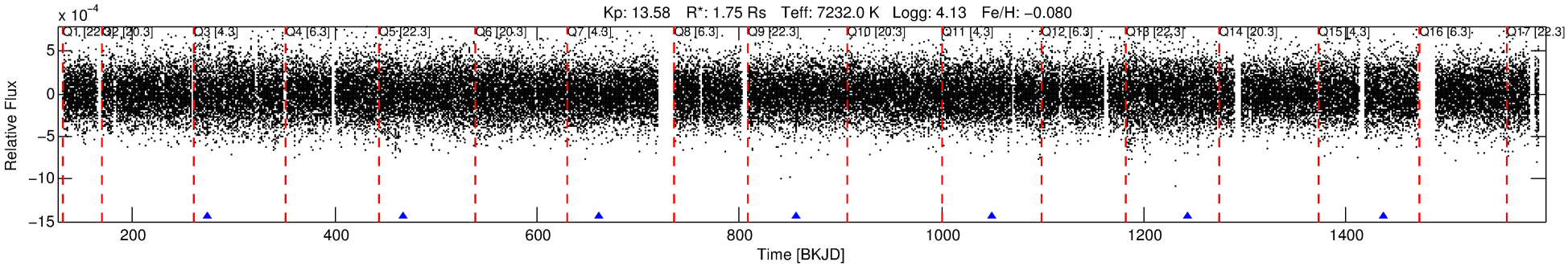
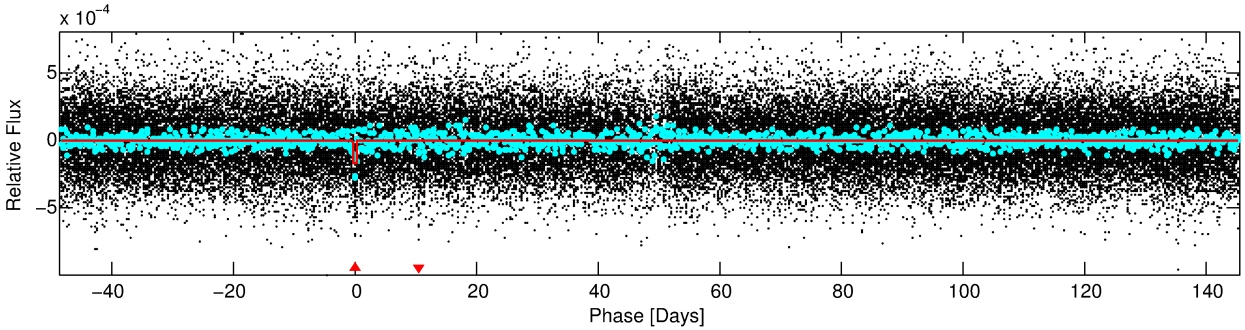
WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

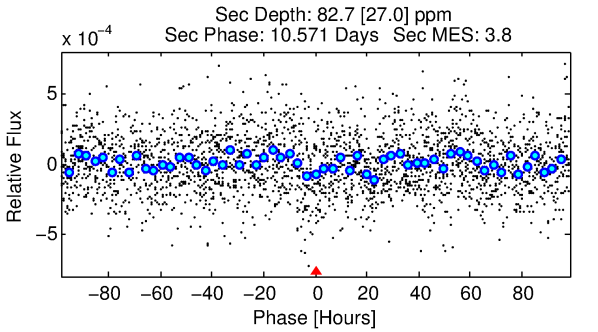
DV One-Page Summary

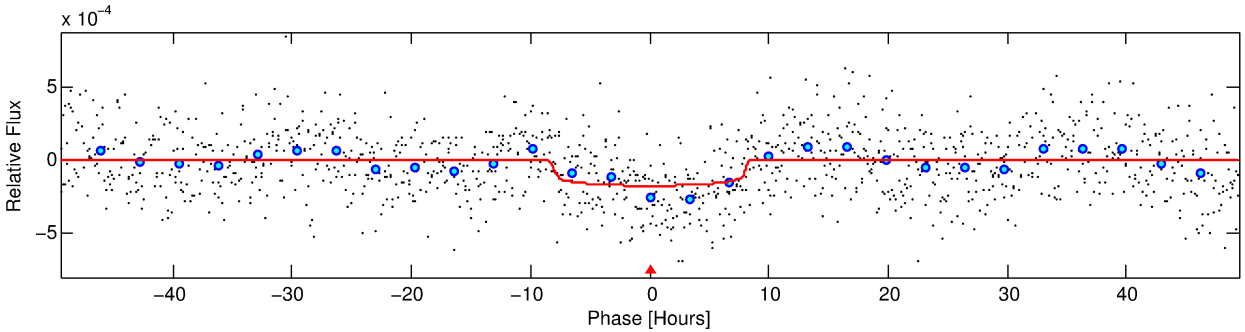
KIC: 12167502 Candidate: 1 of 1 Period: 194.000 d

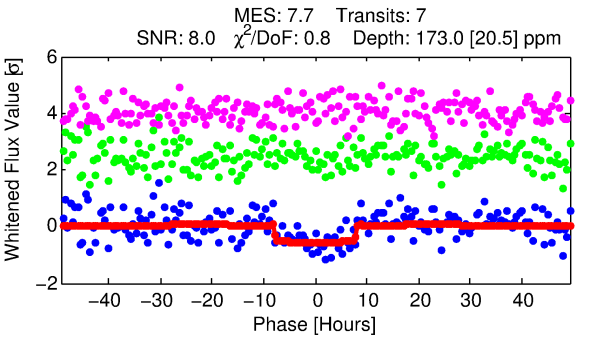
WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

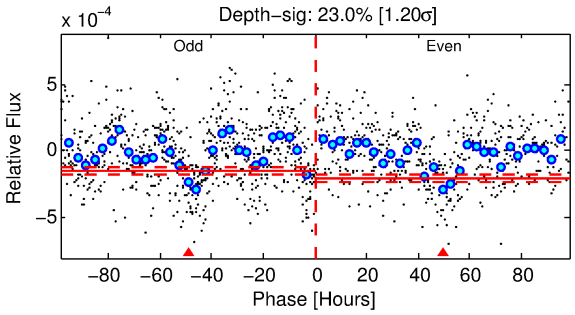


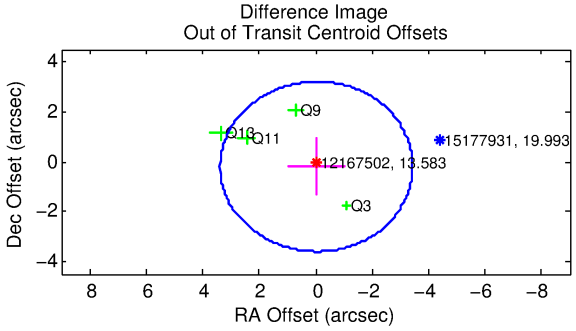












DV Fit Results:

Period = 193.99983 [0.00510] d
Epoch = 273.6573 [0.0186] BKJD
Rp/R* = 0.0128 [0.0038]
a/R* = 68.77 [120.40]
b = 0.66 [1.48]

Seff = 13.31 [5.32]
Teq = 487 [49] K
Rp = 2.45 [1.05] Re
a = 0.7509 [0.1903] AU

Ag = 4282.66 [3278.85] [1.31σ]
Teffp = 6092 [1063] K [5.27σ]

DV Diagnostic Results:

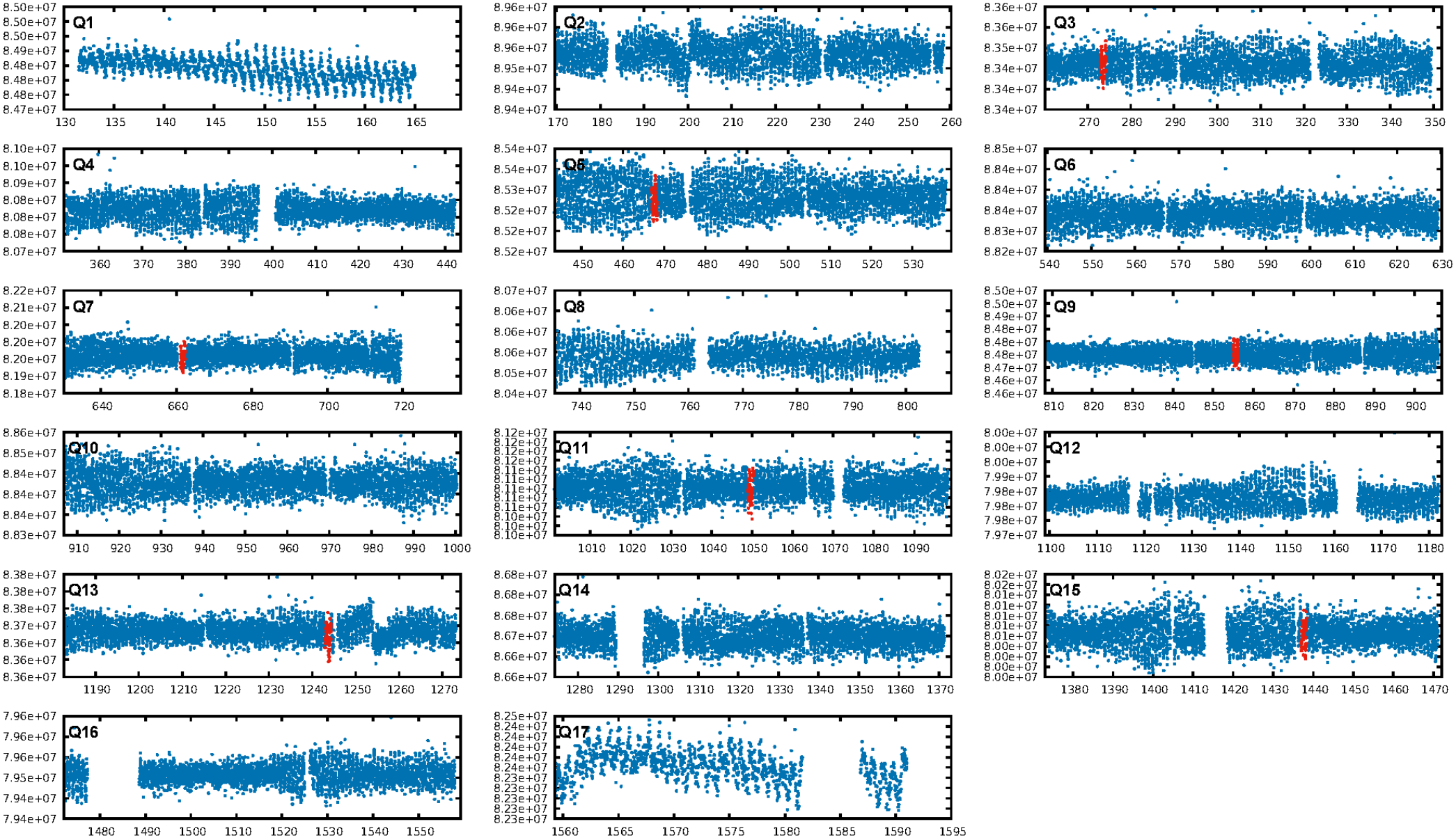
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 62.6%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 1.11e−13
RollingBand−fgt: 1.00 [7/7]
GhostDiagnostic−chr: 2.429

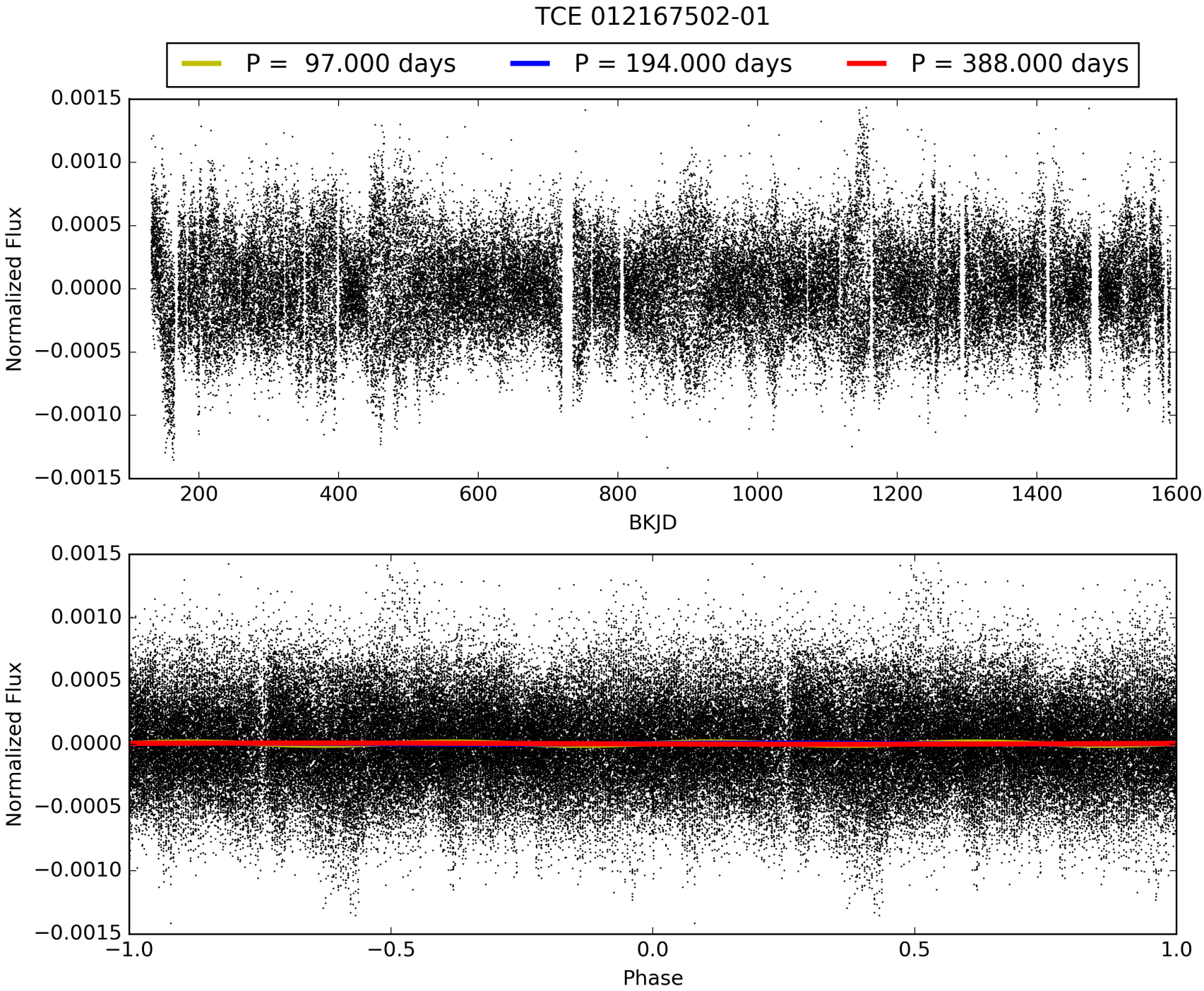
Centroid−sig: 30.0%
Centroid−so: 0.982 arcsec [0.78σ]
OotOffset−rm: 0.200 arcsec [0.18σ]
KicOffset−rm: 0.242 arcsec [0.21σ]
OotOffset−st: 0/2/0/2 [4]
KicOffset−st: 0/2/0/2 [4]
DiffImageQuality−fgm: 1.00 [4/4]
DiffImageOverlap−fno: 1.00 [5/5]

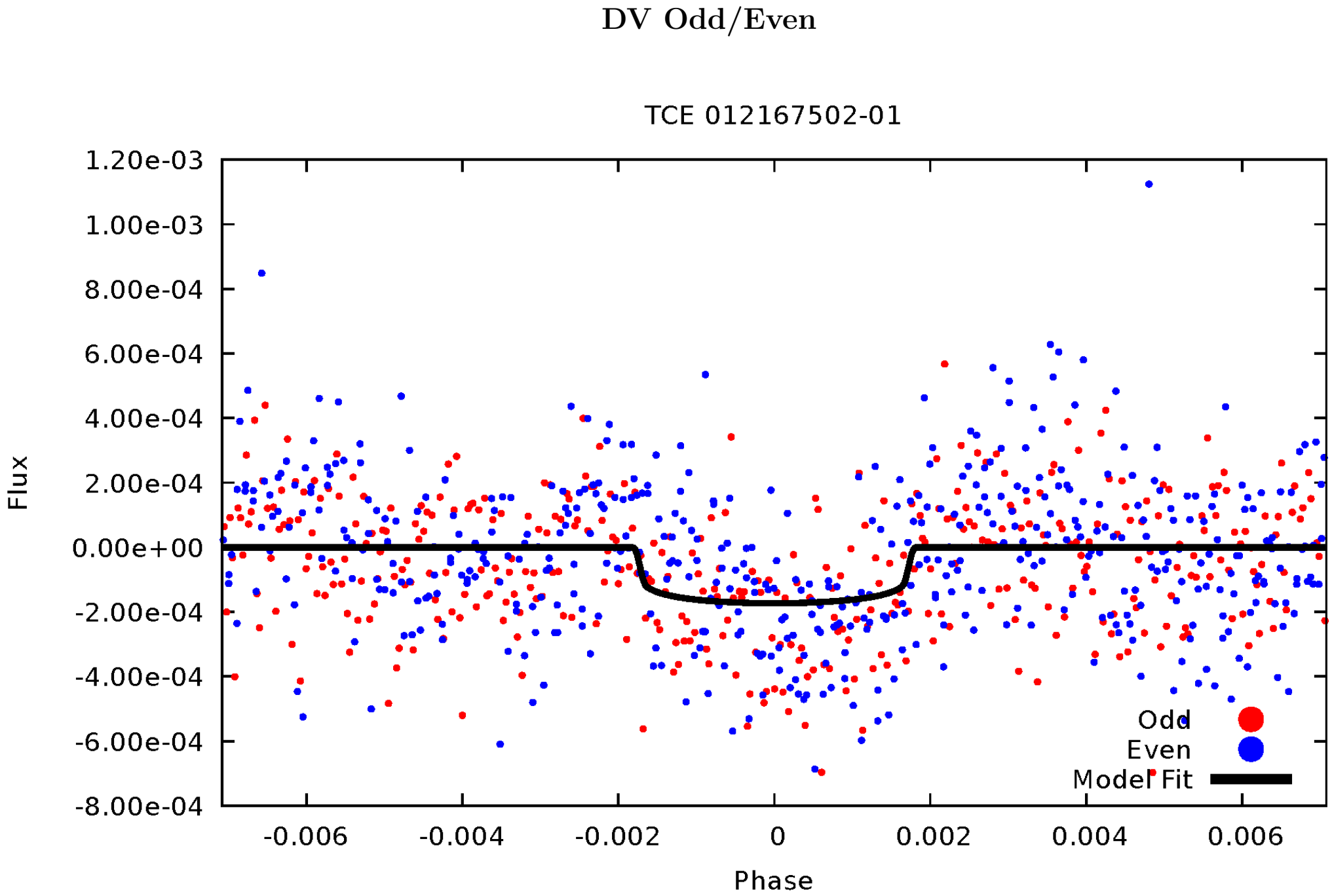
Software Revision: svn+ssh://murzim/repo/soc/branches/integ/ksop−2174@60968 −− Date Generated: 08−Feb−2016 03:23:26 Z

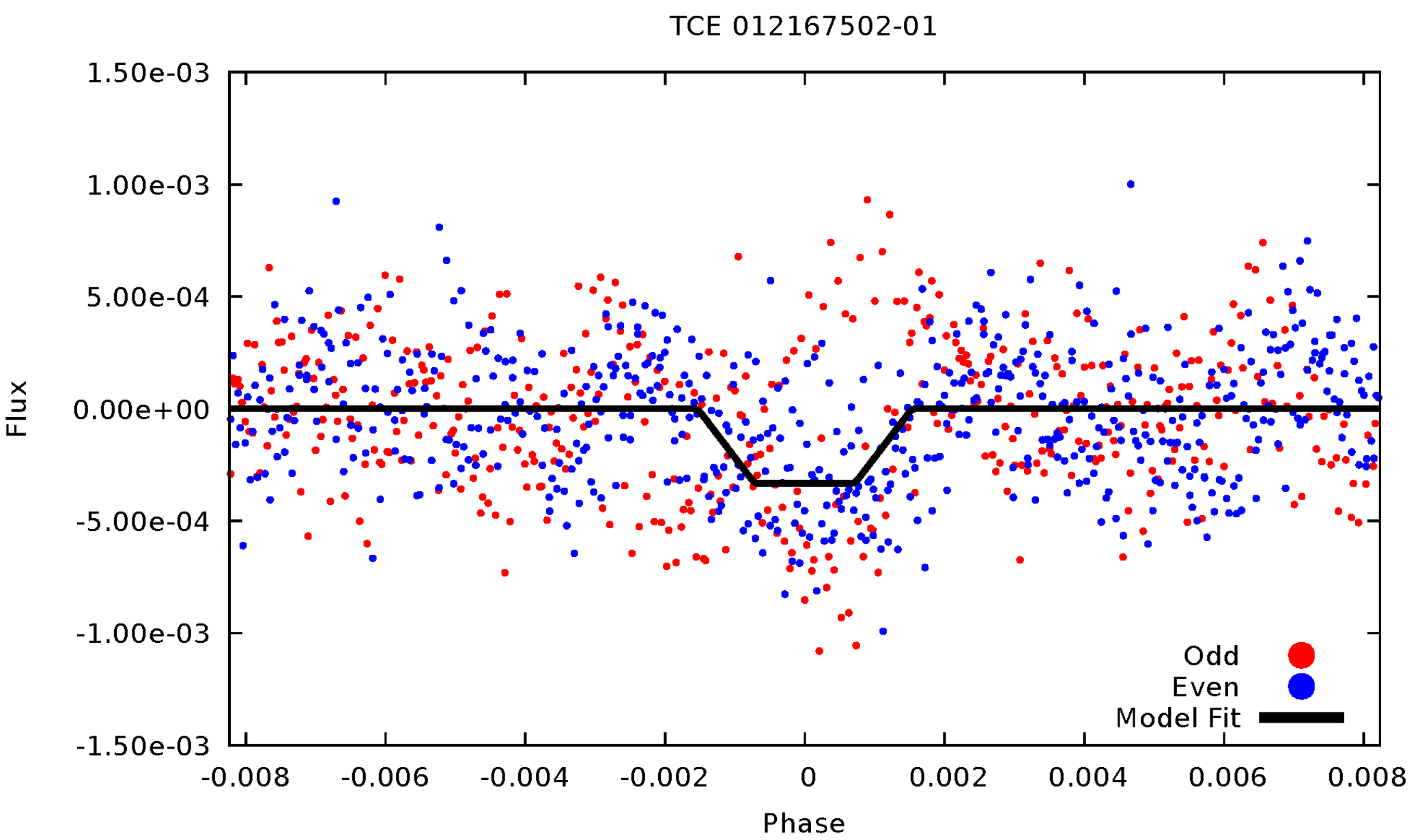
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 012167502-01, PDC Light Curves

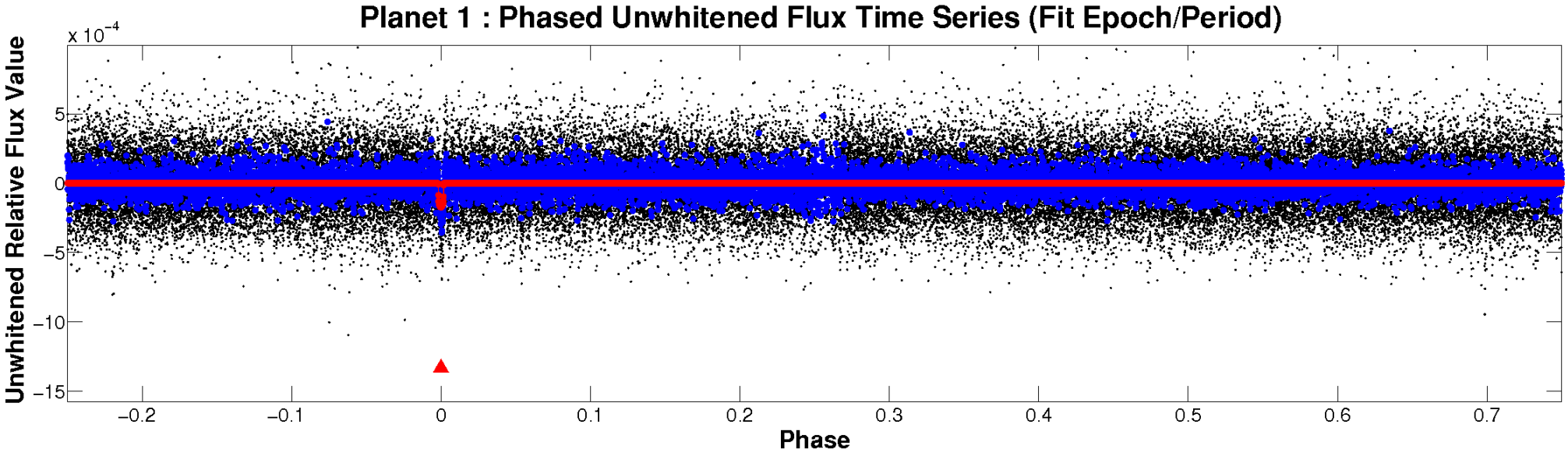


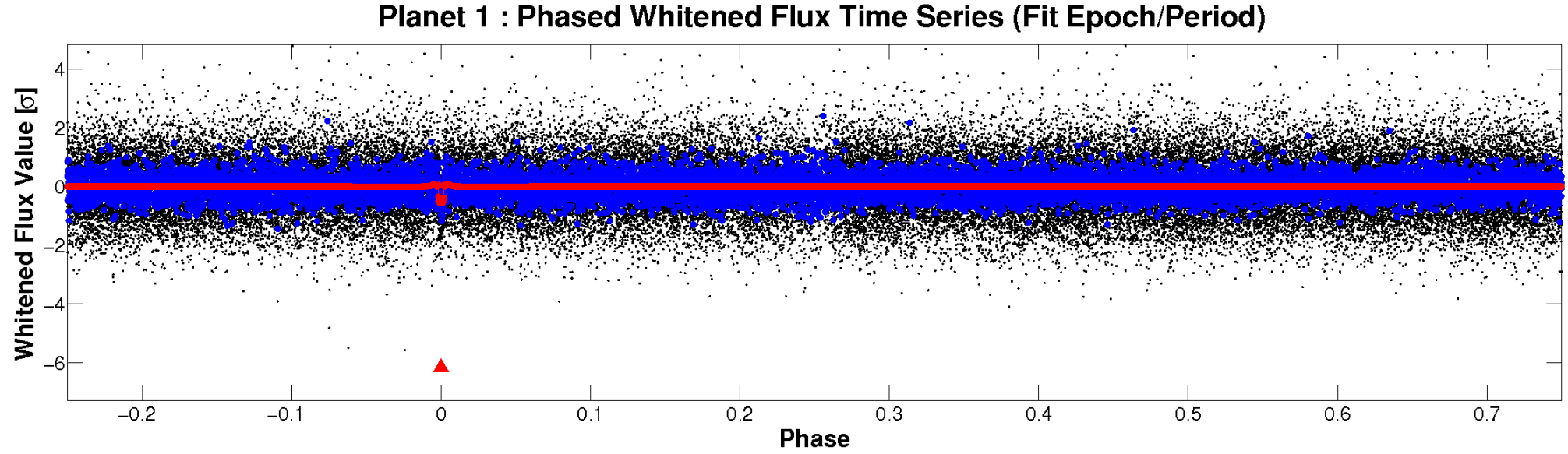

TCE 012167502-01
P = 97.000 days
P = 194.000 days
P = 388.000 days
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
0.0015
0.0010
0.0005
0.0000
−0.0005
−0.0010
−0.0015
−1.0
−0.5
0.0
0.5
1.0
Phase


DV Odd/Even
TCE 012167502-01
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
-0.006
-0.004
-0.002
0
0.002
0.004
0.006
Phase
Odd
Even
Model Fit


ALT Odd/Even
TCE 012167502-01
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.008
-0.006
-0.004
-0.002
0
0.002
0.004
0.006
0.008
Phase
Odd
Even
Model Fit

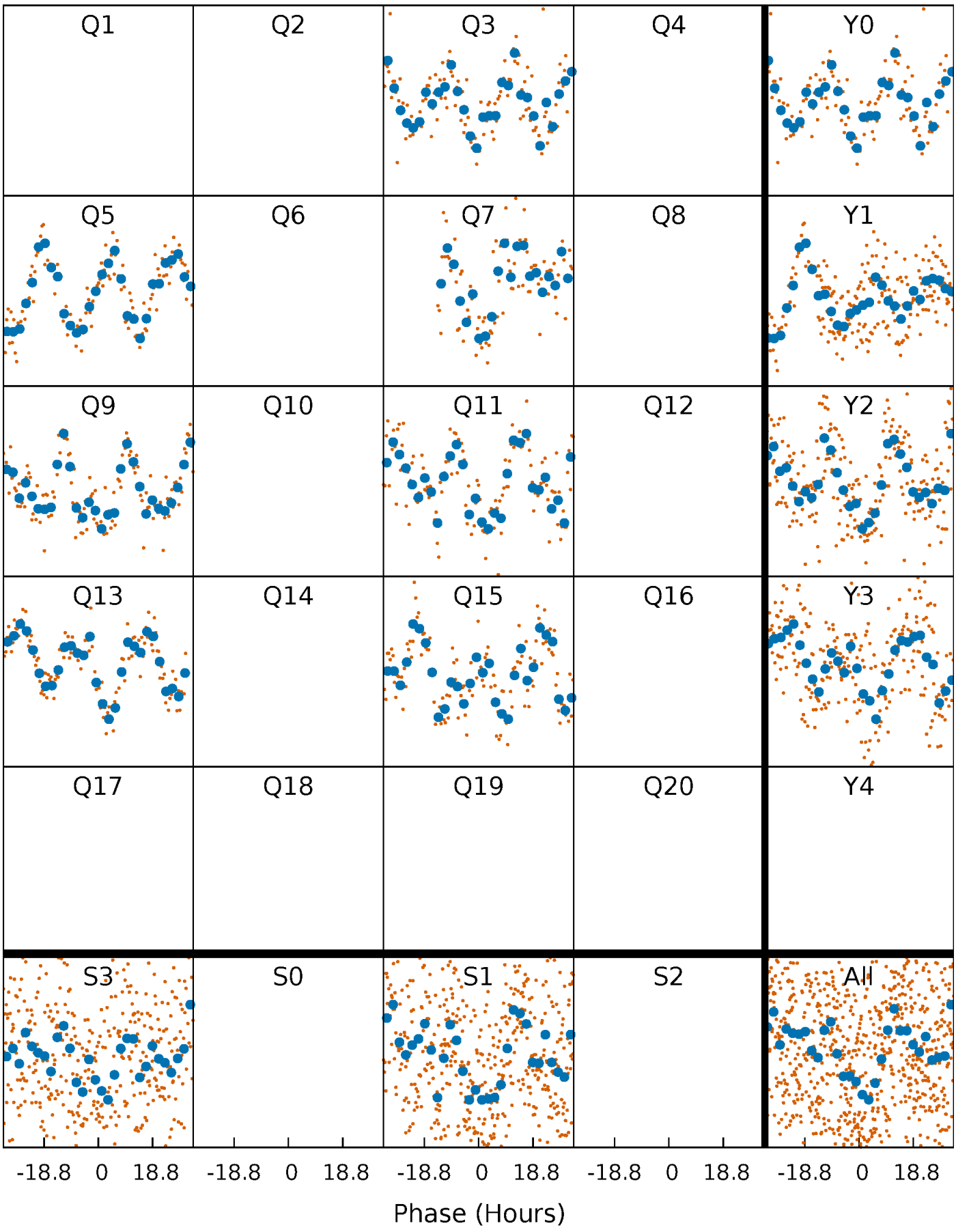
Non-Whitened Vs. Whitened Light Curve





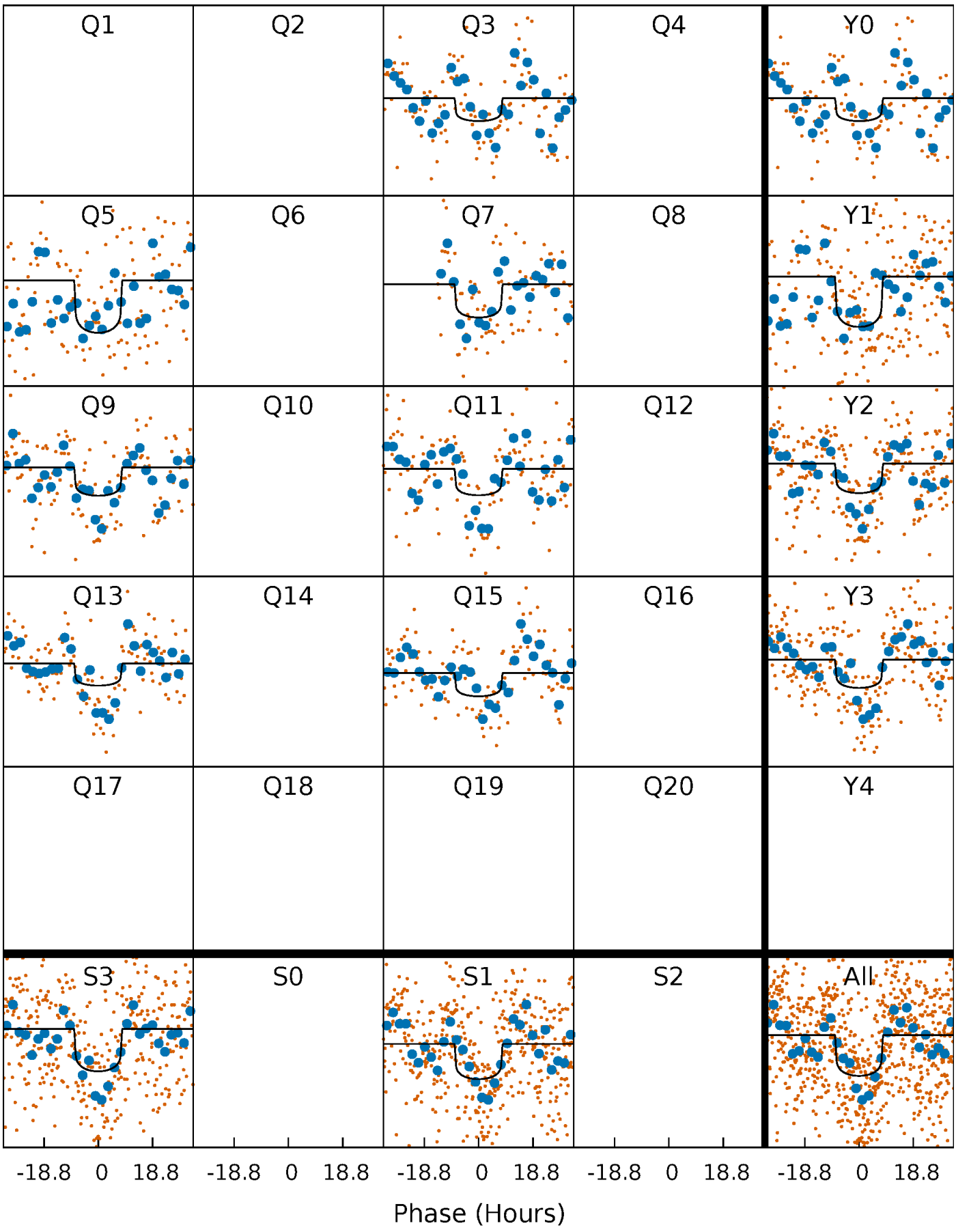
PDC Quarter-Phased Transit Curves

TCE 012167502-01 P=193.999826 Days T_0=273.657283 (BKJD)



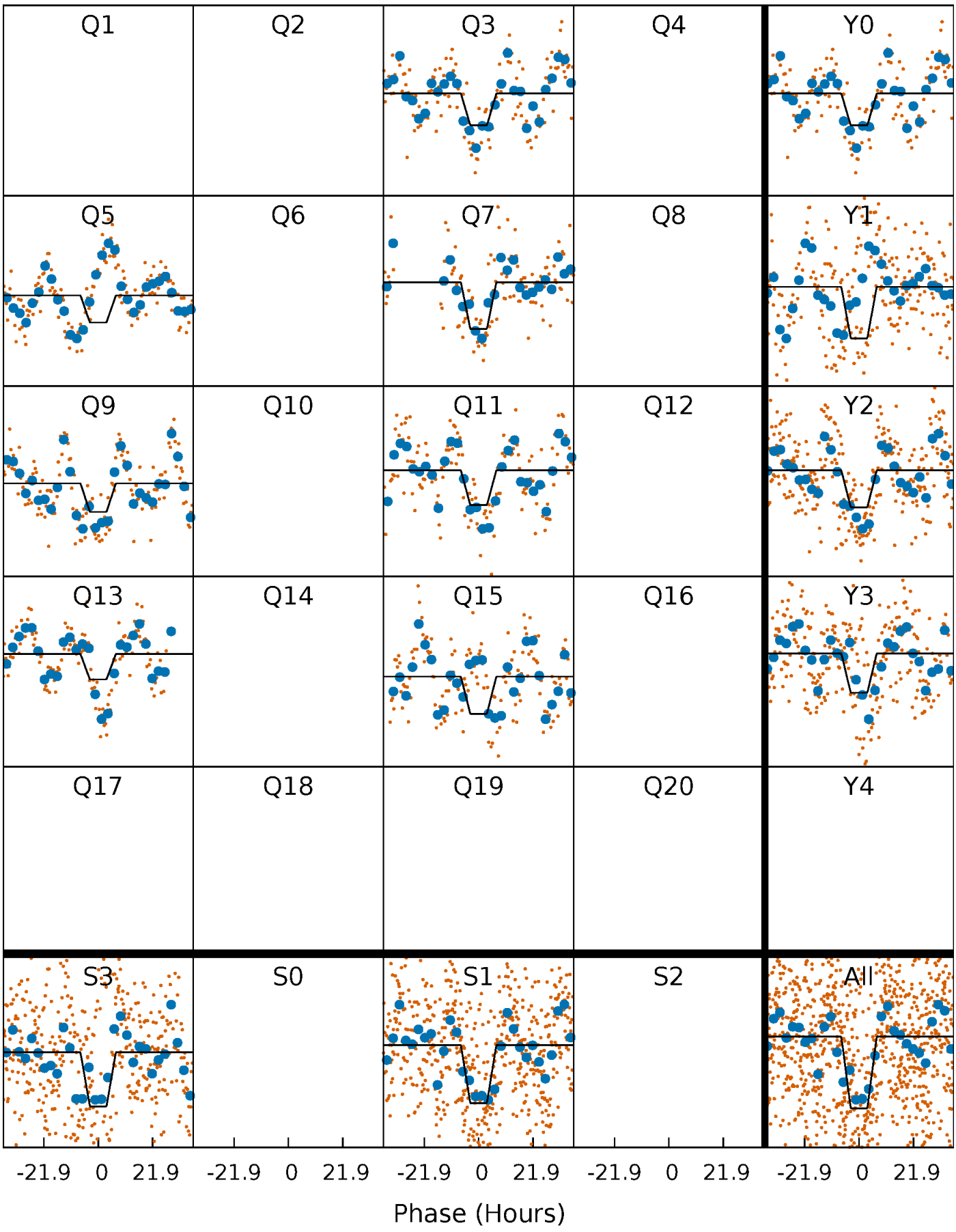
DV Quarter-Phased Transit Curves

TCE 012167502-01 P=193.999826 Days T_0=273.657283 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

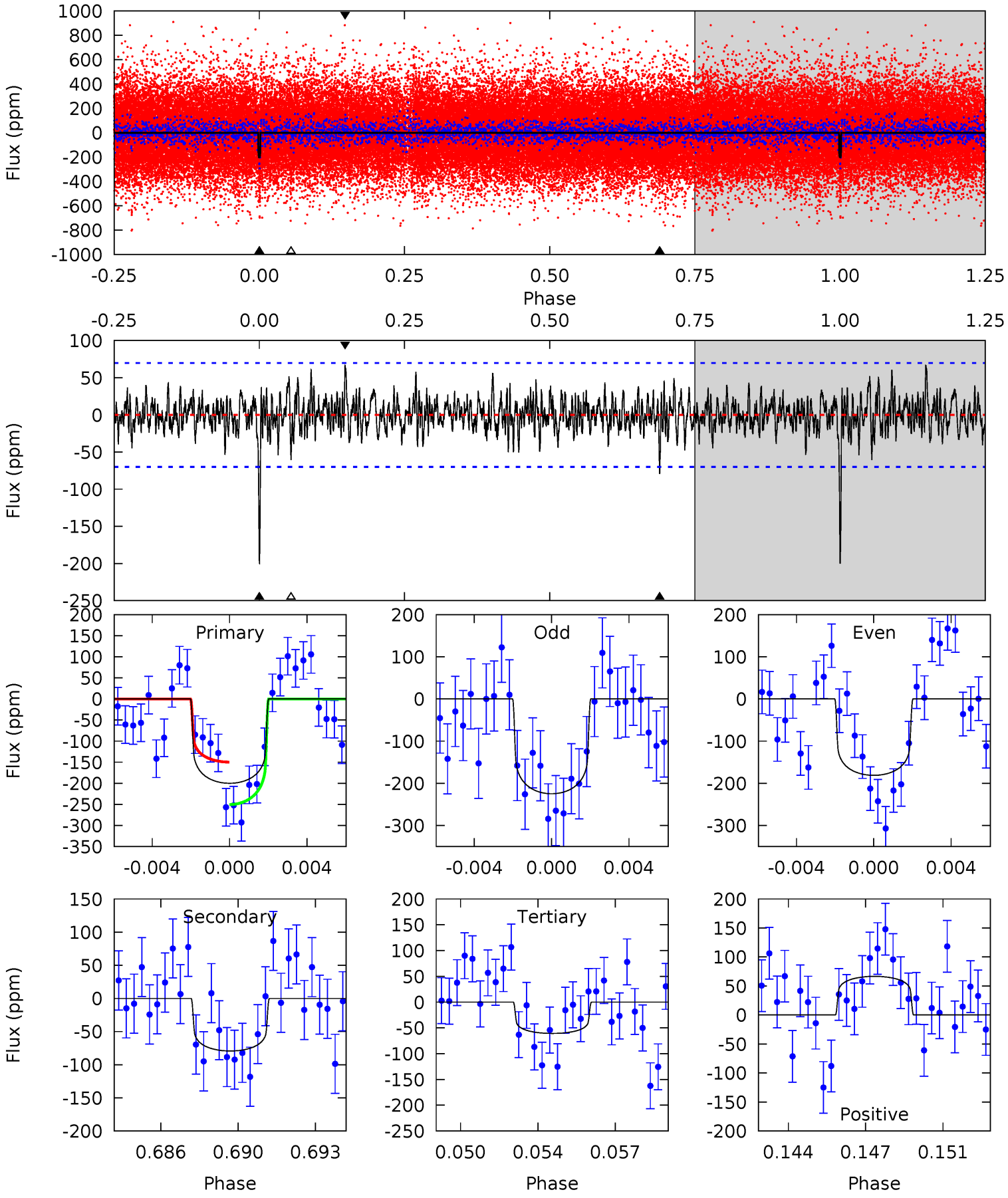
TCE 012167502-01 P=194.009841 Days T_0=273.684117 (BKJD)



DV Model-Shift Uniqueness Test

012167502-01, P = 193.999826 Days, E = 79.657457 Days

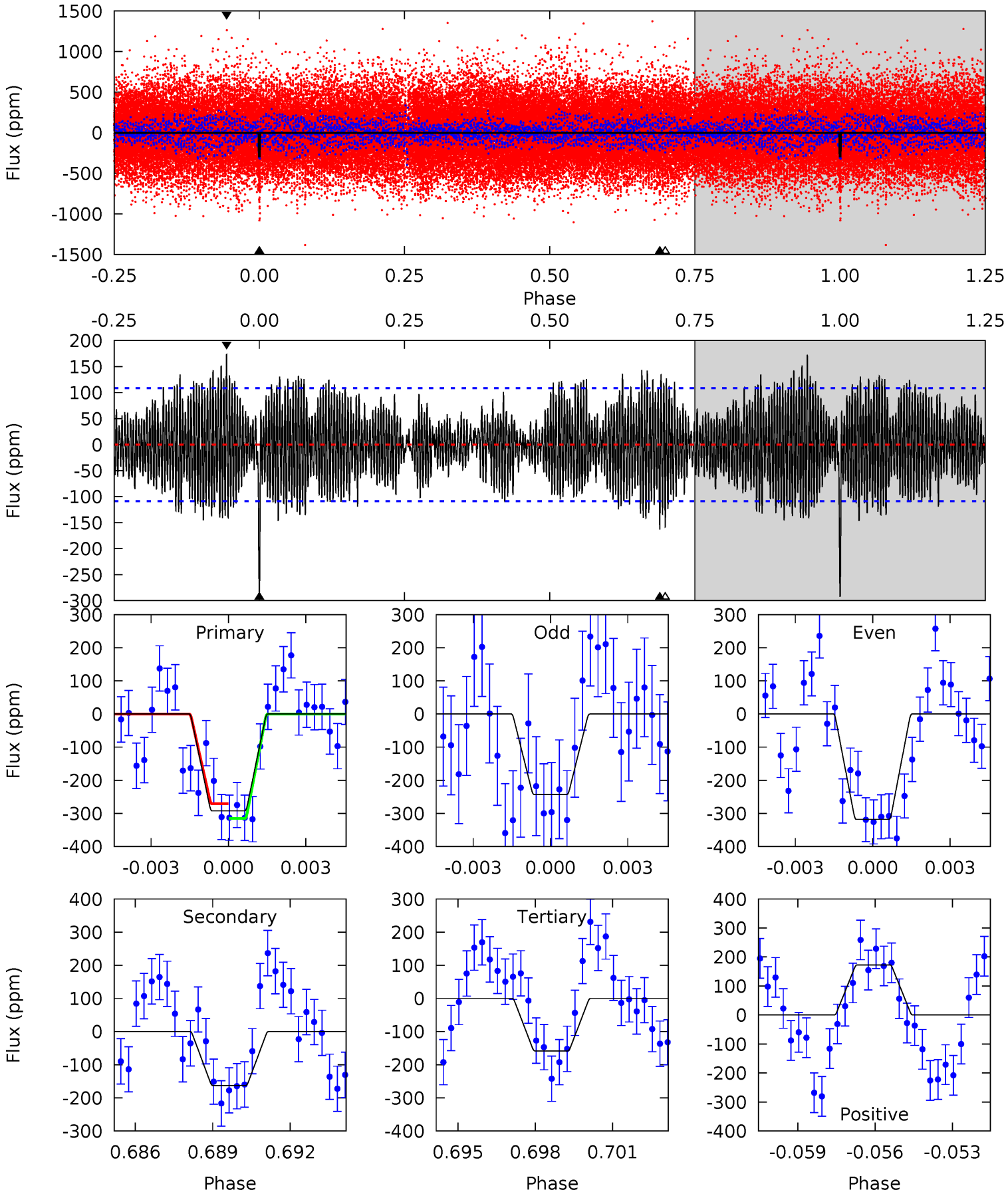
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	5.92	4.53	4.97	5.22	2.91	1.35	10.4	9.96	1.39	0.95	1.61	1.25	0.25	3.76



Alt Model-Shift Uniqueness Test

012167502-01, P = 194.009841 Days, E = 79.674276 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	7.86	7.64	8.34	5.24	2.95	2.94	6.47	5.77	0.22	-0.48	1.79	0.60	0.37	1.06



Stellar Parameters For KIC 012167502

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7232^{+201}_{-316}	$4.128^{+0.128}_{-0.192}$	$-0.080^{+0.250}_{-0.350}$	$1.750^{+0.541}_{-0.361}$	$1.501^{+0.221}_{-0.243}$	$0.394^{+0.296}_{-0.196}$
	+3%/-4%	+3%/-5%	+312%/-438%	+31%/-21%	+15%/-16%	+75%/-50%
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 012167502-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-79±13	$2.51^{+0.82}_{-0.77}$	685^{+52}_{-44}	5913^{+1248}_{-683}	3933^{+4016}_{-1857}
Alt.	-163±21	$3.56^{+1.02}_{-0.87}$	686^{+52}_{-46}	5930^{+862}_{-539}	3916^{+2938}_{-1549}

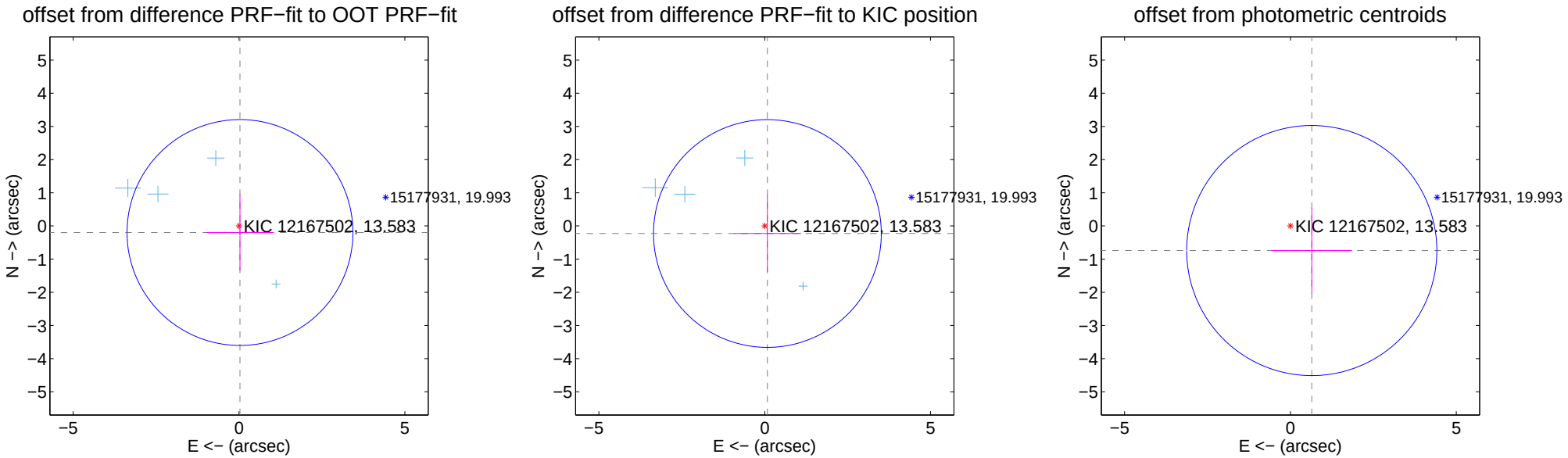
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

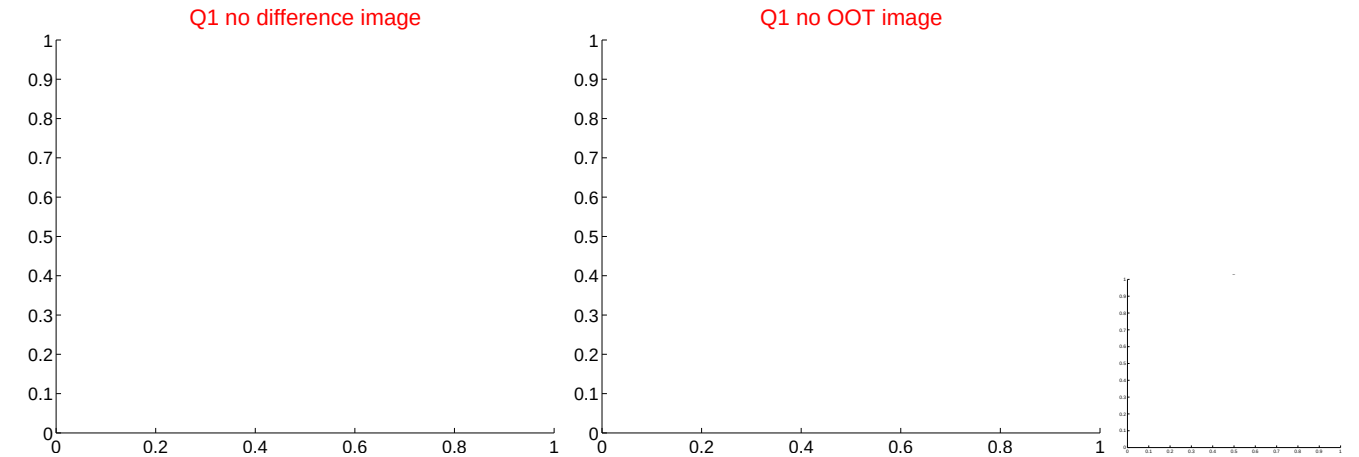
Supplemental centroid analysis for 012167502-01. Kepler magnitude: 13.58. Transit SNR 8.00
There are 4 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

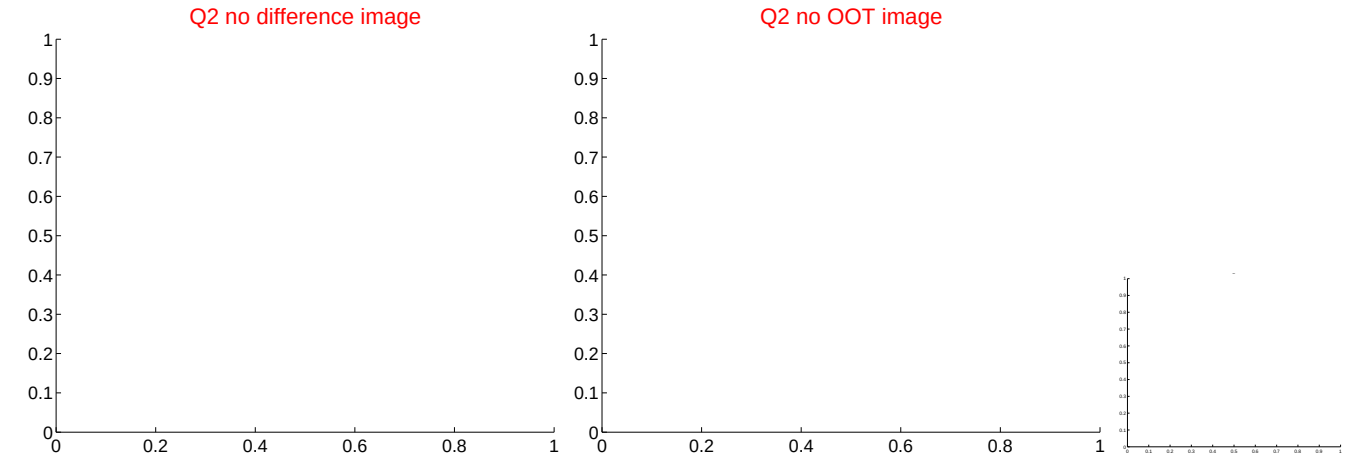
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.200 ± 1.135	0.18	-0.029 ± 1.021	-0.198 ± 1.137
PRF-fit source offset from KIC position	0.242 ± 1.144	0.21	-0.081 ± 1.014	-0.228 ± 1.160
photometric centroid source offset	0.98 ± 1.26	0.78	-0.64 ± 1.21	-0.74 ± 1.29

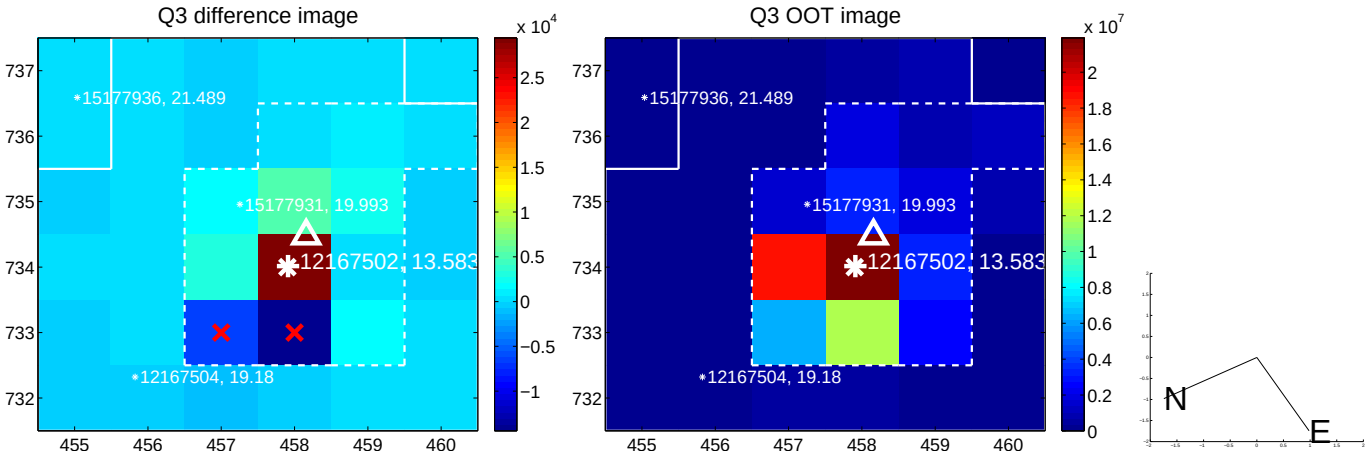


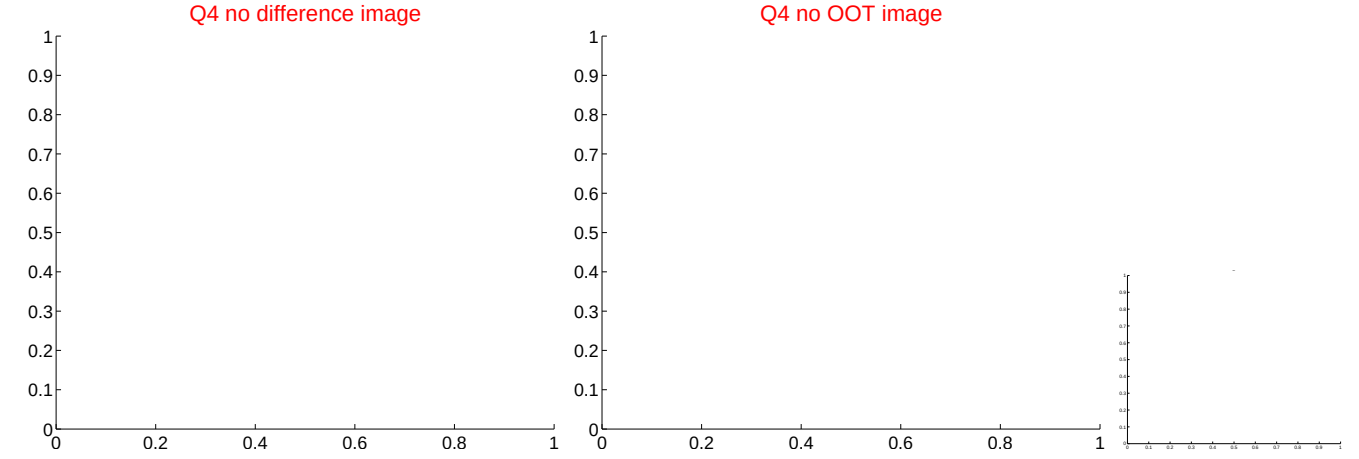
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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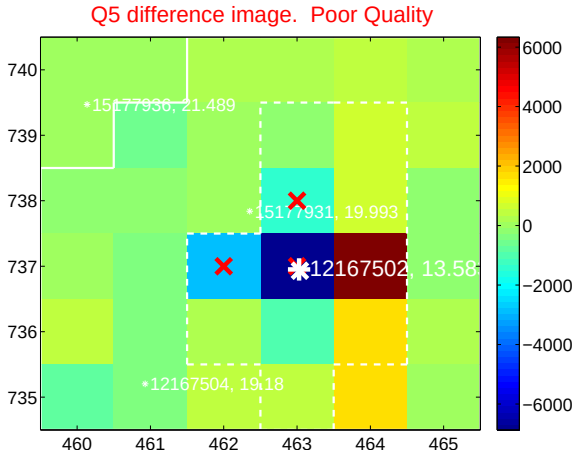
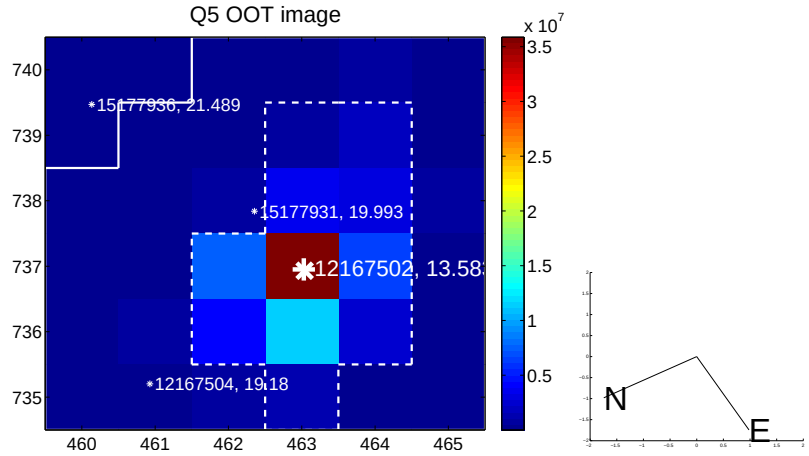
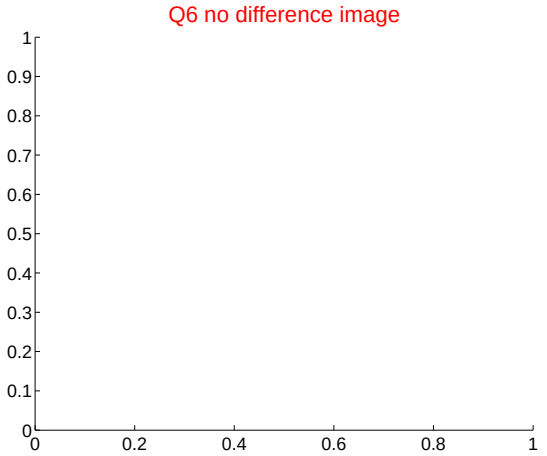
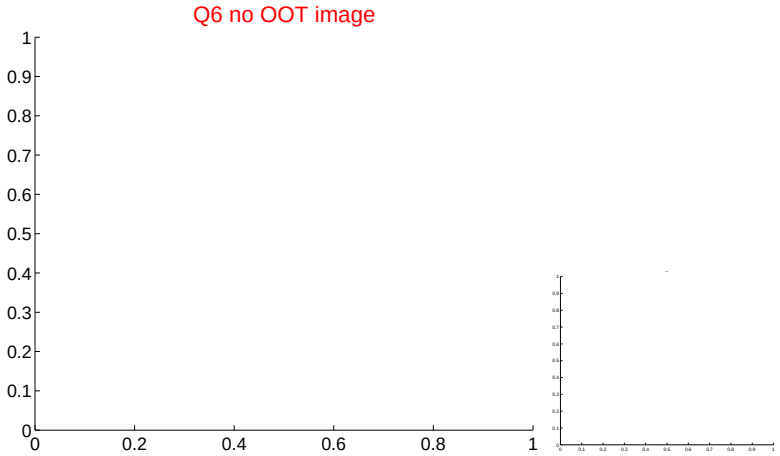
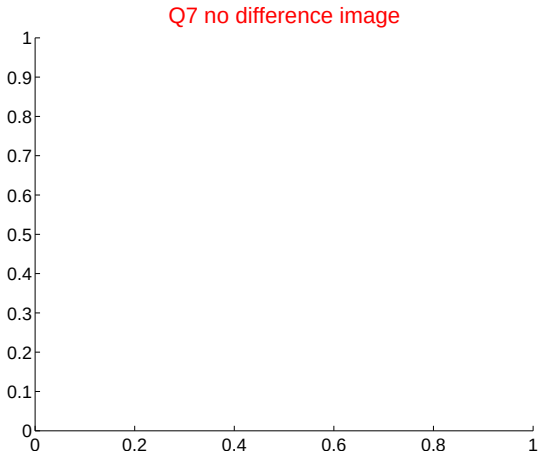
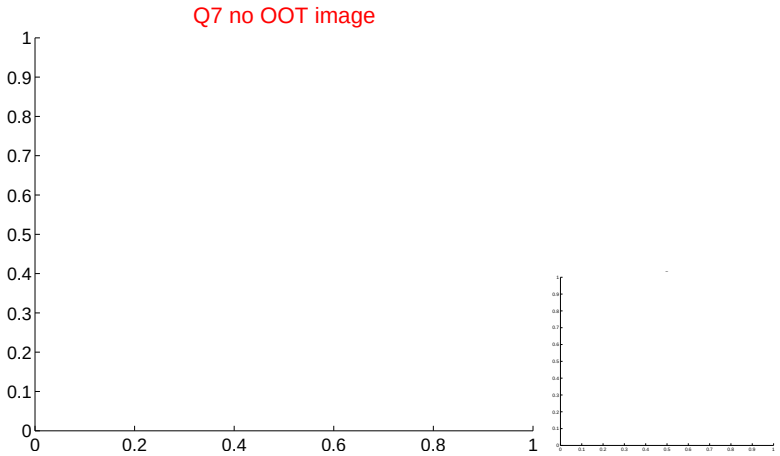


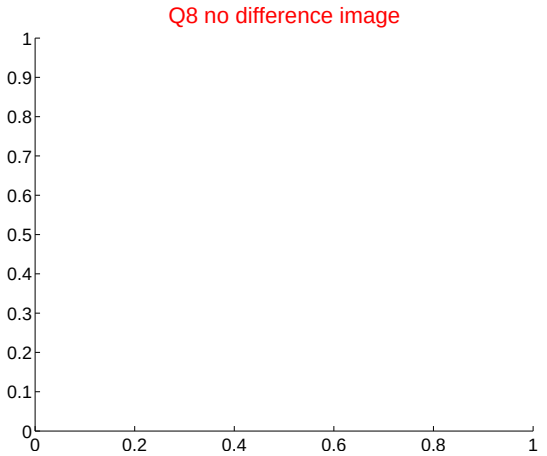


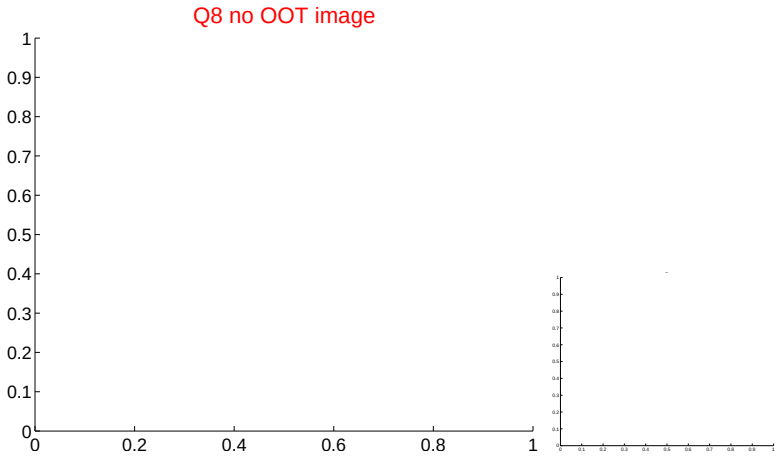




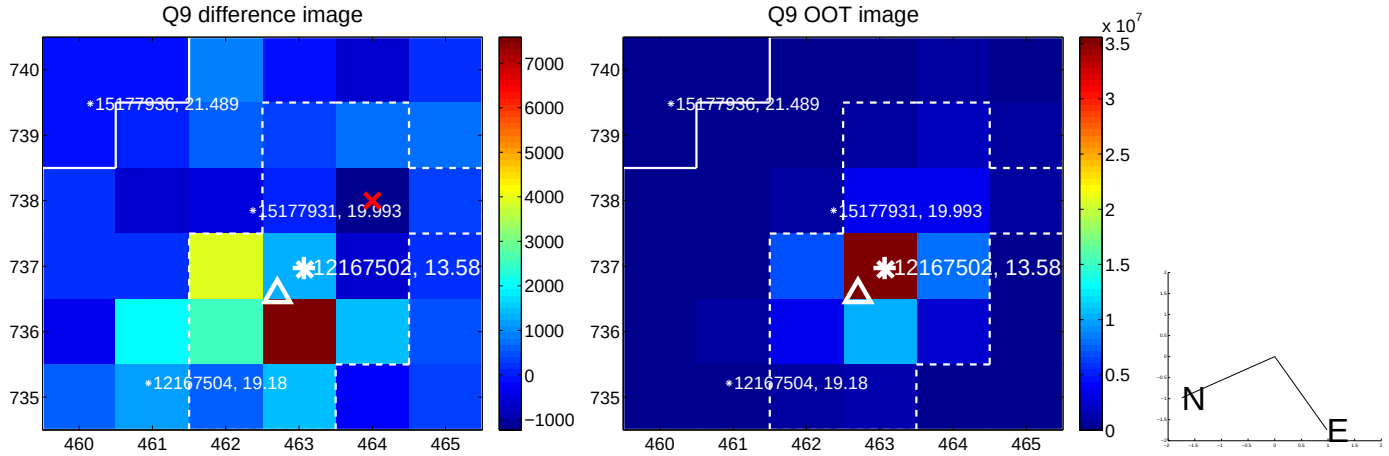


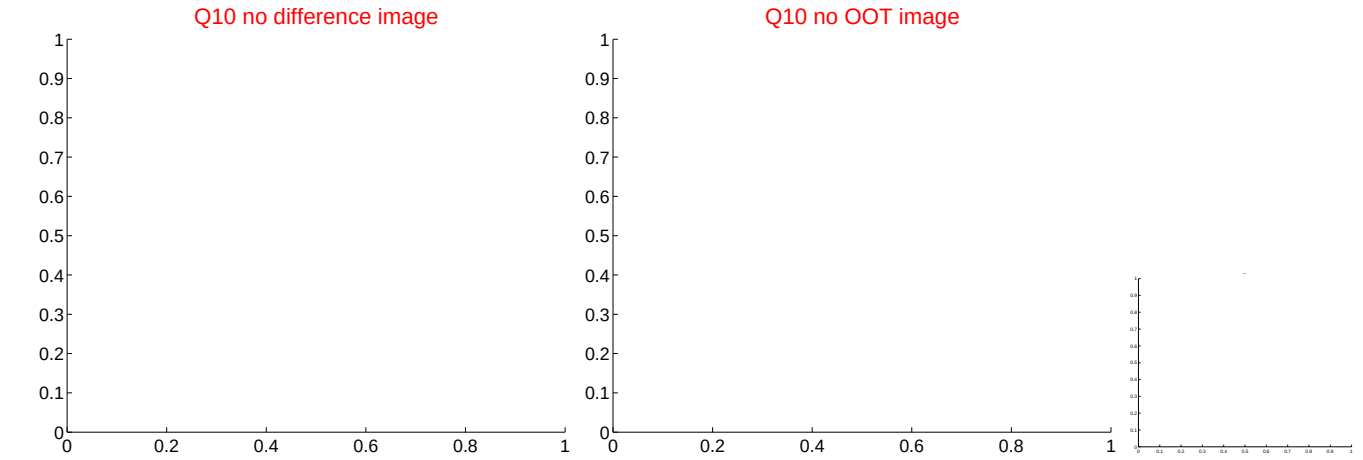


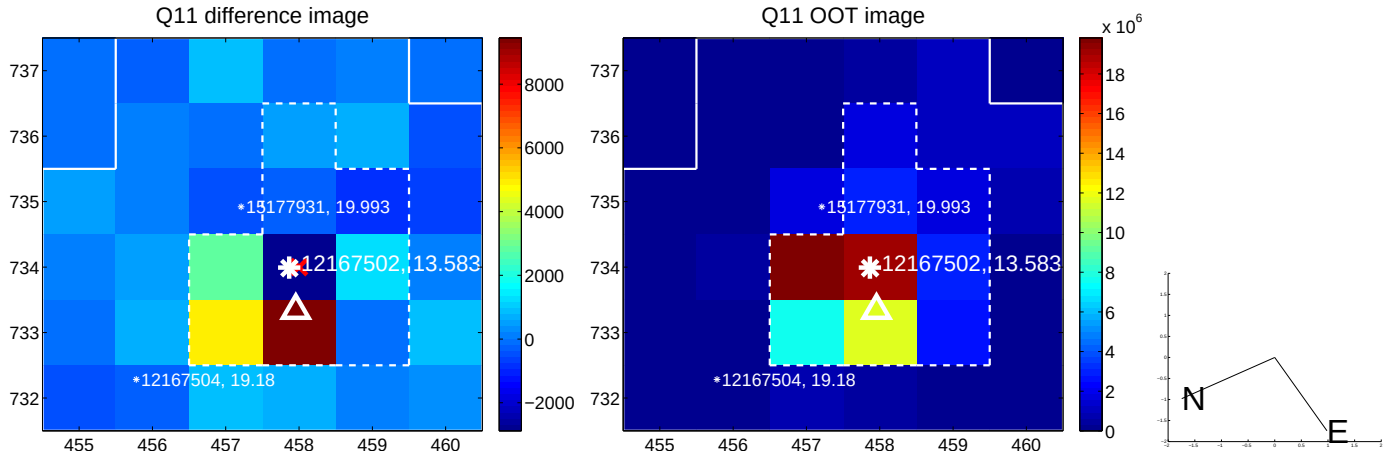


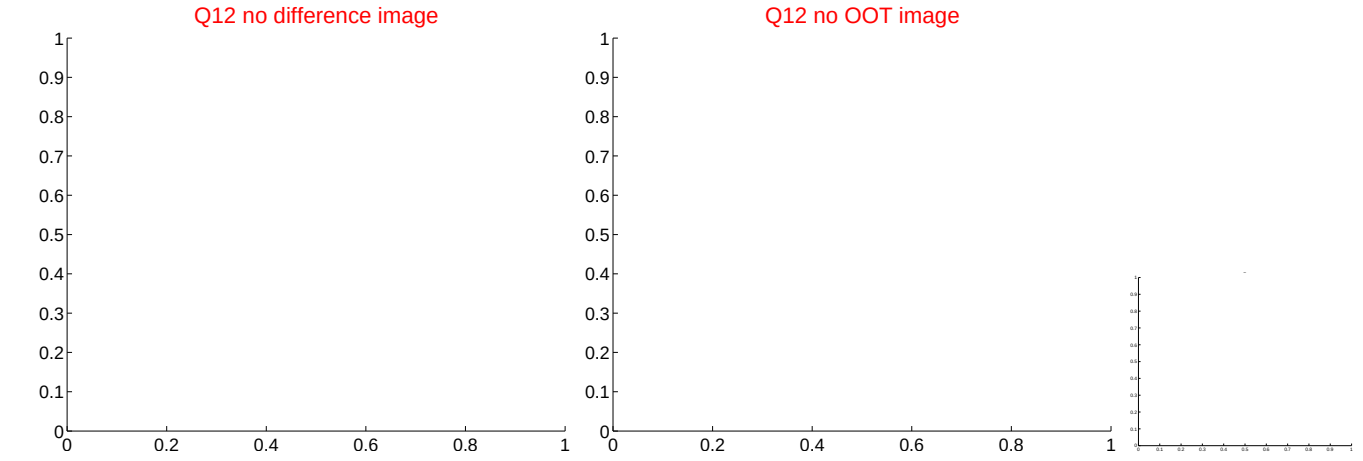


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.









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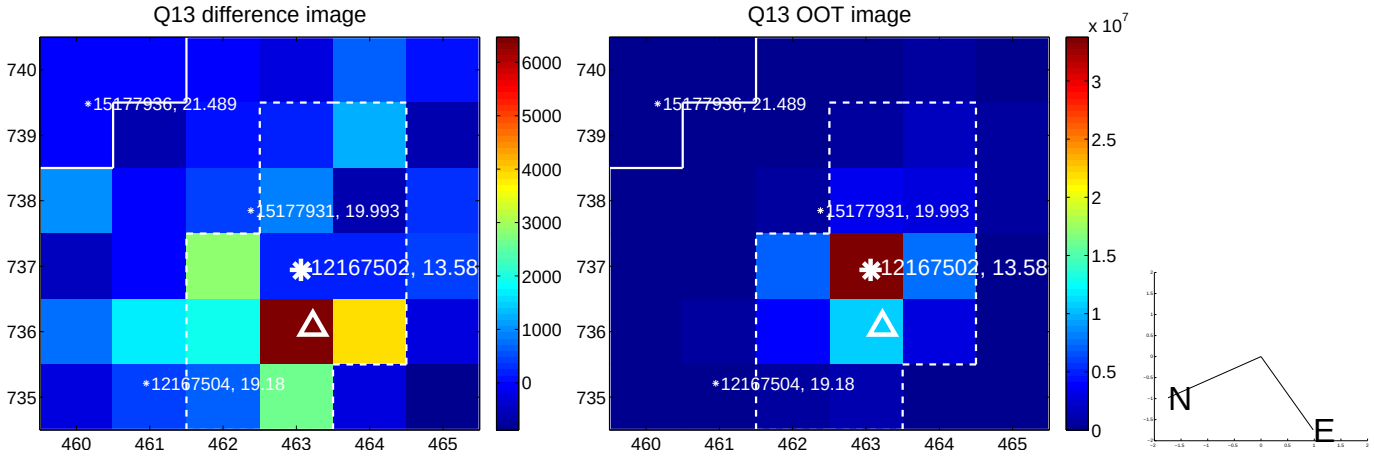
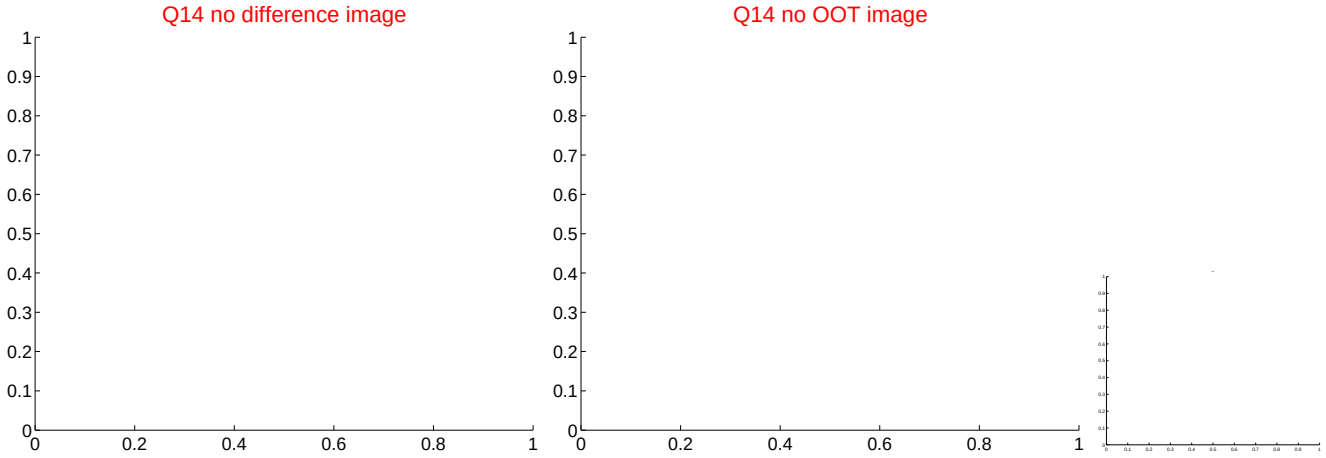
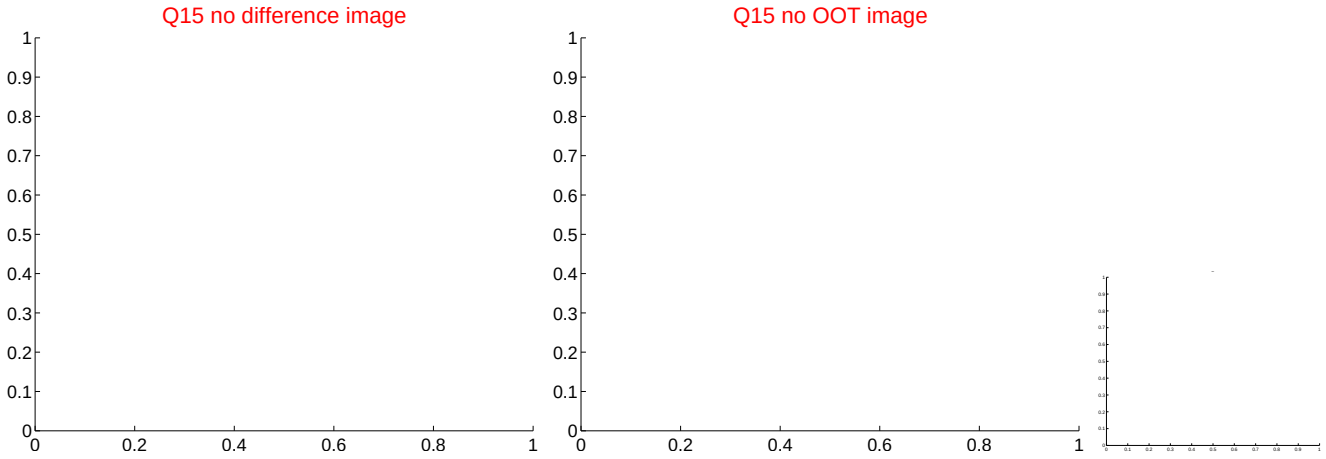
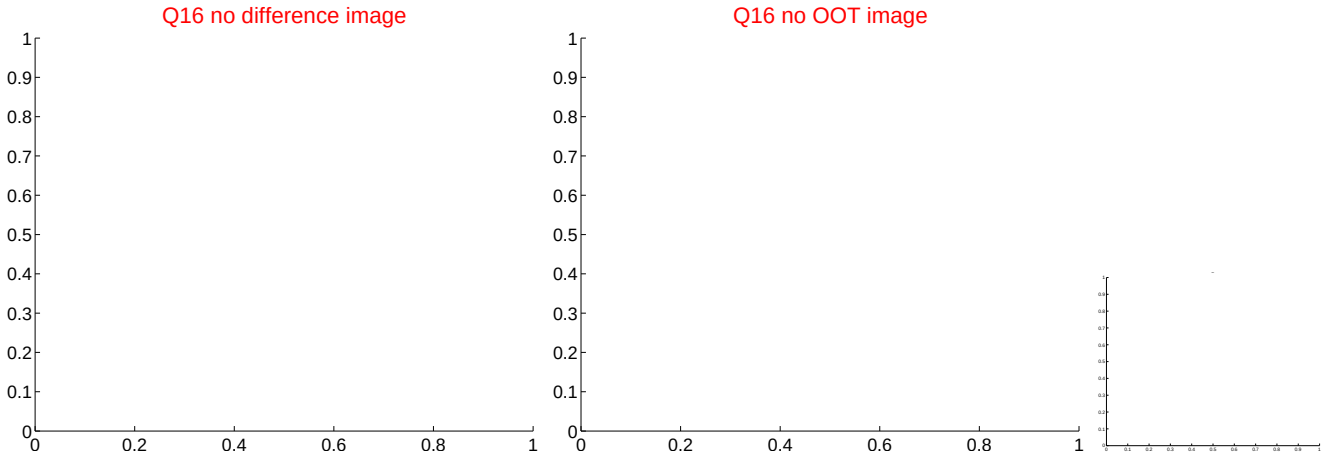
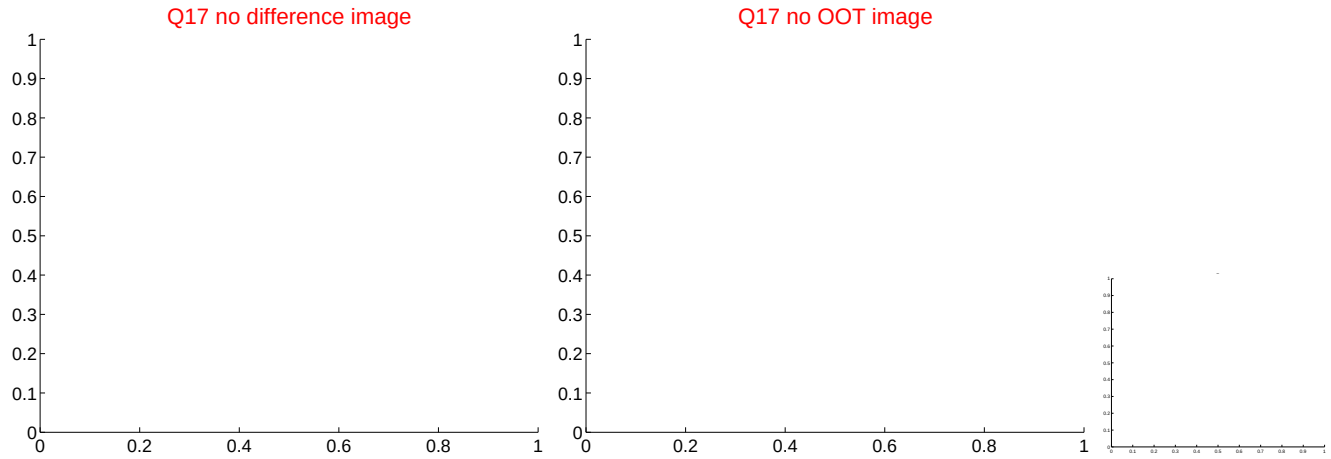


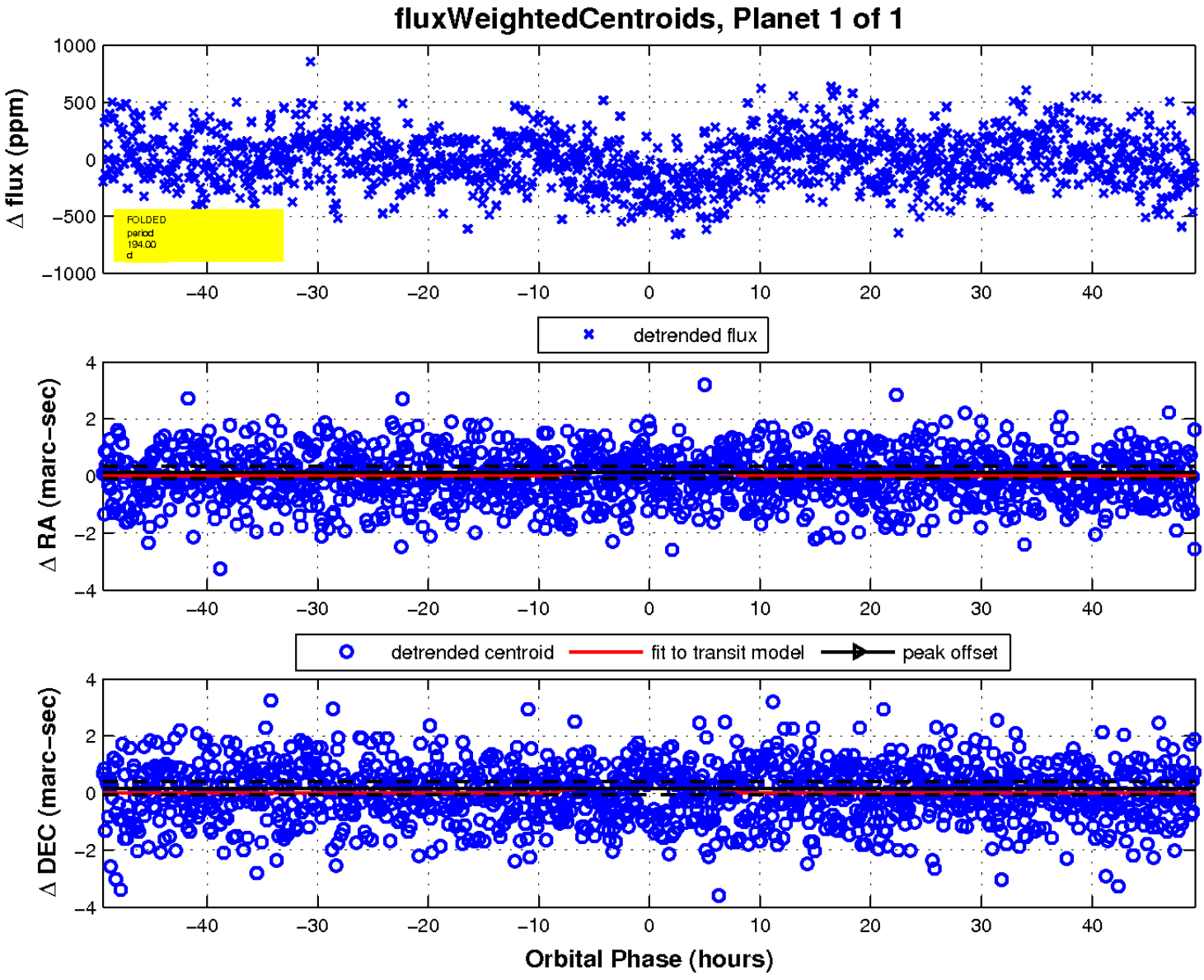






white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image