KIC 008123377

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 ($S_\oplus$)
008123377-01	OBS	No	0.677118	131.883931	169.2	2.582	10.3	10.1	1.60	6998	2.53	19628.51
008123377-02	OBS	No	0.863961	131.967083	93.3	5.760	9.8	5.4	1.60	6998	1.61	14183.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008123377-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008123377-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

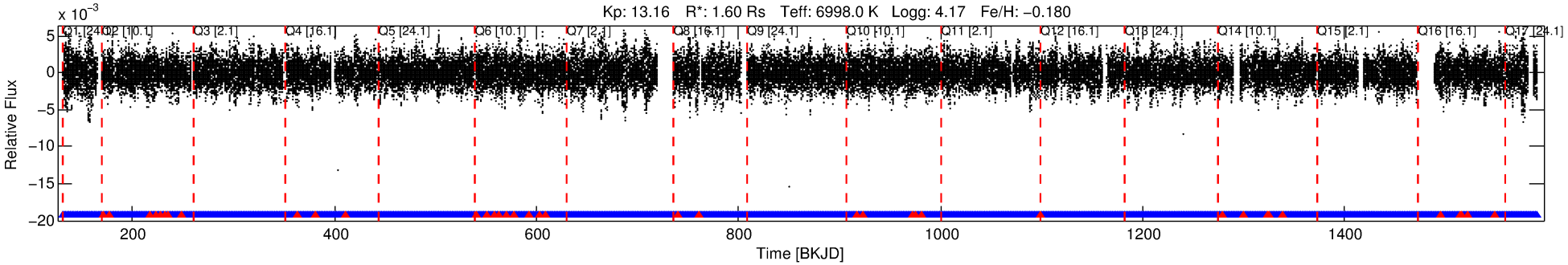
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

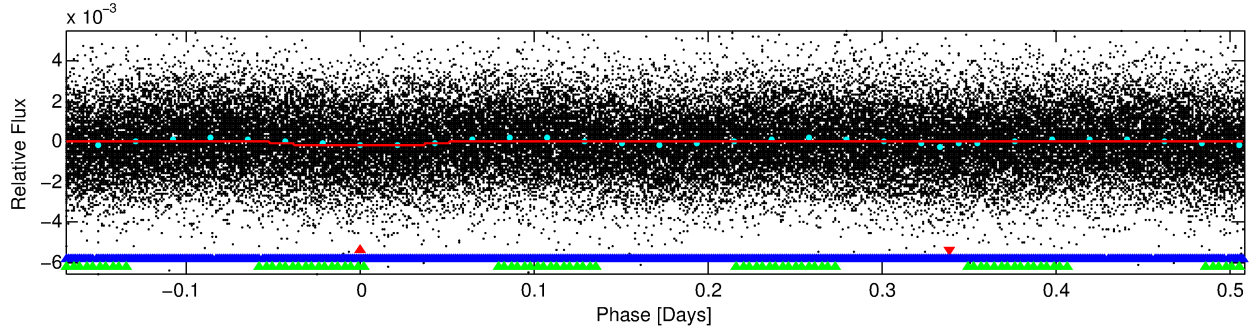
Ephemeris Match Information For 008123377-01

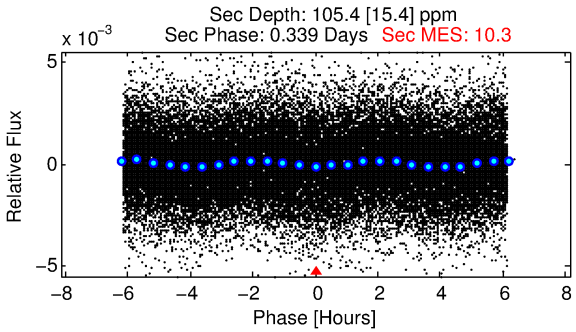
No Significant Match Found

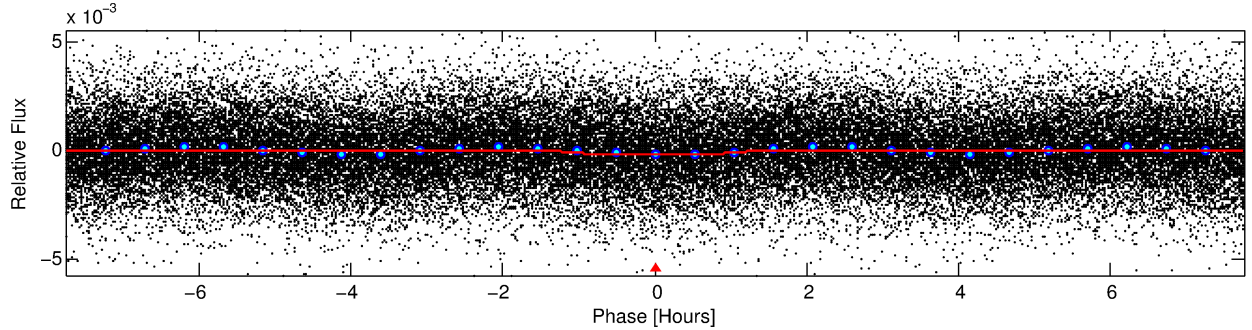
DV One-Page Summary

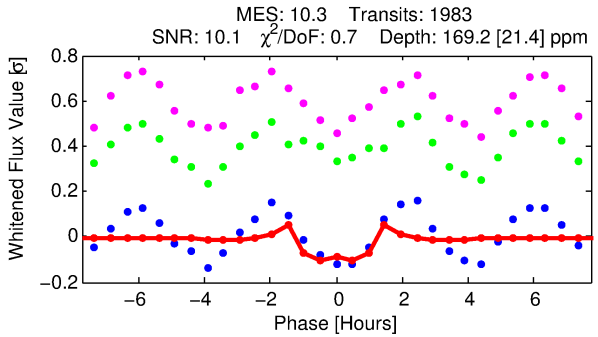
KIC: 8123377 Candidate: 1 of 3 Period: 0.677 d

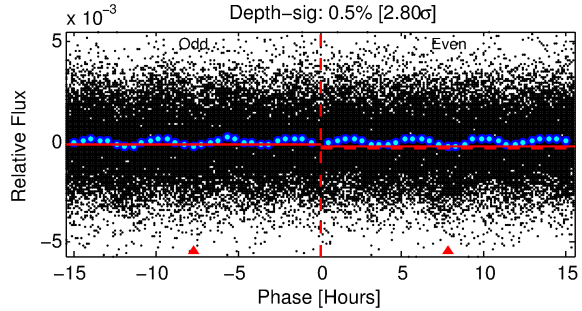


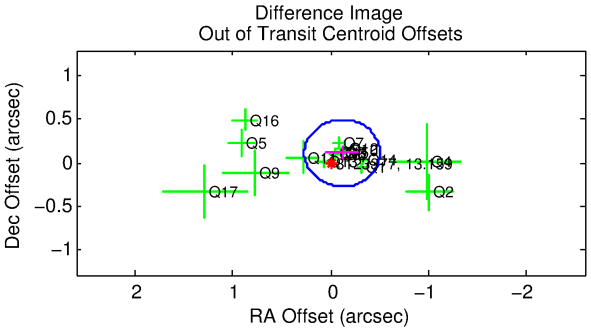












DV Fit Results:

Period = 0.67712 [0.00001] d
Epoch = 131.8839 [0.0014] BKJD
Rp/R* = 0.0144 [0.0016]
a/R* = 1.23 [0.21]
b = 0.94 [0.06]

Seff = 19628.51 [7439.13]
Teq = 3018 [286] K
Rp = 2.53 [0.83] Re
a = 0.0168 [0.0042] AU

Ag = 2.56 [1.12] [1.39σ]
Teffp = 5900 [456] K [5.36σ]

DV Diagnostic Results:

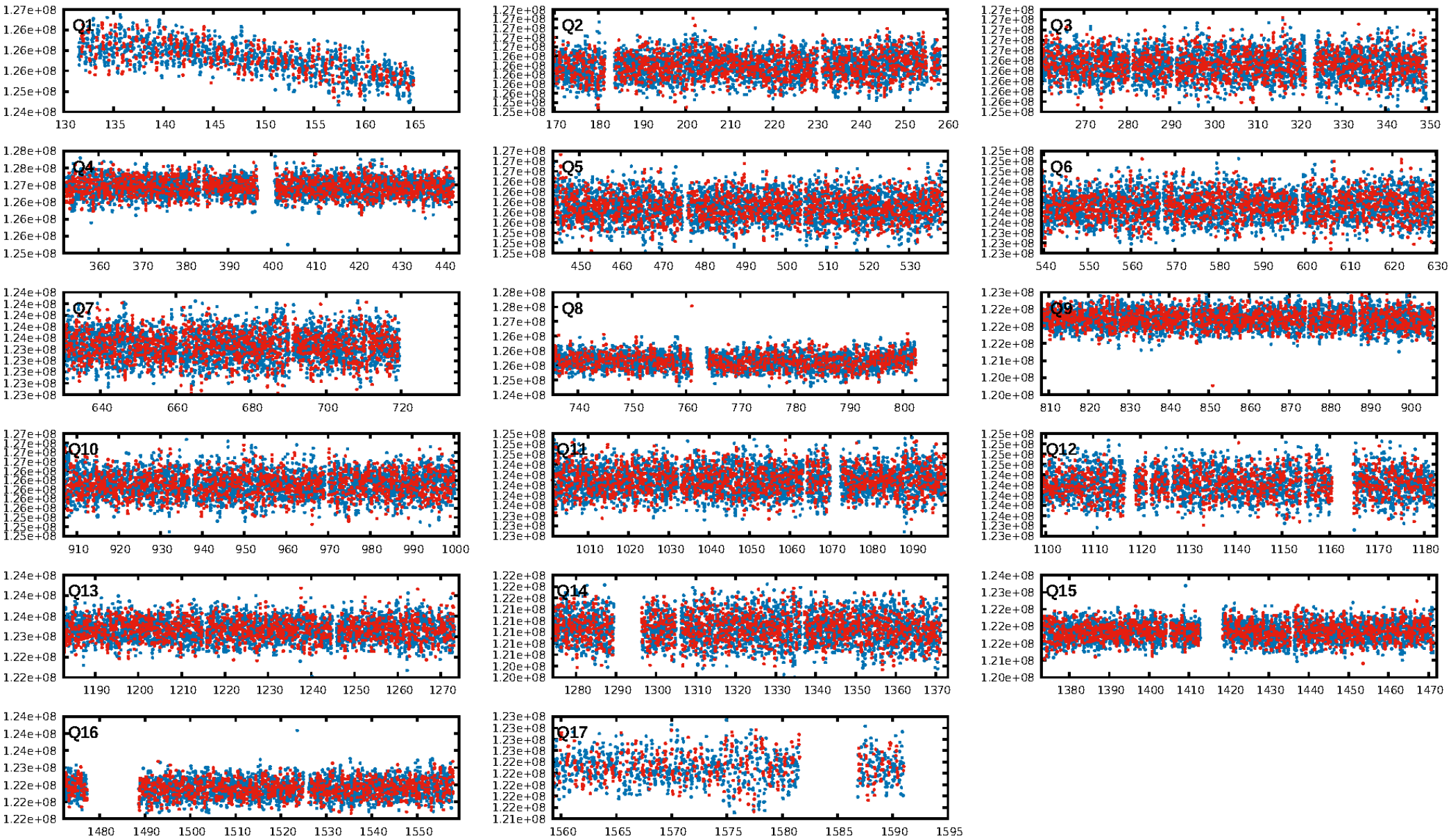
ShortPeriod−sig: N/A
LongPeriod−sig: 52.3% [0.71σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 0.98 [1856/1894]
GhostDiagnostic−chr: 0.564

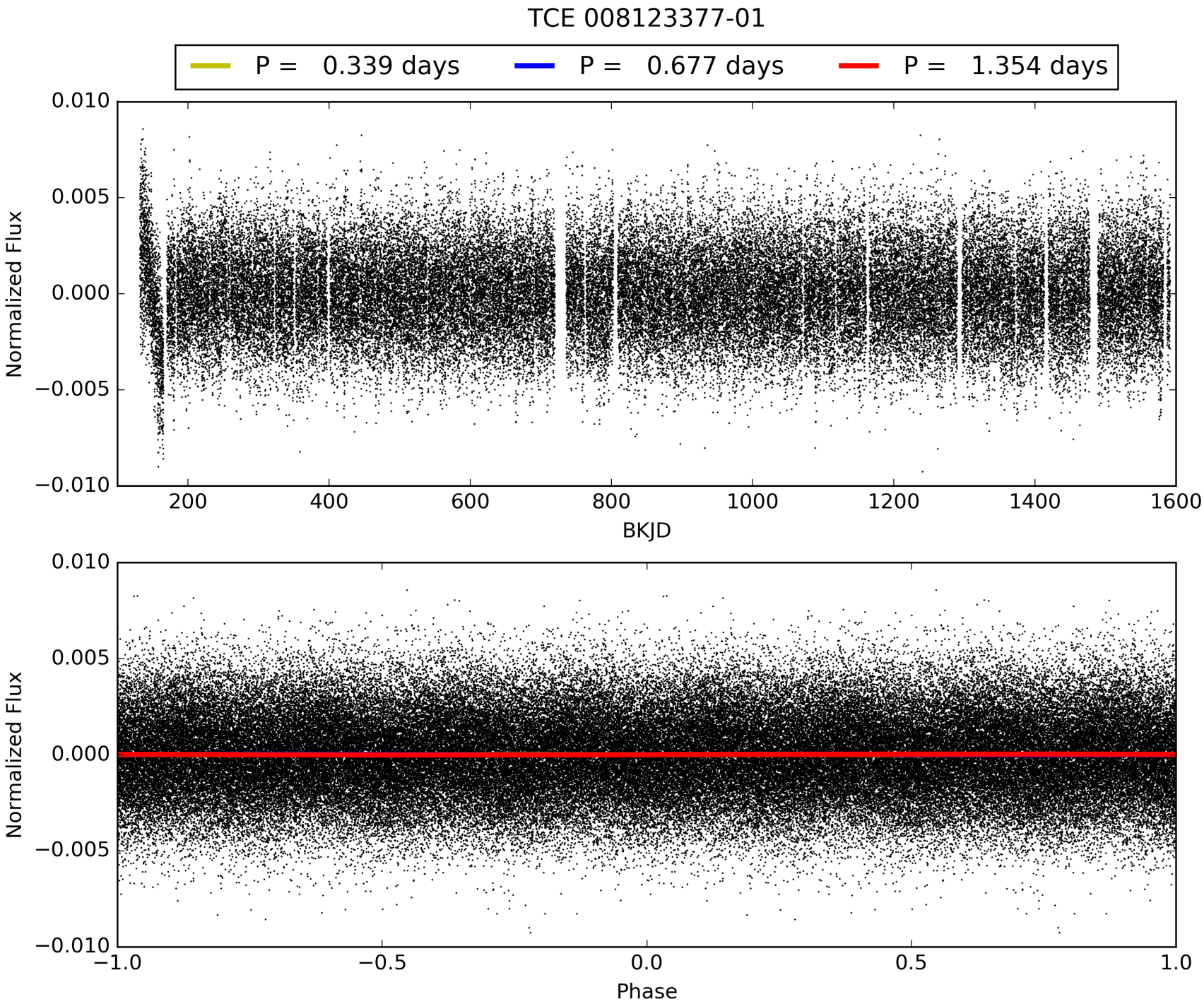
Centroid−sig: 0.4%
Centroid−so: 0.316 arcsec [2.13σ]
OotOffset−rm: 0.160 arcsec [1.24σ]
KicOffset−rm: 0.099 arcsec [0.68σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 1.00 [17/17]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 23:37:48 Z

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

TCE 008123377-01, PDC Light Curves

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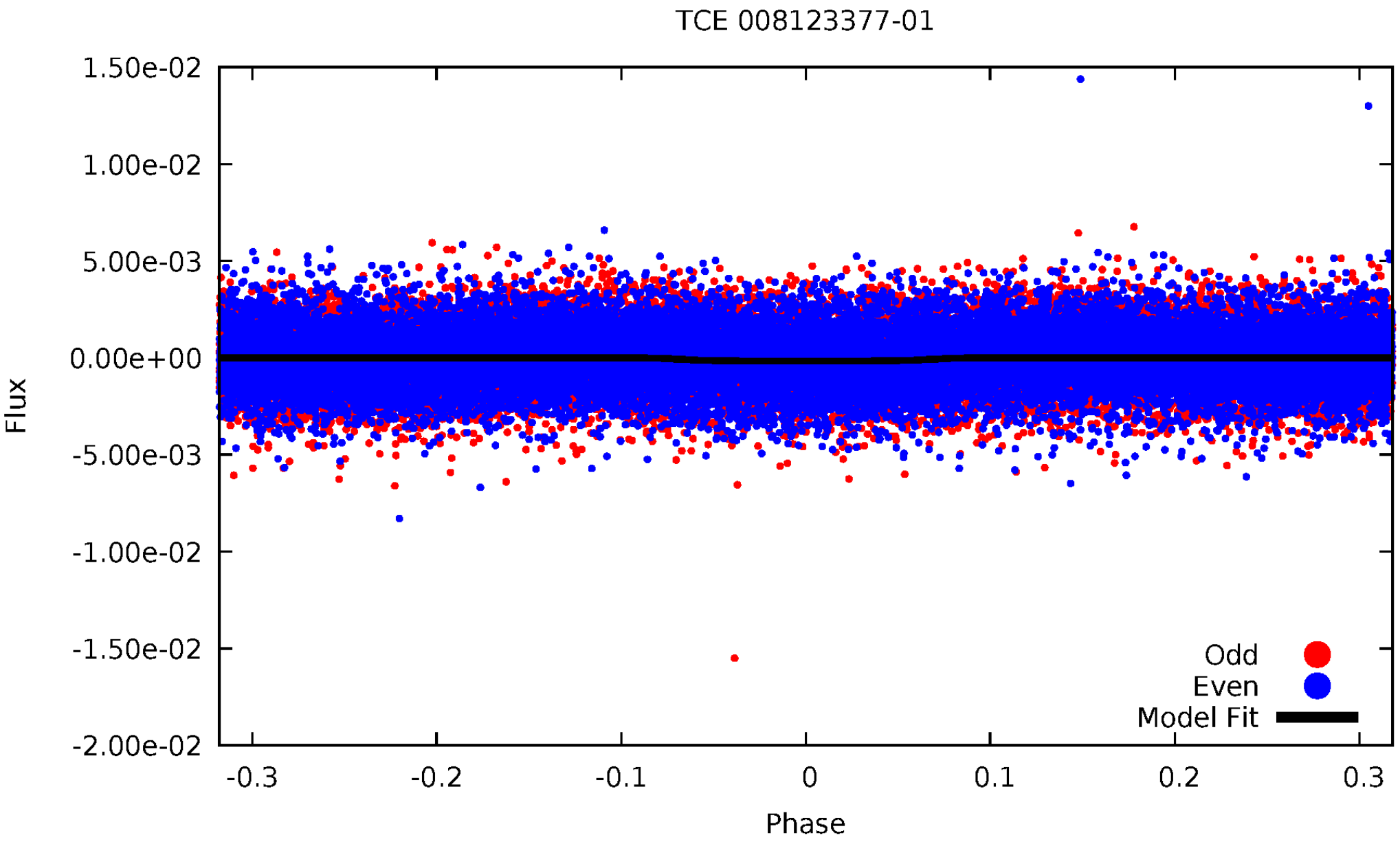
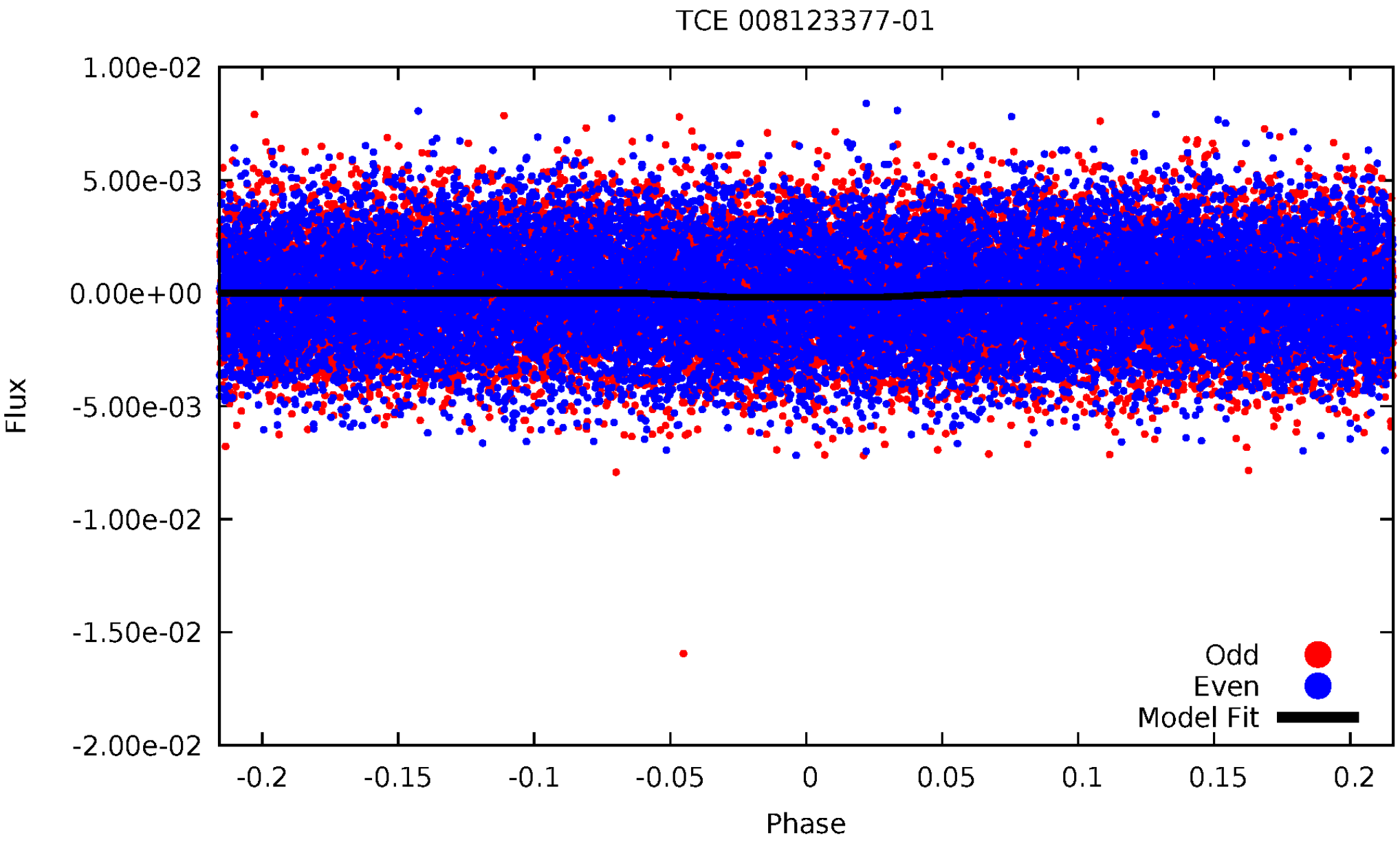
P = 0.339 days
P = 0.677 days
P = 1.354 days
Normalized Flux
0.010
0.005
0.000
−0.005
−0.010
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.010
0.005
0.000
−0.005
−0.010
−1.0
−0.5
0.0
0.5
1.0
Phase

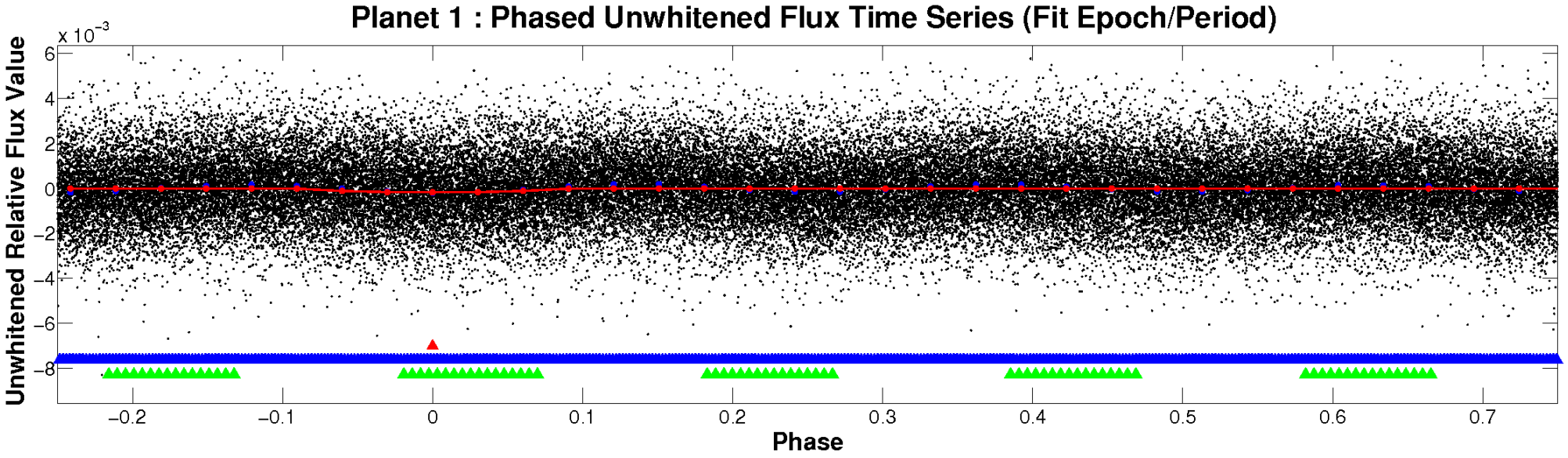
DV Odd/Even

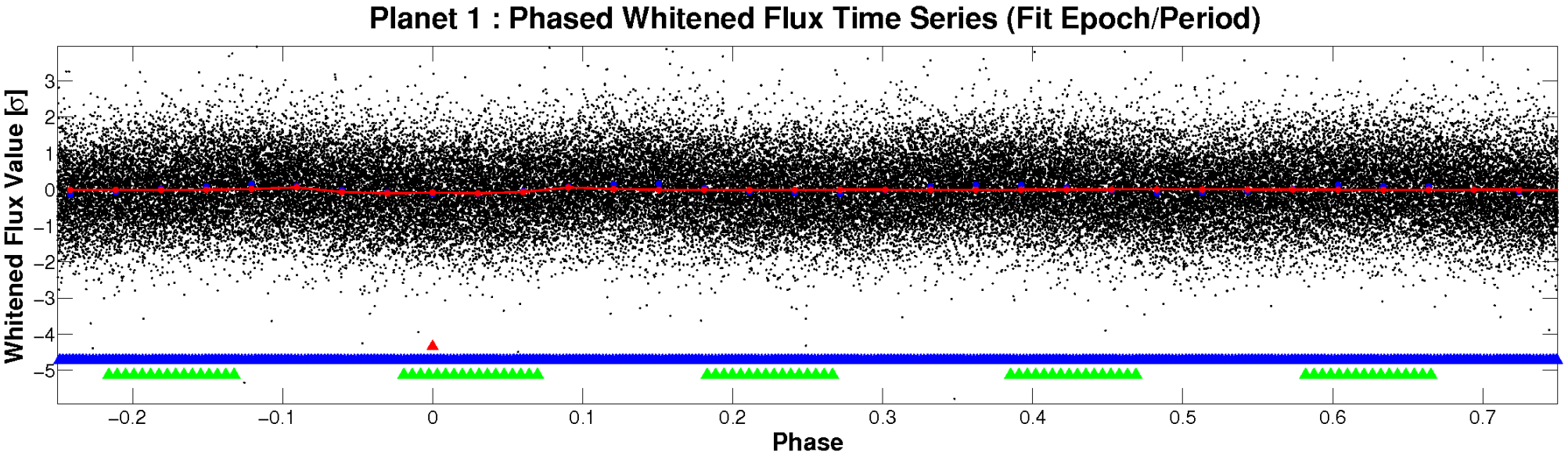

TCE 008123377-01
1.50e-02
1.00e-02
5.00e-03
0.00e+00
-5.00e-03
-1.00e-02
-1.50e-02
-2.00e-02
Flux
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008123377-01
1.00e-02
5.00e-03
0.00e+00
-5.00e-03
-1.00e-02
-1.50e-02
-2.00e-02
Flux
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
Phase
Odd
Even
Model Fit

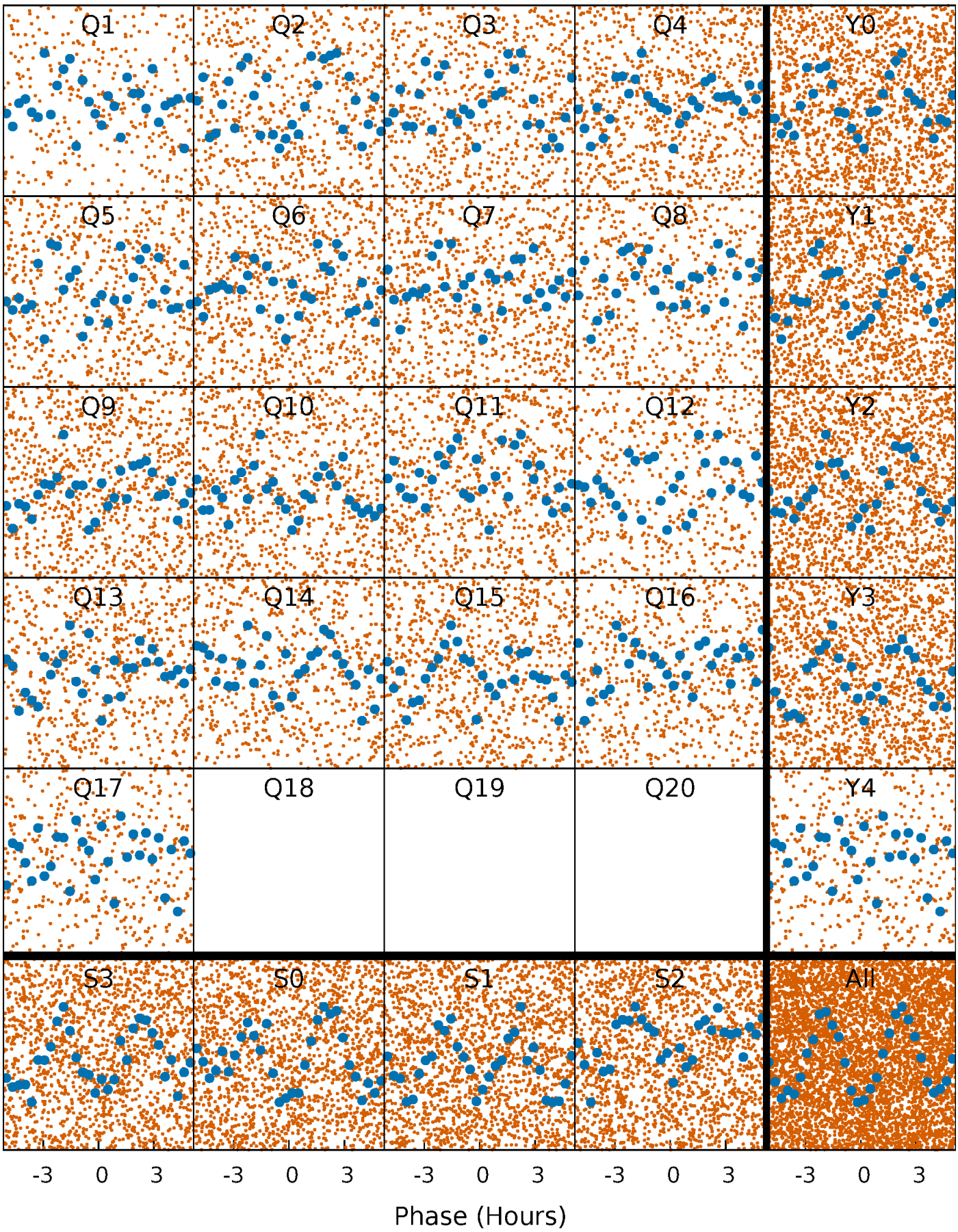
Non-Whitened Vs. Whitened Light Curve





PDC Quarter-Phased Transit Curves

TCE 008123377-01 P= 0.677118 Days T_0=131.883931 (BKJD)



DV Quarter-Phased Transit Curves

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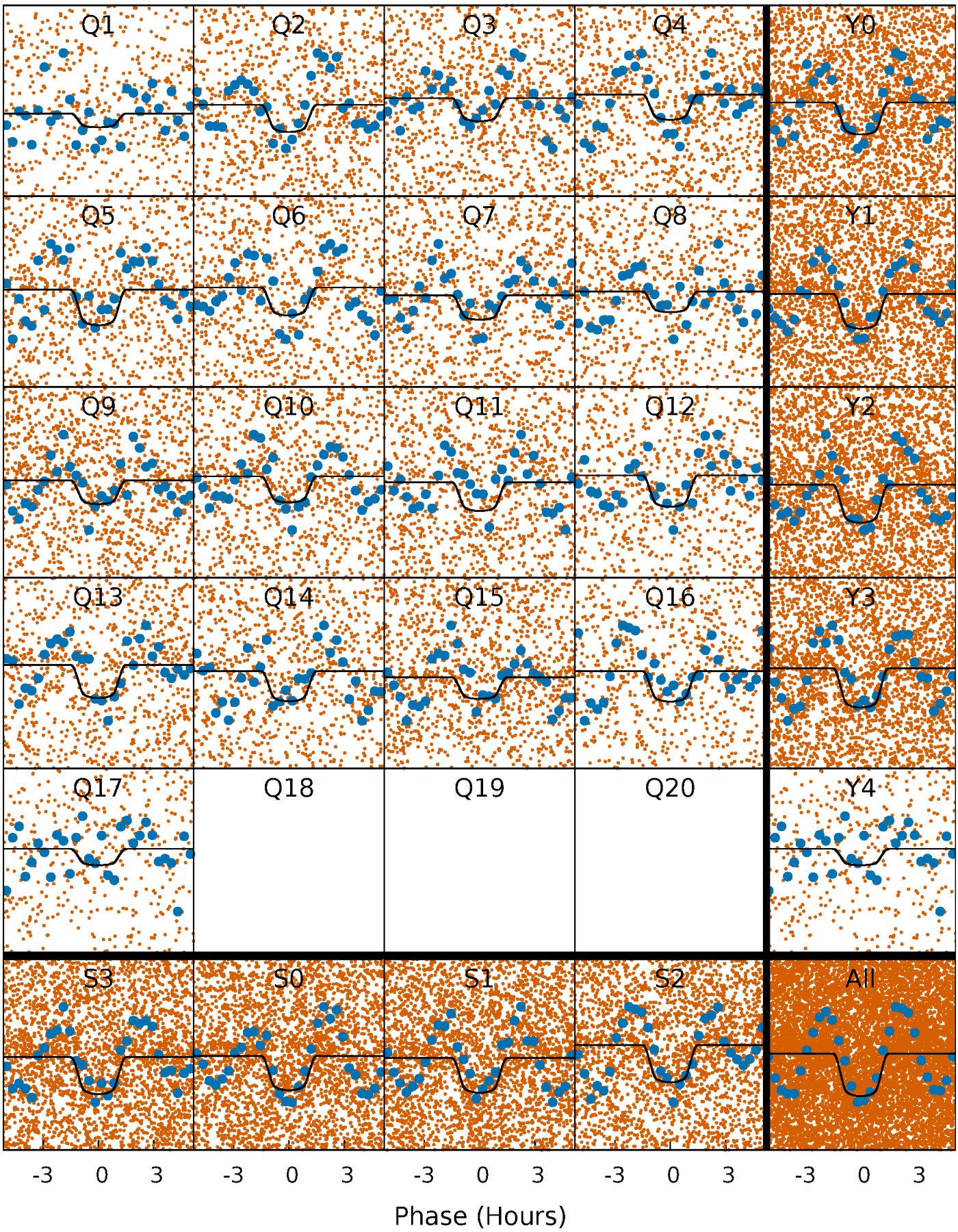
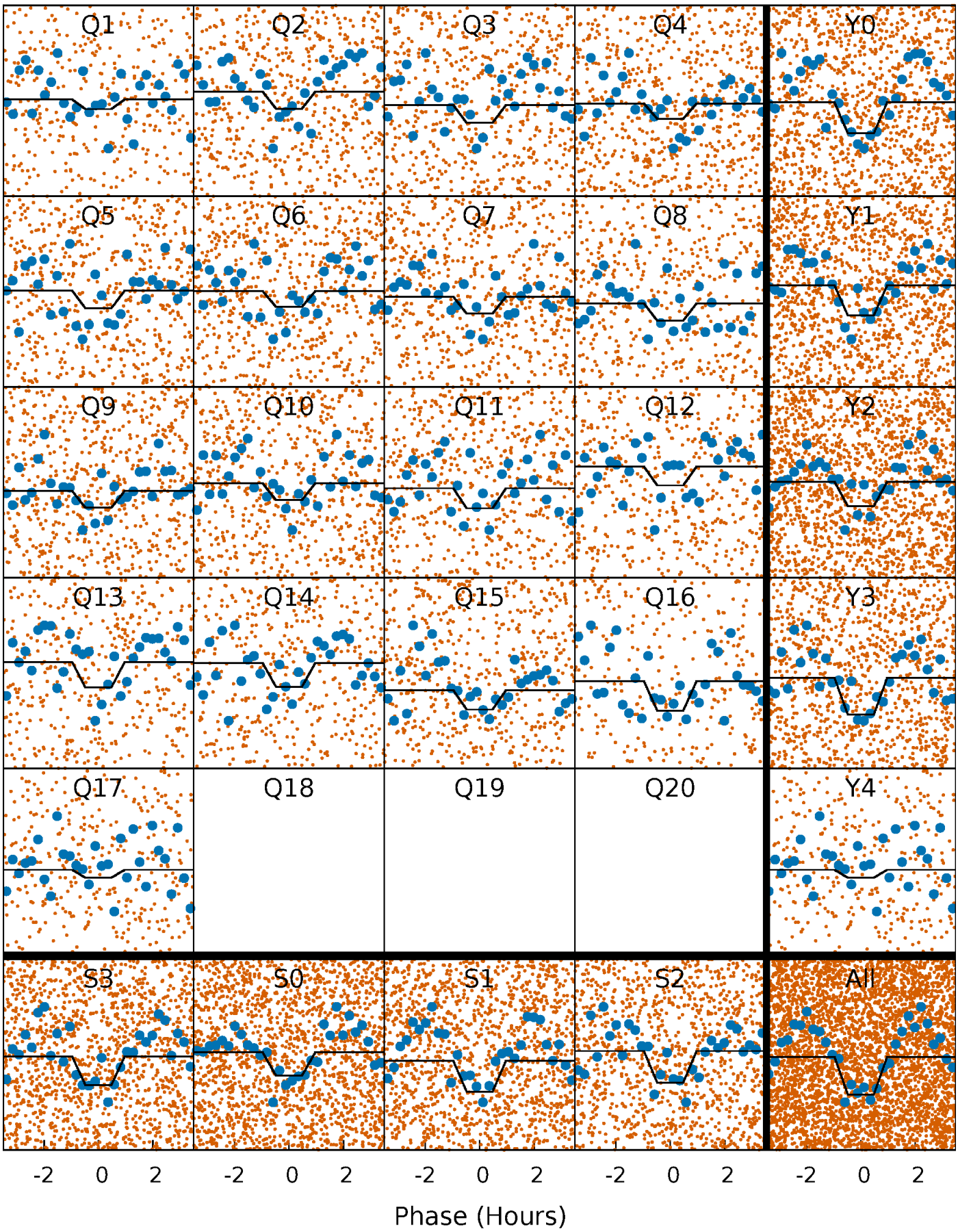


Alt. Detrend Quarter-Phased Transit Curves

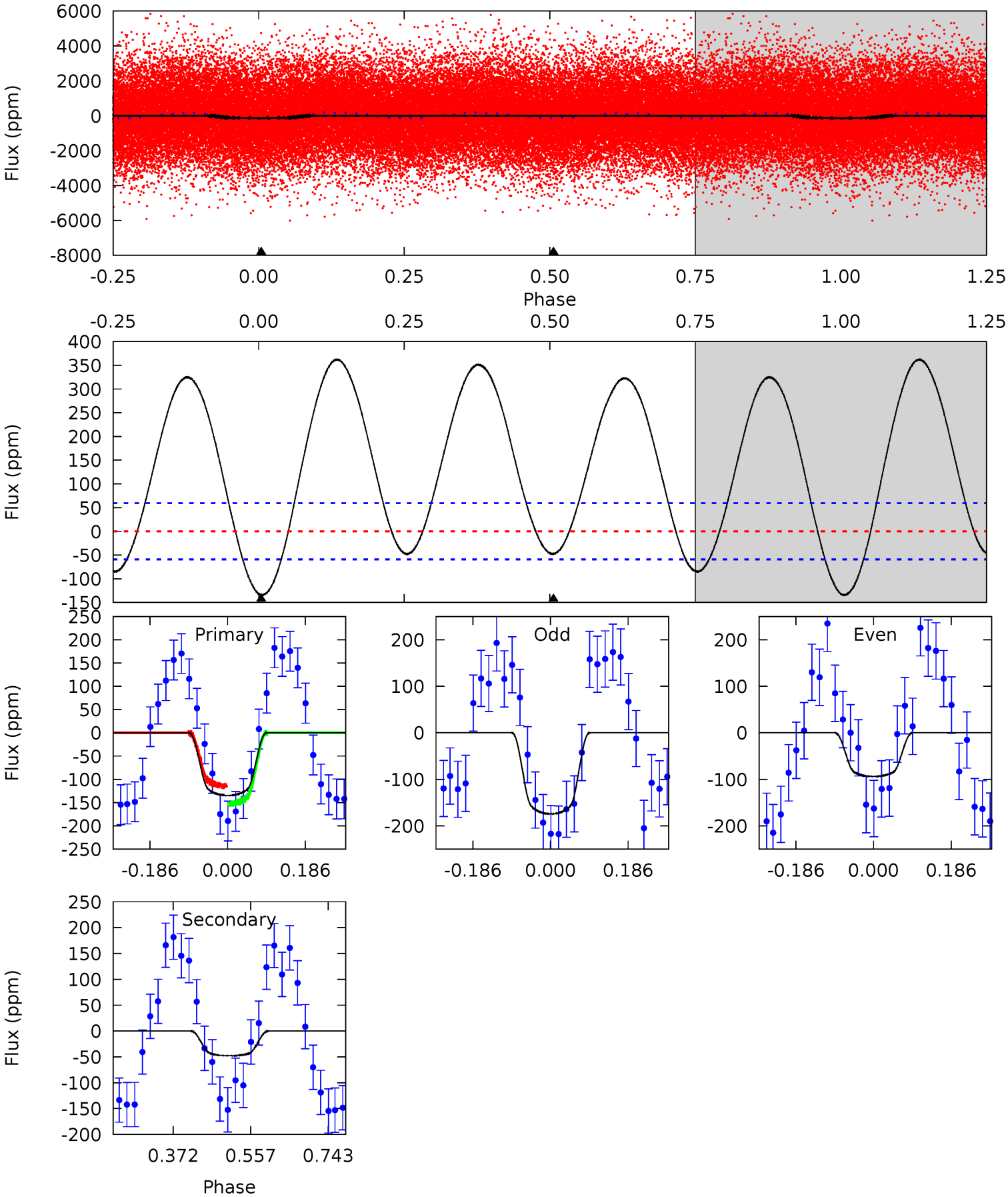
TCE 008123377-01 P= 0.677129 Days T_0=131.877255 (BKJD)



DV Model-Shift Uniqueness Test

008123377-01, P = 0.677118 Days, E = 131.206813 Days

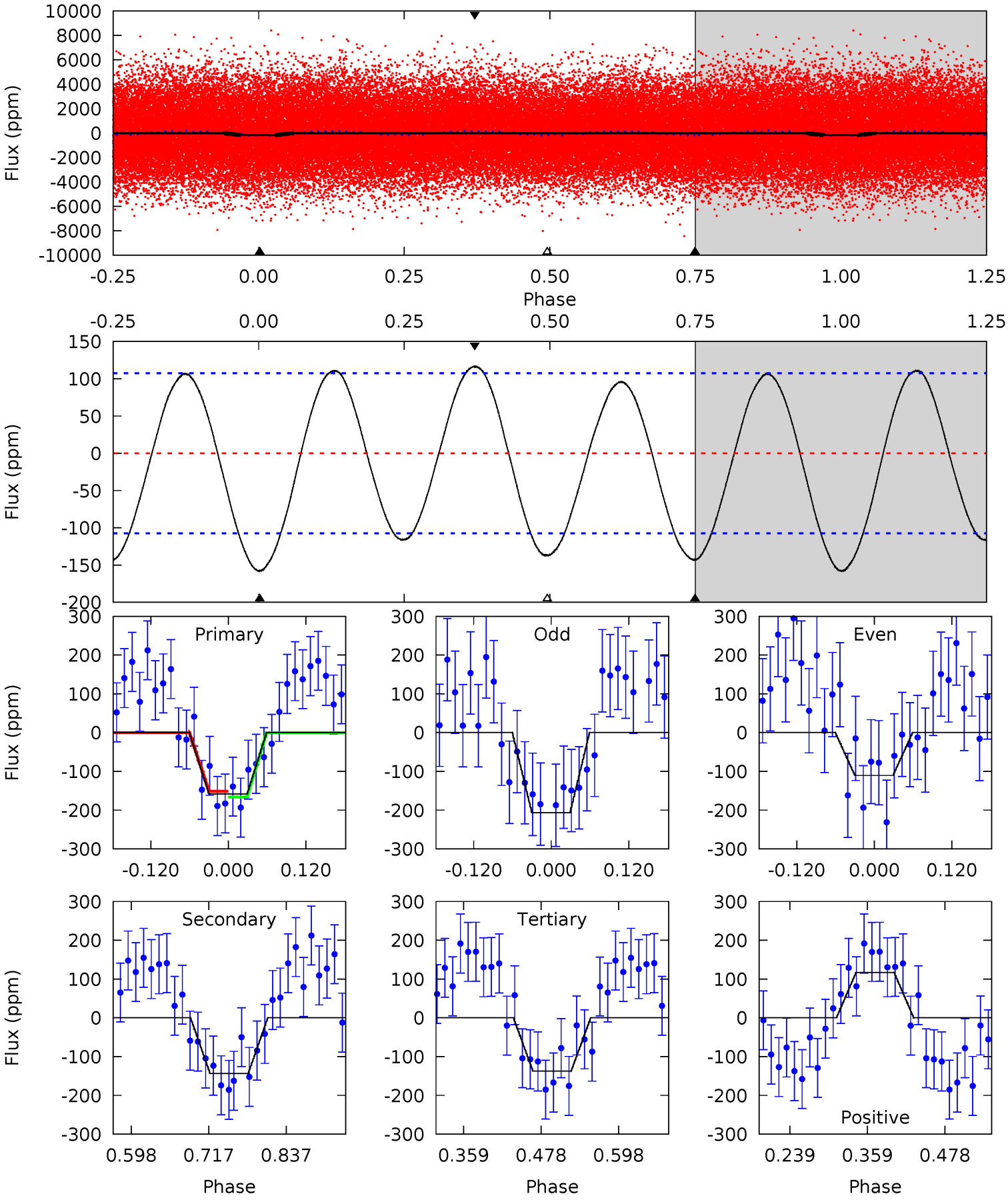
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	3.58	0	0	4.43	1.32	5.33	10.1	10.1	3.58	3.58	3.02	1.10	0.73	1.42



Alt Model-Shift Uniqueness Test

008123377-01, P = 0.677129 Days, E = 131.200126 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.68	6.06	5.80	4.93	4.53	1.56	3.62	0.88	1.76	0.25	1.13	1.98	0.83	0.42	0.30



Stellar Parameters For KIC 008123377

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6998^{+197}_{-271}	$4.166^{+0.148}_{-0.181}$	$-0.180^{+0.250}_{-0.350}$	$1.605^{+0.496}_{-0.330}$	$1.383^{+0.195}_{-0.239}$	$0.471^{+0.377}_{-0.243}$
	+3%/-4%	+4%/-4%	+139%/-194%	+31%/-21%	+14%/-17%	+80%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008123377-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-48±13	$2.53^{+0.48}_{-0.40}$	4210^{+322}_{-261}	4563^{+426}_{-481}	$1.084^{+0.580}_{-0.384}$
Alt.	-144±24	$2.23^{+0.49}_{-0.37}$	4224^{+300}_{-280}	6615^{+608}_{-546}	$4.446^{+1.988}_{-1.521}$

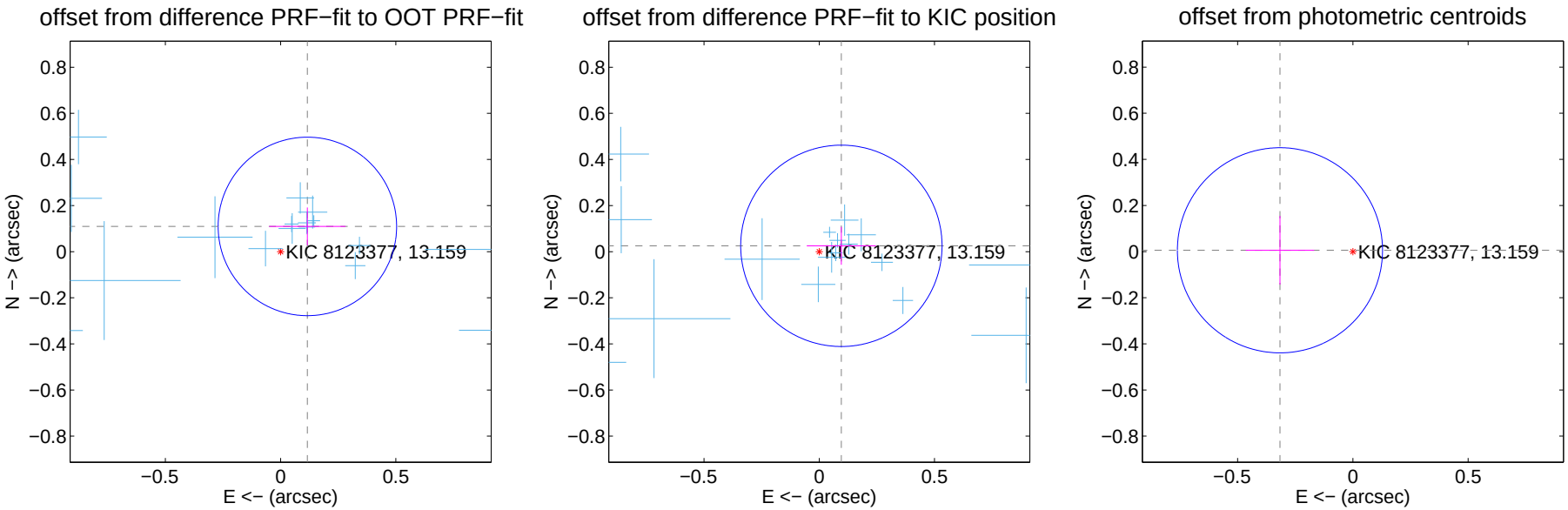
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

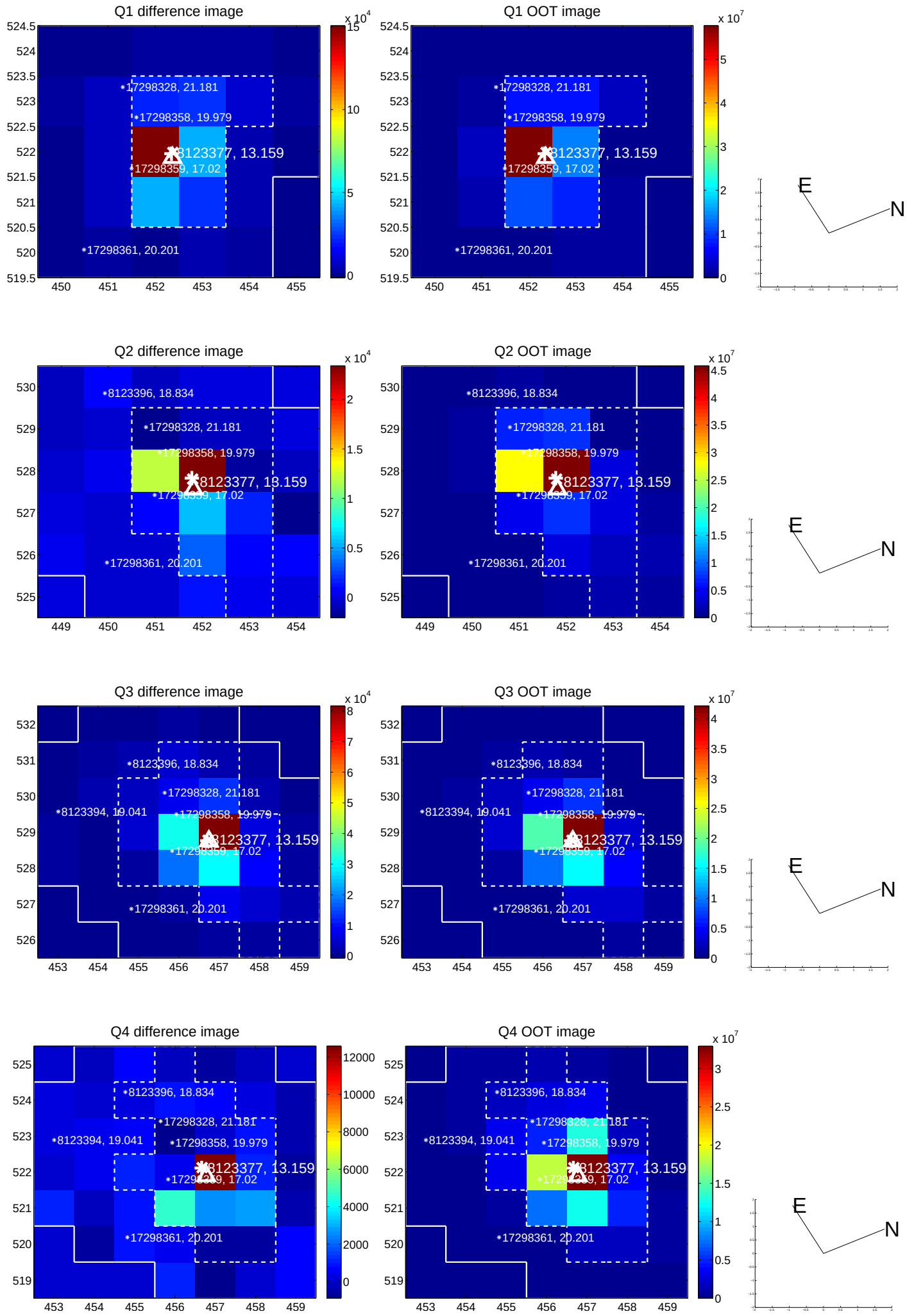
Supplemental centroid analysis for 008123377-01. Kepler magnitude: 13.16. Transit SNR 10.13
There are 17 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.160 ± 0.129	1.24	-0.116 ± 0.166	0.110 ± 0.082
PRF-fit source offset from KIC position	0.099 ± 0.146	0.68	-0.096 ± 0.150	0.025 ± 0.082
photometric centroid source offset	0.32 ± 0.15	2.13	0.32 ± 0.15	0.01 ± 0.15

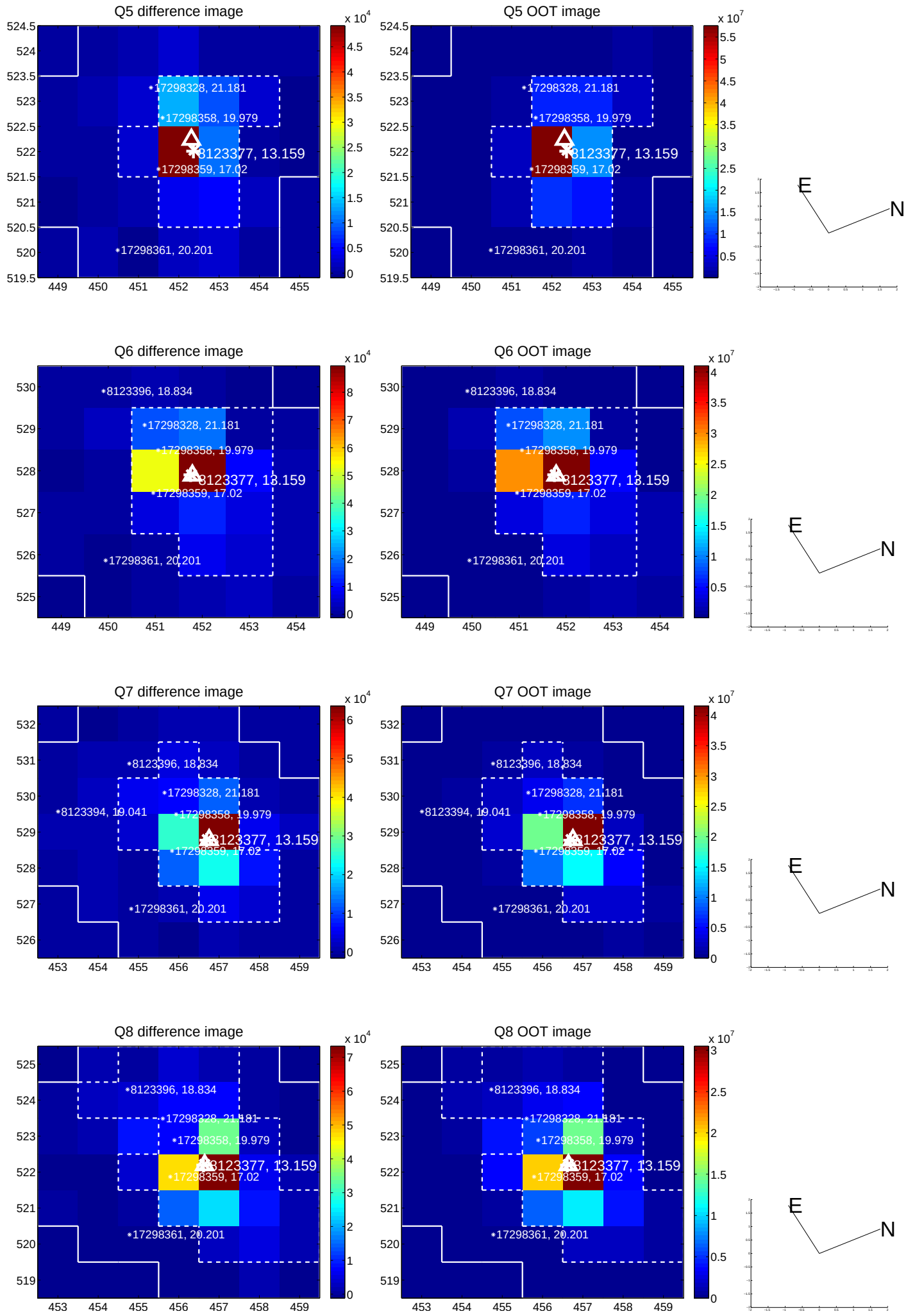


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

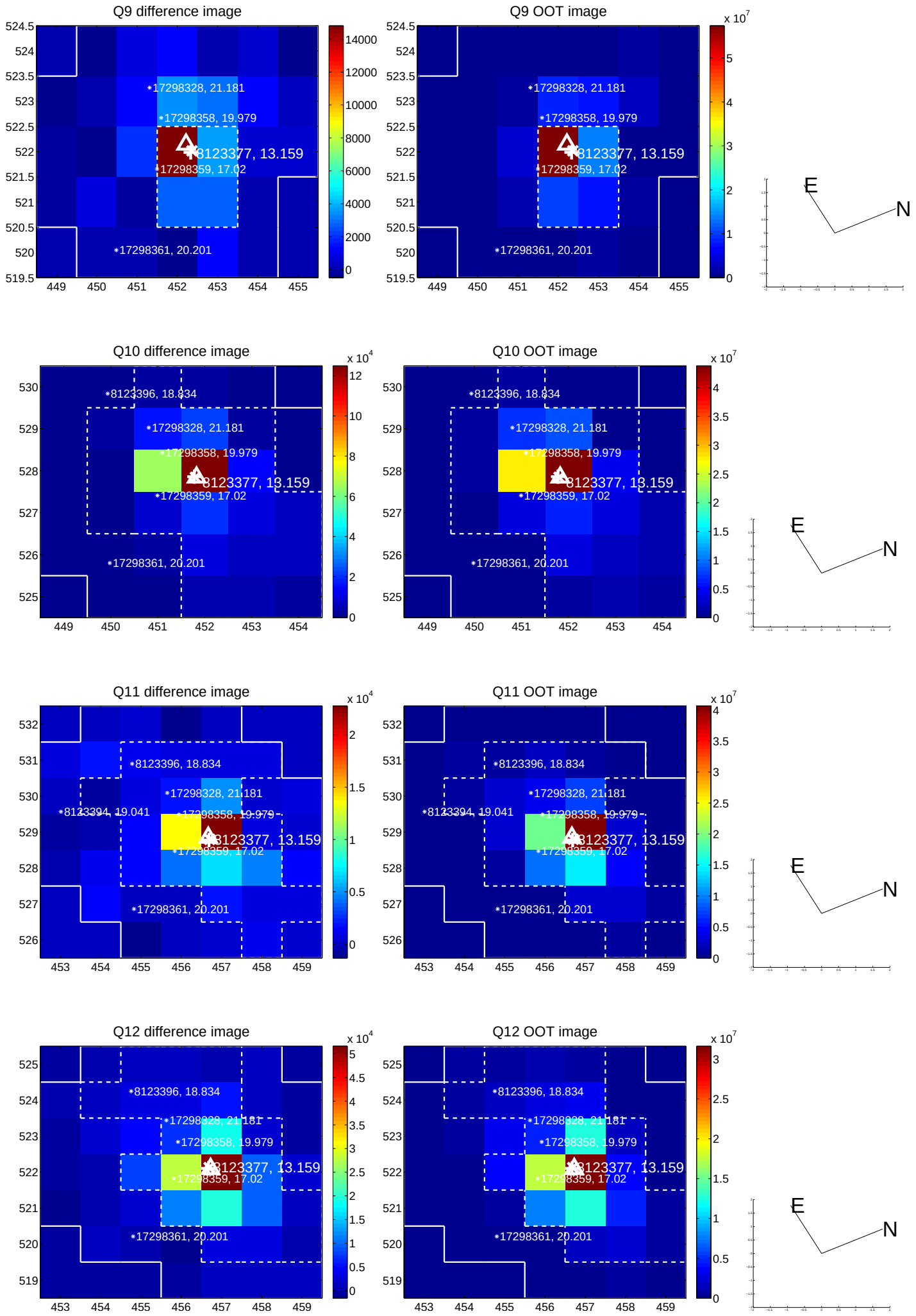
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



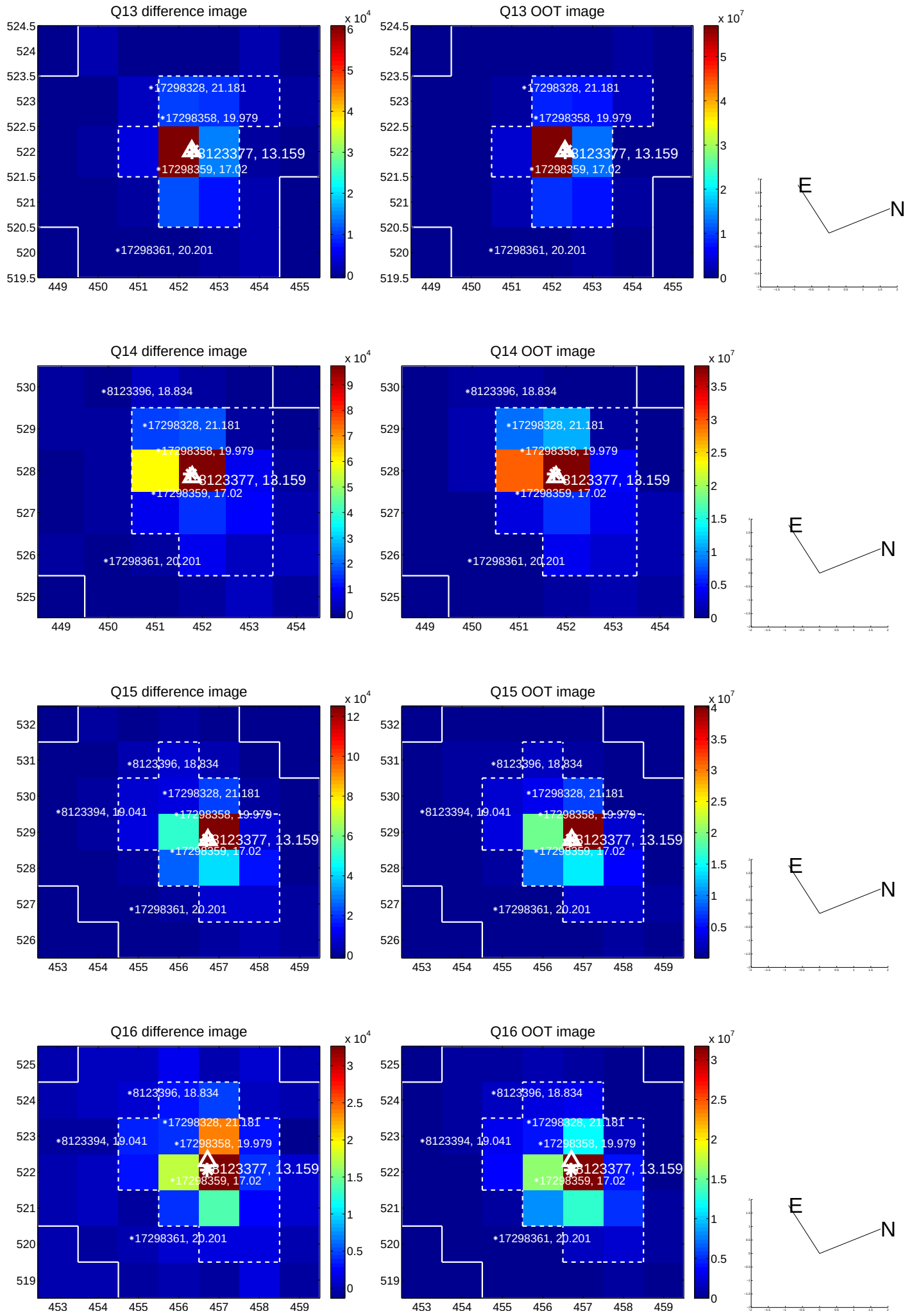
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



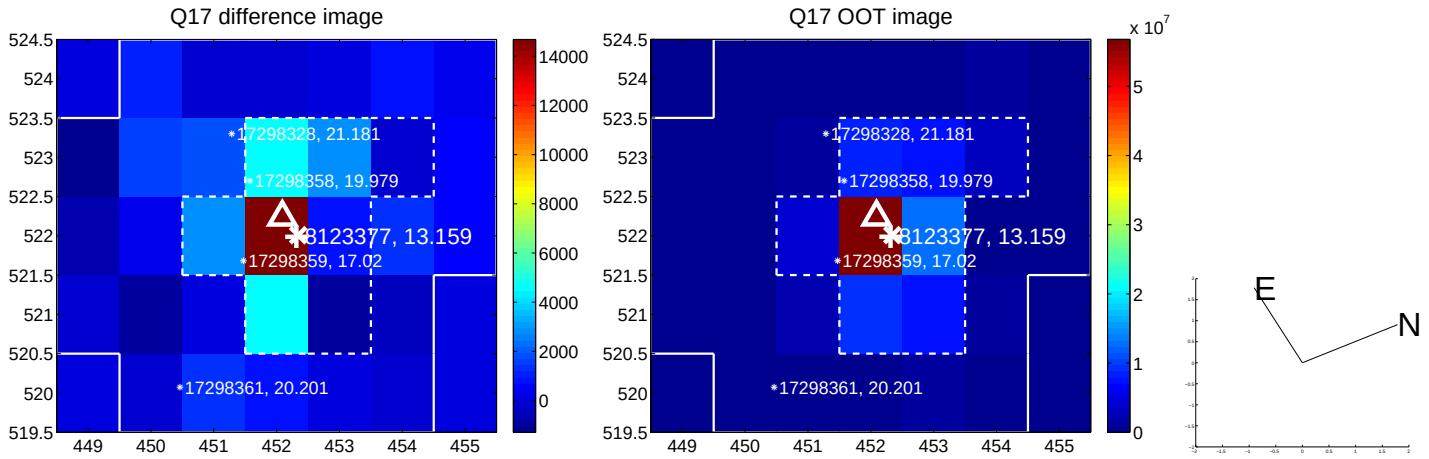
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

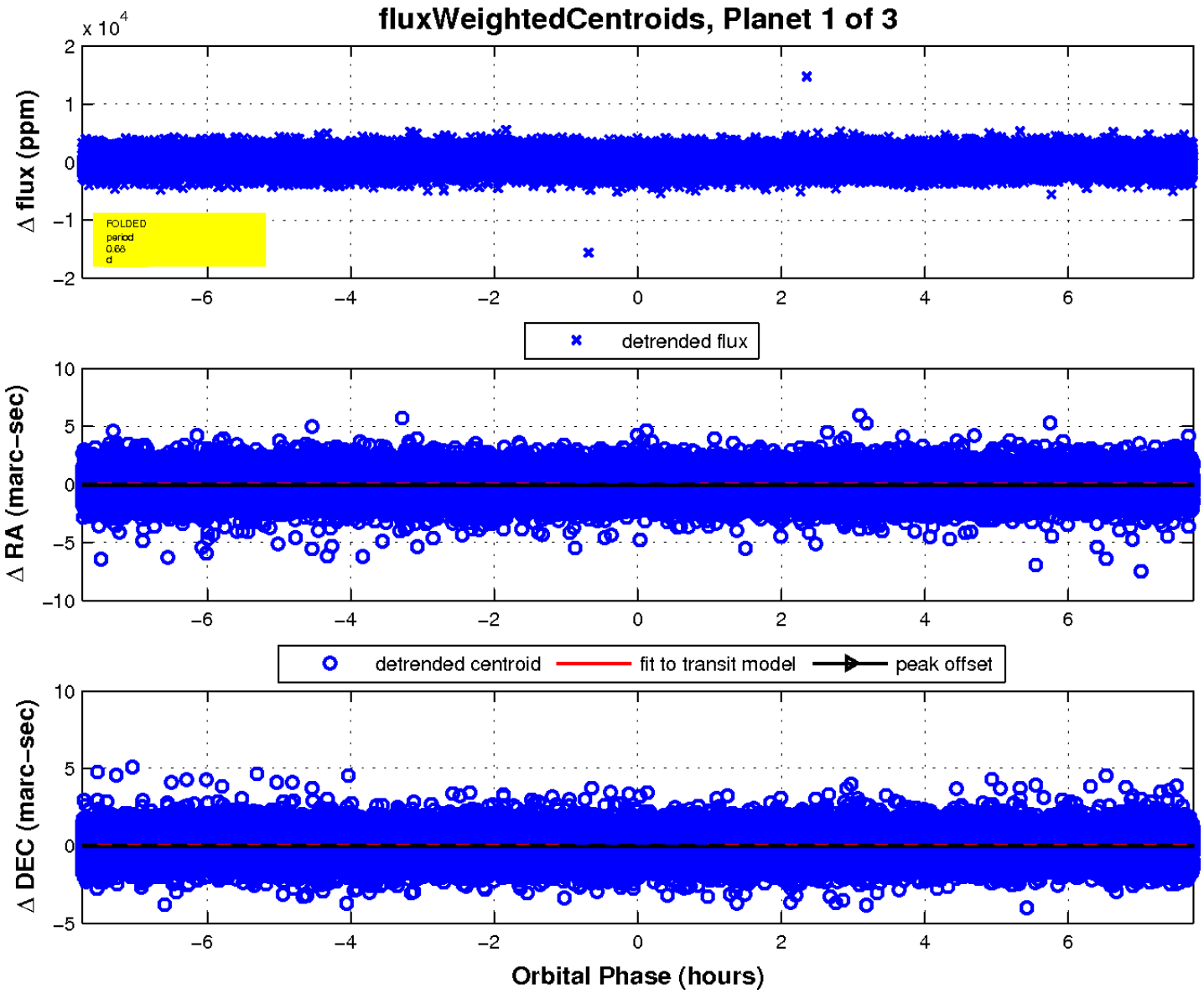


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

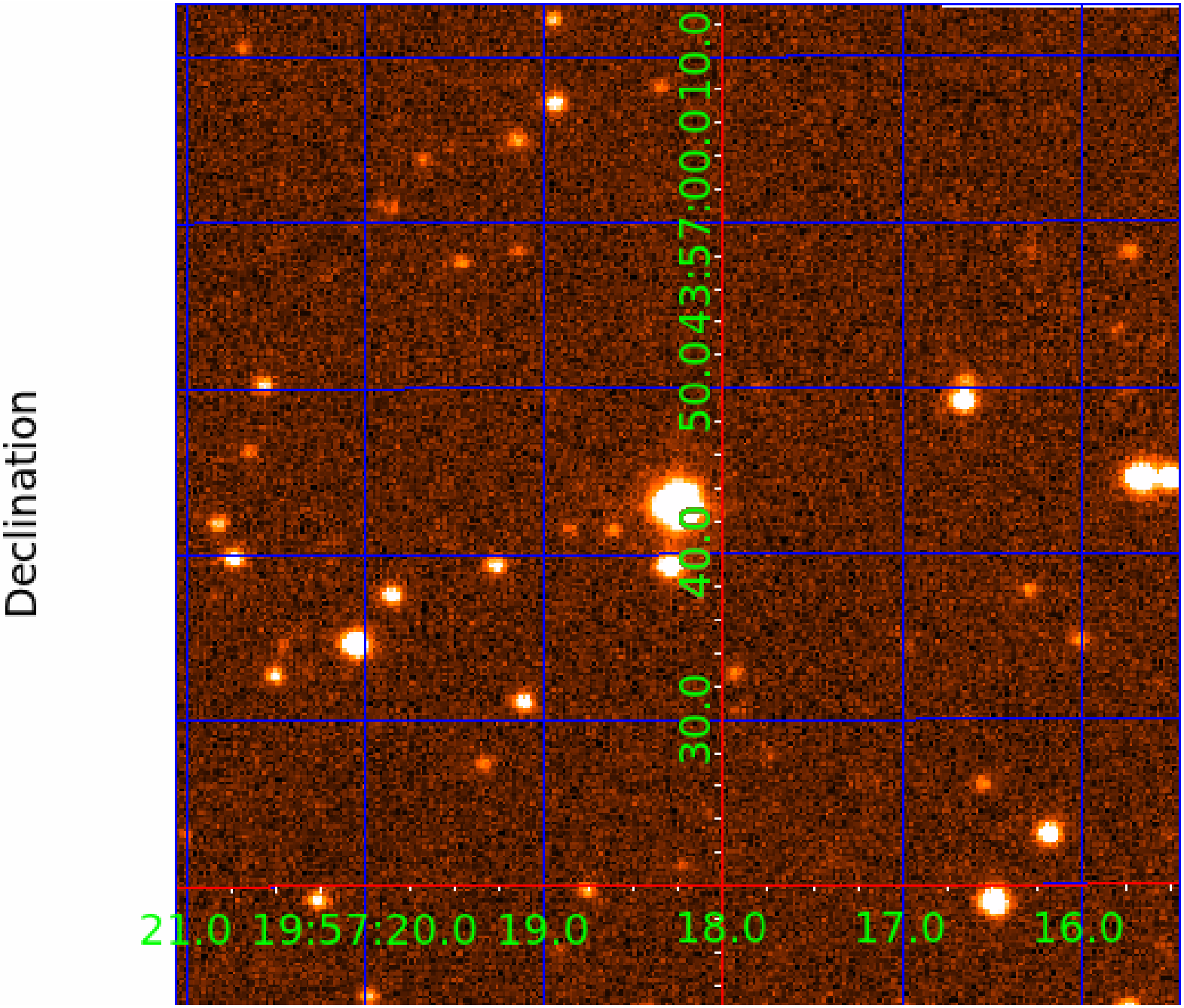


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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30.0
21.0
19:57:20.0
19.0
18.0
17.0
16.0

KIC 008123377

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 ($S_\oplus$)
008123377-01	OBS	No	0.677118	131.883931	169.2	2.582	10.3	10.1	1.60	6998	2.53	19628.51
008123377-02	OBS	No	0.863961	131.967083	93.3	5.760	9.8	5.4	1.60	6998	1.61	14183.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008123377-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008123377-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

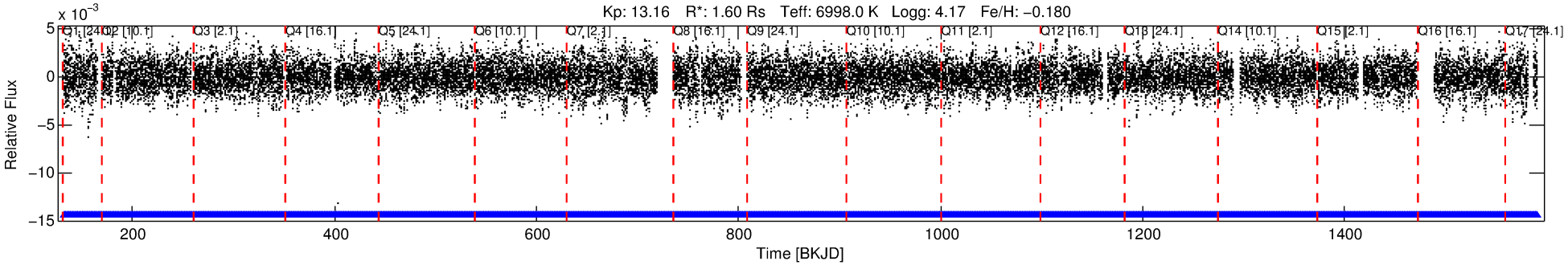
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

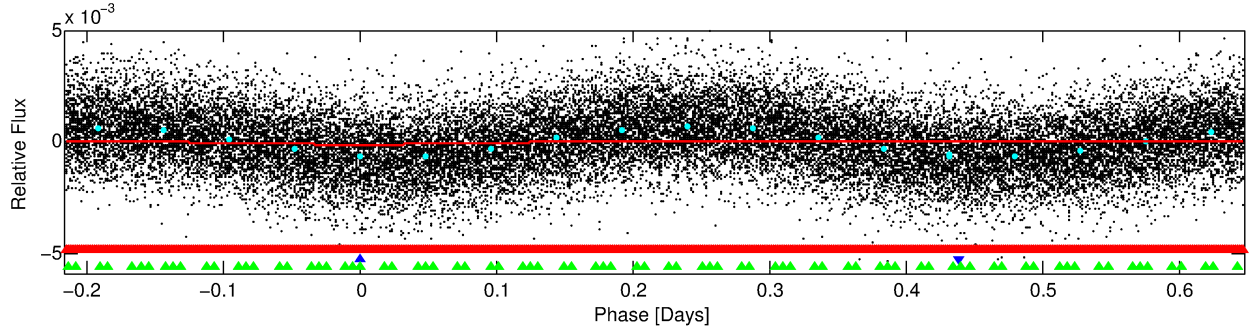
Ephemeris Match Information For 008123377-02

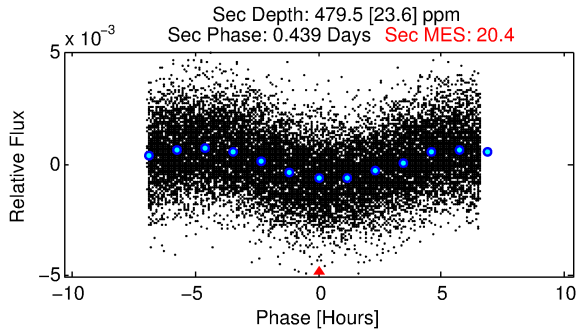
No Significant Match Found

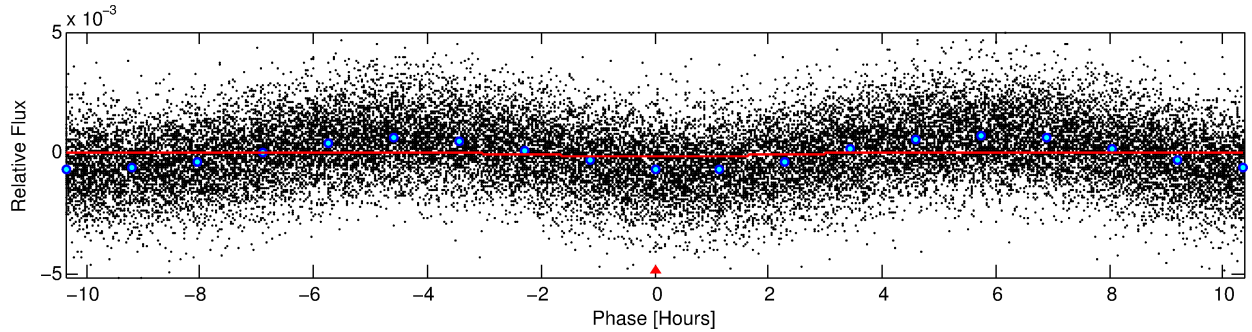
DV One-Page Summary

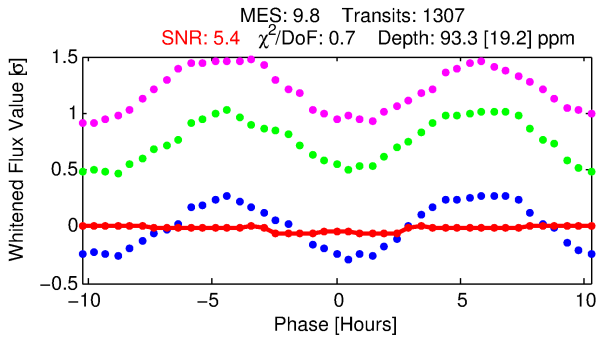
KIC: 8123377 Candidate: 2 of 3 Period: 0.864 d

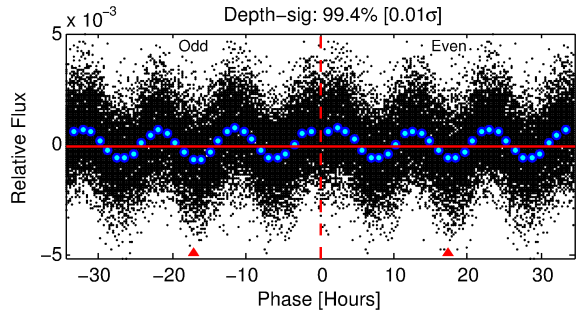


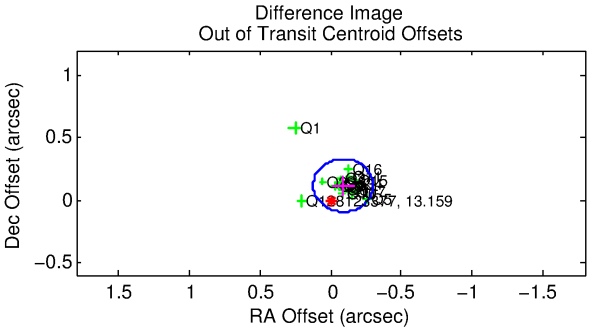












DV Fit Results:

Period = 0.86396 [0.00002] d
Epoch = 131.9671 [0.0061] BKJD
Rp/R* = 0.0092 [0.0118]
a/R* = 1.25 [3.37]
b = 0.50 [11.37]

Seff = 14183.44 [5375.46]
Teq = 2783 [264] K
Rp = 1.61 [2.12] Re
a = 0.0198 [0.0049] AU

Ag = 39.86 [103.32] [0.38σ]
Teffp = 10810 [6955] K [1.15σ]

DV Diagnostic Results:

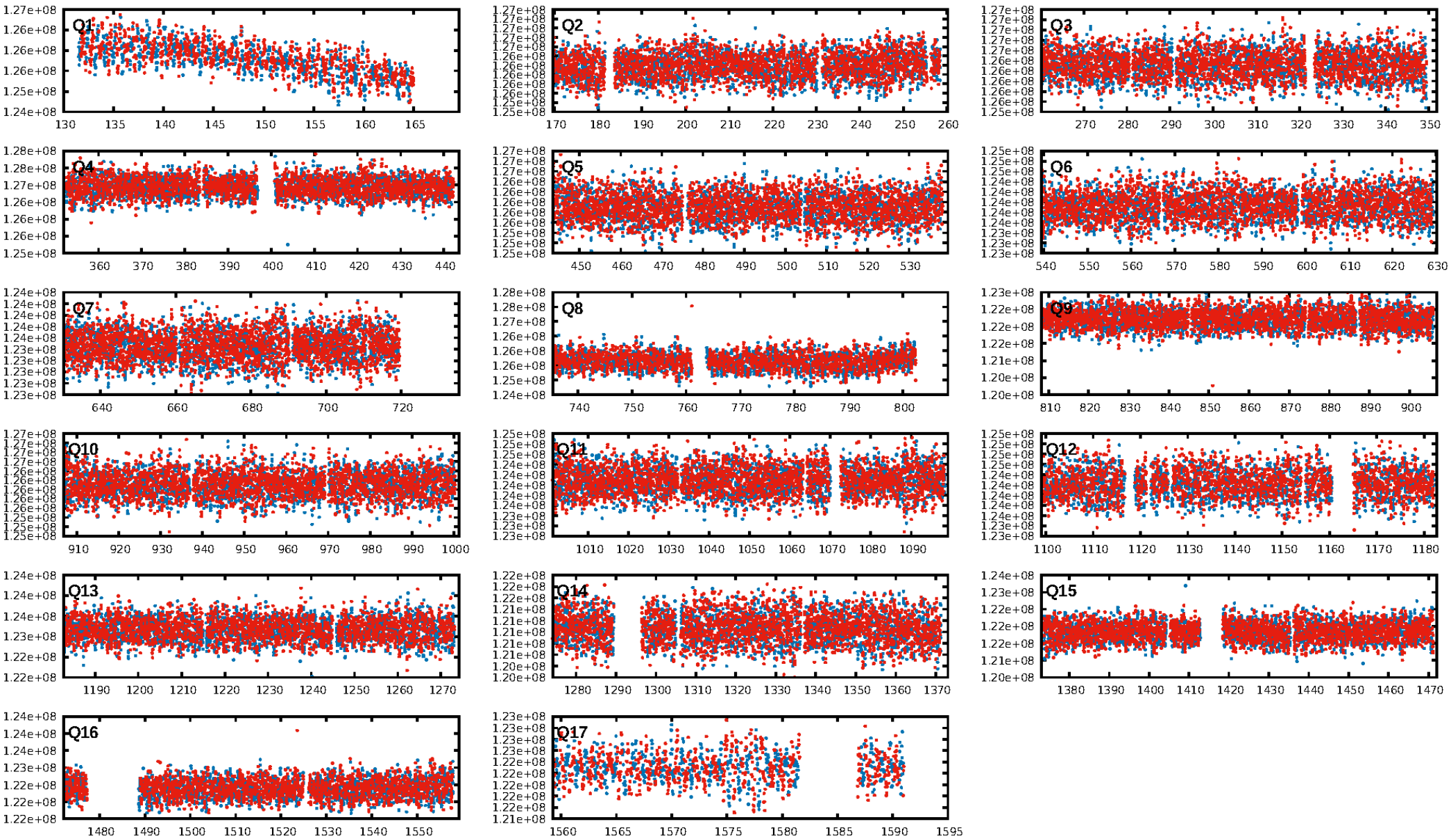
ShortPeriod−sig: 52.3% [0.71σ]
LongPeriod−sig: 100.0% [53.96σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [1249/1249]
GhostDiagnostic−chr: 7.222

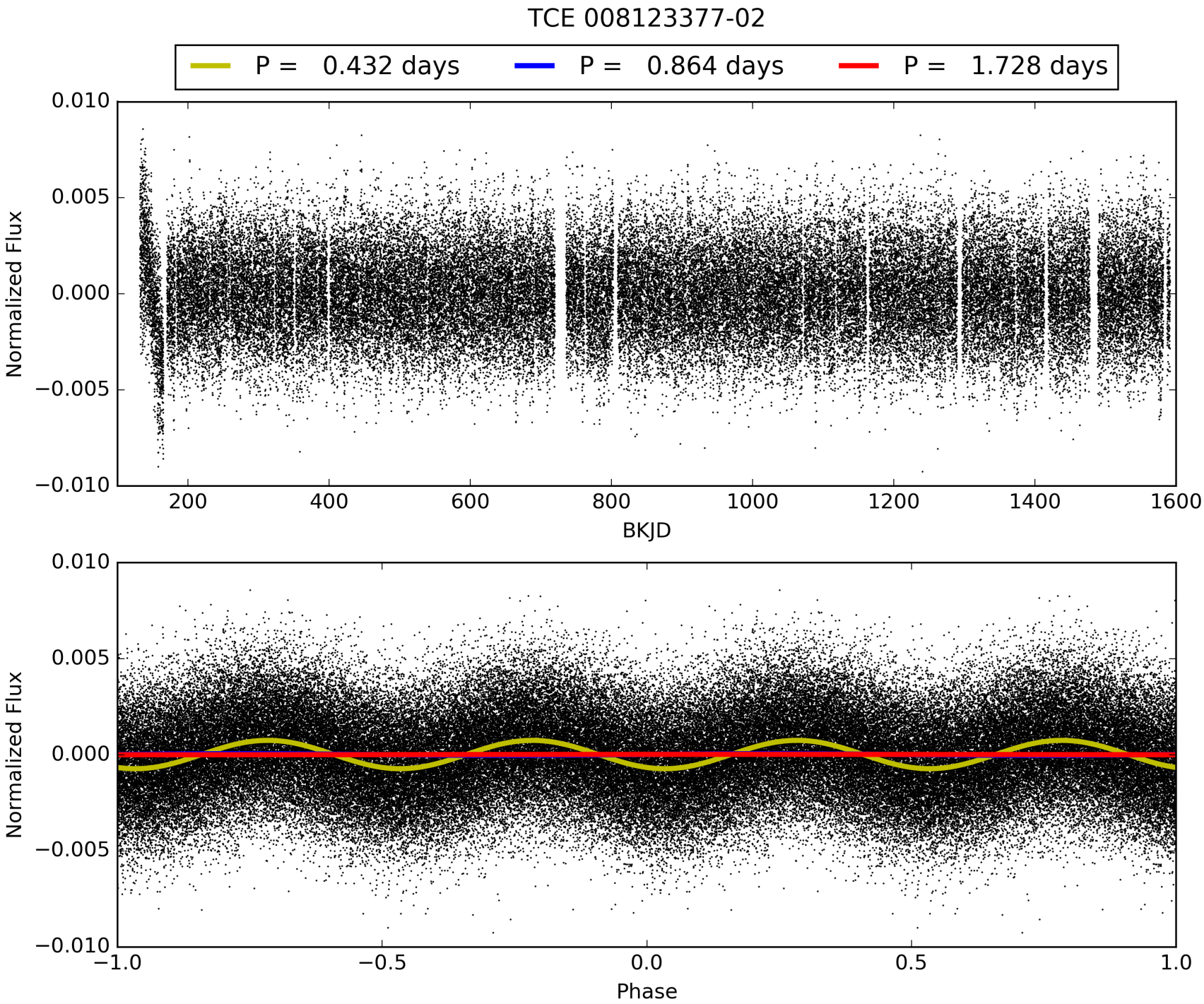
Centroid−sig: 0.0%
Centroid−so: 0.728 arcsec [3.73σ]
OotOffset−rm: 0.146 arcsec [2.07σ]
KicOffset−rm: 0.080 arcsec [1.10σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 1.00 [17/17]
DiffImageOverlap−fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 23:38:02 Z

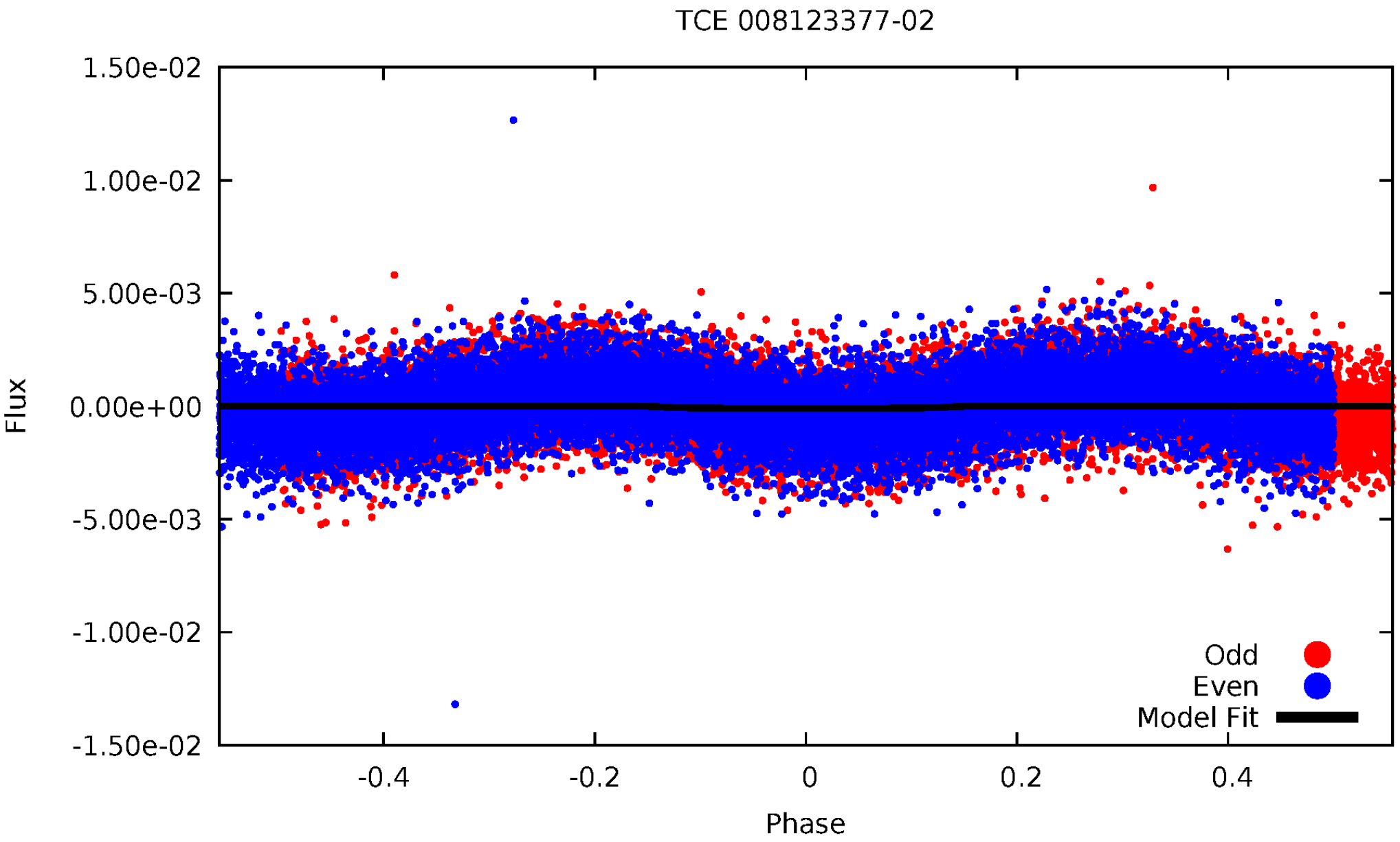
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008123377-02, PDC Light Curves

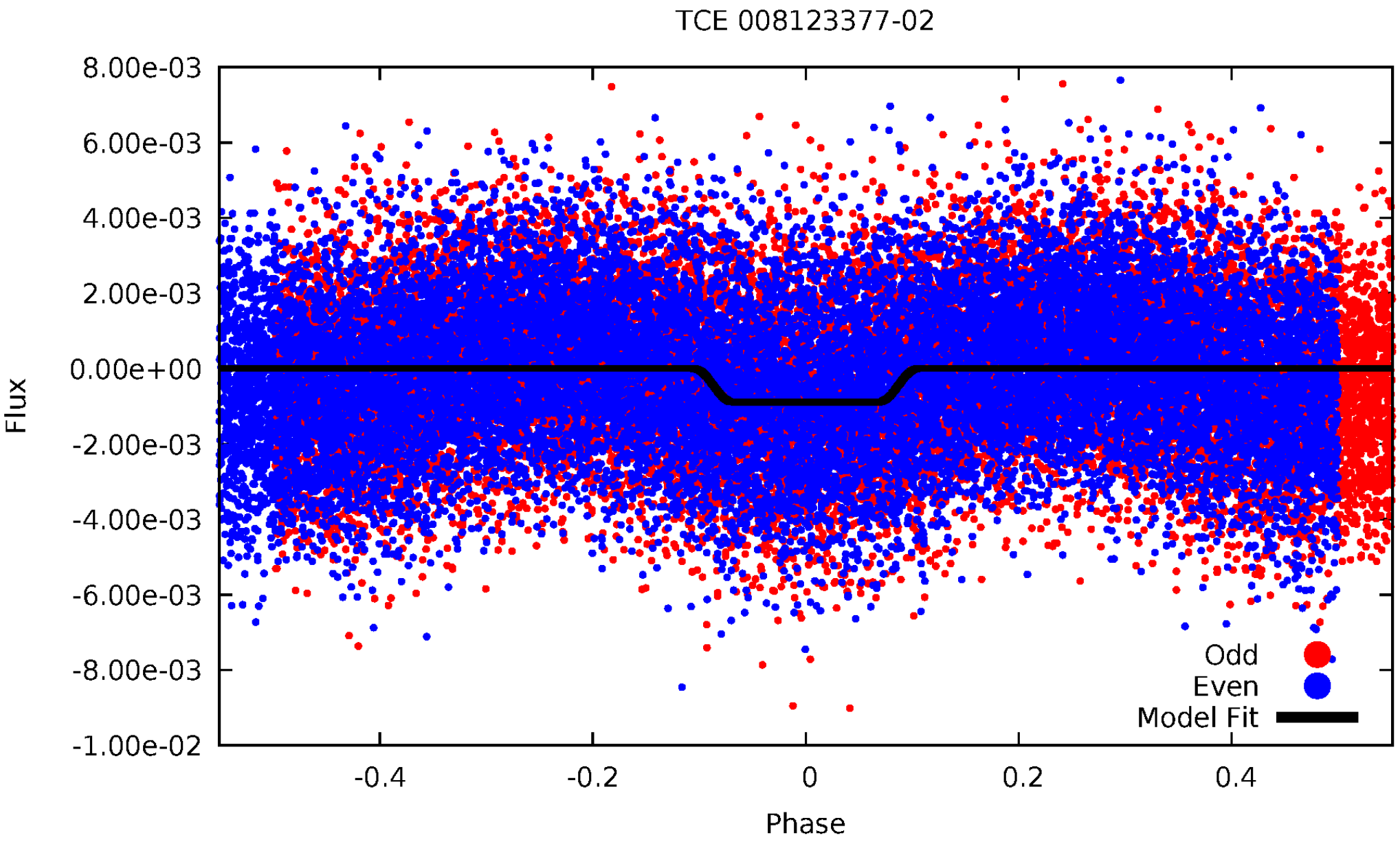



TCE 008123377-02
P = 0.432 days
P = 0.864 days
P = 1.728 days
Normalized Flux
0.010
0.005
0.000
−0.005
−0.010
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.010
0.005
0.000
−0.005
−0.010
−1.0
−0.5
0.0
0.5
1.0
Phase

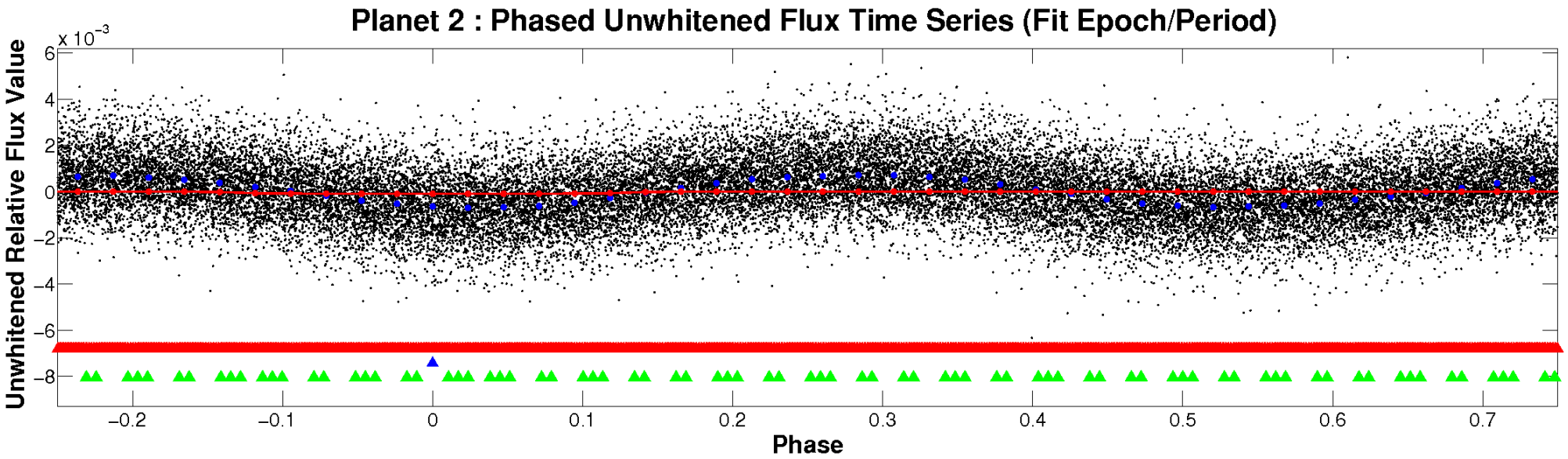
DV Odd/Even

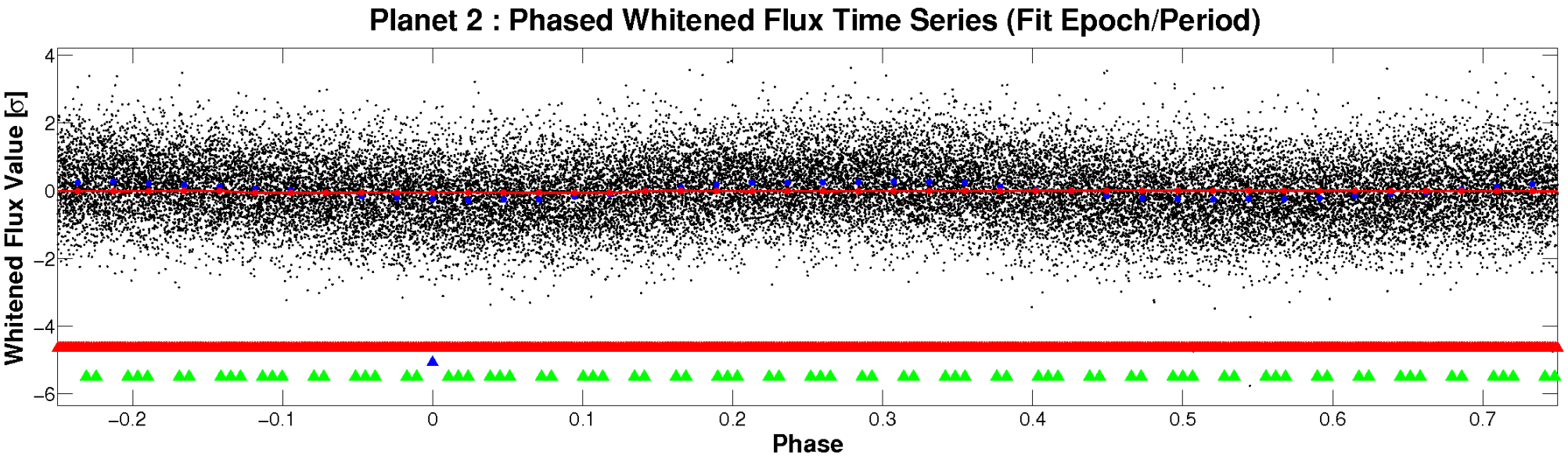

TCE 008123377-02
1.50e-02
1.00e-02
5.00e-03
0.00e+00
-5.00e-03
-1.00e-02
-1.50e-02
Flux
-0.4
-0.2
0
0.2
0.4
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008123377-02
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
-8.00e-03
-1.00e-02
Flux
-0.4
-0.2
0
0.2
0.4
Phase
Odd
Even
Model Fit

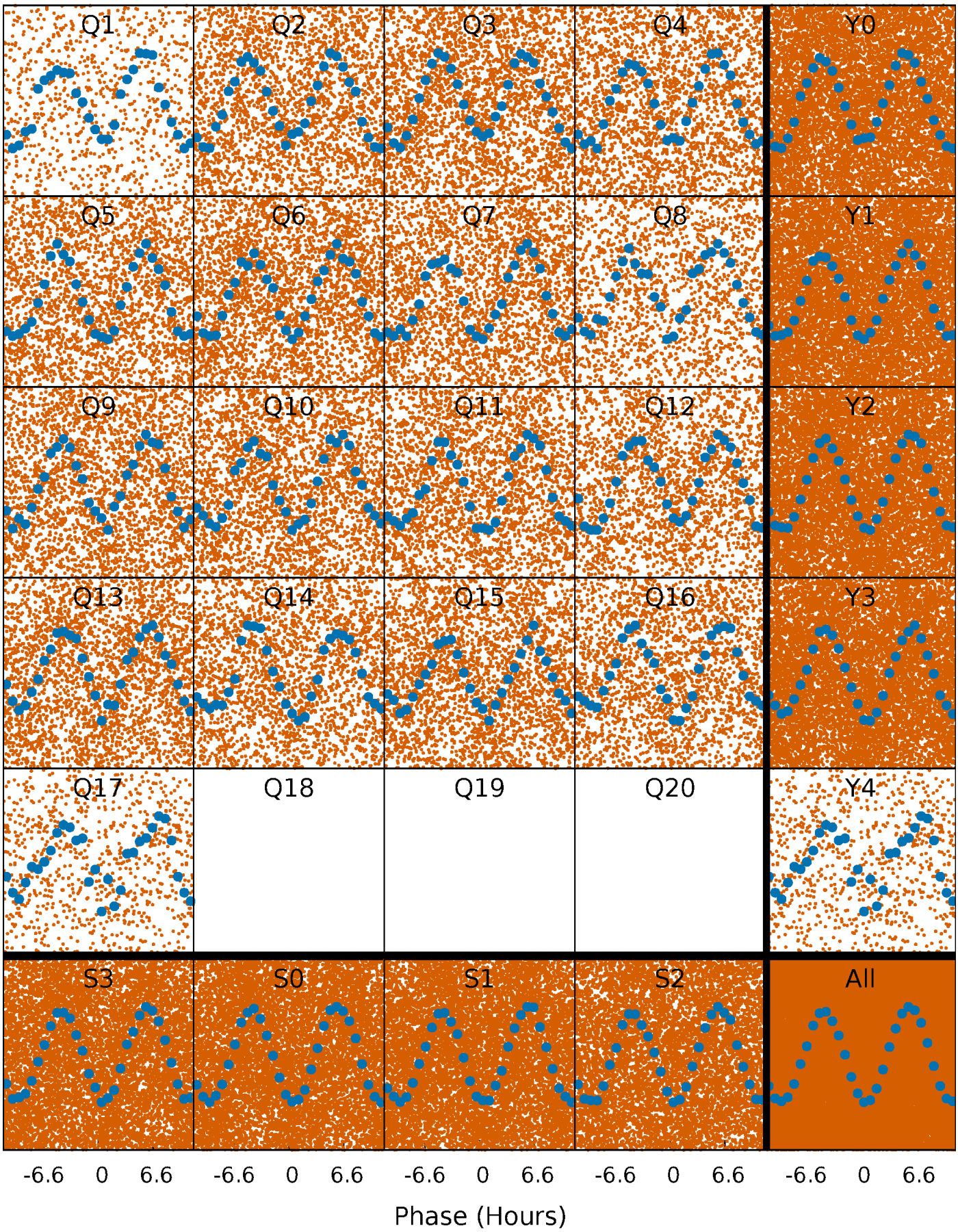
Non-Whitened Vs. Whitened Light Curve





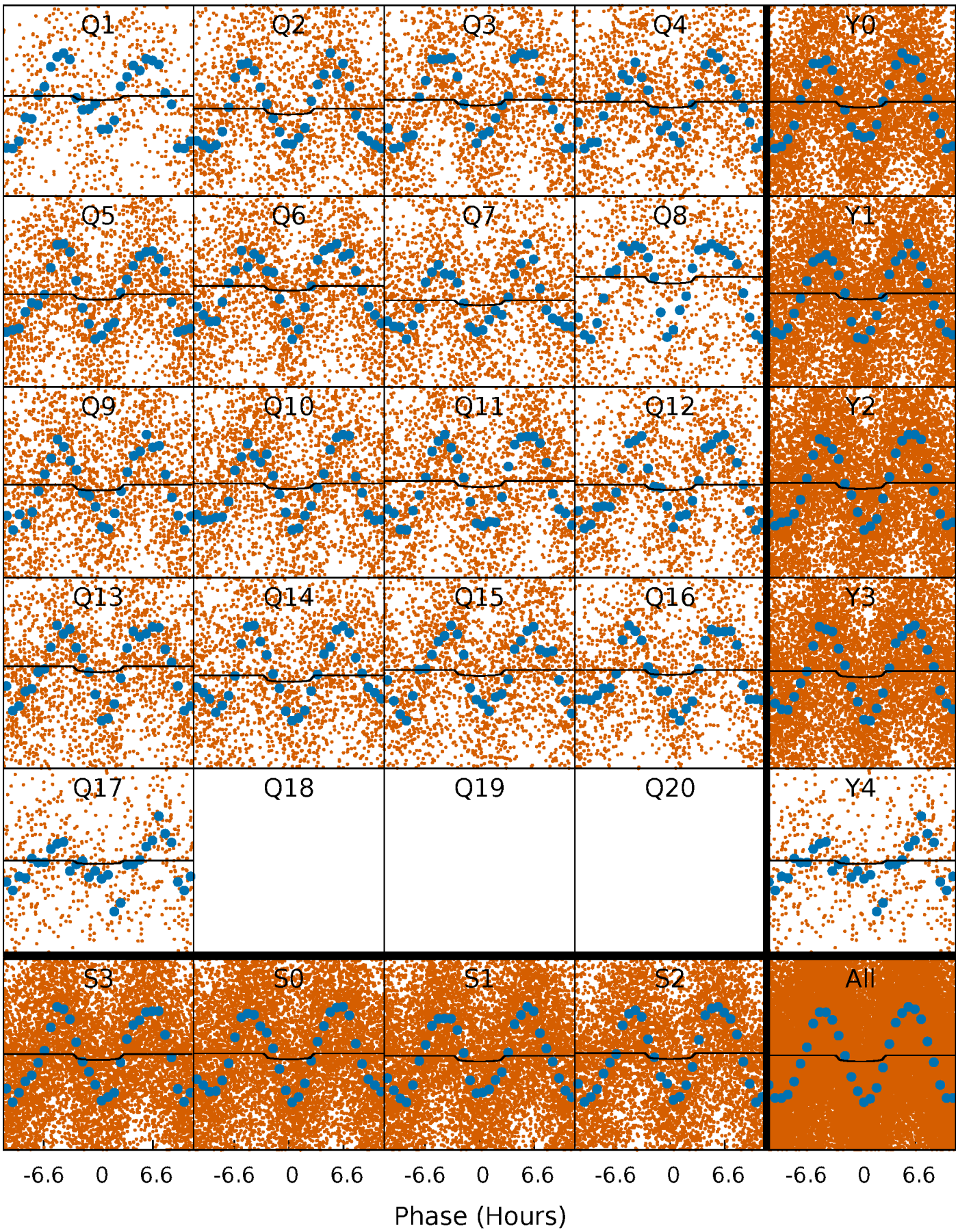
PDC Quarter-Phased Transit Curves

TCE 008123377-02 P= 0.863961 Days T_0=131.967083 (BKJD)



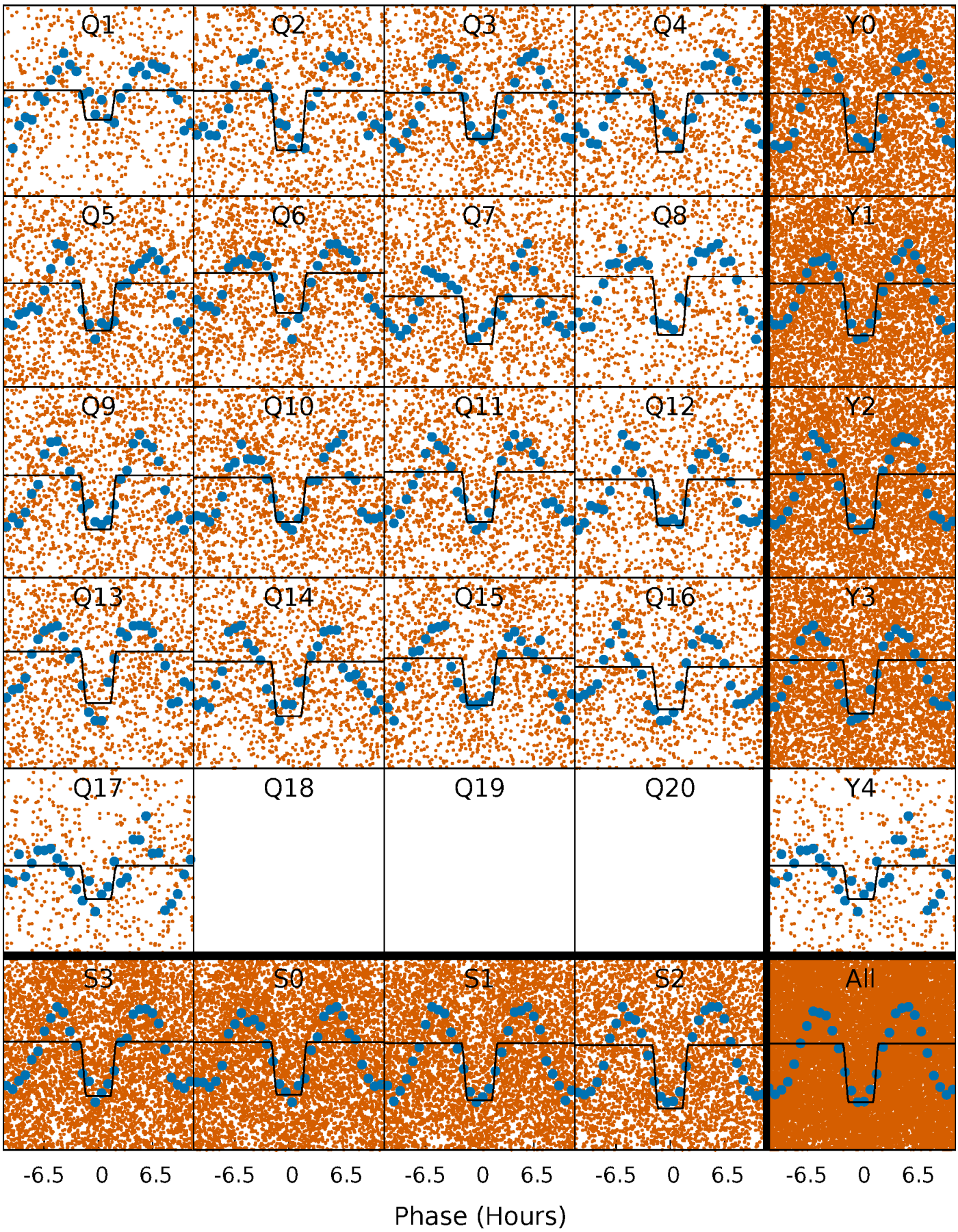
DV Quarter-Phased Transit Curves

TCE 008123377-02 P= 0.863961 Days T_0=131.967083 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

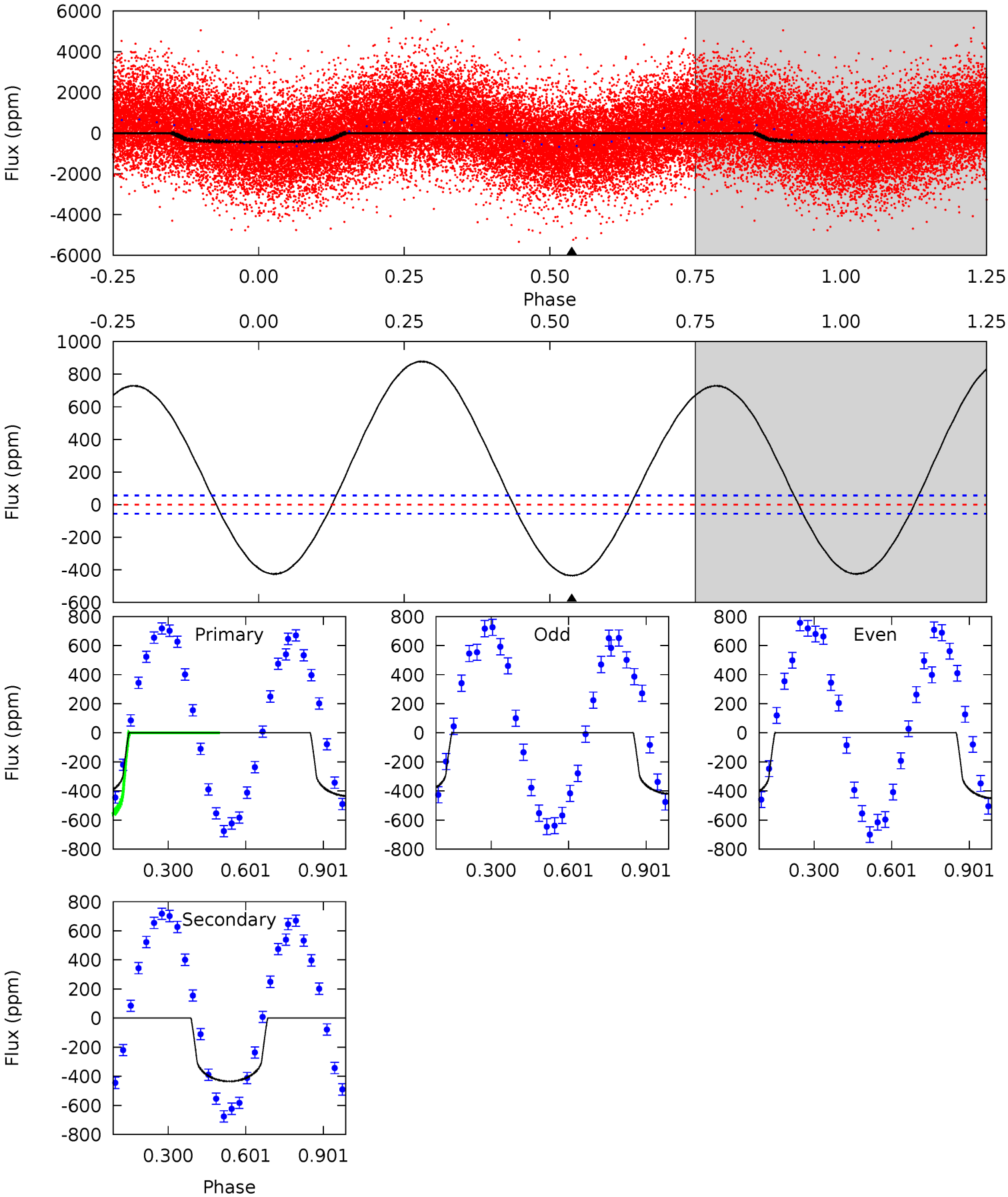
TCE 008123377-02 P= 0.864025 Days T_0=131.938362 (BKJD)



DV Model-Shift Uniqueness Test

008123377-02, P = 0.863961 Days, E = 131.103122 Days

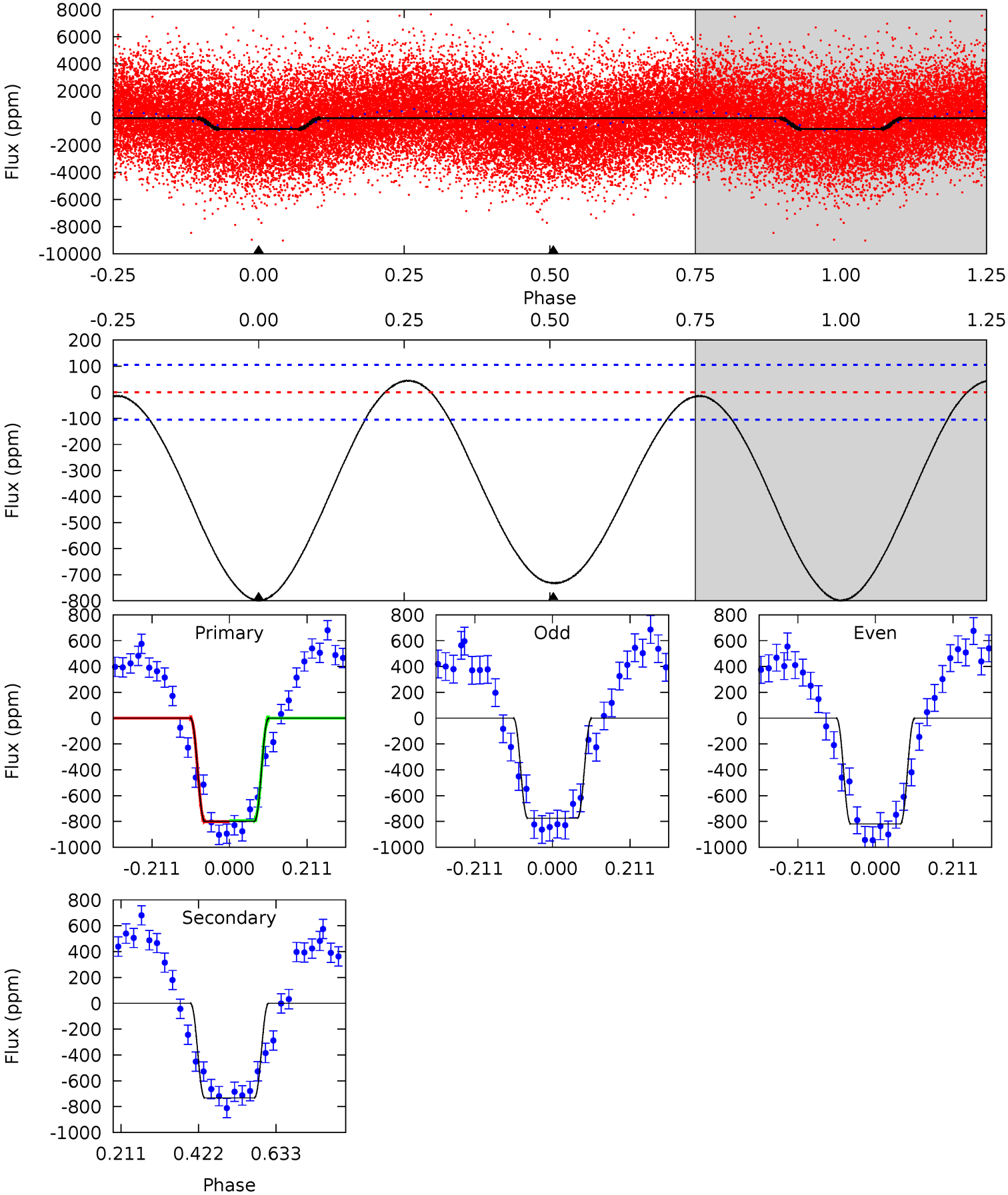
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.6	33.6	0	0	4.33	1.04	28.7	33.6	33.6	33.6	33.6	1.10	0.94	0.67	14.6



Alt Model-Shift Uniqueness Test

008123377-02, P = 0.864025 Days, E = 131.074337 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.4	30.6	0	0	4.41	1.25	1.28	33.4	33.4	30.6	30.6	0.94	0.99	0.05	0.20



Stellar Parameters For KIC 008123377

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6998^{+197}_{-271}	$4.166^{+0.148}_{-0.181}$	$-0.180^{+0.250}_{-0.350}$	$1.605^{+0.496}_{-0.330}$	$1.383^{+0.195}_{-0.239}$	$0.471^{+0.377}_{-0.243}$
	+3%/-4%	+4%/-4%	+139%/-194%	+31%/-21%	+14%/-17%	+80%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008123377-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-435±13	$2.13^{+1.80}_{-1.40}$	3875^{+296}_{-247}	9700^{+18892}_{-3059}	20^{+142}_{-14}
Alt.	-732±24	$5.17^{+2.13}_{-2.02}$	3903^{+278}_{-268}	6580^{+2267}_{-1093}	$5.905^{+8.971}_{-2.999}$

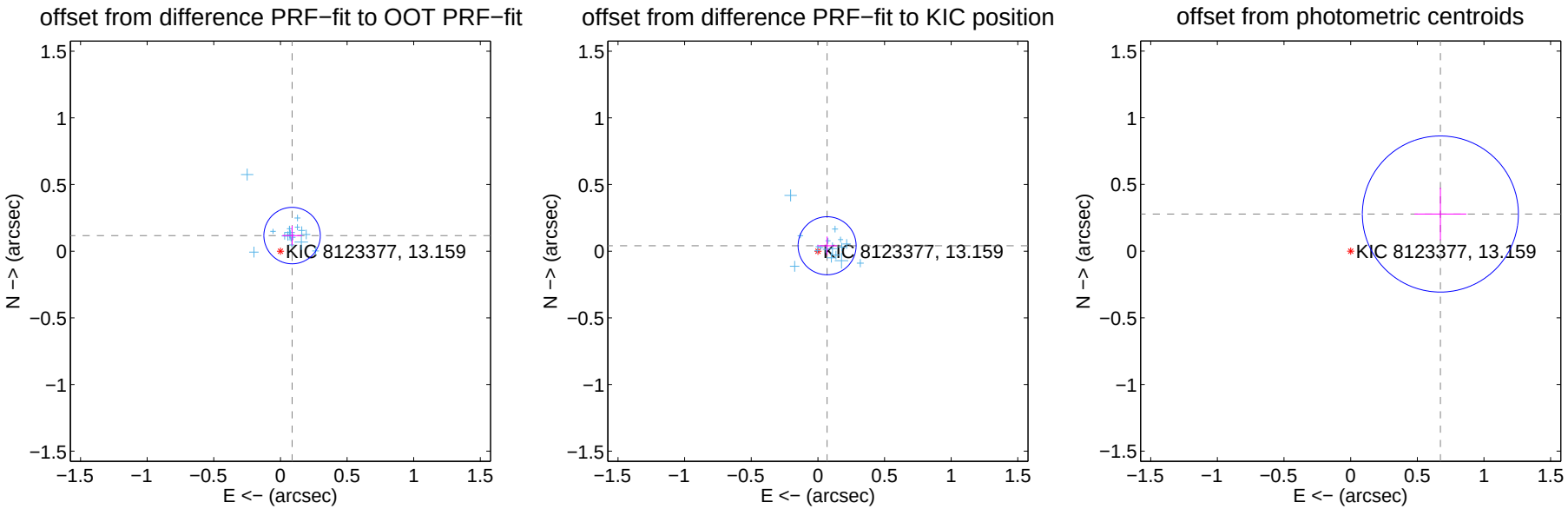
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

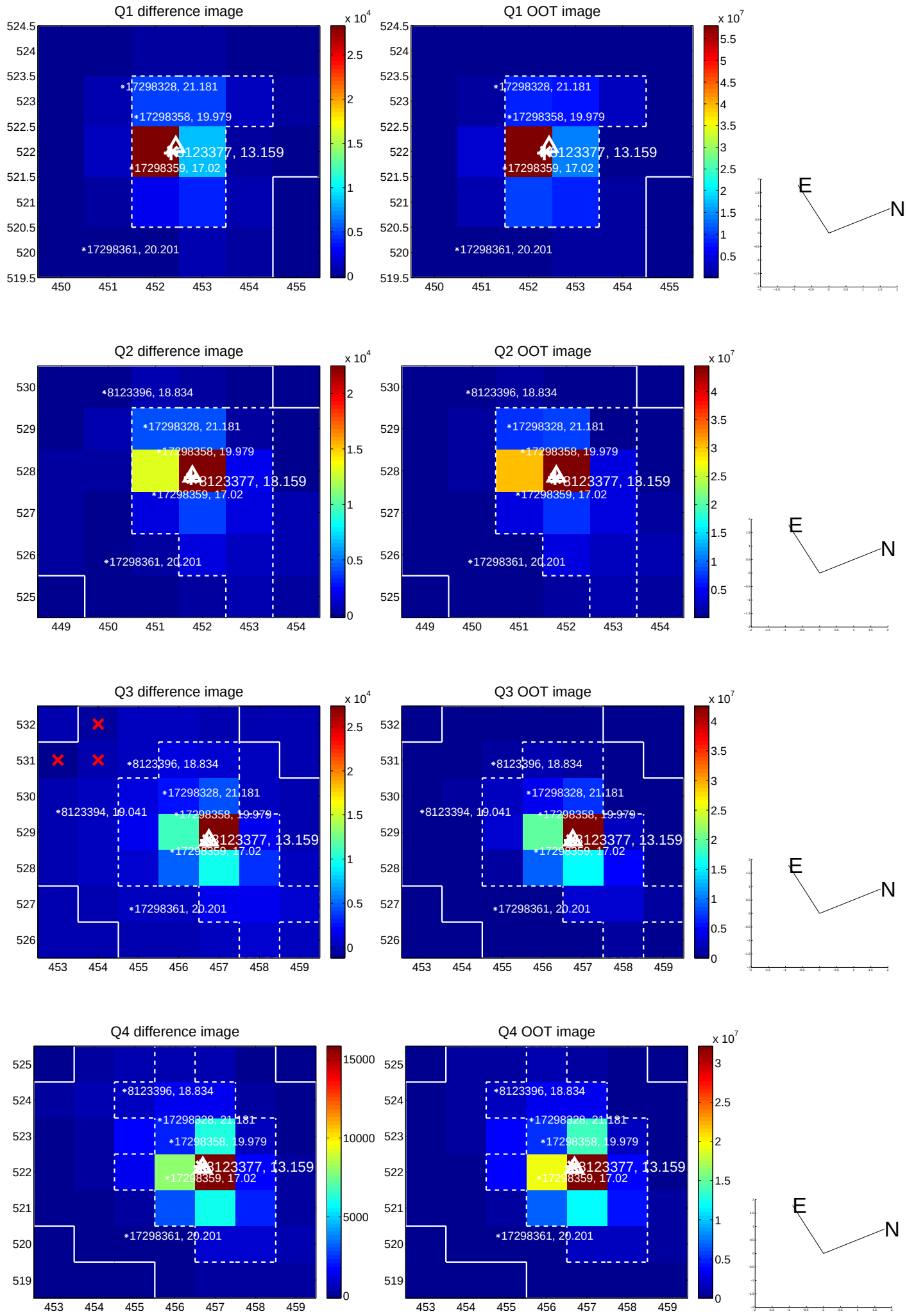
Supplemental centroid analysis for 008123377-02. Kepler magnitude: 13.16. Transit SNR 5.35
There are 17 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.146 ± 0.071	2.07	-0.088 ± 0.074	0.117 ± 0.073
PRF-fit source offset from KIC position	0.080 ± 0.073	1.10	-0.069 ± 0.074	0.041 ± 0.070
photometric centroid source offset	0.73 ± 0.20	3.73	-0.67 ± 0.19	0.28 ± 0.20

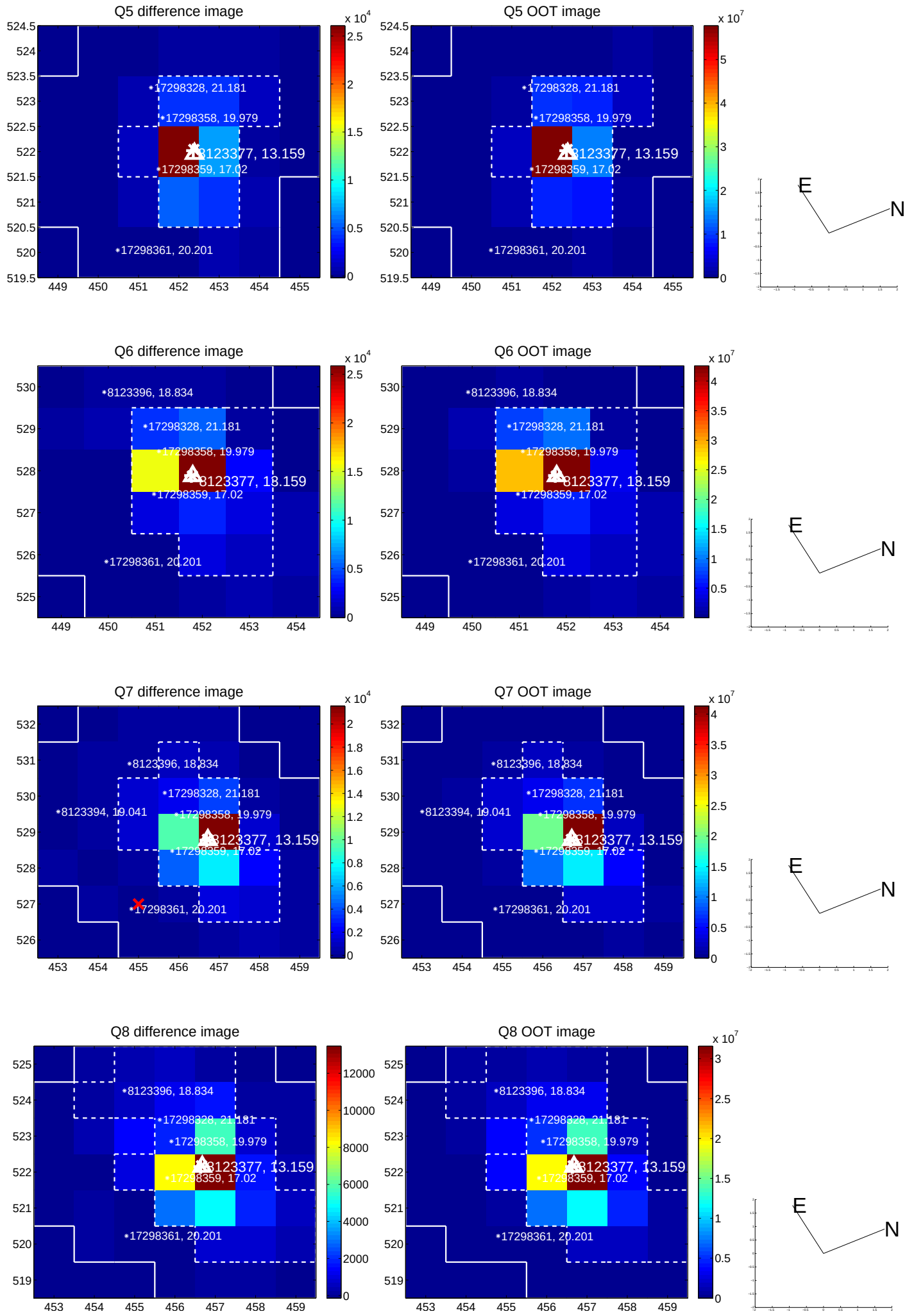


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

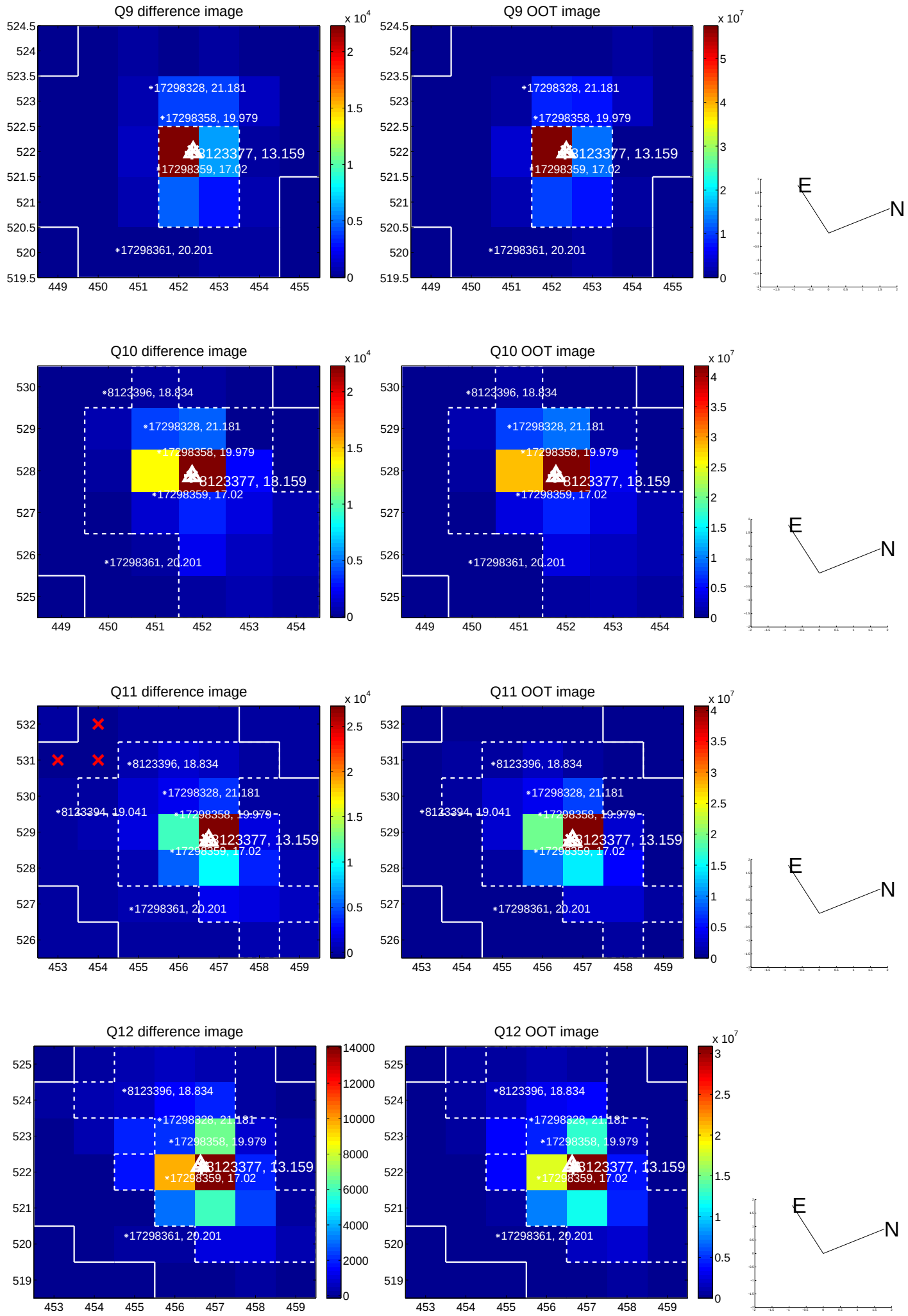
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



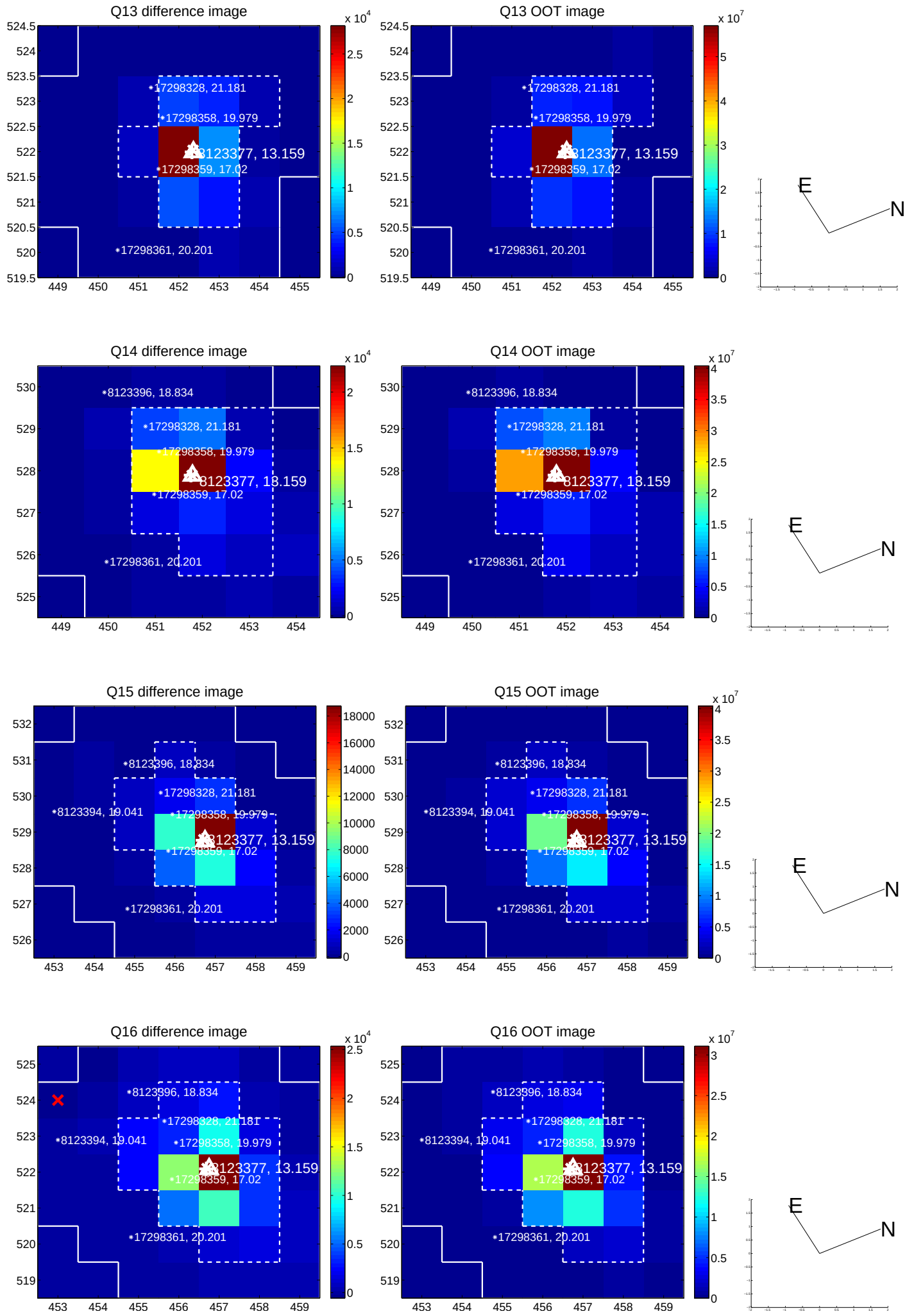
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



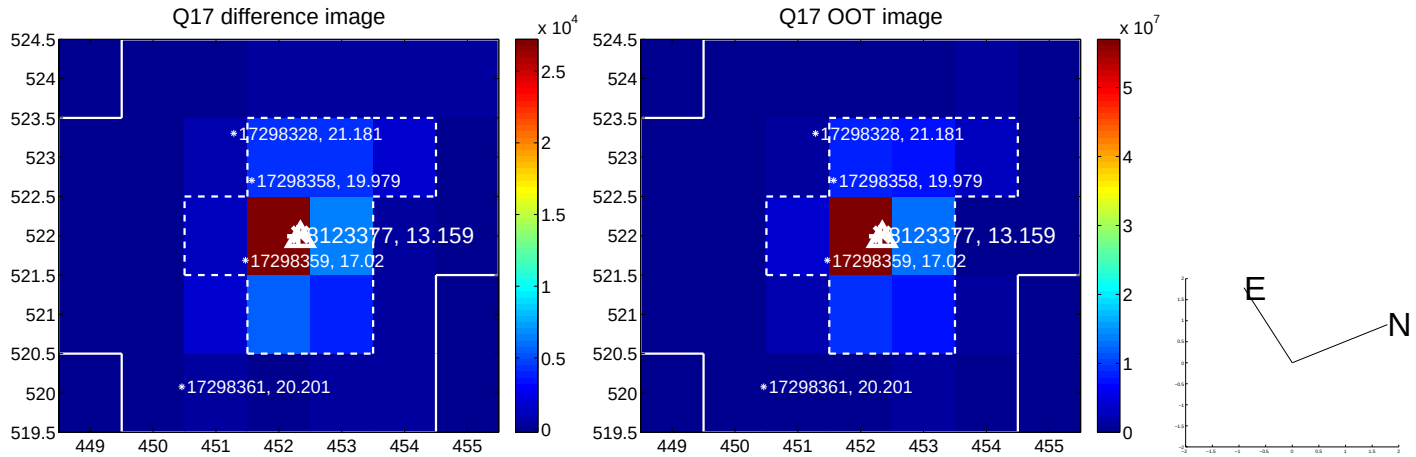
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

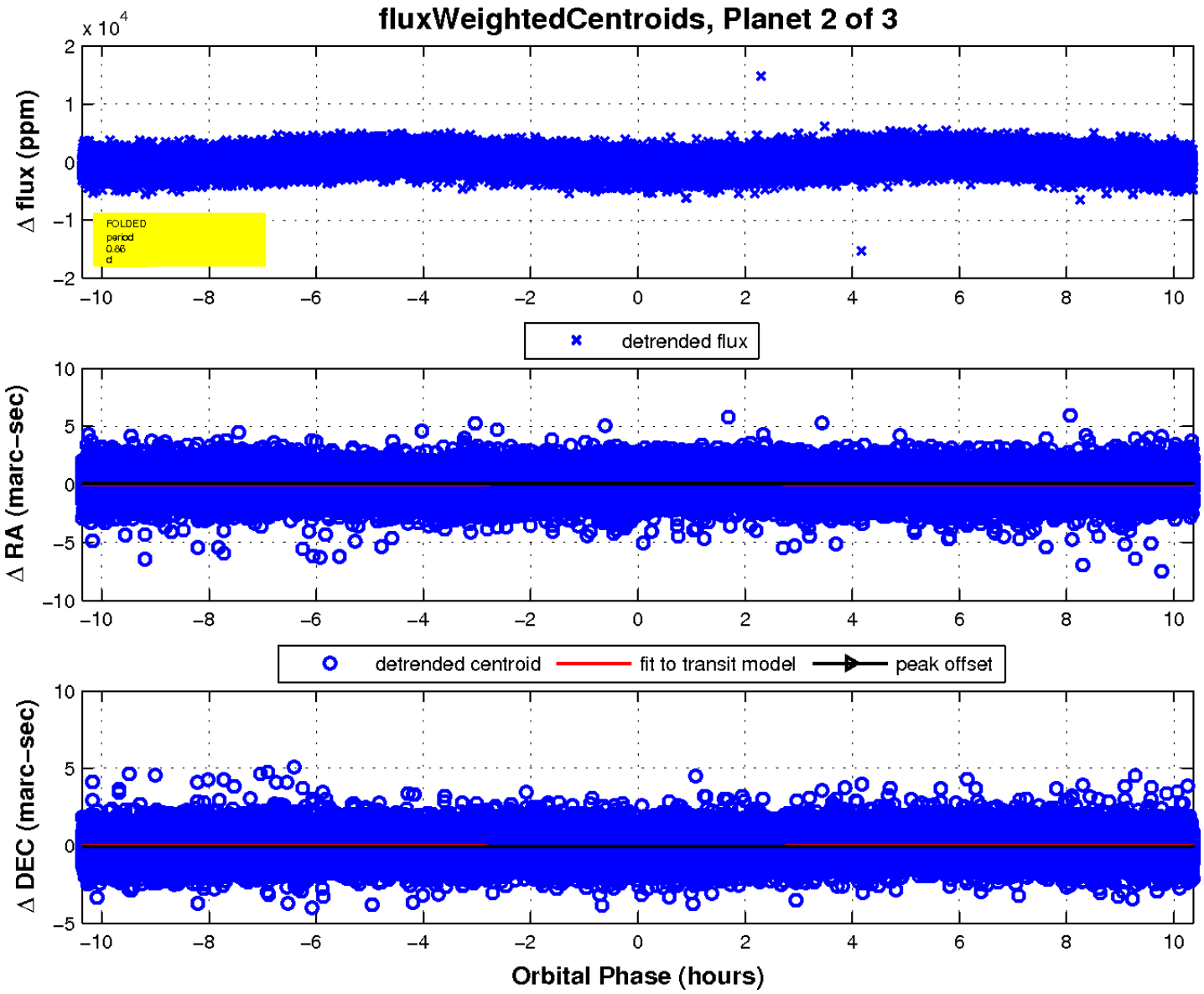


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

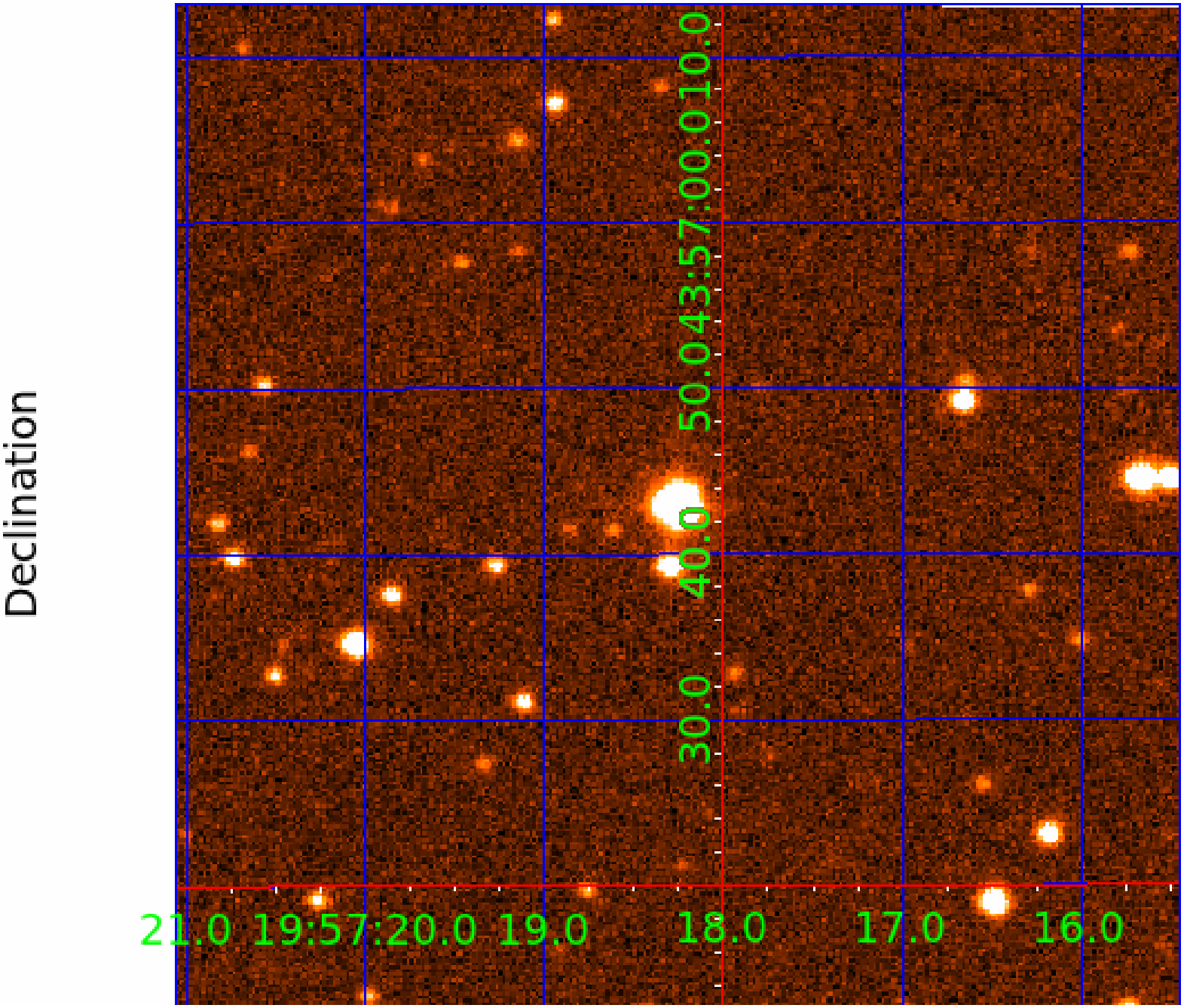


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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