KIC 009290087

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 ($S_\oplus$)
009290087-01	OBS	No	416.801058	533.447079	163.5	14.970	8.4	7.9	1.74	6141	2.43	3.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009290087-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—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.

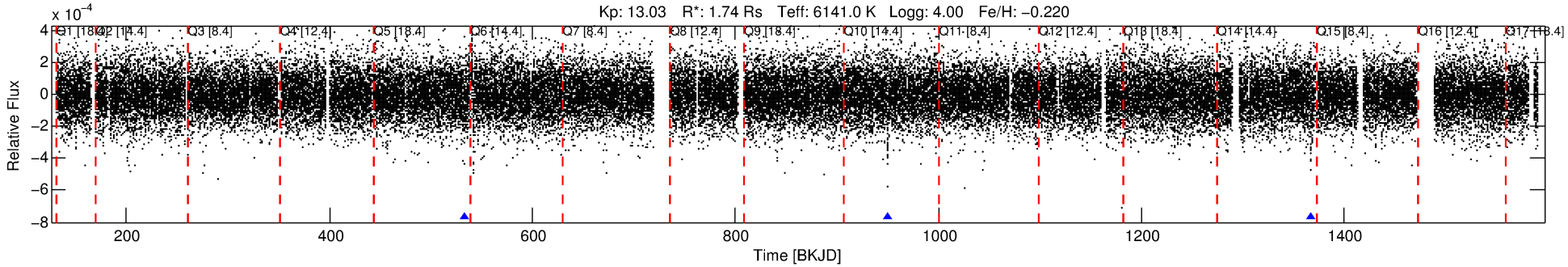
Ephemeris Match Information For 009290087-01

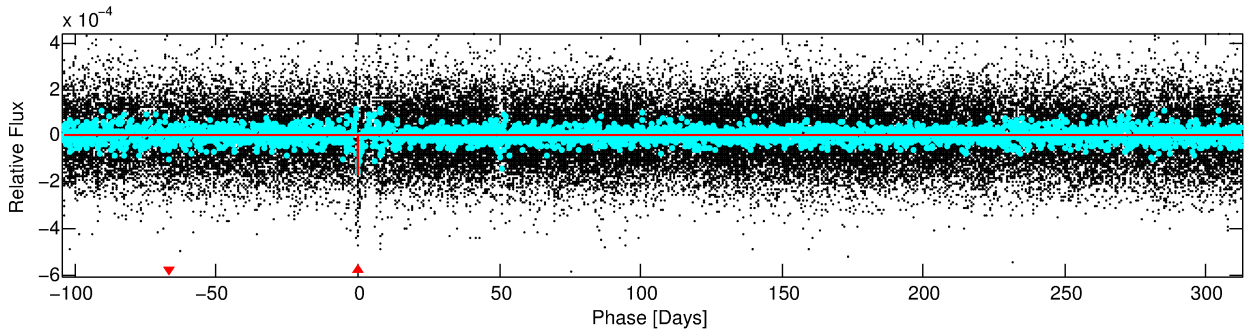
No Significant Match Found

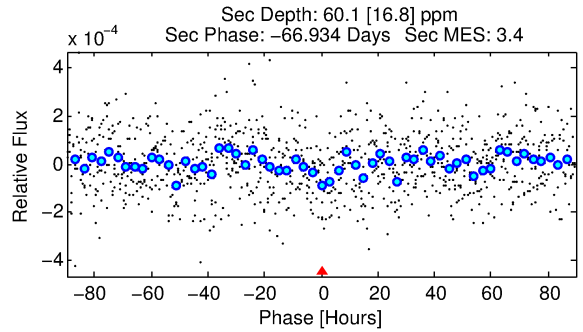
DV One-Page Summary

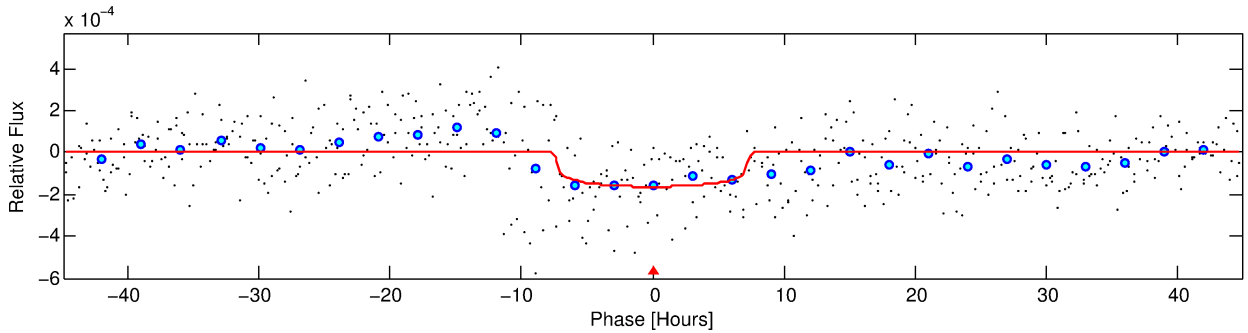
KIC: 9290087 Candidate: 1 of 1 Period: 416.801 d

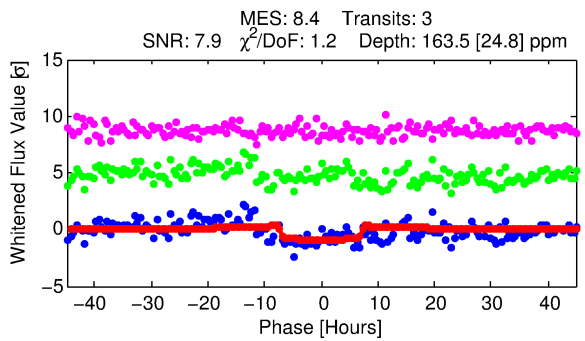
Kp: 13.03 R*: 1.74 Rs Teff: 6141.0 K Logg: 4.00 Fe/H: −0.220

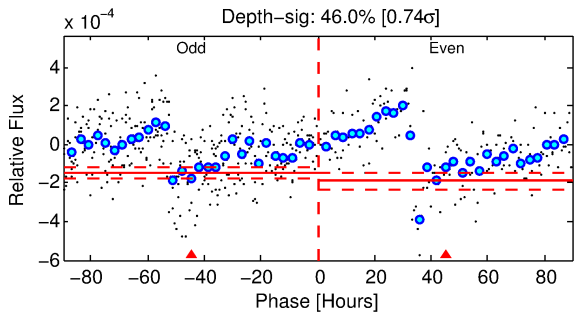


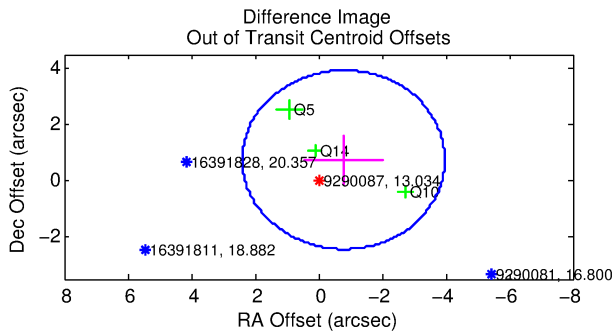












DV Fit Results:

Period = 416.80106 [0.01626] d
Epoch = 533.4471 [0.0209] BKJD
Rp/R* = 0.0128 [0.0047]
a/R* = 138.46 [252.21]
b = 0.78 [0.95]

Seff = 3.02 [1.40]
Teq = 336 [39] K
Rp = 2.43 [1.16] Re
a = 1.1268 [0.3219] AU

Ag = 7106.75 [6414.92] [1.11σ]
Teffp = 4772 [946] K [4.68σ]

DV Diagnostic Results:

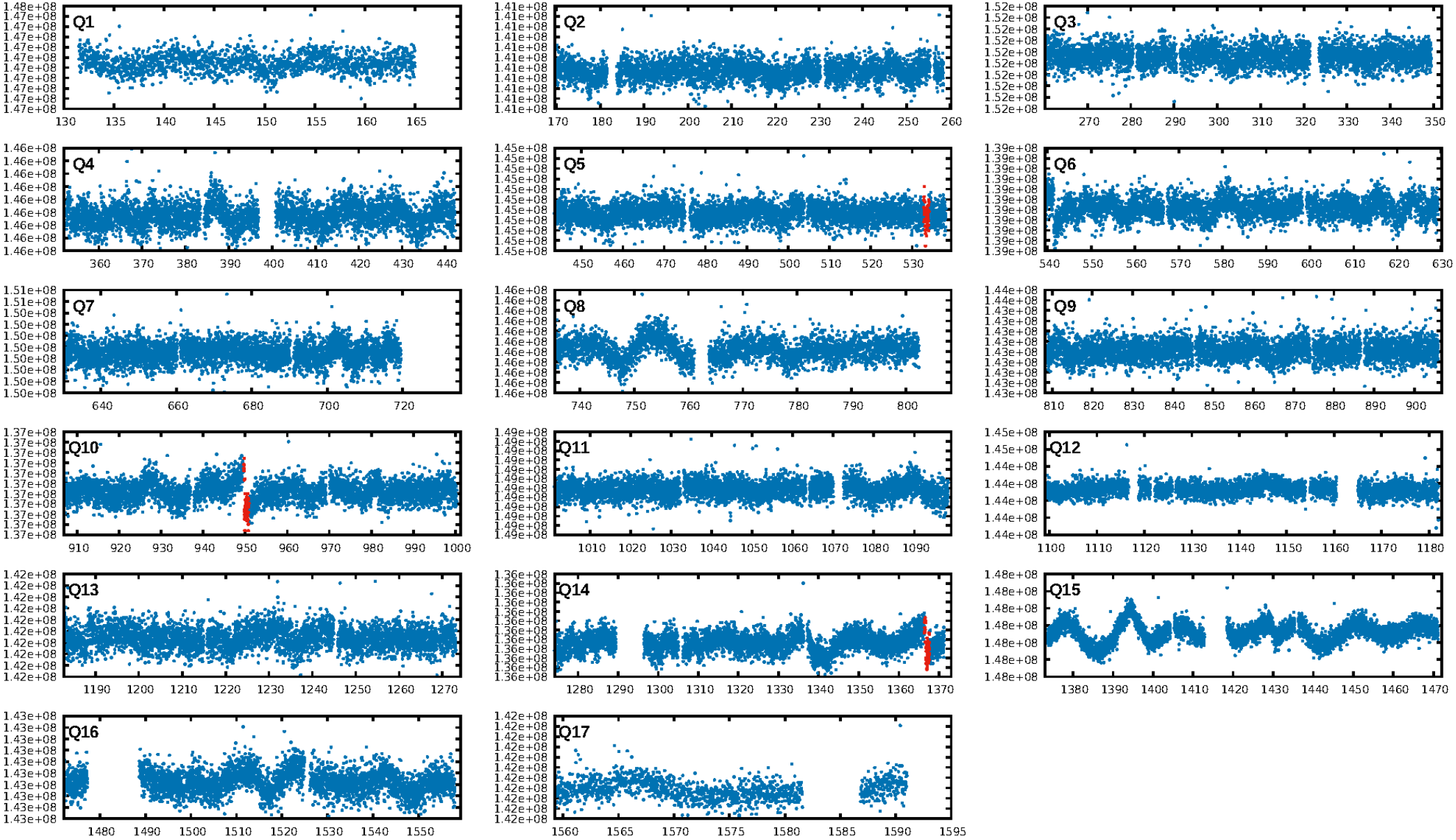
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 6.0%
ModelChiSquareGof−sig: 93.0%
Bootstrap−pfa: 1.89e−09
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: 4.888

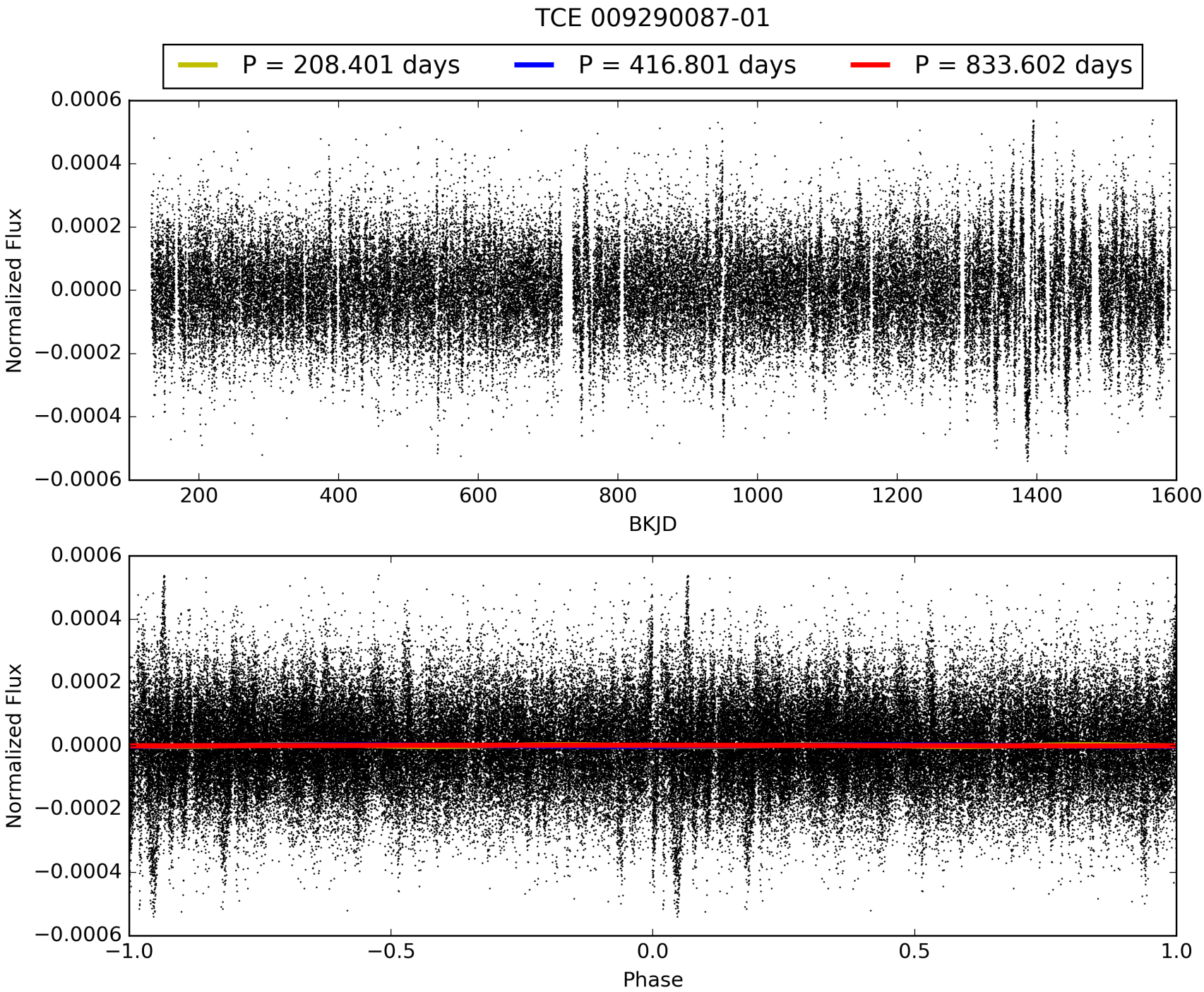
Centroid−sig: 0.3%
Centroid−so: 2.785 arcsec [1.66σ]
OotOffset−rm: 1.086 arcsec [1.02σ]
KicOffset−rm: 1.418 arcsec [1.53σ]
OotOffset−st: 2/0/0/1 [3]
KicOffset−st: 2/0/0/1 [3]
DiffImageQuality−fgm: 1.00 [3/3]
DiffImageOverlap−fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 01:31:12 Z

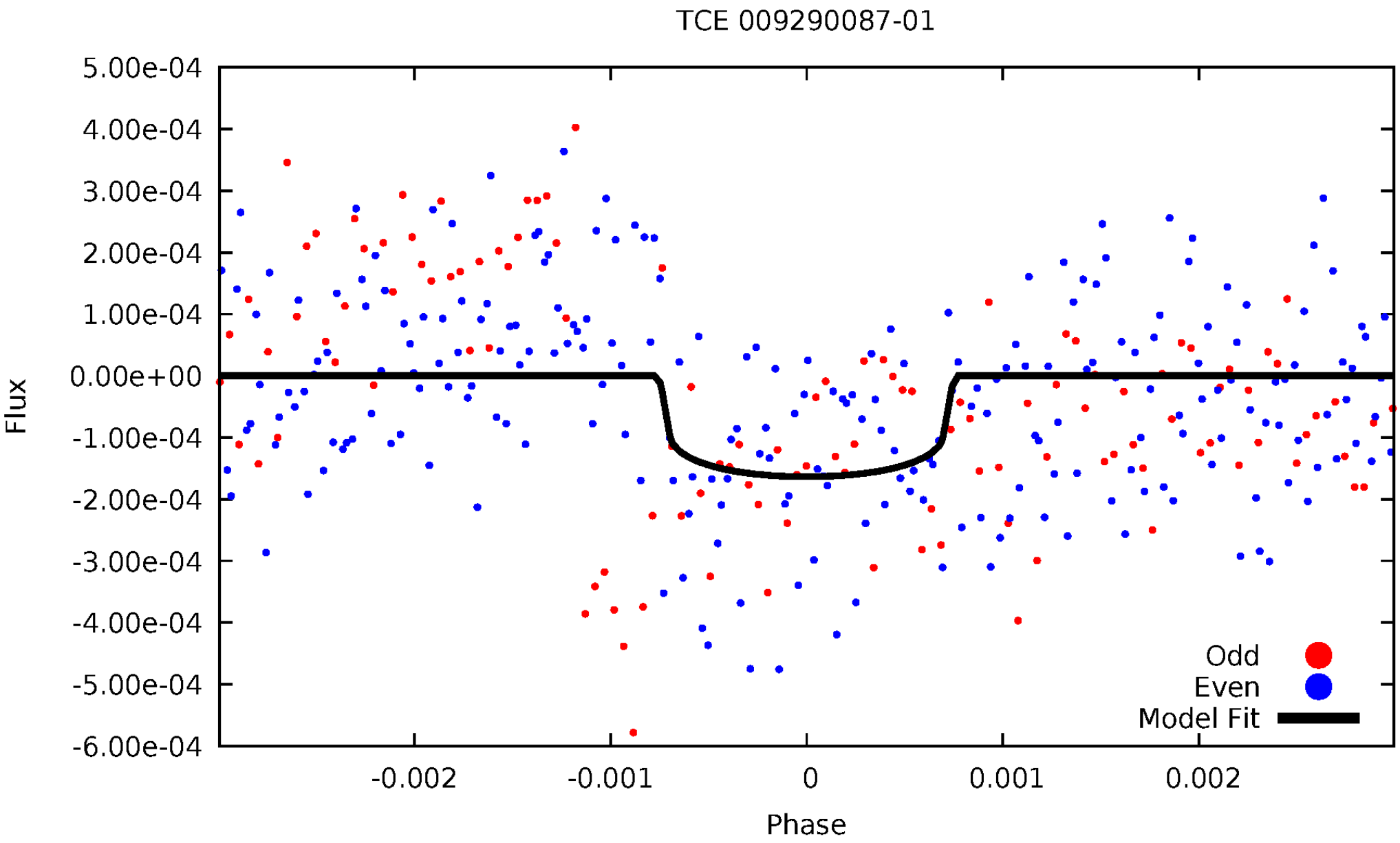
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009290087-01, PDC Light Curves

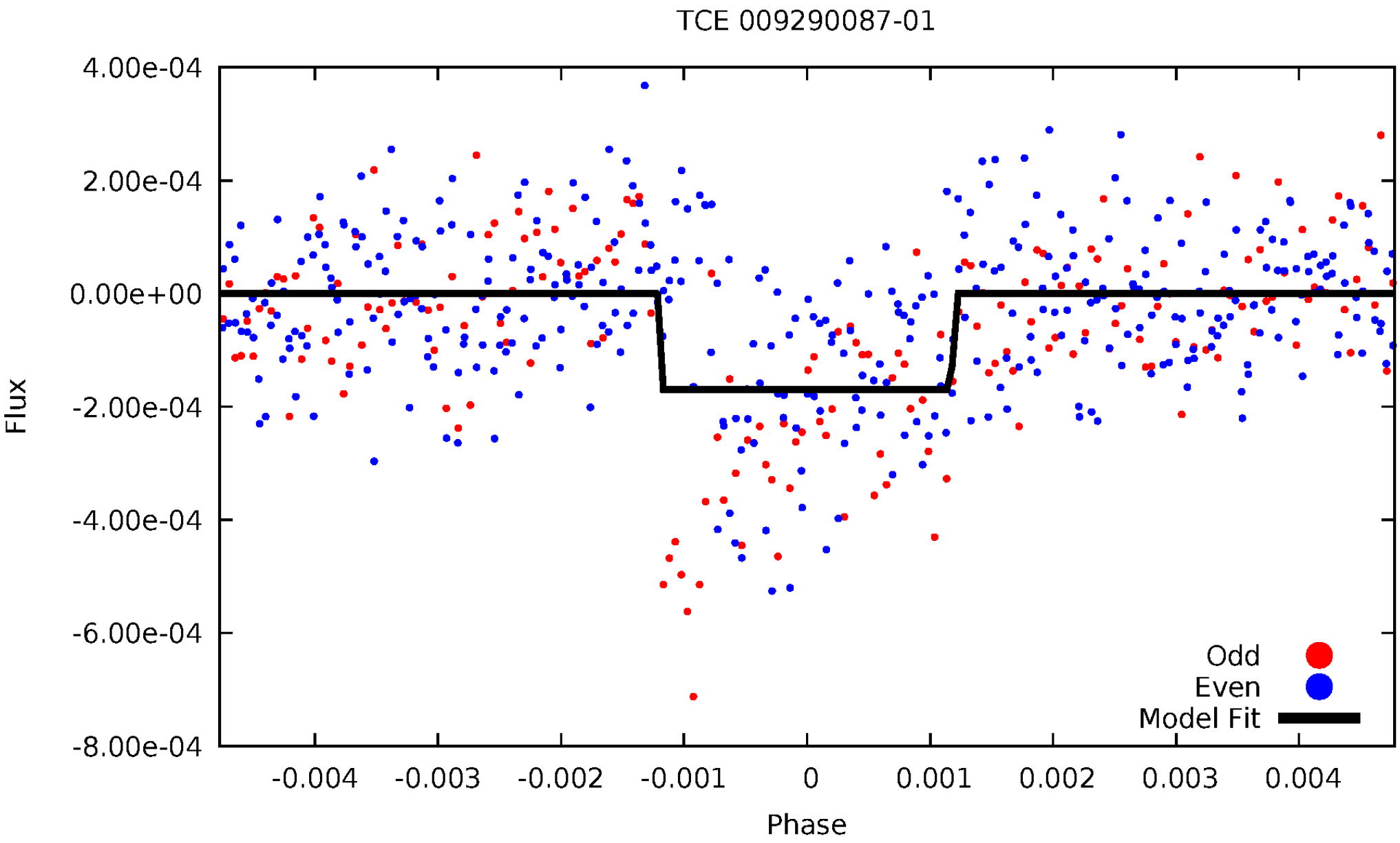



TCE 009290087-01
P = 208.401 days
P = 416.801 days
P = 833.602 days
Normalized Flux
0.0006
0.0004
0.0002
0.0000
−0.0002
−0.0004
−0.0006
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0006
0.0004
0.0002
0.0000
−0.0002
−0.0004
−0.0006
−1.0
−0.5
0.0
0.5
1.0
Phase

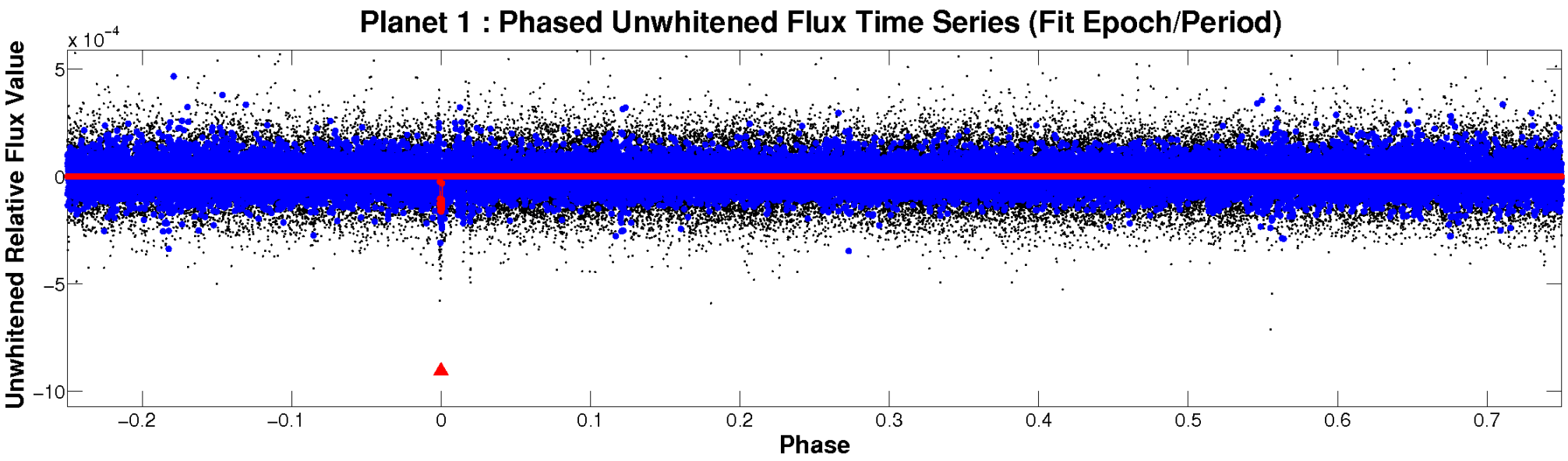
DV Odd/Even

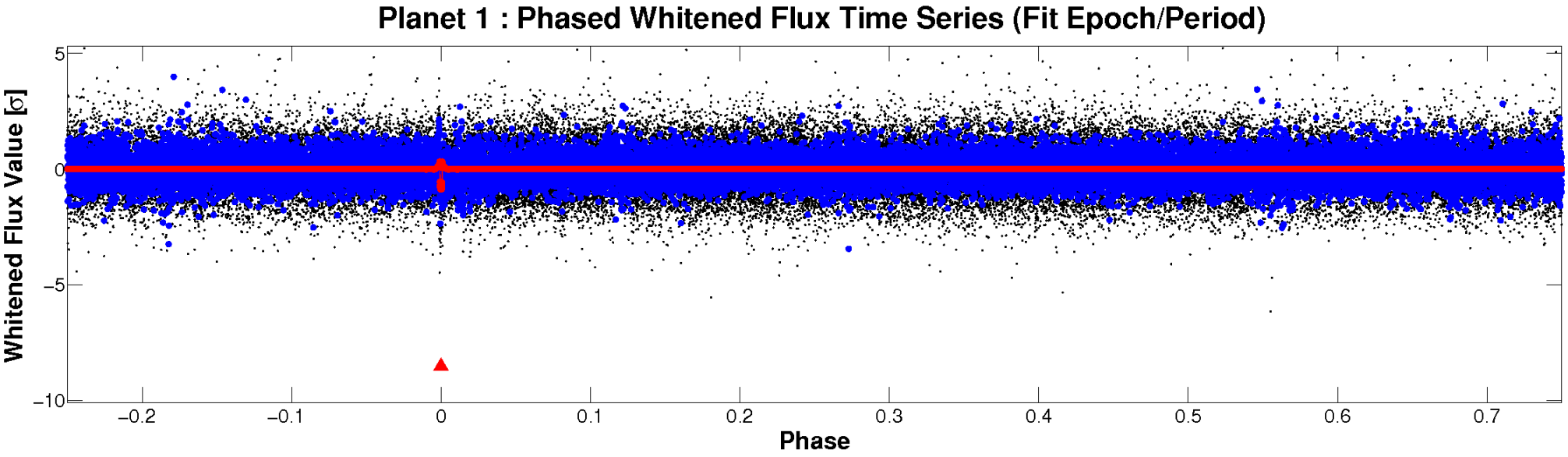

TCE 009290087-01
5.00e-04
4.00e-04
3.00e-04
2.00e-04
1.00e-04
0.00e+00
-1.00e-04
-2.00e-04
-3.00e-04
-4.00e-04
-5.00e-04
-6.00e-04
Flux
-0.002
-0.001
0
0.001
0.002
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009290087-01
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.004
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
0.004
Phase
Odd
Even
Model Fit

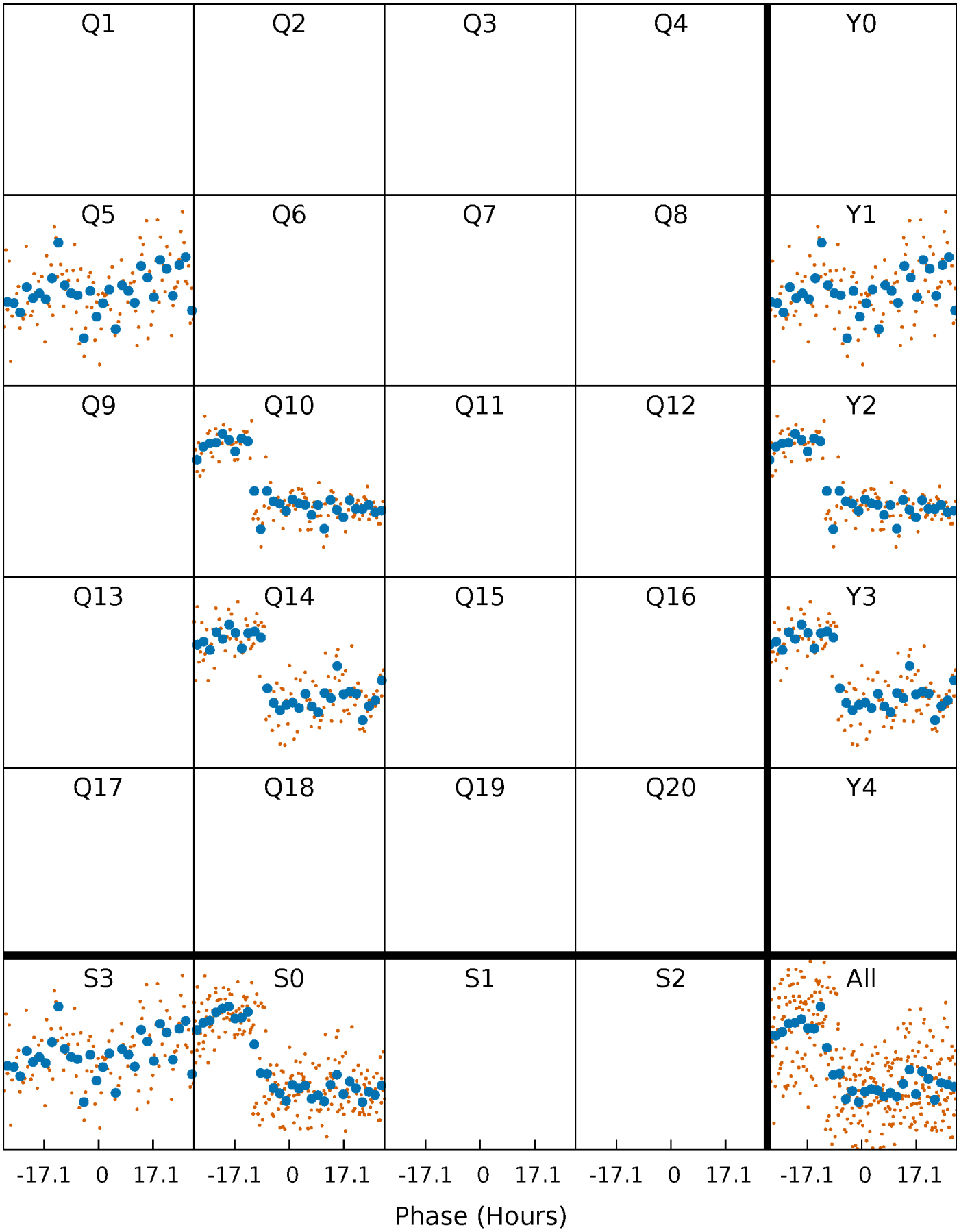
Non-Whitened Vs. Whitened Light Curve





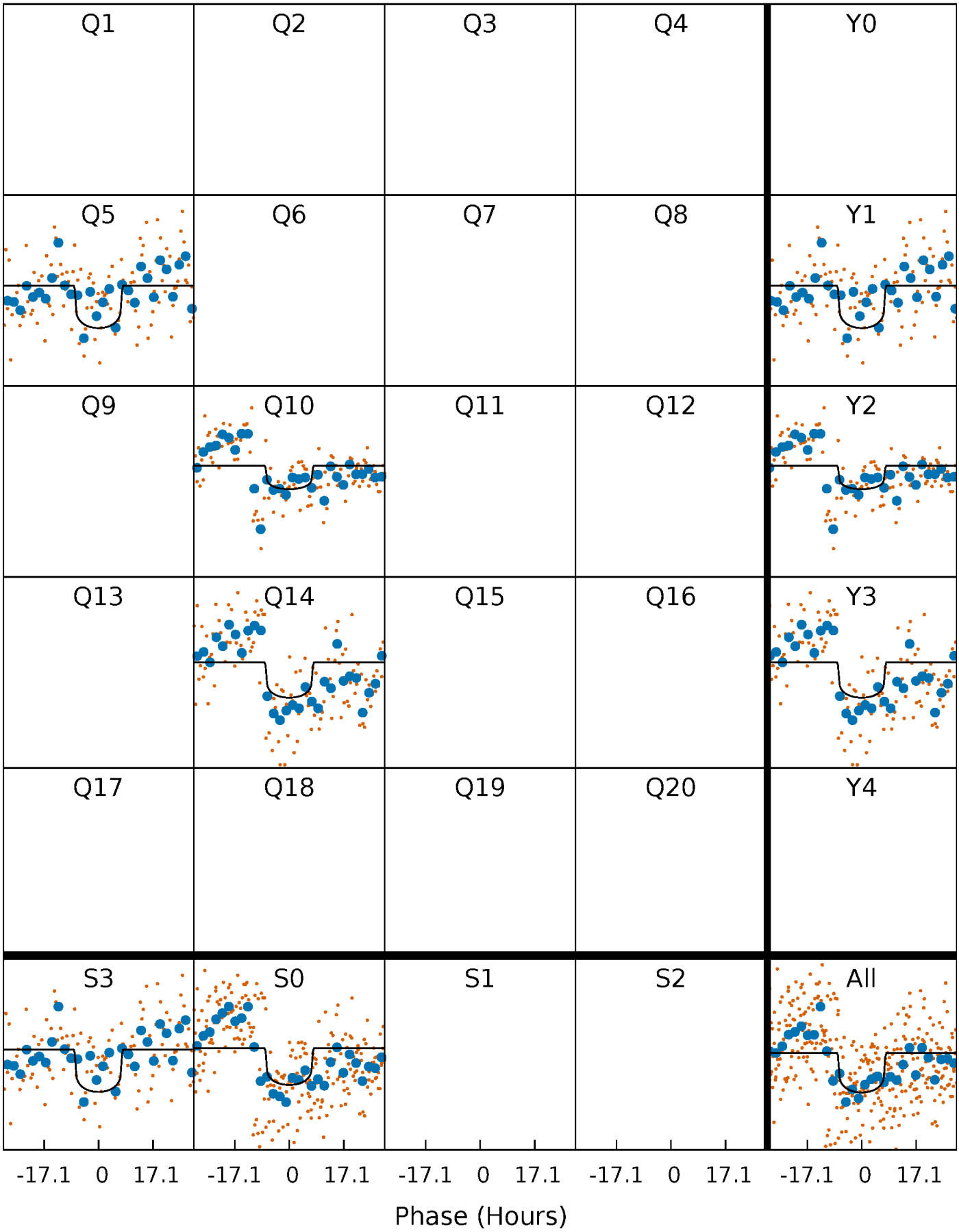
PDC Quarter-Phased Transit Curves

TCE 009290087-01 P=416.801058 Days T_0=533.447079 (BKJD)



DV Quarter-Phased Transit Curves

TCE 009290087-01 P=416.801058 Days T_0=533.447079 (BKJD)



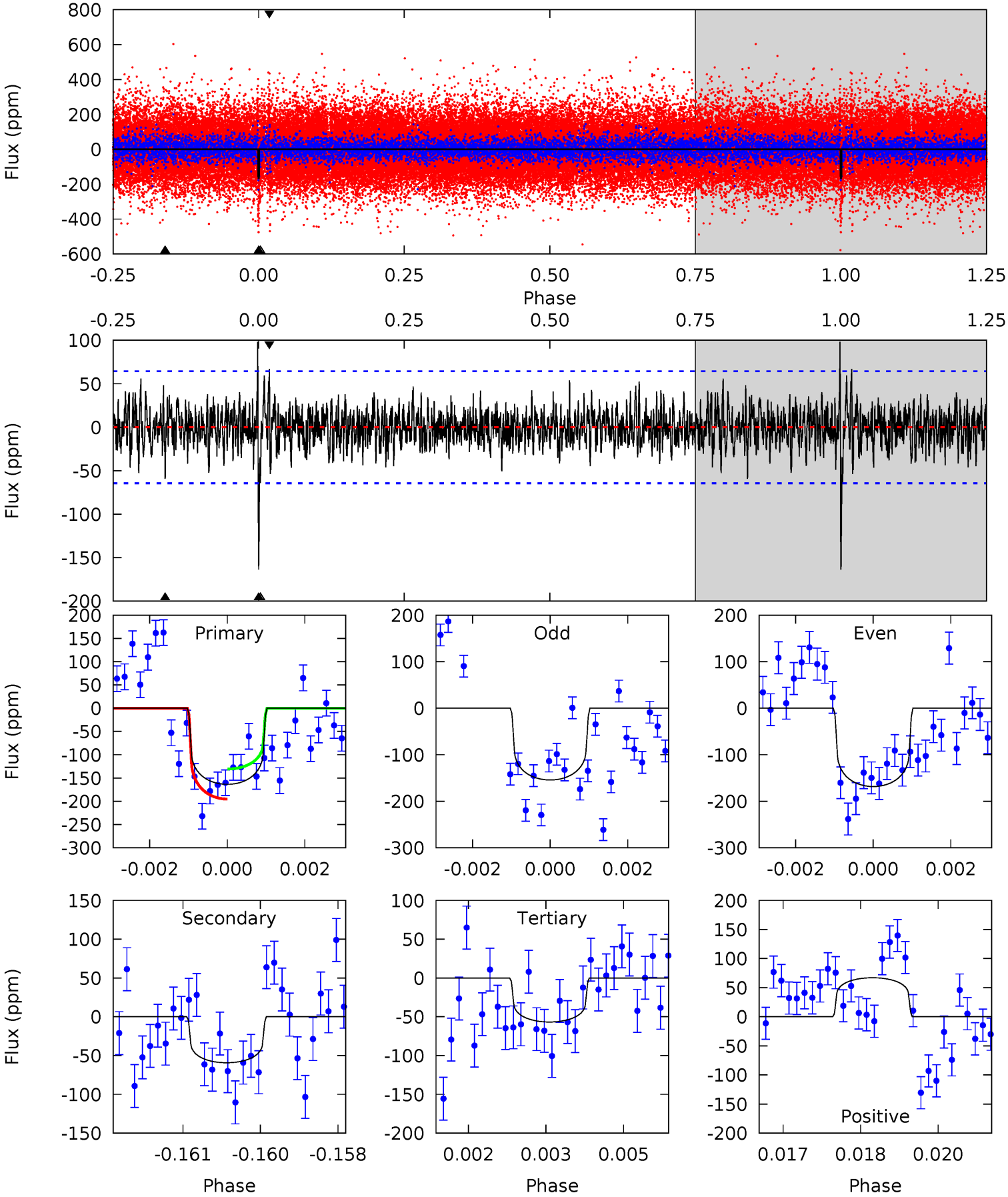
Alt. Detrend Quarter-Phased Transit Curves

TCE 009290087-01 P=416.783323 Days T_0=533.481522 (BKJD)

DV Model-Shift Uniqueness Test

009290087-01, P = 416.801058 Days, E = 116.646021 Days

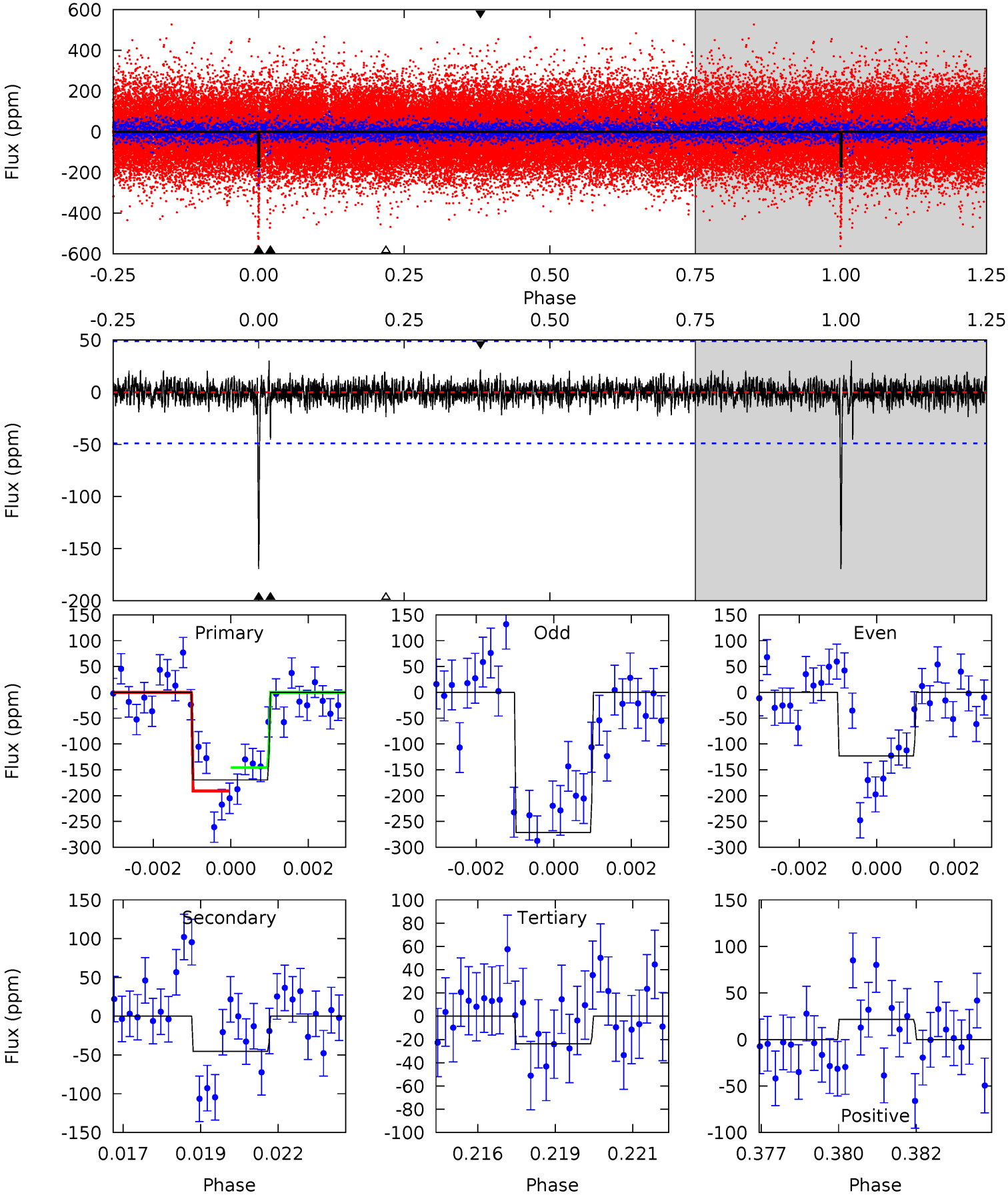
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	4.95	4.73	5.60	5.38	3.17	1.39	8.92	8.05	0.21	-0.65	0.56	1.06	0.38	2.69



Alt Model-Shift Uniqueness Test

009290087-01, P = 416.783323 Days, E = 116.698199 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	4.89	2.56	2.33	5.29	3.04	0.70	15.7	15.9	2.33	2.56	7.64	1.02	0.15	2.43



Stellar Parameters For KIC 009290087

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6141^{+186}_{-186}	$4.000^{+0.259}_{-0.111}$	$-0.220^{+0.300}_{-0.300}$	$1.735^{+0.356}_{-0.534}$	$1.099^{+0.204}_{-0.167}$	$0.296^{+0.481}_{-0.099}$
	+3%/-3%	+6%/-3%	+136%/-136%	+21%/-31%	+19%/-15%	+162%/-33%
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 009290087-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-59±12	$2.26^{+0.92}_{-0.78}$	463^{+30}_{-35}	4907^{+1040}_{-644}	7933^{+11507}_{-4017}
Alt.	-45±9	$2.35^{+0.97}_{-0.95}$	461^{+30}_{-36}	4579^{+1044}_{-534}	5790^{+10344}_{-3056}

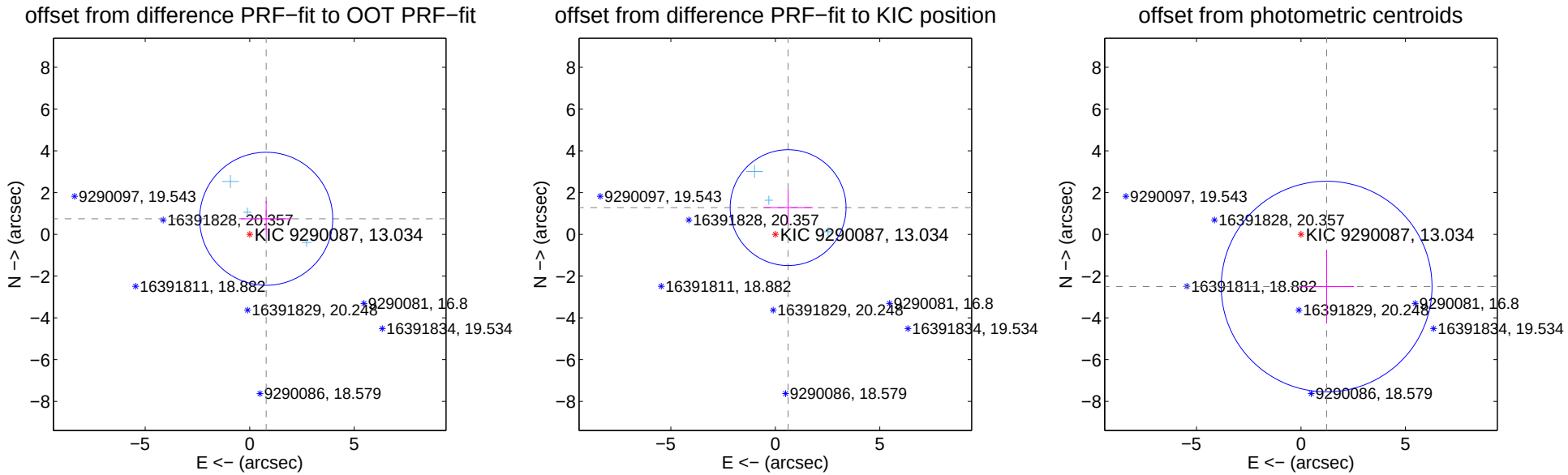
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

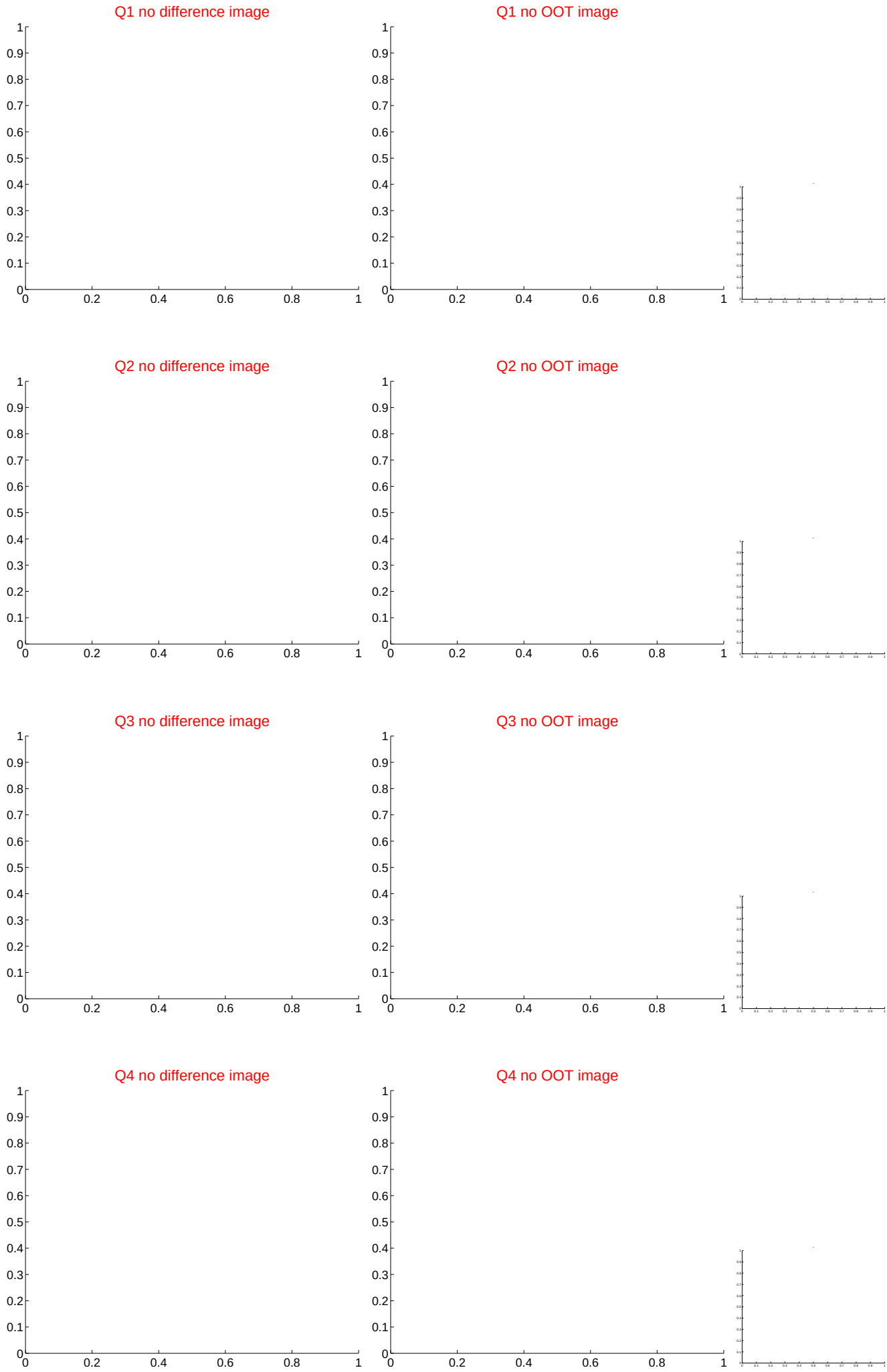
Supplemental centroid analysis for 009290087-01. Kepler magnitude: 13.03. Transit SNR 7.87
There are 3 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.086 ± 1.062	1.02	-0.790 ± 1.221	0.745 ± 0.848
PRF-fit source offset from KIC position	1.418 ± 0.924	1.53	-0.612 ± 1.192	1.279 ± 0.851
photometric centroid source offset	2.79 ± 1.68	1.66	-1.23 ± 1.31	-2.50 ± 1.76

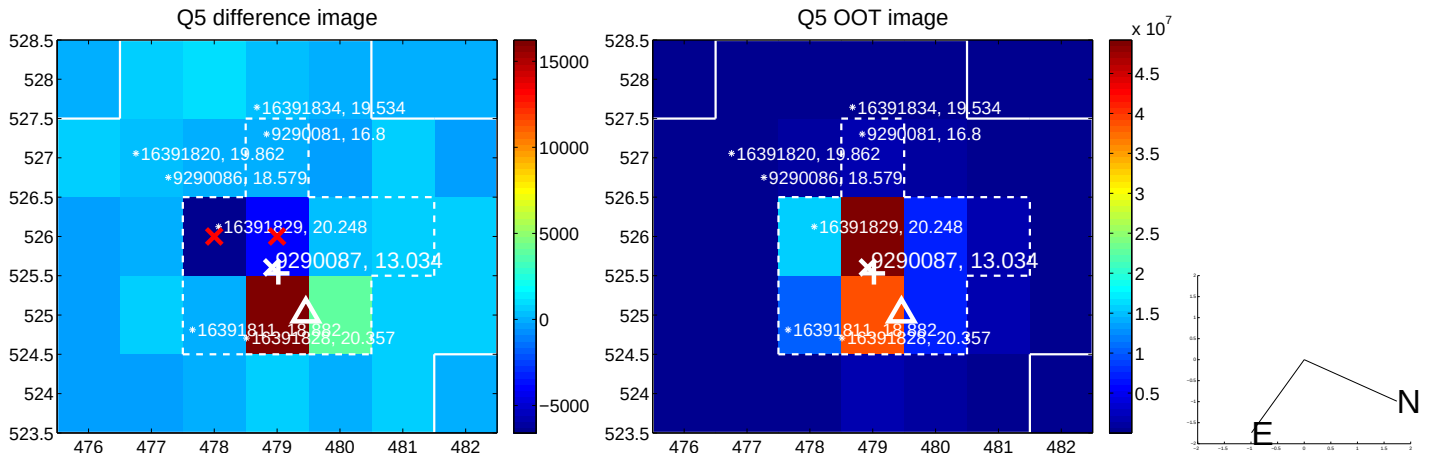


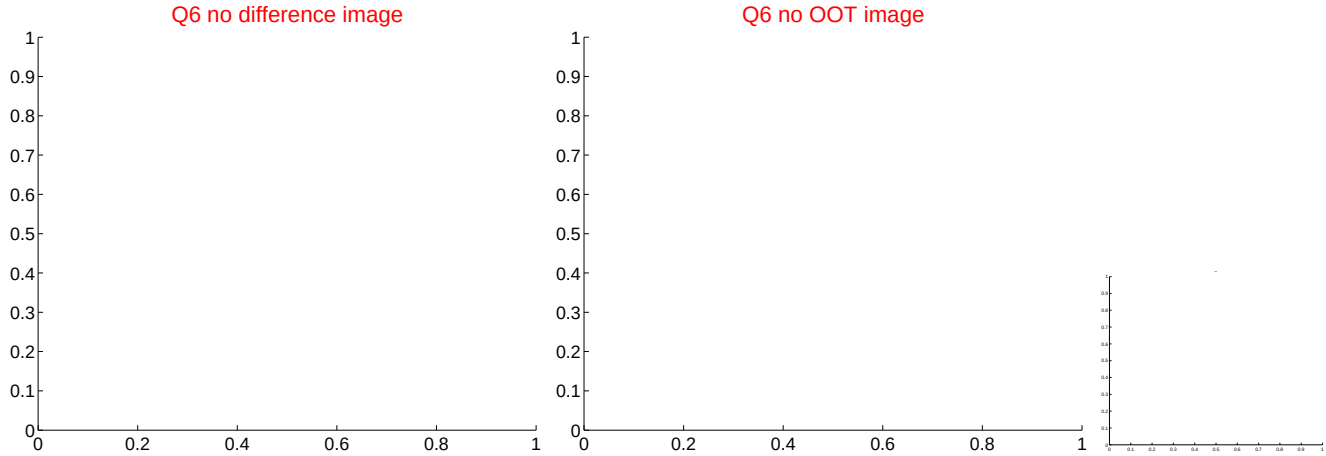
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

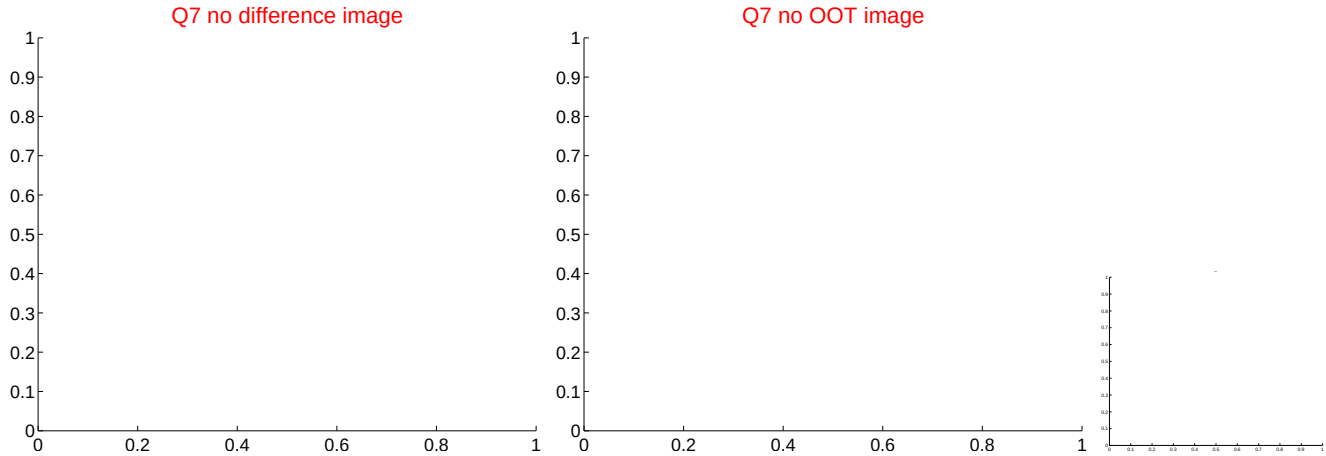
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

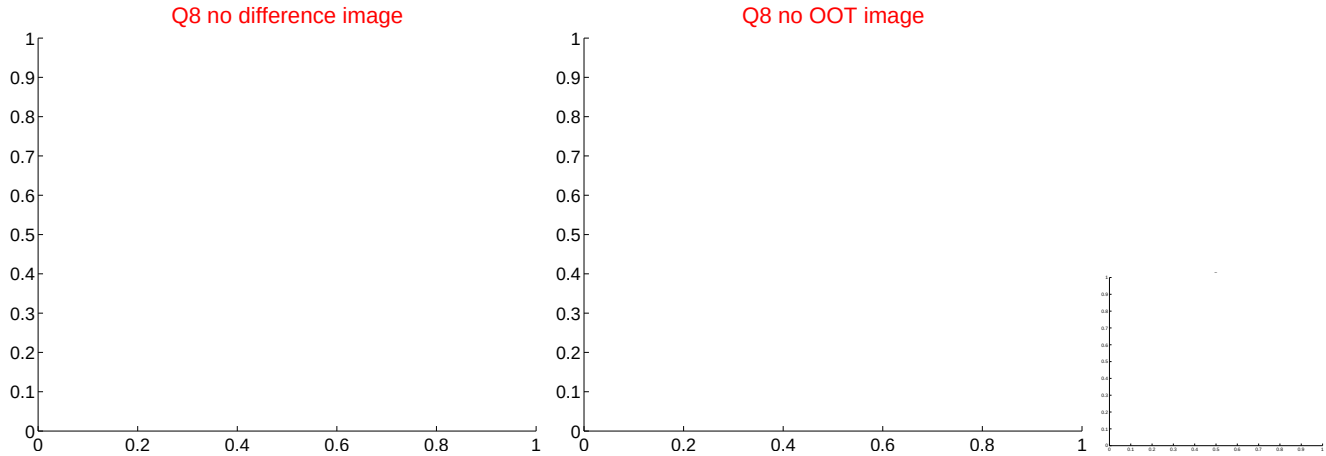


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

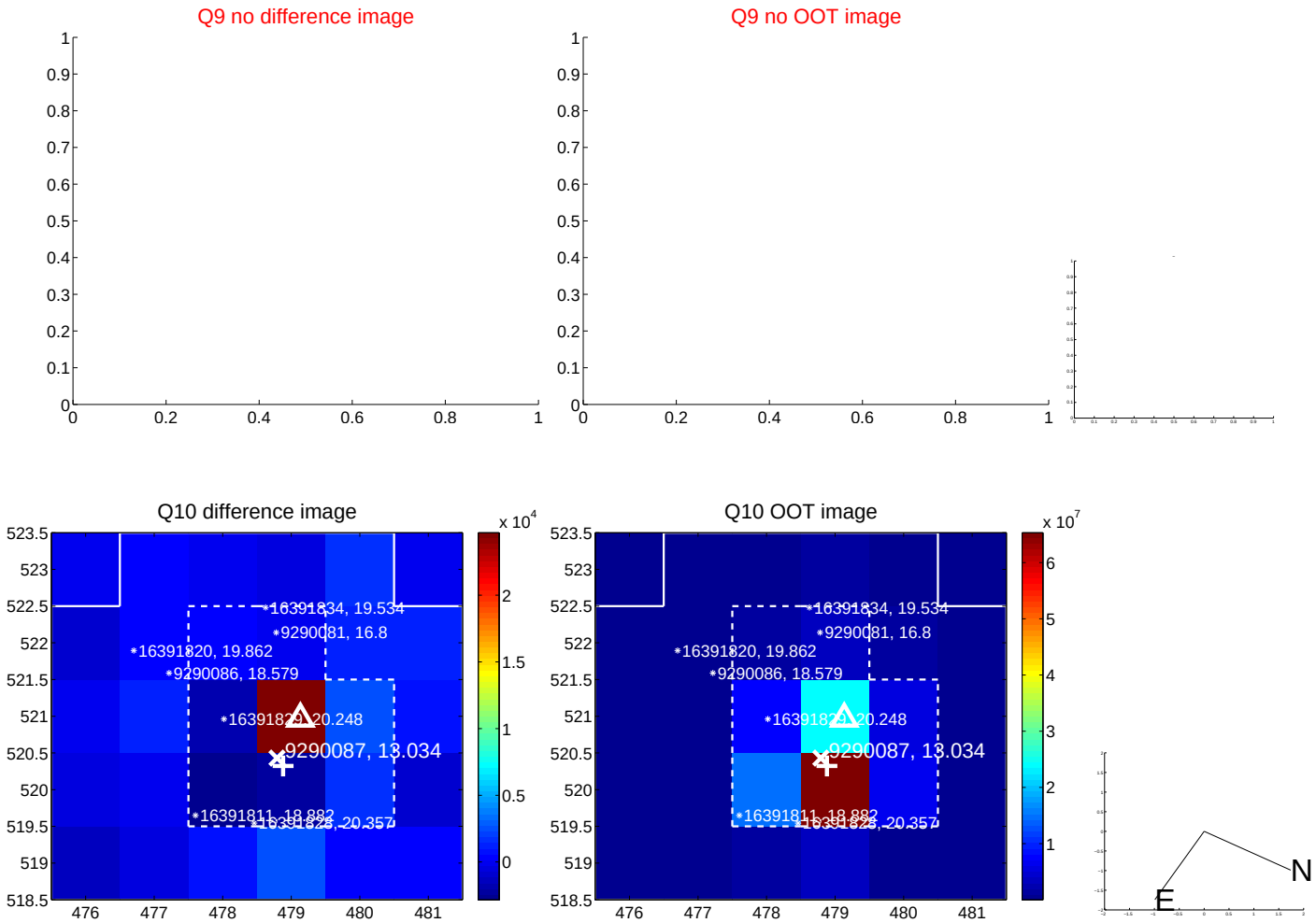


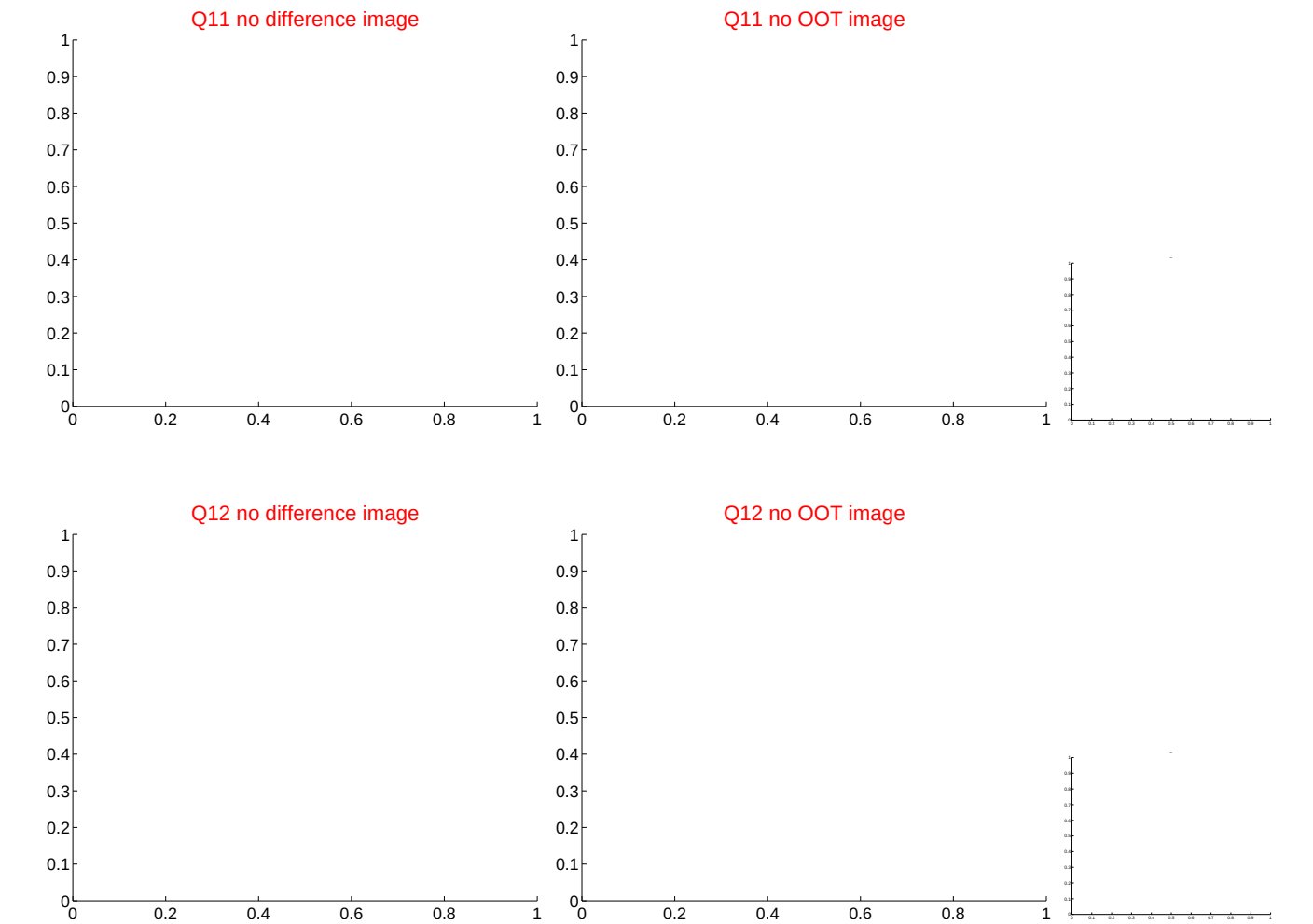




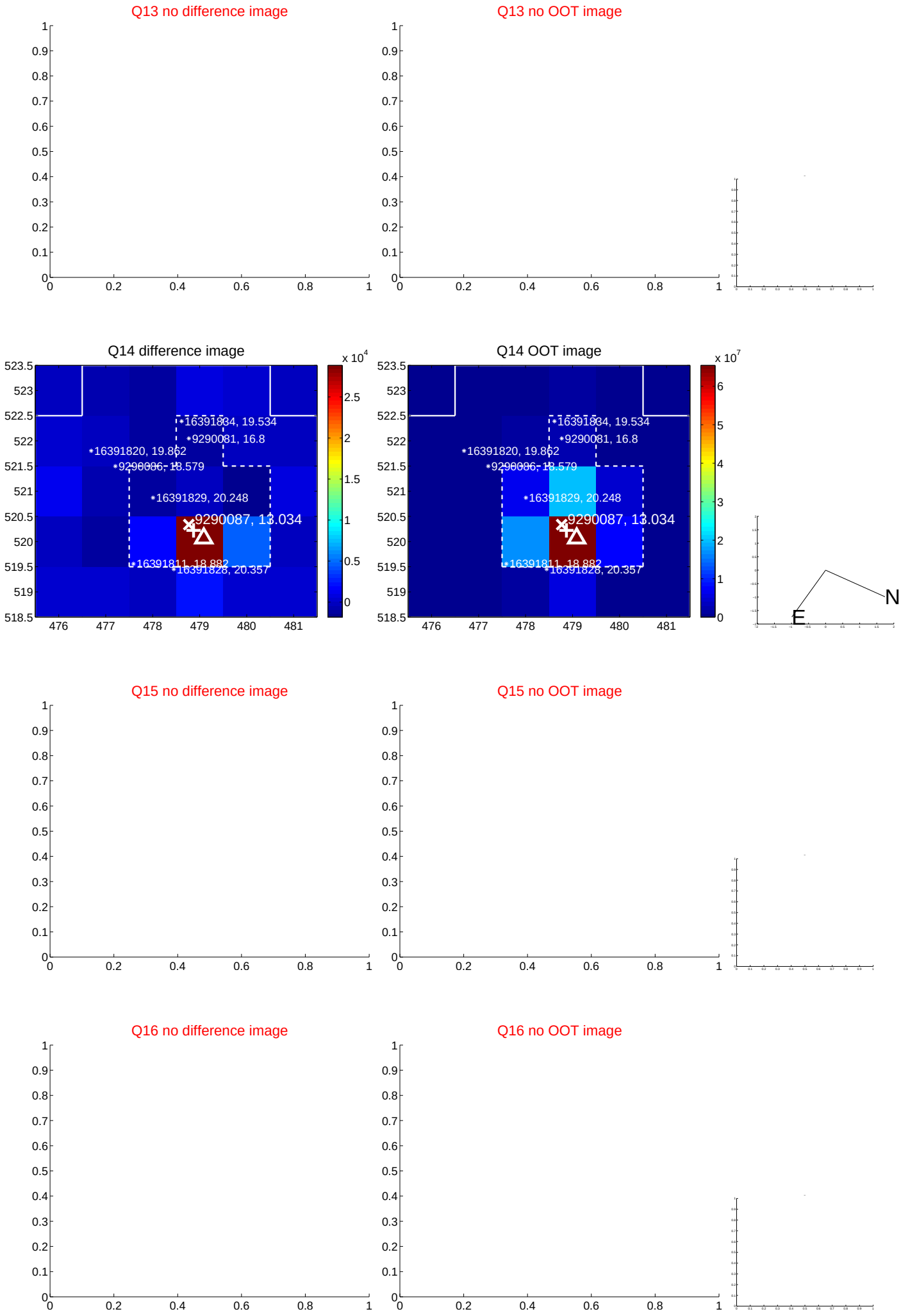


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

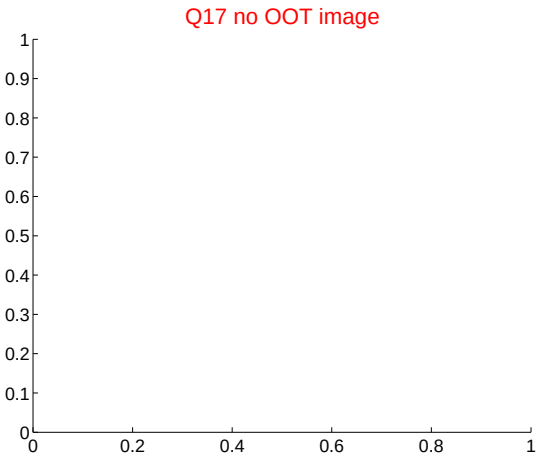


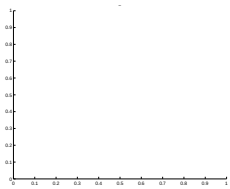


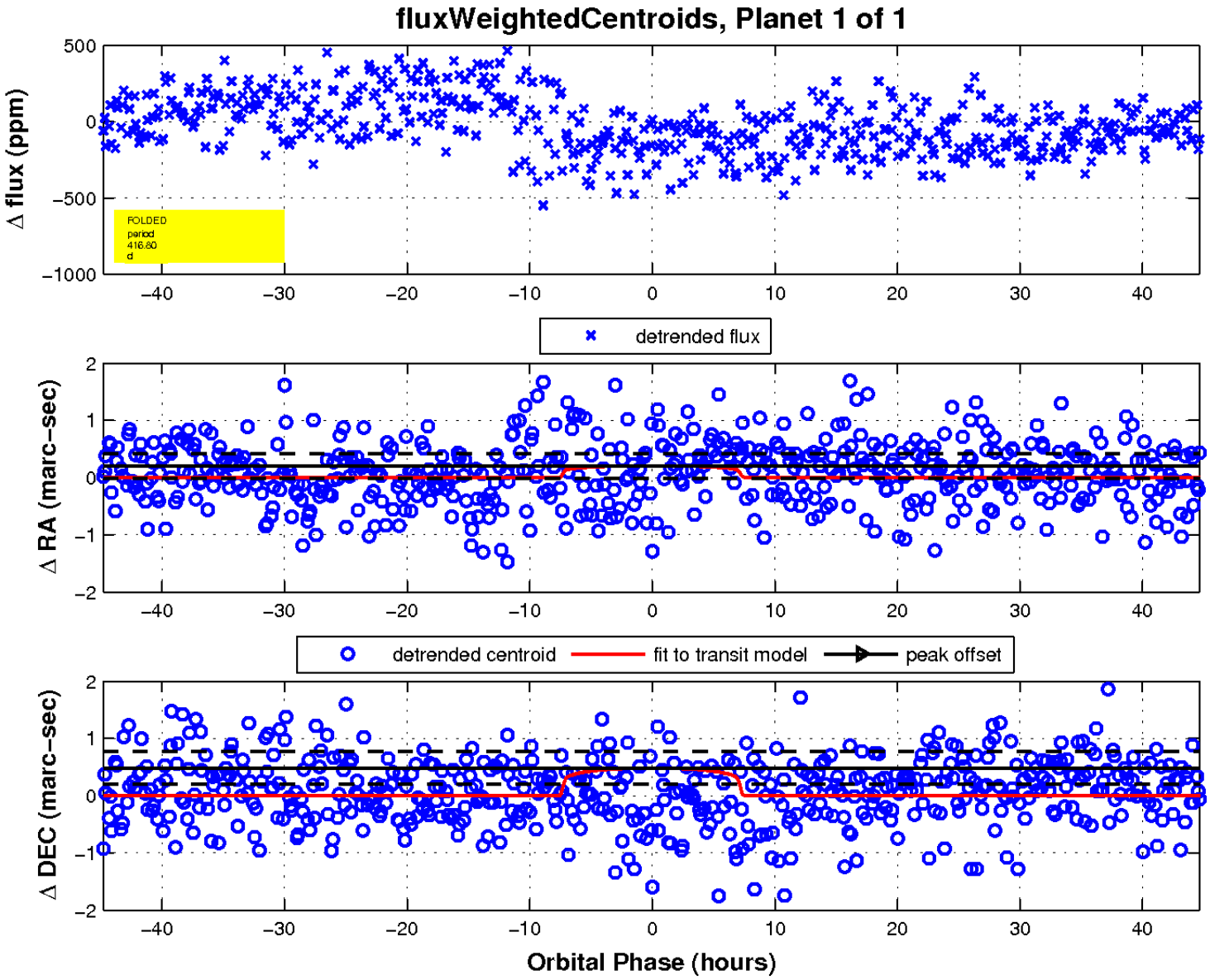
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



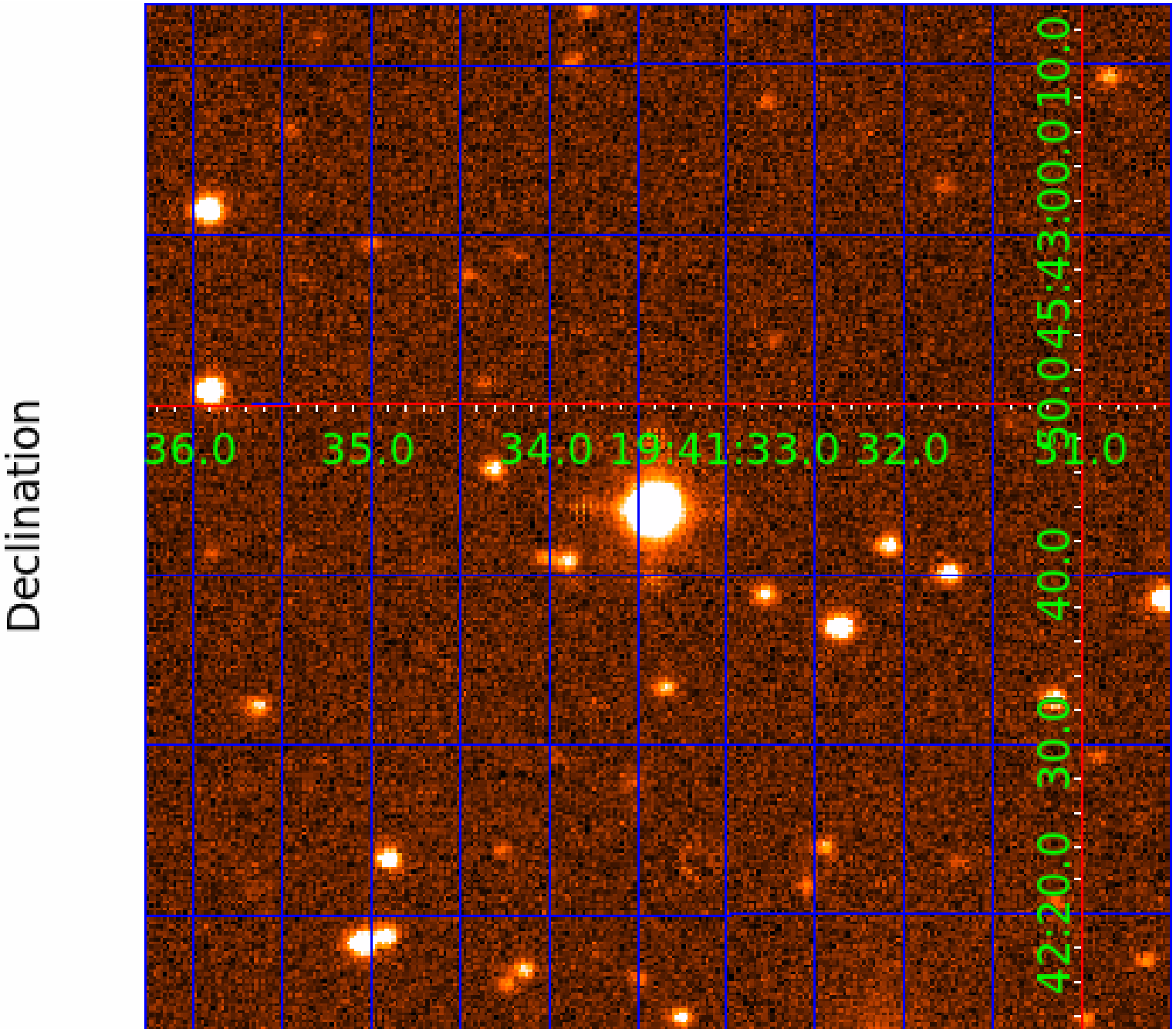
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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