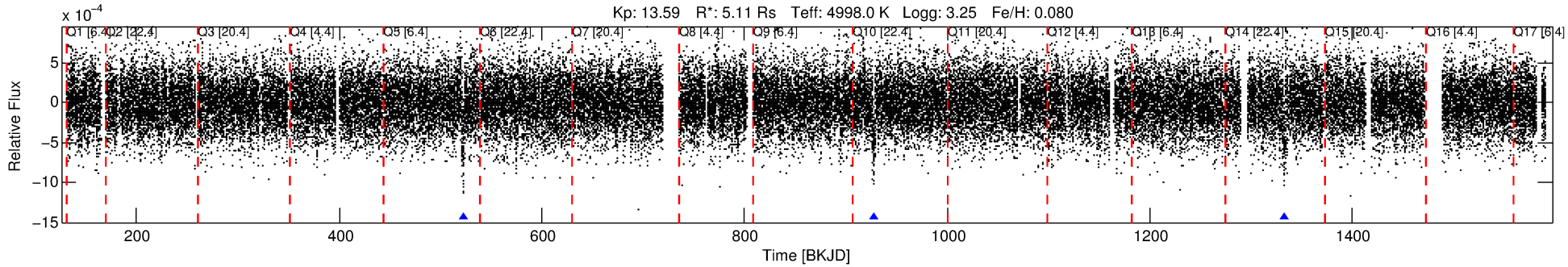
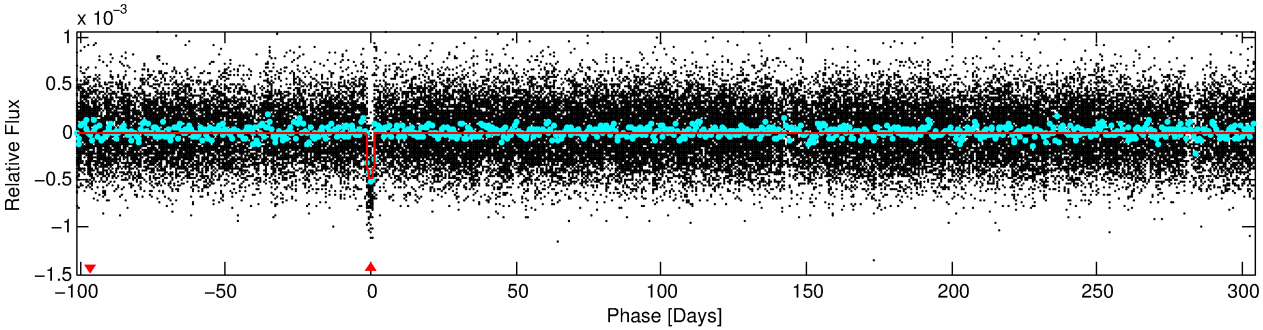
WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

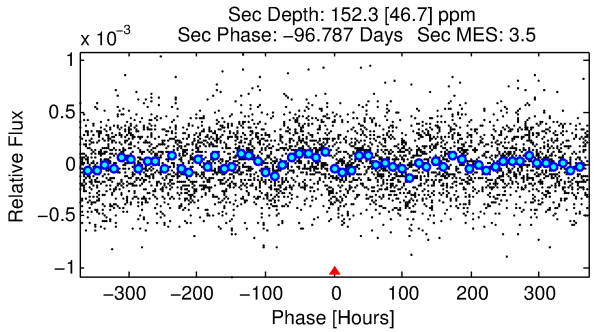
DV One-Page Summary

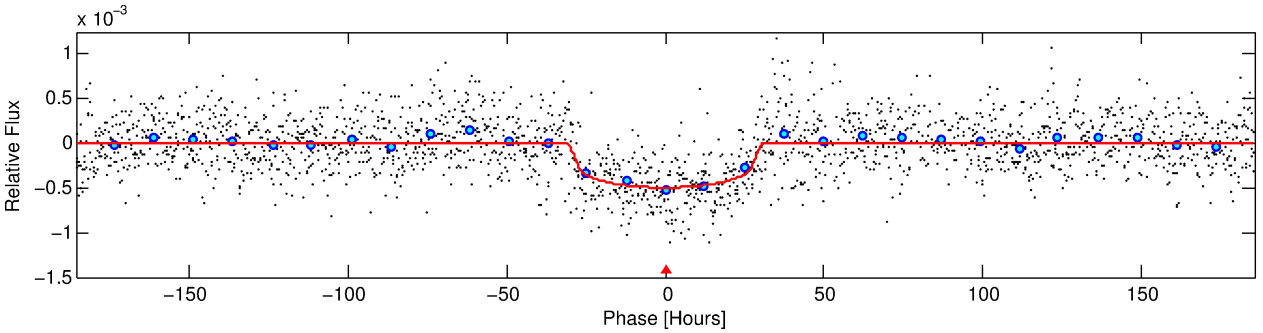
KIC: 10647393 Candidate: 1 of 1 Period: 405.519 d

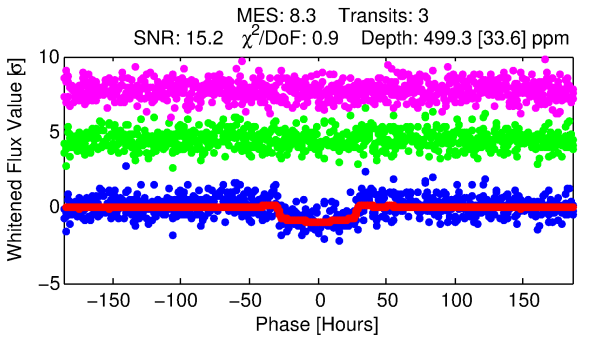
WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

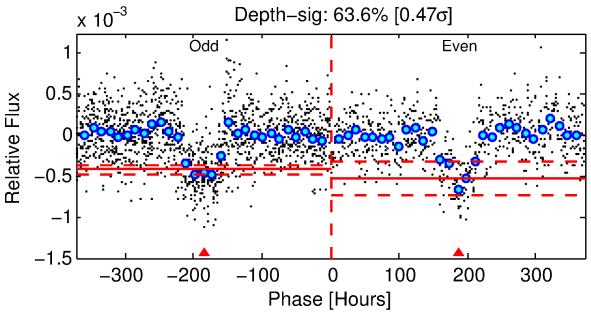


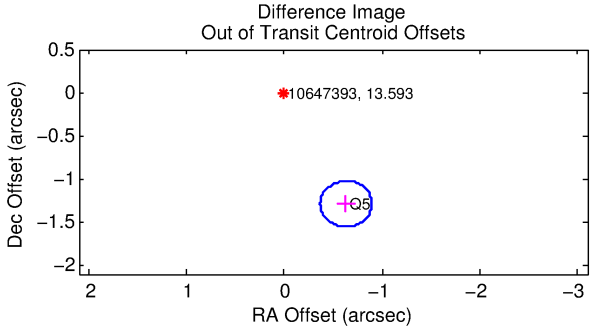












DV Fit Results:

Period = 405.51924 [0.03624] d
Epoch = 522.1328 [0.0451] BKJD
Rp/R* = 0.0234 [0.0021]
a/R* = 29.68 [8.98]
b = 0.83 [0.11]

Seff = 9.01 [1.70]
Teq = 442 [21] K
Rp = 13.08 [2.93] Re
a = 1.2741 [0.1780] AU

Ag = 794.82 [304.19] [2.61σ]
Teffp = 3626 [338] K [9.40σ]

DV Diagnostic Results:

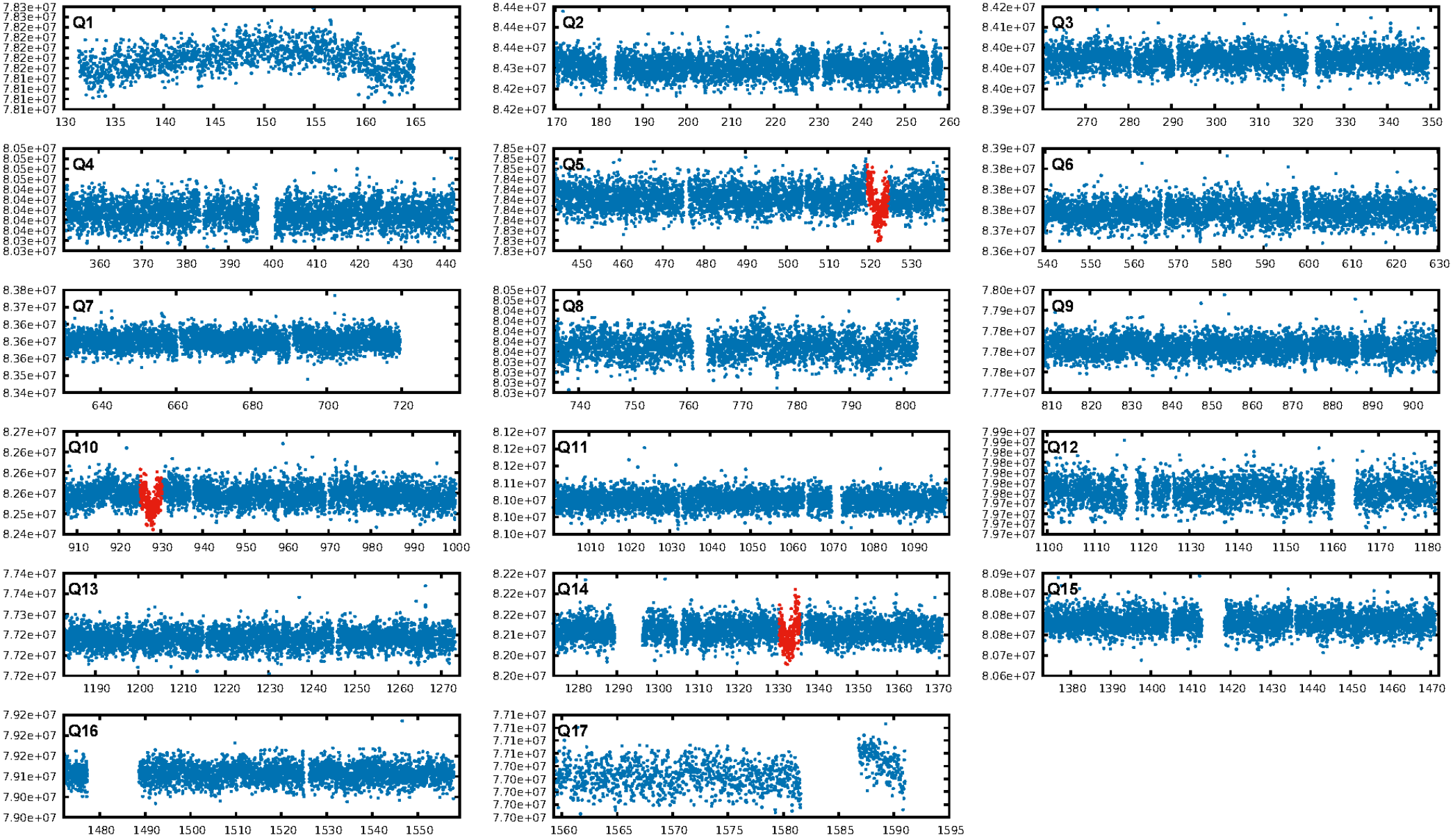
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 95.0%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 3.43e−16
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: −66.81

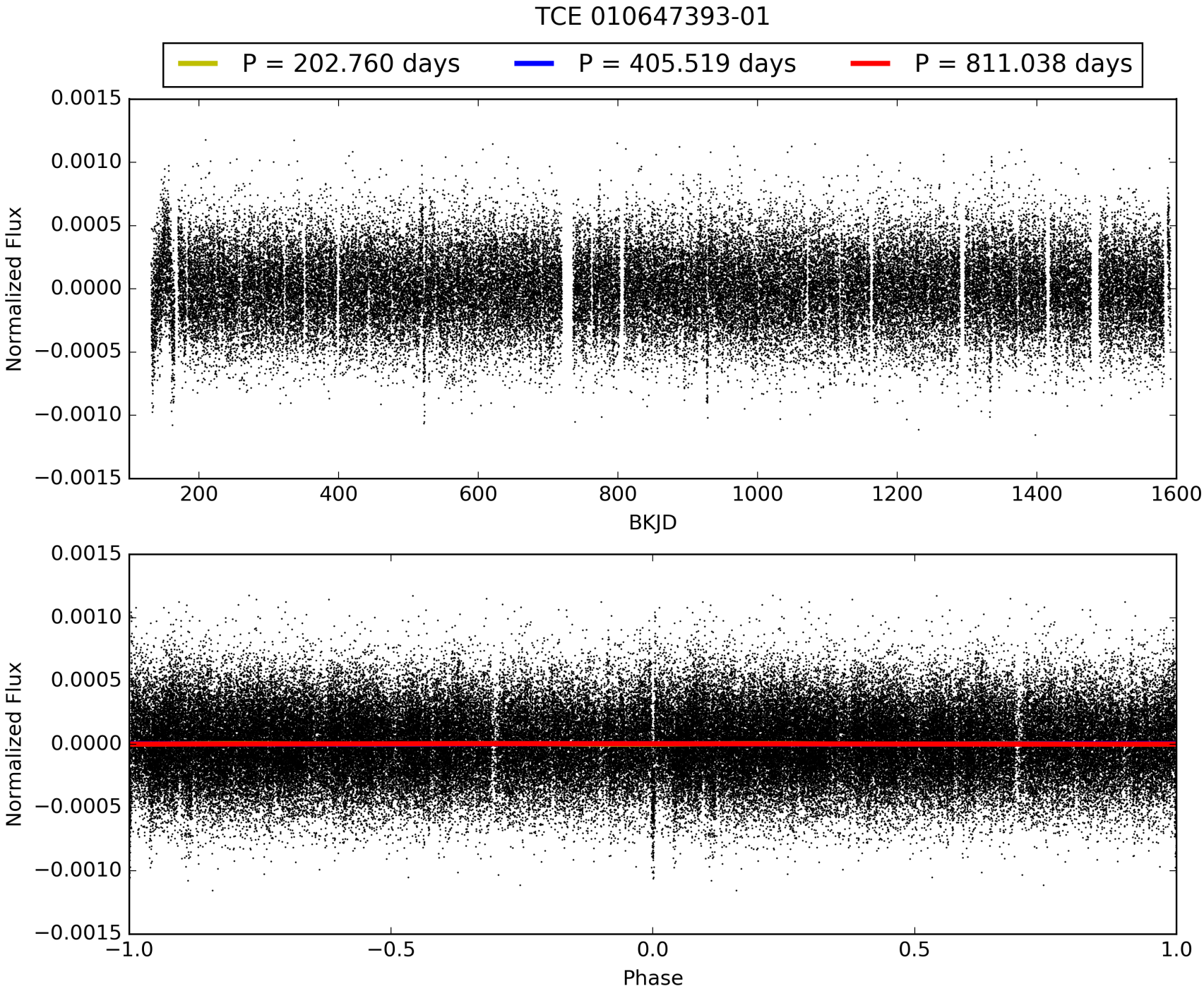
Centroid−sig: 28.8%
Centroid−so: 0.608 arcsec [1.10σ]
OotOffset−rm: 1.434 arcsec [16.30σ]
KicOffset−rm: 1.430 arcsec [16.27σ]
OotOffset−st: 0/0/0/1 [1]
KicOffset−st: 0/0/0/1 [1]
DiffImageQuality−fgm: 1.00 [1/1]
DiffImageOverlap−fno: 1.00 [1/1]

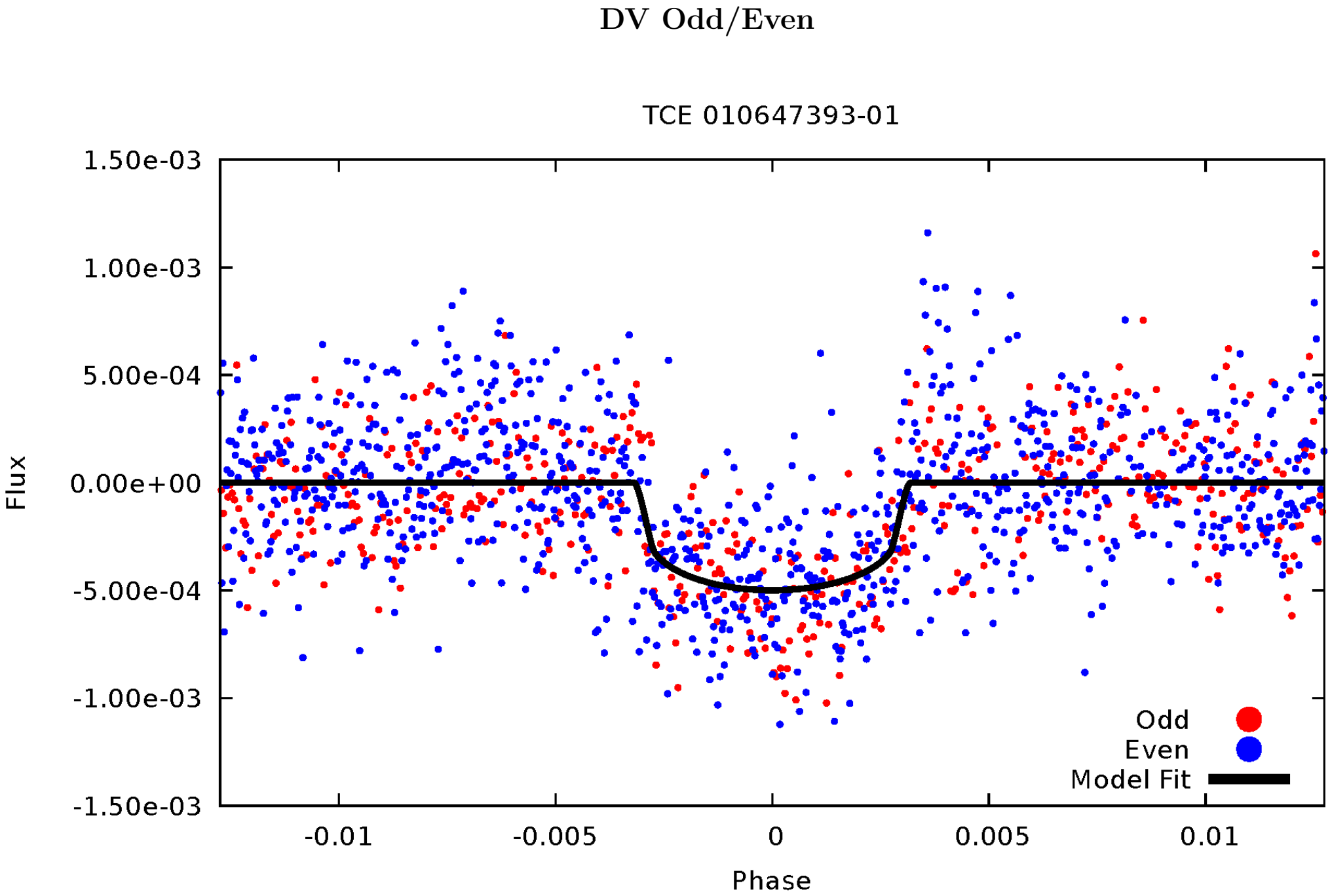
Software Revision: svn+ssh://murzim/repo/soc/branches/integ/ksop−2174@60968 −− Date Generated: 06−Feb−2016 06:58:37 Z

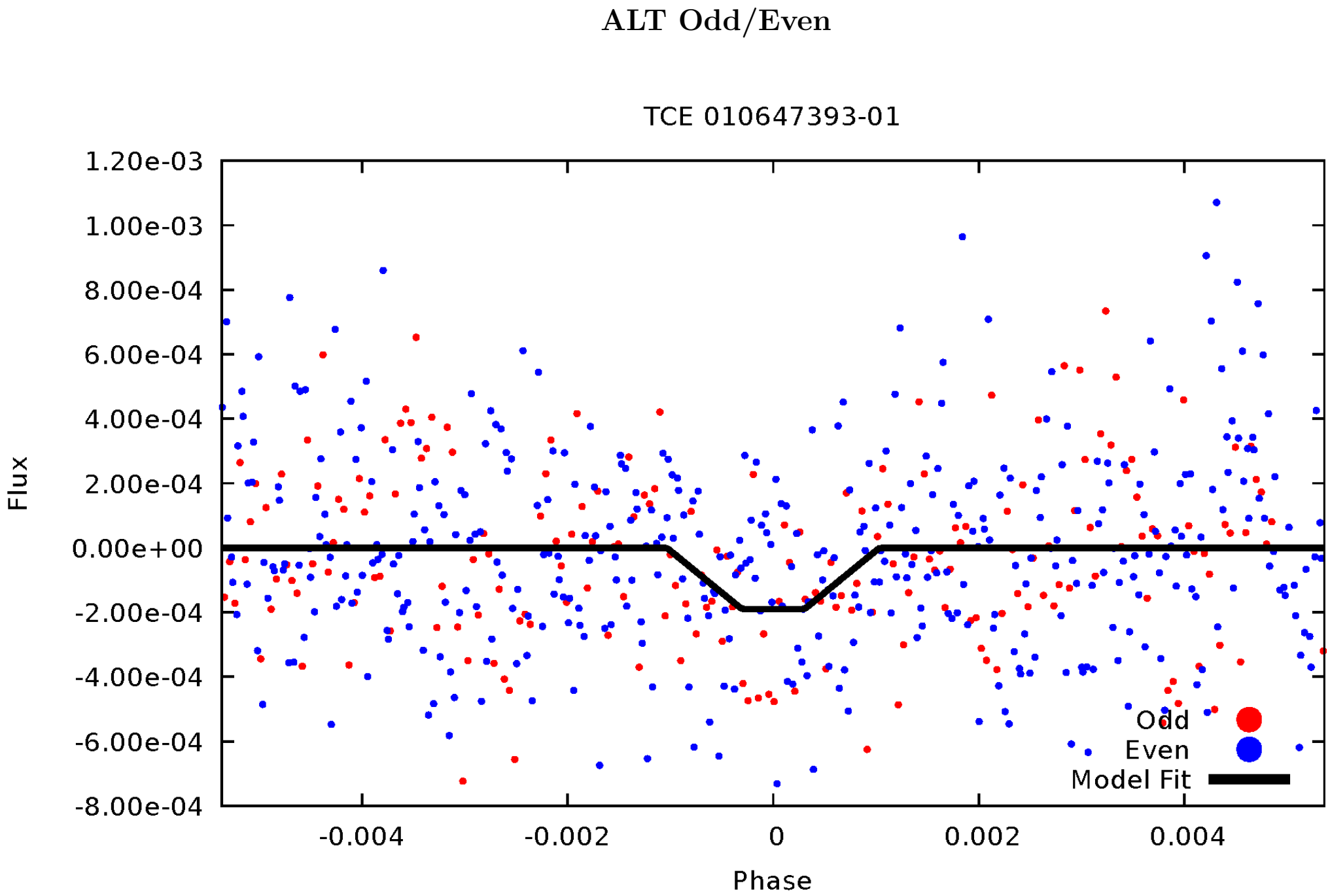
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010647393-01, PDC Light Curves

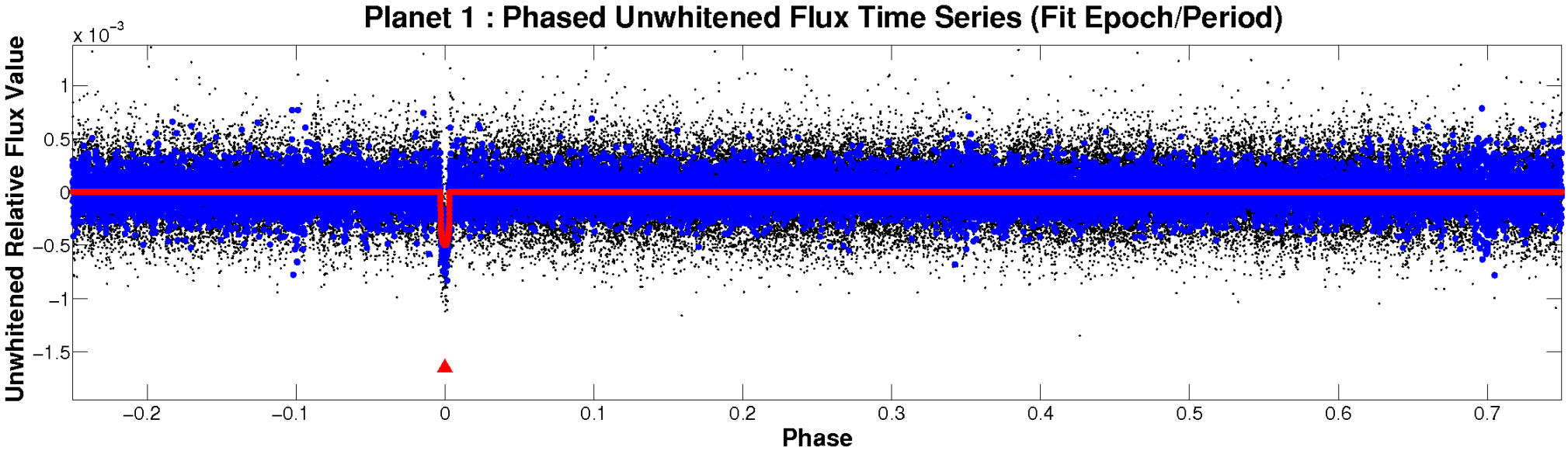


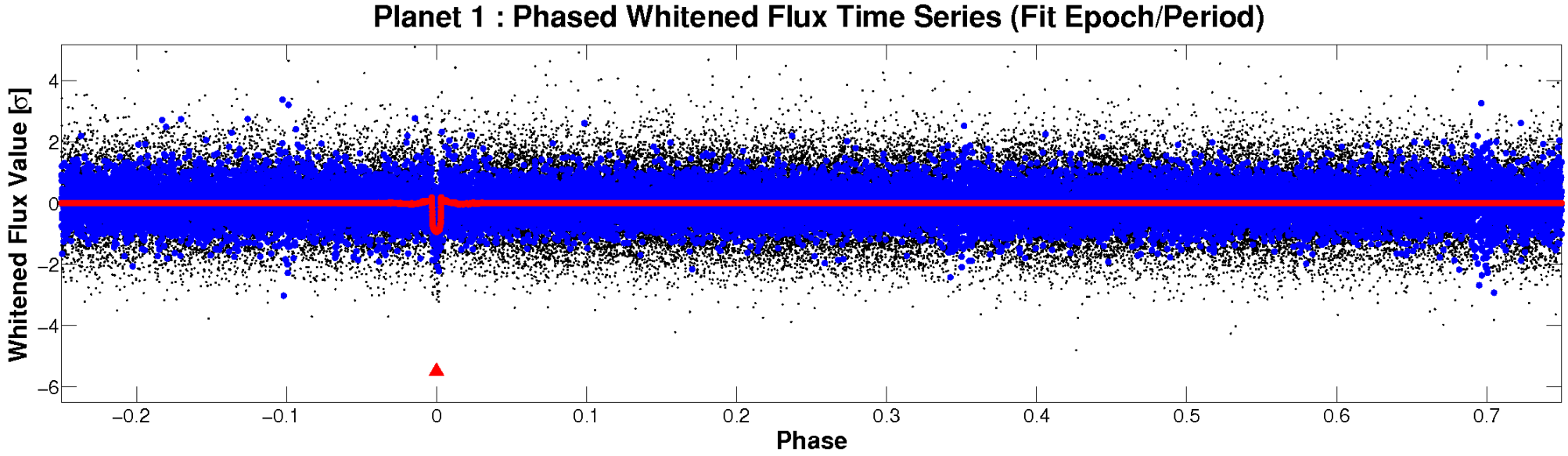

TCE 010647393-01
P = 202.760 days
P = 405.519 days
P = 811.038 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
−1.0
−0.5
0.0
0.5
1.0
Phase


DV Odd/Even
TCE 010647393-01
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.01
-0.005
0
0.005
0.01
Phase
Odd
Even
Model Fit


ALT Odd/Even
TCE 010647393-01
1.20e-03
1.00e-03
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.004
-0.002
0
0.002
0.004
Phase
Odd
Even
Model Fit

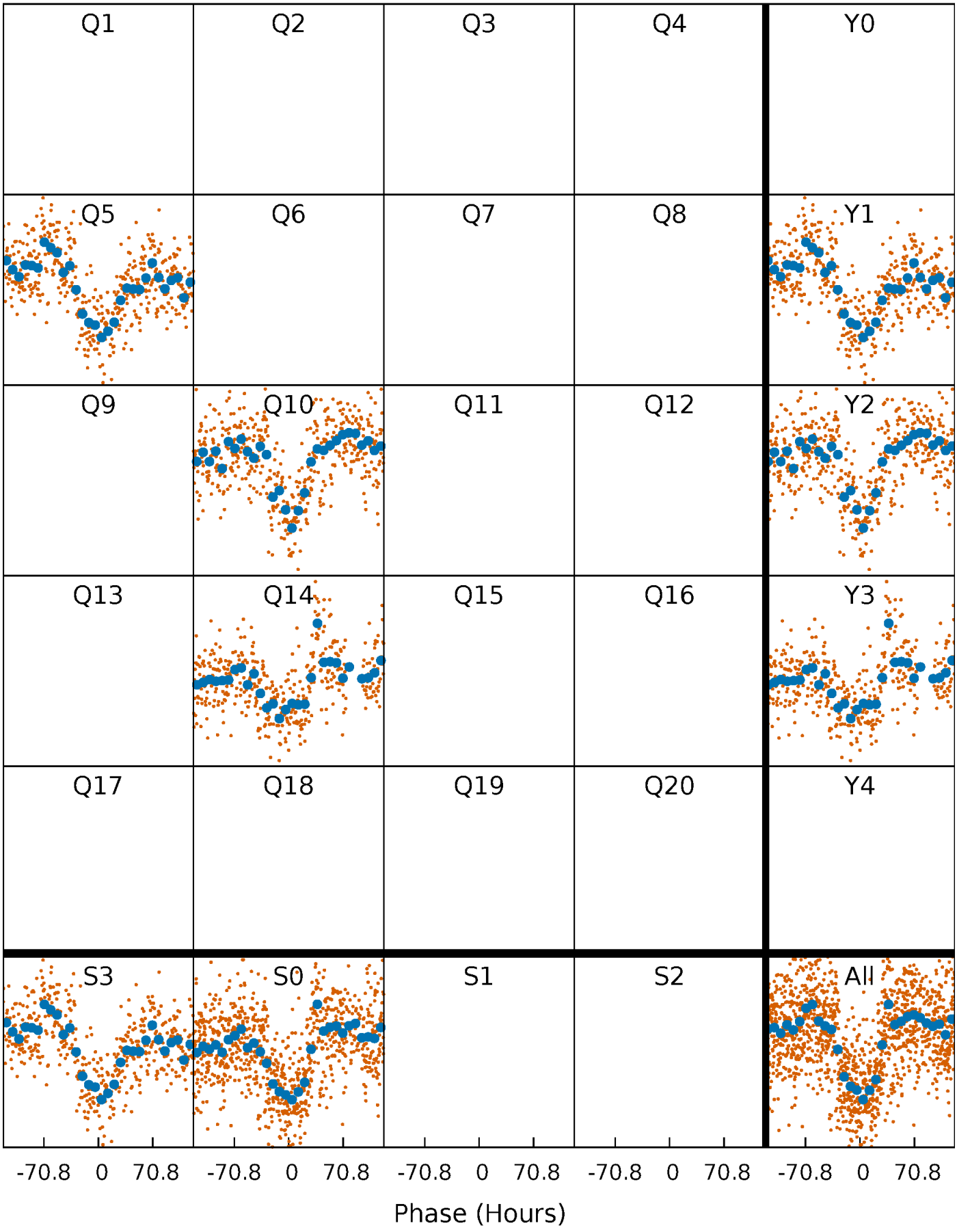
Non-Whitened Vs. Whitened Light Curve





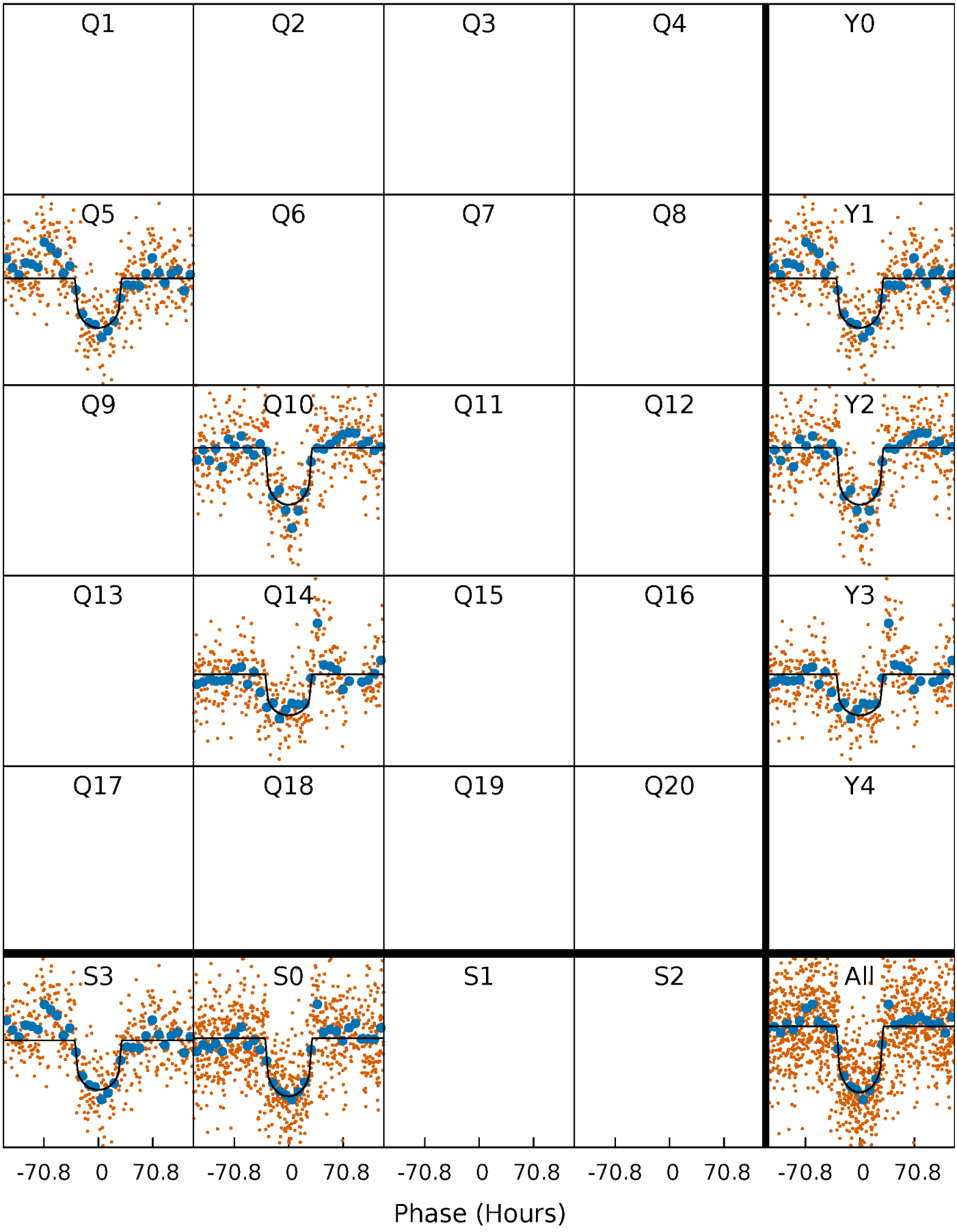
PDC Quarter-Phased Transit Curves

TCE 010647393-01 P=405.519243 Days T_0=522.132818 (BKJD)



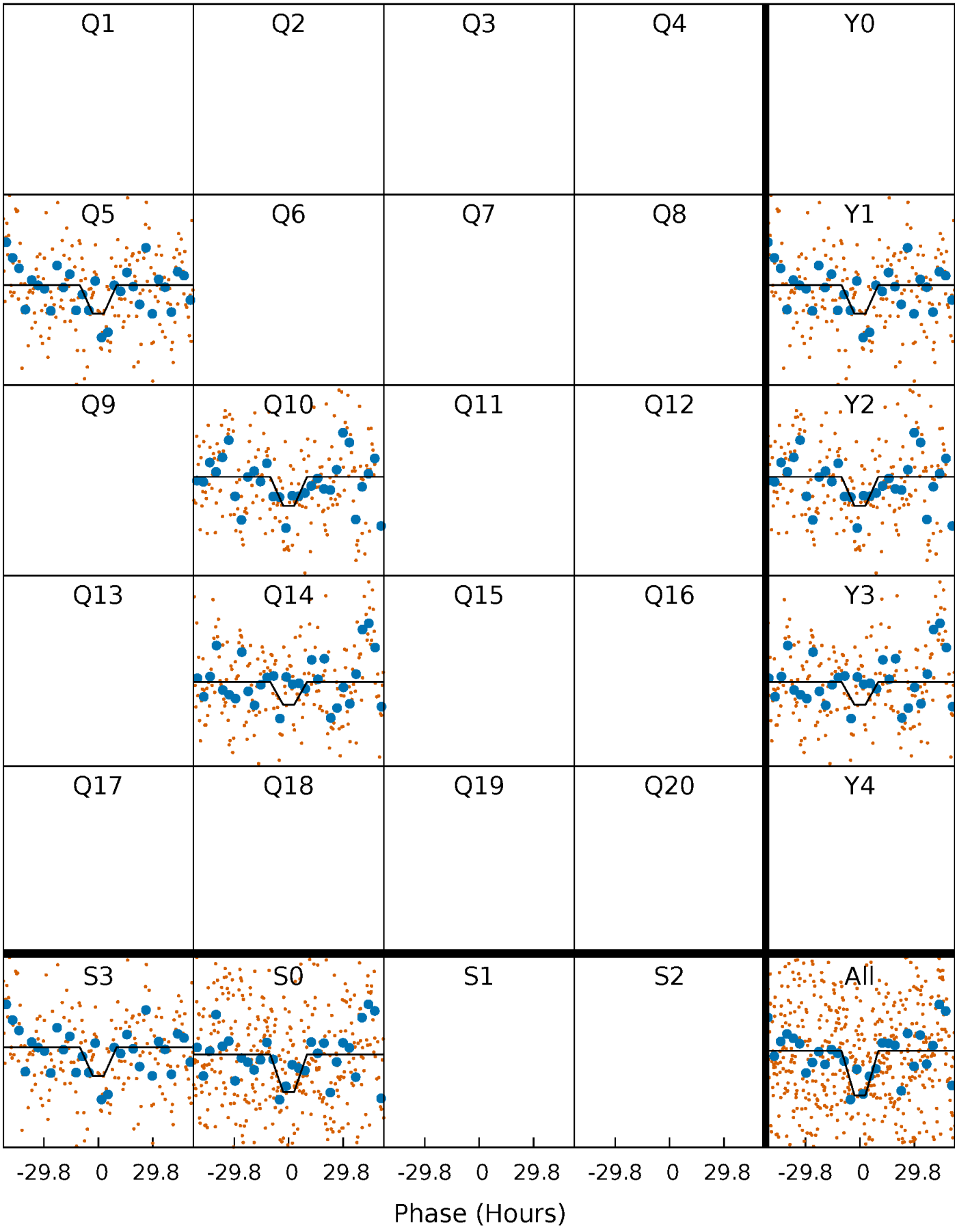
DV Quarter-Phased Transit Curves

TCE 010647393-01 P=405.519243 Days T_0=522.132818 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

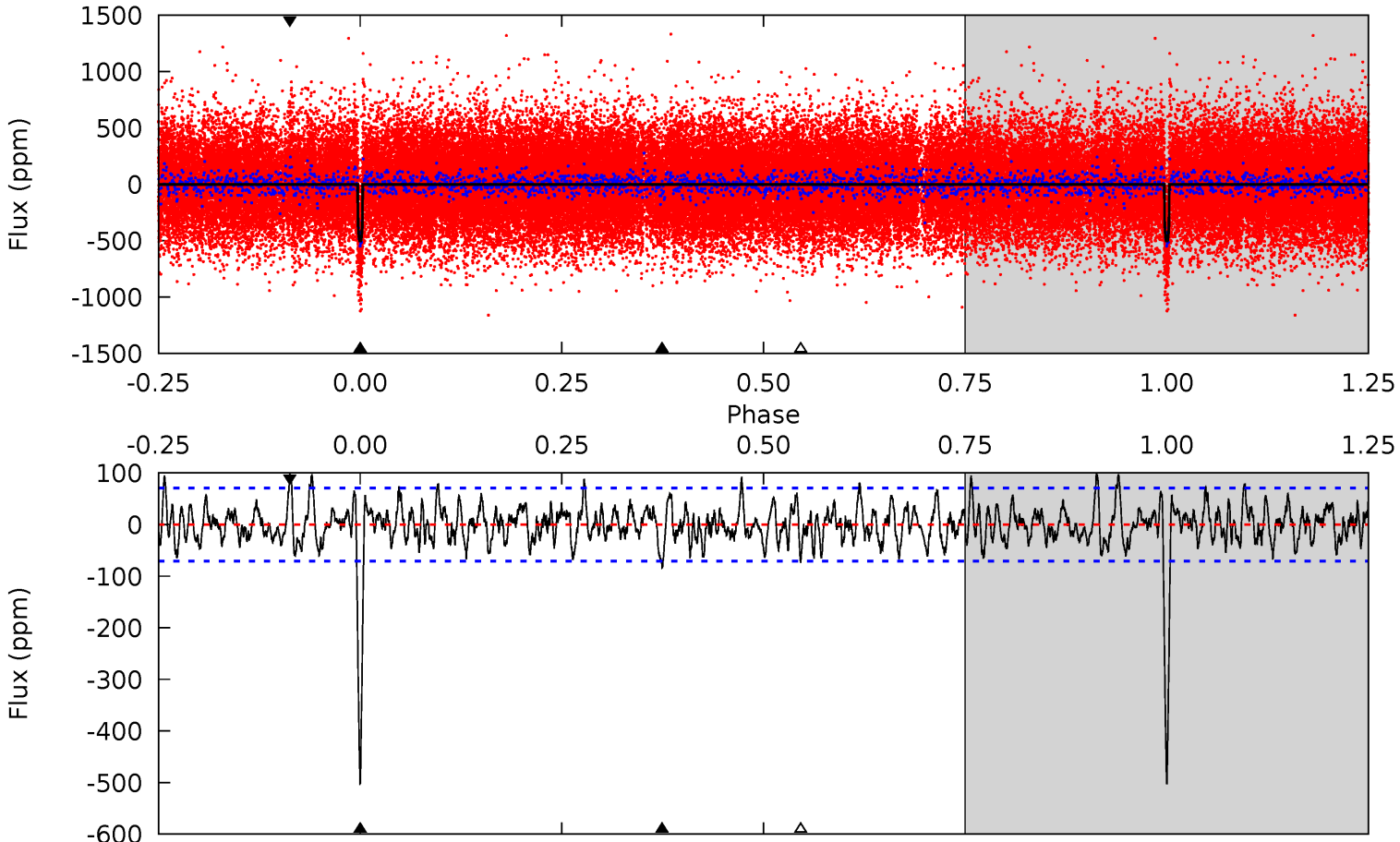
TCE 010647393-01 P=405.088516 Days T_0=522.698981 (BKJD)

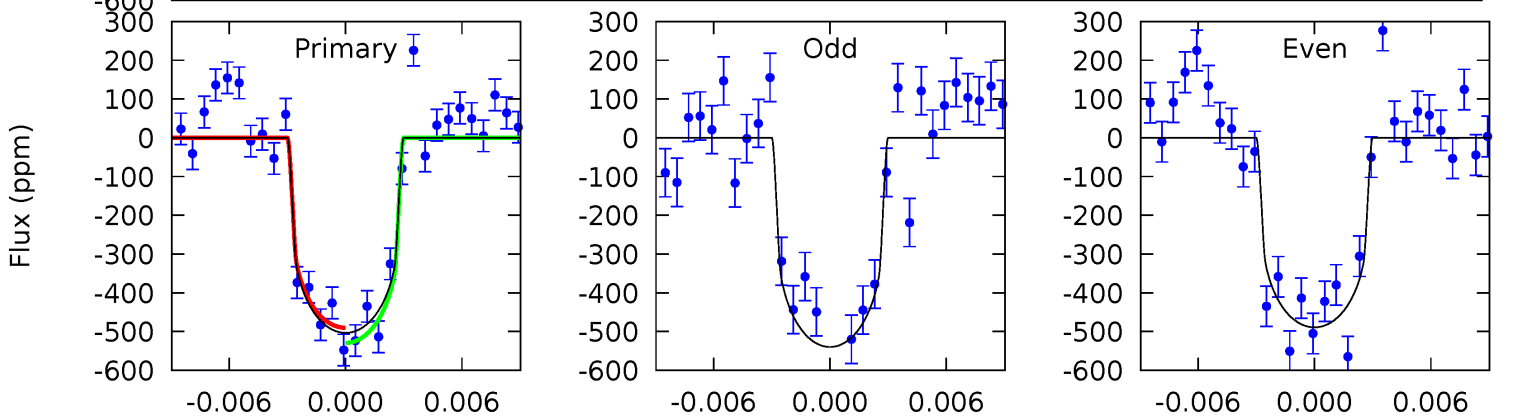


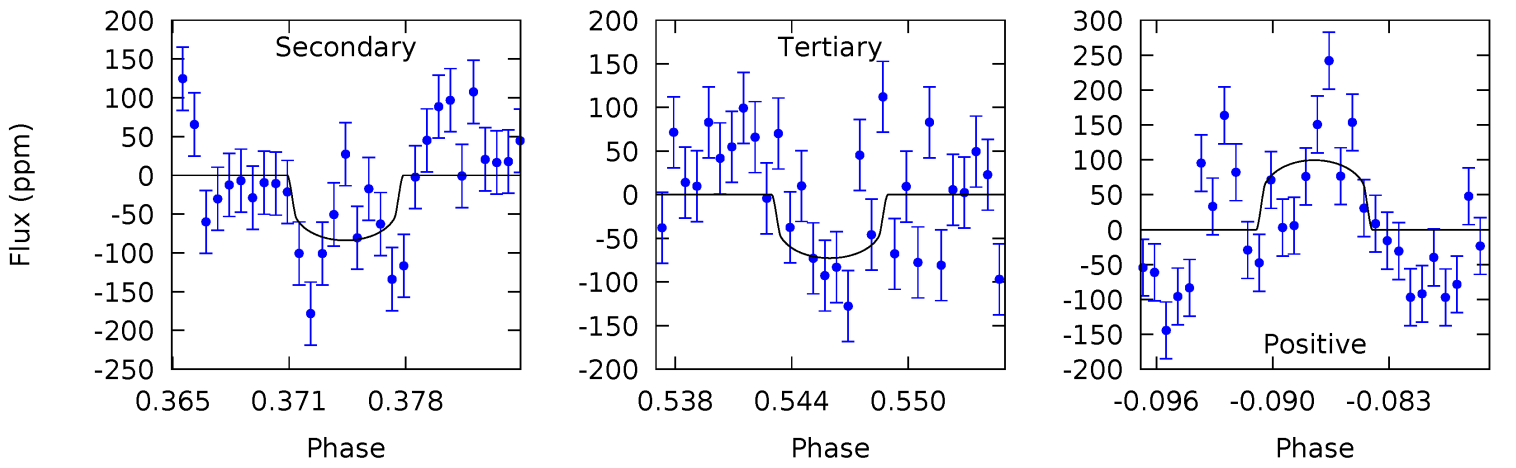
DV Model-Shift Uniqueness Test

010647393-01, P = 405.519243 Days, E = 116.613575 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.3	6.06	5.25	7.18	5.11	2.73	2.11	31.1	29.2	0.81	-1.13	1.72	0.96	0.17	1.41



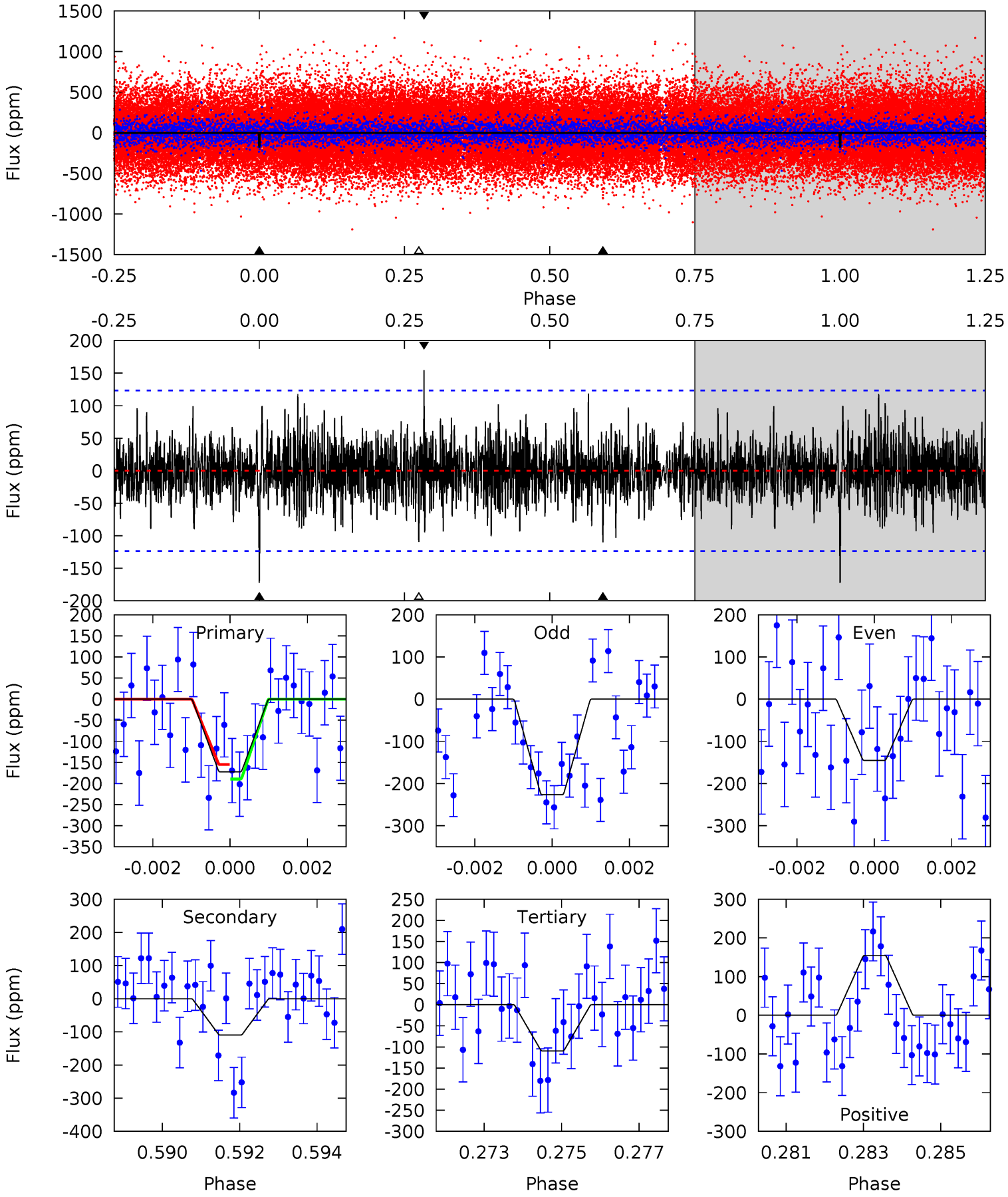




Alt Model-Shift Uniqueness Test

010647393-01, P = 405.088516 Days, E = 117.610465 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.42	4.73	4.72	6.66	5.32	3.08	1.43	2.71	0.77	0.01	-1.93	1.65	0.79	0.47	0.74



Stellar Parameters For KIC 010647393

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	4998^{+86}_{-148}	$3.245^{+0.033}_{-0.027}$	$0.080^{+0.150}_{-0.300}$	$5.114^{+0.395}_{-1.054}$	$1.675^{+0.251}_{-0.586}$	$0.018^{+0.005}_{-0.002}$
	+2%/-3%	+1%/-1%	+188%/-375%	+8%/-21%	+15%/-35%	+30%/-10%
Source	PHO1	AST9	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 010647393-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-84±14	$13.23^{+1.34}_{-1.80}$	615^{+15}_{-19}	3535^{+165}_{-146}	449^{+125}_{-105}
Alt.	-110±23	$7.74^{+1.38}_{-1.43}$	616^{+17}_{-21}	4460^{+390}_{-321}	1648^{+856}_{-522}

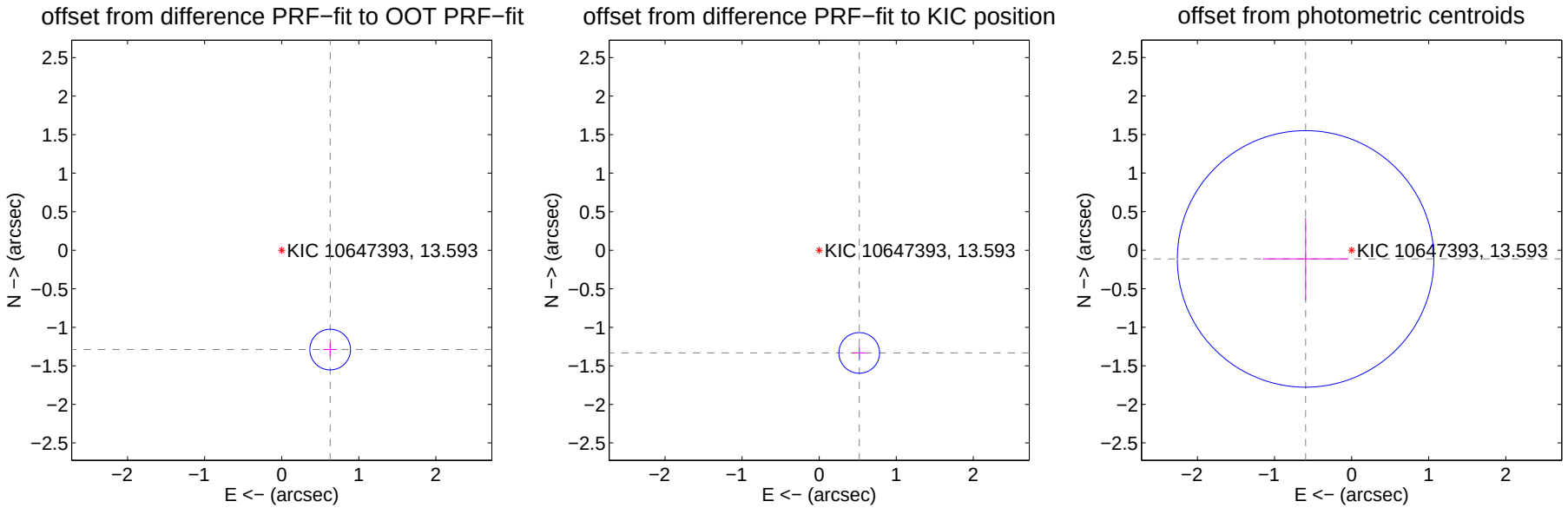
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

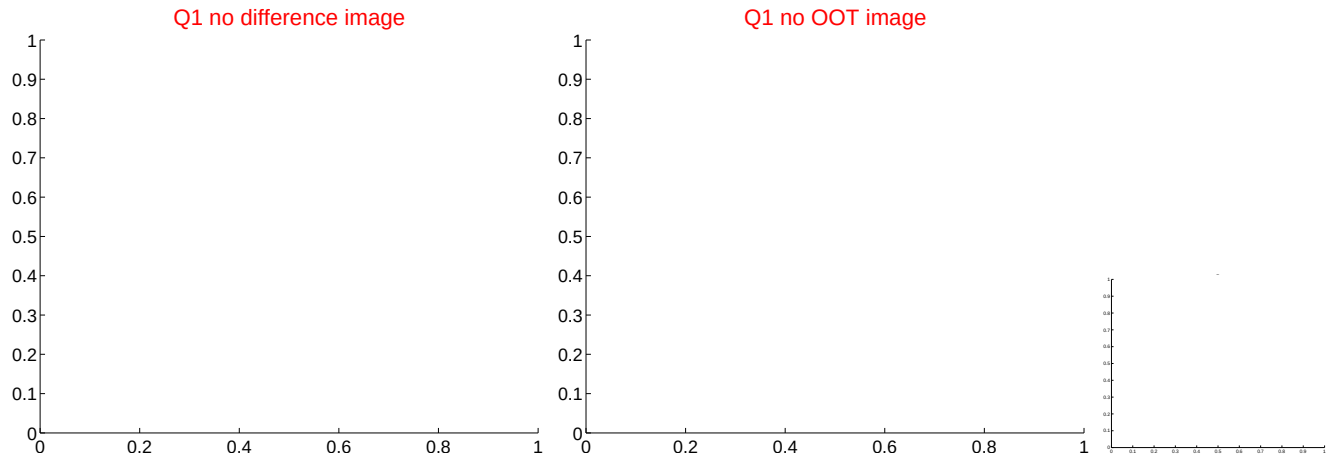
Supplemental centroid analysis for 010647393-01. Kepler magnitude: 13.59. Transit SNR 15.23
There are 1 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

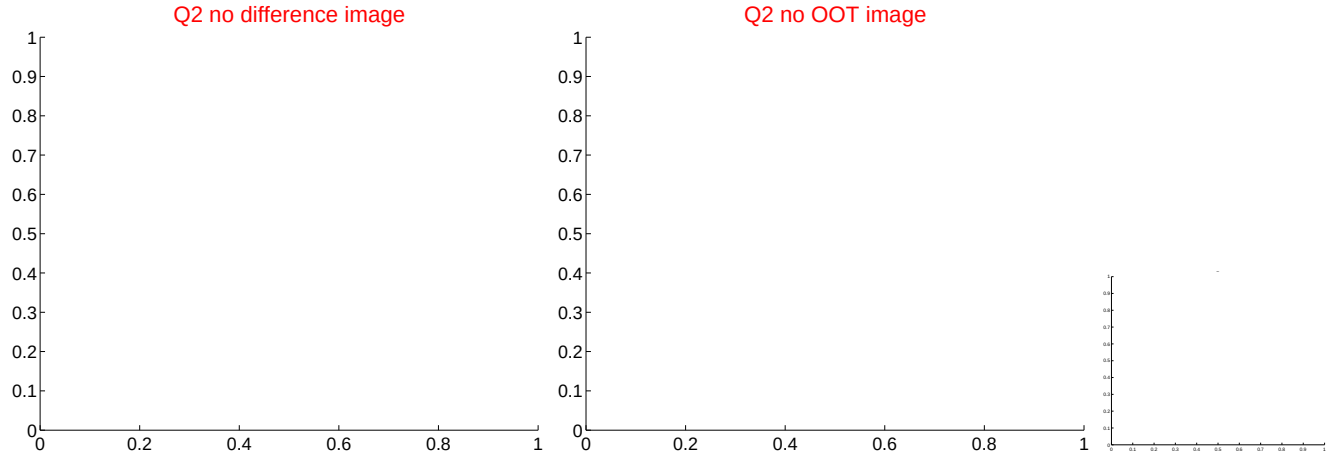
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.434 ± 0.088	16.30	-0.629 ± 0.089	-1.289 ± 0.088
PRF-fit source offset from KIC position	1.430 ± 0.088	16.27	-0.520 ± 0.089	-1.332 ± 0.088
photometric centroid source offset	0.61 ± 0.55	1.10	0.60 ± 0.56	-0.11 ± 0.53

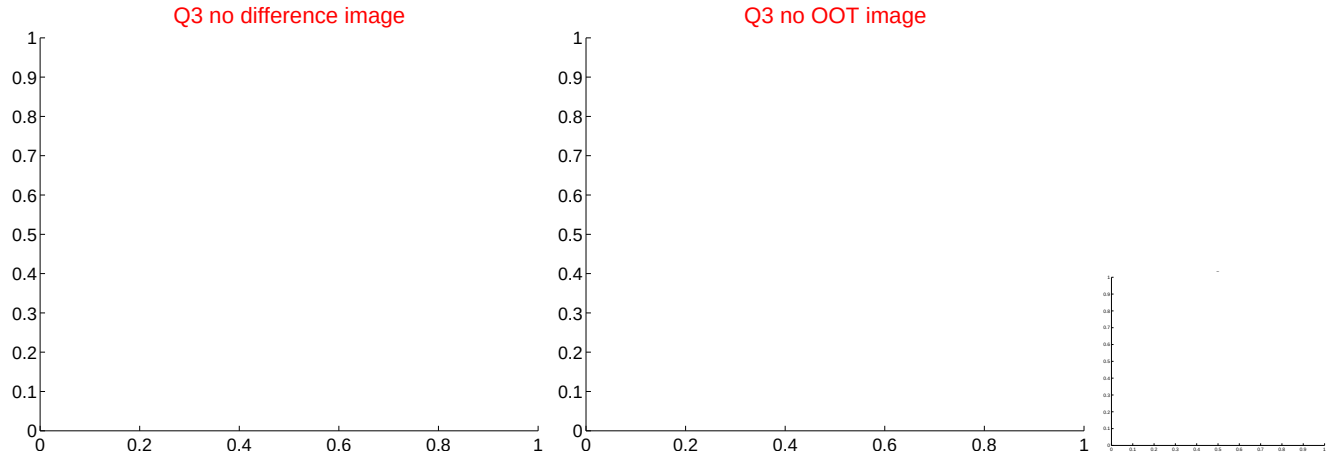


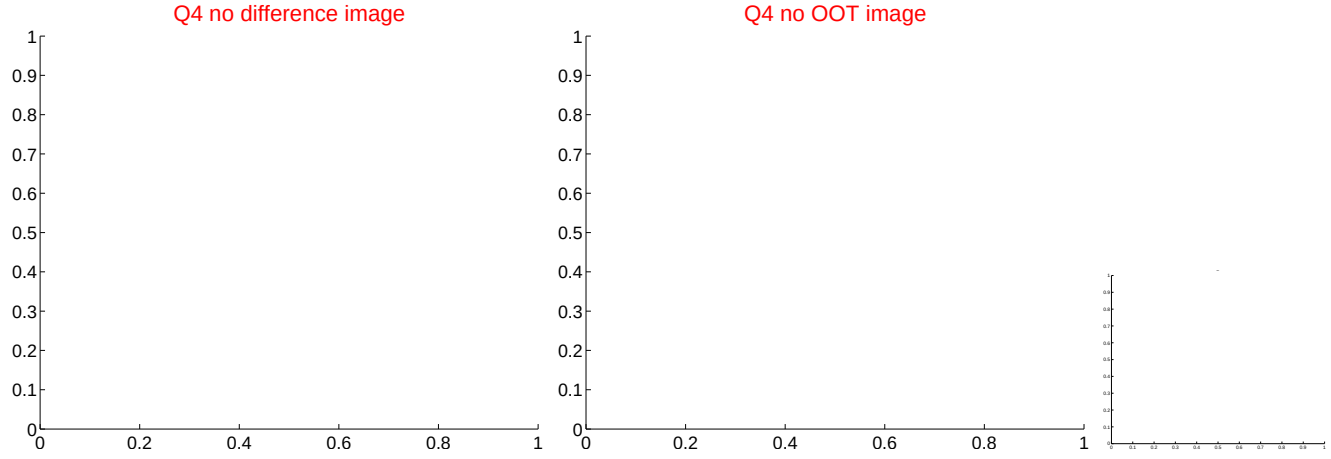
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

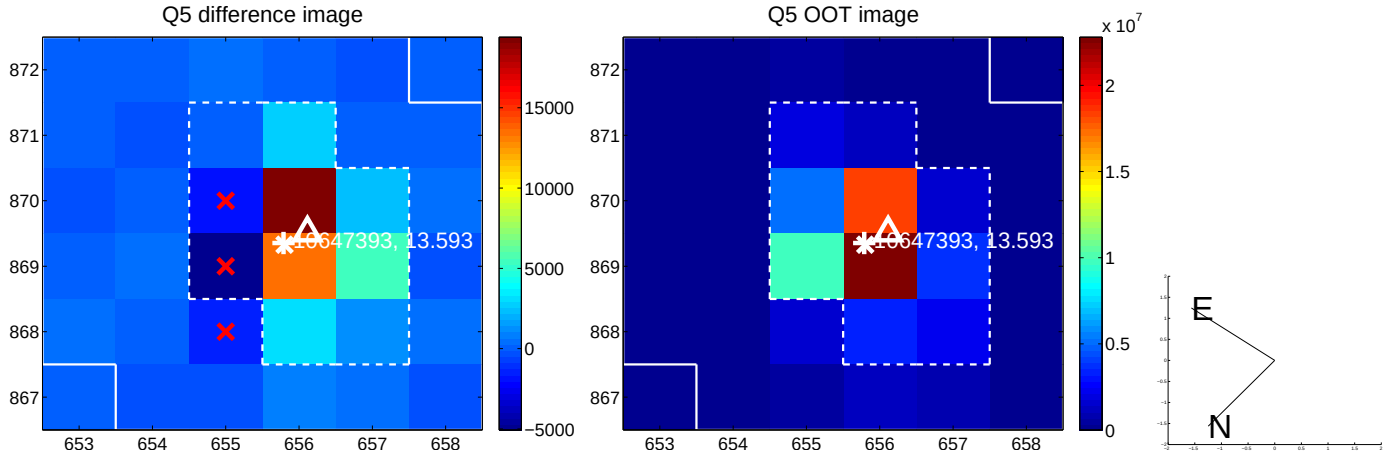


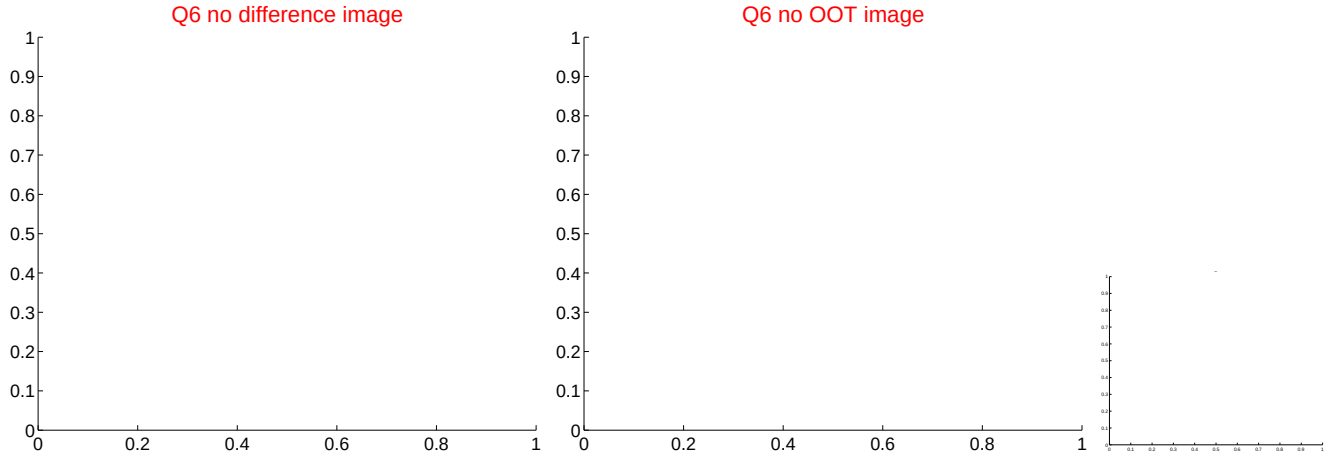


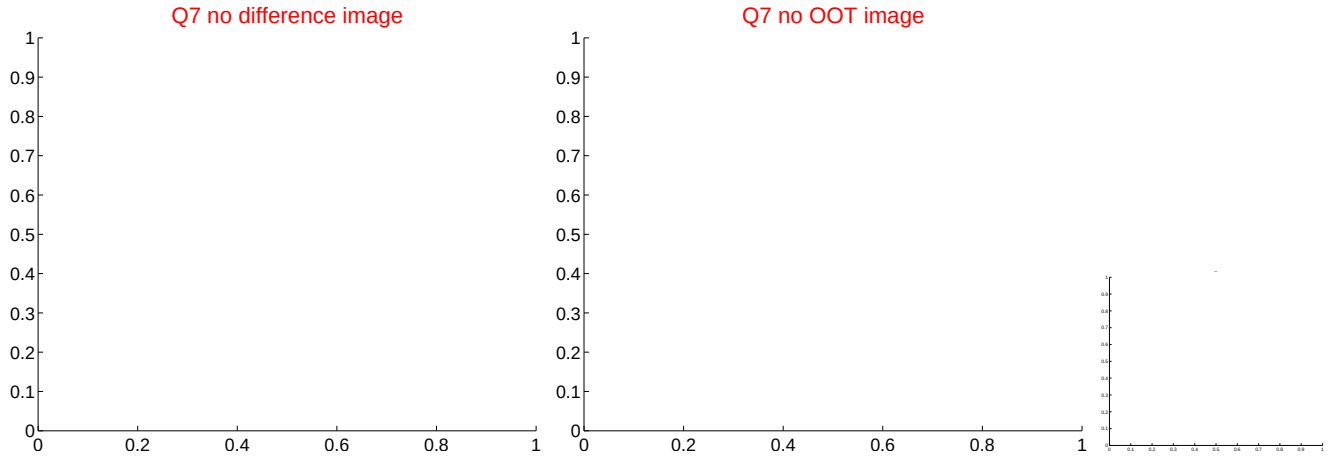


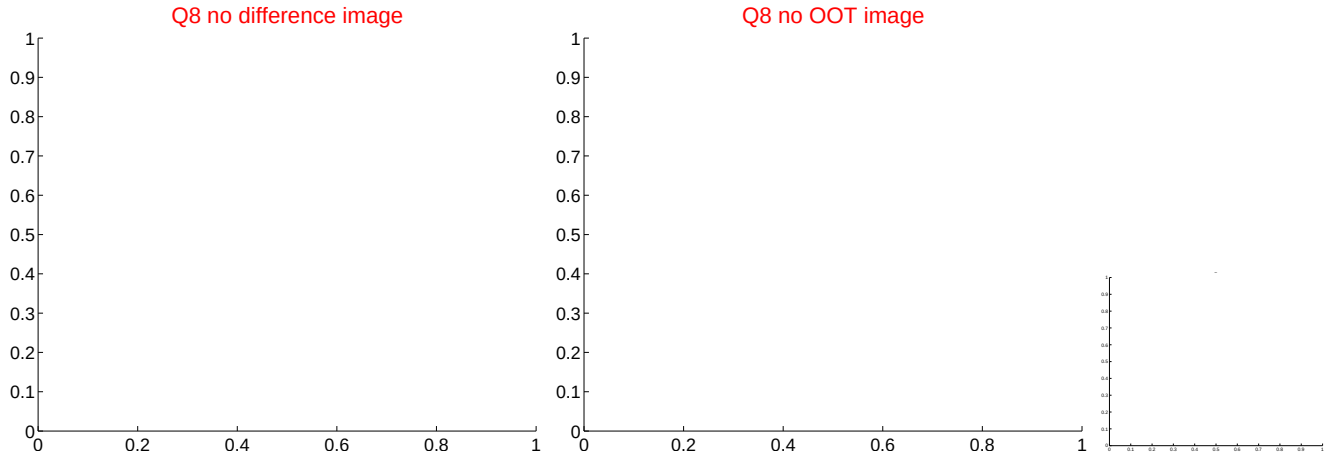


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

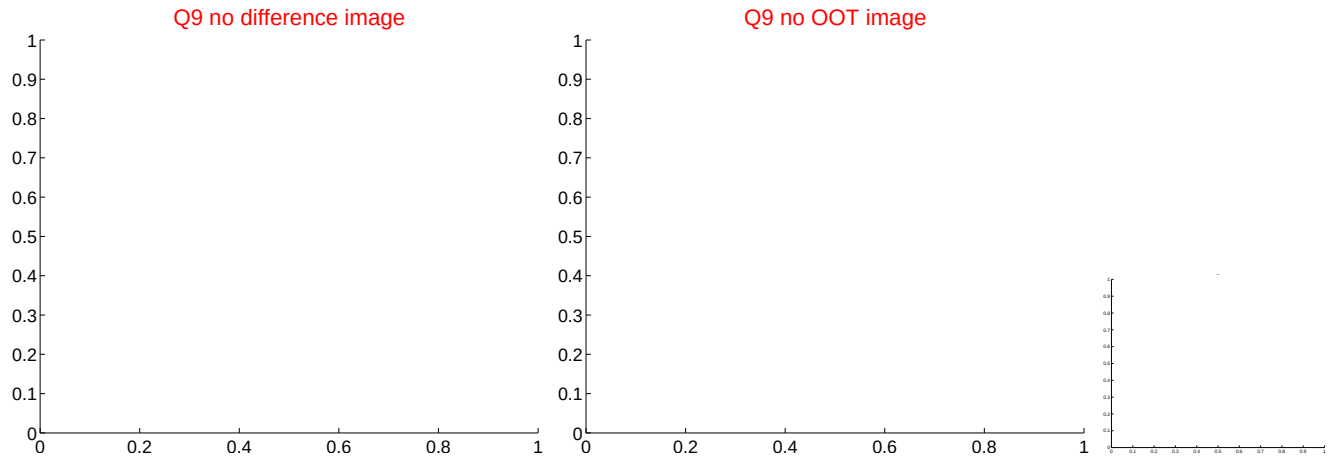


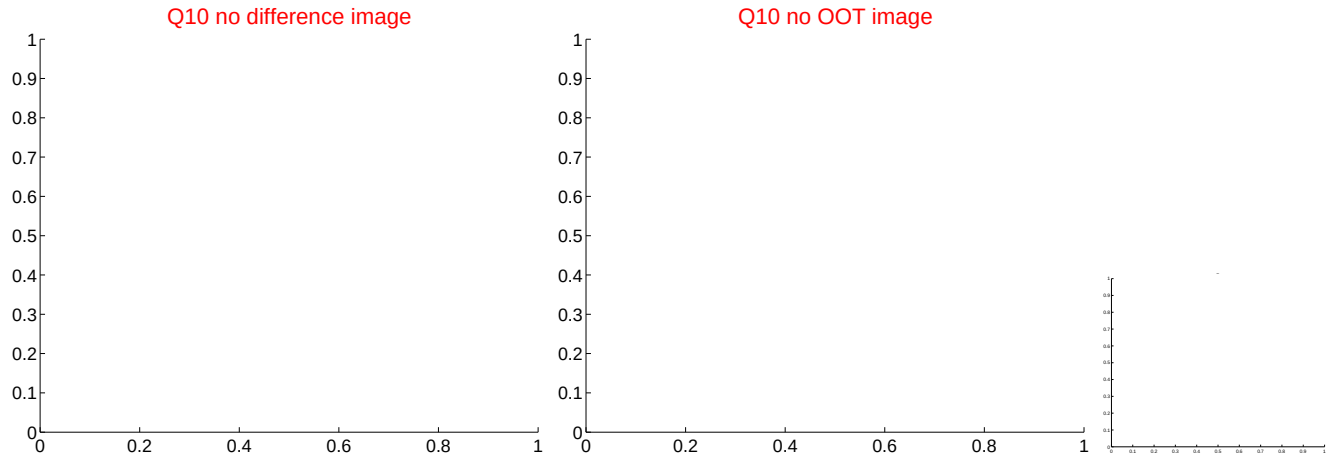


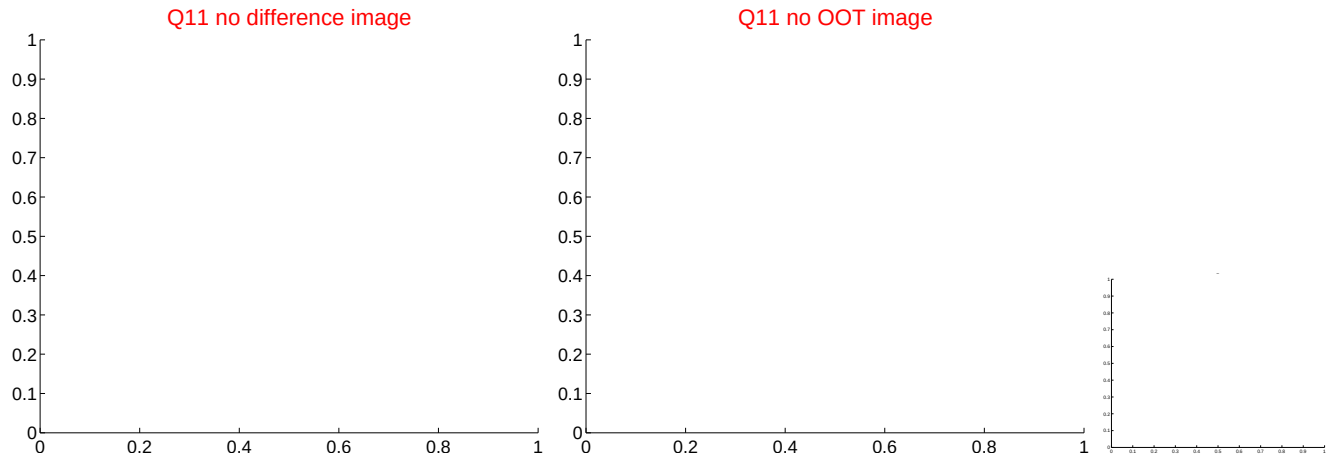


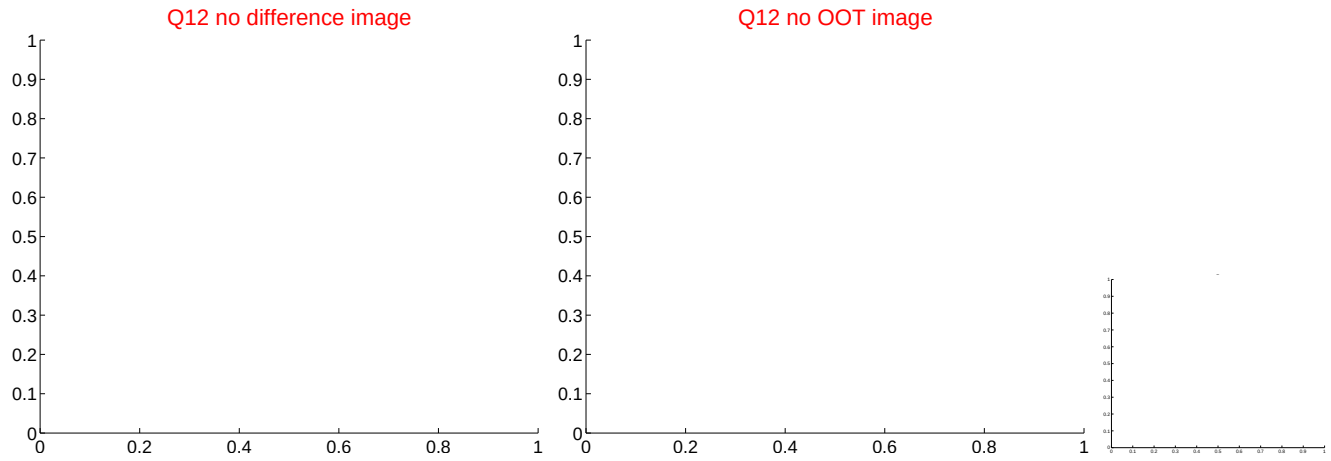


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

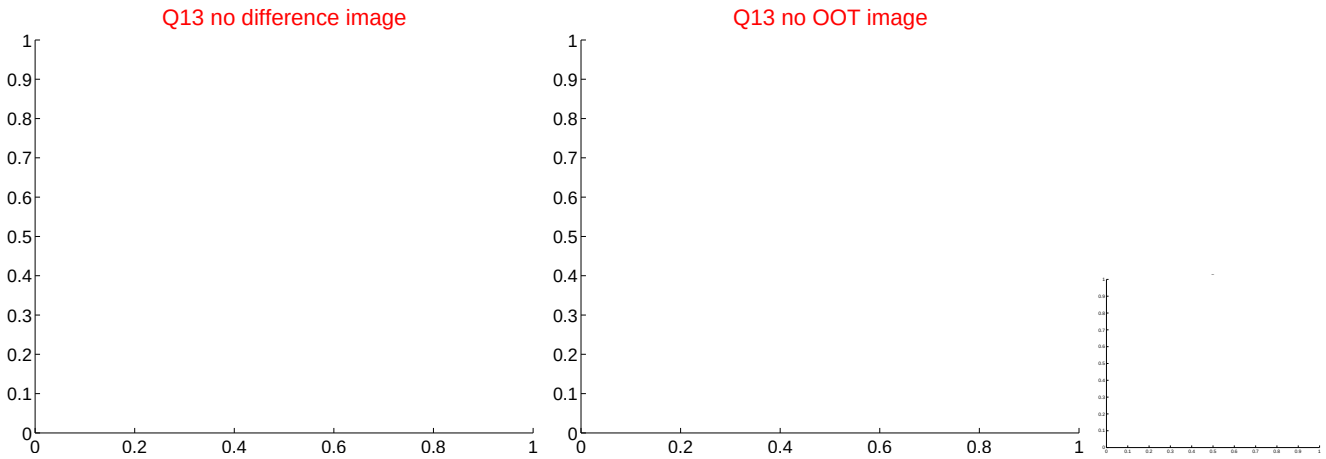


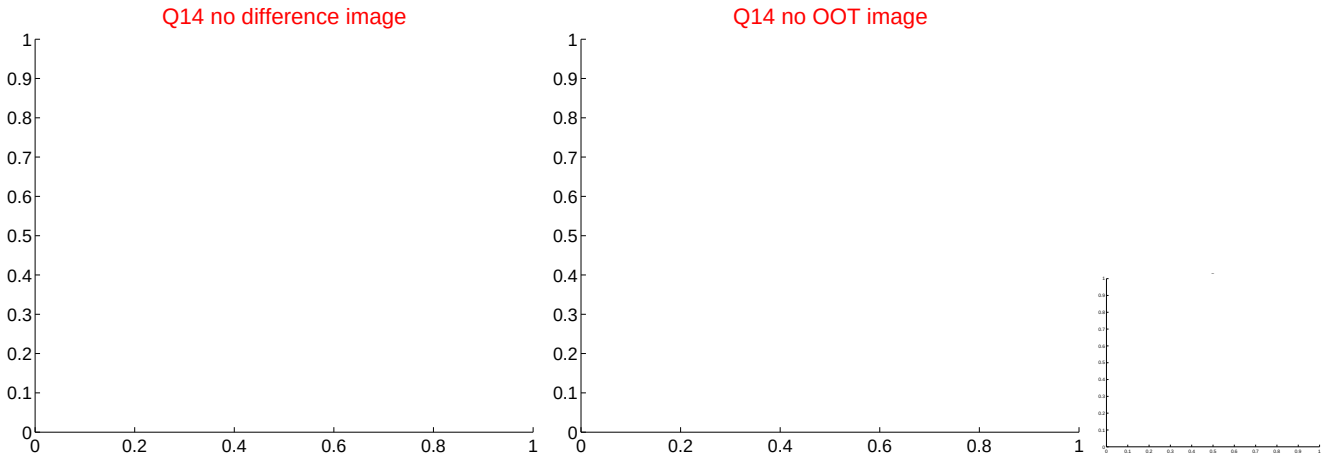


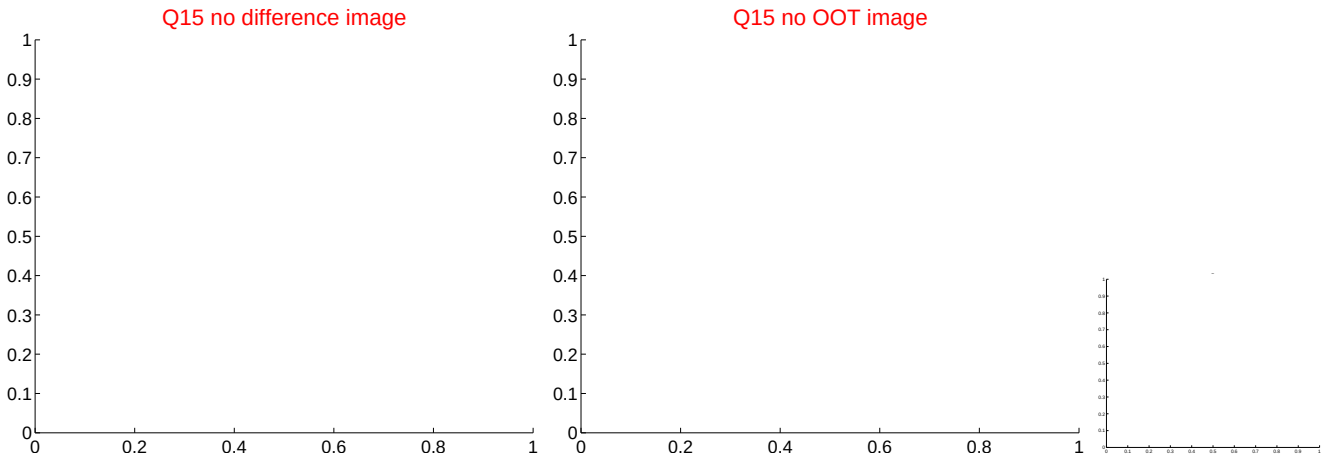


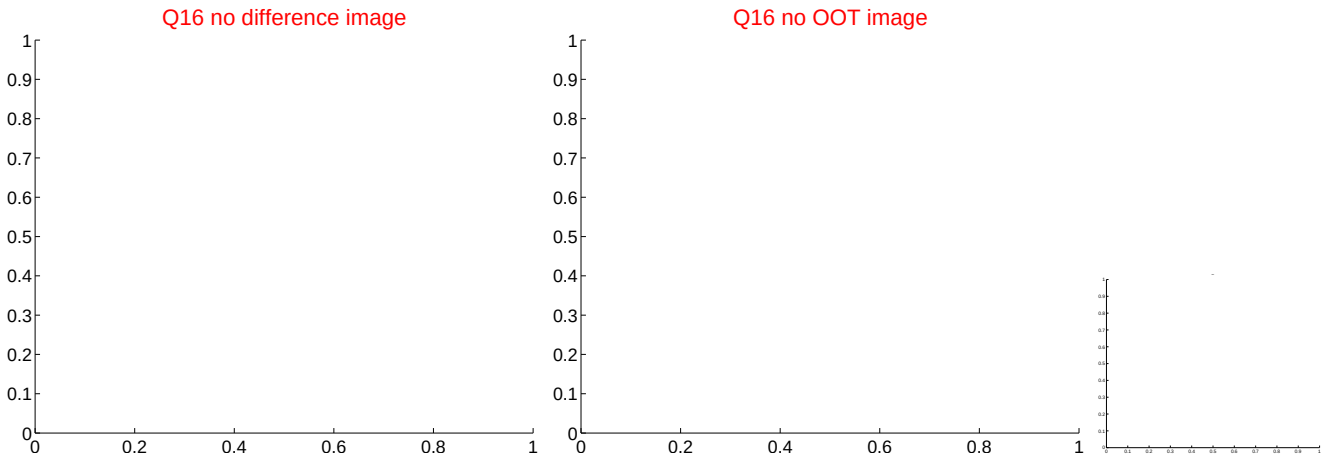


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

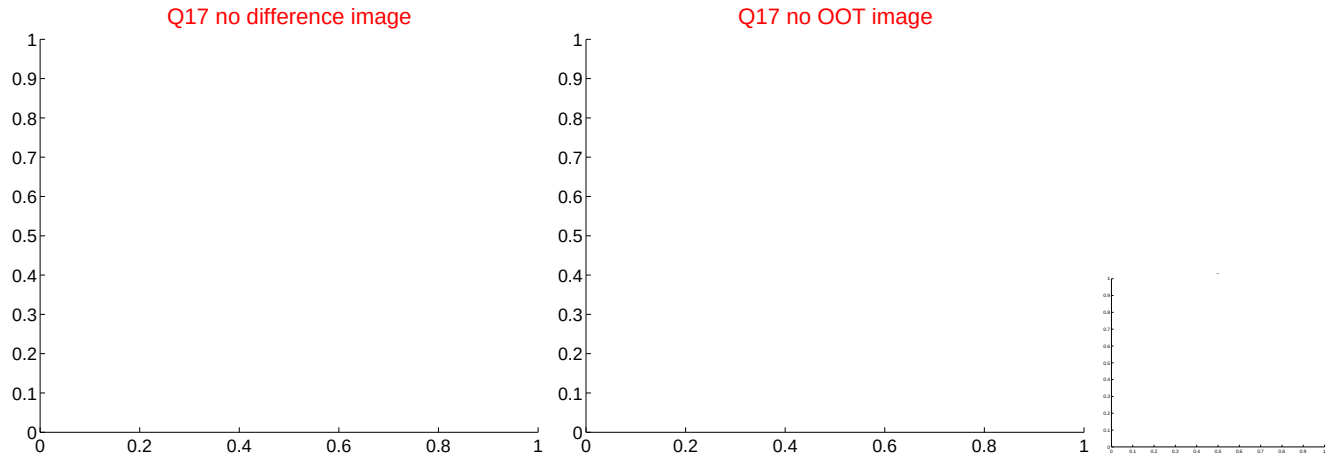


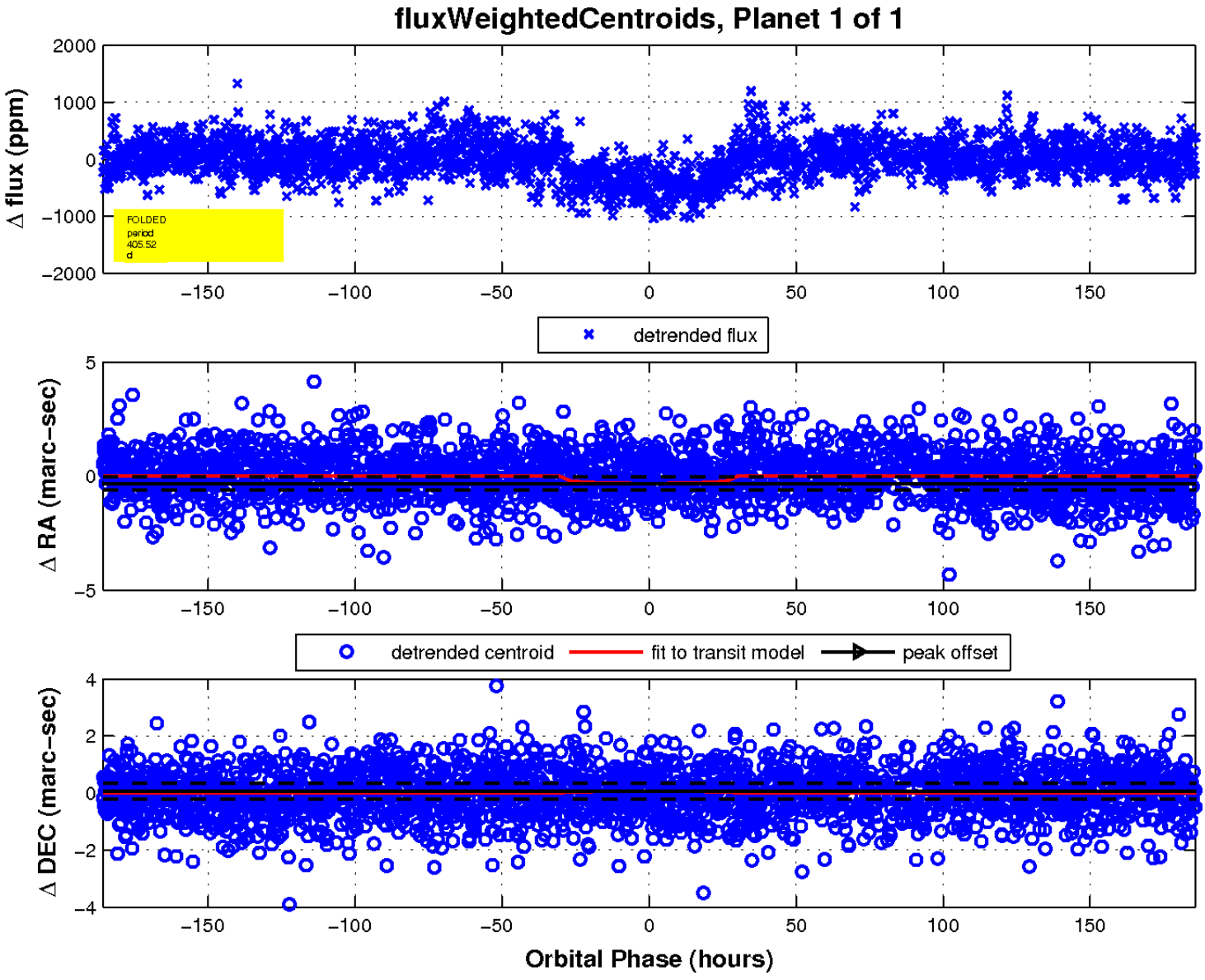




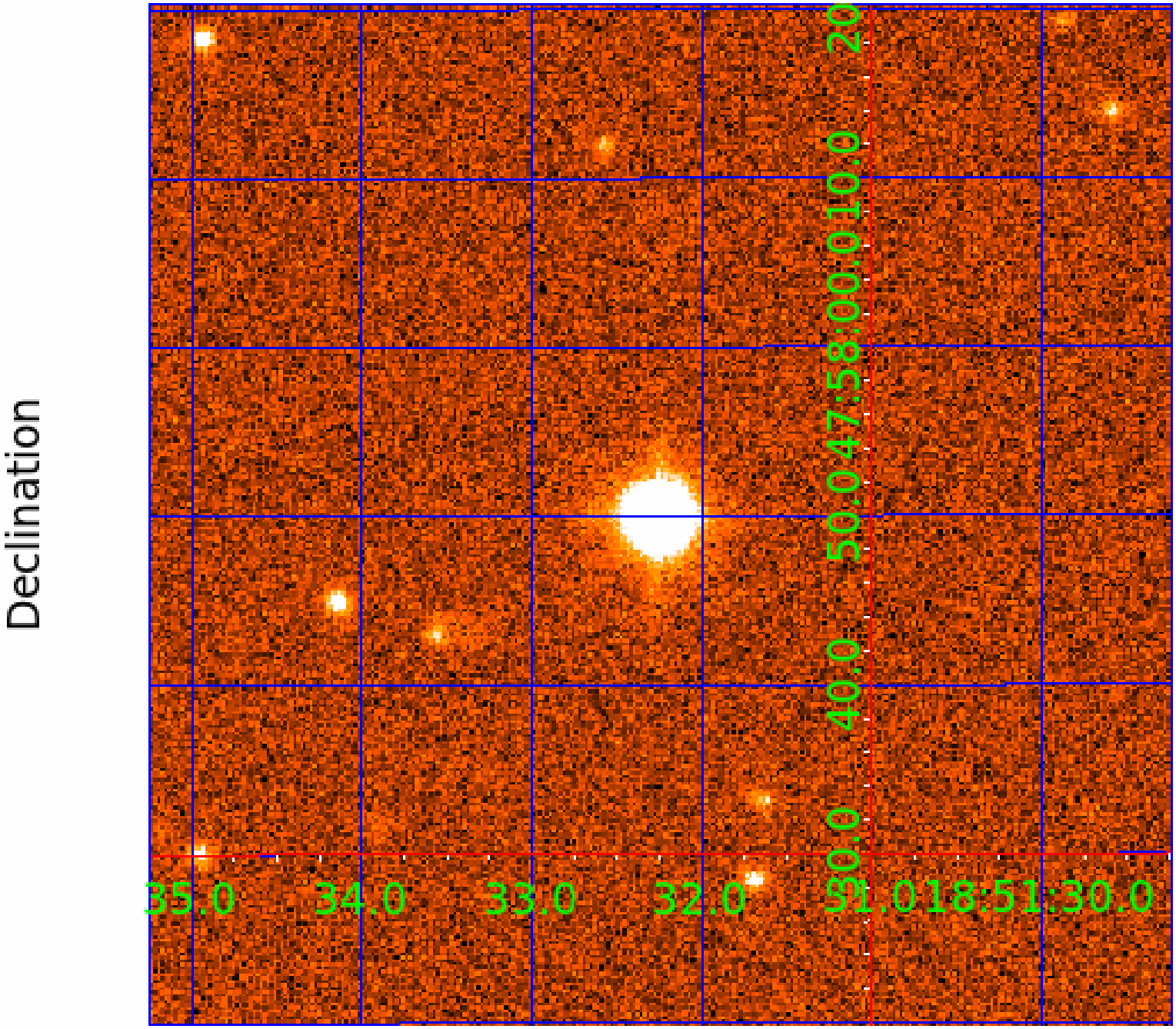


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
35.0
34.0
33.0
32.0
31.0
18:51:30.0
30.0
40.0
50.0
47:58:00.0
10.0
20