KIC 009214713

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 ($S_\oplus$)
009214713-01	OBS	0422.01	404.506323	250.635446	10123.7	8.038	159.4	52.6	1.05	6230	10.86	1.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009214713-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

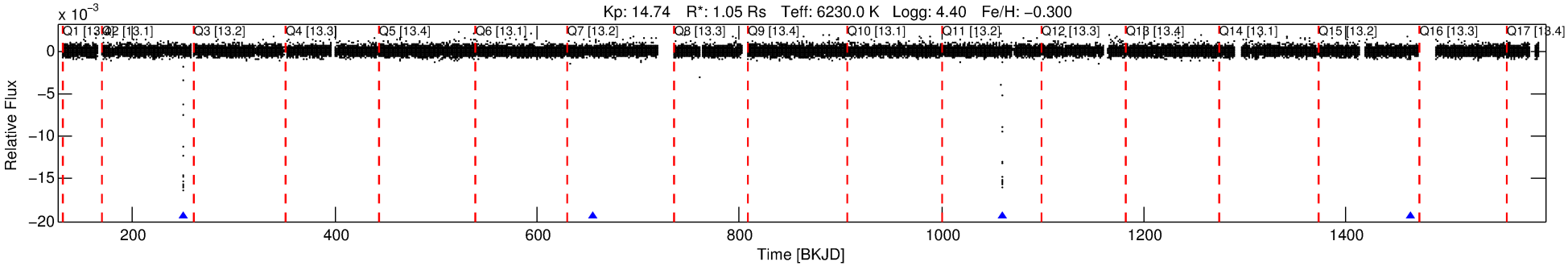
Ephemeris Match Information For 009214713-01

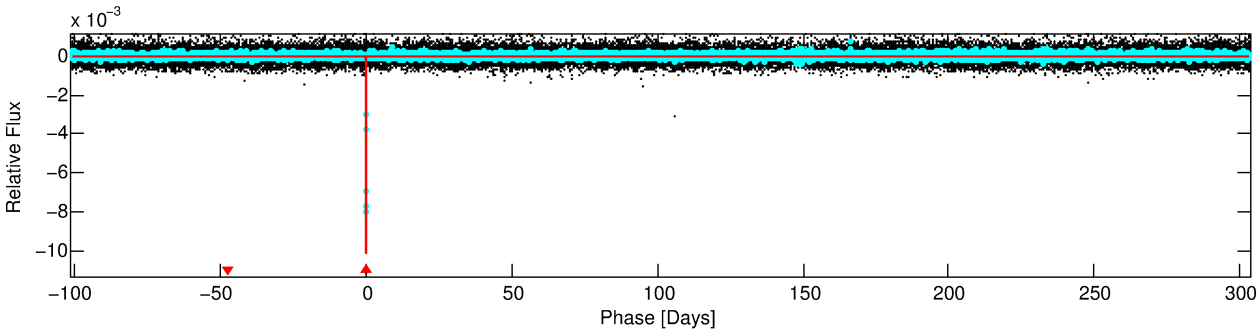
No Significant Match Found

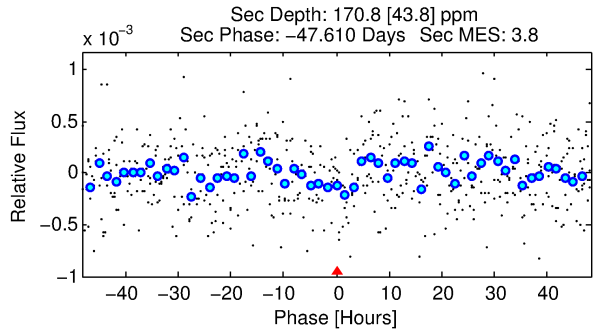
DV One-Page Summary

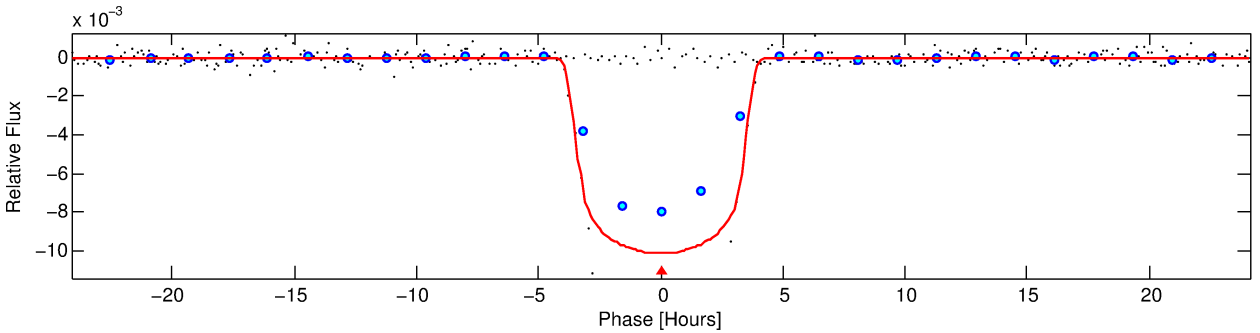
KIC: 9214713 Candidate: 1 of 1 Period: 404.506 d
KOI: K00422 Corr: No Ephemeris Match

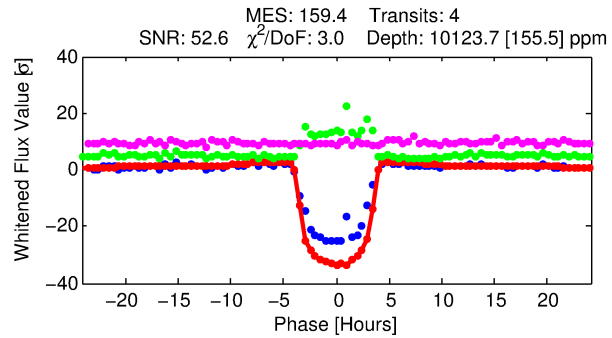
Kp: 14.74 R*: 1.05 Rs Teff: 6230.0 K Logg: 4.40 Fe/H: −0.300

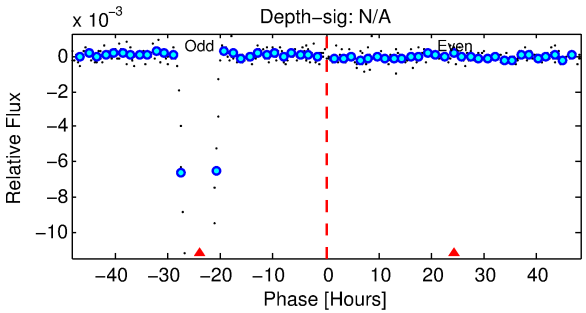


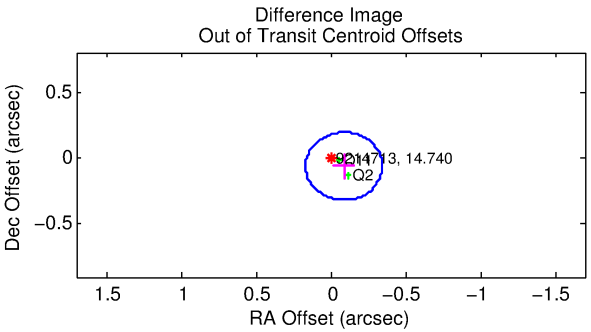












DV Fit Results:

Period = 404.50632 [0.00110] d
Epoch = 250.6354 [0.0023] BKJD
Rp/R* = 0.0951 [0.0023]
a/R* = 375.06 [41.04]
b = 0.50 [0.17]

Seff = 1.29 [0.51]
Teq = 272 [27] K
Rp = 10.86 [3.39] Re
a = 1.0697 [0.2776] AU

Ag = 911.31 [415.84] [2.19σ]
Teffp = 2310 [169] K [11.92σ]

DV Diagnostic Results:

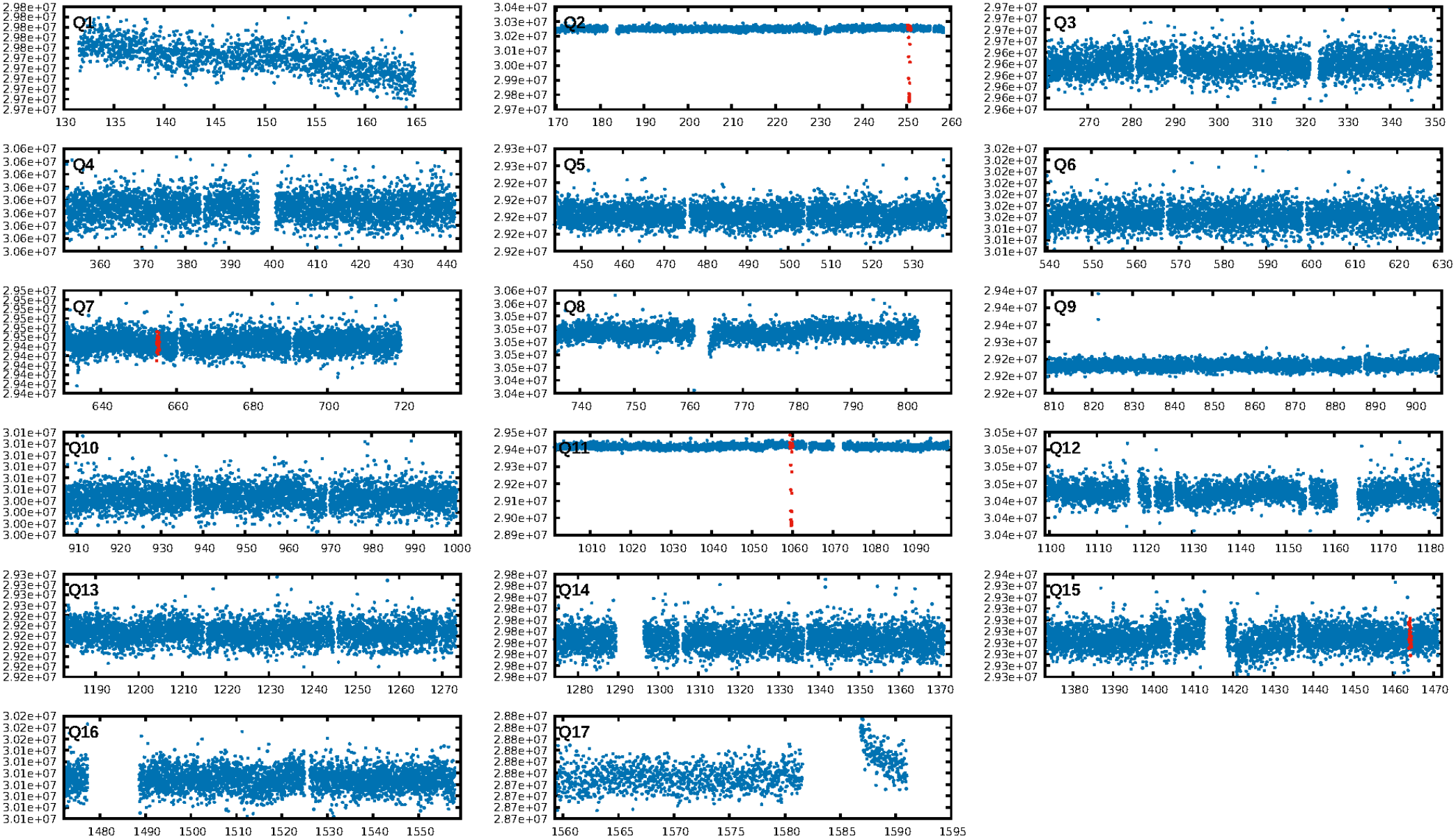
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 0.2%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 0.00e+00
RollingBand−fgt: 1.00 [4/4]
GhostDiagnostic−chr: 26.88

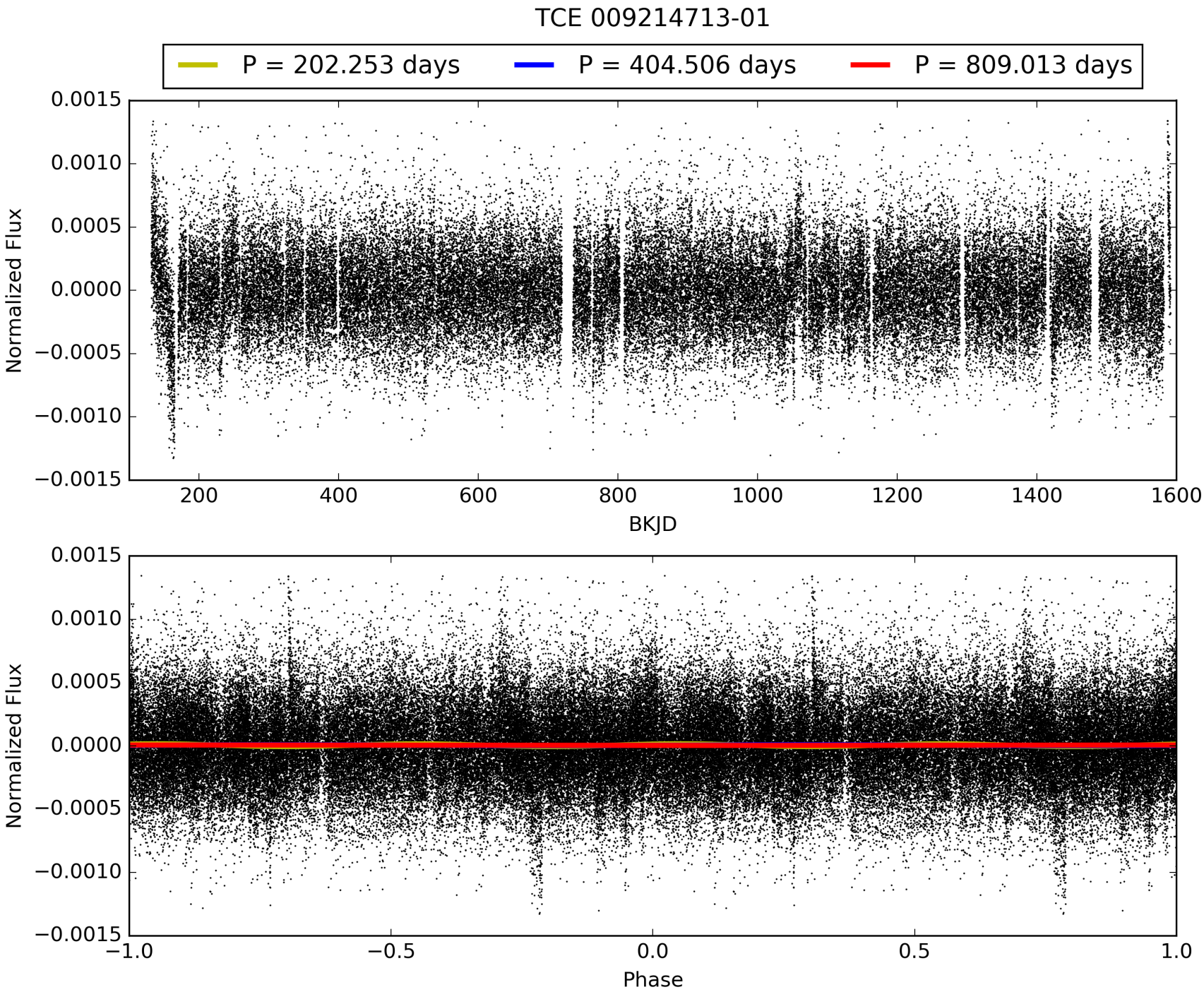
Centroid−sig: 0.0%
Centroid−so: 0.150 arcsec [2.06σ]
OotOffset−rm: 0.107 arcsec [1.26σ]
KicOffset−rm: 0.021 arcsec [0.27σ]
OotOffset−st: 1/1/0/0 [2]
KicOffset−st: 1/1/0/0 [2]
DiffImageQuality−fgm: 1.00 [2/2]
DiffImageOverlap−fno: 1.00 [4/4]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 −− Date Generated: 30−Jan−2016 14:58:54 Z

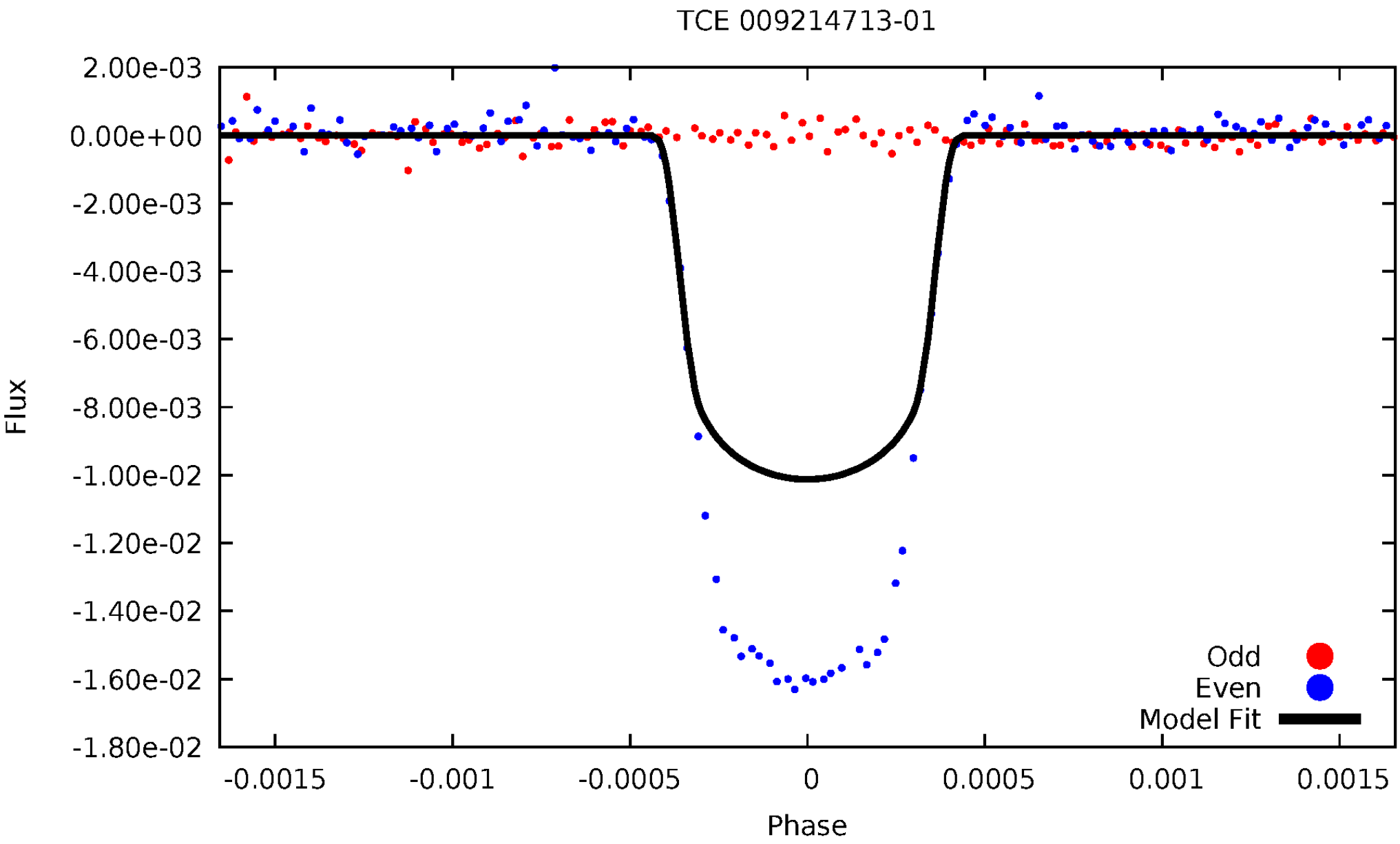
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009214713-01, PDC Light Curves

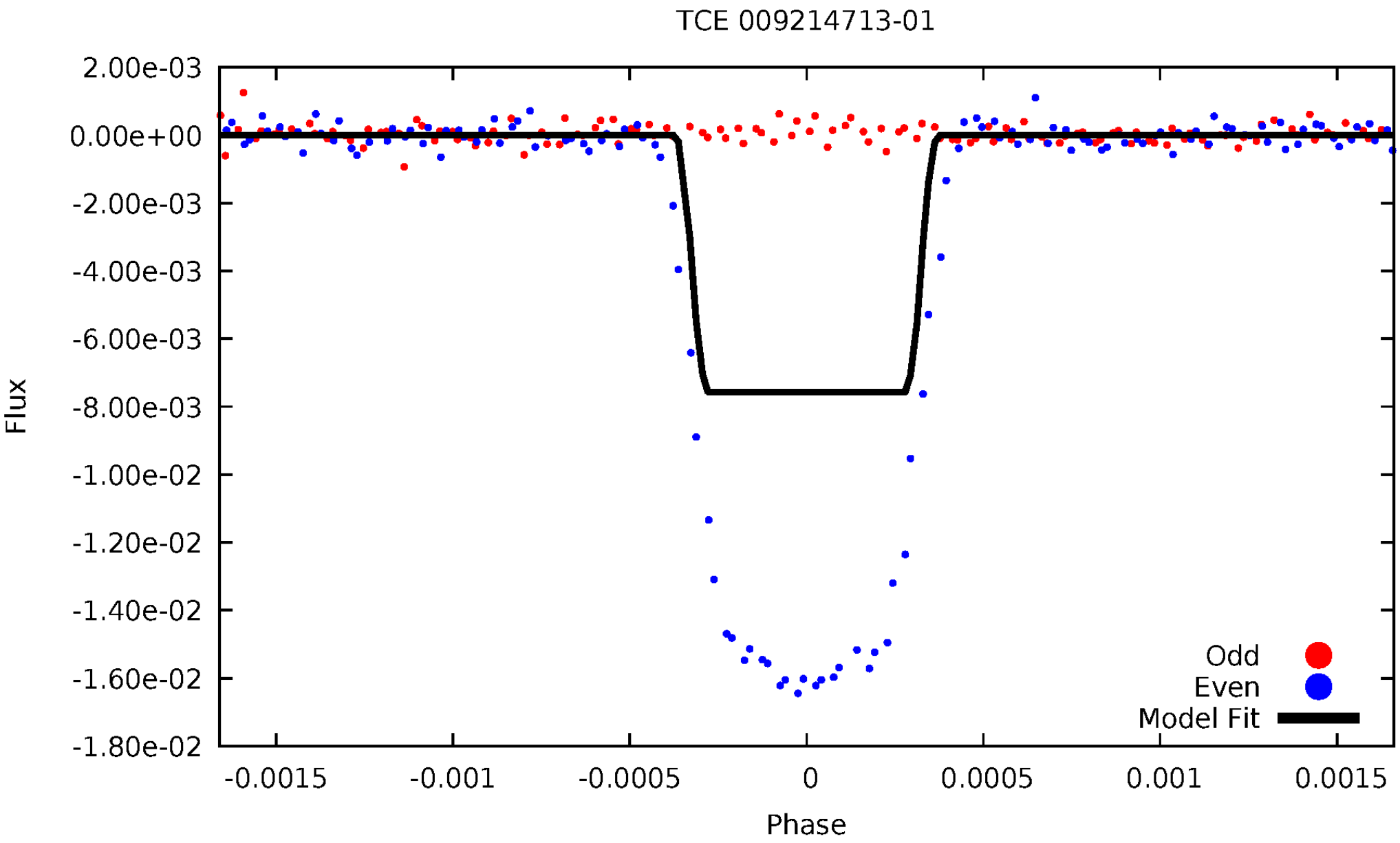



TCE 009214713-01
P = 202.253 days
P = 404.506 days
P = 809.013 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase

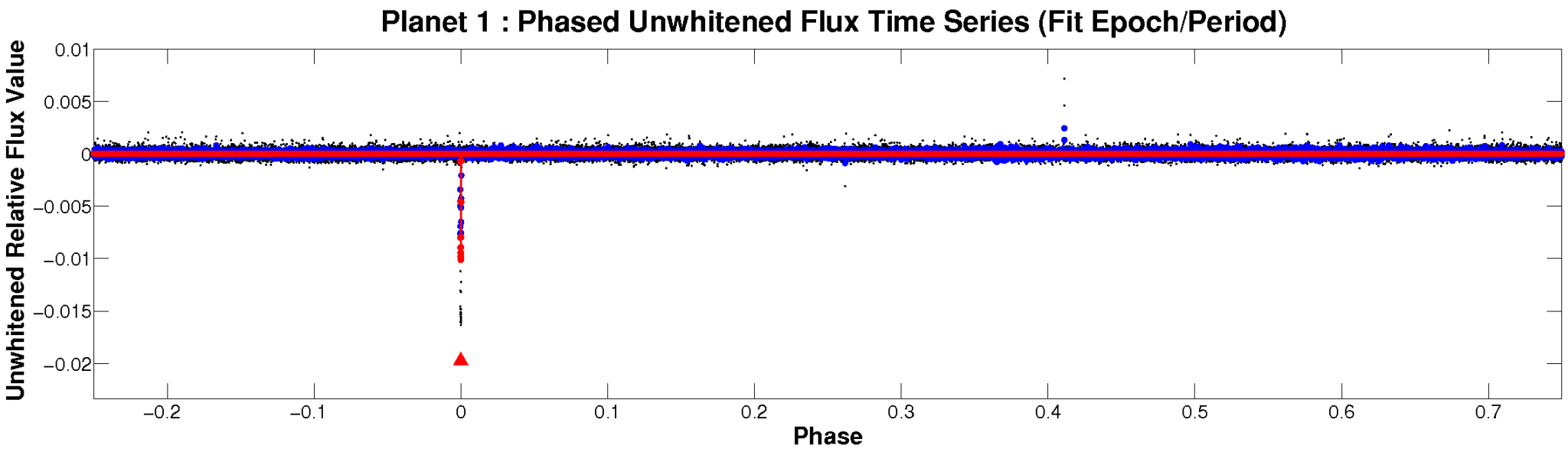
DV Odd/Even

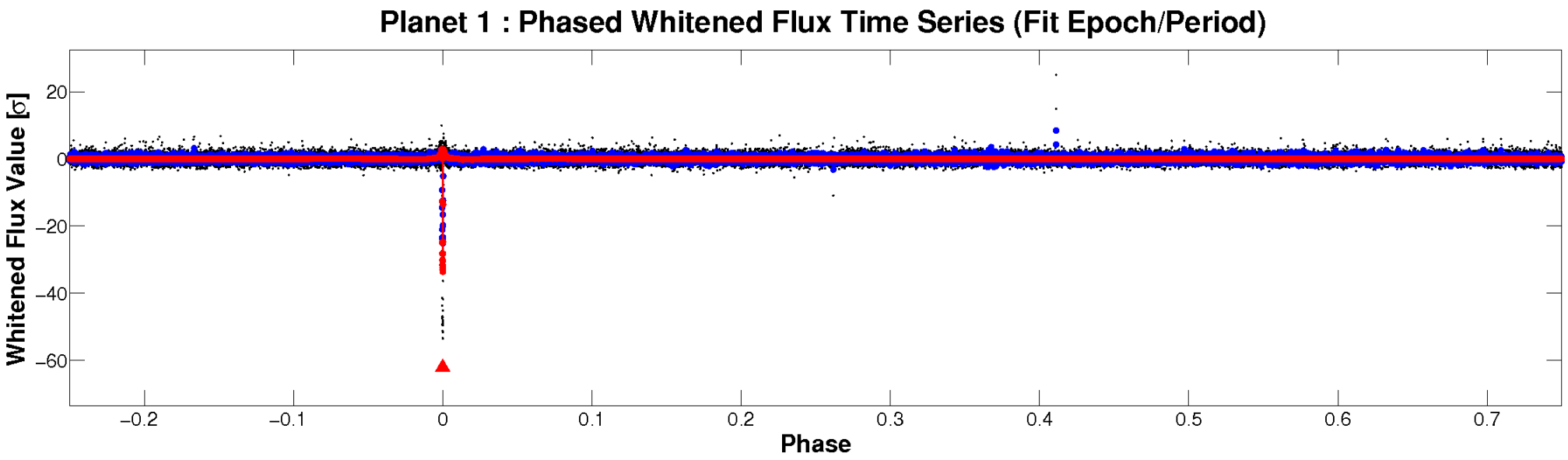

TCE 009214713-01
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
-8.00e-03
-1.00e-02
-1.20e-02
-1.40e-02
-1.60e-02
-1.80e-02
Flux
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009214713-01
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
-8.00e-03
-1.00e-02
-1.20e-02
-1.40e-02
-1.60e-02
-1.80e-02
Flux
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
Phase
Odd
Even
Model Fit

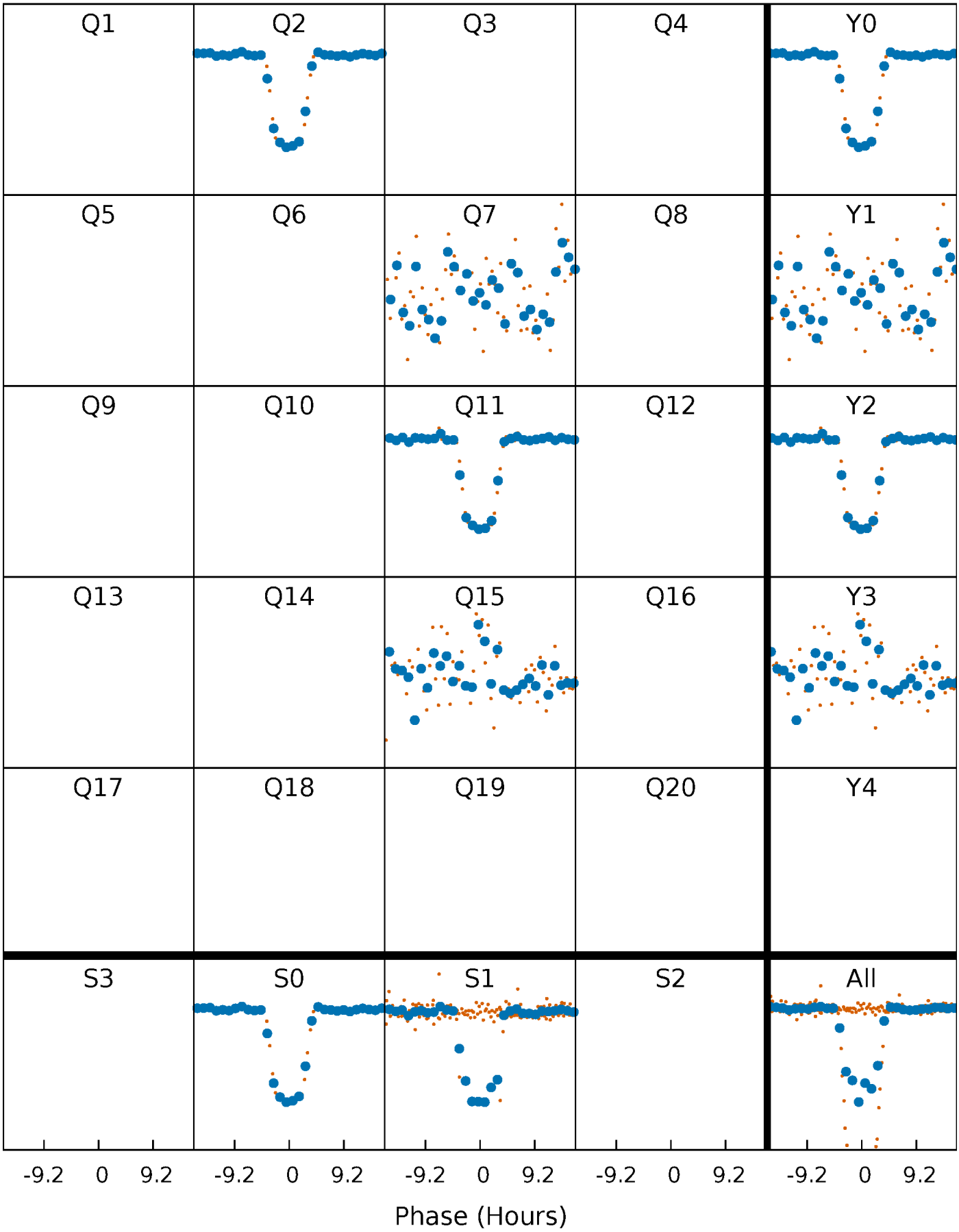
Non-Whitened Vs. Whitened Light Curve





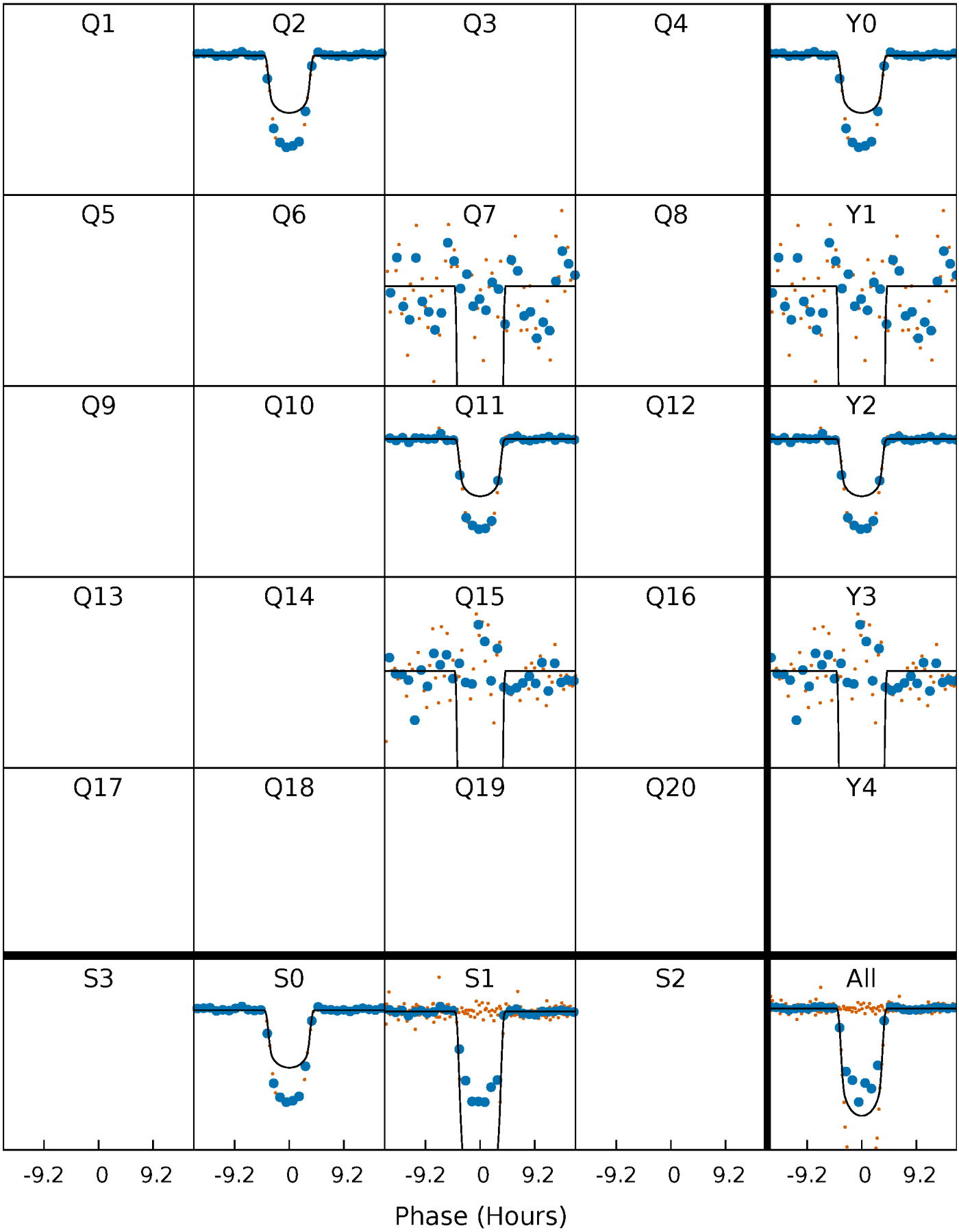
PDC Quarter-Phased Transit Curves

TCE 009214713-01 P=404.506323 Days T_0=250.635446 (BKJD)



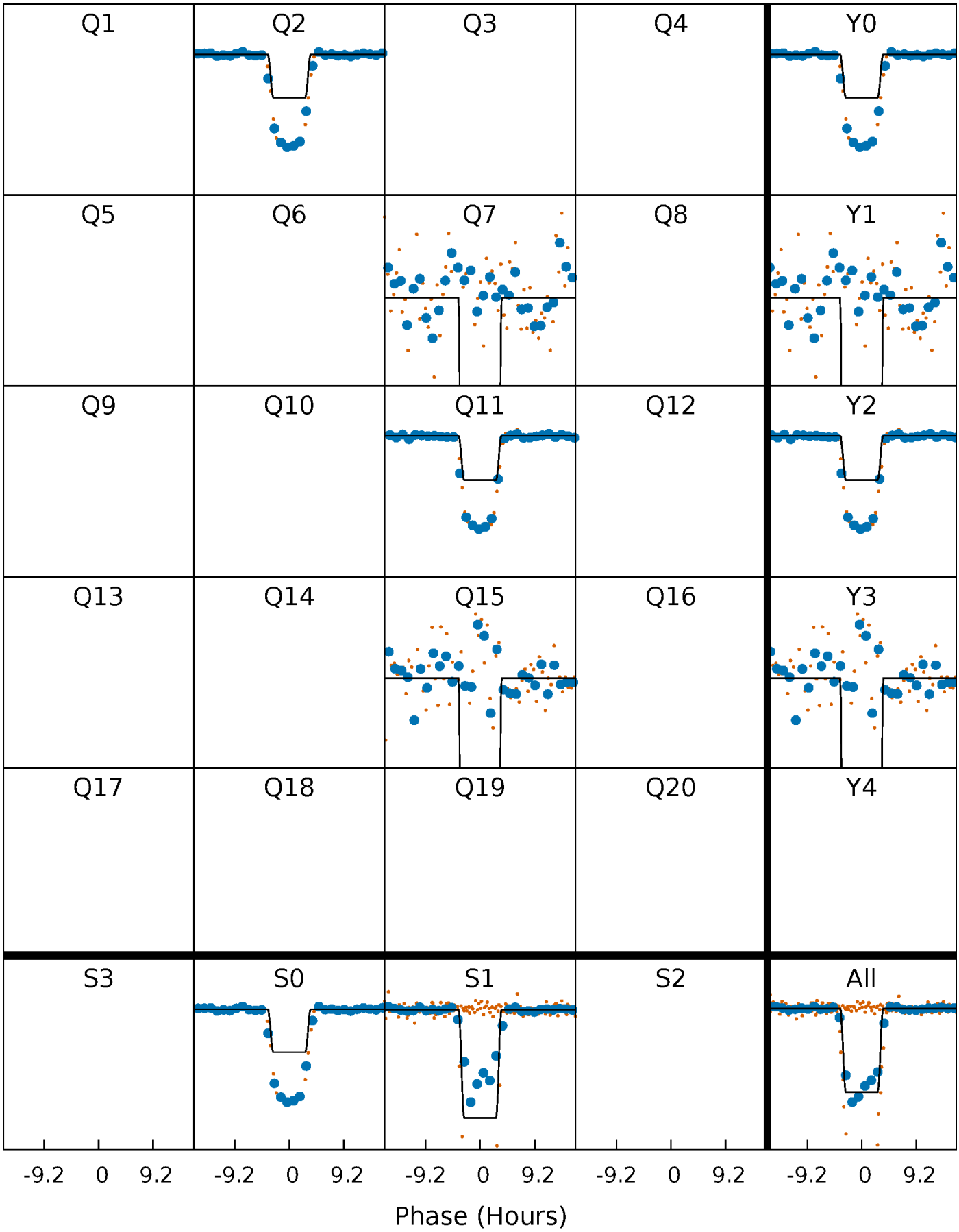
DV Quarter-Phased Transit Curves

TCE 009214713-01 P=404.506323 Days T_0=250.635446 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

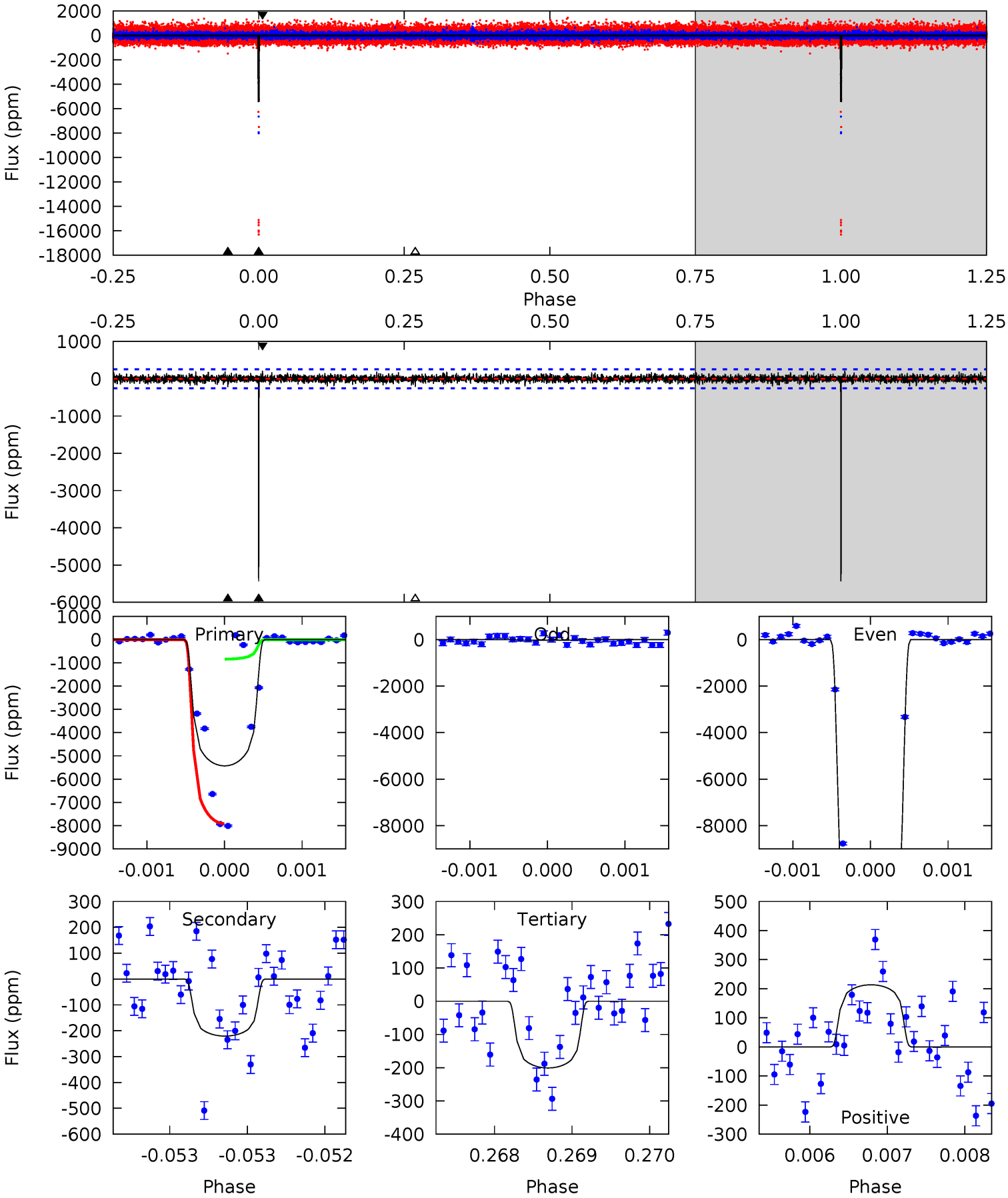
TCE 009214713-01 P=404.509565 Days T_0=250.630965 (BKJD)



DV Model-Shift Uniqueness Test

009214713-01, P = 404.506323 Days, E = 250.635446 Days

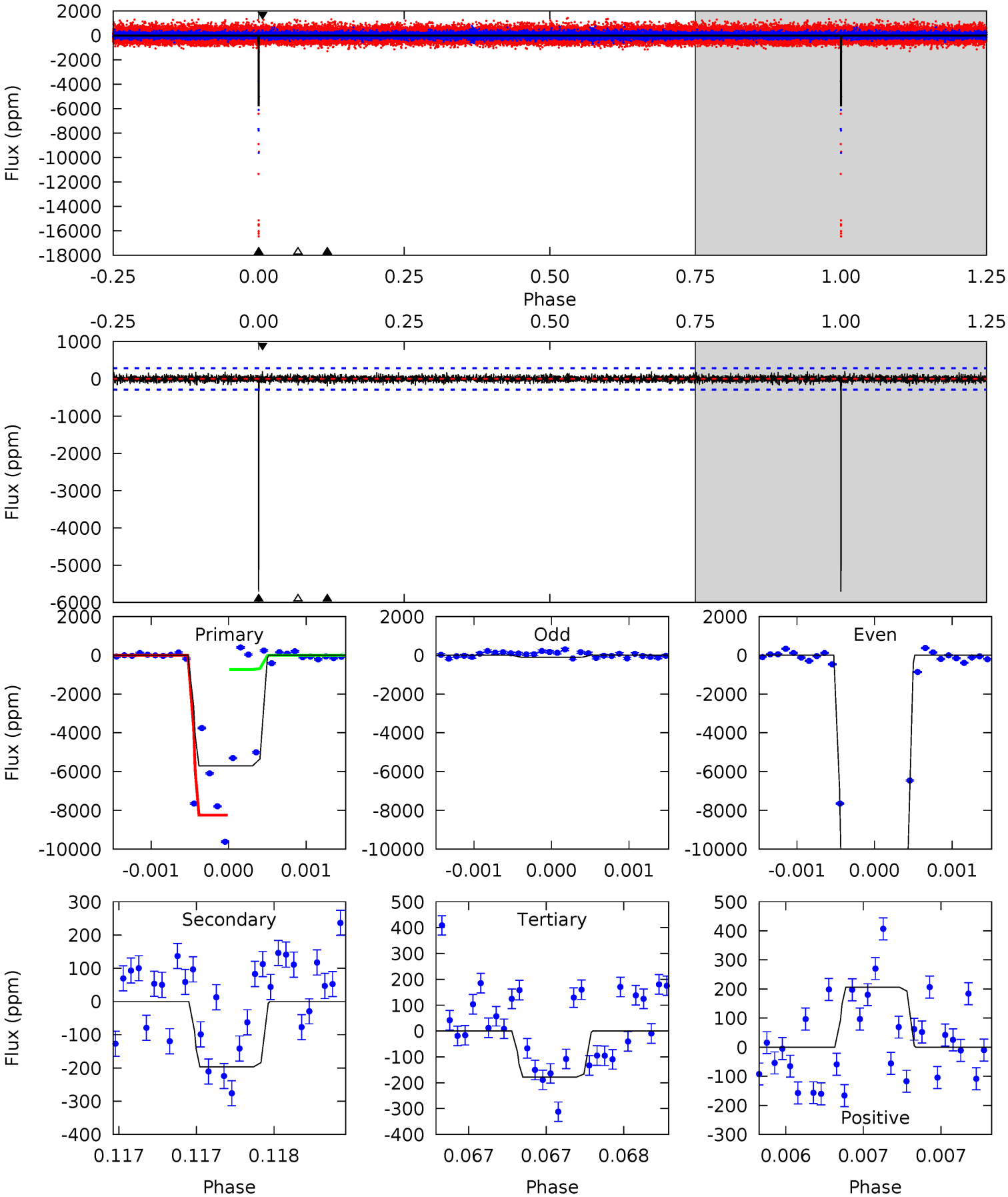
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
117.1	4.76	4.33	4.61	5.48	3.34	1.14	112.8	112.5	0.42	0.15	199.4	1.00	0.04	72.6



Alt Model-Shift Uniqueness Test

009214713-01, P = 404.509565 Days, E = 250.630965 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
110.4	3.80	3.44	3.99	5.51	3.38	0.94	106.9	106.4	0.36	-0.18	180.3	1.01	0.03	66.0



Stellar Parameters For KIC 009214713

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6230^{+169}_{-206}	$4.397^{+0.087}_{-0.203}$	$-0.300^{+0.250}_{-0.300}$	$1.047^{+0.326}_{-0.140}$	$0.993^{+0.148}_{-0.111}$	$1.220^{+0.566}_{-0.621}$
	+3%/-3%	+2%/-5%	+83%/-100%	+31%/-13%	+15%/-11%	+46%/-51%
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 009214713-01 / KOI 0422.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-221±46	$11.03^{+1.84}_{-0.98}$	385^{+27}_{-21}	3091^{+110}_{-117}	1074^{+385}_{-326}
Alt.	-197±52	$10.07^{+1.68}_{-0.89}$	384^{+29}_{-20}	3119^{+134}_{-159}	1137^{+432}_{-356}

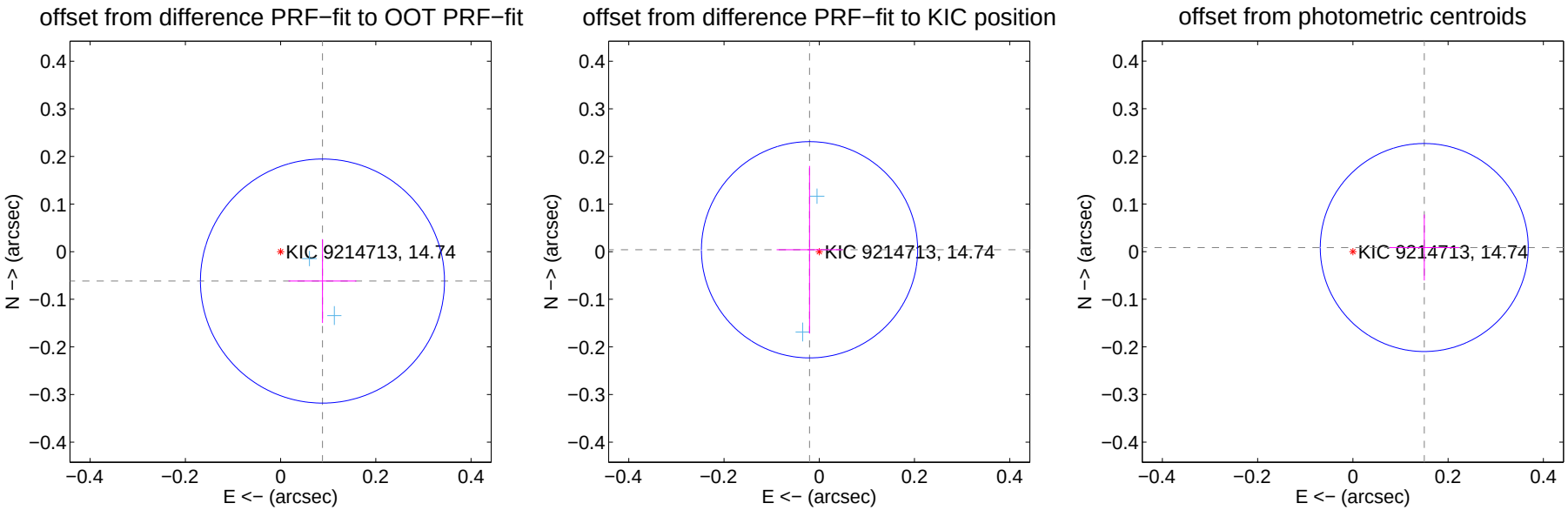
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

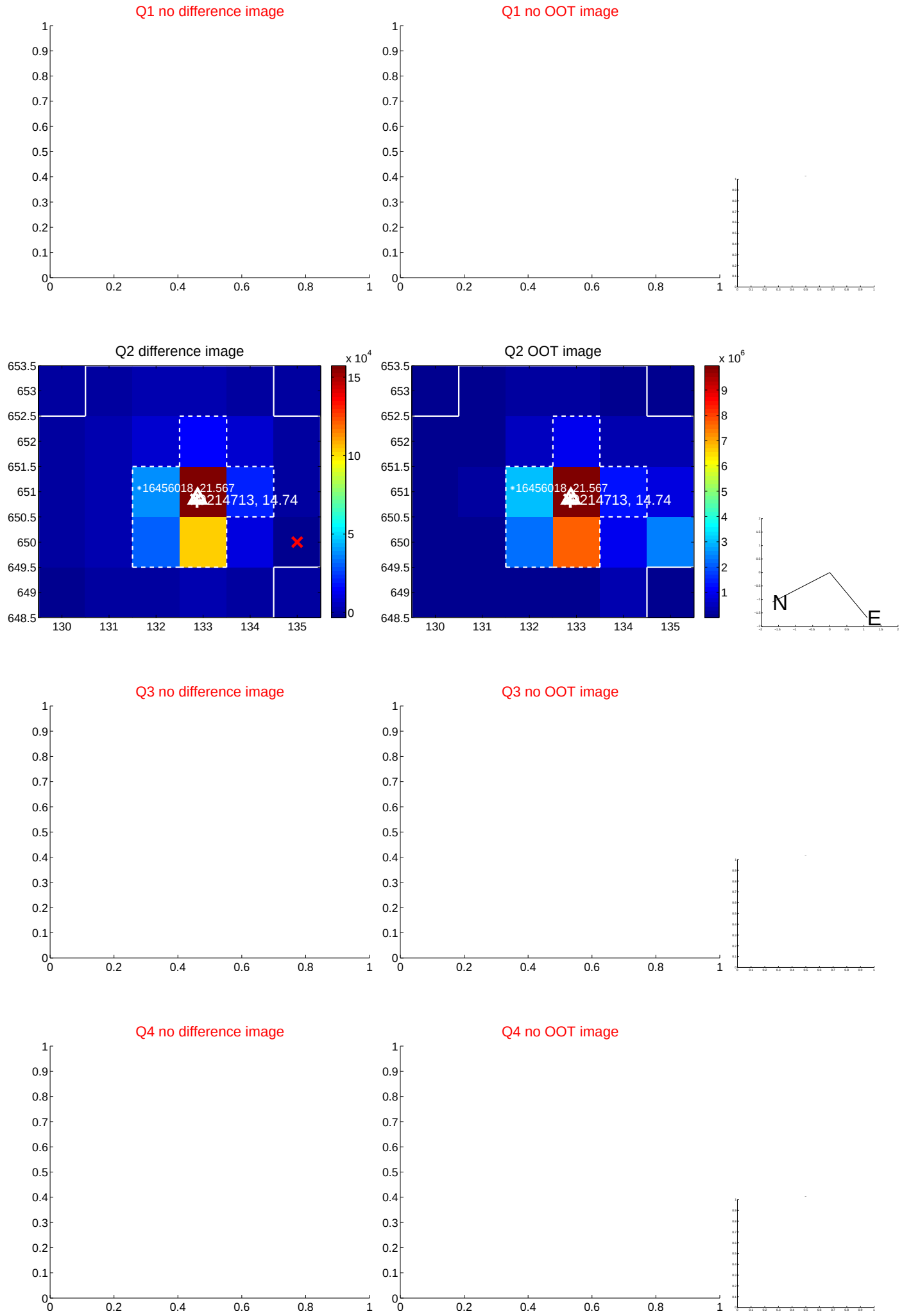
Supplemental centroid analysis for 009214713-01. Kepler magnitude: 14.74. Transit SNR 52.61
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.107 ± 0.085	1.26	-0.088 ± 0.071	-0.062 ± 0.088
PRF-fit source offset from KIC position	0.021 ± 0.076	0.27	0.020 ± 0.069	0.004 ± 0.176
photometric centroid source offset	0.15 ± 0.07	2.06	-0.15 ± 0.07	0.01 ± 0.07

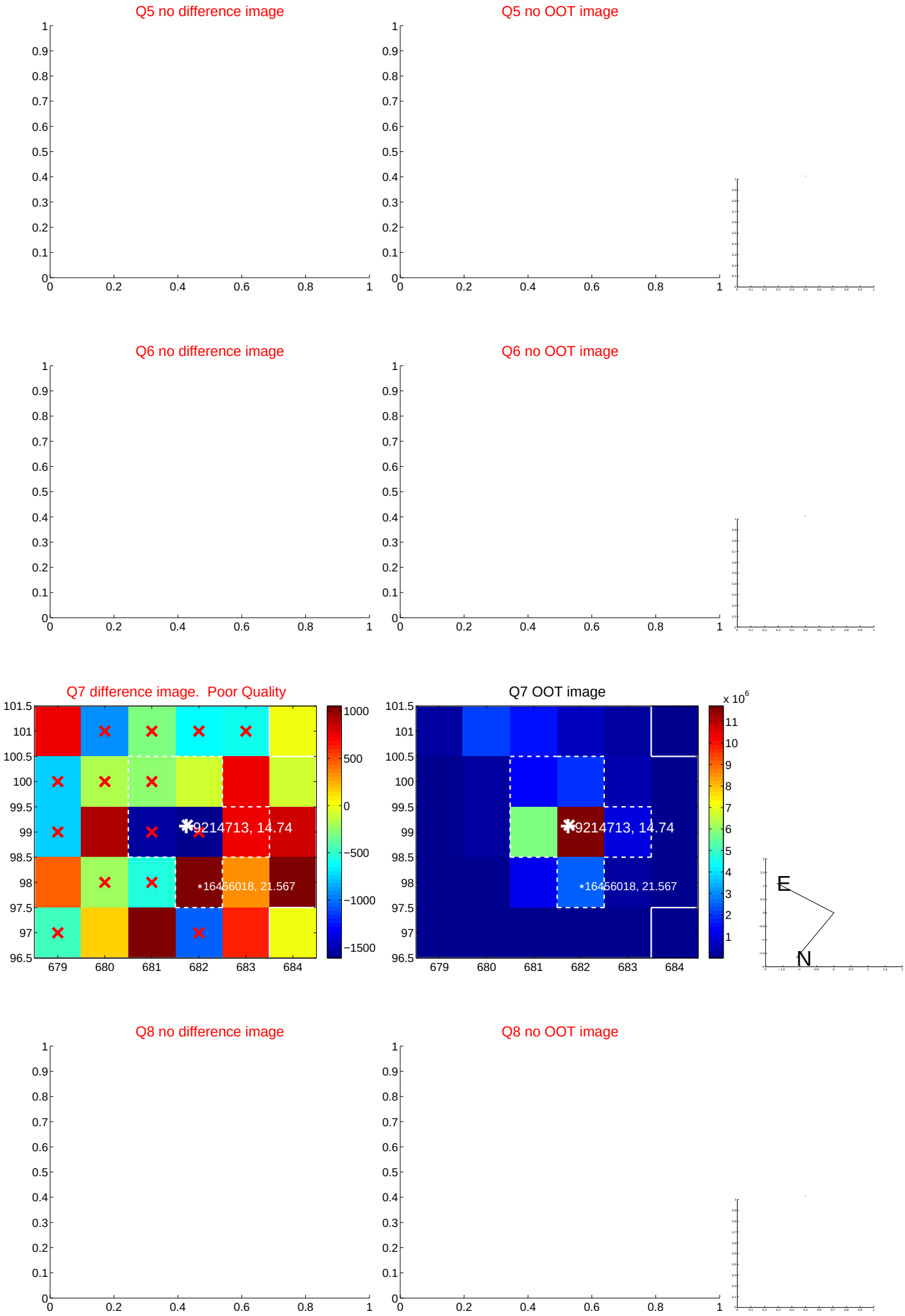


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

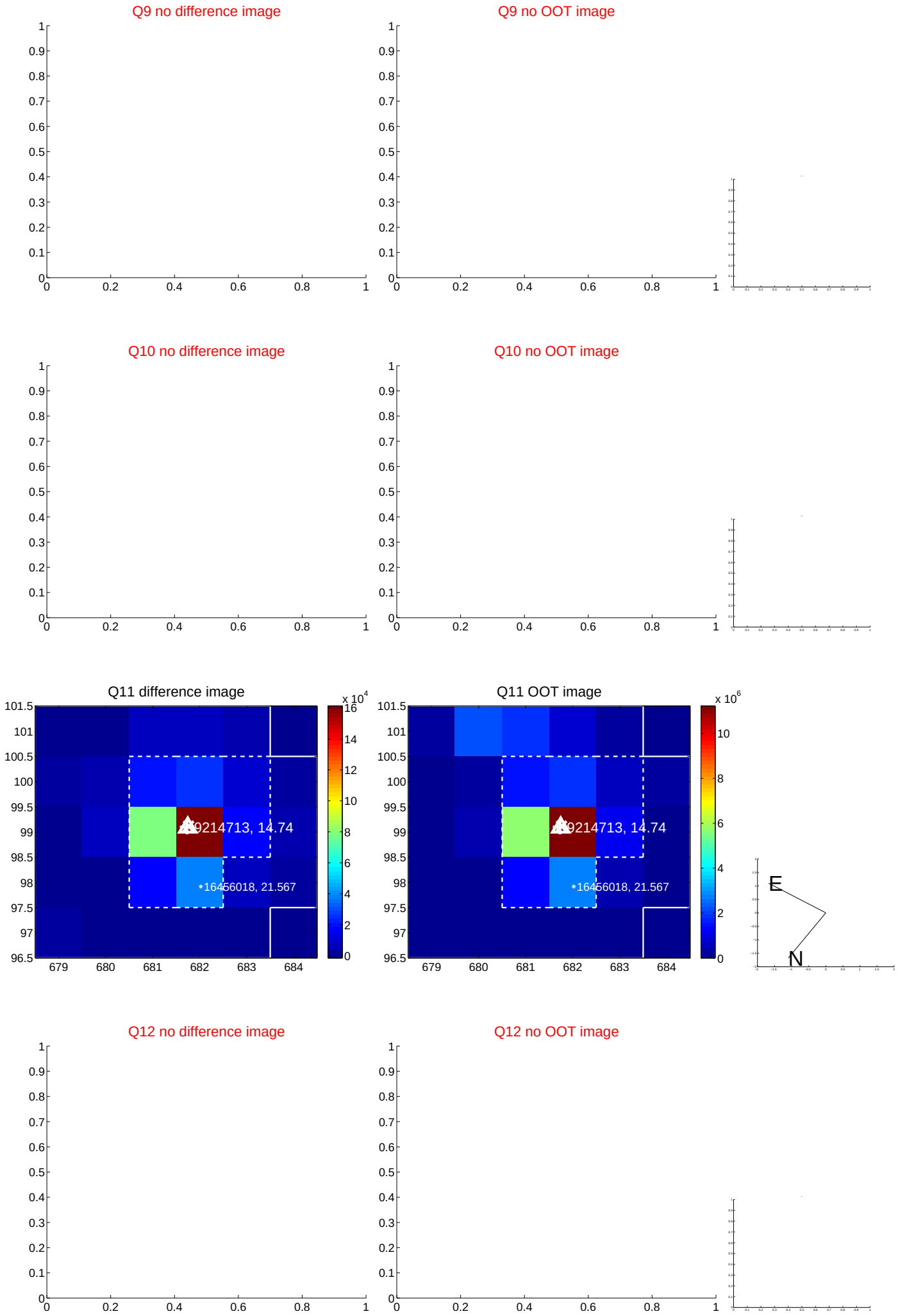
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



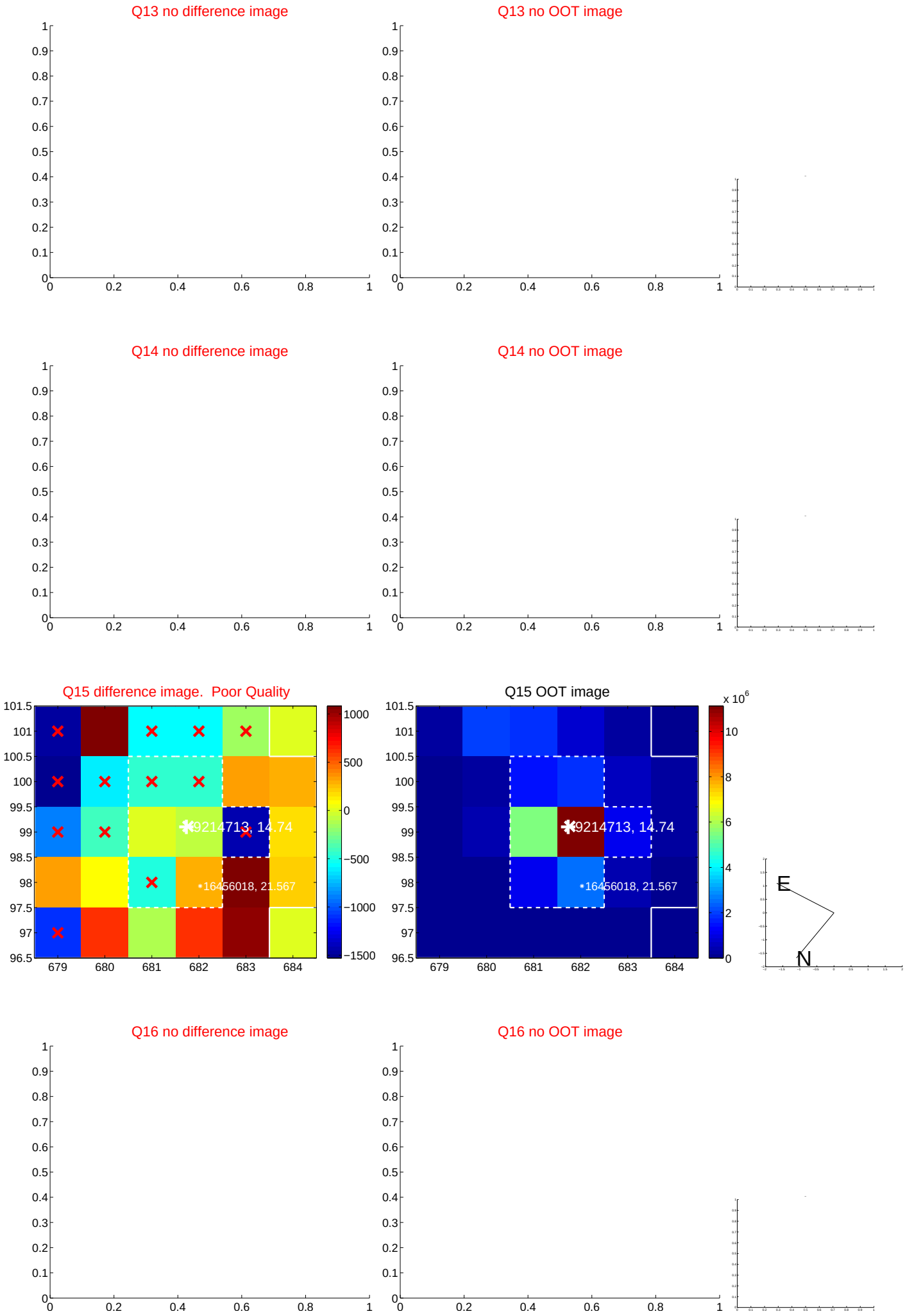
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



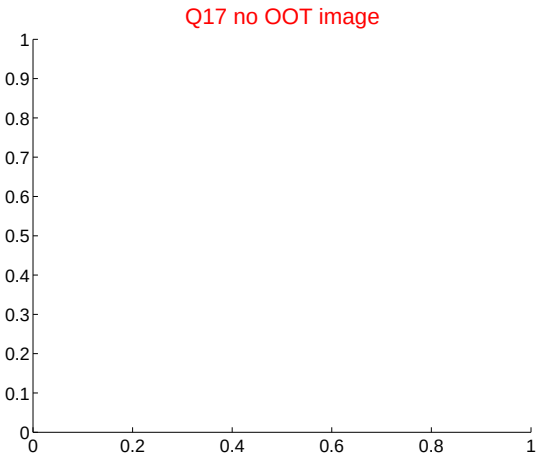
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

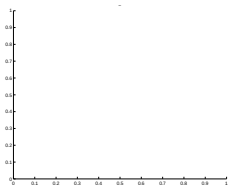


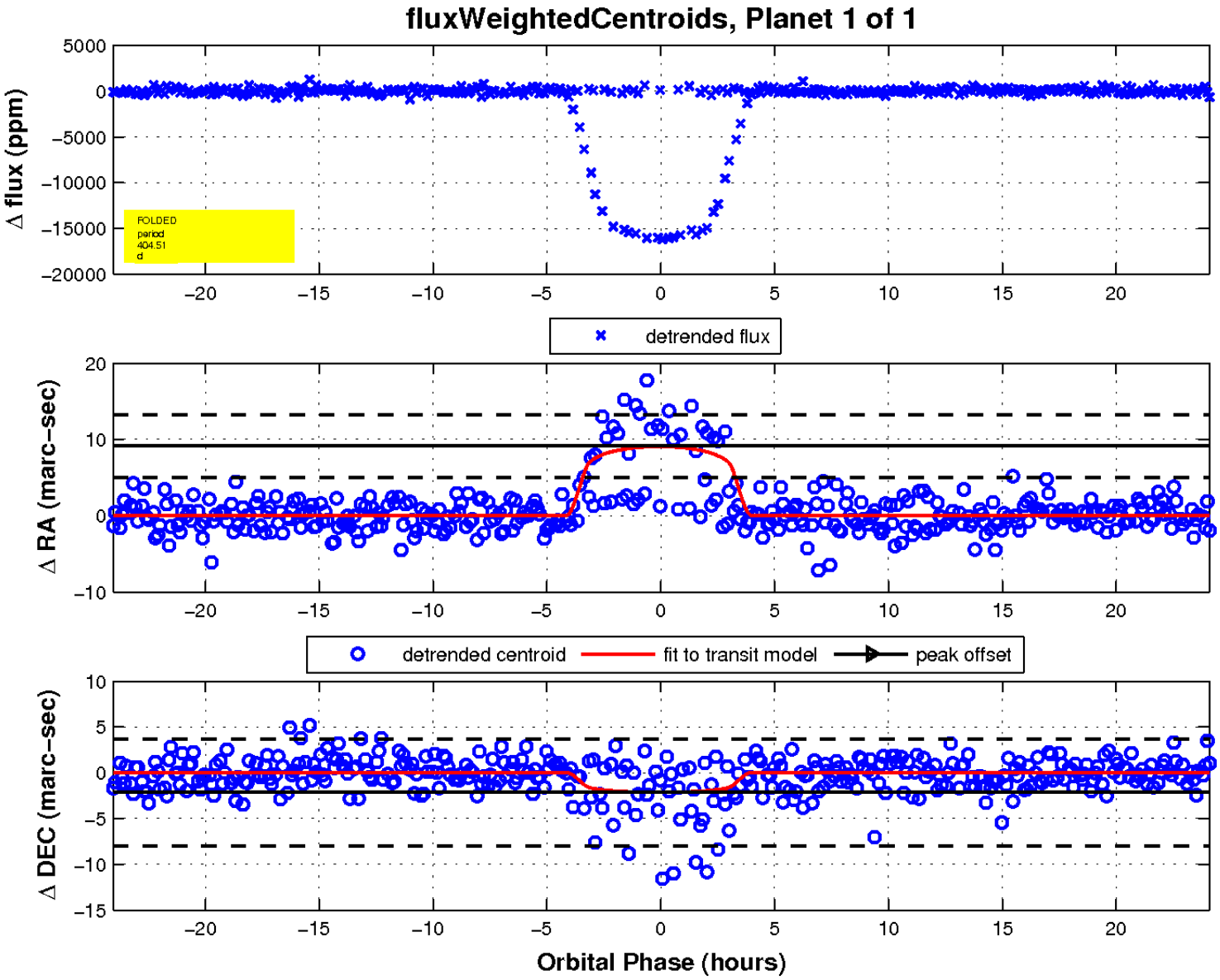
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



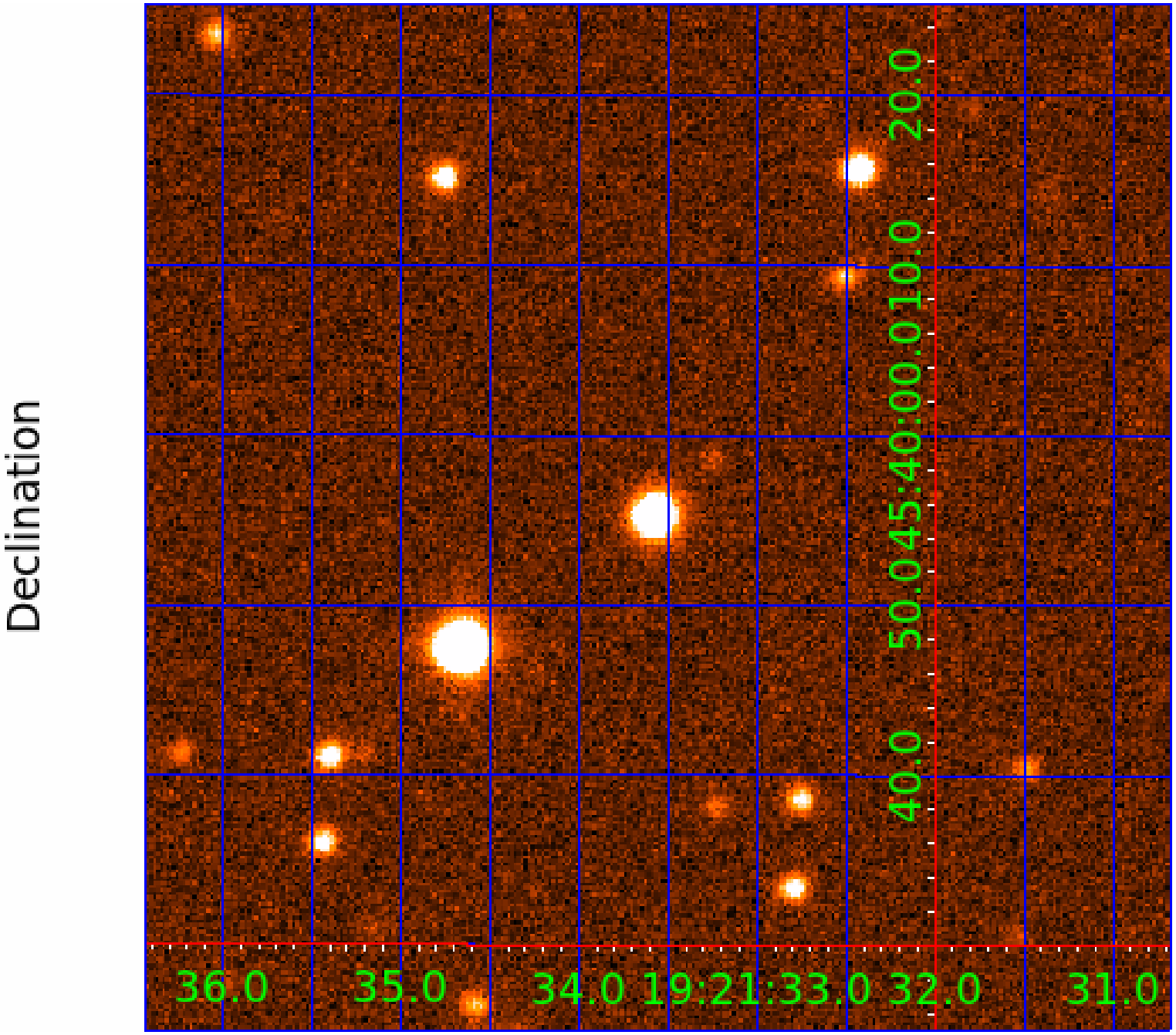
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image


Declination
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31.0