KIC 009166386

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 ($S_\oplus$)
009166386-01	OBS	No	9.305648	138.914816	438.0	25.645	15.2	22.2	1.84	6559	7.45	609.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009166386-01	OBS	FP	0.00	1	0	0	0	LPP_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.

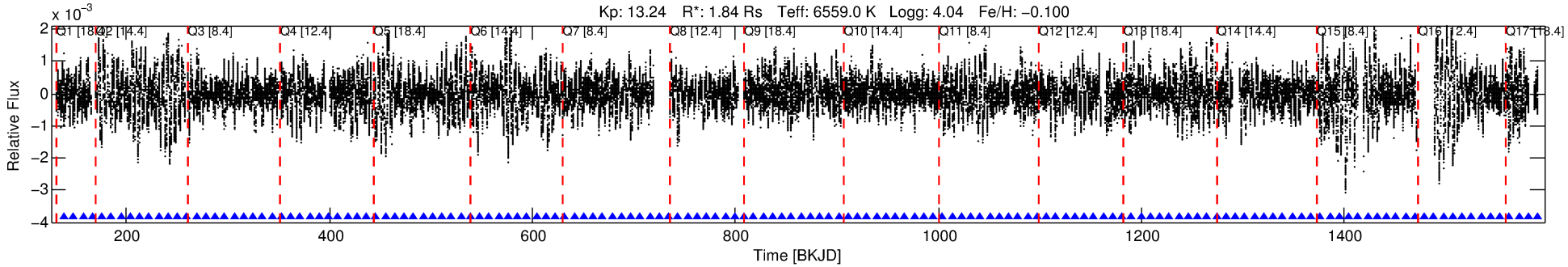
Ephemeris Match Information For 009166386-01

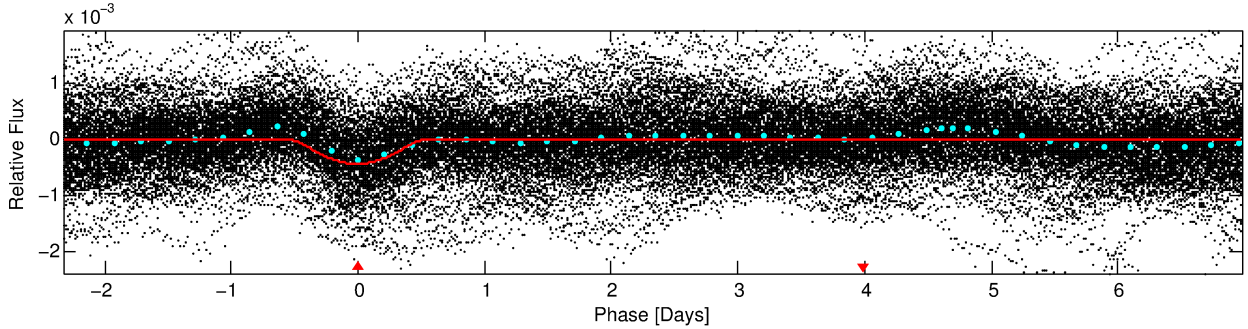
No Significant Match Found

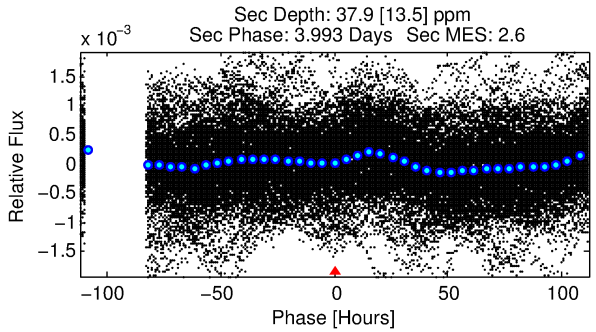
DV One-Page Summary

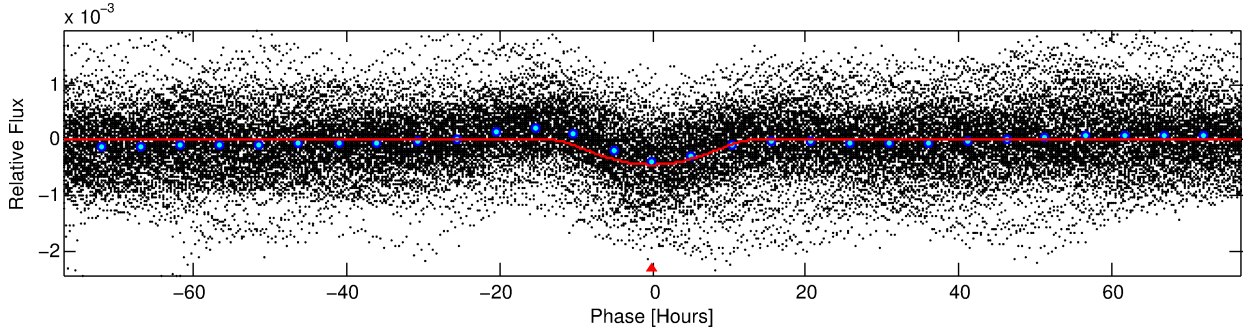
KIC: 9166386 Candidate: 1 of 1 Period: 9.306 d

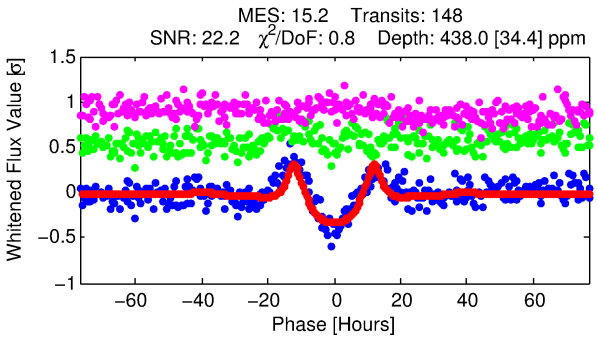
Kp: 13.24 R*: 1.84 Rs Teff: 6559.0 K Logg: 4.04 Fe/H: −0.100

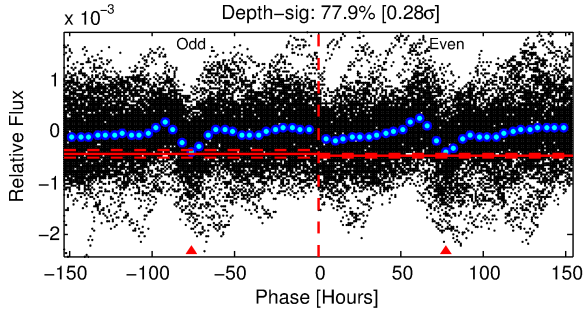


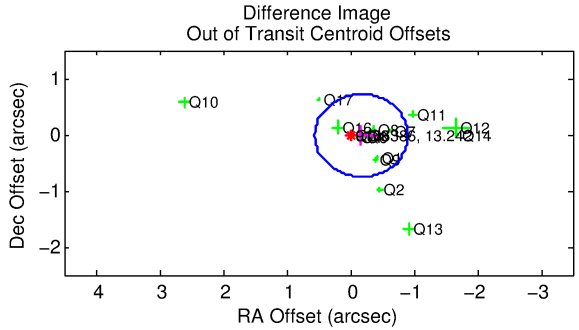












DV Fit Results:

Period = 9.30565 [0.00014] d
Epoch = 138.9148 [0.0118] BKJD
Rp/R* = 0.0370 [0.0110]
a/R* = 1.27 [0.02]
b = 1.00 [0.01]

Seff = 609.88 [253.35]
Teq = 1267 [132] K
Rp = 7.45 [3.01] Re
a = 0.0962 [0.0243] AU

Ag = 3.48 [2.78] [0.89σ]
Teffp = 2675 [473] K [2.87σ]

DV Diagnostic Results:

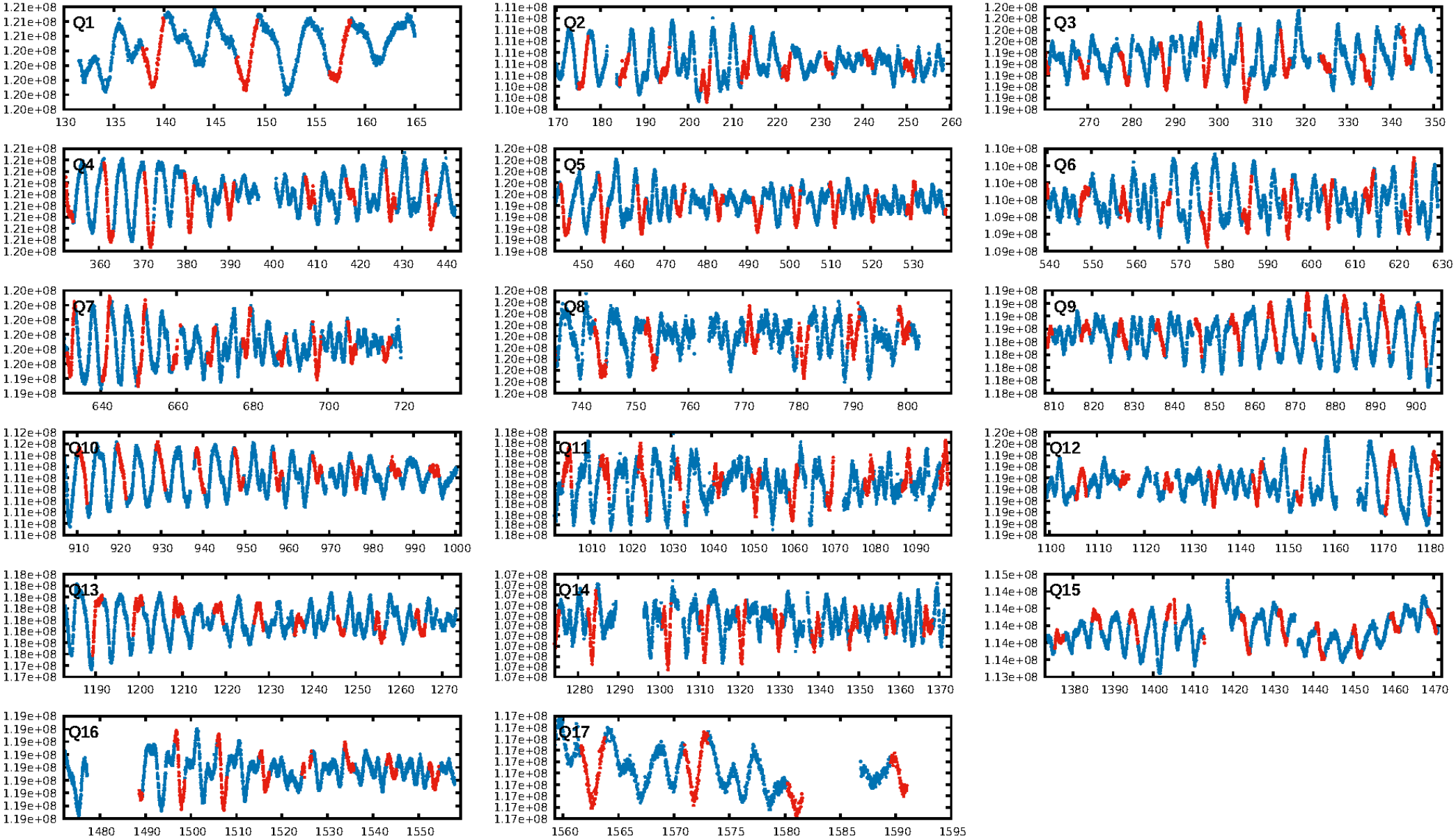
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 89.3%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 8.90e−54
RollingBand−fgt: 1.00 [141/141]
GhostDiagnostic−chr: 2.316

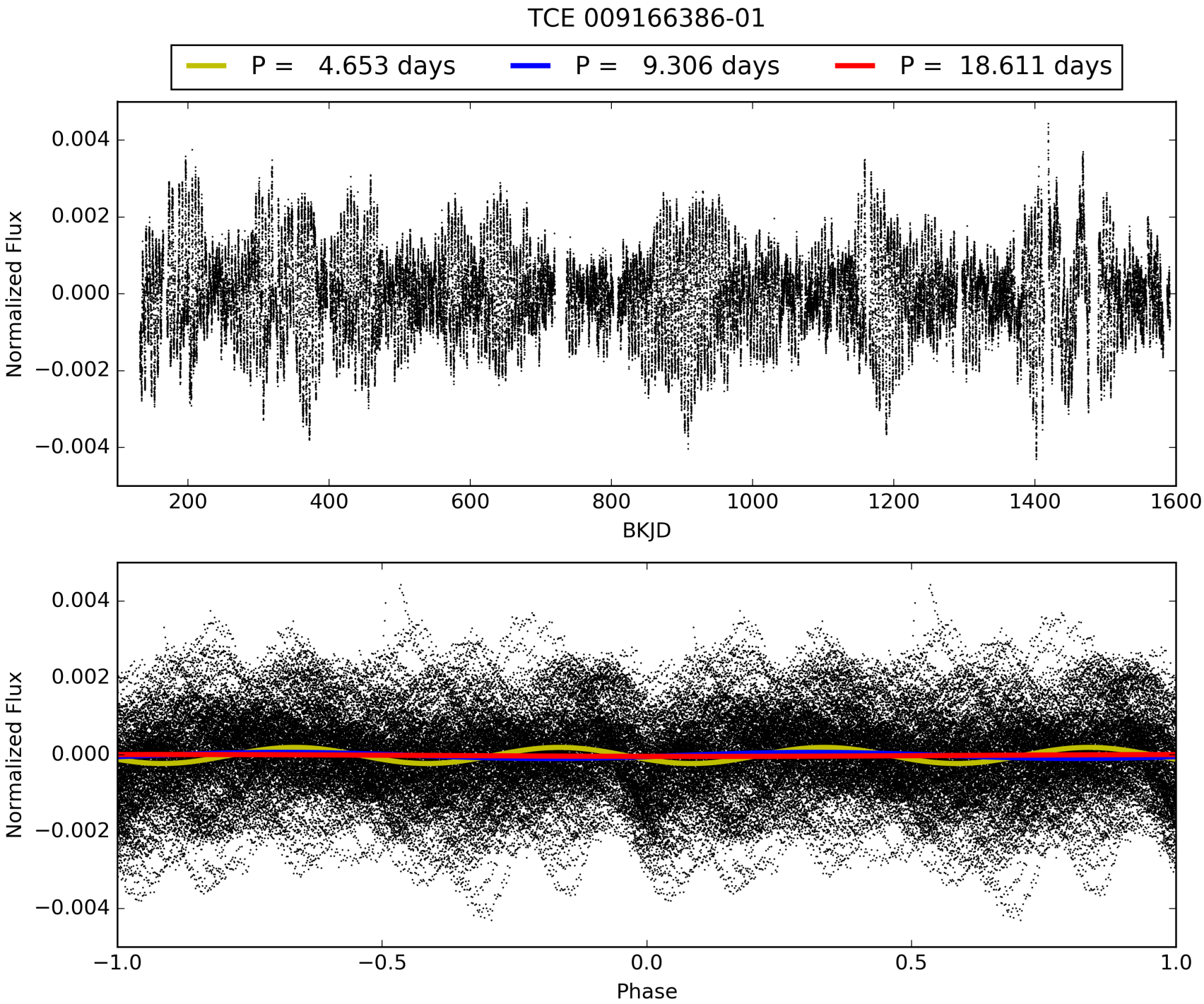
Centroid−sig: 1.9%
Centroid−so: 0.319 arcsec [3.60σ]
OotOffset−rm: 0.174 arcsec [0.71σ]
KicOffset−rm: 0.157 arcsec [0.63σ]
OotOffset−st: 4/3/4/5 [16]
KicOffset−st: 4/3/4/5 [16]
DiffImageQuality−fgm: 0.81 [13/16]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 07:14:30 Z

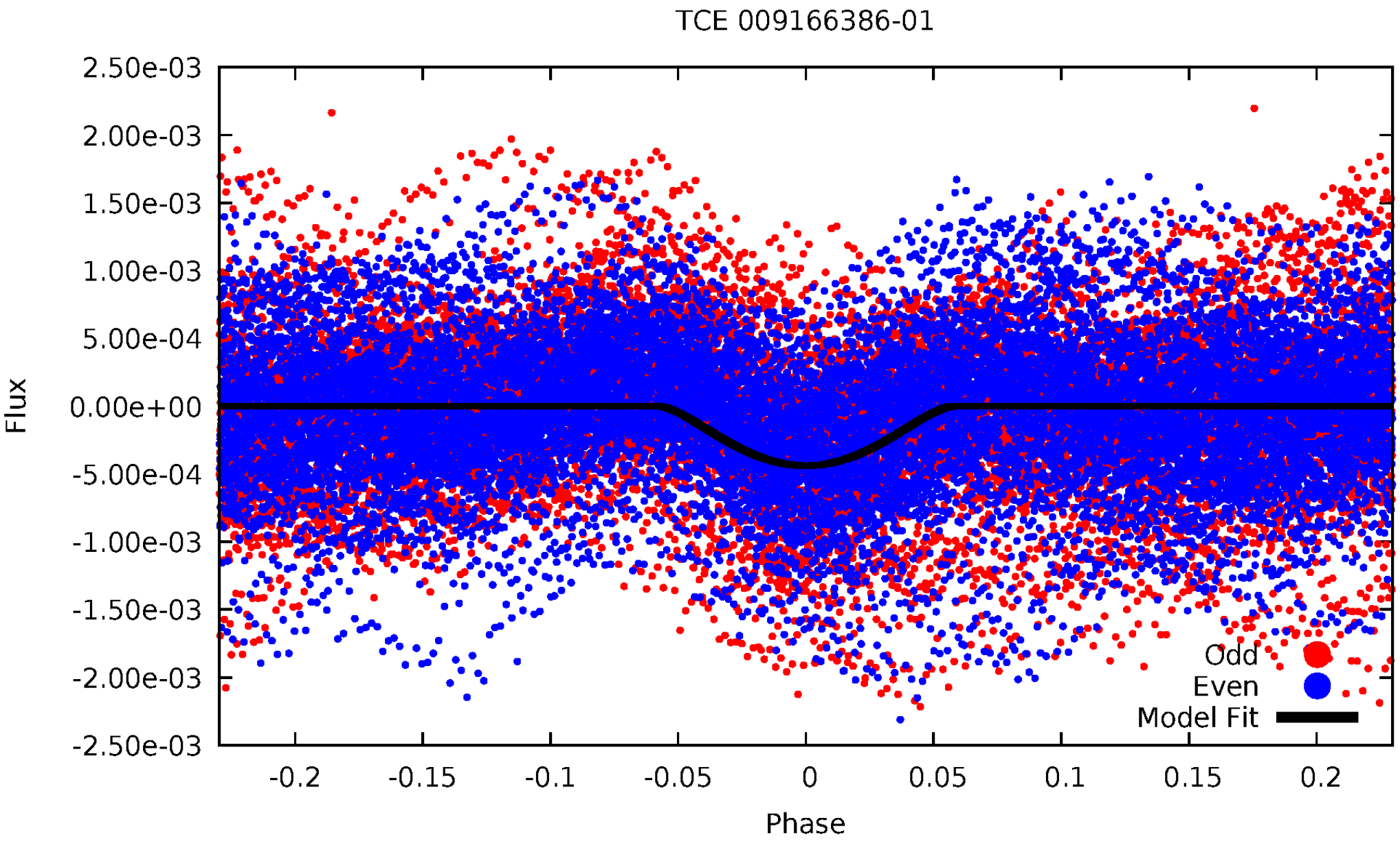
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009166386-01, PDC Light Curves

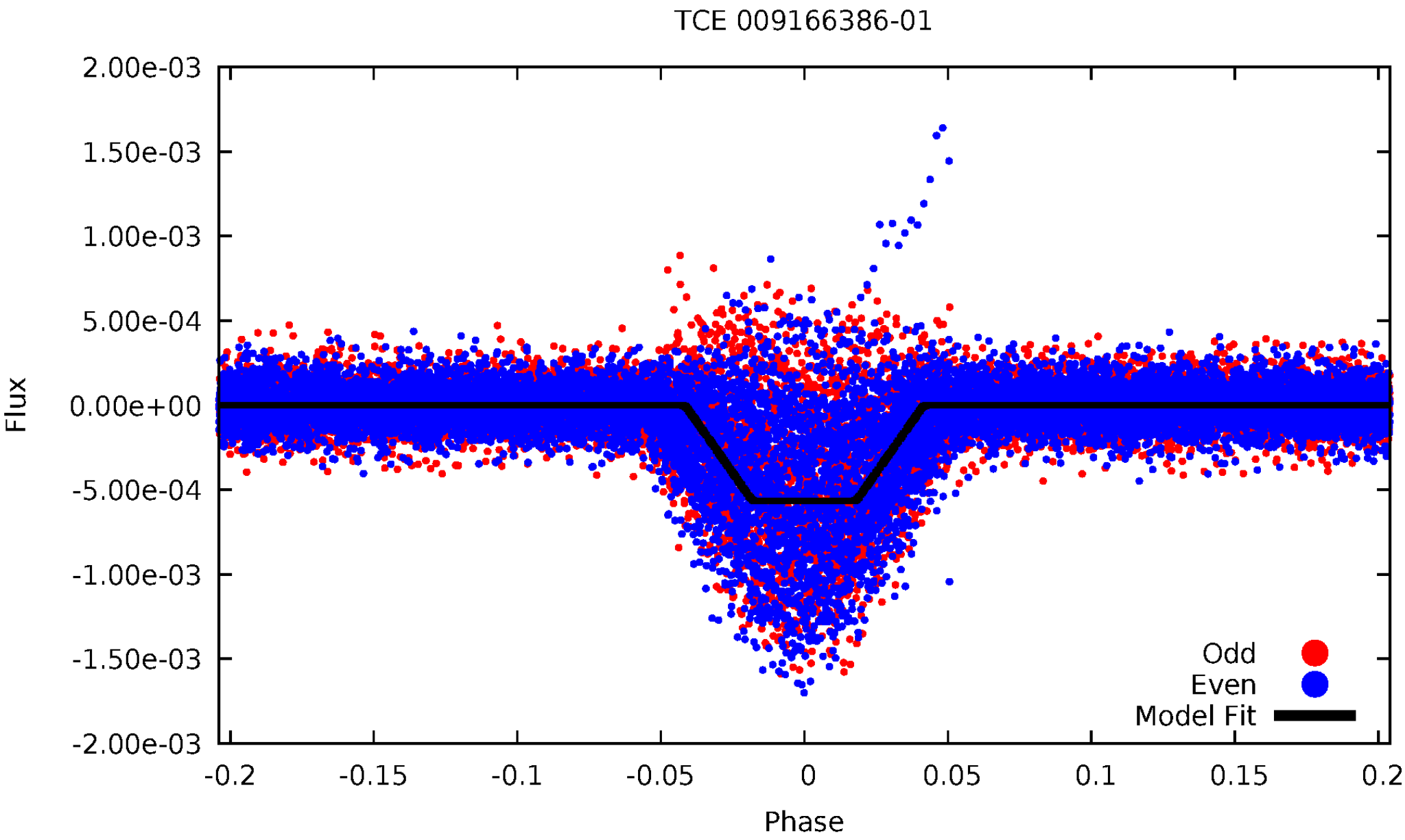



TCE 009166386-01
P = 4.653 days
P = 9.306 days
P = 18.611 days
Normalized Flux
0.004
0.002
0.000
−0.002
−0.004
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.004
0.002
0.000
−0.002
−0.004
−1.0
−0.5
0.0
0.5
1.0
Phase

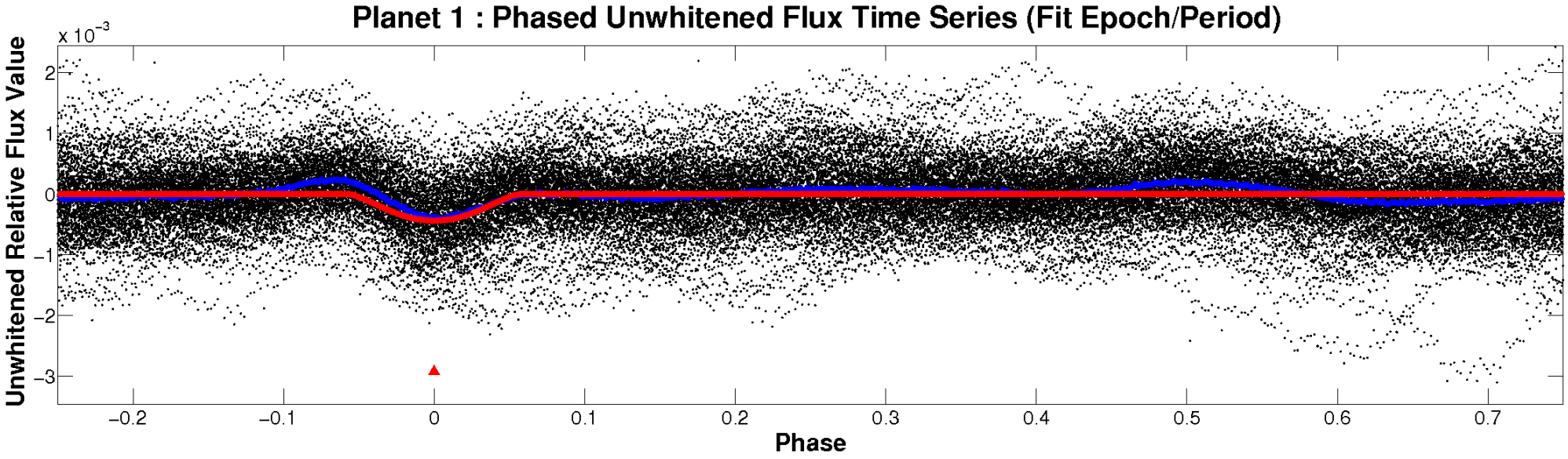
DV Odd/Even

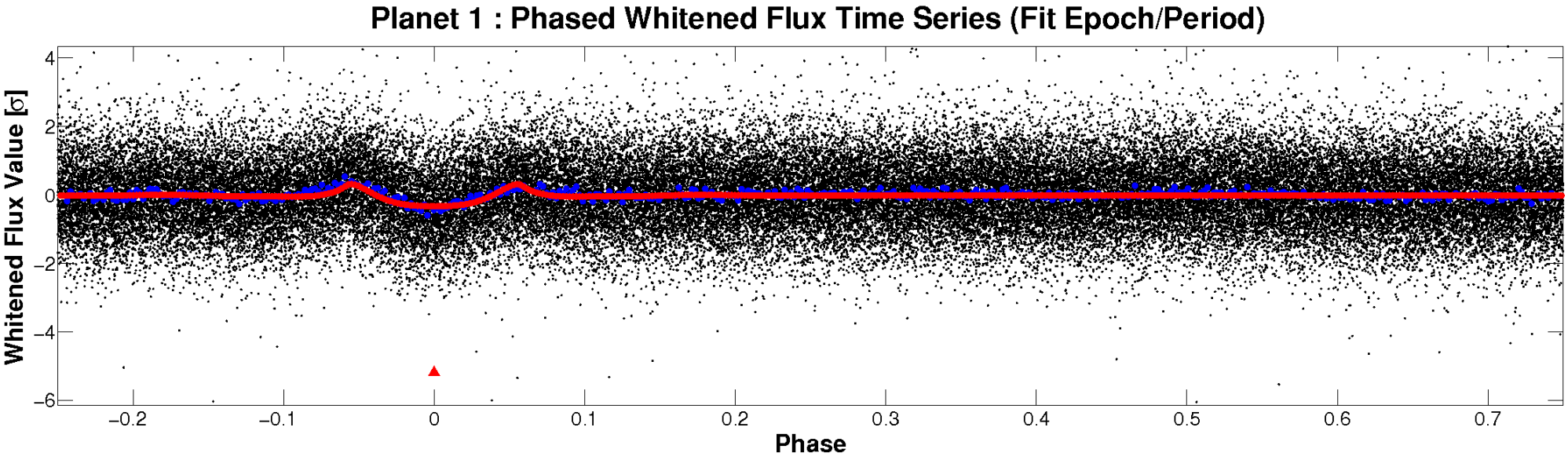

TCE 009166386-01
2.50e-03
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
-2.00e-03
-2.50e-03
Flux
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009166386-01
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
-2.00e-03
Flux
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
Phase
Odd
Even
Model Fit

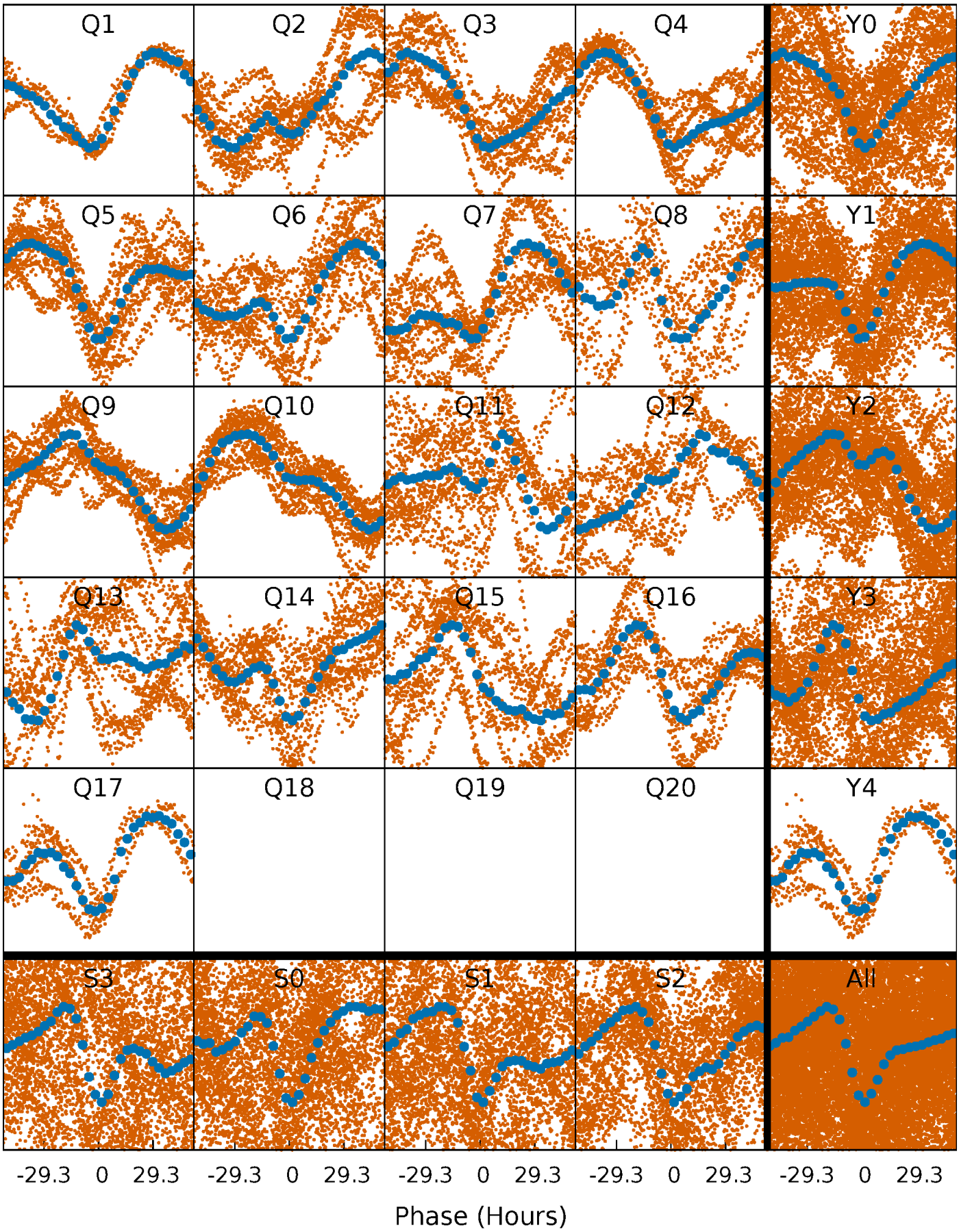
Non-Whitened Vs. Whitened Light Curve





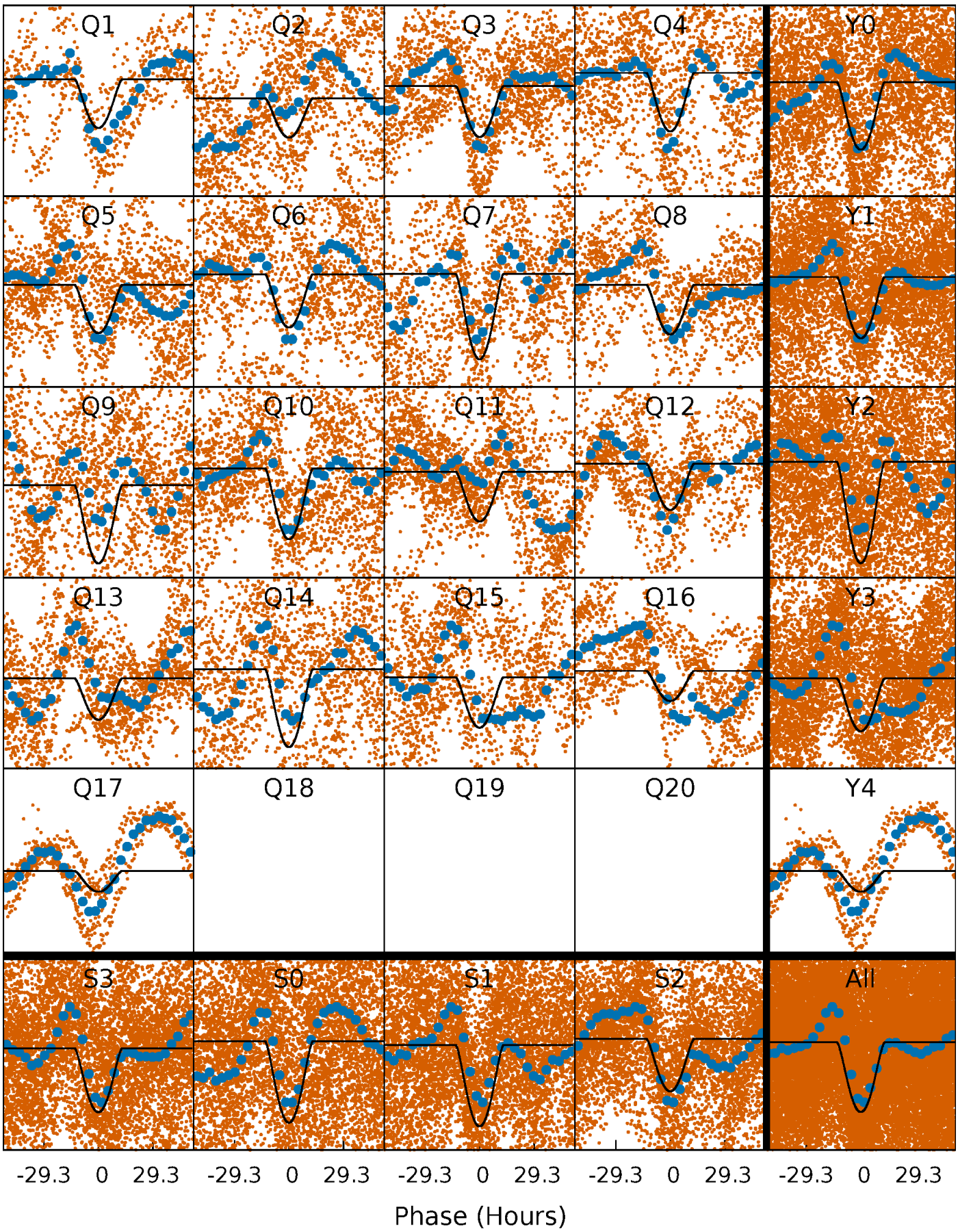
PDC Quarter-Phased Transit Curves

TCE 009166386-01 P= 9.305648 Days T_0=138.914816 (BKJD)



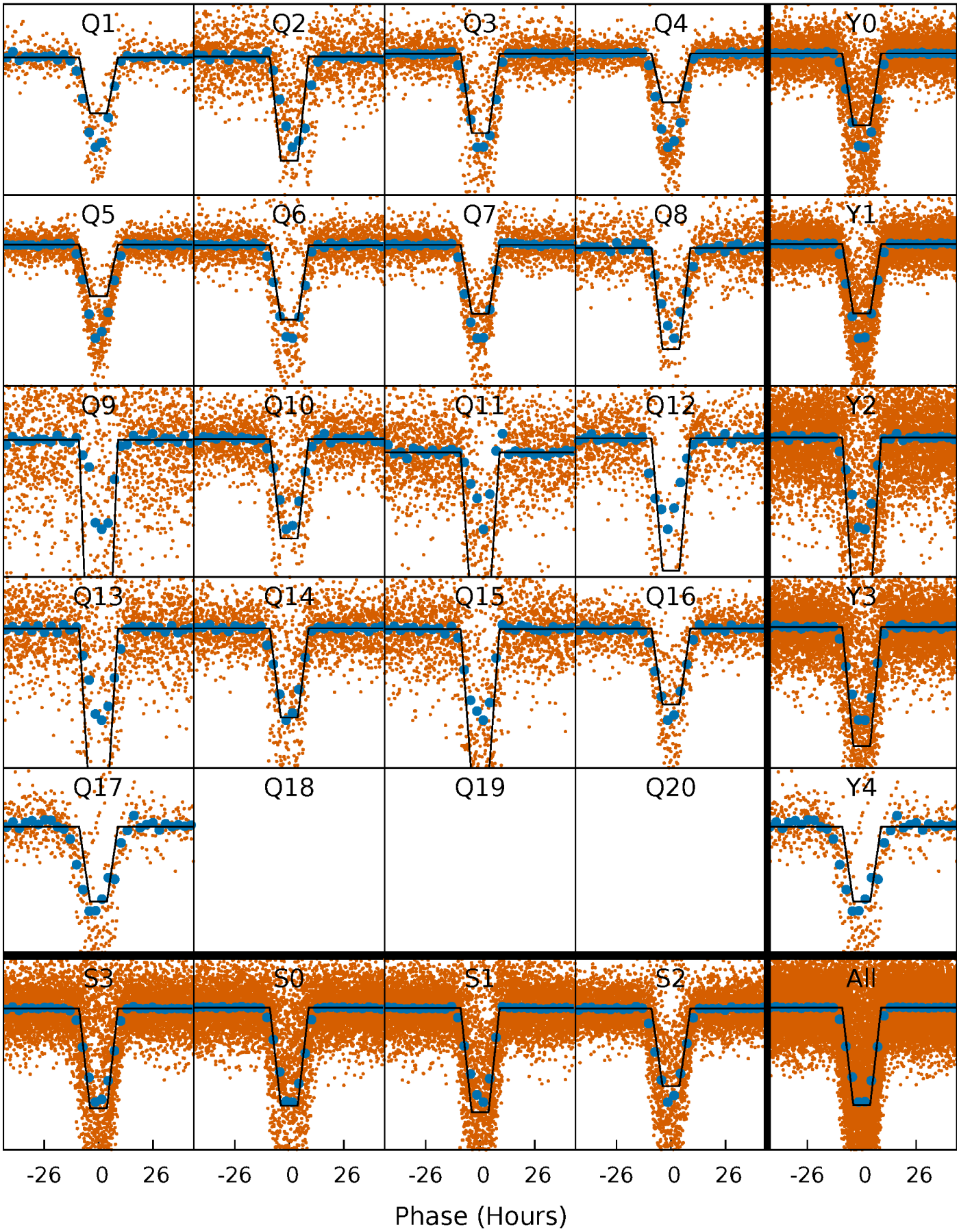
DV Quarter-Phased Transit Curves

TCE 009166386-01 P= 9.305648 Days T_0=138.914816 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

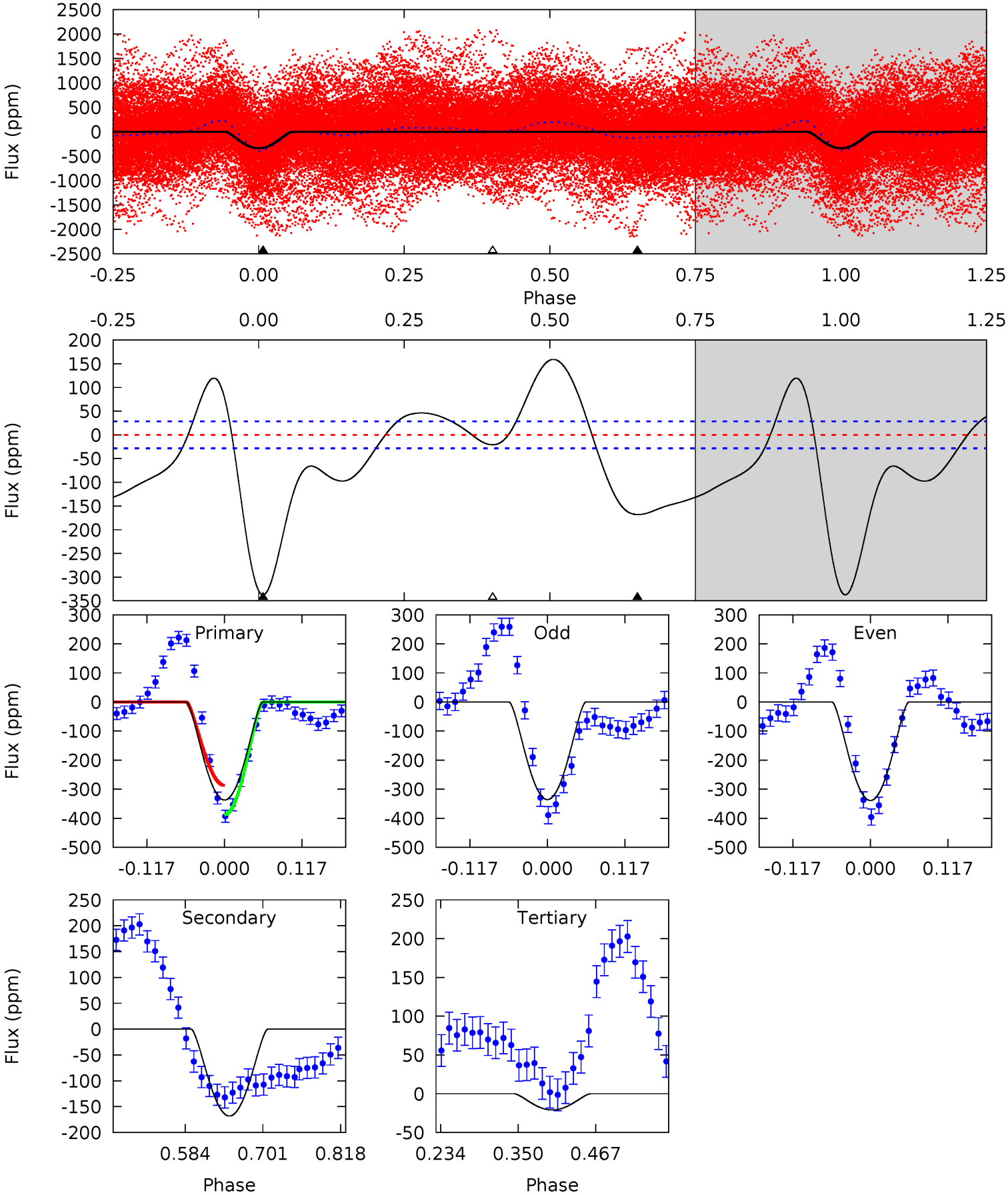
TCE 009166386-01 P= 9.306153 Days T_0=138.860462 (BKJD)



DV Model-Shift Uniqueness Test

009166386-01, P = 9.305648 Days, E = 129.609168 Days

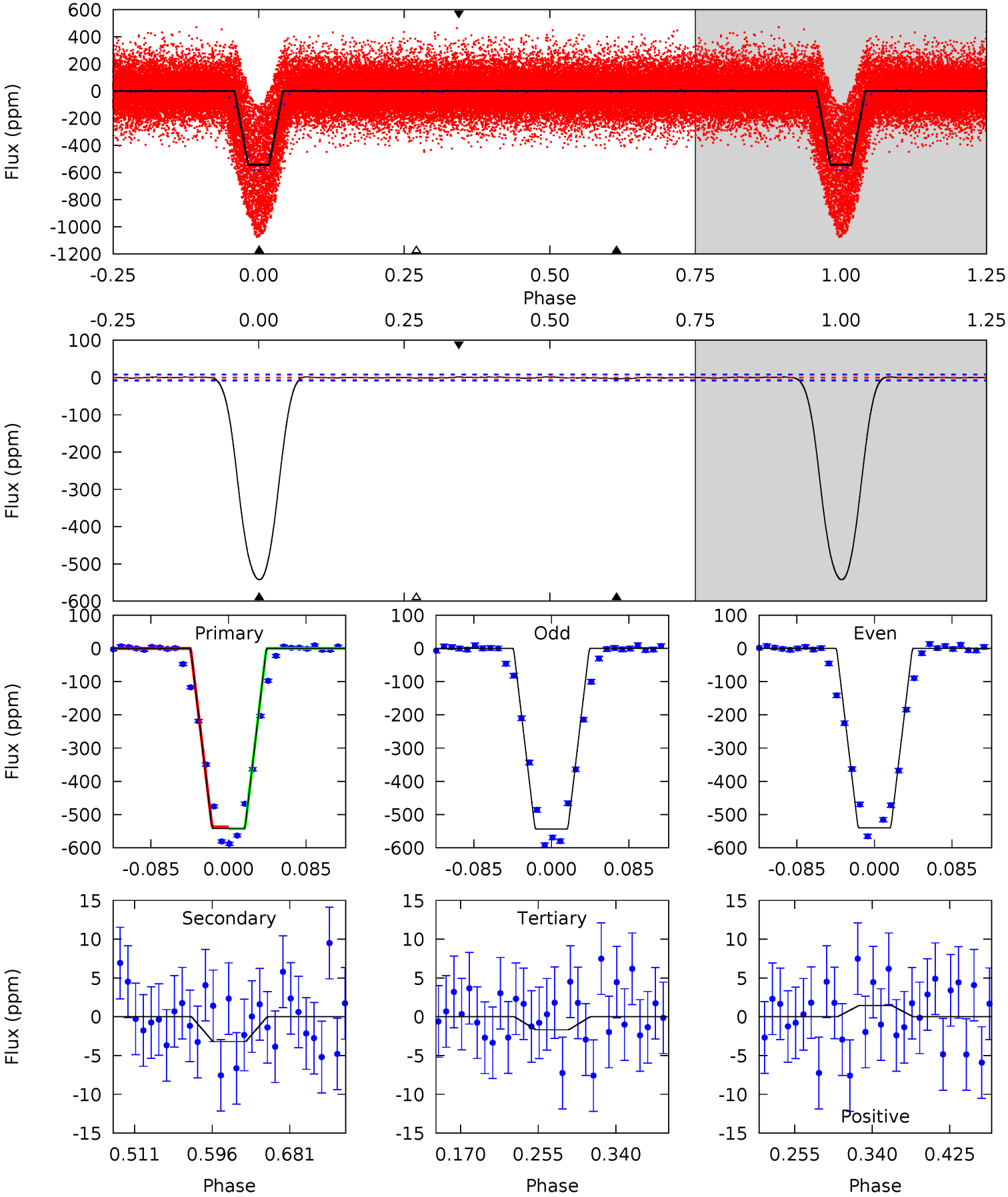
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
53.8	26.8	3.33	0	4.53	1.57	11.9	50.4	53.8	23.5	26.8	0.26	0.81	0.32	7.91



Alt Model-Shift Uniqueness Test

009166386-01, P = 9.306153 Days, E = 129.554309 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
316.4	1.86	0.98	0.85	4.60	1.72	0.53	315.4	315.6	0.88	1.02	1.01	0.96	0.00	1.53



Stellar Parameters For KIC 009166386

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	M($M_\odot$)	$p_\star$ (g·cm^{-3})
	6559^{+155}_{-214}	$4.043^{+0.228}_{-0.123}$	$-0.100^{+0.250}_{-0.250}$	$1.845^{+0.366}_{-0.503}$	$1.379^{+0.150}_{-0.257}$	$0.309^{+0.430}_{-0.116}$
	+2%/-3%	+6%/-3%	+250%/-250%	+20%/-27%	+11%/-19%	+139%/-38%
Source	PHO1	FLK73	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 009166386-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-168±6	$7.16^{+2.44}_{-2.45}$	1749^{+102}_{-130}	4142^{+669}_{-399}	17^{+21}_{-8}
Alt.	-3±2	$4.72^{+2.32}_{-2.18}$	1743^{+103}_{-128}	2392^{+617}_{-4337}	$0.705^{+1.932}_{-0.461}$

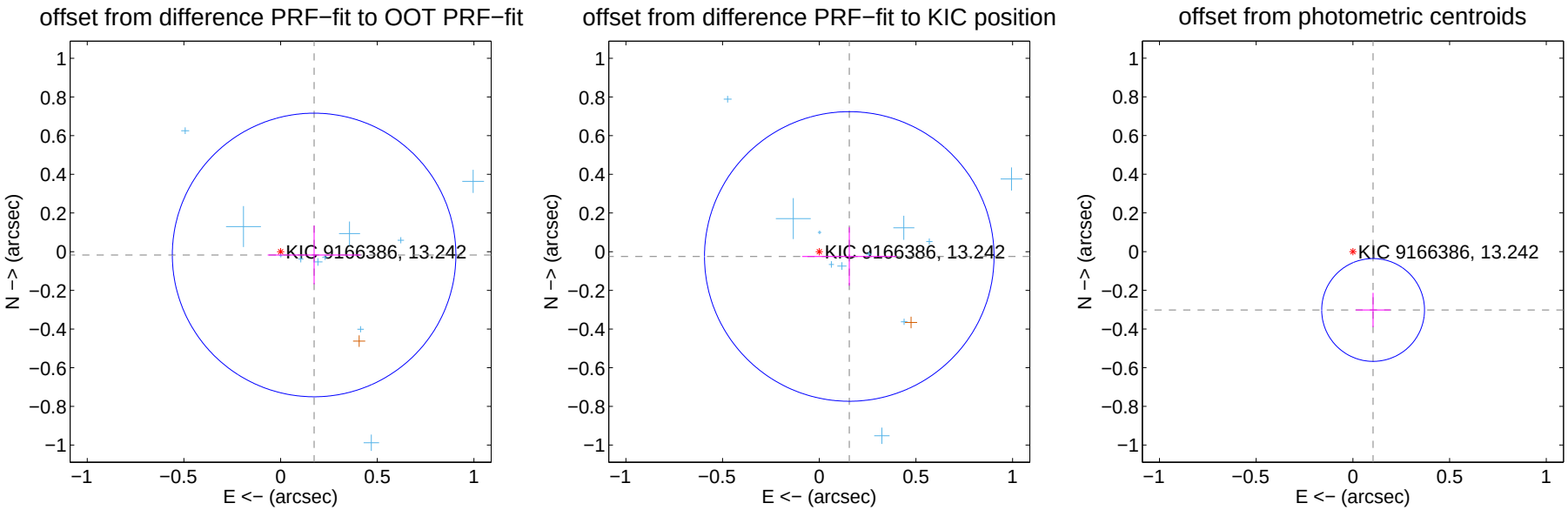
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

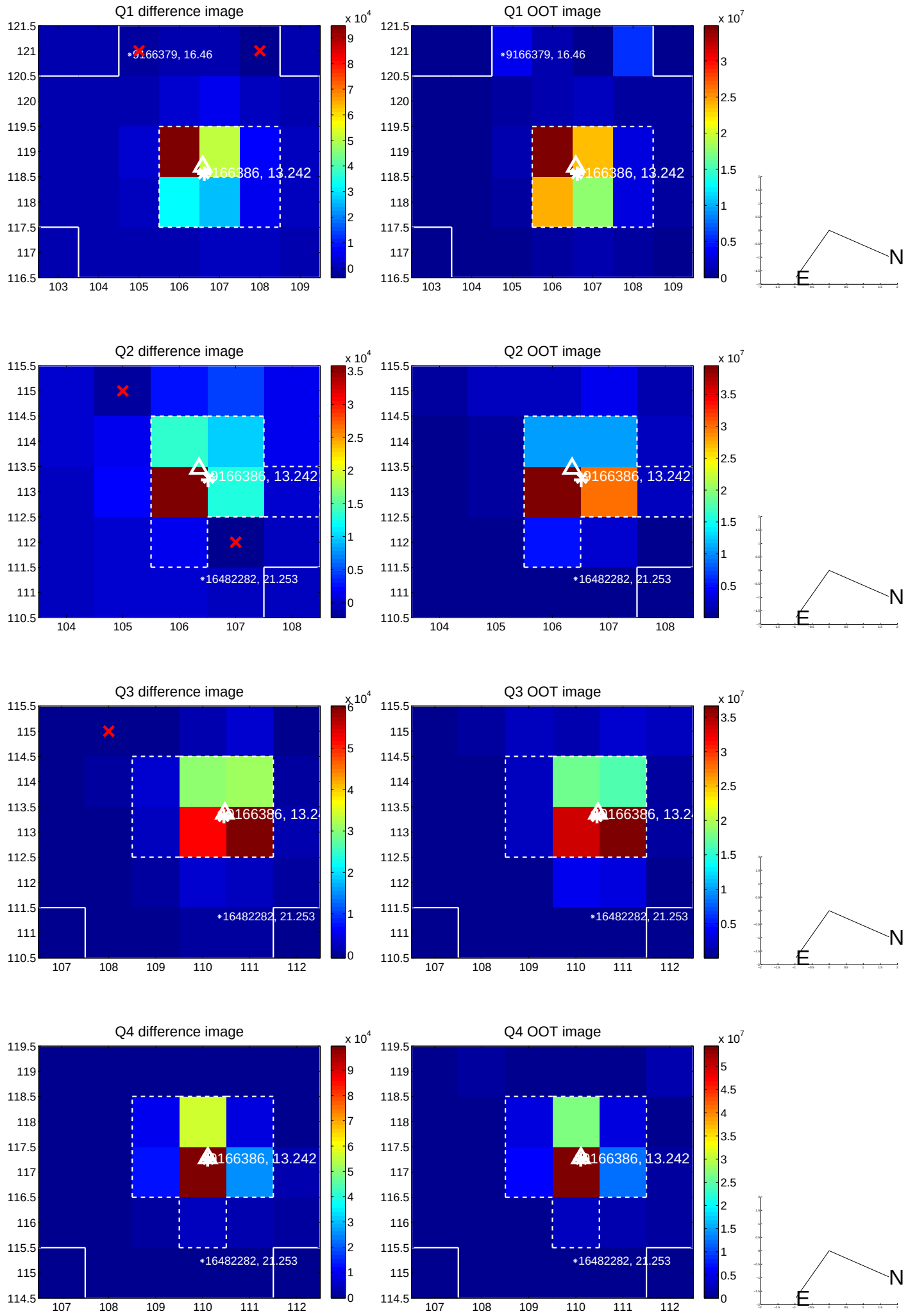
Supplemental centroid analysis for 009166386-01. Kepler magnitude: 13.24. Transit SNR 22.23
There are 13 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.174 ± 0.244	0.71	-0.173 ± 0.240	-0.017 ± 0.152
PRF-fit source offset from KIC position	0.157 ± 0.250	0.63	-0.155 ± 0.243	-0.025 ± 0.151
photometric centroid source offset	0.32 ± 0.09	3.60	-0.10 ± 0.09	-0.30 ± 0.09

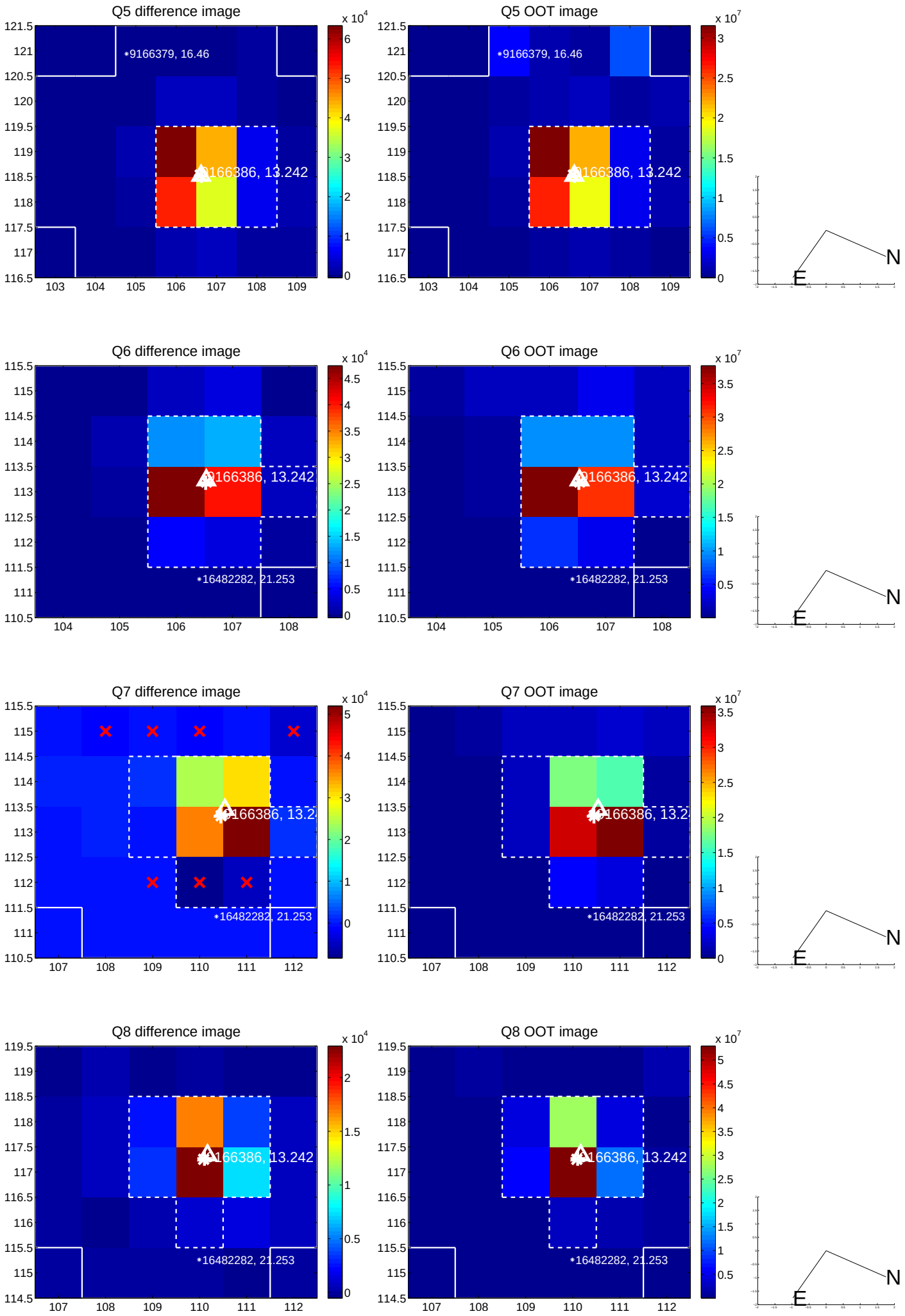


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

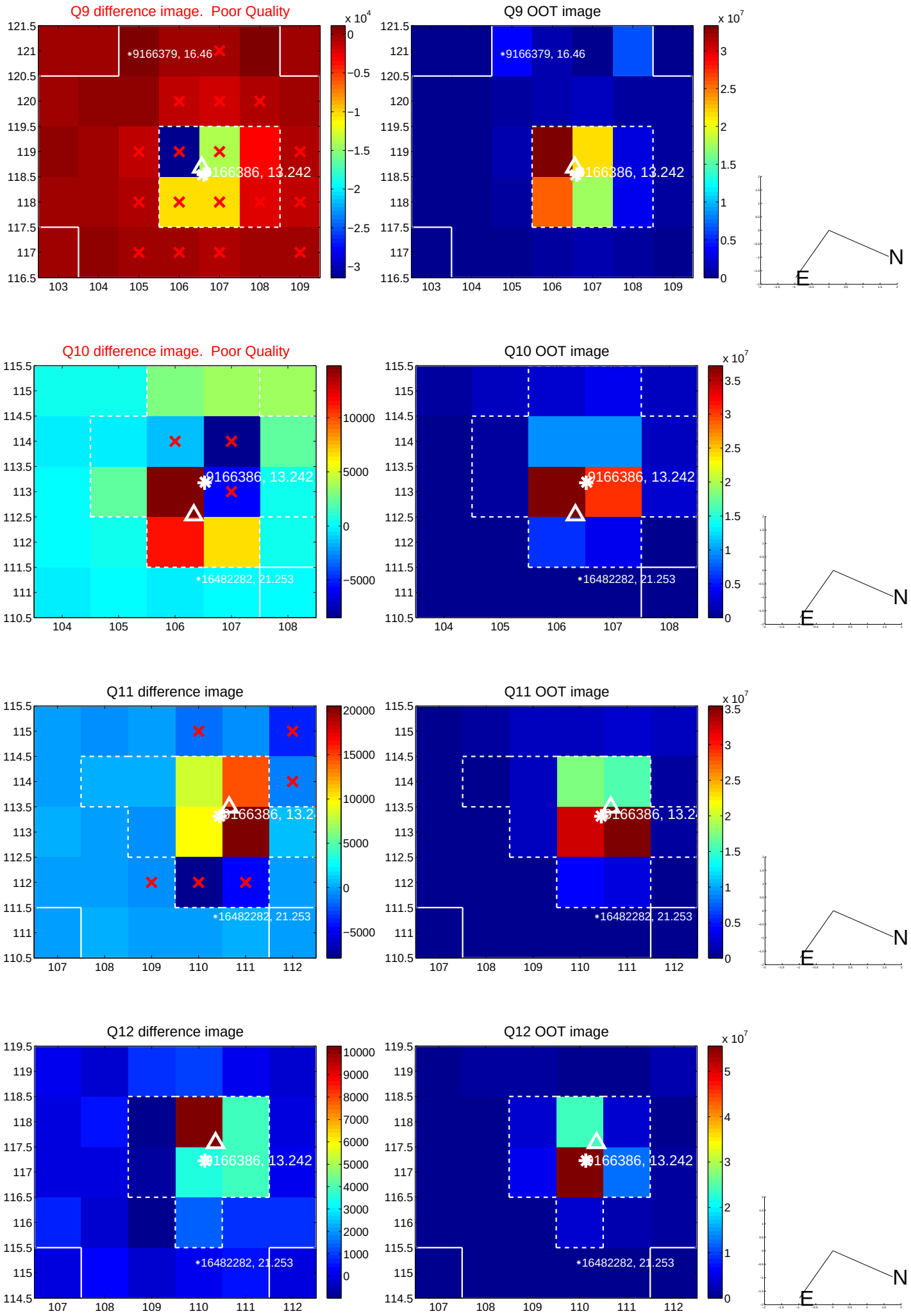
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



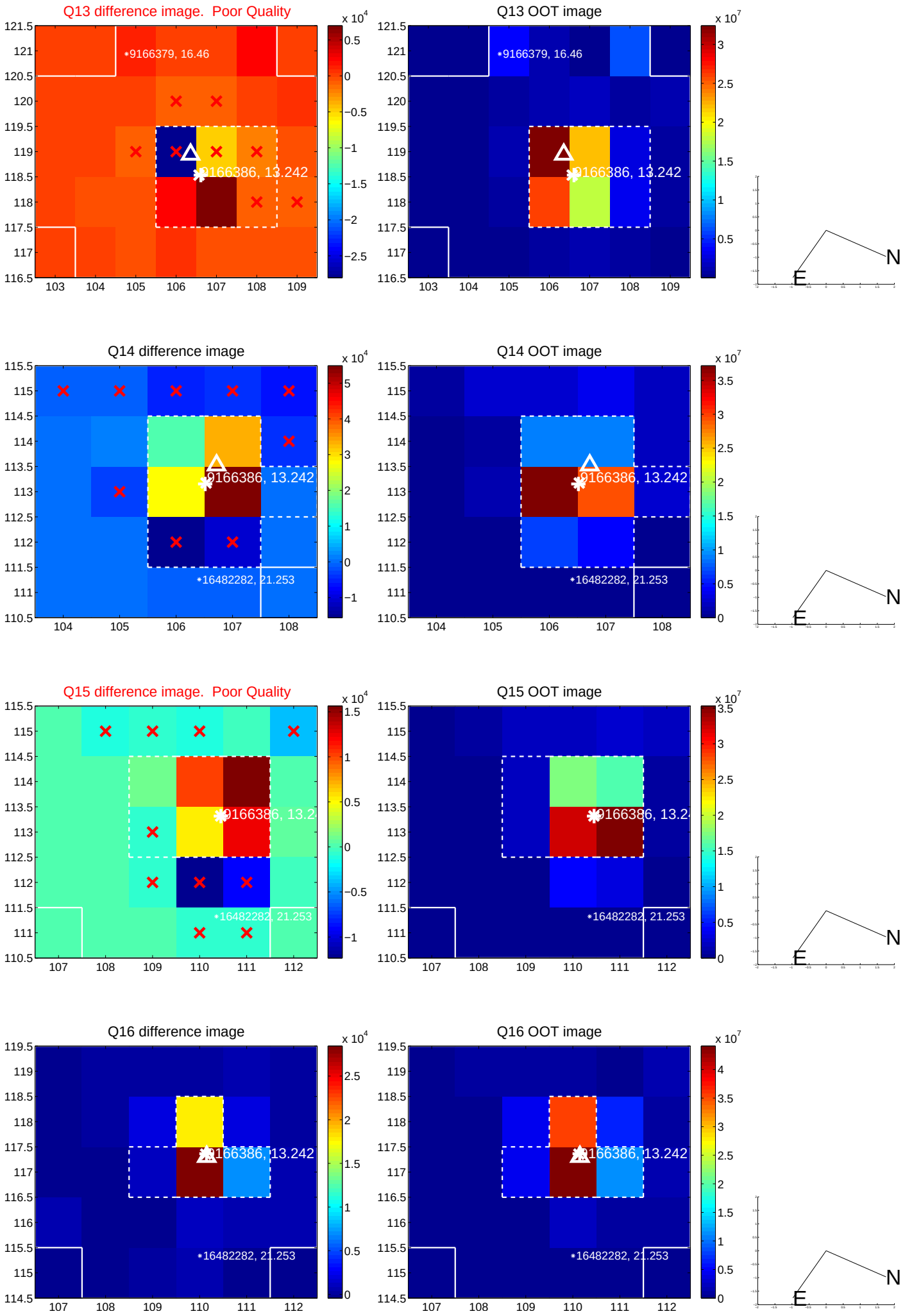
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



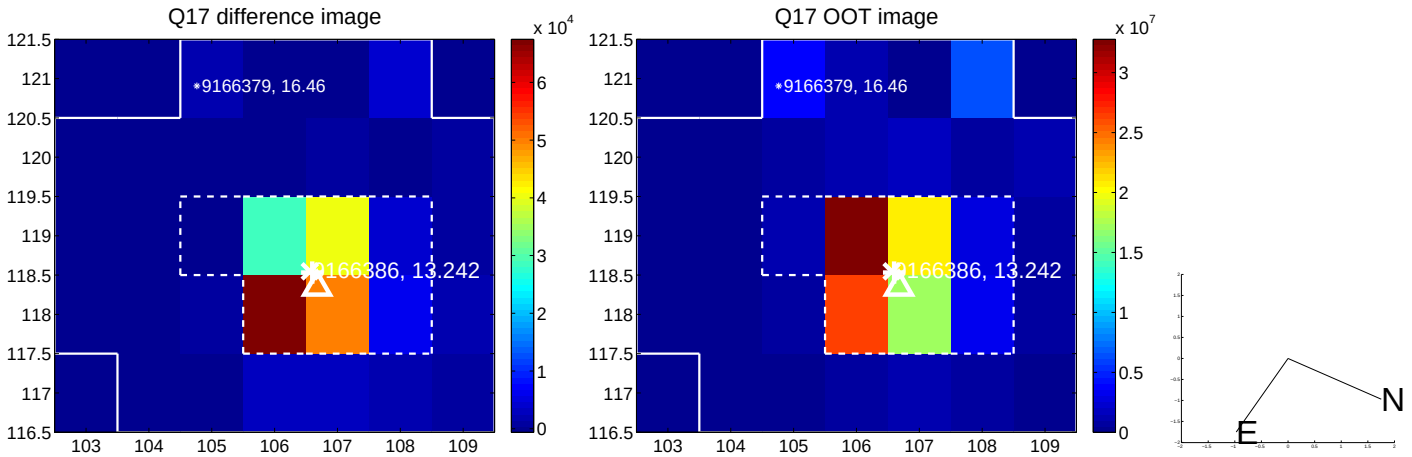
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

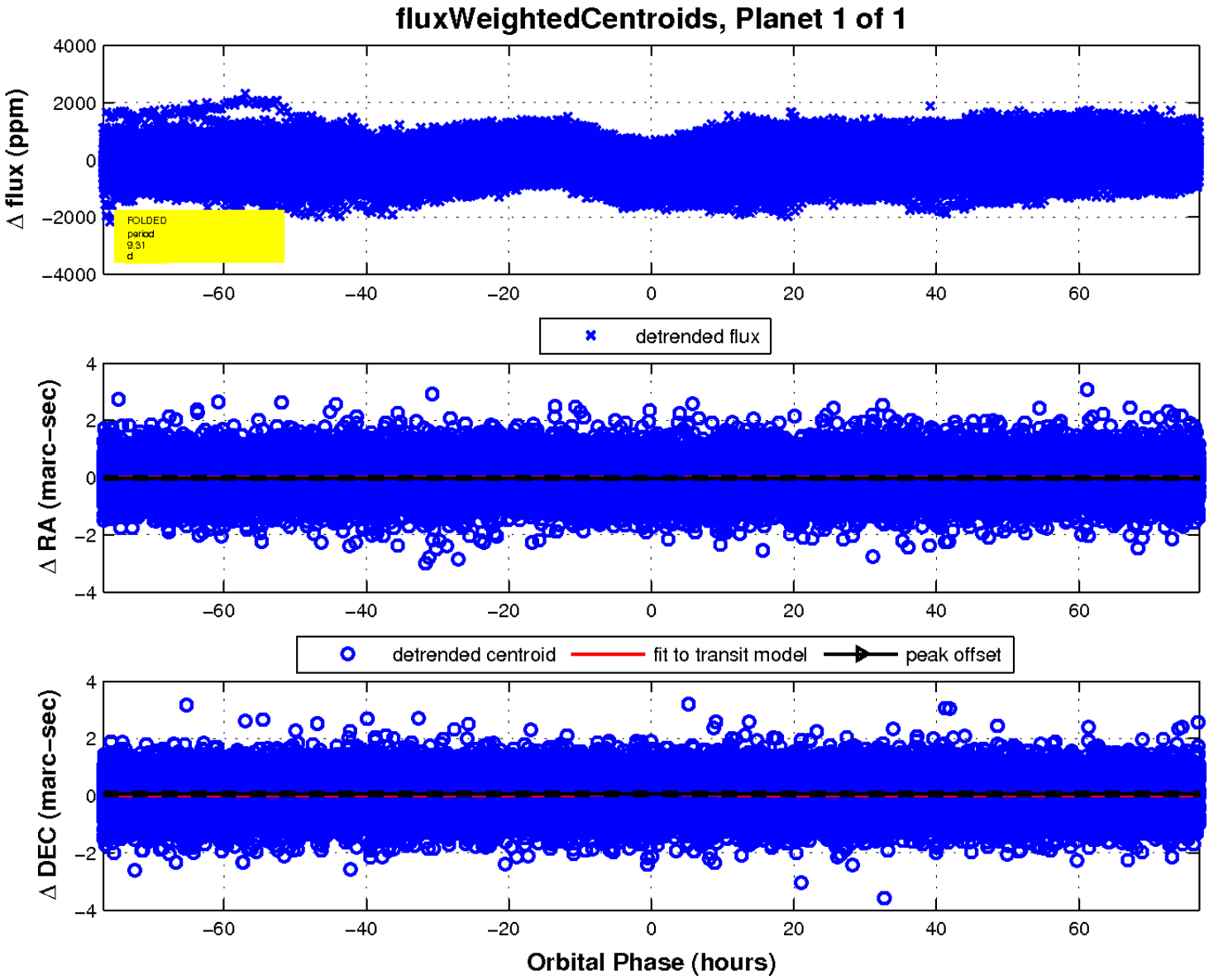


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

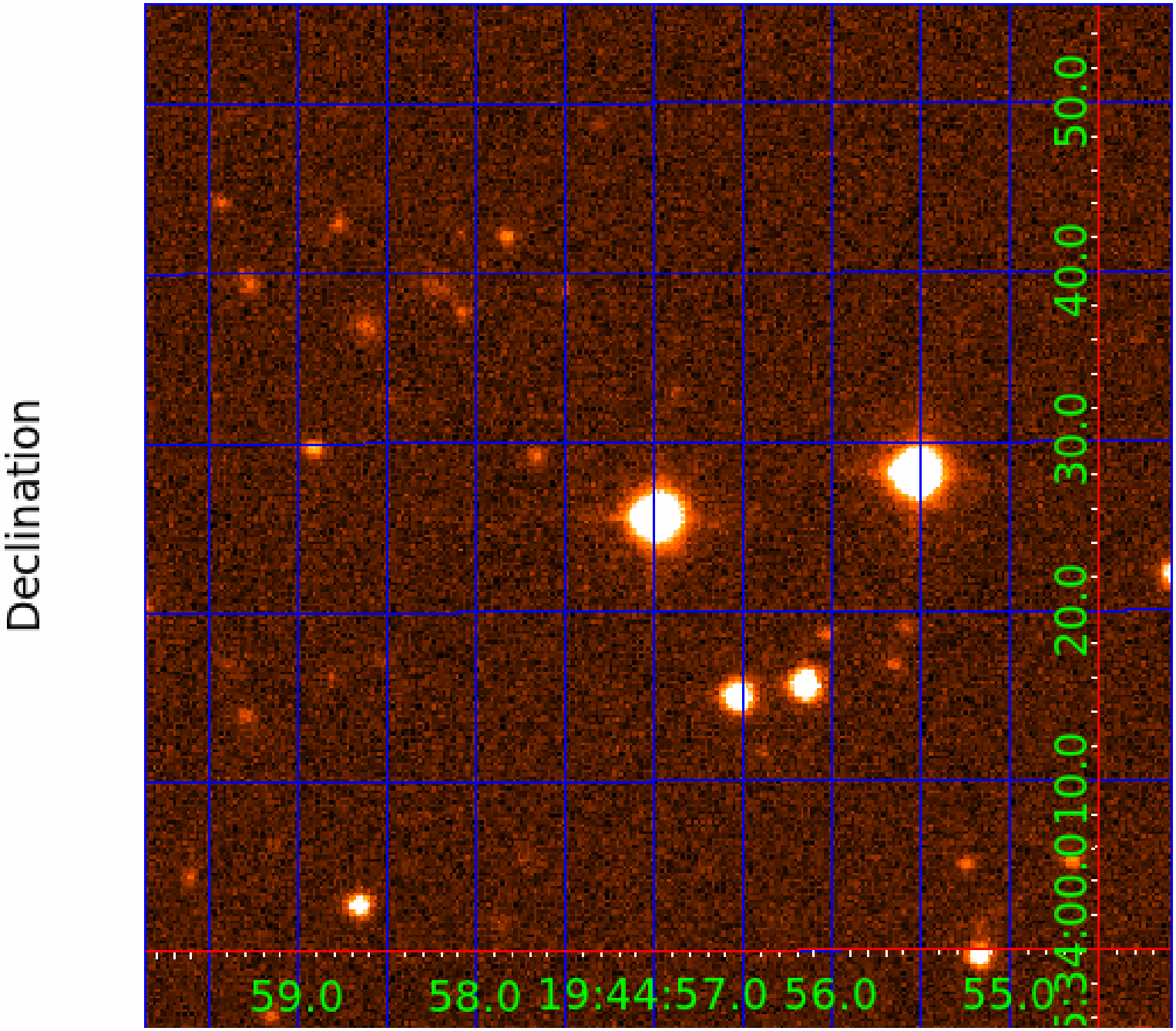


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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