

KIC 005218014

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})
005218014-01	OBS	6544.01	10.845296	138.333991	7485.5	4.420	272.9	281.3	7.02	5096	113.95	1896.00
005218014-02	OBS	No	10.845286	142.234705	6667.1	5.333	244.8	258.5	7.02	5096	107.92	1896.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005218014-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005218014-02	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.

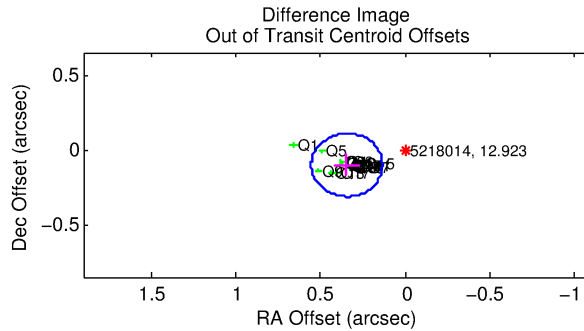
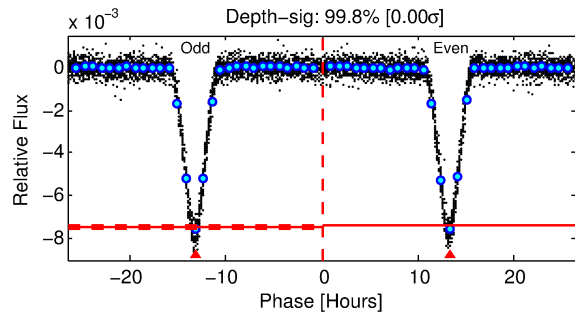
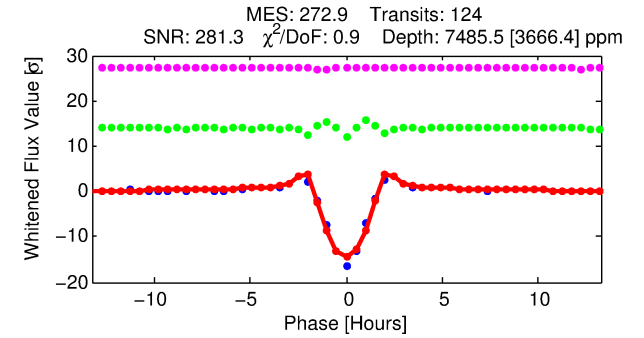
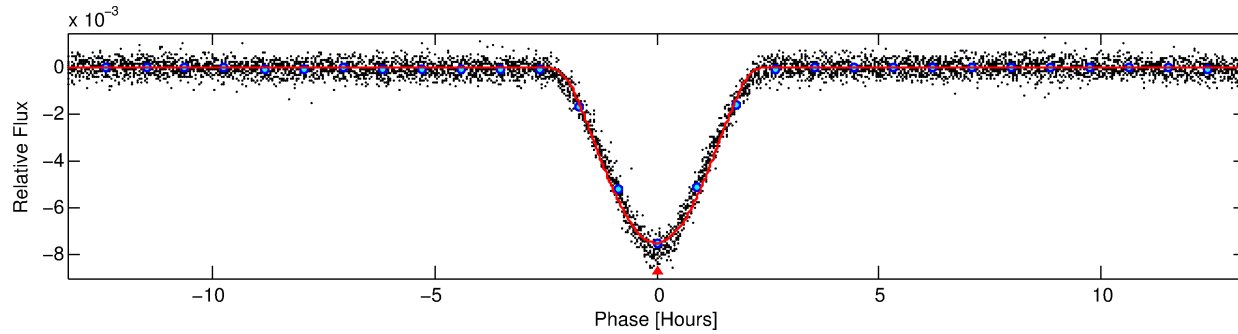
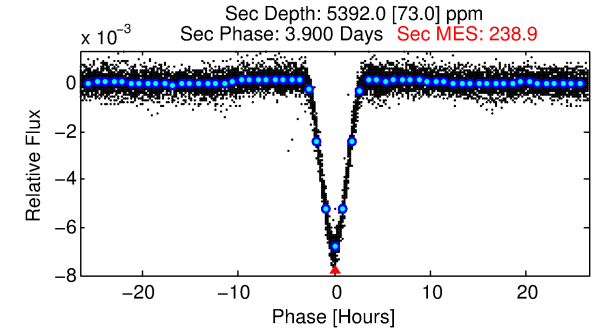
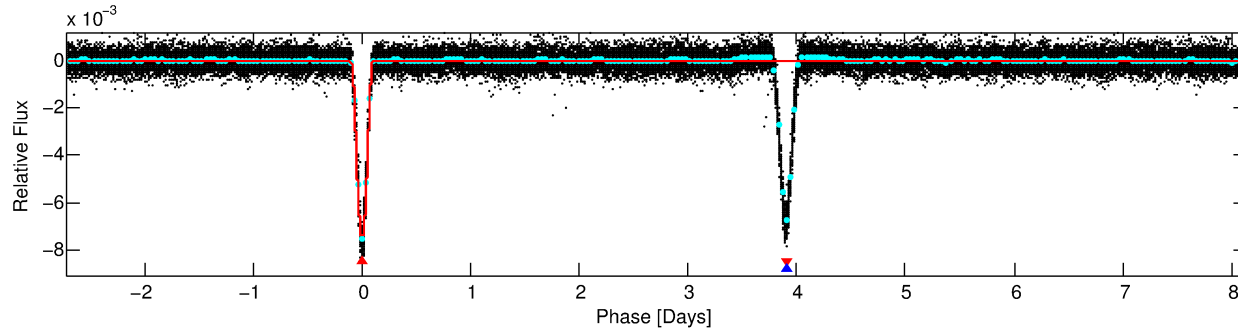
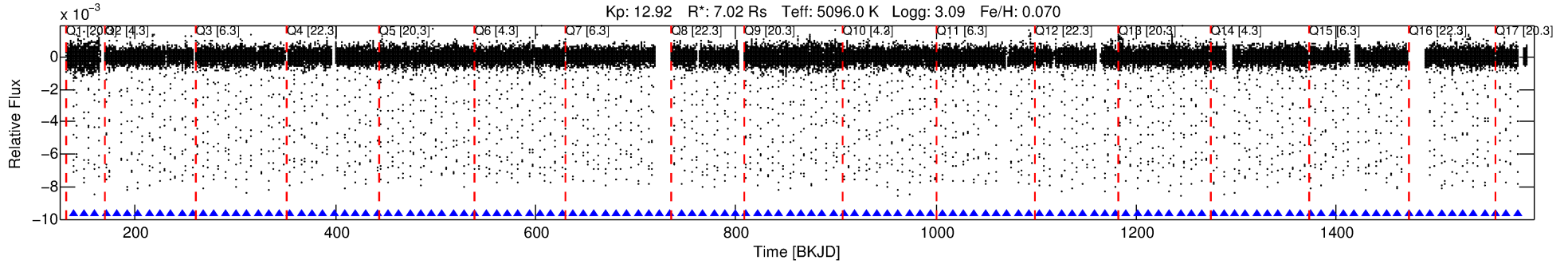
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005218014-01

No Significant Match Found

DV One-Page Summary

KIC: 5218014 Candidate: 1 of 2 Period: 10.845 d
KOI: K06544.01 Corr: 0.997



DV Fit Results:

Period = 10.84530 [0.00000] d
Epoch = 138.3340 [0.0003] BKJD
Rp/R* = 0.1487 [0.0122]
a/R* = 10.65 [0.13]
b = 1.00 [0.03]
Seff = 1896.00 [832.86]
Teq = 1683 [185] K
Rp = 113.95 [44.02] Re
a = 0.1254 [0.0382] AU
Ag = 3.59 [1.64] [1.58 σ]
Teffp = 3581 [176] K [7.45 σ]

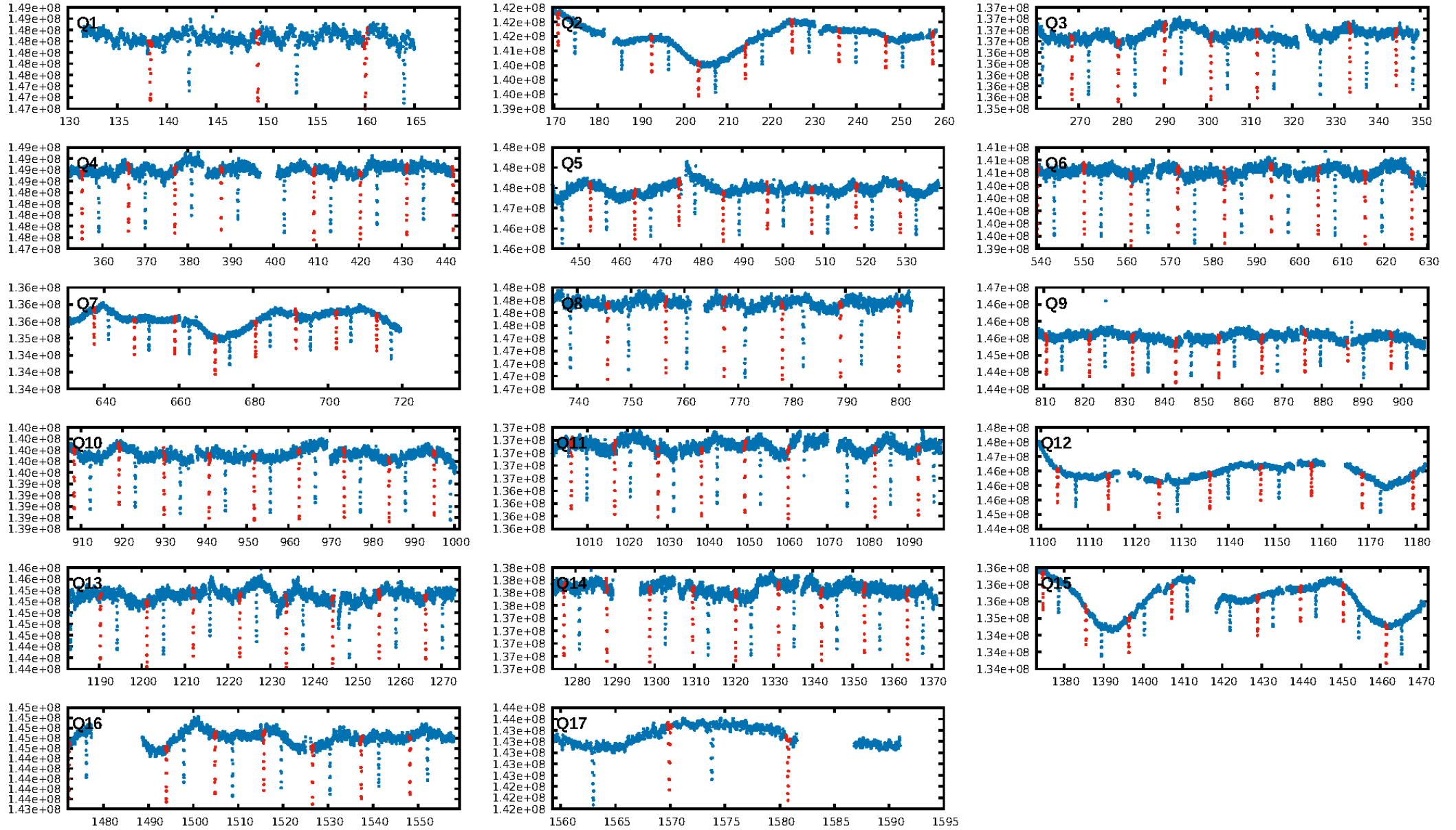
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.0%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [119/119]
GhostDiagnostic-chr: 3.552
Centroid-sig: 0.0%
Centroid-so: 0.456 arcsec [25.24 σ]
OotOffset-rm: 0.360 arcsec [5.14 σ]
KicOffset-rm: 0.521 arcsec [7.47 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]

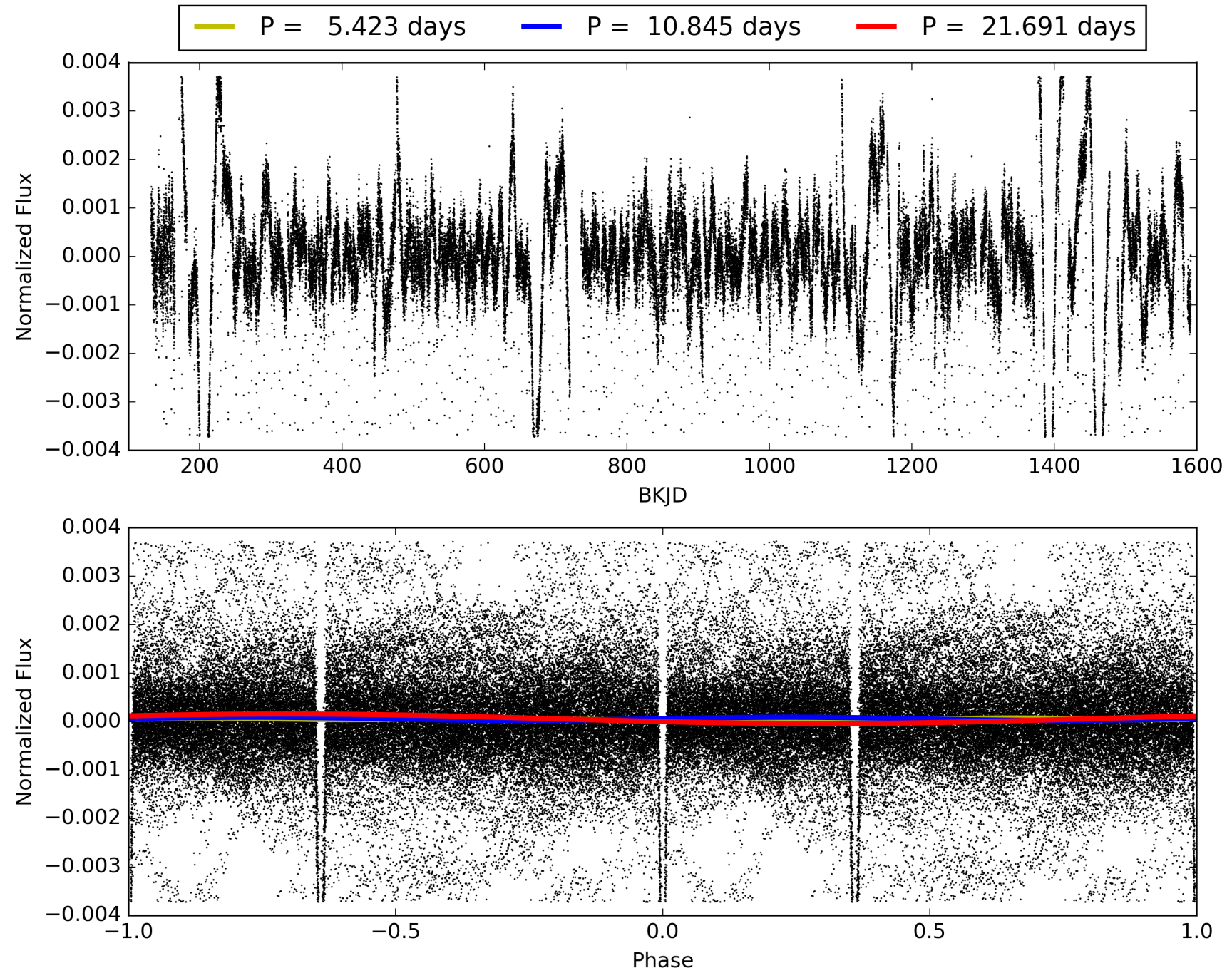
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:53:53 Z

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

TCE 005218014-01, PDC Light Curves

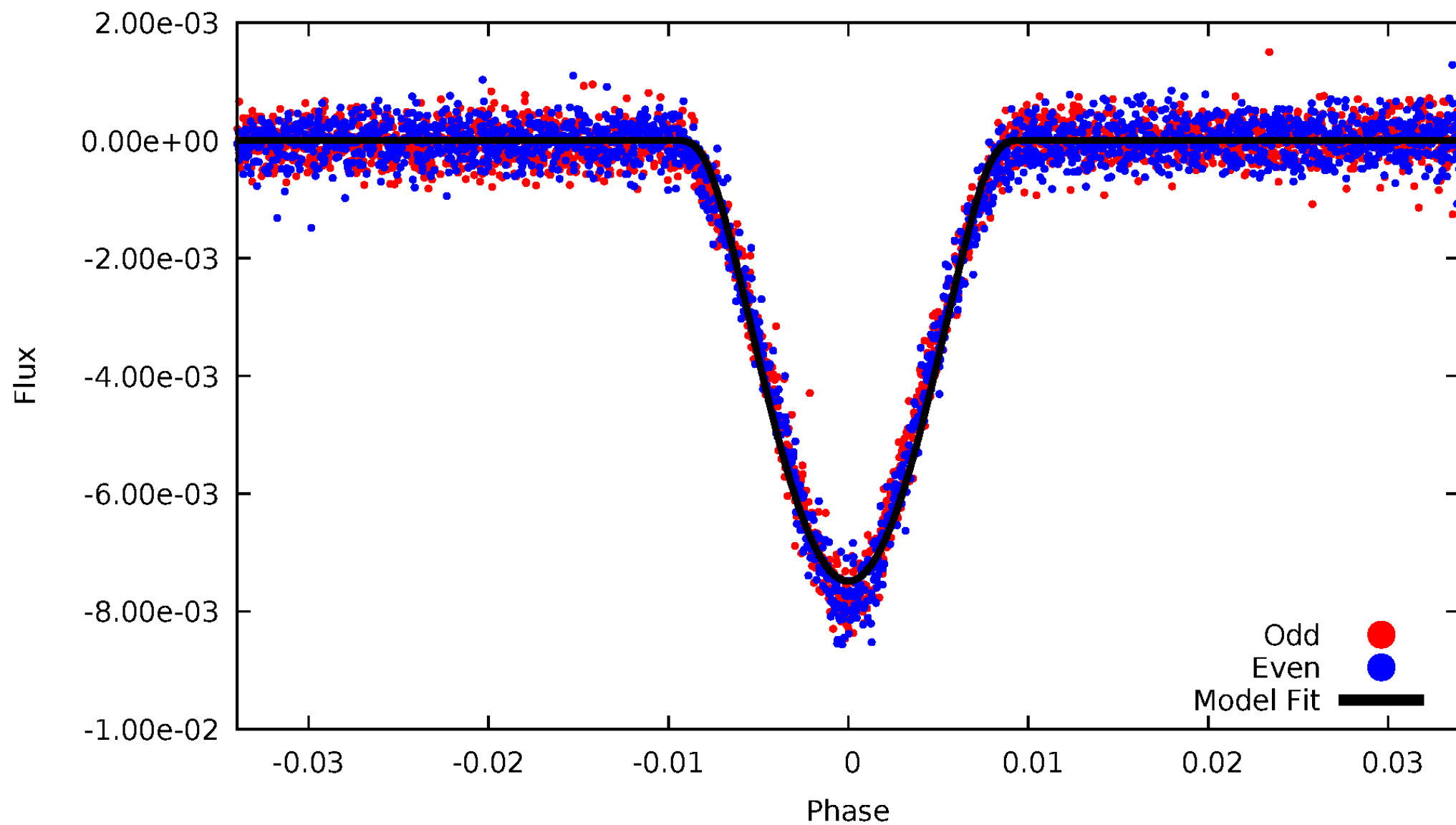


TCE 005218014-01



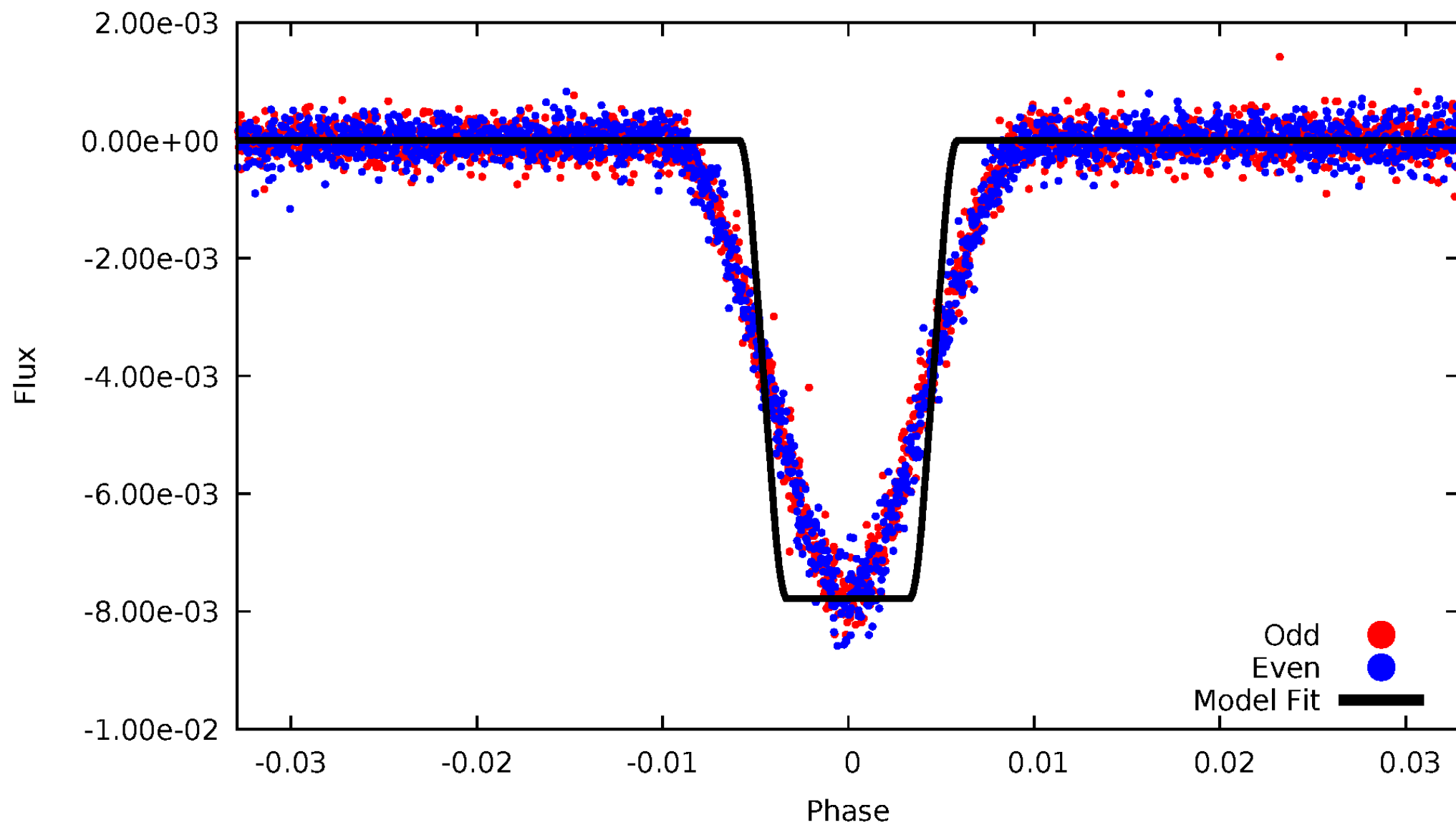
DV Odd/Even

TCE 005218014-01



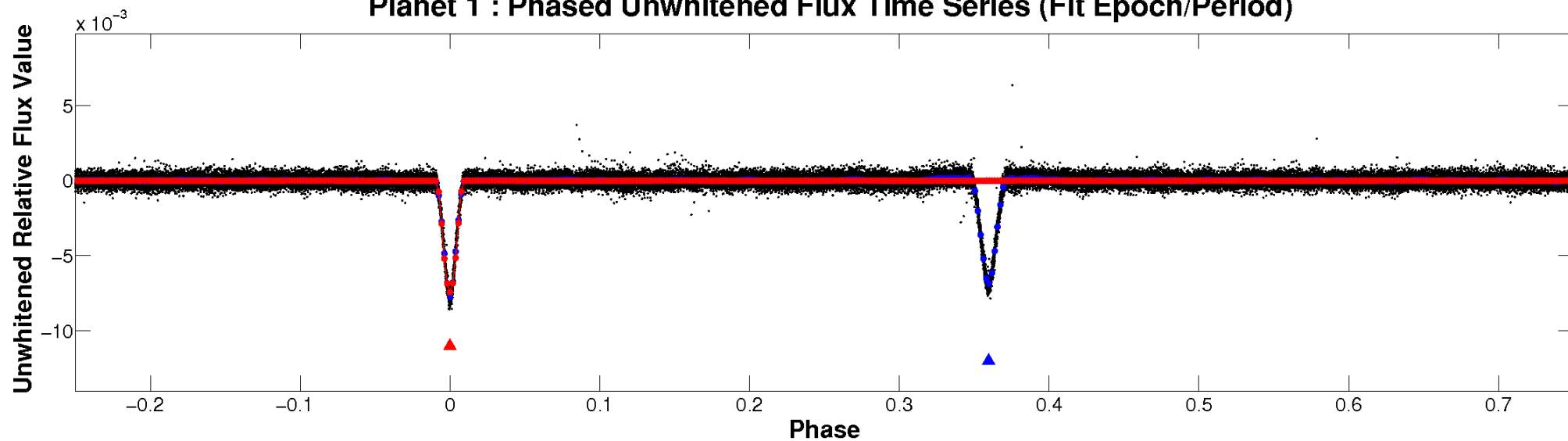
ALT Odd/Even

TCE 005218014-01

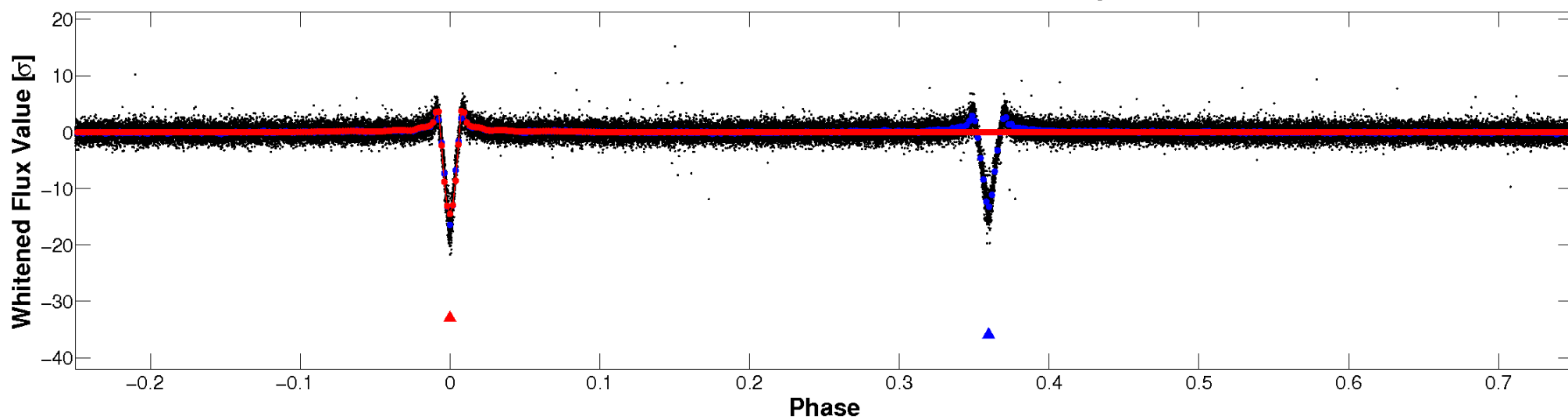


Non-Whitened Vs. Whitened Light Curve

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

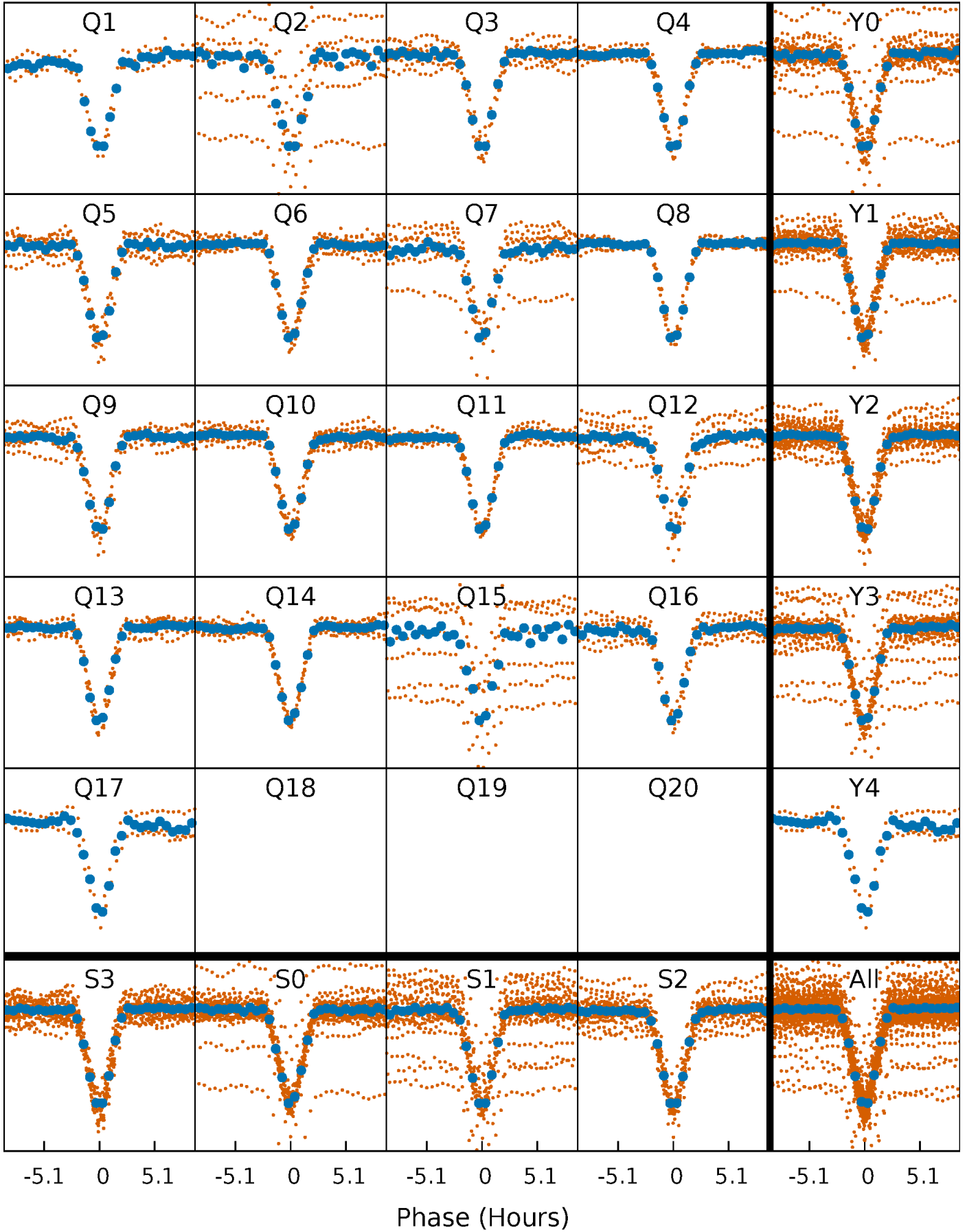


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



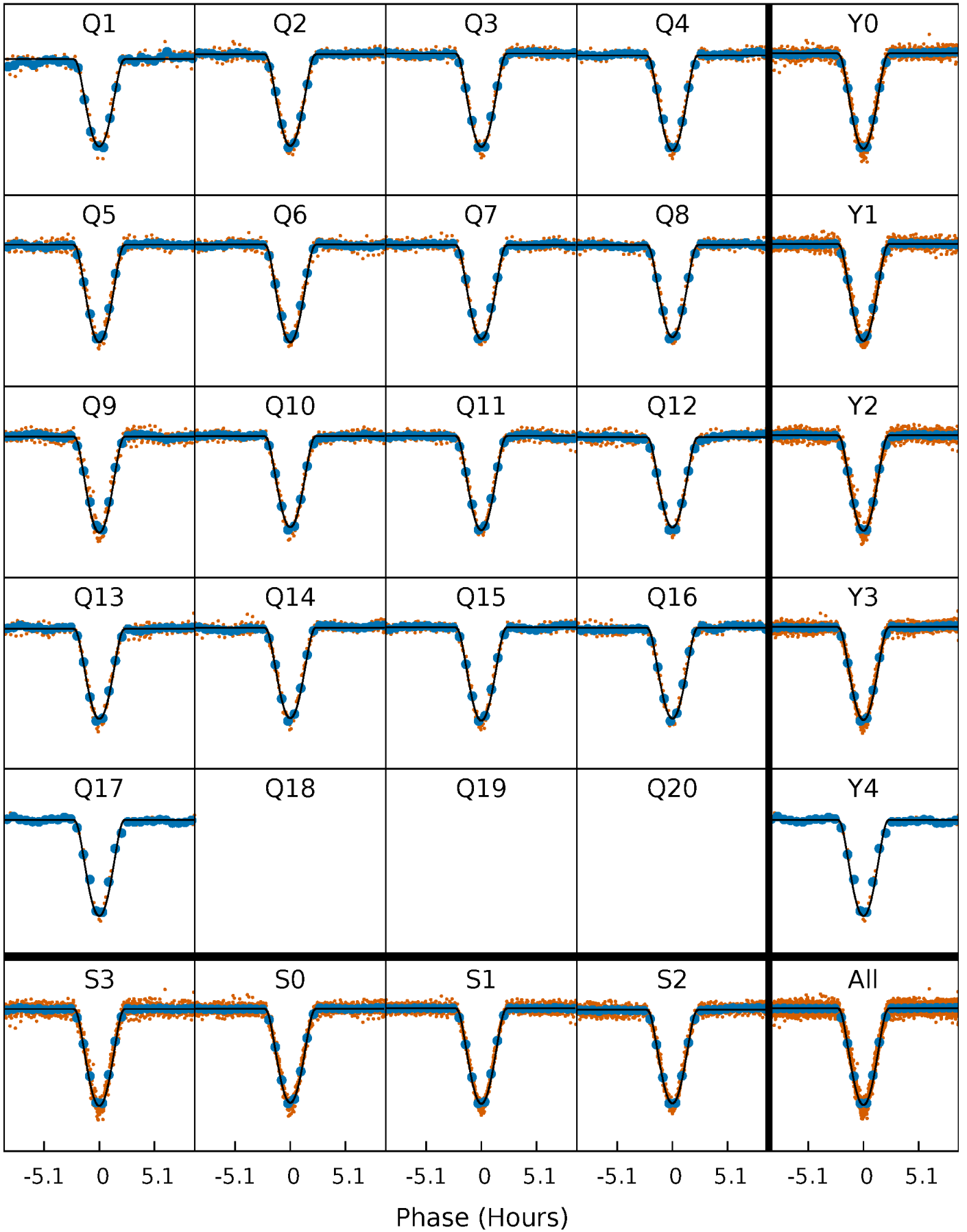
PDC Quarter-Phased Transit Curves

TCE 005218014-01 P= 10.845296 Days $T_0=138.333991$ (BKJD)



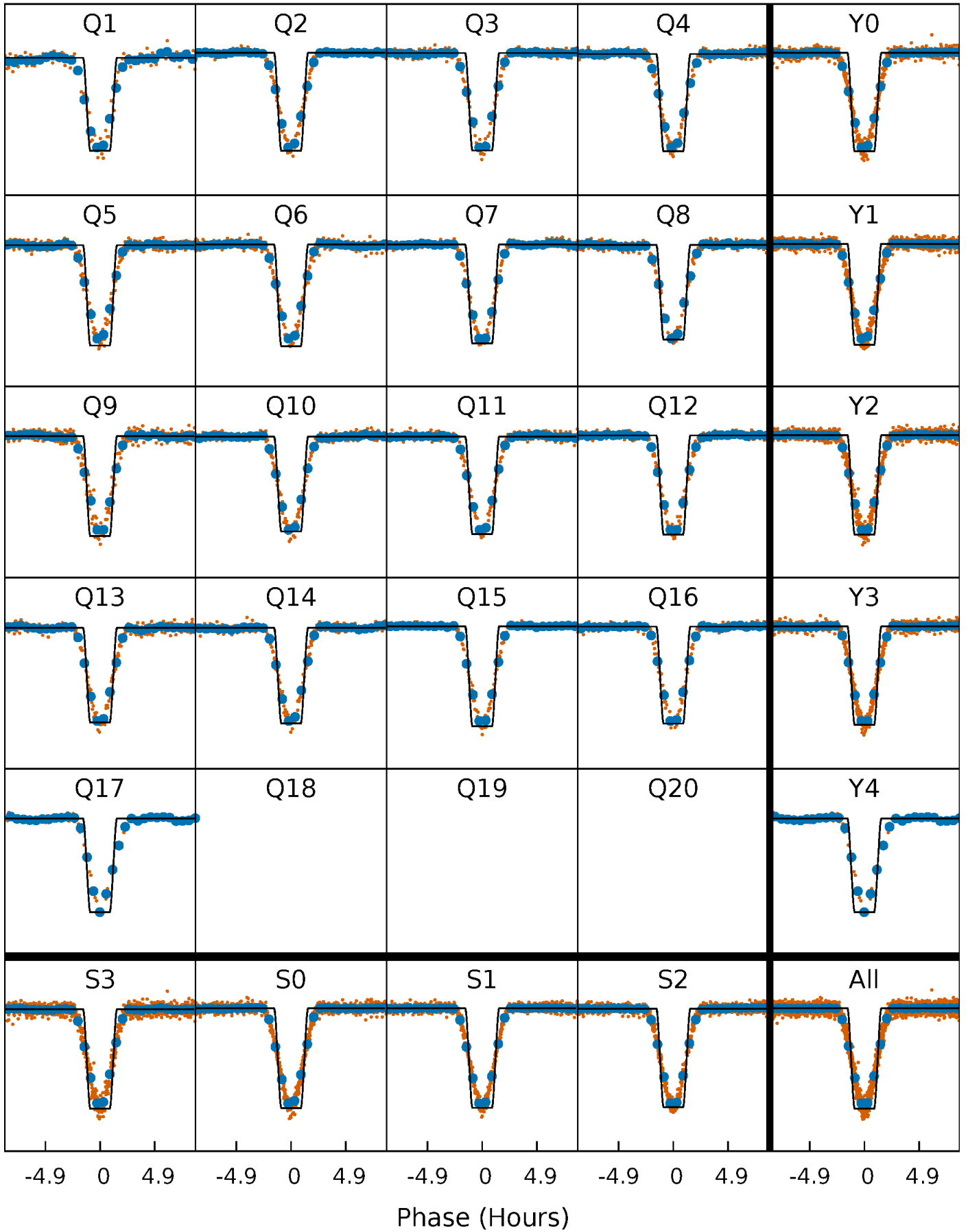
DV Quarter-Phased Transit Curves

TCE 005218014-01 P= 10.845296 Days $T_0=138.333991$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

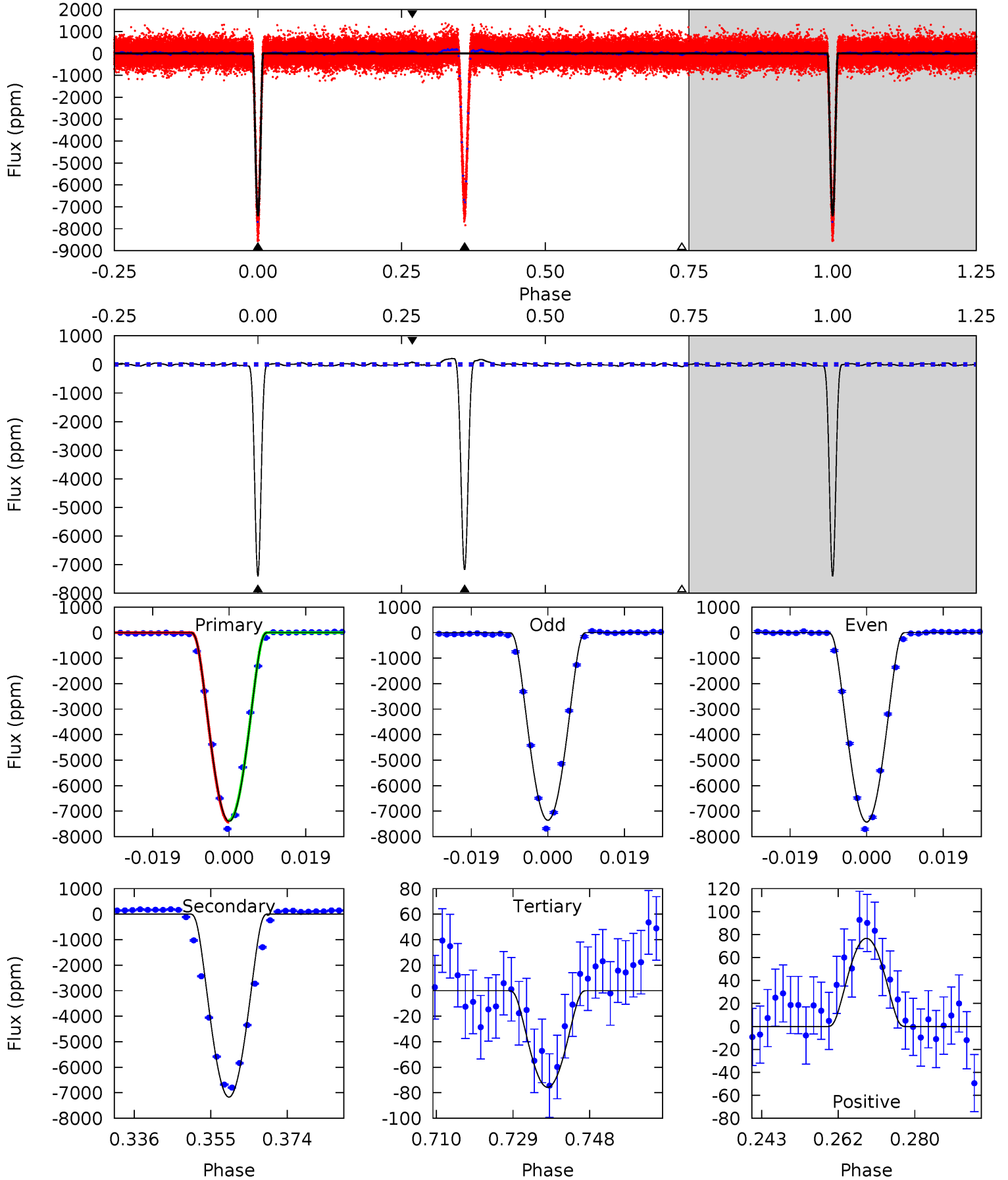
TCE 005218014-01 P= 10.845263 Days $T_0=138.336040$ (BKJD)



DV Model-Shift Uniqueness Test

005218014-01, P = 10.845296 Days, E = 127.488695 Days

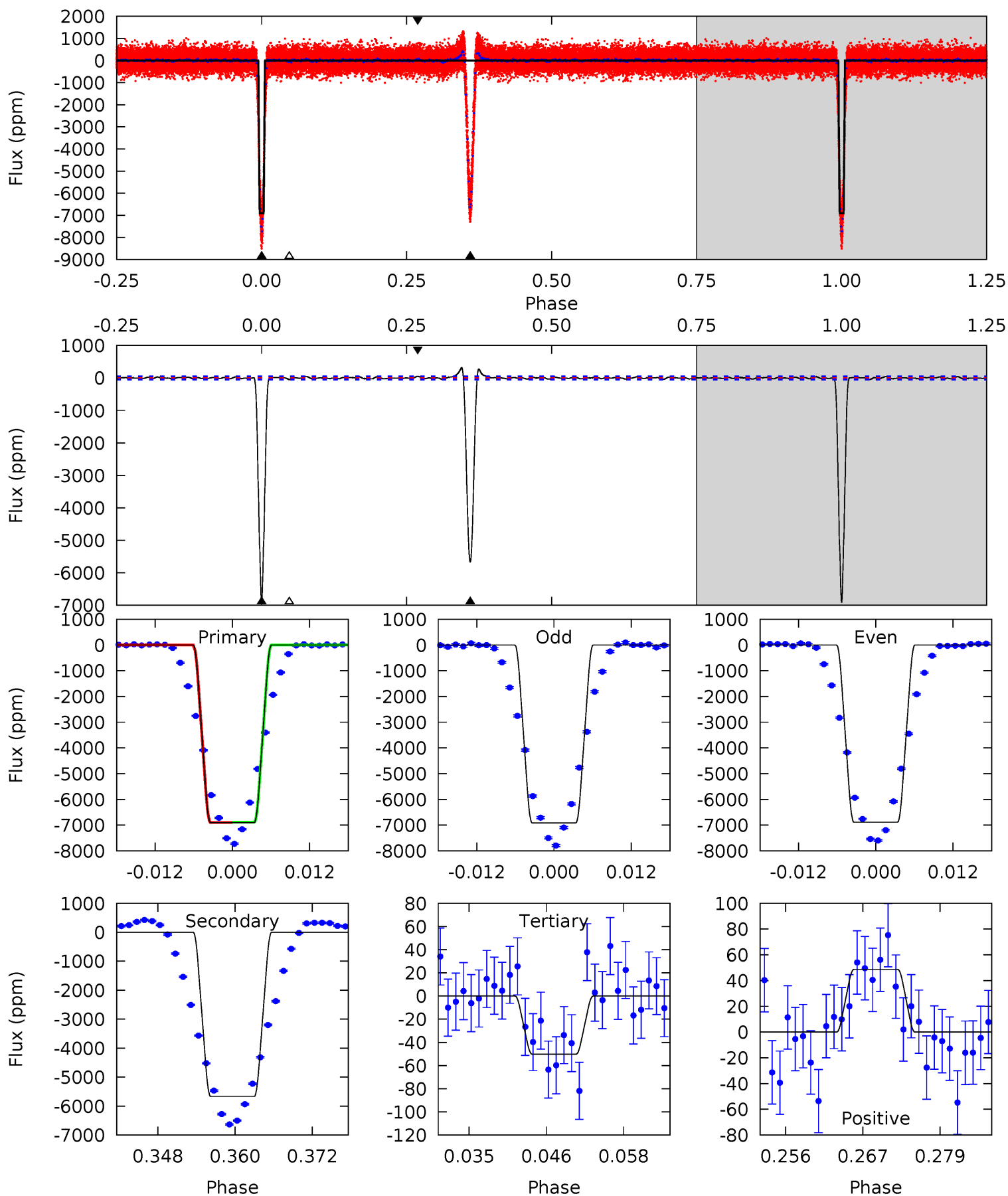
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
838.3	812.7	8.58	8.70	4.90	2.35	5.01	829.7	829.6	804.1	804.0	3.98	1.00	0.03	4.10



Alt Model-Shift Uniqueness Test

005218014-01, P = 10.845263 Days, E = 127.490777 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
702.5	576.7	5.12	4.95	5.00	2.52	3.63	697.4	697.6	571.6	571.8	1.34	1.00	0.04	0.21



Stellar Parameters For KIC 005218014

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5096^{+53}_{-136}	$3.094^{+0.224}_{-0.096}$	$0.070^{+0.100}_{-0.200}$	$7.023^{+1.767}_{-2.651}$	$2.233^{+0.469}_{-0.870}$	$0.009^{+0.015}_{-0.003}$
	+1%/-3%	+7%/-3%	+143%/-286%	+25%/-38%	+21%/-39%	+164%/-32%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005218014-01 / KOI 6544.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7168 ± 9	$109.45^{+20.09}_{-22.92}$	2289^{+140}_{-182}	4034^{+141}_{-130}	$5.307^{+2.376}_{-1.324}$
Alt.	-5667 ± 10	$65.14^{+13.78}_{-14.88}$	2296^{+119}_{-168}	4718^{+313}_{-257}	12^{+6}_{-4}

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

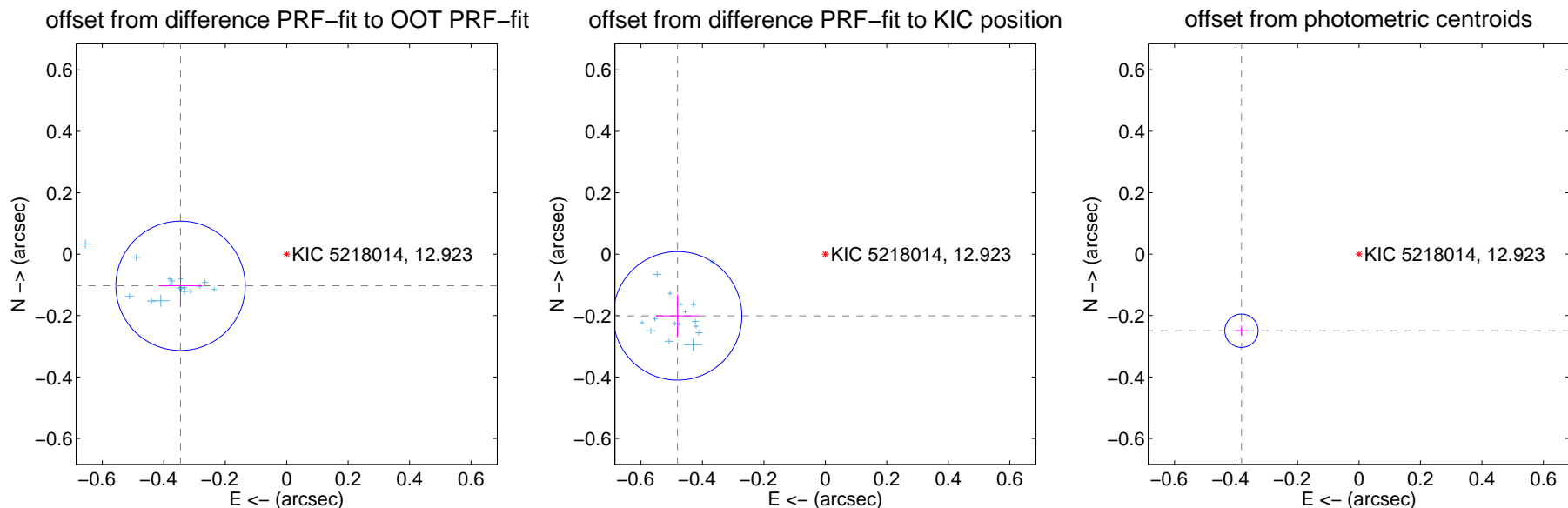
DV Centroid Data

Supplemental centroid analysis for 005218014-01. Kepler magnitude: 12.92. Transit SNR 281.26

There are 17 quarters with good PRF difference image offsets

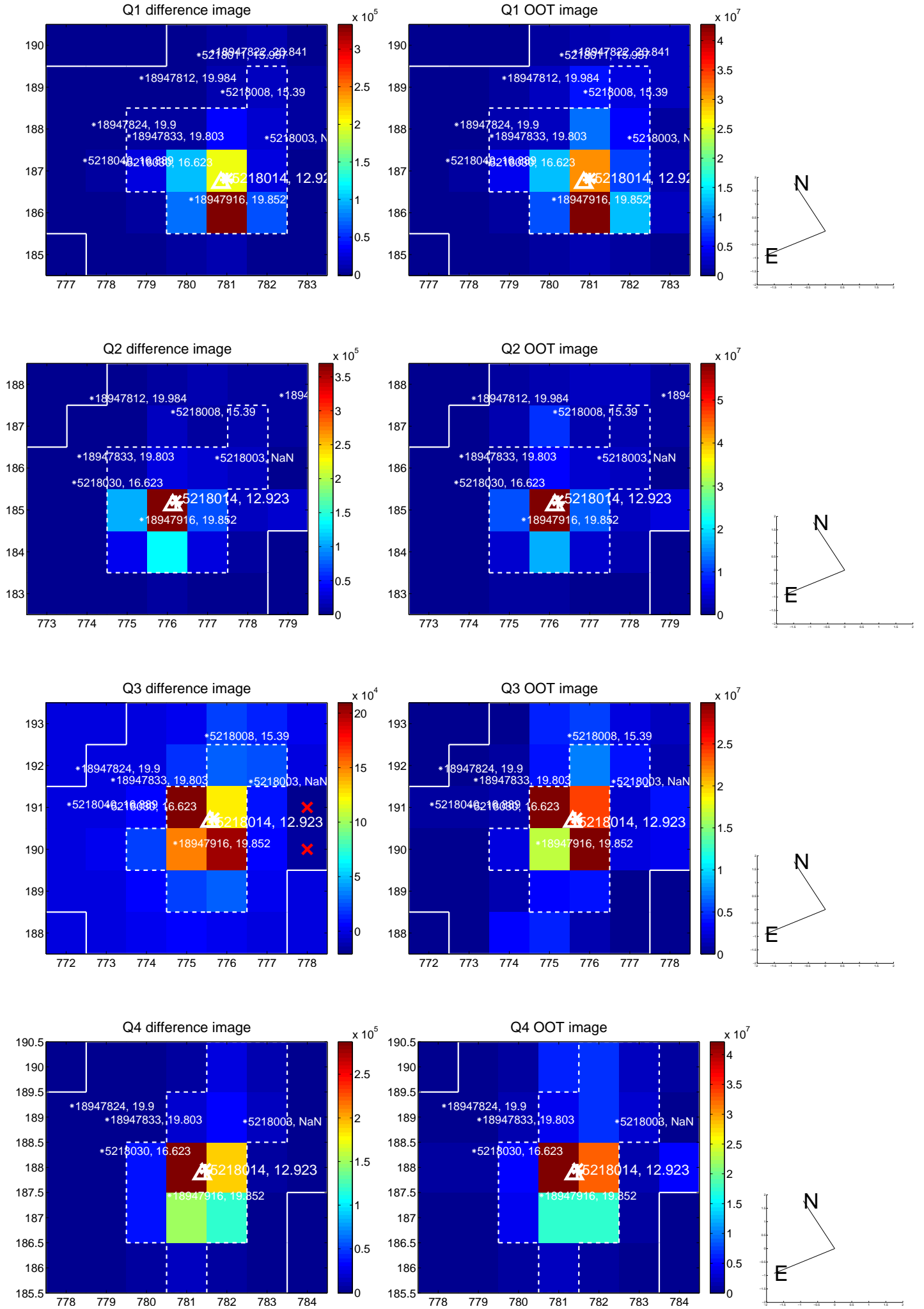
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.360 ± 0.070	5.14	0.345 ± 0.071	-0.103 ± 0.068
PRF-fit source offset from KIC position	0.521 ± 0.070	7.47	0.481 ± 0.070	-0.201 ± 0.069
photometric centroid source offset	0.46 ± 0.02	25.24	0.38 ± 0.02	-0.25 ± 0.02

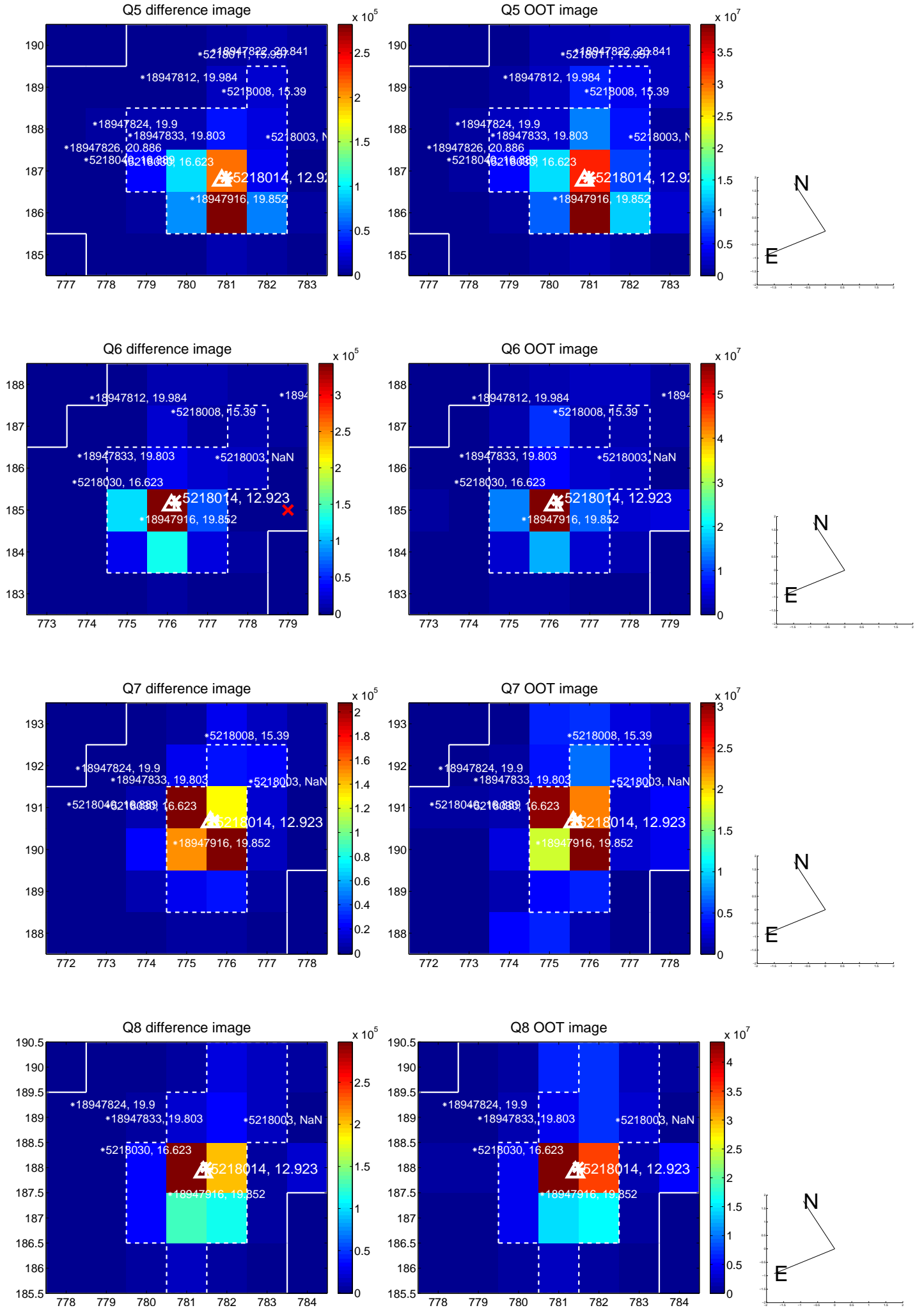


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

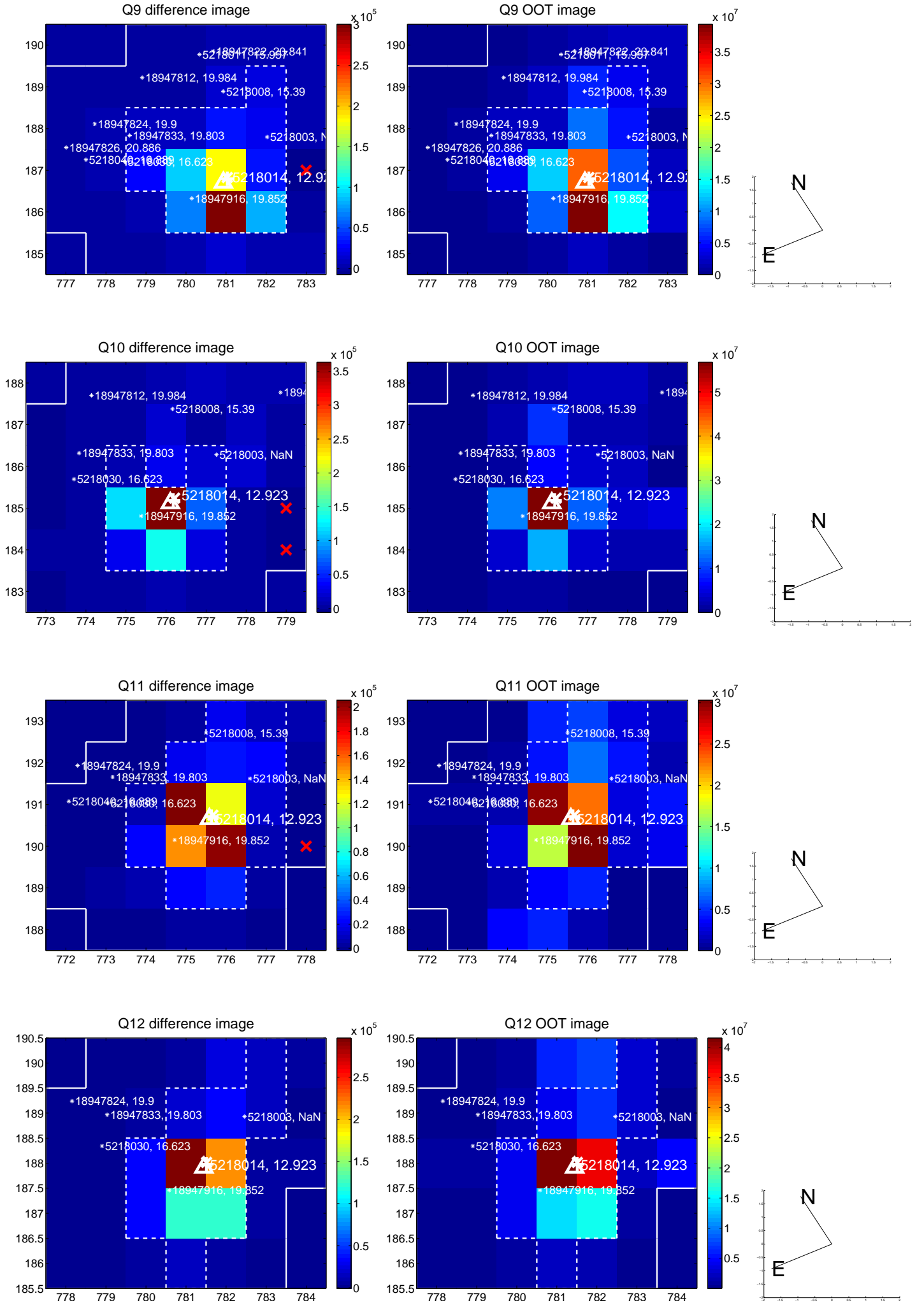
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



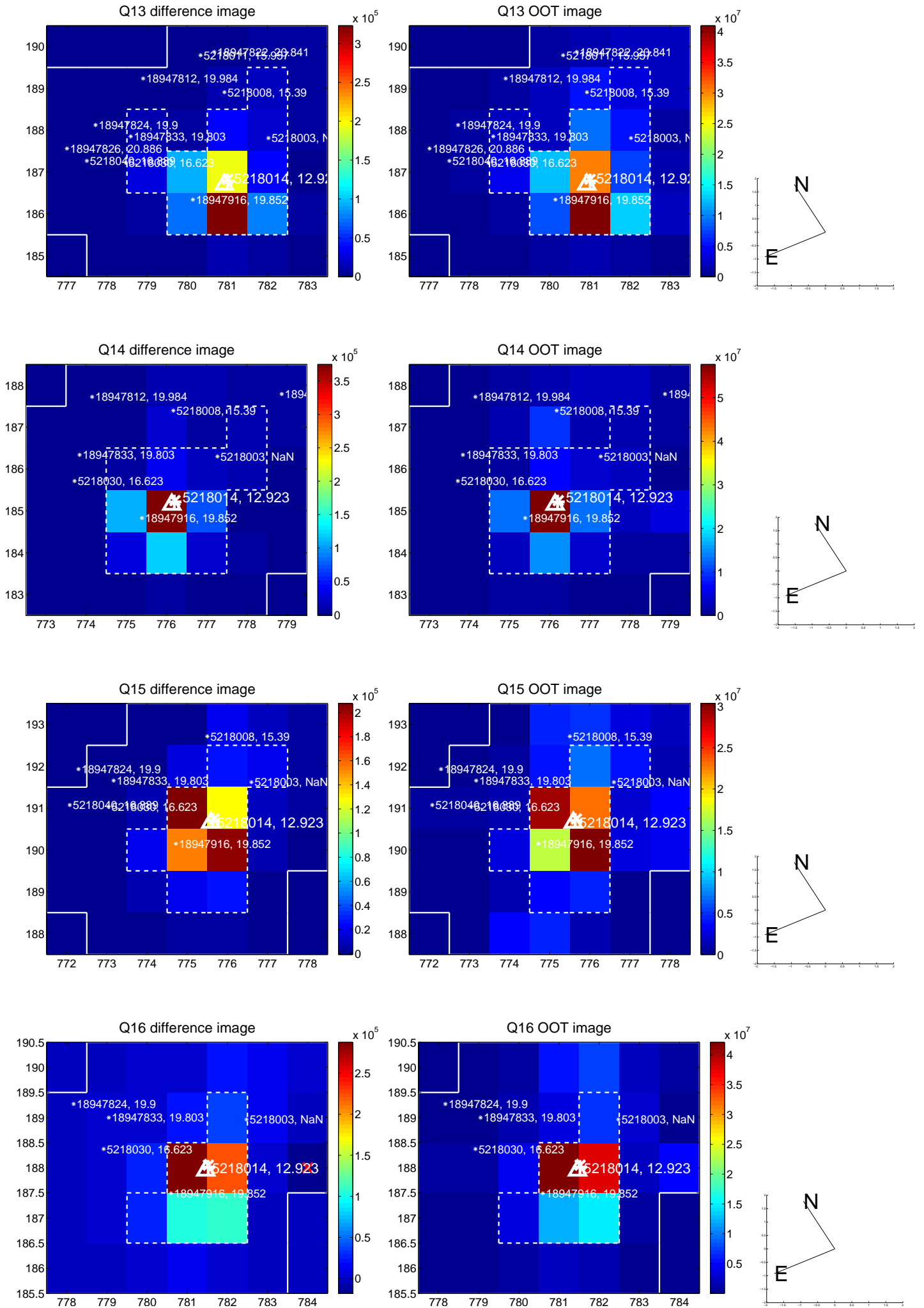
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



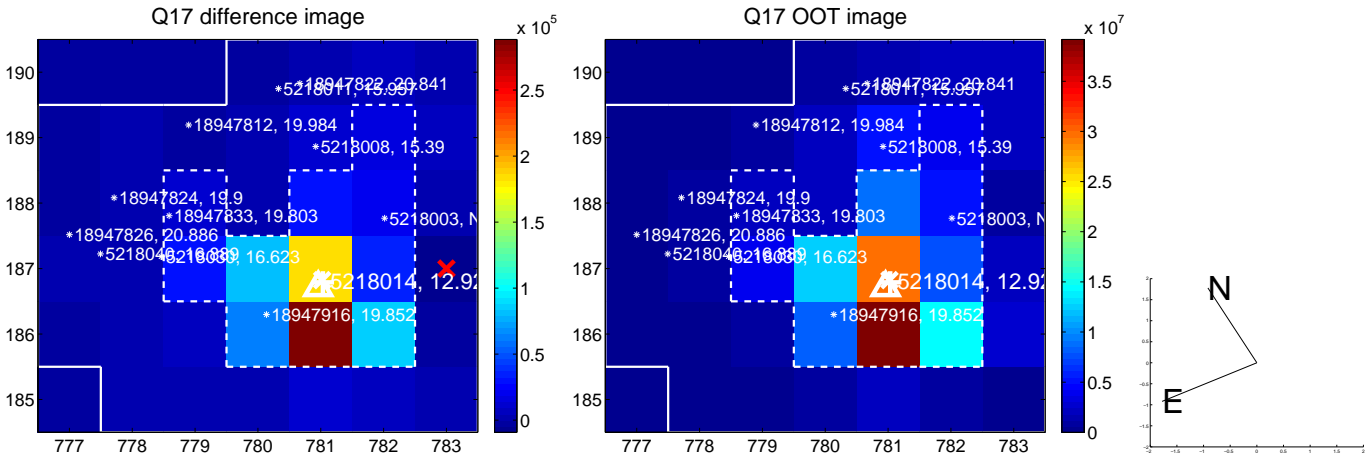
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



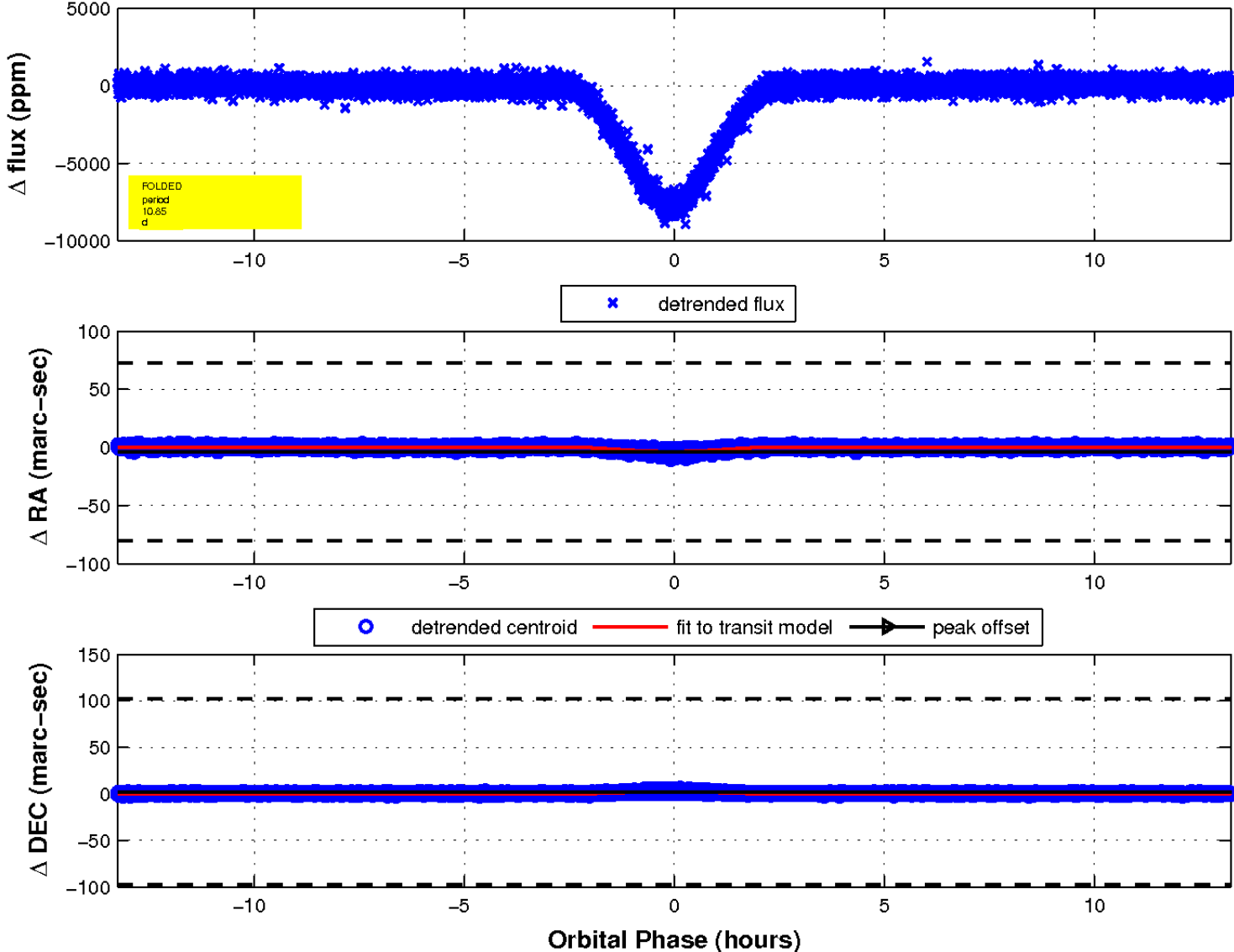
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

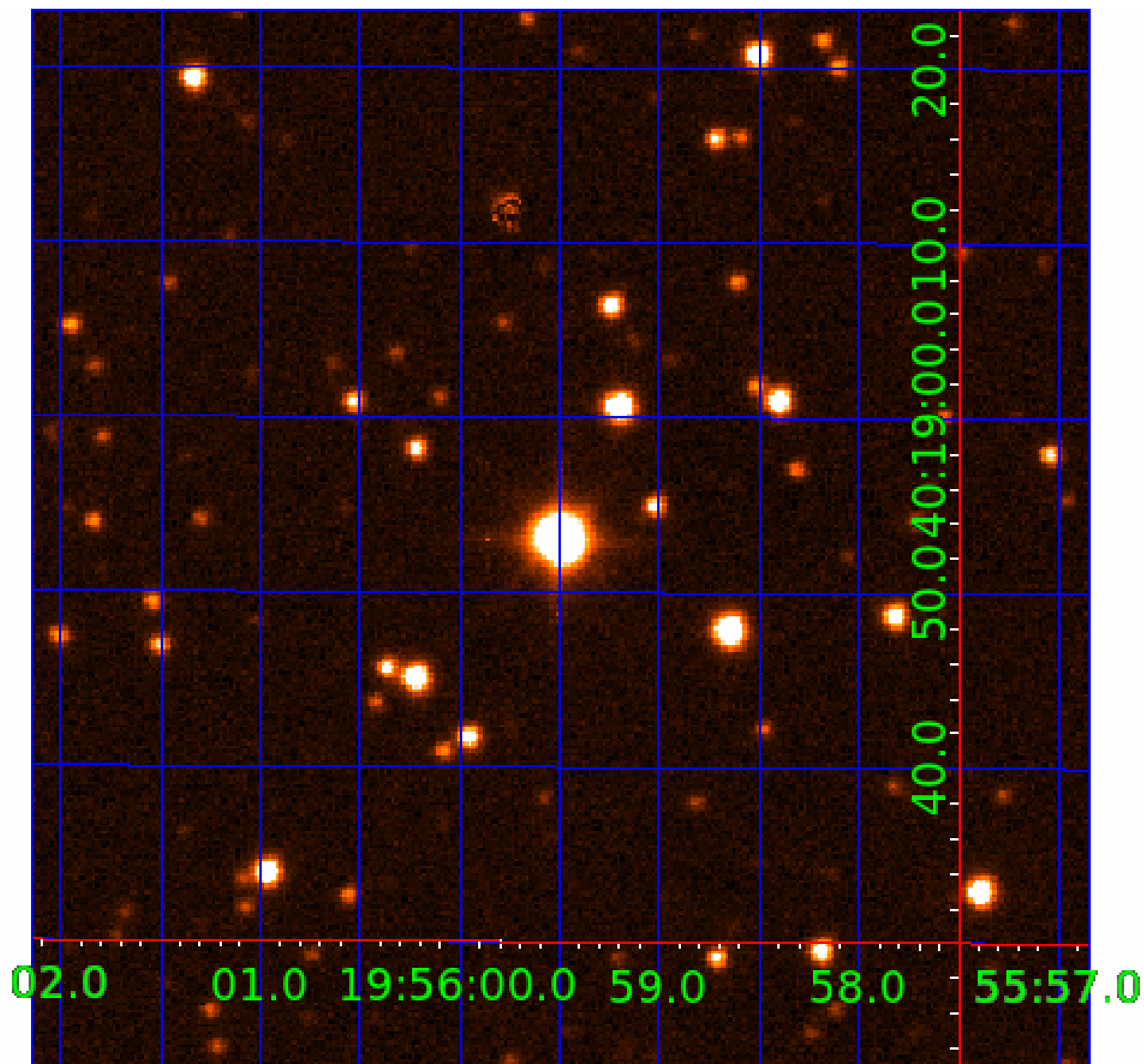


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005218014

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})
005218014-01	OBS	6544.01	10.845296	138.333991	7485.5	4.420	272.9	281.3	7.02	5096	113.95	1896.00
005218014-02	OBS	No	10.845286	142.234705	6667.1	5.333	244.8	258.5	7.02	5096	107.92	1896.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005218014-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005218014-02	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.

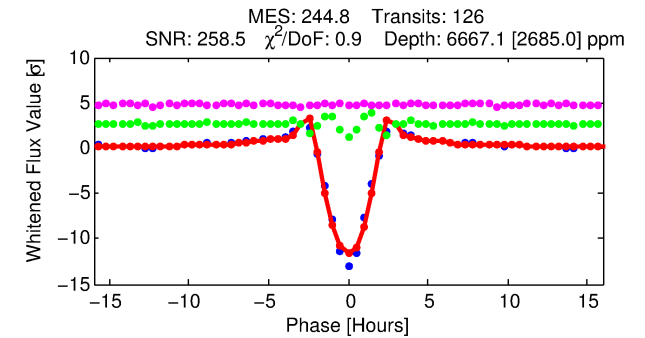
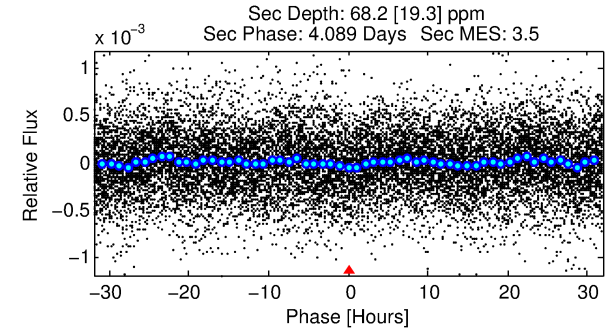
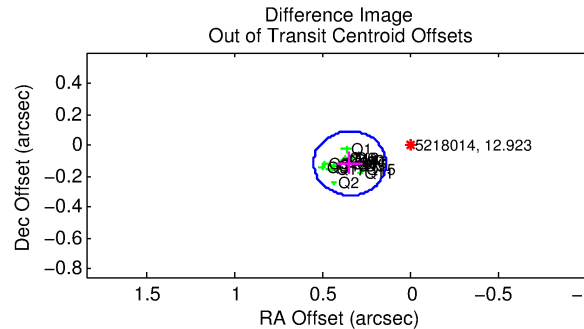
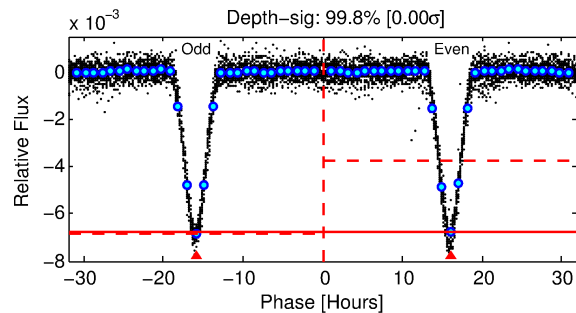
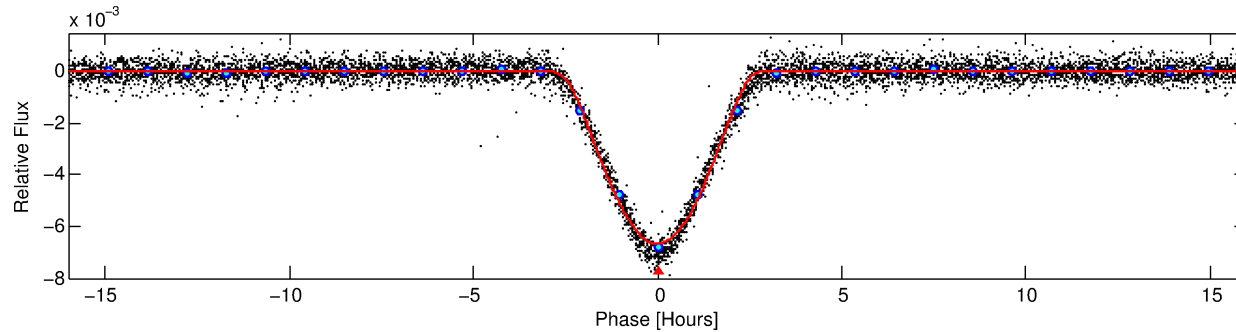
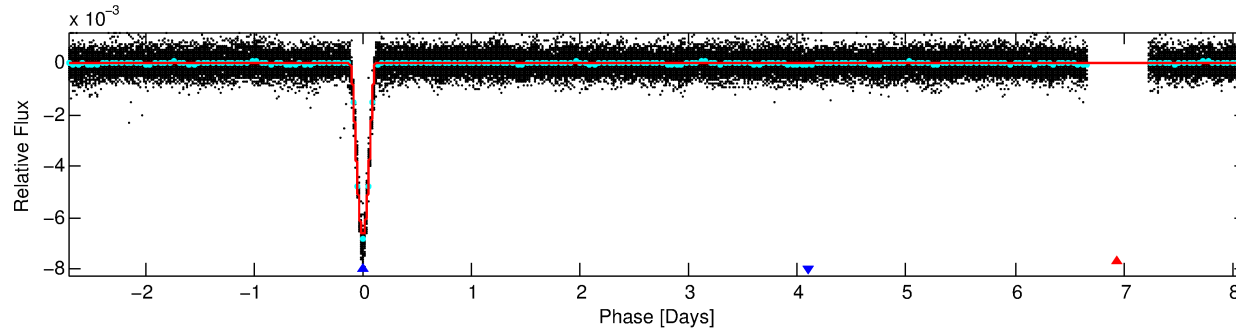
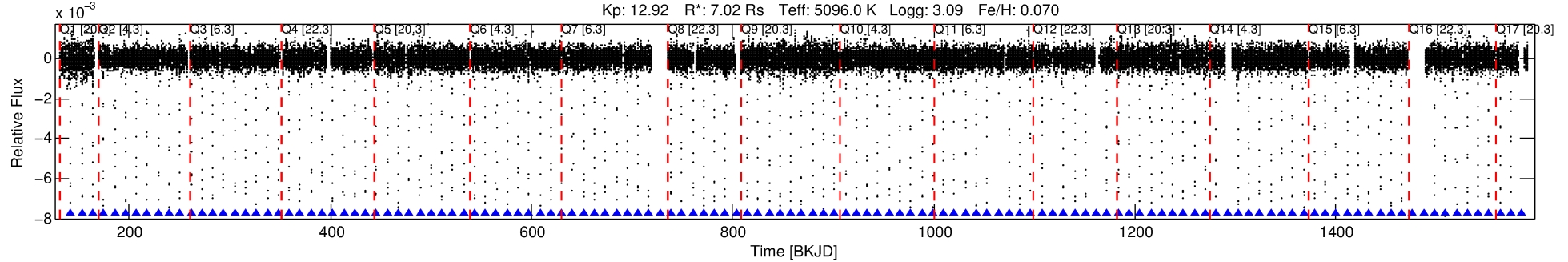
Ephemeris Match Information For 005218014-02

No Significant Match Found

DV One-Page Summary

KIC: 5218014 Candidate: 2 of 2 Period: 10.845 d
KOI: K06544 Corr: No Ephemeris Match

Kp: 12.92 R*: 7.02 Rs Teff: 5096.0 K Logg: 3.09 Fe/H: 0.070



DV Fit Results:

Period = 10.84529 [0.00000] d
Epoch = 142.2347 [0.0003] BKJD
Rp/R* = 0.1408 [0.0118]
a/R* = 8.59 [0.11]
b = 1.00 [0.05]
Seff = 1896.00 [832.86]
Teq = 1683 [185] K
Rp = 107.93 [41.73] Re
a = 0.1254 [0.0382] AU
Ag = 0.05 [0.03] [-34.84σ]
Teffp = 1234 [107] K [-2.10σ]

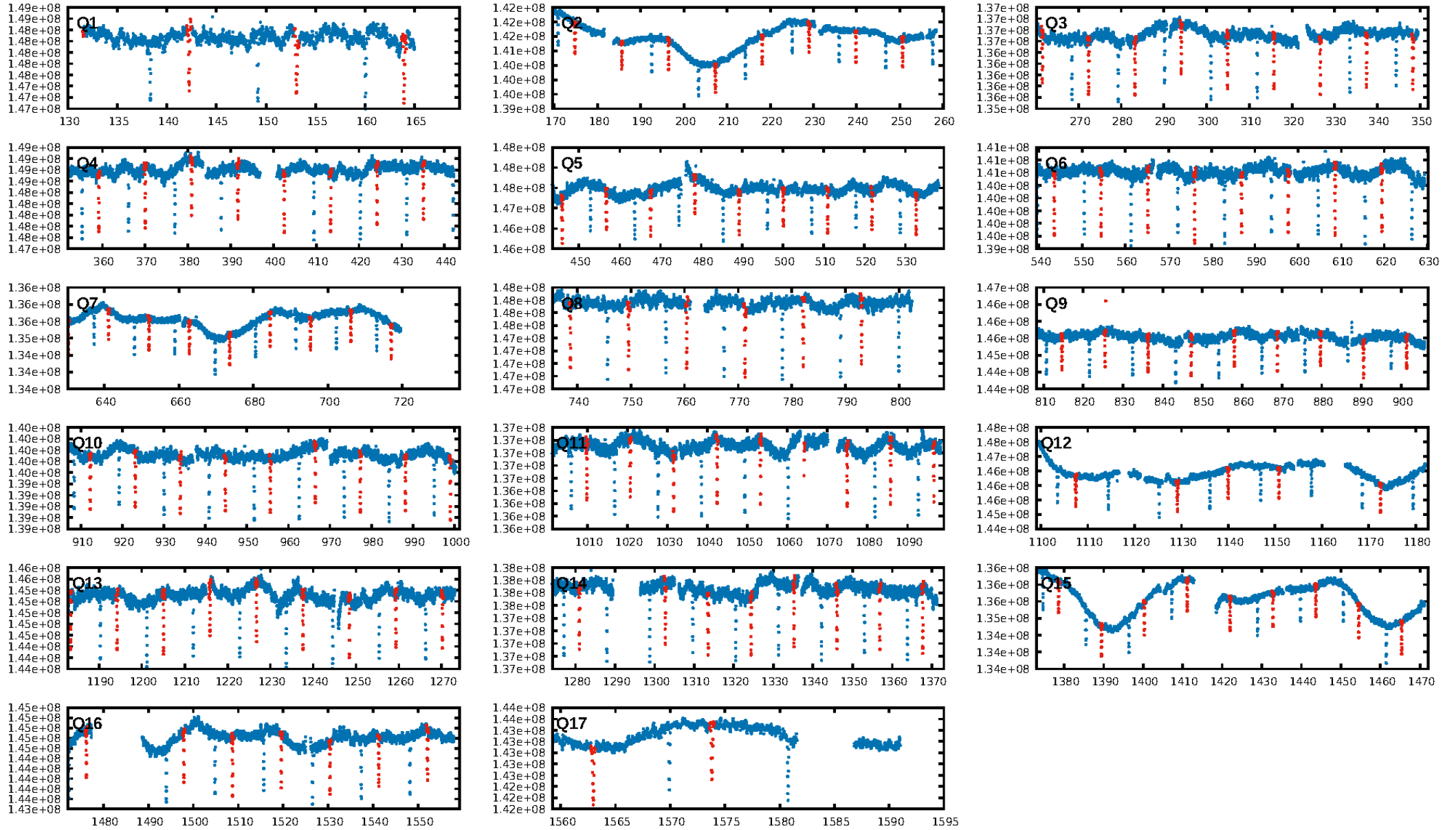
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 98.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [121/121]
GhostDiagnostic-chr: 3.625
Centroid-sig: 0.0%
Centroid-so: 0.458 arcsec [24.60σ]
OotOffset-rm: 0.366 arcsec [5.31σ]
KicOffset-rm: 0.527 arcsec [7.70σ]
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]

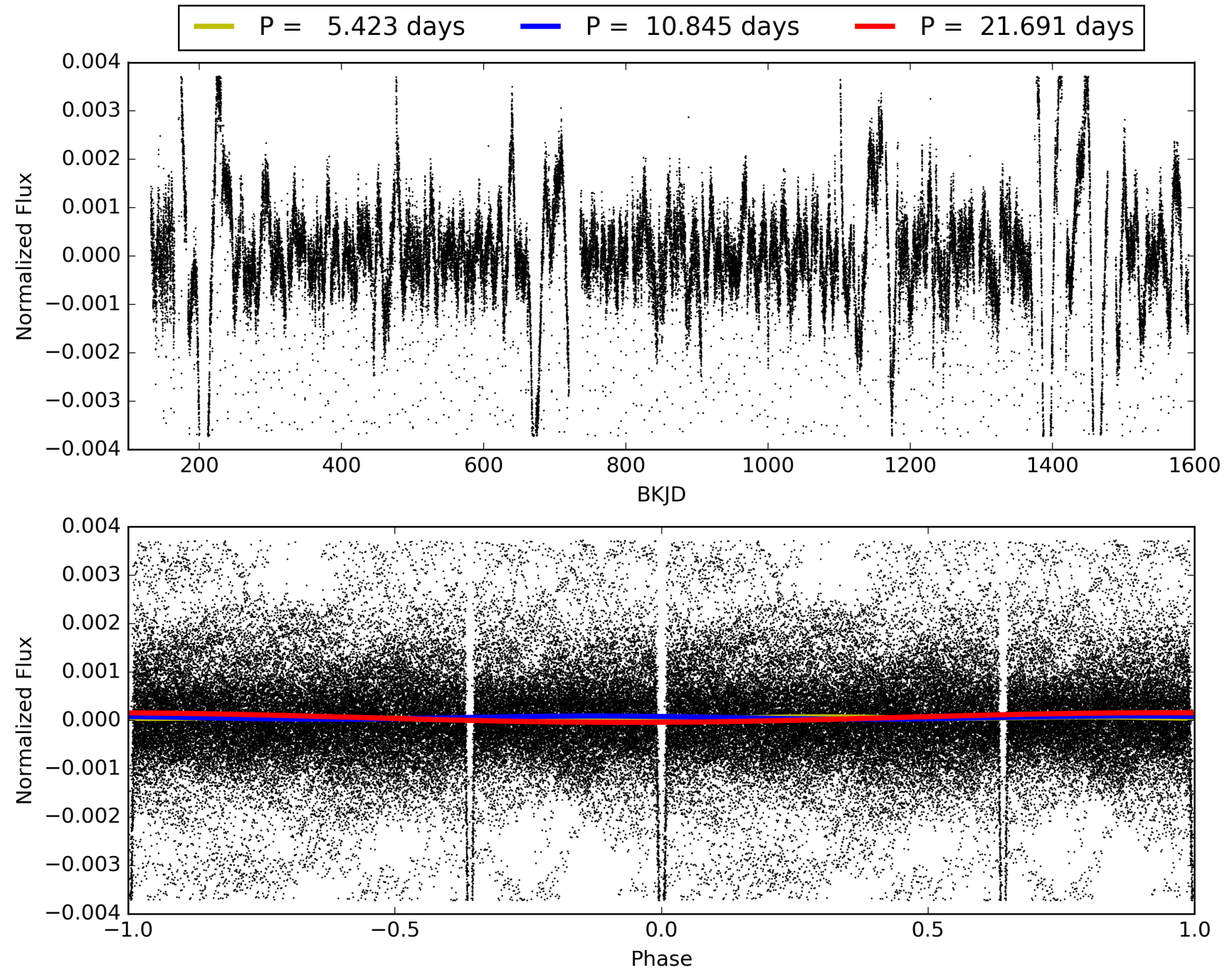
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:53:59 Z

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

TCE 005218014-02, PDC Light Curves

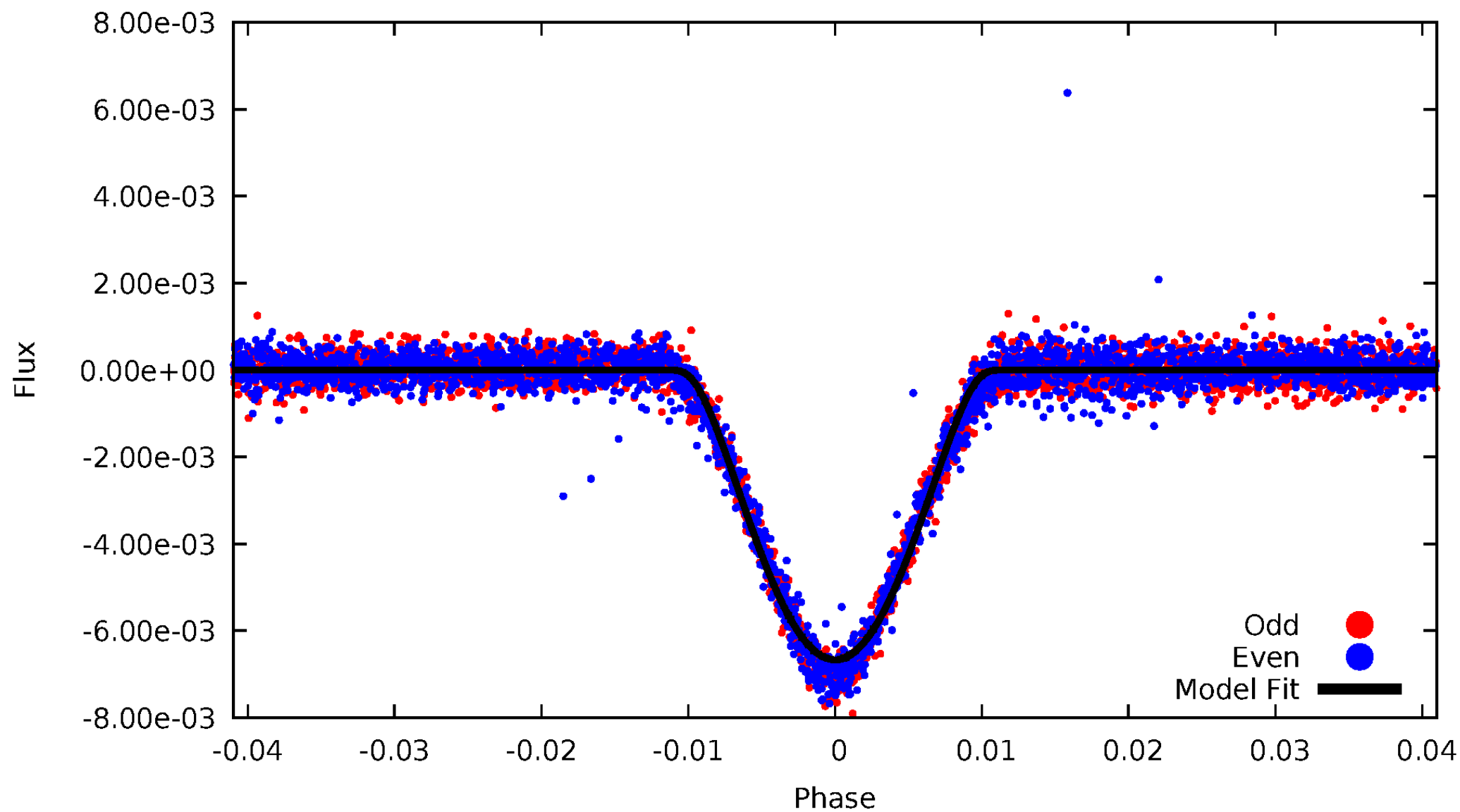


TCE 005218014-02



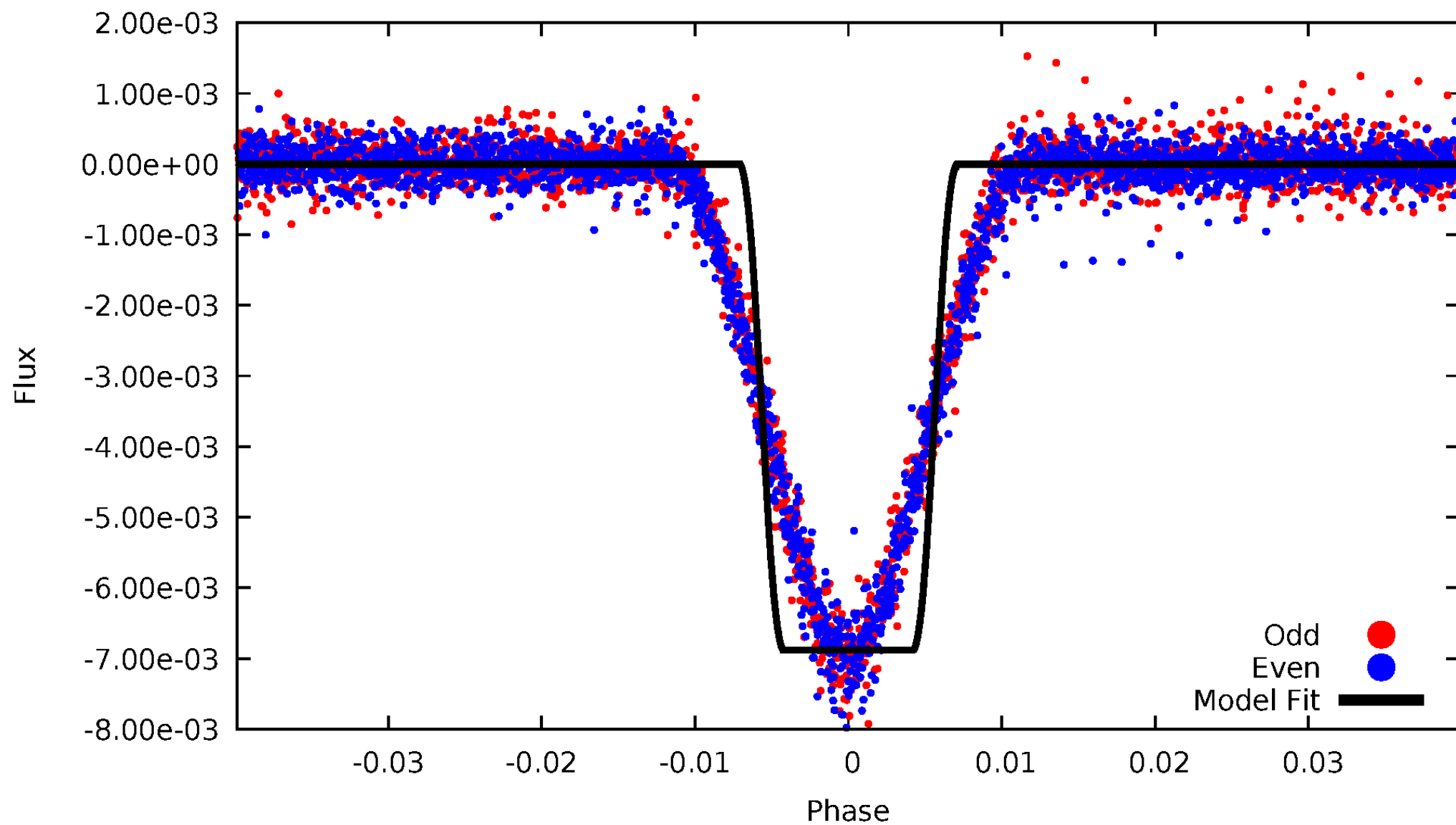
DV Odd/Even

TCE 005218014-02



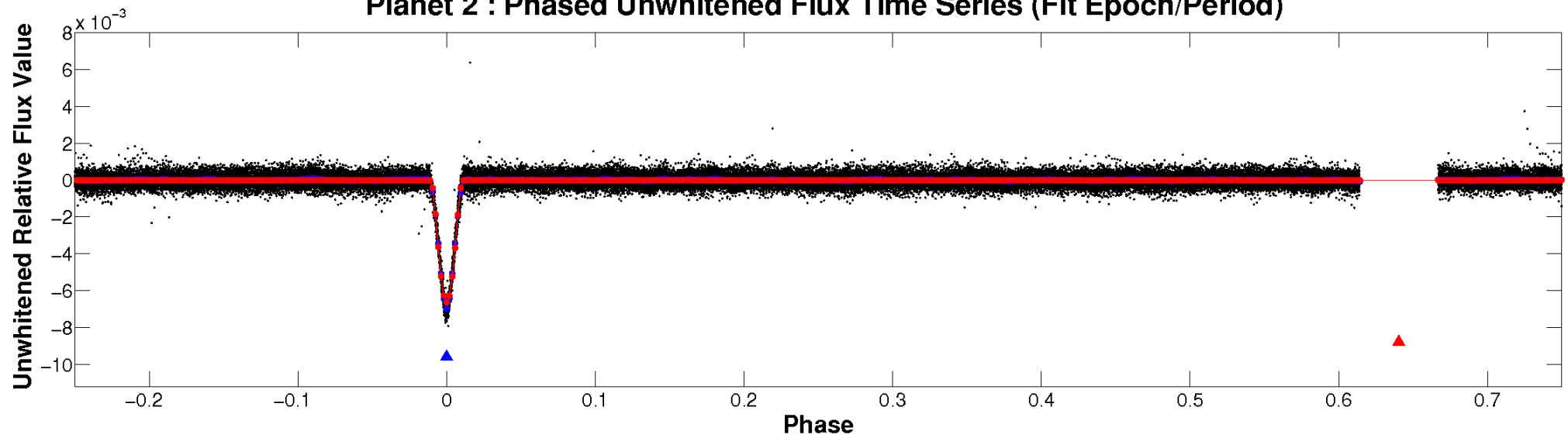
ALT Odd/Even

TCE 005218014-02

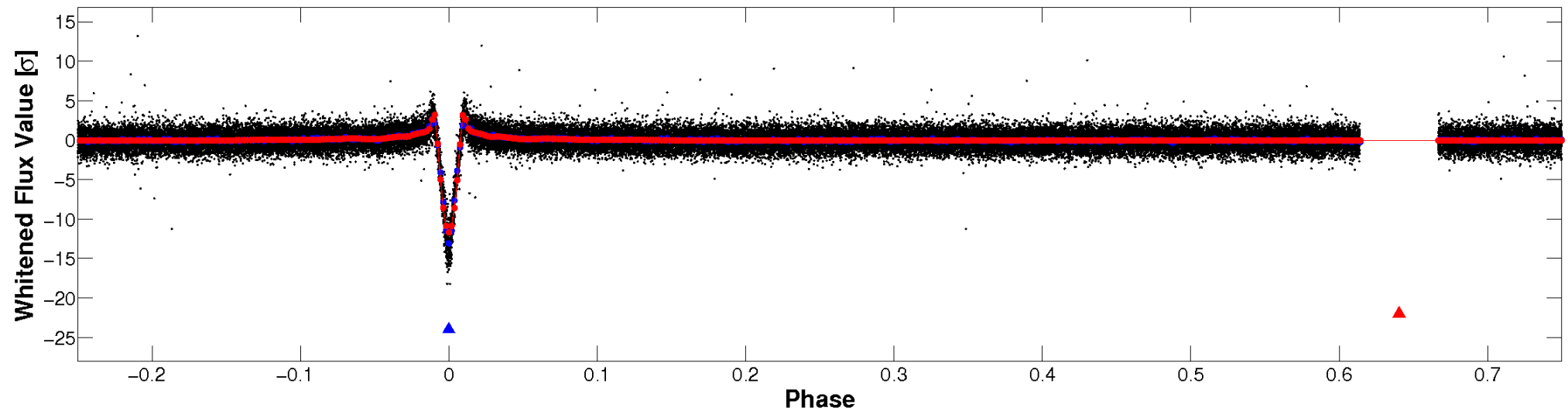


Non-Whitened Vs. Whitened Light Curve

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

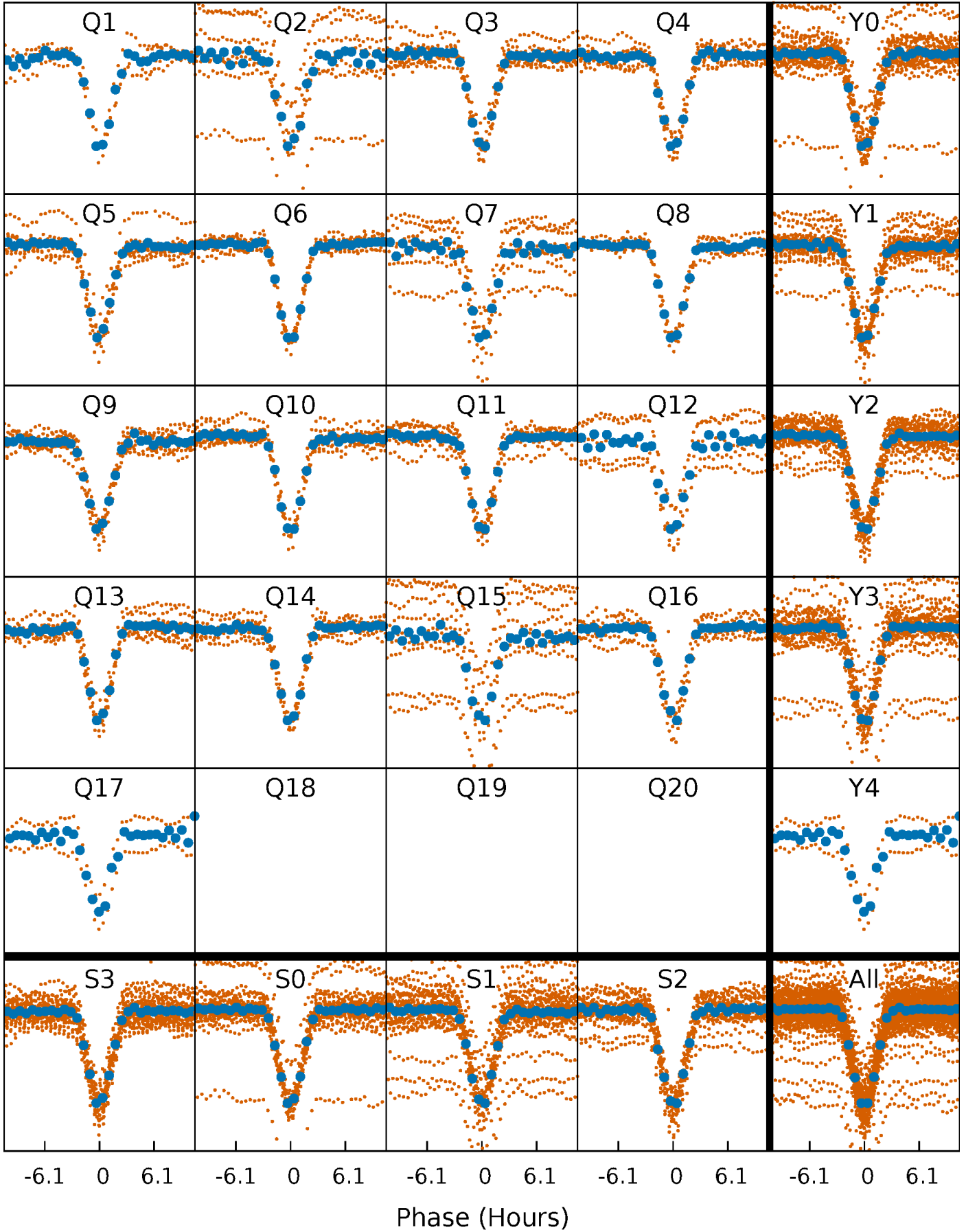


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



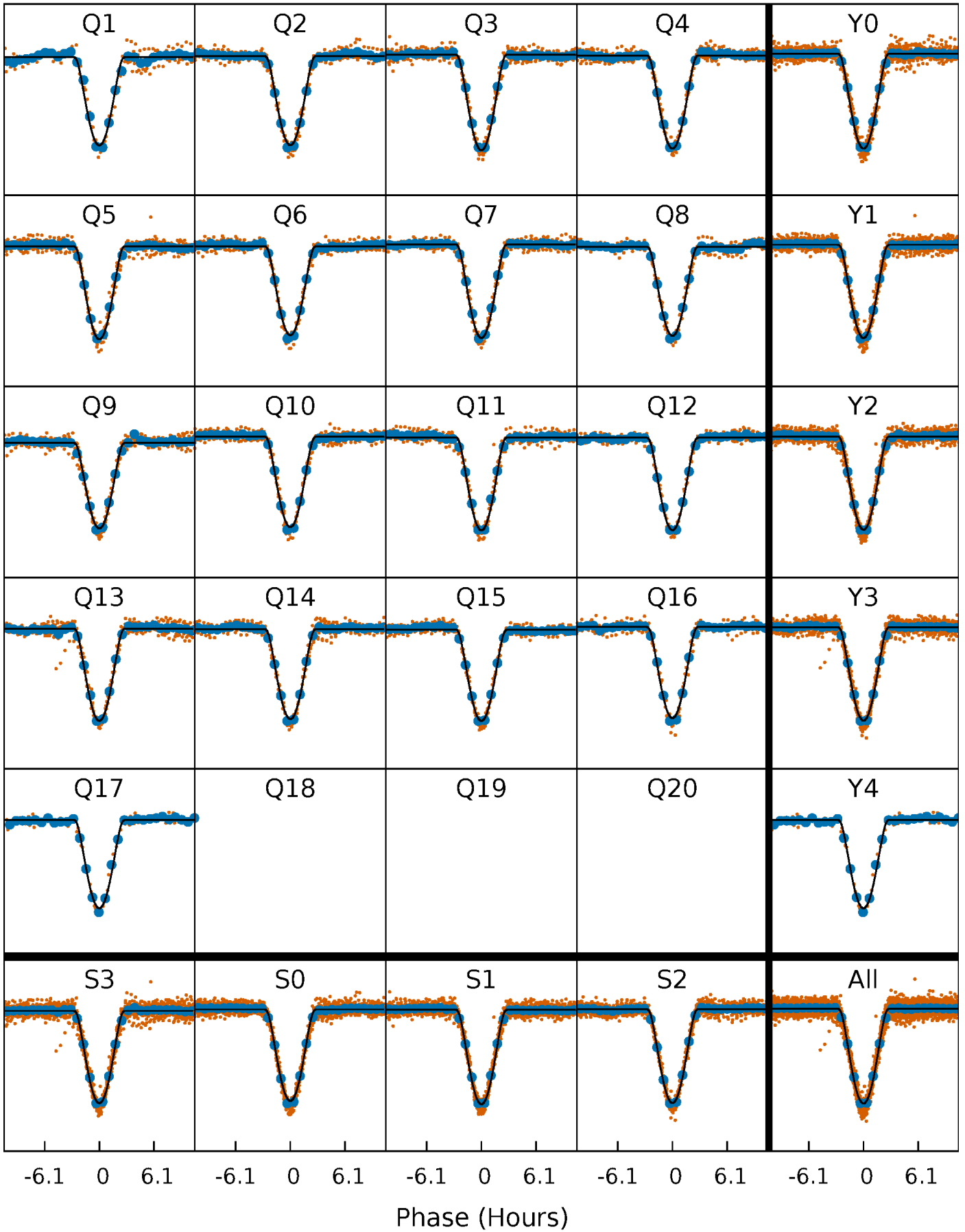
PDC Quarter-Phased Transit Curves

TCE 005218014-02 P= 10.845286 Days $T_0=142.234705$ (BKJD)



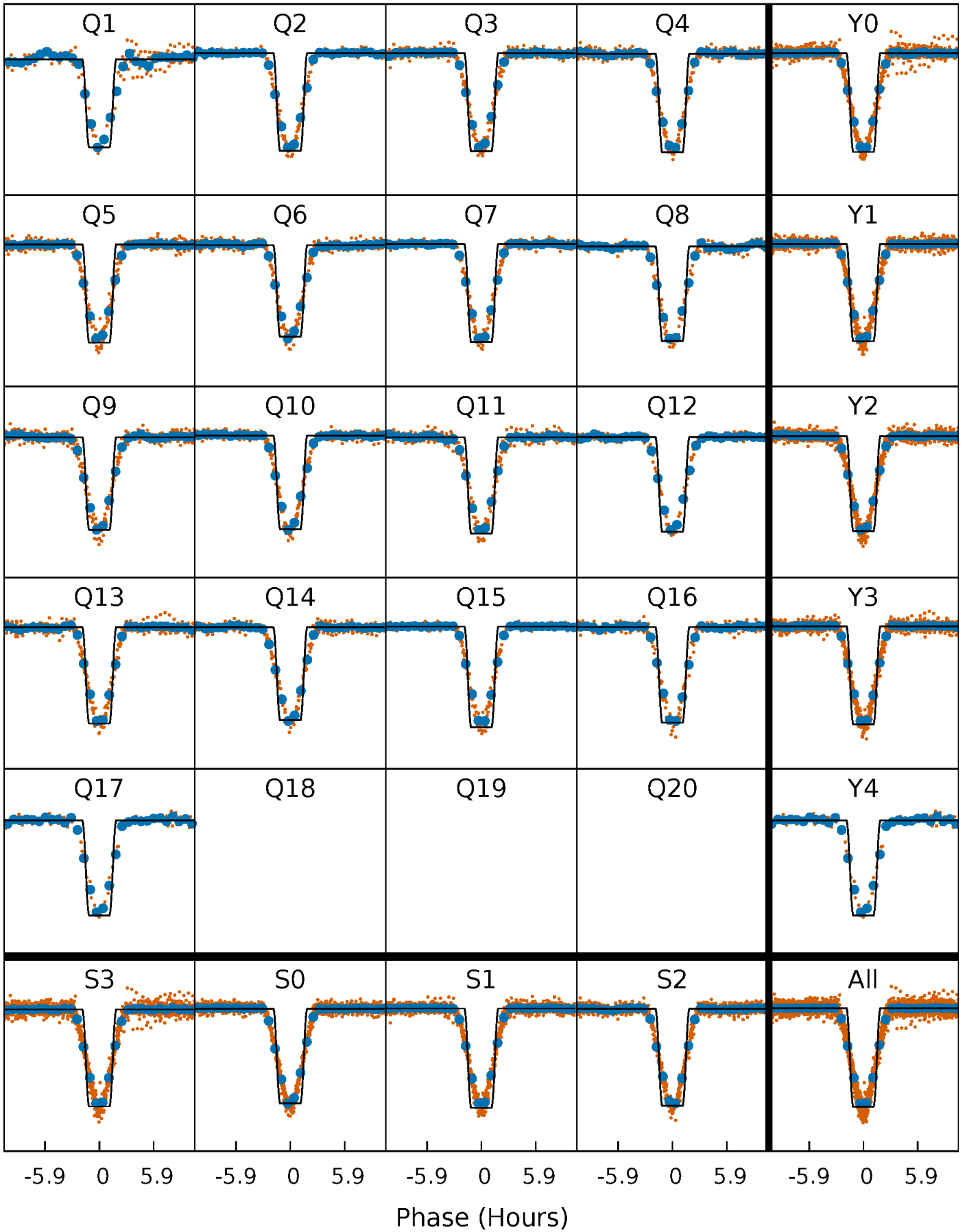
DV Quarter-Phased Transit Curves

TCE 005218014-02 P= 10.845286 Days $T_0=142.234705$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

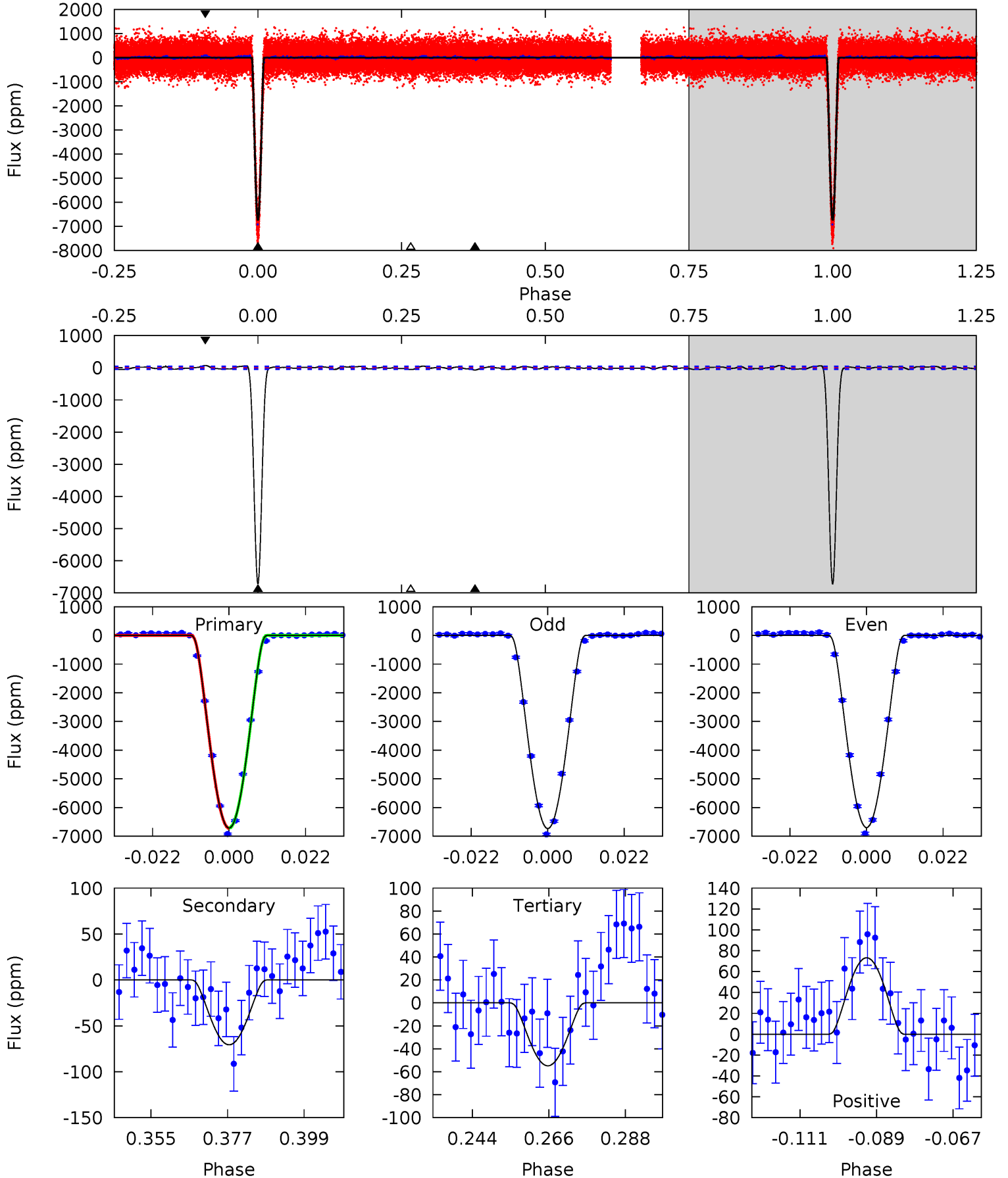
TCE 005218014-02 P= 10.845265 Days $T_0=142.236194$ (BKJD)



DV Model-Shift Uniqueness Test

005218014-02, P = 10.845286 Days, E = 131.389419 Days

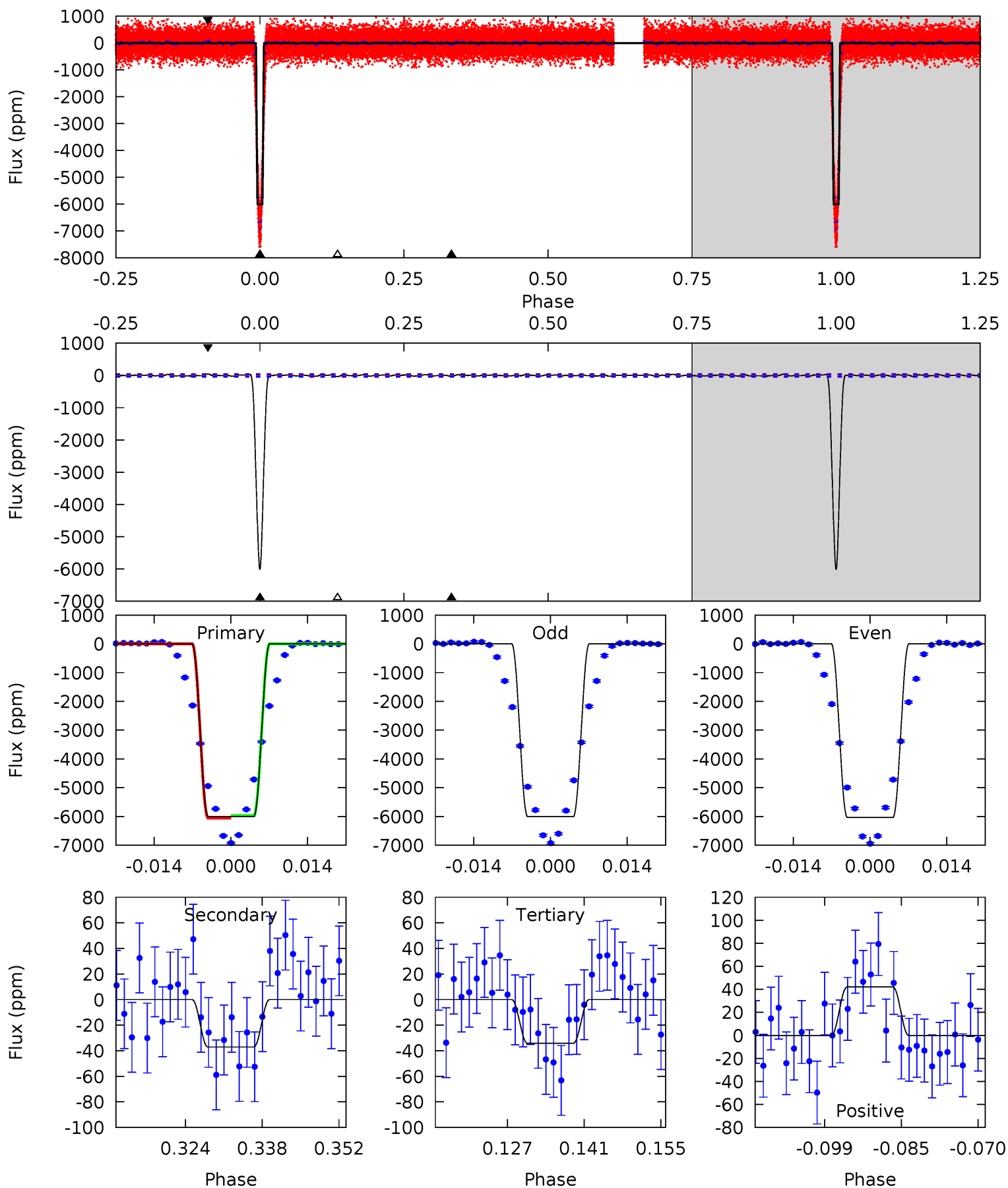
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
815.0	8.57	6.65	8.89	4.87	2.29	3.12	808.3	806.1	1.92	-0.31	2.14	1.00	0.01	0.42



Alt Model-Shift Uniqueness Test

005218014-02, P = 10.845265 Days, E = 131.390929 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
732.1	4.52	4.17	5.13	4.96	2.46	1.57	728.0	727.0	0.35	-0.60	1.50	1.01	0.01	5.17



Stellar Parameters For KIC 005218014

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5096^{+53}_{-136}	$3.094^{+0.224}_{-0.096}$	$0.070^{+0.100}_{-0.200}$	$7.023^{+1.767}_{-2.651}$	$2.233^{+0.469}_{-0.870}$	$0.009^{+0.015}_{-0.003}$
	+1%/-3%	+7%/-3%	+143%/-286%	+25%/-38%	+21%/-39%	+164%/-32%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005218014-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-71 ± 8	$104.51^{+19.15}_{-21.67}$	2301^{+132}_{-173}	-2588^{+131}_{-86}	$0.057^{+0.025}_{-0.014}$
Alt.	-37 ± 8	$61.36^{+13.91}_{-14.31}$	2306^{+132}_{-176}	-2537^{+159}_{-115}	$0.087^{+0.050}_{-0.034}$

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

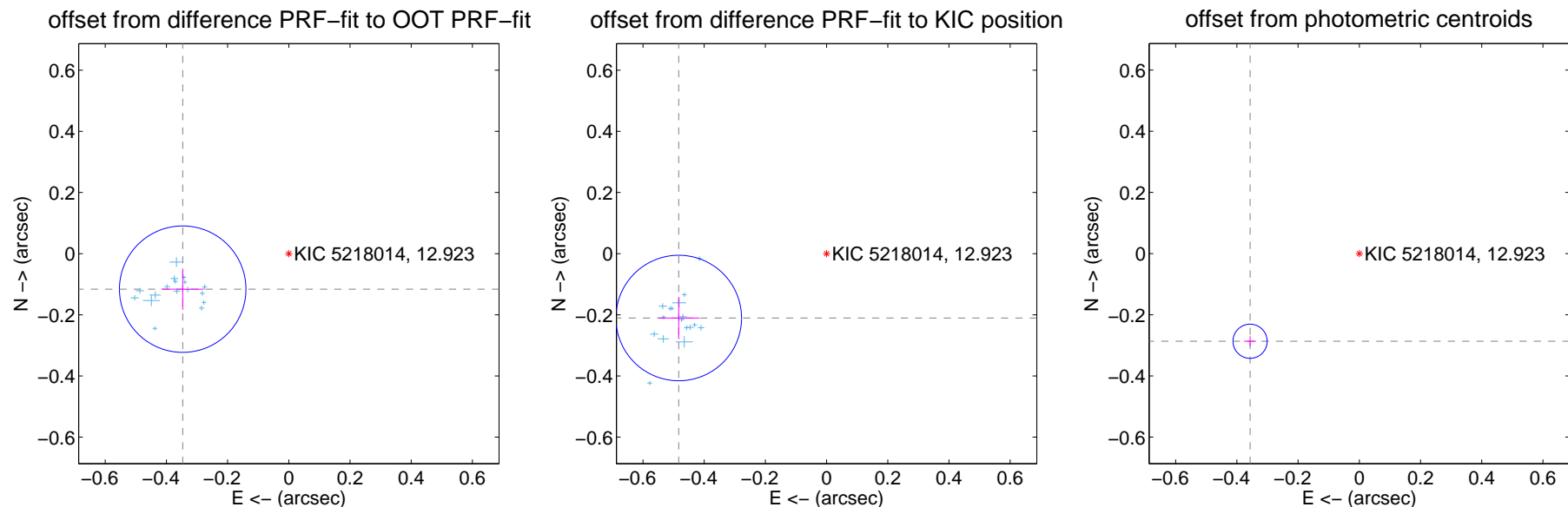
DV Centroid Data

Supplemental centroid analysis for 005218014-02. Kepler magnitude: 12.92. Transit SNR 258.50

There are 17 quarters with good PRF difference image offsets

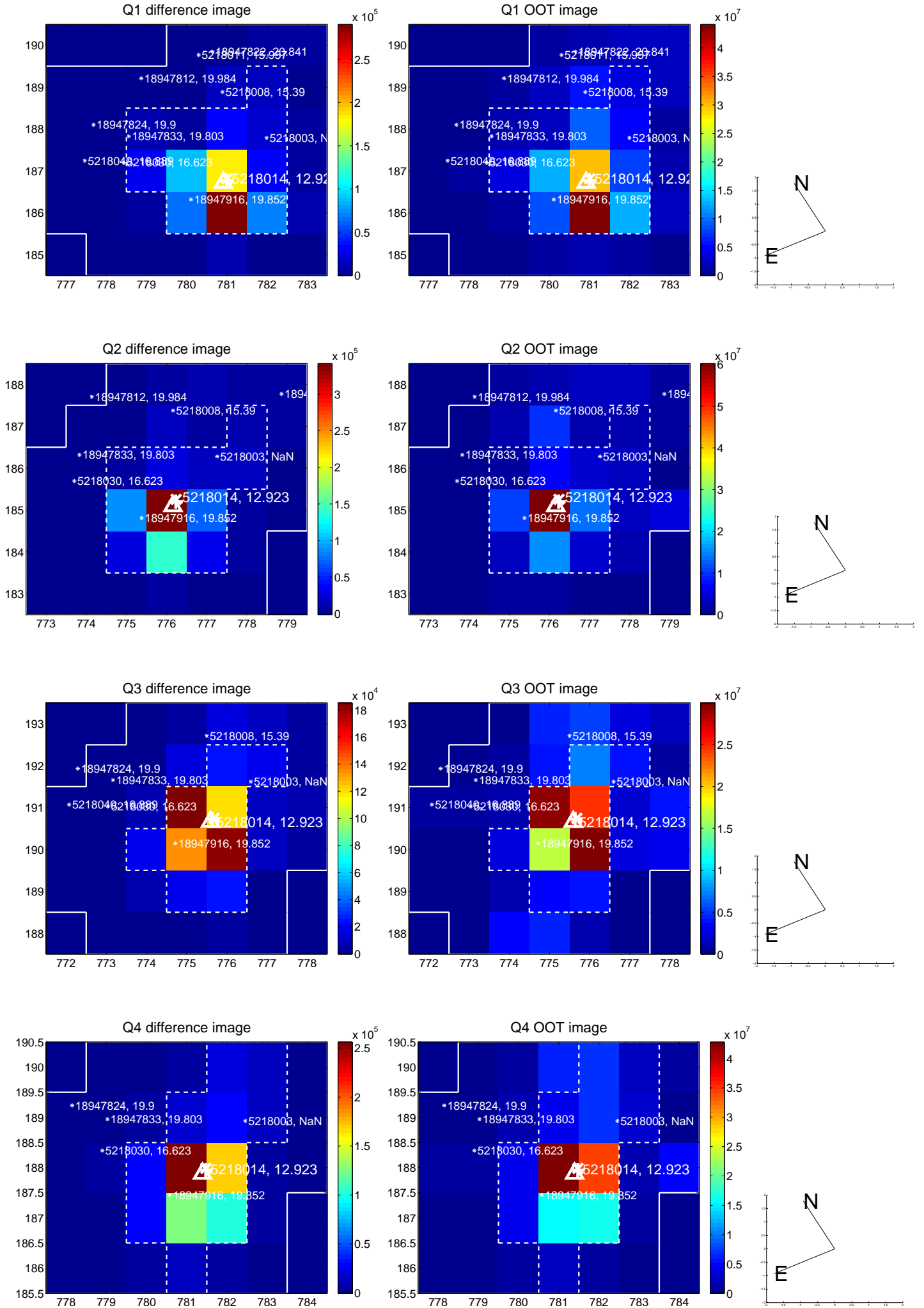
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.366 ± 0.069	5.31	0.347 ± 0.069	-0.116 ± 0.068
PRF-fit source offset from KIC position	0.527 ± 0.068	7.70	0.483 ± 0.068	-0.211 ± 0.069
photometric centroid source offset	0.46 ± 0.02	24.60	0.36 ± 0.02	-0.29 ± 0.02

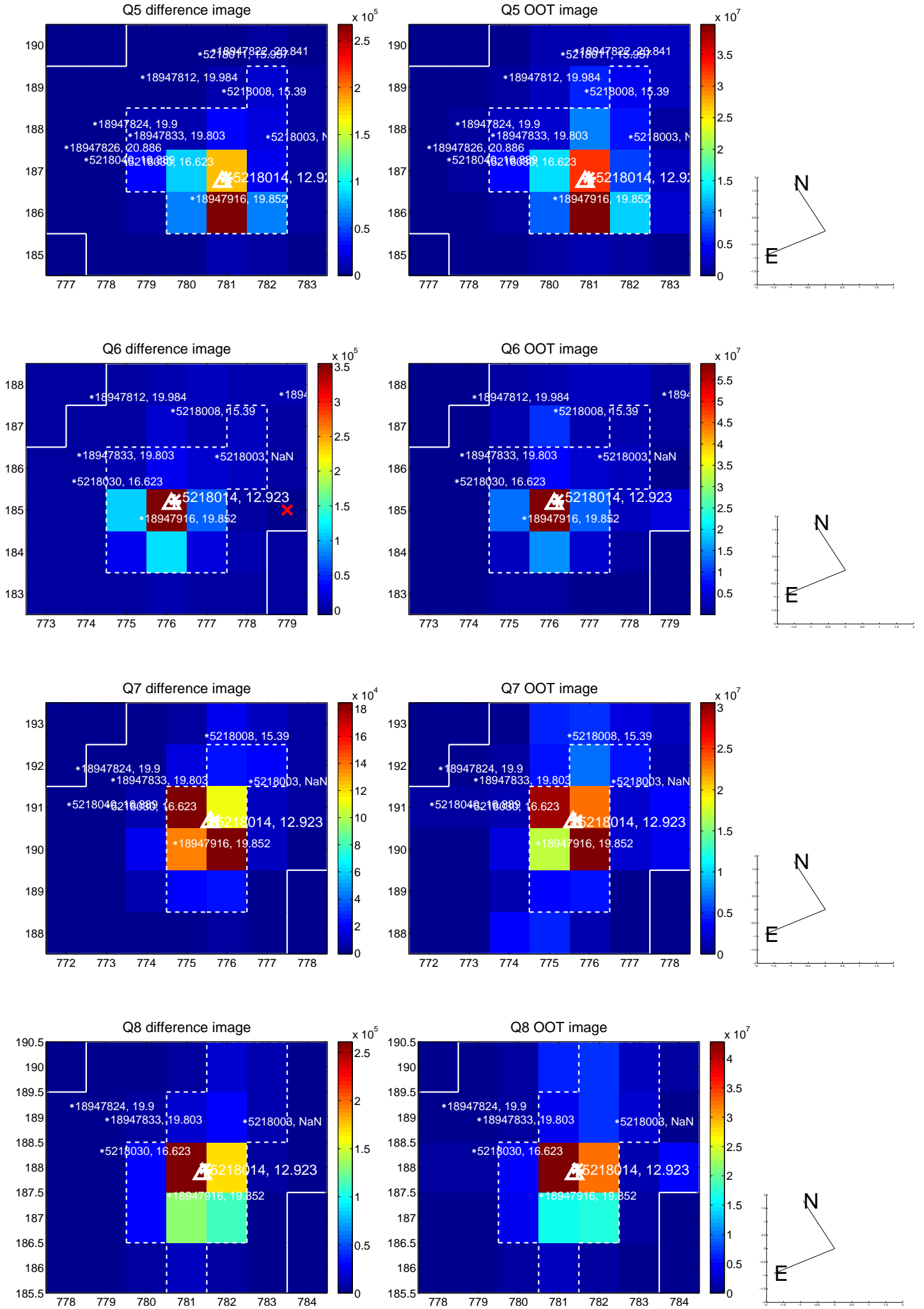


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

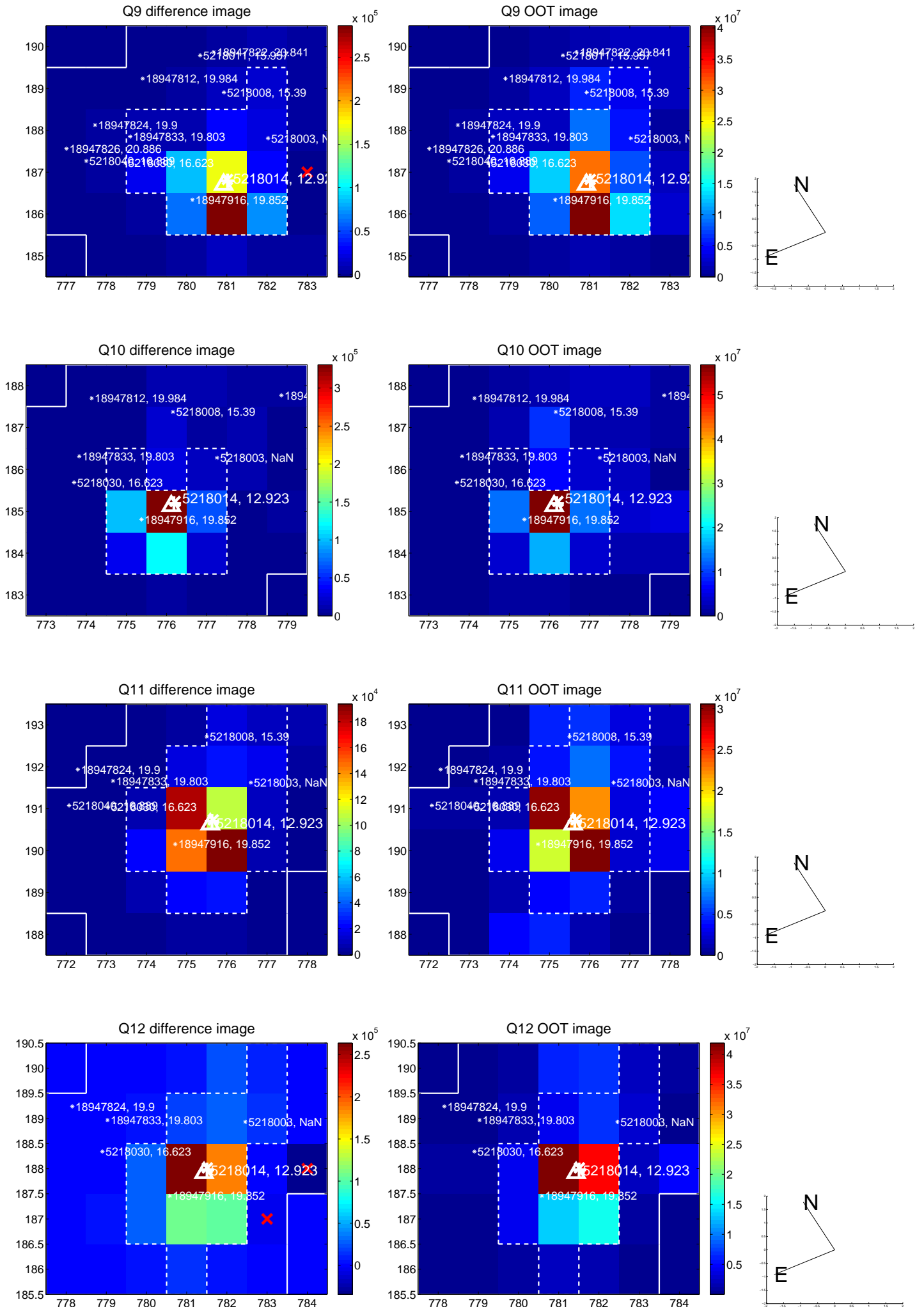
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



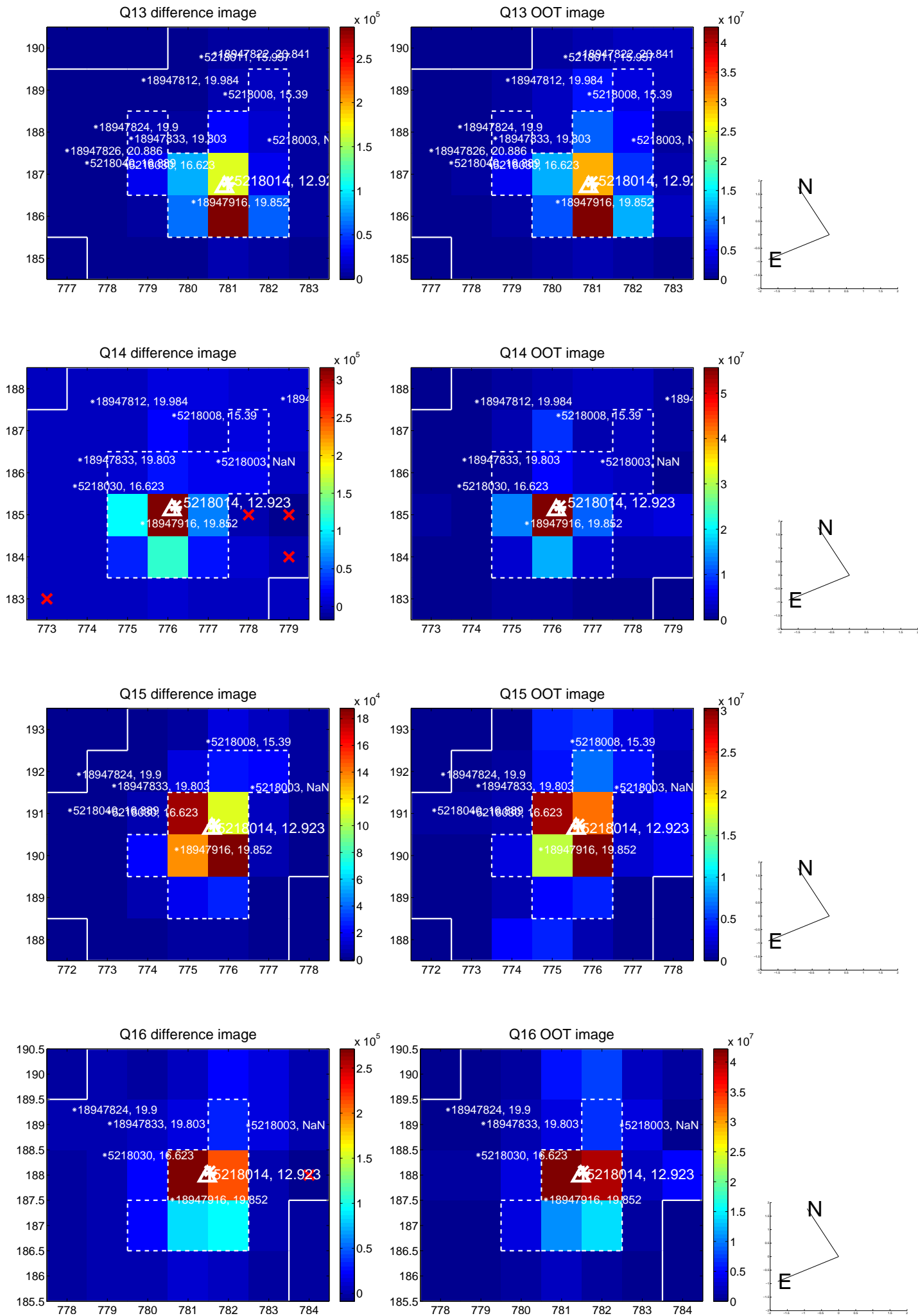
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



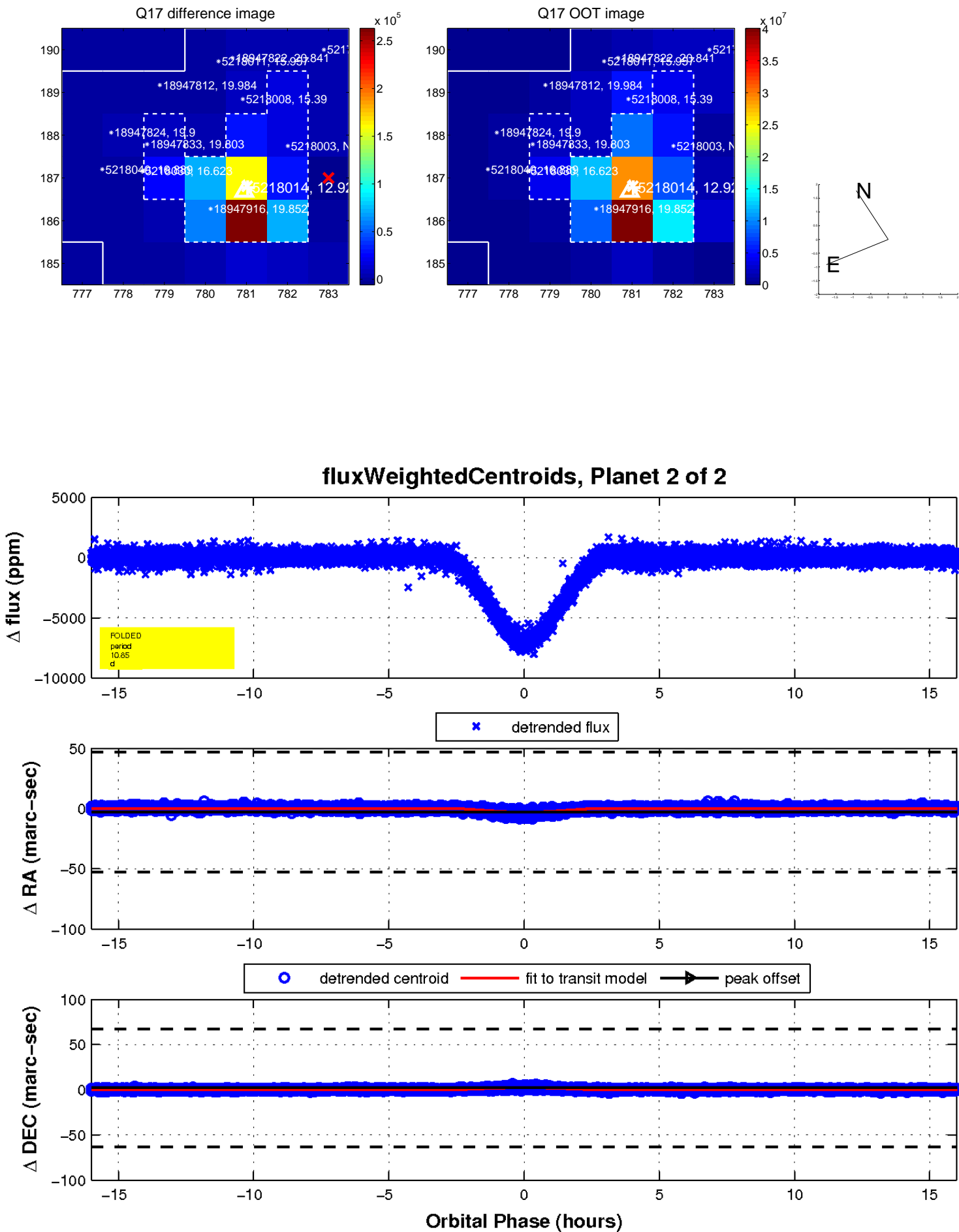
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

