KIC 008984131

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 ($S_\oplus$)
008984131-01	OBS	No	2.555828	132.081385	59.6	9.425	9.4	9.2	3.20	5665	2.94	5217.72
008984131-02	OBS	No	274.765282	362.680276	540.0	8.469	8.5	6.8	3.20	5665	7.71	10.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008984131-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008984131-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

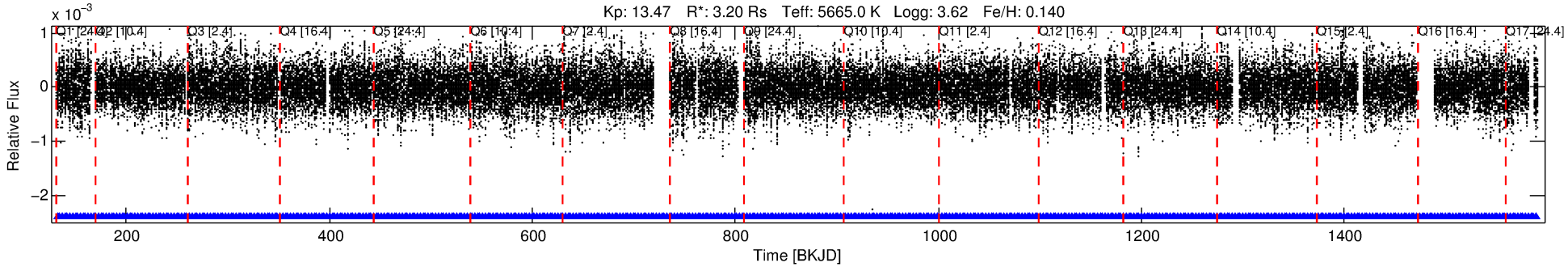
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

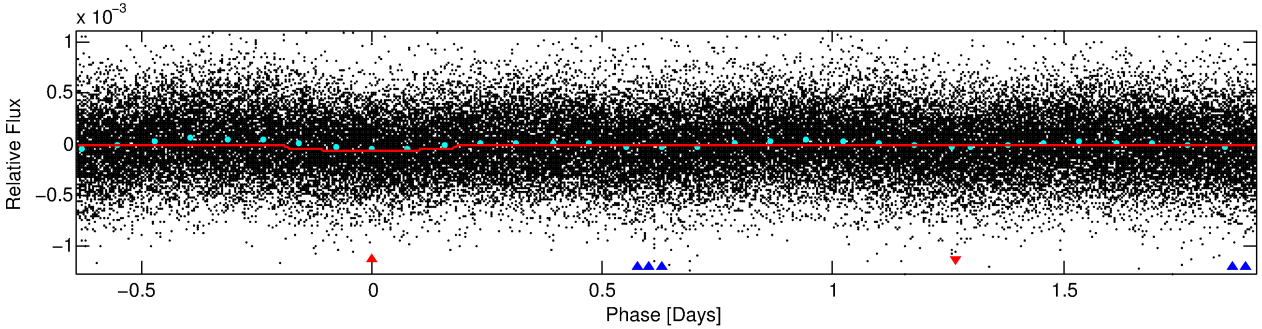
Ephemeris Match Information For 008984131-01

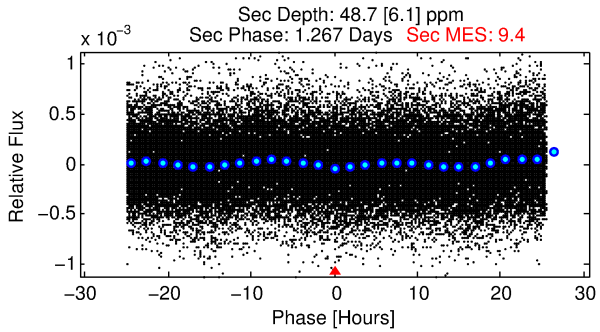
No Significant Match Found

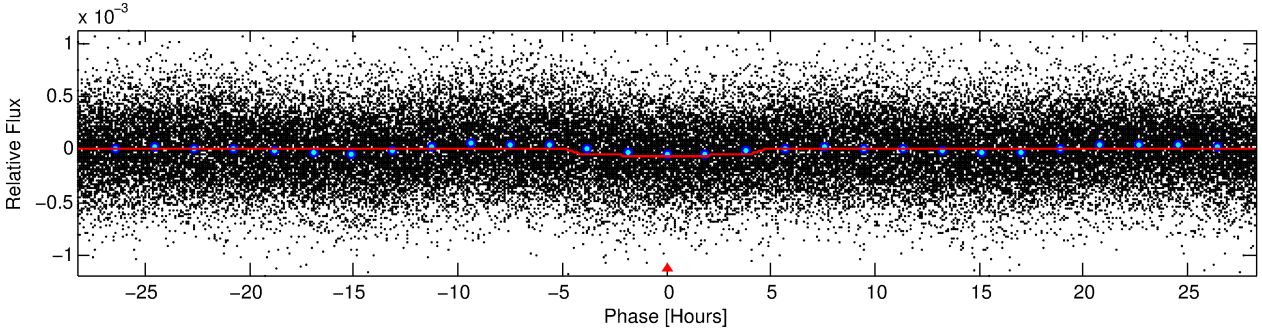
DV One-Page Summary

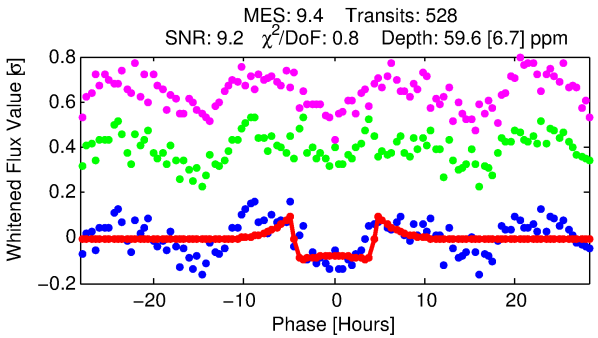
KIC: 8984131 Candidate: 1 of 2 Period: 2.556 d

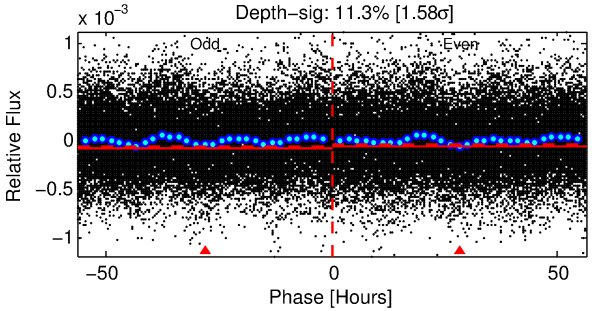


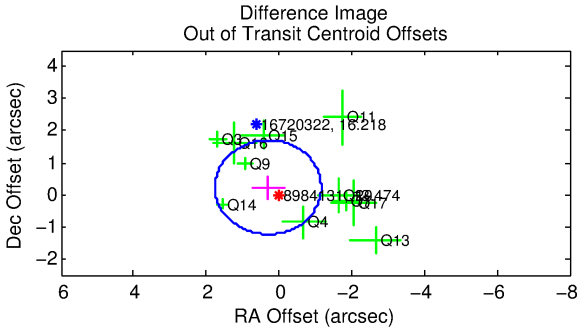












DV Fit Results:

Period = 2.55583 [0.00002] d
Epoch = 132.0814 [0.0045] BKJD
Rp/R* = 0.0084 [0.0012]
a/R* = 1.33 [0.37]
b = 0.90 [0.13]

Seff = 5217.71 [6279.46]
Teq = 2167 [652] K
Rp = 2.94 [1.90] Re
a = 0.0425 [0.0297] AU

Ag = 5.60 [6.94] [0.66σ]
Teffp = 5153 [441] K [3.79σ]

DV Diagnostic Results:

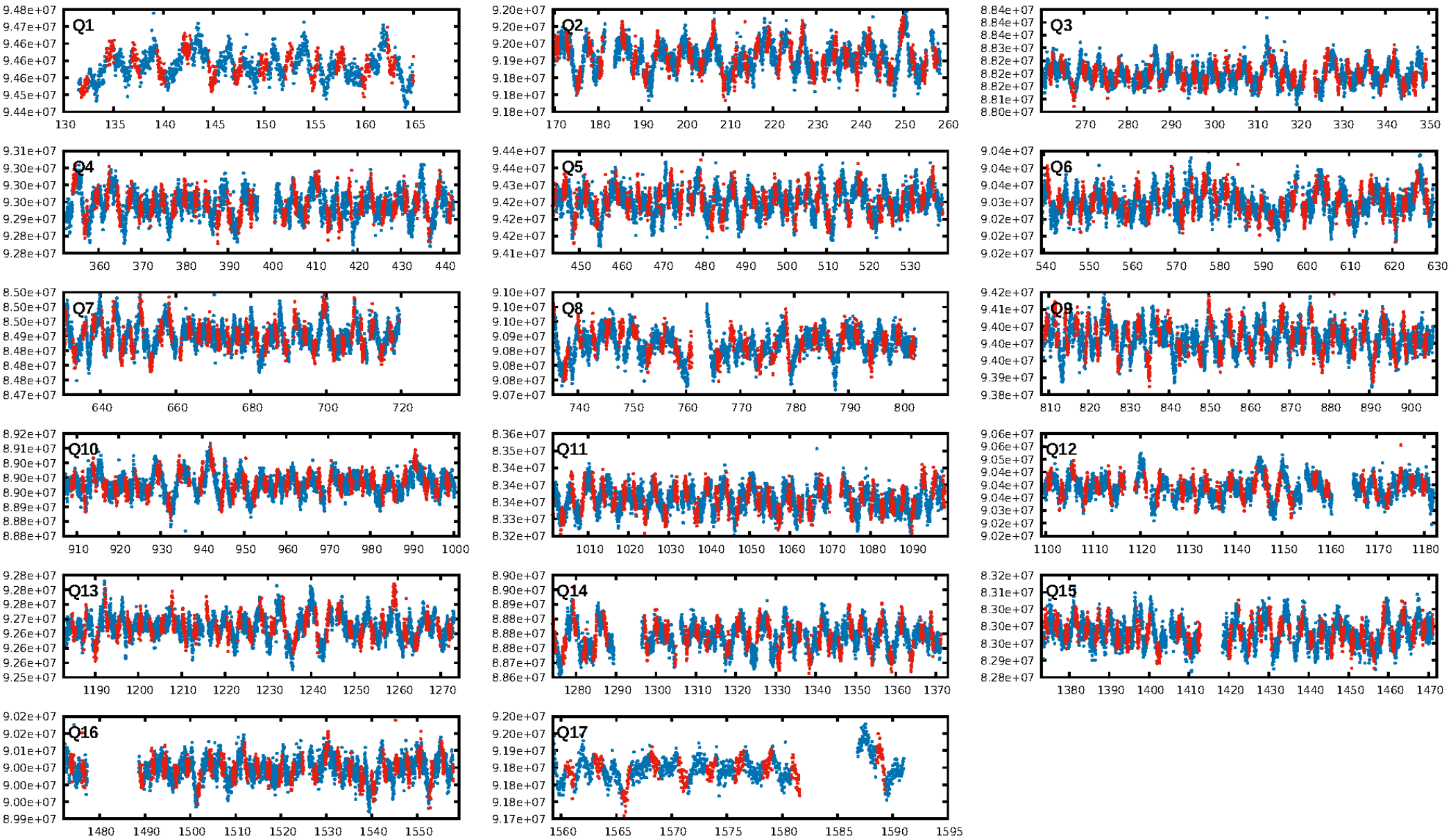
ShortPeriod−sig: N/A
LongPeriod−sig: 100.0% [515.60σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 2.85e−15
RollingBand−fgt: 1.00 [505/505]
GhostDiagnostic−chr: 0.498

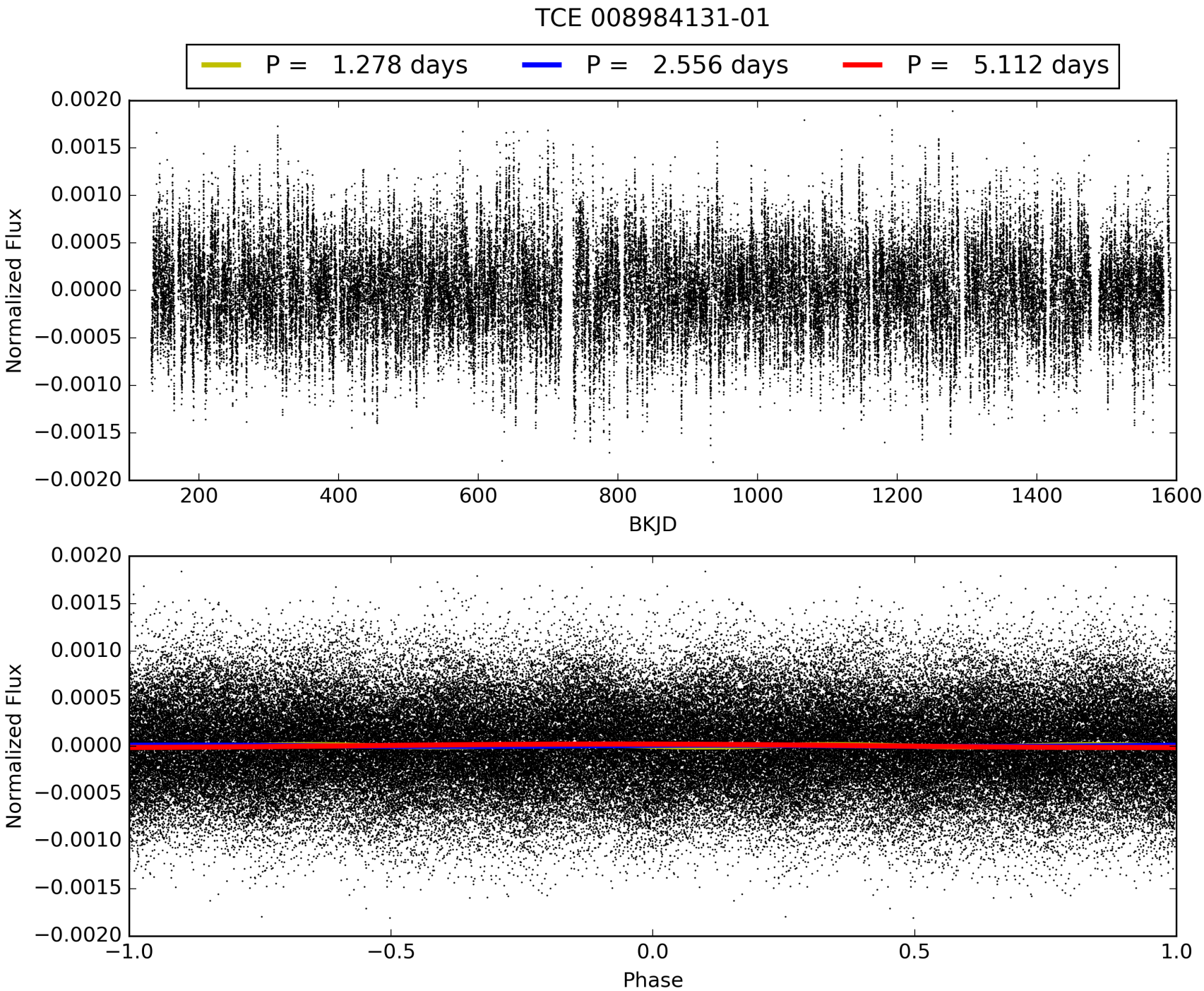
Centroid−sig: 0.0%
Centroid−so: 1.820 arcsec [3.45σ]
OotOffset−rm: 0.383 arcsec [0.78σ]
KicOffset−rm: 0.433 arcsec [0.93σ]
OotOffset−st: 3/4/2/3 [12]
KicOffset−st: 3/4/2/3 [12]
DiffImageQuality−fgm: 0.75 [9/12]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 00:13:39 Z

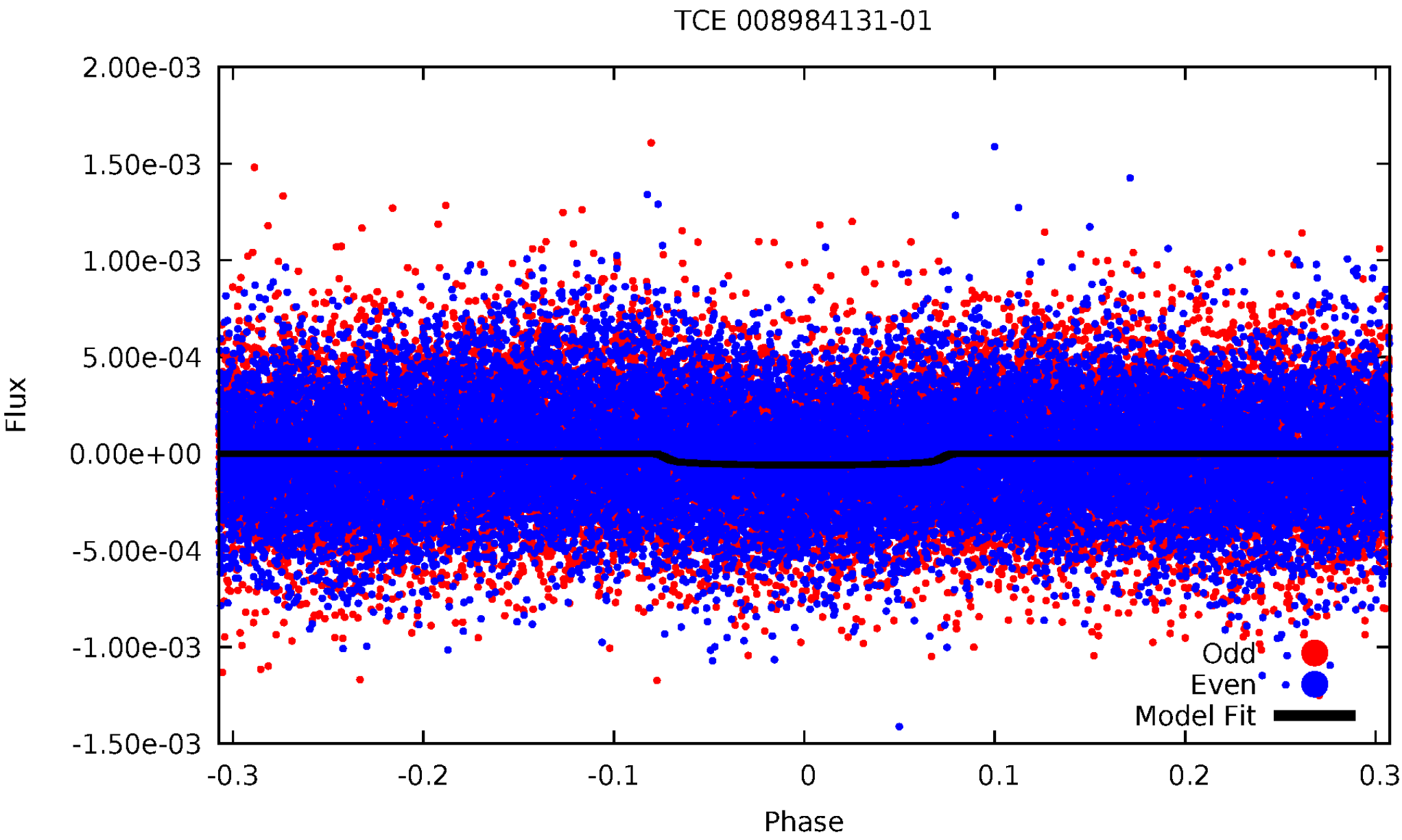
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008984131-01, PDC Light Curves

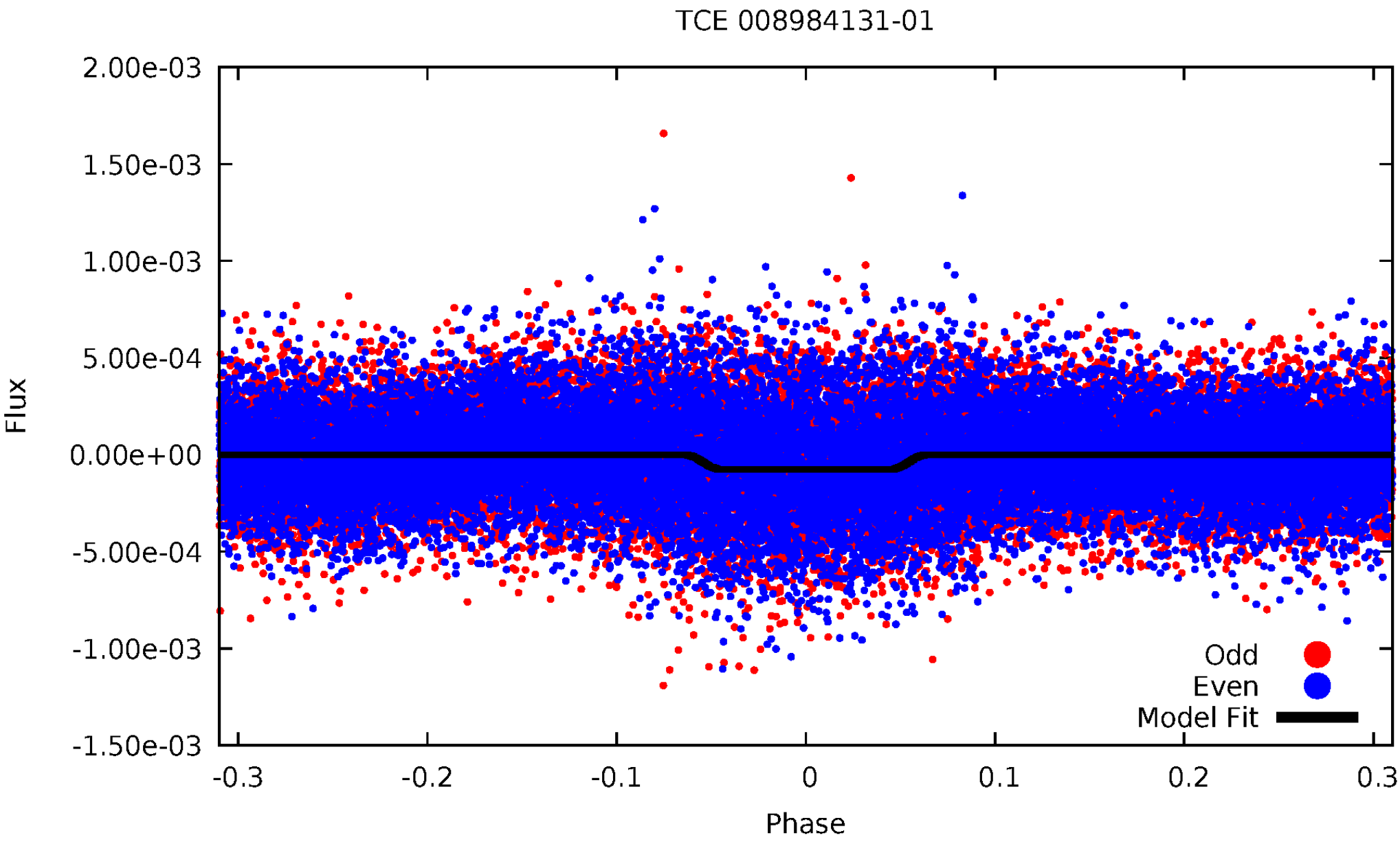



TCE 008984131-01
P = 1.278 days
P = 2.556 days
P = 5.112 days
Normalized Flux
BKJD
Normalized Flux
Phase

DV Odd/Even


TCE 008984131-01
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
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008984131-01
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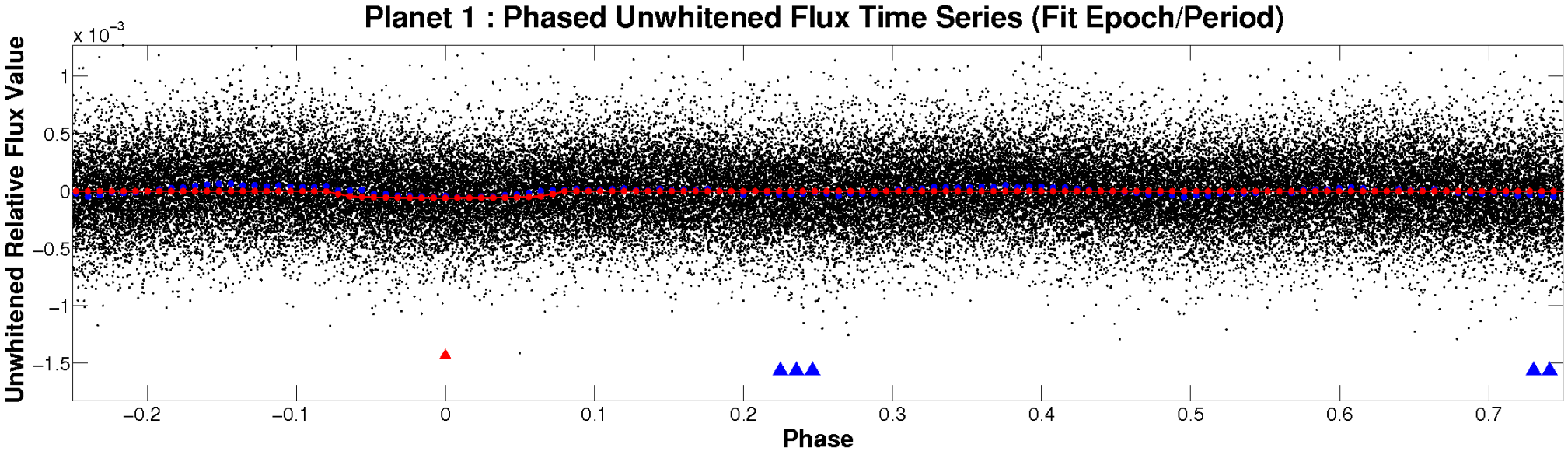
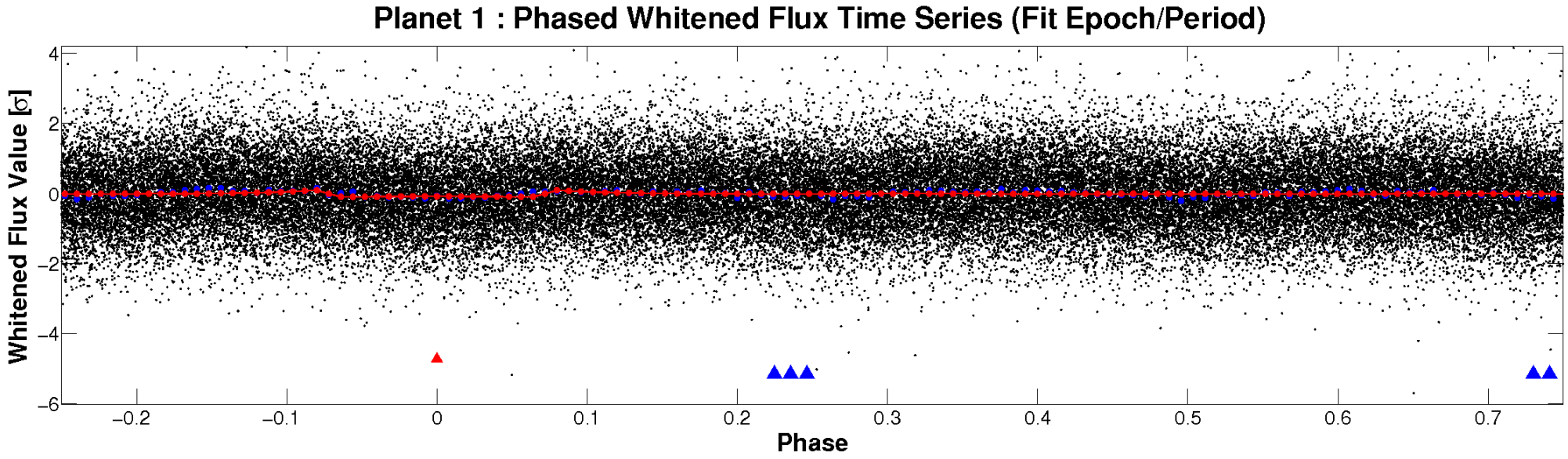
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Phase
Odd
Even
Model Fit

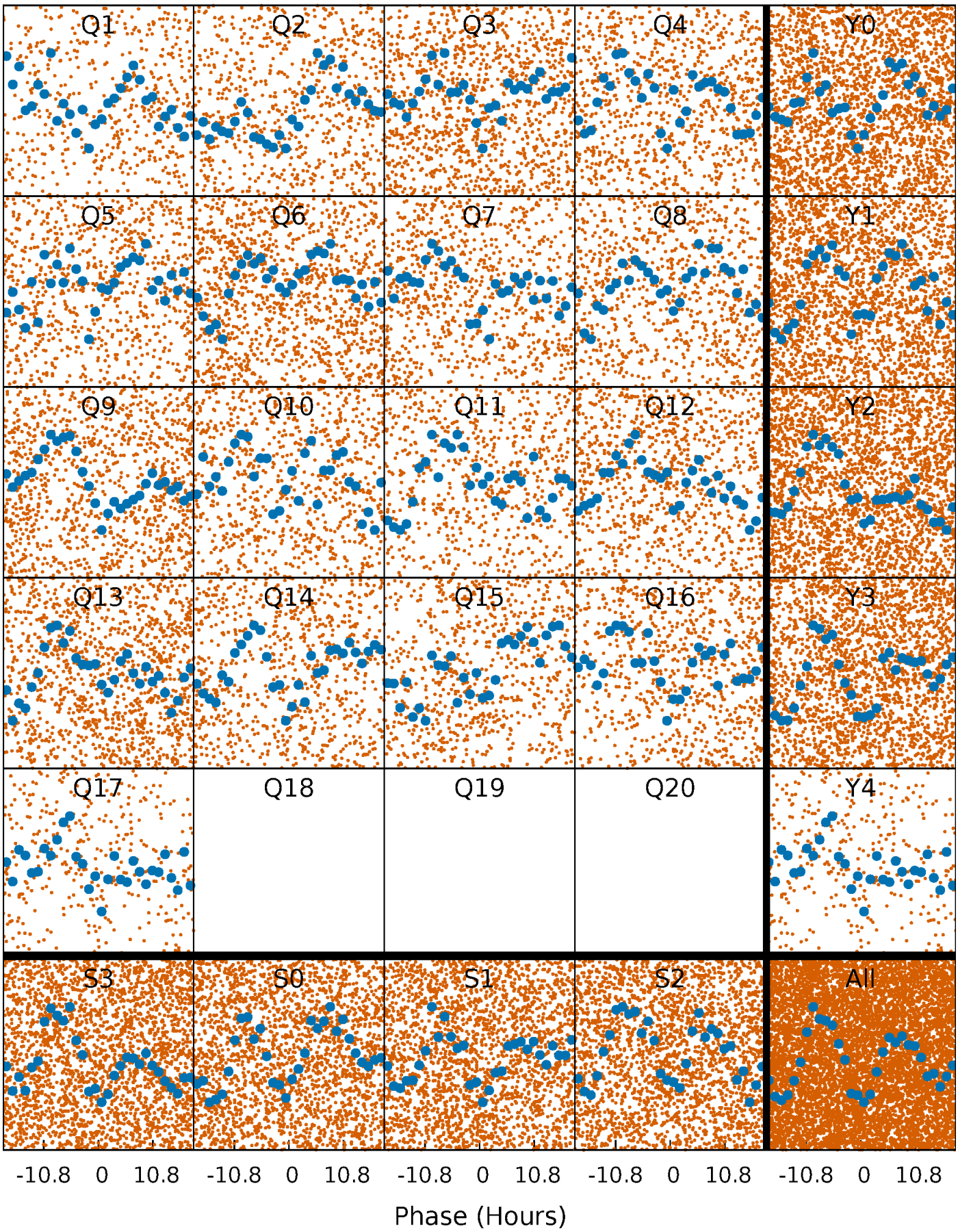
Non-Whitened Vs. Whitened Light Curve





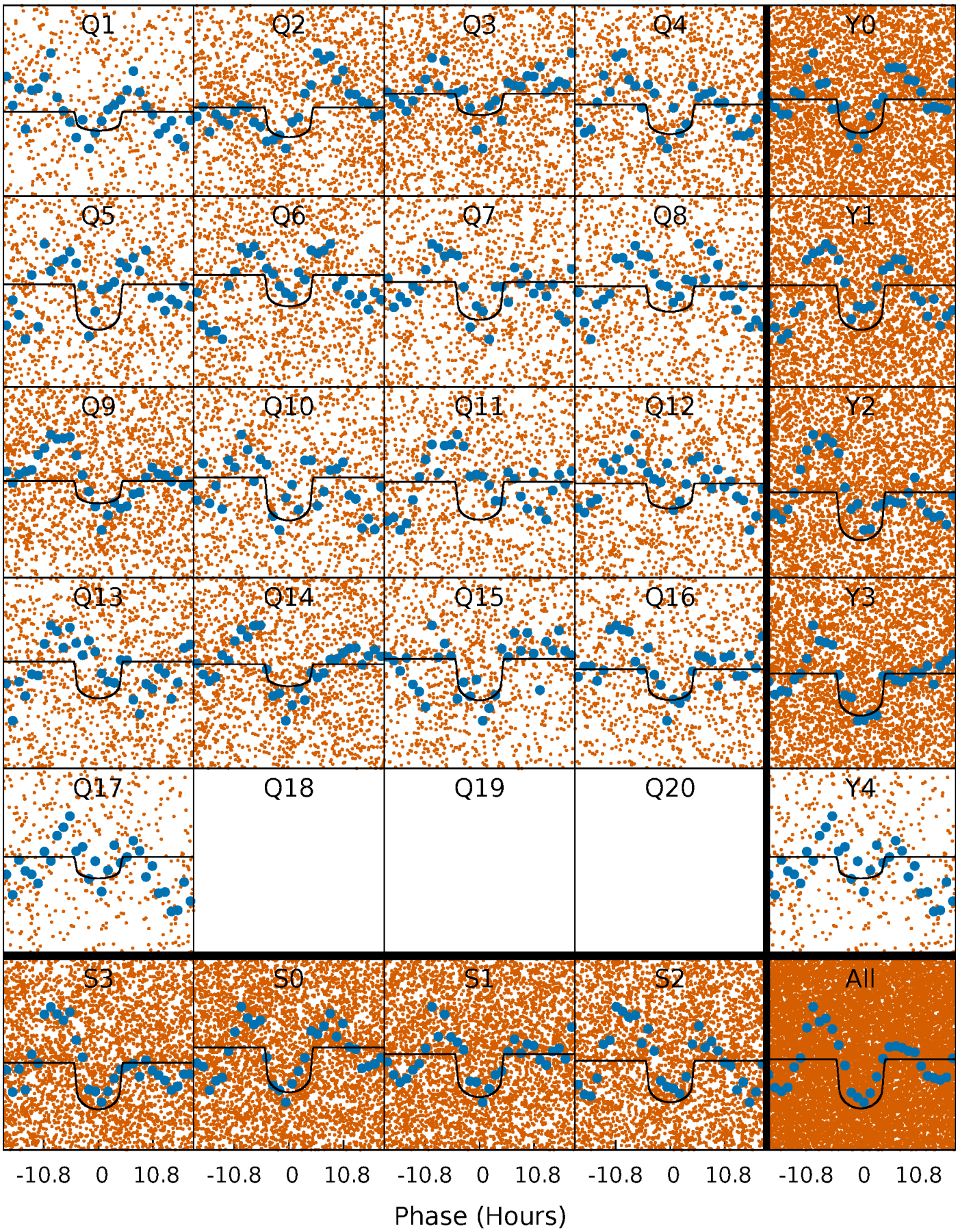
PDC Quarter-Phased Transit Curves

TCE 008984131-01 P= 2.555828 Days T_0=132.081385 (BKJD)



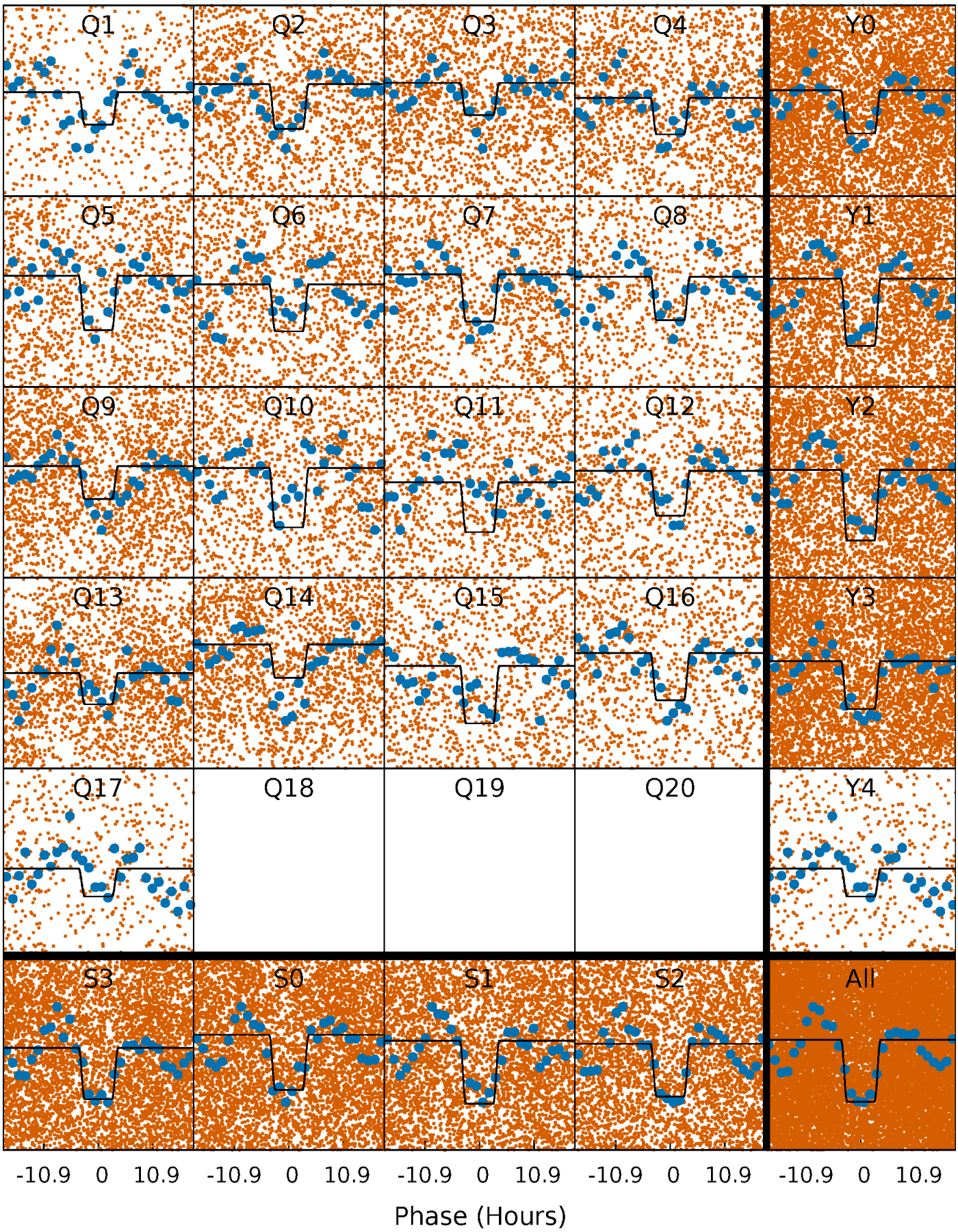
DV Quarter-Phased Transit Curves

TCE 008984131-01 P= 2.555828 Days T_0=132.081385 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

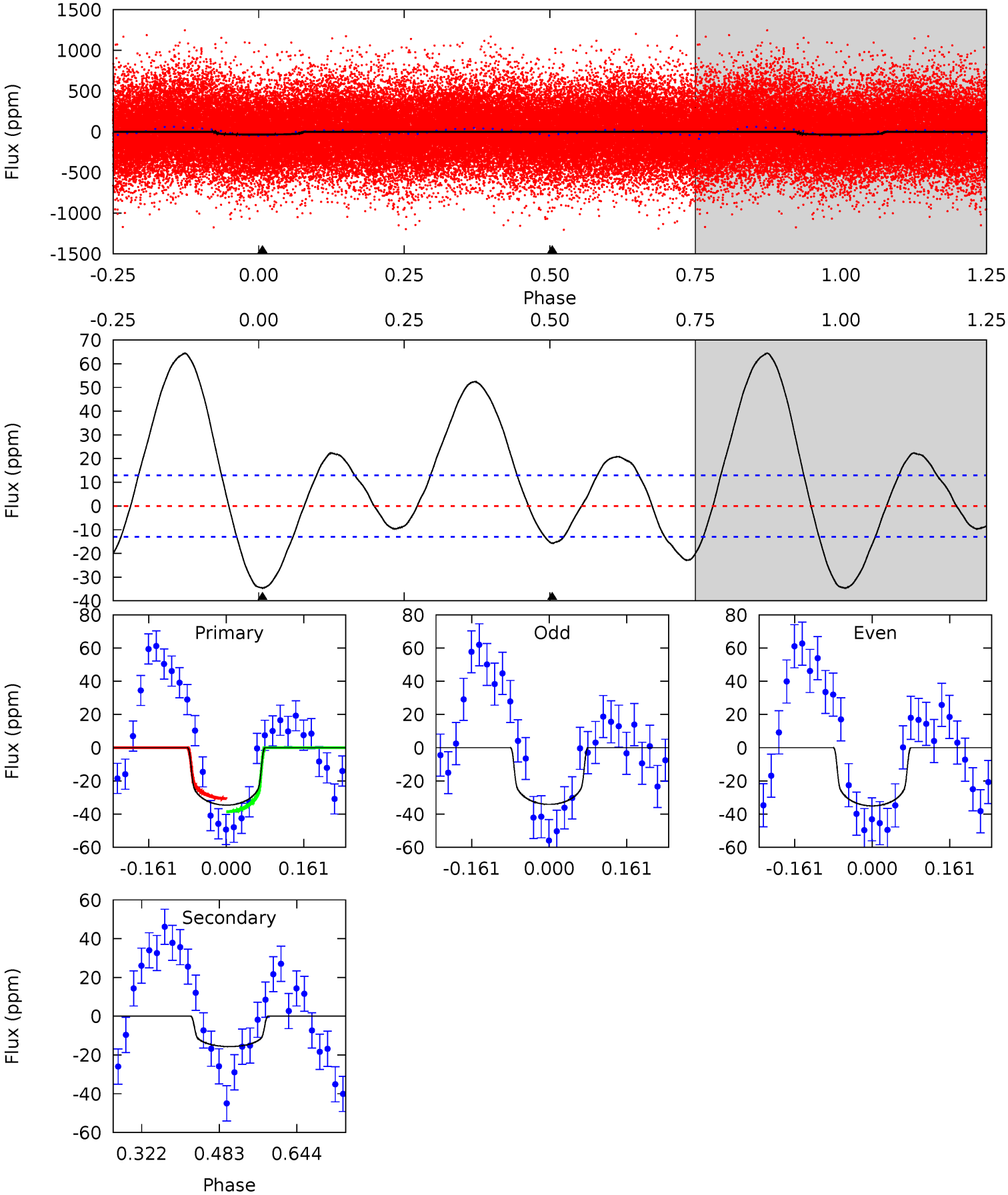
TCE 008984131-01 P= 2.555783 Days T_0=132.092579 (BKJD)



DV Model-Shift Uniqueness Test

008984131-01, P = 2.555828 Days, E = 129.525557 Days

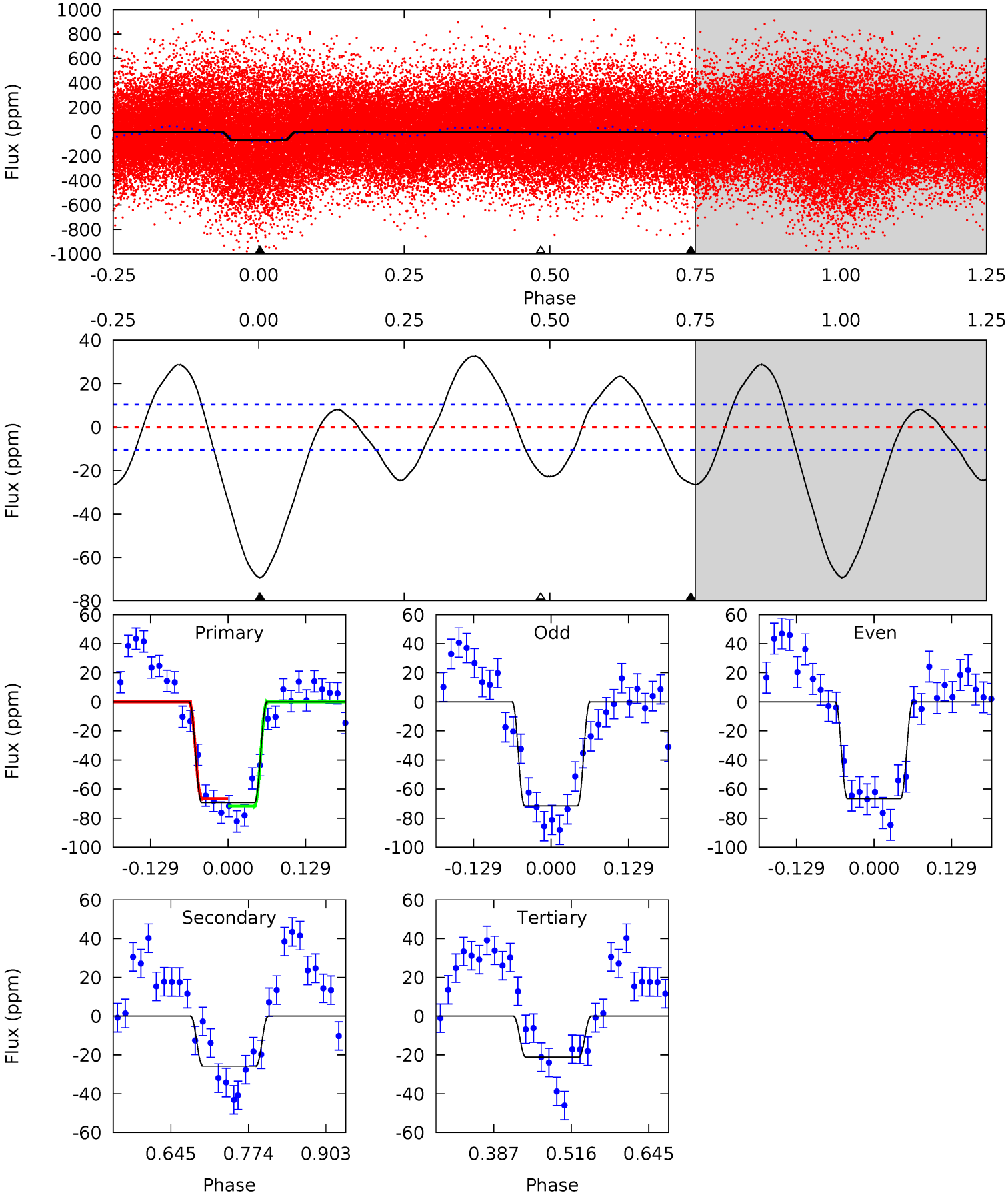
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	5.39	0	0	4.46	1.40	6.99	11.9	11.9	5.39	5.39	0.16	1.47	0.65	1.37



Alt Model-Shift Uniqueness Test

008984131-01, P = 2.555783 Days, E = 129.536796 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.1	11.2	9.18	0	4.51	1.52	7.66	20.9	30.1	2.04	11.2	1.06	0.89	0.32	1.11



Stellar Parameters For KIC 008984131

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5665^{+170}_{-170}	$3.624^{+0.731}_{-0.172}$	$0.140^{+0.250}_{-0.250}$	$3.197^{+0.859}_{-2.005}$	$1.568^{+0.195}_{-0.585}$	$0.068^{+0.848}_{-0.032}$
	+3%/-3%	+20%/-5%	+179%/-179%	+27%/-63%	+12%/-37%	+1255%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008984131-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16±3	$2.72^{+0.81}_{-0.93}$	2968^{+279}_{-499}	4018^{+352}_{-312}	$2.122^{+2.421}_{-0.945}$
Alt.	-26±2	$2.82^{+0.82}_{-0.99}$	2946^{+290}_{-511}	4395^{+339}_{-278}	$3.250^{+3.802}_{-1.328}$

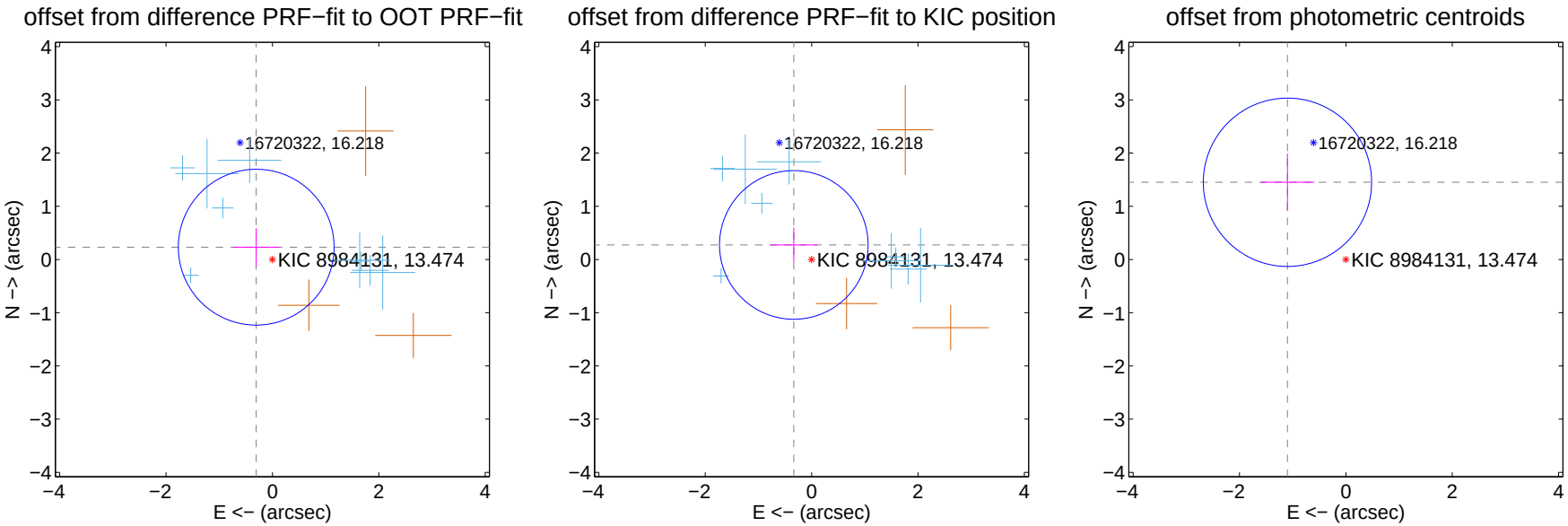
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

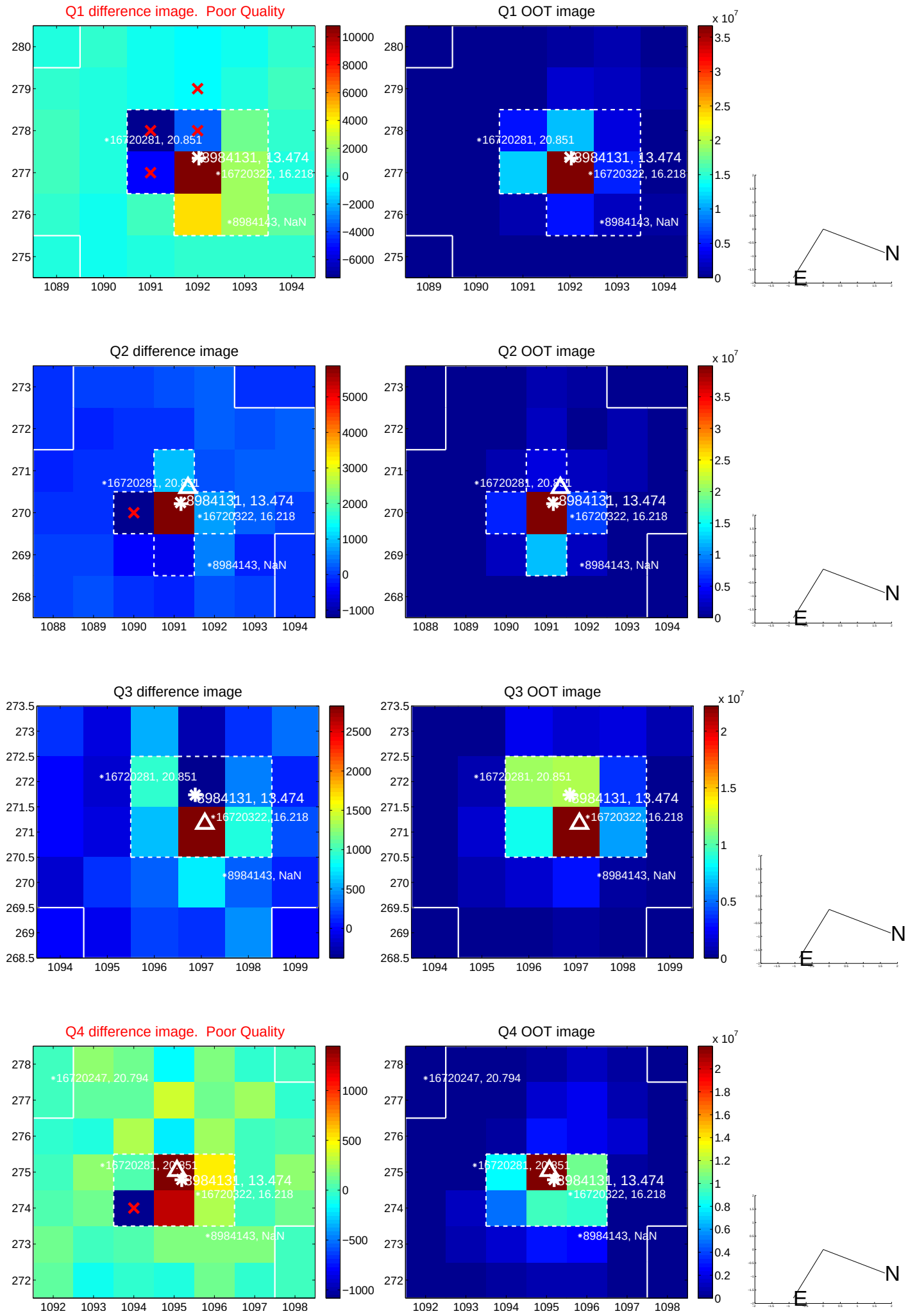
Supplemental centroid analysis for 008984131-01. Kepler magnitude: 13.47. Transit SNR 9.18
There are 9 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.383 ± 0.488	0.78	0.305 ± 0.435	0.231 ± 0.357
PRF-fit source offset from KIC position	0.433 ± 0.466	0.93	0.335 ± 0.439	0.274 ± 0.322
photometric centroid source offset	1.82 ± 0.53	3.45	1.10 ± 0.51	1.45 ± 0.54

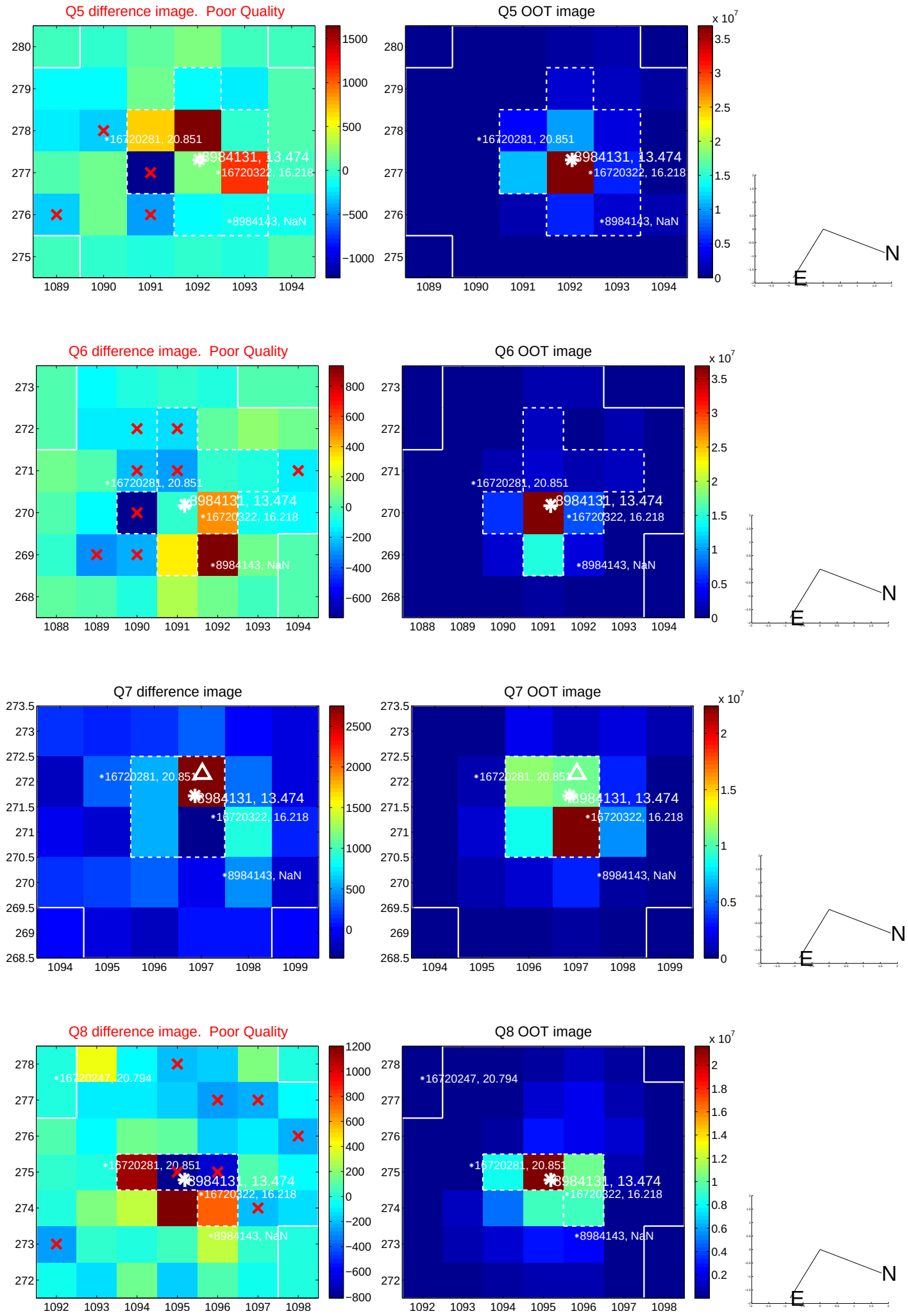


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

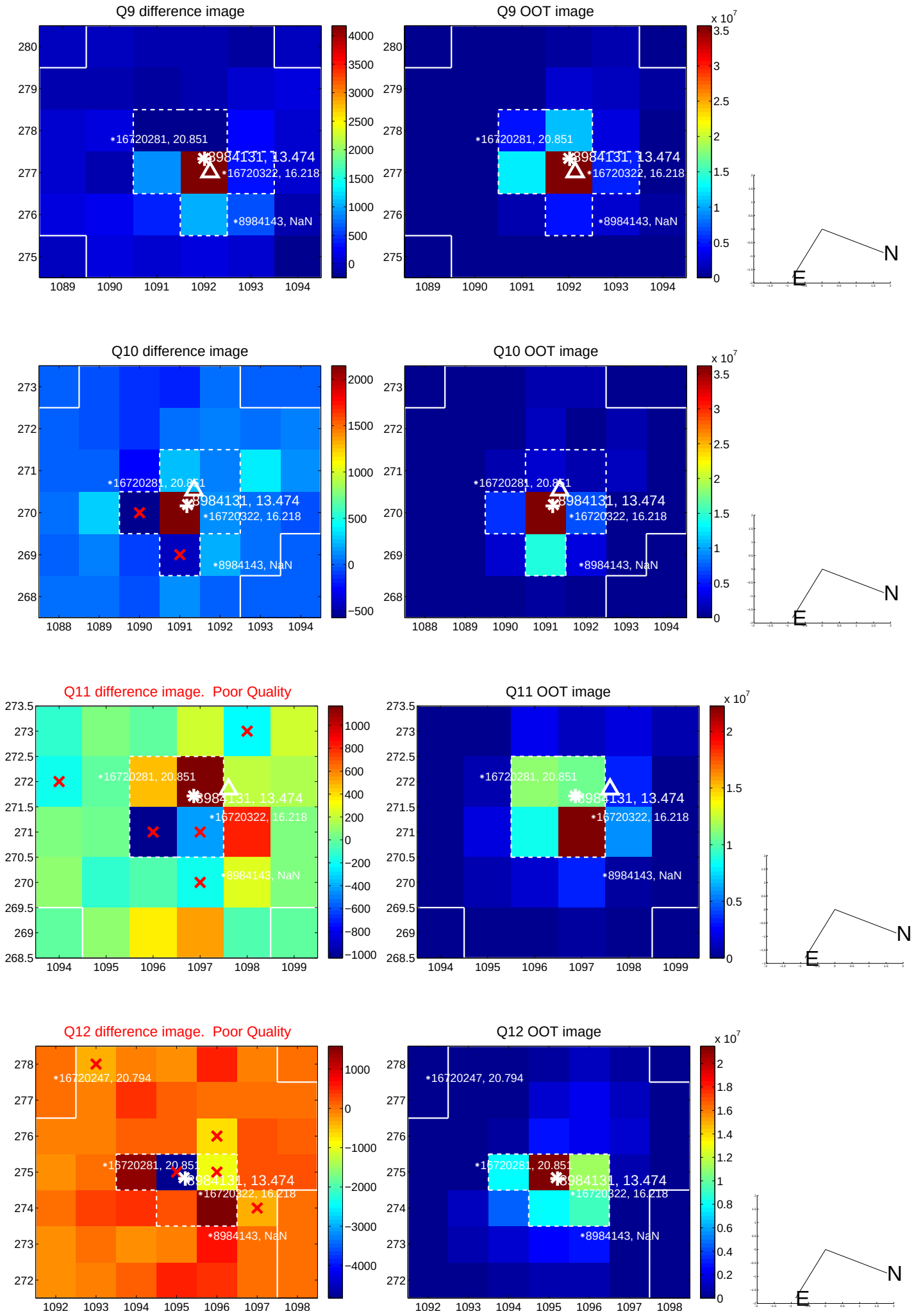
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



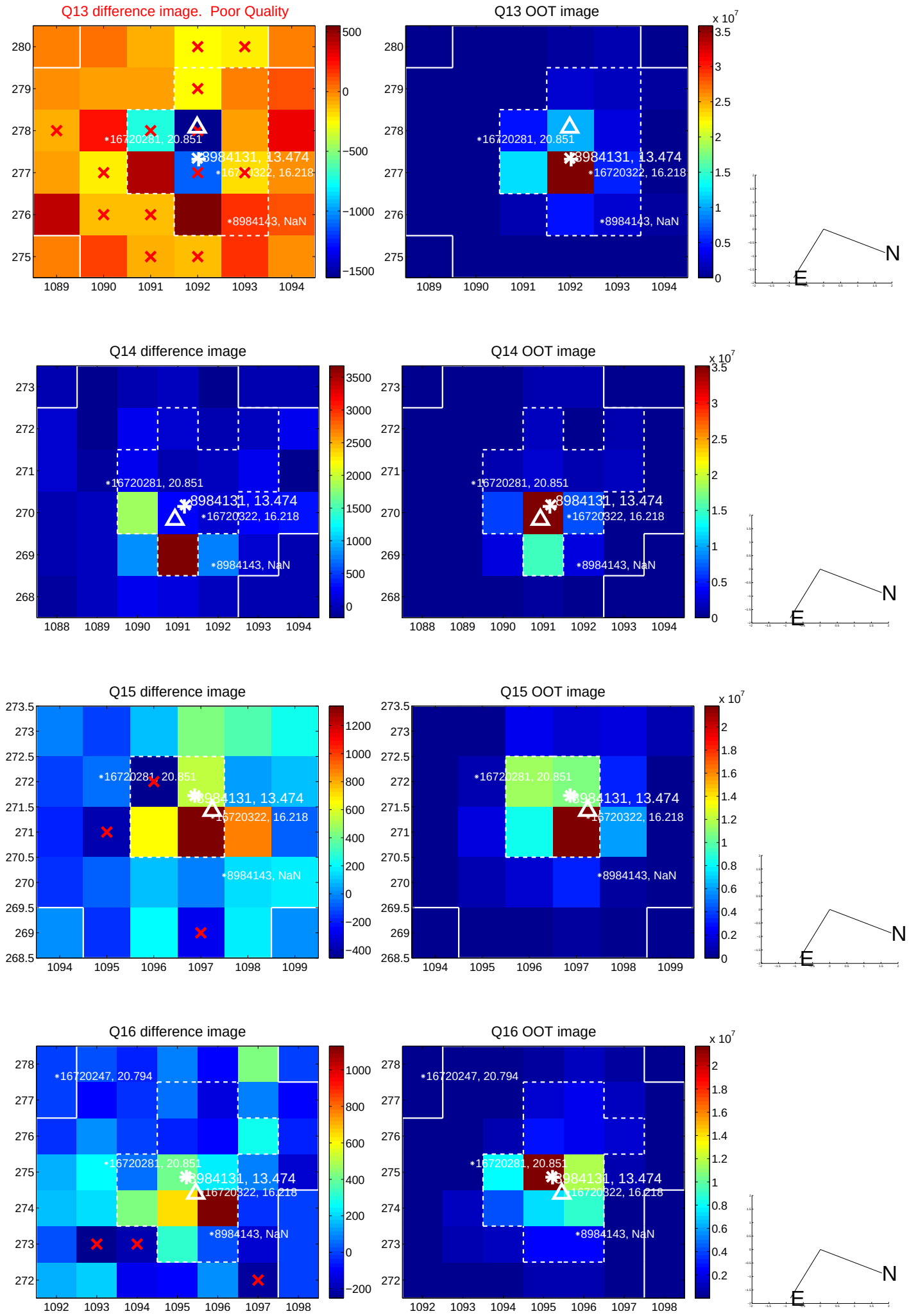
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



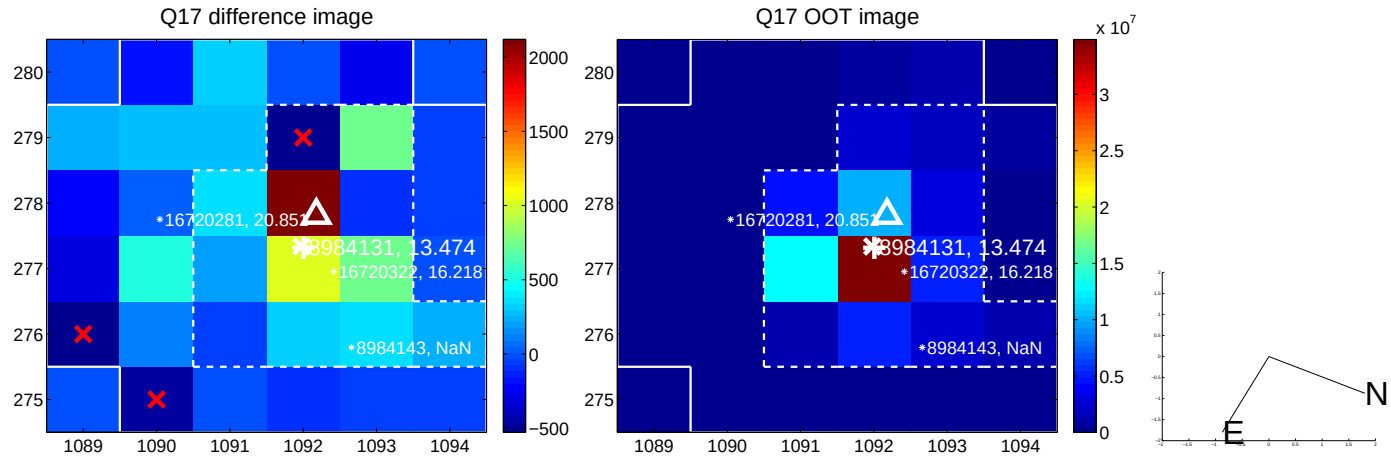
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

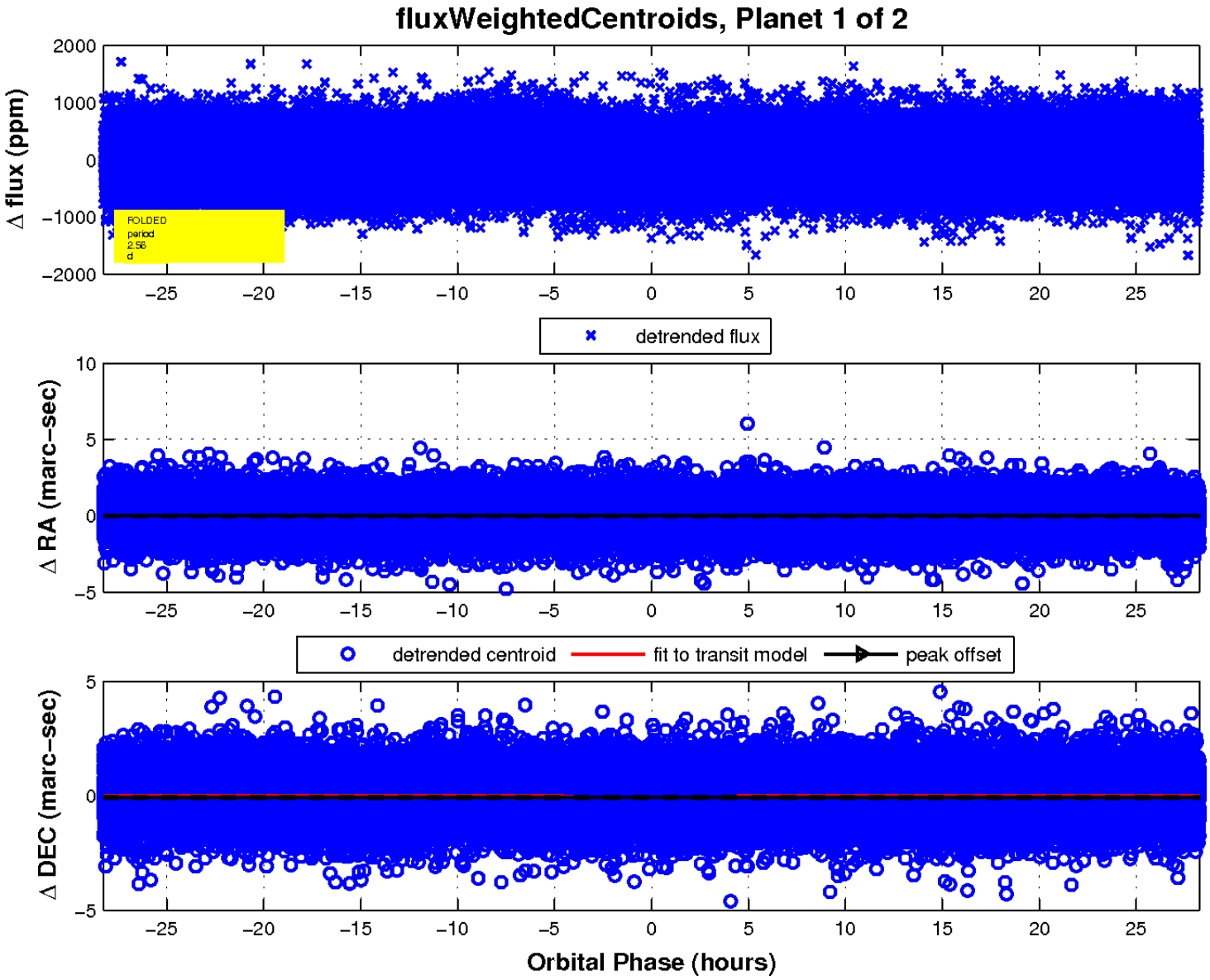


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

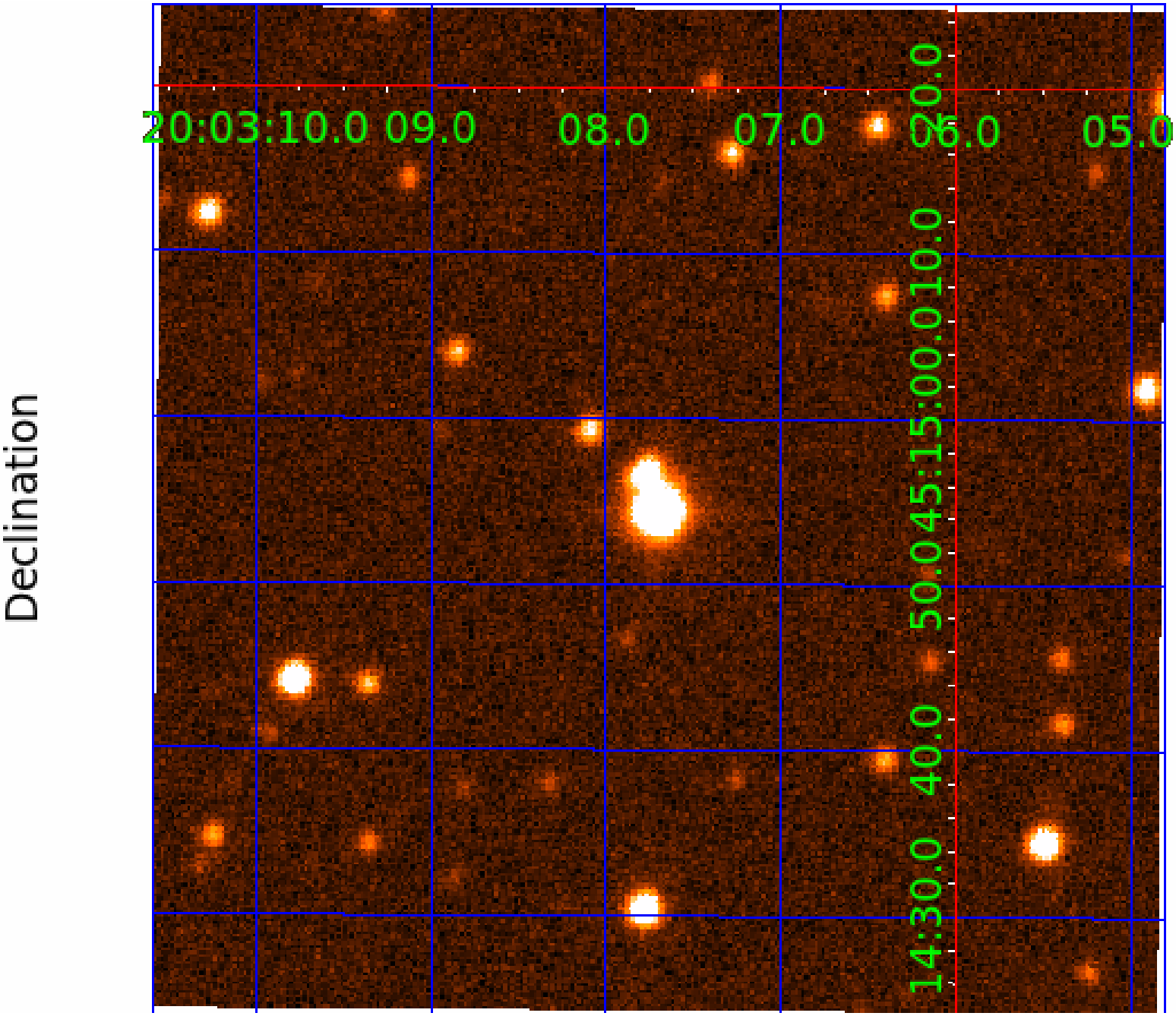


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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07.0
06.0
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20.0
10.0
15:00.0
45.0
50.0
40.0
14:30.0
Declination

KIC 008984131

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 ($S_\oplus$)
008984131-01	OBS	No	2.555828	132.081385	59.6	9.425	9.4	9.2	3.20	5665	2.94	5217.72
008984131-02	OBS	No	274.765282	362.680276	540.0	8.469	8.5	6.8	3.20	5665	7.71	10.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008984131-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008984131-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

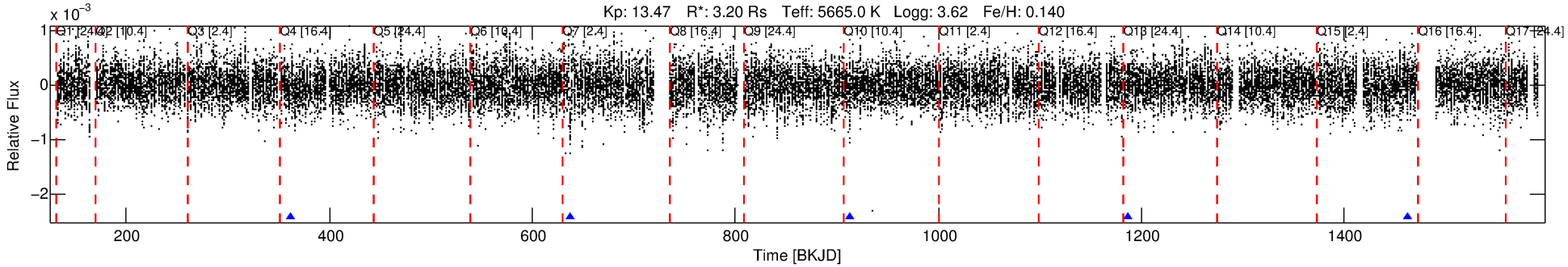
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

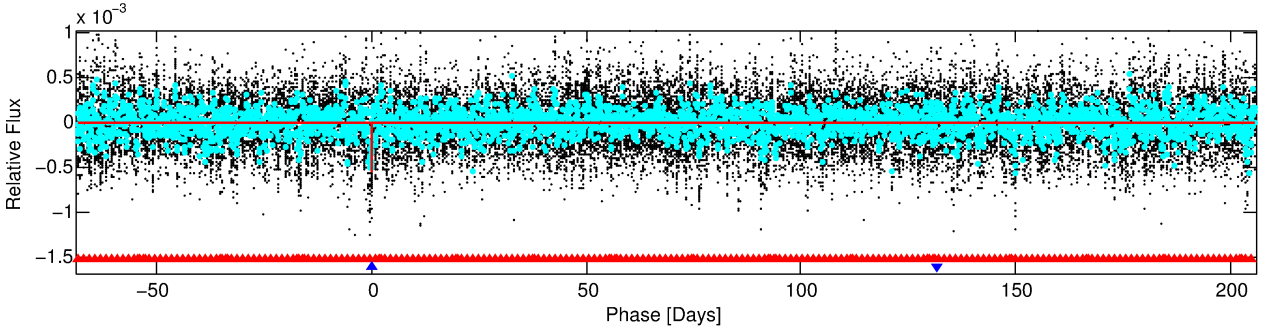
Ephemeris Match Information For 008984131-02

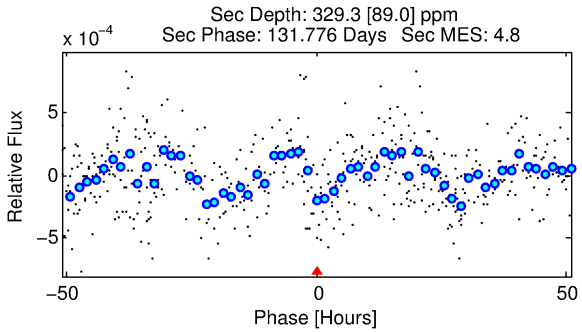
No Significant Match Found

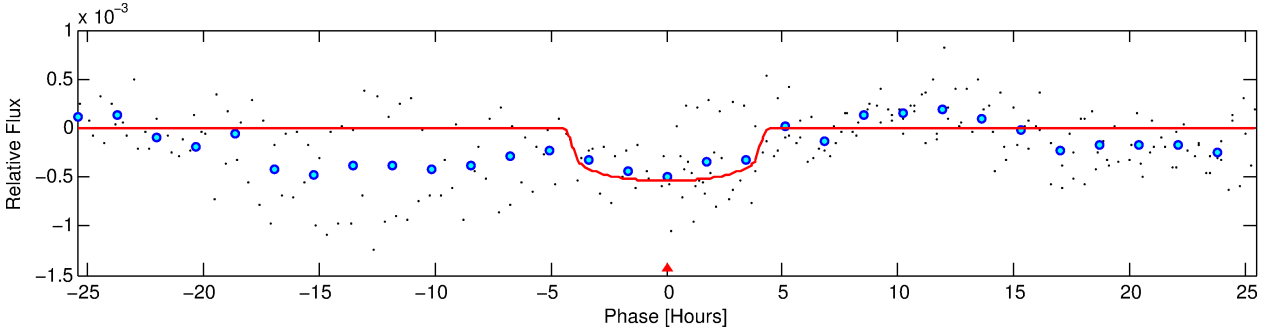
DV One-Page Summary

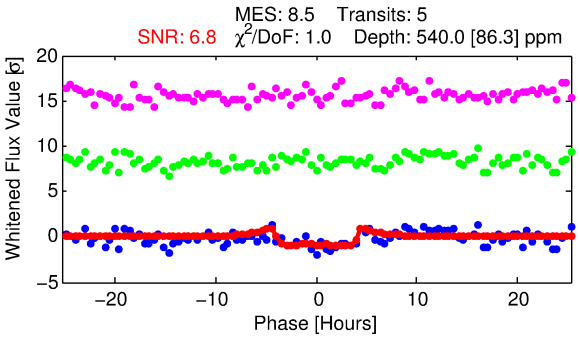
KIC: 8984131 Candidate: 2 of 2 Period: 274.765 d

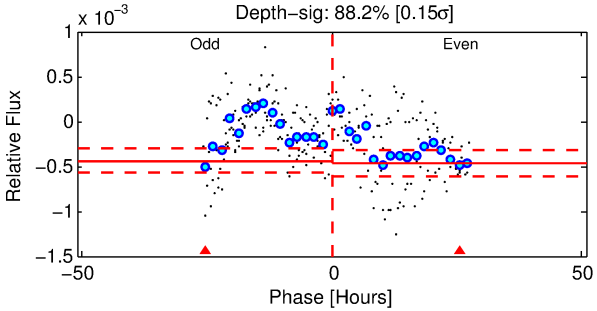


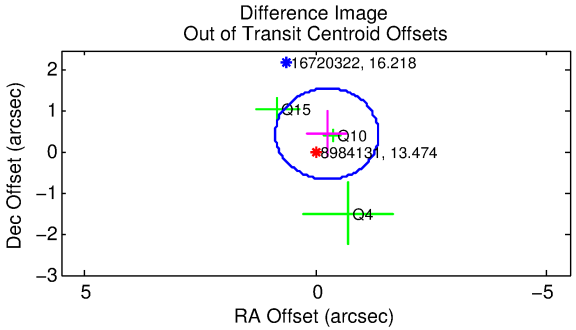












DV Fit Results:

Period = 274.76528 [0.00492] d
Epoch = 362.6803 [0.0121] BKJD
Rp/R* = 0.0221 [0.0124]
a/R* = 206.31 [477.36]
b = 0.59 [2.54]

Seff = 10.21 [12.28]
Teq = 456 [137] K
Rp = 7.71 [6.50] Re
a = 0.9612 [0.6726] AU

Ag = 2817.76 [4694.92] [0.60σ]
Teffp = 5134 [1495] K [3.12σ]

DV Diagnostic Results:

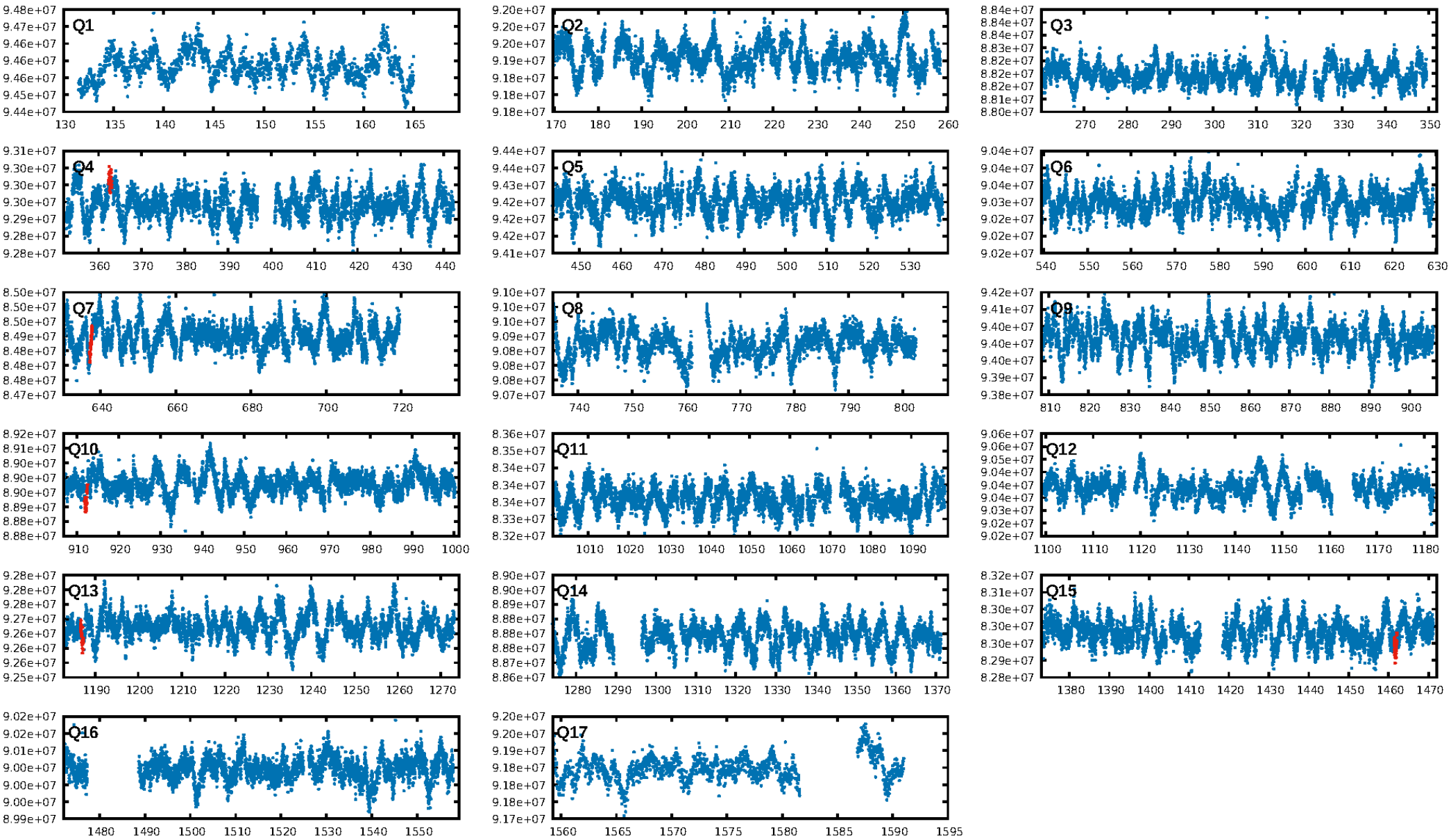
ShortPeriod−sig: 100.0% [515.60σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: 2.3%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 1.59e−10
RollingBand−fgt: 1.00 [5/5]
GhostDiagnostic−chr: 8.22

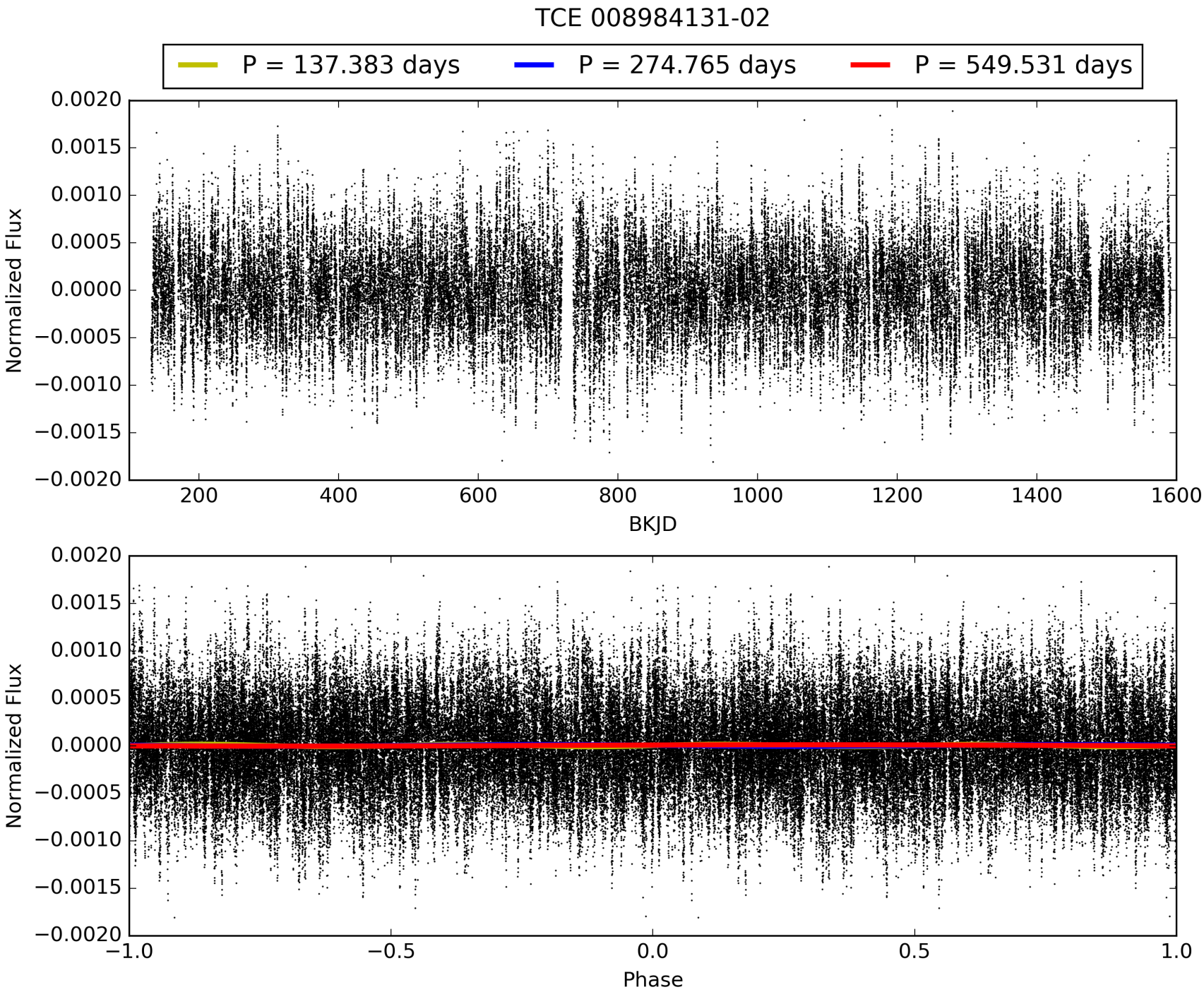
Centroid−sig: 50.6%
Centroid−so: 0.849 arcsec [1.42σ]
OotOffset−rm: 0.518 arcsec [1.40σ]
KicOffset−rm: 0.505 arcsec [0.79σ]
OotOffset−st: 1/1/1/0 [3]
KicOffset−st: 1/1/1/0 [3]
DiffImageQuality−fgm: 0.67 [2/3]
DiffImageOverlap−fno: 0.00 [0/4]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 00:13:51 Z

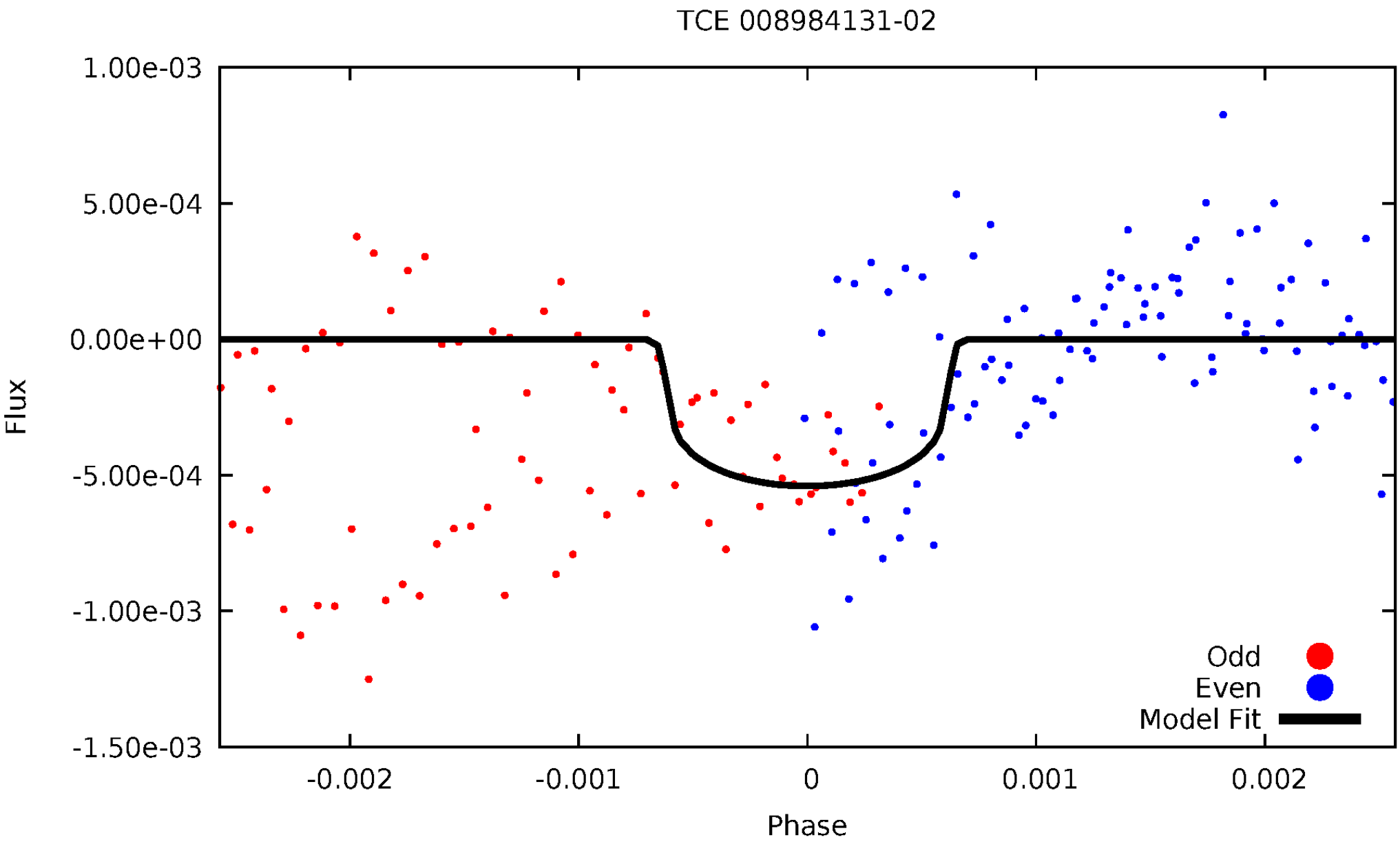
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008984131-02, PDC Light Curves

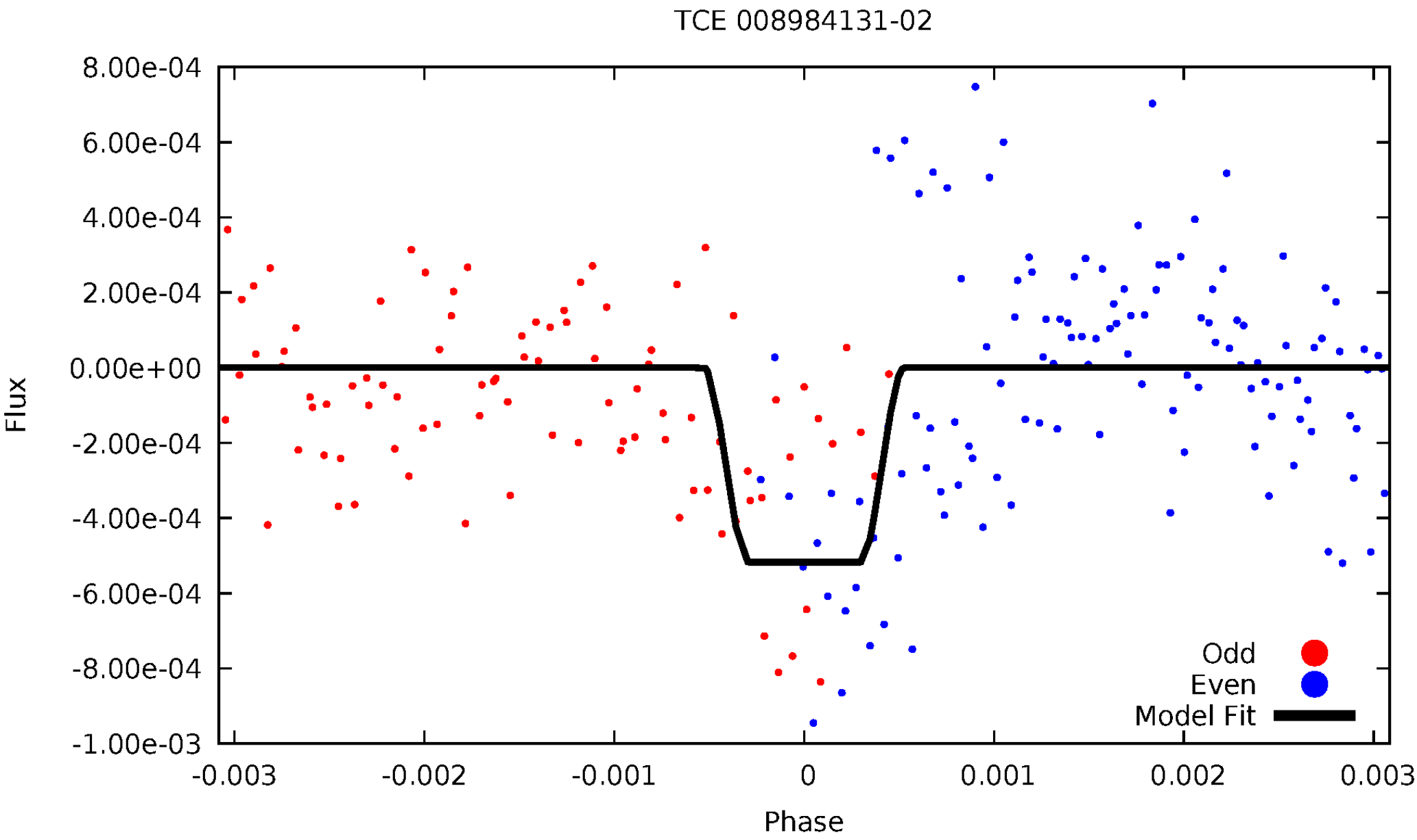



TCE 008984131-02
P = 137.383 days
P = 274.765 days
P = 549.531 days
Normalized Flux
BKJD
Normalized Flux
Phase

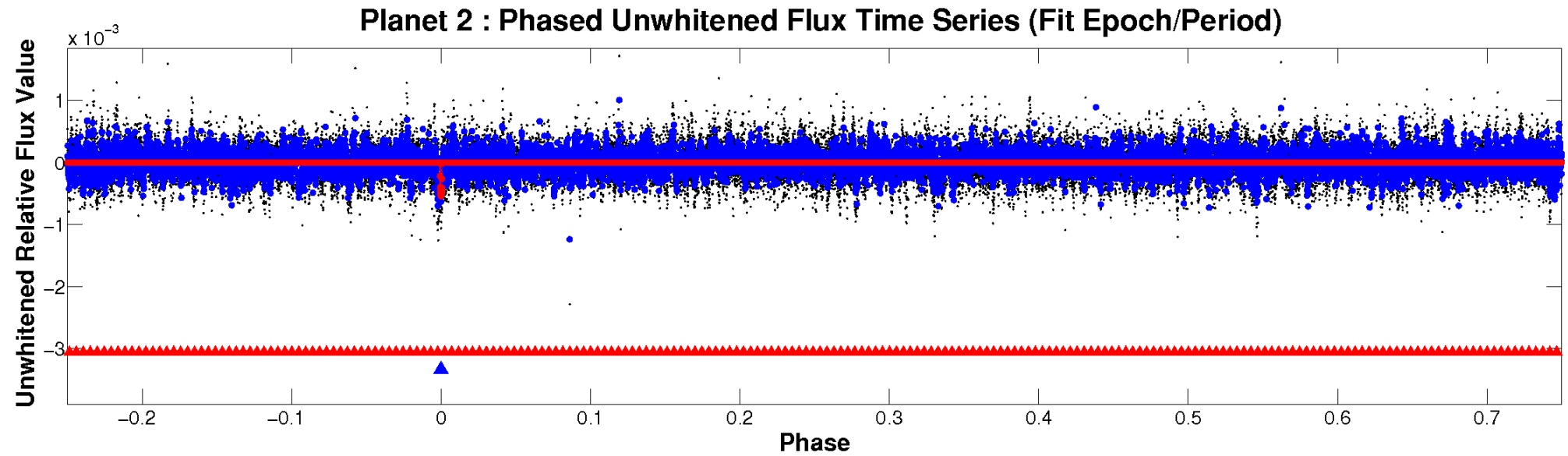
DV Odd/Even

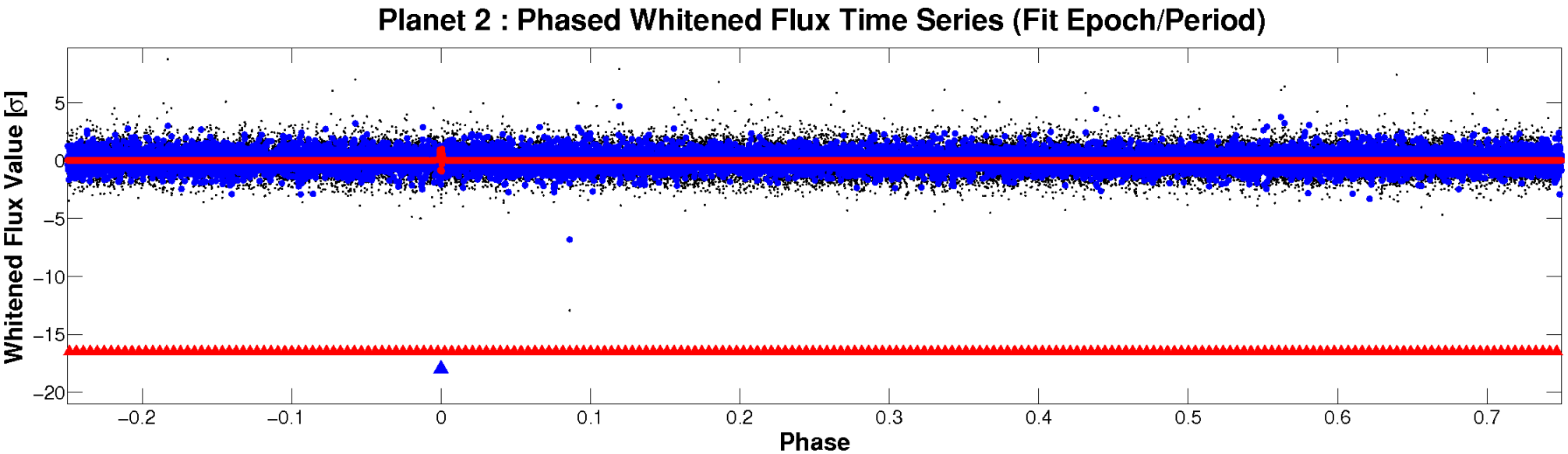

TCE 008984131-02
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.002
-0.001
0
0.001
0.002
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008984131-02
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
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
Phase
Odd
Even
Model Fit

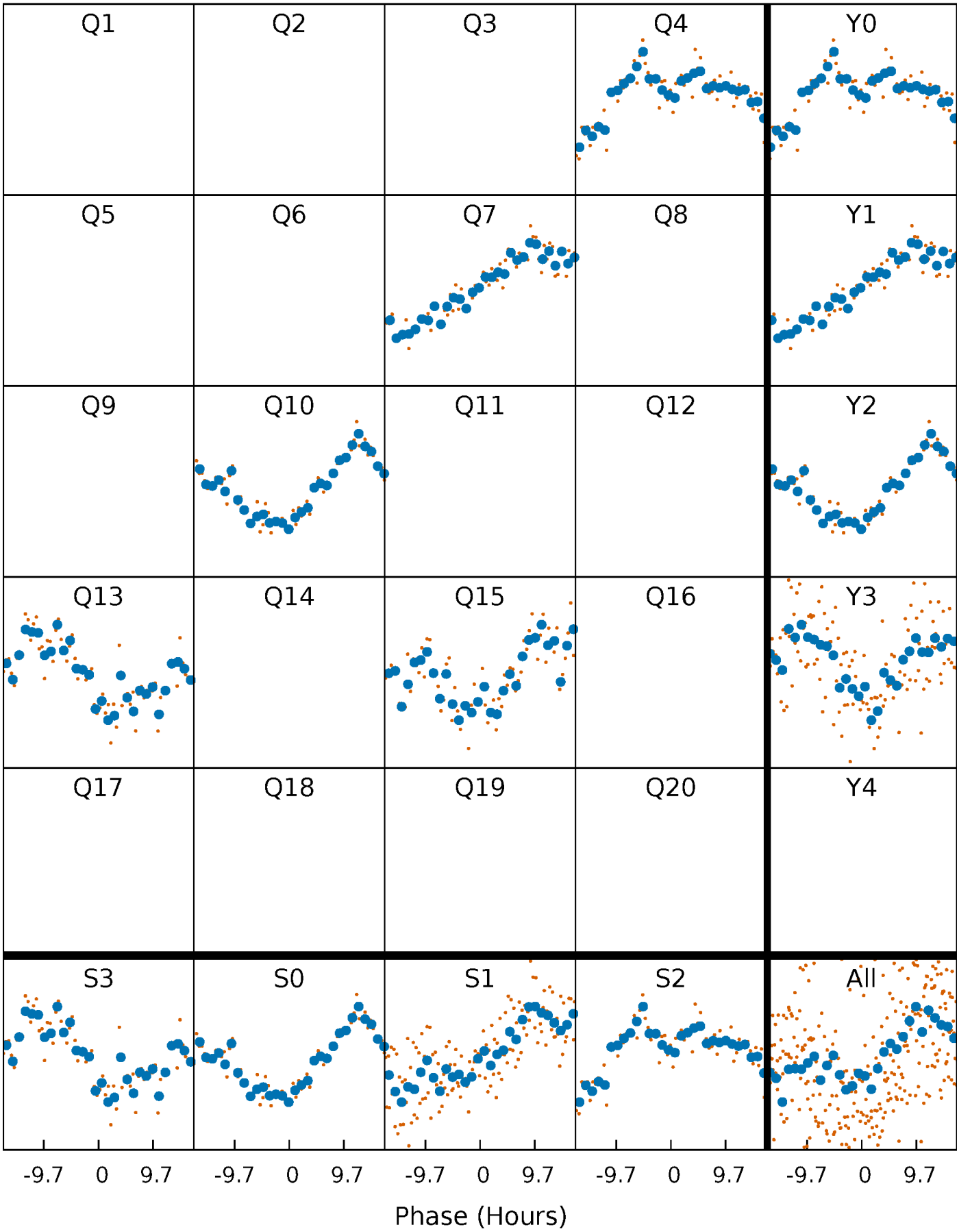
Non-Whitened Vs. Whitened Light Curve





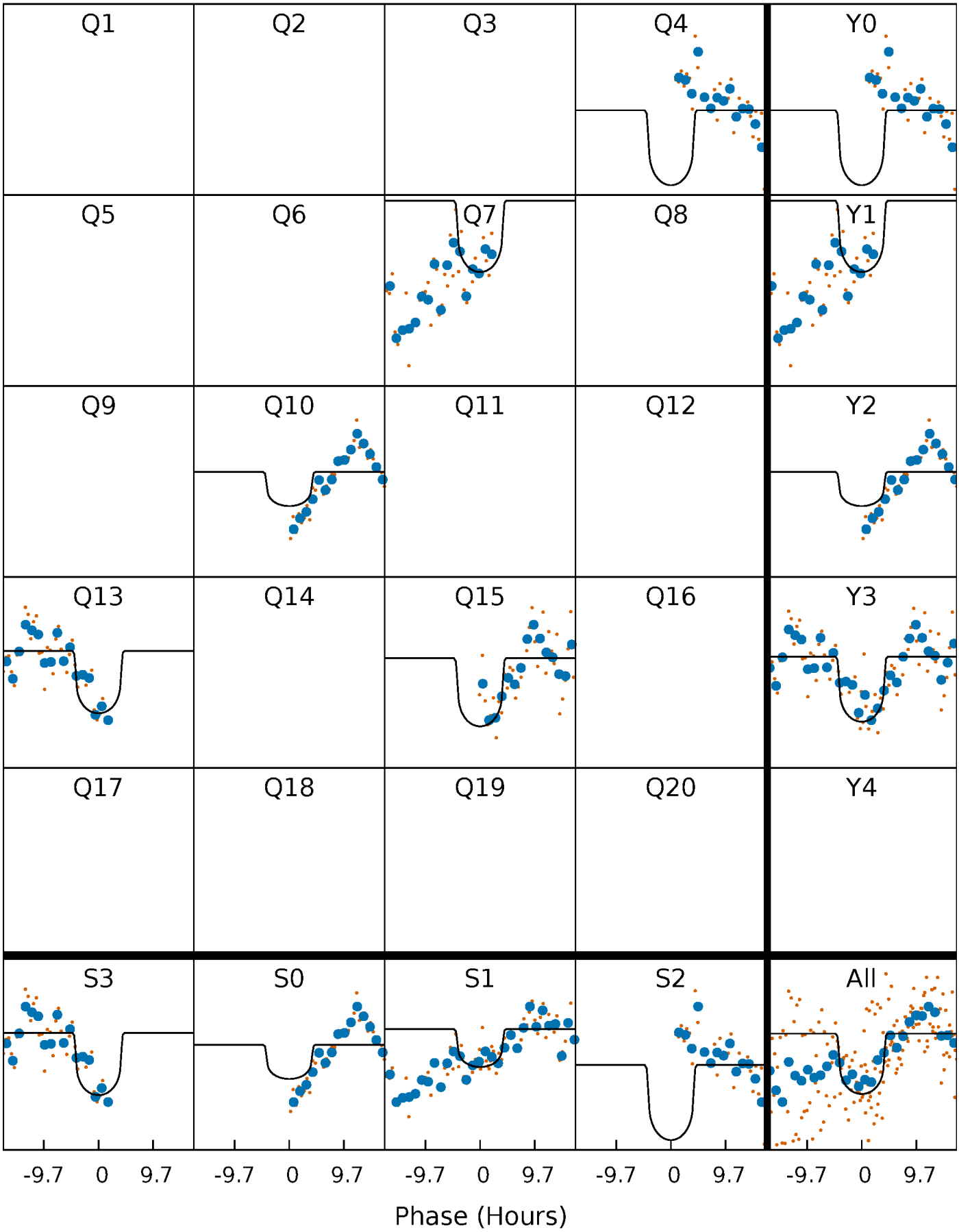
PDC Quarter-Phased Transit Curves

TCE 008984131-02 P=274.765282 Days T_0=362.680276 (BKJD)



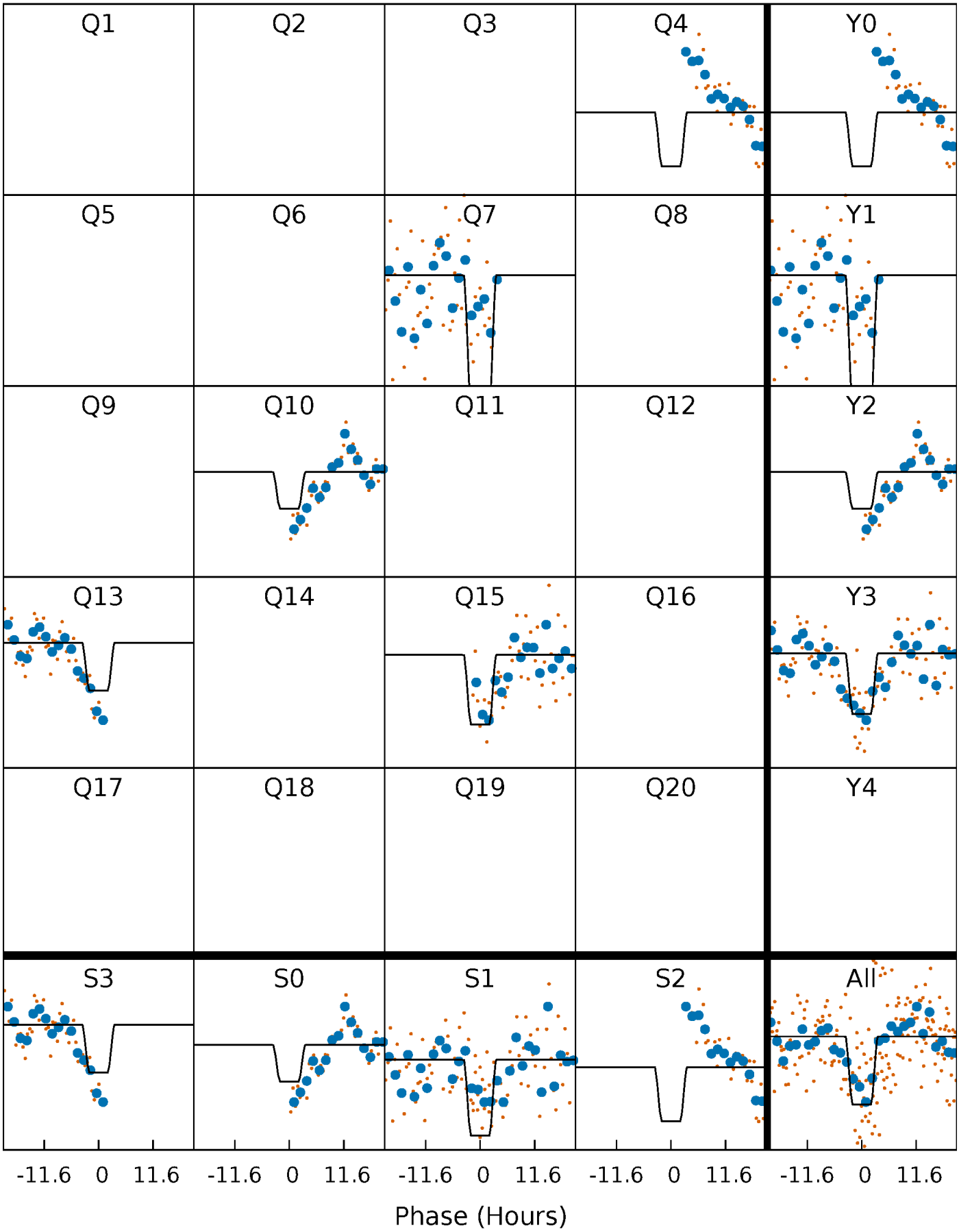
DV Quarter-Phased Transit Curves

TCE 008984131-02 P=274.765282 Days T_0=362.680276 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

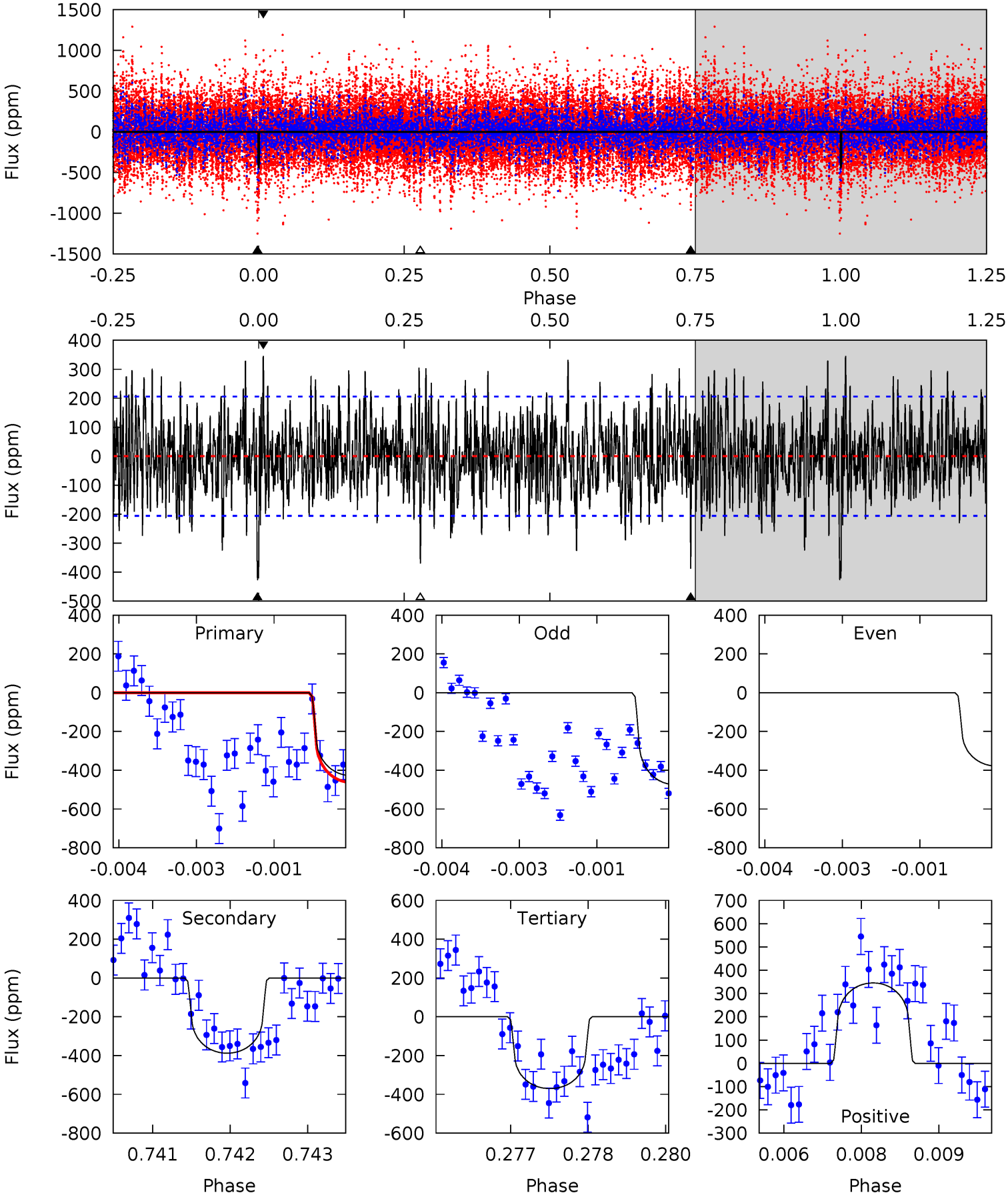
TCE 008984131-02 P=274.797326 Days T_0=362.611516 (BKJD)



DV Model-Shift Uniqueness Test

008984131-02, P = 274.765282 Days, E = 87.914994 Days

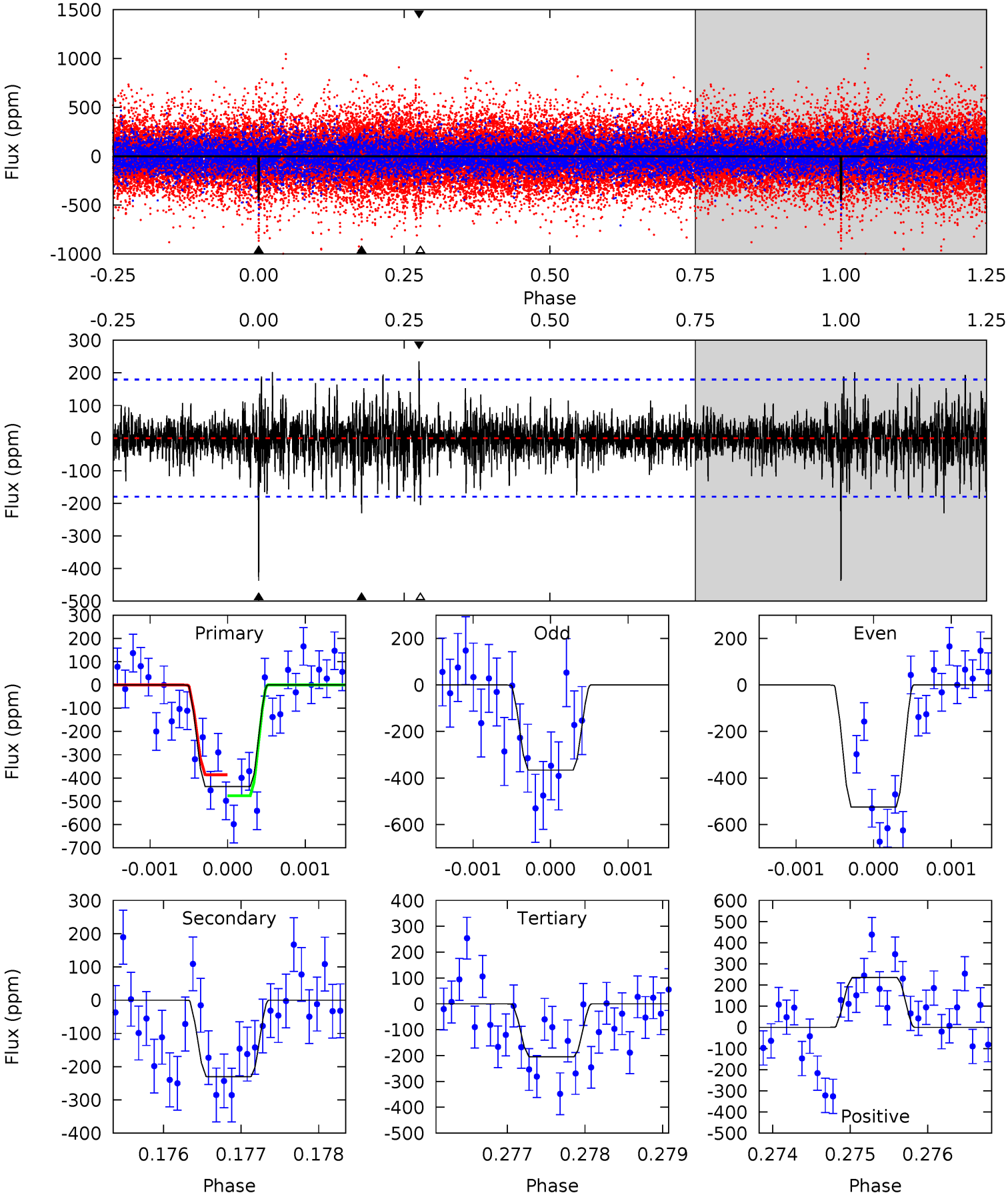
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	10.2	9.72	9.07	5.41	3.22	2.80	1.51	2.16	0.46	1.11	1.24	0.96	0.45	0.67



Alt Model-Shift Uniqueness Test

008984131-02, P = 274.797326 Days, E = 87.814190 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	6.97	6.21	7.14	5.45	3.28	1.47	7.04	6.10	0.76	-0.17	2.39	0.53	0.35	1.36



Stellar Parameters For KIC 008984131

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5665^{+170}_{-170}	$3.624^{+0.731}_{-0.172}$	$0.140^{+0.250}_{-0.250}$	$3.197^{+0.859}_{-2.005}$	$1.568^{+0.195}_{-0.585}$	$0.068^{+0.848}_{-0.032}$
	+3%/-3%	+20%/-5%	+179%/-179%	+27%/-63%	+12%/-37%	+1255%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008984131-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-388±38	$6.88^{+5.18}_{-3.82}$	614^{+69}_{-103}	5207^{+2163}_{-849}	4085^{+15839}_{-2751}
Alt.	-230±33	$6.93^{+4.90}_{-3.96}$	617^{+63}_{-95}	4741^{+1803}_{-757}	2340^{+10064}_{-1540}

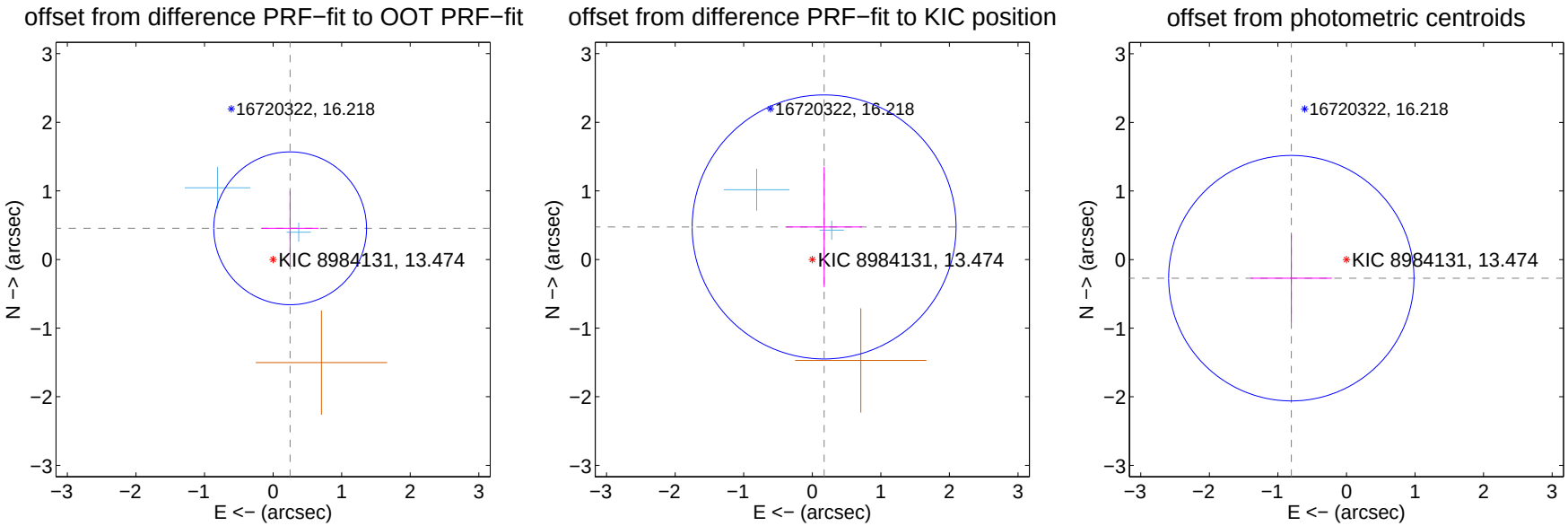
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

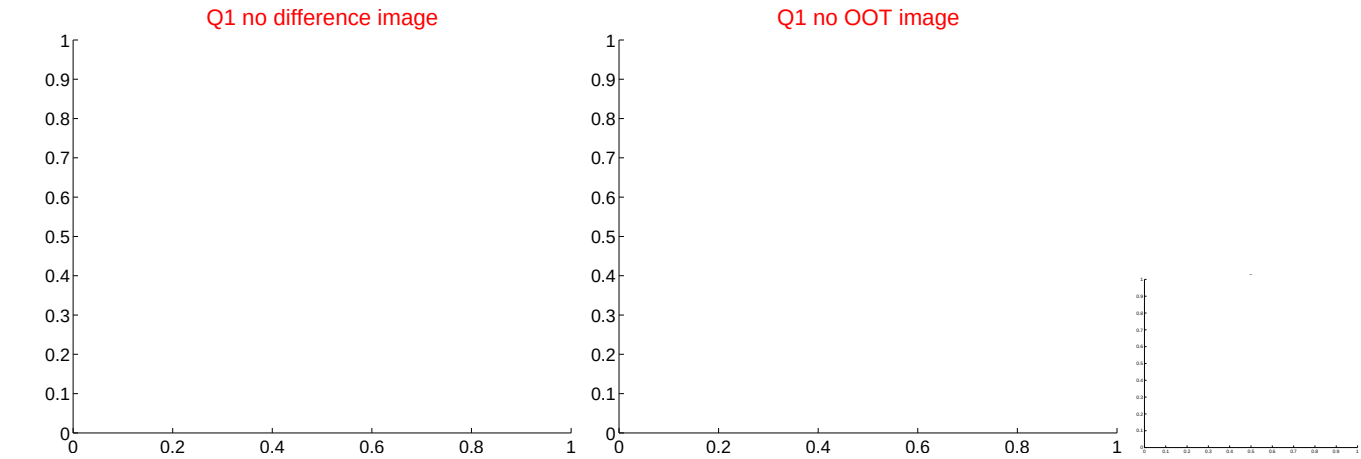
Supplemental centroid analysis for 008984131-02. Kepler magnitude: 13.47. Transit SNR 6.83
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

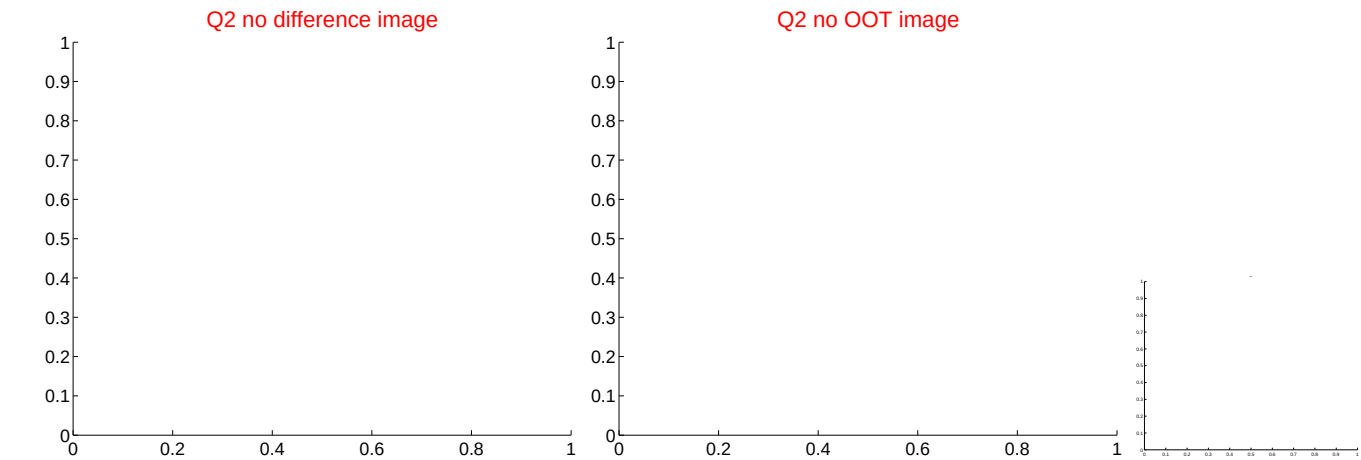
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.518 ± 0.371	1.40	-0.249 ± 0.412	0.455 ± 0.546
PRF-fit source offset from KIC position	0.505 ± 0.641	0.79	-0.173 ± 0.552	0.475 ± 0.876
photometric centroid source offset	0.85 ± 0.60	1.42	0.80 ± 0.59	-0.27 ± 0.64

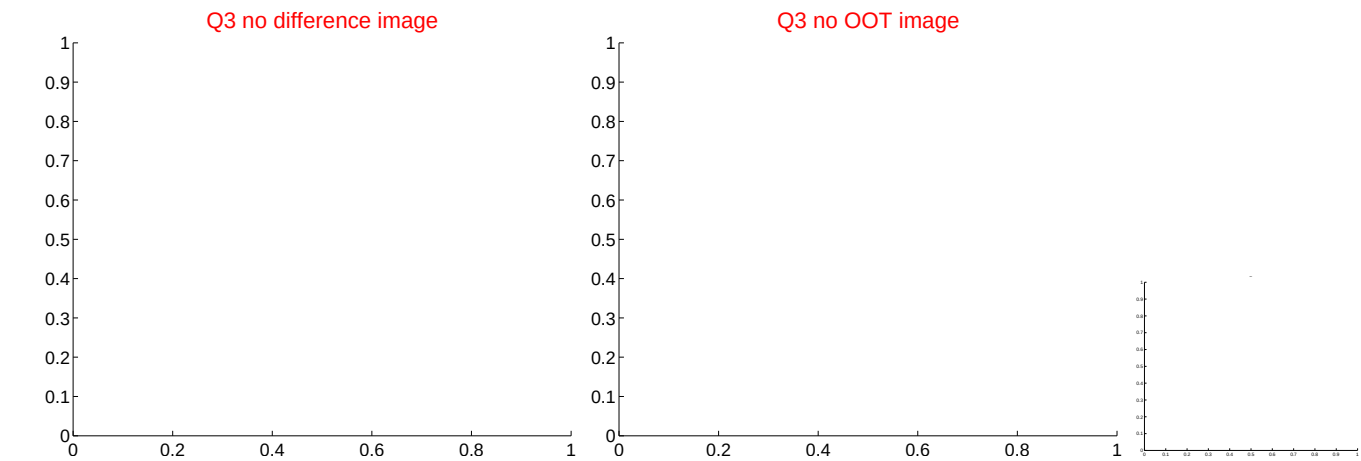


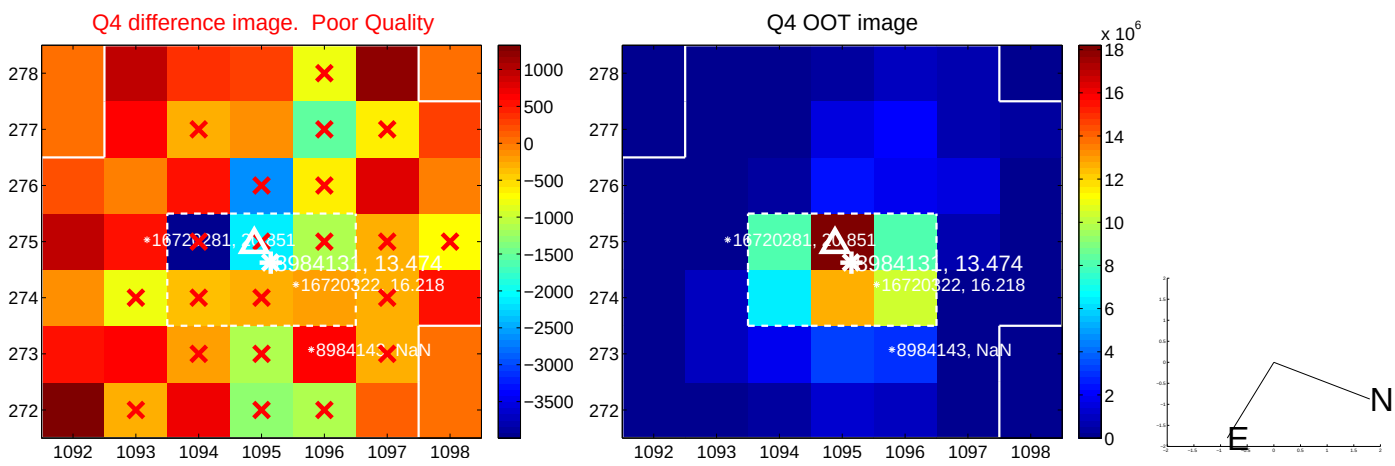
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

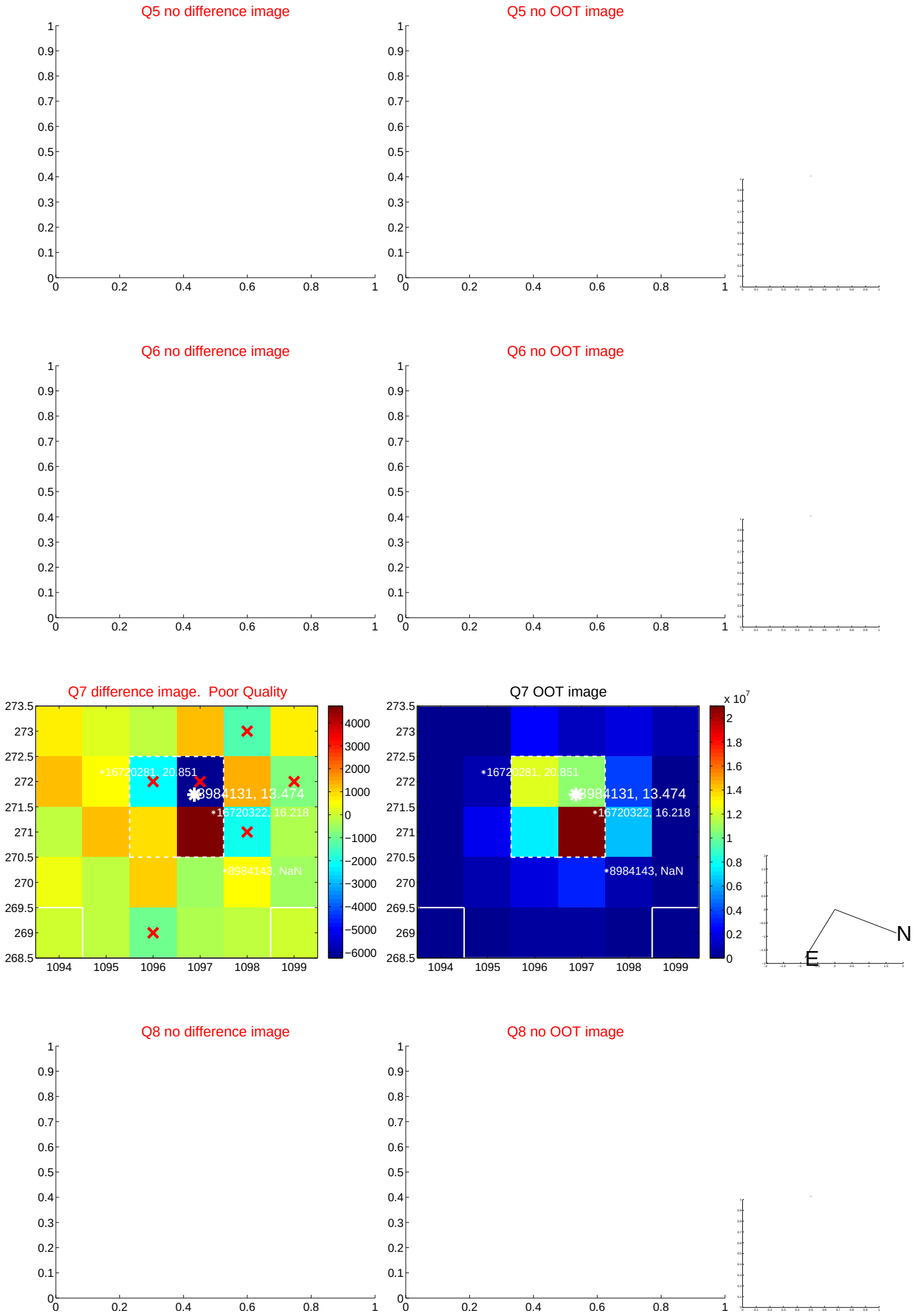




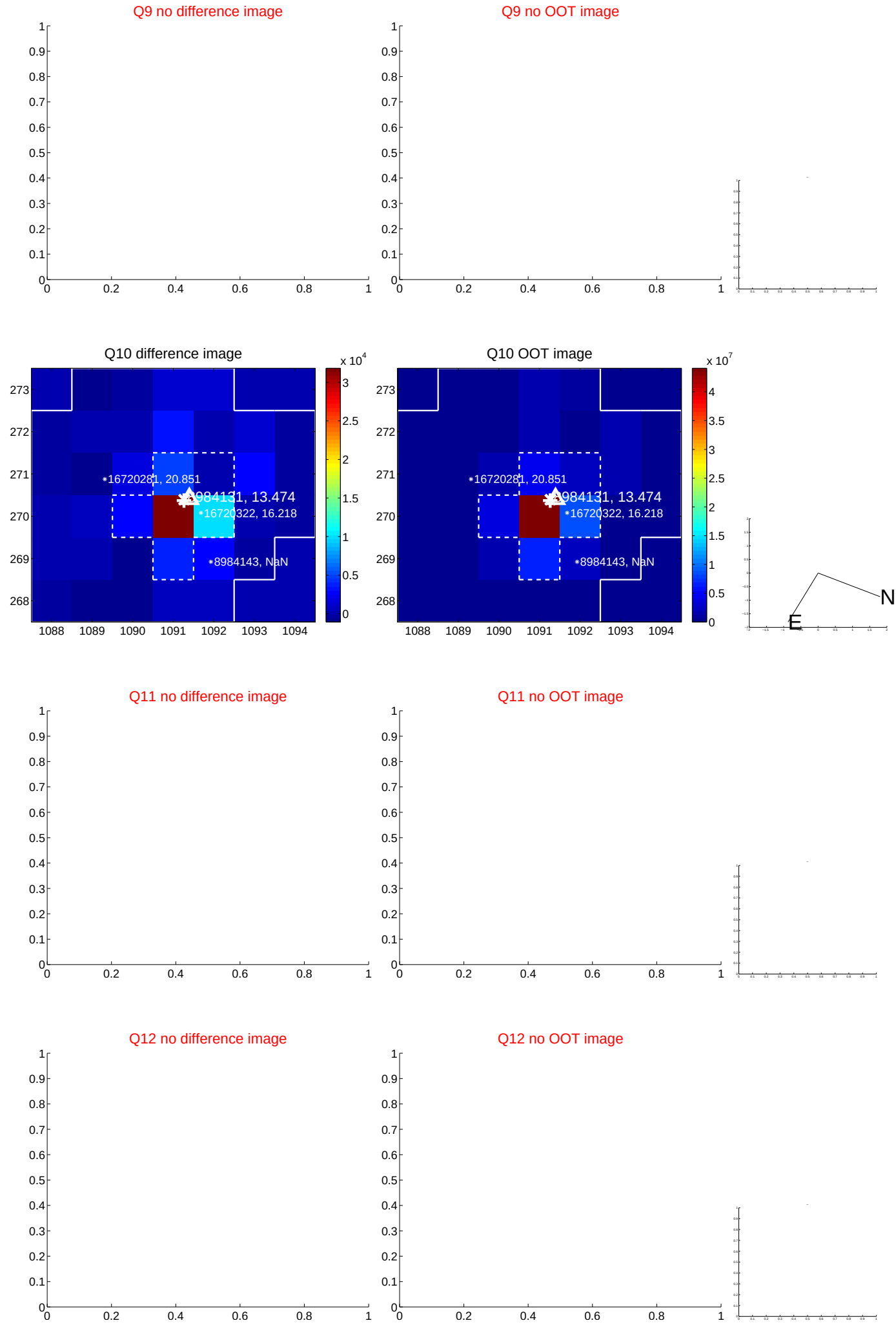




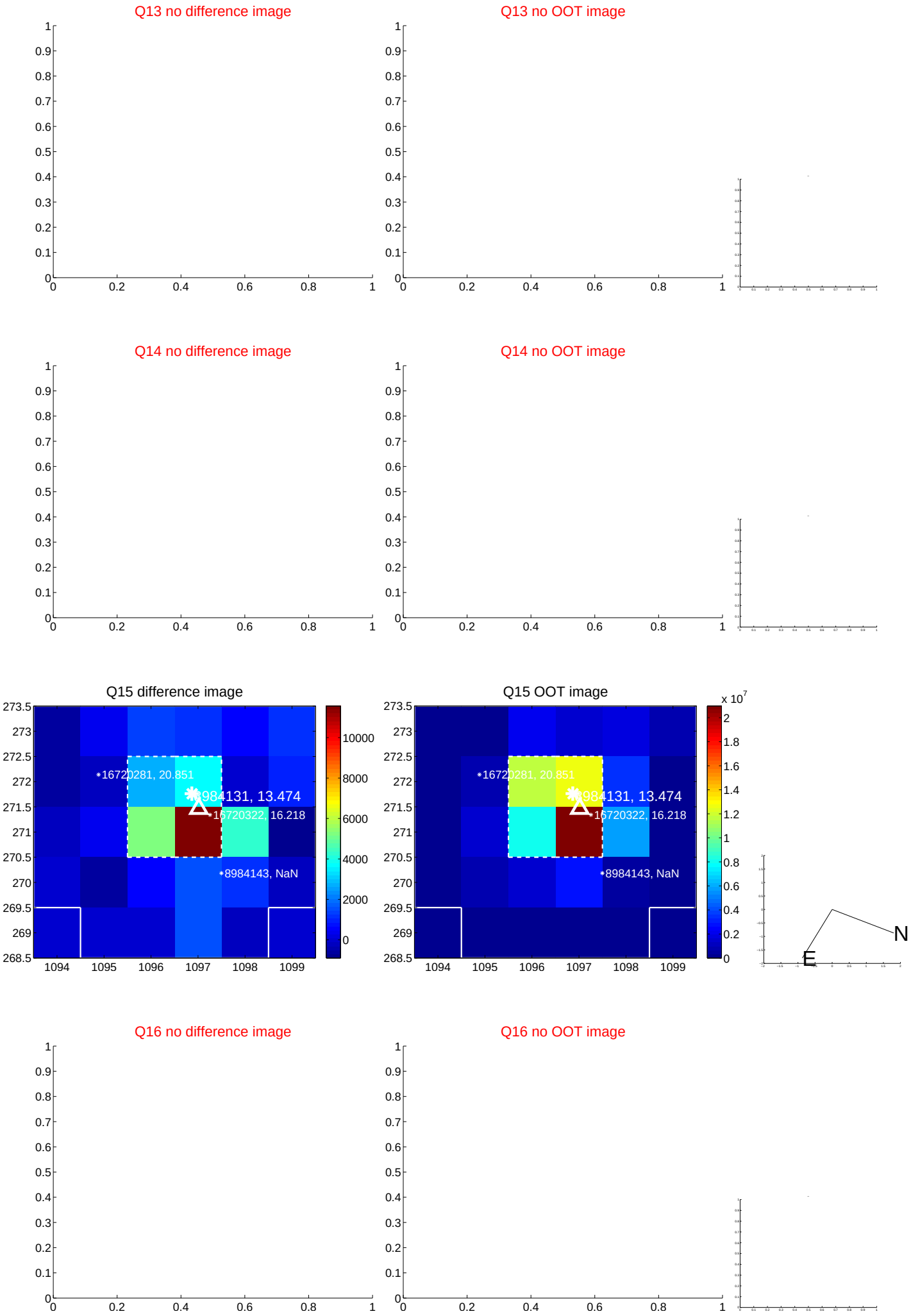
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



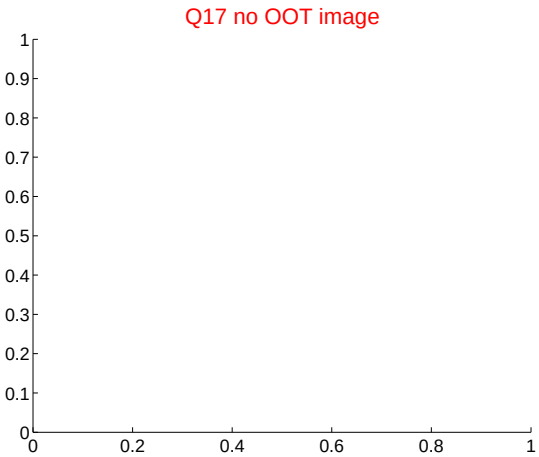
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

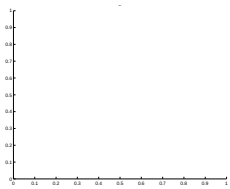


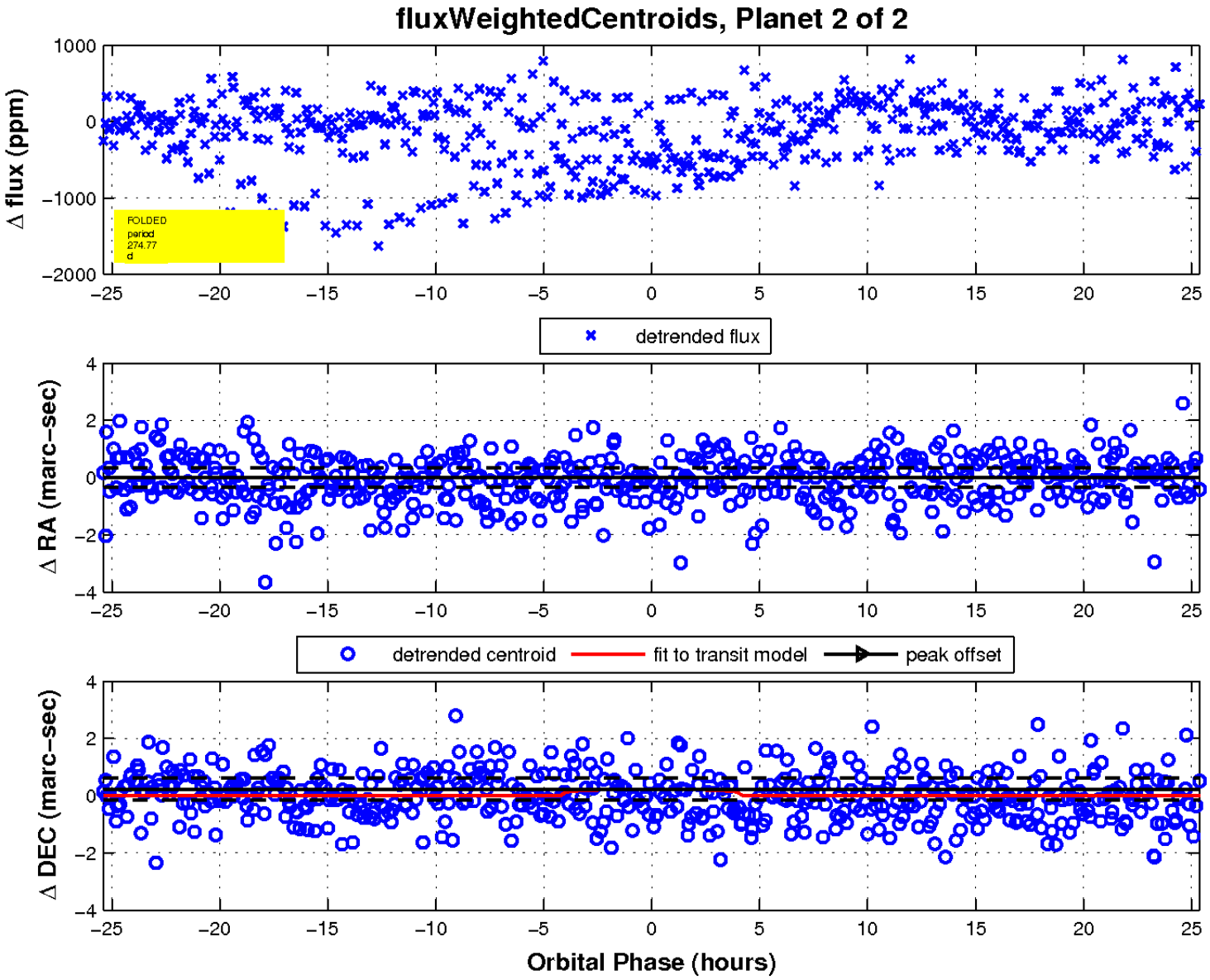
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



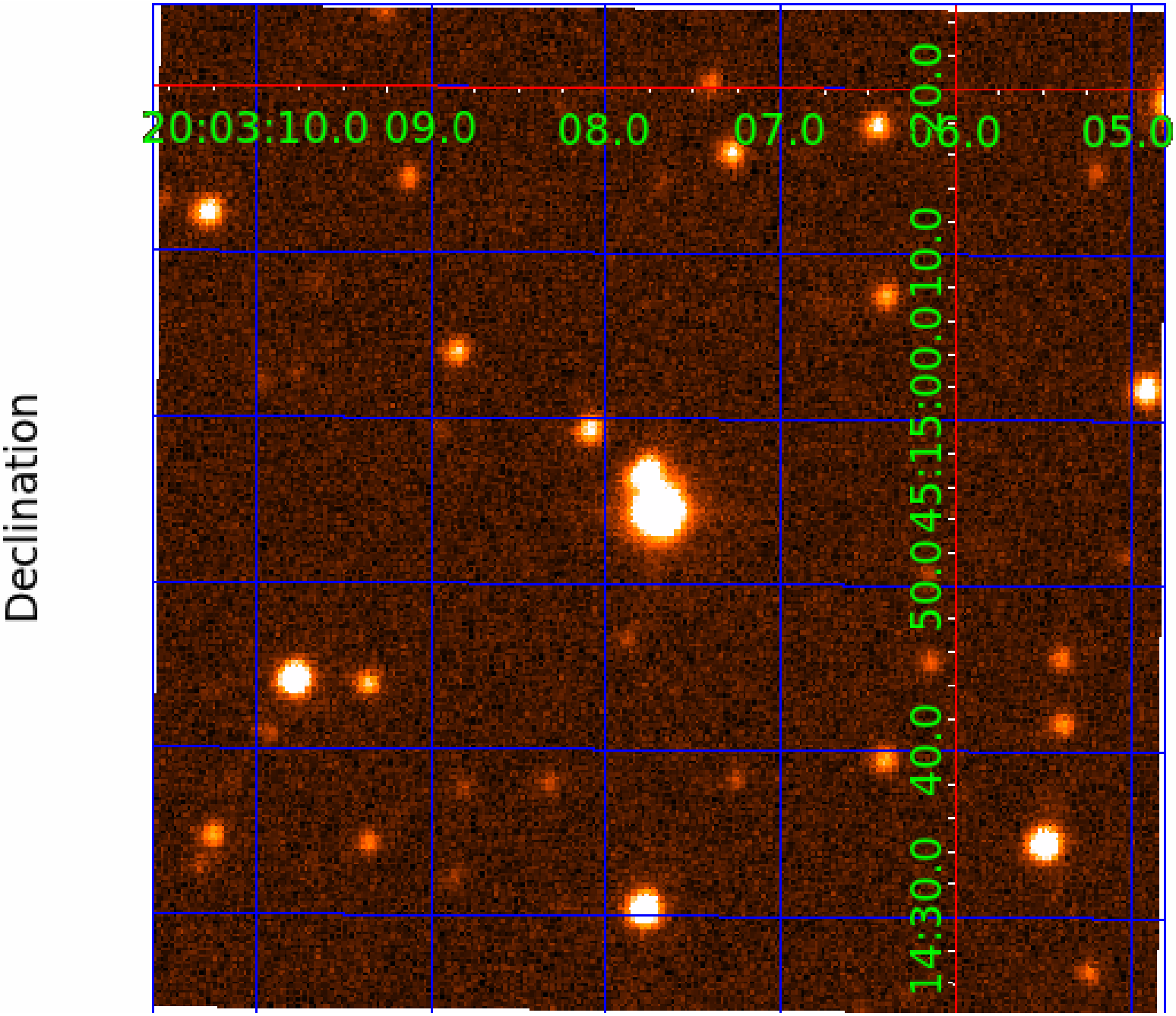
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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07.0
06.0
05.0
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10.0
15:00.0
45.0
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40.0
14:30.0
Declination