KIC 008963059

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 ($S_\oplus$)
008963059-01	OBS	No	507.753753	437.573370	269.0	4.338	7.5	7.2	1.79	5386	3.52	1.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008963059-01	OBS	FP	0.03	1	0	0	0	MOD_NONUNIQ_ALT—MOD_POS_ALT

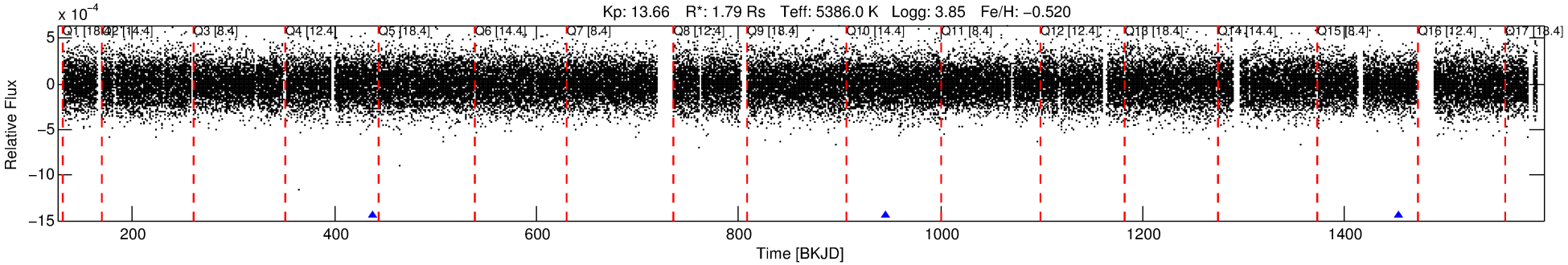
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

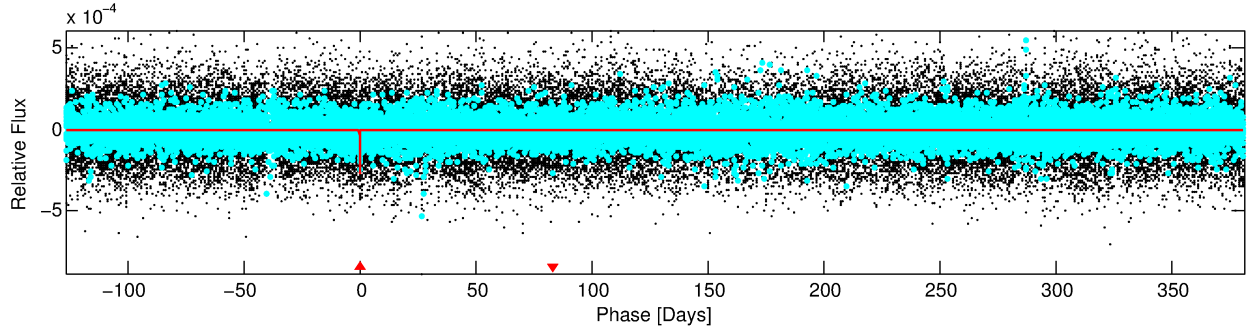
Ephemeris Match Information For 008963059-01

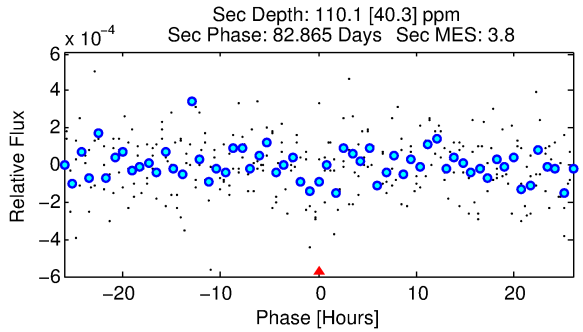
No Significant Match Found

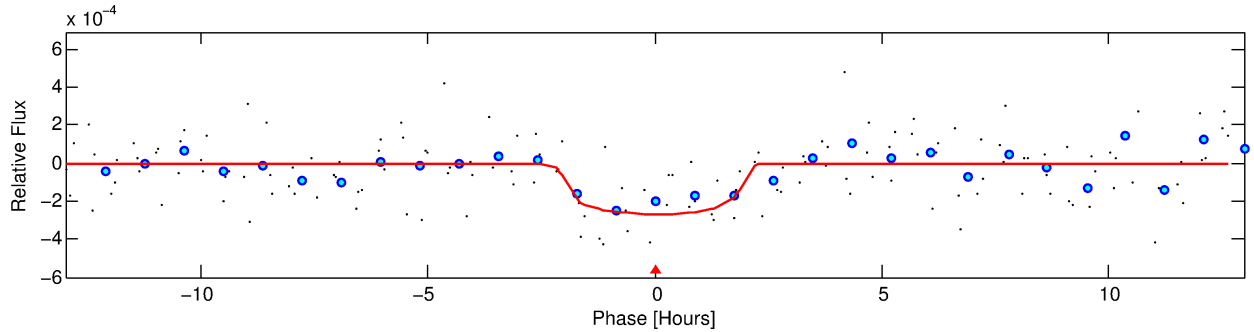
DV One-Page Summary

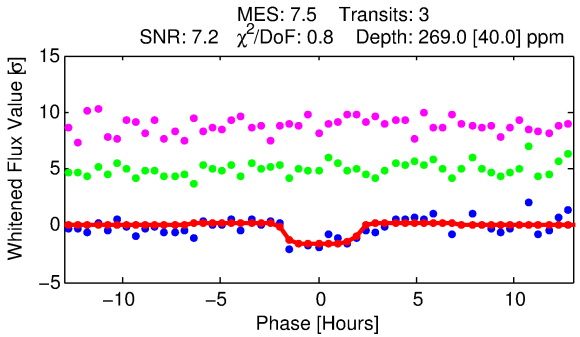
KIC: 8963059 Candidate: 1 of 1 Period: 507.754 d

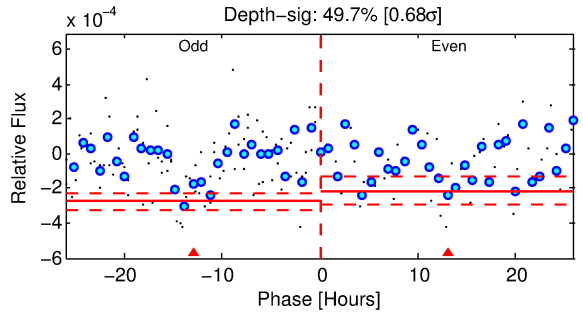


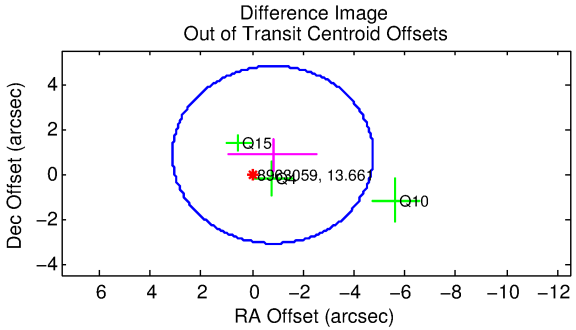












DV Fit Results:

Period = 507.75375 [0.00888] d
Epoch = 437.5734 [0.0112] BKJD
Rp/R* = 0.0180 [0.0093]
a/R* = 419.14 [971.74]
b = 0.90 [0.48]

Seff = 1.76 [2.16]
Teq = 293 [90] K
Rp = 3.52 [2.87] Re
a = 1.1758 [0.8366] AU

Ag = 6749.82 [11091.32] [0.61σ]
Teffp = 4113 [1137] K [3.35σ]

DV Diagnostic Results:

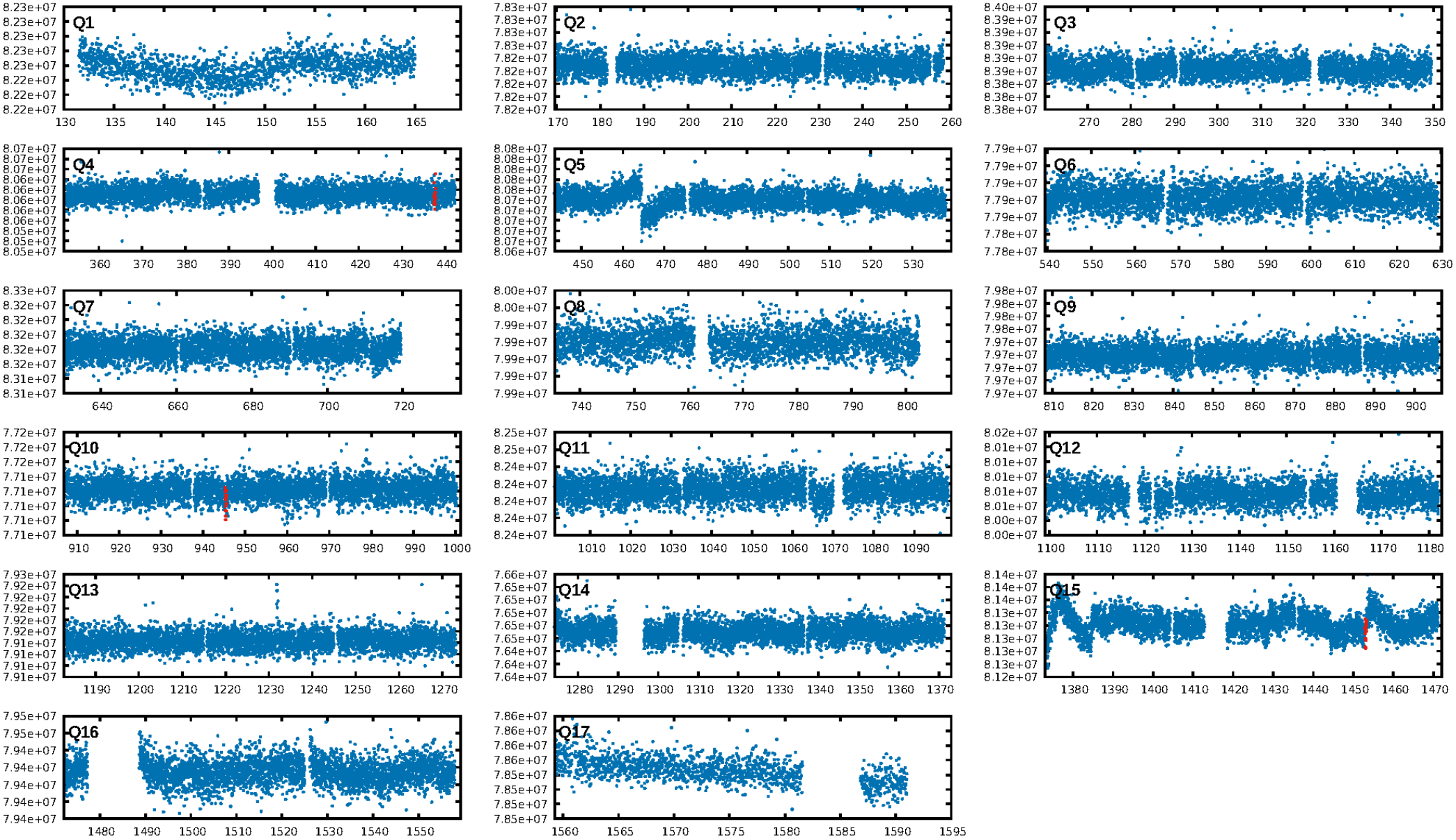
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 81.2%
ModelChiSquareGof−sig: 96.4%
Bootstrap−pfa: 4.16e−10
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: 10.97

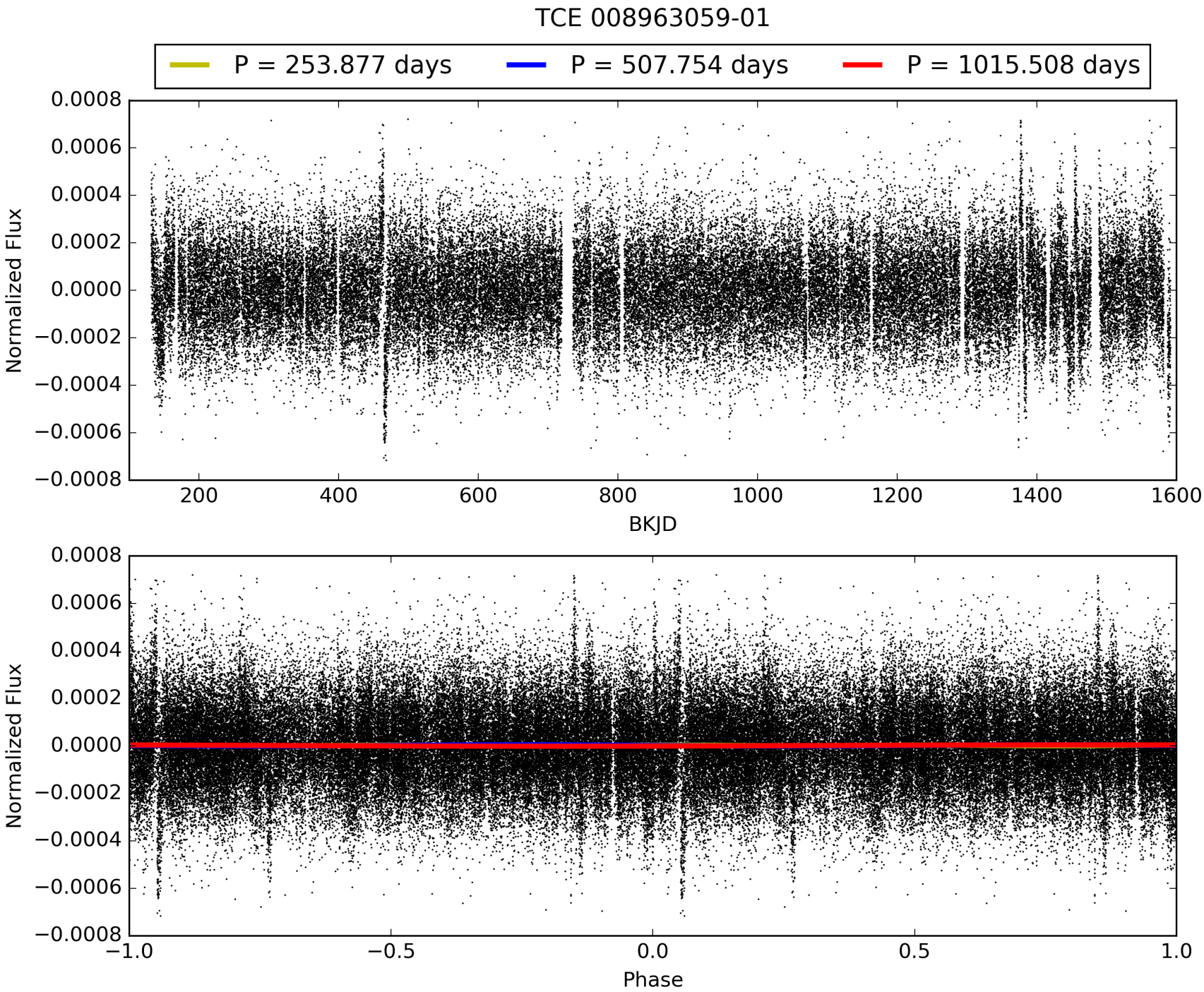
Centroid−sig: 10.3%
Centroid−so: 2.319 arcsec [1.39σ]
OotOffset−rm: 1.178 arcsec [0.90σ]
KicOffset−rm: 1.233 arcsec [0.96σ]
OotOffset−st: 1/1/1/0 [3]
KicOffset−st: 1/1/1/0 [3]
DiffImageQuality−fgm: 0.67 [2/3]
DiffImageOverlap−fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 00:44:31 Z

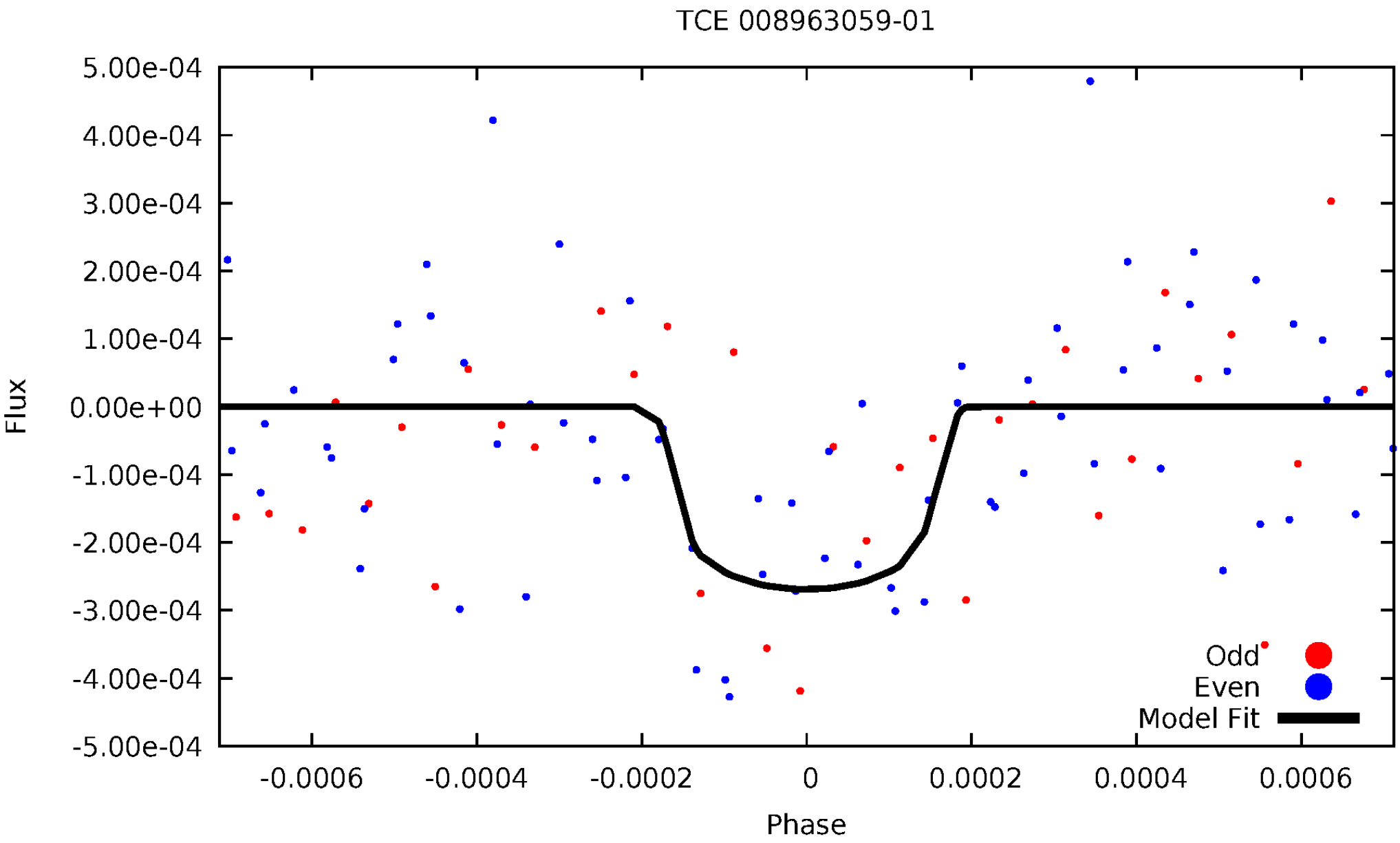
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008963059-01, PDC Light Curves

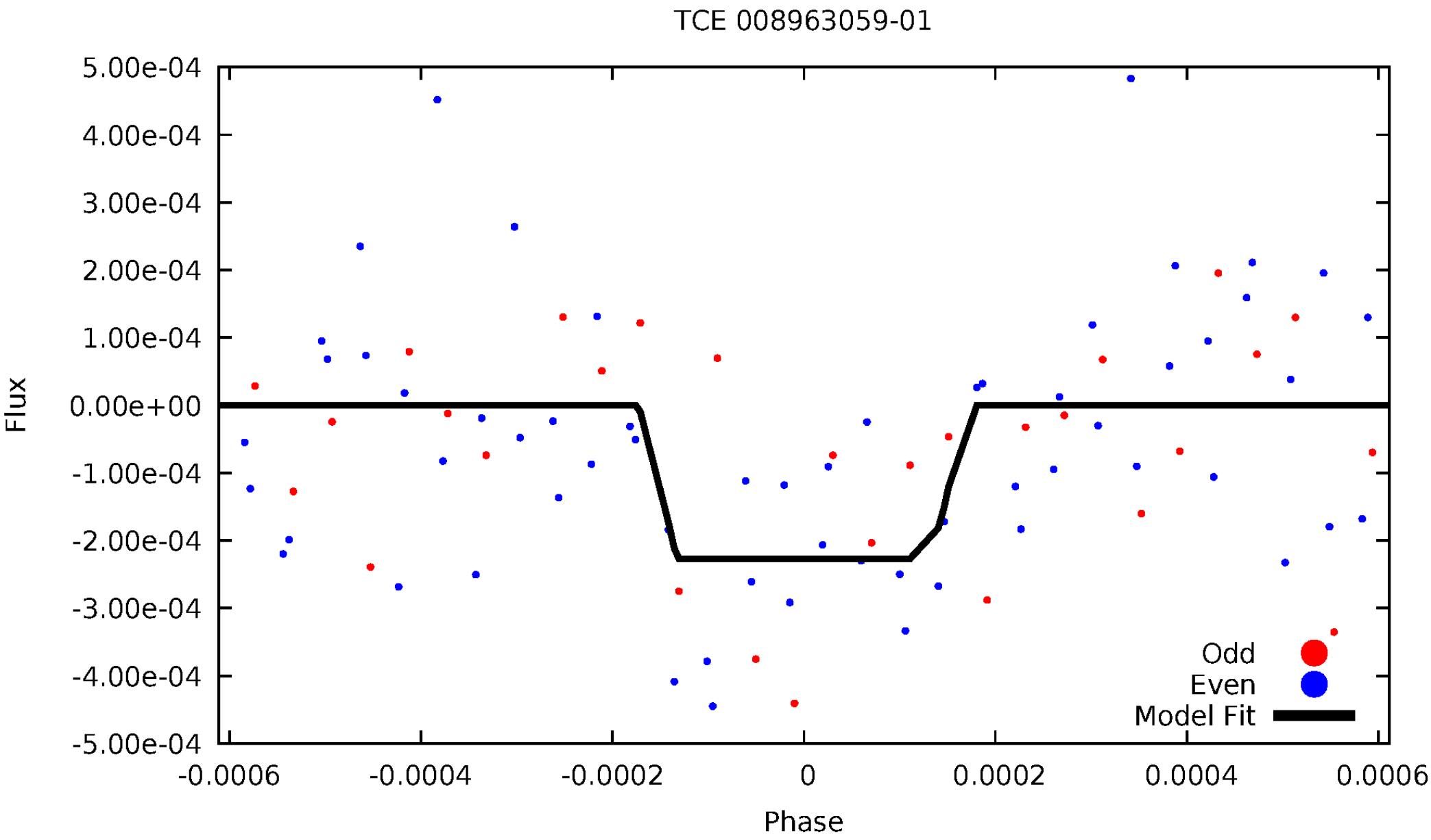



TCE 008963059-01
P = 253.877 days
P = 507.754 days
P = 1015.508 days
Normalized Flux
BKJD
Normalized Flux
Phase

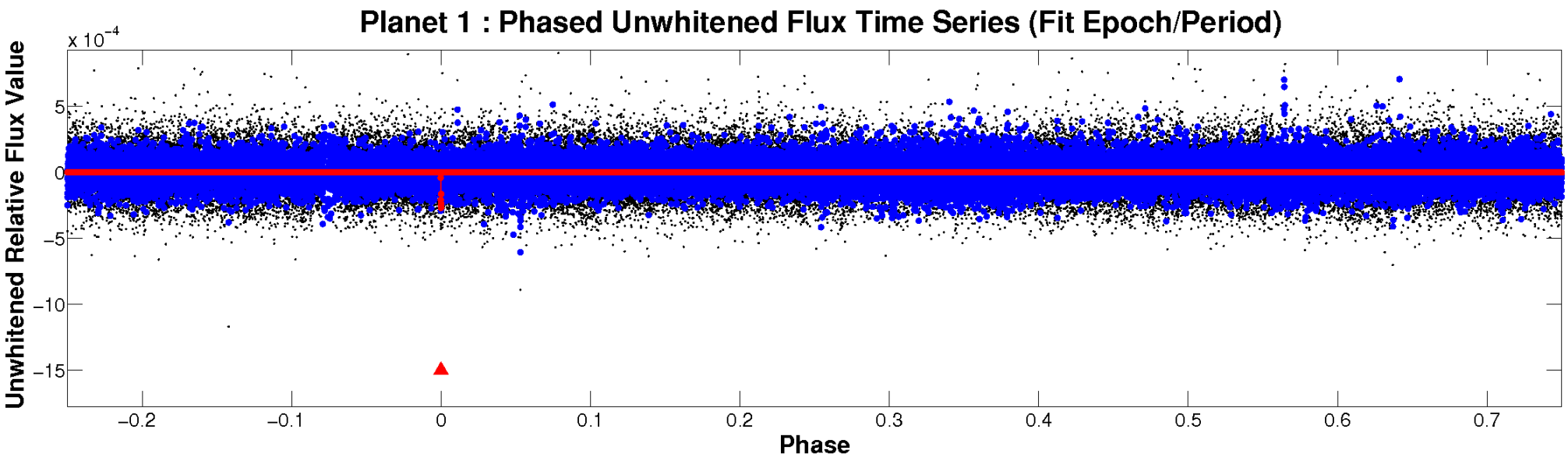
DV Odd/Even

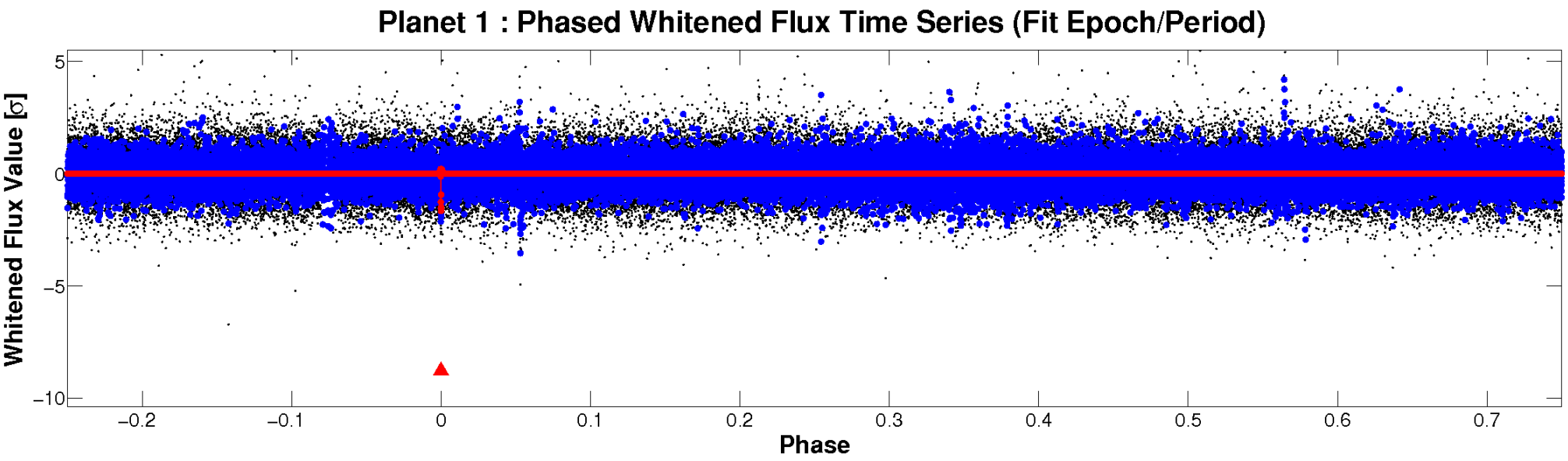

TCE 008963059-01
5.00e-04
4.00e-04
3.00e-04
2.00e-04
1.00e-04
0.00e+00
-1.00e-04
-2.00e-04
-3.00e-04
-4.00e-04
-5.00e-04
Flux
-0.0006
-0.0004
-0.0002
0
0.0002
0.0004
0.0006
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 008963059-01
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
Flux
-0.0006
-0.0004
-0.0002
0
0.0002
0.0004
0.0006
Phase
Odd
Even
Model Fit

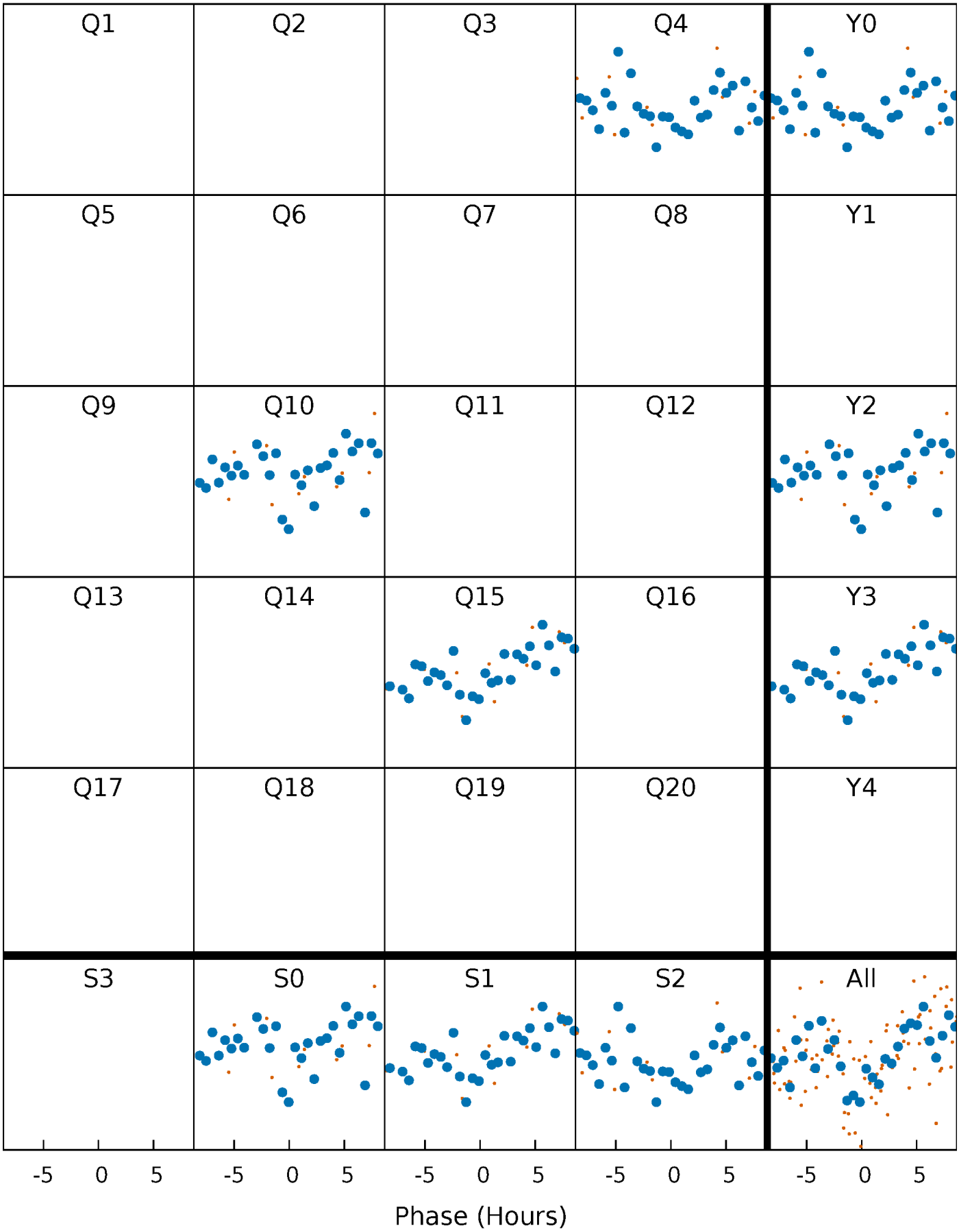
Non-Whitened Vs. Whitened Light Curve





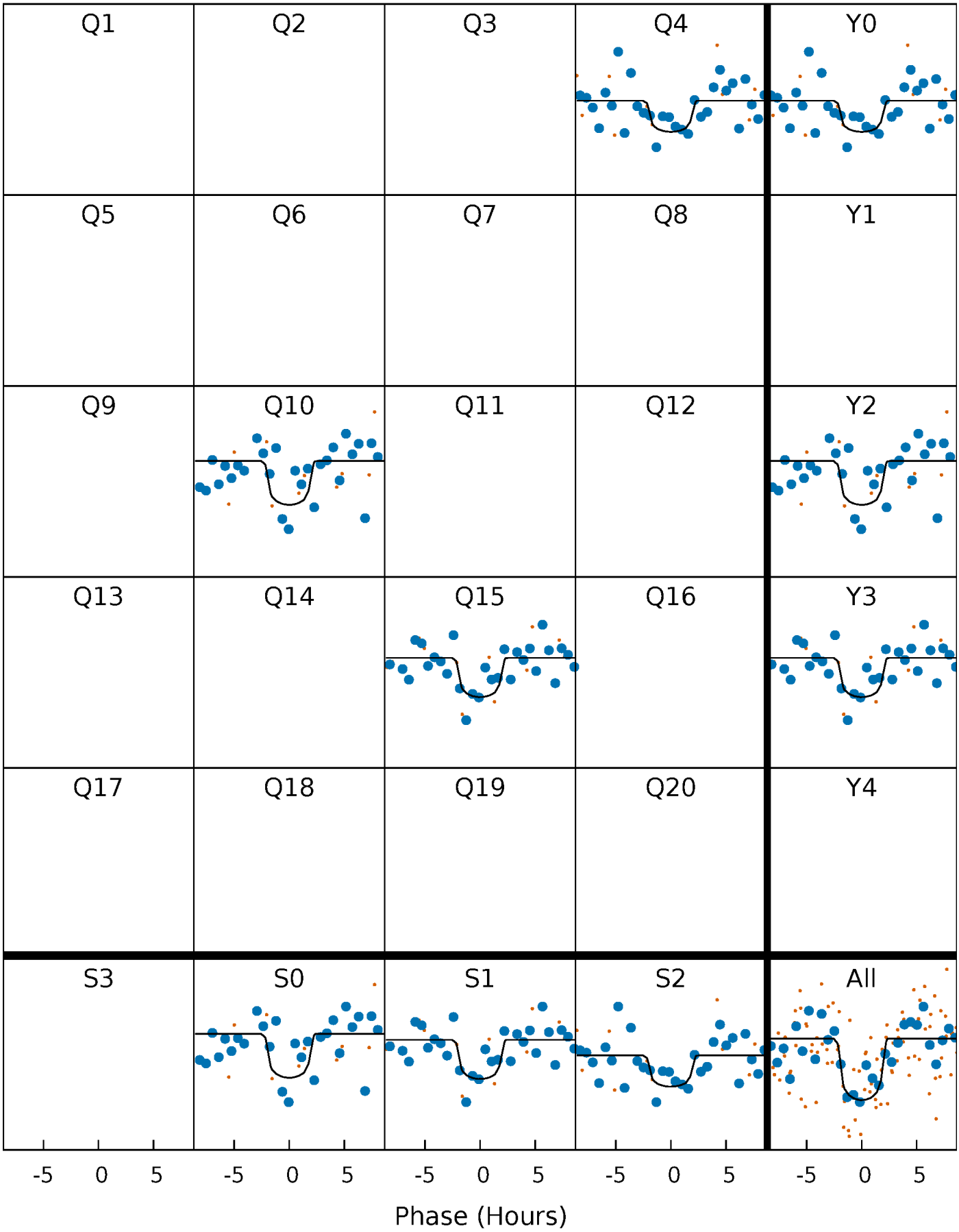
PDC Quarter-Phased Transit Curves

TCE 008963059-01 P=507.753753 Days T_0=437.573370 (BKJD)



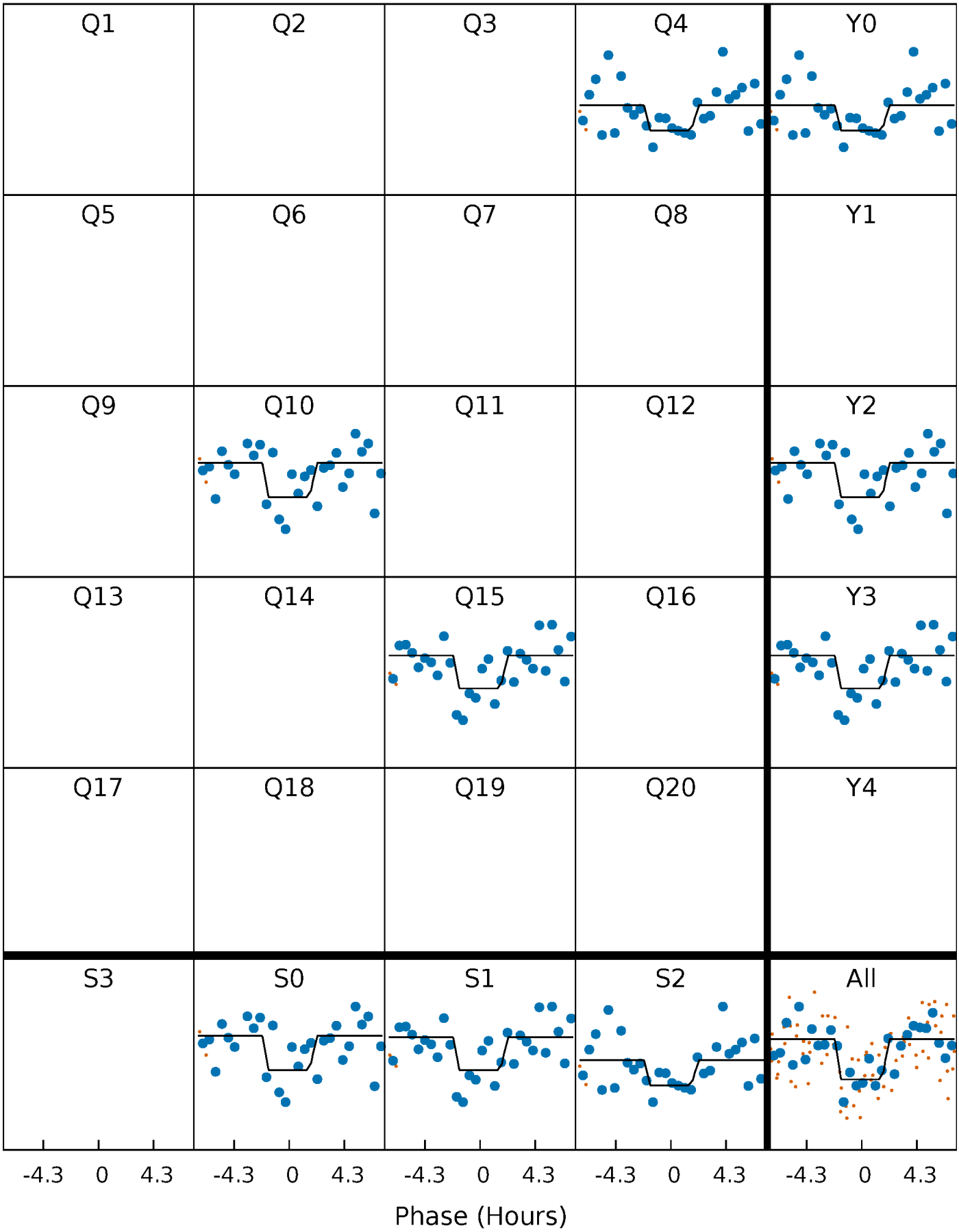
DV Quarter-Phased Transit Curves

TCE 008963059-01 P=507.753753 Days T_0=437.573370 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

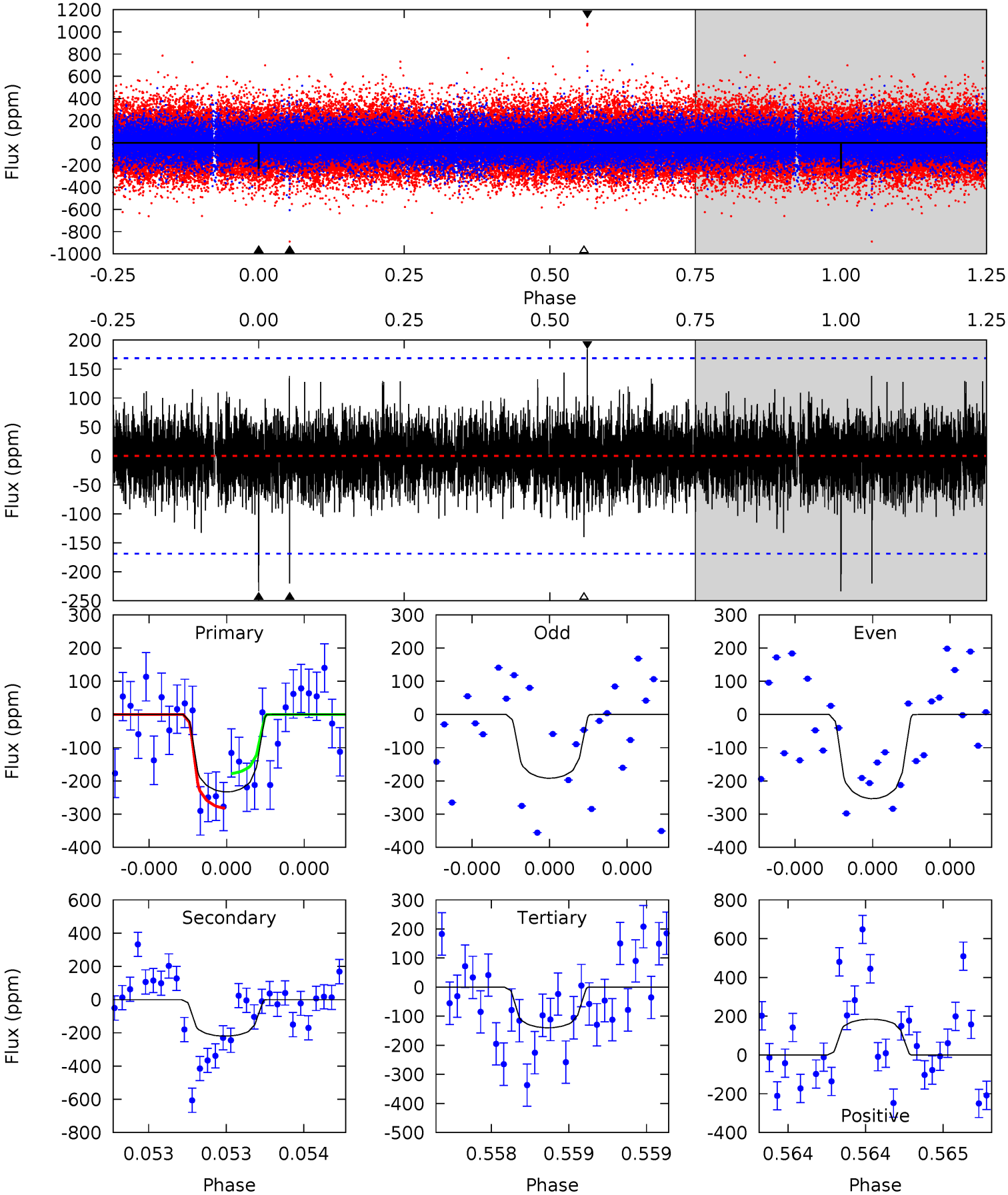
TCE 008963059-01 P=507.753532 Days T_0=437.574620 (BKJD)



DV Model-Shift Uniqueness Test

008963059-01, P = 507.753753 Days, E = 437.573370 Days

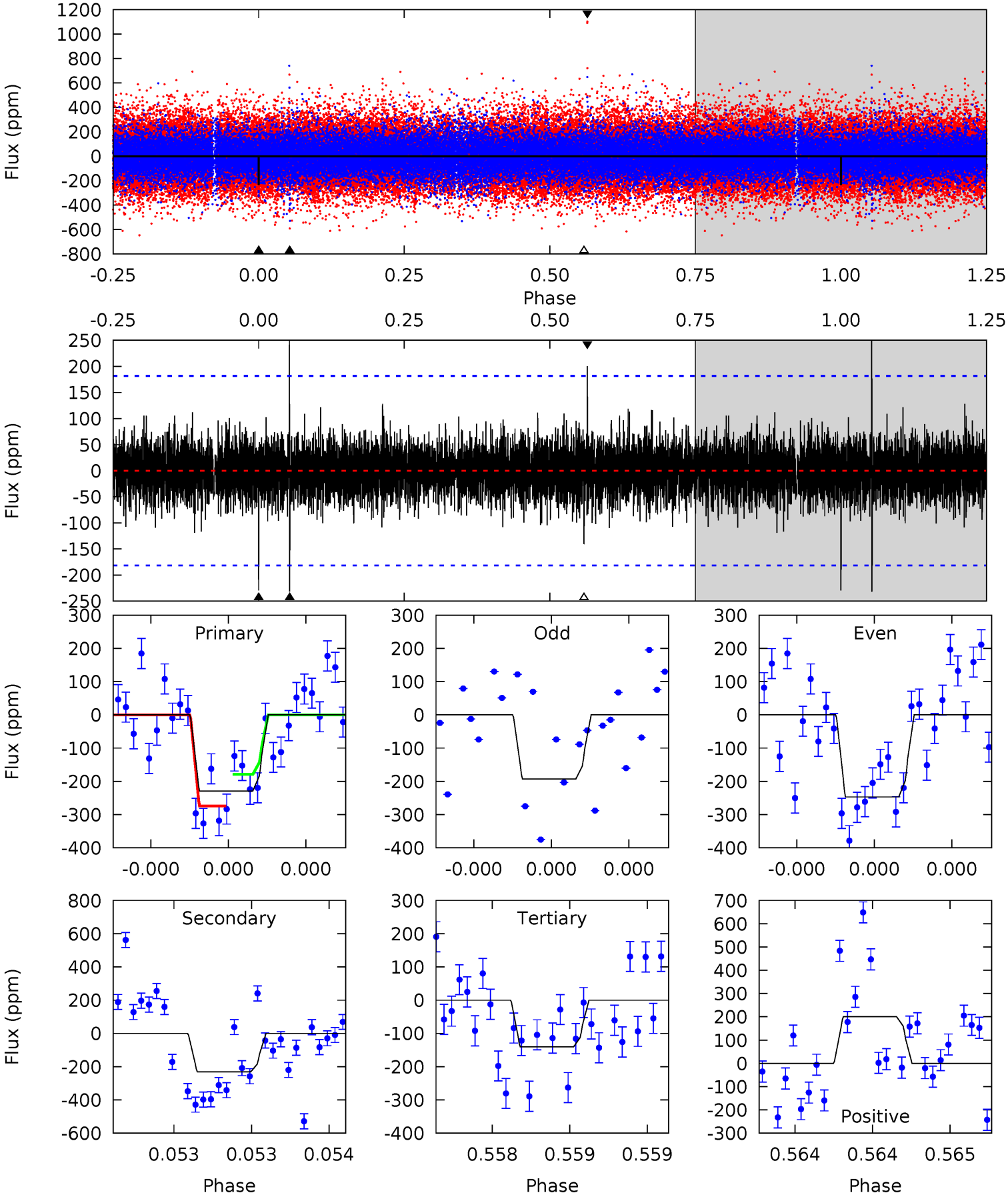
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.78	7.34	4.66	6.16	5.62	3.56	1.18	3.12	1.62	2.67	1.18	0.96	0.93	0.44	1.74



Alt Model-Shift Uniqueness Test

008963059-01, P = 507.753532 Days, E = 437.574620 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.10	7.19	4.36	6.21	5.63	3.57	1.02	2.75	0.90	2.83	0.98	0.79	1.00	0.52	1.48



Stellar Parameters For KIC 008963059

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5386^{+187}_{-169}	$3.855^{+0.749}_{-0.321}$	$-0.520^{+0.350}_{-0.250}$	$1.794^{+1.128}_{-1.128}$	$0.841^{+0.184}_{-0.122}$	$0.205^{+2.645}_{-0.130}$
	+3%/-3%	+19%/-8%	+67%/-48%	+63%/-63%	+22%/-15%	+1289%/-63%
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 008963059-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-220±30	$3.34^{+2.24}_{-1.82}$	404^{+62}_{-75}	4921^{+1723}_{-729}	15084^{+57799}_{-9719}
Alt.	-232±32	$2.83^{+2.21}_{-1.73}$	402^{+64}_{-74}	5300^{+2685}_{-896}	$22256^{+118608}_{-15213}$

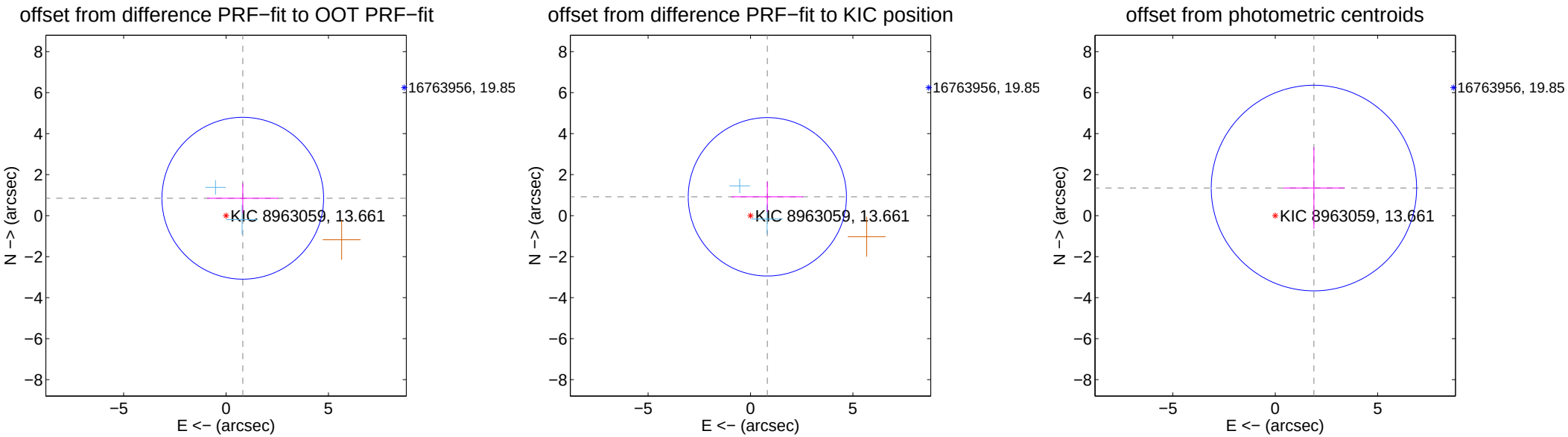
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

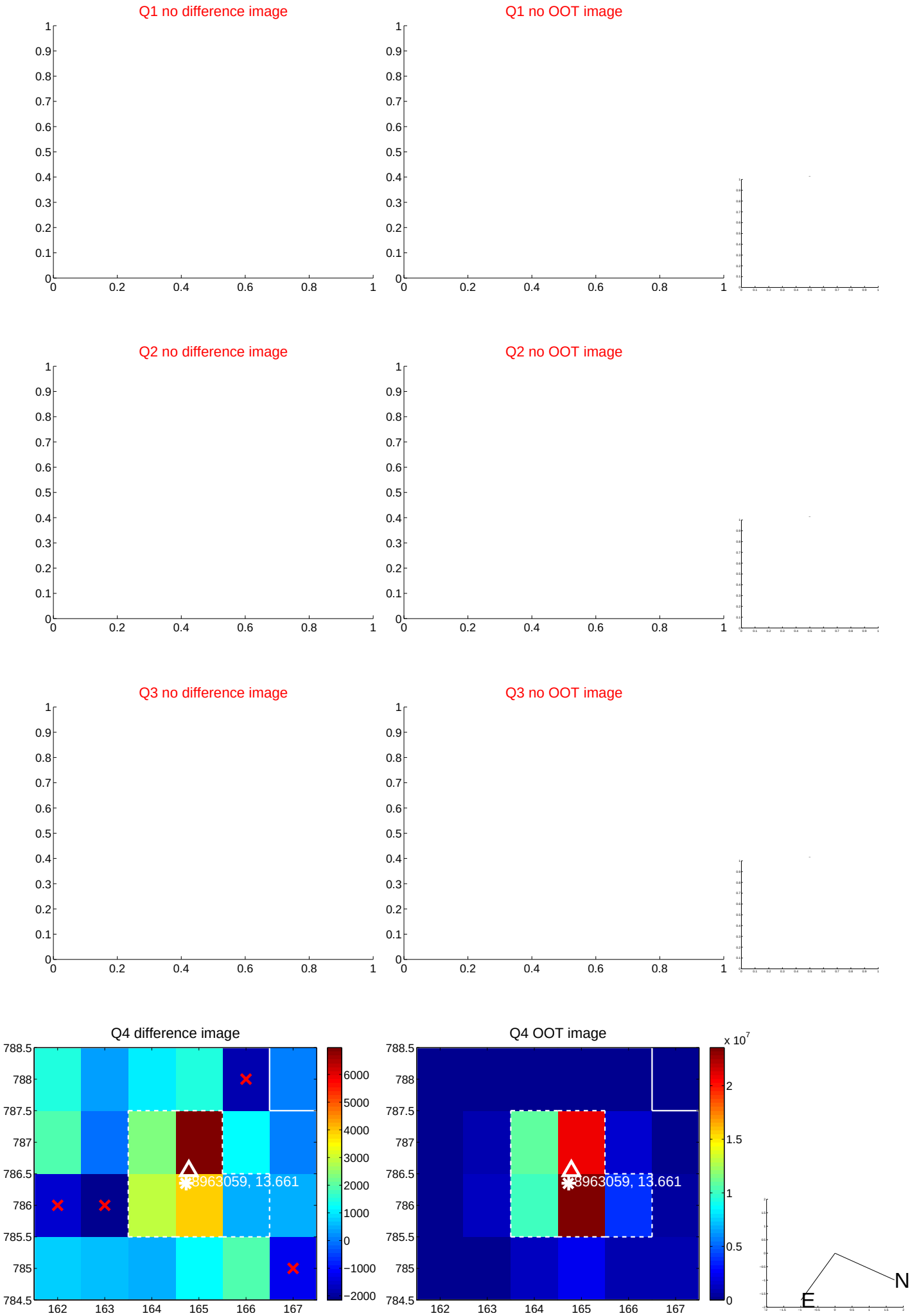
Supplemental centroid analysis for 008963059-01. Kepler magnitude: 13.66. Transit SNR 7.24
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.178 ± 1.316	0.90	-0.817 ± 1.739	0.848 ± 0.729
PRF-fit source offset from KIC position	1.233 ± 1.287	0.96	-0.823 ± 1.748	0.919 ± 0.732
photometric centroid source offset	2.32 ± 1.67	1.39	-1.89 ± 1.49	1.35 ± 1.99

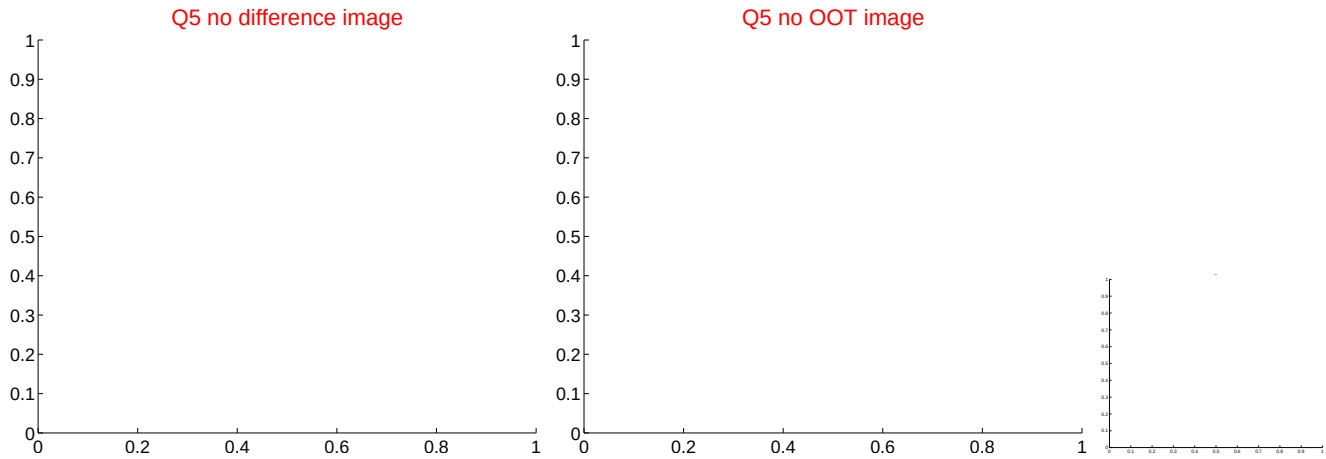


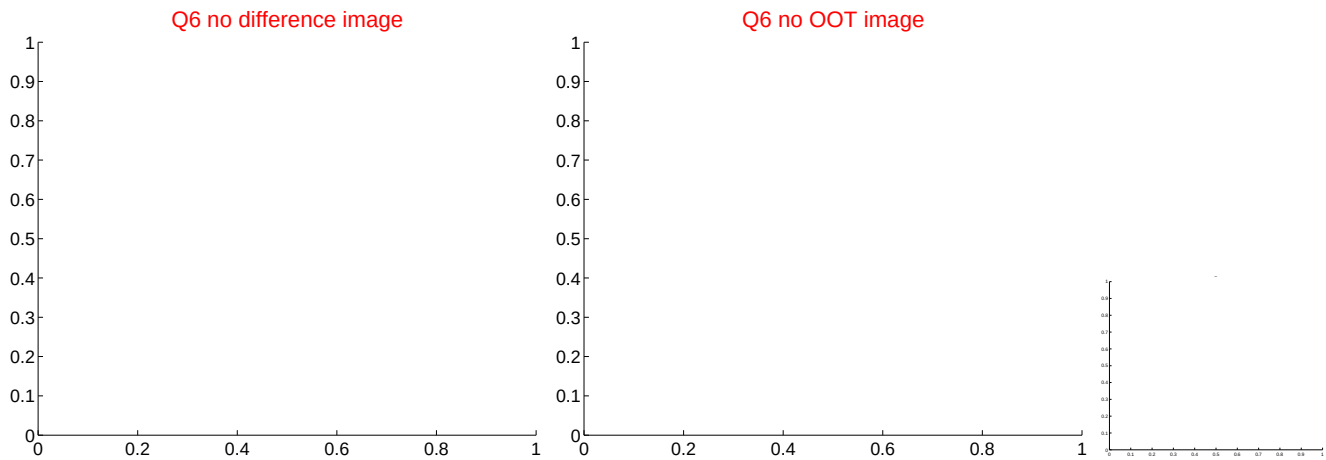
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

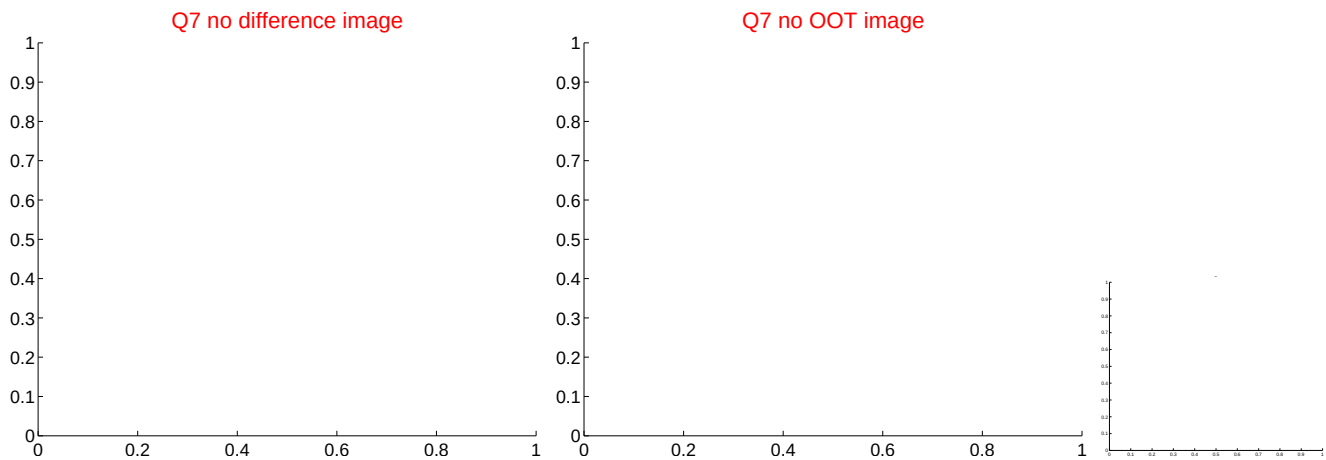
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

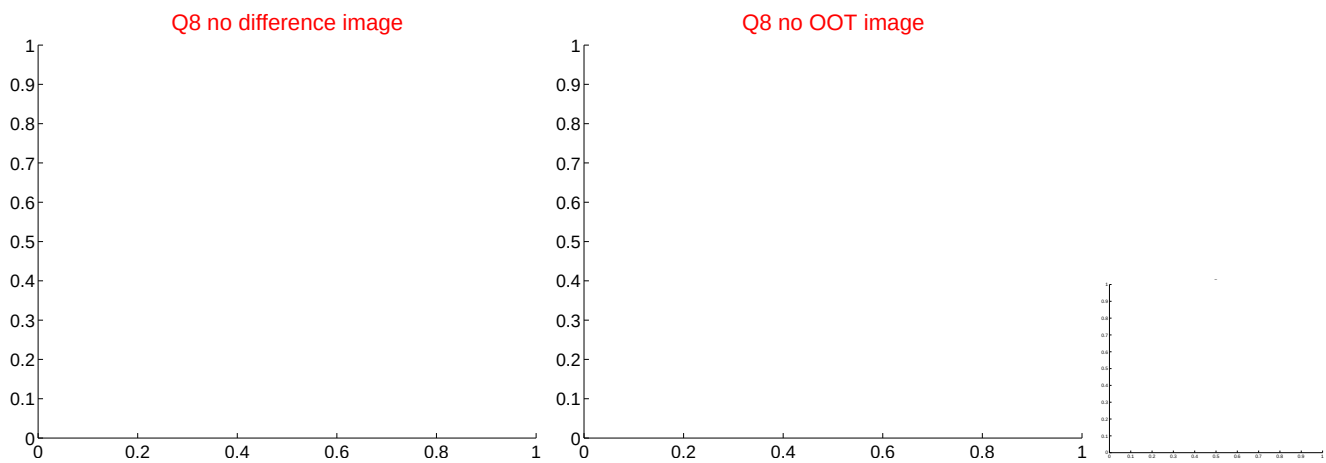


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

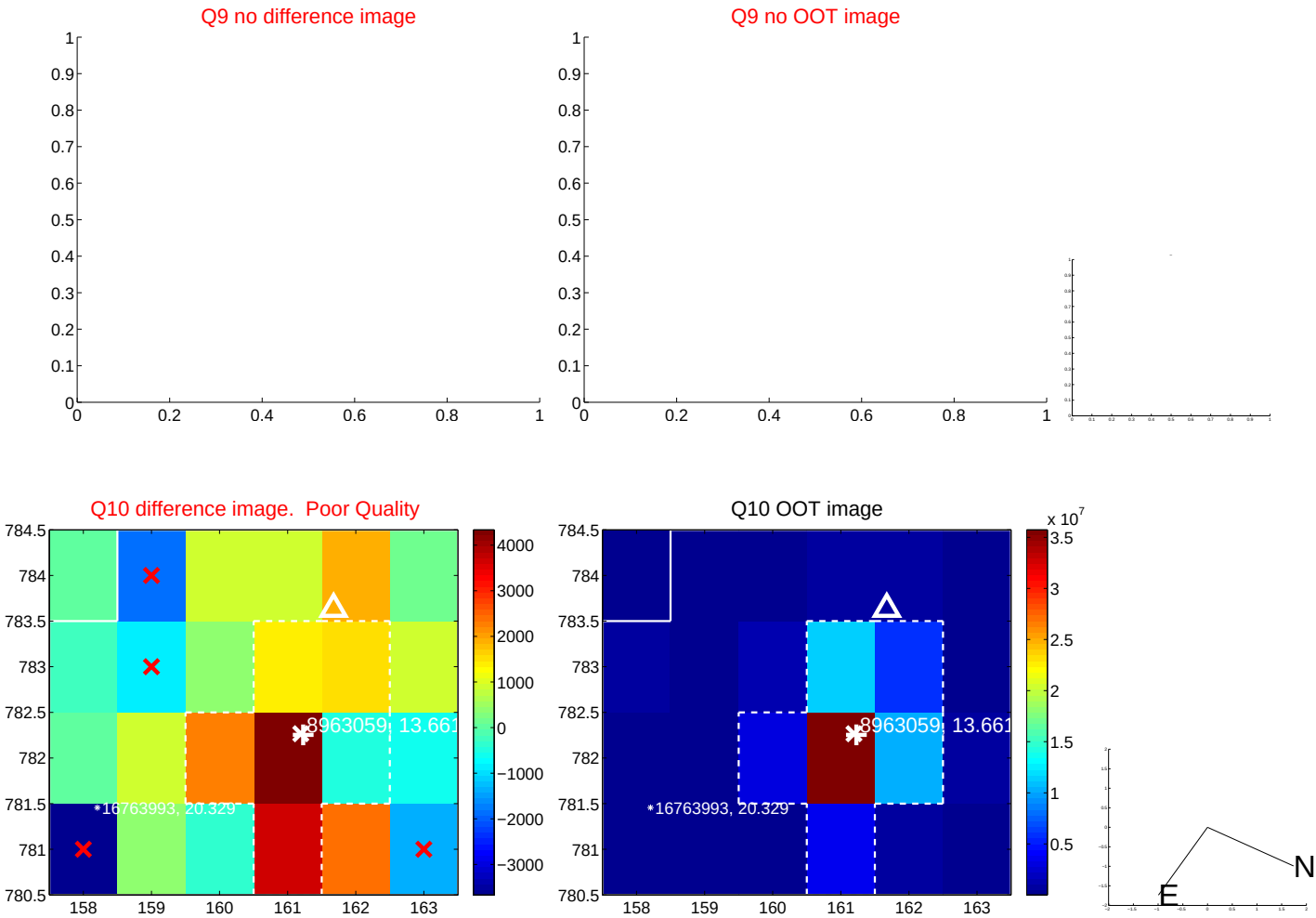


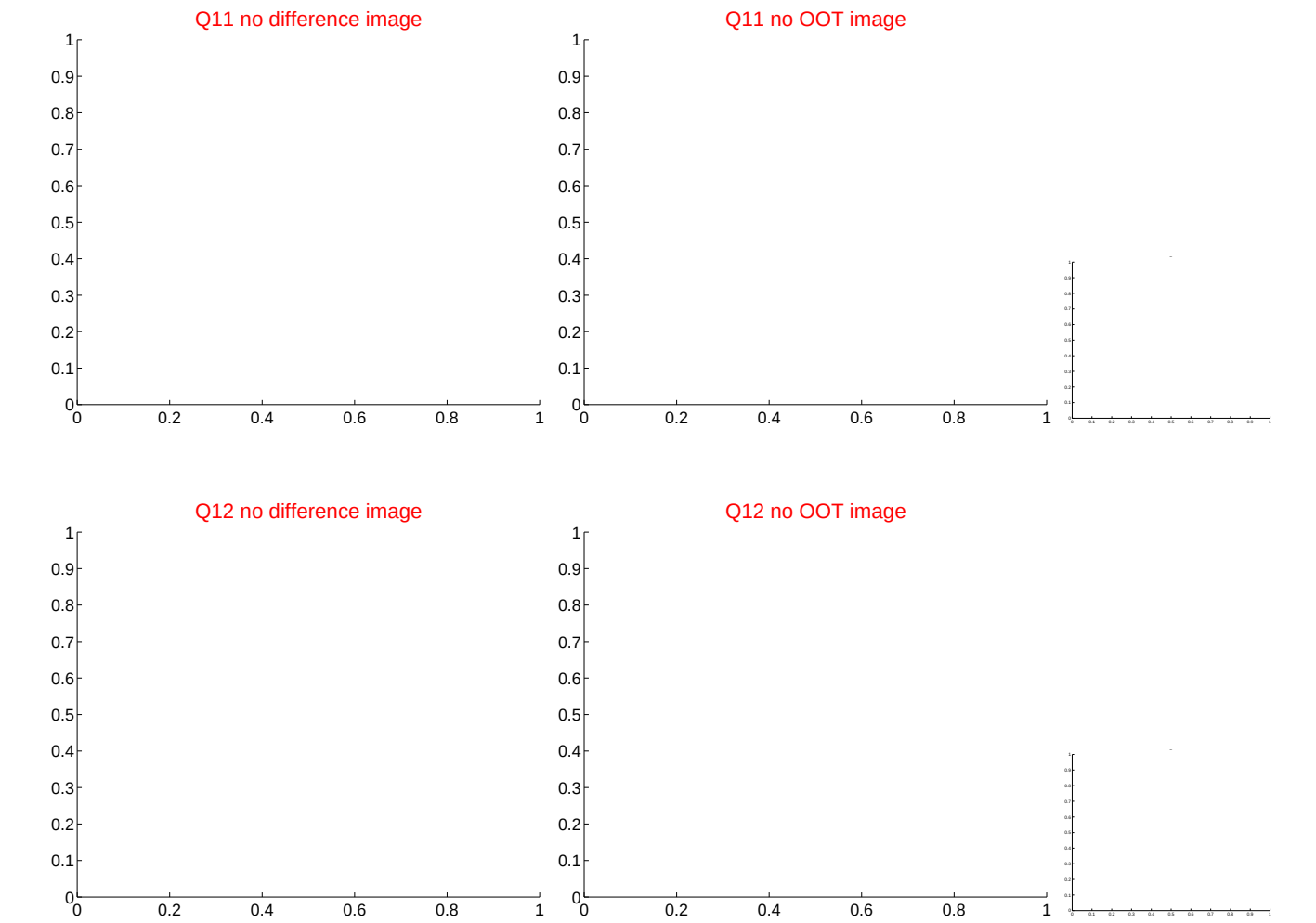




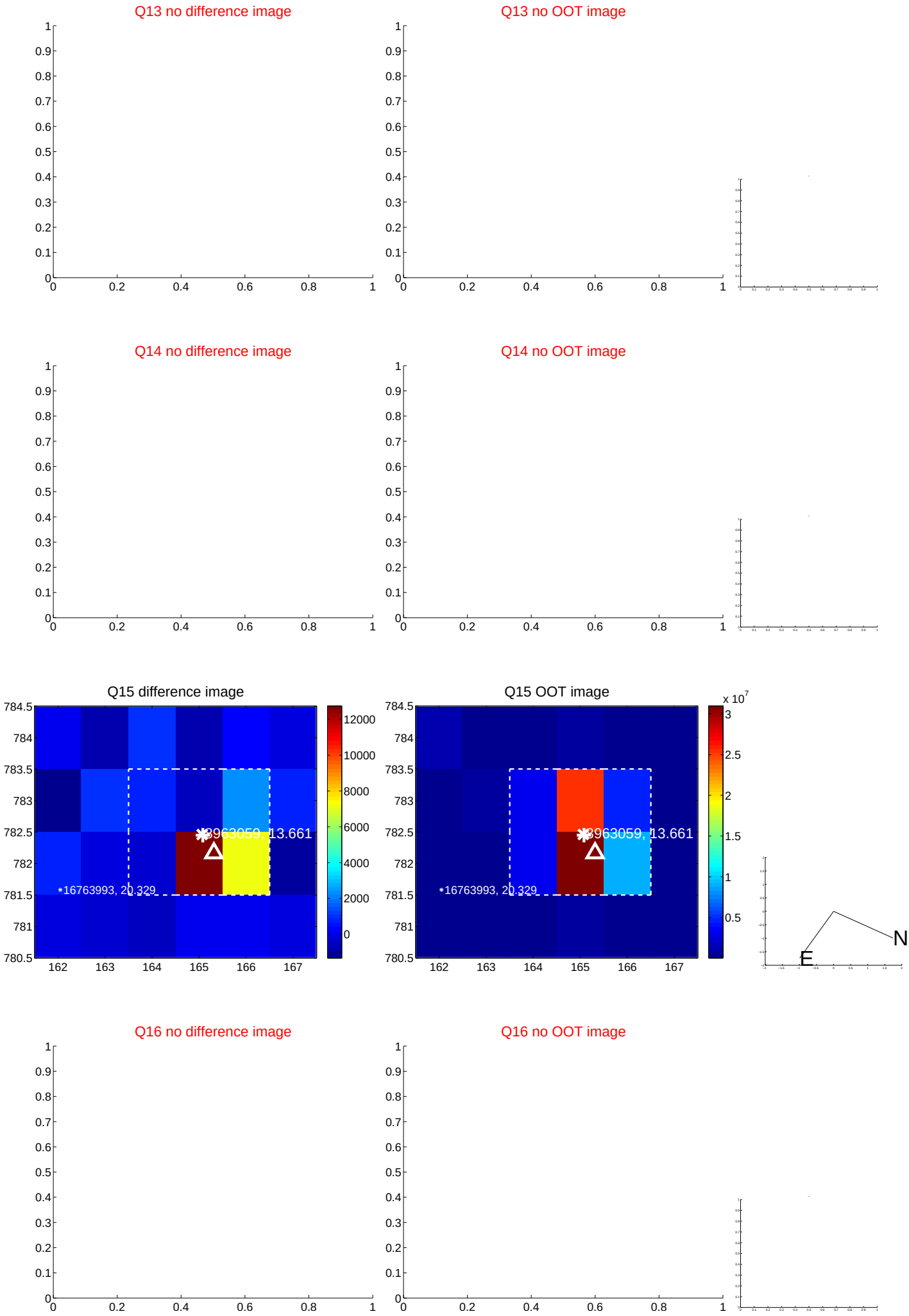


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

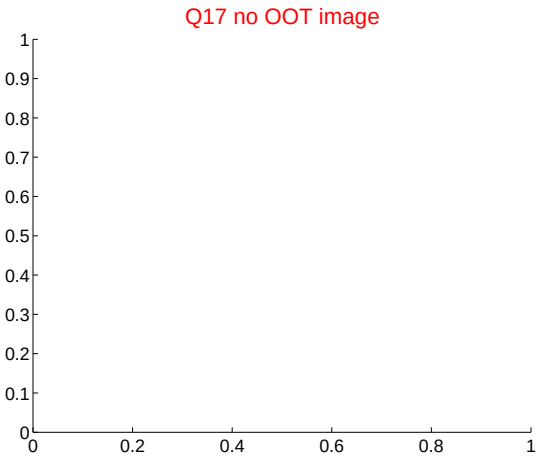


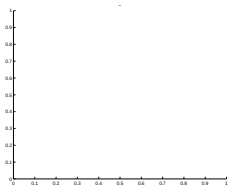


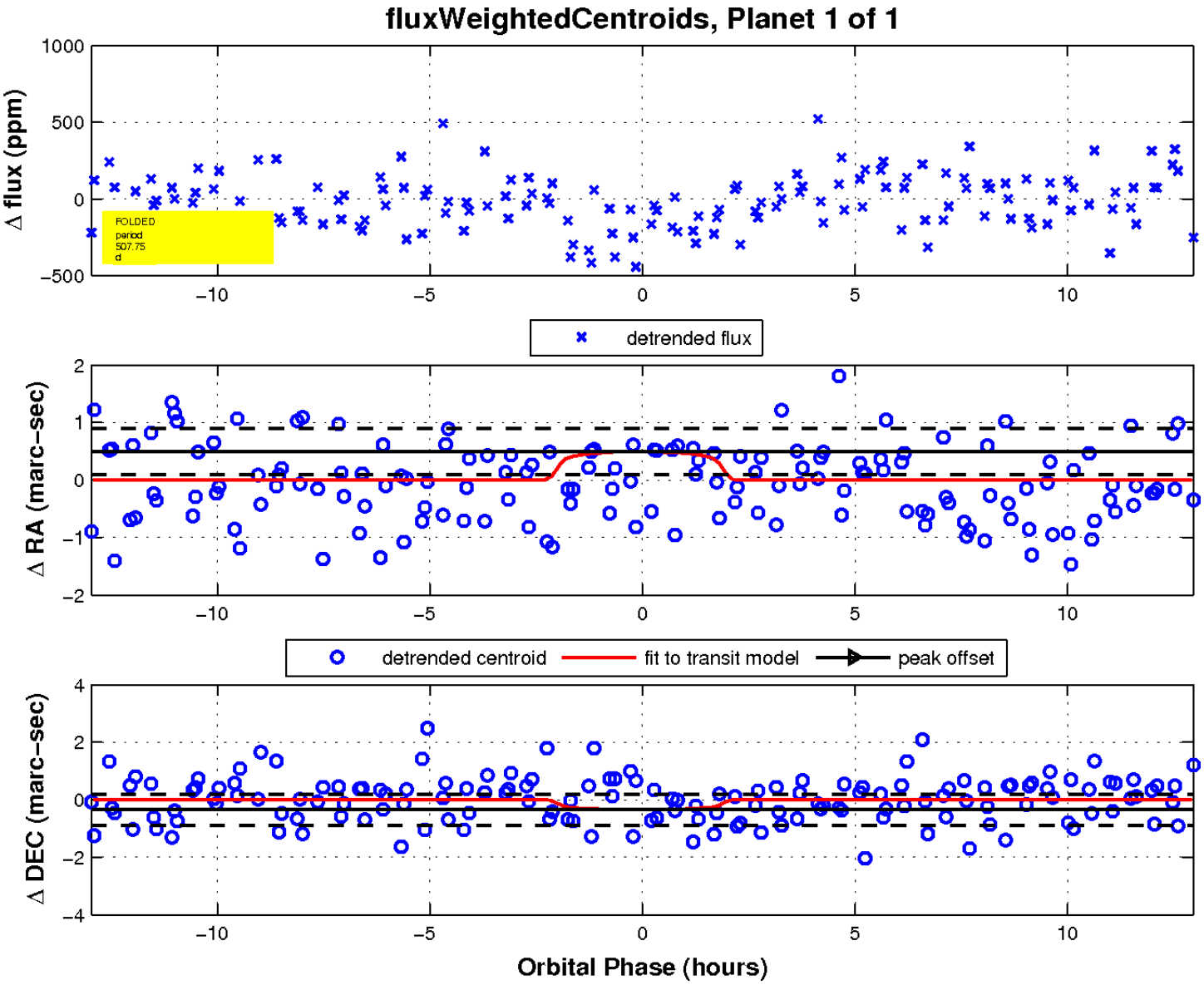
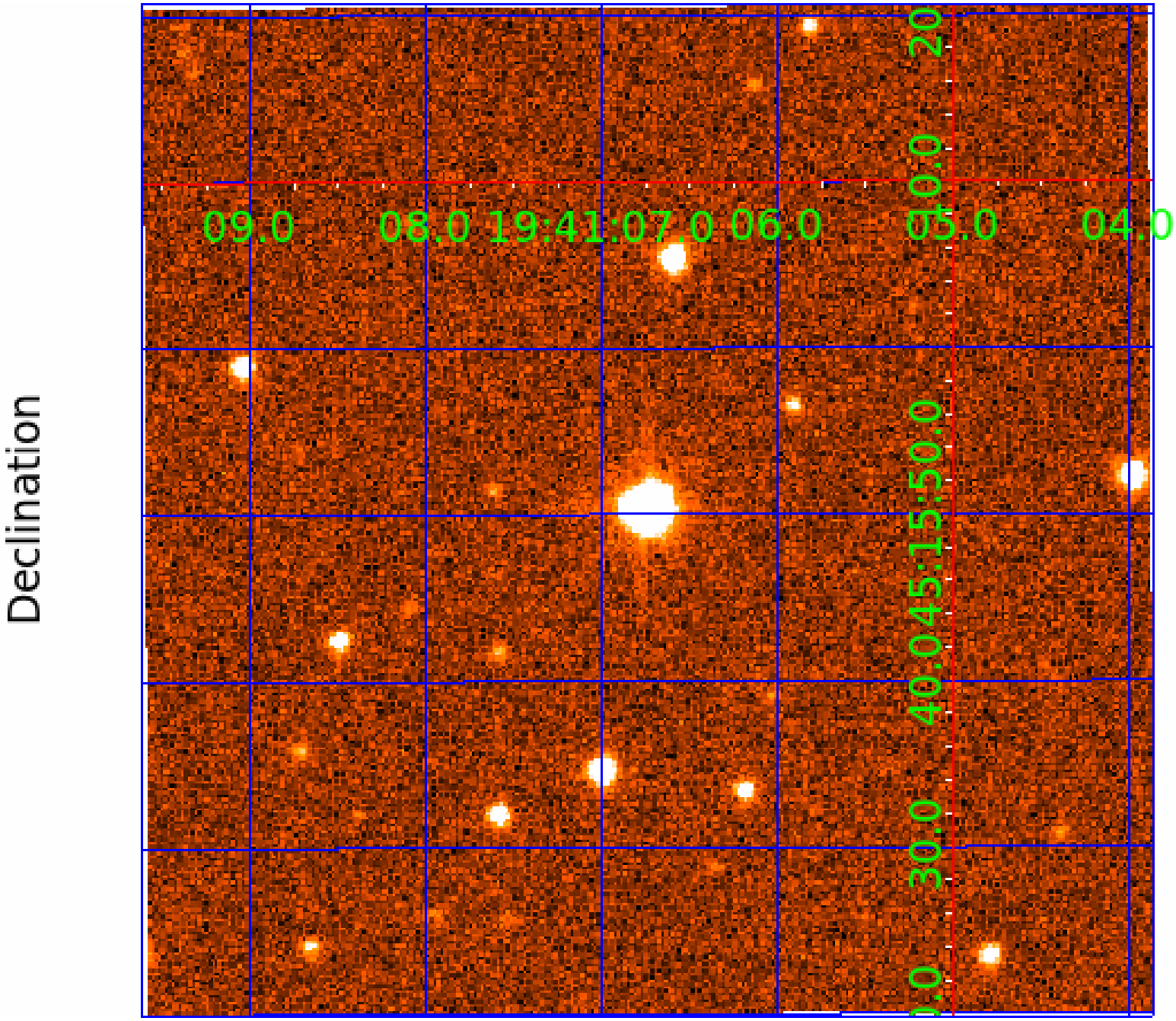
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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







UKIRT Image