KIC 009050337

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 ($S_\oplus$)
009050337-01	OBS	No	1.109726	132.516197	21.8	2.978	10.6	10.5	2.80	7324	1.52	32502.13
009050337-02	OBS	No	1.109709	132.150001	19.1	3.369	8.7	9.6	2.80	7324	1.44	32502.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009050337-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009050337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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.

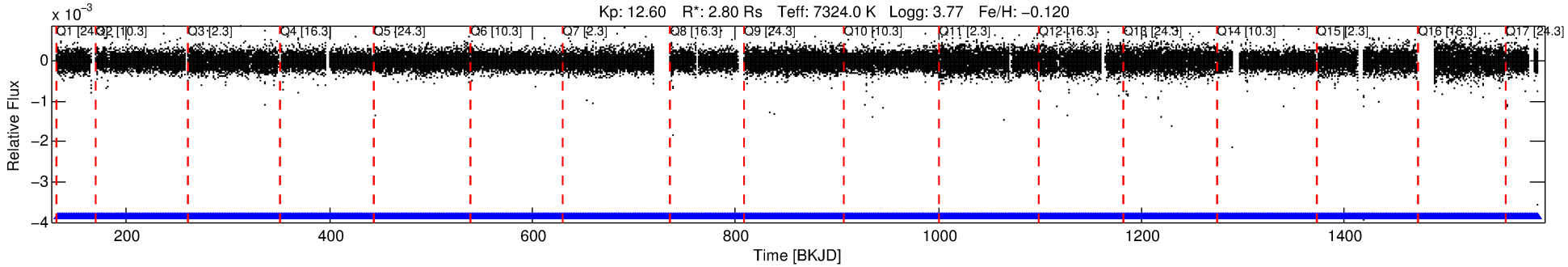
Ephemeris Match Information For 009050337-01

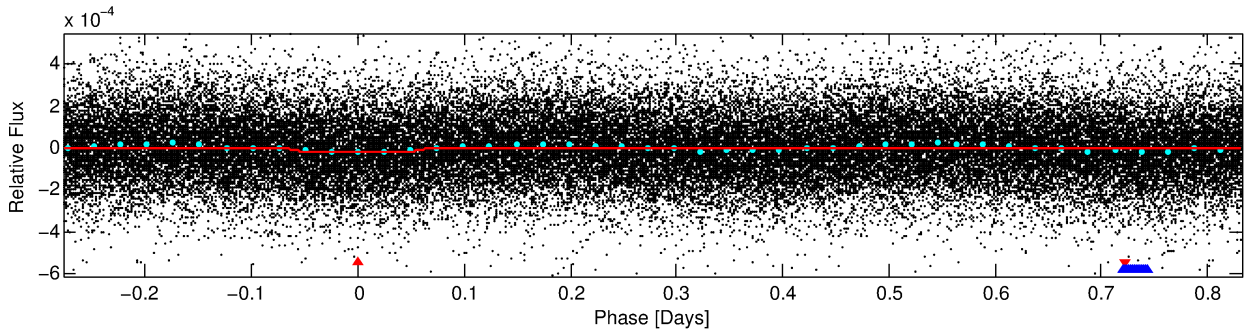
No Significant Match Found

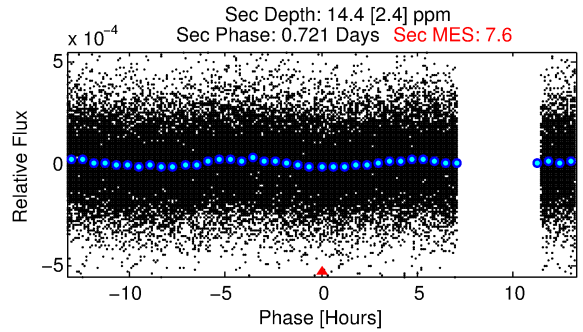
DV One-Page Summary

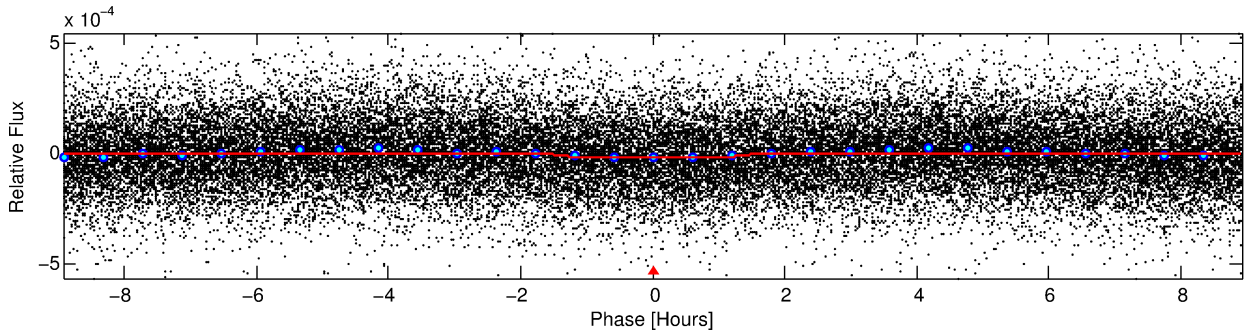
KIC: 9050337 Candidate: 1 of 2 Period: 1.110 d

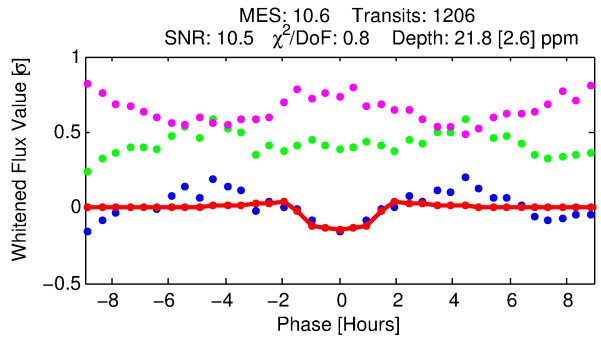
Kp: 12.60 R*: 2.80 Rs Teff: 7324.0 K Logg: 3.77 Fe/H: −0.120

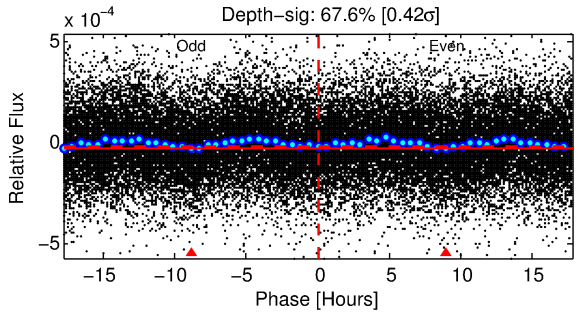


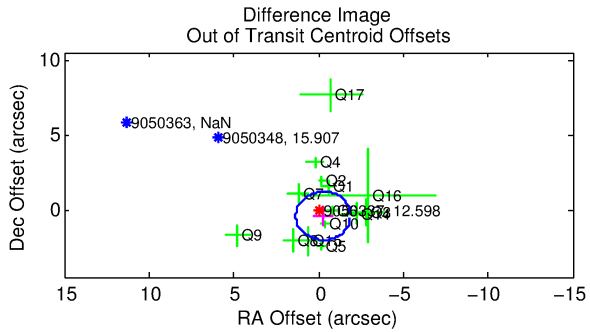












DV Fit Results:

Period = 1.10973 [0.00001] d
Epoch = 132.5162 [0.0033] BKJD
Rp/R* = 0.0050 [0.0014]
a/R* = 1.59 [1.62]
b = 0.90 [0.37]

Seff = 32502.13 [22483.75]
Teq = 3424 [592] K
Rp = 1.52 [0.79] Re
a = 0.0250 [0.0106] AU

Ag = 2.15 [1.89] [0.61σ]
Teffp = 6408 [953] K [2.66σ]

DV Diagnostic Results:

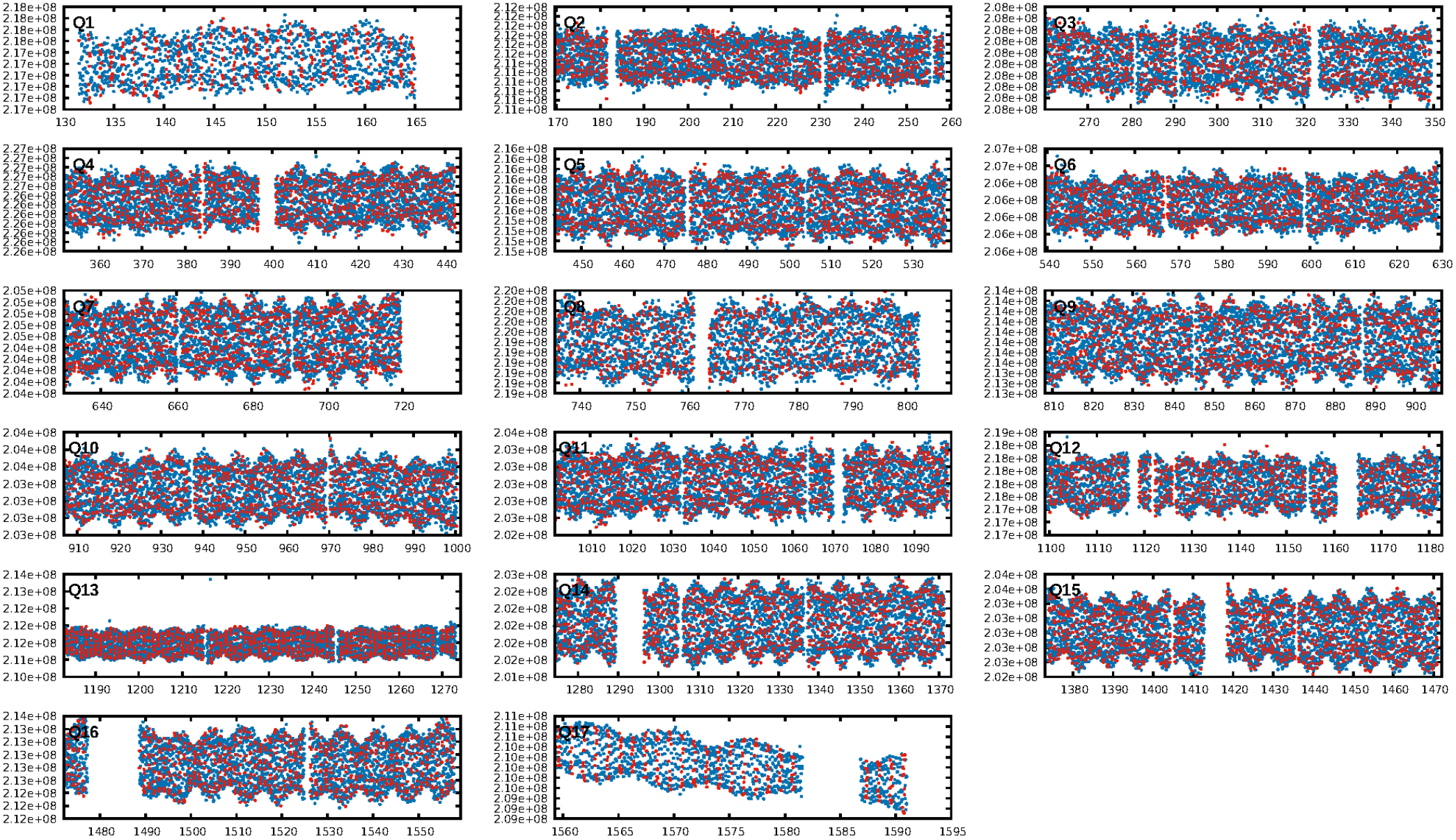
ShortPeriod−sig: 0.0% [0.00σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 1.51e−19
RollingBand−fgt: 1.00 [1152/1152]
GhostDiagnostic−chr: 1.903

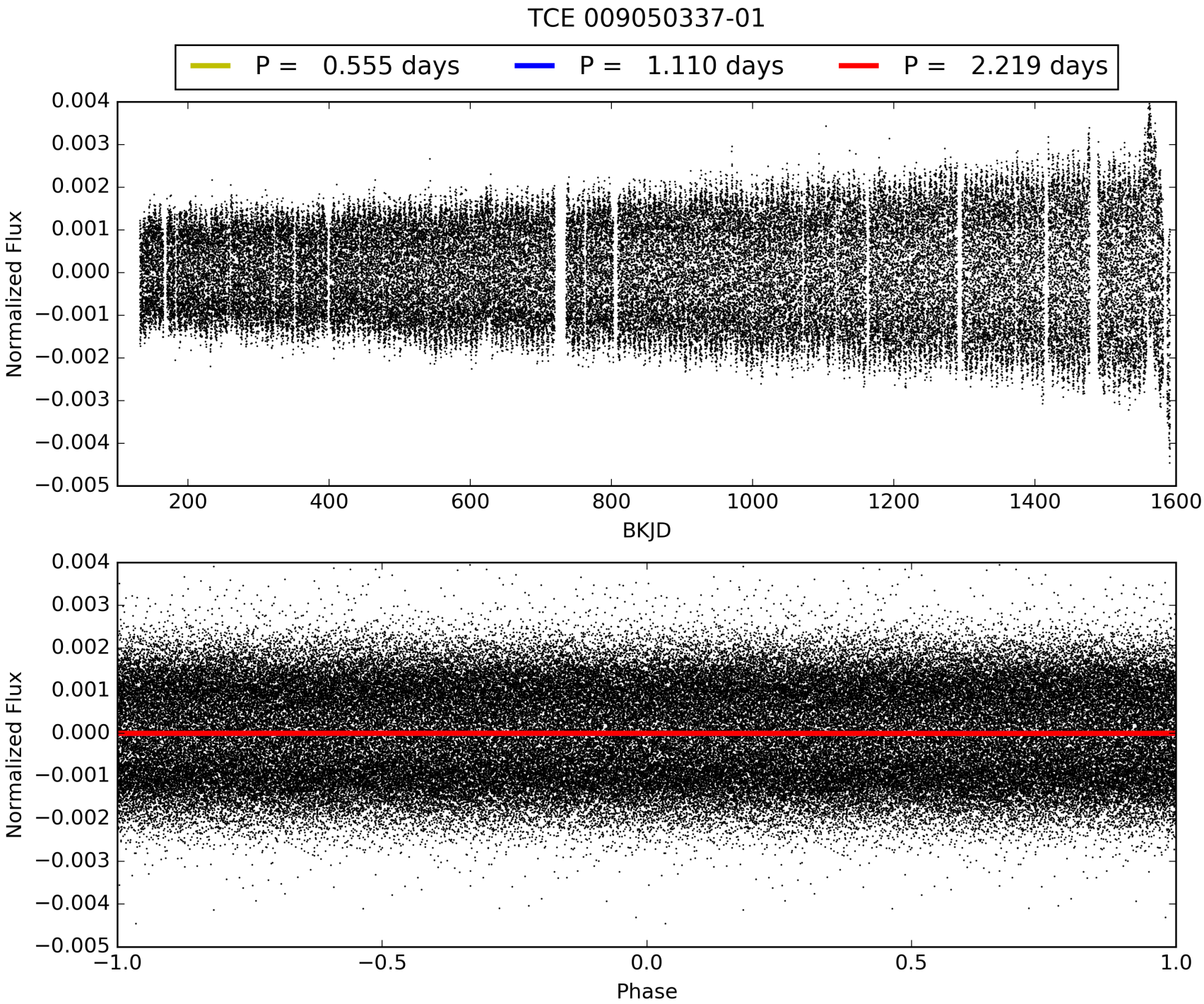
Centroid−sig: 0.0%
Centroid−so: 2.380 arcsec [2.61σ]
OotOffset−rm: 0.503 arcsec [0.94σ]
KicOffset−rm: 0.477 arcsec [0.90σ]
OotOffset−st: 4/3/3/4 [14]
KicOffset−st: 4/3/3/4 [14]
DiffImageQuality−fgm: 0.57 [8/14]
DiffImageOverlap−fno: 0.41 [7/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 00:53:03 Z

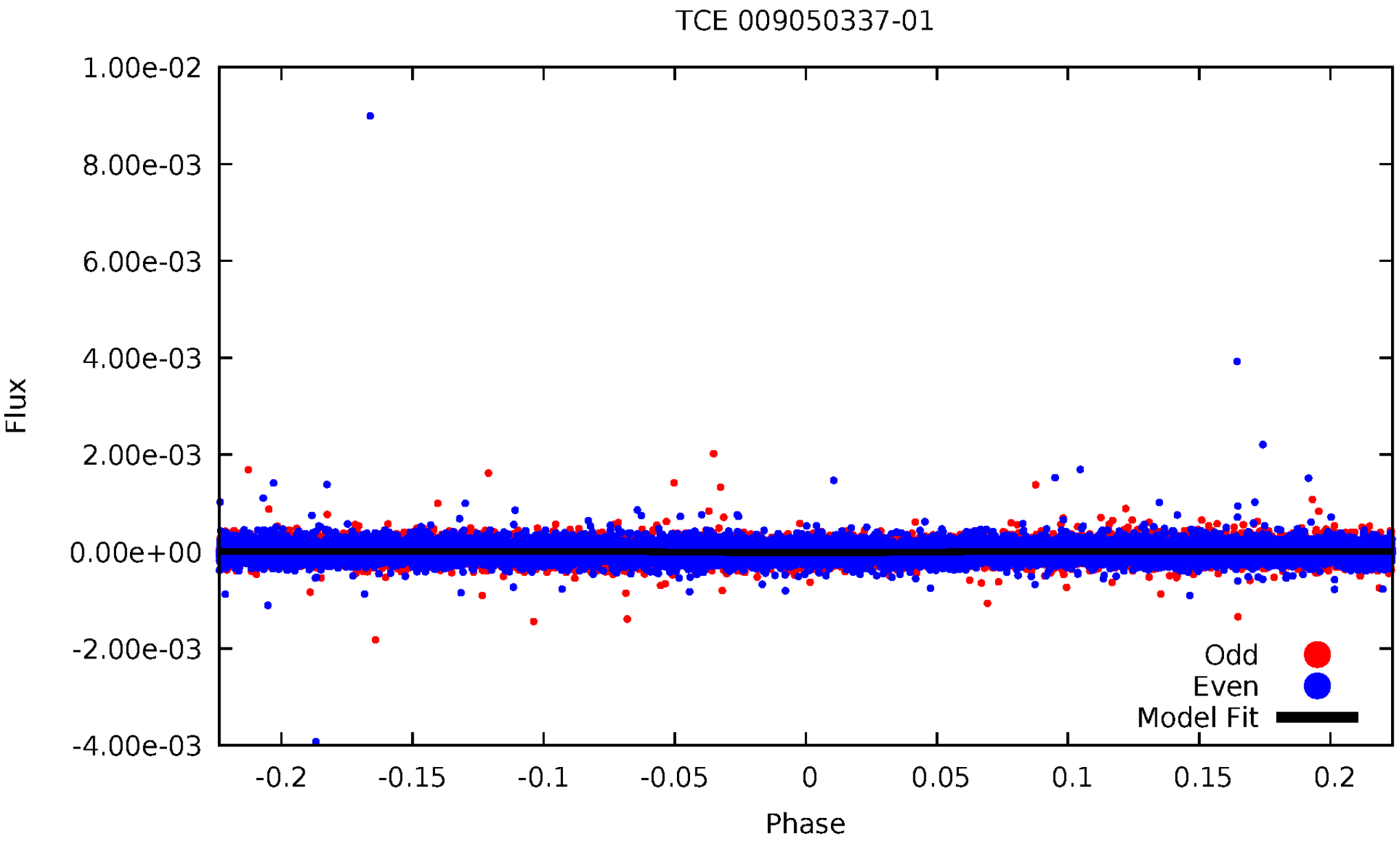
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009050337-01, PDC Light Curves




TCE 009050337-01
P = 0.555 days
P = 1.110 days
P = 2.219 days
Normalized Flux
BKJD
Normalized Flux
Phase

DV Odd/Even


TCE 009050337-01
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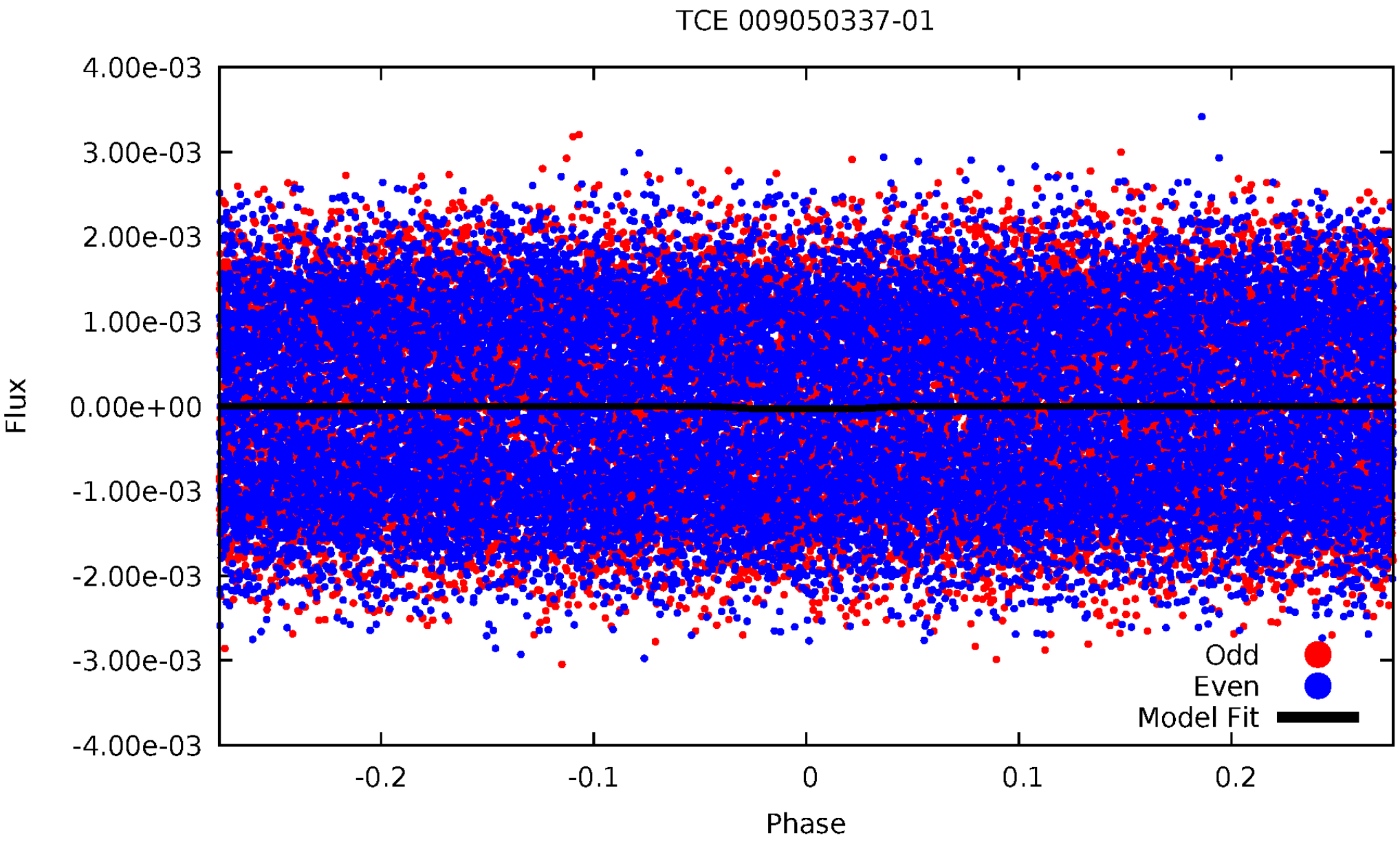
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
Flux
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009050337-01
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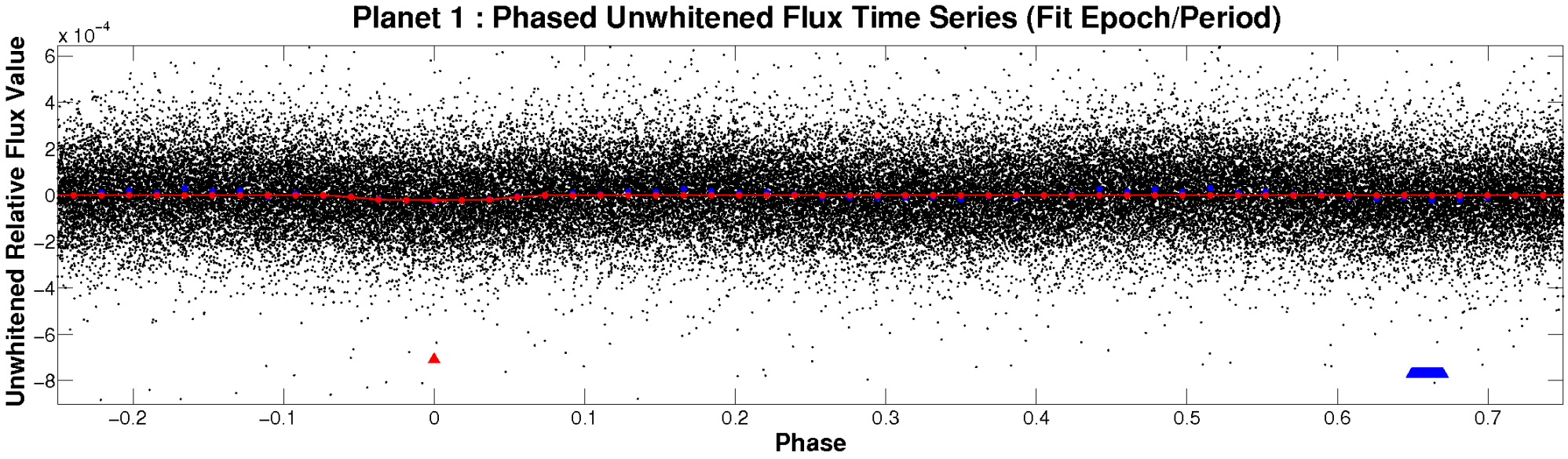
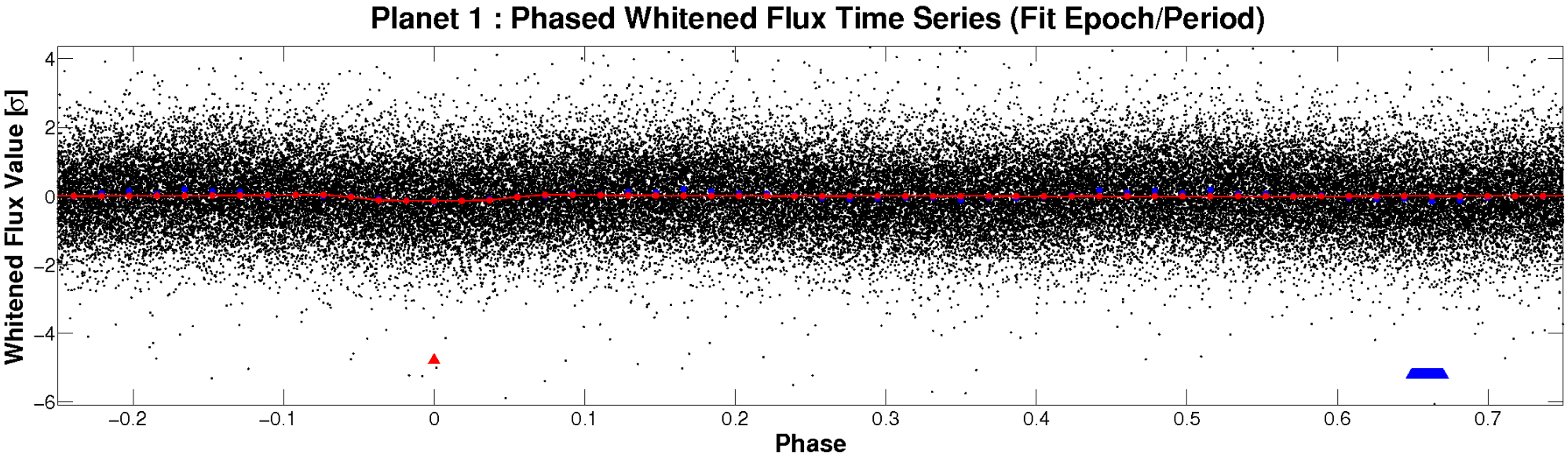
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
-4.00e-03
Flux
-0.2
-0.1
0
0.1
0.2
Phase
Odd
Even
Model Fit

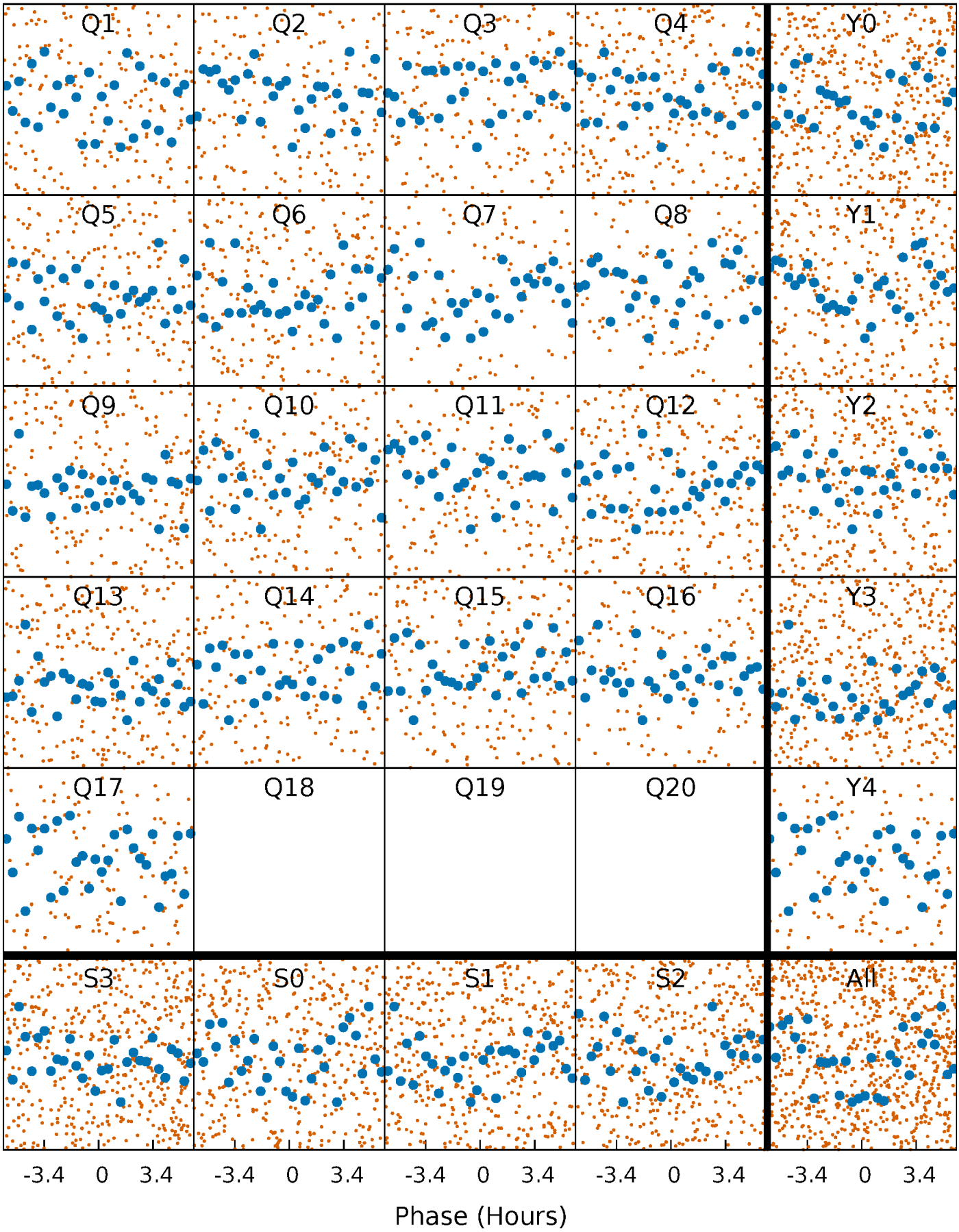
Non-Whitened Vs. Whitened Light Curve





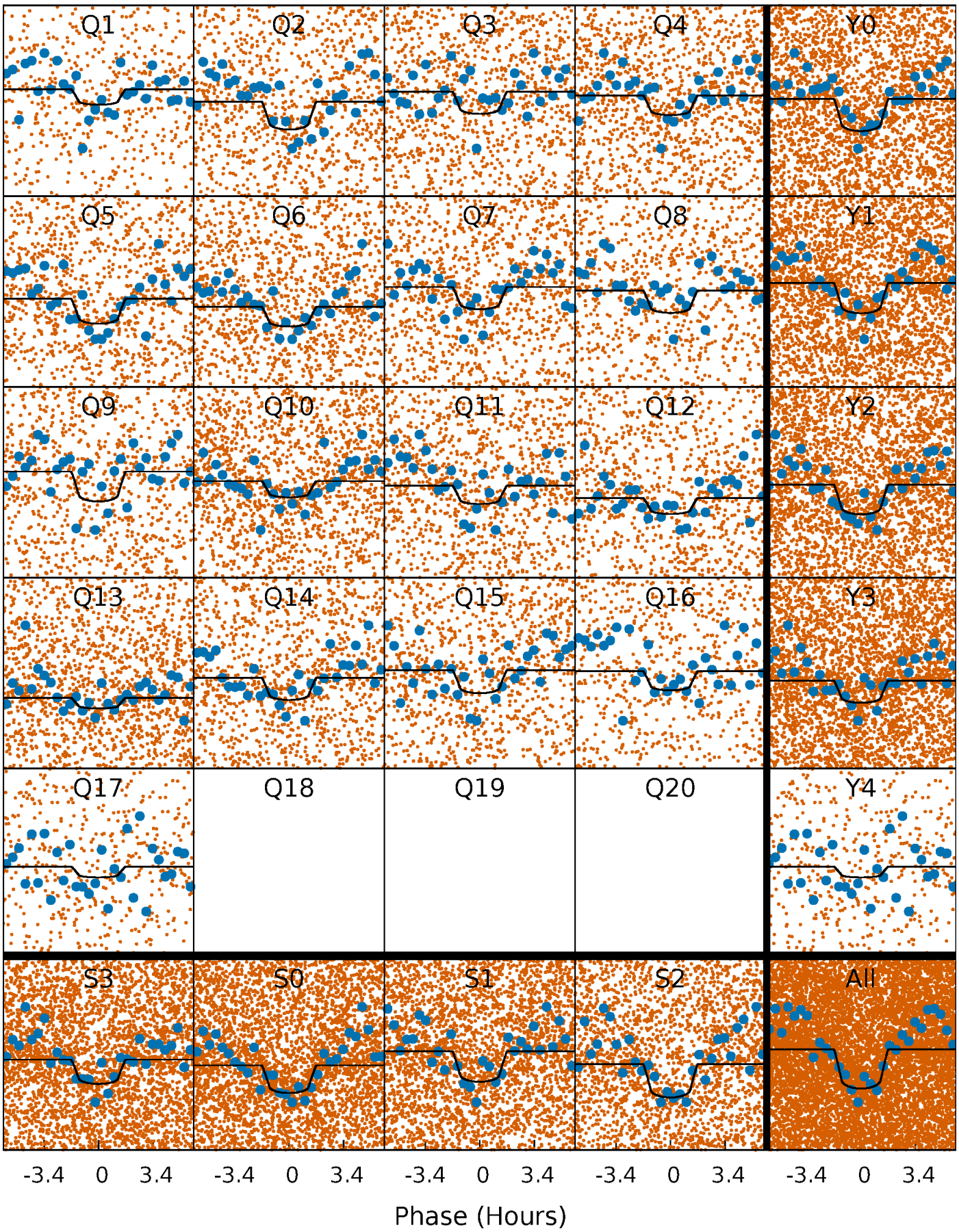
PDC Quarter-Phased Transit Curves

TCE 009050337-01 P= 1.109726 Days T_0=132.516197 (BKJD)



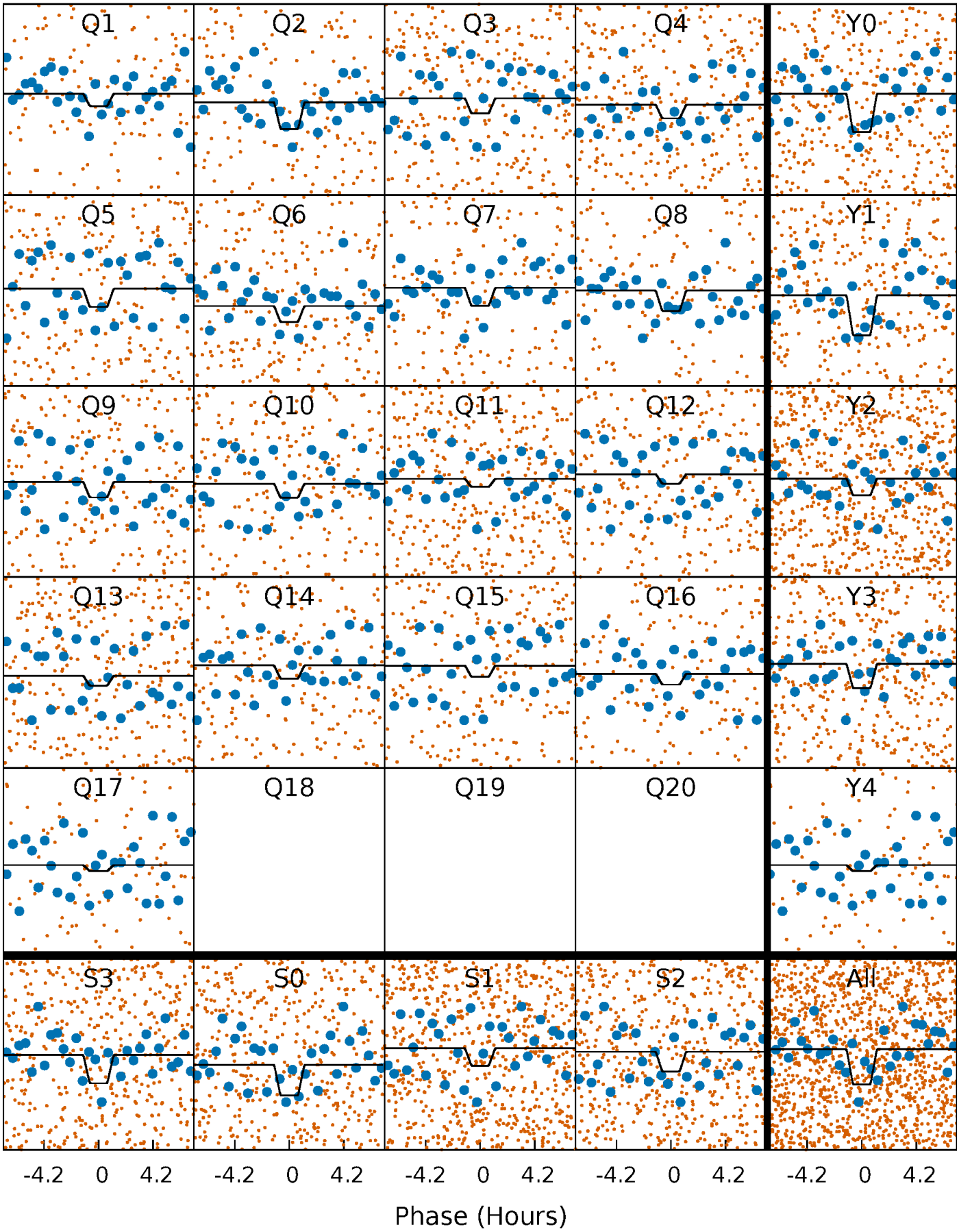
DV Quarter-Phased Transit Curves

TCE 009050337-01 P= 1.109726 Days T_0=132.516197 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

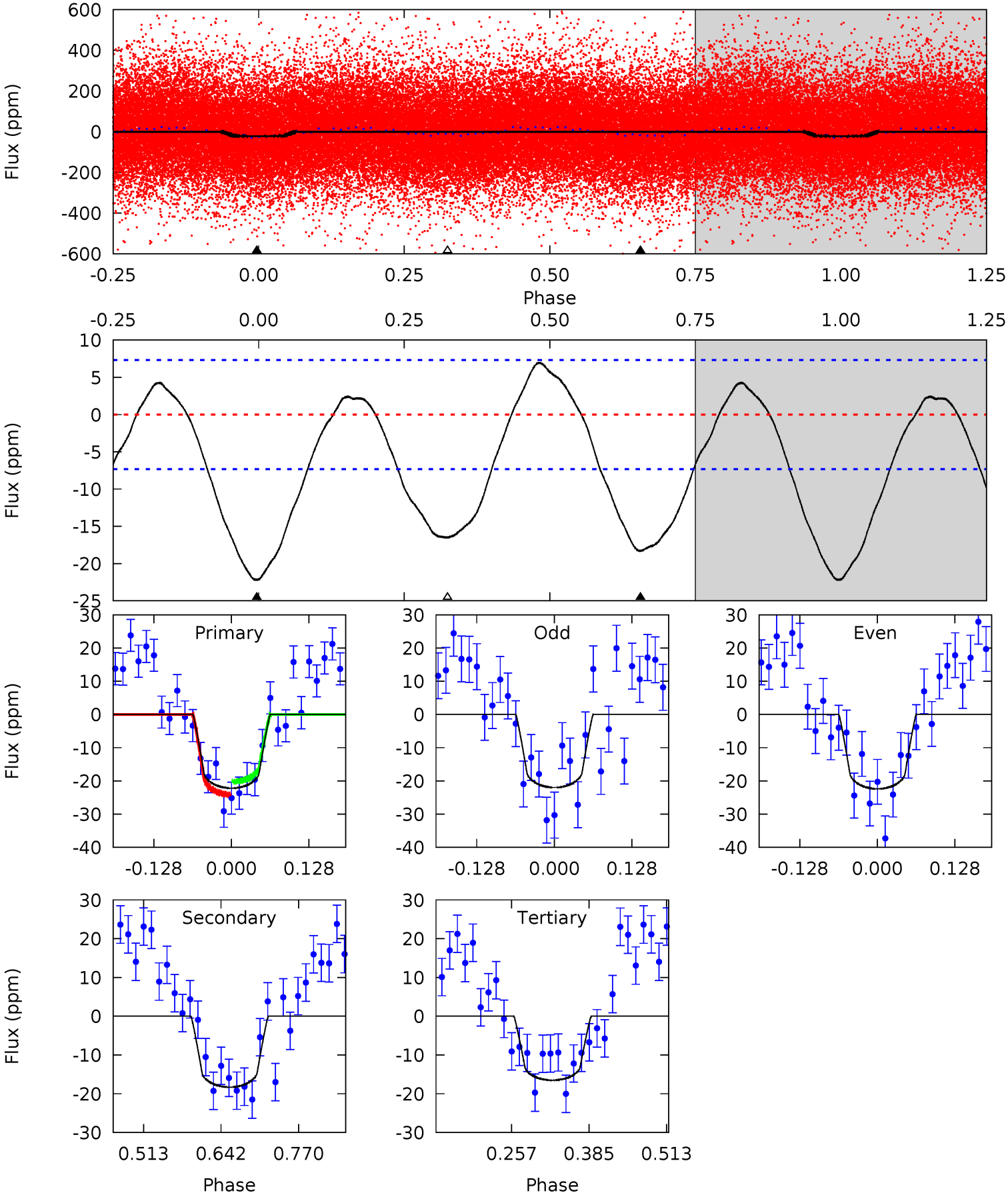
TCE 009050337-01 P= 1.109692 Days T_0=132.533574 (BKJD)



DV Model-Shift Uniqueness Test

009050337-01, P = 1.109726 Days, E = 131.406471 Days

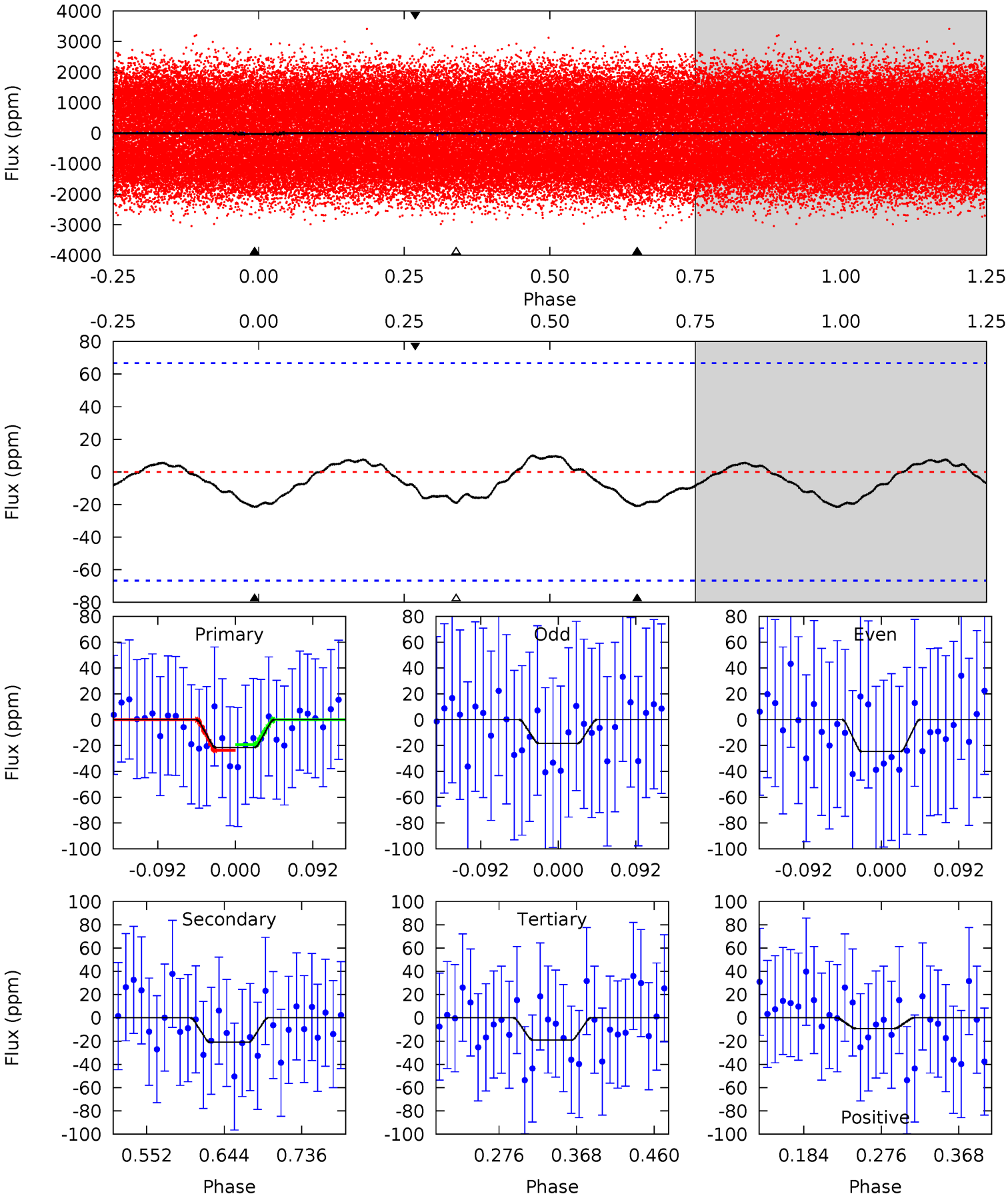
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	11.3	10.2	0	4.51	1.52	4.78	3.50	13.7	1.10	11.3	0.13	1.01	0.24	1.22



Alt Model-Shift Uniqueness Test

009050337-01, P = 1.109692 Days, E = 131.423882 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.48	1.44	1.31	-0.63	4.58	1.69	0.57	0.17	2.11	0.13	2.07	0.22	1.16	0.32	0.15



Stellar Parameters For KIC 009050337

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7324^{+228}_{-304}	$3.769^{+0.392}_{-0.098}$	$-0.120^{+0.250}_{-0.350}$	$2.802^{+0.418}_{-1.253}$	$1.682^{+0.194}_{-0.333}$	$0.108^{+0.347}_{-0.032}$
	+3%/-4%	+10%/-3%	+208%/-292%	+15%/-45%	+12%/-20%	+322%/-30%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009050337-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18±2	$1.38^{+0.48}_{-0.48}$	4683^{+308}_{-510}	6610^{+1493}_{-951}	$3.335^{+4.047}_{-1.568}$
Alt.	-21±15	$1.53^{+0.52}_{-0.46}$	4685^{+320}_{-474}	6400^{+1739}_{-1624}	$3.067^{+4.144}_{-2.117}$

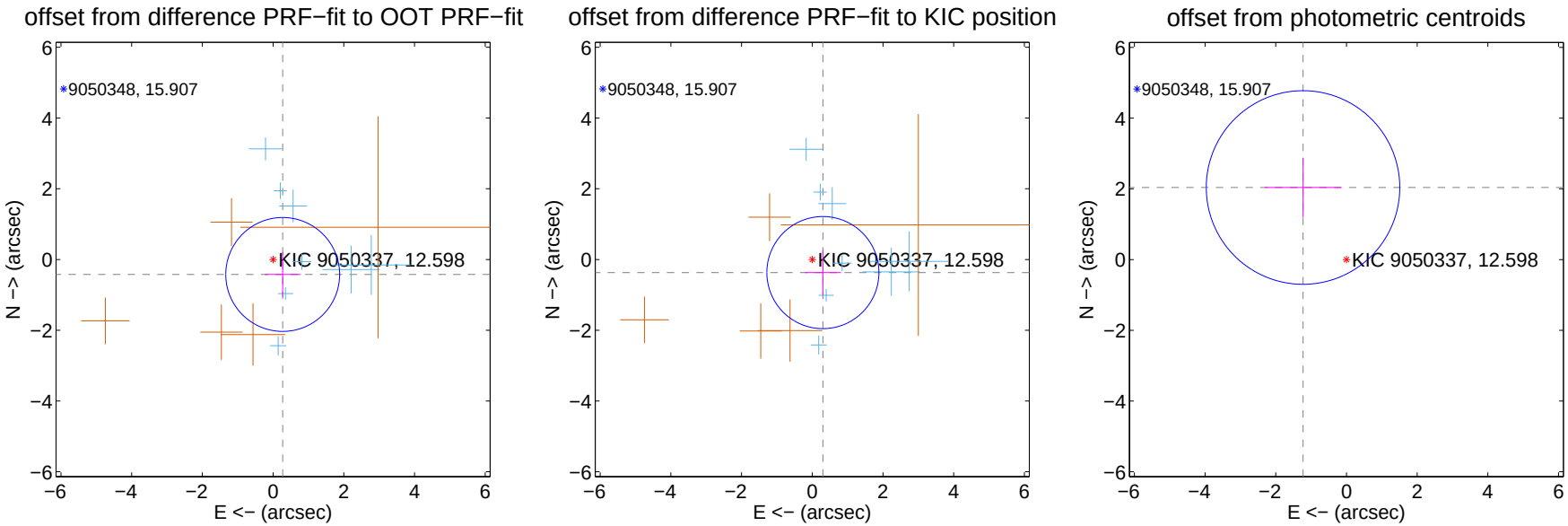
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

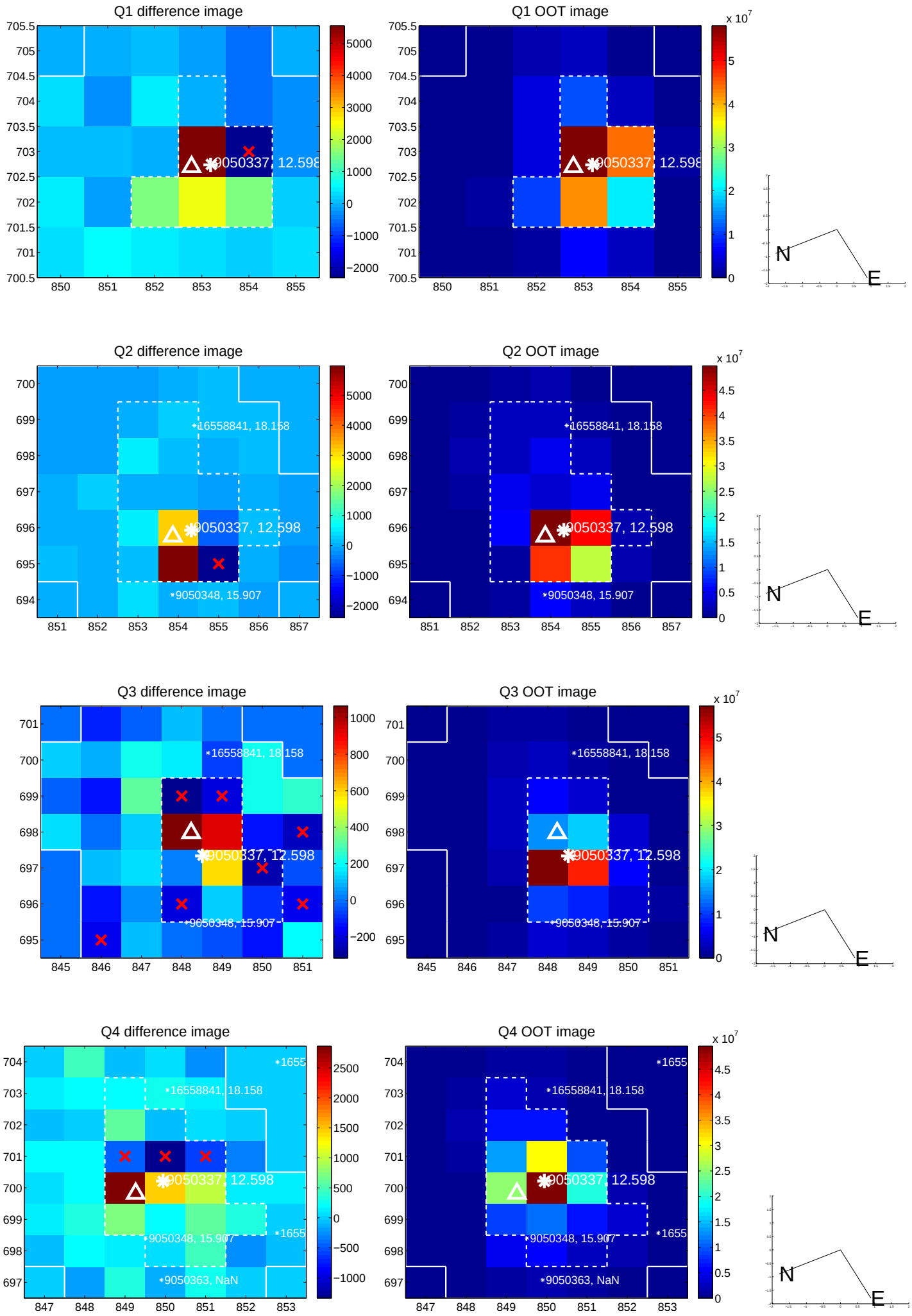
Supplemental centroid analysis for 009050337-01. Kepler magnitude: 12.60. Transit SNR 10.51
There are 8 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.503 ± 0.537	0.94	-0.272 ± 0.505	-0.423 ± 0.631
PRF-fit source offset from KIC position	0.477 ± 0.528	0.90	-0.300 ± 0.511	-0.370 ± 0.636
photometric centroid source offset	2.38 ± 0.91	2.61	1.23 ± 1.08	2.04 ± 0.84

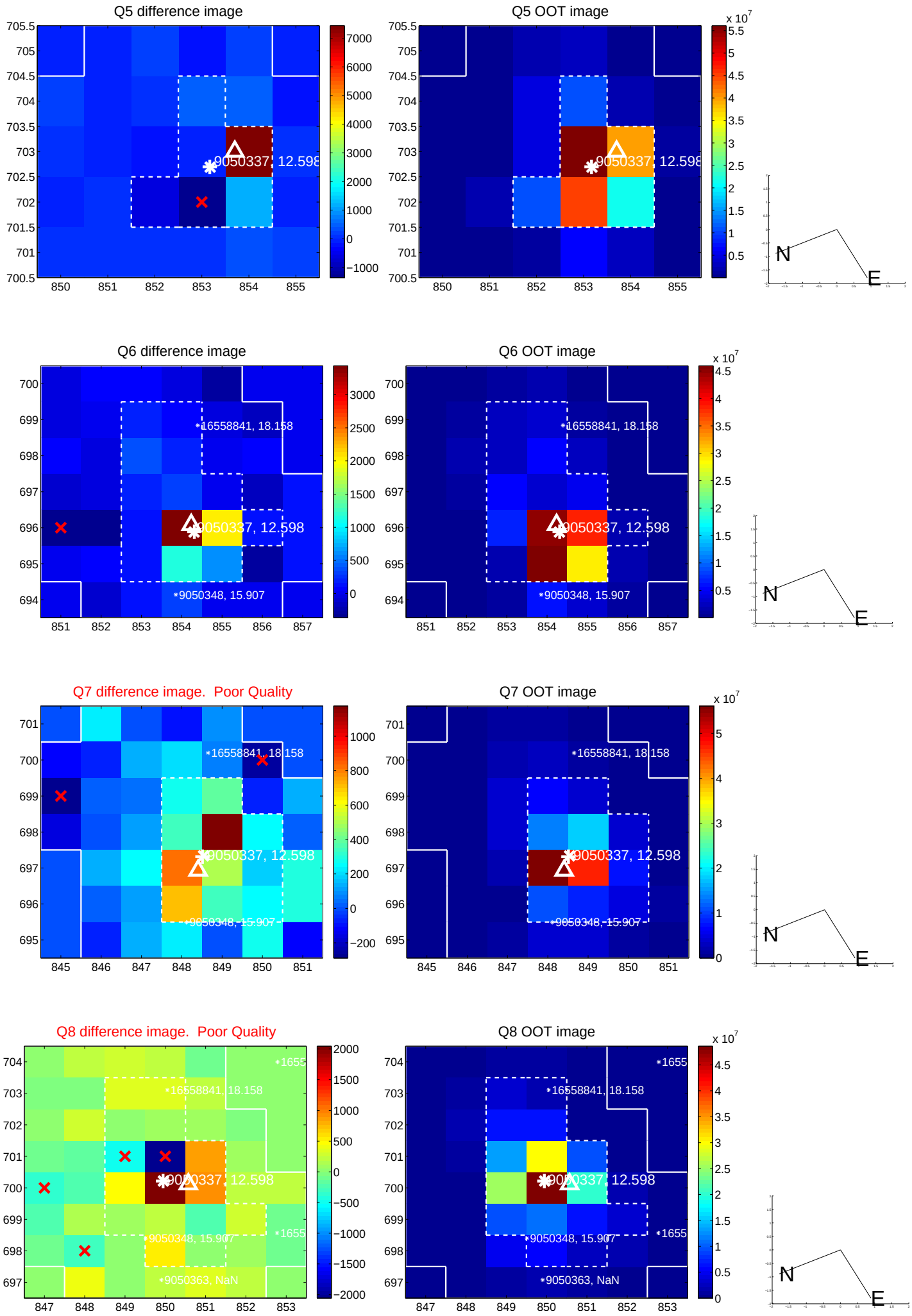


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

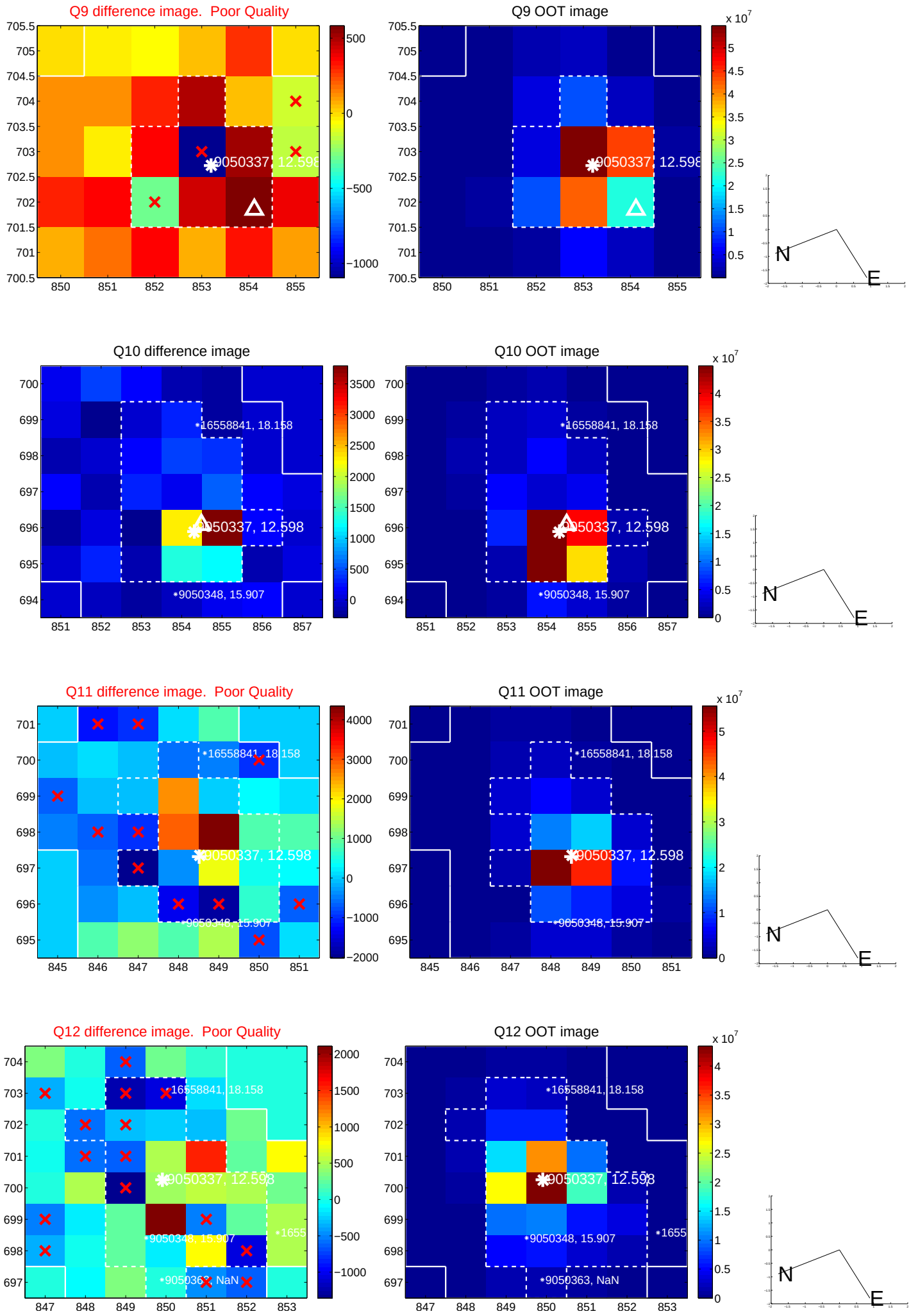
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



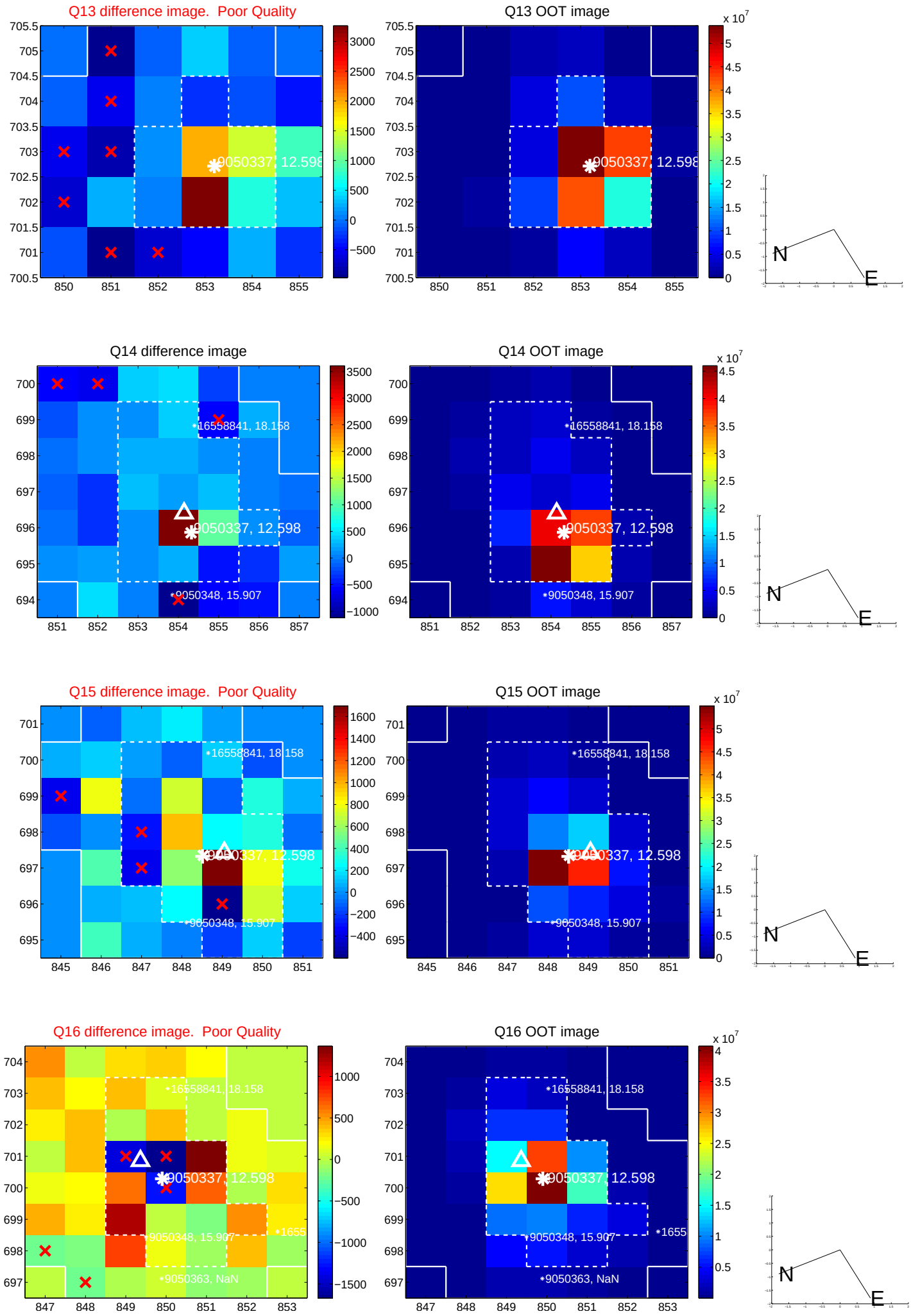
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



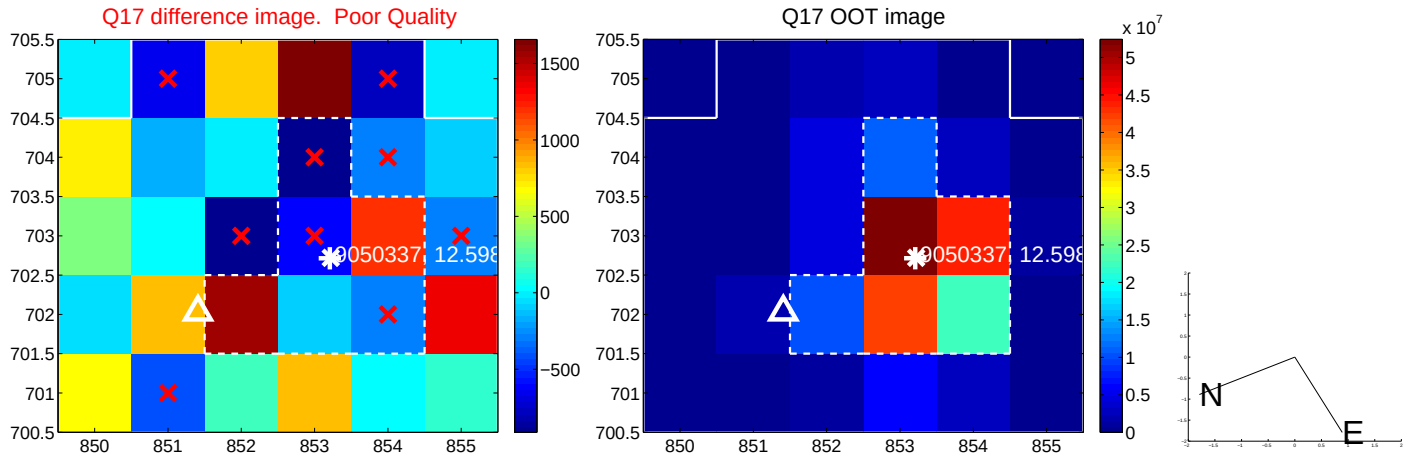
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

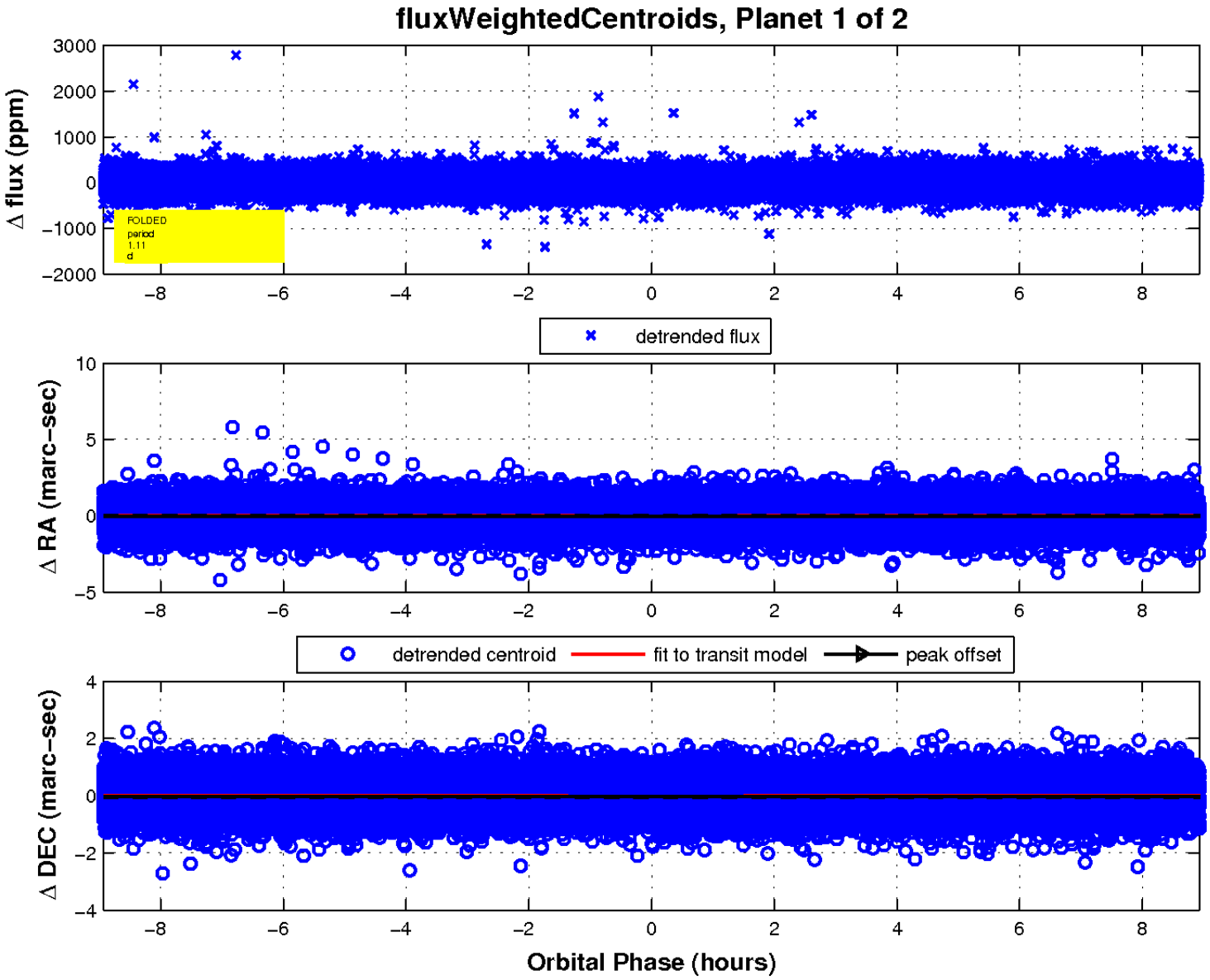


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

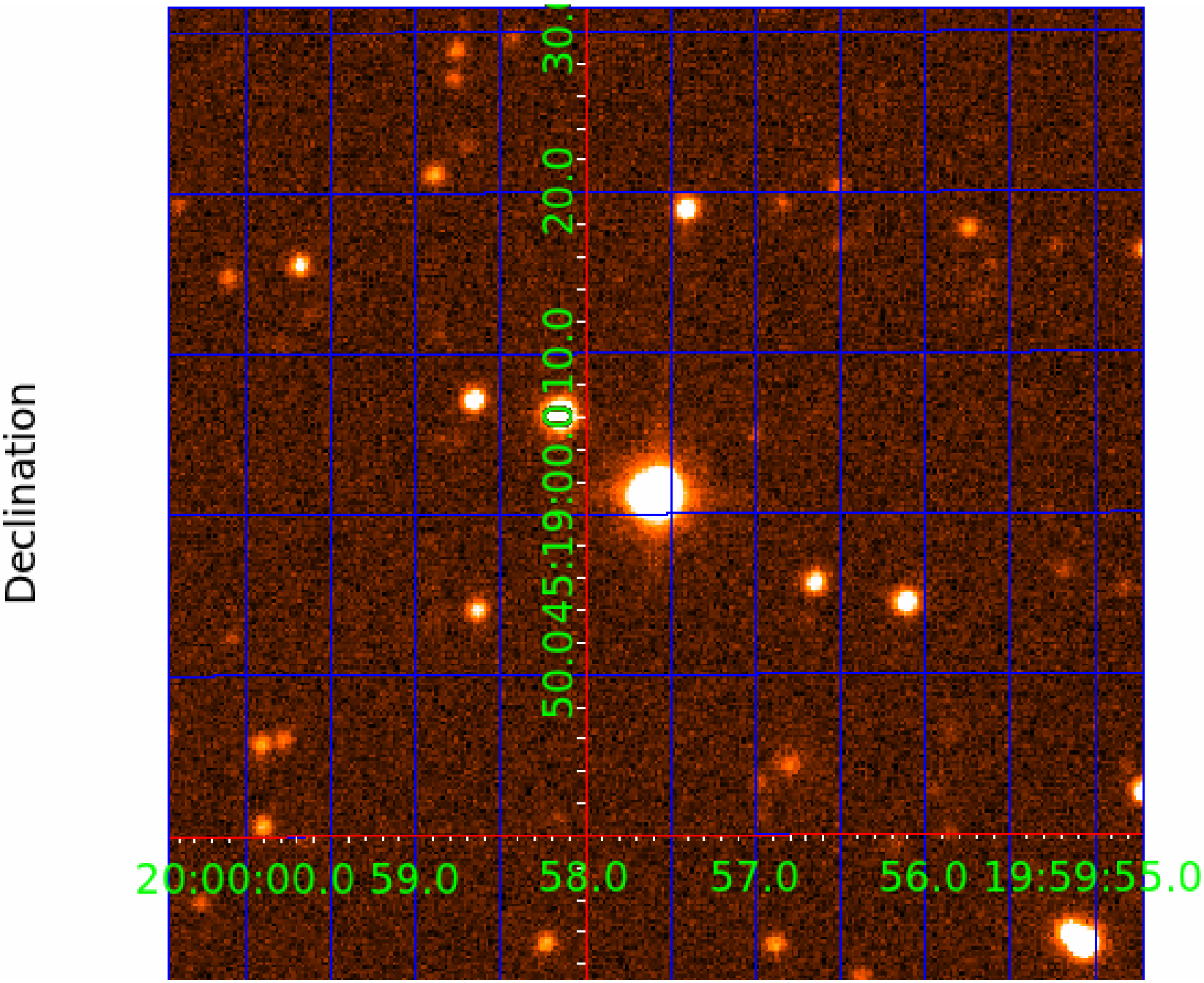


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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19:59:55.0

KIC 009050337

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 ($S_\oplus$)
009050337-01	OBS	No	1.109726	132.516197	21.8	2.978	10.6	10.5	2.80	7324	1.52	32502.13
009050337-02	OBS	No	1.109709	132.150001	19.1	3.369	8.7	9.6	2.80	7324	1.44	32502.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009050337-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009050337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

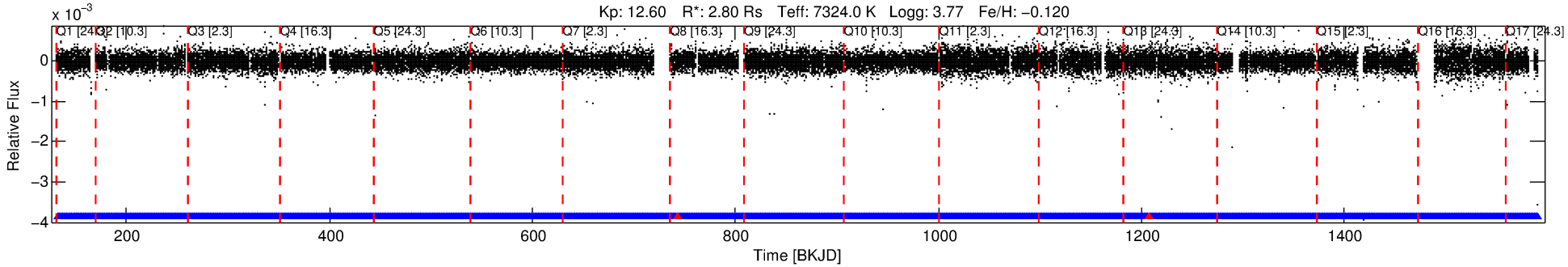
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

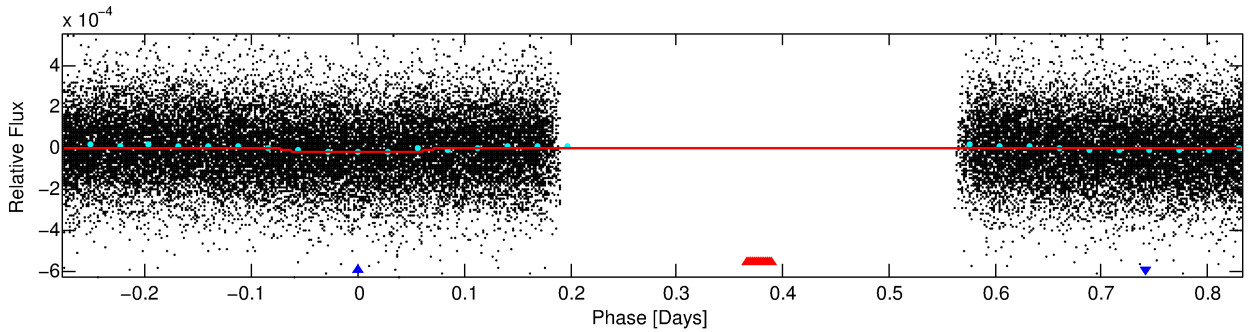
Ephemeris Match Information For 009050337-02

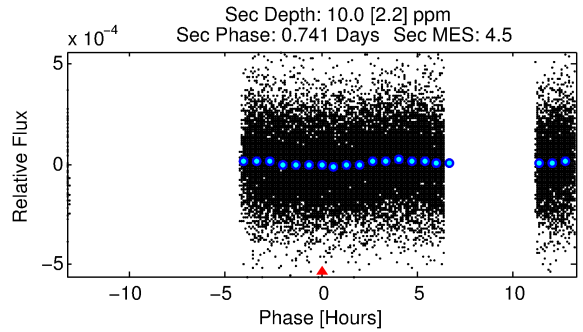
No Significant Match Found

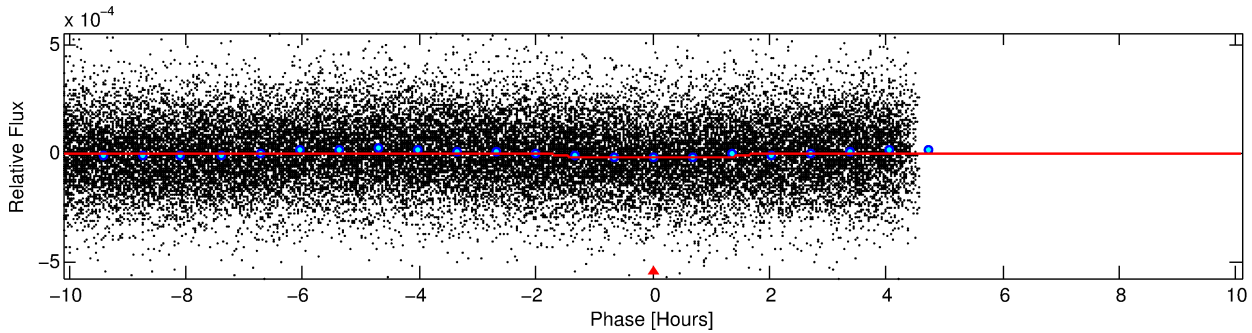
DV One-Page Summary

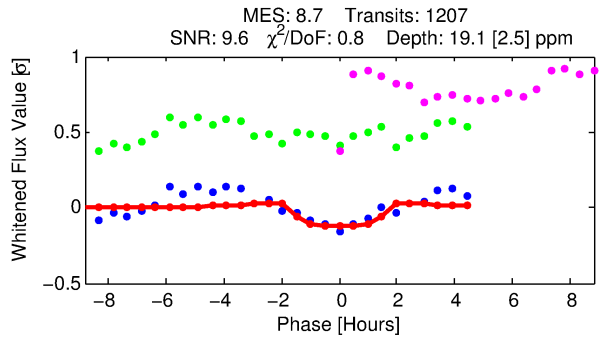
KIC: 9050337 Candidate: 2 of 2 Period: 1.110 d

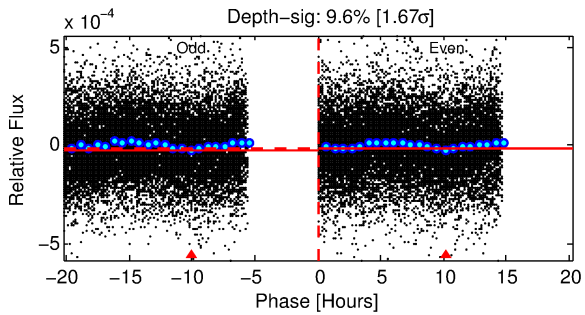


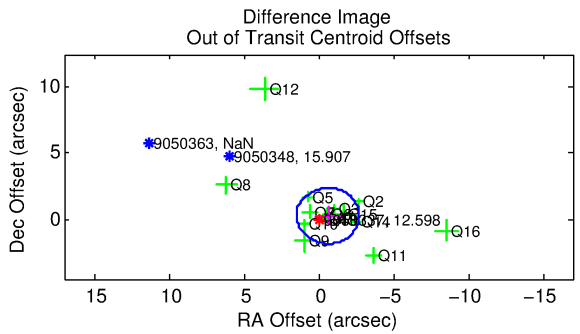












DV Fit Results:

Period = 1.10971 [0.00001] d
Epoch = 132.1500 [0.0039] BKJD
Rp/R* = 0.0047 [0.0018]
a/R* = 1.42 [1.74]
b = 0.91 [0.45]

Seff = 32502.81 [22484.23]
Teq = 3424 [592] K
Rp = 1.44 [0.85] Re
a = 0.0250 [0.0106] AU

Ag = 1.65 [1.73] [0.38σ]
Teffp = 6000 [1233] K [1.88σ]

DV Diagnostic Results:

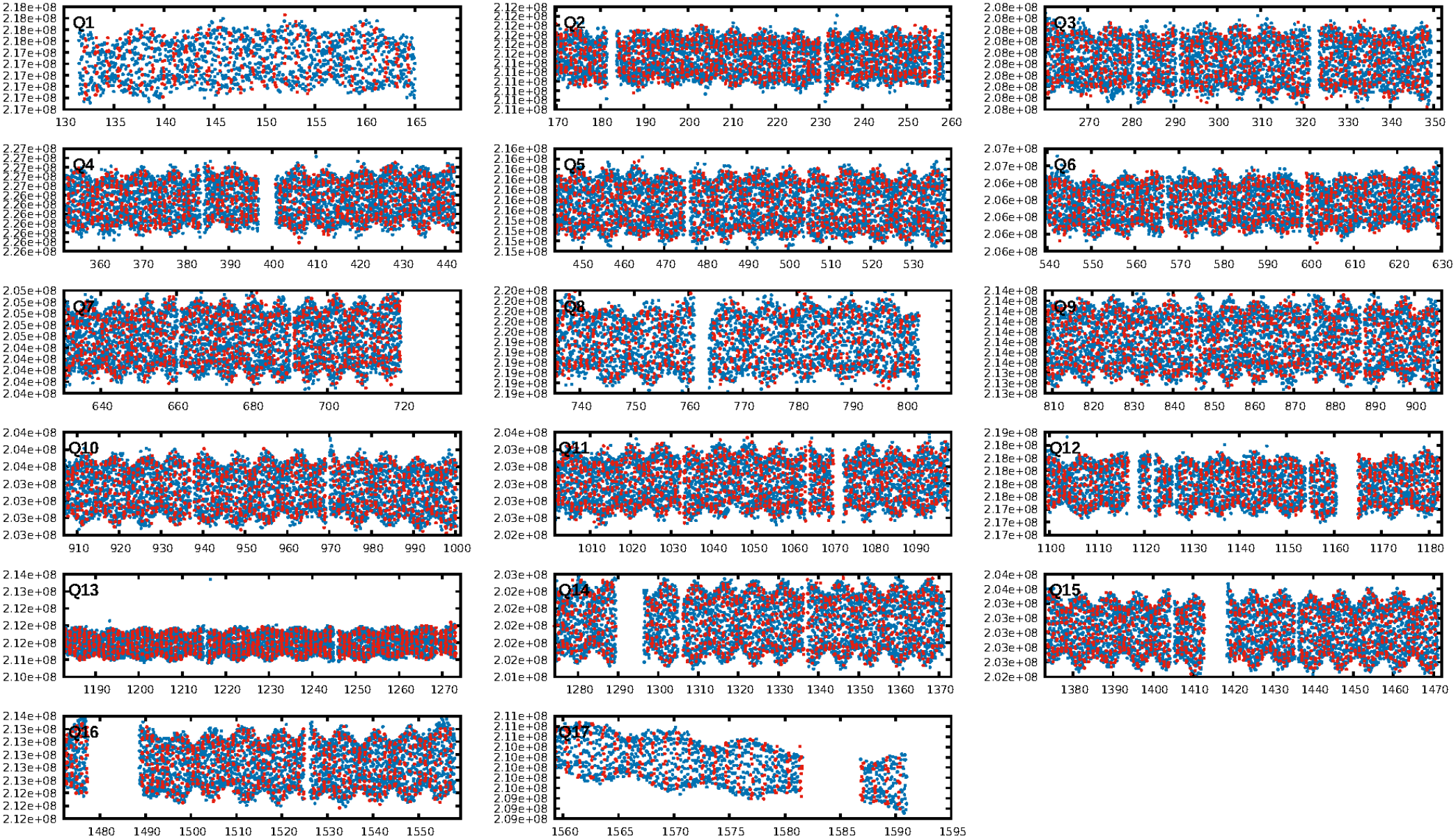
ShortPeriod−sig: N/A
LongPeriod−sig: 0.0% [0.00σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 1.73e−14
RollingBand−fgt: 1.00 [1150/1152]
GhostDiagnostic−chr: 0.919

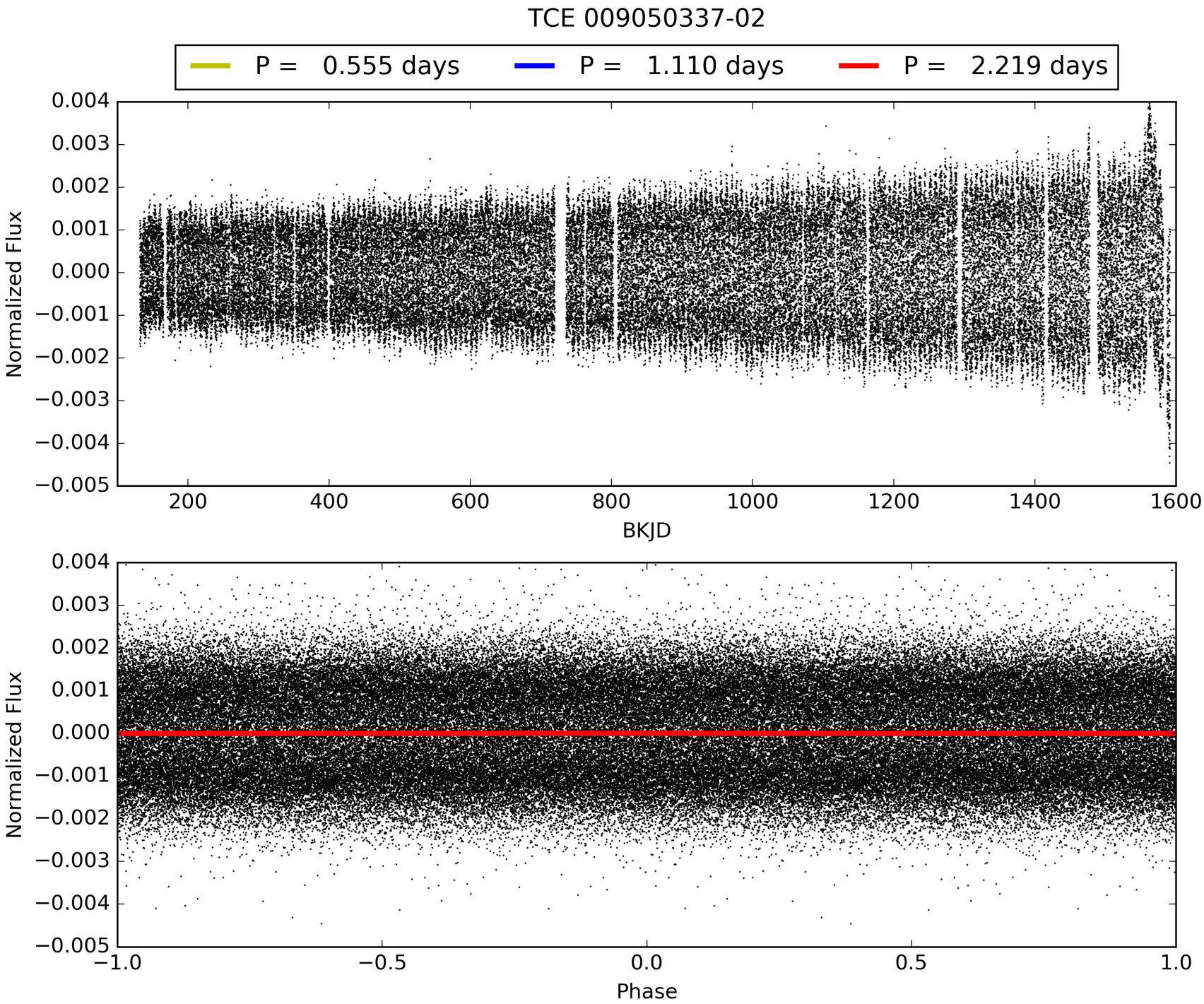
Centroid−sig: 42.3%
Centroid−so: 0.556 arcsec [0.59σ]
OotOffset−rm: 0.686 arcsec [0.98σ]
KicOffset−rm: 0.705 arcsec [1.14σ]
OotOffset−st: 4/4/4/4 [16]
KicOffset−st: 4/4/4/4 [16]
DiffImageQuality−fgm: 0.81 [13/16]
DiffImageOverlap−fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 00:53:14 Z

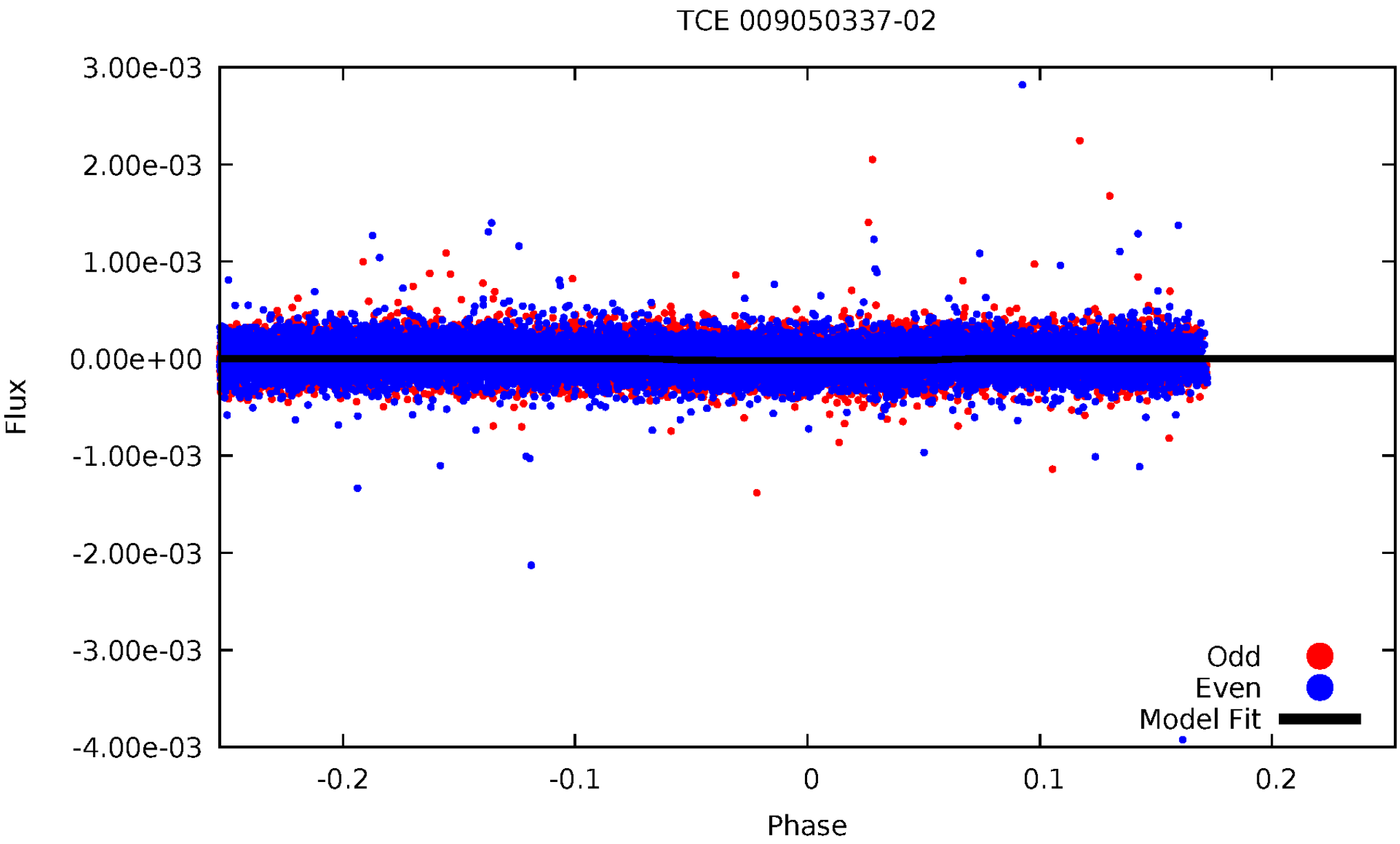
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009050337-02, PDC Light Curves

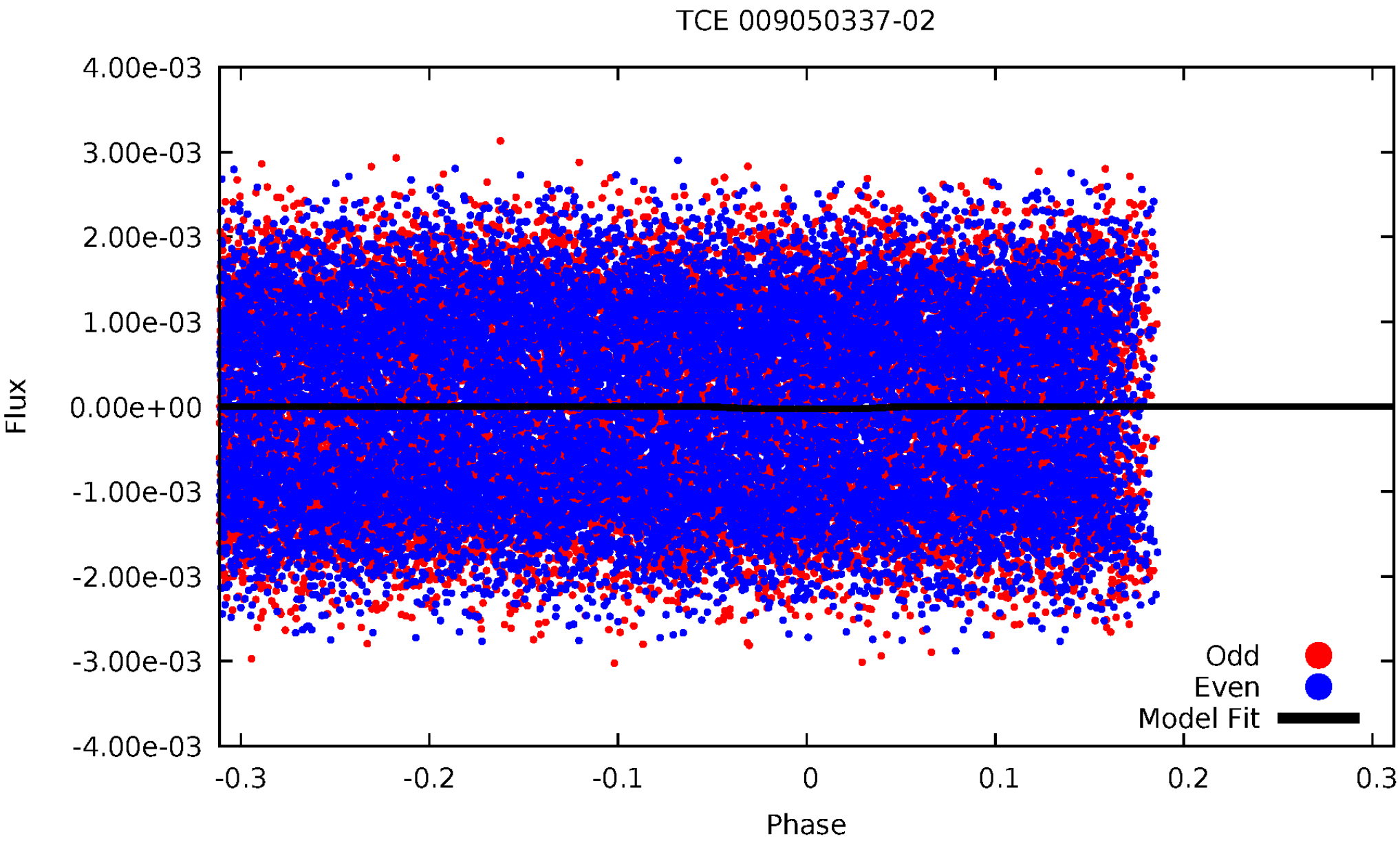



TCE 009050337-02
P = 0.555 days
P = 1.110 days
P = 2.219 days
Normalized Flux
BKJD
Normalized Flux
Phase

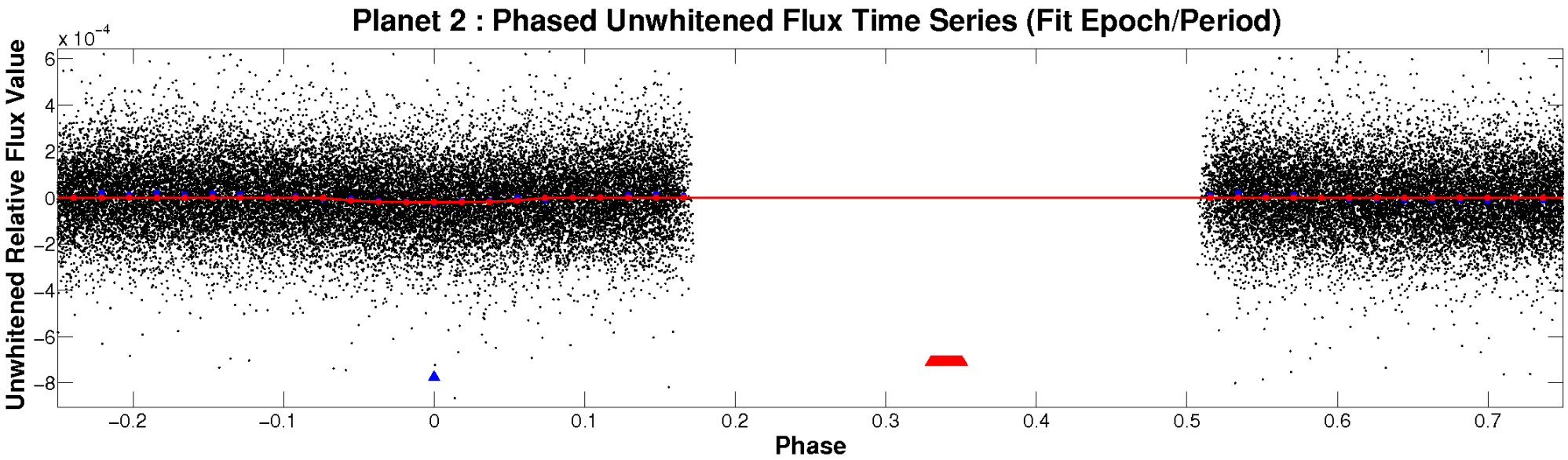
DV Odd/Even

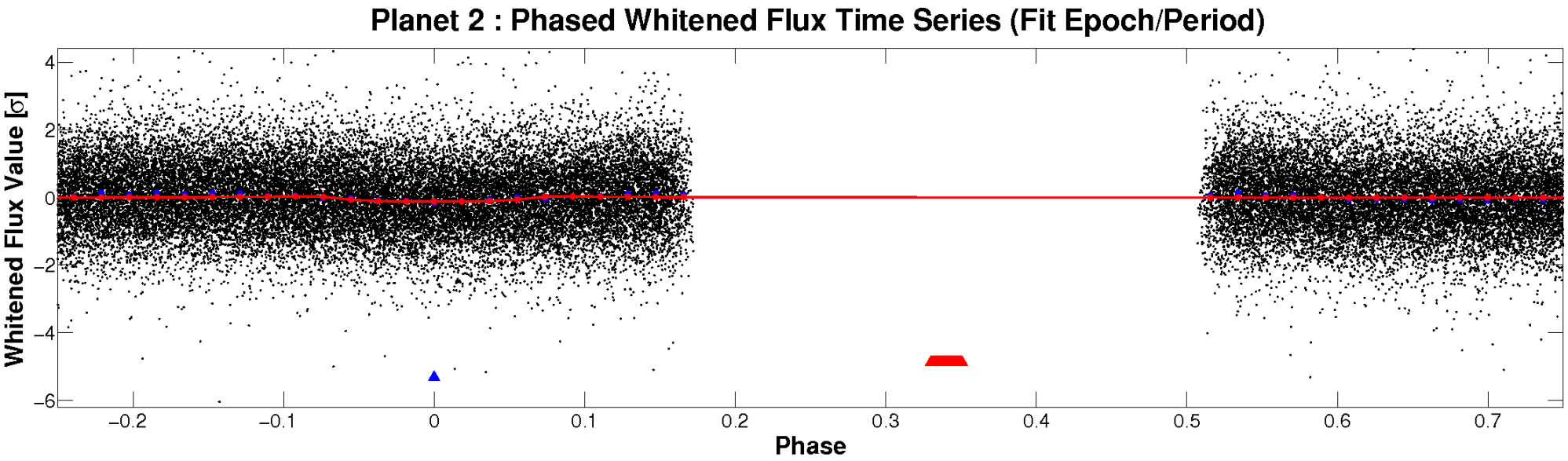

TCE 009050337-02
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
-4.00e-03
Flux
-0.2
-0.1
0
0.1
0.2
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009050337-02
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
-4.00e-03
Flux
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Phase
Odd
Even
Model Fit

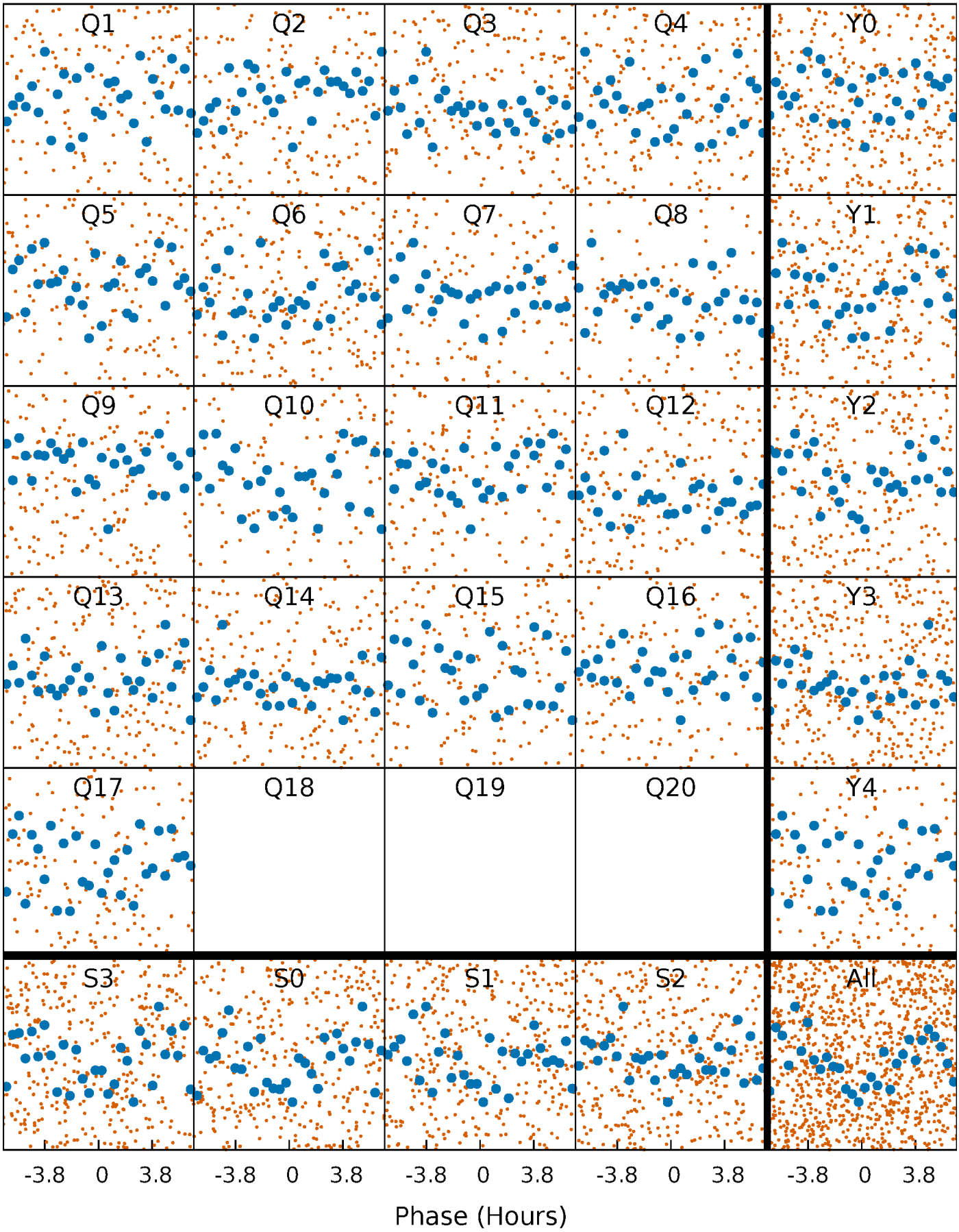
Non-Whitened Vs. Whitened Light Curve





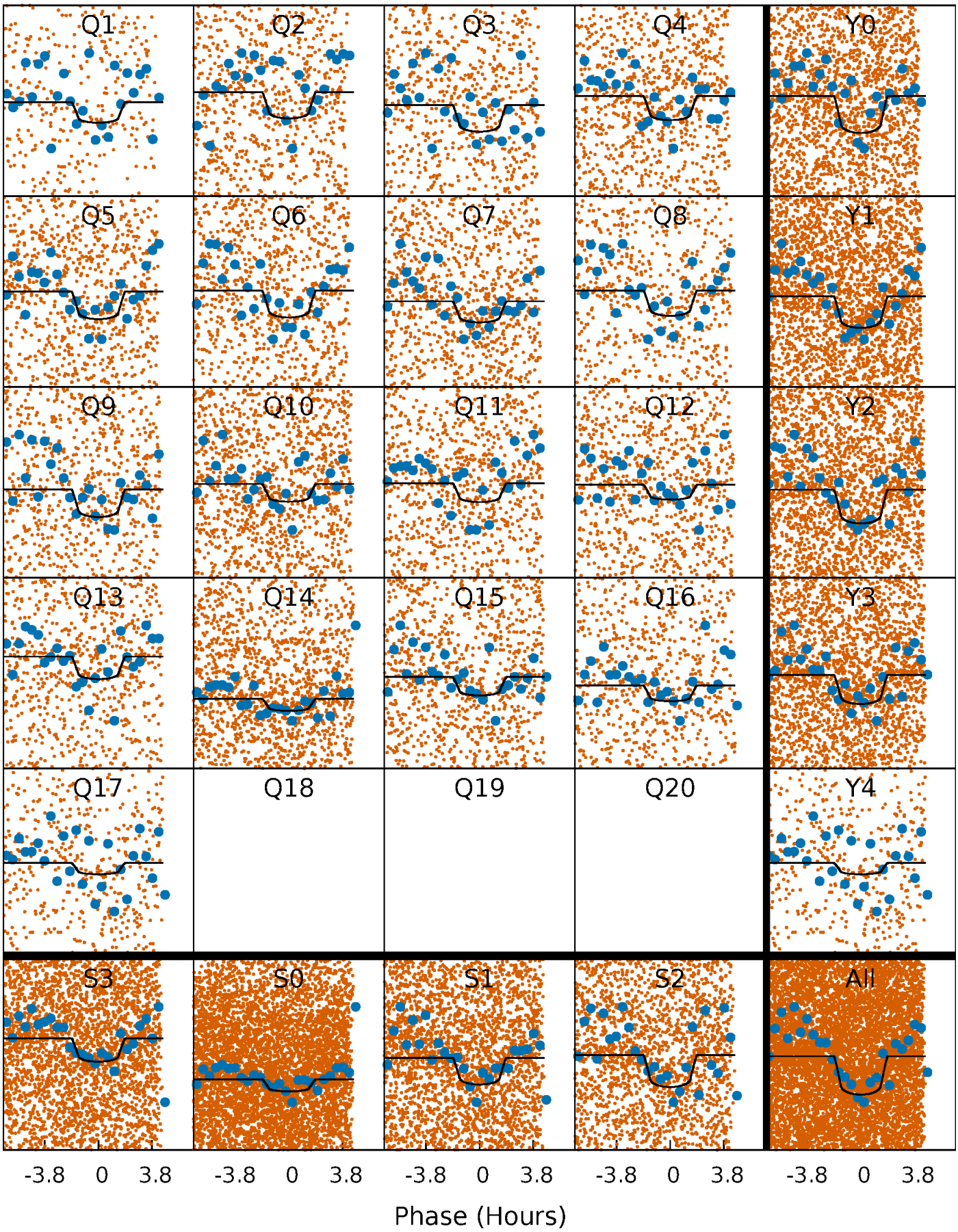
PDC Quarter-Phased Transit Curves

TCE 009050337-02 P= 1.109709 Days T_0=132.150001 (BKJD)



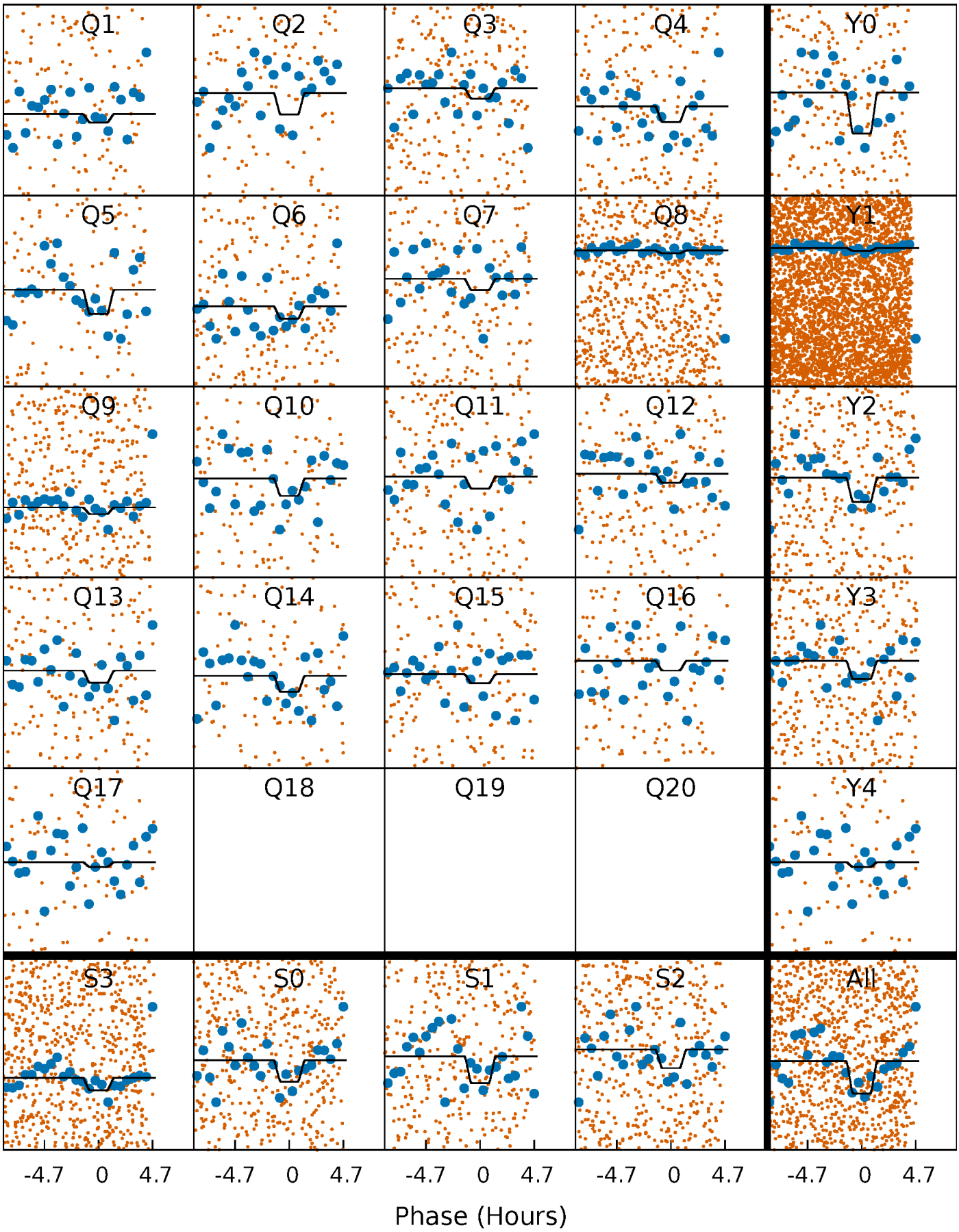
DV Quarter-Phased Transit Curves

TCE 009050337-02 P= 1.109709 Days T_0=132.150001 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

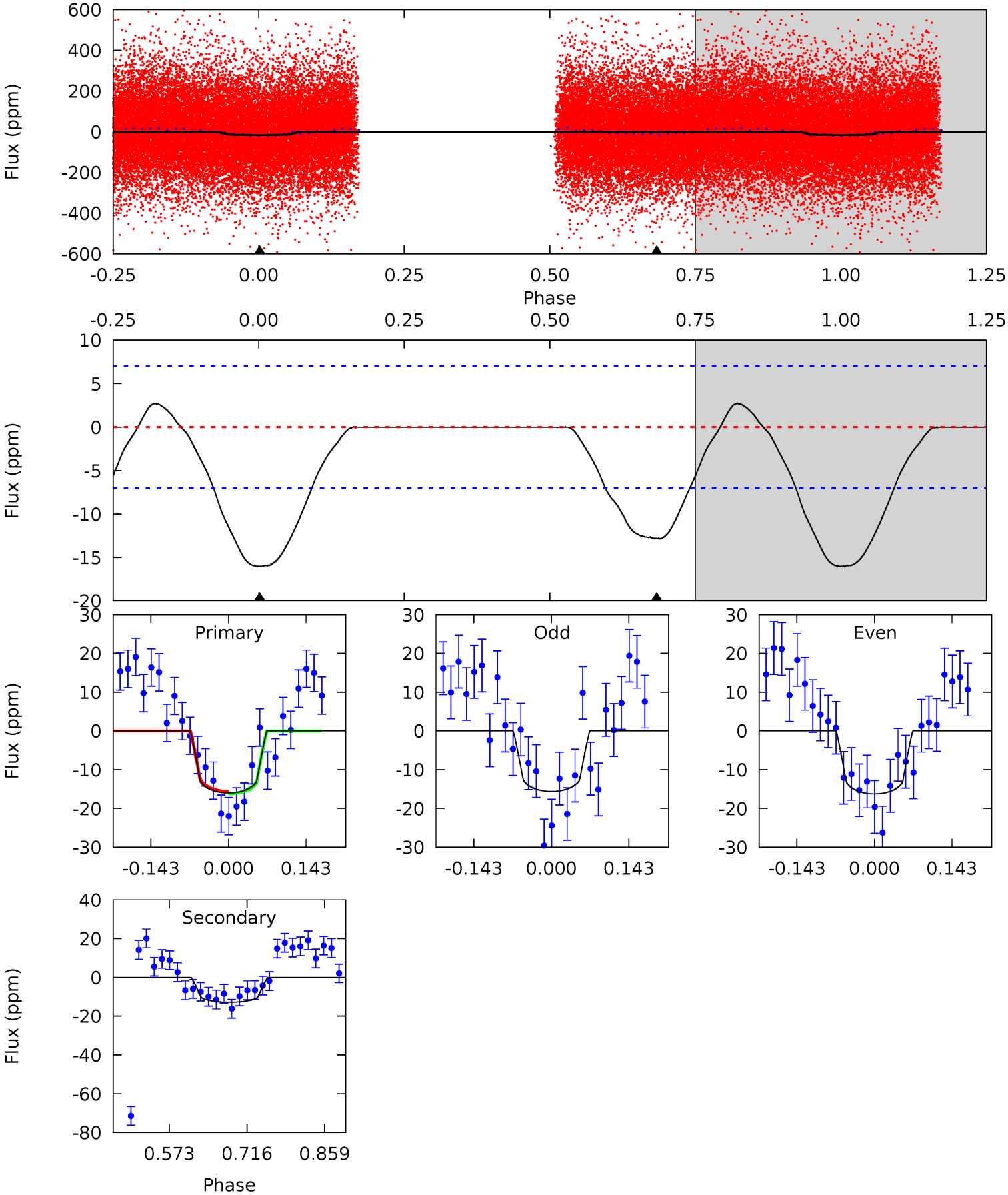
TCE 009050337-02 P= 1.109694 Days T_0=132.153658 (BKJD)



DV Model-Shift Uniqueness Test

009050337-02, P = 1.109709 Days, E = 131.040292 Days

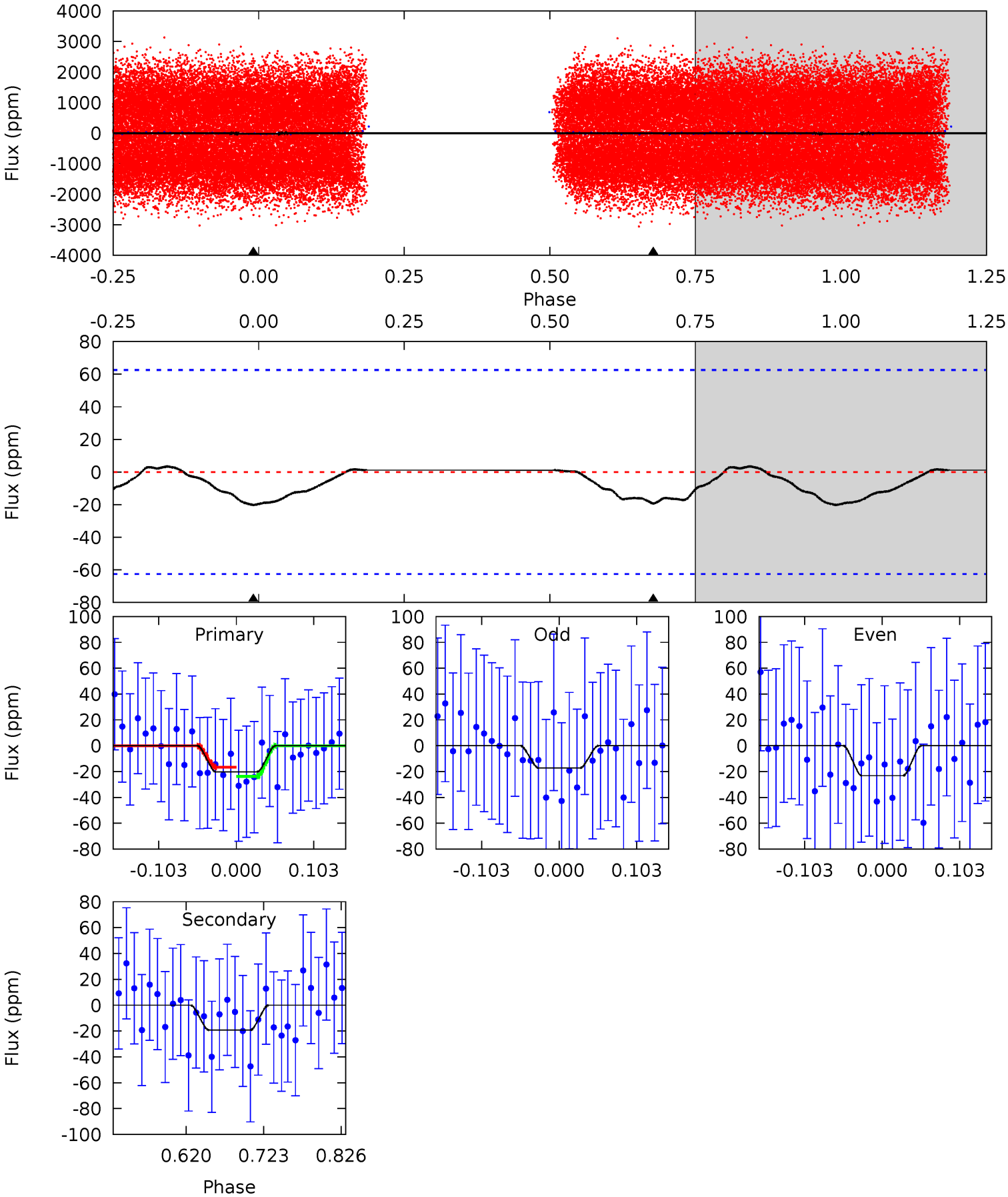
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	8.19	0	0	4.49	1.46	0.69	10.2	10.2	8.19	8.19	0.21	1.14	0.14	0.18



Alt Model-Shift Uniqueness Test

009050337-02, P = 1.109694 Days, E = 131.043964 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.47	1.41	0	0	4.56	1.63	0.25	1.47	1.47	1.41	1.41	0.21	0.71	0.15	0.26



Stellar Parameters For KIC 009050337

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7324^{+228}_{-304}	$3.769^{+0.392}_{-0.098}$	$-0.120^{+0.250}_{-0.350}$	$2.802^{+0.418}_{-1.253}$	$1.682^{+0.194}_{-0.333}$	$0.108^{+0.347}_{-0.032}$
	+3%/-4%	+10%/-3%	+208%/-292%	+15%/-45%	+12%/-20%	+322%/-30%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009050337-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13±2	$1.33^{+0.65}_{-0.54}$	4643^{+328}_{-504}	6028^{+2085}_{-991}	$2.530^{+4.472}_{-1.384}$
Alt.	-19±14	$1.32^{+0.68}_{-0.54}$	4653^{+316}_{-504}	6541^{+3255}_{-1939}	$3.196^{+8.460}_{-2.359}$

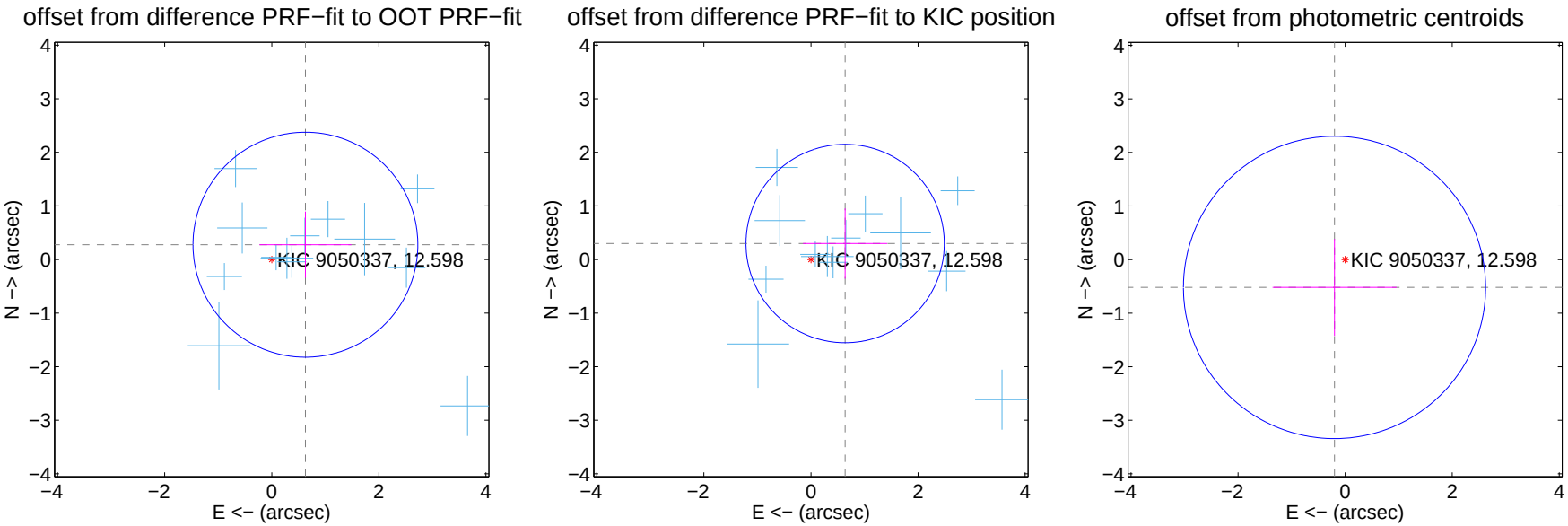
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

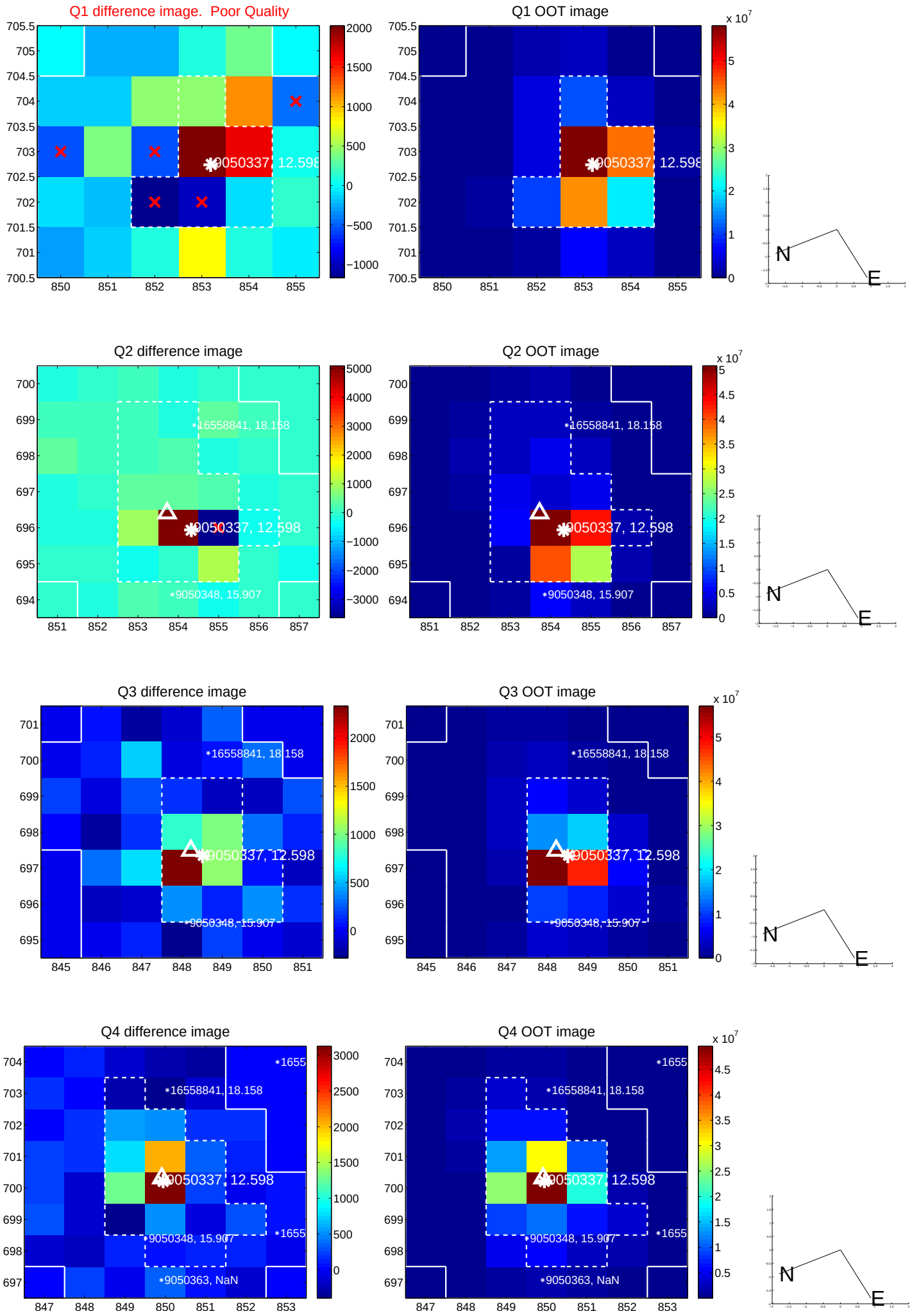
Supplemental centroid analysis for 009050337-02. Kepler magnitude: 12.60. Transit SNR 9.56
There are 13 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.686 ± 0.700	0.98	-0.628 ± 0.858	0.276 ± 0.619
PRF-fit source offset from KIC position	0.705 ± 0.617	1.14	-0.638 ± 0.788	0.298 ± 0.655
photometric centroid source offset	0.56 ± 0.94	0.59	0.20 ± 1.16	-0.52 ± 0.90

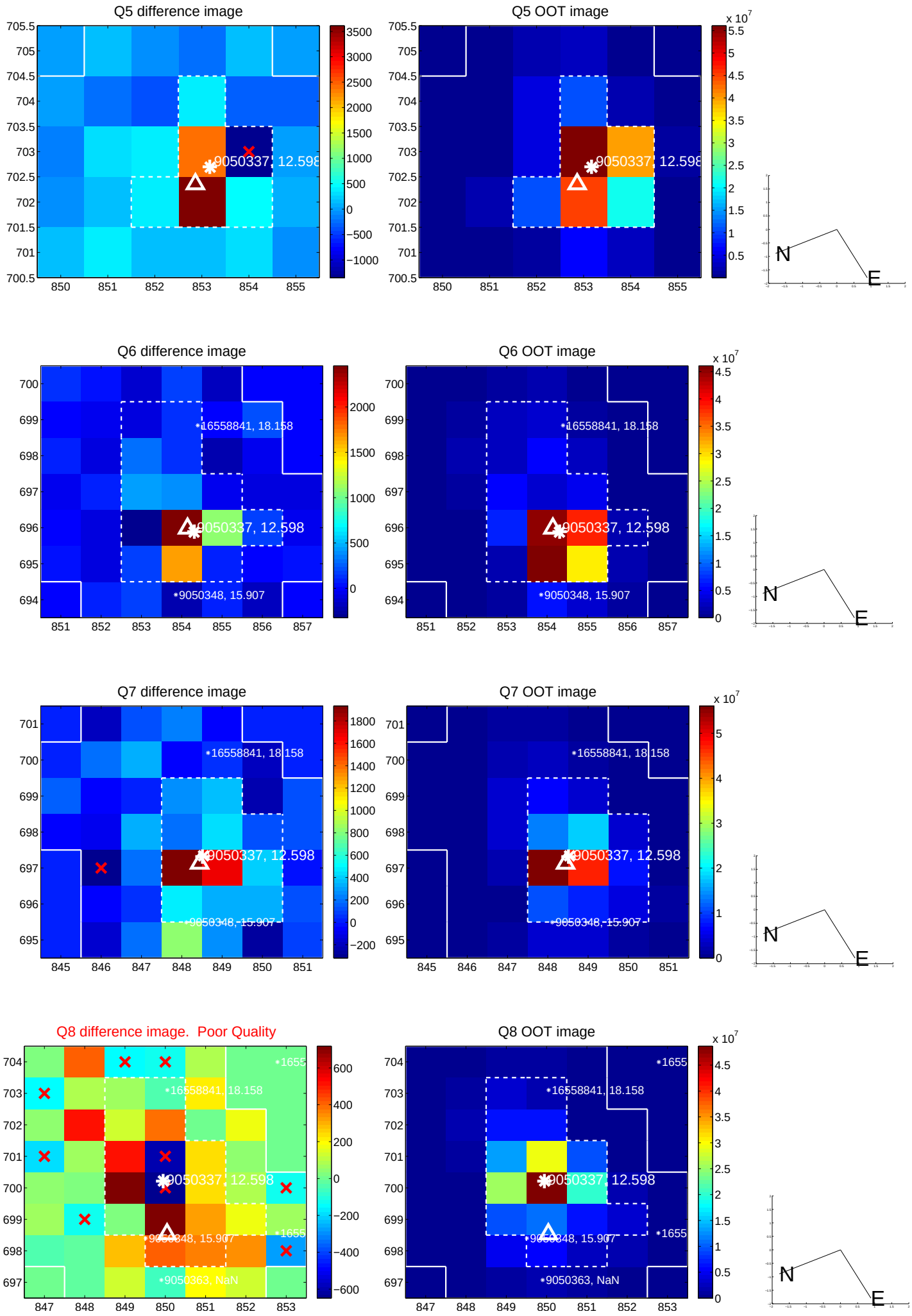


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

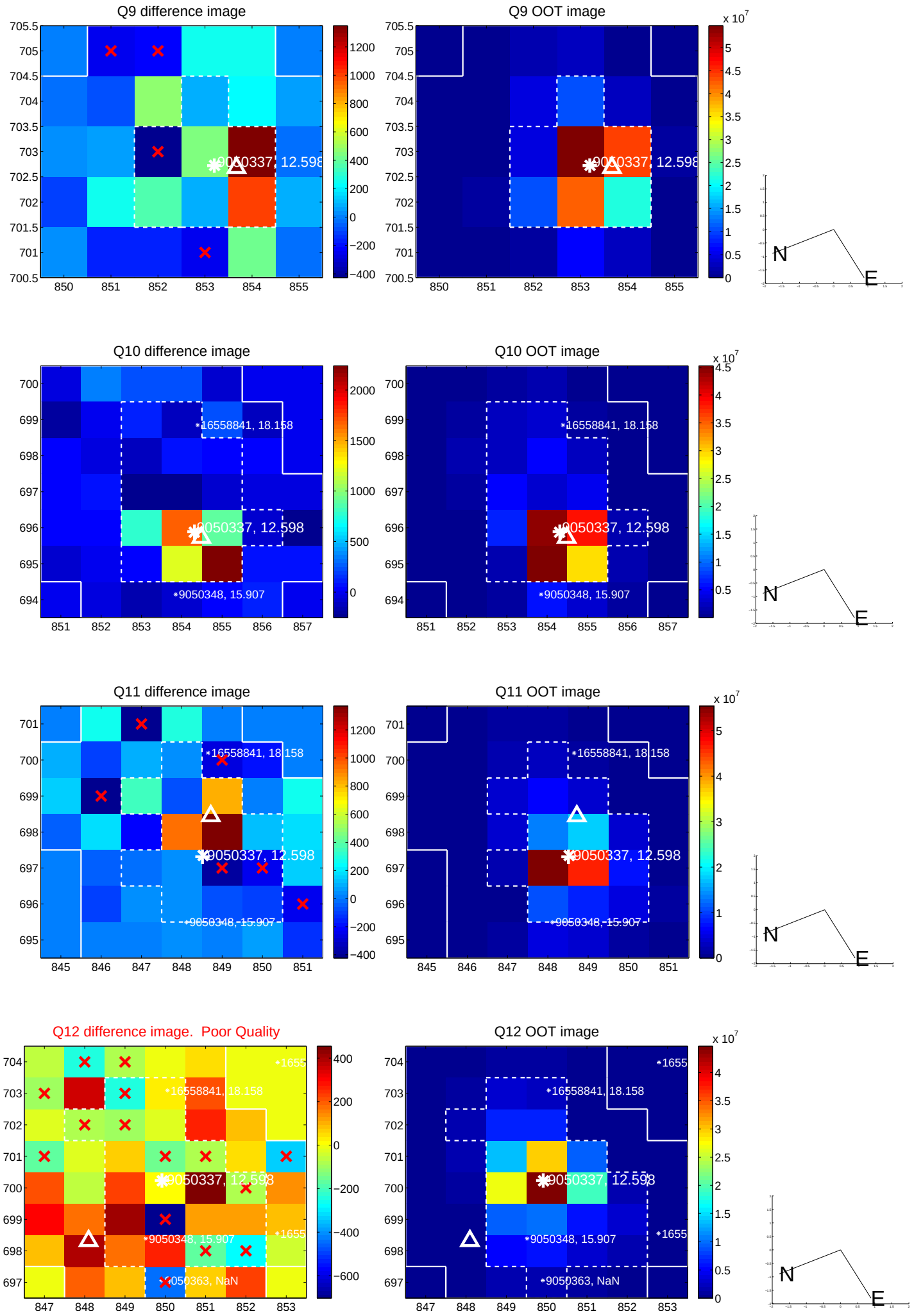
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



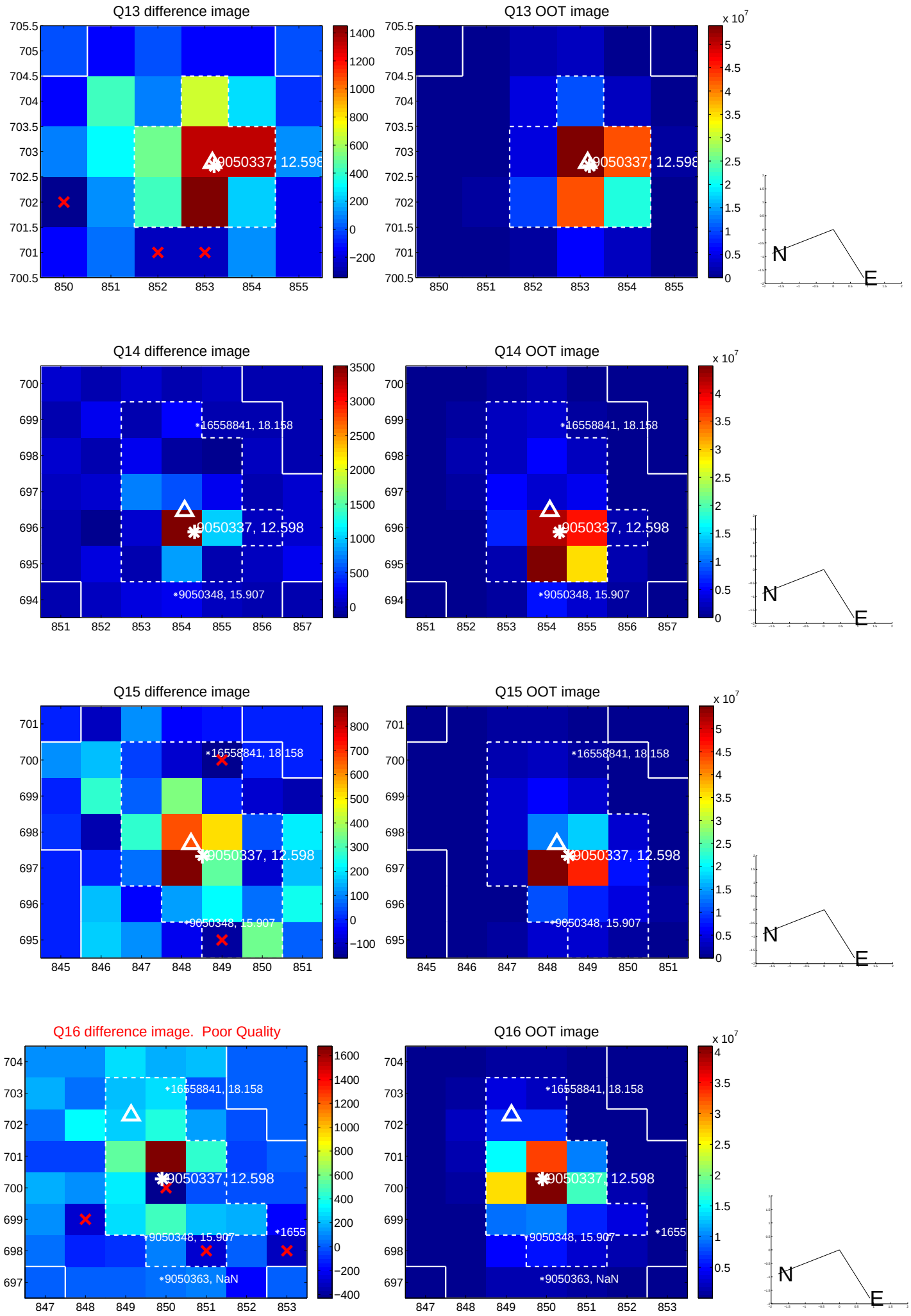
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



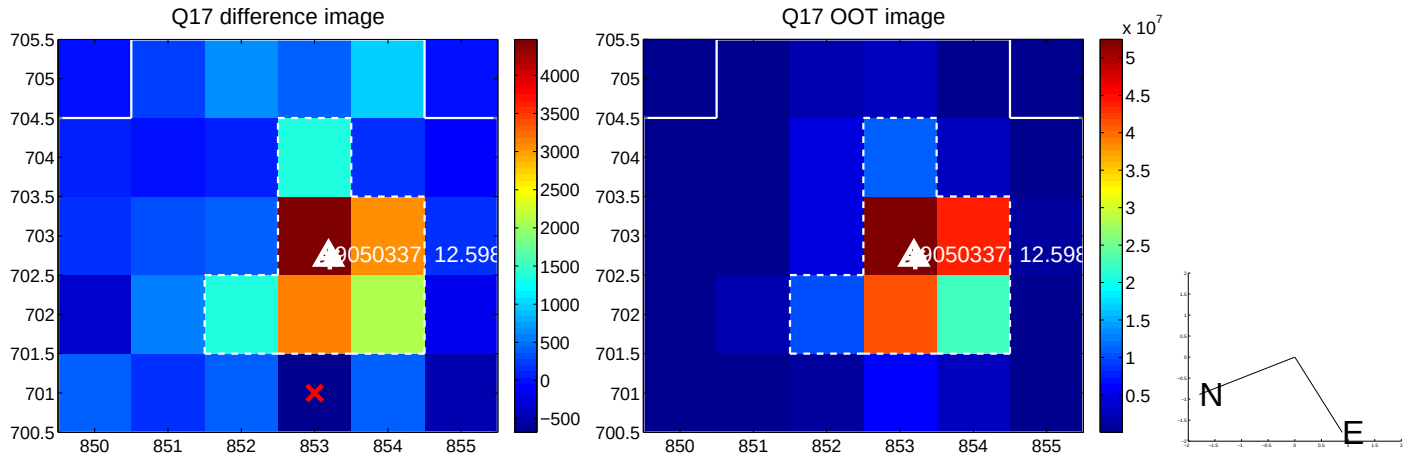
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

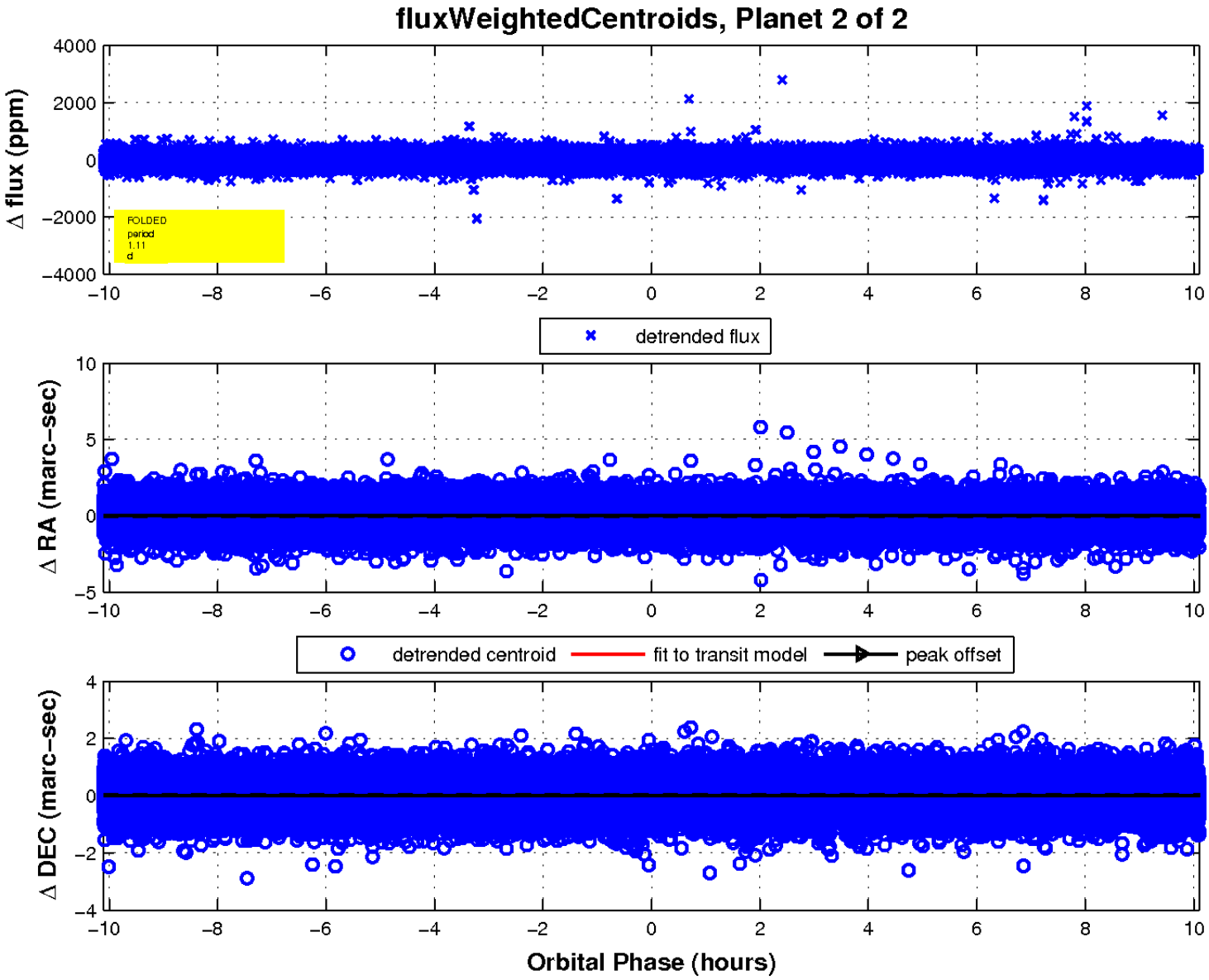


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

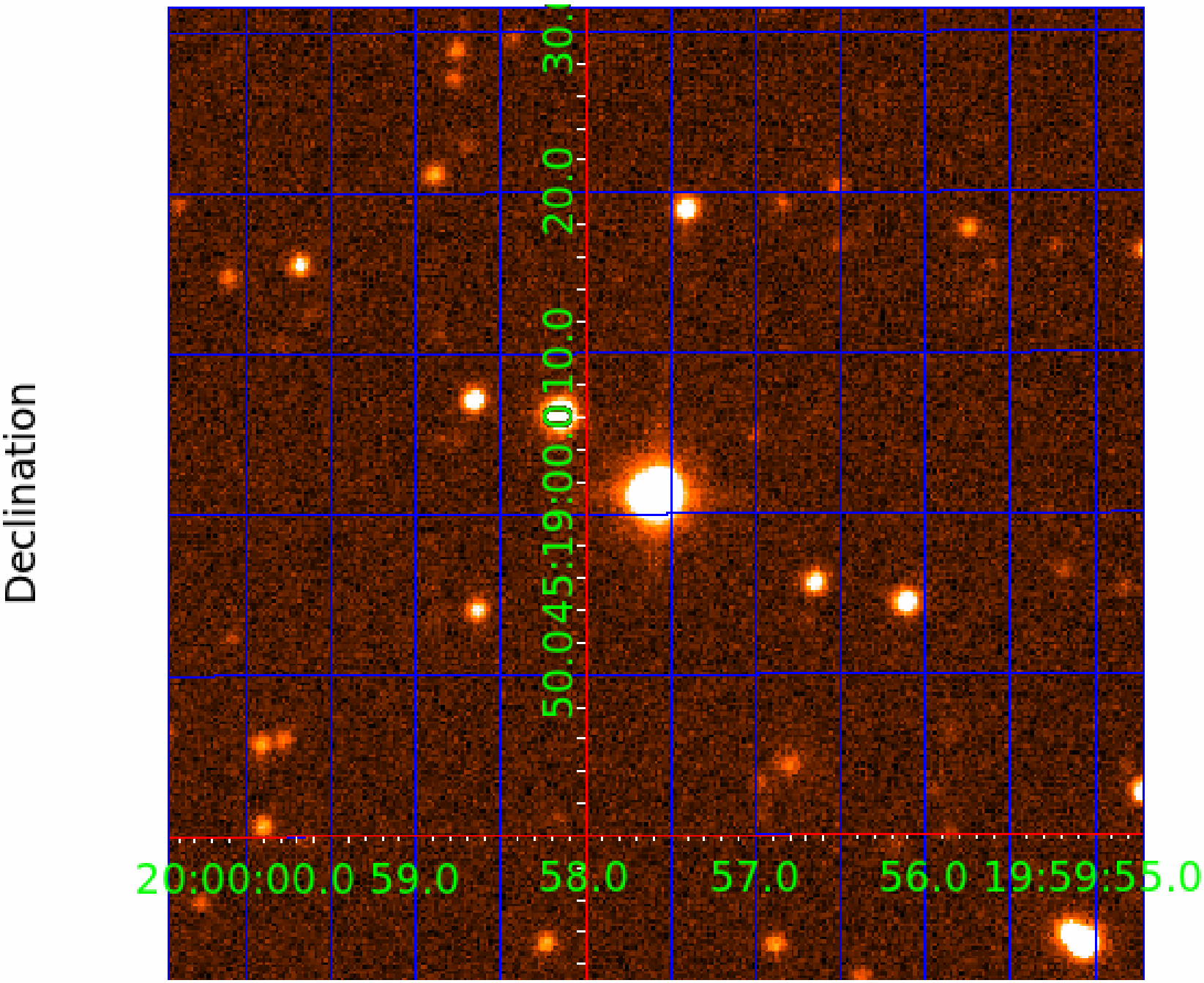


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
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