KIC 009107656

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 ($S_\oplus$)
009107656-01	OBS	No	366.042016	179.222737	1190.0	20.770	7.2	7.3	0.43	3682	1.51	0.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009107656-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

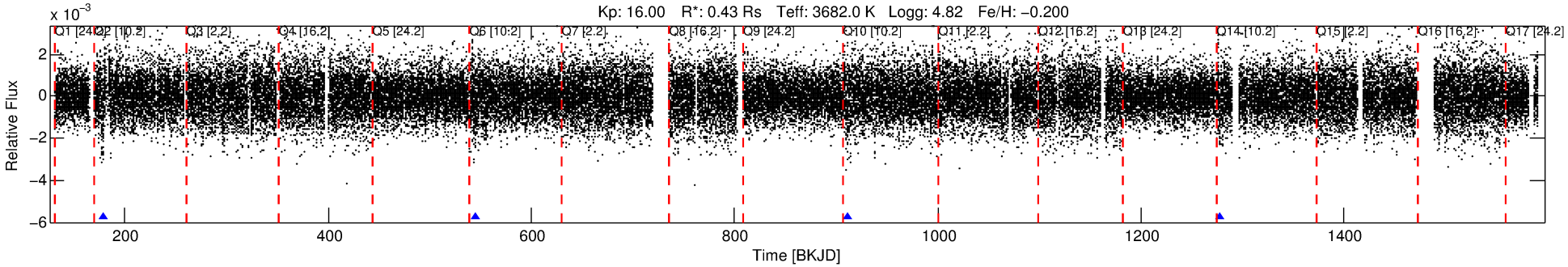
Ephemeris Match Information For 009107656-01

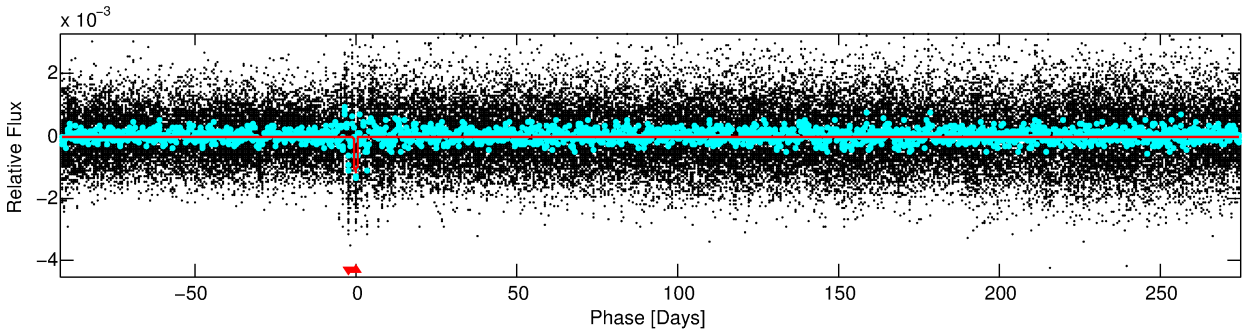
No Significant Match Found

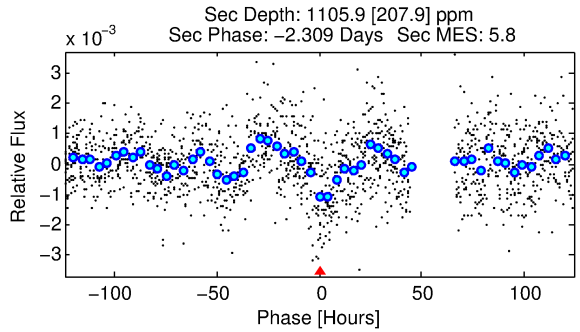
DV One-Page Summary

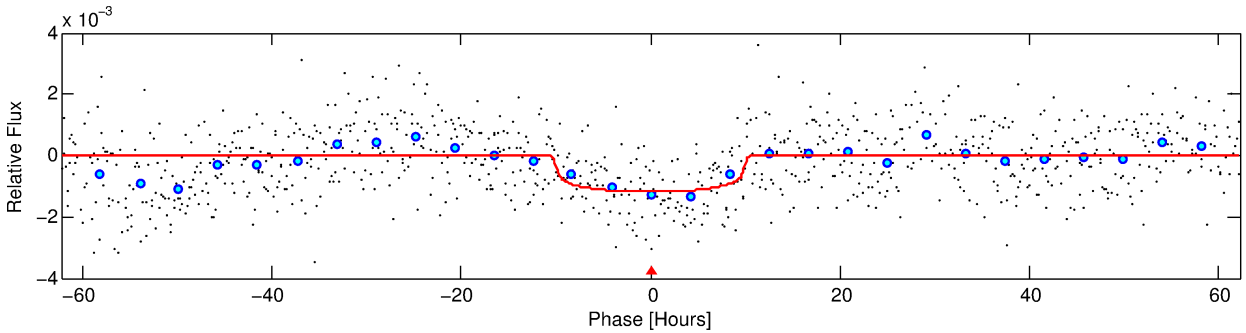
KIC: 9107656 Candidate: 1 of 1 Period: 366.042 d

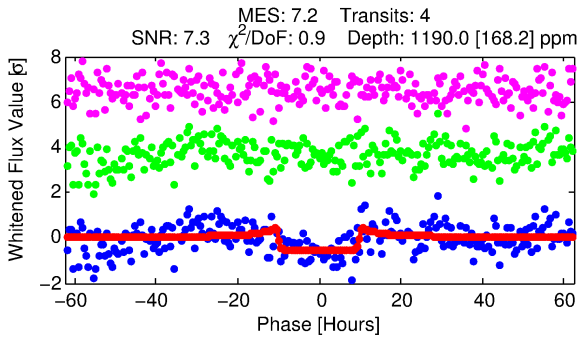
Kp: 16.00 R*: 0.43 Rs Teff: 3682.0 K Logg: 4.82 Fe/H: −0.200

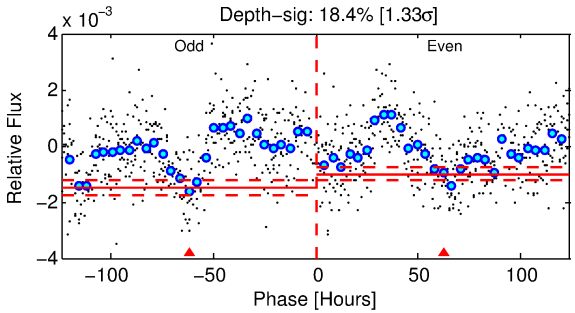












DV Fit Results:

Period = 366.04202 [0.01070] d
Epoch = 179.2227 [0.0195] BKJD
Rp/R* = 0.0319 [0.0090]
a/R* = 129.55 [161.33]
b = 0.37 [2.88]

Seff = 0.05 [0.00]
Teq = 122 [3] K
Rp = 1.51 [0.44] Re
a = 0.7722 [0.0443] AU

Ag = 159086.07 [95174.71] [1.67σ]
Teffp = 3760 [561] K [6.49σ]

DV Diagnostic Results:

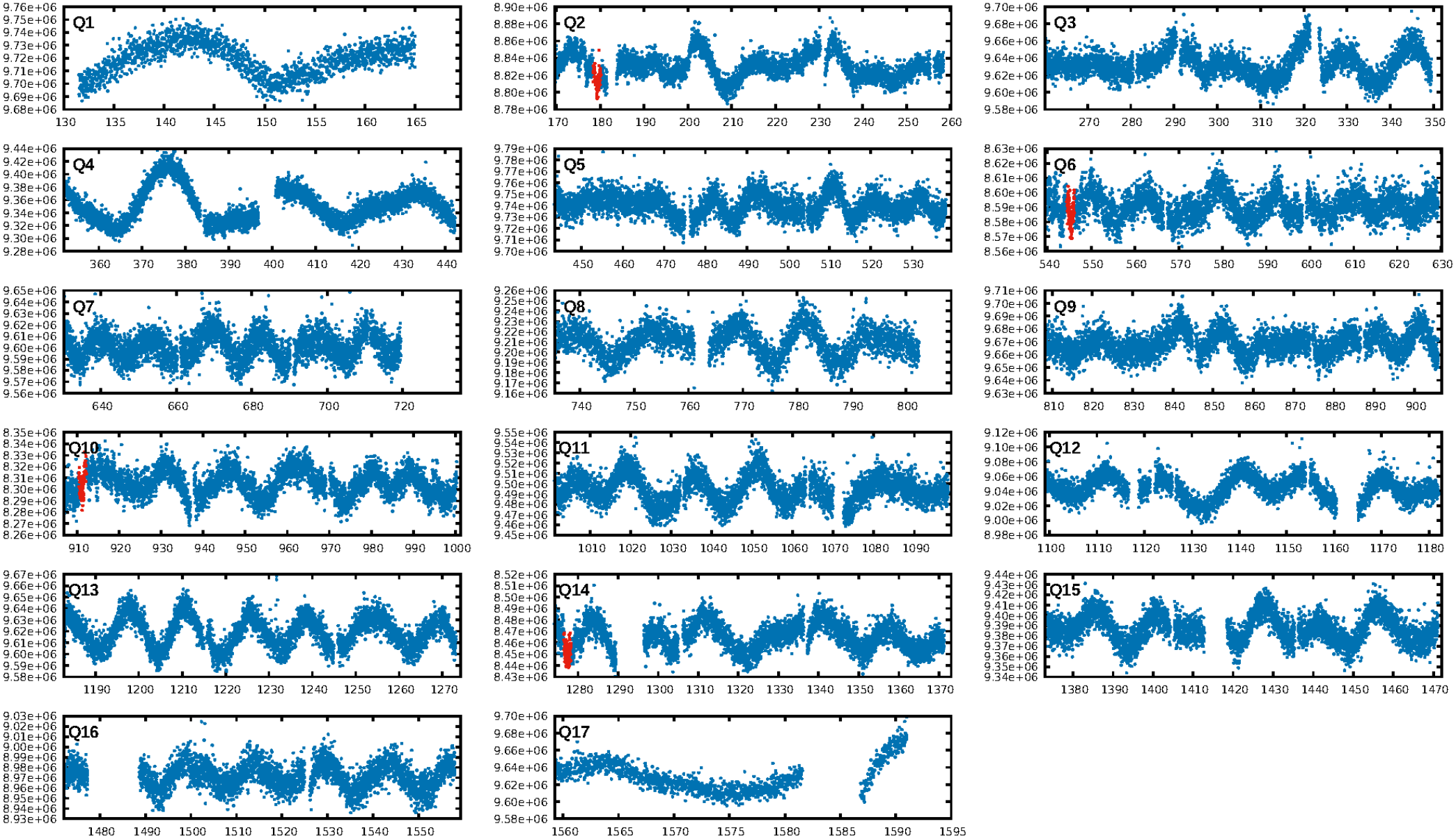
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 55.8%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 1.28e−09
RollingBand−fgt: 1.00 [4/4]
GhostDiagnostic−chr: −0.7734

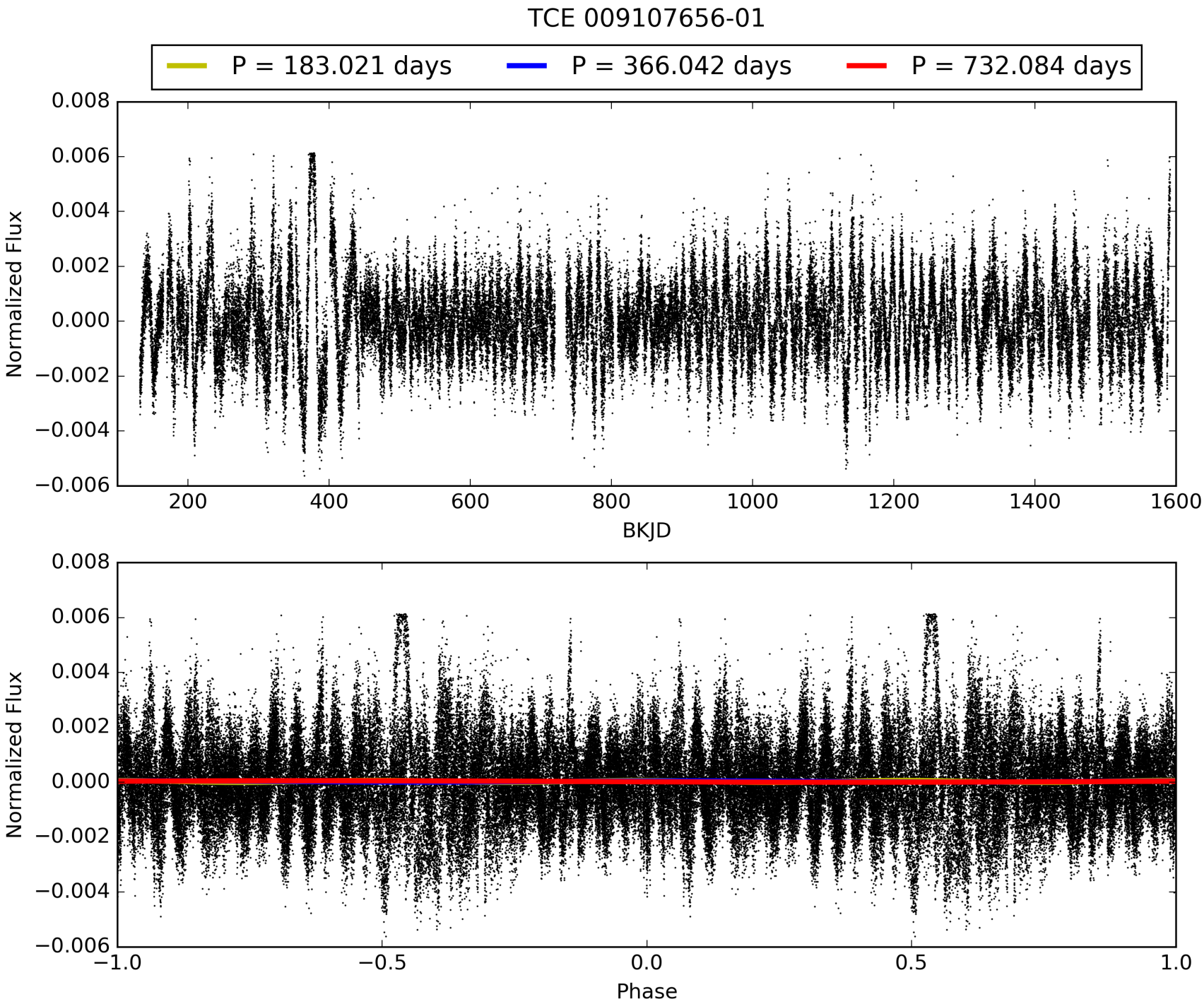
Centroid−sig: 11.7%
Centroid−so: 1.297 arcsec [1.26σ]
OotOffset−rm: N/A
KicOffset−rm: N/A
OotOffset−st: 0/0/0/0 [0]
KicOffset−st: 0/0/0/0 [0]
DiffImageQuality−fgm: N/A
DiffImageOverlap−fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 13:58:13 Z

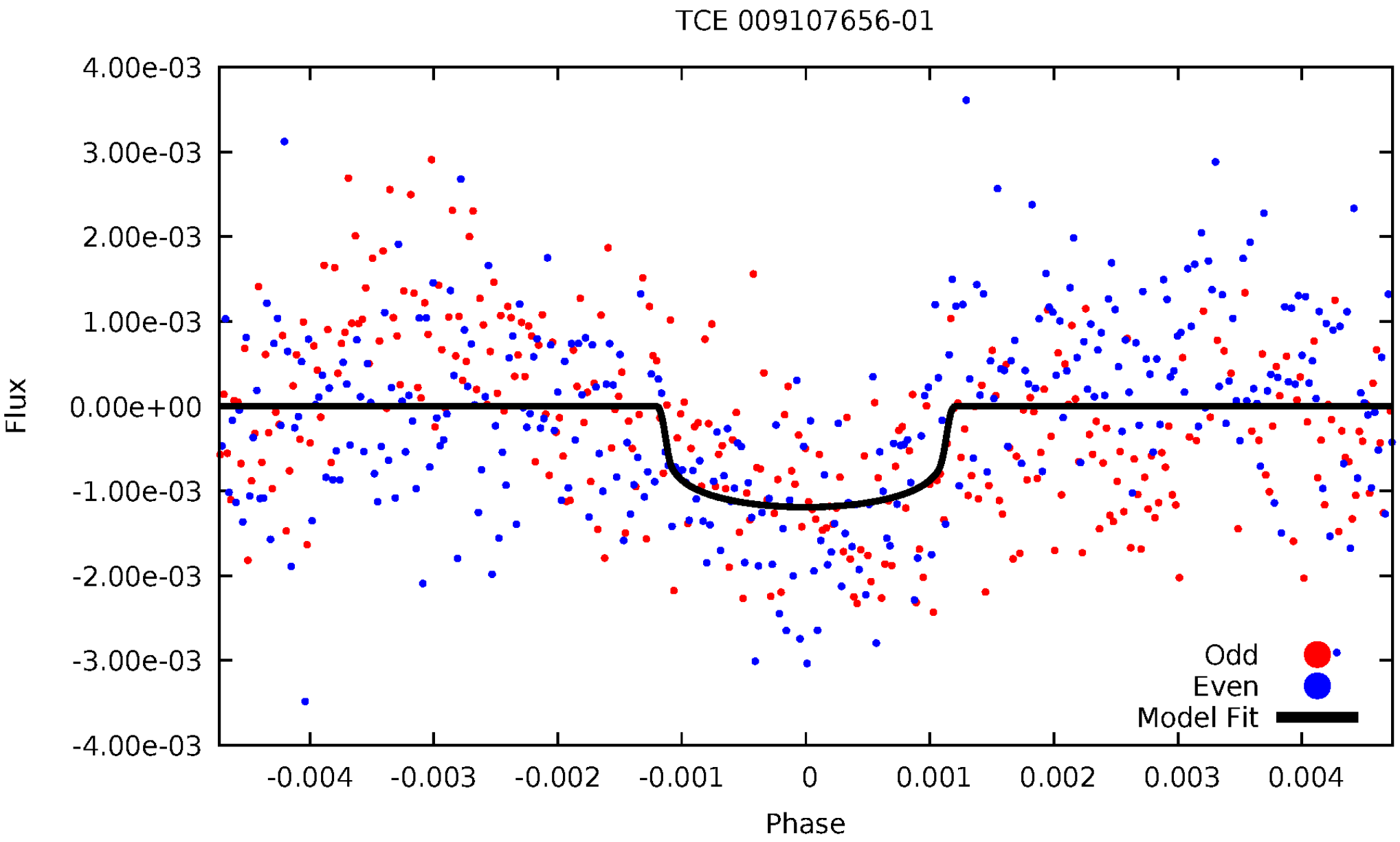
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009107656-01, PDC Light Curves

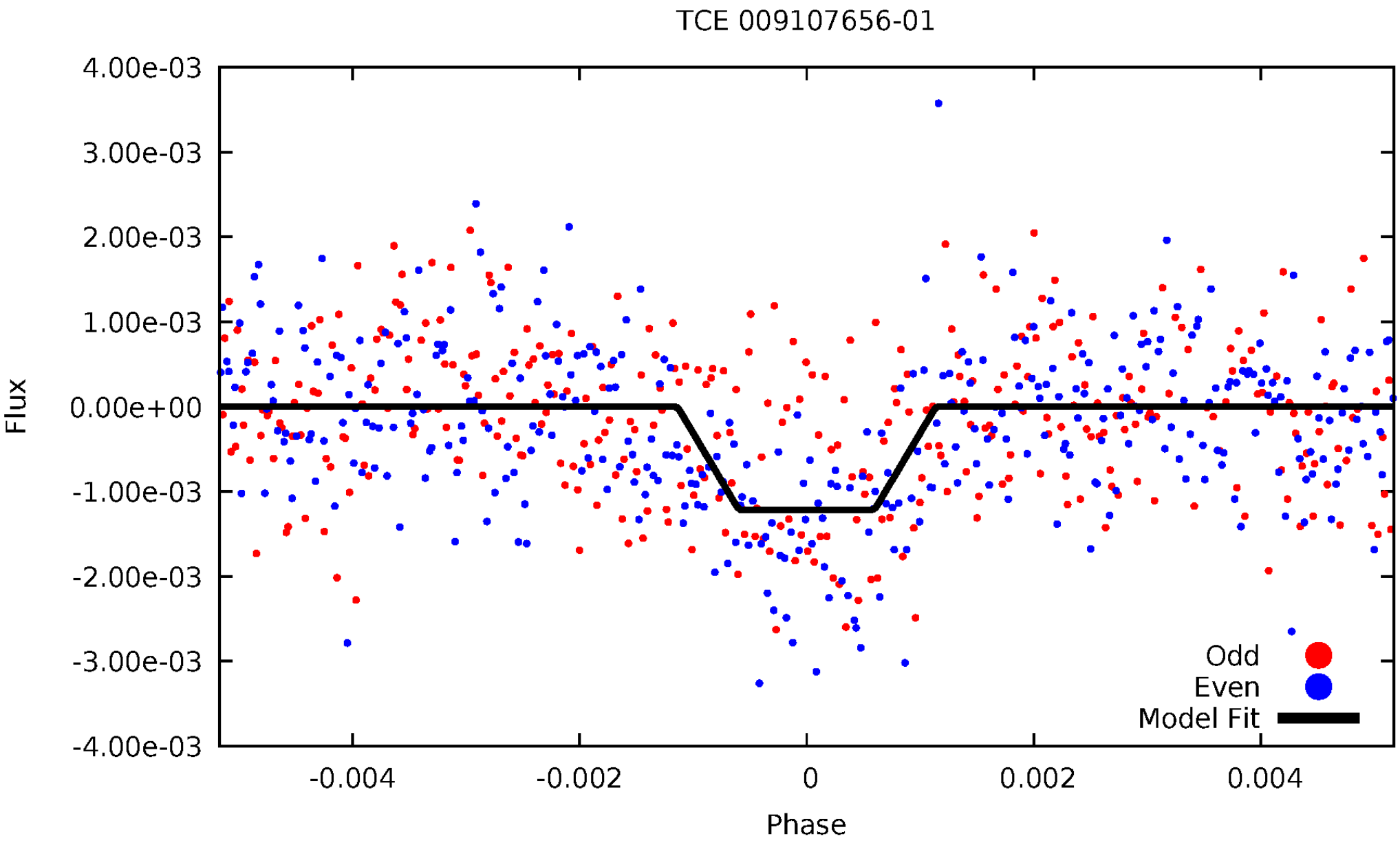



TCE 009107656-01
P = 183.021 days
P = 366.042 days
P = 732.084 days
Normalized Flux
BKJD
Normalized Flux
Phase

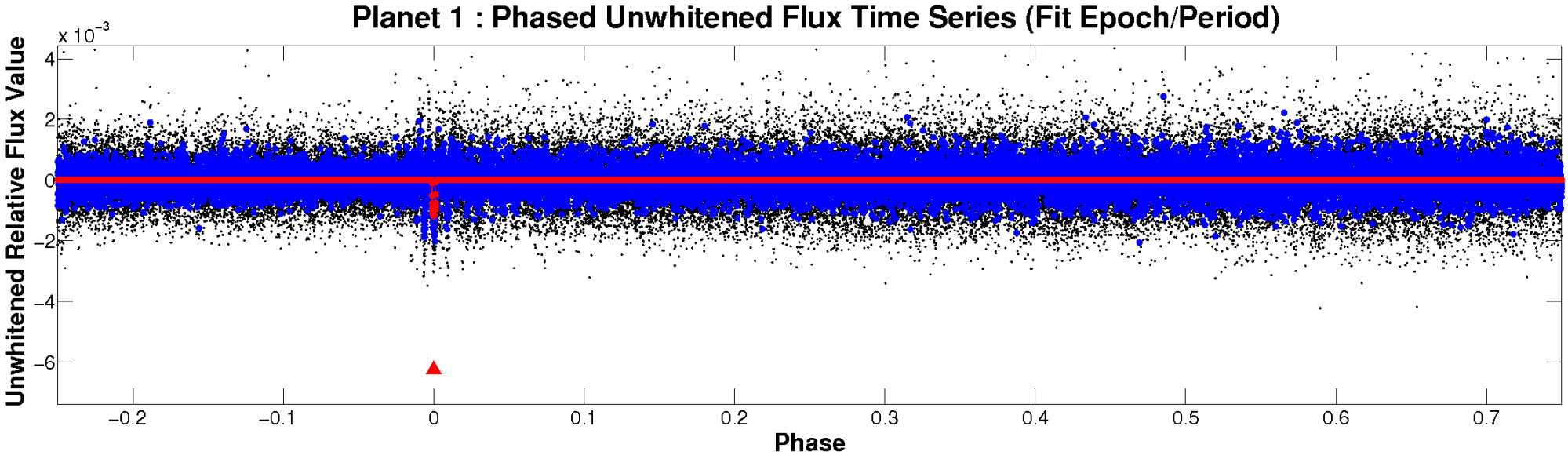
DV Odd/Even

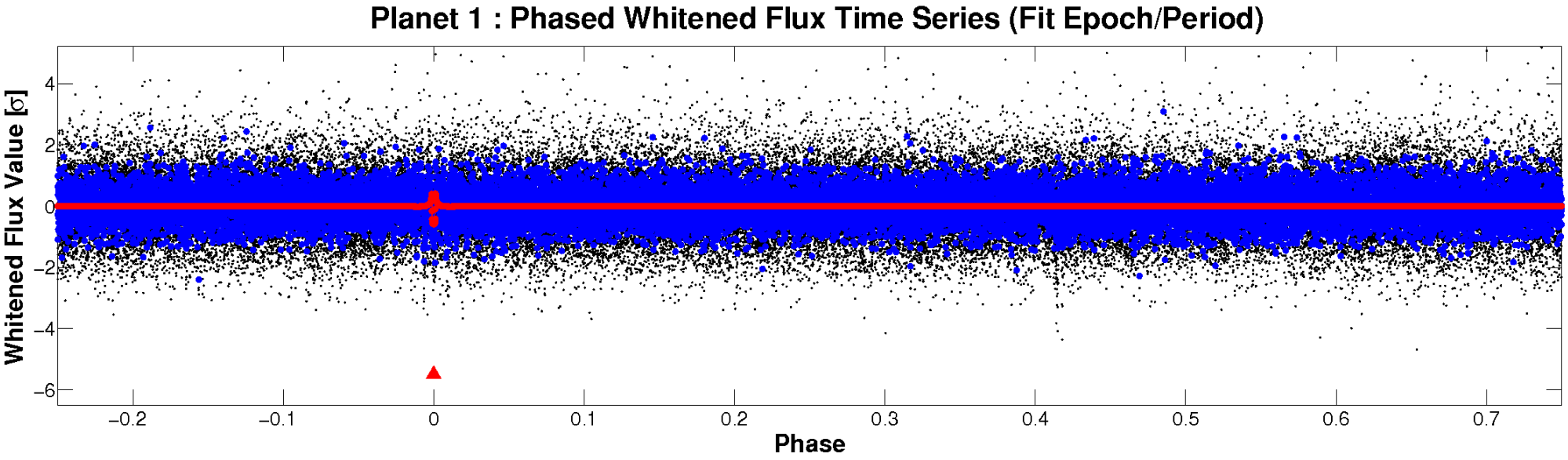

TCE 009107656-01
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
-4.00e-03
Flux
-0.004
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
0.004
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009107656-01
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
-4.00e-03
Flux
-0.004
-0.002
0
0.002
0.004
Phase
Odd
Even
Model Fit

Non-Whitened Vs. Whitened Light Curve





PDC Quarter-Phased Transit Curves

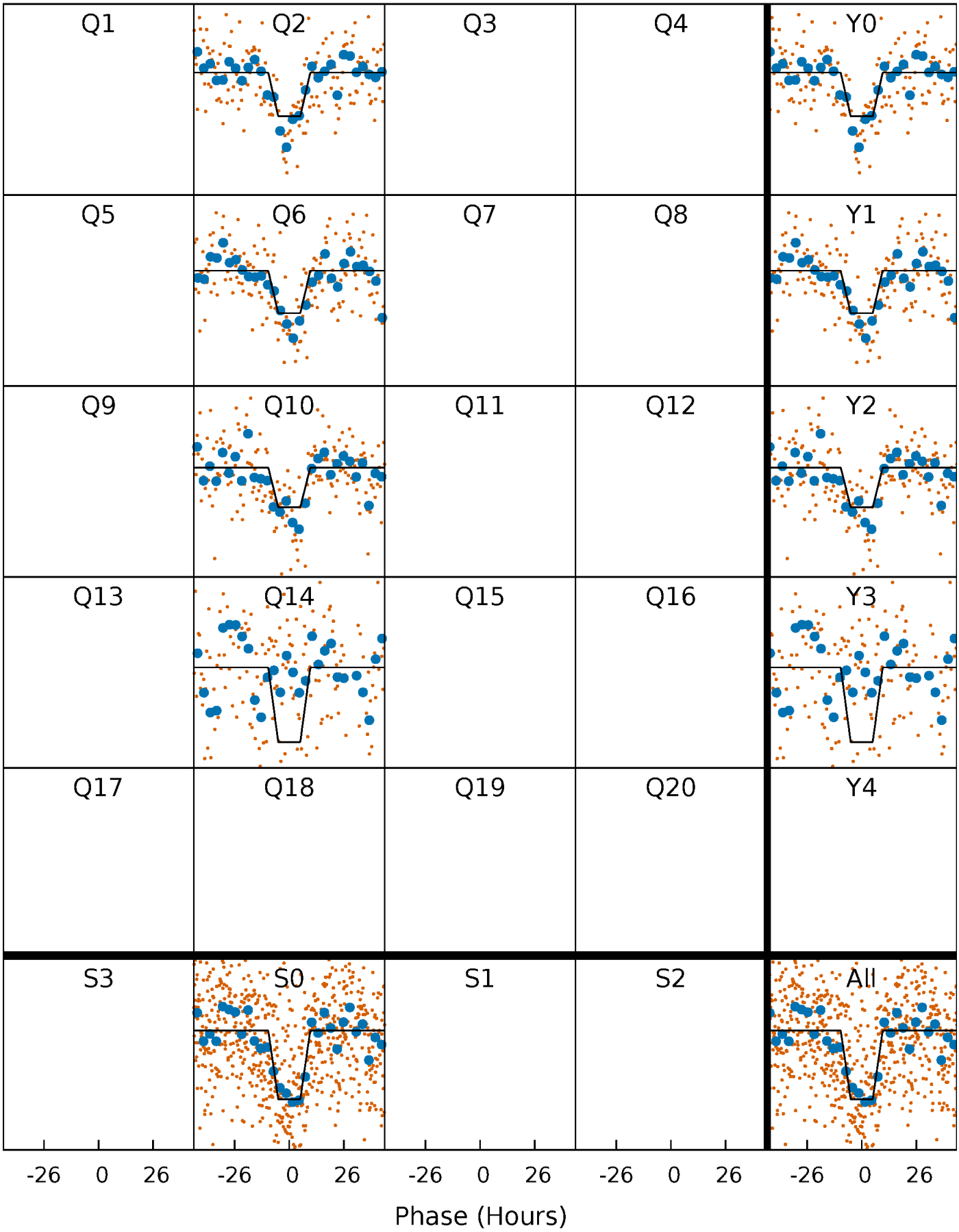
TCE 009107656-01 P=366.042016 Days T_0=179.222737 (BKJD)

DV Quarter-Phased Transit Curves

TCE 009107656-01 P=366.042016 Days T_0=179.222737 (BKJD)

Alt. Detrend Quarter-Phased Transit Curves

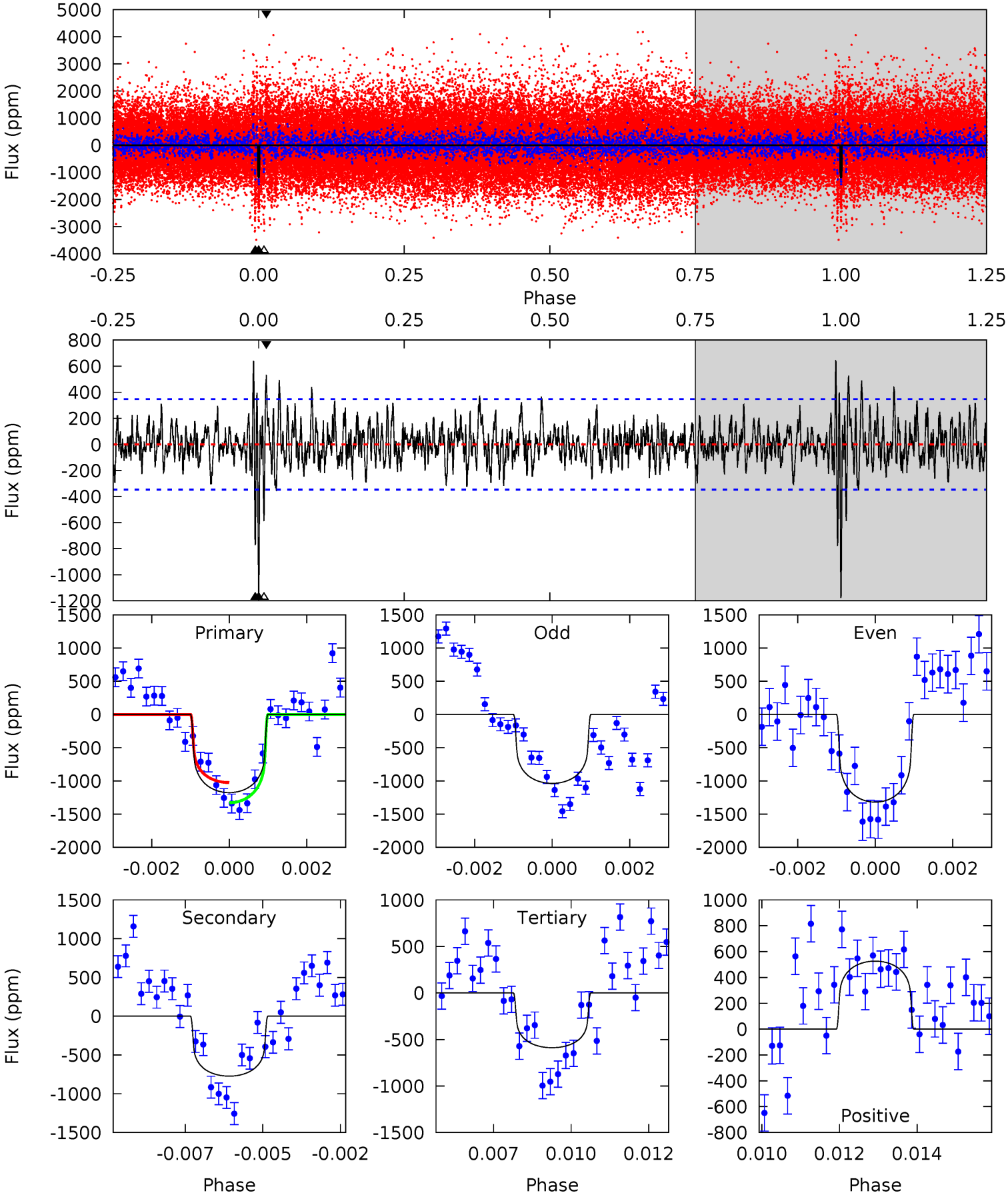
TCE 009107656-01 P=366.019549 Days T_0=179.270721 (BKJD)



DV Model-Shift Uniqueness Test

009107656-01, P = 366.042016 Days, E = 179.222737 Days

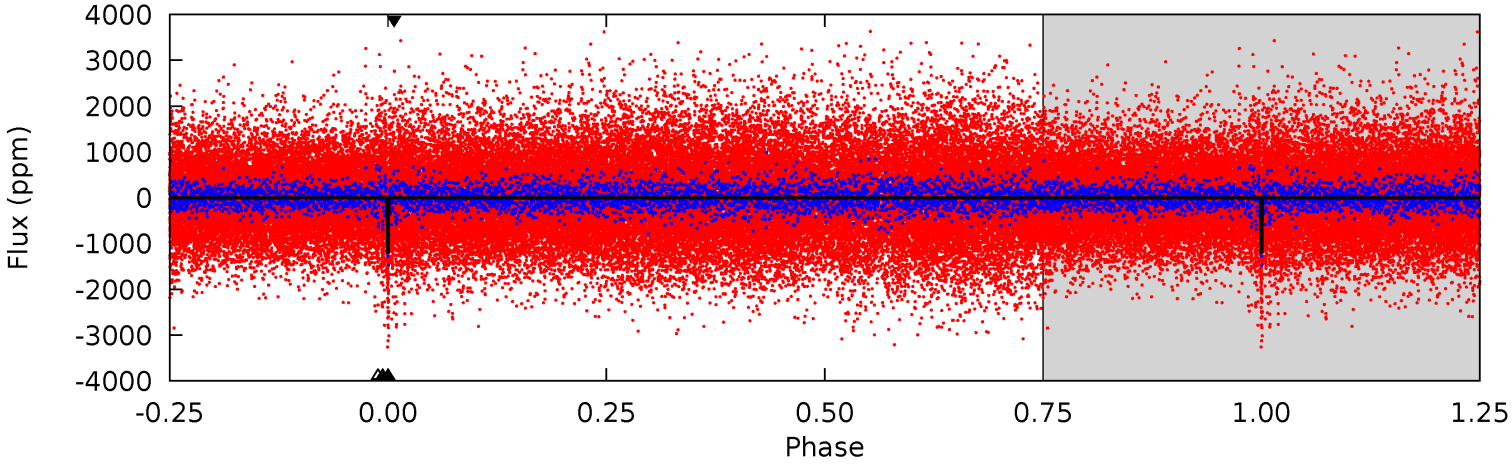
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	11.8	8.96	8.01	5.29	3.03	1.90	8.94	9.89	2.81	3.76	2.15	1.11	0.35	2.32

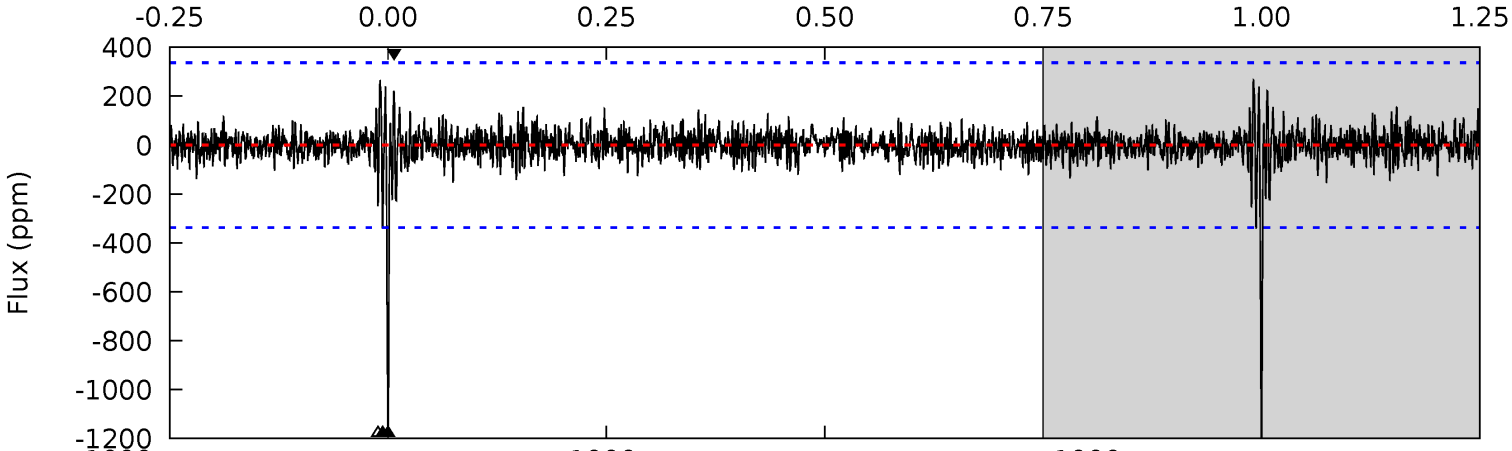


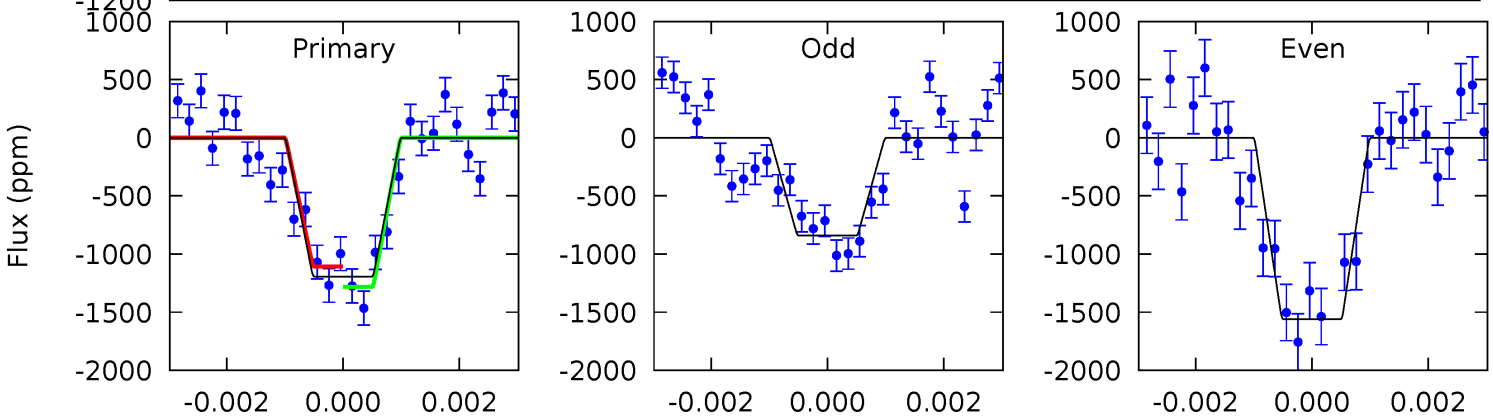
Alt Model-Shift Uniqueness Test

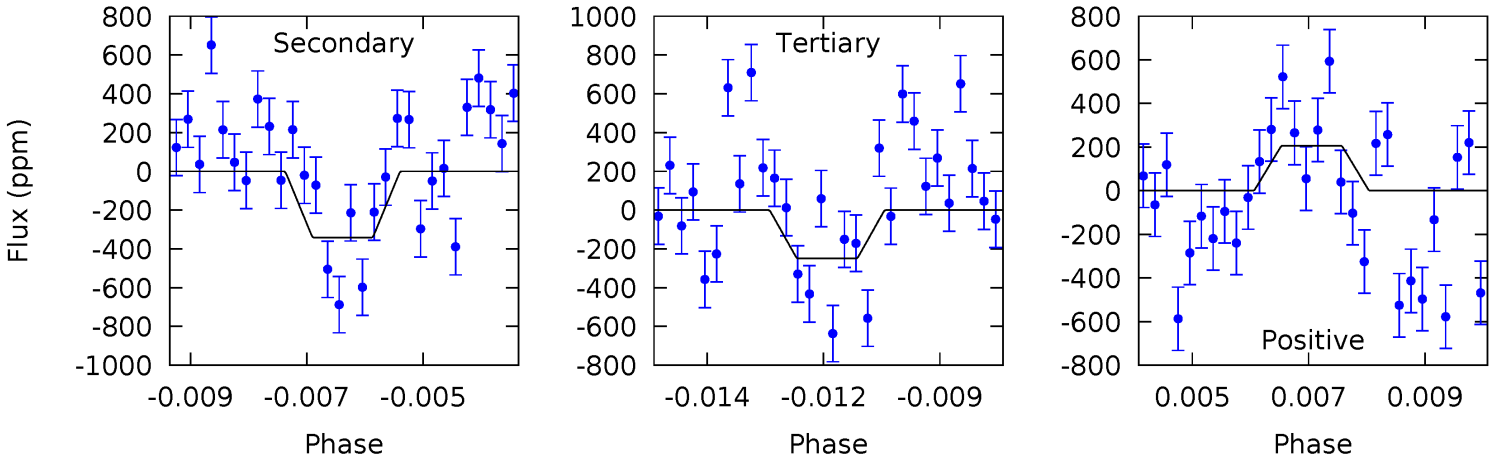
009107656-01, P = 366.019549 Days, E = 179.270721 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	5.36	3.93	3.25	5.30	3.05	0.74	14.8	15.5	1.43	2.11	5.65	0.80	0.18	1.39









Stellar Parameters For KIC 009107656

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	3682^{+44}_{-55}	$4.824^{+0.035}_{-0.031}$	$-0.200^{+0.100}_{-0.100}$	$0.434^{+0.027}_{-0.033}$	$0.459^{+0.026}_{-0.036}$	$7.886^{+1.407}_{-0.991}$
	+1%/-1%	+1%/-1%	+50%/-50%	+6%/-8%	+6%/-8%	+18%/-13%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009107656-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-773±66	$1.49^{+0.42}_{-0.41}$	170^{+3}_{-4}	3522^{+426}_{-260}	$115058^{+102581}_{-46427}$
Alt.	-341±64	$1.64^{+0.47}_{-0.40}$	170^{+3}_{-3}	3024^{+270}_{-210}	41002^{+32292}_{-16959}

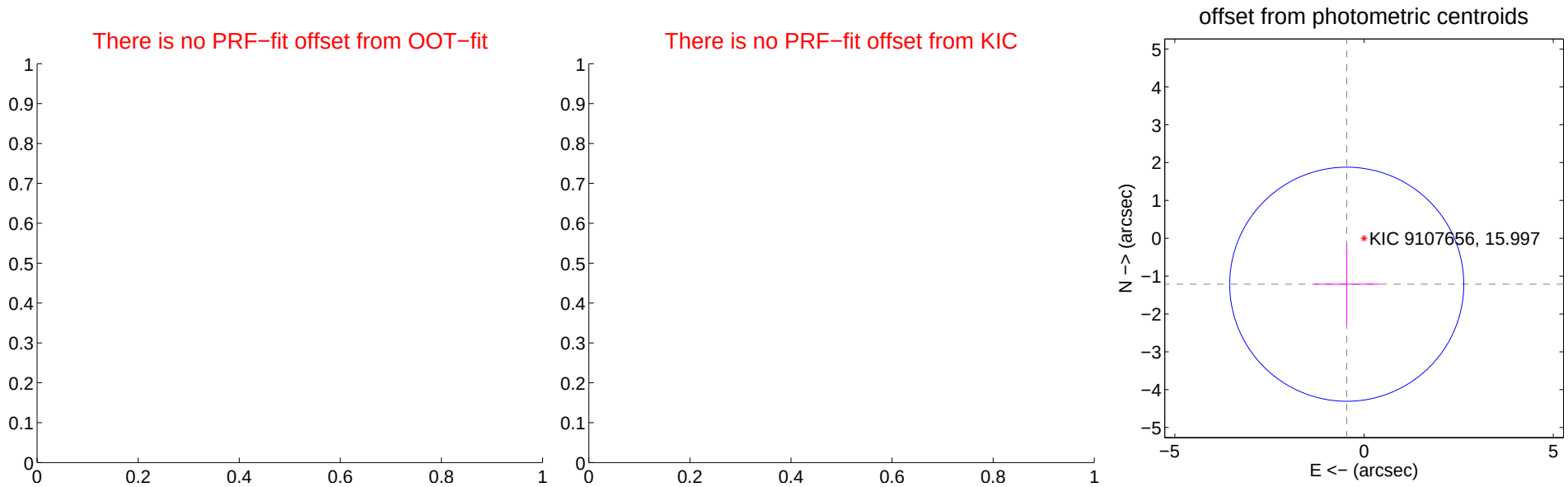
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

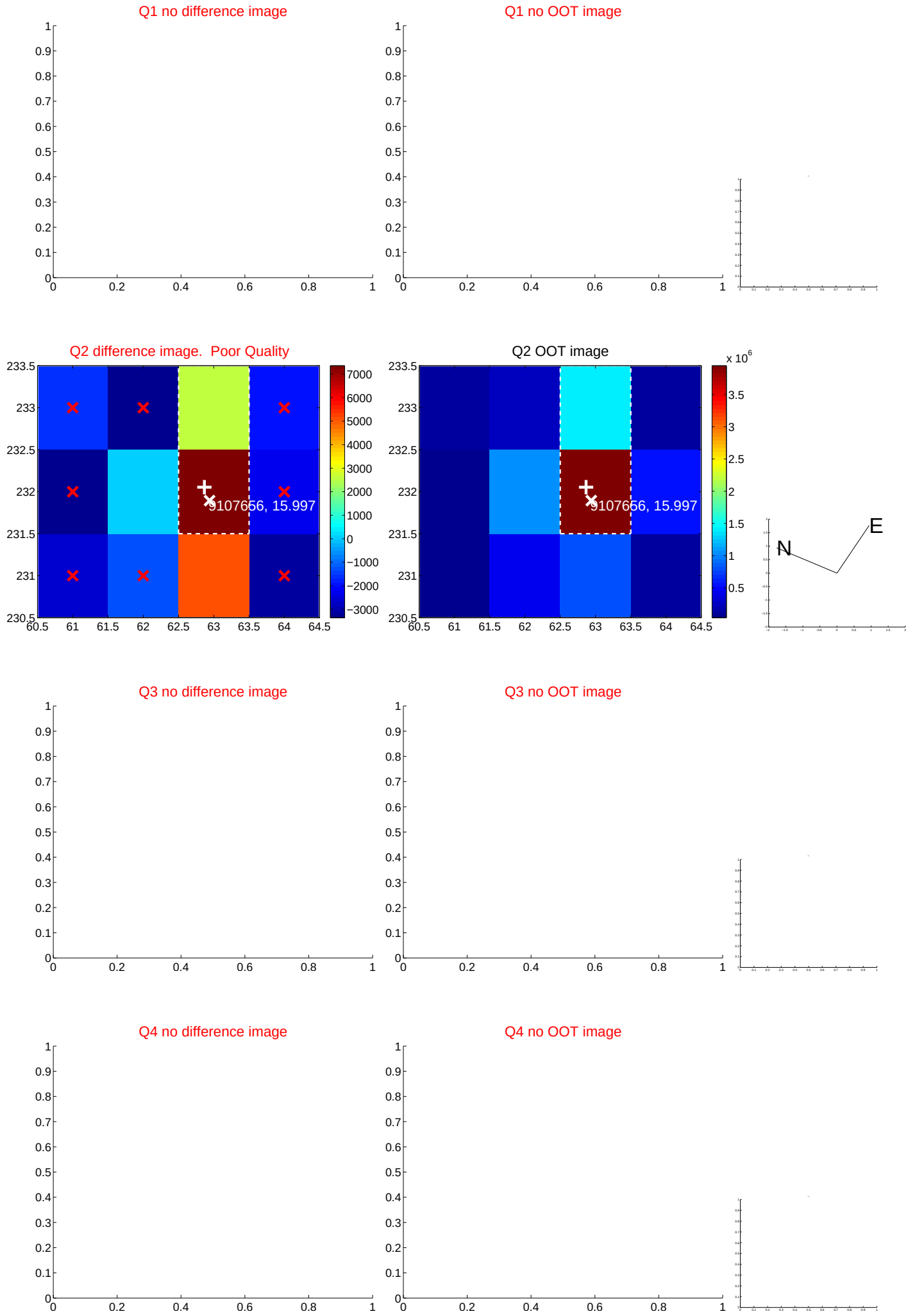
Supplemental centroid analysis for 009107656-01. Kepler magnitude: 16.00. Transit SNR 7.33
There are 0 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.30 ± 1.03	1.26	0.46 ± 0.87	-1.21 ± 1.05

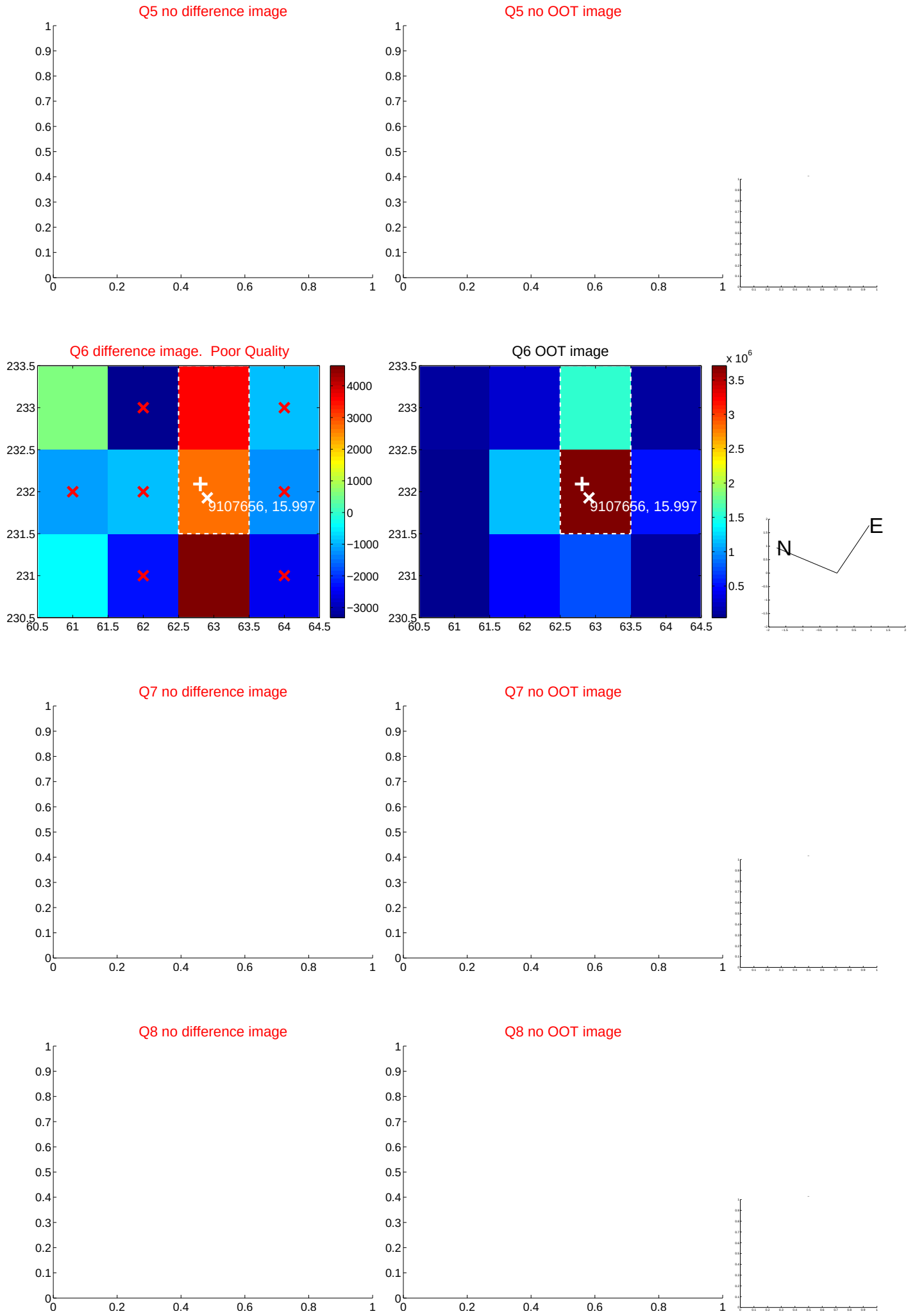


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

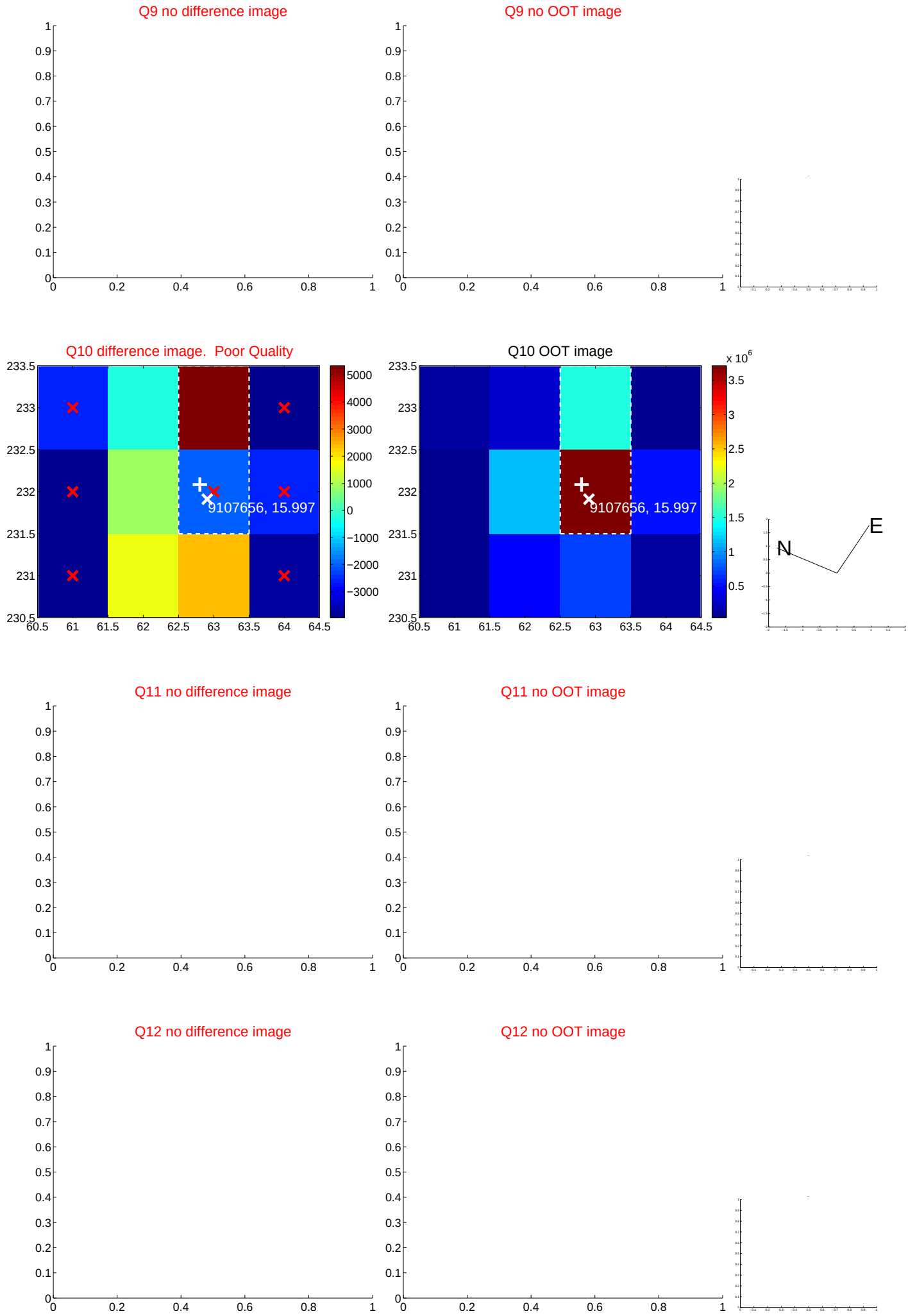
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



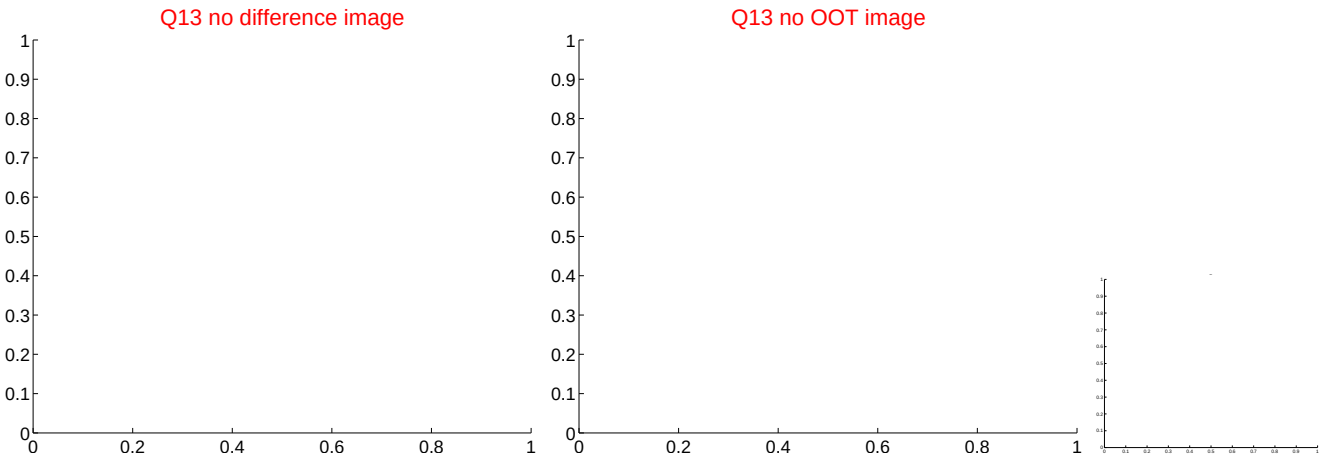
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

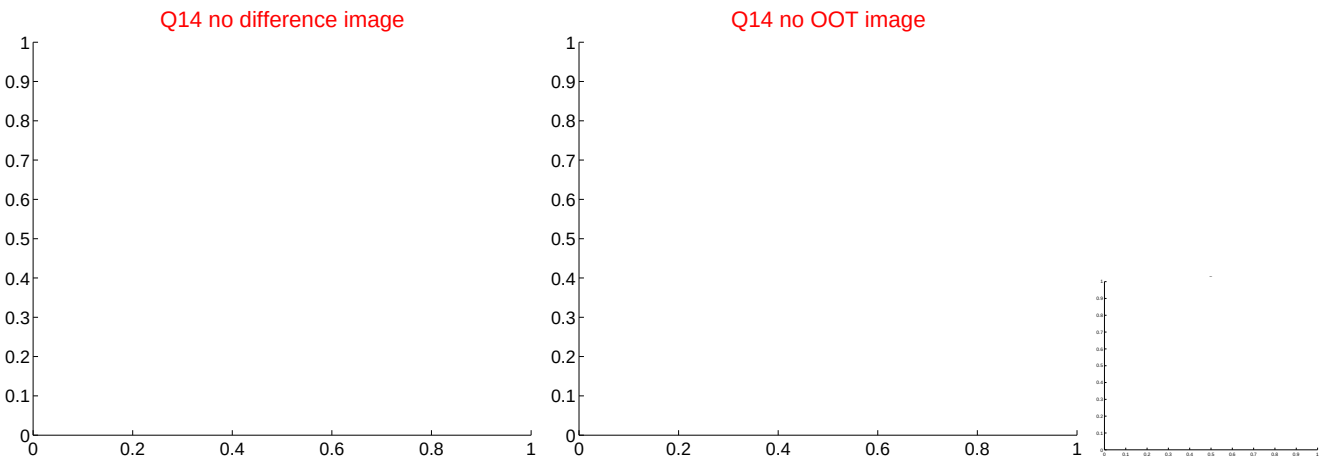


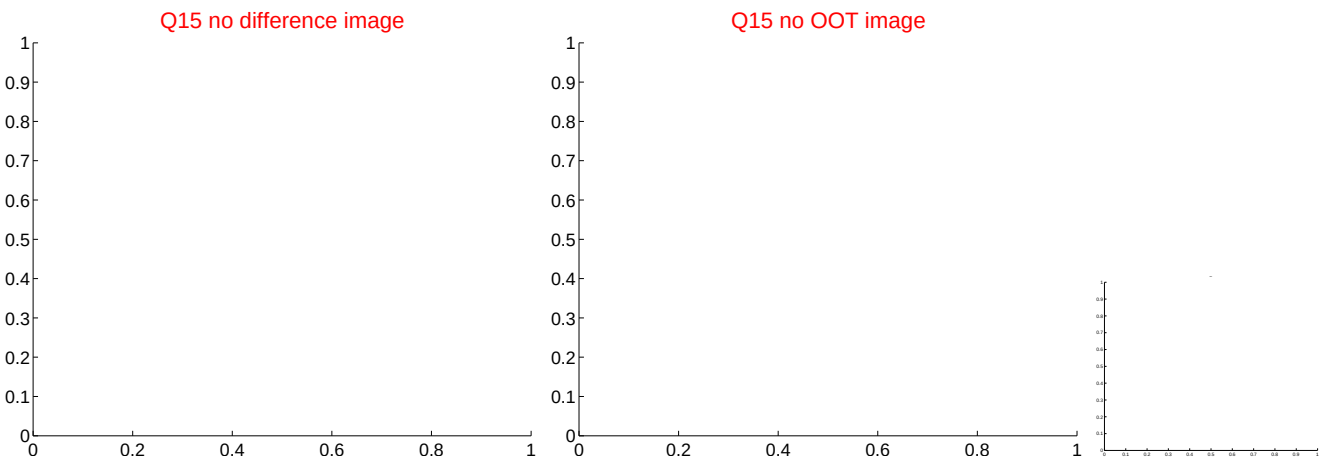
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

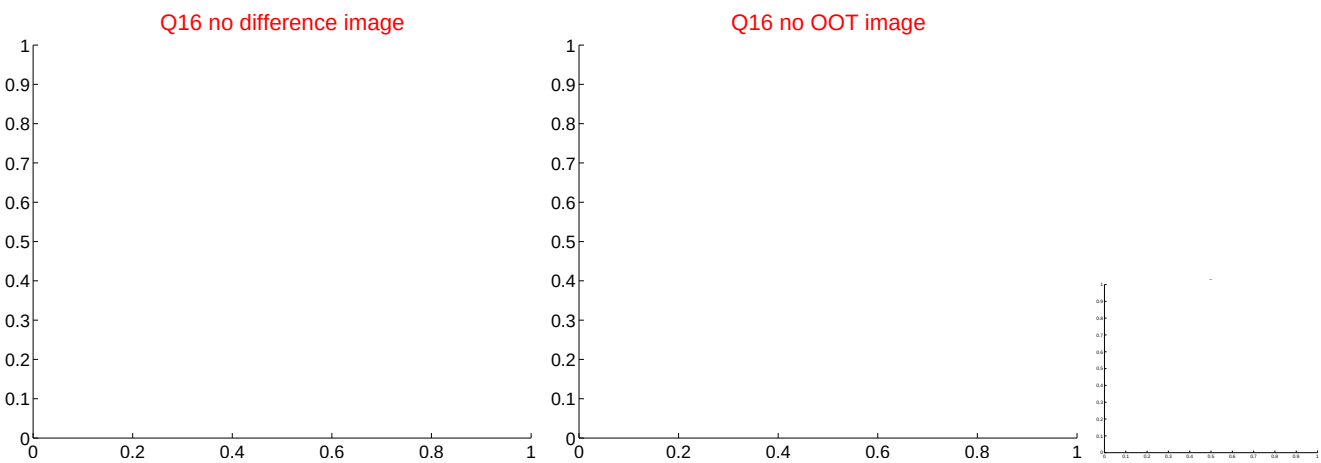


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

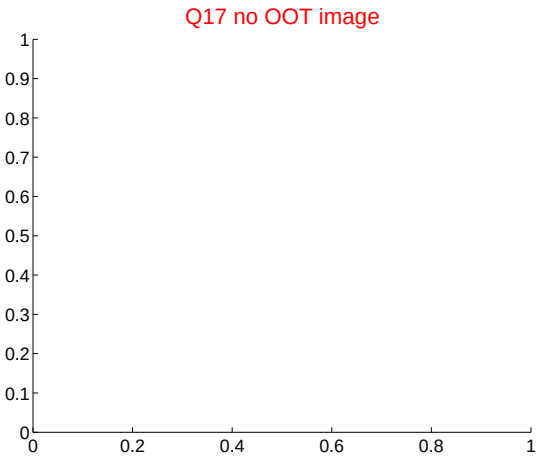


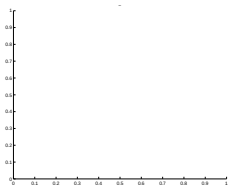


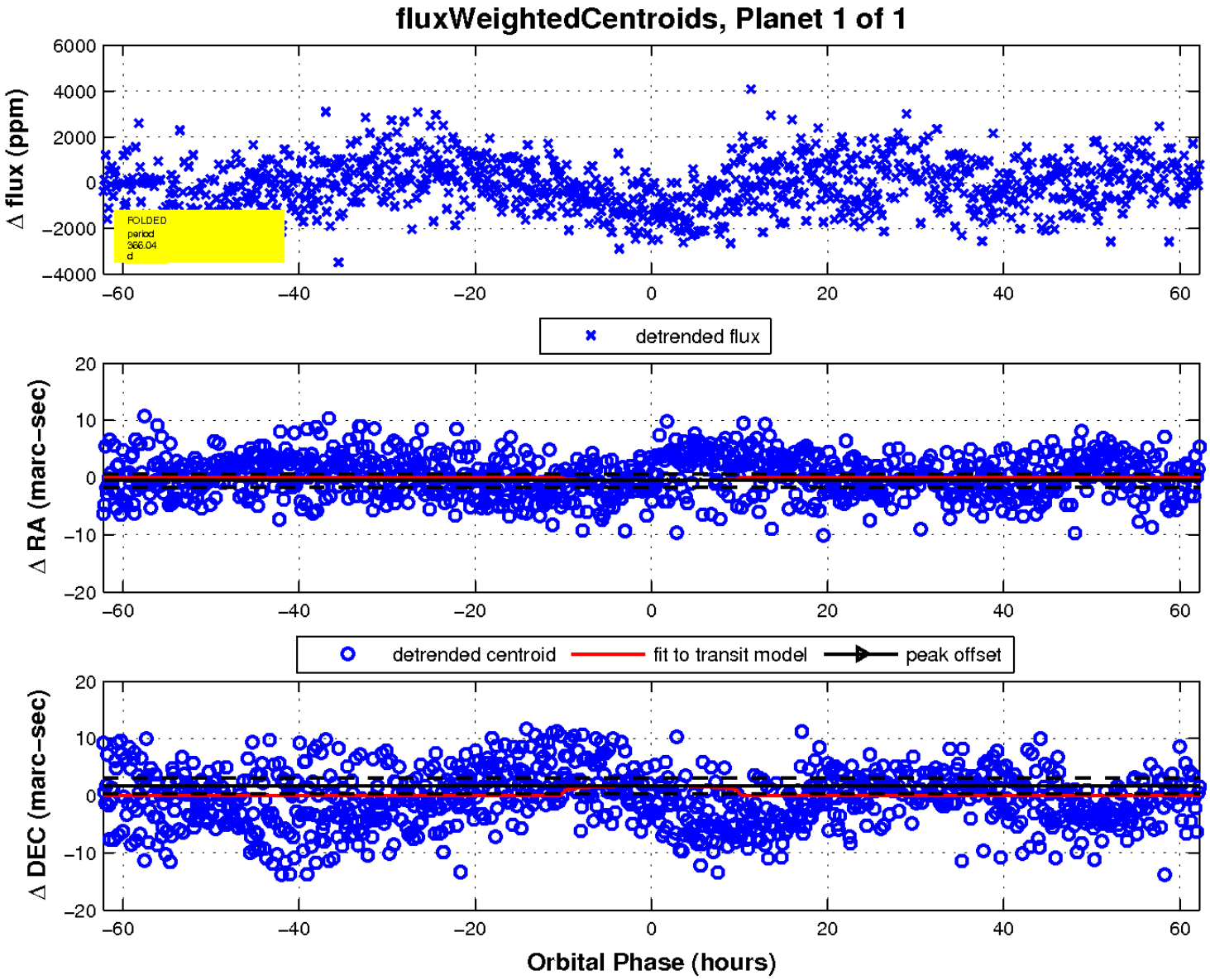




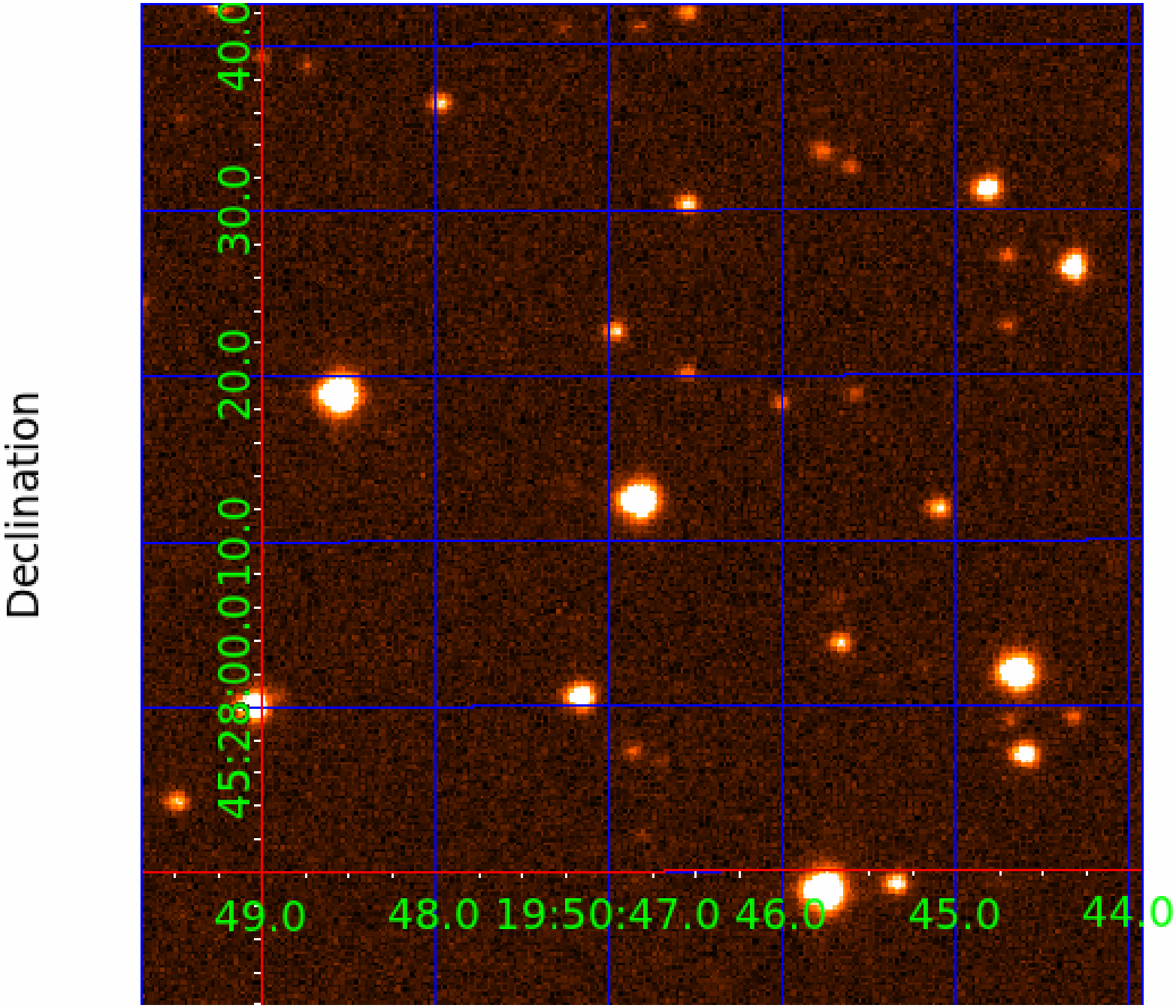
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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