

KIC 008166043

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})
008166043-01	OBS	No	502.951745	355.687830	266.0	5.222	7.9	7.2	0.70	5168	1.28	0.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008166043-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

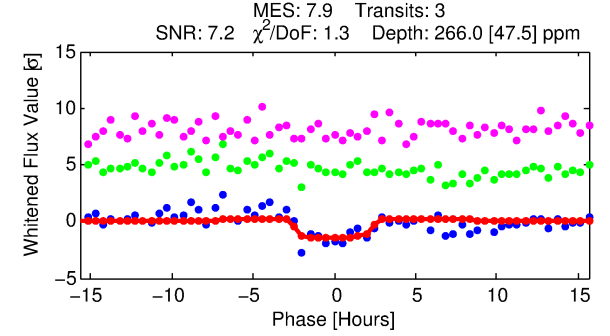
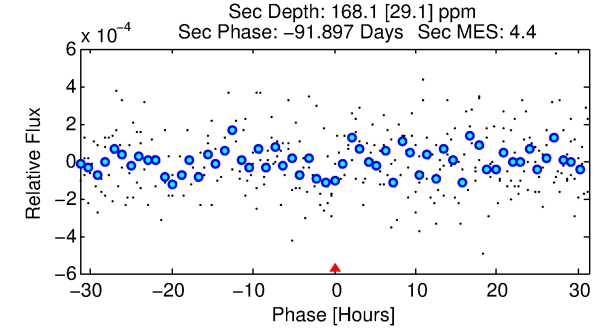
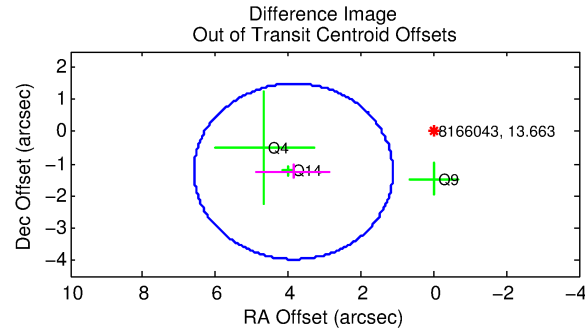
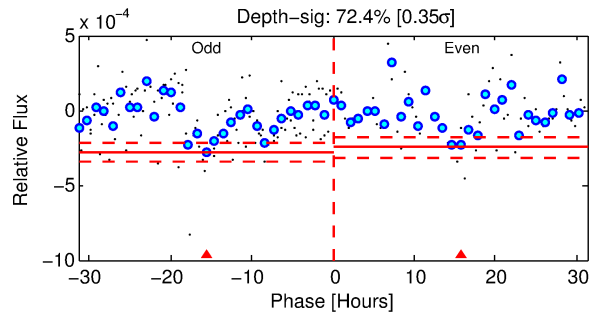
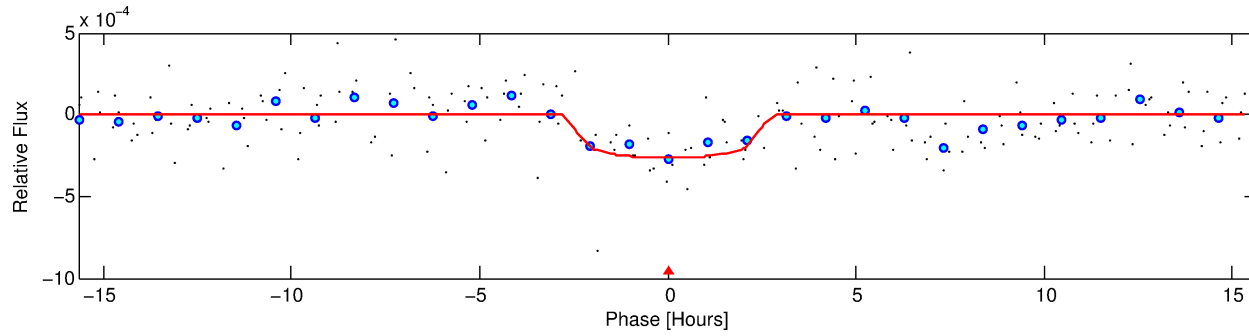
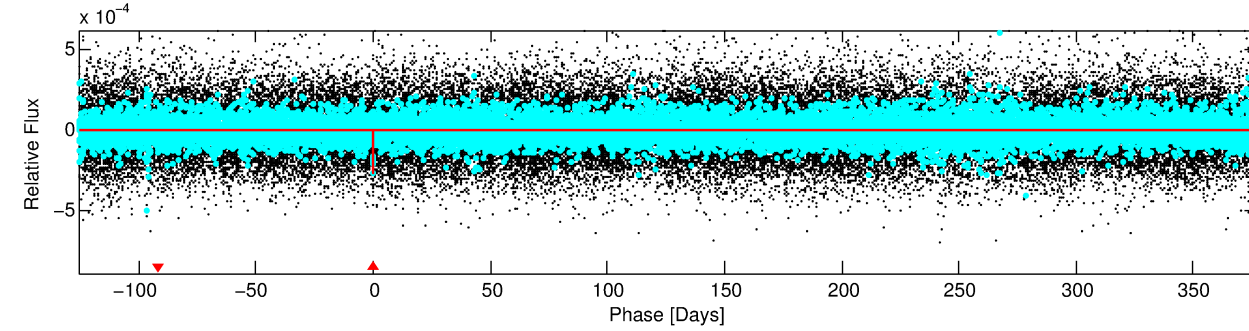
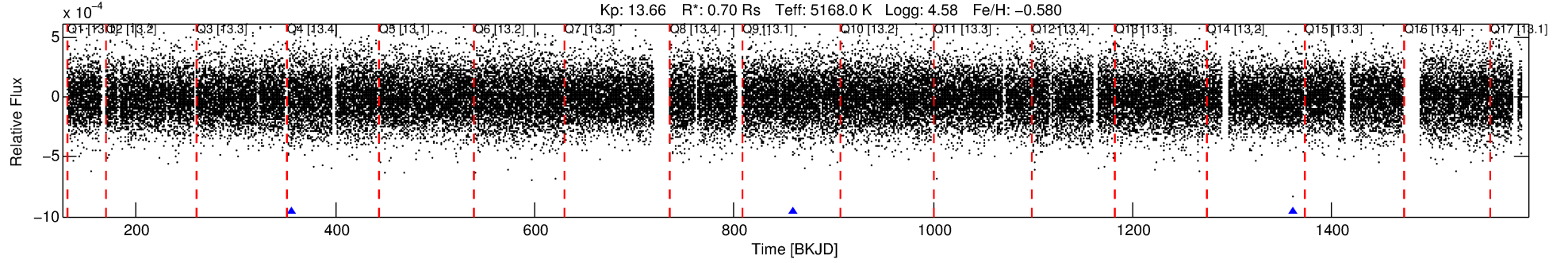
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008166043-01

No Significant Match Found

DV One-Page Summary

KIC: 8166043 Candidate: 1 of 1 Period: 502.952 d



DV Fit Results:

Period = 502.95175 [0.01105] d
Epoch = 355.6878 [0.0161] BKJD
Rp/R* = 0.0168 [0.0293]
a/R* = 443.29 [3196.18]
b = 0.82 [2.95]
Seff = 0.26 [0.05]
Teq = 183 [8] K
Rp = 1.28 [2.23] Re
a = 1.0817 [0.0996] AU
Ag = 66299.08 [231101.15] [0.29 σ]
Teffp = 4537 [3953] K [1.10 σ]

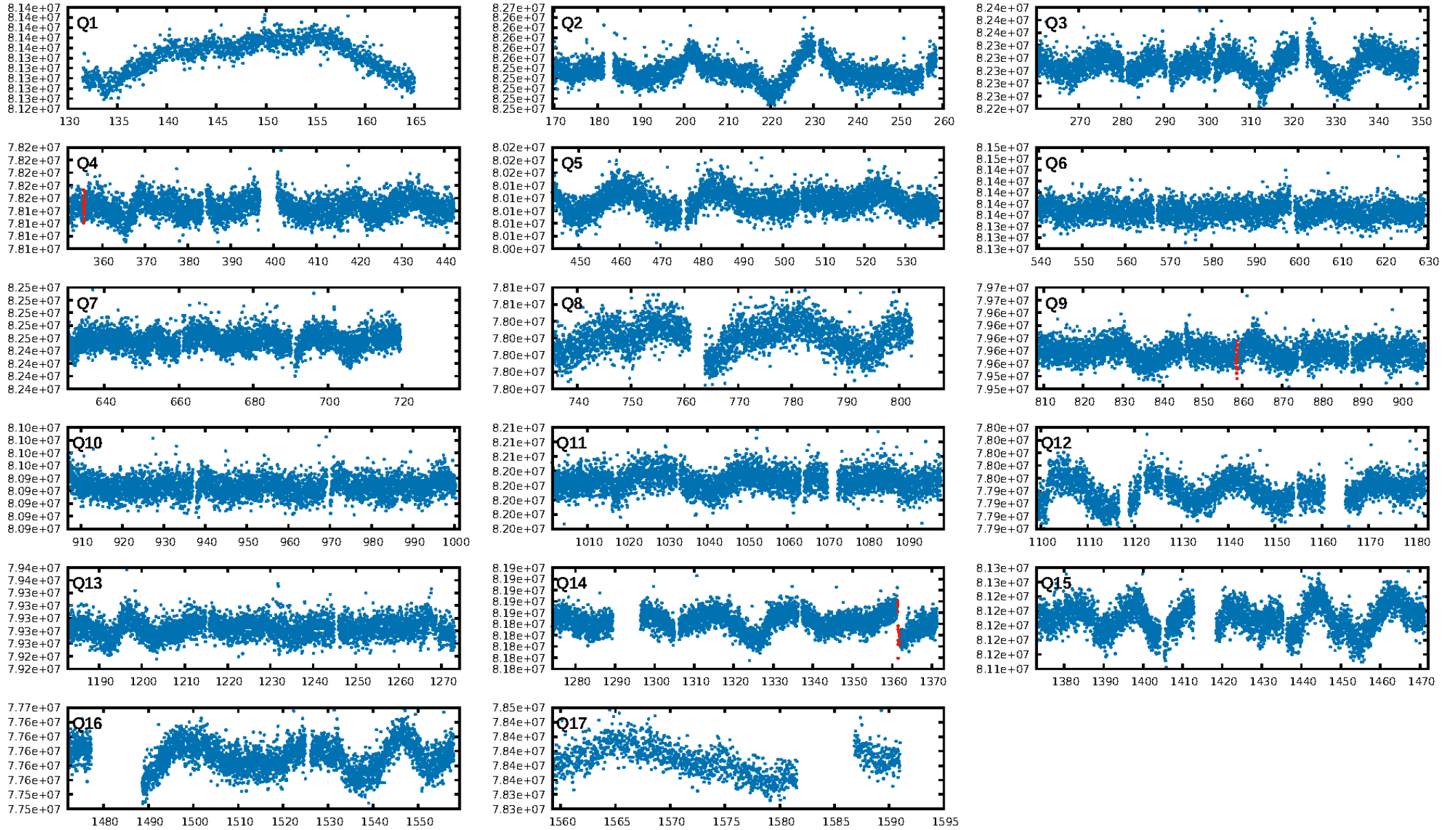
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 7.4%
ModelChiSquareGof-sig: 96.0%
Bootstrap-pfa: 3.25e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.365
Centroid-sig: 48.4%
Centroid-so: 1.232 arcsec [0.50 σ]
OotOffset-rm: 4.052 arcsec [4.44 σ]
KicOffset-rm: 4.116 arcsec [5.08 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

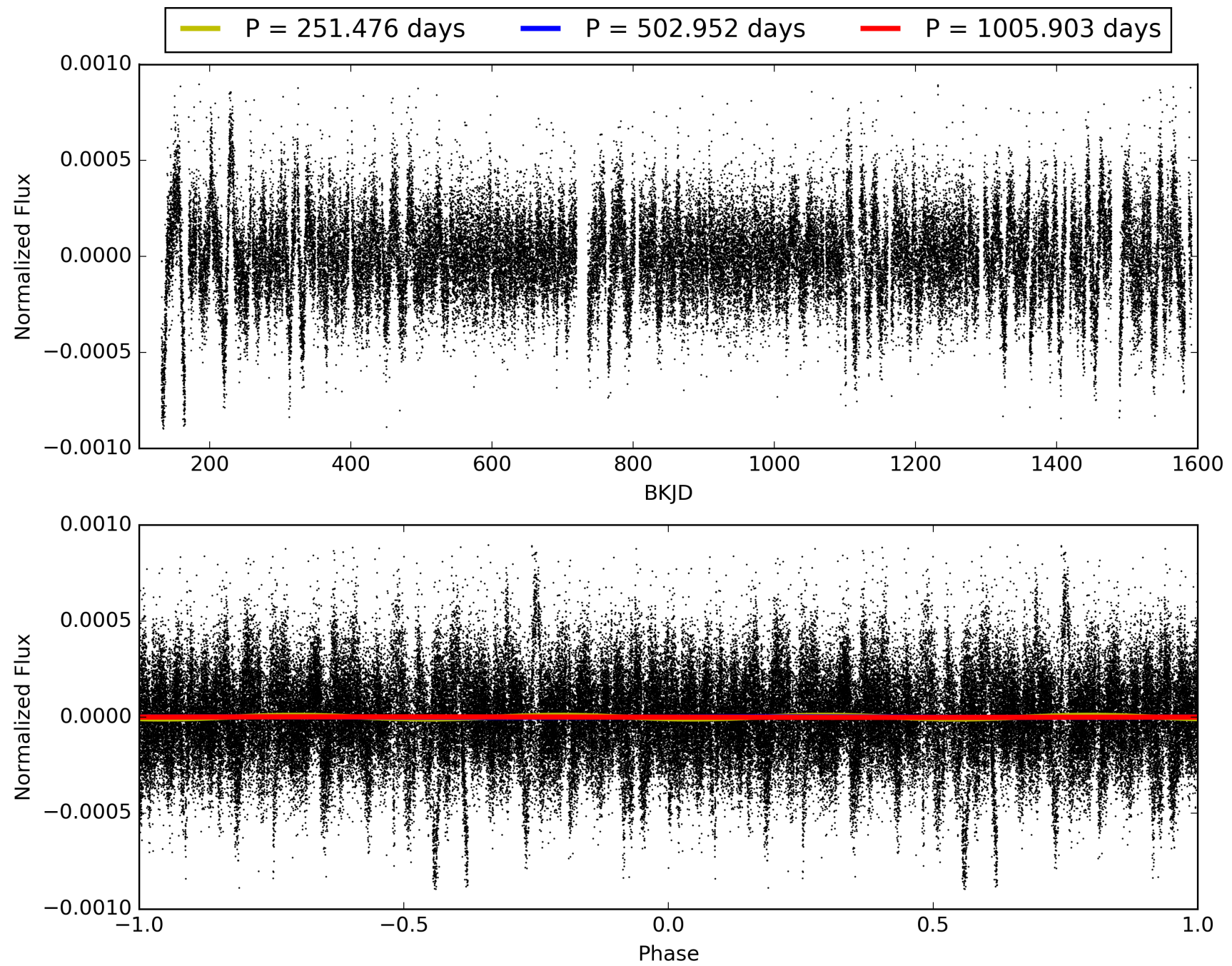
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:08:52 Z

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

TCE 008166043-01, PDC Light Curves

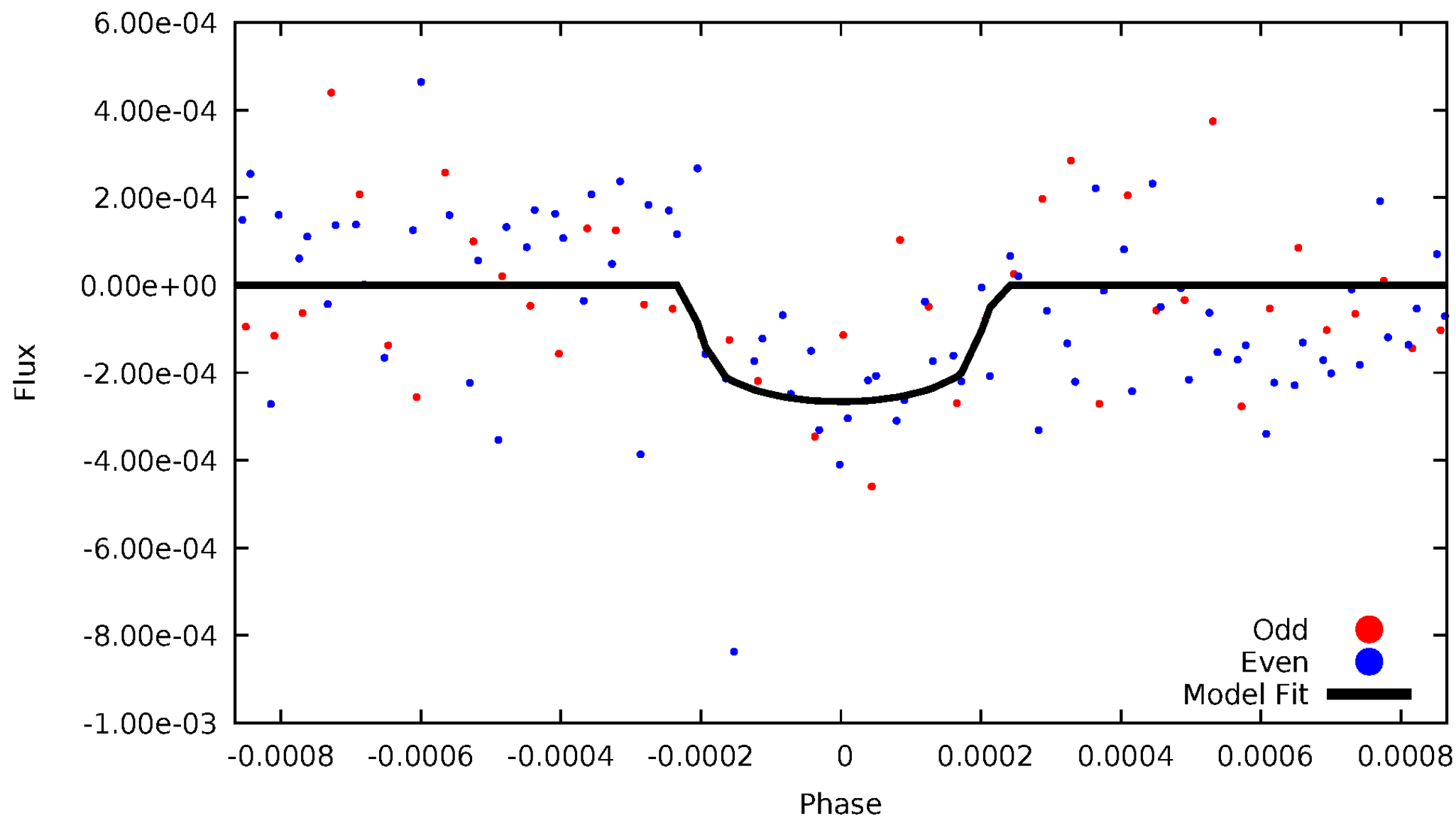


TCE 008166043-01



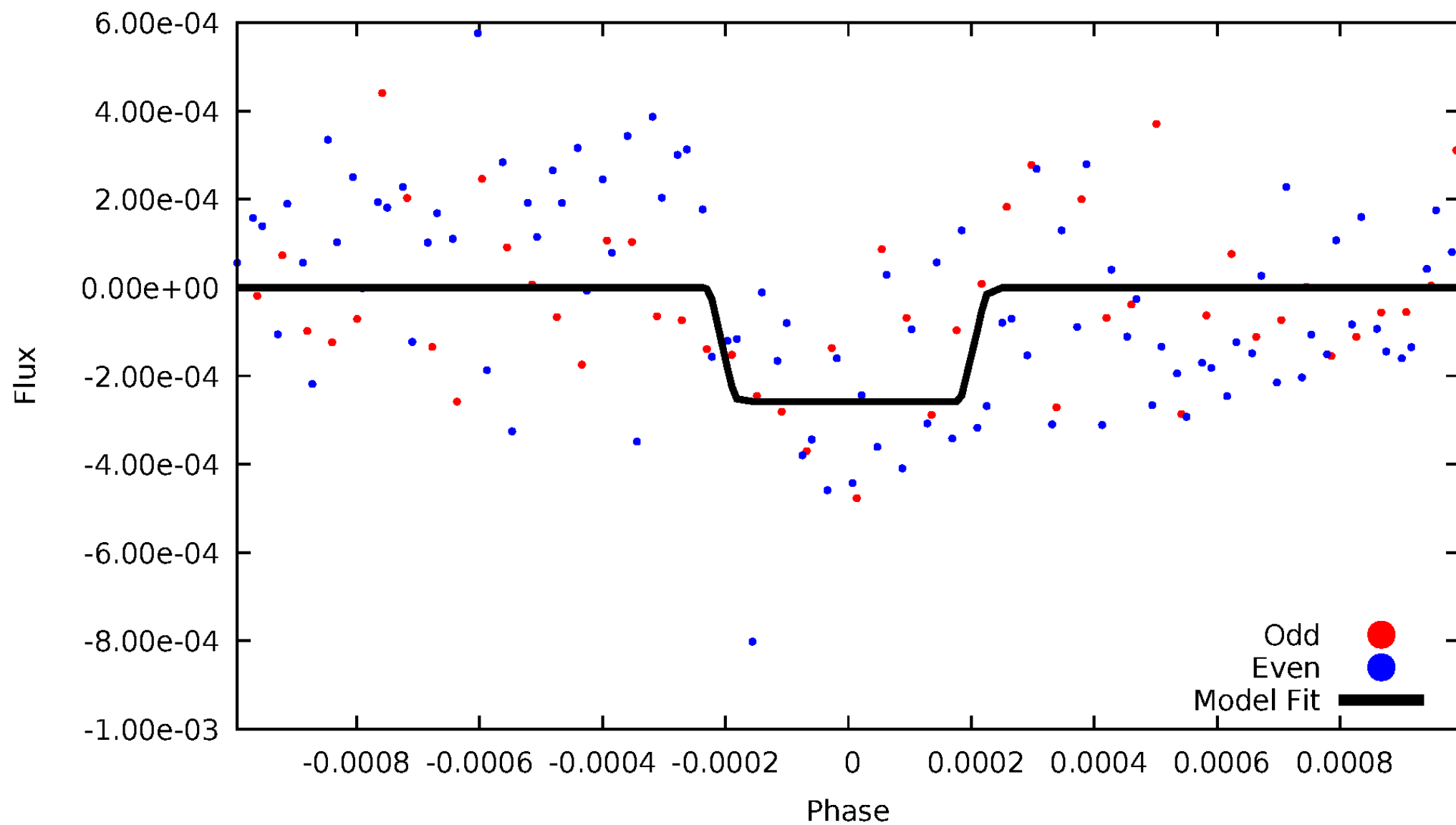
DV Odd/Even

TCE 008166043-01



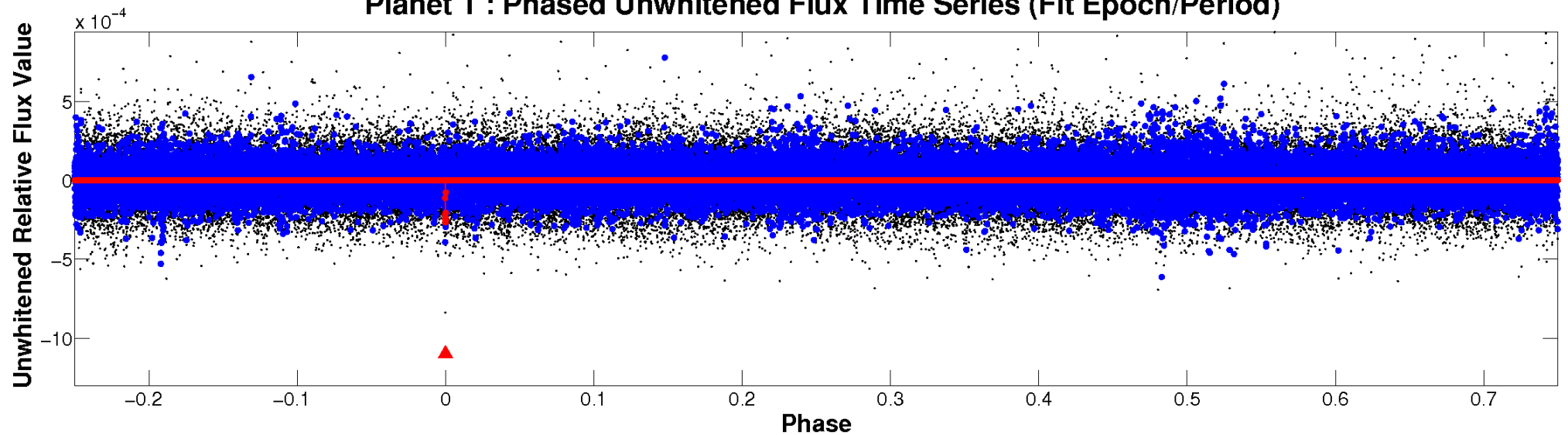
ALT Odd/Even

TCE 008166043-01

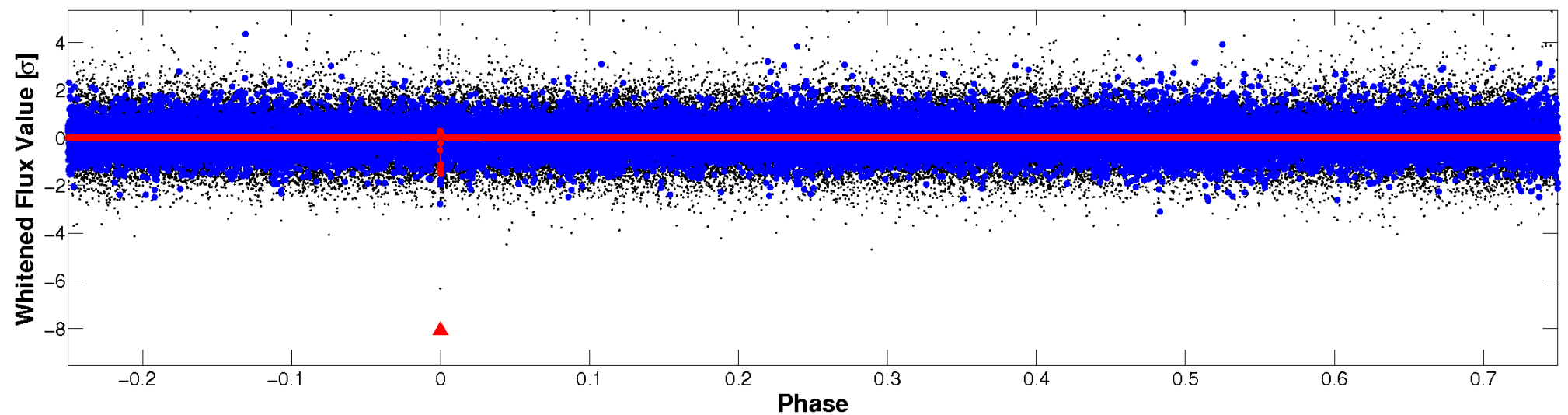


Non-Whitened Vs. Whitened Light Curve

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

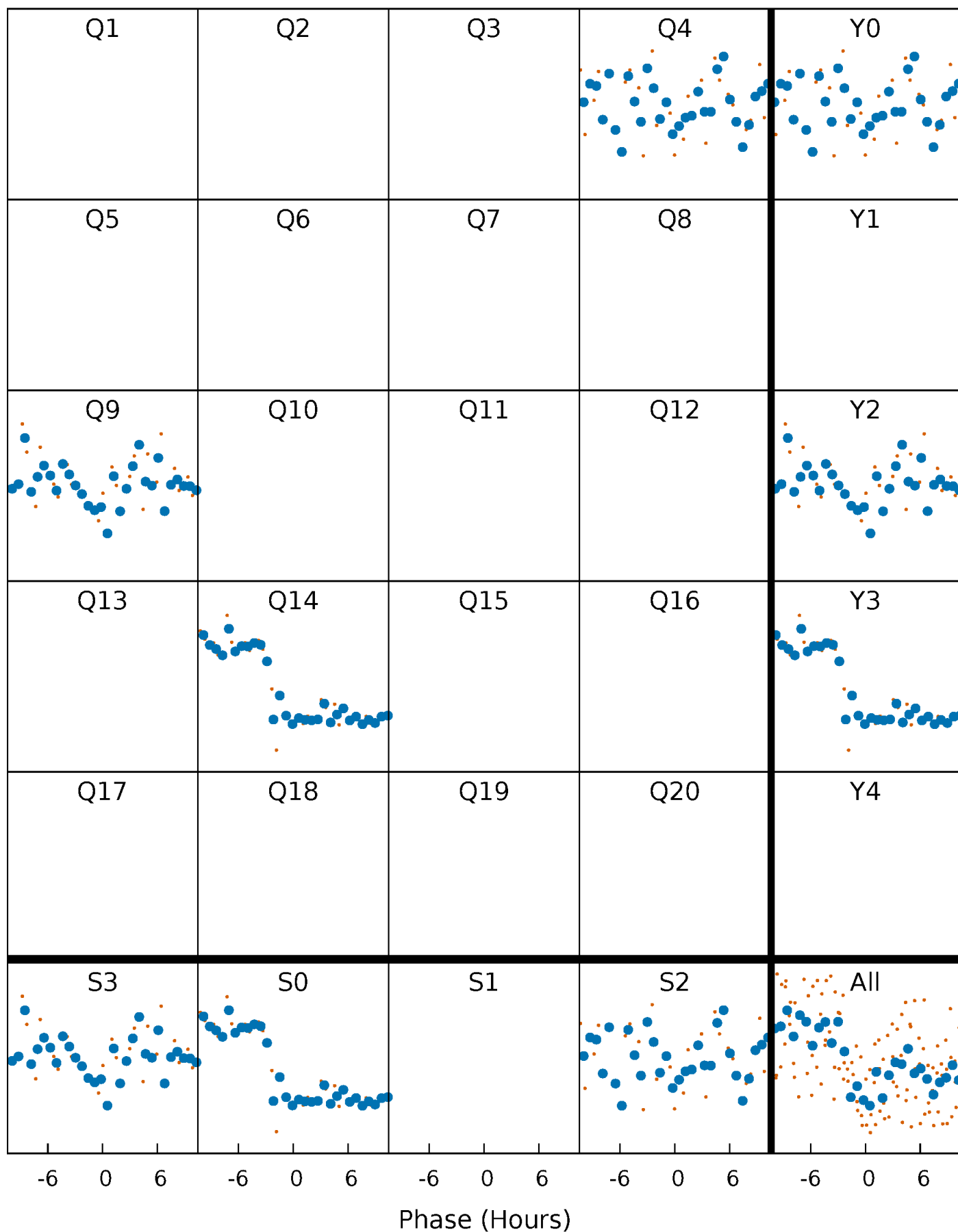


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



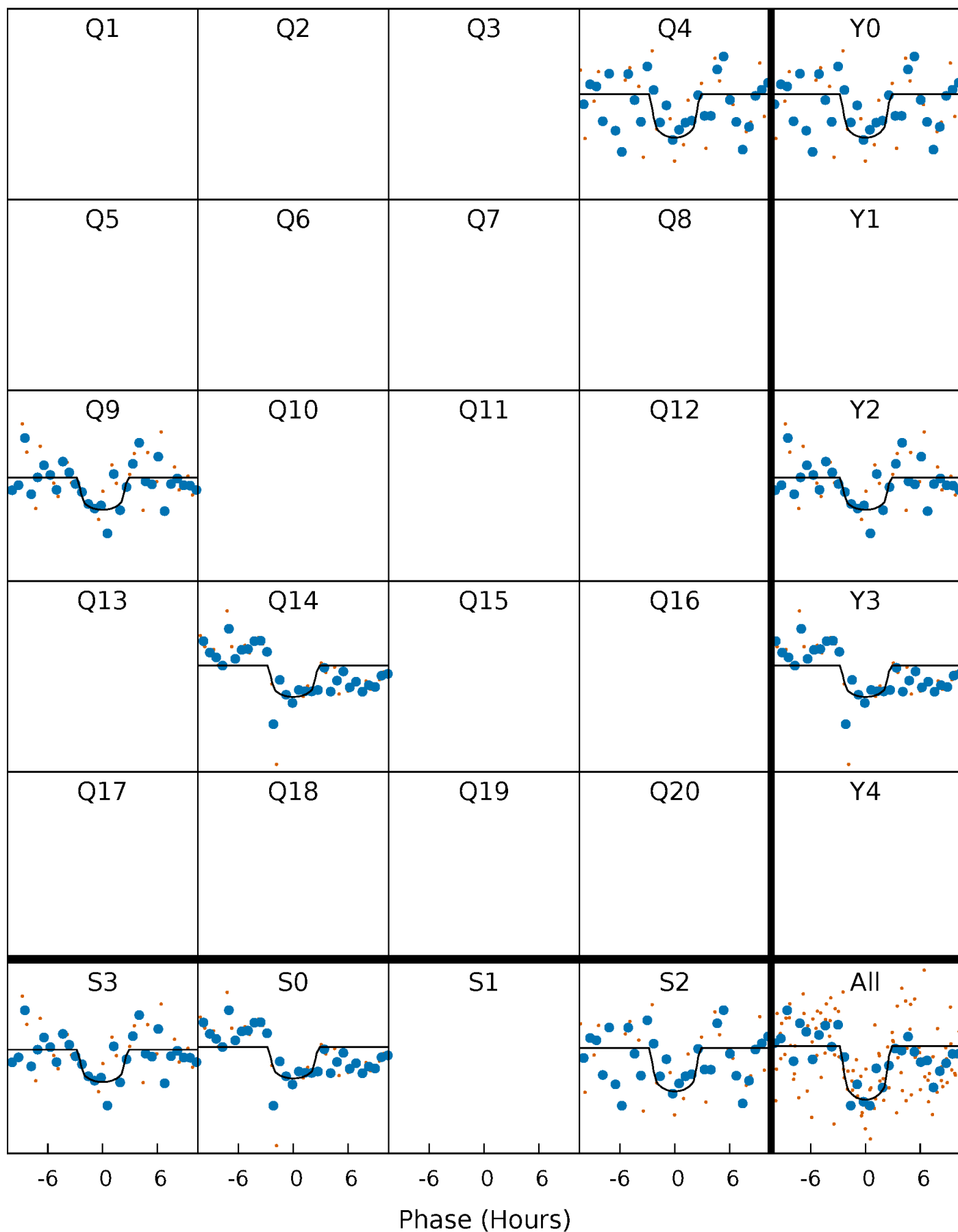
PDC Quarter-Phased Transit Curves

TCE 008166043-01 P=502.951746 Days $T_0=355.687830$ (BKJD)



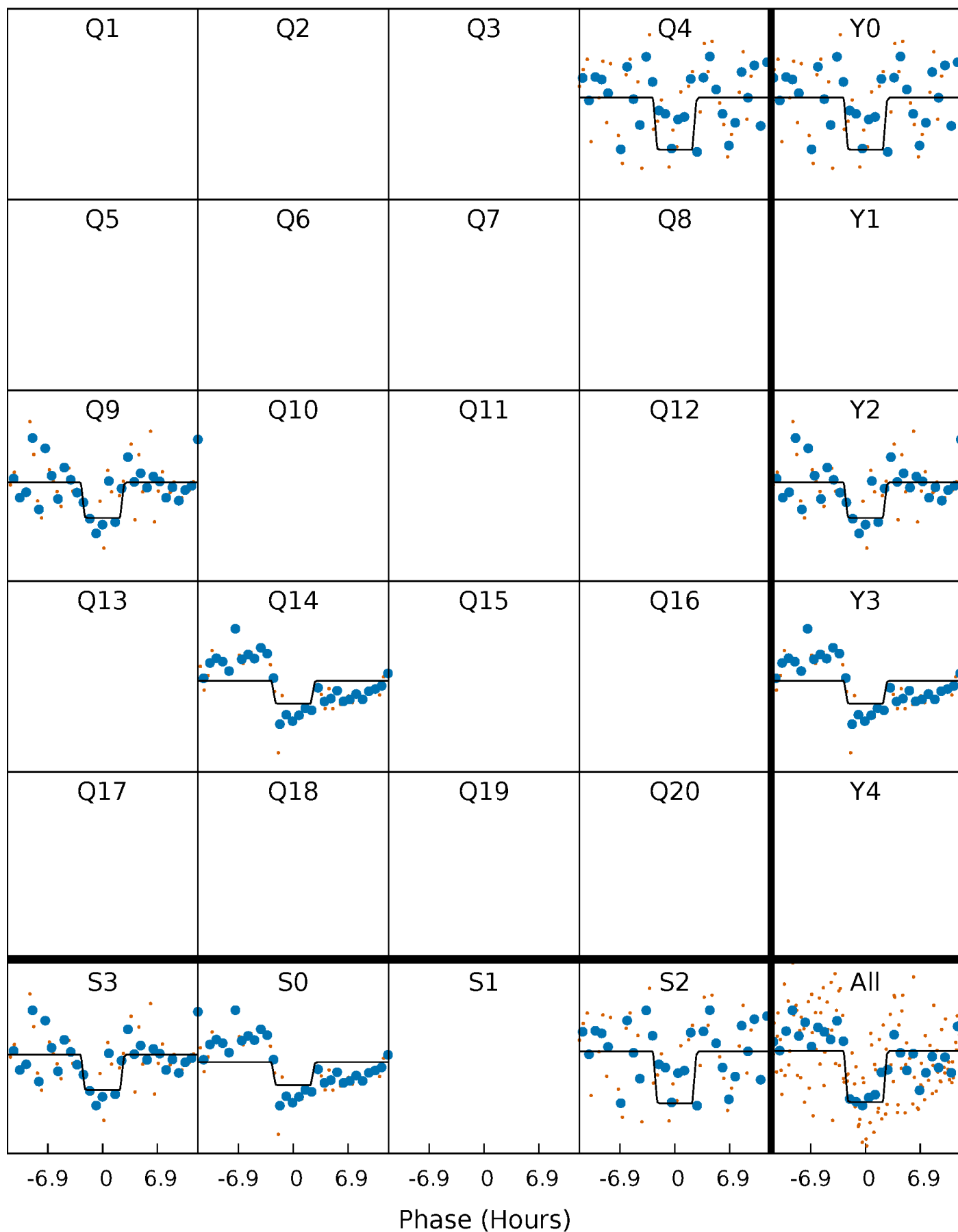
DV Quarter-Phased Transit Curves

TCE 008166043-01 P=502.951746 Days $T_0=355.687830$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

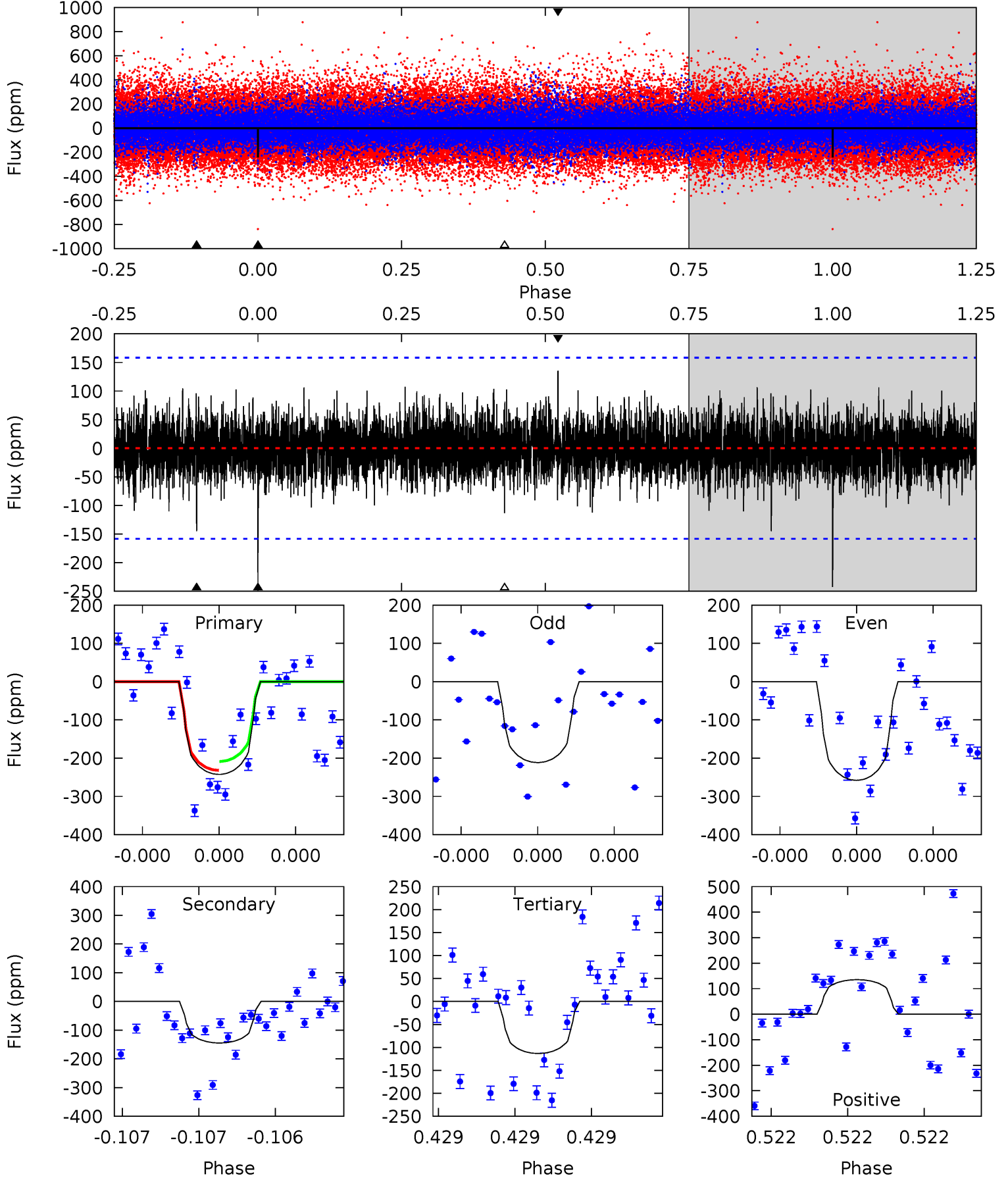
TCE 008166043-01 P=502.938023 Days $T_0=355.716830$ (BKJD)



DV Model-Shift Uniqueness Test

008166043-01, P = 502.951746 Days, E = 355.687830 Days

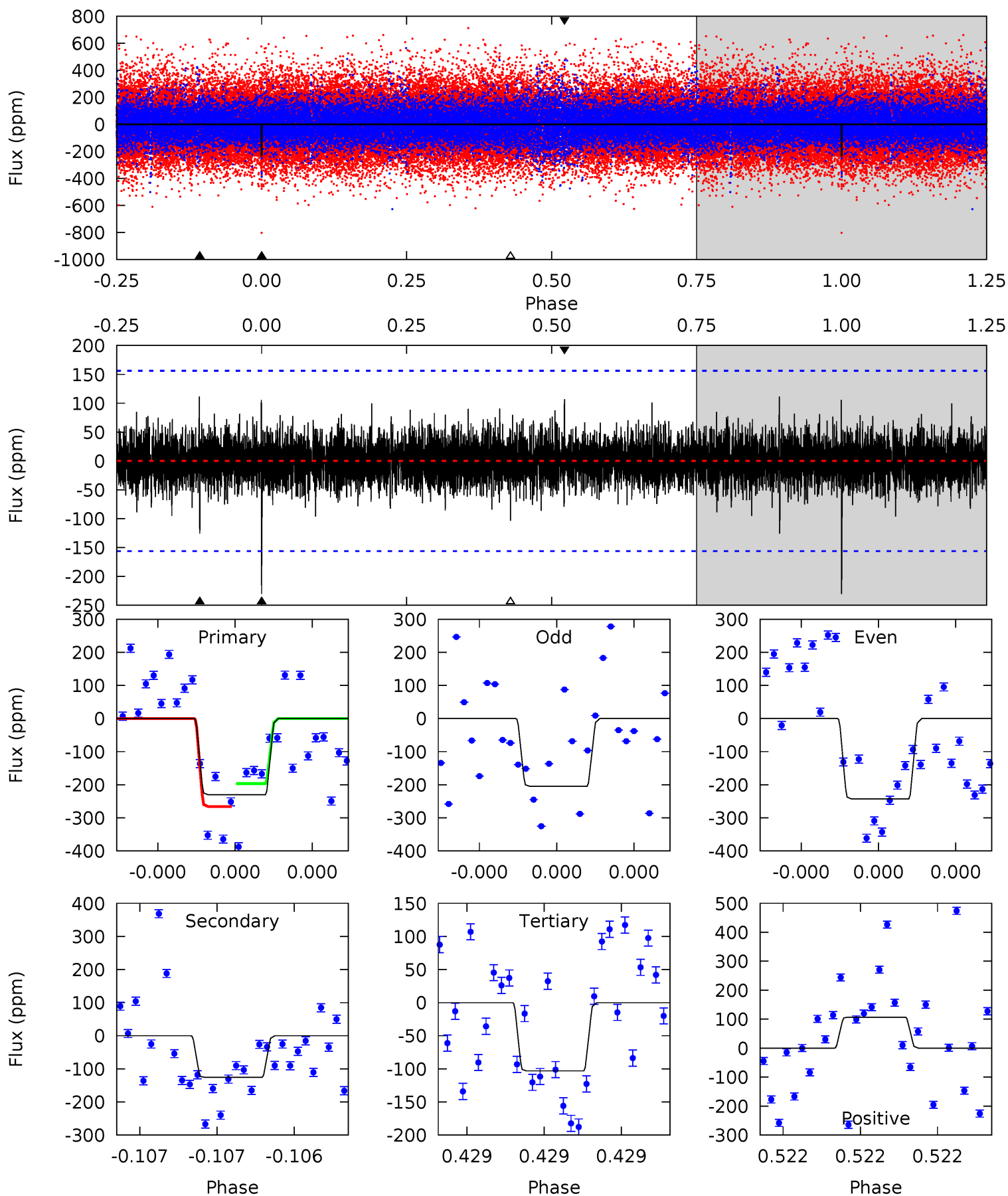
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.57	5.11	4.00	4.78	5.59	3.51	1.12	4.57	3.79	1.11	0.33	0.79	1.15	0.36	0.40



Alt Model-Shift Uniqueness Test

008166043-01, P = 502.938023 Days, E = 355.716830 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.24	4.50	3.69	3.83	5.59	3.51	0.92	4.55	4.41	0.81	0.67	0.66	1.13	0.33	1.24



Stellar Parameters For KIC 008166043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5168^{+154}_{-138}	$4.577^{+0.078}_{-0.052}$	$-0.580^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.783^{+0.935}_{-0.488}$
	+3%/-3%	+2%/-1%	+60%/-52%	+10%/-10%	+13%/-6%	+34%/-18%
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 008166043-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-145 ± 28	$2.16^{+1.95}_{-1.50}$	255^{+10}_{-10}	3725^{+2298}_{-702}	$19701^{+201611}_{-14361}$
Alt.	-126 ± 28	$2.19^{+1.92}_{-1.50}$	255^{+9}_{-9}	3638^{+1901}_{-669}	$16913^{+139724}_{-12283}$

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 $A_{\text{obs}} \gg 1.0$

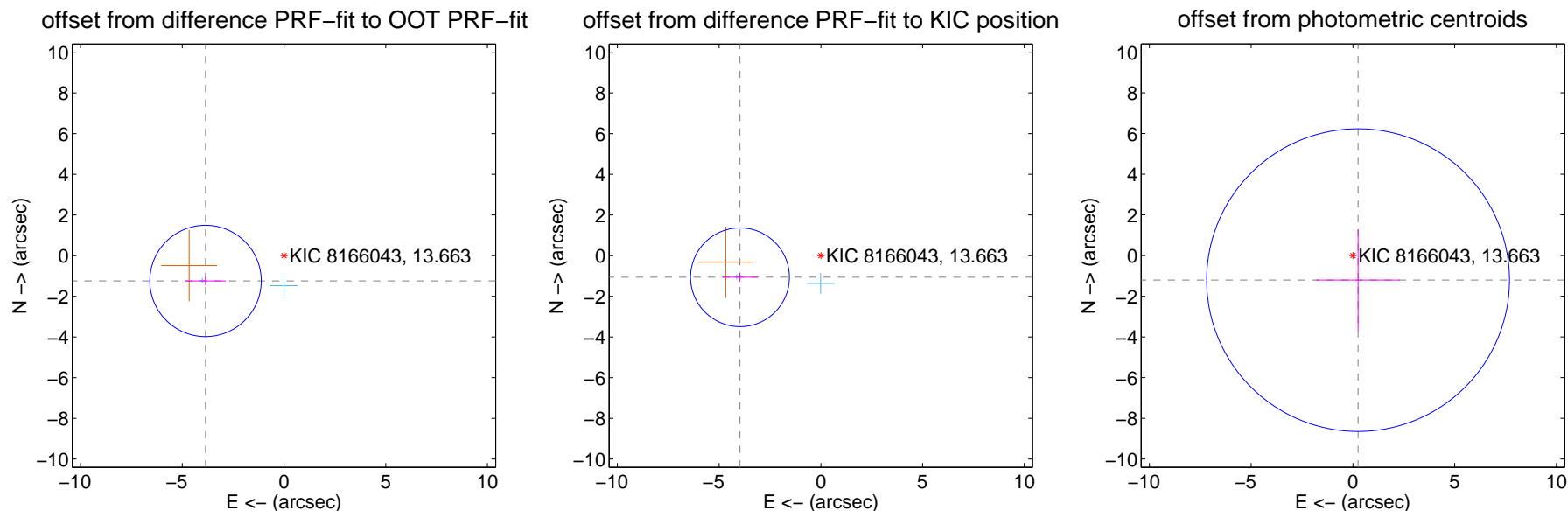
DV Centroid Data

Supplemental centroid analysis for 008166043-01. Kepler magnitude: 13.66. Transit SNR 7.25

There are 2 quarters with good PRF difference image offsets

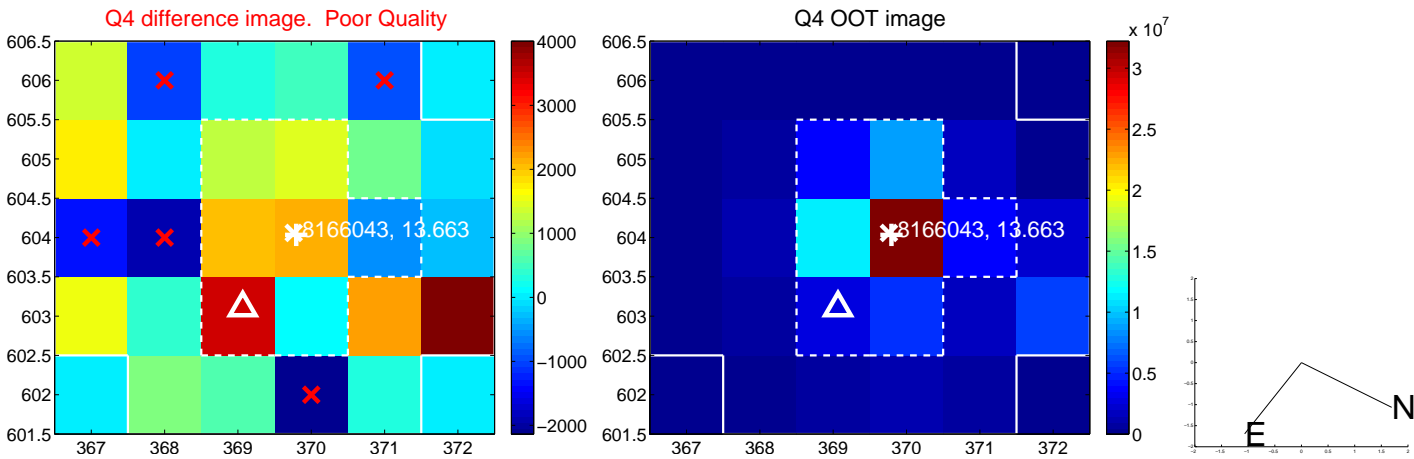
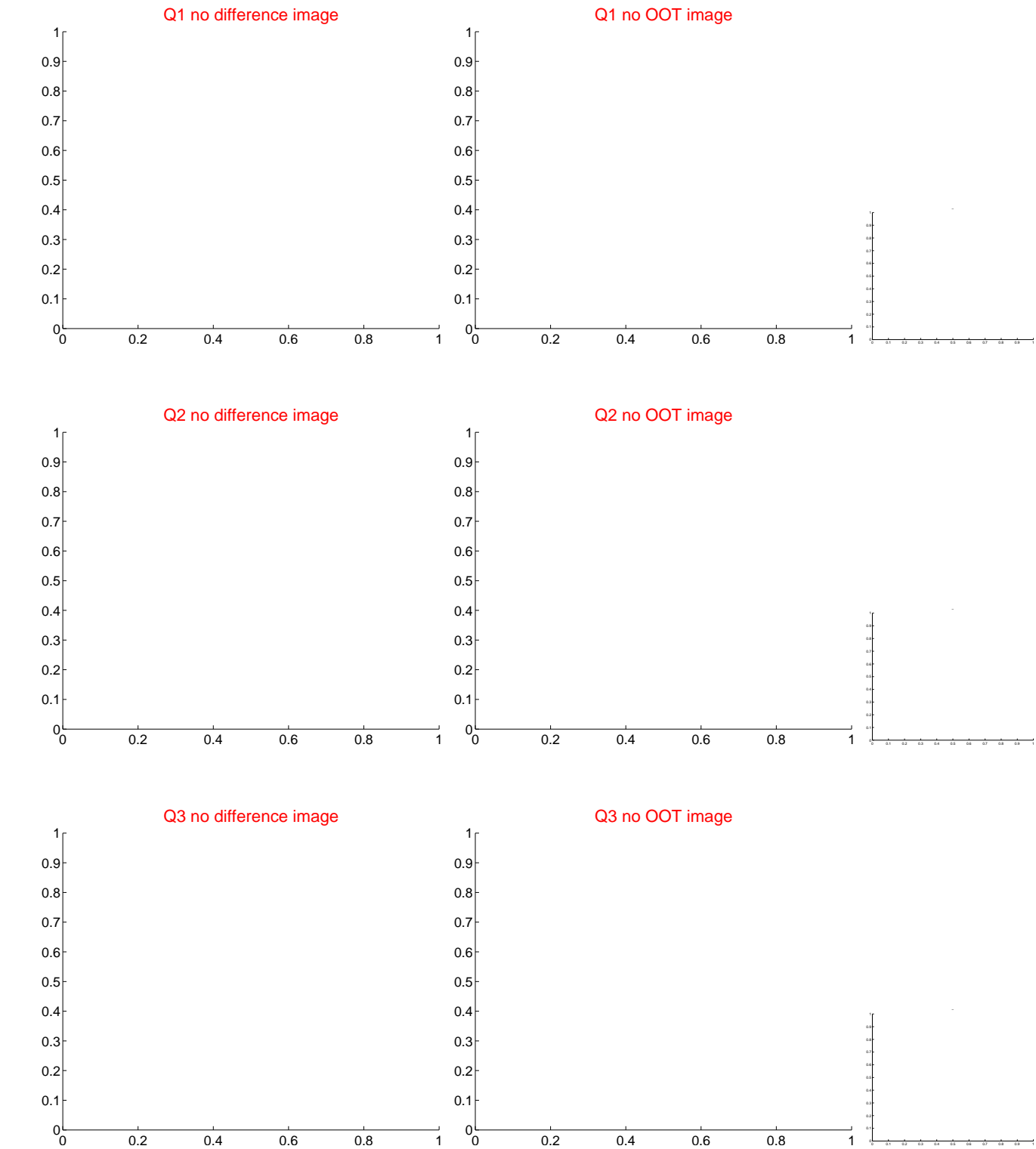
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.052 ± 0.912	4.44	3.857 ± 0.997	-1.244 ± 0.209
PRF-fit source offset from KIC position	4.116 ± 0.810	5.08	3.976 ± 0.873	-1.064 ± 0.223
photometric centroid source offset	1.23 ± 2.48	0.50	-0.25 ± 2.06	-1.21 ± 2.50



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.

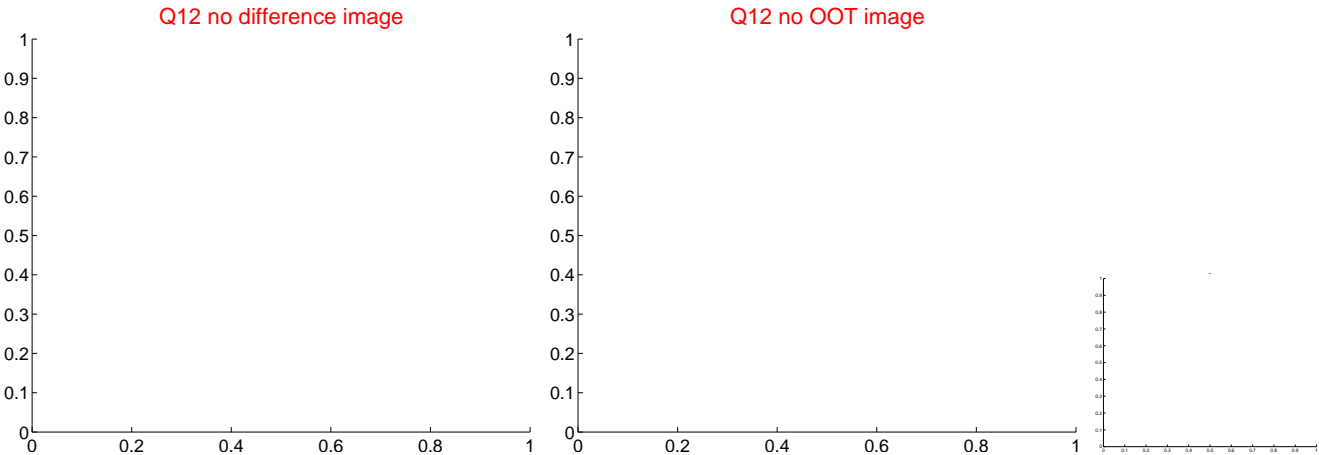
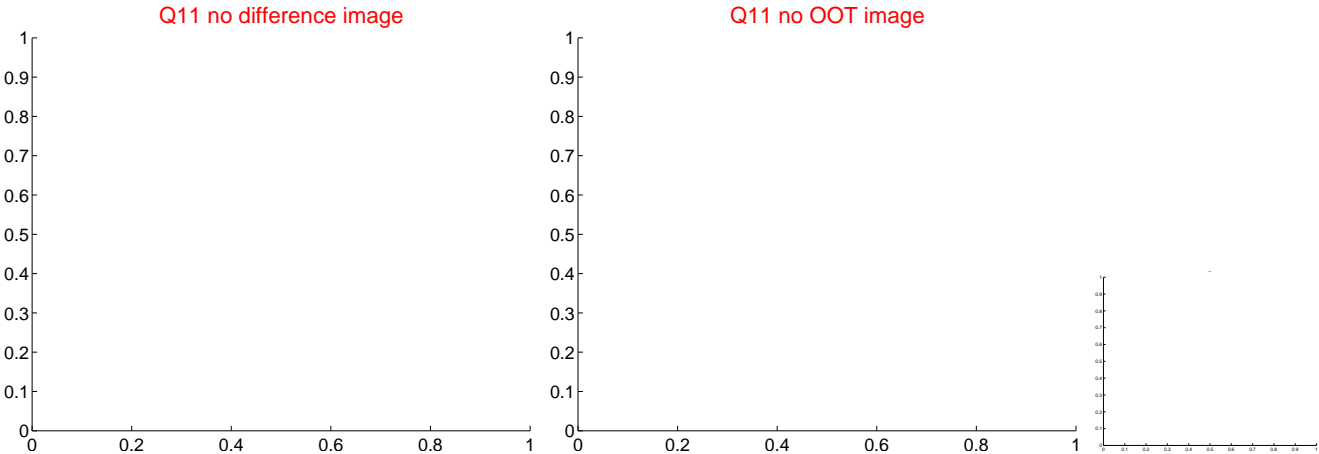
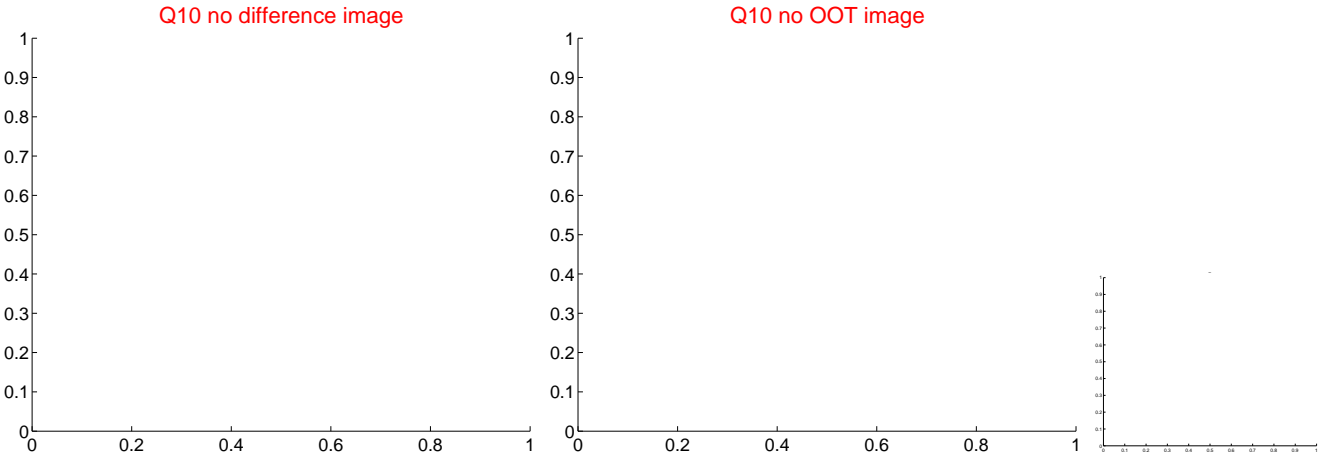
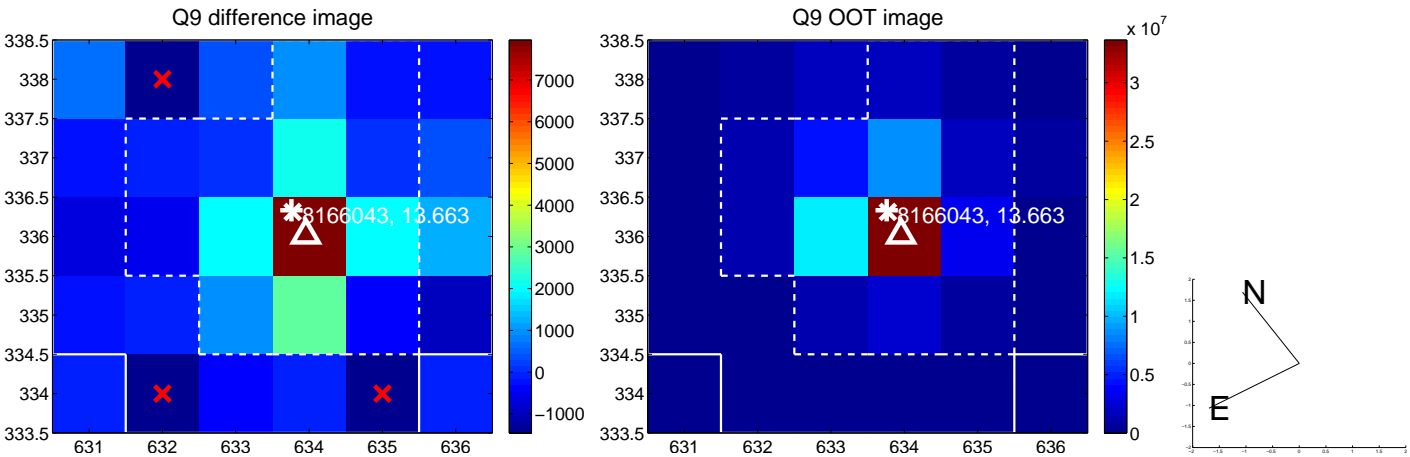
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



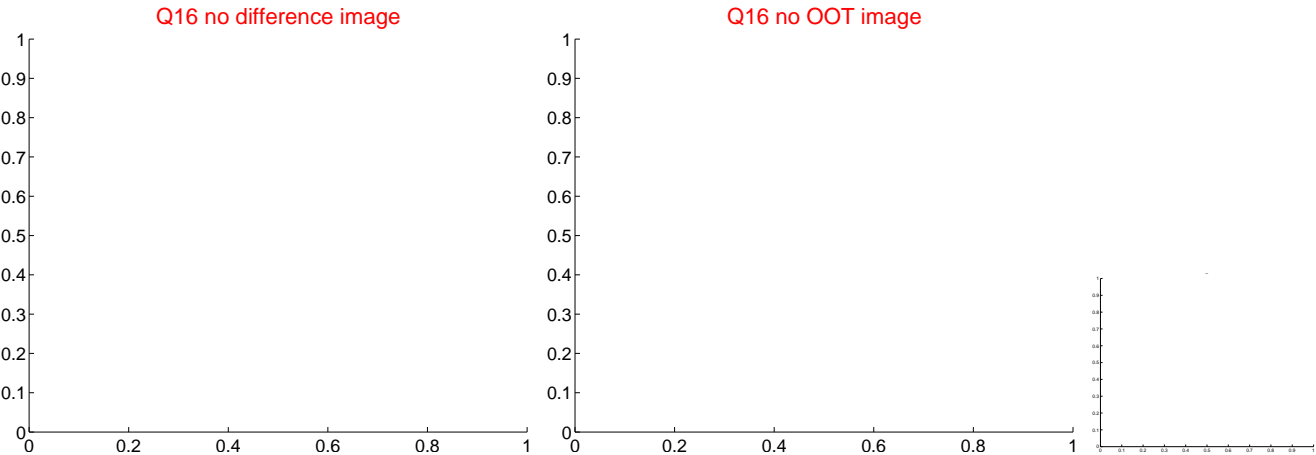
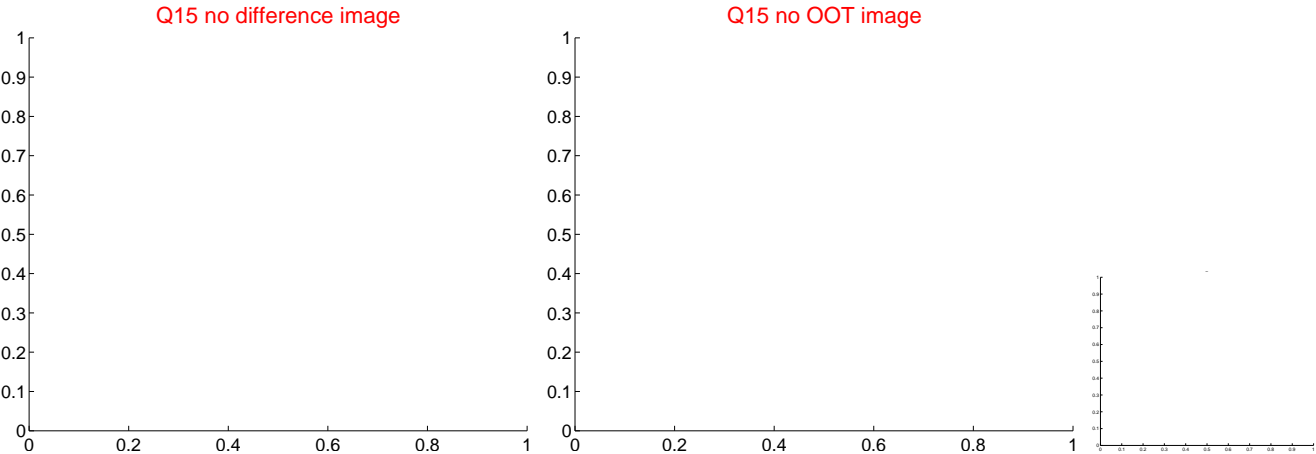
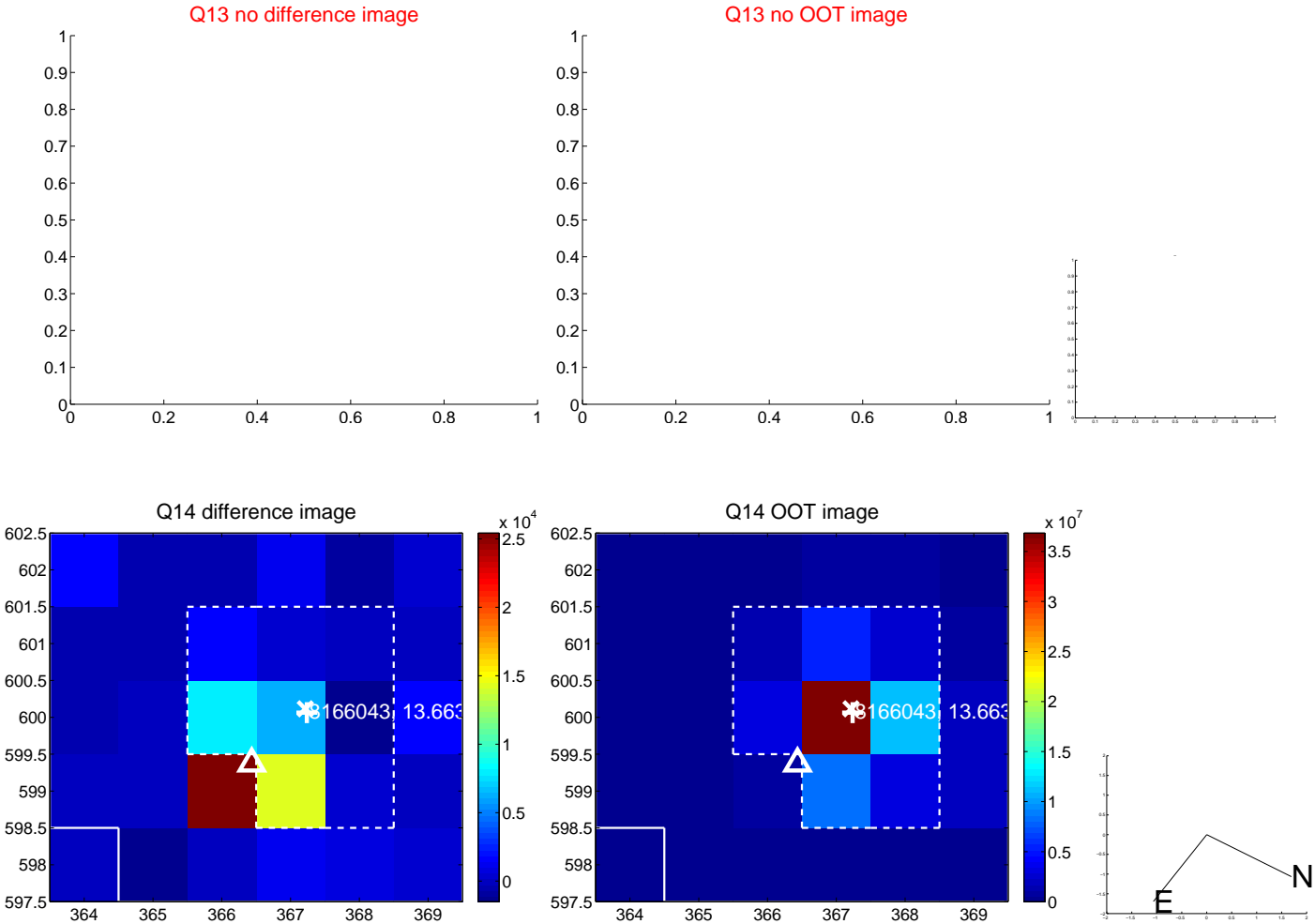
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



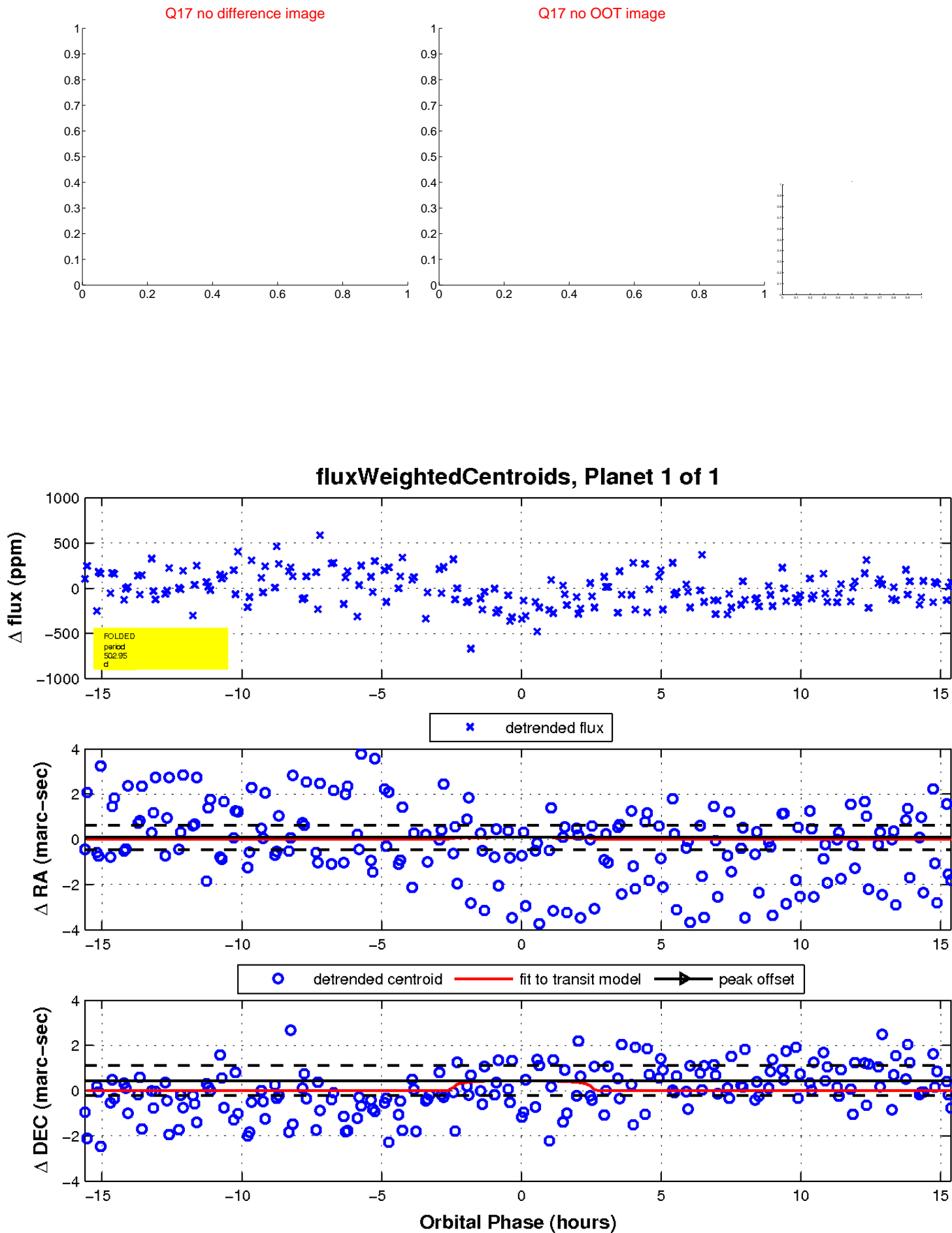
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

