KIC 009597095

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 ($S_\oplus$)
009597095-01	OBS	7200.01	2.745640	131.707933	44660.3	3.015	1828.5	1712.3	1.00	5780	30.38	678.81
009597095-02	OBS	No	2.745641	133.080797	8500.5	2.856	350.2	342.9	1.00	5780	16.83	678.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597095-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
009597095-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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.

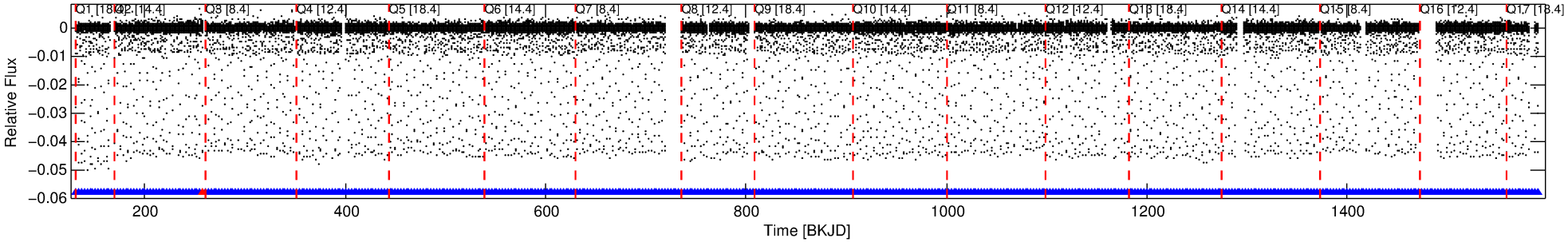
Ephemeris Match Information For 009597095-01

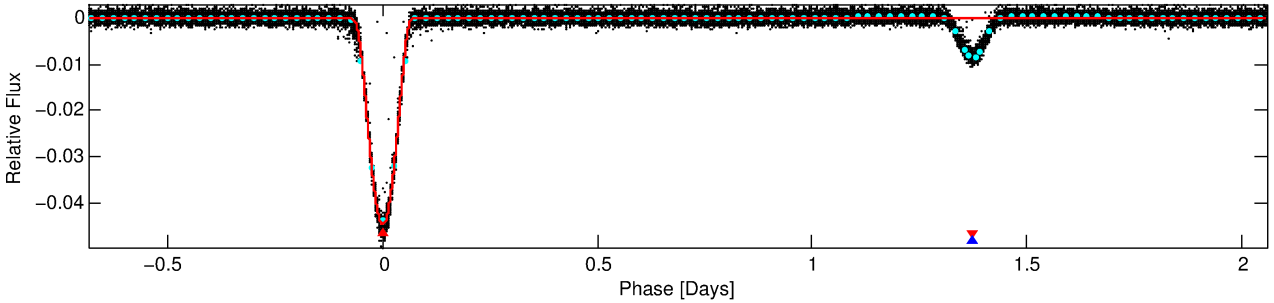
No Significant Match Found

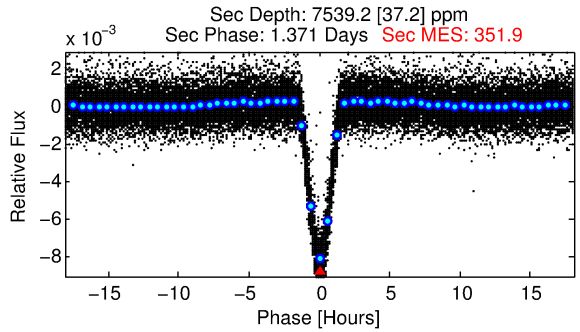
DV One-Page Summary

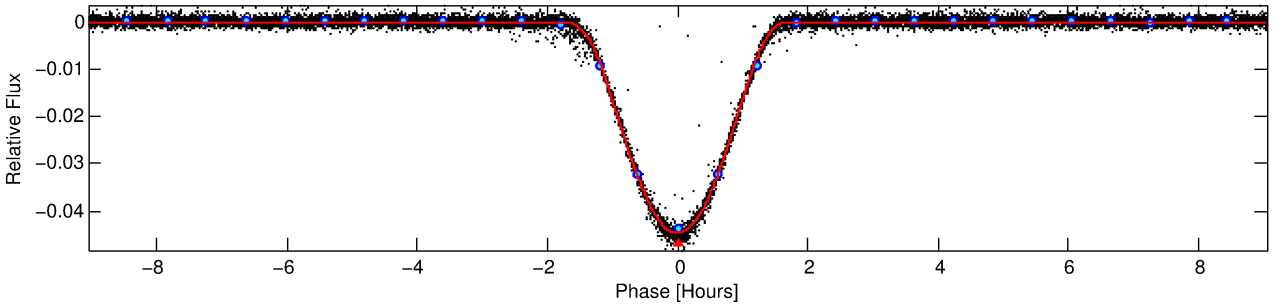
KIC: 9597095 Candidate: 1 of 2 Period: 2.746 d
KOI: K07200.01 Corr: 0.995

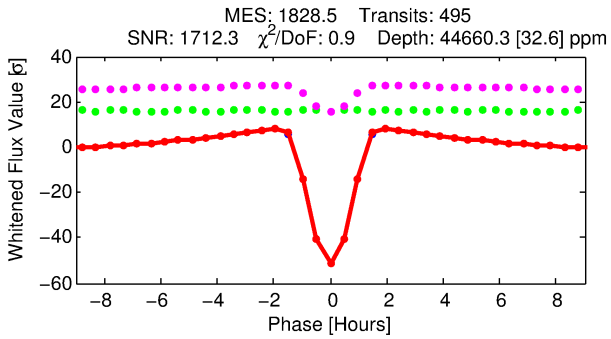
Kp: 15.94 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000

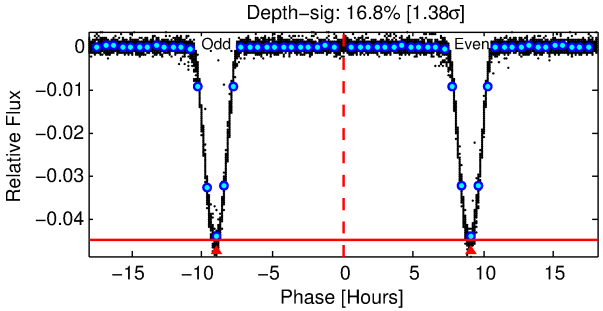


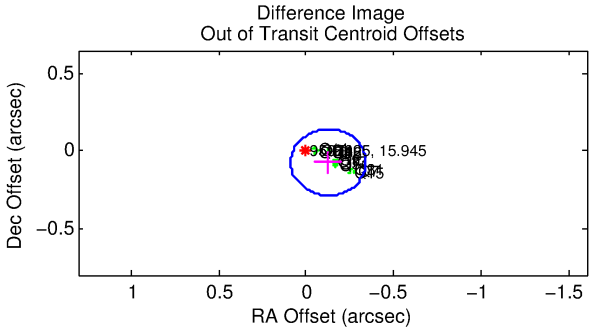












DV Fit Results:

Period = 2.74564 [0.00000] d
Epoch = 131.7079 [0.0000] BKJD
Rp/R* = 0.2784 [0.0058]
a/R* = 6.30 [0.01]
b = 0.91 [0.01]

Seff = 678.81 [0.00]
Teq = 1302 [0] K
Rp = 30.38 [0.63] Re
a = 0.0384 [0.0000] AU

Ag = 6.62 [0.28] [20.37σ]
Teffp = 3228 [34] K [57.27σ]

DV Diagnostic Results:

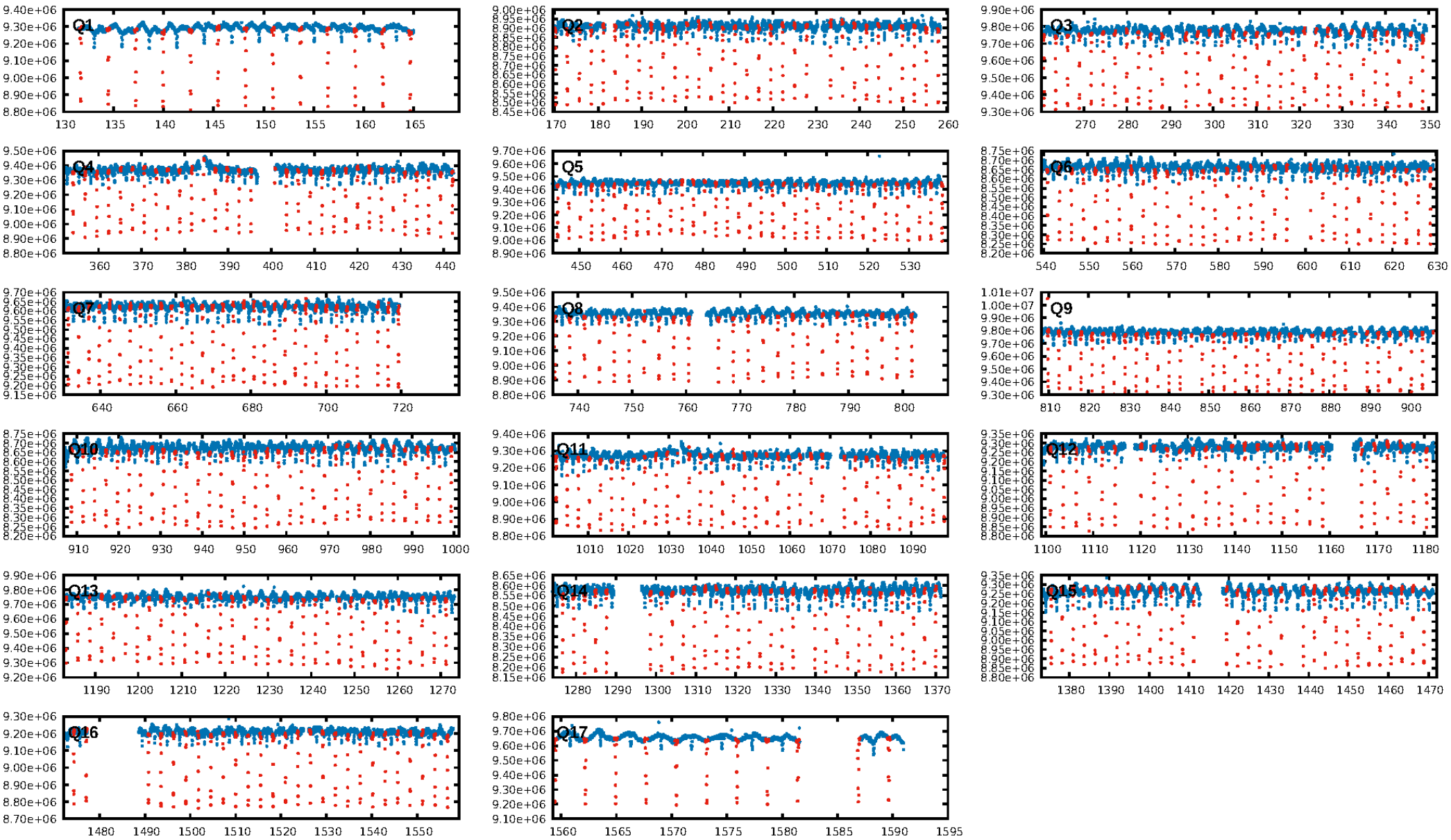
ShortPeriod−sig: N/A
LongPeriod−sig: 0.0% [0.00σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [470/471]
GhostDiagnostic−chr: 3.87

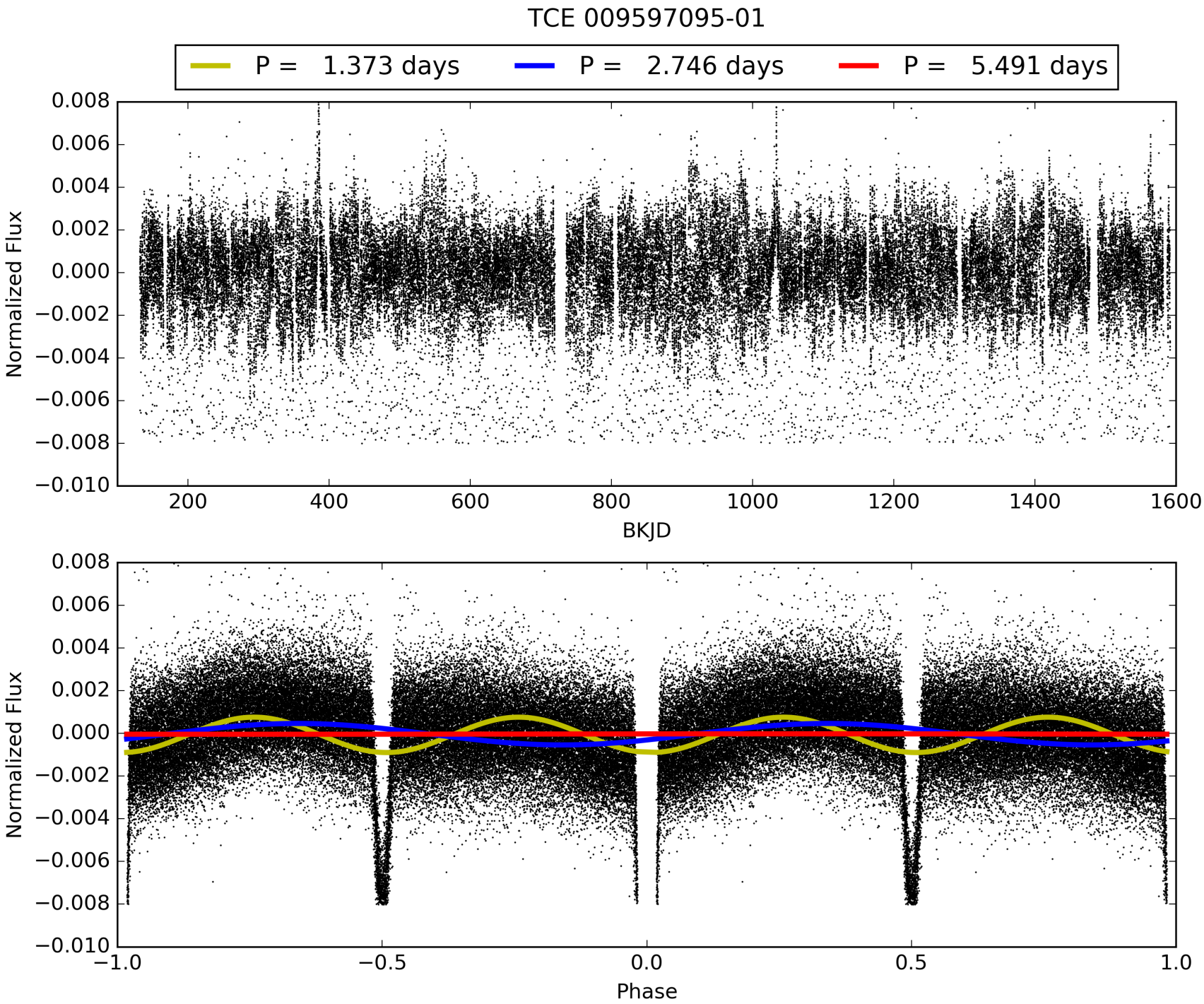
Centroid−sig: 0.0%
Centroid−so: 0.582 arcsec [91.35σ]
OotOffset−rm: 0.145 arcsec [2.03σ]
KicOffset−rm: 0.600 arcsec [8.93σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 1.00 [17/17]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03−Feb−2016 07:53:44 Z

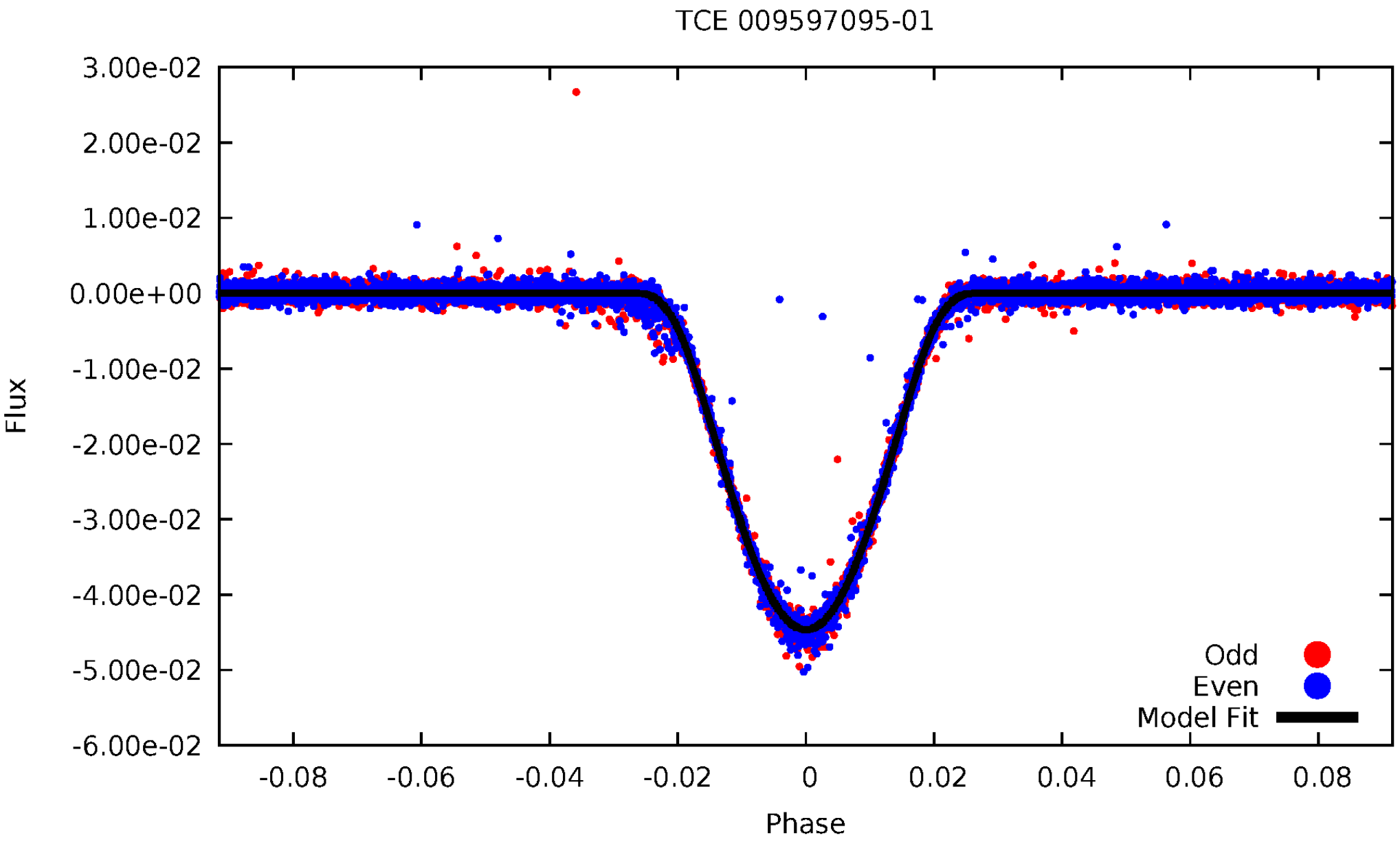
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009597095-01, PDC Light Curves

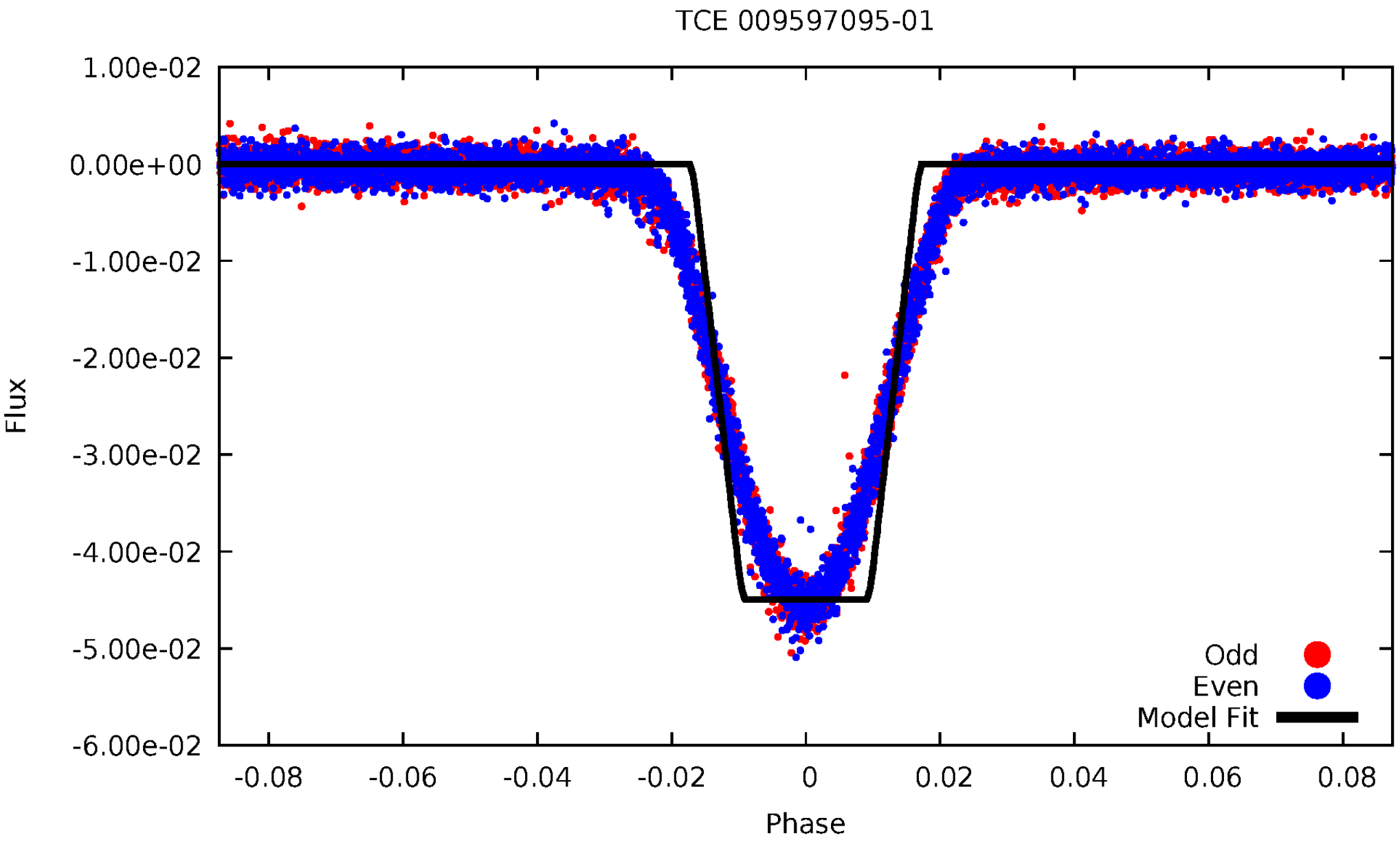



TCE 009597095-01
P = 1.373 days
P = 2.746 days
P = 5.491 days
Normalized Flux
BKJD
Phase
0.008
0.006
0.004
0.002
0.000
−0.002
−0.004
−0.006
−0.008
−0.010
200
400
600
800
1000
1200
1400
1600
−1.0
−0.5
0.0
0.5
1.0

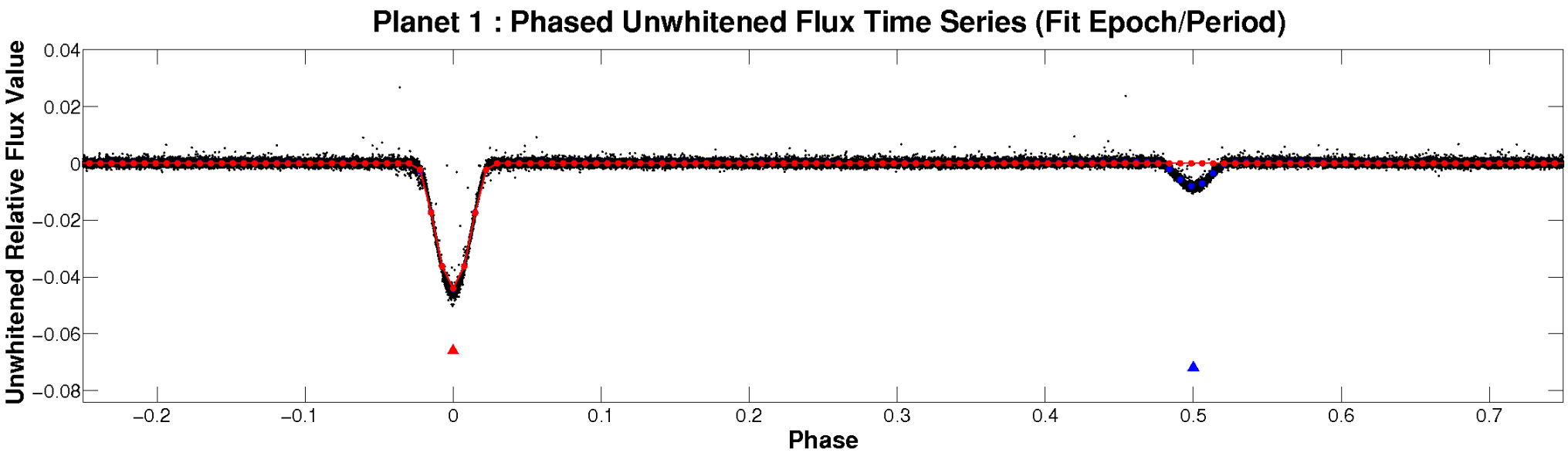
DV Odd/Even

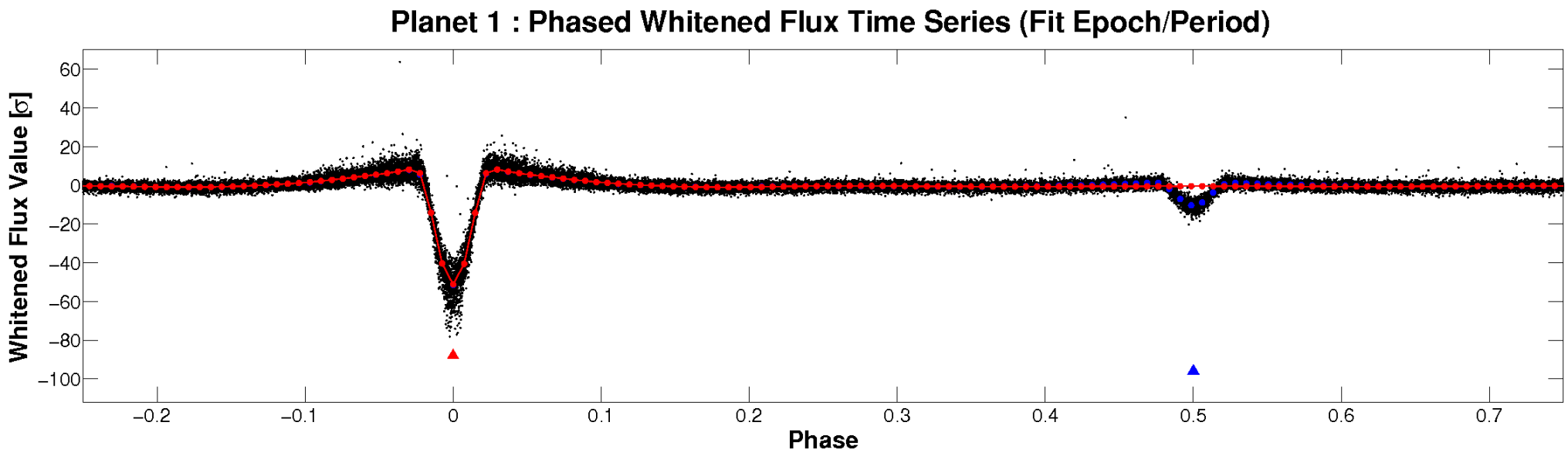

TCE 009597095-01
3.00e-02
2.00e-02
1.00e-02
0.00e+00
-1.00e-02
-2.00e-02
-3.00e-02
-4.00e-02
-5.00e-02
-6.00e-02
Flux
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009597095-01
1.00e-02
0.00e+00
-1.00e-02
-2.00e-02
-3.00e-02
-4.00e-02
-5.00e-02
-6.00e-02
Flux
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
Phase
Odd
Even
Model Fit

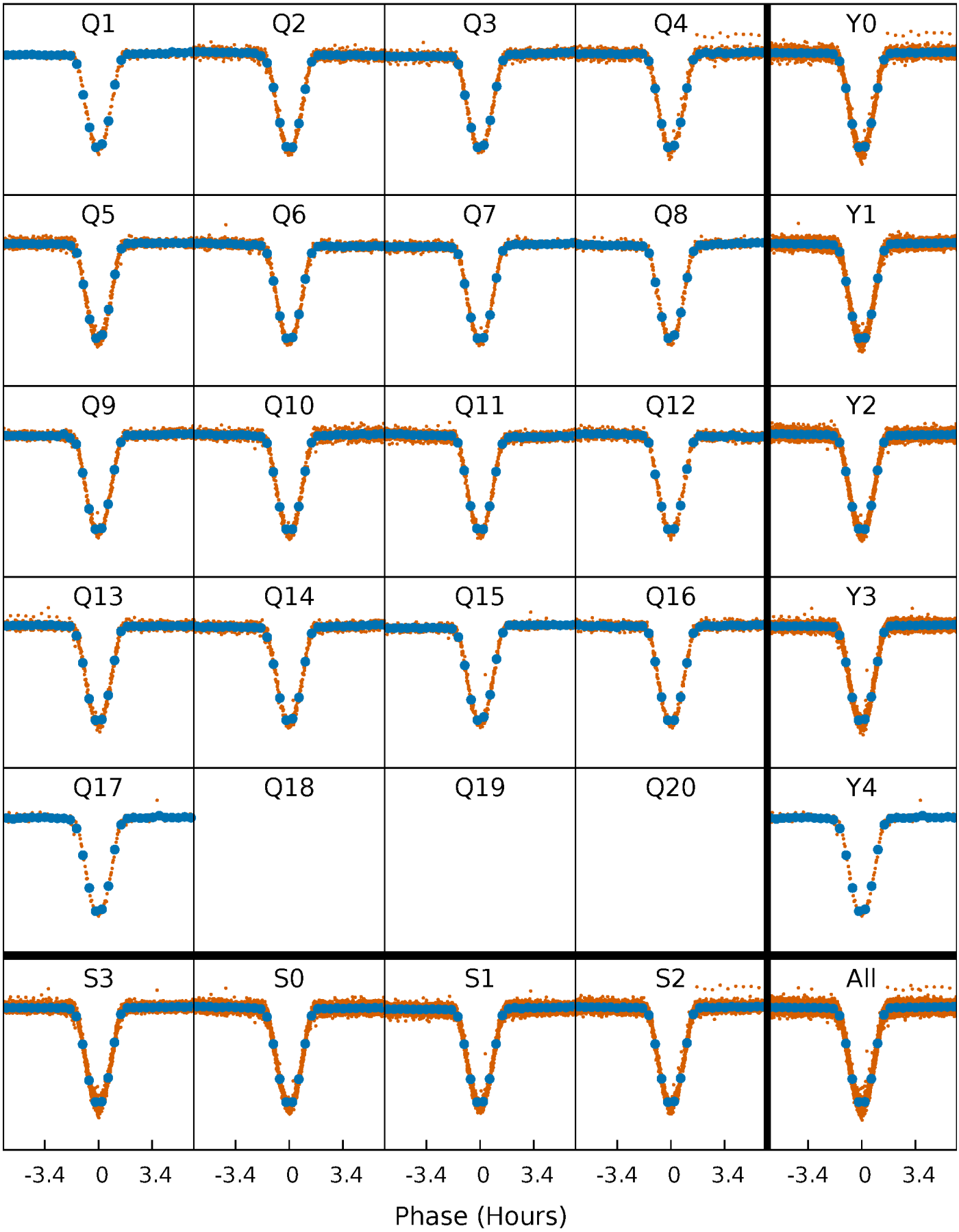
Non-Whitened Vs. Whitened Light Curve





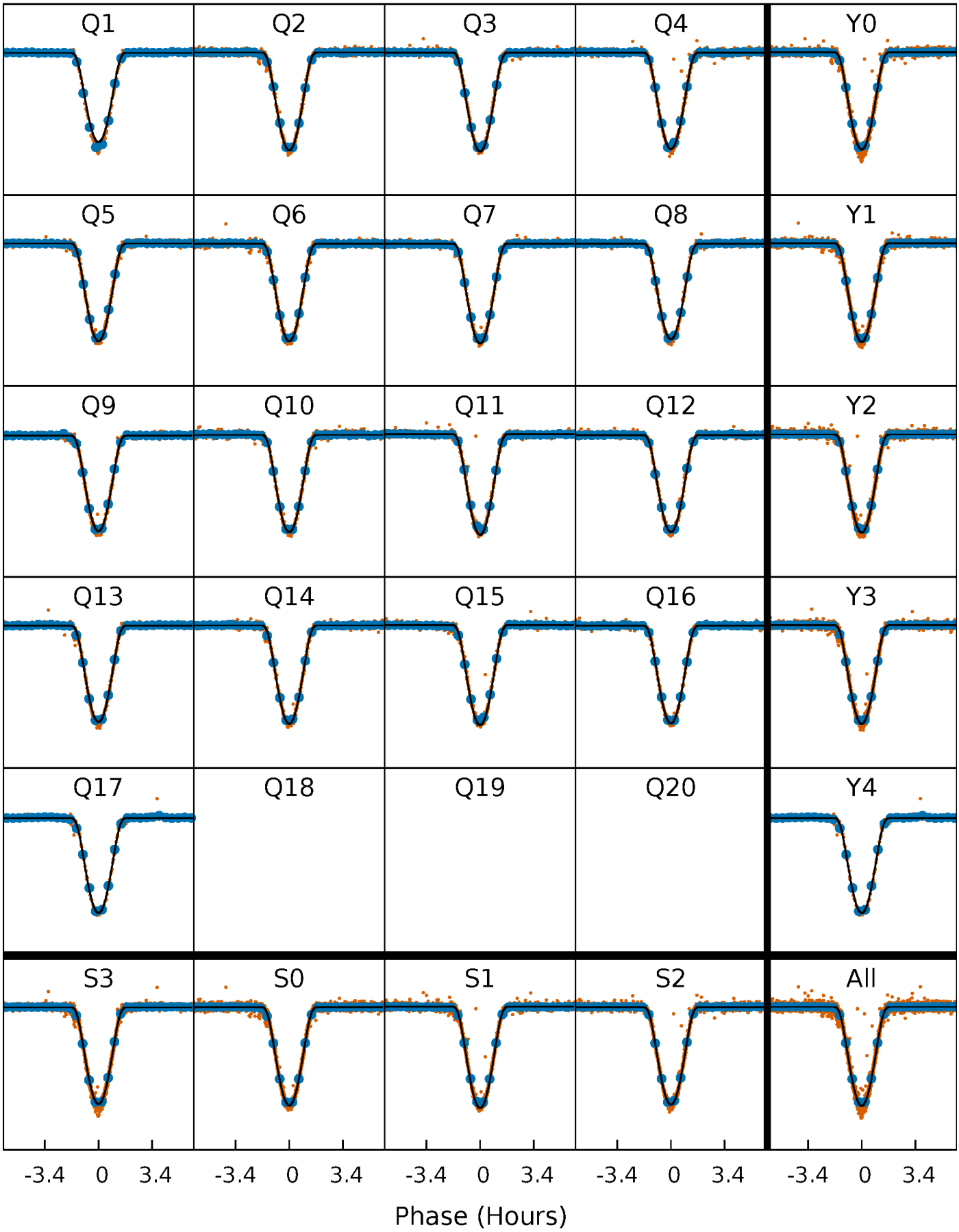
PDC Quarter-Phased Transit Curves

TCE 009597095-01 P= 2.745640 Days T_0=131.707933 (BKJD)



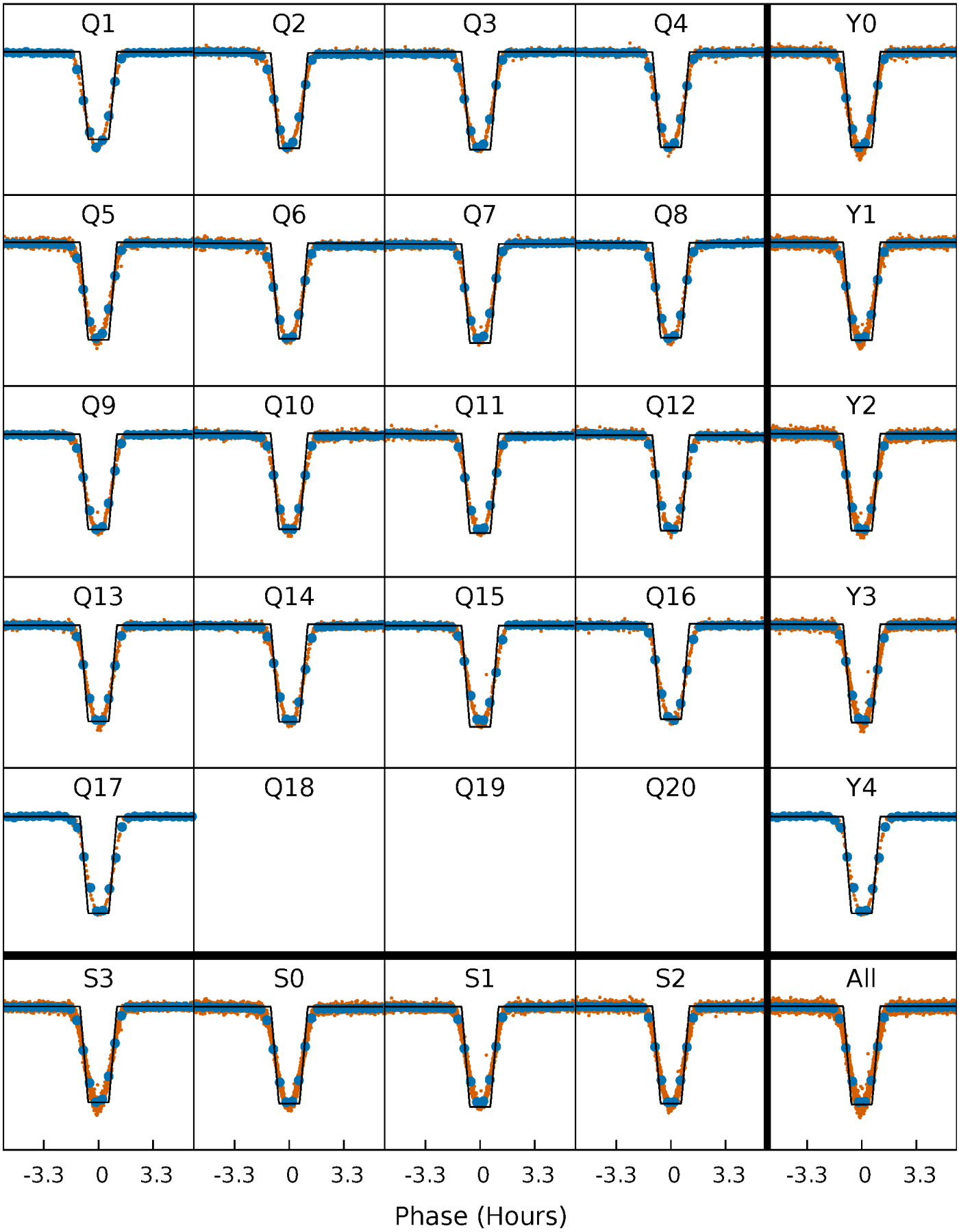
DV Quarter-Phased Transit Curves

TCE 009597095-01 P= 2.745640 Days T_0=131.707933 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

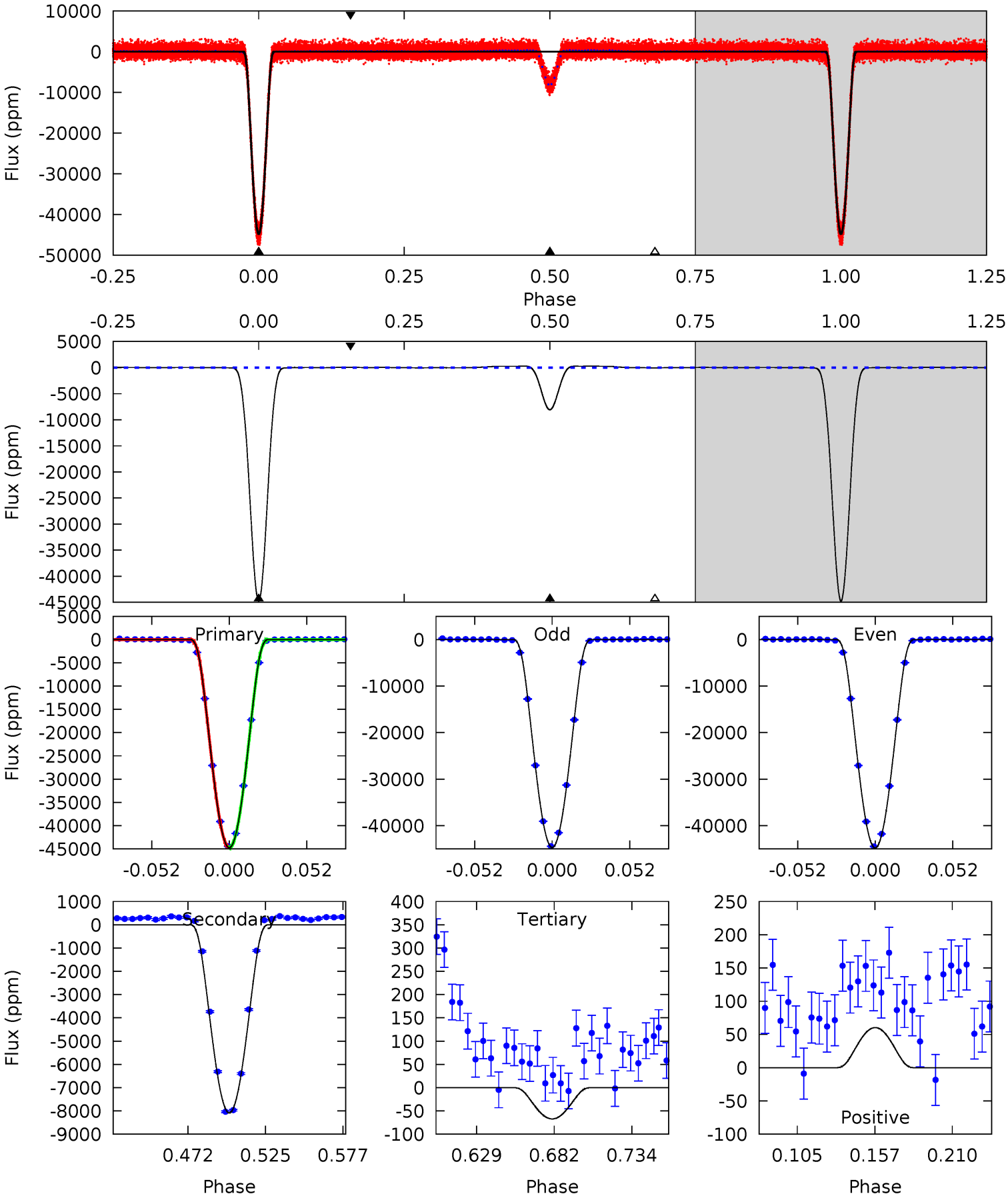
TCE 009597095-01 P= 2.745629 Days T_0=131.711147 (BKJD)



DV Model-Shift Uniqueness Test

009597095-01, P = 2.745640 Days, E = 128.962293 Days

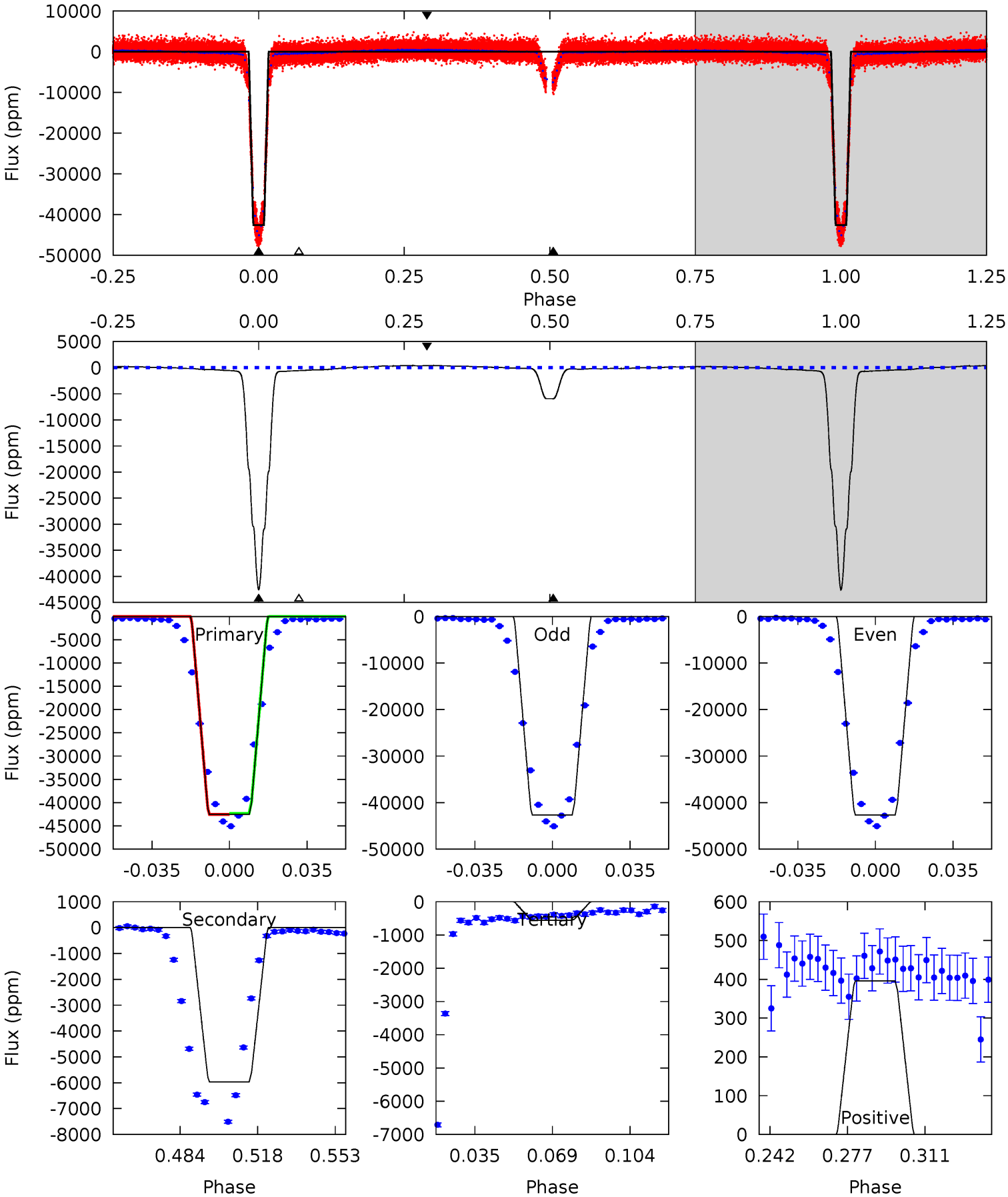
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3499	632.2	5.26	4.72	4.70	1.94	7.15	3493	3494	626.9	627.4	4.20	1.00	0.01	0.63



Alt Model-Shift Uniqueness Test

009597095-01, P = 2.745629 Days, E = 128.965518 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1631	228.6	21.4	15.2	4.78	2.11	10.9	1610	1616	207.2	213.4	0.23	1.00	0.01	0



Stellar Parameters For KIC 009597095

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5780^{+-1}_{-1}	$4.438^{+-1.000}_{-1.000}$	$0.000^{+-1.000}_{-1.000}$	$1.000^{+-1.000}_{-1.000}$	$-1.000^{+-1.000}_{-1.000}$	$-1.000^{+-1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 009597095-01 / KOI 7200.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8085±13	$30.33^{+2.34}_{-2.13}$	1816^{+86}_{-81}	3678^{+92}_{-94}	$7.186^{+0.945}_{-0.889}$
Alt.	-5965±26	$23.20^{+1.80}_{-1.66}$	1818^{+83}_{-81}	3827^{+107}_{-99}	$9.049^{+1.303}_{-1.098}$

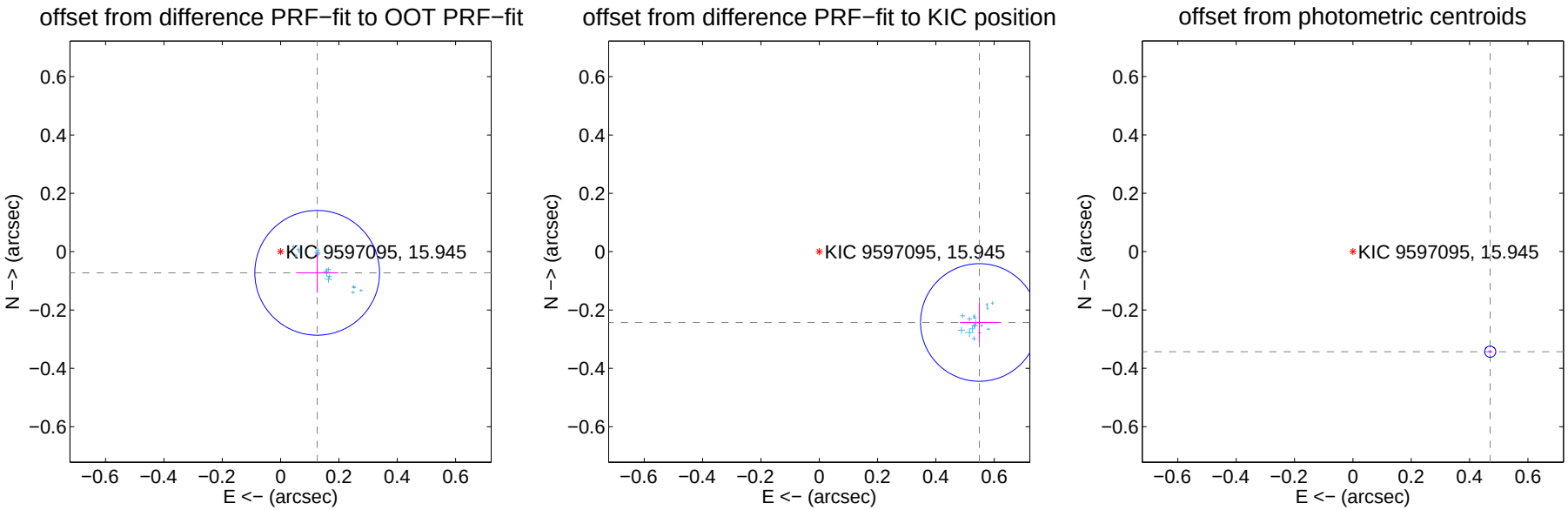
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

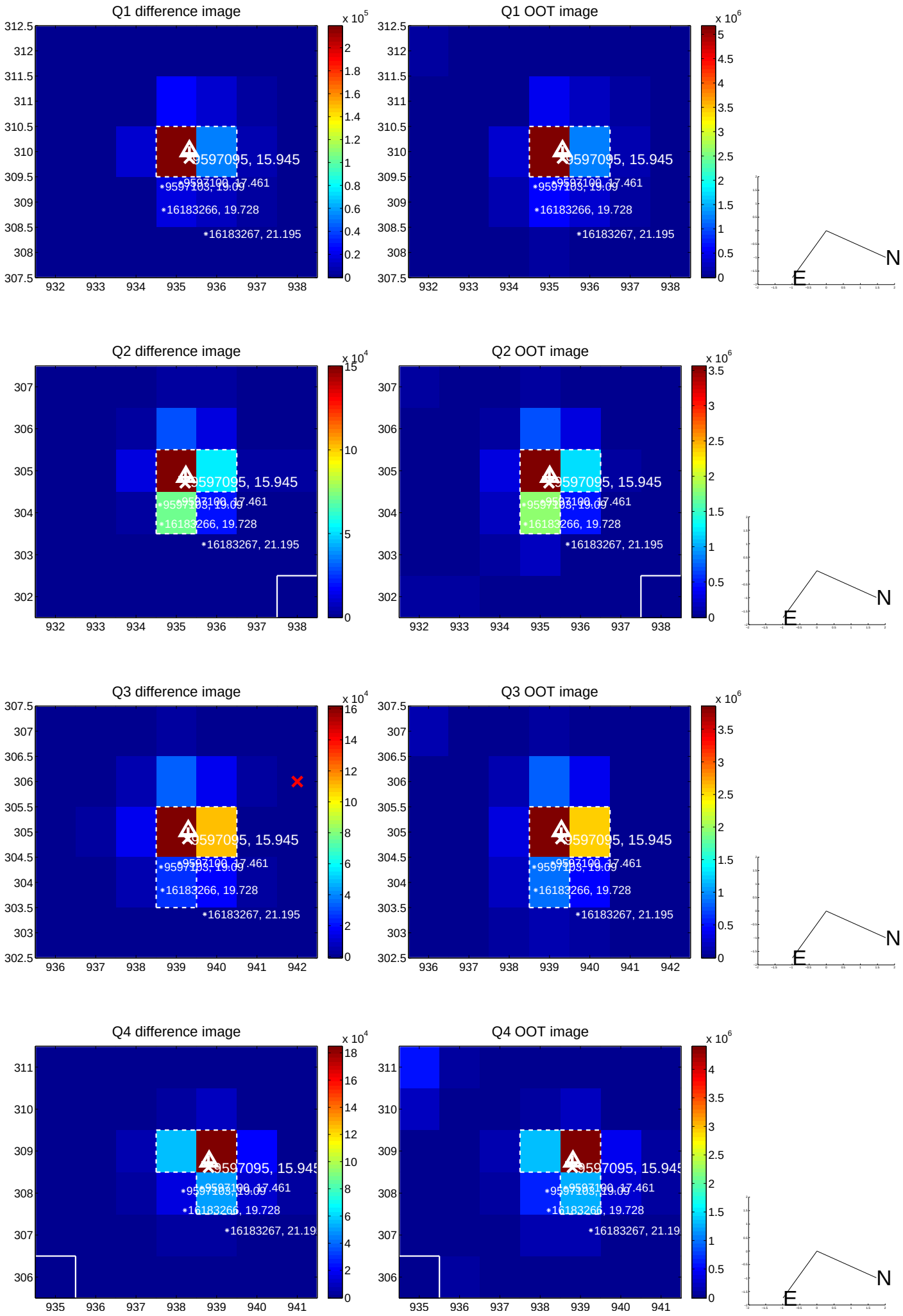
Supplemental centroid analysis for 009597095-01. Kepler magnitude: 15.95. Transit SNR 1712.27
There are 17 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.145 ± 0.071	2.03	-0.125 ± 0.072	-0.073 ± 0.069
PRF-fit source offset from KIC position	0.600 ± 0.067	8.93	-0.549 ± 0.067	-0.243 ± 0.067
photometric centroid source offset	0.58 ± 0.01	91.35	-0.47 ± 0.01	-0.34 ± 0.01

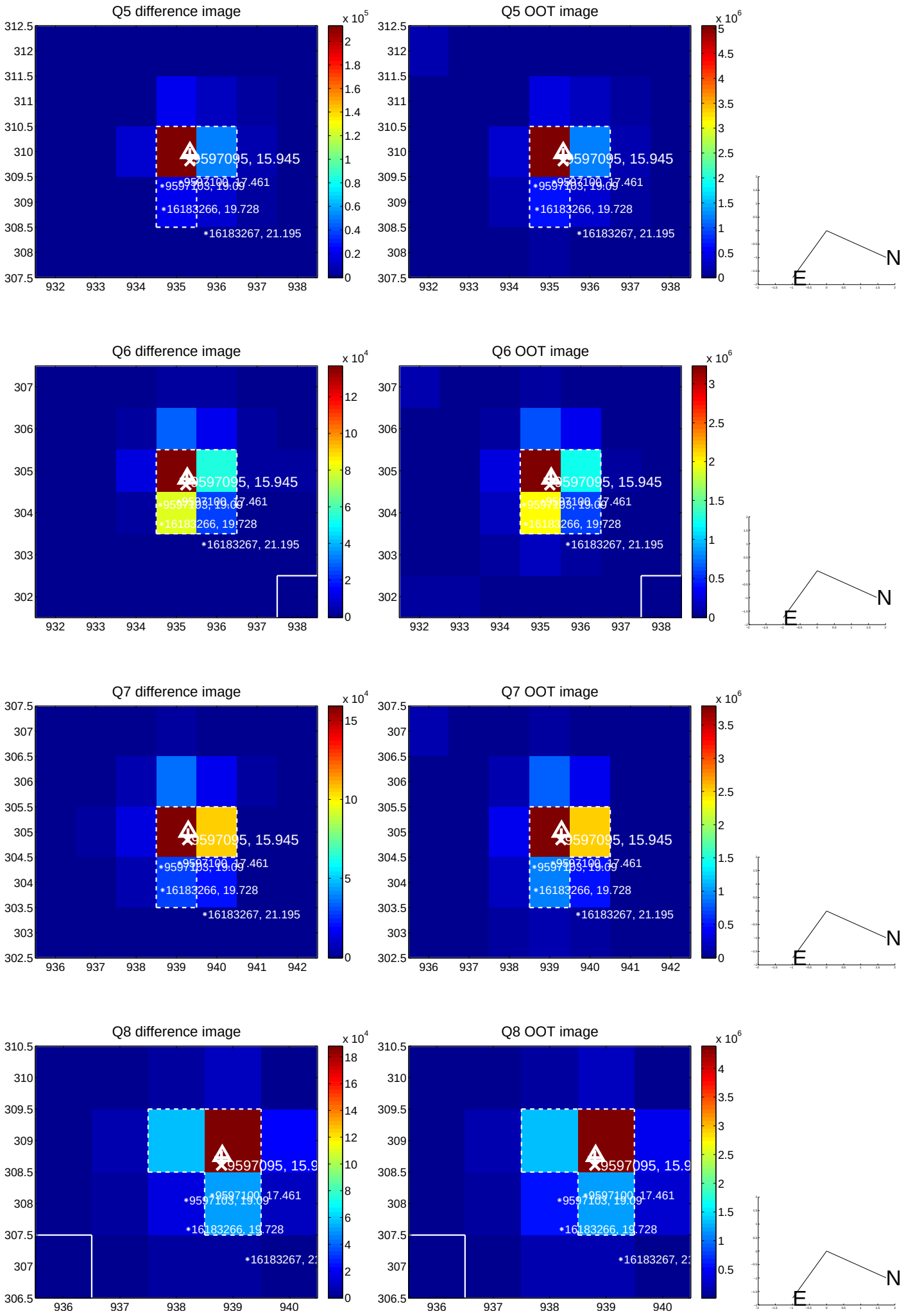


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

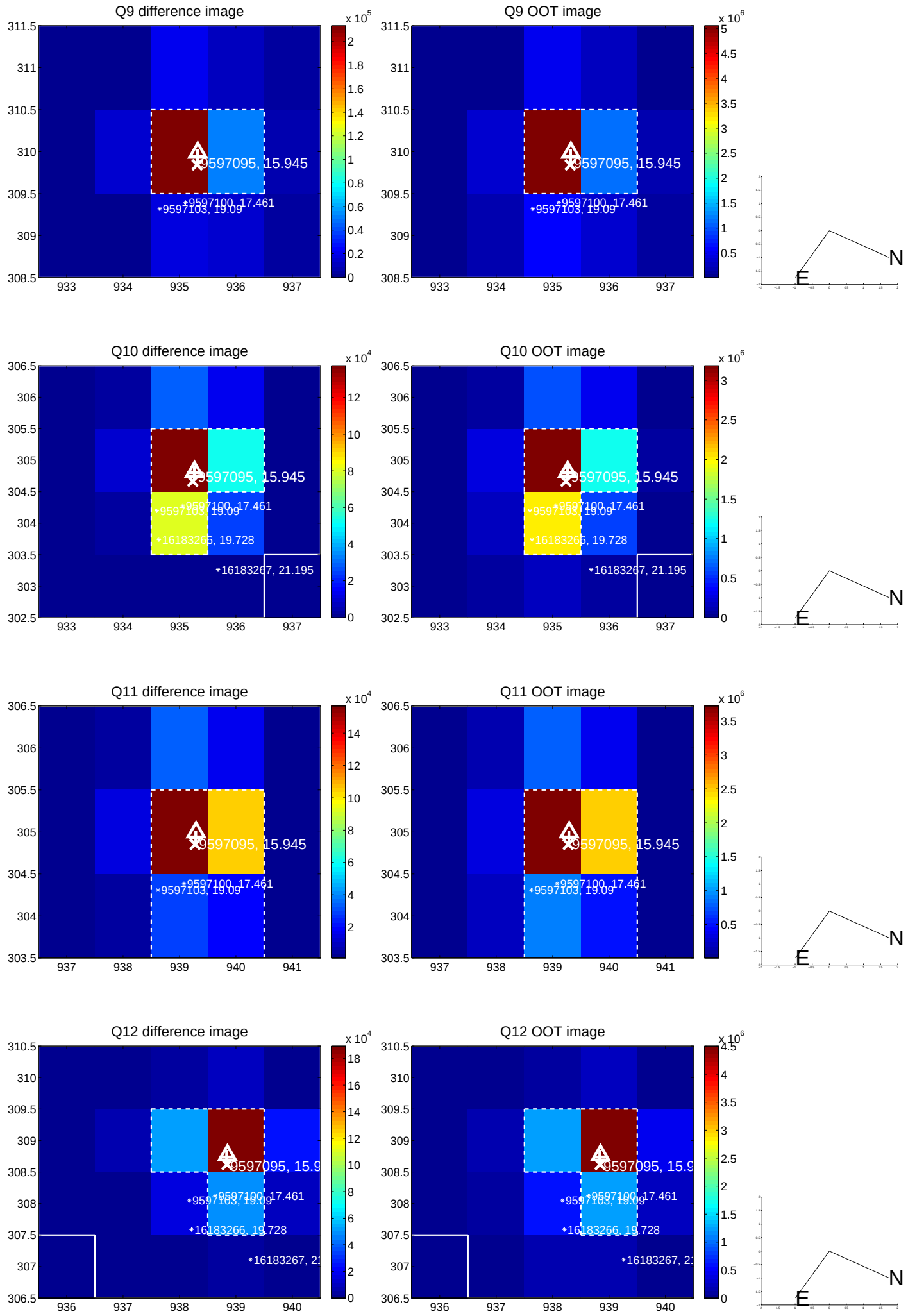
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



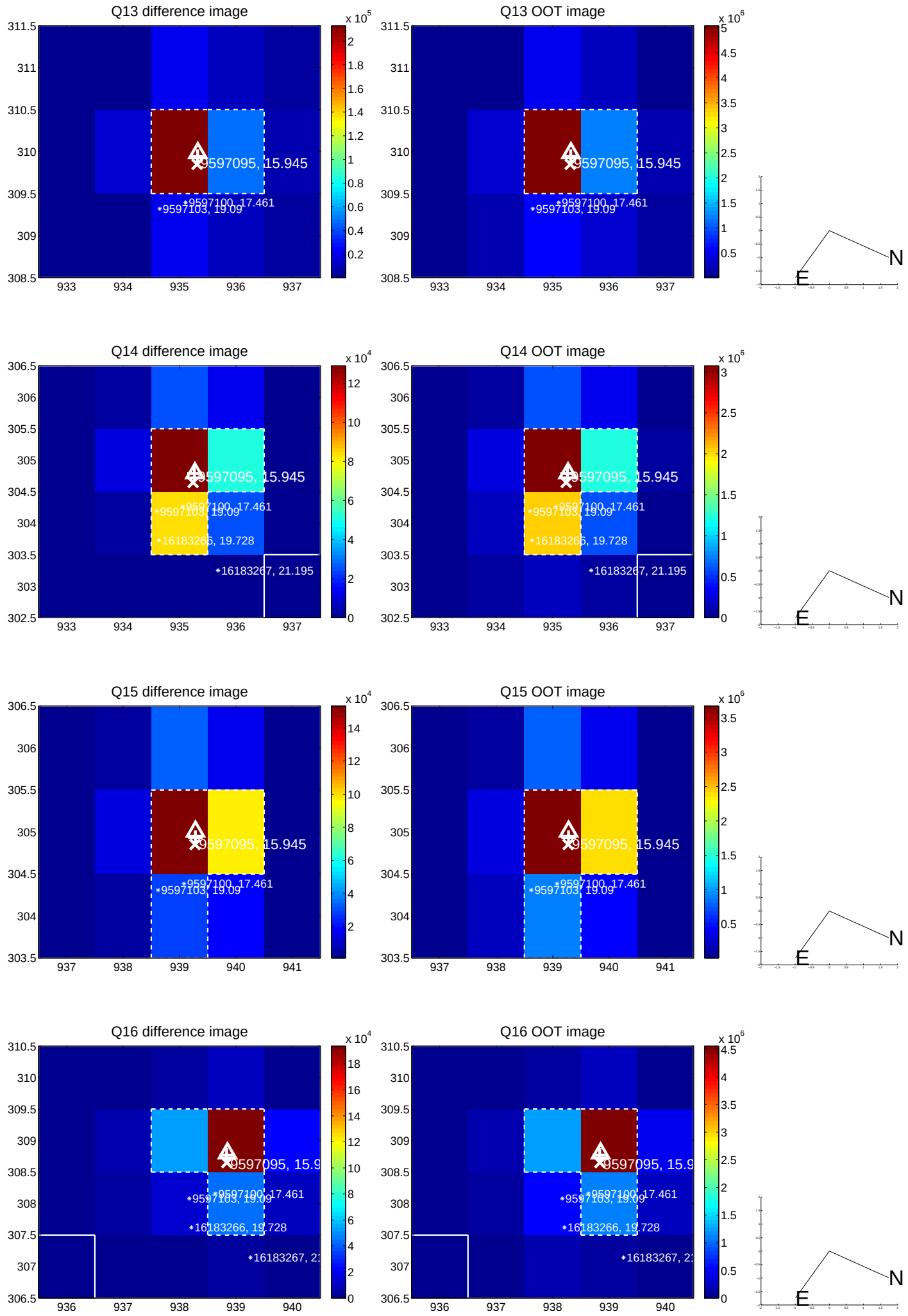
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



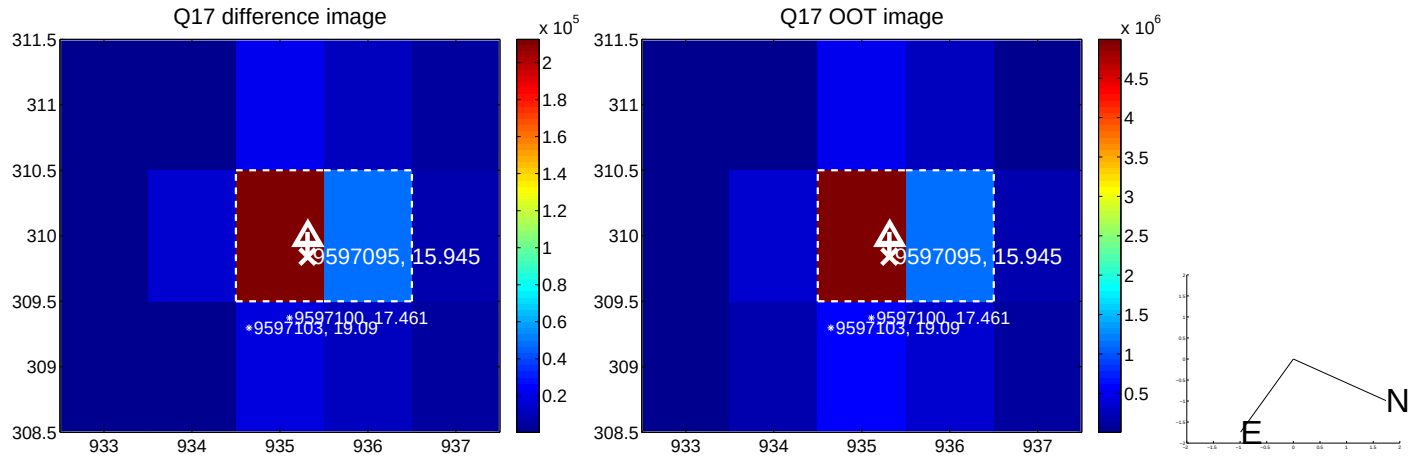
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

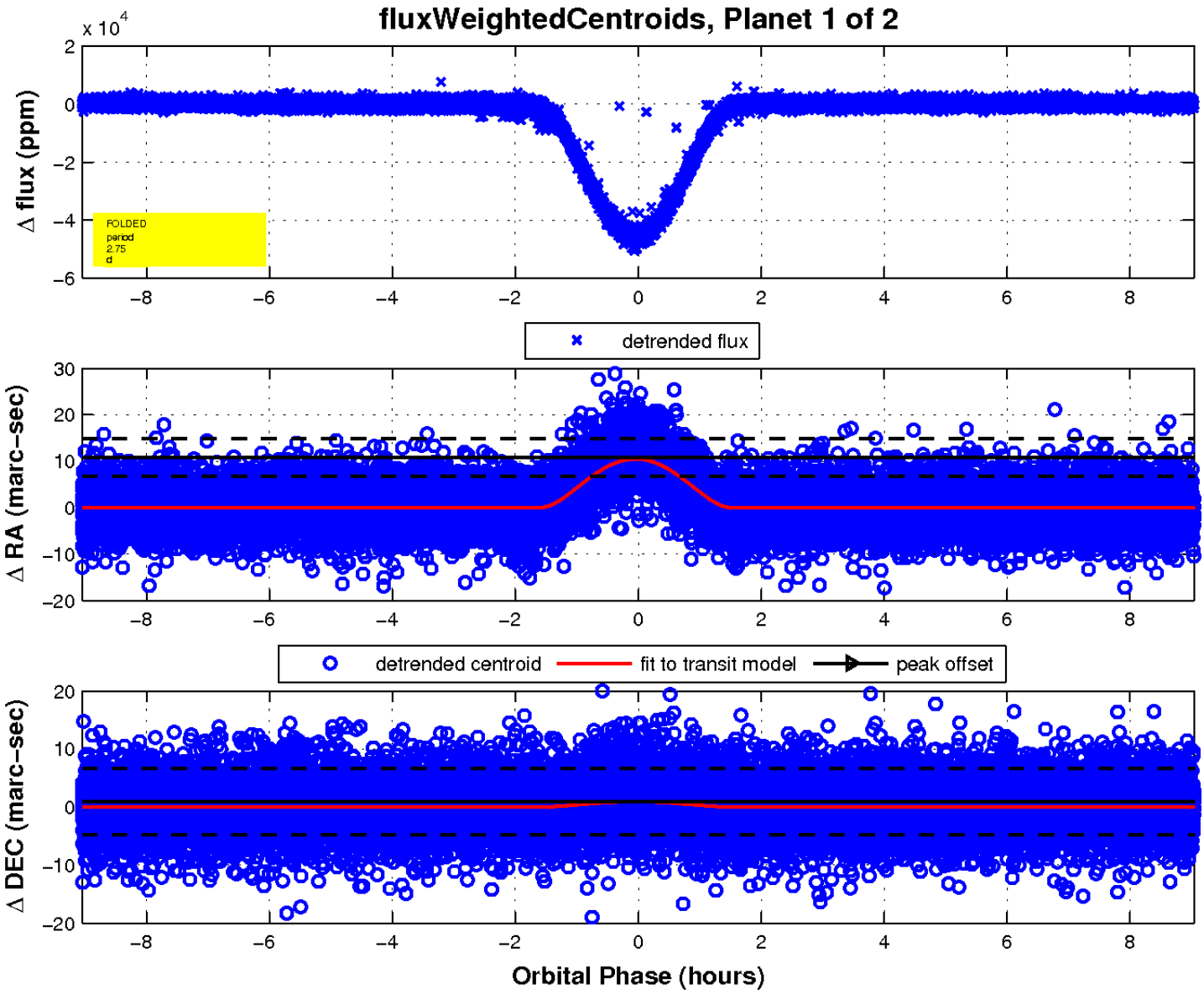


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

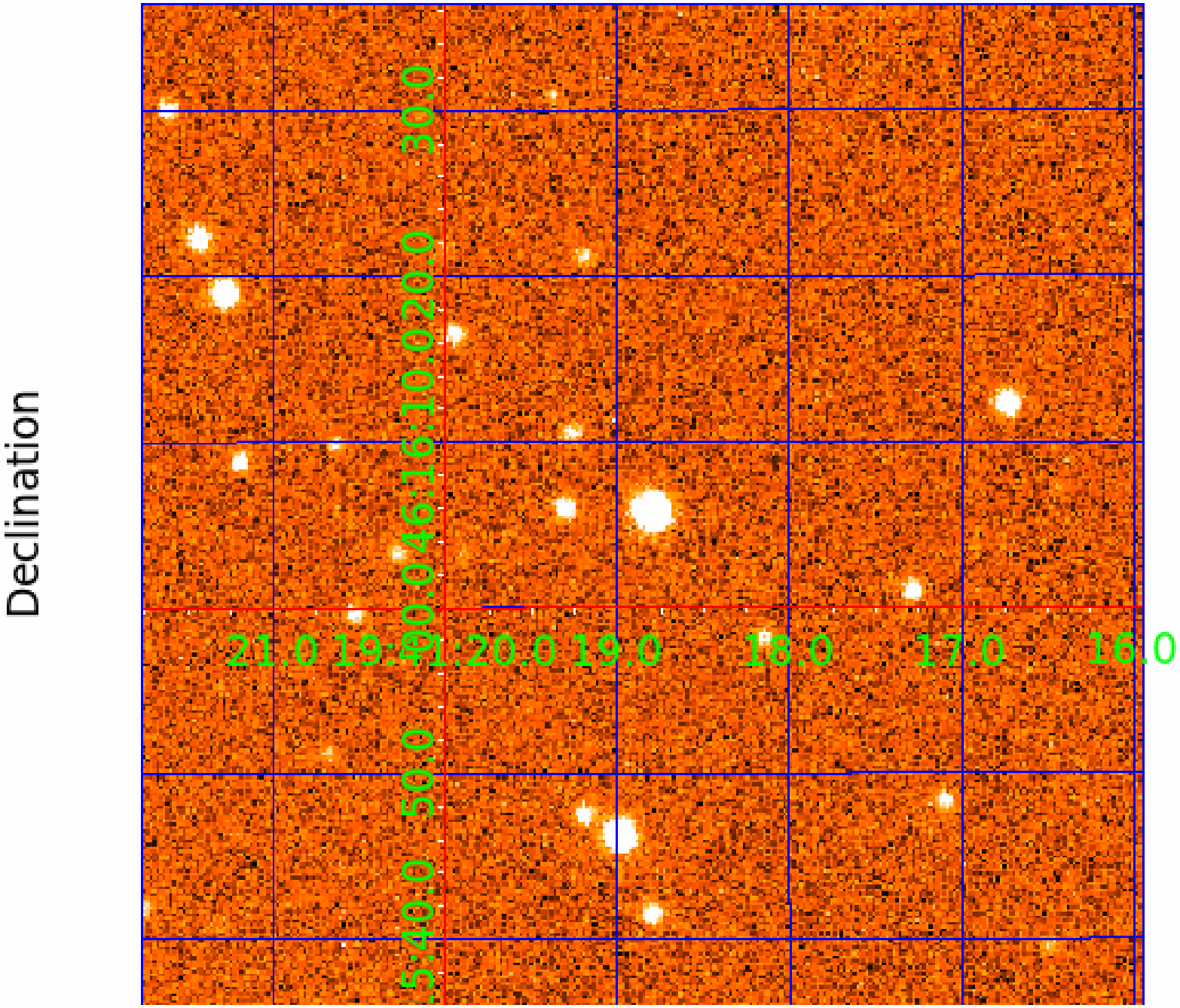


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
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40:0
30.0
20.0
10.0
46:16
21.0
19:40
21:20.0
19.0
18.0
17.0
16.0

KIC 009597095

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 ($S_\oplus$)
009597095-01	OBS	7200.01	2.745640	131.707933	44660.3	3.015	1828.5	1712.3	1.00	5780	30.38	678.81
009597095-02	OBS	No	2.745641	133.080797	8500.5	2.856	350.2	342.9	1.00	5780	16.83	678.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597095-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
009597095-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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.

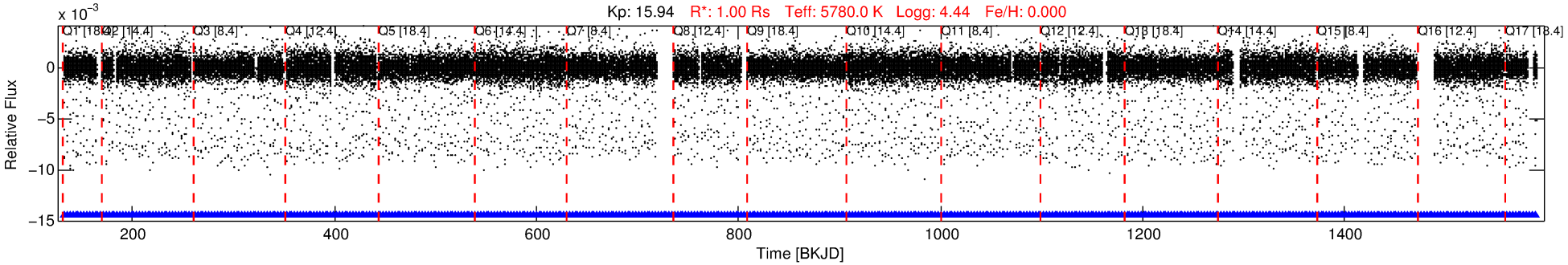
Ephemeris Match Information For 009597095-02

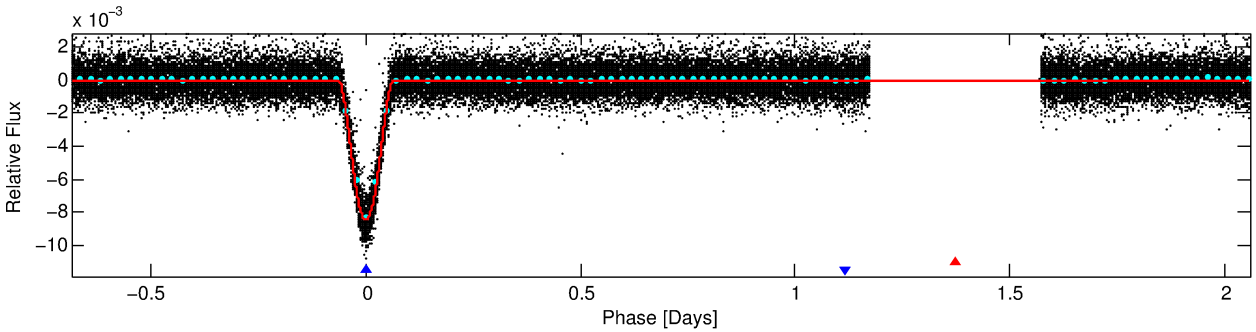
No Significant Match Found

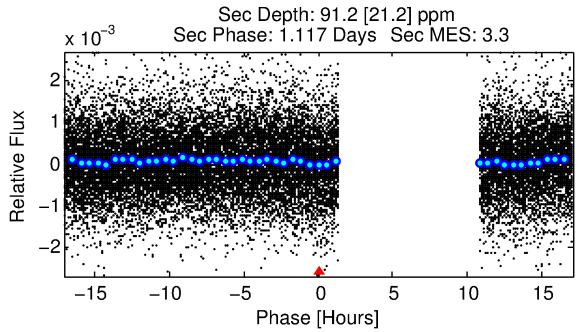
DV One-Page Summary

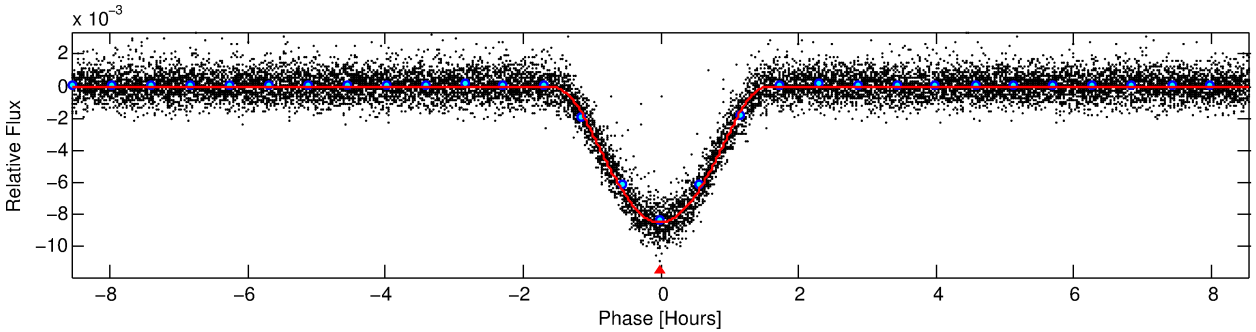
KIC: 9597095 Candidate: 2 of 2 Period: 2.746 d
KOI: K07200 Corr: No Ephemeris Match

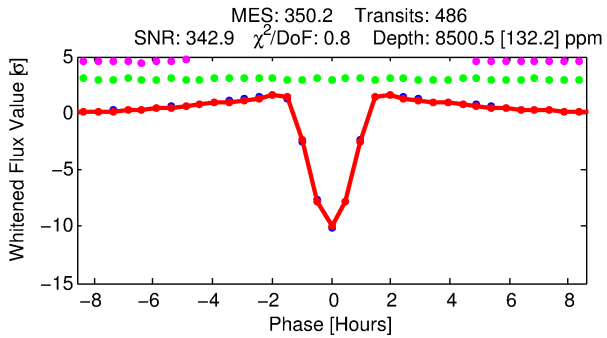
Kp: 15.94 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000

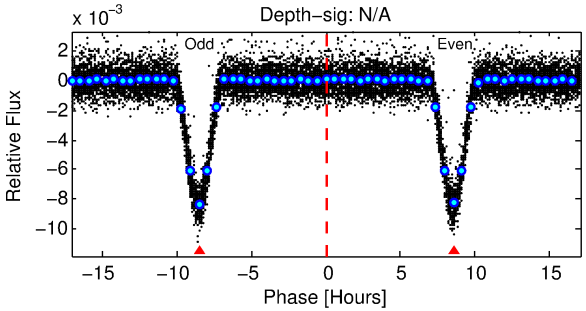


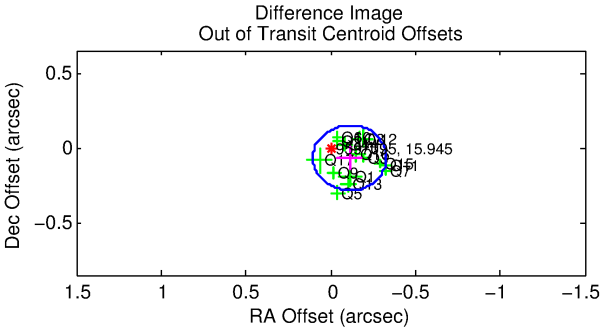












DV Fit Results:

Period = 2.74564 [0.00000] d
Epoch = 133.0808 [0.0001] BKJD
Rp/R* = 0.1543 [0.0246]
a/R* = 4.37 [0.09]
b = 1.00 [0.04]

Seff = 678.81 [0.00]
Teq = 1302 [0] K
Rp = 16.83 [2.68] Re
a = 0.0384 [0.0000] AU

Ag = 0.26 [0.10] [−7.20σ]
Teffp = 1438 [142] K [0.96σ]

DV Diagnostic Results:

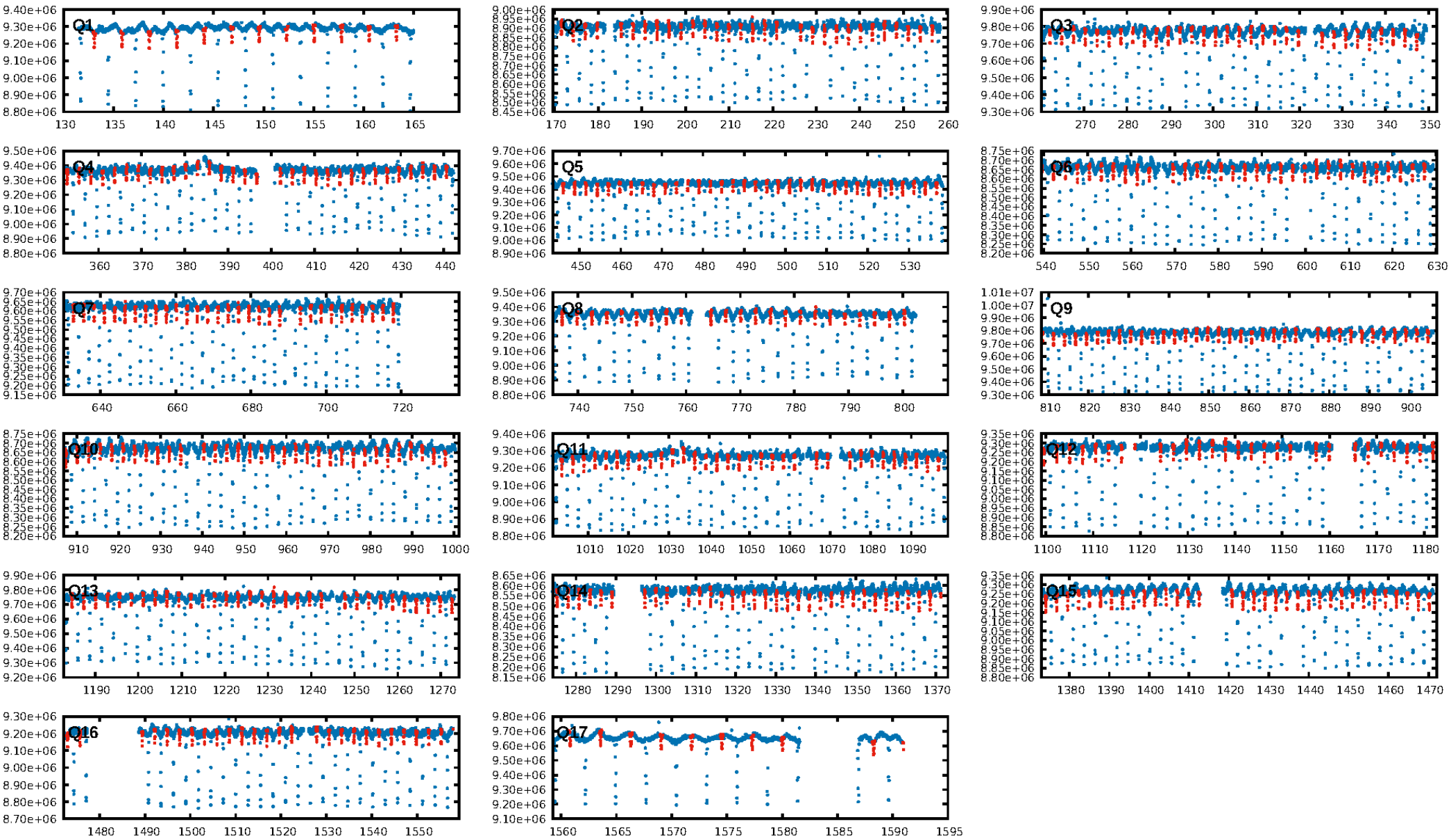
ShortPeriod−sig: 0.0% [0.00σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [464/464]
GhostDiagnostic−chr: 3.797

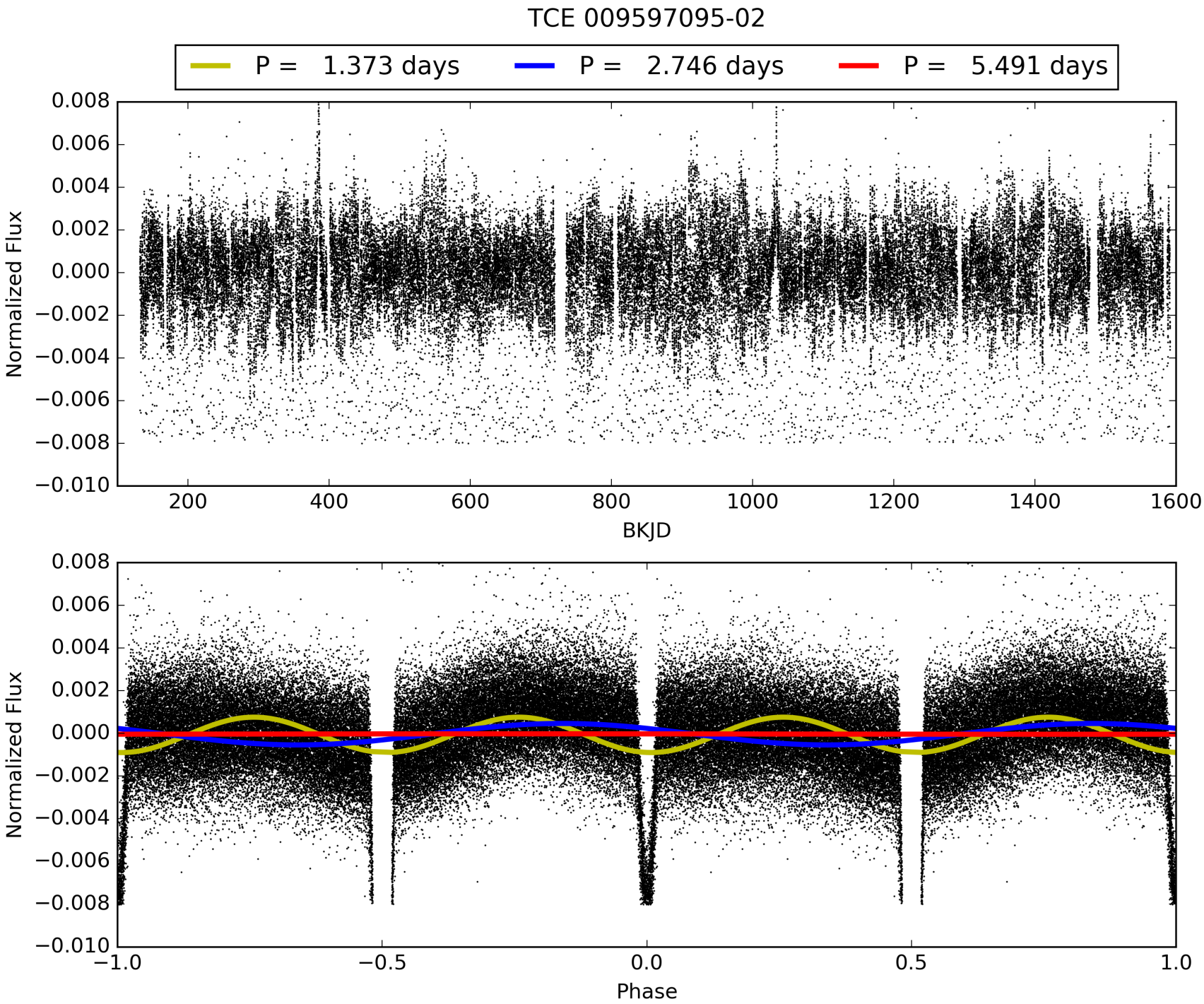
Centroid−sig: 0.2%
Centroid−so: 0.483 arcsec [13.85σ]
OotOffset−rm: 0.131 arcsec [1.82σ]
KicOffset−rm: 0.590 arcsec [8.44σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 1.00 [17/17]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03−Feb−2016 07:53:51 Z

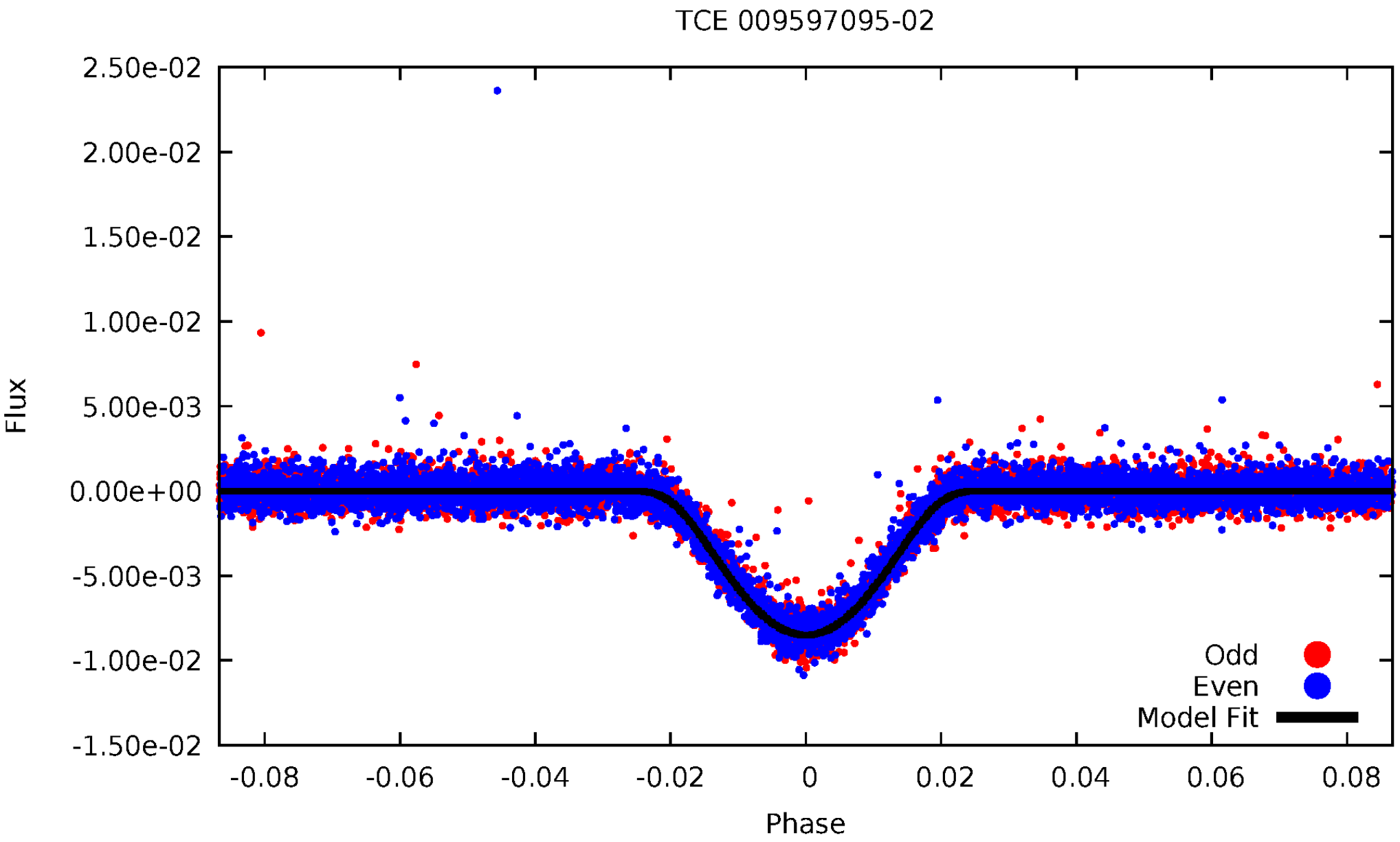
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009597095-02, PDC Light Curves

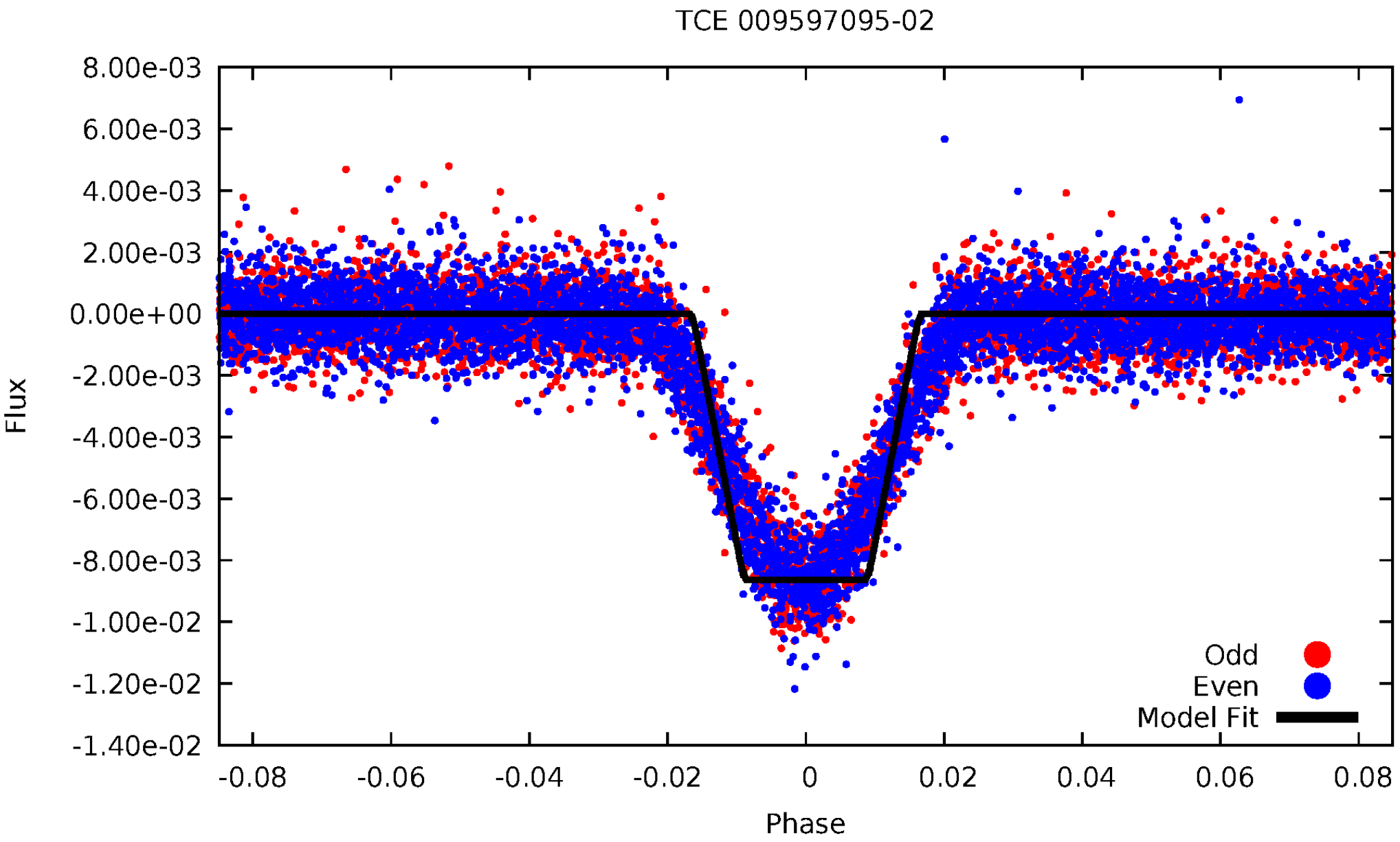



TCE 009597095-02
P = 1.373 days
P = 2.746 days
P = 5.491 days
Normalized Flux
BKJD
Phase
0.008
0.006
0.004
0.002
0.000
−0.002
−0.004
−0.006
−0.008
−0.010
200
400
600
800
1000
1200
1400
1600
−1.0
−0.5
0.0
0.5
1.0

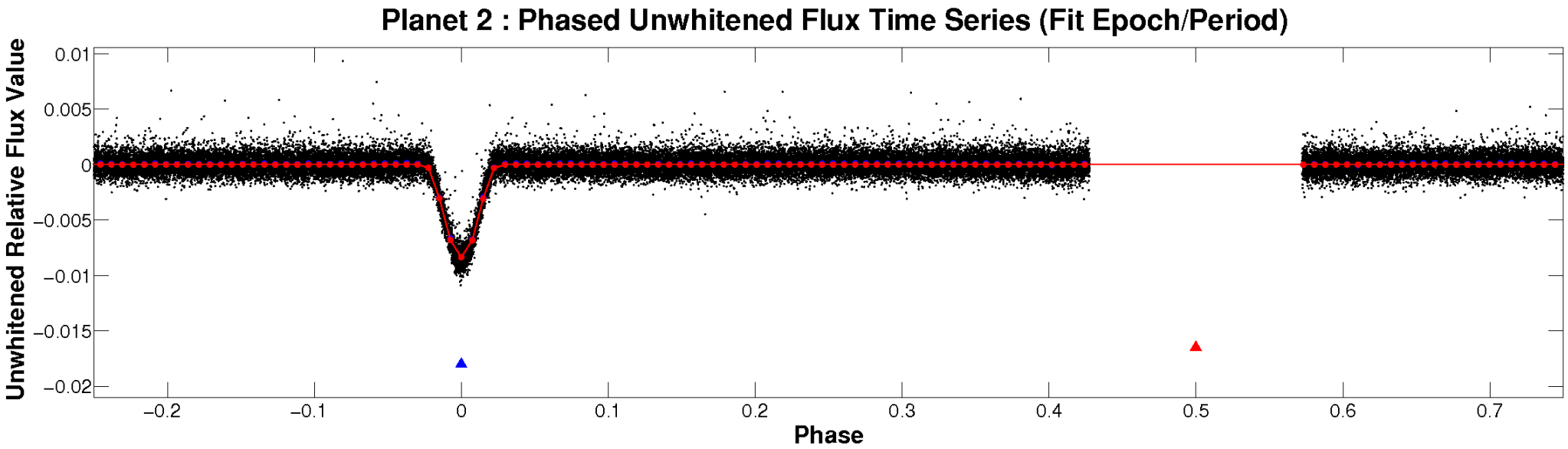
DV Odd/Even

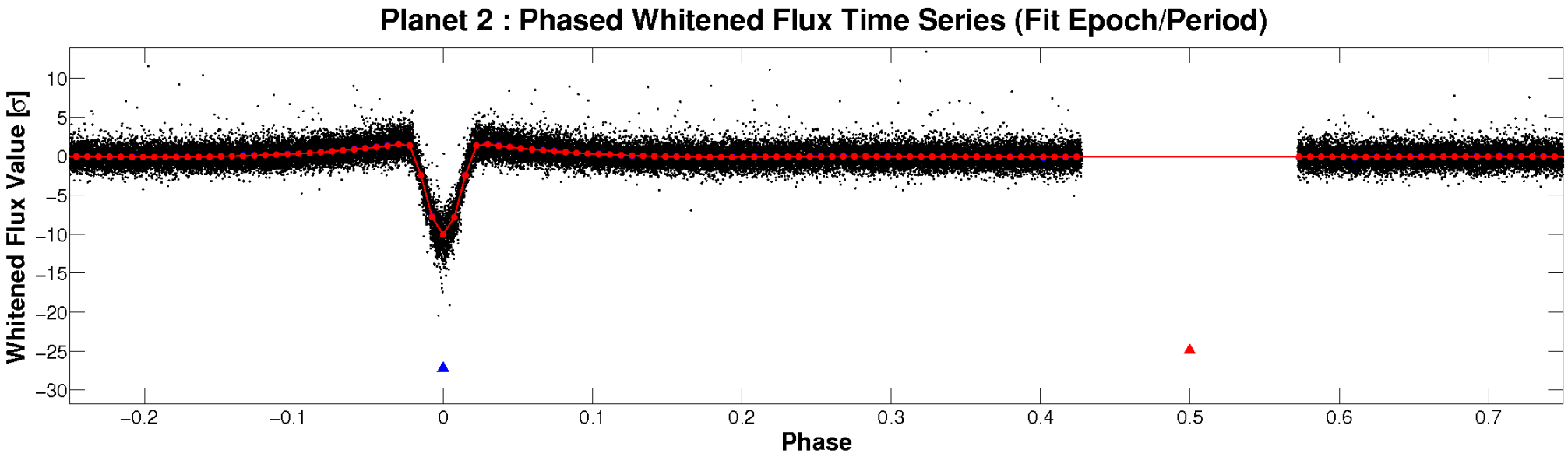

TCE 009597095-02
2.50e-02
2.00e-02
1.50e-02
1.00e-02
5.00e-03
0.00e+00
-5.00e-03
-1.00e-02
-1.50e-02
Flux
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009597095-02
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
-8.00e-03
-1.00e-02
-1.20e-02
-1.40e-02
Flux
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
Phase
Odd
Even
Model Fit

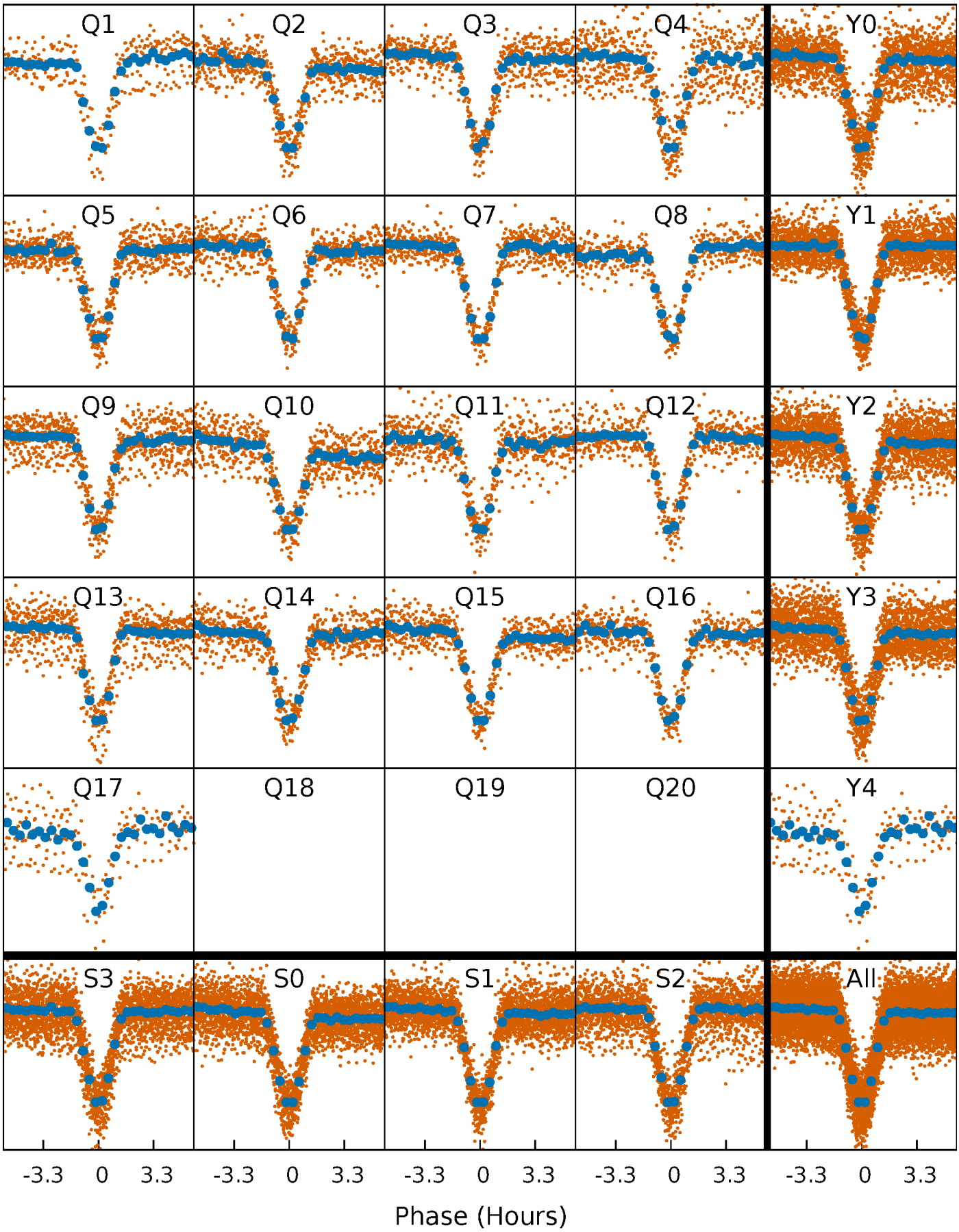
Non-Whitened Vs. Whitened Light Curve





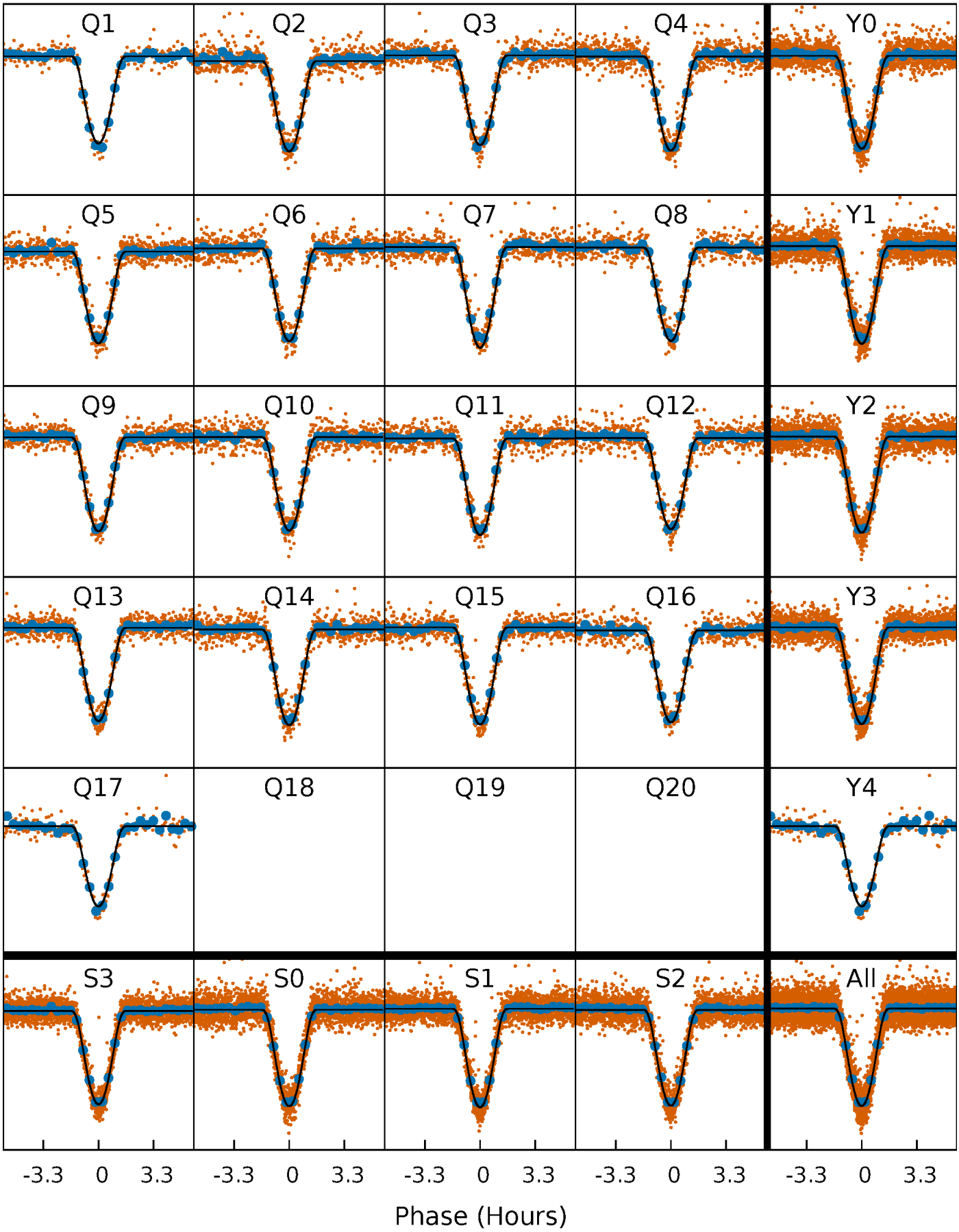
PDC Quarter-Phased Transit Curves

TCE 009597095-02 P= 2.745641 Days T_0=133.080797 (BKJD)



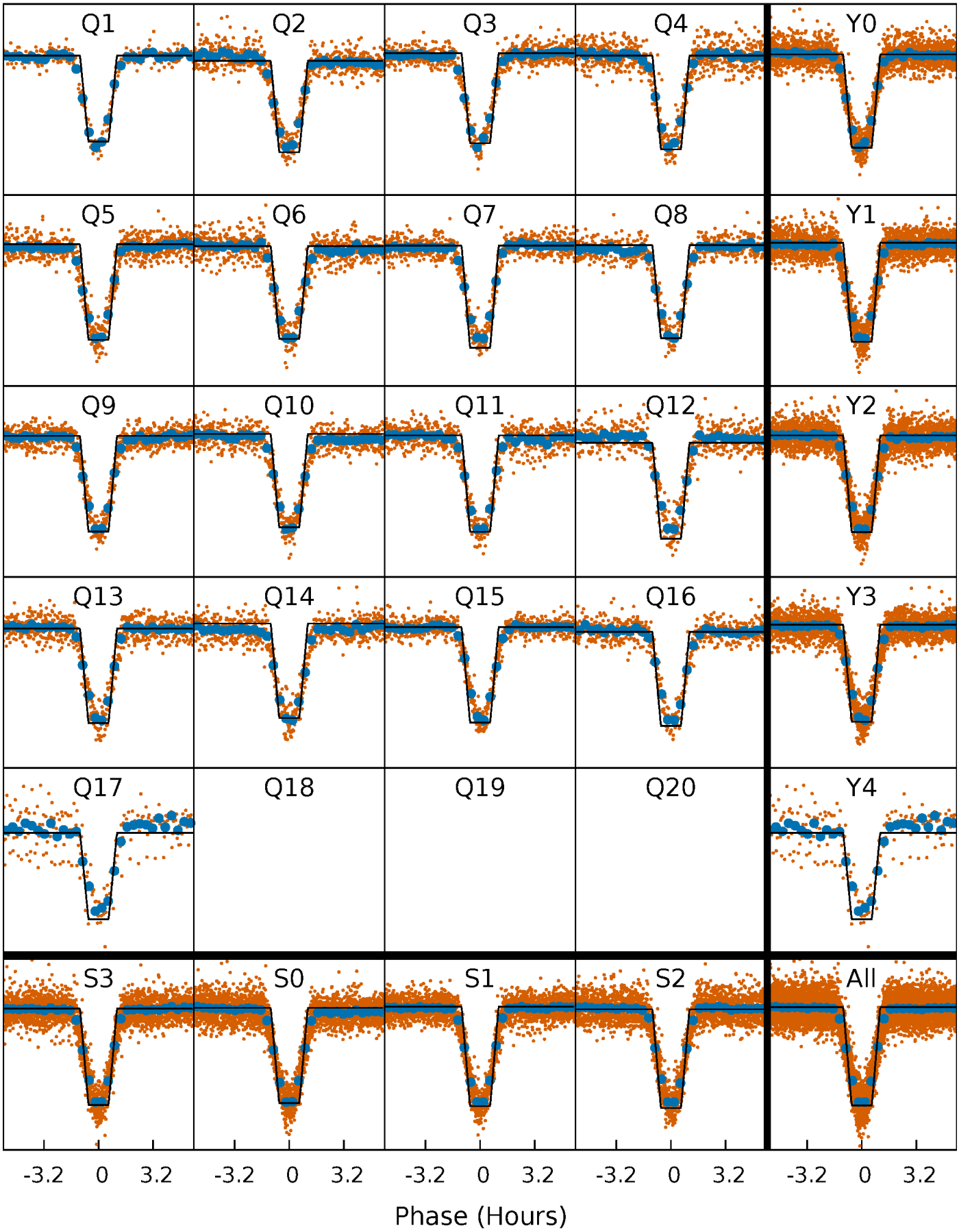
DV Quarter-Phased Transit Curves

TCE 009597095-02 P= 2.745641 Days T_0=133.080797 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

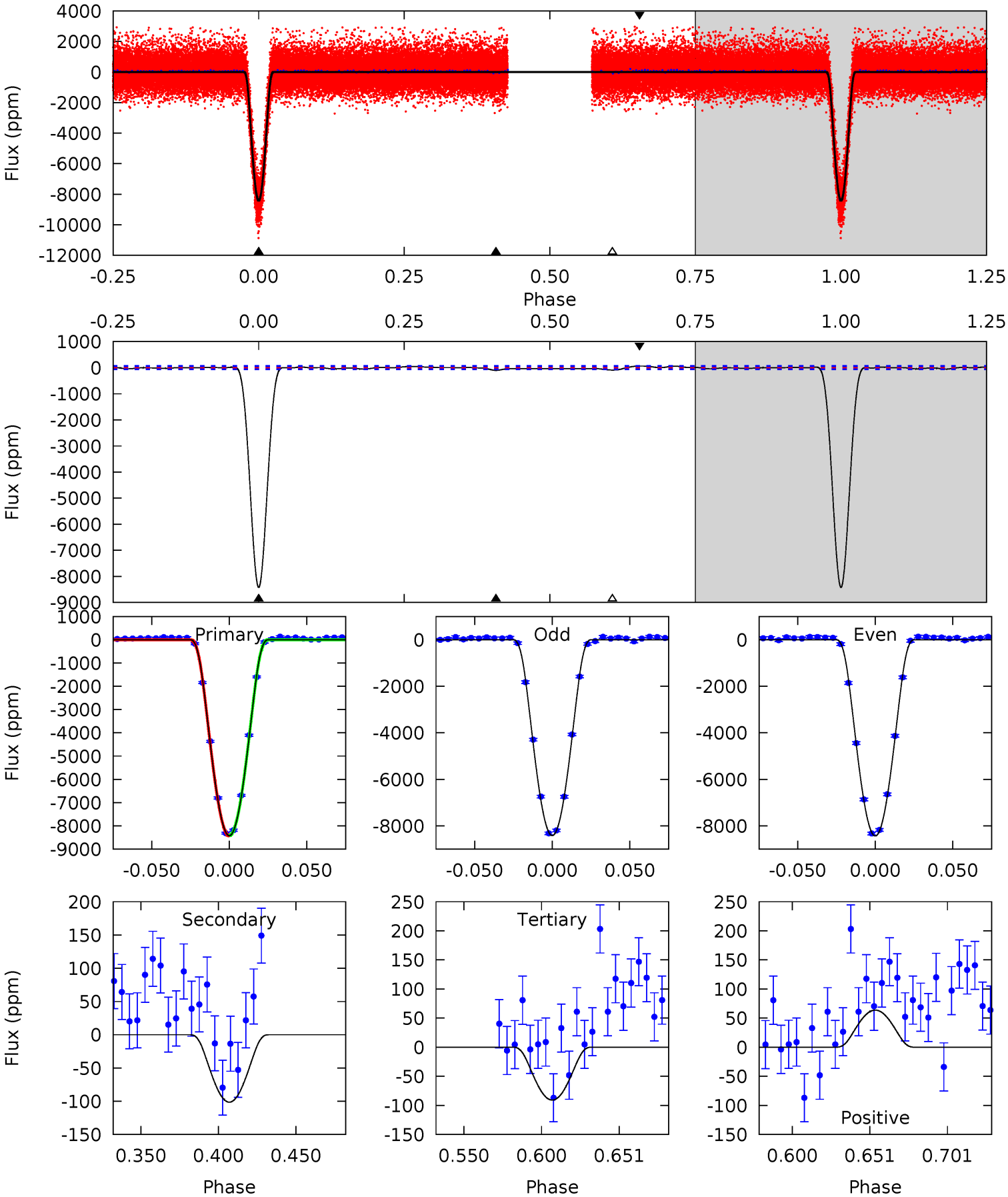
TCE 009597095-02 P= 2.745629 Days T_0=133.084105 (BKJD)



DV Model-Shift Uniqueness Test

009597095-02, P = 2.745641 Days, E = 130.335156 Days

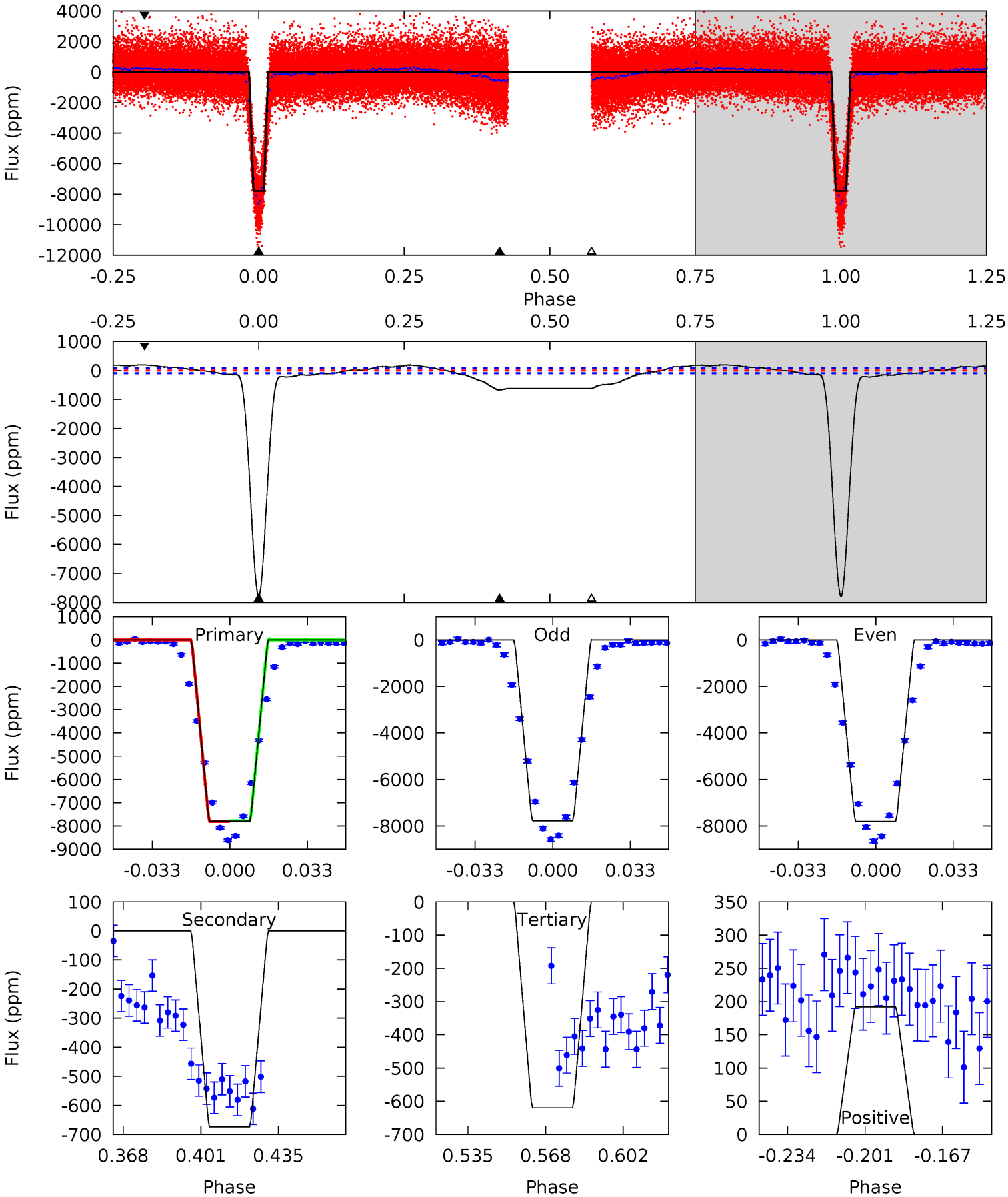
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
657.8	7.92	7.10	4.98	4.71	1.96	2.42	650.7	652.8	0.82	2.94	0.62	0.99	0.01	0.70



Alt Model-Shift Uniqueness Test

009597095-02, P = 2.745629 Days, E = 130.338476 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
400.9	34.7	31.9	9.88	4.79	2.13	9.43	369.0	391.0	2.79	24.8	0.86	1.00	0.02	0.89



Stellar Parameters For KIC 009597095

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5780^{+-1}_{-1}	$4.438^{+-1.000}_{-1.000}$	$0.000^{+-1.000}_{-1.000}$	$1.000^{+-1.000}_{-1.000}$	$-1.000^{+-1.000}_{-1.000}$	$-1.000^{+-1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 009597095-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-101±13	$16.82^{+3.05}_{-2.84}$	1817^{+87}_{-86}	-1712^{+3850}_{-392}	$0.288^{+0.136}_{-0.083}$
Alt.	-674±19	$10.23^{+2.53}_{-2.85}$	1819^{+86}_{-80}	3491^{+415}_{-270}	$5.258^{+4.850}_{-1.908}$

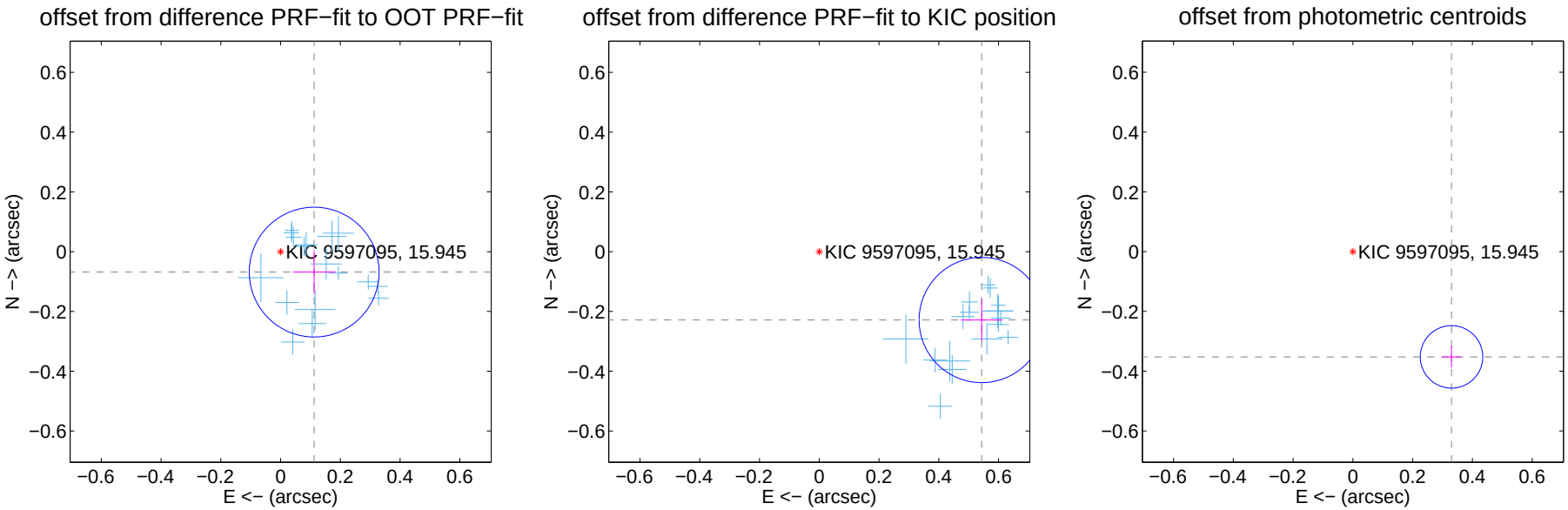
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

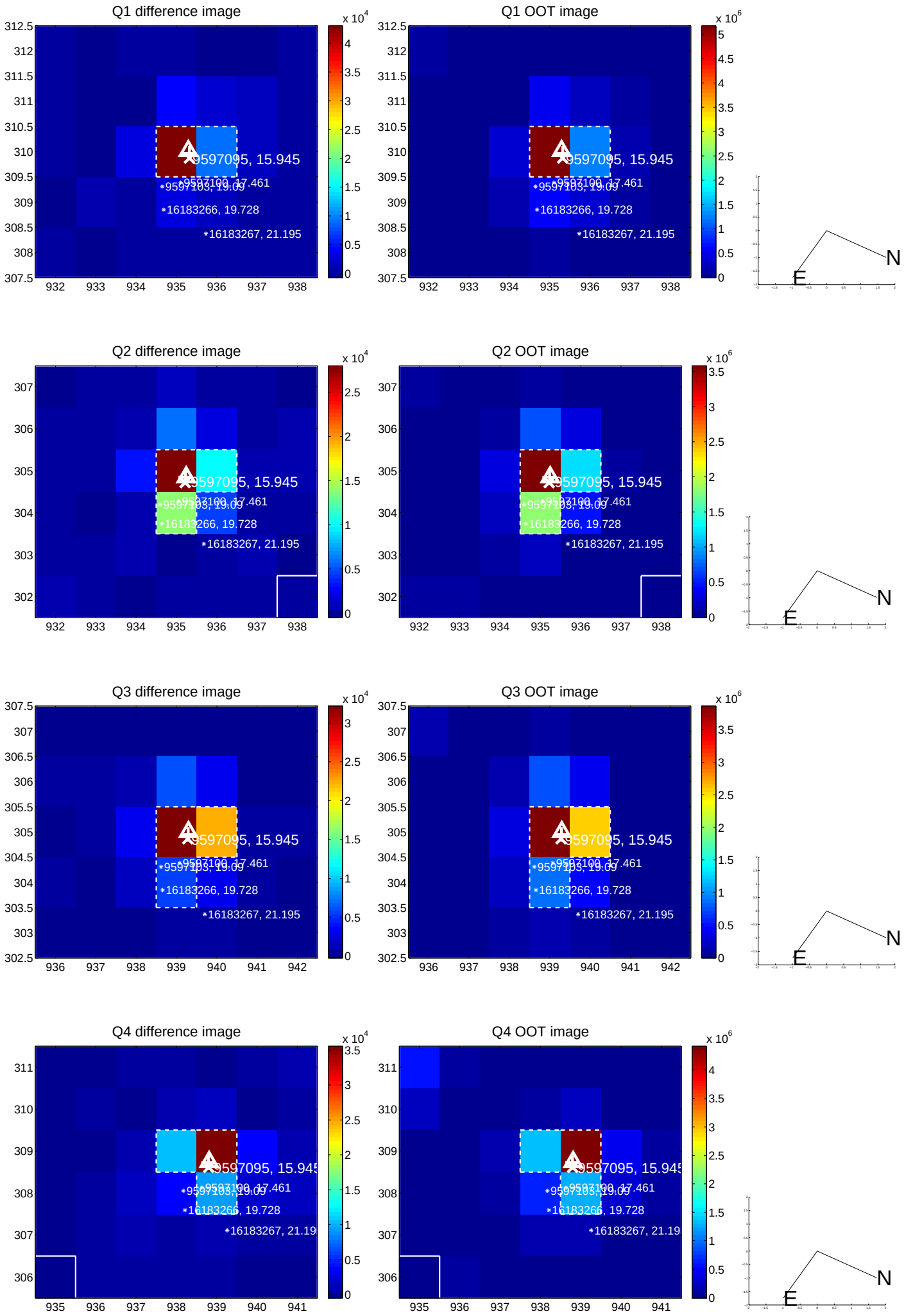
Supplemental centroid analysis for 009597095-02. Kepler magnitude: 15.95. Transit SNR 342.88
There are 17 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.131 ± 0.072	1.82	-0.112 ± 0.072	-0.068 ± 0.073
PRF-fit source offset from KIC position	0.590 ± 0.070	8.44	-0.544 ± 0.070	-0.229 ± 0.070
photometric centroid source offset	0.48 ± 0.03	13.85	-0.33 ± 0.03	-0.35 ± 0.04

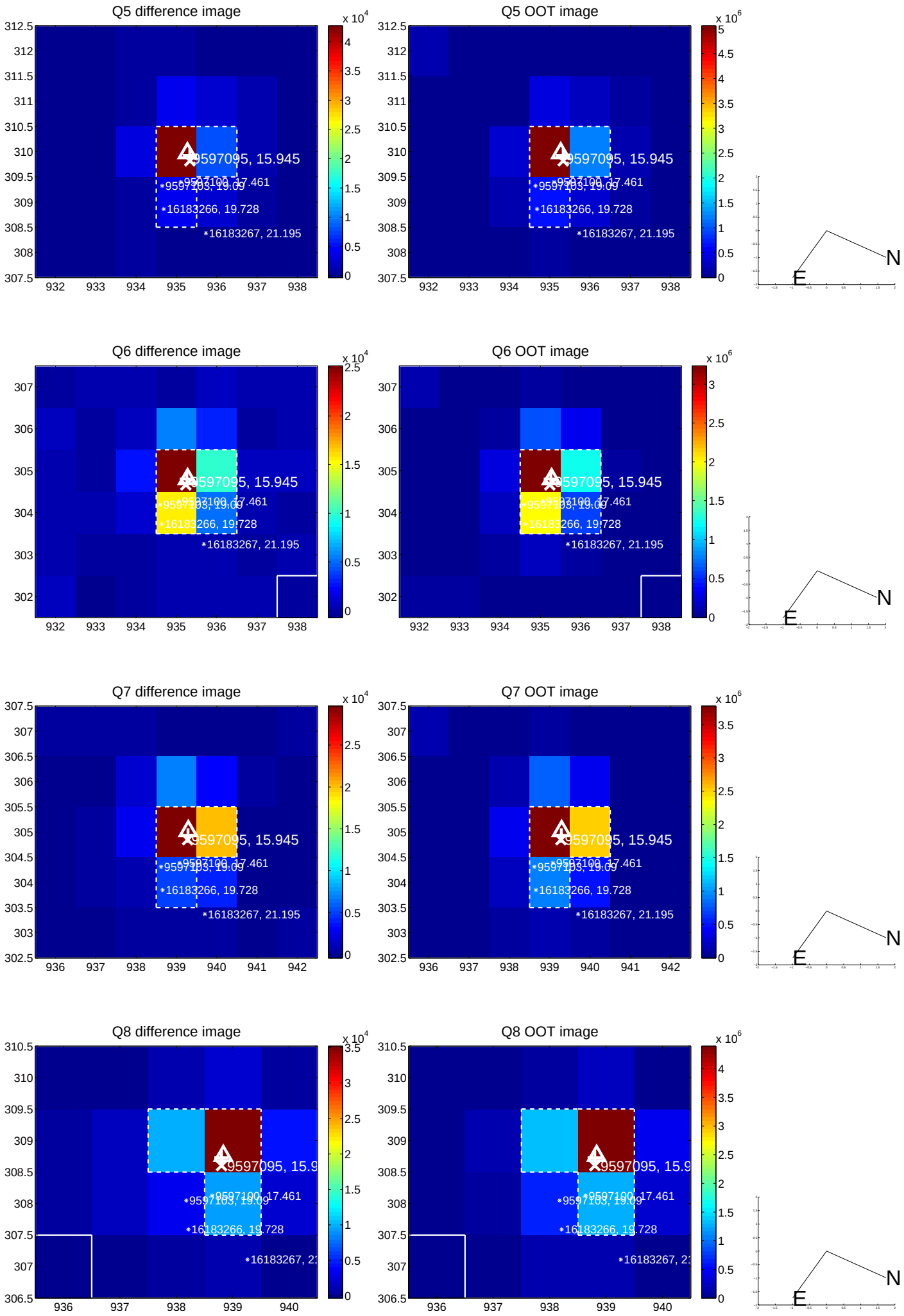


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

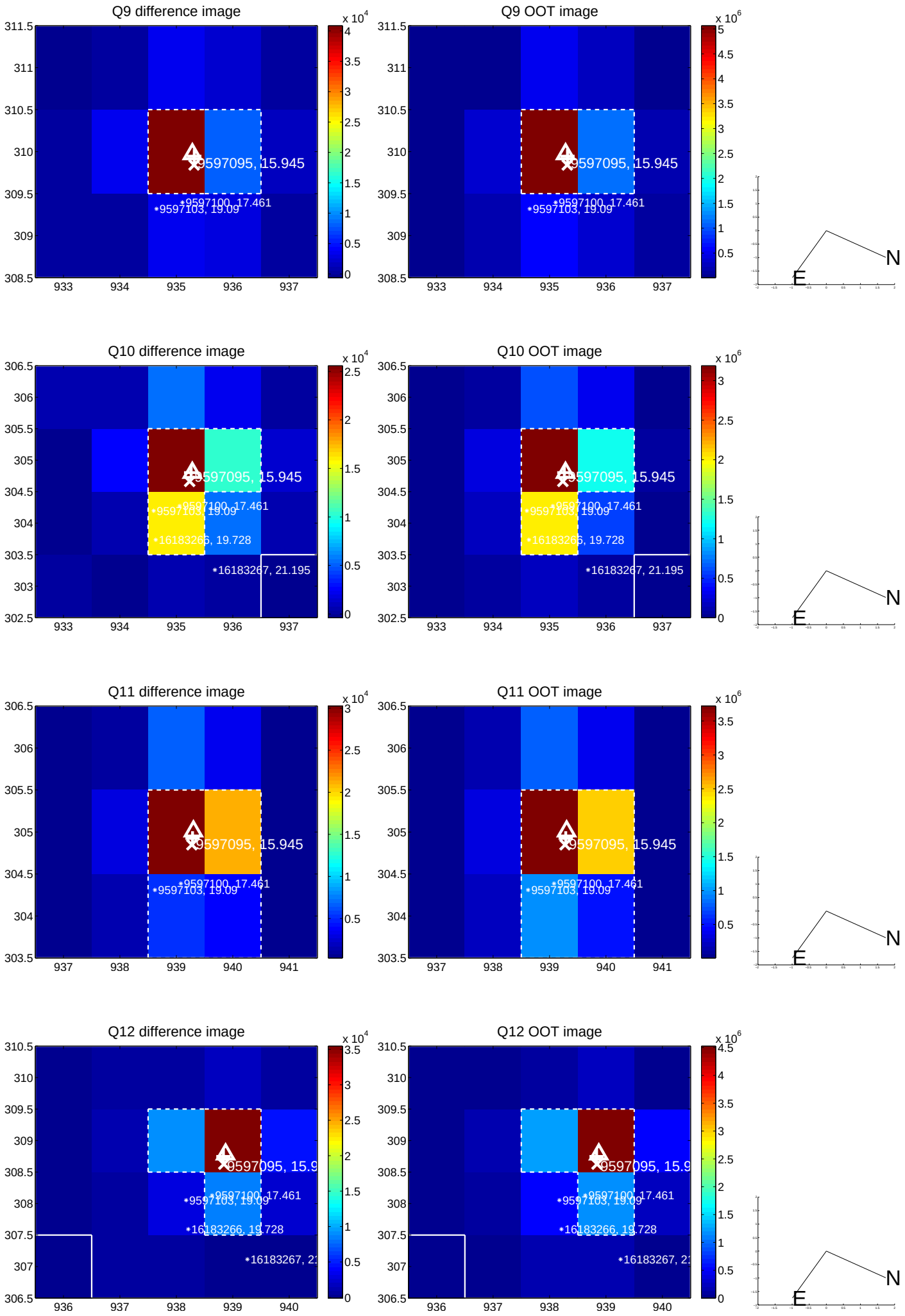
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



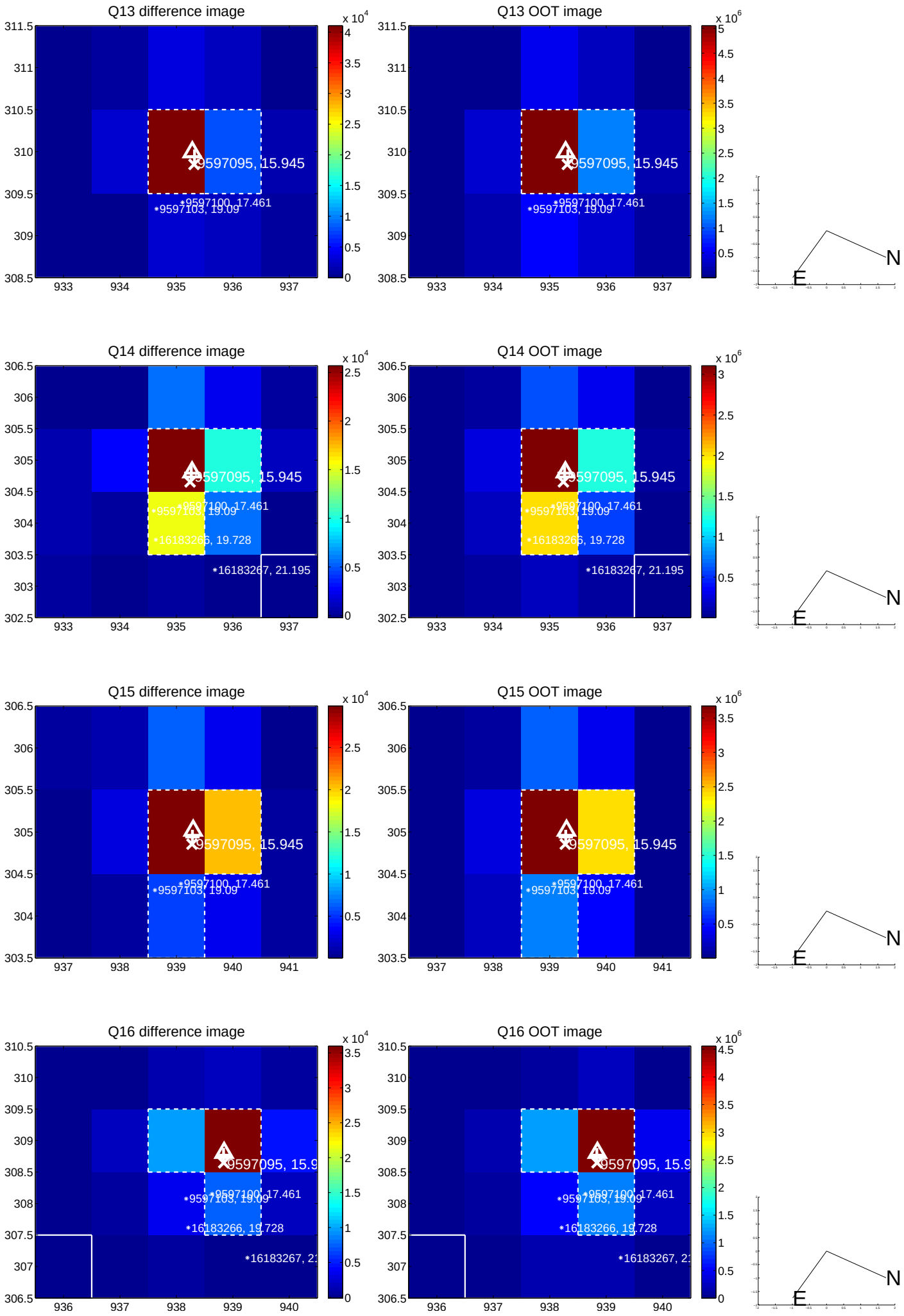
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



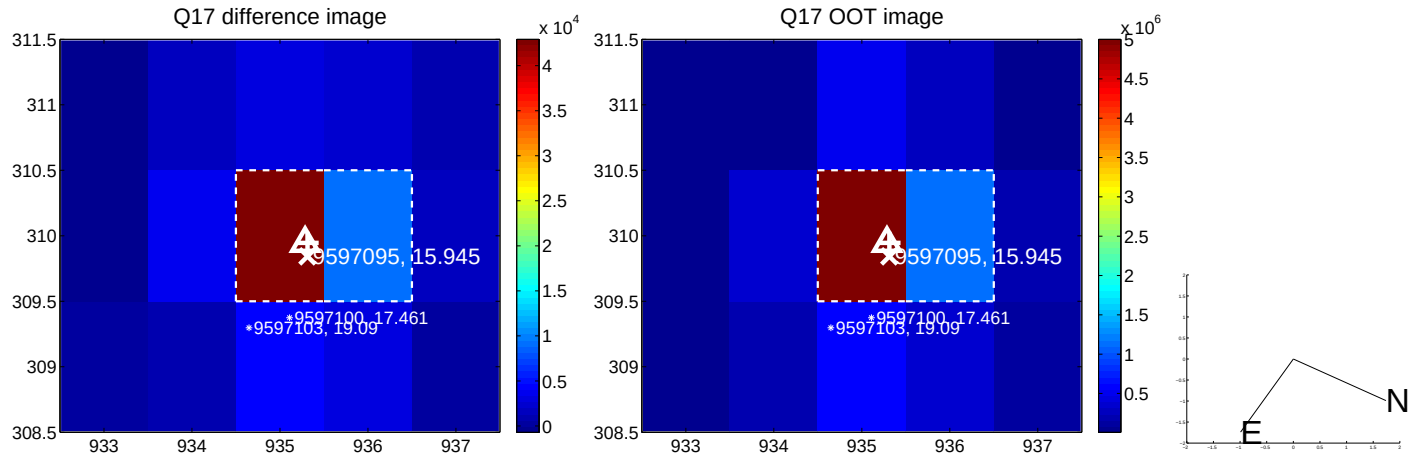
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

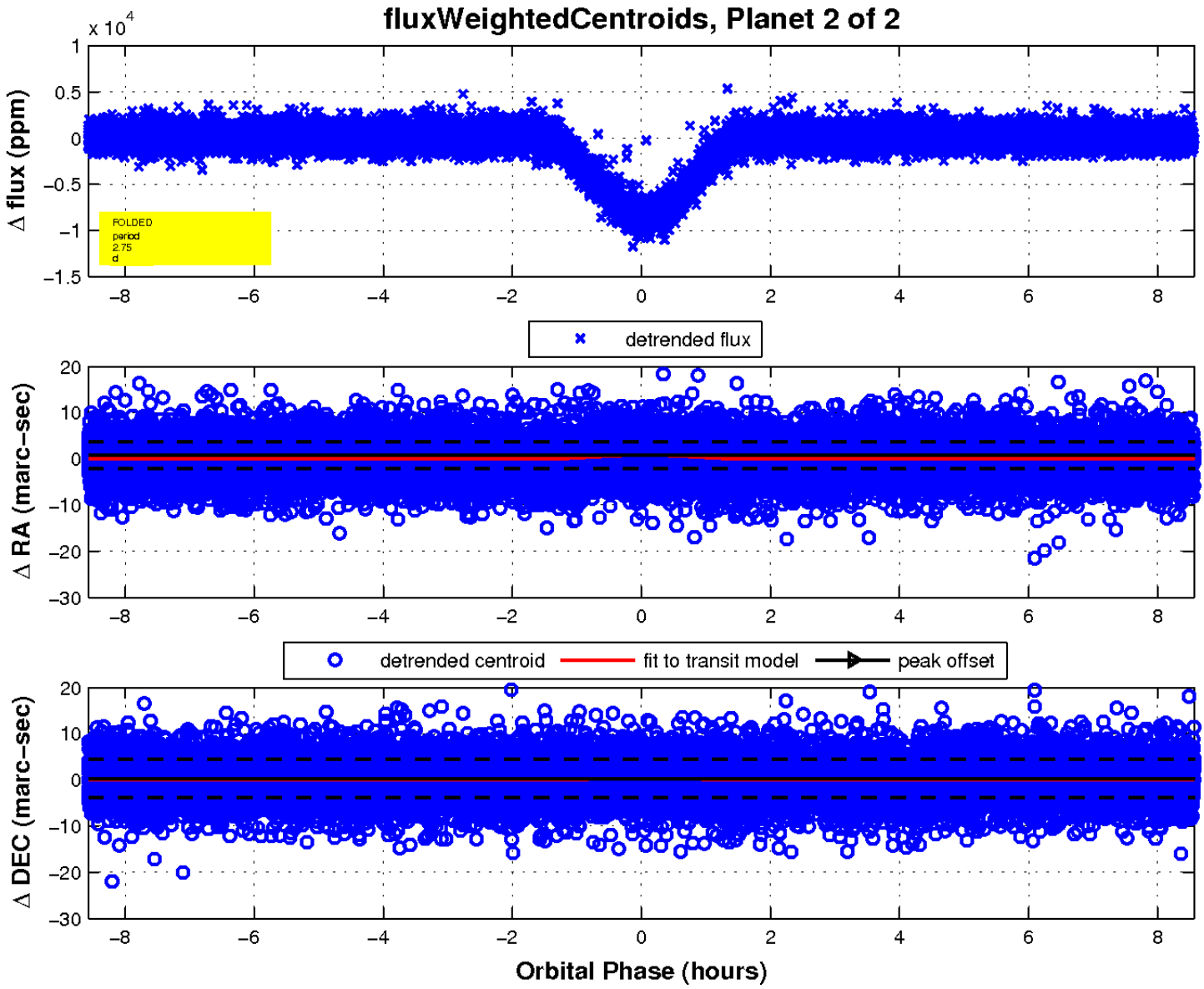


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

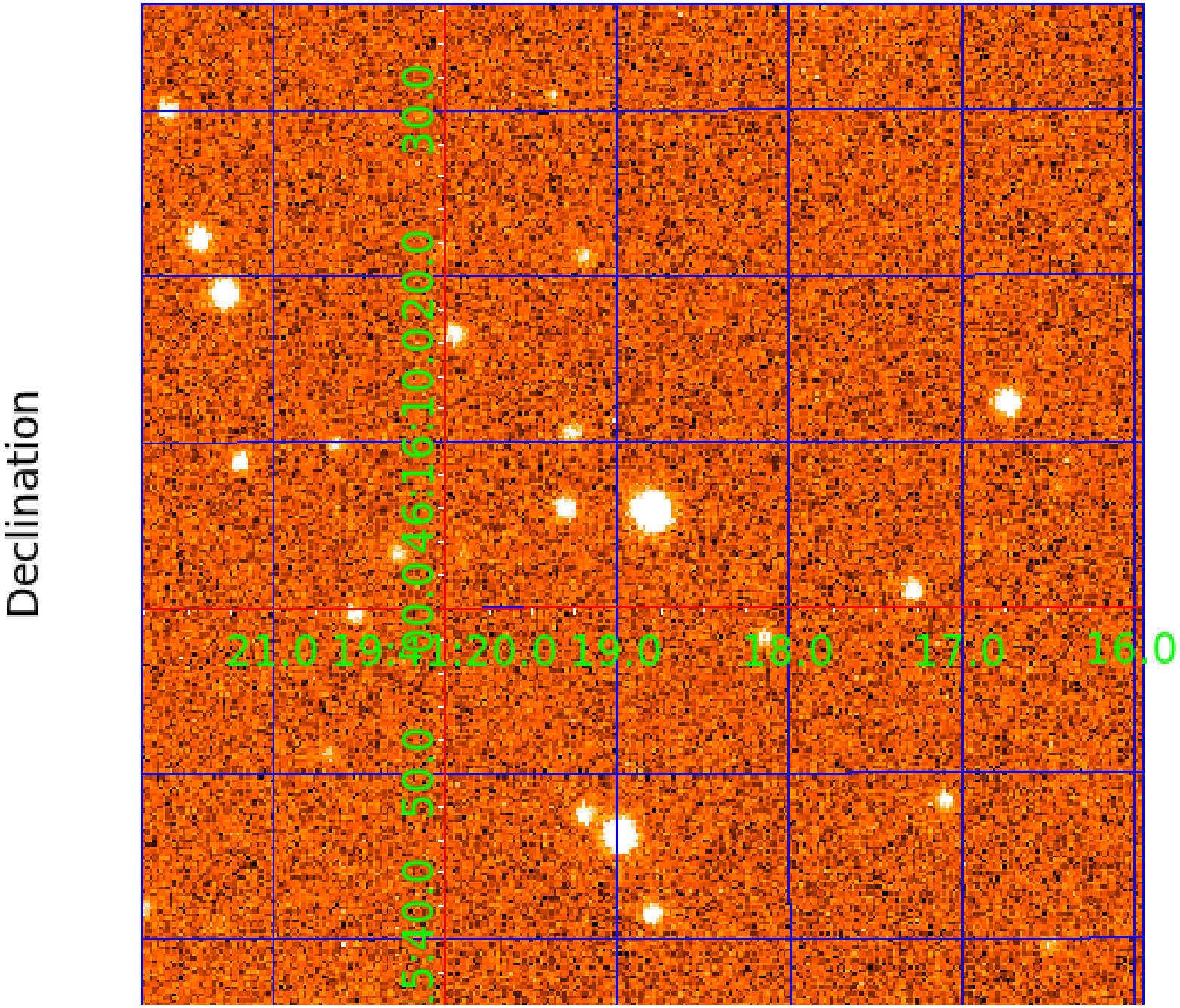


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
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30.0
20.0
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46:16
21.0
19:40
21:20.0
19.0
18.0
17.0
16.0