KIC 008953059

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 ($S_\oplus$)
008953059-01	OBS	6062.01	5.499942	136.869353	40391.5	5.139	1638.1	1520.5	1.16	6435	23.39	493.74
008953059-02	OBS	No	5.499934	133.777041	1616.6	5.112	68.9	74.7	1.16	6435	5.21	493.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008953059-01	OBS	FP	0.01	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008953059-02	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.

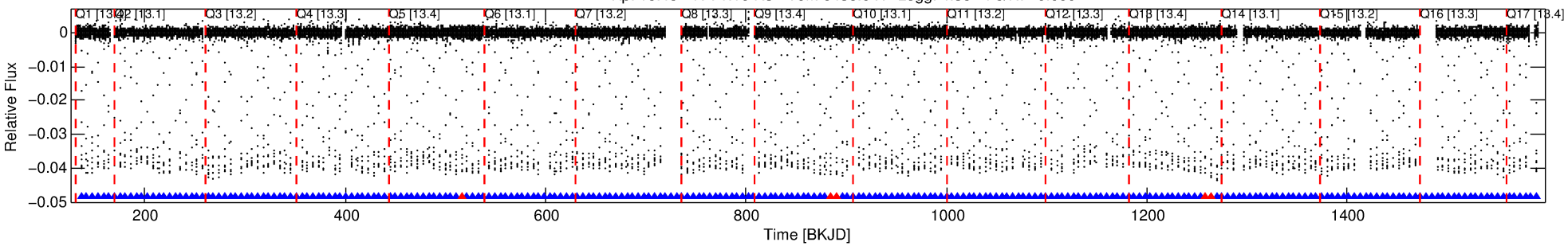
Ephemeris Match Information For 008953059-01

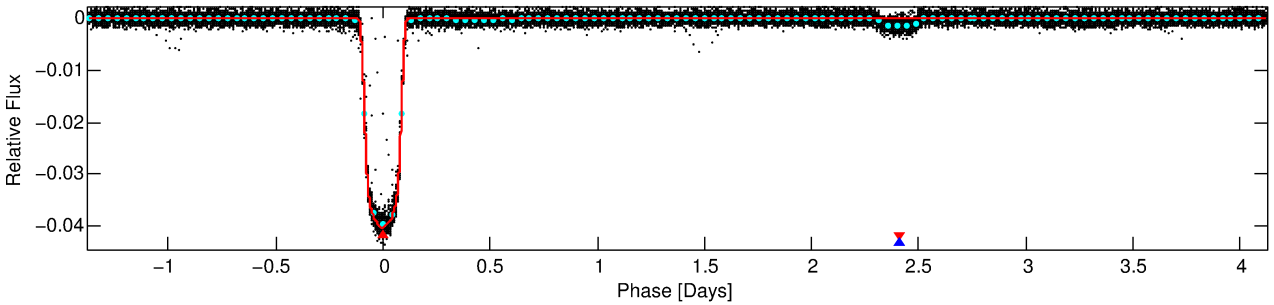
No Significant Match Found

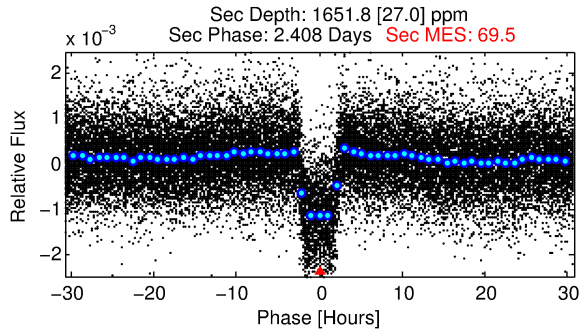
DV One-Page Summary

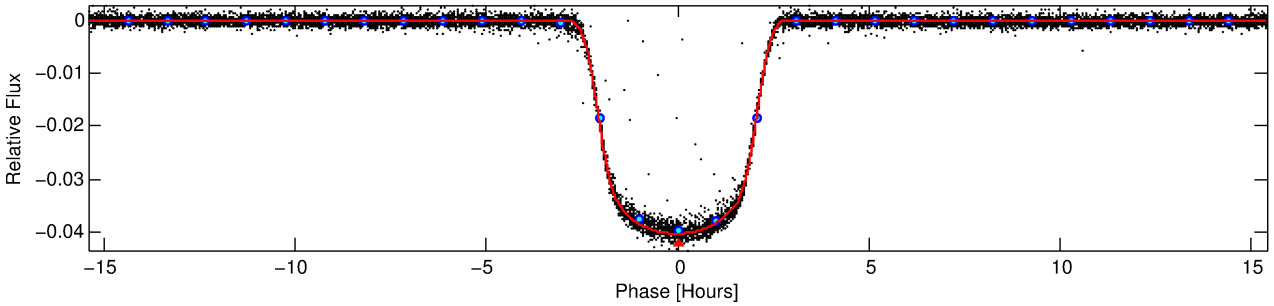
KIC: 8953059 Candidate: 1 of 2 Period: 5.500 d
KOI: K06062.01 Corr: 0.997

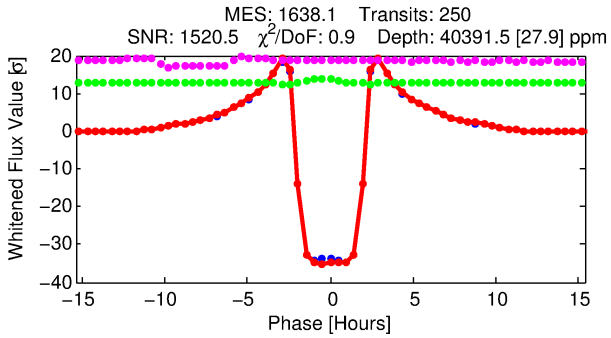
Kp: 15.48 R*: 1.16 Rs Teff: 6435.0 K Logg: 4.38 Fe/H: −0.060

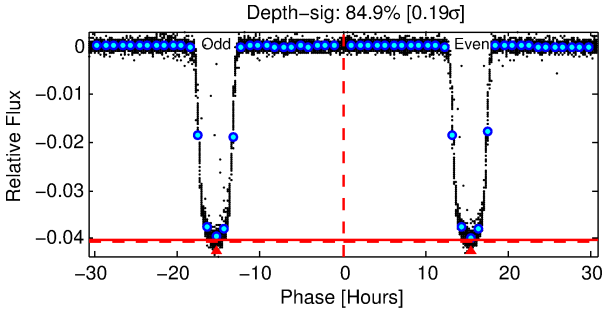


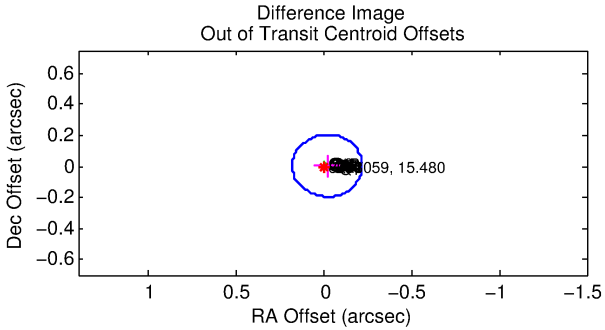












DV Fit Results:

Period = 5.49994 [0.00000] d
Epoch = 136.8694 [0.0000] BKJD
Rp/R* = 0.1853 [0.0001]
a/R* = 9.68 [0.02]
b = 0.10 [0.02]

Seff = 493.74 [200.32]
Teq = 1202 [122] K
Rp = 23.39 [7.48] Re
a = 0.0645 [0.0172] AU

Ag = 6.92 [2.66] [2.23σ]
Teffp = 3014 [100] K [11.51σ]

DV Diagnostic Results:

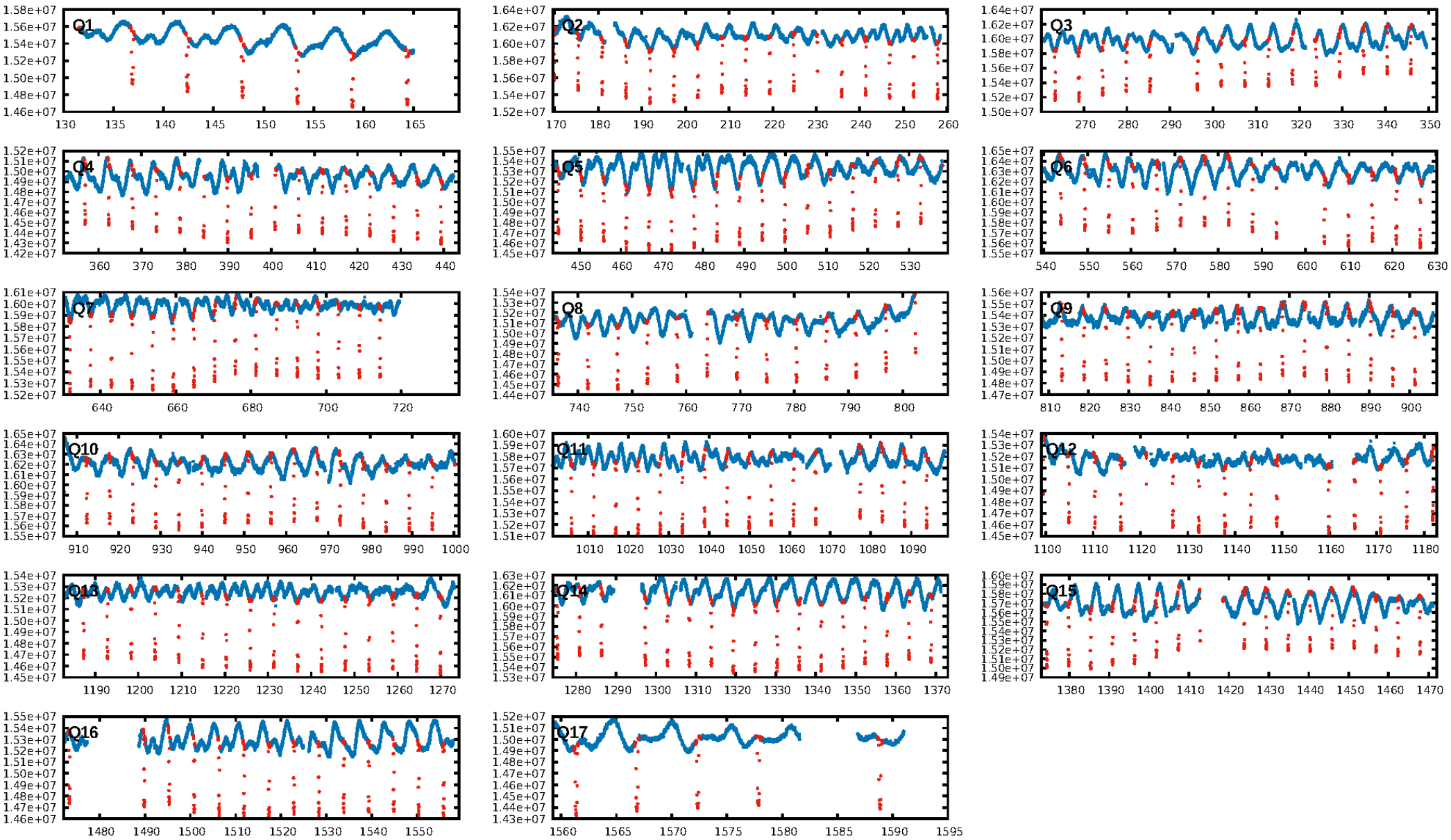
ShortPeriod−sig: 0.0% [0.00σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 0.00e+00
RollingBand−fgt: 0.98 [234/239]
GhostDiagnostic−chr: 2.427

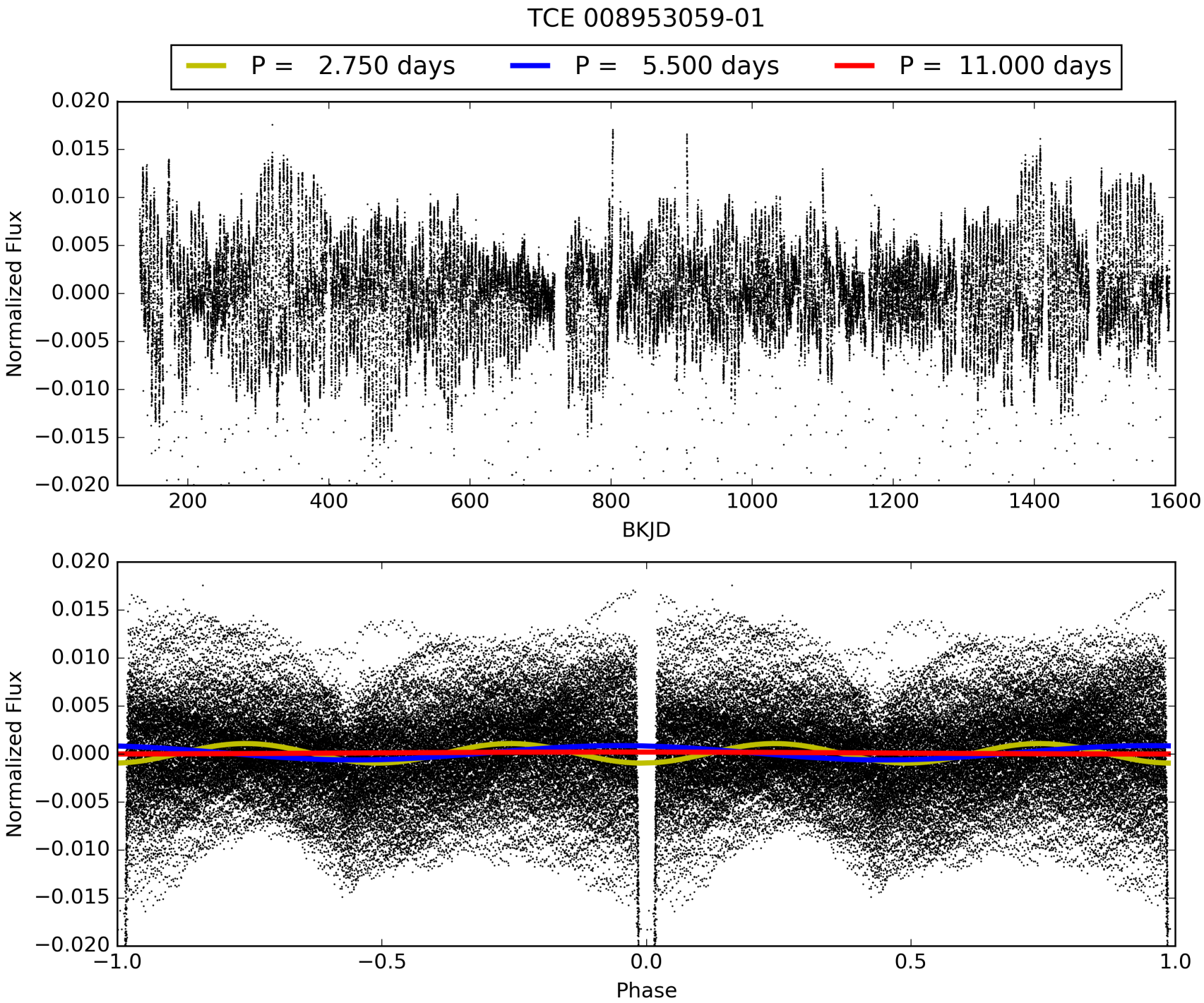
Centroid−sig: 0.0%
Centroid−so: 0.074 arcsec [15.31σ]
OotOffset−rm: 0.020 arcsec [0.31σ]
KicOffset−rm: 0.187 arcsec [2.75σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 1.00 [17/17]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 05:56:44 Z

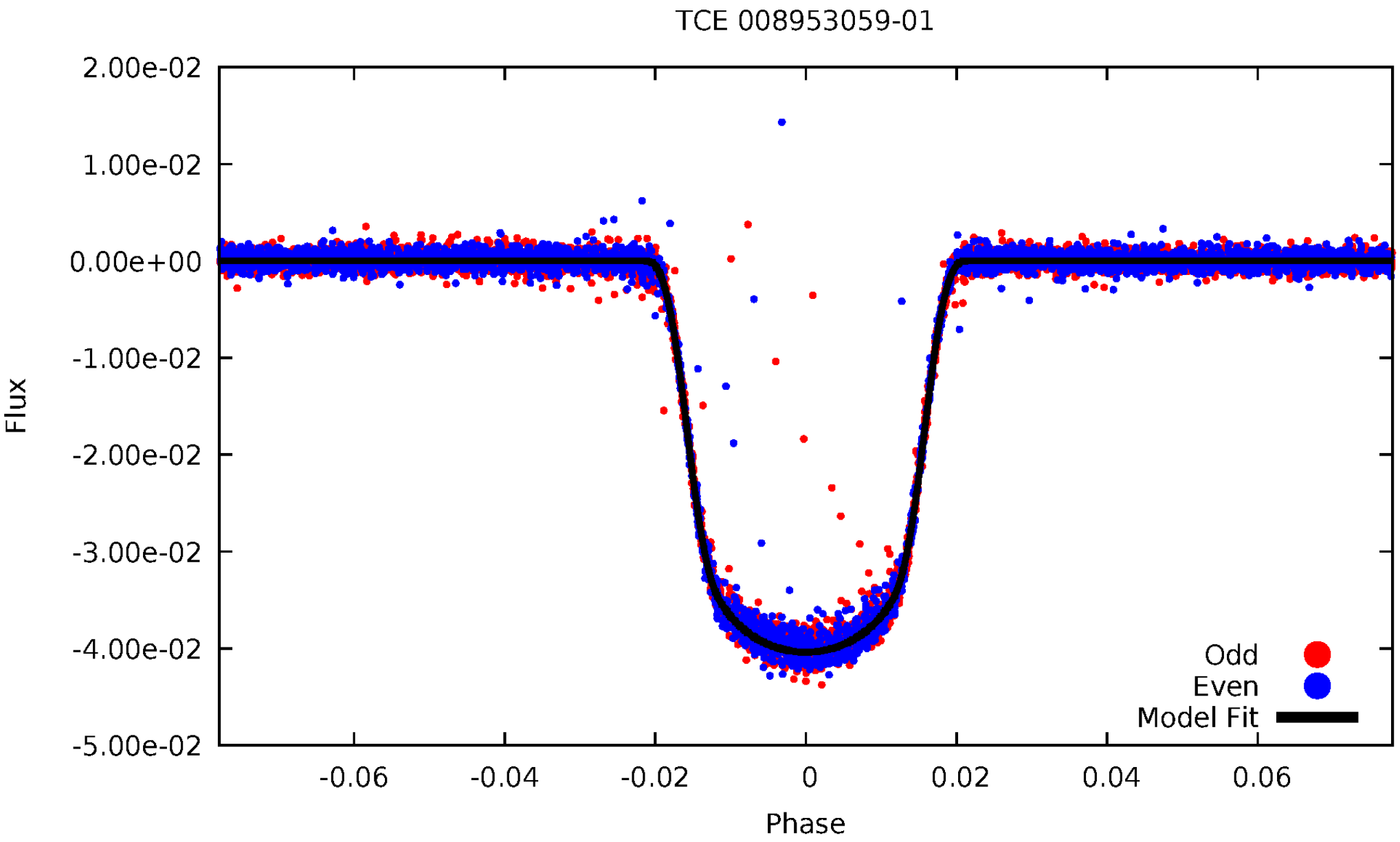
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008953059-01, PDC Light Curves

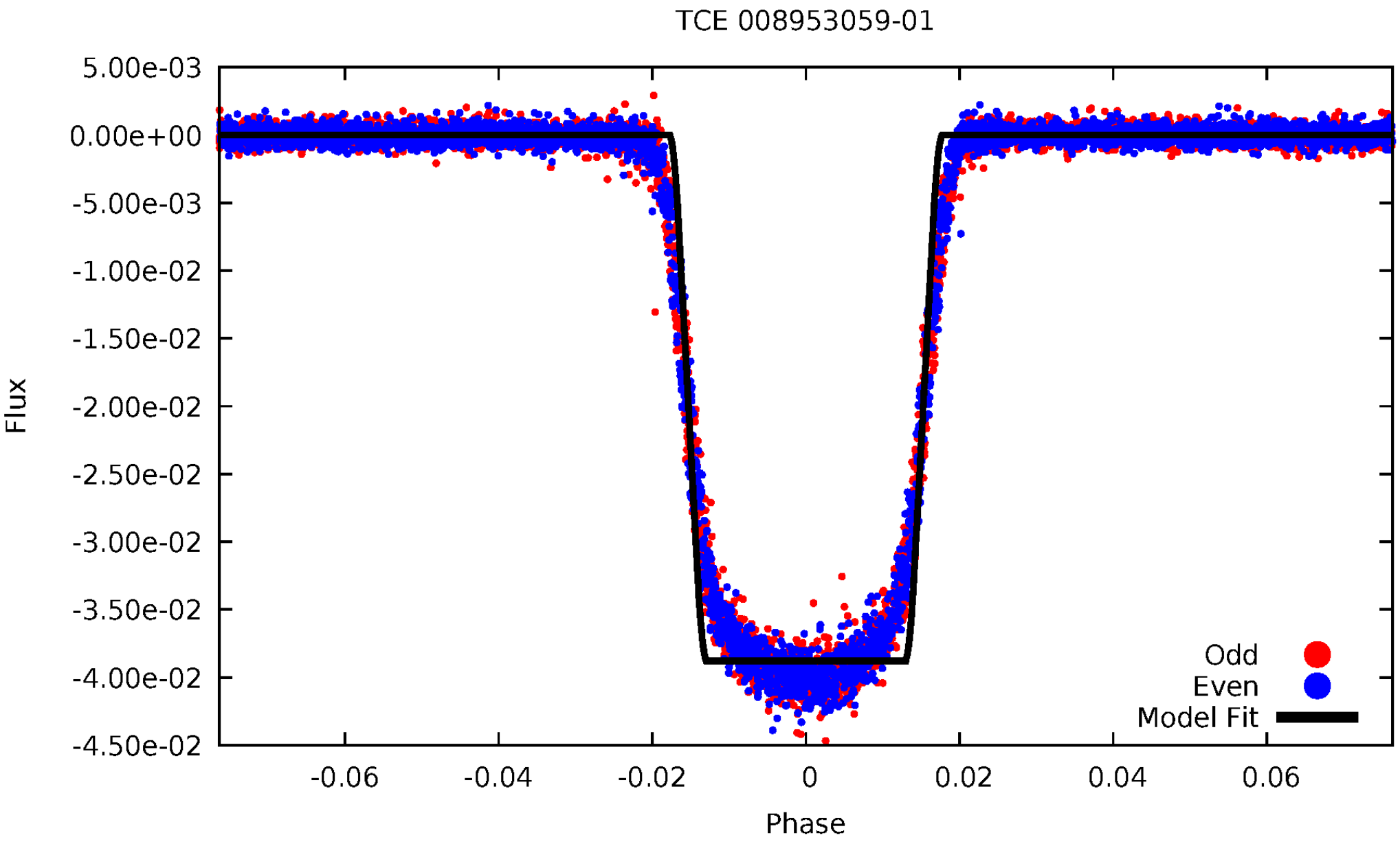



TCE 008953059-01
P = 2.750 days
P = 5.500 days
P = 11.000 days
Normalized Flux
BKJD
Normalized Flux
Phase

DV Odd/Even


TCE 008953059-01
2.00e-02
1.00e-02
0.00e+00
-1.00e-02
-2.00e-02
-3.00e-02
-4.00e-02
-5.00e-02
Flux
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008953059-01
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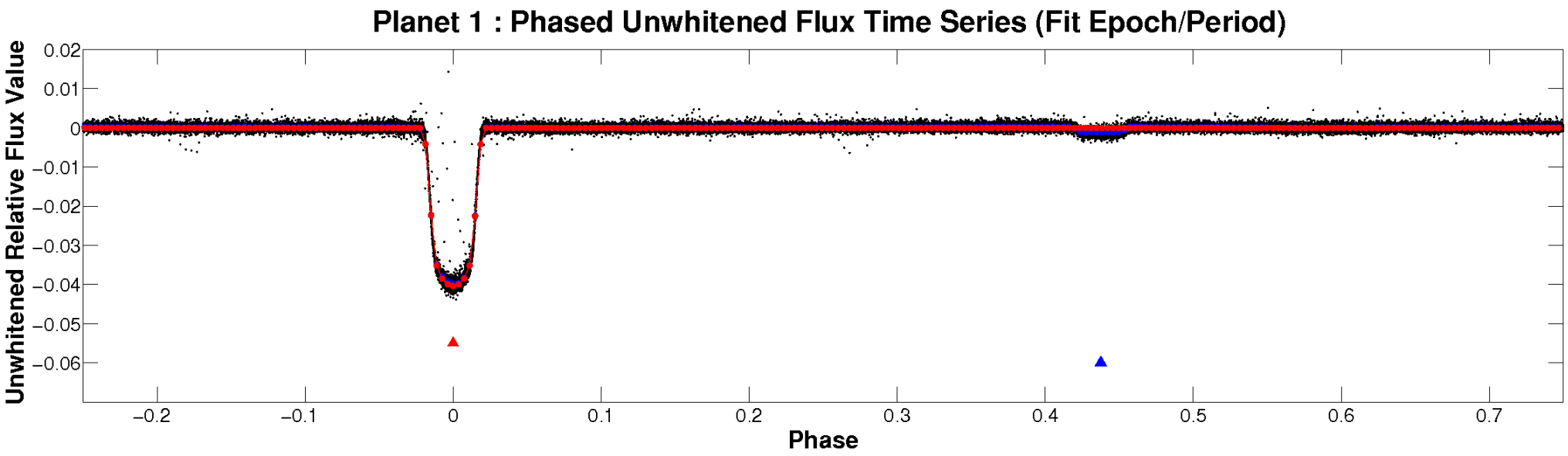
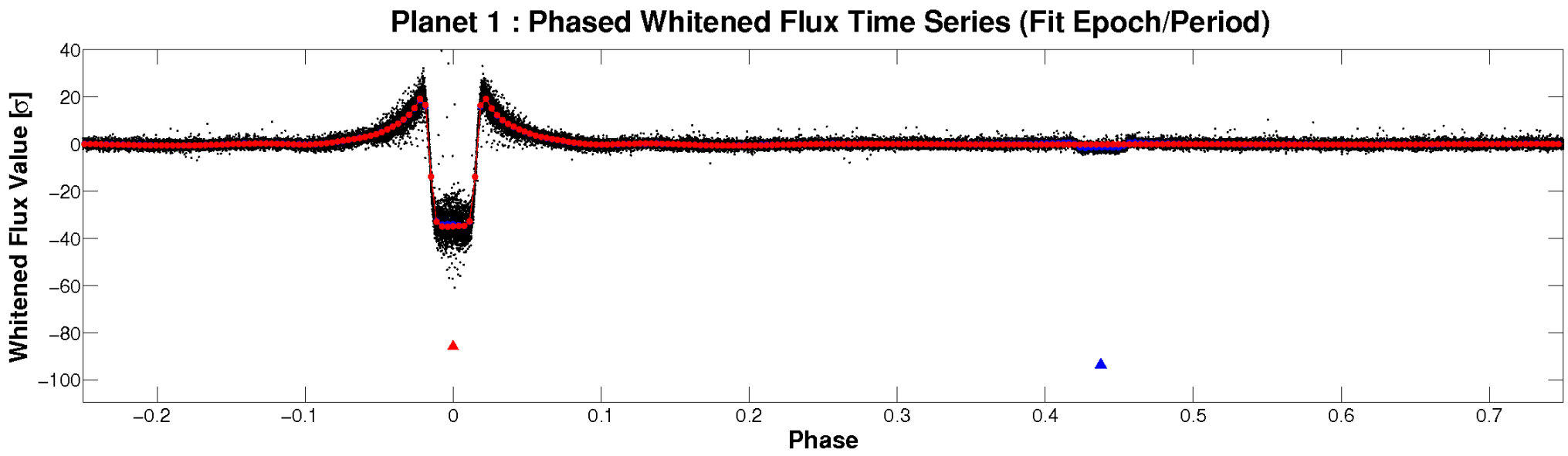
0.00e+00
-5.00e-03
-1.00e-02
-1.50e-02
-2.00e-02
-2.50e-02
-3.00e-02
-3.50e-02
-4.00e-02
-4.50e-02
Flux
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
Phase
Odd
Even
Model Fit

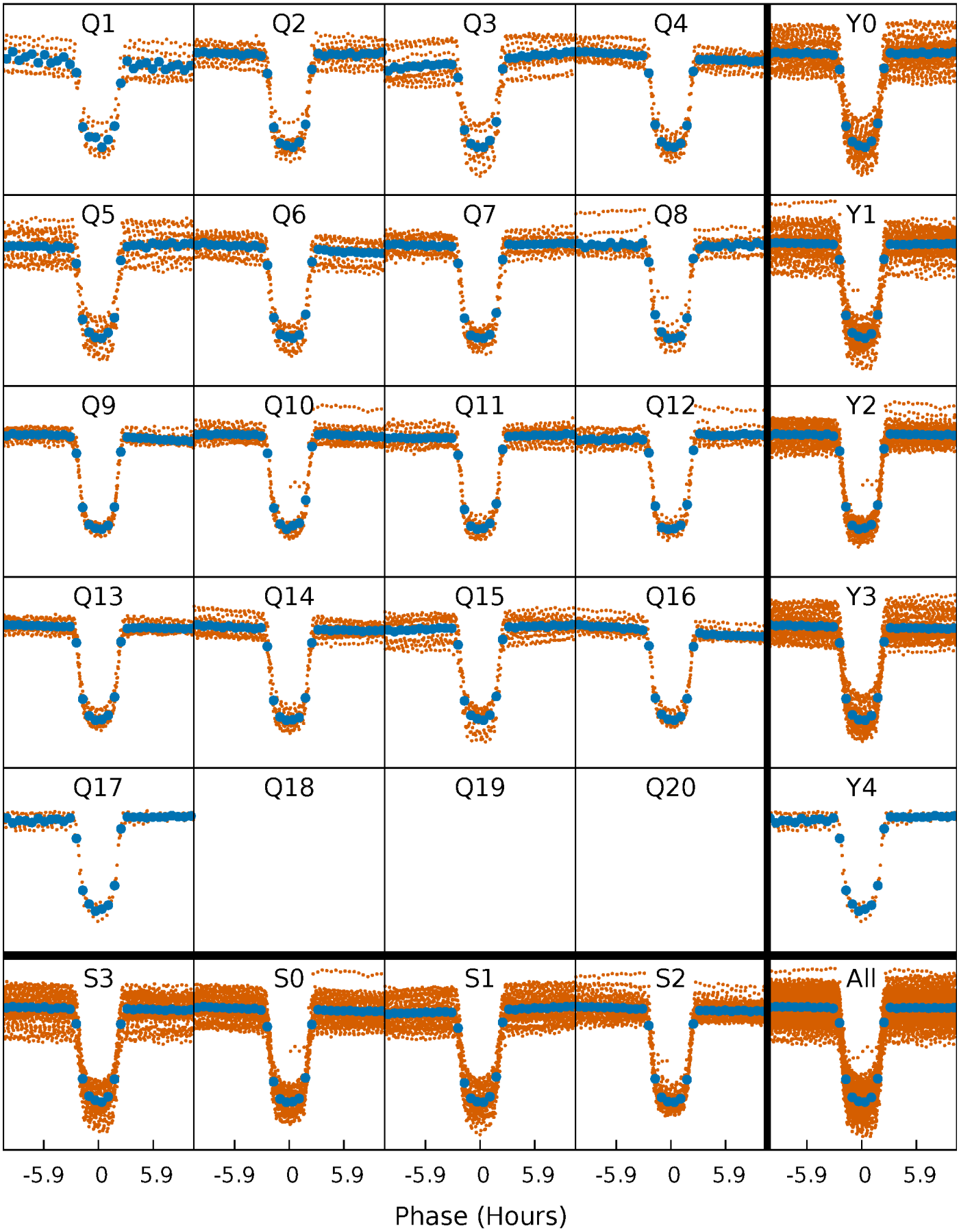
Non-Whitened Vs. Whitened Light Curve





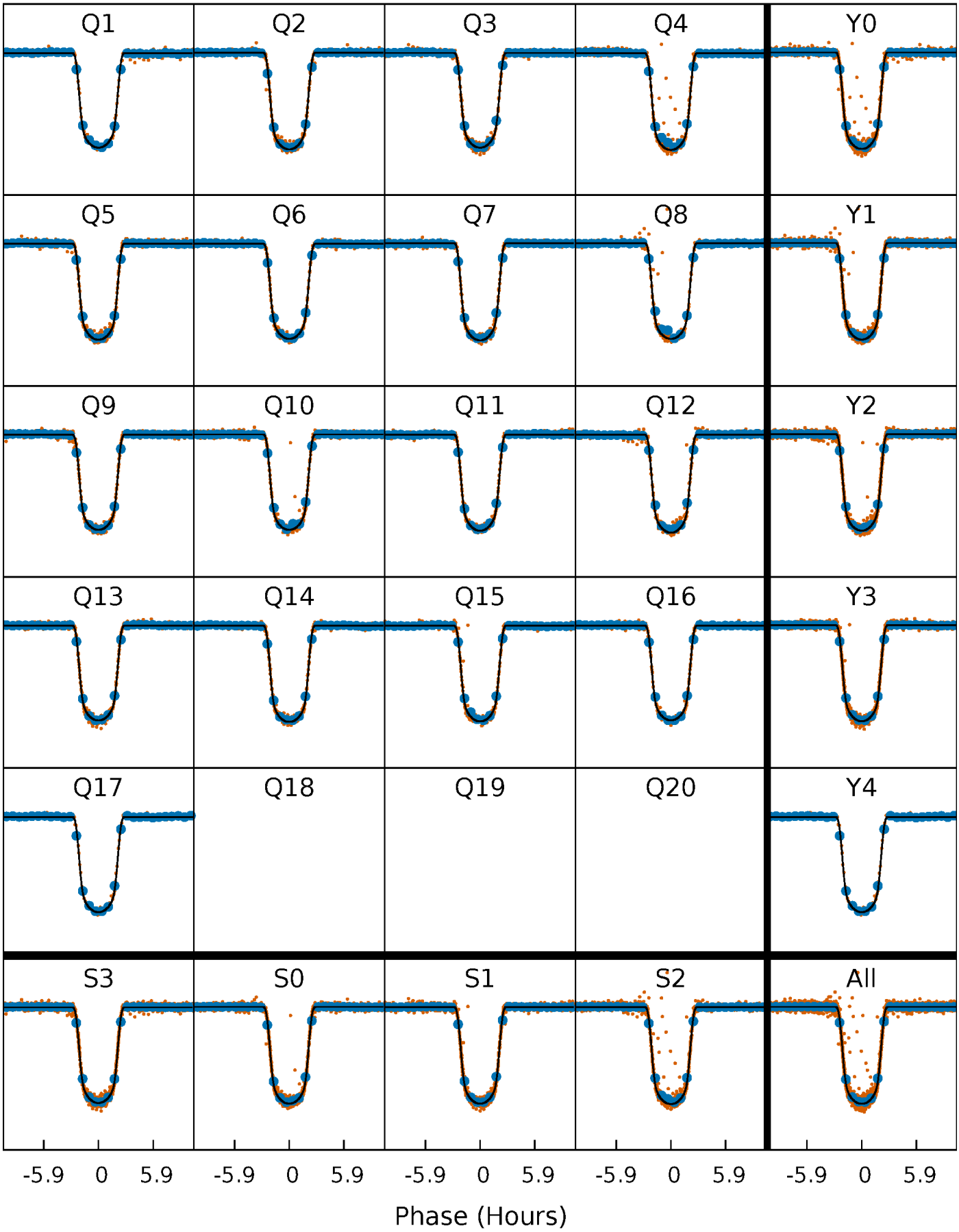
PDC Quarter-Phased Transit Curves

TCE 008953059-01 P= 5.499942 Days T_0=136.869353 (BKJD)



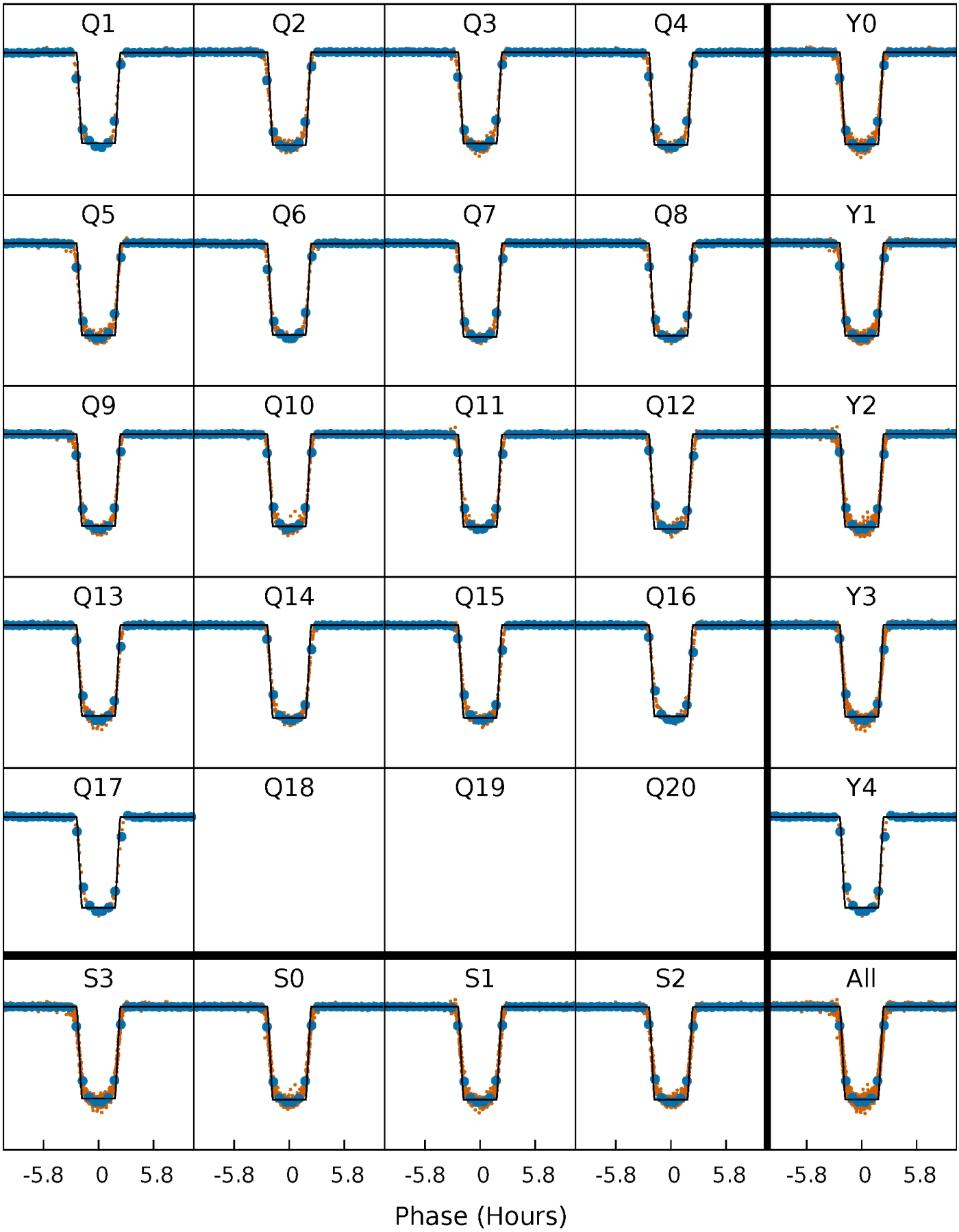
DV Quarter-Phased Transit Curves

TCE 008953059-01 P= 5.499942 Days T_0=136.869353 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

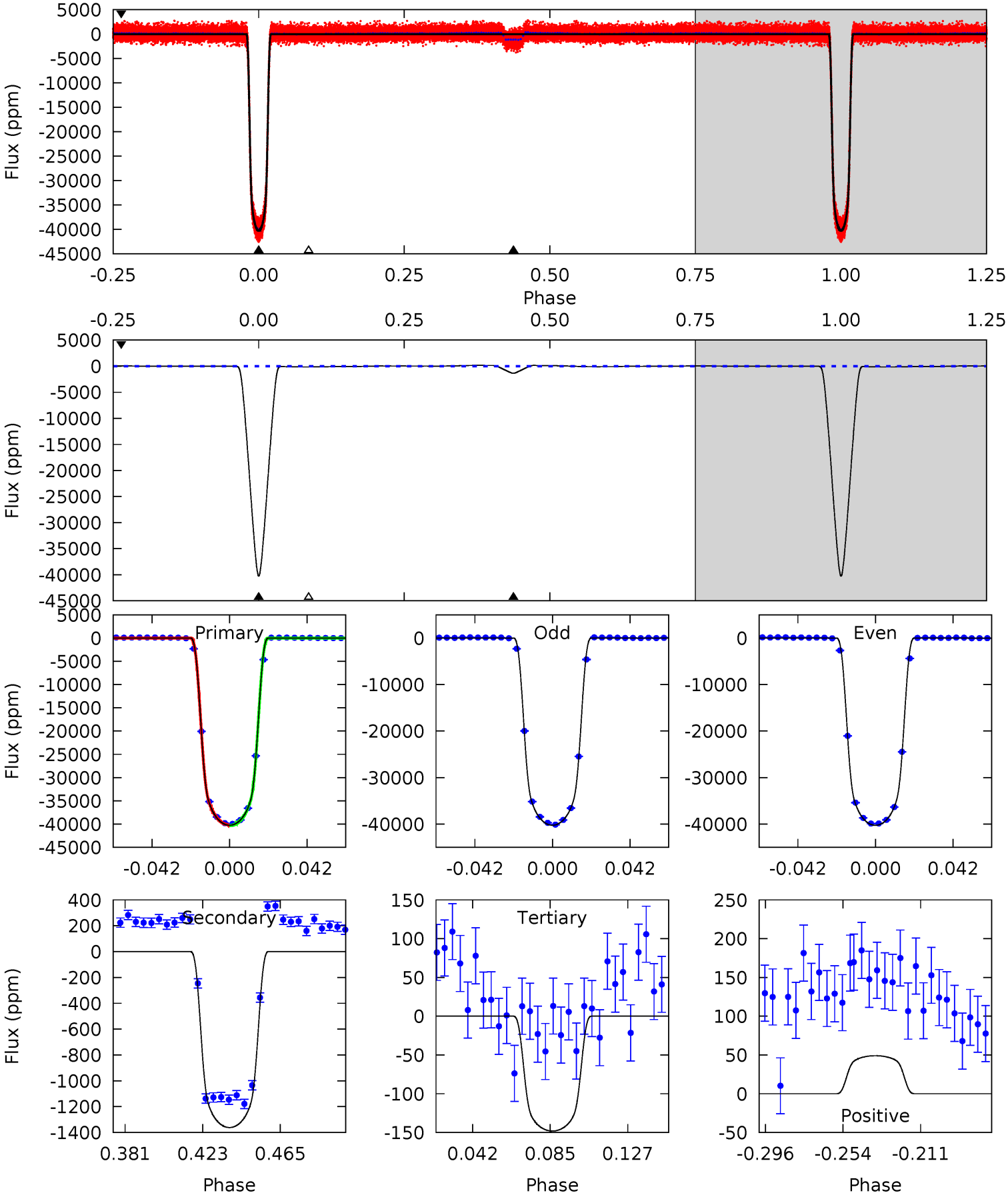
TCE 008953059-01 P= 5.499908 Days T_0=136.873704 (BKJD)



DV Model-Shift Uniqueness Test

008953059-01, P = 5.499942 Days, E = 131.369411 Days

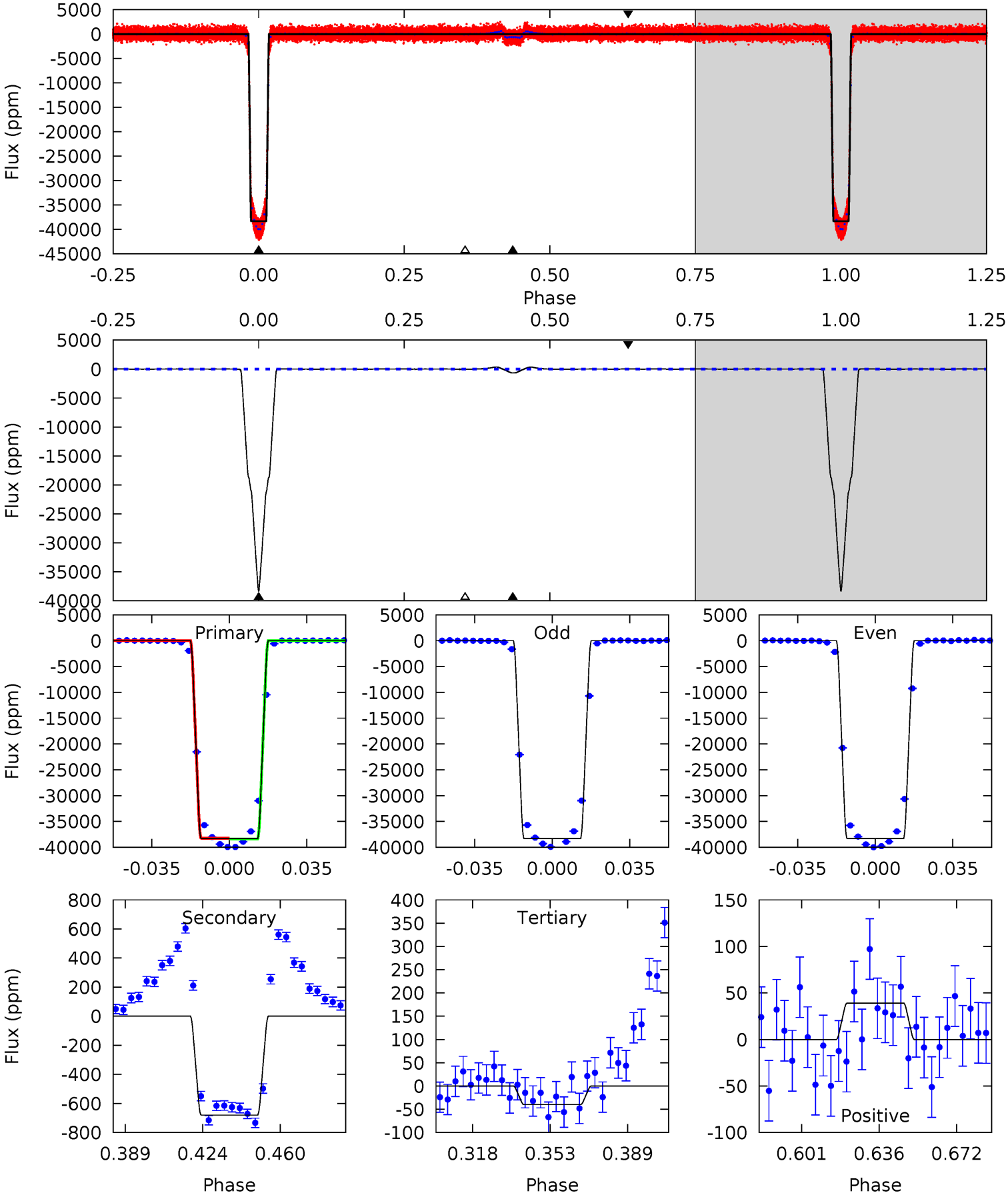
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3281	111.0	12.1	3.99	4.74	2.03	5.39	3269	3277	98.9	107.0	0.27	0.99	0.00	5.52



Alt Model-Shift Uniqueness Test

008953059-01, P = 5.499908 Days, E = 131.373796 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3126	55.5	3.26	3.19	4.78	2.10	2.68	3122	3122	52.2	52.3	0.16	1.00	0.01	0



Stellar Parameters For KIC 008953059

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6435^{+153}_{-211}	$4.385^{+0.065}_{-0.208}$	$-0.060^{+0.250}_{-0.300}$	$1.157^{+0.370}_{-0.148}$	$1.186^{+0.169}_{-0.152}$	$1.078^{+0.311}_{-0.575}$
	+2%/-3%	+1%/-5%	+417%/-500%	+32%/-13%	+14%/-13%	+29%/-53%
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 008953059-01 / KOI 6062.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1362±12	$24.11^{+3.91}_{-2.11}$	1710^{+125}_{-90}	3361^{+53}_{-66}	$5.346^{+0.895}_{-1.263}$
Alt.	-680±12	$25.47^{+4.65}_{-2.12}$	1712^{+127}_{-88}	2944^{+44}_{-55}	$2.345^{+0.402}_{-0.589}$

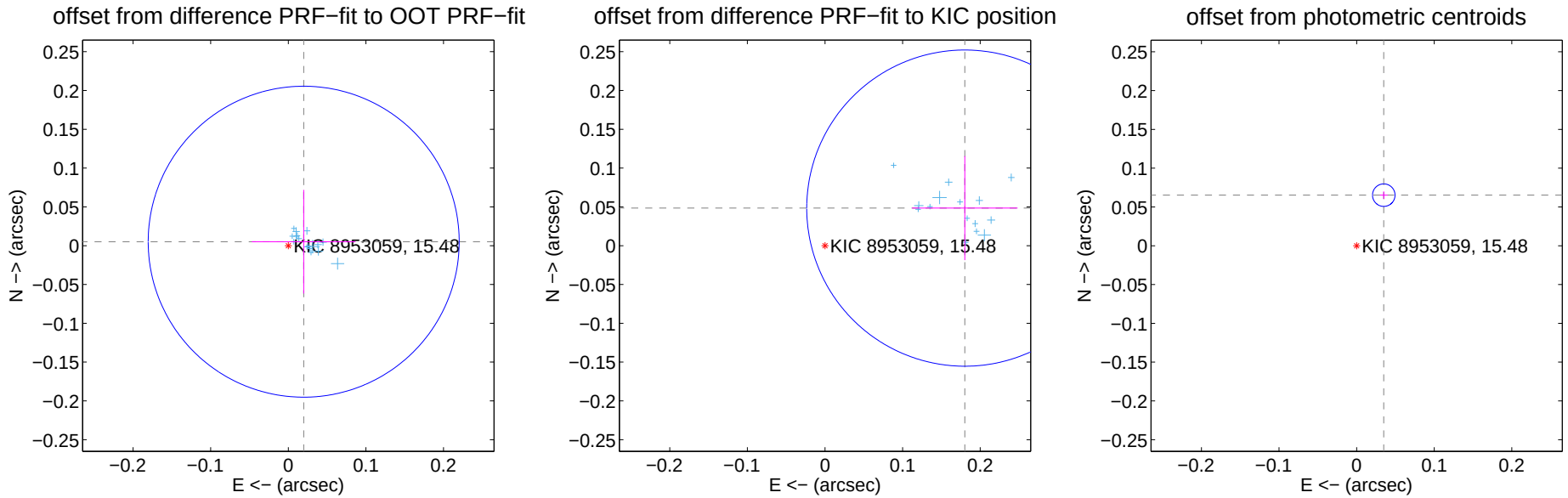
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

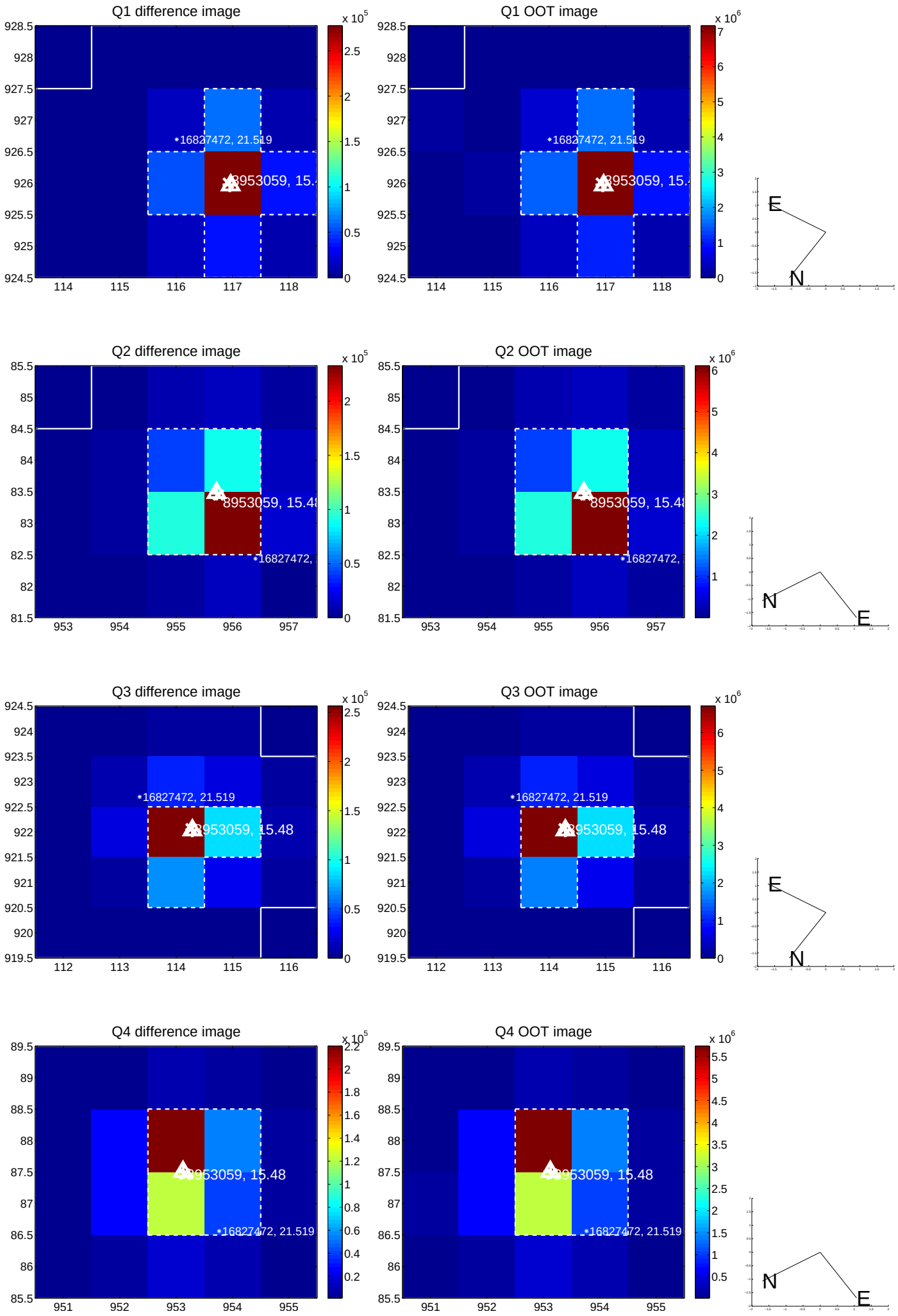
Supplemental centroid analysis for 008953059-01. Kepler magnitude: 15.48. Transit SNR 1520.46
There are 17 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.020 ± 0.067	0.31	-0.020 ± 0.067	0.005 ± 0.067
PRF-fit source offset from KIC position	0.187 ± 0.068	2.75	-0.180 ± 0.068	0.048 ± 0.067
photometric centroid source offset	0.07 ± 0.00	15.31	-0.03 ± 0.00	0.07 ± 0.00

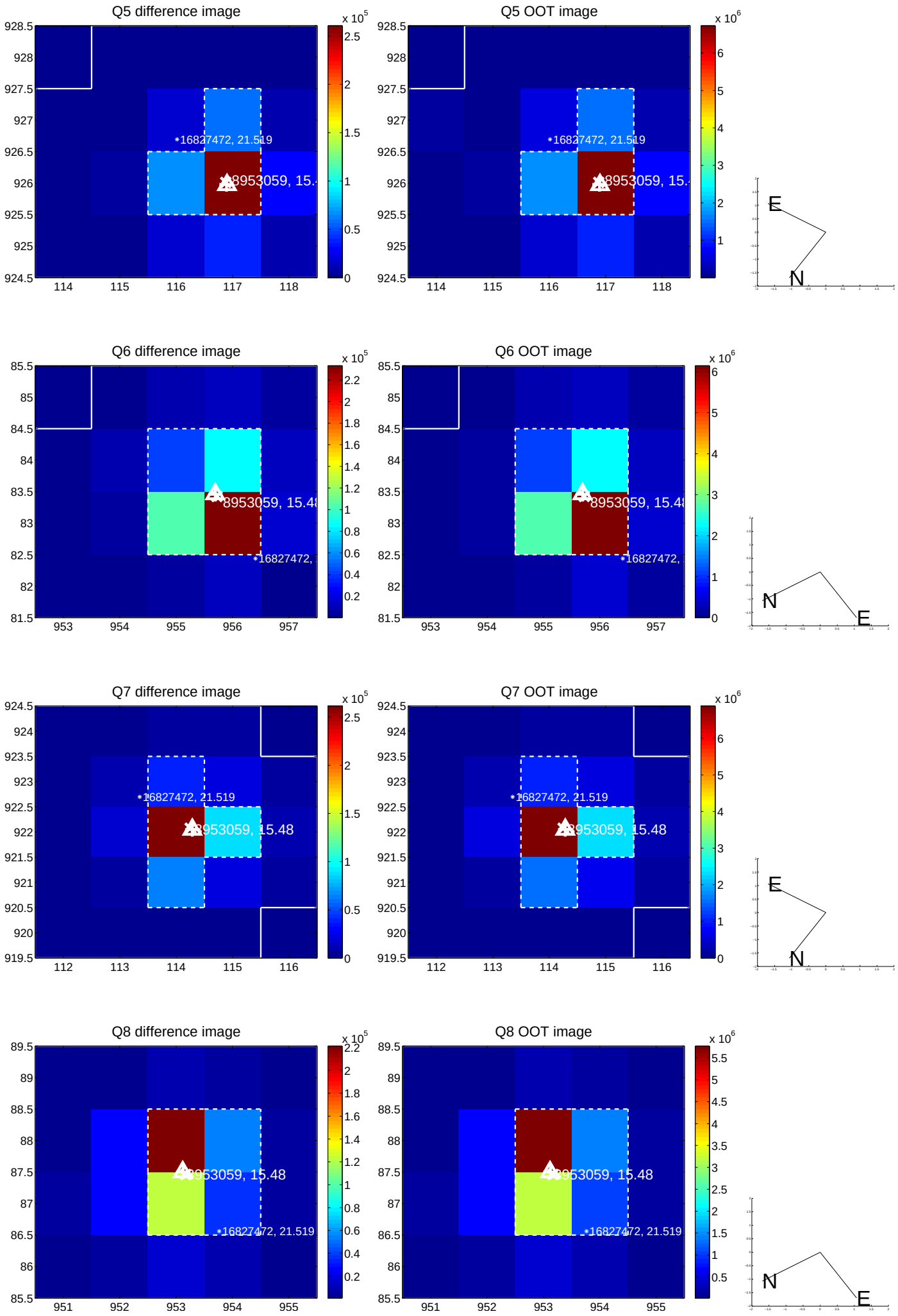


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs $> 15,000,000$ are from the UKIRT catalog.

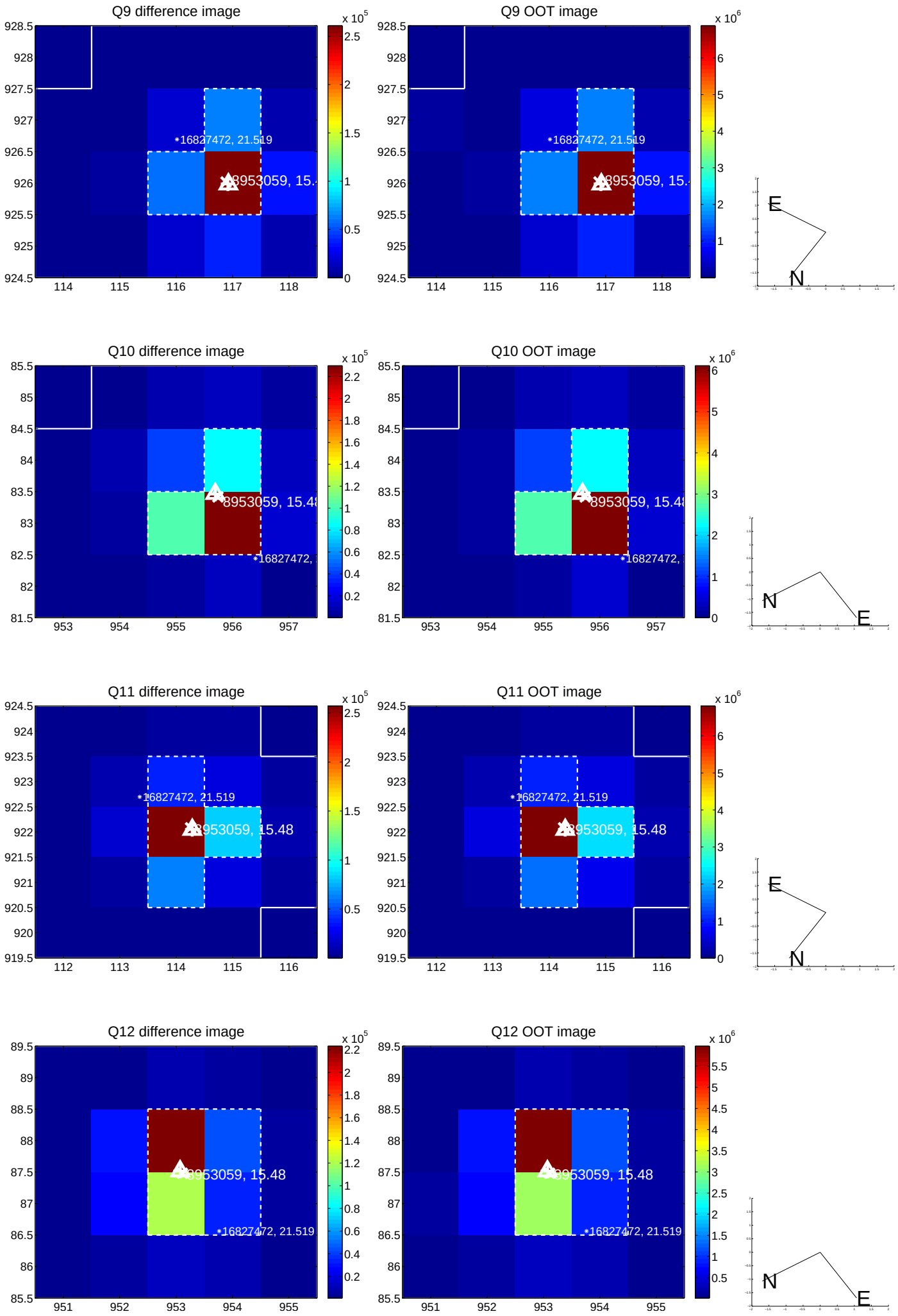
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



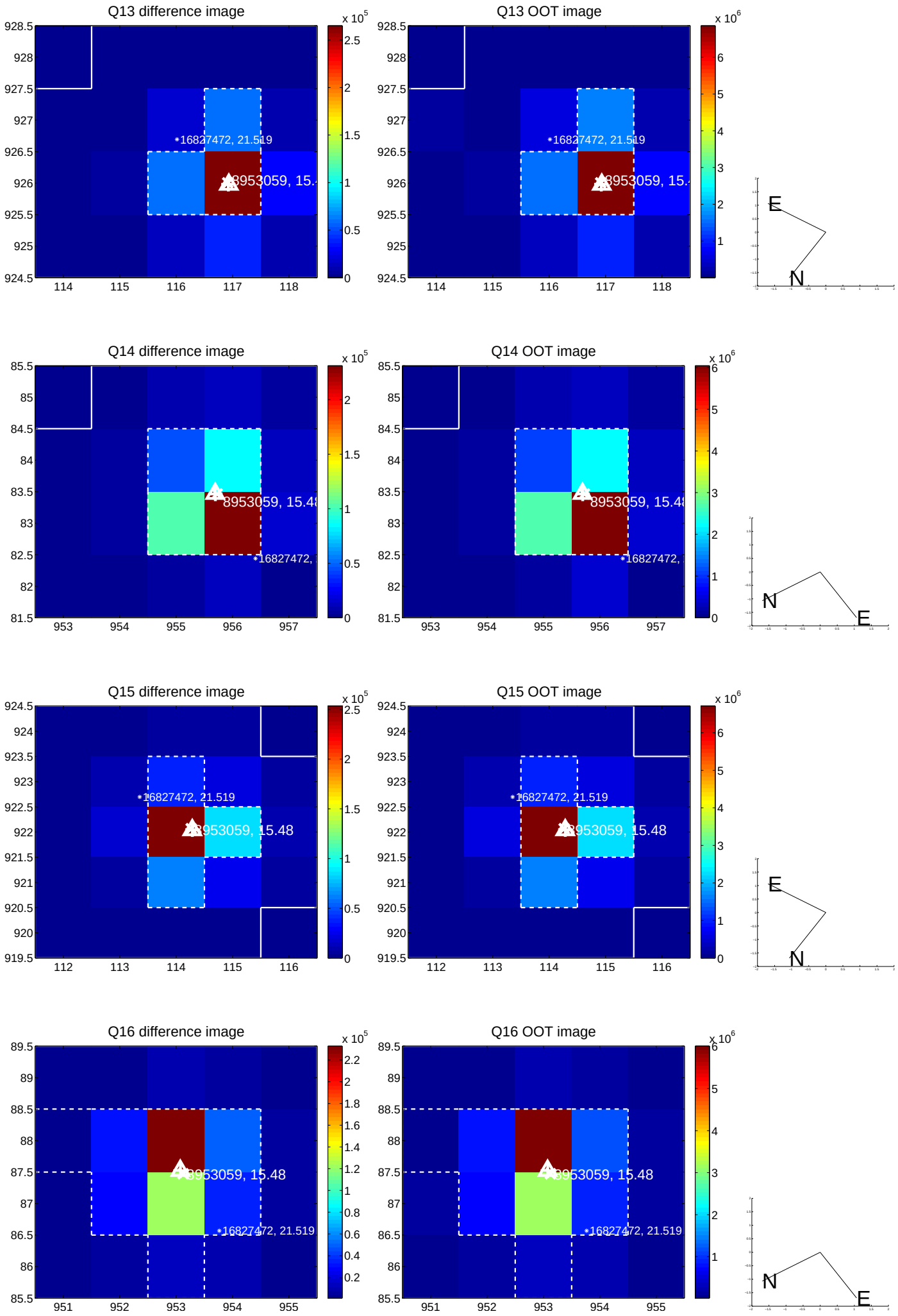
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



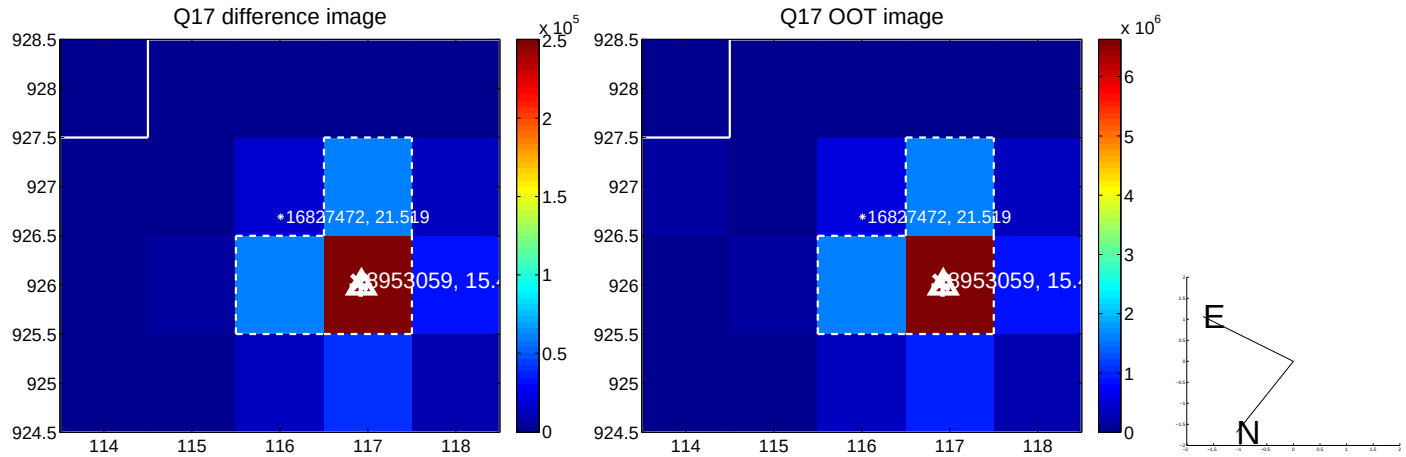
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

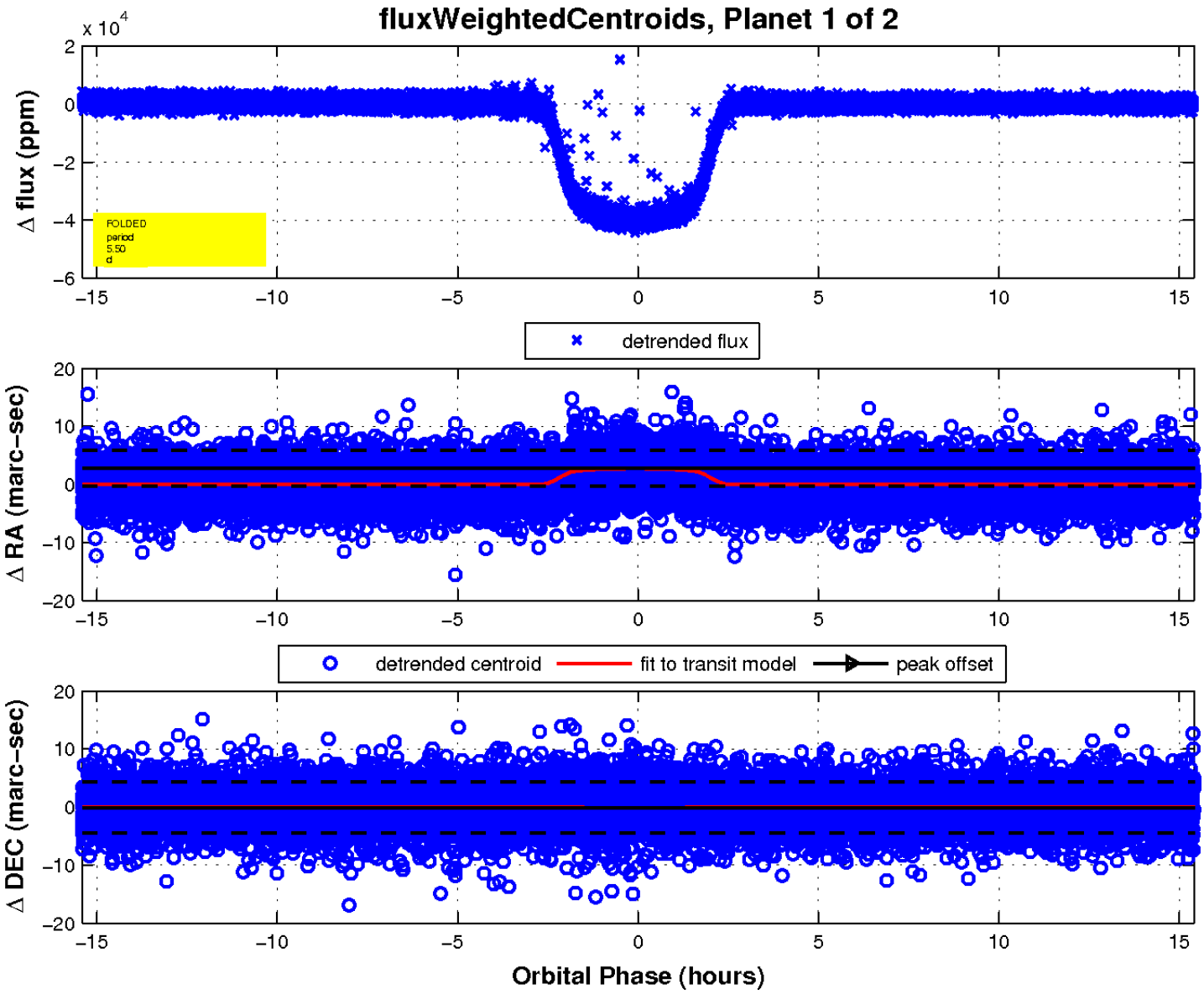


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

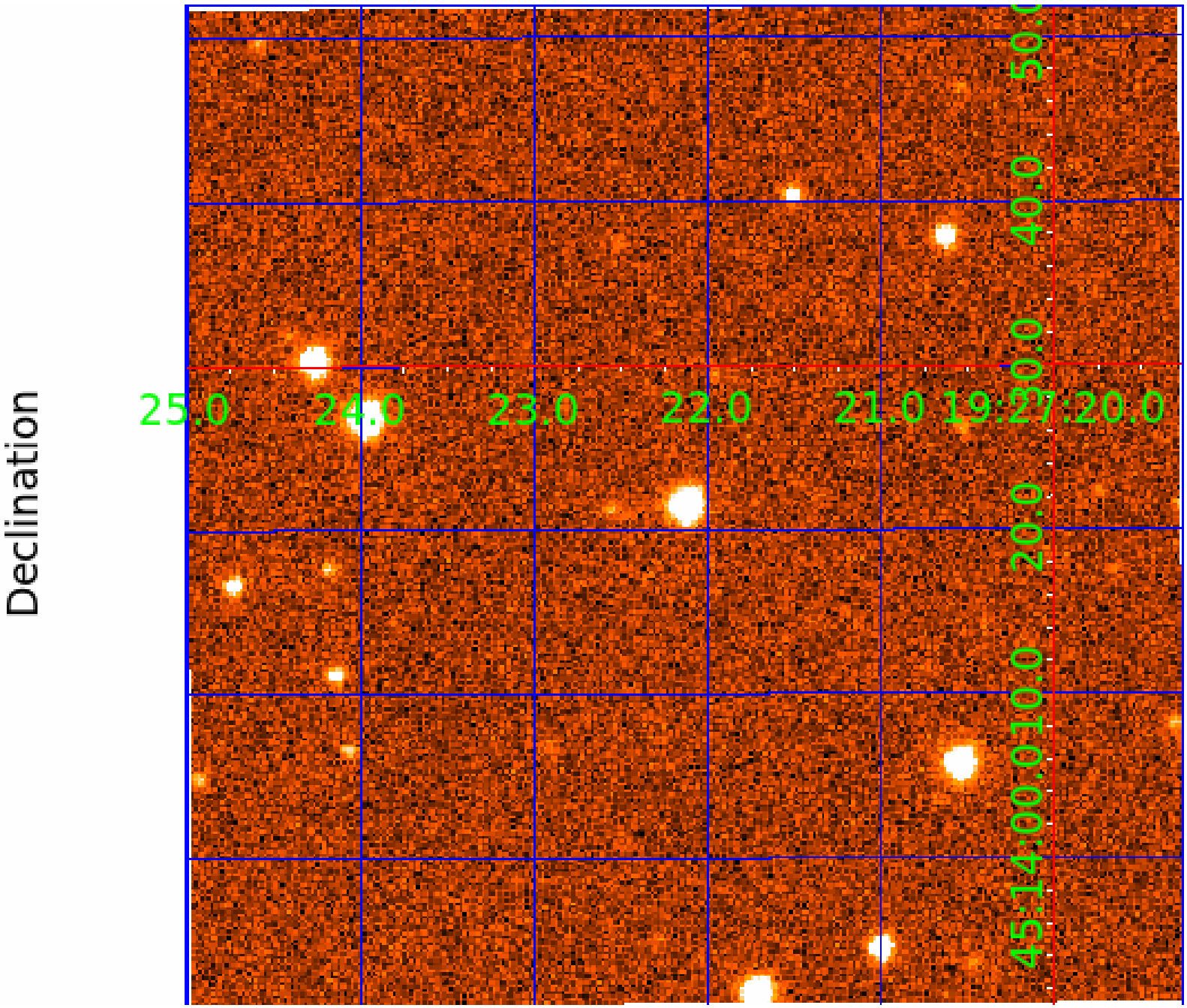


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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22.0
21.0
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45:14:00.0
10.0
20.0
30.0
40.0
50.0

KIC 008953059

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 ($S_\oplus$)
008953059-01	OBS	6062.01	5.499942	136.869353	40391.5	5.139	1638.1	1520.5	1.16	6435	23.39	493.74
008953059-02	OBS	No	5.499934	133.777041	1616.6	5.112	68.9	74.7	1.16	6435	5.21	493.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008953059-01	OBS	FP	0.01	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008953059-02	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.

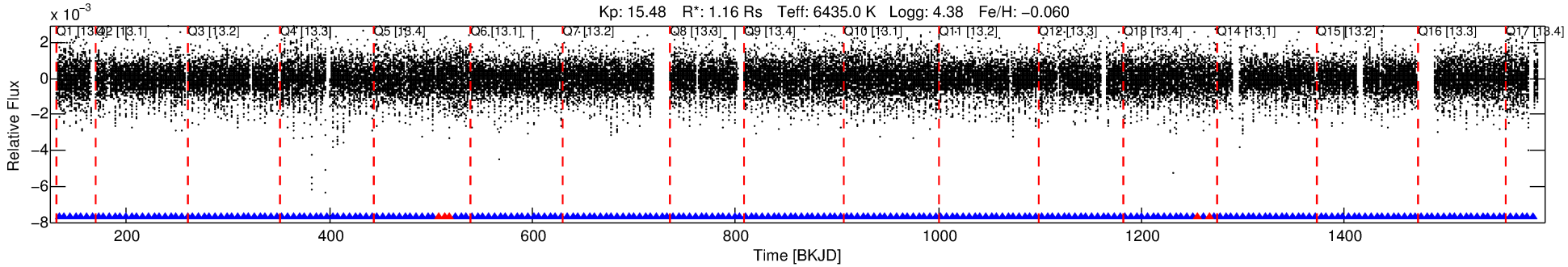
Ephemeris Match Information For 008953059-02

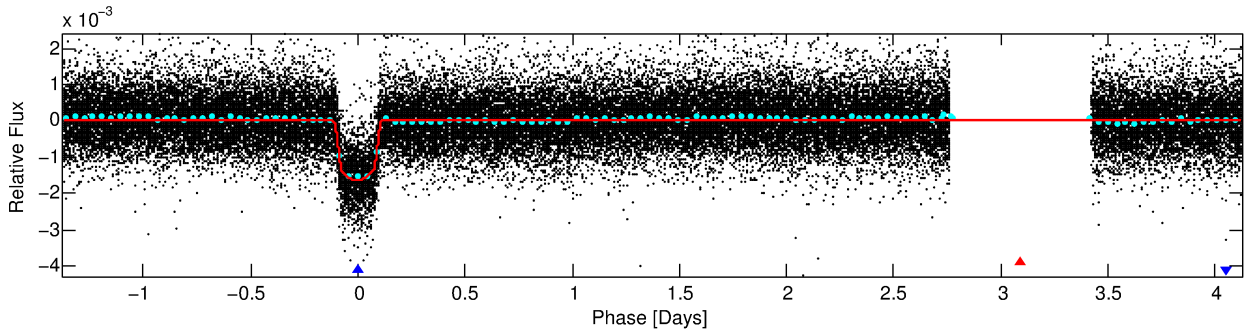
No Significant Match Found

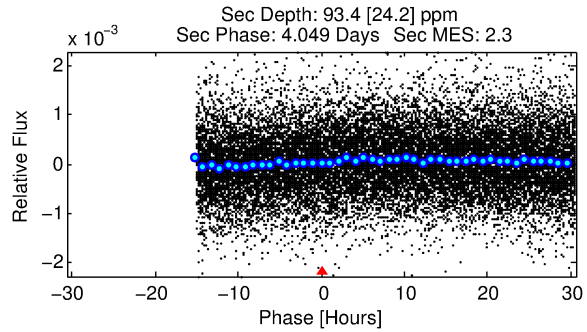
DV One-Page Summary

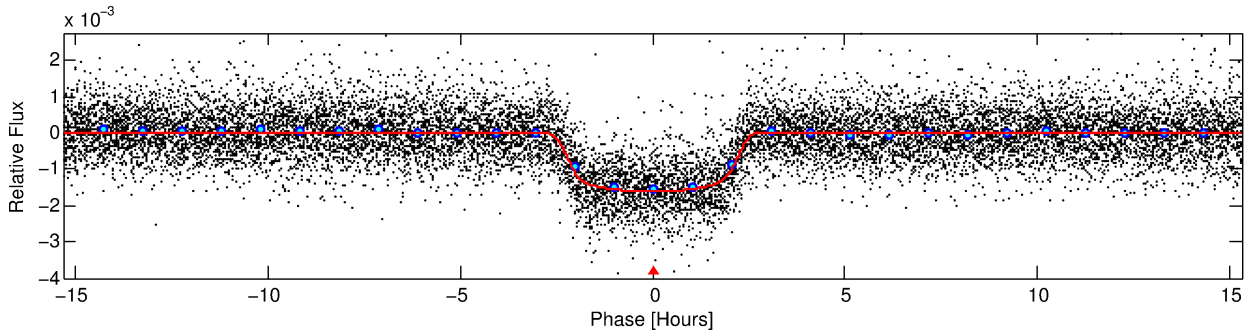
KIC: 8953059 Candidate: 2 of 2 Period: 5.500 d
KOI: K06062 Corr: No Ephemeris Match

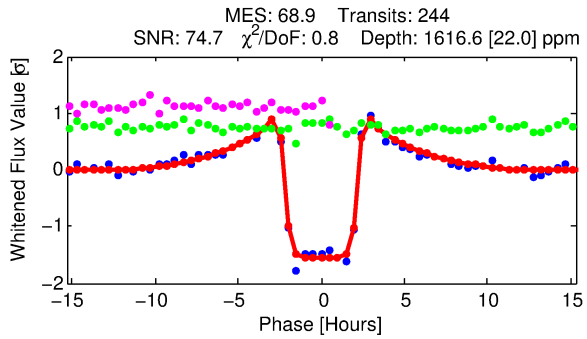
Kp: 15.48 R*: 1.16 Rs Teff: 6435.0 K Logg: 4.38 Fe/H: −0.060

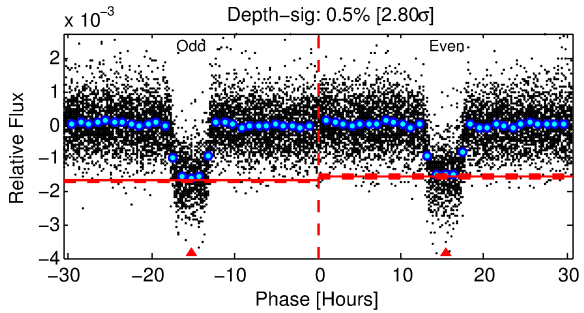


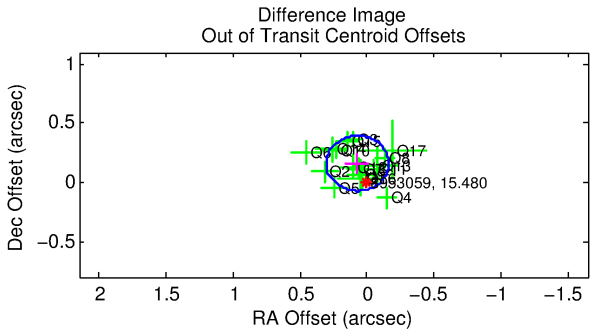












DV Fit Results:

Period = 5.49993 [0.00001] d
Epoch = 133.7770 [0.0008] BKJD
Rp/R* = 0.0413 [0.0007]
a/R* = 5.26 [0.37]
b = 0.83 [0.03]

Seff = 493.74 [200.32]
Teq = 1202 [122] K
Rp = 5.21 [1.67] Re
a = 0.0645 [0.0172] AU

Ag = 7.89 [3.66] [1.88σ]
Teffp = 3115 [227] K [7.42σ]

DV Diagnostic Results:

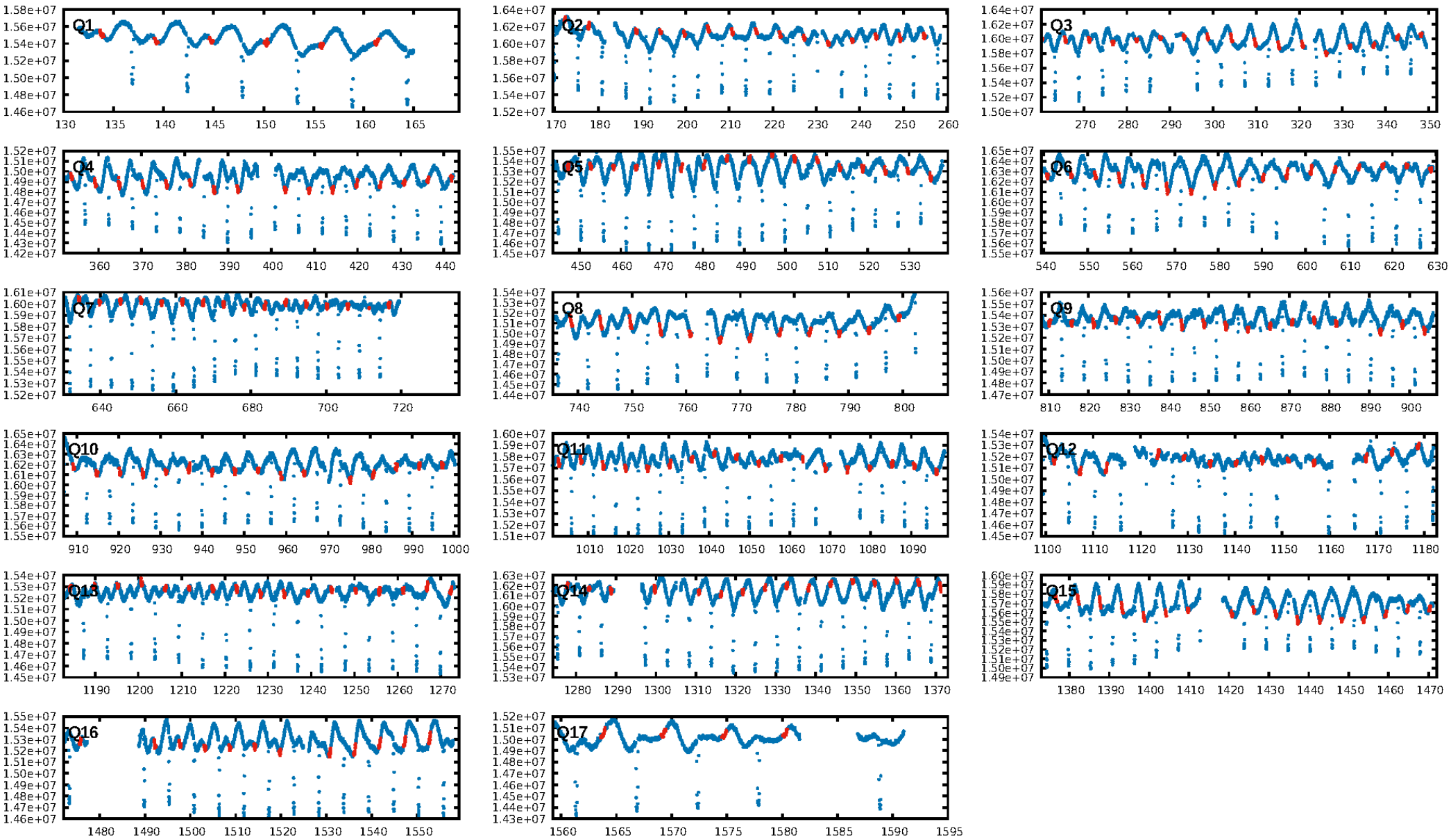
ShortPeriod−sig: N/A
LongPeriod−sig: 0.0% [0.00σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 0.00e+00
RollingBand−fgt: 0.98 [229/234]
GhostDiagnostic−chr: 1.668

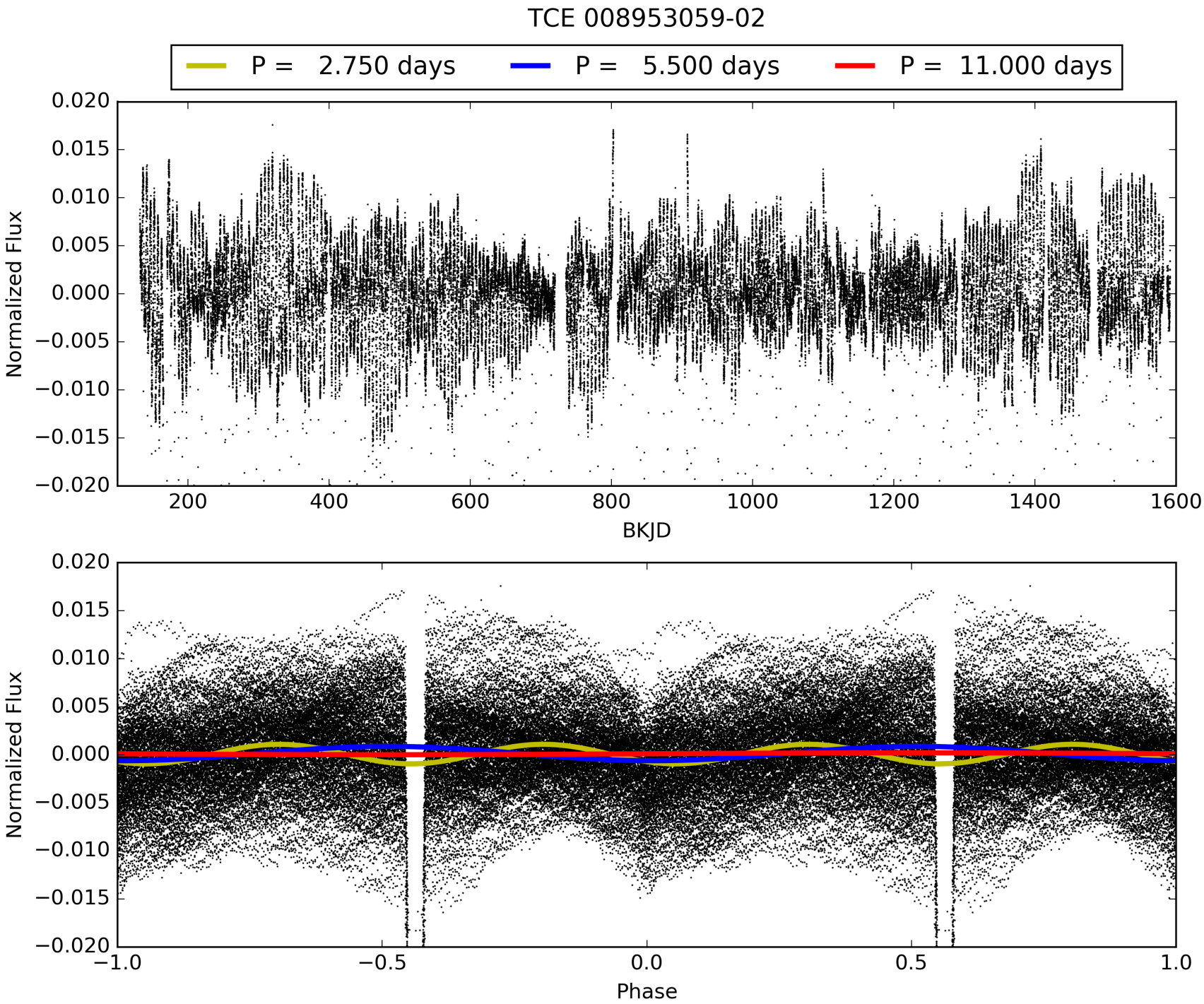
Centroid−sig: 36.2%
Centroid−so: 0.149 arcsec [1.29σ]
OotOffset−rm: 0.176 arcsec [2.27σ]
KicOffset−rm: 0.233 arcsec [2.98σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 1.00 [17/17]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 05:56:51 Z

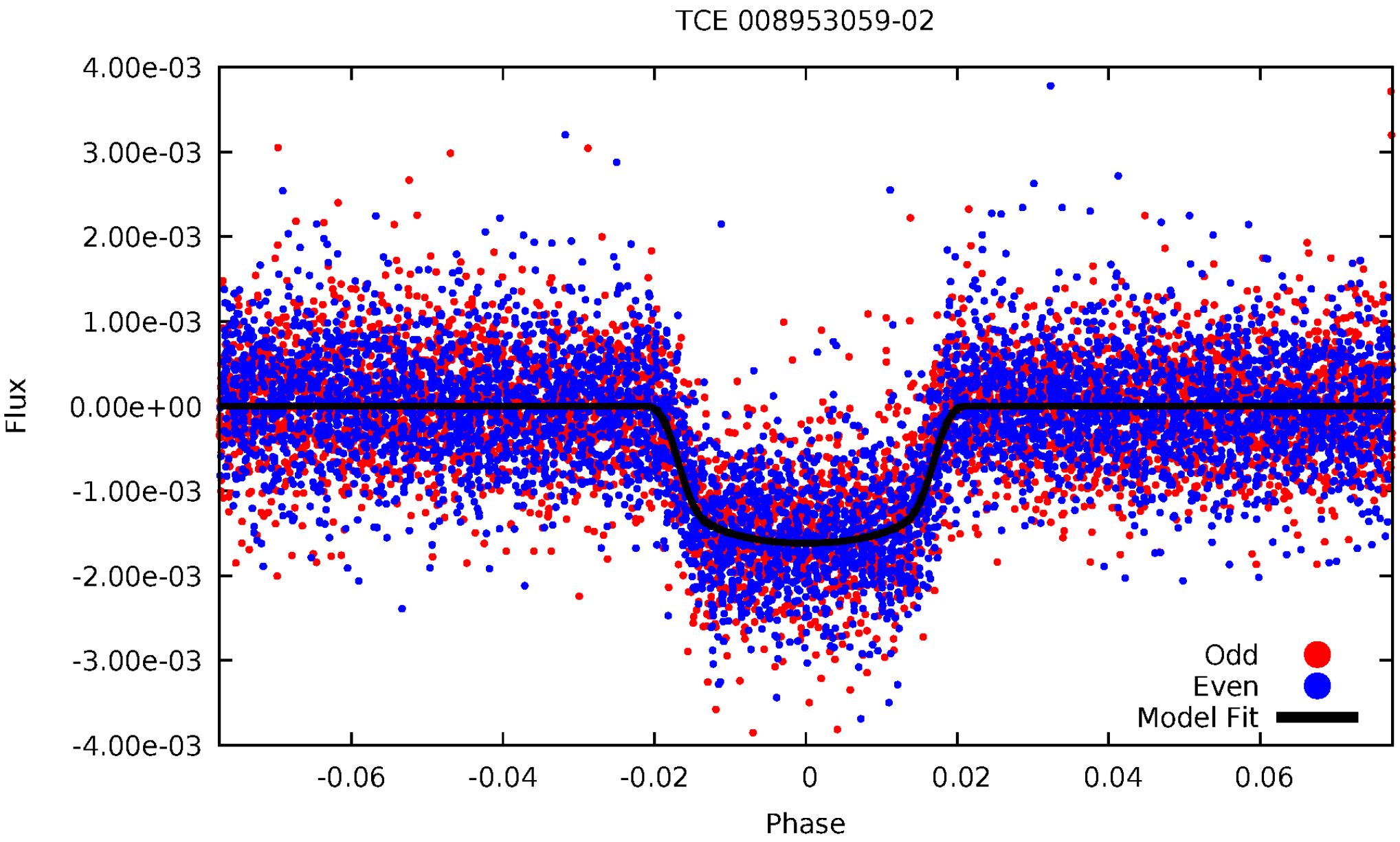
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008953059-02, PDC Light Curves

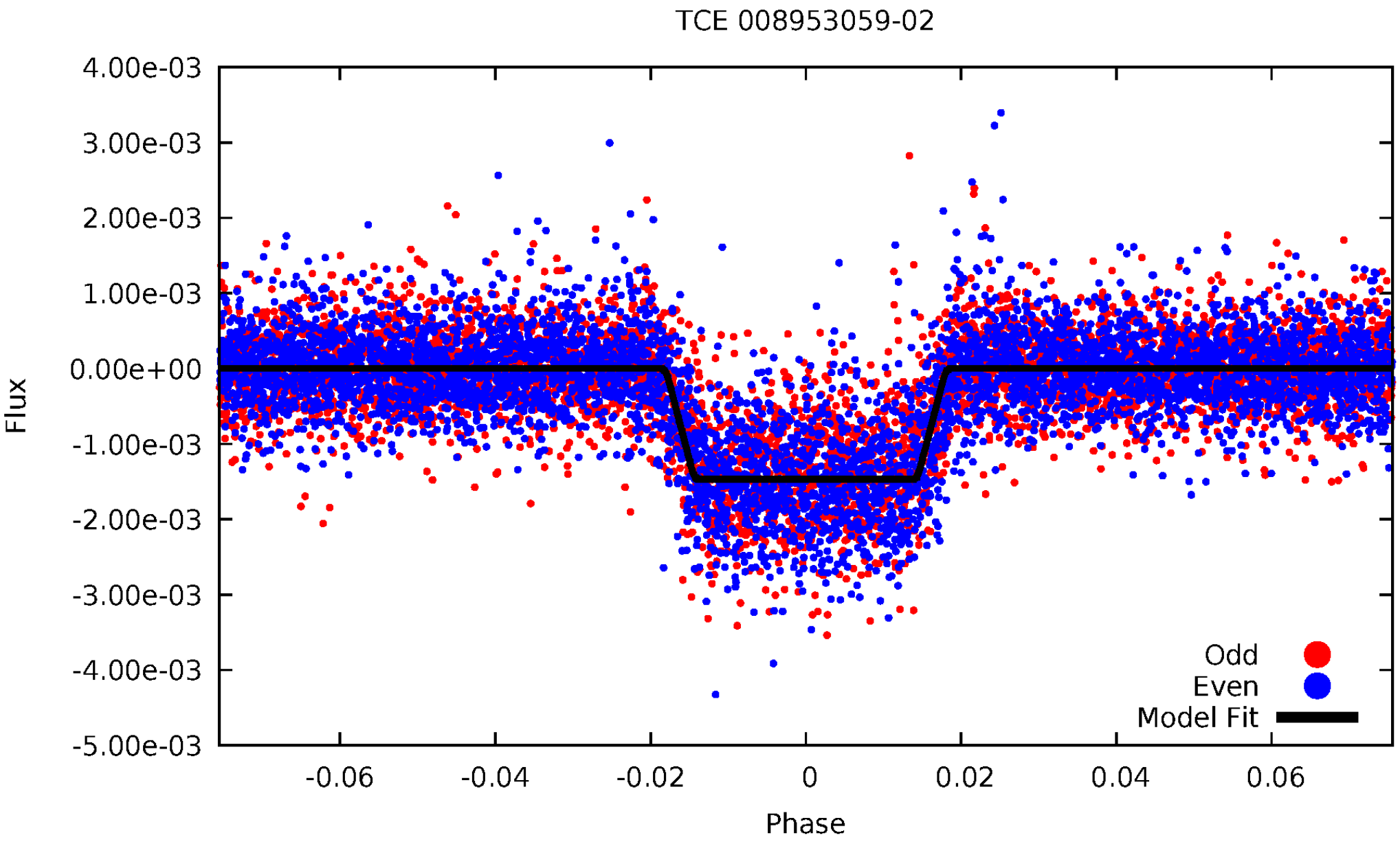



TCE 008953059-02
P = 2.750 days
P = 5.500 days
P = 11.000 days
Normalized Flux
BKJD
Normalized Flux
Phase

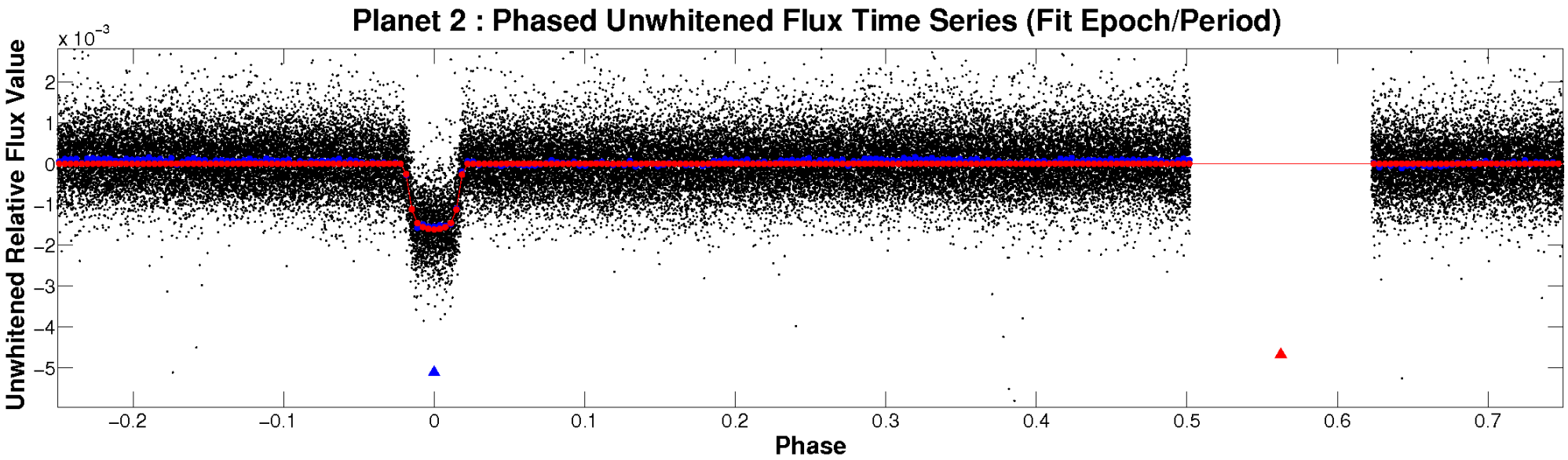
DV Odd/Even

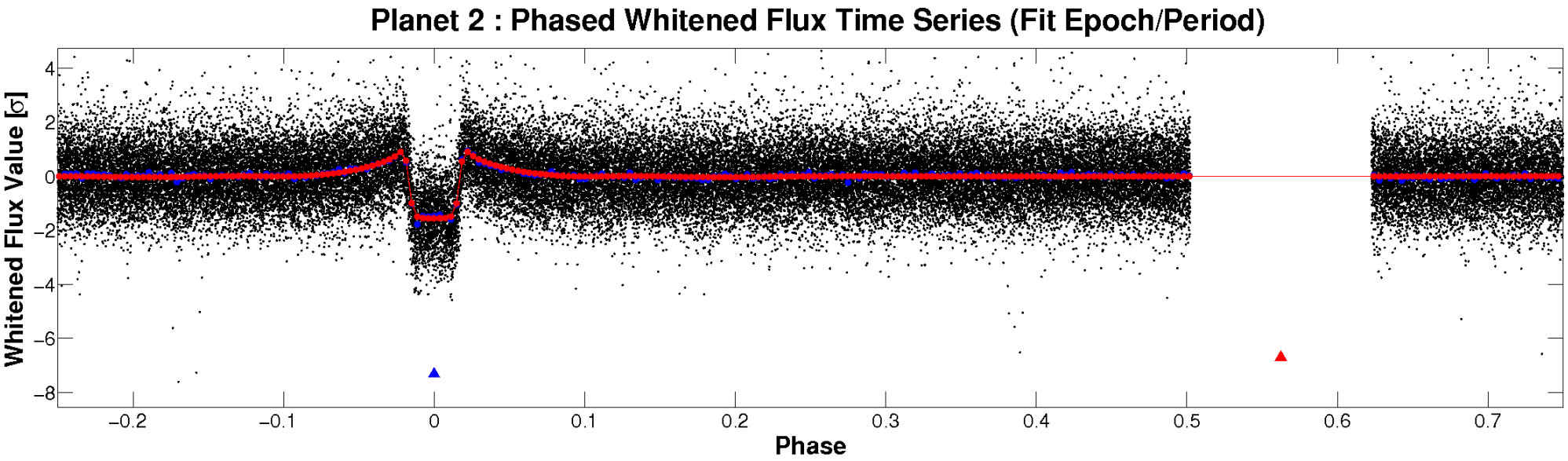

TCE 008953059-02
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
-4.00e-03
Flux
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008953059-02
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
-4.00e-03
-5.00e-03
Flux
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
Phase
Odd
Even
Model Fit

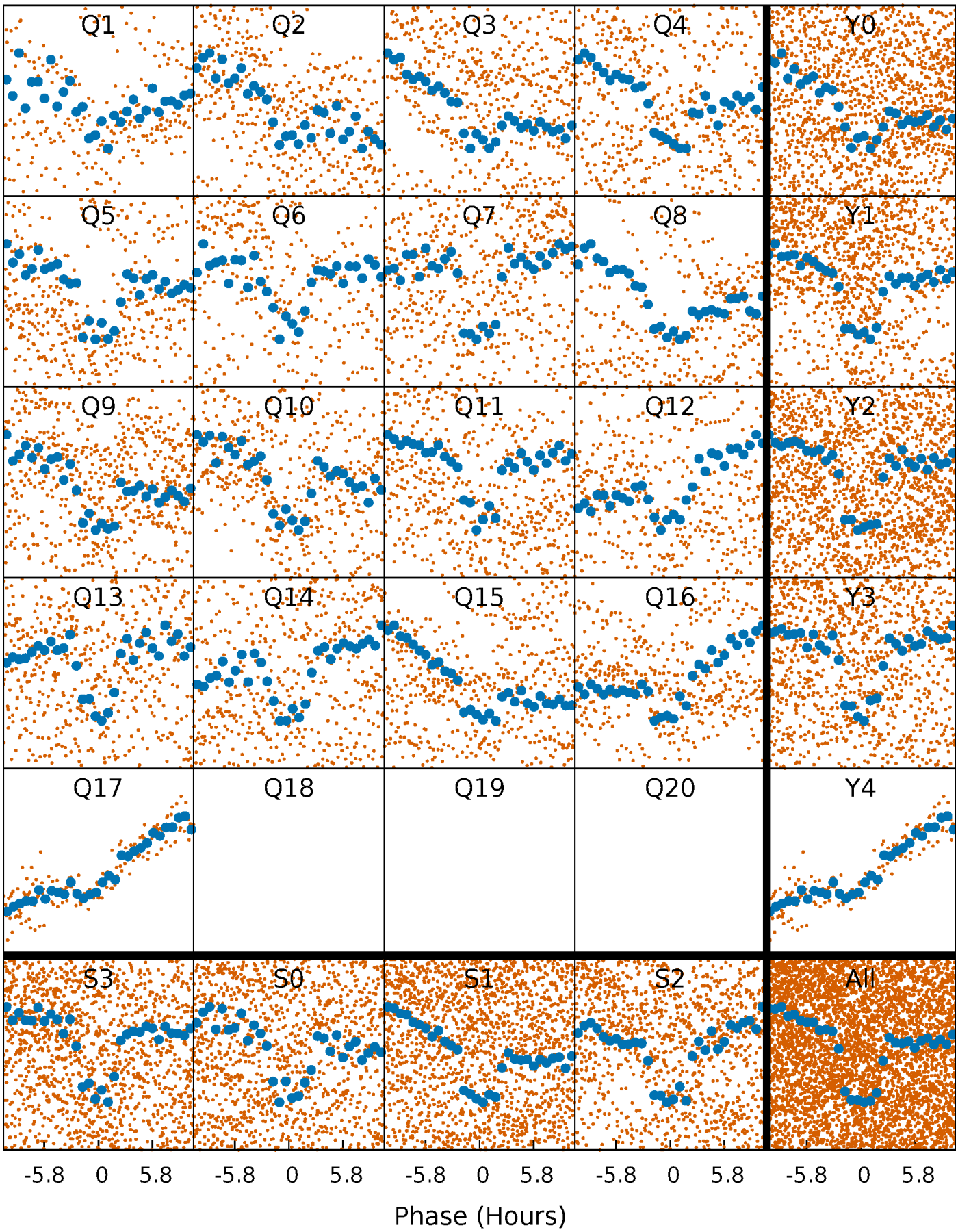
Non-Whitened Vs. Whitened Light Curve





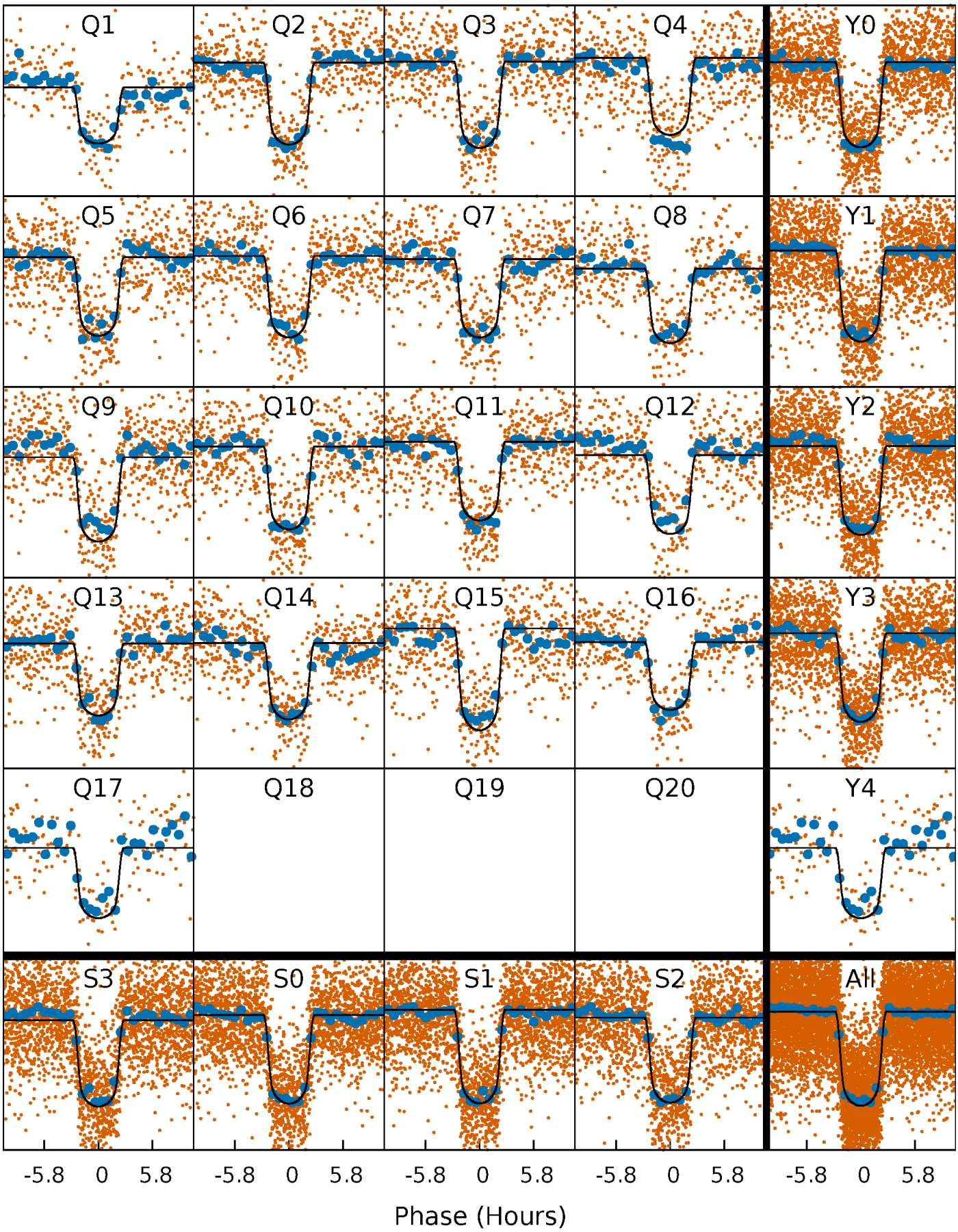
PDC Quarter-Phased Transit Curves

TCE 008953059-02 P= 5.499934 Days T_0=133.777041 (BKJD)



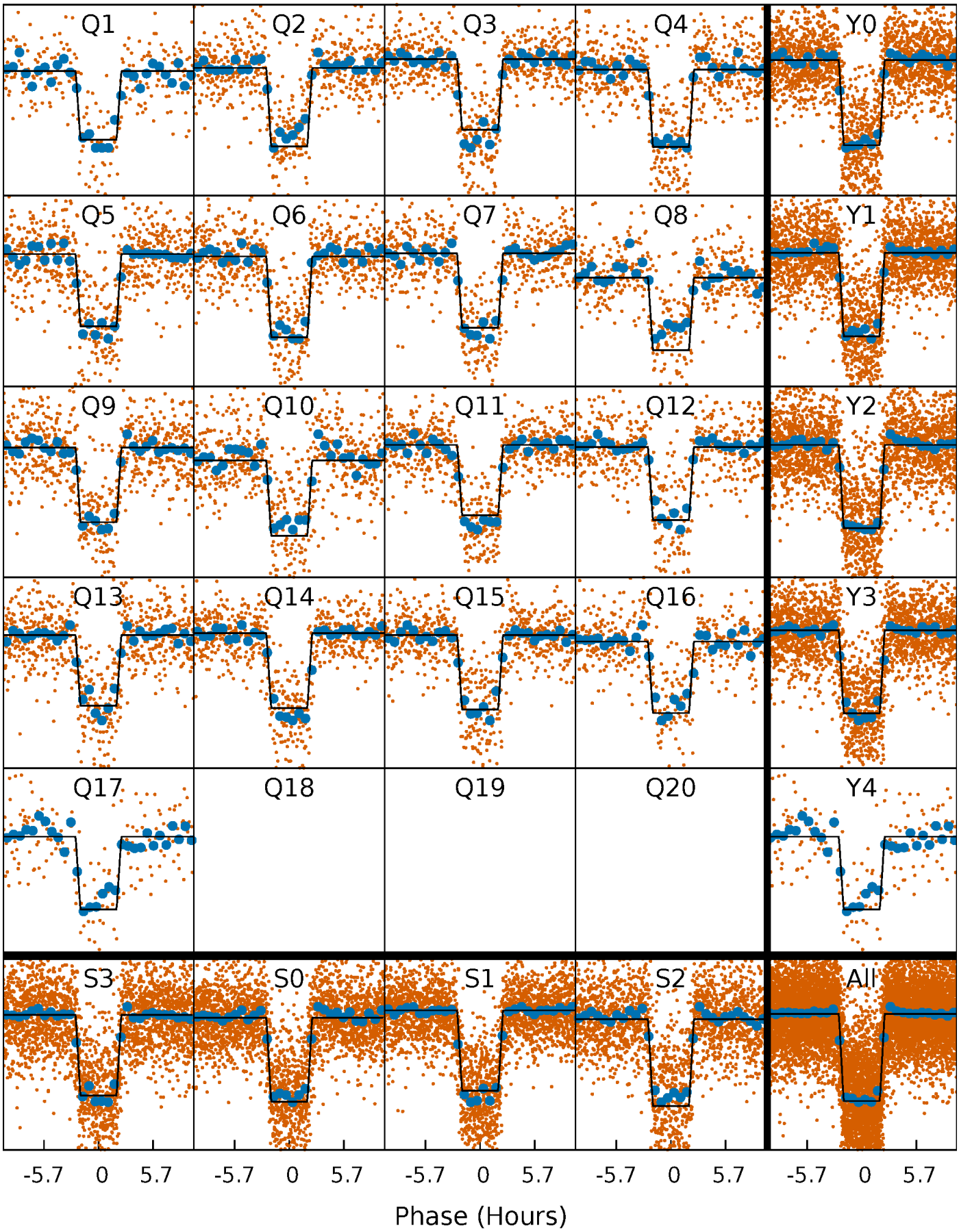
DV Quarter-Phased Transit Curves

TCE 008953059-02 P= 5.499934 Days T_0=133.777041 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

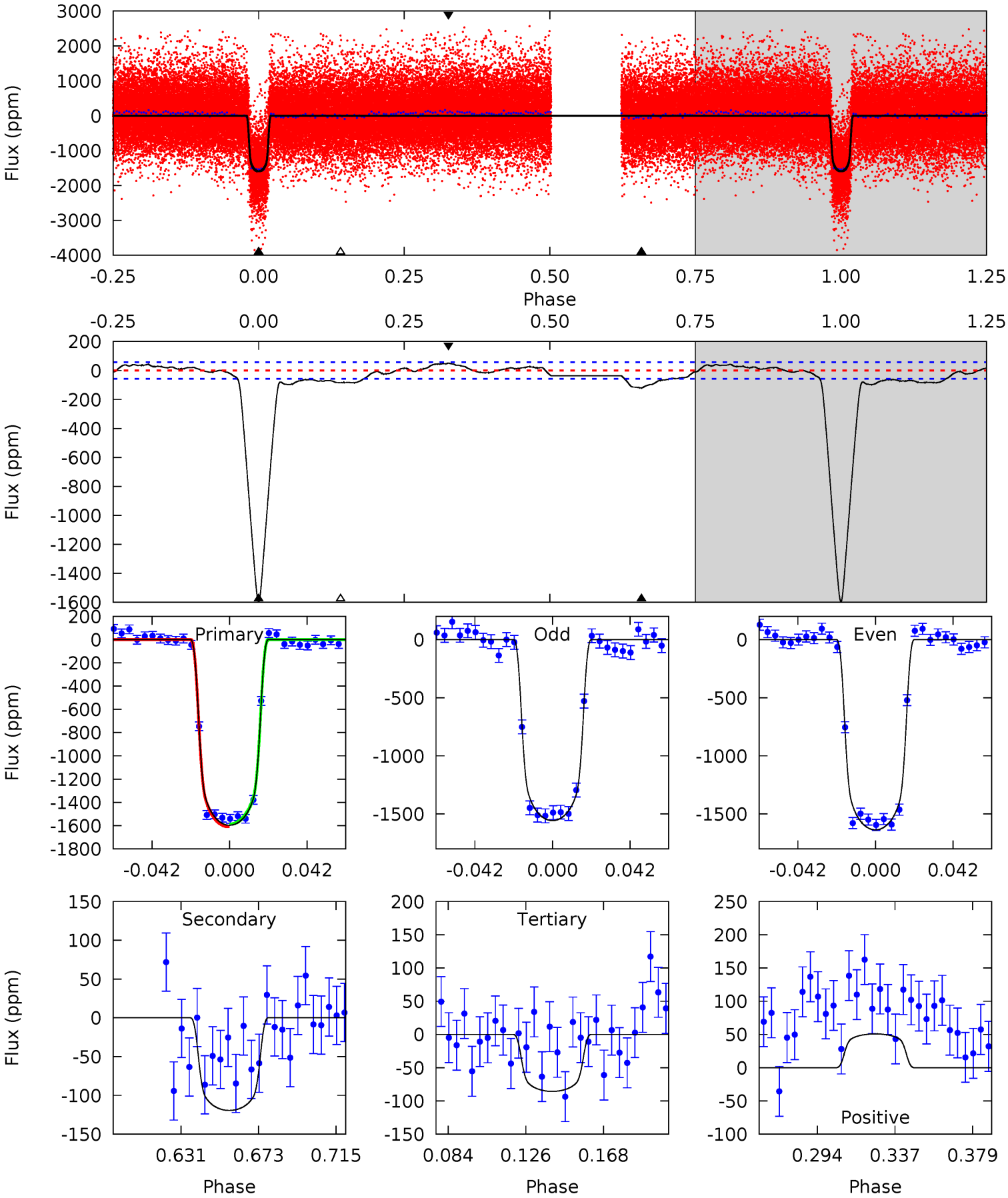
TCE 008953059-02 P= 5.499908 Days T_0=133.779512 (BKJD)



DV Model-Shift Uniqueness Test

008953059-02, P = 5.499934 Days, E = 128.277107 Days

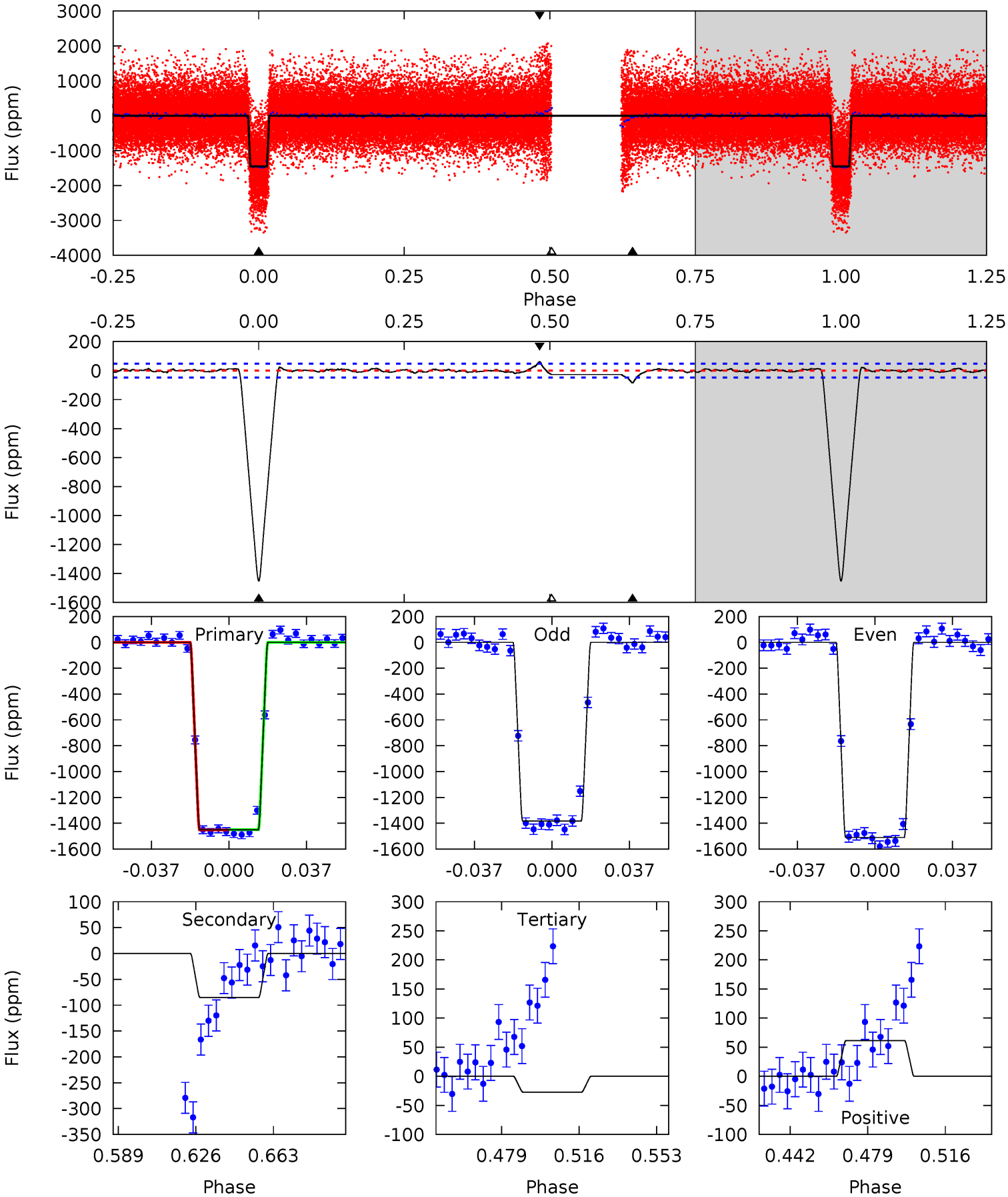
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
133.0	9.95	7.13	4.23	4.74	2.03	3.37	125.8	128.7	2.81	5.71	3.32	0.98	0.03	0.92



Alt Model-Shift Uniqueness Test

008953059-02, P = 5.499908 Days, E = 128.279604 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
145.7	8.57	2.73	6.16	4.77	2.09	0.99	143.0	139.5	5.84	2.41	6.41	1.00	0.04	0.14



Stellar Parameters For KIC 008953059

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6435^{+153}_{-211}	$4.385^{+0.065}_{-0.208}$	$-0.060^{+0.250}_{-0.300}$	$1.157^{+0.370}_{-0.148}$	$1.186^{+0.169}_{-0.152}$	$1.078^{+0.311}_{-0.575}$
	+2%/-3%	+1%/-5%	+417%/-500%	+32%/-13%	+14%/-13%	+29%/-53%
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 008953059-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-119±12	$5.35^{+0.90}_{-0.46}$	1708^{+125}_{-85}	3689^{+93}_{-93}	$9.167^{+2.203}_{-2.144}$
Alt.	-85±10	$4.98^{+0.87}_{-0.43}$	1710^{+134}_{-81}	3569^{+101}_{-94}	$7.555^{+1.744}_{-1.804}$

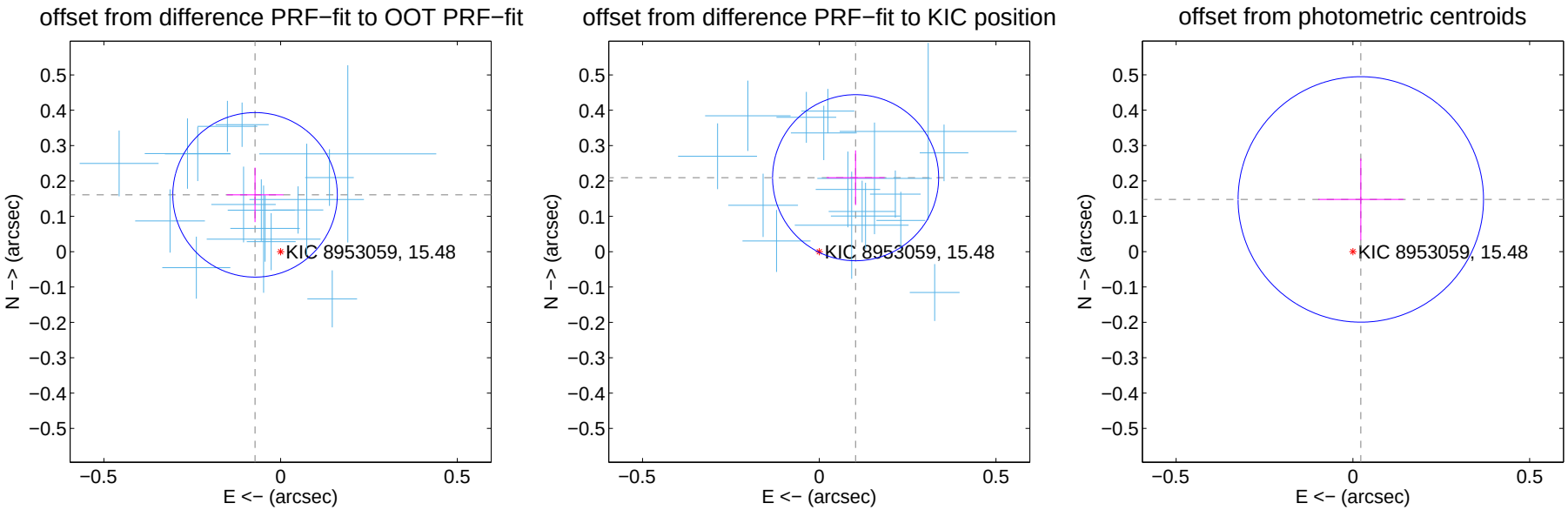
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

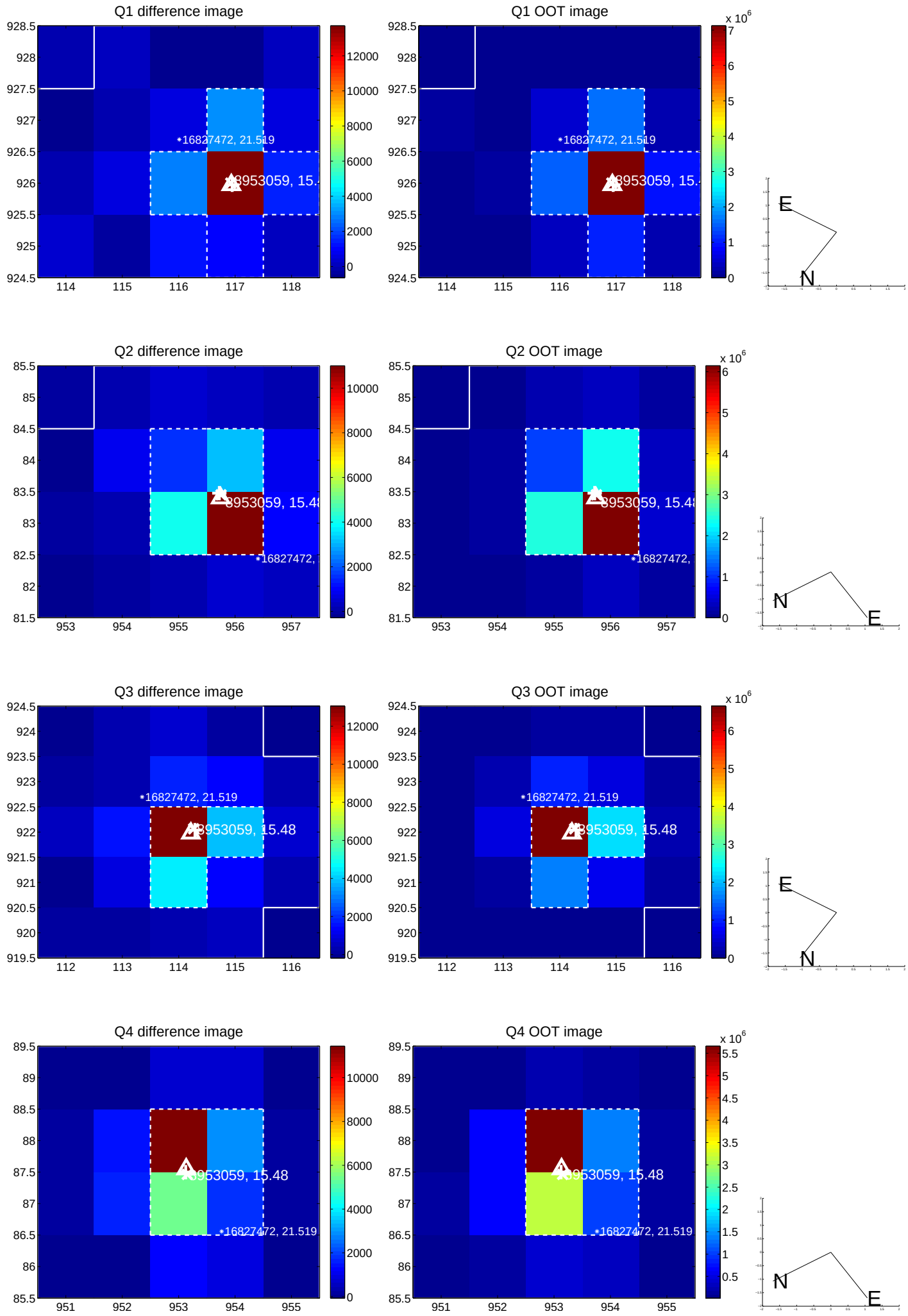
Supplemental centroid analysis for 008953059-02. Kepler magnitude: 15.48. Transit SNR 74.66
There are 17 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.176 ± 0.078	2.27	0.072 ± 0.080	0.161 ± 0.077
PRF-fit source offset from KIC position	0.233 ± 0.078	2.98	-0.103 ± 0.082	0.209 ± 0.077
photometric centroid source offset	0.15 ± 0.12	1.29	-0.02 ± 0.12	0.15 ± 0.12

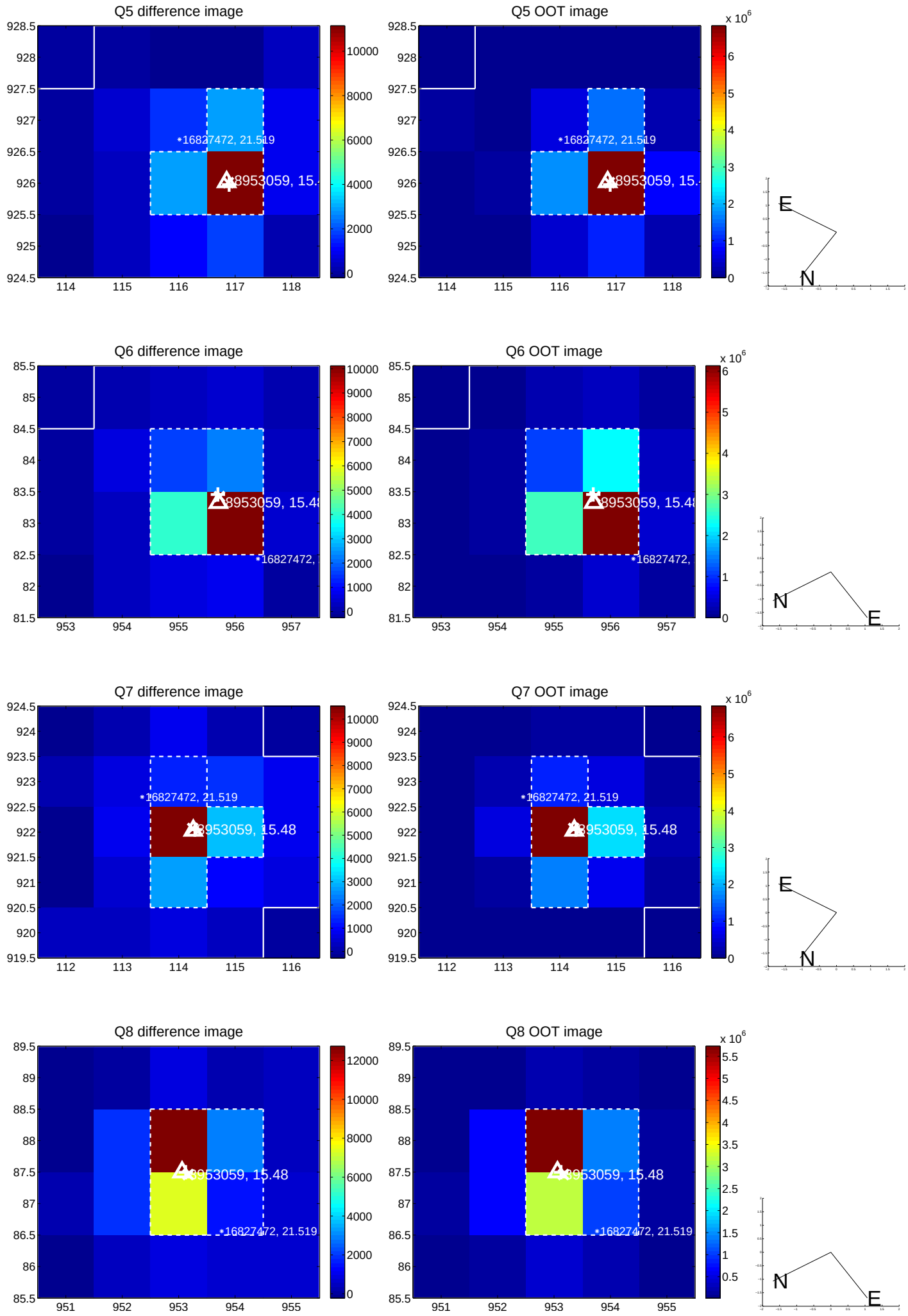


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

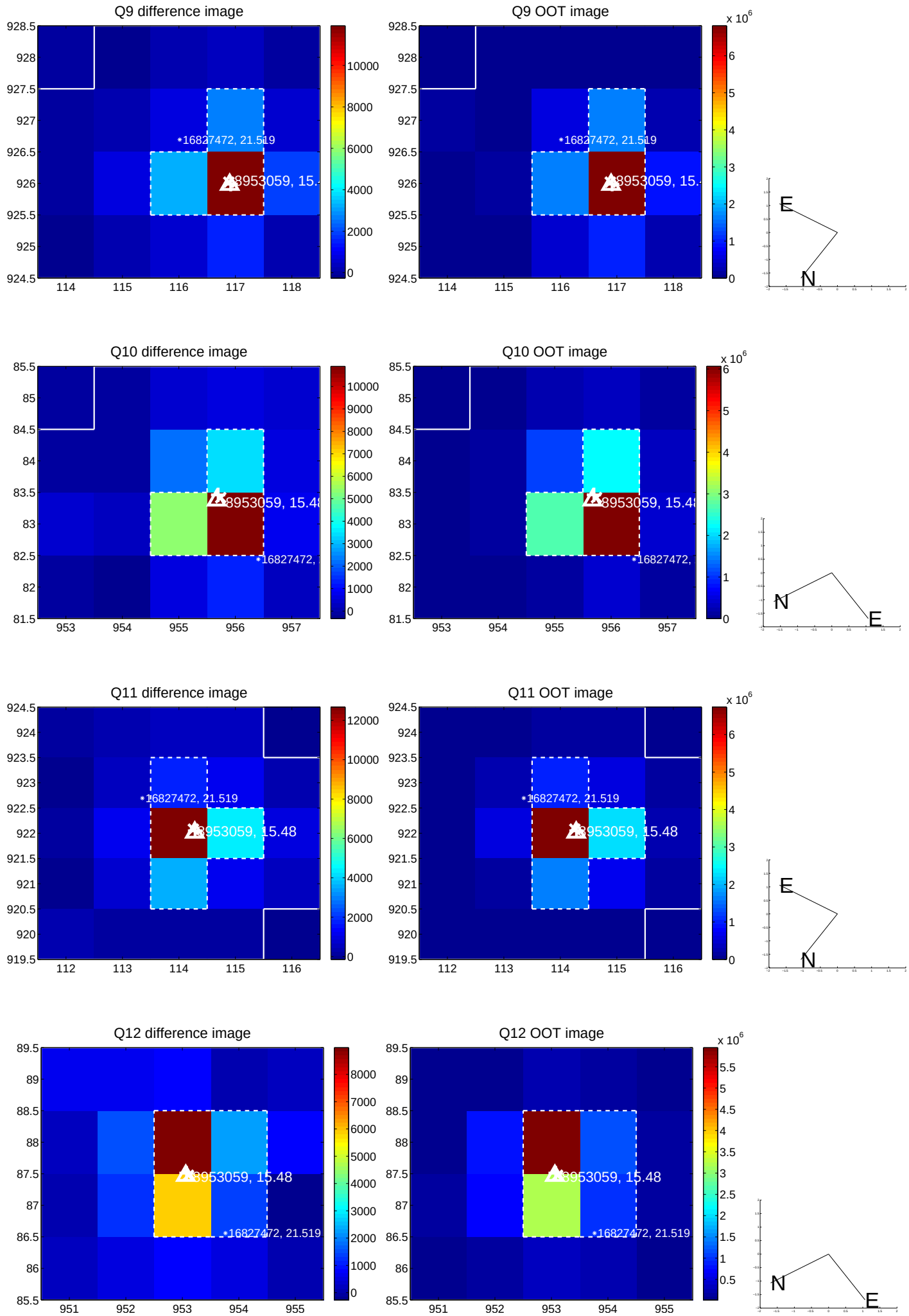
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



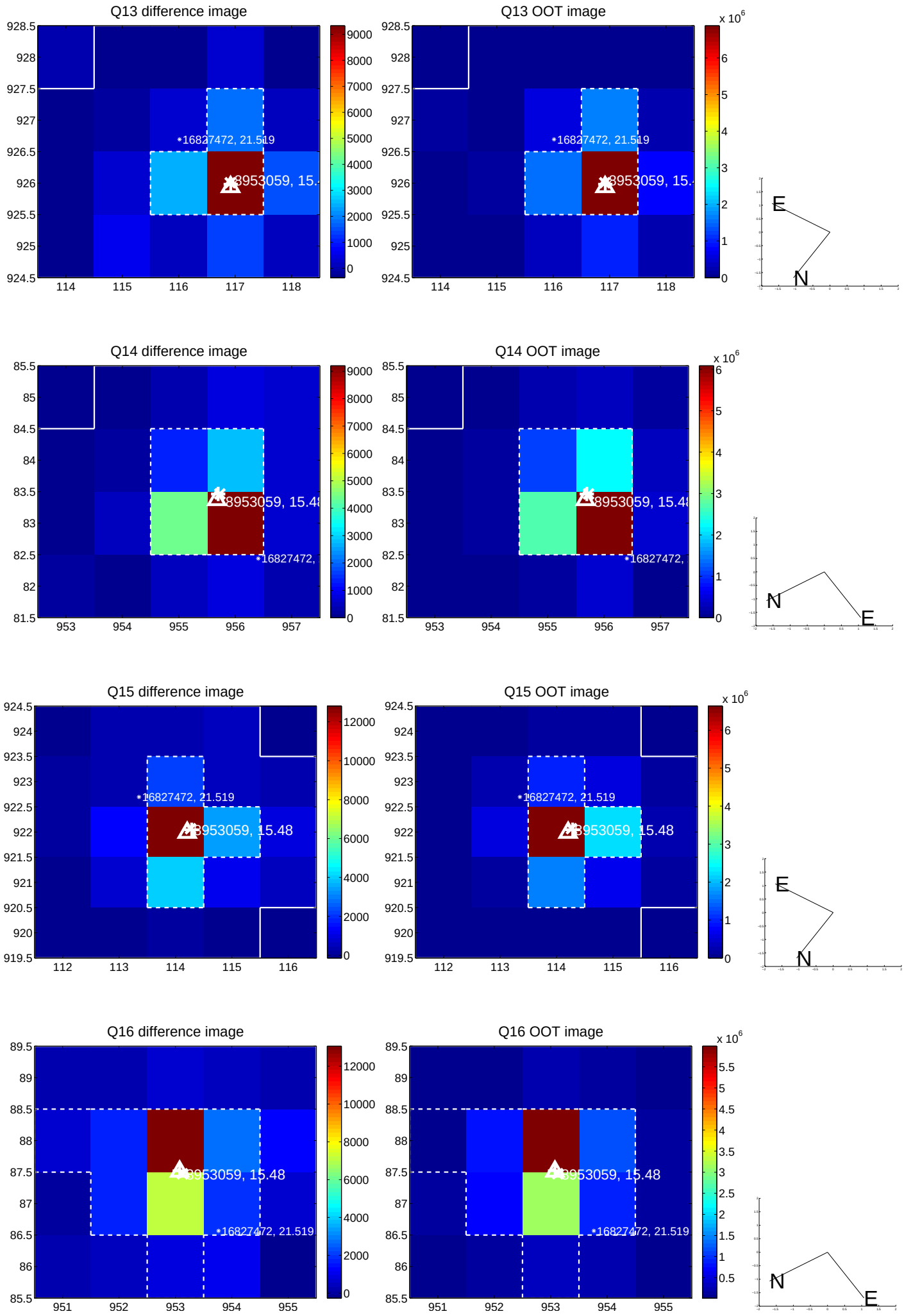
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



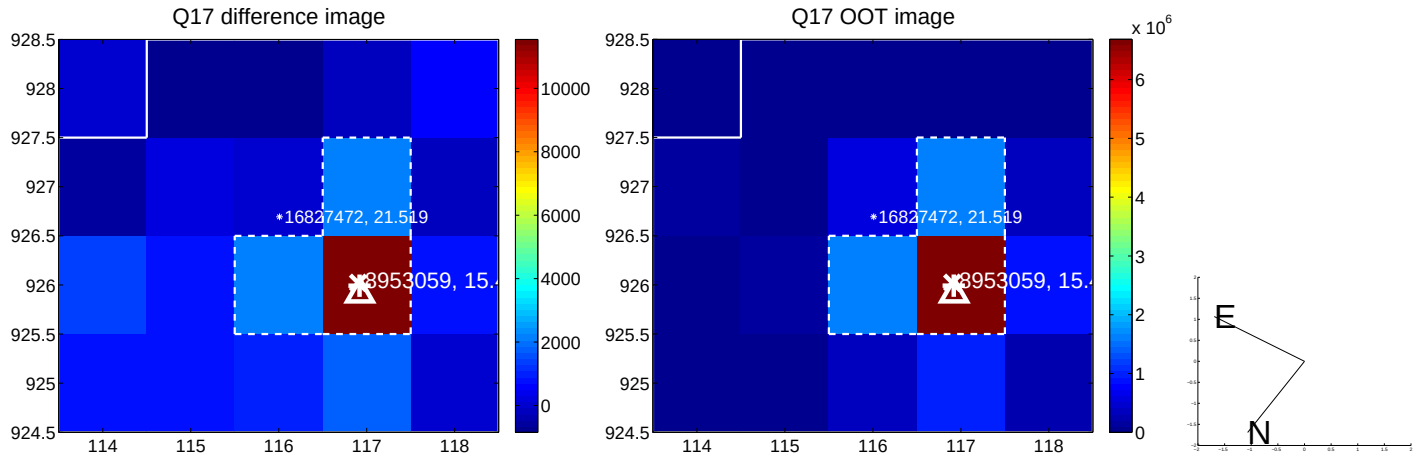
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

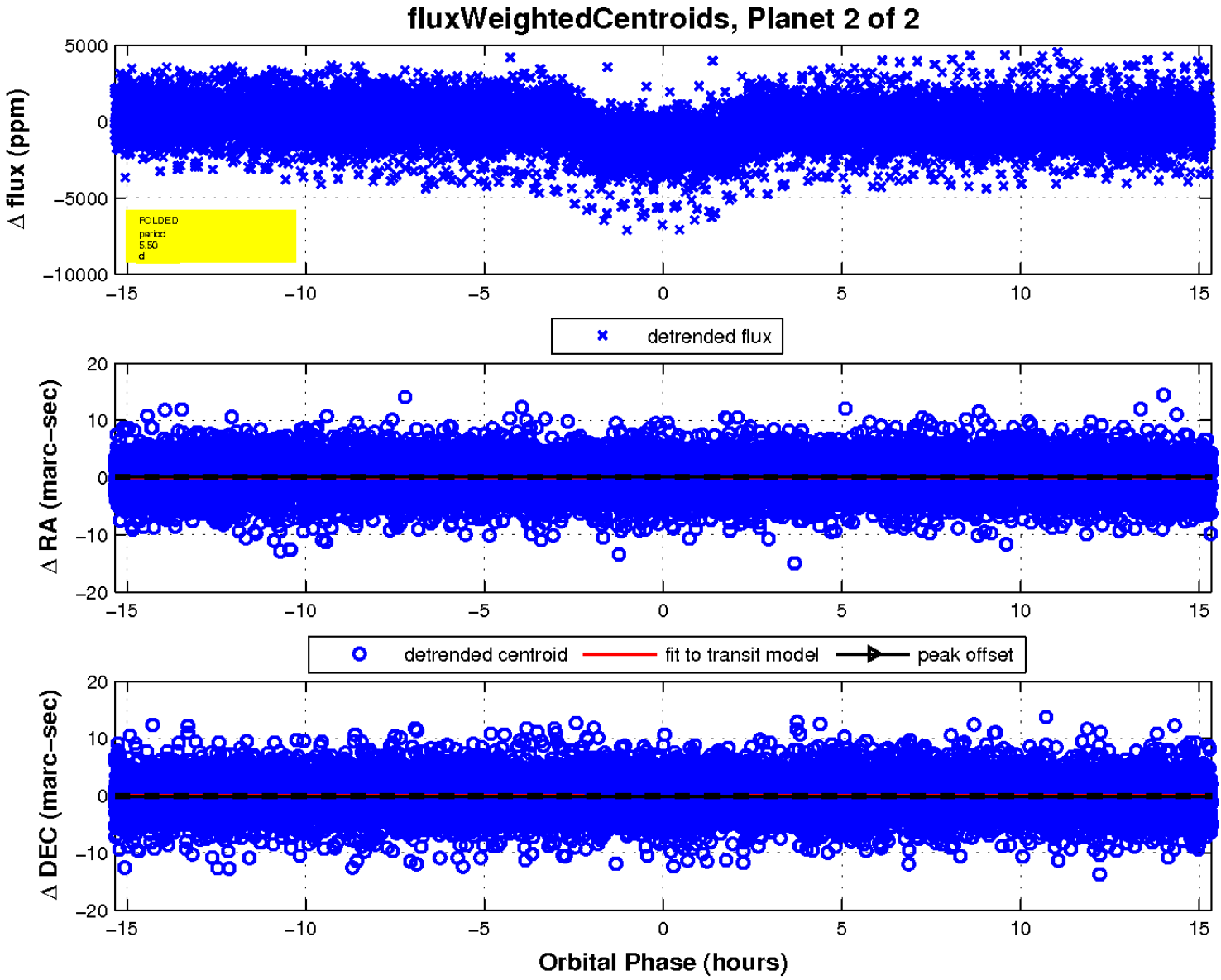


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

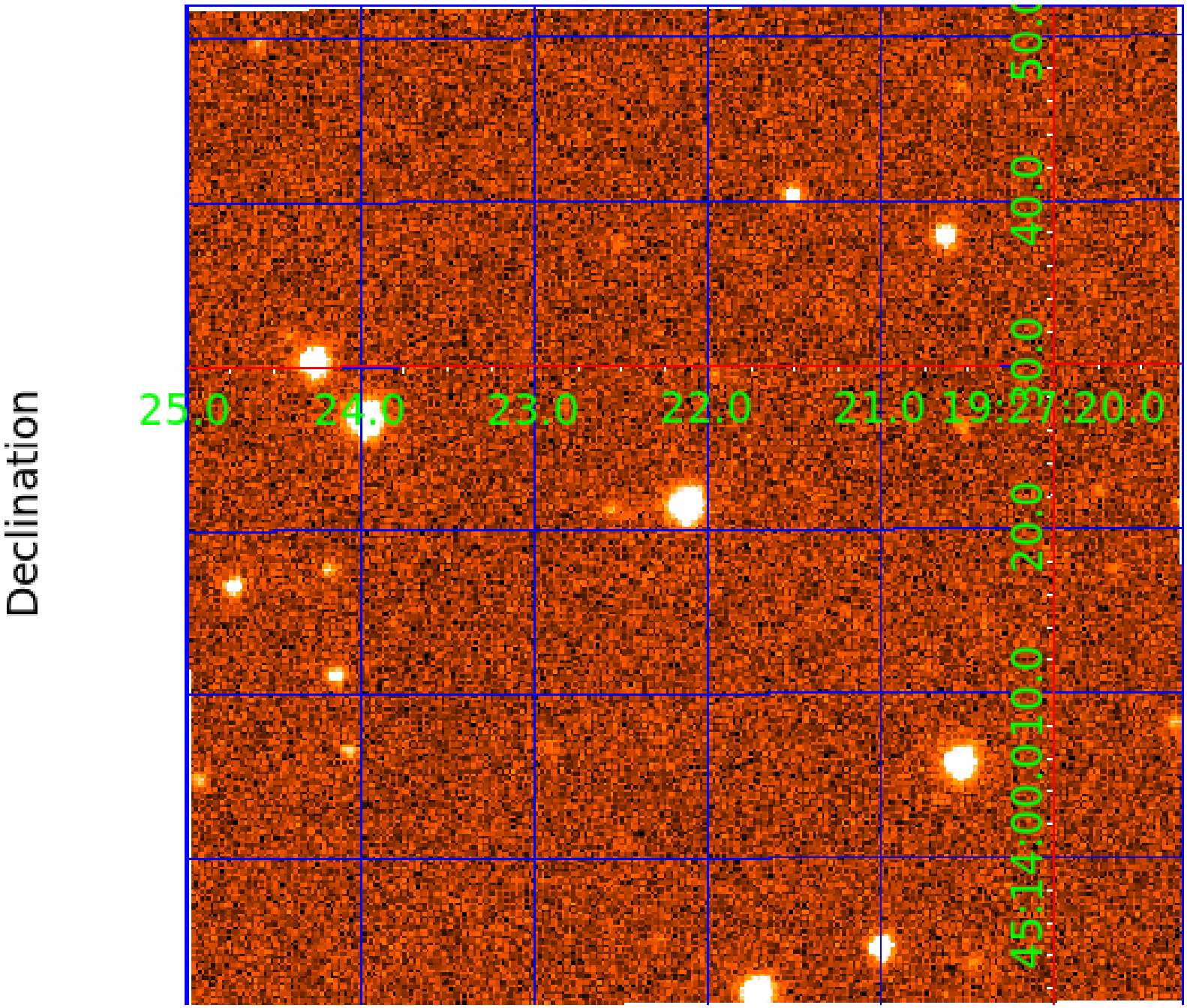


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
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23.0
22.0
21.0
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10.0
20.0
30.0
40.0
50.0