

KIC 002445134

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})
002445134-01	OBS	5983.01	8.411917	139.657173	125859.1	3.500	12396.6	-1.0	1.31	6247	47.03	346.30
002445134-02	OBS	No	8.412007	135.448035	7292.4	5.175	716.3	699.0	1.31	6247	13.04	346.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002445134-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
002445134-02	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.

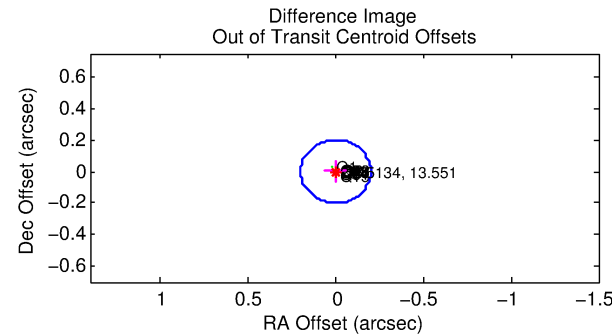
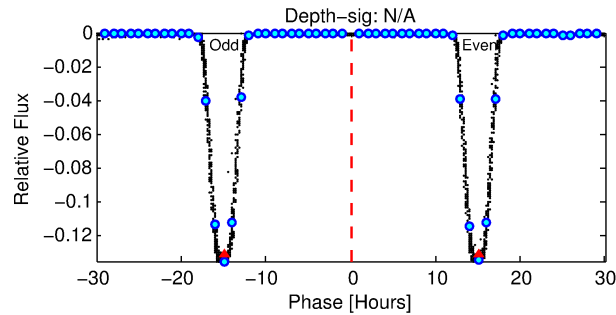
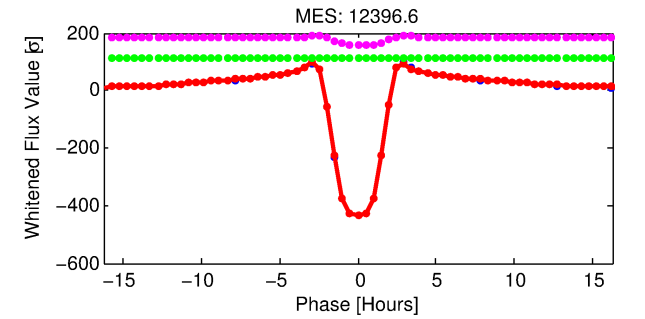
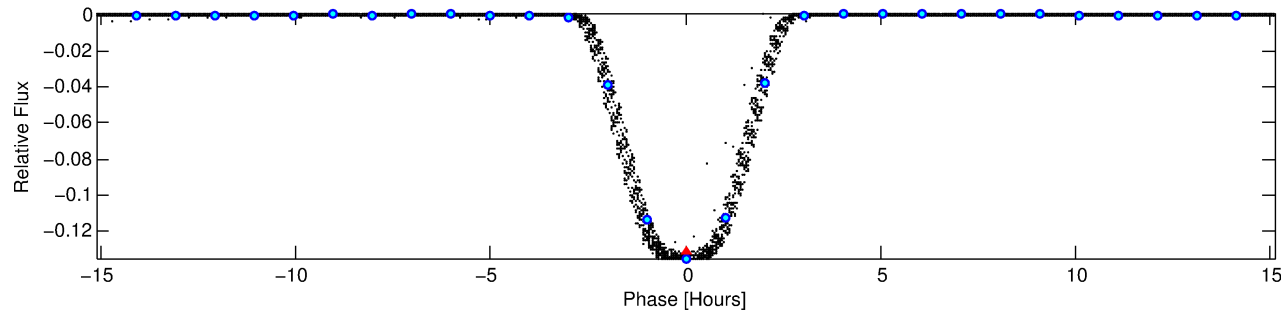
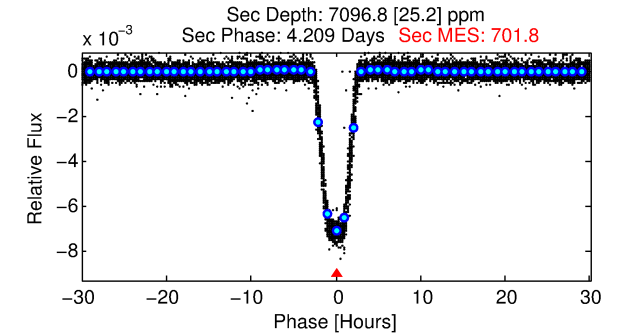
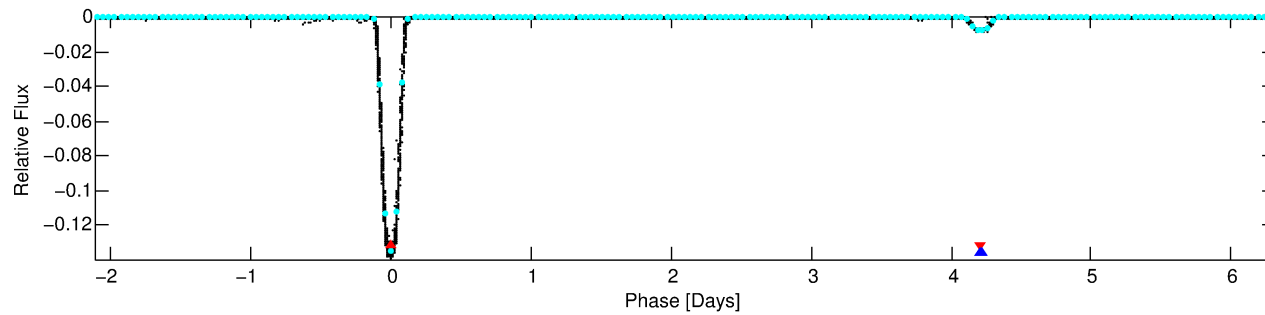
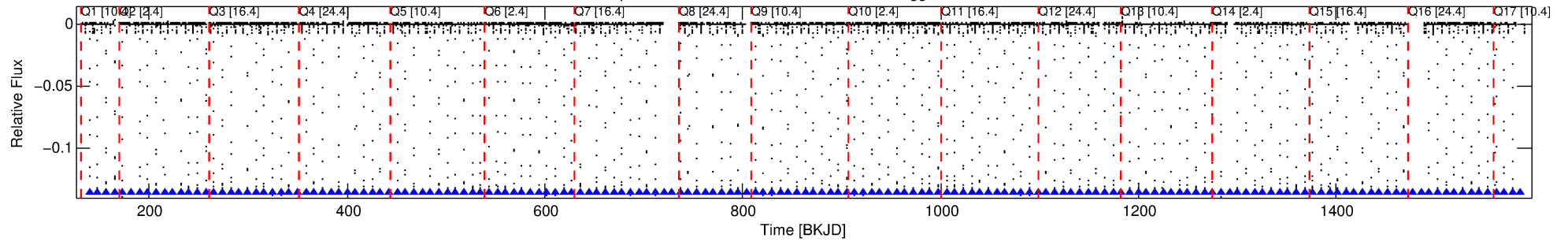
Ephemeris Match Information For 002445134-01

No Significant Match Found

DV One-Page Summary

KIC: 2445134 Candidate: 1 of 2 Period: 8.412 d
KOI: K05983.01 Corr: 0.804

Kp: 13.55 R*: 1.31 Rs Teff: 6247.0 K Logg: 4.22 Fe/H: -0.200



TPS TCE Results:

Period = 8.41192 d
Epoch = 139.6572 BKJD

DV fit results are unavailable

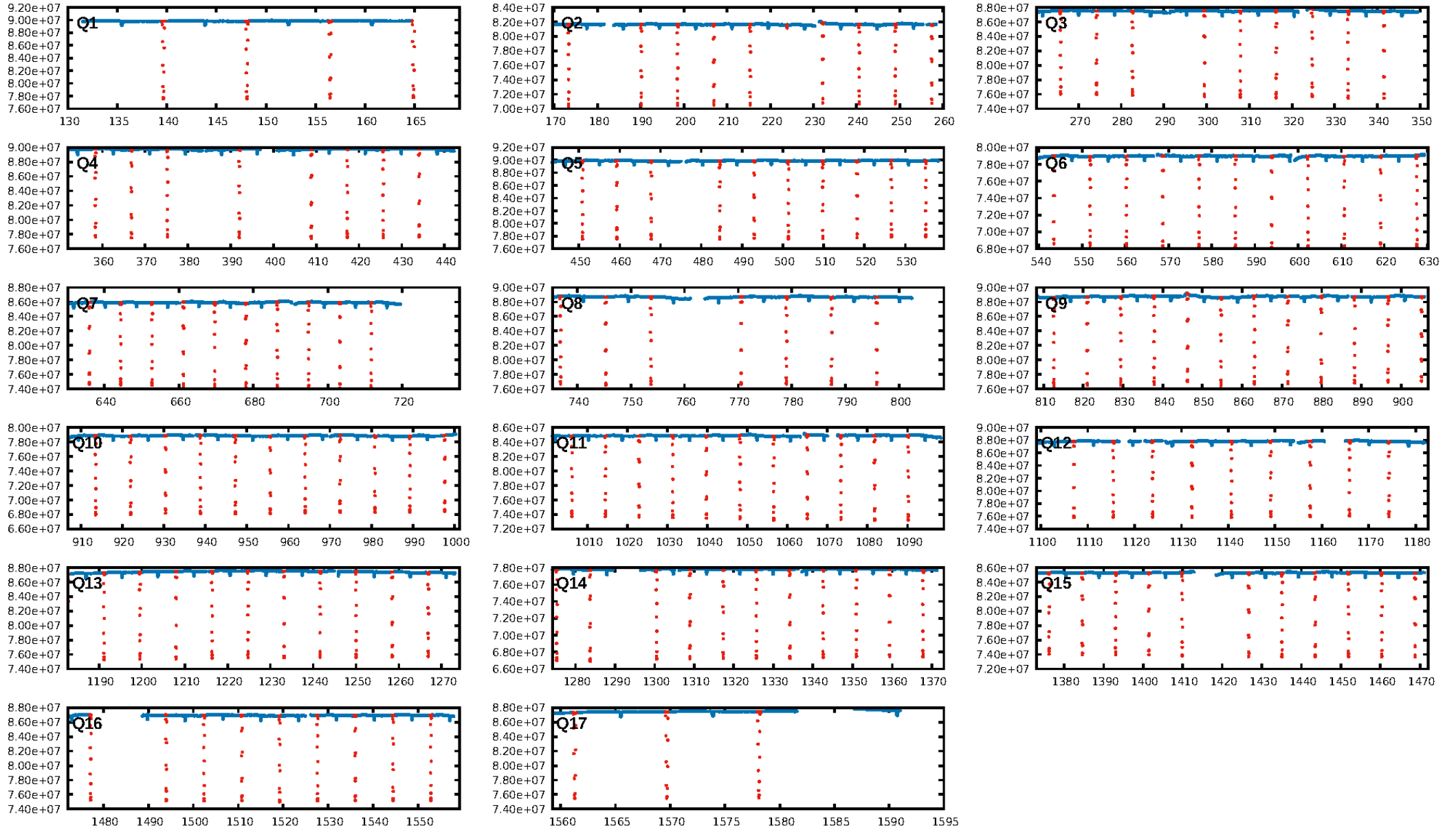
DV Diagnostic Results:

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 [149/149]
GhostDiagnostic-chr: 3.258
Centroid-sig: 0.0%
Centroid-so: 0.403 arcsec [509.43σ]
OotOffset-rm: 0.002 arcsec [0.02σ]
KicOffset-rm: 0.081 arcsec [1.19σ]
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]

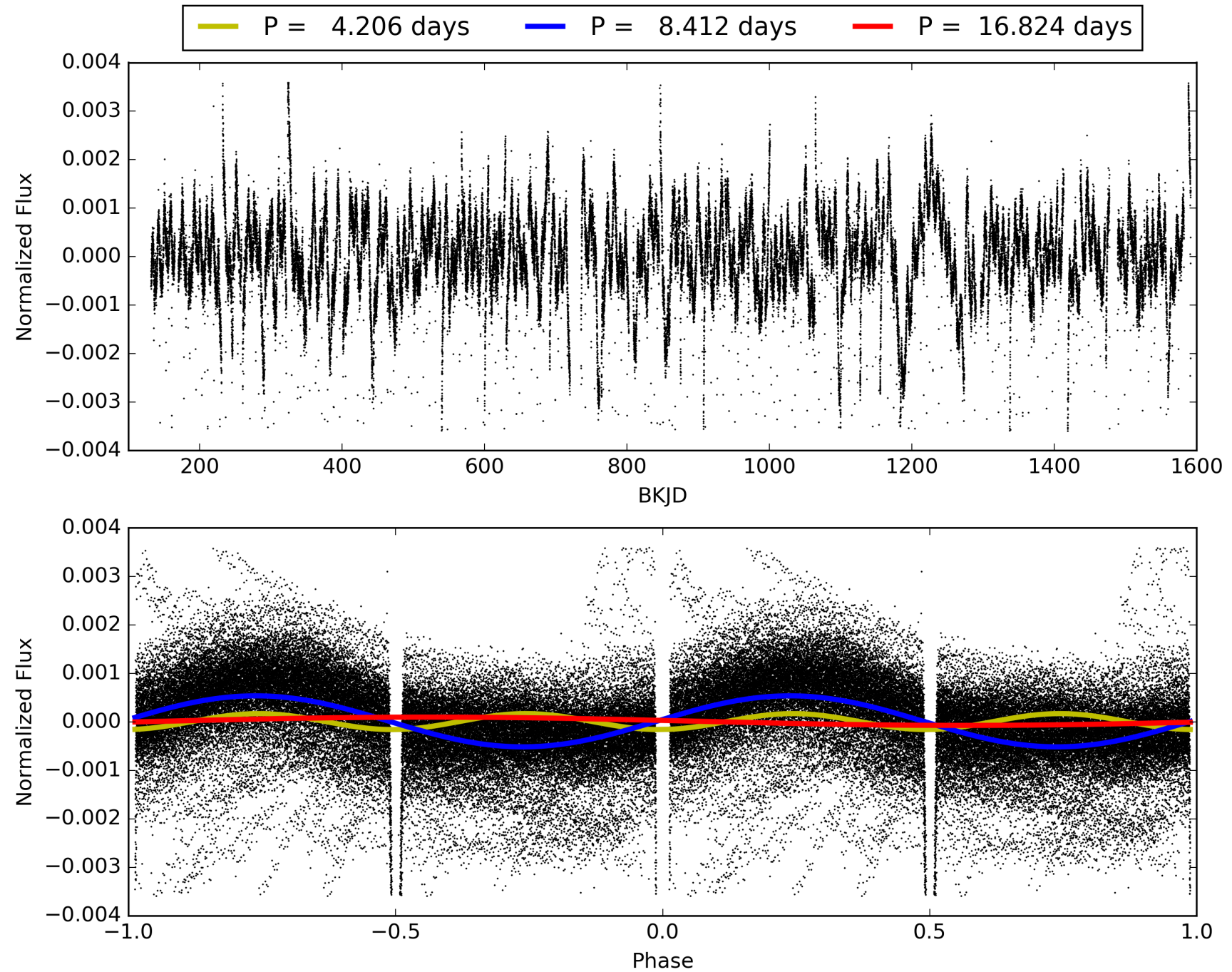
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:49:46 Z

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

TCE 002445134-01, PDC Light Curves

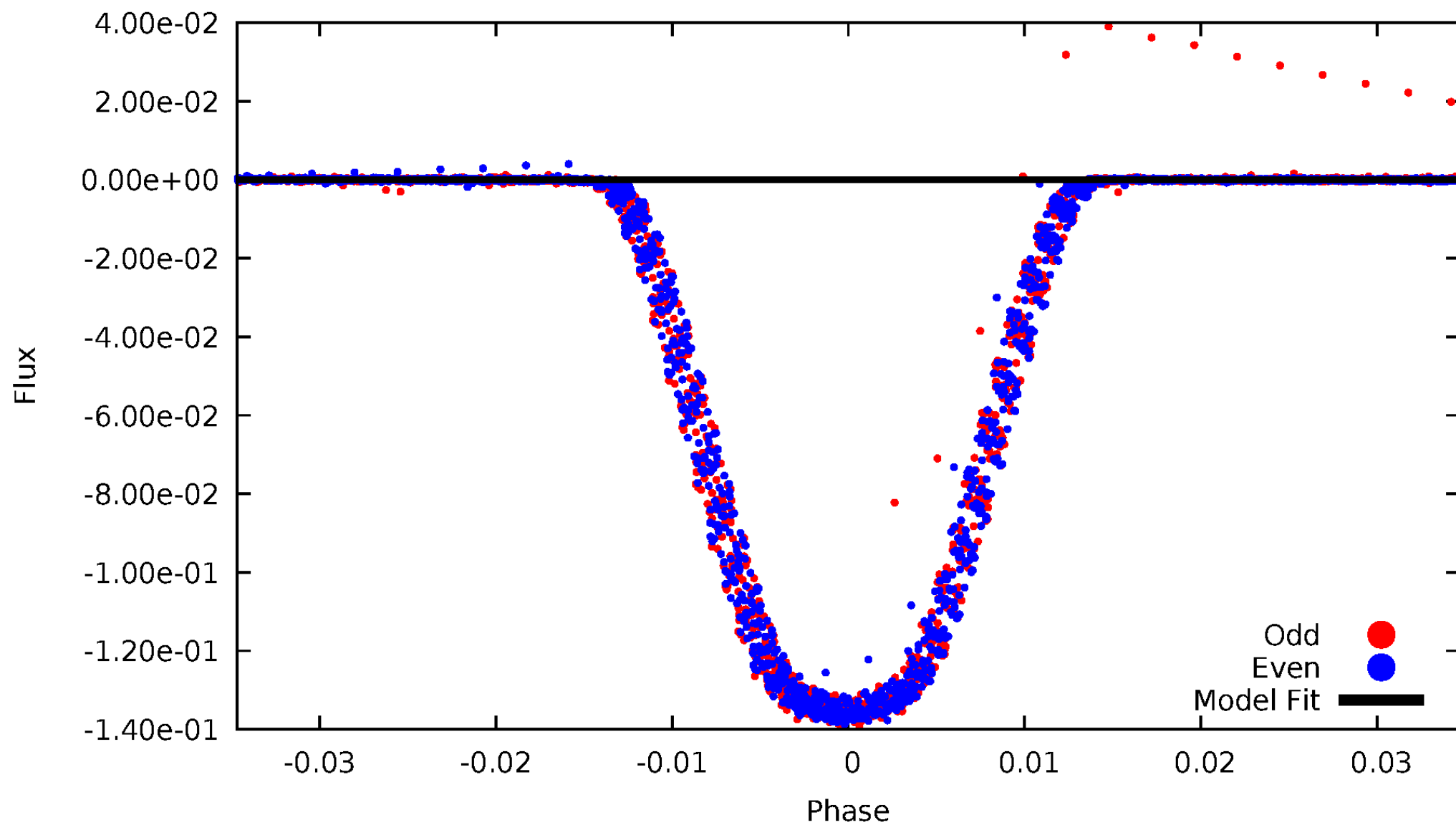


TCE 002445134-01



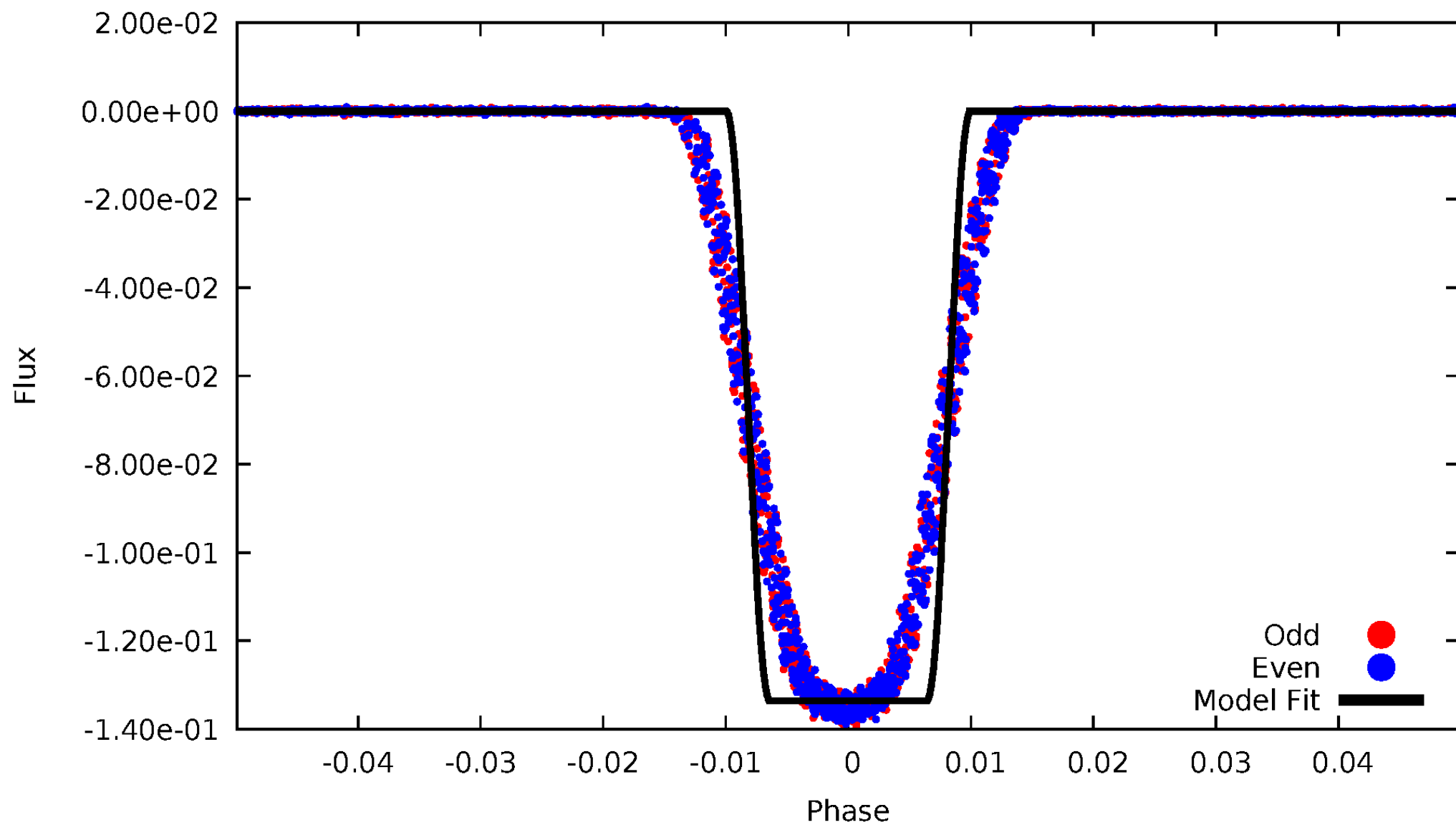
DV Odd/Even

TCE 002445134-01



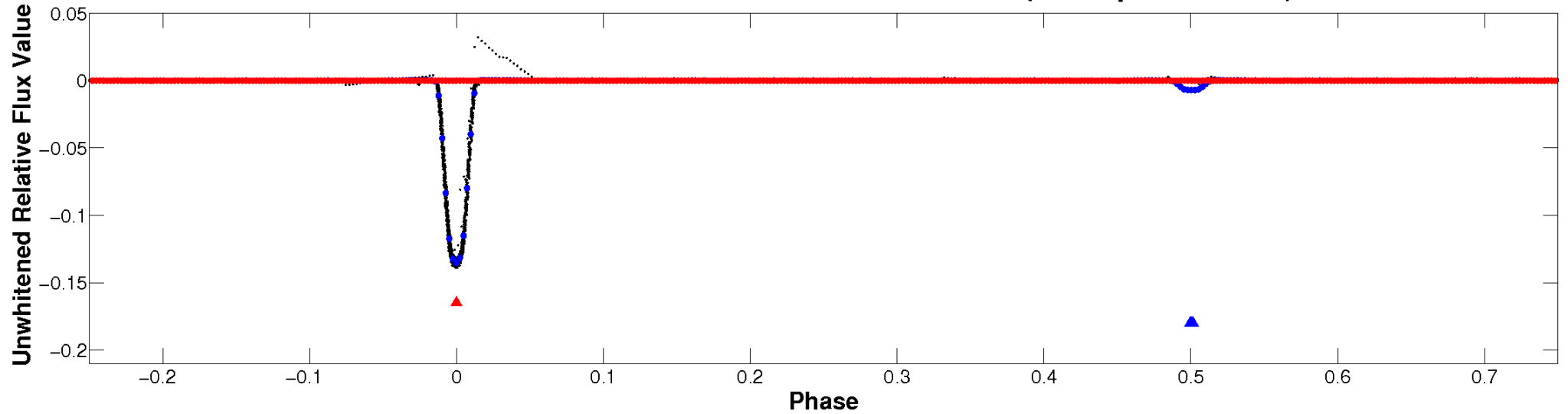
ALT Odd/Even

TCE 002445134-01



Non-Whitened Vs. Whitened Light Curve

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

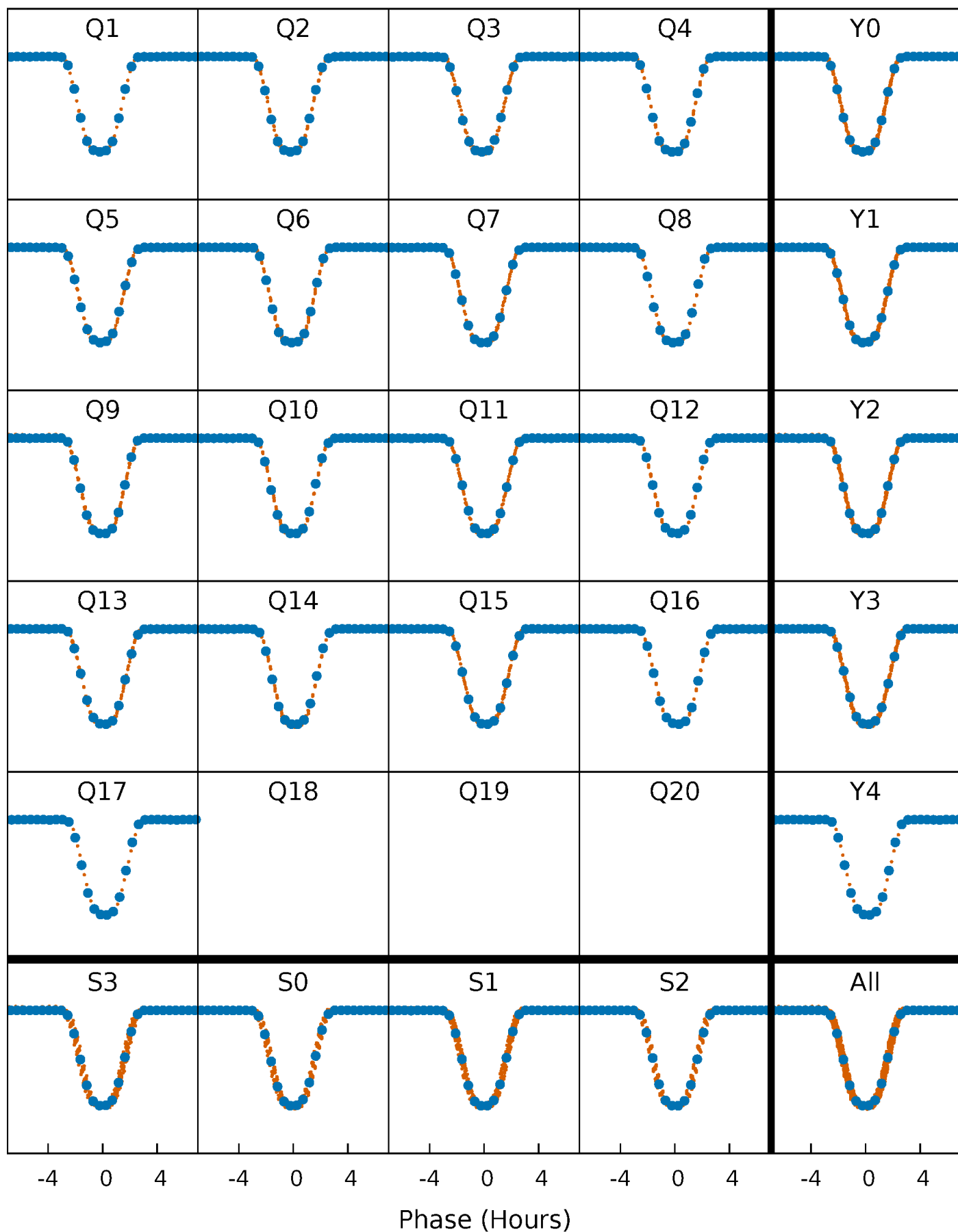


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



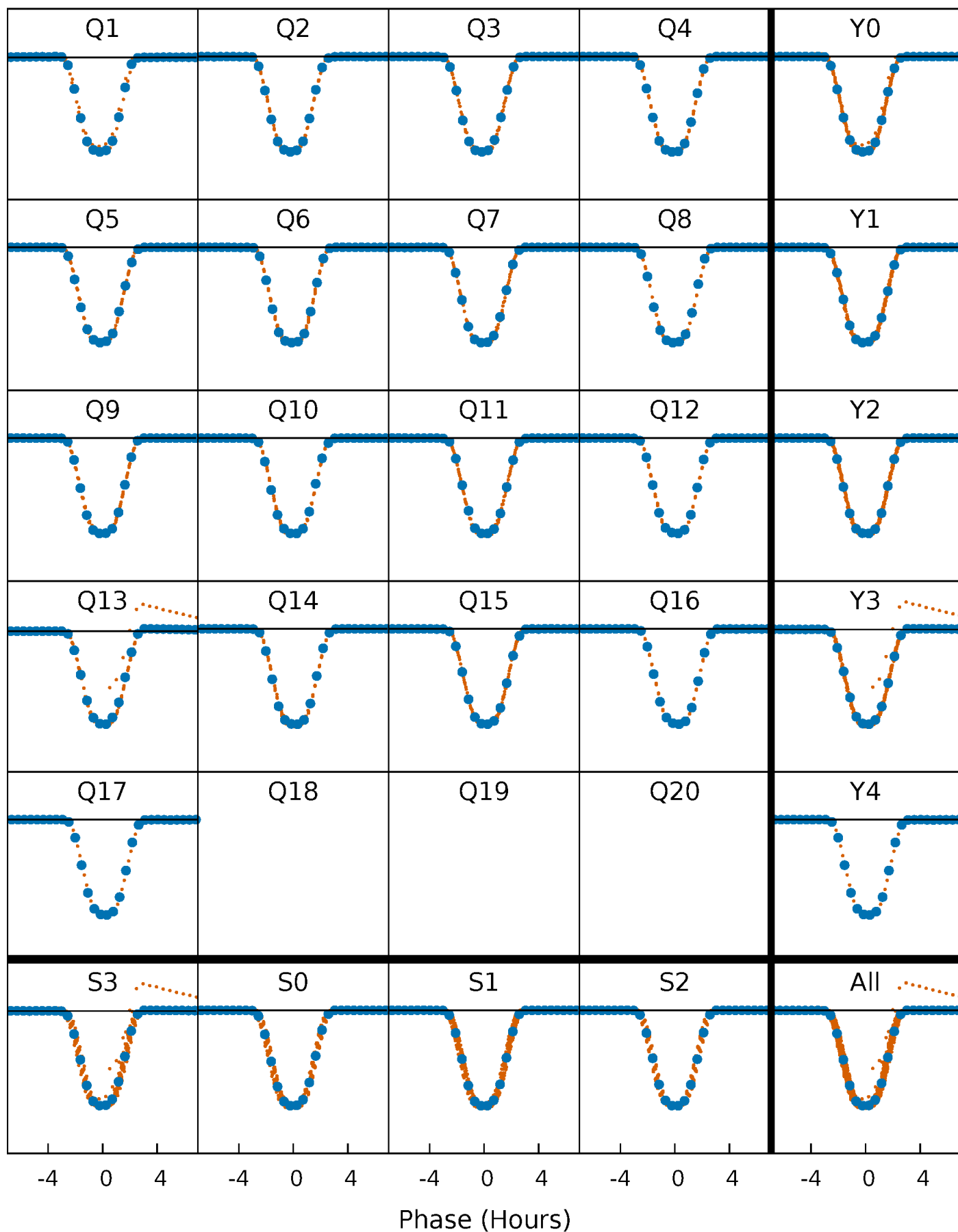
PDC Quarter-Phased Transit Curves

TCE 002445134-01 P= 8.411917 Days $T_0=139.657173$ (BKJD)



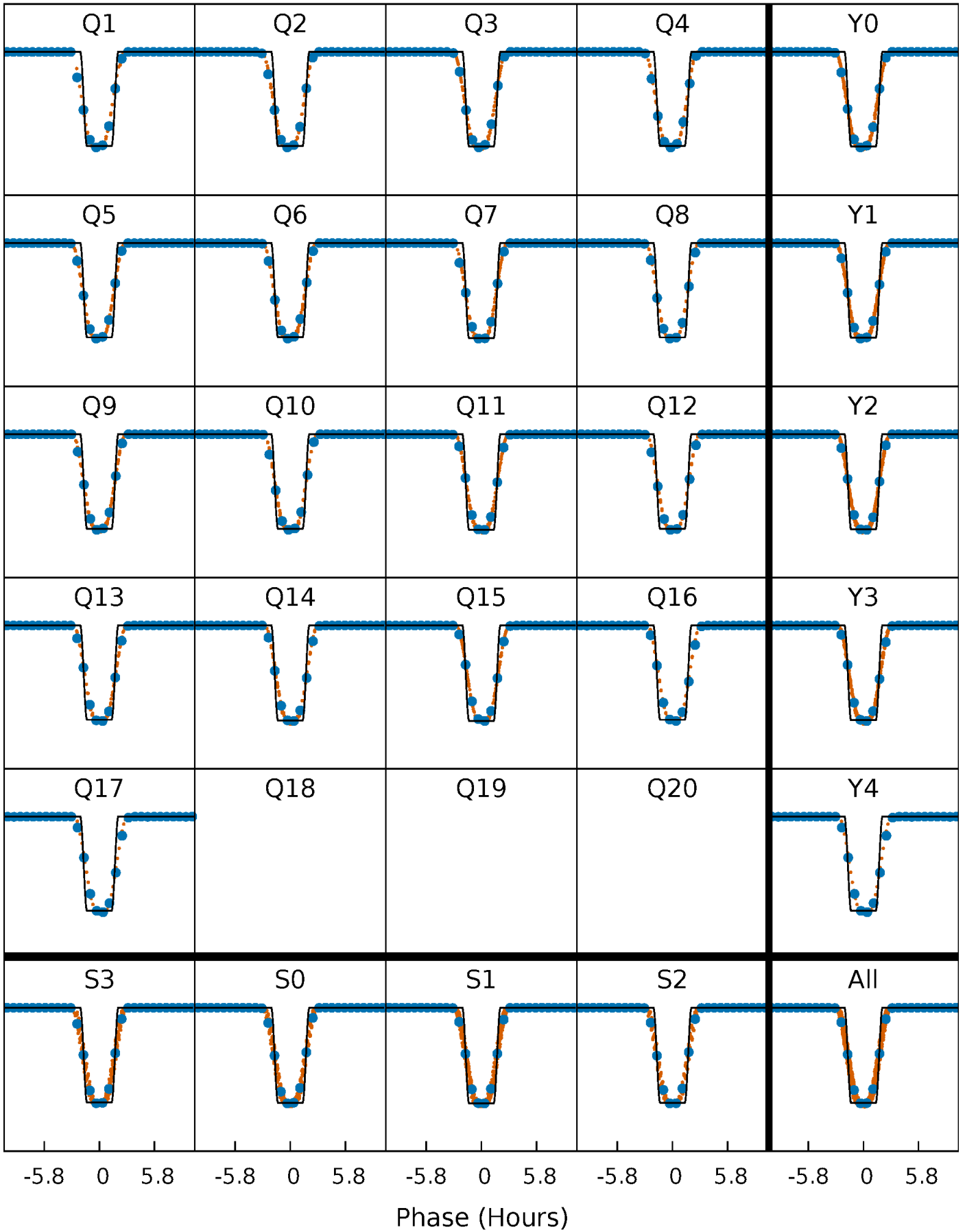
DV Quarter-Phased Transit Curves

TCE 002445134-01 P= 8.411917 Days $T_0=139.657173$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

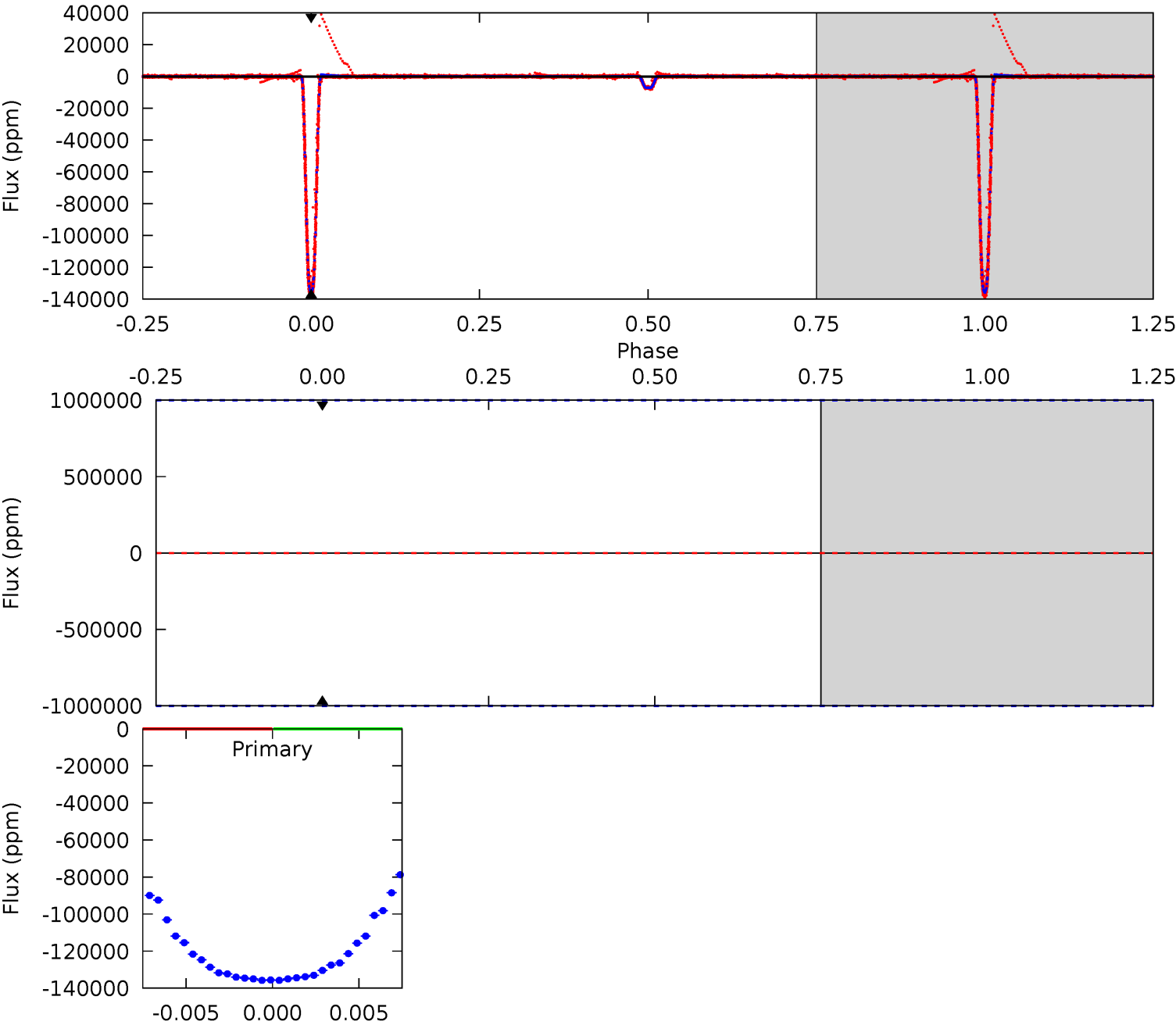
TCE 002445134-01 P= 8.411917 Days $T_0=139.656902$ (BKJD)



DV Model-Shift Uniqueness Test

002445134-01, P = 8.411917 Days, E = 131.245256 Days

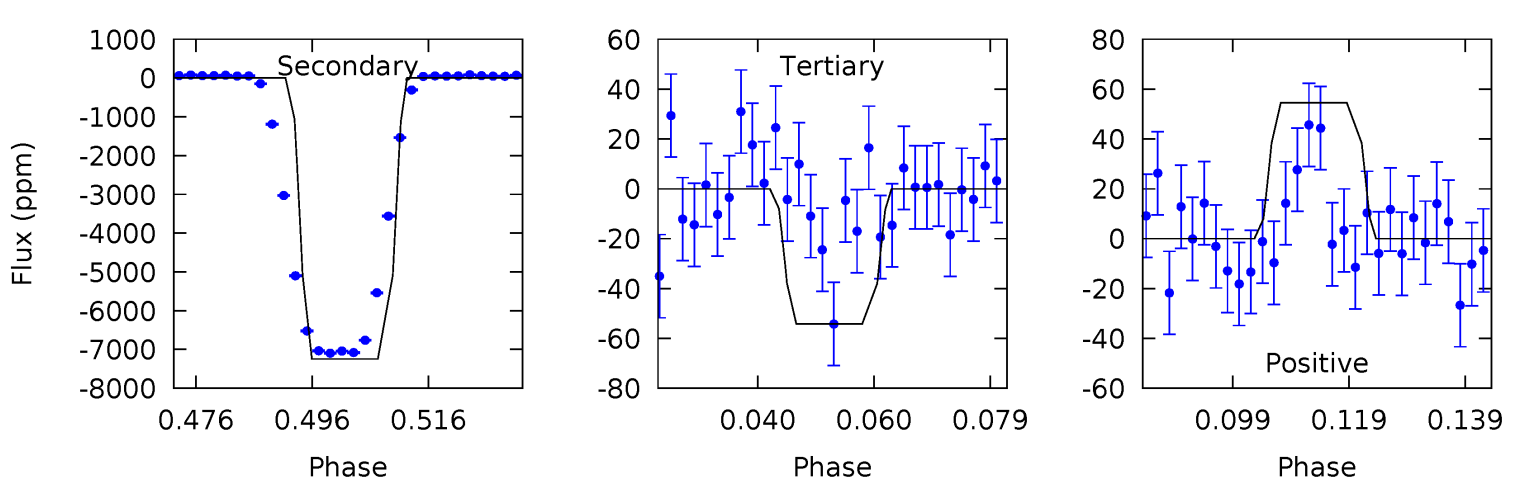
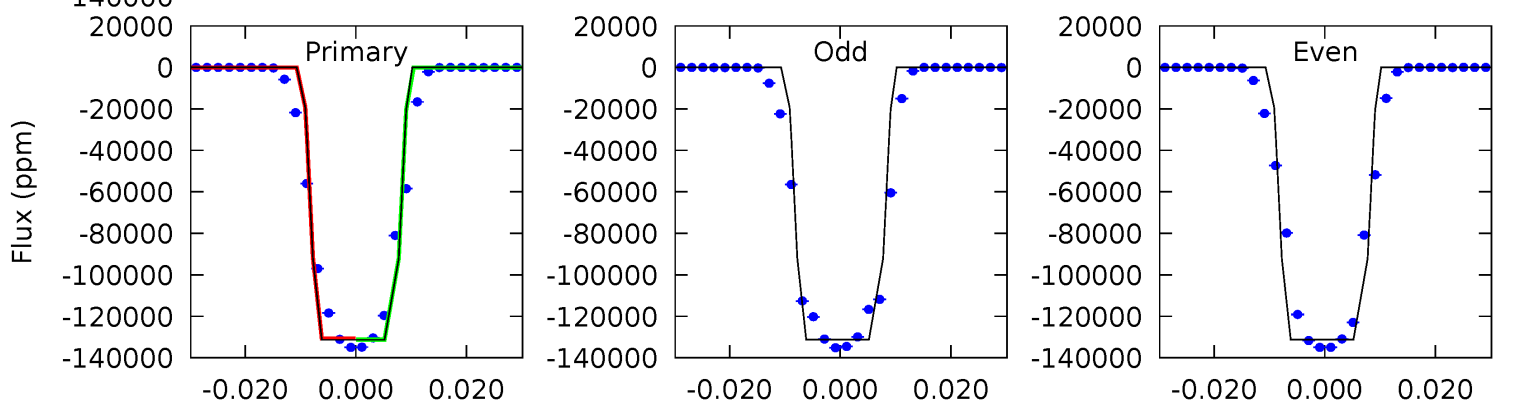
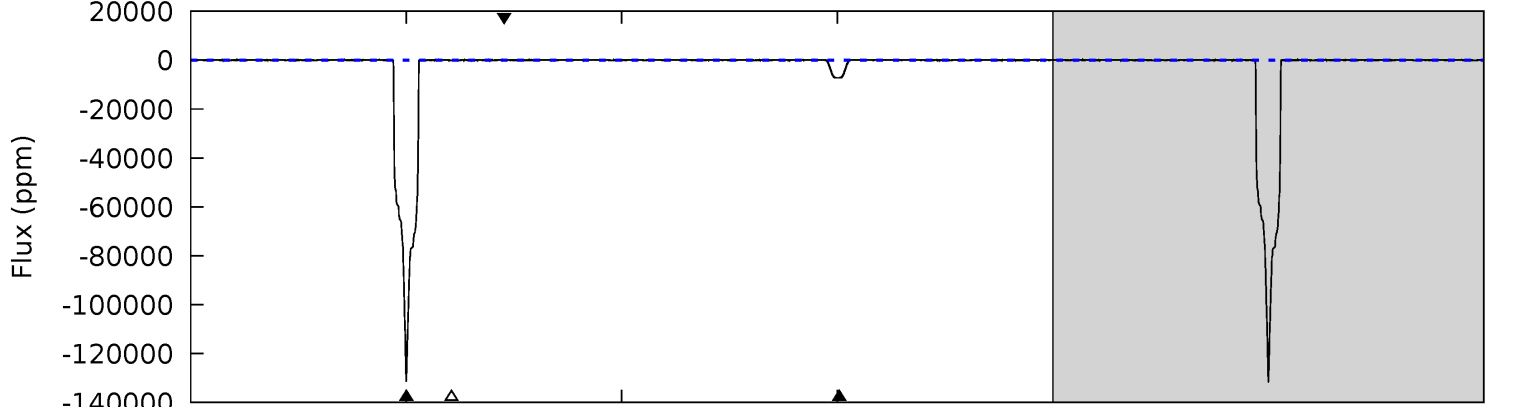
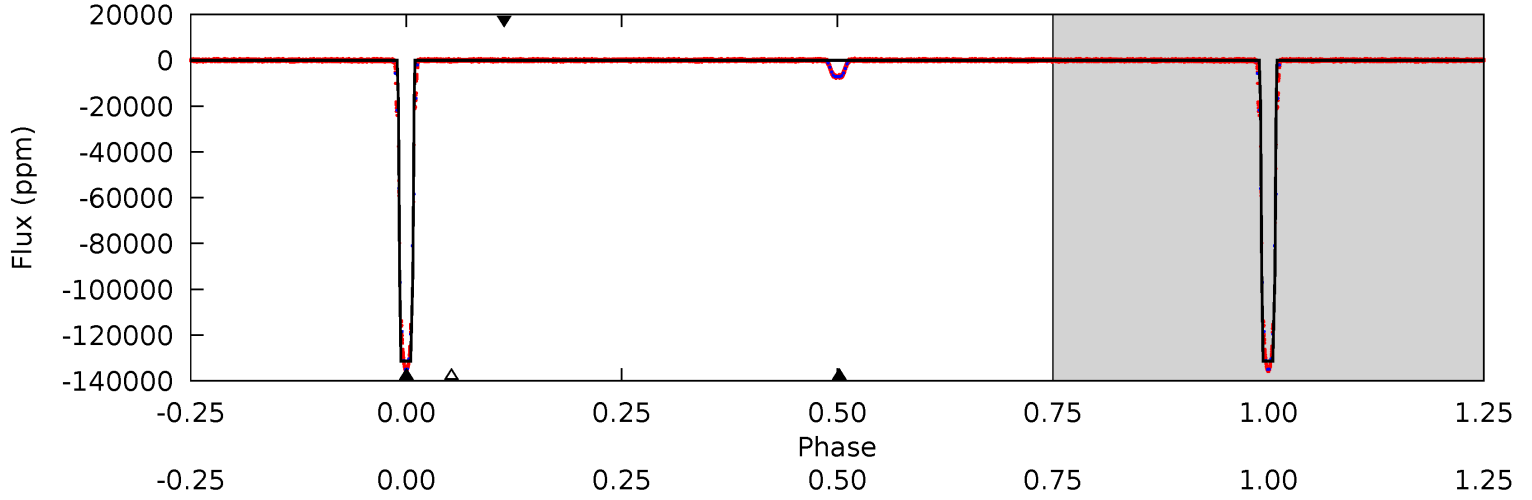
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

002445134-01, P = 8.411917 Days, E = 131.244985 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8508	469.2	3.51	3.53	4.89	2.33	1.20	8504	8504	465.7	465.7	1.13	1.00	0.00	0



Stellar Parameters For KIC 002445134

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6247^{+169}_{-206}	$4.225^{+0.185}_{-0.185}$	$-0.200^{+0.250}_{-0.300}$	$1.314^{+0.373}_{-0.305}$	$1.057^{+0.185}_{-0.123}$	$0.656^{+0.656}_{-0.333}$
	+3%/-3%	+4%/-4%	+125%/-150%	+28%/-23%	+18%/-12%	+100%/-51%
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 002445134-01 / KOI 5983.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$46.91^{+16.99}_{-14.34}$	1542^{+107}_{-114}	3001^{+3406}_{-9073}	$3.600^{+196.055}_{-169.711}$
Alt.	-7245 ± 15	$52.39^{+16.84}_{-15.13}$	1533^{+124}_{-102}	3484^{+416}_{-270}	$9.959^{+9.646}_{-4.167}$

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

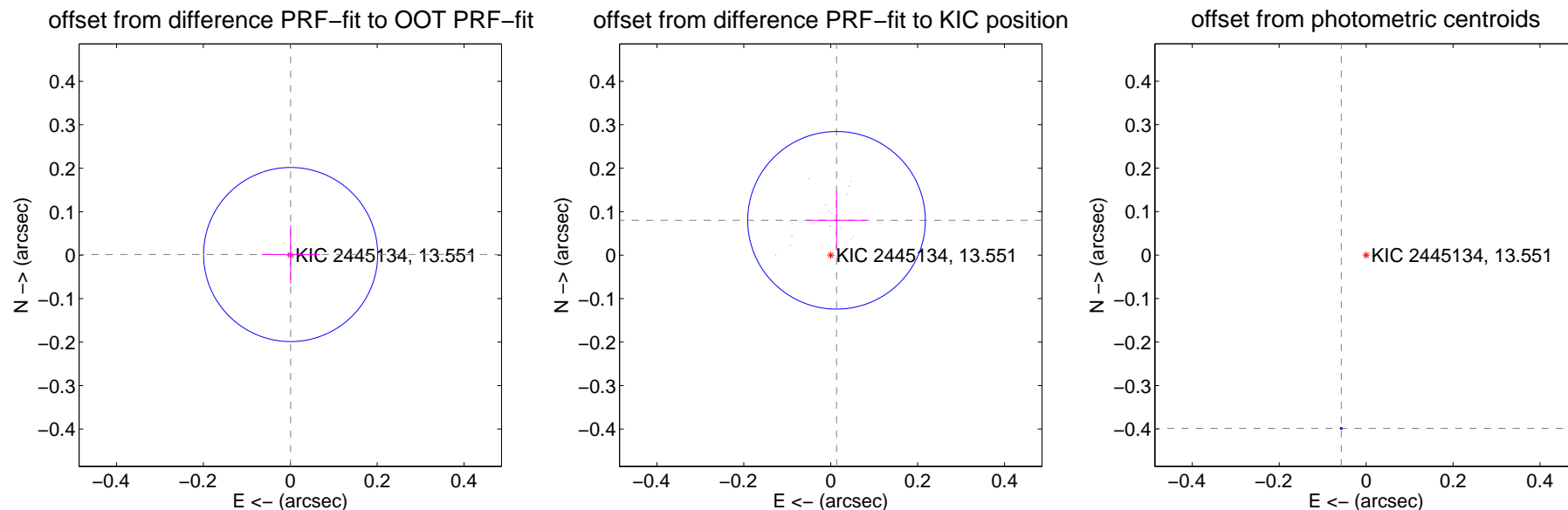
DV Centroid Data

Supplemental centroid analysis for 002445134-01. Kepler magnitude: 13.55. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

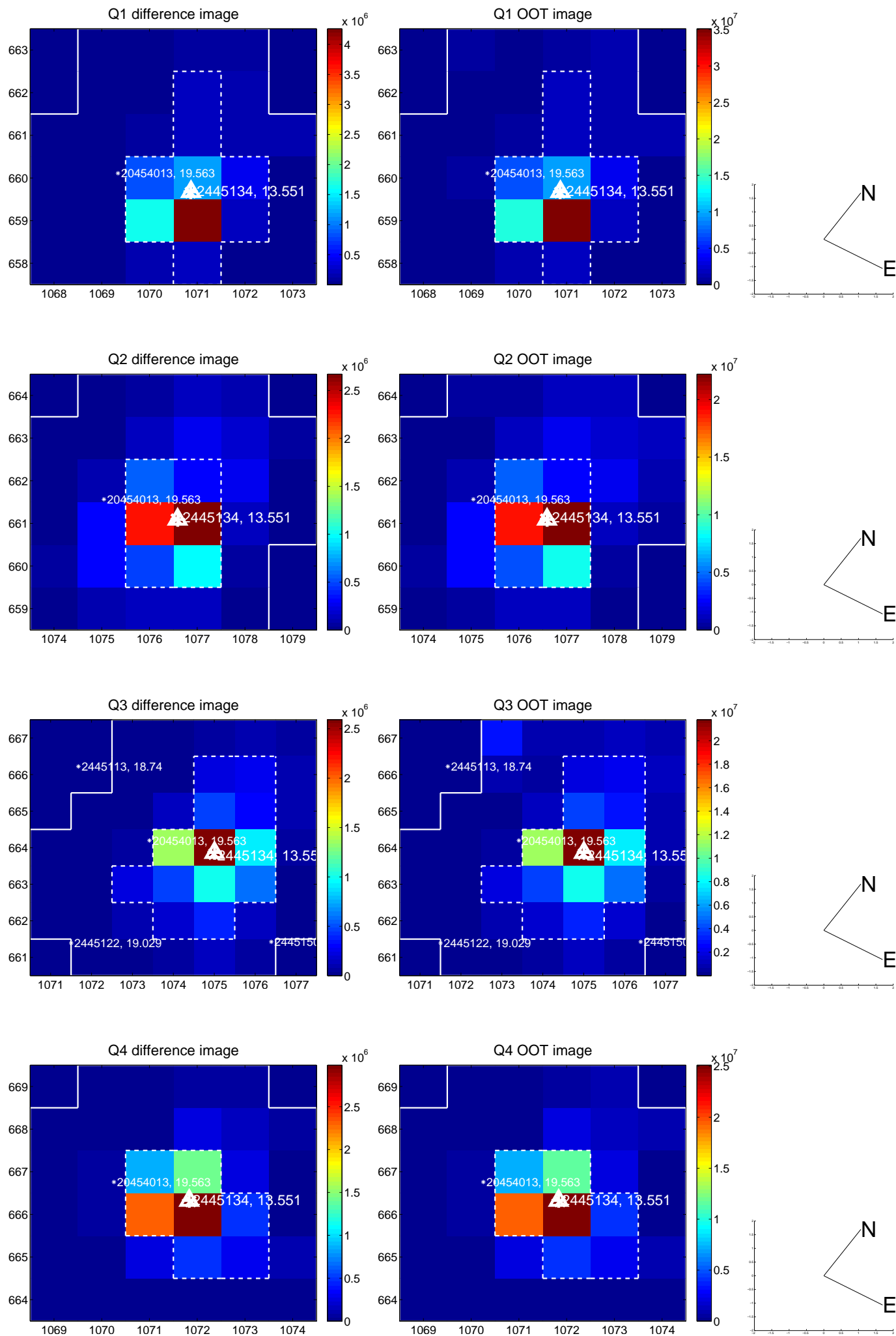
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.002 ± 0.067	0.02	-0.001 ± 0.067	0.001 ± 0.067
PRF-fit source offset from KIC position	0.081 ± 0.068	1.19	-0.013 ± 0.069	0.080 ± 0.068
photometric centroid source offset	0.40 ± 0.00	509.43	0.06 ± 0.00	-0.40 ± 0.00

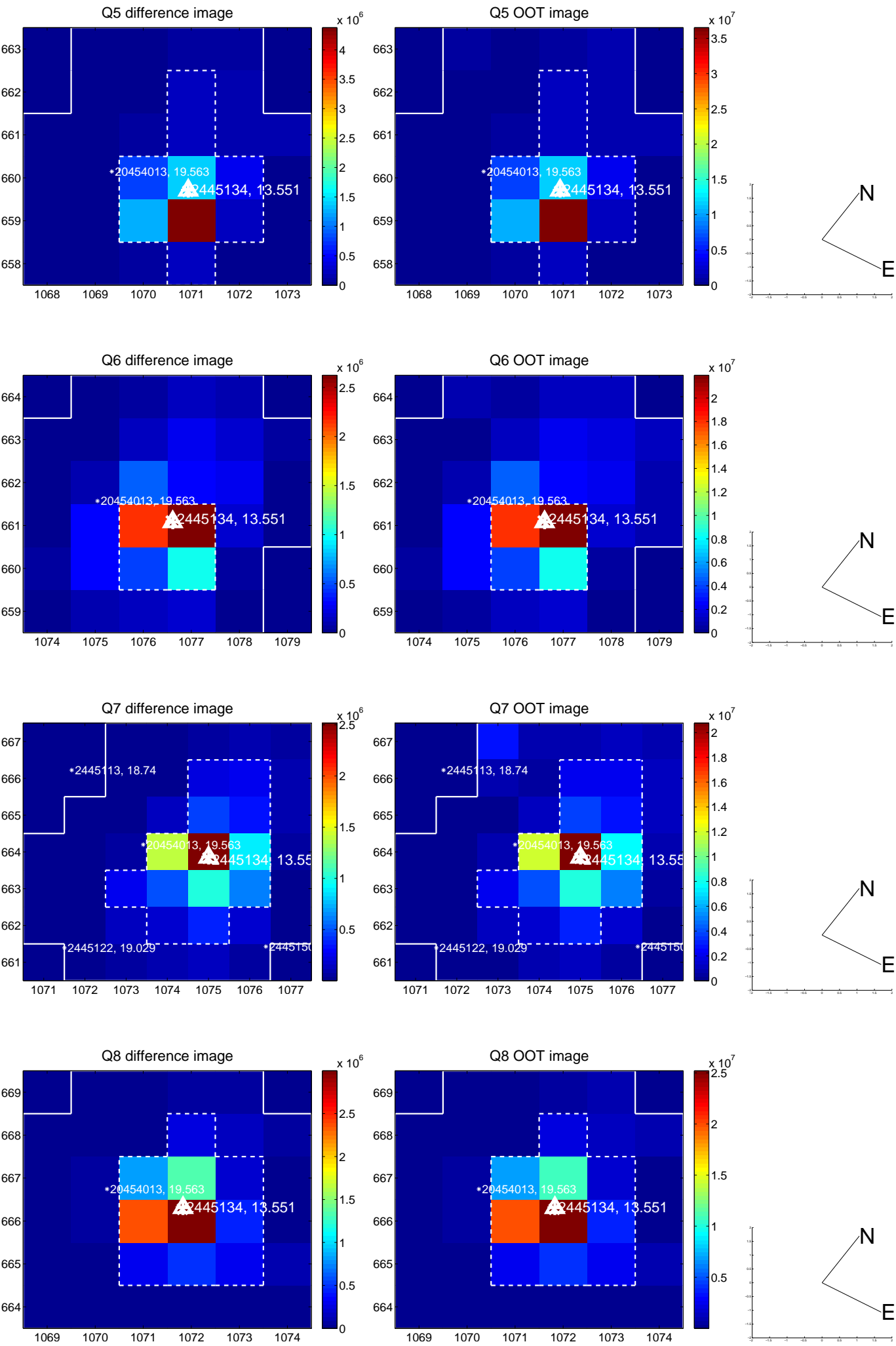


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

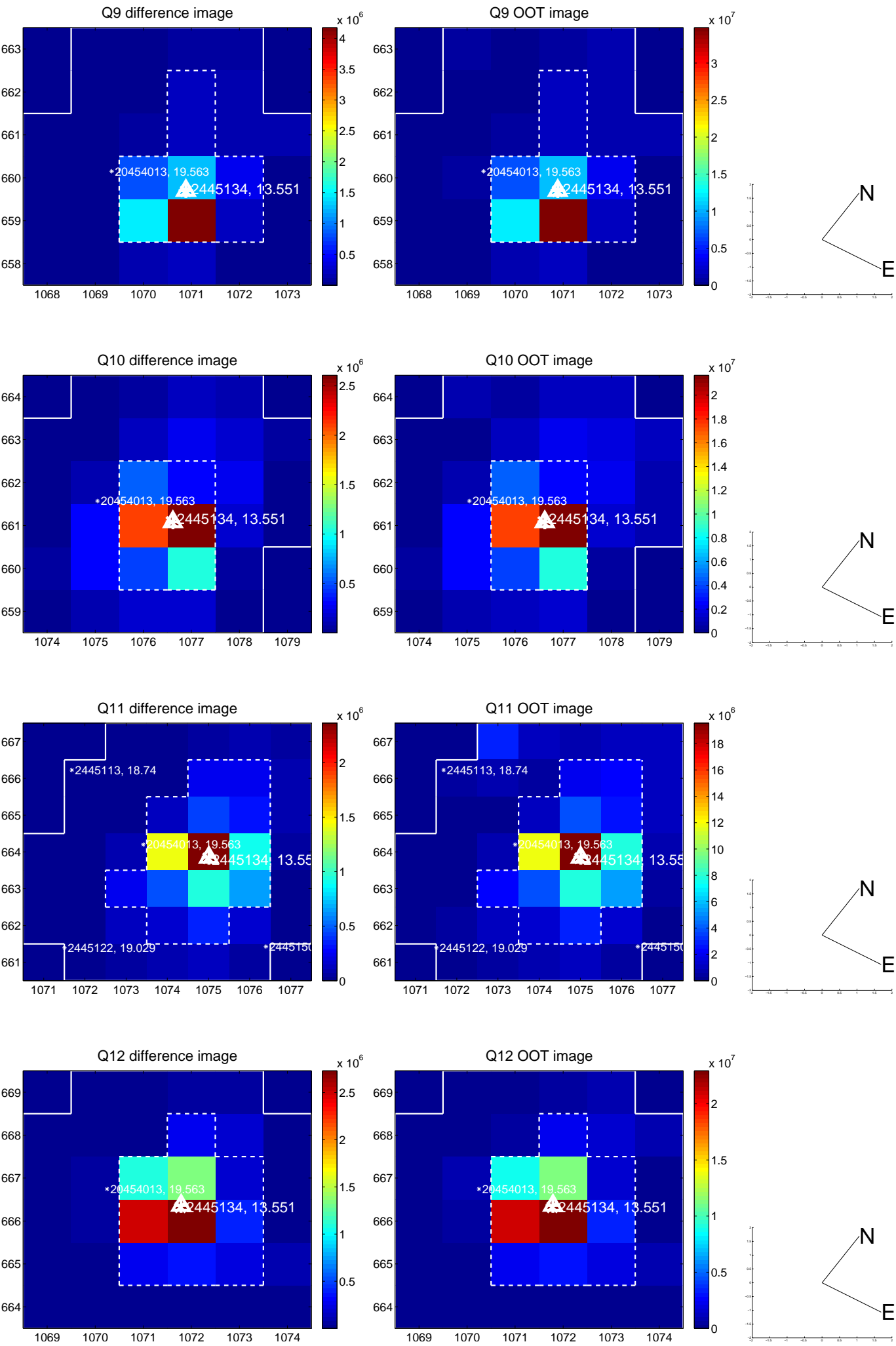
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



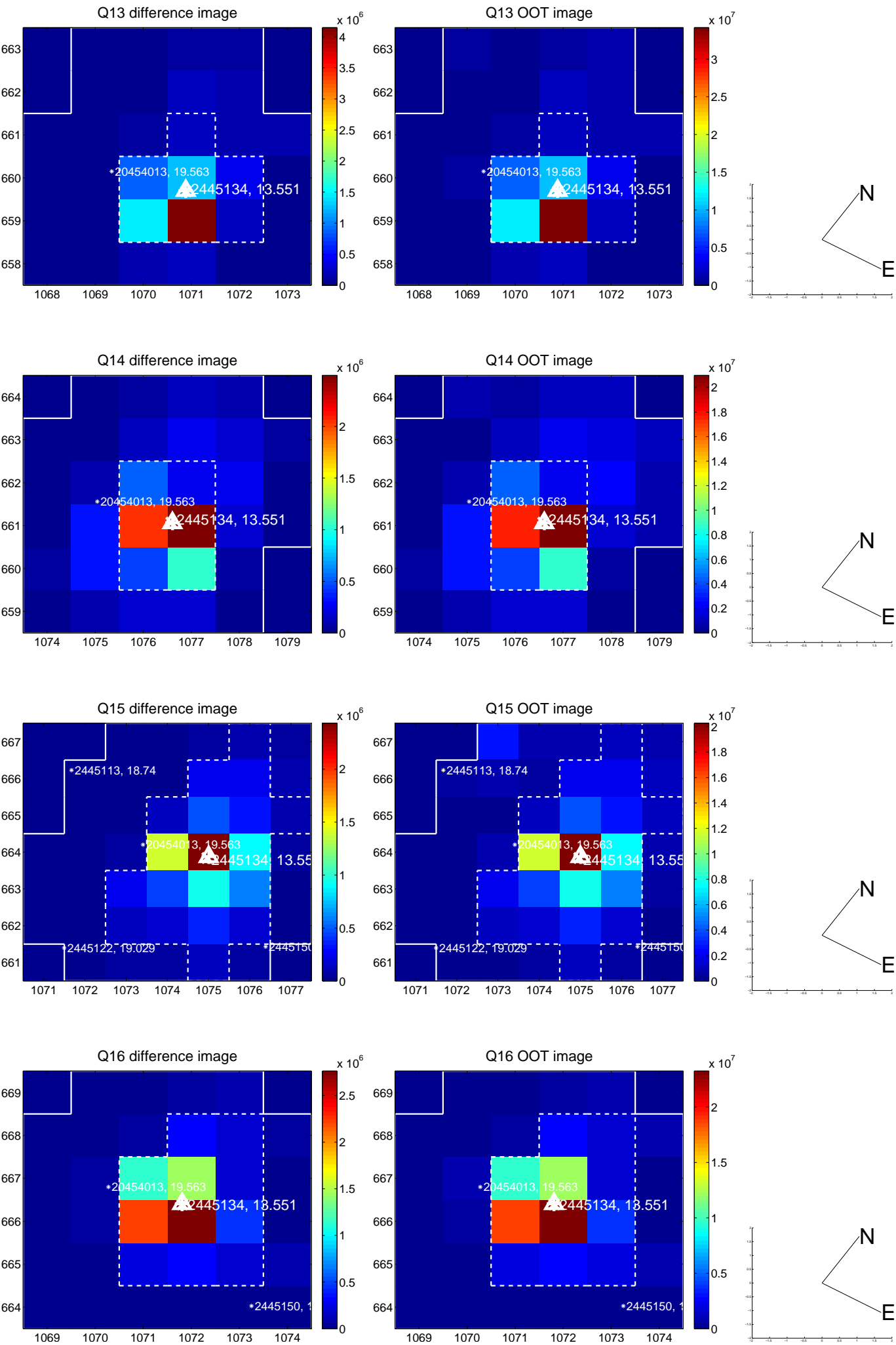
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



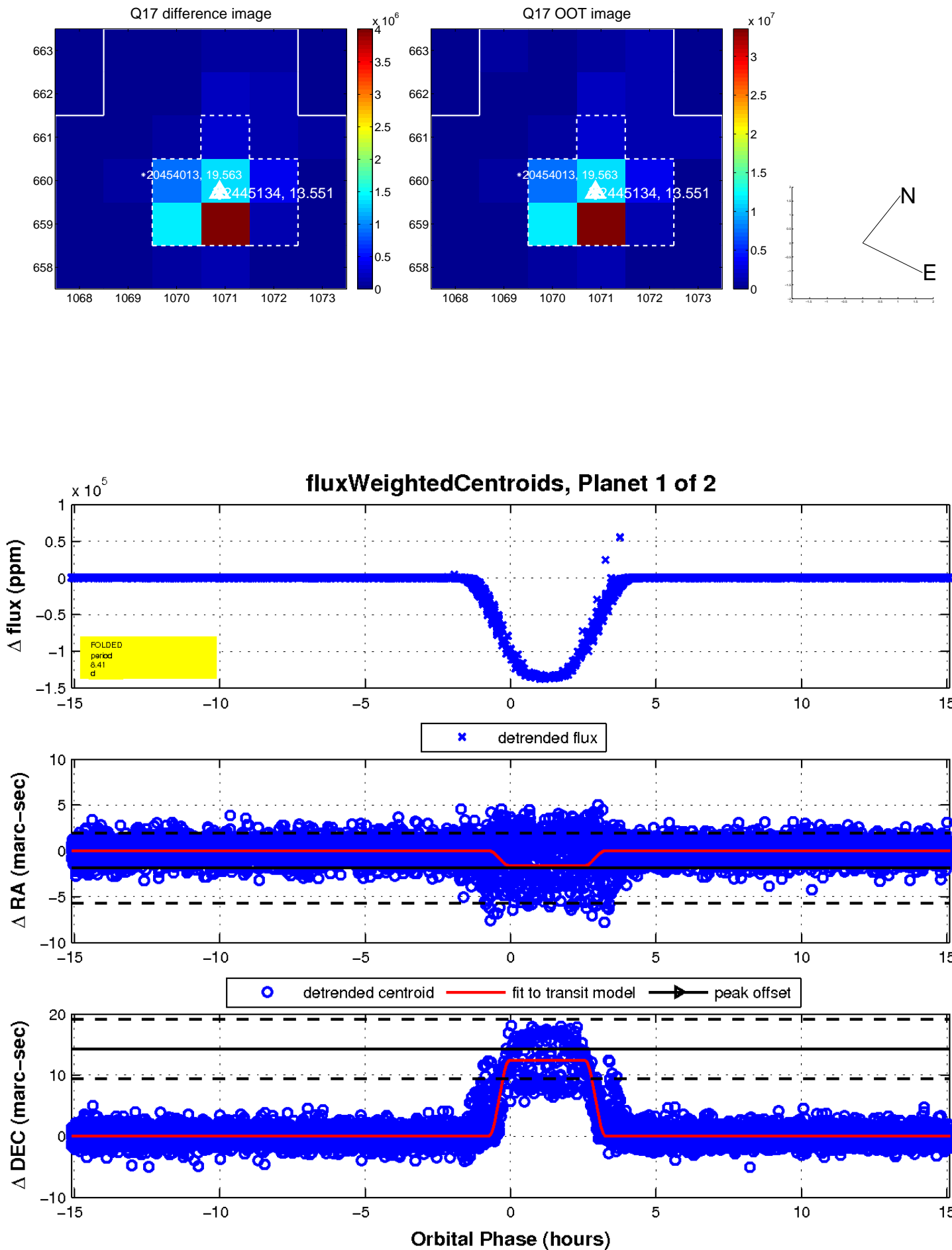
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

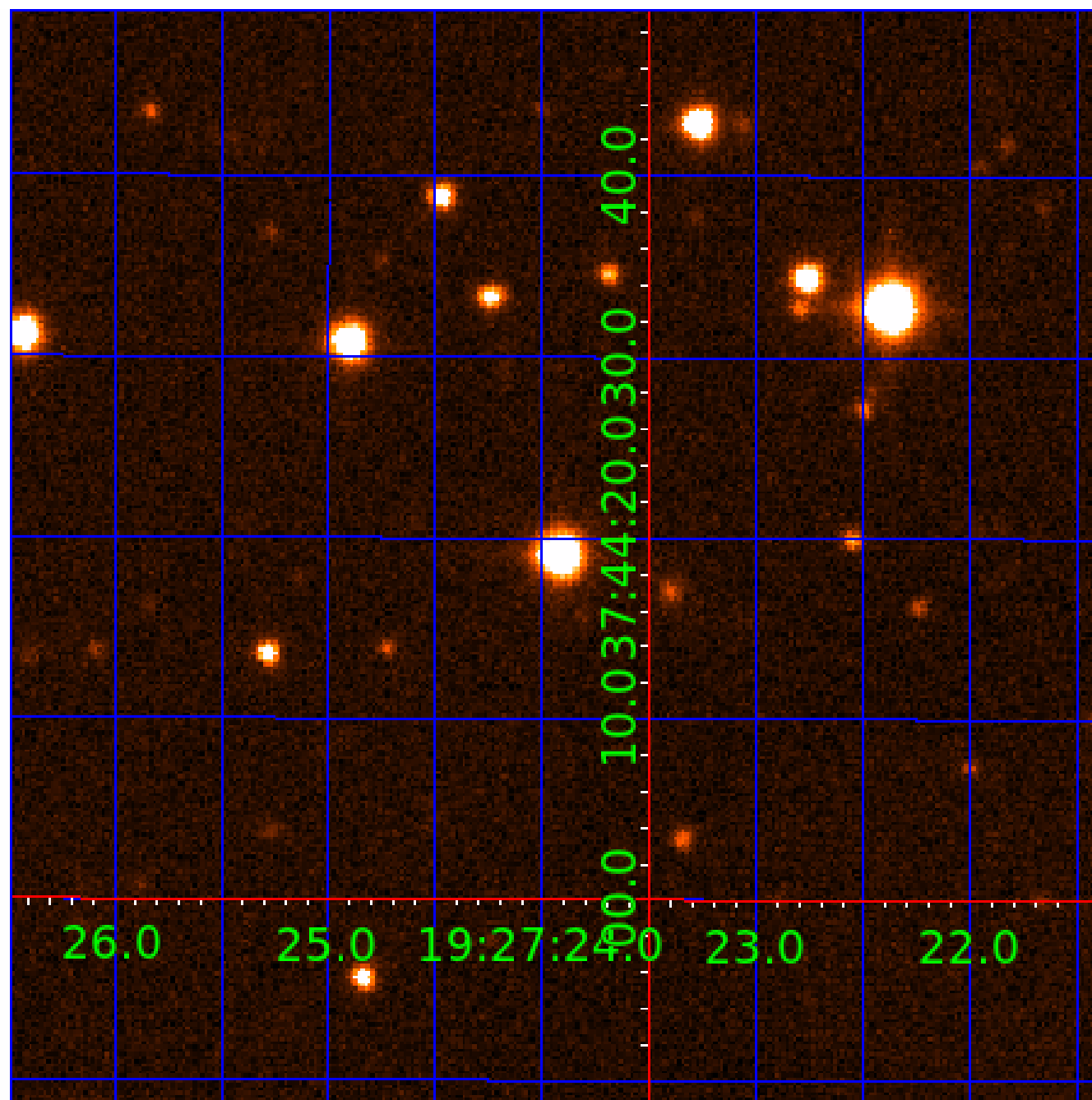


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002445134

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})
002445134-01	OBS	5983.01	8.411917	139.657173	125859.1	3.500	12396.6	-1.0	1.31	6247	47.03	346.30
002445134-02	OBS	No	8.412007	135.448035	7292.4	5.175	716.3	699.0	1.31	6247	13.04	346.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002445134-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
002445134-02	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.

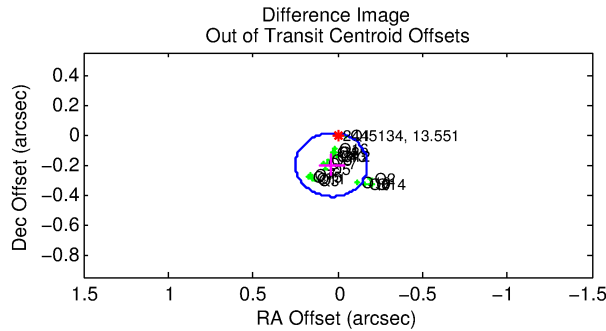
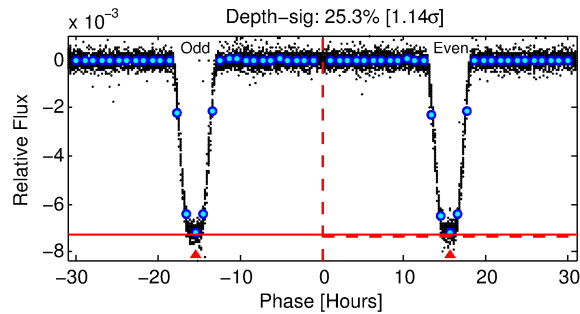
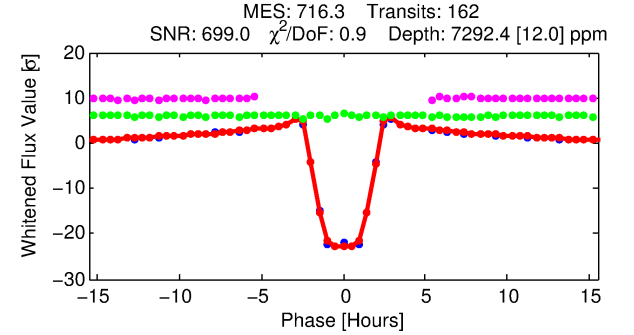
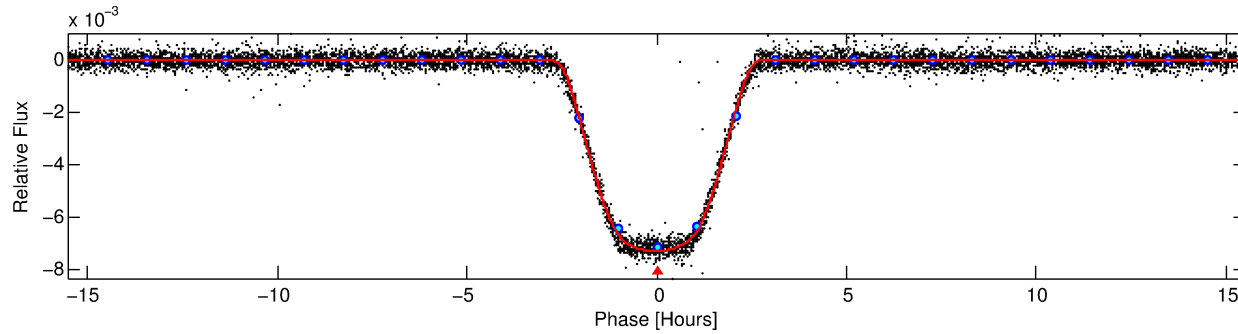
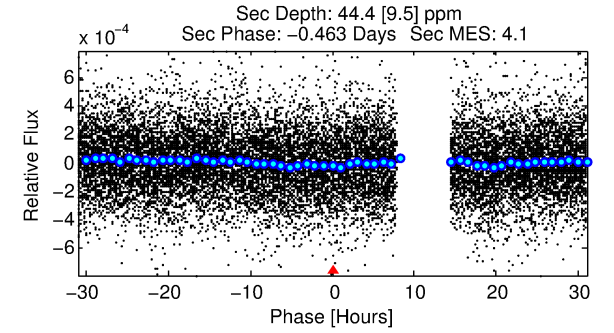
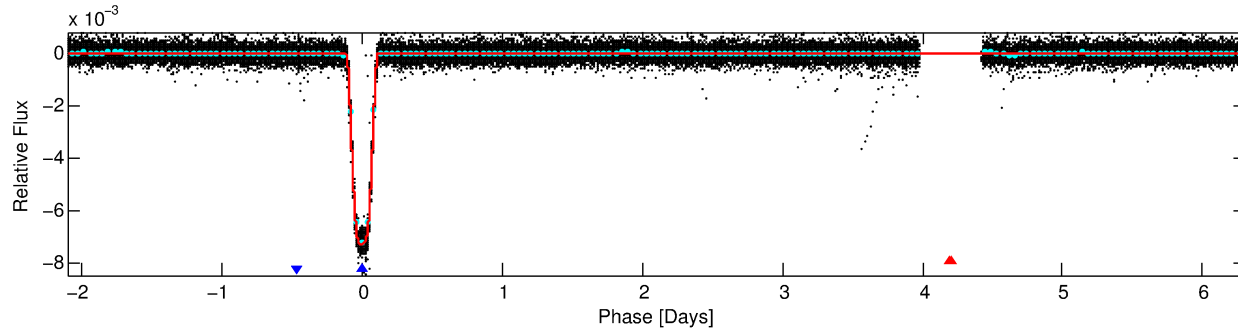
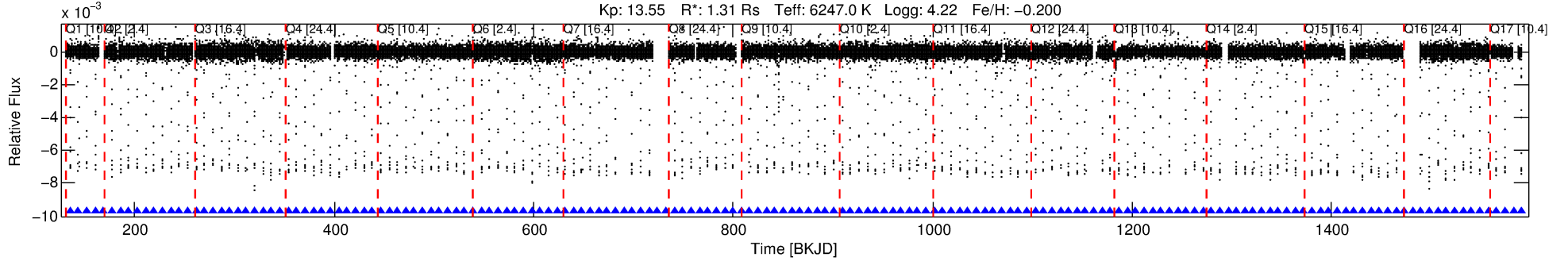
Ephemeris Match Information For 002445134-02

No Significant Match Found

DV One-Page Summary

KIC: 2445134 Candidate: 2 of 2 Period: 8.412 d
KOI: K05983 Corr: No Ephemeris Match

Kp: 13.55 R*: 1.31 Rs Teff: 6247.0 K Logg: 4.22 Fe/H: -0.200



DV Fit Results:

Period = 8.41201 [0.00000] d
Epoch = 135.4480 [0.0001] BKJD
Rp/R* = 0.0910 [0.0001]
a/R* = 8.06 [0.02]
b = 0.88 [0.00]
Seff = 346.29 [126.70]
Teq = 1100 [101] K
Rp = 13.05 [3.70] Re
a = 0.0825 [0.0195] AU
Ag = 0.98 [0.39] [-0.06 σ]
Teffp = 1691 [106] K [4.04 σ]

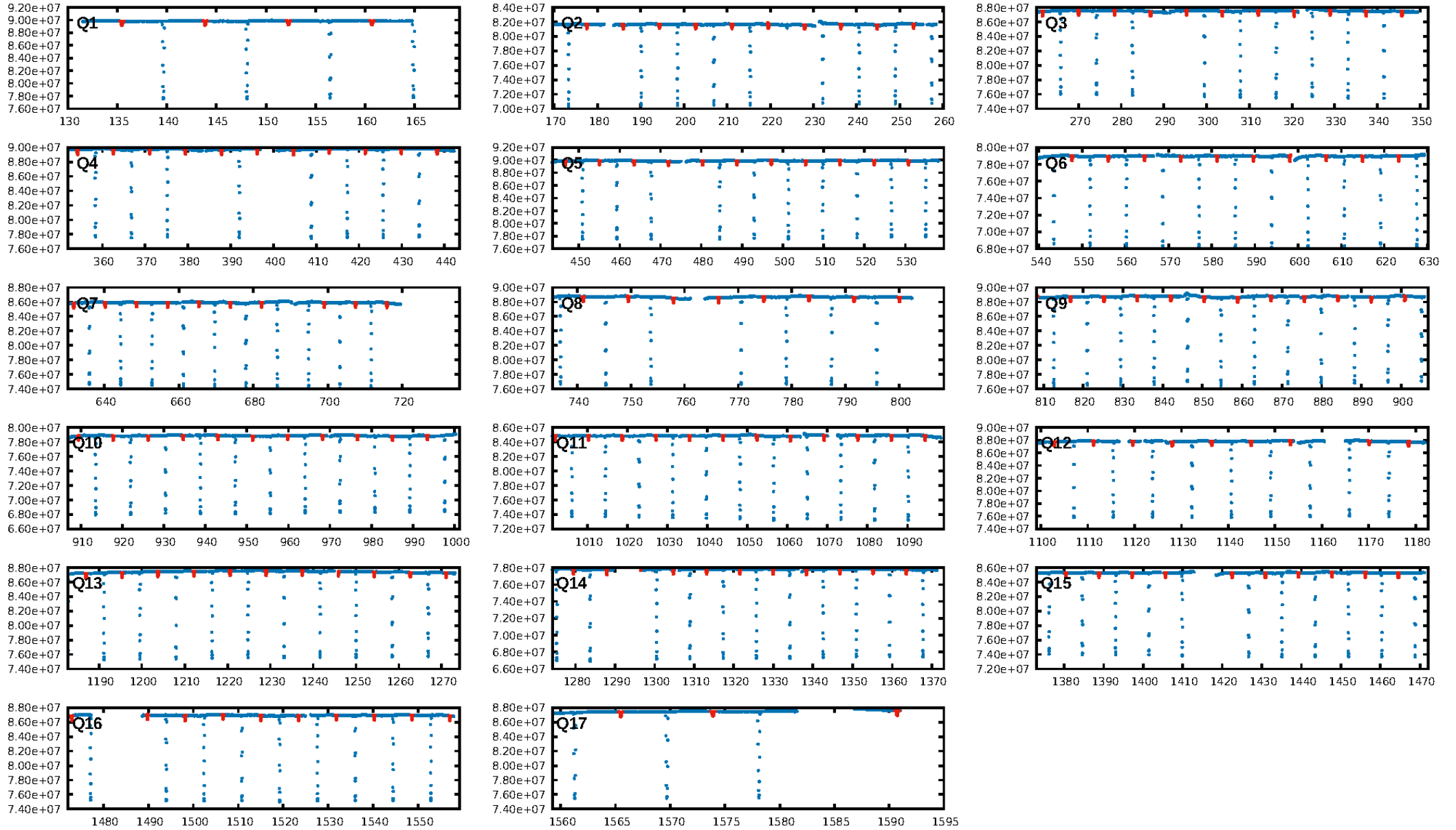
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [155/155]
GhostDiagnostic-chr: 4.454
Centroid-sig: 0.0%
Centroid-so: 0.481 arcsec [34.20 σ]
OotOffset-rm: 0.204 arcsec [2.88 σ]
KicOffset-rm: 0.117 arcsec [1.61 σ]
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]

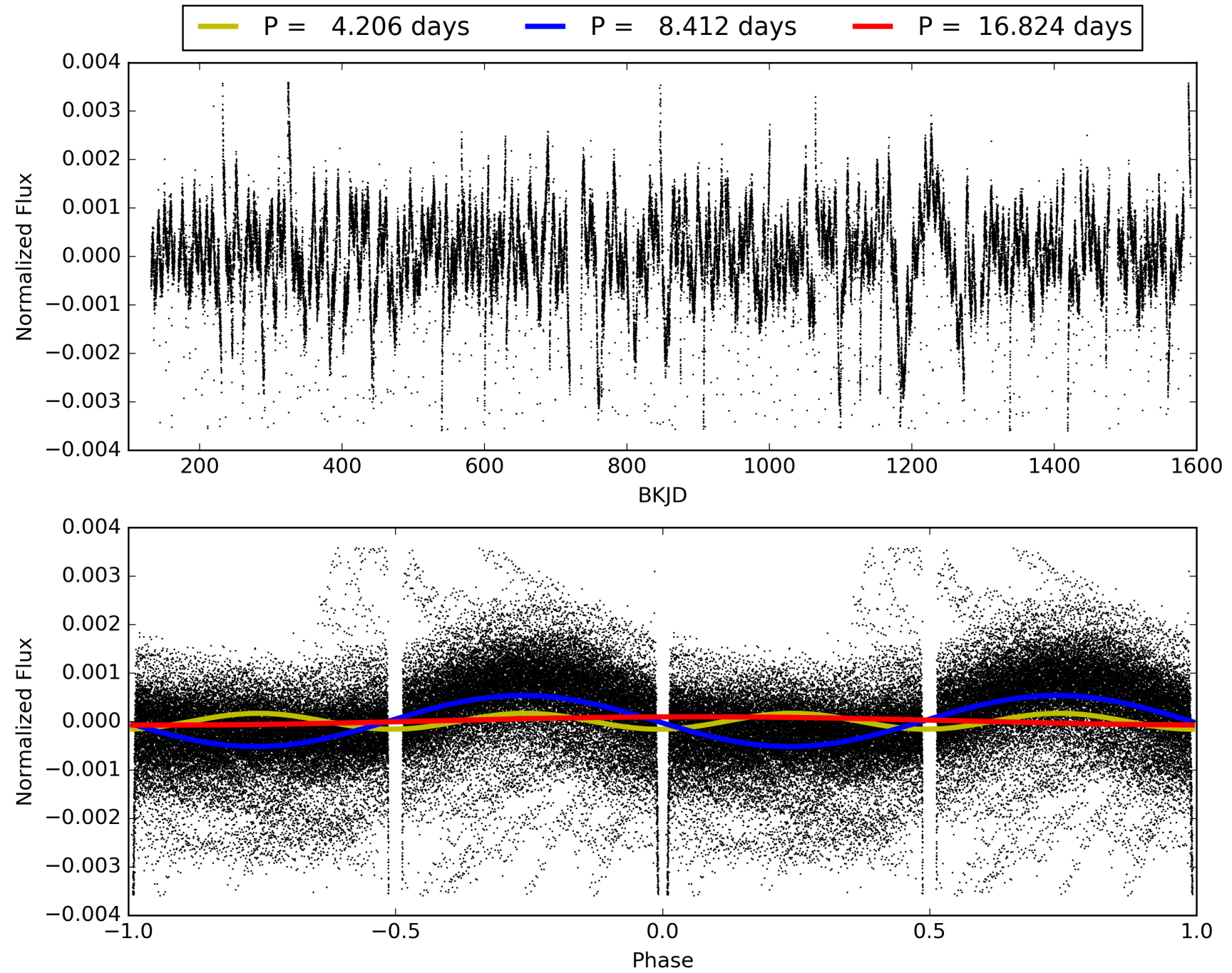
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:49:50 Z

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

TCE 002445134-02, PDC Light Curves

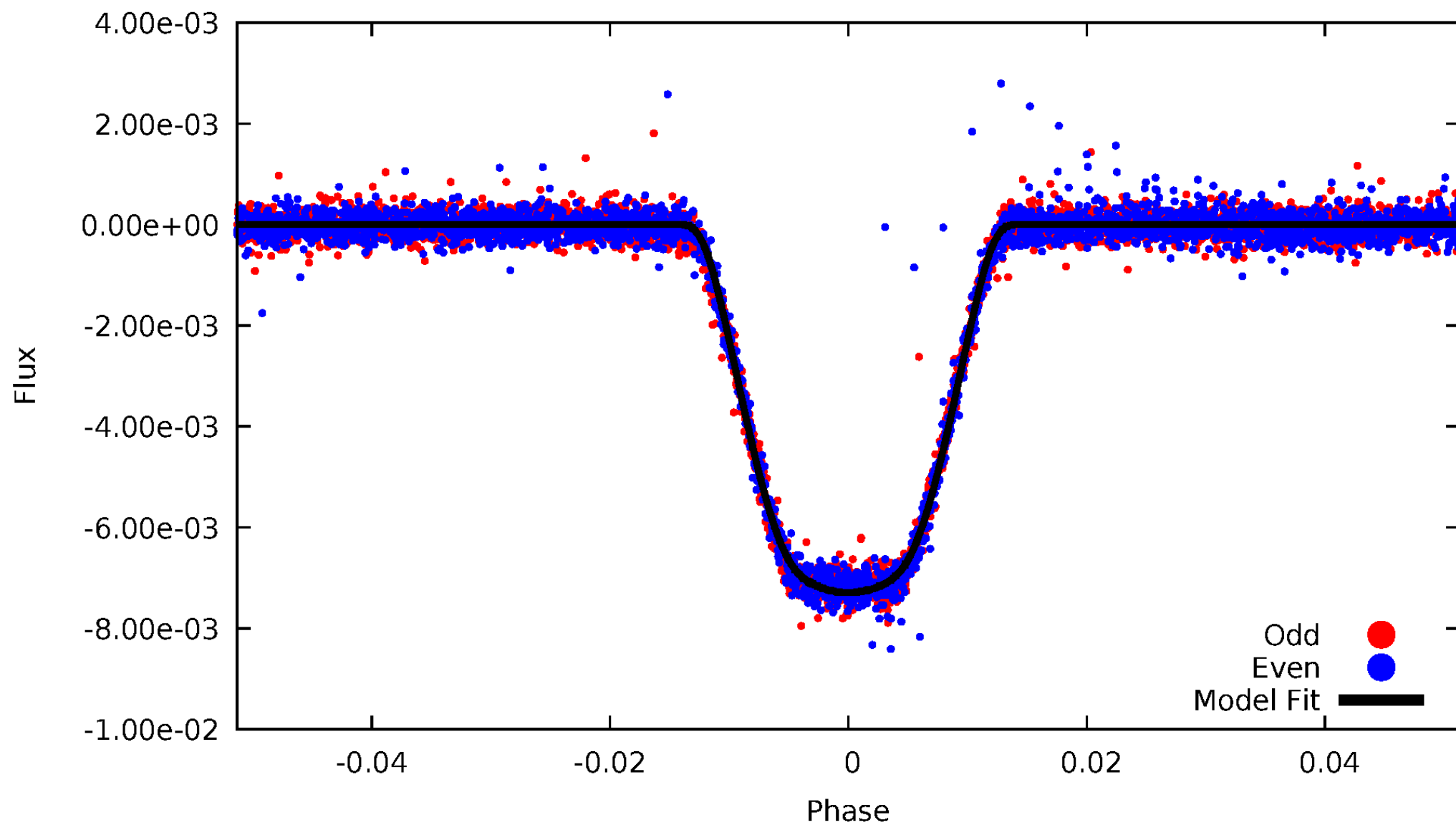


TCE 002445134-02



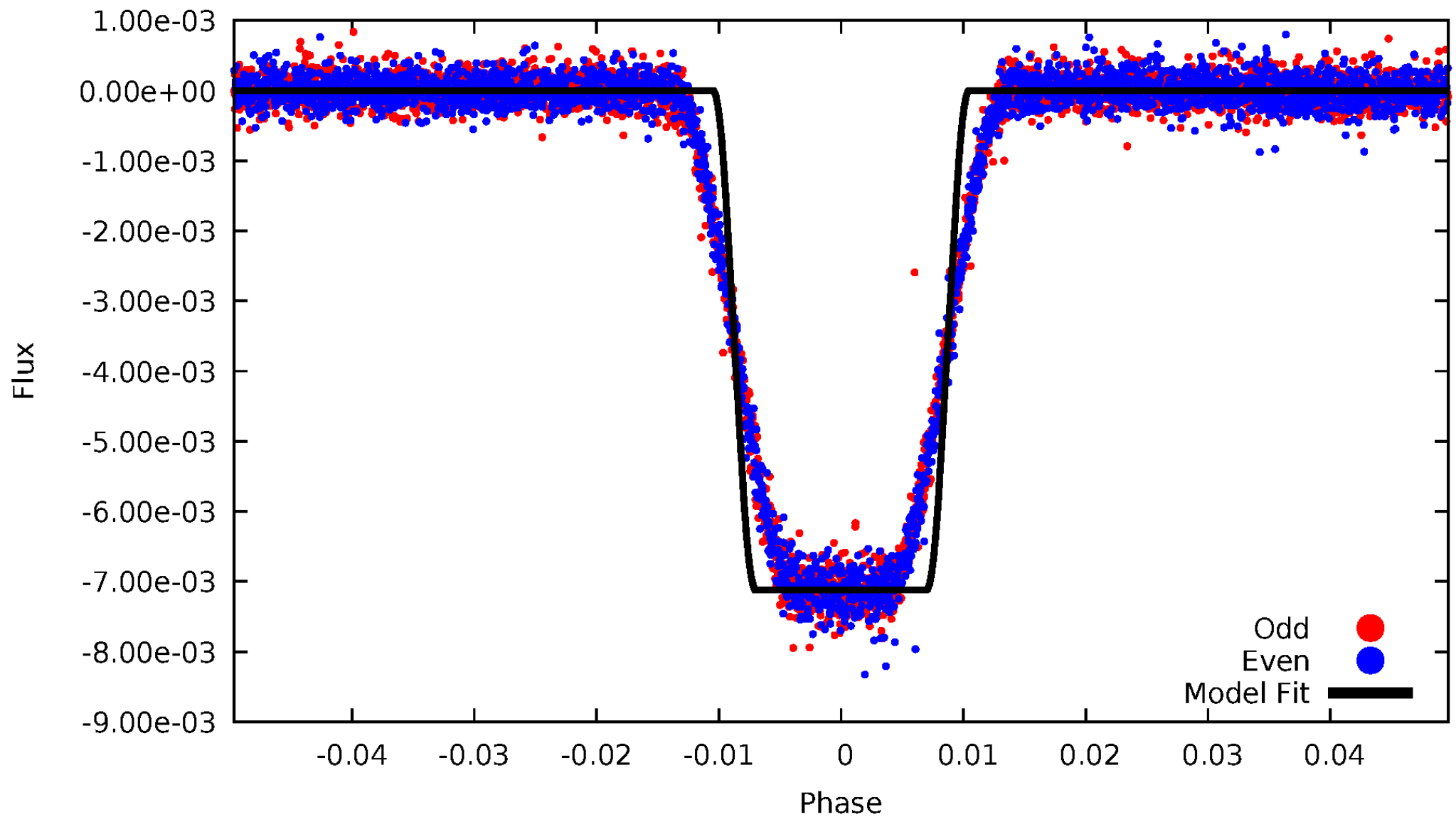
DV Odd/Even

TCE 002445134-02



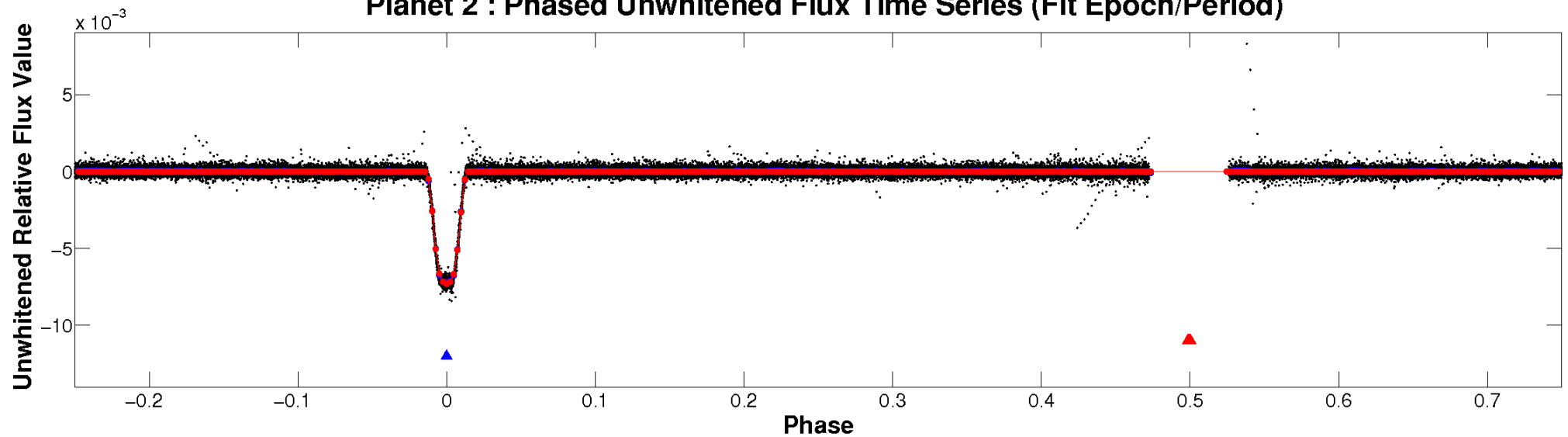
ALT Odd/Even

TCE 002445134-02

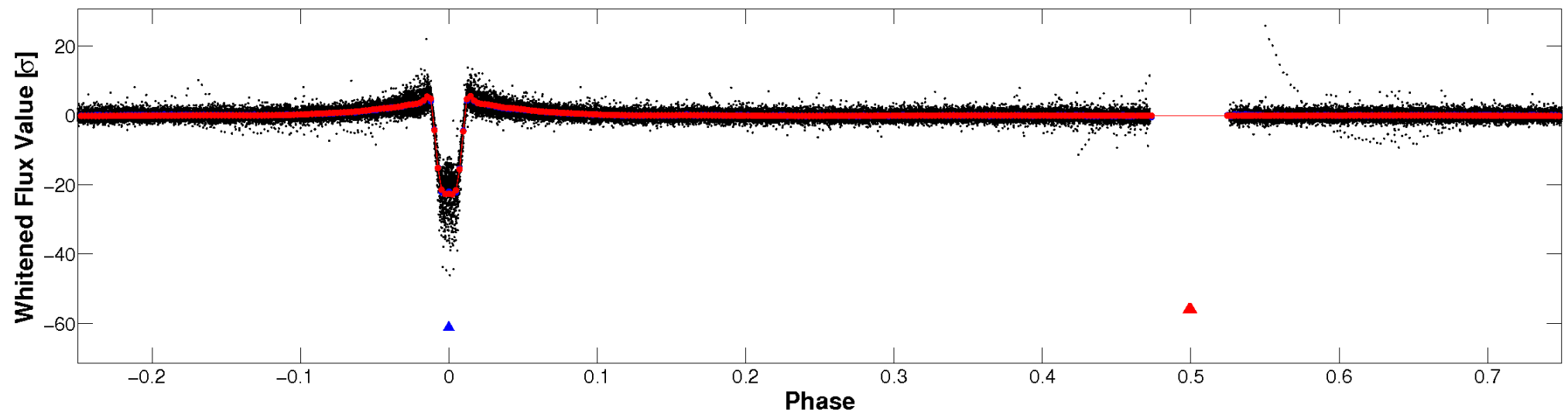


Non-Whitened Vs. Whitened Light Curve

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

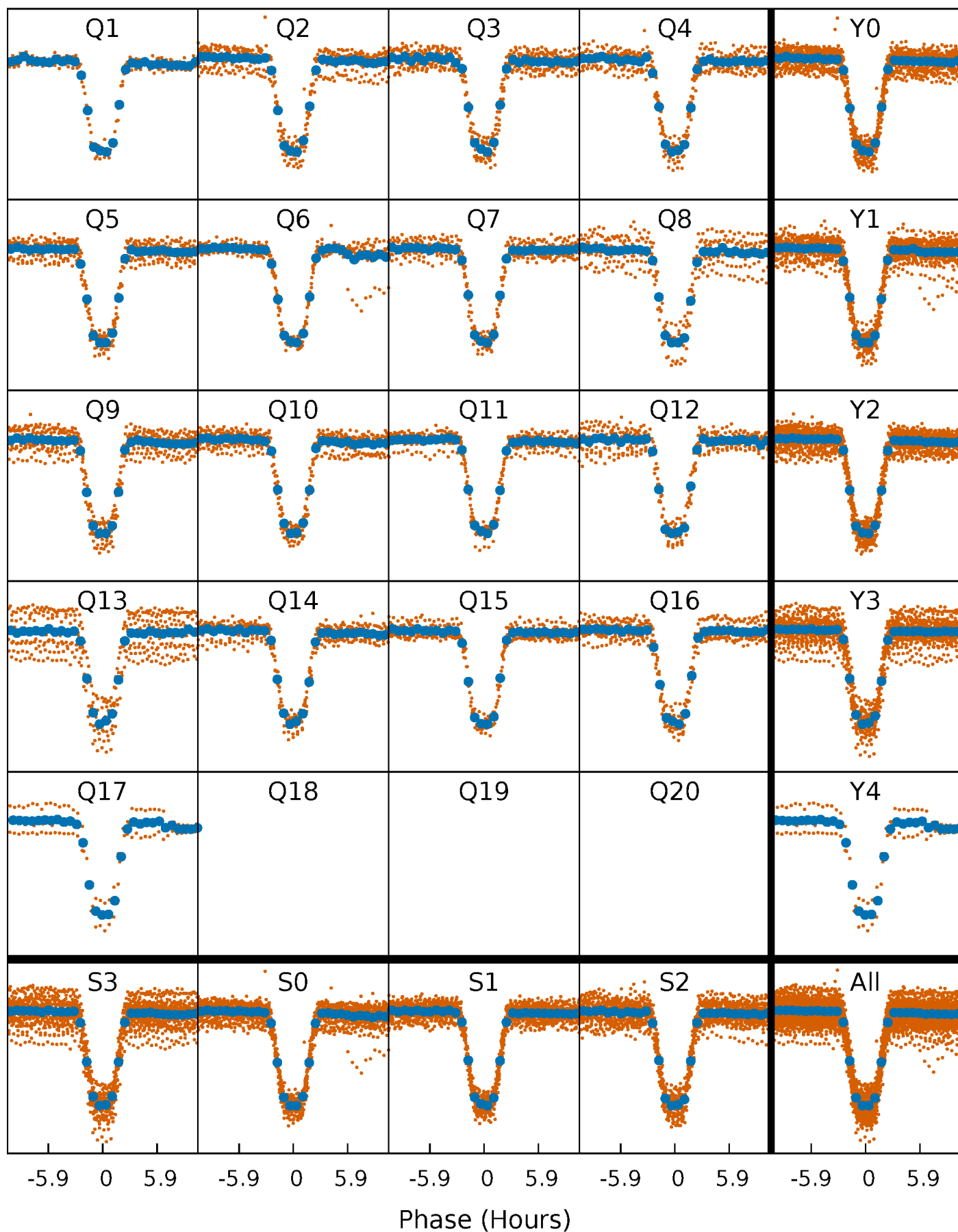


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



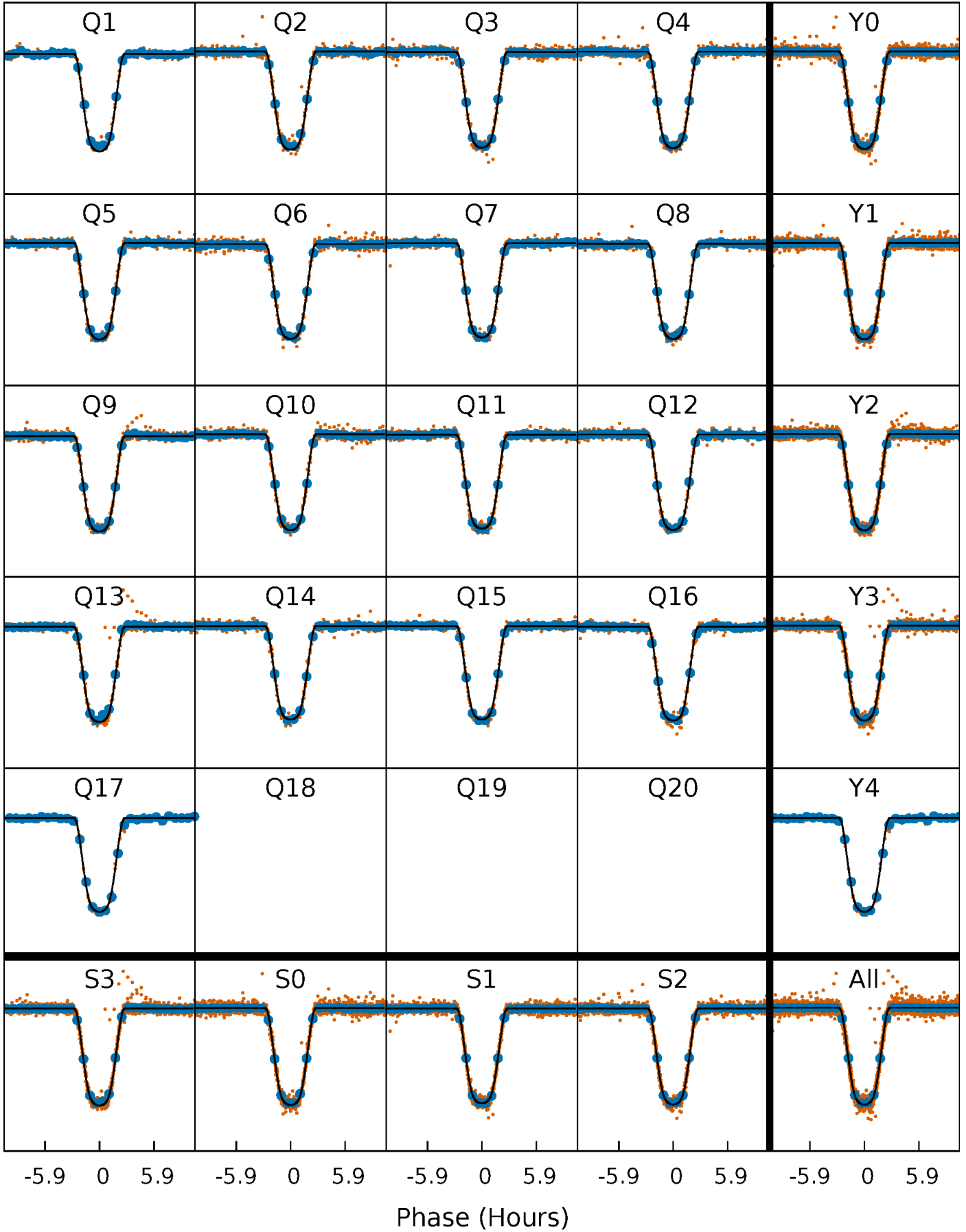
PDC Quarter-Phased Transit Curves

TCE 002445134-02 P= 8.412007 Days $T_0=135.448036$ (BKJD)



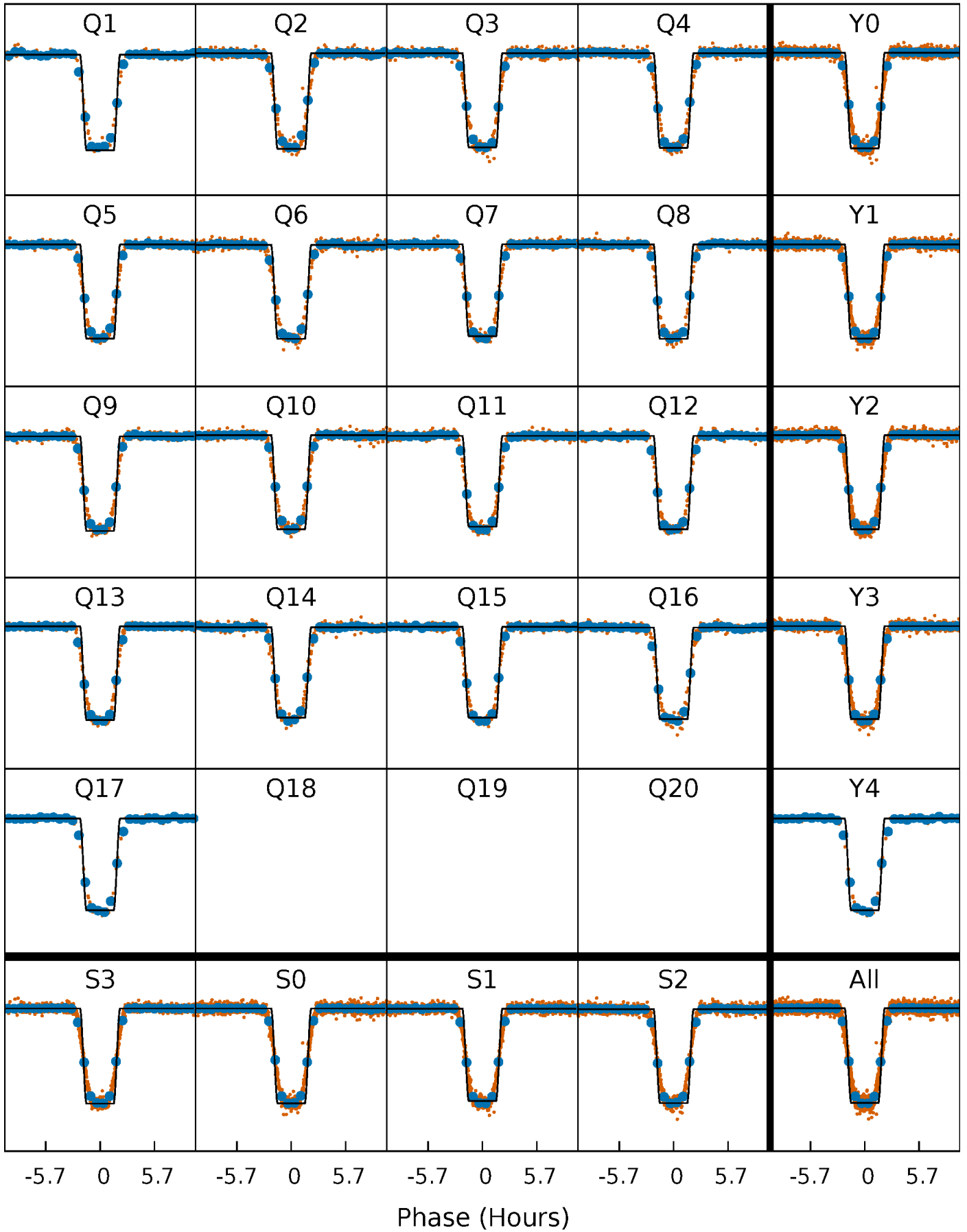
DV Quarter-Phased Transit Curves

TCE 002445134-02 P= 8.412007 Days $T_0=135.448036$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

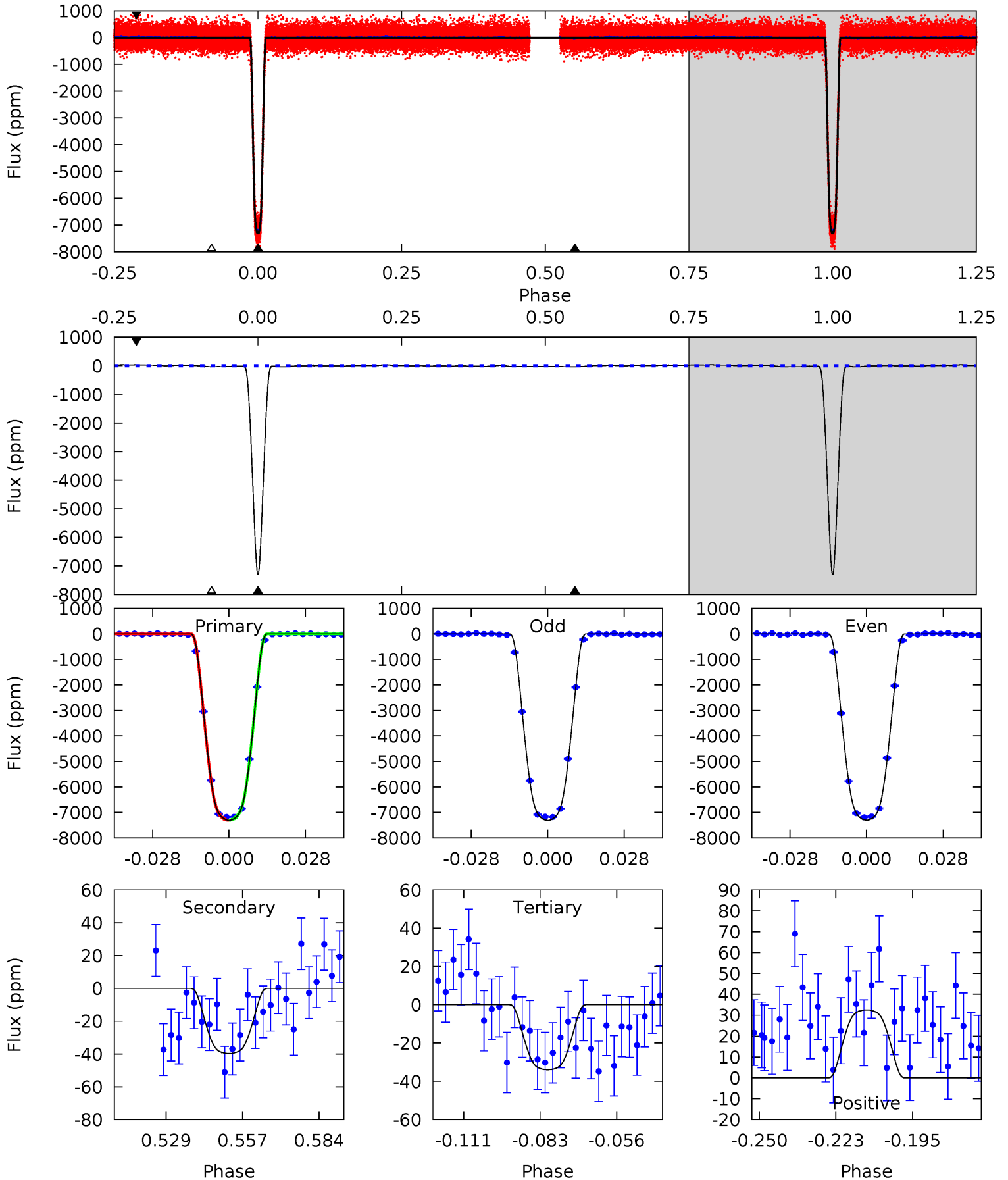
TCE 002445134-02 P= 8.412015 Days $T_0=135.447130$ (BKJD)



DV Model-Shift Uniqueness Test

002445134-02, P = 8.412007 Days, E = 127.036029 Days

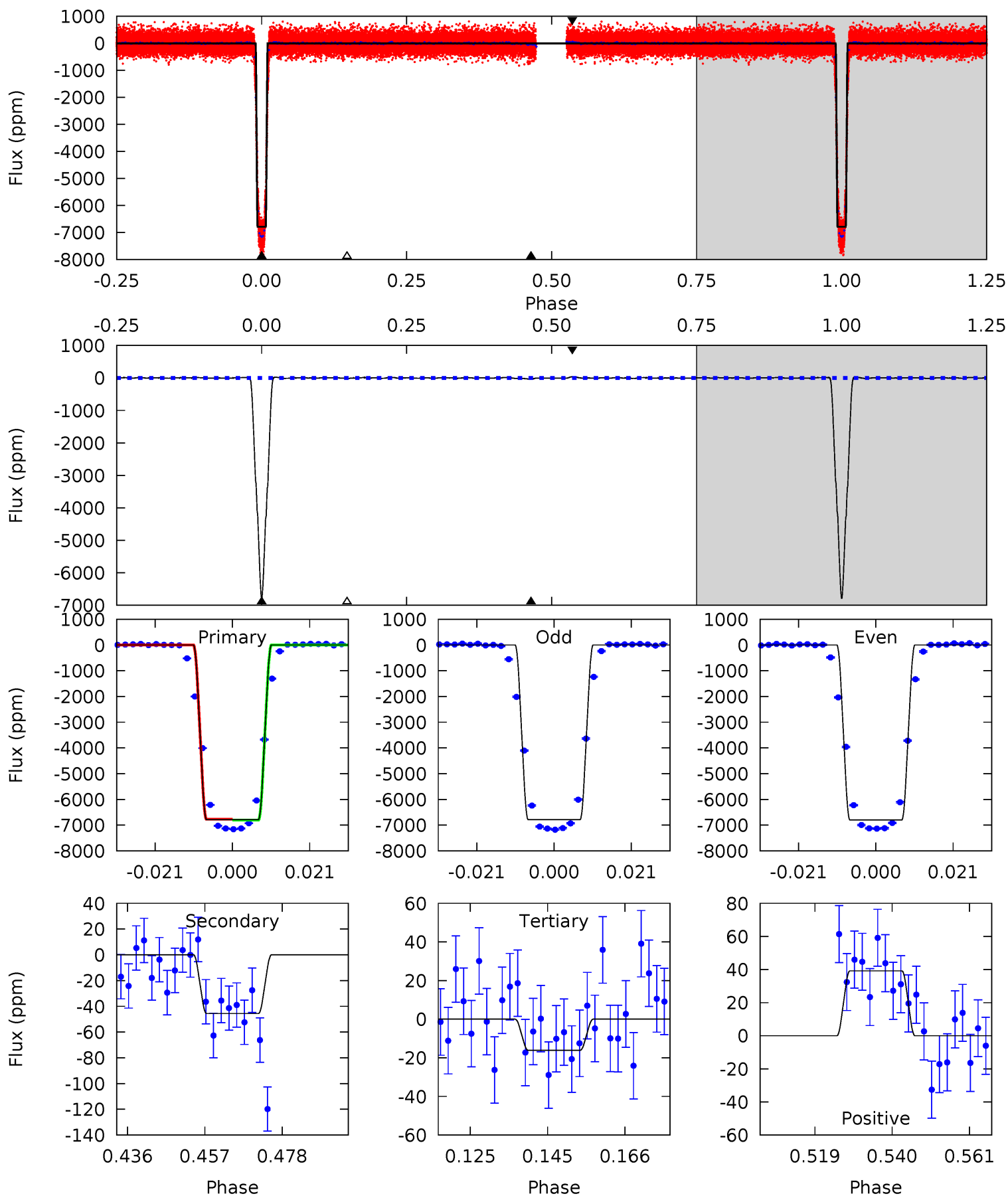
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1471	7.99	6.84	6.55	4.83	2.20	3.24	1465	1465	1.15	1.44	0.74	0.99	0.00	0.35



Alt Model-Shift Uniqueness Test

002445134-02, P = 8.412015 Days, E = 127.035115 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1212	8.14	2.88	7.00	4.88	2.31	1.30	1210	1205	5.27	1.14	1.10	1.00	0.01	2.72



Stellar Parameters For KIC 002445134

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6247^{+169}_{-206}	$4.225^{+0.185}_{-0.185}$	$-0.200^{+0.250}_{-0.300}$	$1.314^{+0.373}_{-0.305}$	$1.057^{+0.185}_{-0.123}$	$0.656^{+0.656}_{-0.333}$
	+3%/-3%	+4%/-4%	+125%/-150%	+28%/-23%	+18%/-12%	+100%/-51%
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 002445134-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-40 ± 5	$13.24^{+2.00}_{-1.80}$	1537^{+121}_{-112}	2371^{+67}_{-86}	$0.863^{+0.295}_{-0.223}$
Alt.	-46 ± 6	$12.16^{+2.13}_{-1.47}$	1541^{+118}_{-114}	2488^{+65}_{-73}	$1.141^{+0.375}_{-0.300}$

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

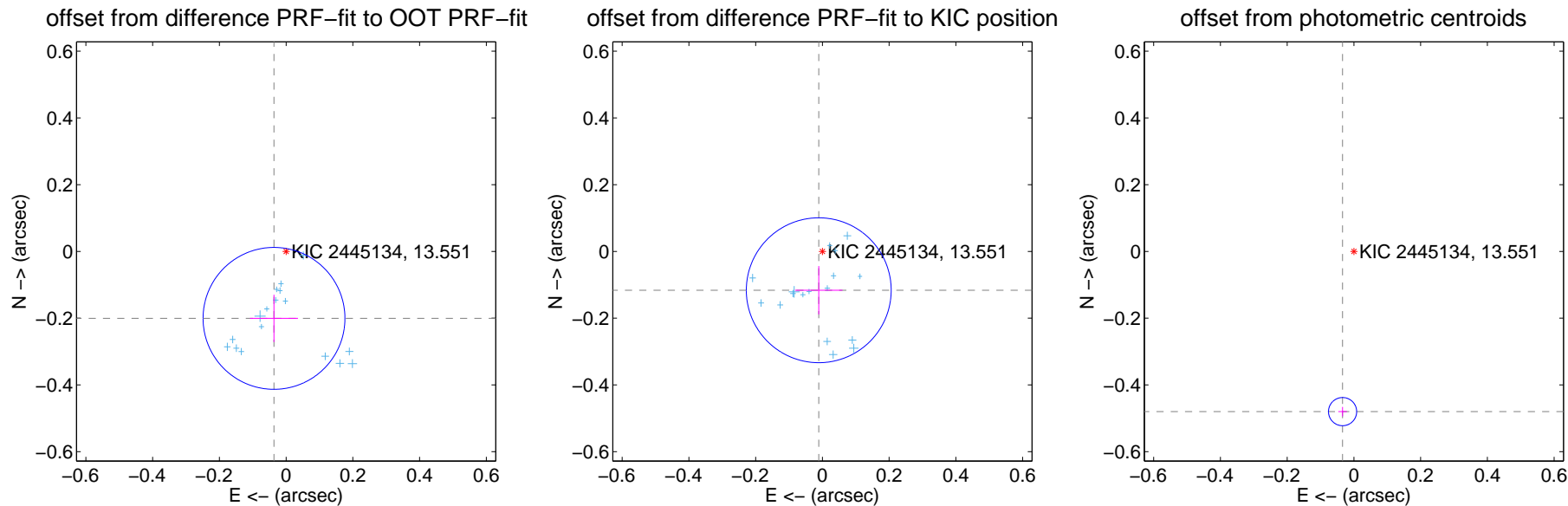
DV Centroid Data

Supplemental centroid analysis for 002445134-02. Kepler magnitude: 13.55. Transit SNR 699.04

There are 17 quarters with good PRF difference image offsets

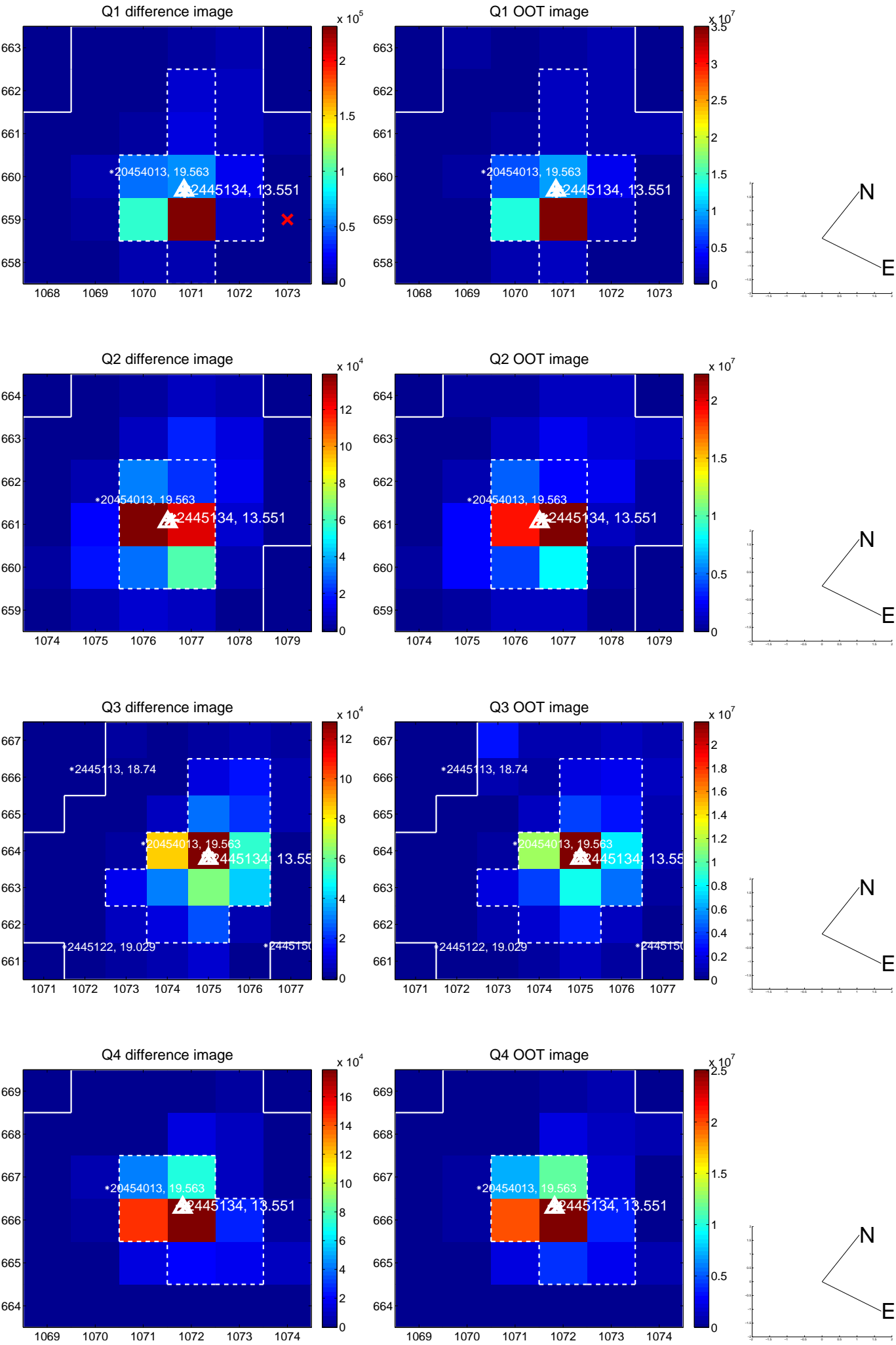
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.204 ± 0.071	2.88	0.036 ± 0.072	-0.201 ± 0.071
PRF-fit source offset from KIC position	0.117 ± 0.072	1.61	0.011 ± 0.071	-0.116 ± 0.072
photometric centroid source offset	0.48 ± 0.01	34.20	0.03 ± 0.01	-0.48 ± 0.01

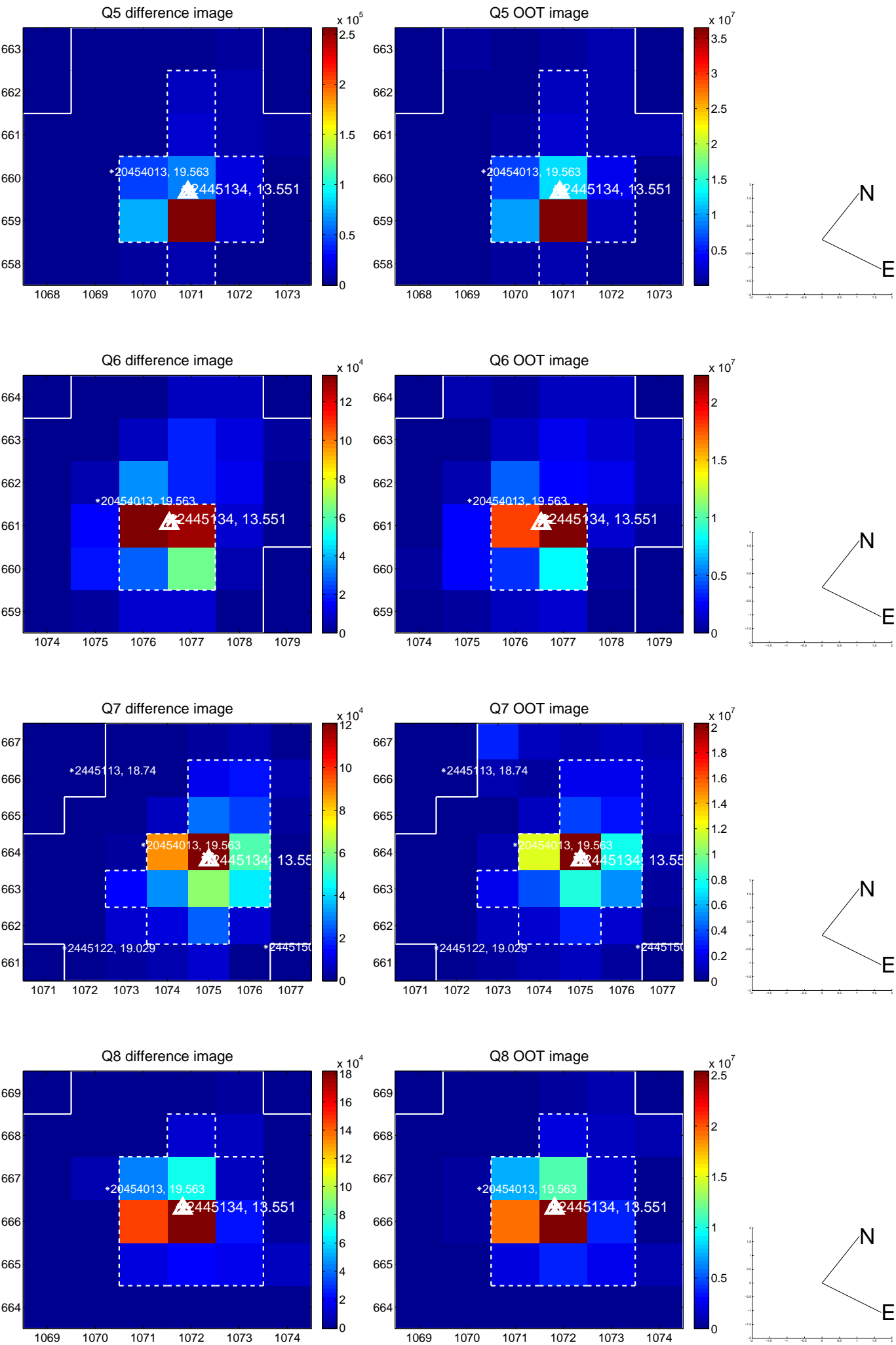


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

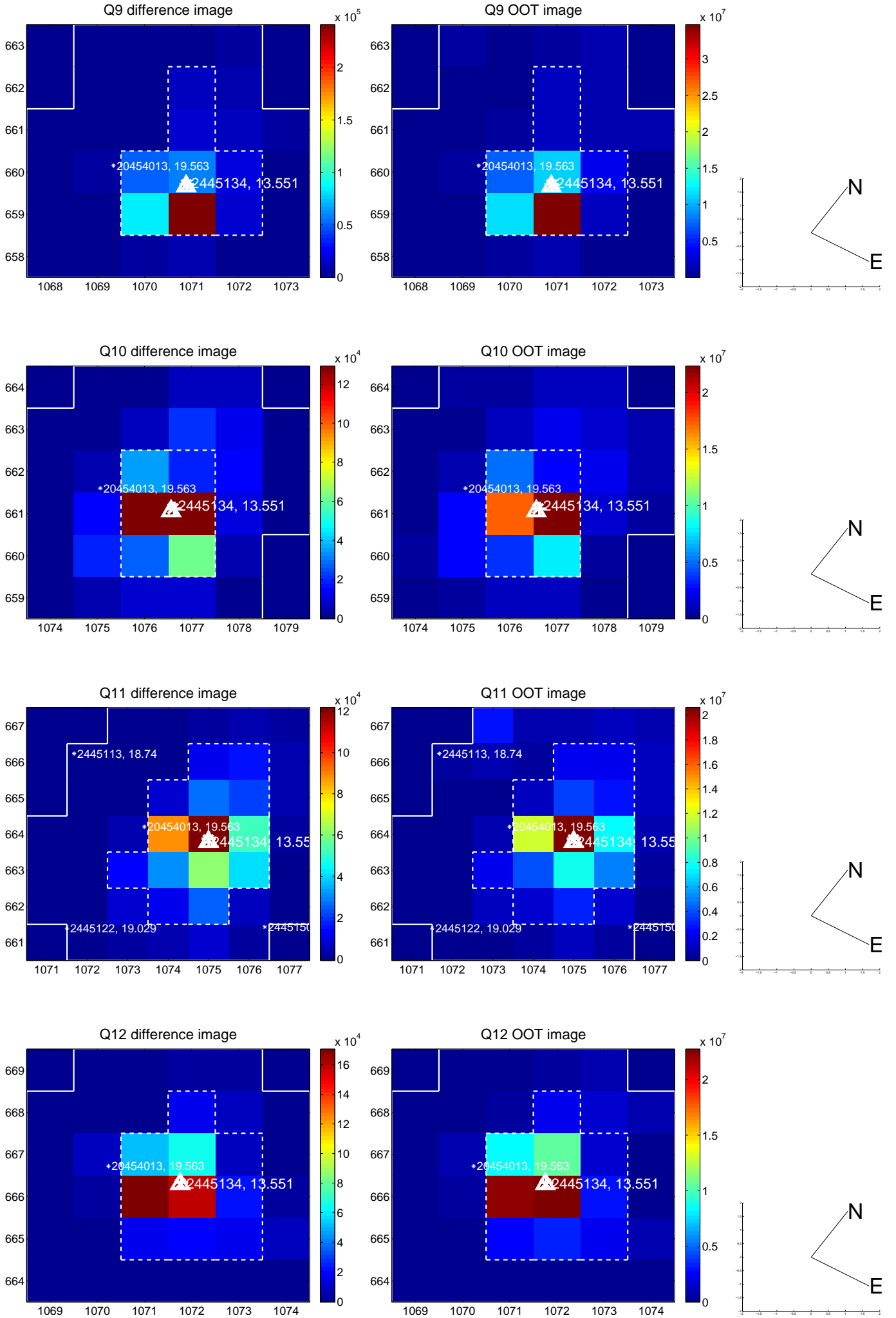
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



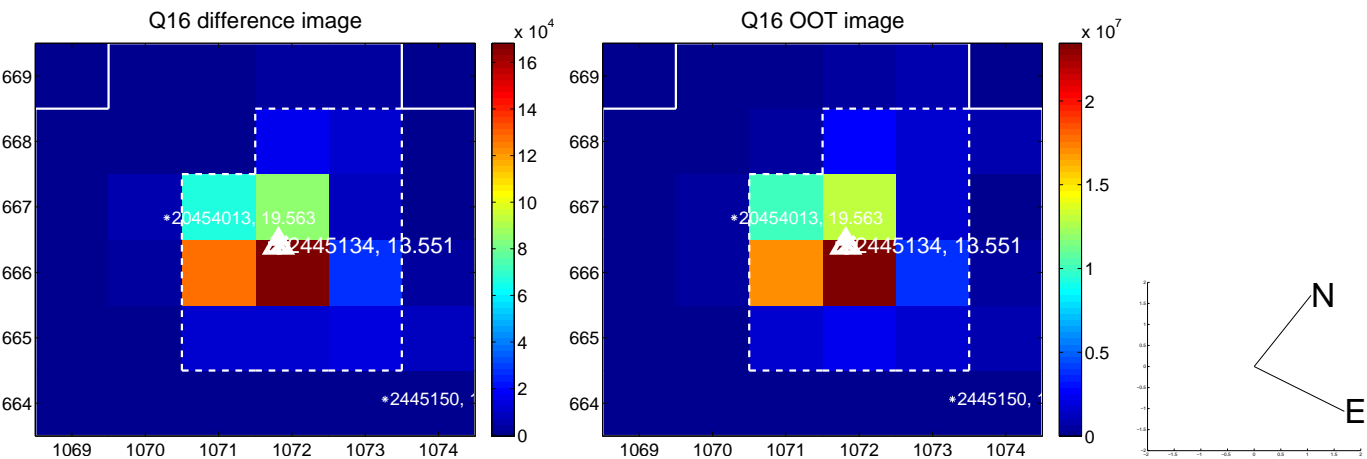
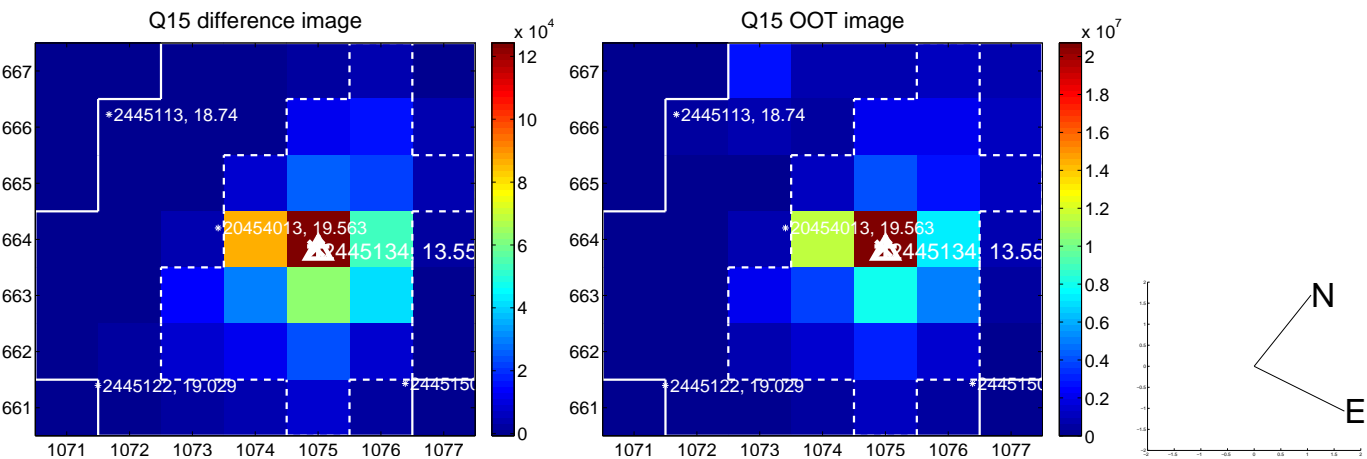
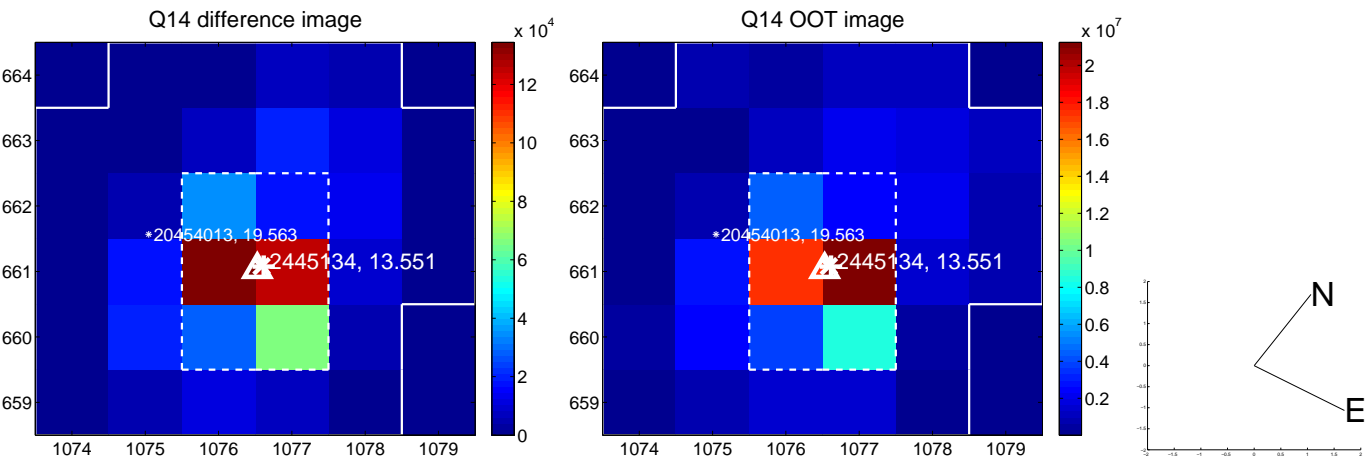
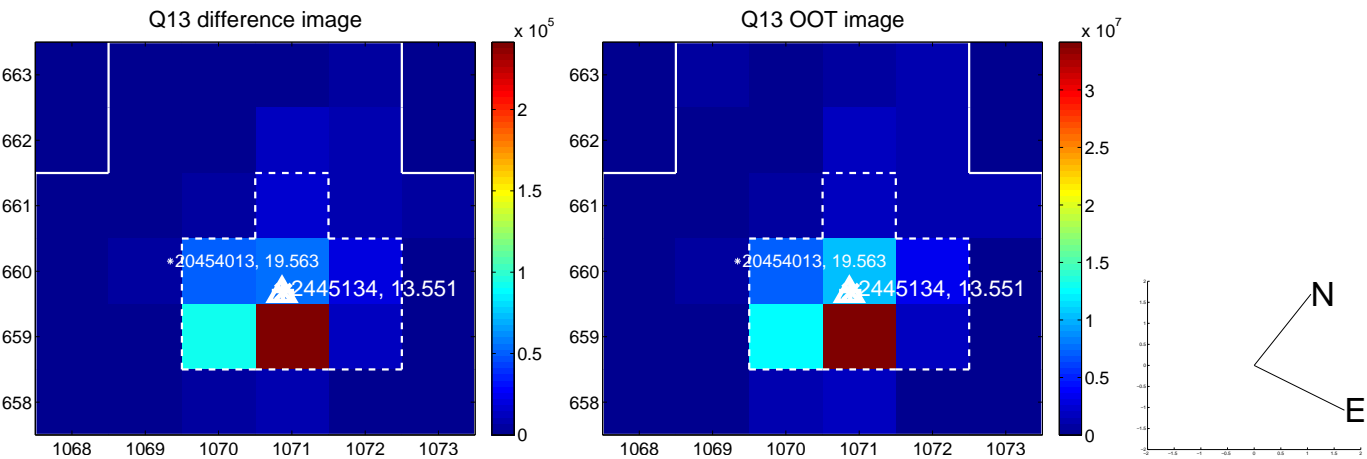
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



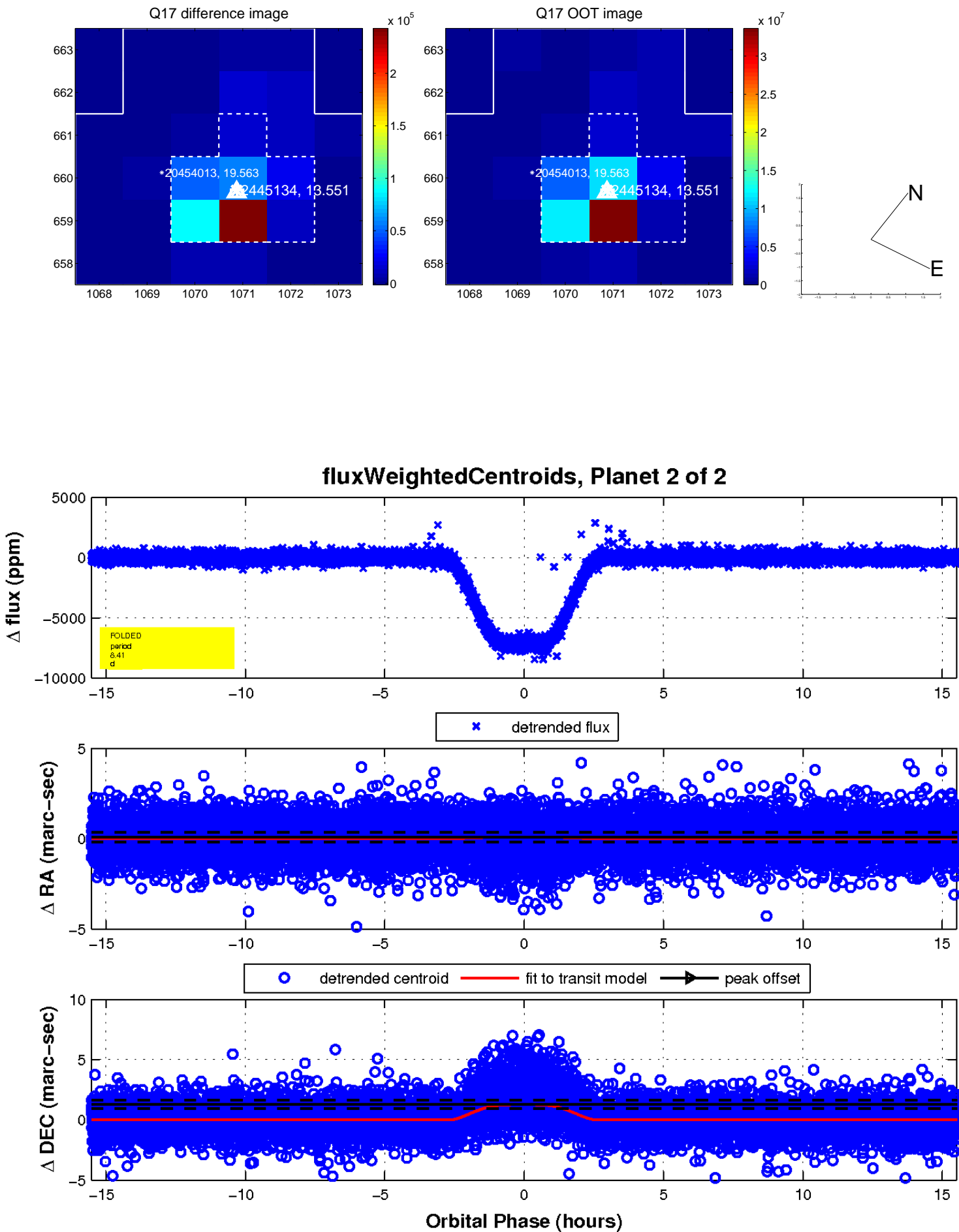
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

