

KIC 004165903

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})
004165903-01	OBS	No	2.465137	133.975713	125.3	7.906	10.1	10.2	1.09	6604	2.42	1467.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004165903-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

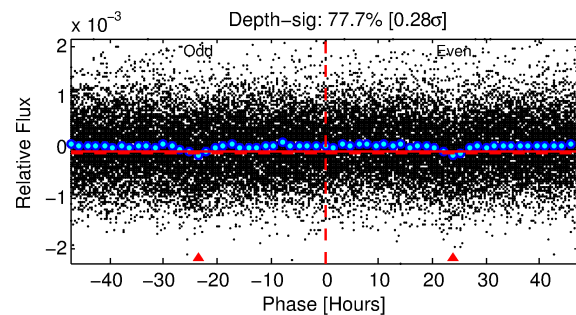
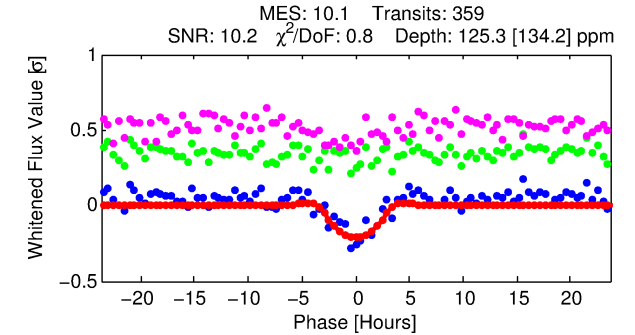
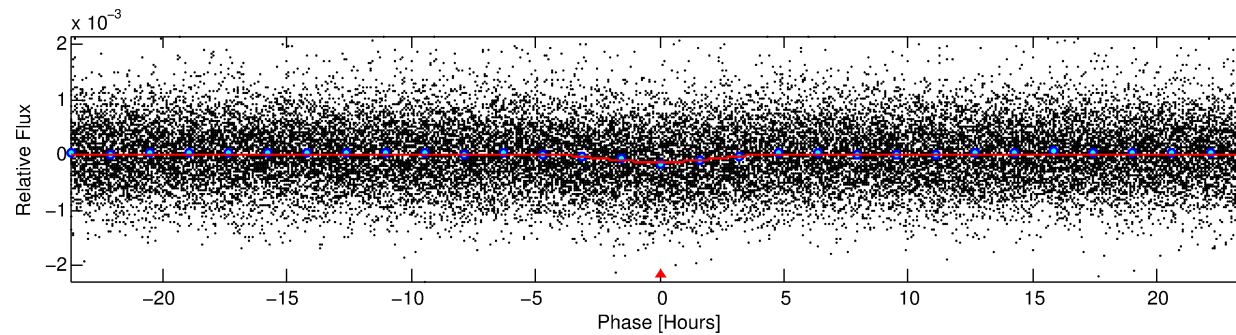
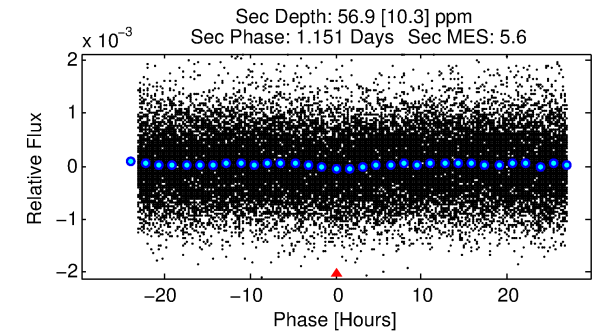
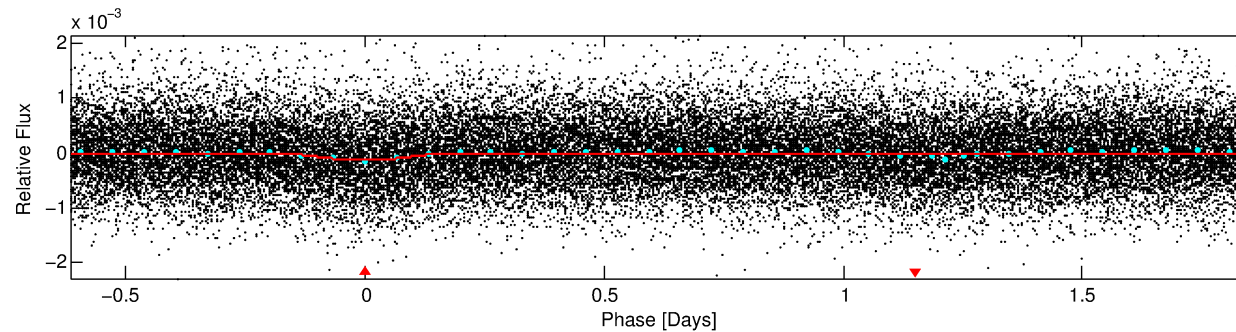
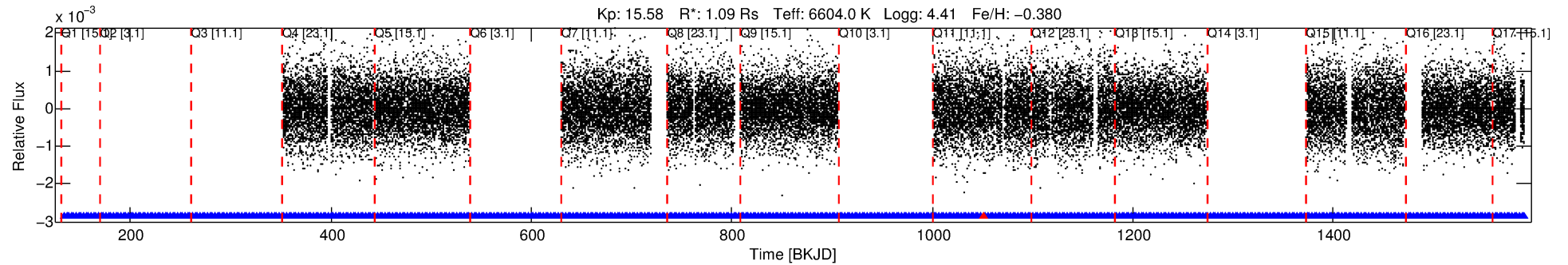
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004165903-01

No Significant Match Found

DV One-Page Summary

KIC: 4165903 Candidate: 1 of 1 Period: 2.465 d



DV Fit Results:

Period = 2.46514 [0.00006] d
Epoch = 133.9757 [0.0196] BKJD
Rp/R* = 0.0204 [0.0720]
a/R* = 1.12 [0.12]
b = 1.00 [0.09]
Seff = 1467.19 [525.32]
Teq = 1578 [141] K
Rp = 2.42 [8.57] Re
a = 0.0370 [0.0083] AU
Ag = 7.34 [51.88] [0.12σ]
Teffp = 4016 [7093] K [0.34σ]

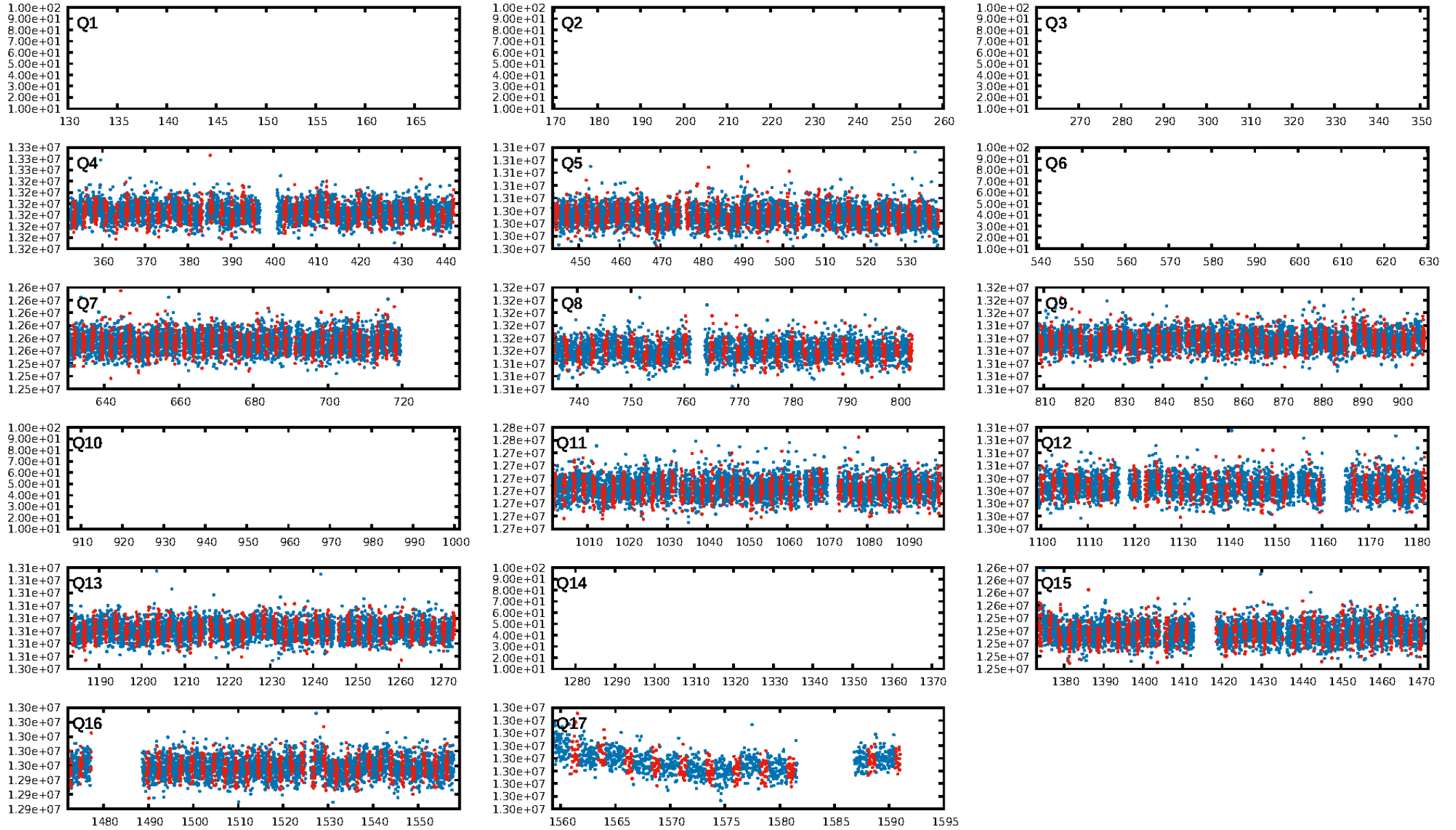
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.19e-22
RollingBand-fgt: 1.00 [347/348]
GhostDiagnostic-chr: -1.071
Centroid-sig: 0.0%
Centroid-so: 20.245 arcsec [16.85σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [11/11]

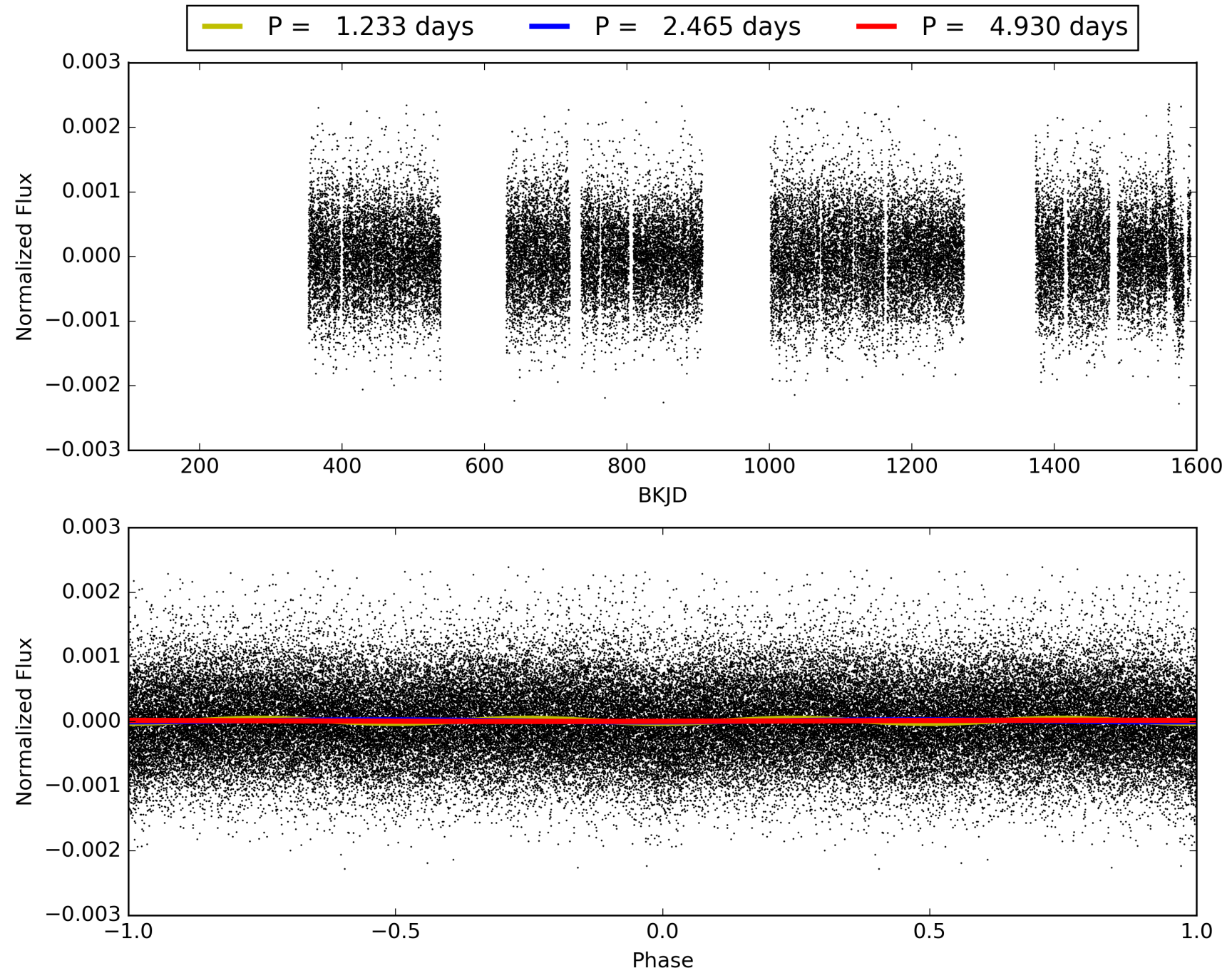
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:34:55 Z

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

TCE 004165903-01, PDC Light Curves

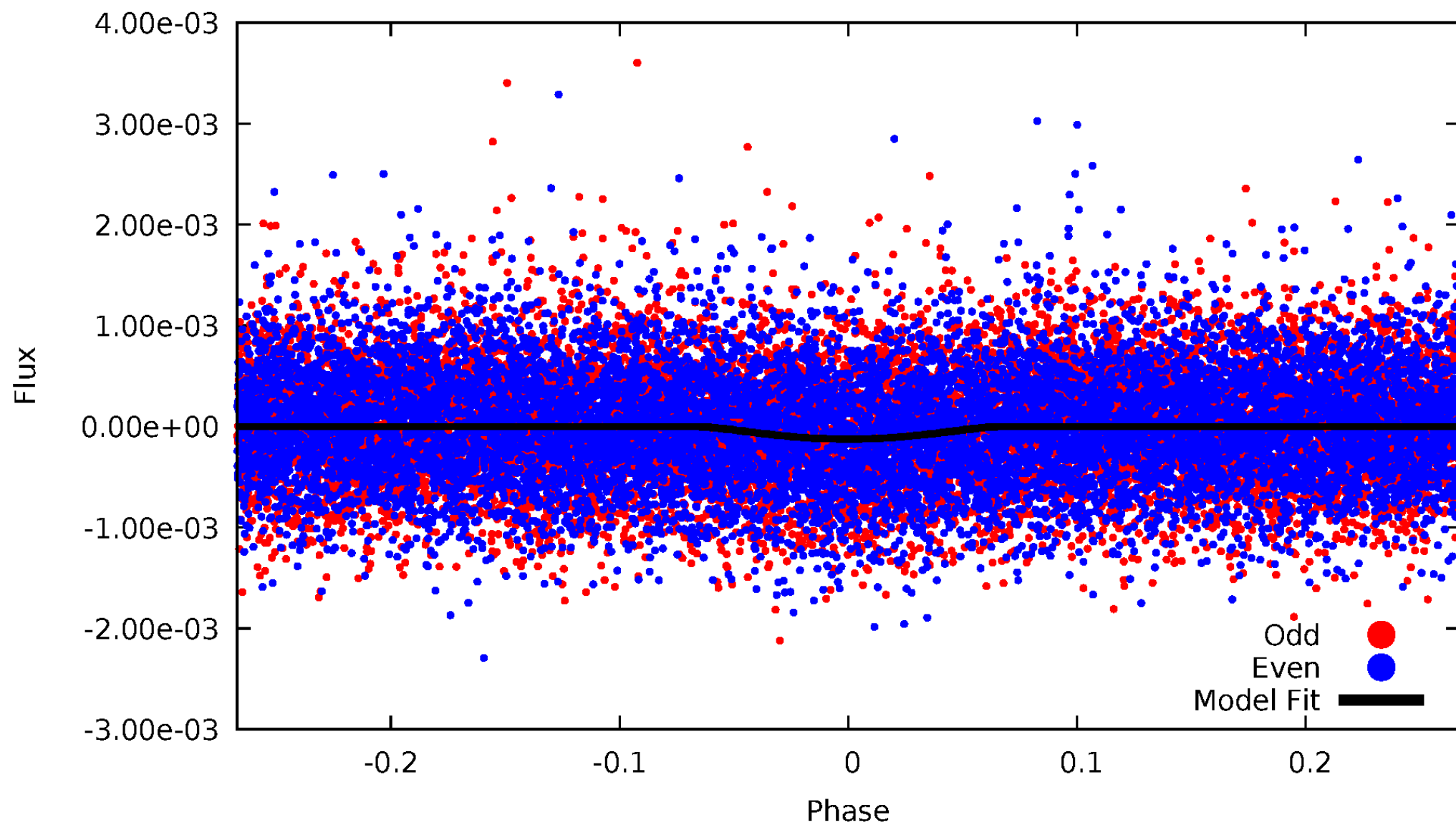


TCE 004165903-01



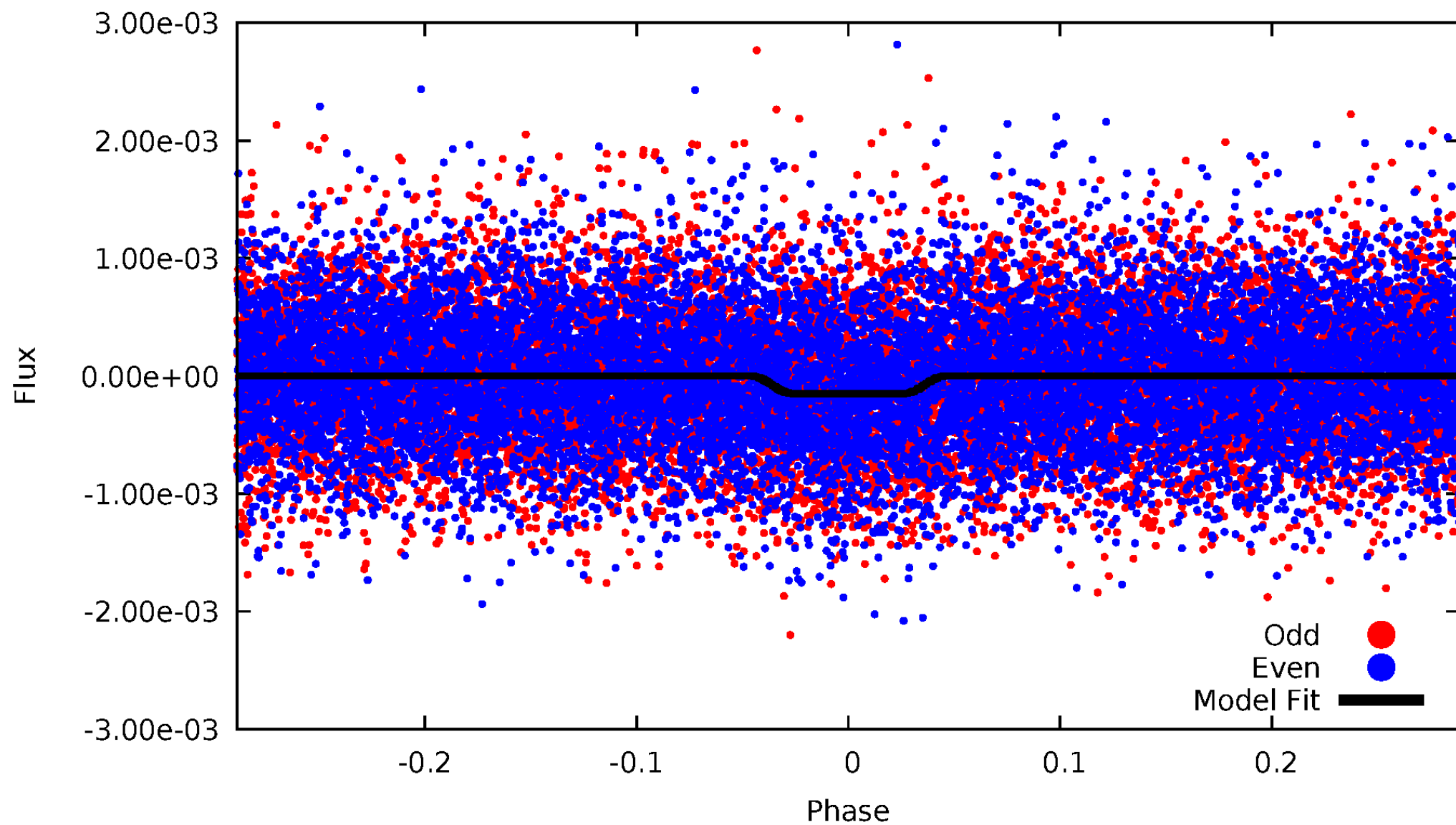
DV Odd/Even

TCE 004165903-01



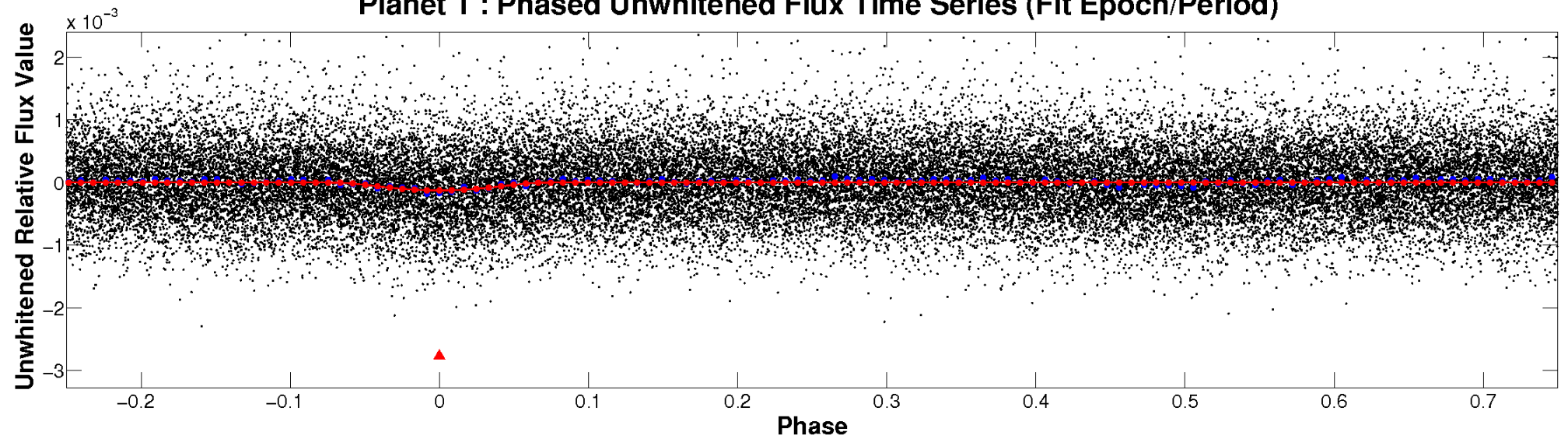
ALT Odd/Even

TCE 004165903-01

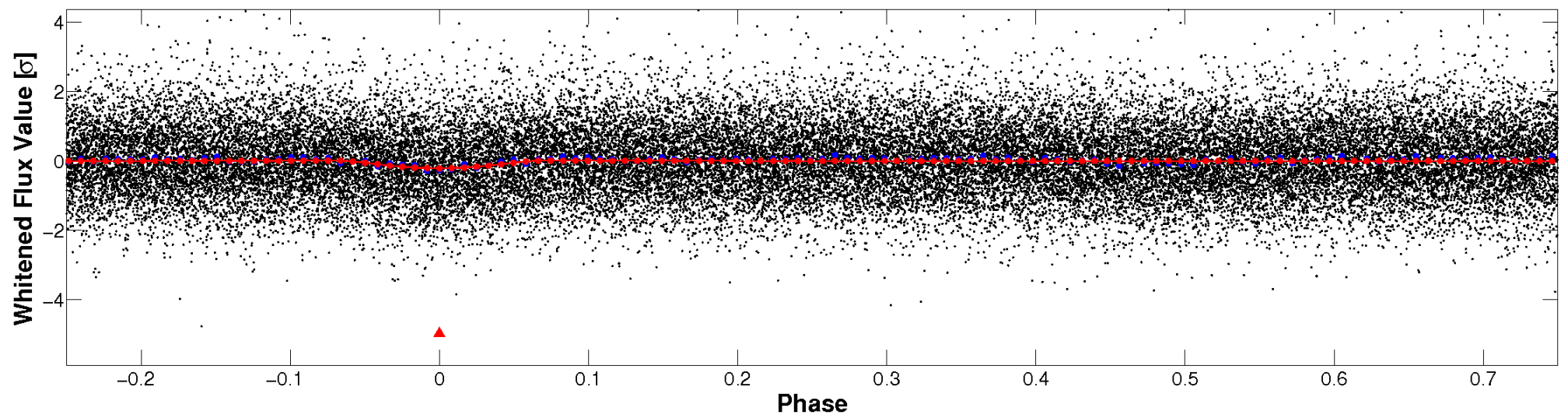


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

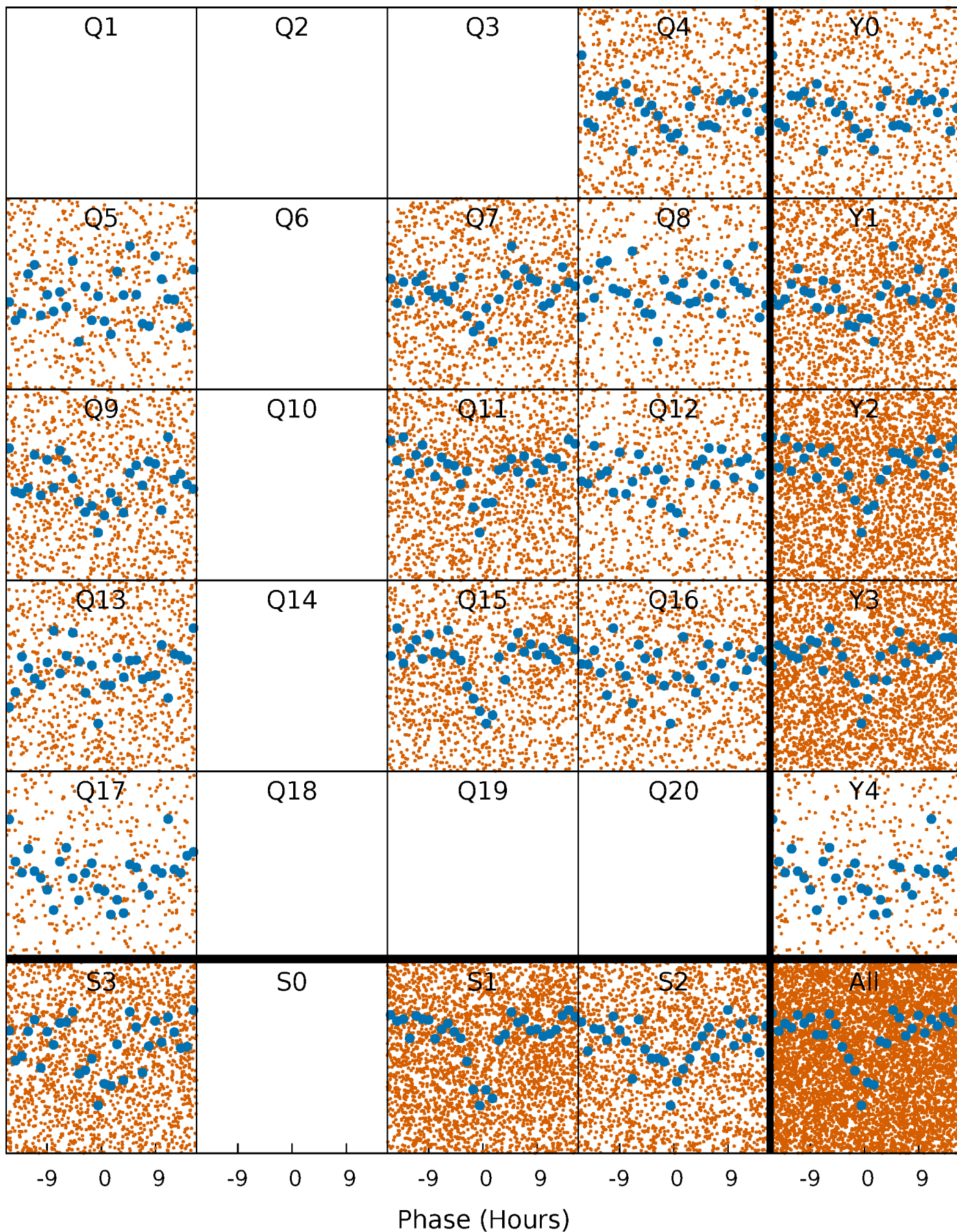


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



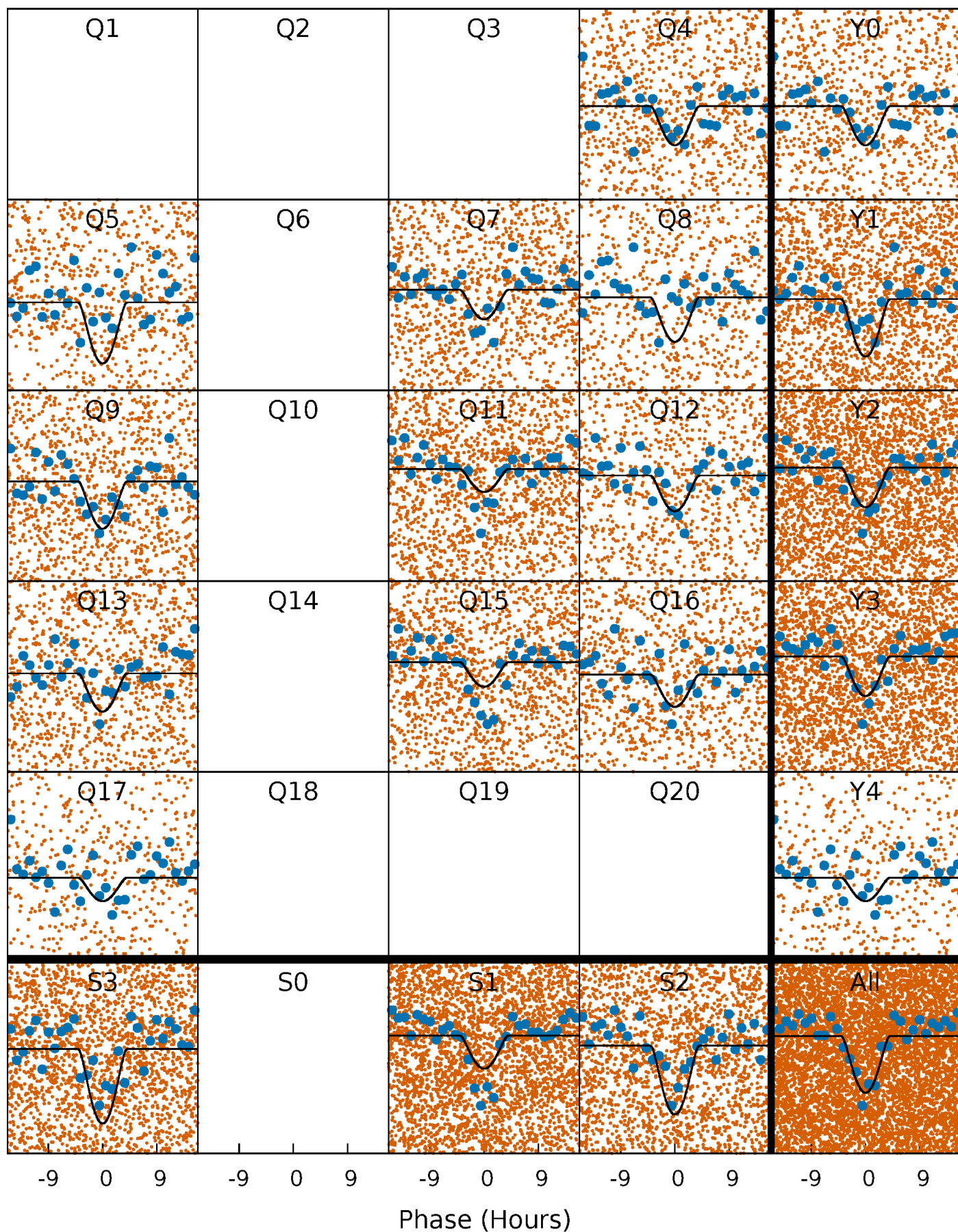
PDC Quarter-Phased Transit Curves

TCE 004165903-01 P= 2.465137 Days $T_0=133.975713$ (BKJD)



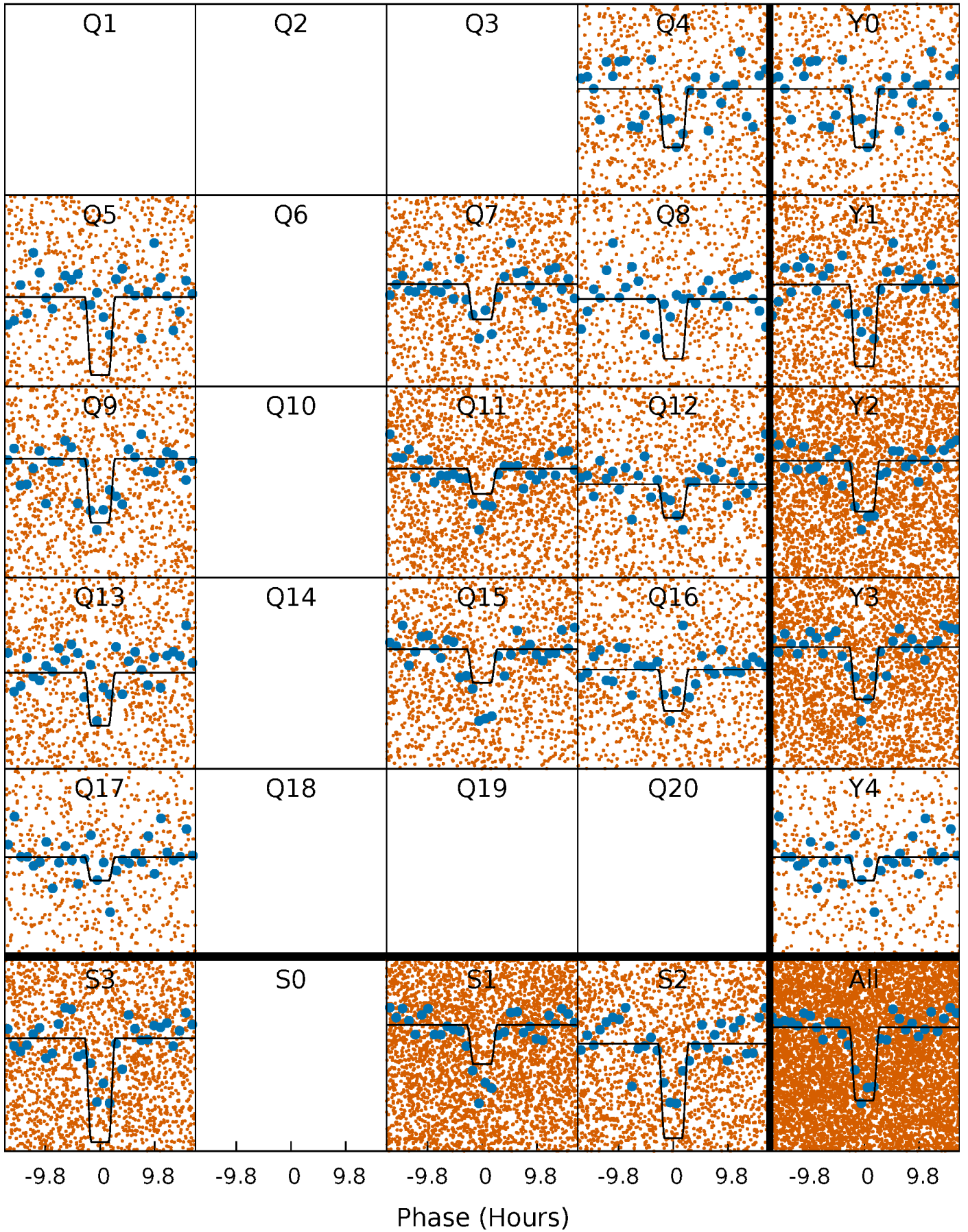
DV Quarter-Phased Transit Curves

TCE 004165903-01 P= 2.465137 Days $T_0=133.975713$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

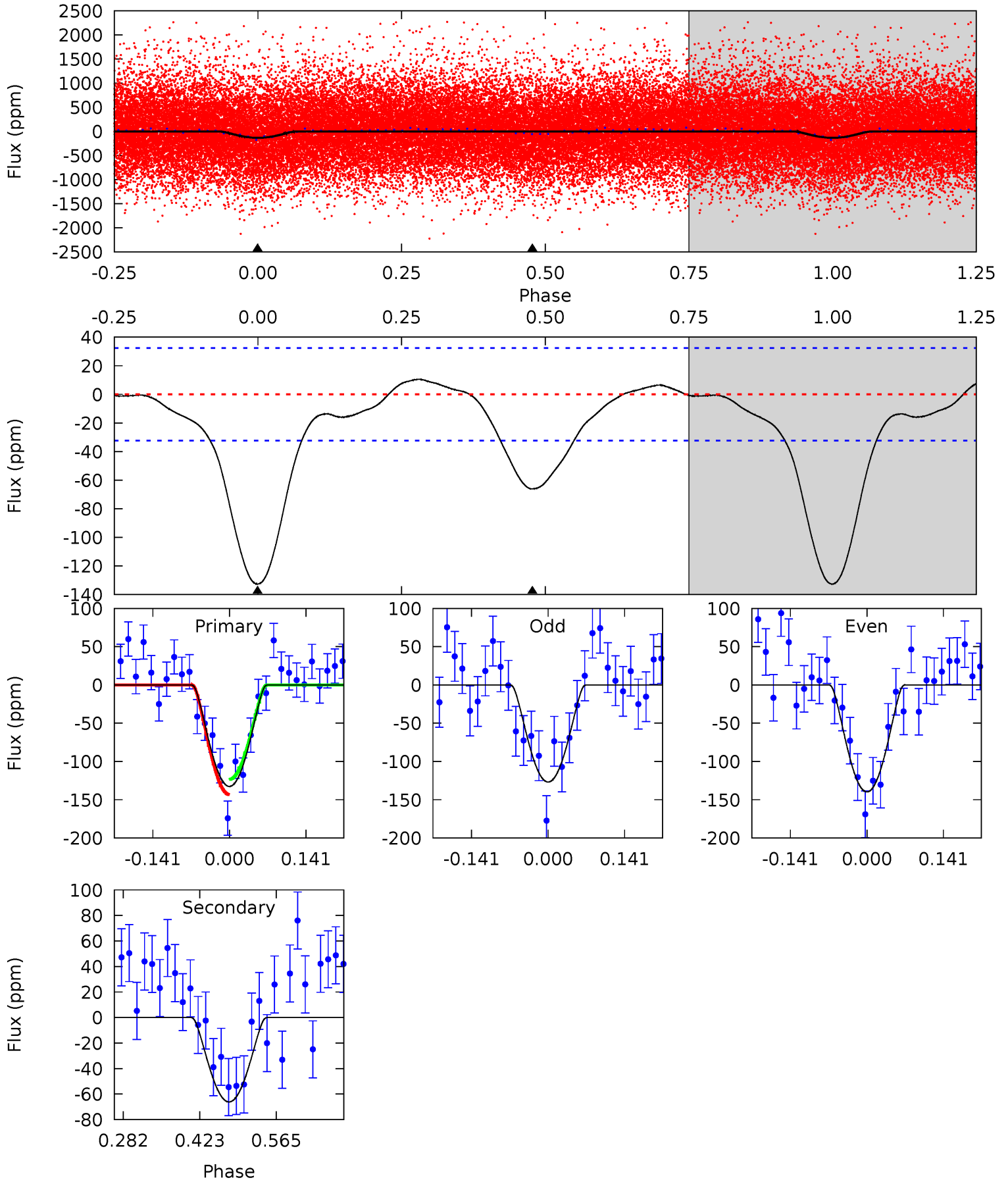
TCE 004165903-01 P= 2.465153 Days $T_0=133.966019$ (BKJD)



DV Model-Shift Uniqueness Test

004165903-01, P = 2.465137 Days, E = 133.975713 Days

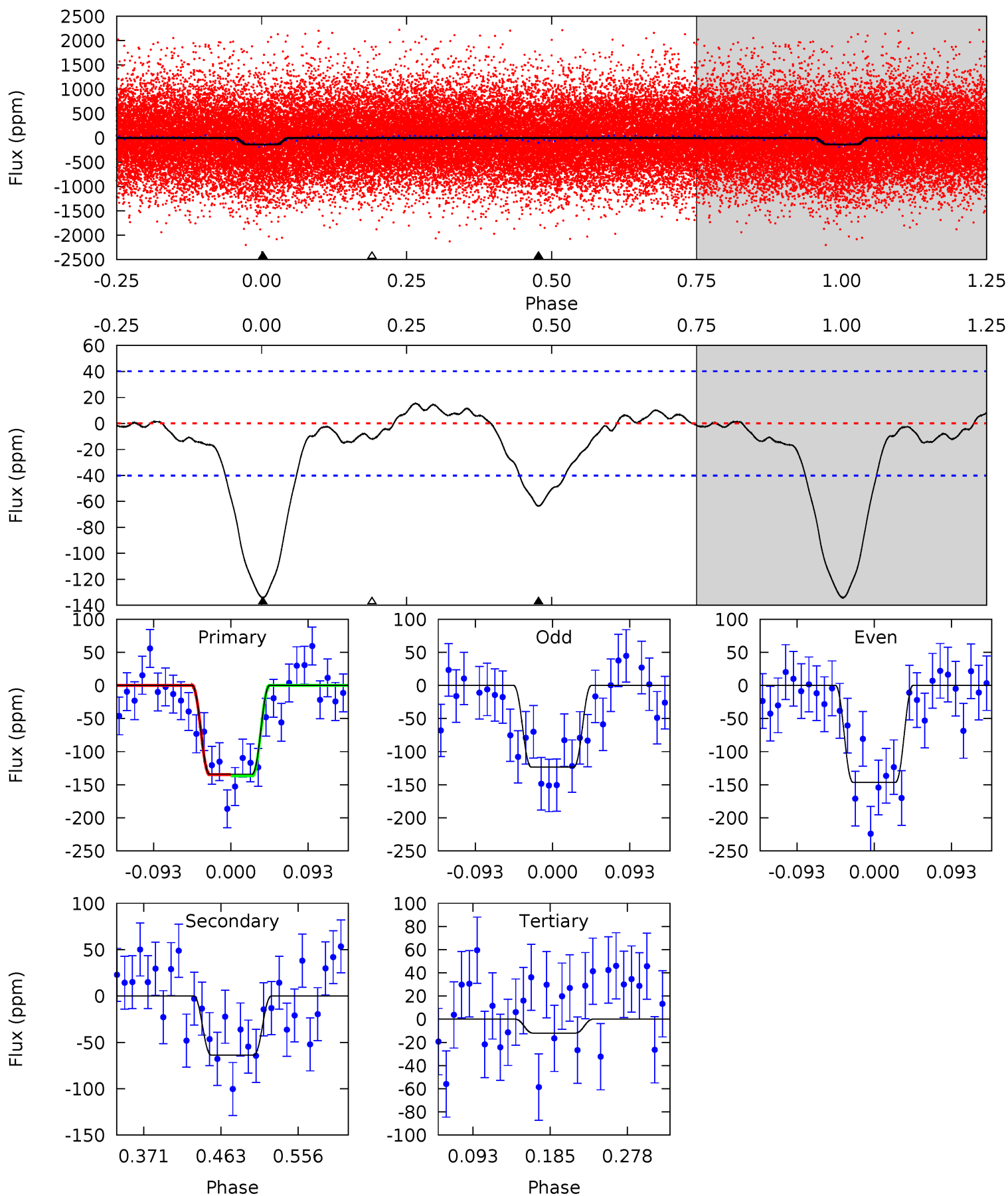
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	9.18	0	0	4.49	1.47	1.02	18.4	18.4	9.18	9.18	0.90	0.79	0.07	1.38



Alt Model-Shift Uniqueness Test

004165903-01, P = 2.465153 Days, E = 133.966019 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	7.27	1.37	0	4.58	1.68	0.95	13.9	15.3	5.90	7.27	1.31	0.86	0.10	0.12



Stellar Parameters For KIC 004165903

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6604^{+183}_{-252}	$4.413^{+0.062}_{-0.175}$	$-0.380^{+0.250}_{-0.300}$	$1.087^{+0.295}_{-0.127}$	$1.115^{+0.146}_{-0.146}$	$1.224^{+0.382}_{-0.570}$
	+3%/-4%	+1%/-4%	+66%/-79%	+27%/-12%	+13%/-13%	+31%/-47%
Source	KIC0	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 004165903-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-66 ± 7	$6.51^{+7.68}_{-4.58}$	2232^{+147}_{-109}	3009^{+1768}_{-5164}	$1.167^{+11.692}_{-0.920}$
Alt.	-64 ± 9	$7.00^{+6.50}_{-4.79}$	2240^{+143}_{-112}	2912^{+1569}_{-4999}	$0.953^{+8.706}_{-0.699}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

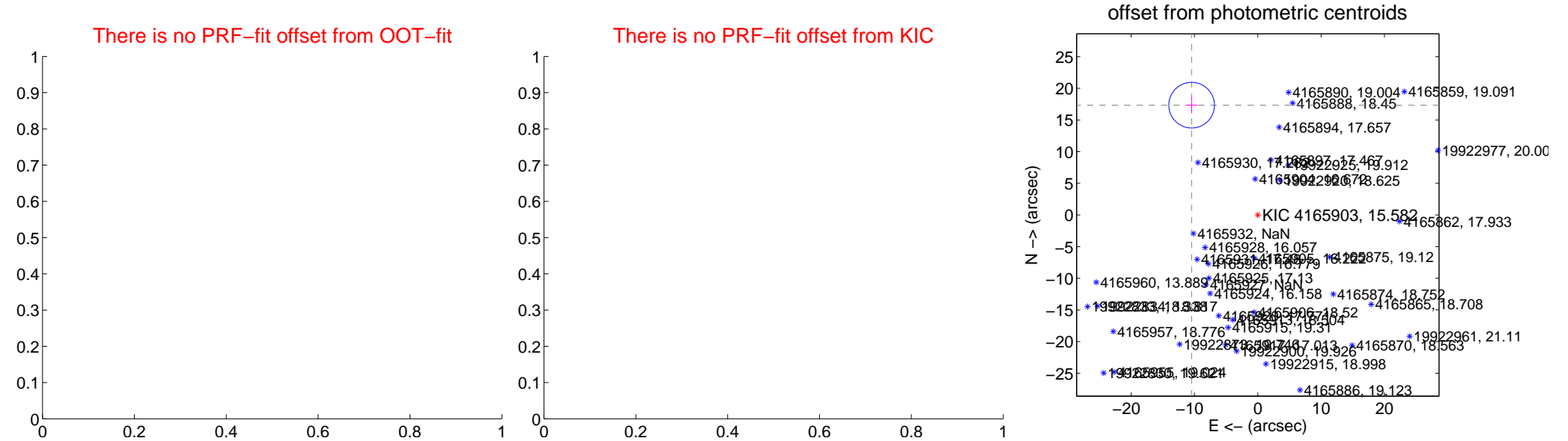
DV Centroid Data

Supplemental centroid analysis for 004165903-01. Kepler magnitude: 15.58. Transit SNR 10.17

There are 0 quarters with good PRF difference image offsets

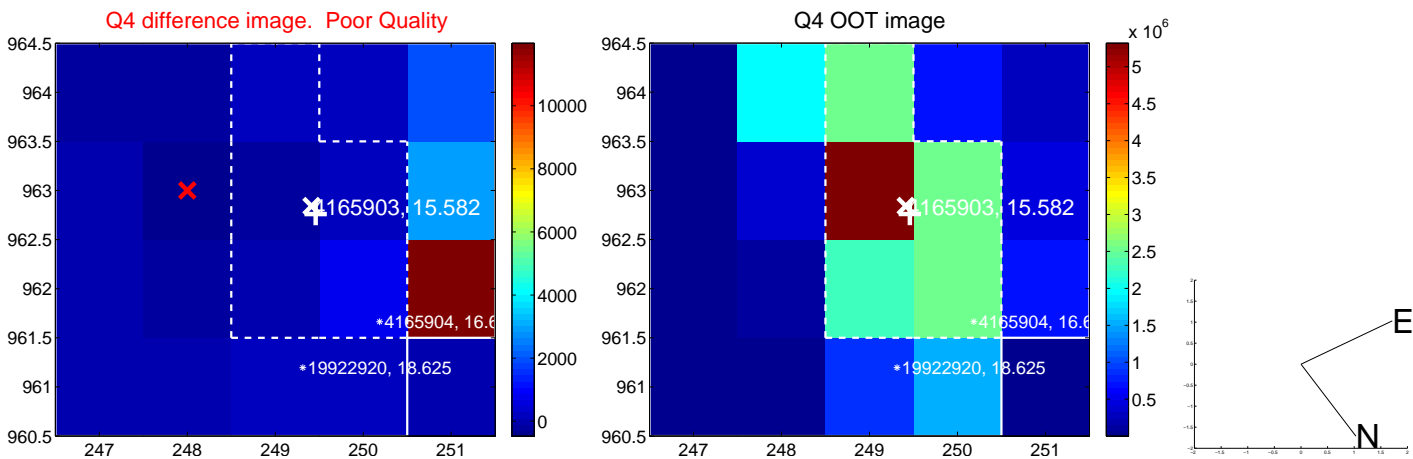
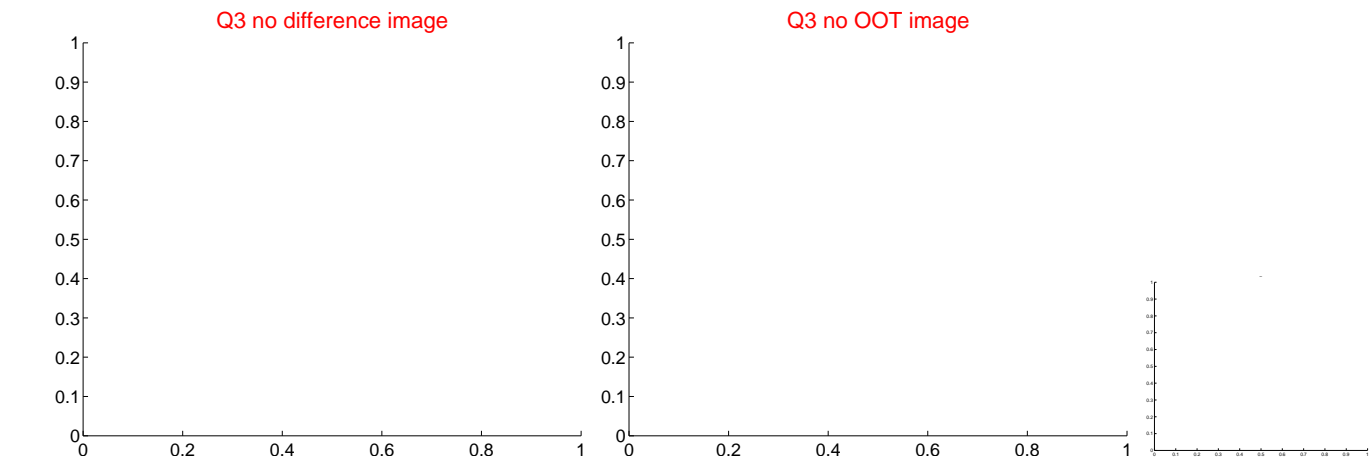
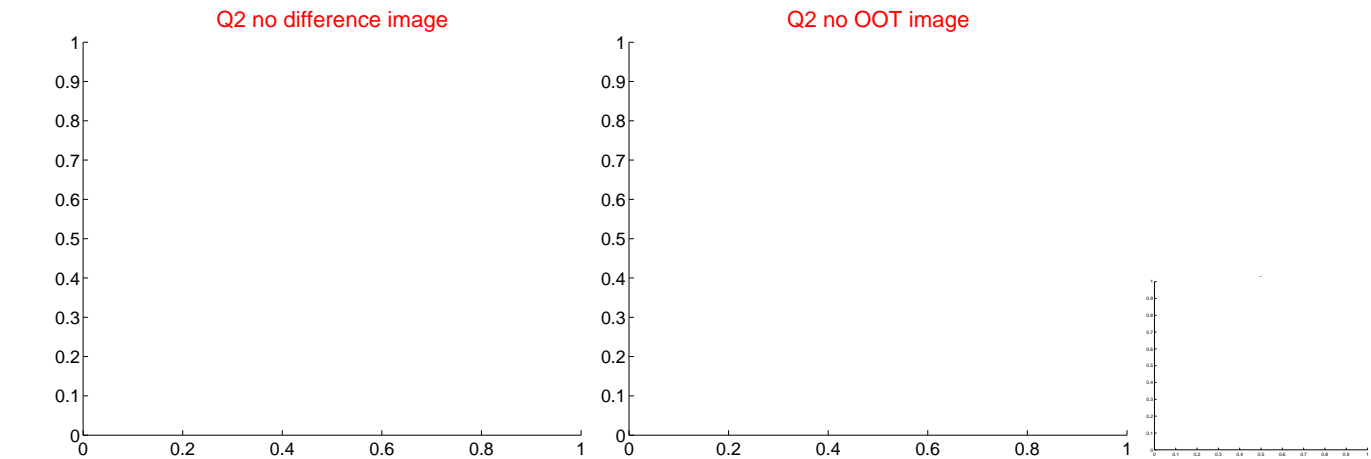
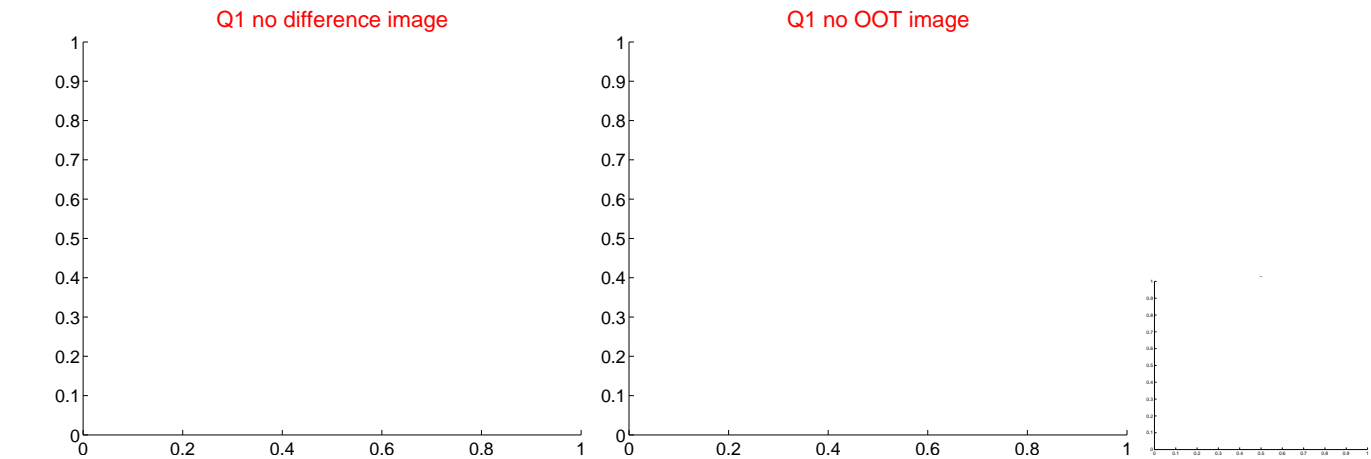
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	20.24 ± 1.20	16.85	10.45 ± 0.94	17.34 ± 1.28

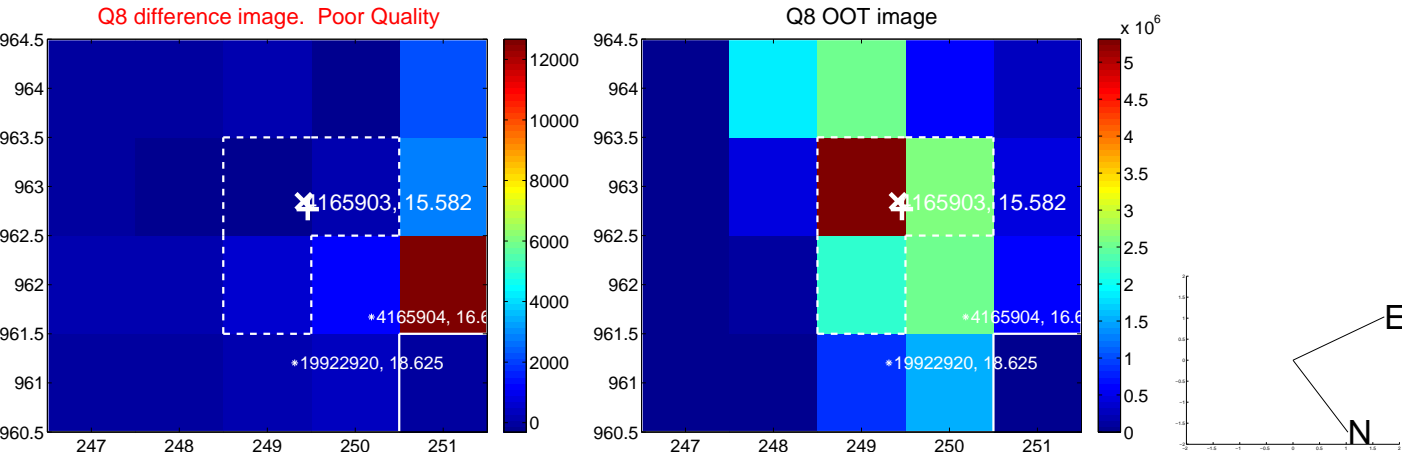
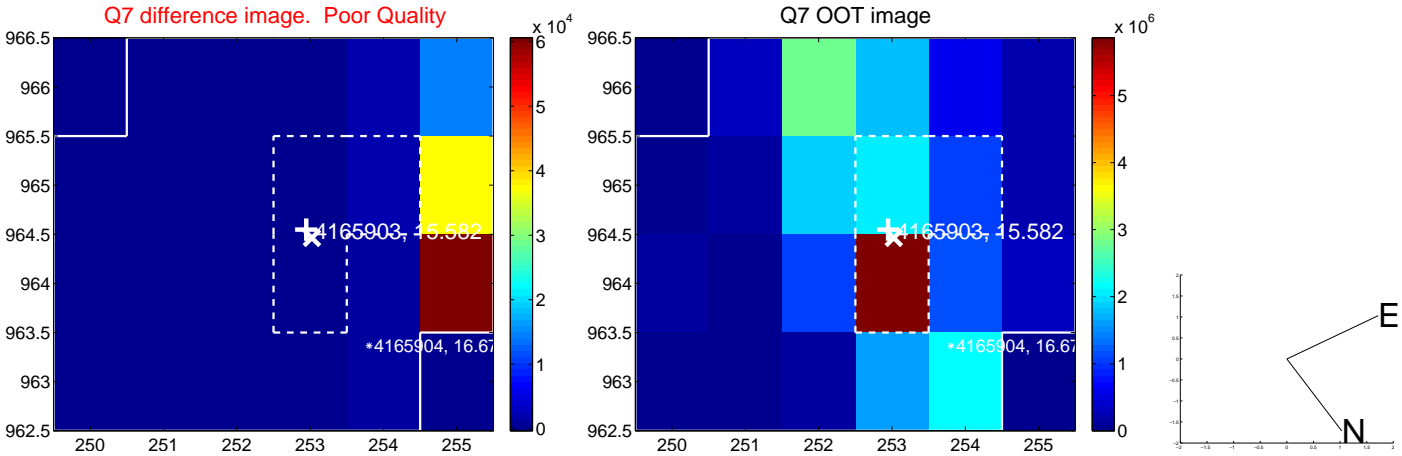
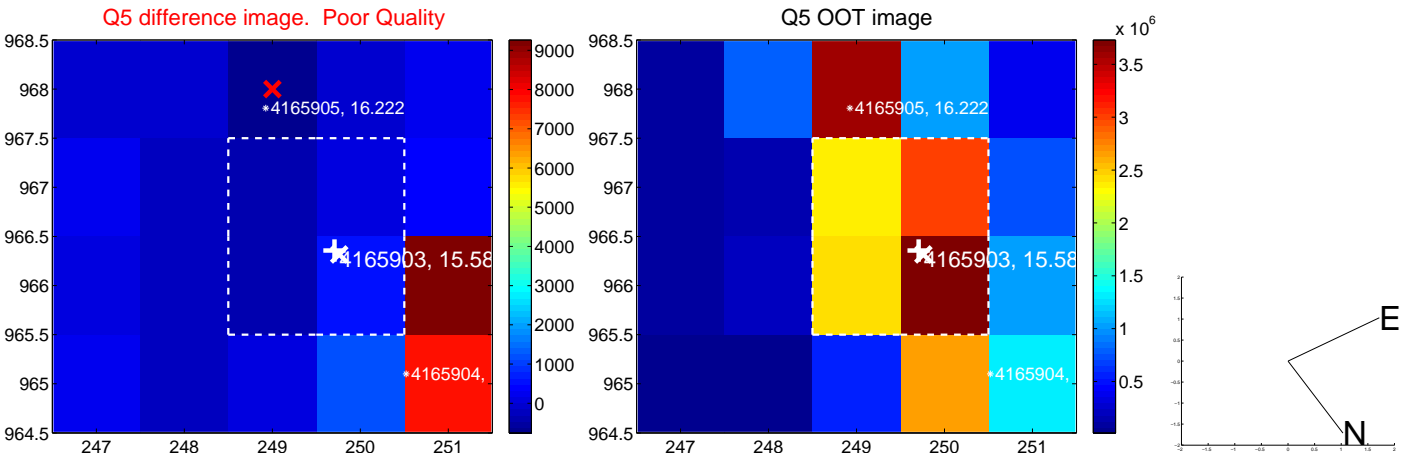


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

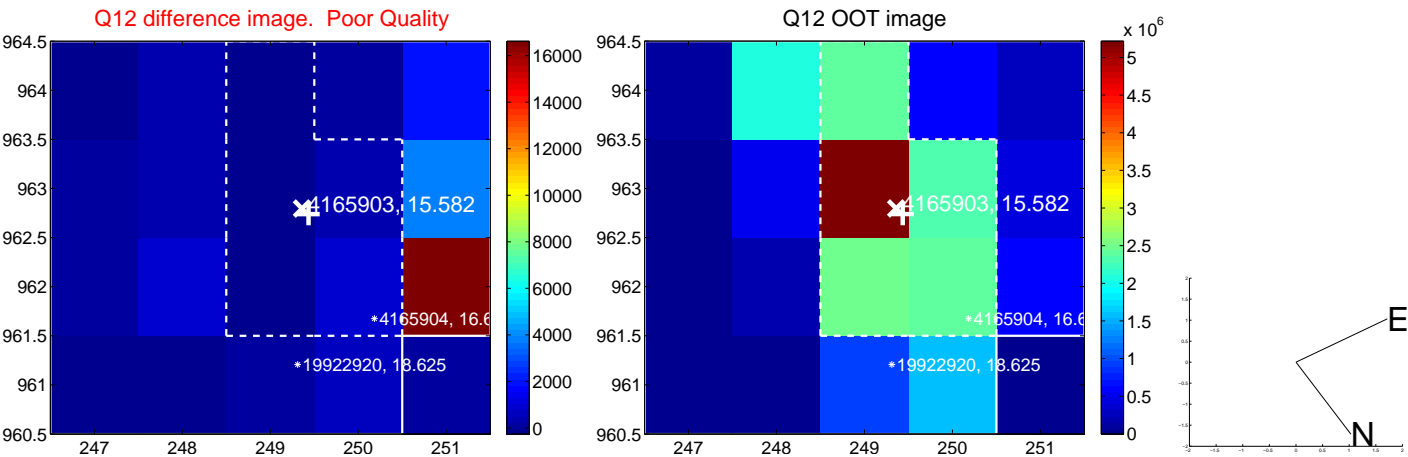
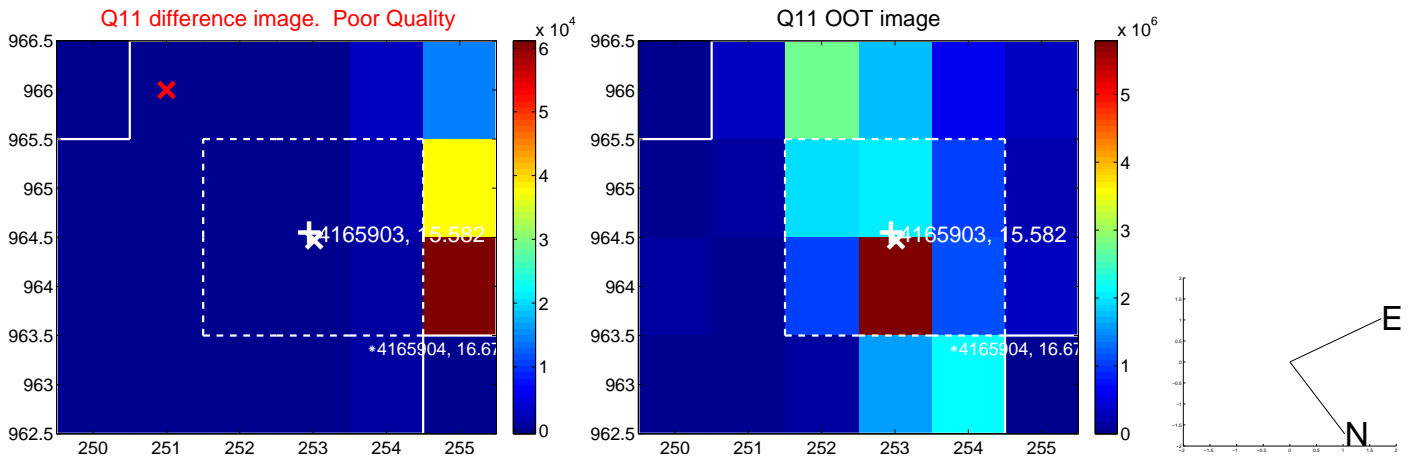
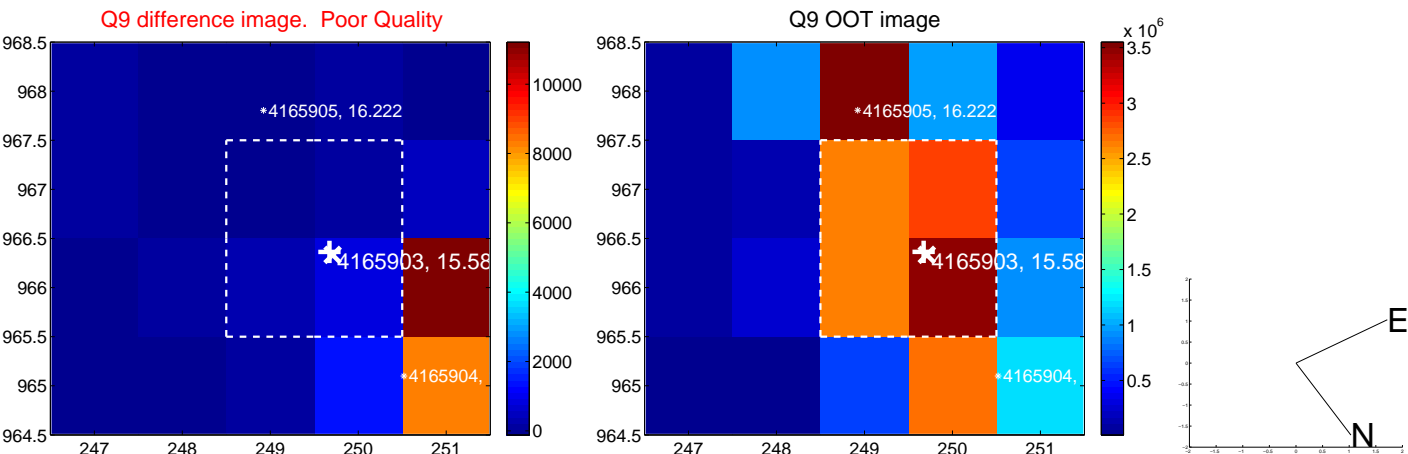
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



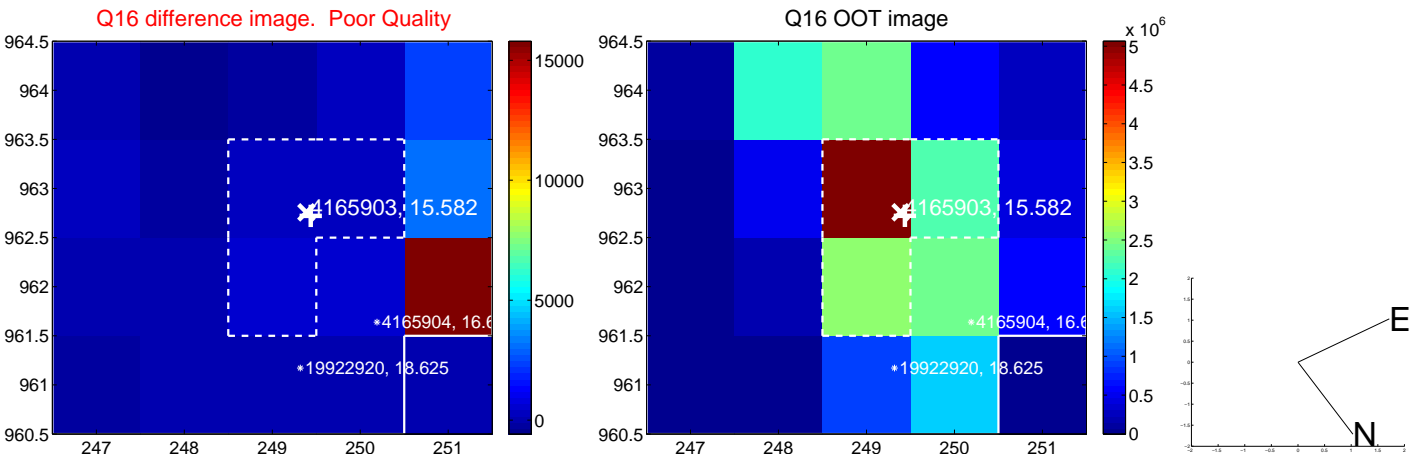
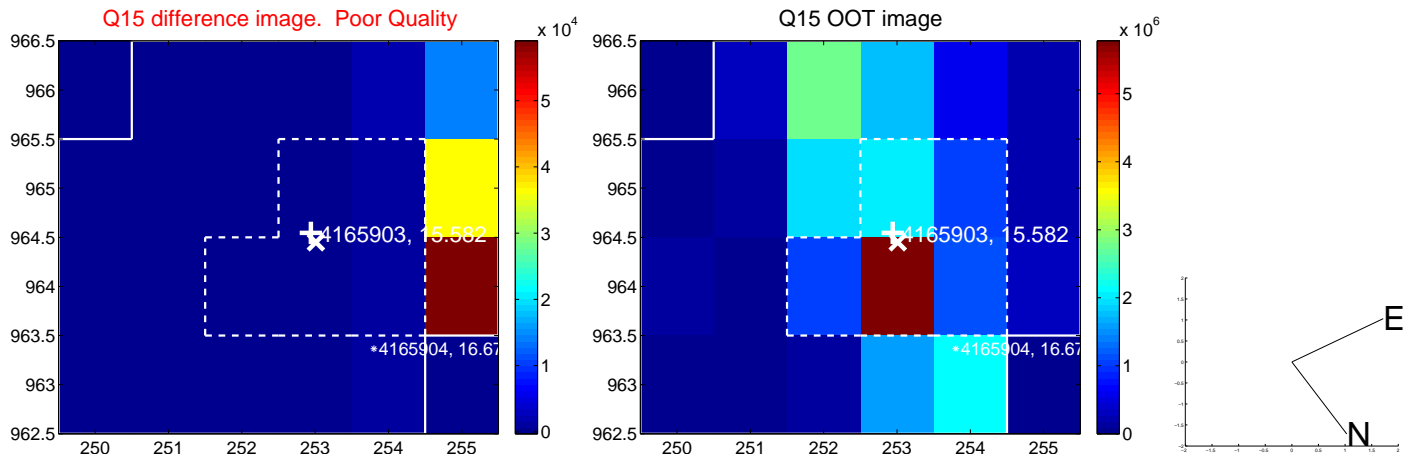
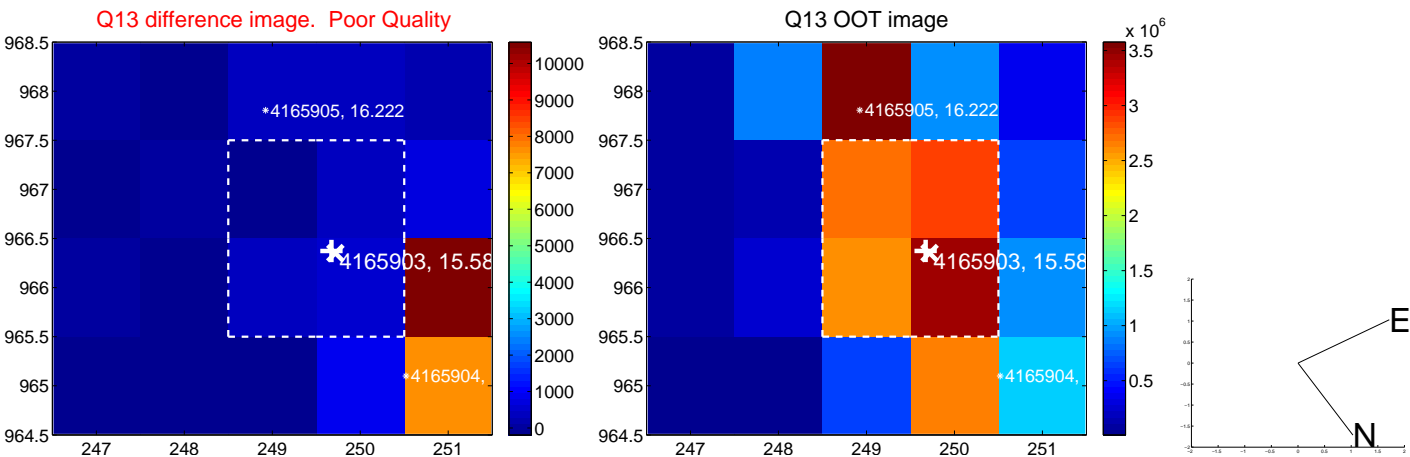
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



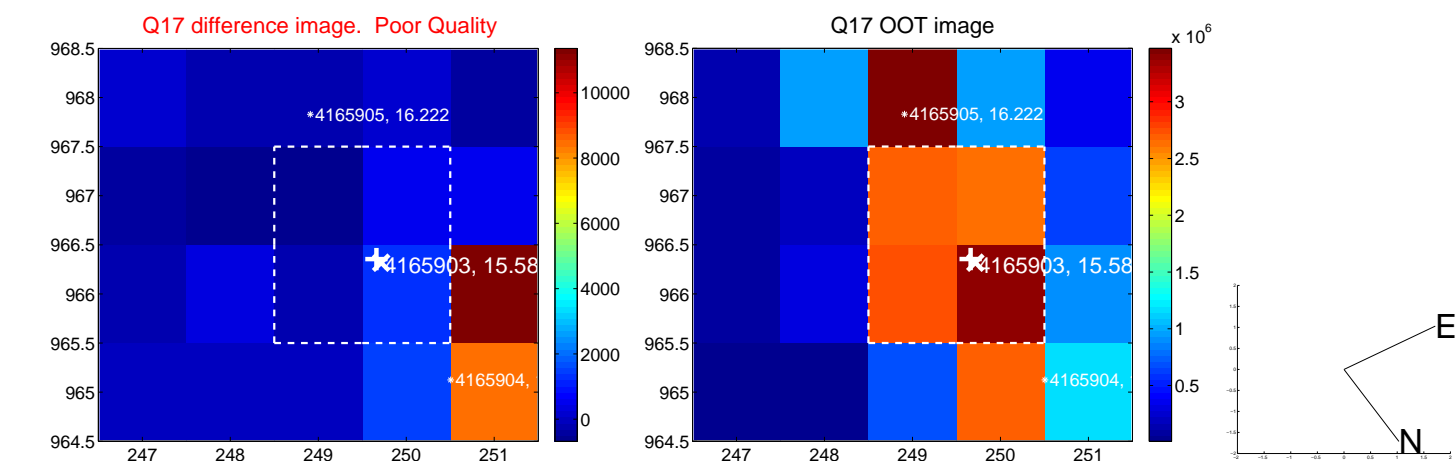
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



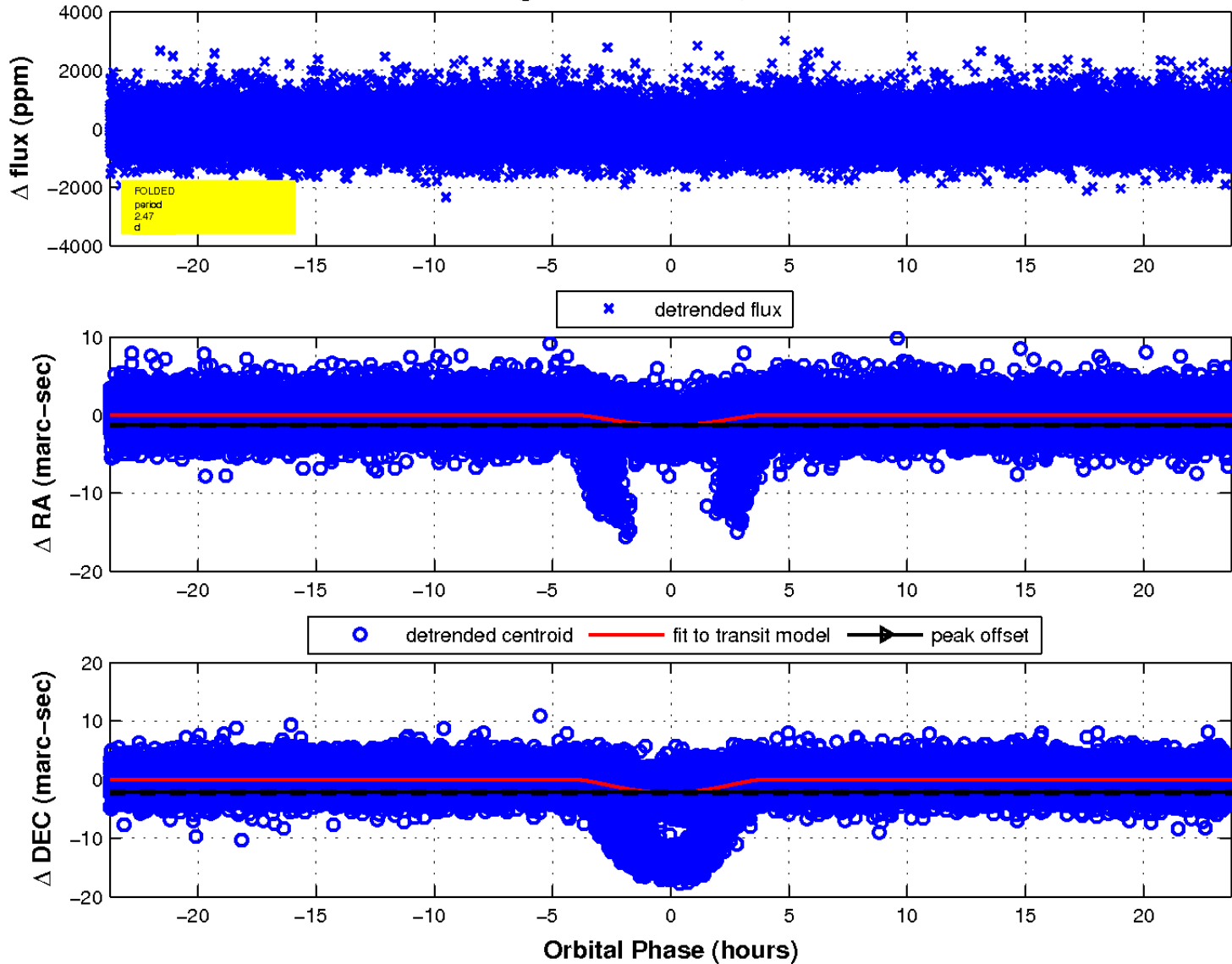
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

