KIC 008938257

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 ($S_\oplus$)
008938257-01	OBS	No	0.623791	131.719799	20.7	2.572	10.2	10.4	1.48	6897	0.79	17273.56
008938257-02	OBS	No	351.028991	172.028013	396.3	3.979	8.8	9.3	1.48	6897	3.60	3.72
008938257-04	OBS	No	12.386381	138.661605	125.2	9.717	8.6	9.9	1.48	6897	2.60	321.25
008938257-05	OBS	No	53.693787	146.914391	213.5	6.930	7.9	8.7	1.48	6897	2.53	45.45
008938257-06	OBS	No	129.070176	241.726224	347.3	4.065	7.7	7.8	1.48	6897	3.55	14.12
008938257-07	OBS	No	238.294933	261.711404	260.5	4.309	8.0	7.1	1.48	6897	3.07	6.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008938257-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008938257-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

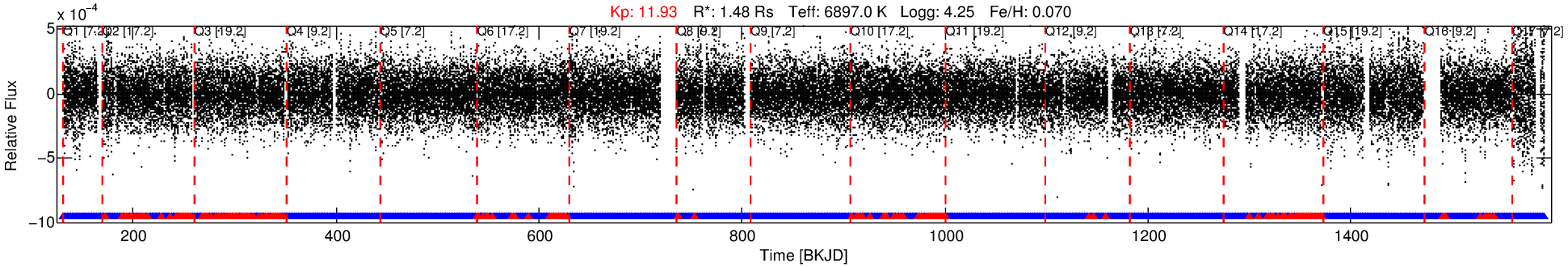
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

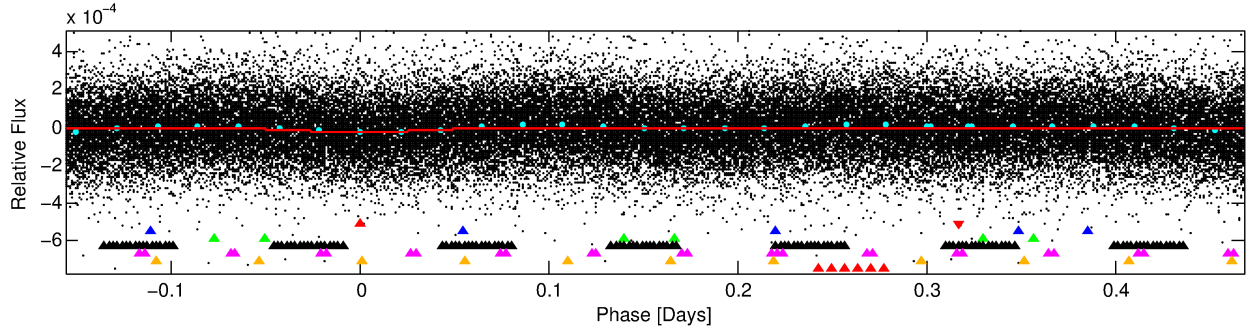
Ephemeris Match Information For 008938257-01

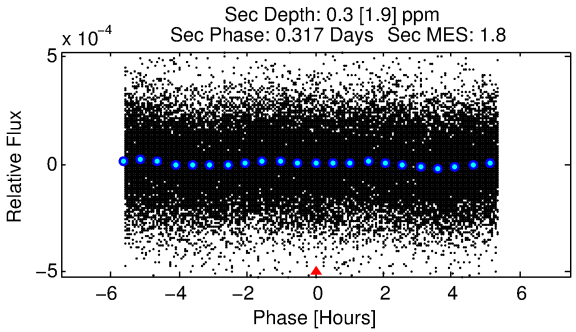
No Significant Match Found

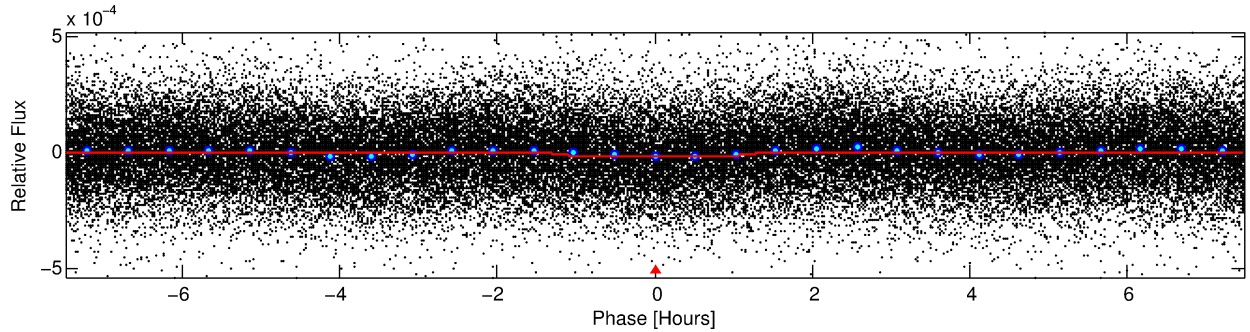
DV One-Page Summary

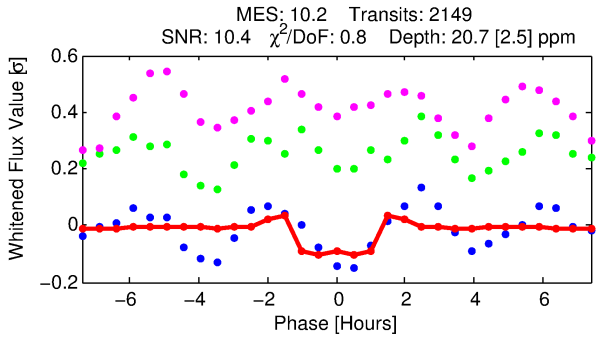
KIC: 8938257 Candidate: 1 of 7 Period: 0.624 d

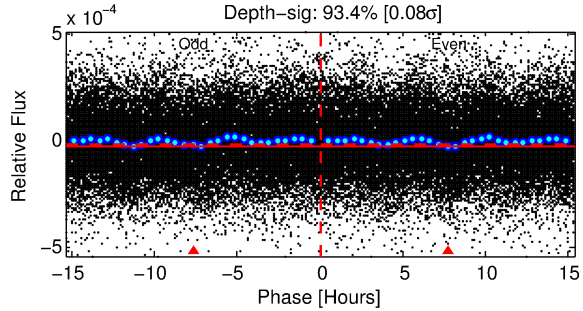


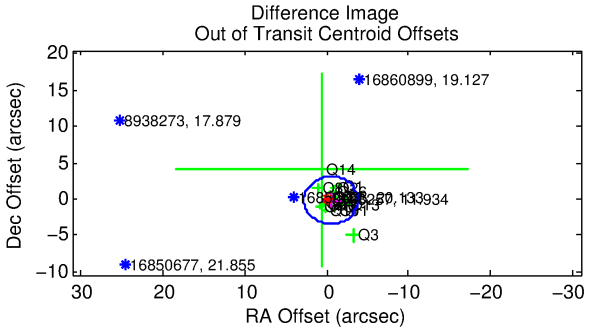












DV Fit Results:

Period = 0.62379 [0.00001] d
Epoch = 131.7198 [0.0018] BKJD
Rp/R* = 0.0049 [0.0011]
a/R* = 1.25 [0.59]
b = 0.90 [0.28]

Seff = 17273.56 [7482.42]
Teq = 2923 [317] K
Rp = 0.79 [0.32] Re
a = 0.0161 [0.0045] AU

Ag = 0.07 [0.44] [−2.12σ]
Teffp = 2316 [3682] K [−0.16σ]

DV Diagnostic Results:

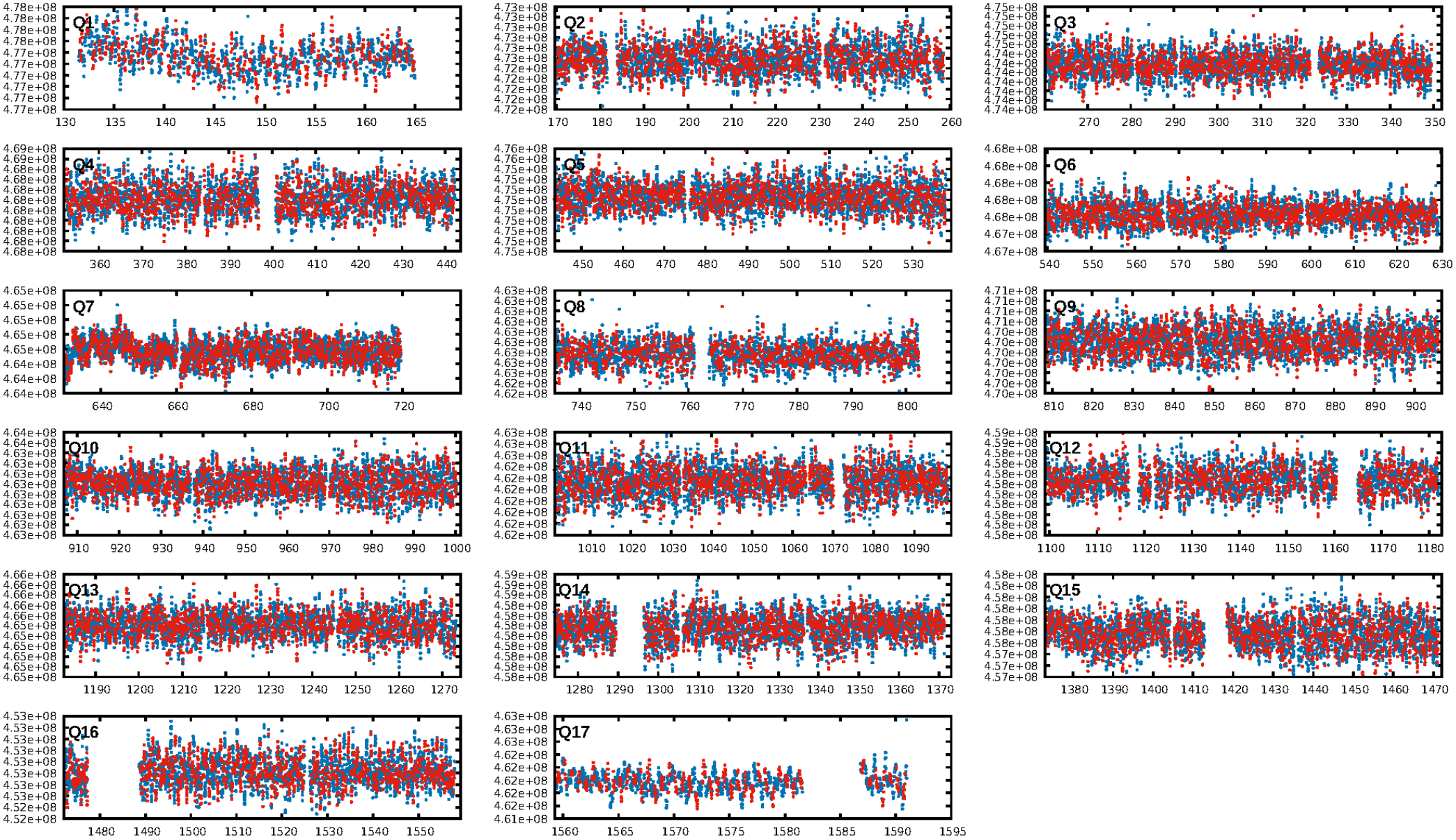
ShortPeriod−sig: N/A
LongPeriod−sig: 100.0% [28.09σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 3.12e−19
RollingBand−fgt: 0.88 [1816/2052]
GhostDiagnostic−chr: −27.4

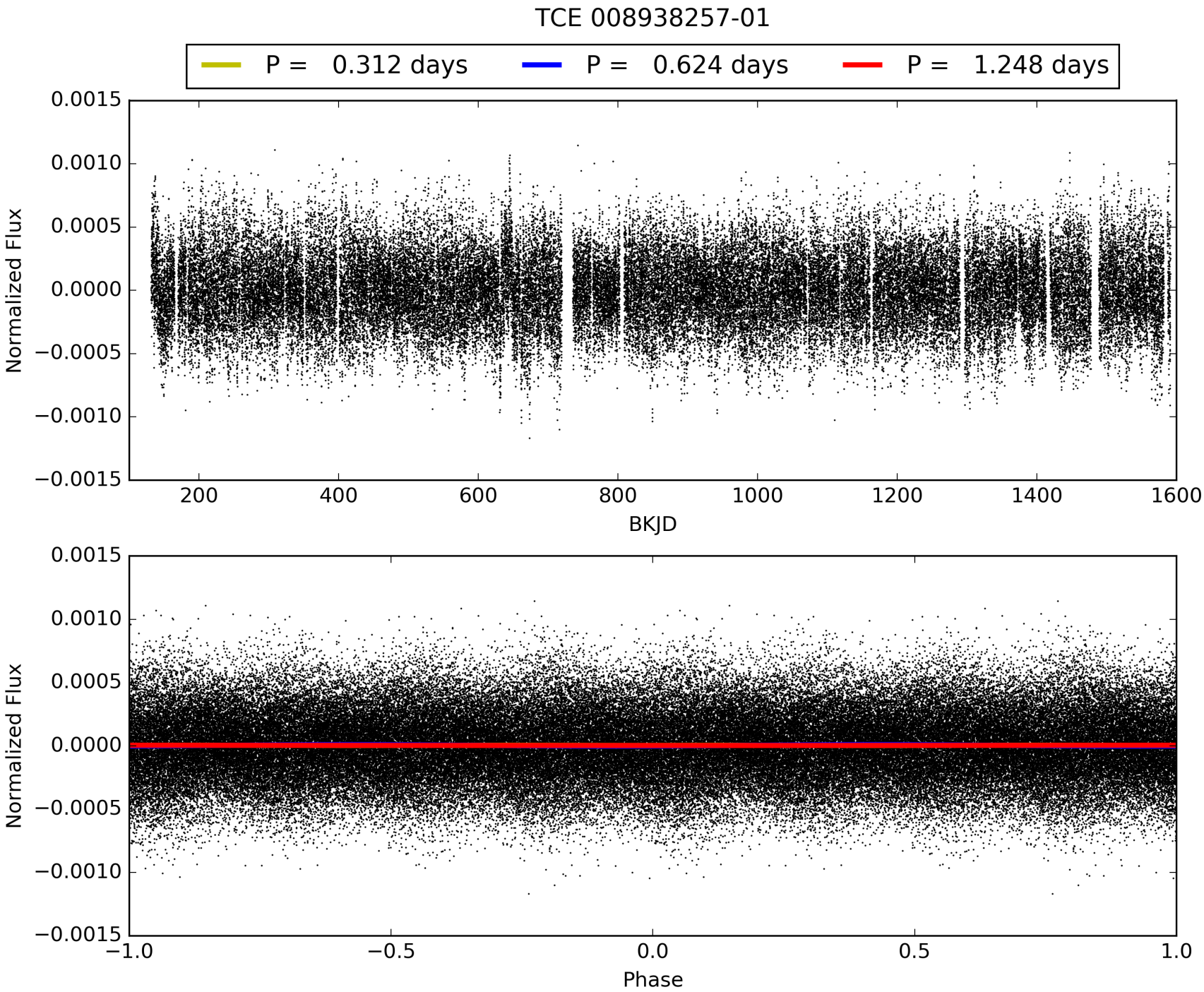
Centroid−sig: 13.6%
Centroid−so: 0.419 arcsec [1.07σ]
OotOffset−rm: 0.527 arcsec [0.48σ]
KicOffset−rm: 0.492 arcsec [0.46σ]
OotOffset−st: 4/4/4/4 [16]
KicOffset−st: 4/4/4/4 [16]
DiffImageQuality−fgm: 0.75 [12/16]
DiffImageOverlap−fno: 0.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 −− Date Generated: 30−Jan−2016 06:16:56 Z

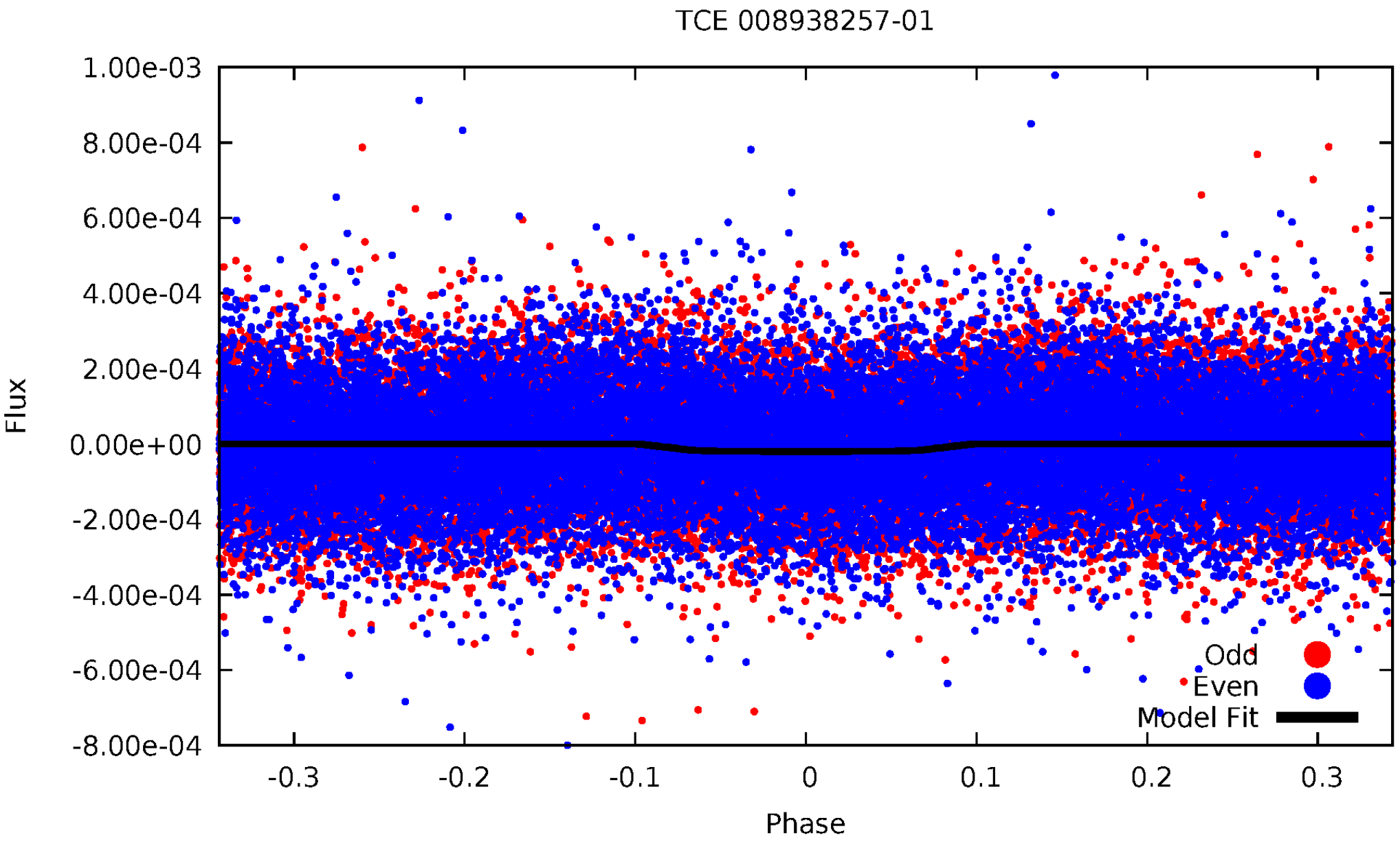
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008938257-01, PDC Light Curves

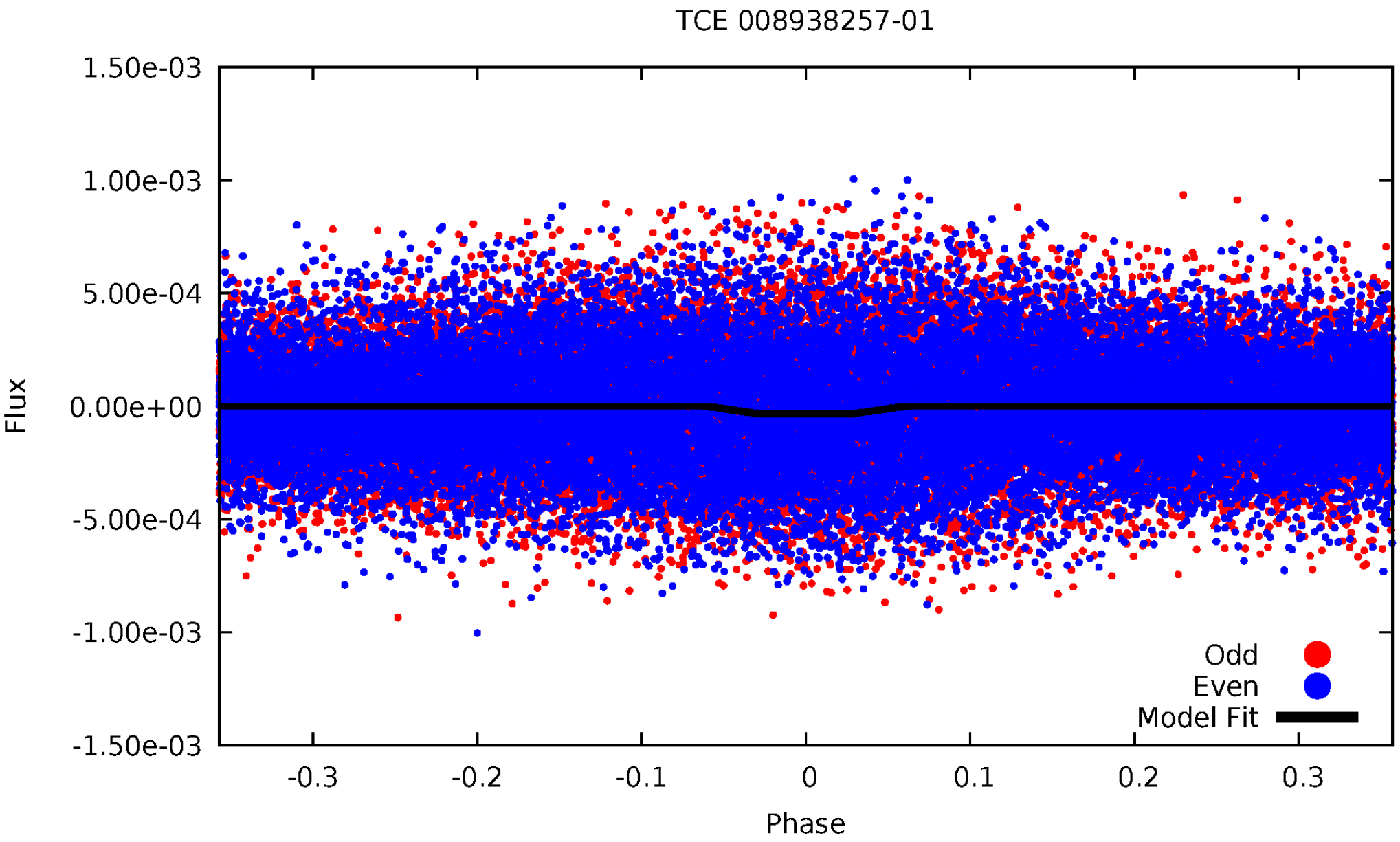



TCE 008938257-01
P = 0.312 days
P = 0.624 days
P = 1.248 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

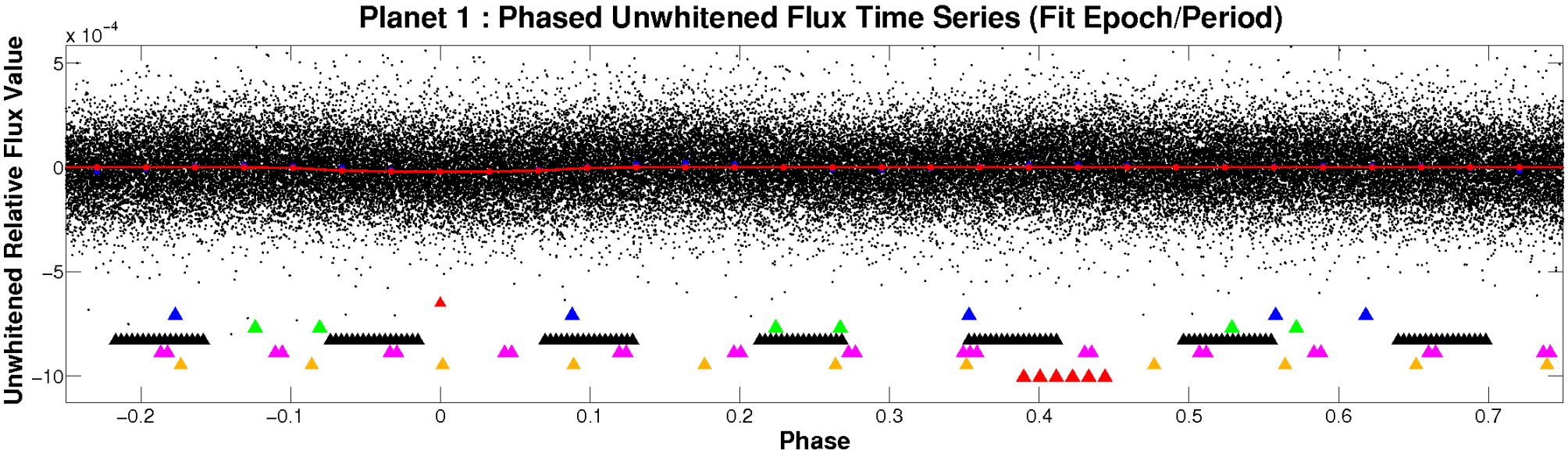
DV Odd/Even

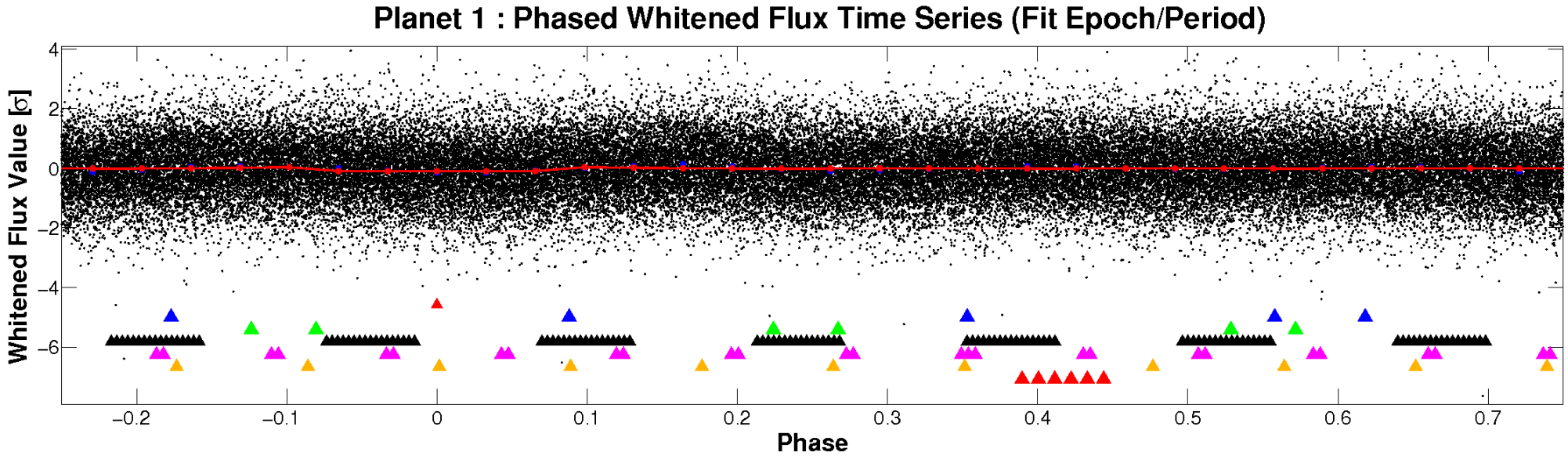

TCE 008938257-01
1.00e-03
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008938257-01
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

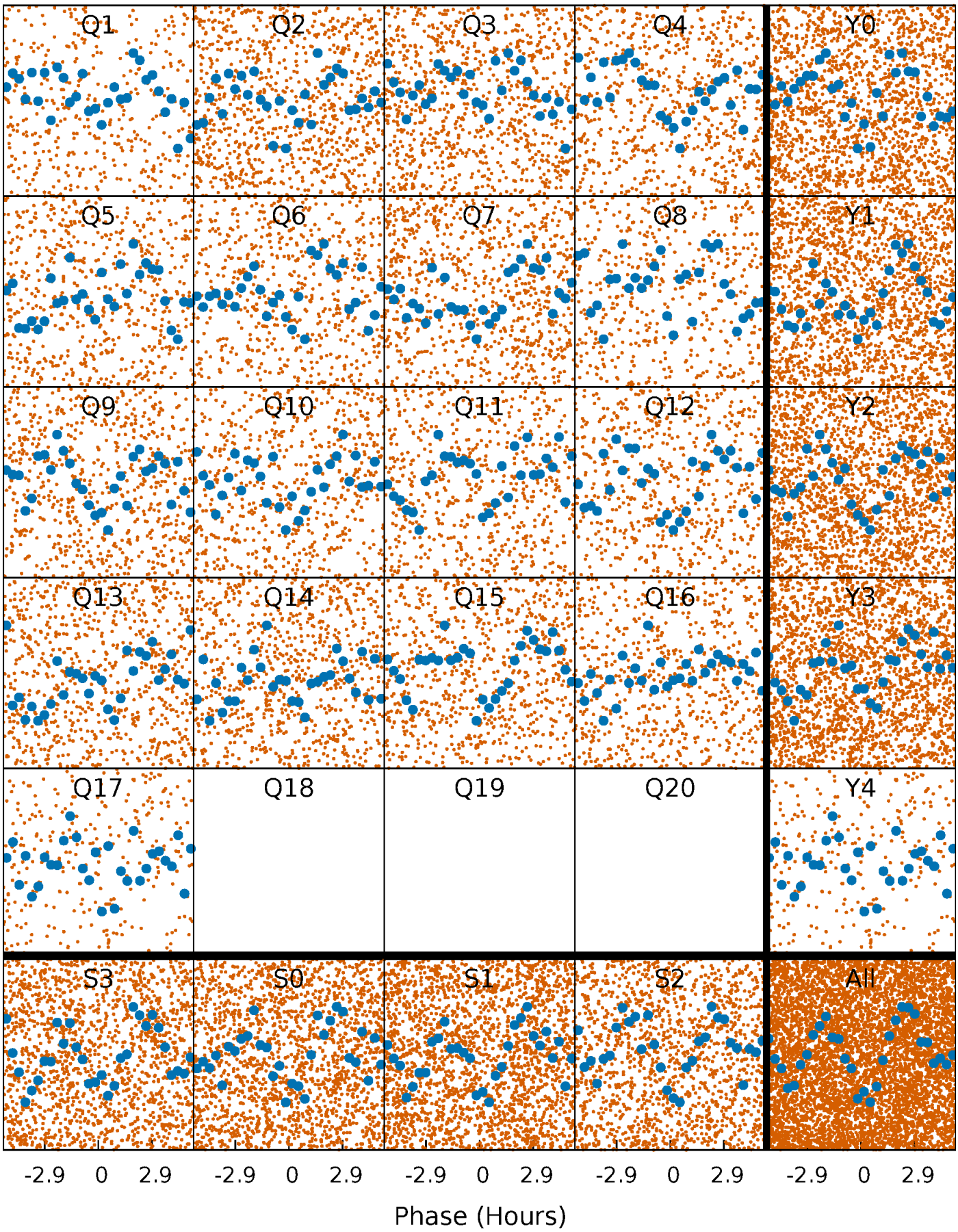
Non-Whitened Vs. Whitened Light Curve





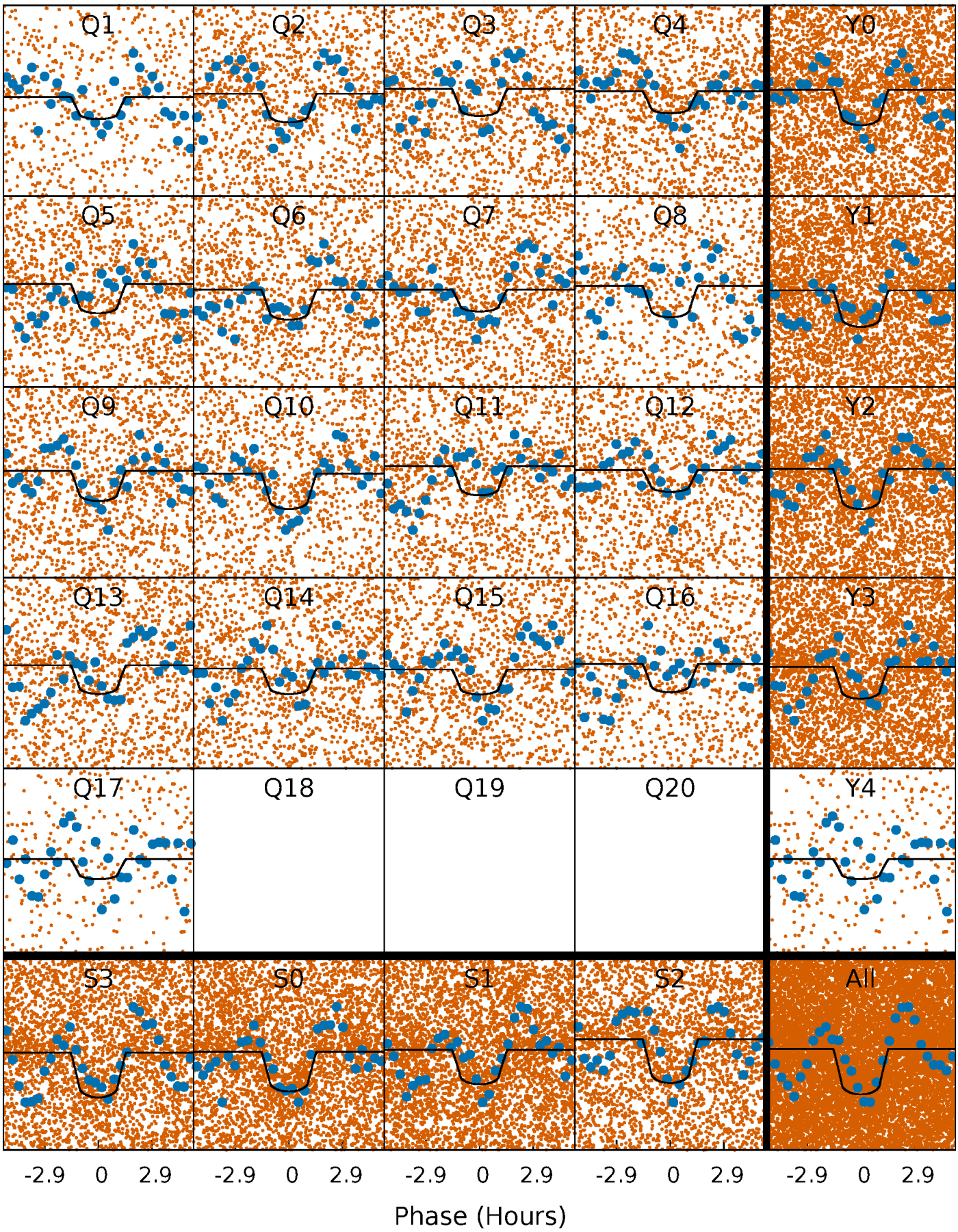
PDC Quarter-Phased Transit Curves

TCE 008938257-01 P= 0.623791 Days T_0=131.719799 (BKJD)



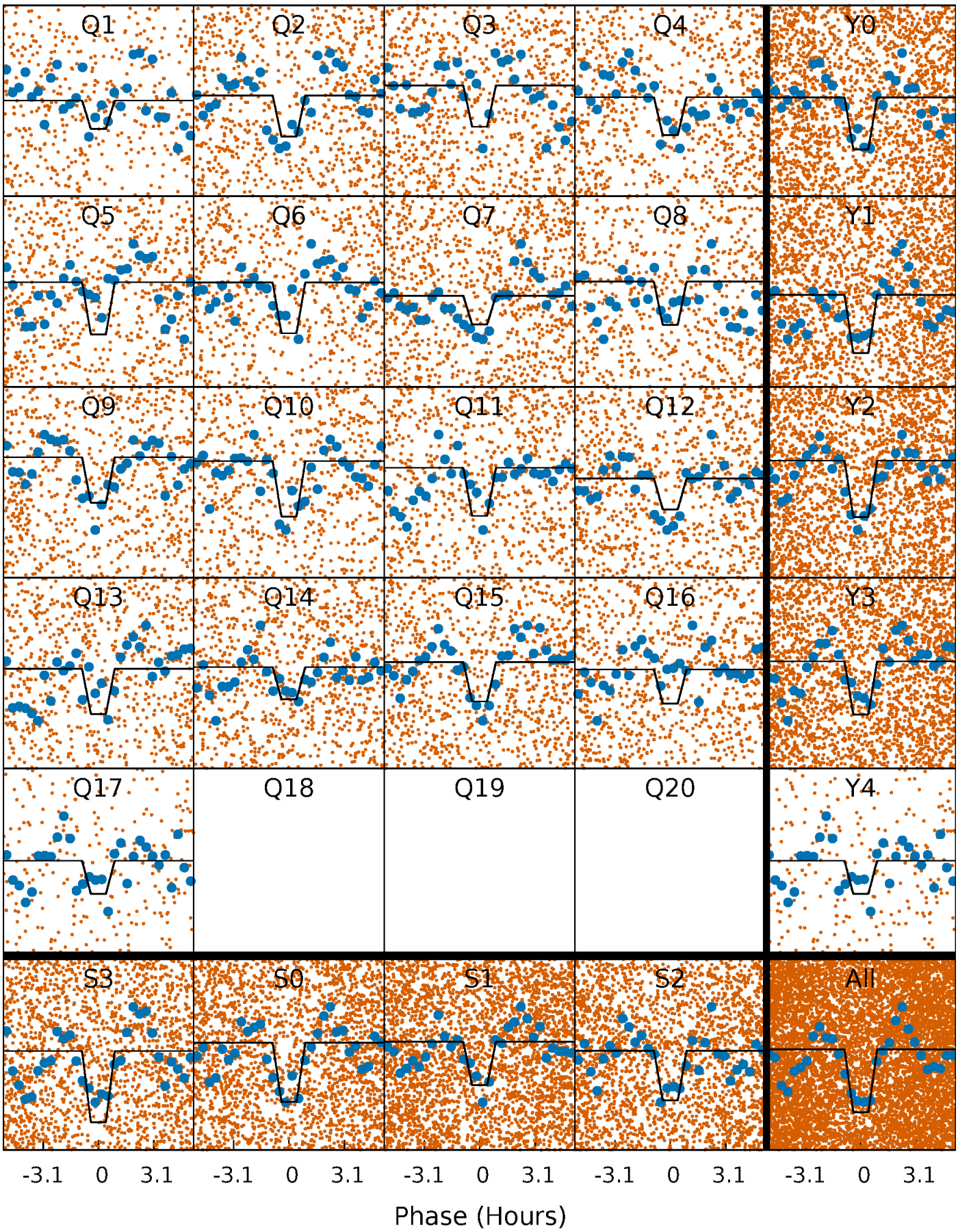
DV Quarter-Phased Transit Curves

TCE 008938257-01 P= 0.623791 Days T_0=131.719799 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

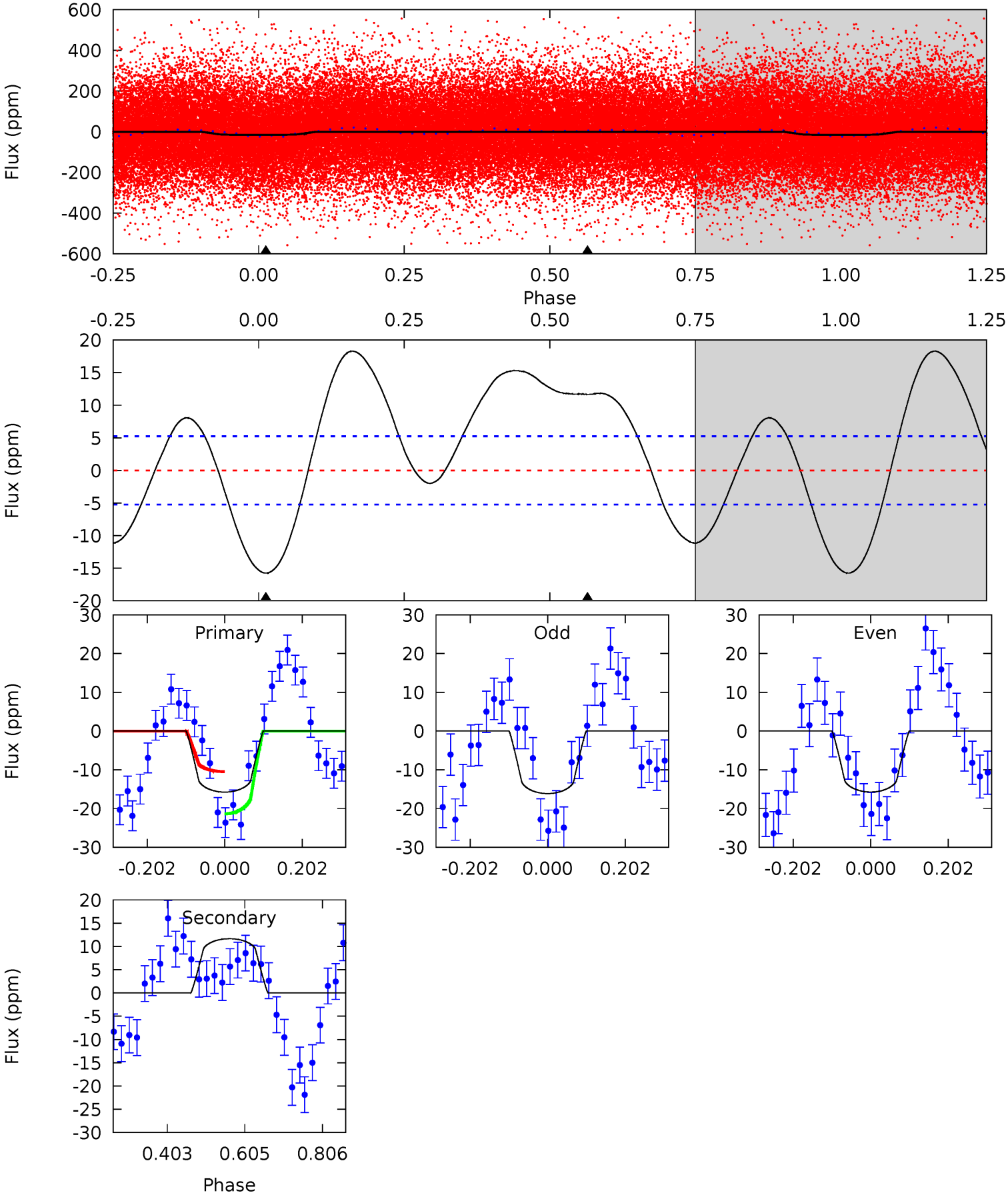
TCE 008938257-01 P= 0.623801 Days T_0=131.718078 (BKJD)



DV Model-Shift Uniqueness Test

008938257-01, P = 0.623791 Days, E = 131.096008 Days

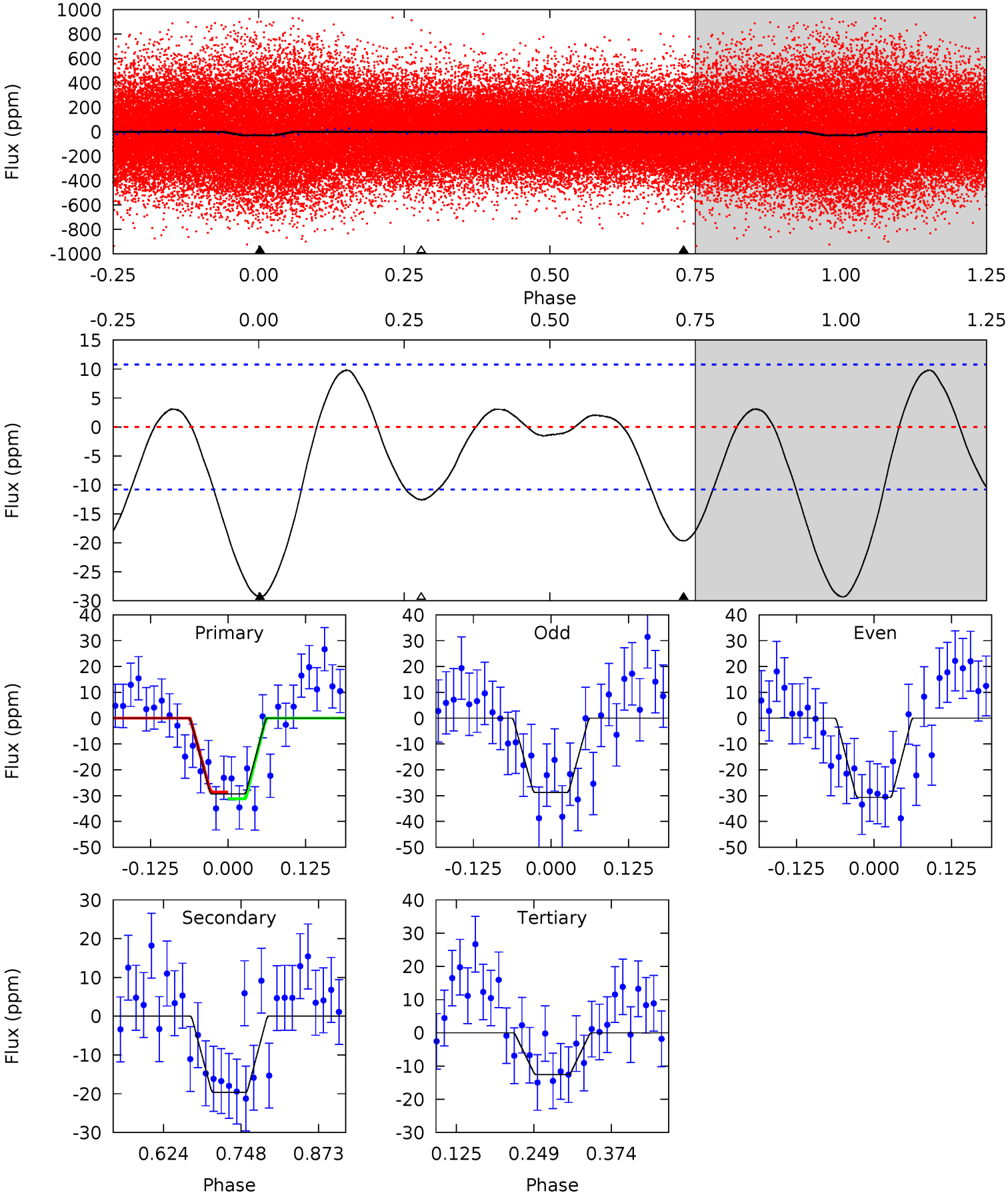
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	-9.81	0	0	4.42	1.28	4.54	13.3	13.3	-9.81	-9.81	0.17	0.96	0.54	4.56



Alt Model-Shift Uniqueness Test

008938257-01, P = 0.623801 Days, E = 131.094277 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	8.23	5.27	0	4.52	1.54	2.48	7.03	12.3	2.97	8.23	0.41	0.78	0.25	0.52



Stellar Parameters For KIC 008938257

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6897^{+193}_{-303}	$4.248^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.482^{+0.511}_{-0.256}$	$1.417^{+0.213}_{-0.213}$	$0.613^{+0.298}_{-0.332}$
	+3%/-4%	+2%/-5%	+286%/-500%	+34%/-17%	+15%/-15%	+49%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008938257-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	12±1	$0.80^{+0.25}_{-0.19}$	4158^{+341}_{-267}	-5929^{+538}_{-819}	$-2.543^{+1.071}_{-1.775}$
Alt.	-20±2	$0.99^{+0.24}_{-0.20}$	4138^{+314}_{-259}	5769^{+677}_{-544}	$2.857^{+1.553}_{-1.060}$

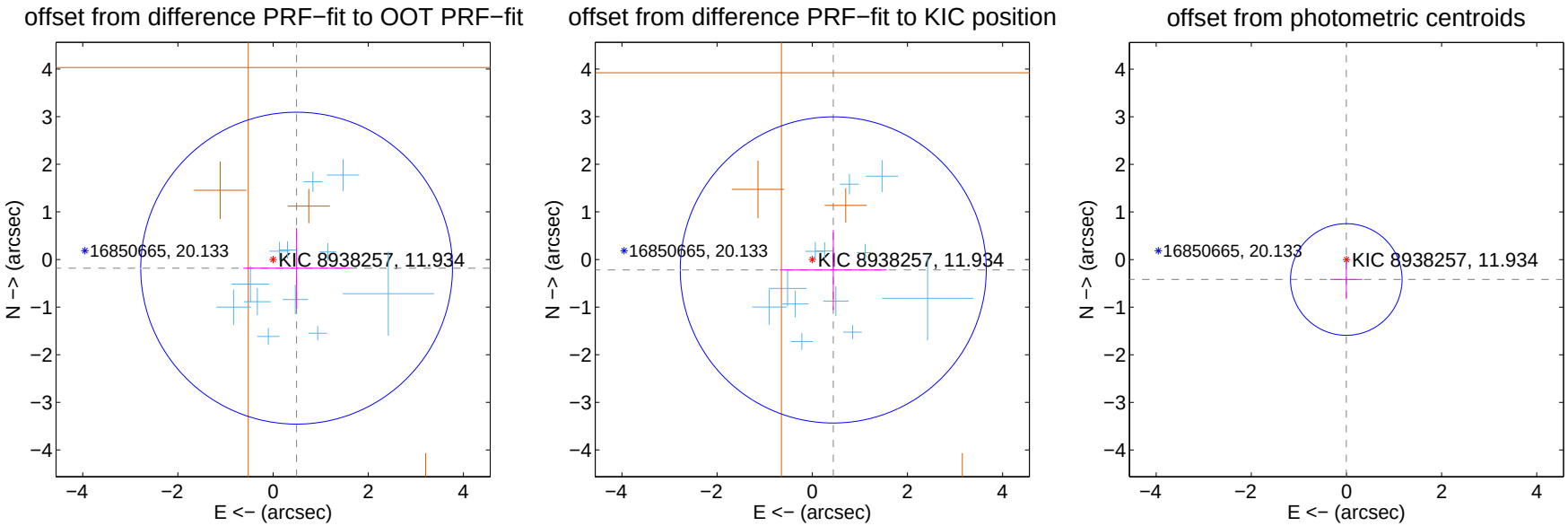
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

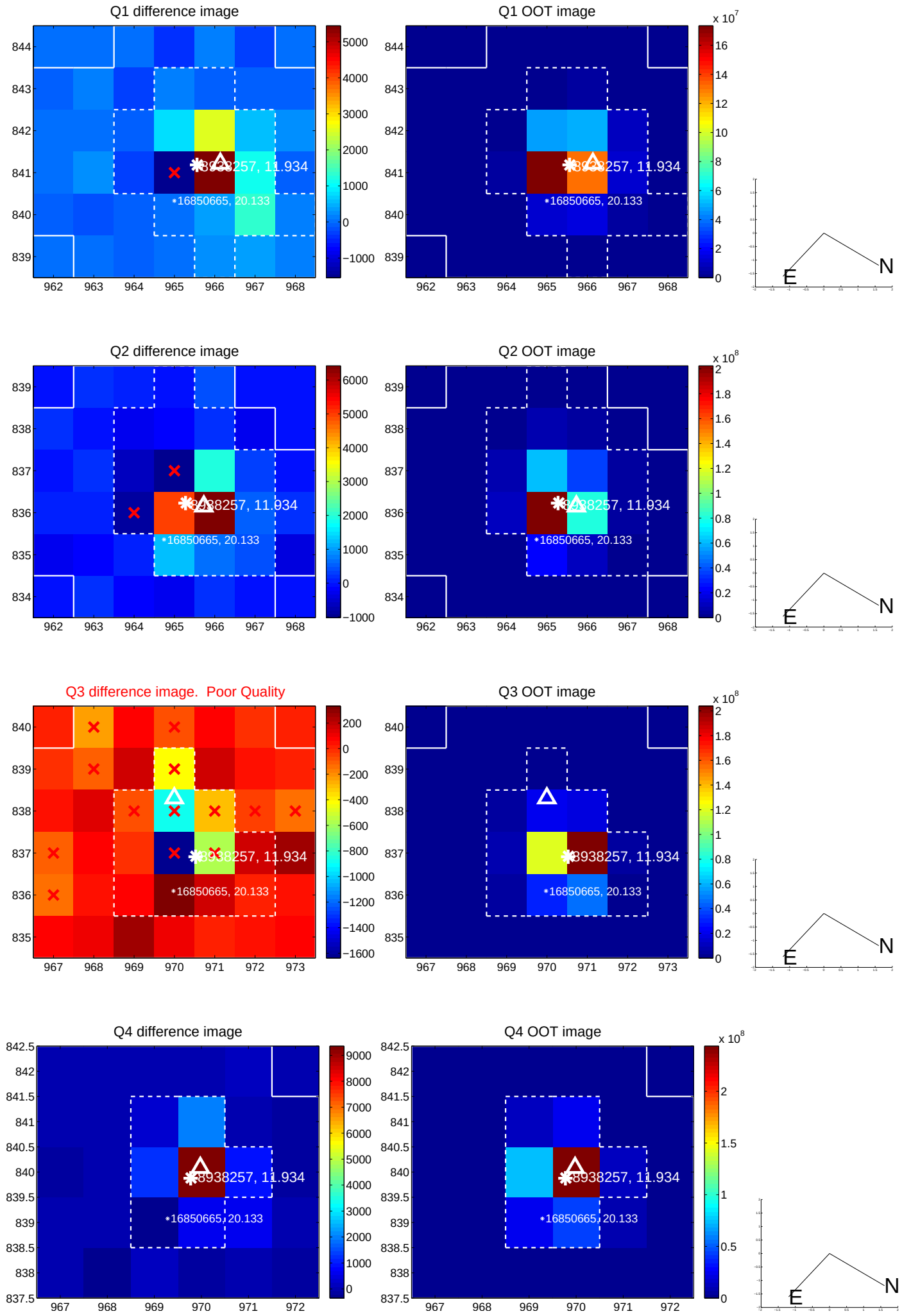
Supplemental centroid analysis for 008938257-01. Kepler magnitude: 11.93. Transit SNR 10.35
There are 12 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.527 ± 1.092	0.48	-0.494 ± 1.122	-0.182 ± 0.840
PRF-fit source offset from KIC position	0.492 ± 1.072	0.46	-0.441 ± 1.122	-0.219 ± 0.840
photometric centroid source offset	0.42 ± 0.39	1.07	0.00 ± 0.33	-0.42 ± 0.39



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.



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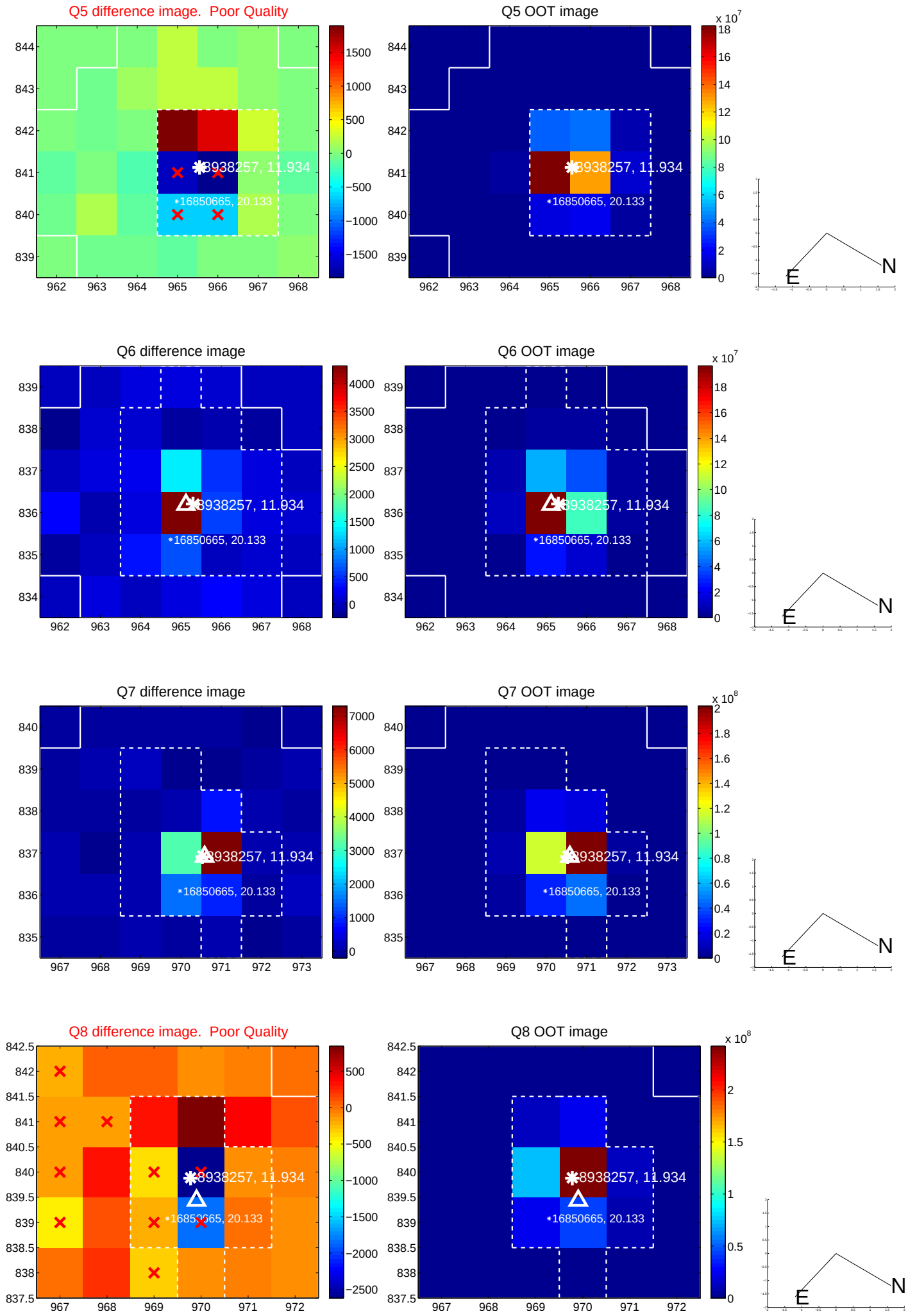
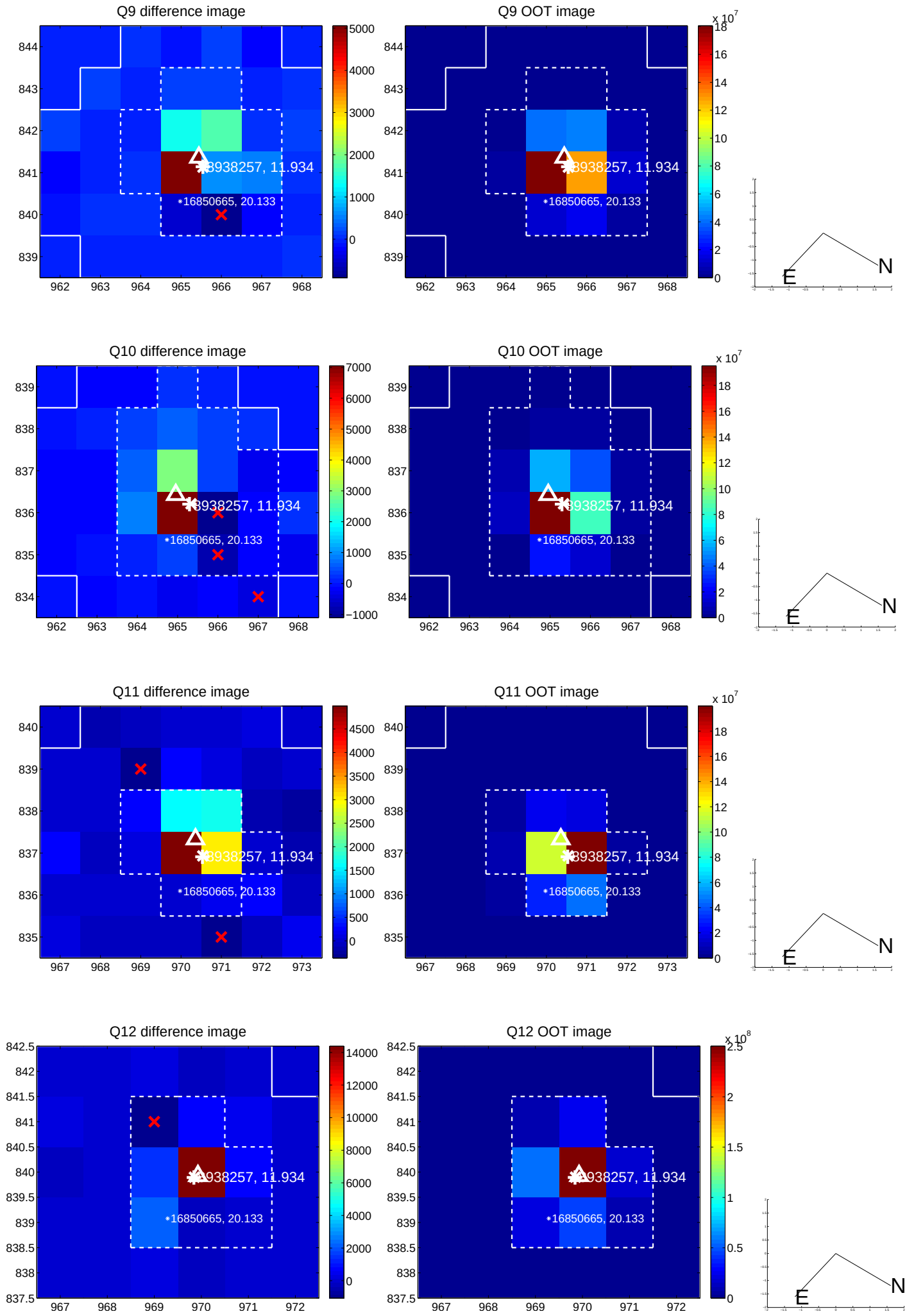
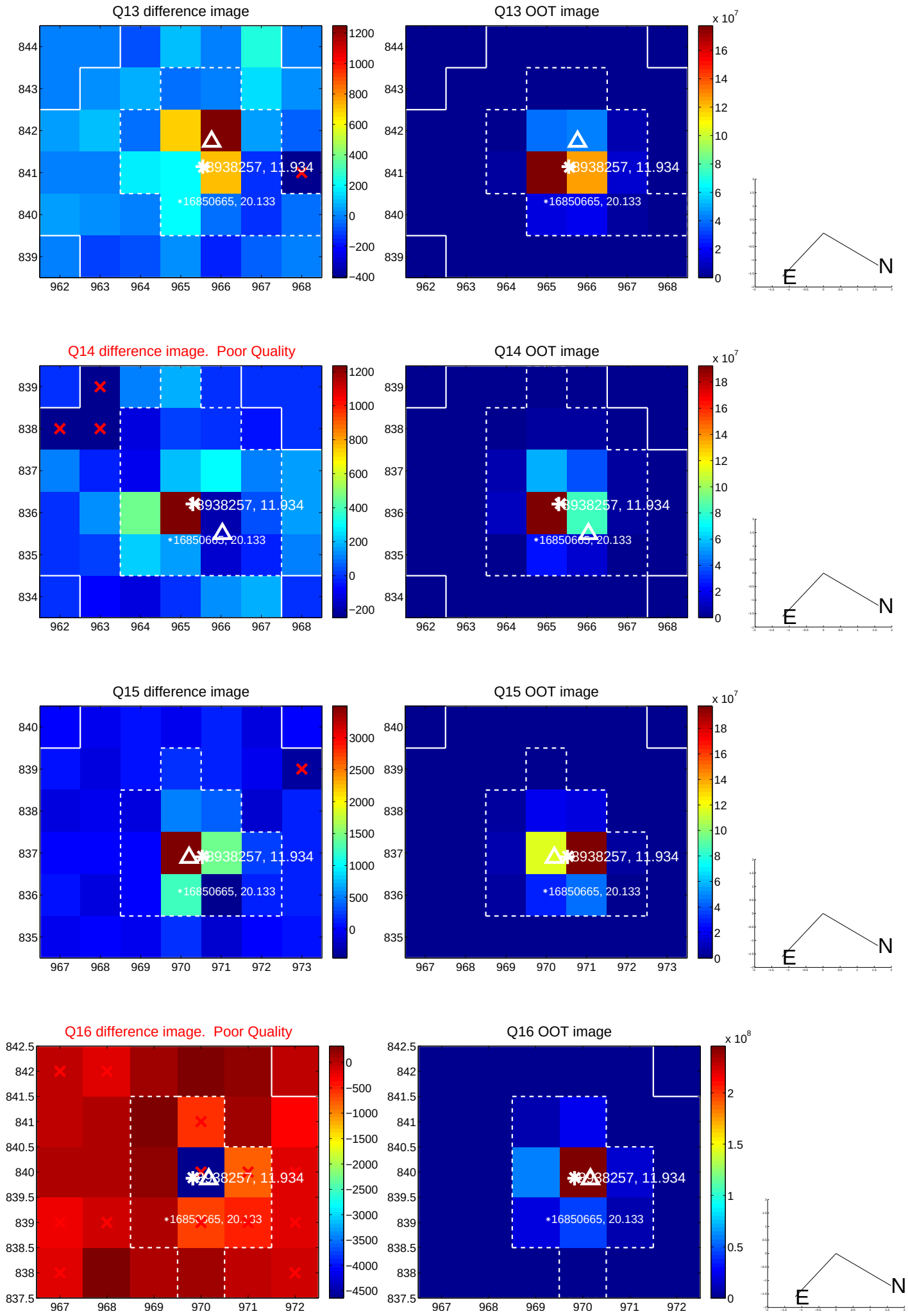


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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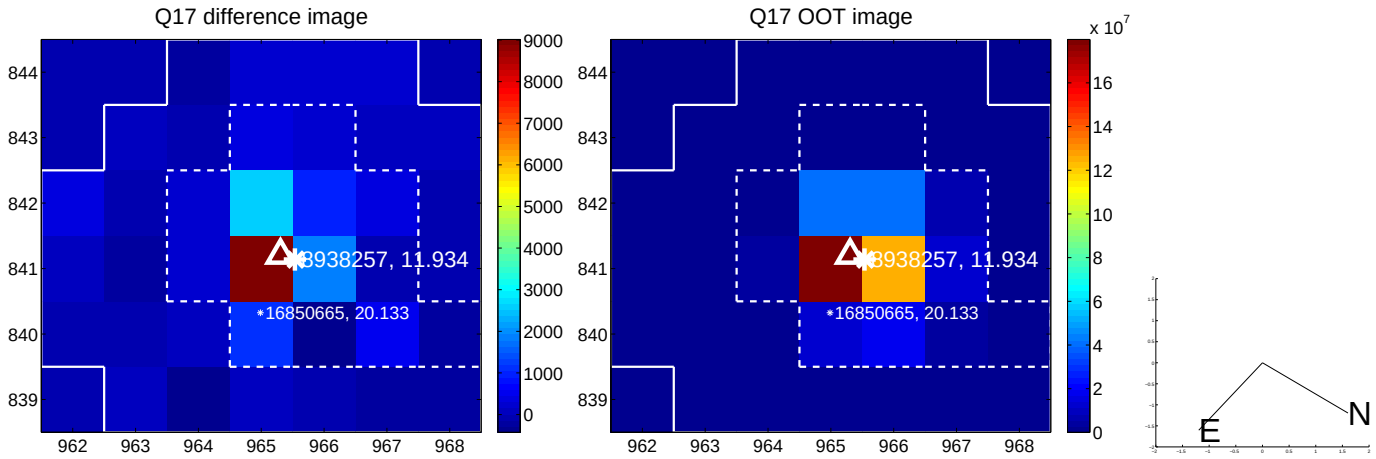
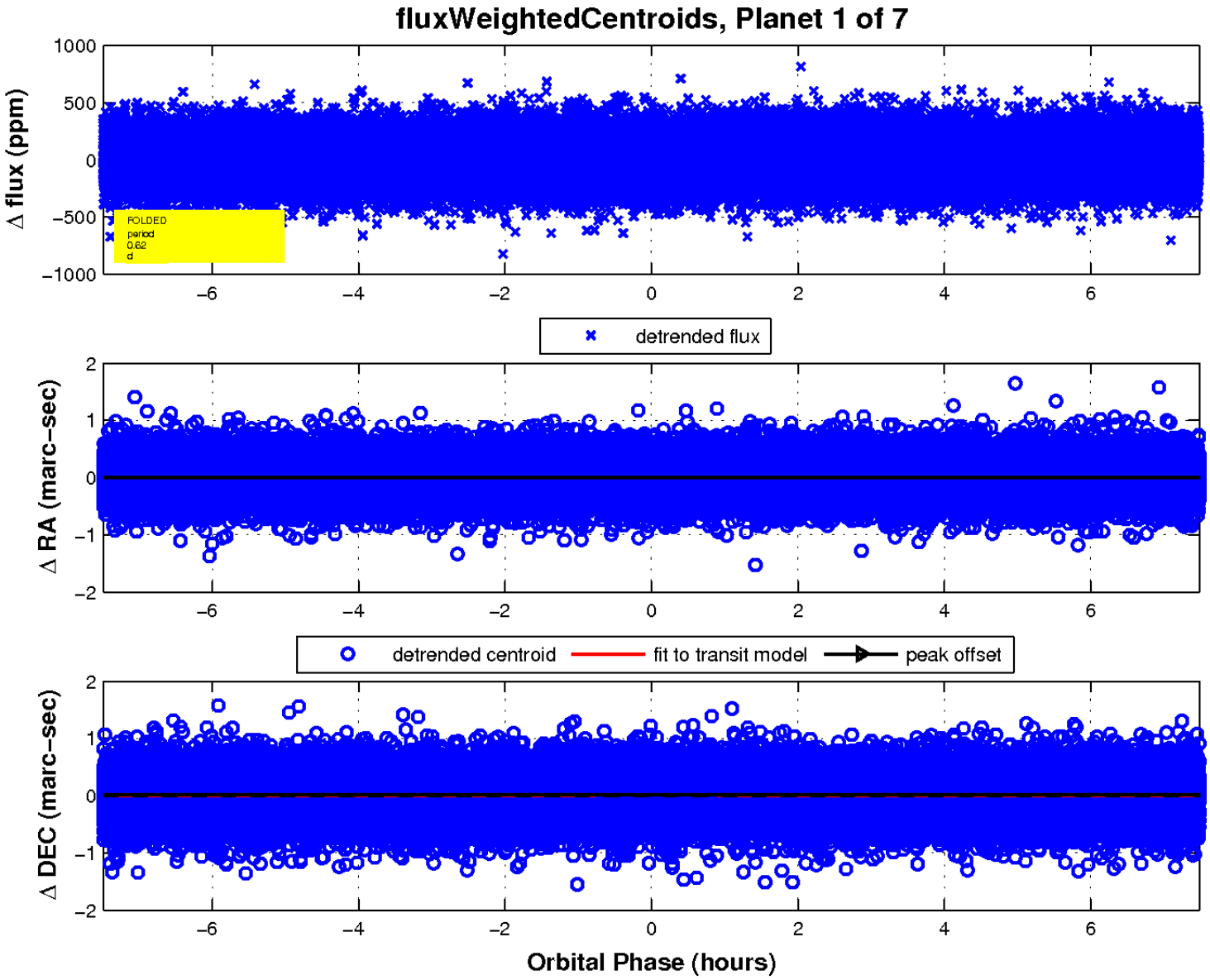
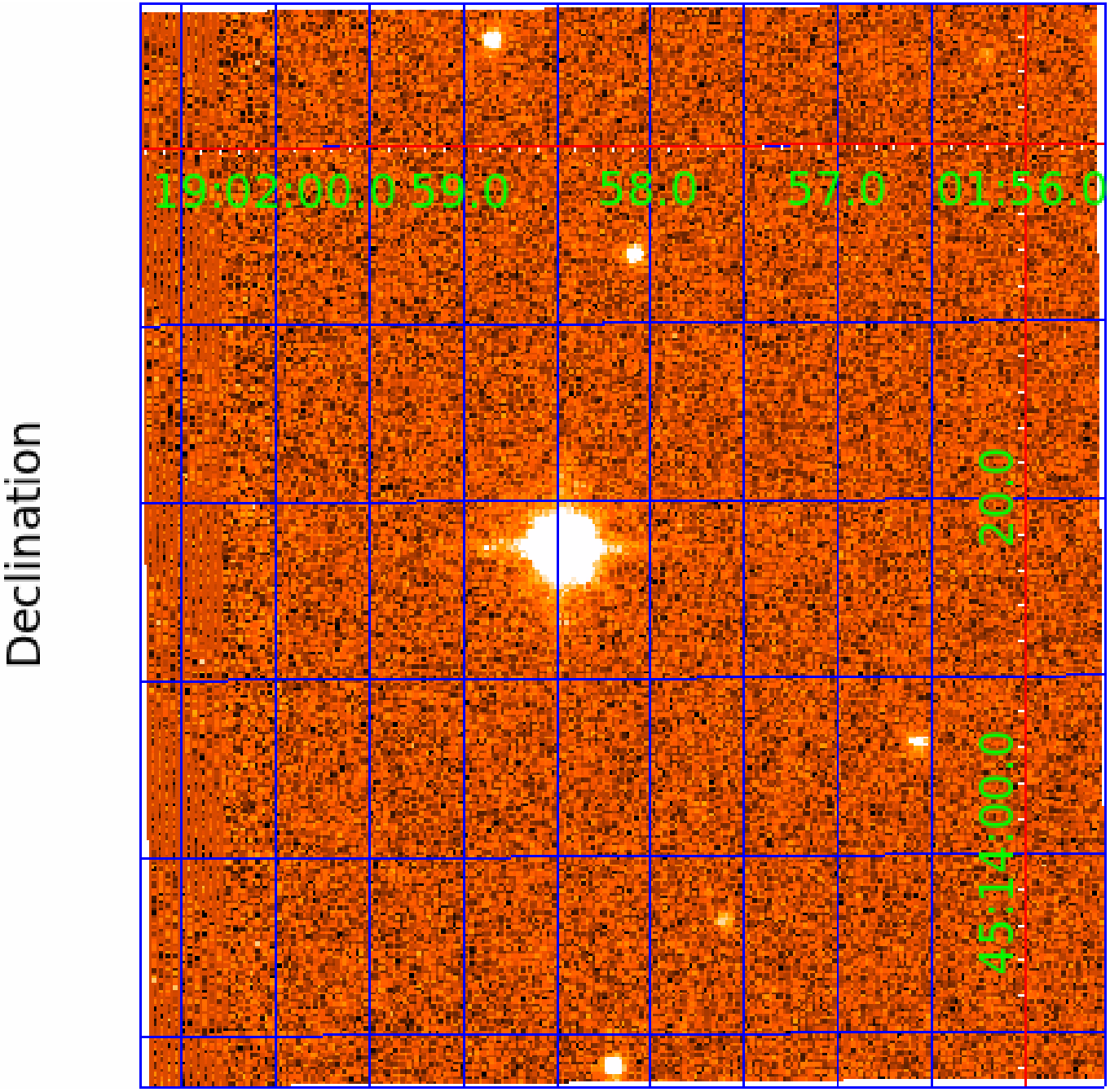




UKIRT Image



KIC 008938257

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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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008938257-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008938257-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

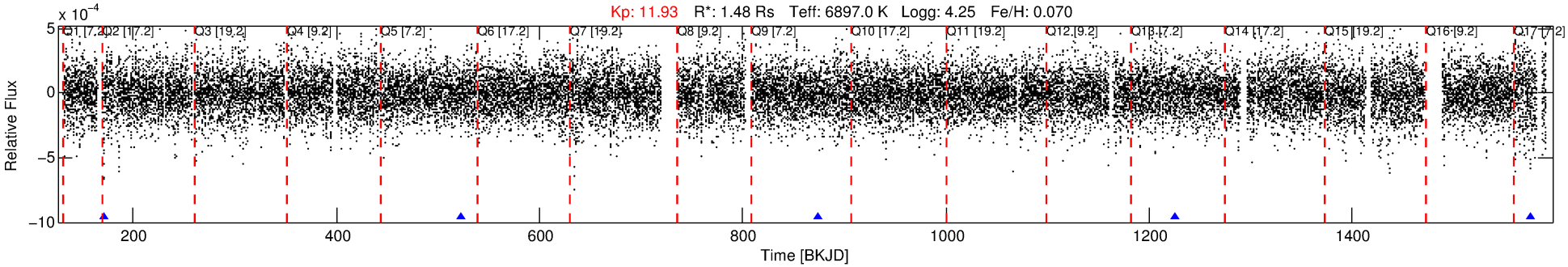
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

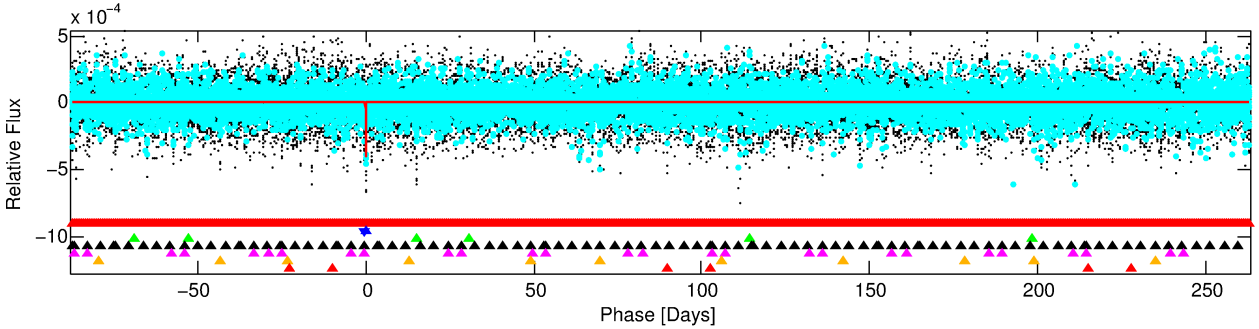
Ephemeris Match Information For 008938257-02

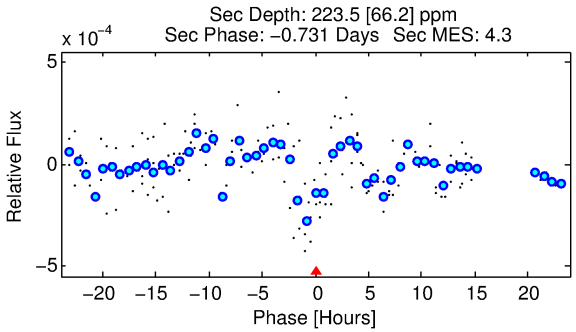
No Significant Match Found

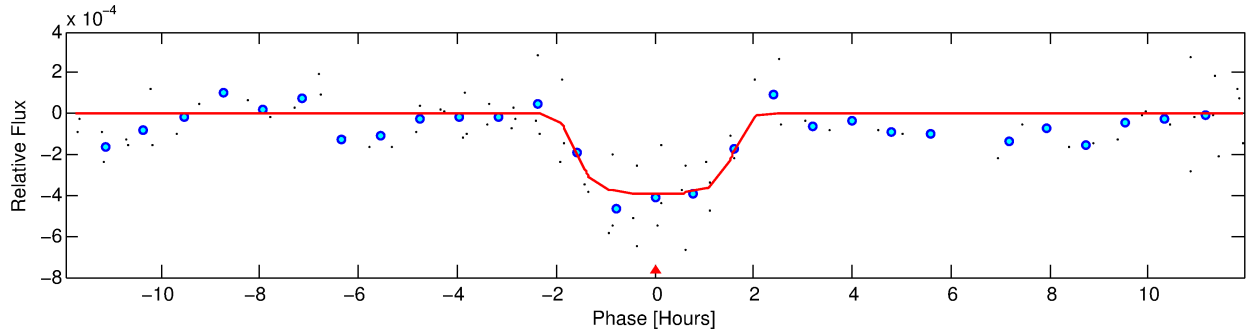
DV One-Page Summary

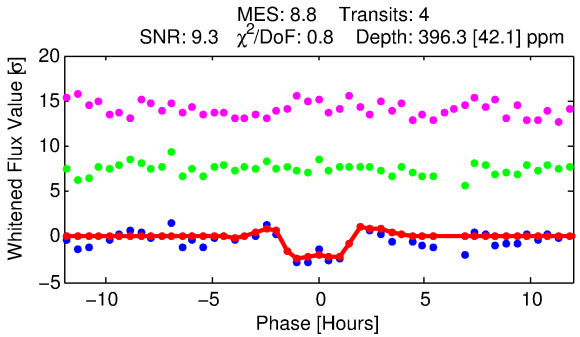
KIC: 8938257 Candidate: 2 of 7 Period: 351.029 d

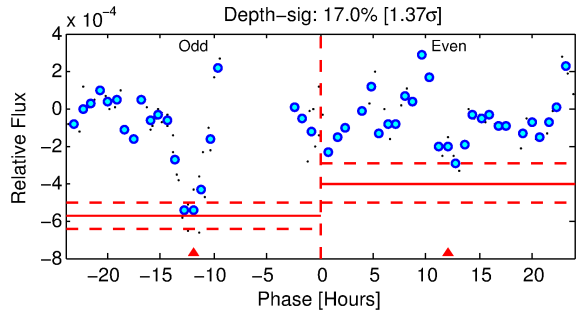


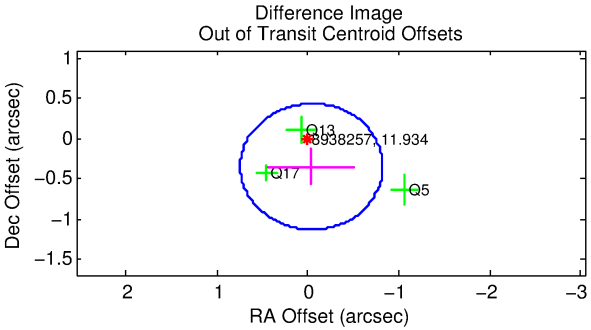












DV Fit Results:

Period = 351.02899 [0.00212] d
Epoch = 172.0280 [0.0040] BKJD
Rp/R* = 0.0223 [0.0020]
a/R* = 261.38 [93.78]
b = 0.95 [0.04]

Seff = 3.72 [1.61]
Teq = 354 [38] K
Rp = 3.60 [1.28] Re
a = 1.0944 [0.3072] AU

Ag = 11334.12 [5951.29] [1.90σ]
Teffp = 5649 [547] K [9.66σ]

DV Diagnostic Results:

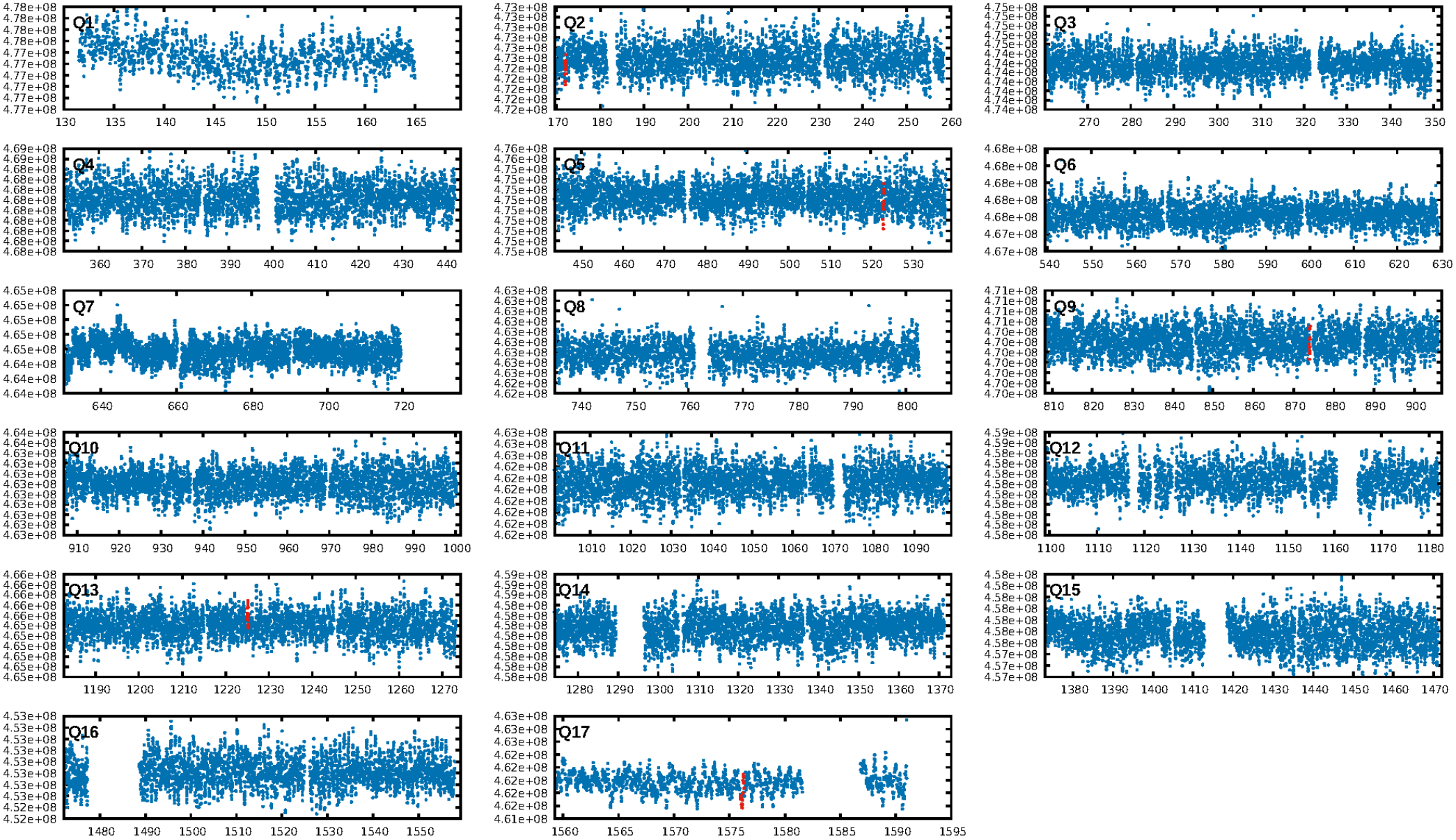
ShortPeriod−sig: 100.0% [323.28σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: 29.3%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 1.55e−11
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: 3.337

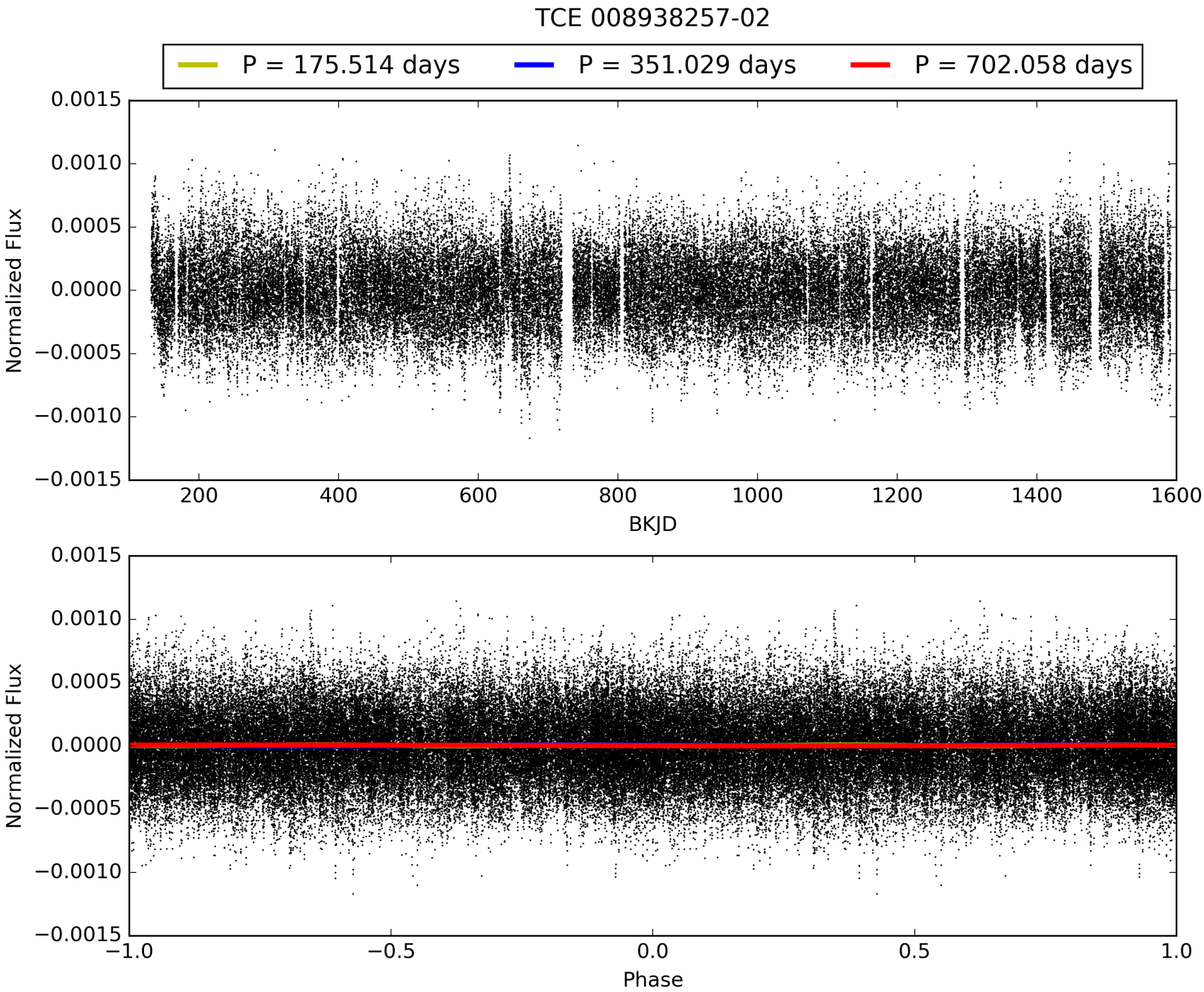
Centroid−sig: 66.0%
Centroid−so: 0.208 arcsec [0.51σ]
OotOffset−rm: 0.352 arcsec [1.35σ]
KicOffset−rm: 0.404 arcsec [1.66σ]
OotOffset−st: 0/0/0/3 [3]
KicOffset−st: 0/0/0/3 [3]
DiffImageQuality−fgm: 0.67 [2/3]
DiffImageOverlap−fno: 0.00 [0/4]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 06:17:10 Z

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

TCE 008938257-02, PDC Light Curves

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P = 175.514 days
P = 351.029 days
P = 702.058 days
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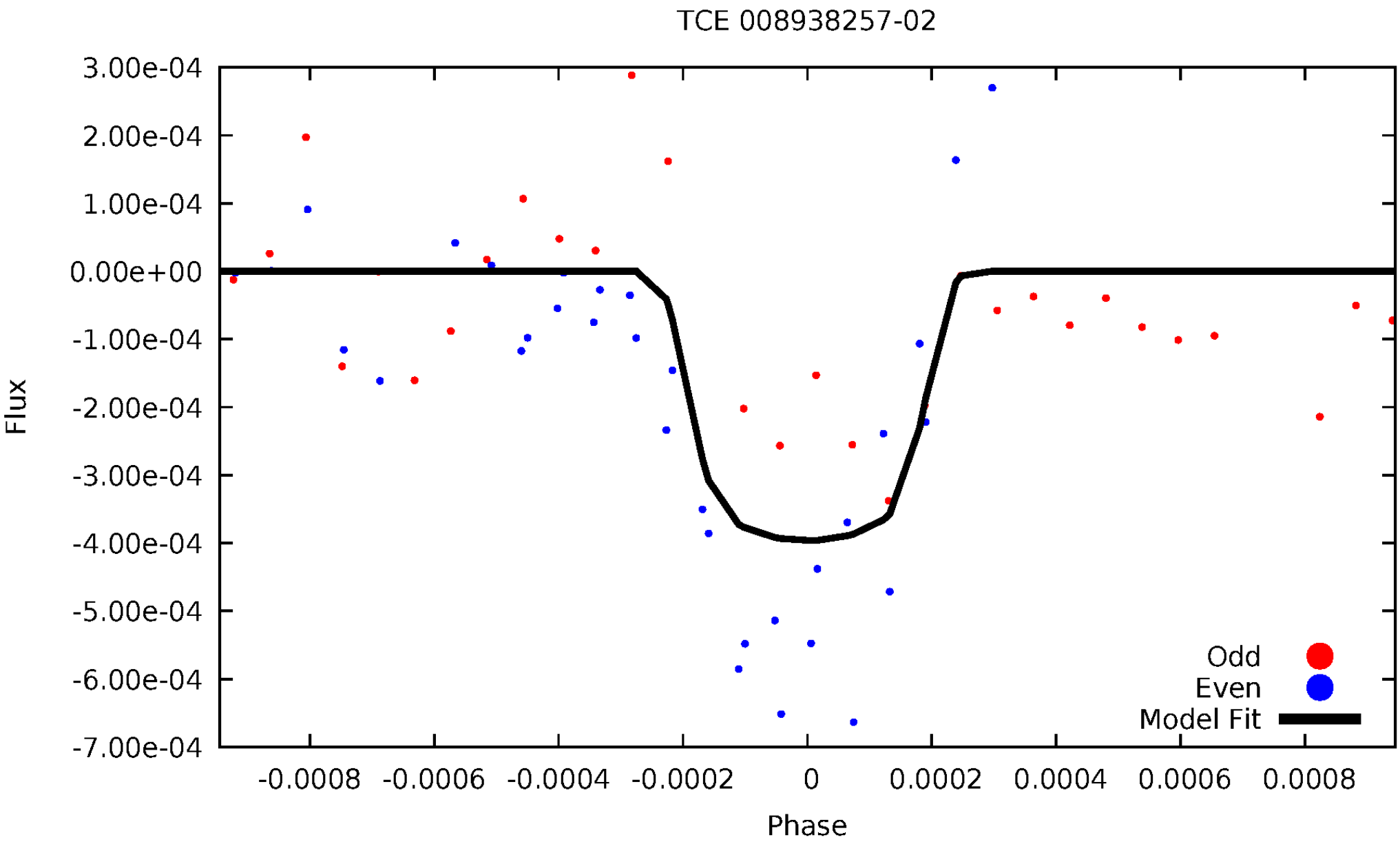
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

DV Odd/Even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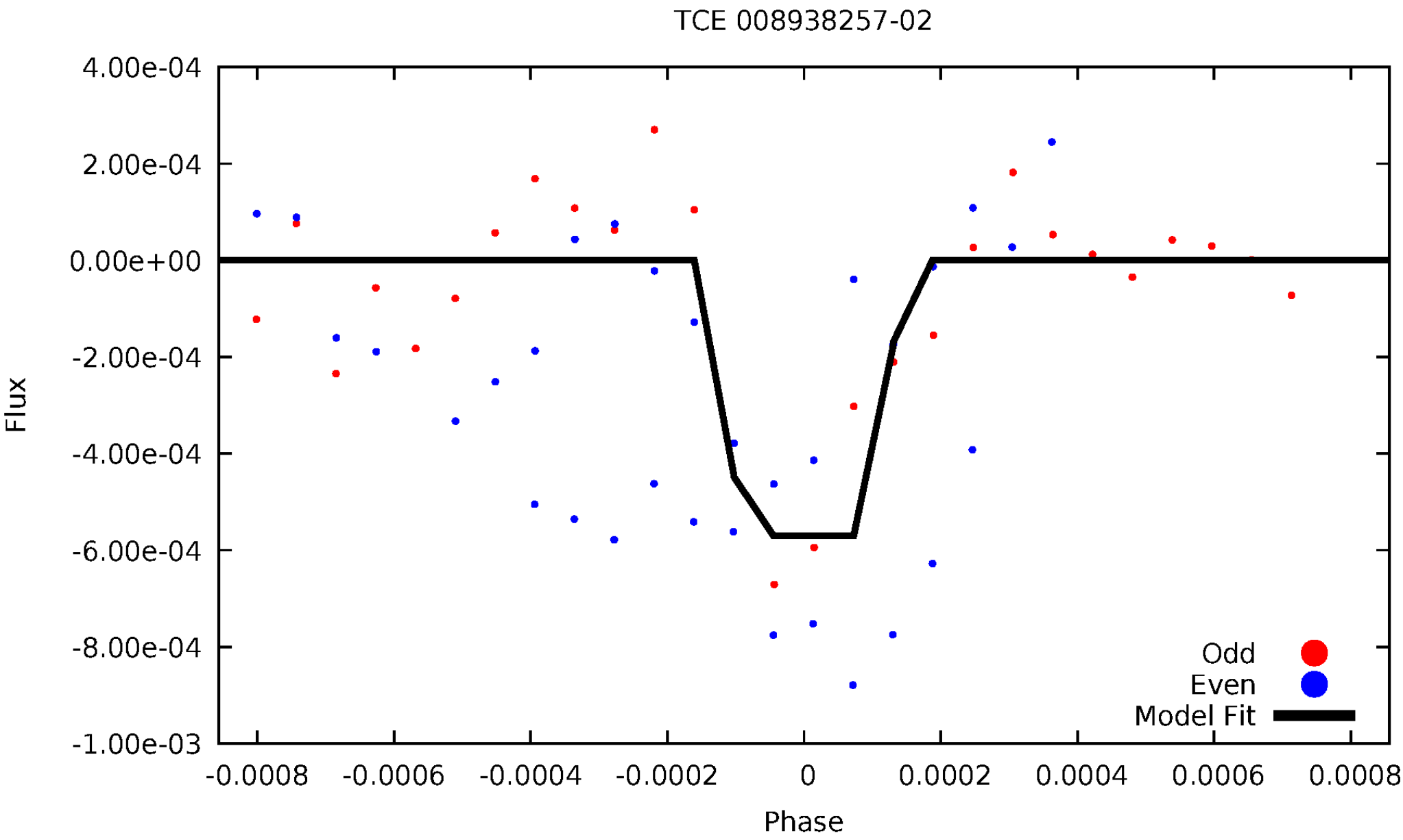
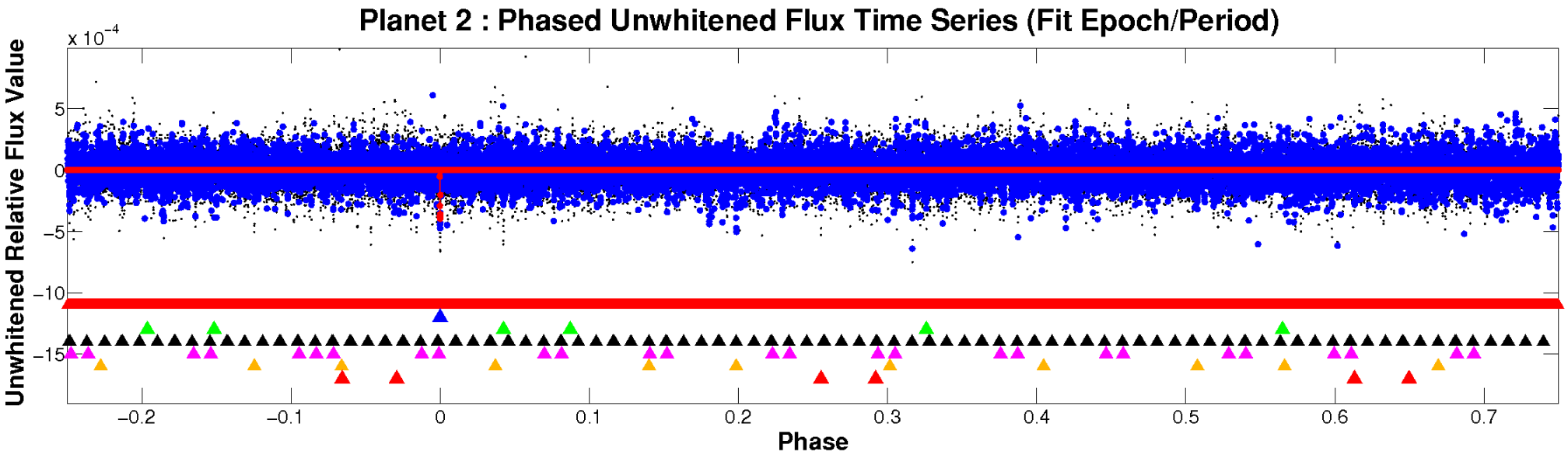
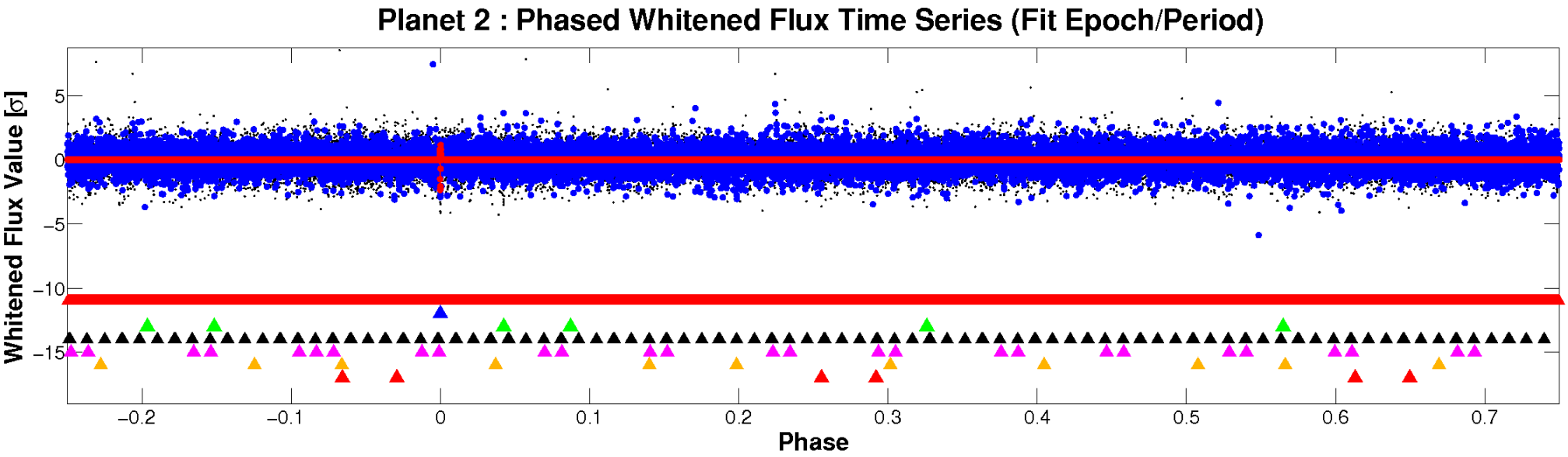
3.00e-04
2.00e-04
1.00e-04
0.00e+00
-1.00e-04
-2.00e-04
-3.00e-04
-4.00e-04
-5.00e-04
-6.00e-04
-7.00e-04
Flux
-0.0008
-0.0006
-0.0004
-0.0002
0
0.0002
0.0004
0.0006
0.0008
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008938257-02
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
-0.0008
-0.0006
-0.0004
-0.0002
0
0.0002
0.0004
0.0006
0.0008
Phase
Odd
Even
Model Fit

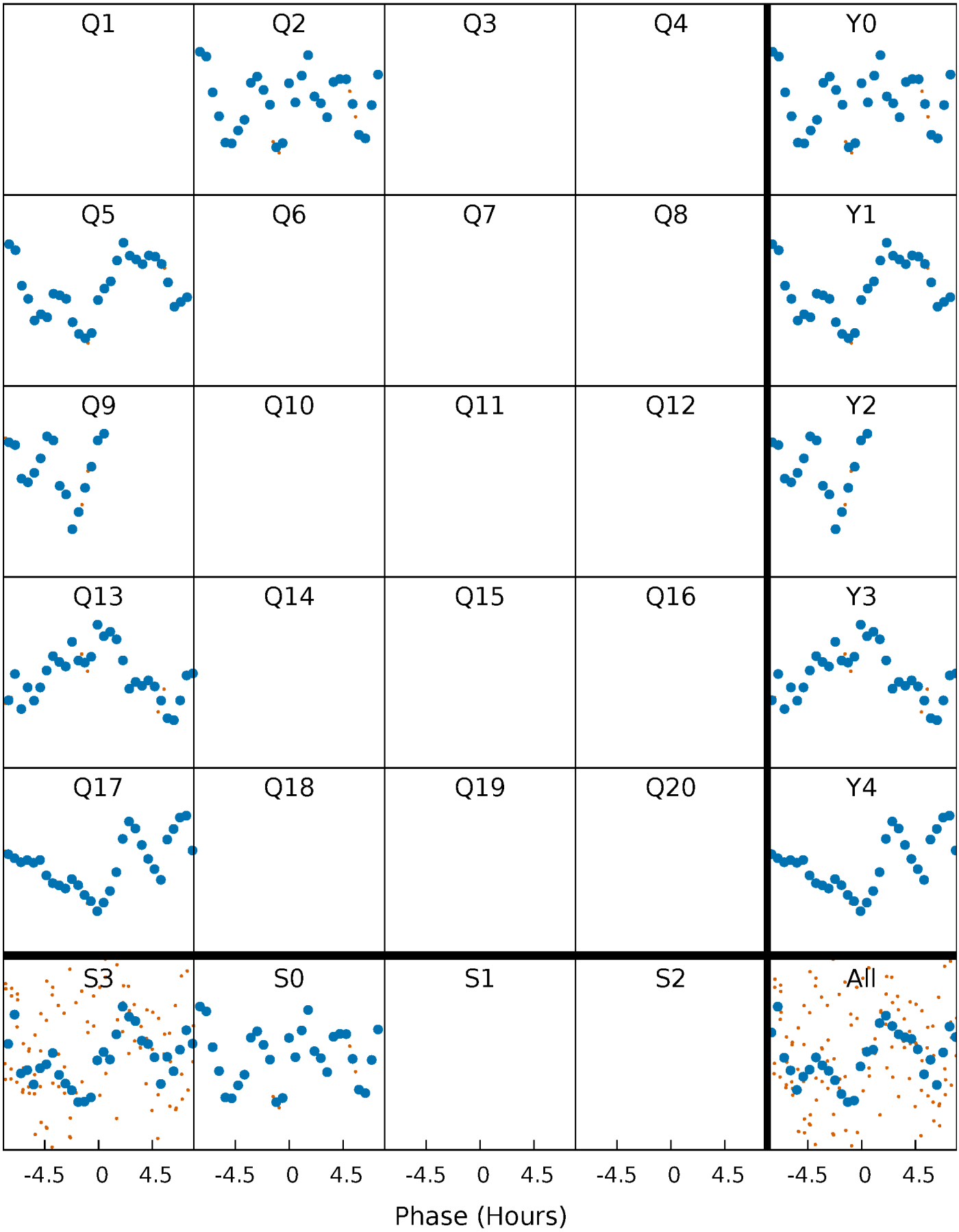
Non-Whitened Vs. Whitened Light Curve





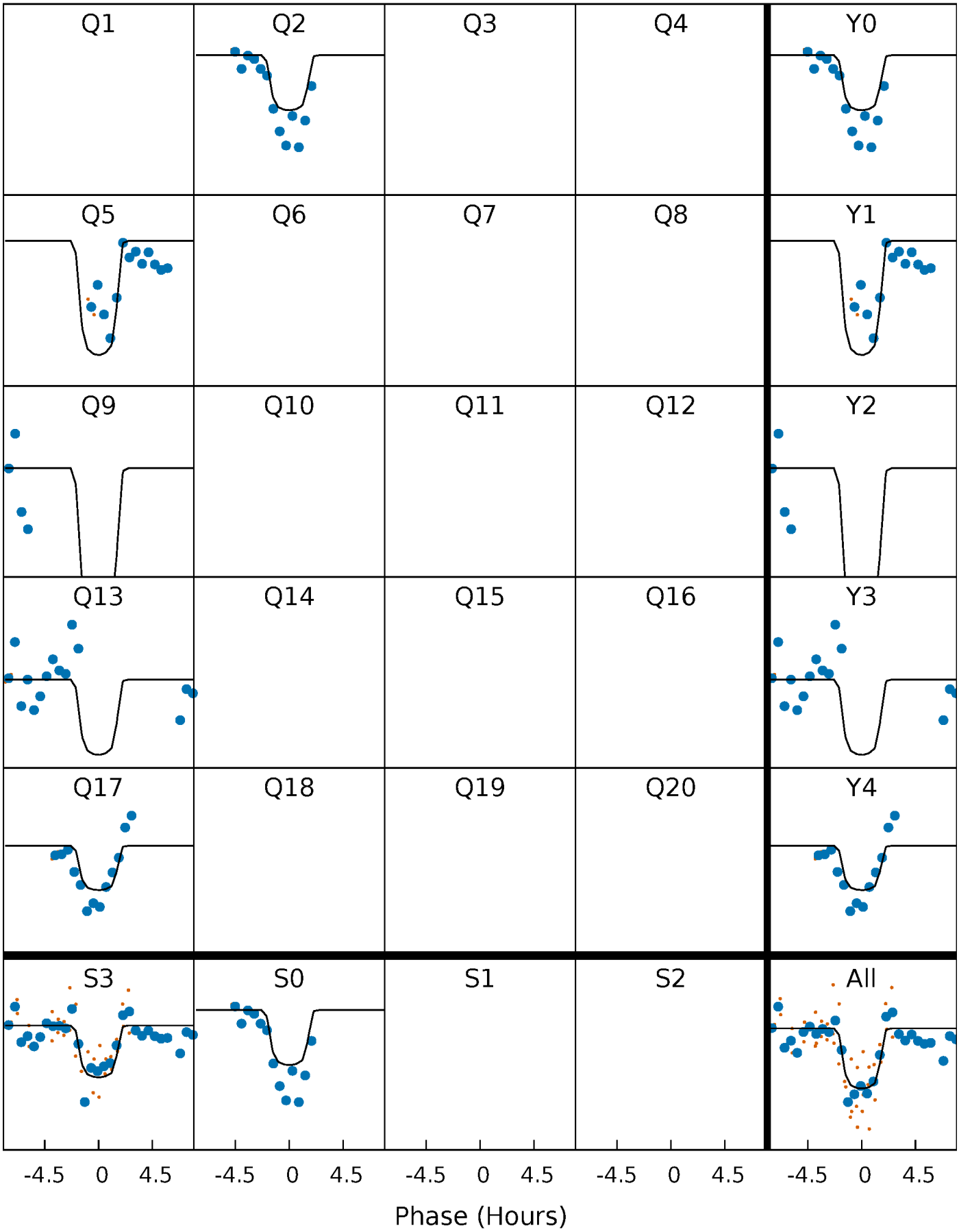
PDC Quarter-Phased Transit Curves

TCE 008938257-02 P=351.028991 Days T_0=172.028013 (BKJD)



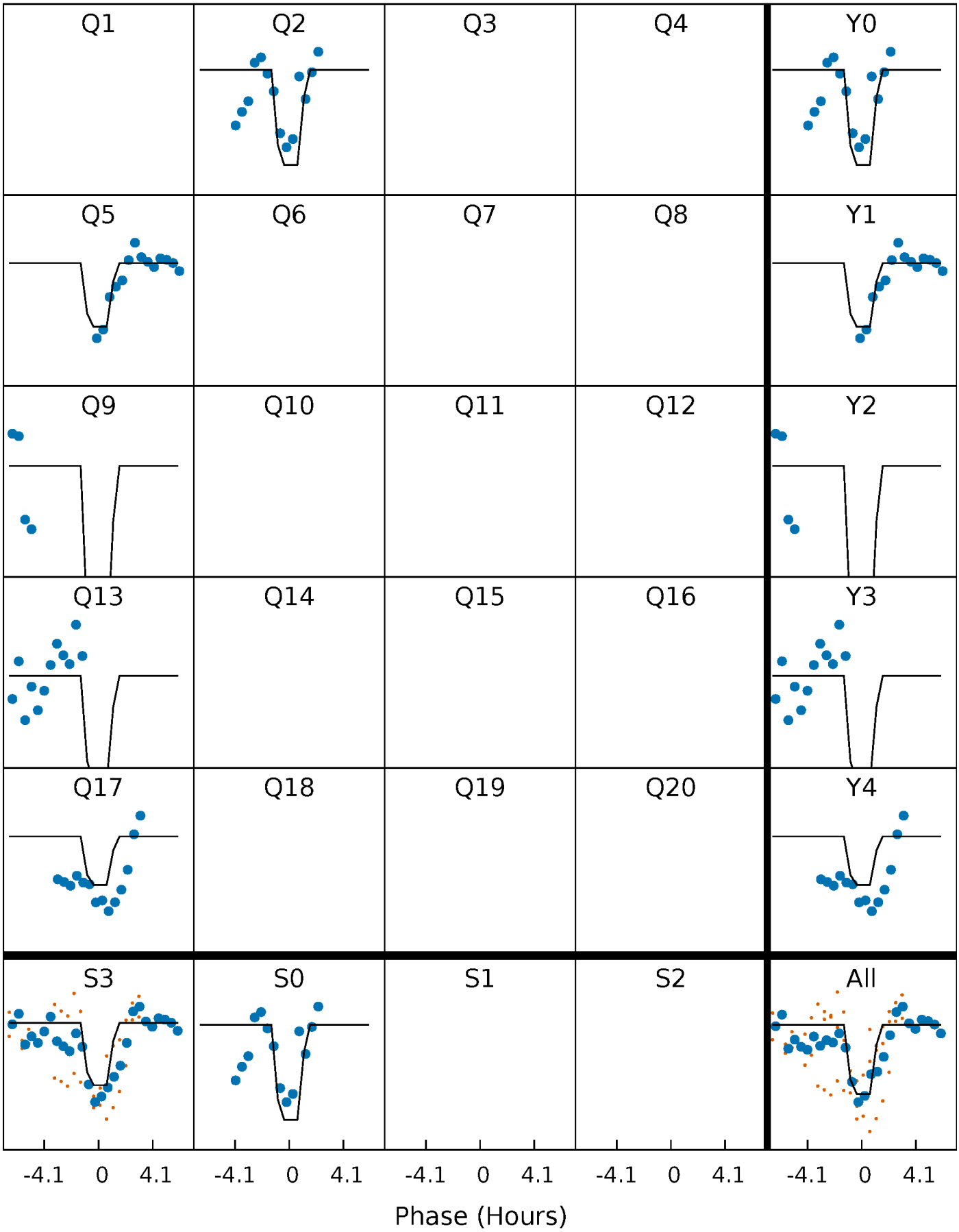
DV Quarter-Phased Transit Curves

TCE 008938257-02 P=351.028991 Days T_0=172.028013 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

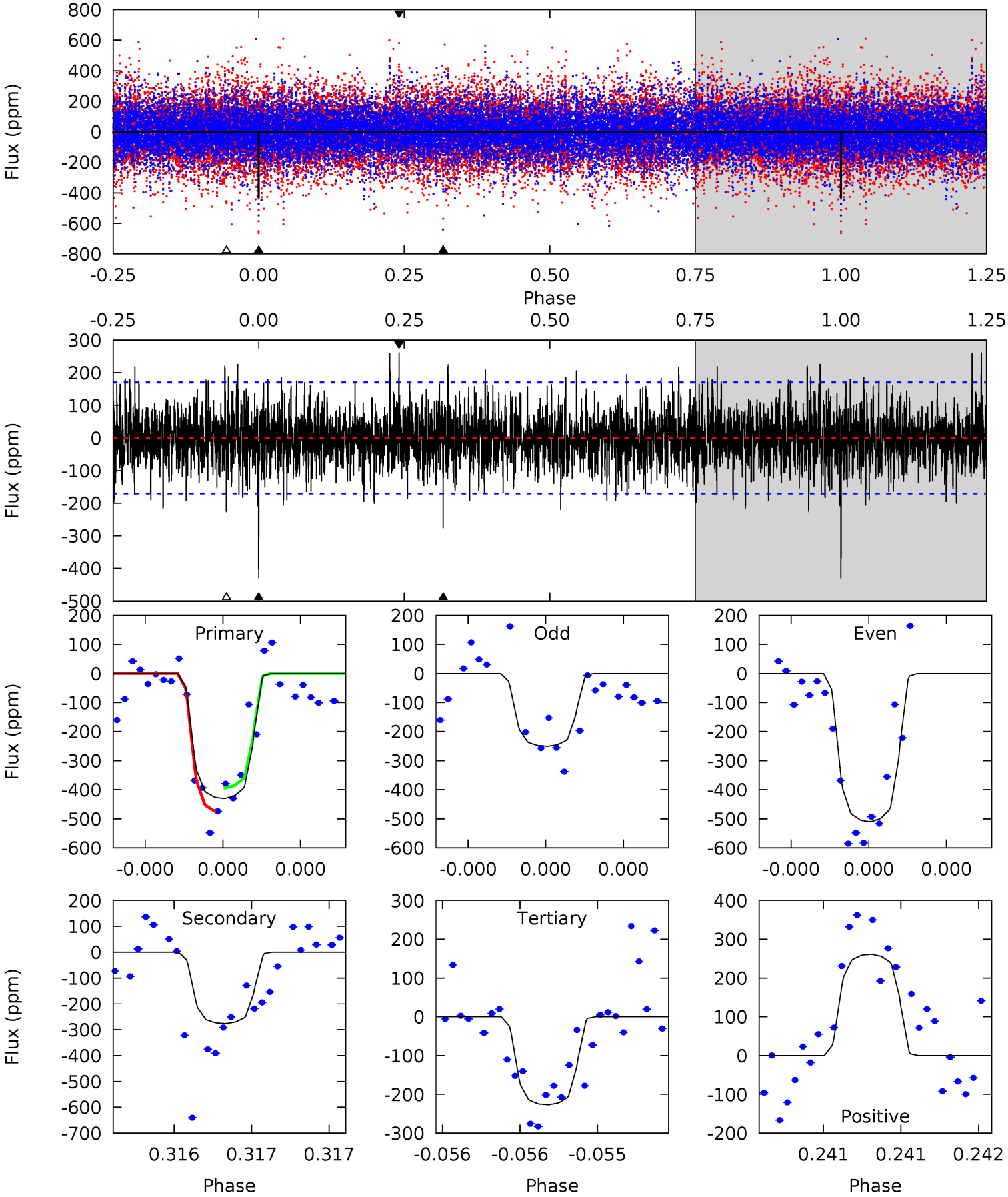
TCE 008938257-02 P=351.028184 Days T_0=172.008186 (BKJD)



DV Model-Shift Uniqueness Test

008938257-02, P = 351.028991 Days, E = 172.028013 Days

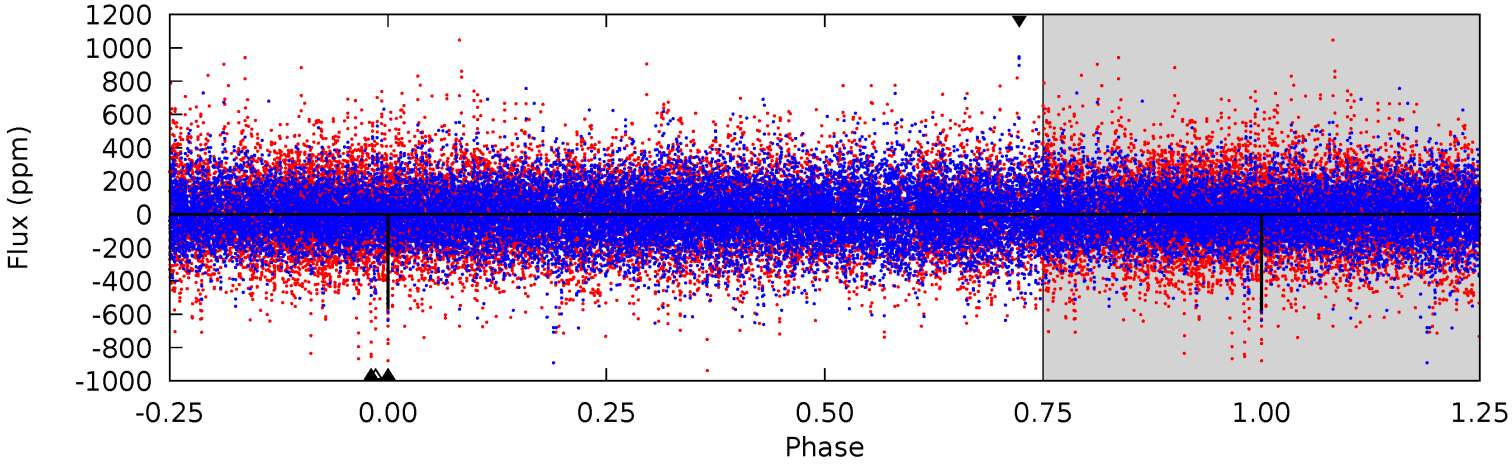
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	9.04	7.43	8.56	5.58	3.50	2.09	6.65	5.52	1.61	0.48	3.82	0.93	0.38	1.30

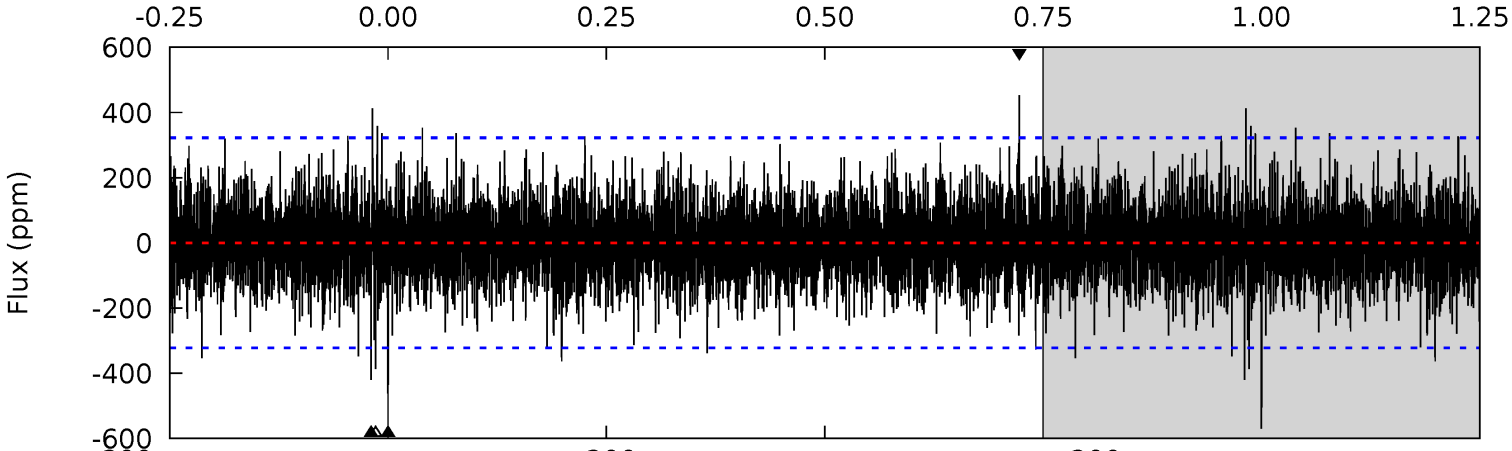


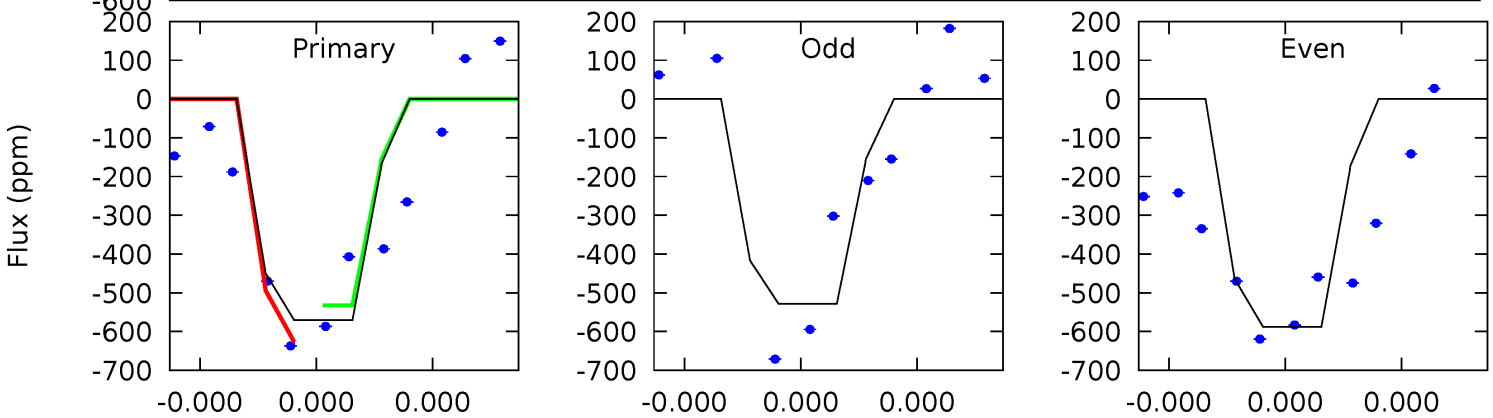
Alt Model-Shift Uniqueness Test

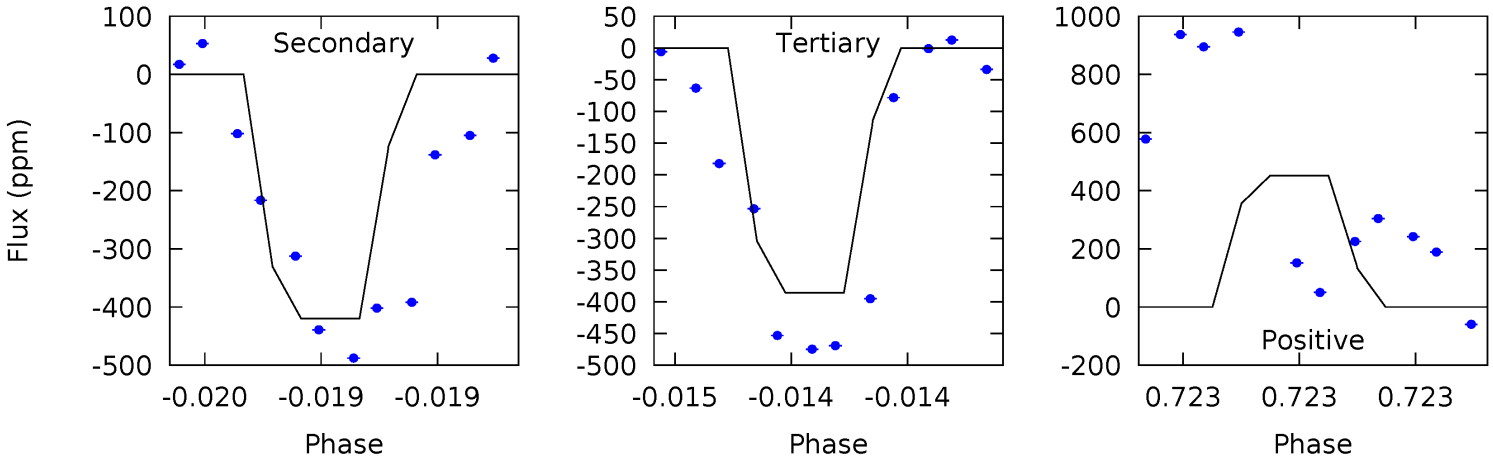
008938257-02, P = 351.028184 Days, E = 172.008186 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	7.43	6.84	8.00	5.70	3.68	1.72	3.26	2.09	0.59	-0.57	0.45	1.08	0.44	0.78









Stellar Parameters For KIC 008938257

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6897^{+193}_{-303}	$4.248^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.482^{+0.511}_{-0.256}$	$1.417^{+0.213}_{-0.213}$	$0.613^{+0.298}_{-0.332}$
	+3%/-4%	+2%/-5%	+286%/-500%	+34%/-17%	+15%/-15%	+49%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008938257-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-276±31	$3.74^{+0.69}_{-0.52}$	502^{+39}_{-30}	5892^{+395}_{-360}	12756^{+4393}_{-3465}
Alt.	-420±56	$3.94^{+0.76}_{-0.52}$	502^{+41}_{-30}	6347^{+392}_{-394}	17221^{+5676}_{-5049}

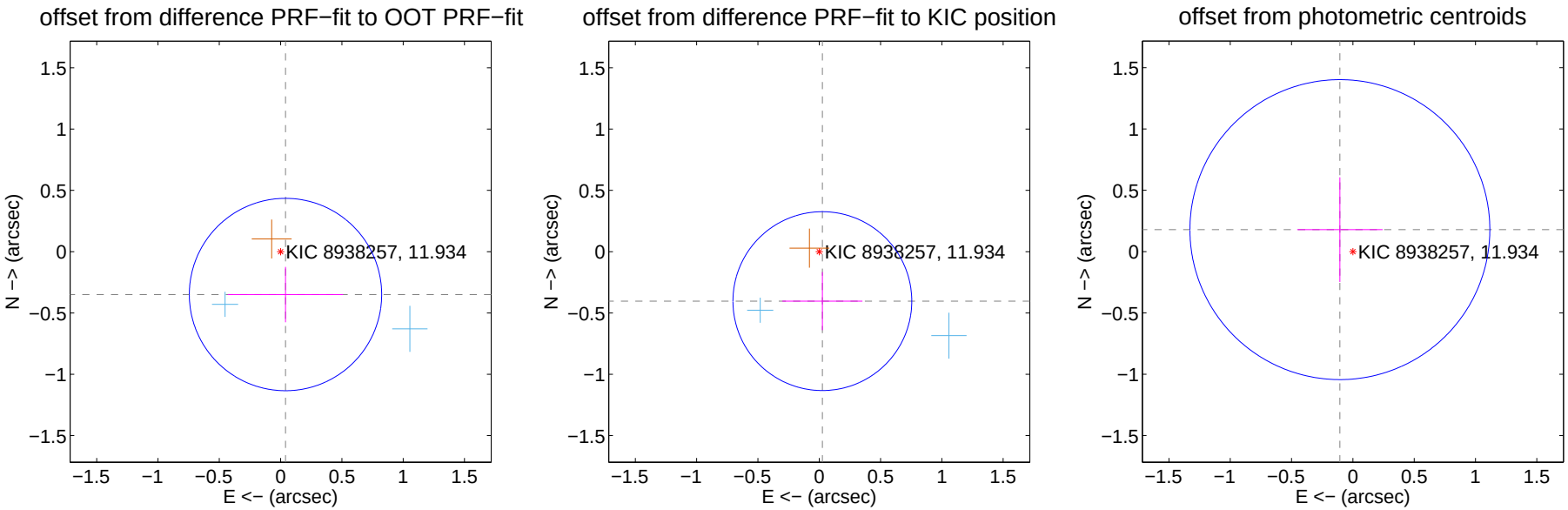
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

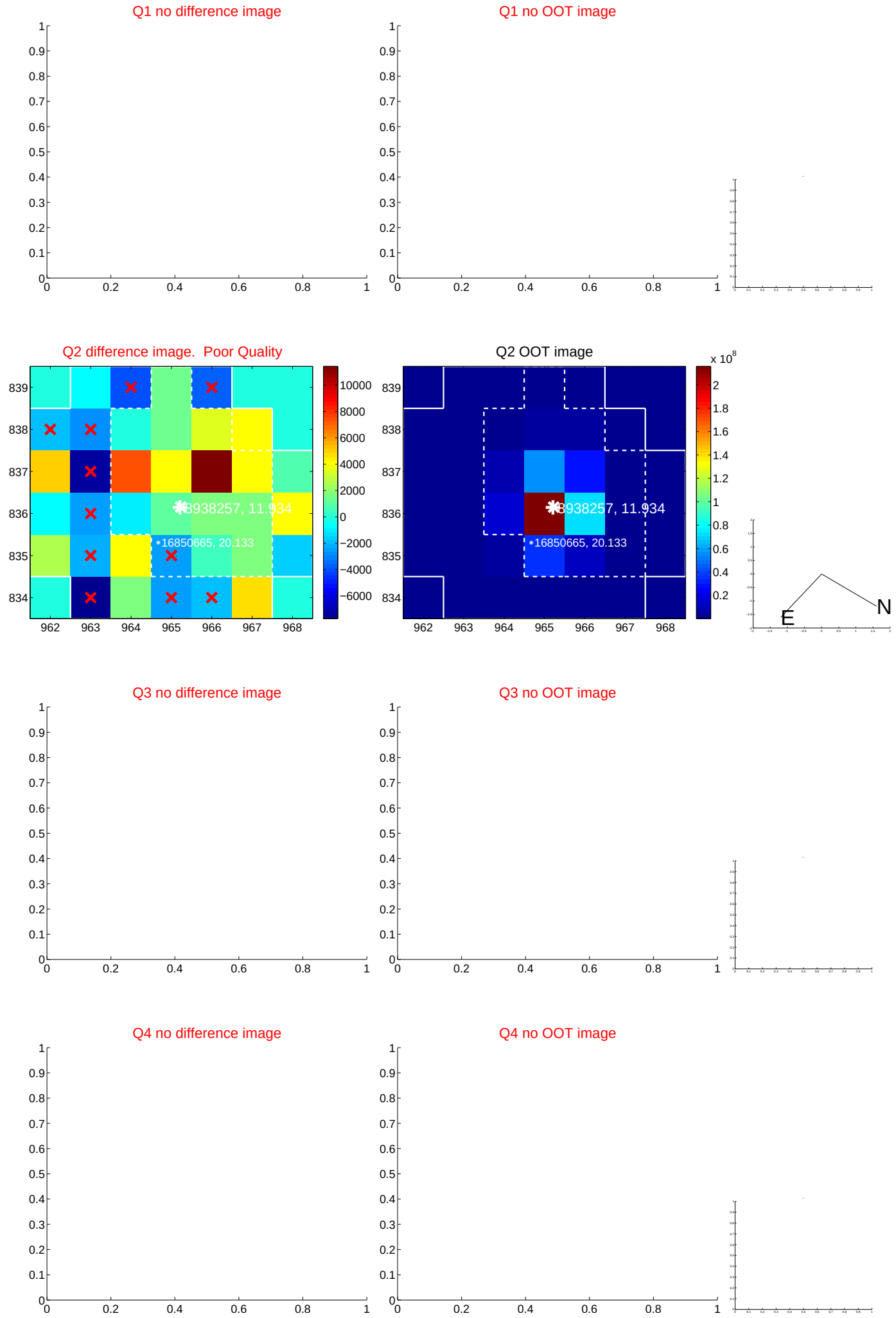
Supplemental centroid analysis for 008938257-02. Kepler magnitude: 11.93. Transit SNR 9.31
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.352 ± 0.261	1.35	-0.040 ± 0.470	-0.350 ± 0.226
PRF-fit source offset from KIC position	0.404 ± 0.243	1.66	-0.025 ± 0.327	-0.403 ± 0.237
photometric centroid source offset	0.21 ± 0.41	0.51	0.11 ± 0.35	0.18 ± 0.43

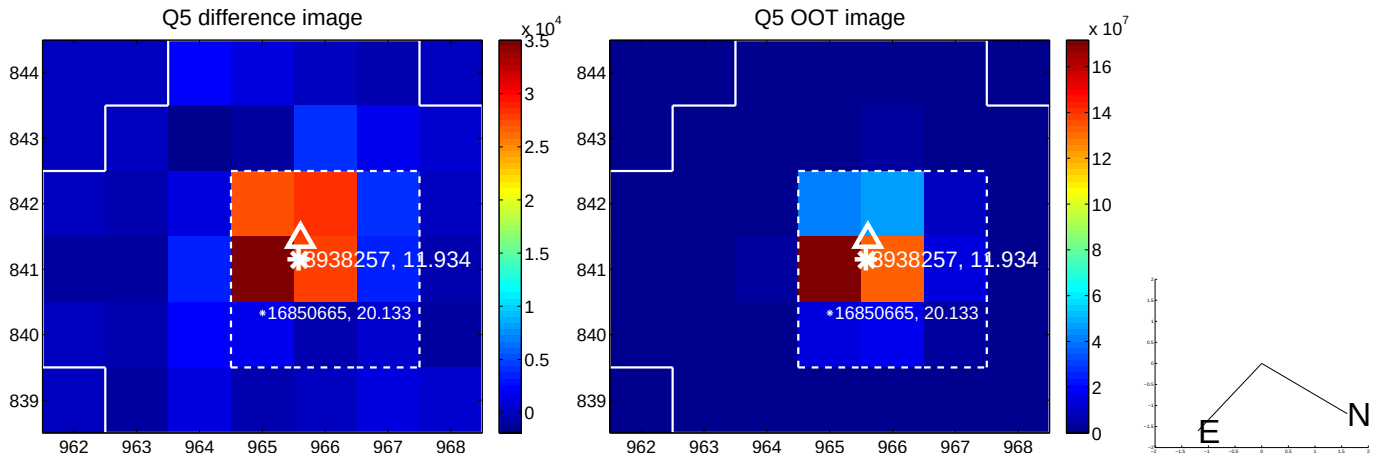


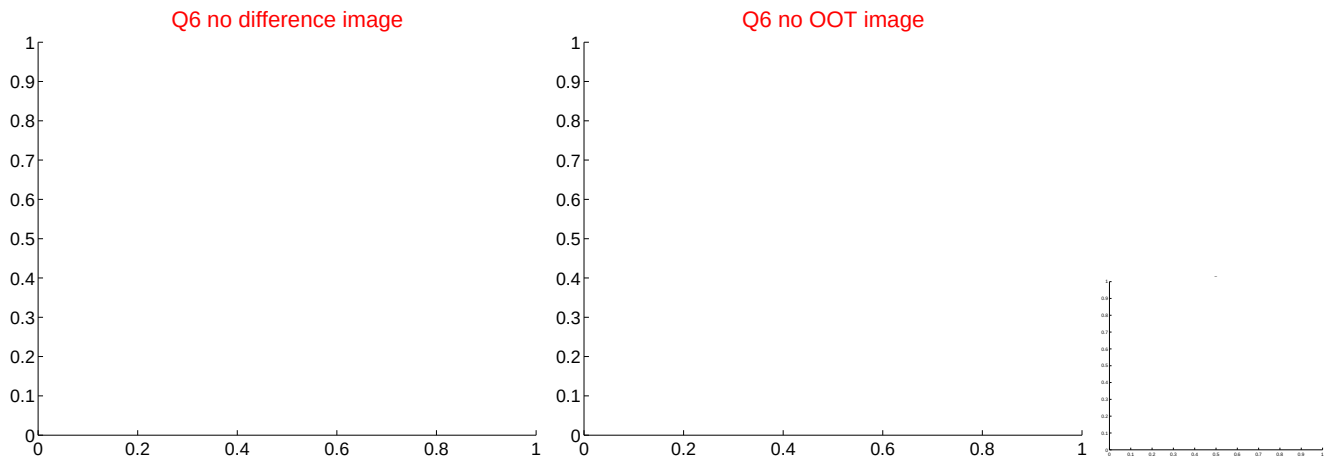
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

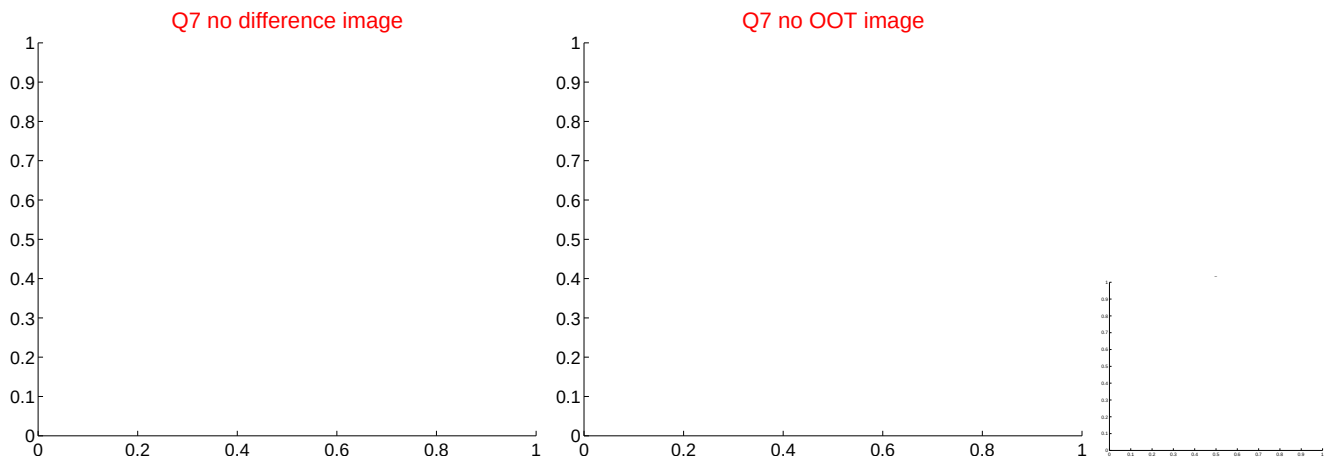
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

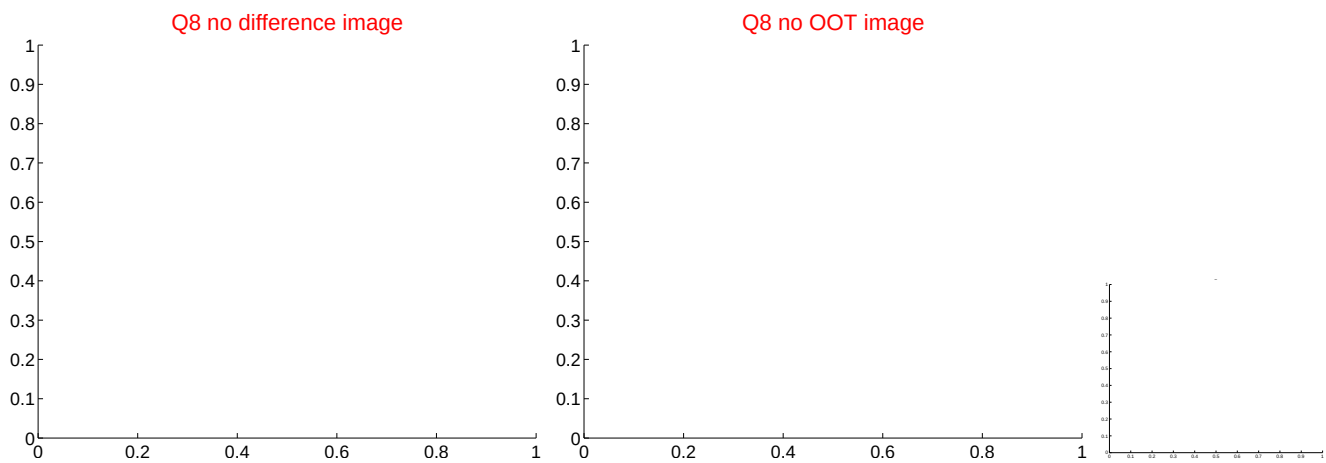


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

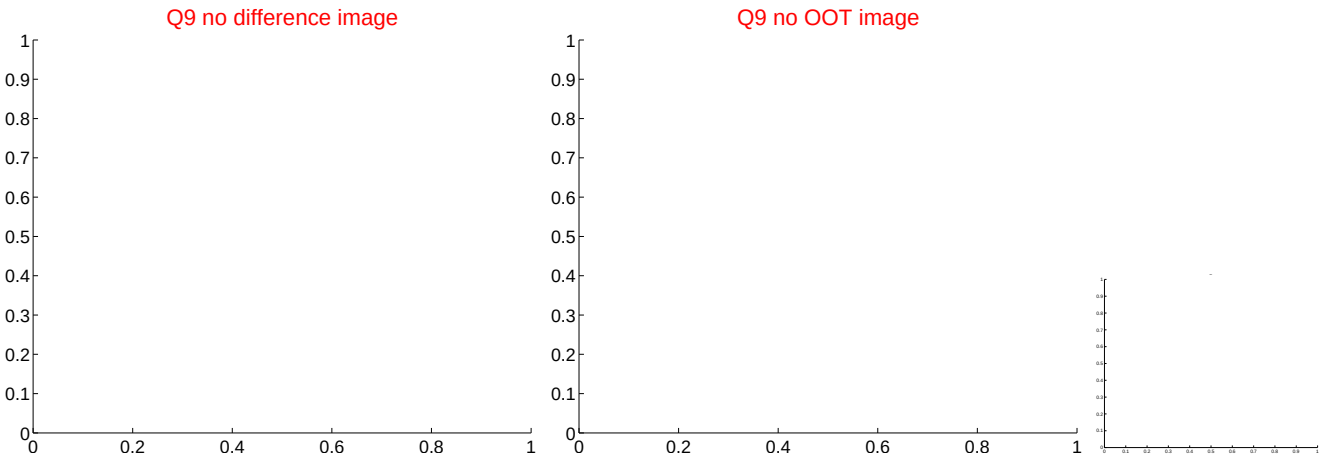


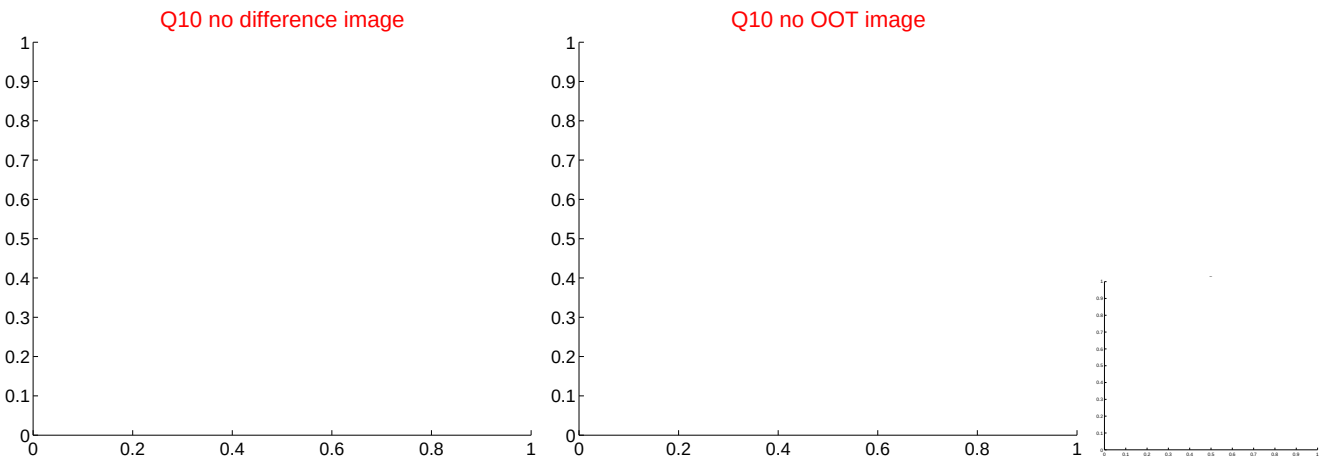


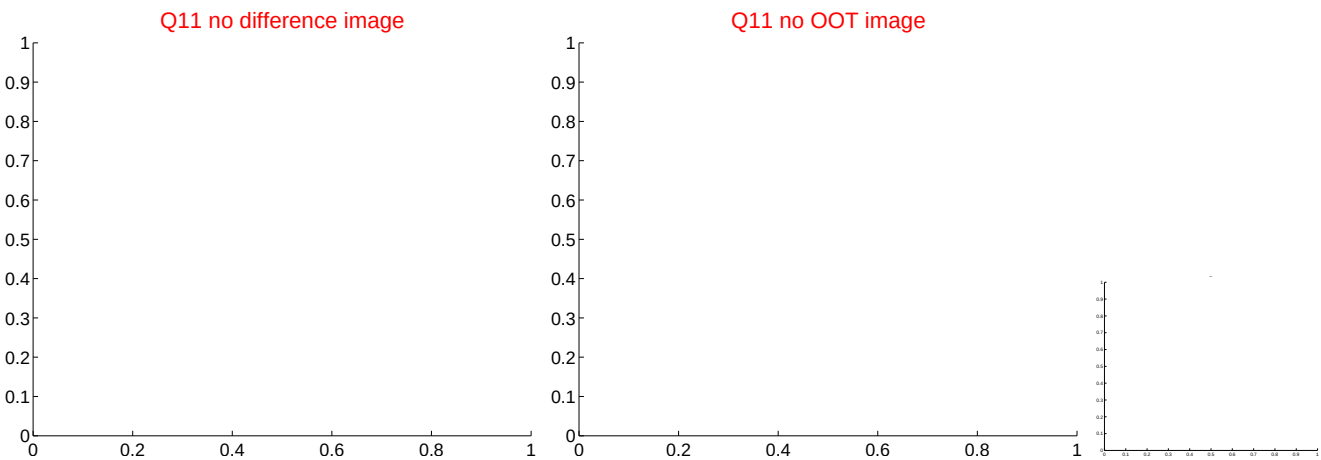


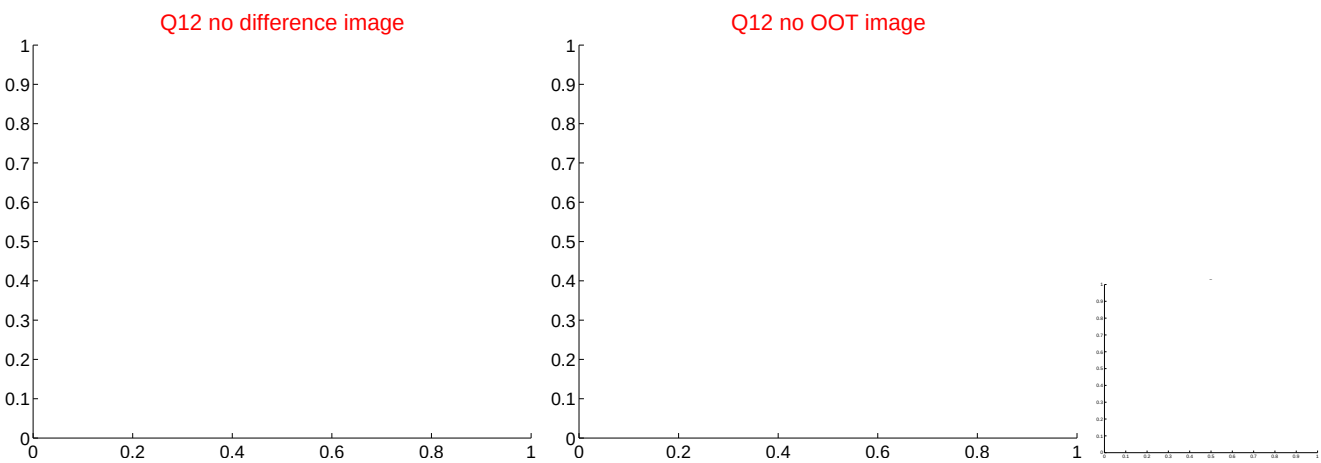


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

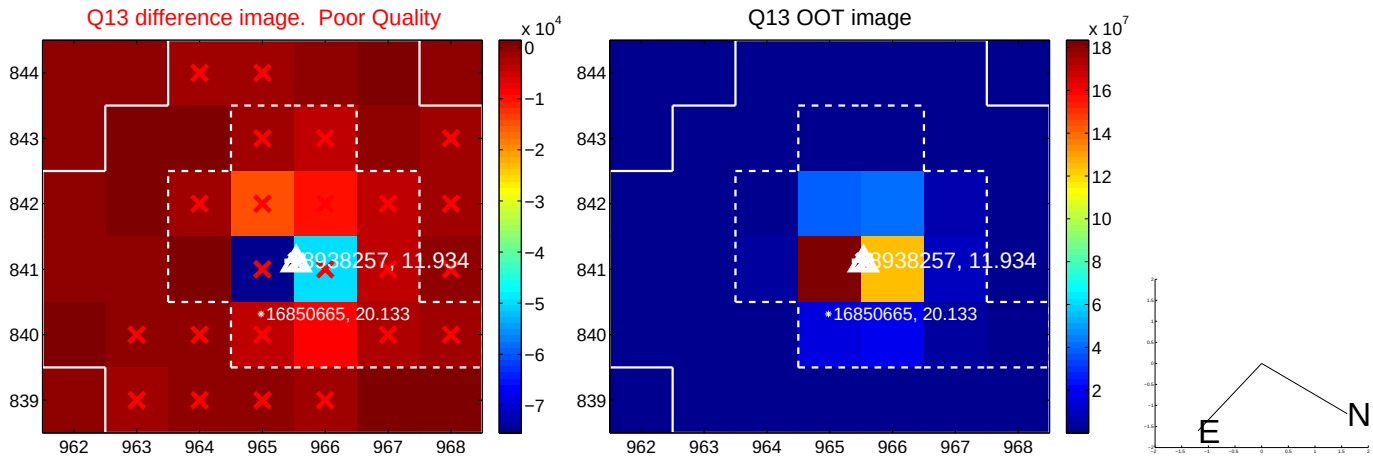


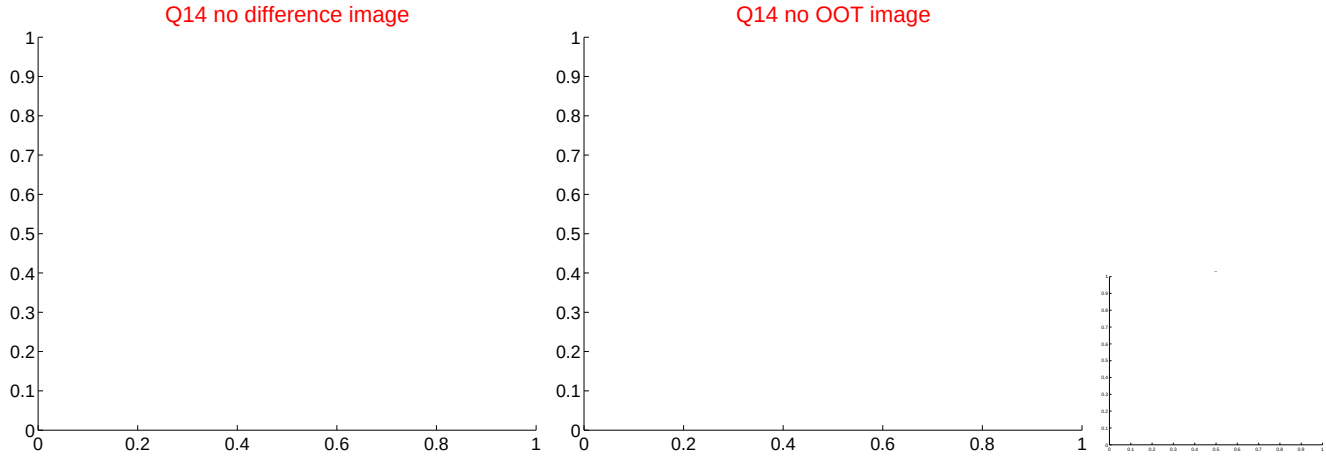


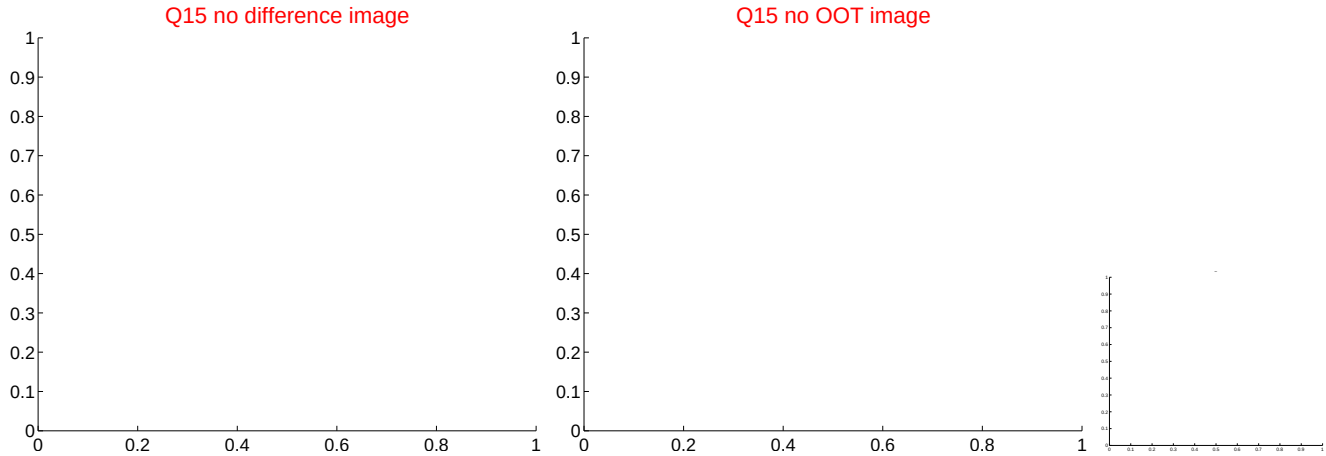


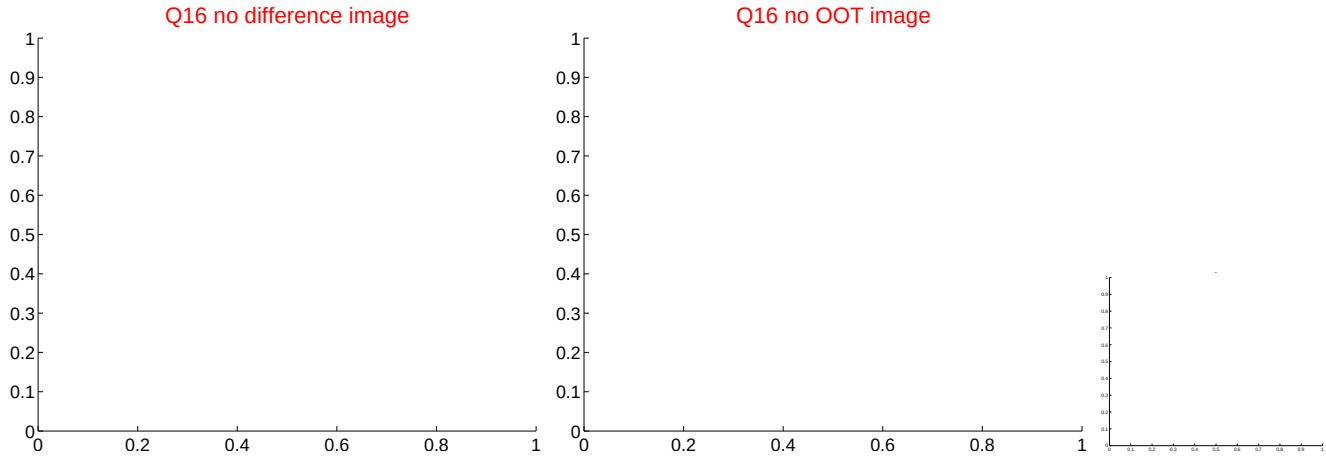


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

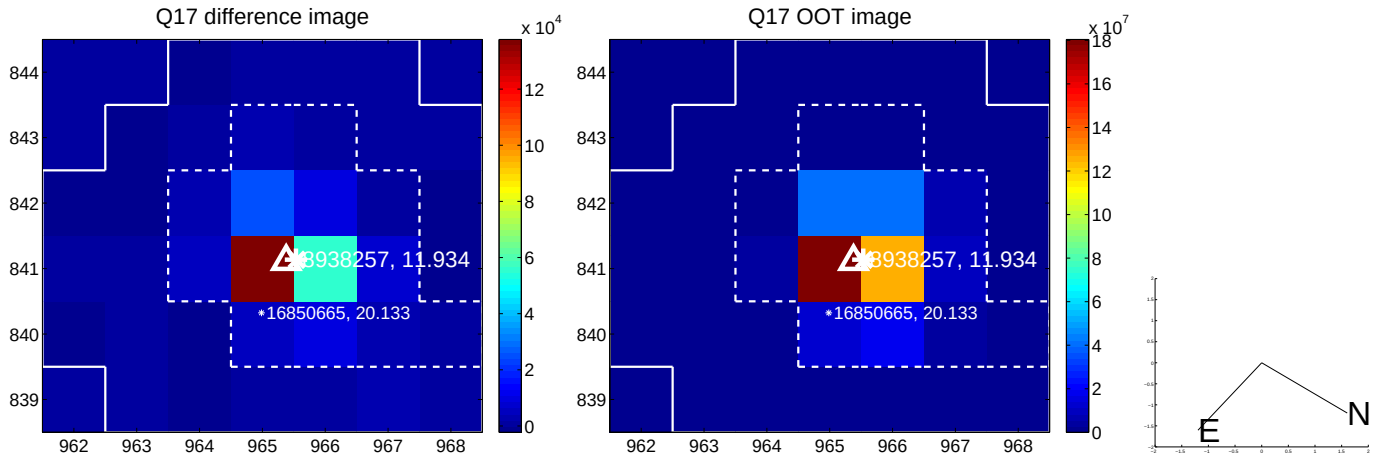


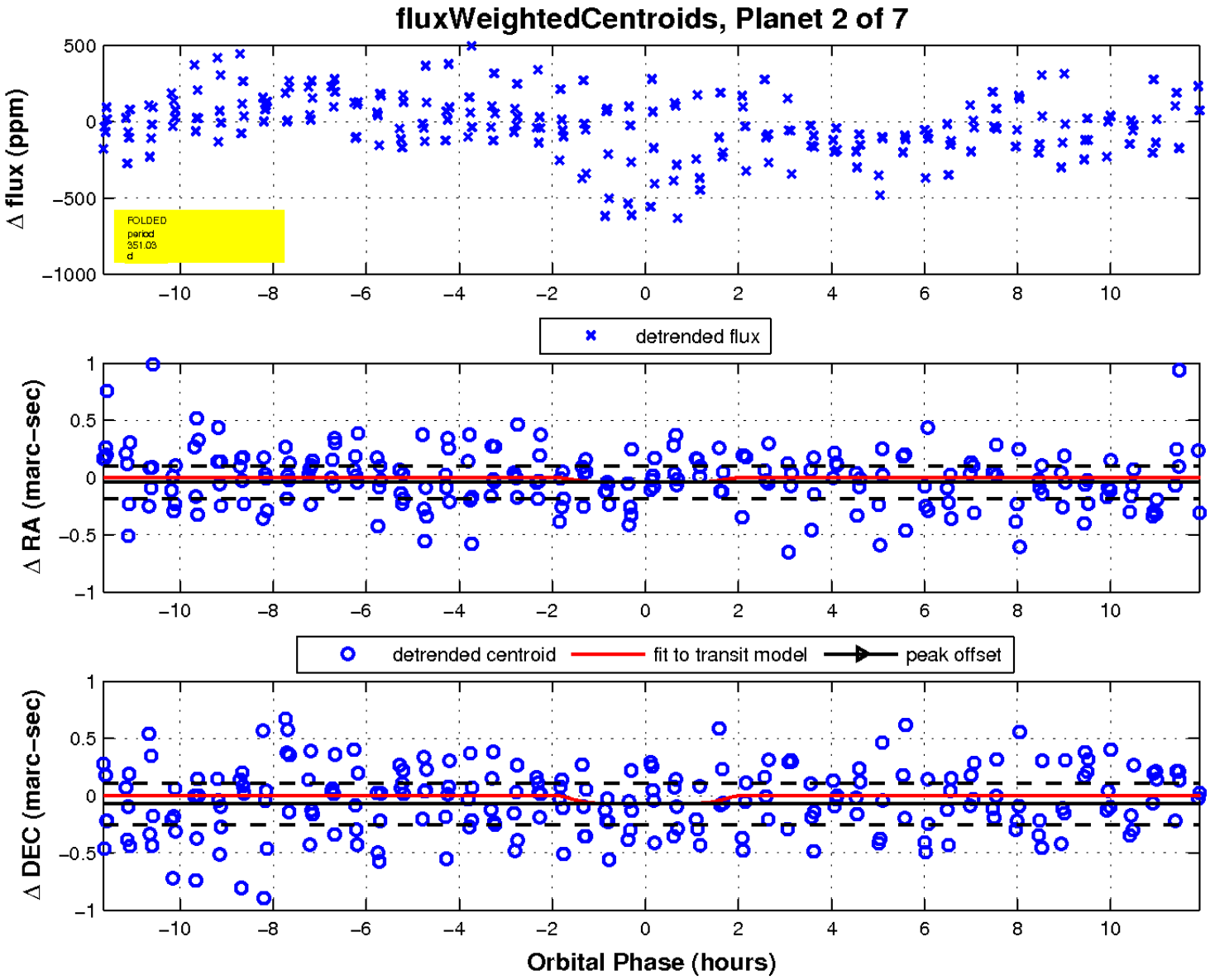




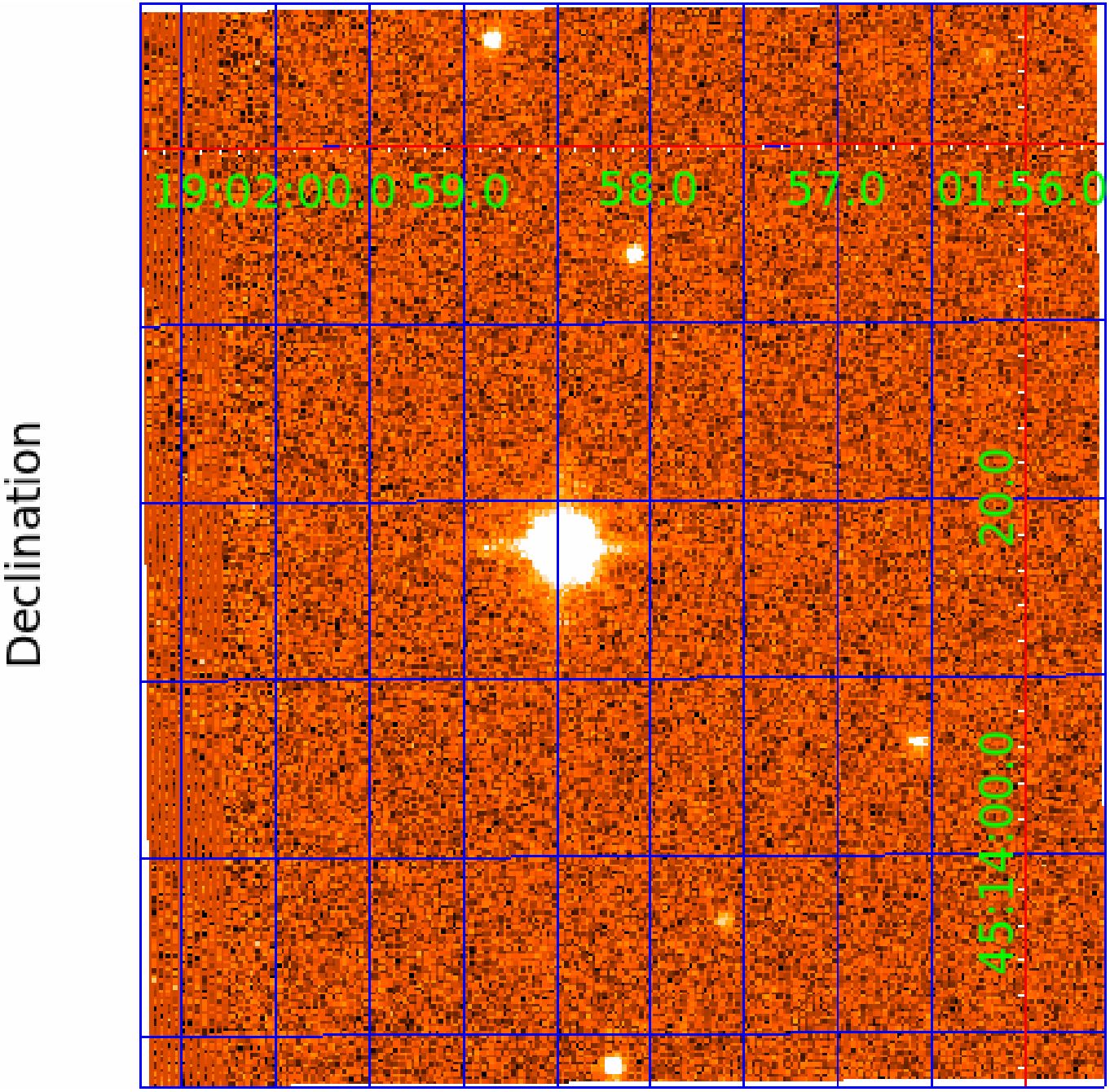


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image



KIC 008938257

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 ($S_\oplus$)
008938257-01	OBS	No	0.623791	131.719799	20.7	2.572	10.2	10.4	1.48	6897	0.79	17273.56
008938257-02	OBS	No	351.028991	172.028013	396.3	3.979	8.8	9.3	1.48	6897	3.60	3.72
008938257-04	OBS	No	12.386381	138.661605	125.2	9.717	8.6	9.9	1.48	6897	2.60	321.25
008938257-05	OBS	No	53.693787	146.914391	213.5	6.930	7.9	8.7	1.48	6897	2.53	45.45
008938257-06	OBS	No	129.070176	241.726224	347.3	4.065	7.7	7.8	1.48	6897	3.55	14.12
008938257-07	OBS	No	238.294933	261.711404	260.5	4.309	8.0	7.1	1.48	6897	3.07	6.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008938257-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008938257-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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.

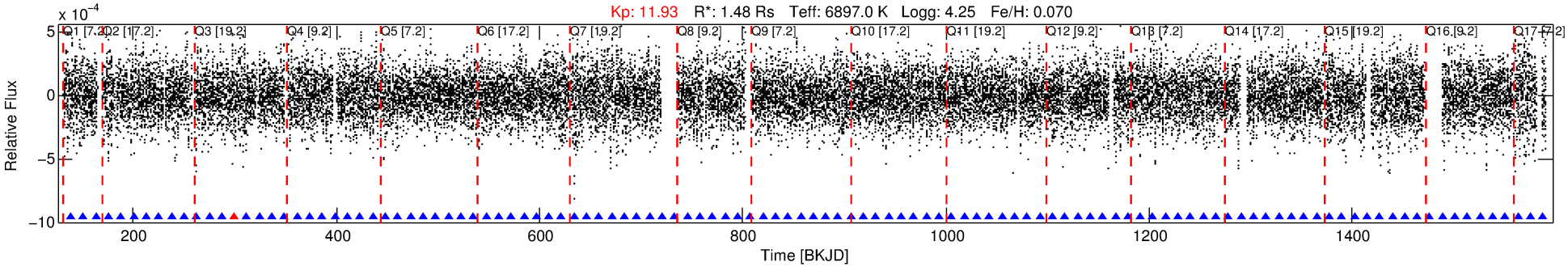
Ephemeris Match Information For 008938257-04

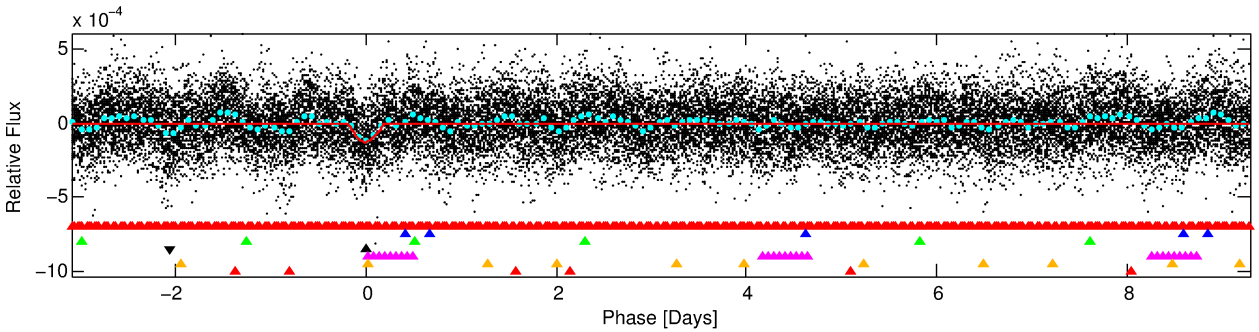
No Significant Match Found

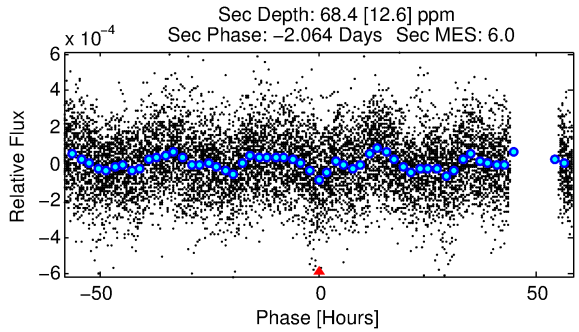
DV One-Page Summary

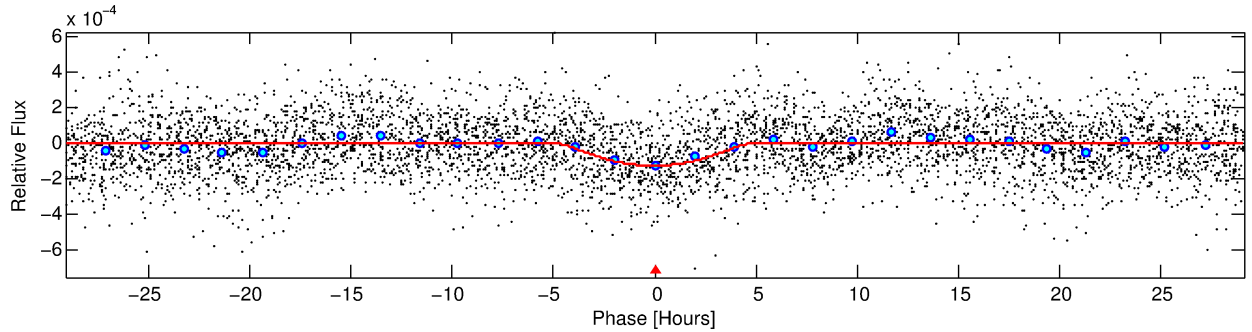
KIC: 8938257 Candidate: 4 of 7 Period: 12.386 d

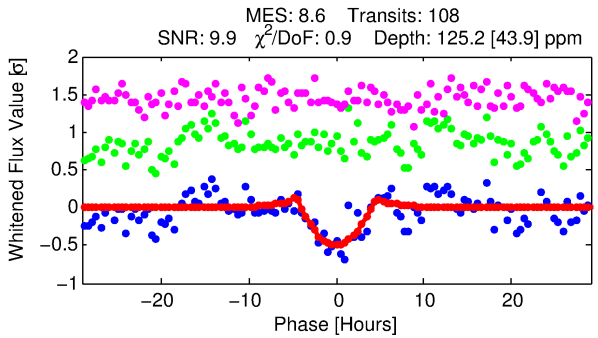
Kp: 11.93 R*: 1.48 Rs Teff: 6897.0 K Logg: 4.25 Fe/H: 0.070

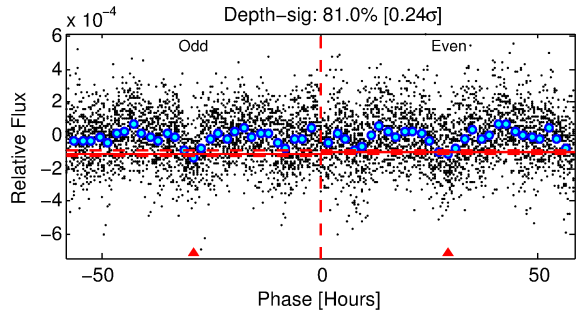


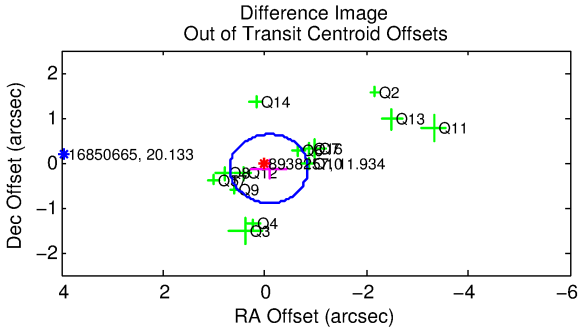












DV Fit Results:

Period = 12.38638 [0.00029] d
Epoch = 138.6616 [0.0187] BKJD
Rp/R* = 0.0160 [0.0107]
a/R* = 2.34 [0.53]
b = 0.99 [0.02]

Seff = 321.25 [139.16]
Teq = 1080 [117] K
Rp = 2.59 [1.94] Re
a = 0.1177 [0.0331] AU

Ag = 77.49 [108.48] [0.71σ]
Teffp = 4952 [1676] K [2.30σ]

DV Diagnostic Results:

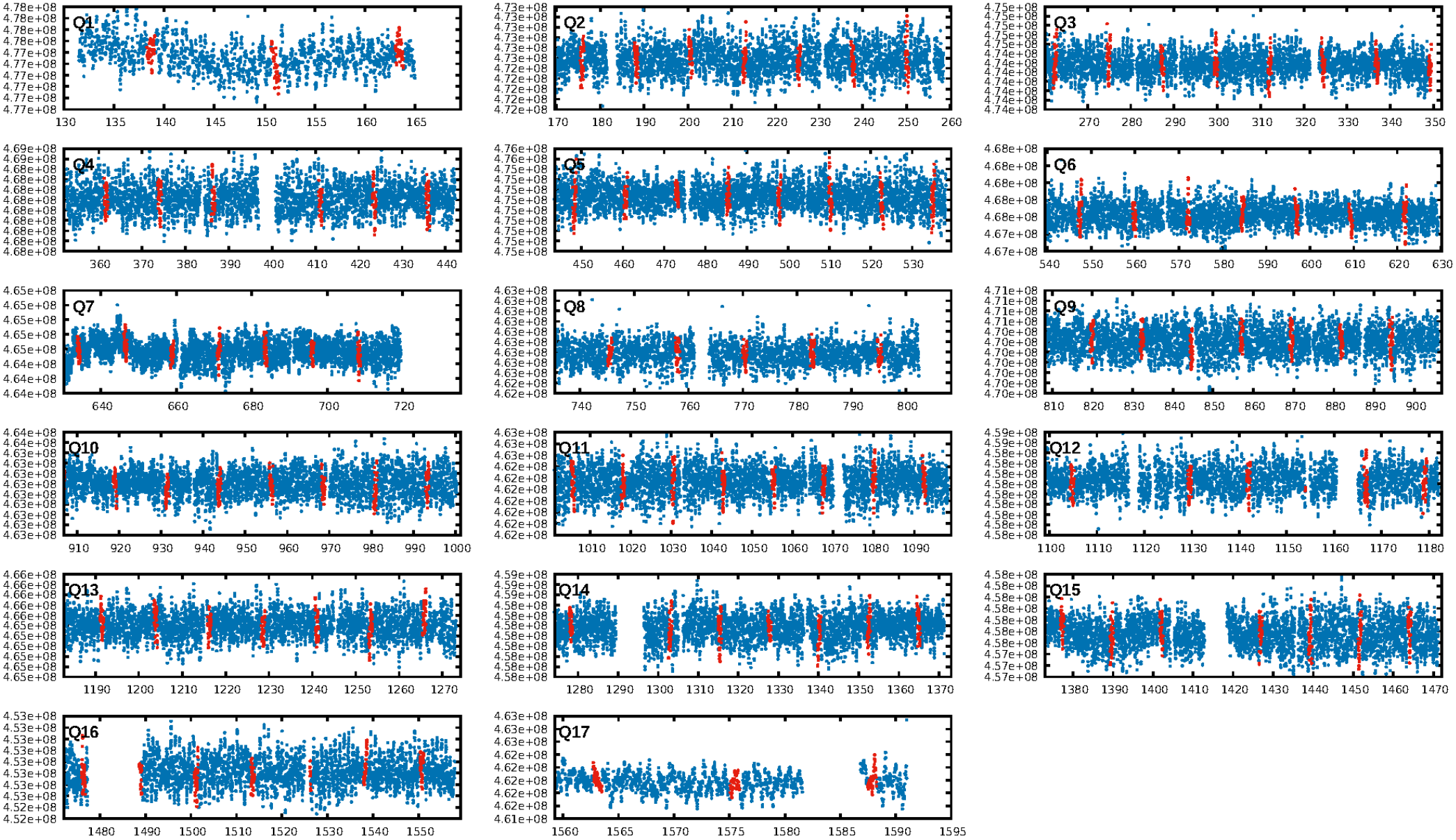
ShortPeriod−sig: 100.0% [28.09σ]
LongPeriod−sig: 100.0% [83.07σ]
ModelChiSquare2−sig: 81.6%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 1.01e−13
RollingBand−fgt: 0.99 [101/102]
GhostDiagnostic−chr: 2.036

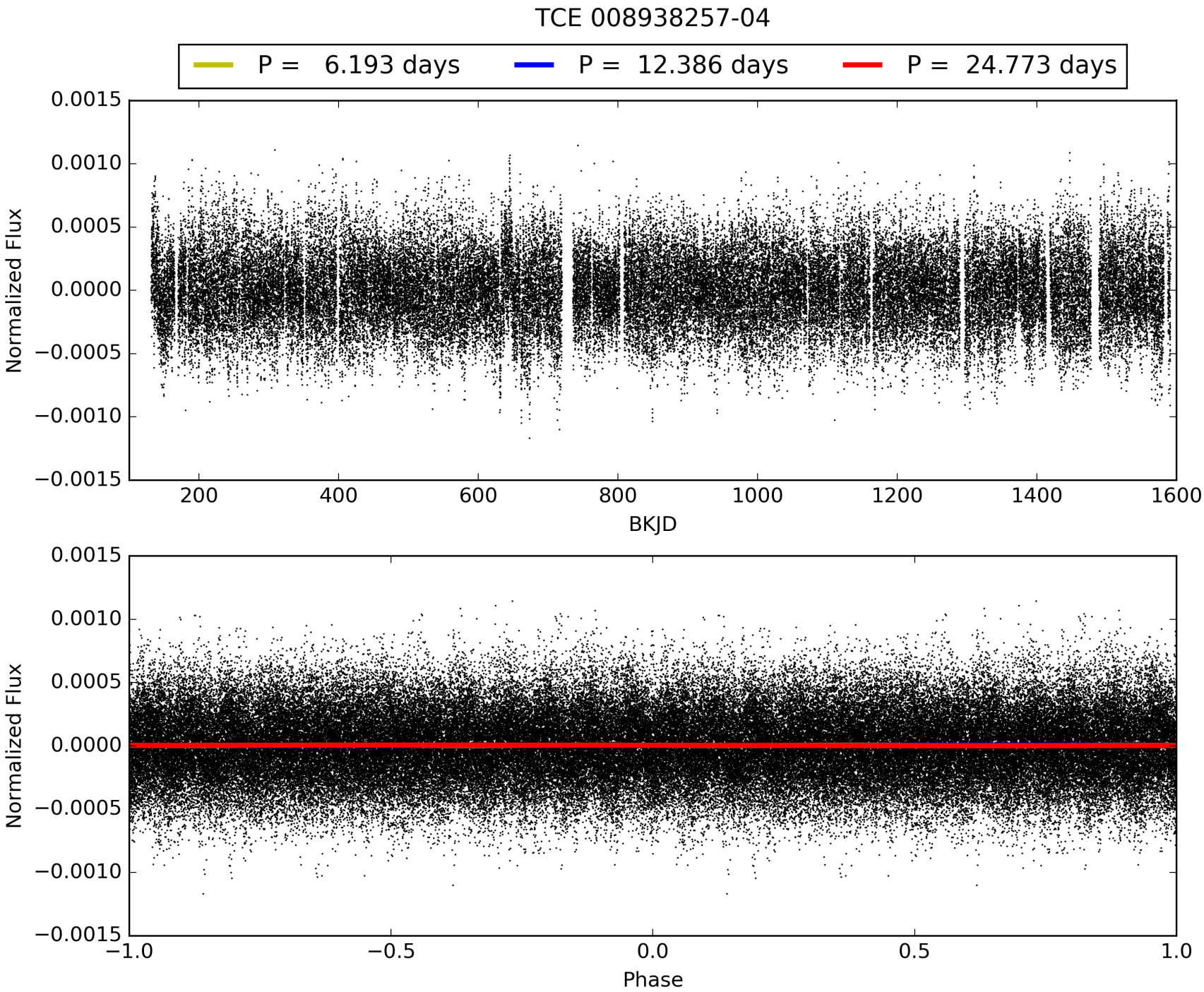
Centroid−sig: 17.7%
Centroid−so: 0.240 arcsec [0.99σ]
OotOffset−rm: 0.157 arcsec [0.62σ]
KicOffset−rm: 0.184 arcsec [0.87σ]
OotOffset−st: 4/3/4/4 [15]
KicOffset−st: 4/3/4/4 [15]
DiffImageQuality−fgm: 0.80 [12/15]
DiffImageOverlap−fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 06:17:23 Z

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

TCE 008938257-04, PDC Light Curves




TCE 008938257-04
P = 6.193 days
P = 12.386 days
P = 24.773 days
Normalized Flux
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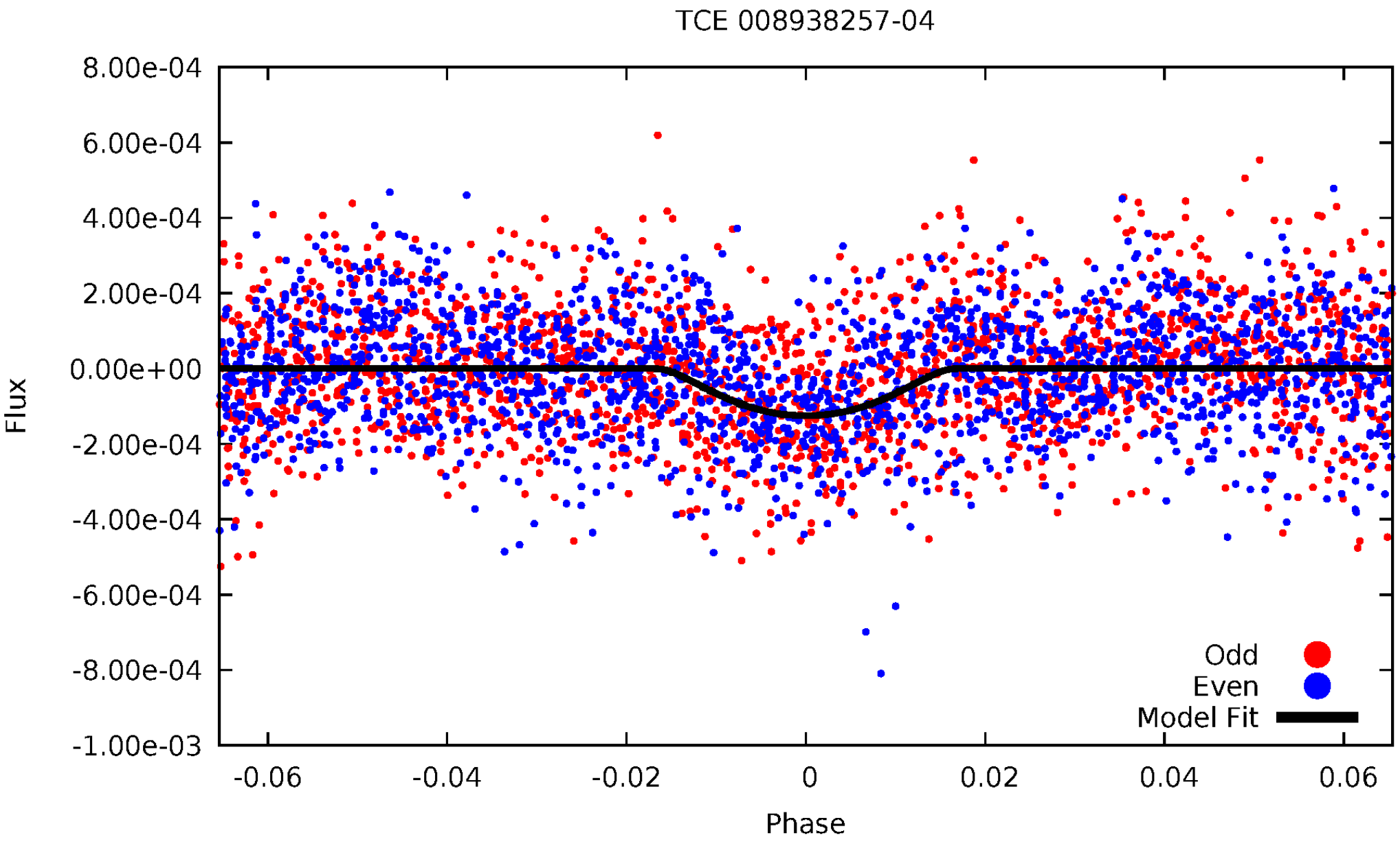
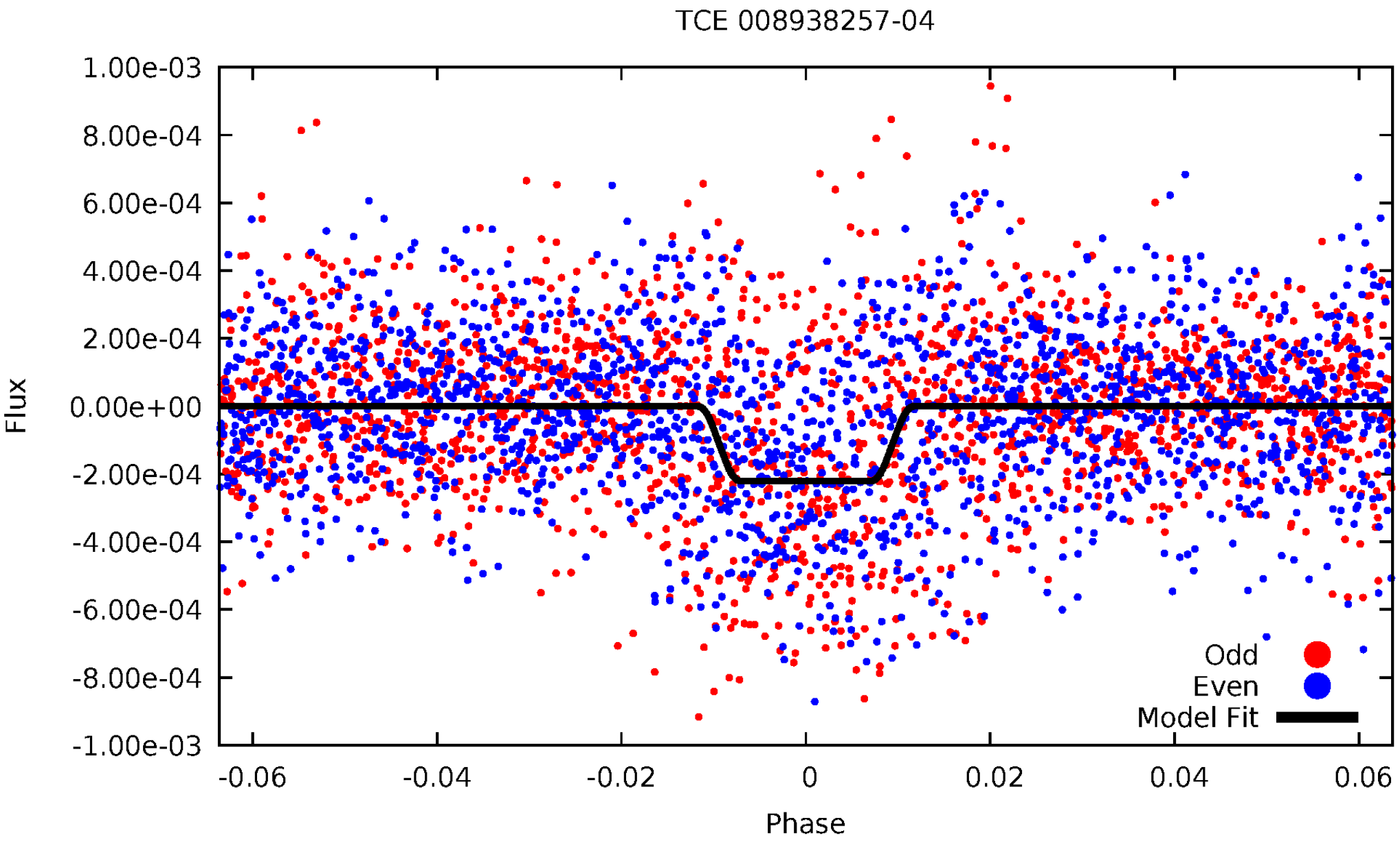
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

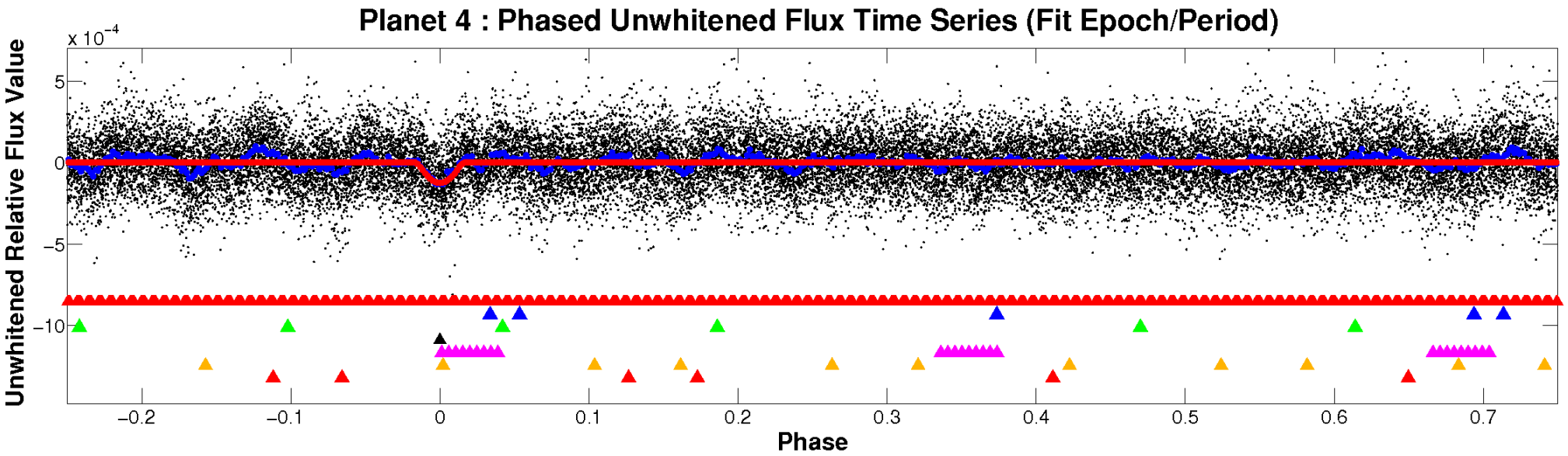
DV Odd/Even

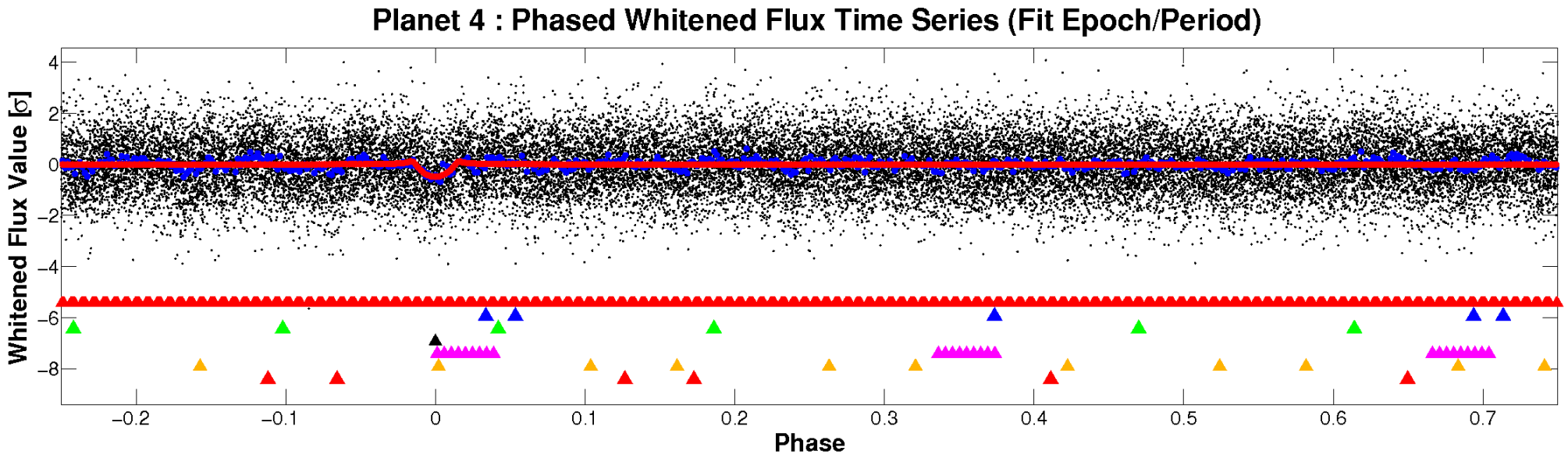

TCE 008938257-04
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
Flux
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008938257-04
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
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
Phase
Odd
Even
Model Fit

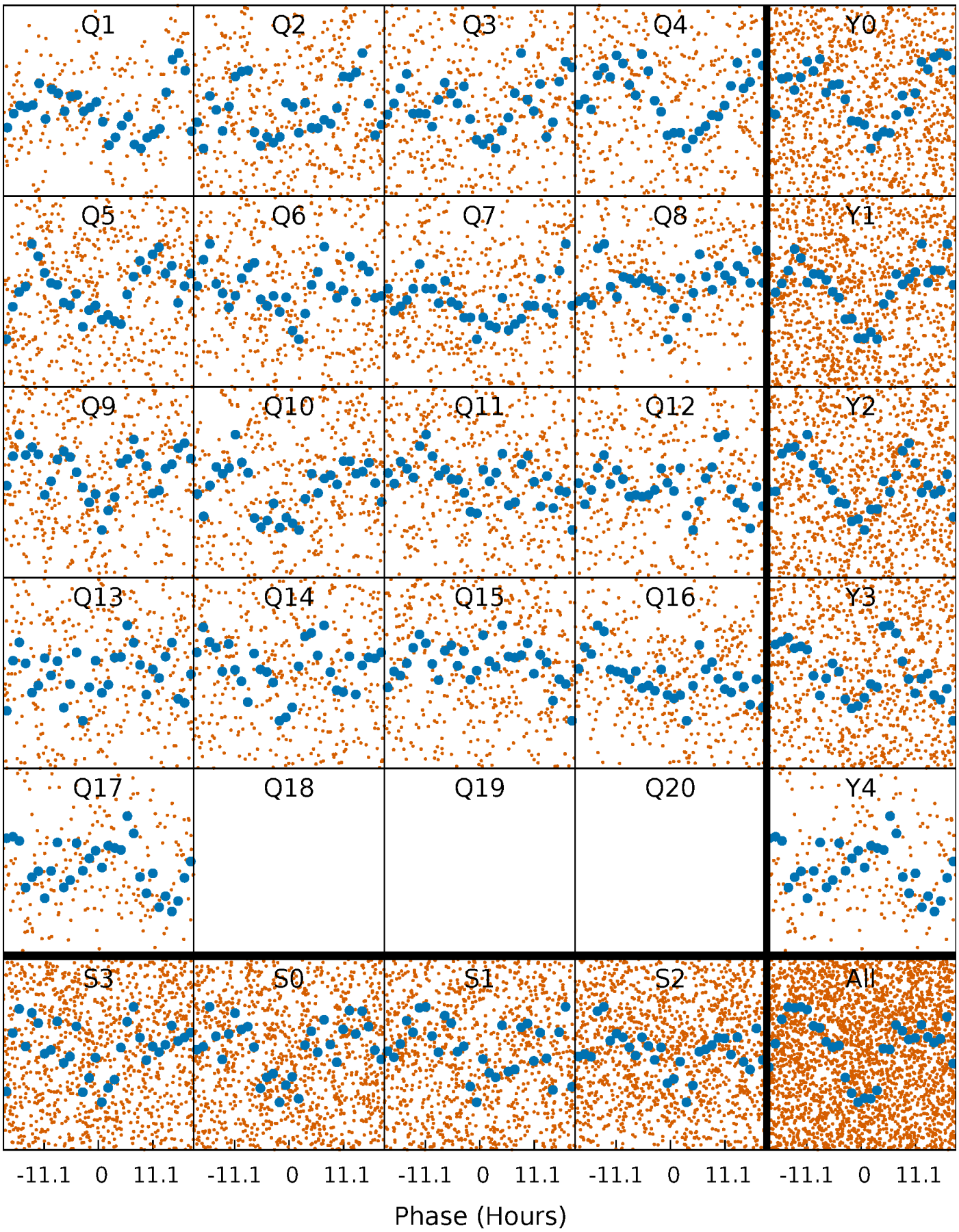
Non-Whitened Vs. Whitened Light Curve





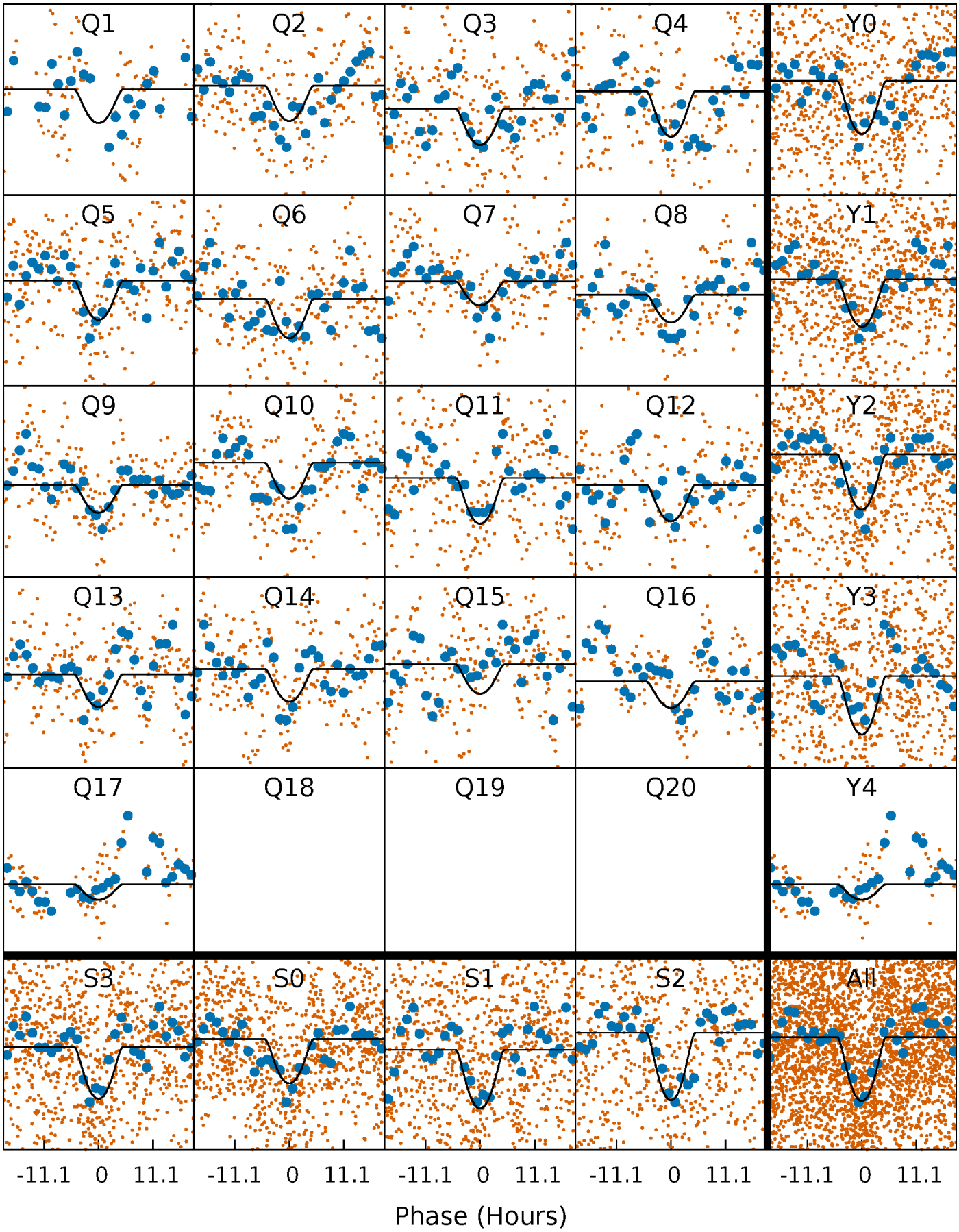
PDC Quarter-Phased Transit Curves

TCE 008938257-04 P= 12.386381 Days T_0=138.661605 (BKJD)



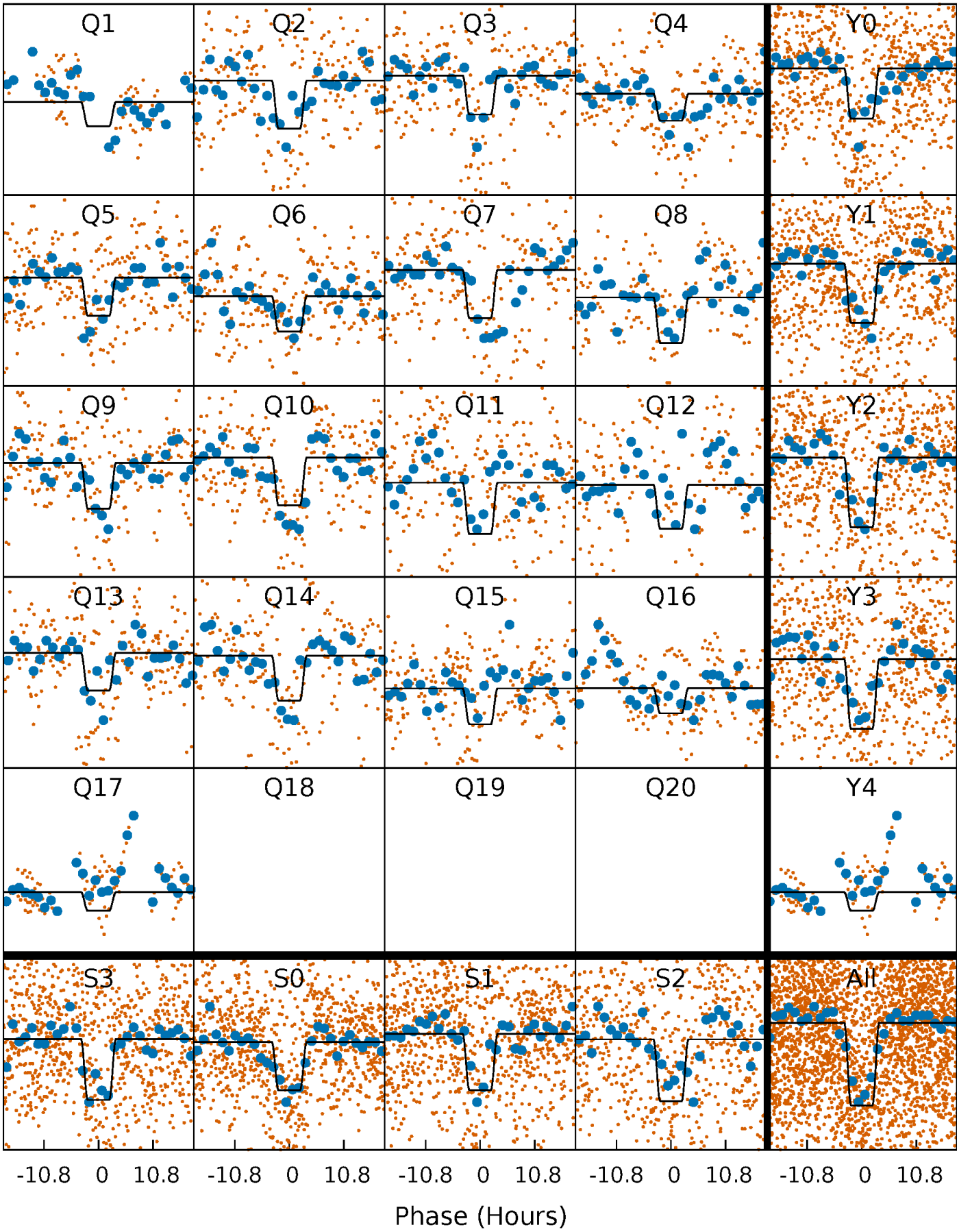
DV Quarter-Phased Transit Curves

TCE 008938257-04 P= 12.386381 Days T_0=138.661605 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

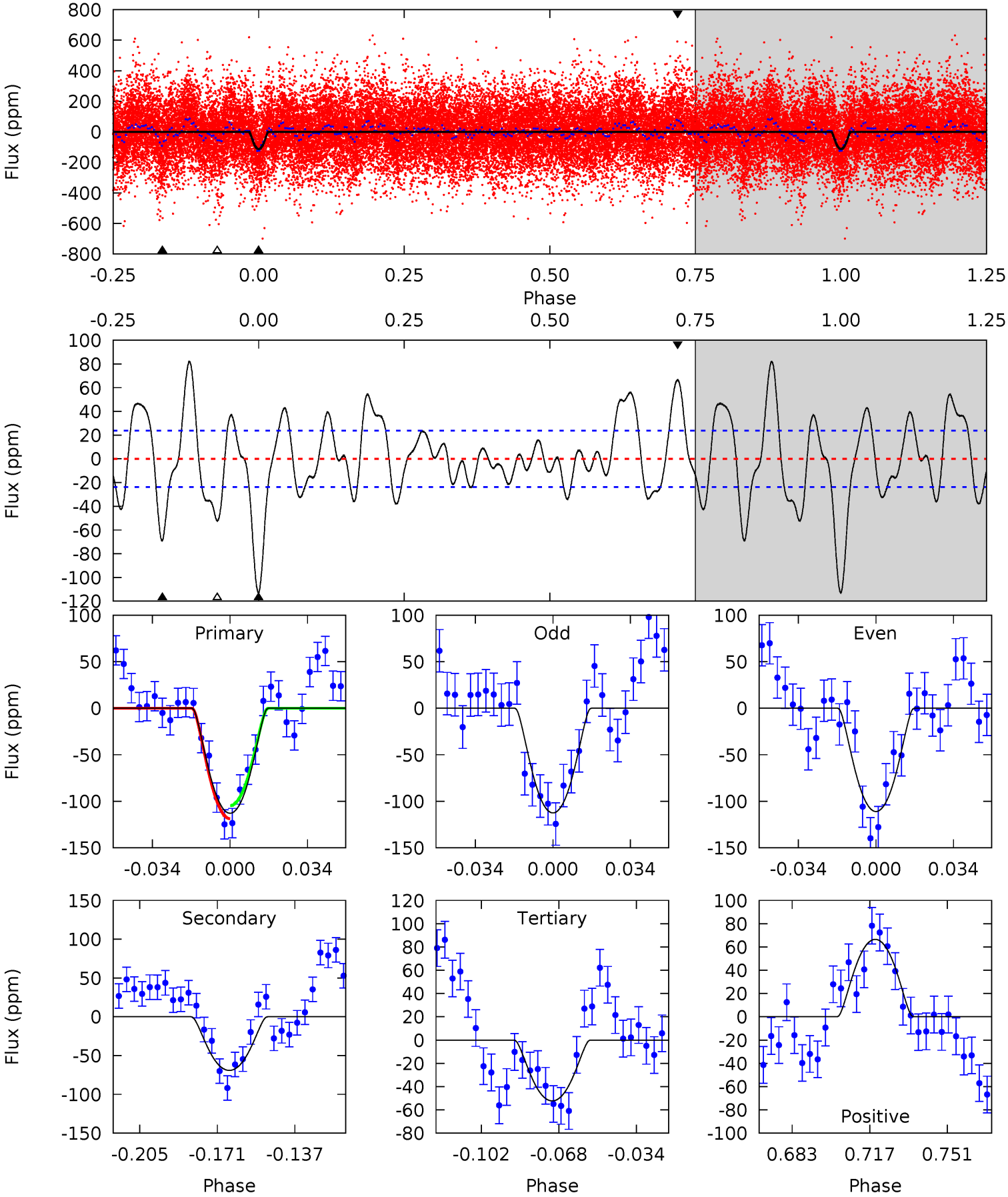
TCE 008938257-04 P= 12.386036 Days T_0=138.663107 (BKJD)



DV Model-Shift Uniqueness Test

008938257-04, P = 12.386381 Days, E = 126.275224 Days

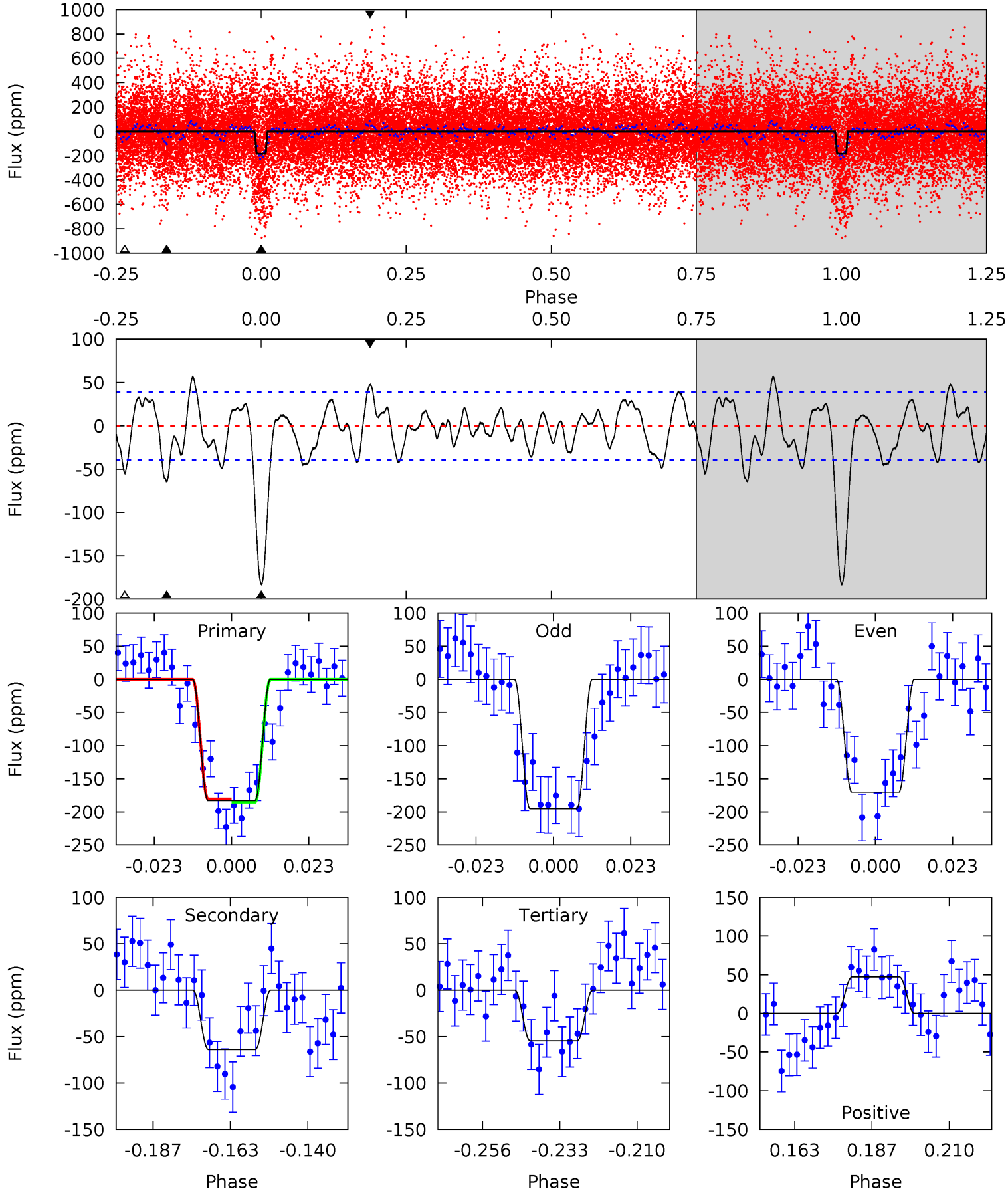
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	13.9	10.5	13.4	4.79	2.12	5.57	12.2	9.34	3.40	0.53	0.15	0.94	0.42	1.40



Alt Model-Shift Uniqueness Test

008938257-04, P = 12.386036 Days, E = 126.277071 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	7.96	6.81	5.88	4.86	2.27	2.75	15.9	16.8	1.14	2.07	1.52	0.69	0.24	0.29



Stellar Parameters For KIC 008938257

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6897^{+193}_{-303}	$4.248^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.482^{+0.511}_{-0.256}$	$1.417^{+0.213}_{-0.213}$	$0.613^{+0.298}_{-0.332}$
	+3%/-4%	+2%/-5%	+286%/-500%	+34%/-17%	+15%/-15%	+49%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008938257-04 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-69±5	$2.75^{+1.73}_{-1.55}$	1526^{+118}_{-95}	4916^{+2671}_{-798}	68^{+294}_{-41}
Alt.	-64±8	$2.72^{+1.76}_{-1.58}$	1534^{+120}_{-90}	4977^{+2617}_{-938}	69^{+313}_{-44}

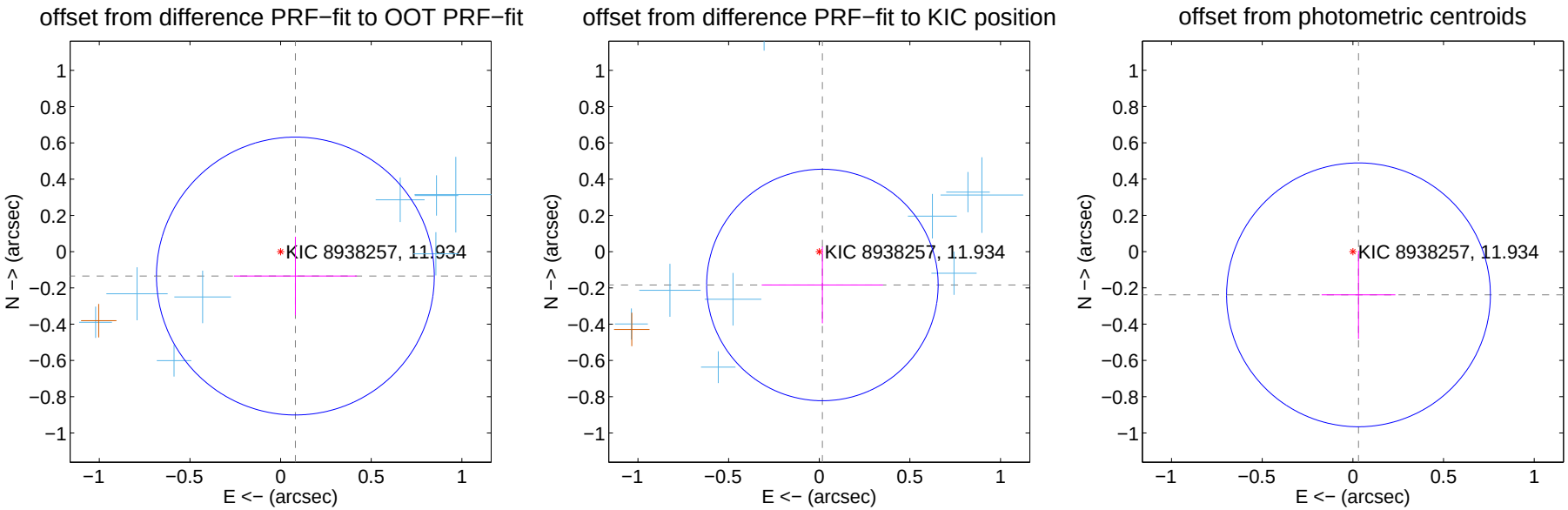
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

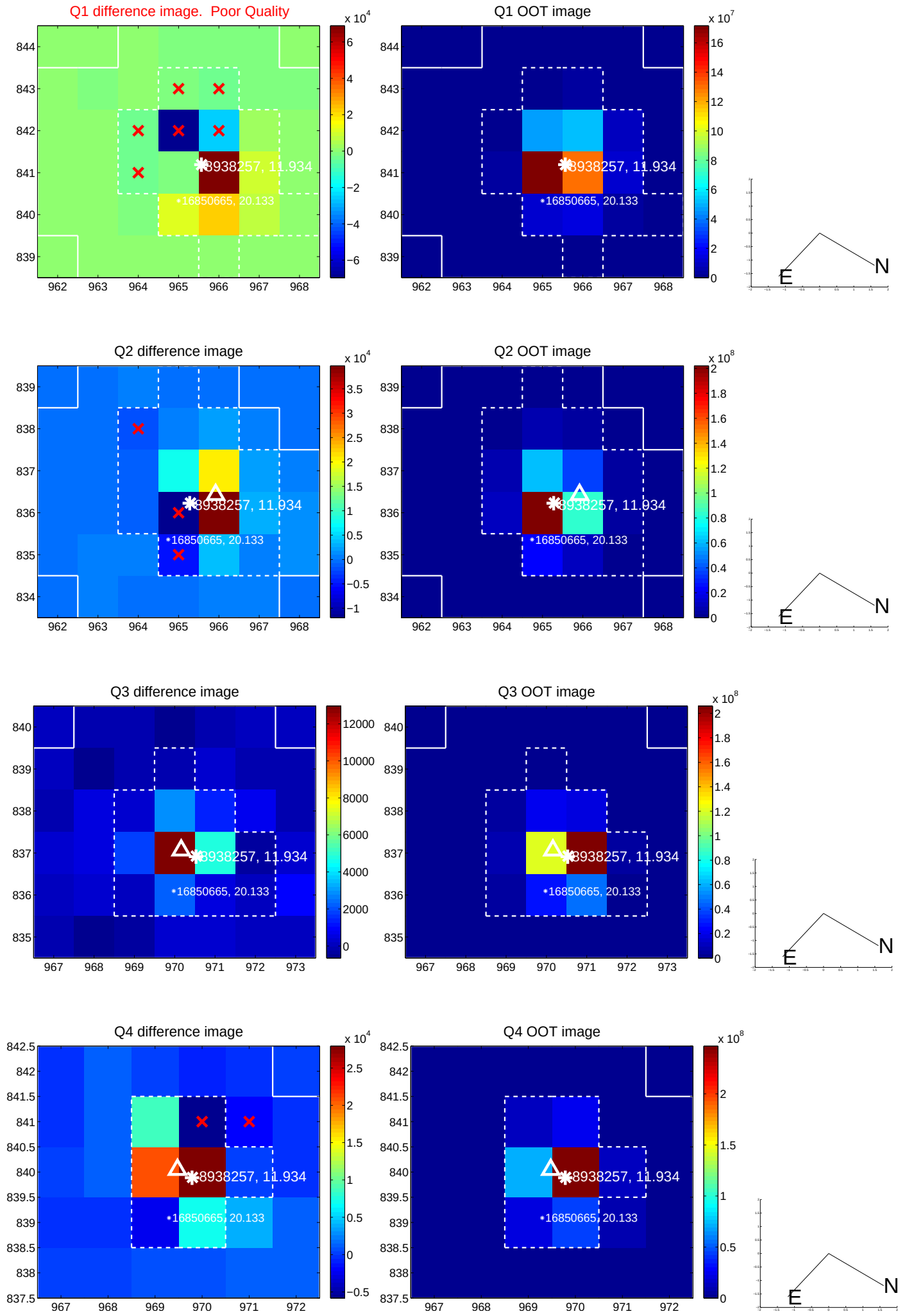
Supplemental centroid analysis for 008938257-04. Kepler magnitude: 11.93. Transit SNR 9.90
There are 12 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.157 ± 0.255	0.62	-0.082 ± 0.339	-0.134 ± 0.216
PRF-fit source offset from KIC position	0.184 ± 0.213	0.87	-0.017 ± 0.335	-0.184 ± 0.211
photometric centroid source offset	0.24 ± 0.24	0.99	-0.03 ± 0.20	-0.24 ± 0.24

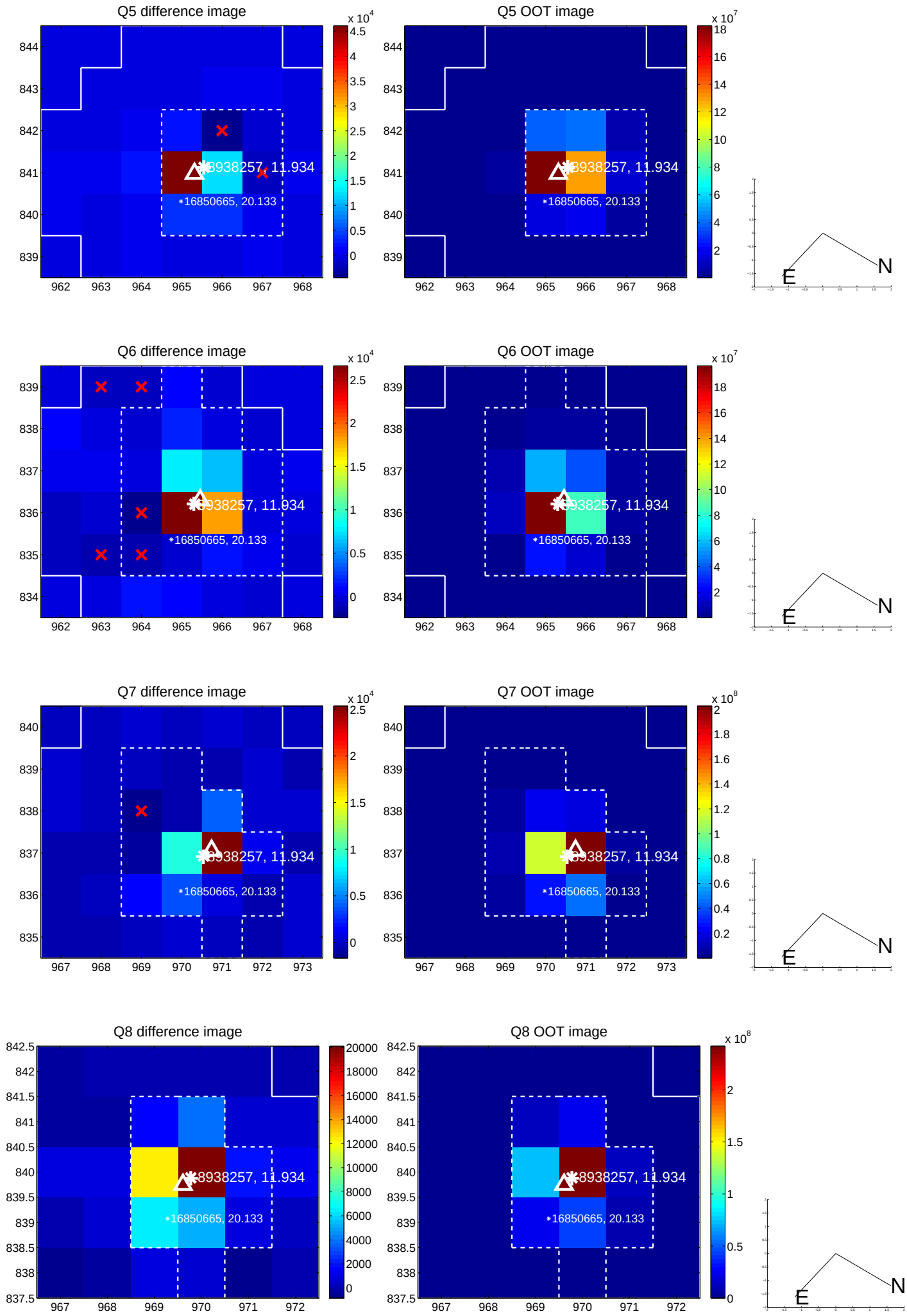


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

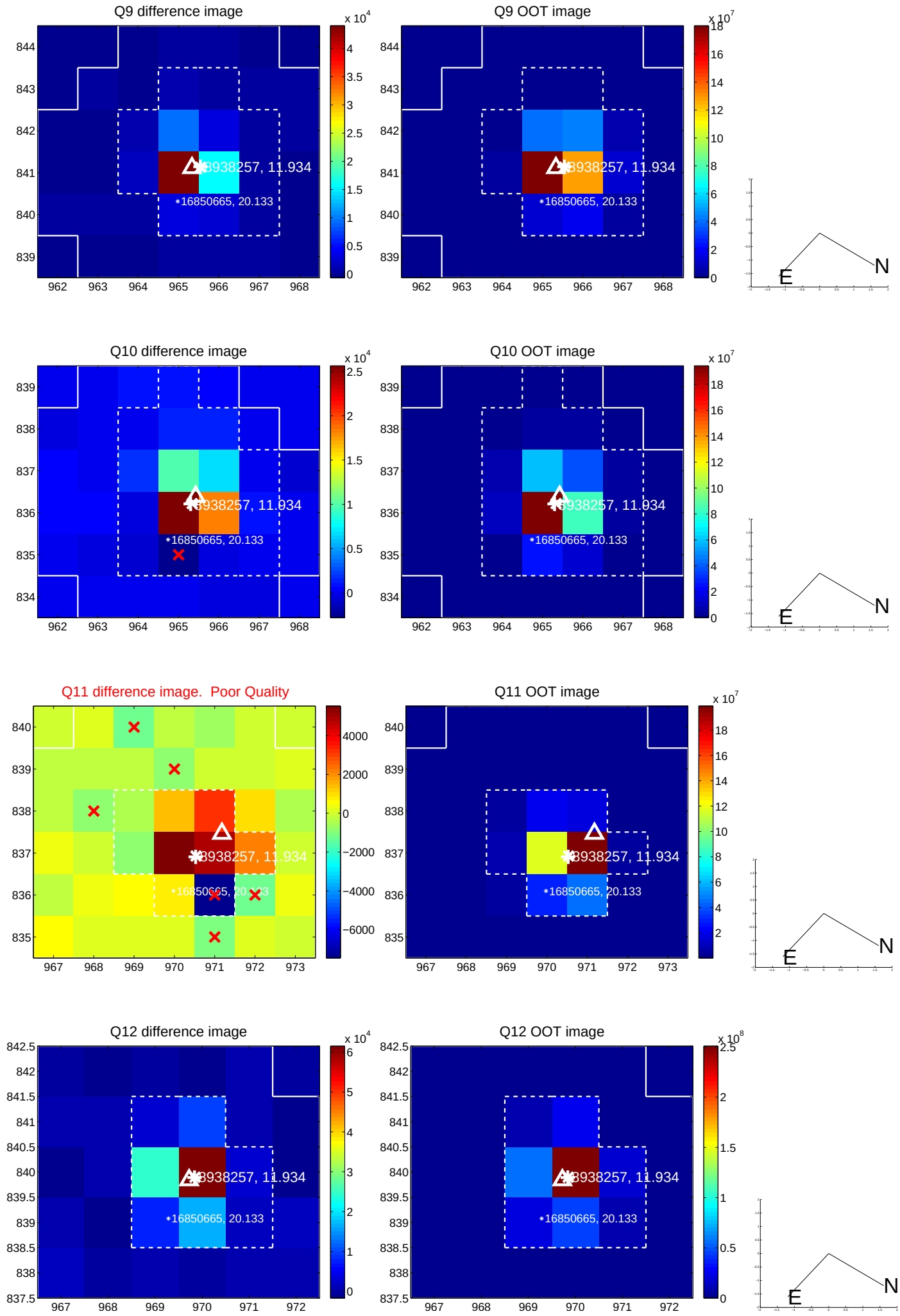
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



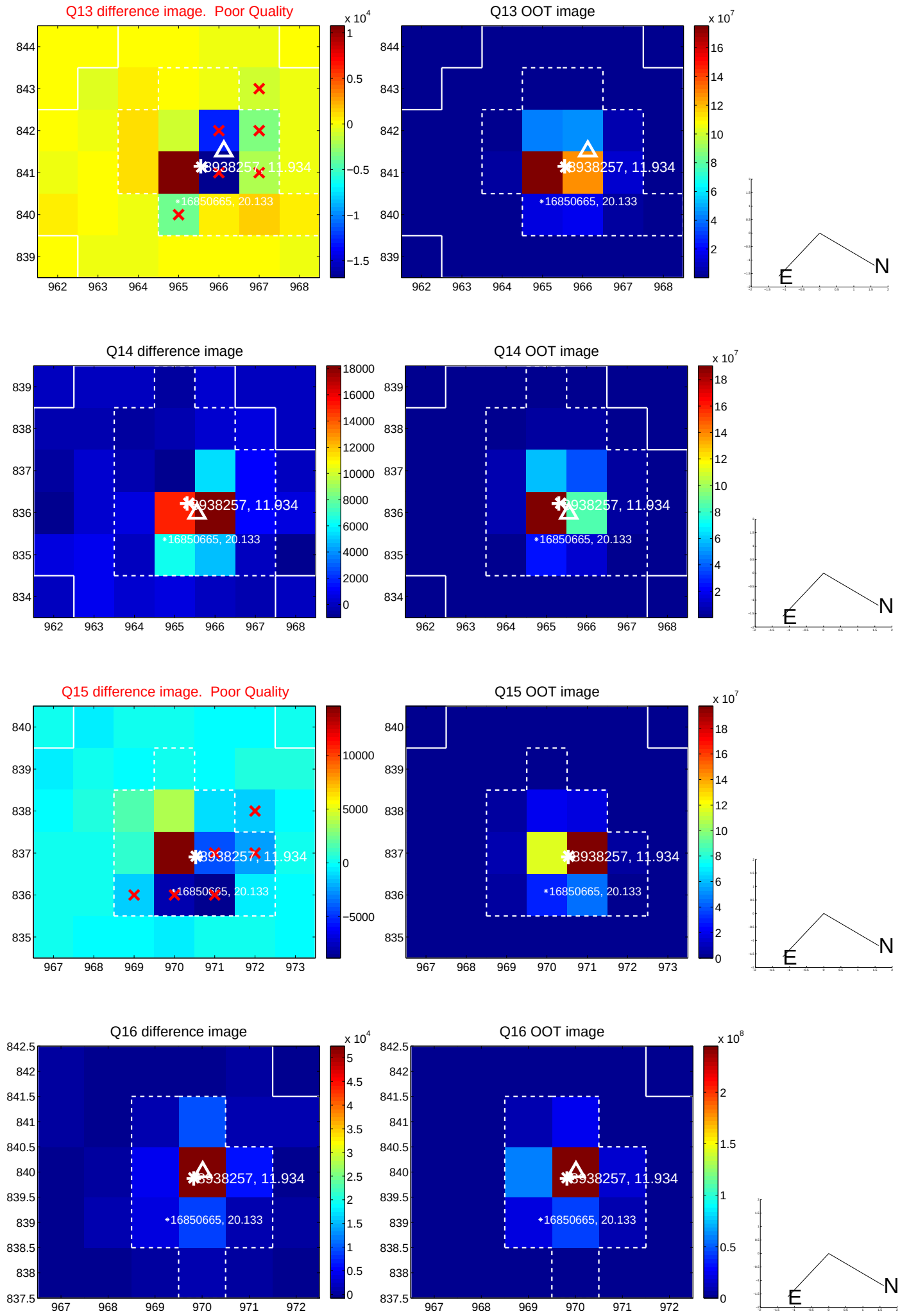
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



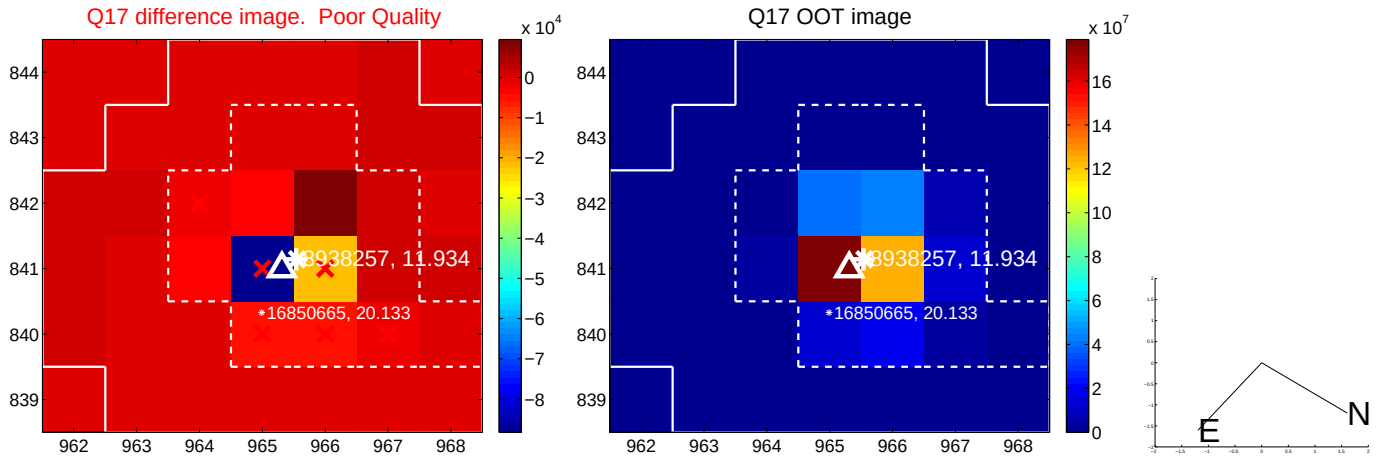
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

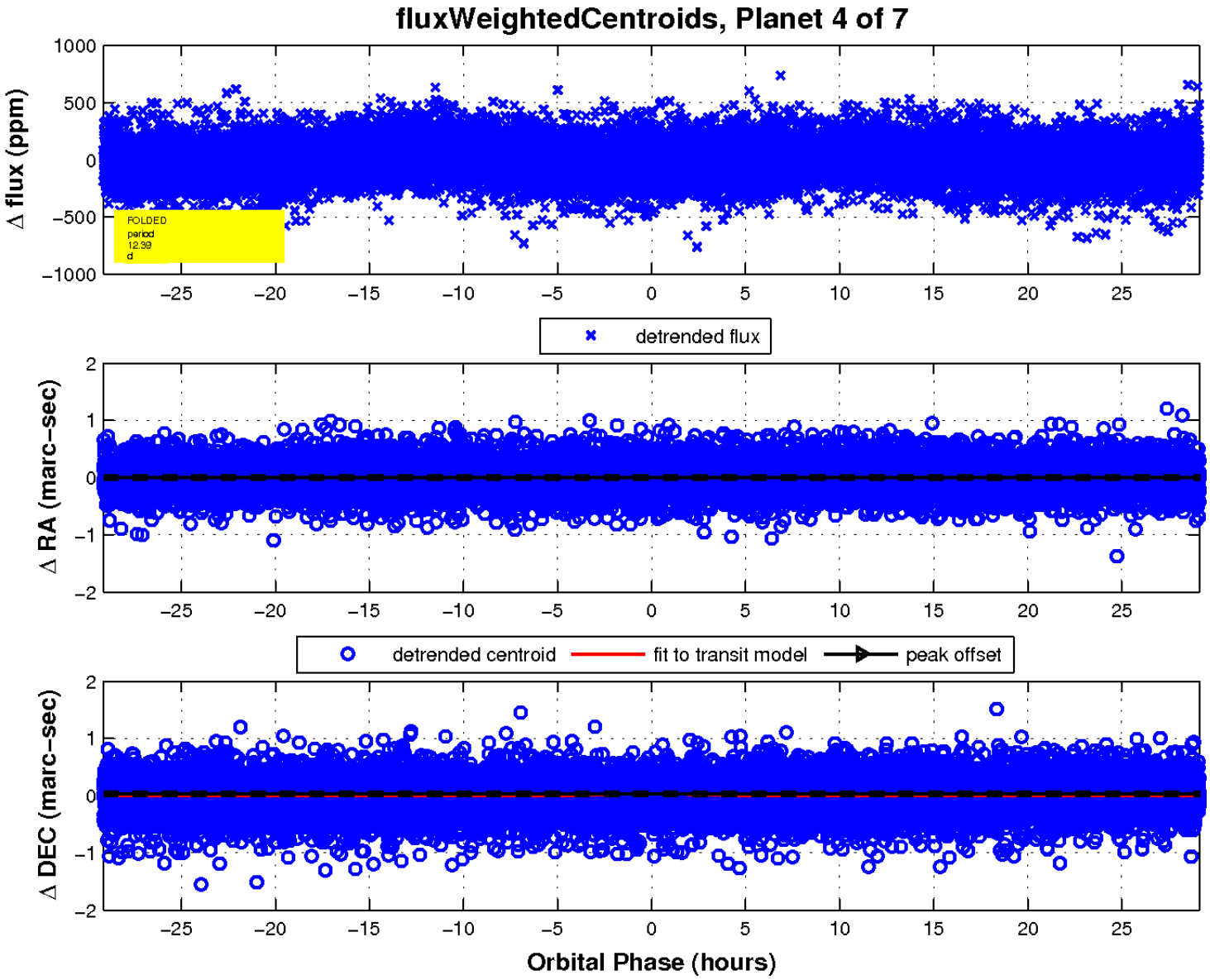


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

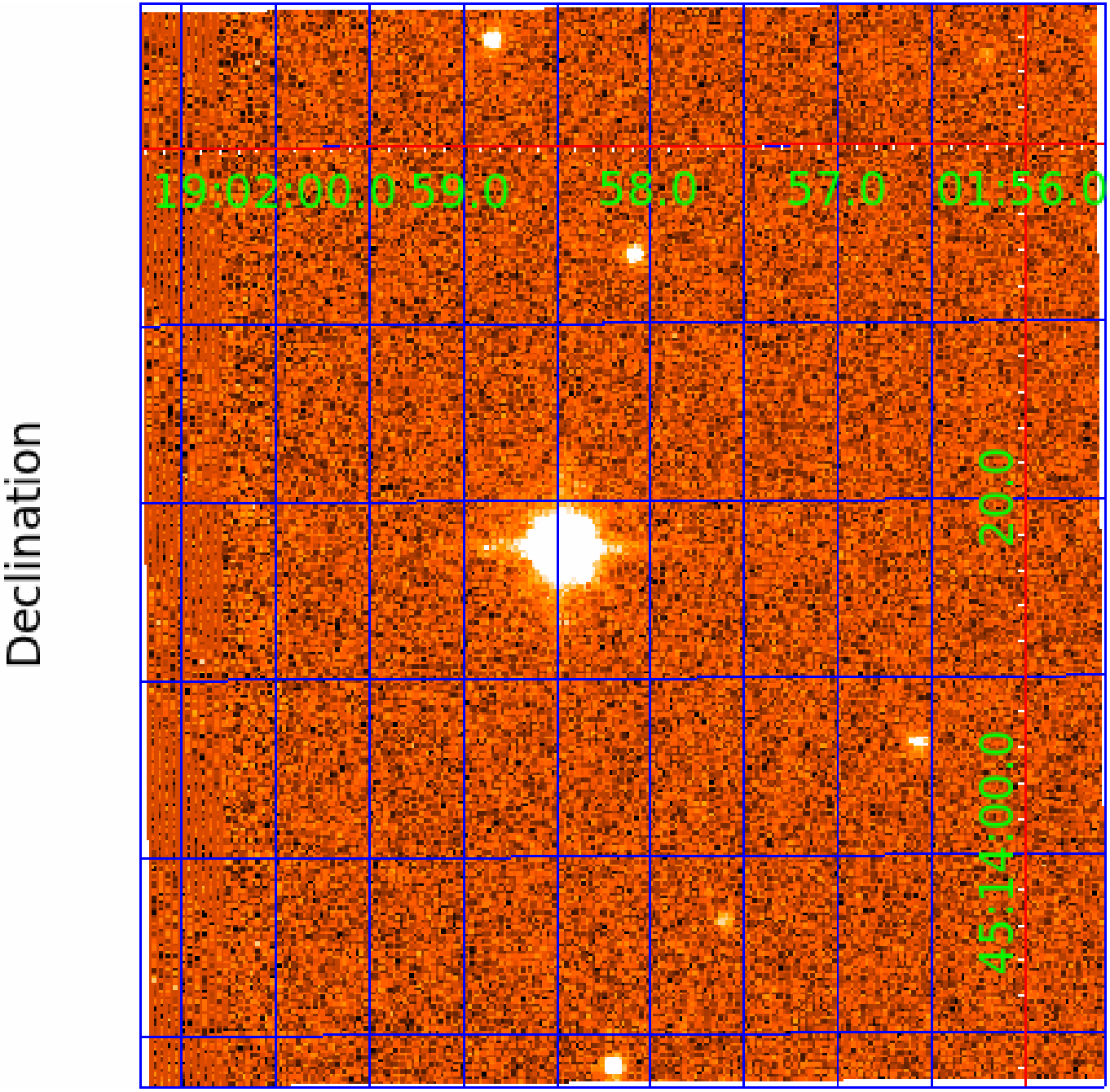


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image



KIC 008938257

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 ($S_\oplus$)
008938257-01	OBS	No	0.623791	131.719799	20.7	2.572	10.2	10.4	1.48	6897	0.79	17273.56
008938257-02	OBS	No	351.028991	172.028013	396.3	3.979	8.8	9.3	1.48	6897	3.60	3.72
008938257-04	OBS	No	12.386381	138.661605	125.2	9.717	8.6	9.9	1.48	6897	2.60	321.25
008938257-05	OBS	No	53.693787	146.914391	213.5	6.930	7.9	8.7	1.48	6897	2.53	45.45
008938257-06	OBS	No	129.070176	241.726224	347.3	4.065	7.7	7.8	1.48	6897	3.55	14.12
008938257-07	OBS	No	238.294933	261.711404	260.5	4.309	8.0	7.1	1.48	6897	3.07	6.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008938257-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008938257-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

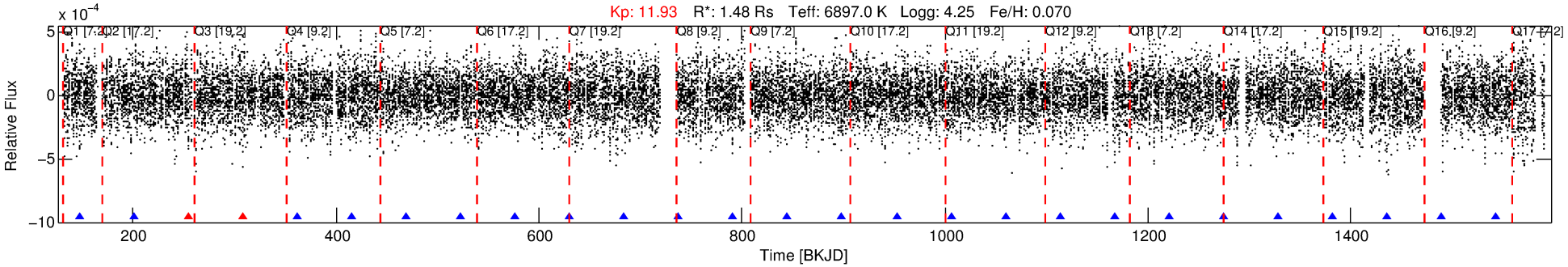
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

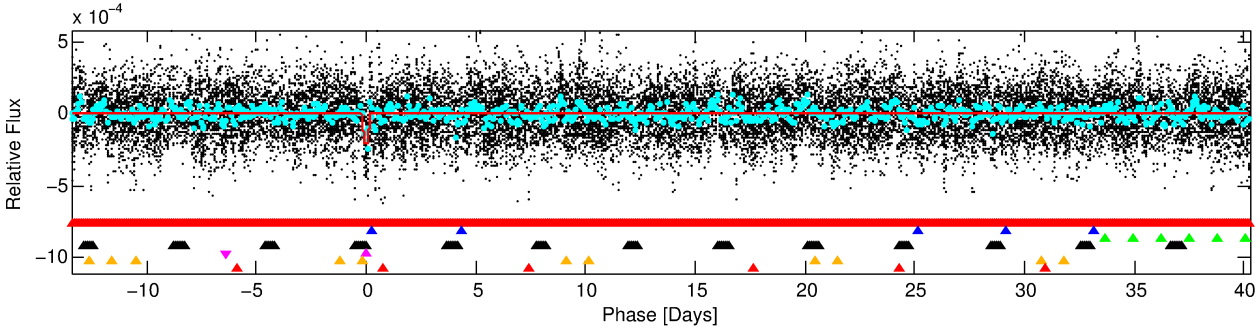
Ephemeris Match Information For 008938257-05

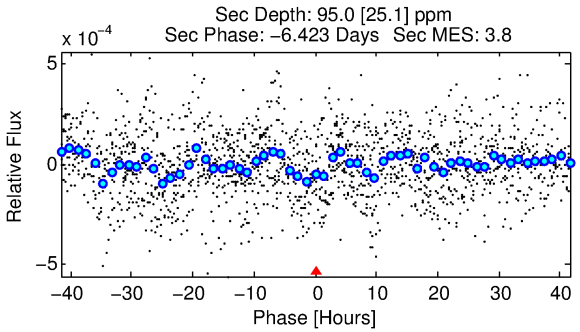
No Significant Match Found

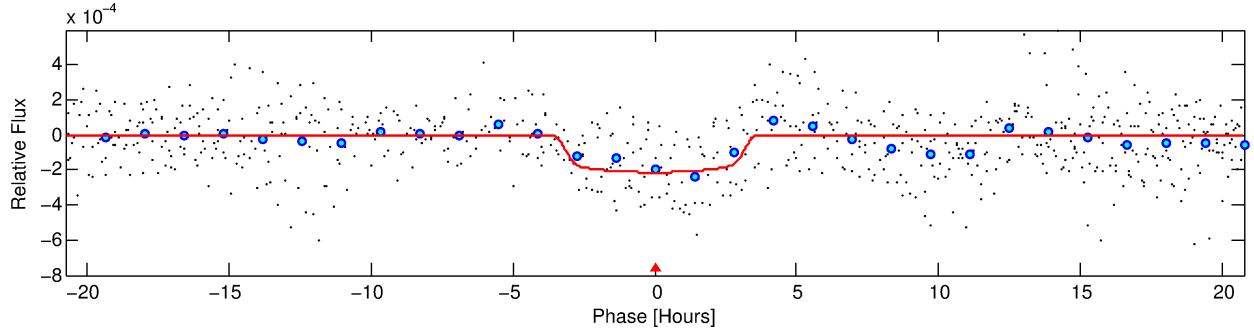
DV One-Page Summary

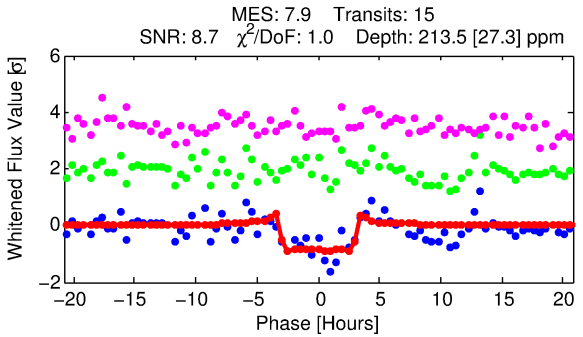
KIC: 8938257 Candidate: 5 of 7 Period: 53.694 d

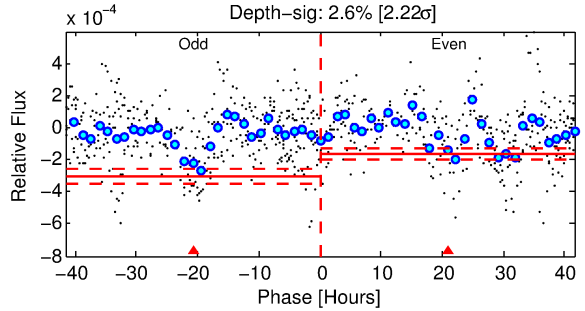


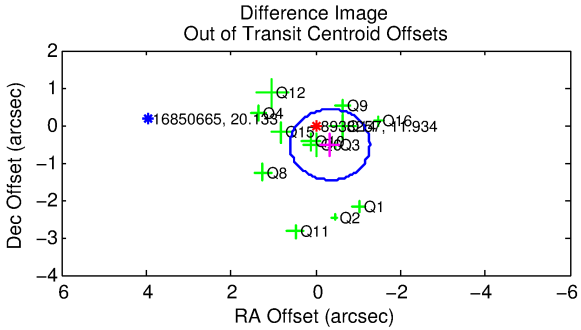












DV Fit Results:

Period = 53.69379 [0.00060] d
Epoch = 146.9144 [0.0090] BKJD
Rp/R* = 0.0156 [0.0019]
a/R* = 27.44 [15.42]
b = 0.90 [0.11]

Seff = 45.45 [19.69]
Teq = 662 [72] K
Rp = 2.53 [0.92] Re
a = 0.3130 [0.0879] AU

Ag = 801.91 [427.75] [1.87σ]
Teffp = 5447 [542] K [8.75σ]

DV Diagnostic Results:

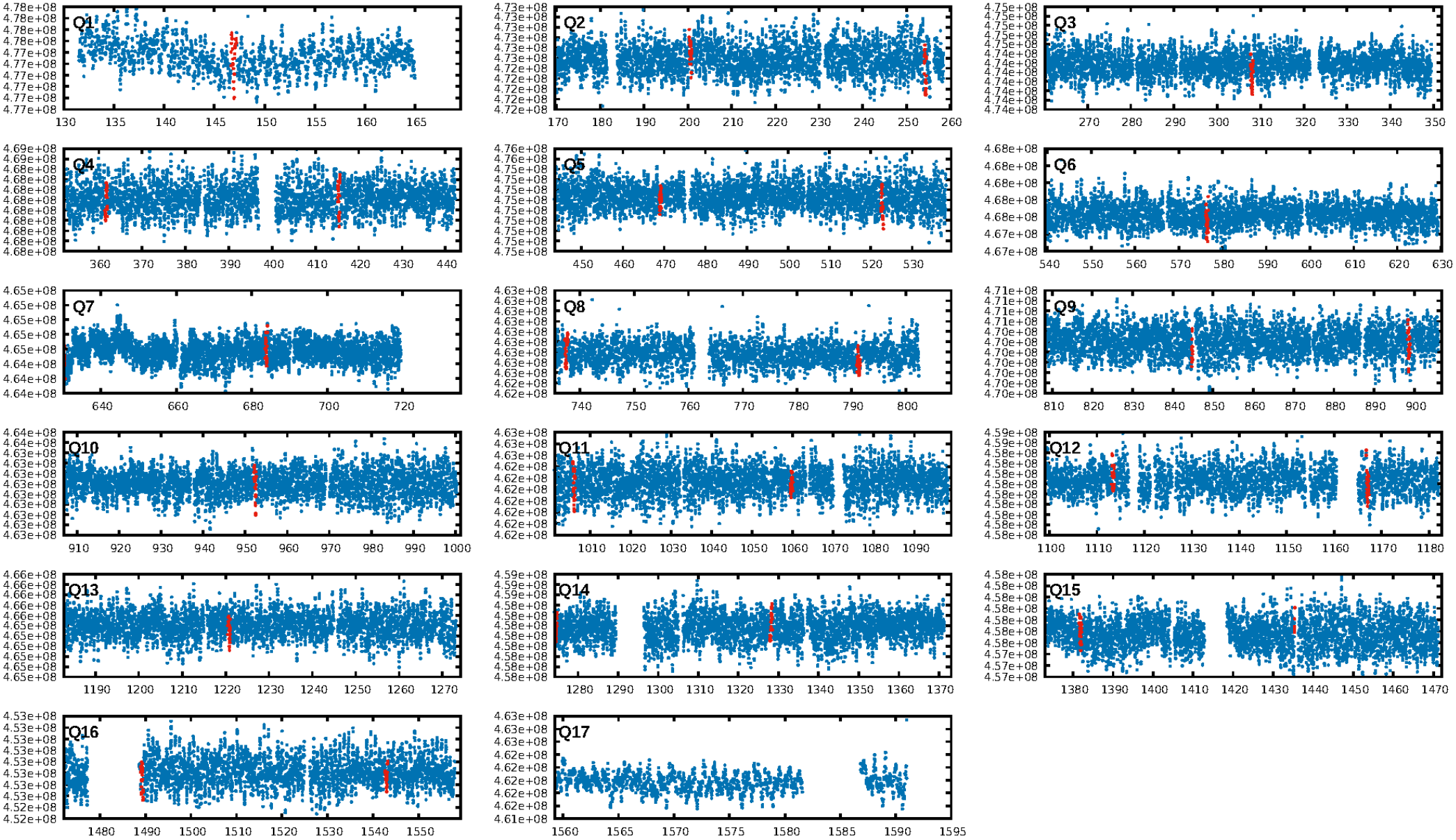
ShortPeriod−sig: 100.0% [83.07σ]
LongPeriod−sig: 100.0% [225.17σ]
ModelChiSquare2−sig: 5.0%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 2.16e−10
RollingBand−fgt: 0.86 [12/14]
GhostDiagnostic−chr: 0.6781

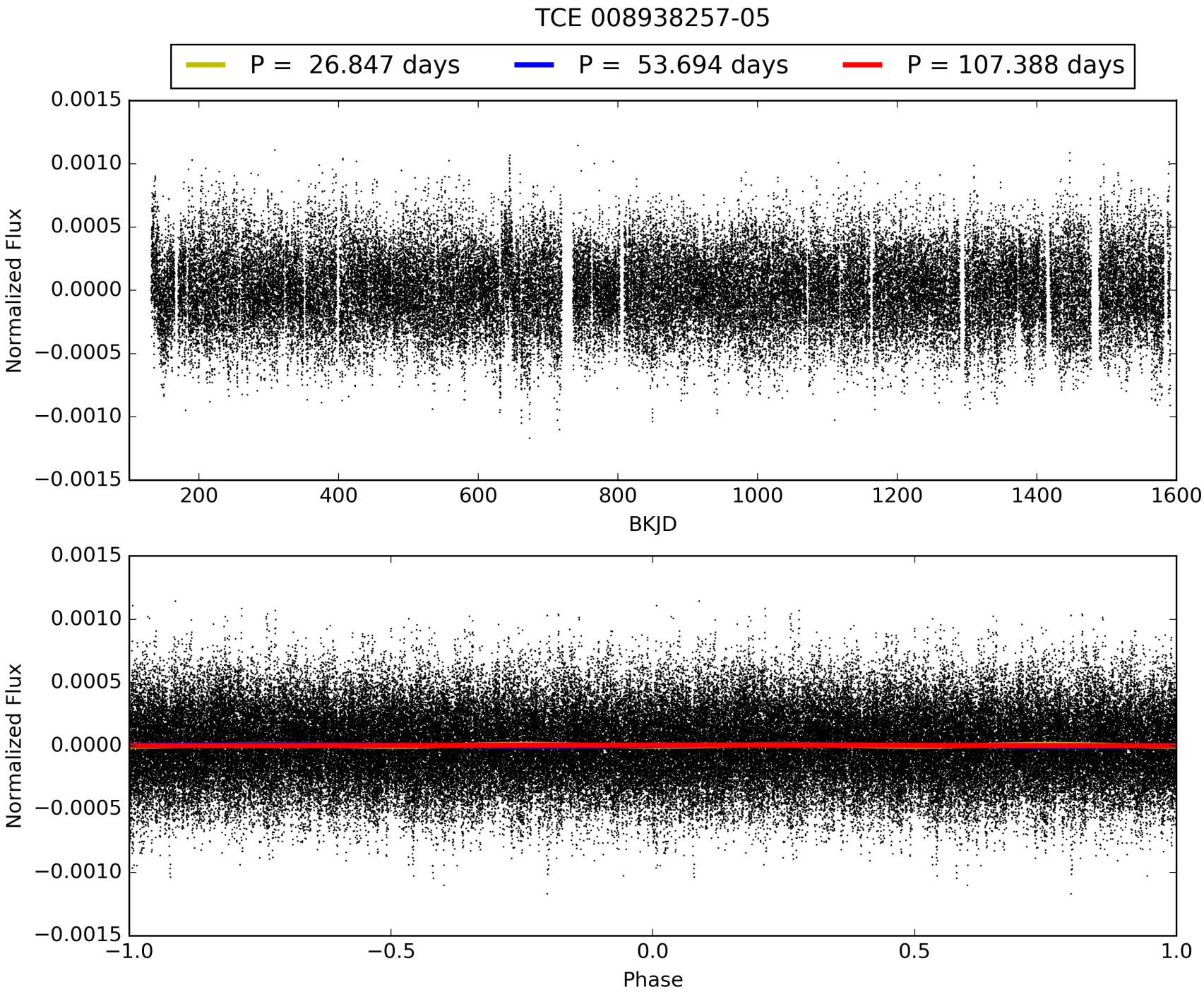
Centroid−sig: 15.1%
Centroid−so: 0.308 arcsec [1.38σ]
OotOffset−rm: 0.617 arcsec [1.96σ]
KicOffset−rm: 0.596 arcsec [1.96σ]
OotOffset−st: 4/3/4/2 [13]
KicOffset−st: 4/3/4/2 [13]
DiffImageQuality−fgm: 0.77 [10/13]
DiffImageOverlap−fno: 0.00 [0/15]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 06:17:28 Z

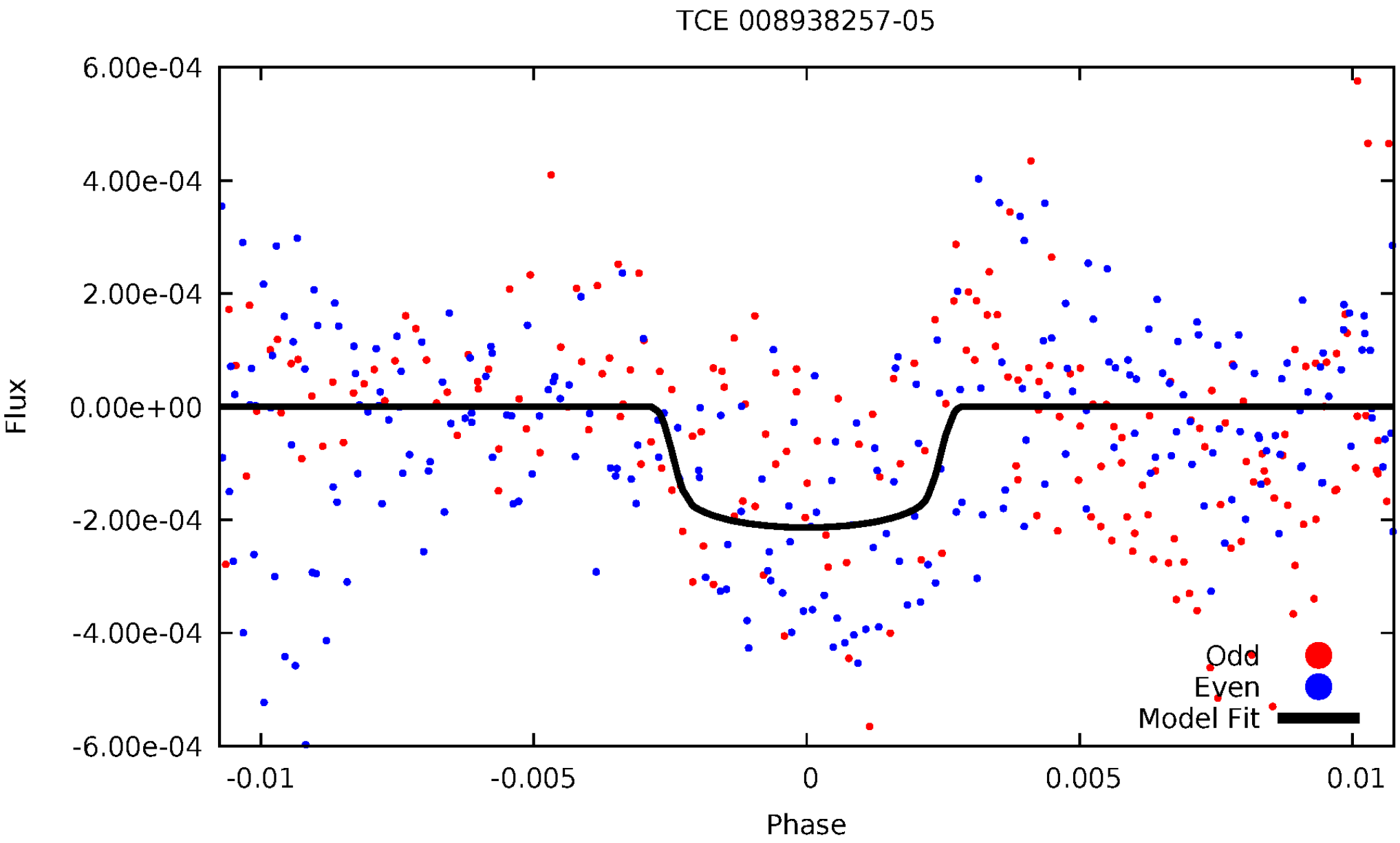
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008938257-05, PDC Light Curves

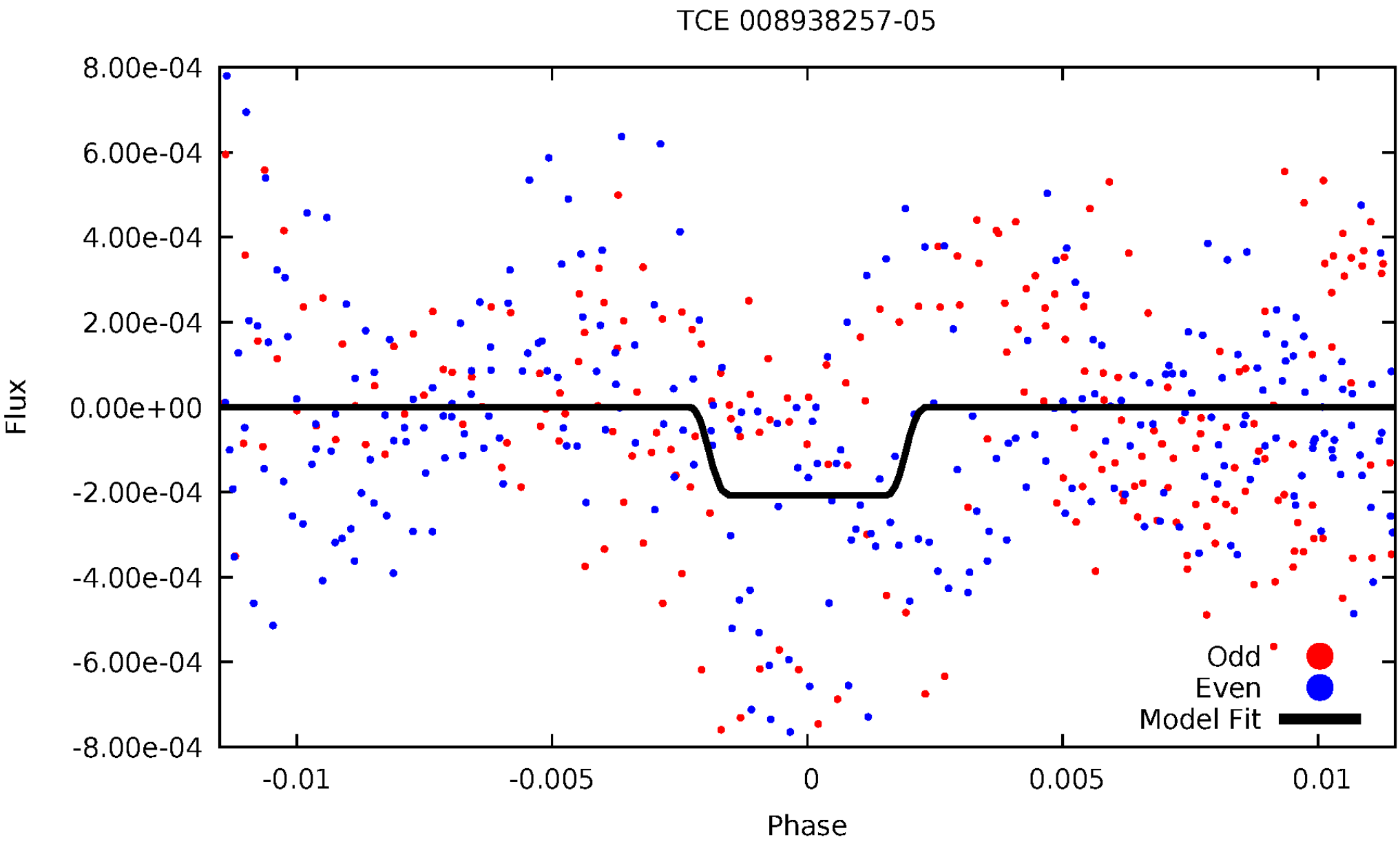



TCE 008938257-05
P = 26.847 days
P = 53.694 days
P = 107.388 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

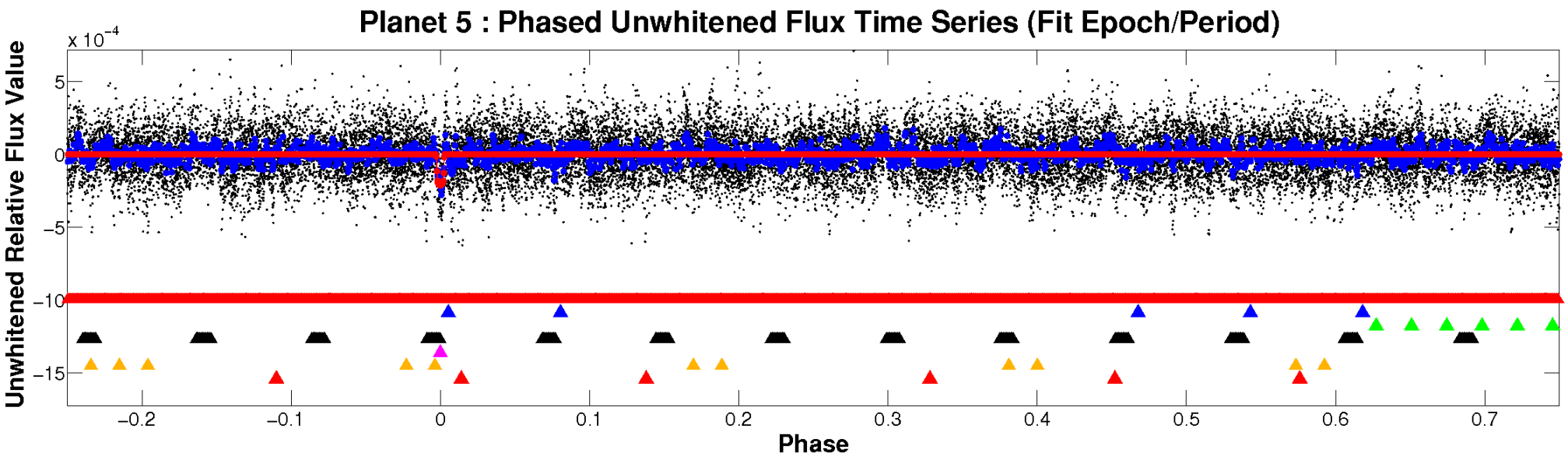
DV Odd/Even

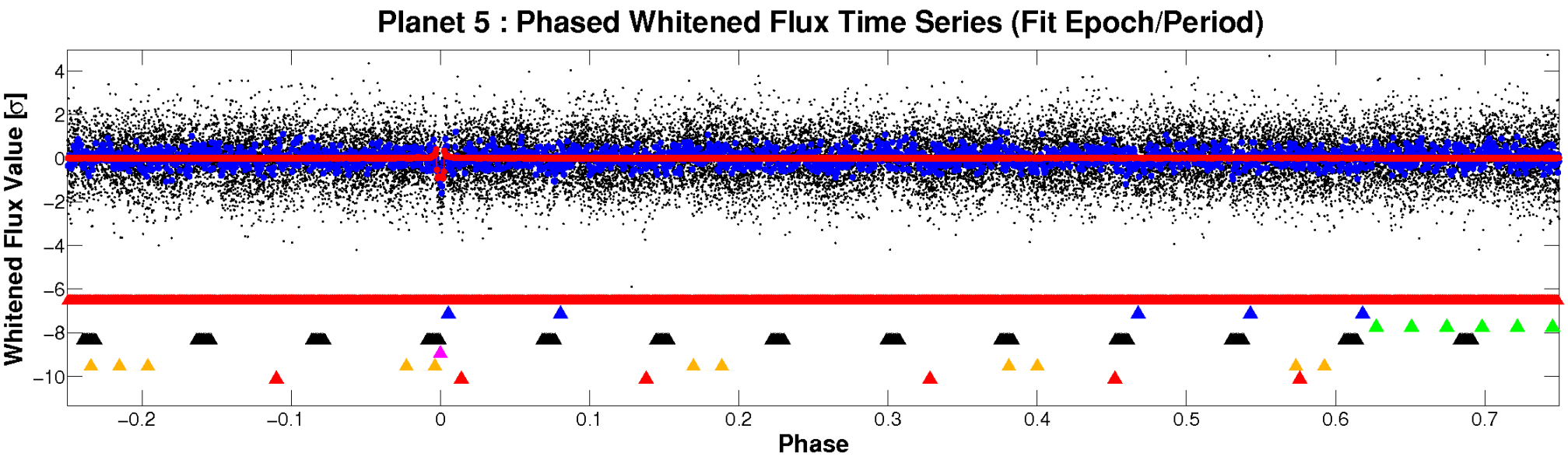

TCE 008938257-05
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.01
-0.005
0
0.005
0.01
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008938257-05
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
Flux
-0.01
-0.005
0
0.005
0.01
Phase
Odd
Even
Model Fit

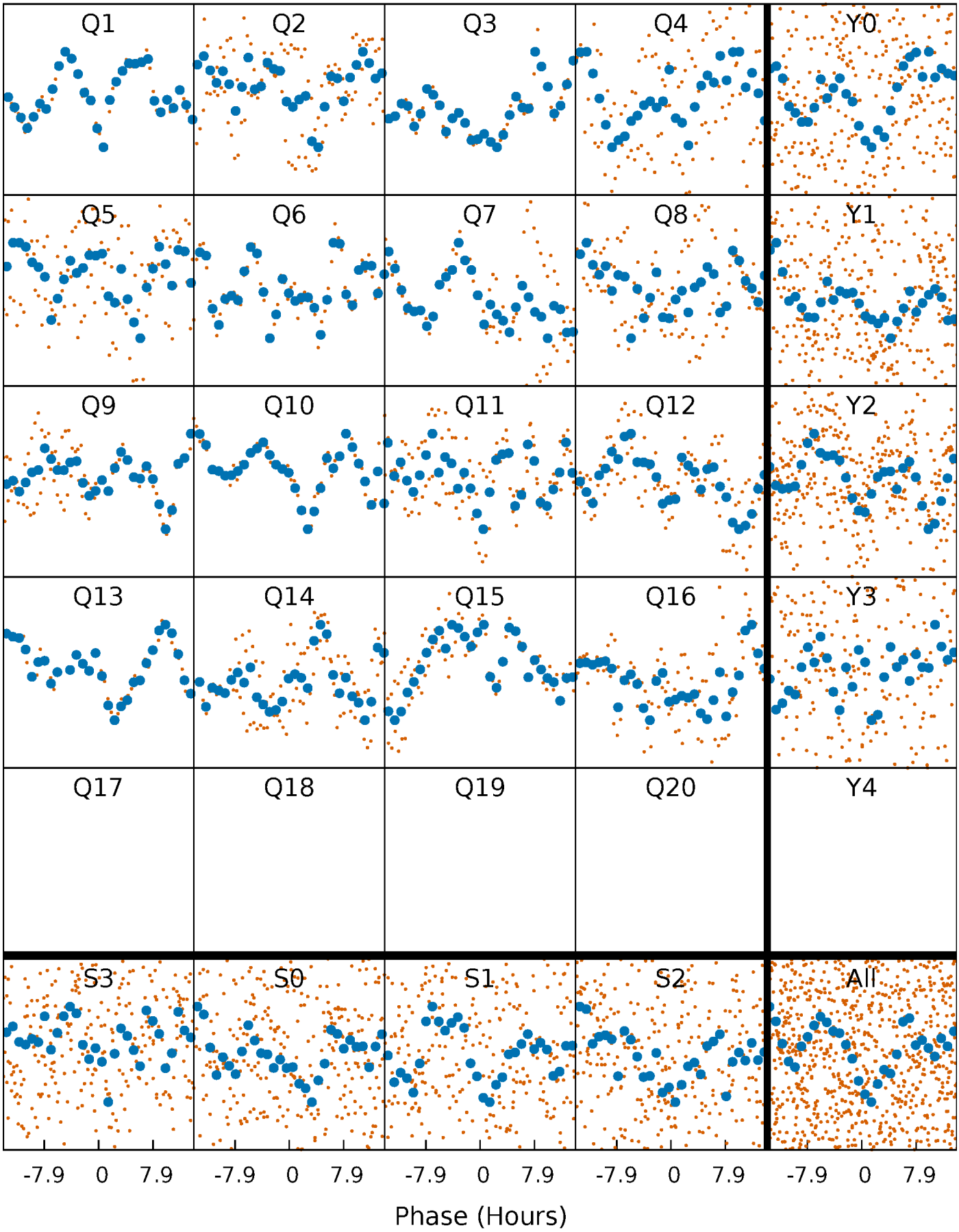
Non-Whitened Vs. Whitened Light Curve





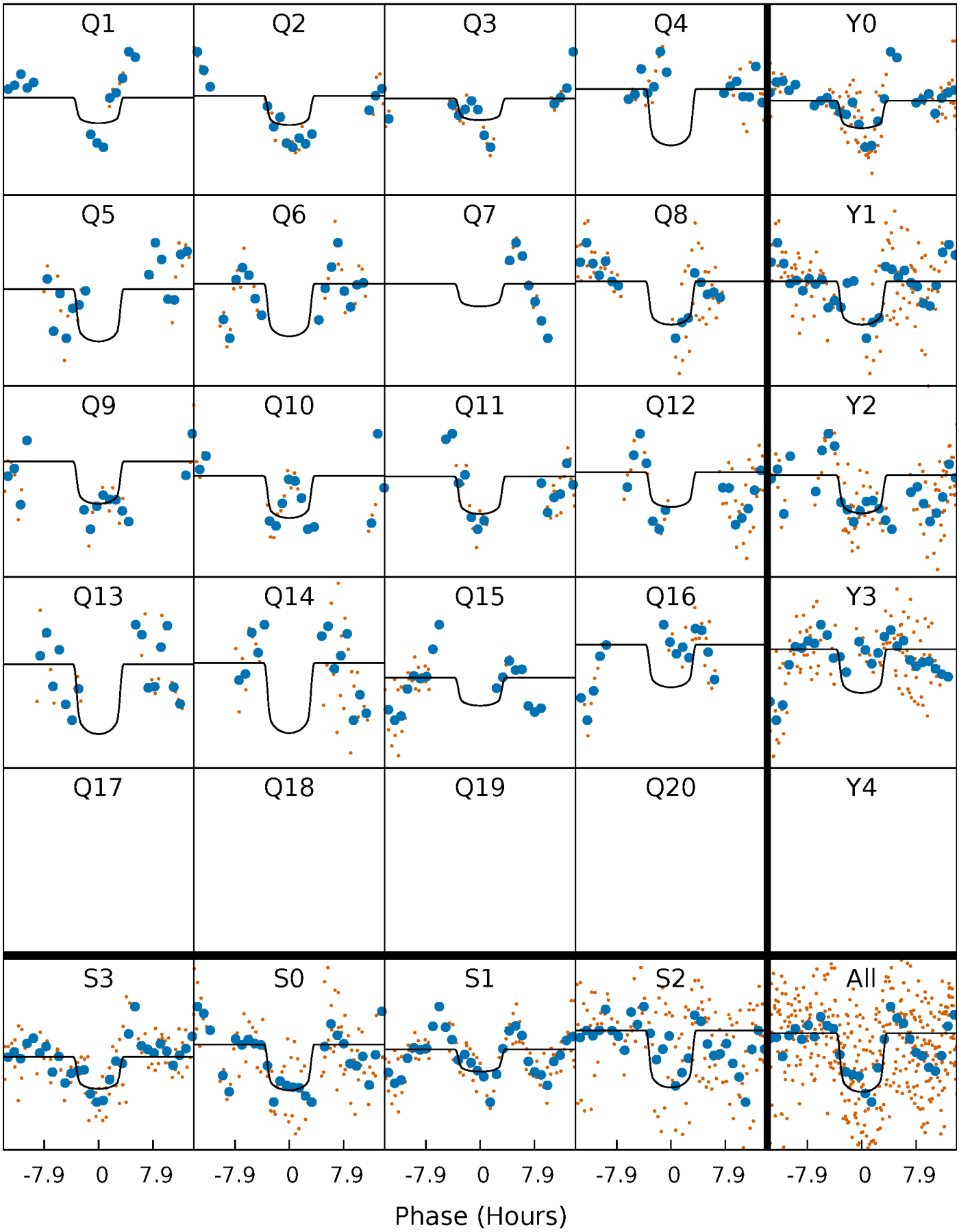
PDC Quarter-Phased Transit Curves

TCE 008938257-05 P= 53.693787 Days T_0=146.914391 (BKJD)



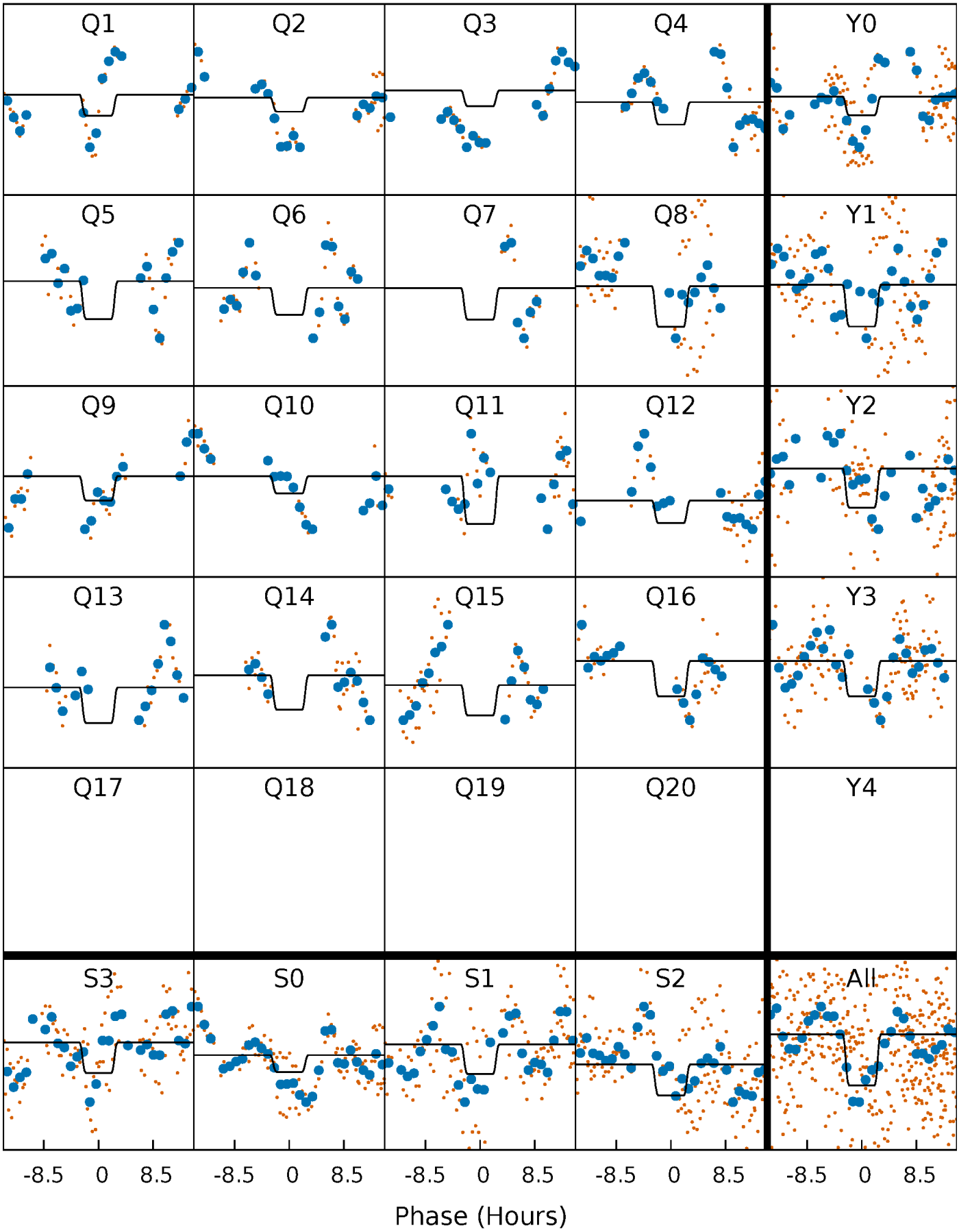
DV Quarter-Phased Transit Curves

TCE 008938257-05 P= 53.693787 Days T_0=146.914391 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

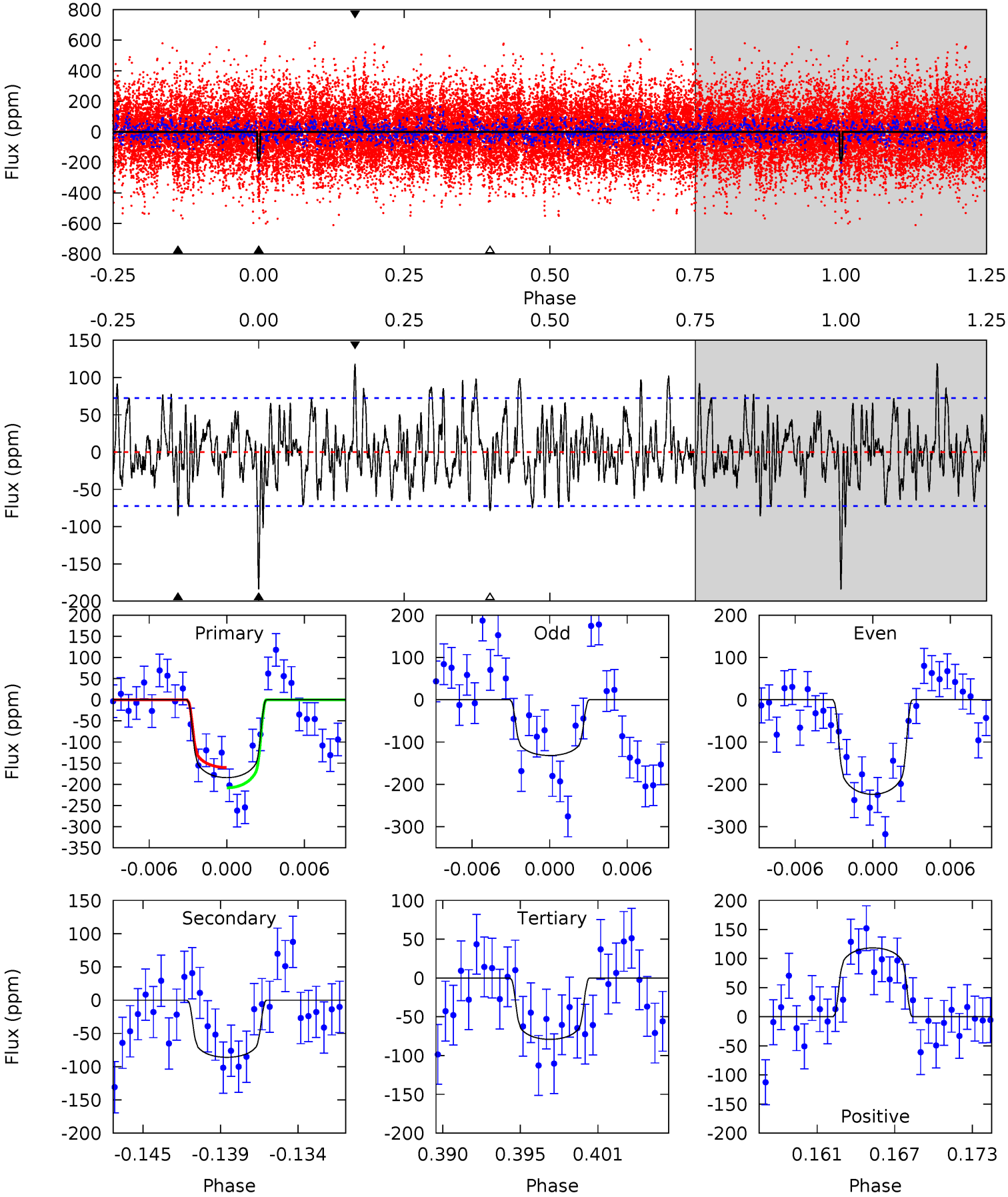
TCE 008938257-05 P= 53.688635 Days T_0=146.980464 (BKJD)



DV Model-Shift Uniqueness Test

008938257-05, P = 53.693787 Days, E = 93.220604 Days

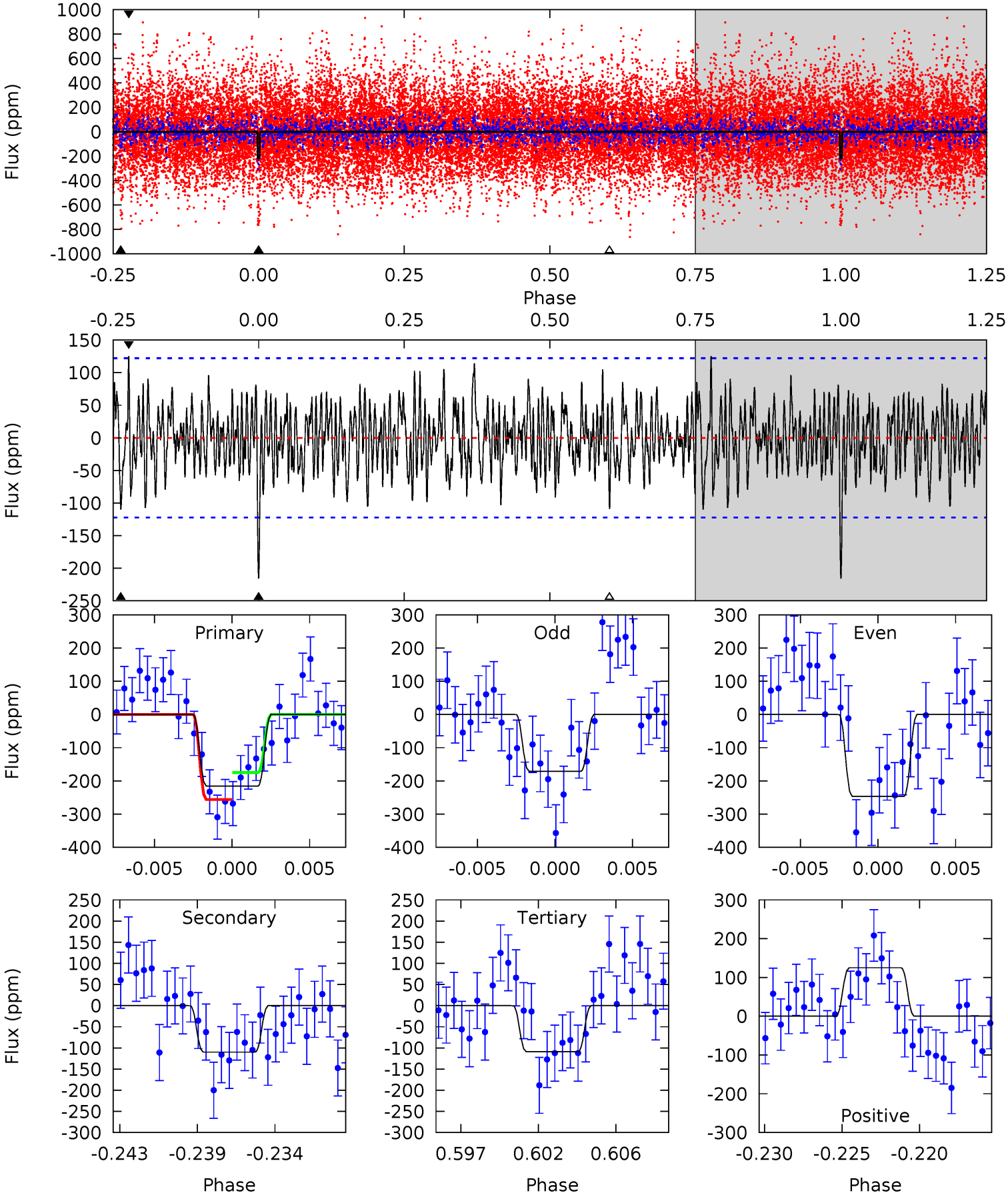
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	6.10	5.61	8.39	5.14	2.77	2.43	7.45	4.66	0.48	-2.30	3.24	0.85	0.39	1.70



Alt Model-Shift Uniqueness Test

008938257-05, P = 53.688635 Days, E = 93.291829 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.13	4.65	4.61	5.29	5.17	2.83	1.71	4.52	3.84	0.04	-0.64	1.58	1.63	0.37	1.72



Stellar Parameters For KIC 008938257

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6897^{+193}_{-303}	$4.248^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.482^{+0.511}_{-0.256}$	$1.417^{+0.213}_{-0.213}$	$0.613^{+0.298}_{-0.332}$
	+3%/-4%	+2%/-5%	+286%/-500%	+34%/-17%	+15%/-15%	+49%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008938257-05 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-86±14	$2.63^{+0.52}_{-0.45}$	938^{+72}_{-60}	5281^{+439}_{-356}	654^{+322}_{-214}
Alt.	-110±24	$2.40^{+0.54}_{-0.40}$	939^{+79}_{-56}	5838^{+549}_{-508}	1000^{+482}_{-368}

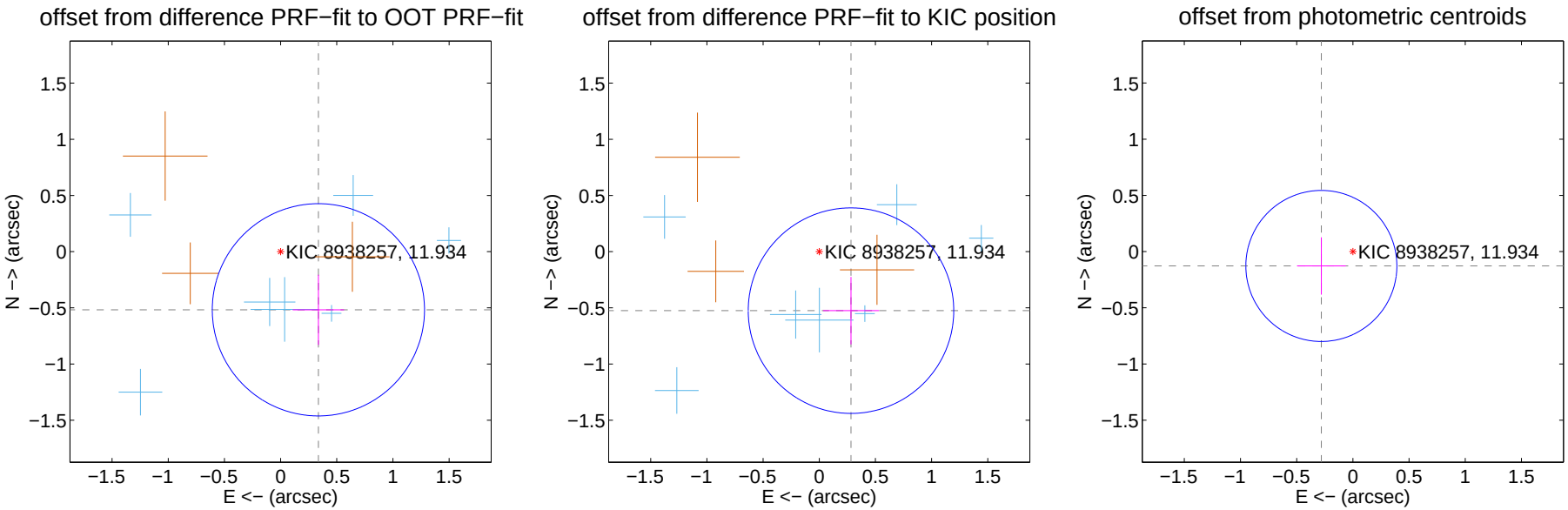
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

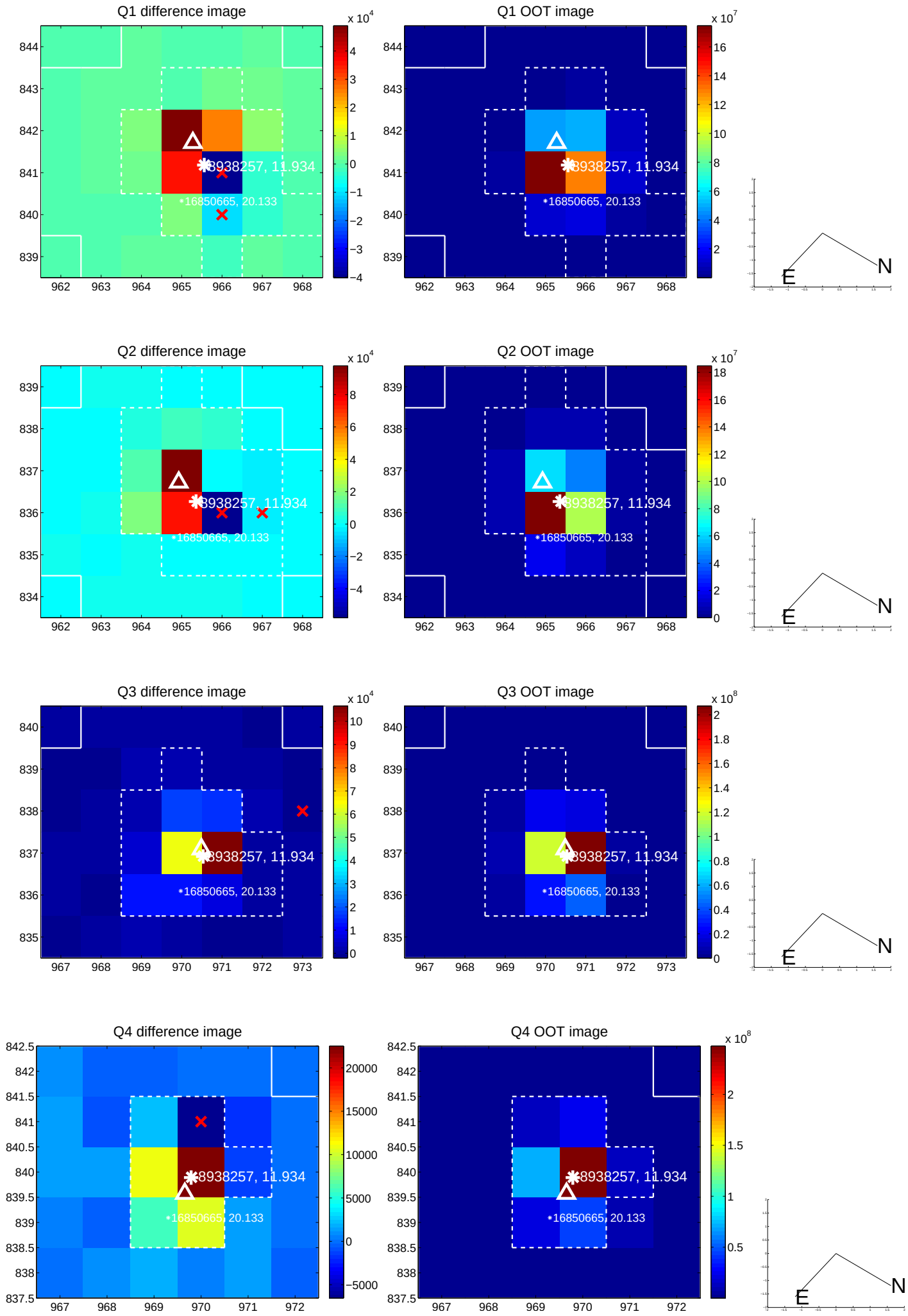
Supplemental centroid analysis for 008938257-05. Kepler magnitude: 11.93. Transit SNR 8.67
There are 10 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.617 ± 0.315	1.96	-0.336 ± 0.229	-0.517 ± 0.312
PRF-fit source offset from KIC position	0.596 ± 0.305	1.96	-0.283 ± 0.249	-0.525 ± 0.300
photometric centroid source offset	0.31 ± 0.22	1.38	0.28 ± 0.22	-0.13 ± 0.26

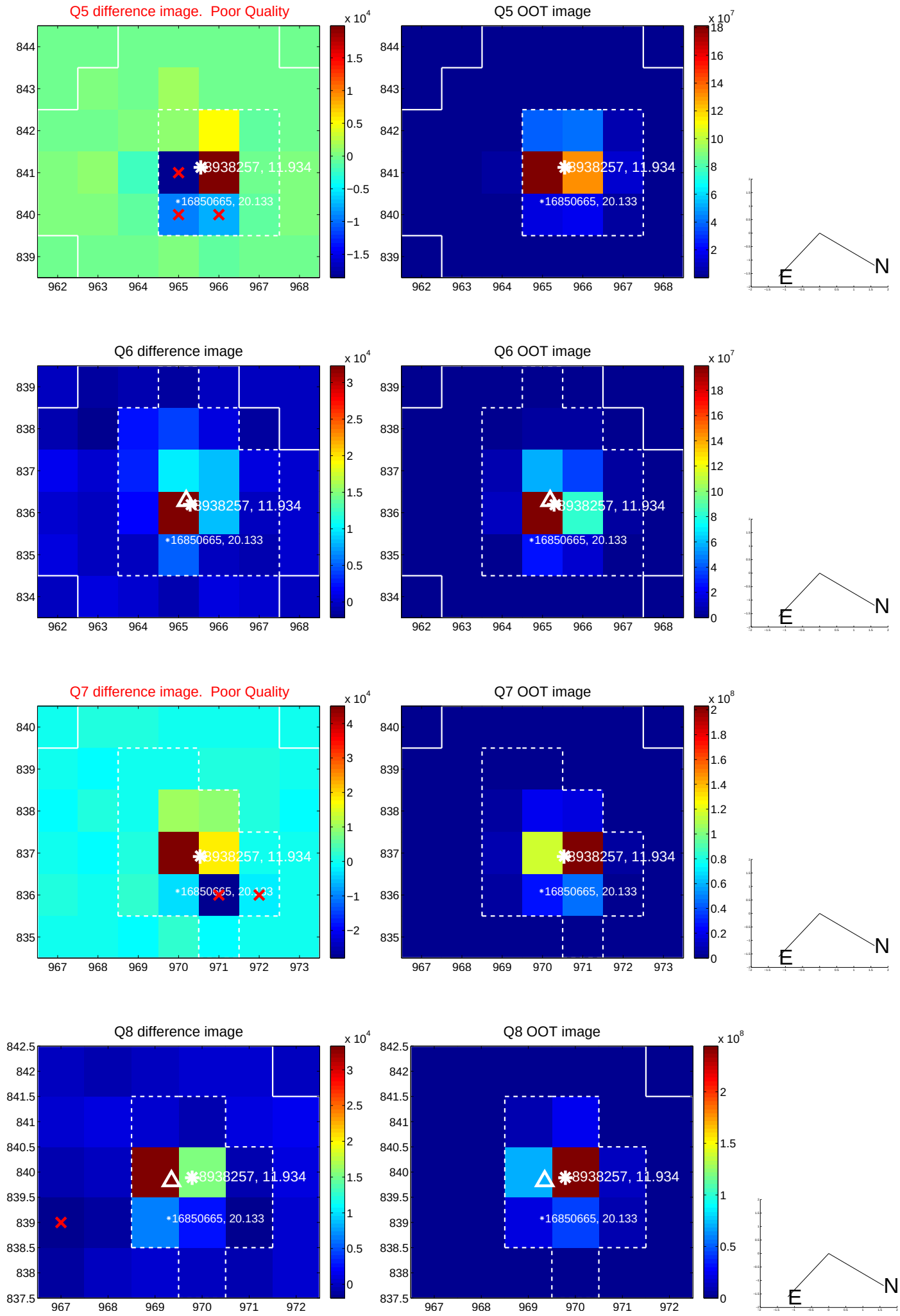


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

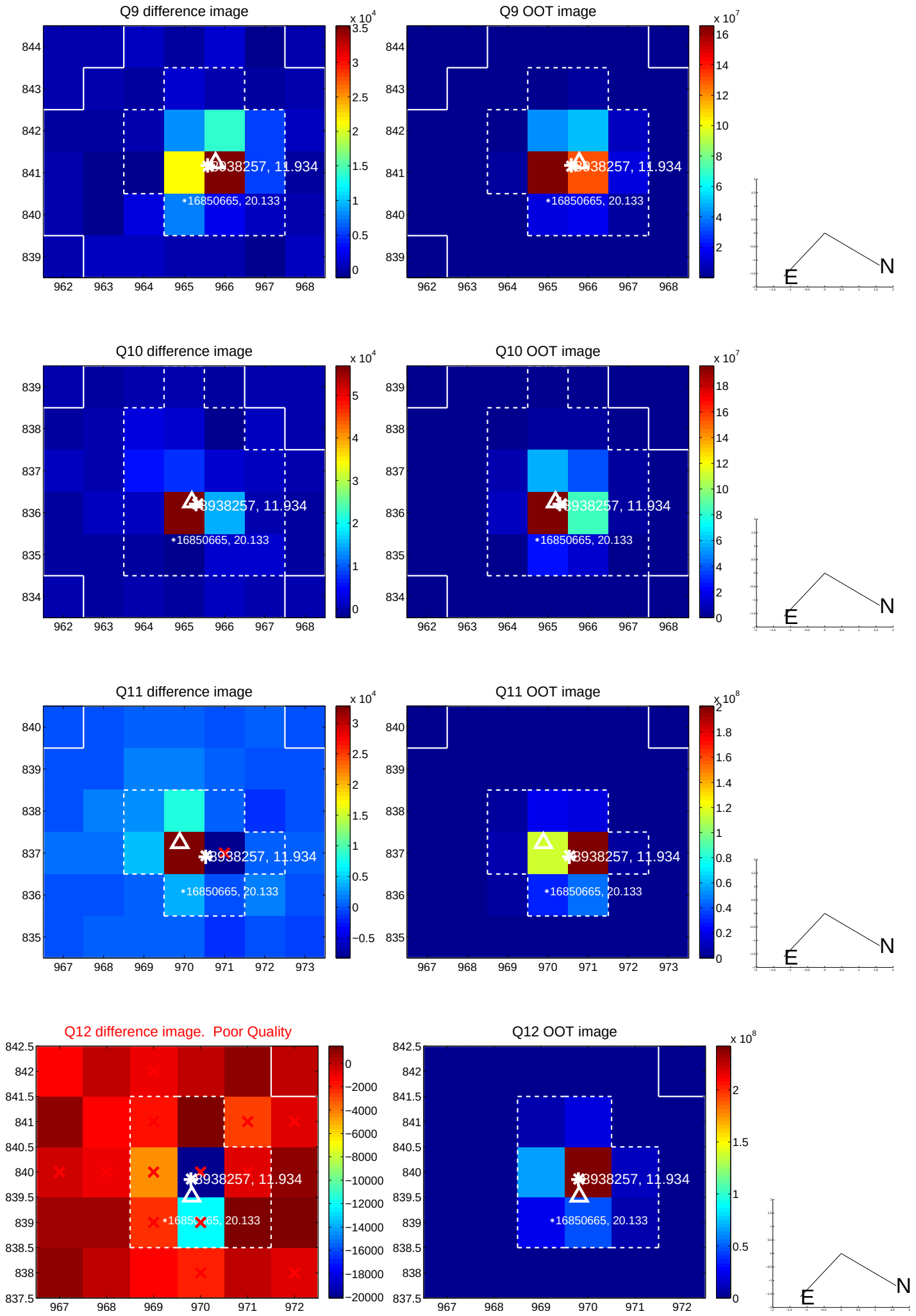
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



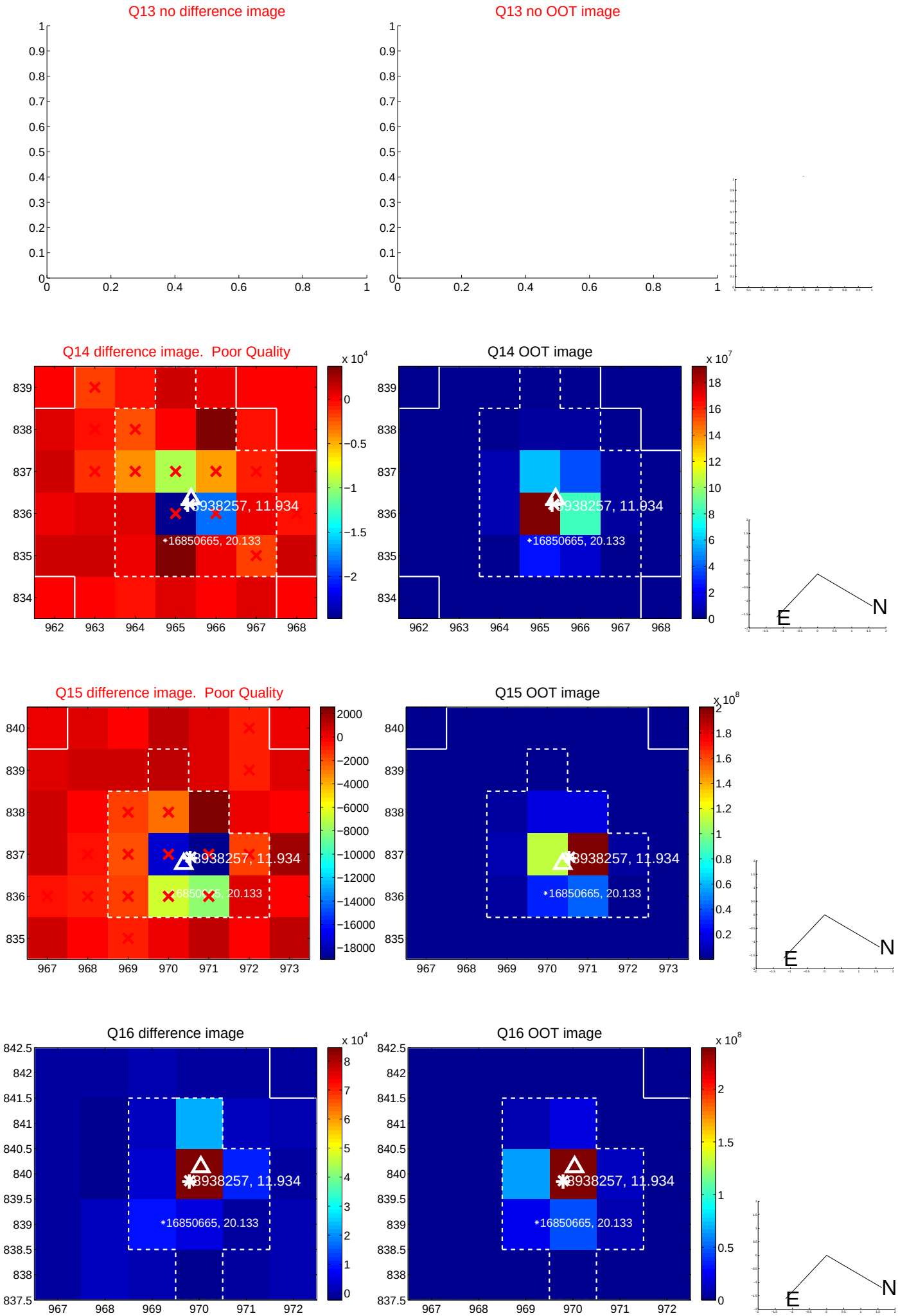
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



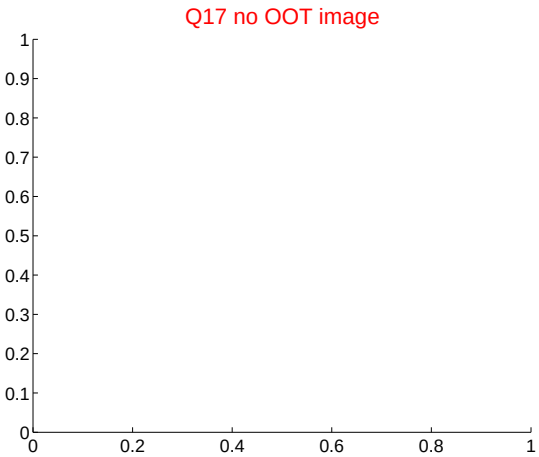
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

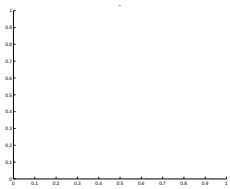


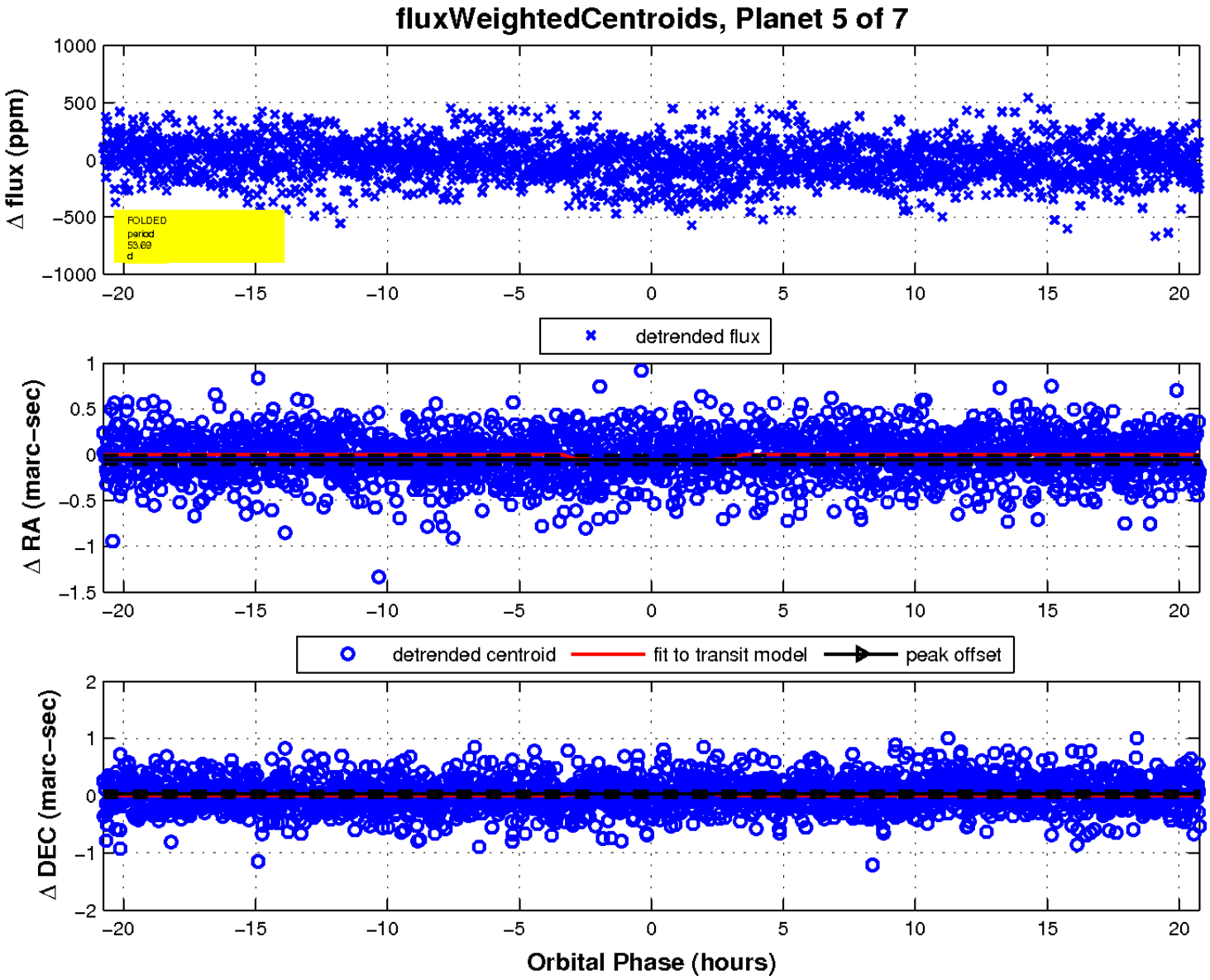
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



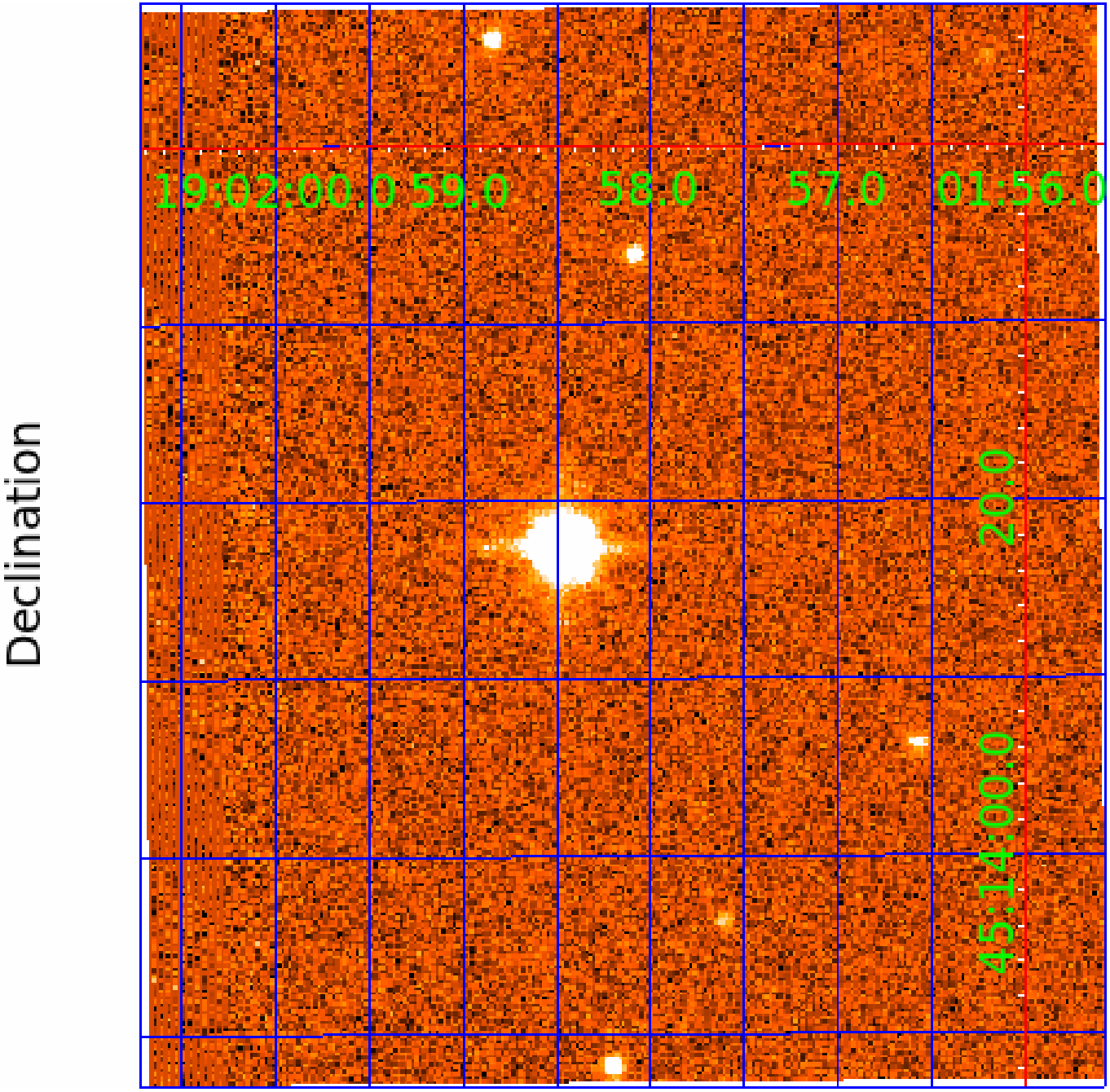
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image



KIC 008938257

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 ($S_\oplus$)
008938257-01	OBS	No	0.623791	131.719799	20.7	2.572	10.2	10.4	1.48	6897	0.79	17273.56
008938257-02	OBS	No	351.028991	172.028013	396.3	3.979	8.8	9.3	1.48	6897	3.60	3.72
008938257-04	OBS	No	12.386381	138.661605	125.2	9.717	8.6	9.9	1.48	6897	2.60	321.25
008938257-05	OBS	No	53.693787	146.914391	213.5	6.930	7.9	8.7	1.48	6897	2.53	45.45
008938257-06	OBS	No	129.070176	241.726224	347.3	4.065	7.7	7.8	1.48	6897	3.55	14.12
008938257-07	OBS	No	238.294933	261.711404	260.5	4.309	8.0	7.1	1.48	6897	3.07	6.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008938257-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008938257-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

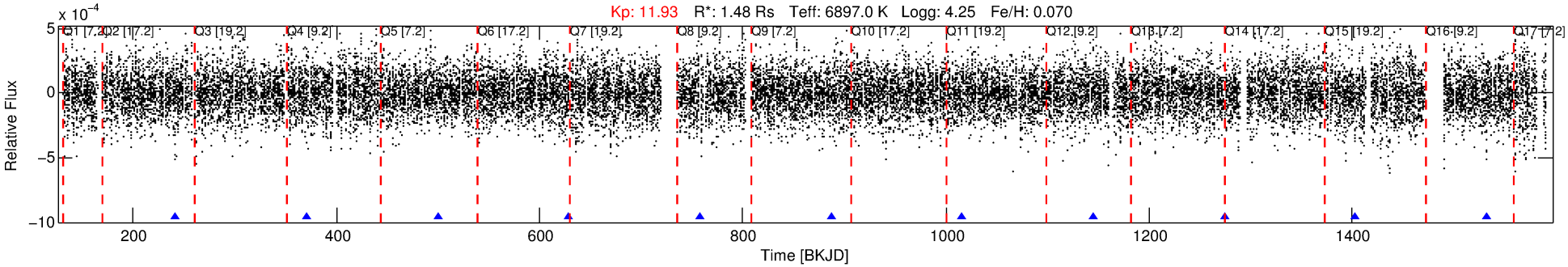
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

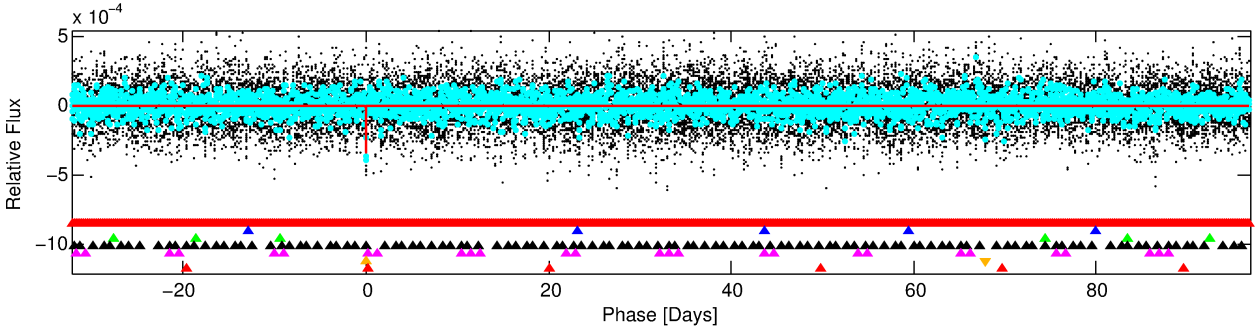
Ephemeris Match Information For 008938257-06

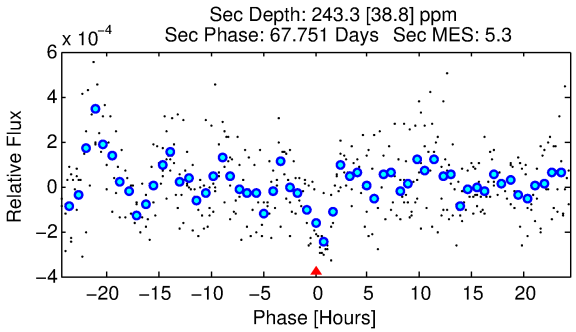
No Significant Match Found

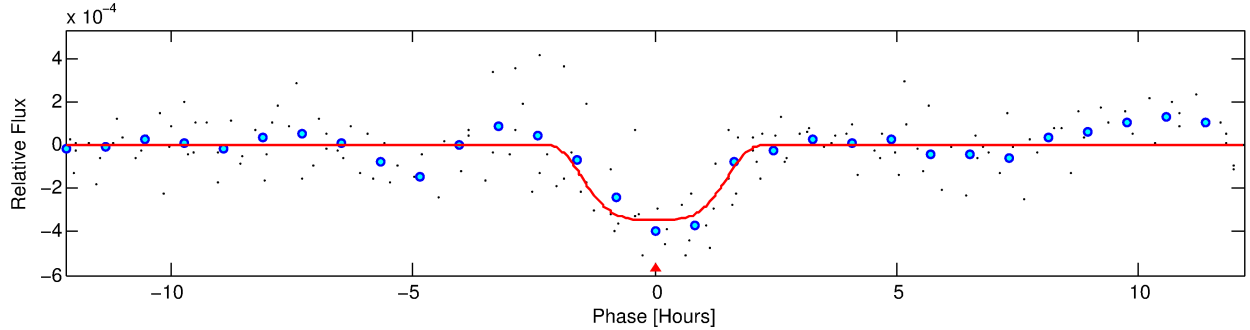
DV One-Page Summary

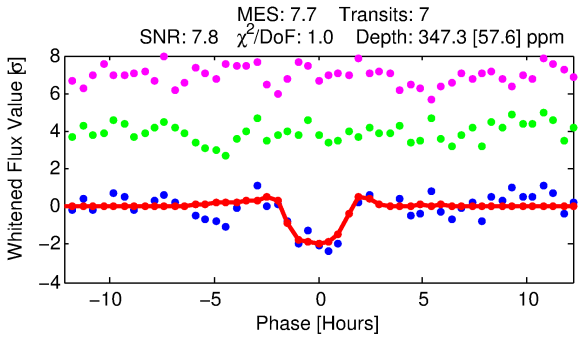
KIC: 8938257 Candidate: 6 of 7 Period: 129.070 d

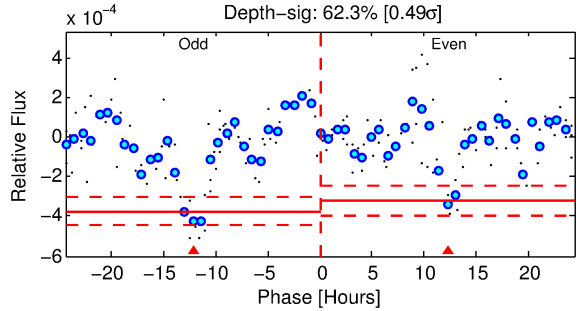


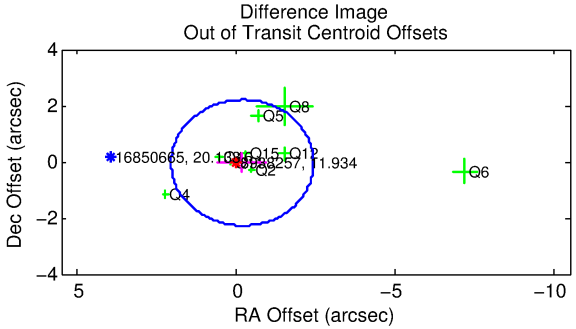












DV Fit Results:

Period = 129.07018 [0.00136] d
Epoch = 241.7262 [0.0100] BKJD
Rp/R* = 0.0219 [0.0023]
a/R* = 76.95 [17.28]
b = 0.97 [0.01]

Seff = 14.11 [6.11]
Teq = 494 [54] K
Rp = 3.55 [1.28] Re
a = 0.5617 [0.1577] AU

Ag = 3352.53 [1593.48] [2.10σ]
Teffp = 5815 [460] K [11.49σ]

DV Diagnostic Results:

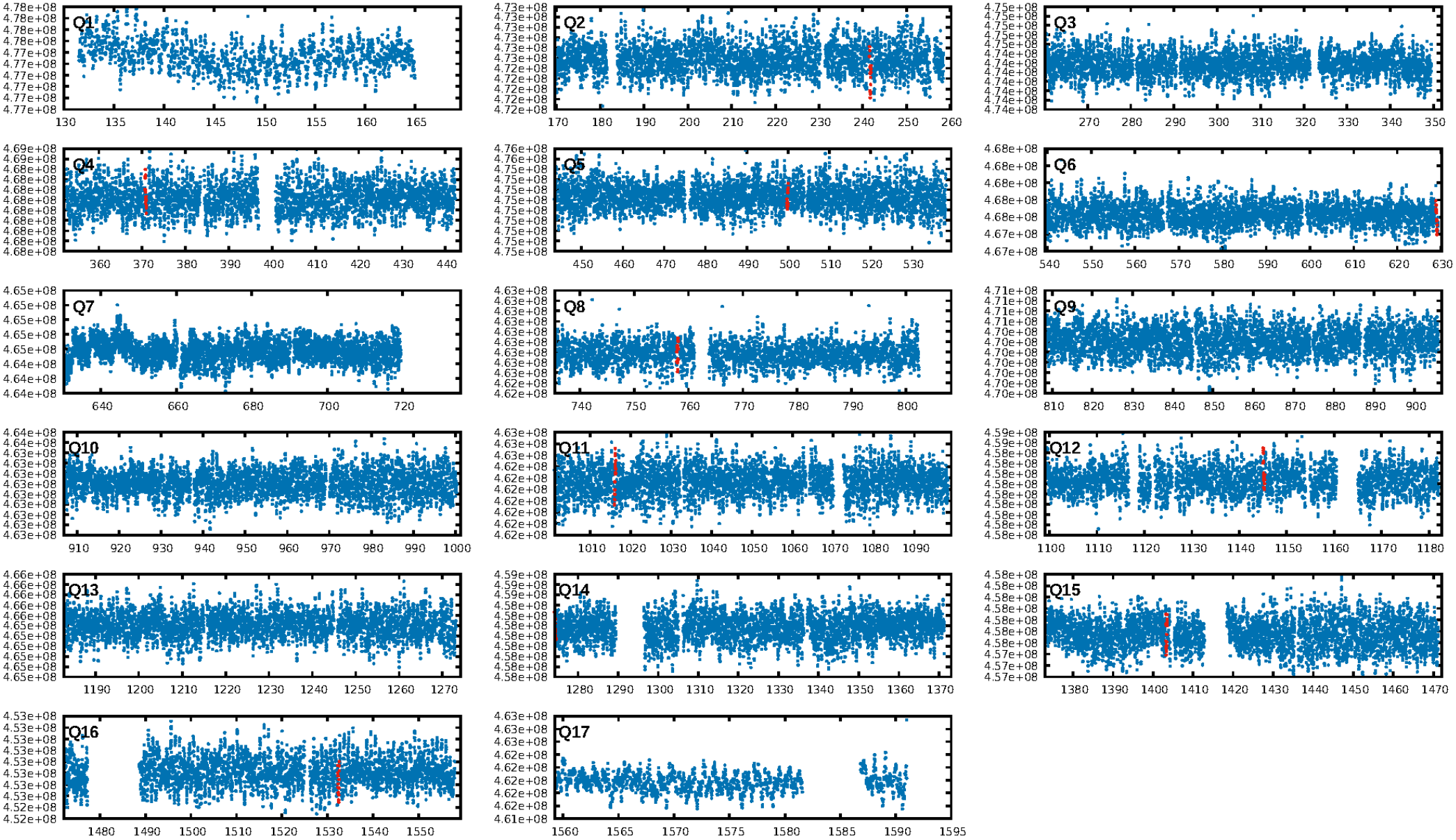
ShortPeriod−sig: 100.0% [225.17σ]
LongPeriod−sig: 100.0% [442.48σ]
ModelChiSquare2−sig: 47.5%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 1.98e−09
RollingBand−fgt: 1.00 [7/7]
GhostDiagnostic−chr: −1.265

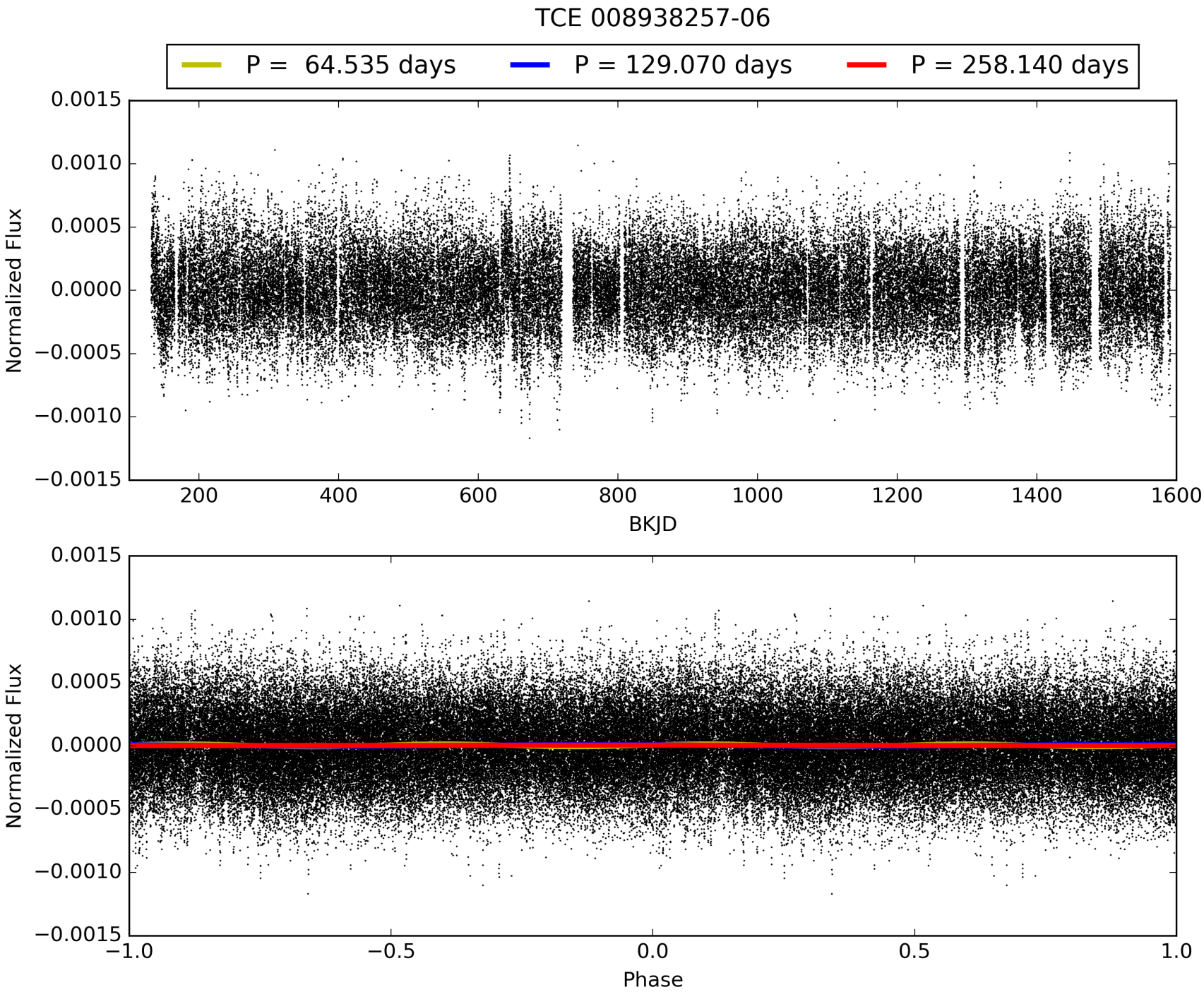
Centroid−sig: 38.6%
Centroid−so: 0.250 arcsec [0.77σ]
OotOffset−rm: 0.200 arcsec [0.27σ]
KicOffset−rm: 0.096 arcsec [0.13σ]
OotOffset−st: 2/2/4/1 [9]
KicOffset−st: 2/2/4/1 [9]
DiffImageQuality−fgm: 0.67 [6/9]
DiffImageOverlap−fno: 0.00 [0/9]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 06:17:34 Z

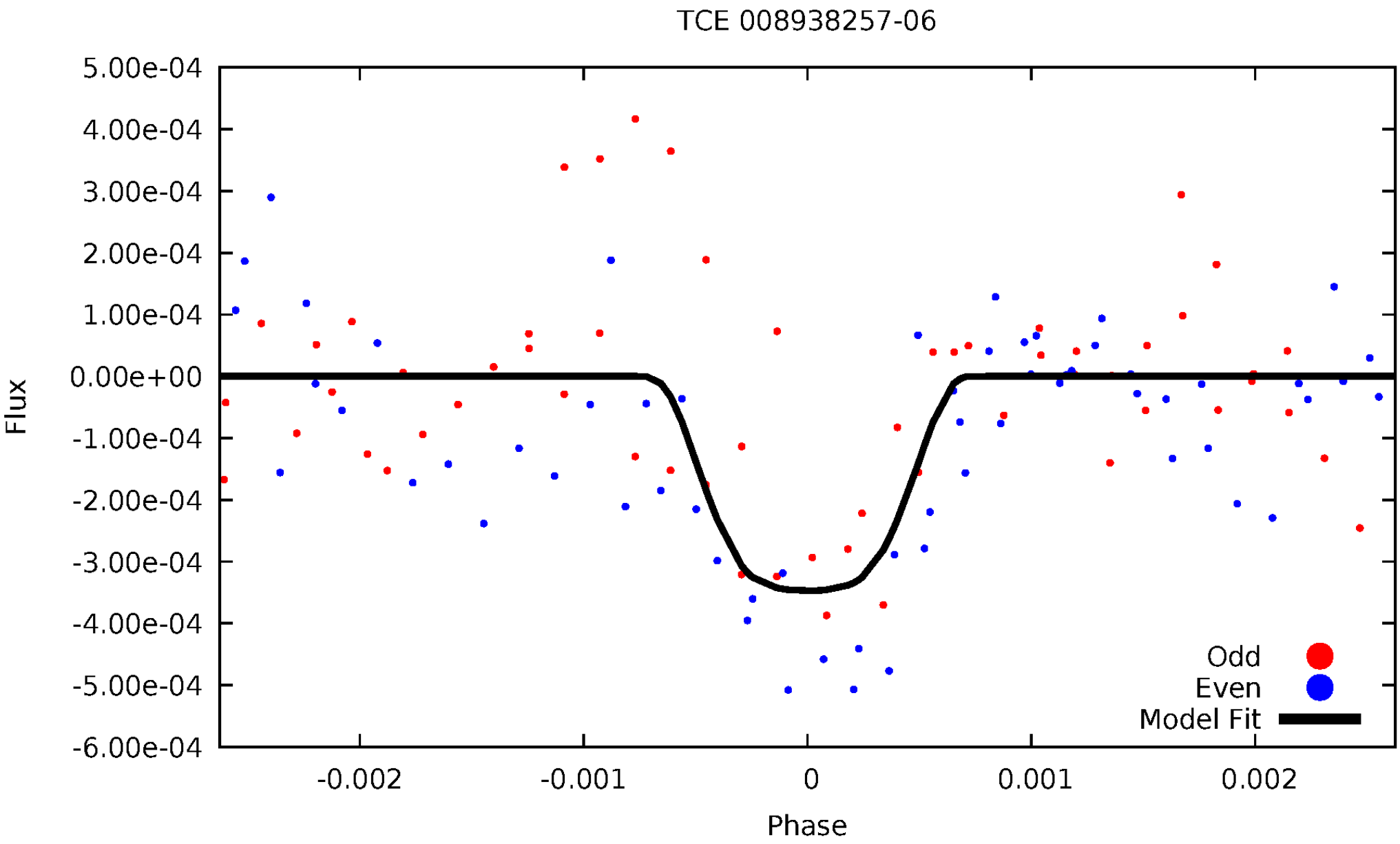
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008938257-06, PDC Light Curves

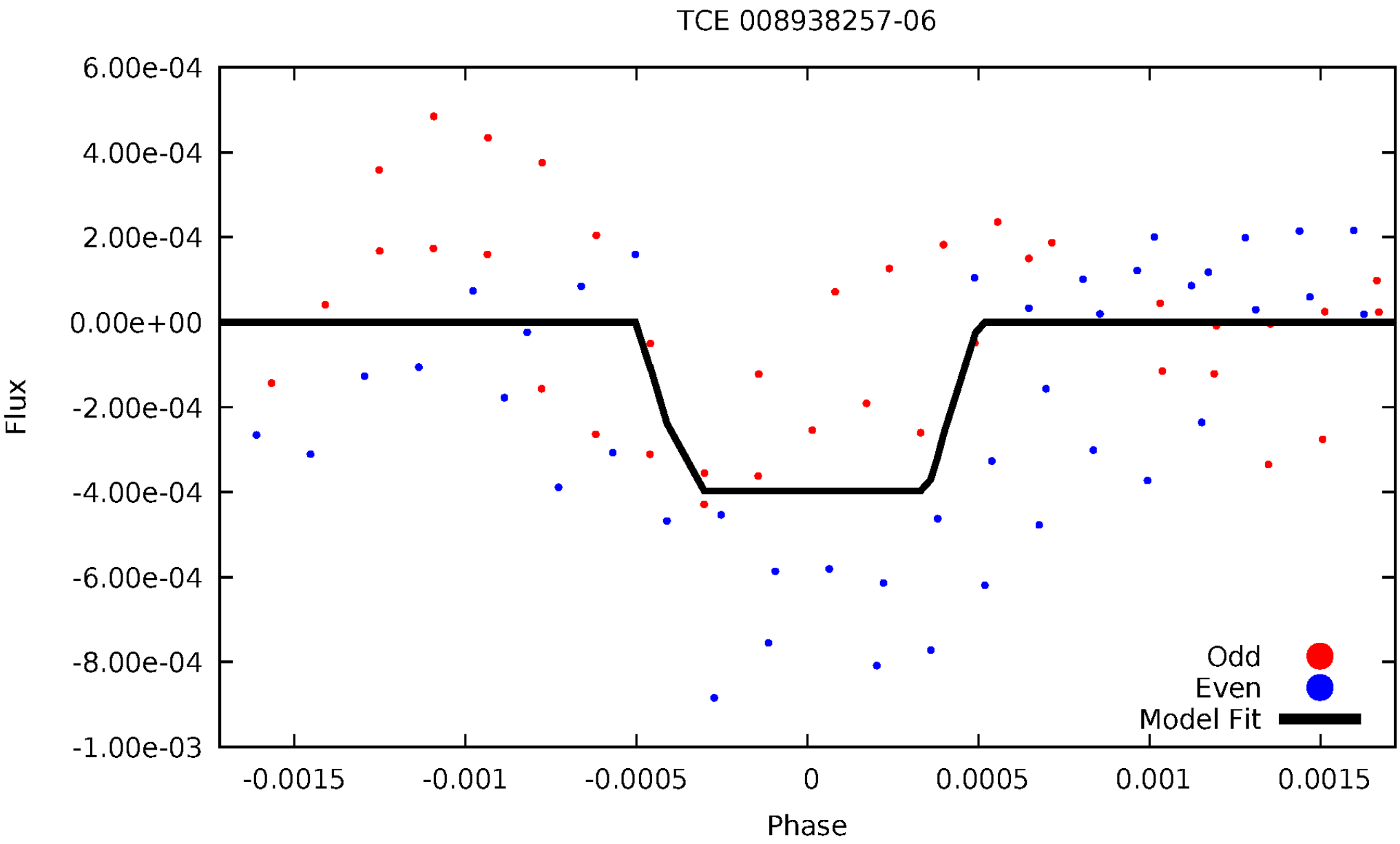



TCE 008938257-06
P = 64.535 days
P = 129.070 days
P = 258.140 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

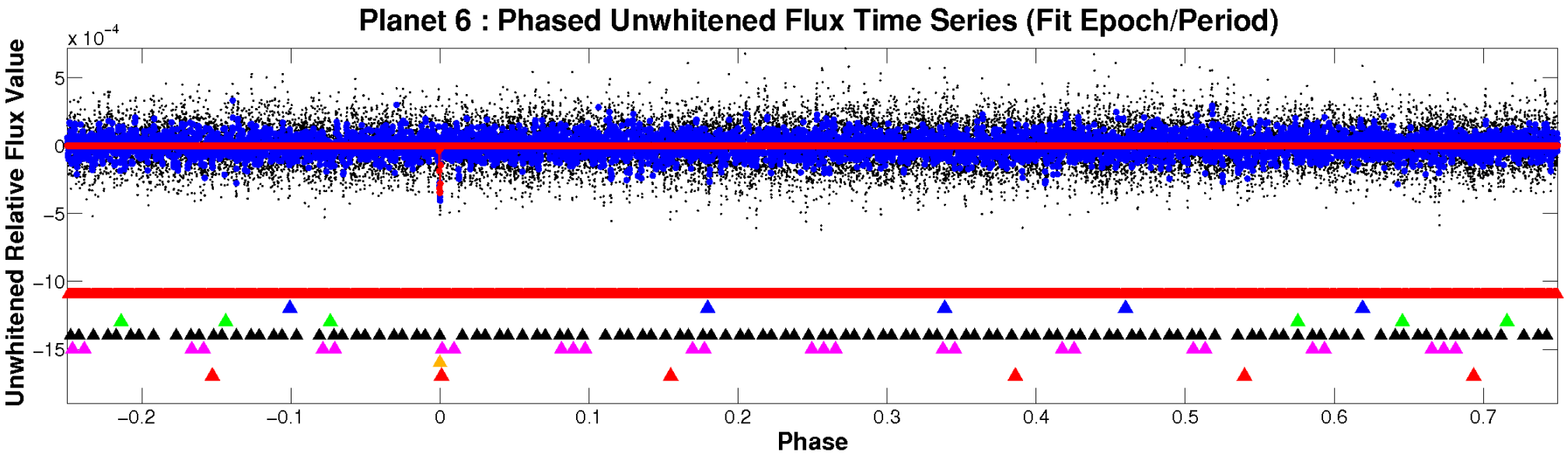
DV Odd/Even

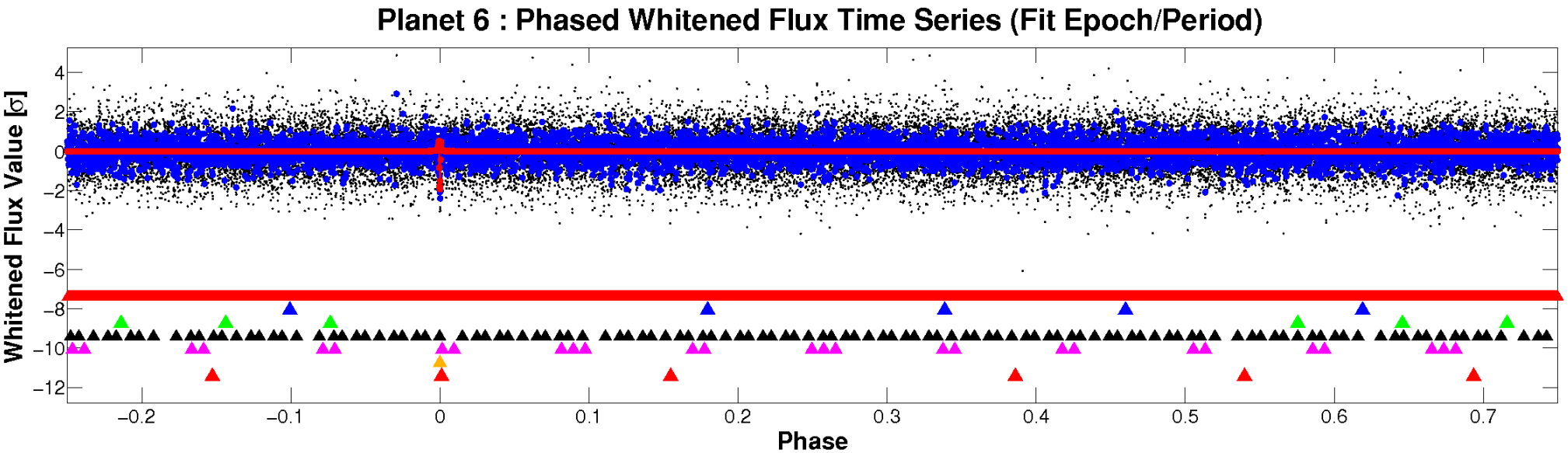

TCE 008938257-06
5.00e-04
4.00e-04
3.00e-04
2.00e-04
1.00e-04
0.00e+00
-1.00e-04
-2.00e-04
-3.00e-04
-4.00e-04
-5.00e-04
-6.00e-04
Flux
-0.002
-0.001
0
0.001
0.002
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008938257-06
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
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
Phase
Odd
Even
Model Fit

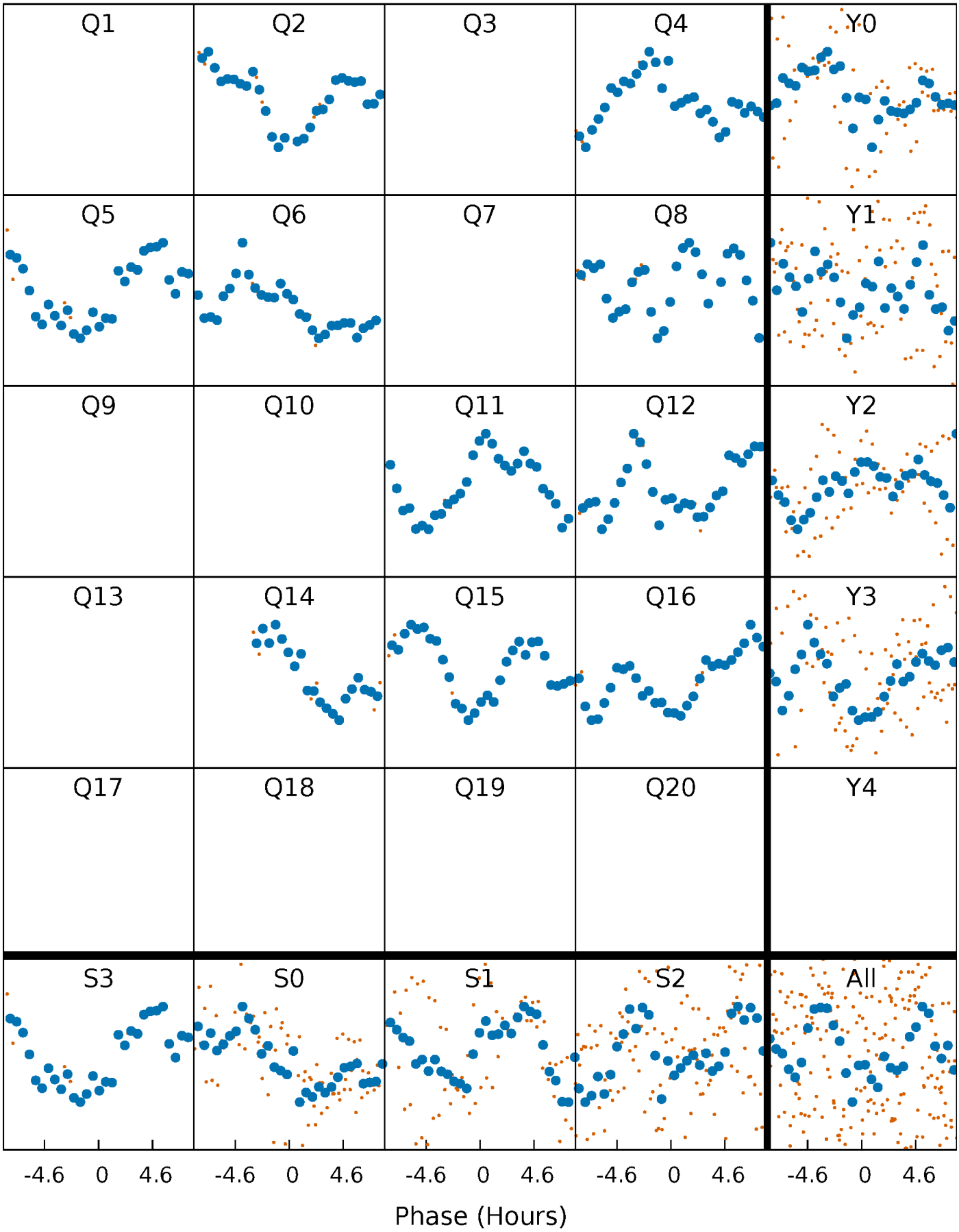
Non-Whitened Vs. Whitened Light Curve





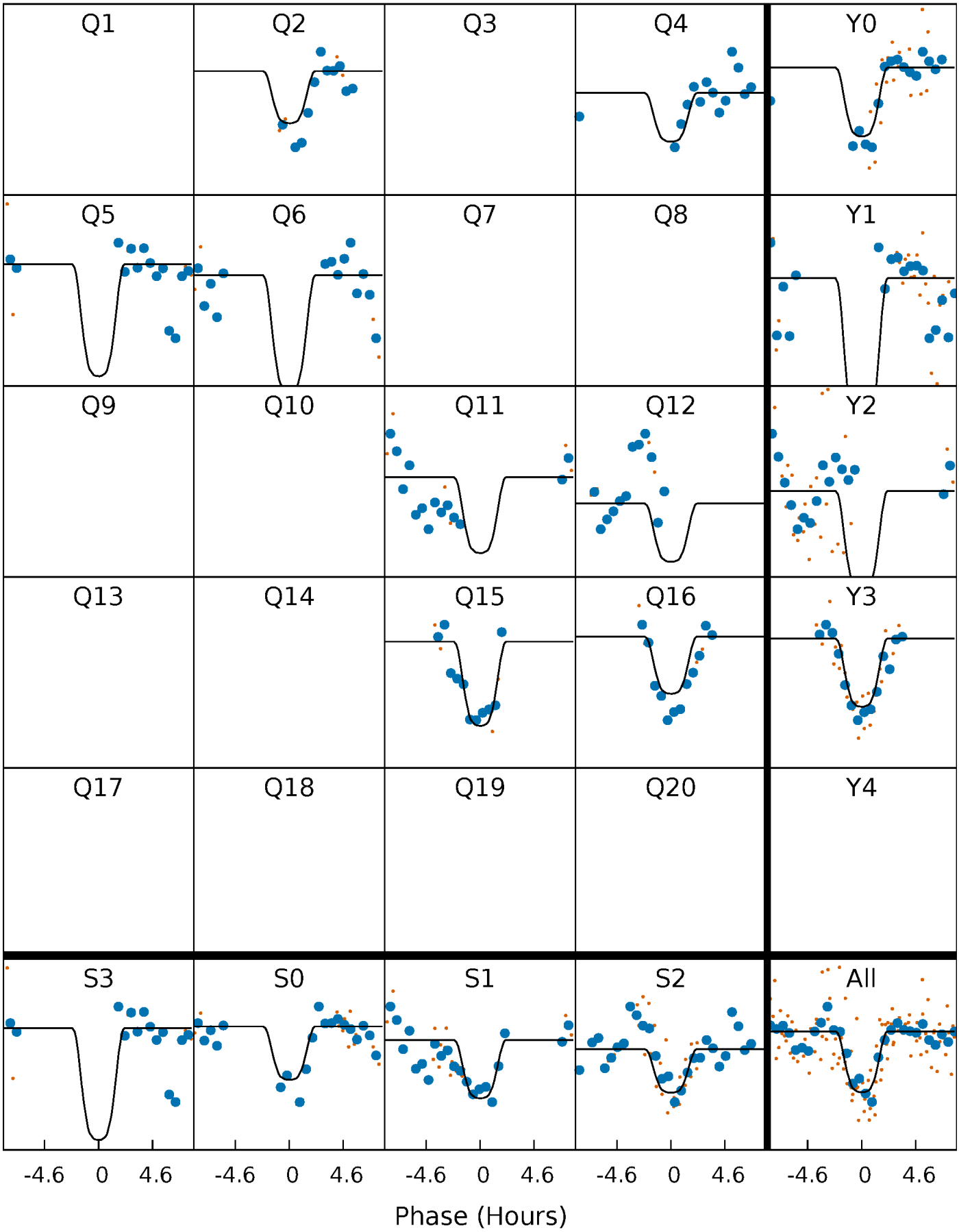
PDC Quarter-Phased Transit Curves

TCE 008938257-06 P=129.070176 Days T_0=241.726224 (BKJD)



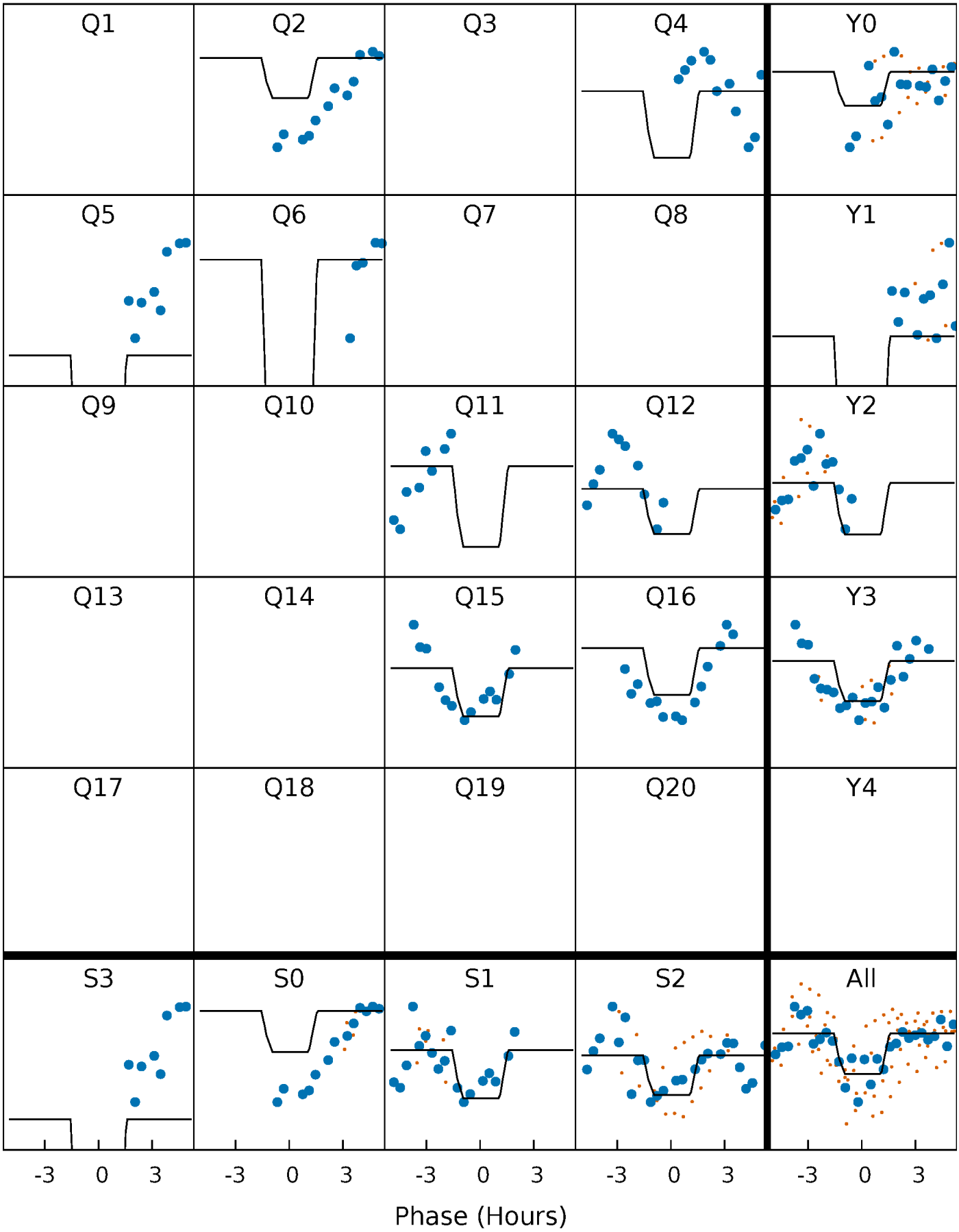
DV Quarter-Phased Transit Curves

TCE 008938257-06 P=129.070176 Days T_0=241.726224 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

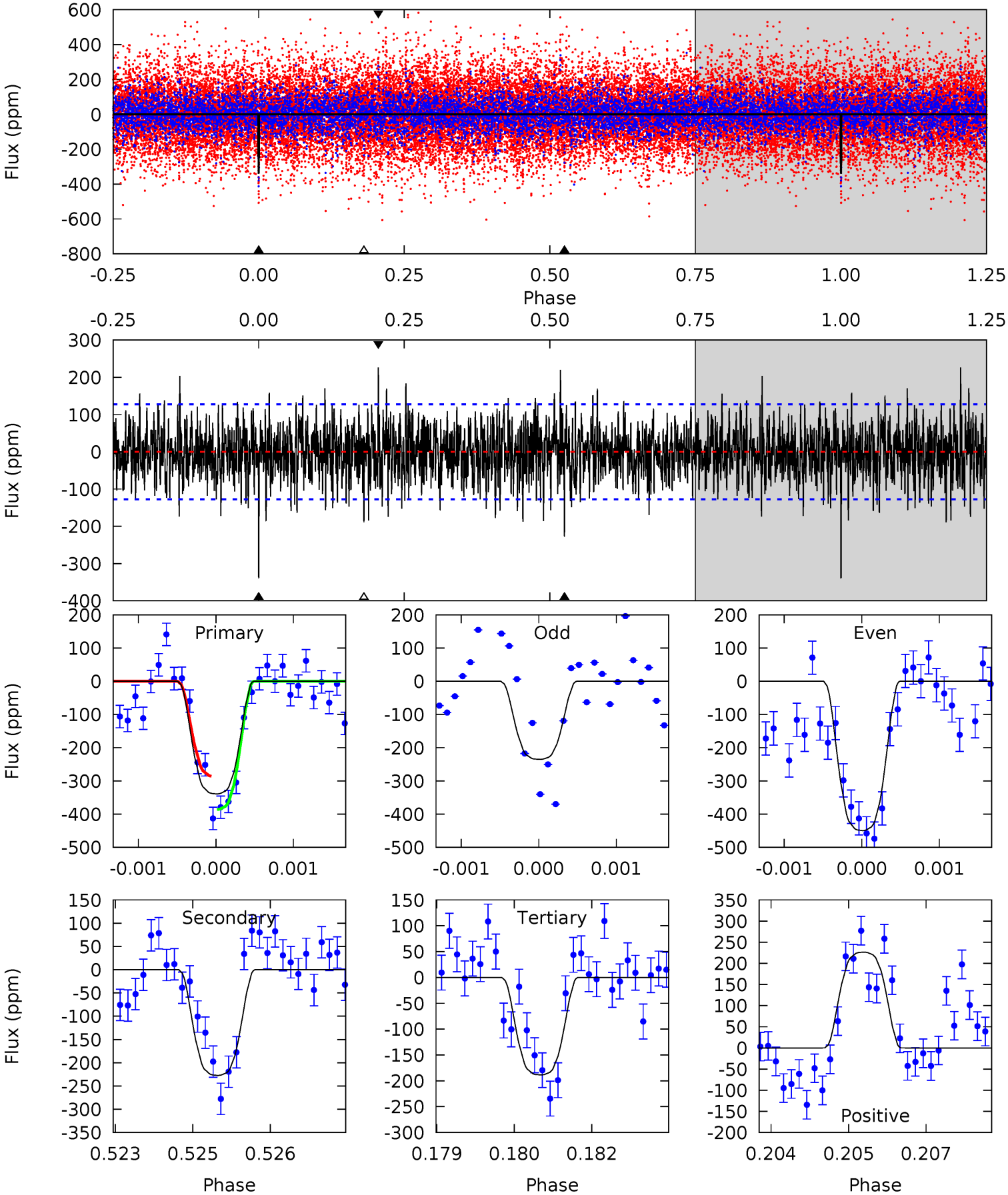
TCE 008938257-06 P=129.070226 Days T_0=241.726764 (BKJD)



DV Model-Shift Uniqueness Test

008938257-06, P = 129.070176 Days, E = 112.656048 Days

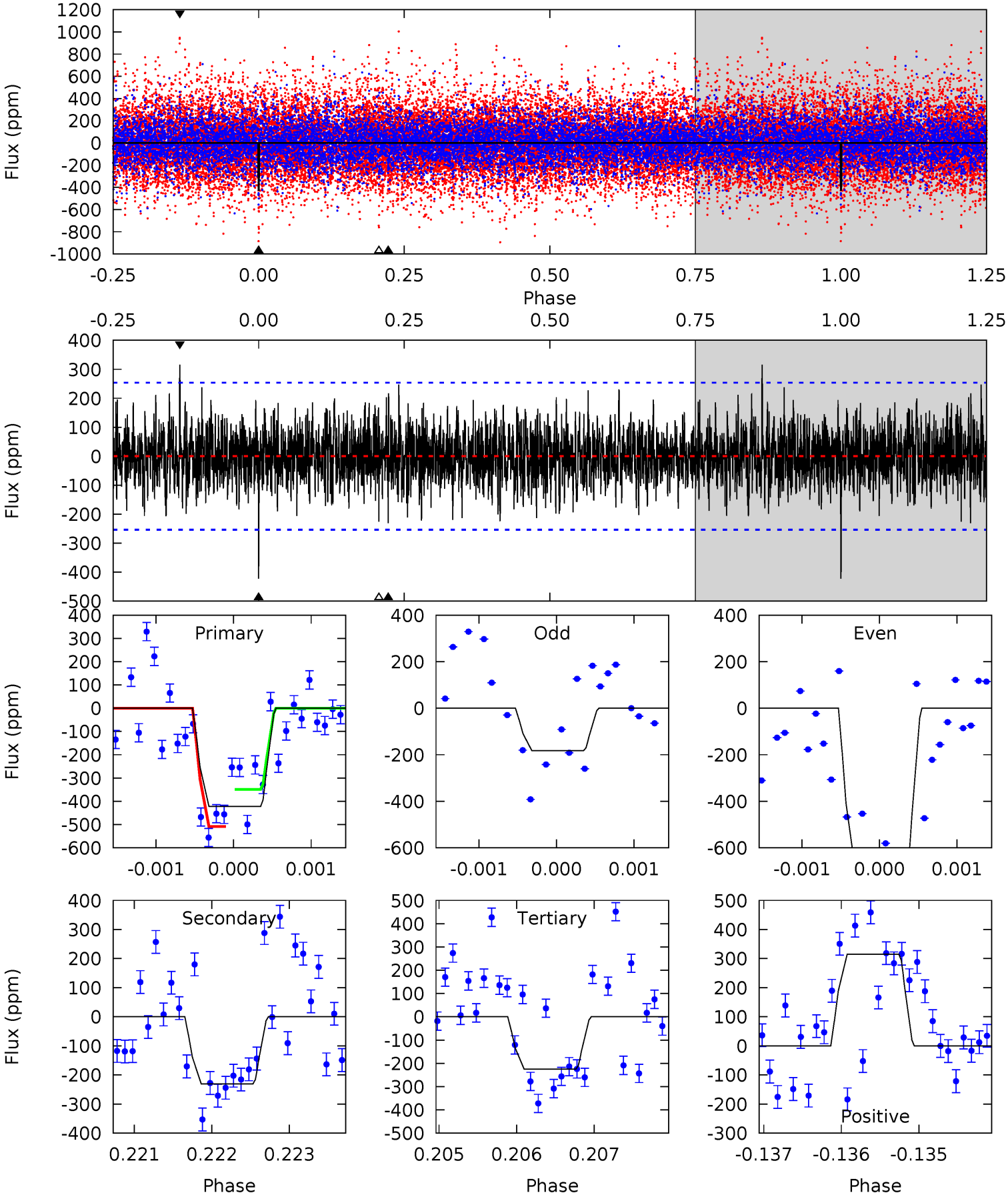
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	9.62	7.98	9.58	5.38	3.18	2.45	6.37	4.77	1.63	0.03	4.60	0.80	0.40	2.11



Alt Model-Shift Uniqueness Test

008938257-06, P = 129.070226 Days, E = 112.656538 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.09	4.98	4.85	6.79	5.46	3.30	1.56	4.24	2.31	0.12	-1.81	5.36	1.16	0.43	1.72



Stellar Parameters For KIC 008938257

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6897^{+193}_{-303}	$4.248^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.482^{+0.511}_{-0.256}$	$1.417^{+0.213}_{-0.213}$	$0.613^{+0.298}_{-0.332}$
	+3%/-4%	+2%/-5%	+286%/-500%	+34%/-17%	+15%/-15%	+49%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008938257-06 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-227±24	$3.64^{+0.68}_{-0.55}$	699^{+53}_{-43}	5691^{+379}_{-371}	2930^{+1084}_{-872}
Alt.	-231±46	$3.33^{+0.69}_{-0.55}$	700^{+59}_{-45}	5983^{+523}_{-445}	3617^{+1581}_{-1268}

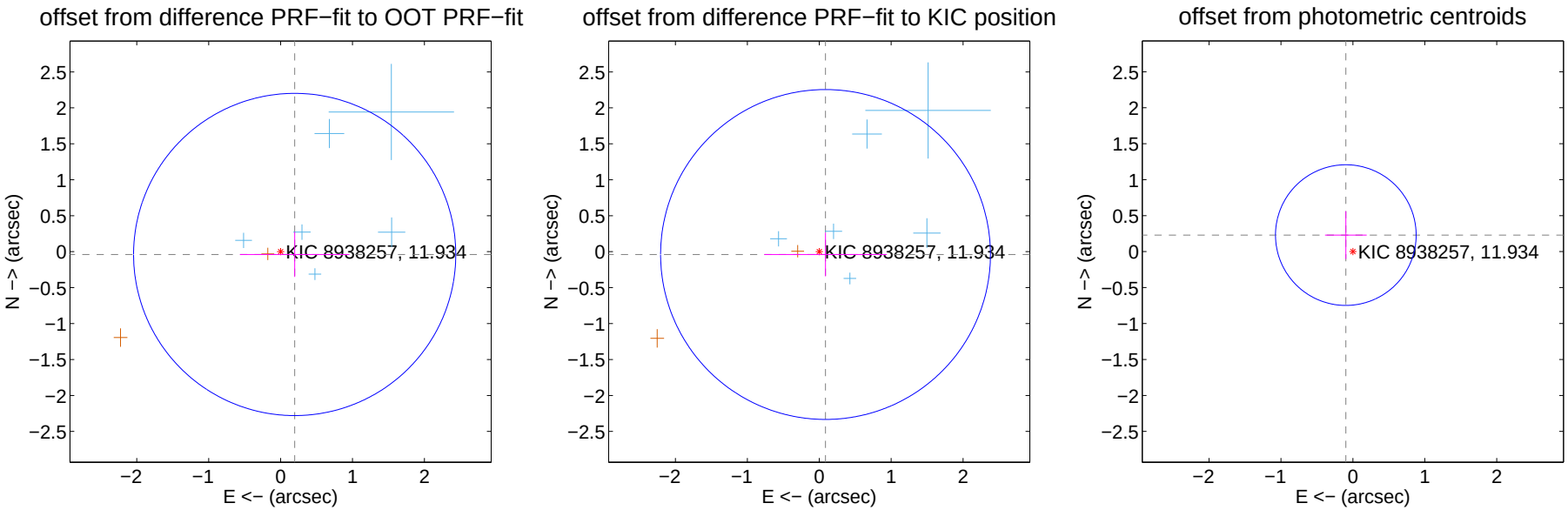
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

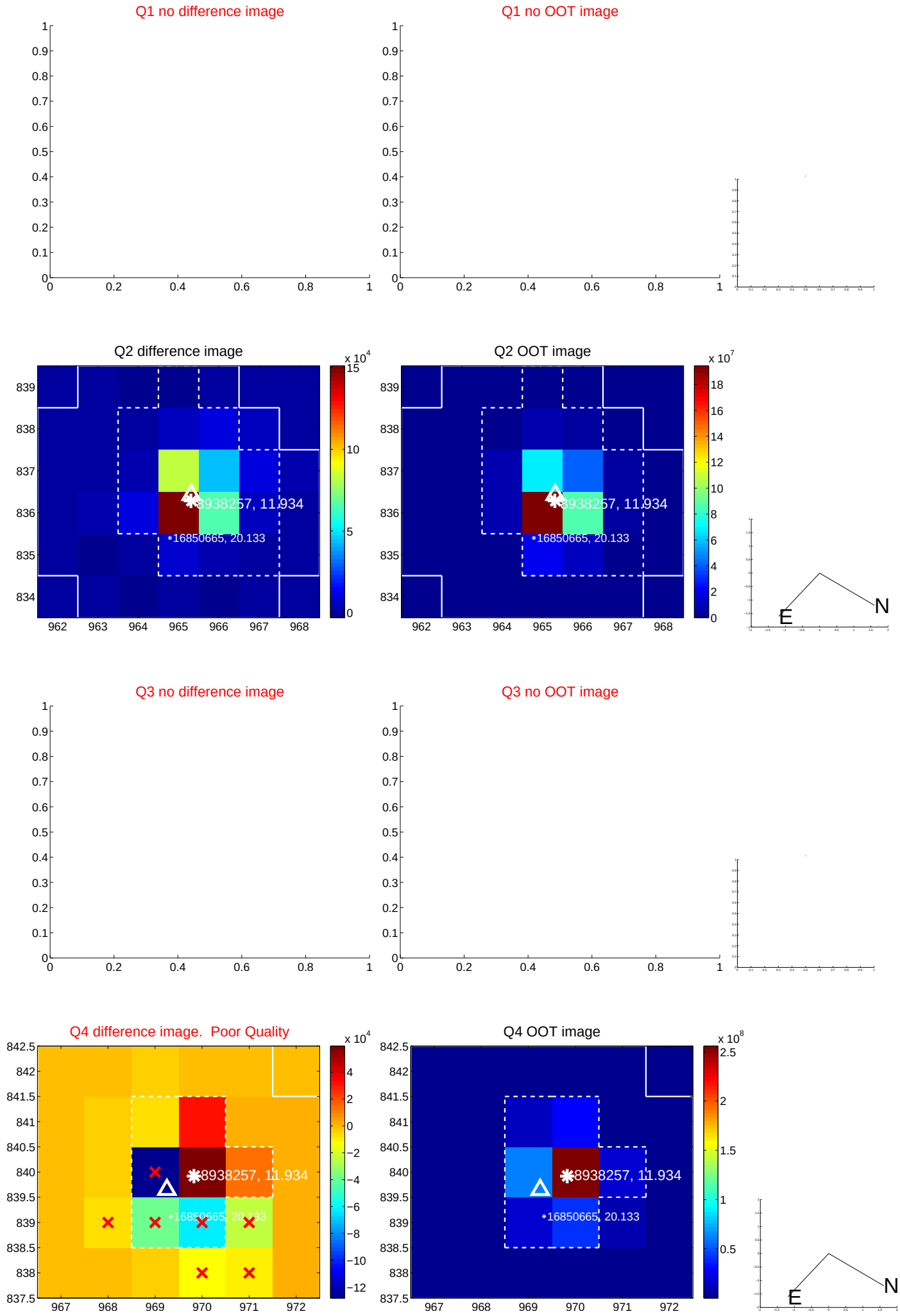
Supplemental centroid analysis for 008938257-06. Kepler magnitude: 11.93. Transit SNR 7.84
There are 6 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.200 ± 0.747	0.27	-0.196 ± 0.762	-0.039 ± 0.312
PRF-fit source offset from KIC position	0.096 ± 0.765	0.13	-0.087 ± 0.853	-0.039 ± 0.304
photometric centroid source offset	0.25 ± 0.33	0.77	0.10 ± 0.29	0.23 ± 0.33

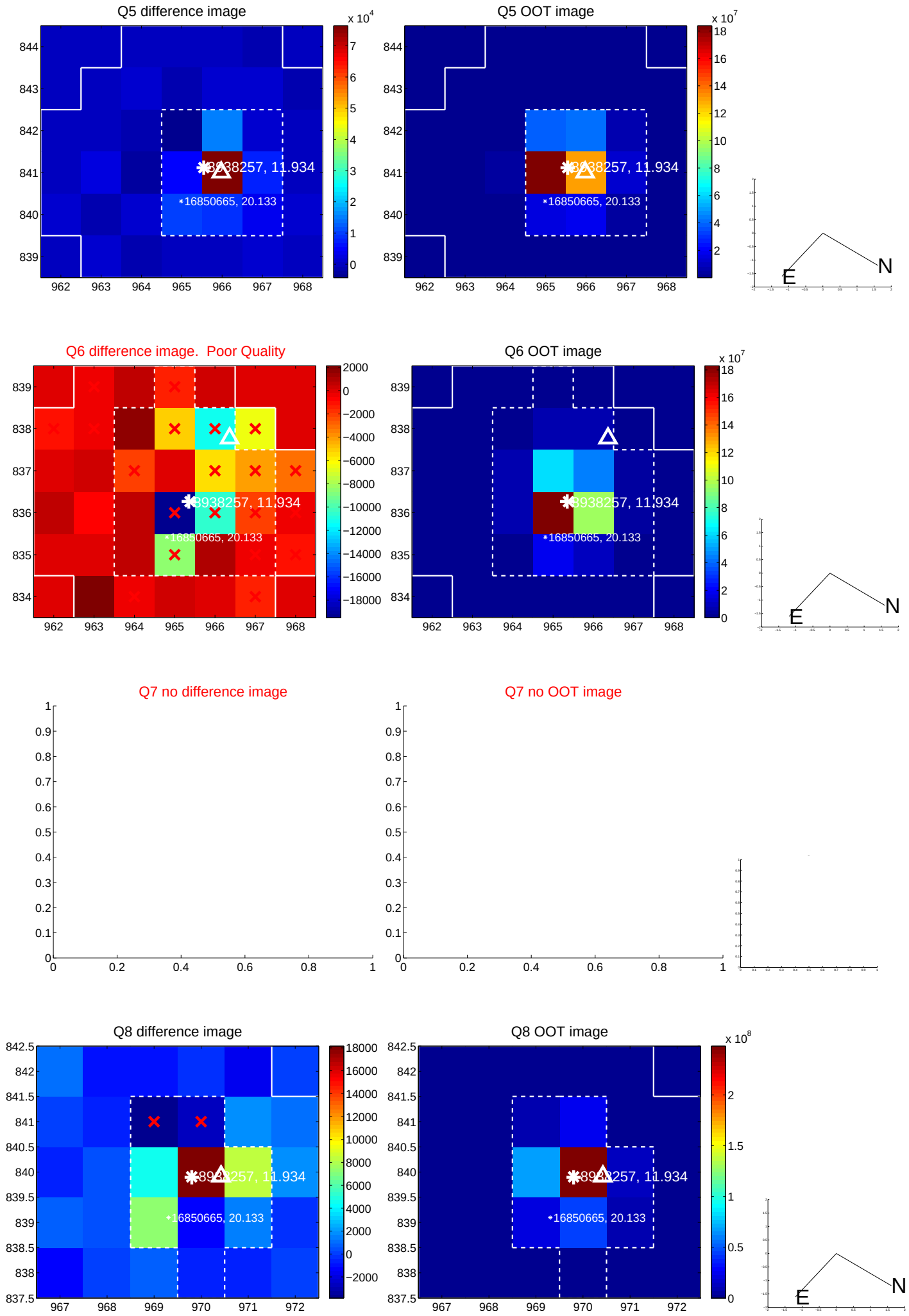


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

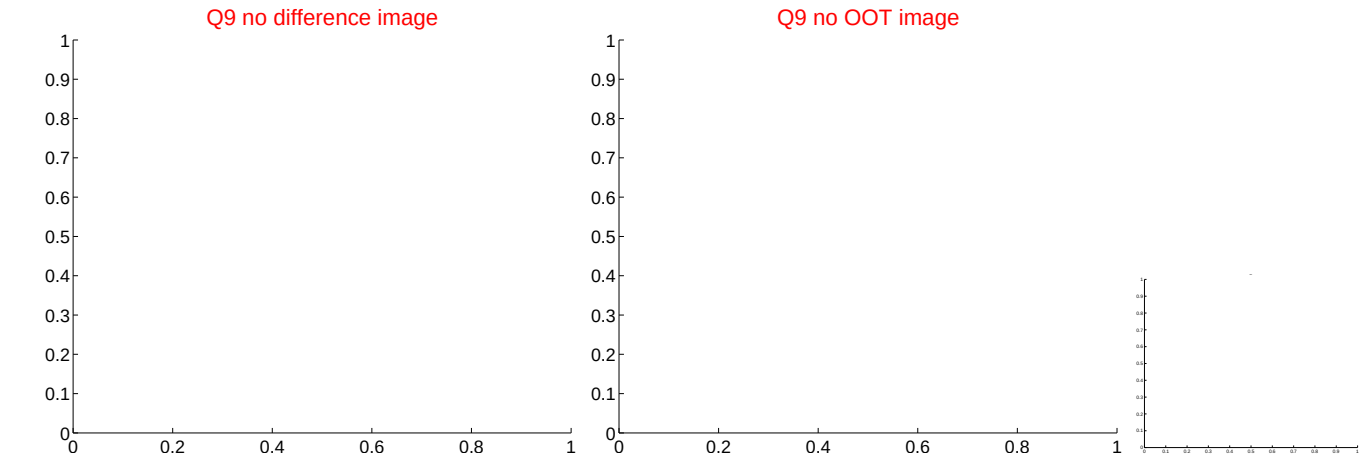
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

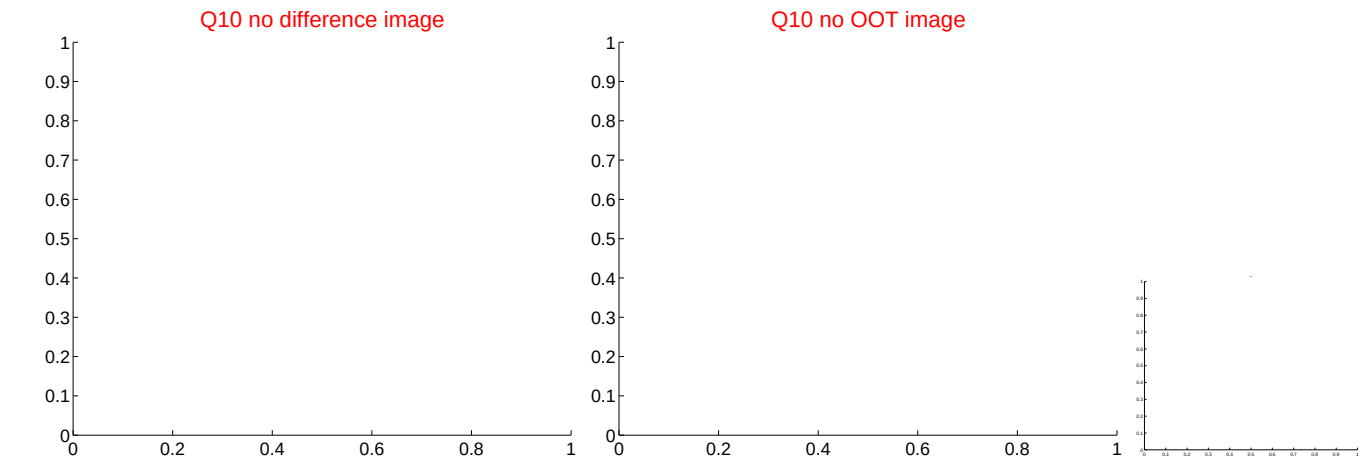


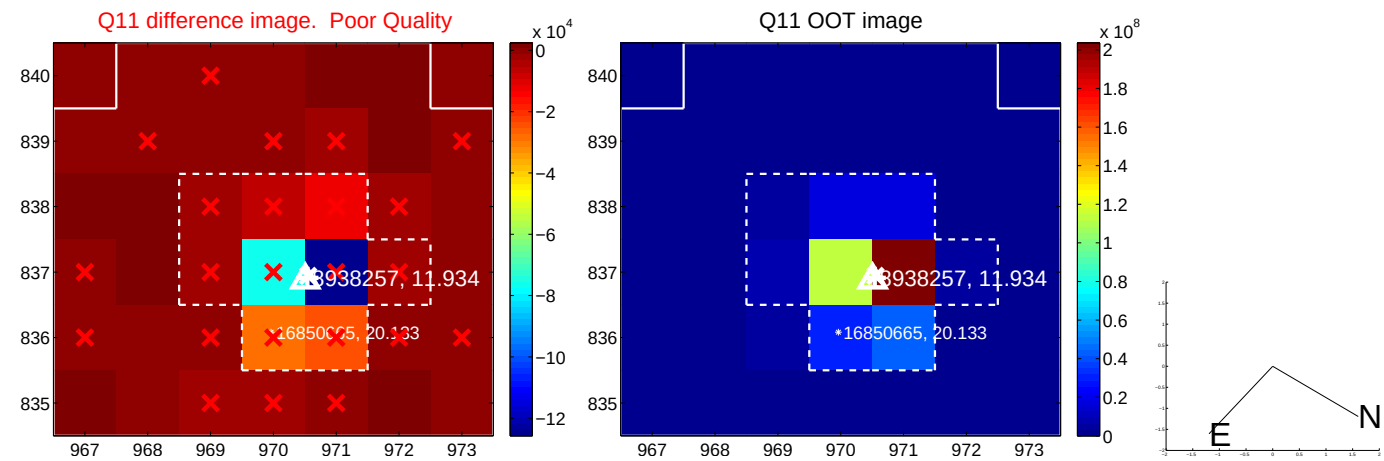
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

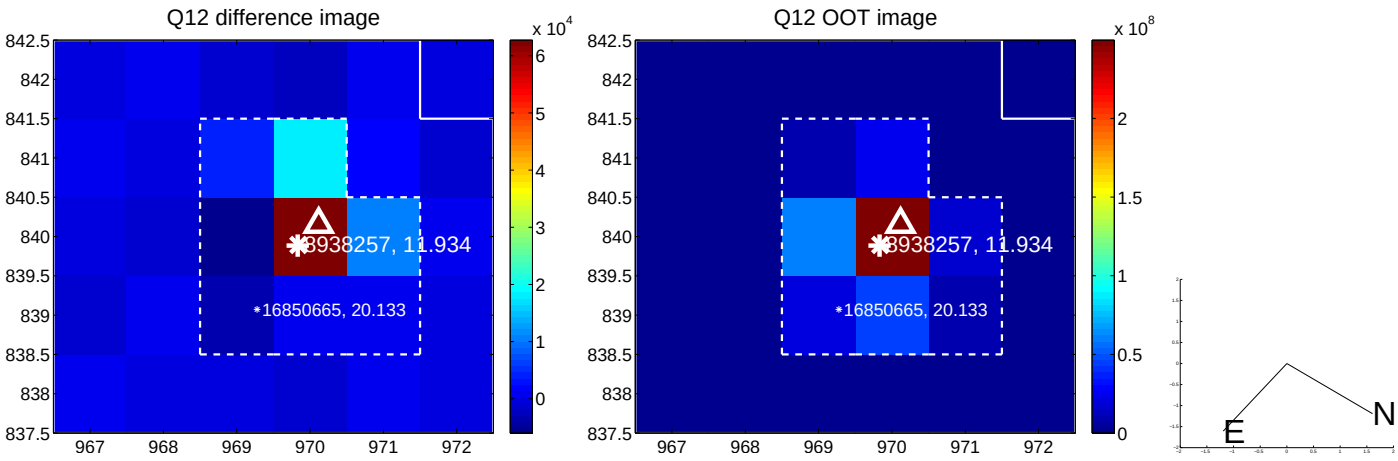


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

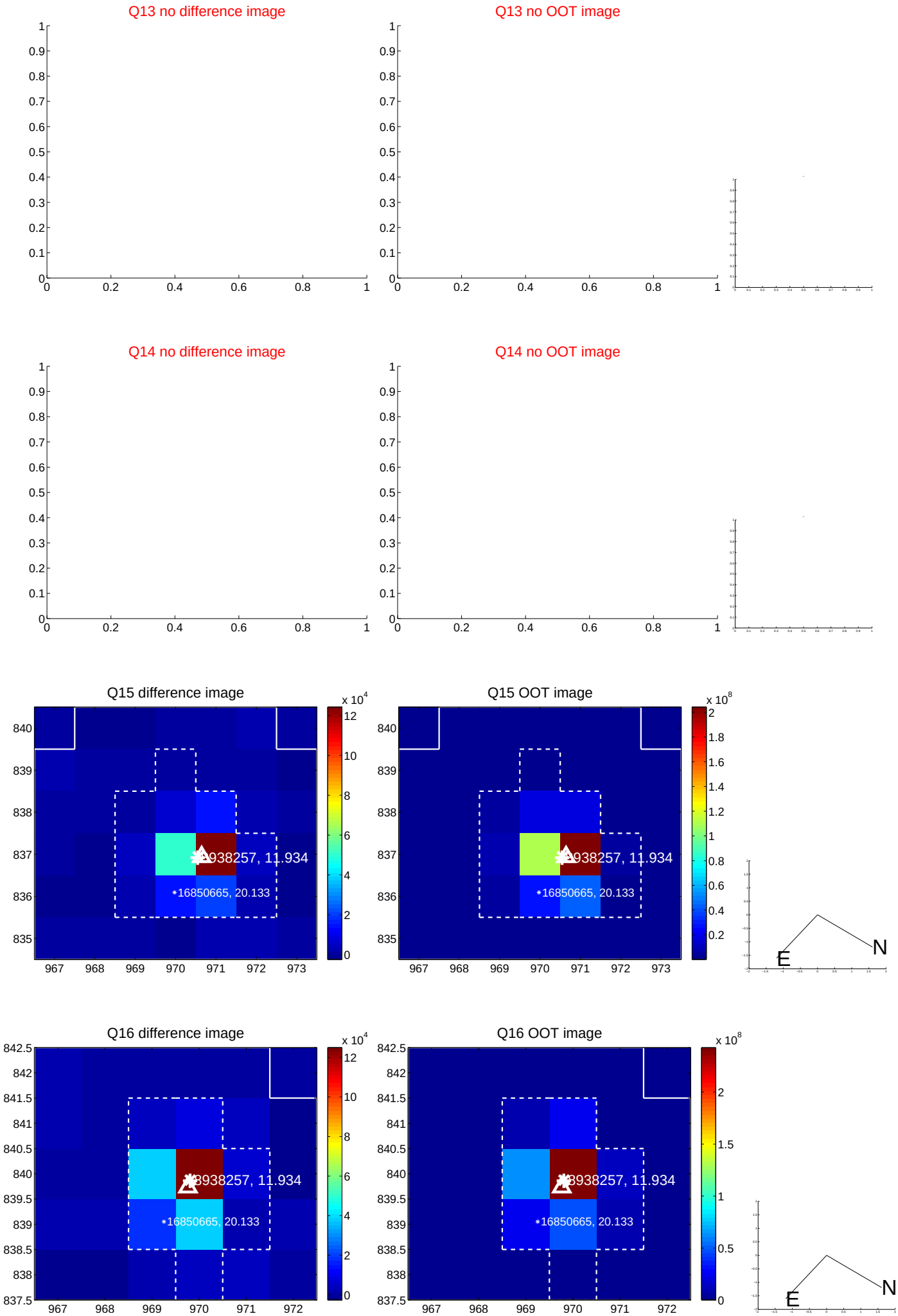




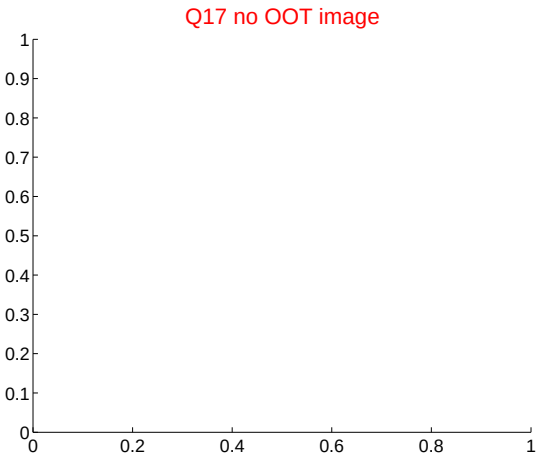


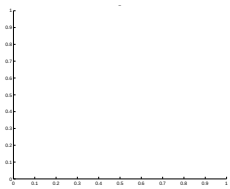


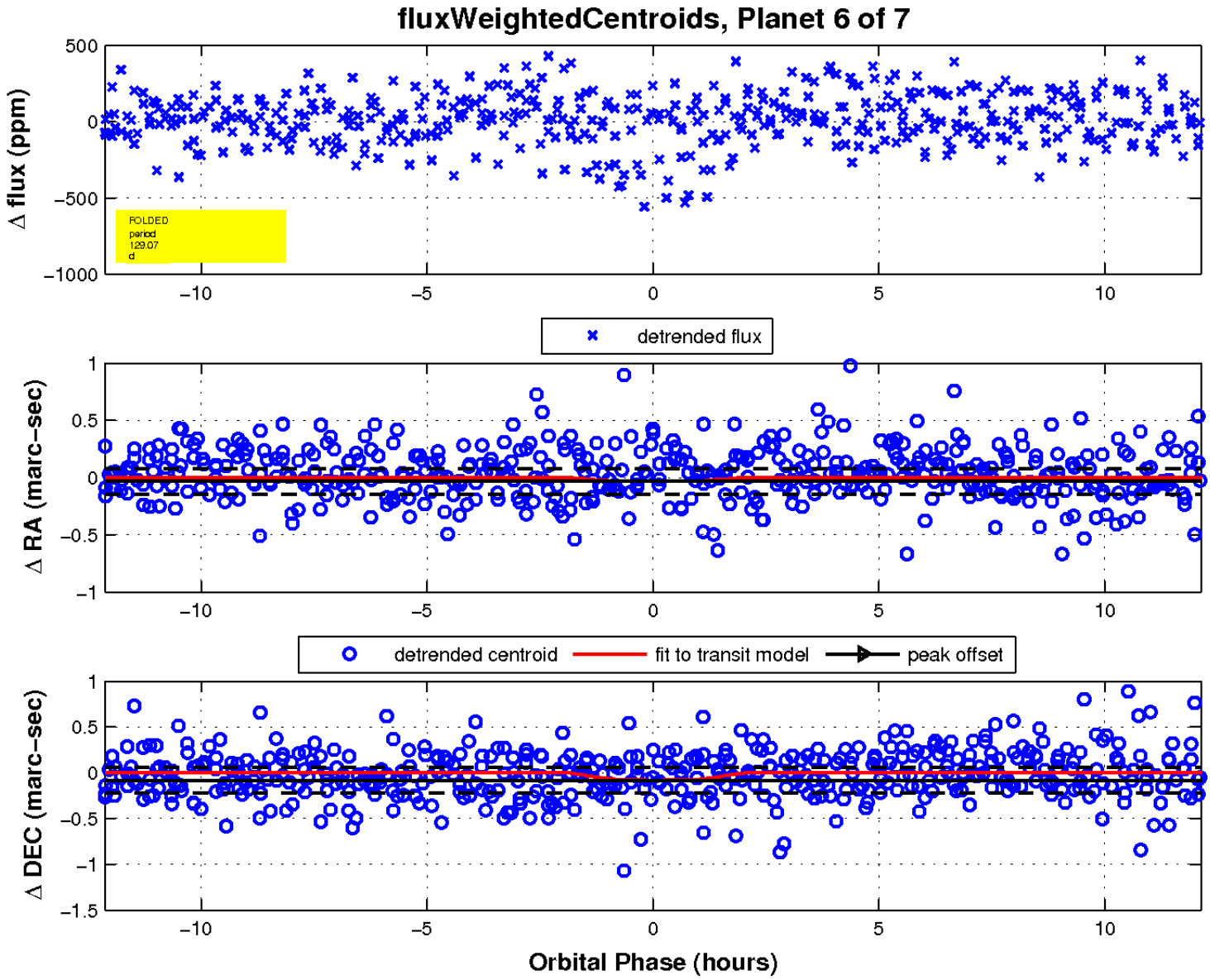
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



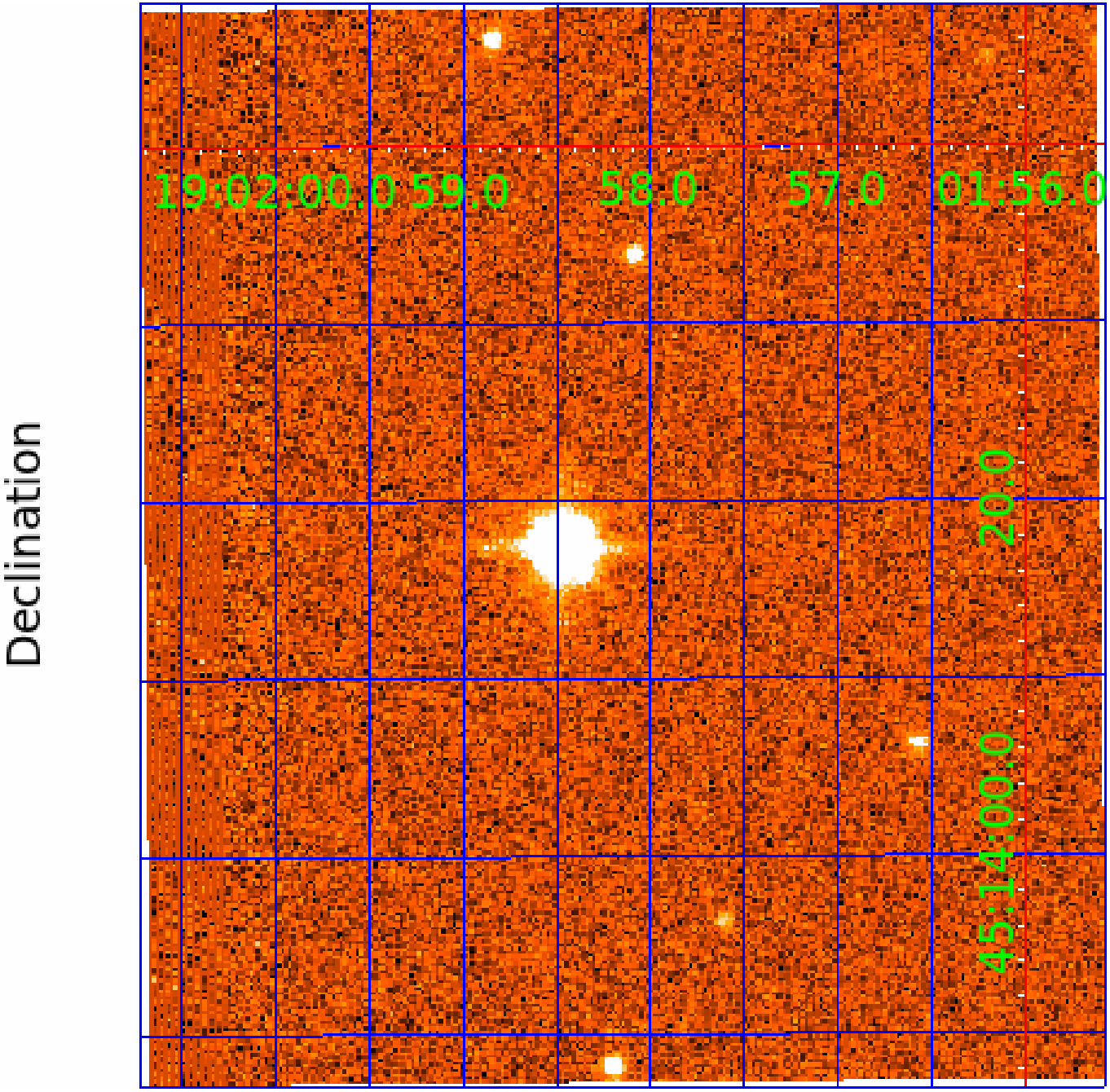
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image



KIC 008938257

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 ($S_\oplus$)
008938257-01	OBS	No	0.623791	131.719799	20.7	2.572	10.2	10.4	1.48	6897	0.79	17273.56
008938257-02	OBS	No	351.028991	172.028013	396.3	3.979	8.8	9.3	1.48	6897	3.60	3.72
008938257-04	OBS	No	12.386381	138.661605	125.2	9.717	8.6	9.9	1.48	6897	2.60	321.25
008938257-05	OBS	No	53.693787	146.914391	213.5	6.930	7.9	8.7	1.48	6897	2.53	45.45
008938257-06	OBS	No	129.070176	241.726224	347.3	4.065	7.7	7.8	1.48	6897	3.55	14.12
008938257-07	OBS	No	238.294933	261.711404	260.5	4.309	8.0	7.1	1.48	6897	3.07	6.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008938257-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008938257-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008938257-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

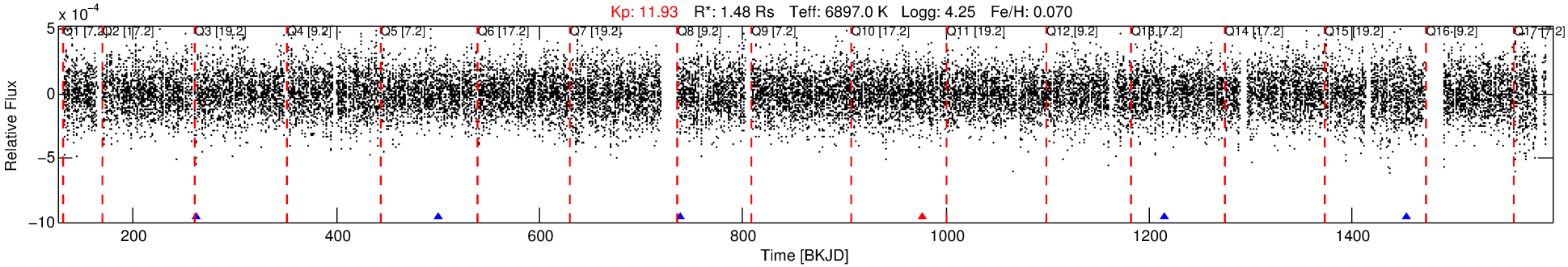
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

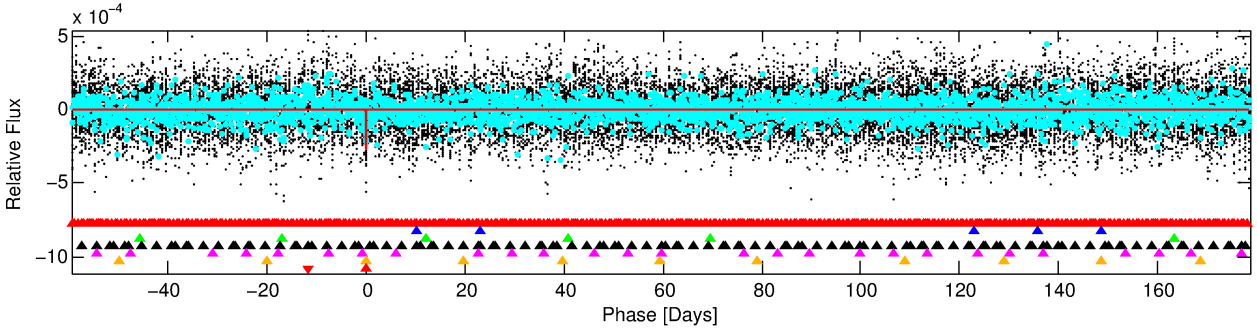
Ephemeris Match Information For 008938257-07

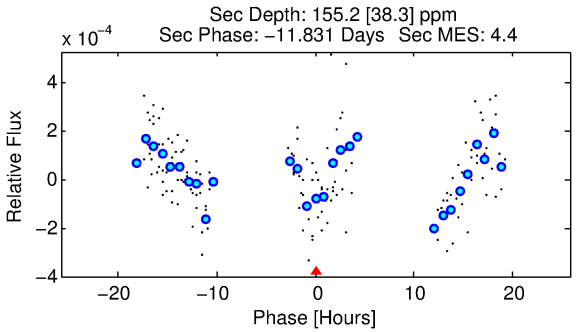
No Significant Match Found

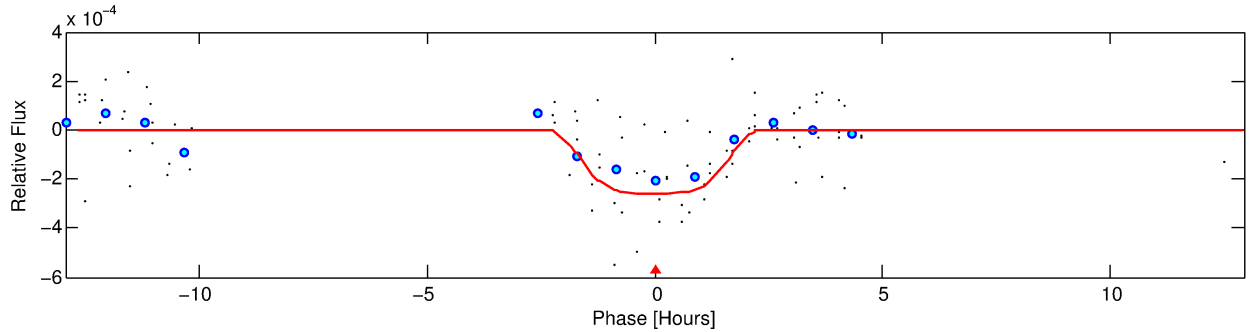
DV One-Page Summary

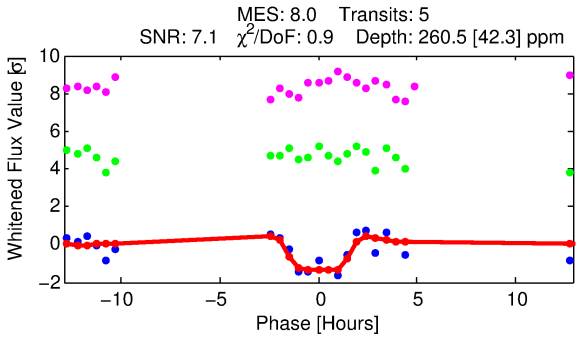
KIC: 8938257 Candidate: 7 of 7 Period: 238.295 d

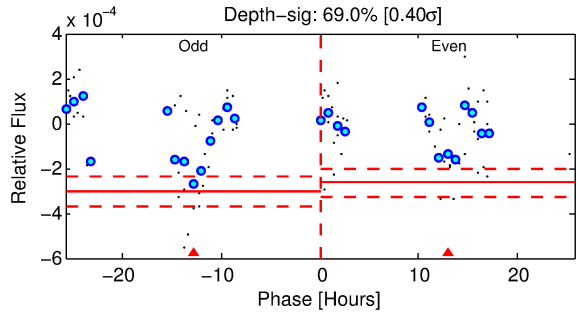


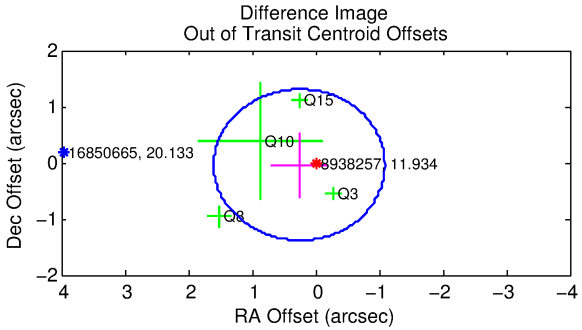












DV Fit Results:

Period = 238.29493 [0.00360] d
Epoch = 261.7114 [0.0123] BKJD
Rp/R* = 0.0190 [0.0020]
a/R* = 130.59 [36.66]
b = 0.97 [0.02]

Seff = 6.23 [2.70]
Teq = 403 [44] K
Rp = 3.07 [1.10] Re
a = 0.8453 [0.2373] AU

Ag = 6490.74 [3315.64] [1.96σ]
Teffp = 5591 [514] K [10.06σ]

DV Diagnostic Results:

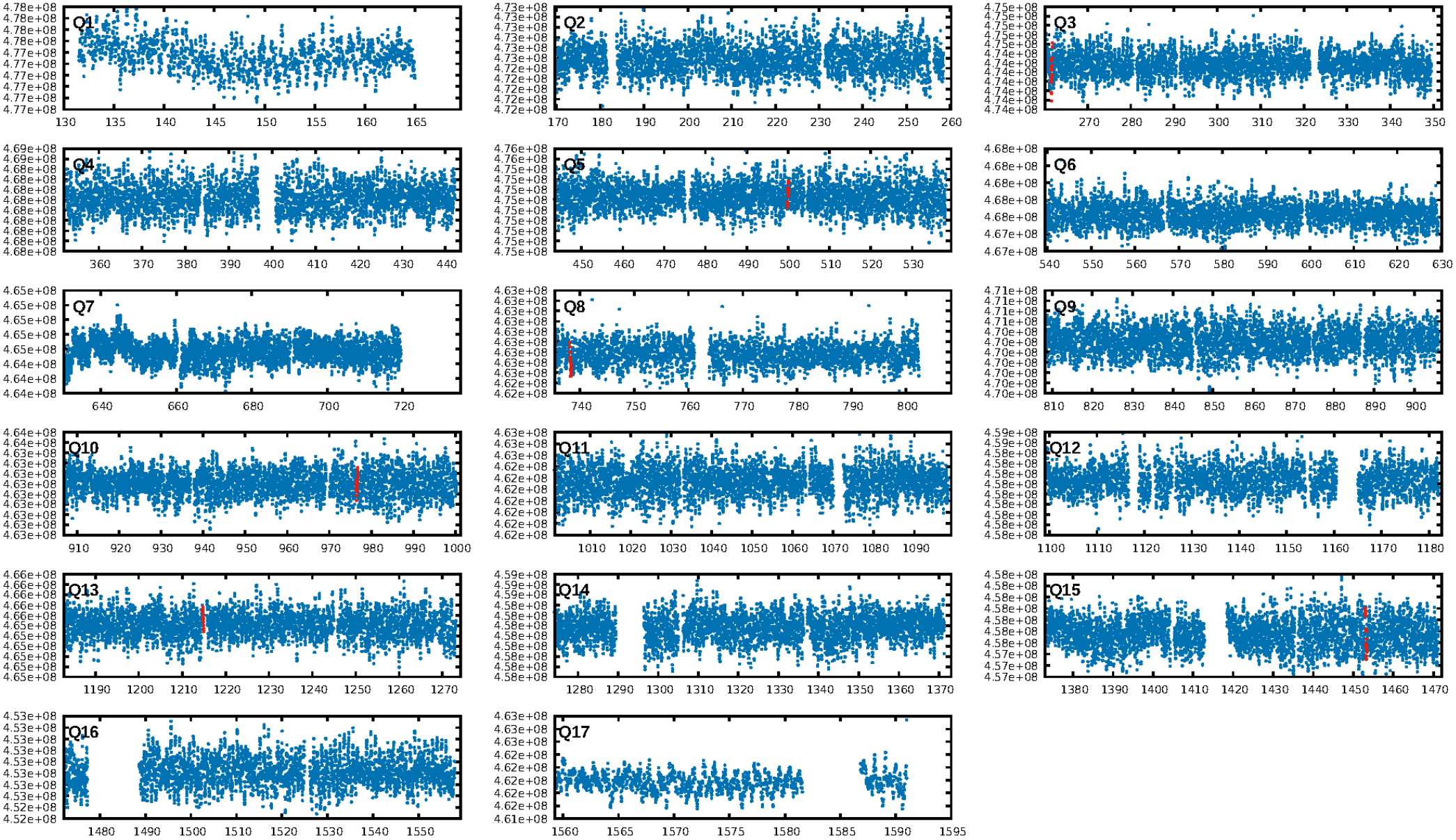
ShortPeriod−sig: 100.0% [442.48σ]
LongPeriod−sig: 100.0% [107.72σ]
ModelChiSquare2−sig: 1.6%
ModelChiSquareGof−sig: 99.7%
Bootstrap−pfa: 1.21e−09
RollingBand−fgt: 0.80 [4/5]
GhostDiagnostic−chr: 0.6503

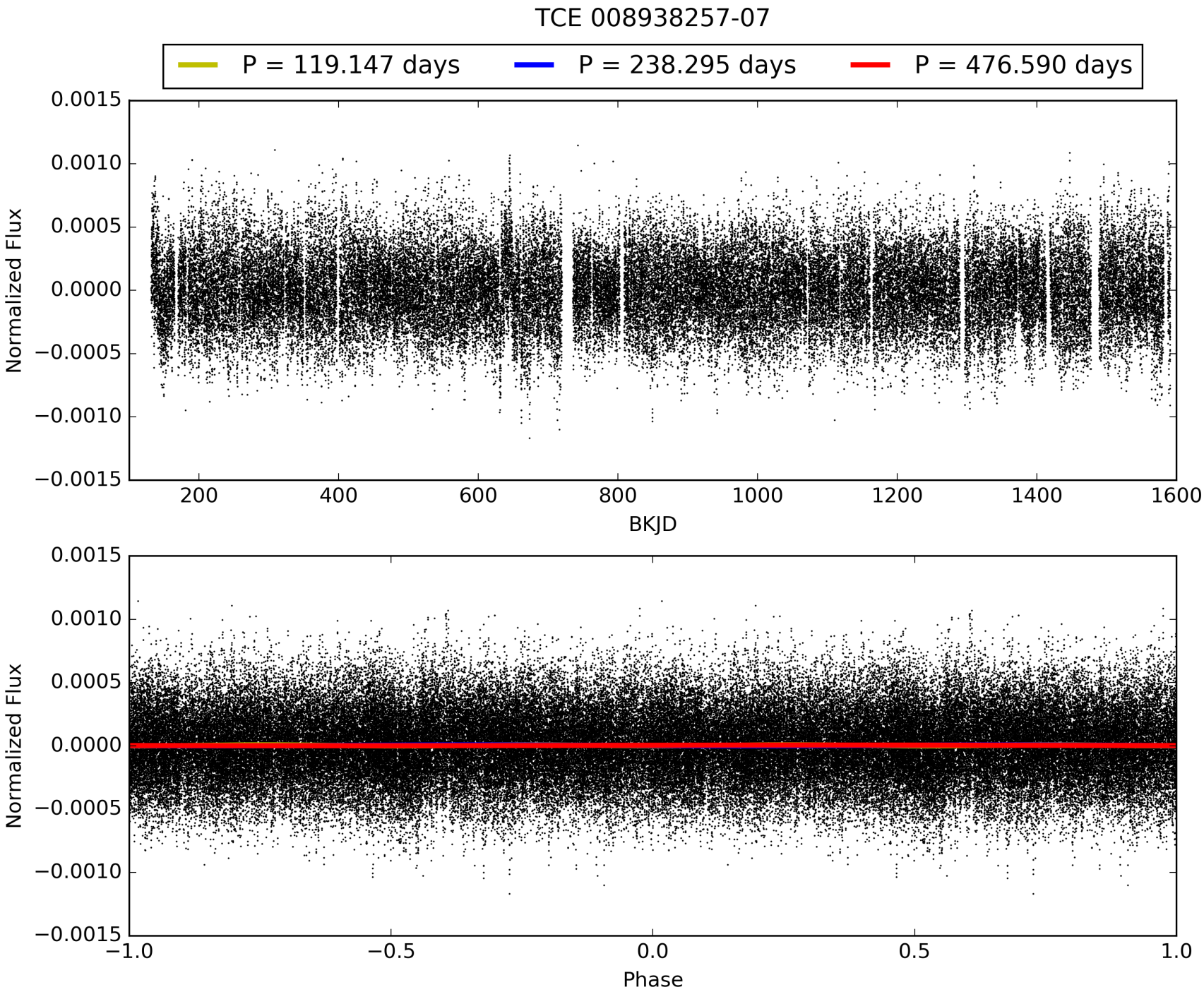
Centroid−sig: 14.1%
Centroid−so: 0.589 arcsec [1.03σ]
OotOffset−rm: 0.258 arcsec [0.58σ]
KicOffset−rm: 0.310 arcsec [0.72σ]
OotOffset−st: 1/2/1/0 [4]
KicOffset−st: 1/2/1/0 [4]
DiffImageQuality−fgm: 1.00 [4/4]
DiffImageOverlap−fno: 0.00 [0/5]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 06:17:40 Z

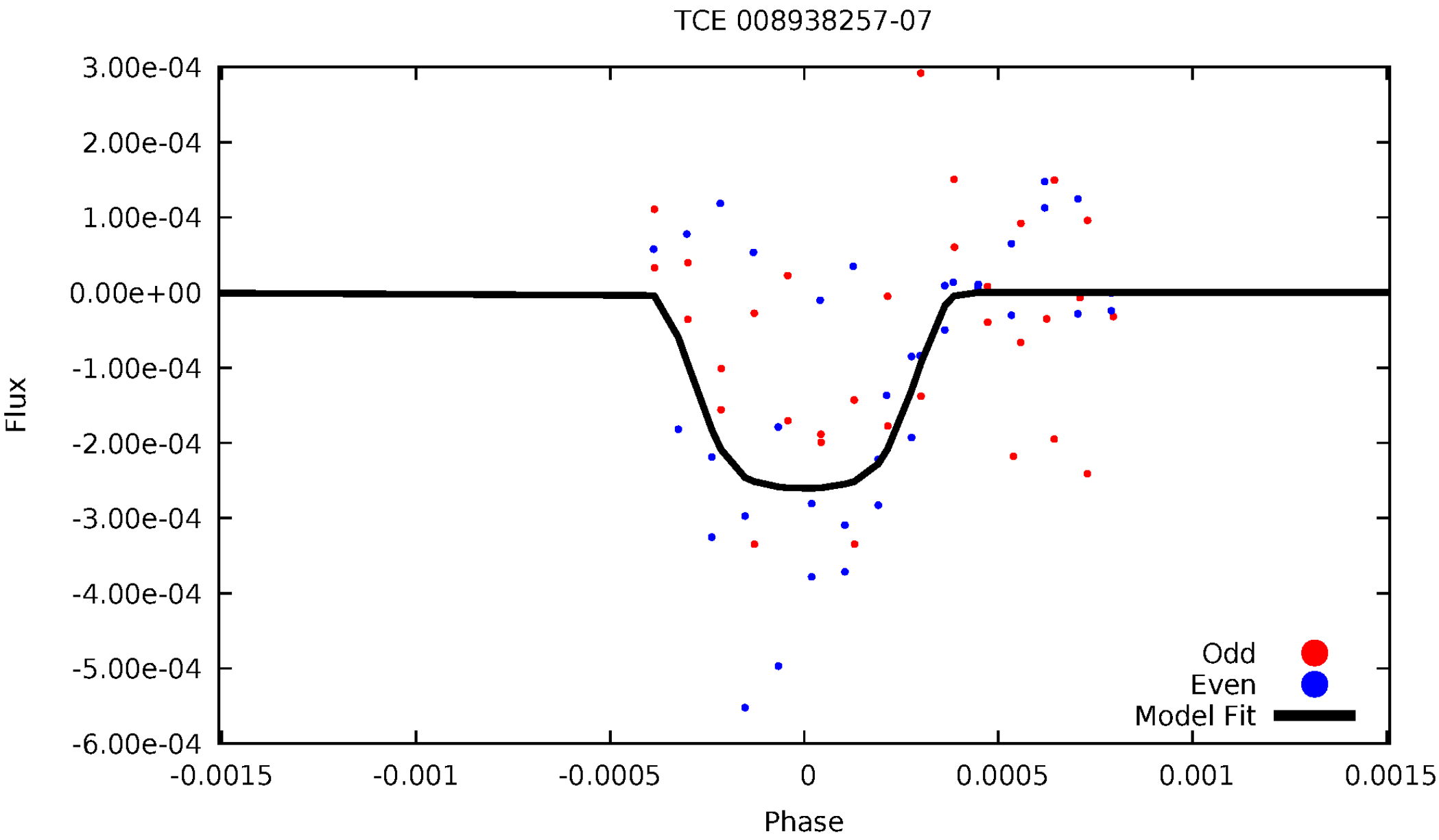
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008938257-07, PDC Light Curves

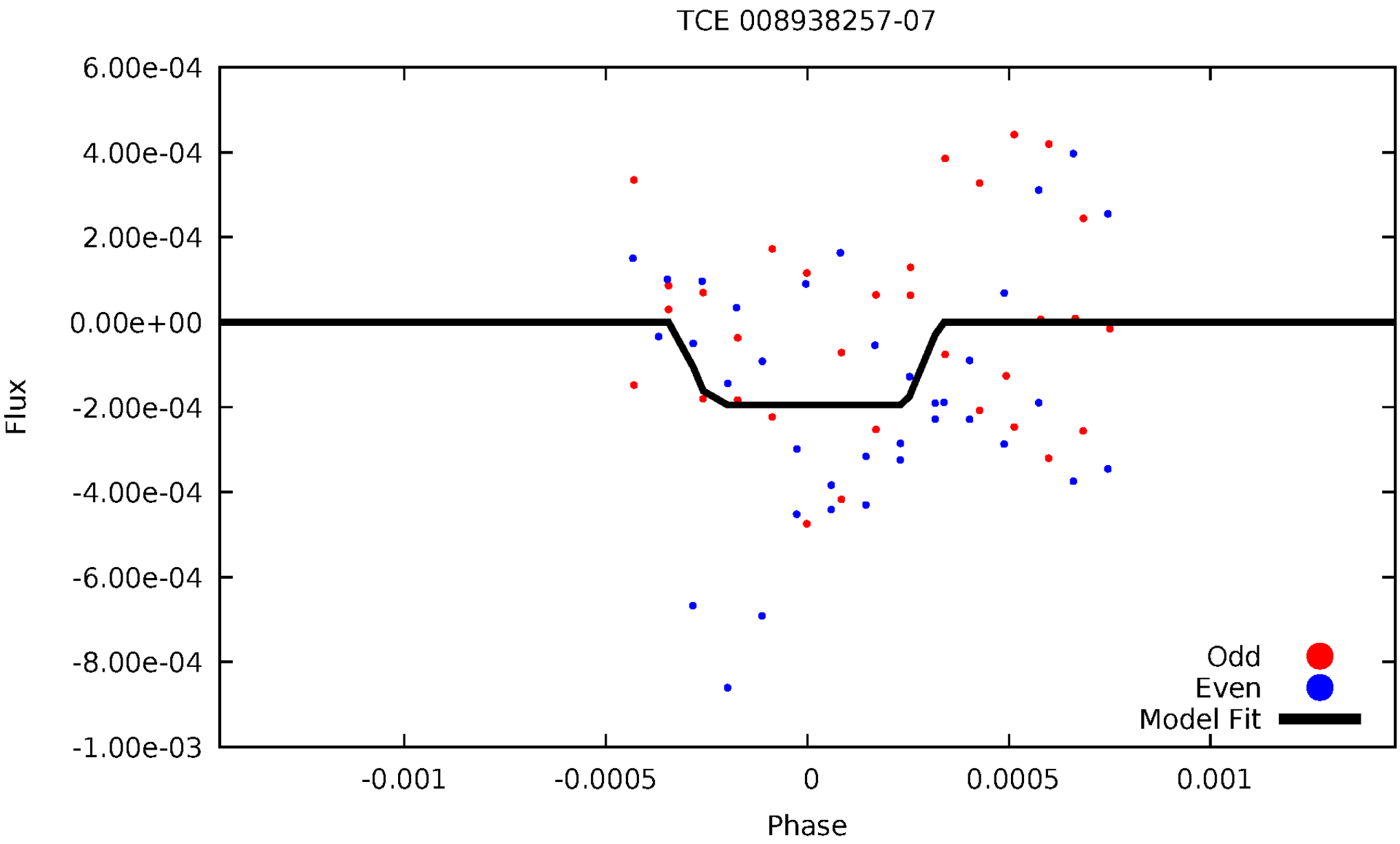



TCE 008938257-07
P = 119.147 days
P = 238.295 days
P = 476.590 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

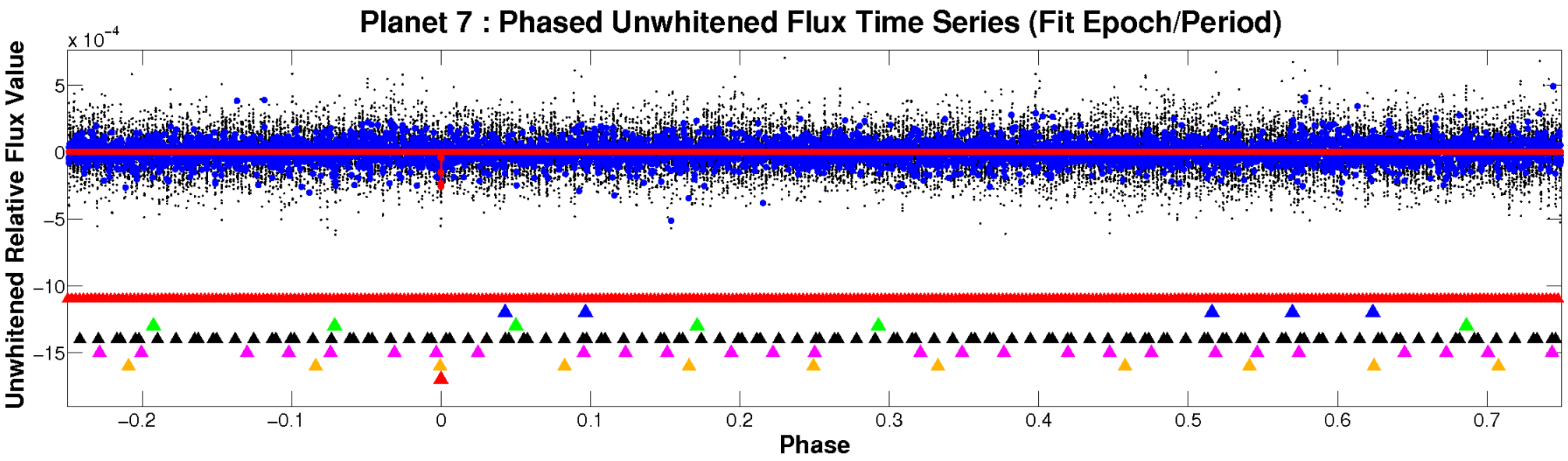
DV Odd/Even

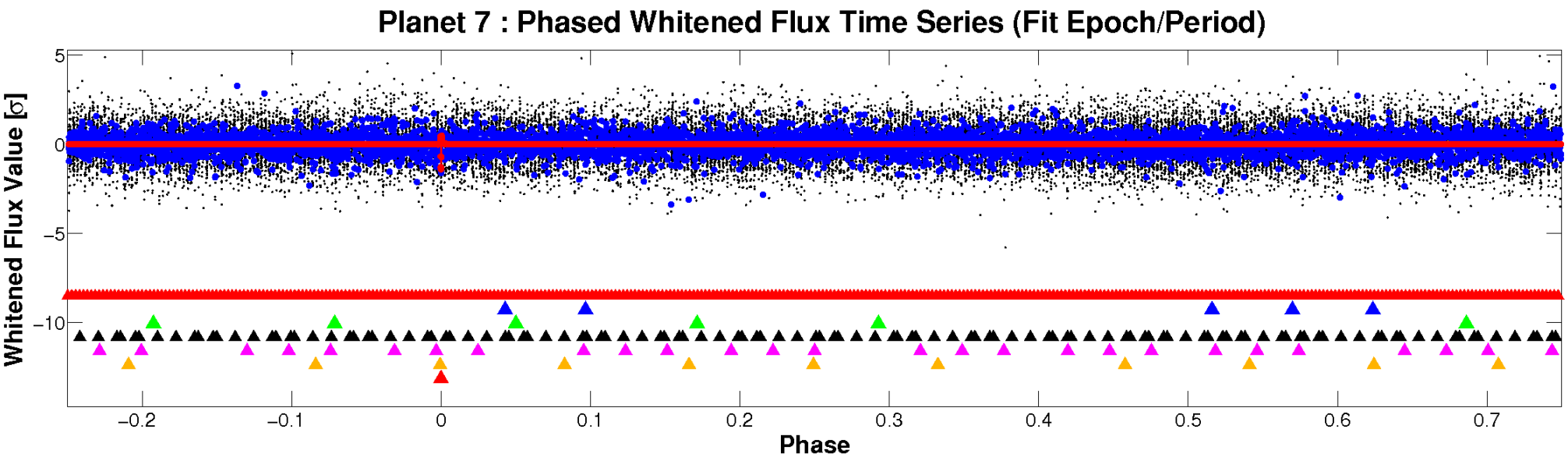

TCE 008938257-07
3.00e-04
2.00e-04
1.00e-04
0.00e+00
-1.00e-04
-2.00e-04
-3.00e-04
-4.00e-04
-5.00e-04
-6.00e-04
Flux
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008938257-07
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
-0.001
-0.0005
0
0.0005
0.001
Phase
Odd
Even
Model Fit

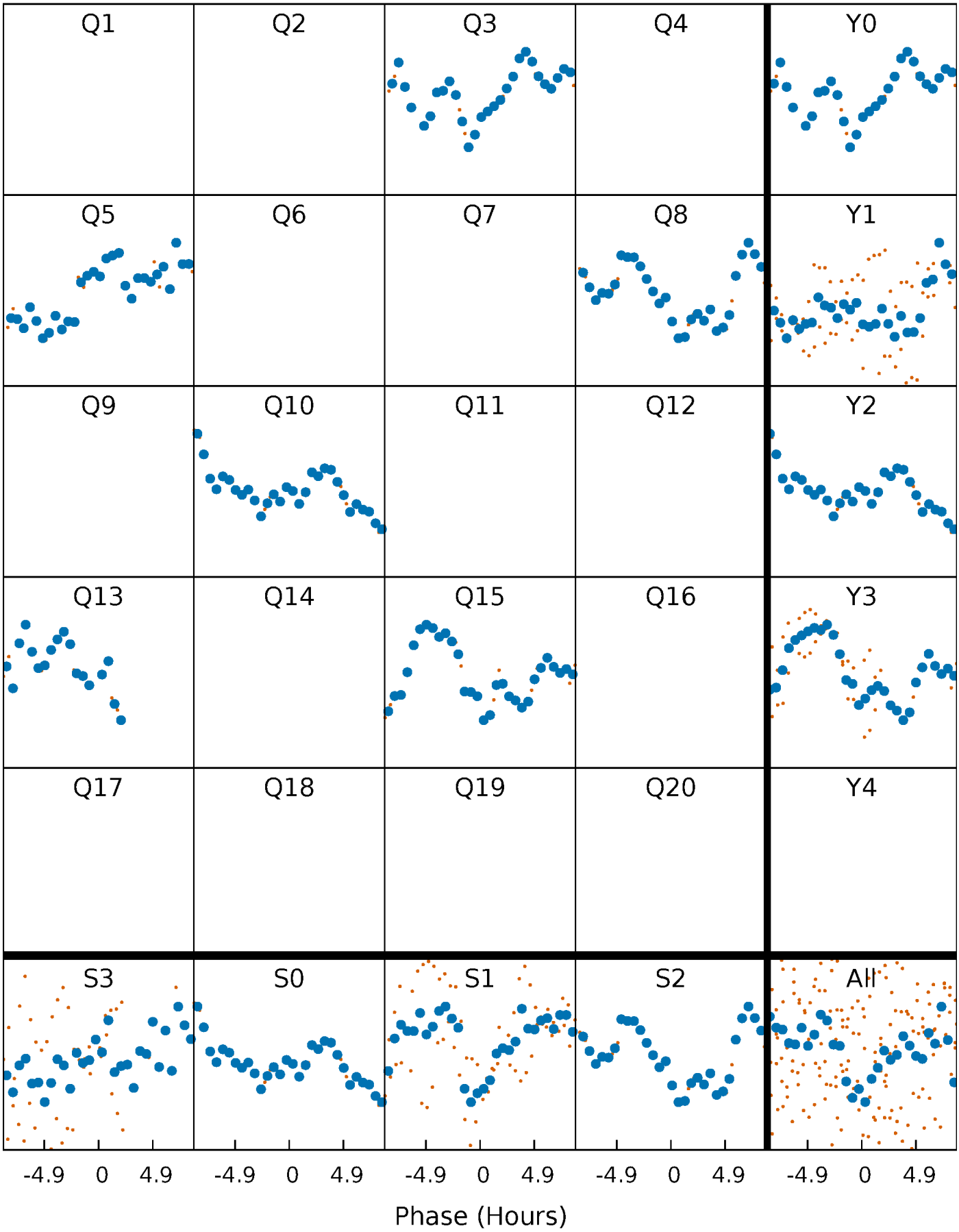
Non-Whitened Vs. Whitened Light Curve





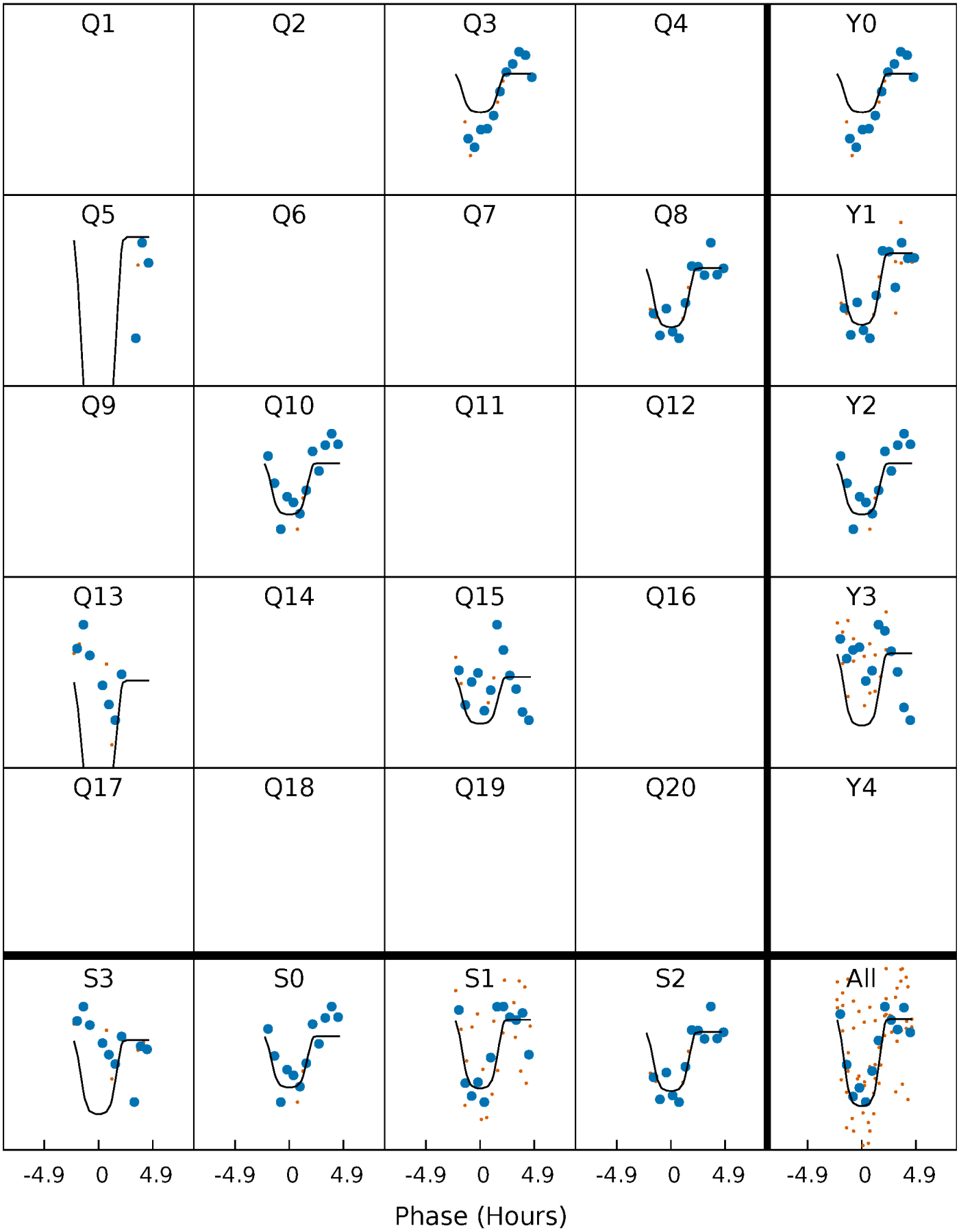
PDC Quarter-Phased Transit Curves

TCE 008938257-07 P=238.294933 Days T_0=261.711404 (BKJD)



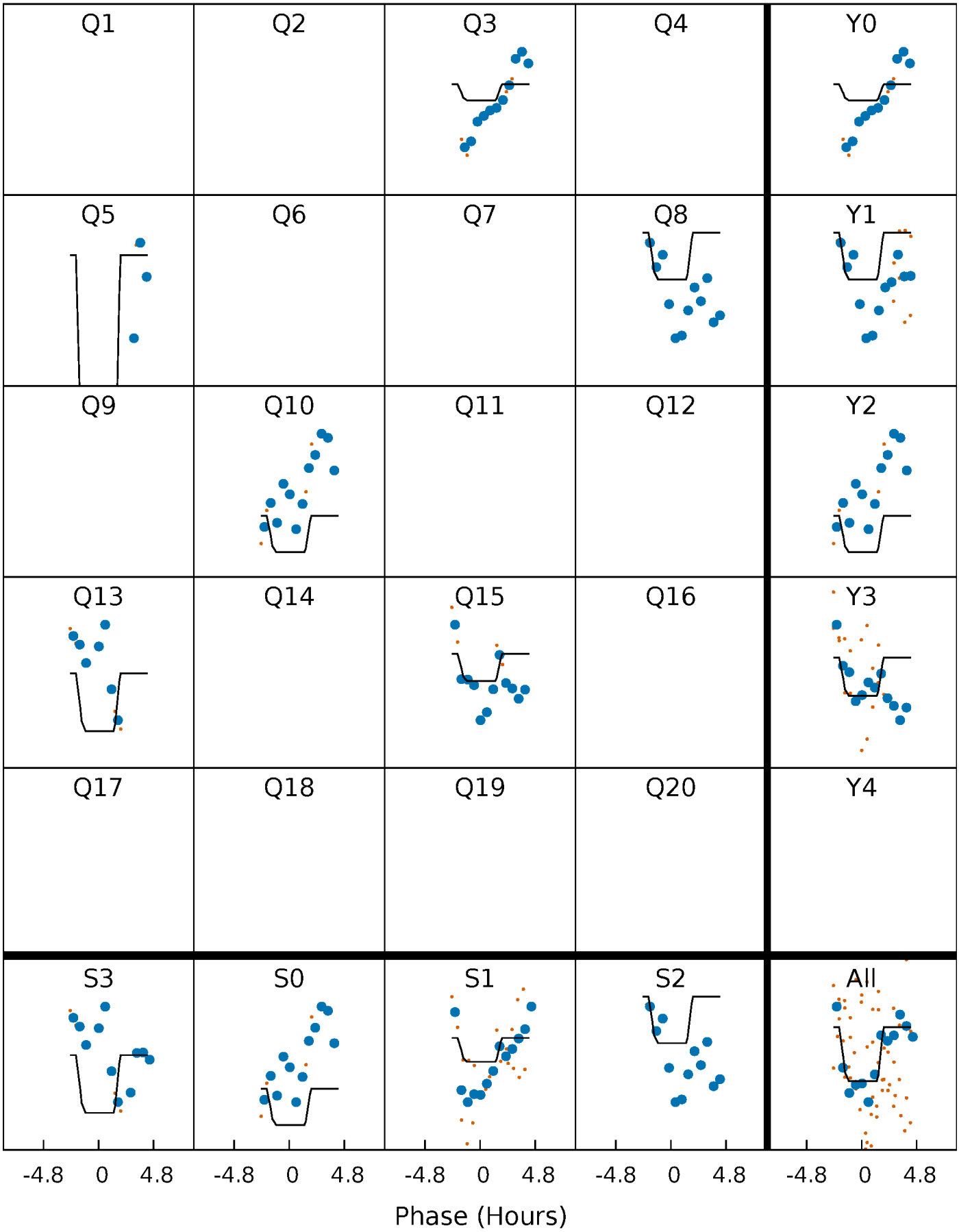
DV Quarter-Phased Transit Curves

TCE 008938257-07 P=238.294933 Days T_0=261.711404 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

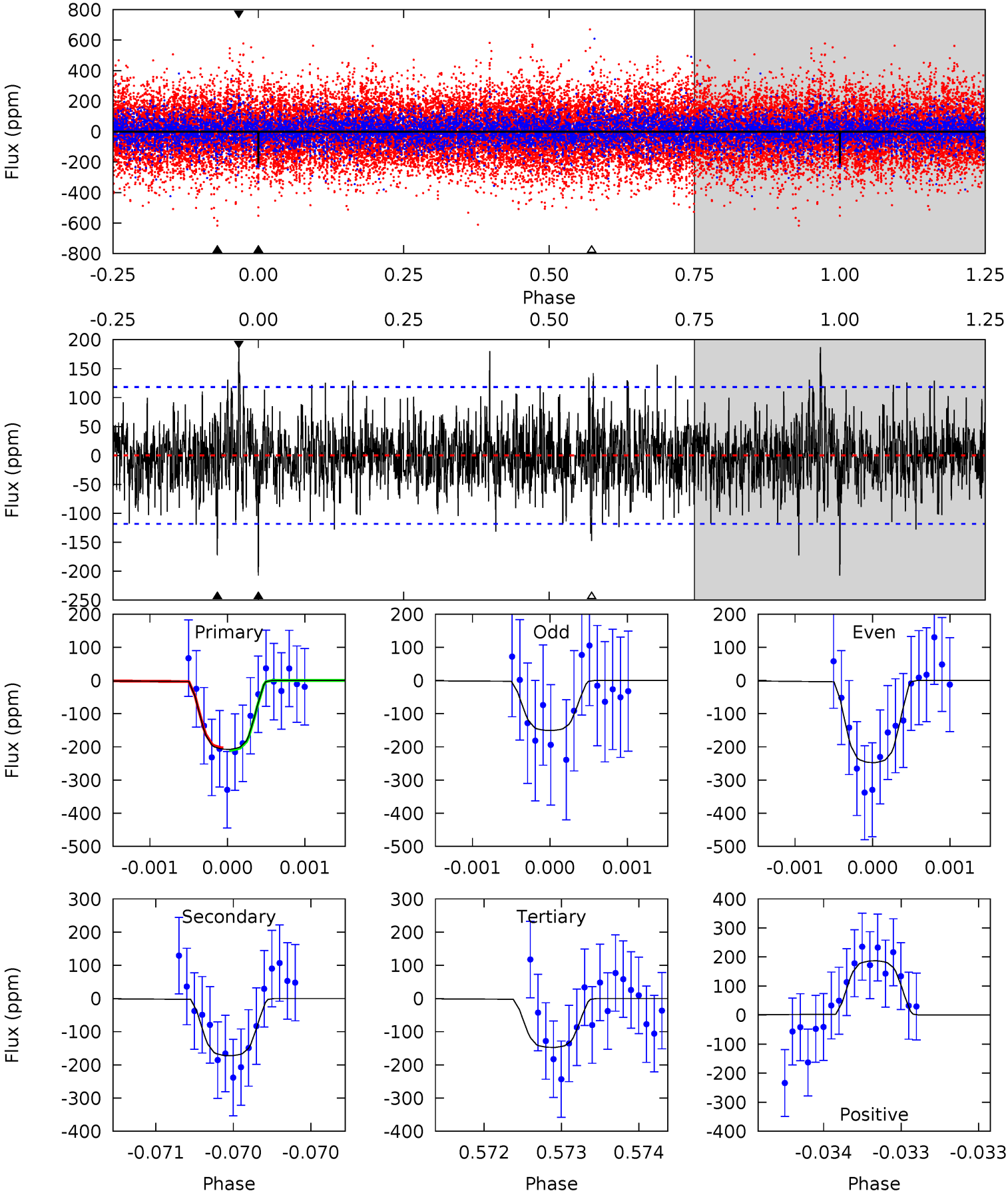
TCE 008938257-07 P=238.294883 Days T_0=261.722303 (BKJD)



DV Model-Shift Uniqueness Test

008938257-07, P = 238.294933 Days, E = 23.416471 Days

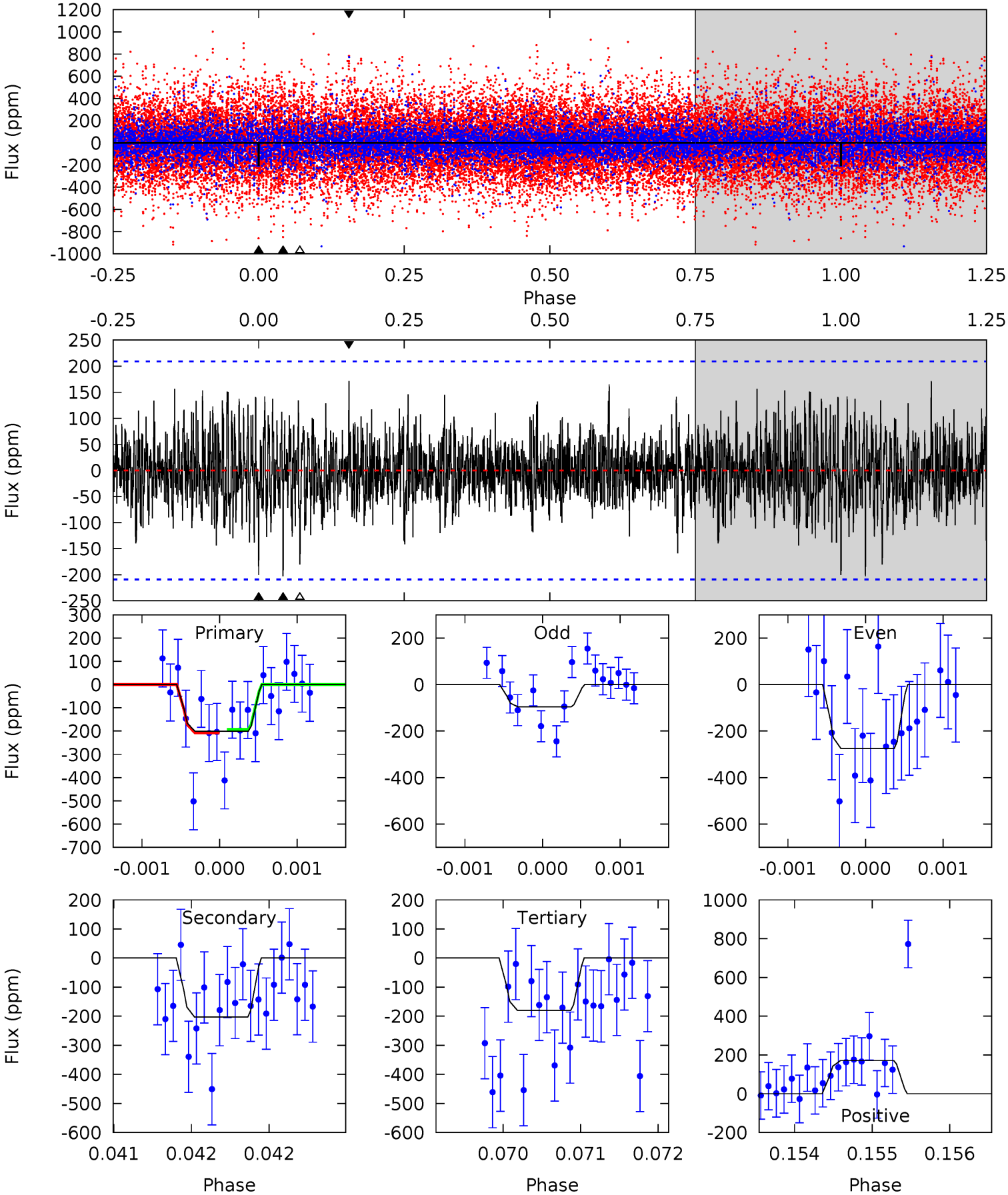
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.66	8.02	6.86	8.69	5.50	3.36	2.01	2.79	0.96	1.16	-0.67	2.23	0.85	0.47	0.16



Alt Model-Shift Uniqueness Test

008938257-07, P = 238.294883 Days, E = 23.427420 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.31	5.36	4.76	4.53	5.53	3.42	1.26	0.54	0.78	0.60	0.83	2.34	0.76	0.46	0.20



Stellar Parameters For KIC 008938257

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6897^{+193}_{-303}	$4.248^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.482^{+0.511}_{-0.256}$	$1.417^{+0.213}_{-0.213}$	$0.613^{+0.298}_{-0.332}$
	+3%/-4%	+2%/-5%	+286%/-500%	+34%/-17%	+15%/-15%	+49%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008938257-07 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-172±21	$3.14^{+0.58}_{-0.45}$	568^{+46}_{-33}	5704^{+393}_{-355}	6692^{+2425}_{-2014}
Alt.	-203±38	$2.36^{+0.54}_{-0.43}$	571^{+47}_{-35}	6901^{+834}_{-594}	14242^{+7236}_{-4905}

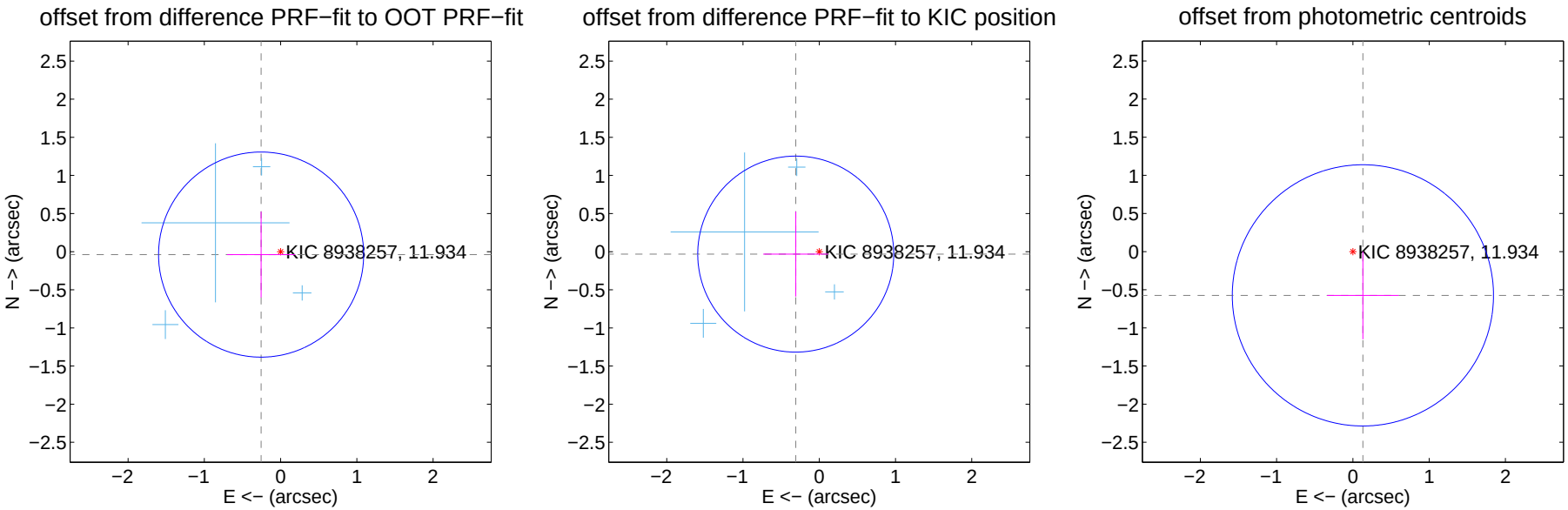
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

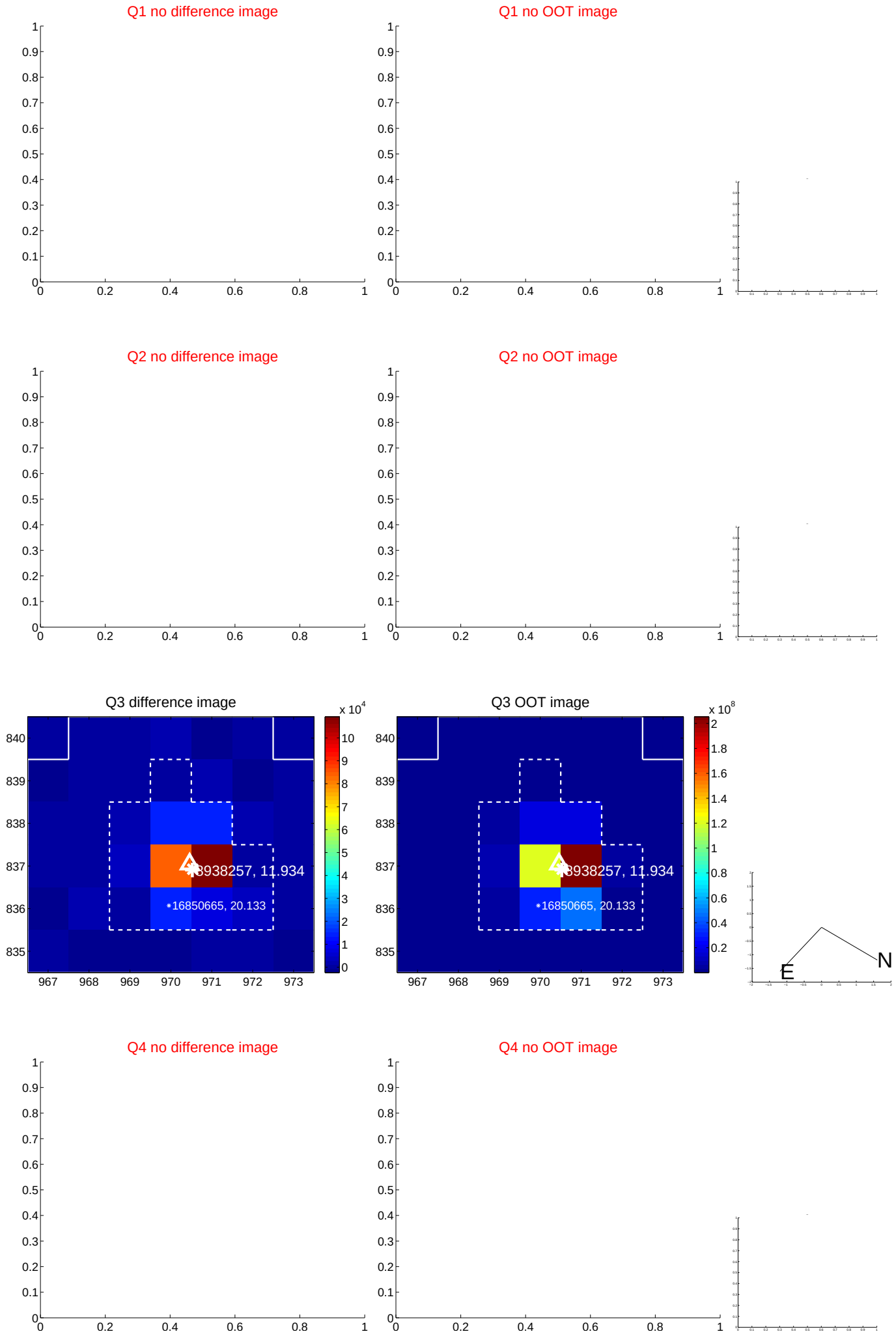
Supplemental centroid analysis for 008938257-07. Kepler magnitude: 11.93. Transit SNR 7.11
There are 4 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.258 ± 0.448	0.58	0.256 ± 0.445	-0.038 ± 0.563
PRF-fit source offset from KIC position	0.310 ± 0.428	0.72	0.308 ± 0.427	-0.032 ± 0.557
photometric centroid source offset	0.59 ± 0.57	1.03	-0.13 ± 0.47	-0.57 ± 0.58

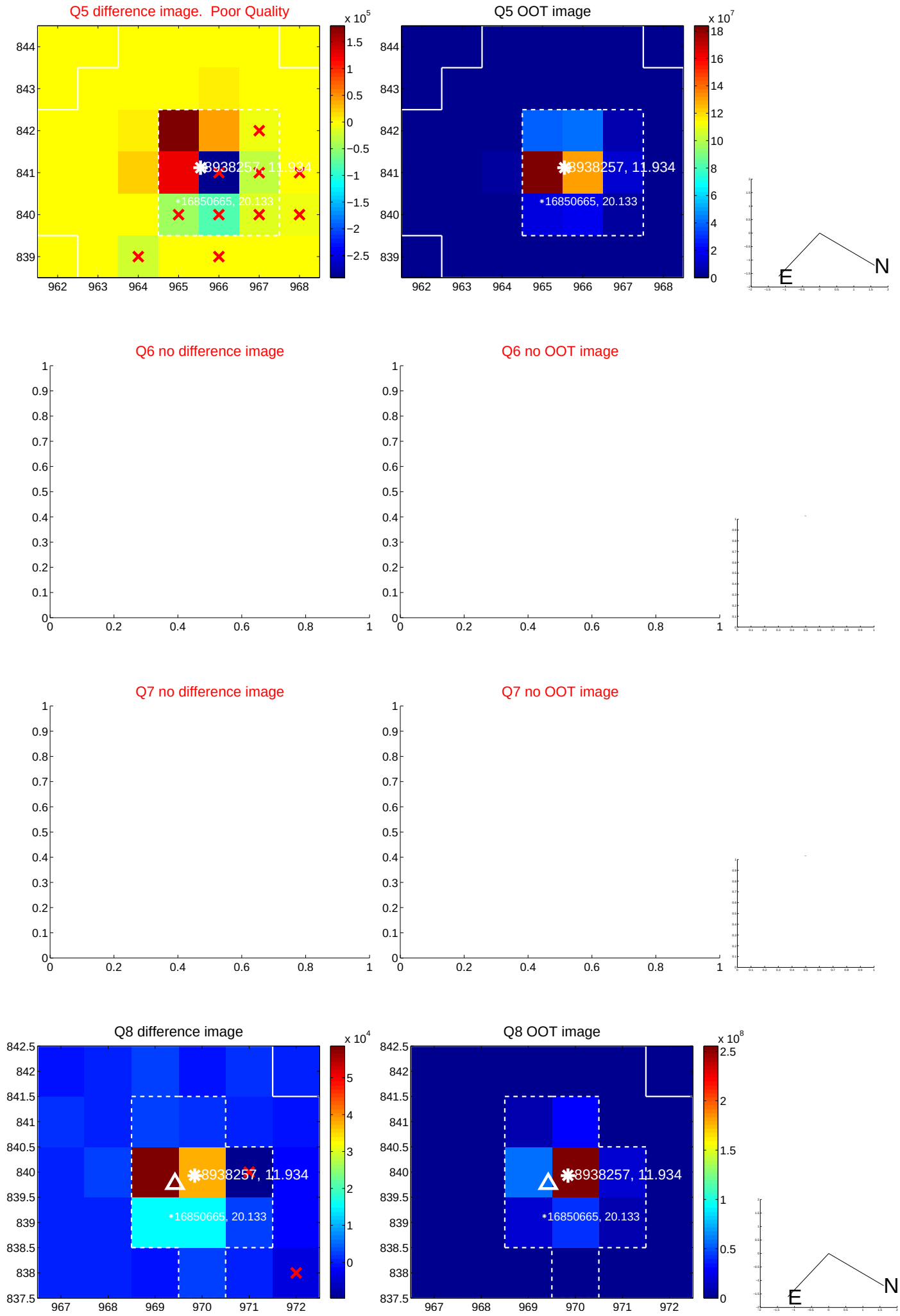


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

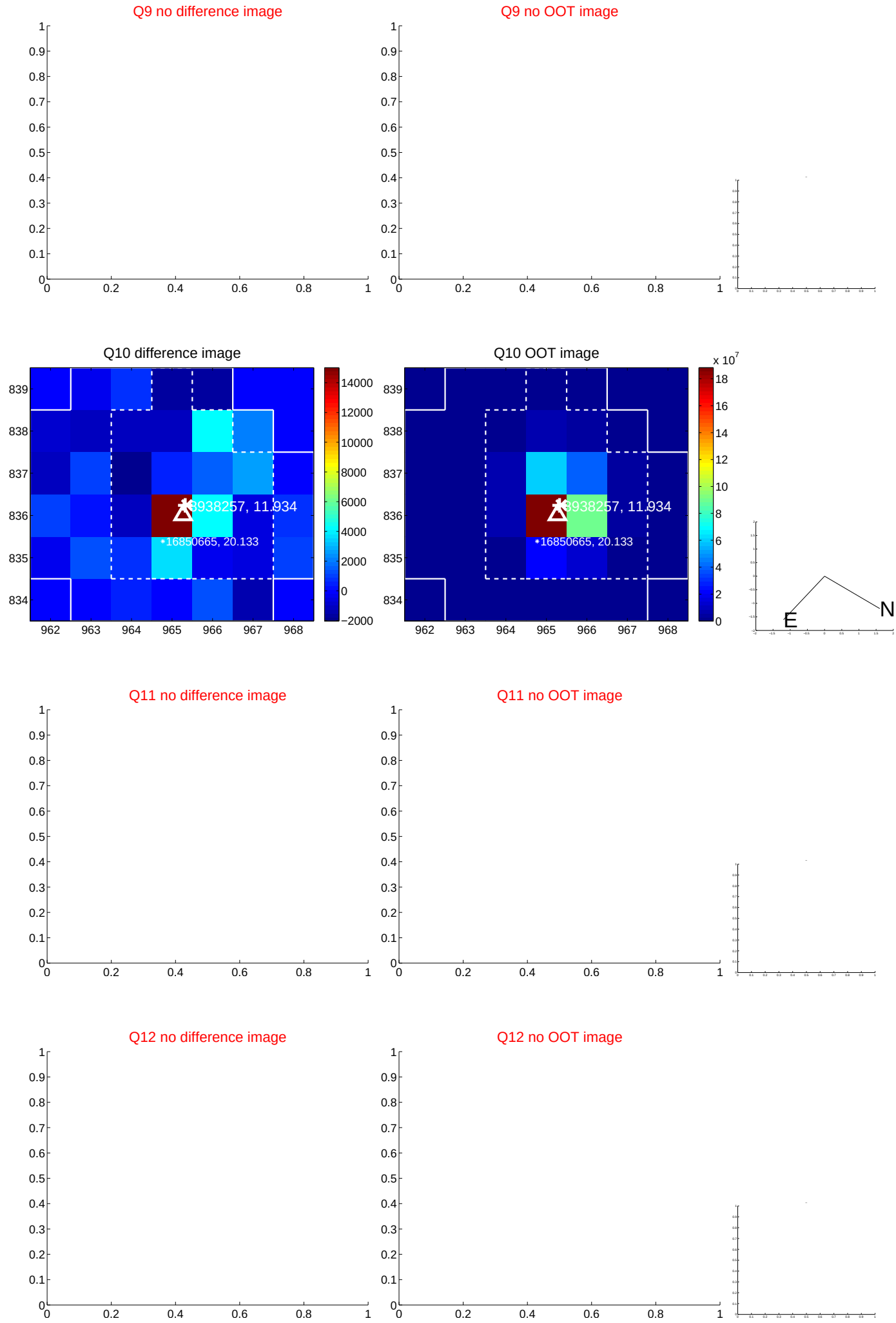
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



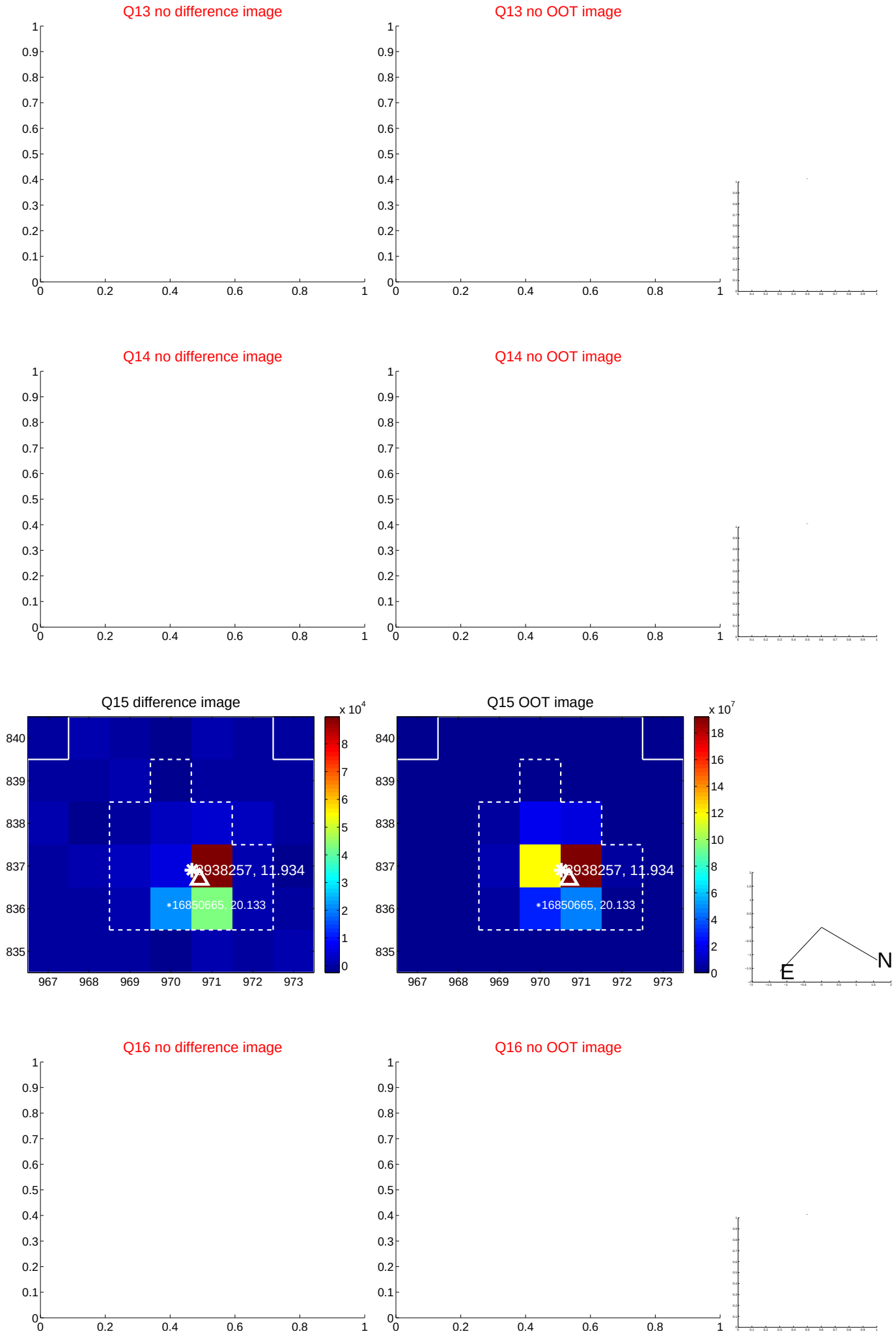
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



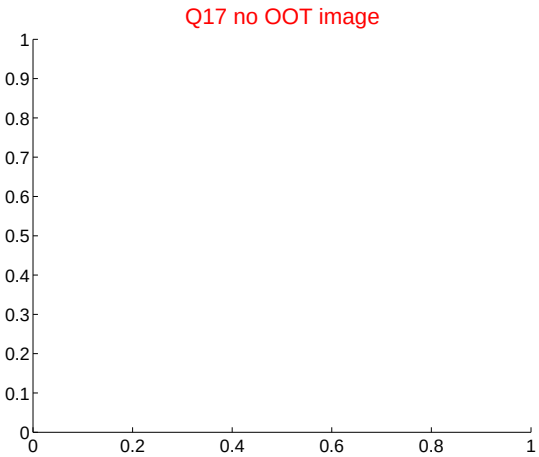
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

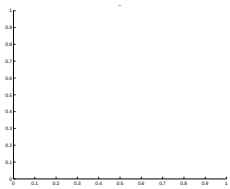


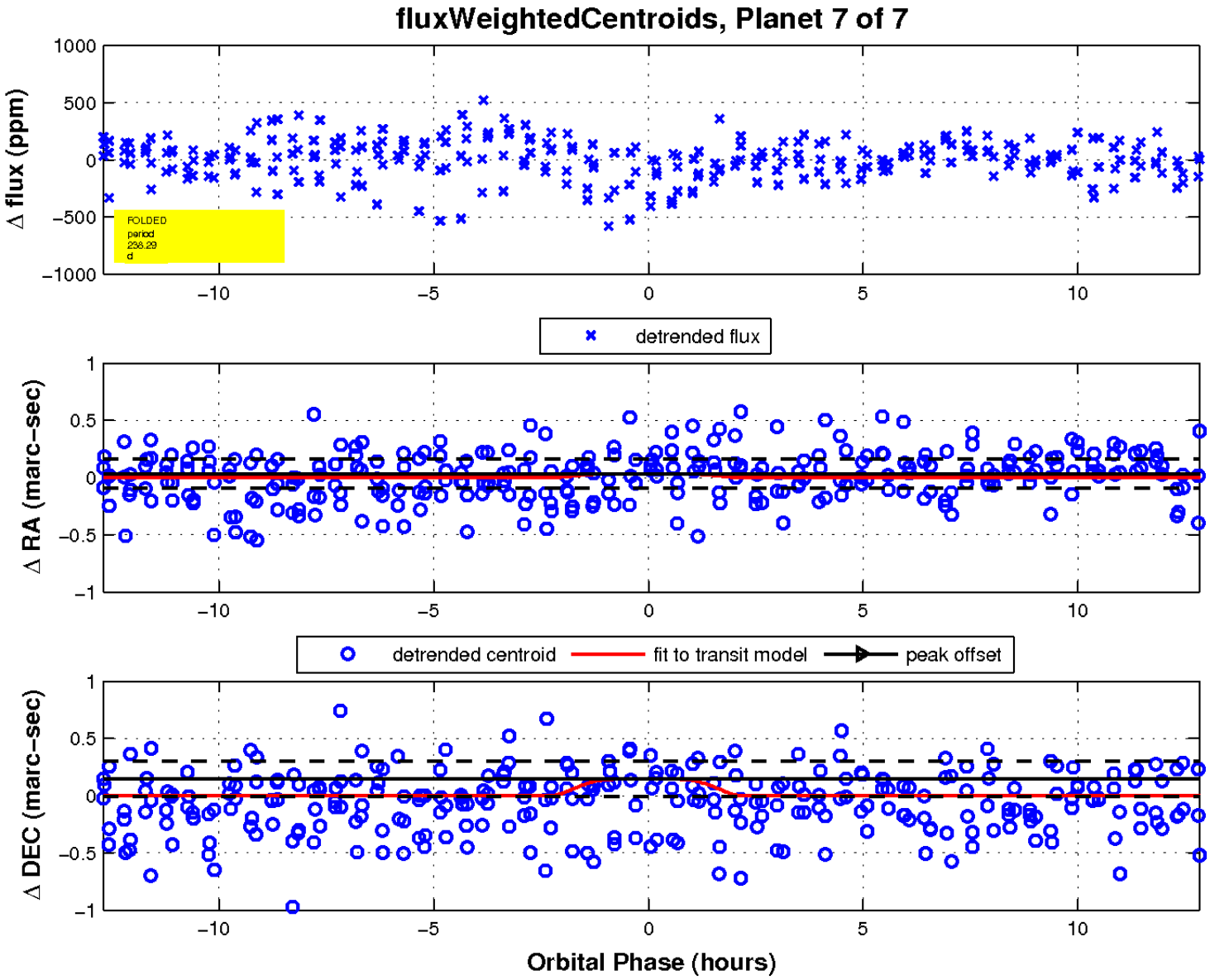
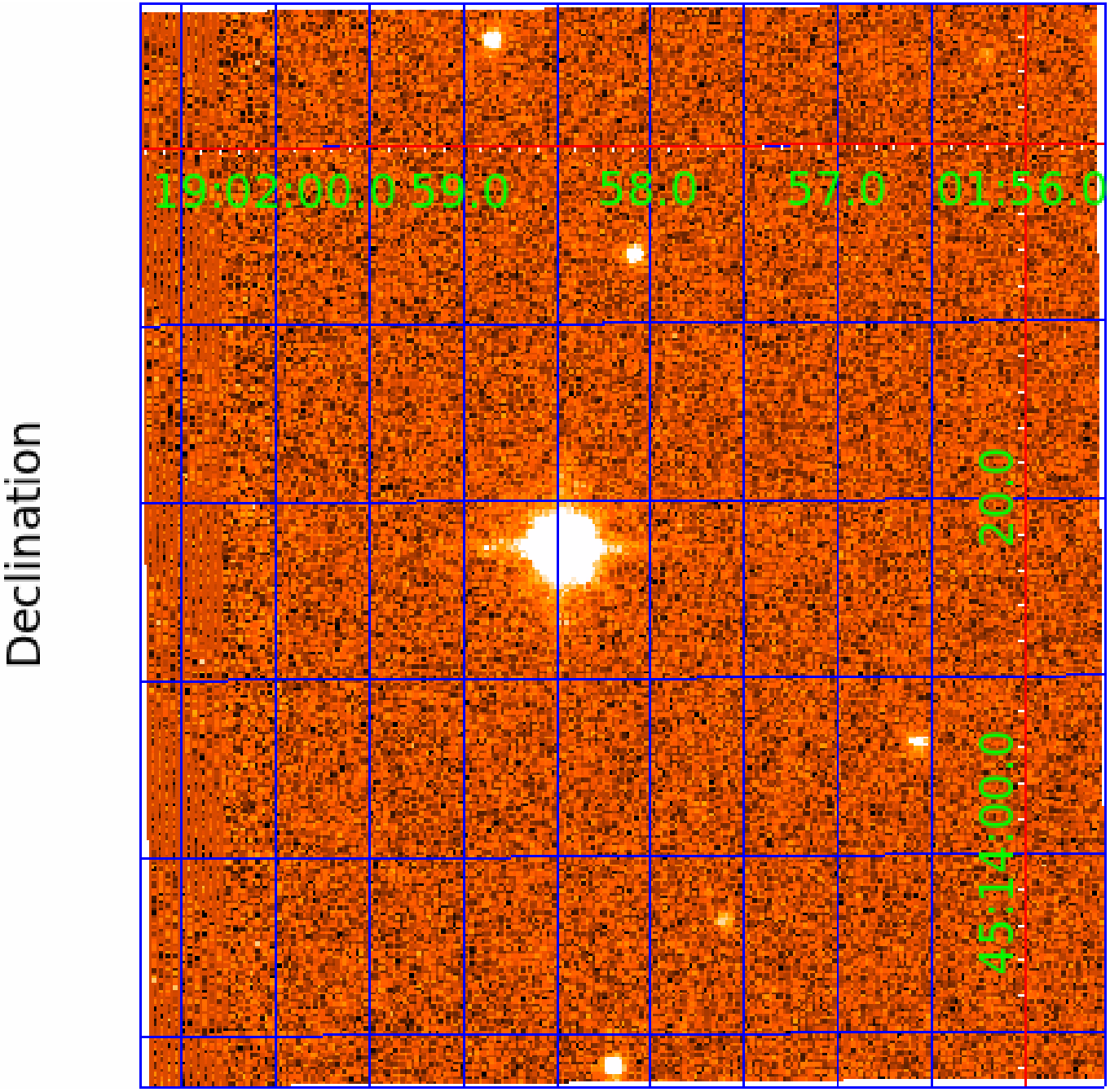
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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







UKIRT Image