KIC 008149484

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 ($S_\oplus$)
008149484-01	OBS	4306.01	2.978786	132.046212	45.0	3.182	8.1	14.7	2.09	6316	1.68	3198.59
008149484-02	OBS	No	1.489383	132.031282	33.4	3.018	11.8	11.1	2.09	6316	1.41	8060.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008149484-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008149484-02	OBS	FP	0.00	1	1	0	1	IS_SEC_TCE—EPHEM_MATCH

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.

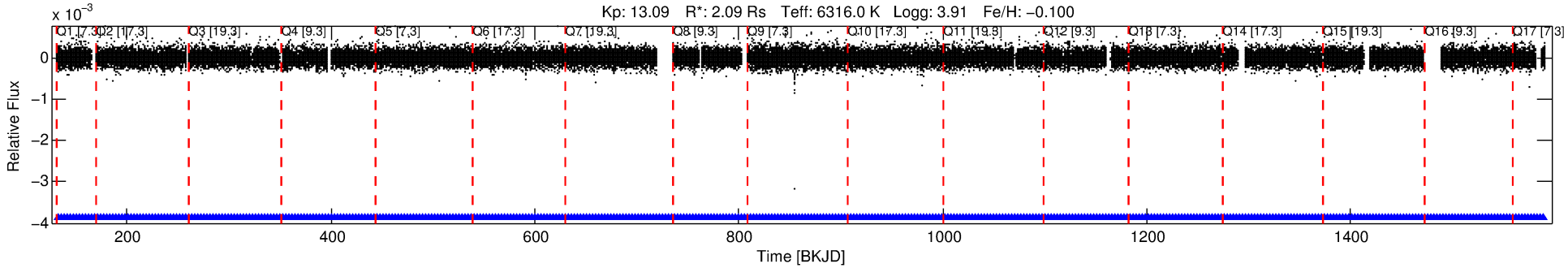
Ephemeris Match Information For 008149484-01

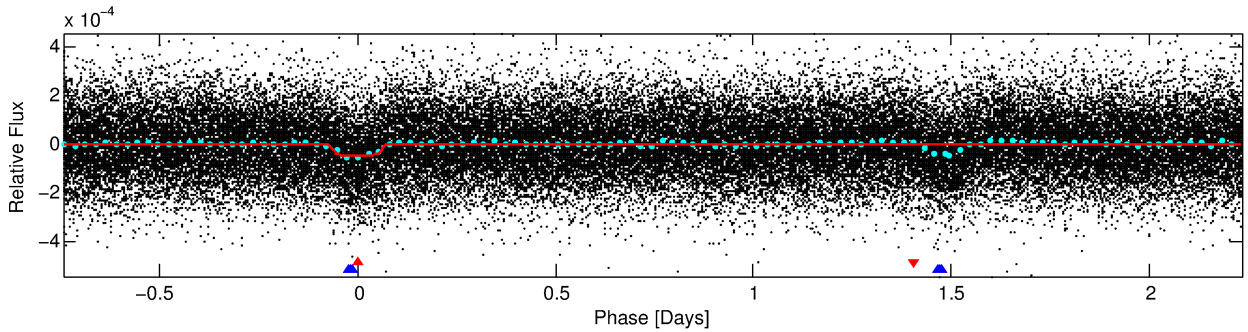
No Significant Match Found

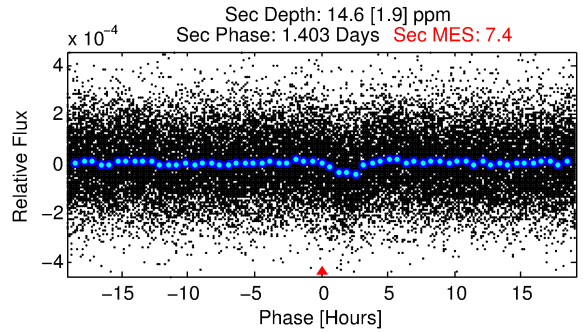
DV One-Page Summary

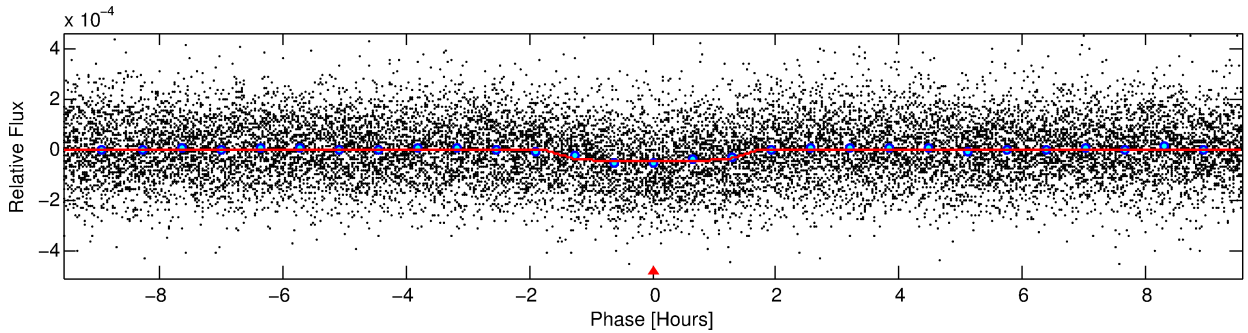
KIC: 8149484 Candidate: 1 of 2 Period: 2.979 d
KOI: K04306 Corr: No Ephemeris Match

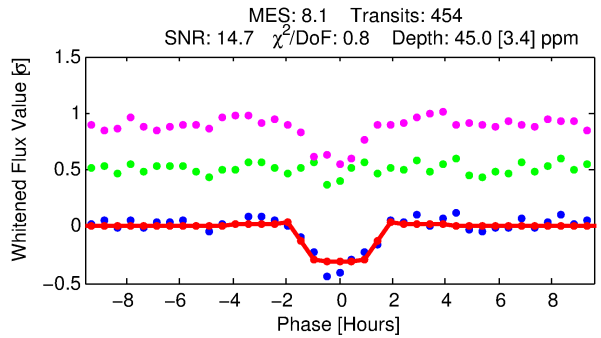
Kp: 13.09 R*: 2.09 Rs Teff: 6316.0 K Logg: 3.91 Fe/H: −0.100

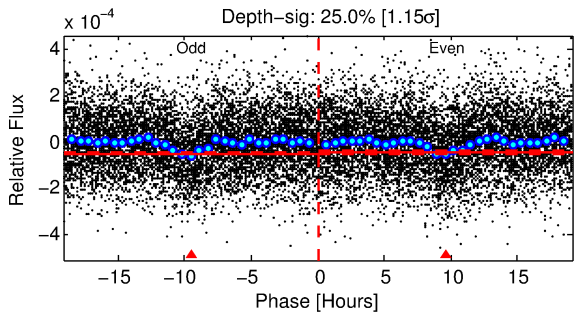


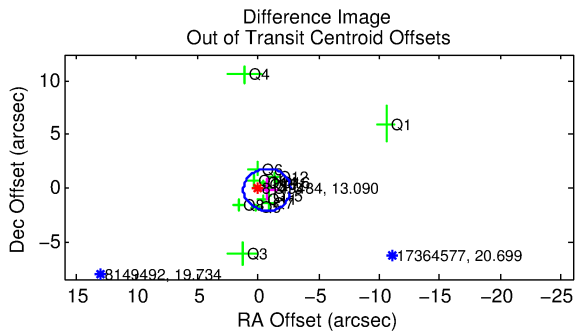












DV Fit Results:

Period = 2.97879 [0.00001] d
Epoch = 132.0462 [0.0029] BKJD
Rp/R* = 0.0074 [0.0022]
a/R* = 3.03 [4.63]
b = 0.92 [0.28]

Seff = 3198.59 [1628.26]
Teq = 1918 [244] K
Rp = 1.68 [0.74] Re
a = 0.0441 [0.0137] AU

Ag = 5.54 [4.38] [1.04σ]
Teffp = 4548 [710] K [3.50σ]

DV Diagnostic Results:

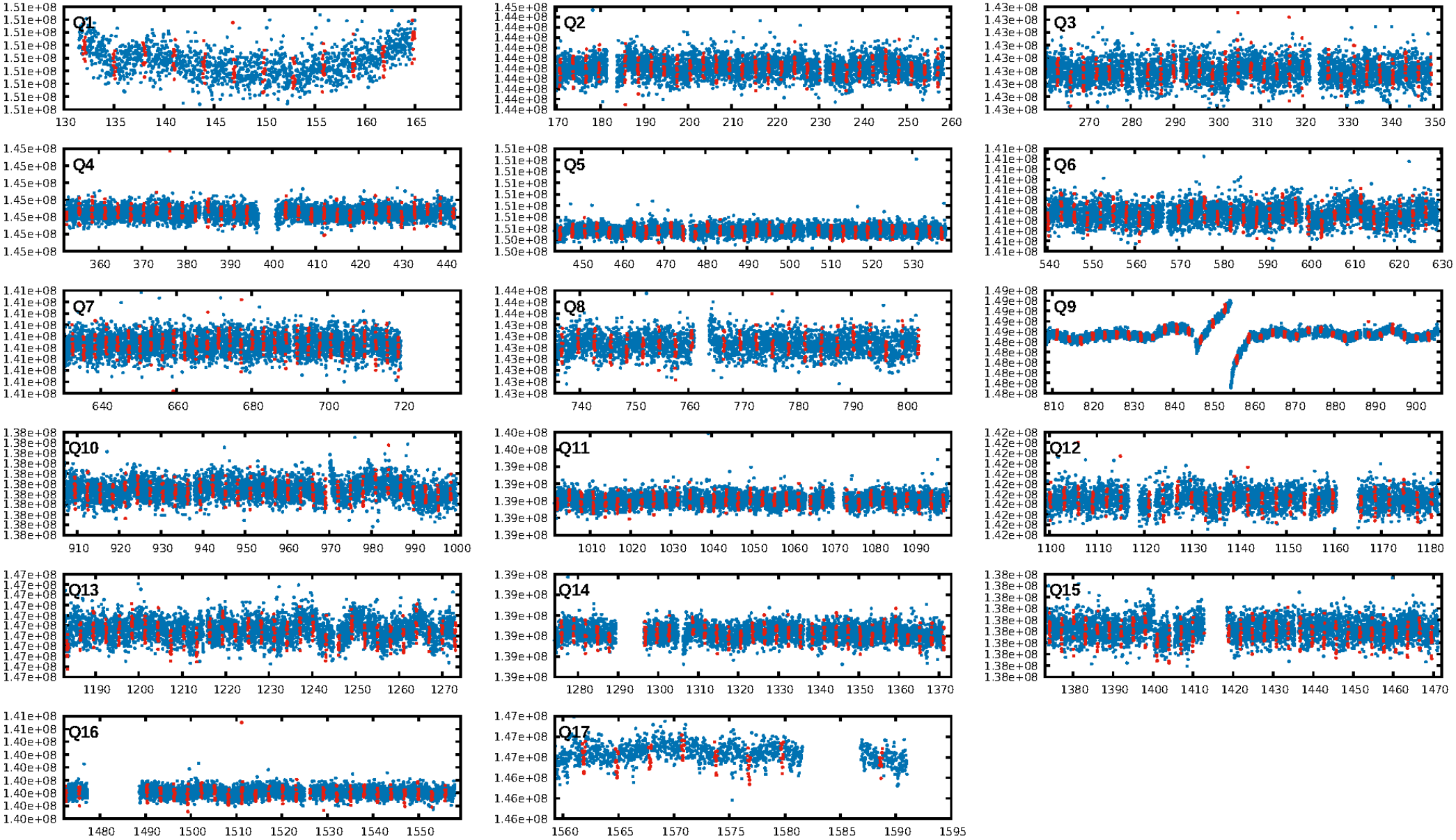
ShortPeriod−sig: 100.0% [8.15σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 2.33e−16
RollingBand−fgt: 1.00 [434/434]
GhostDiagnostic−chr: 3.489

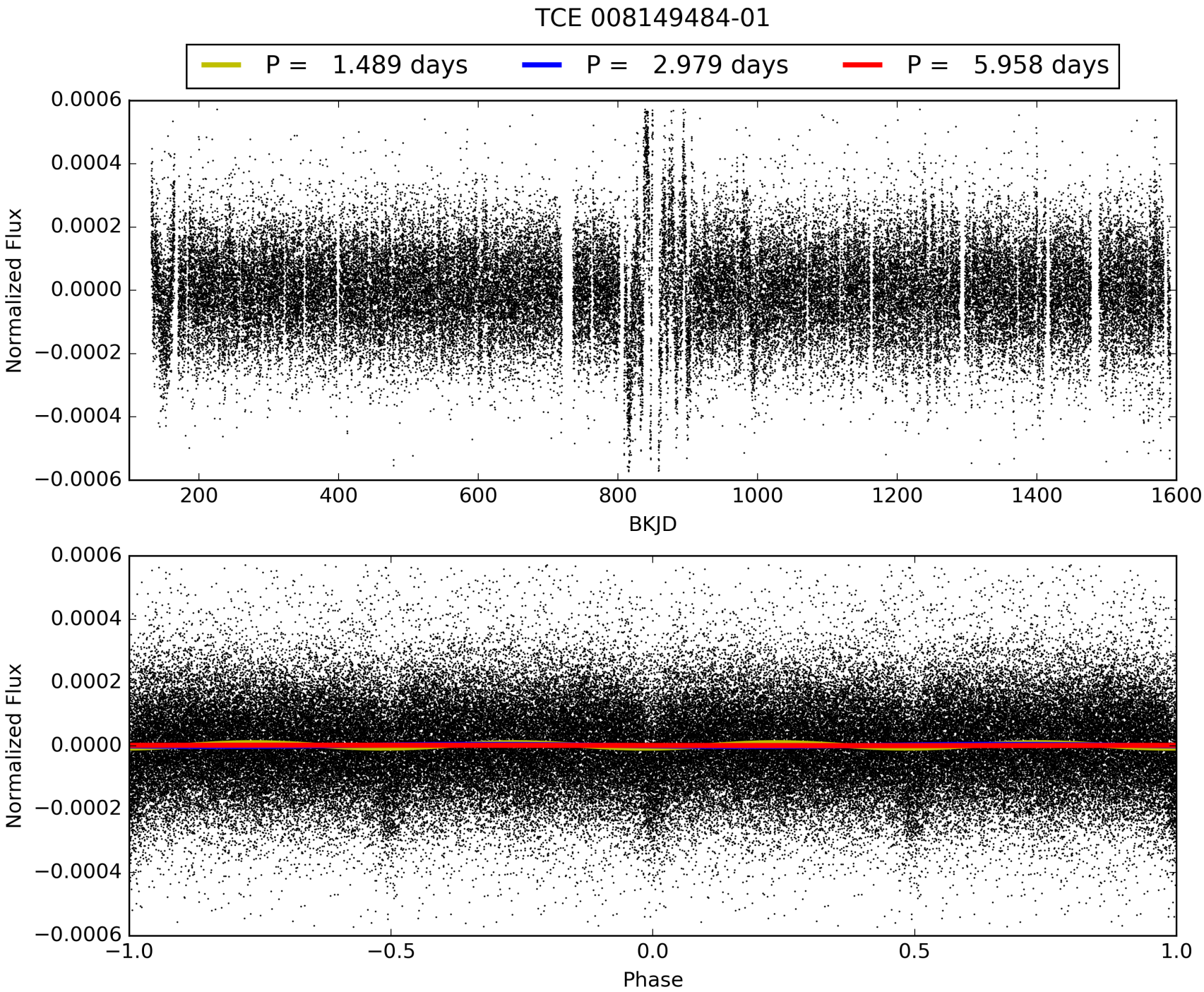
Centroid−sig: 0.1%
Centroid−so: 1.324 arcsec [1.53σ]
OotOffset−rm: 0.762 arcsec [1.17σ]
KicOffset−rm: 0.656 arcsec [0.98σ]
OotOffset−st: 3/4/4/4 [15]
KicOffset−st: 3/4/4/4 [15]
DiffImageQuality−fgm: 0.80 [12/15]
DiffImageOverlap−fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 09:11:19 Z

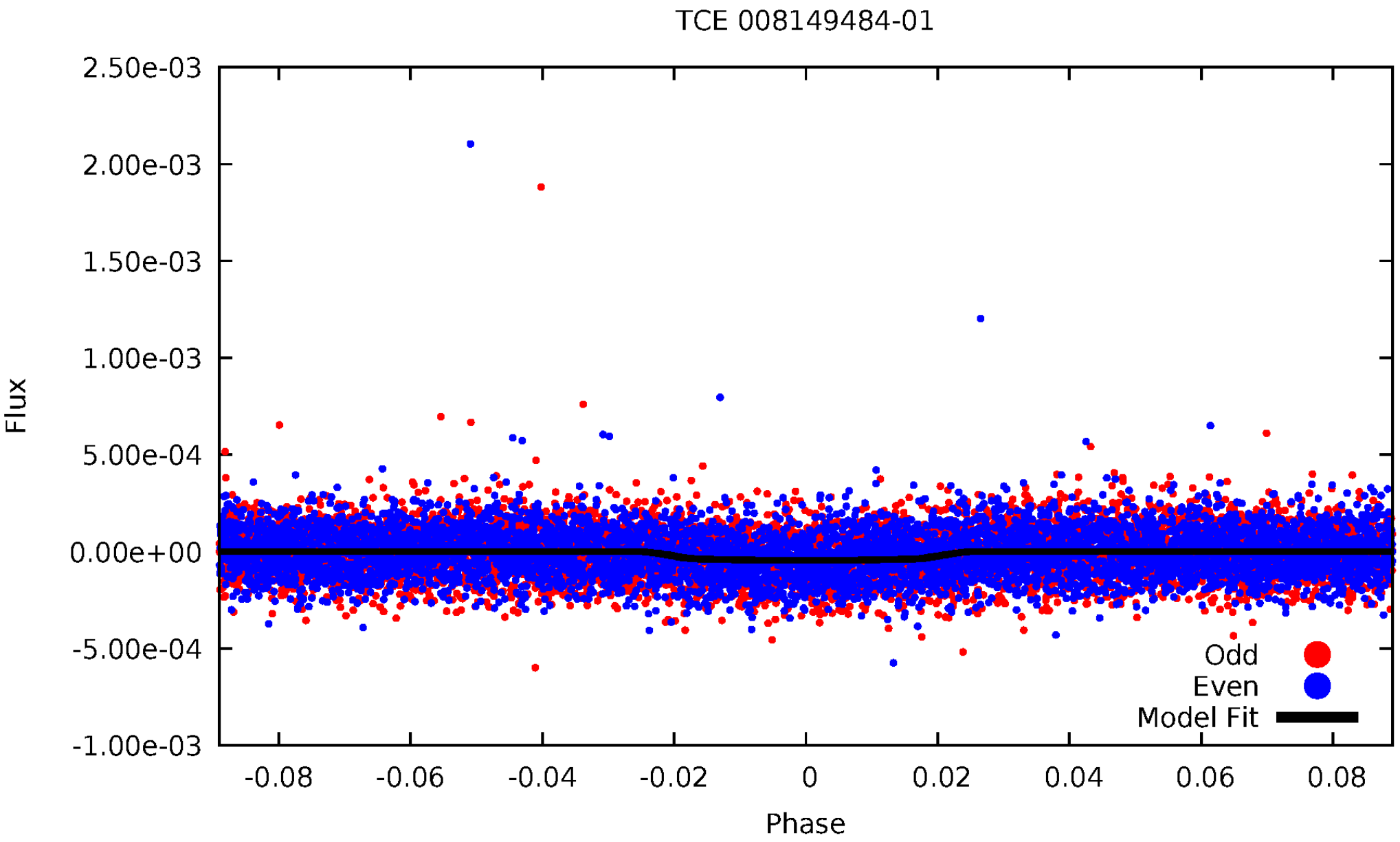
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008149484-01, PDC Light Curves

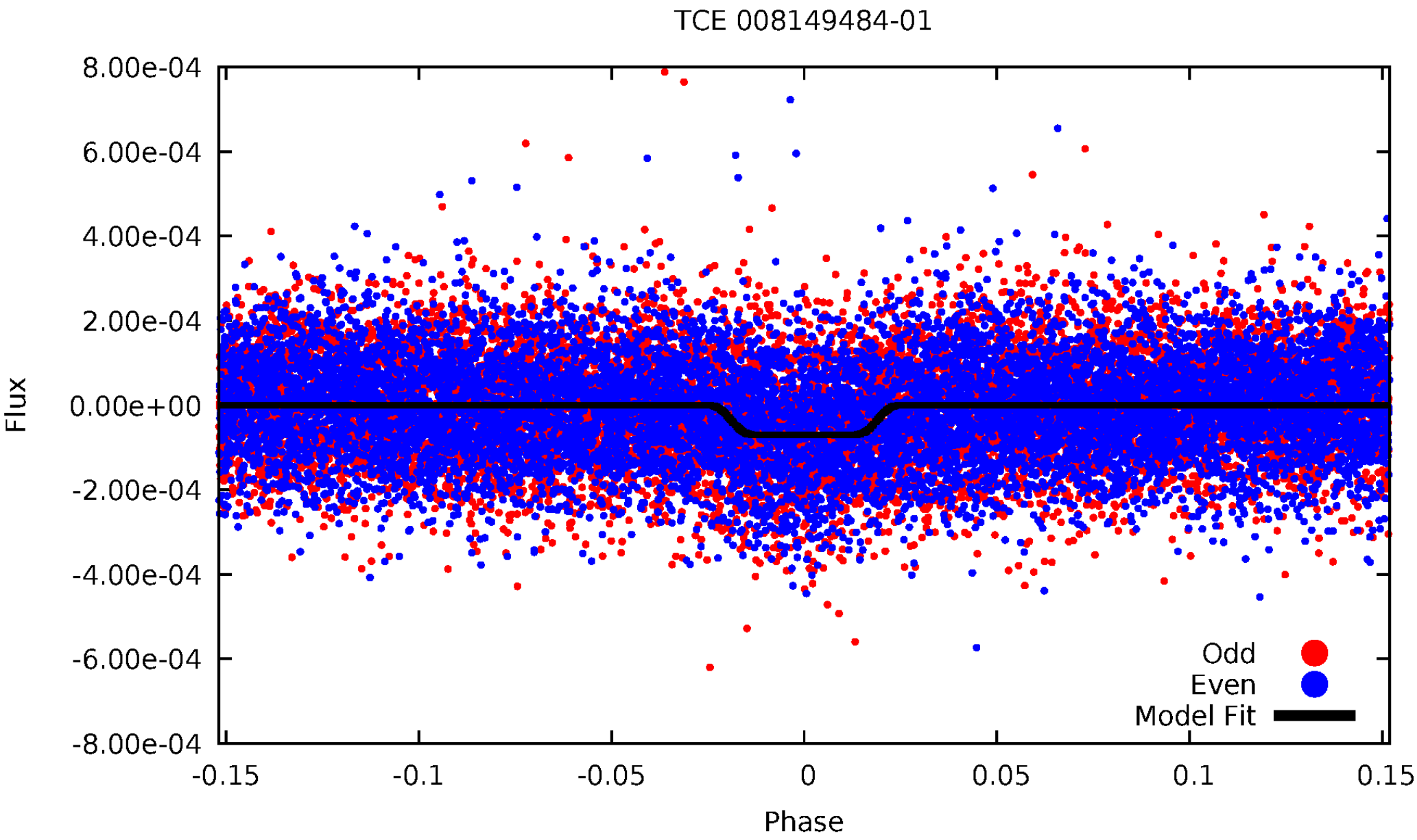



TCE 008149484-01
P = 1.489 days
P = 2.979 days
P = 5.958 days
Normalized Flux
0.0006
0.0004
0.0002
0.0000
−0.0002
−0.0004
−0.0006
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0006
0.0004
0.0002
0.0000
−0.0002
−0.0004
−0.0006
−1.0
−0.5
0.0
0.5
1.0
Phase

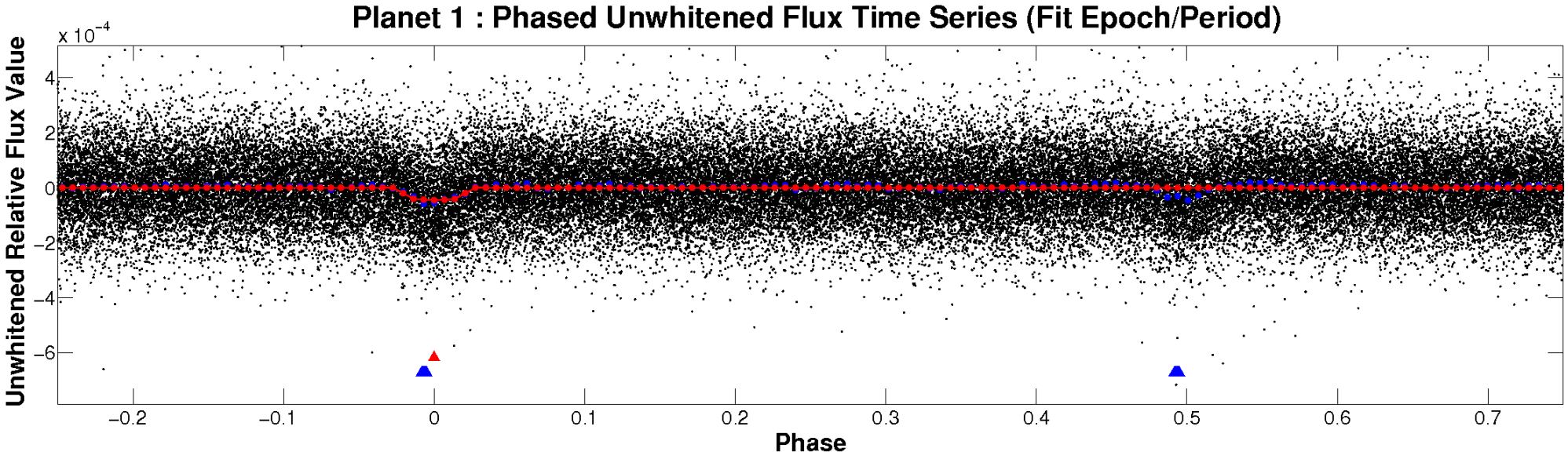
DV Odd/Even

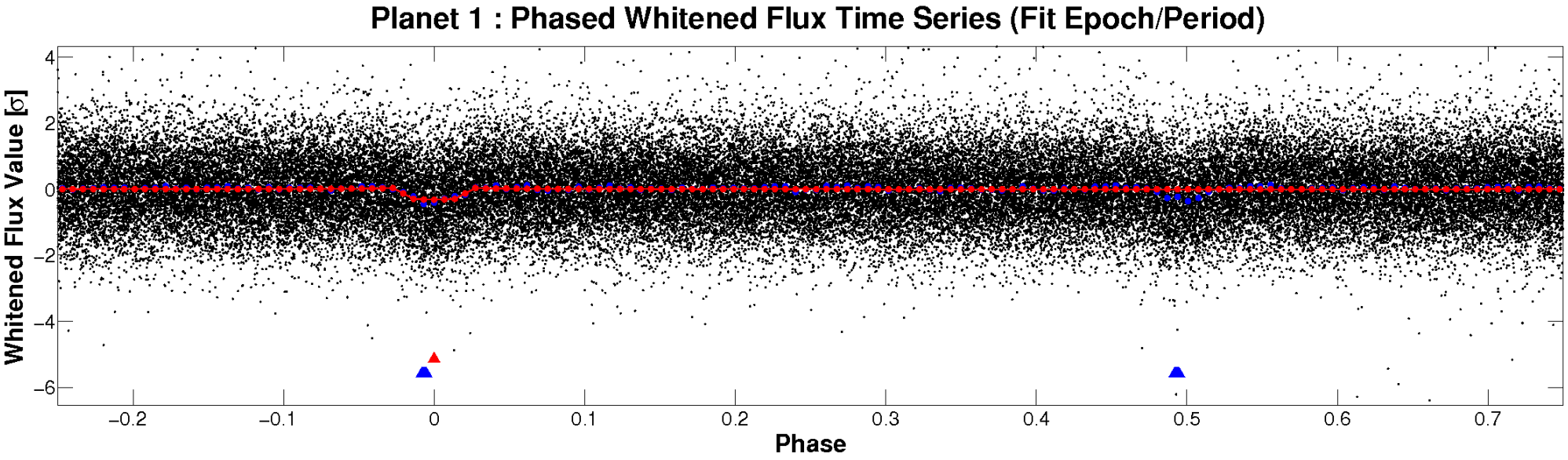

TCE 008149484-01
2.50e-03
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
Flux
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008149484-01
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
Flux
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
Phase
Odd
Even
Model Fit

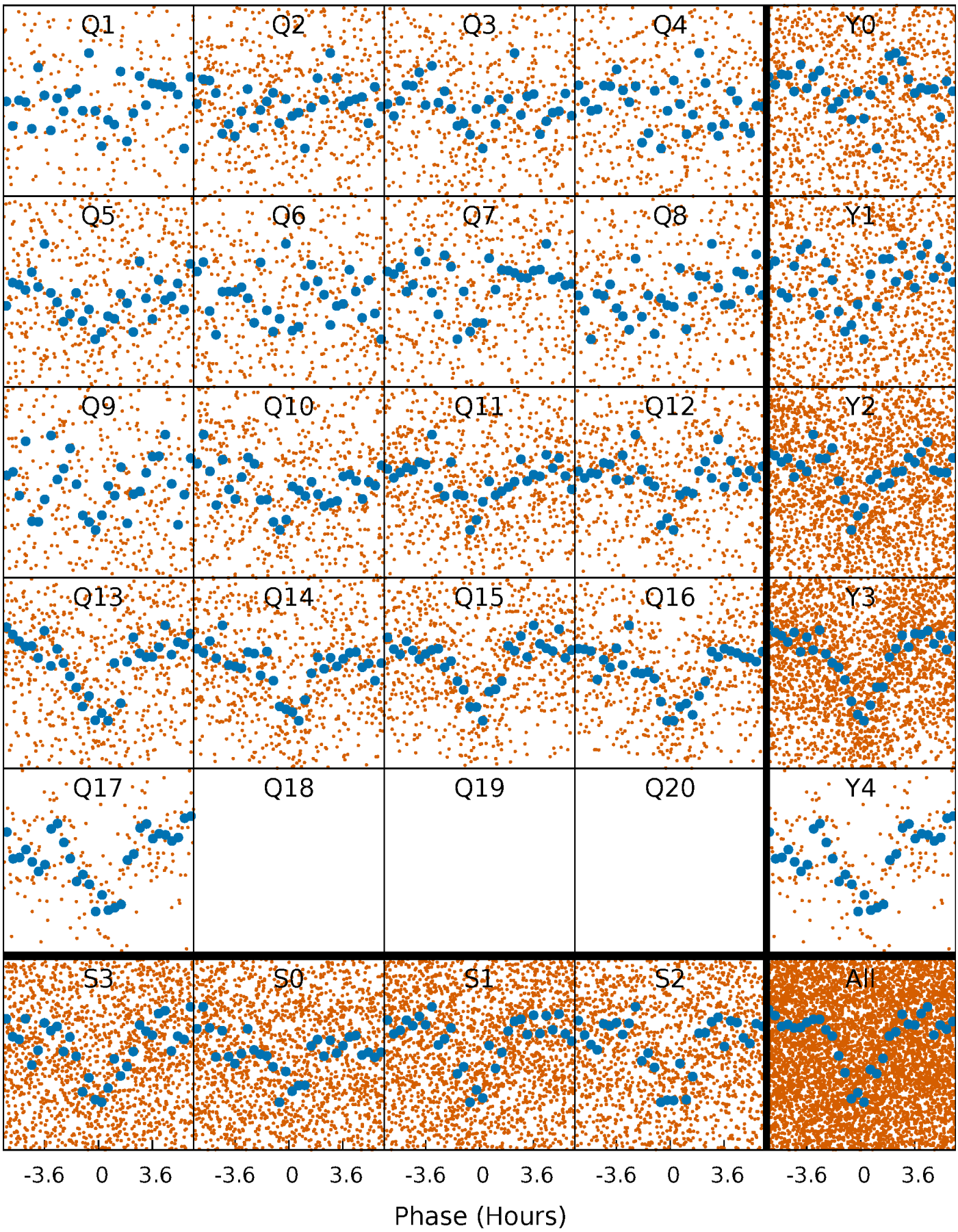
Non-Whitened Vs. Whitened Light Curve





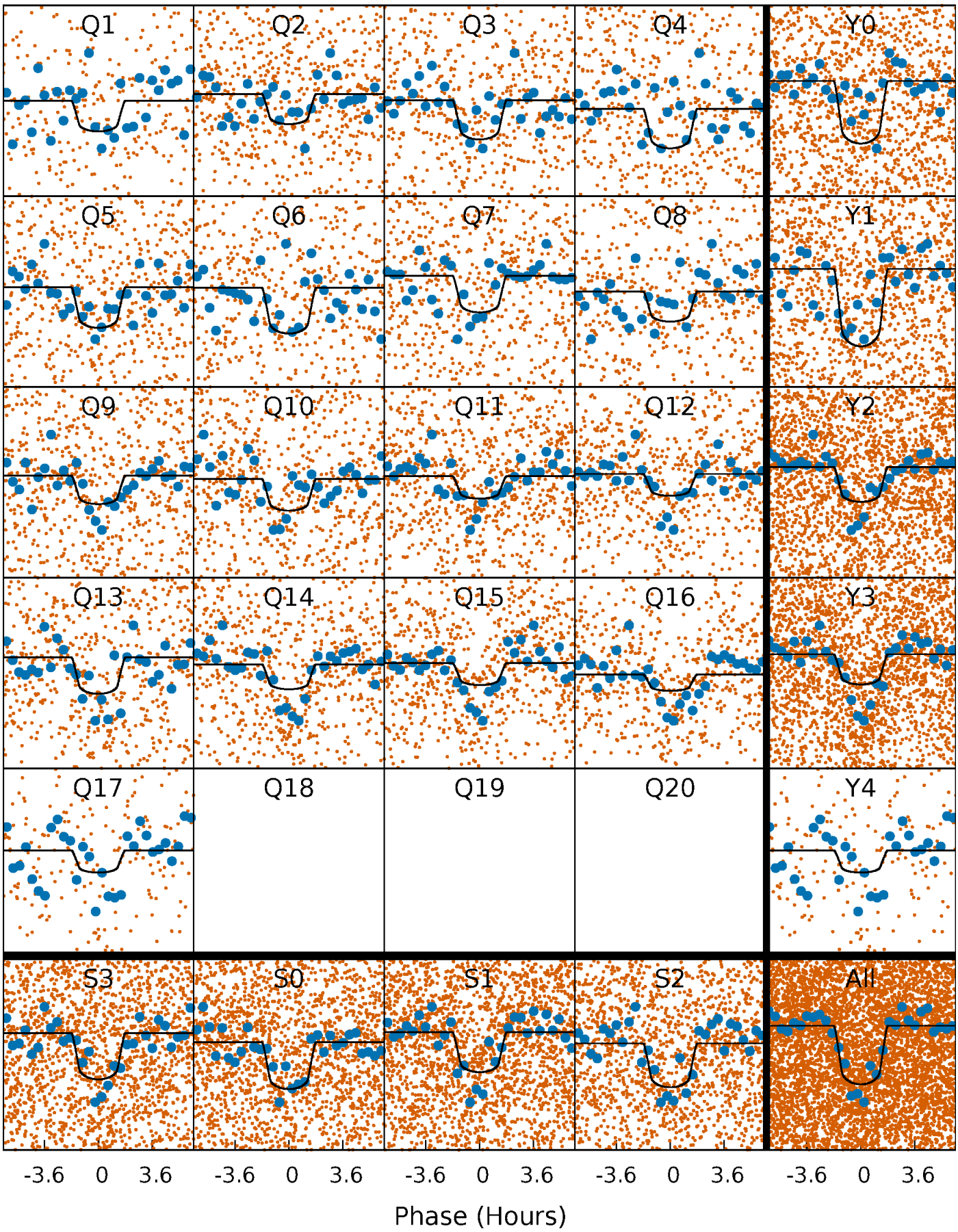
PDC Quarter-Phased Transit Curves

TCE 008149484-01 P= 2.978786 Days T_0=132.046212 (BKJD)



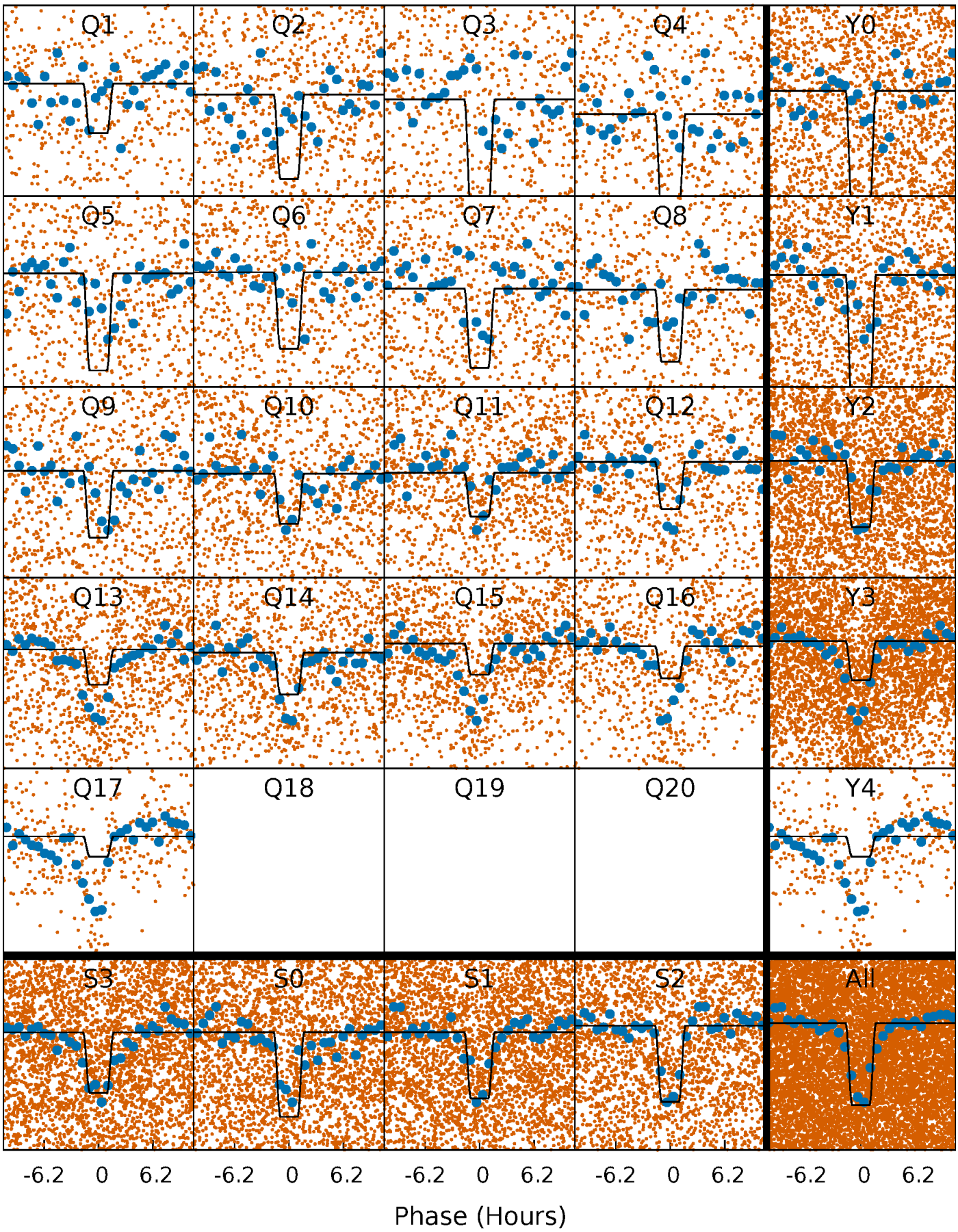
DV Quarter-Phased Transit Curves

TCE 008149484-01 P= 2.978786 Days T_0=132.046212 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

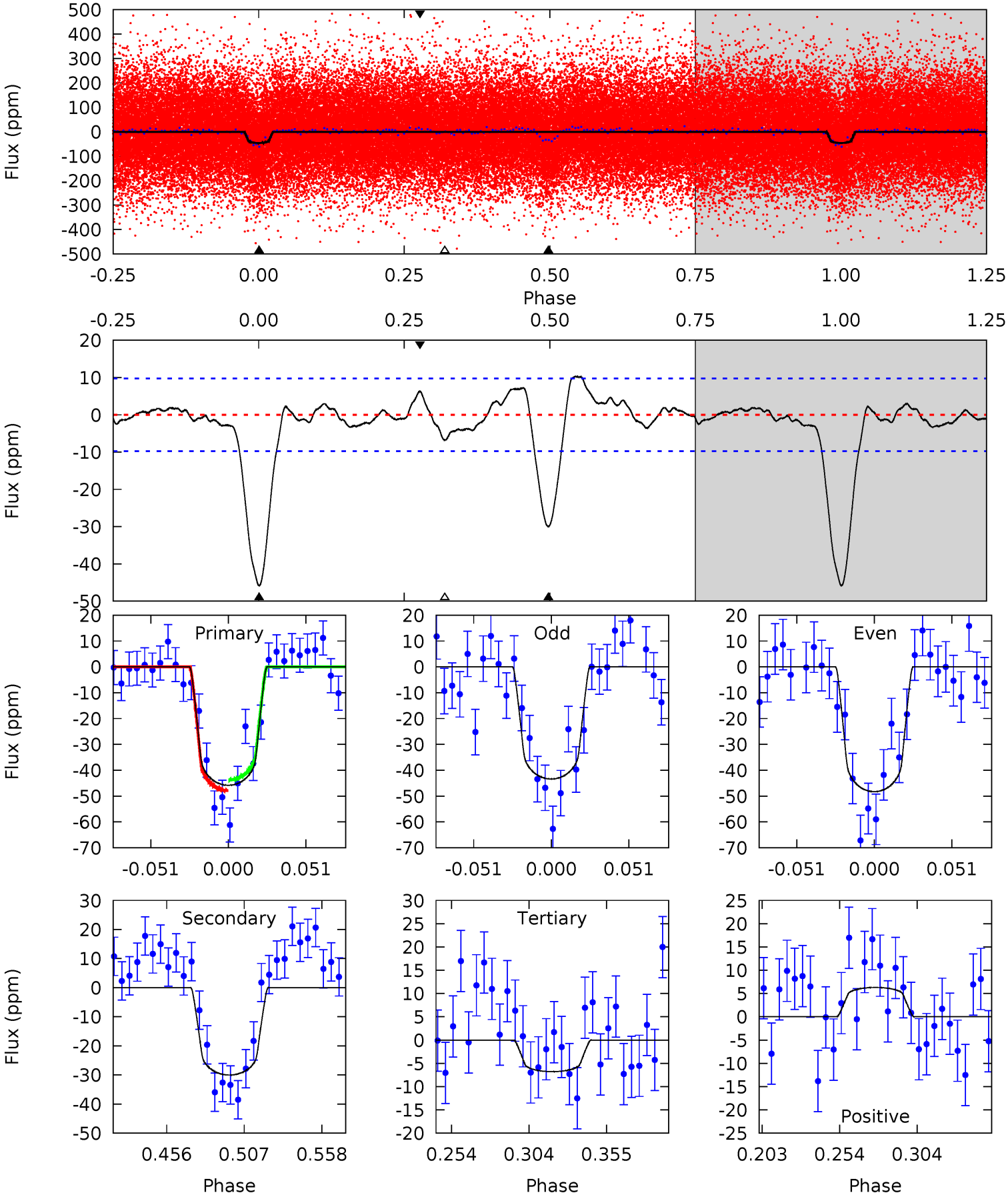
TCE 008149484-01 P= 2.979064 Days T_0=131.947555 (BKJD)



DV Model-Shift Uniqueness Test

008149484-01, P = 2.978786 Days, E = 129.067426 Days

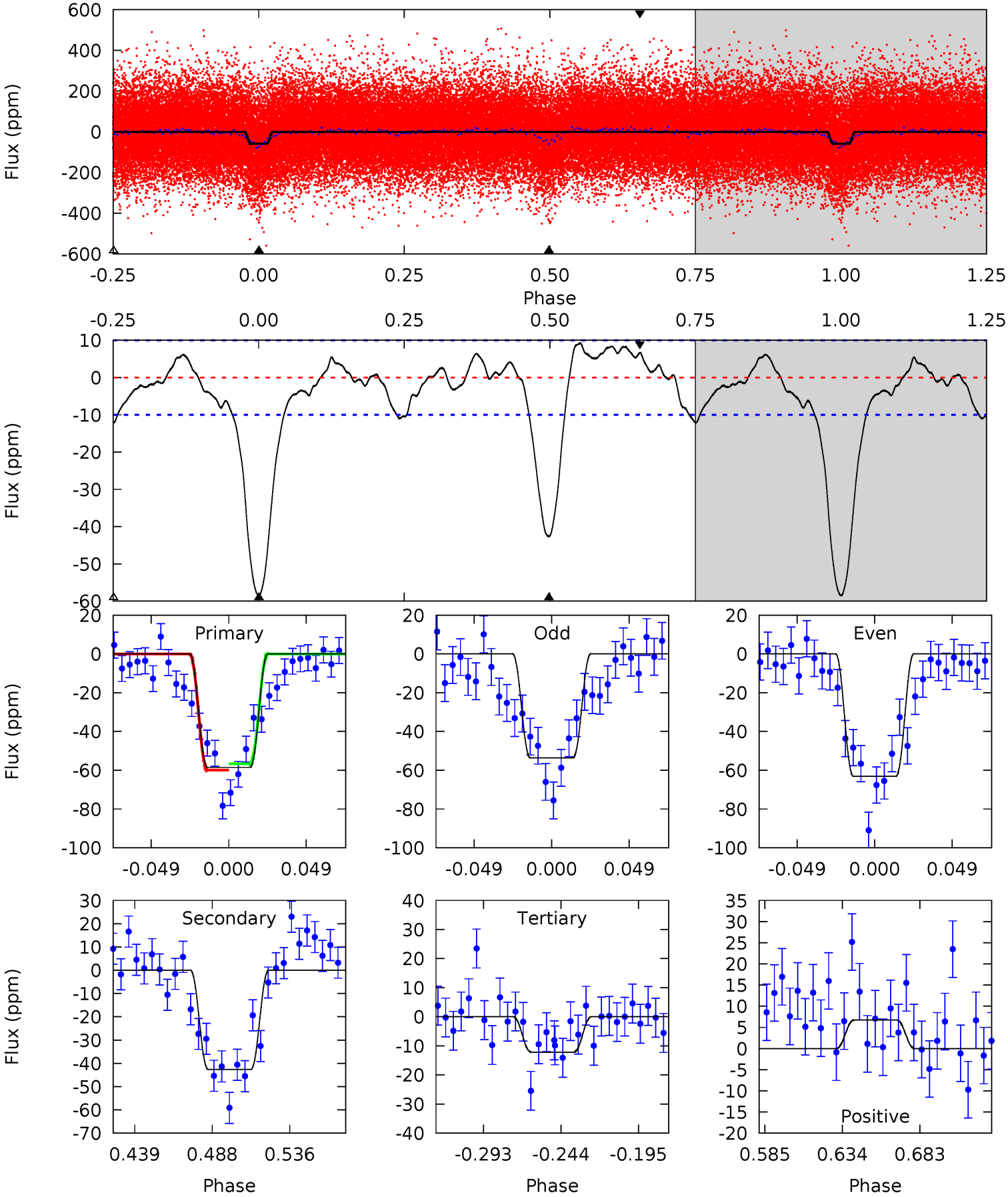
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	14.5	3.27	3.04	4.71	1.95	1.44	18.8	19.1	11.2	11.4	1.18	0.90	0.18	1.00



Alt Model-Shift Uniqueness Test

008149484-01, P = 2.979064 Days, E = 128.968491 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.6	20.1	5.73	3.17	4.71	1.97	2.34	21.9	24.4	14.4	16.9	2.23	1.00	0.14	0.76



Stellar Parameters For KIC 008149484

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	M($M_\odot$)	$p_\star$ (g·cm^{-3})
	6316^{+154}_{-173}	$3.908^{+0.292}_{-0.117}$	$-0.100^{+0.300}_{-0.250}$	$2.087^{+0.449}_{-0.673}$	$1.285^{+0.220}_{-0.220}$	$0.199^{+0.371}_{-0.073}$
	+2%/-3%	+7%/-3%	+300%/-250%	+22%/-32%	+17%/-17%	+186%/-37%
Source	PHO1	FLK73	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 008149484-01 / KOI 4306.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-30±2	$1.60^{+0.59}_{-0.53}$	2647^{+171}_{-206}	5465^{+1083}_{-642}	13^{+15}_{-6}
Alt.	-43±2	$1.80^{+0.59}_{-0.51}$	2621^{+171}_{-207}	5542^{+862}_{-538}	14^{+13}_{-6}

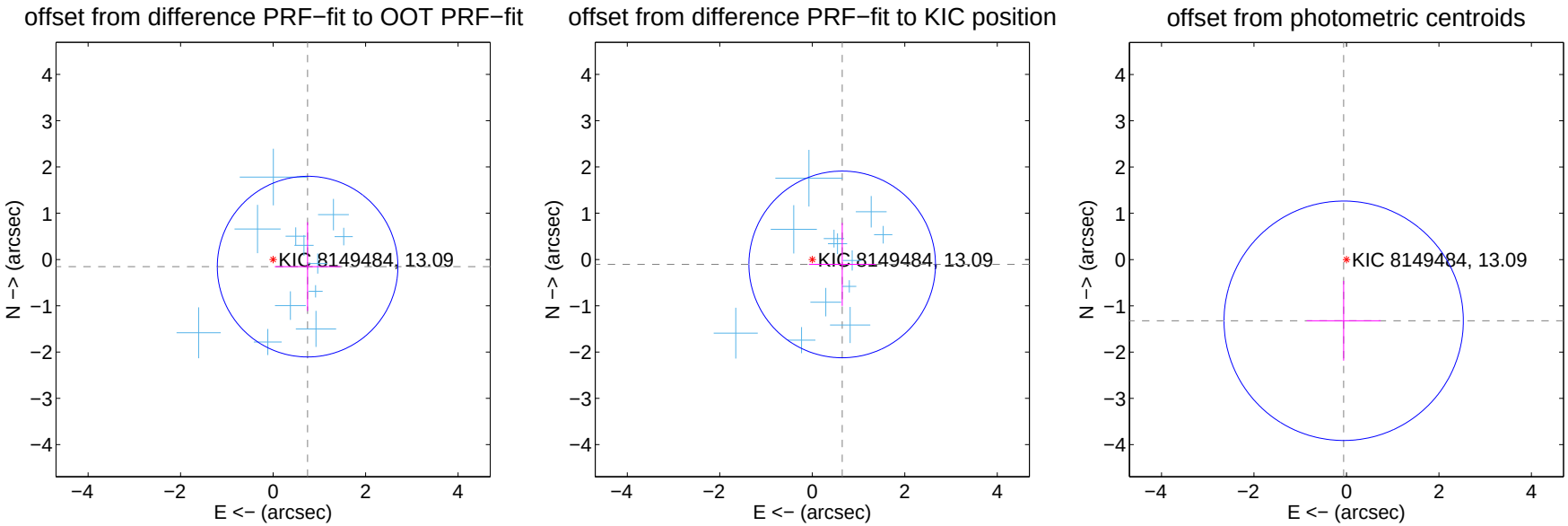
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

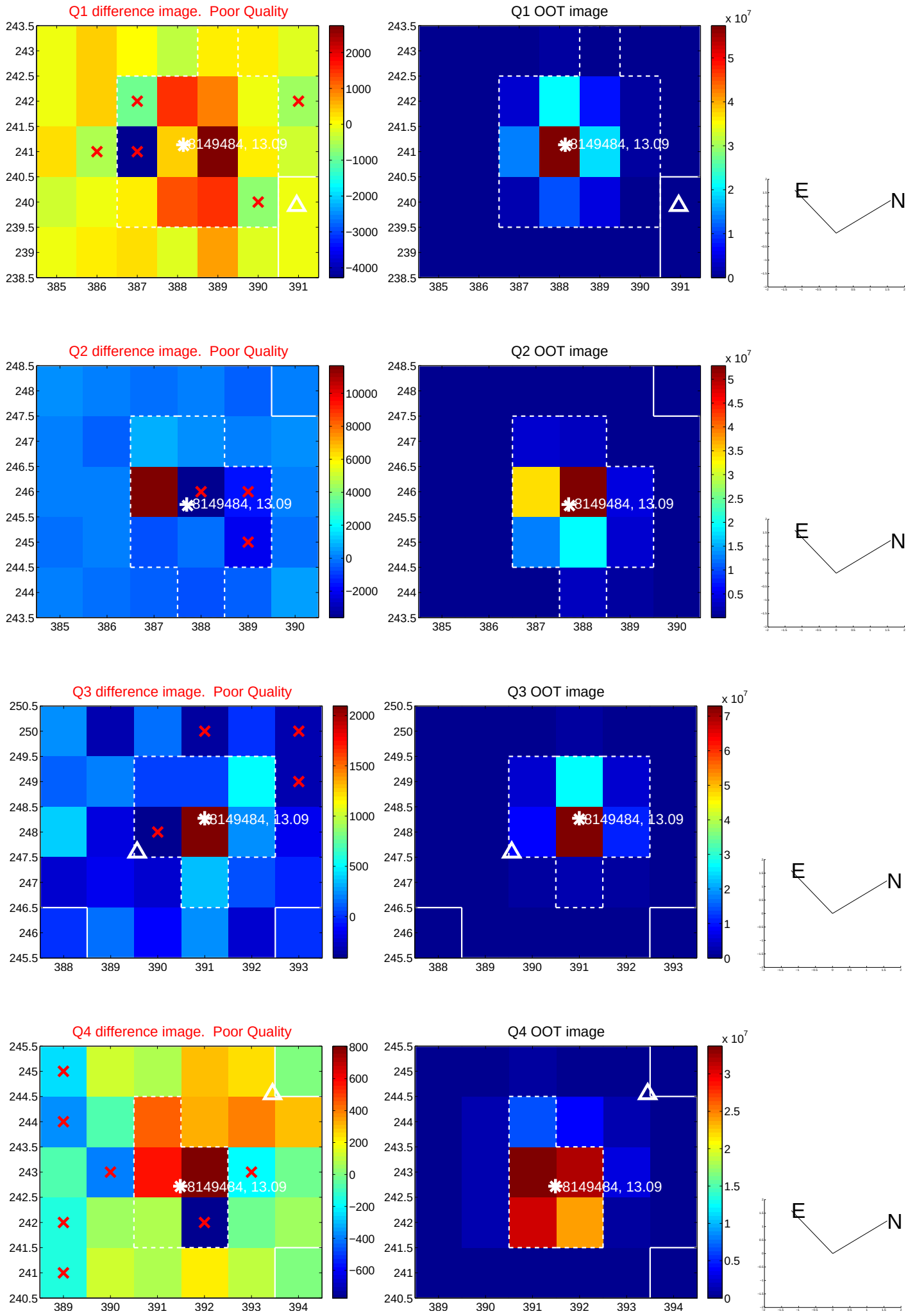
Supplemental centroid analysis for 008149484-01. Kepler magnitude: 13.09. Transit SNR 14.68
There are 12 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.762 ± 0.651	1.17	-0.746 ± 0.709	-0.154 ± 0.960
PRF-fit source offset from KIC position	0.656 ± 0.672	0.98	-0.647 ± 0.720	-0.106 ± 0.897
photometric centroid source offset	1.32 ± 0.86	1.53	0.06 ± 0.80	-1.32 ± 0.86

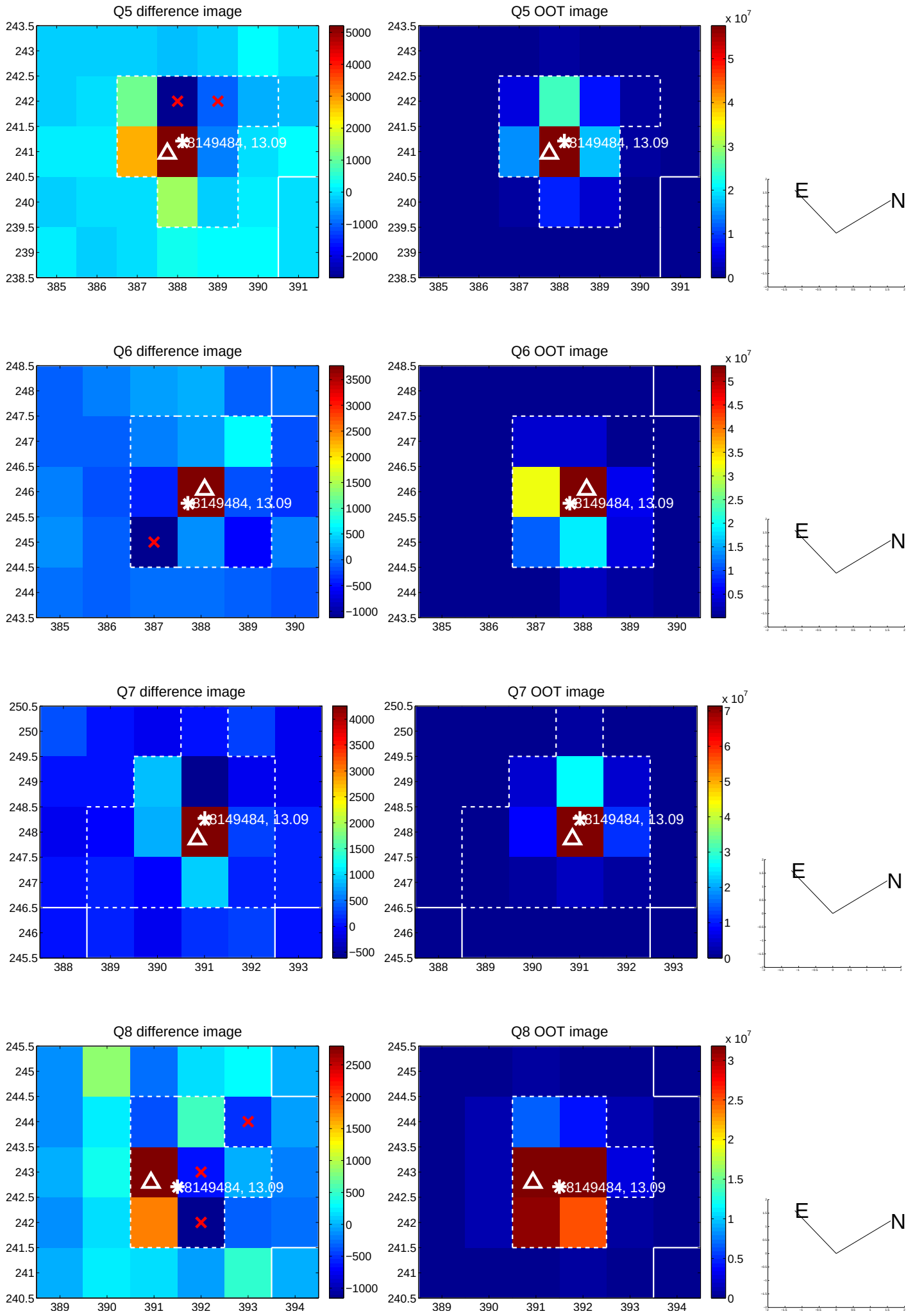


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

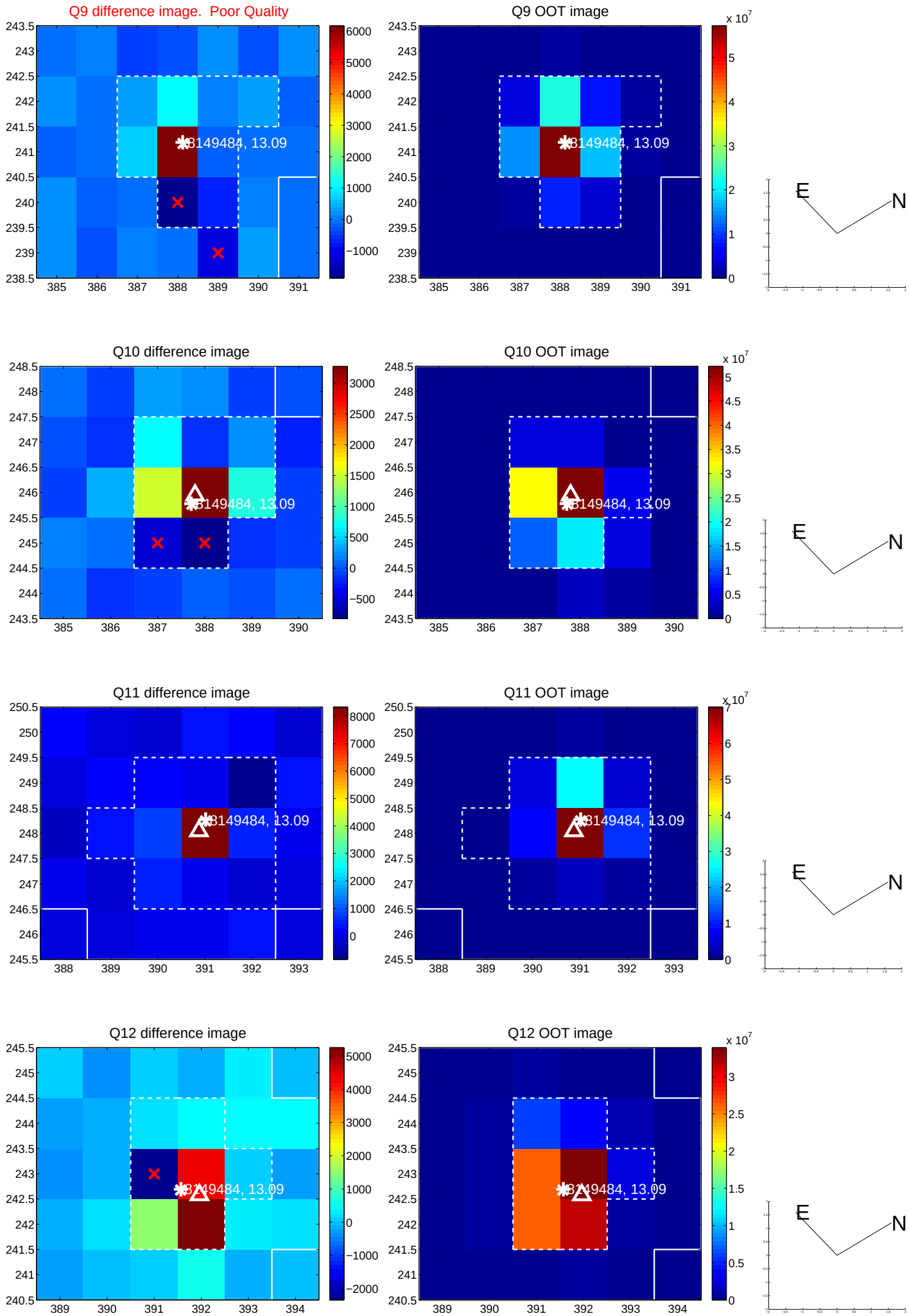
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



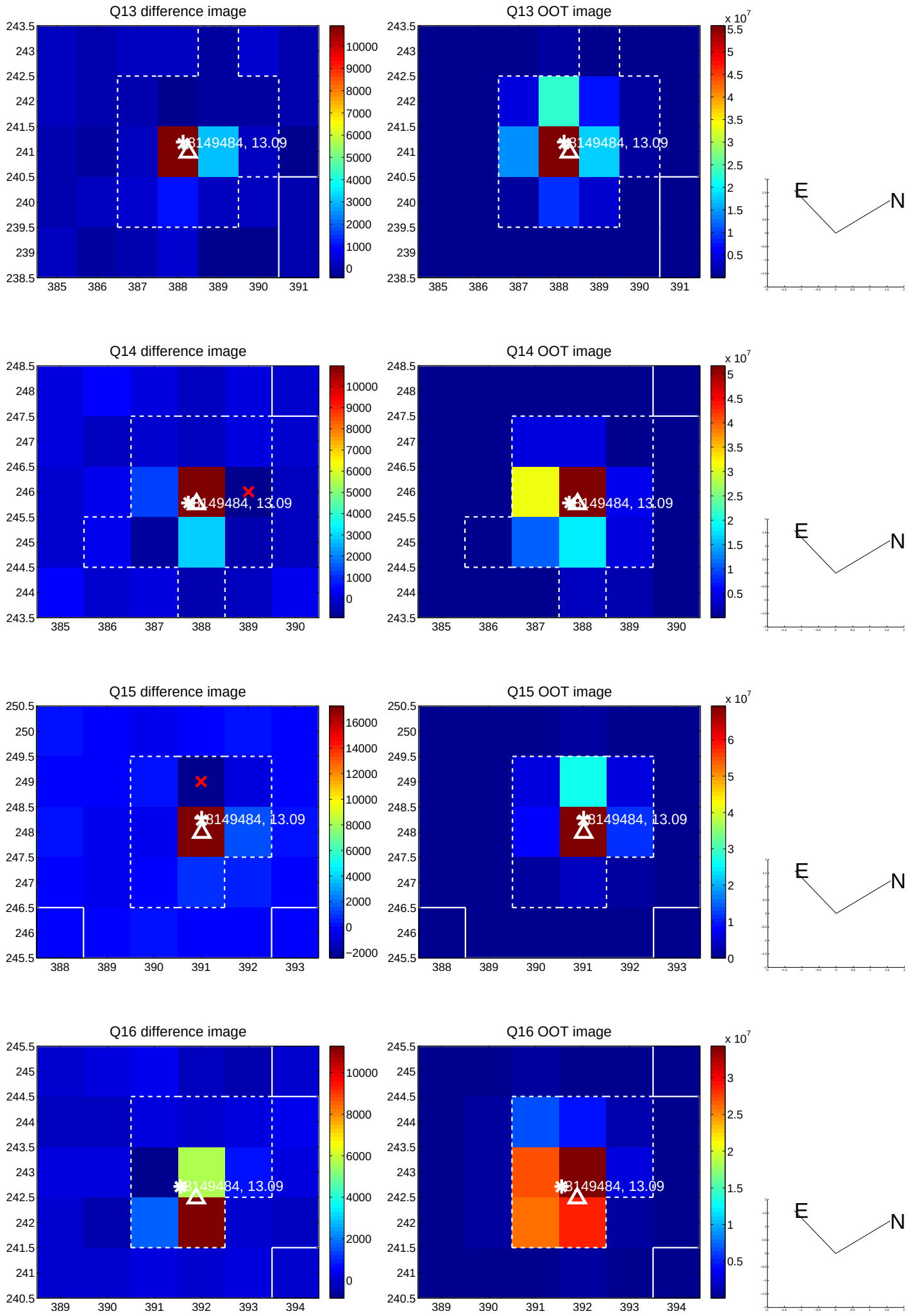
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



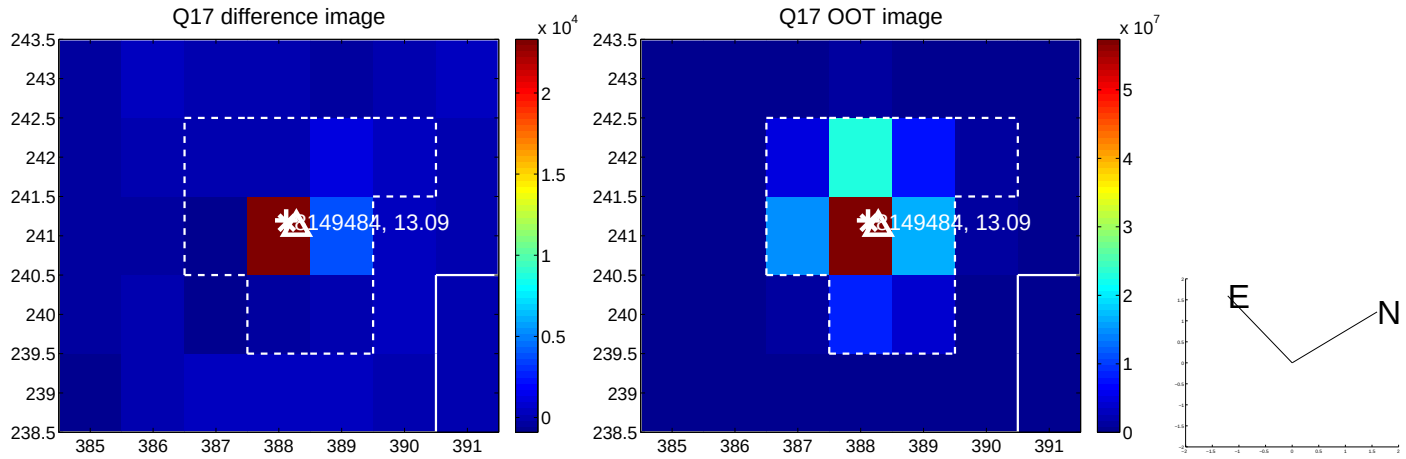
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

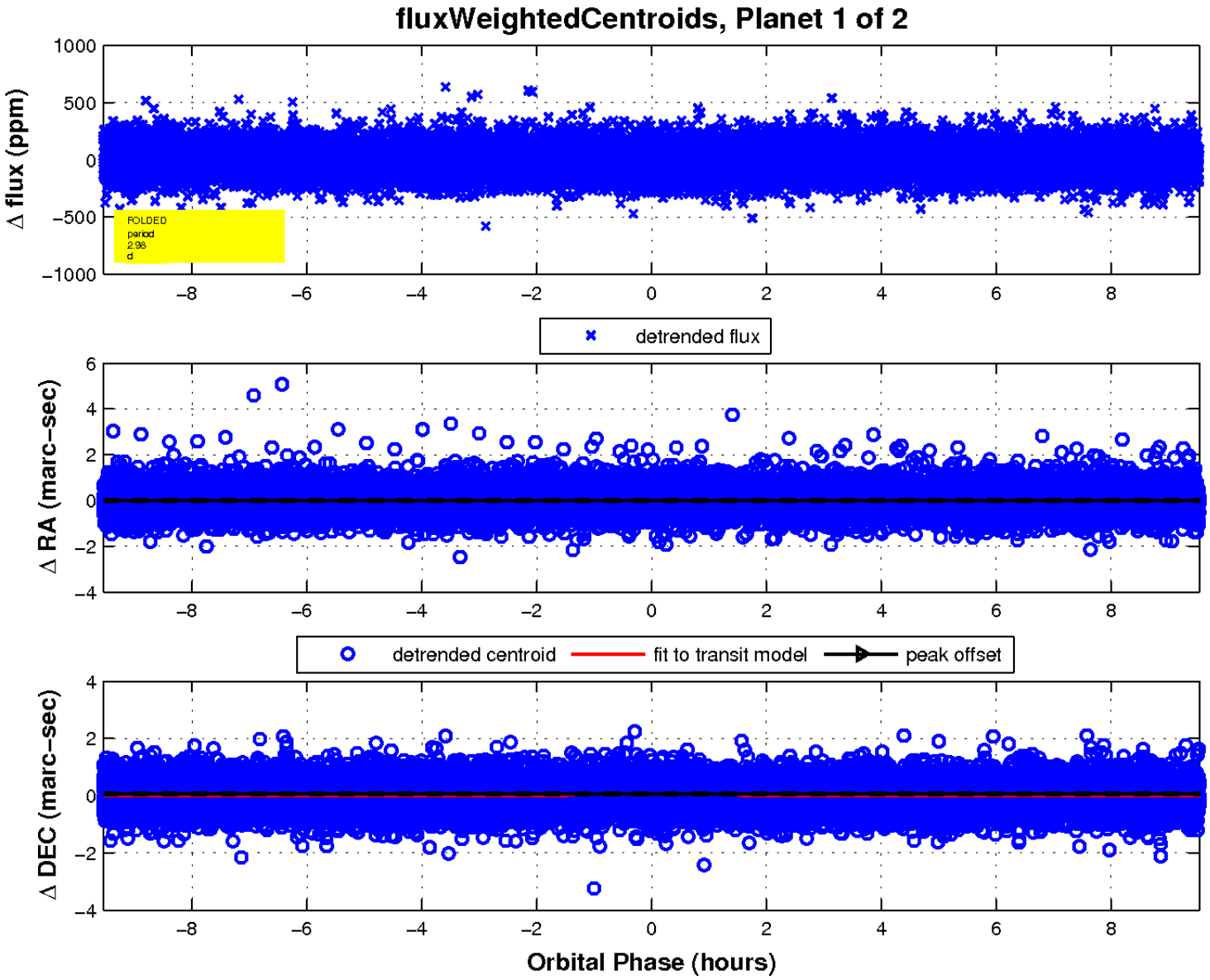


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

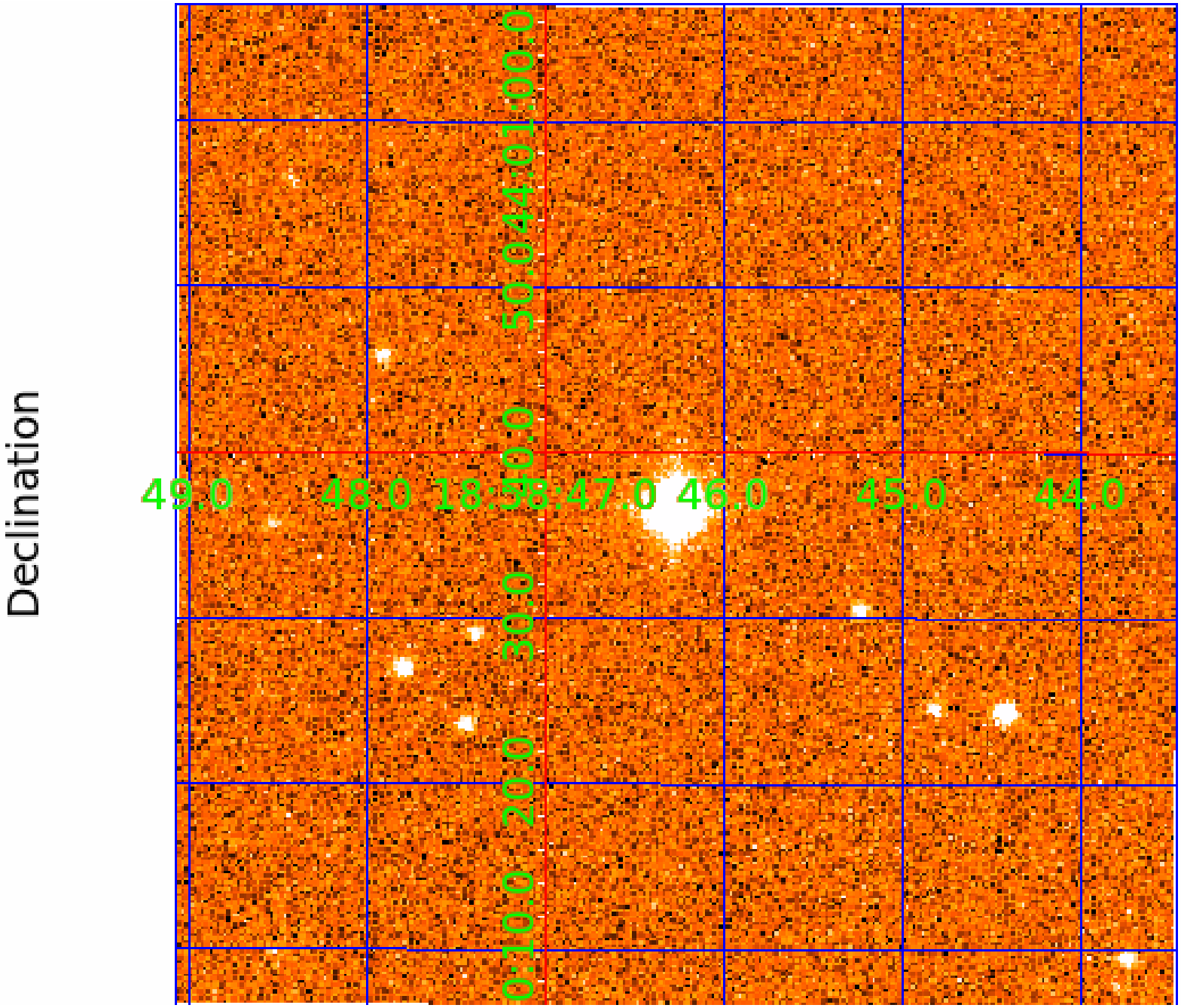


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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18:38:47.0
46.0
45.0
44.0
0:10:0
20.0
30.0
40.0
50.0
1:00.0

KIC 008149484

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 ($S_\oplus$)
008149484-01	OBS	4306.01	2.978786	132.046212	45.0	3.182	8.1	14.7	2.09	6316	1.68	3198.59
008149484-02	OBS	No	1.489383	132.031282	33.4	3.018	11.8	11.1	2.09	6316	1.41	8060.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008149484-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008149484-02	OBS	FP	0.00	1	1	0	1	IS_SEC_TCE—EPHEM_MATCH

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 008149484-02

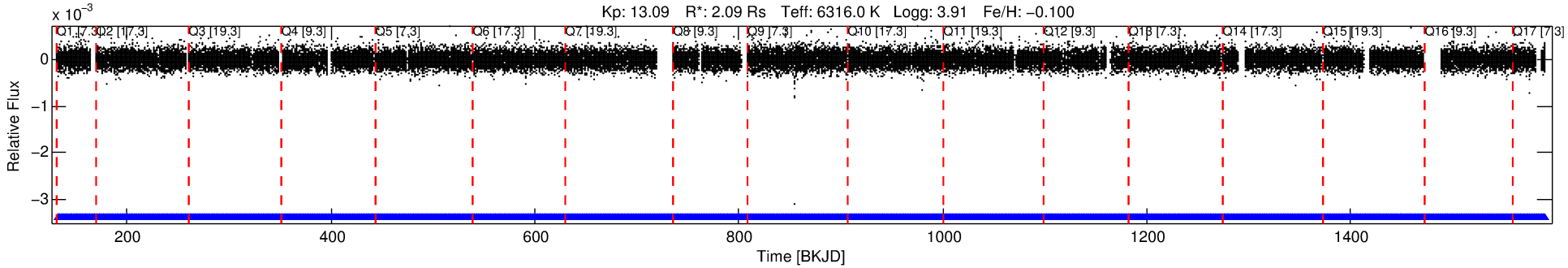
TCE (1)	KIC	Parent (2)	Parent KIC	P_1:P_2	Dist (″)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008149484-02	8149484	6958.01	8081389	1:1	229.3	58	0	13.99	13.09	12805.00	Col-Anomaly	0	3.18	1.71

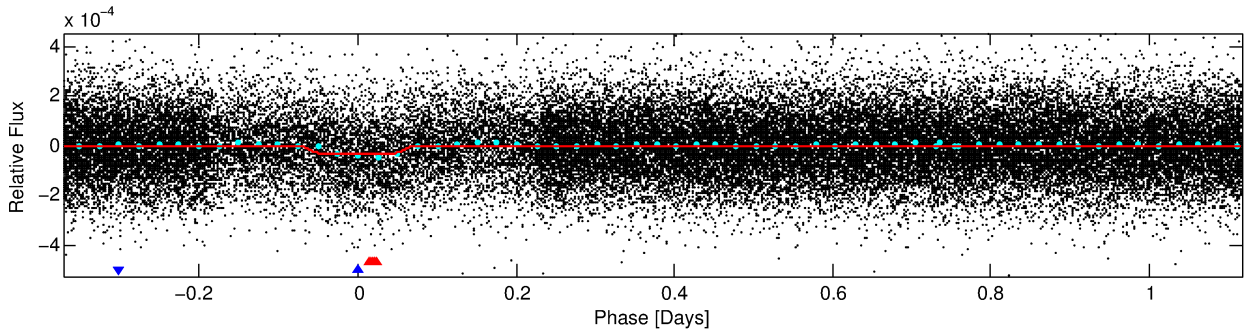
Notes: P_1:P_2 is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth dividied by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should recieve extra scrutiny, especially if the period ratio is very large.

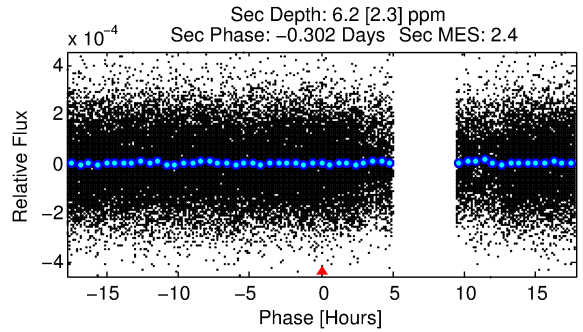
DV One-Page Summary

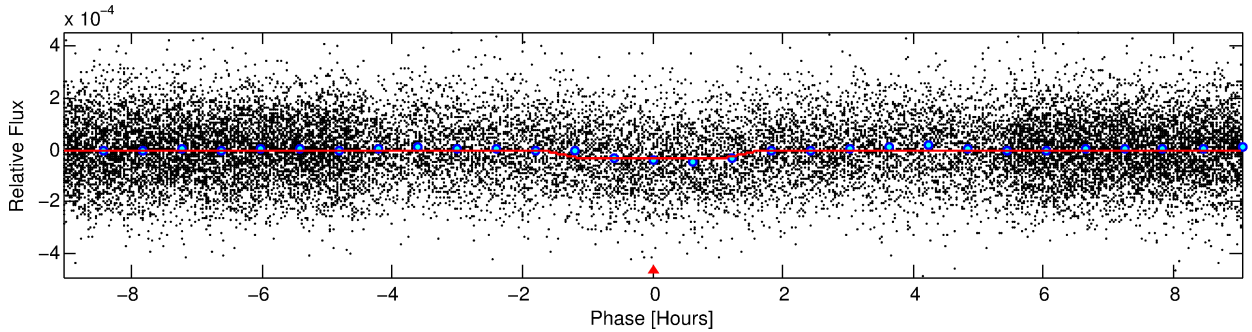
KIC: 8149484 Candidate: 2 of 2 Period: 1.489 d
KOI: K04306.01 Corr: 0.856

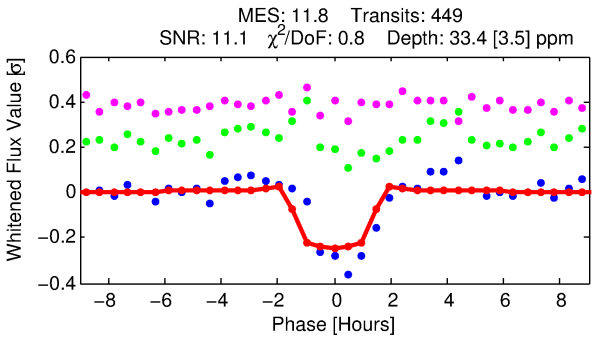
Kp: 13.09 R*: 2.09 Rs Teff: 6316.0 K Logg: 3.91 Fe/H: −0.100

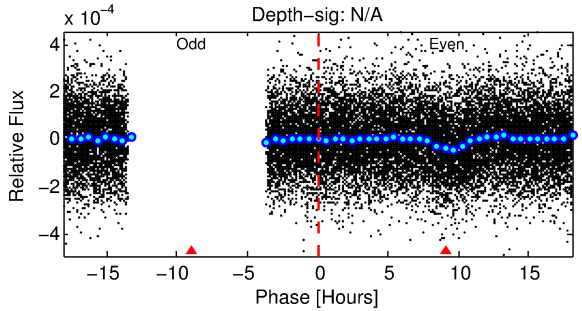


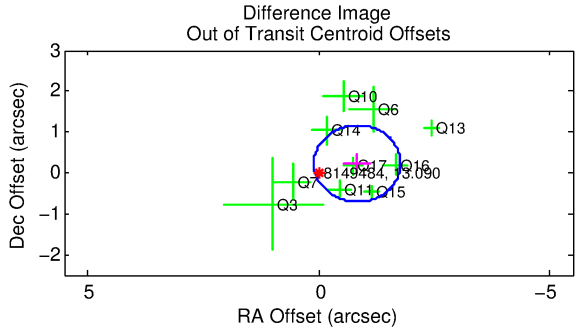












DV Fit Results:

Period = 1.48938 [0.00001] d
Epoch = 132.0313 [0.0034] BKJD
Rp/R* = 0.0062 [0.0026]
a/R* = 1.94 [3.31]
b = 0.90 [0.50]

Seff = 8060.02 [4102.99]
Teq = 2416 [307] K
Rp = 1.41 [0.74] Re
a = 0.0278 [0.0086] AU

Ag = 1.32 [1.36] [0.23σ]
Teffp = 4002 [913] K [1.65σ]

DV Diagnostic Results:

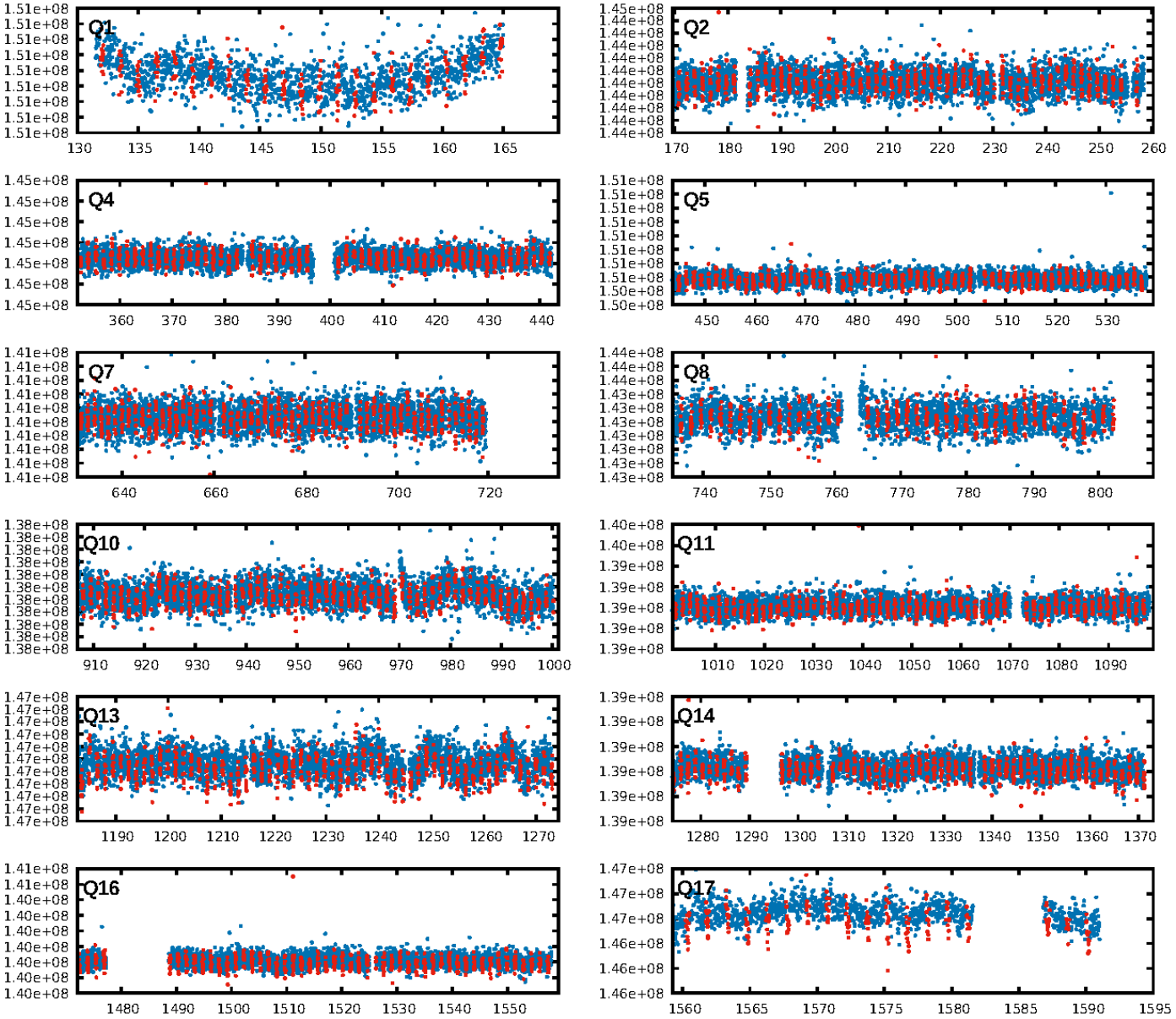
ShortPeriod−sig: N/A
LongPeriod−sig: 100.0% [8.15σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 1.27e−30
RollingBand−fgt: 1.00 [428/428]
GhostDiagnostic−chr: 4.759

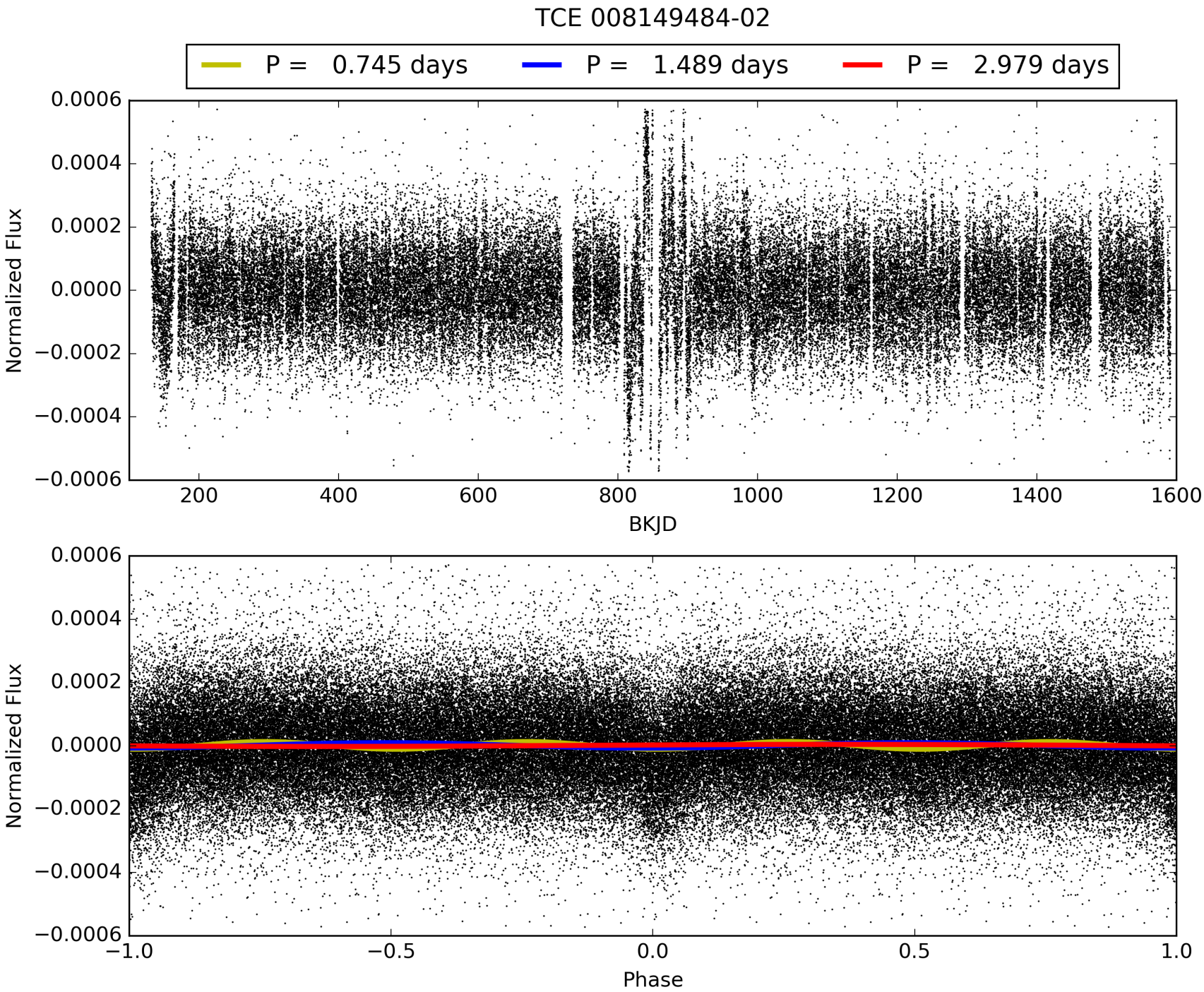
Centroid−sig: 0.0%
Centroid−so: 1.986 arcsec [2.50σ]
OotOffset−rm: 0.865 arcsec [2.77σ]
KicOffset−rm: 0.776 arcsec [2.26σ]
OotOffset−st: 3/4/1/2 [10]
KicOffset−st: 3/4/1/2 [10]
DiffImageQuality−fgm: 1.00 [10/10]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 09:11:28 Z

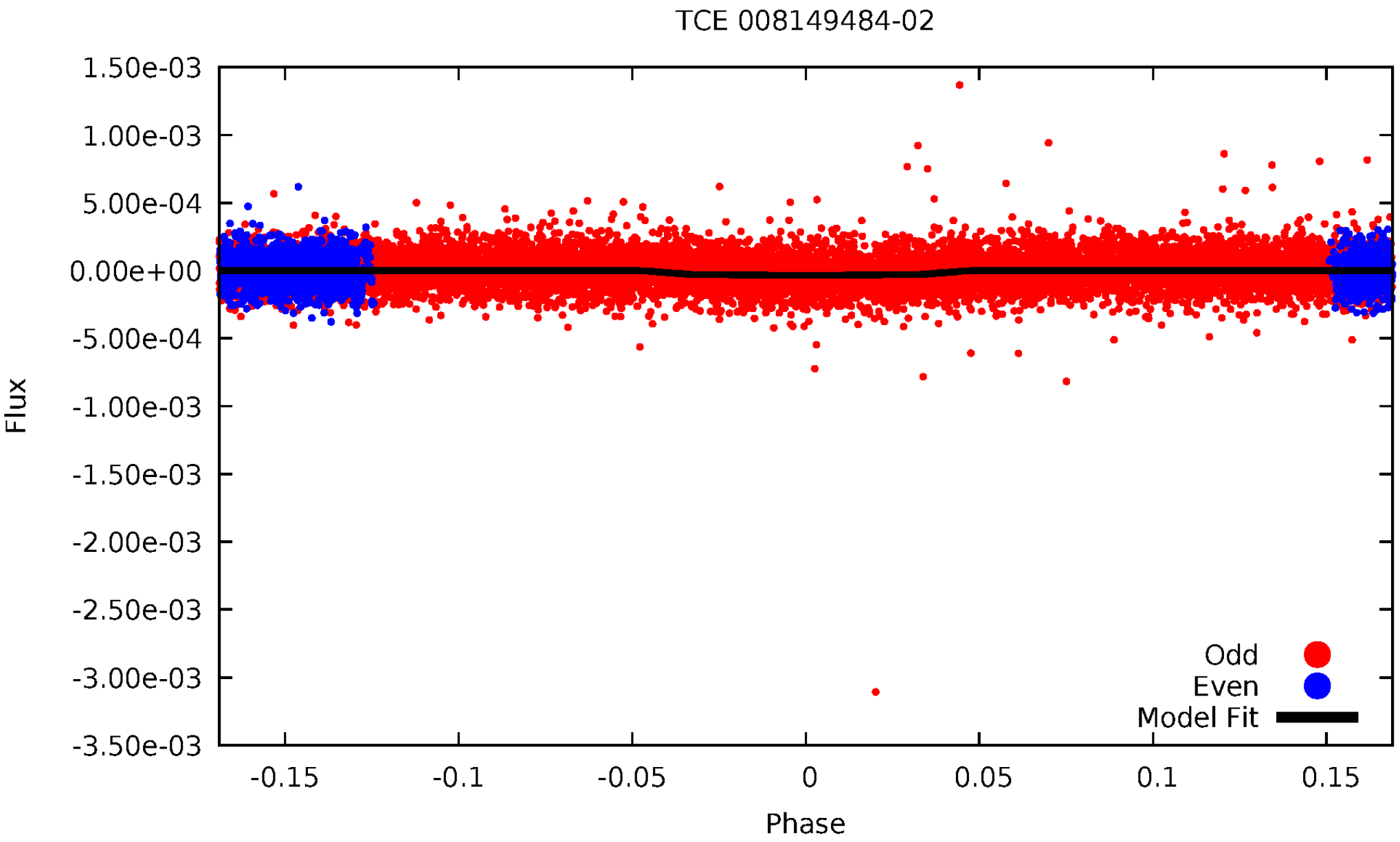
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008149484-02, PDC Light Curves

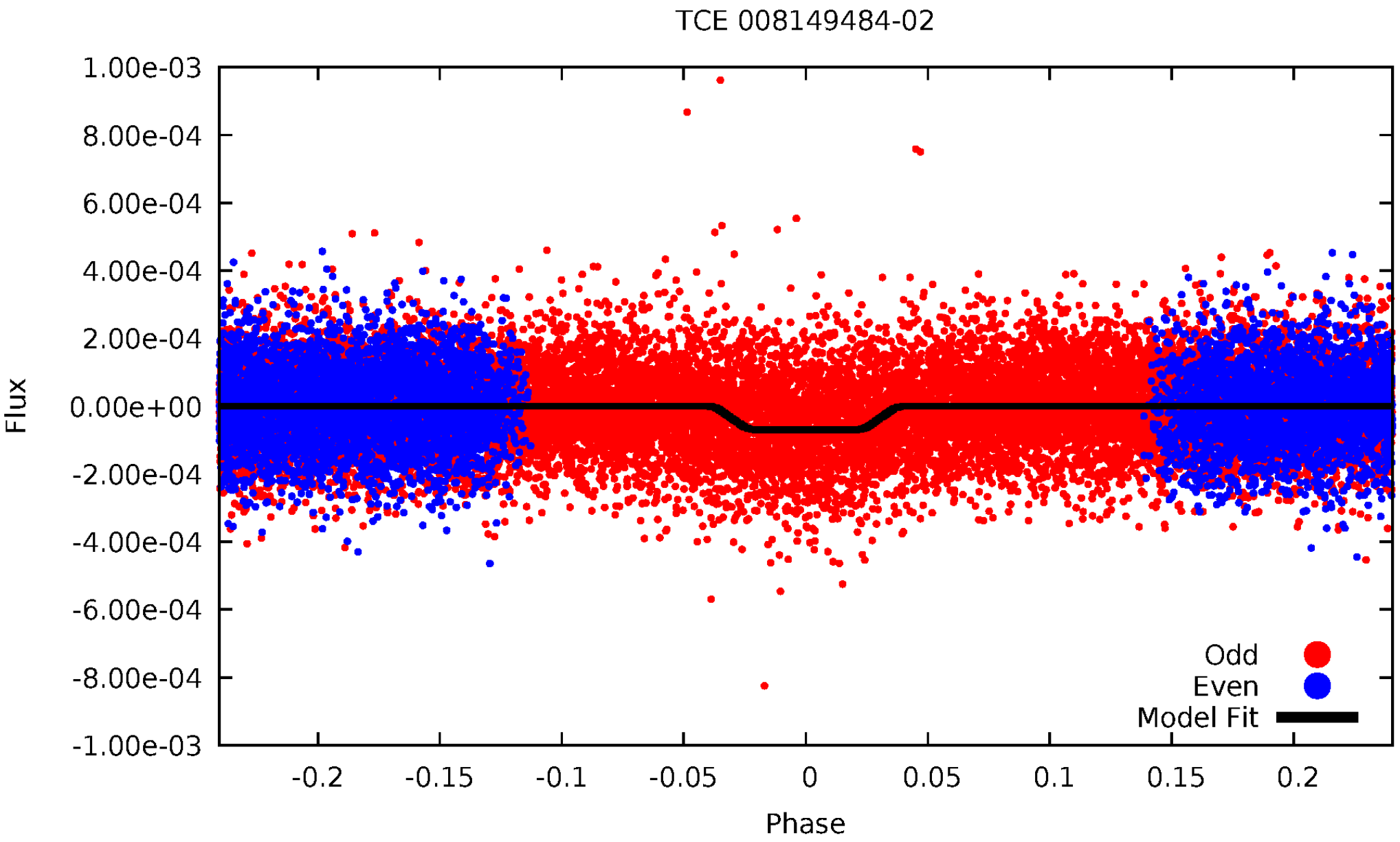



TCE 008149484-02
P = 0.745 days
P = 1.489 days
P = 2.979 days
Normalized Flux
0.0006
0.0004
0.0002
0.0000
−0.0002
−0.0004
−0.0006
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0006
0.0004
0.0002
0.0000
−0.0002
−0.0004
−0.0006
−1.0
−0.5
0.0
0.5
1.0
Phase

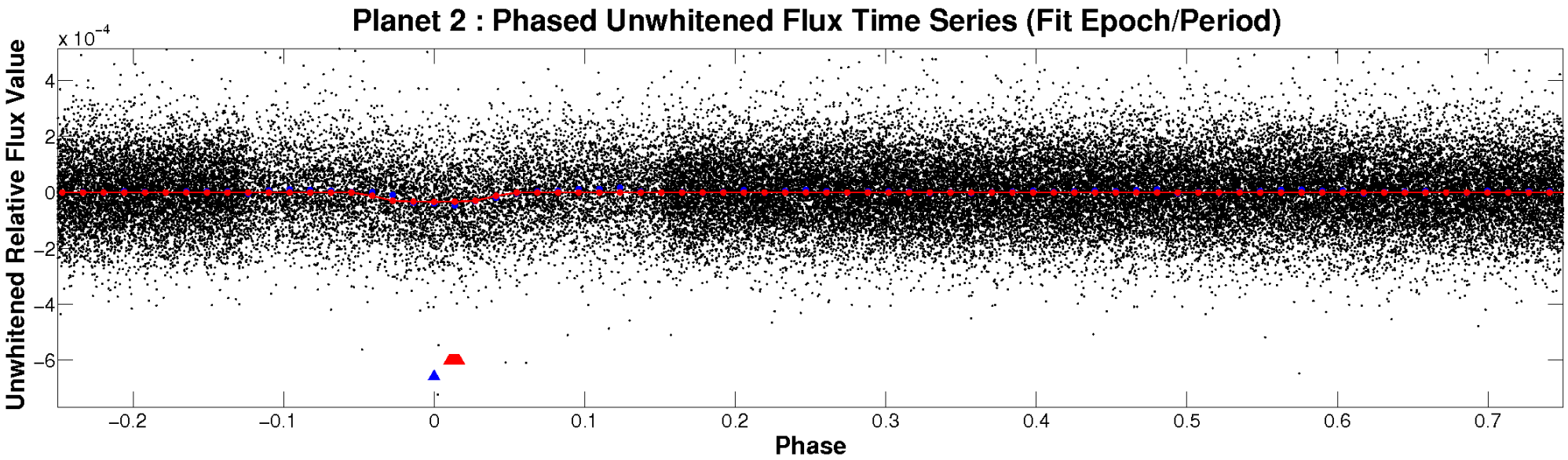
DV Odd/Even

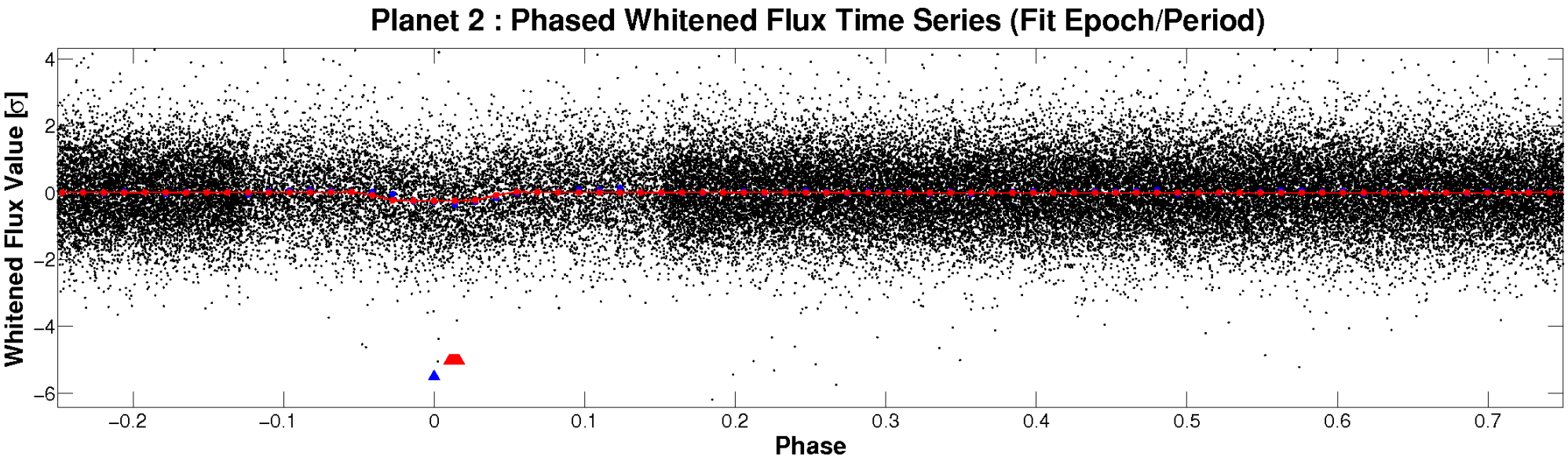

TCE 008149484-02
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
-2.00e-03
-2.50e-03
-3.00e-03
-3.50e-03
Flux
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008149484-02
1.00e-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
-8.00e-04
-1.00e-03
Flux
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
Phase
Odd
Even
Model Fit

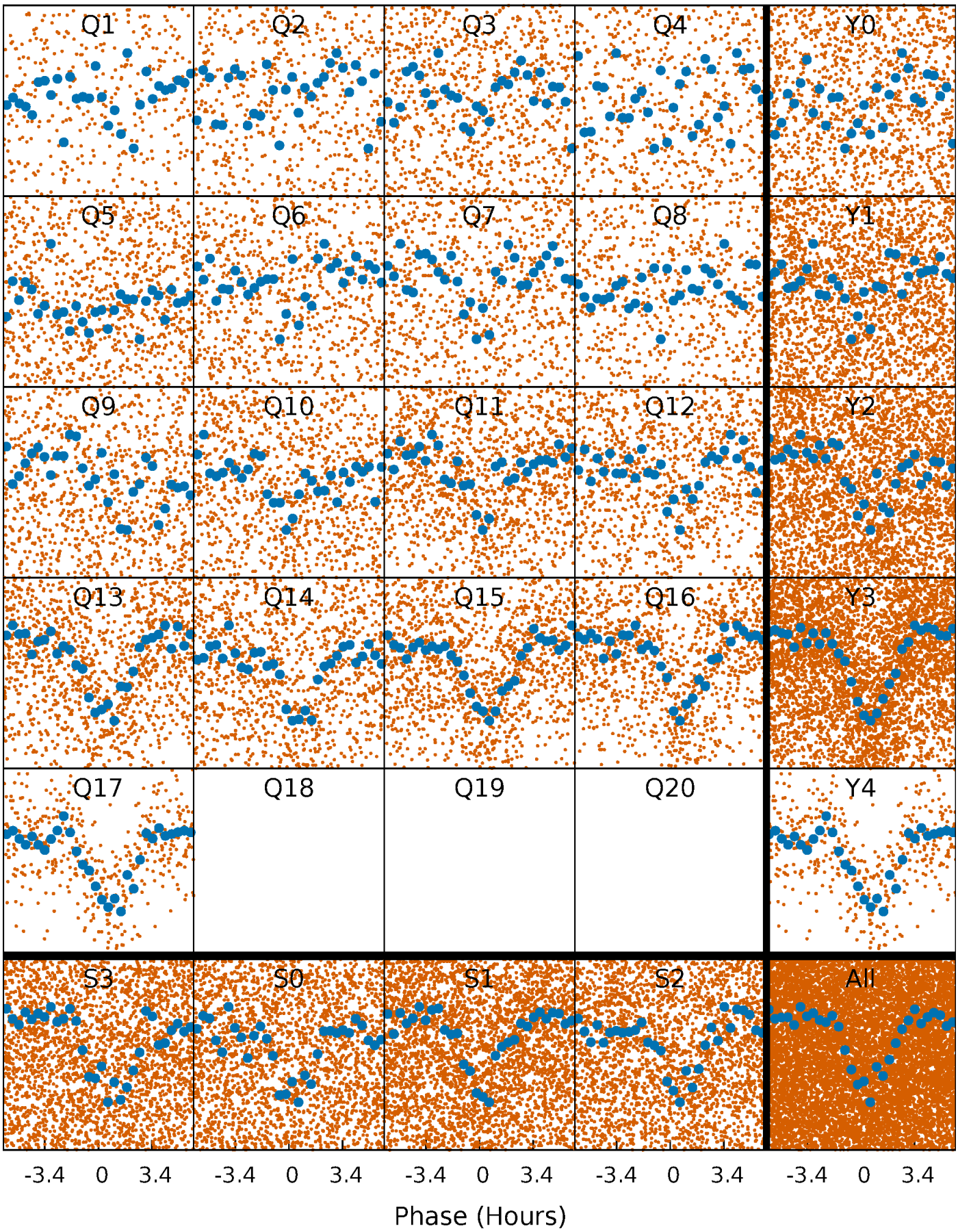
Non-Whitened Vs. Whitened Light Curve





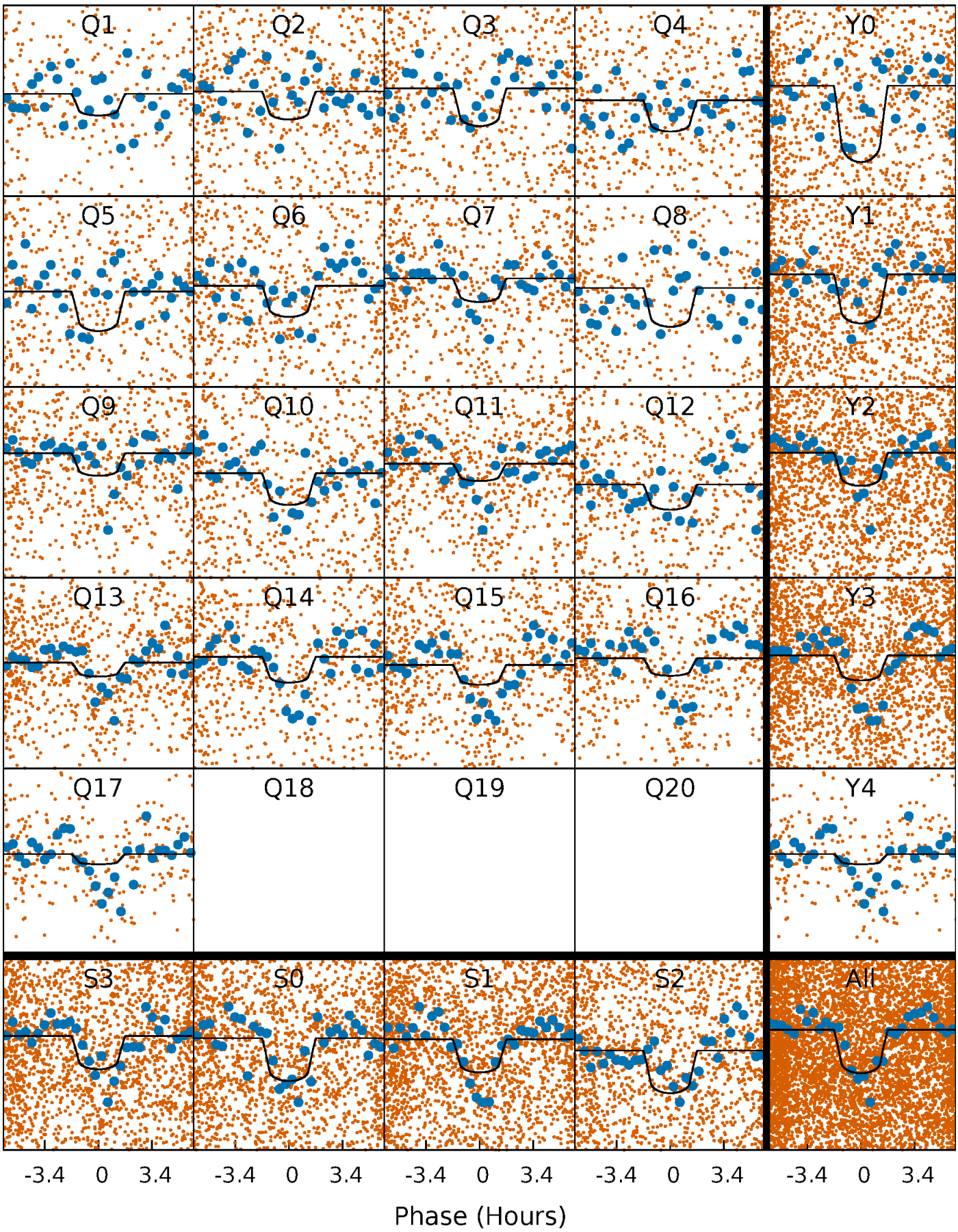
PDC Quarter-Phased Transit Curves

TCE 008149484-02 P= 1.489383 Days T_0=132.031282 (BKJD)



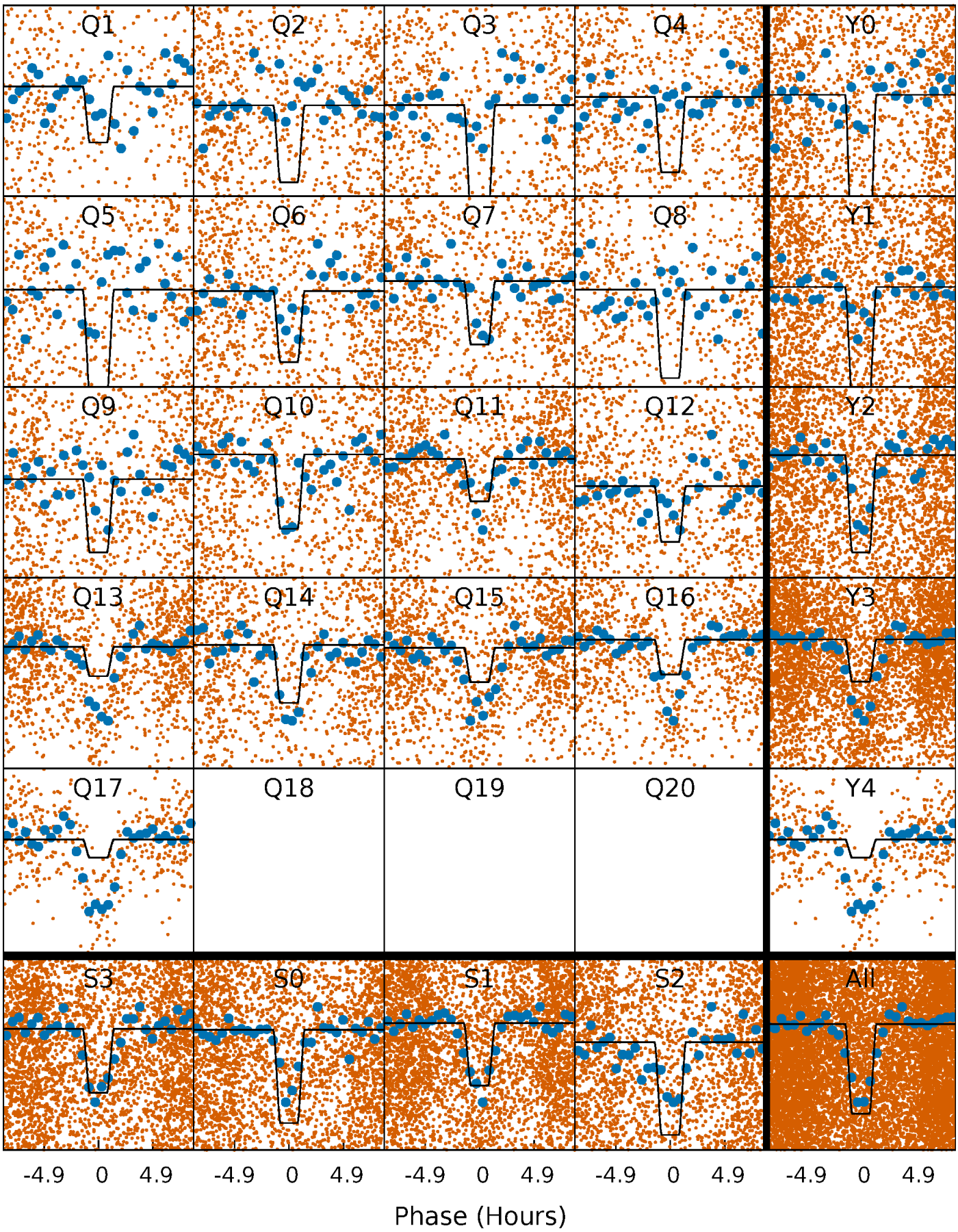
DV Quarter-Phased Transit Curves

TCE 008149484-02 P= 1.489383 Days T_0=132.031282 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

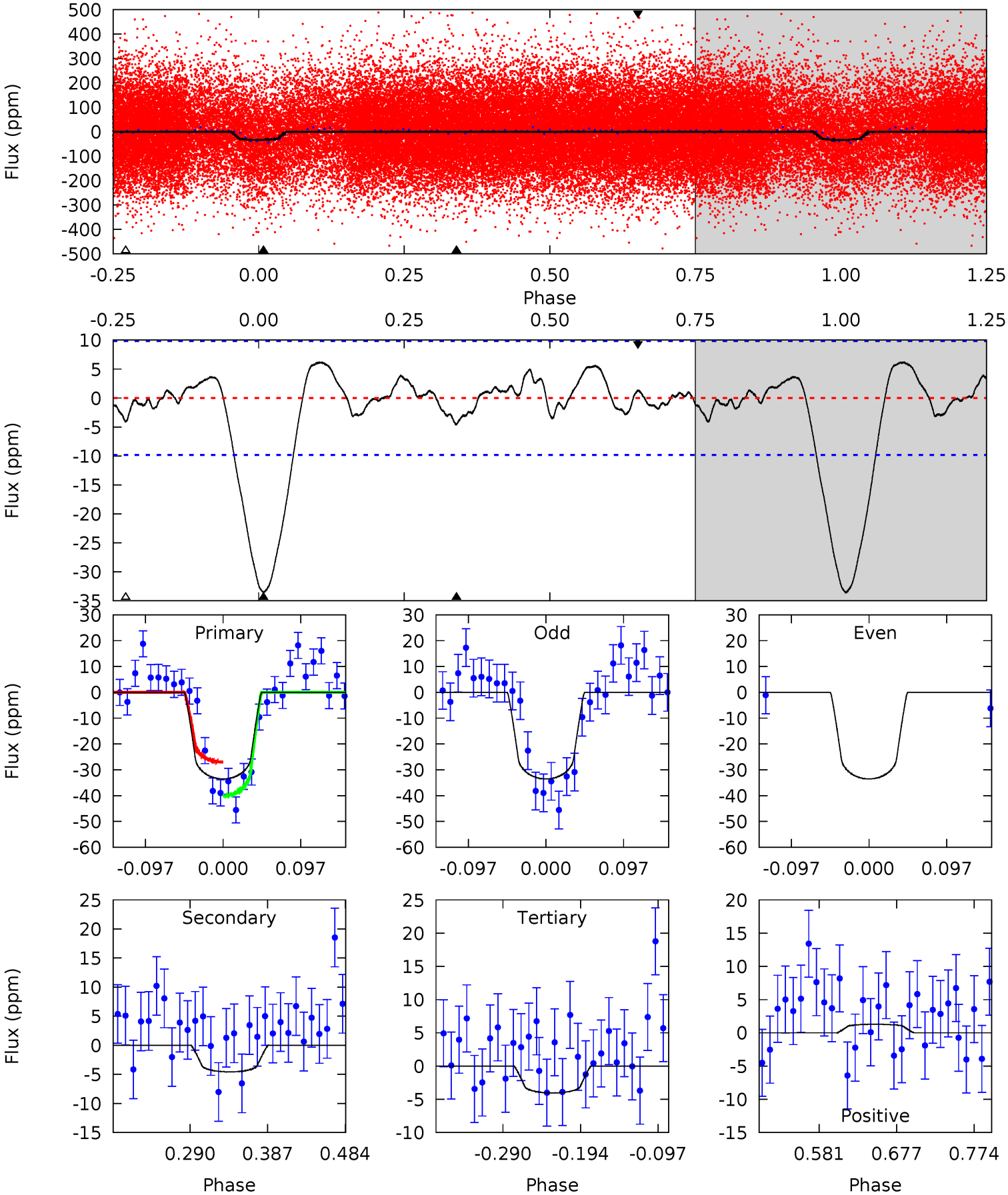
TCE 008149484-02 P= 1.489442 Days T_0=132.002947 (BKJD)



DV Model-Shift Uniqueness Test

008149484-02, P = 1.489383 Days, E = 130.541899 Days

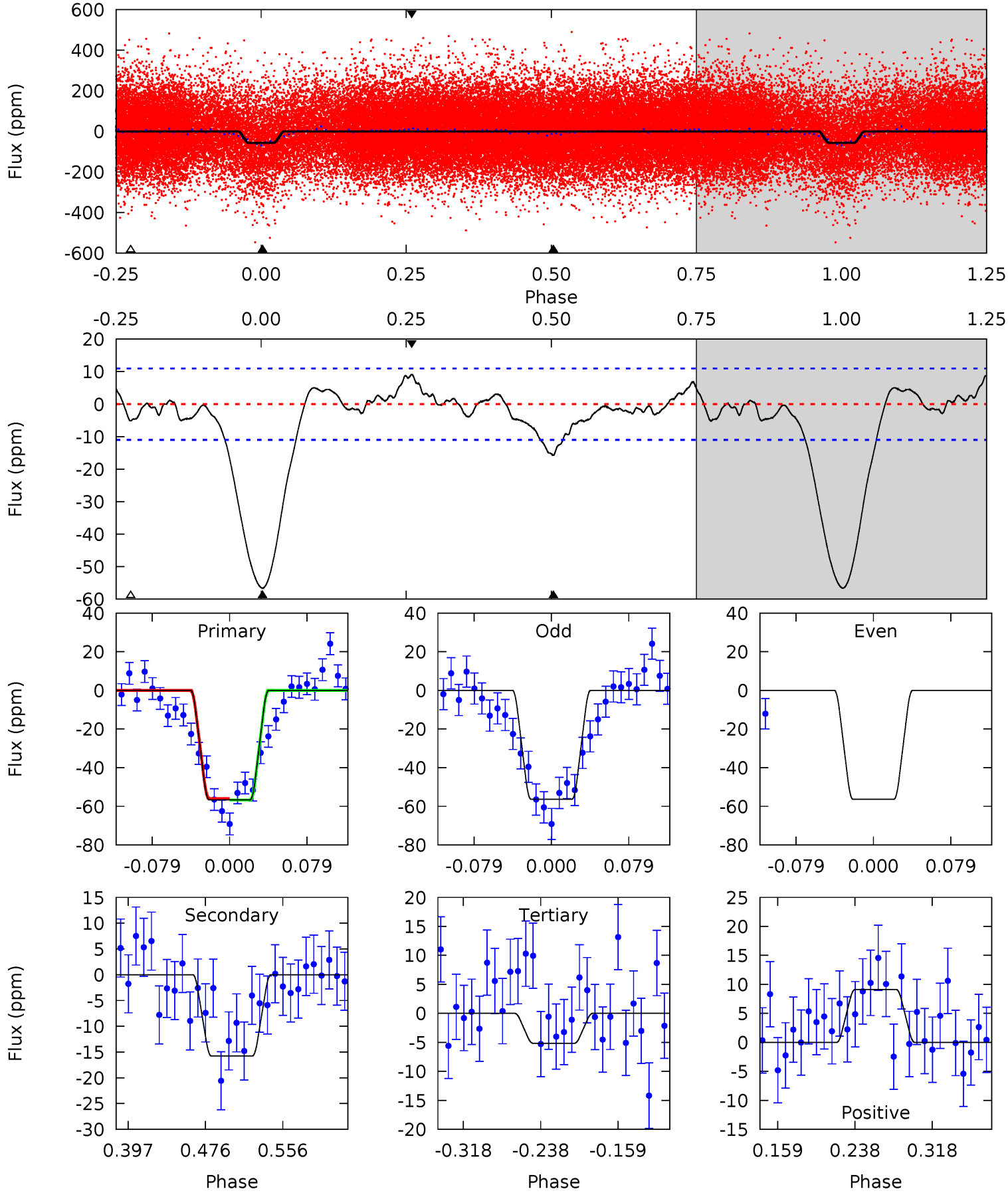
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	2.13	1.88	0.60	4.57	1.66	1.08	13.7	15.0	0.24	1.53	0	1.07	0.15	3.07



Alt Model-Shift Uniqueness Test

008149484-02, P = 1.489442 Days, E = 130.513505 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.8	6.63	2.17	3.84	4.61	1.75	1.30	21.6	20.0	4.45	2.79	0	1.13	0.14	0.17



Stellar Parameters For KIC 008149484

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	M($M_\odot$)	$p_\star$ (g·cm^{-3})
	6316^{+154}_{-173}	$3.908^{+0.292}_{-0.117}$	$-0.100^{+0.300}_{-0.250}$	$2.087^{+0.449}_{-0.673}$	$1.285^{+0.220}_{-0.220}$	$0.199^{+0.371}_{-0.073}$
	+2%/-3%	+7%/-3%	+300%/-250%	+22%/-32%	+17%/-17%	+186%/-37%
Source	PHO1	FLK73	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 008149484-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5±2	$1.33^{+0.64}_{-0.56}$	3296^{+222}_{-276}	3753^{+1012}_{-939}	$1.070^{+2.165}_{-0.659}$
Alt.	-16±2	$1.81^{+0.66}_{-0.59}$	3313^{+203}_{-272}	4365^{+777}_{-500}	$2.017^{+2.375}_{-0.945}$

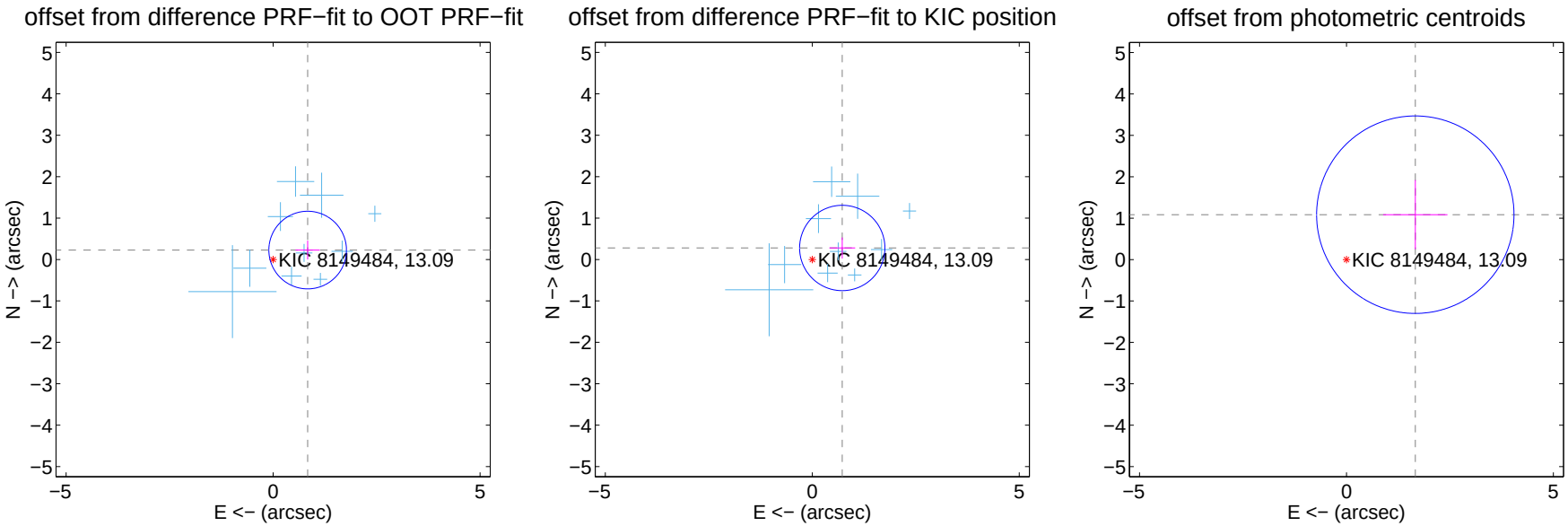
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

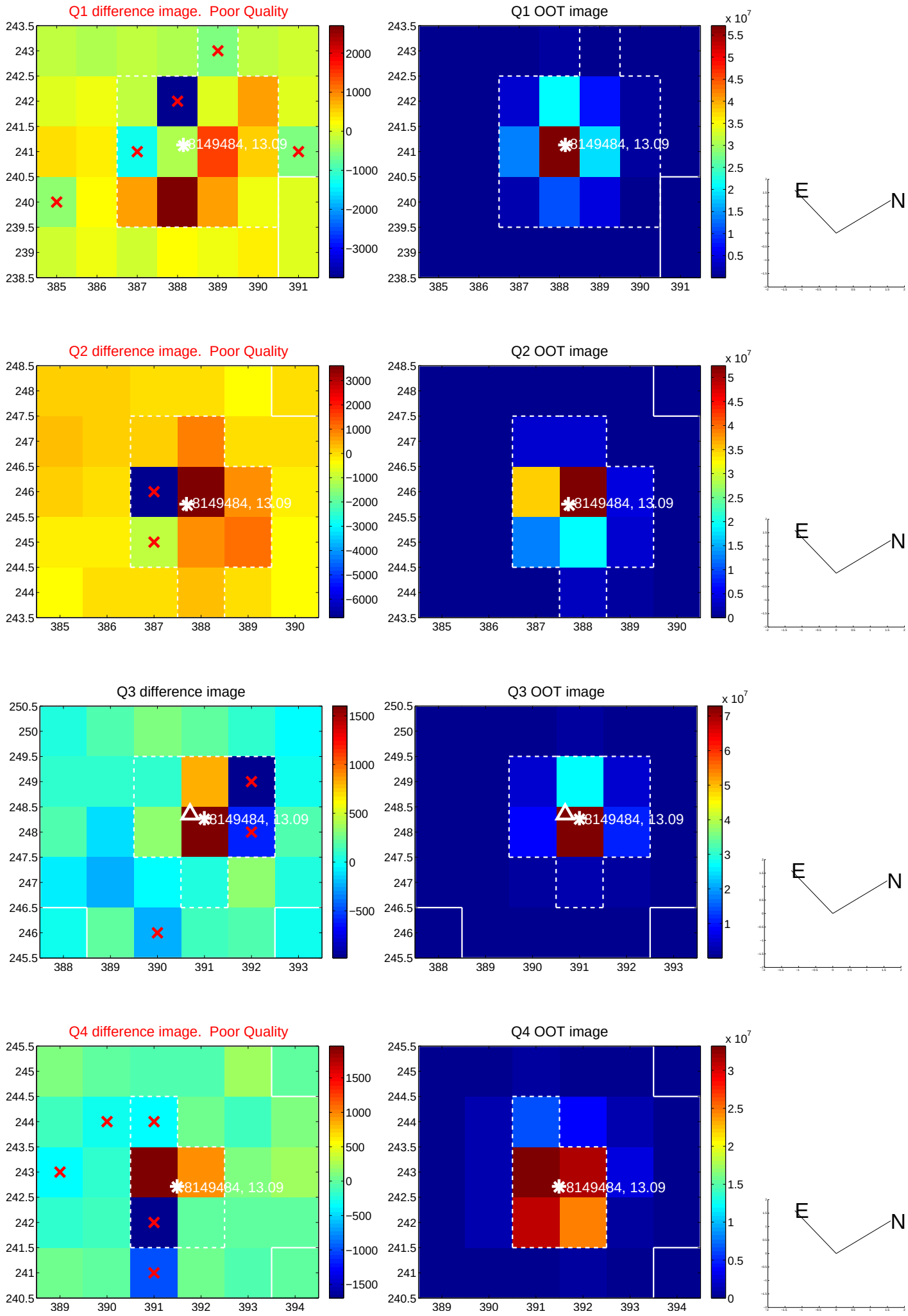
Supplemental centroid analysis for 008149484-02. Kepler magnitude: 13.09. Transit SNR 11.08
There are 10 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.865 ± 0.312	2.77	-0.835 ± 0.292	0.228 ± 0.227
PRF-fit source offset from KIC position	0.776 ± 0.343	2.26	-0.724 ± 0.311	0.278 ± 0.254
photometric centroid source offset	1.99 ± 0.79	2.50	-1.66 ± 0.78	1.08 ± 0.84

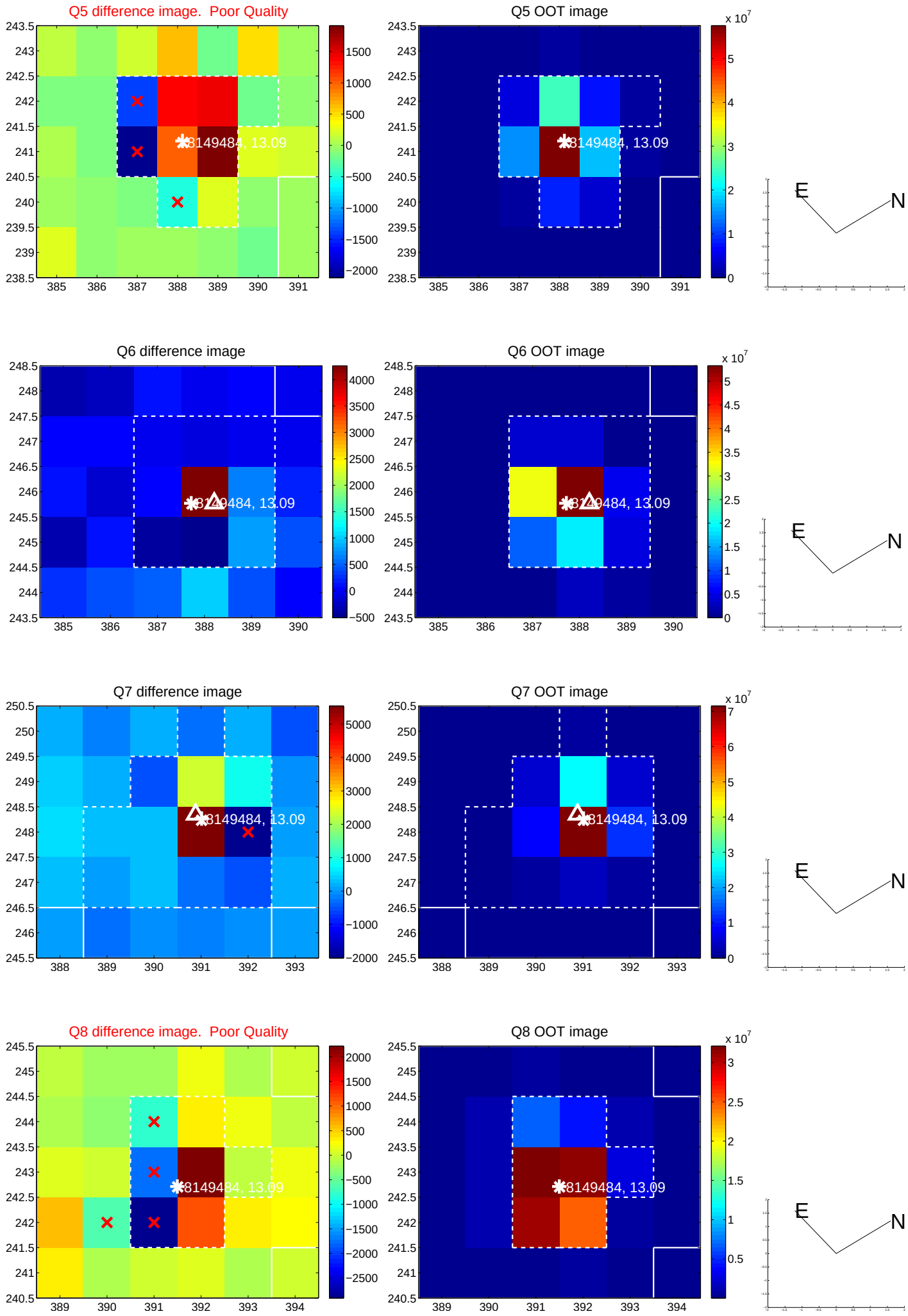


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

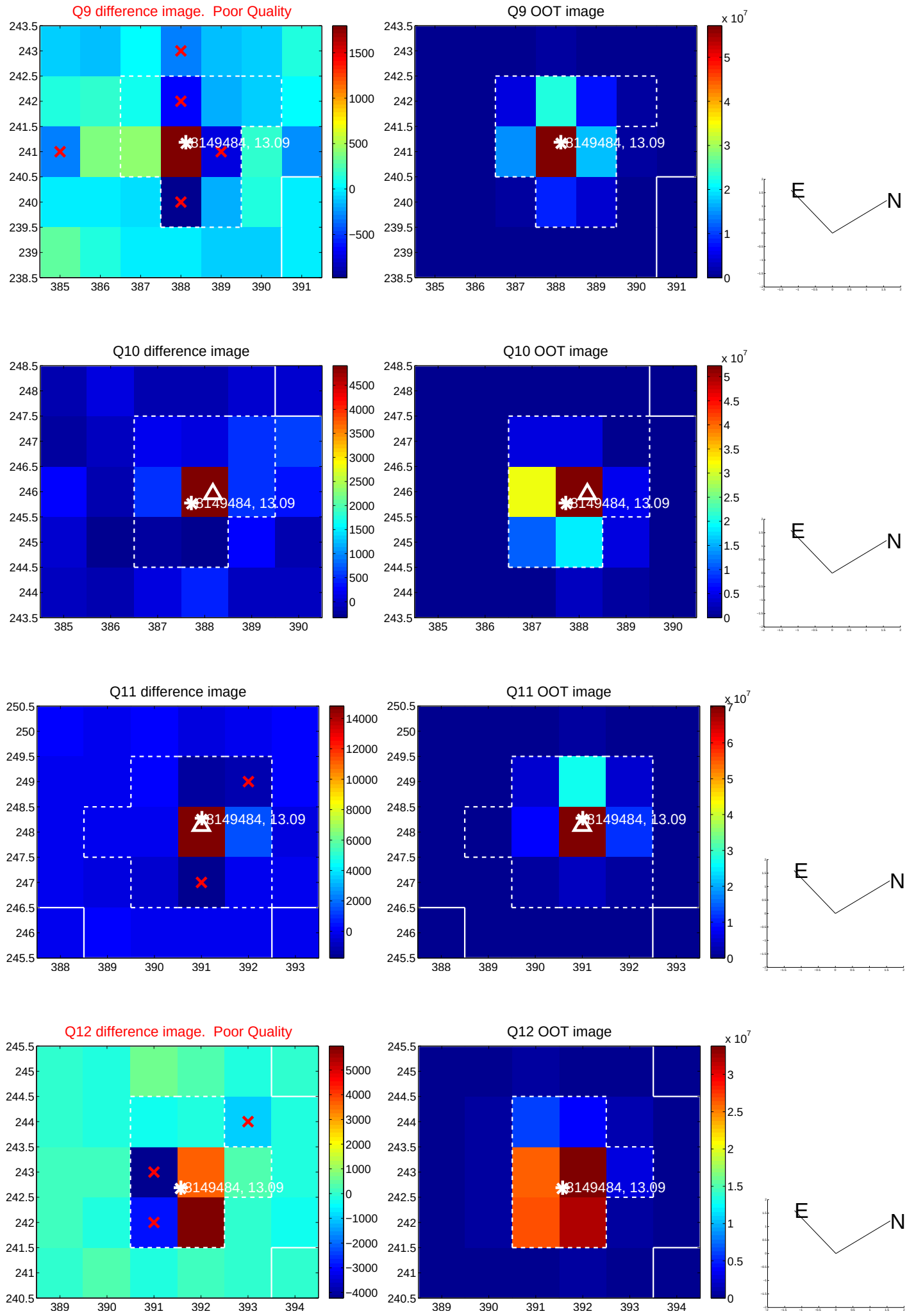
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



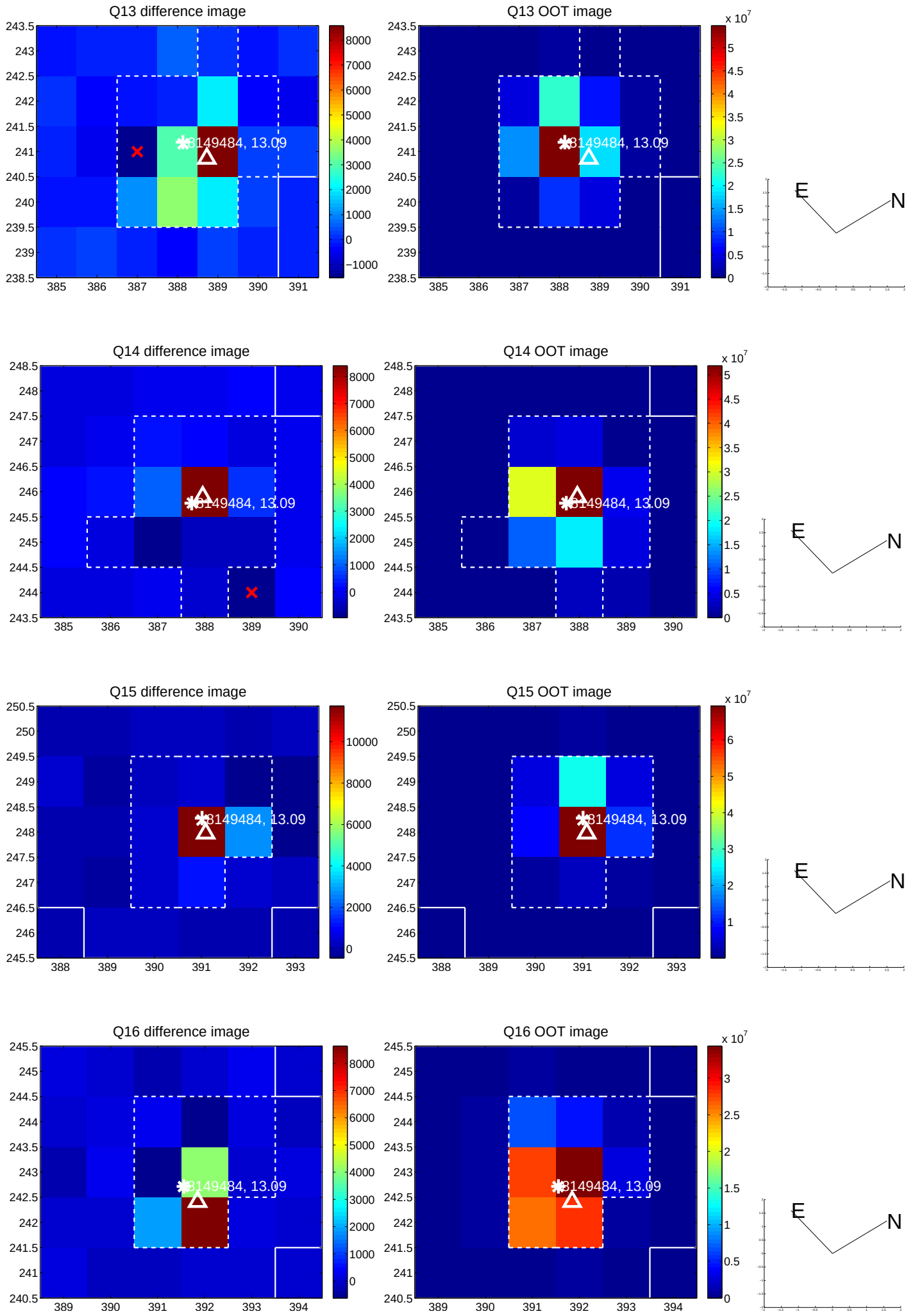
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



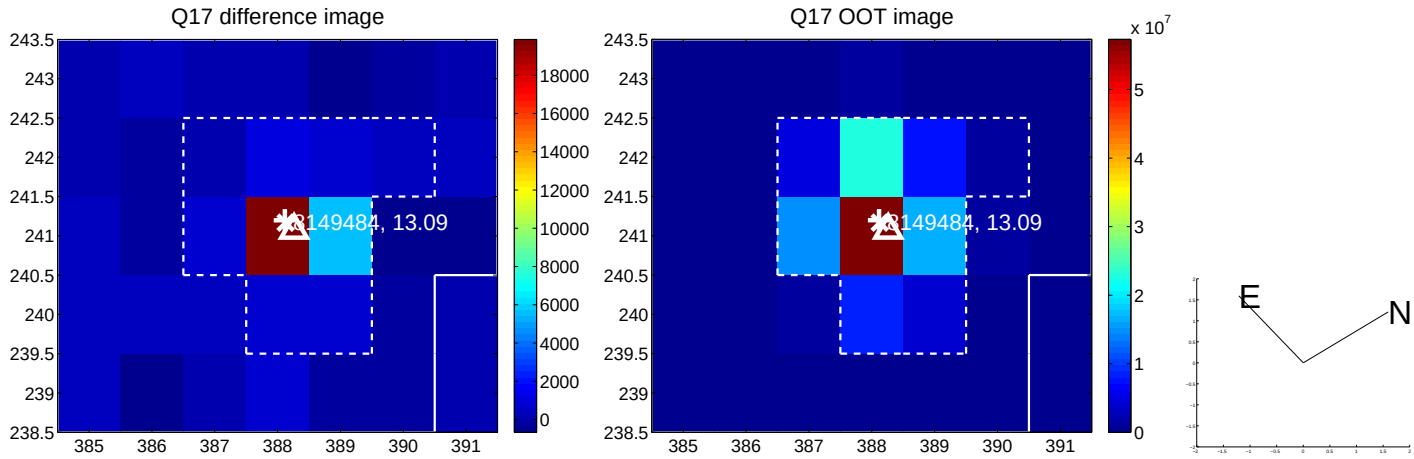
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

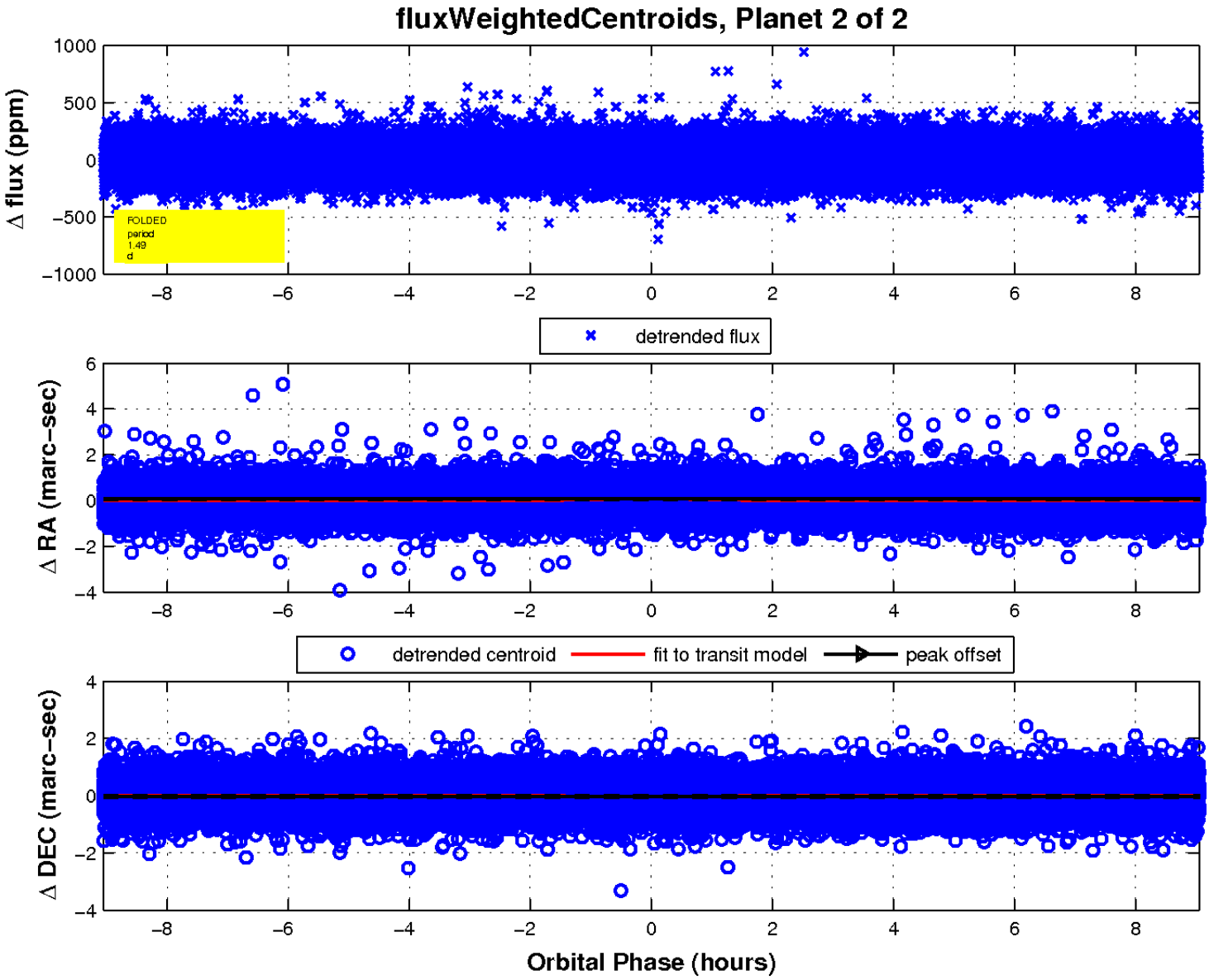


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

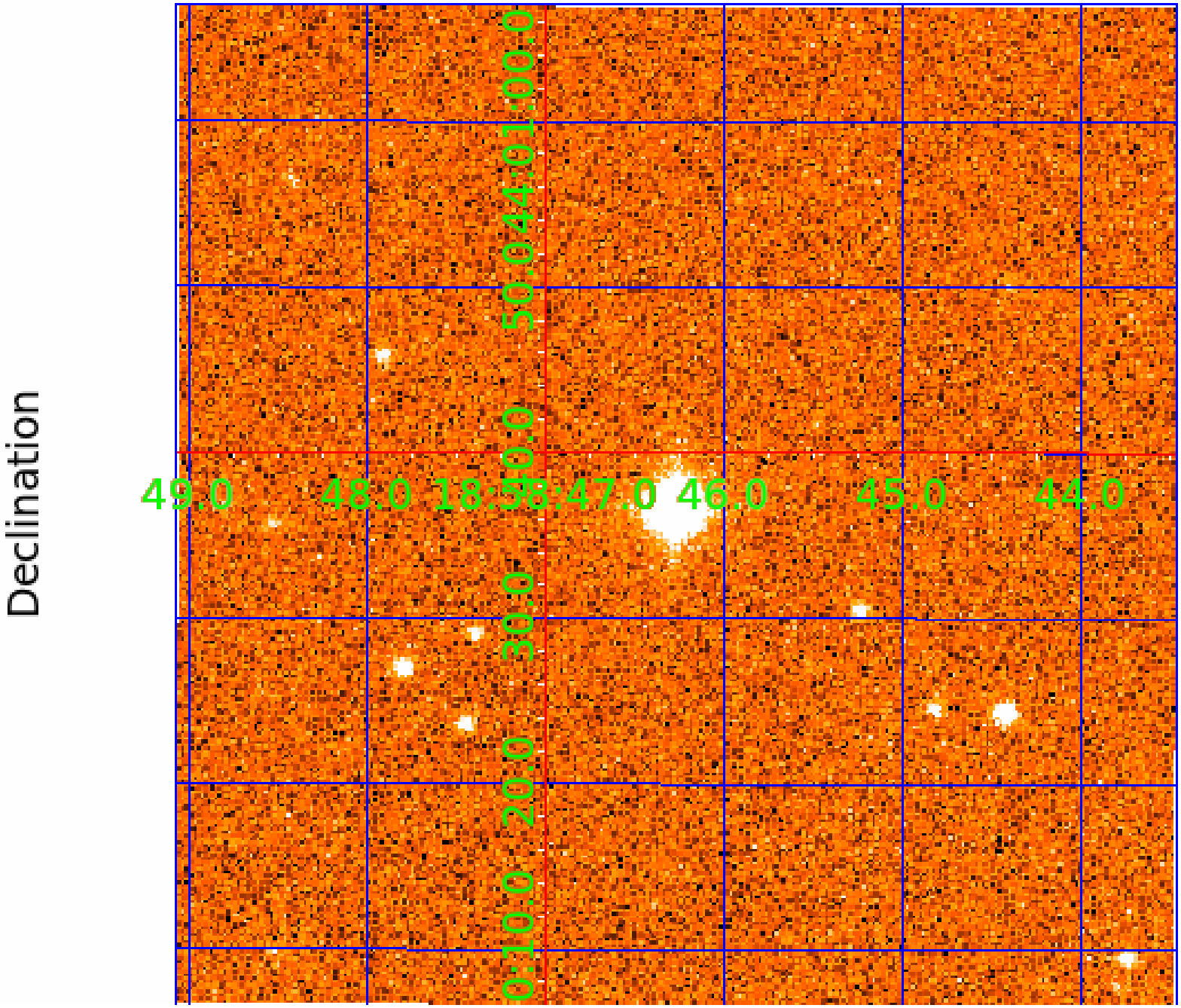


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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46.0
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0:10:0
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30.0
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1:00.0