KIC 009597218

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 ($S_\oplus$)
009597218-01	OBS	No	2.214994	132.158399	17.1	11.518	7.8	7.6	2.14	7766	0.89	9456.35
009597218-02	OBS	No	414.359888	208.530144	344.0	3.940	8.5	8.0	2.14	7766	4.57	8.84
009597218-03	OBS	No	140.015459	148.745540	244.3	4.785	7.6	7.4	2.14	7766	3.82	37.55
009597218-04	OBS	No	205.817690	143.134272	347.6	2.938	7.6	6.9	2.14	7766	4.66	22.47
009597218-05	OBS	No	107.503982	146.379079	296.0	3.553	7.7	8.2	2.14	7766	4.12	53.41
009597218-06	OBS	No	120.880547	156.138356	186.6	8.760	7.4	7.1	2.14	7766	3.14	45.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597218-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009597218-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

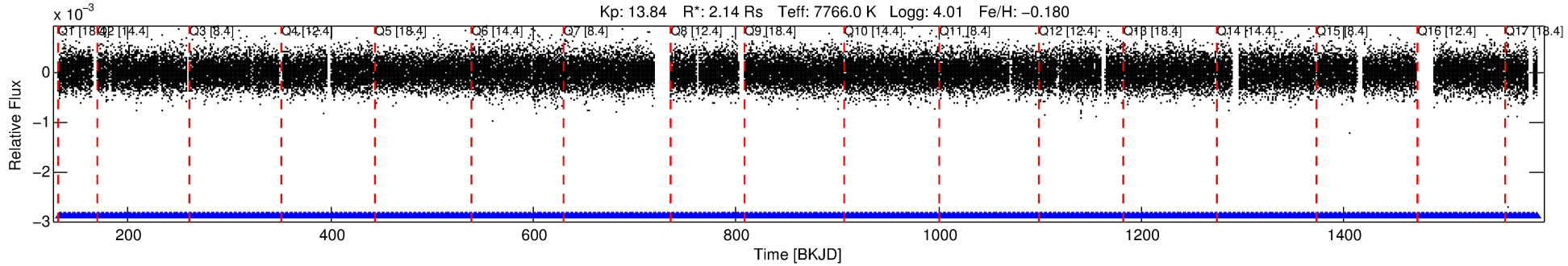
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

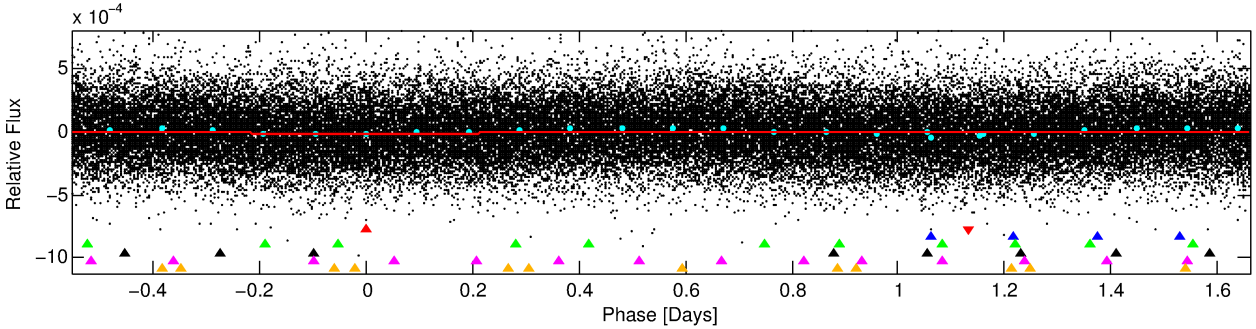
Ephemeris Match Information For 009597218-01

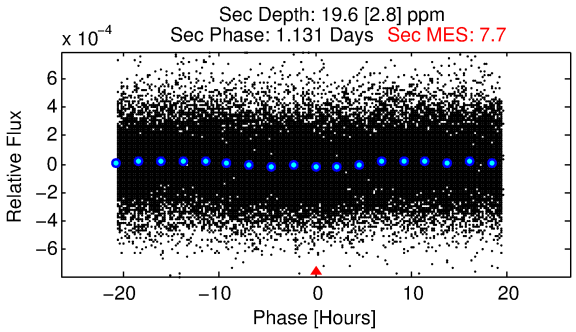
No Significant Match Found

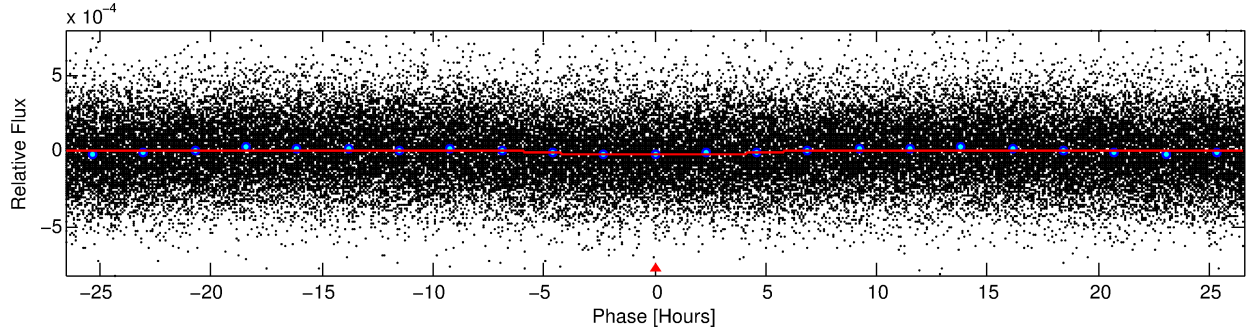
DV One-Page Summary

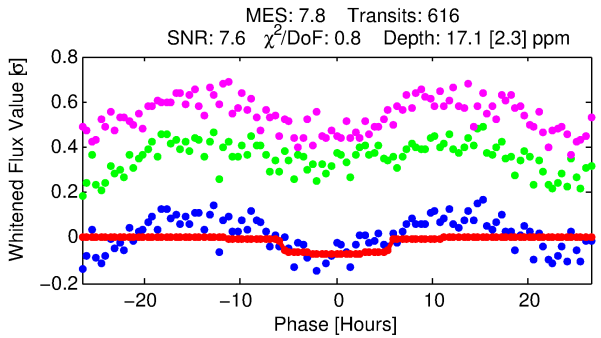
KIC: 9597218 Candidate: 1 of 6 Period: 2.215 d

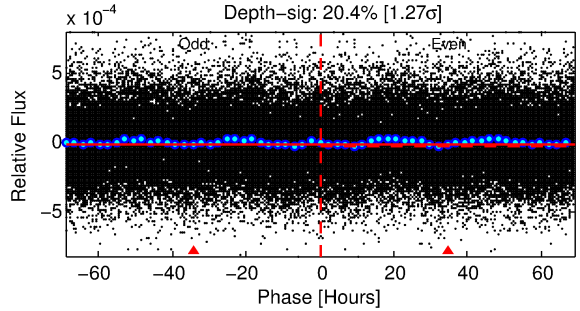


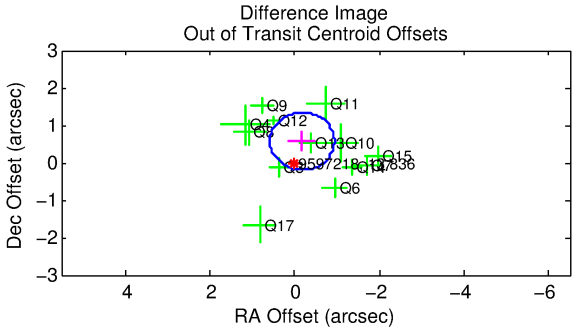












DV Fit Results:

Period = 2.21499 [0.00005] d
Epoch = 132.1584 [0.0126] BKJD
Rp/R* = 0.0038 [0.0054]
a/R* = 1.57 [7.28]
b = 0.22 [34.11]

Seff = 9456.35 [4238.16]
Teq = 2515 [282] K
Rp = 0.89 [1.30] Re
a = 0.0397 [0.0109] AU

Ag = 21.17 [60.70] [0.33σ]
Teffp = 8339 [5924] K [0.98σ]

DV Diagnostic Results:

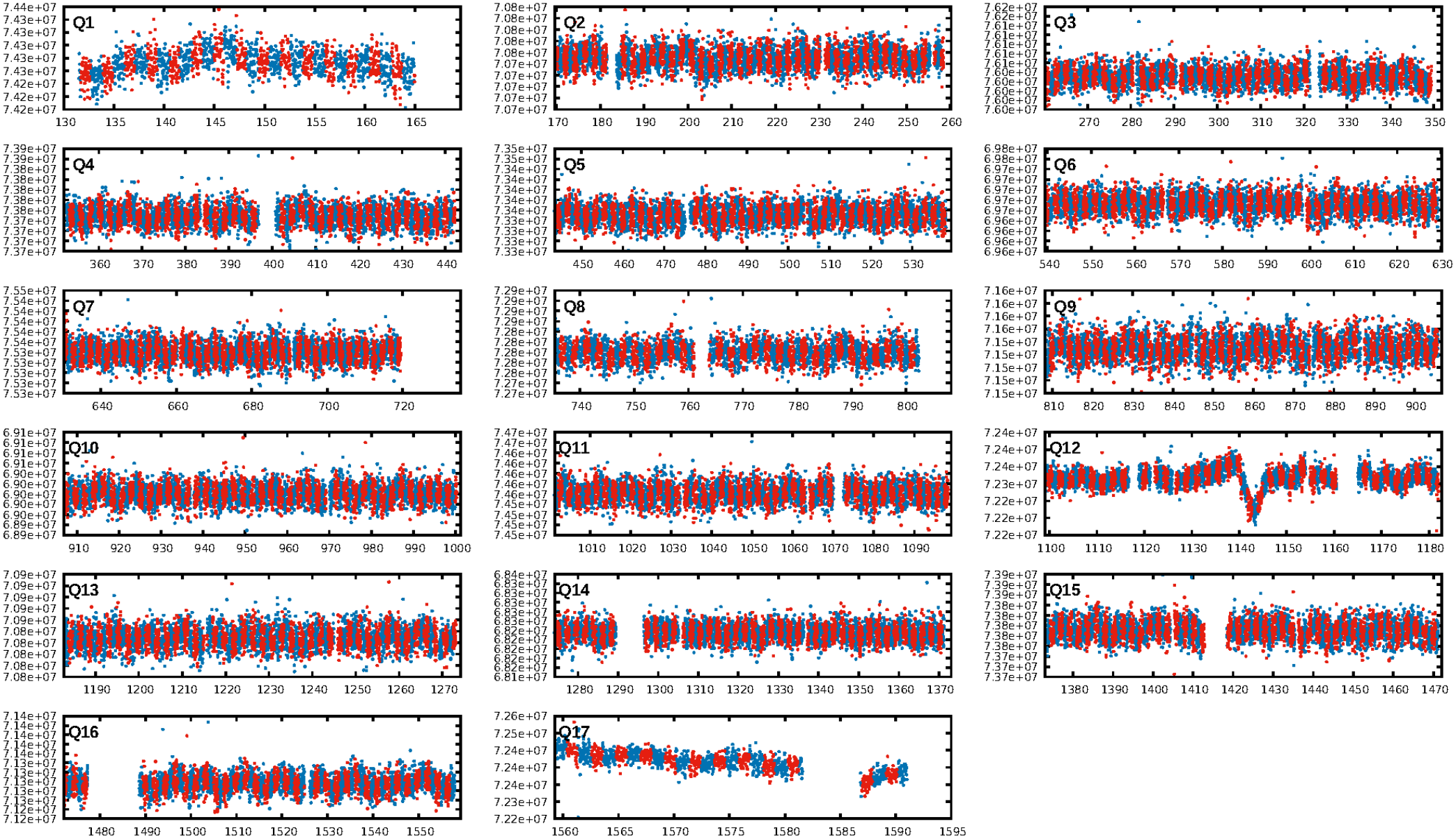
ShortPeriod−sig: N/A
LongPeriod−sig: 100.0% [209.64σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 1.09e−09
RollingBand−fgt: 1.00 [589/589]
GhostDiagnostic−chr: 2.45

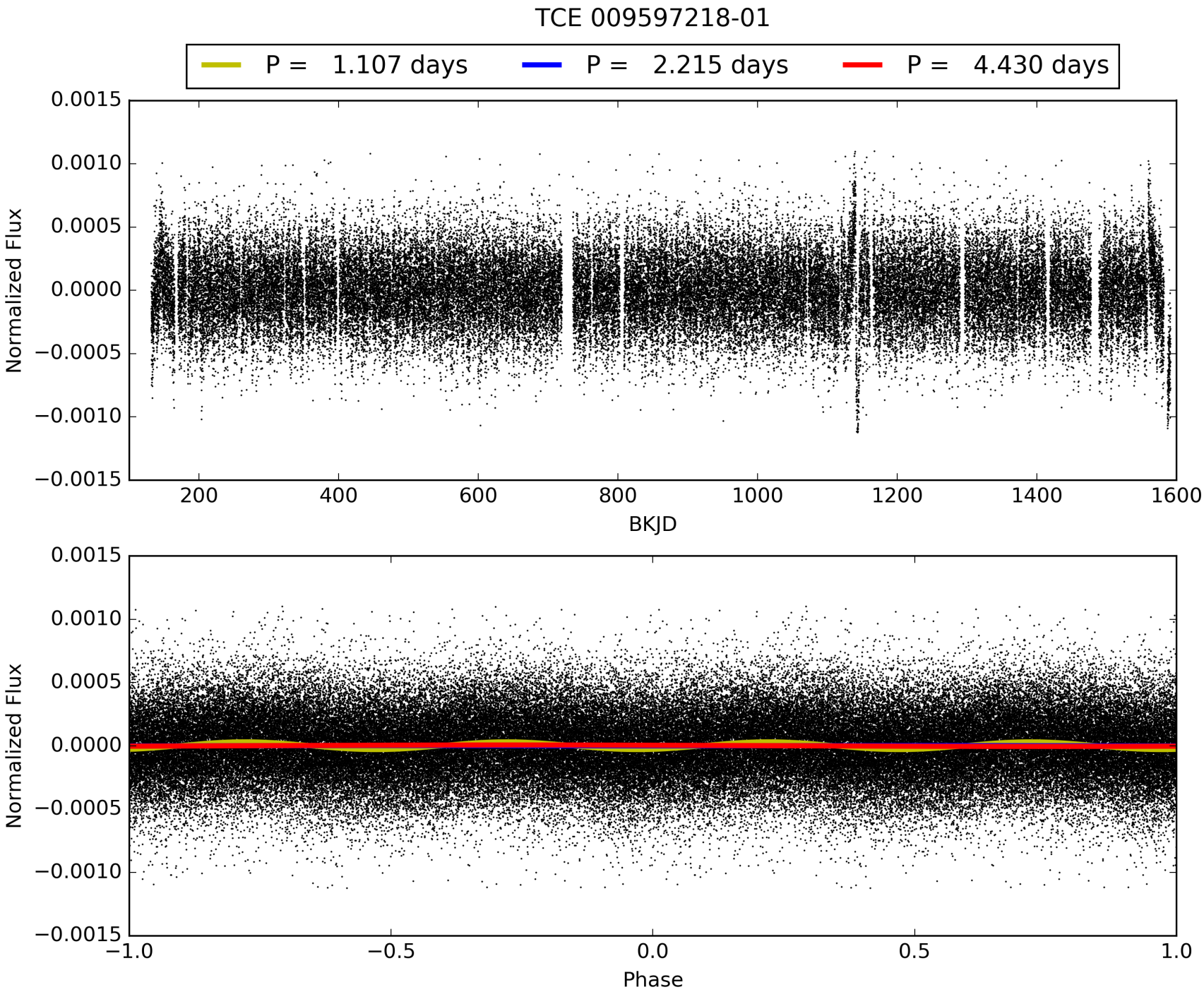
Centroid−sig: 28.0%
Centroid−so: 1.214 arcsec [0.96σ]
OotOffset−rm: 0.598 arcsec [2.35σ]
KicOffset−rm: 0.568 arcsec [2.24σ]
OotOffset−st: 3/4/3/3 [13]
KicOffset−st: 3/4/3/3 [13]
DiffImageQuality−fgm: 0.92 [12/13]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 15:41:16 Z

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

TCE 009597218-01, PDC Light Curves




TCE 009597218-01
P = 1.107 days
P = 2.215 days
P = 4.430 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
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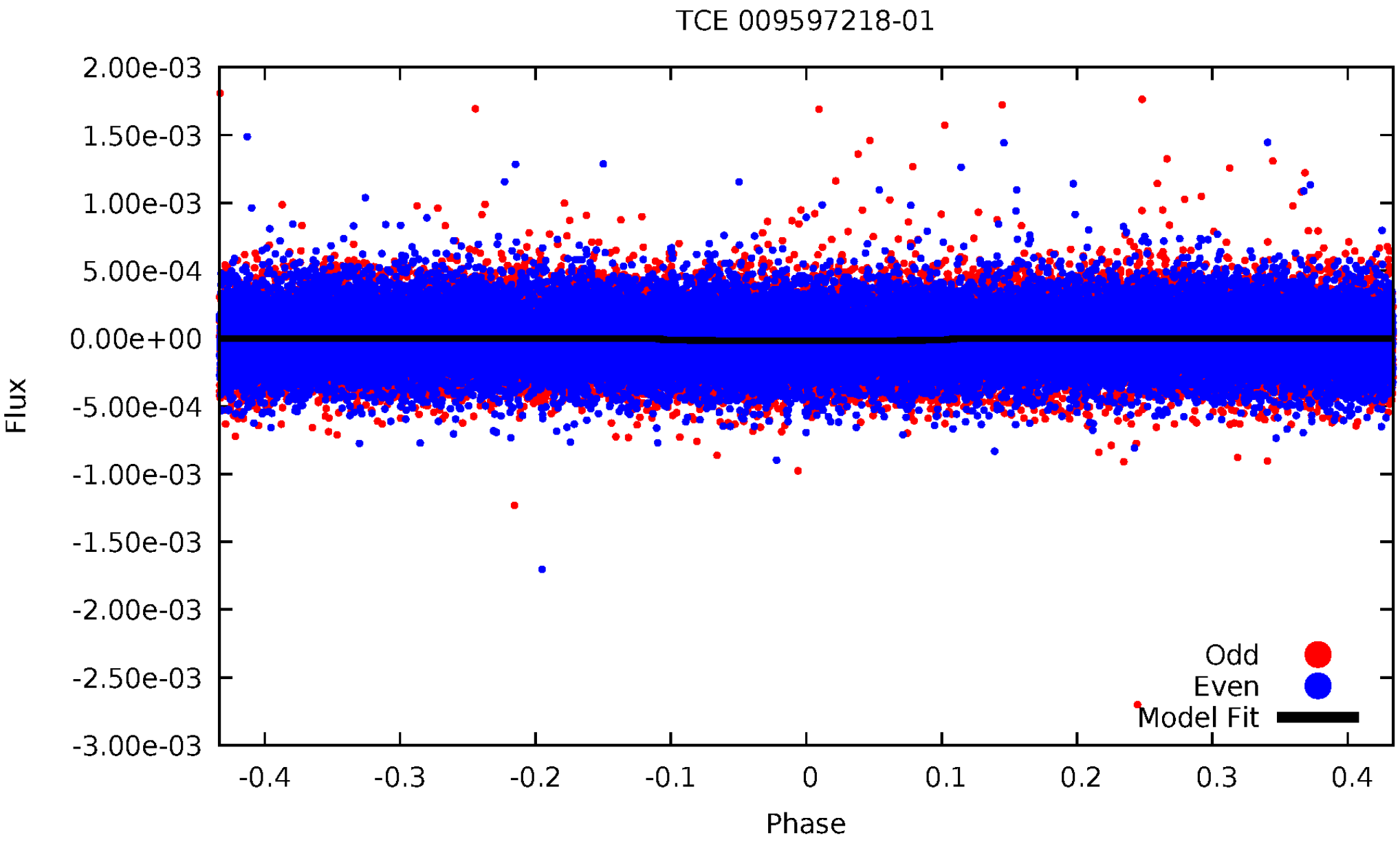
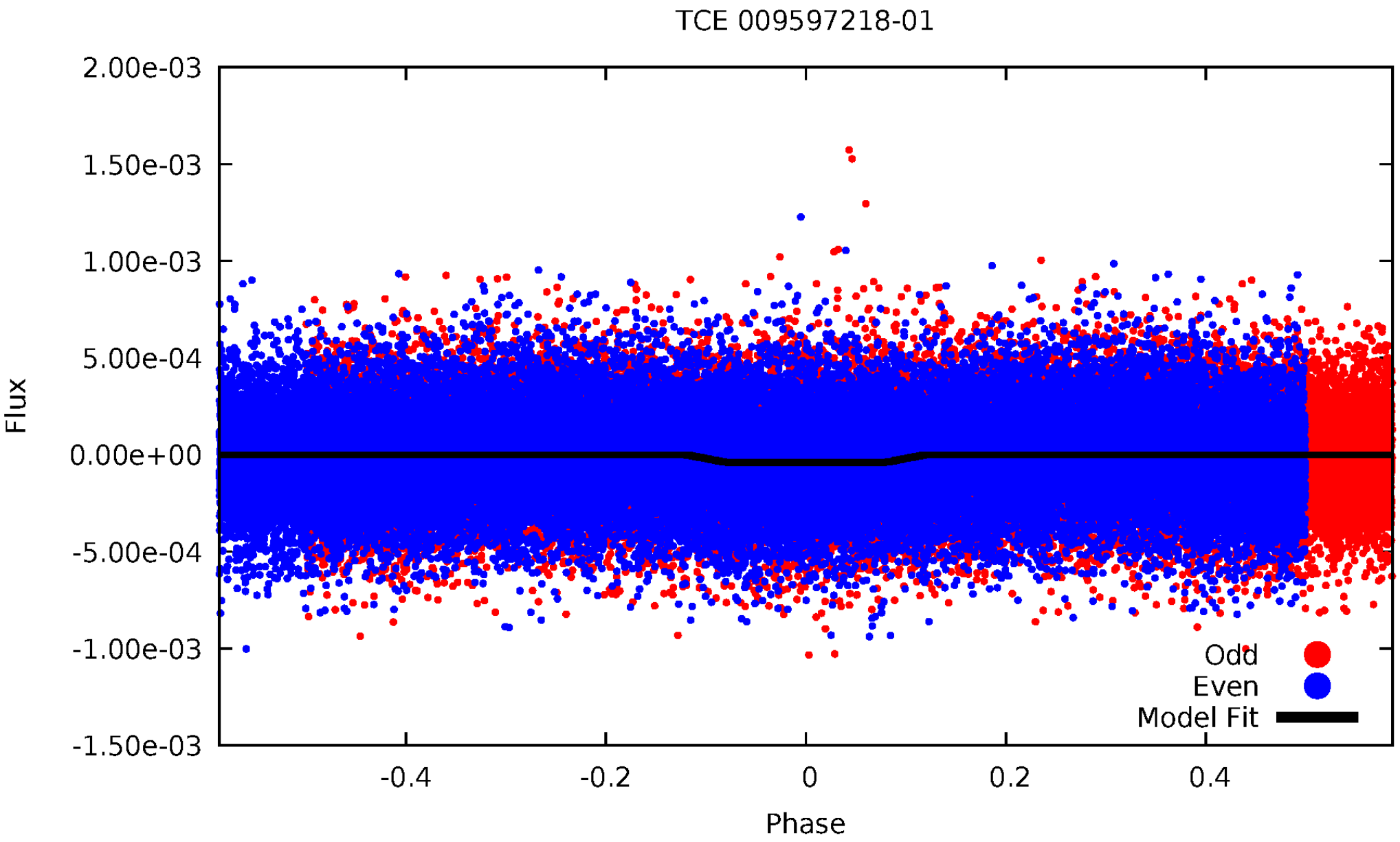
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

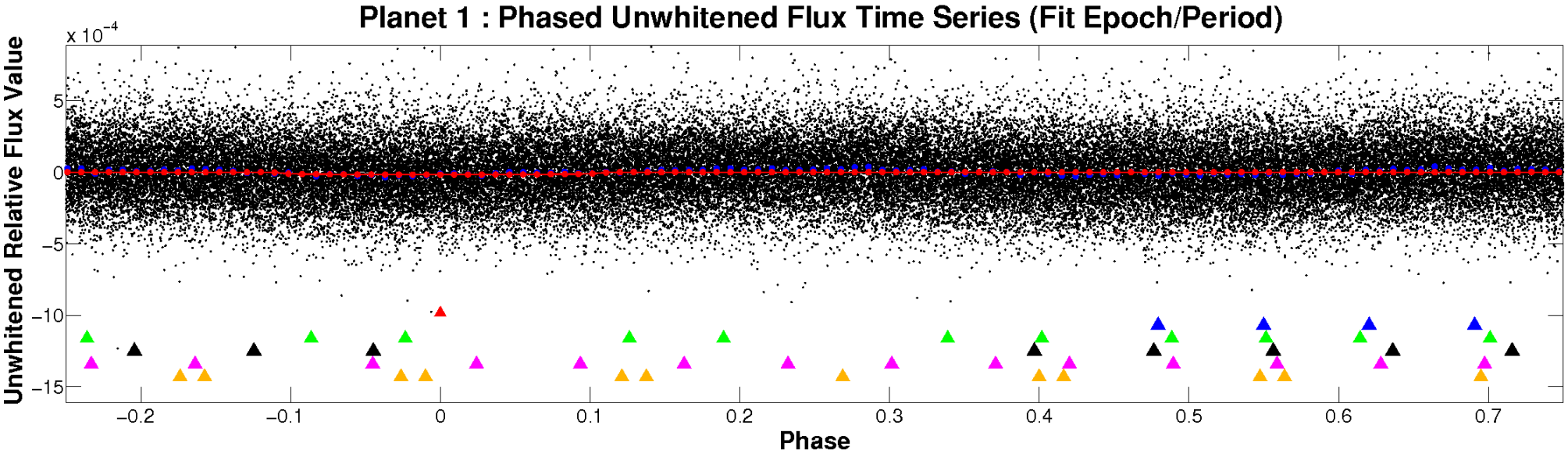
DV Odd/Even

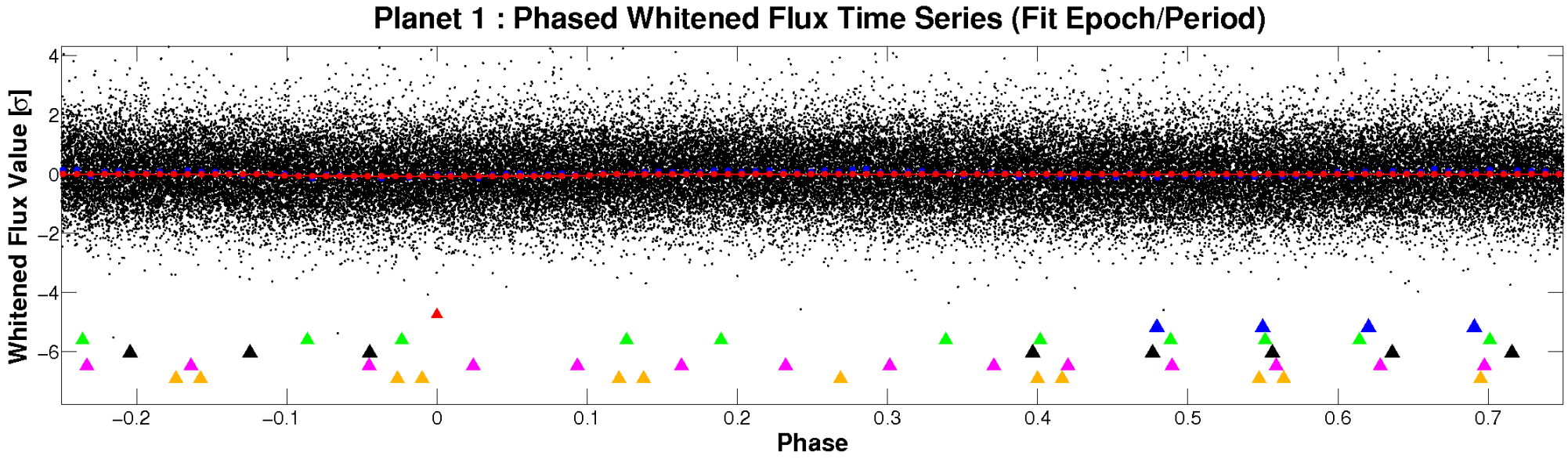

TCE 009597218-01
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
-2.00e-03
-2.50e-03
-3.00e-03
Flux
-0.4
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
0.4
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009597218-01
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.4
-0.2
0
0.2
0.4
Phase
Odd
Even
Model Fit

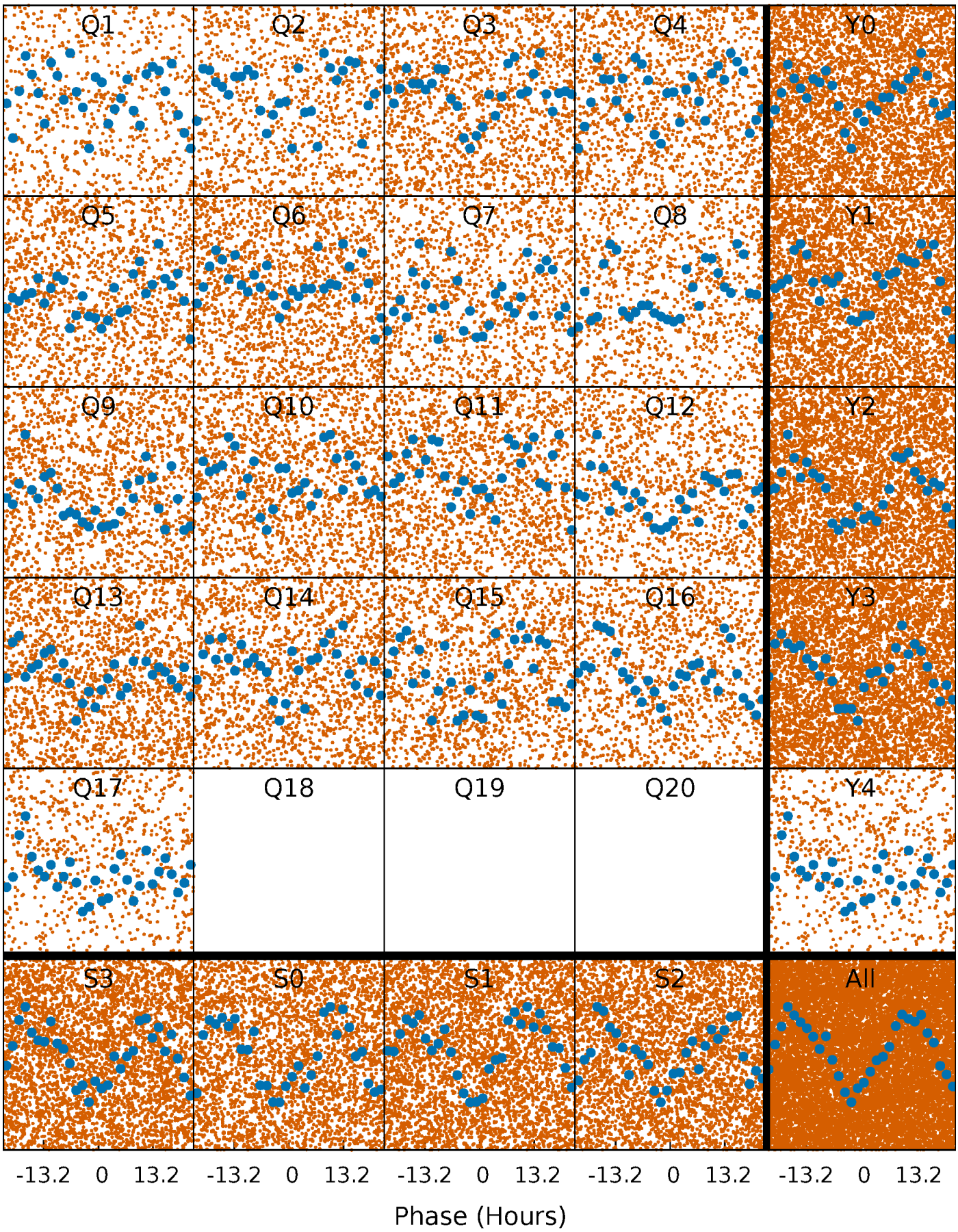
Non-Whitened Vs. Whitened Light Curve





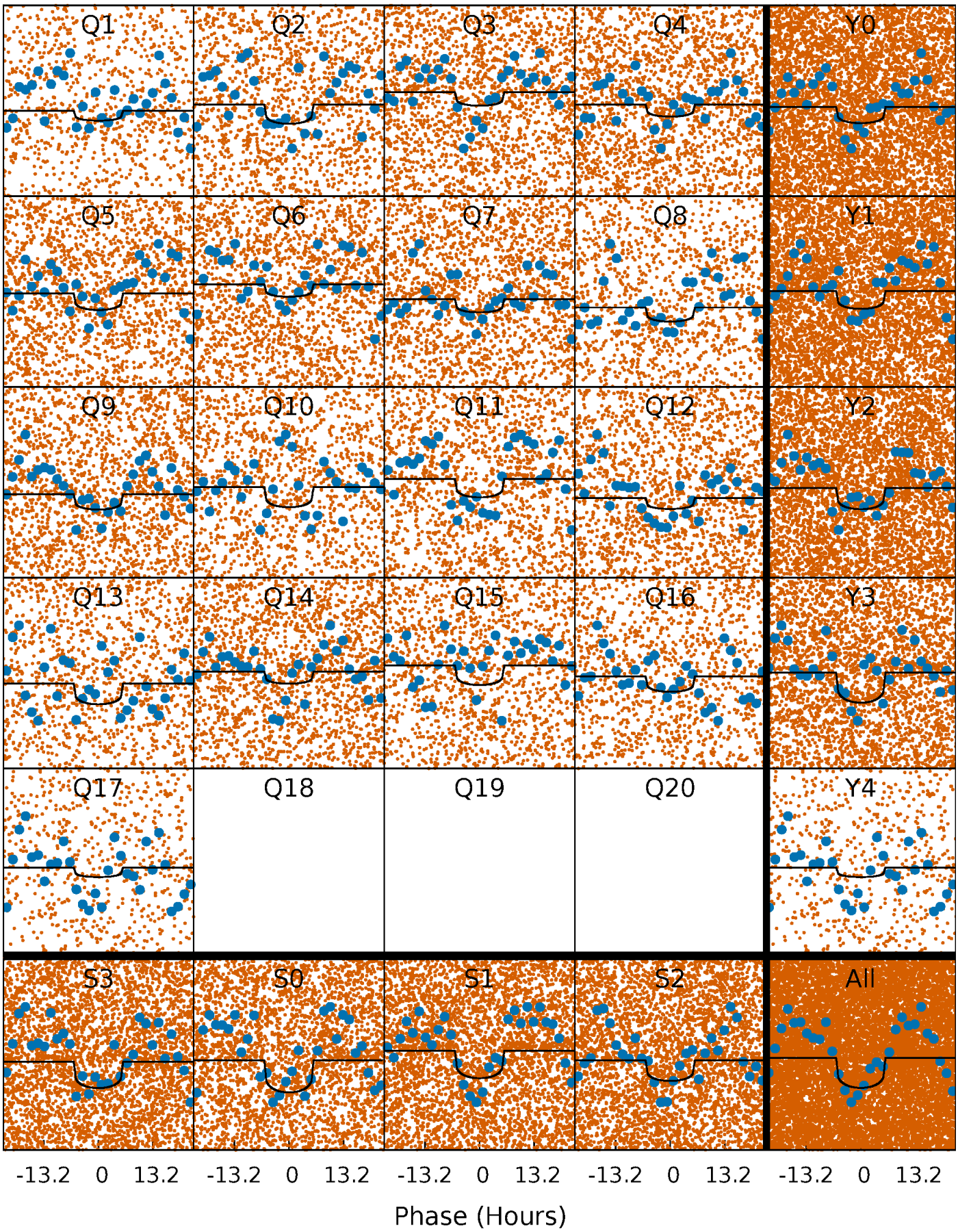
PDC Quarter-Phased Transit Curves

TCE 009597218-01 P= 2.214994 Days T_0=132.158399 (BKJD)



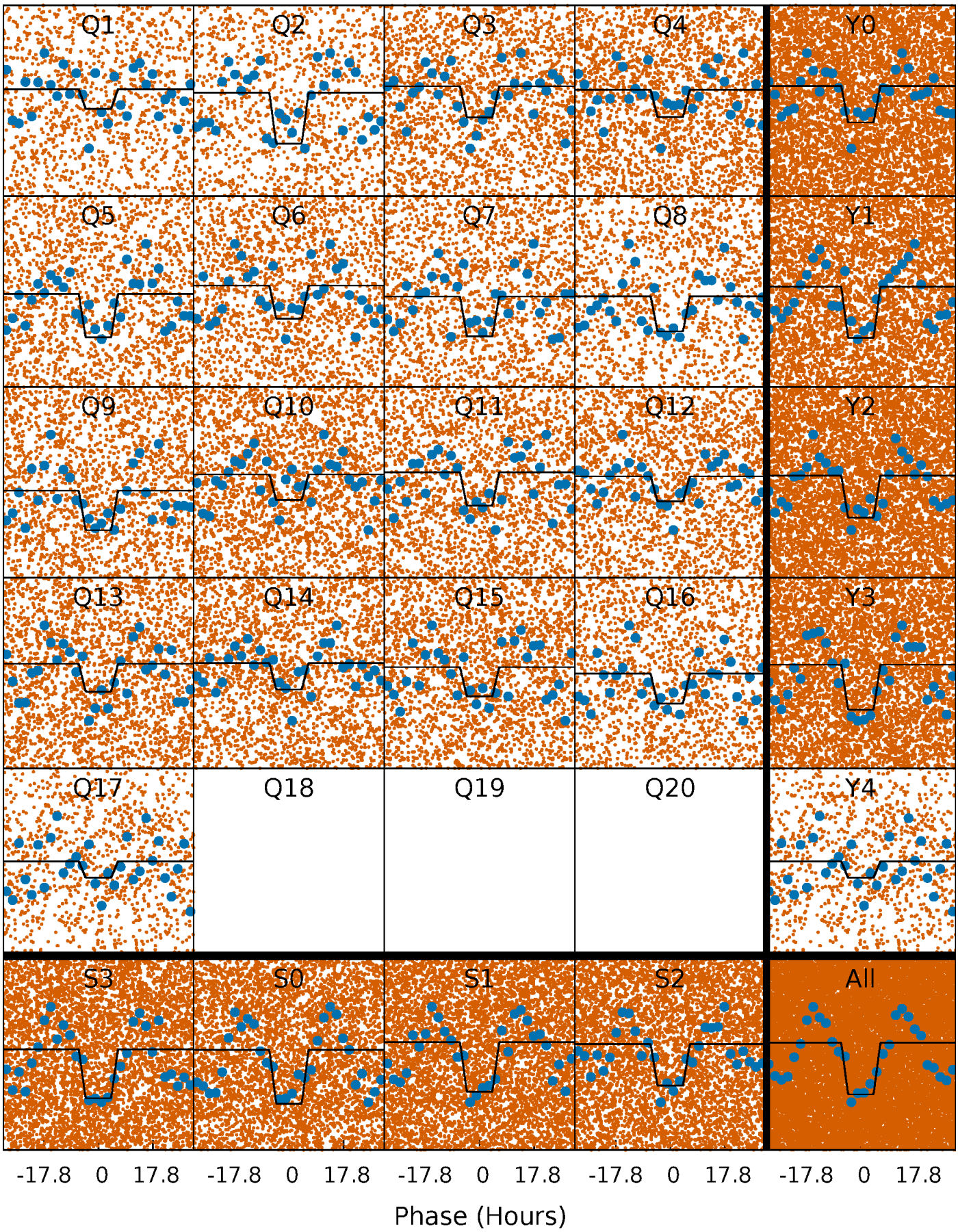
DV Quarter-Phased Transit Curves

TCE 009597218-01 P= 2.214994 Days T_0=132.158399 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

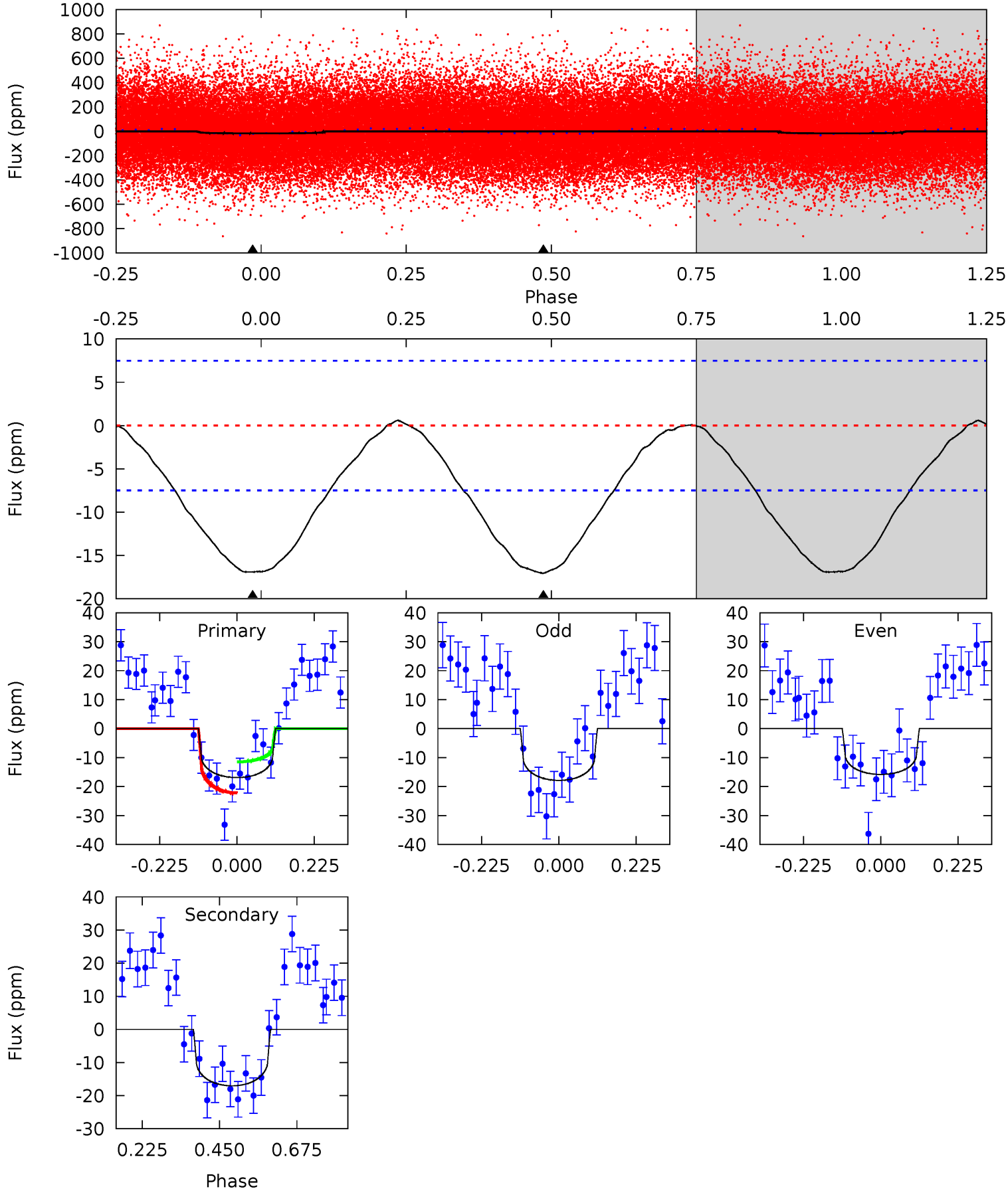
TCE 009597218-01 P= 2.214681 Days T_0=132.198507 (BKJD)



DV Model-Shift Uniqueness Test

009597218-01, P = 2.214994 Days, E = 129.943405 Days

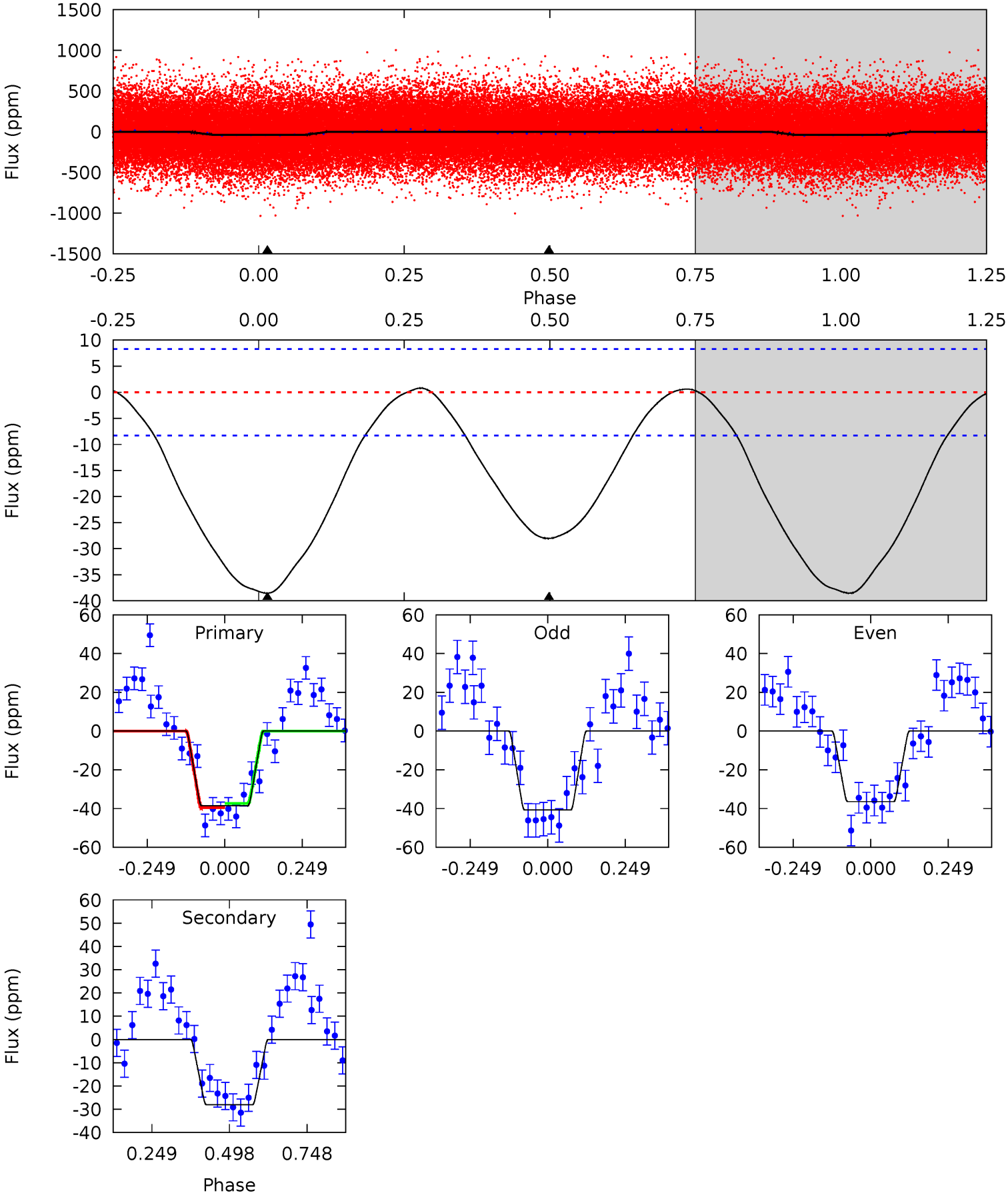
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.93	10.0	0	0	4.39	1.21	0.15	9.93	9.93	10.0	10.0	0.61	0.81	0.03	3.17



Alt Model-Shift Uniqueness Test

009597218-01, P = 2.214681 Days, E = 129.983826 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	14.8	0	0	4.37	1.15	0.60	20.3	20.3	14.8	14.8	1.12	0.90	0.02	0.59



Stellar Parameters For KIC 009597218

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7766^{+216}_{-325}	$4.008^{+0.234}_{-0.144}$	$-0.180^{+0.200}_{-0.350}$	$2.137^{+0.447}_{-0.671}$	$1.697^{+0.196}_{-0.319}$	$0.245^{+0.324}_{-0.095}$
	+3%/-4%	+6%/-4%	+111%/-194%	+21%/-31%	+12%/-19%	+132%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009597218-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-17±2	$1.19^{+1.16}_{-0.78}$	3497^{+230}_{-302}	6741^{+7104}_{-1891}	10^{+78}_{-8}
Alt.	-28±2	$1.66^{+1.17}_{-1.06}$	3490^{+245}_{-290}	6361^{+5893}_{-1393}	$8.636^{+58.085}_{-5.677}$

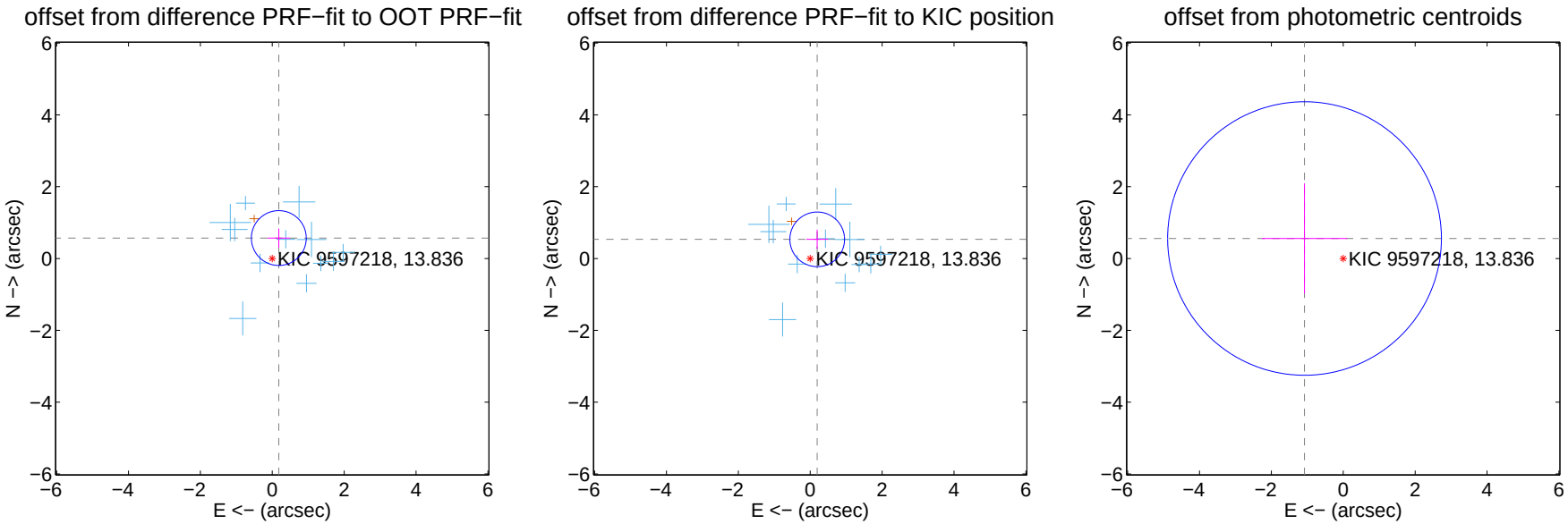
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

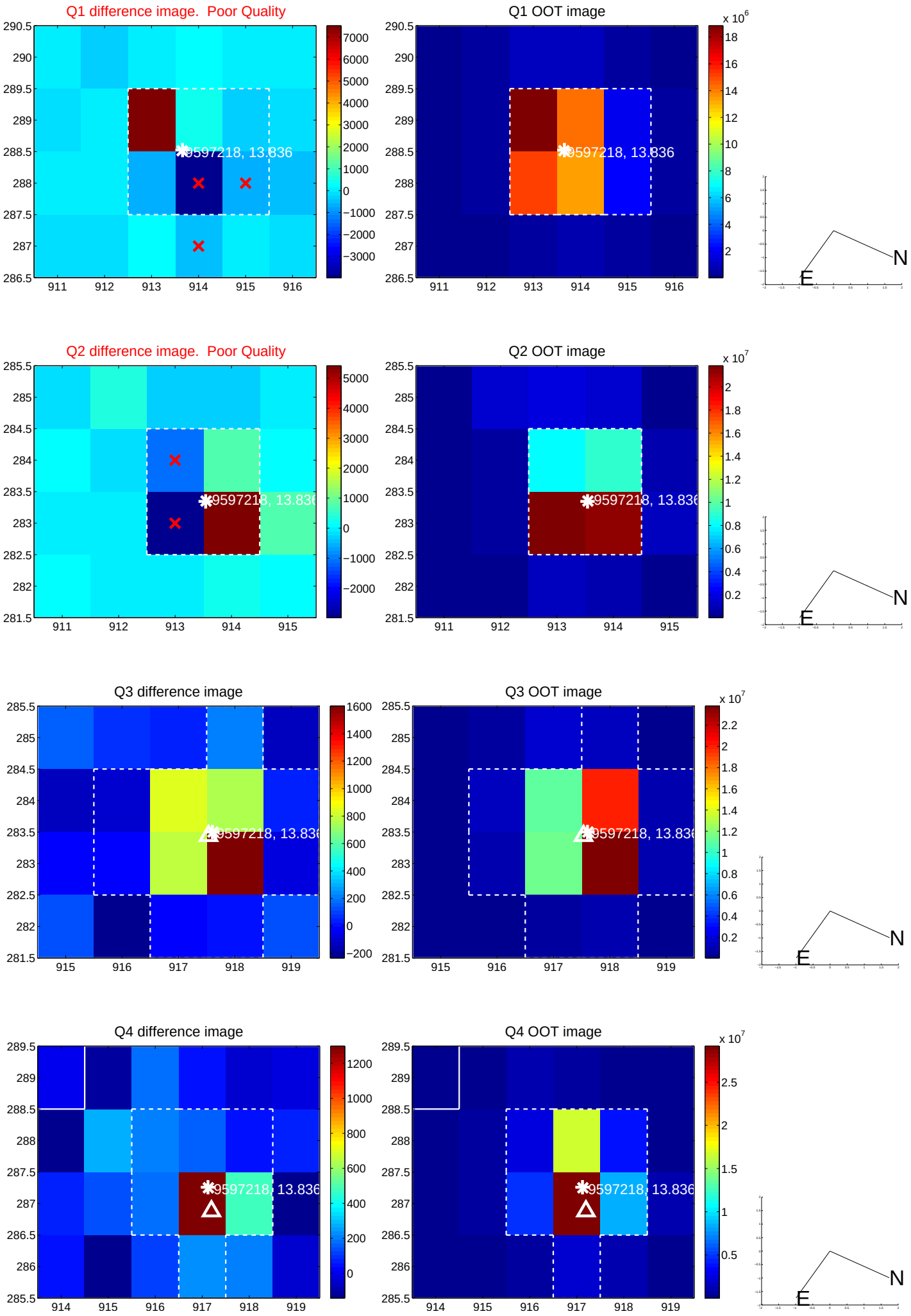
Supplemental centroid analysis for 009597218-01. Kepler magnitude: 13.84. Transit SNR 7.61
There are 12 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.598 ± 0.255	2.35	-0.181 ± 0.311	0.570 ± 0.264
PRF-fit source offset from KIC position	0.568 ± 0.254	2.24	-0.194 ± 0.300	0.534 ± 0.268
photometric centroid source offset	1.21 ± 1.27	0.96	1.08 ± 1.19	0.56 ± 1.53

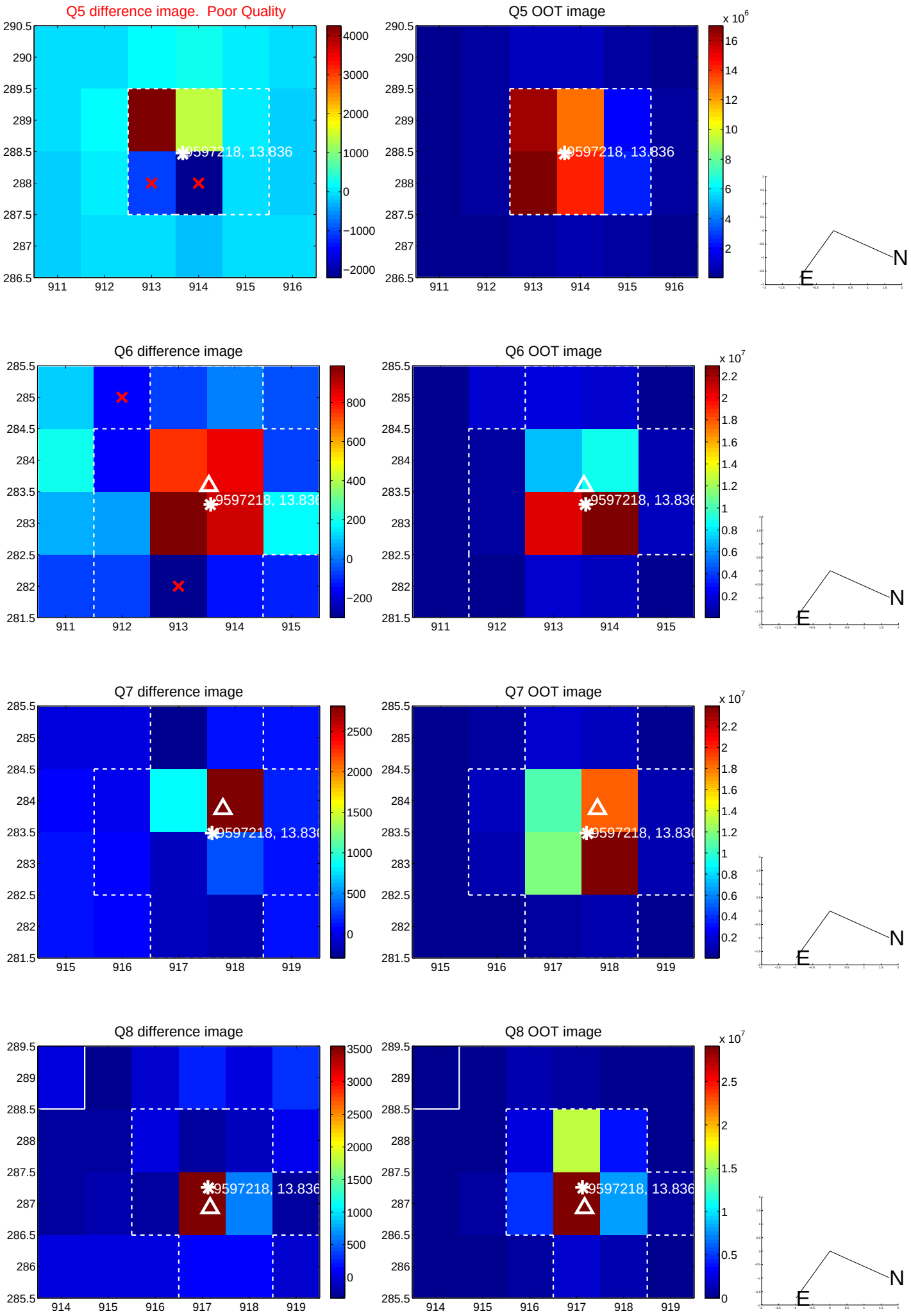


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

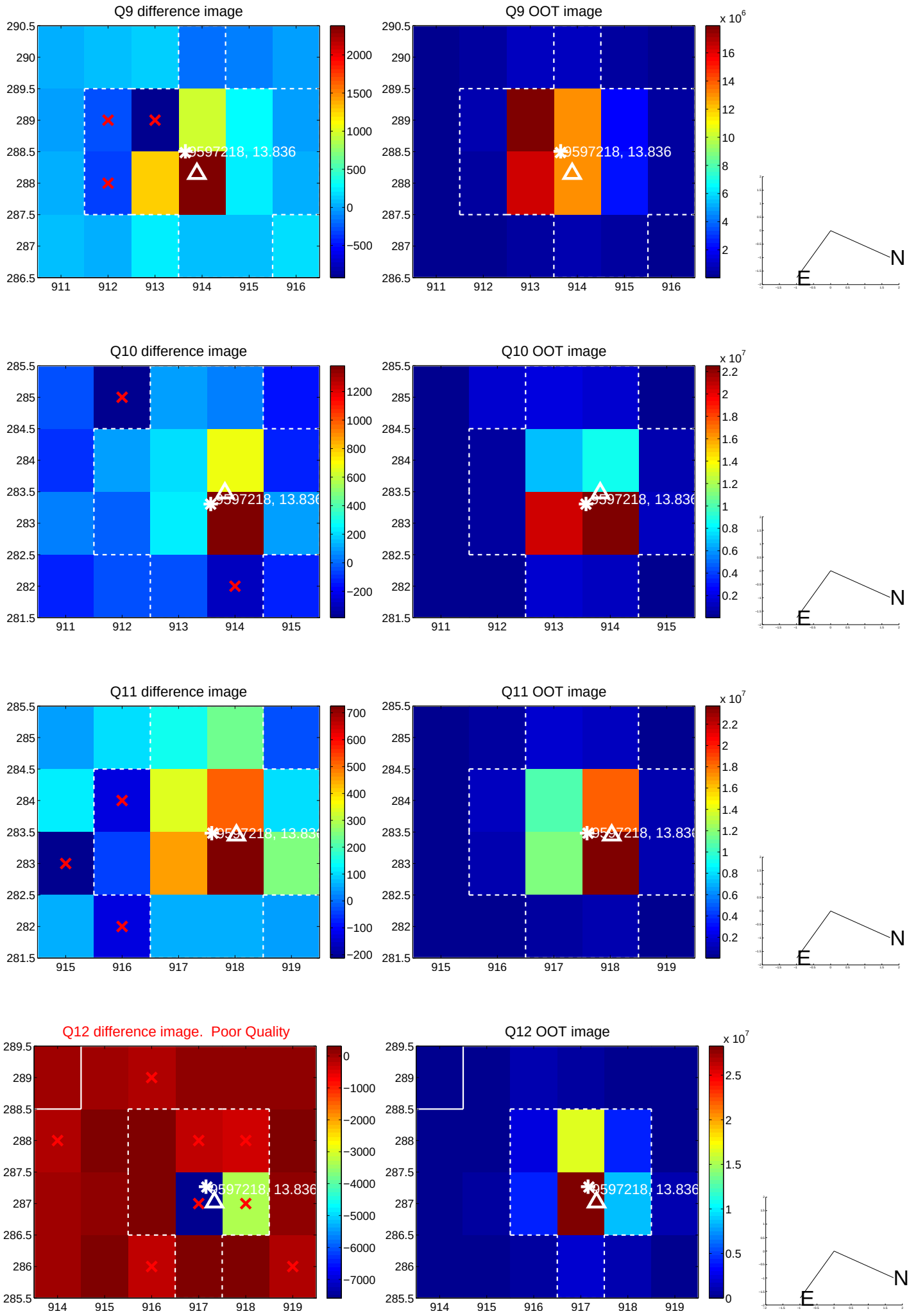
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



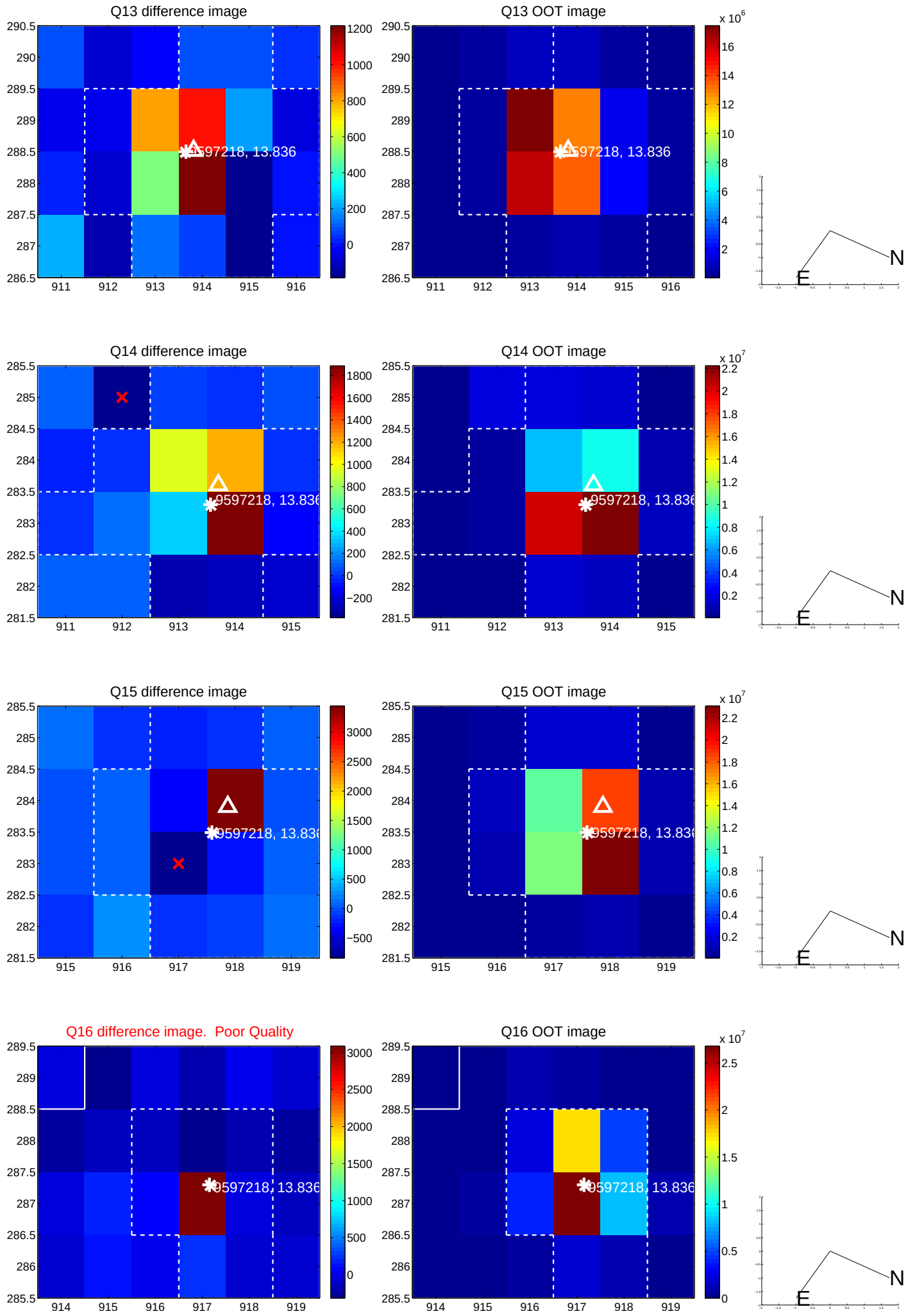
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



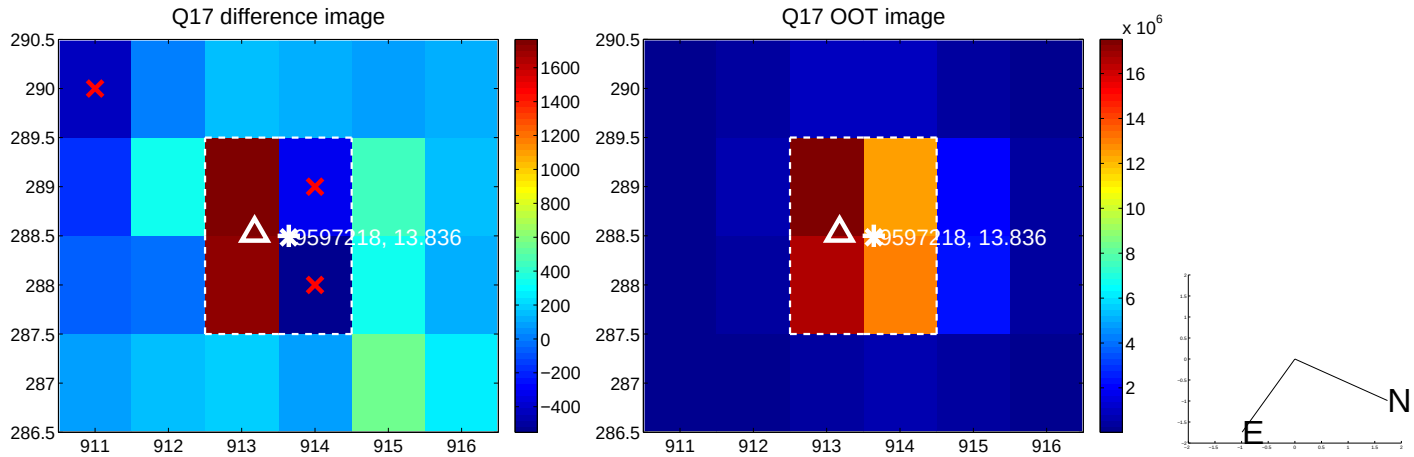
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

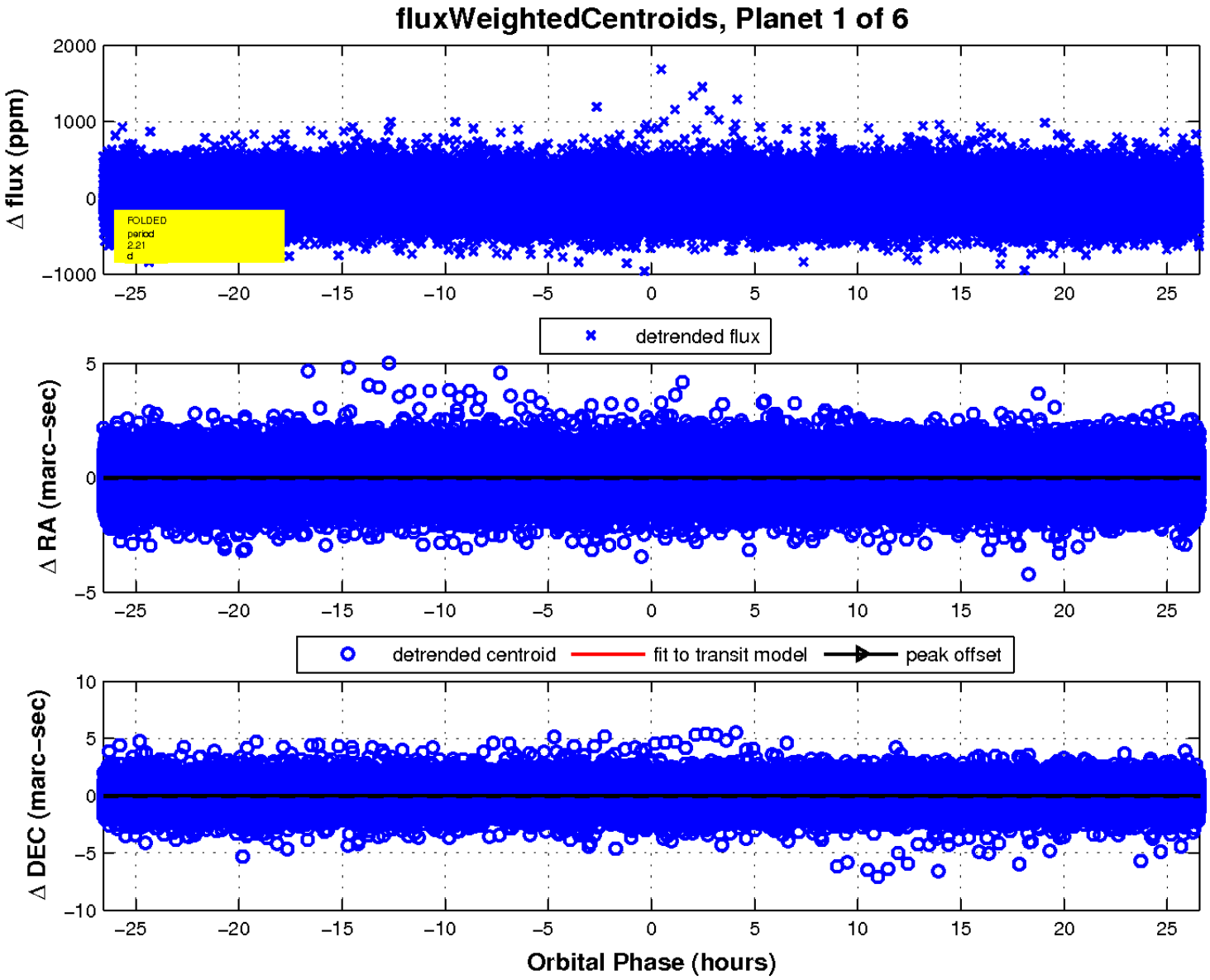


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

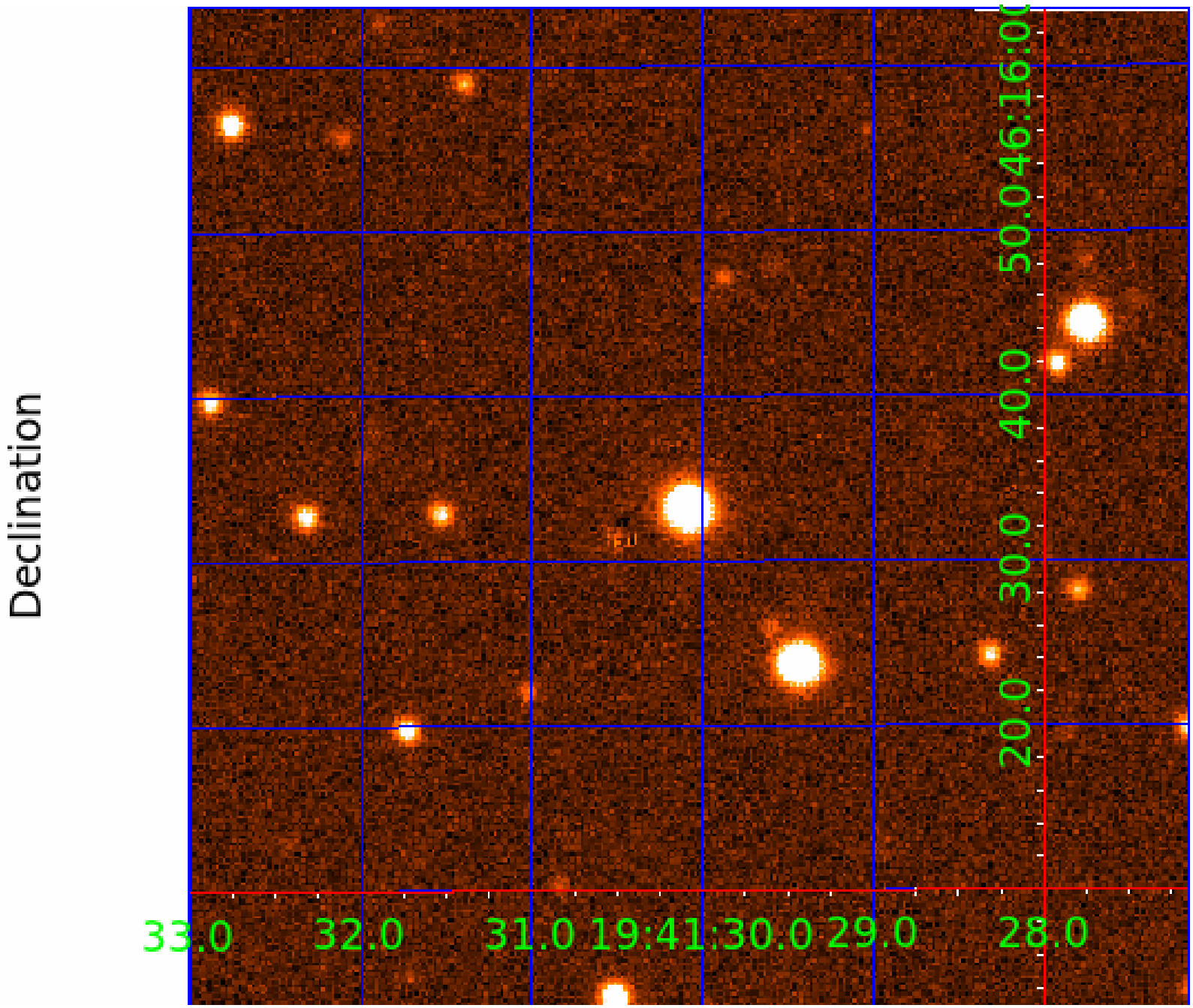


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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30.0
20.0
33.0
32.0
31.0
19:41:30.0
29.0
28.0

KIC 009597218

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 ($S_\oplus$)
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009597218-05	OBS	No	107.503982	146.379079	296.0	3.553	7.7	8.2	2.14	7766	4.12	53.41
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597218-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009597218-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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.

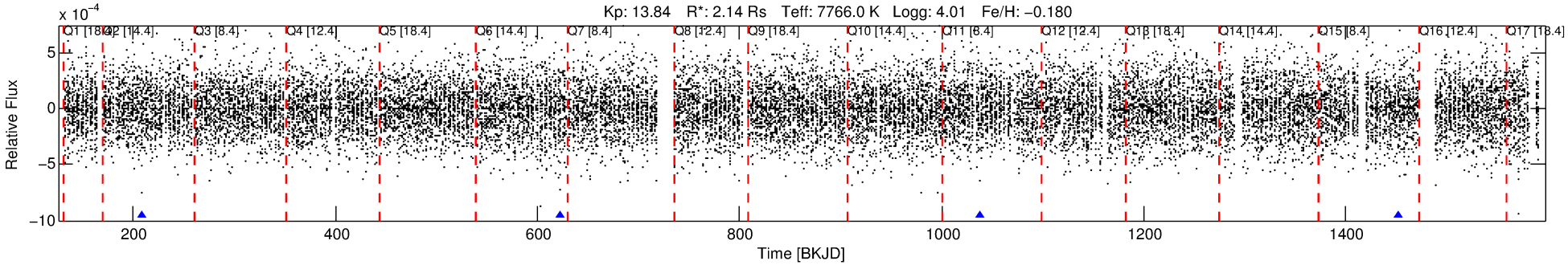
Ephemeris Match Information For 009597218-02

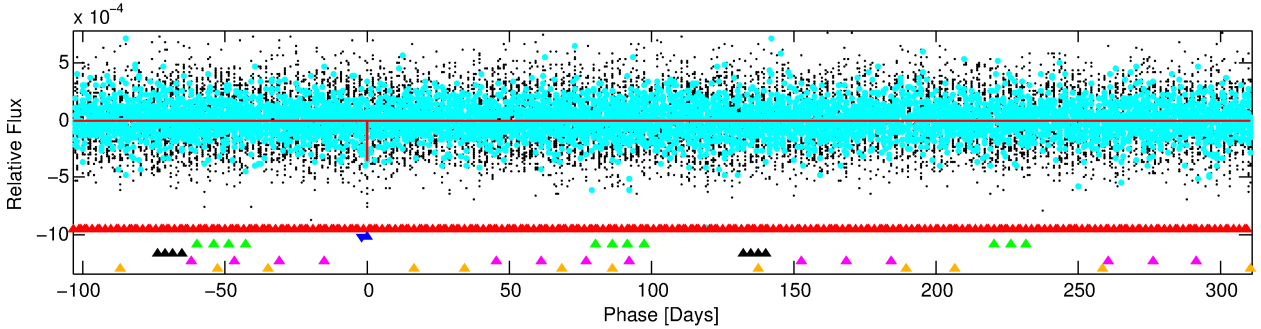
No Significant Match Found

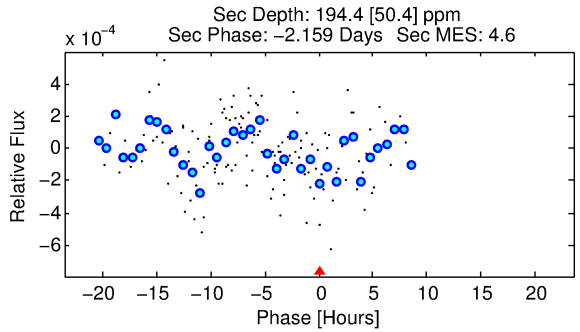
DV One-Page Summary

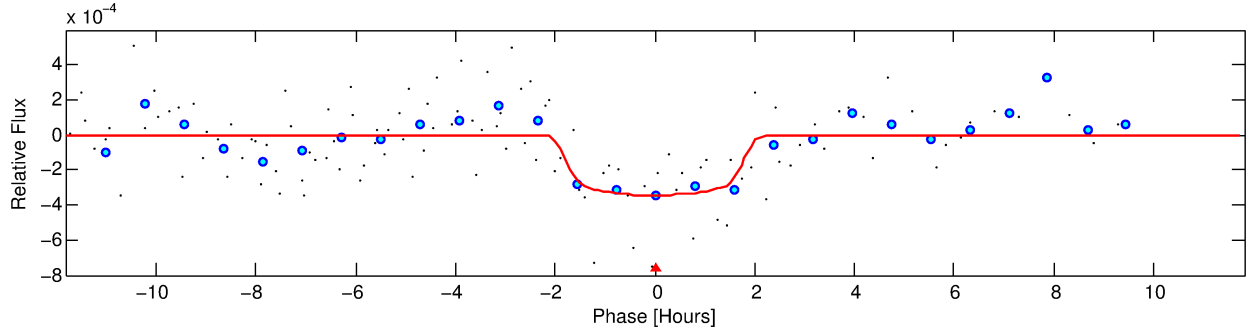
KIC: 9597218 Candidate: 2 of 6 Period: 414.360 d

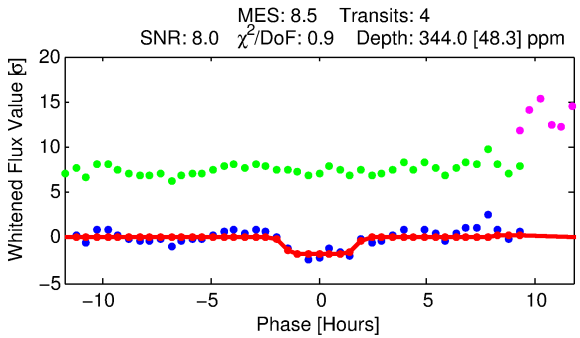
Kp: 13.84 R*: 2.14 Rs Teff: 7766.0 K Logg: 4.01 Fe/H: −0.180

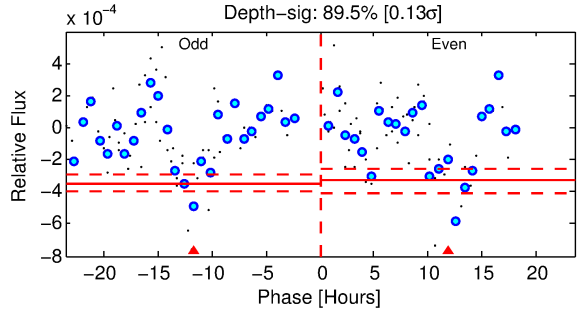


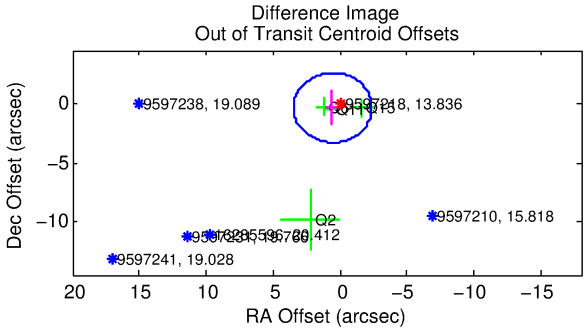












DV Fit Results:

Period = 414.35989 [0.00608] d
Epoch = 208.5301 [0.0090] BKJD
Rp/R* = 0.0196 [0.0091]
a/R* = 413.94 [1057.73]
b = 0.88 [0.67]

Seff = 8.84 [3.96]
Teq = 440 [49] K
Rp = 4.57 [2.56] Re
a = 1.2976 [0.3579] AU

Ag = 8636.37 [9074.48] [0.95σ]
Teffp = 6553 [1605] K [3.81σ]

DV Diagnostic Results:

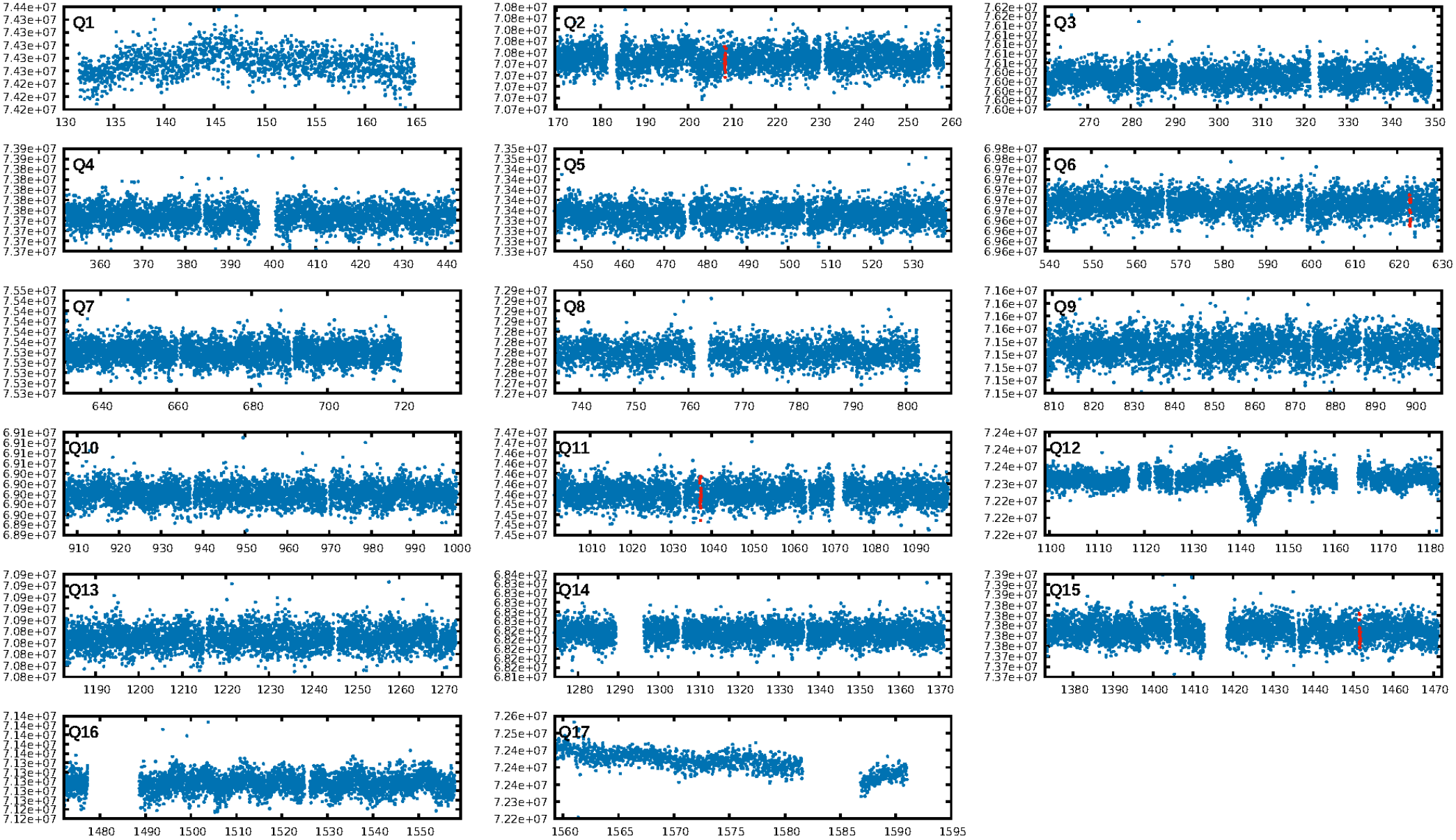
ShortPeriod−sig: 100.0% [1018.34σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: 84.6%
ModelChiSquareGof−sig: 97.8%
Bootstrap−pfa: 3.15e−10
RollingBand−fgt: 1.00 [4/4]
GhostDiagnostic−chr: −13.54

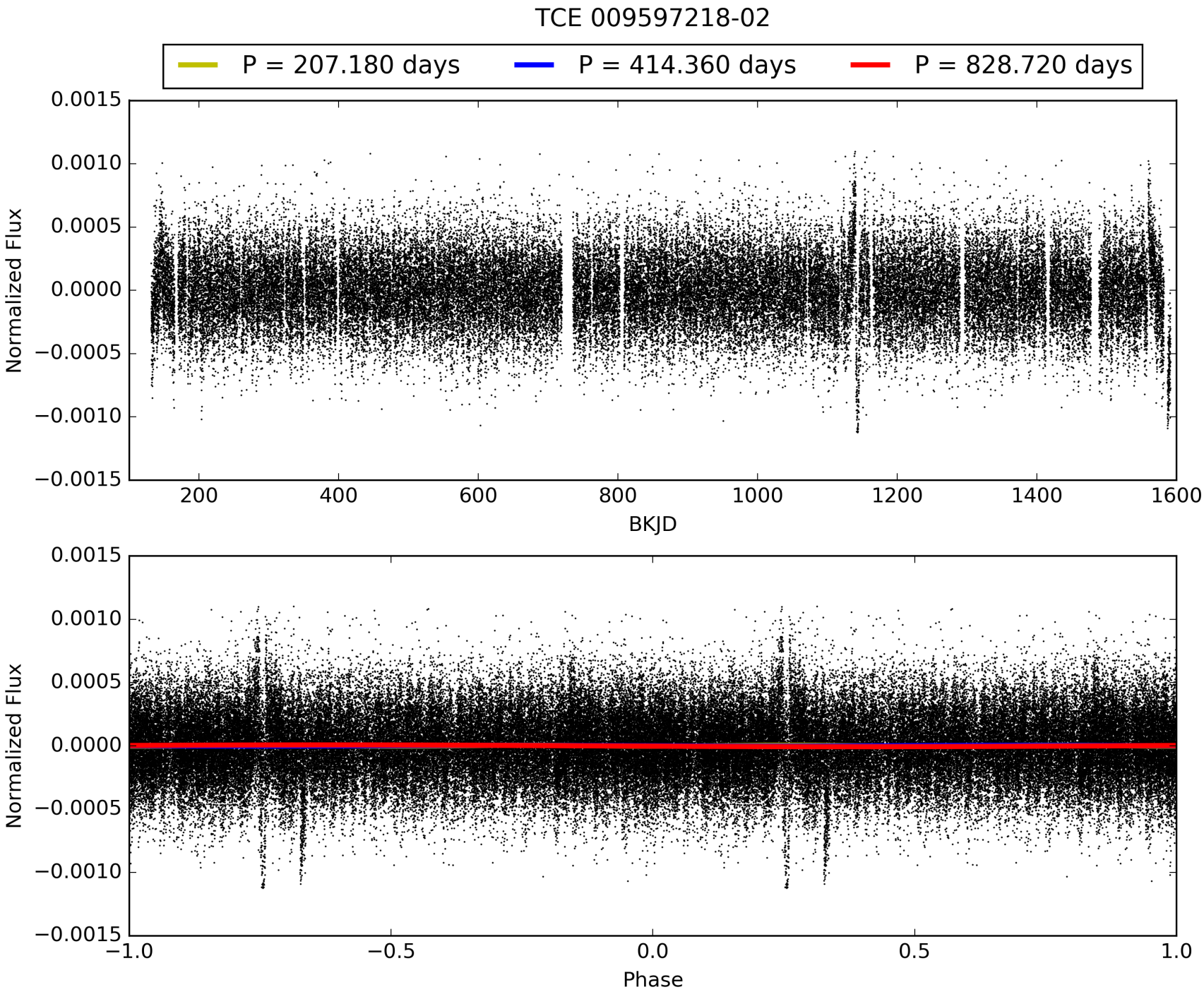
Centroid−sig: 25.9%
Centroid−so: 1.622 arcsec [1.16σ]
OotOffset−rm: 0.684 arcsec [0.70σ]
KicOffset−rm: 0.715 arcsec [0.53σ]
OotOffset−st: 2/2/0/0 [4]
KicOffset−st: 2/2/0/0 [4]
DiffImageQuality−fgm: 0.75 [3/4]
DiffImageOverlap−fno: 1.00 [4/4]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 15:41:30 Z

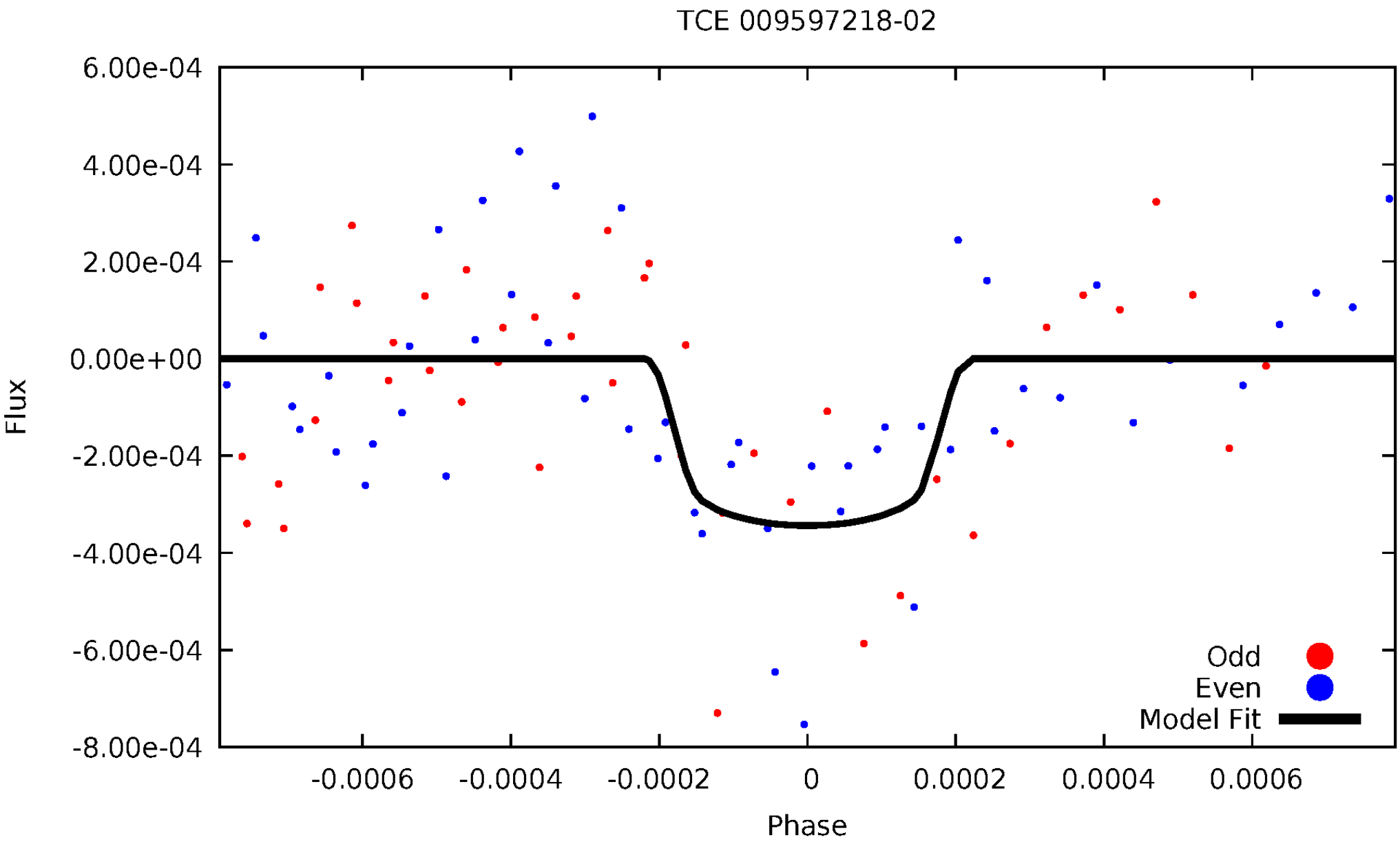
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009597218-02, PDC Light Curves

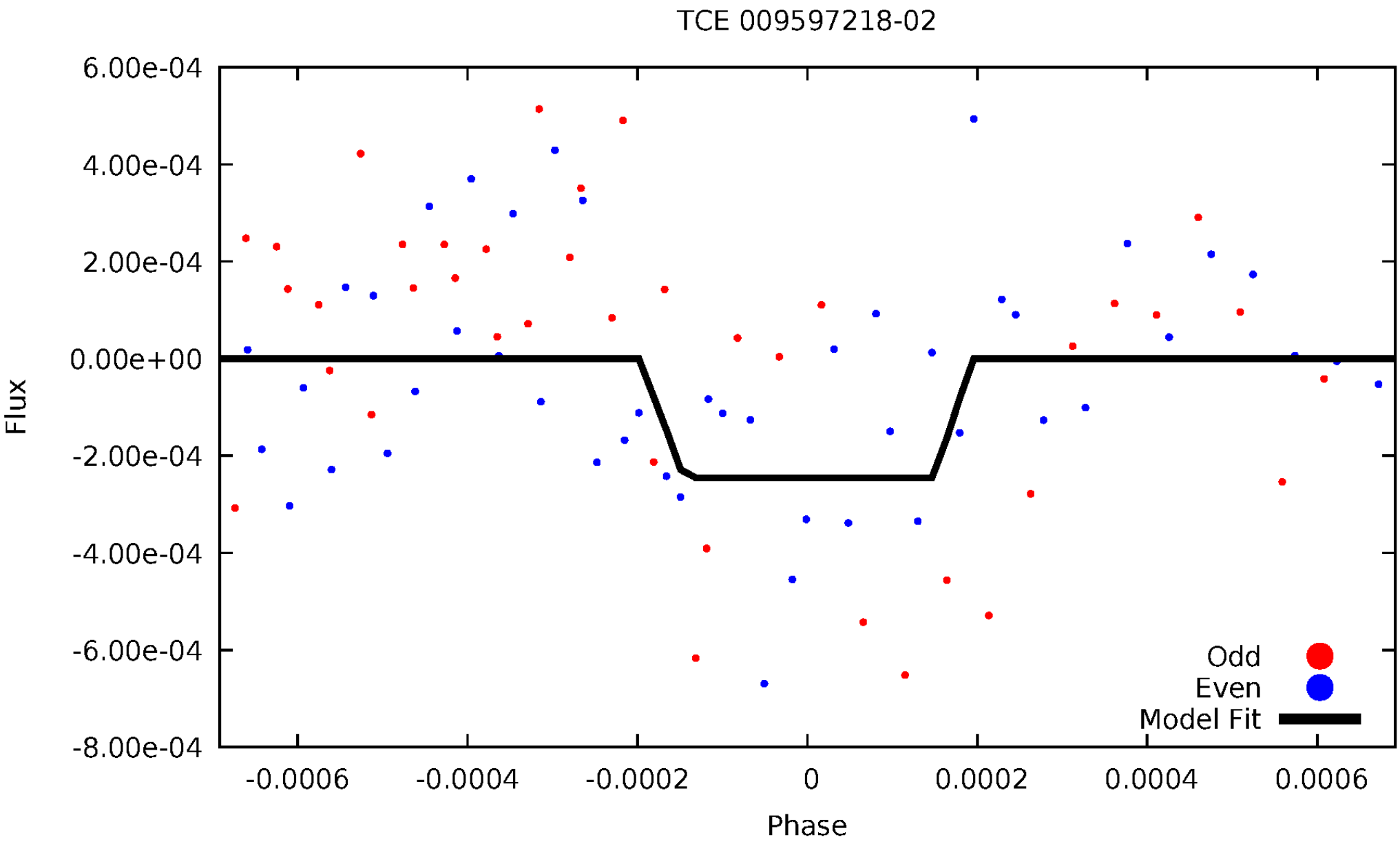



TCE 009597218-02
P = 207.180 days
P = 414.360 days
P = 828.720 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

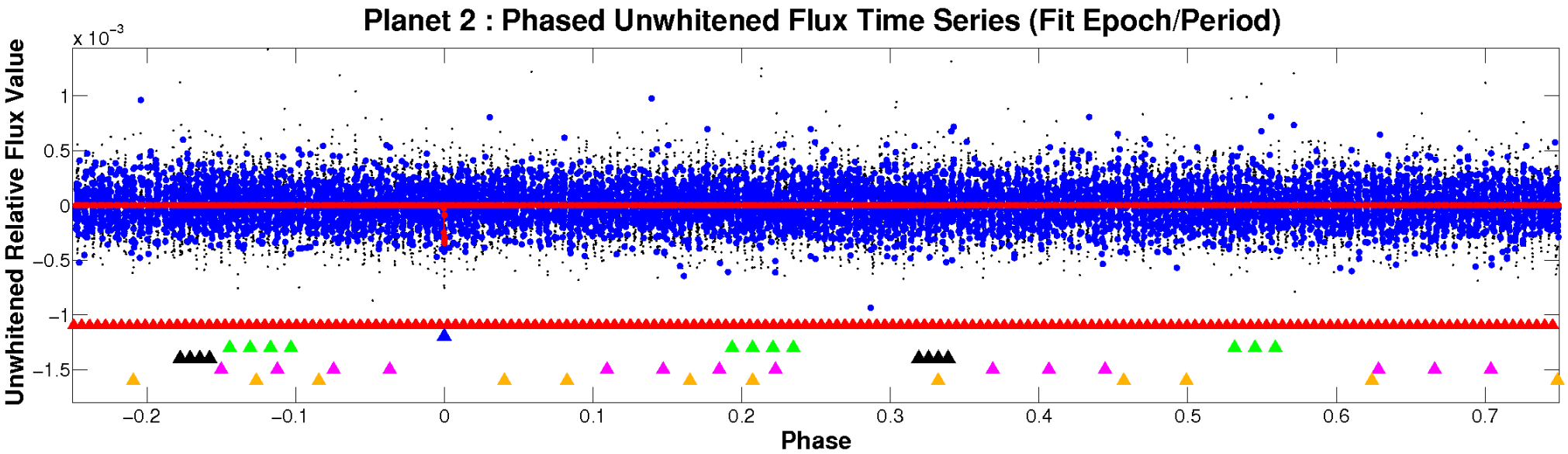
DV Odd/Even

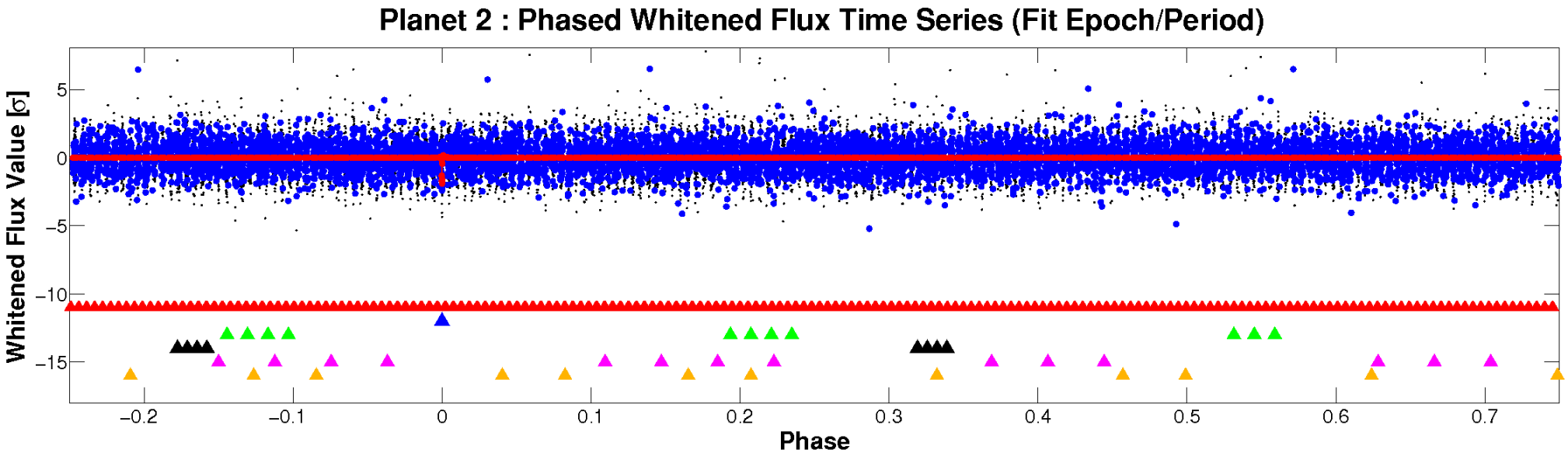

TCE 009597218-02
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.0006
-0.0004
-0.0002
0
0.0002
0.0004
0.0006
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009597218-02
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.0006
-0.0004
-0.0002
0
0.0002
0.0004
0.0006
Phase
Odd
Even
Model Fit

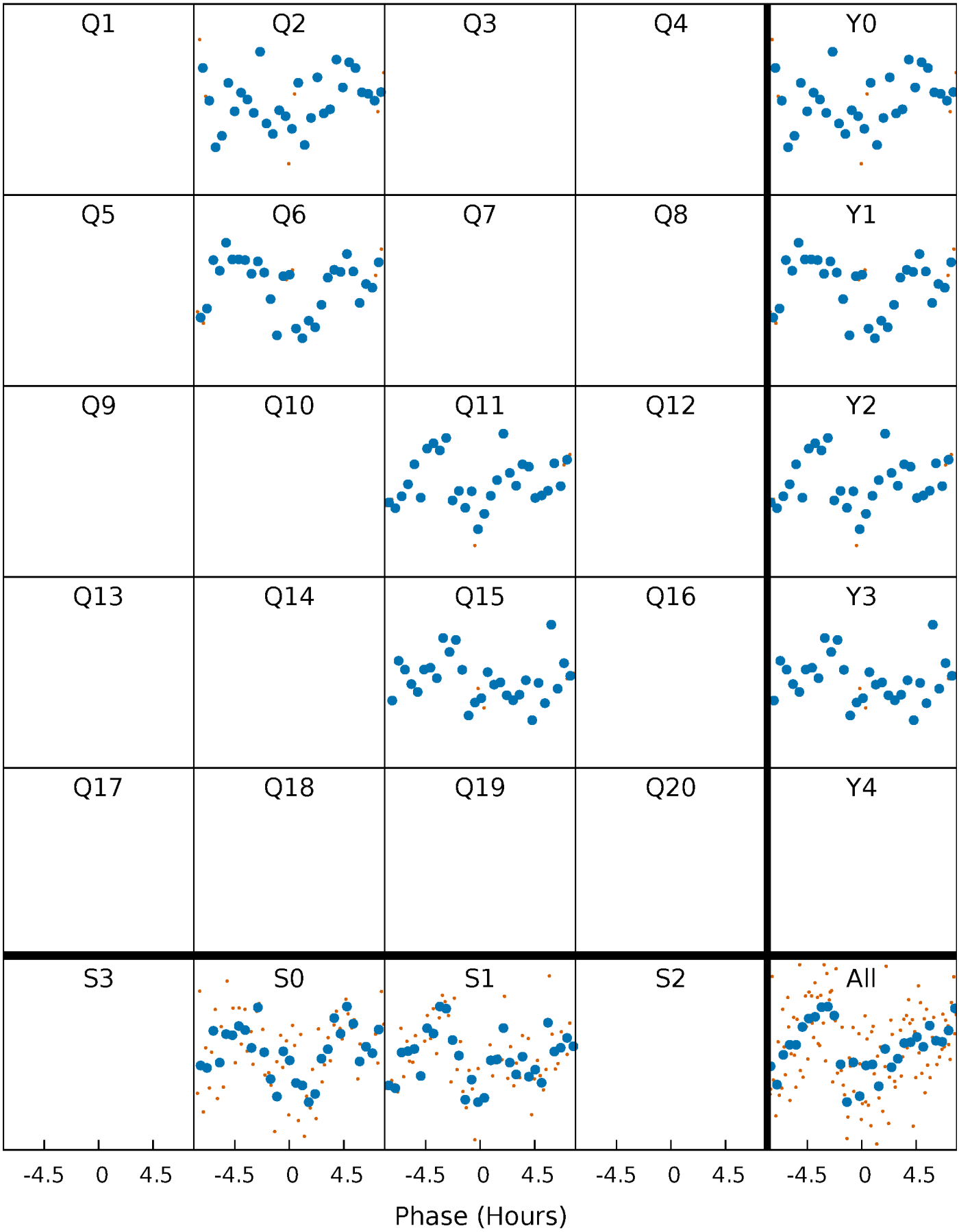
Non-Whitened Vs. Whitened Light Curve





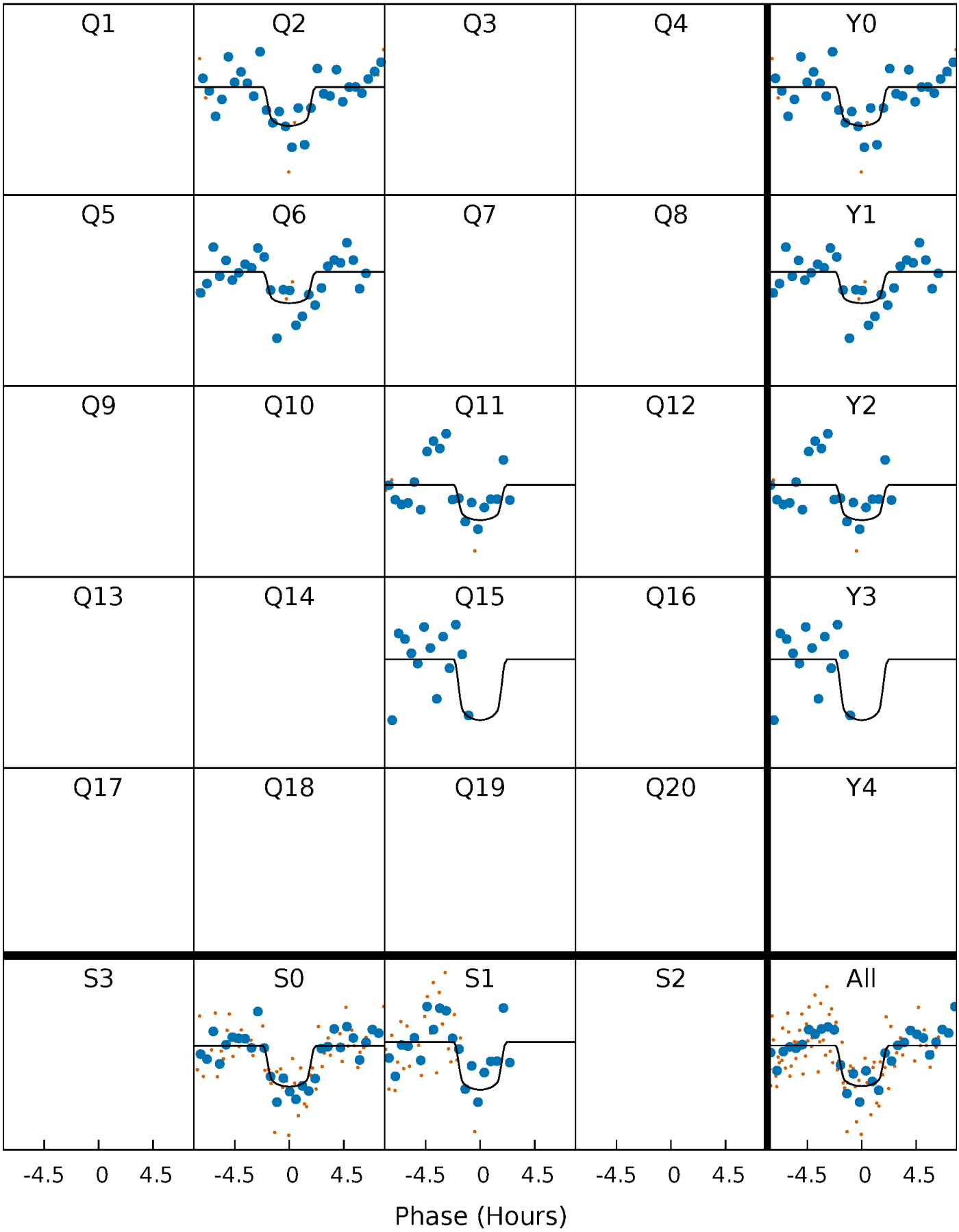
PDC Quarter-Phased Transit Curves

TCE 009597218-02 P=414.359888 Days T_0=208.530144 (BKJD)



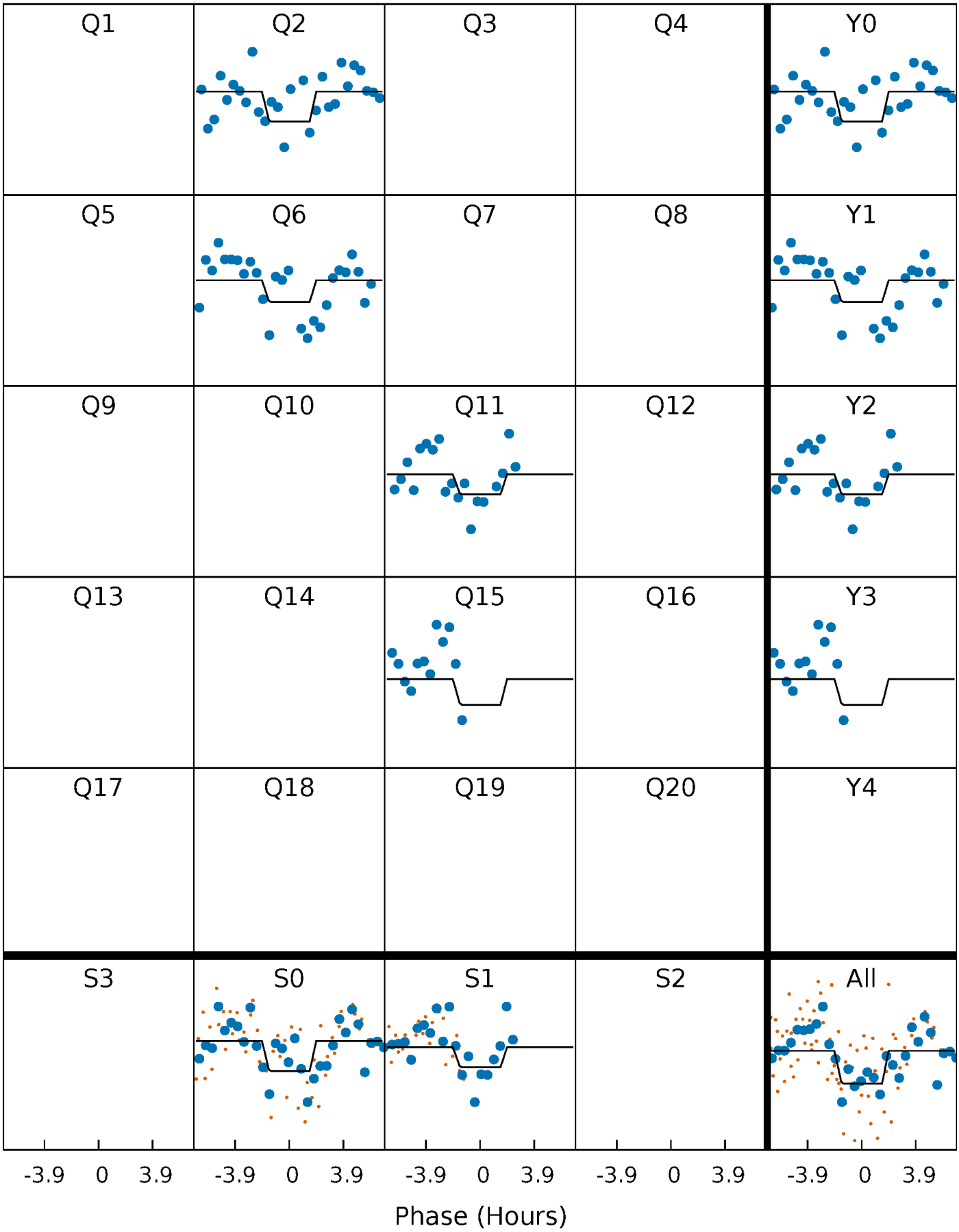
DV Quarter-Phased Transit Curves

TCE 009597218-02 P=414.359888 Days T_0=208.530144 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

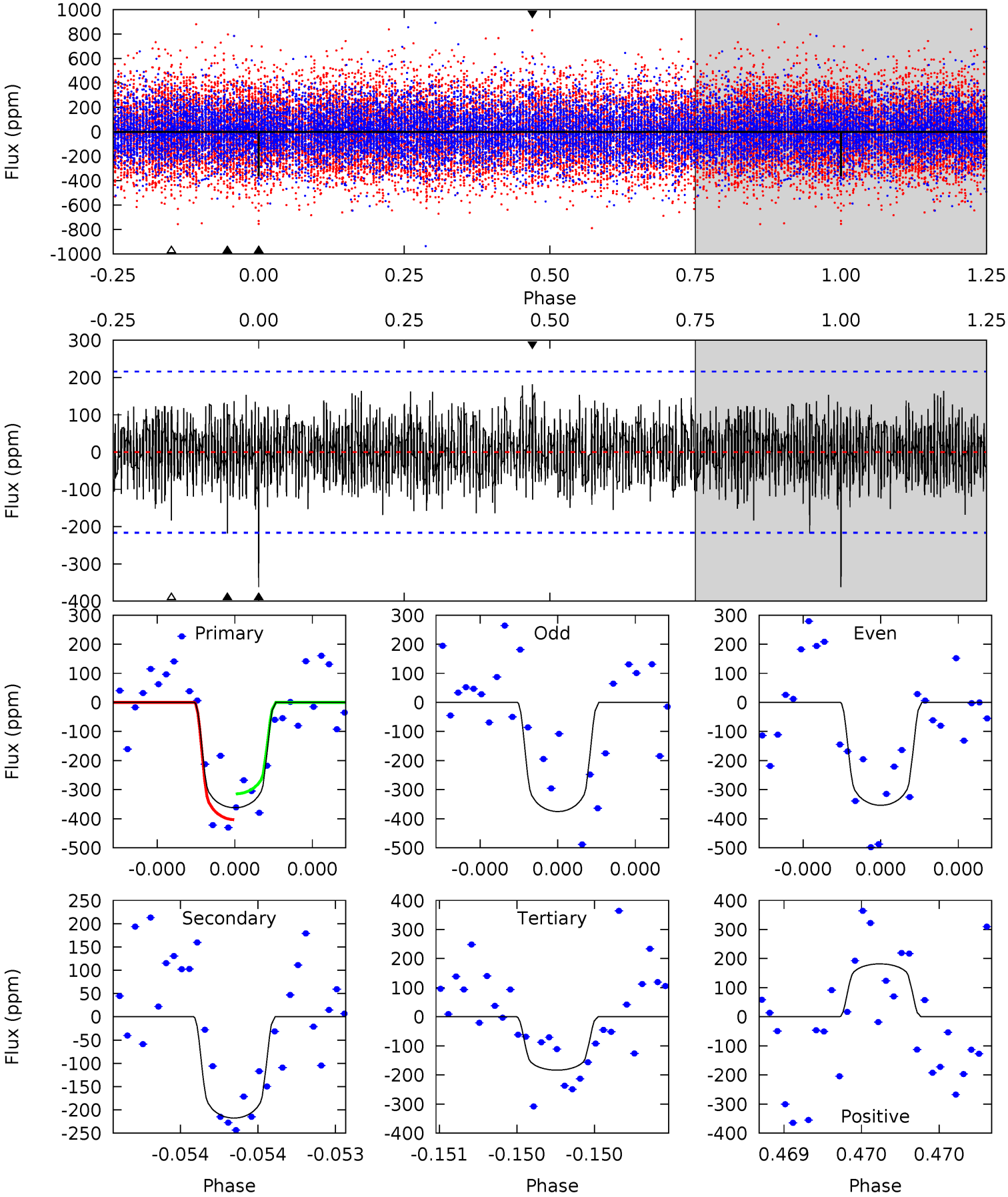
TCE 009597218-02 P=414.358541 Days T_0=208.535791 (BKJD)



DV Model-Shift Uniqueness Test

009597218-02, P = 414.359888 Days, E = 208.530144 Days

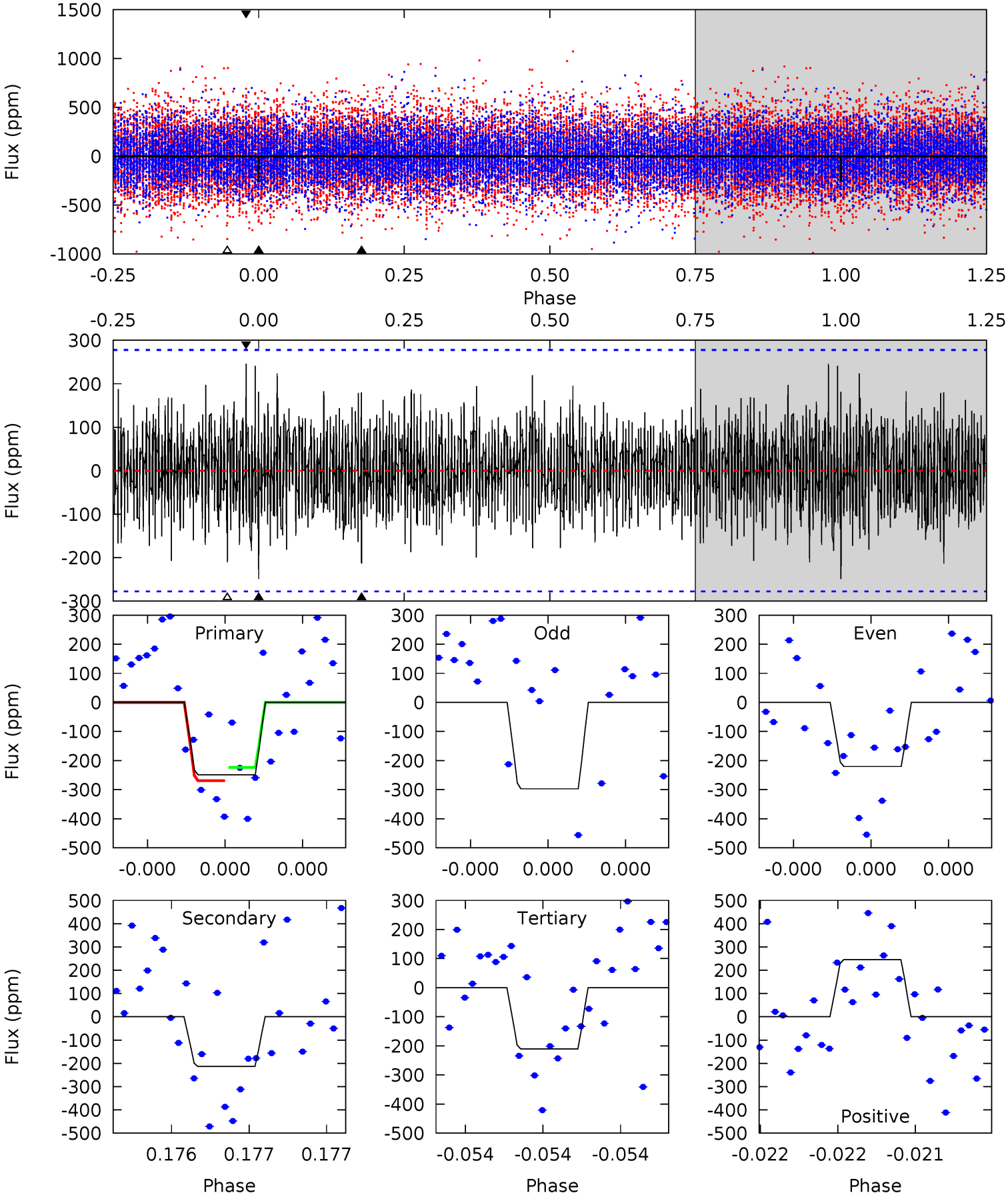
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.39	5.64	4.75	4.71	5.60	3.53	1.45	4.63	4.68	0.89	0.93	0.27	0.94	0.33	1.14



Alt Model-Shift Uniqueness Test

009597218-02, P = 414.358541 Days, E = 208.535791 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.03	4.32	4.26	4.97	5.62	3.56	1.30	0.77	0.06	0.06	-0.65	0.75	0.97	0.50	0.46



Stellar Parameters For KIC 009597218

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7766^{+216}_{-325}	$4.008^{+0.234}_{-0.144}$	$-0.180^{+0.200}_{-0.350}$	$2.137^{+0.447}_{-0.671}$	$1.697^{+0.196}_{-0.319}$	$0.245^{+0.324}_{-0.095}$
	+3%/-4%	+6%/-4%	+111%/-194%	+21%/-31%	+12%/-19%	+132%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009597218-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-218±39	$4.47^{+2.25}_{-2.04}$	610^{+42}_{-47}	6573^{+2682}_{-1148}	10375^{+23925}_{-6124}
Alt.	-213±49	$3.75^{+2.15}_{-2.04}$	610^{+44}_{-53}	7138^{+4784}_{-1436}	13955^{+49450}_{-8655}

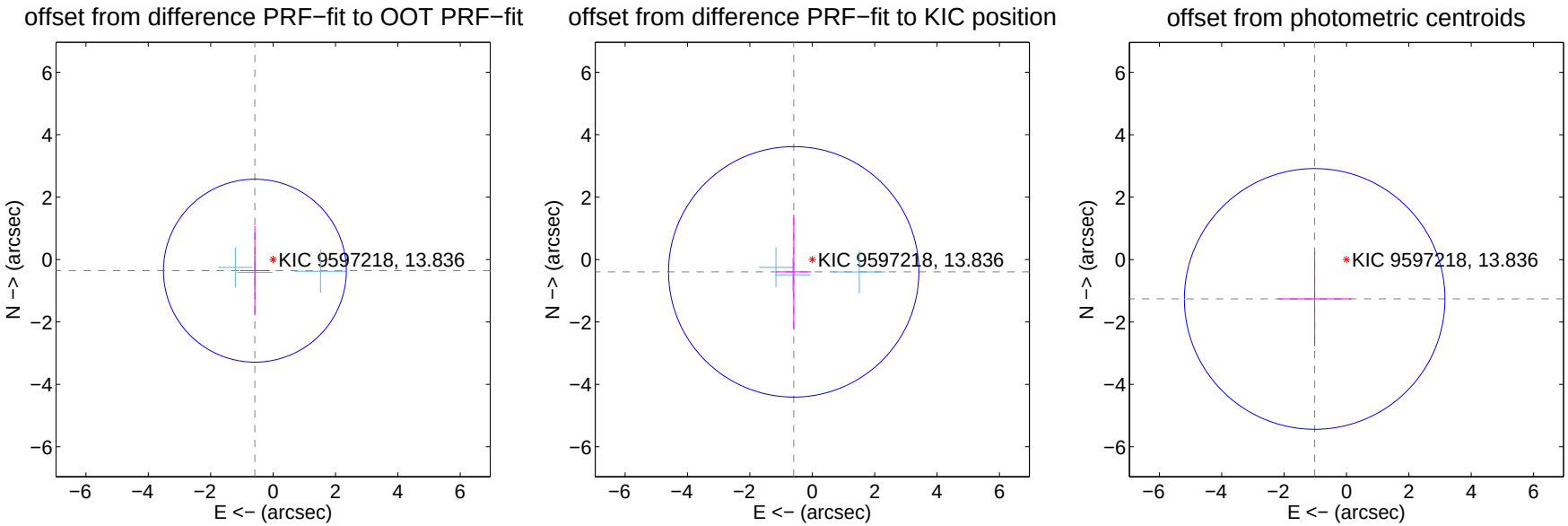
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

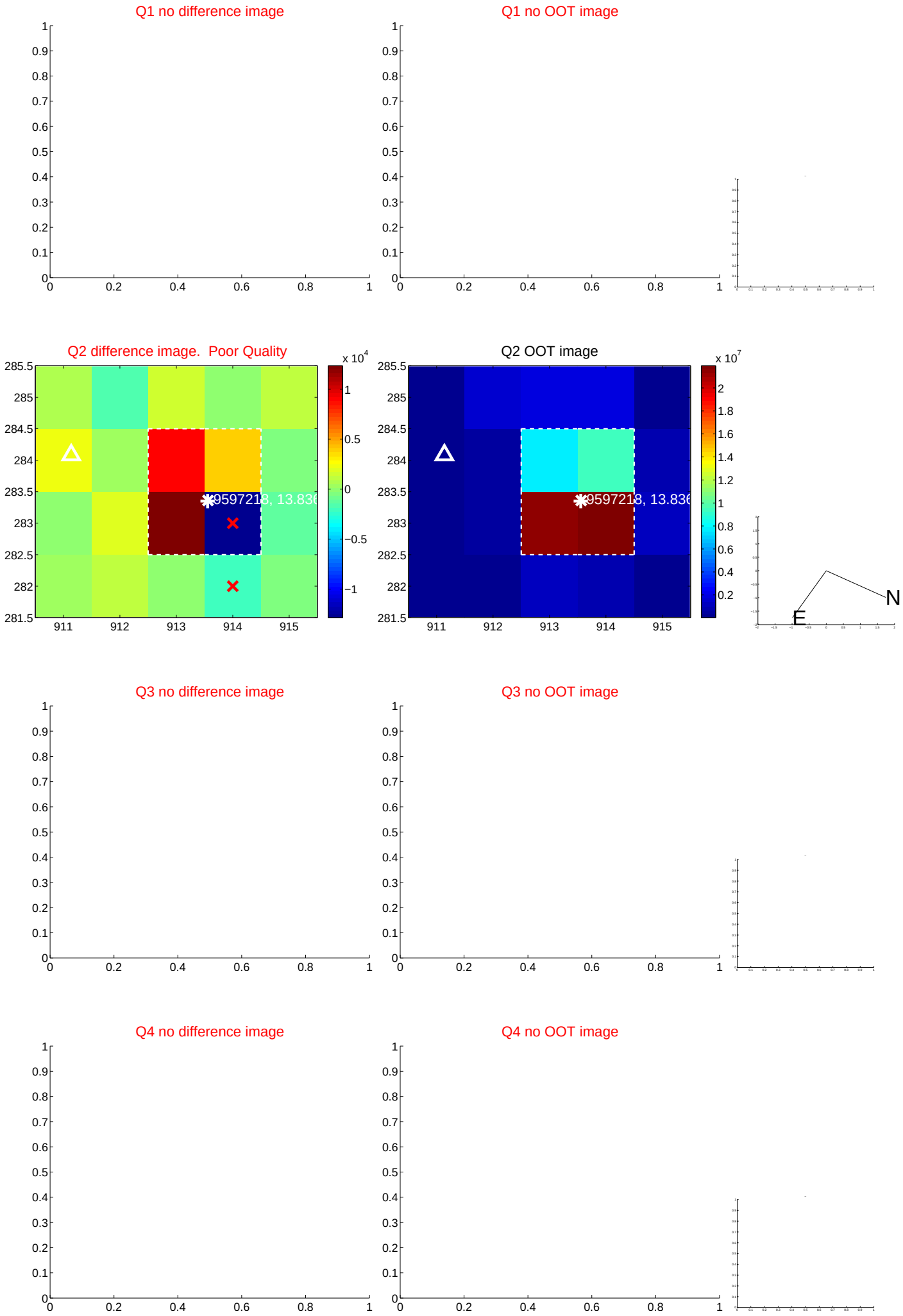
Supplemental centroid analysis for 009597218-02. Kepler magnitude: 13.84. Transit SNR 8.04
There are 3 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.684 ± 0.977	0.70	0.583 ± 0.477	-0.358 ± 1.429
PRF-fit source offset from KIC position	0.715 ± 1.337	0.53	0.595 ± 0.559	-0.396 ± 1.838
photometric centroid source offset	1.62 ± 1.39	1.16	1.02 ± 1.17	-1.26 ± 1.52

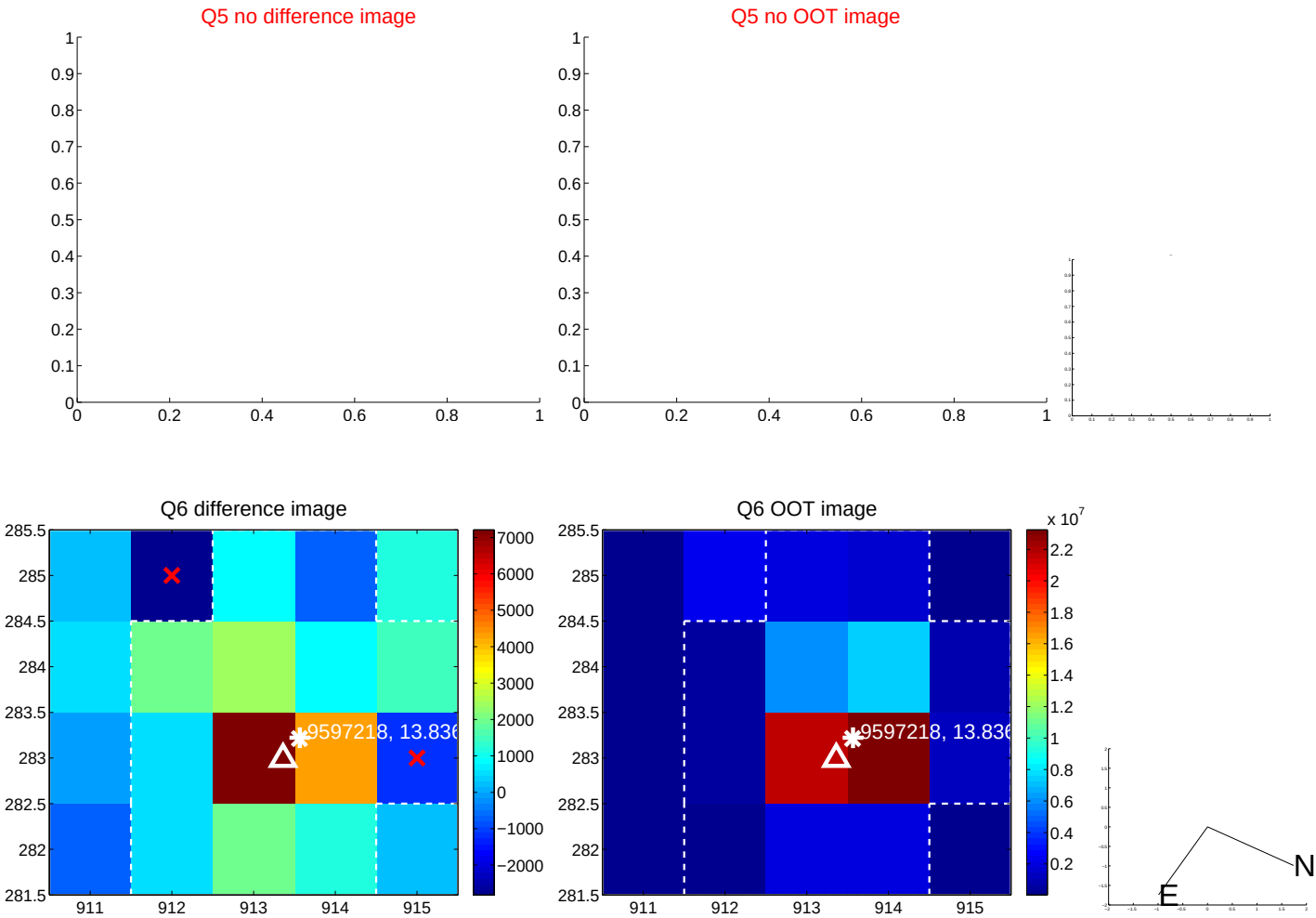


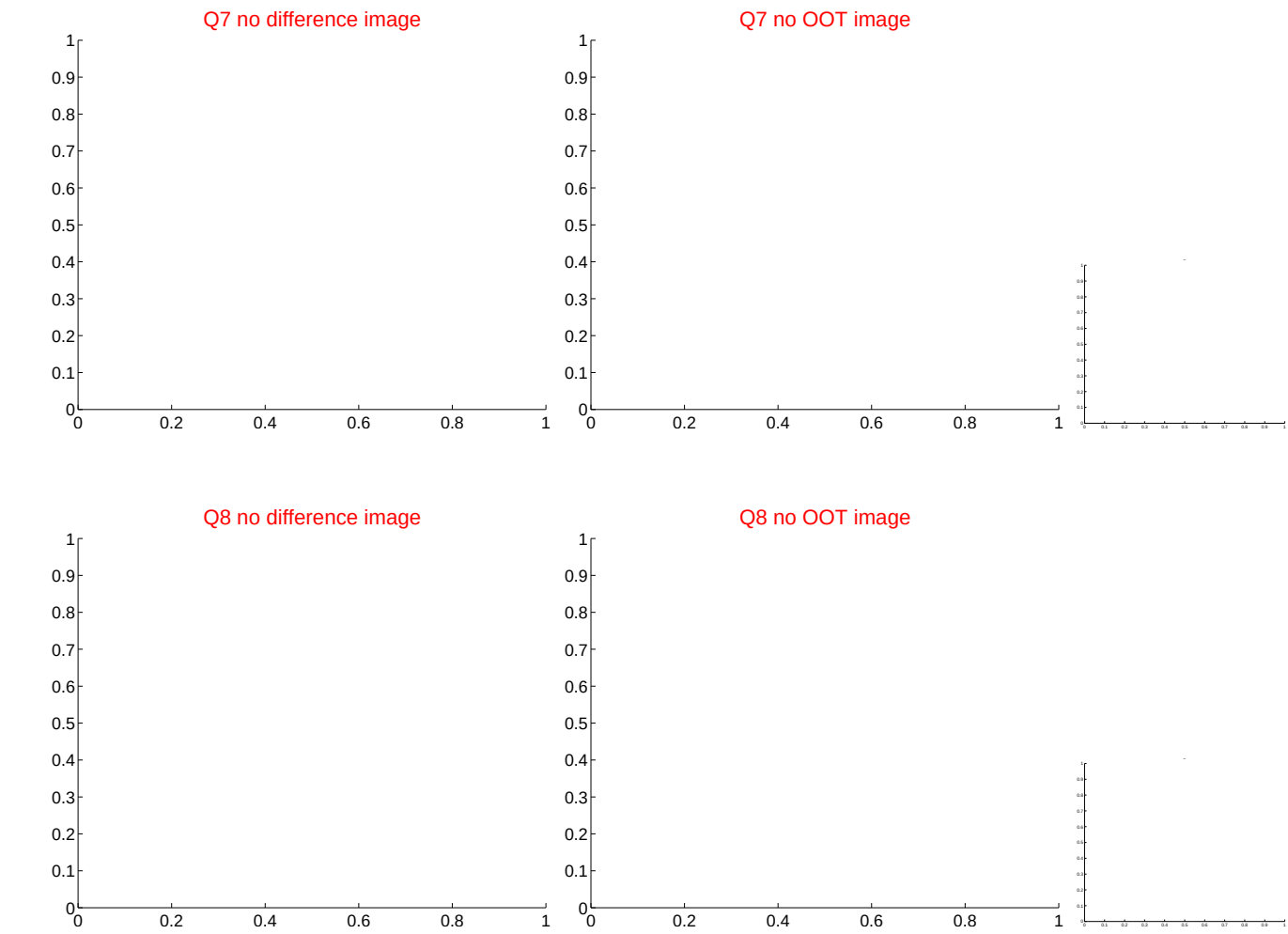
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

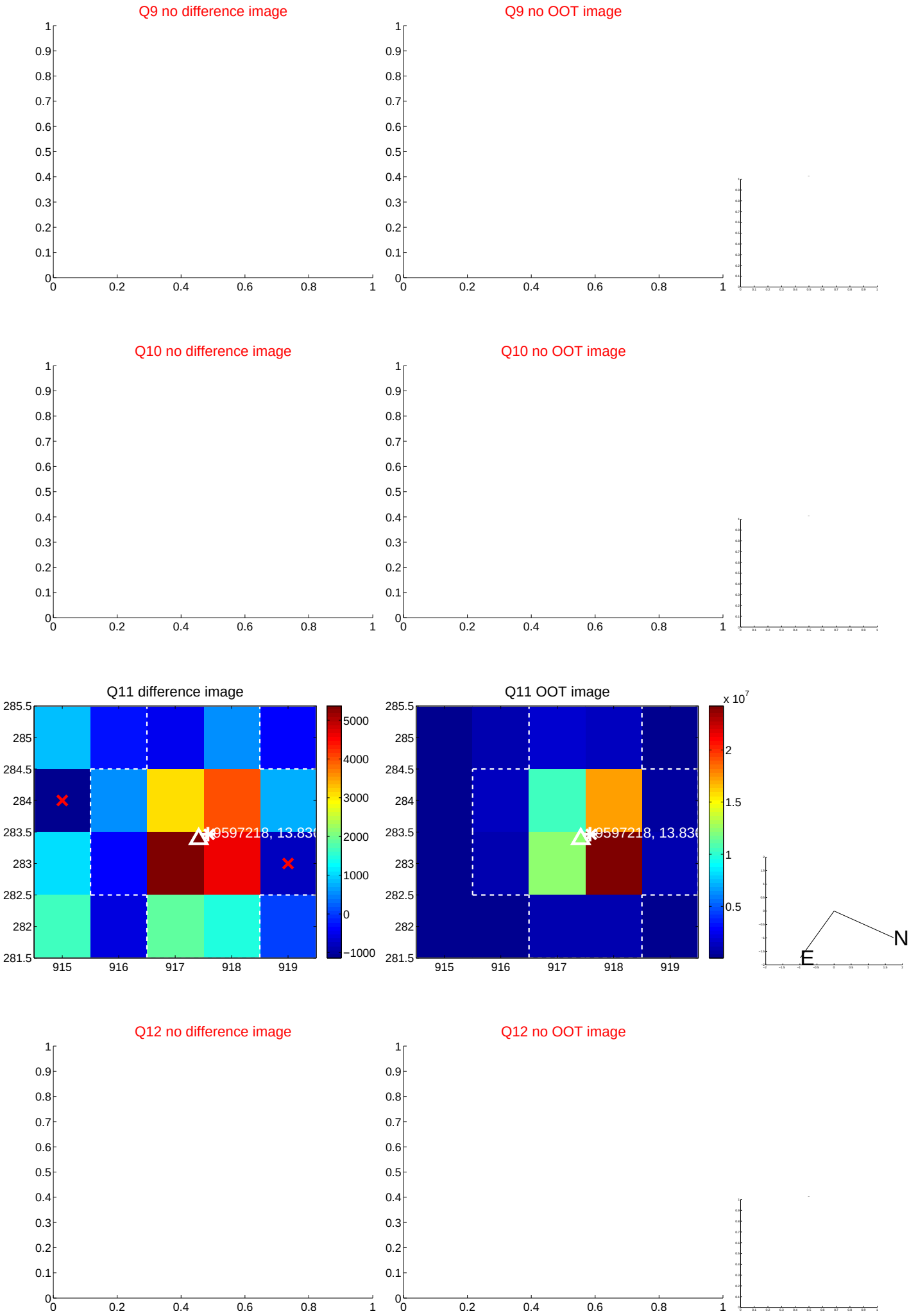


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

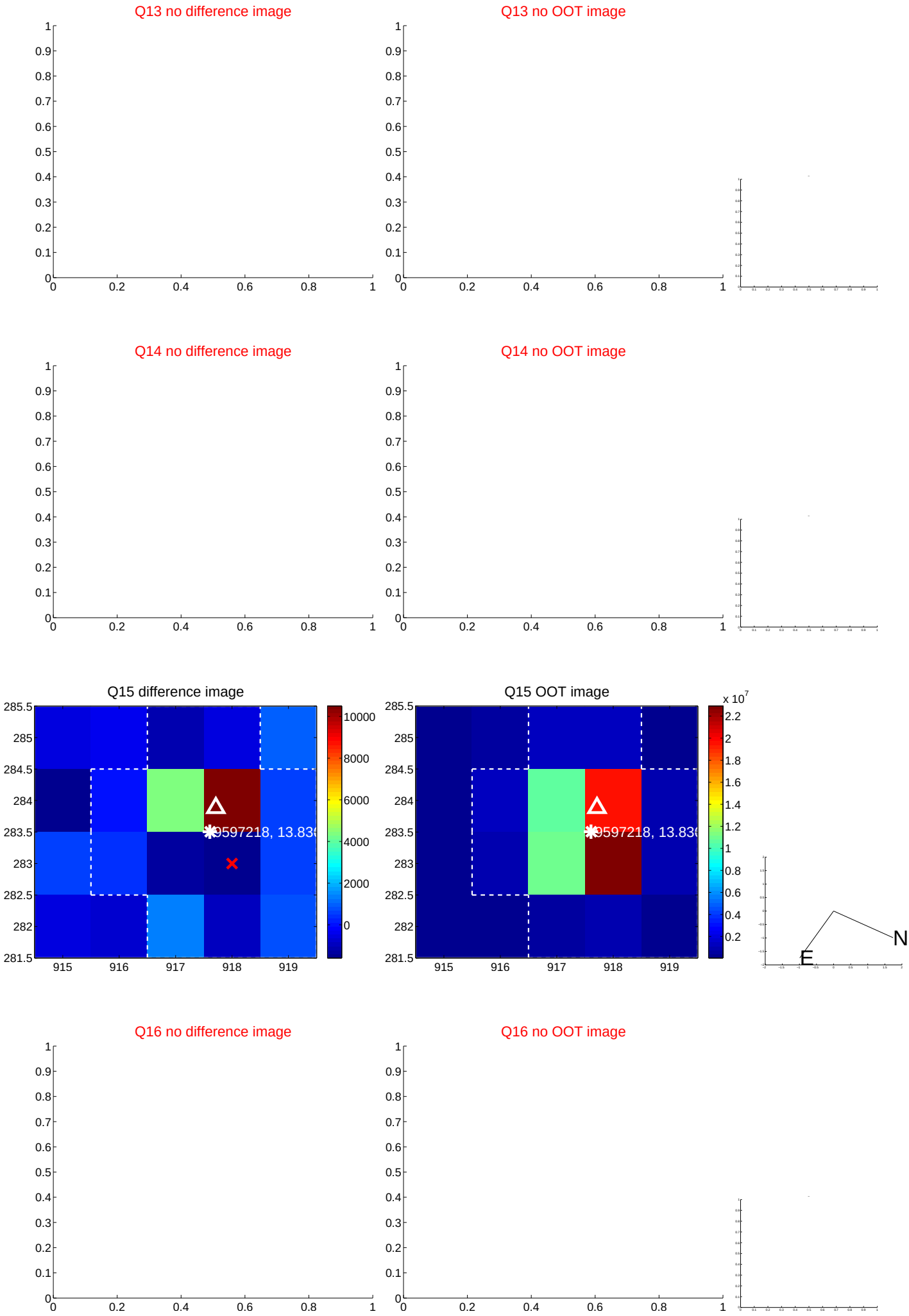




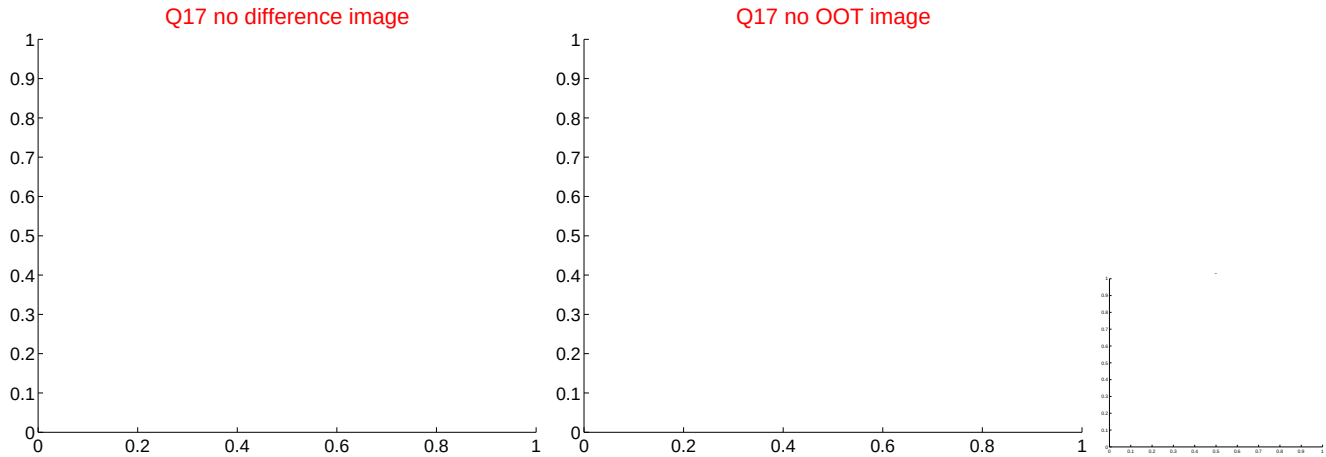
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

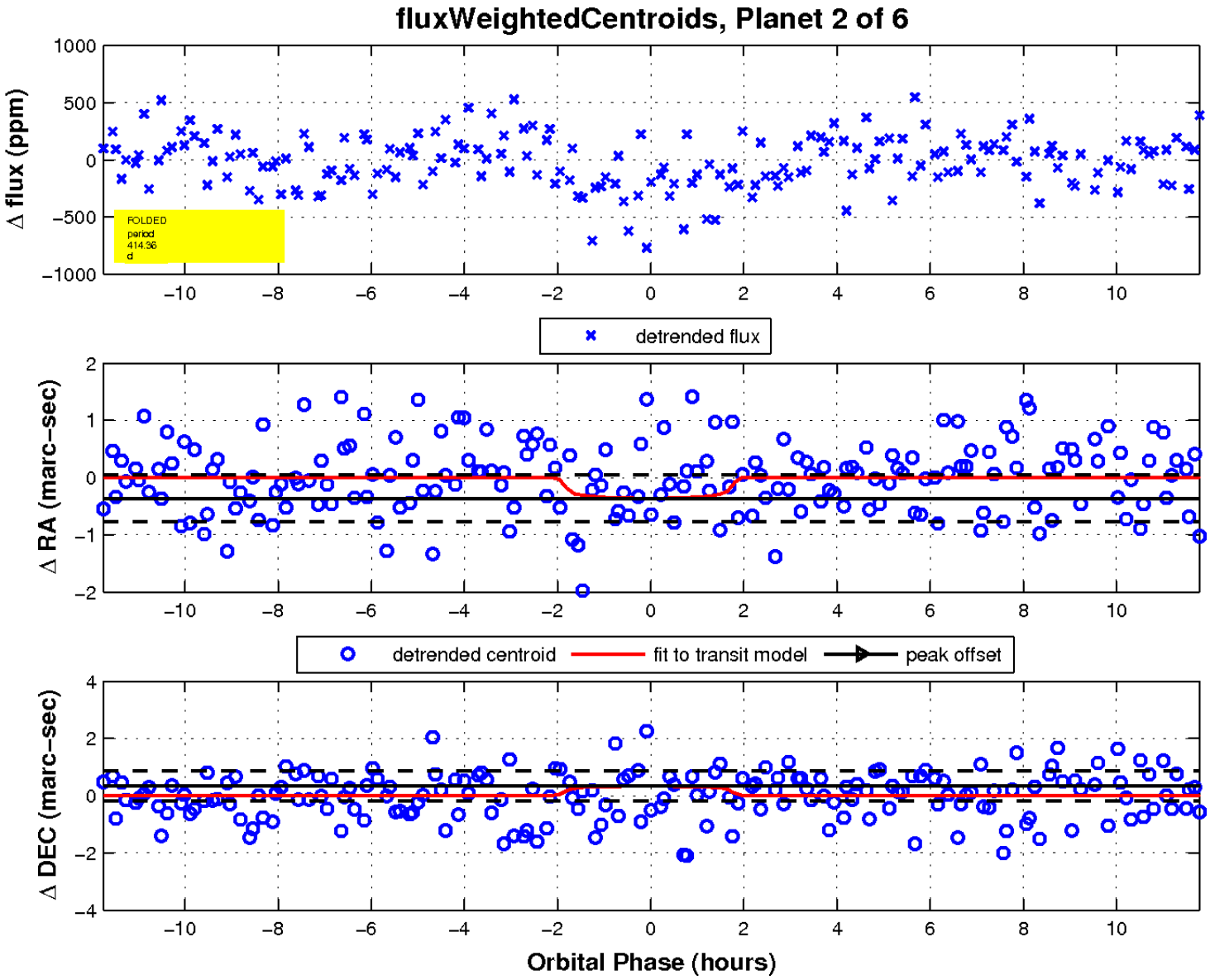


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

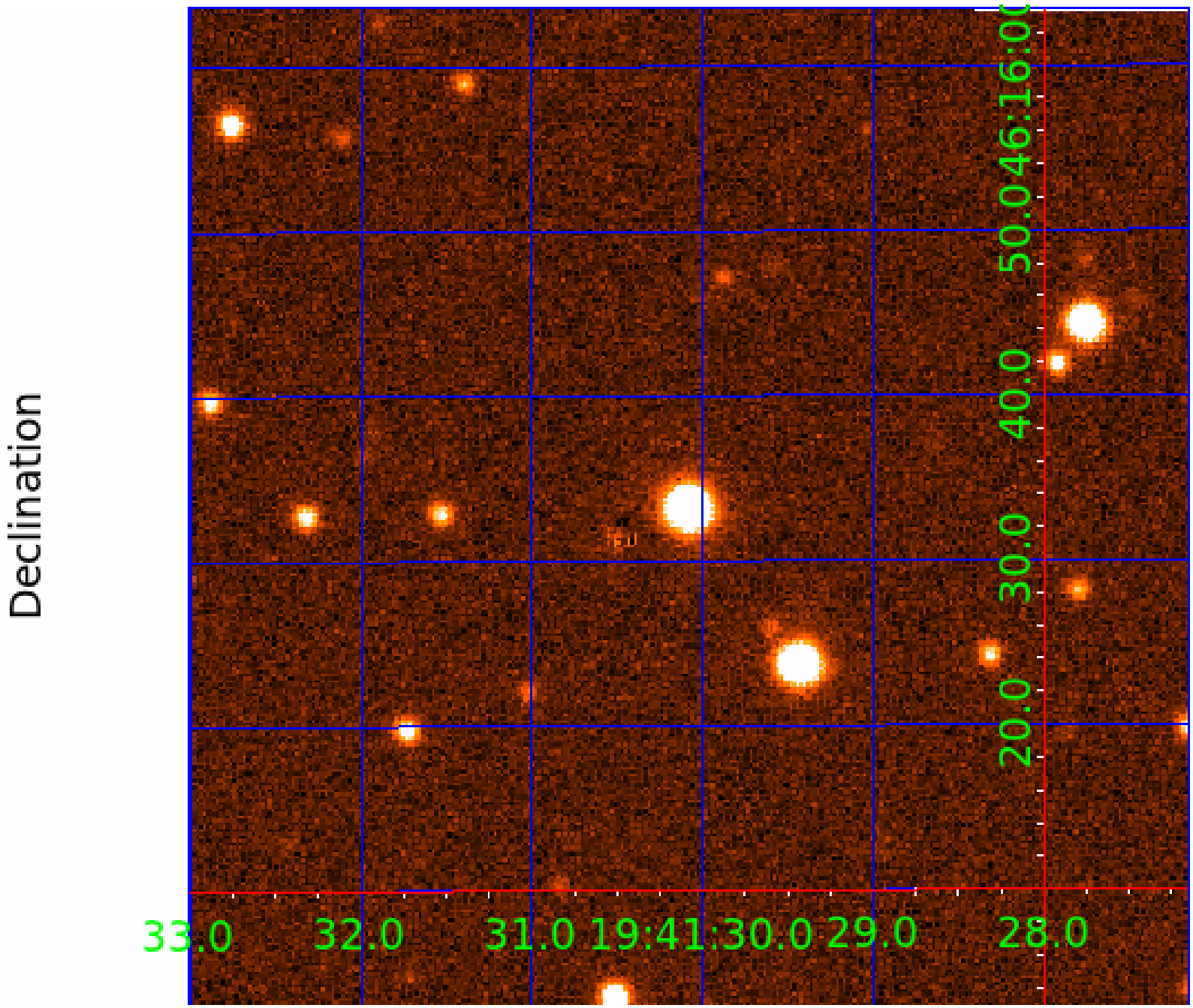


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
46:16:0
50.0
40.0
30.0
20.0
33.0
32.0
31.0
19:41:30.0
29.0
28.0

KIC 009597218

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 ($S_\oplus$)
009597218-01	OBS	No	2.214994	132.158399	17.1	11.518	7.8	7.6	2.14	7766	0.89	9456.35
009597218-02	OBS	No	414.359888	208.530144	344.0	3.940	8.5	8.0	2.14	7766	4.57	8.84
009597218-03	OBS	No	140.015459	148.745540	244.3	4.785	7.6	7.4	2.14	7766	3.82	37.55
009597218-04	OBS	No	205.817690	143.134272	347.6	2.938	7.6	6.9	2.14	7766	4.66	22.47
009597218-05	OBS	No	107.503982	146.379079	296.0	3.553	7.7	8.2	2.14	7766	4.12	53.41
009597218-06	OBS	No	120.880547	156.138356	186.6	8.760	7.4	7.1	2.14	7766	3.14	45.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597218-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009597218-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

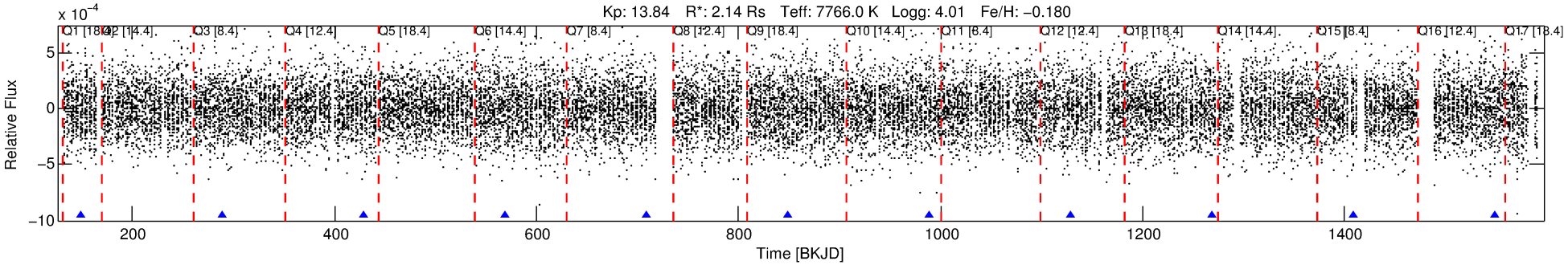
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

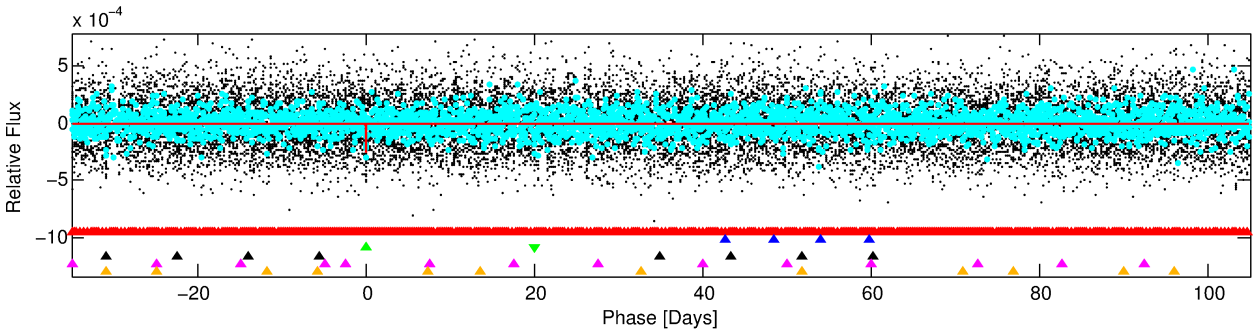
Ephemeris Match Information For 009597218-03

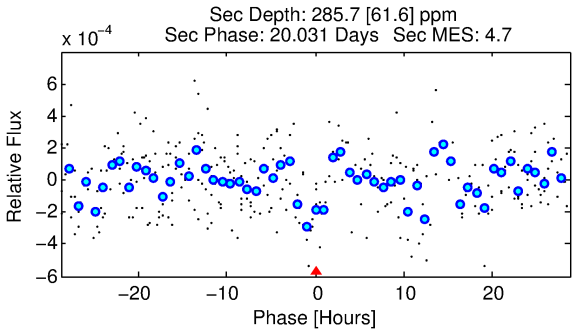
No Significant Match Found

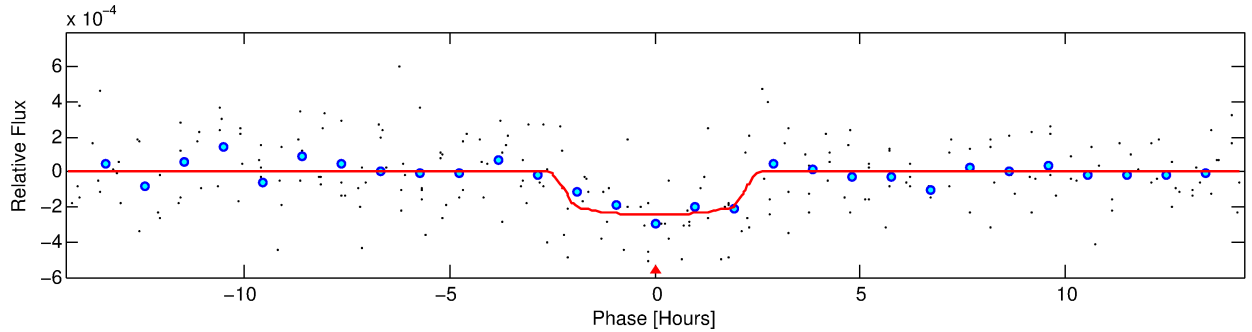
DV One-Page Summary

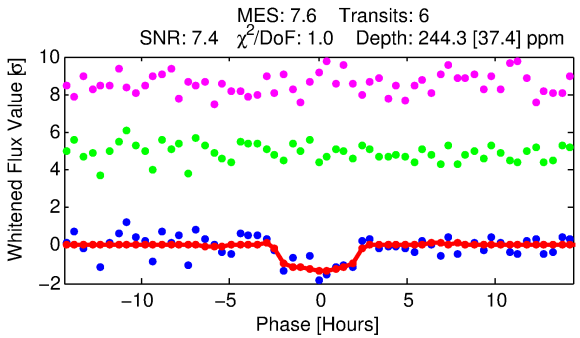
KIC: 9597218 Candidate: 3 of 6 Period: 140.015 d

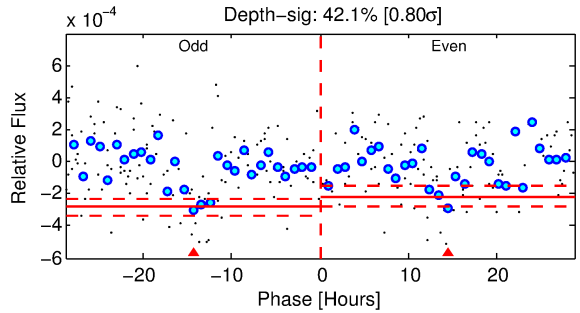


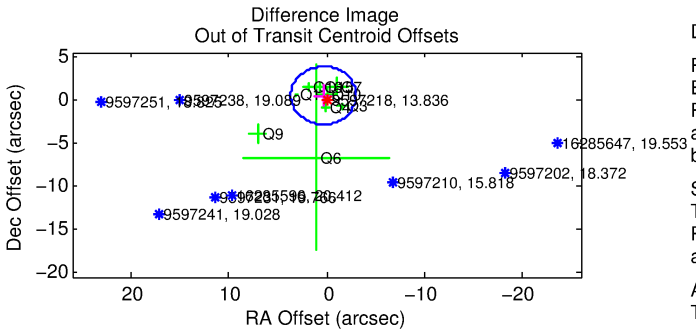












DV Fit Results:

Period = 140.01546 [0.00175] d
Epoch = 148.7455 [0.0103] BKJD
Rp/R* = 0.0164 [0.0238]
a/R* = 117.92 [986.86]
b = 0.87 [2.40]

Seff = 37.55 [16.83]
Teq = 631 [71] K
Rp = 3.82 [5.68] Re
a = 0.6295 [0.1736] AU

Ag = 4268.70 [12558.17] [0.34σ]
Teffp = 7889 [5753] K [1.26σ]

DV Diagnostic Results:

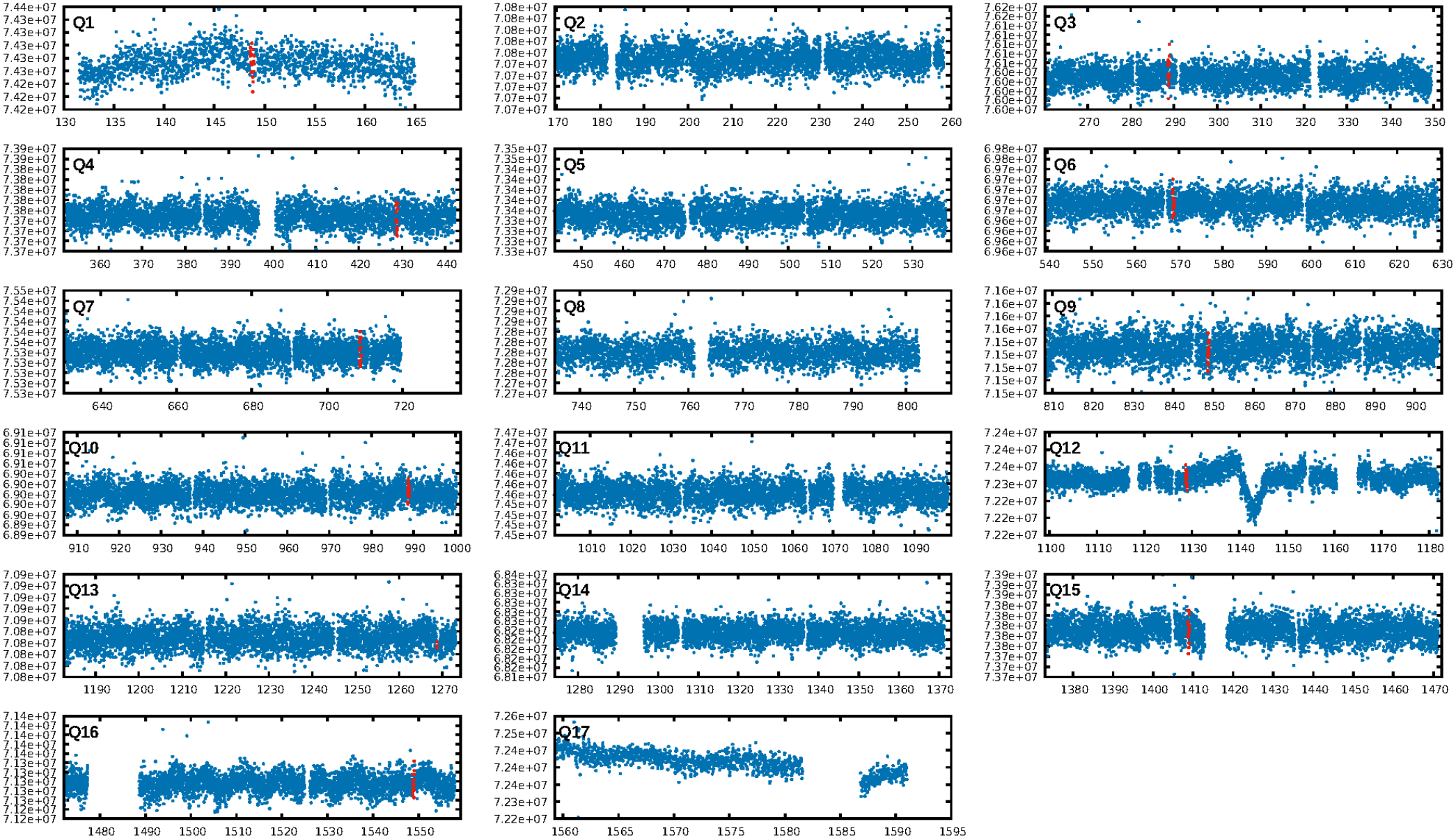
ShortPeriod−sig: 100.0% [46.01σ]
LongPeriod−sig: 100.0% [281.27σ]
ModelChiSquare2−sig: 65.0%
ModelChiSquareGof−sig: 99.9%
Bootstrap−pfa: 4.63e−09
RollingBand−fgt: 1.00 [5/5]
GhostDiagnostic−chr: 1.525

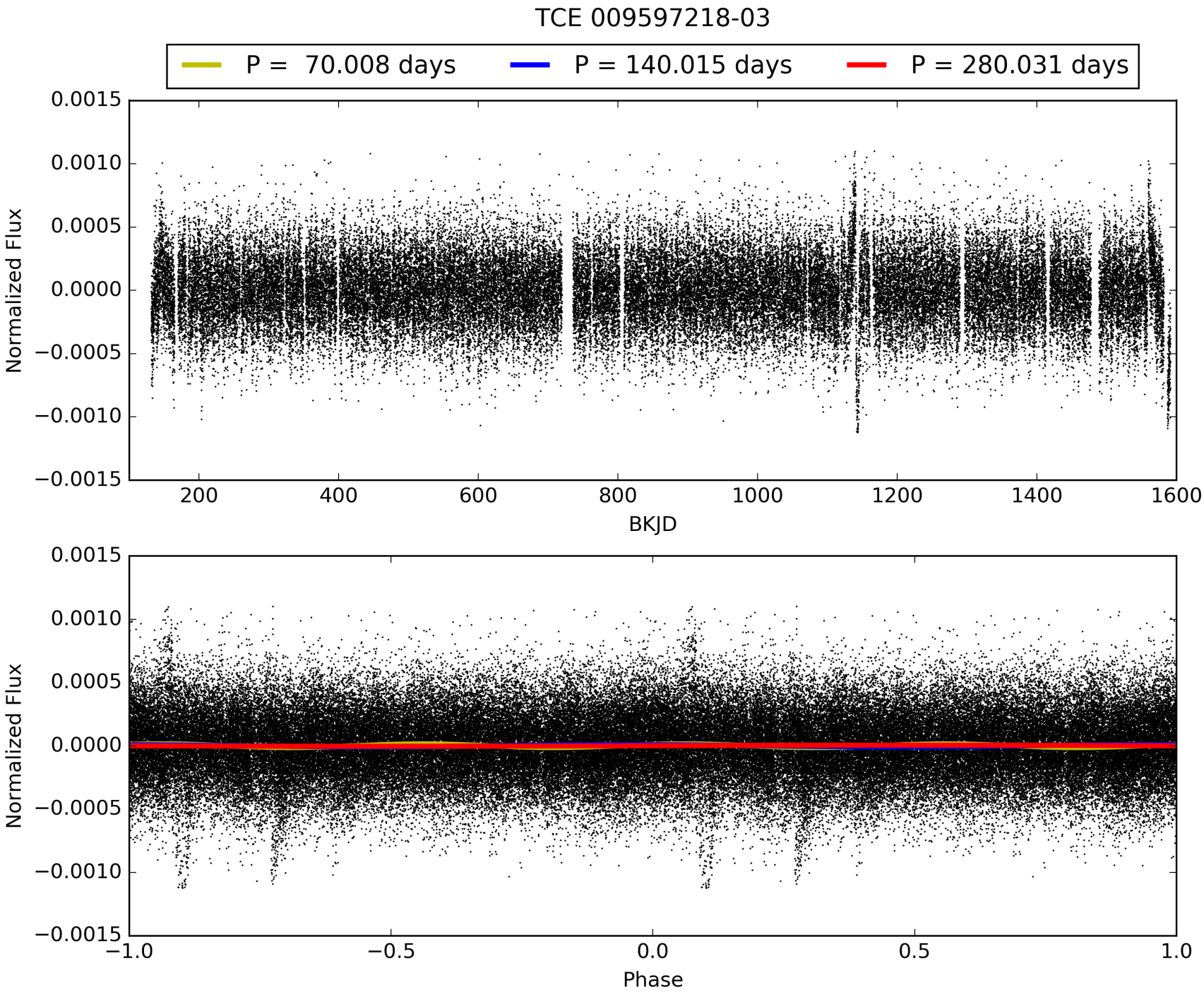
Centroid−sig: 0.0%
Centroid−so: 3.594 arcsec [2.68σ]
OotOffset−rm: 0.606 arcsec [0.54σ]
KicOffset−rm: 0.592 arcsec [0.53σ]
OotOffset−st: 2/3/2/2 [9]
KicOffset−st: 2/3/2/2 [9]
DiffImageQuality−fgm: 0.56 [5/9]
DiffImageOverlap−fno: 0.50 [5/10]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 15:41:35 Z

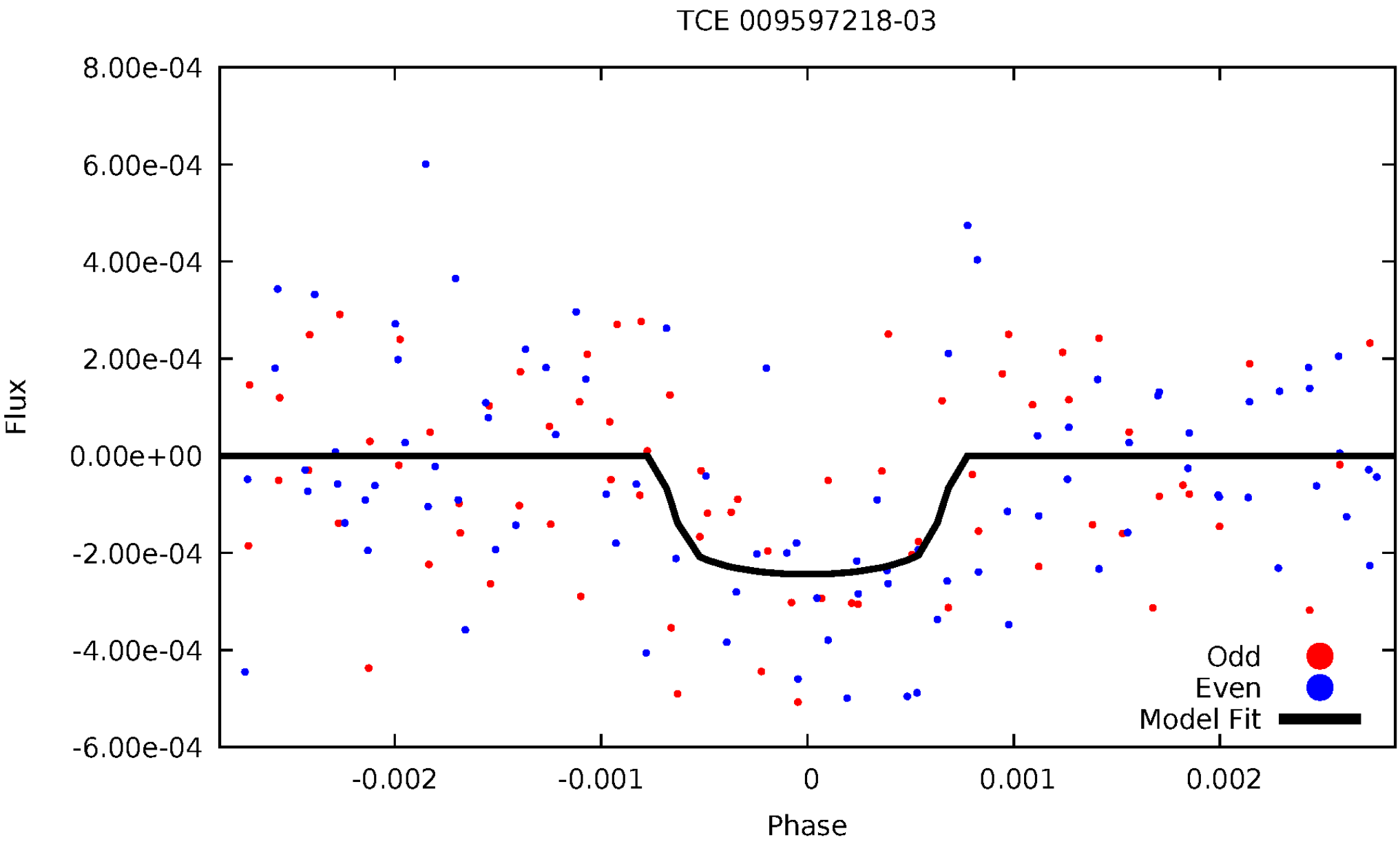
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009597218-03, PDC Light Curves

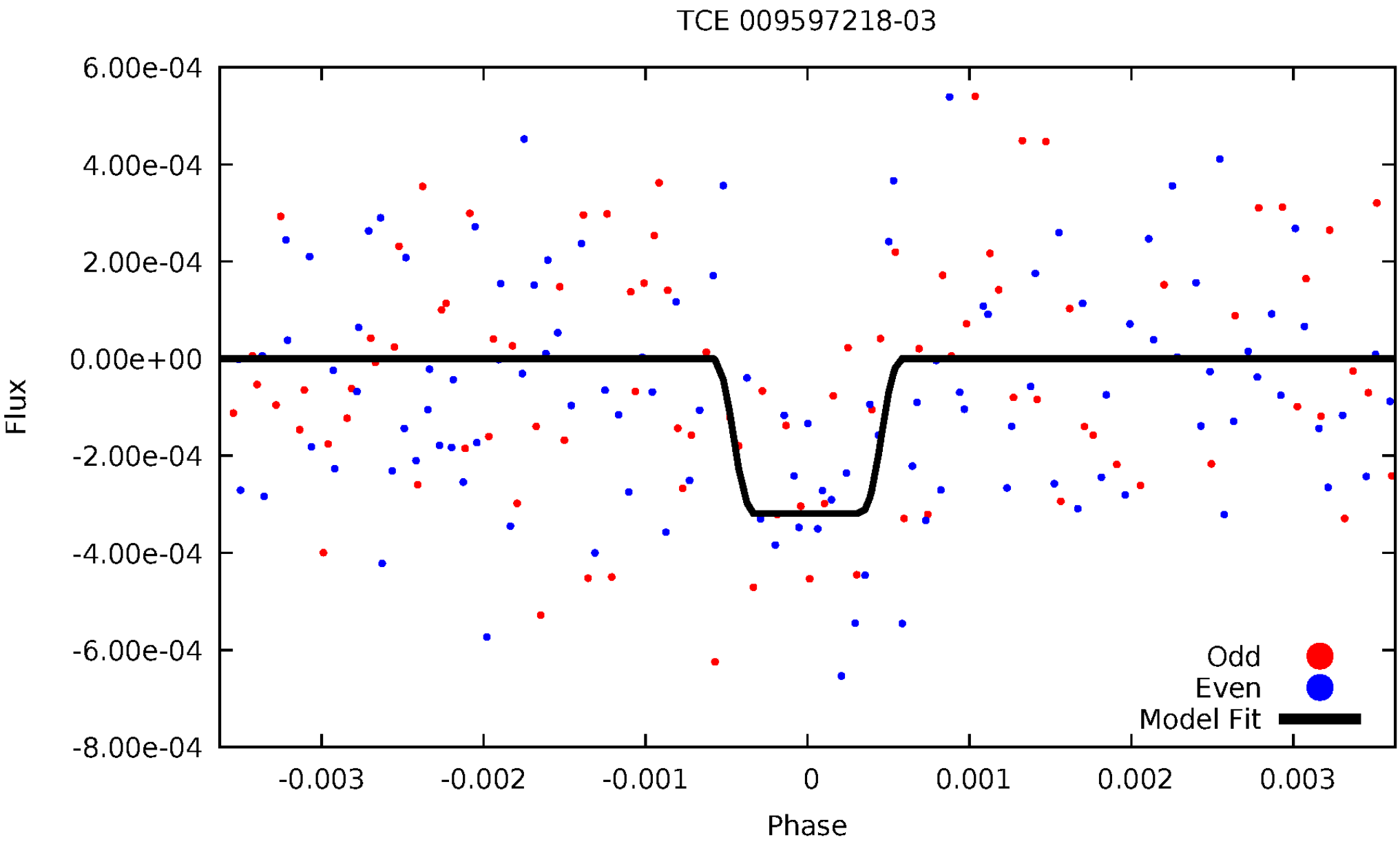



TCE 009597218-03
P = 70.008 days
P = 140.015 days
P = 280.031 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

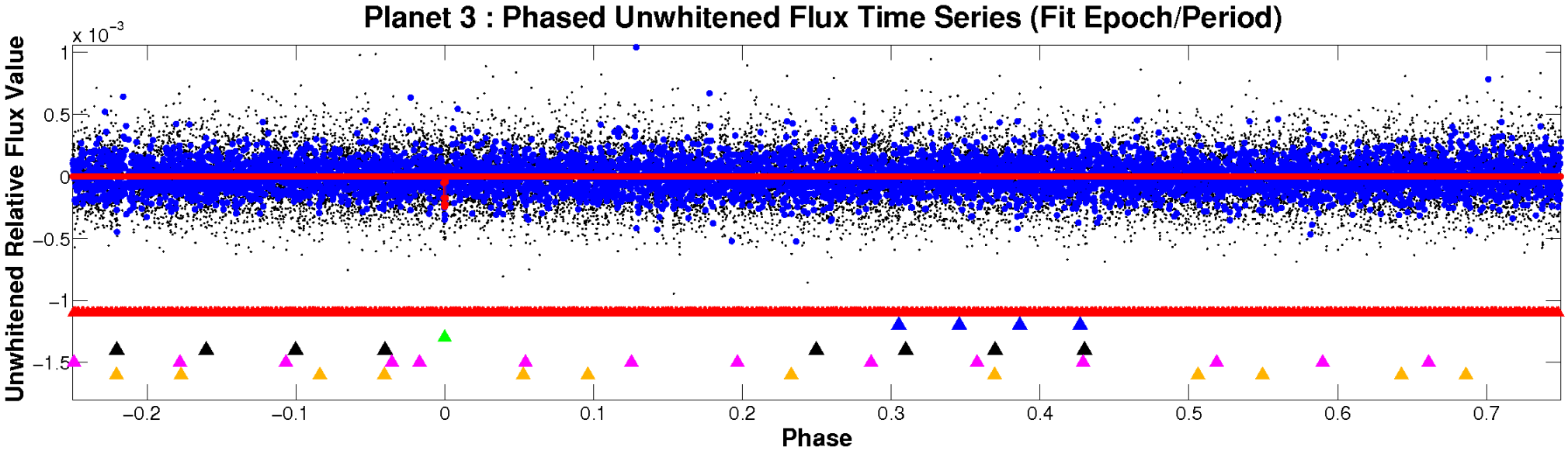
DV Odd/Even

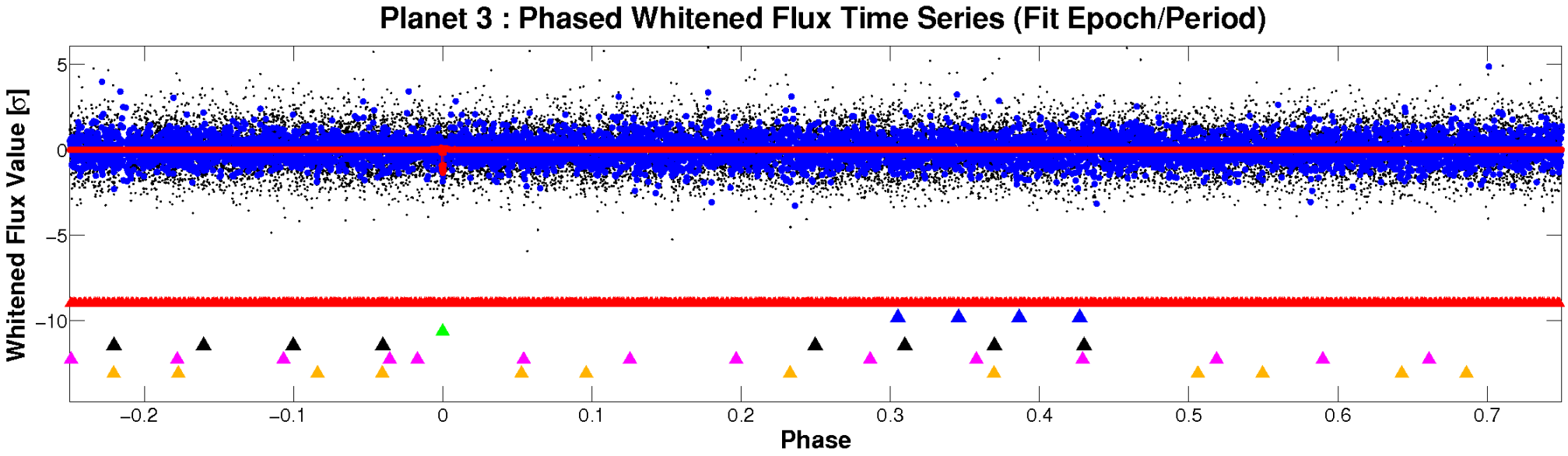

TCE 009597218-03
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.002
-0.001
0
0.001
0.002
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009597218-03
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
Phase
Odd
Even
Model Fit

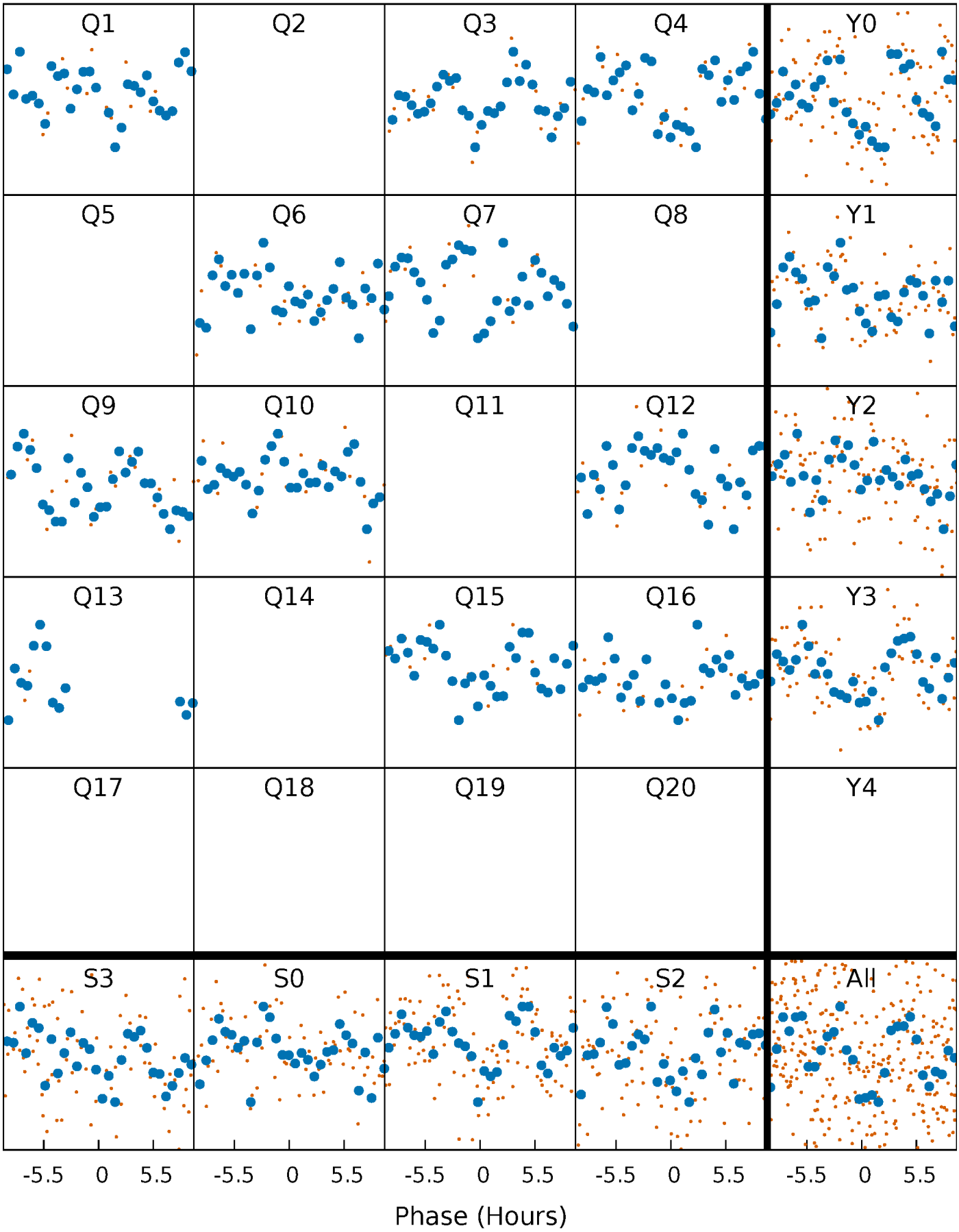
Non-Whitened Vs. Whitened Light Curve





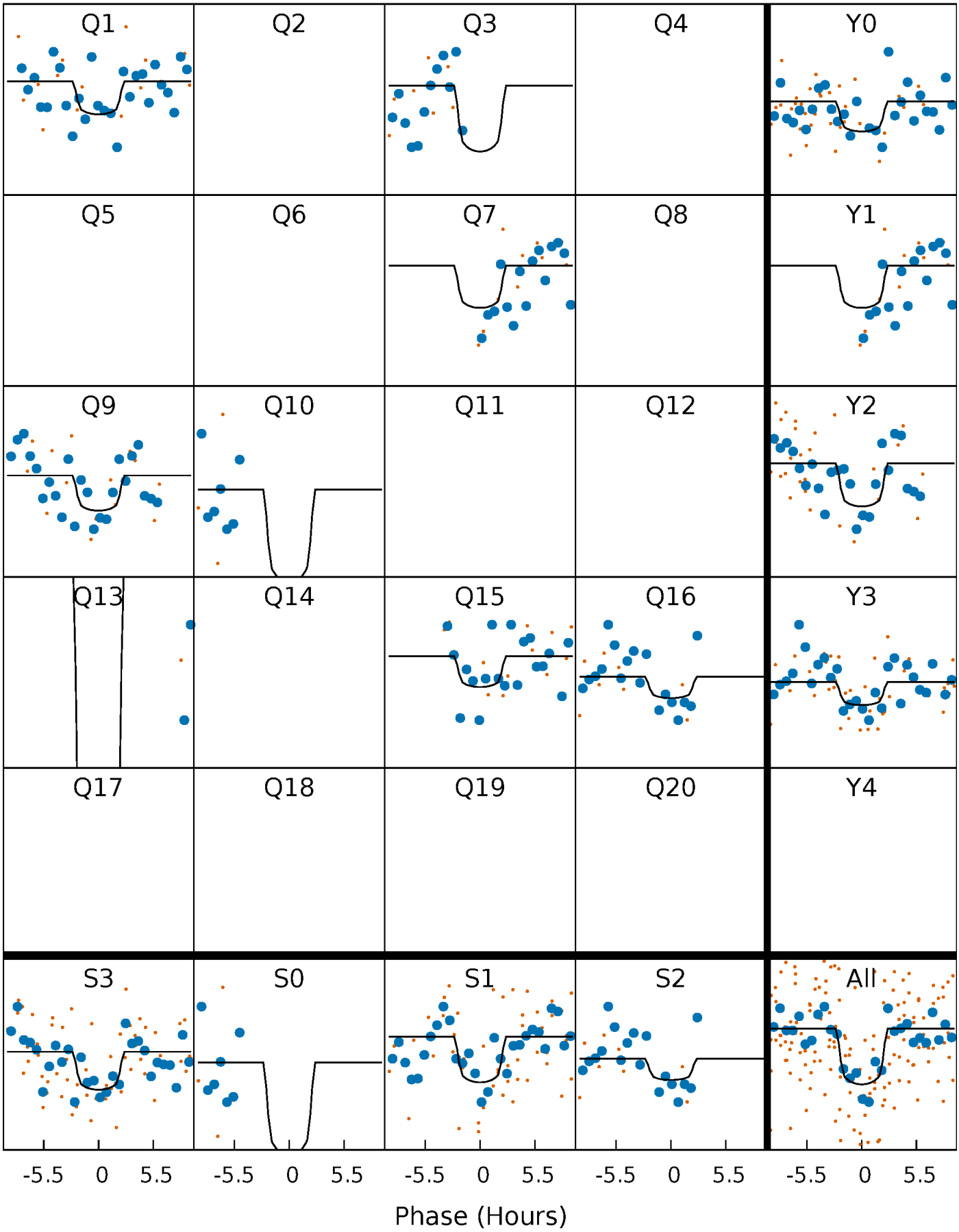
PDC Quarter-Phased Transit Curves

TCE 009597218-03 P=140.015459 Days T_0=148.745540 (BKJD)



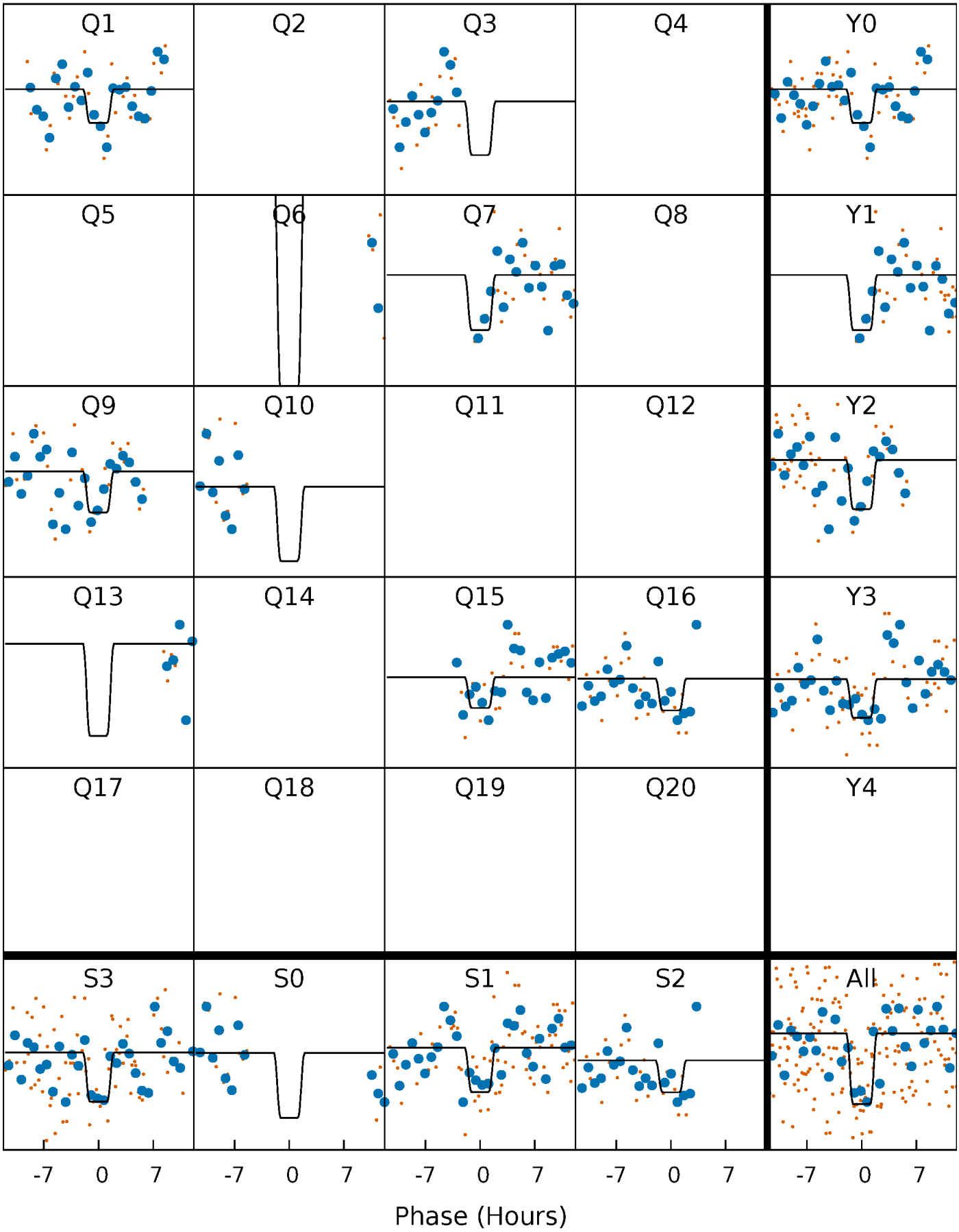
DV Quarter-Phased Transit Curves

TCE 009597218-03 P=140.015459 Days T_0=148.745540 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

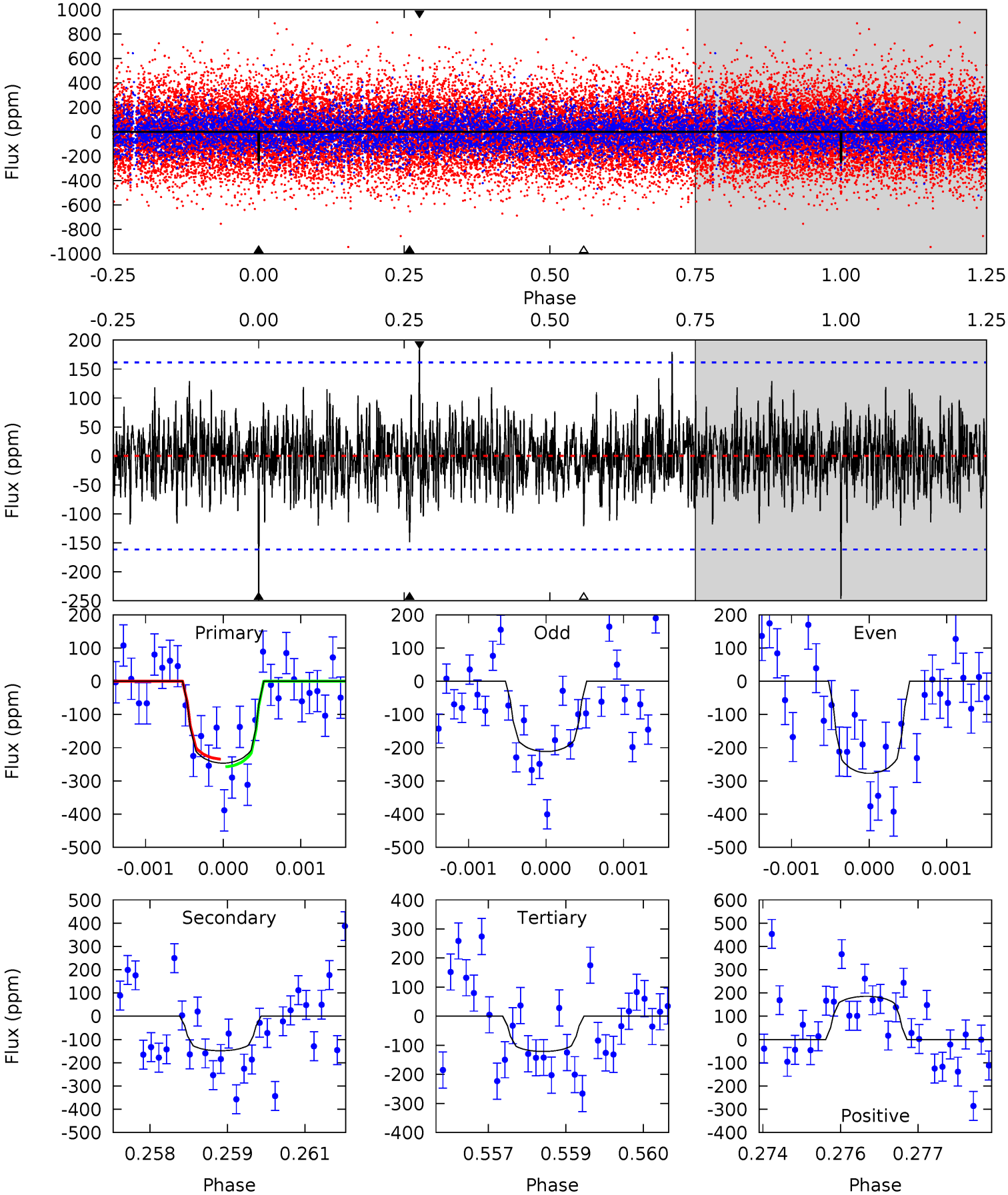
TCE 009597218-03 P=140.009544 Days T_0=148.790474 (BKJD)



DV Model-Shift Uniqueness Test

009597218-03, P = 140.015459 Days, E = 8.730081 Days

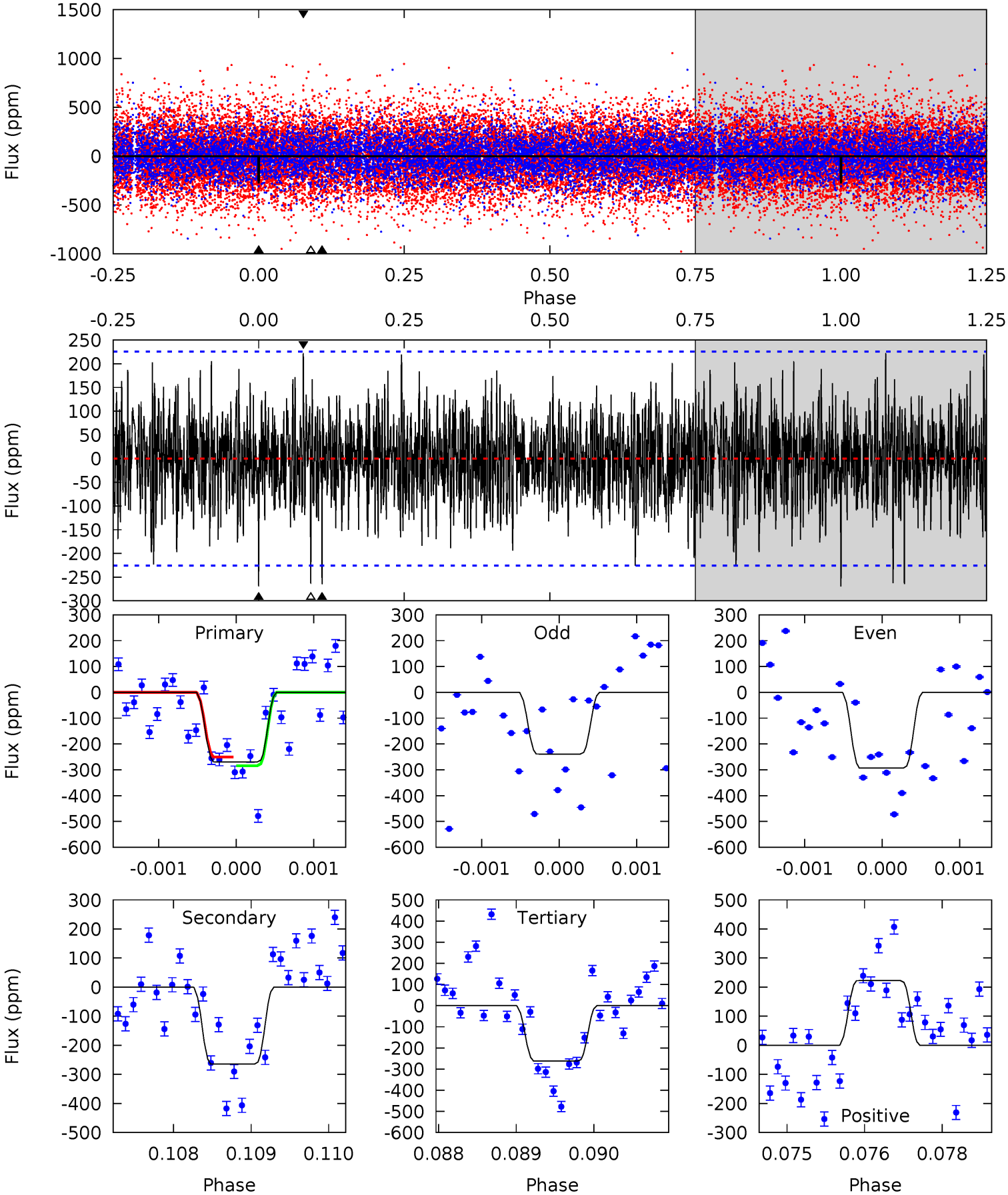
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.21	4.95	4.04	6.18	5.38	3.18	1.36	4.17	2.04	0.91	-1.23	1.09	1.06	0.43	0.39



Alt Model-Shift Uniqueness Test

009597218-03, P = 140.009544 Days, E = 8.780930 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.48	6.37	6.31	5.35	5.43	3.26	1.66	0.17	1.13	0.06	1.02	0.65	1.01	0.45	0.40



Stellar Parameters For KIC 009597218

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	M($M_\odot$)	$p_\star$ (g·cm^{-3})
	7766^{+216}_{-325}	$4.008^{+0.234}_{-0.144}$	$-0.180^{+0.200}_{-0.350}$	$2.137^{+0.447}_{-0.671}$	$1.697^{+0.196}_{-0.319}$	$0.245^{+0.324}_{-0.095}$
	+3%/-4%	+6%/-4%	+111%/-194%	+21%/-31%	+12%/-19%	+132%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009597218-03 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-149±30	$5.31^{+4.82}_{-3.42}$	873^{+64}_{-73}	5433^{+4210}_{-1207}	1118^{+7933}_{-812}
Alt.	-265±42	$5.56^{+5.05}_{-3.43}$	872^{+62}_{-66}	6119^{+5315}_{-1505}	1783^{+11560}_{-1280}

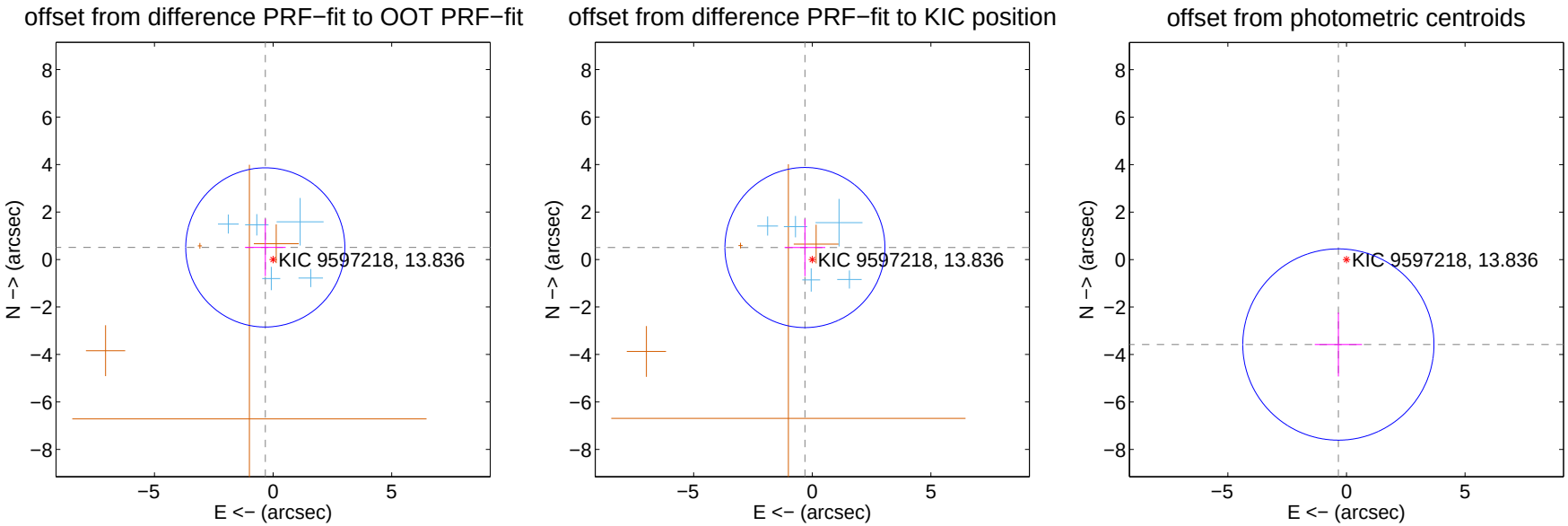
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

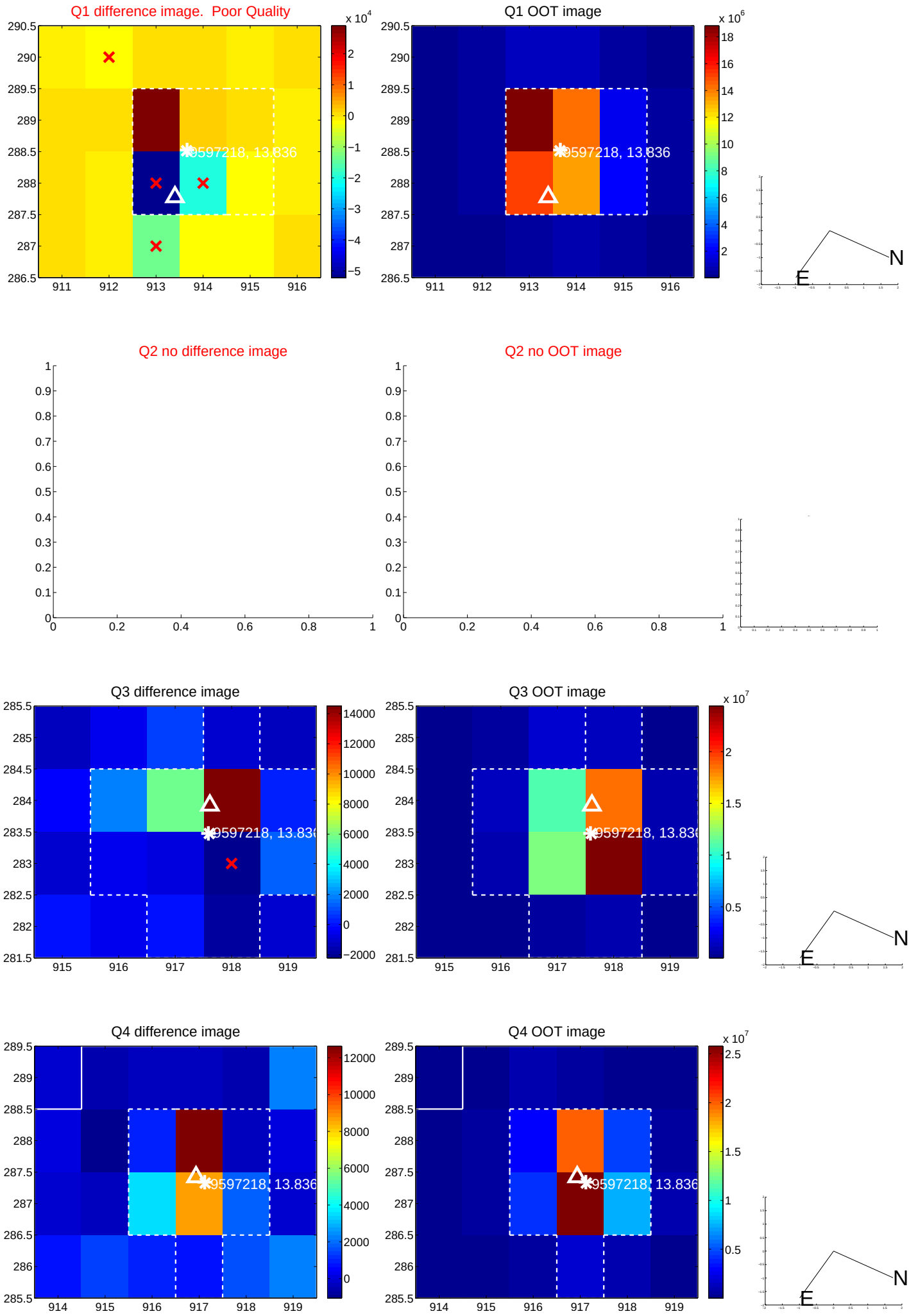
Supplemental centroid analysis for 009597218-03. Kepler magnitude: 13.84. Transit SNR 7.40
There are 5 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.606 ± 1.117	0.54	0.328 ± 0.857	0.509 ± 1.210
PRF-fit source offset from KIC position	0.592 ± 1.124	0.53	0.310 ± 0.857	0.504 ± 1.210
photometric centroid source offset	3.59 ± 1.34	2.68	0.34 ± 1.00	-3.58 ± 1.35

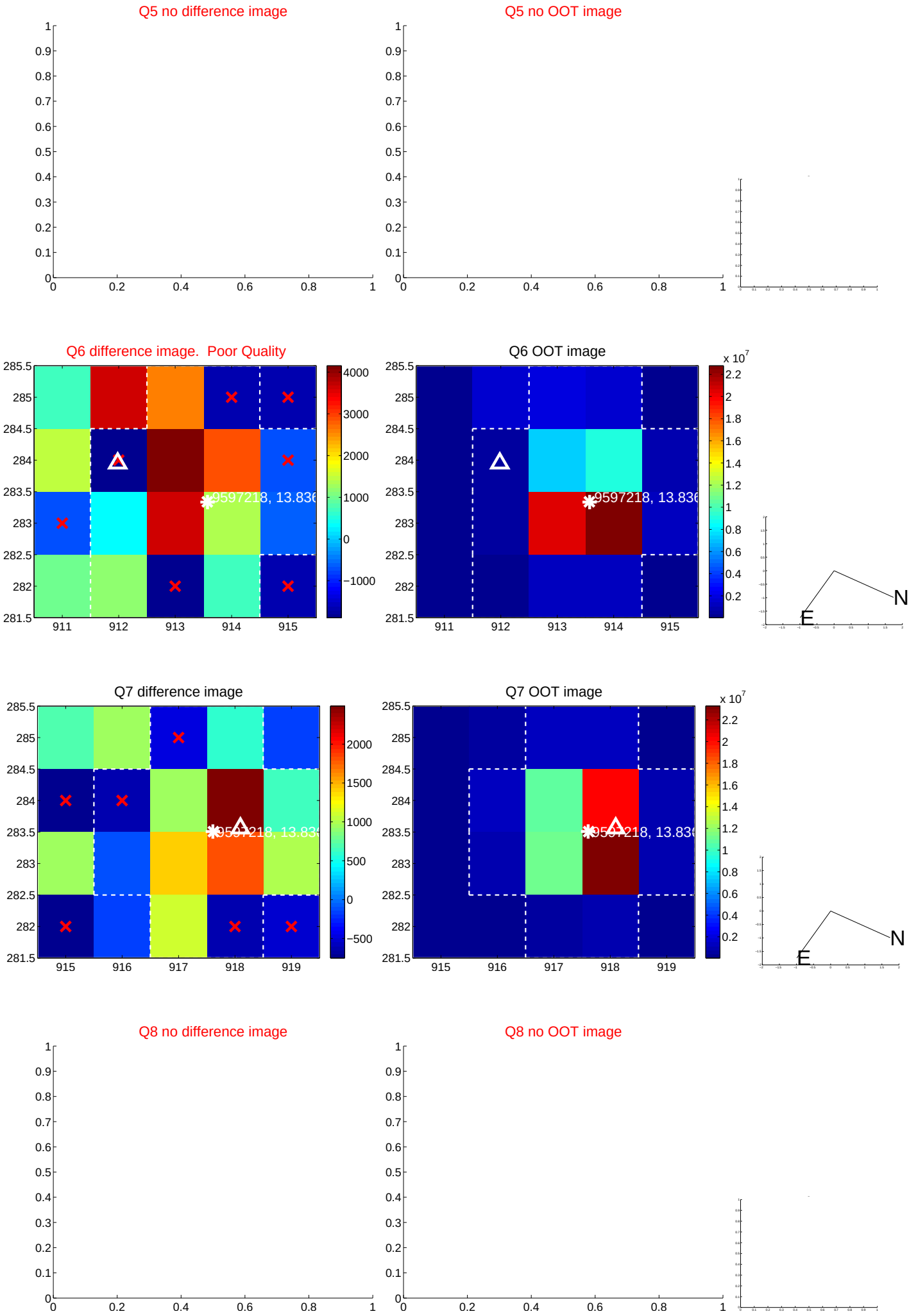


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

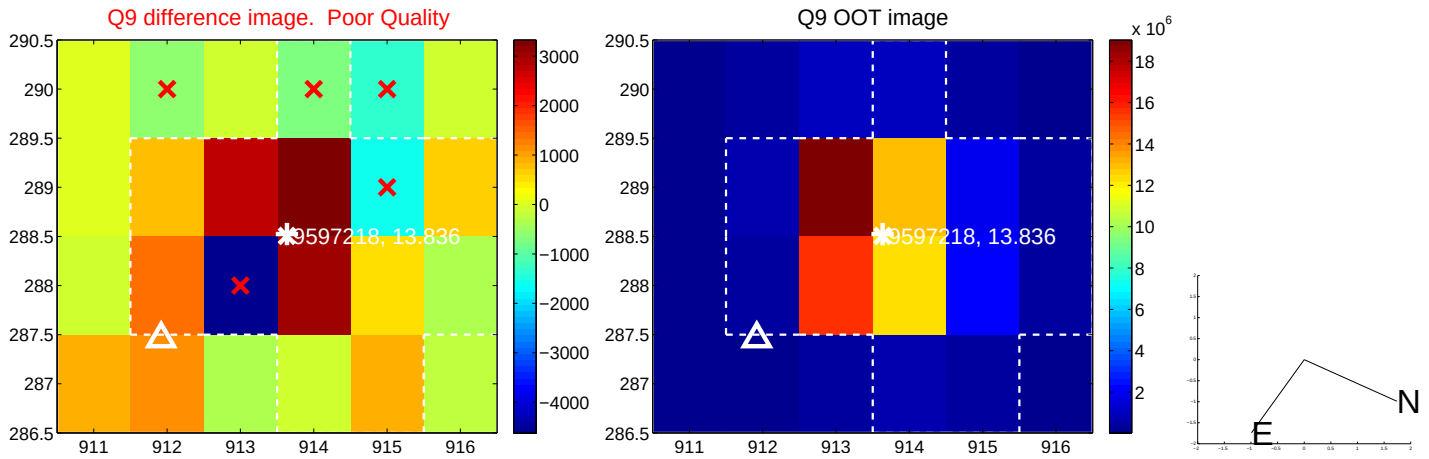
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

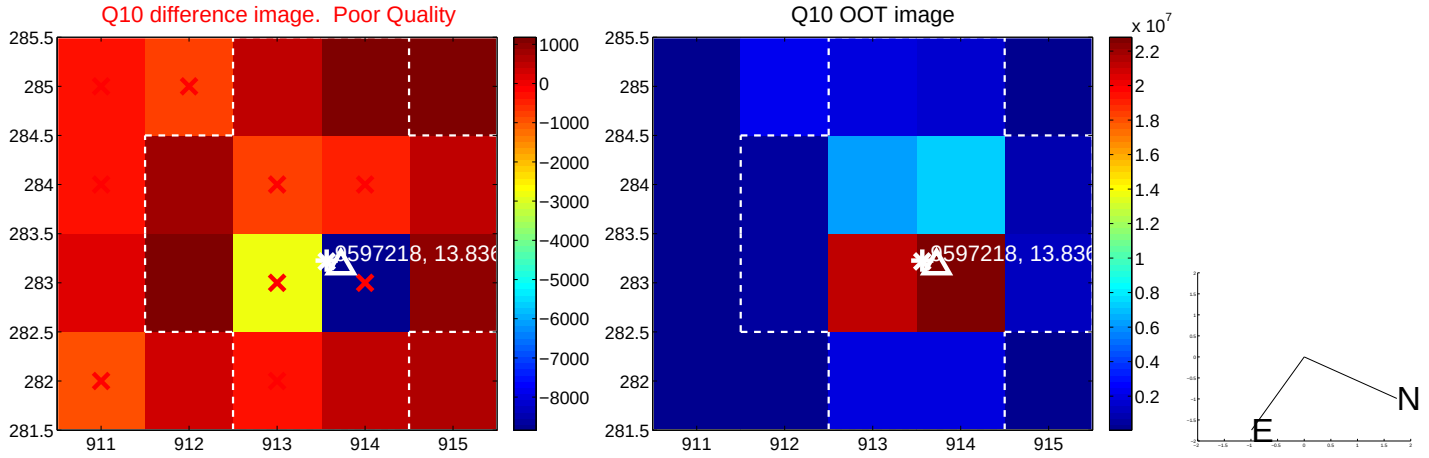


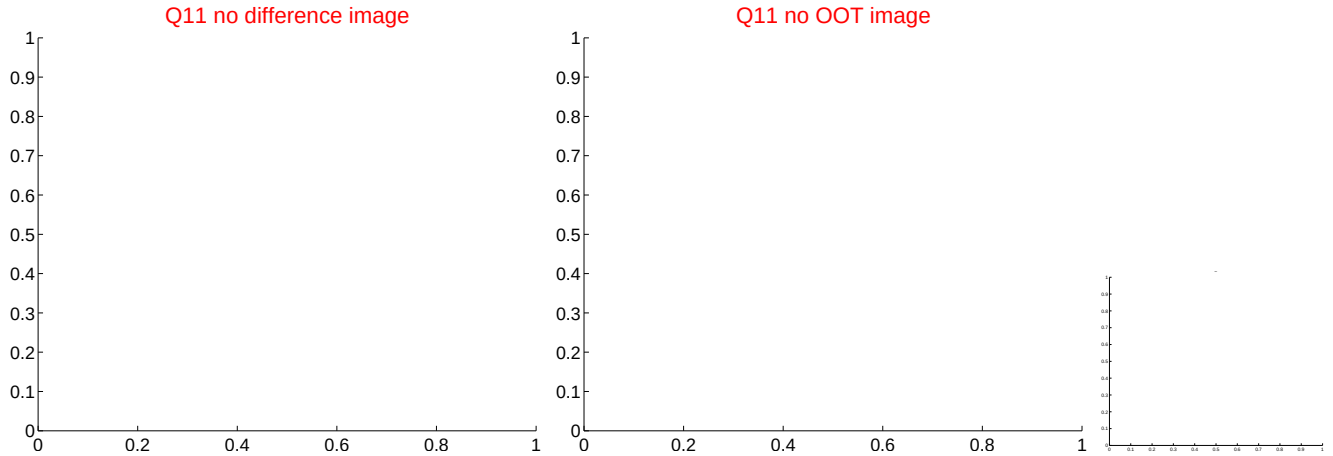
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

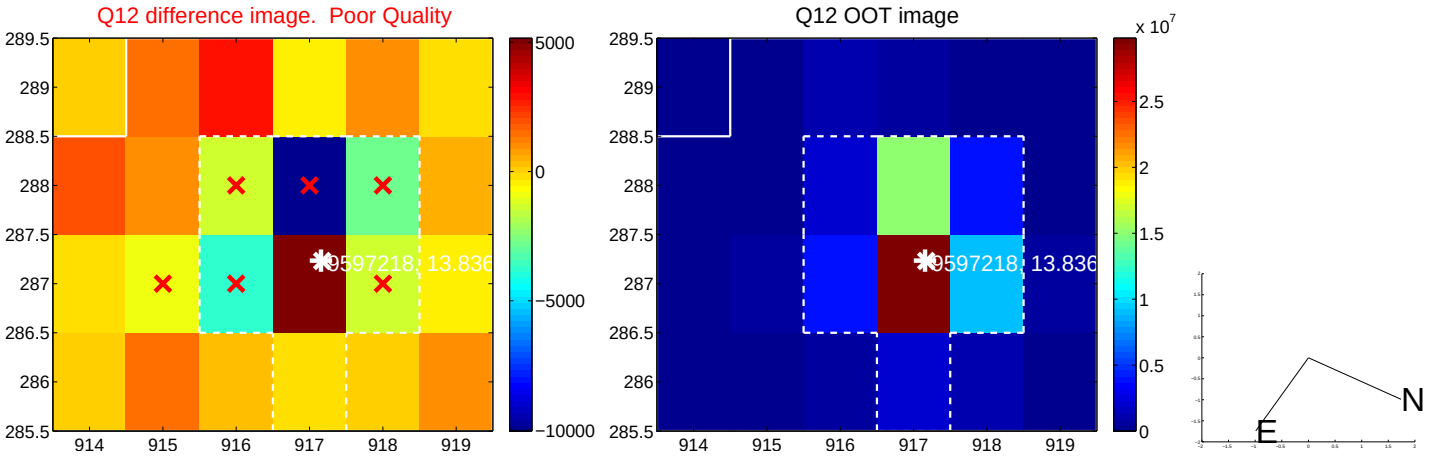


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

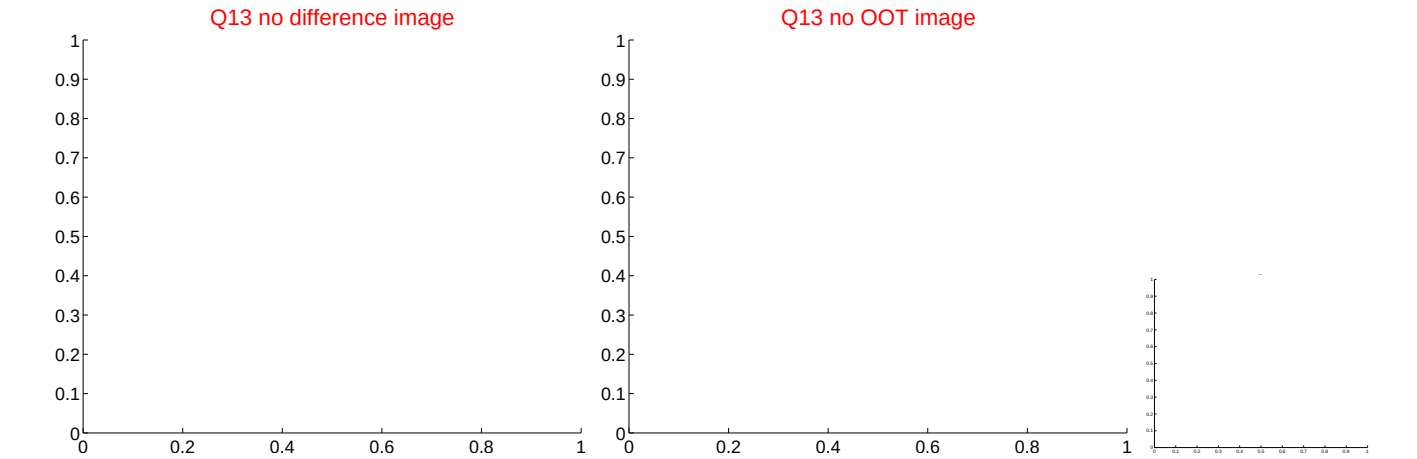


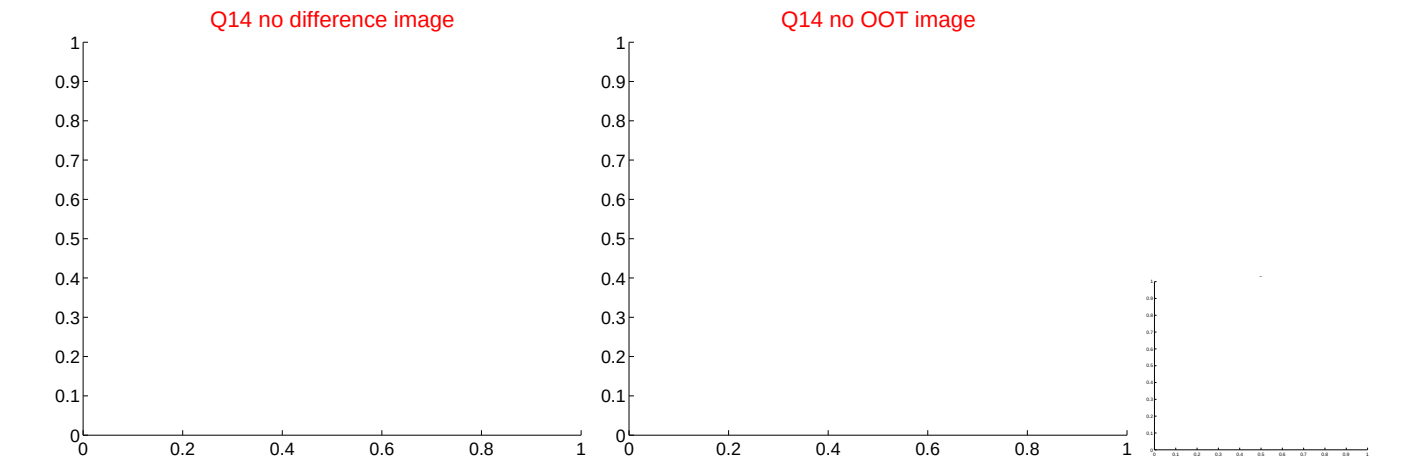


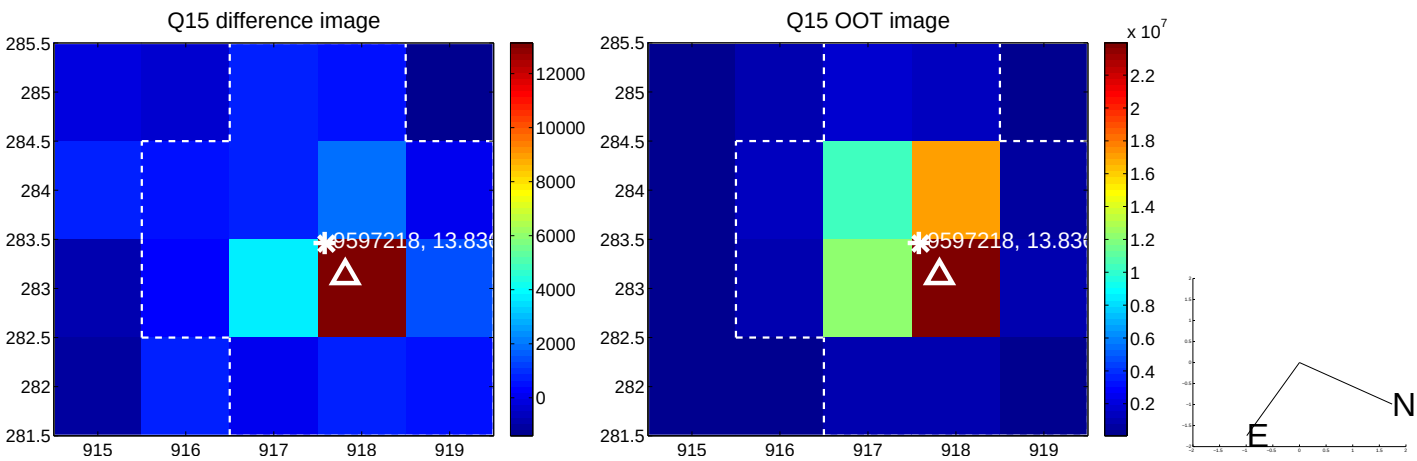


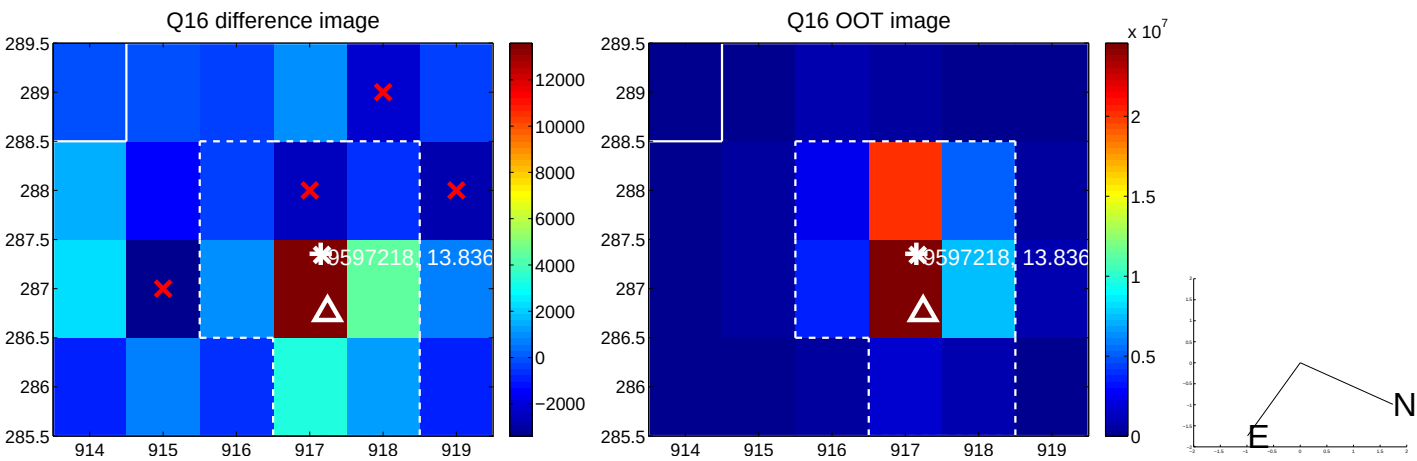


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

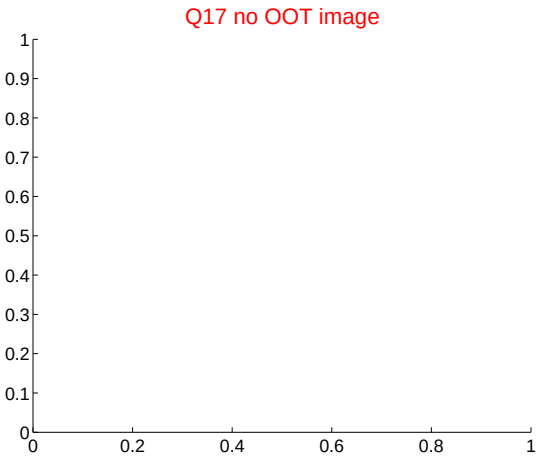


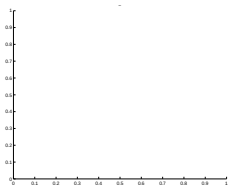


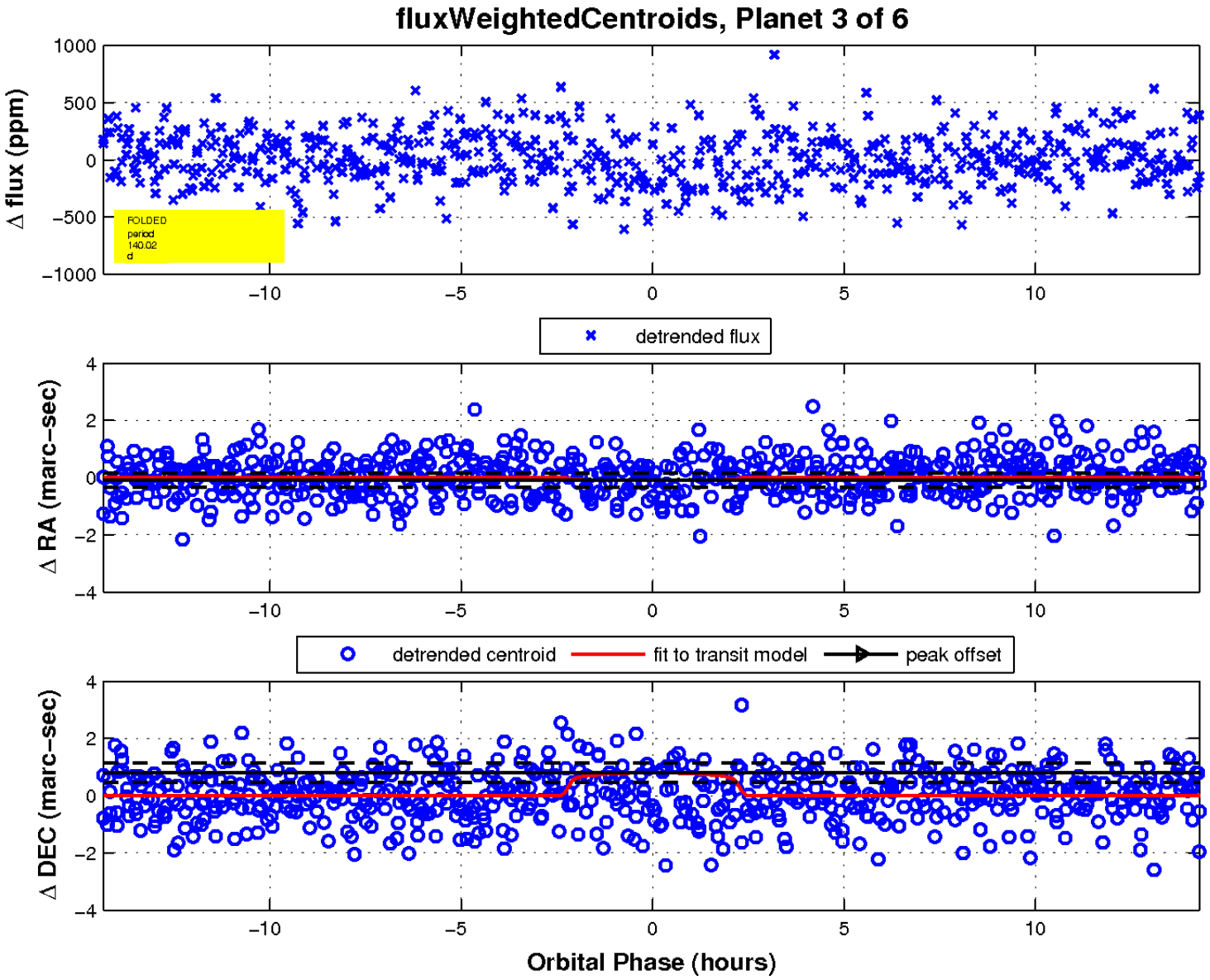




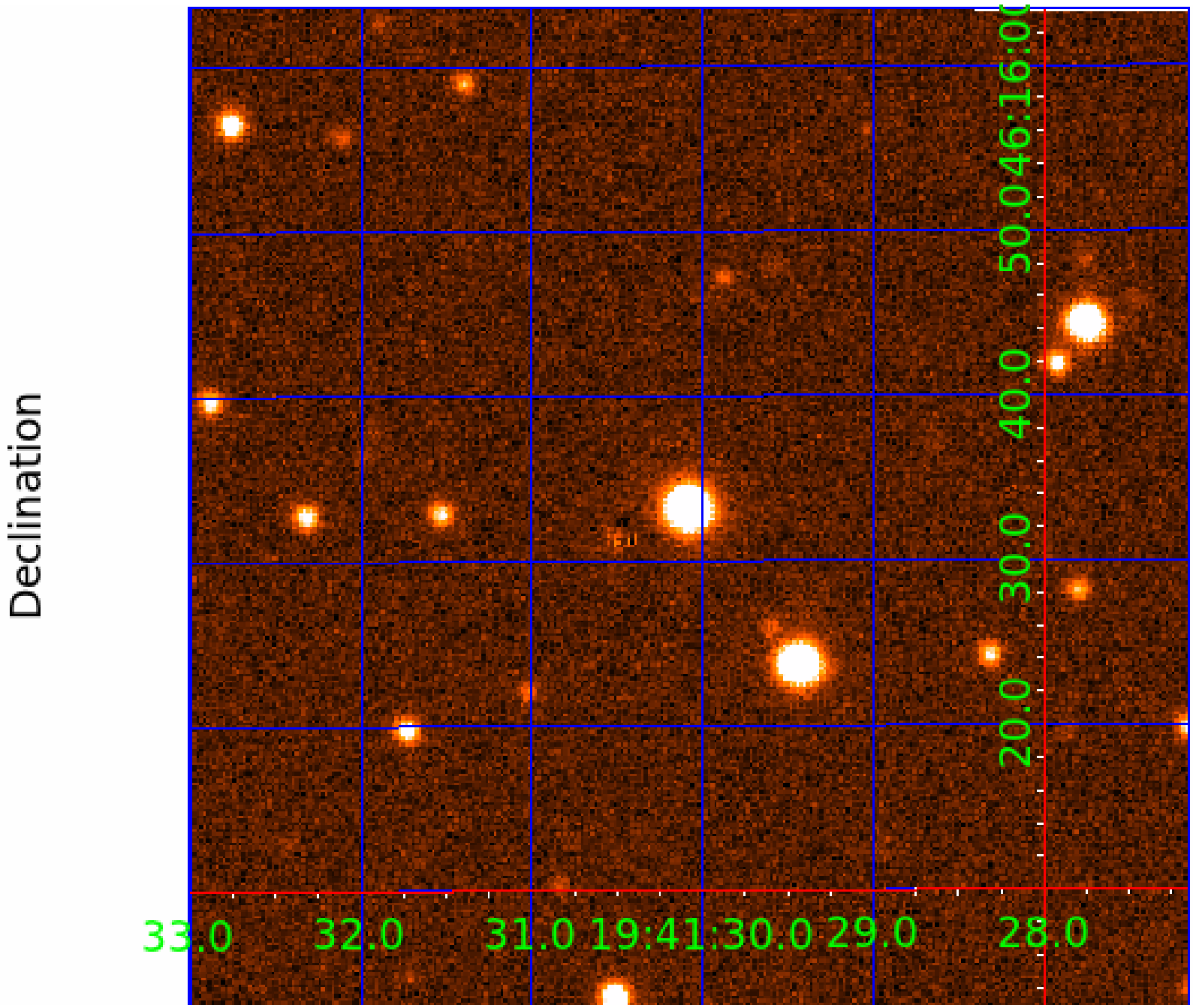
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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28.0

KIC 009597218

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 ($S_\oplus$)
009597218-01	OBS	No	2.214994	132.158399	17.1	11.518	7.8	7.6	2.14	7766	0.89	9456.35
009597218-02	OBS	No	414.359888	208.530144	344.0	3.940	8.5	8.0	2.14	7766	4.57	8.84
009597218-03	OBS	No	140.015459	148.745540	244.3	4.785	7.6	7.4	2.14	7766	3.82	37.55
009597218-04	OBS	No	205.817690	143.134272	347.6	2.938	7.6	6.9	2.14	7766	4.66	22.47
009597218-05	OBS	No	107.503982	146.379079	296.0	3.553	7.7	8.2	2.14	7766	4.12	53.41
009597218-06	OBS	No	120.880547	156.138356	186.6	8.760	7.4	7.1	2.14	7766	3.14	45.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597218-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009597218-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

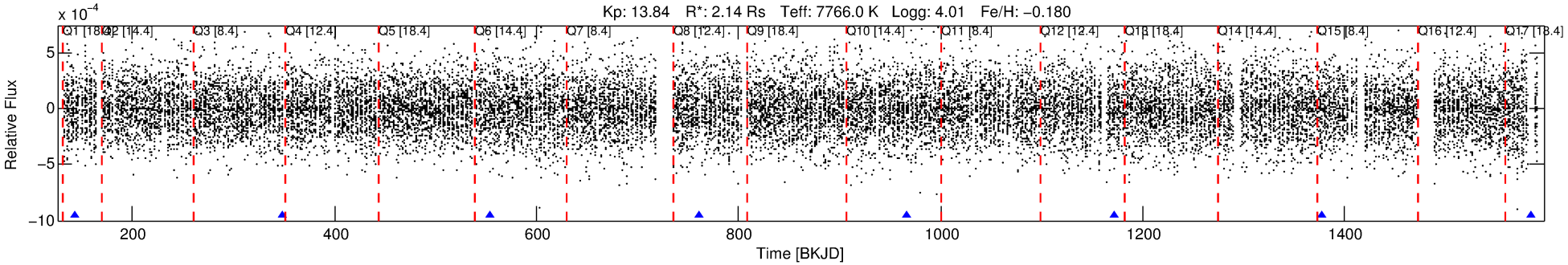
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

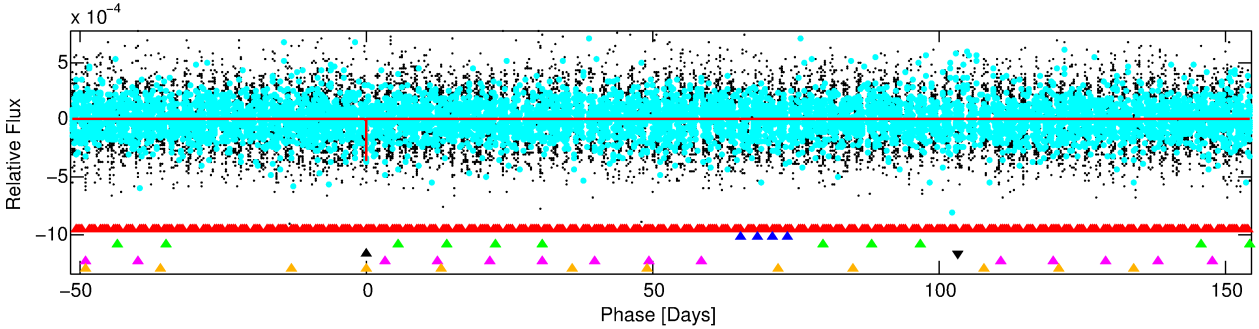
Ephemeris Match Information For 009597218-04

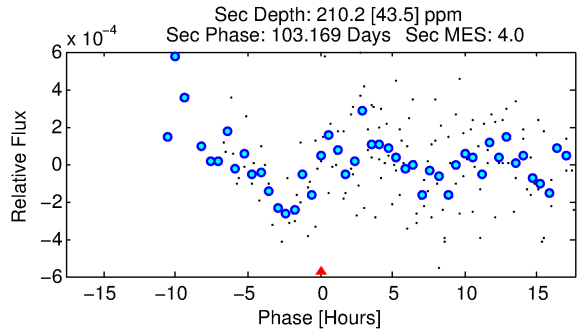
No Significant Match Found

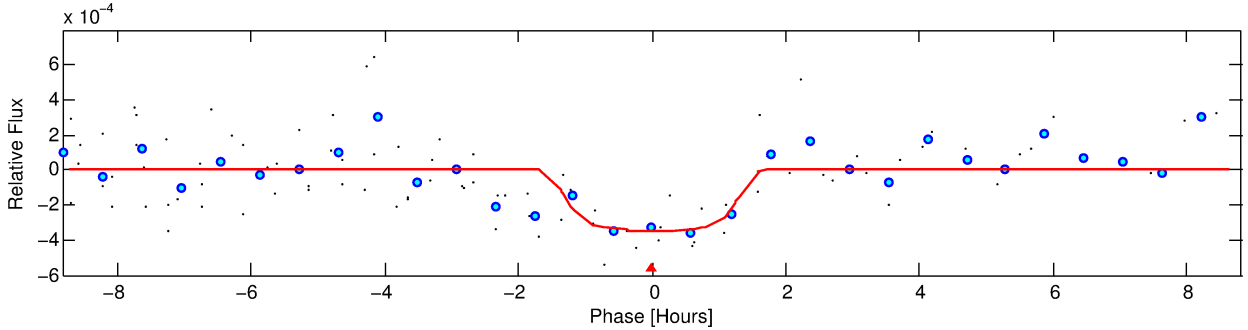
DV One-Page Summary

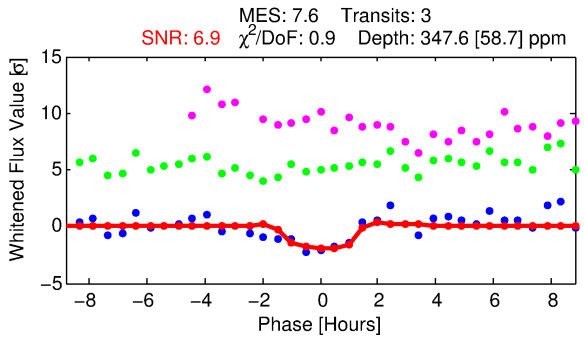
KIC: 9597218 Candidate: 4 of 6 Period: 205.818 d

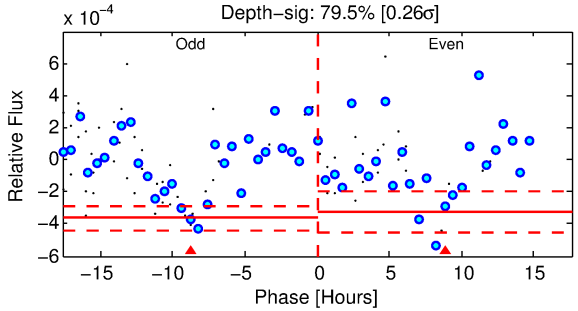


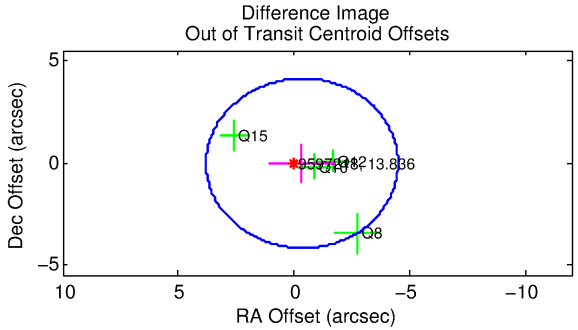












DV Fit Results:

Period = 205.81769 [0.00676] d
Epoch = 143.1343 [0.0351] BKJD
Rp/R* = 0.0200 [0.0130]
a/R* = 257.31 [973.10]
b = 0.90 [0.81]

Seff = 22.47 [10.07]
Teq = 555 [62] K
Rp = 4.66 [3.37] Re
a = 0.8139 [0.2245] AU

Ag = 3523.48 [4876.13] [0.72σ]
Teffp = 6613 [2200] K [2.75σ]

DV Diagnostic Results:

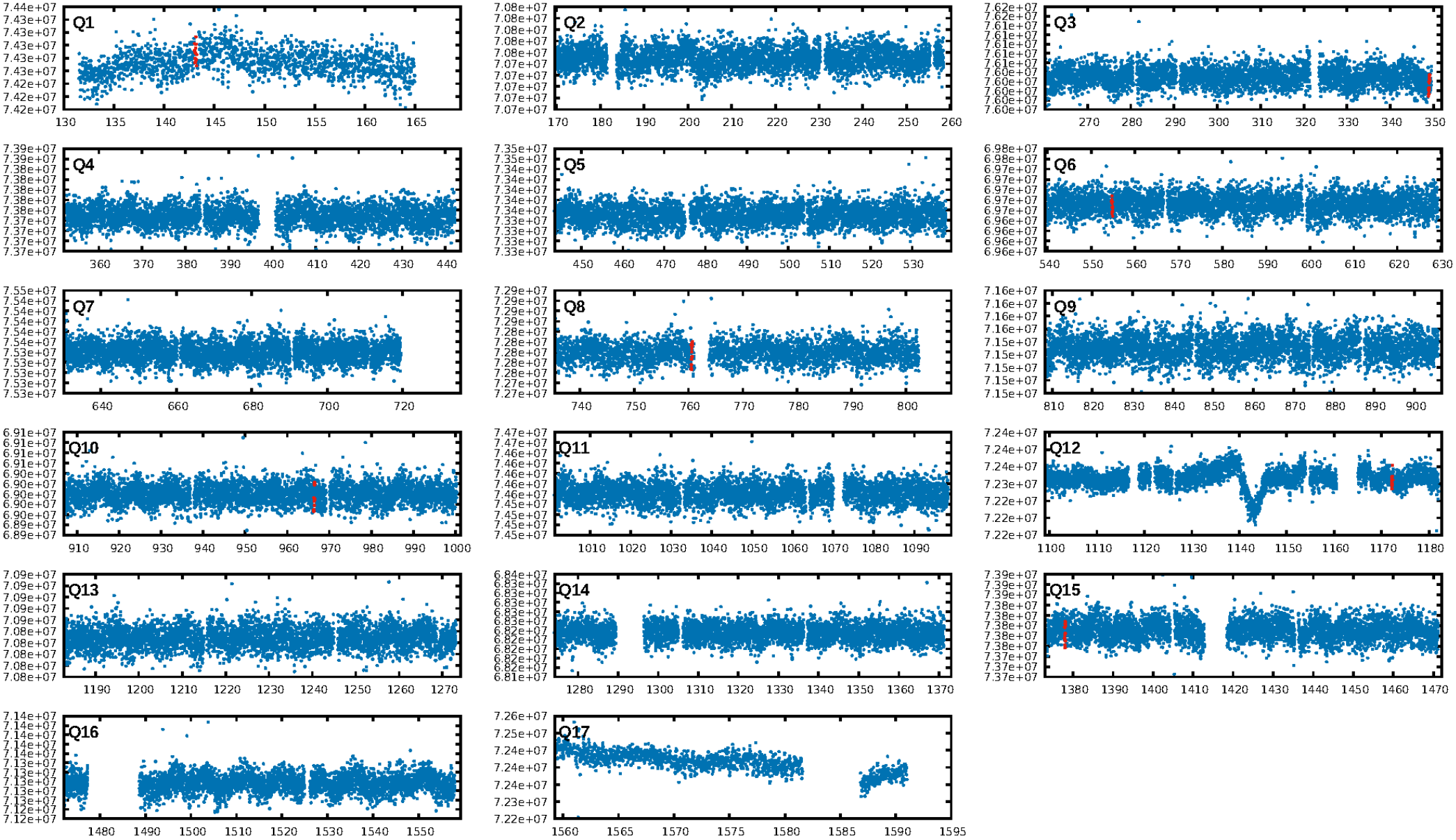
ShortPeriod−sig: 100.0% [281.27σ]
LongPeriod−sig: 100.0% [1018.34σ]
ModelChiSquare2−sig: 90.9%
ModelChiSquareGof−sig: 99.8%
Bootstrap−pfa: 9.94e−09
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: −1.68

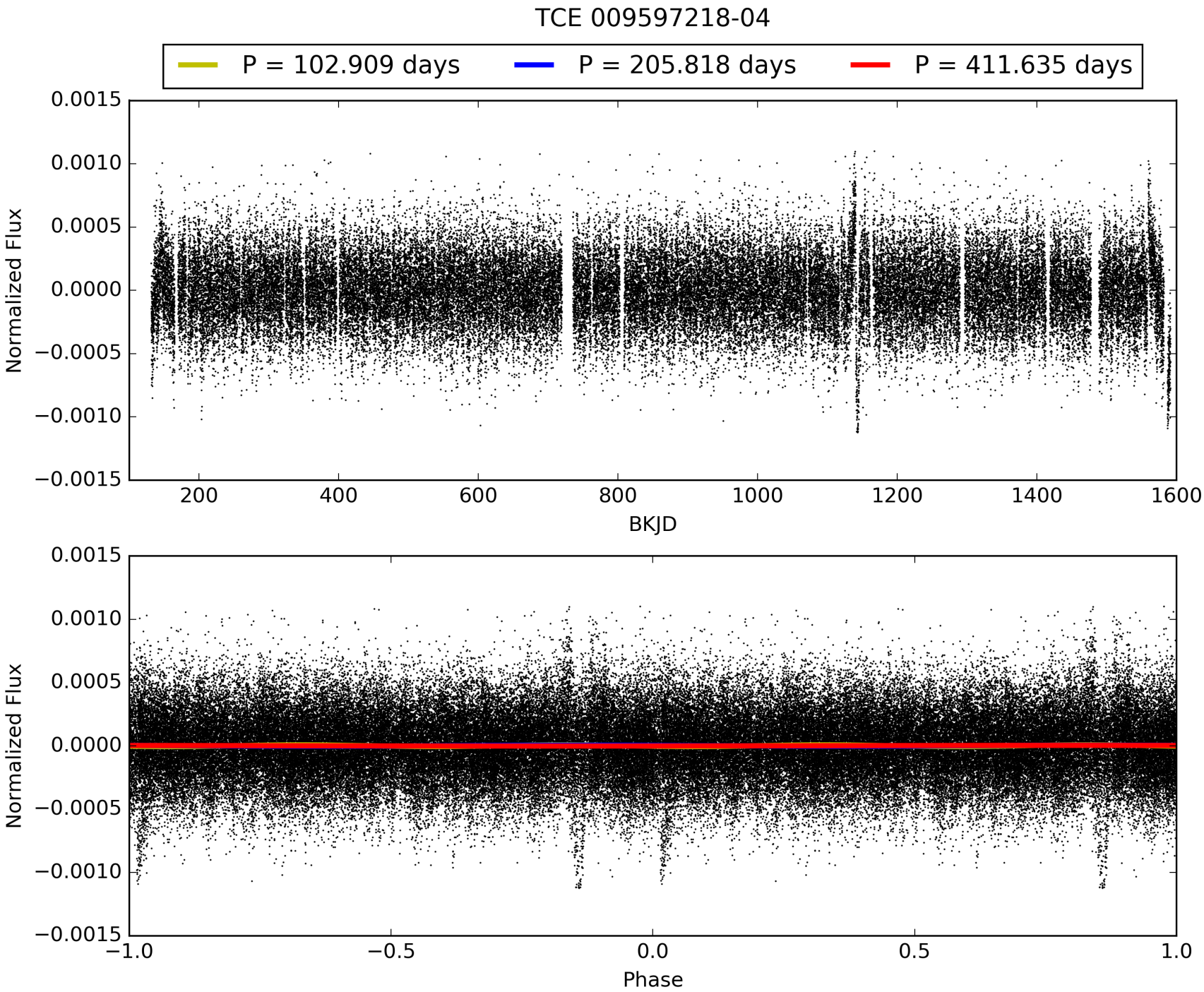
Centroid−sig: 6.0%
Centroid−so: 2.092 arcsec [1.54σ]
OotOffset−rm: 0.352 arcsec [0.25σ]
KicOffset−rm: 0.358 arcsec [0.24σ]
OotOffset−st: 1/1/2/0 [4]
KicOffset−st: 1/1/2/0 [4]
DiffImageQuality−fgm: 0.50 [2/4]
DiffImageOverlap−fno: 0.43 [3/7]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 15:41:42 Z

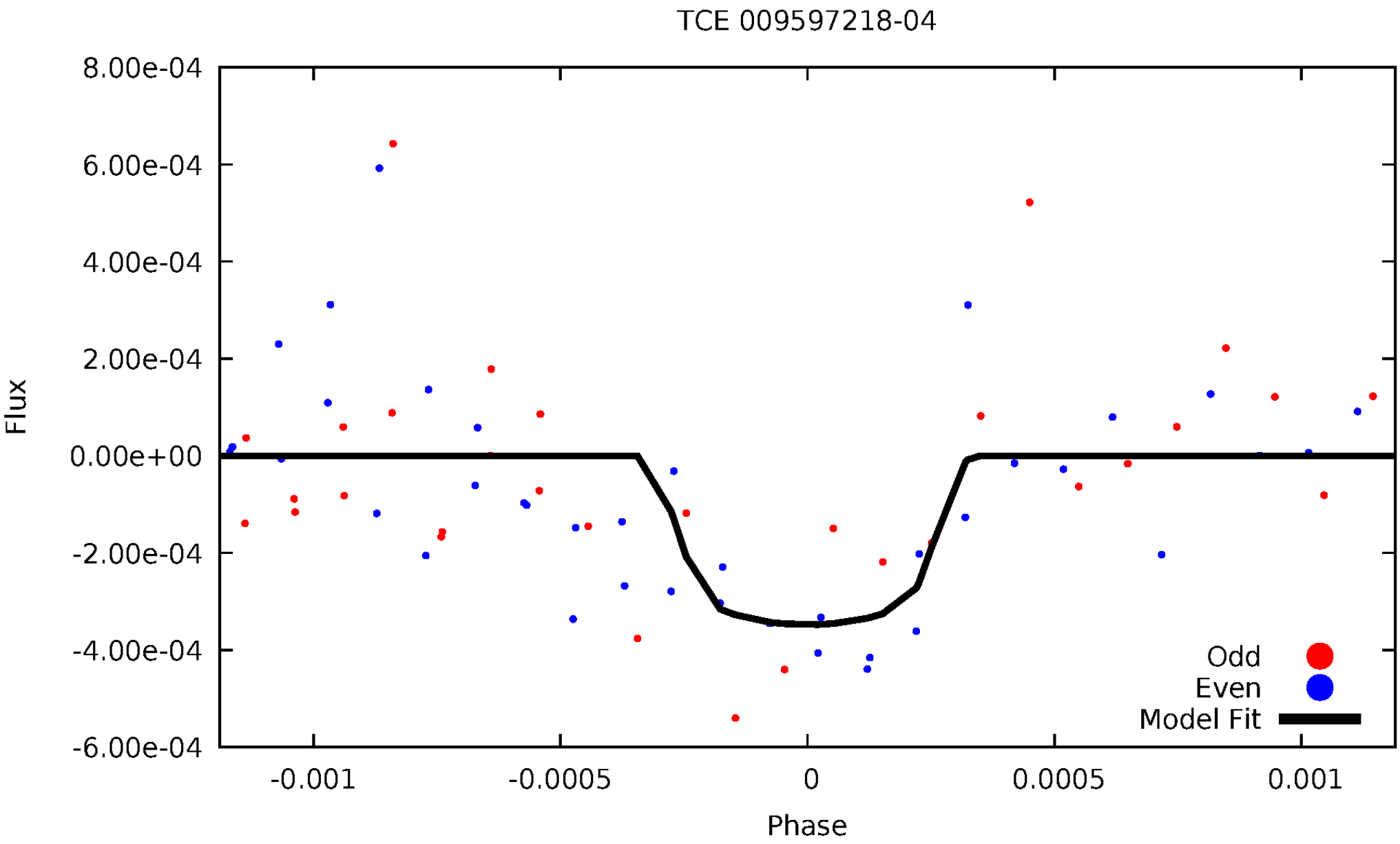
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009597218-04, PDC Light Curves

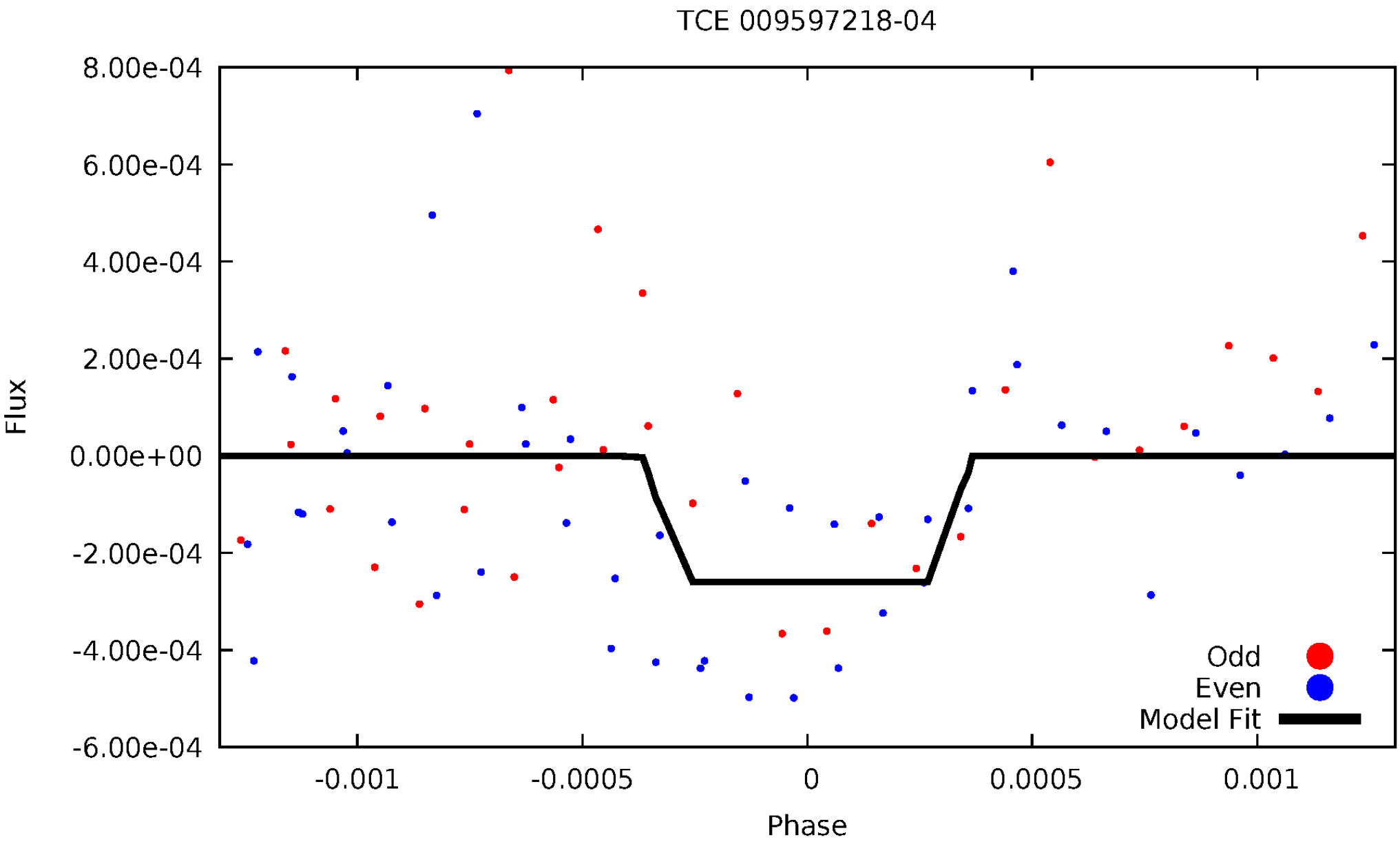



TCE 009597218-04
P = 102.909 days
P = 205.818 days
P = 411.635 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

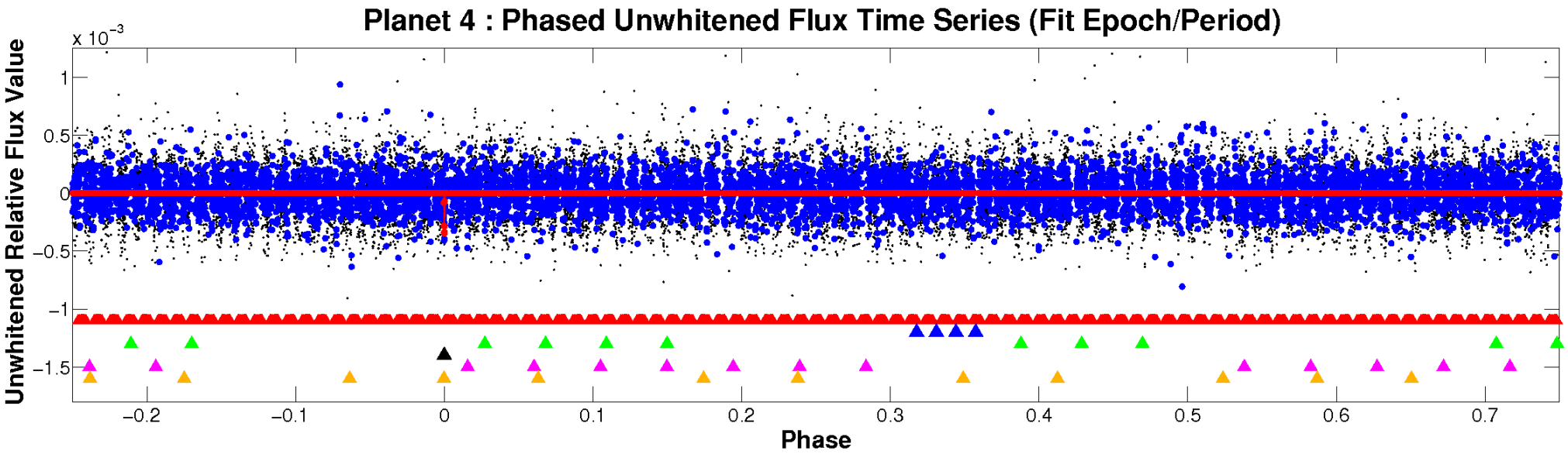
DV Odd/Even

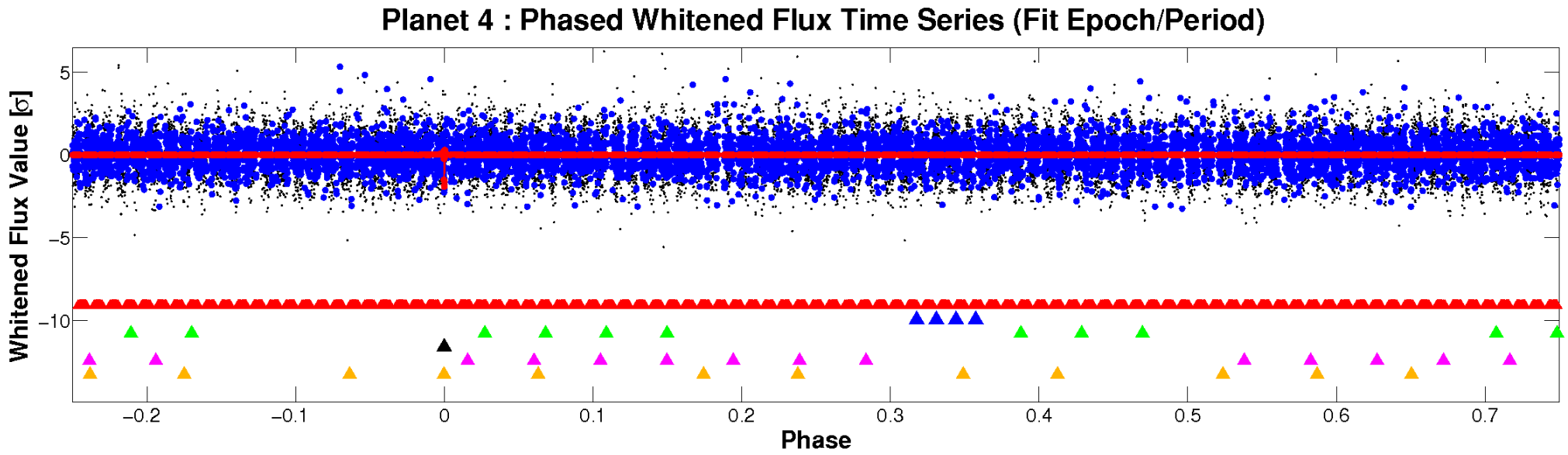

TCE 009597218-04
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.001
-0.0005
0
0.0005
0.001
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009597218-04
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.001
-0.0005
0
0.0005
0.001
Phase
Odd
Even
Model Fit

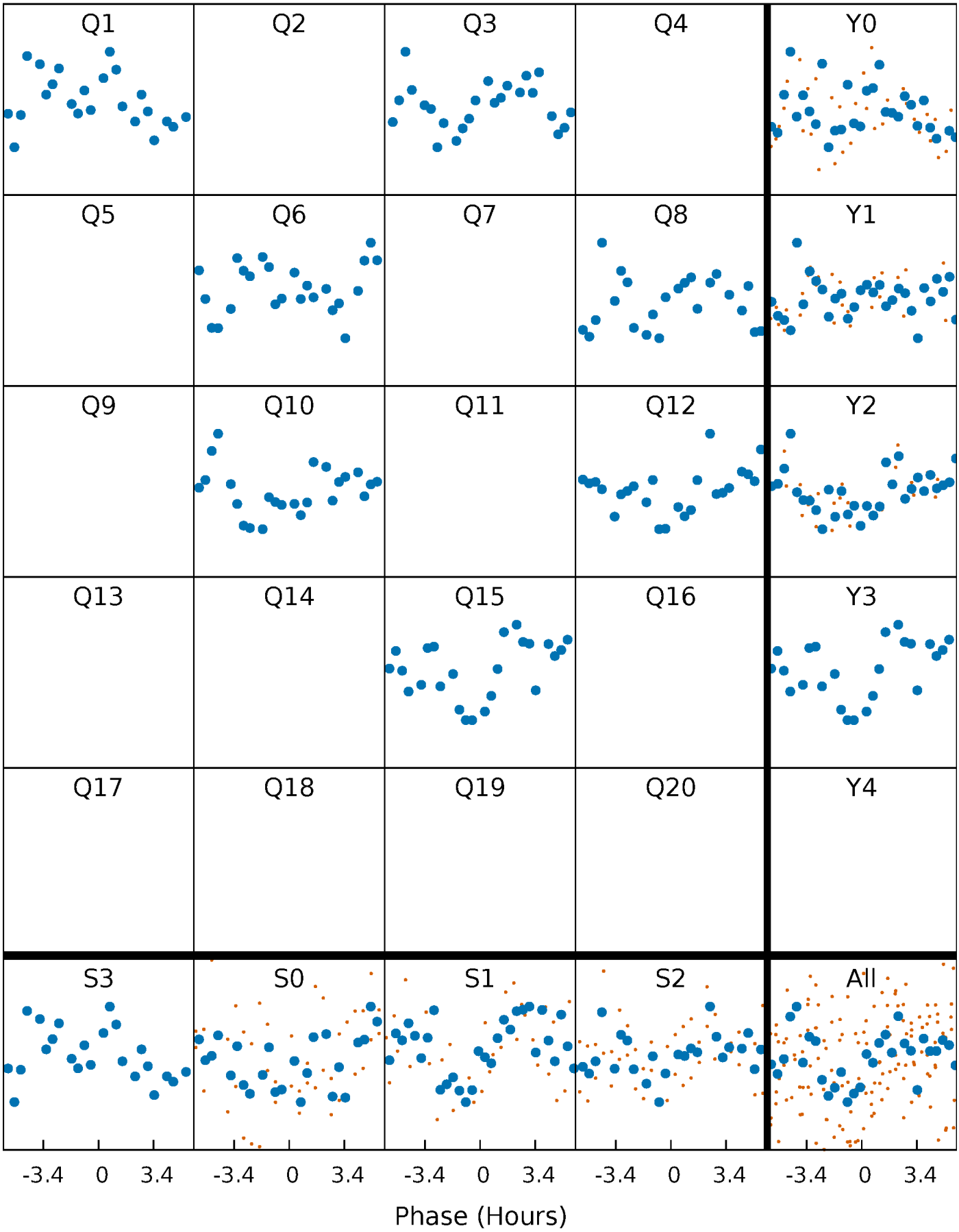
Non-Whitened Vs. Whitened Light Curve





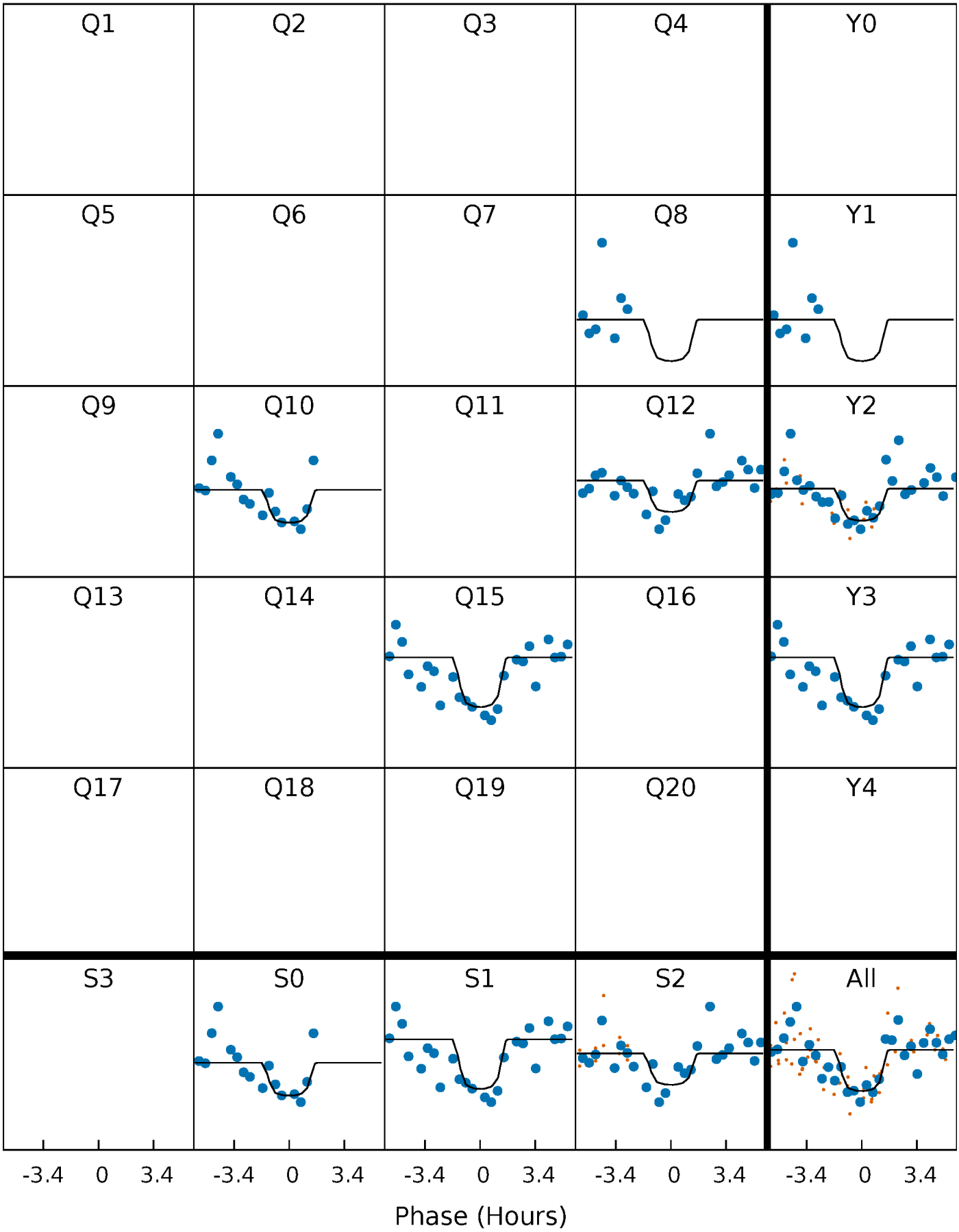
PDC Quarter-Phased Transit Curves

TCE 009597218-04 P=205.817690 Days T_0=143.134272 (BKJD)



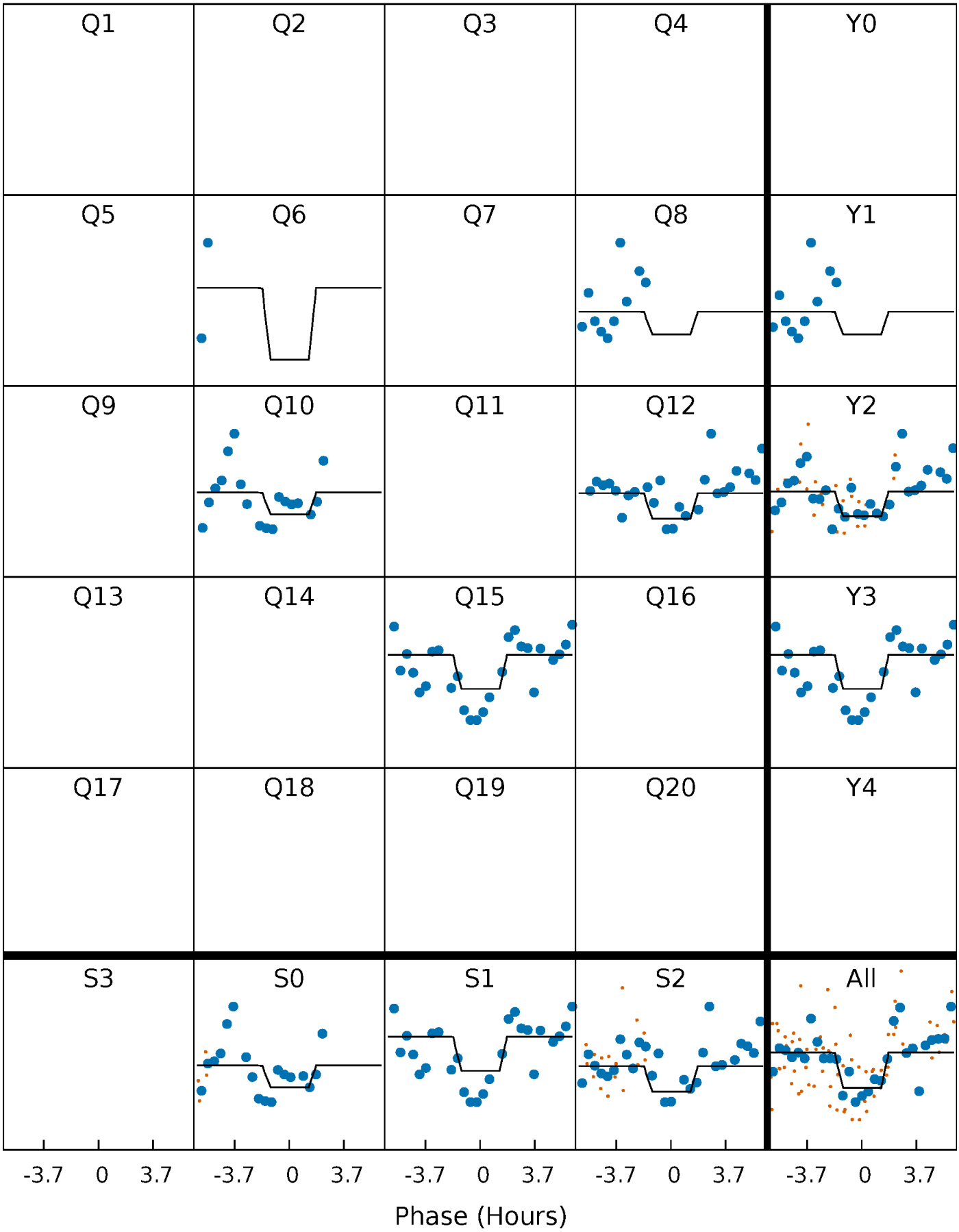
DV Quarter-Phased Transit Curves

TCE 009597218-04 P=205.817690 Days T_0=143.134272 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

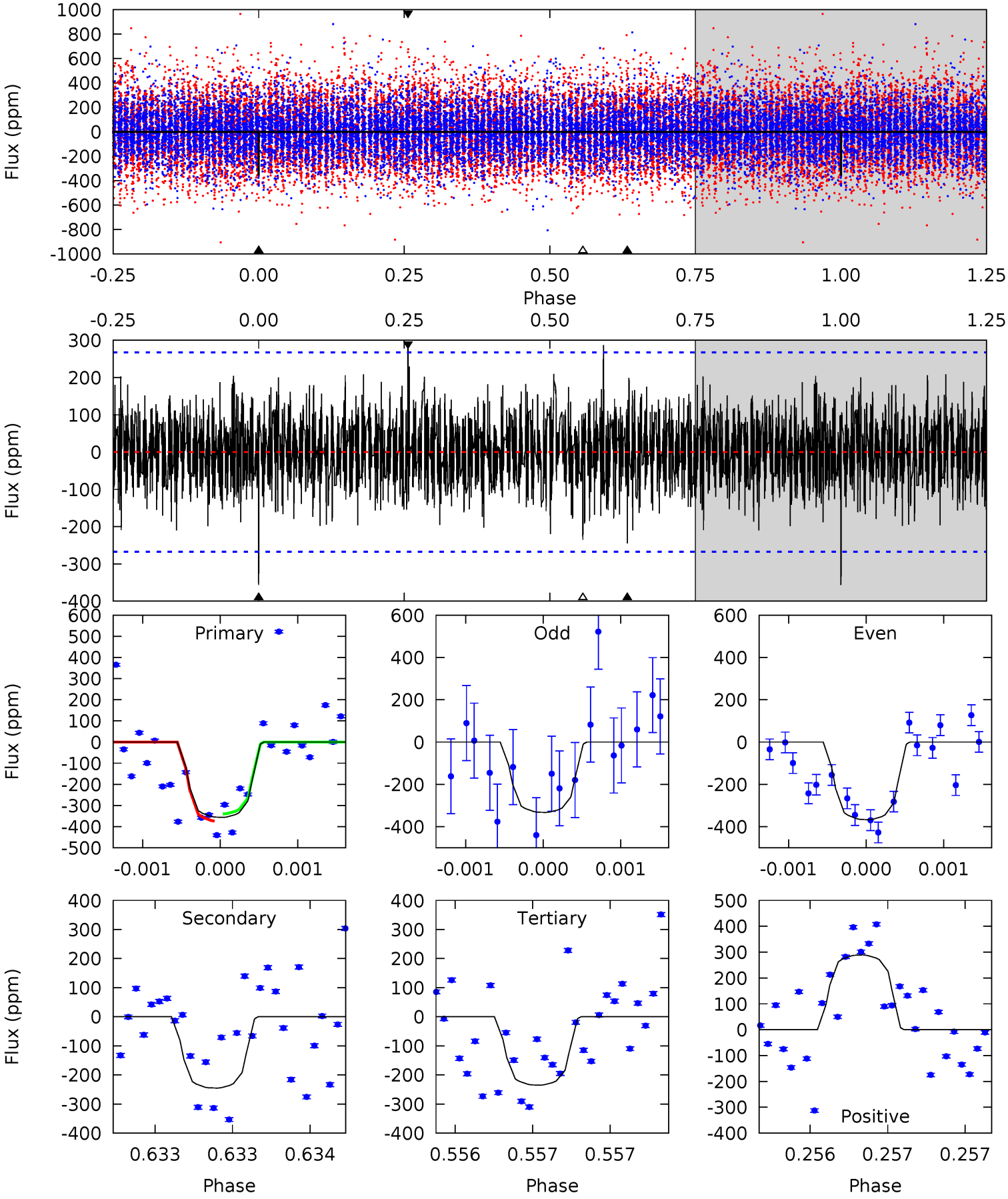
TCE 009597218-04 P=205.826437 Days T_0=143.072118 (BKJD)



DV Model-Shift Uniqueness Test

009597218-04, P = 205.817690 Days, E = 143.134272 Days

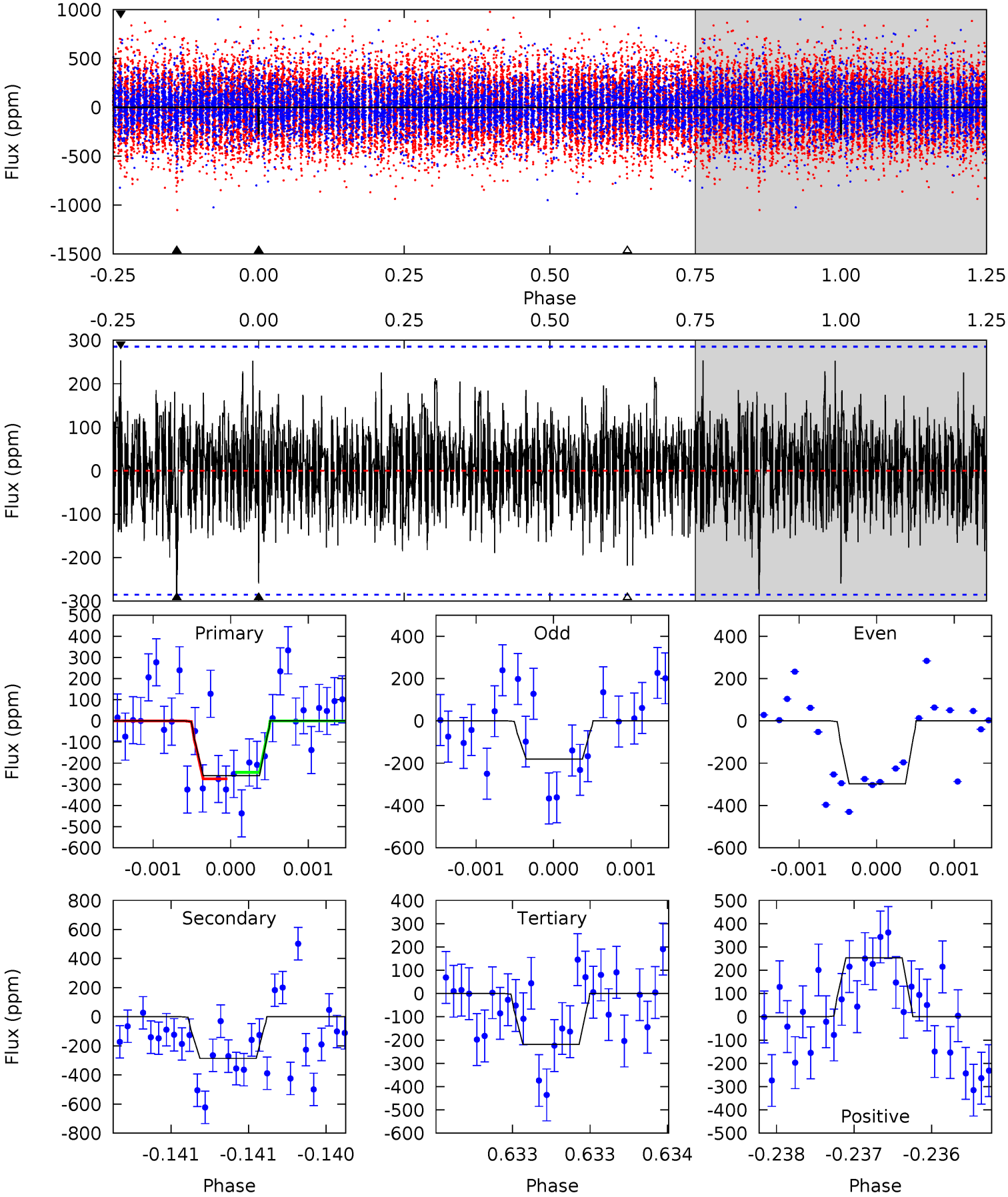
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.37	5.07	4.87	5.98	5.54	3.42	1.39	2.50	1.39	0.21	-0.91	0.33	1.07	0.45	0.34



Alt Model-Shift Uniqueness Test

009597218-04, P = 205.826437 Days, E = 143.072118 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.01	5.53	4.22	4.89	5.51	3.38	1.25	0.79	0.11	1.31	0.64	1.06	1.24	0.47	0.30



Stellar Parameters For KIC 009597218

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7766^{+216}_{-325}	$4.008^{+0.234}_{-0.144}$	$-0.180^{+0.200}_{-0.350}$	$2.137^{+0.447}_{-0.671}$	$1.697^{+0.196}_{-0.319}$	$0.245^{+0.324}_{-0.095}$
	+3%/-4%	+6%/-4%	+111%/-194%	+21%/-31%	+12%/-19%	+132%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009597218-04 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-245±48	$4.83^{+2.81}_{-2.70}$	771^{+52}_{-58}	6579^{+4434}_{-1349}	3868^{+16044}_{-2398}
Alt.	-286±52	$3.84^{+3.03}_{-2.34}$	769^{+55}_{-60}	7655^{+8304}_{-1949}	6933^{+36569}_{-4811}

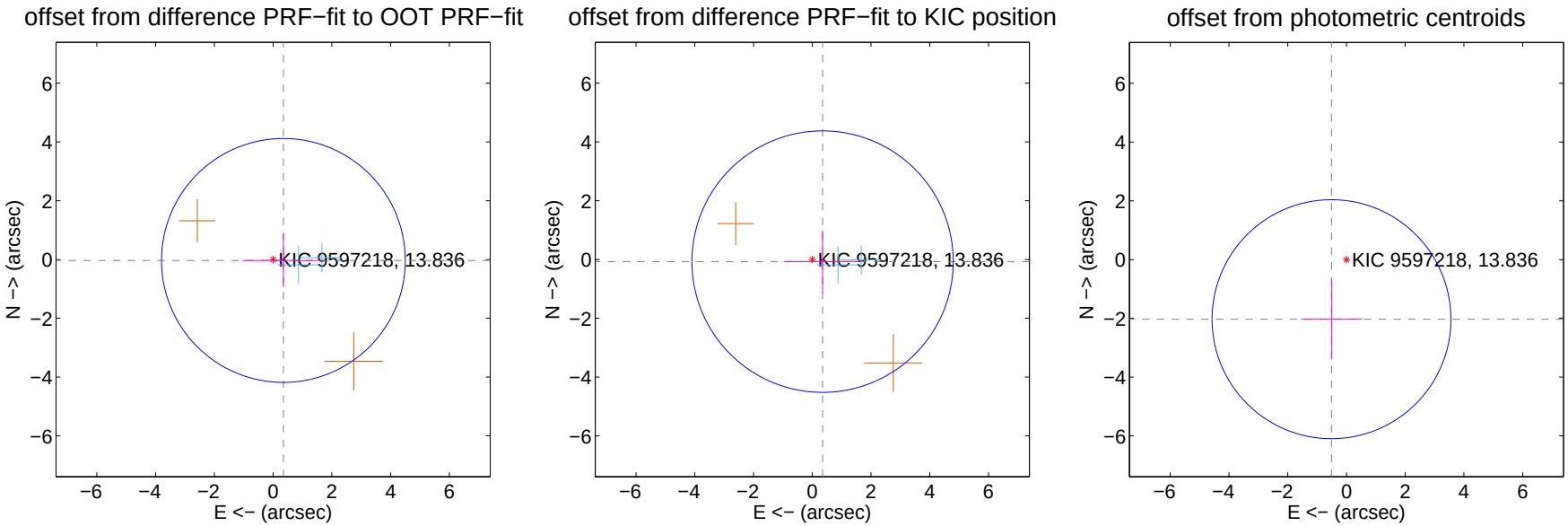
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

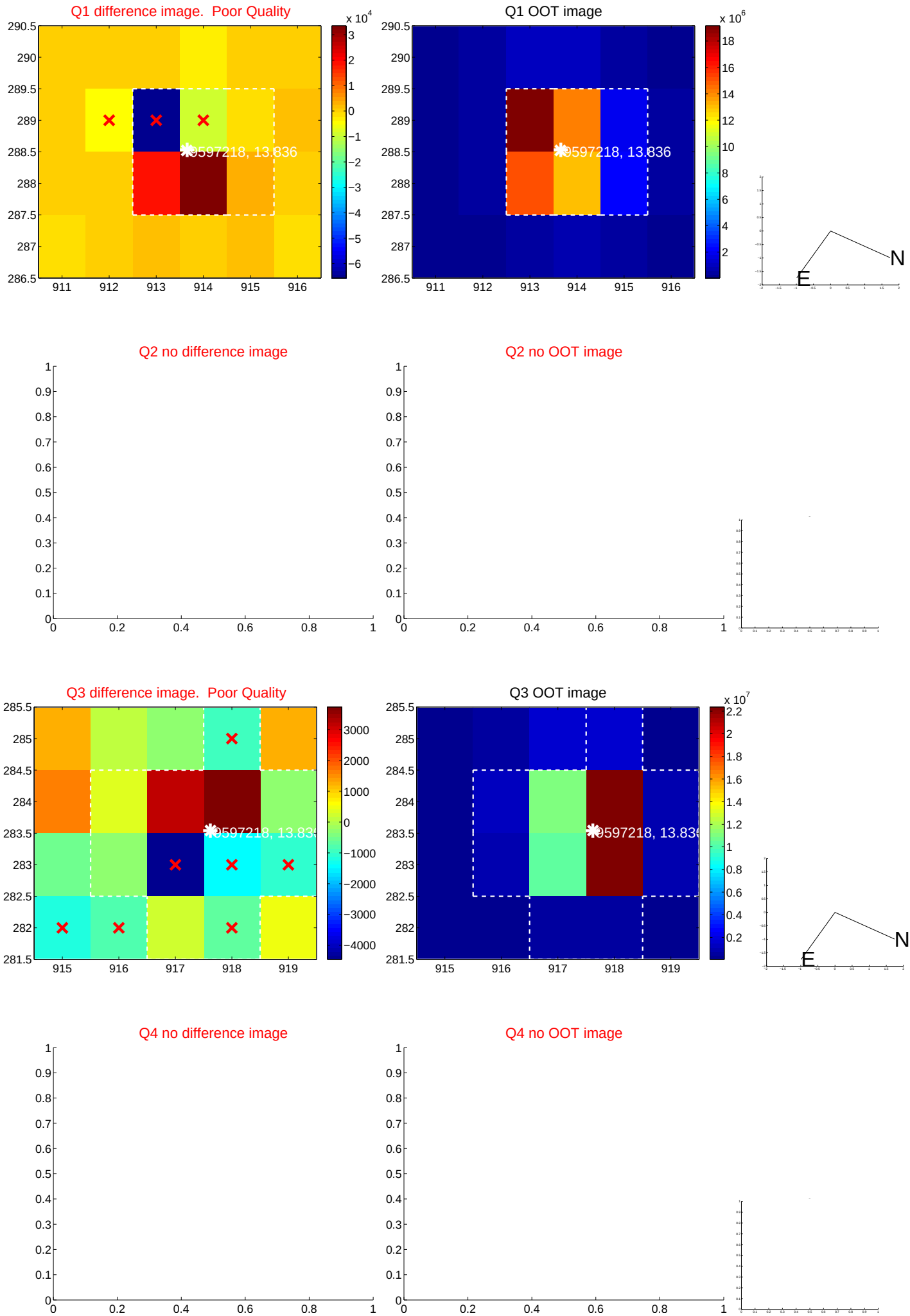
Supplemental centroid analysis for 009597218-04. Kepler magnitude: 13.84. Transit SNR 6.91
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.352 ± 1.383	0.25	-0.351 ± 1.386	-0.032 ± 0.906
PRF-fit source offset from KIC position	0.358 ± 1.483	0.24	-0.351 ± 1.317	-0.072 ± 1.066
photometric centroid source offset	2.09 ± 1.36	1.54	0.51 ± 1.04	-2.03 ± 1.37

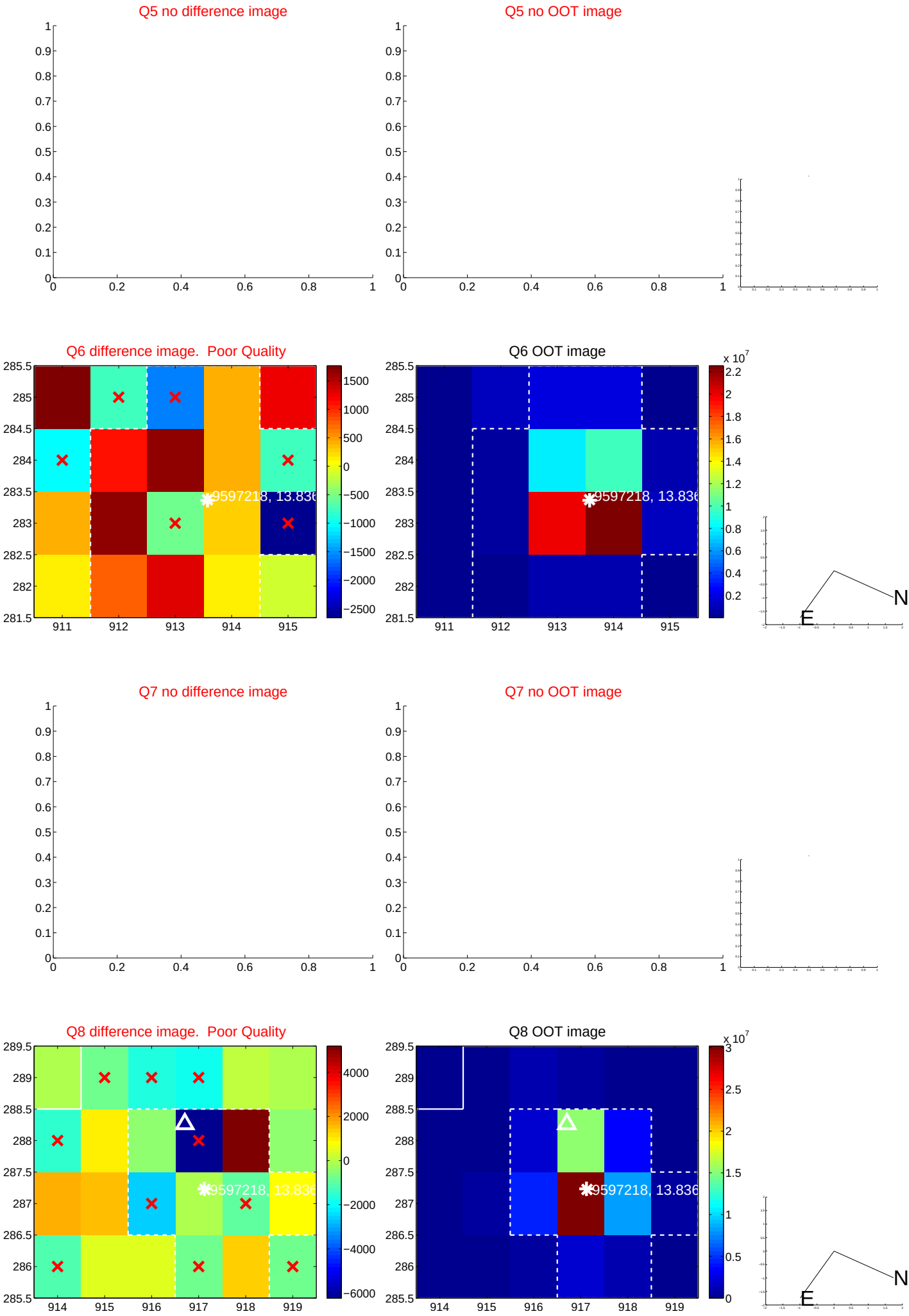


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

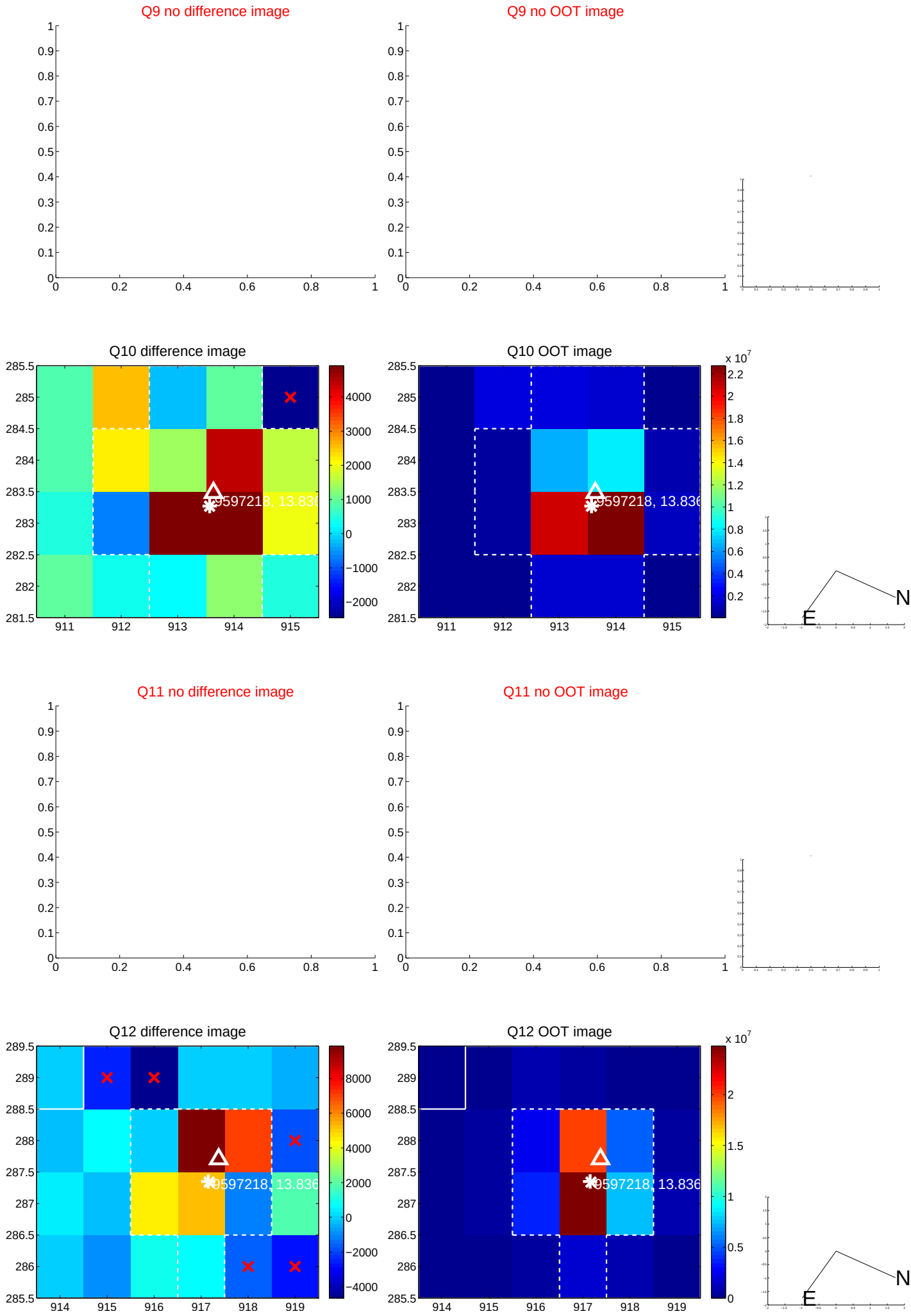
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



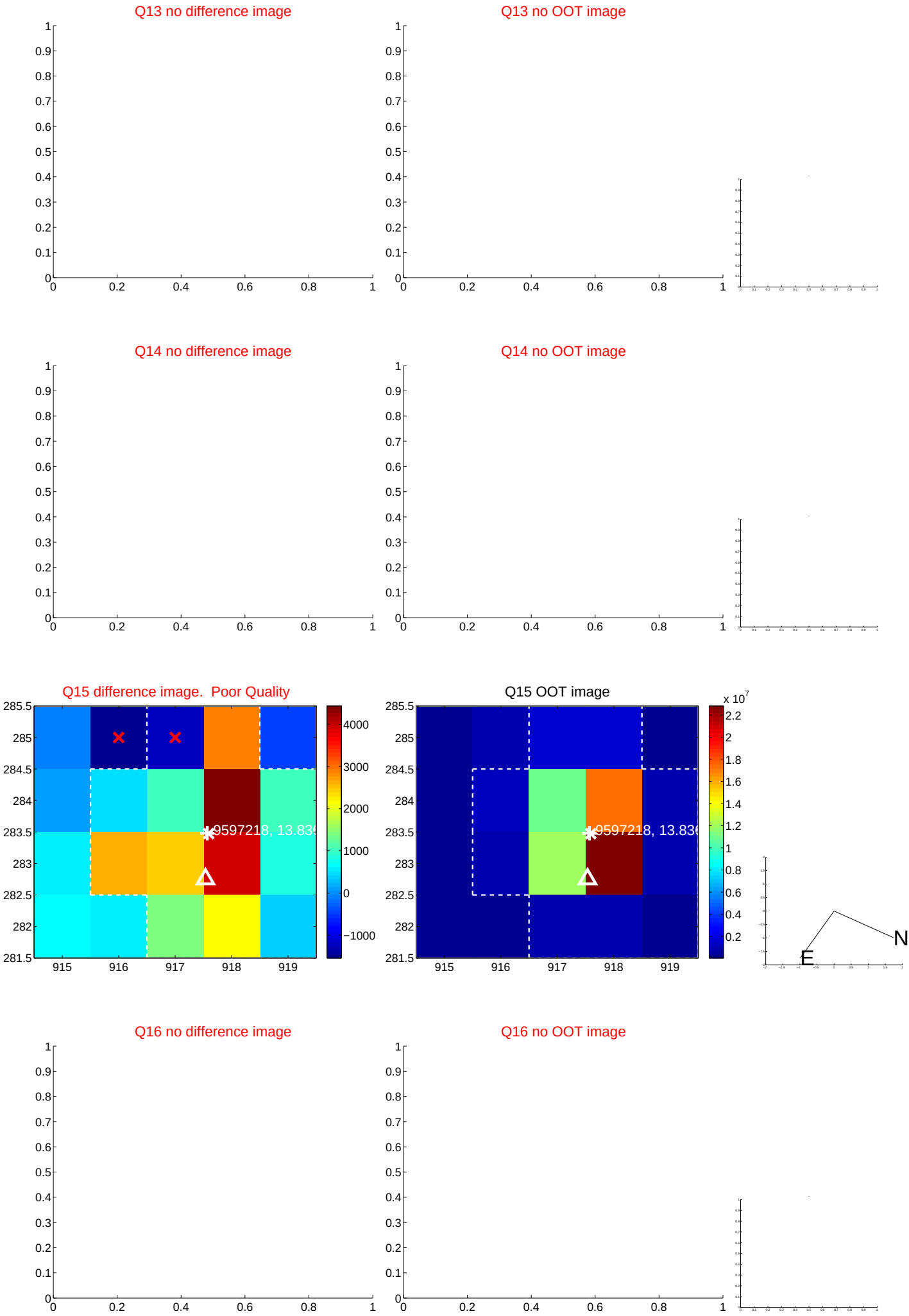
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



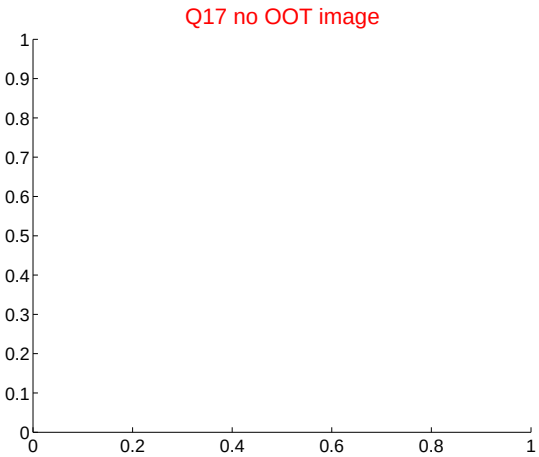
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

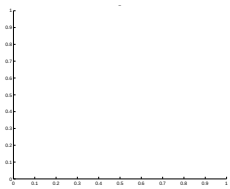


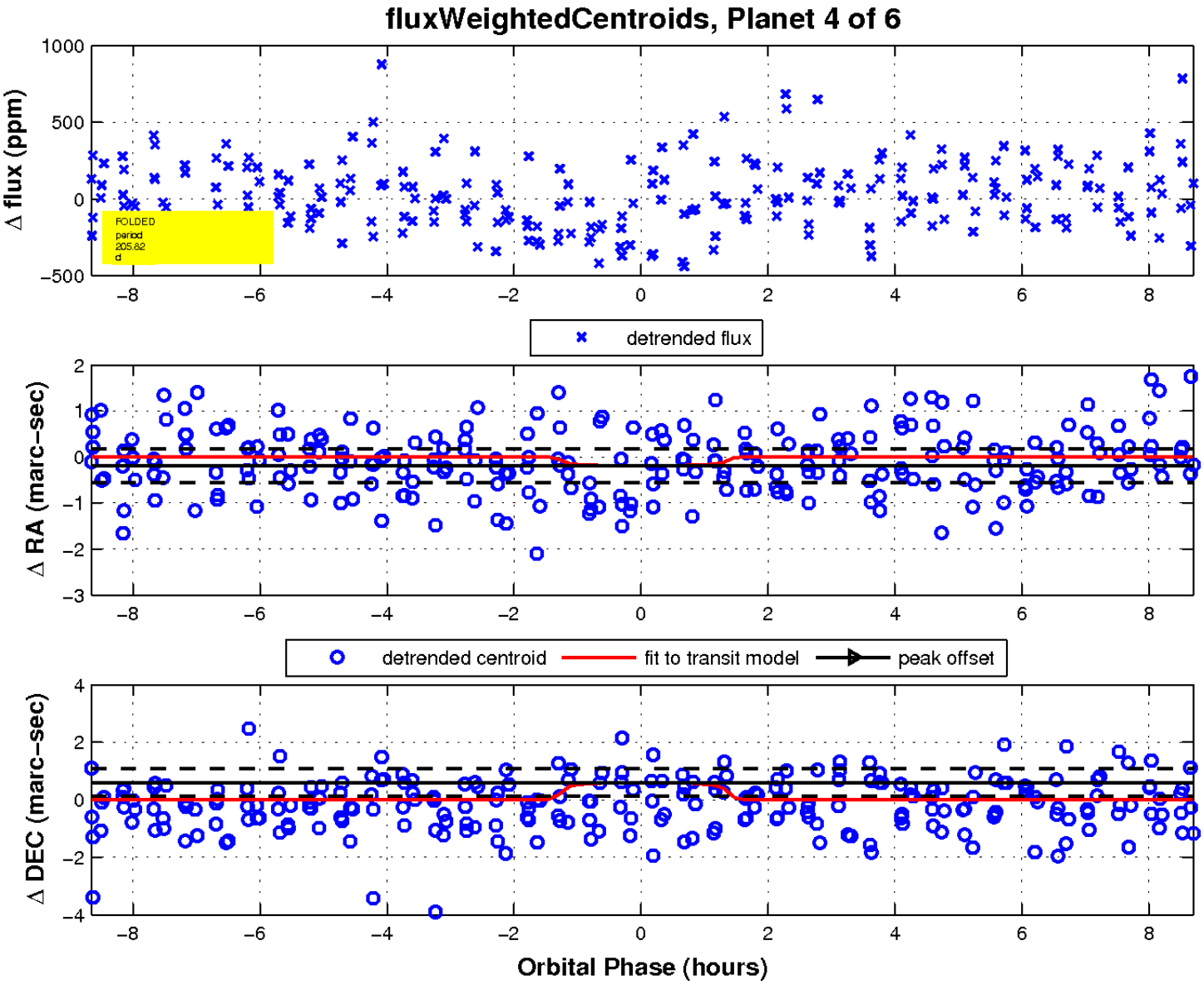
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



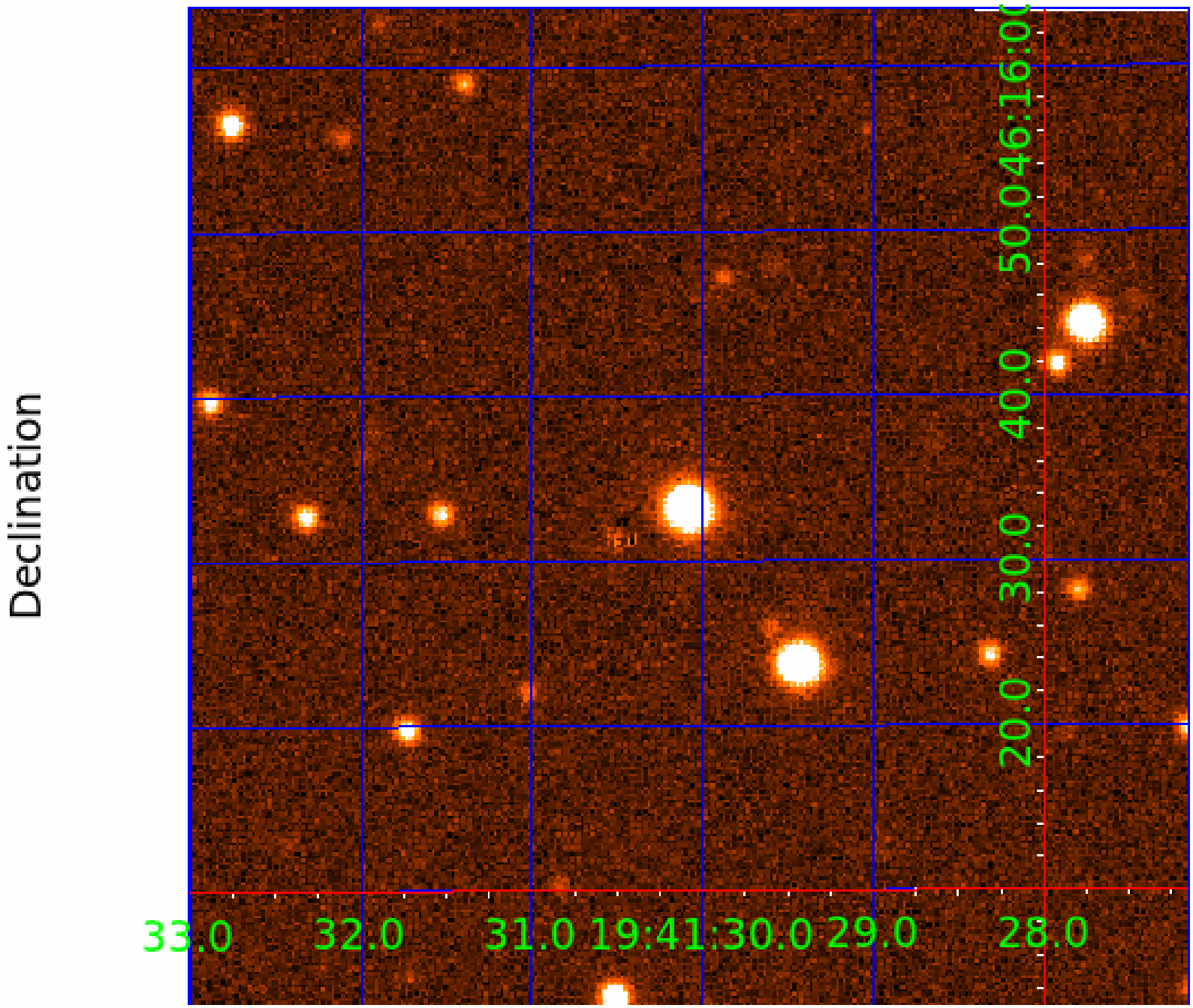
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image


Declination
46:16:0
50.0
40.0
30.0
20.0
33.0
32.0
31.0
19:41:30.0
29.0
28.0

KIC 009597218

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 ($S_\oplus$)
009597218-01	OBS	No	2.214994	132.158399	17.1	11.518	7.8	7.6	2.14	7766	0.89	9456.35
009597218-02	OBS	No	414.359888	208.530144	344.0	3.940	8.5	8.0	2.14	7766	4.57	8.84
009597218-03	OBS	No	140.015459	148.745540	244.3	4.785	7.6	7.4	2.14	7766	3.82	37.55
009597218-04	OBS	No	205.817690	143.134272	347.6	2.938	7.6	6.9	2.14	7766	4.66	22.47
009597218-05	OBS	No	107.503982	146.379079	296.0	3.553	7.7	8.2	2.14	7766	4.12	53.41
009597218-06	OBS	No	120.880547	156.138356	186.6	8.760	7.4	7.1	2.14	7766	3.14	45.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597218-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009597218-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

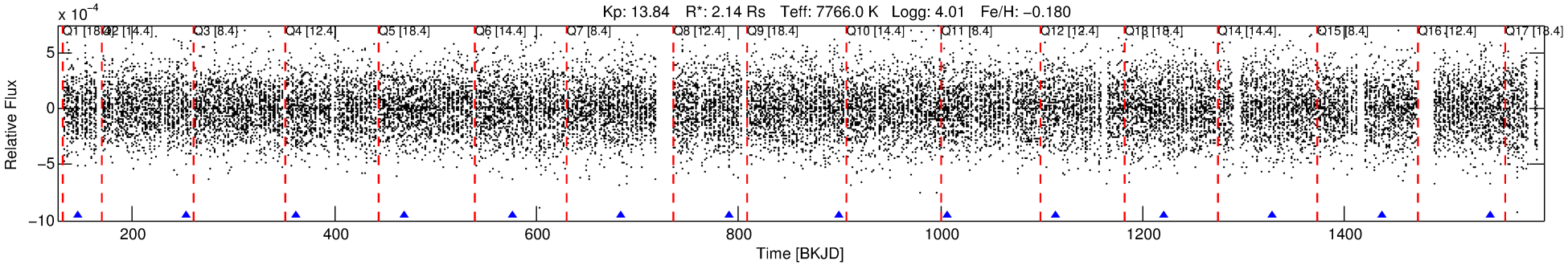
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

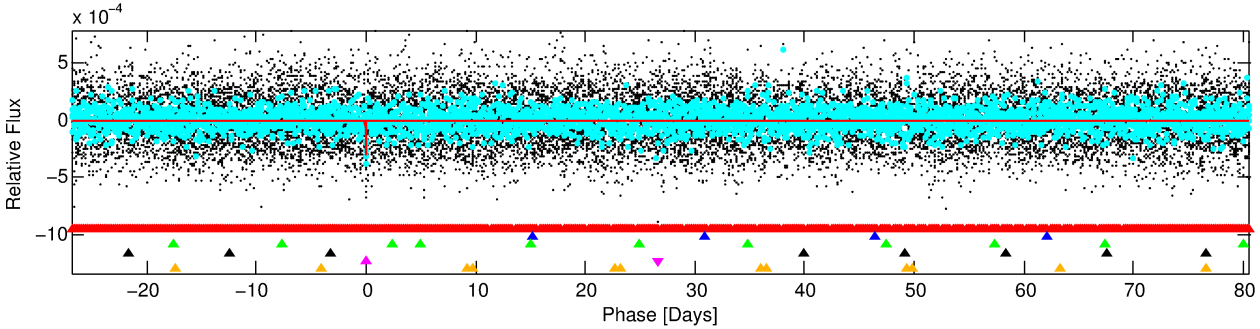
Ephemeris Match Information For 009597218-05

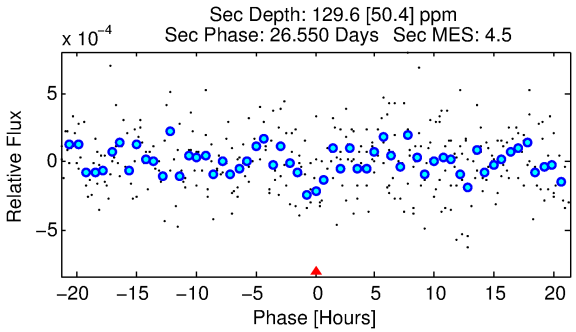
No Significant Match Found

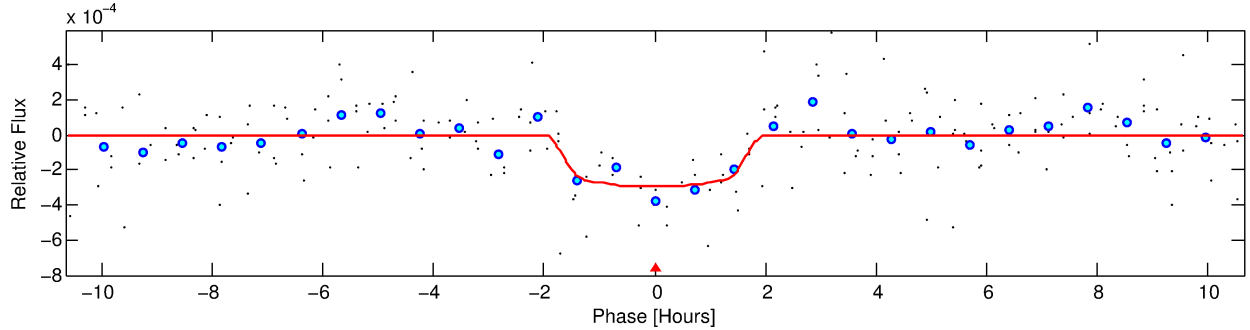
DV One-Page Summary

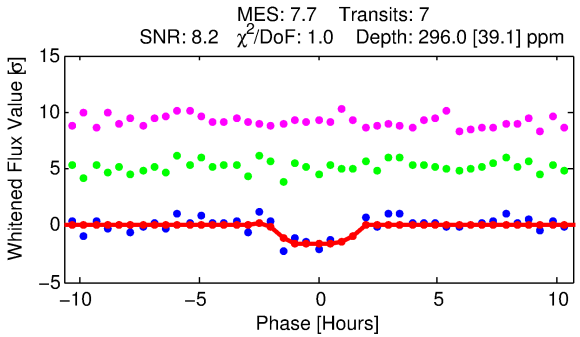
KIC: 9597218 Candidate: 5 of 6 Period: 107.504 d

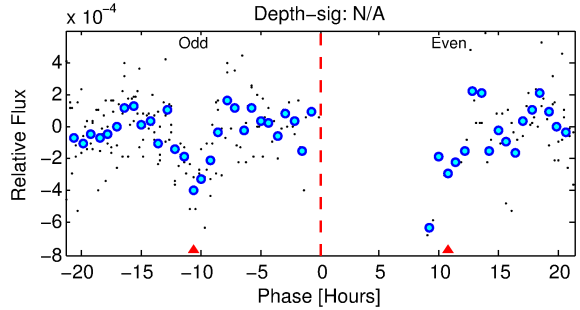


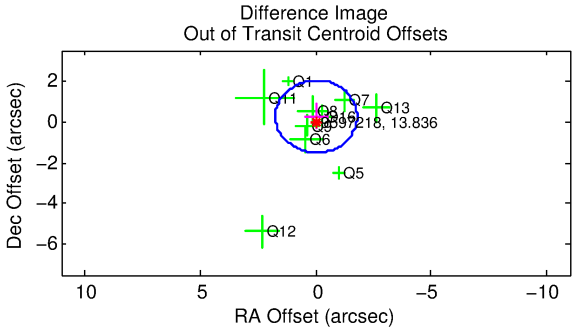












DV Fit Results:

Period = 107.50398 [0.00106] d
Epoch = 146.3791 [0.0069] BKJD
Rp/R* = 0.0176 [0.0124]
a/R* = 136.54 [531.50]
b = 0.83 [1.49]

Seff = 53.41 [23.94]
Teq = 689 [77] K
Rp = 4.12 [3.16] Re
a = 0.5279 [0.1456] AU

Ag = 1172.89 [1773.57] [0.66σ]
Teffp = 6237 [2282] K [2.43σ]

DV Diagnostic Results:

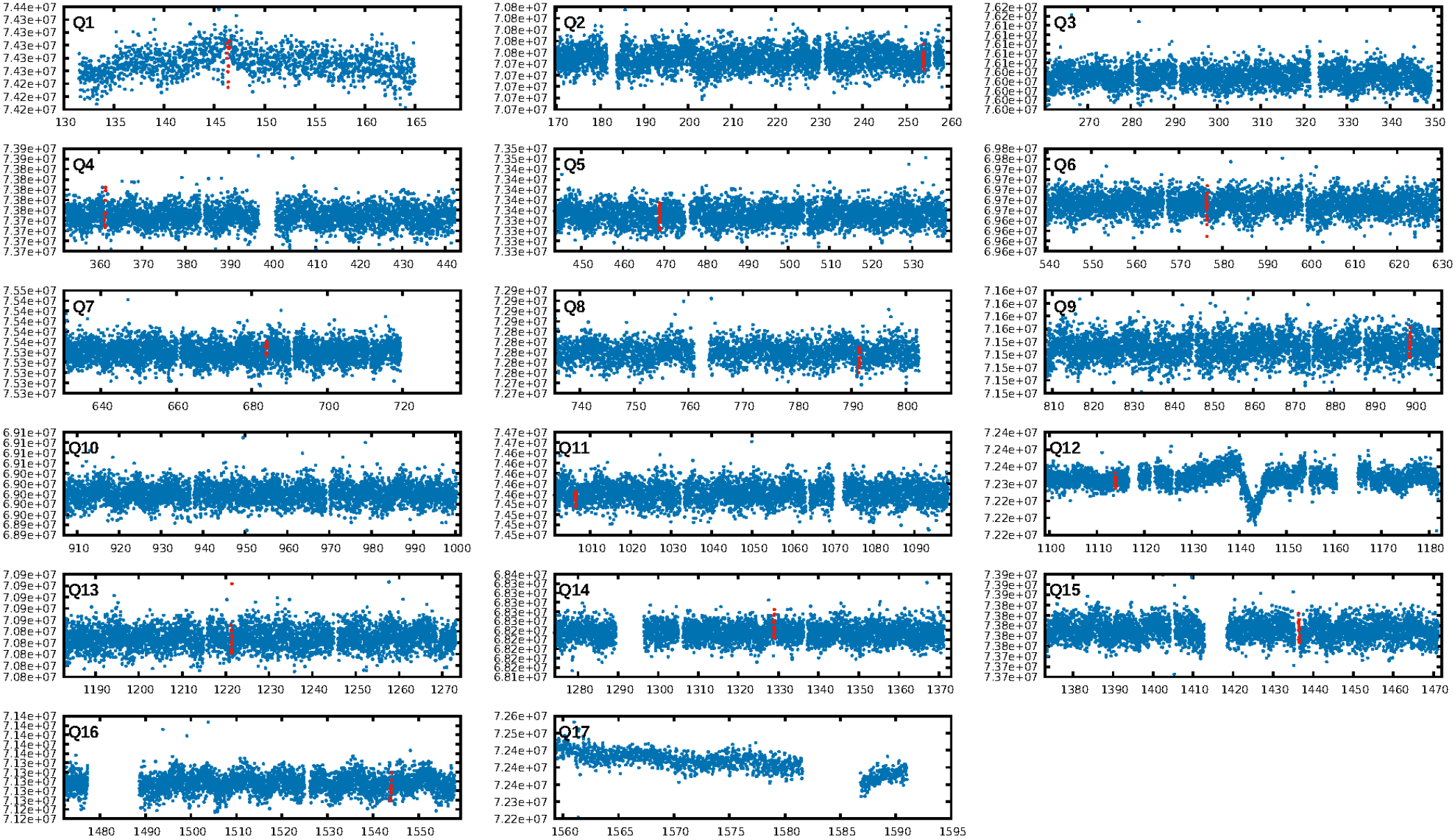
ShortPeriod−sig: 100.0% [209.64σ]
LongPeriod−sig: 100.0% [33.96σ]
ModelChiSquare2−sig: 47.1%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 8.96e−09
RollingBand−fgt: 1.00 [6/6]
GhostDiagnostic−chr: 0.3479

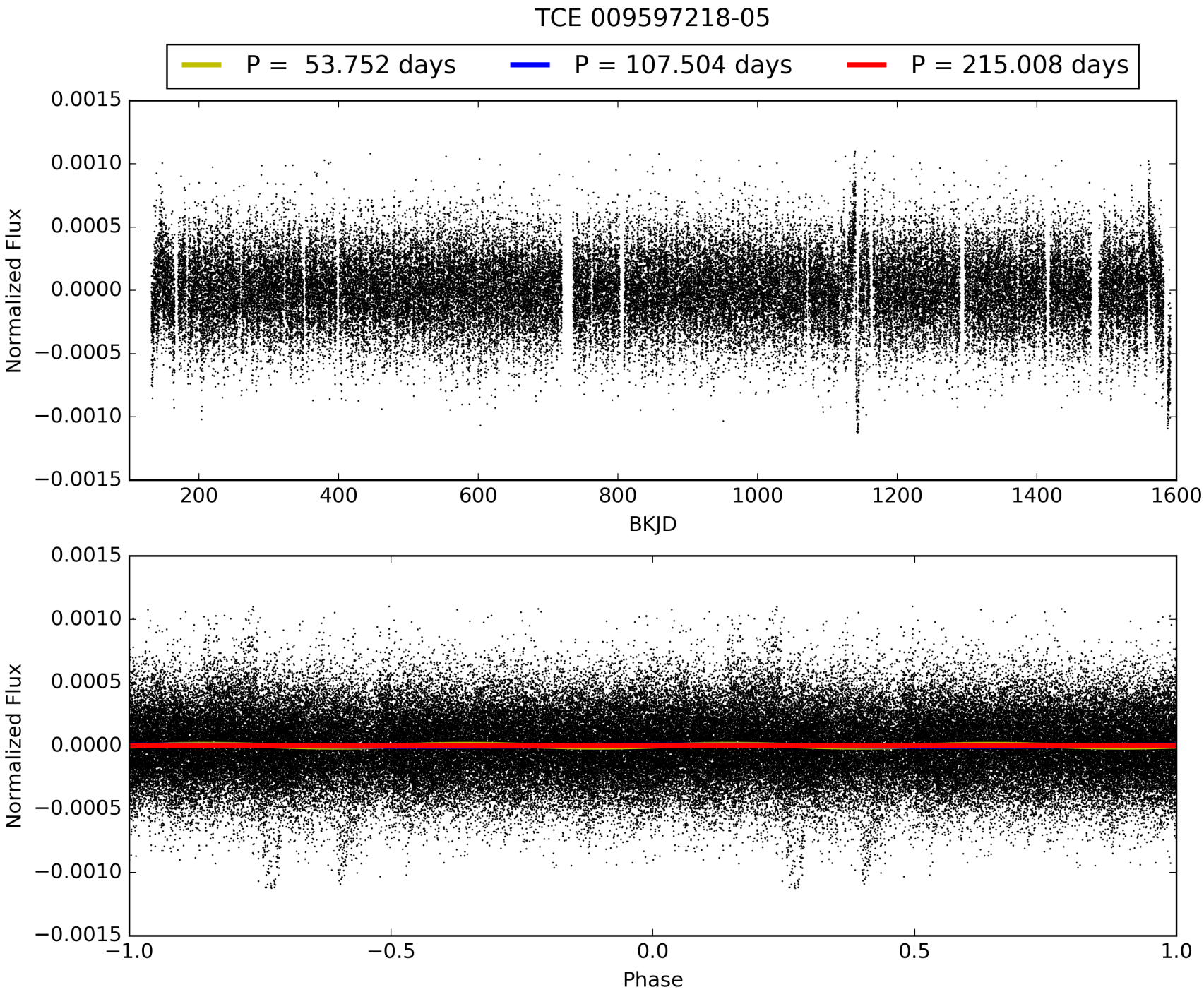
Centroid−sig: 2.1%
Centroid−so: 1.338 arcsec [1.31σ]
OotOffset−rm: 0.264 arcsec [0.45σ]
KicOffset−rm: 0.248 arcsec [0.40σ]
OotOffset−st: 1/2/3/4 [10]
KicOffset−st: 1/2/3/4 [10]
DiffImageQuality−fgm: 0.40 [4/10]
DiffImageOverlap−fno: 0.54 [7/13]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 −− Date Generated: 31−Jan−2016 15:41:47 Z

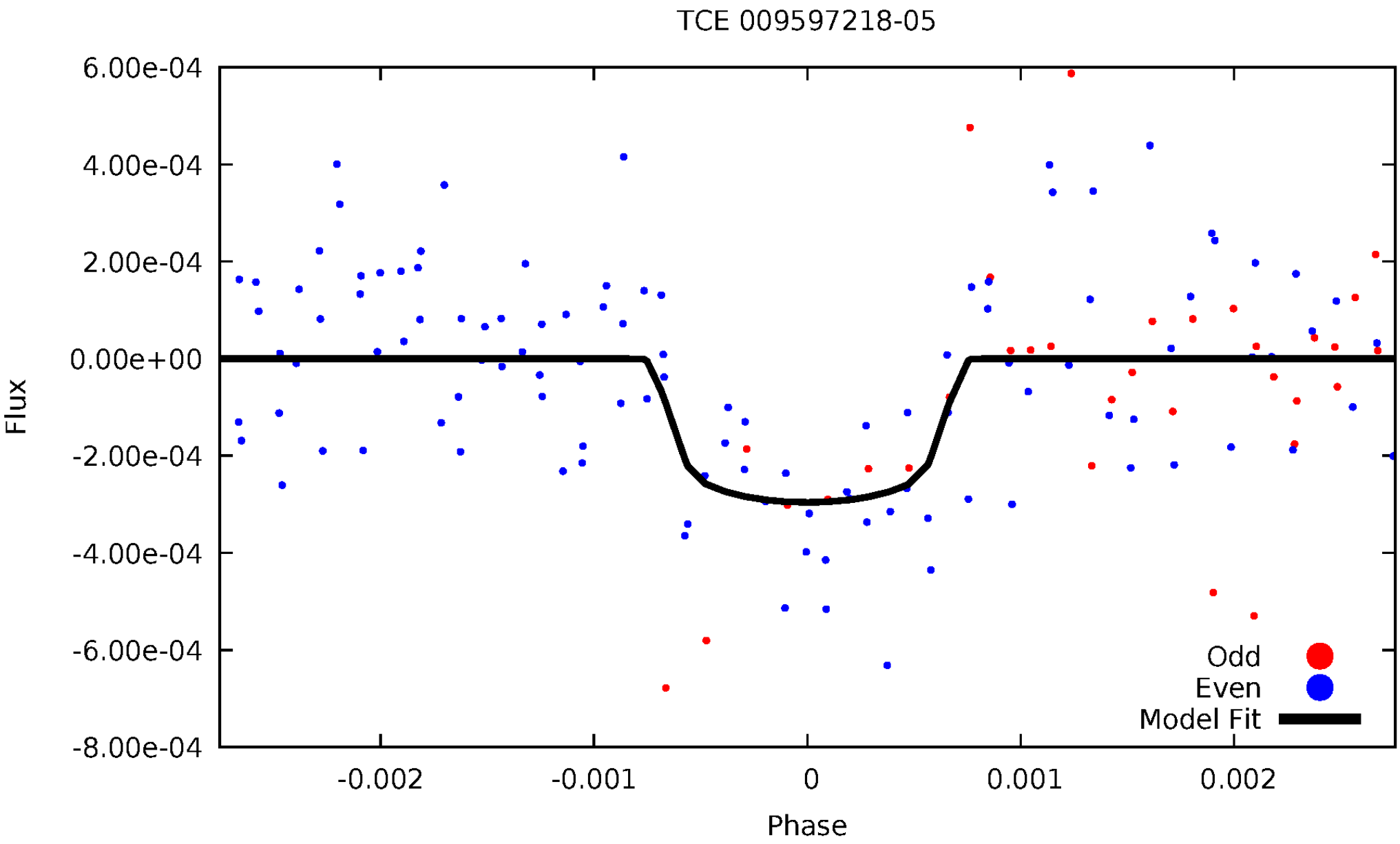
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009597218-05, PDC Light Curves

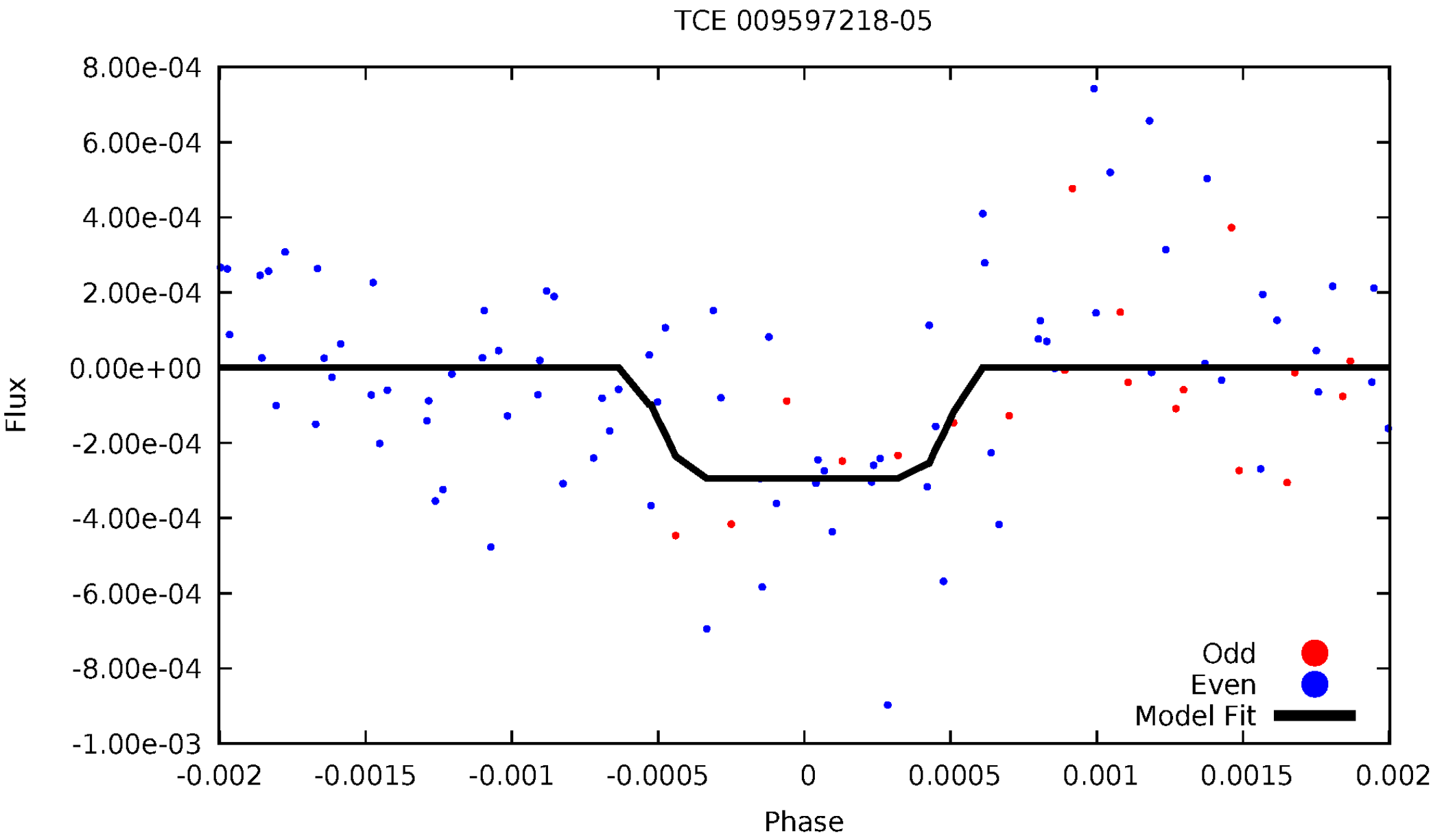



TCE 009597218-05
P = 53.752 days
P = 107.504 days
P = 215.008 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

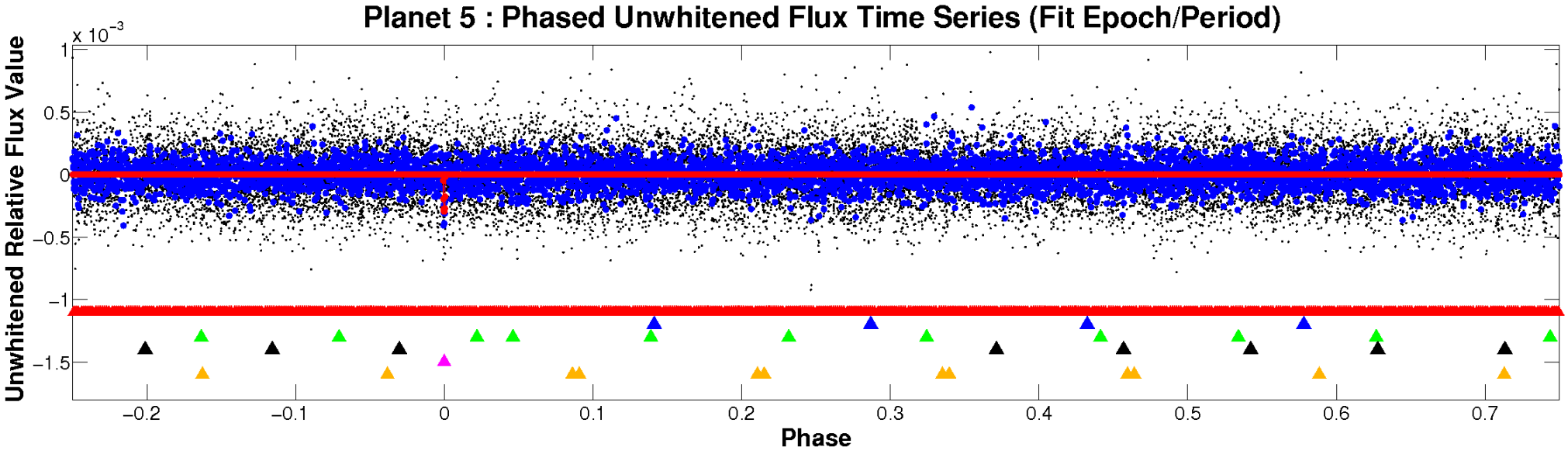
DV Odd/Even

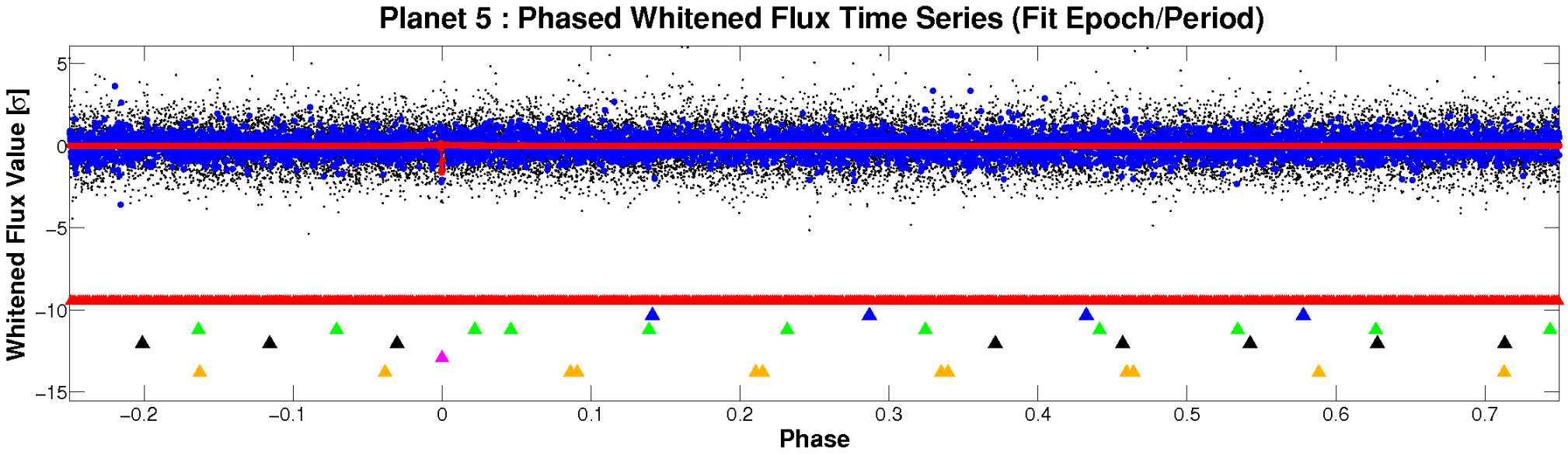

TCE 009597218-05
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.002
-0.001
0
0.001
0.002
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009597218-05
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
Flux
-0.002
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
0.002
Phase
Odd
Even
Model Fit

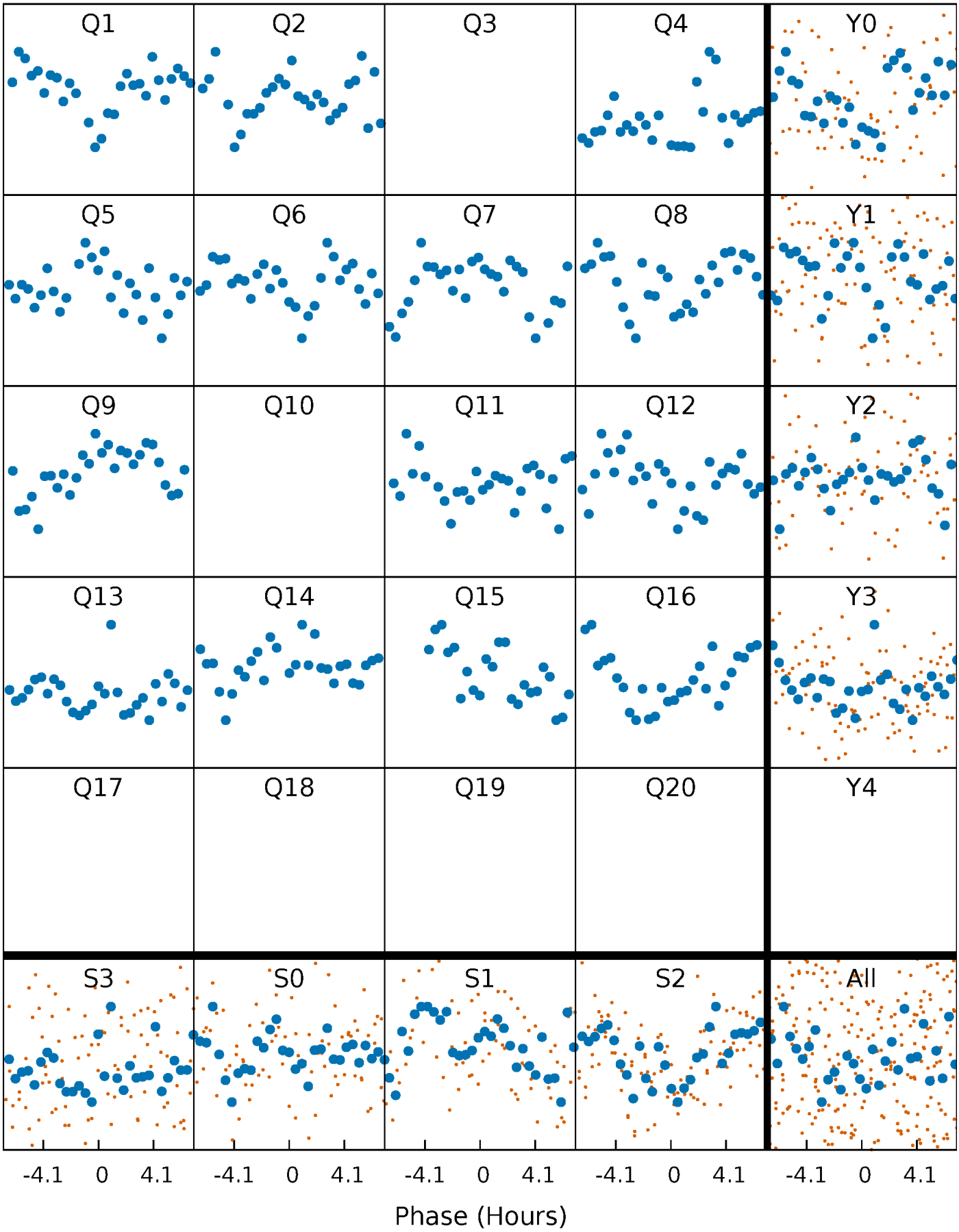
Non-Whitened Vs. Whitened Light Curve





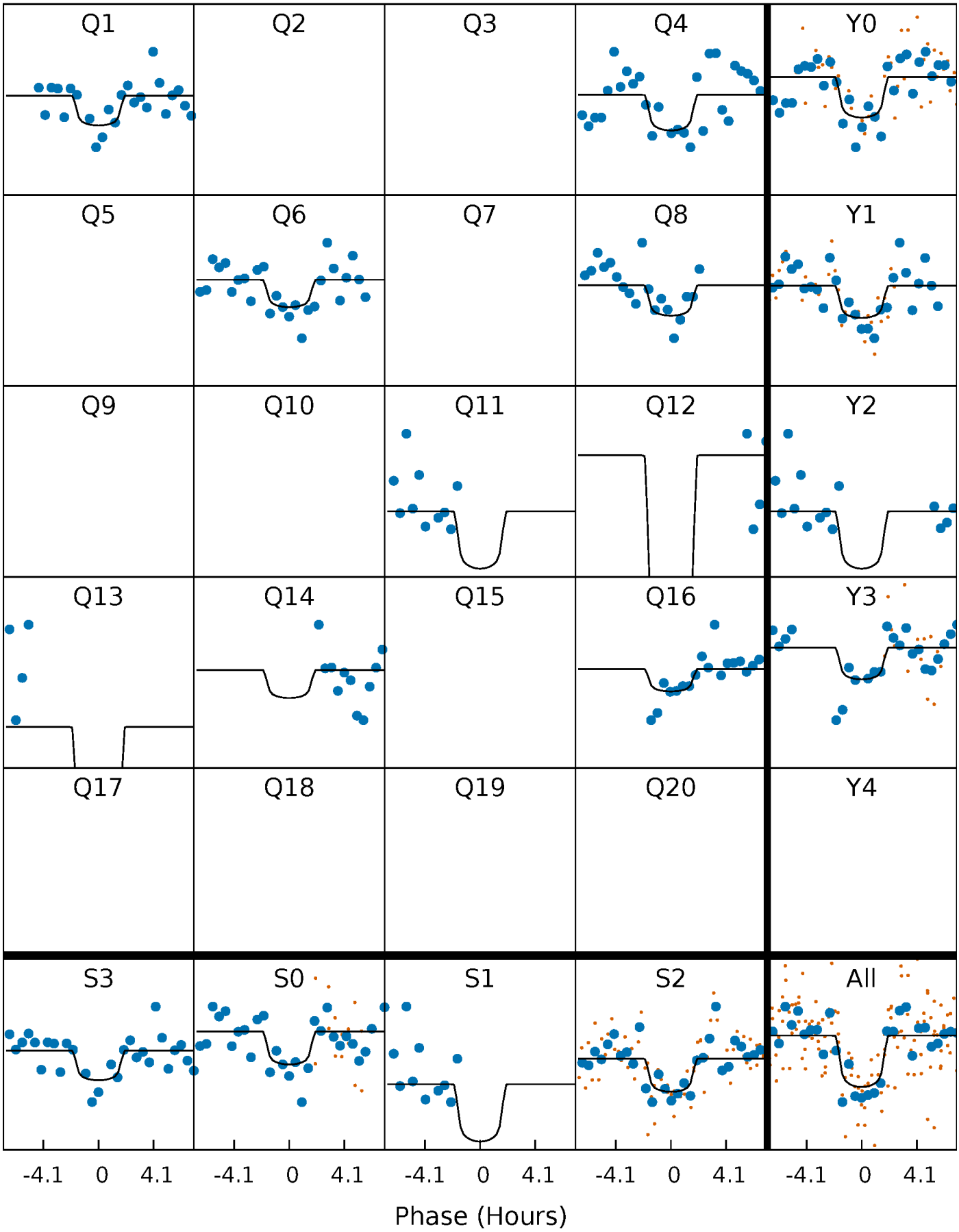
PDC Quarter-Phased Transit Curves

TCE 009597218-05 P=107.503983 Days T_0=146.379079 (BKJD)



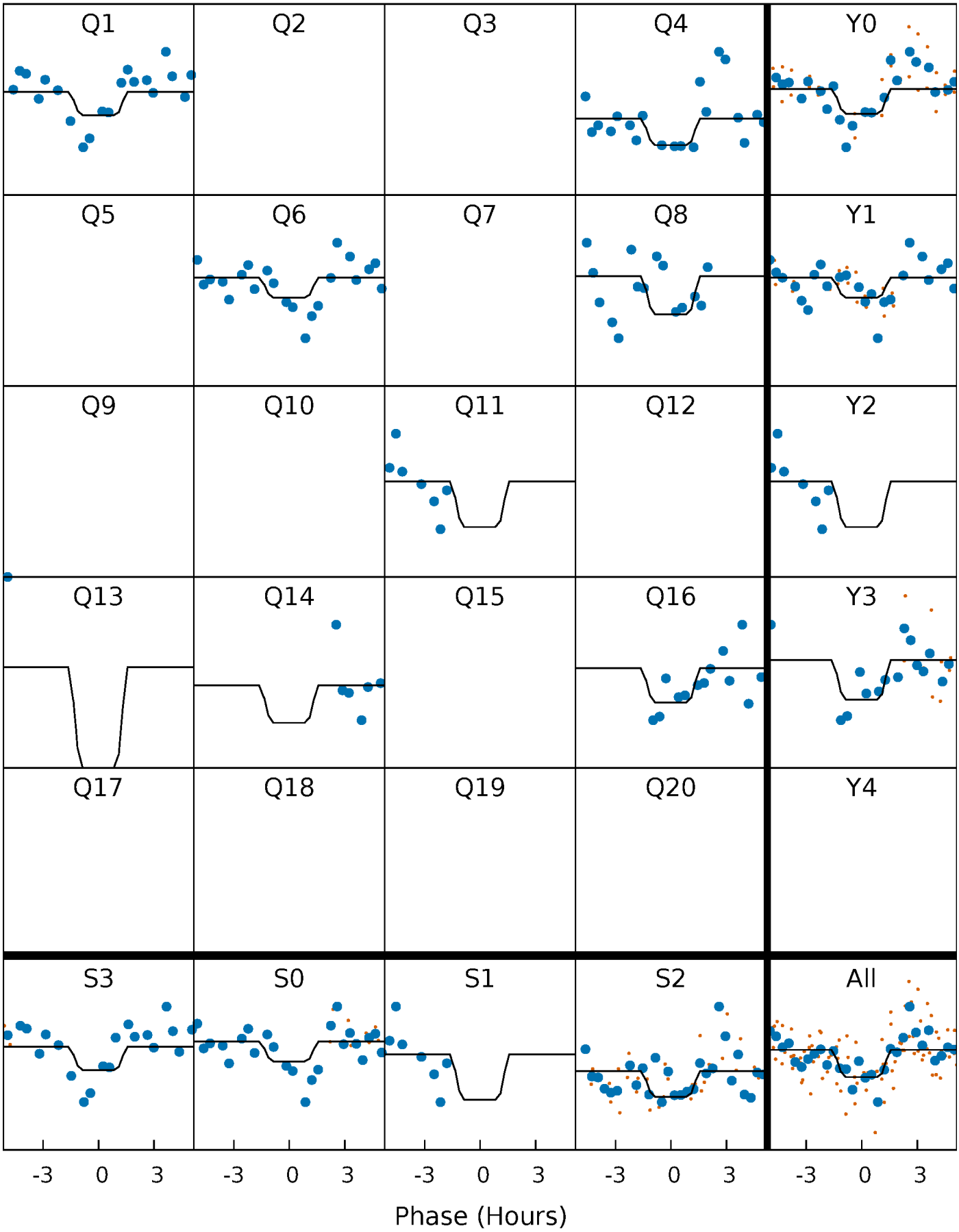
DV Quarter-Phased Transit Curves

TCE 009597218-05 P=107.503983 Days T_0=146.379079 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

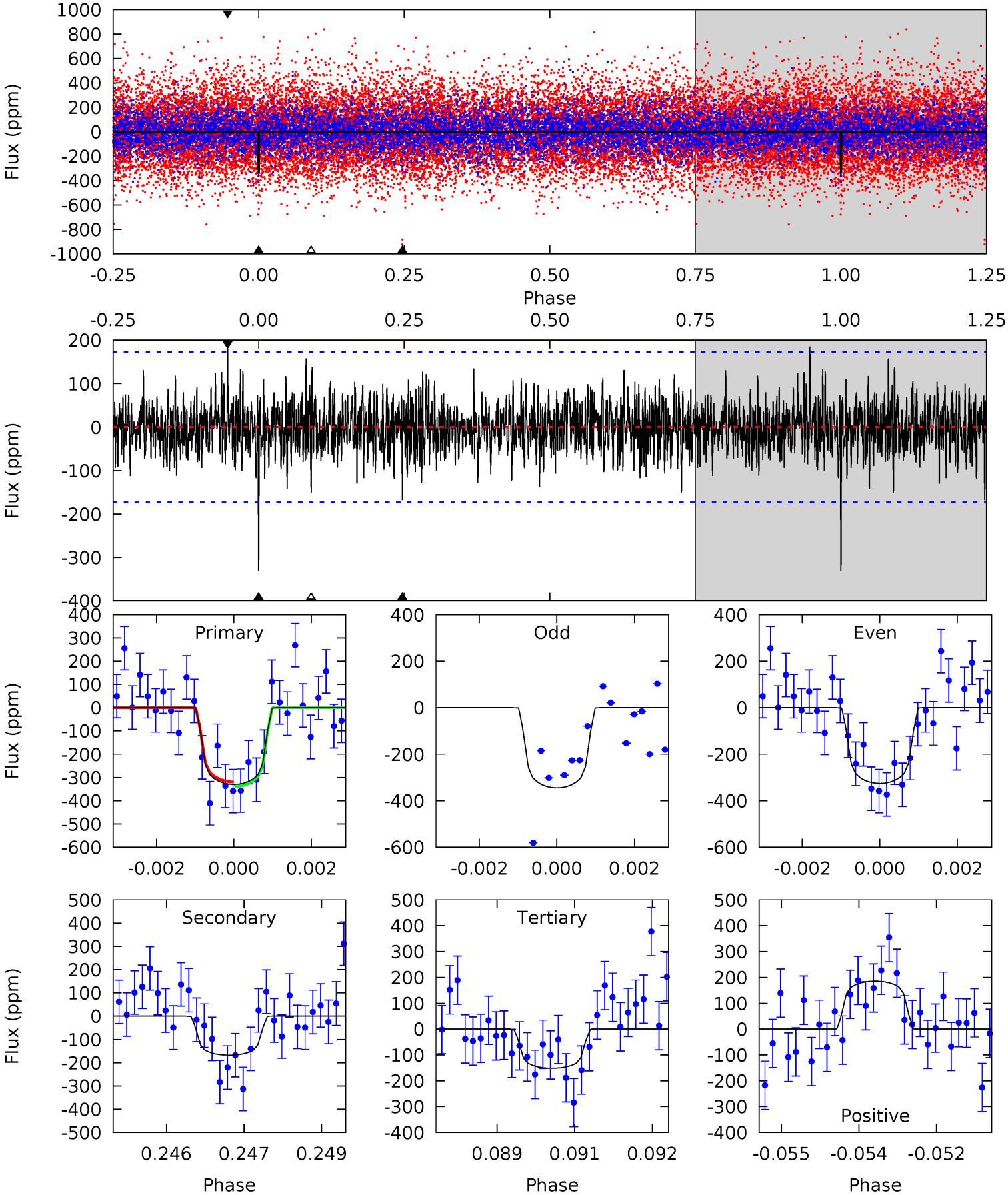
TCE 009597218-05 P=107.500241 Days T_0=146.403635 (BKJD)



DV Model-Shift Uniqueness Test

009597218-05, P = 107.503983 Days, E = 38.875096 Days

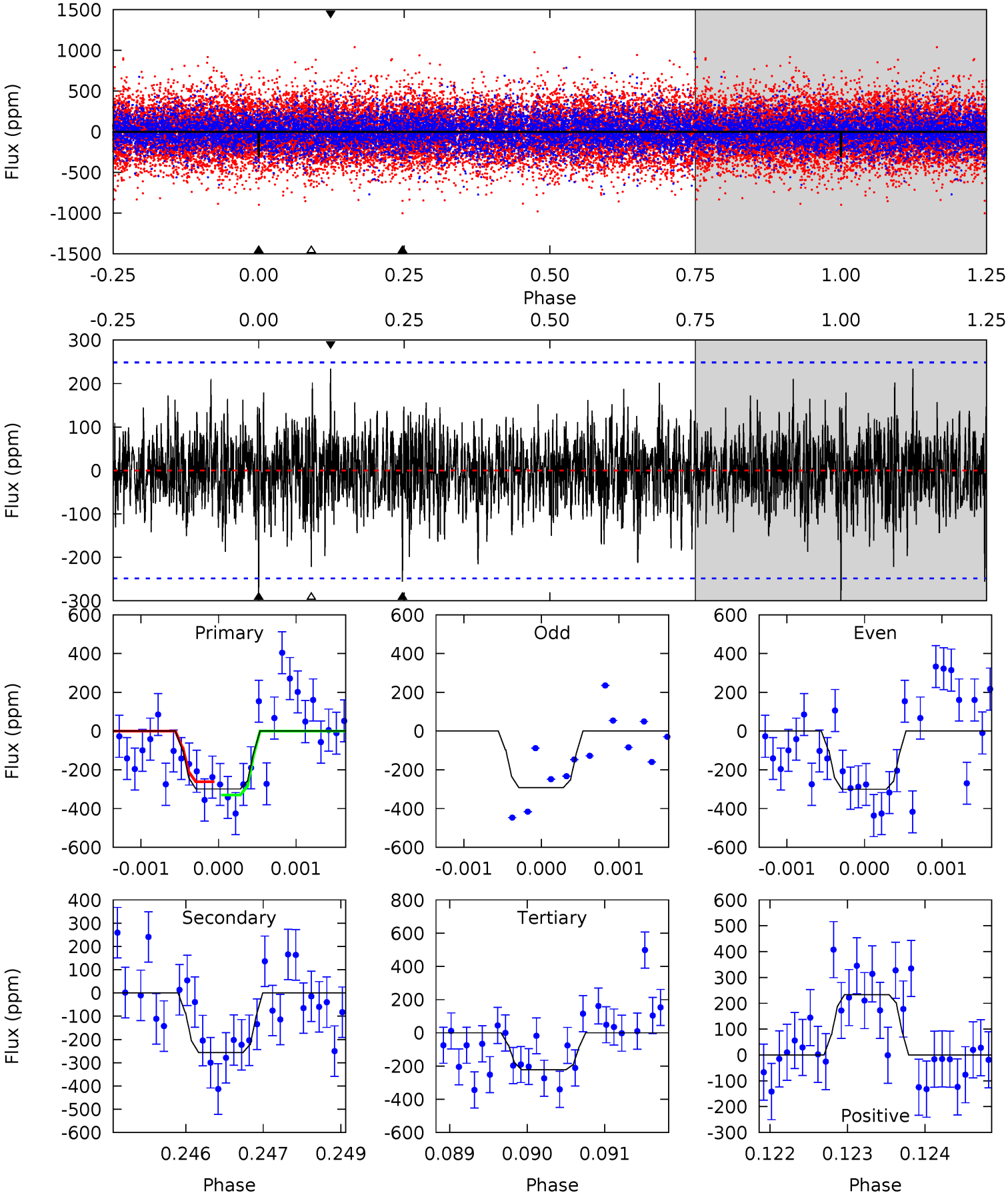
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	5.21	4.71	5.76	5.37	3.17	1.43	5.54	4.49	0.50	-0.55	0.25	1.01	0.36	0.31



Alt Model-Shift Uniqueness Test

009597218-05, P = 107.500241 Days, E = 38.903394 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.53	5.59	4.85	5.10	5.43	3.25	1.33	1.68	1.42	0.74	0.48	0.08	0.99	0.44	0.74



Stellar Parameters For KIC 009597218

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7766^{+216}_{-325}	$4.008^{+0.234}_{-0.144}$	$-0.180^{+0.200}_{-0.350}$	$2.137^{+0.447}_{-0.671}$	$1.697^{+0.196}_{-0.319}$	$0.245^{+0.324}_{-0.095}$
	+3%/-4%	+6%/-4%	+111%/-194%	+21%/-31%	+12%/-19%	+132%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009597218-05 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-168±32	$4.06^{+3.18}_{-2.35}$	953^{+60}_{-73}	6251^{+4665}_{-1318}	1474^{+7027}_{-1009}
Alt.	-256±46	$4.07^{+2.95}_{-2.20}$	954^{+60}_{-73}	7267^{+4817}_{-1781}	2371^{+8942}_{-1566}

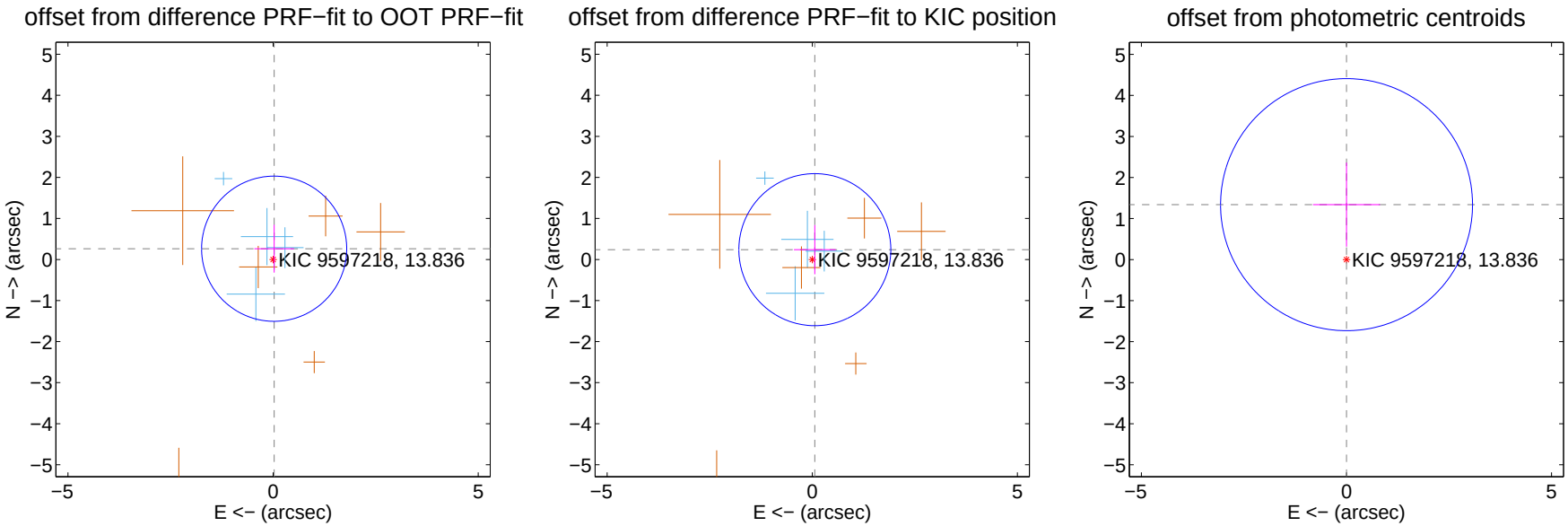
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

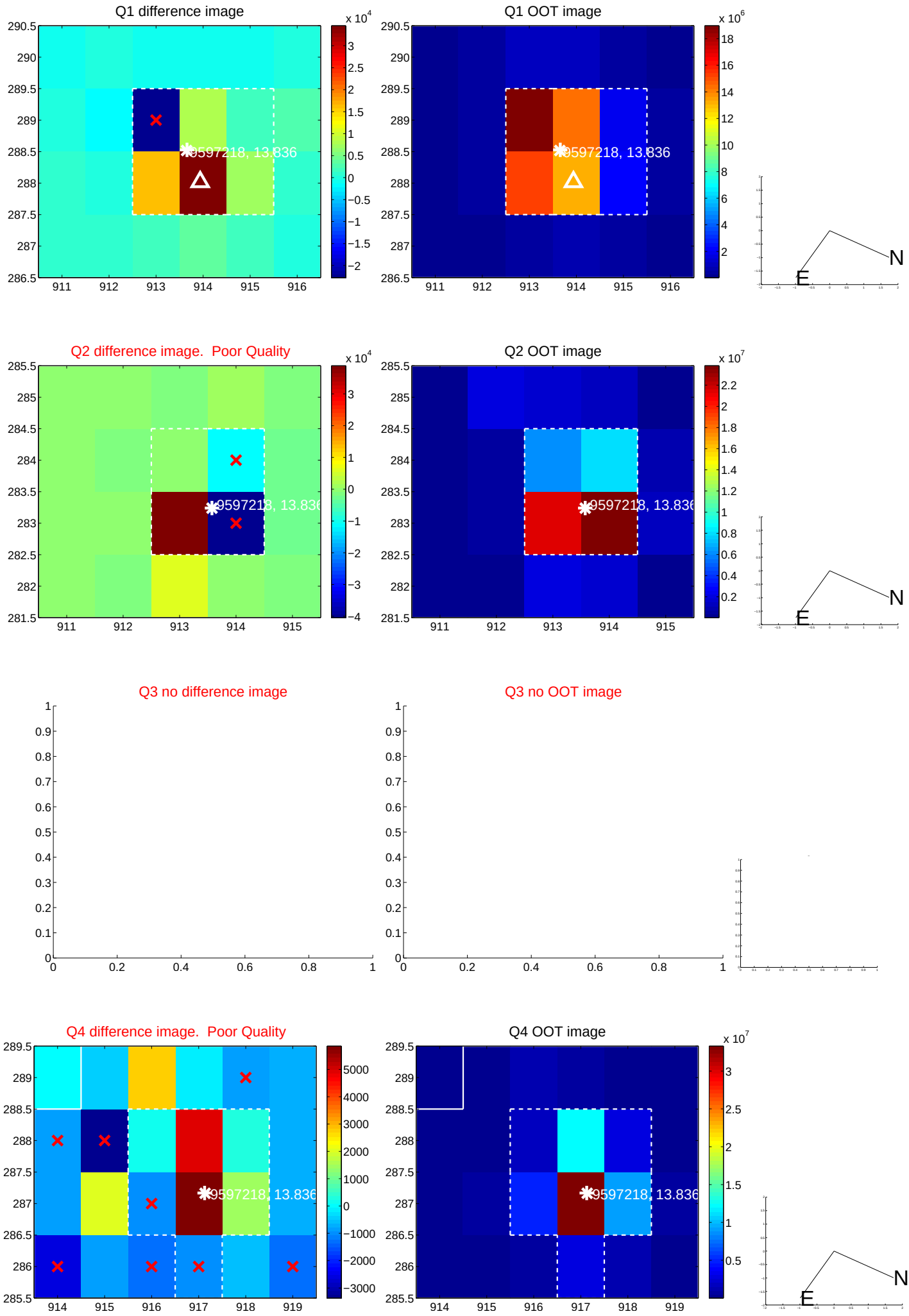
Supplemental centroid analysis for 009597218-05. Kepler magnitude: 13.84. Transit SNR 8.22
There are 4 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.264 ± 0.589	0.45	-0.026 ± 0.483	0.263 ± 0.583
PRF-fit source offset from KIC position	0.248 ± 0.617	0.40	-0.062 ± 0.510	0.239 ± 0.598
photometric centroid source offset	1.34 ± 1.02	1.31	-0.00 ± 0.82	1.34 ± 1.02

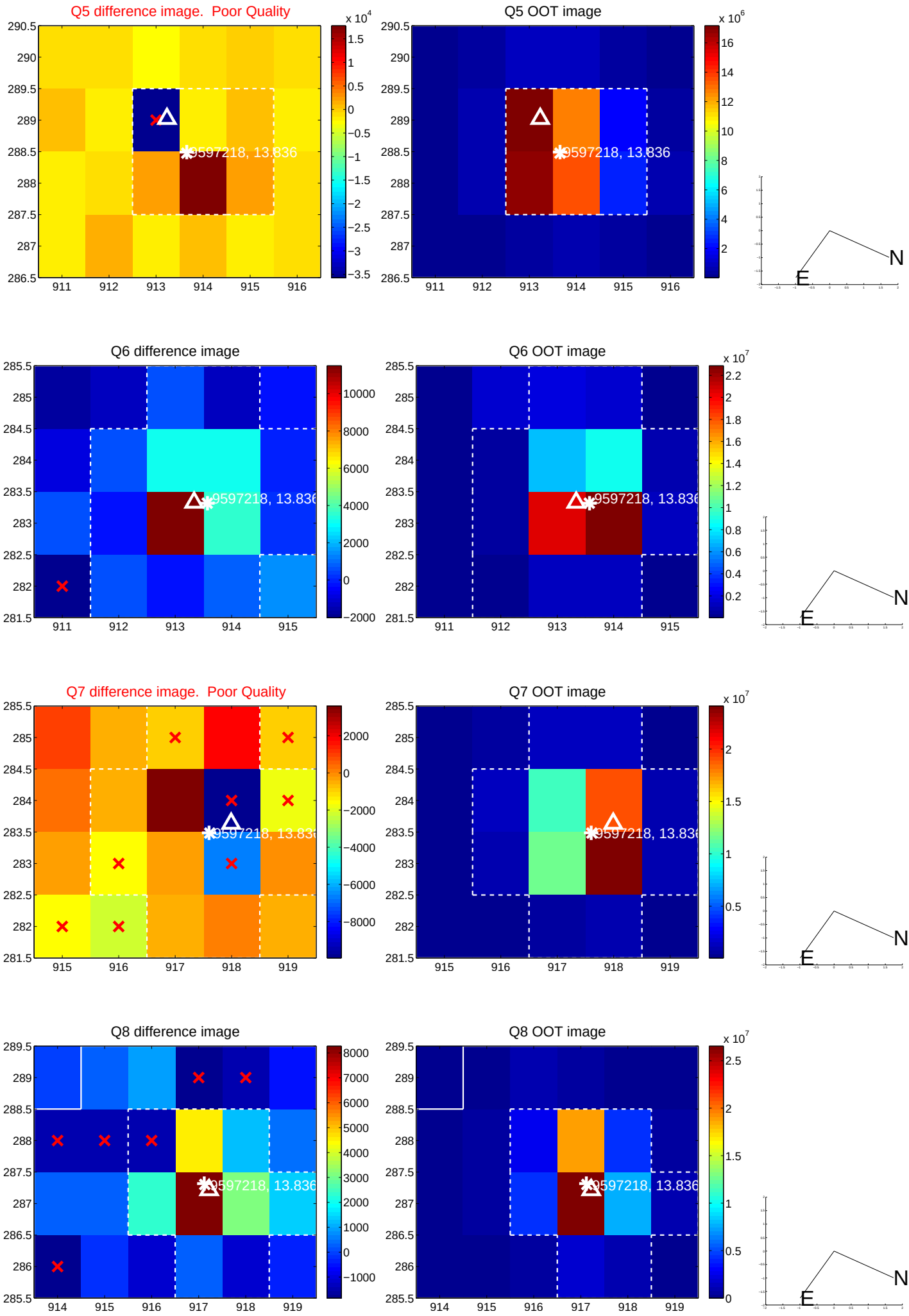


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

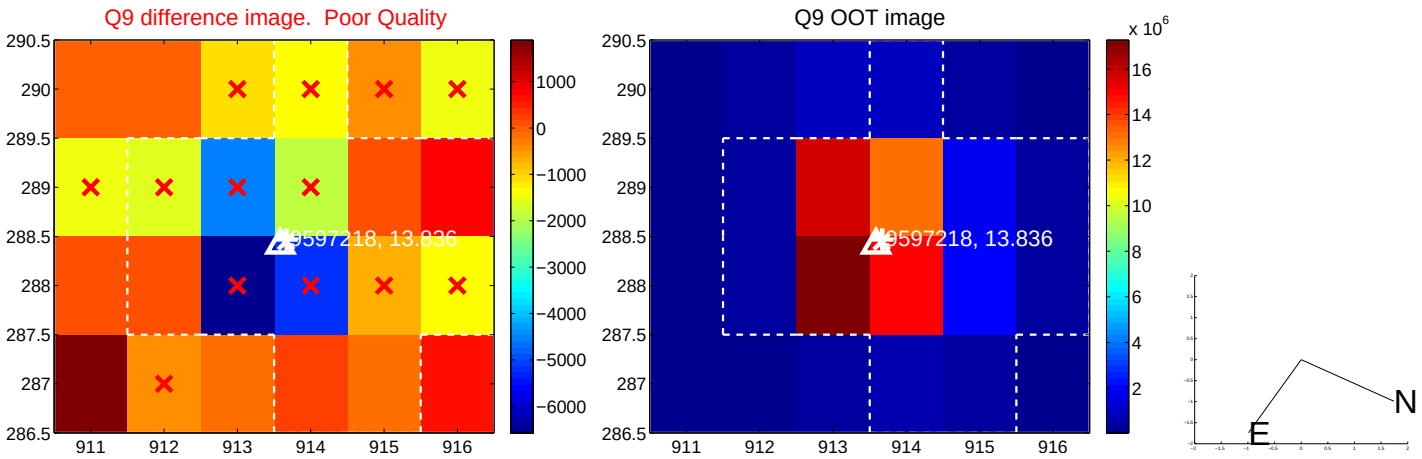
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

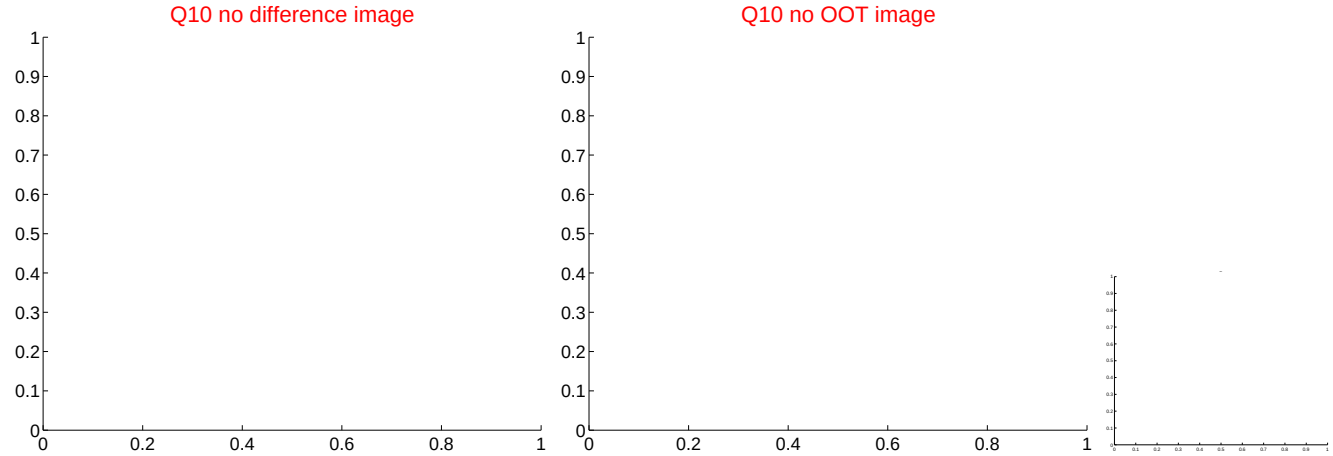


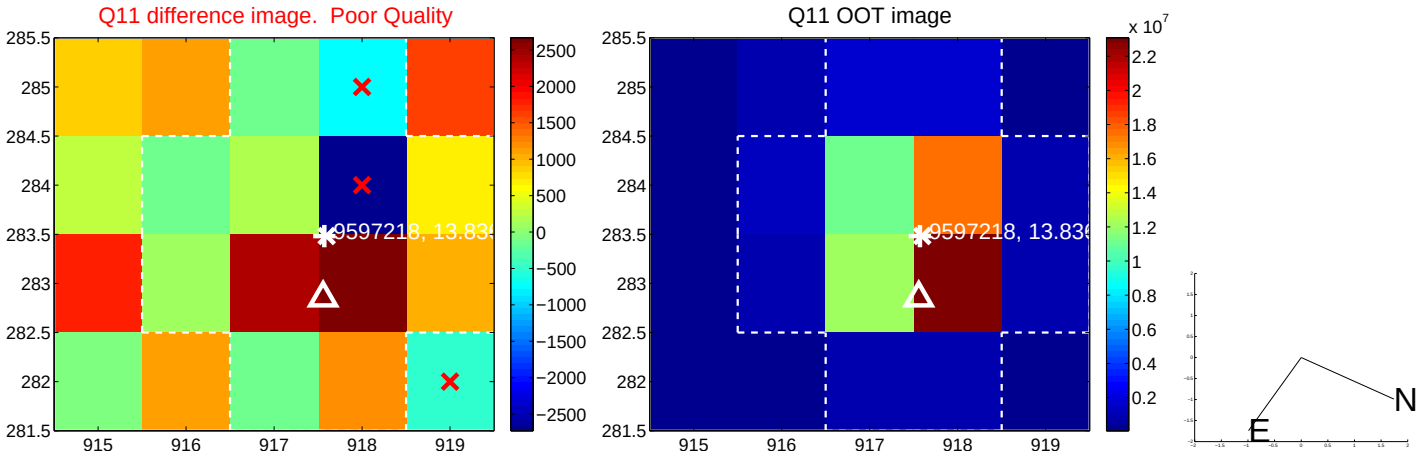
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

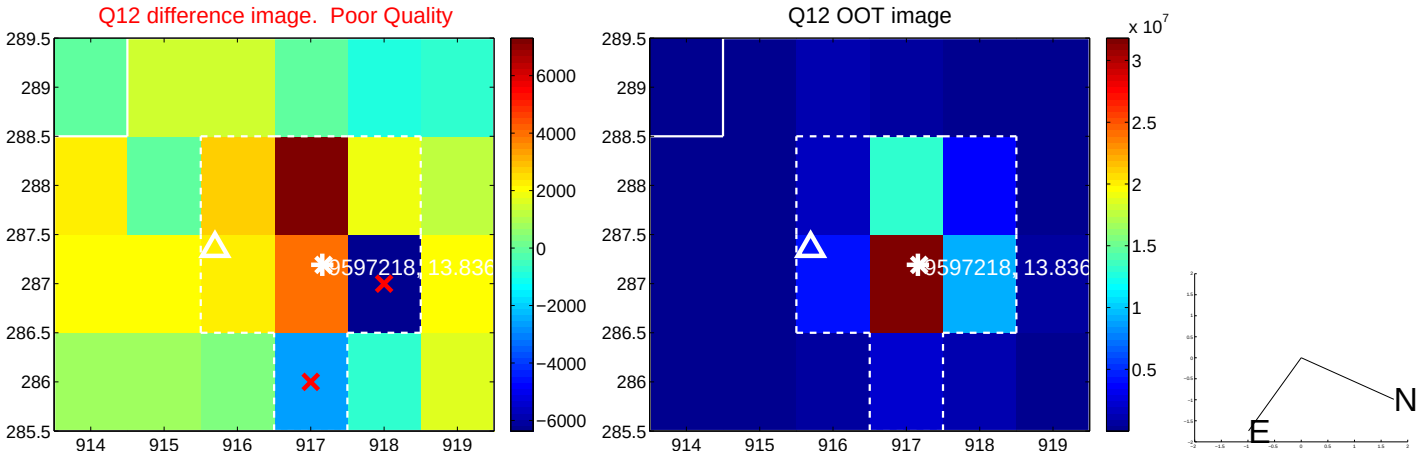


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

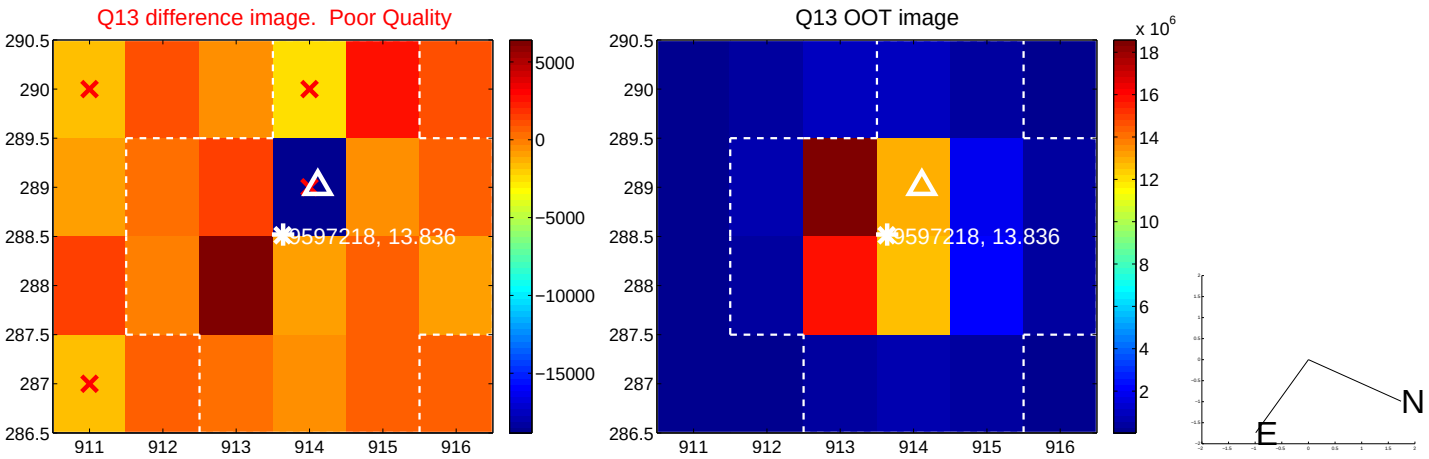


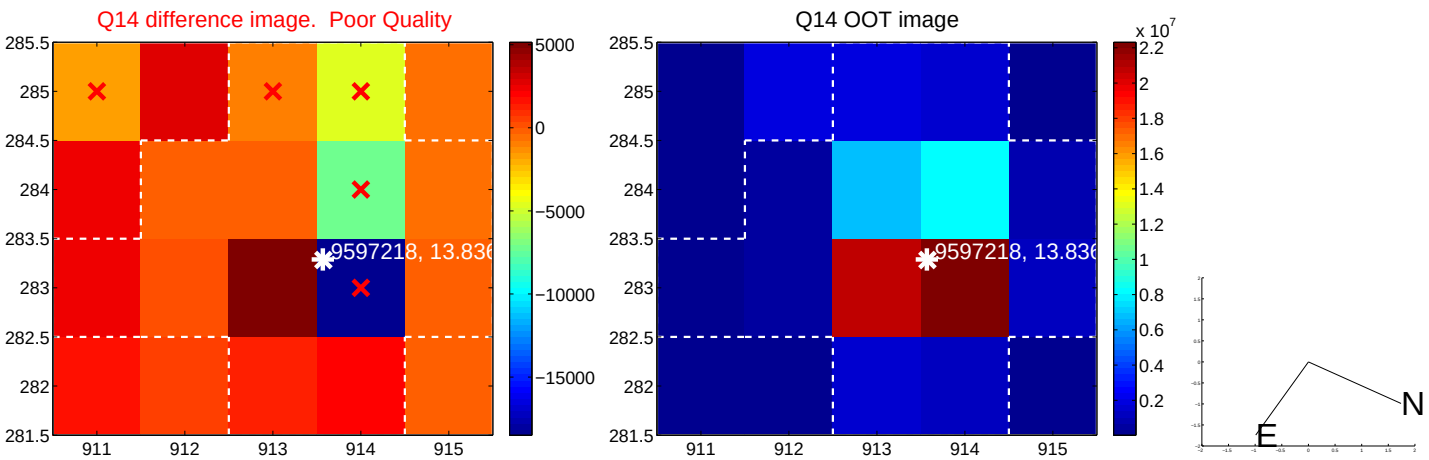


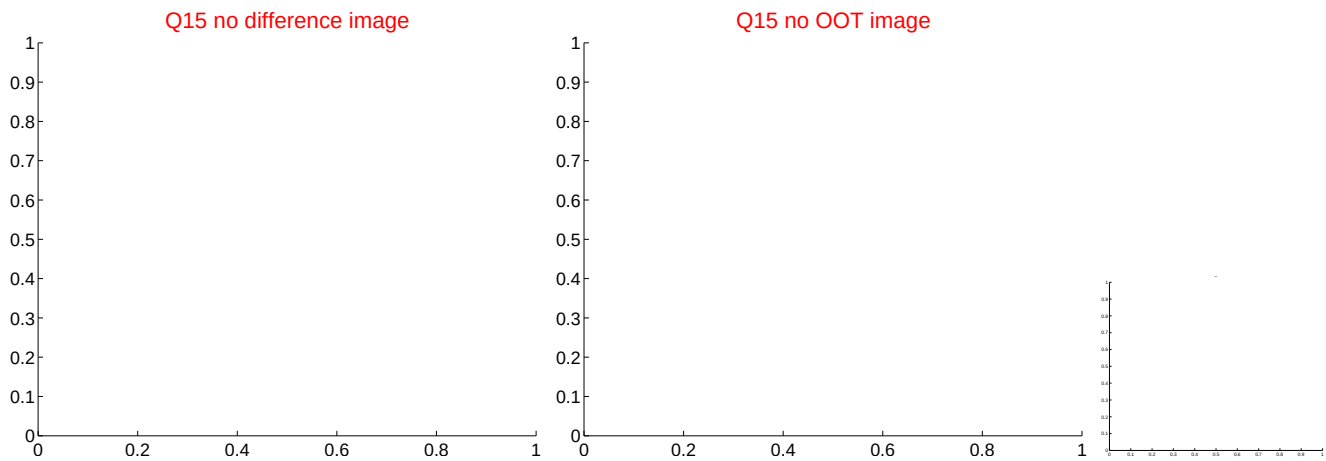


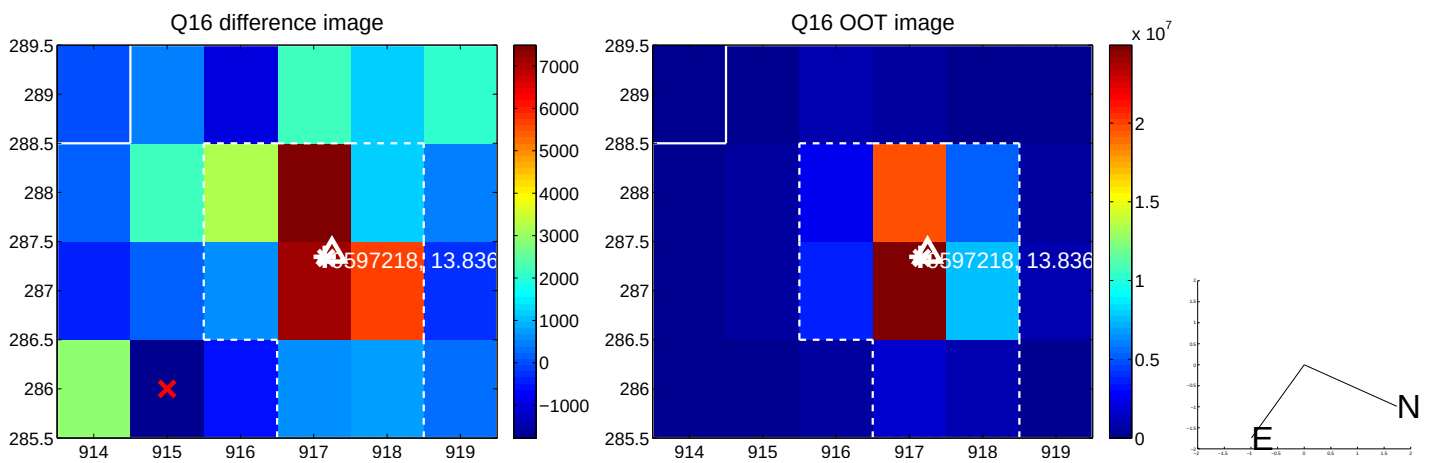


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

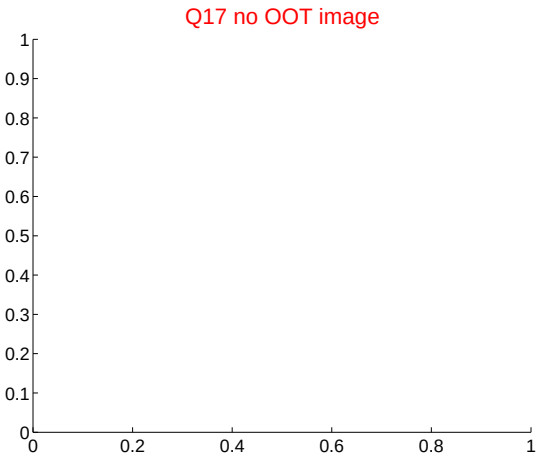


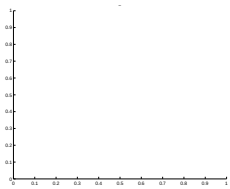


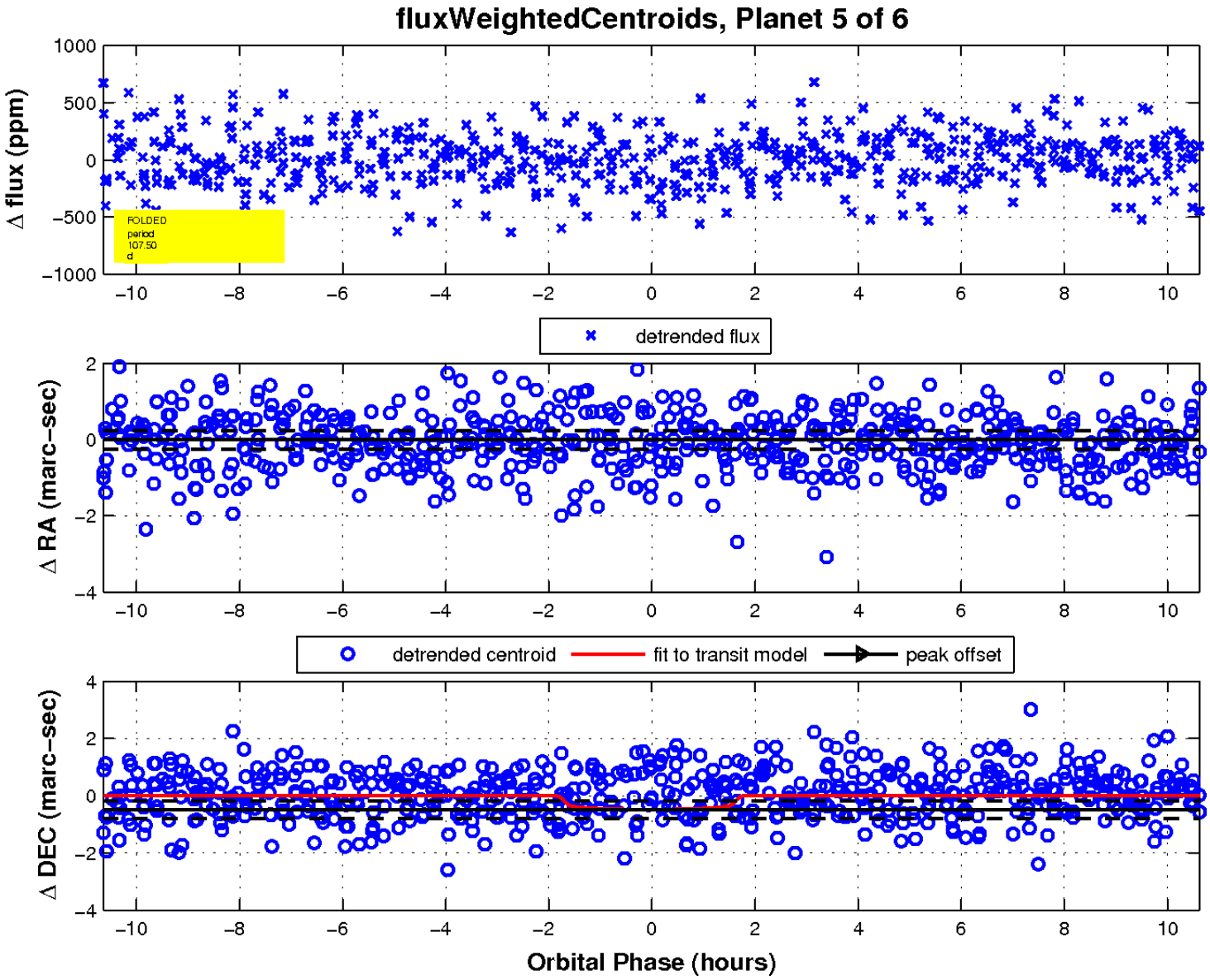




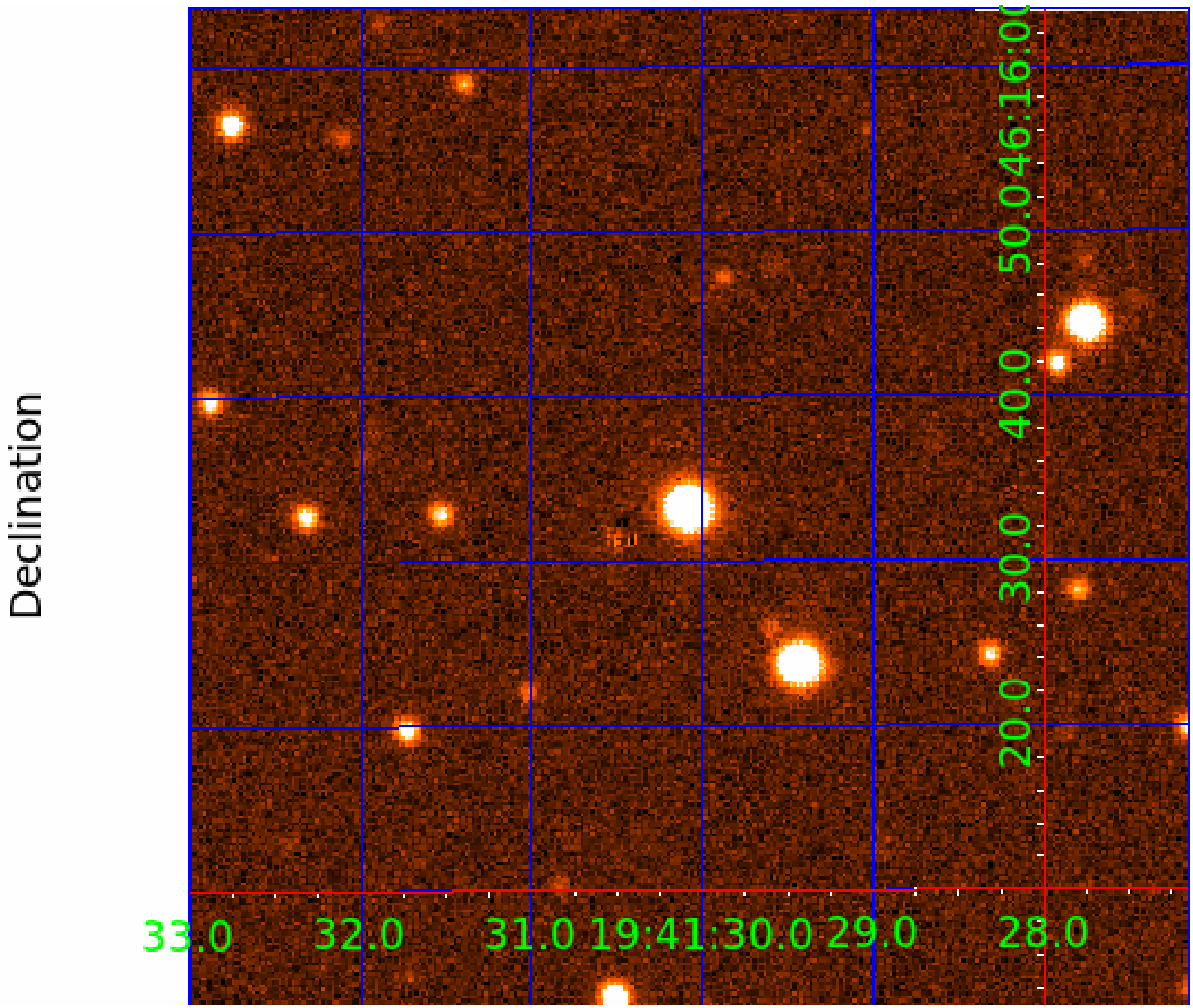
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image


Declination
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28.0

KIC 009597218

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 ($S_\oplus$)
009597218-01	OBS	No	2.214994	132.158399	17.1	11.518	7.8	7.6	2.14	7766	0.89	9456.35
009597218-02	OBS	No	414.359888	208.530144	344.0	3.940	8.5	8.0	2.14	7766	4.57	8.84
009597218-03	OBS	No	140.015459	148.745540	244.3	4.785	7.6	7.4	2.14	7766	3.82	37.55
009597218-04	OBS	No	205.817690	143.134272	347.6	2.938	7.6	6.9	2.14	7766	4.66	22.47
009597218-05	OBS	No	107.503982	146.379079	296.0	3.553	7.7	8.2	2.14	7766	4.12	53.41
009597218-06	OBS	No	120.880547	156.138356	186.6	8.760	7.4	7.1	2.14	7766	3.14	45.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597218-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009597218-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009597218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

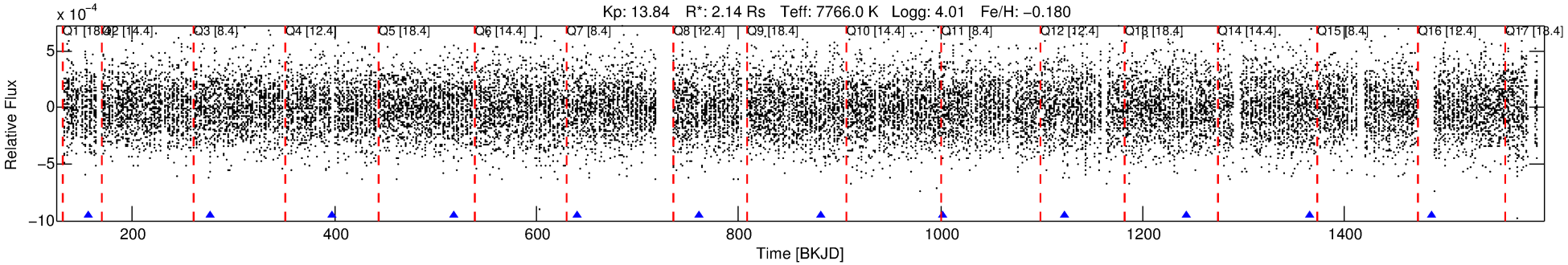
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

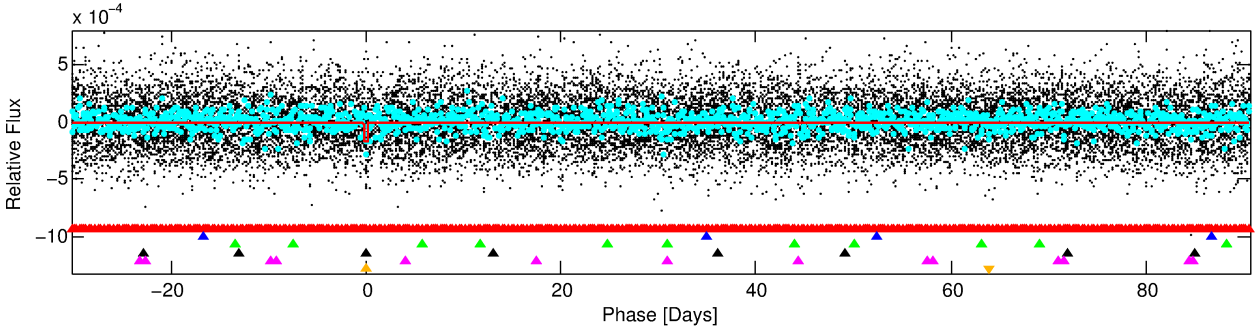
Ephemeris Match Information For 009597218-06

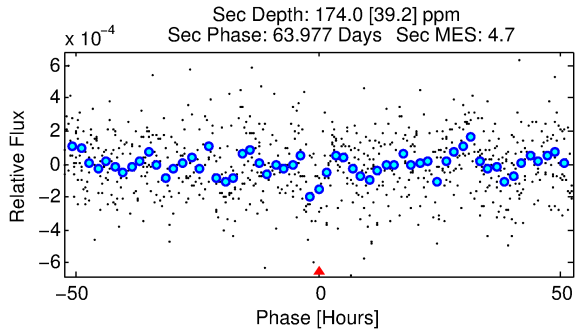
No Significant Match Found

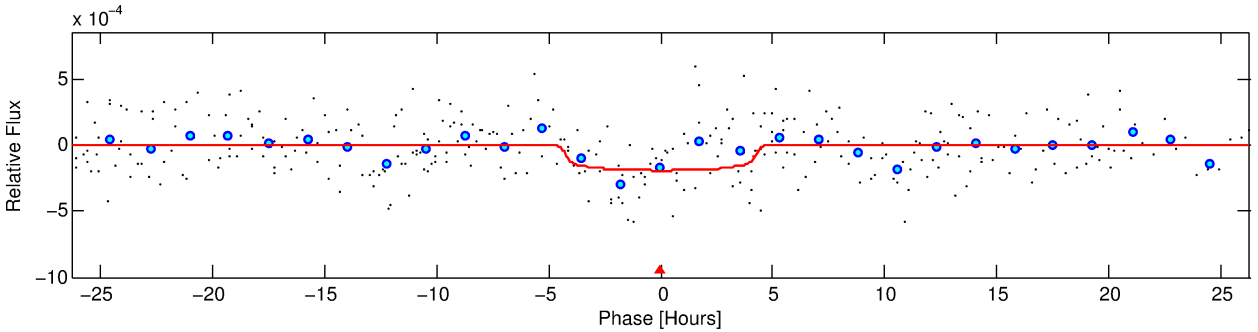
DV One-Page Summary

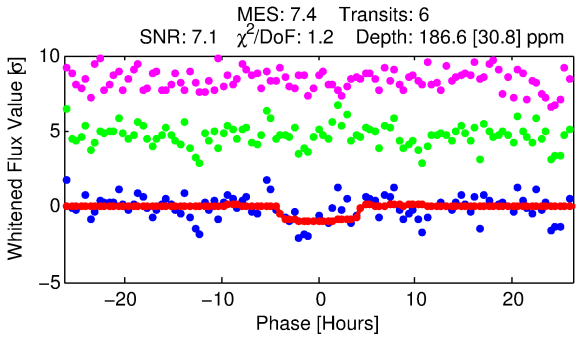
KIC: 9597218 Candidate: 6 of 6 Period: 120.881 d

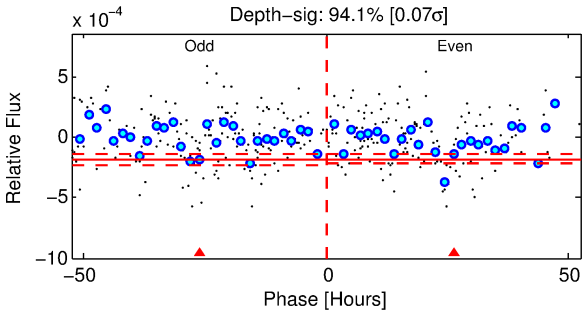


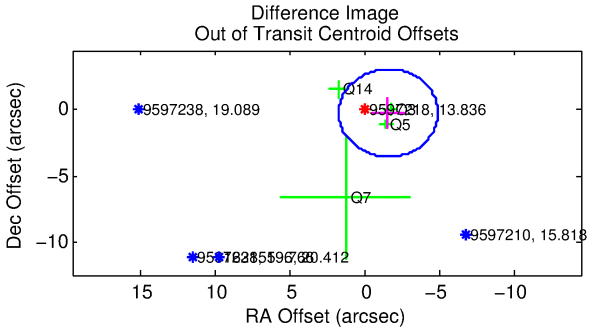












DV Fit Results:

Period = 120.88055 [0.00408] d
Epoch = 156.1384 [0.0259] BKJD
Rp/R* = 0.0135 [0.0092]
a/R* = 74.99 [276.75]
b = 0.72 [2.47]

Seff = 45.68 [20.47]
Teq = 663 [74] K
Rp = 3.14 [2.37] Re
a = 0.5708 [0.1574] AU

Ag = 3159.83 [4575.79] [0.69σ]
Teffp = 7685 [2684] K [2.61σ]

DV Diagnostic Results:

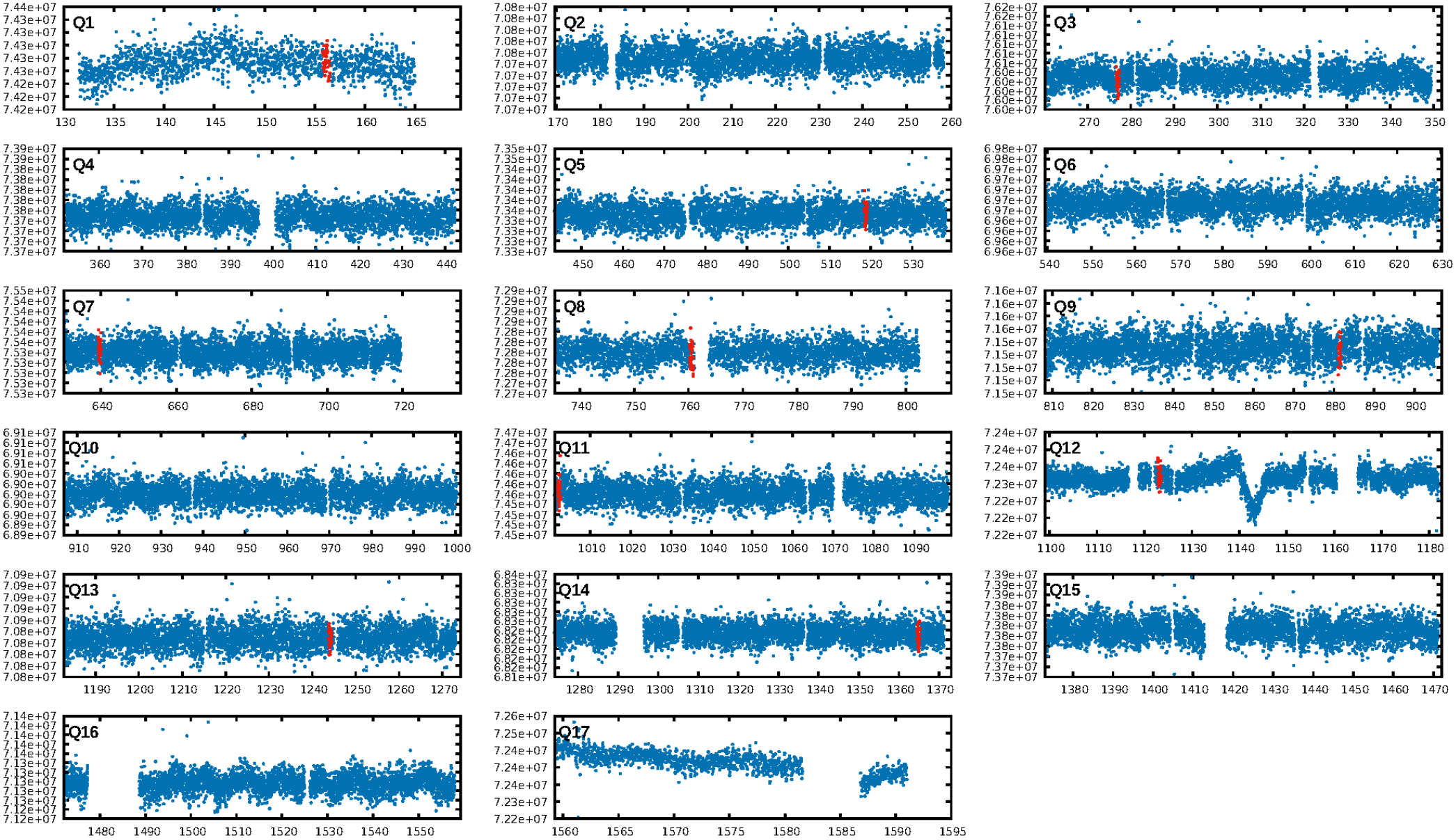
ShortPeriod−sig: 100.0% [33.96σ]
LongPeriod−sig: 100.0% [46.01σ]
ModelChiSquare2−sig: 92.0%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 3.08e−08
RollingBand−fgt: 1.00 [6/6]
GhostDiagnostic−chr: 4.083

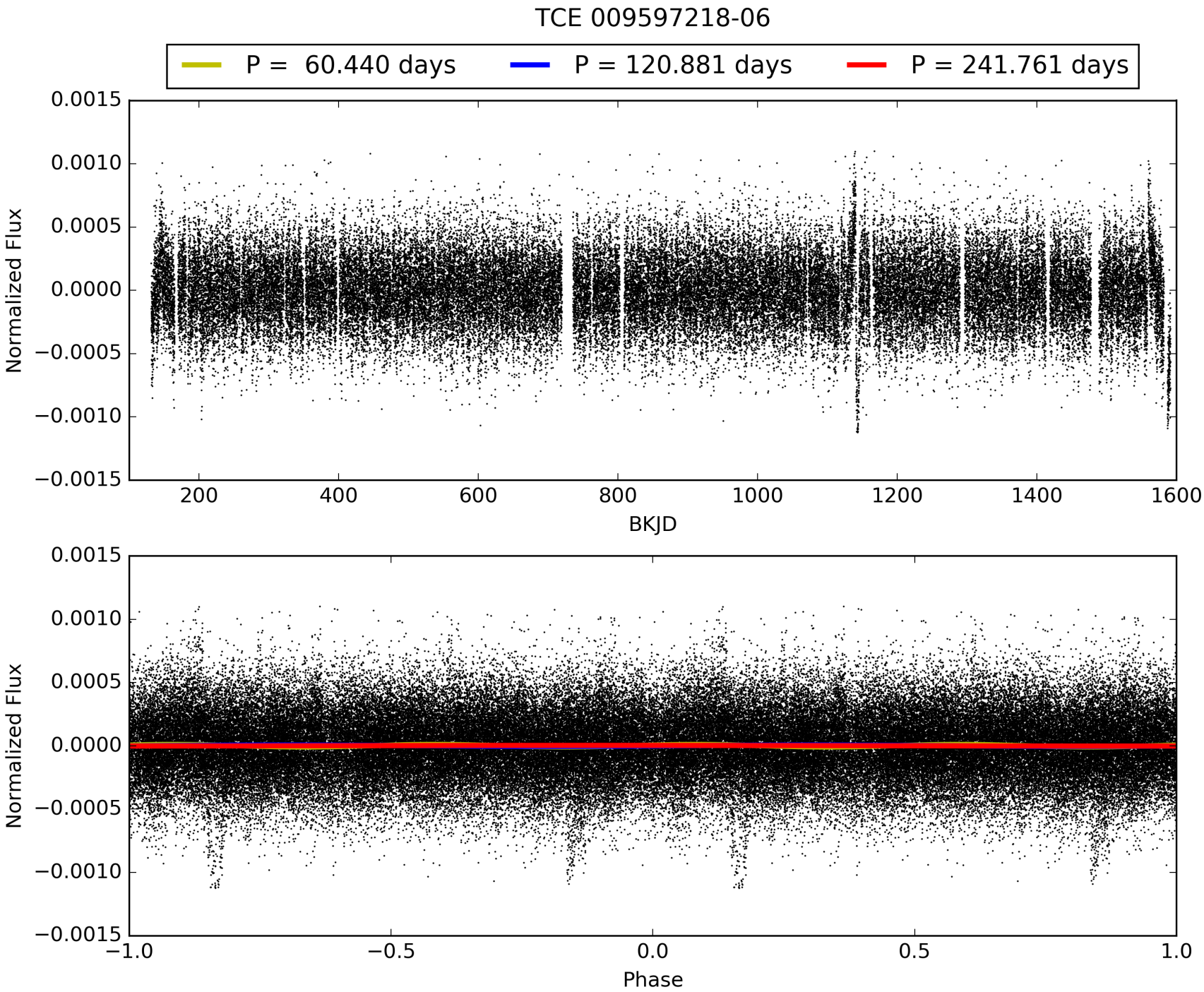
Centroid−sig: 2.7%
Centroid−so: 1.549 arcsec [1.26σ]
OotOffset−rm: 1.637 arcsec [1.48σ]
KicOffset−rm: 1.668 arcsec [1.51σ]
OotOffset−st: 1/2/0/1 [4]
KicOffset−st: 1/2/0/1 [4]
DiffImageQuality−fgm: 0.50 [2/4]
DiffImageOverlap−fno: 0.29 [2/7]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 15:41:51 Z

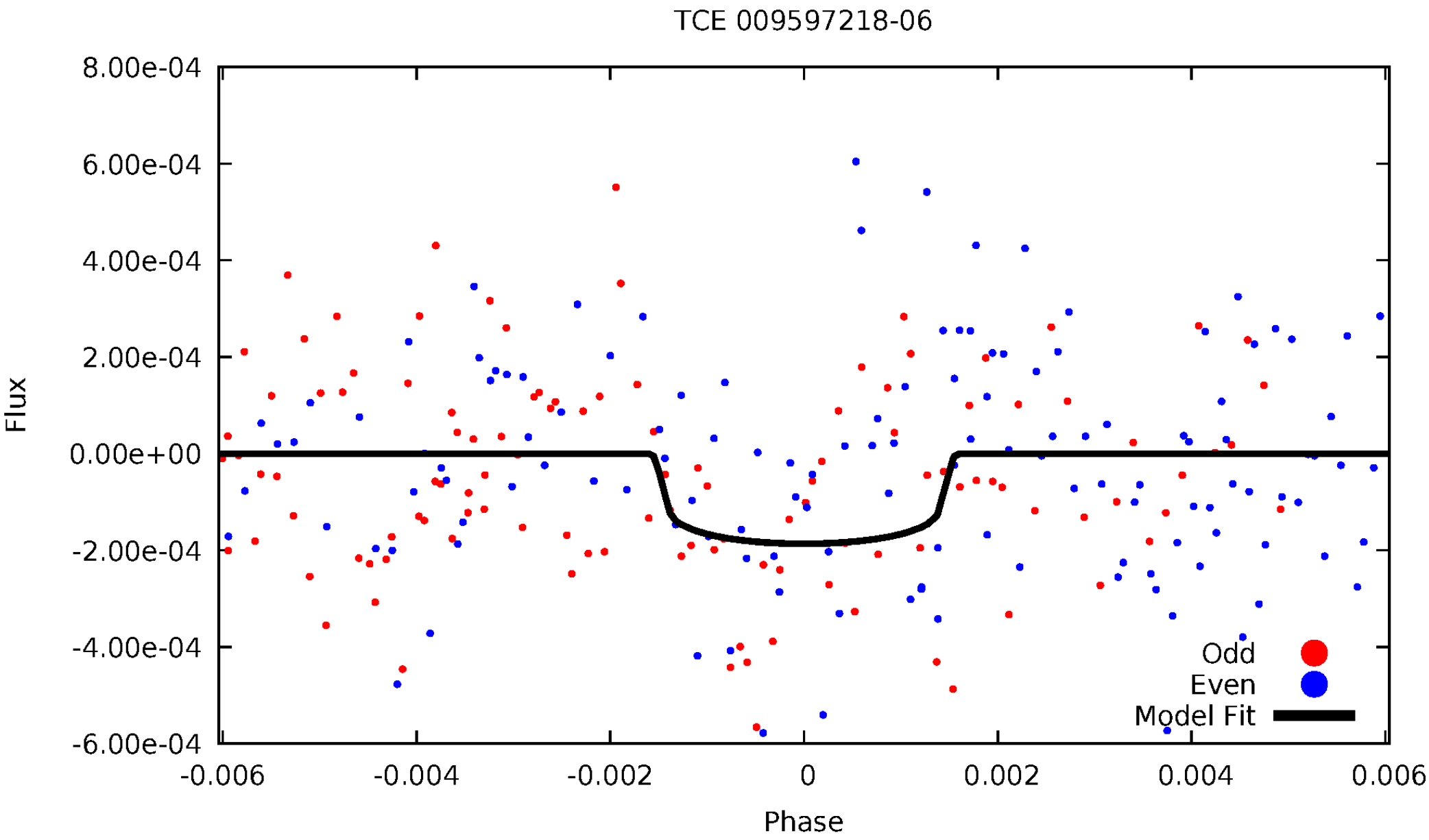
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009597218-06, PDC Light Curves

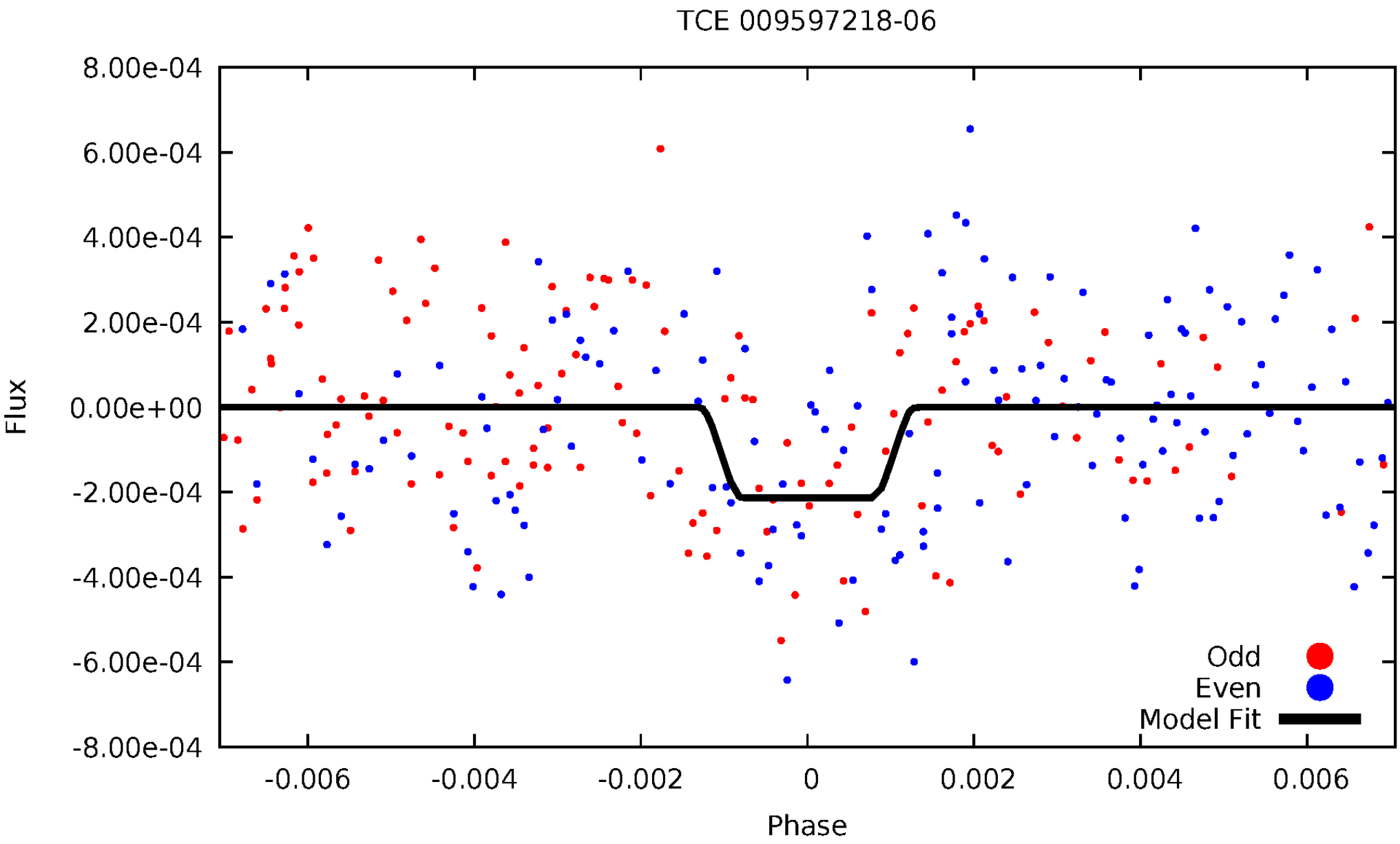



TCE 009597218-06
P = 60.440 days
P = 120.881 days
P = 241.761 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

DV Odd/Even


TCE 009597218-06
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.006
-0.004
-0.002
0
0.002
0.004
0.006
Phase
Odd
Even
Model Fit

ALT Odd/Even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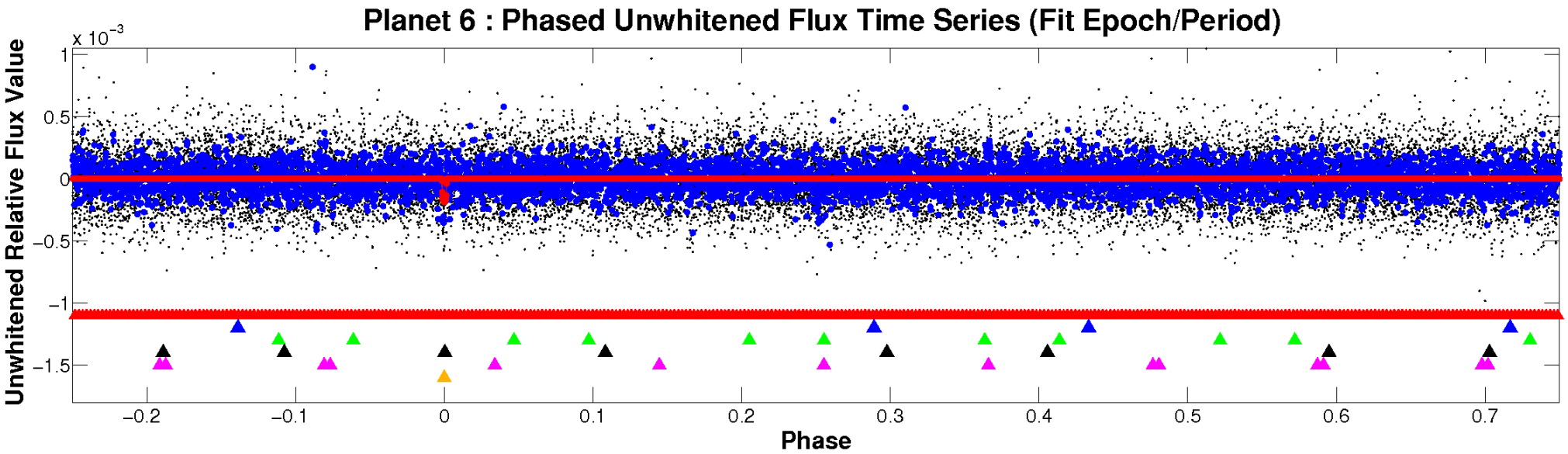
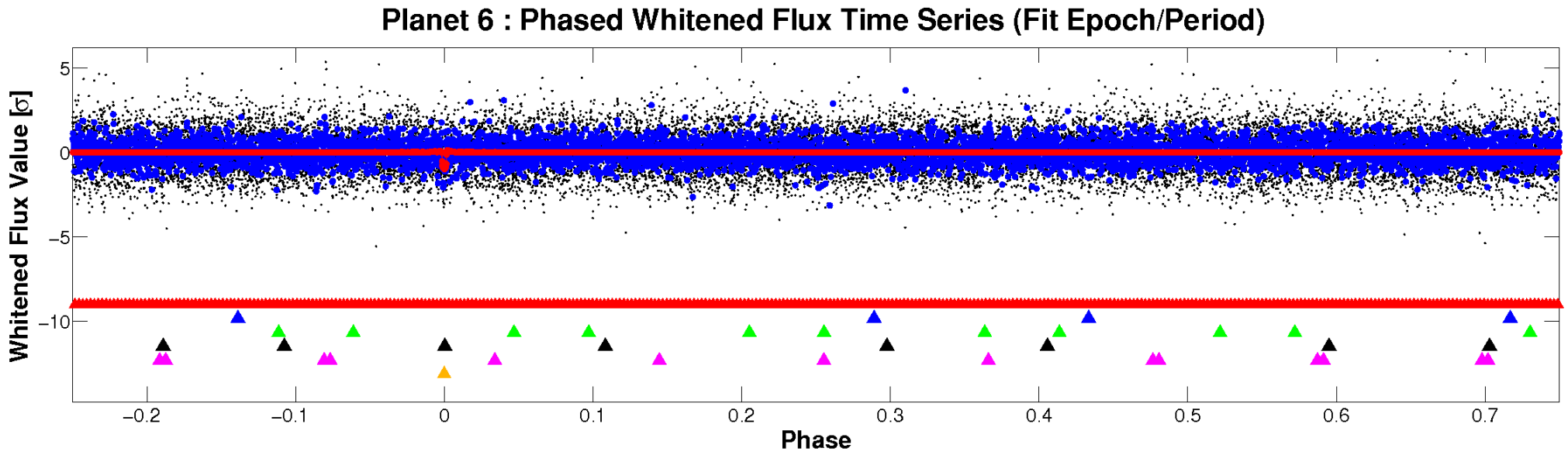
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.006
-0.004
-0.002
0
0.002
0.004
0.006
Phase
Odd
Even
Model Fit

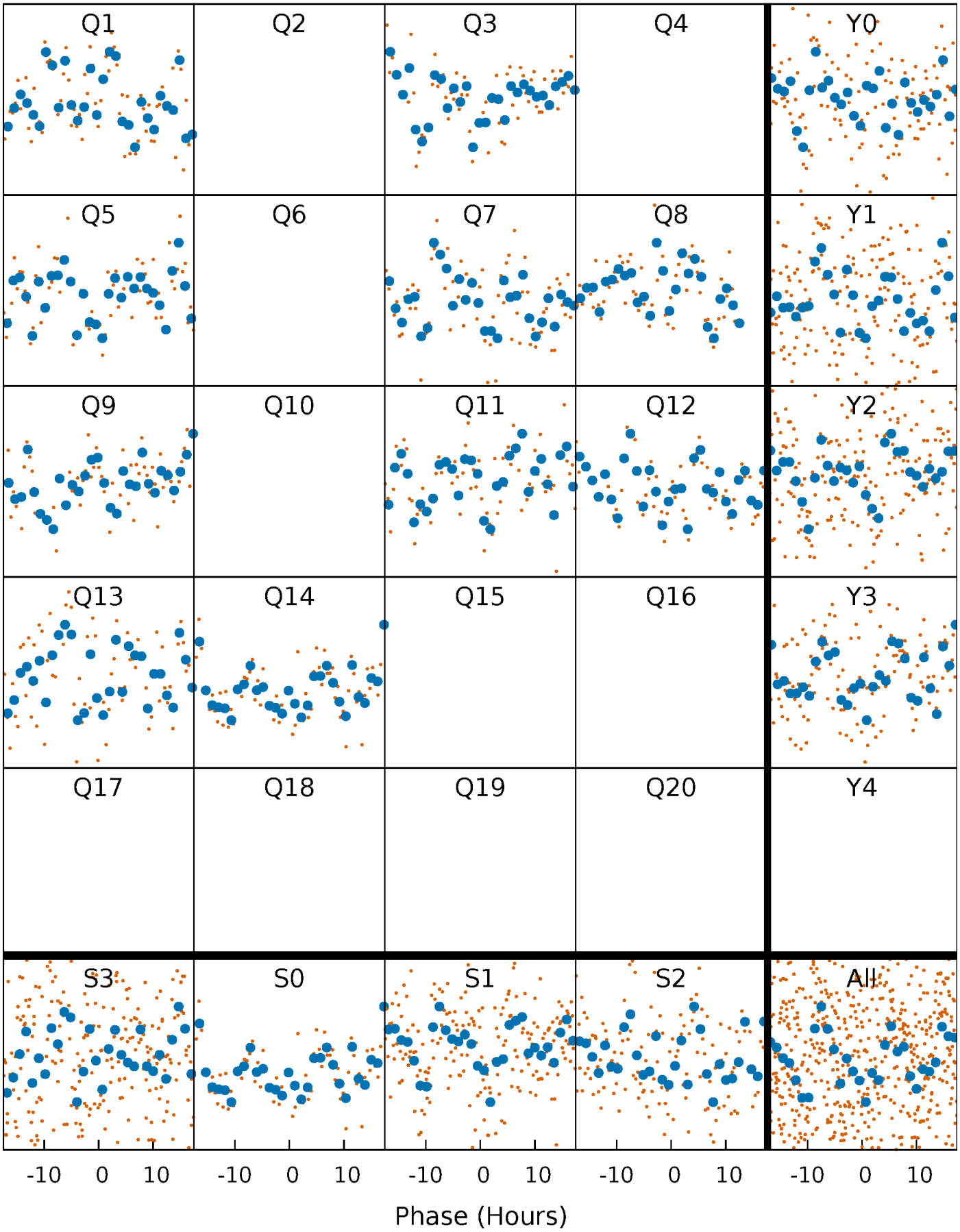
Non-Whitened Vs. Whitened Light Curve





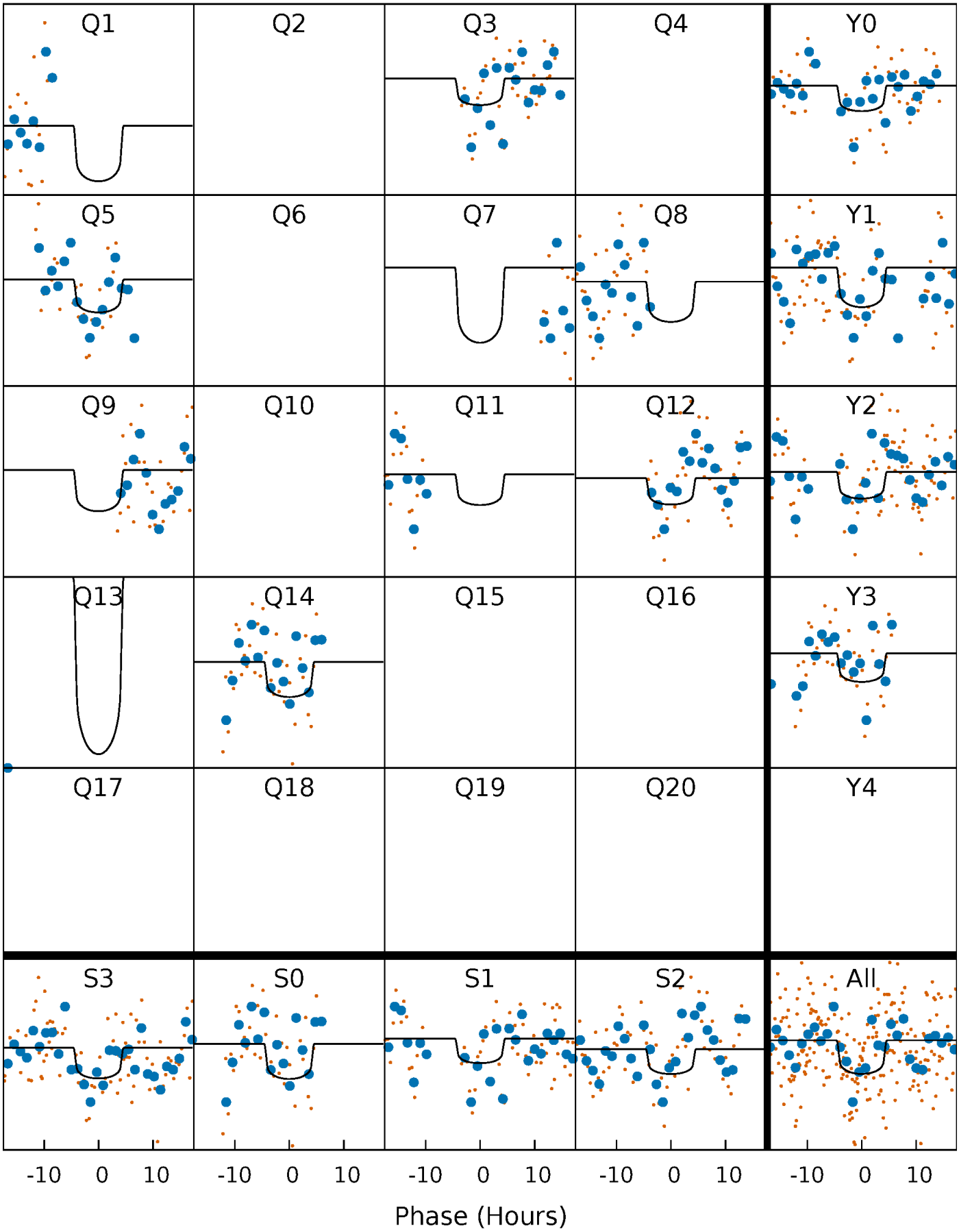
PDC Quarter-Phased Transit Curves

TCE 009597218-06 P=120.880547 Days T_0=156.138356 (BKJD)



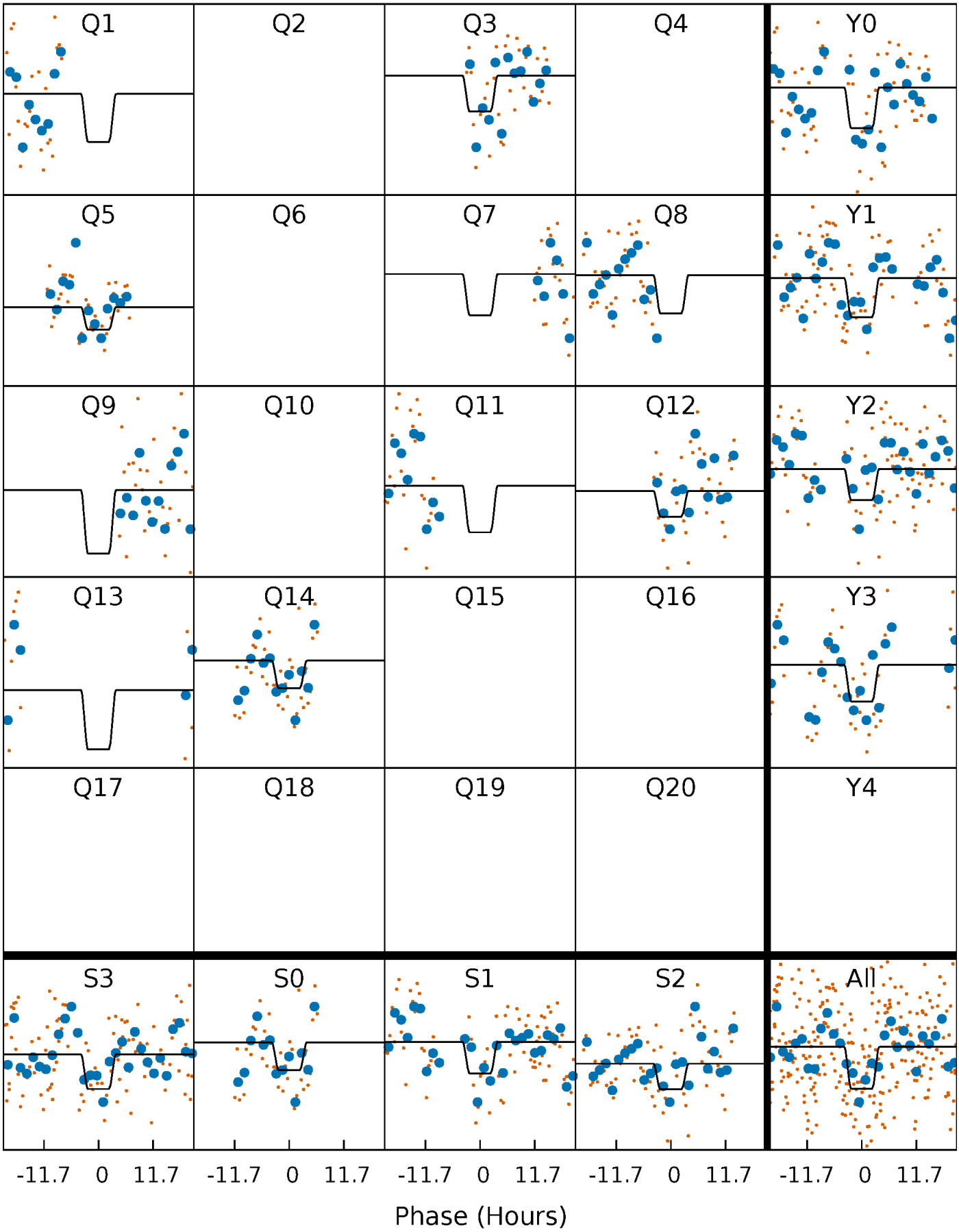
DV Quarter-Phased Transit Curves

TCE 009597218-06 P=120.880547 Days T_0=156.138356 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

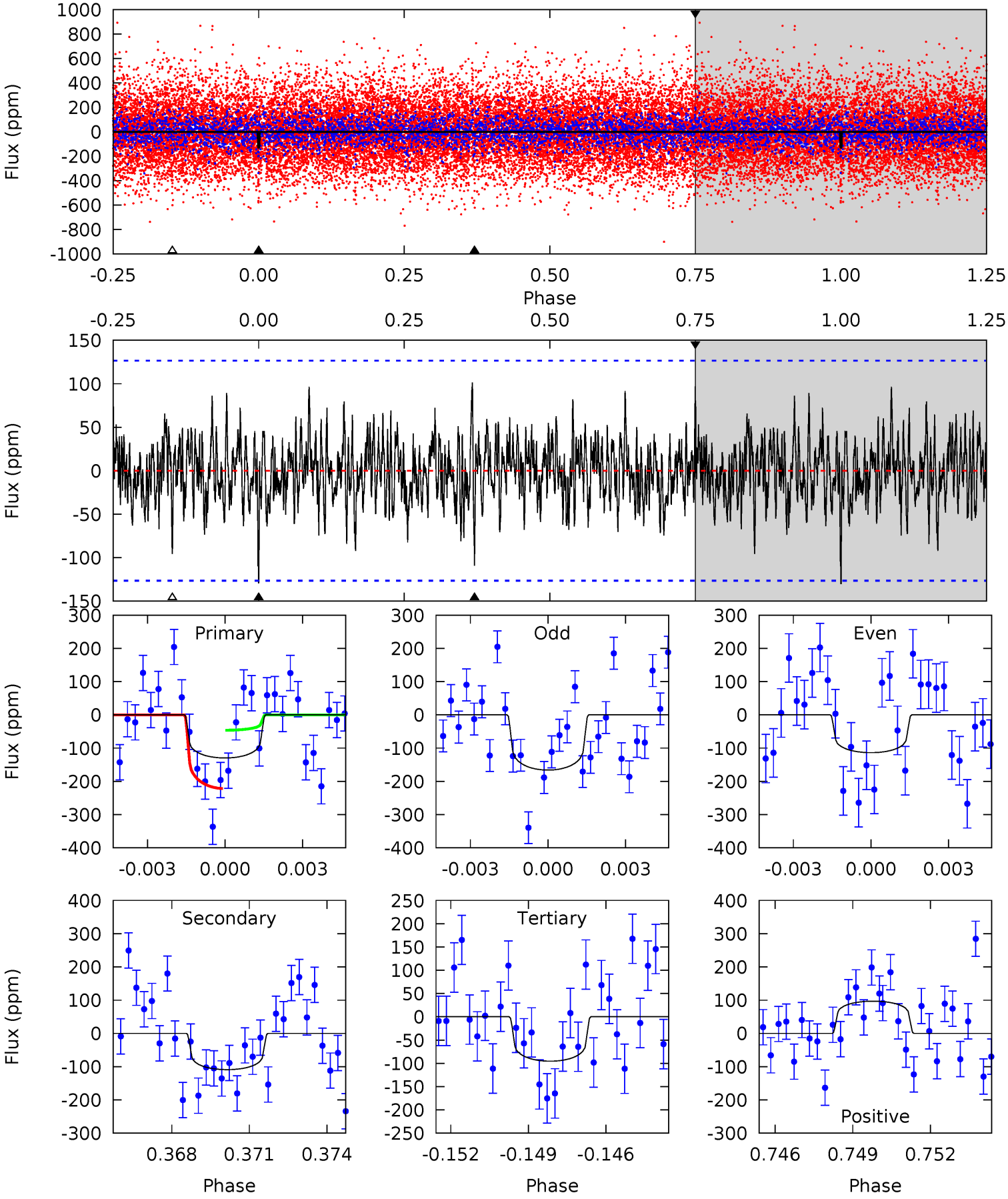
TCE 009597218-06 P=120.880446 Days T_0=156.117432 (BKJD)



DV Model-Shift Uniqueness Test

009597218-06, P = 120.880547 Days, E = 35.257809 Days

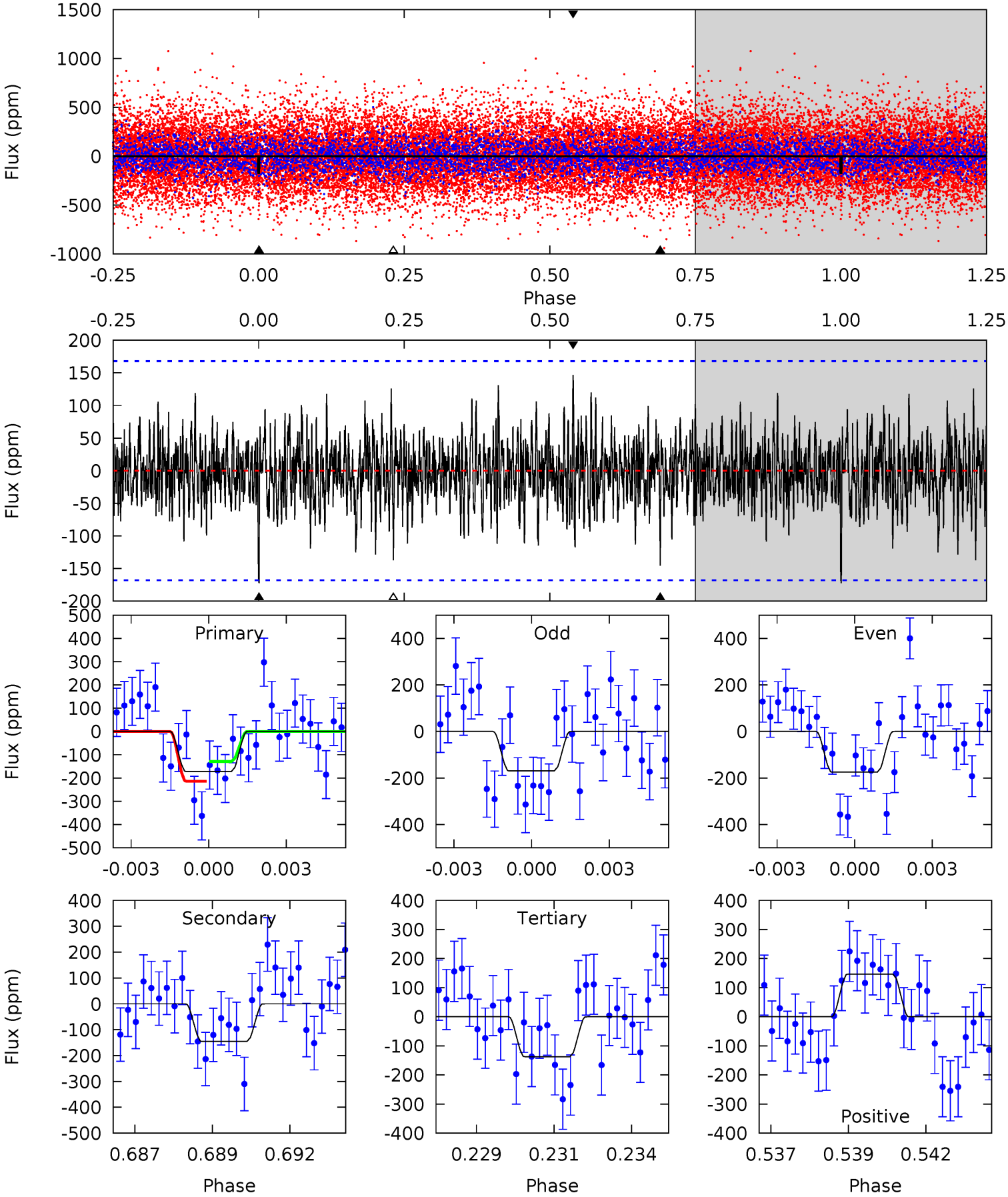
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.39	4.53	3.96	4.02	5.25	2.96	1.24	1.42	1.37	0.56	0.50	1.08	1.02	0.44	3.63



Alt Model-Shift Uniqueness Test

009597218-06, P = 120.880446 Days, E = 35.236986 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.42	4.57	4.31	4.61	5.28	3.01	1.28	1.10	0.81	0.25	-0.04	0.09	0.99	0.46	1.34



Stellar Parameters For KIC 009597218

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	M($M_\odot$)	$p_\star$ (g·cm^{-3})
	7766^{+216}_{-325}	$4.008^{+0.234}_{-0.144}$	$-0.180^{+0.200}_{-0.350}$	$2.137^{+0.447}_{-0.671}$	$1.697^{+0.196}_{-0.319}$	$0.245^{+0.324}_{-0.095}$
	+3%/-4%	+6%/-4%	+111%/-194%	+21%/-31%	+12%/-19%	+132%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009597218-06 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-109±24	$3.20^{+2.22}_{-1.77}$	917^{+64}_{-69}	6534^{+4074}_{-1451}	1904^{+7351}_{-1268}
Alt.	-145±32	$3.33^{+2.16}_{-1.85}$	914^{+66}_{-75}	6850^{+4673}_{-1470}	2342^{+9069}_{-1521}

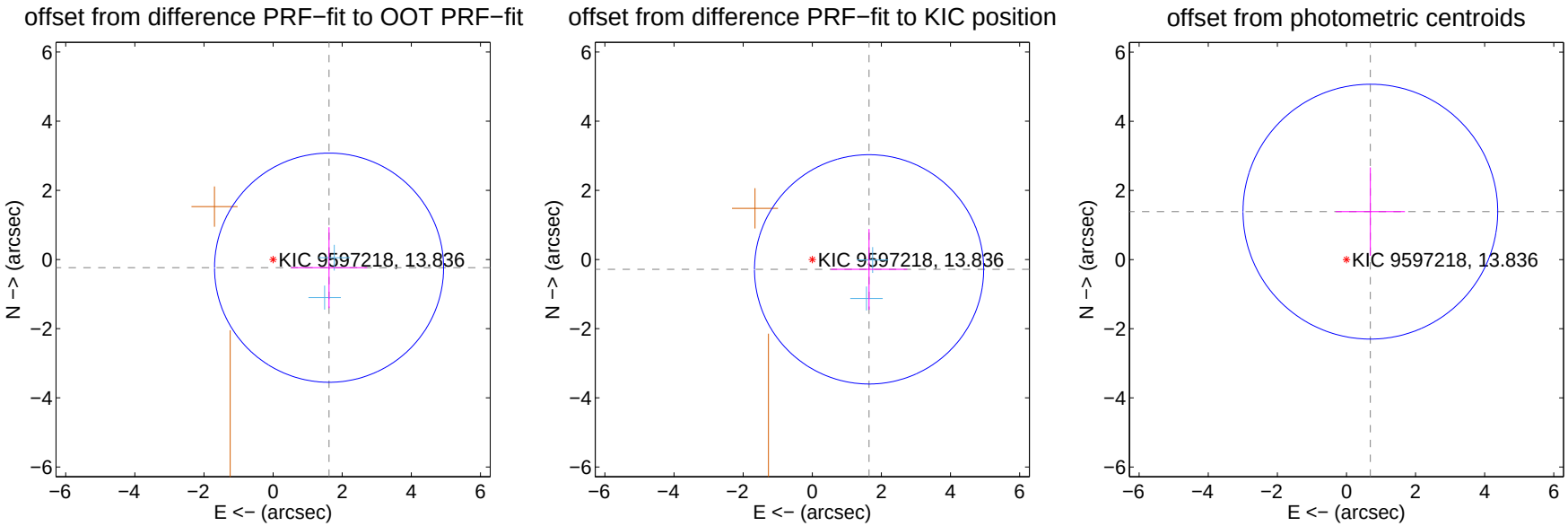
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

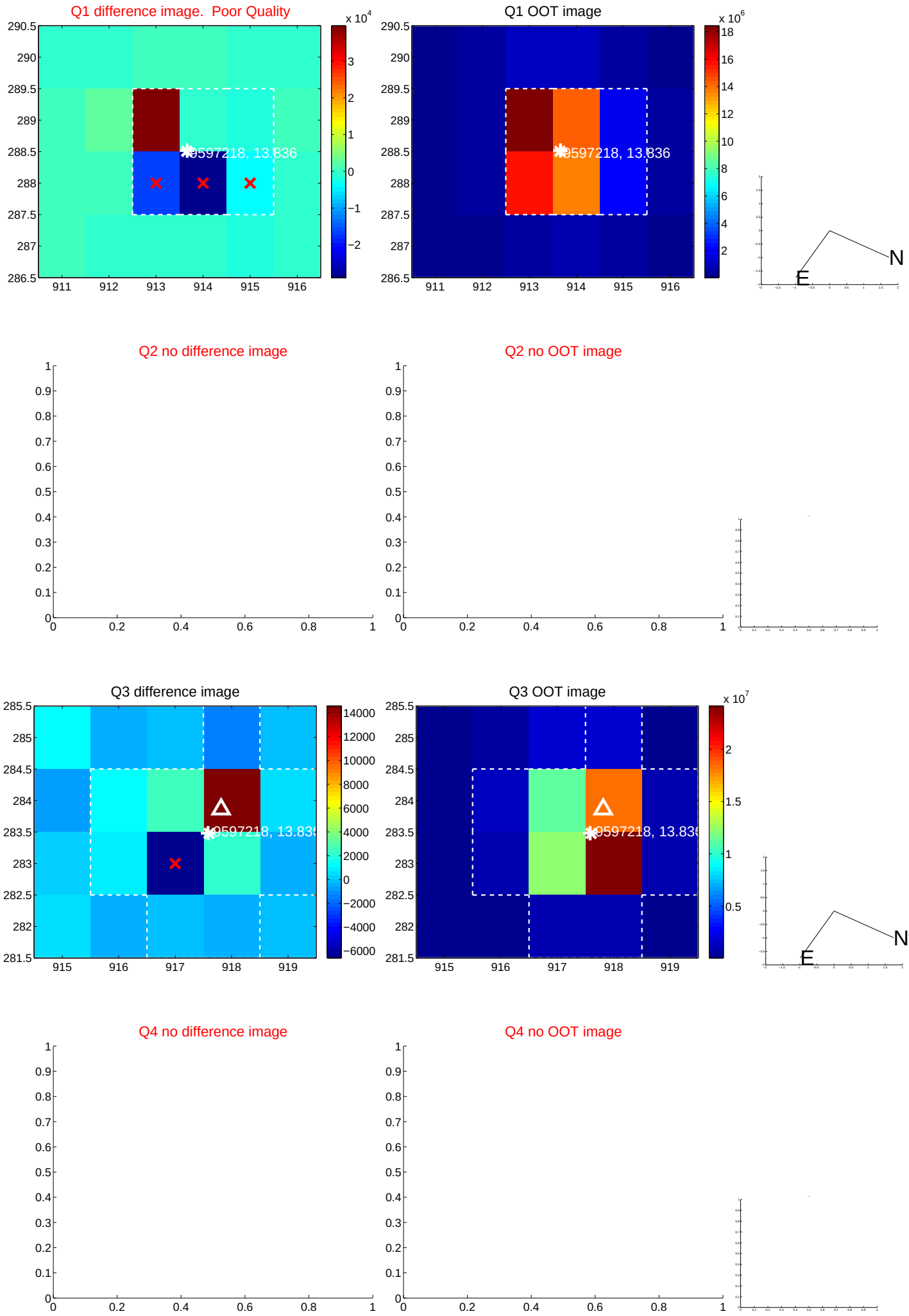
Supplemental centroid analysis for 009597218-06. Kepler magnitude: 13.84. Transit SNR 7.11
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.637 ± 1.105	1.48	-1.620 ± 1.103	-0.237 ± 1.168
PRF-fit source offset from KIC position	1.668 ± 1.105	1.51	-1.644 ± 1.103	-0.285 ± 1.168
photometric centroid source offset	1.55 ± 1.23	1.26	-0.69 ± 1.00	1.39 ± 1.28

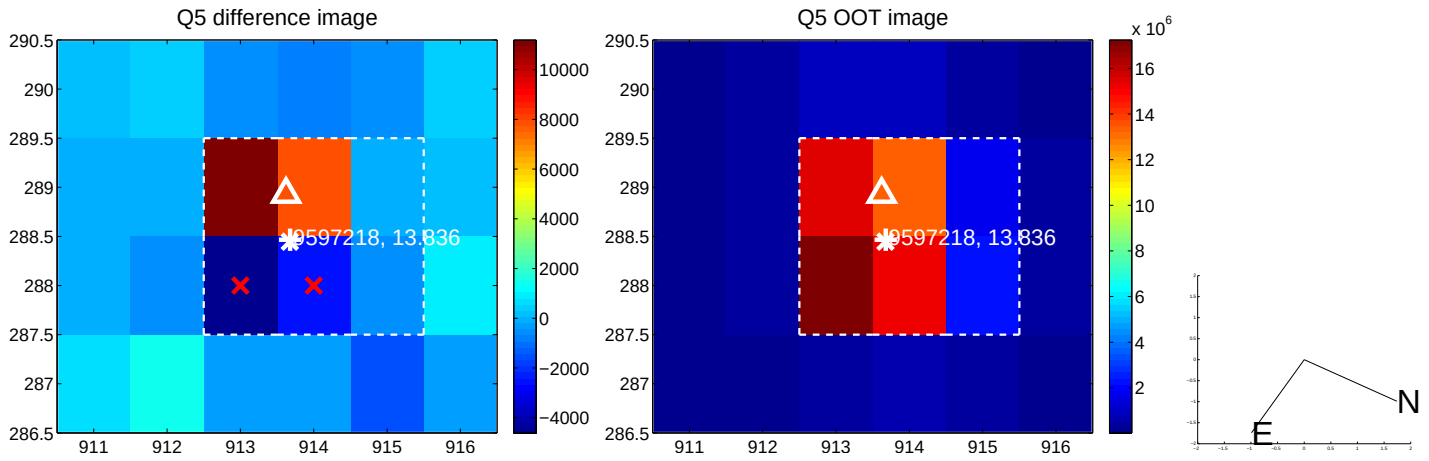


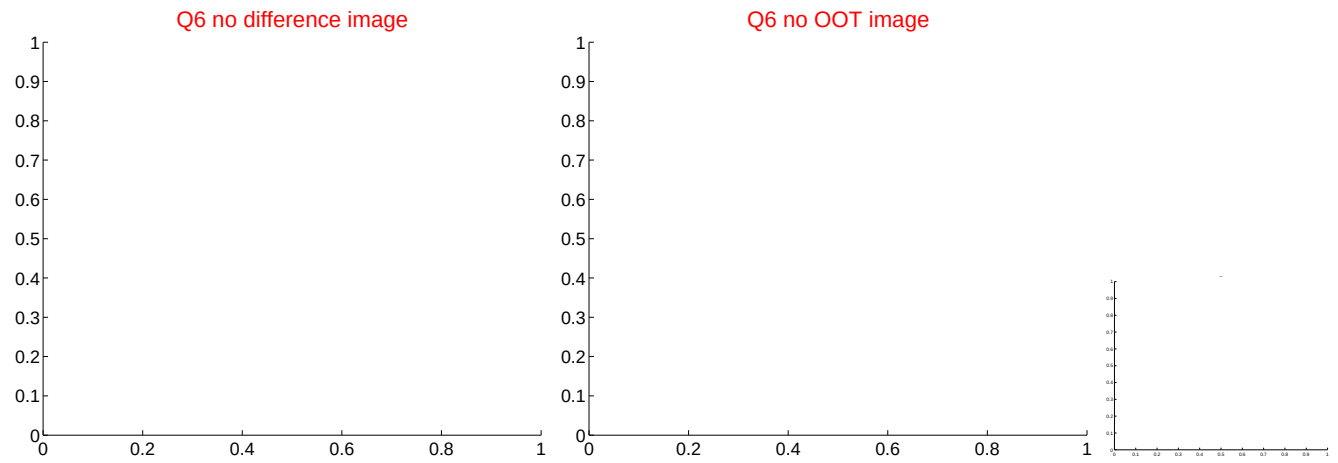
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

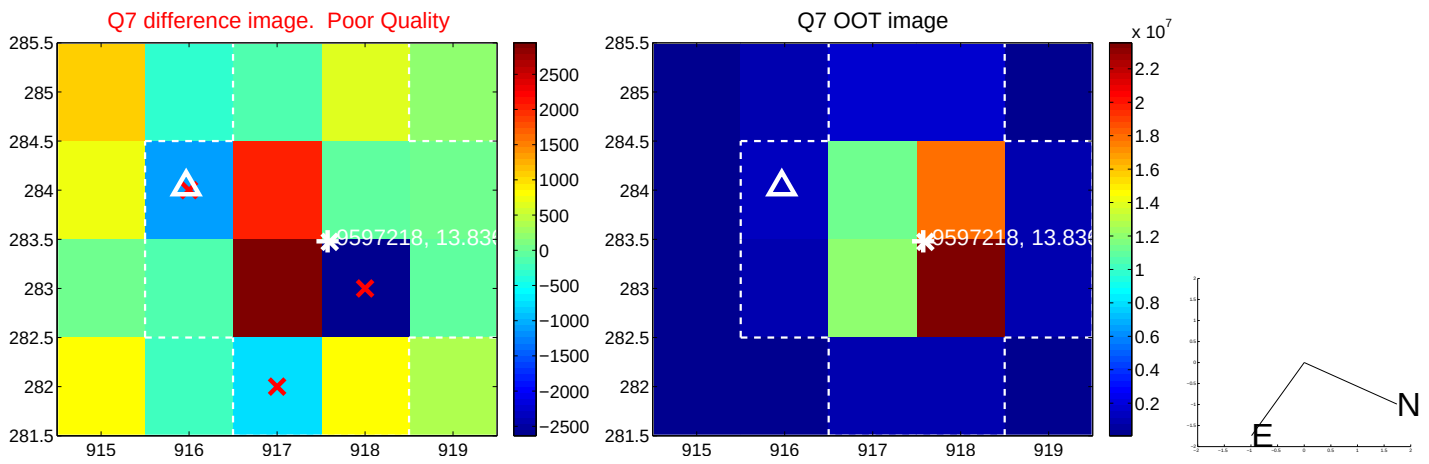
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

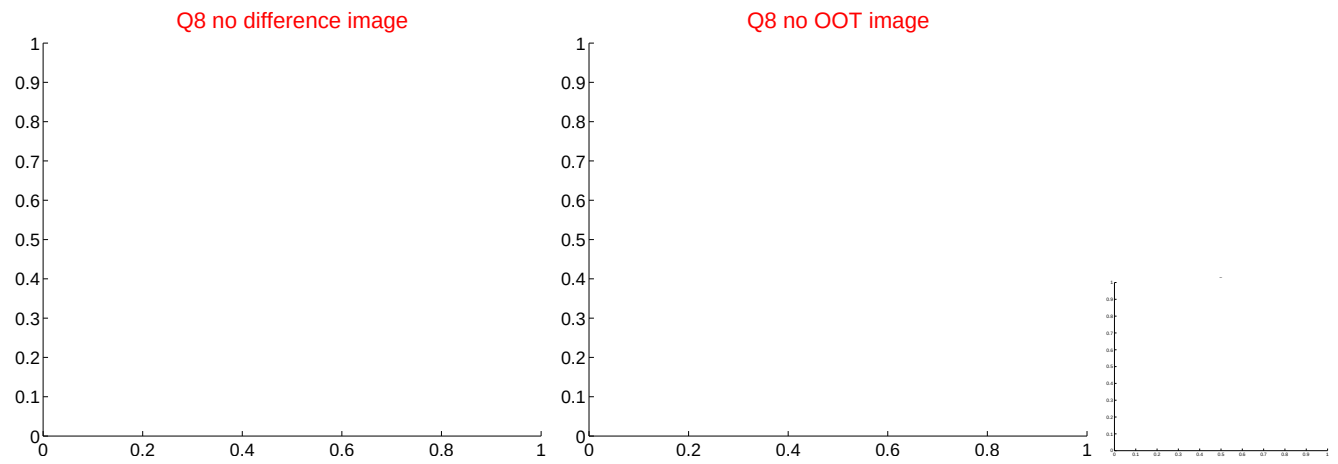


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

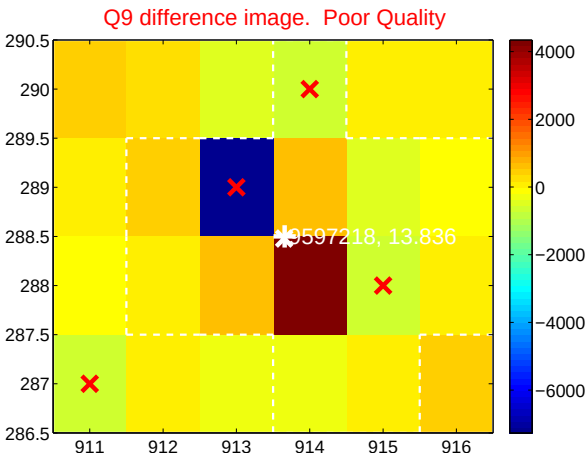


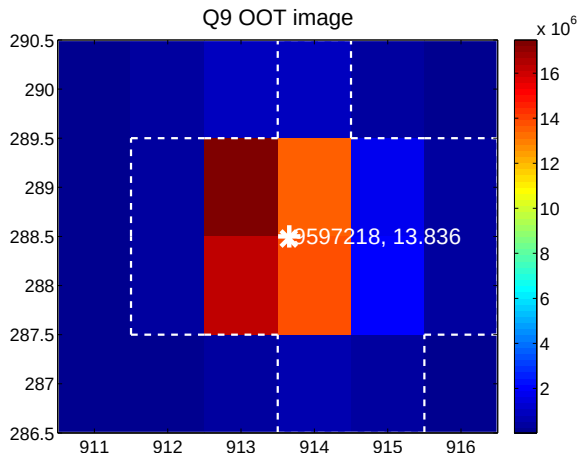


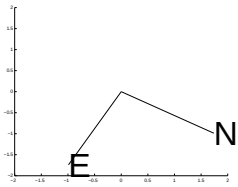


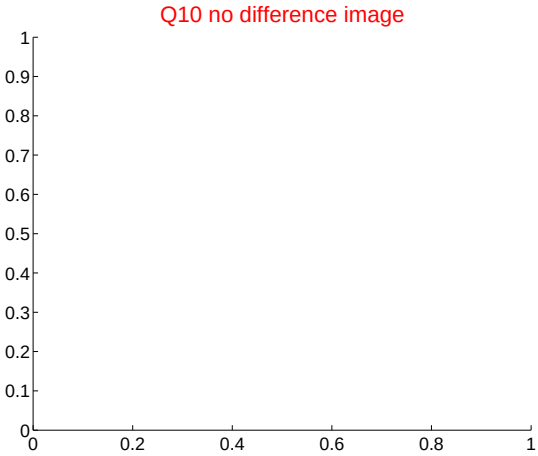


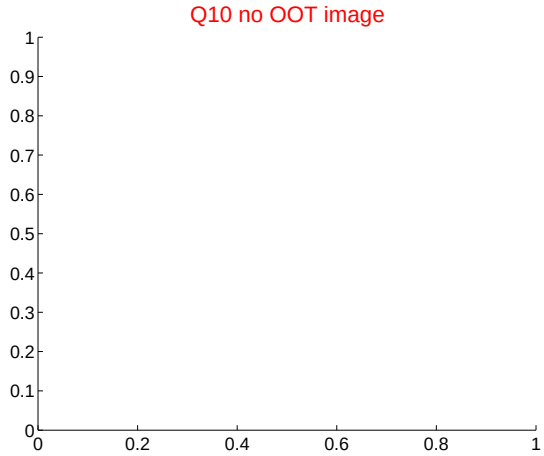
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

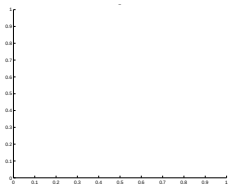


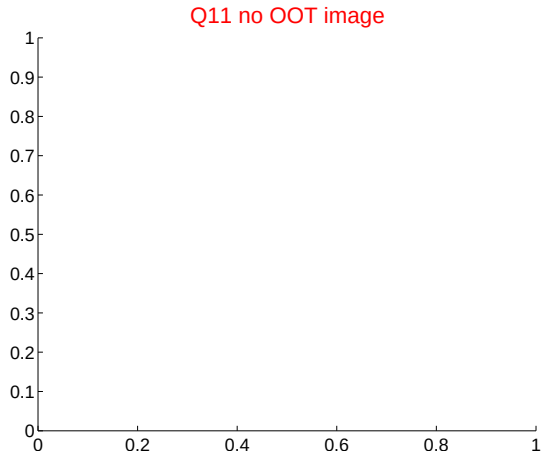


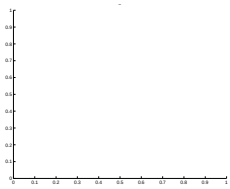


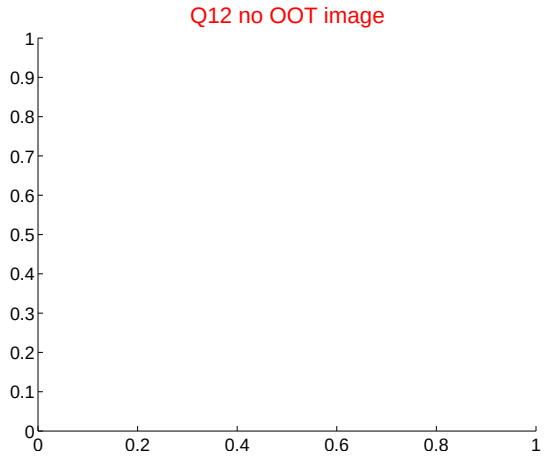


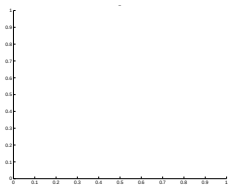




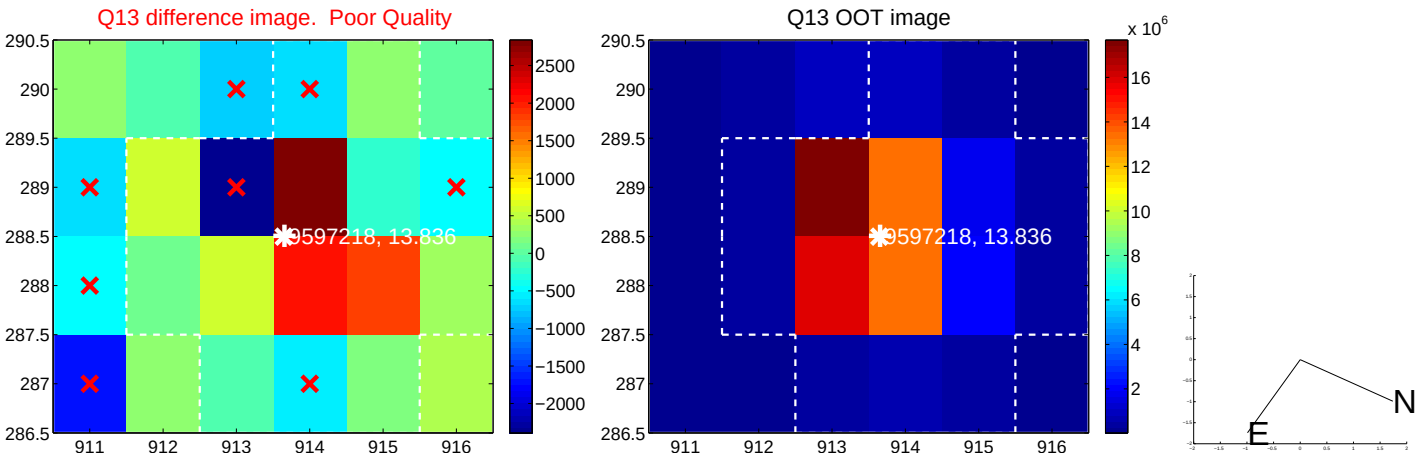


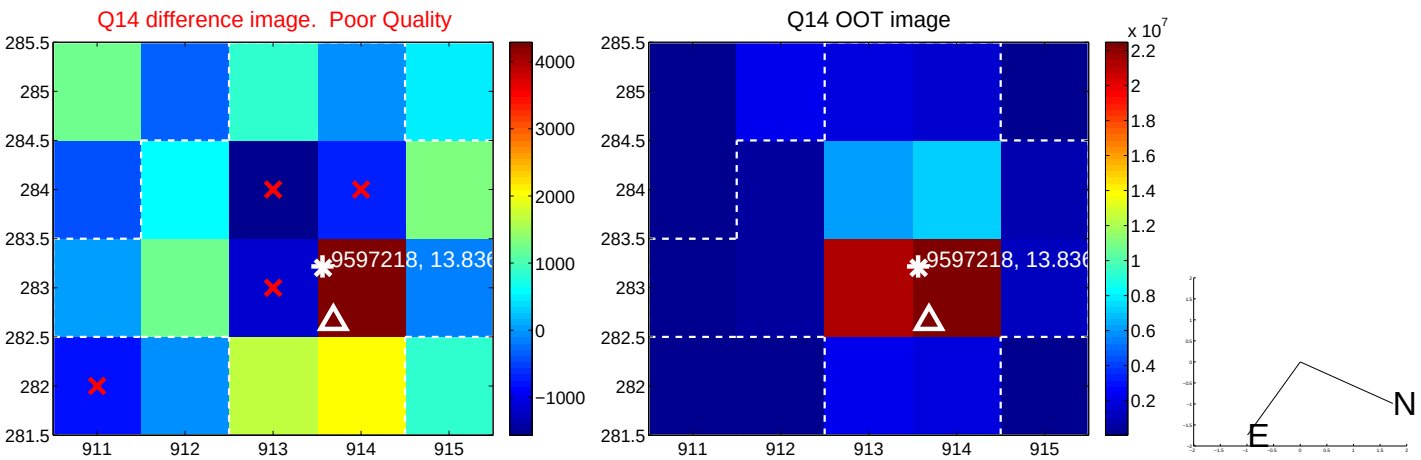


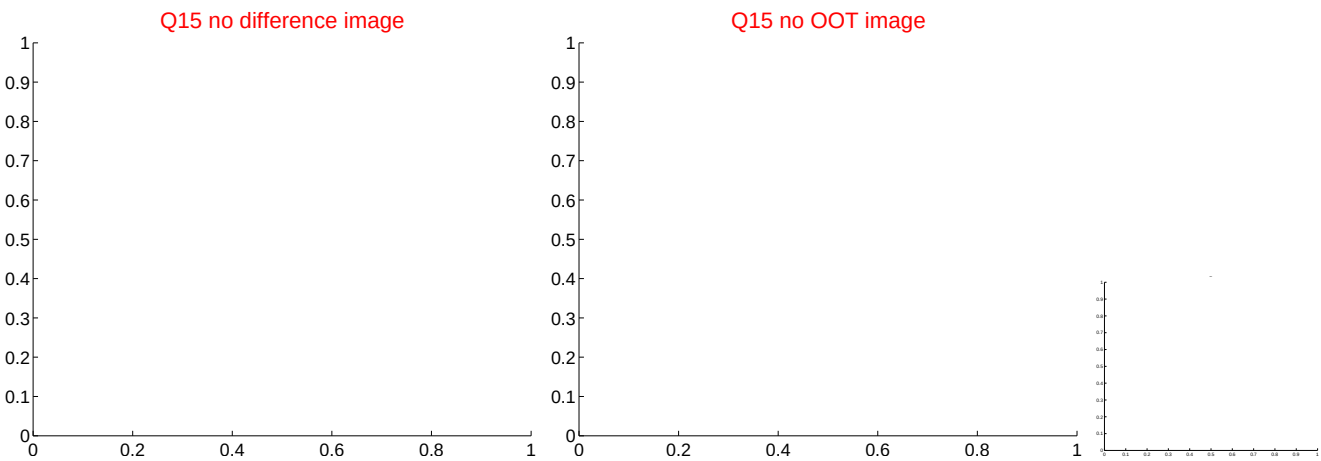


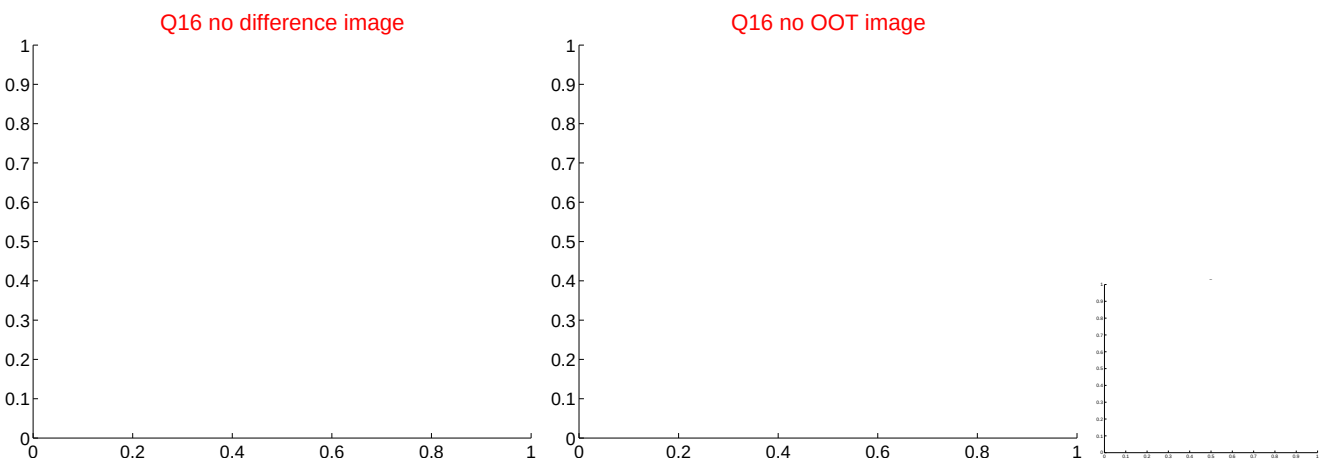


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

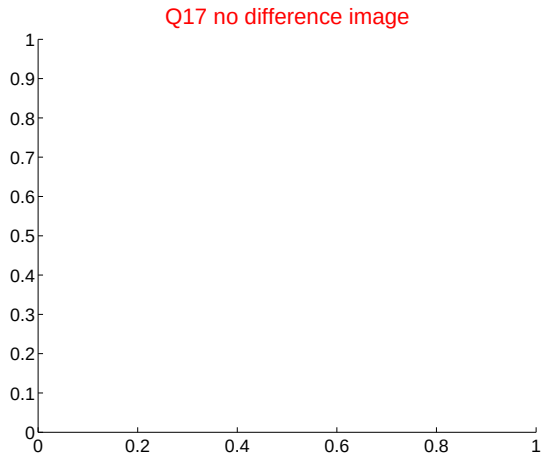


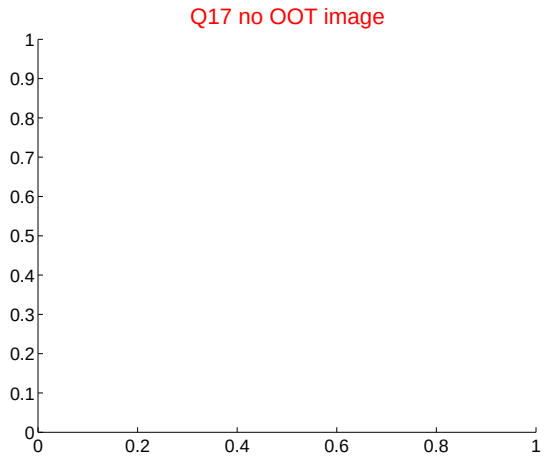


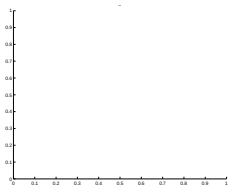


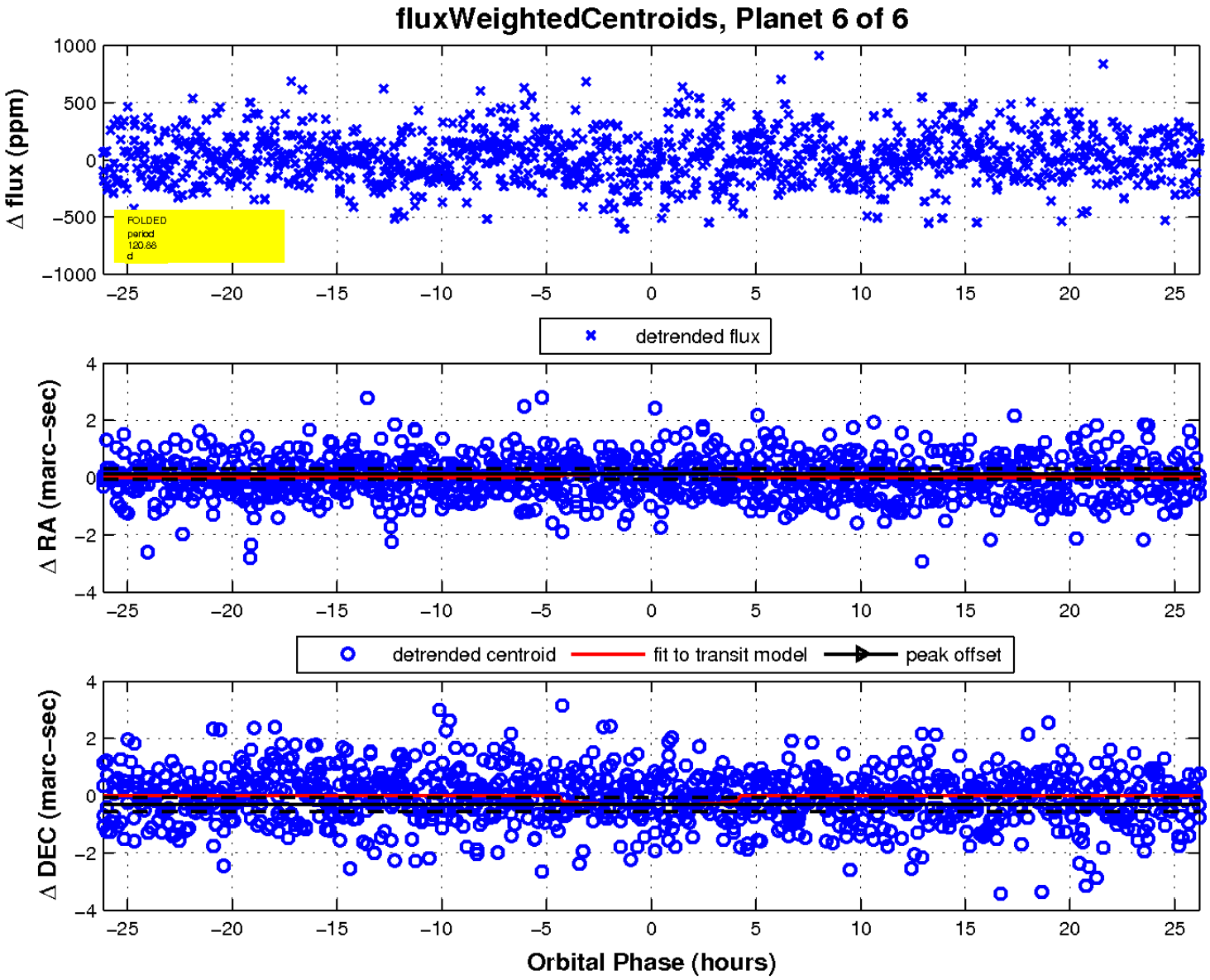


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

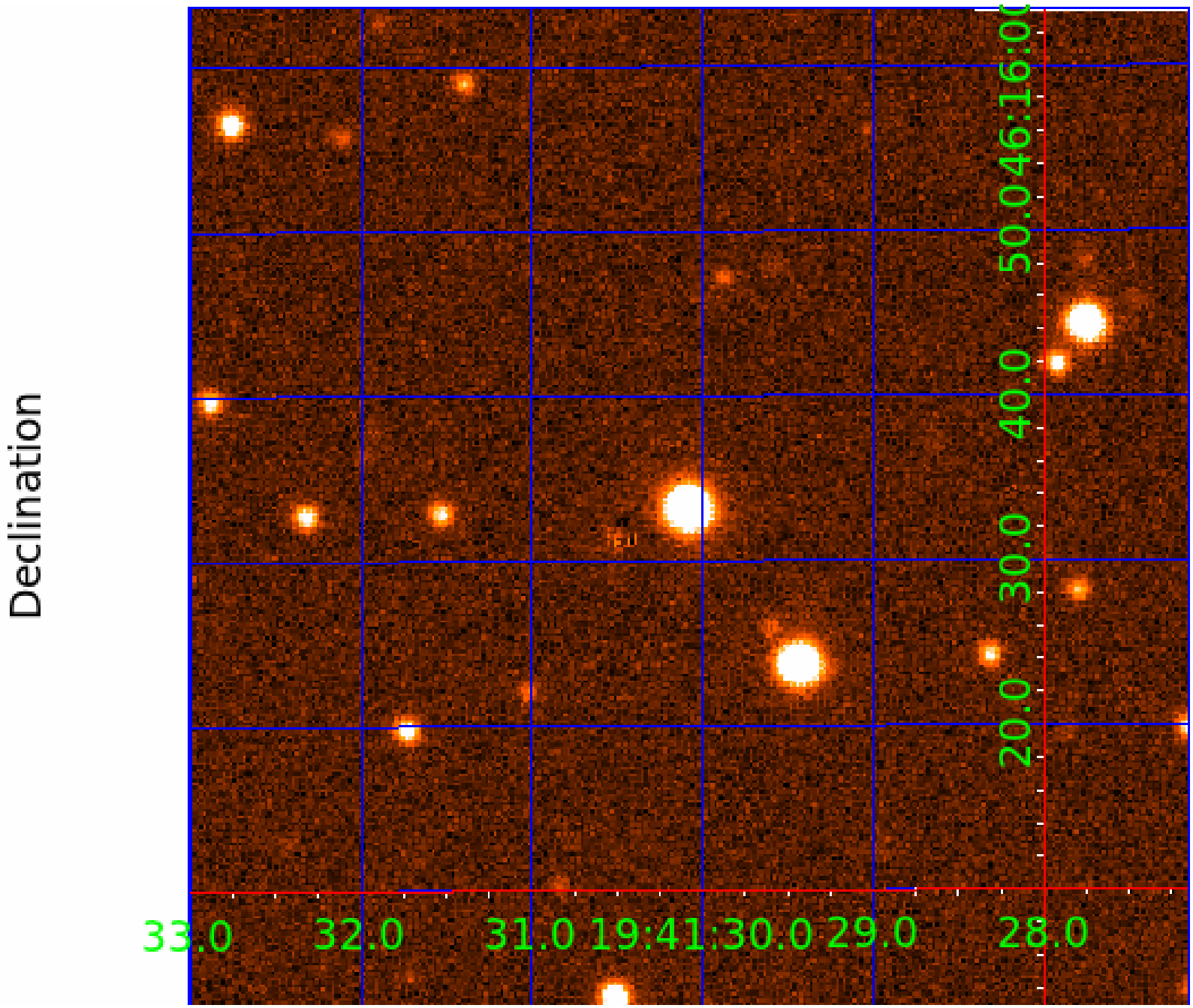








UKIRT Image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