KIC 009142315

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 ($S_\oplus$)
009142315-01	OBS	No	400.727188	509.019359	456.5	9.446	8.3	8.2	0.95	6103	2.12	0.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009142315-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—CENT_FEW_DIFFS

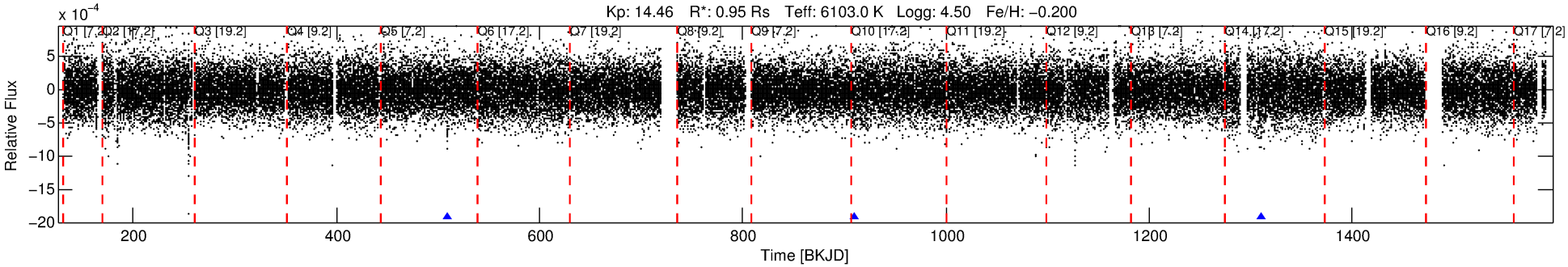
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

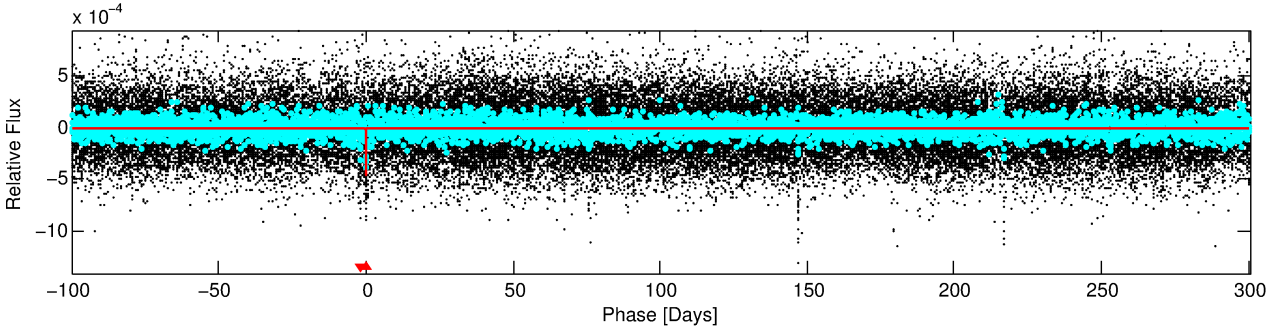
Ephemeris Match Information For 009142315-01

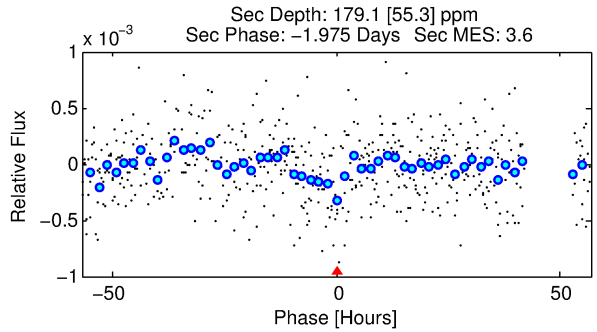
No Significant Match Found

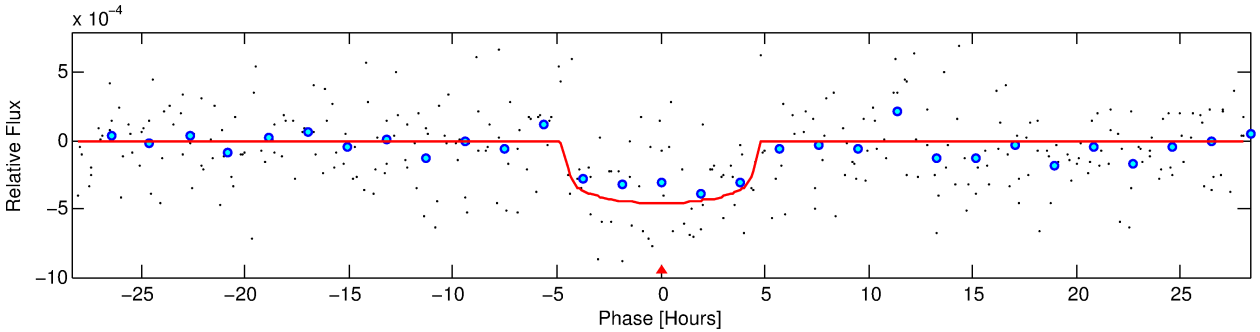
DV One-Page Summary

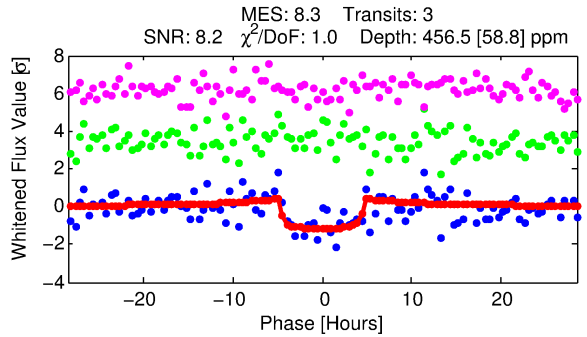
KIC: 9142315 Candidate: 1 of 1 Period: 400.727 d

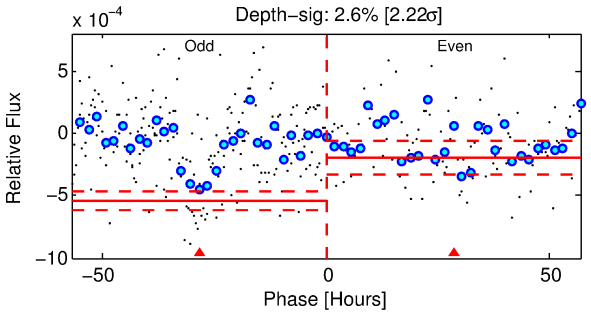


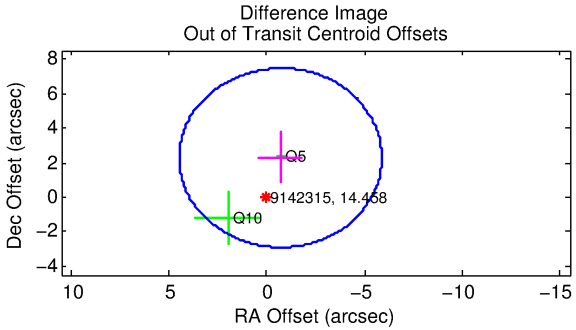












DV Fit Results:

Period = 400.72719 [0.00959] d
Epoch = 509.0194 [0.0120] BKJD
Rp/R* = 0.0205 [0.0126]
a/R* = 265.54 [806.68]
b = 0.61 [3.15]

Seff = 0.97 [0.39]
Teq = 253 [25] K
Rp = 2.12 [1.46] Re
a = 1.0743 [0.2774] AU

Ag = 25254.95 [33434.21] [0.76σ]
Teffp = 4932 [1573] K [2.97σ]

DV Diagnostic Results:

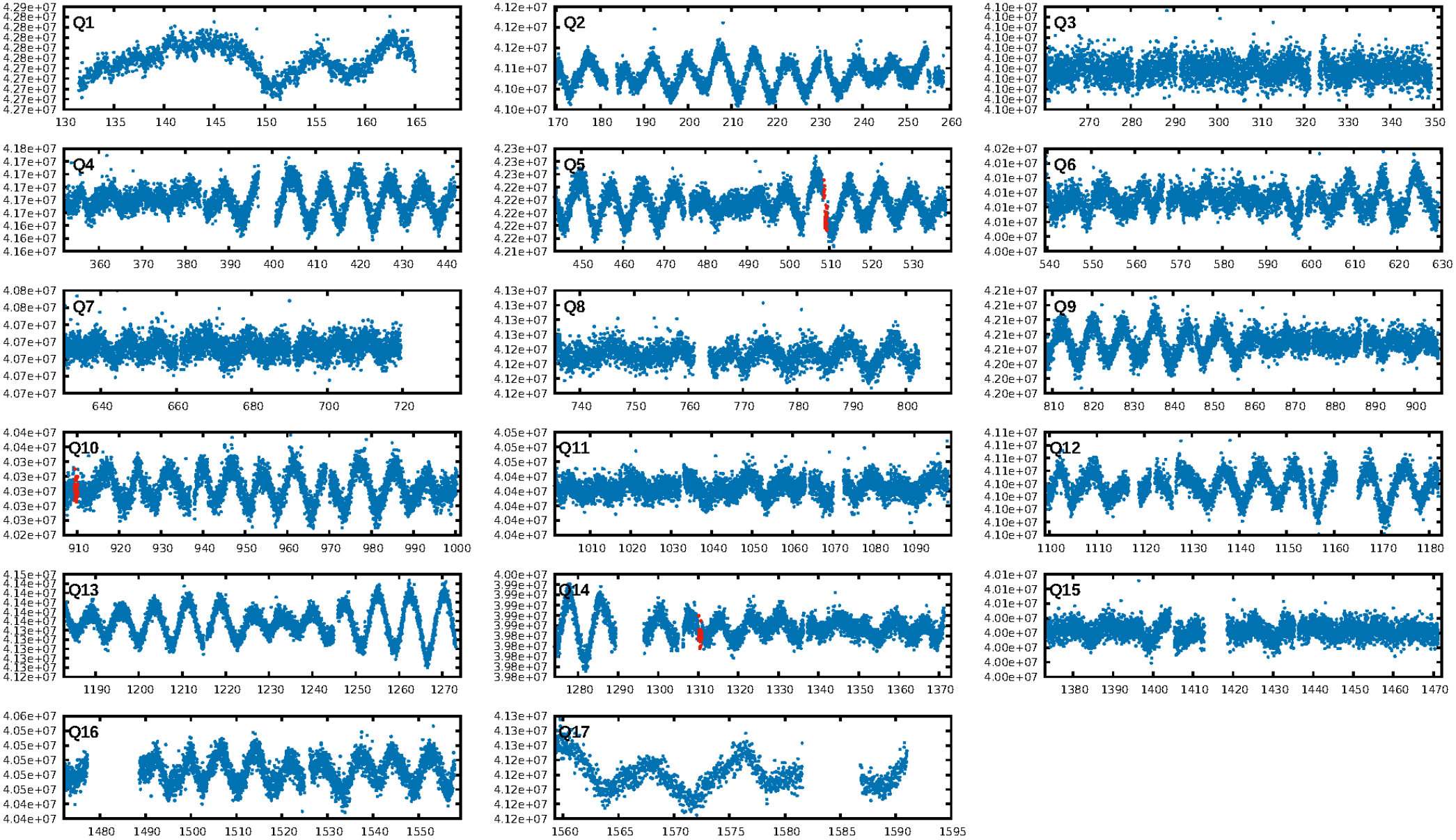
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 3.9%
ModelChiSquareGof−sig: 89.7%
Bootstrap−pfa: 9.78e−11
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: −0.4625

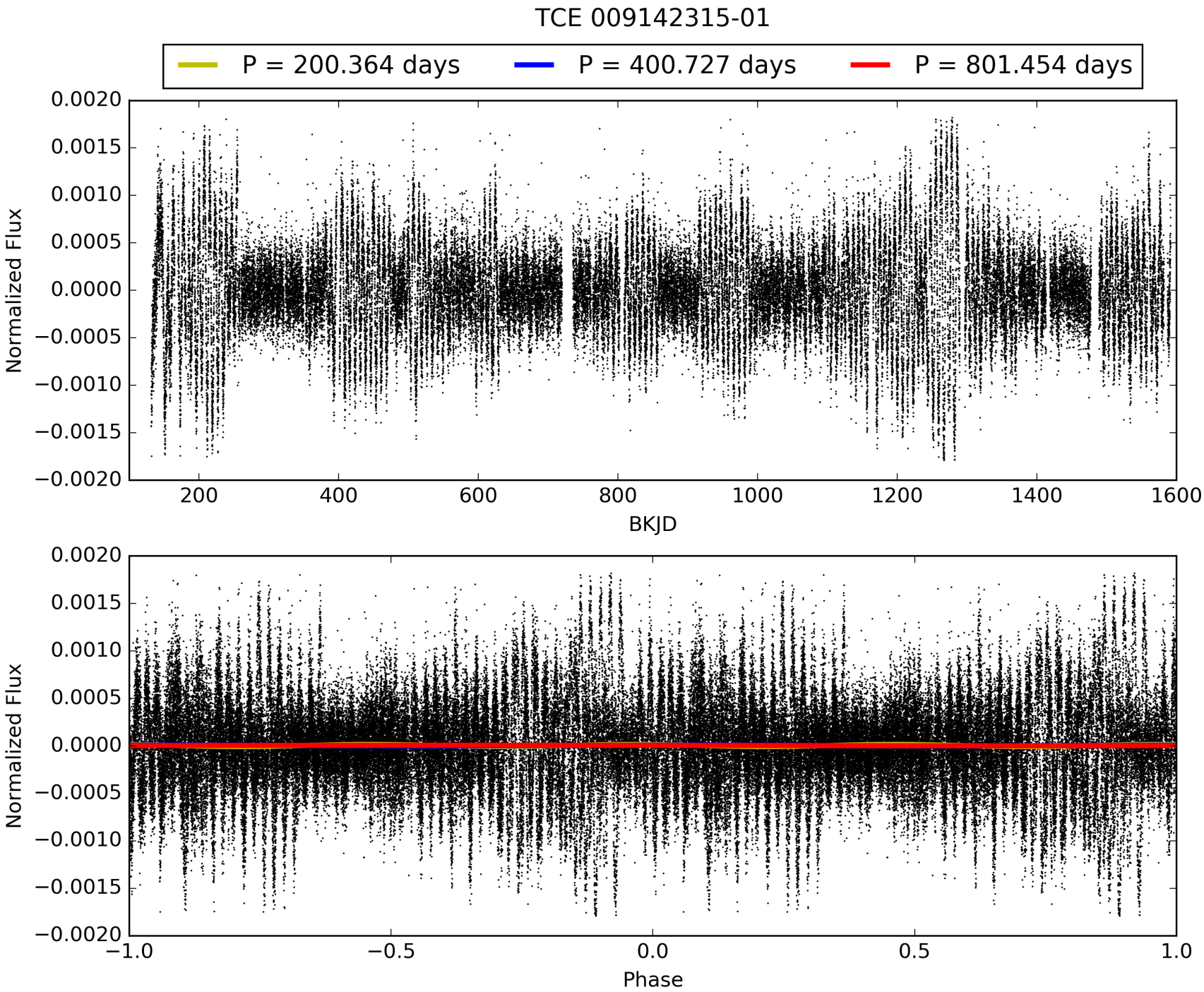
Centroid−sig: 9.5%
Centroid−so: 1.986 arcsec [1.41σ]
OotOffset−rm: 2.386 arcsec [1.38σ]
KicOffset−rm: 1.957 arcsec [1.76σ]
OotOffset−st: 1/0/0/1 [2]
KicOffset−st: 1/0/0/1 [2]
DiffImageQuality−fgm: 0.50 [1/2]
DiffImageOverlap−fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28−Jan−2016 21:14:04 Z

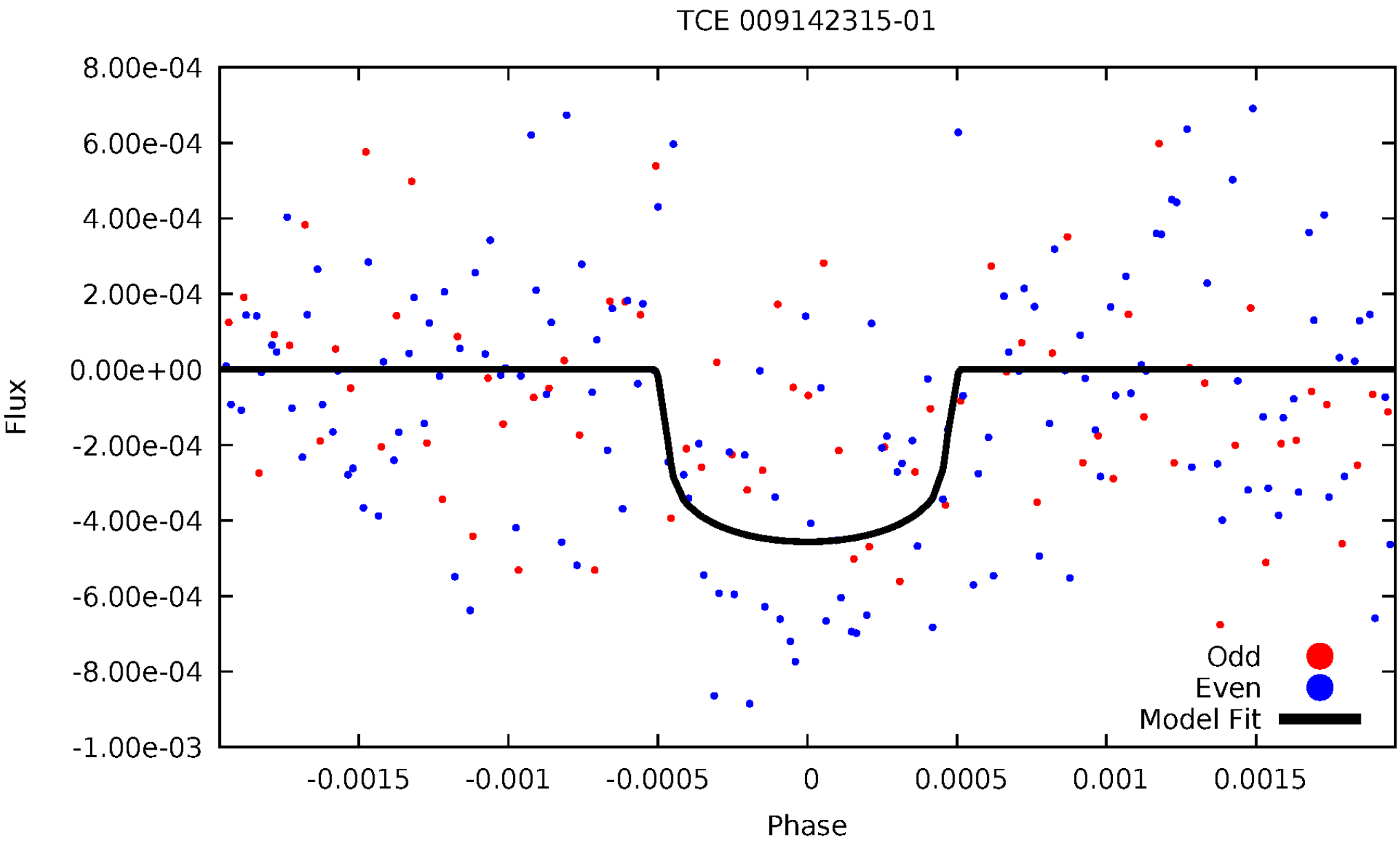
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009142315-01, PDC Light Curves

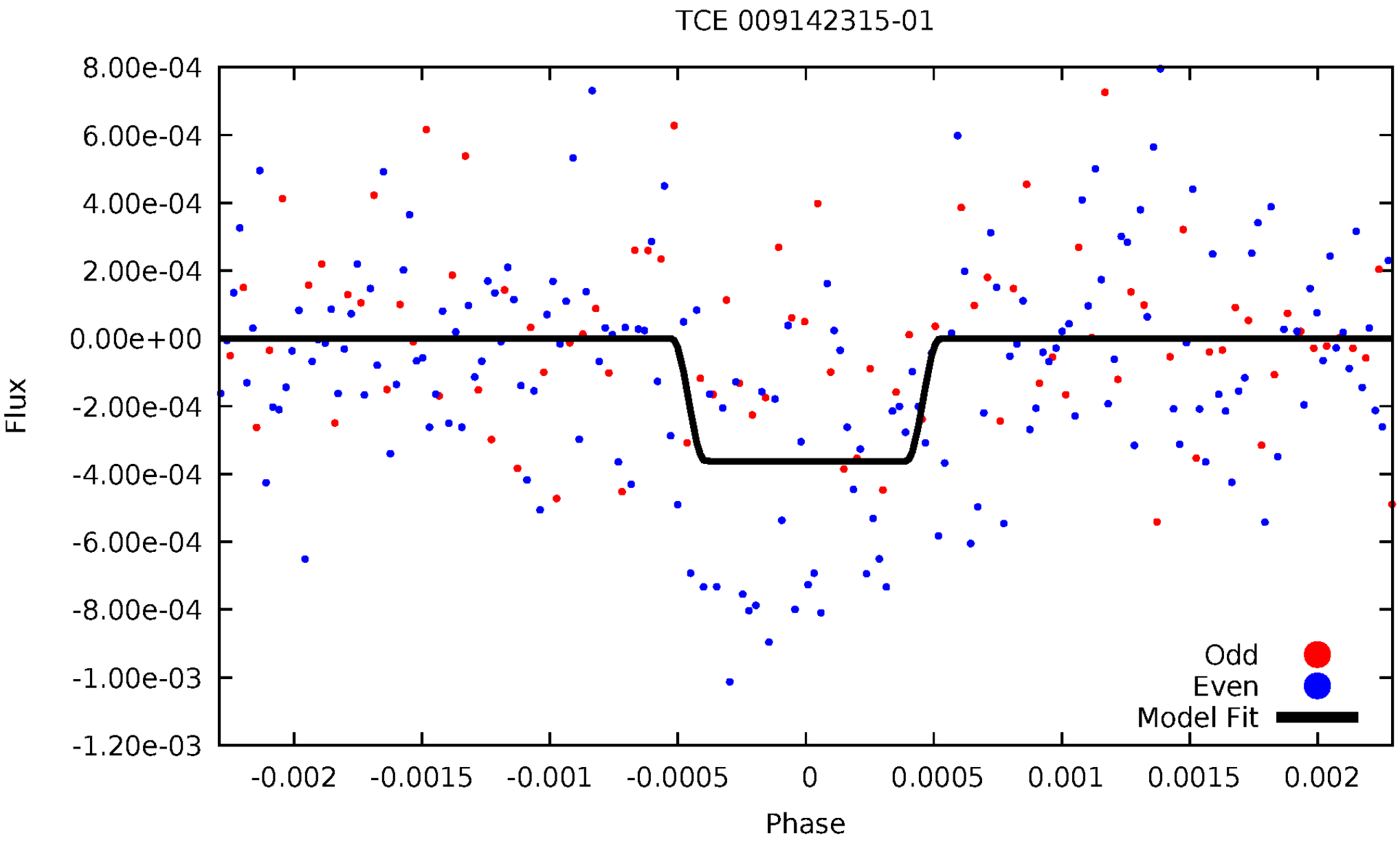



TCE 009142315-01
P = 200.364 days
P = 400.727 days
P = 801.454 days
Normalized Flux
BKJD
Normalized Flux
Phase

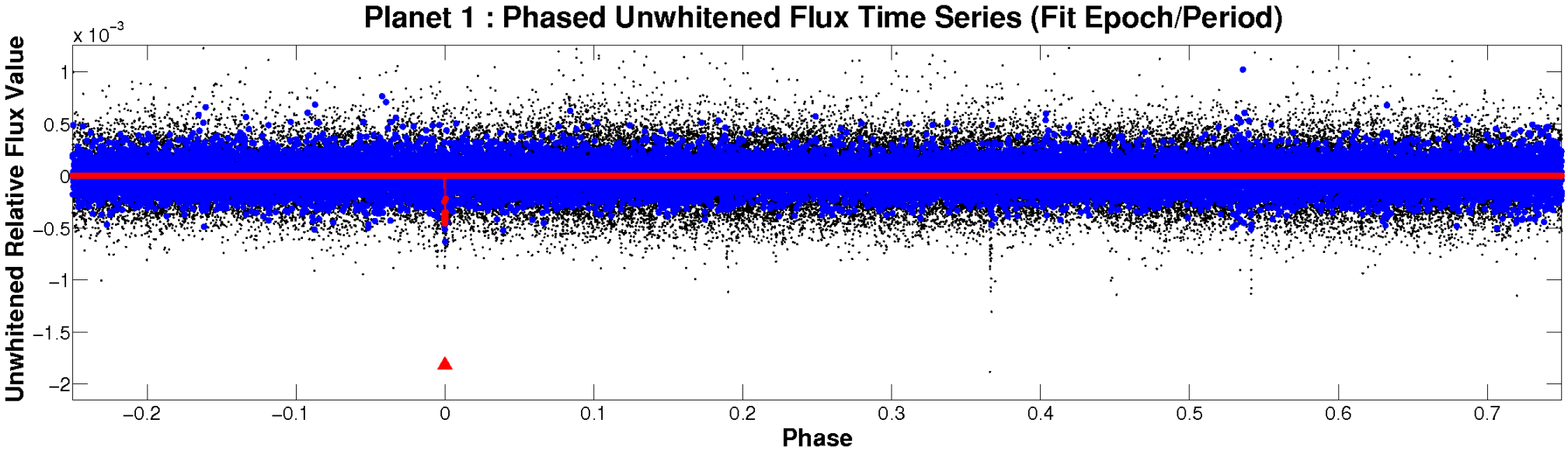
DV Odd/Even

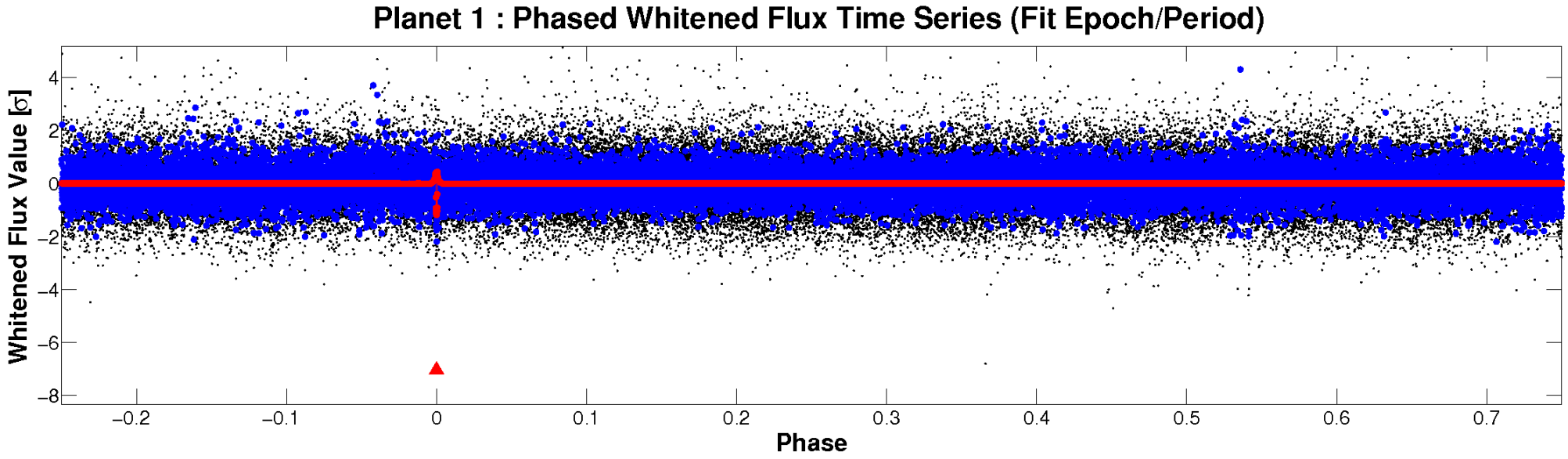

TCE 009142315-01
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
Flux
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009142315-01
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
-1.20e-03
Flux
-0.002
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
0.002
Phase
Odd
Even
Model Fit

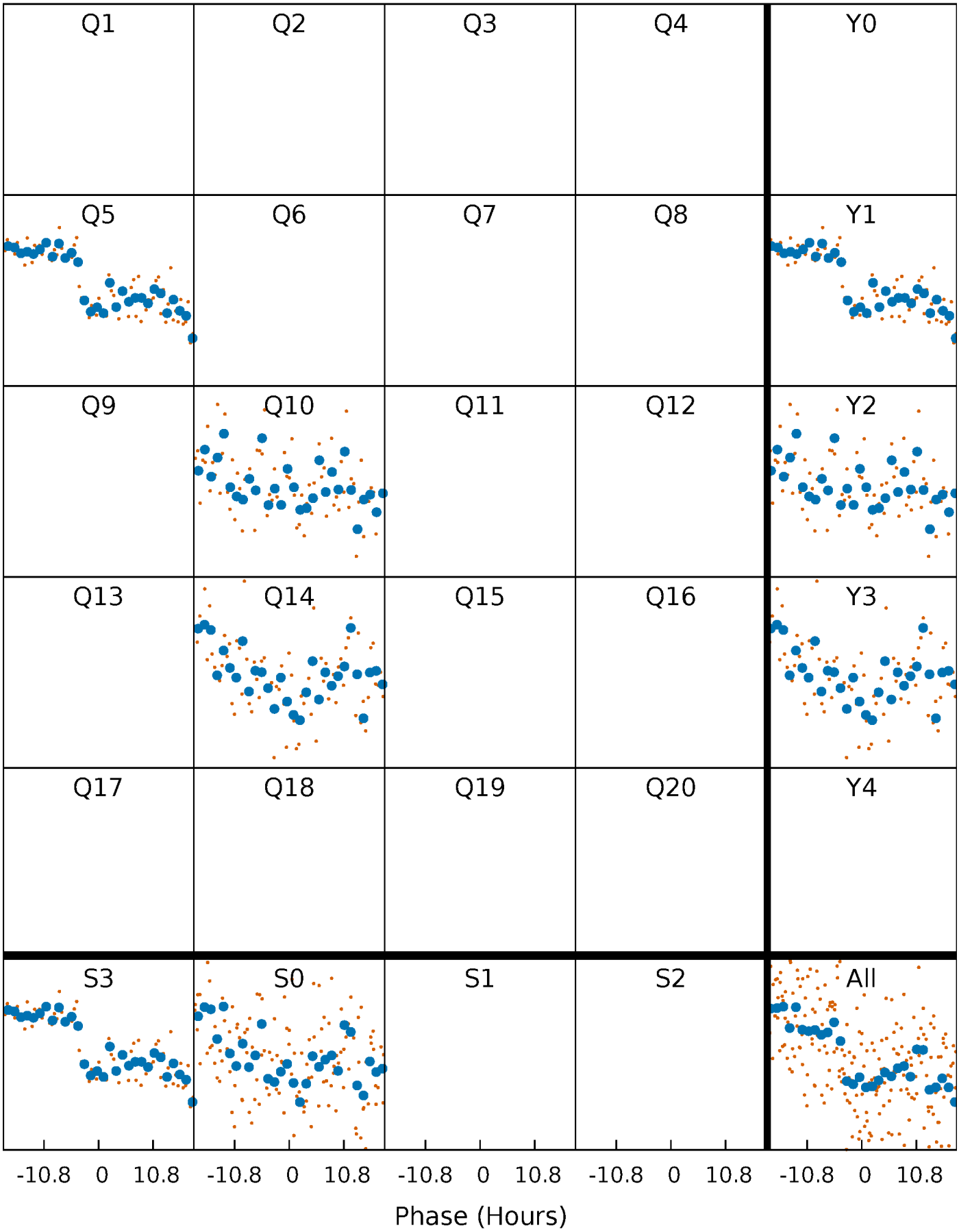
Non-Whitened Vs. Whitened Light Curve





PDC Quarter-Phased Transit Curves

TCE 009142315-01 P=400.727188 Days T_0=509.019359 (BKJD)

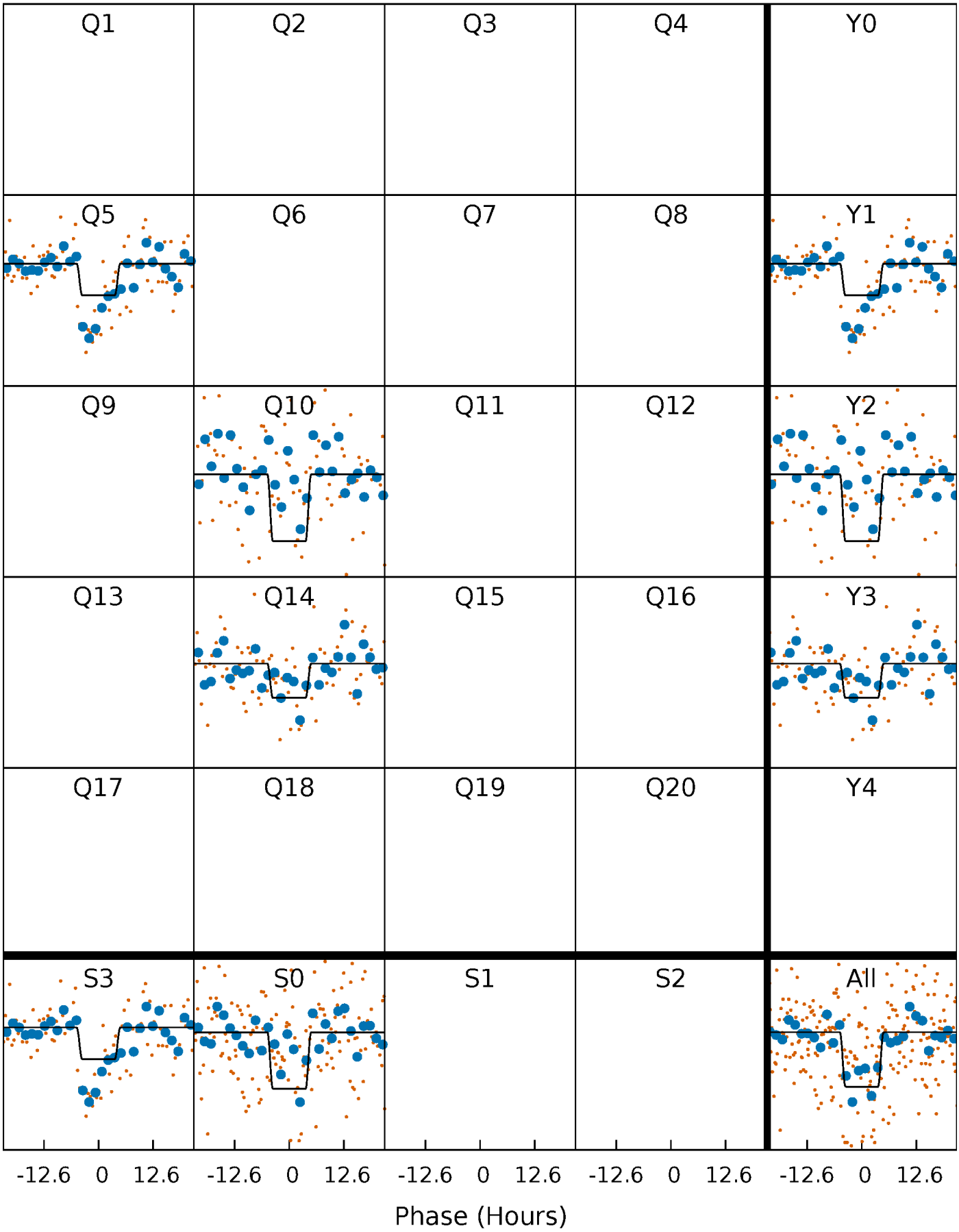


DV Quarter-Phased Transit Curves

TCE 009142315-01 P=400.727188 Days T_0=509.019359 (BKJD)

Alt. Detrend Quarter-Phased Transit Curves

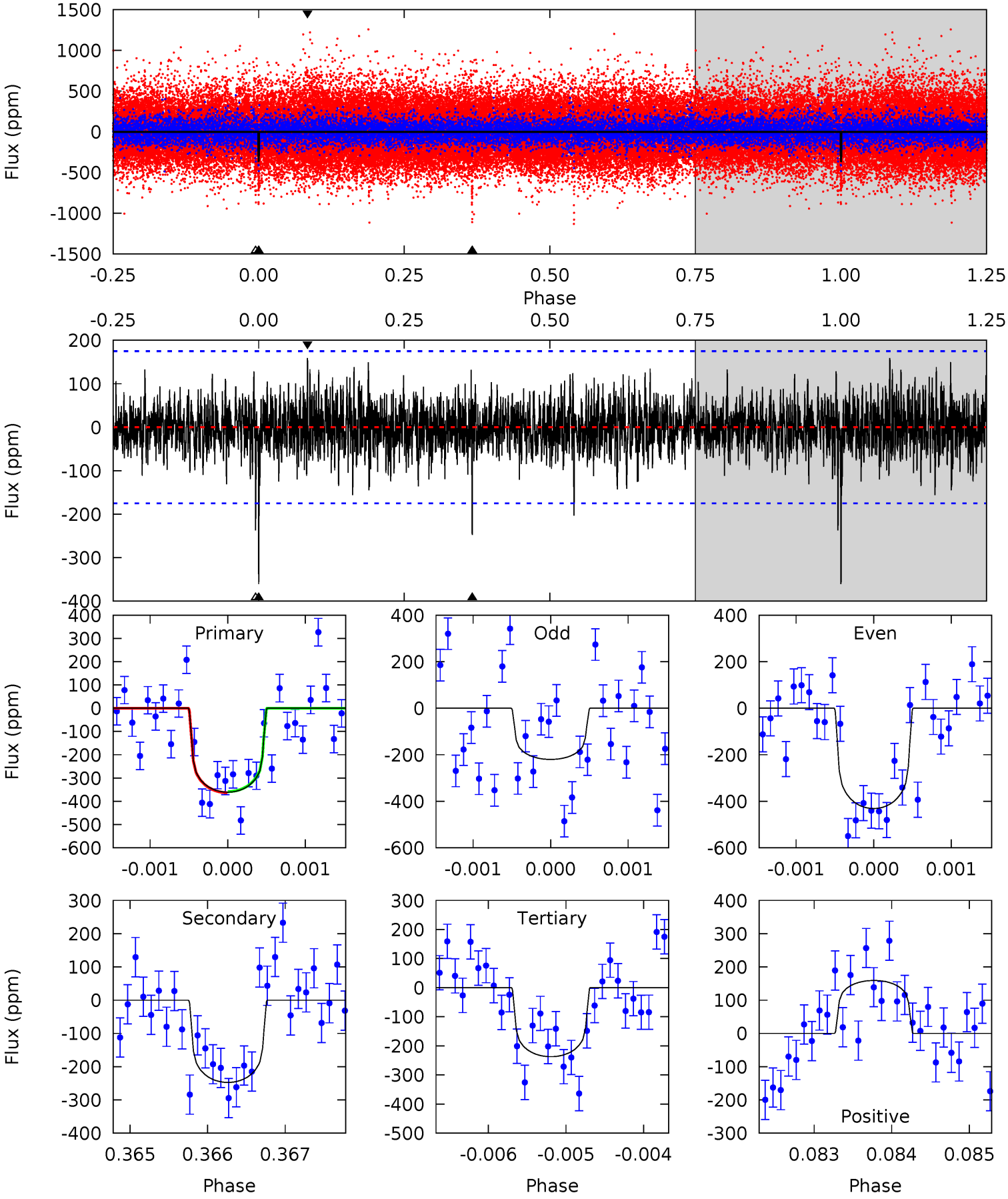
TCE 009142315-01 P=400.688489 Days T_0=509.061015 (BKJD)



DV Model-Shift Uniqueness Test

009142315-01, P = 400.727188 Days, E = 108.292171 Days

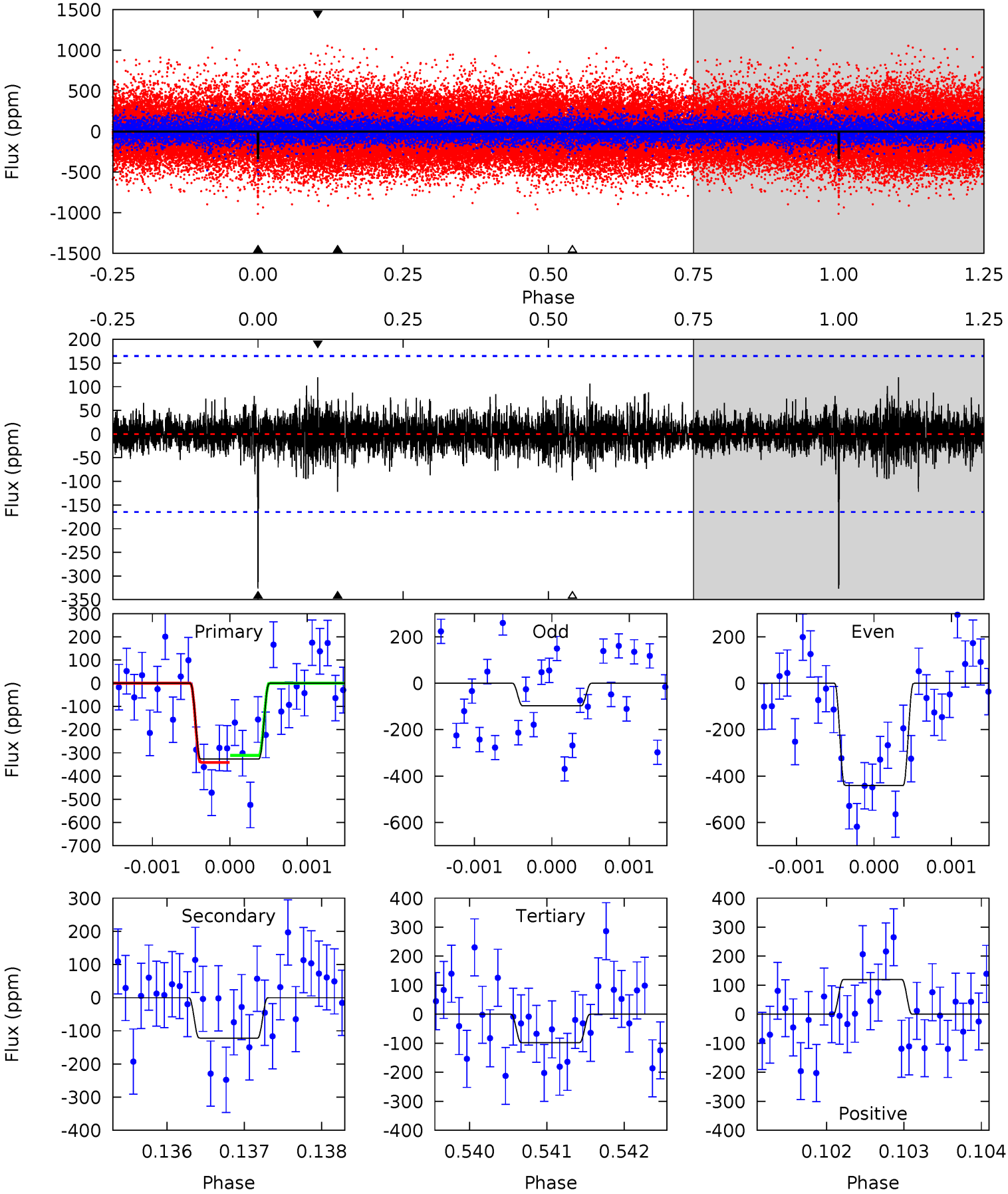
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	7.71	7.39	4.96	5.45	3.29	1.36	3.85	6.29	0.32	2.75	3.09	1.06	0.31	0.07



Alt Model-Shift Uniqueness Test

009142315-01, P = 400.688489 Days, E = 108.372526 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	4.03	3.23	3.96	5.45	3.28	0.83	7.55	6.82	0.80	0.07	5.36	1.17	0.27	0.50



Stellar Parameters For KIC 009142315

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6103^{+163}_{-200}	$4.496^{+0.052}_{-0.208}$	$-0.200^{+0.300}_{-0.300}$	$0.949^{+0.289}_{-0.096}$	$1.028^{+0.142}_{-0.129}$	$1.697^{+0.445}_{-0.886}$
	+3%/-3%	+1%/-5%	+150%/-150%	+30%/-10%	+14%/-13%	+26%/-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 009142315-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-248±32	$2.25^{+1.47}_{-1.24}$	361^{+26}_{-16}	5359^{+2684}_{-1026}	$30243^{+117925}_{-19269}$
Alt.	-122±30	$2.19^{+1.34}_{-1.17}$	360^{+25}_{-18}	4656^{+1956}_{-821}	15833^{+56498}_{-10198}

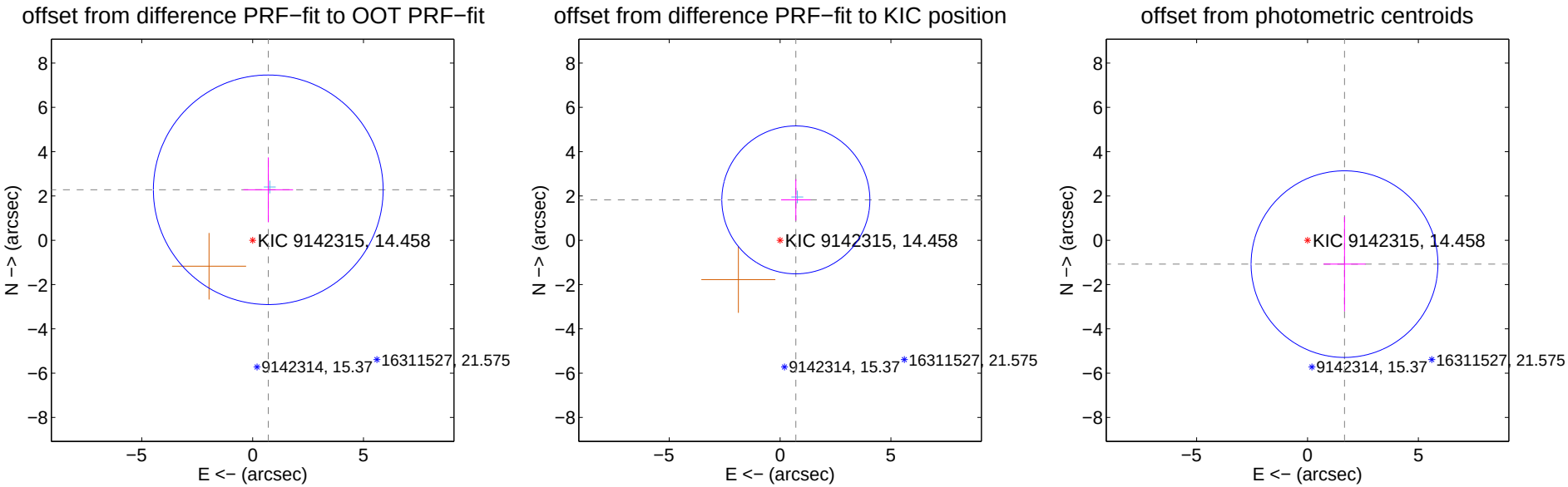
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

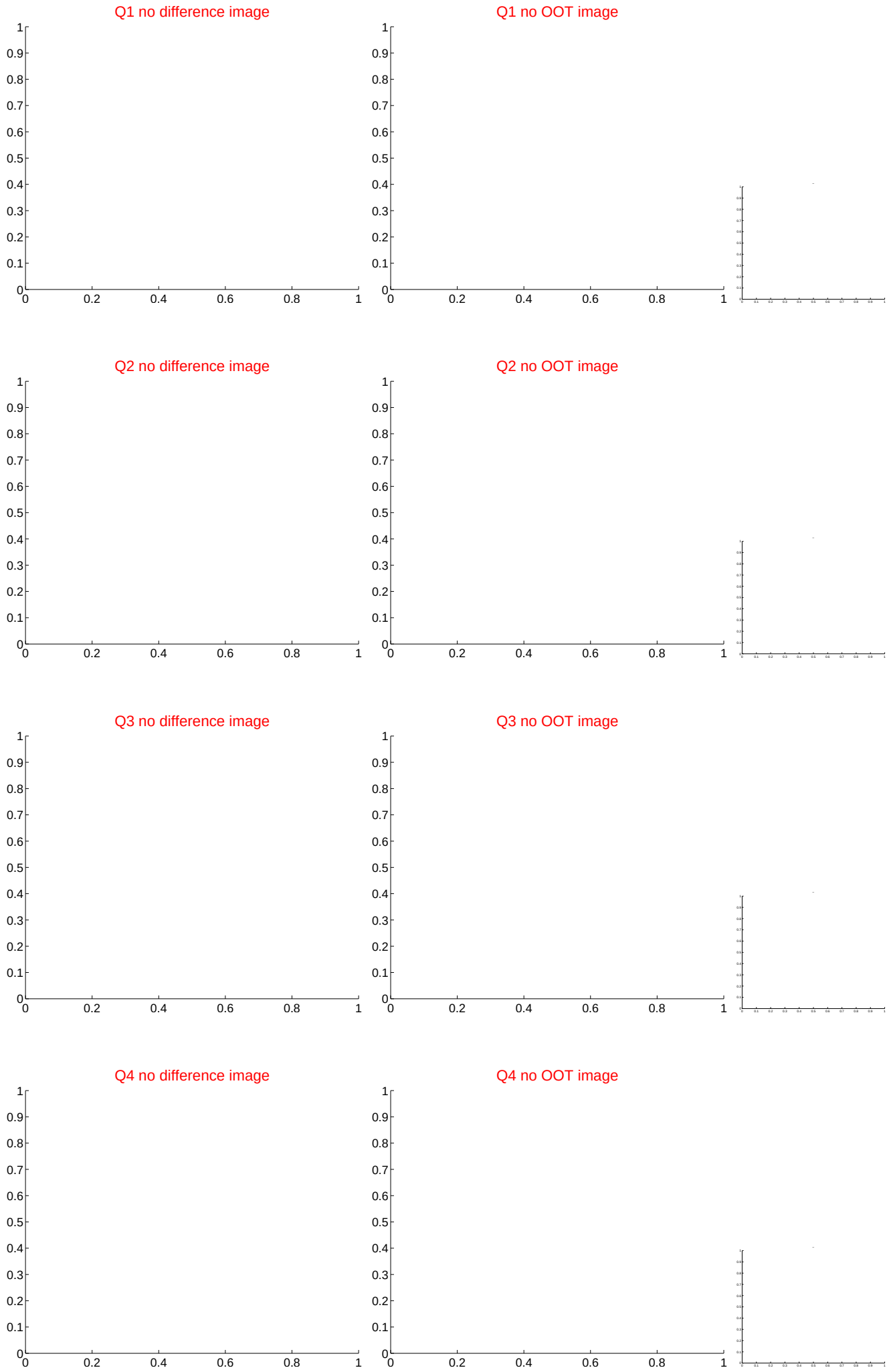
Supplemental centroid analysis for 009142315-01. Kepler magnitude: 14.46. Transit SNR 8.18
There are 1 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.386 ± 1.727	1.38	-0.705 ± 1.120	2.279 ± 1.462
PRF-fit source offset from KIC position	1.957 ± 1.113	1.76	-0.712 ± 0.668	1.823 ± 0.935
photometric centroid source offset	1.99 ± 1.40	1.41	-1.67 ± 0.95	-1.08 ± 2.13

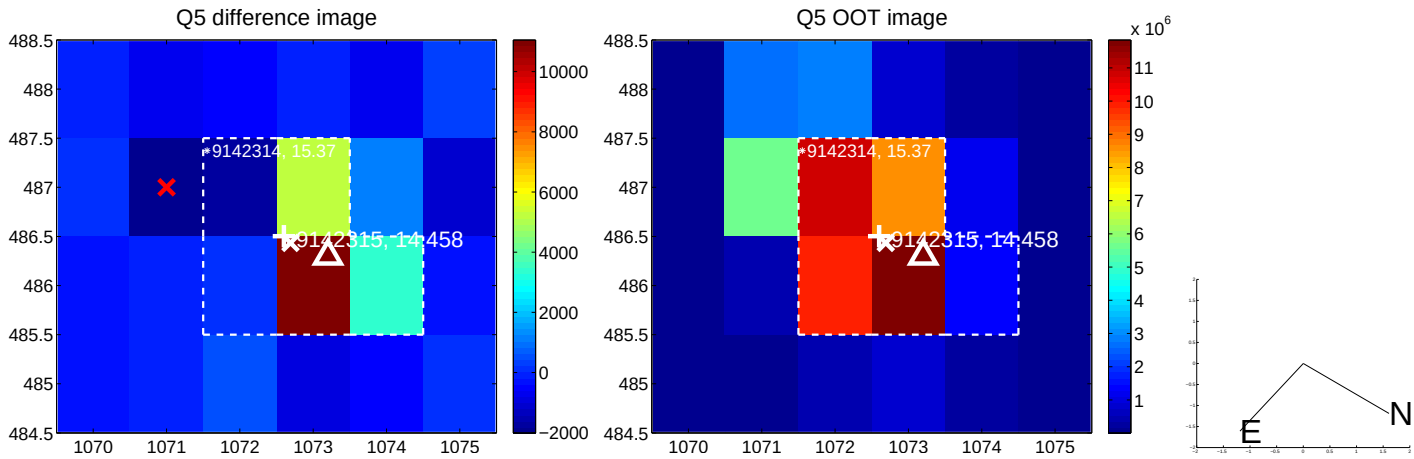


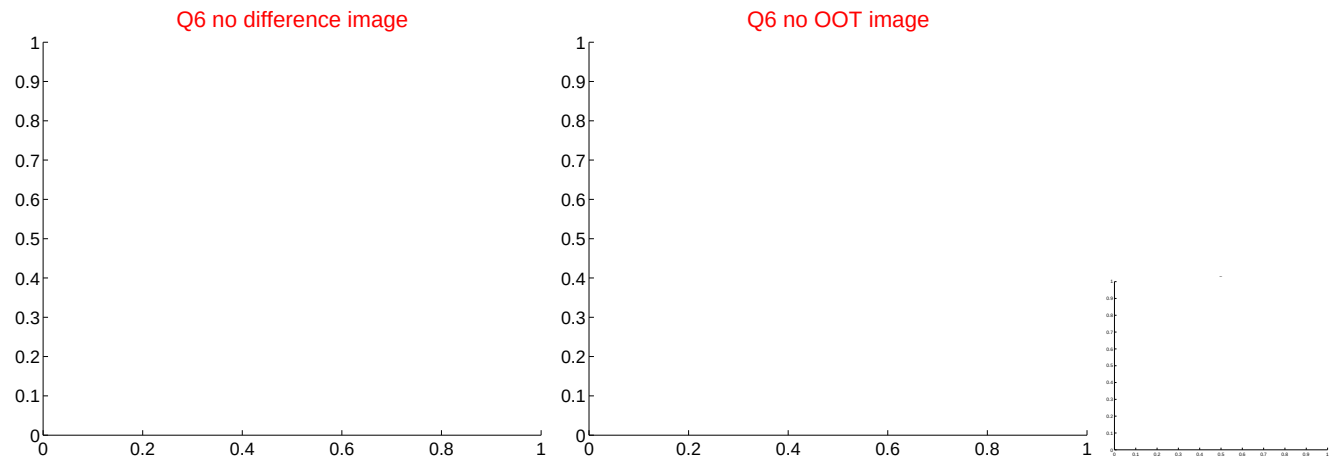
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

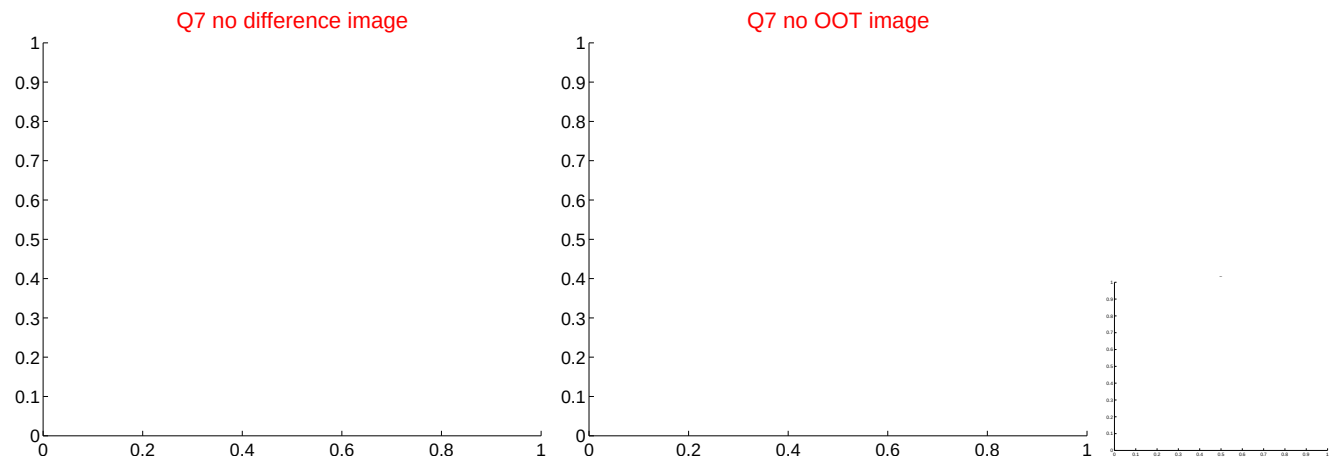
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

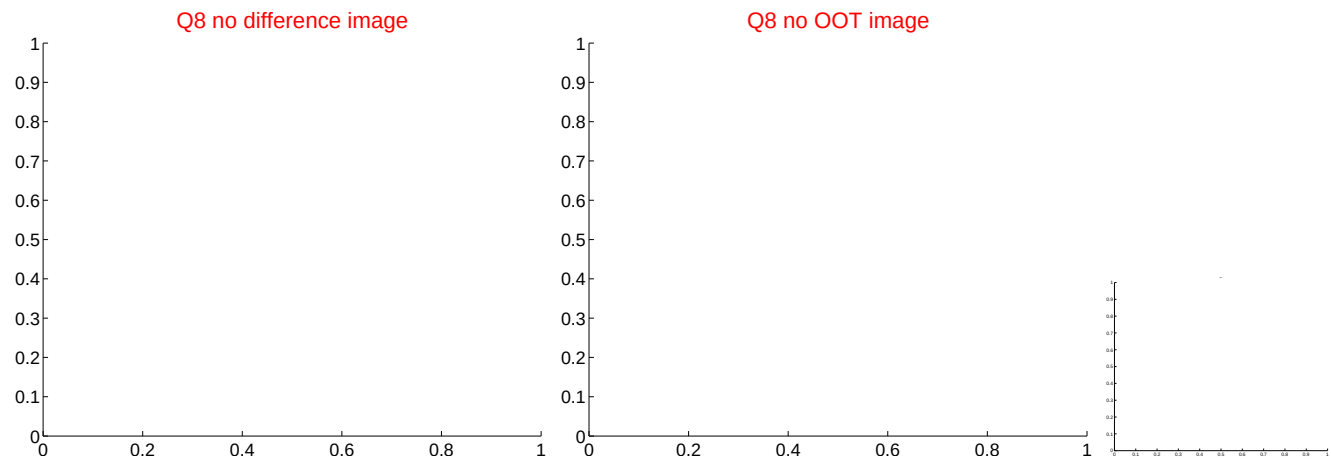


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

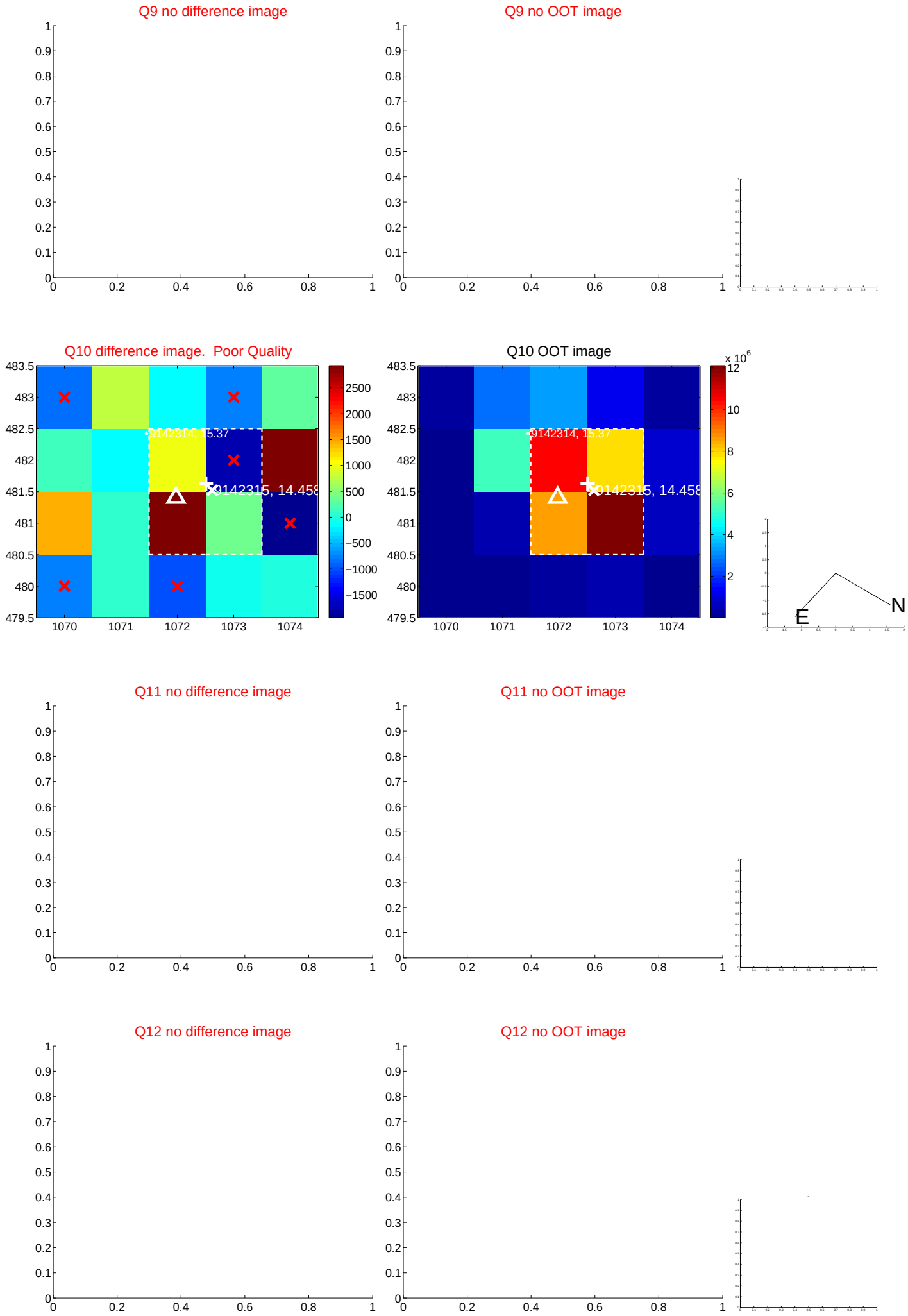




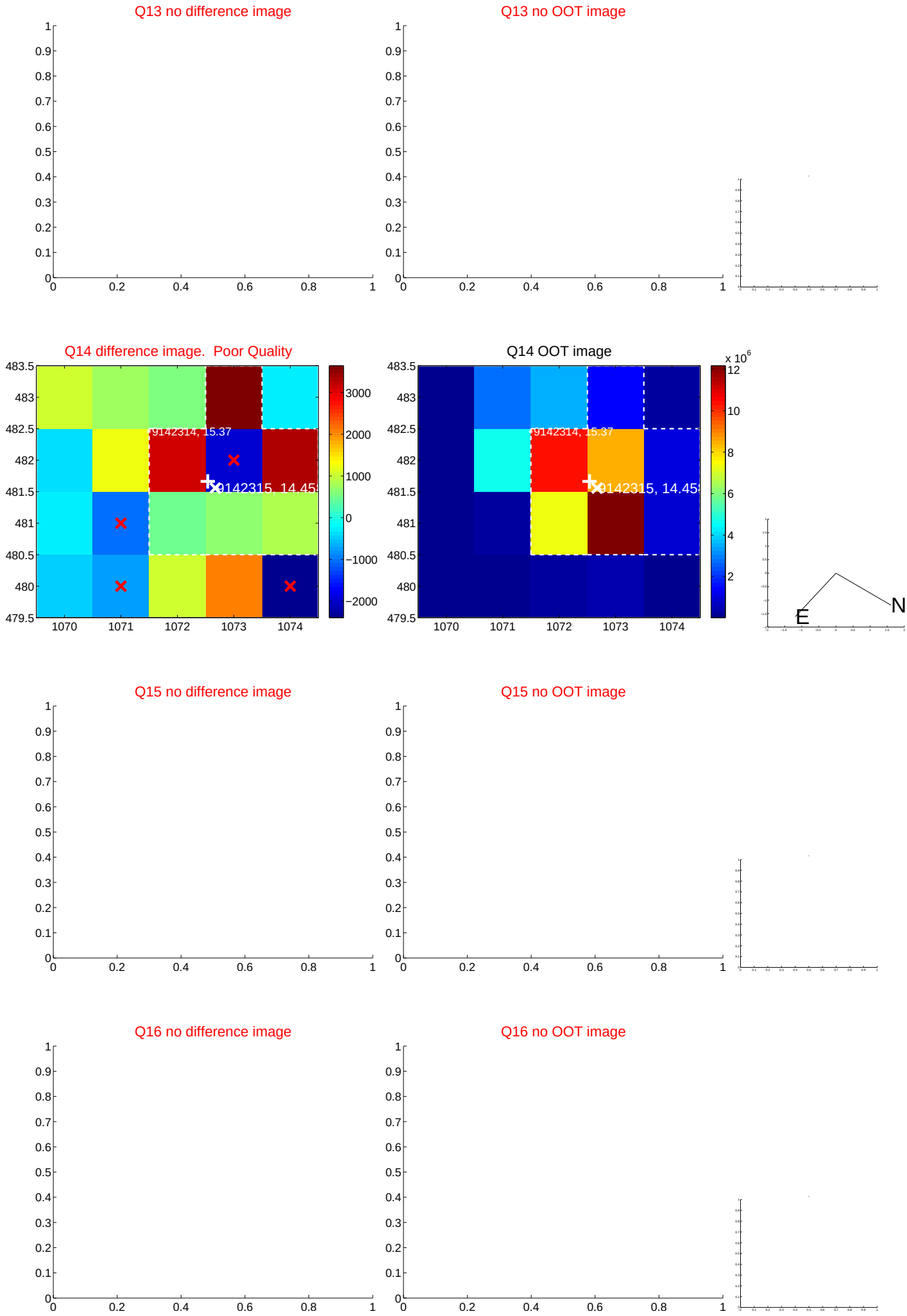




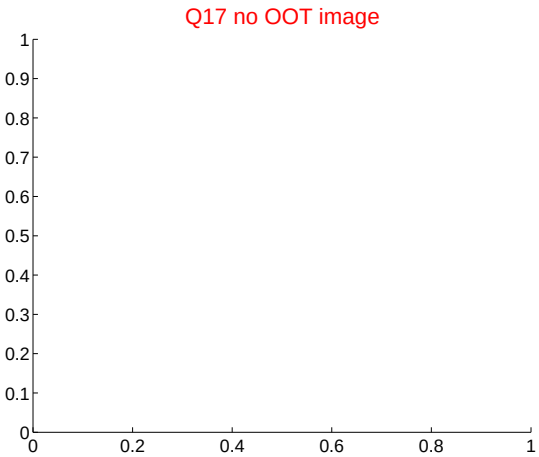
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

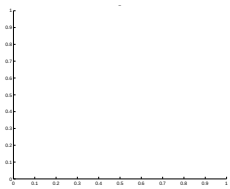


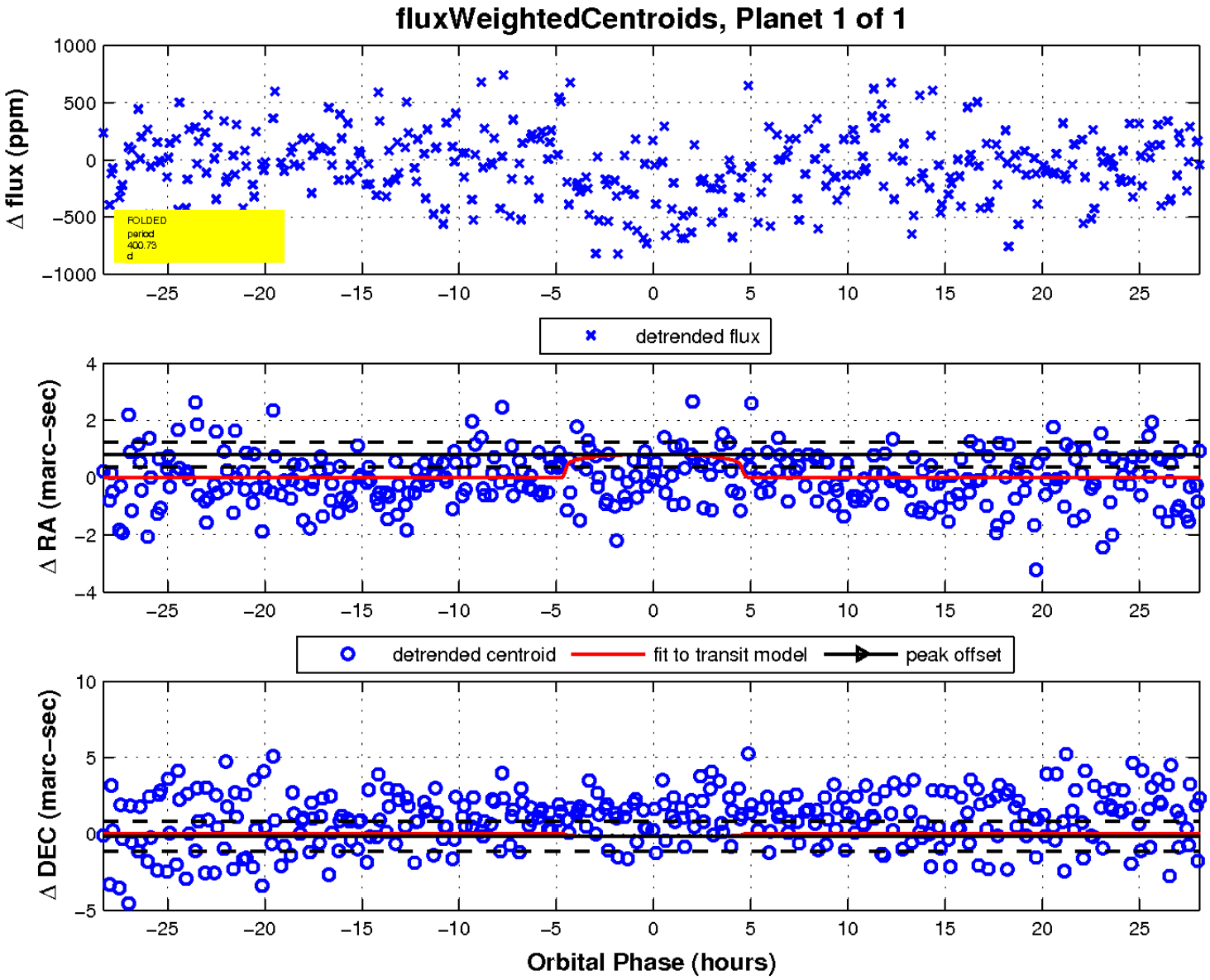
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



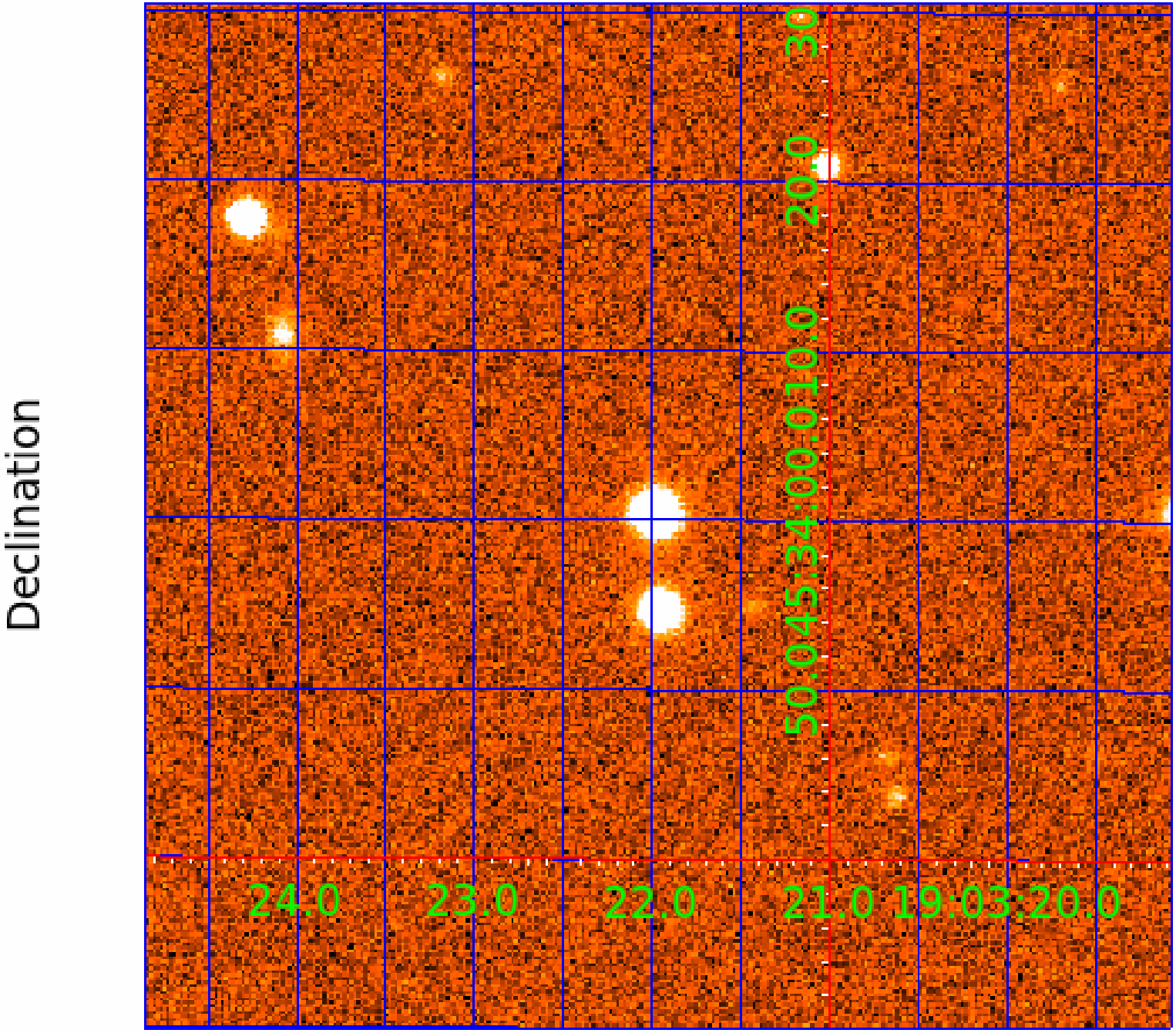
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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