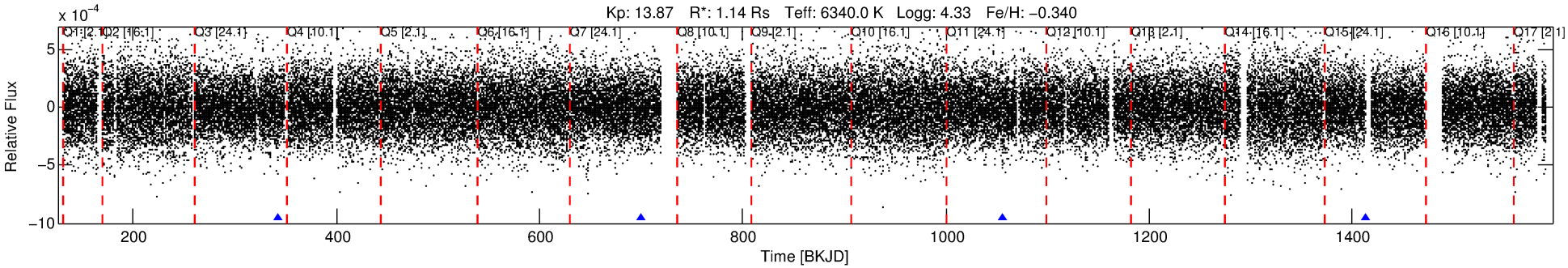
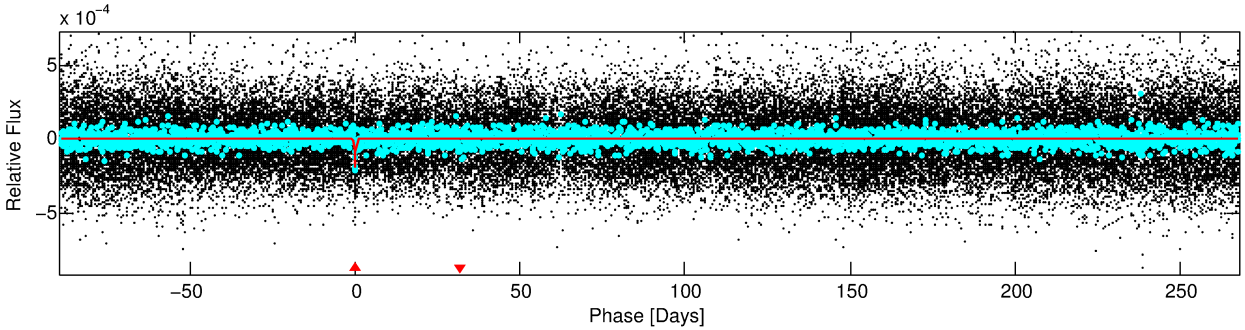
WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

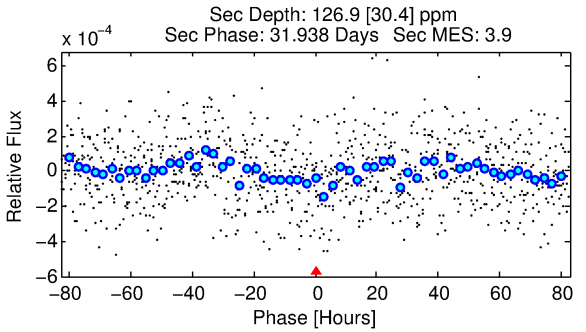
DV One-Page Summary

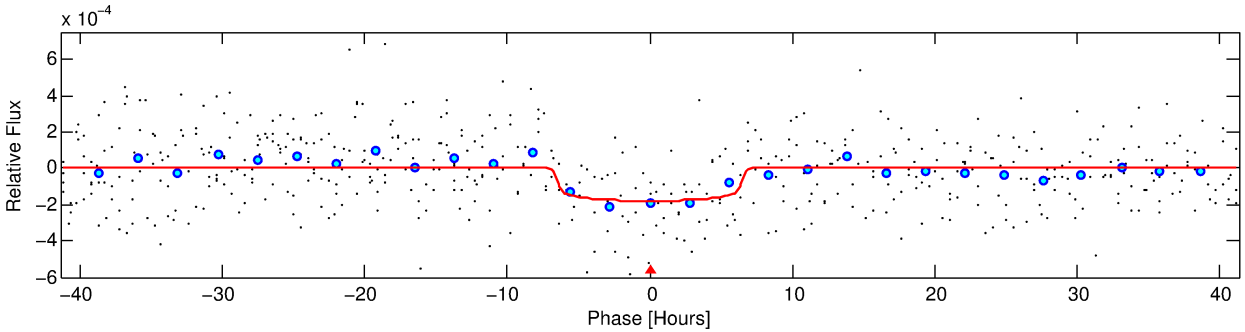
KIC: 8213227 Candidate: 1 of 1 Period: 356.977 d

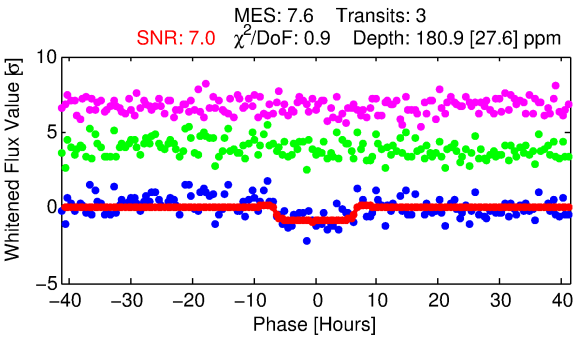
WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

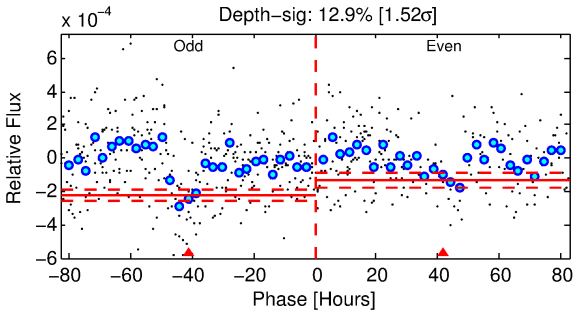


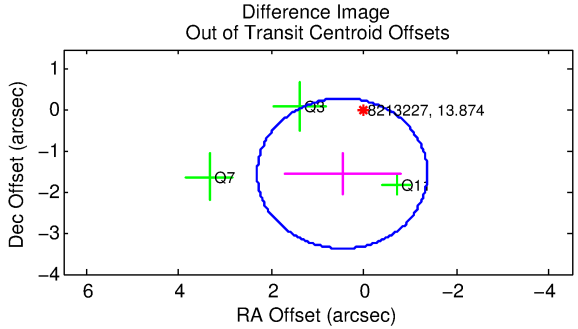












DV Fit Results:

Period = 356.97664 [0.02038] d
Epoch = 342.3623 [0.0272] BKJD
Rp/R* = 0.0140 [0.0034]
a/R* = 107.41 [140.22]
b = 0.86 [0.41]

Seff = 1.94 [0.71]
Teq = 301 [28] K
Rp = 1.75 [0.67] Re
a = 0.9880 [0.2408] AU

Ag = 22357.56 [14414.60] [1.55σ]
Teffp = 5690 [791] K [6.81σ]

DV Diagnostic Results:

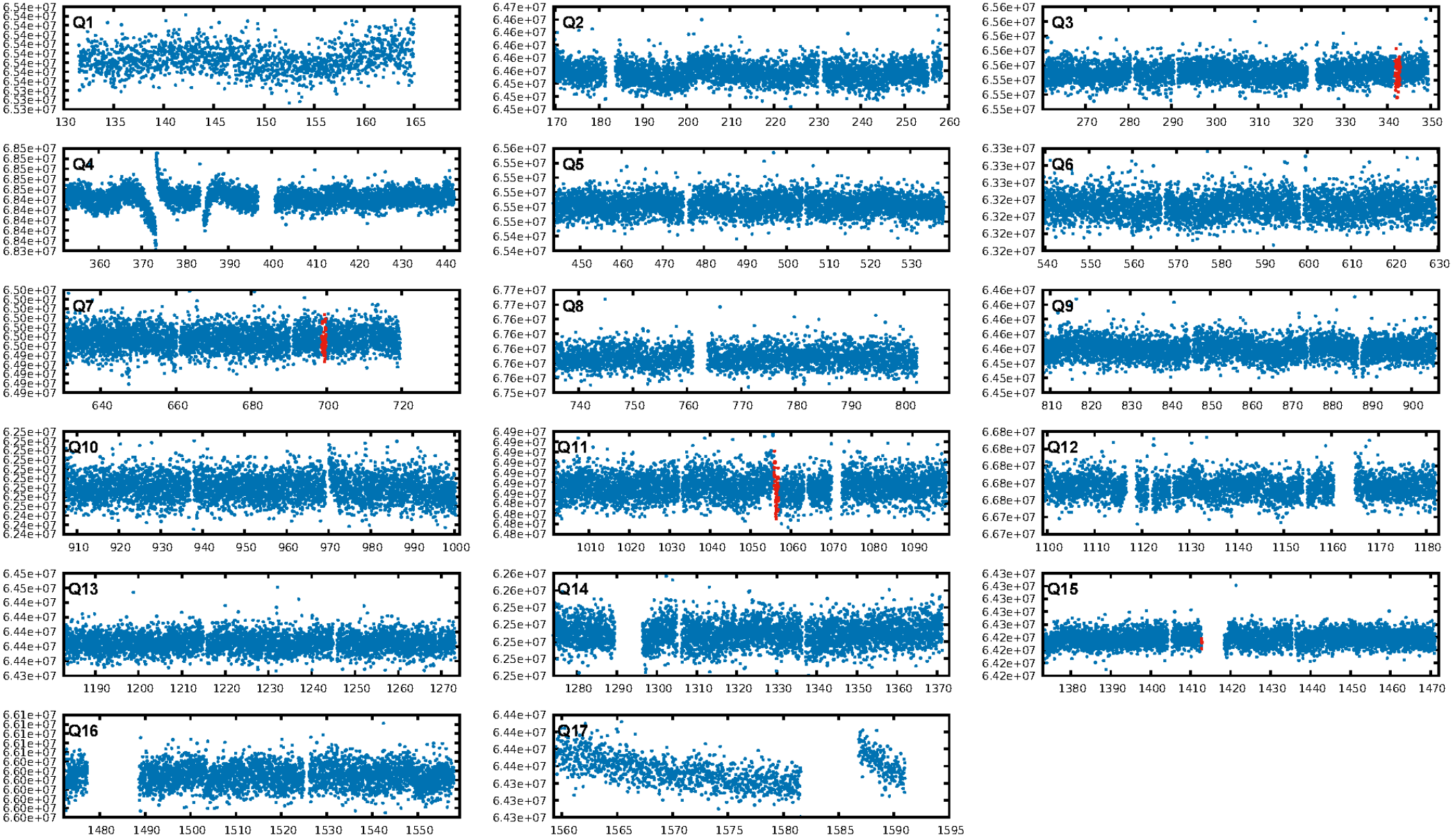
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 40.6%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 3.27e−13
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: −2.936

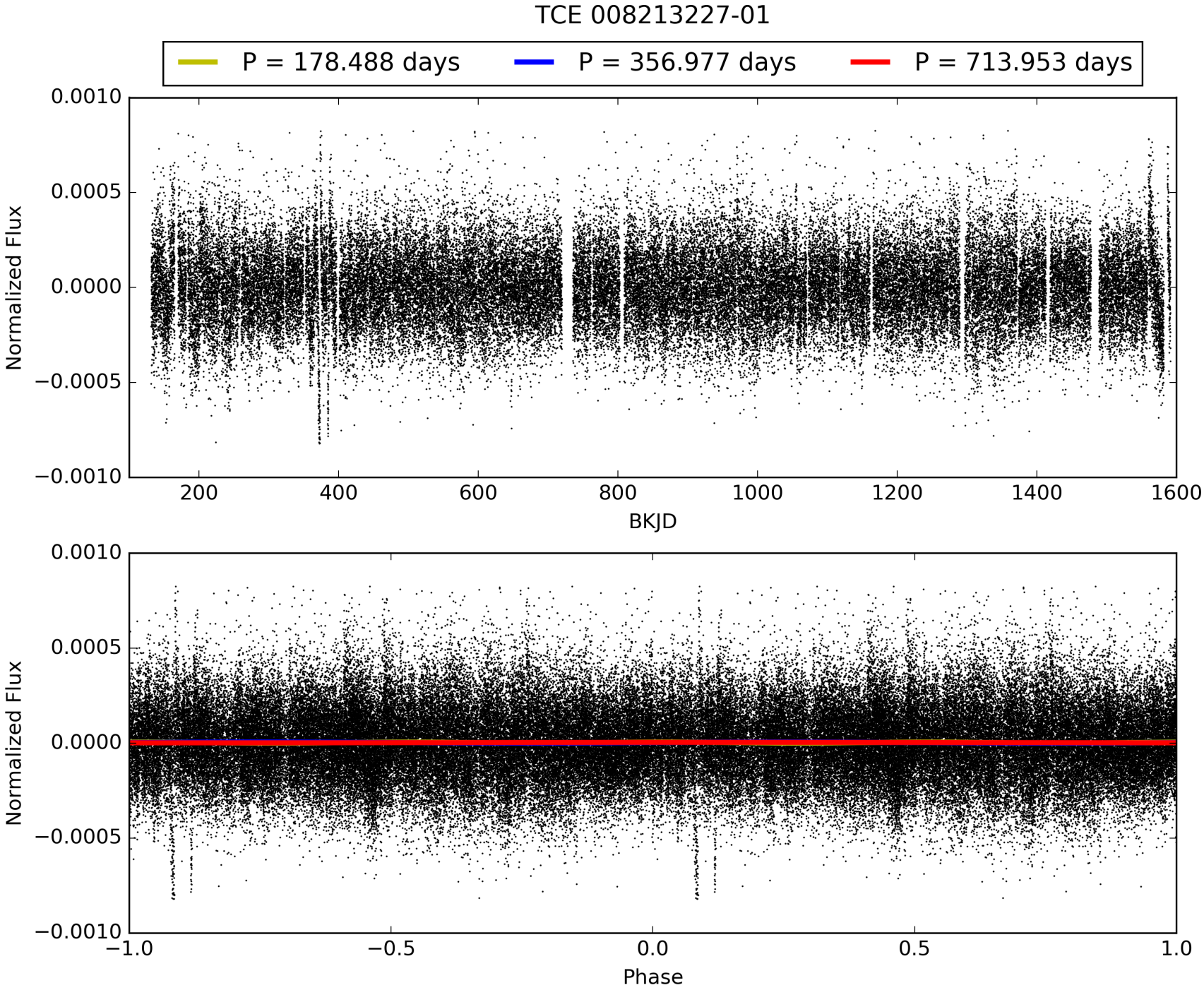
Centroid−sig: 19.5%
Centroid−so: 2.459 arcsec [1.07σ]
OotOffset−rm: 1.606 arcsec [2.62σ]
KicOffset−rm: 1.581 arcsec [2.44σ]
OotOffset−st: 0/3/0/0 [3]
KicOffset−st: 0/3/0/0 [3]
DiffImageQuality−fgm: 0.67 [2/3]
DiffImageOverlap−fno: 1.00 [3/3]

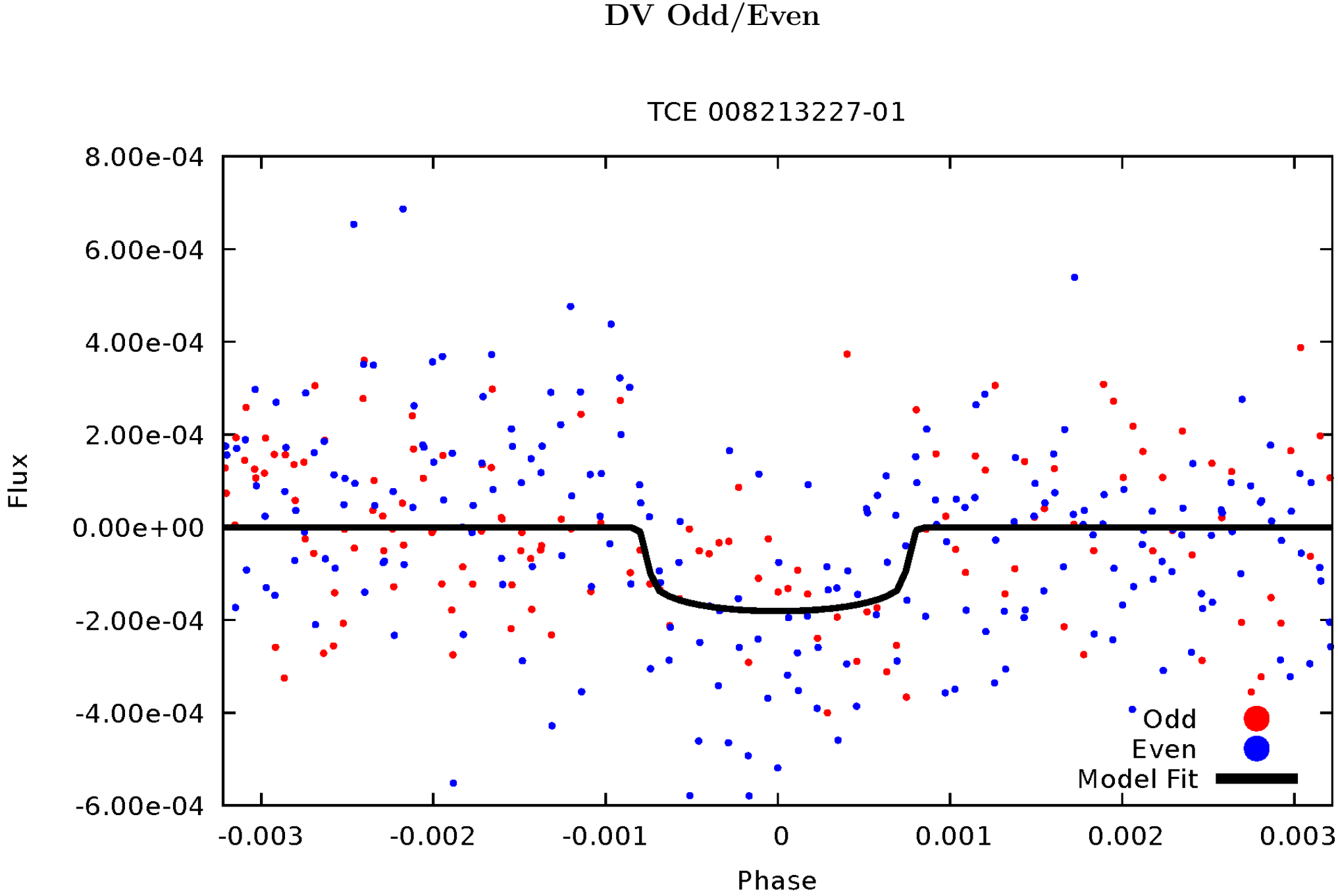
Software Revision: svn+ssh://murzim/repo/soc/branches/integ/ksop−2174@60968 −− Date Generated: 15−Feb−2016 21:15:01 Z

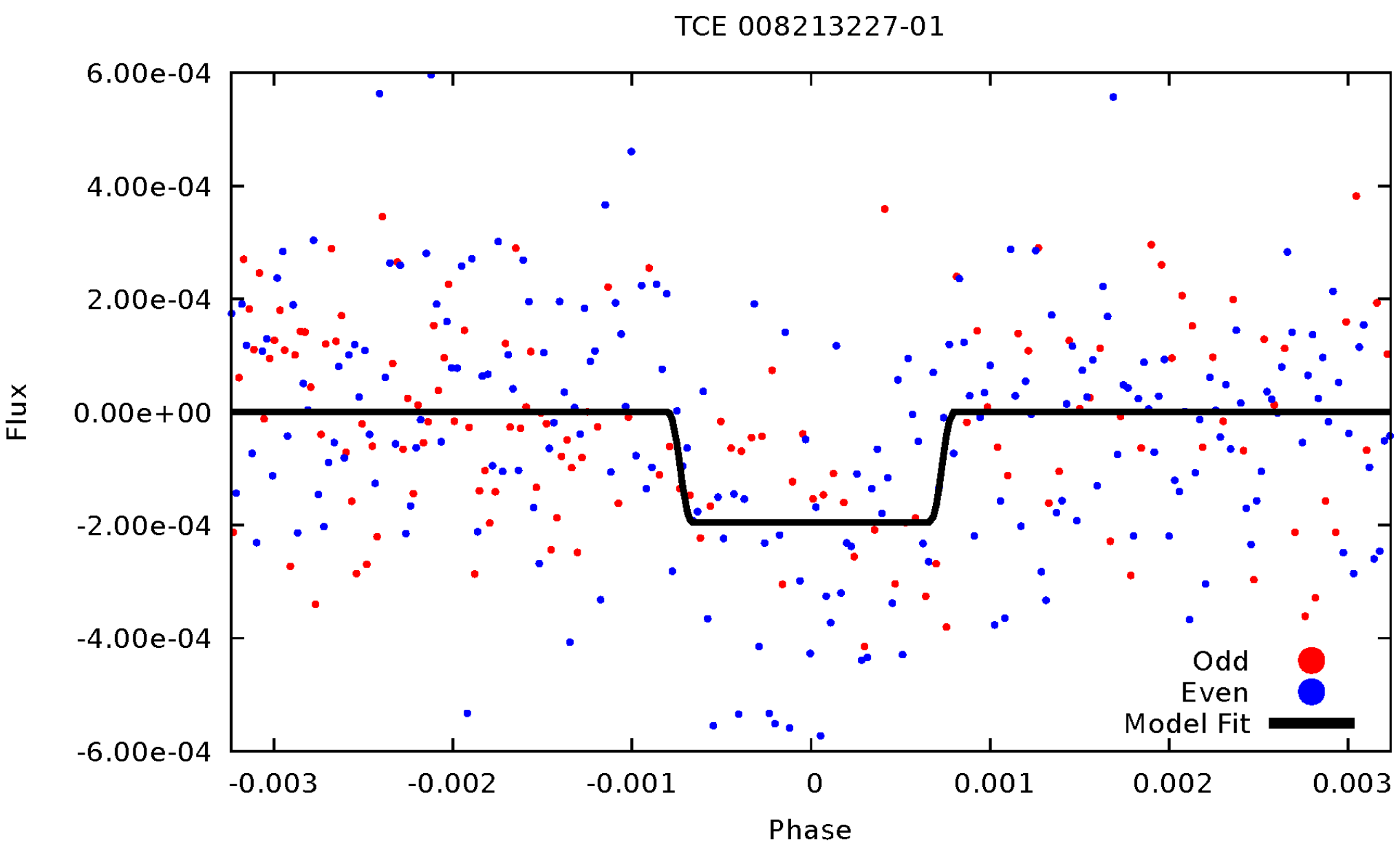
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008213227-01, PDC Light Curves

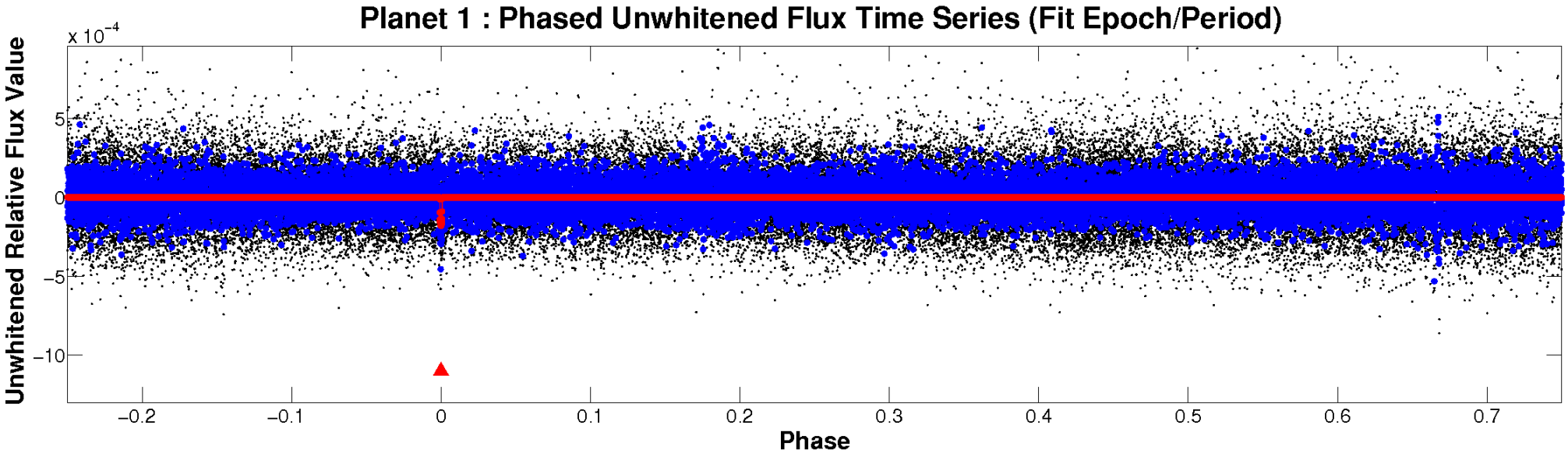


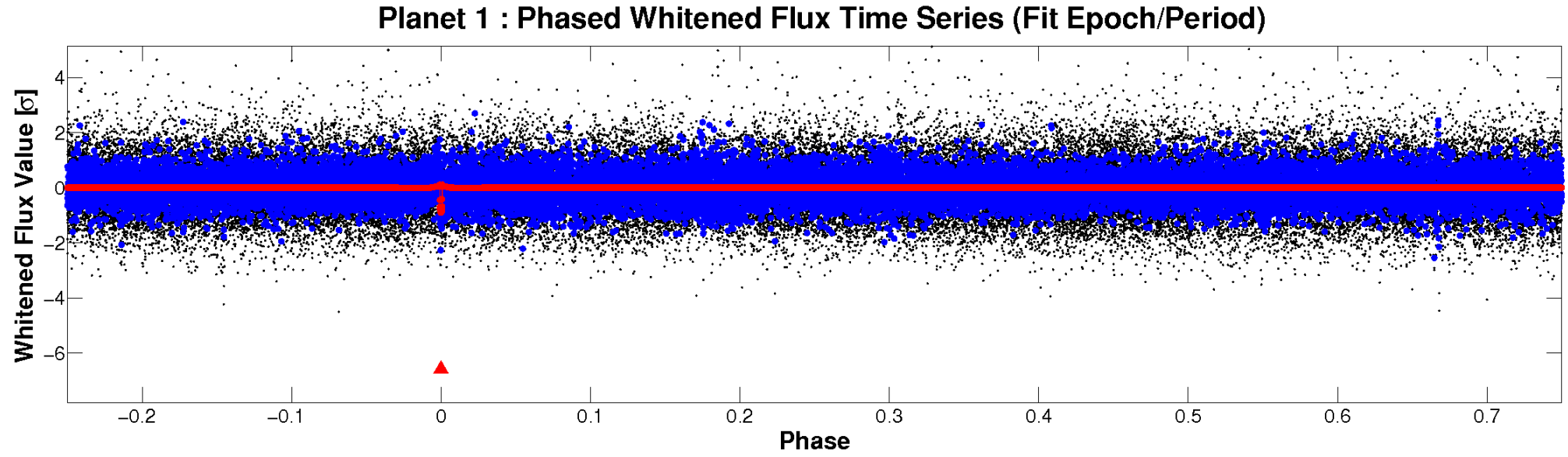

TCE 008213227-01
P = 178.488 days
P = 356.977 days
P = 713.953 days
Normalized Flux
0.0010
0.0005
0.0000
−0.0005
−0.0010
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0010
0.0005
0.0000
−0.0005
−0.0010
−1.0
−0.5
0.0
0.5
1.0
Phase


DV Odd/Even
TCE 008213227-01
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
Phase
Odd
Even
Model Fit


ALT Odd/Even
TCE 008213227-01
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
Phase
Odd
Even
Model Fit

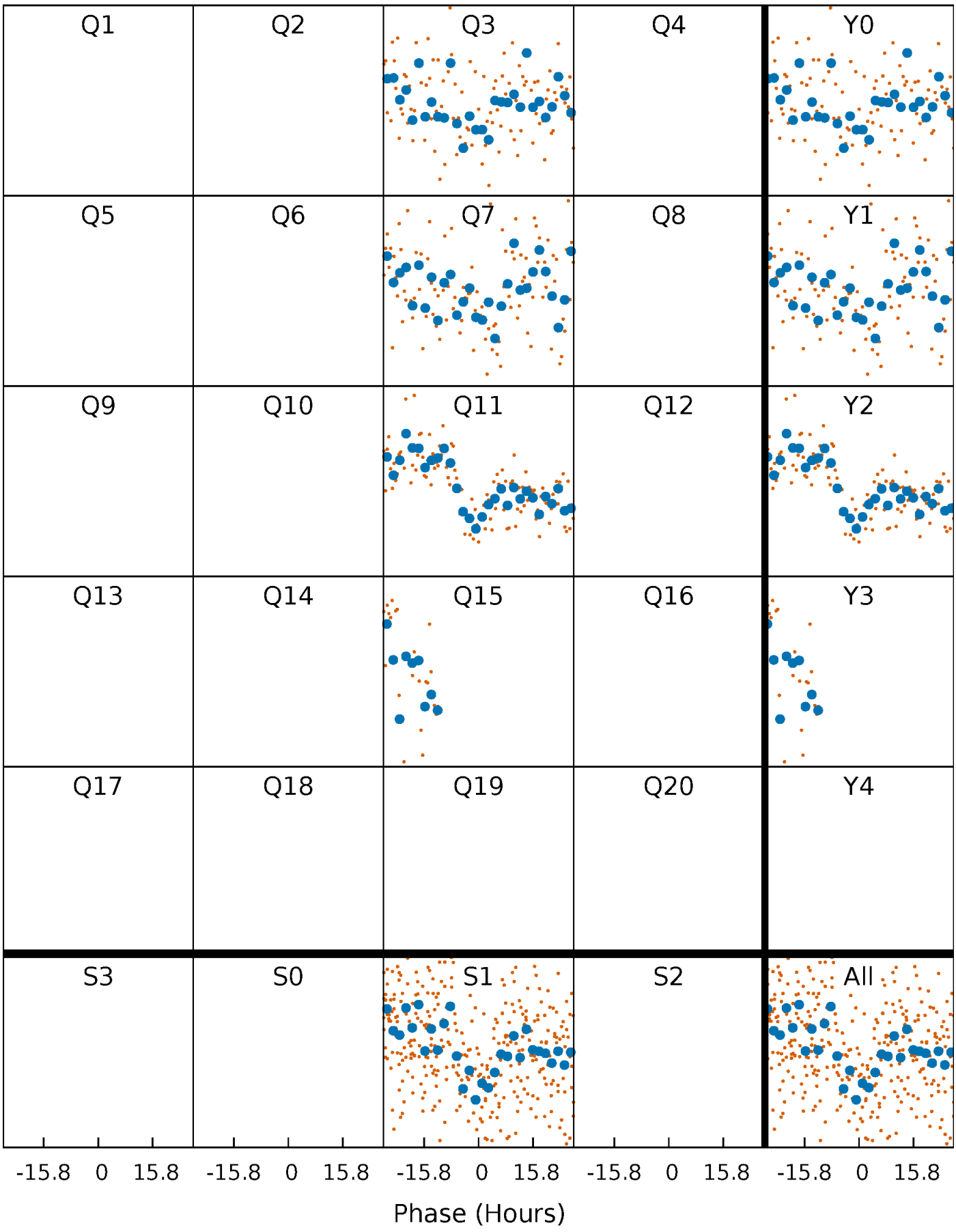
Non-Whitened Vs. Whitened Light Curve





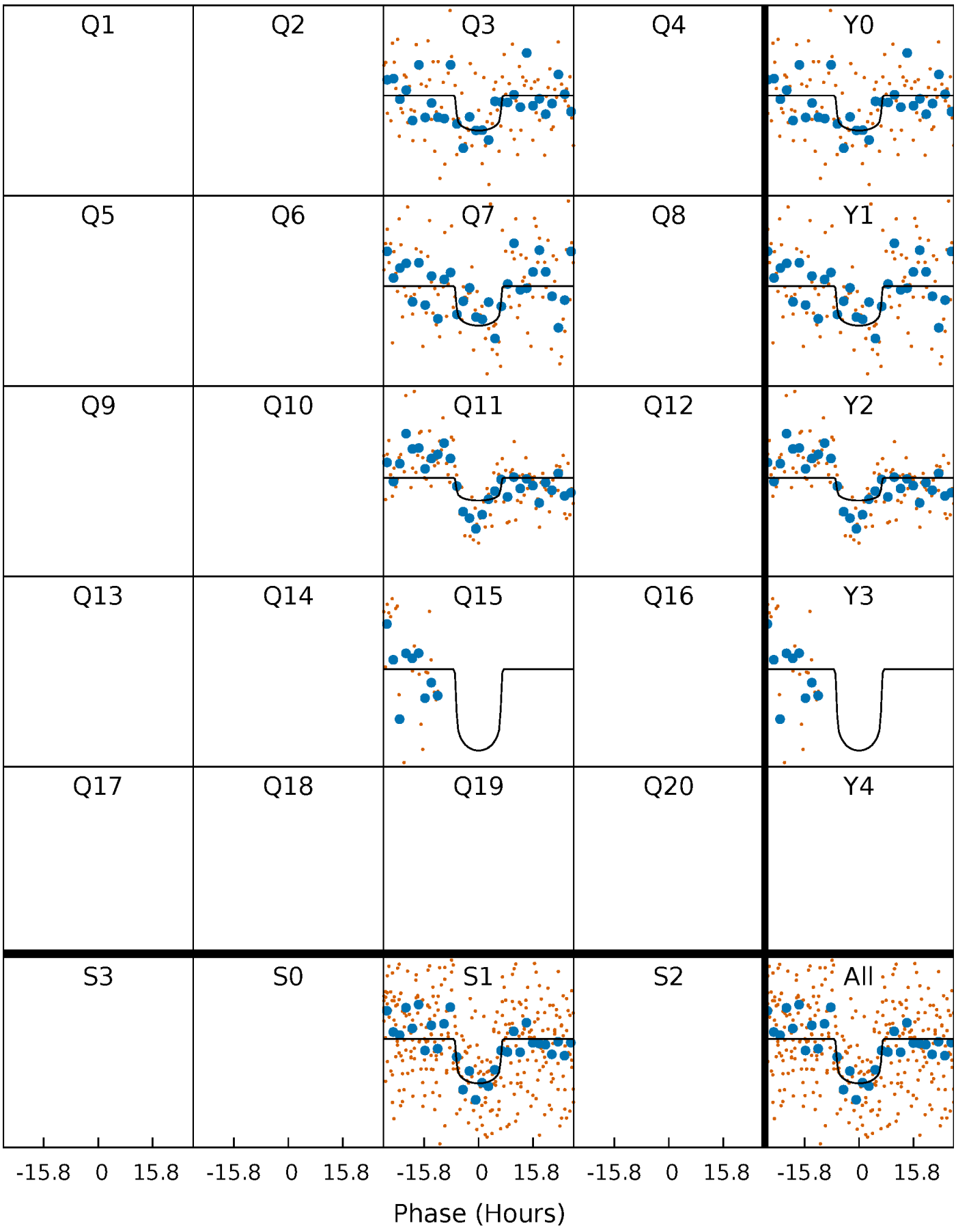
PDC Quarter-Phased Transit Curves

TCE 008213227-01 P=356.976642 Days T_0=342.362295 (BKJD)



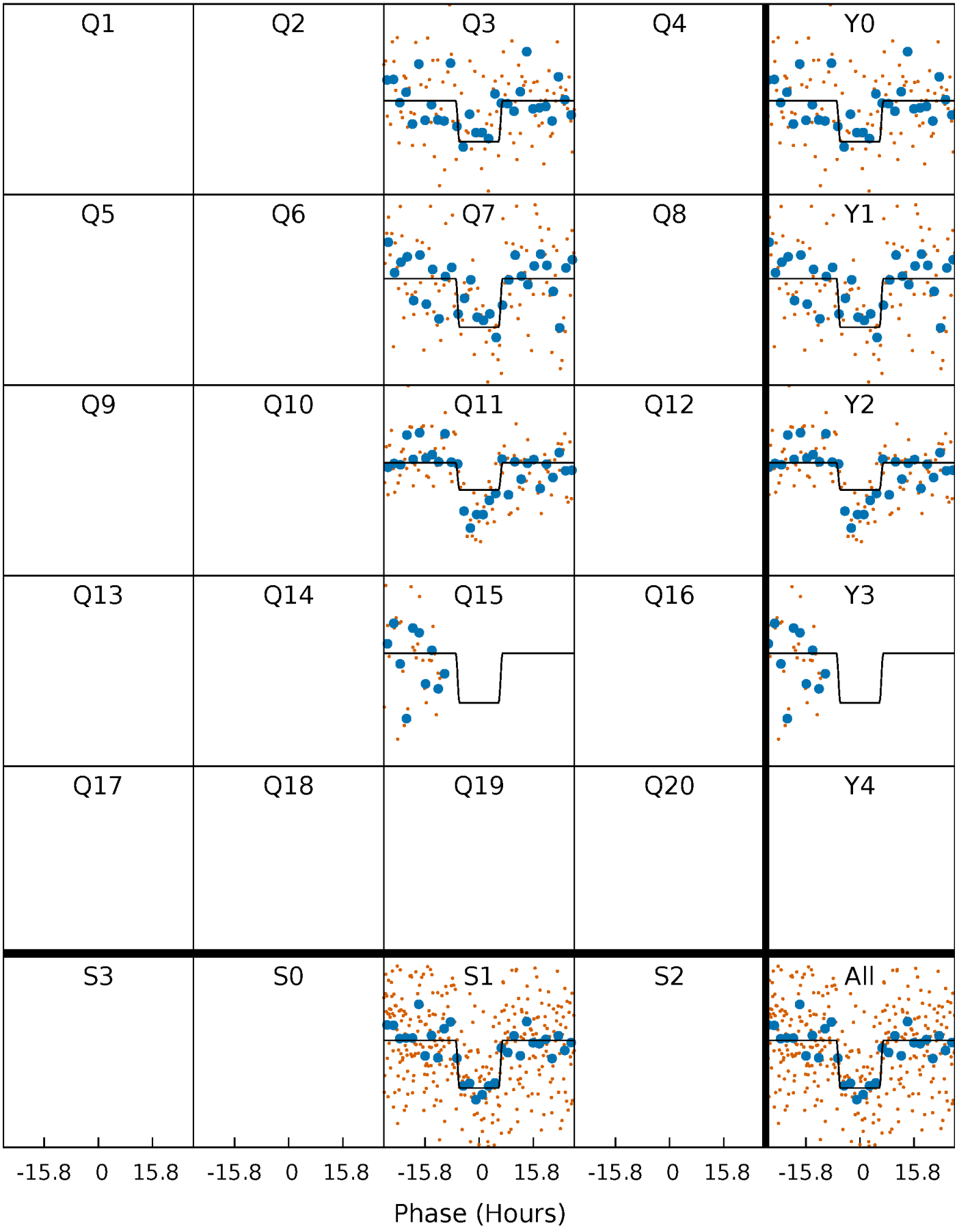
DV Quarter-Phased Transit Curves

TCE 008213227-01 P=356.976642 Days T_0=342.362295 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

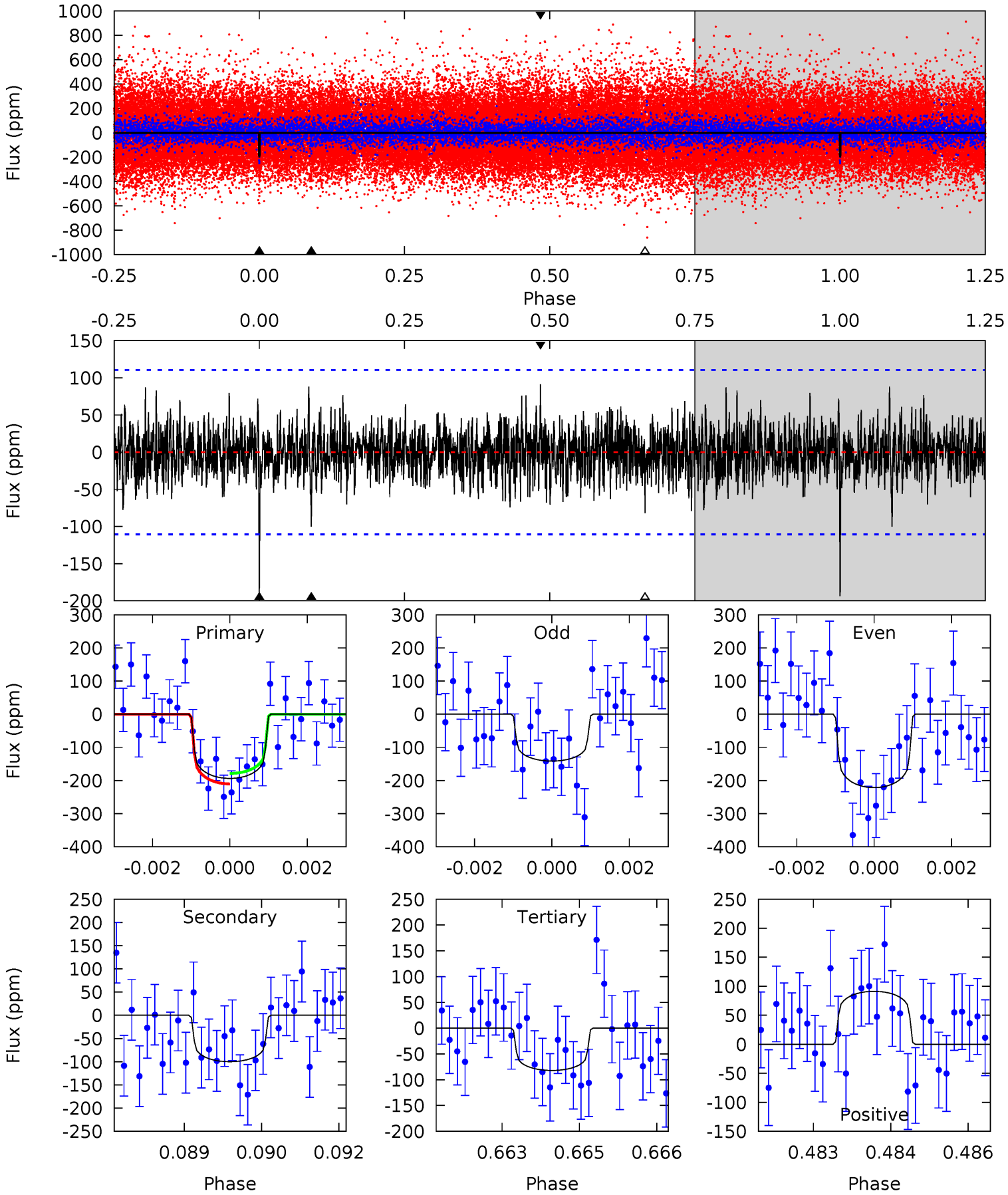
TCE 008213227-01 P=356.960671 Days T_0=342.374888 (BKJD)



DV Model-Shift Uniqueness Test

008213227-01, P = 356.976642 Days, E = 342.362295 Days

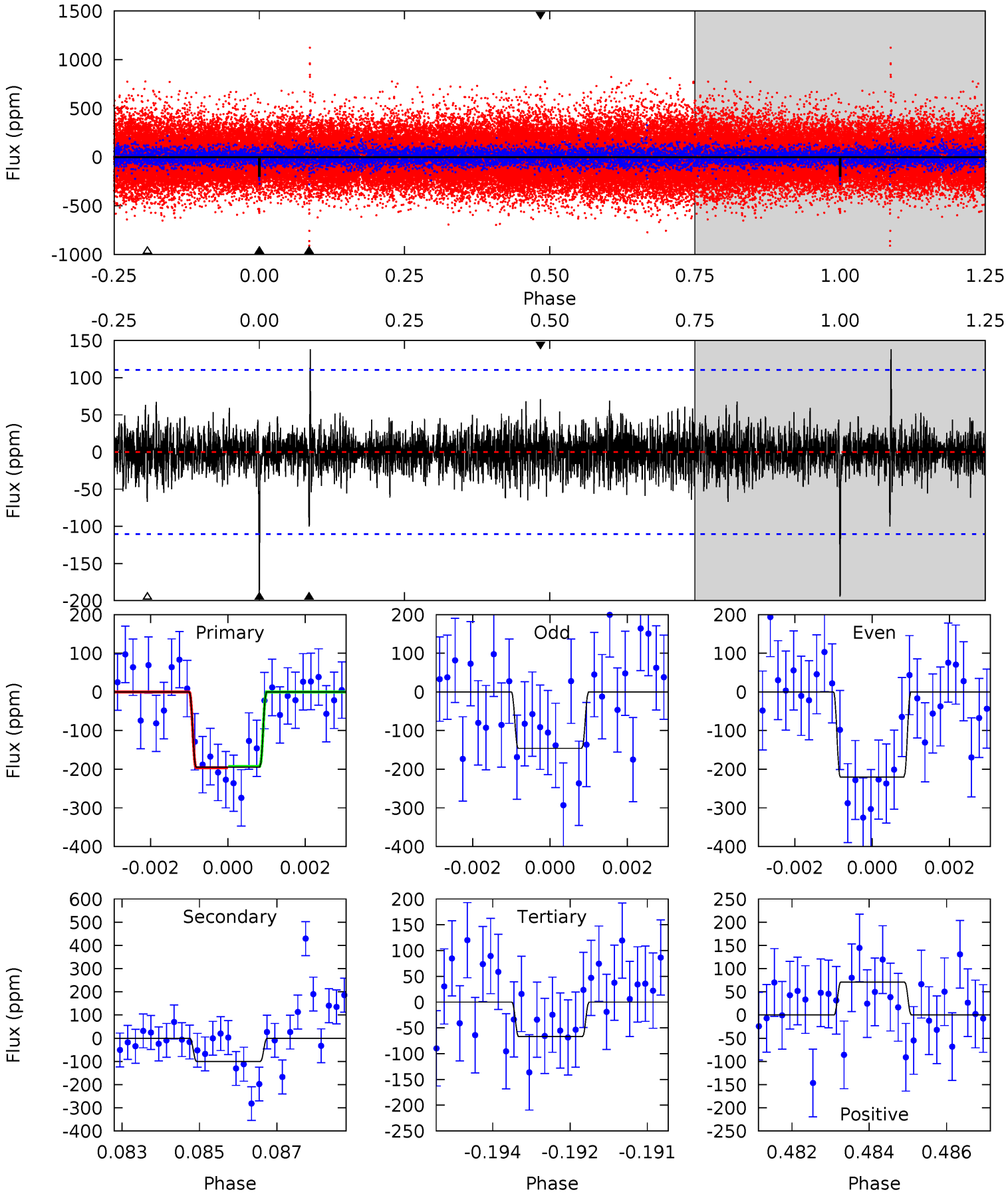
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.40	4.85	3.98	4.43	5.37	3.15	1.18	5.42	4.97	0.88	0.43	1.86	1.06	0.32	0.77



Alt Model-Shift Uniqueness Test

008213227-01, P = 356.960671 Days, E = 342.374888 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.45	4.86	3.25	3.45	5.37	3.16	0.94	6.19	5.99	1.60	1.40	1.71	1.35	0.42	0.09



Stellar Parameters For KIC 008213227

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6340^{+157}_{-189}	$4.325^{+0.124}_{-0.186}$	$-0.340^{+0.250}_{-0.300}$	$1.144^{+0.339}_{-0.183}$	$1.006^{+0.159}_{-0.106}$	$0.947^{+0.574}_{-0.484}$
	+2%/-3%	+3%/-4%	+74%/-88%	+30%/-16%	+16%/-11%	+61%/-51%
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 008213227-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-100±21	$1.77^{+0.50}_{-0.49}$	422^{+30}_{-23}	5361^{+869}_{-535}	16724^{+15838}_{-6872}
Alt.	-100±21	$1.77^{+0.50}_{-0.47}$	421^{+29}_{-23}	5387^{+875}_{-564}	17033^{+15341}_{-7035}

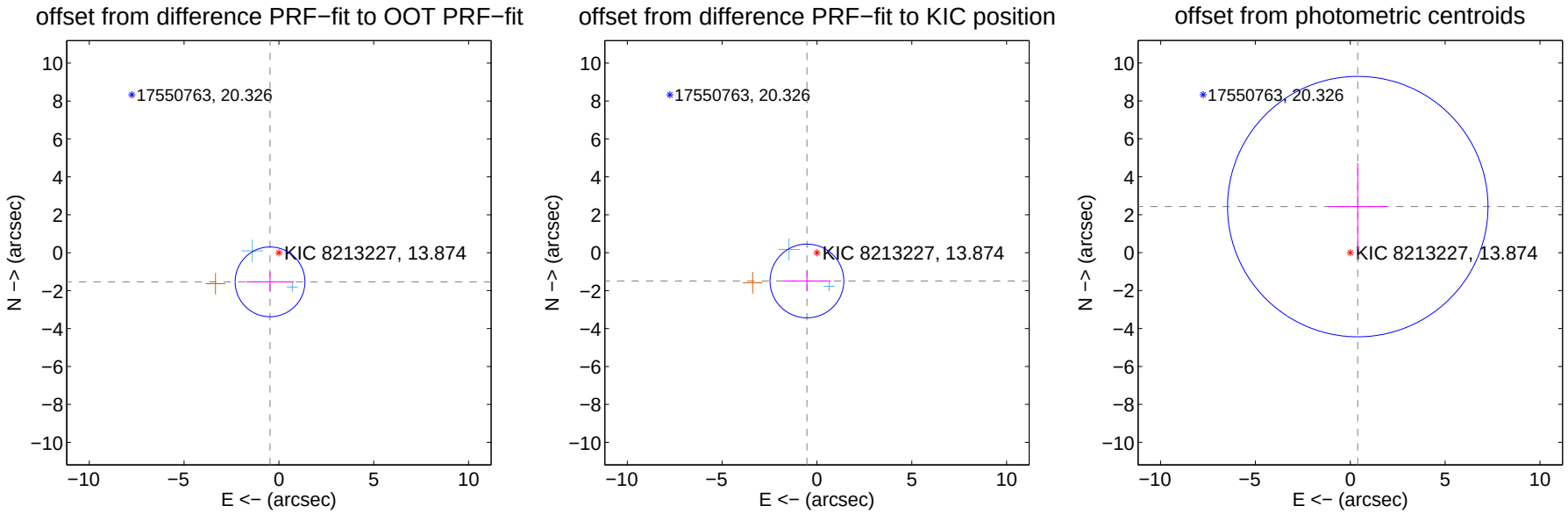
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

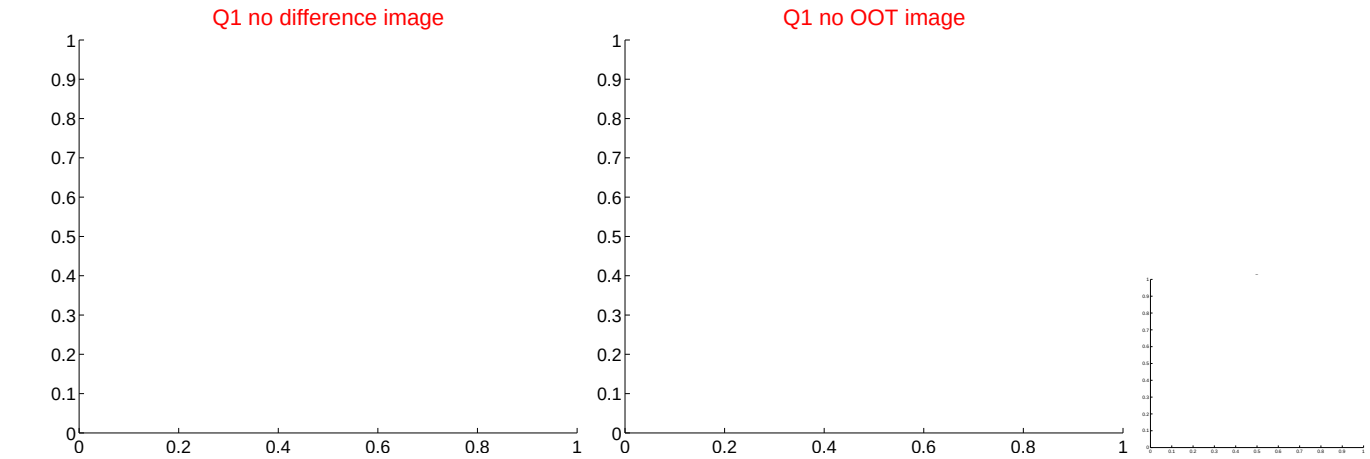
Supplemental centroid analysis for 008213227-01. Kepler magnitude: 13.87. Transit SNR 7.04
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

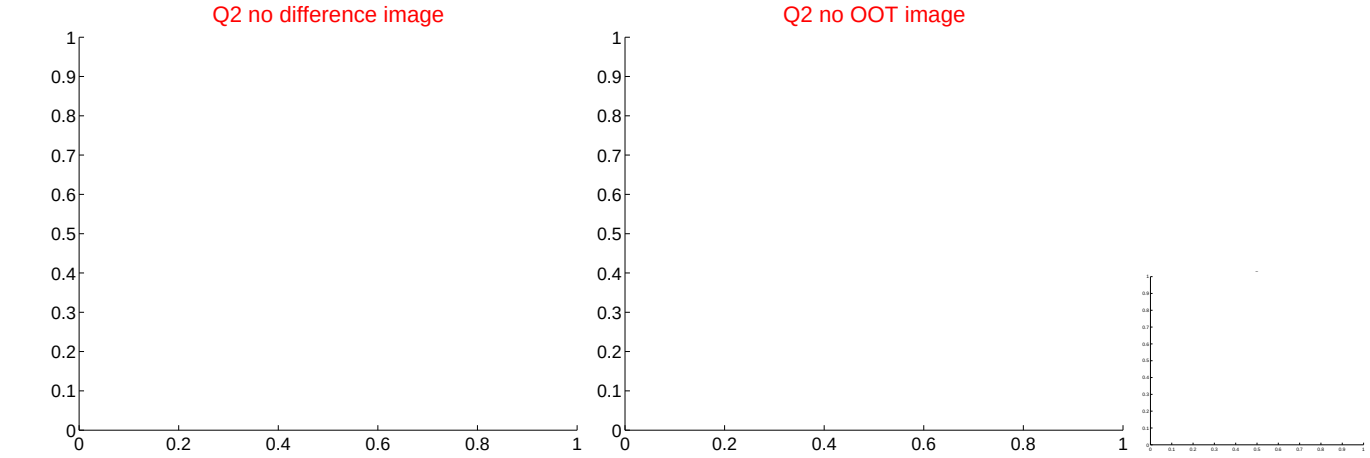
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.606 ± 0.613	2.62	0.468 ± 1.260	-1.537 ± 0.514
PRF-fit source offset from KIC position	1.581 ± 0.648	2.44	0.529 ± 1.259	-1.490 ± 0.523
photometric centroid source offset	2.46 ± 2.29	1.07	-0.40 ± 1.55	2.43 ± 2.30

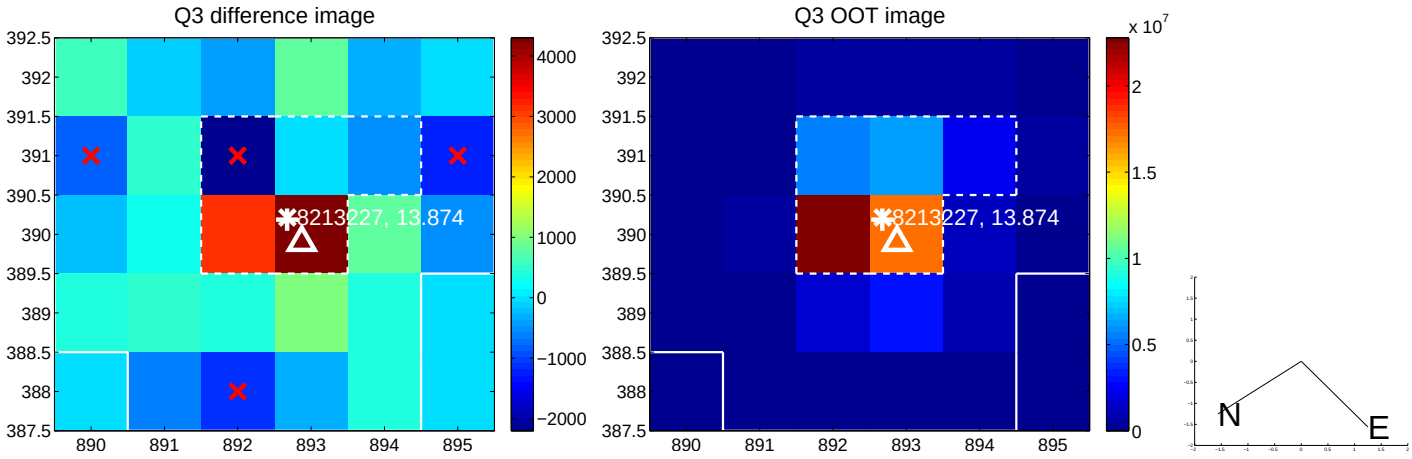


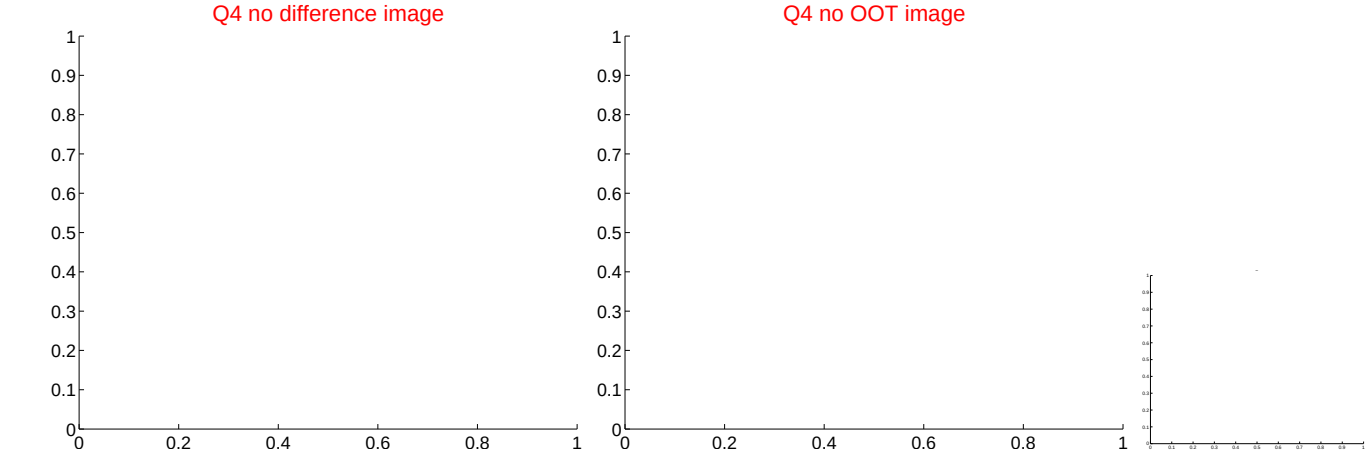
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

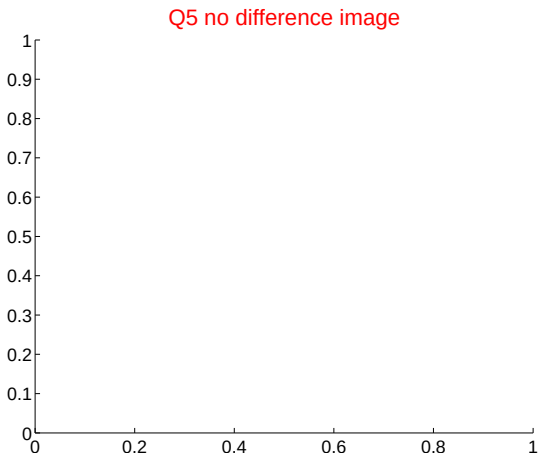


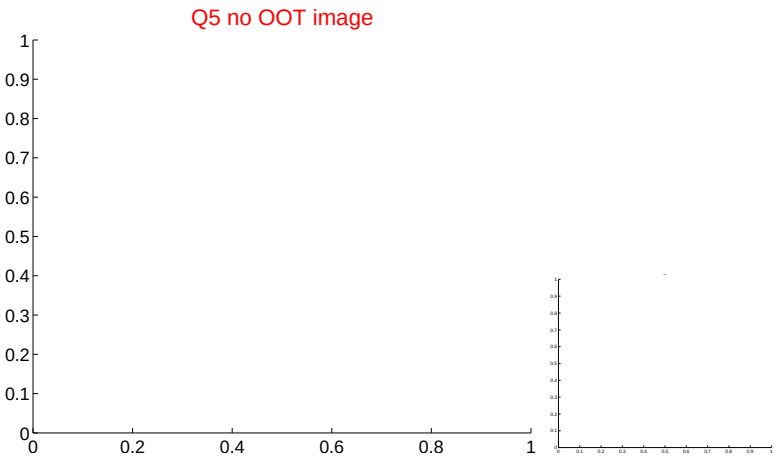


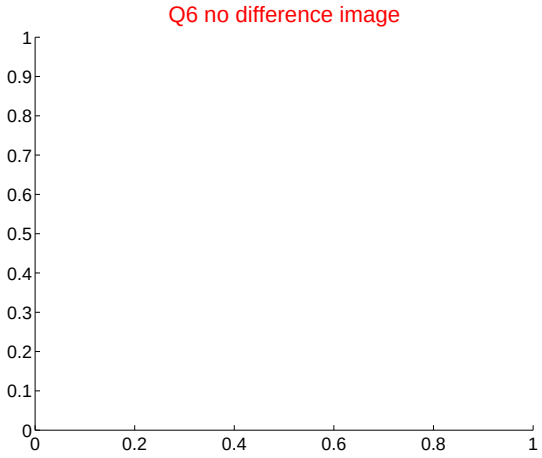


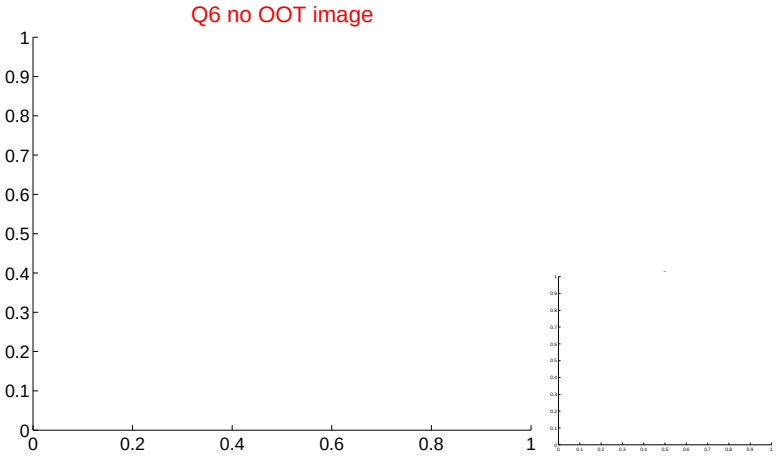


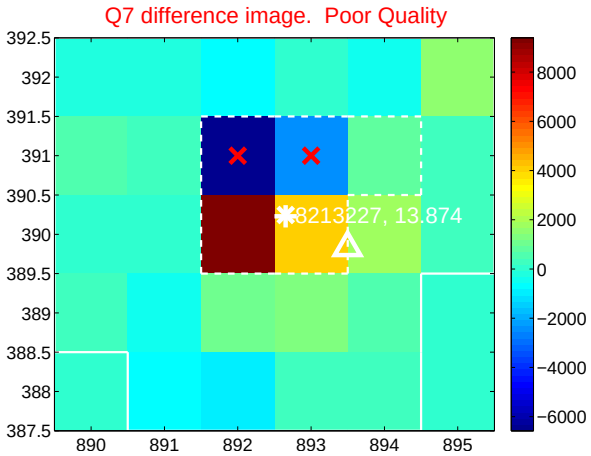
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

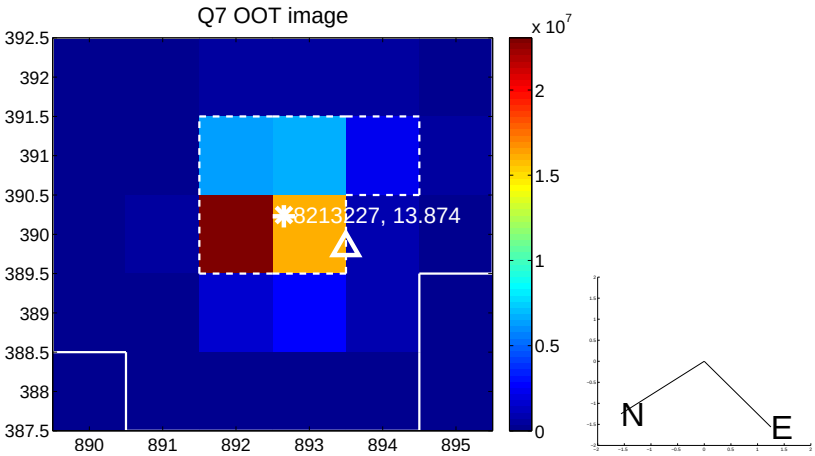


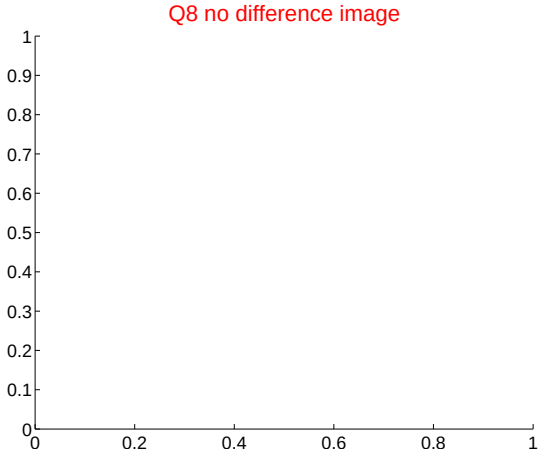


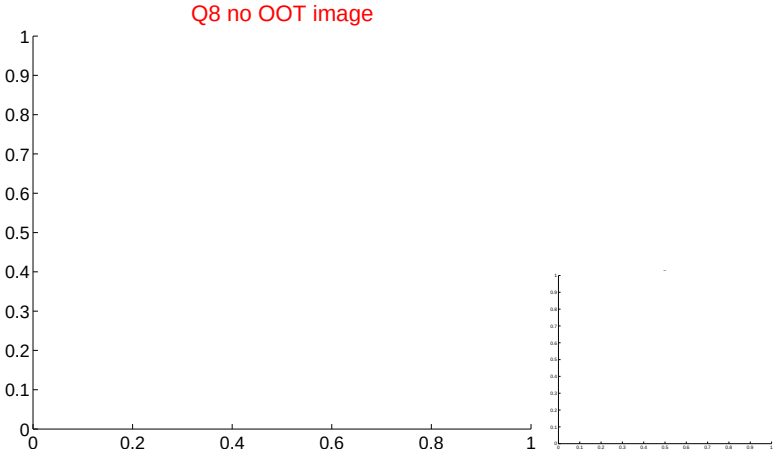




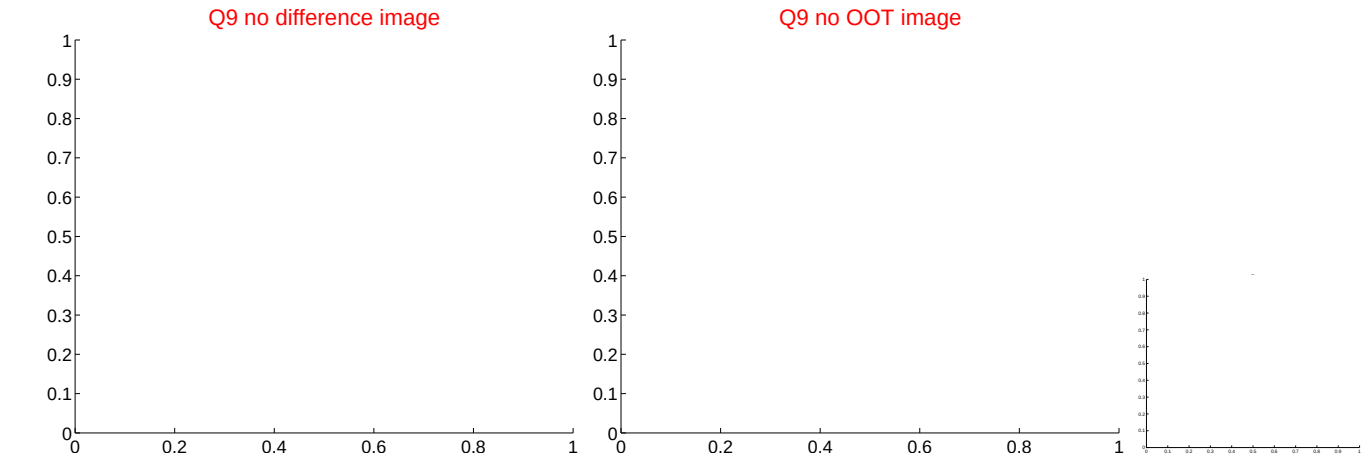


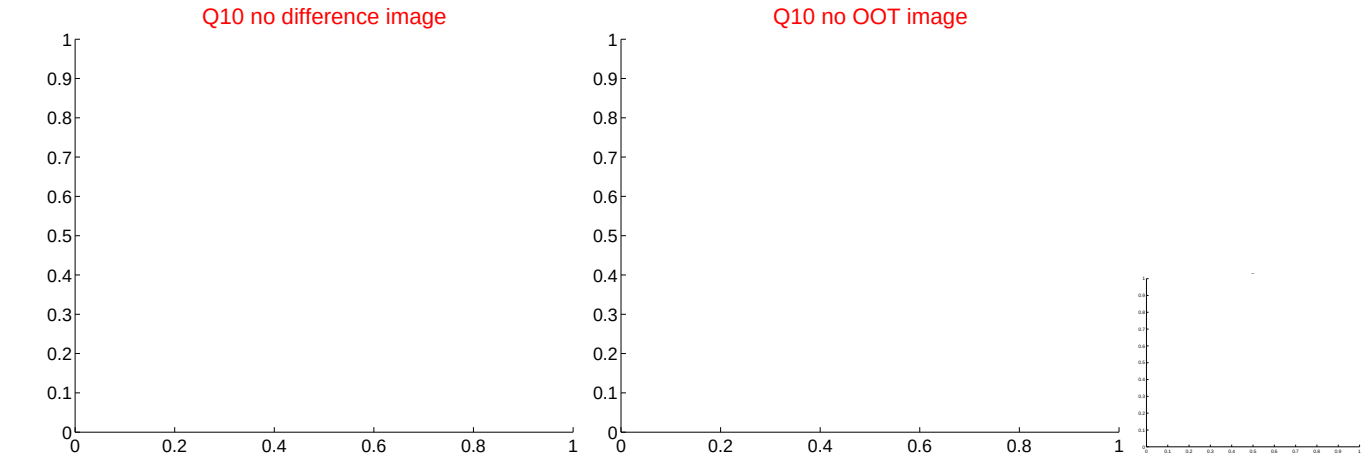


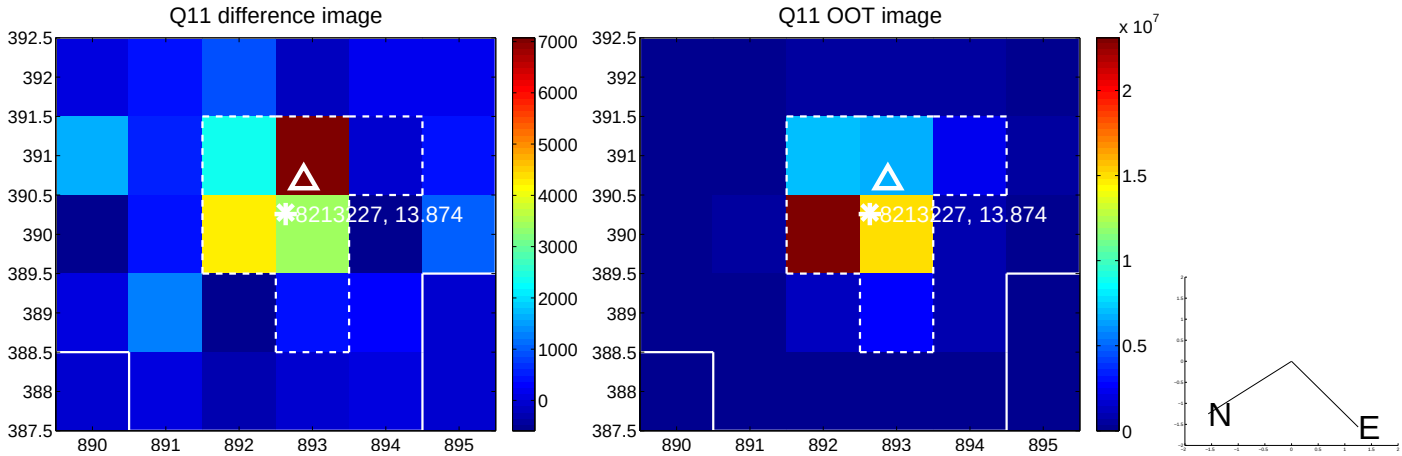


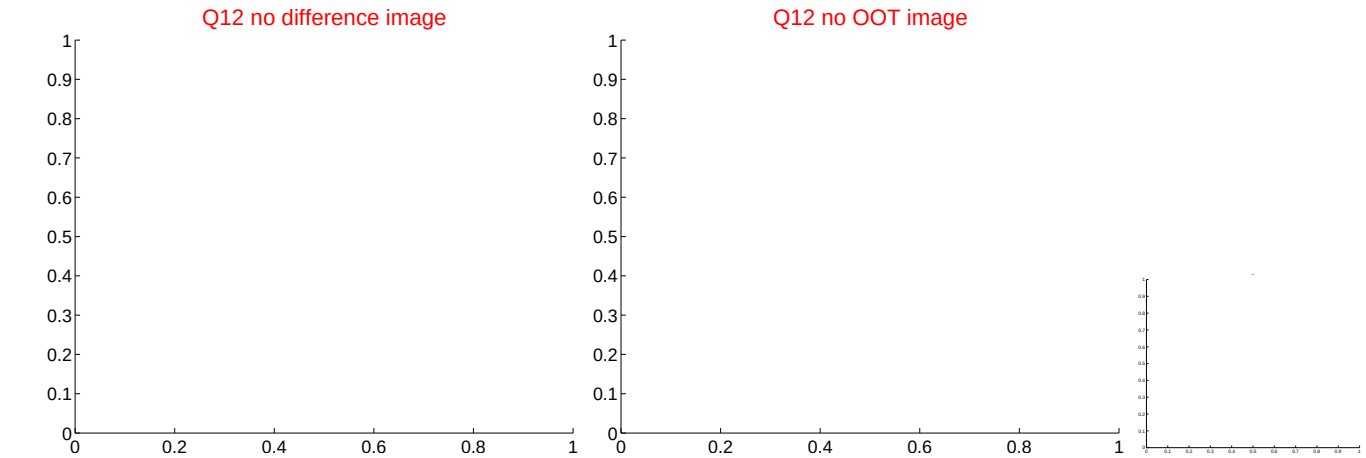


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

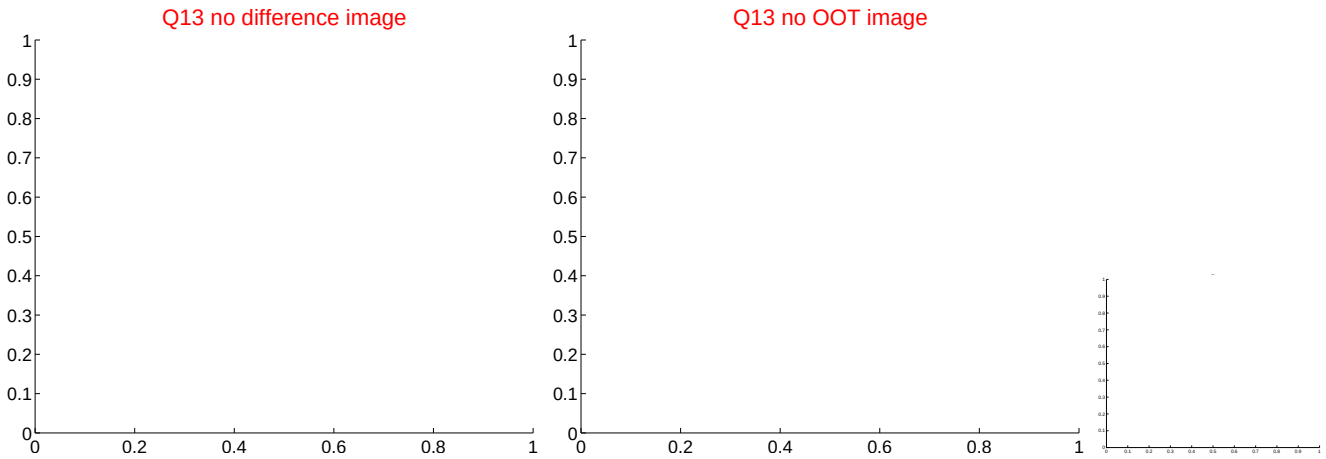


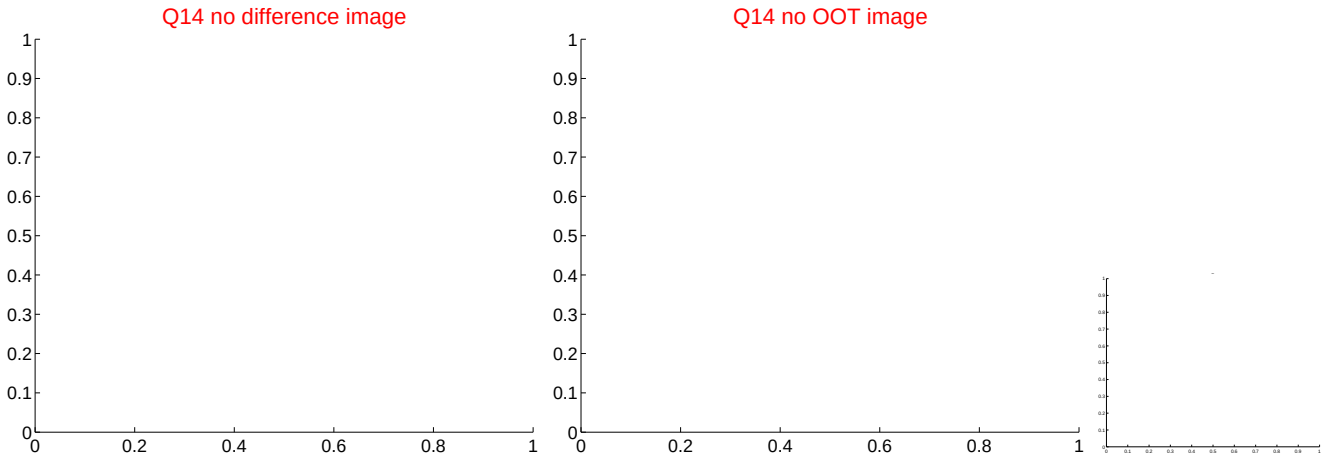


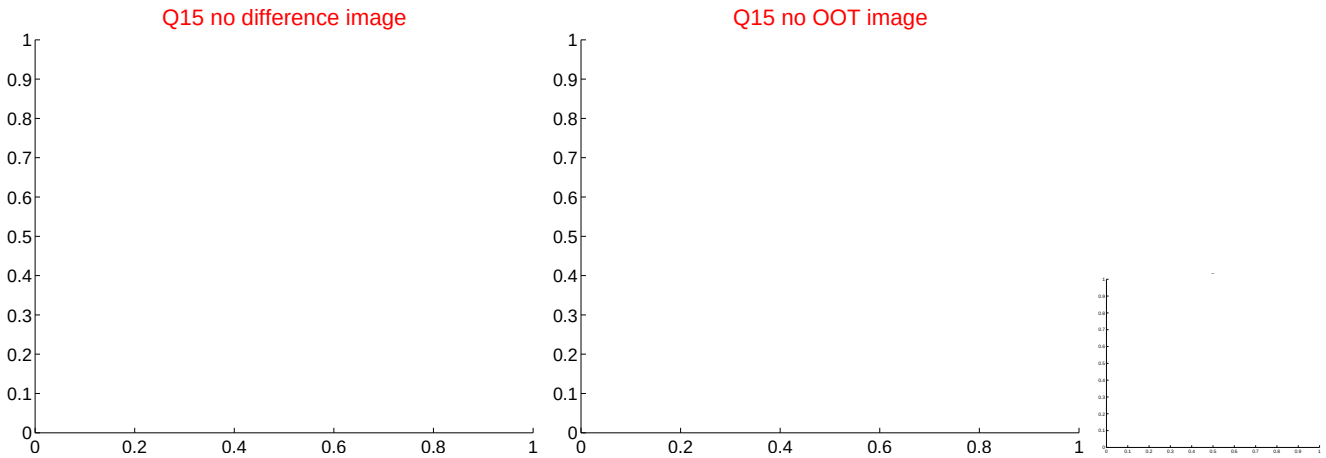


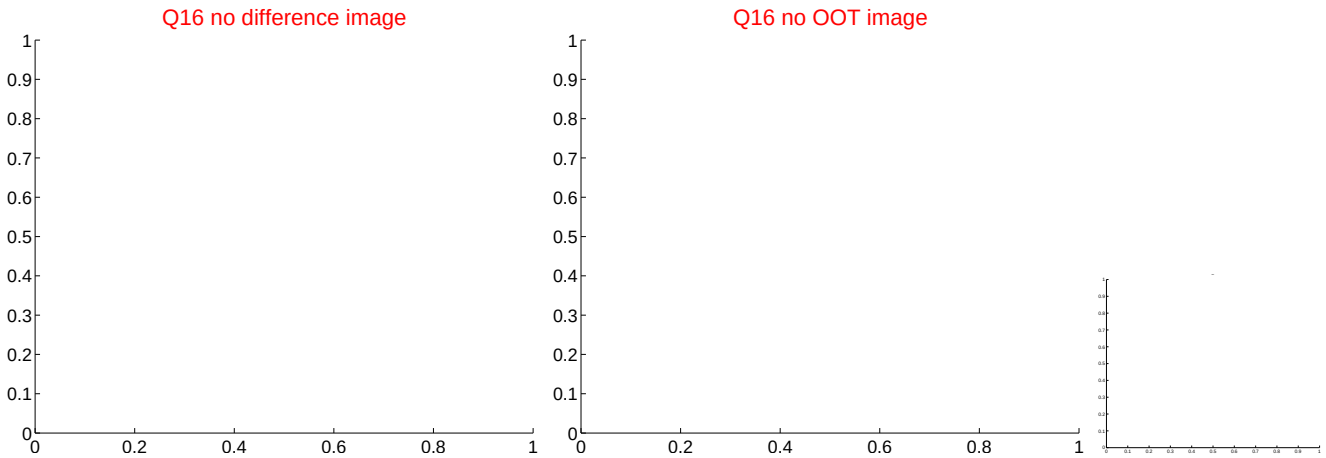


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

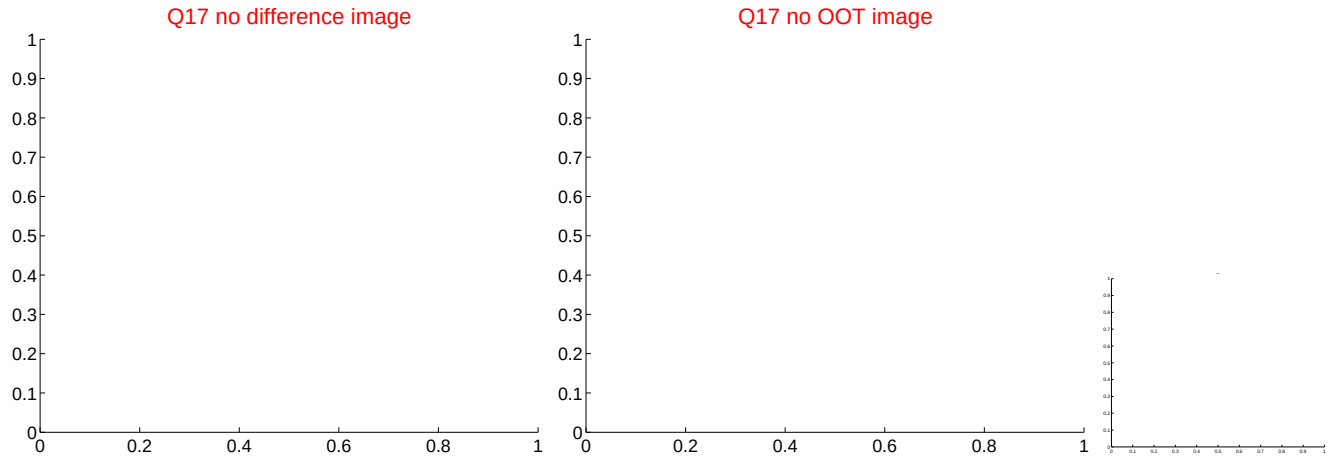


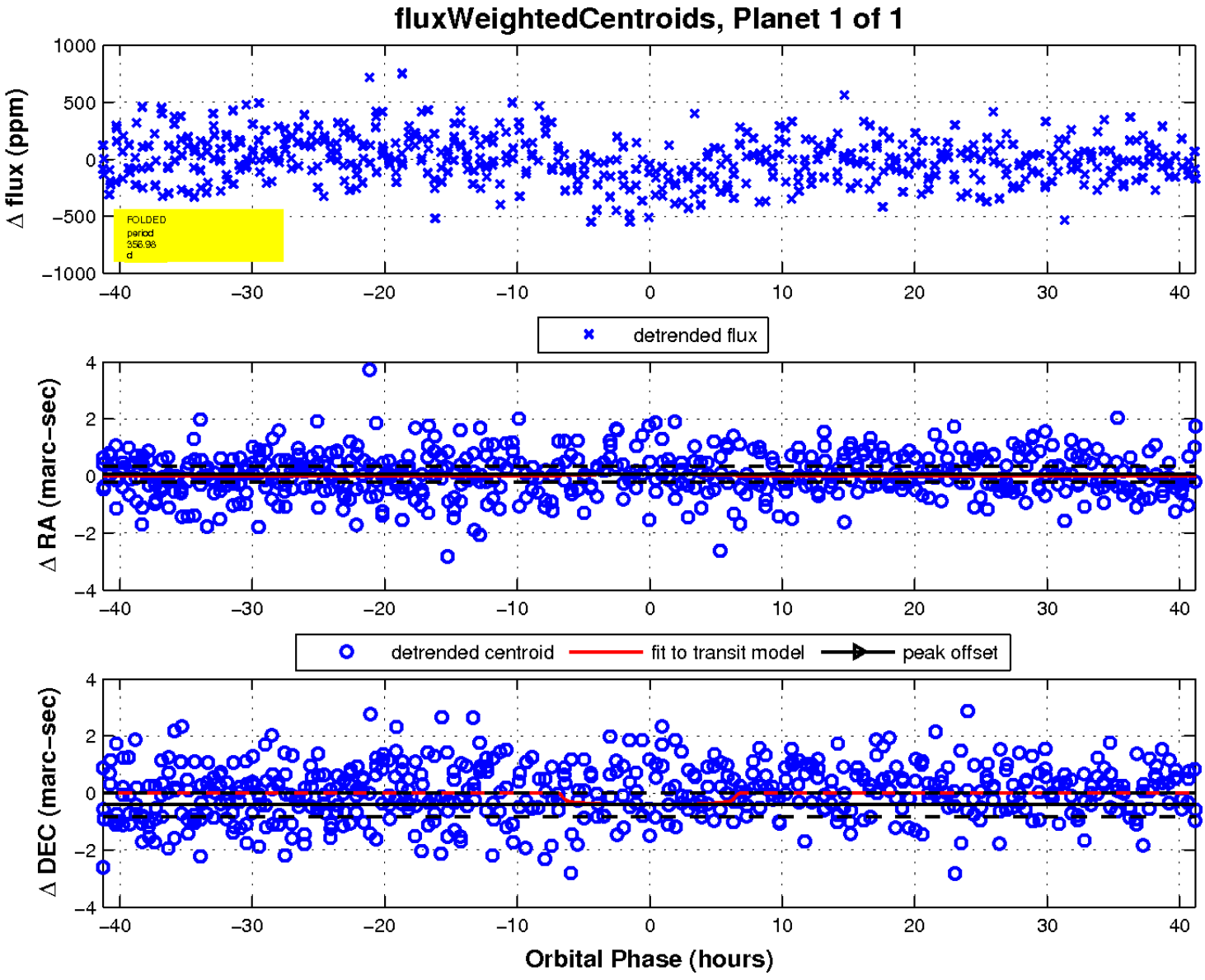






white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image