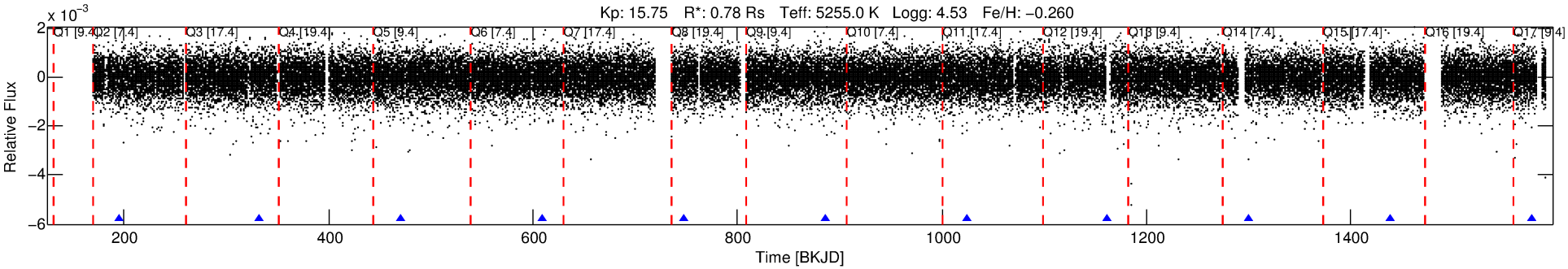
WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

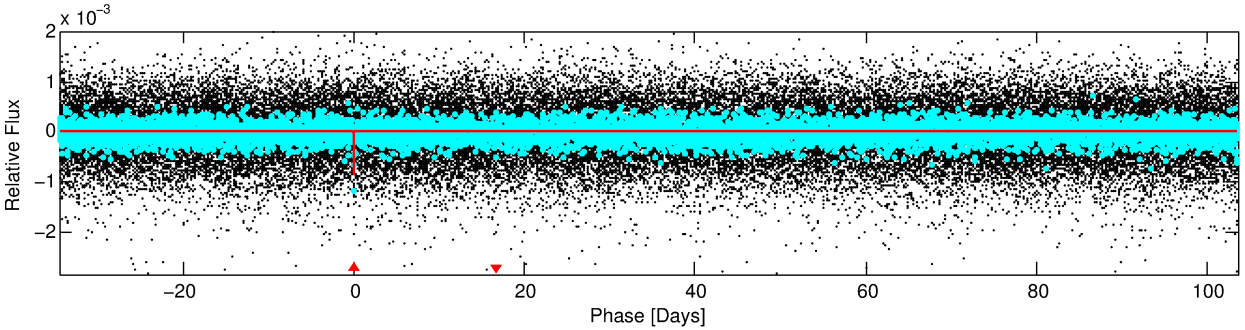
DV One-Page Summary

KIC: 4643830 Candidate: 1 of 1 Period: 138.201 d

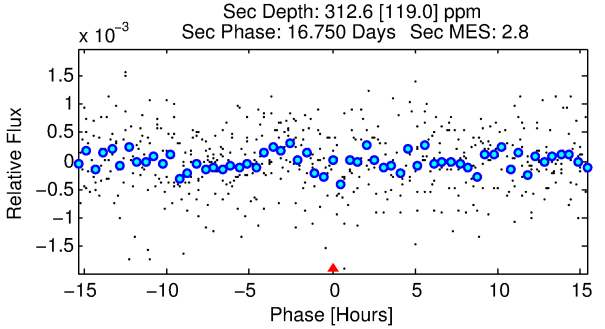
WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

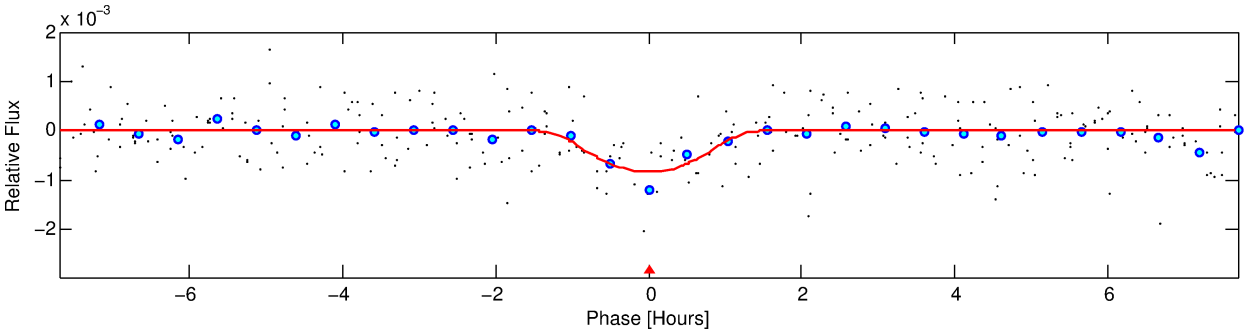
Kp: 15.75 R*: 0.78 Rs Teff: 5255.0 K Logg: 4.53 Fe/H: −0.260



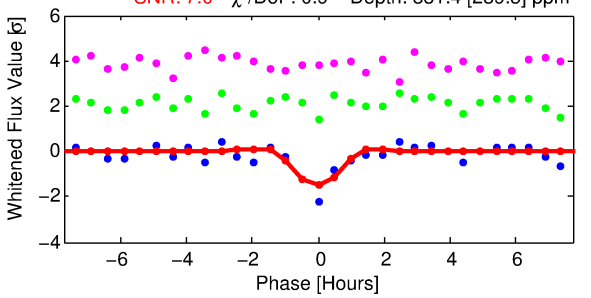


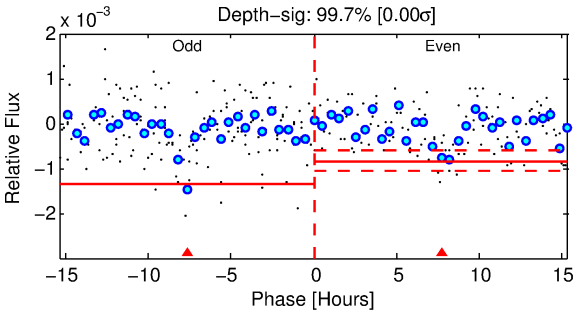
Sec Depth: 312.6 [119.0] ppm
Sec Phase: 16.750 Days Sec MES: 2.8

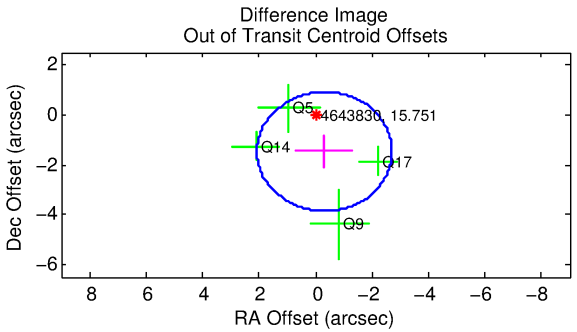




MES: 7.2 Transits: 10
SNR: 7.0 χ^2/DoF: 0.9 Depth: 831.4 [289.5] ppm







DV Fit Results:

Period = 138.20094 [0.00133] d
Epoch = 194.6086 [0.0072] BKJD
Rp/R* = 0.0398 [0.0680]
a/R* = 147.13 [120.40]
b = 0.98 [0.15]

Seff = 1.85 [0.36]
Teq = 297 [14] K
Rp = 3.40 [5.82] Re
a = 0.4759 [0.0510] AU

Ag = 3375.12 [11621.26] [0.29σ]
Teffp = 3504 [3015] K [1.06σ]

DV Diagnostic Results:

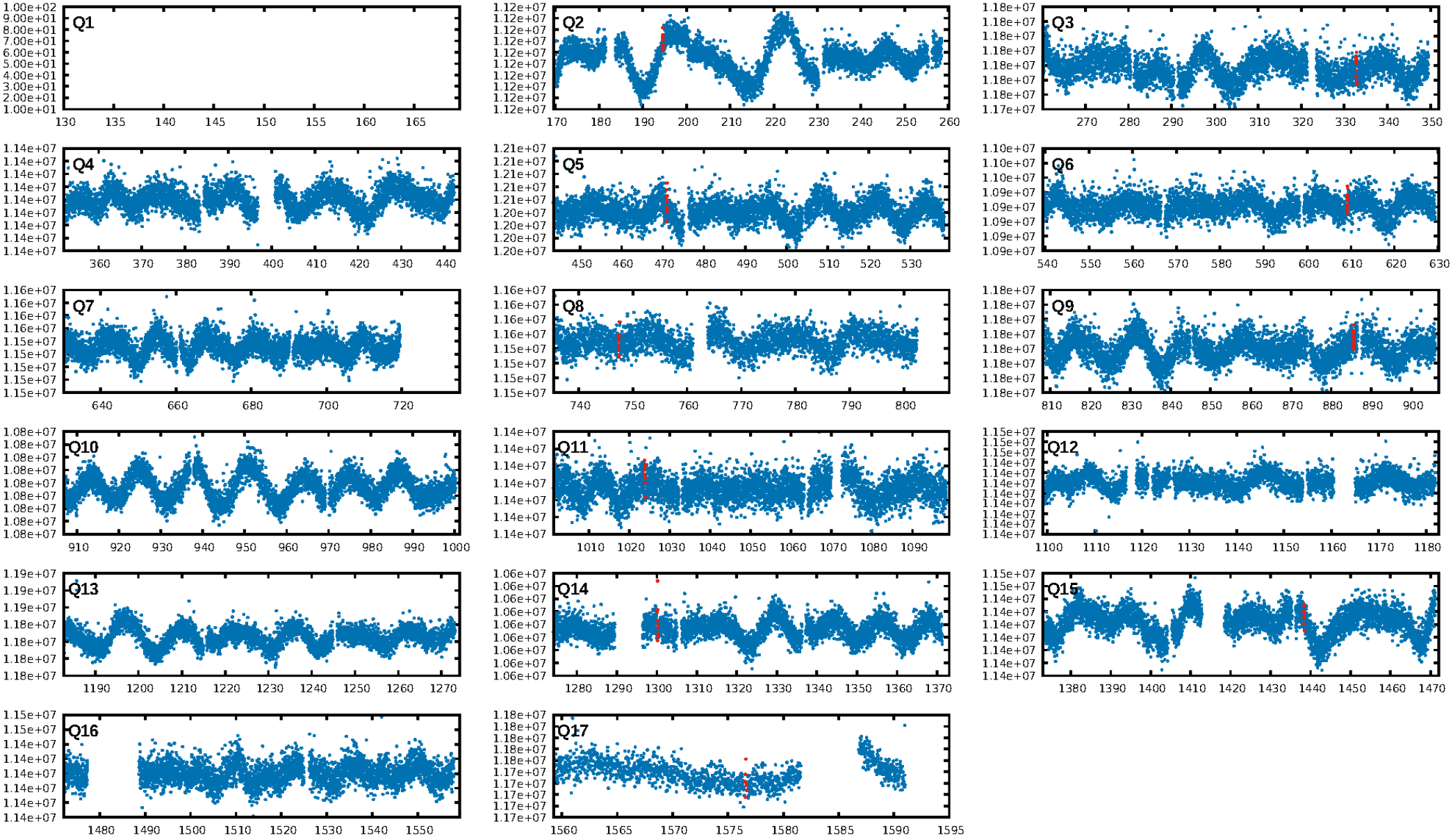
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 93.3%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 1.98e−10
RollingBand−fgt: 1.00 [9/9]
GhostDiagnostic−chr: 1.557

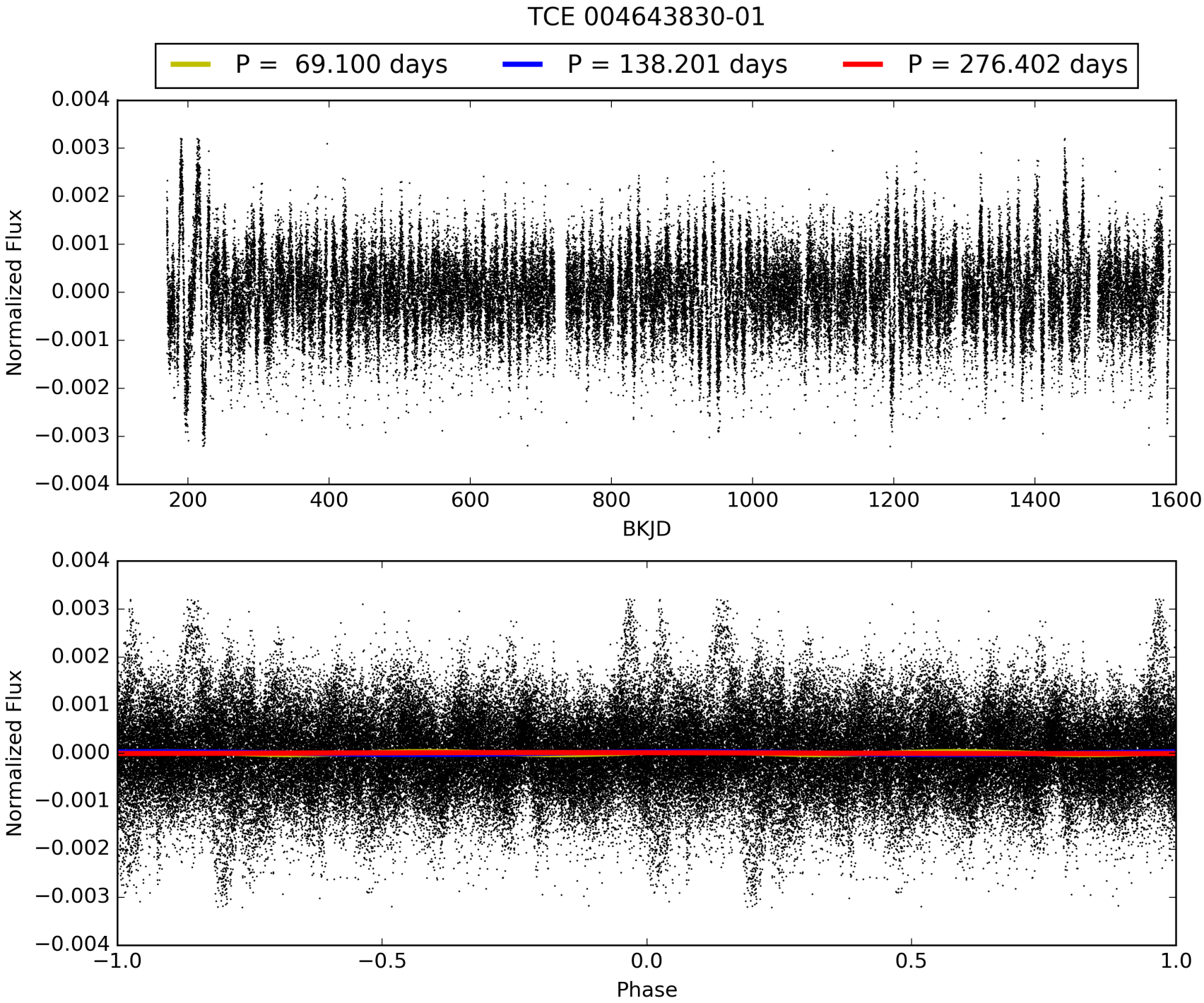
Centroid−sig: 15.3%
Centroid−so: 2.602 arcsec [1.23σ]
OotOffset−rm: 1.508 arcsec [1.89σ]
KicOffset−rm: 1.568 arcsec [1.84σ]
OotOffset−st: 1/0/0/3 [4]
KicOffset−st: 1/0/0/3 [4]
DiffImageQuality−fgm: 0.25 [1/4]
DiffImageOverlap−fno: 1.00 [10/10]

Software Revision: svn+ssh://murzim/repo/soc/branches/integ/ksop−2320@61025 −− Date Generated: 11−Mar−2016 11:32:48 Z

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

TCE 004643830-01, PDC Light Curves

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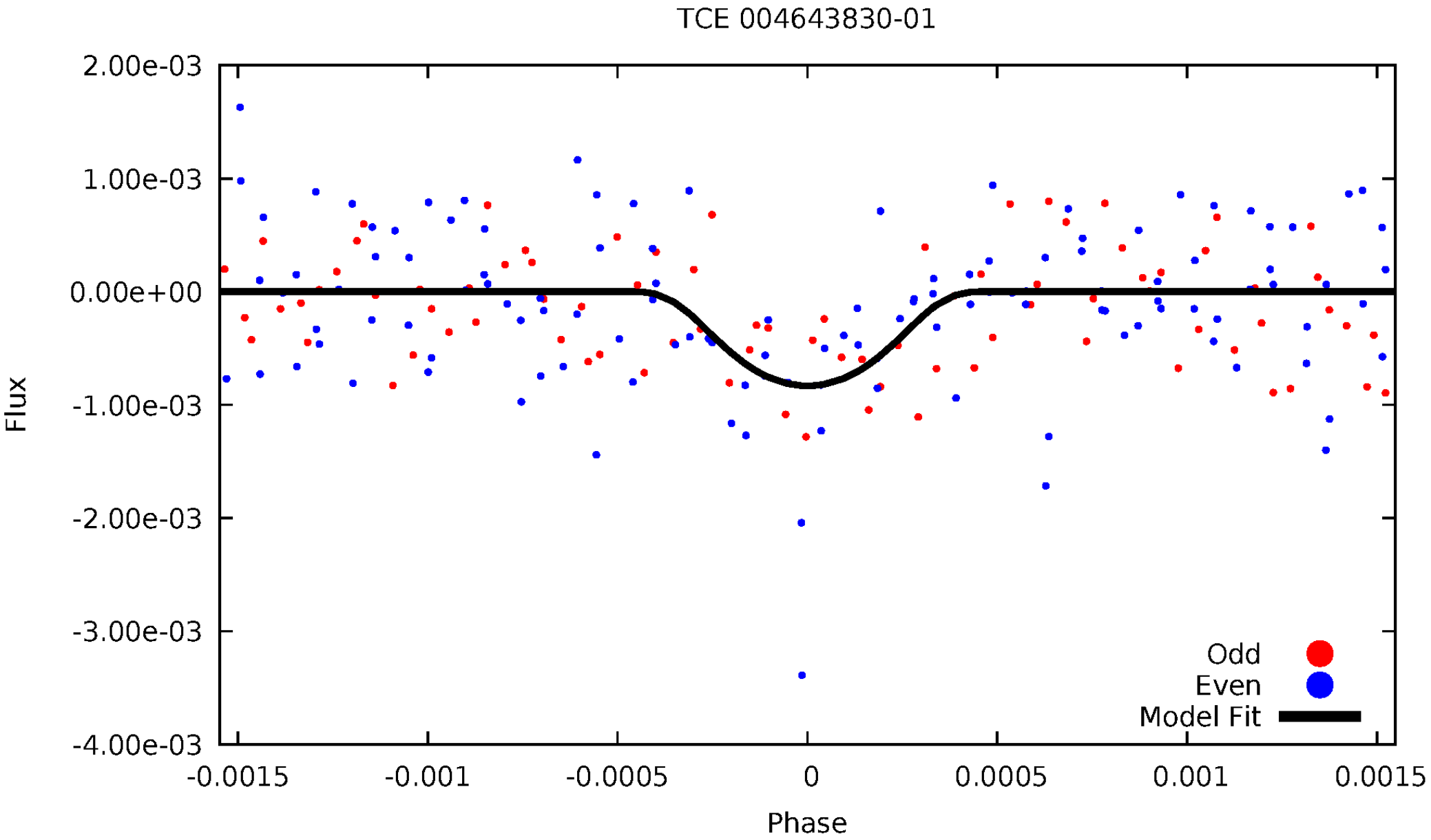
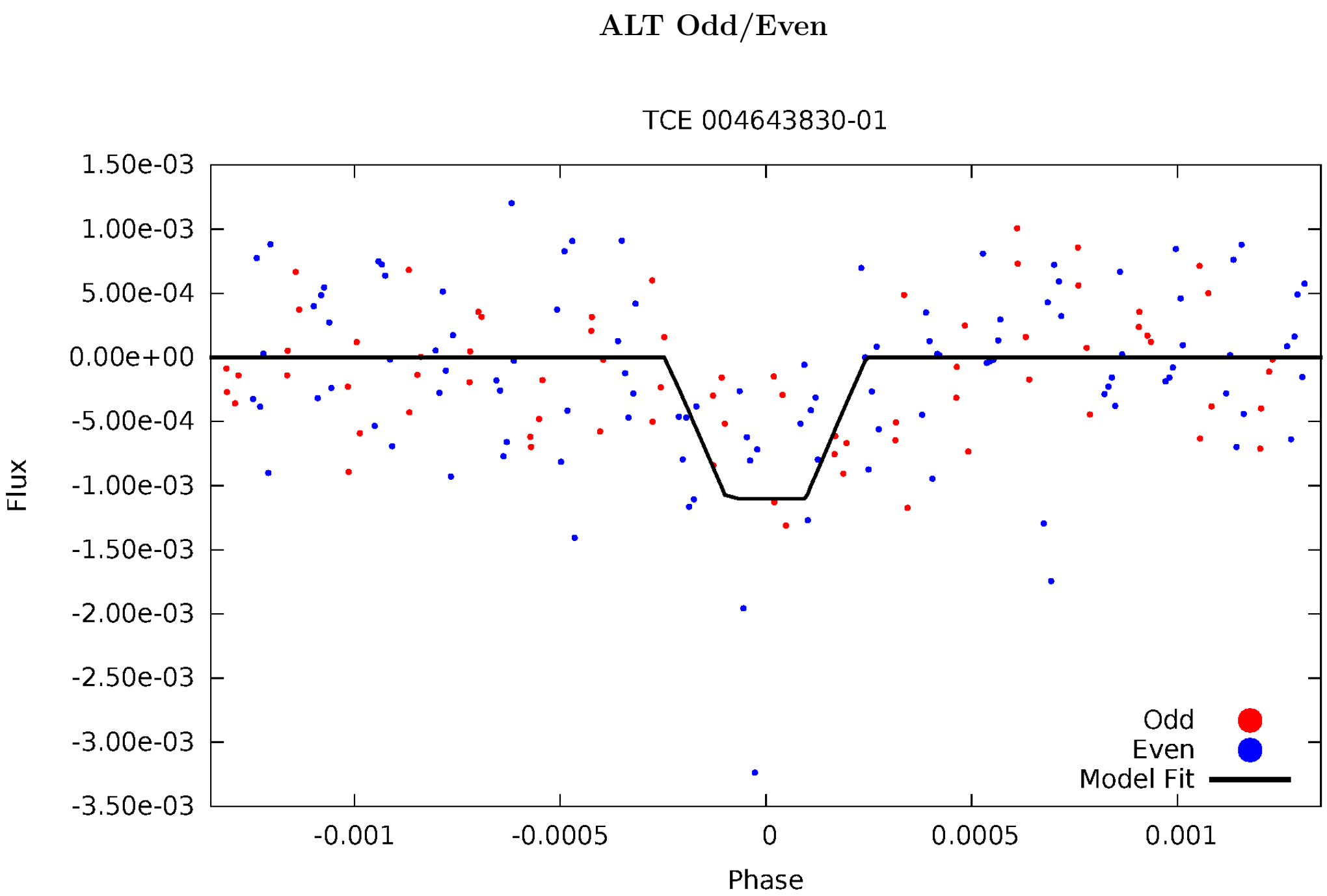
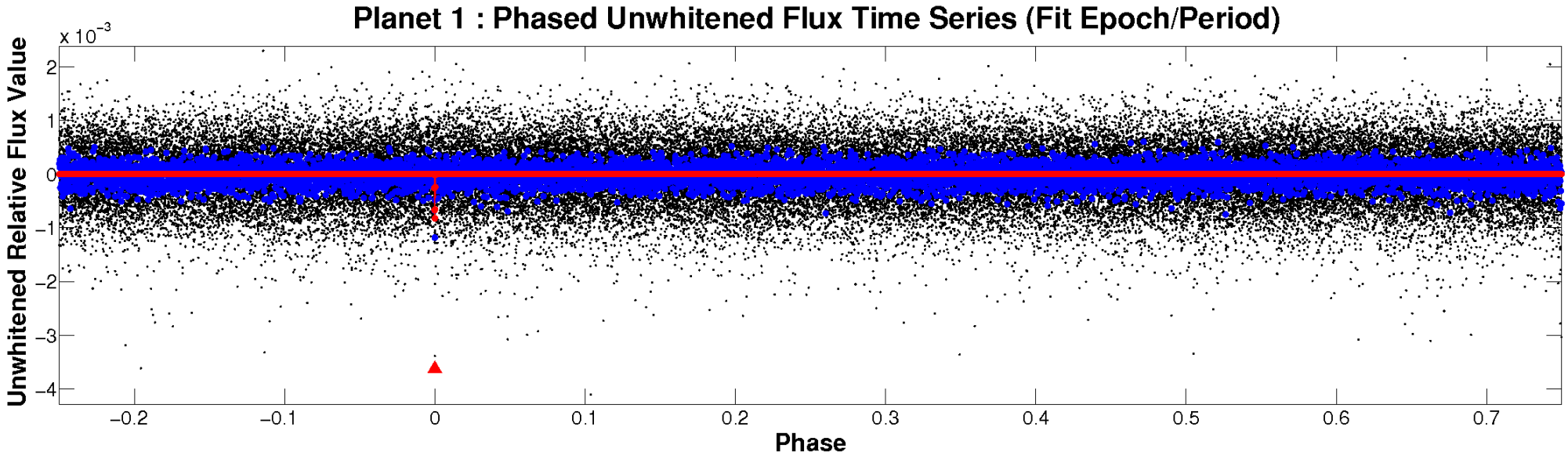
P = 69.100 days
P = 138.201 days
P = 276.402 days
Normalized Flux
BKJD
Normalized Flux
Phase

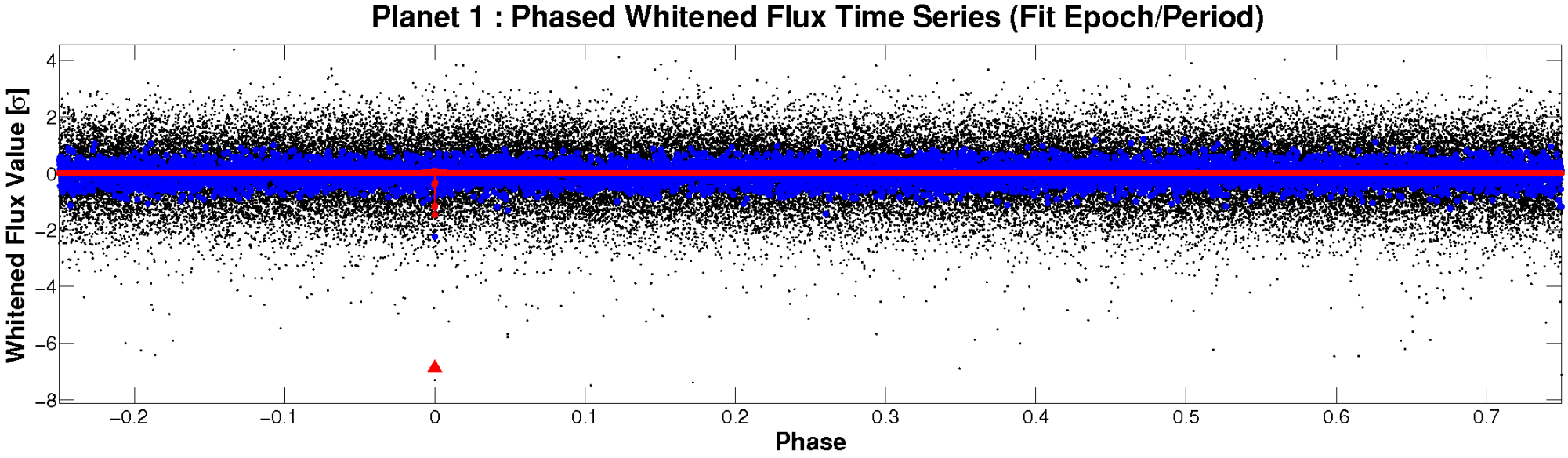
DV Odd/Even


TCE 004643830-01
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
-4.00e-03
Flux
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
Phase
Odd
Even
Model Fit


ALT Odd/Even
TCE 004643830-01
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
-3.00e-03
-3.50e-03
Flux
-0.001
-0.0005
0
0.0005
0.001
Phase
Odd
Even
Model Fit

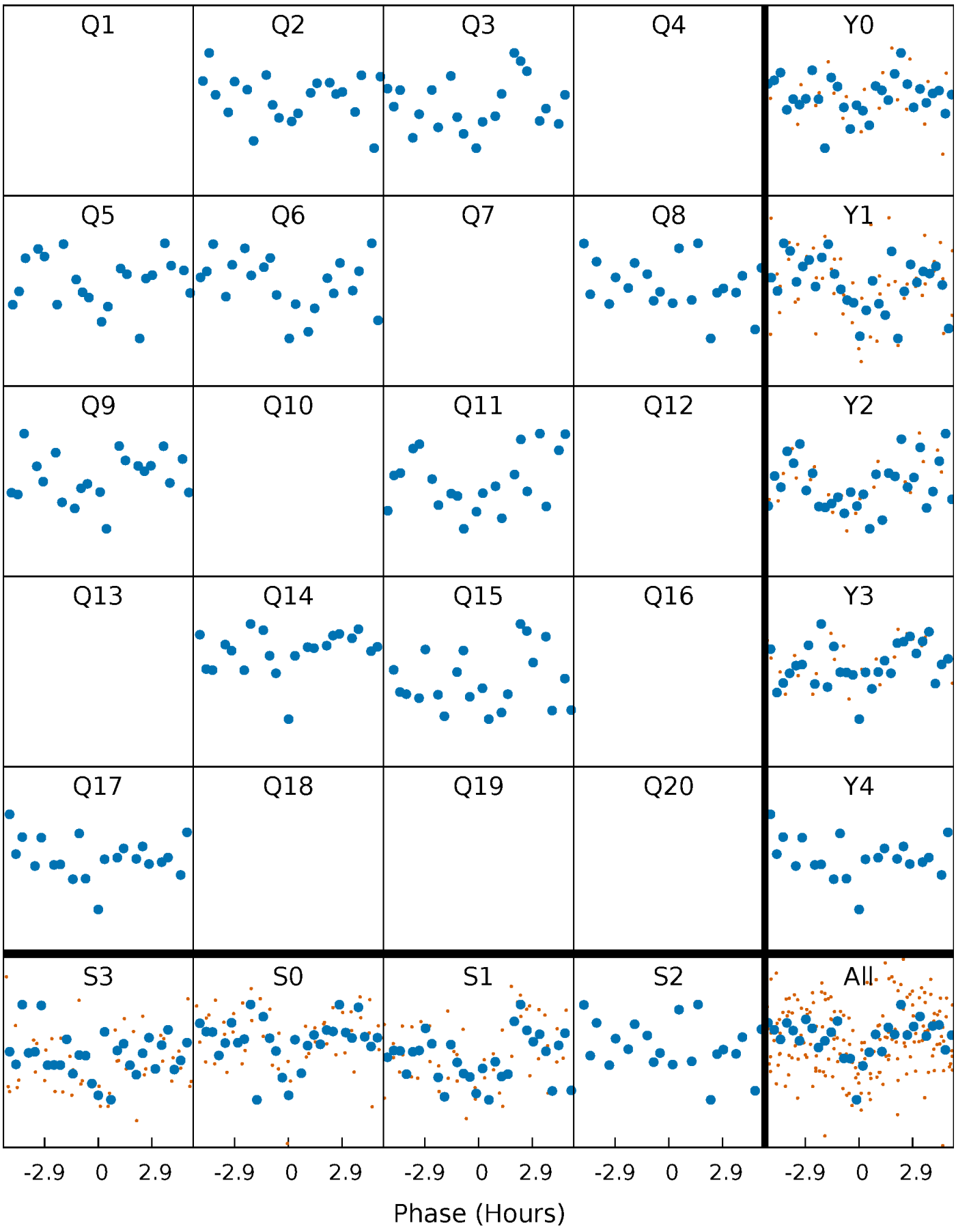
Non-Whitened Vs. Whitened Light Curve





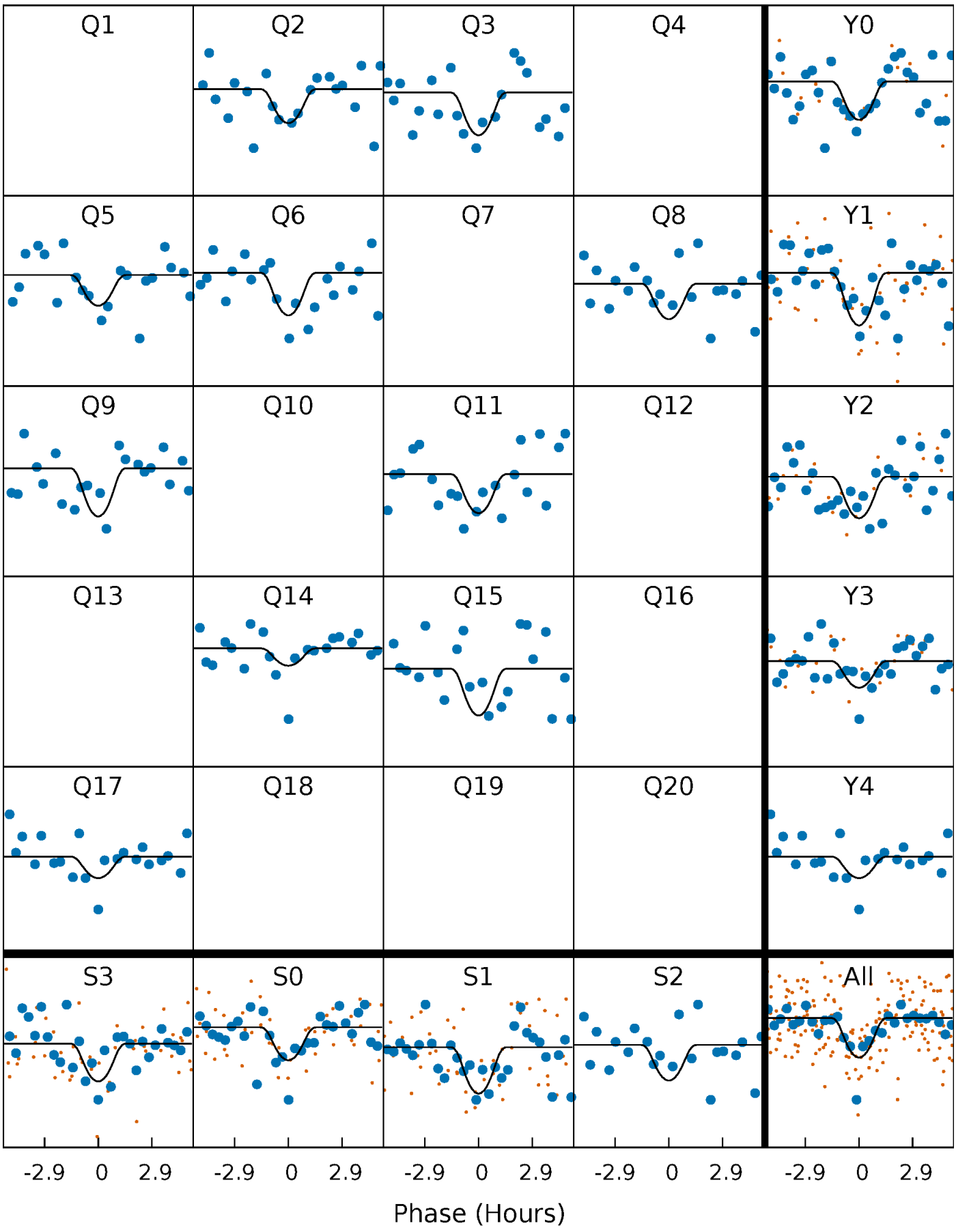
PDC Quarter-Phased Transit Curves

TCE 004643830-01 P=138.200936 Days T_0=194.608650 (BKJD)



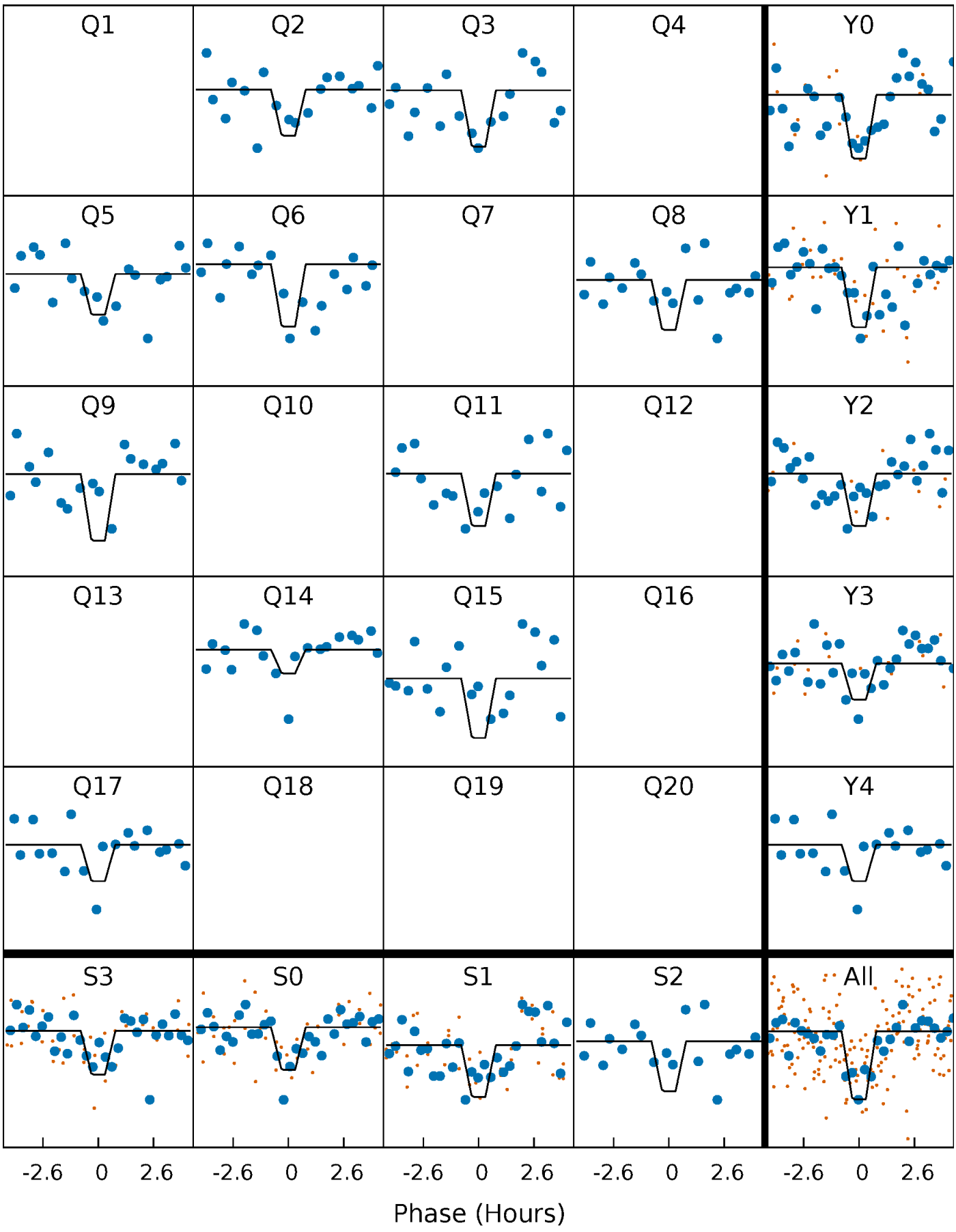
DV Quarter-Phased Transit Curves

TCE 004643830-01 P=138.200936 Days T_0=194.608650 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

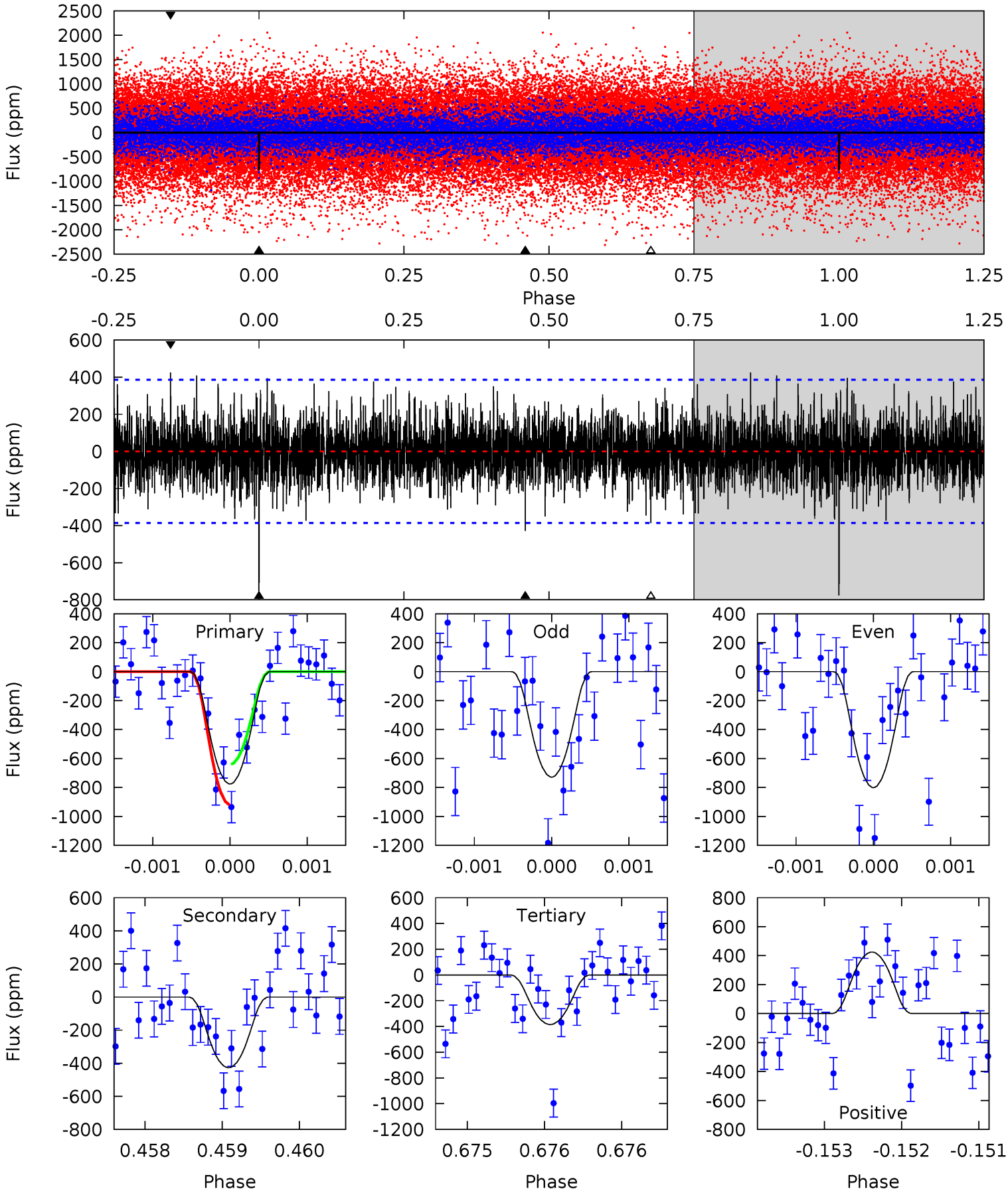
TCE 004643830-01 P=138.202725 Days T_0=194.596080 (BKJD)



DV Model-Shift Uniqueness Test

004643830-01, P = 138.200936 Days, E = 56.407714 Days

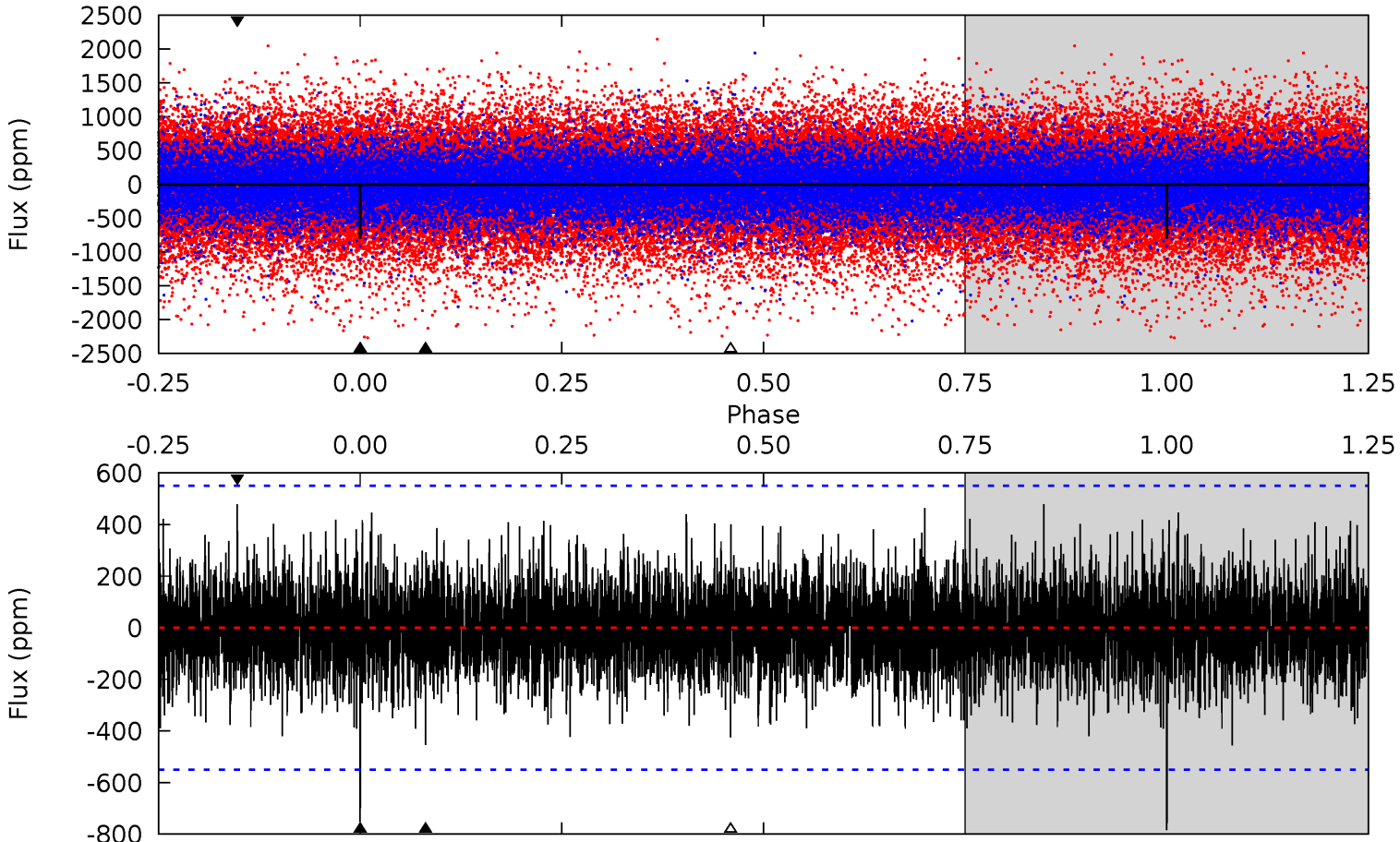
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	6.05	5.46	6.02	5.48	3.33	1.58	5.54	4.97	0.60	0.03	0.50	0.97	0.35	1.97

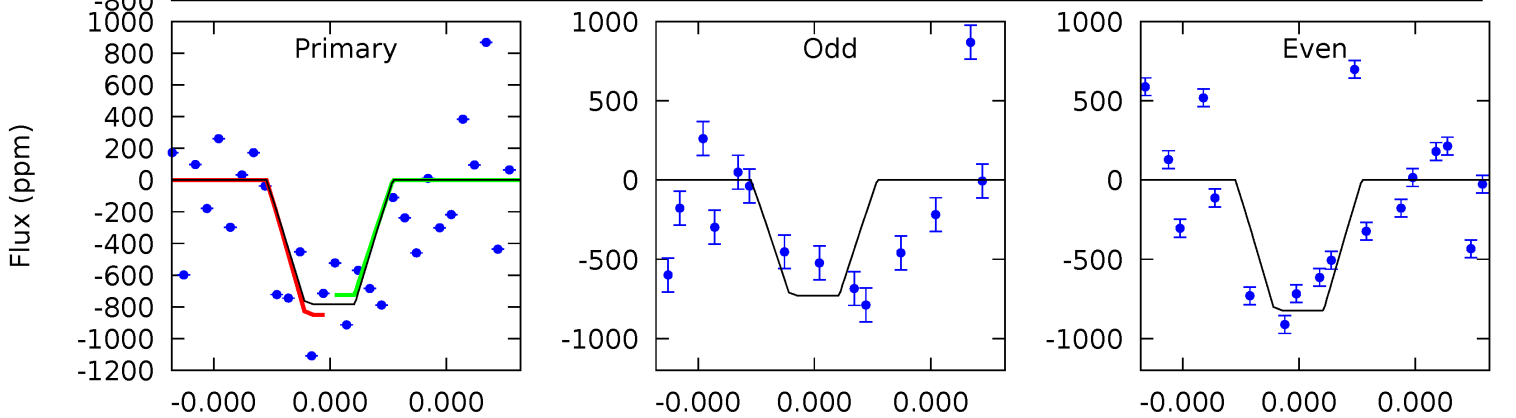


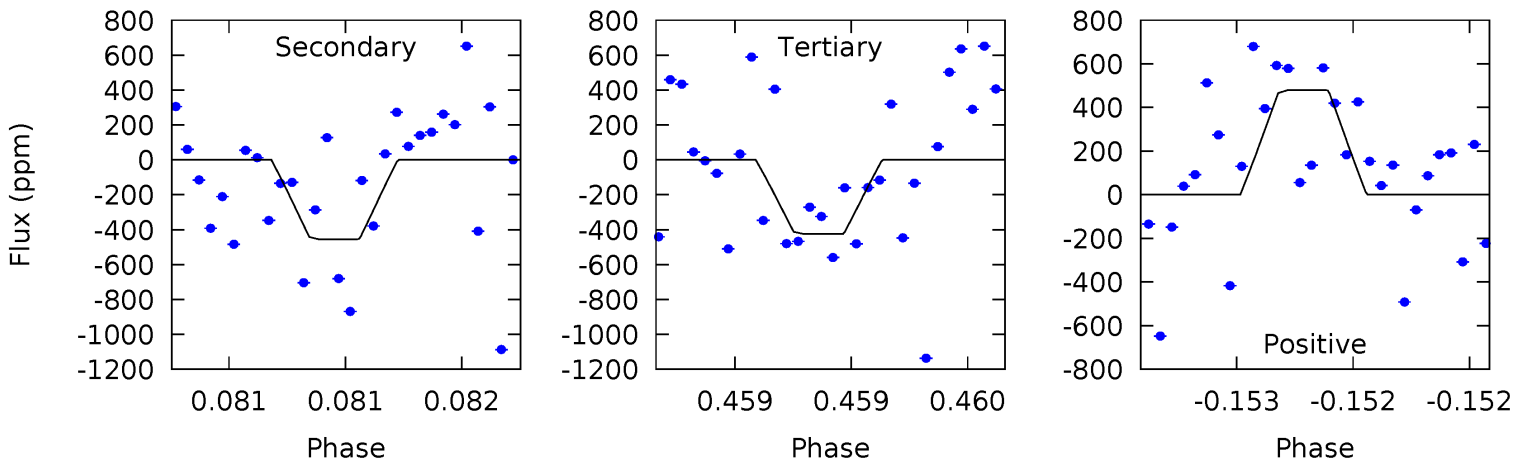
Alt Model-Shift Uniqueness Test

004643830-01, P = 138.202725 Days, E = 56.393355 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.97	4.62	4.31	4.87	5.59	3.51	1.27	3.66	3.10	0.31	-0.25	0.47	1.01	0.38	0.64







Stellar Parameters For KIC 004643830

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5255^{+158}_{-158}	$4.527^{+0.080}_{-0.072}$	$-0.260^{+0.300}_{-0.300}$	$0.783^{+0.103}_{-0.084}$	$0.754^{+0.101}_{-0.062}$	$2.209^{+0.812}_{-0.545}$
	+3%/-3%	+2%/-2%	+115%/-115%	+13%/-11%	+13%/-8%	+37%/-25%
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 004643830-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-427±71	$5.45^{+5.12}_{-3.91}$	415^{+17}_{-17}	3473^{+2026}_{-626}	1825^{+20119}_{-1353}
Alt.	-455±98	$5.14^{+4.99}_{-3.54}$	416^{+17}_{-18}	3558^{+1968}_{-655}	2143^{+18594}_{-1604}

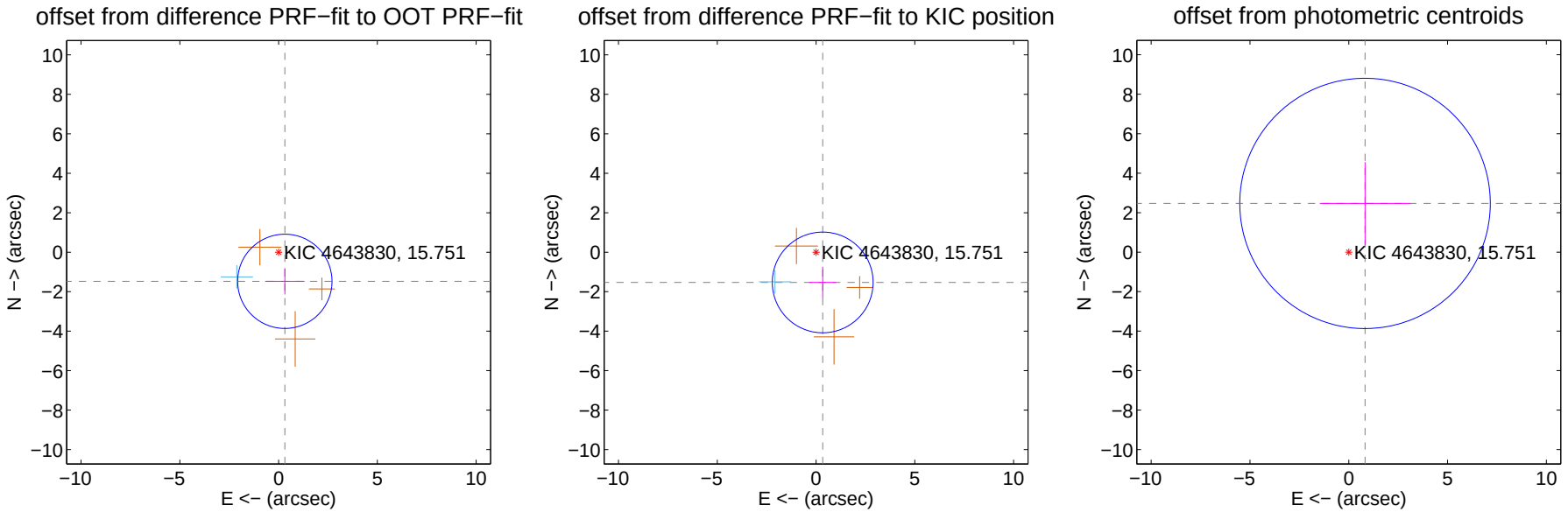
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

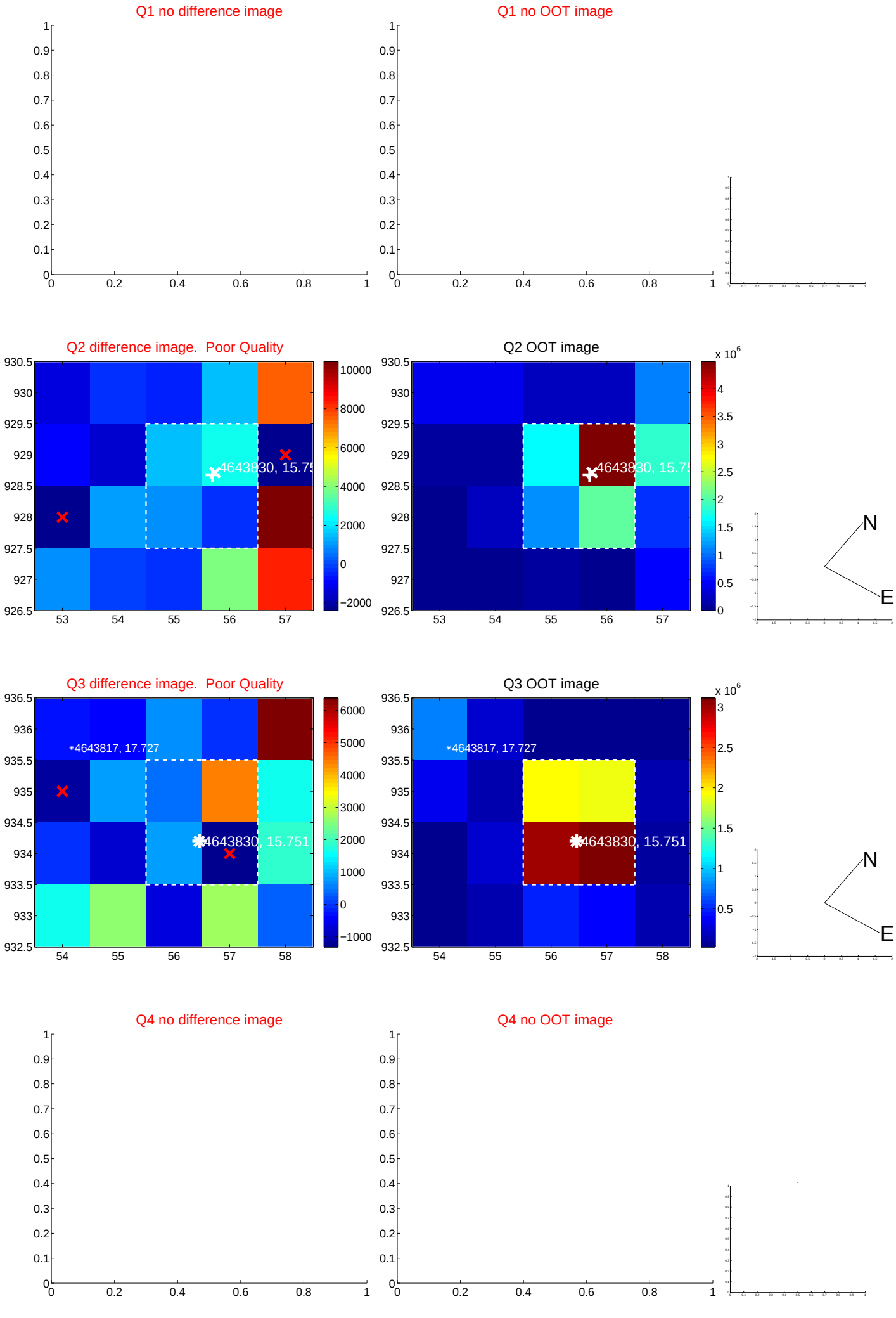
Supplemental centroid analysis for 004643830-01. Kepler magnitude: 15.75. Transit SNR 7.01
There are 1 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.508 ± 0.796	1.89	-0.316 ± 0.998	-1.475 ± 0.667
PRF-fit source offset from KIC position	1.568 ± 0.850	1.84	-0.337 ± 0.678	-1.531 ± 0.798
photometric centroid source offset	2.60 ± 2.11	1.23	-0.82 ± 2.29	2.47 ± 2.09



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.



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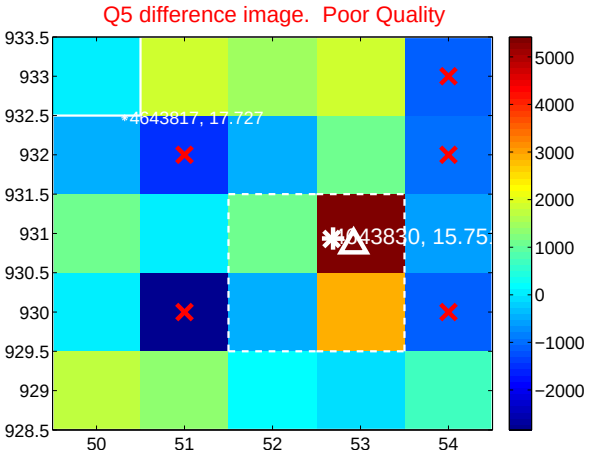
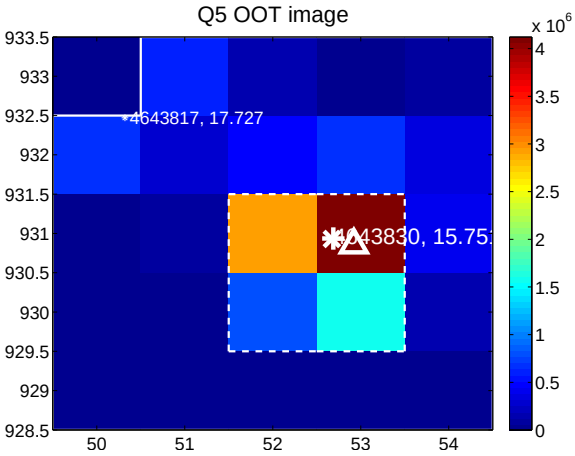
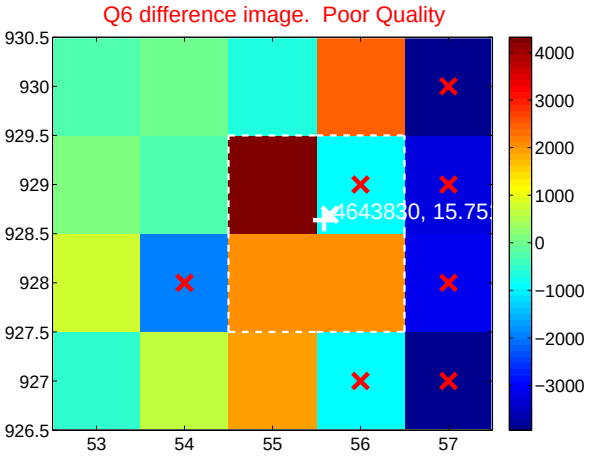
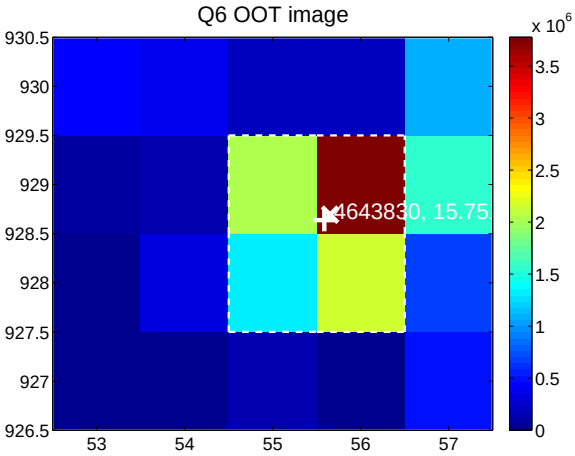
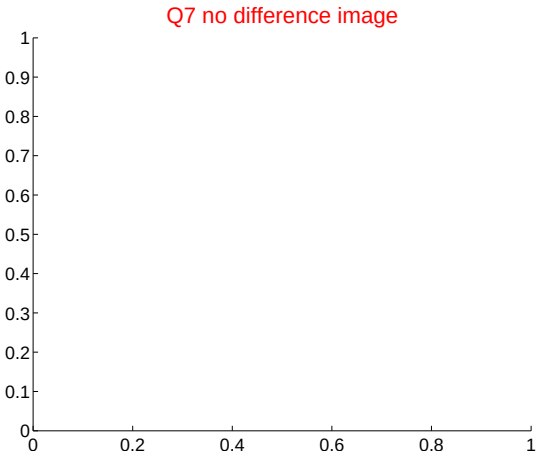
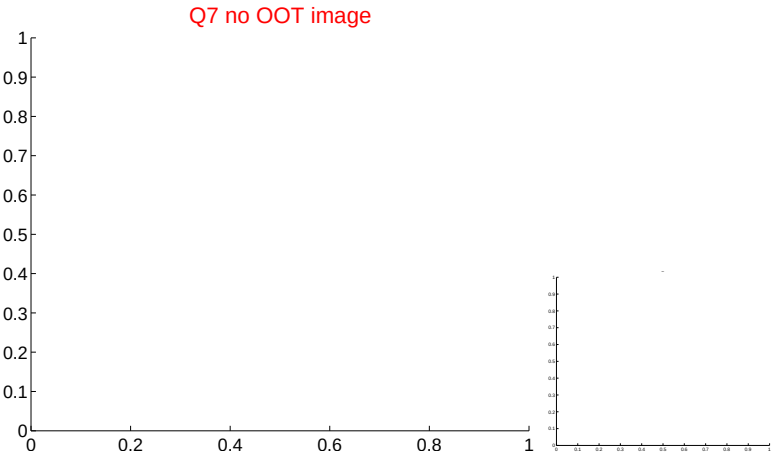


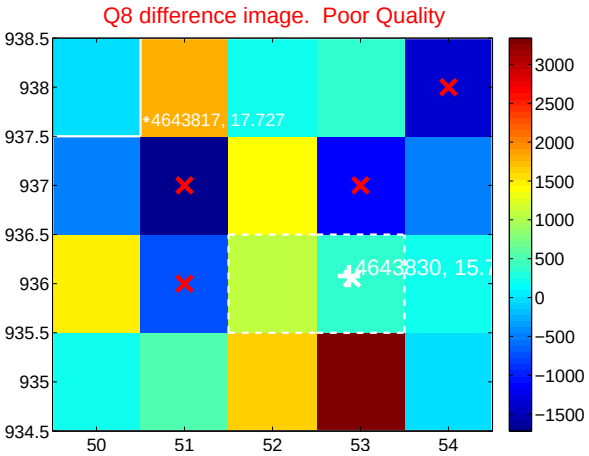


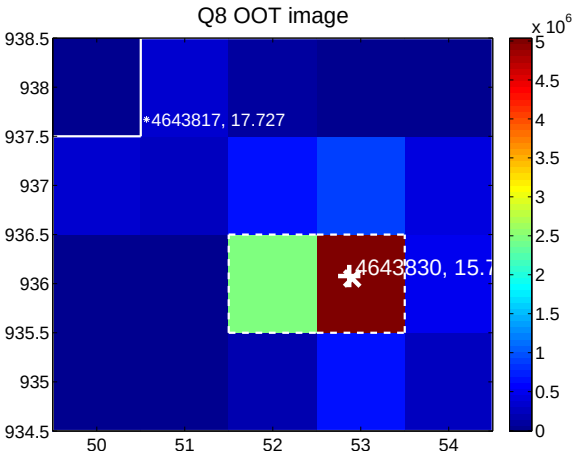




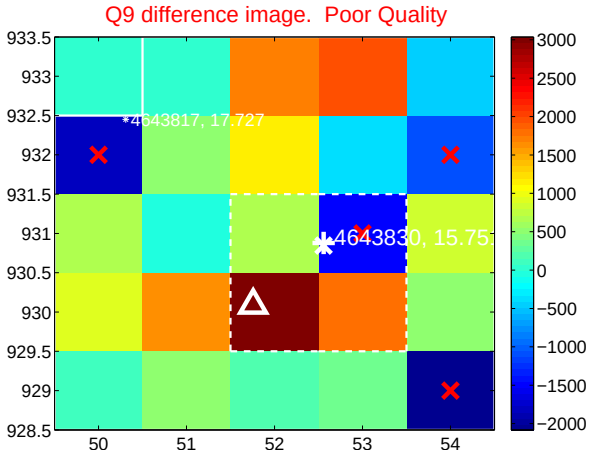


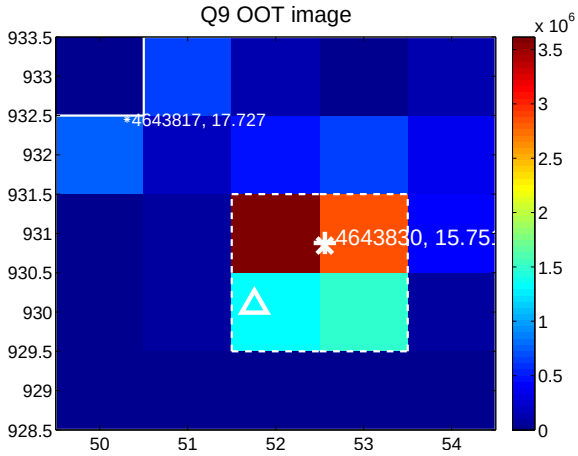


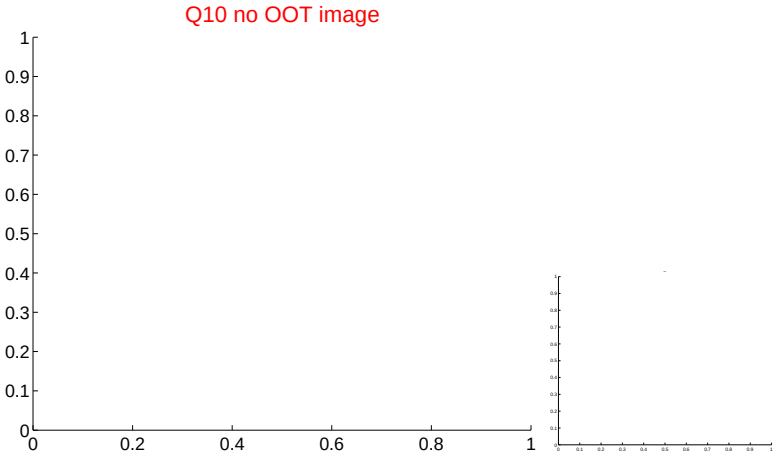


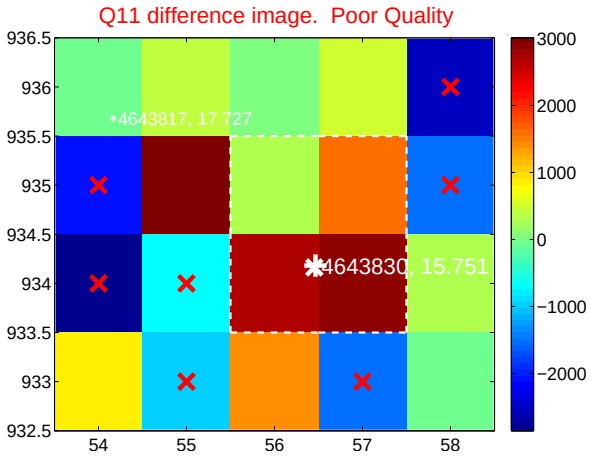


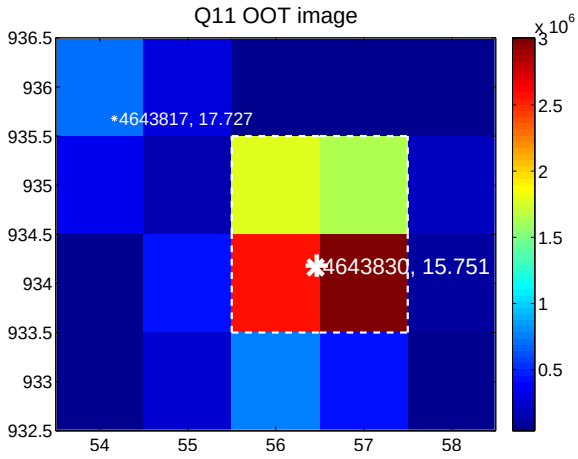
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

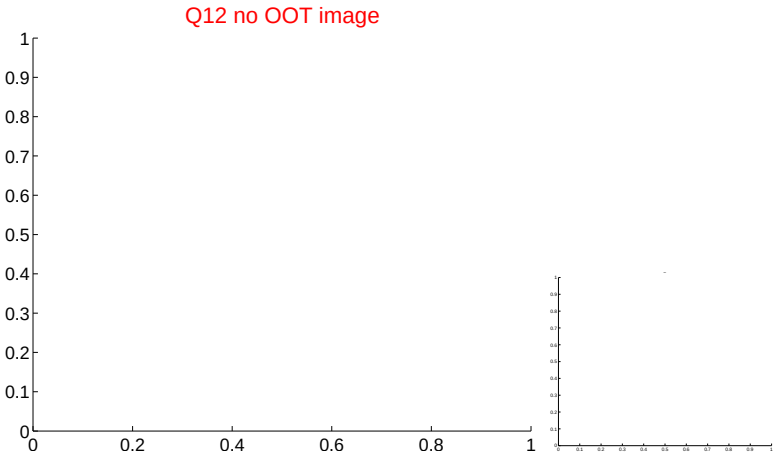




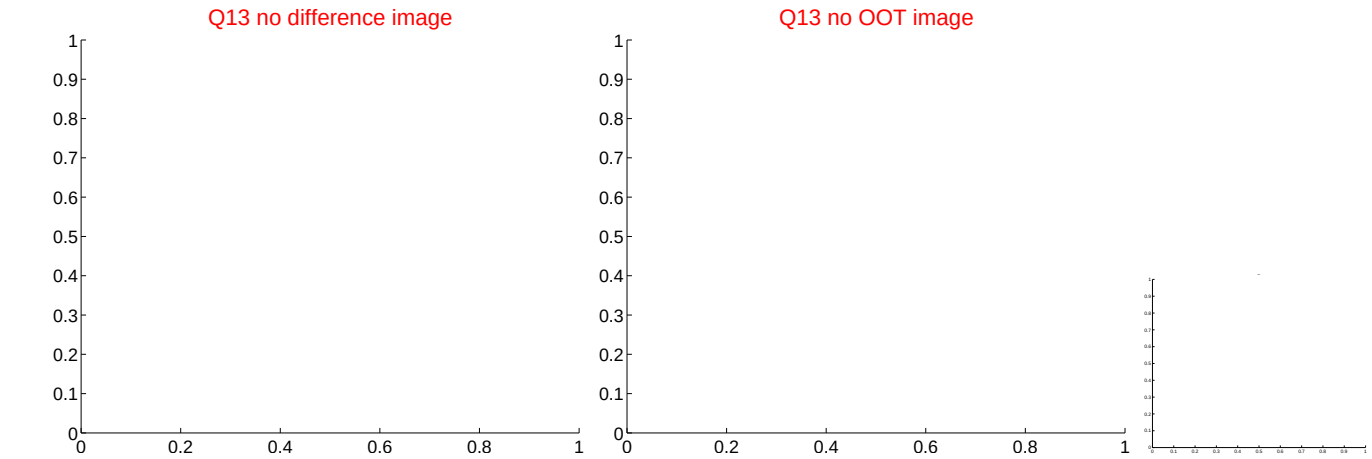


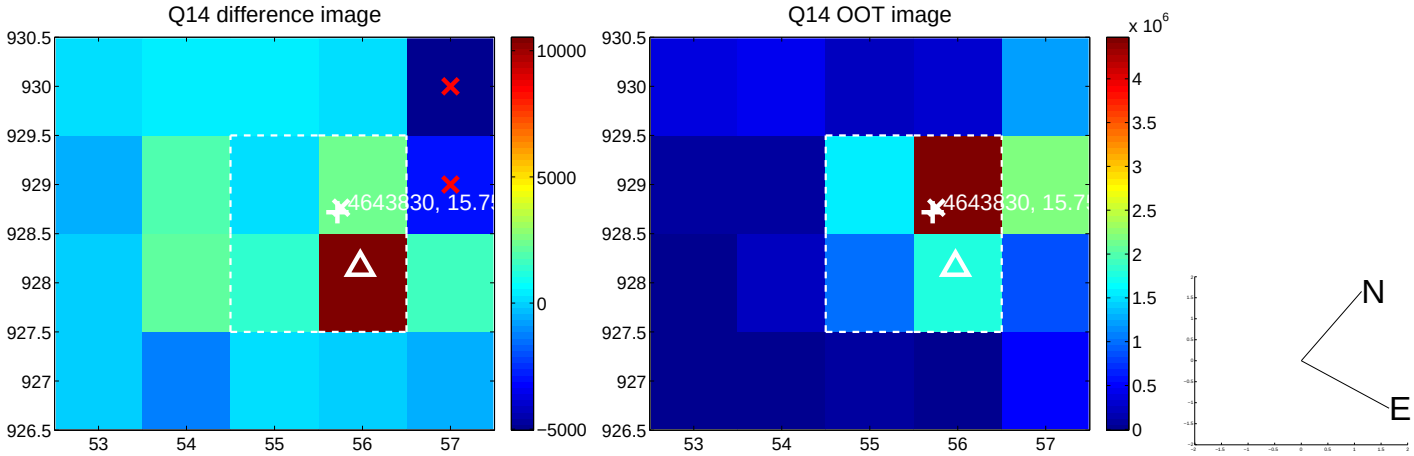


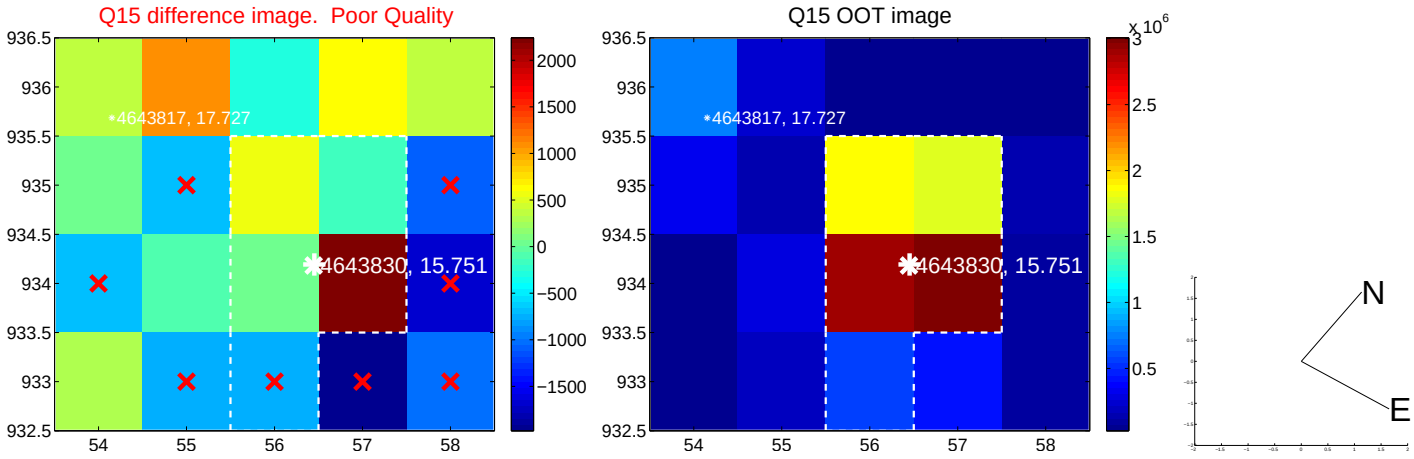


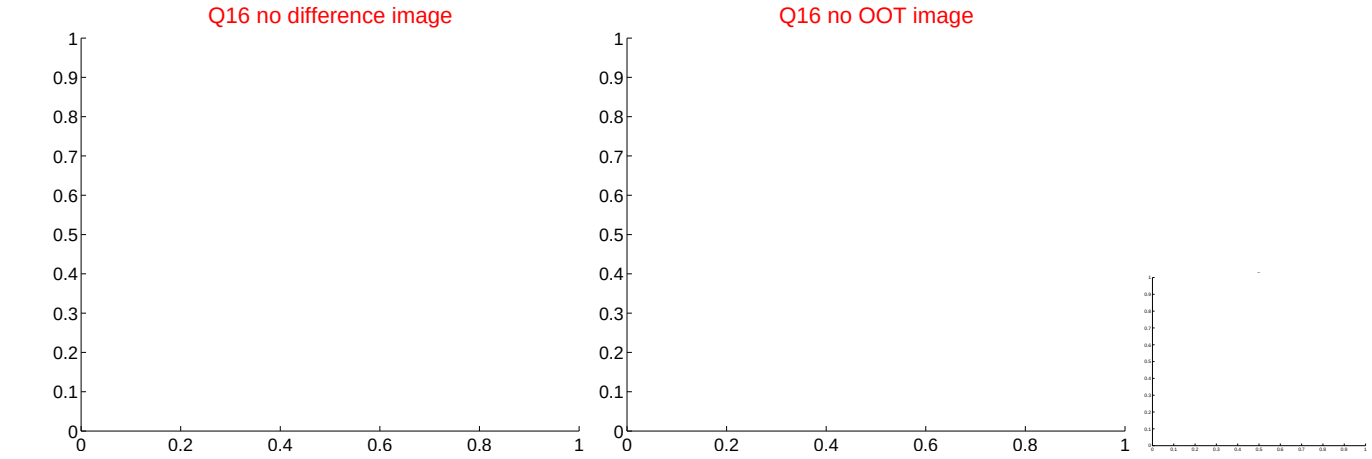


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

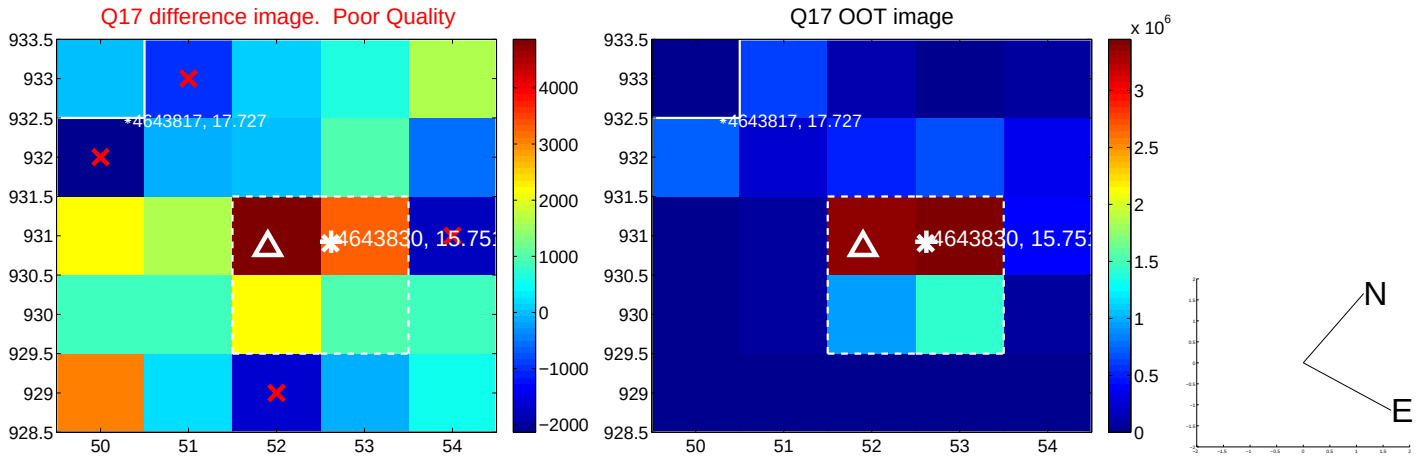


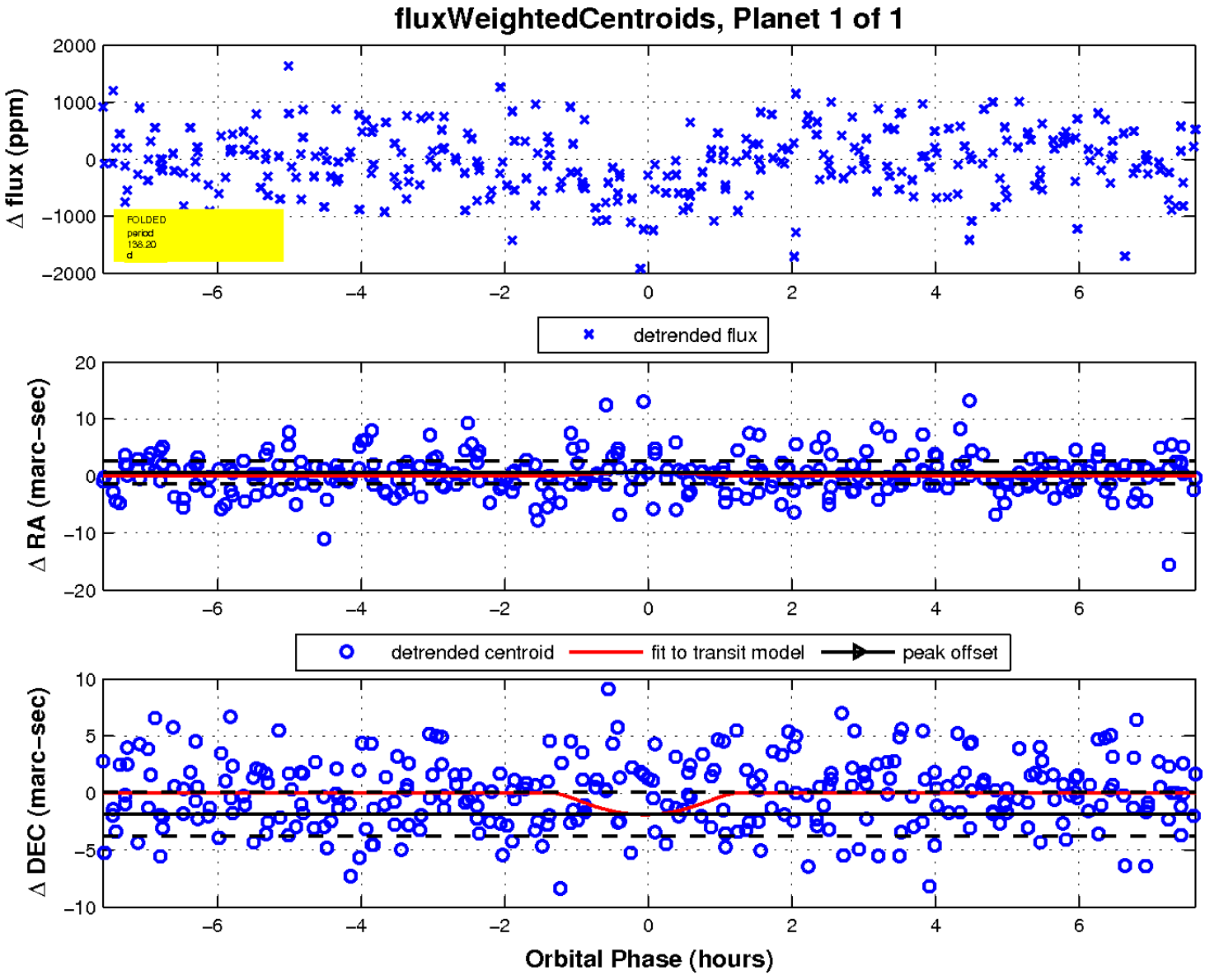




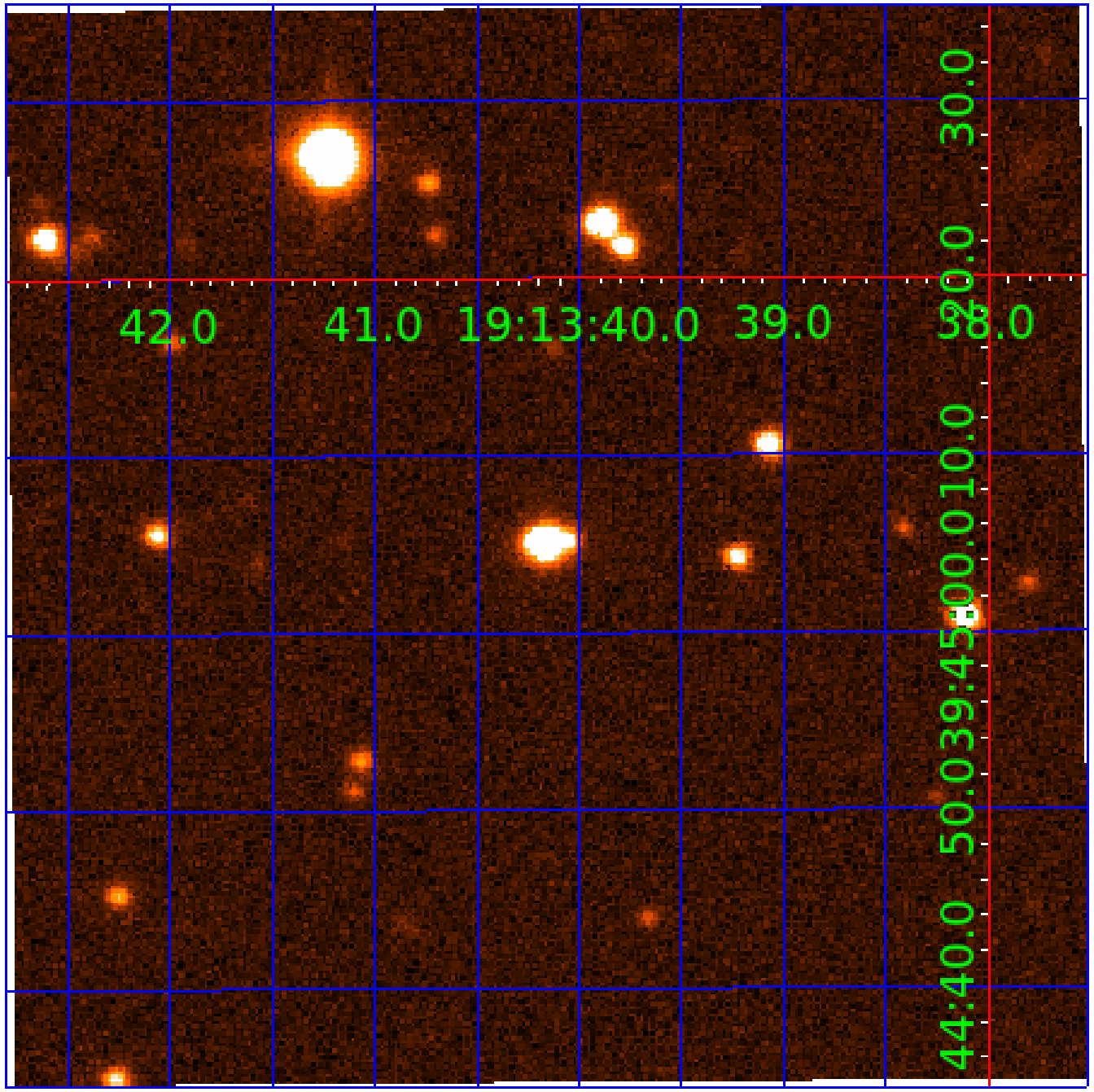


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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