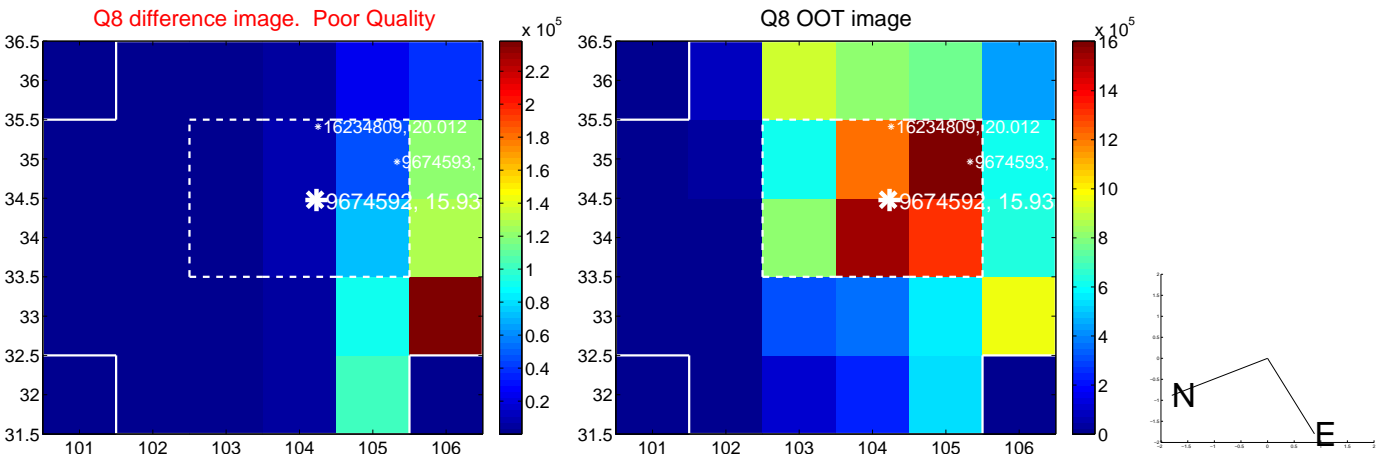
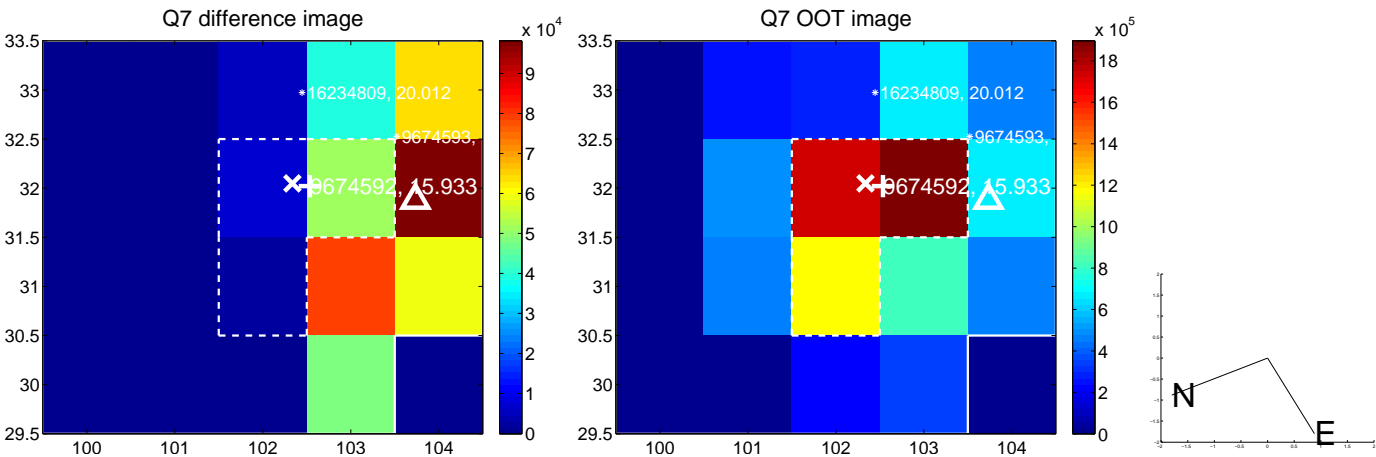
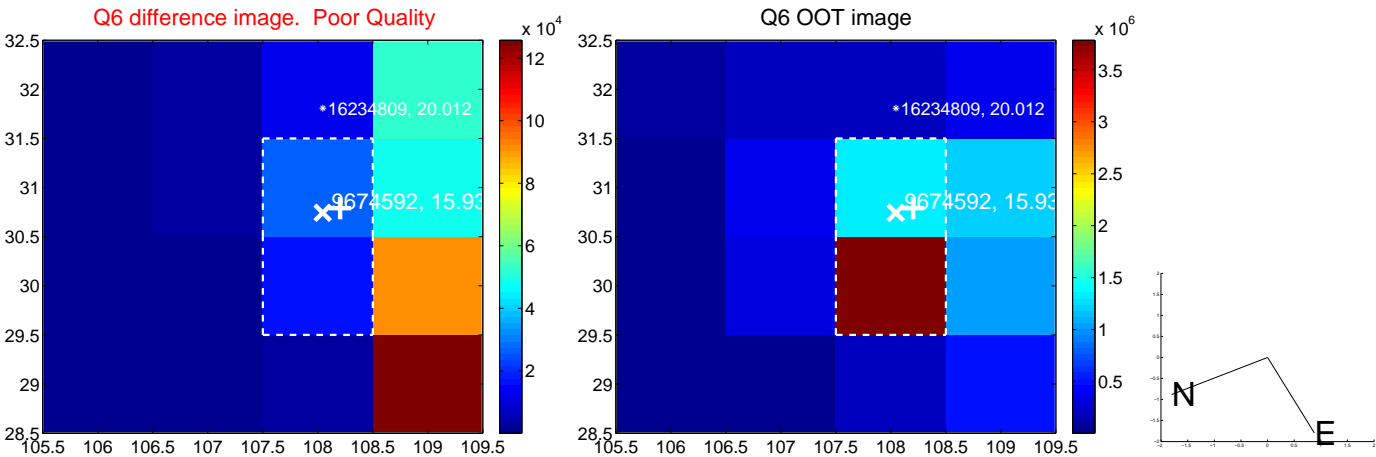
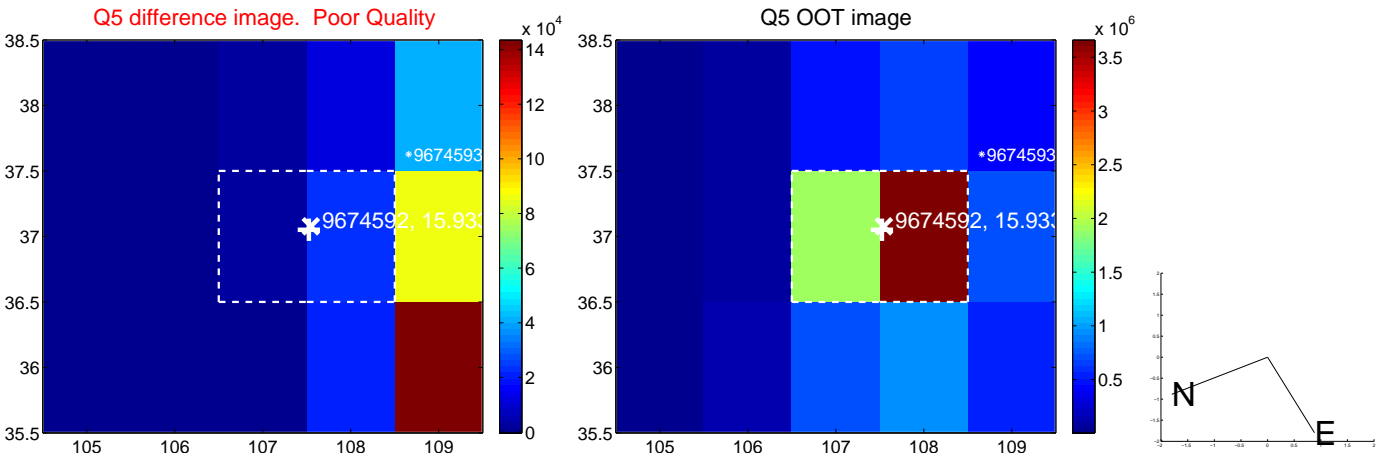


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

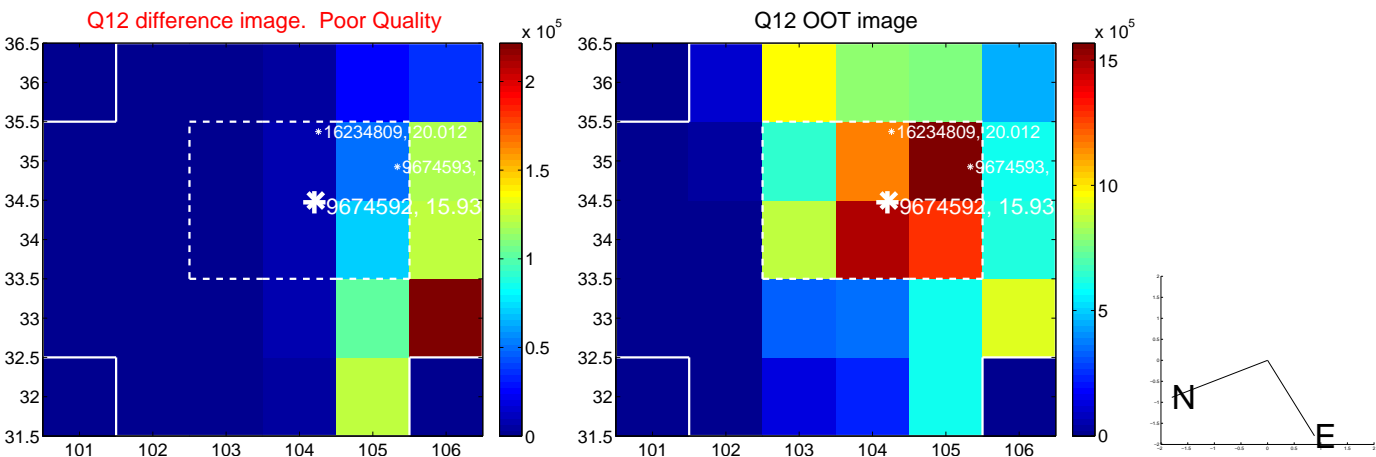
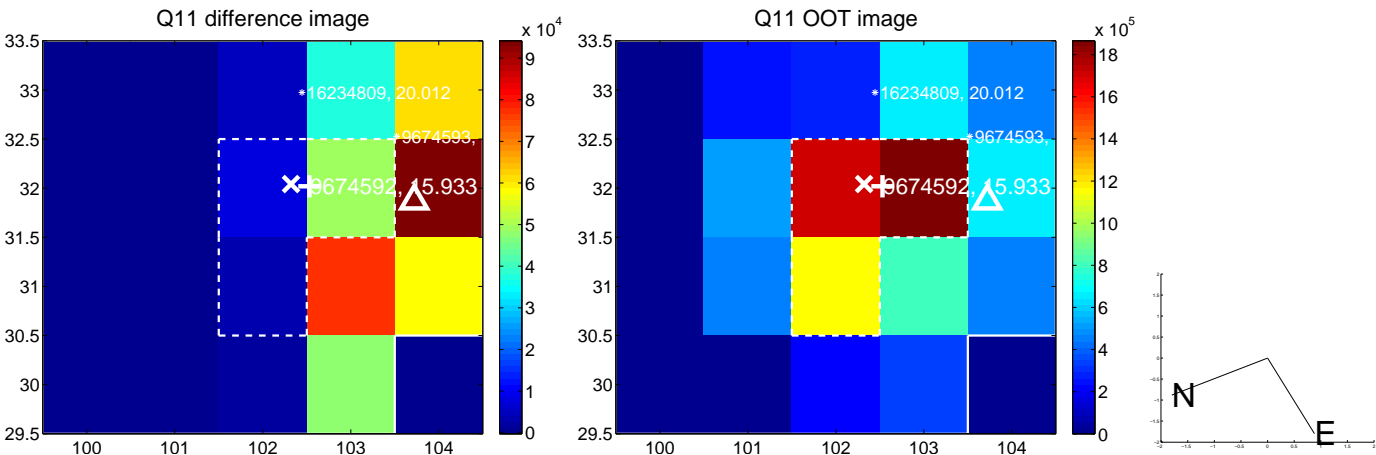
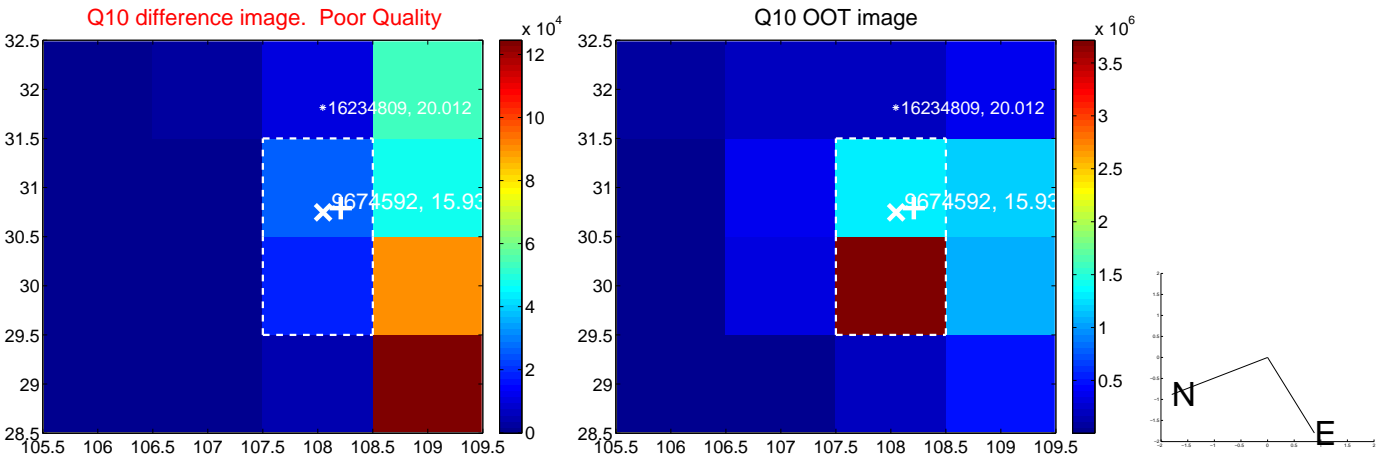
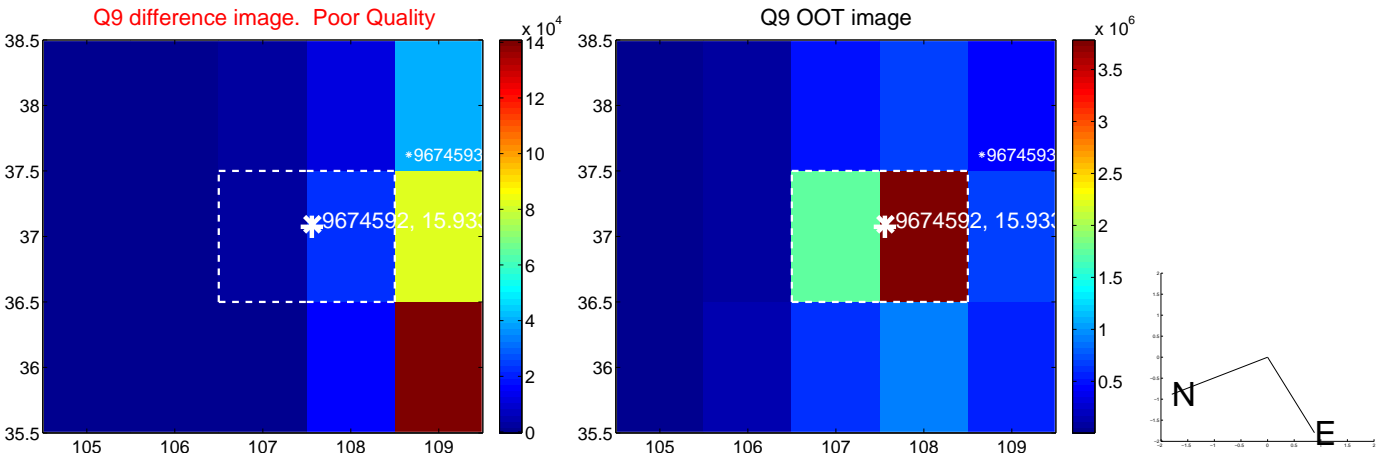
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



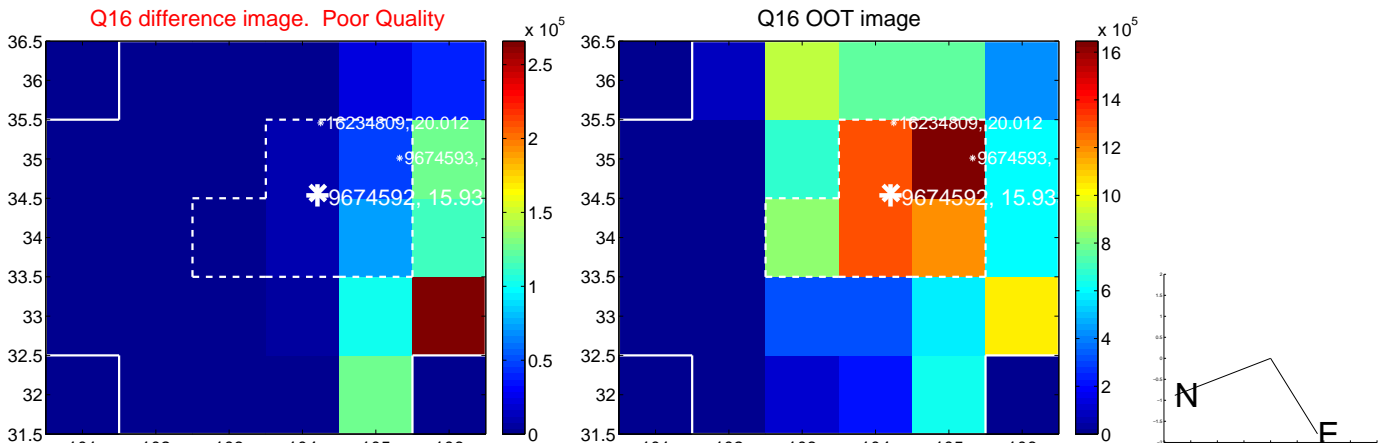
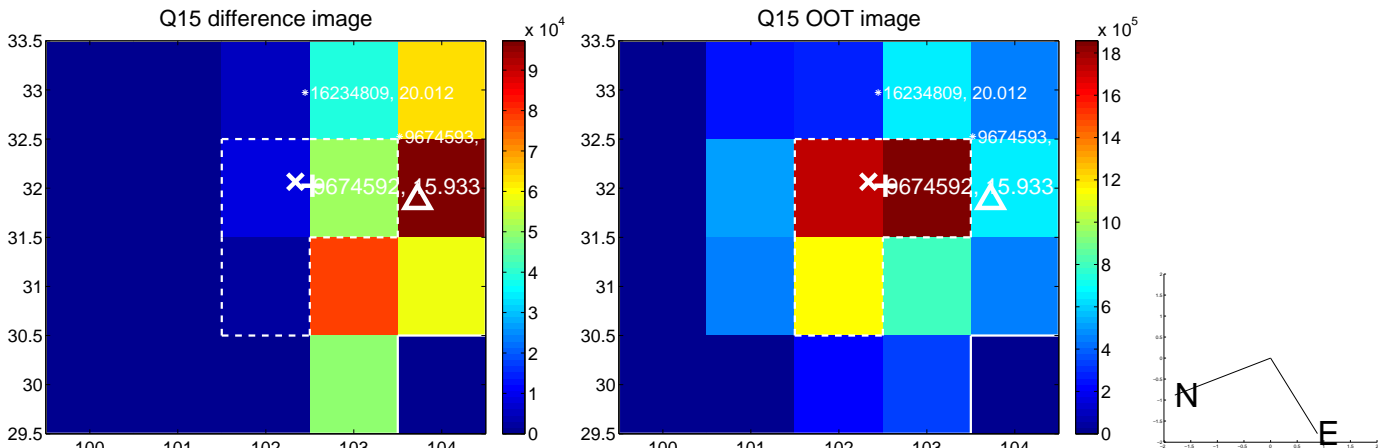
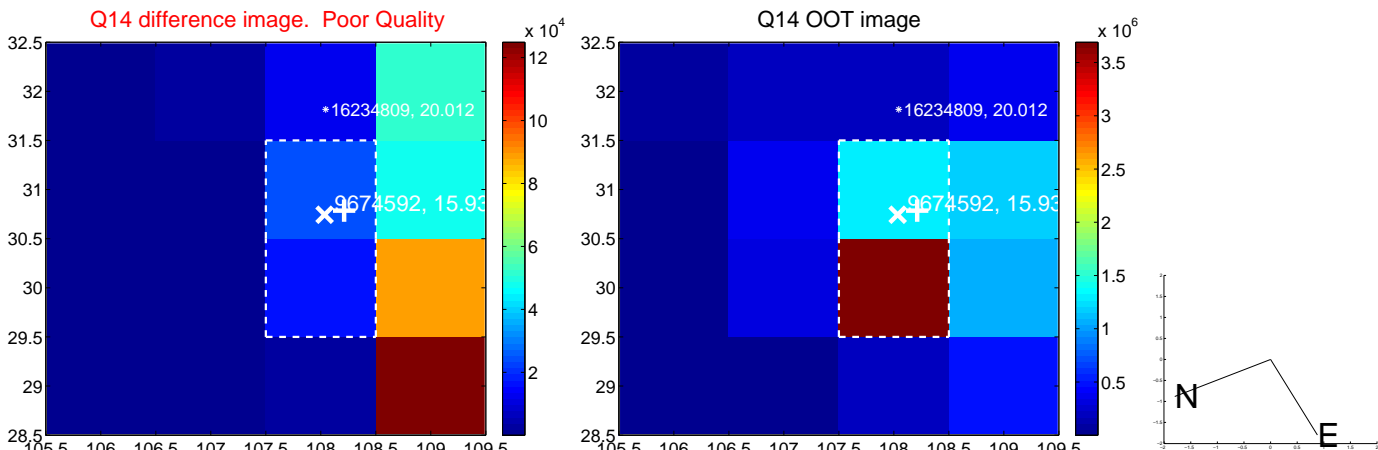
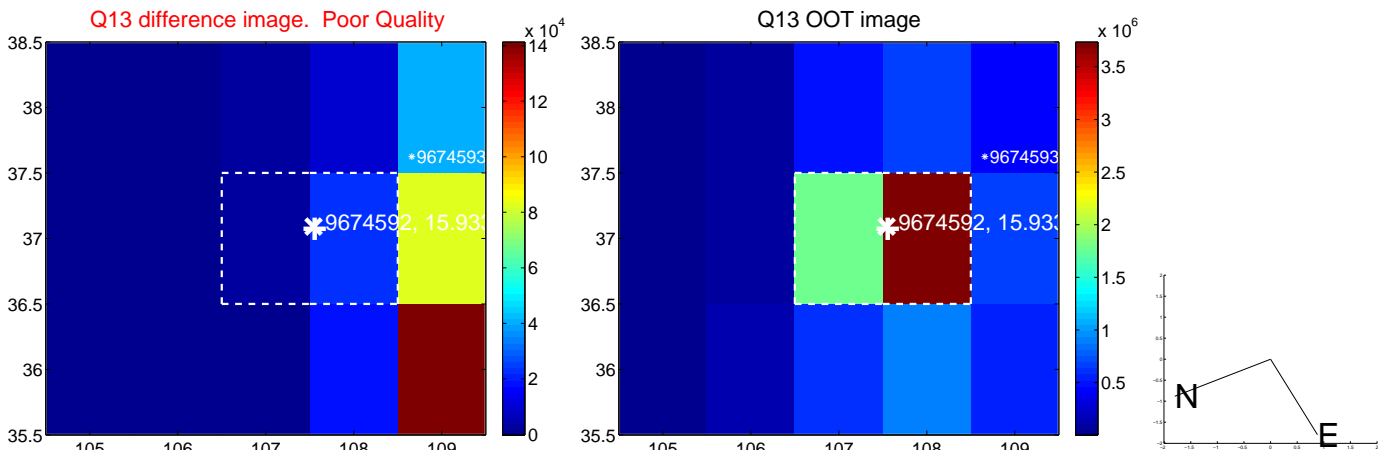
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



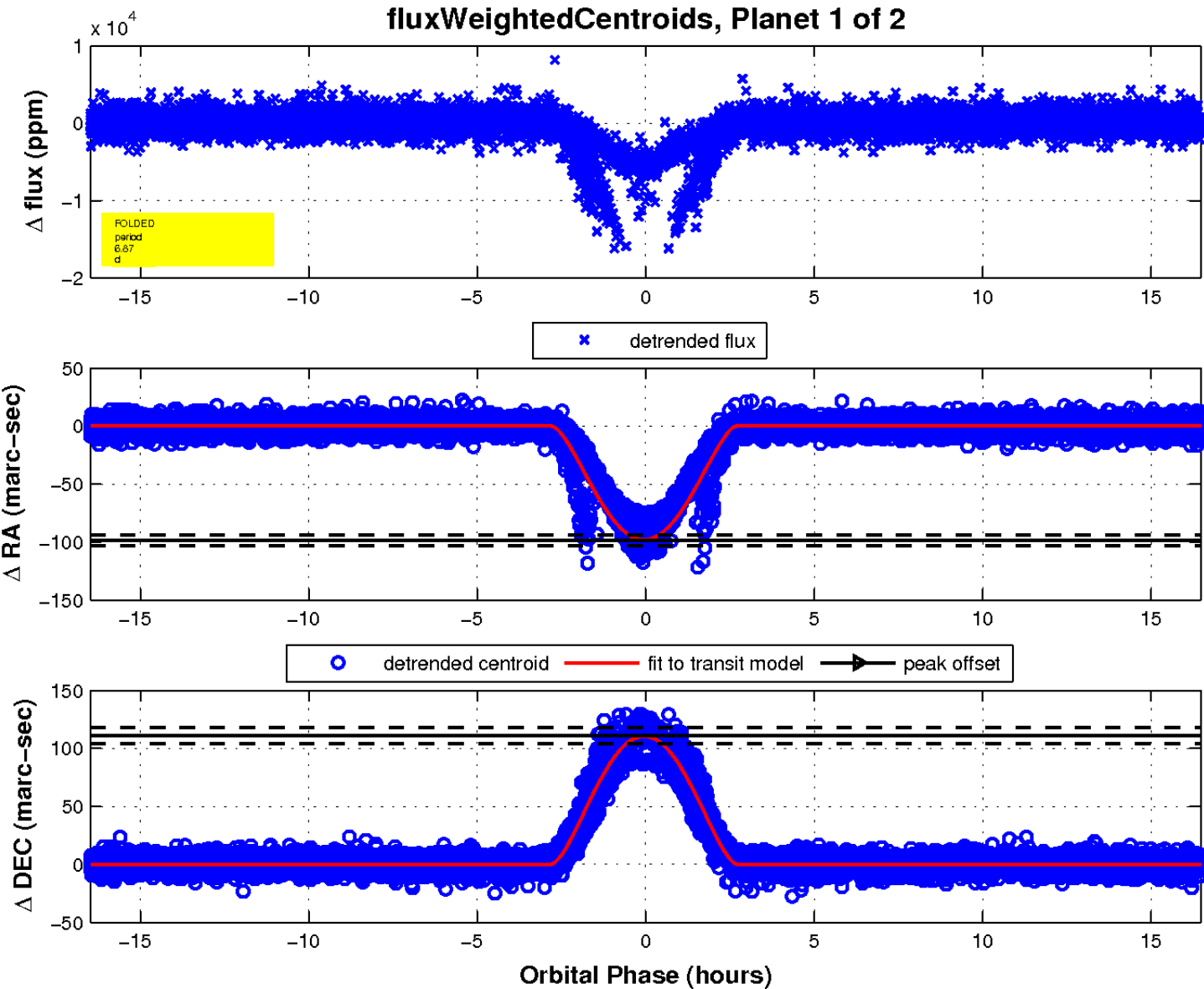
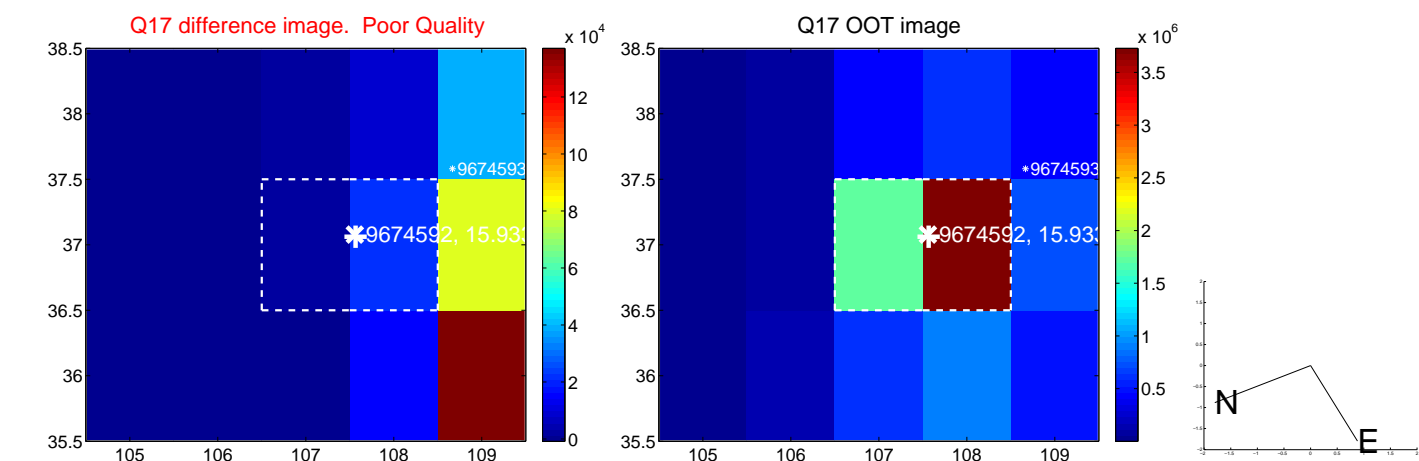
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

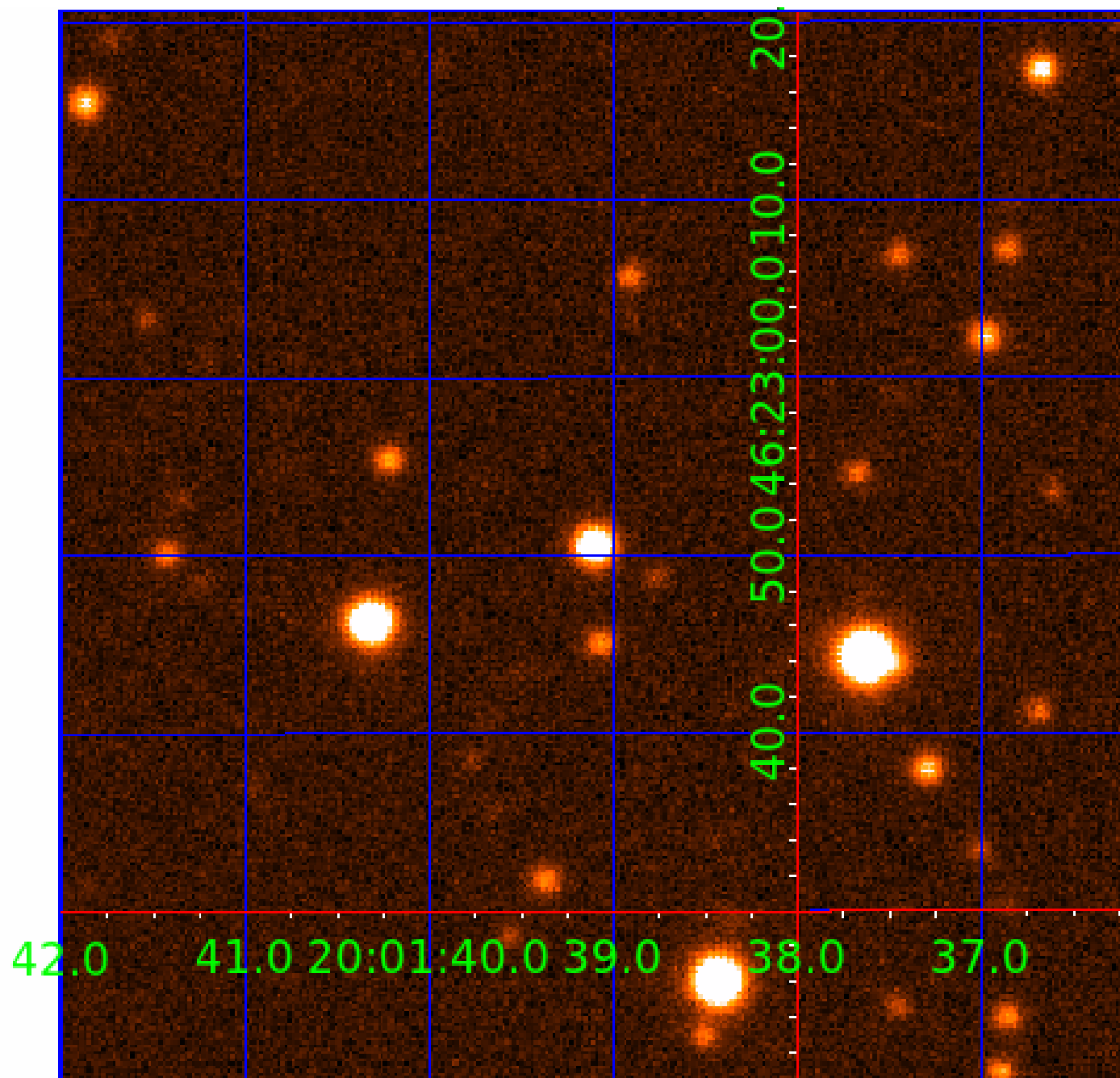


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009674592

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})
009674592-01	OBS	3729.02	6.873681	132.456609	8945.8	5.495	304.6	165.5	0.81	5662	13.79	128.94
009674592-02	OBS	3729.01	6.873668	136.139401	8083.5	7.152	304.2	171.3	0.81	5662	13.10	128.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009674592-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
009674592-02	OBS	FP	0.00	1	0	1	0	SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

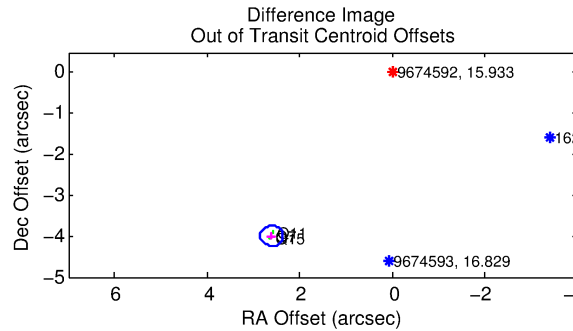
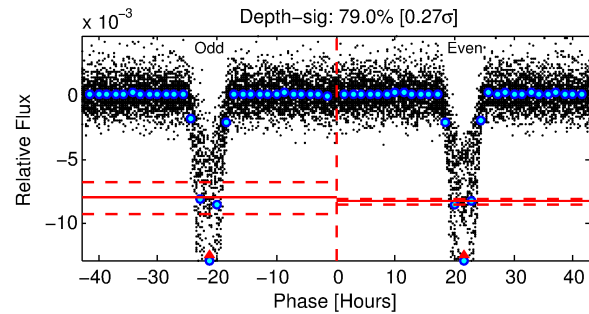
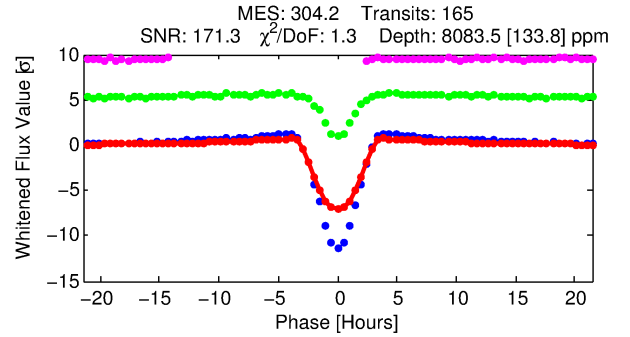
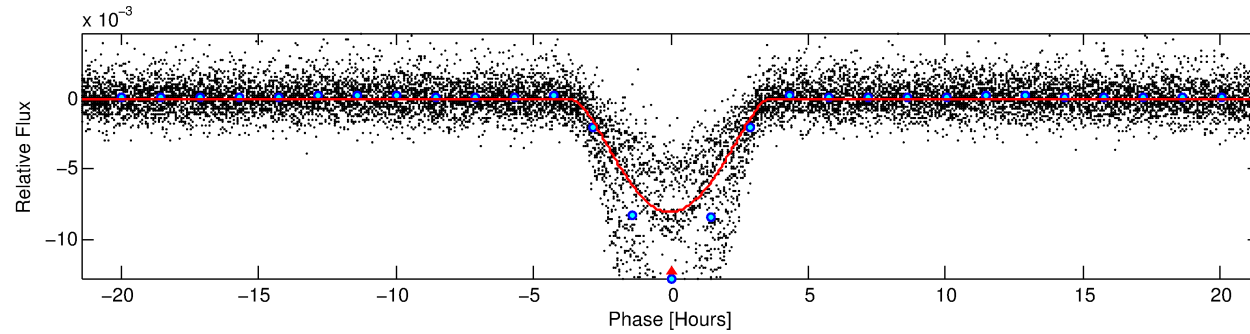
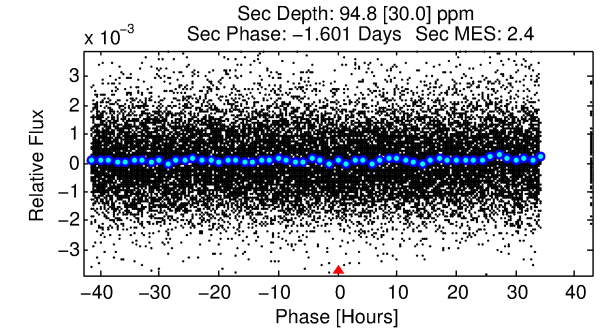
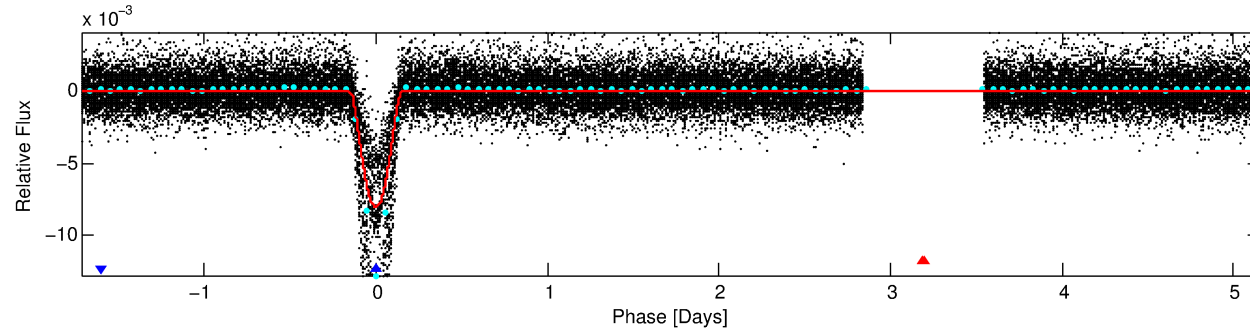
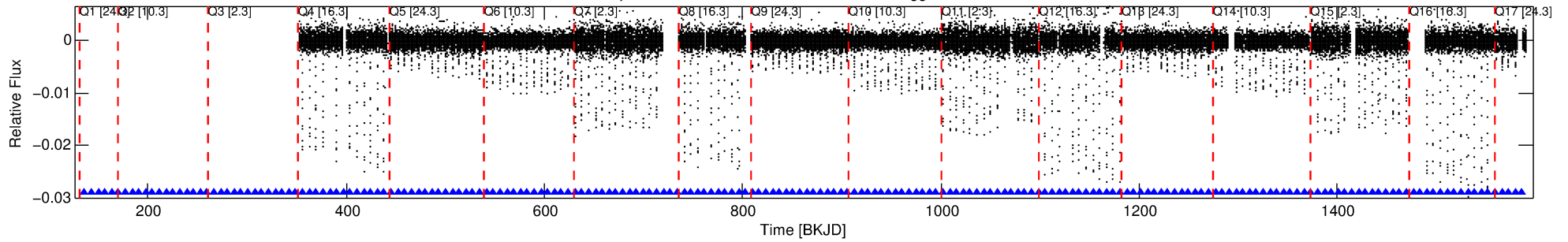
Ephemeris Match Information For 009674592-02

No Significant Match Found

DV One-Page Summary

KIC: 9674592 Candidate: 2 of 2 Period: 6.874 d
KOI: K03729.01 Corr: 0.997

Kp: 15.93 R*: 0.81 Rs Teff: 5662.0 K Logg: 4.58 Fe/H: -0.260



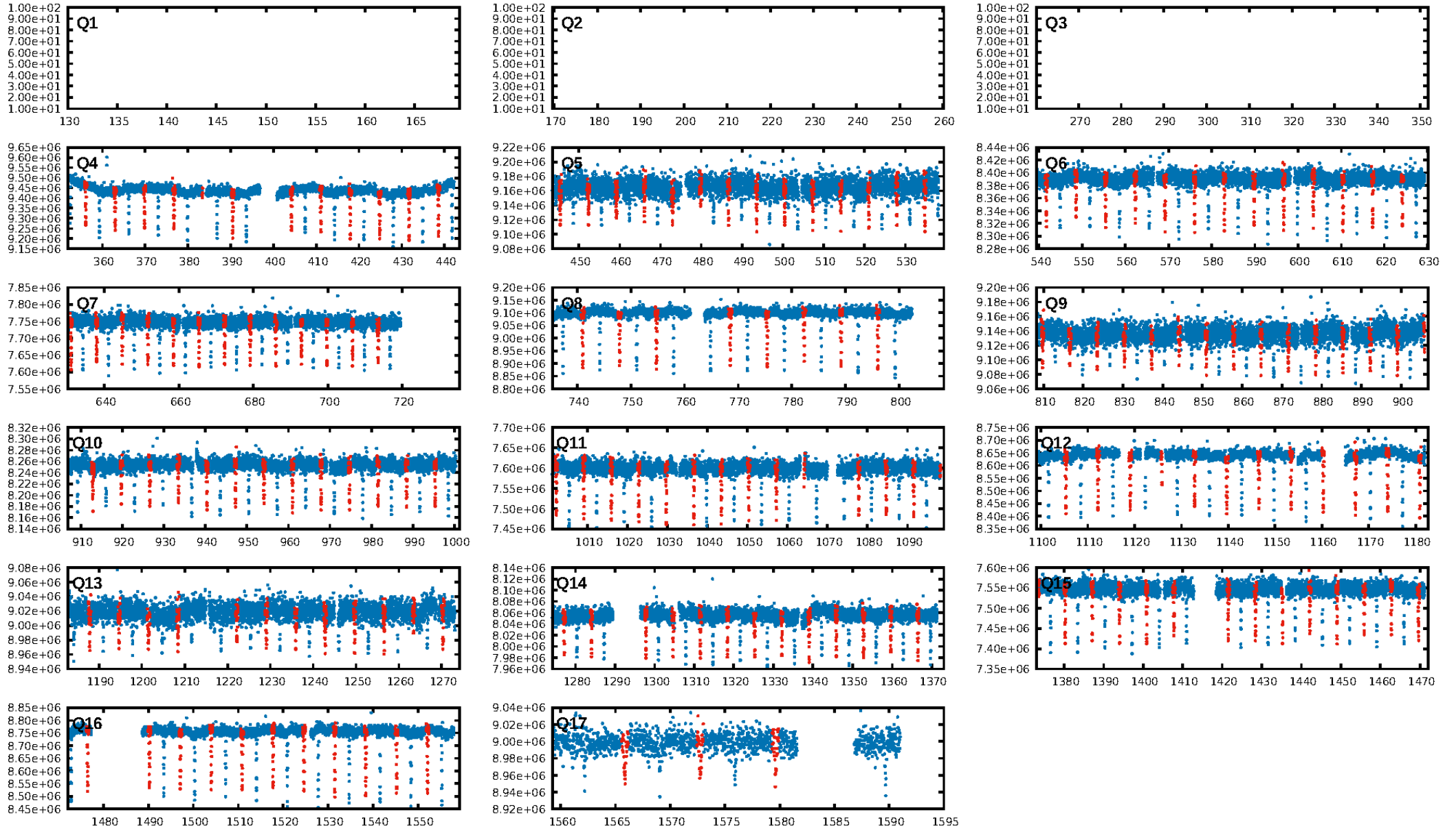
DV Fit Results:

Period = 6.87367 [0.00001] d
Epoch = 136.1394 [0.0012] BKJD
Rp/R* = 0.1491 [0.0429]
a/R* = 4.30 [0.17]
b = 1.00 [0.06]
Seff = 128.94 [41.36]
Teq = 859 [69] K
Rp = 13.10 [4.90] Re
a = 0.0680 [0.0137] AU
Ag = 1.41 [1.01] [0.40 σ]
Teffp = 1447 [242] K [2.33 σ]

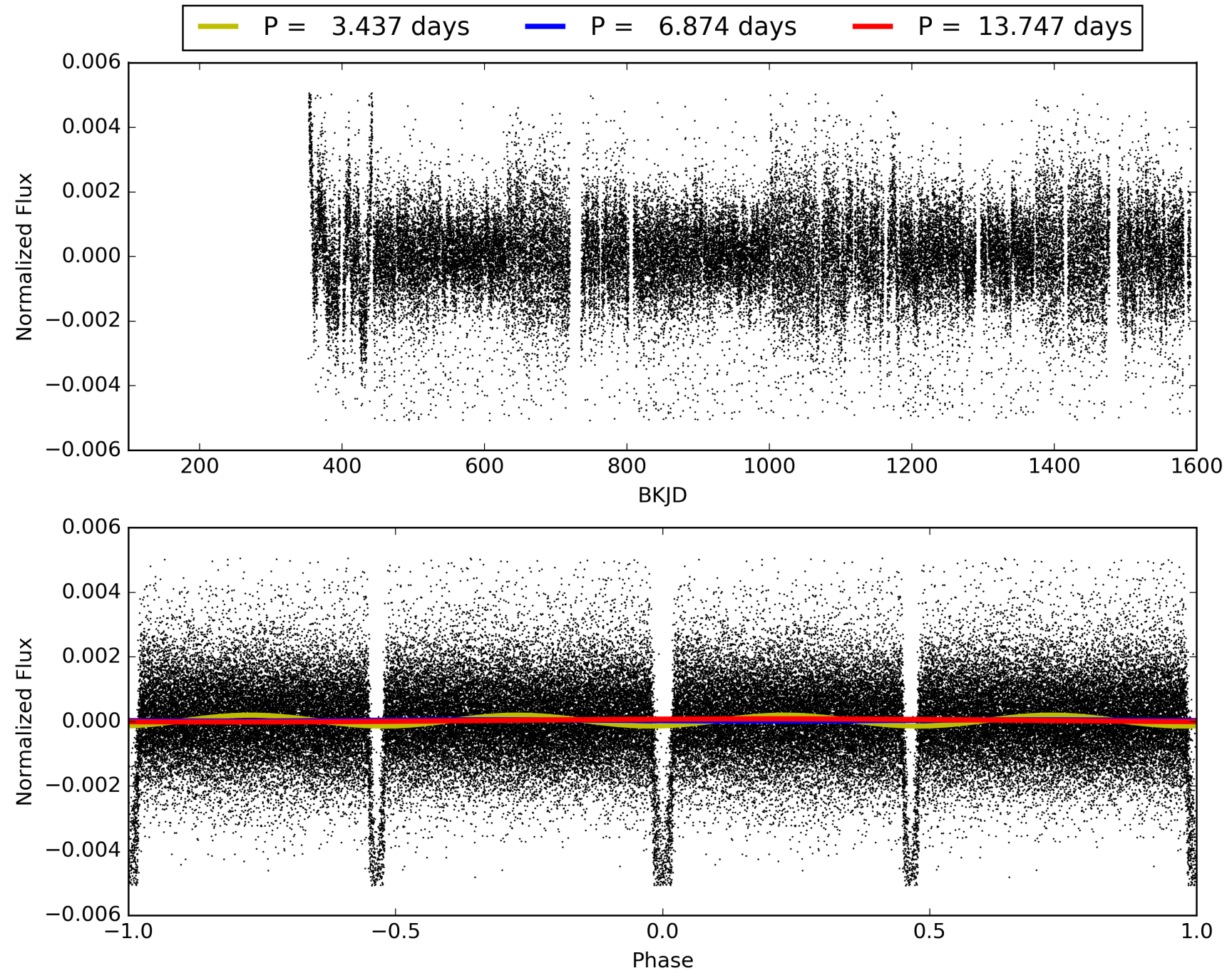
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 60.2%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [162/162]
GhostDiagnostic-chr: -0.2394
Centroid-sig: 0.0%
Centroid-so: 16.987 arcsec [302.48 σ]
OotOffset-rm: 4.770 arcsec [57.95 σ]
KicOffset-rm: 5.576 arcsec [78.25 σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009674592-02, PDC Light Curves

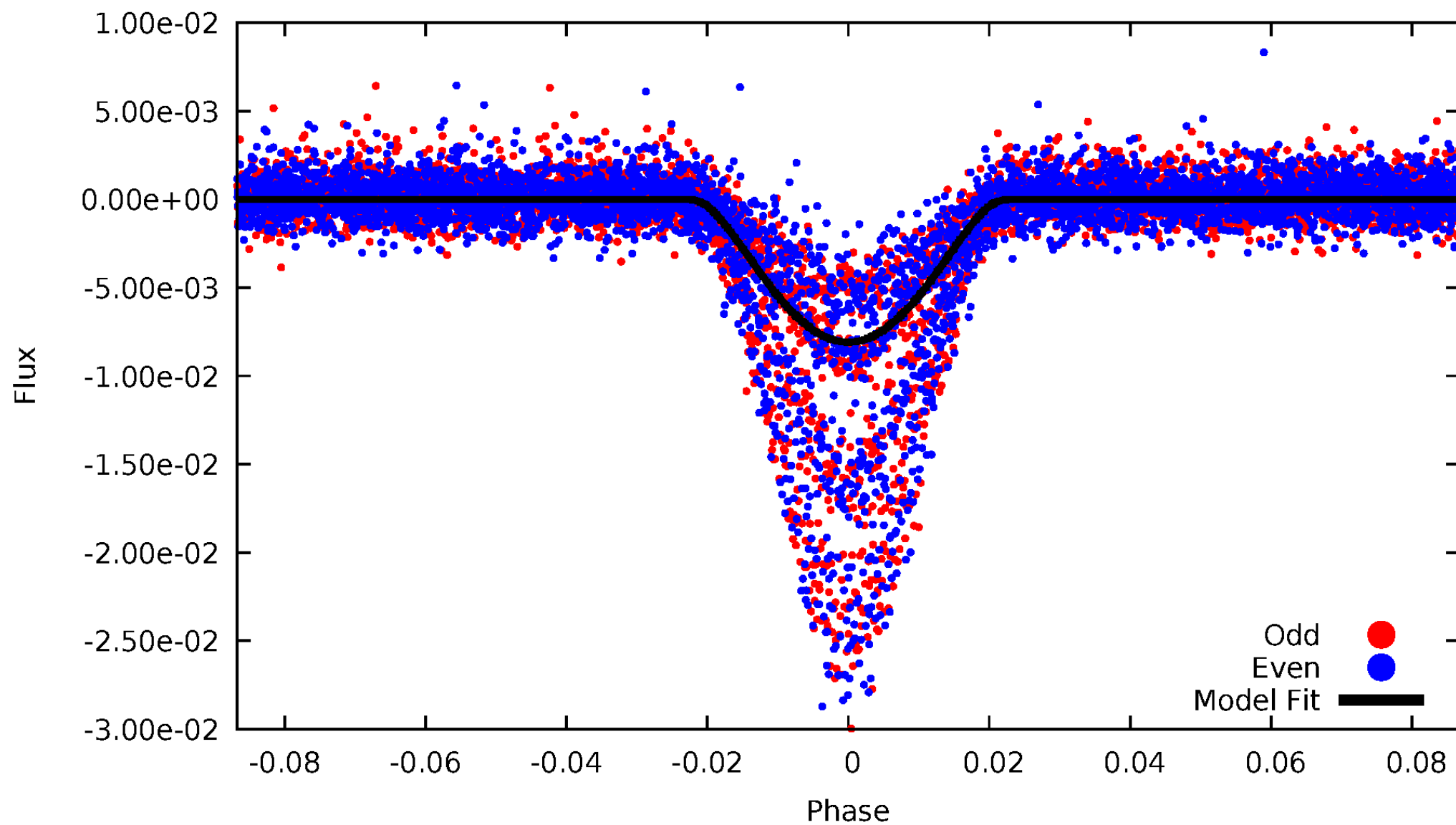


TCE 009674592-02



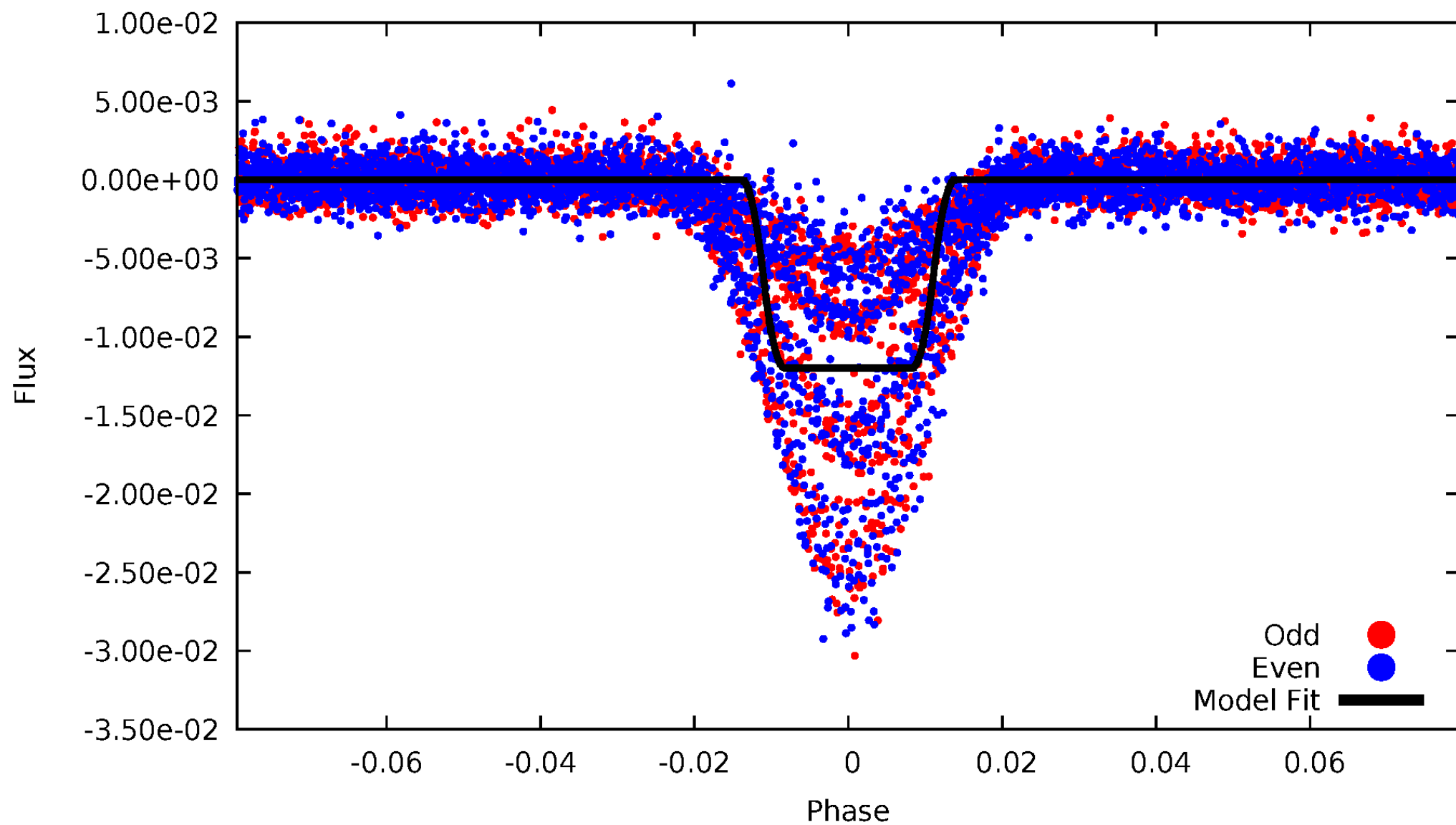
DV Odd/Even

TCE 009674592-02



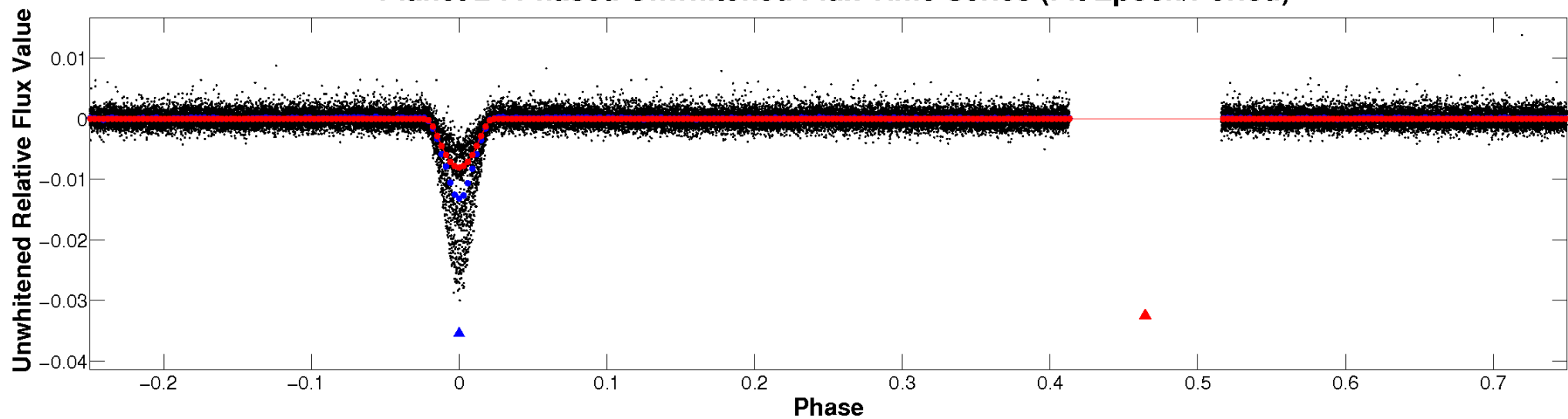
ALT Odd/Even

TCE 009674592-02

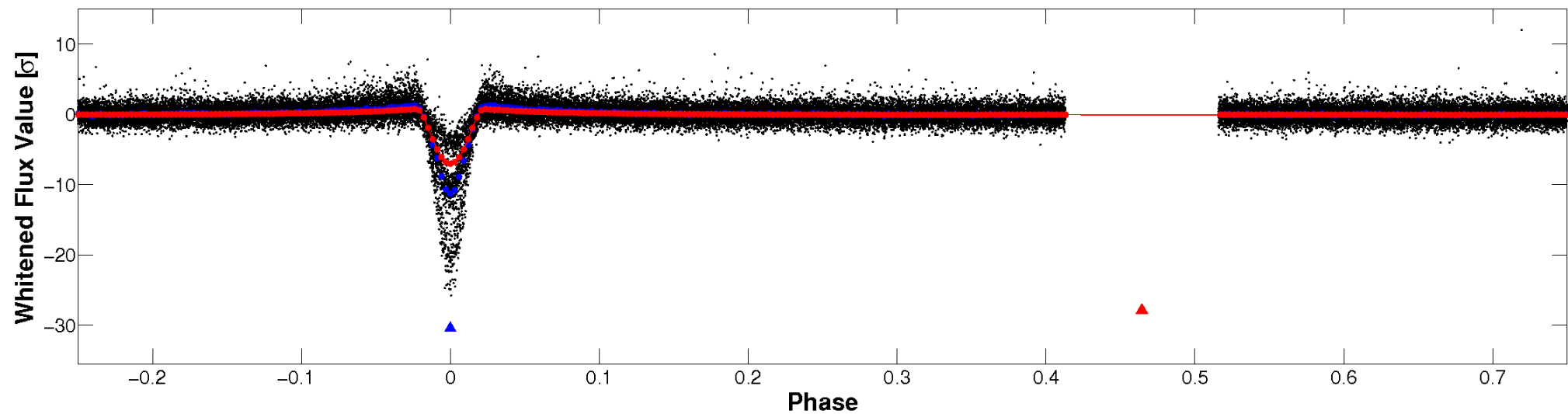


Non-Whitened Vs. Whitened Light Curve

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

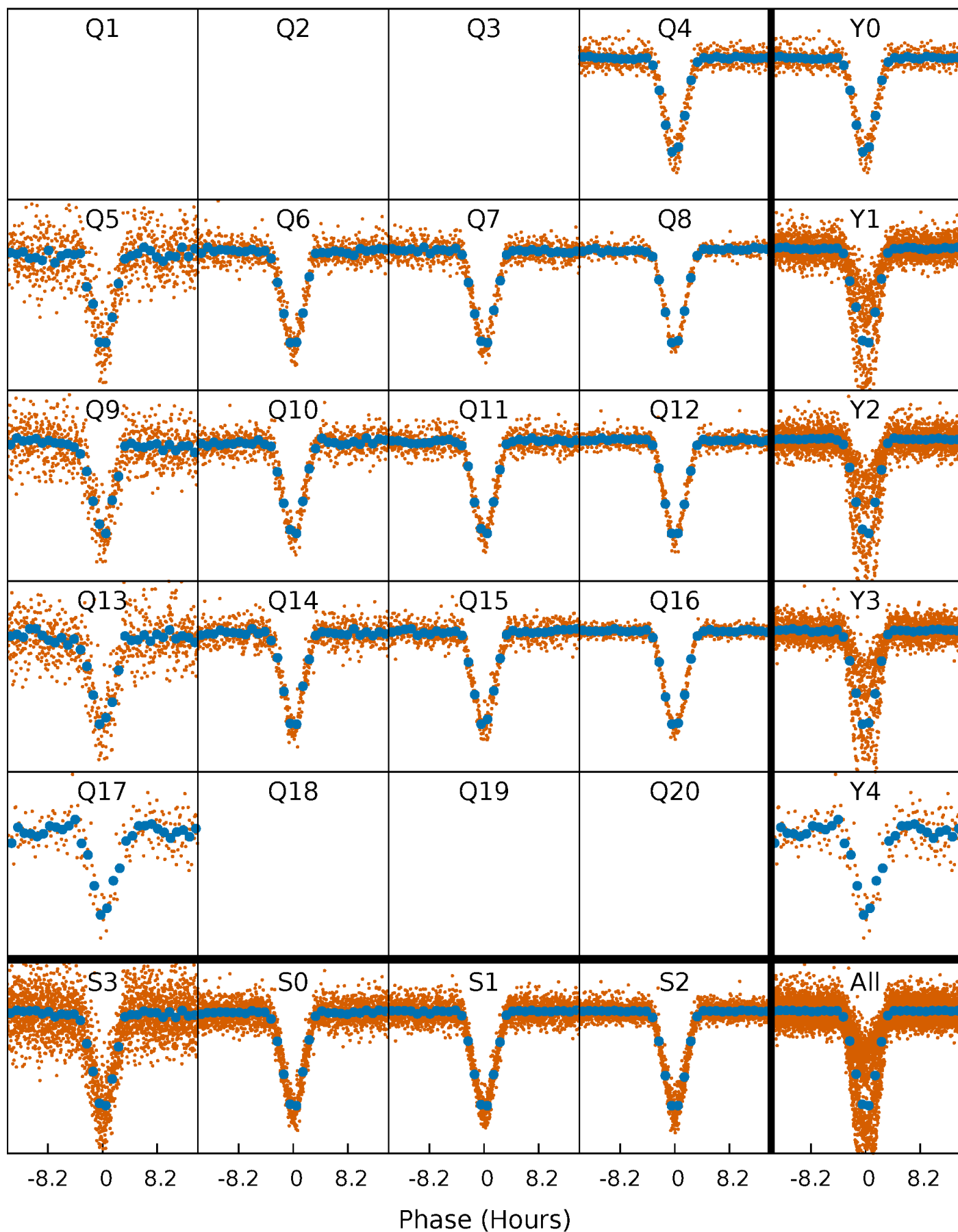


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



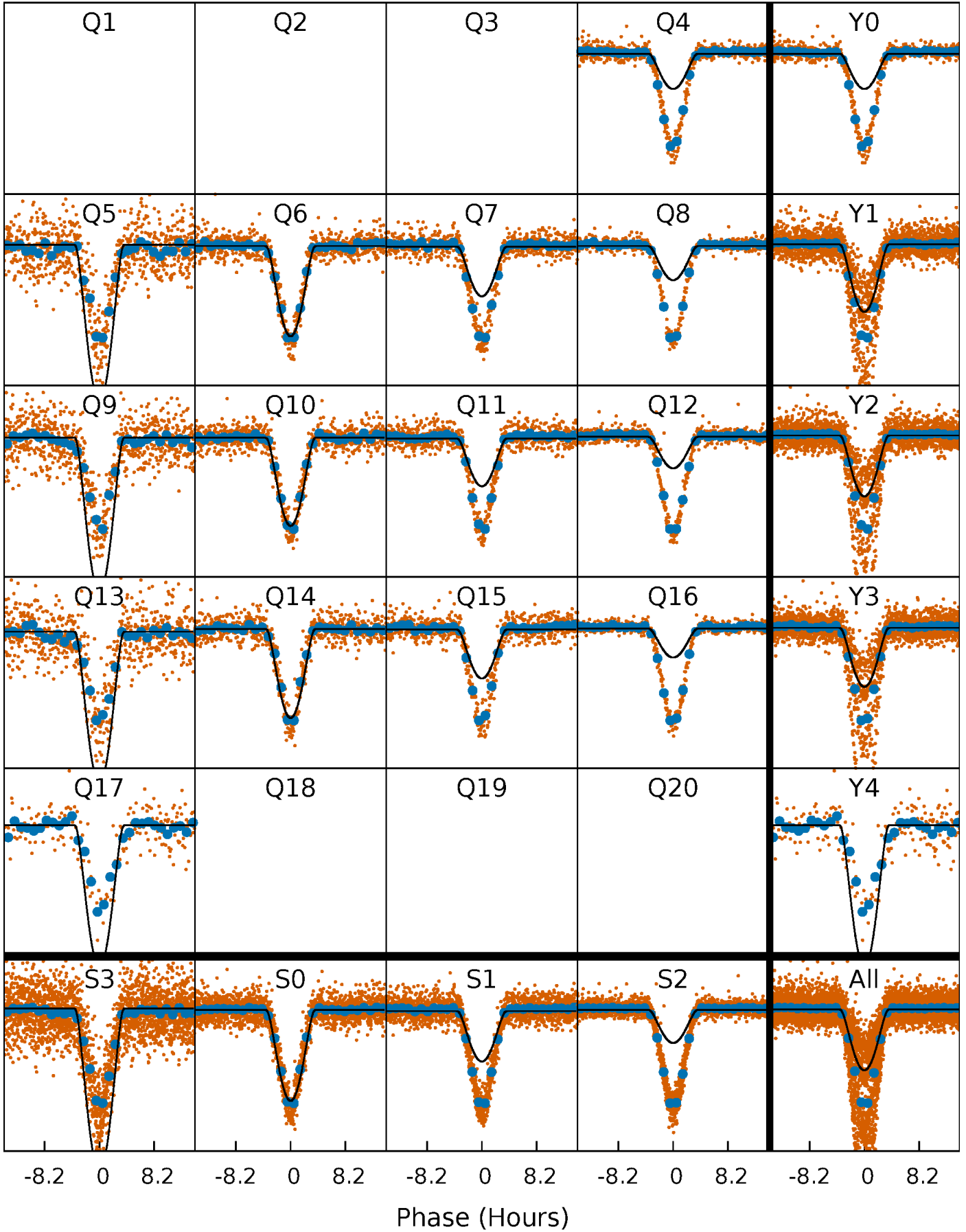
PDC Quarter-Phased Transit Curves

TCE 009674592-02 P= 6.873668 Days $T_0=136.139401$ (BKJD)



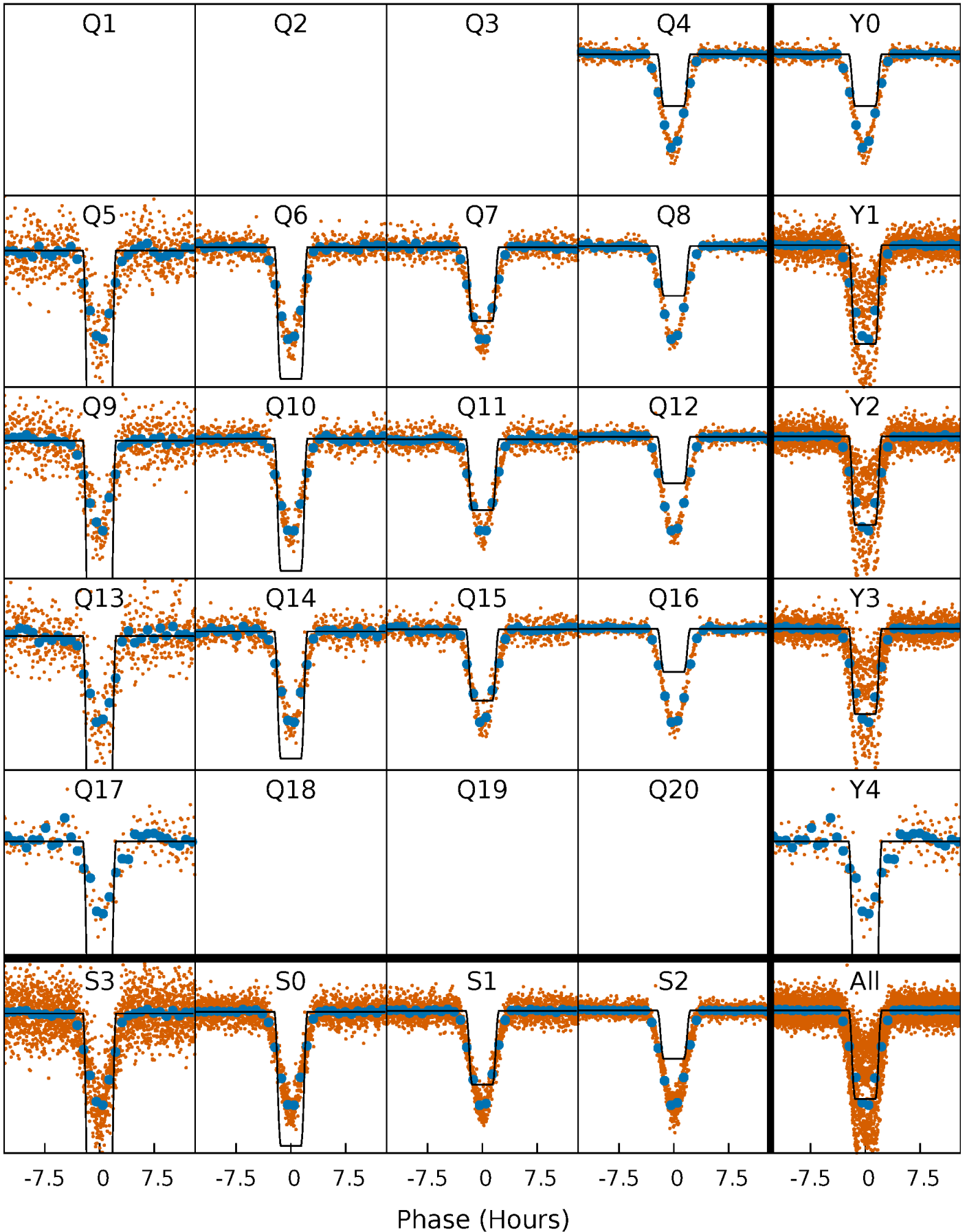
DV Quarter-Phased Transit Curves

TCE 009674592-02 P= 6.873668 Days $T_0=136.139401$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

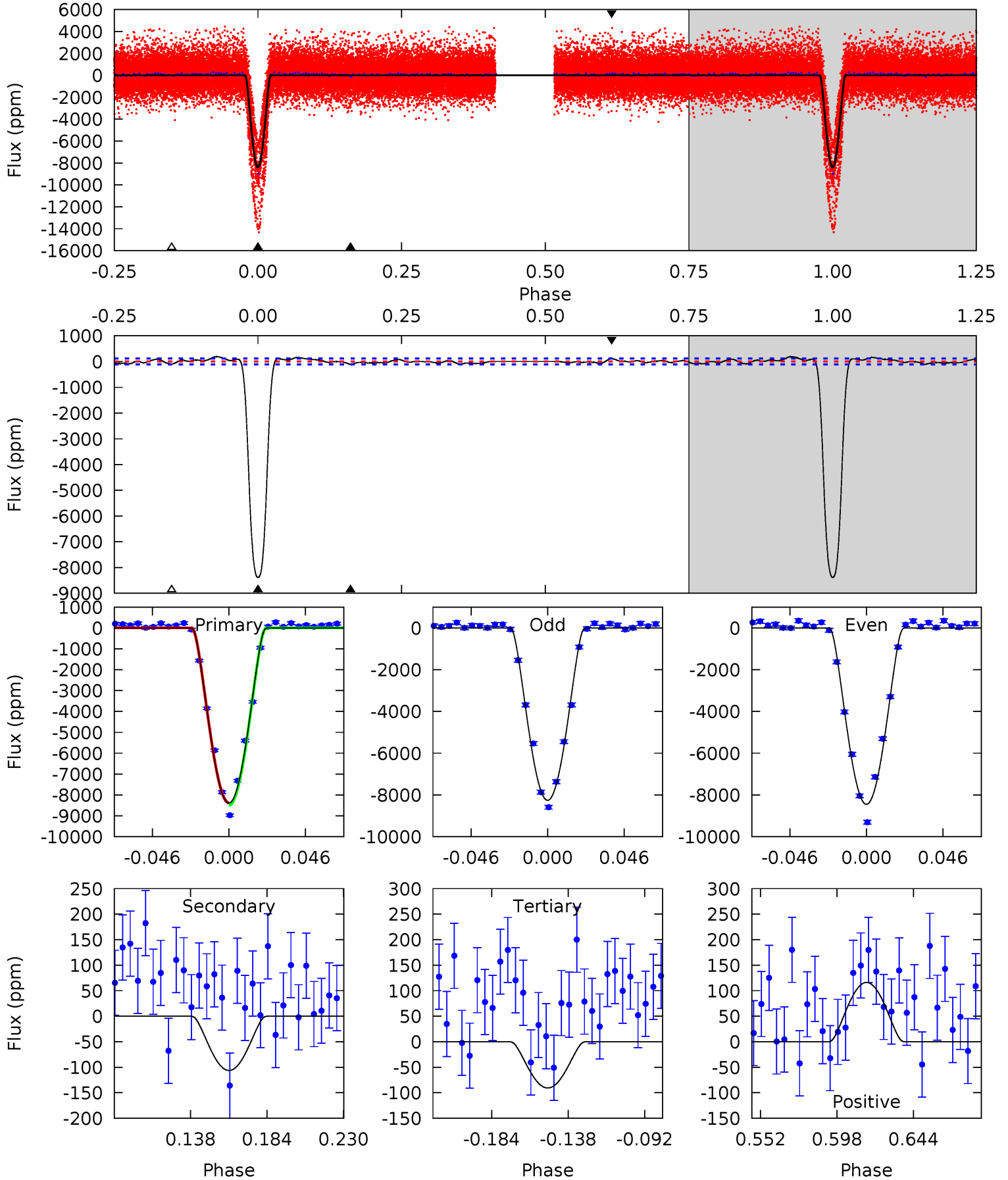
TCE 009674592-02 $P = 6.873627$ Days $T_0 = 136.144646$ (BKJD)



DV Model-Shift Uniqueness Test

009674592-02, P = 6.873668 Days, E = 136.139401 Days

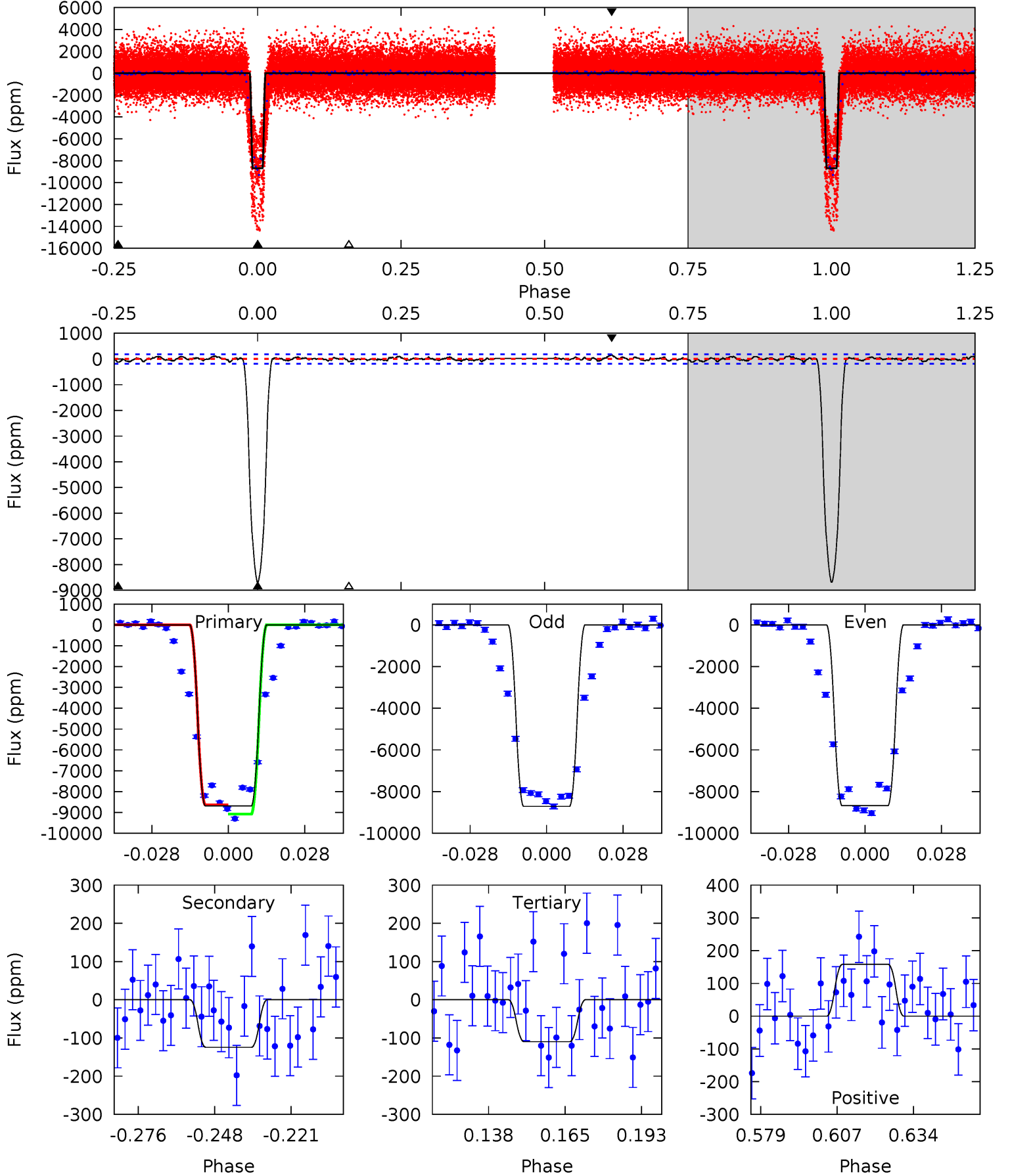
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
342.2	4.34	3.70	4.74	4.73	2.00	2.48	338.5	337.5	0.64	-0.40	3.92	1.38	0.02	0



Alt Model-Shift Uniqueness Test

009674592-02, P = 6.873627 Days, E = 136.144646 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
227.9	3.27	2.88	4.15	4.83	2.20	1.16	225.0	223.8	0.39	-0.89	0.44	1.41	0.02	0



Stellar Parameters For KIC 009674592

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5662^{+186}_{-186}	$4.575^{+0.040}_{-0.160}$	$-0.260^{+0.300}_{-0.300}$	$0.805^{+0.192}_{-0.069}$	$0.899^{+0.088}_{-0.107}$	$2.426^{+0.502}_{-1.042}$
	+3%/-3%	+1%/-3%	+115%/-115%	+24%/-9%	+10%/-12%	+21%/-43%
Source	KIC0	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 009674592-02 / KOI 3729.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-106 ± 25	$13.67^{+4.30}_{-4.03}$	1226^{+78}_{-57}	2307^{+258}_{-196}	$1.401^{+1.548}_{-0.626}$
Alt.	-124 ± 38	$9.97^{+4.22}_{-3.93}$	1225^{+76}_{-59}	2580^{+393}_{-271}	$3.140^{+5.676}_{-1.752}$

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 $A_{obs} \gg 1.0$

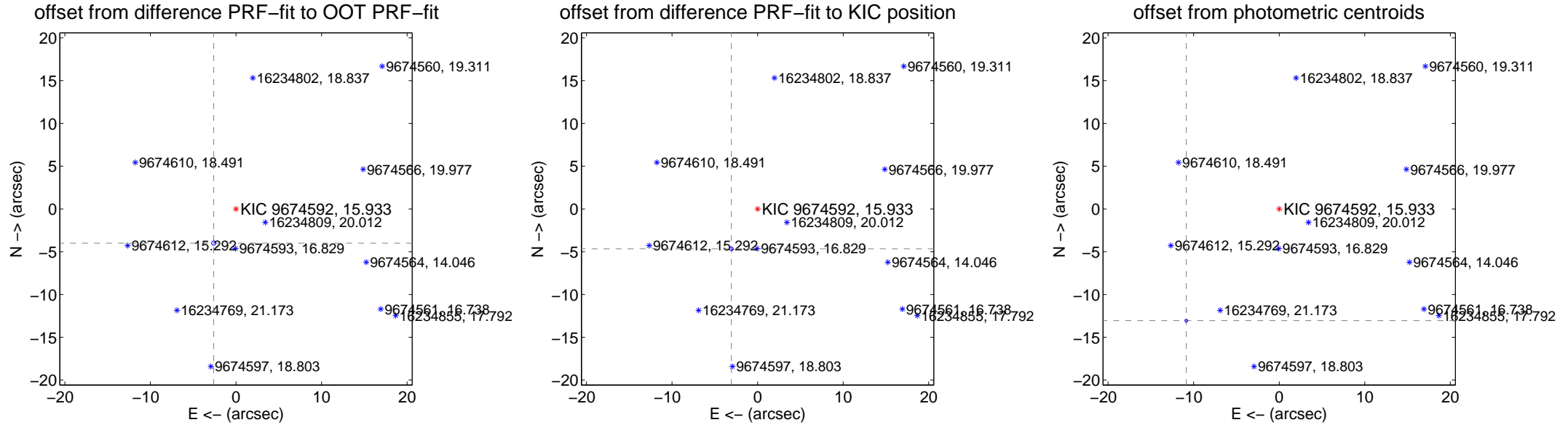
DV Centroid Data

Supplemental centroid analysis for 009674592-02. Kepler magnitude: 15.93. Transit SNR 171.30

There are 3 quarters with good PRF difference image offsets

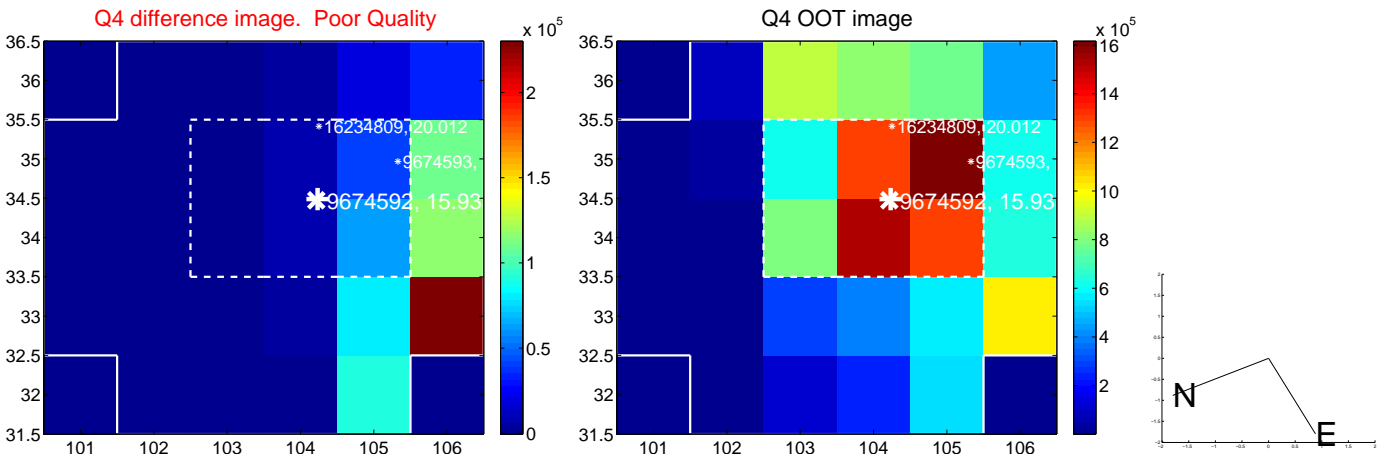
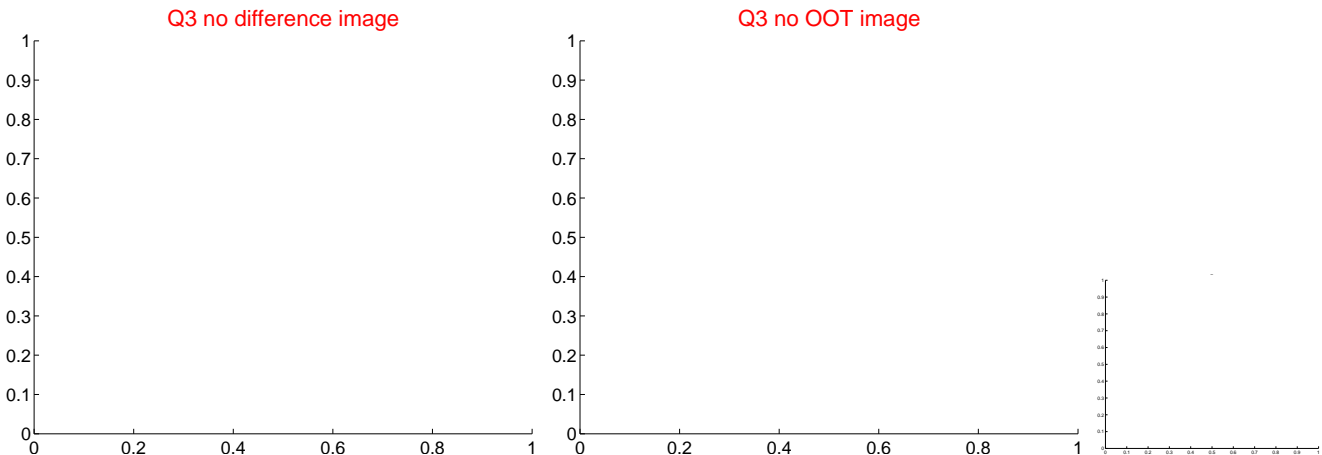
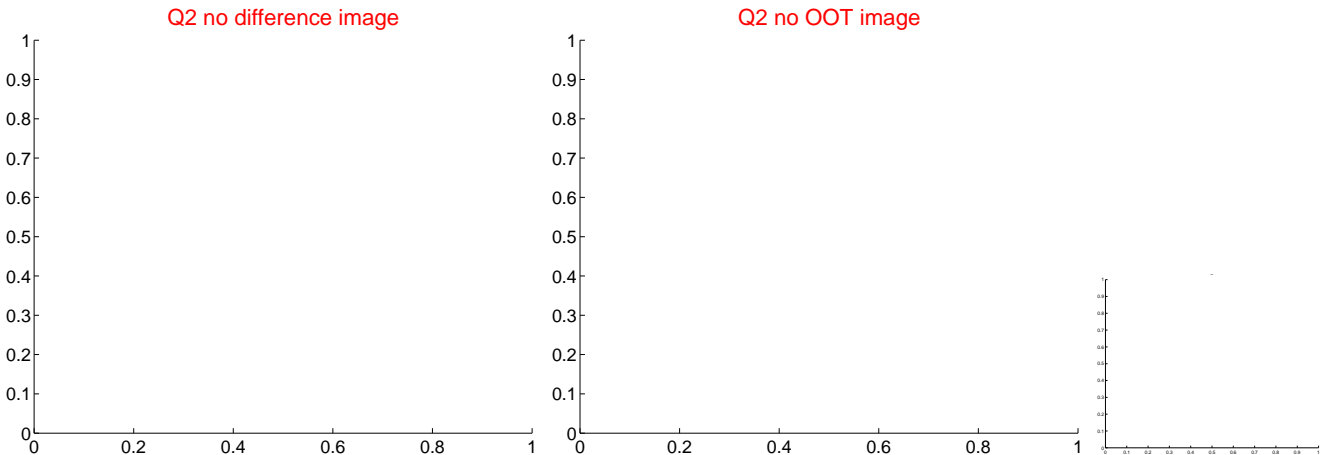
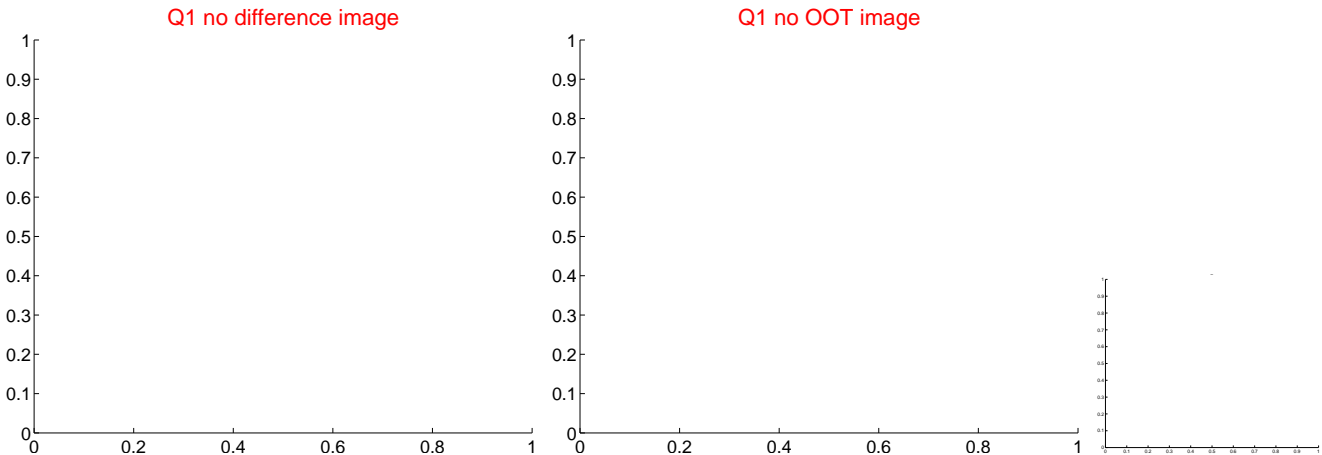
The direct PRF centroid is offset from the target star catalog position by about 0.78 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.770 \pm 0.082	57.95	2.606 \pm 0.070	-3.995 \pm 0.080
PRF-fit source offset from KIC position	5.576 \pm 0.071	78.25	3.062 \pm 0.071	-4.660 \pm 0.068
photometric centroid source offset	16.99 \pm 0.06	302.48	10.86 \pm 0.06	-13.07 \pm 0.06

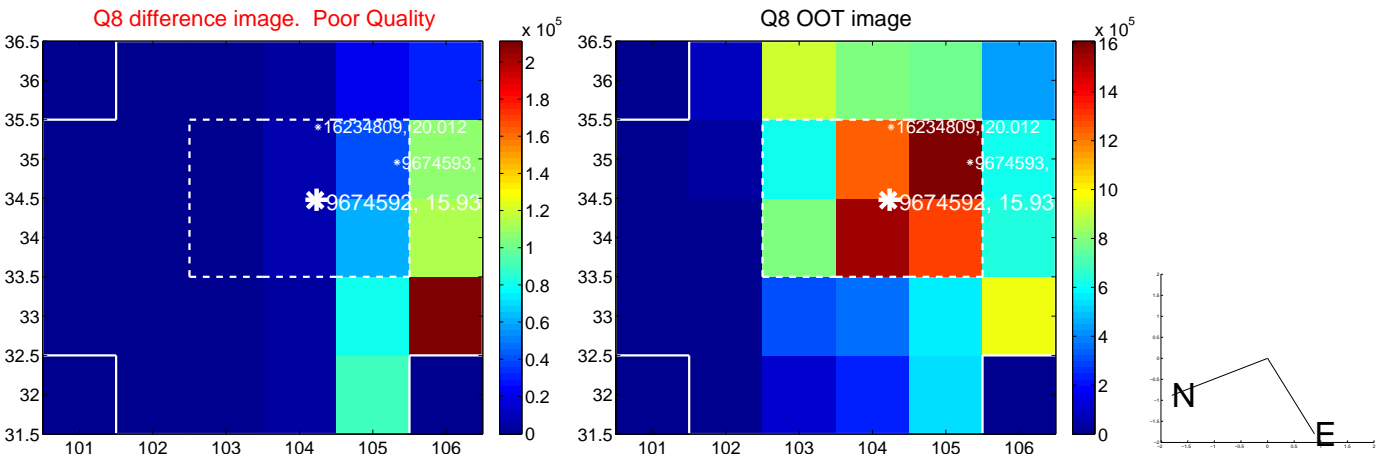
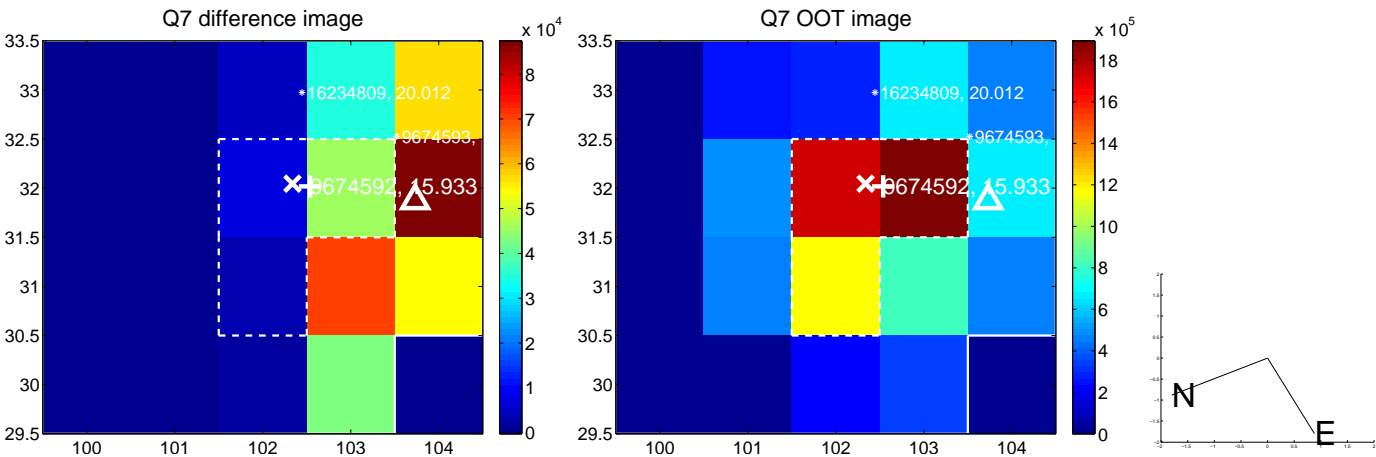
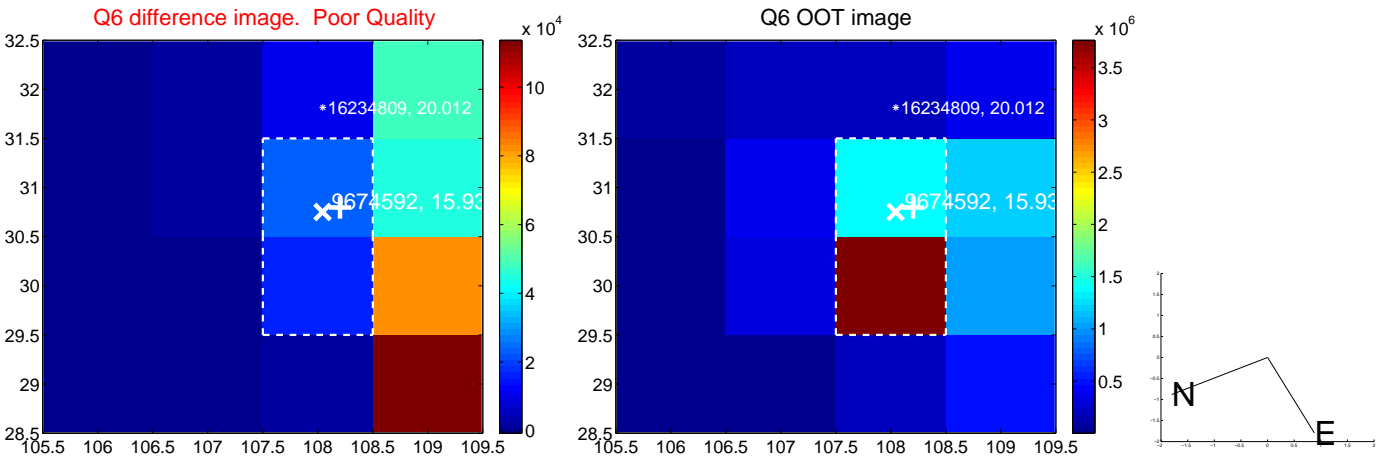
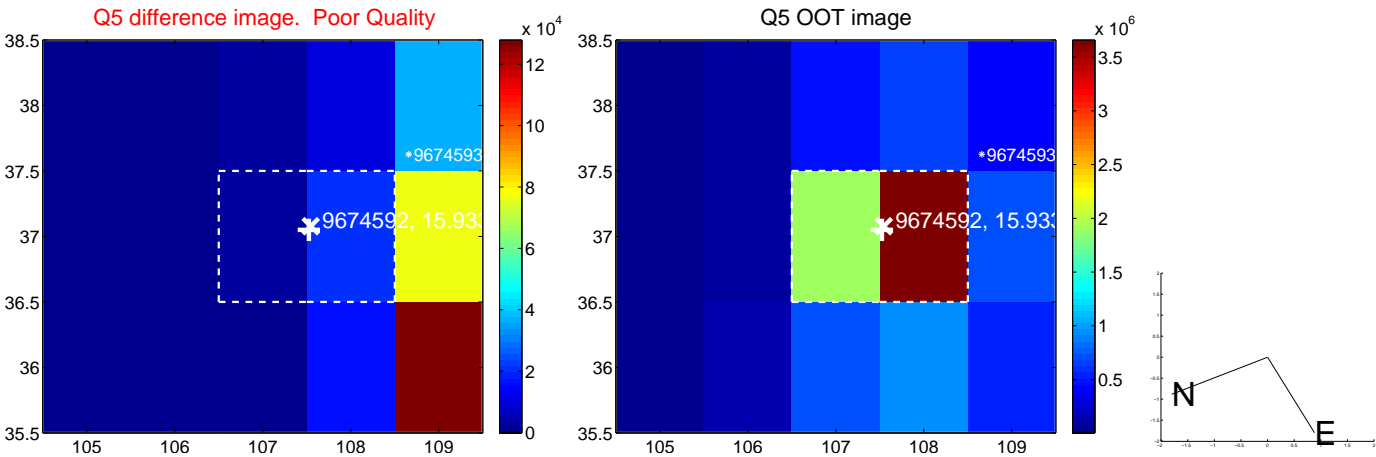


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

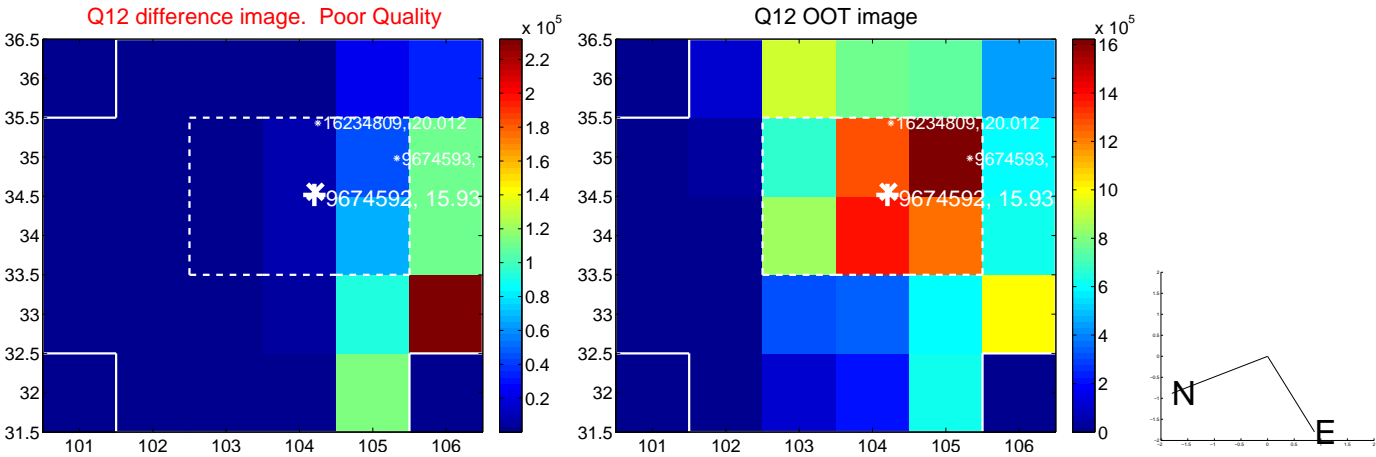
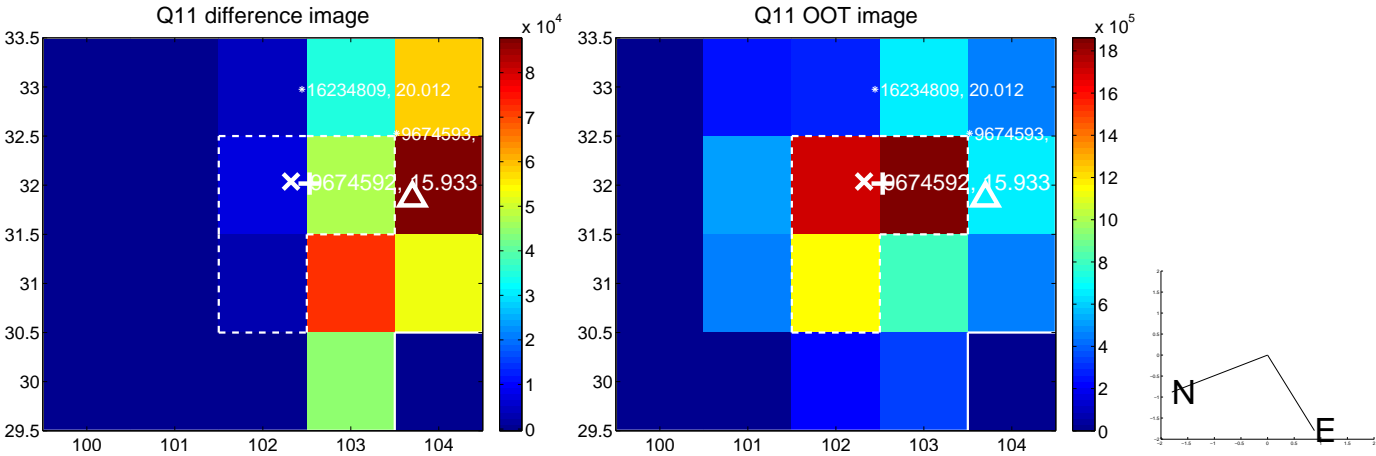
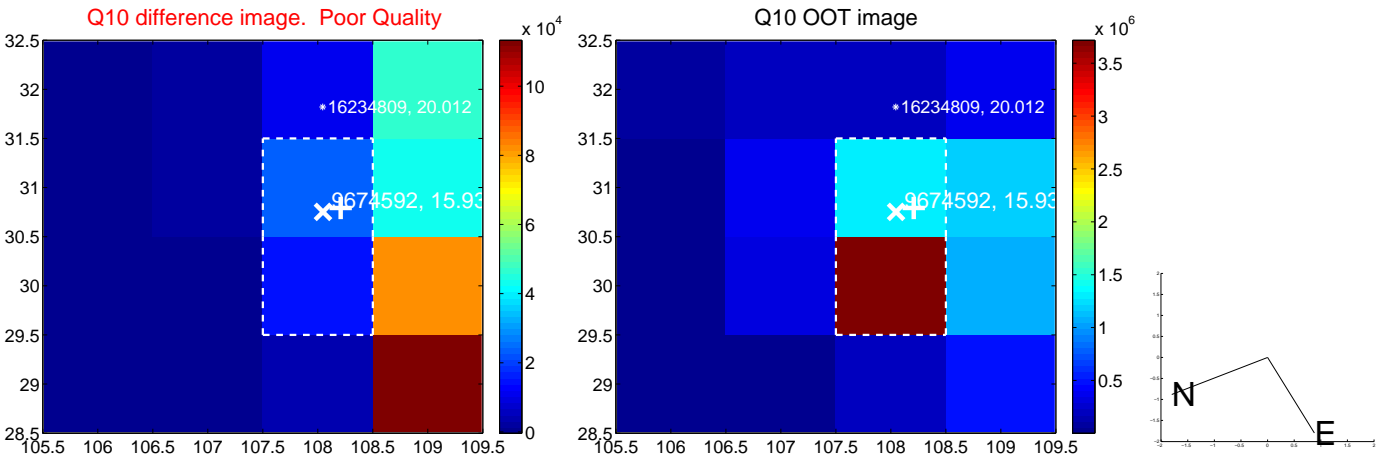
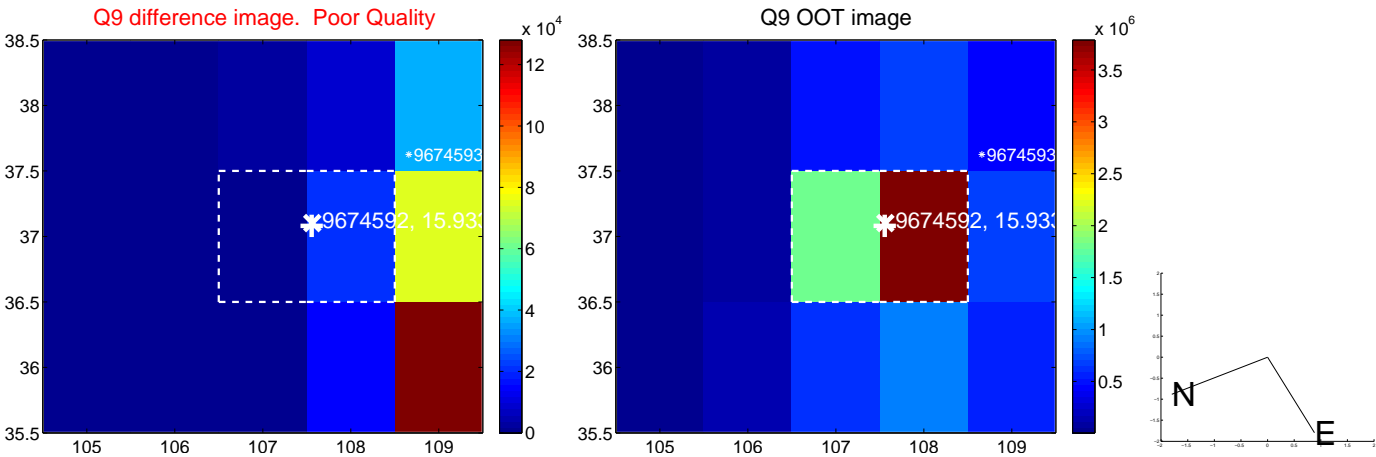
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



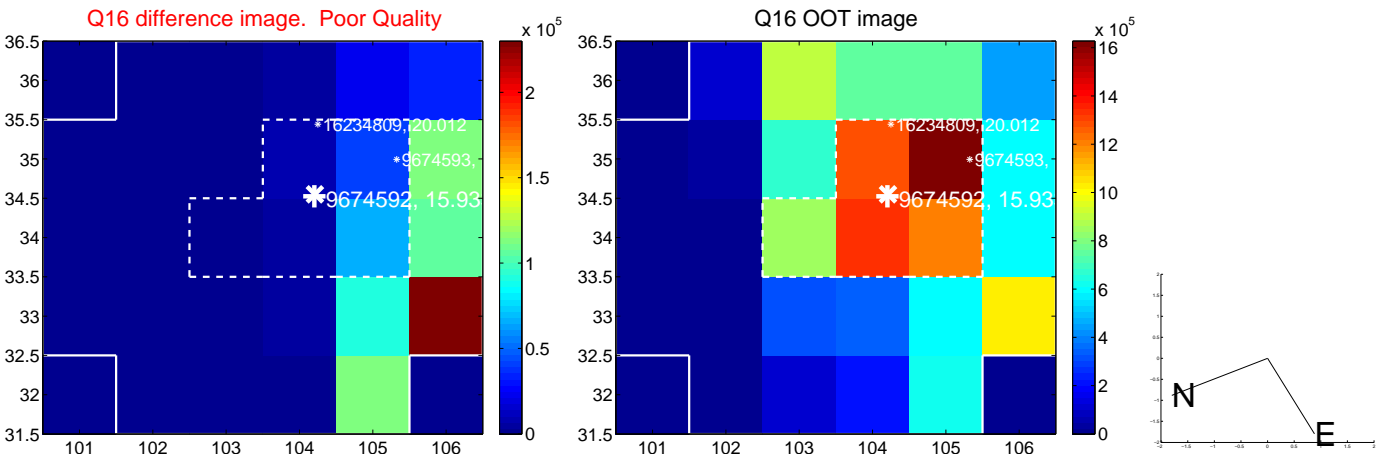
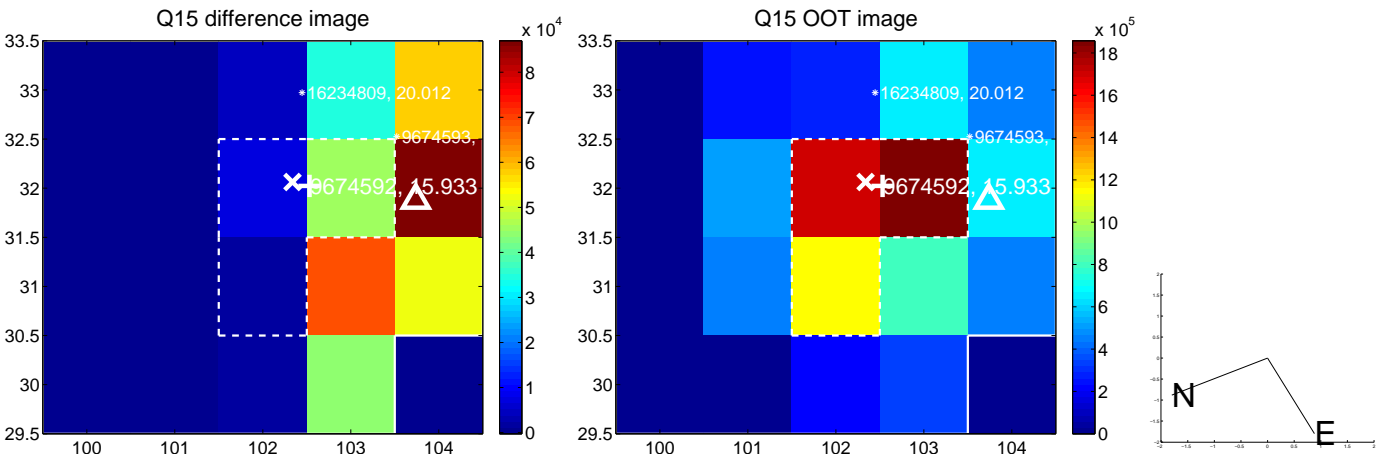
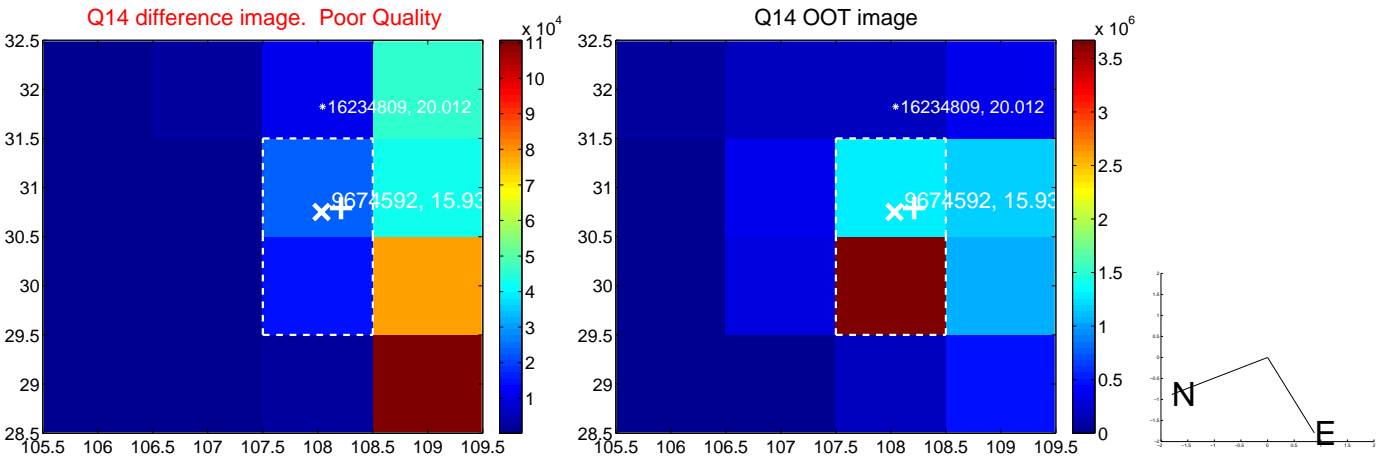
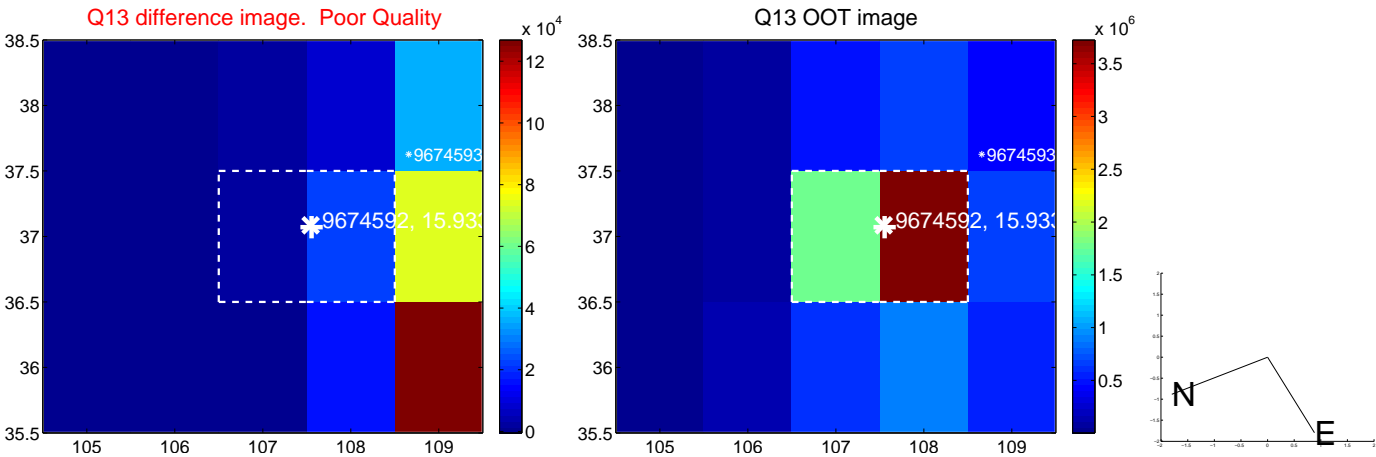
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



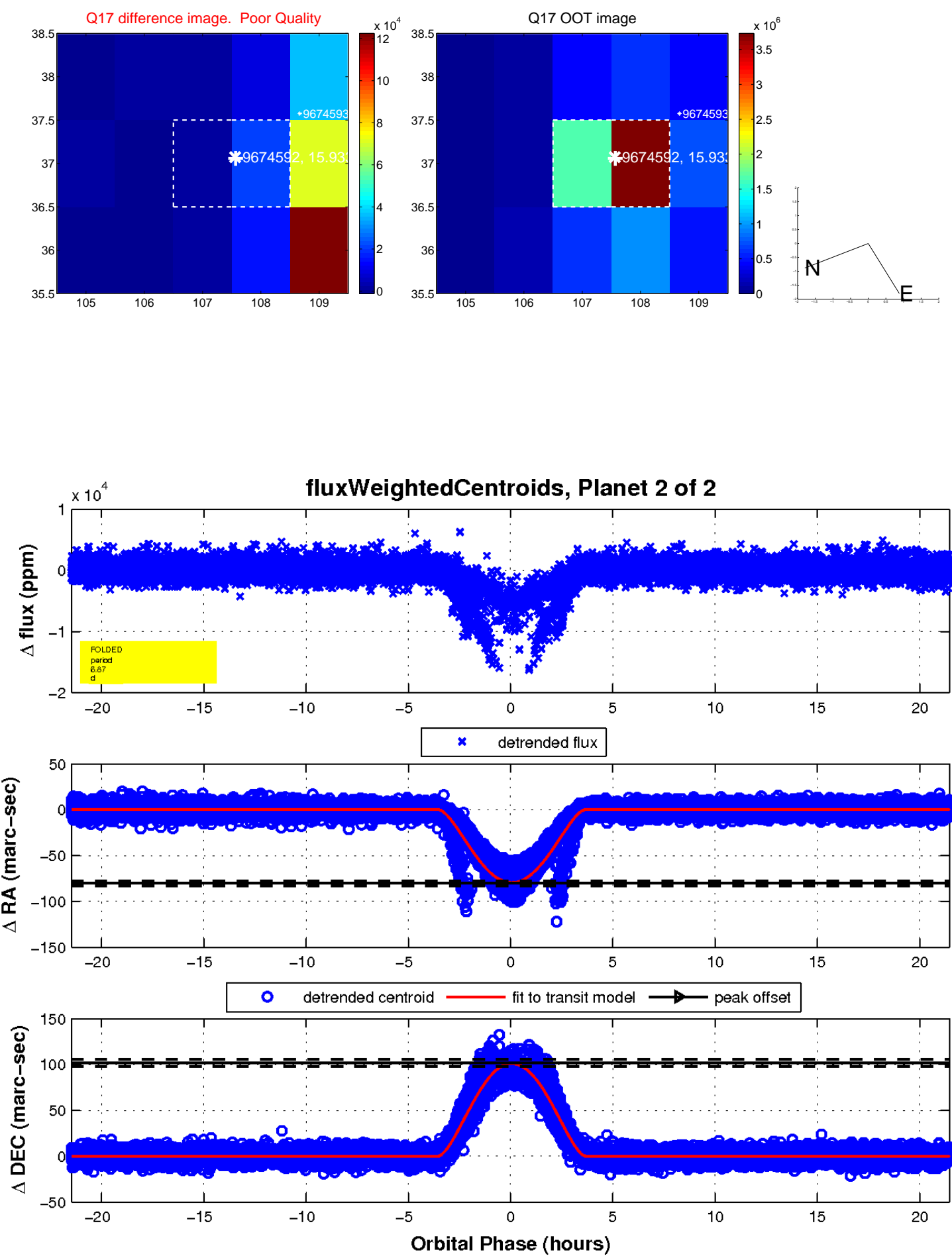
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

