KIC 009183378

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 ($S_\oplus$)
009183378-01	OBS	4222.01	3.385575	133.972319	120.4	1.910	13.1	14.3	1.48	5718	1.92	1125.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009183378-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

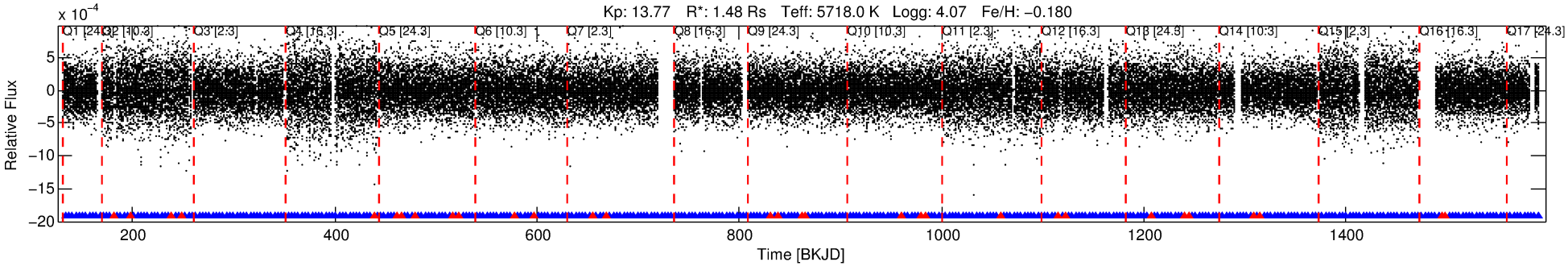
Ephemeris Match Information For 009183378-01

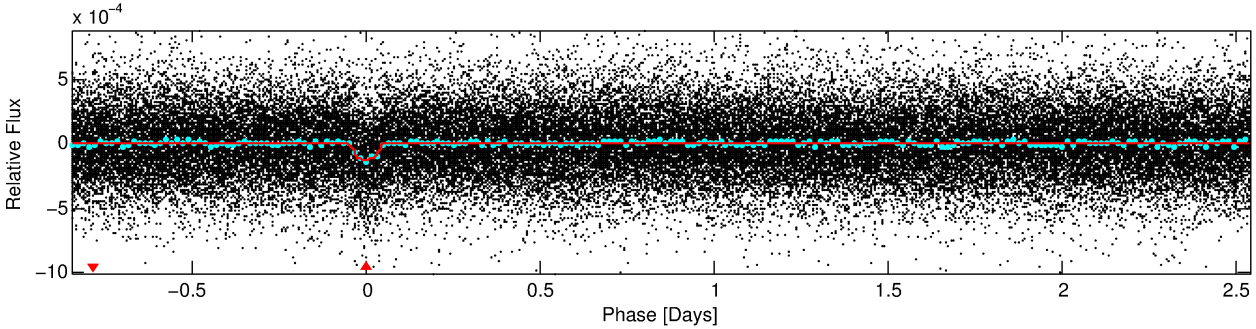
No Significant Match Found

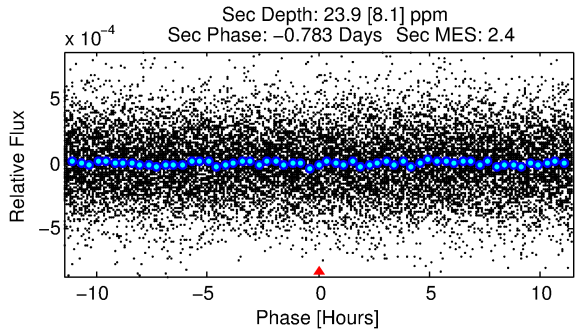
DV One-Page Summary

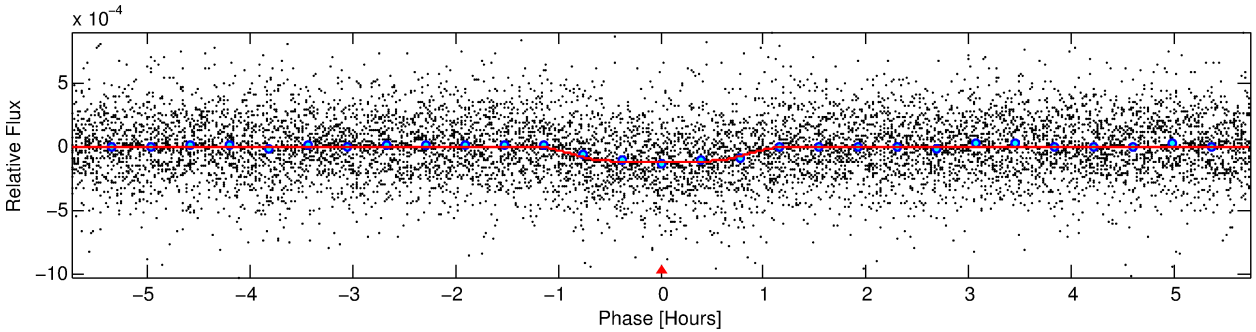
KIC: 9183378 Candidate: 1 of 1 Period: 3.386 d
KOI: K04222.01 Corr: 0.970

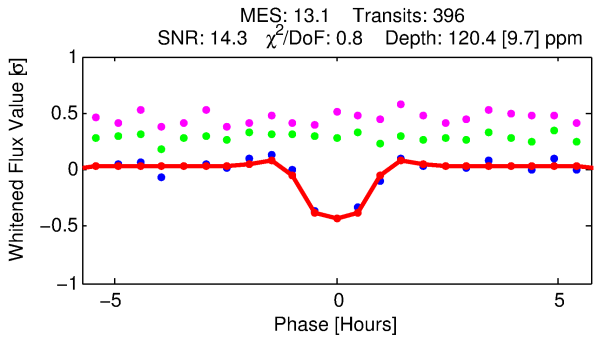
Kp: 13.77 R*: 1.48 Rs Teff: 5718.0 K Logg: 4.07 Fe/H: −0.180

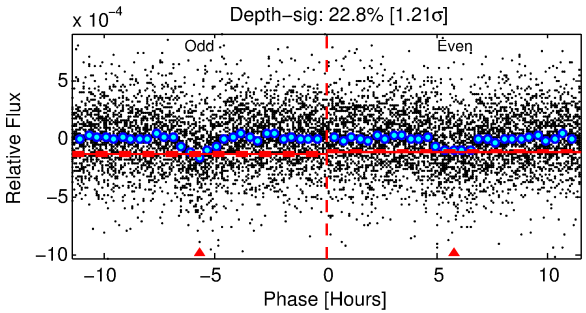


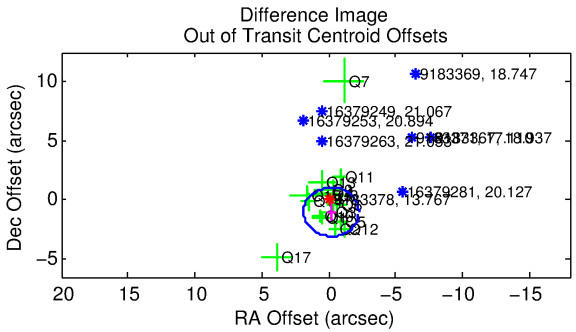












DV Fit Results:

Period = 3.38558 [0.00001] d
Epoch = 133.9723 [0.0020] BKJD
Rp/R* = 0.0119 [0.0063]
a/R* = 6.49 [16.13]
b = 0.89 [0.58]

Seff = 1125.13 [793.73]
Teq = 1477 [260] K
Rp = 1.92 [1.26] Re
a = 0.0432 [0.0179] AU

Ag = 6.65 [8.70] [0.65σ]
Teffp = 3666 [1022] K [2.08σ]

DV Diagnostic Results:

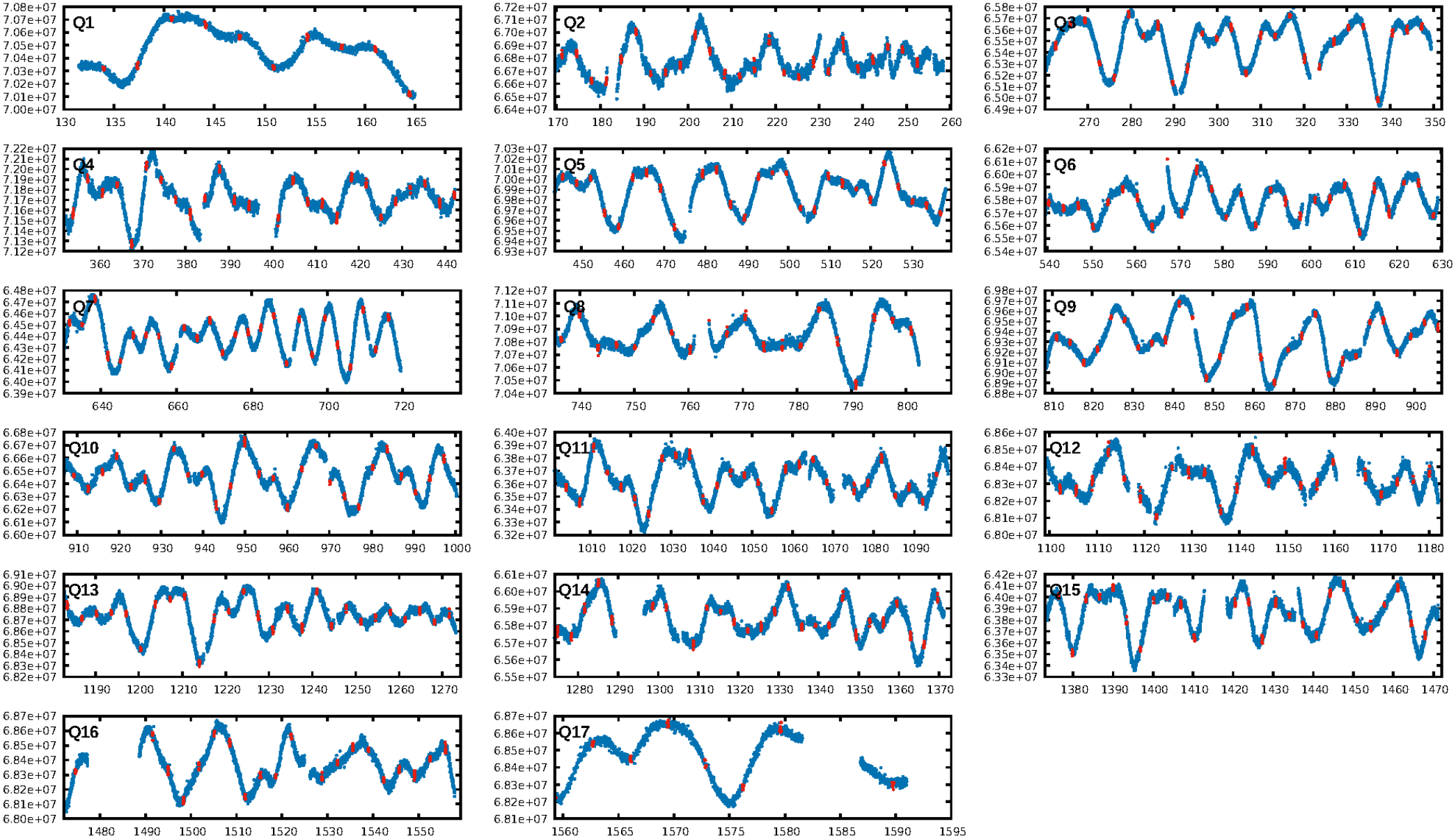
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 6.67e−38
RollingBand−fgt: 0.92 [347/378]
GhostDiagnostic−chr: −64.59

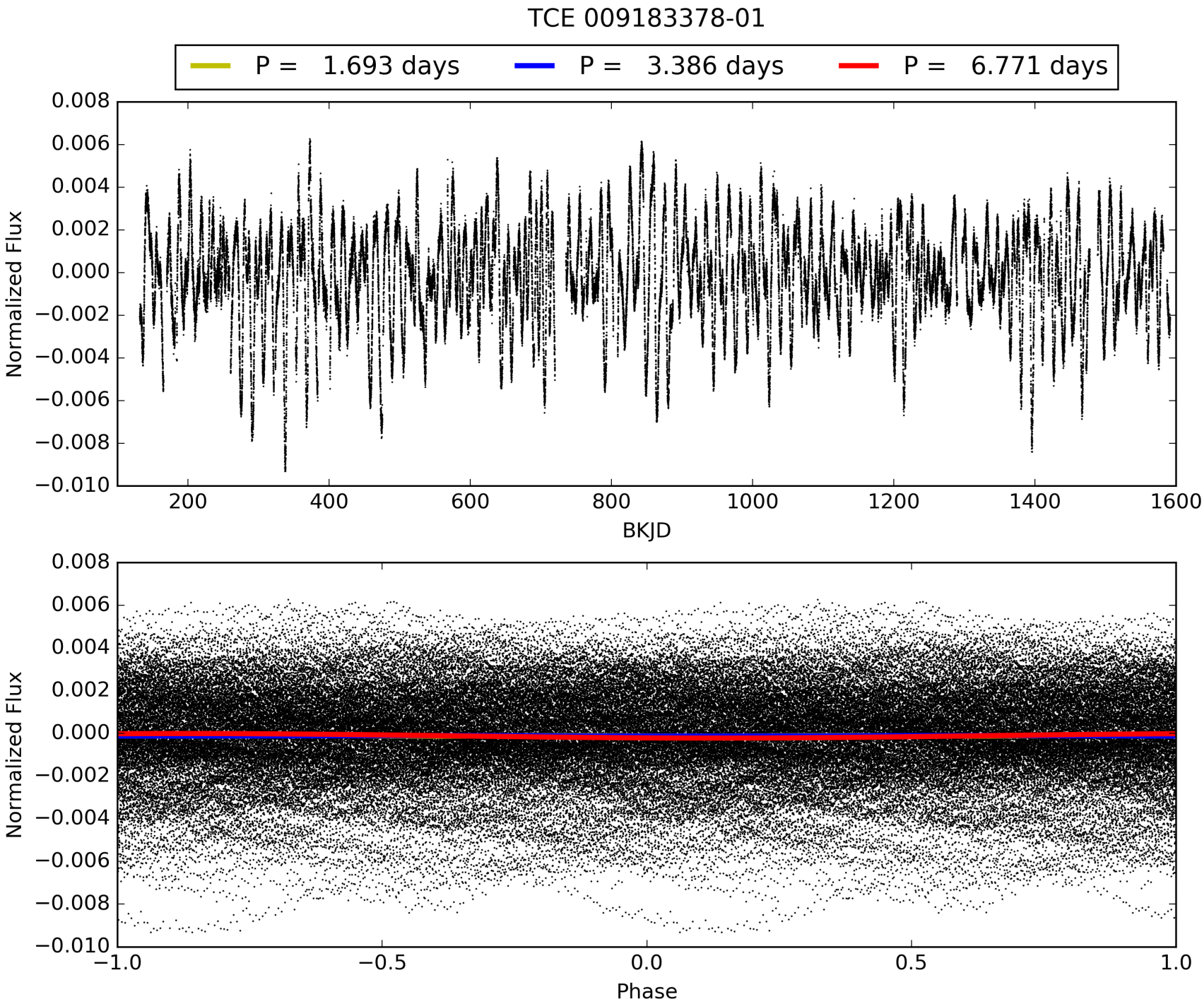
Centroid−sig: 0.0%
Centroid−so: 2.849 arcsec [3.72σ]
OotOffset−rm: 1.008 arcsec [1.46σ]
KicOffset−rm: 0.900 arcsec [1.14σ]
OotOffset−st: 4/4/3/5 [16]
KicOffset−st: 4/4/3/5 [16]
DiffImageQuality−fgm: 0.81 [13/16]
DiffImageOverlap−fno: 0.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 06:20:04 Z

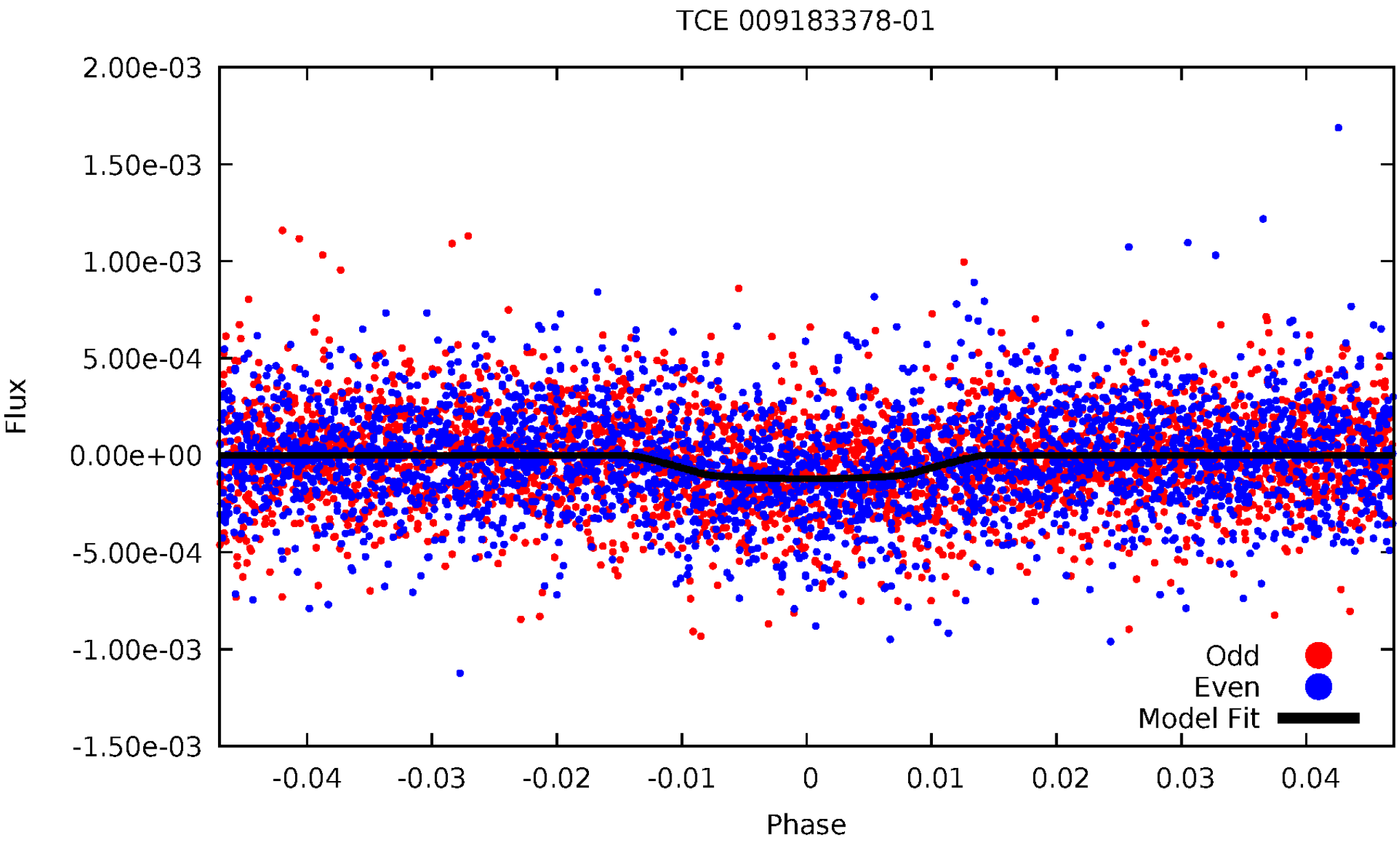
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009183378-01, PDC Light Curves

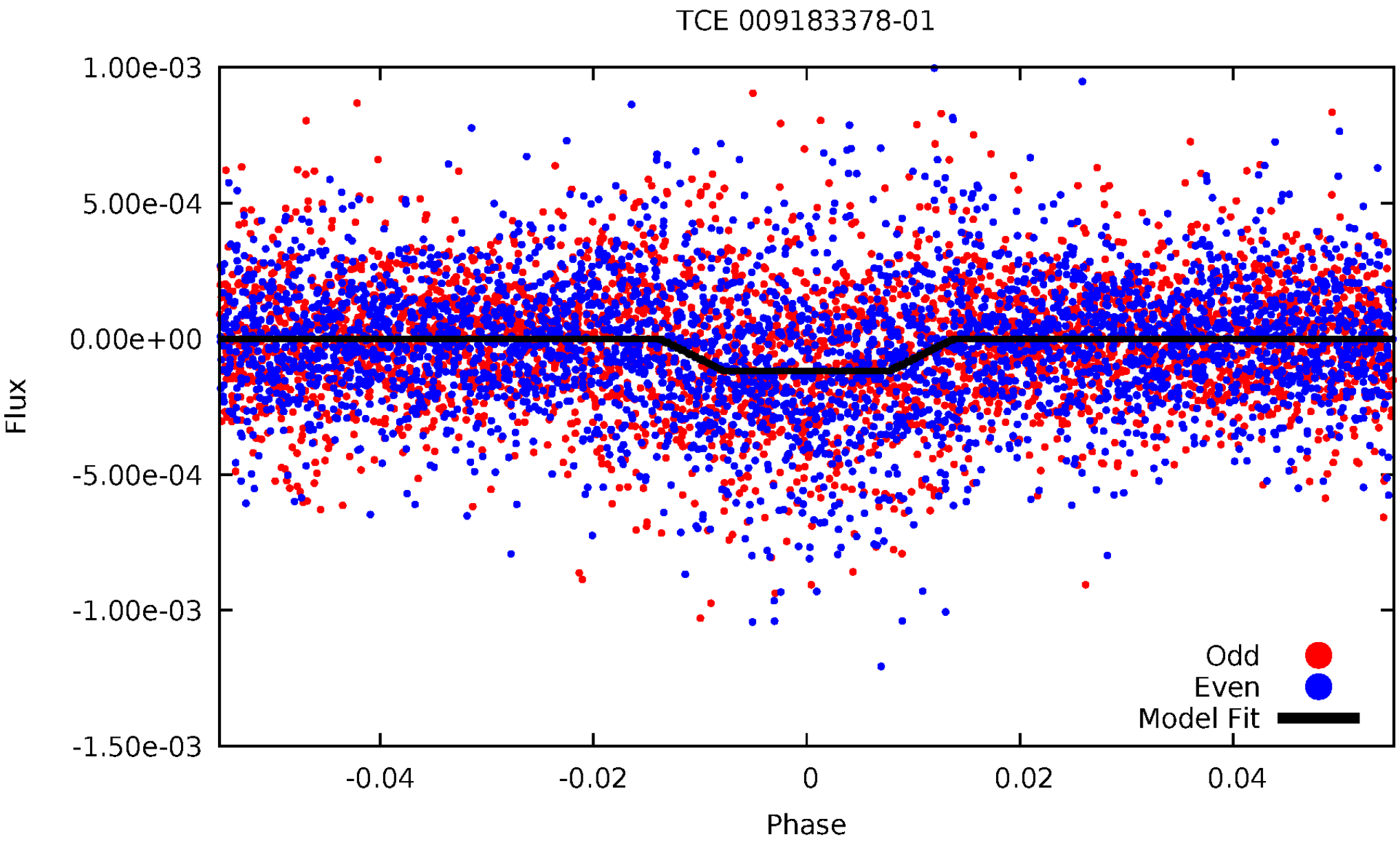



TCE 009183378-01
P = 1.693 days
P = 3.386 days
P = 6.771 days
Normalized Flux
BKJD
Normalized Flux
Phase

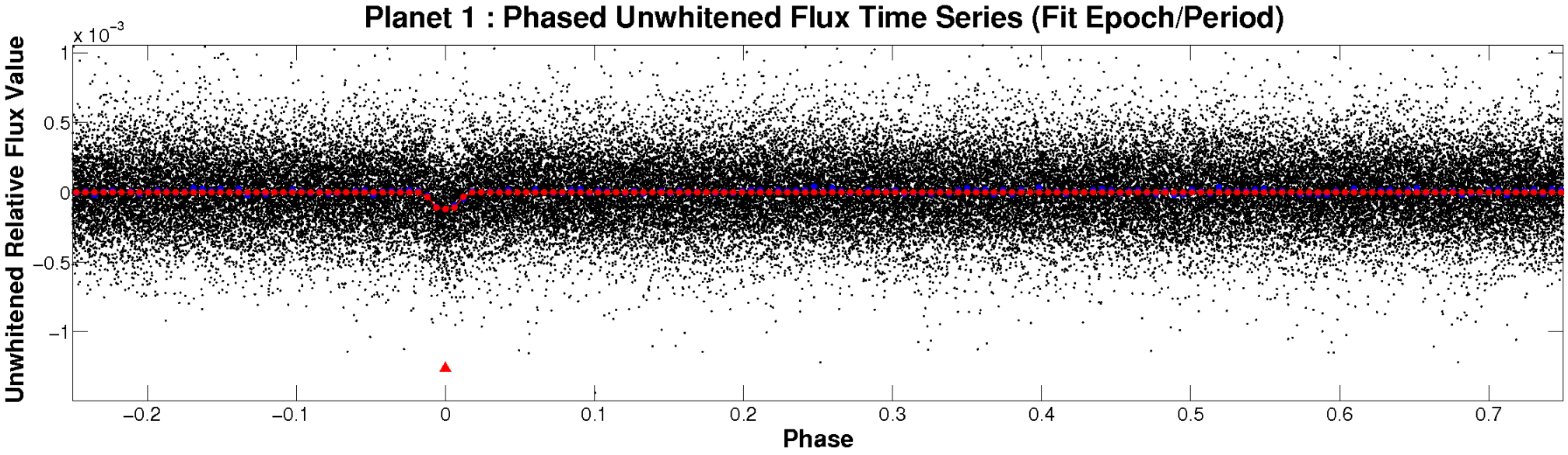
DV Odd/Even

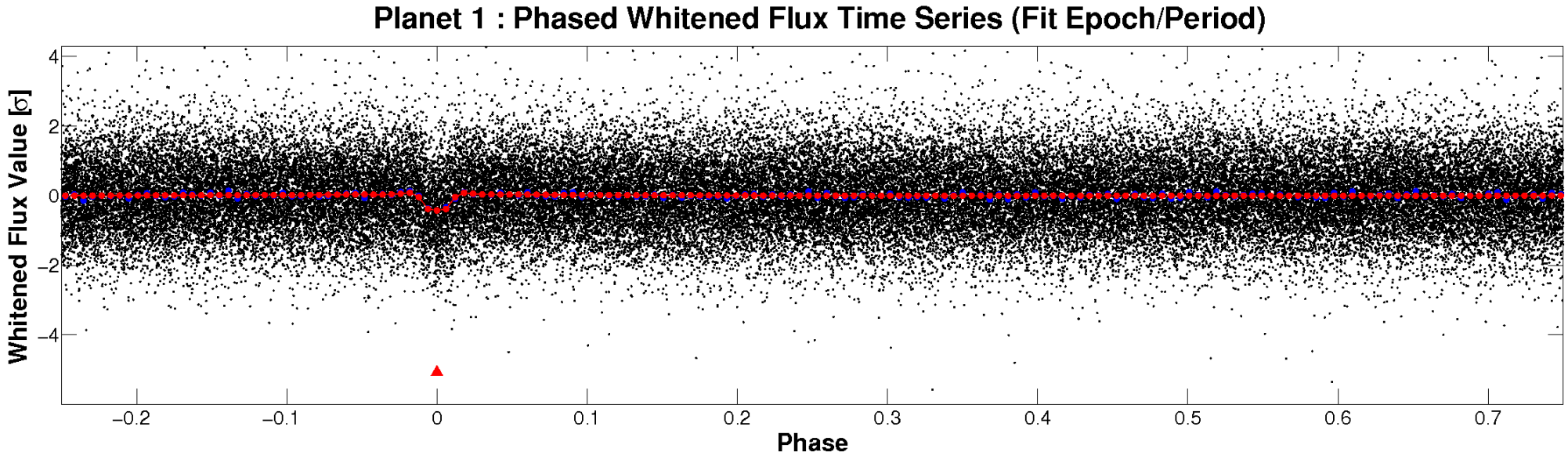

TCE 009183378-01
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.04
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
0.04
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009183378-01
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.04
-0.02
0
0.02
0.04
Phase
Odd
Even
Model Fit

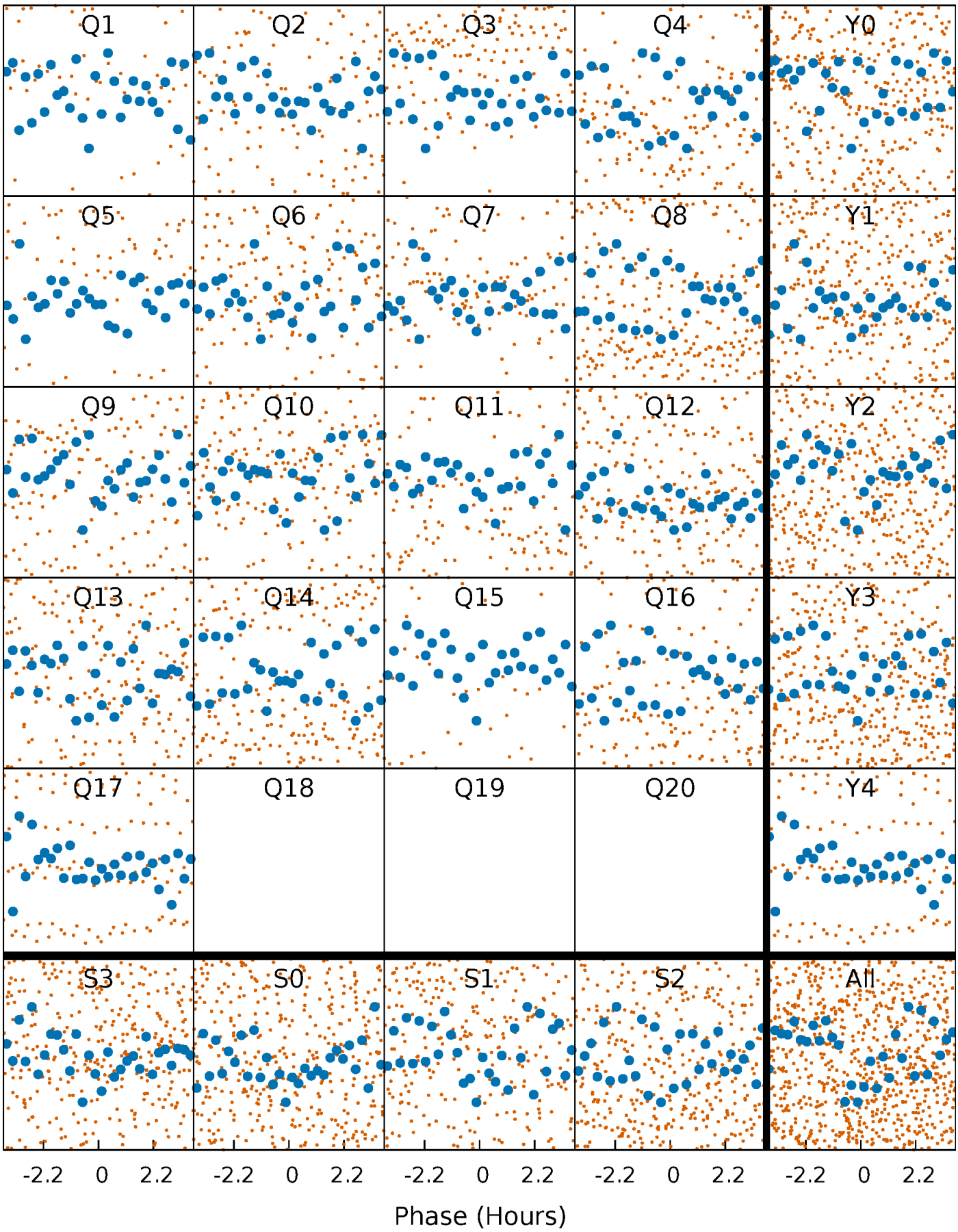
Non-Whitened Vs. Whitened Light Curve





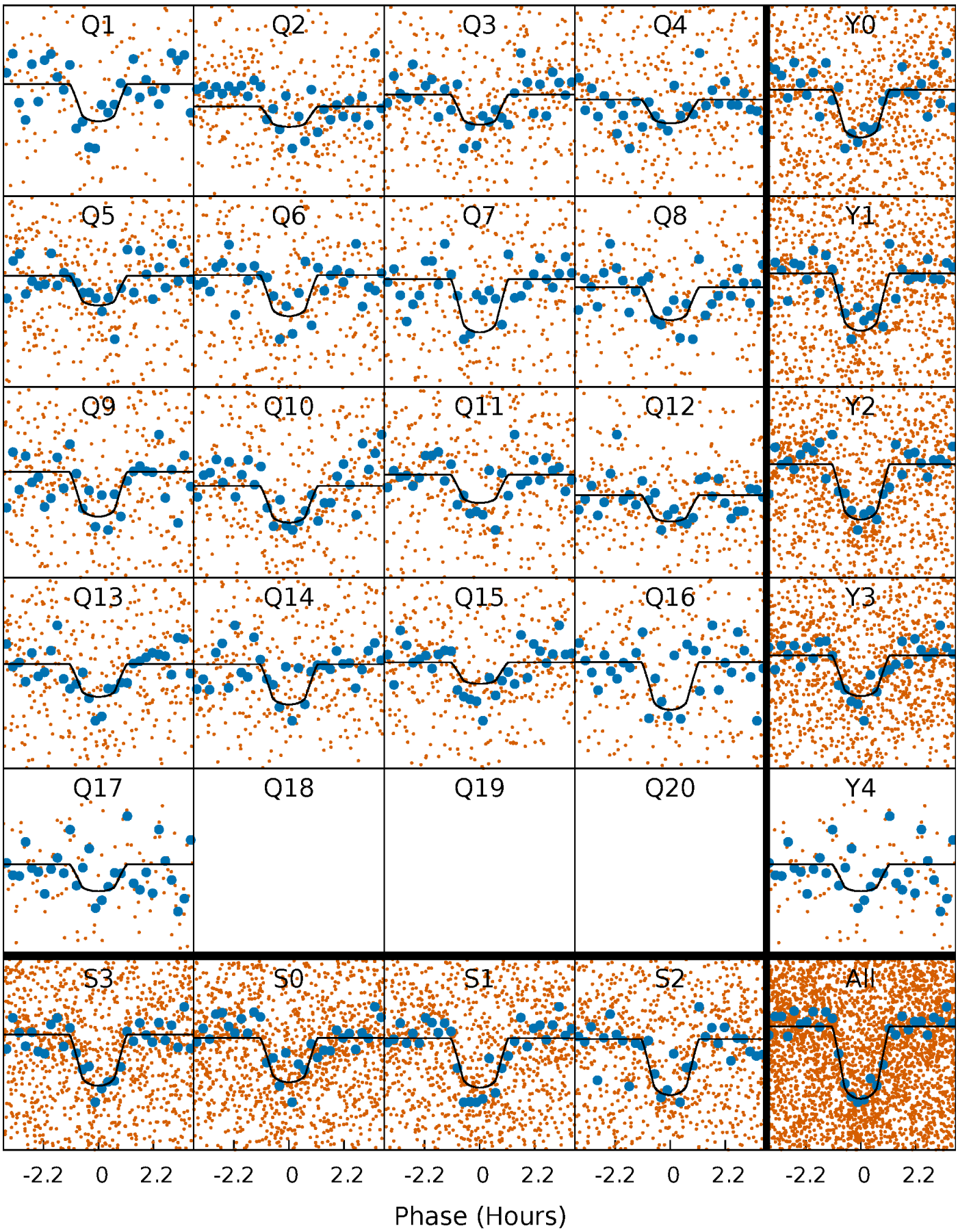
PDC Quarter-Phased Transit Curves

TCE 009183378-01 P= 3.385575 Days T_0=133.972319 (BKJD)



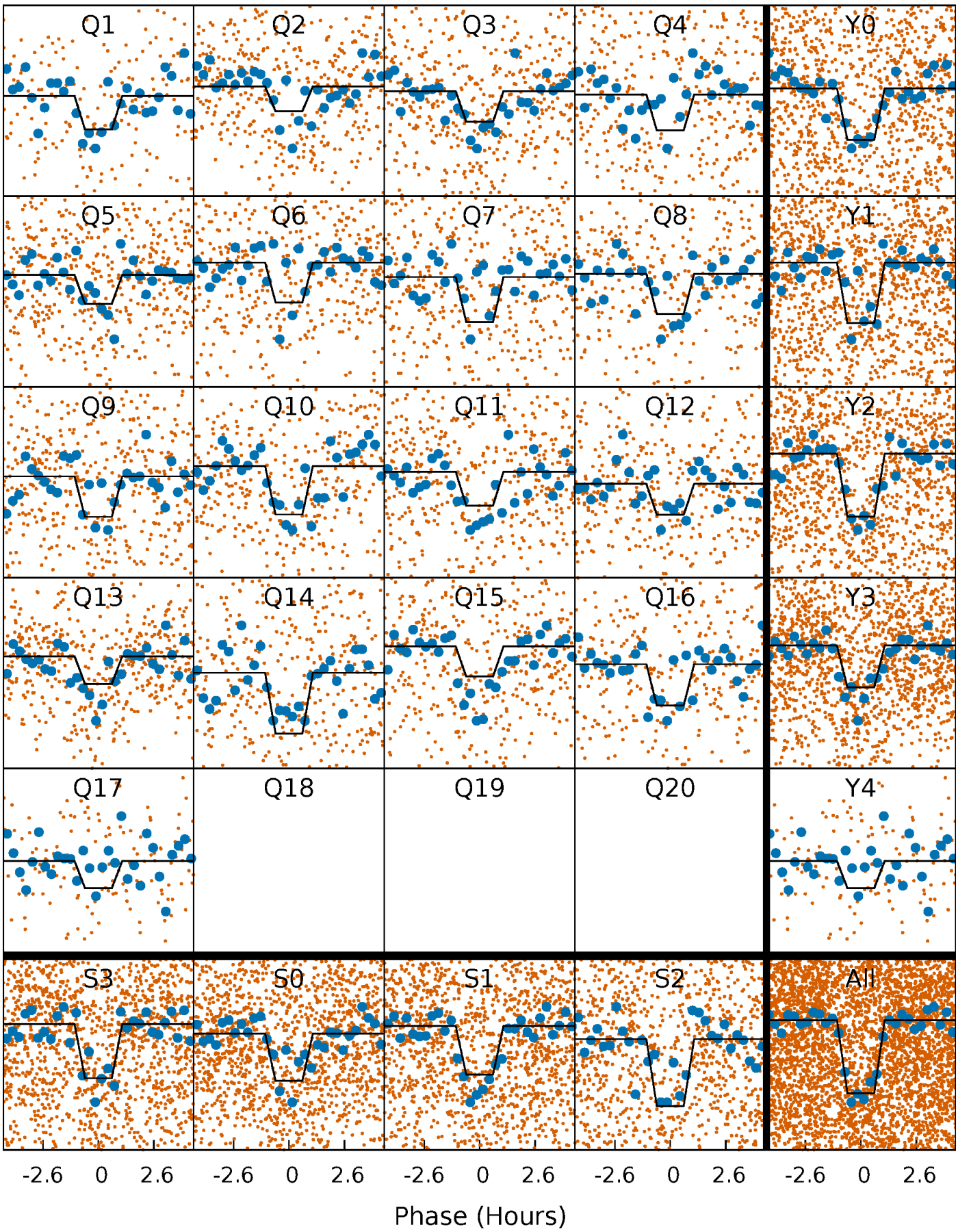
DV Quarter-Phased Transit Curves

TCE 009183378-01 P= 3.385575 Days T_0=133.972319 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

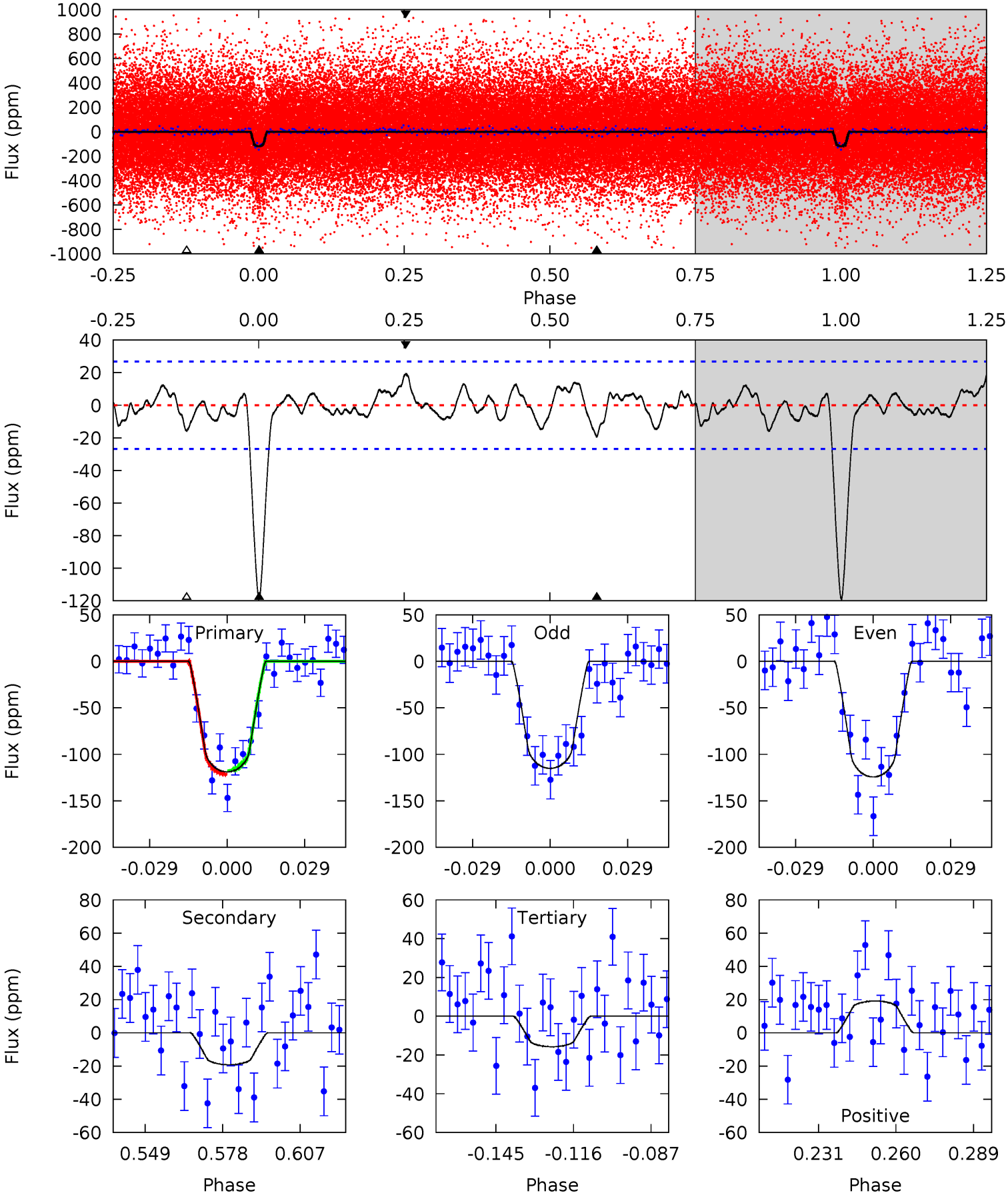
TCE 009183378-01 P= 3.385593 Days T_0=133.970796 (BKJD)



DV Model-Shift Uniqueness Test

009183378-01, P = 3.385575 Days, E = 130.586744 Days

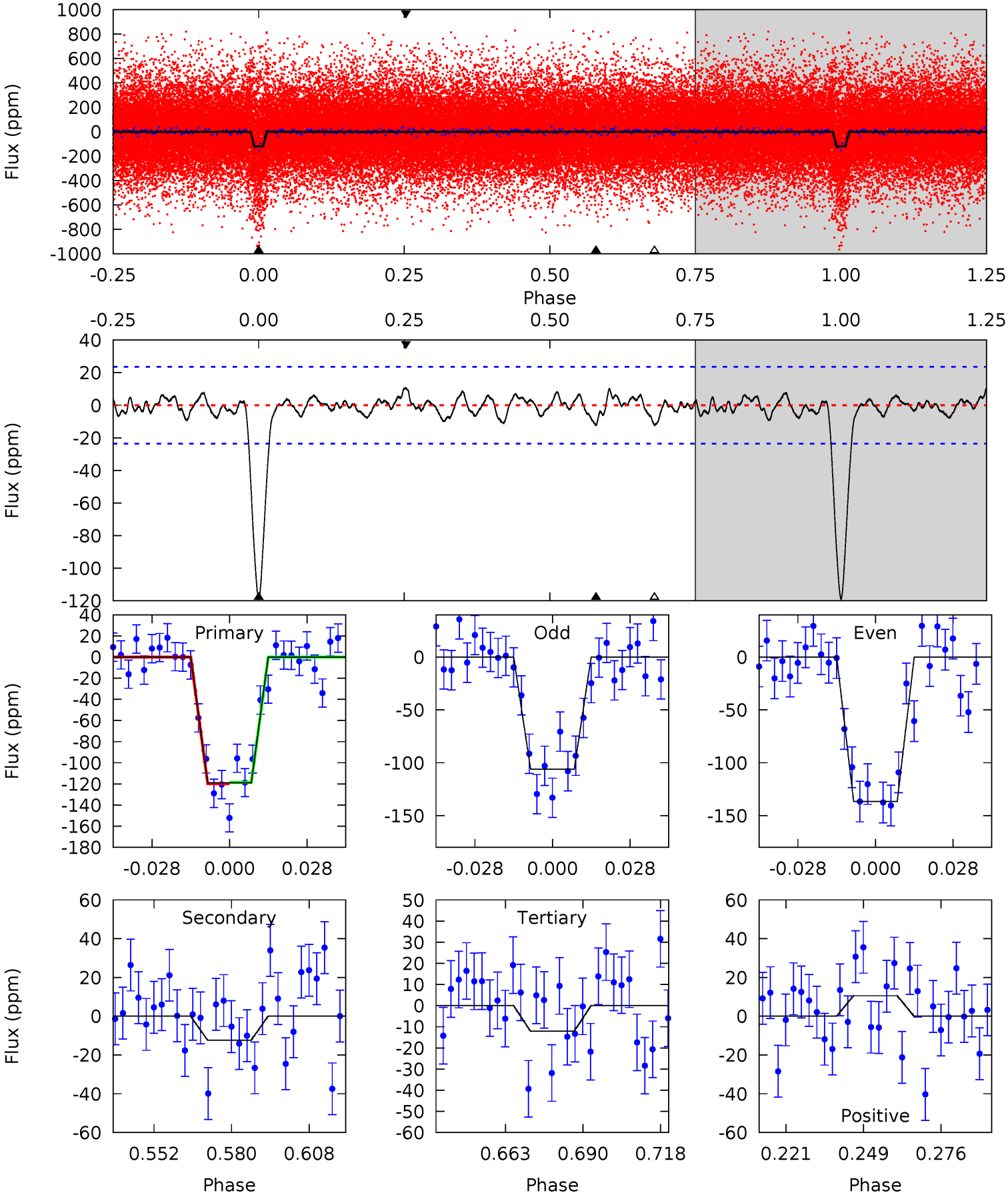
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	3.45	2.83	3.44	4.82	2.18	1.24	18.5	17.9	0.62	0.01	0.83	0.99	0.14	0.35



Alt Model-Shift Uniqueness Test

009183378-01, P = 3.385593 Days, E = 130.585203 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.4	2.53	2.49	2.16	4.83	2.20	0.88	21.9	22.2	0.04	0.37	3.12	1.10	0.08	0.13



Stellar Parameters For KIC 009183378

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	M($M_\odot$)	$p_\star$ (g·cm^{-3})
	5718^{+169}_{-152}	$4.069^{+0.420}_{-0.168}$	$-0.180^{+0.300}_{-0.250}$	$1.480^{+0.386}_{-0.579}$	$0.936^{+0.121}_{-0.096}$	$0.407^{+1.301}_{-0.192}$
	+3%/-3%	+10%/-4%	+167%/-139%	+26%/-39%	+13%/-10%	+320%/-47%
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 009183378-01 / KOI 4222.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19±6	$1.88^{+1.11}_{-0.94}$	2044^{+152}_{-217}	3729^{+1116}_{-518}	$5.498^{+17.170}_{-3.406}$
Alt.	-12±5	$1.65^{+1.08}_{-0.86}$	2037^{+168}_{-211}	3593^{+1146}_{-571}	$4.563^{+16.210}_{-3.058}$

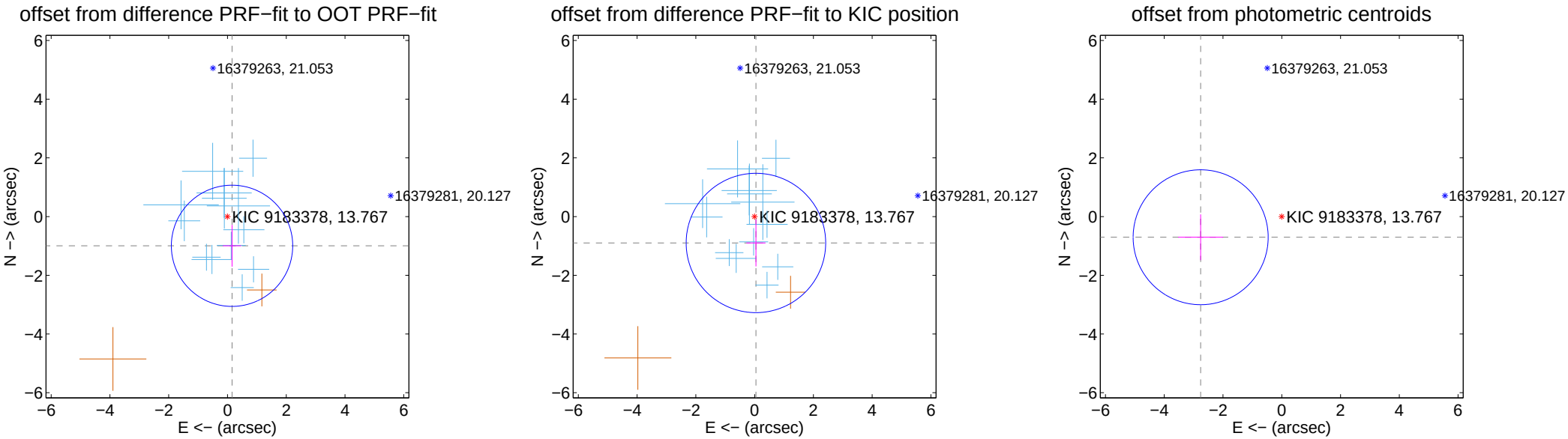
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

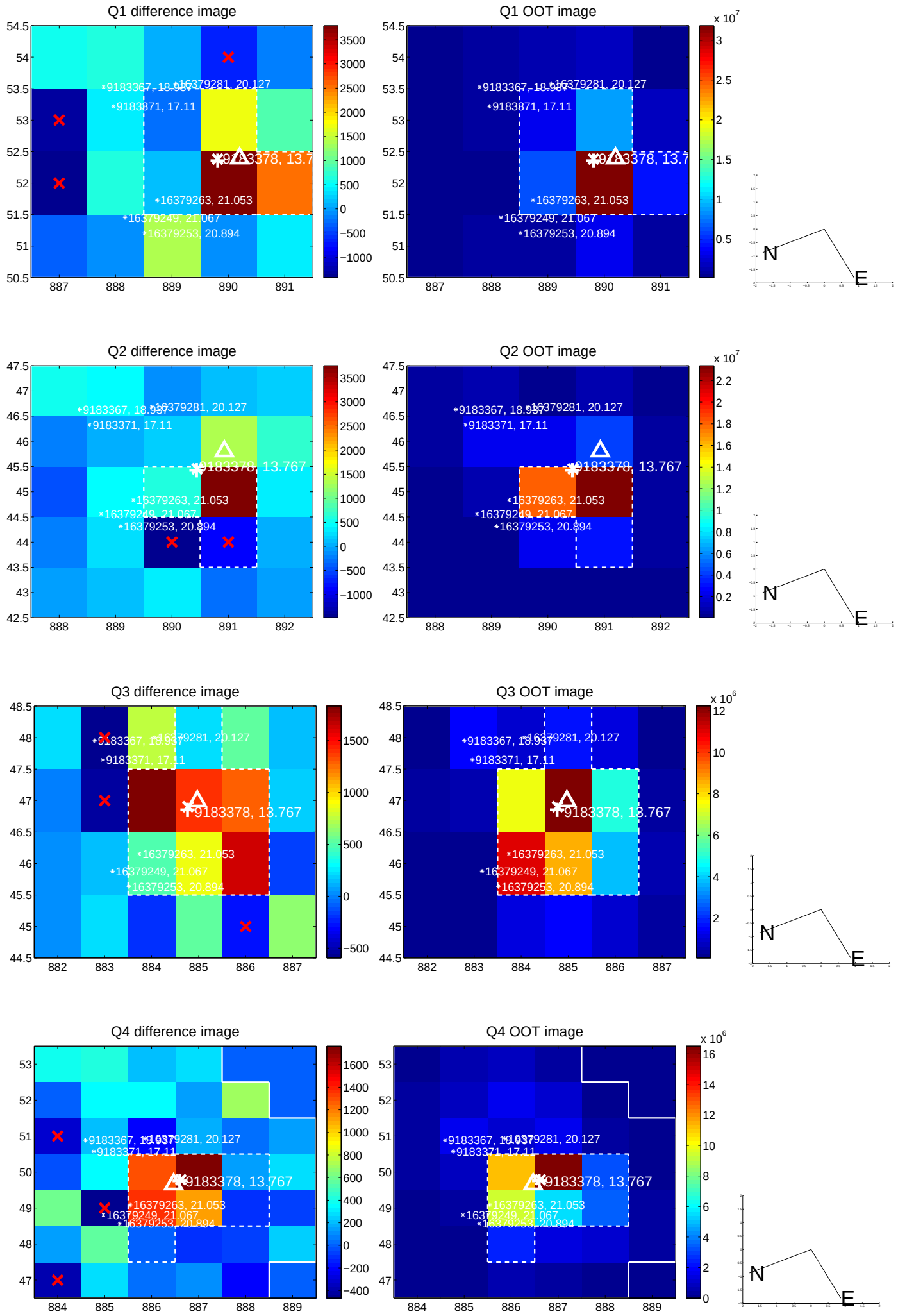
Supplemental centroid analysis for 009183378-01. Kepler magnitude: 13.77. Transit SNR 14.30
There are 13 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.008 ± 0.688	1.46	-0.155 ± 0.312	-0.996 ± 0.711
PRF-fit source offset from KIC position	0.900 ± 0.791	1.14	-0.044 ± 0.325	-0.899 ± 0.799
photometric centroid source offset	2.85 ± 0.77	3.72	2.76 ± 0.77	-0.70 ± 0.78

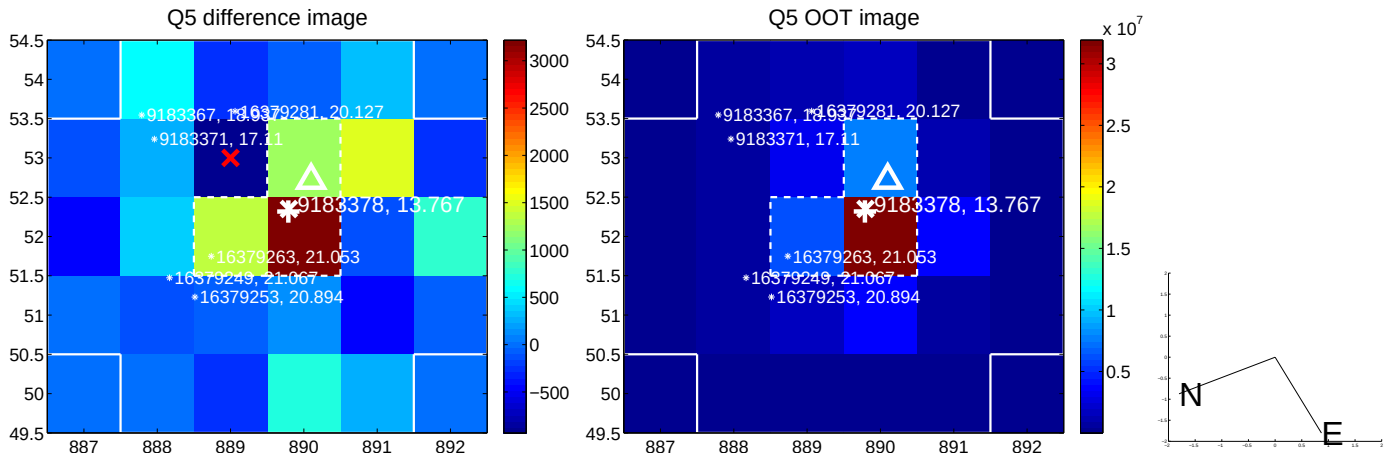


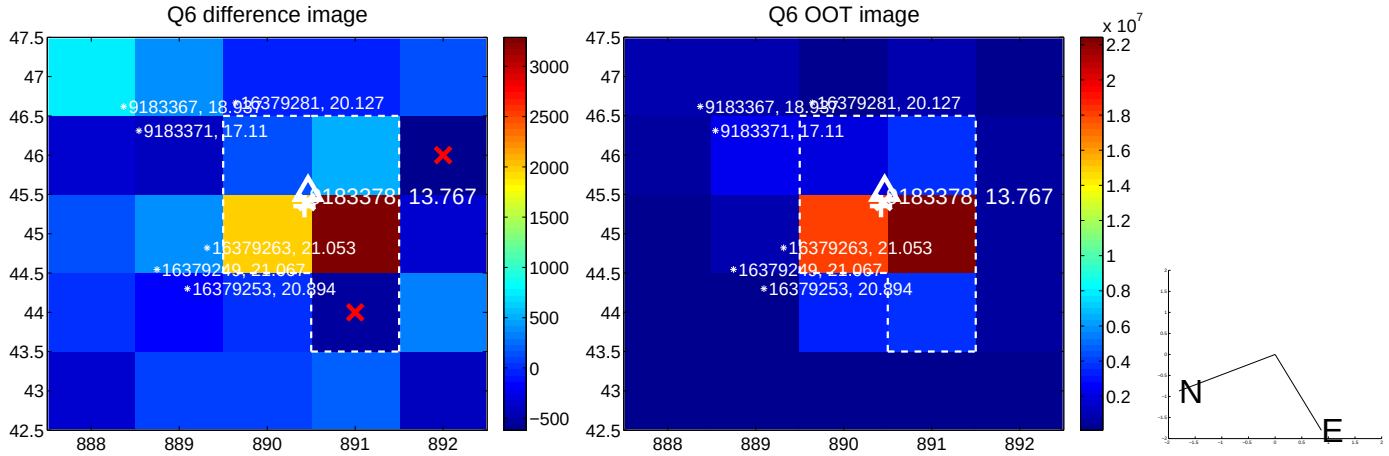
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

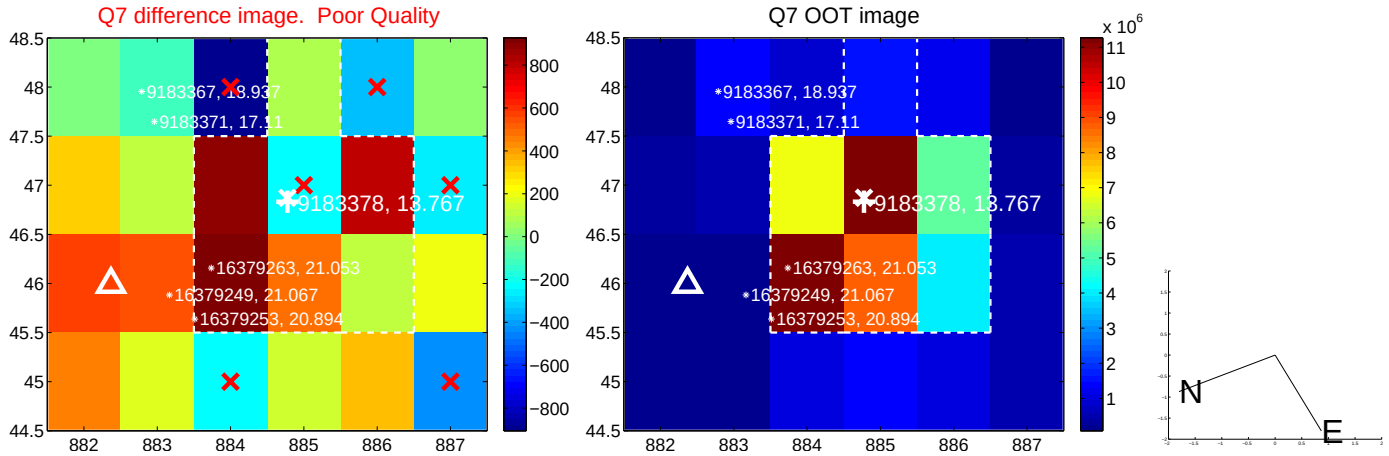
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

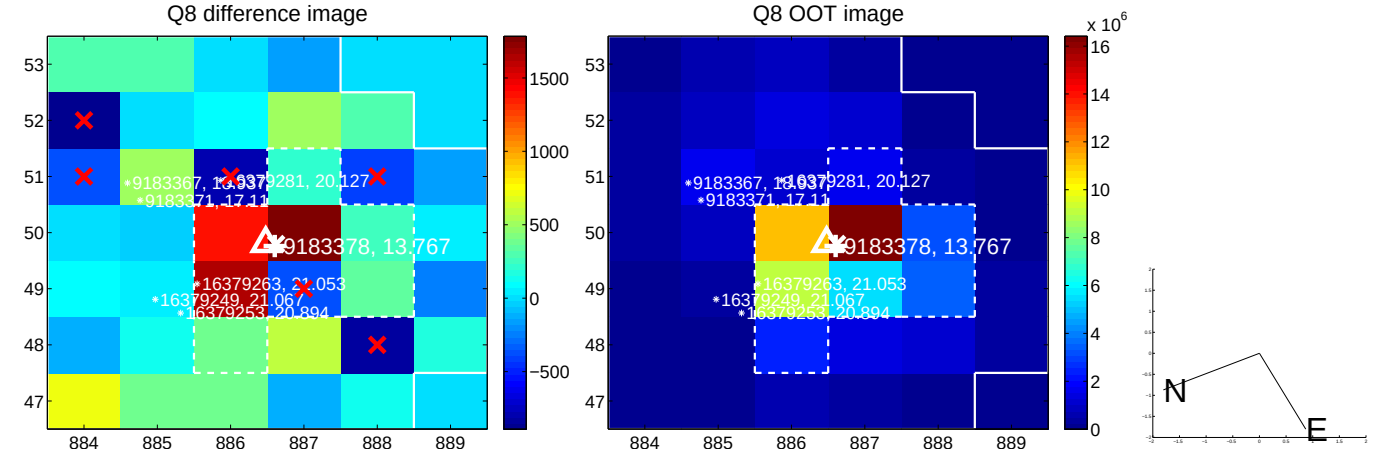


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

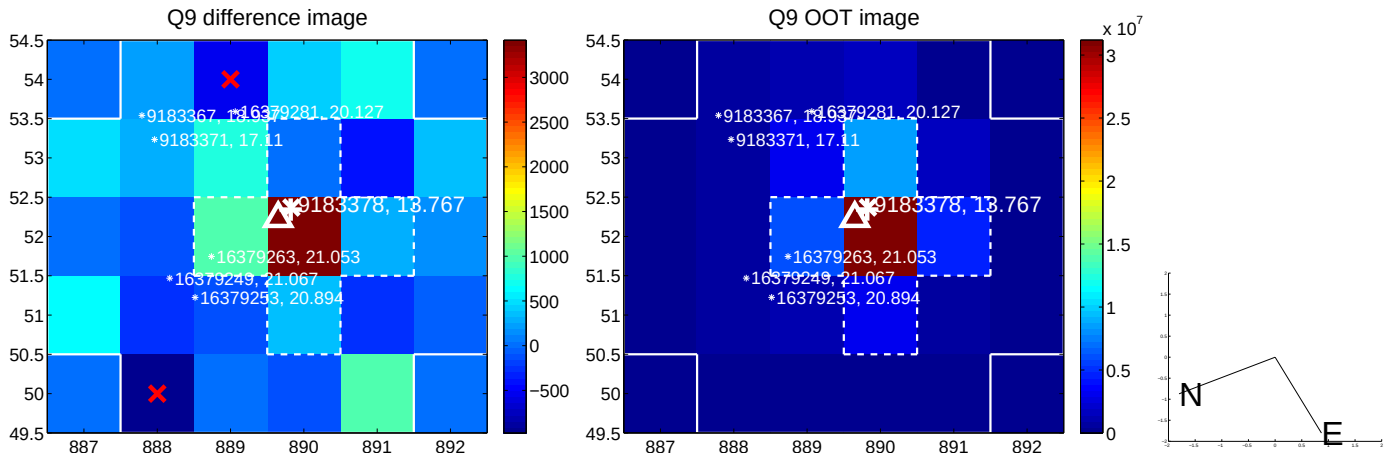


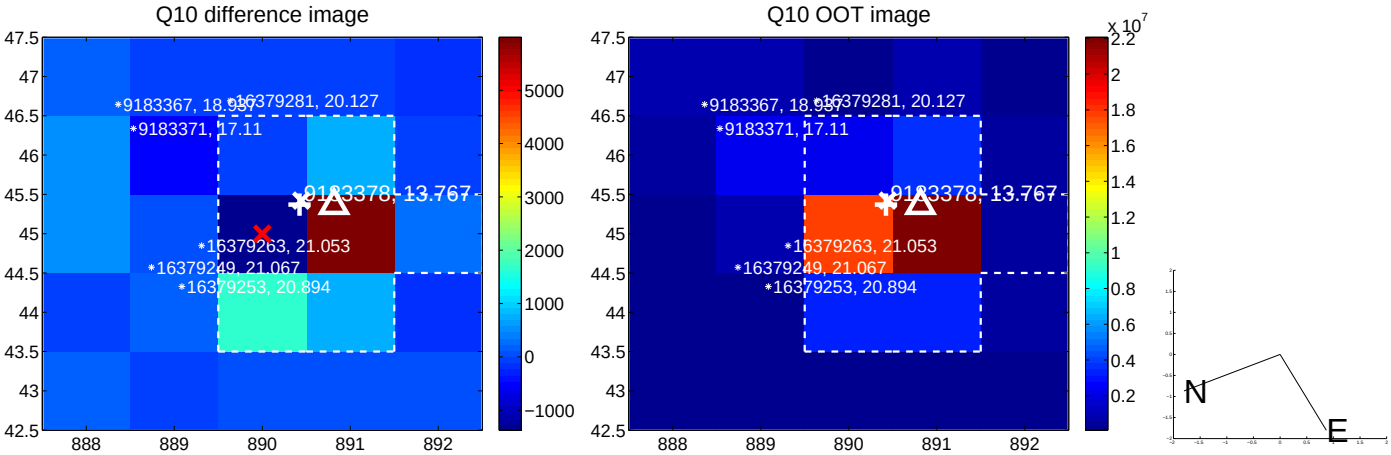


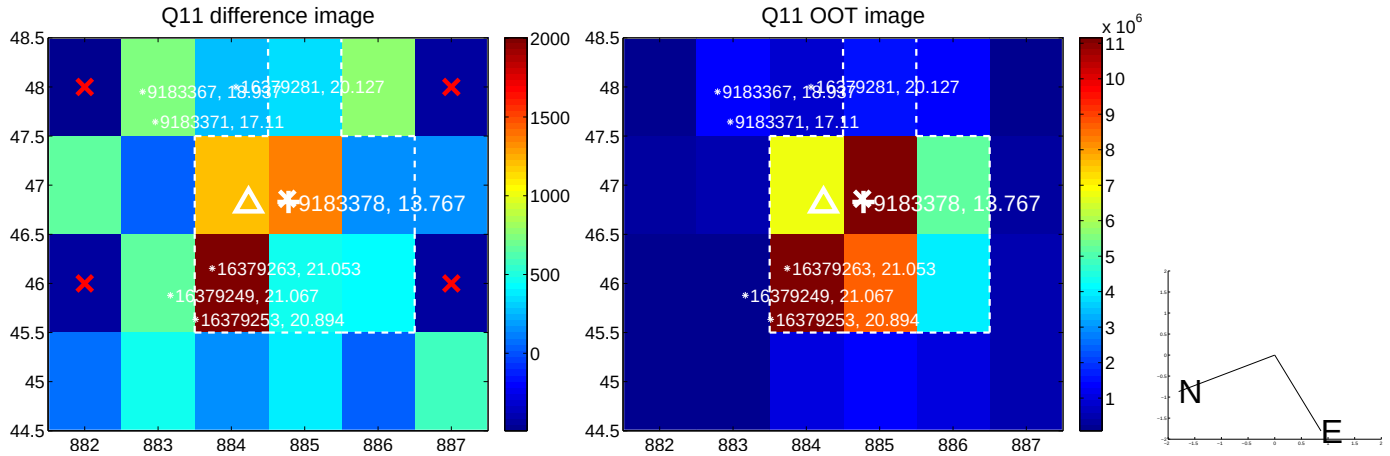


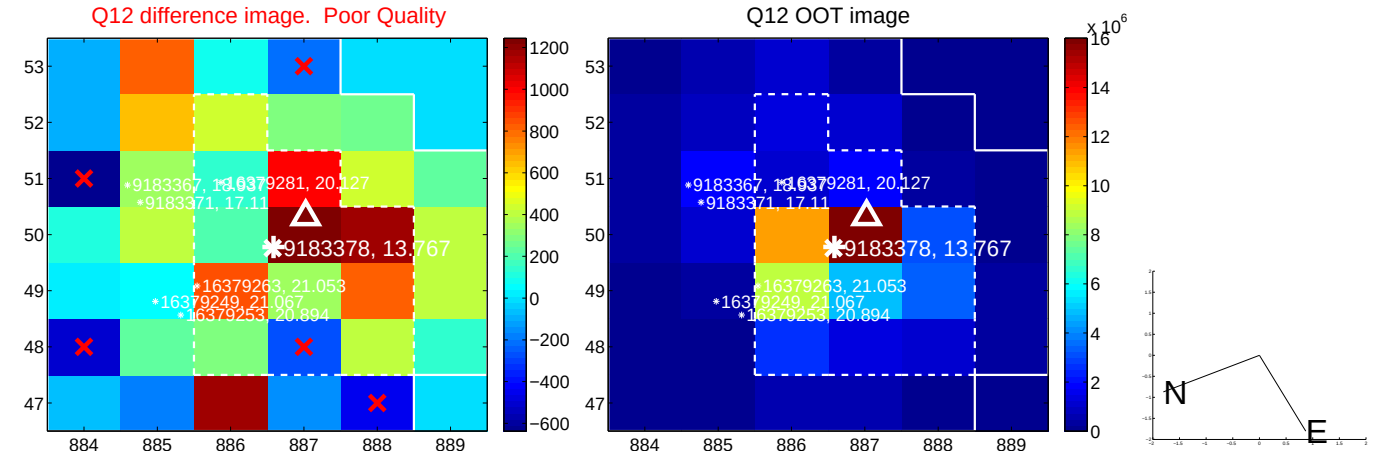


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

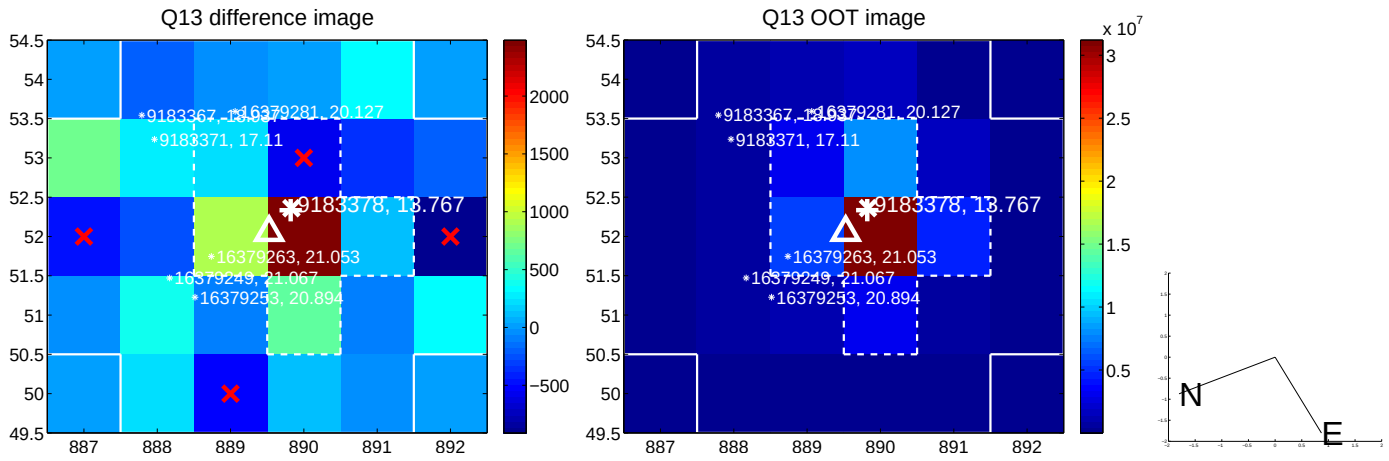


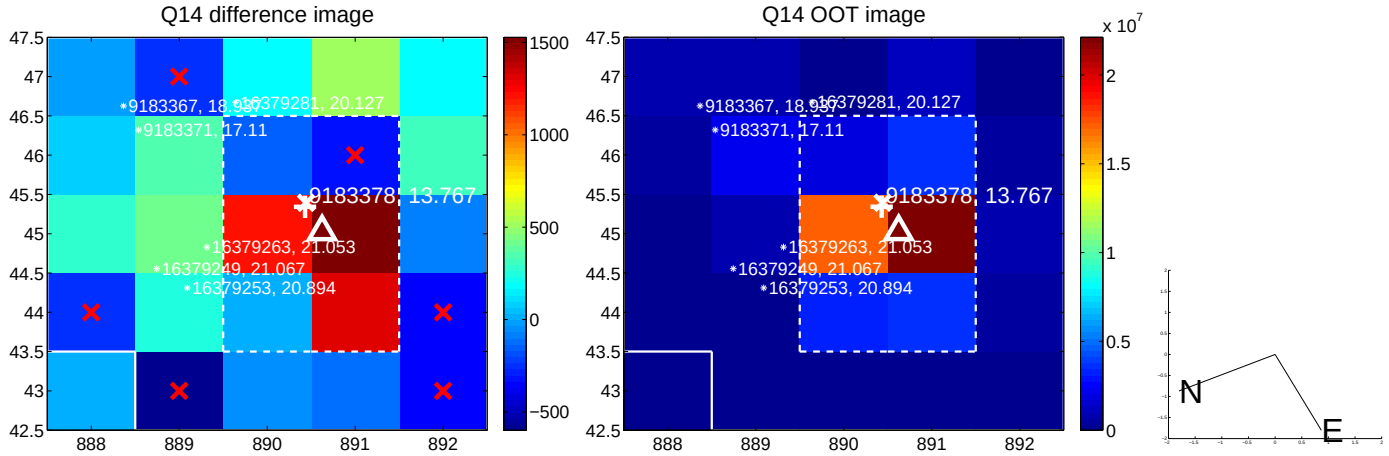


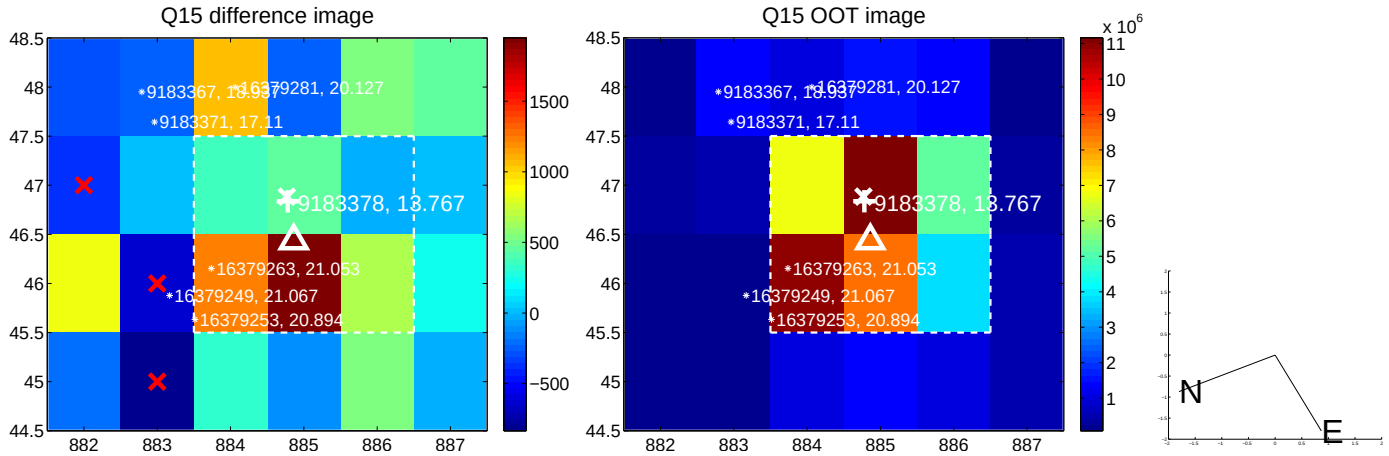


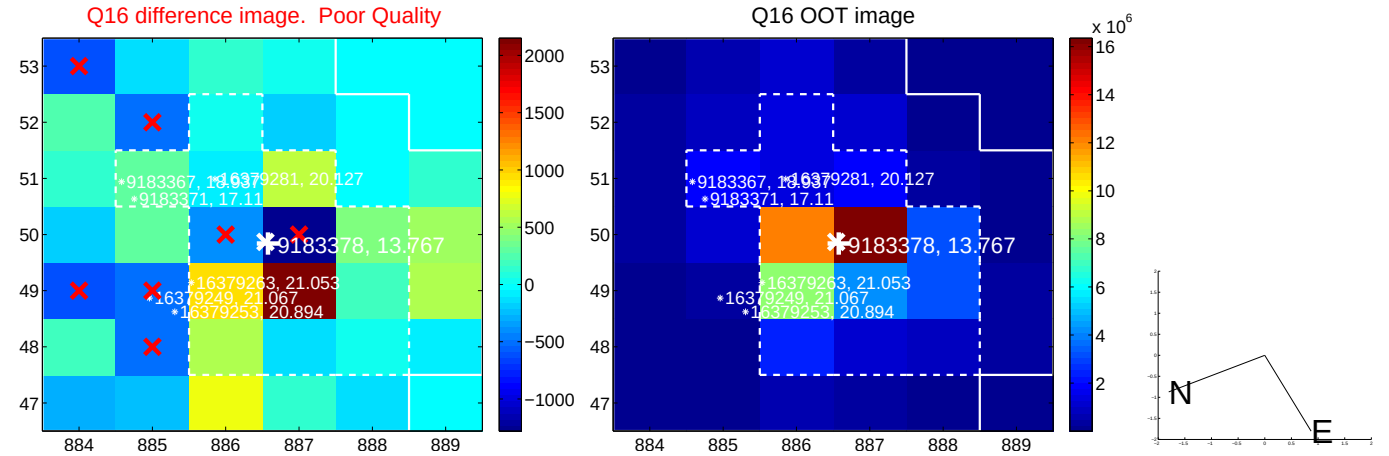


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

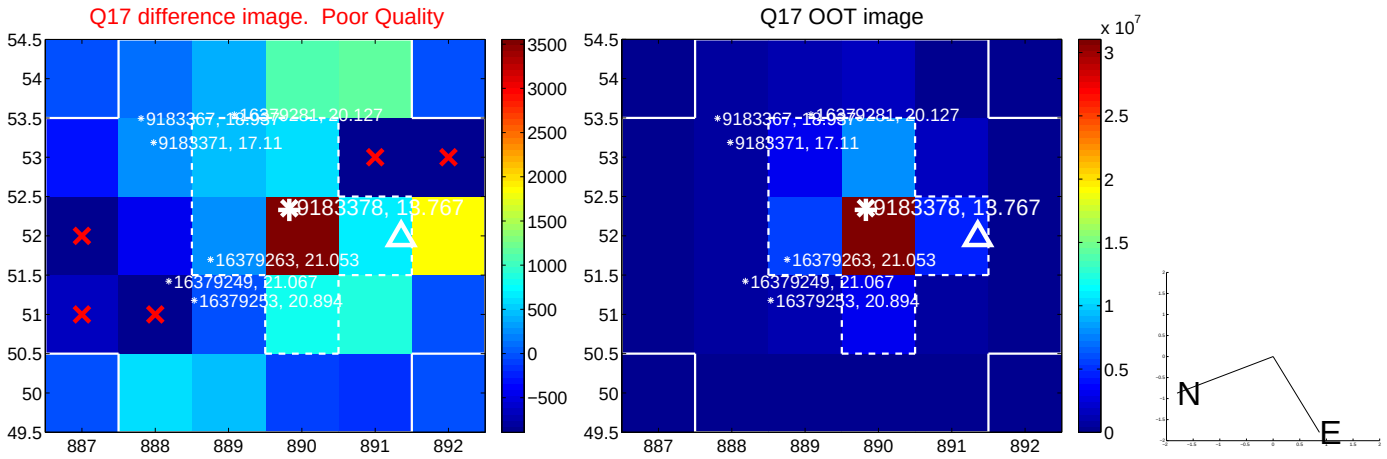


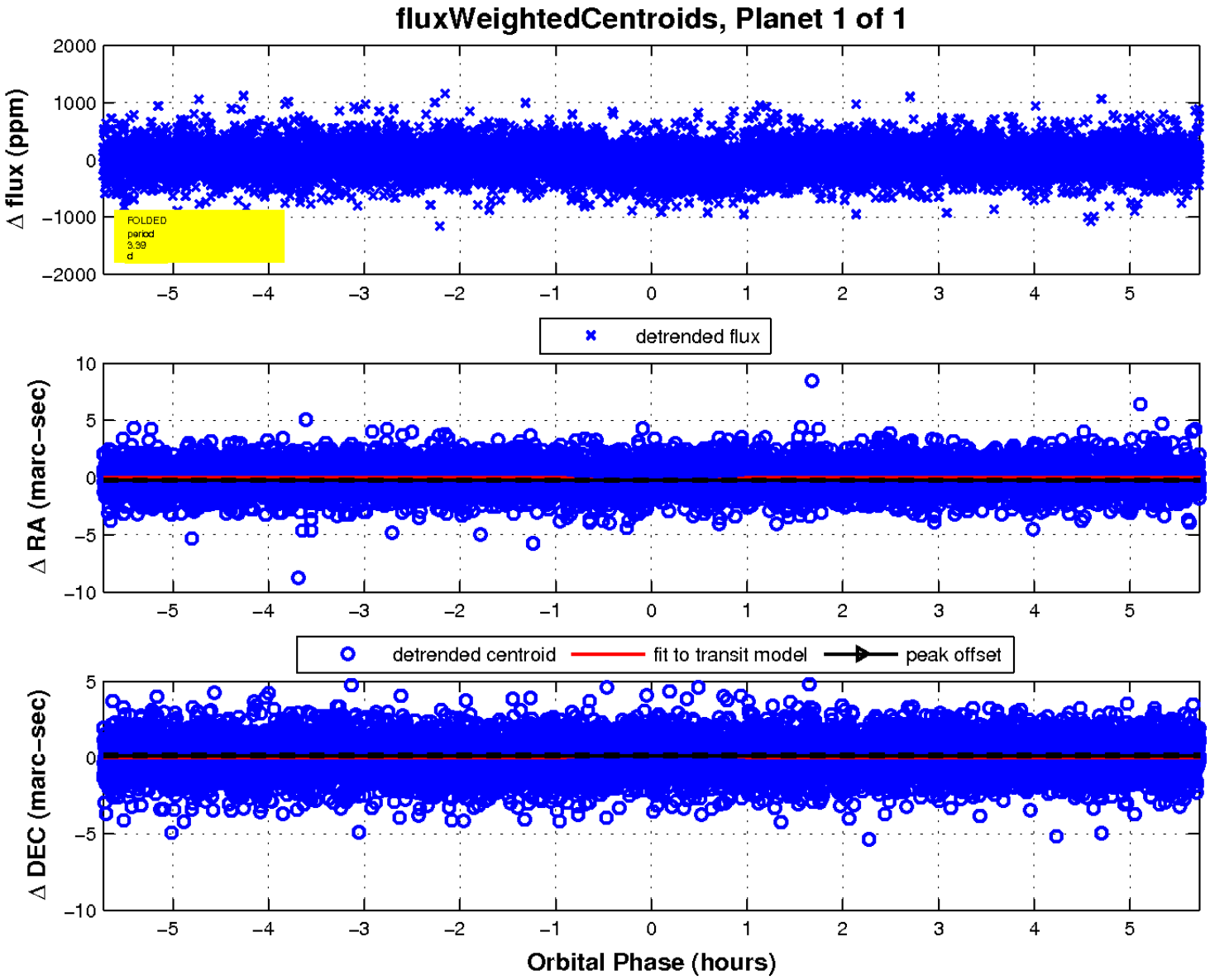
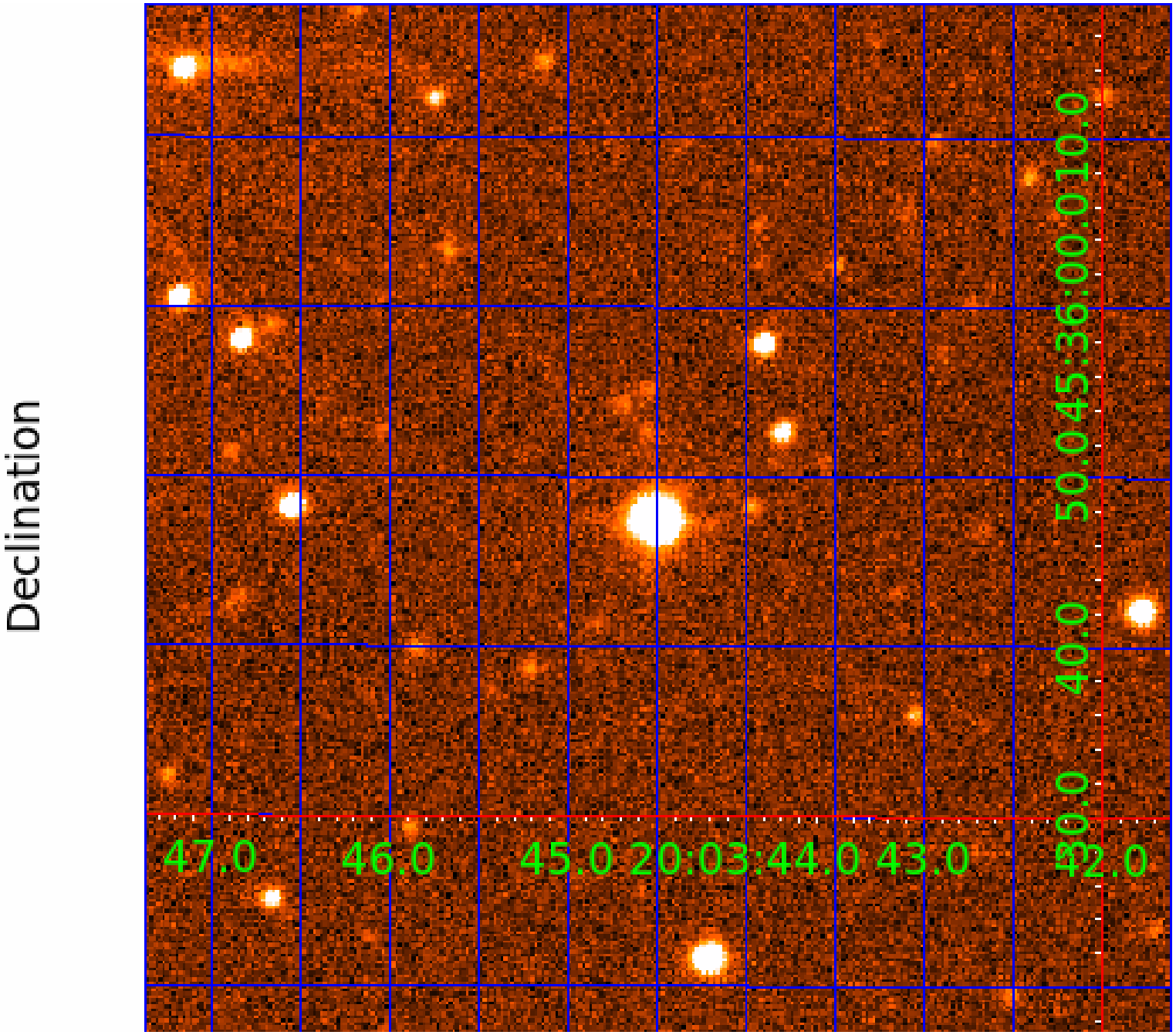






white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image