

KIC 008164977

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})
008164977-01	OBS	No	112.238378	220.910849	273.8	2.069	8.5	7.4	13.97	4809	27.48	283.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008164977-01	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT

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

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

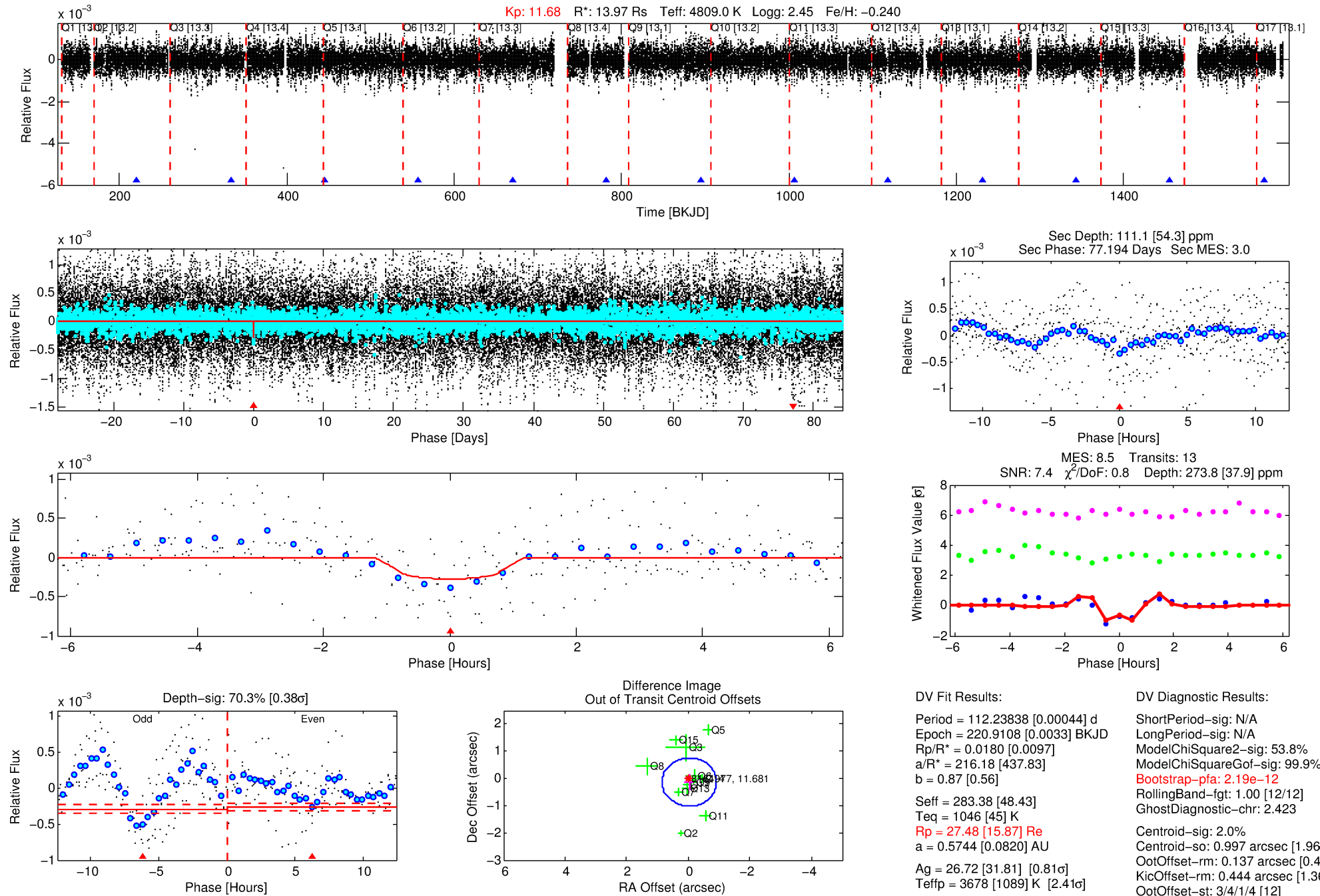
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008164977-01

No Significant Match Found

DV One-Page Summary

KIC: 8164977 Candidate: 1 of 1 Period: 112.238 d



DV Fit Results:

Period = 112.23838 [0.00044] d
Epoch = 220.9108 [0.0033] BKJD
Rp/R* = 0.0180 [0.0097]
a/R* = 216.18 [437.83]
b = 0.87 [0.56]
Seff = 283.38 [48.43]
Teq = 1046 [45] K
Rp = 27.48 [15.87] Re
a = 0.5744 [0.0820] AU
Ag = 26.72 [31.81] [0.81σ]
Teffp = 3678 [1089] K [2.41σ]

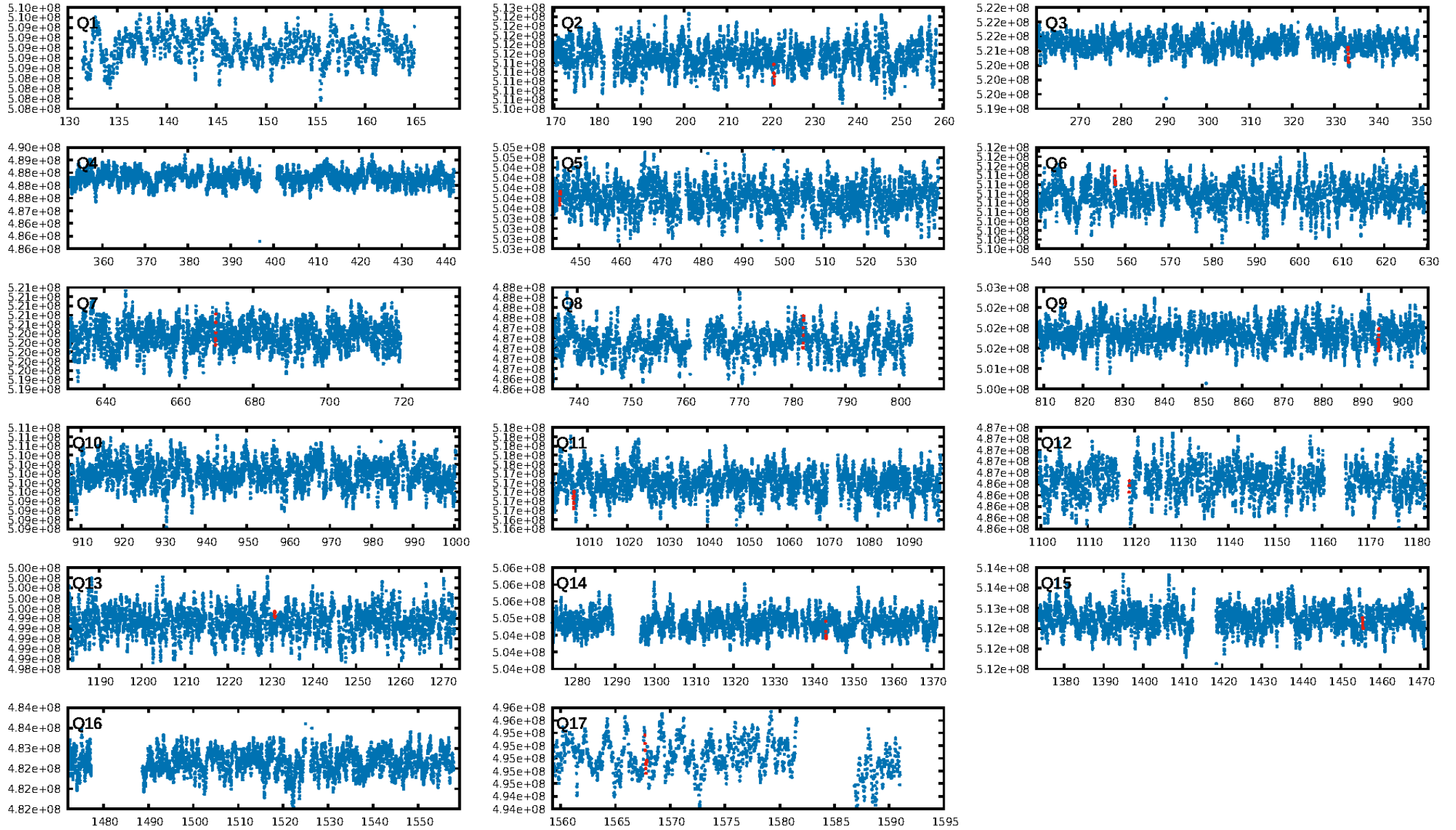
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 53.8%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.19e-12
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 2.423
Centroid-sig: 2.0%
Centroid-so: 0.997 arcsec [1.96σ]
OotOffset-rm: 0.137 arcsec [0.47σ]
KicOffset-rm: 0.444 arcsec [1.36σ]
OotOffset-st: 3/4/1/4 [12]
KicOffset-st: 3/4/1/4 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 1.00 [12/12]

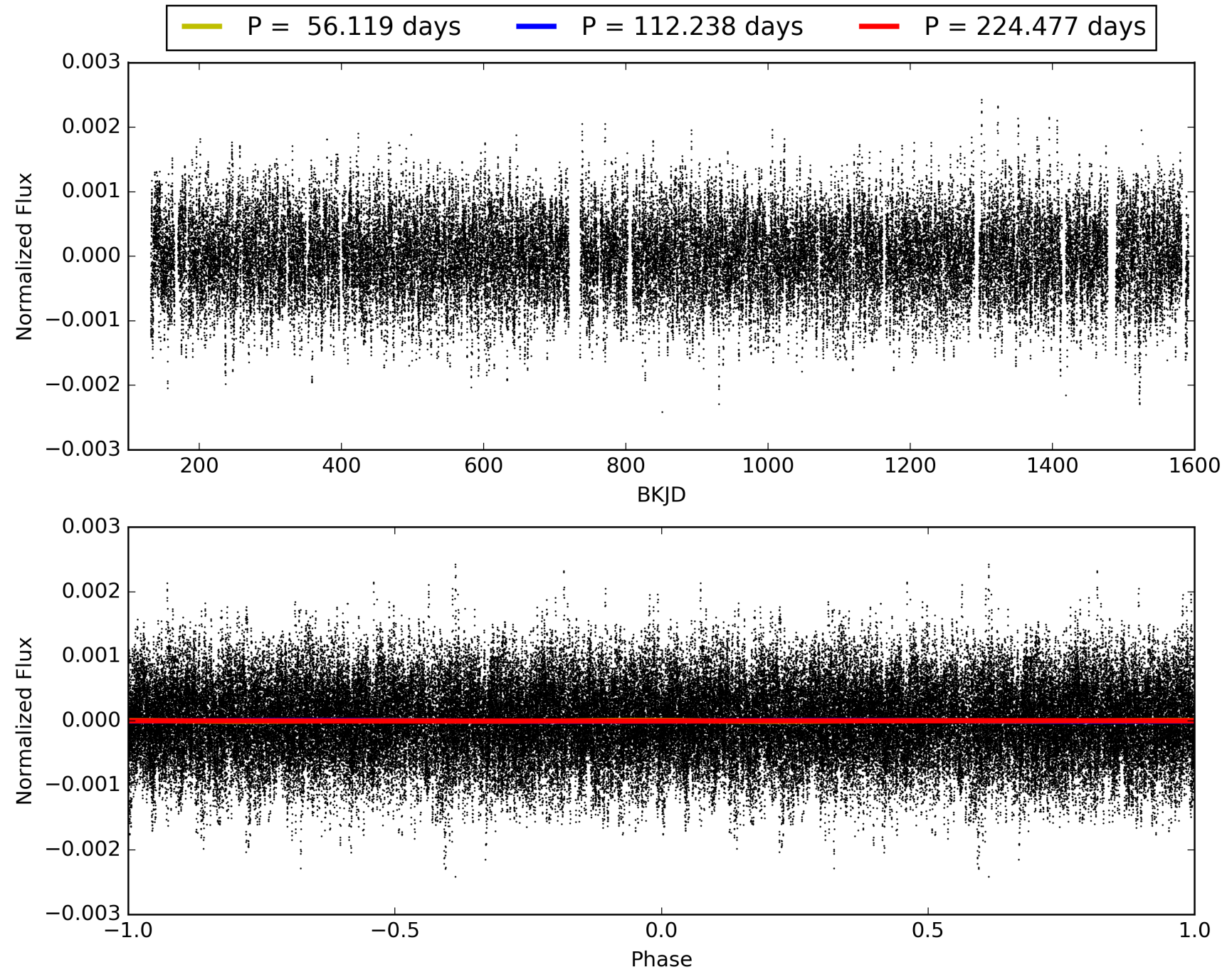
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:49:30 Z

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

TCE 008164977-01, PDC Light Curves

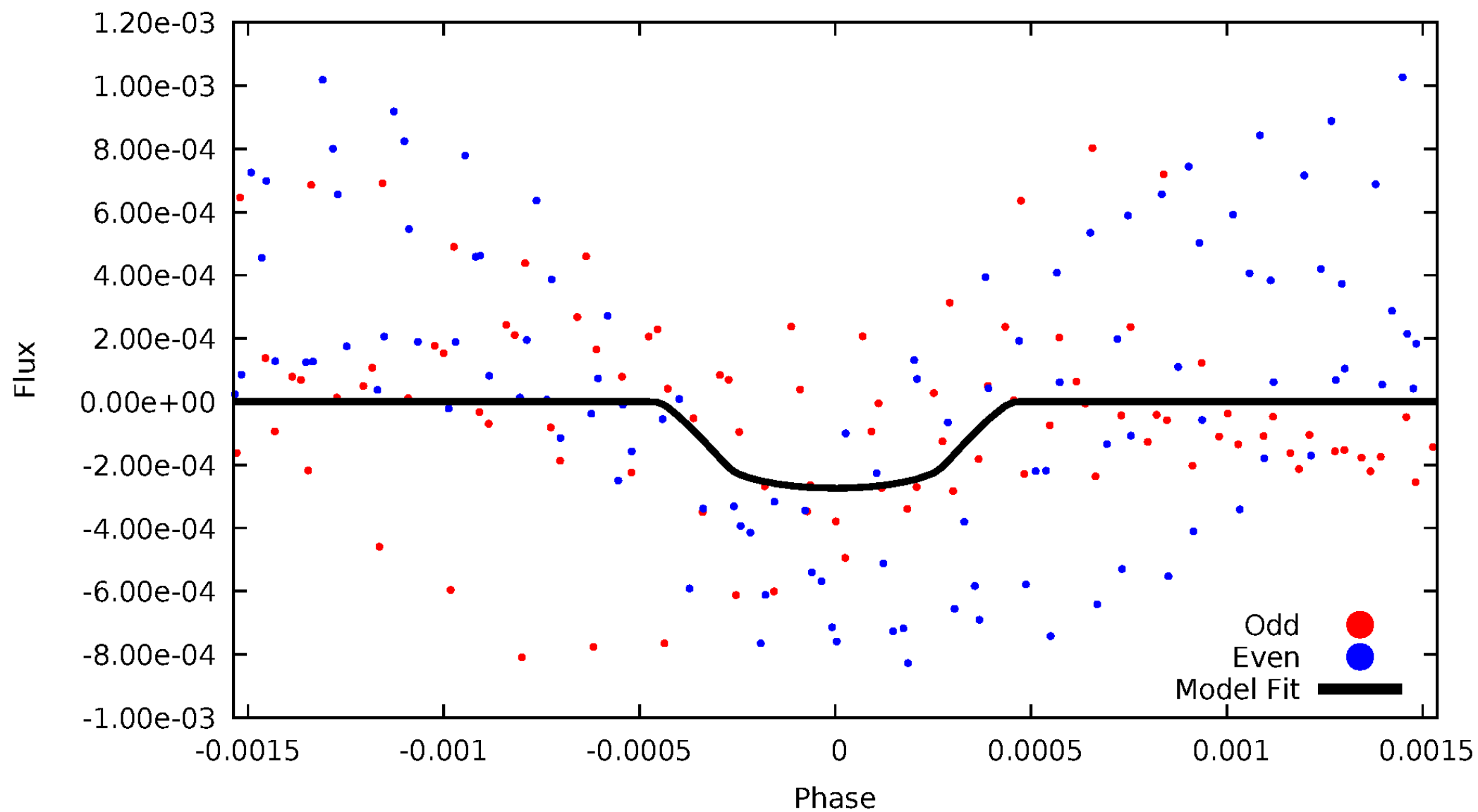


TCE 008164977-01



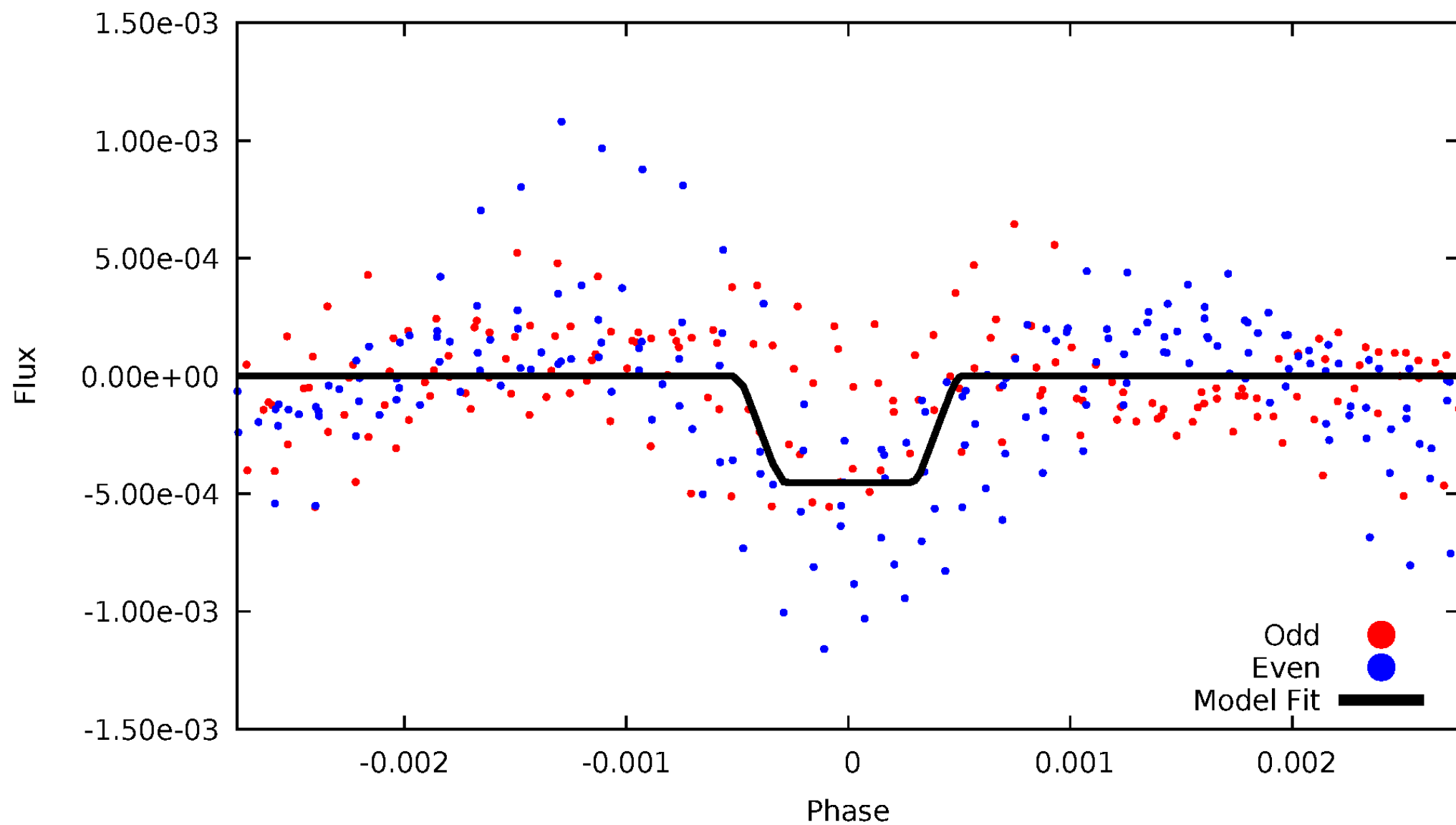
DV Odd/Even

TCE 008164977-01



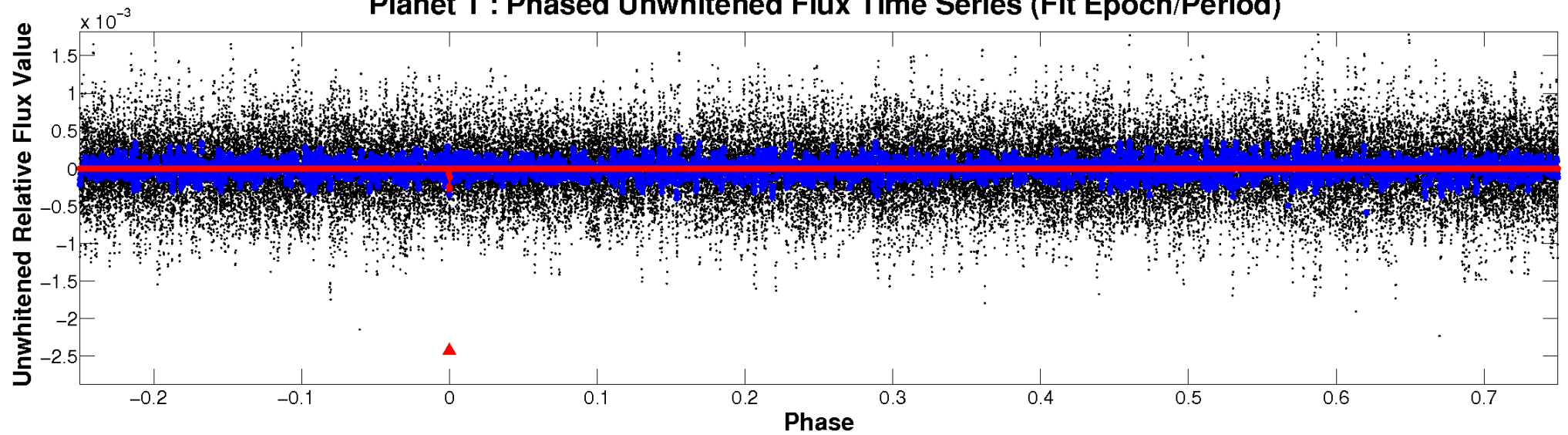
ALT Odd/Even

TCE 008164977-01

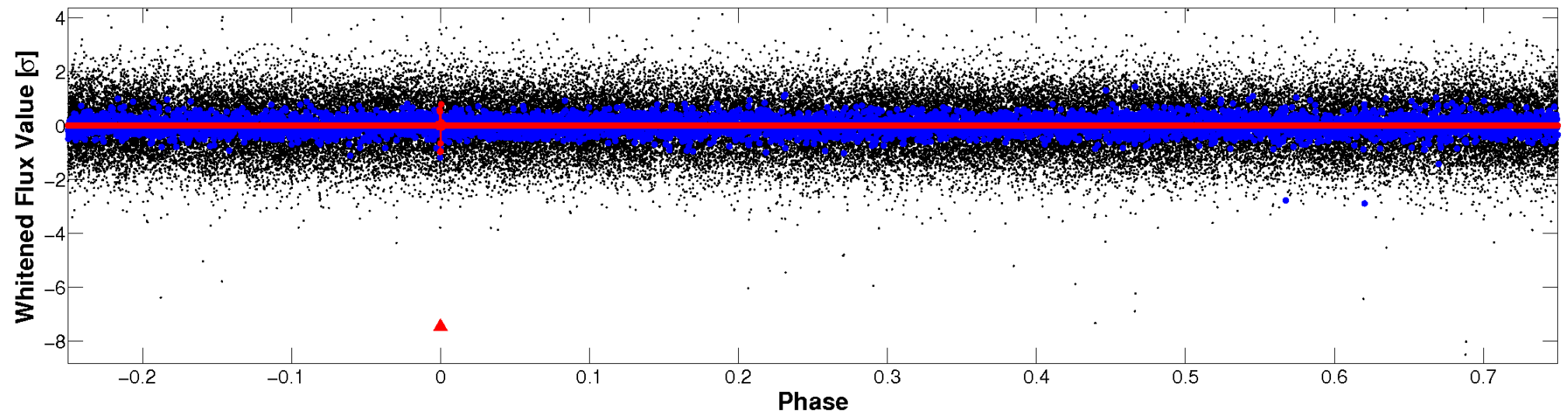


Non-Whitened Vs. Whitened Light Curve

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

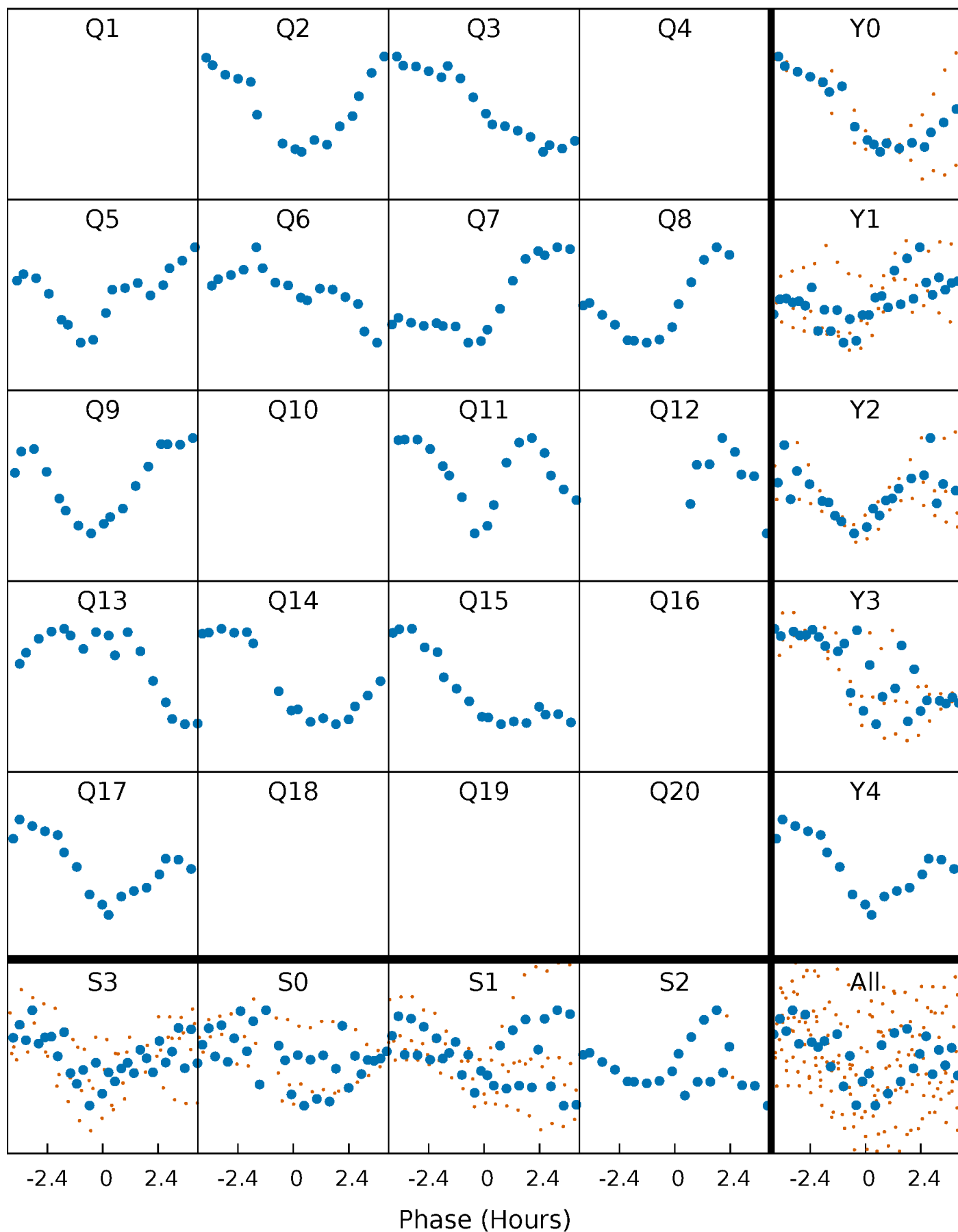


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



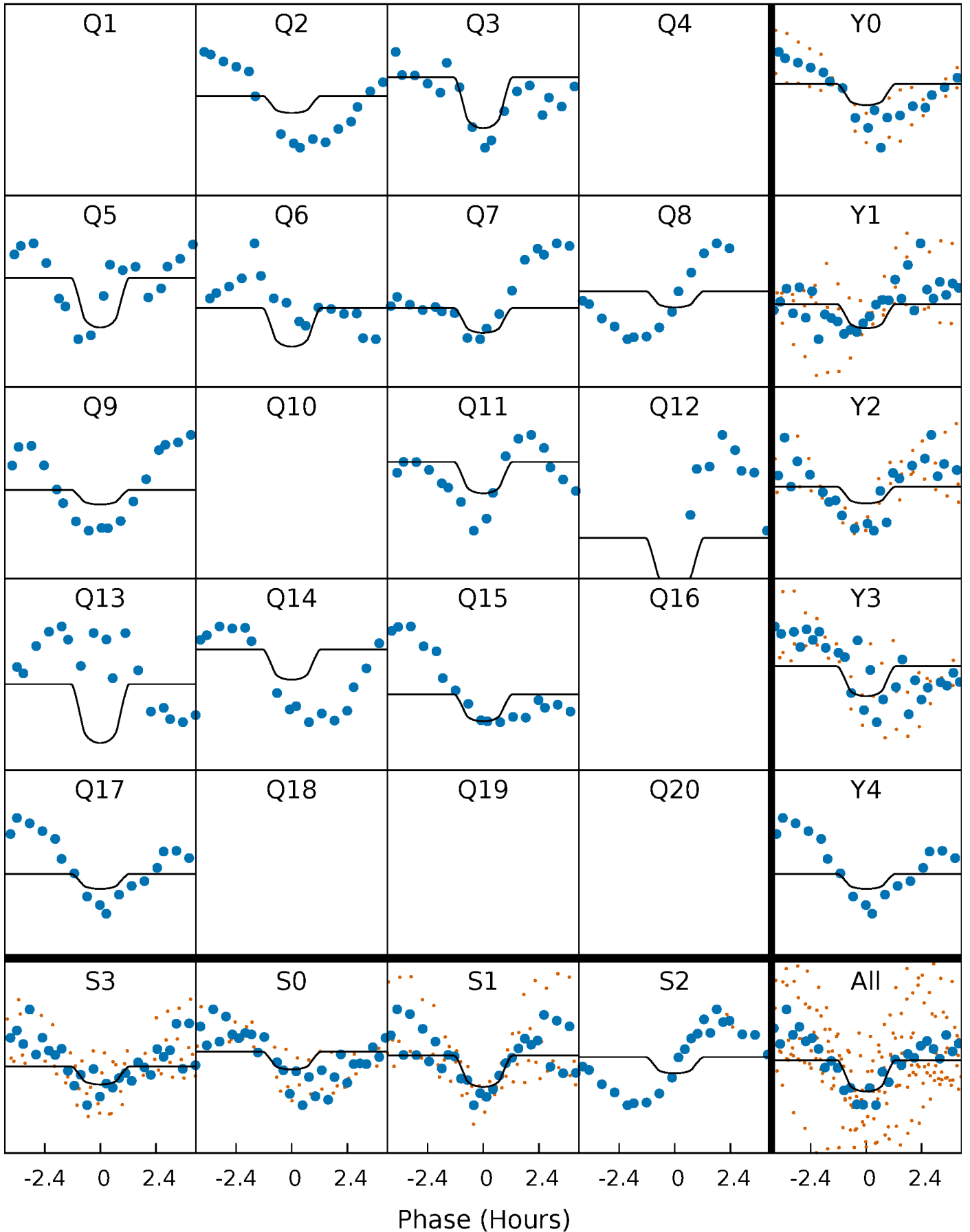
PDC Quarter-Phased Transit Curves

TCE 008164977-01 P=112.238378 Days $T_0=220.910849$ (BKJD)



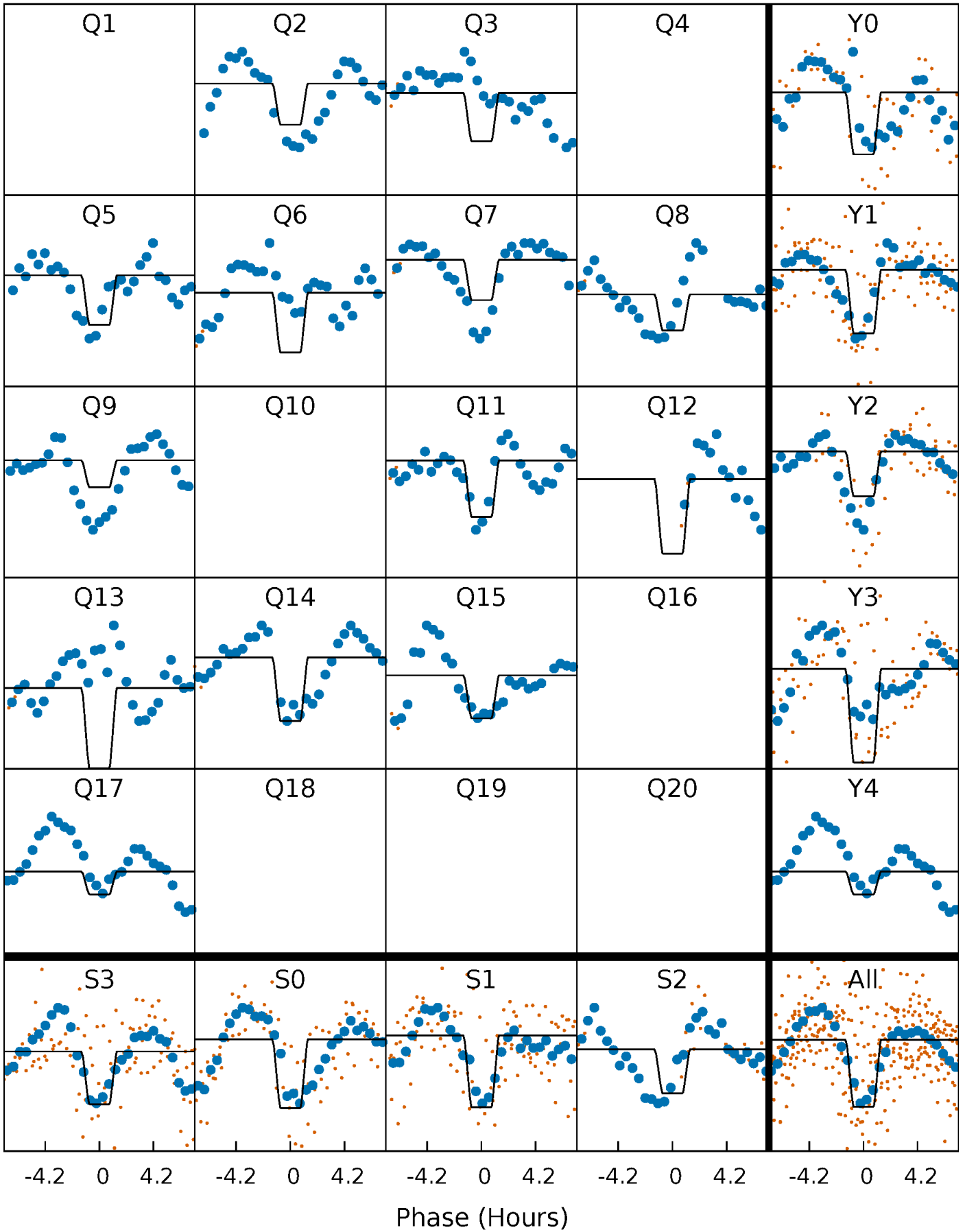
DV Quarter-Phased Transit Curves

TCE 008164977-01 P=112.238378 Days $T_0=220.910849$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

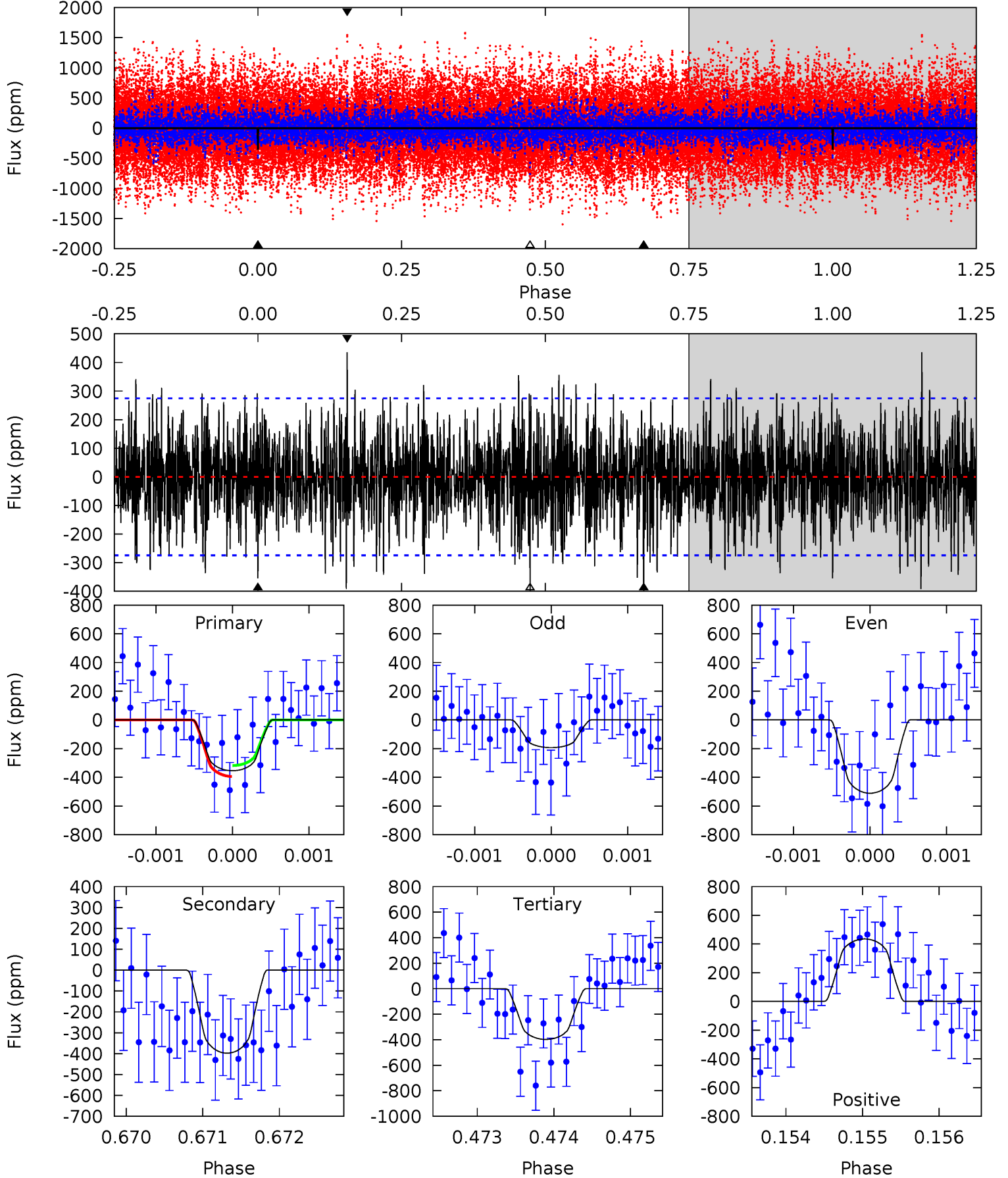
TCE 008164977-01 P=112.239569 Days $T_0=220.894635$ (BKJD)



DV Model-Shift Uniqueness Test

008164977-01, P = 112.238378 Days, E = 108.672471 Days

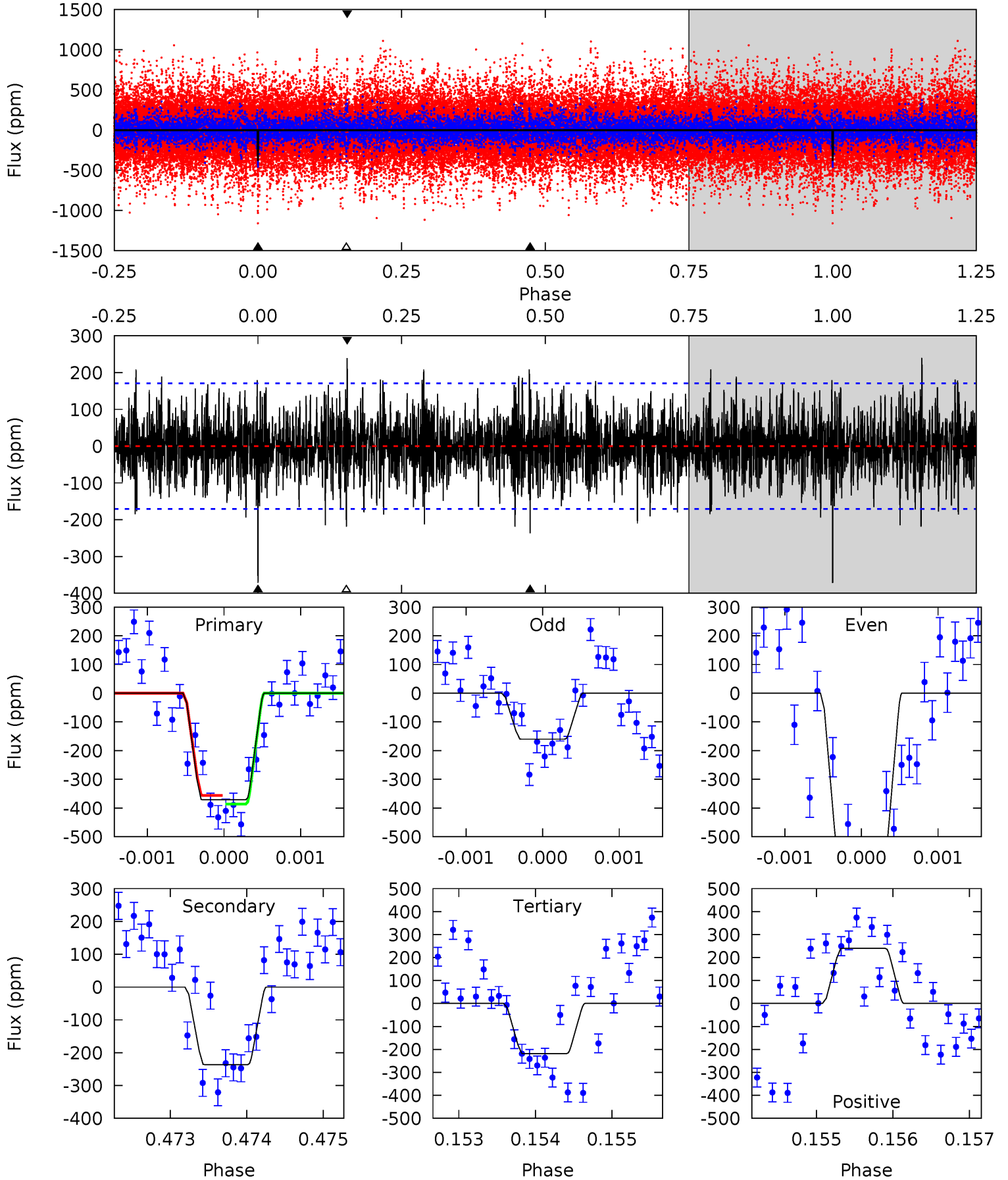
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.06	7.93	7.92	8.67	5.47	3.32	2.33	-0.86	-1.61	0.00	-0.75	3.17	1.14	0.52	0.76



Alt Model-Shift Uniqueness Test

008164977-01, P = 112.239569 Days, E = 108.655066 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.56	6.99	7.66	5.46	3.30	2.07	4.89	4.22	0.57	-0.10	6.87	0.95	0.39	0.48



Stellar Parameters For KIC 008164977

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4809^{+43}_{-100}	$2.450^{+0.033}_{-0.030}$	$-0.240^{+0.100}_{-0.150}$	$13.969^{+1.472}_{-2.943}$	$2.009^{+0.792}_{-0.712}$	$0.001^{+0.000}_{-0.000}$
	+1%/-2%	+1%/-1%	+42%/-62%	+11%/-21%	+39%/-35%	+34%/-9%
Source	SPE74	AST11	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008164977-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-398 ± 50	$27.49^{+14.60}_{-14.47}$	1460^{+32}_{-45}	5016^{+2141}_{-826}	95^{+318}_{-54}
Alt.	-237 ± 31	$32.77^{+16.13}_{-14.23}$	1457^{+36}_{-44}	4206^{+1061}_{-537}	40^{+85}_{-21}

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

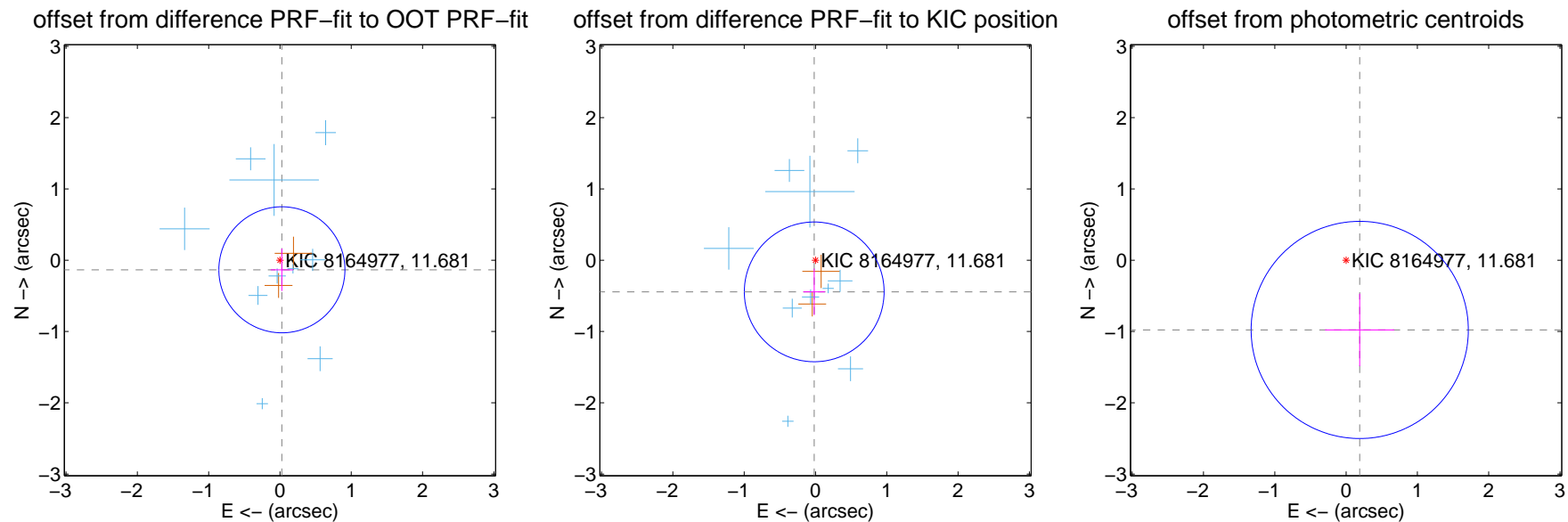
DV Centroid Data

Supplemental centroid analysis for 008164977-01. **Kepler magnitude: 11.68.** Transit SNR 7.38

There are 10 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

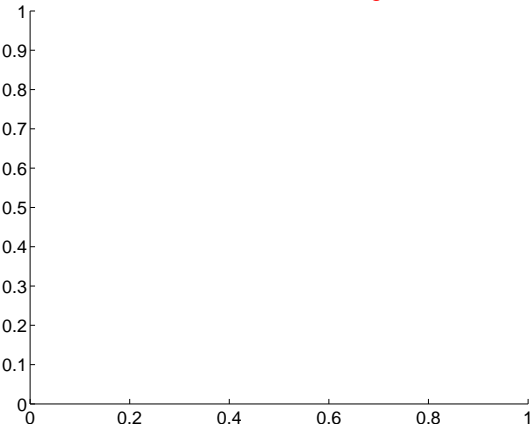
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.137 ± 0.295	0.47	-0.027 ± 0.156	-0.135 ± 0.296
PRF-fit source offset from KIC position	0.444 ± 0.327	1.36	0.018 ± 0.154	-0.444 ± 0.326
photometric centroid source offset	1.00 ± 0.51	1.96	-0.19 ± 0.49	-0.98 ± 0.51



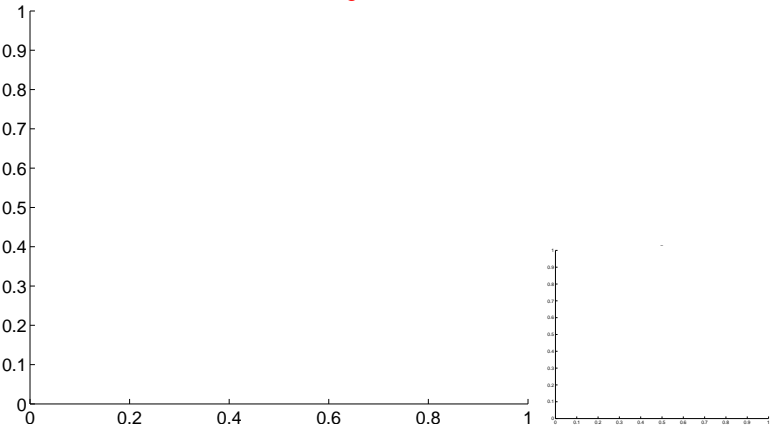
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

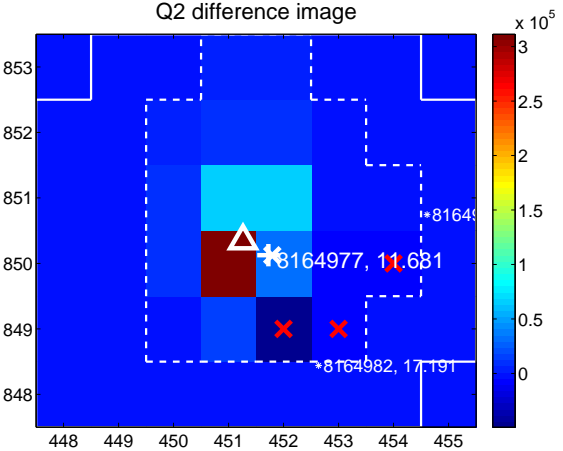
Q1 no difference image



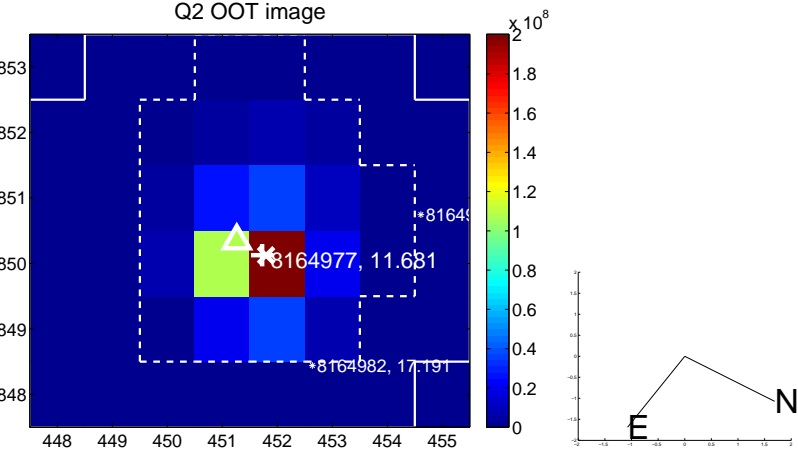
Q1 no OOT image



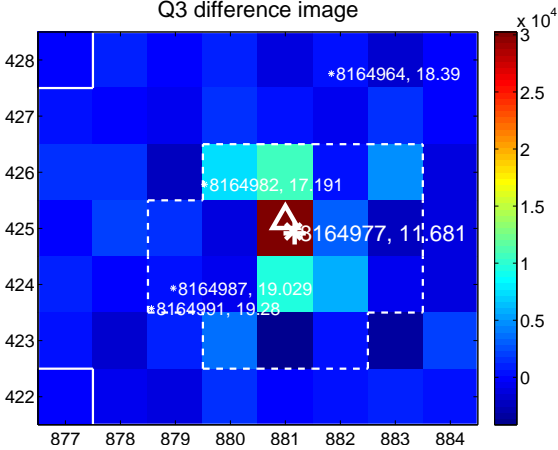
Q2 difference image



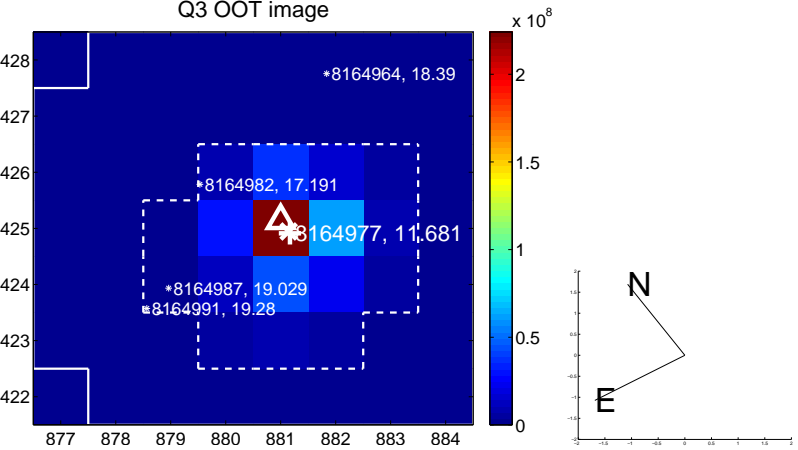
Q2 OOT image



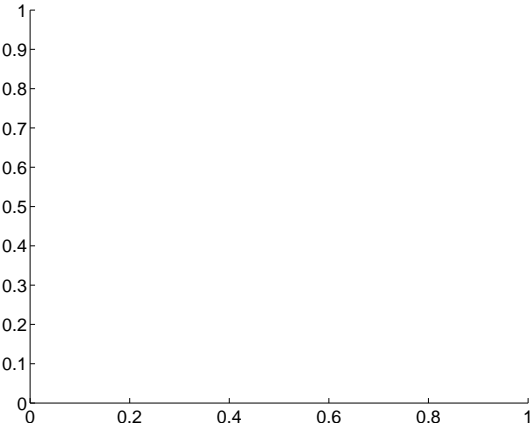
Q3 difference image



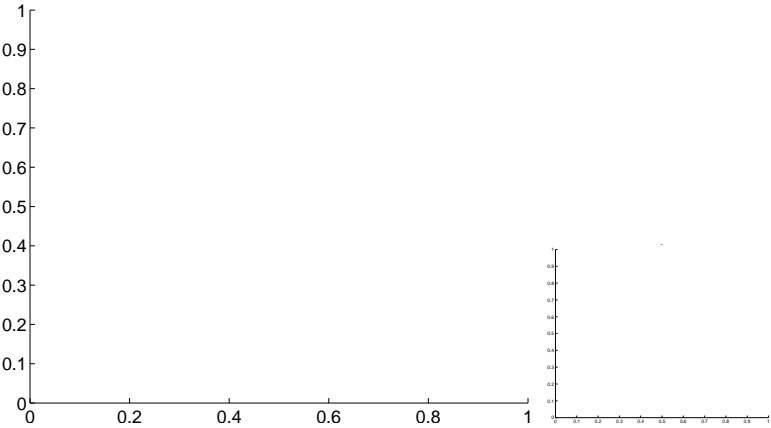
Q3 OOT image



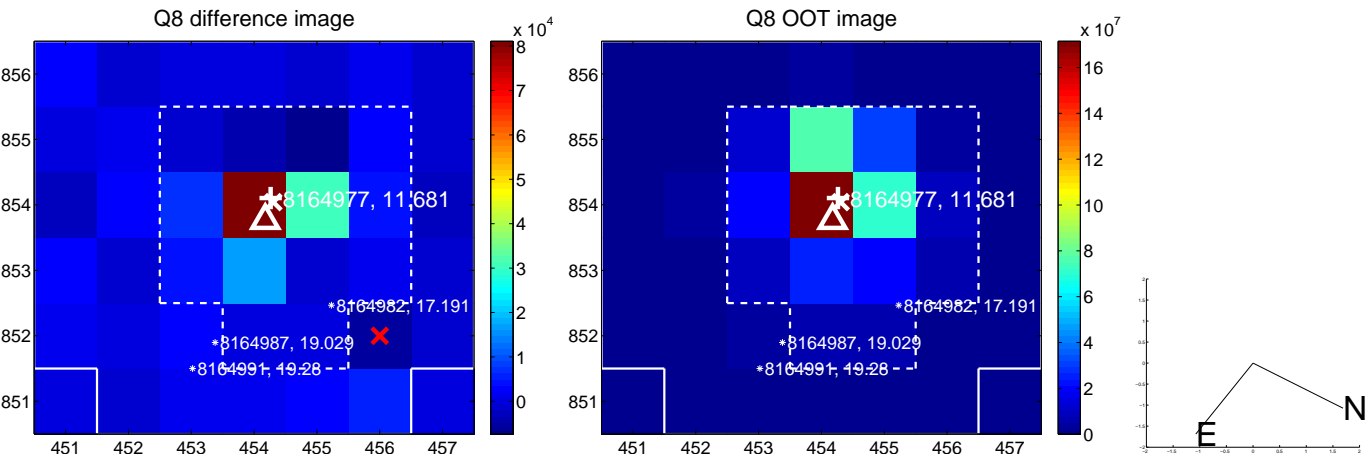
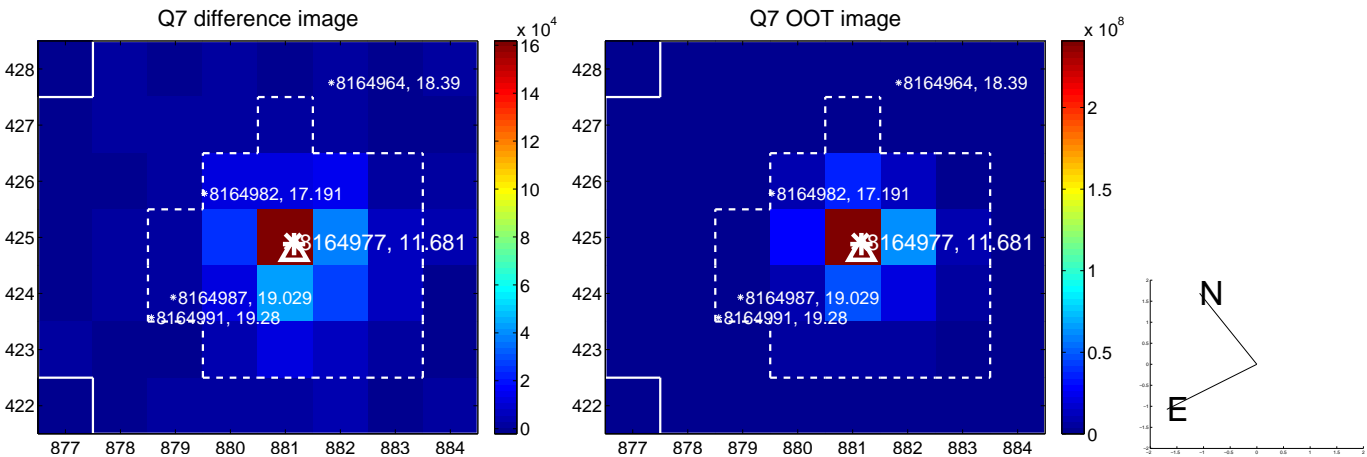
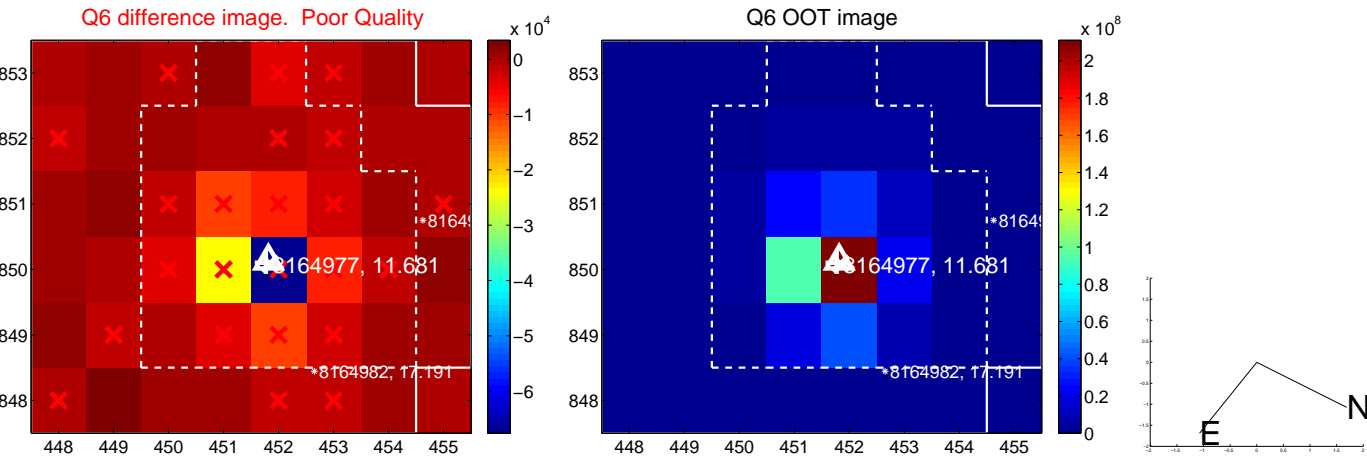
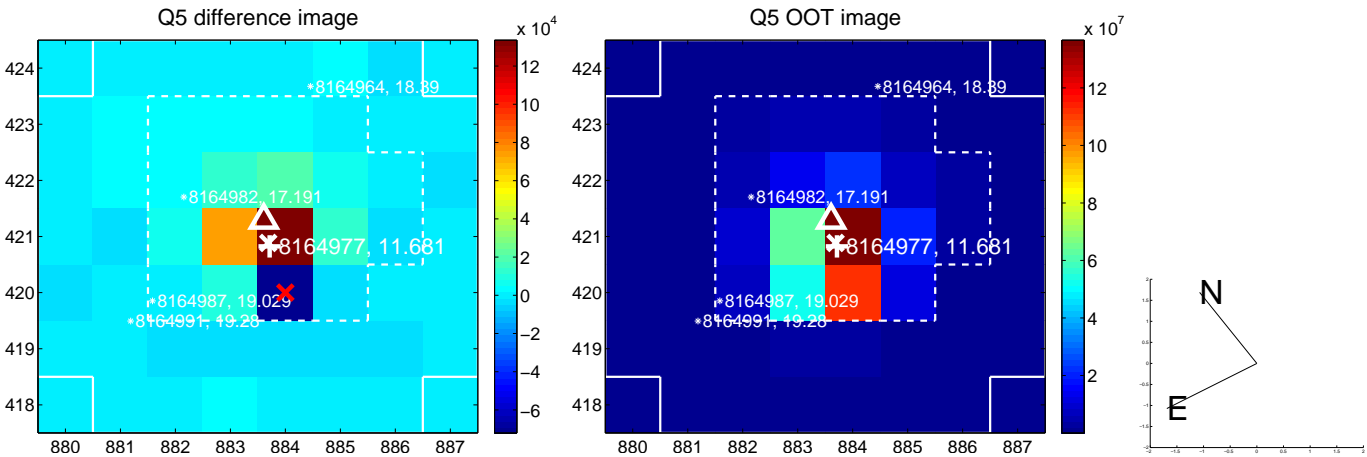
Q4 no difference image



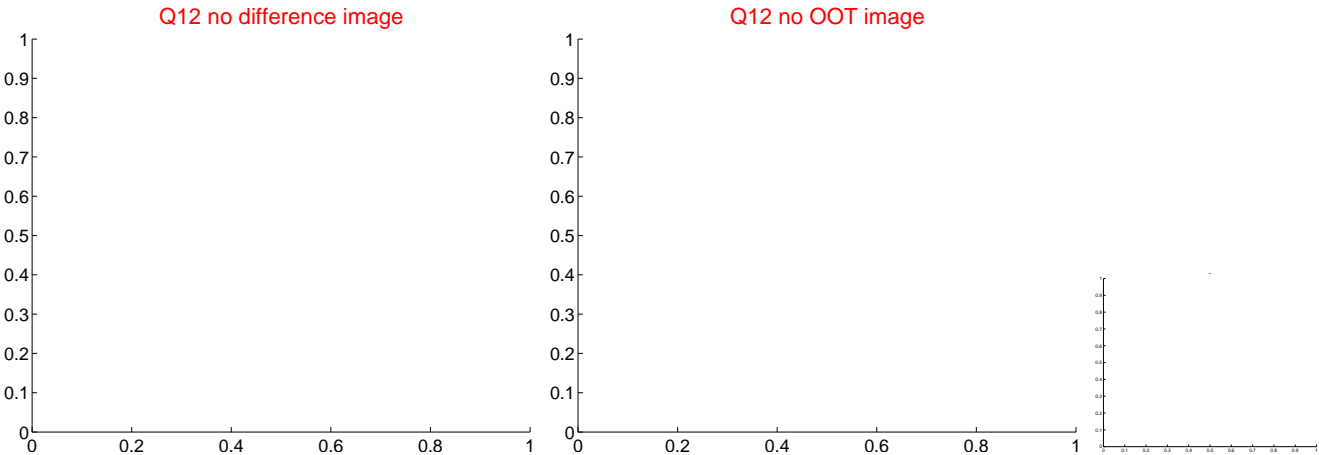
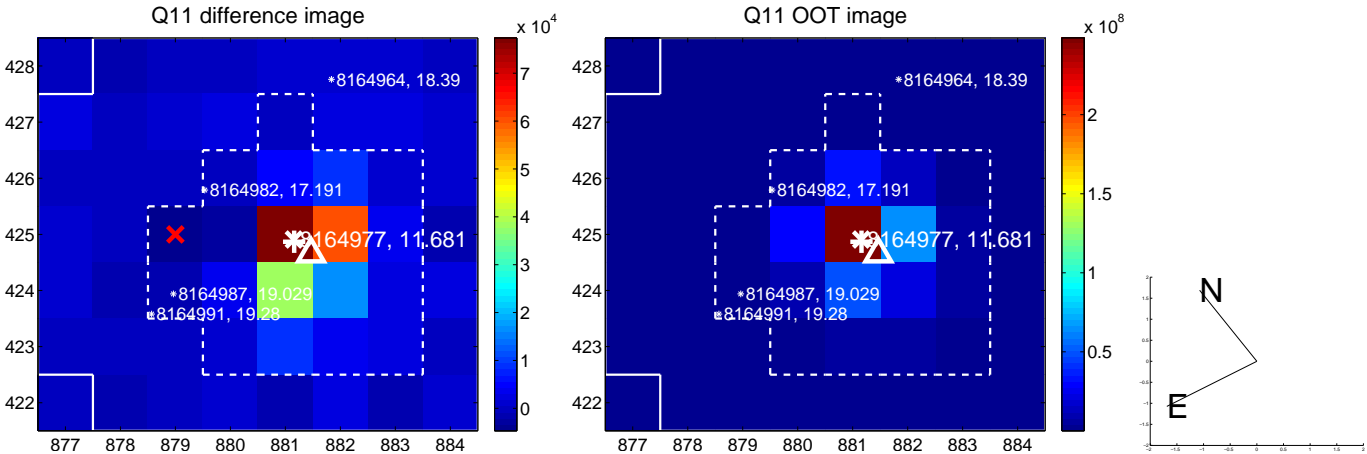
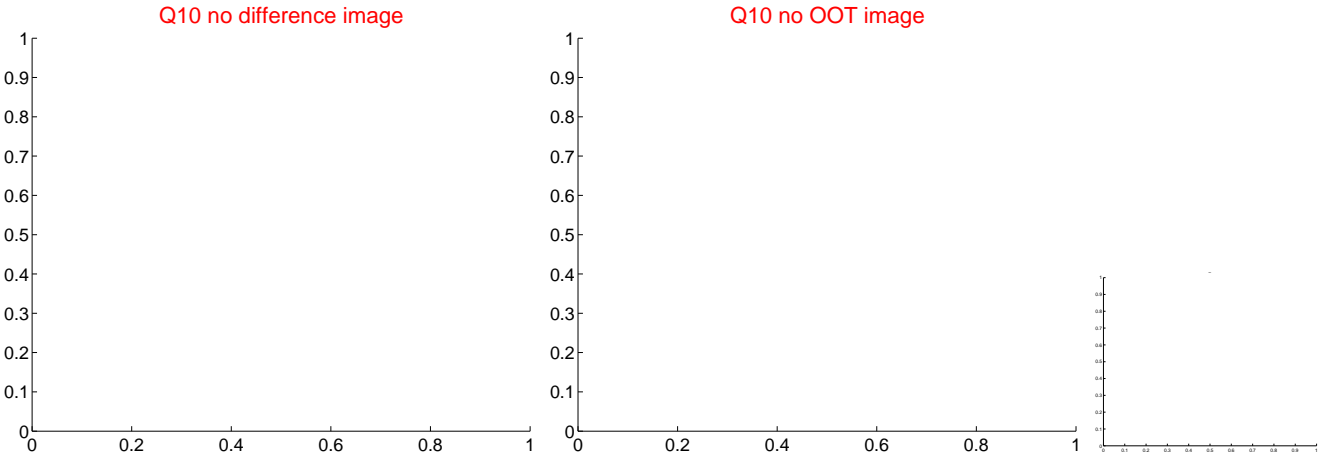
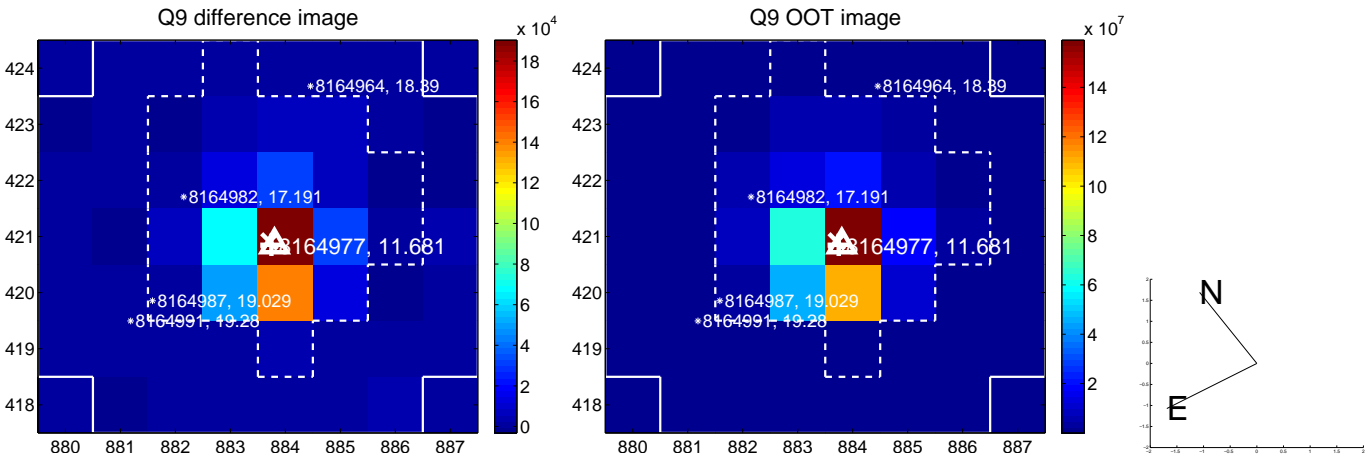
Q4 no OOT image



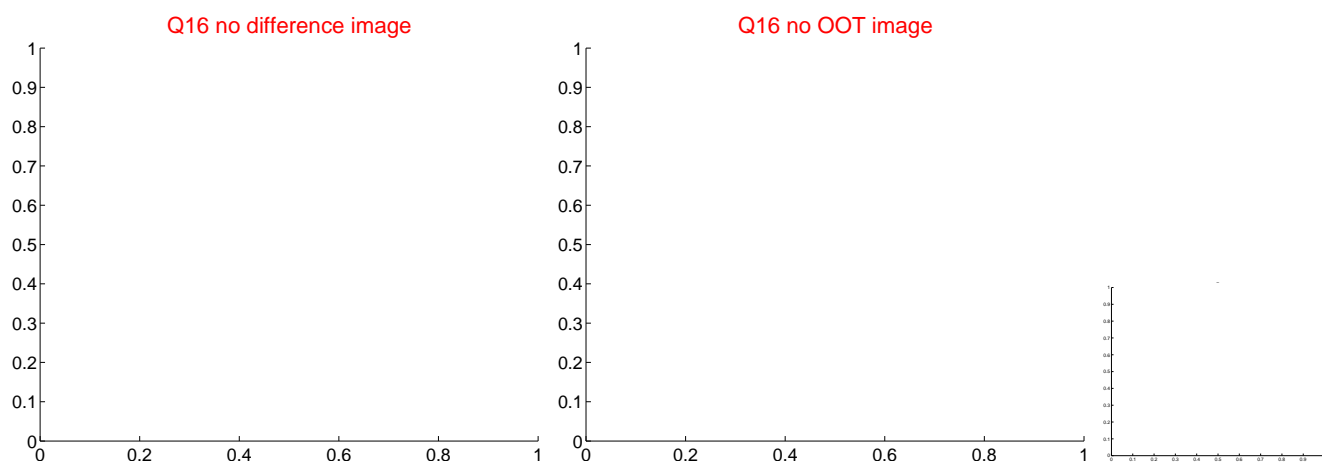
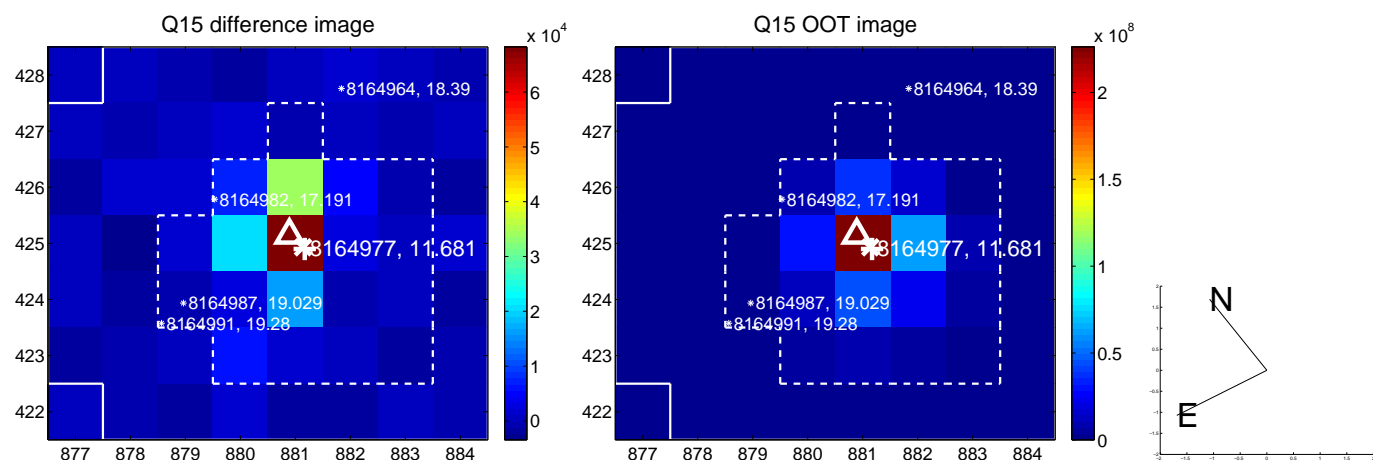
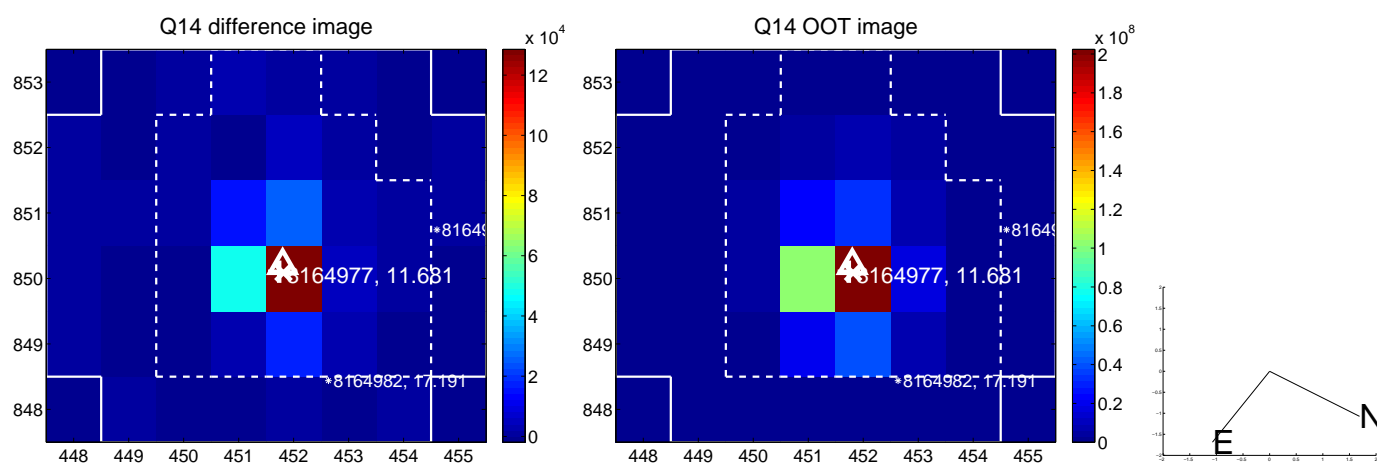
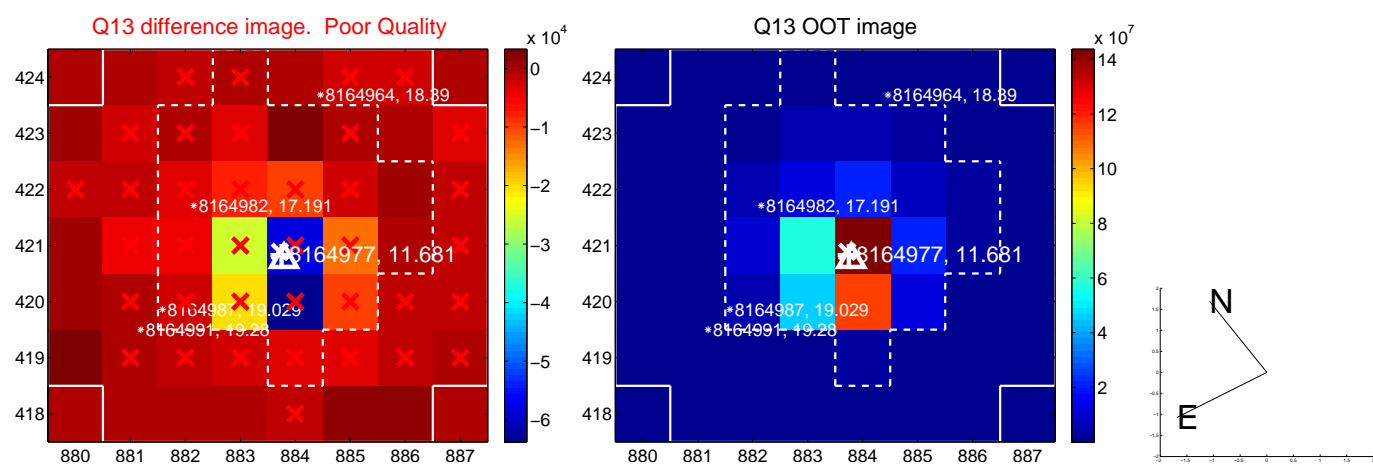
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



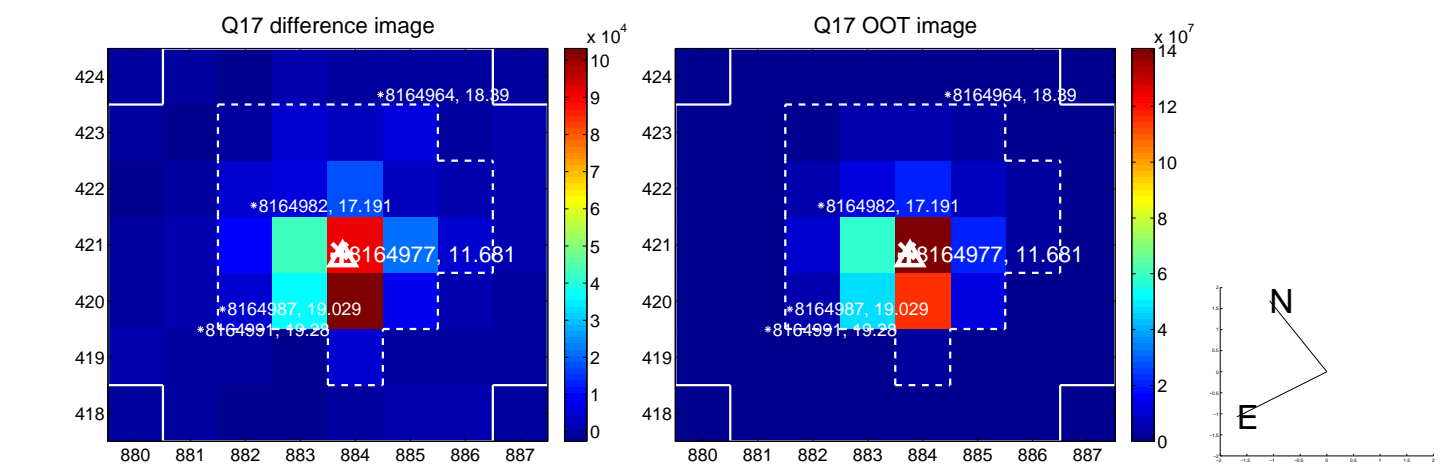
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



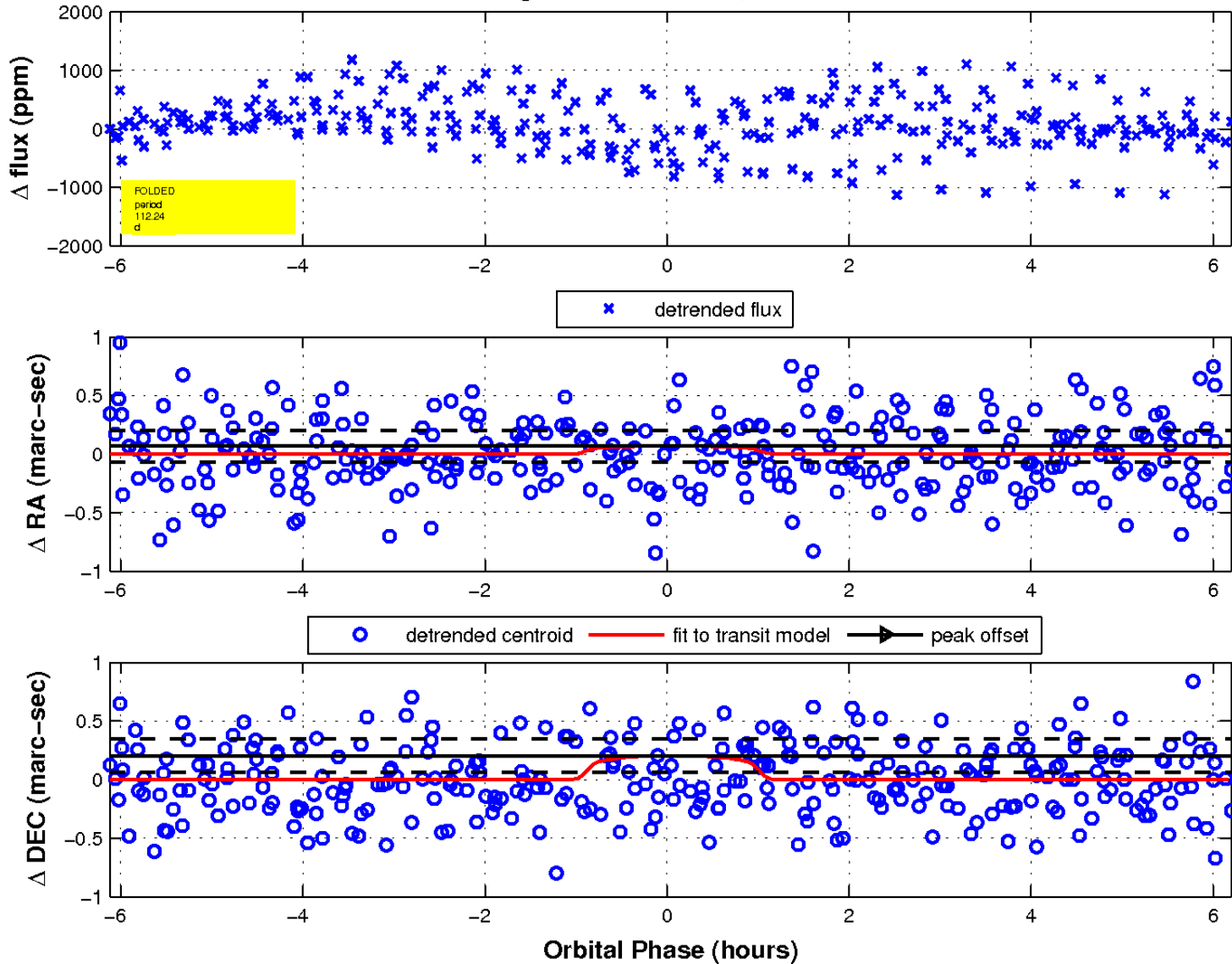
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

