

KIC 004072333

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})
004072333-01	OBS	2731.01	2.007770	132.573482	345.0	2.090	18.9	20.7	0.86	5645	1.92	717.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004072333-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET—HALO_GHOST

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 004072333-01

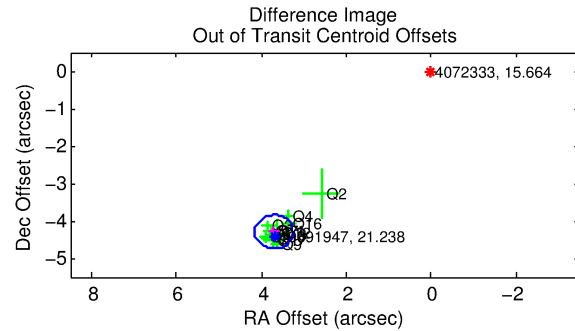
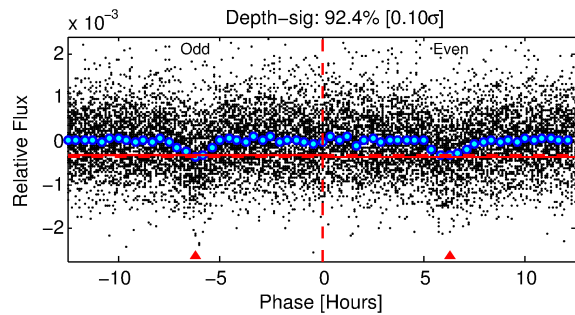
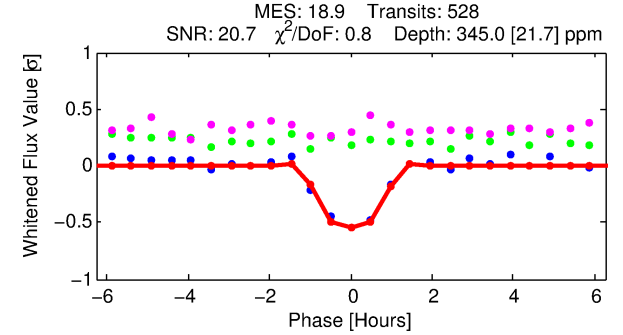
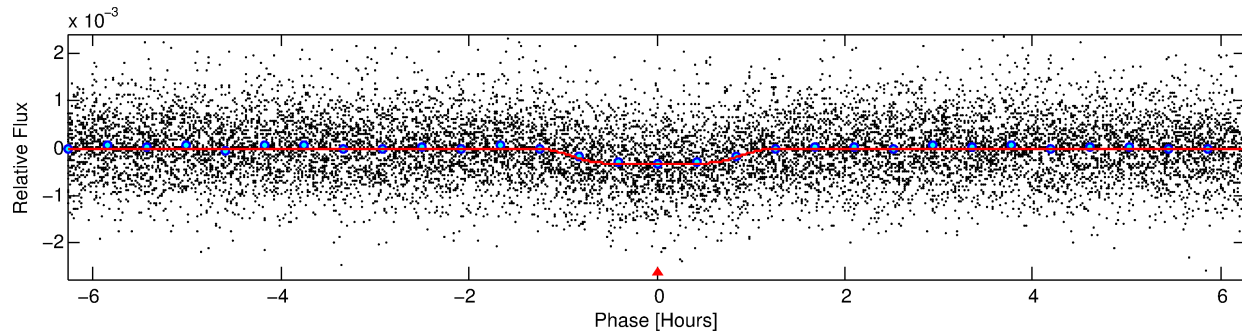
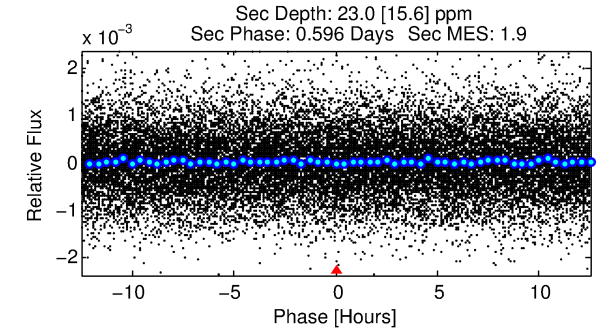
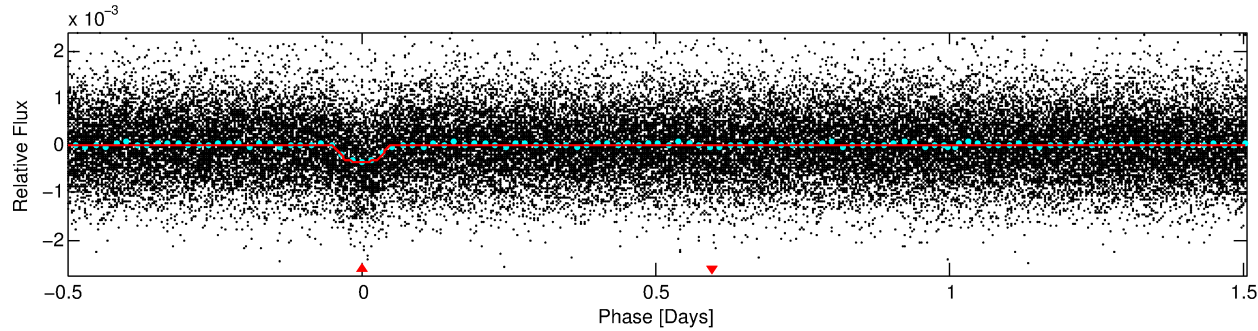
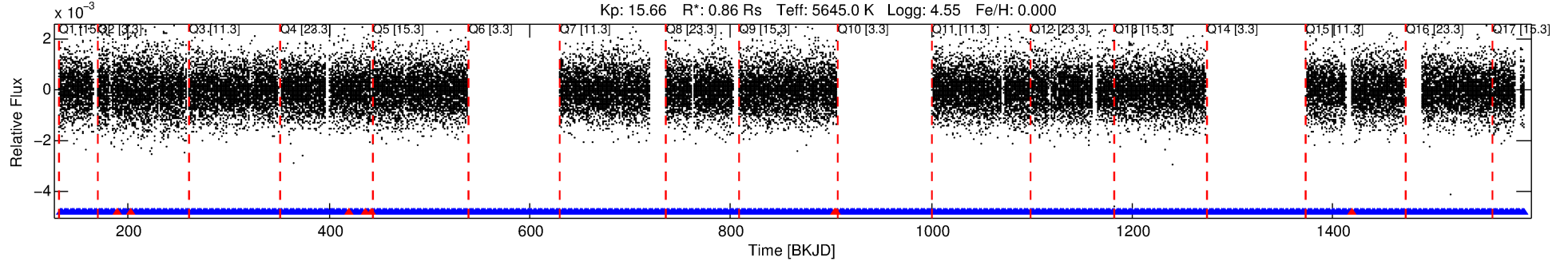
No Significant Match Found

DV One-Page Summary

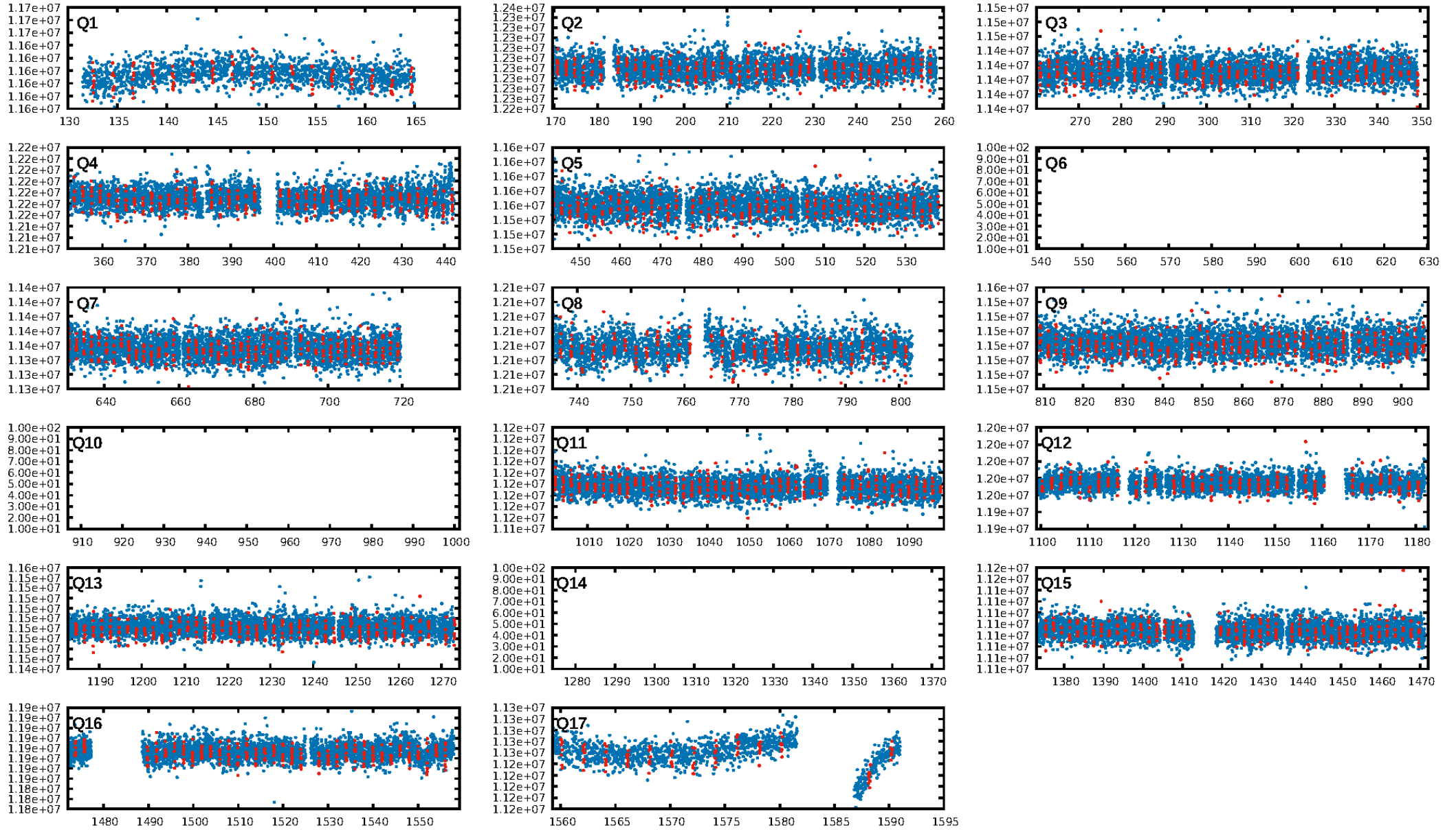
KIC: 4072333 Candidate: 1 of 1 Period: 2.008 d

KOI: K02731.01 Corr: 0.960

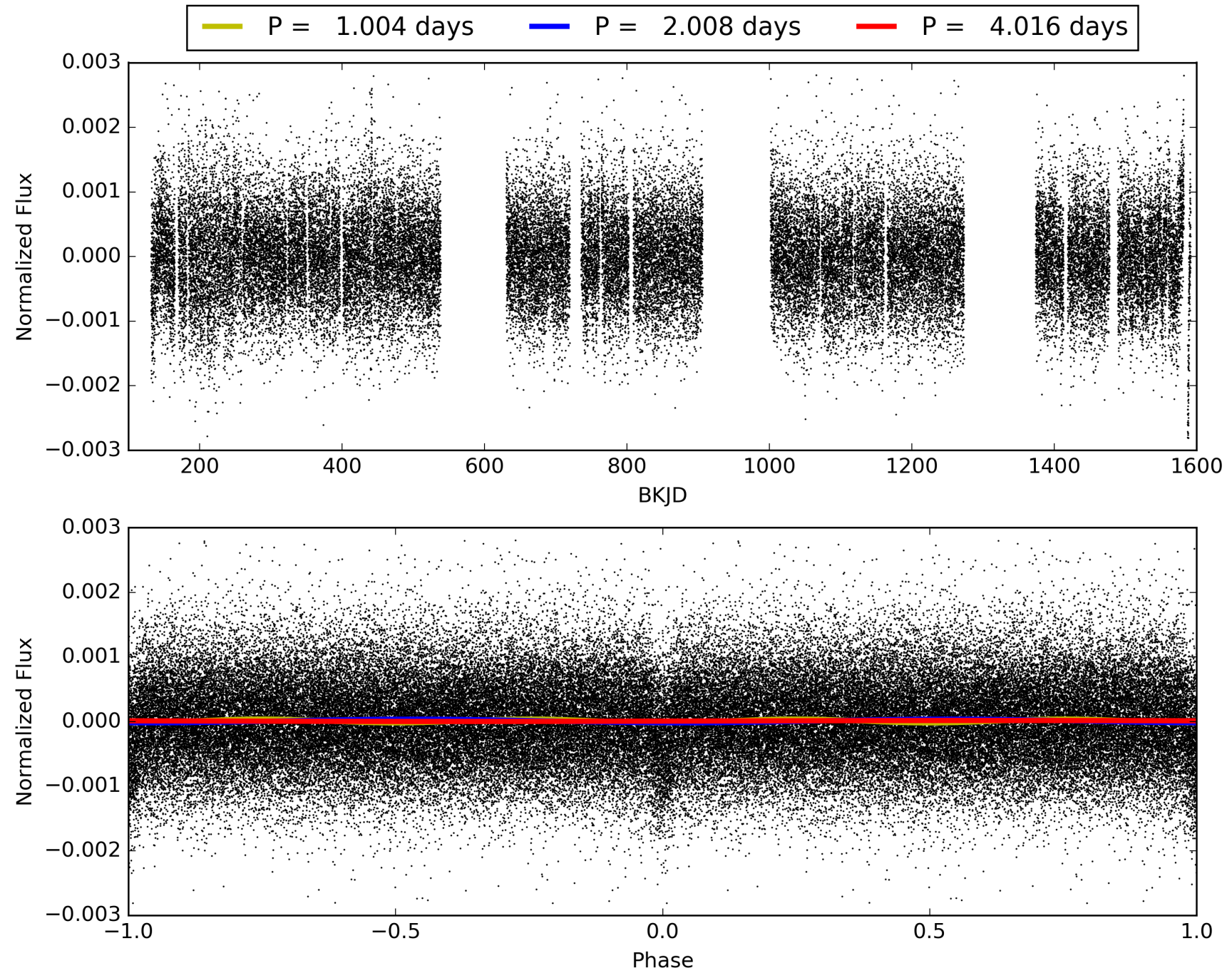
Kp: 15.66 R*: 0.86 Rs Teff: 5645.0 K Logg: 4.55 Fe/H: 0.000



TCE 004072333-01, PDC Light Curves

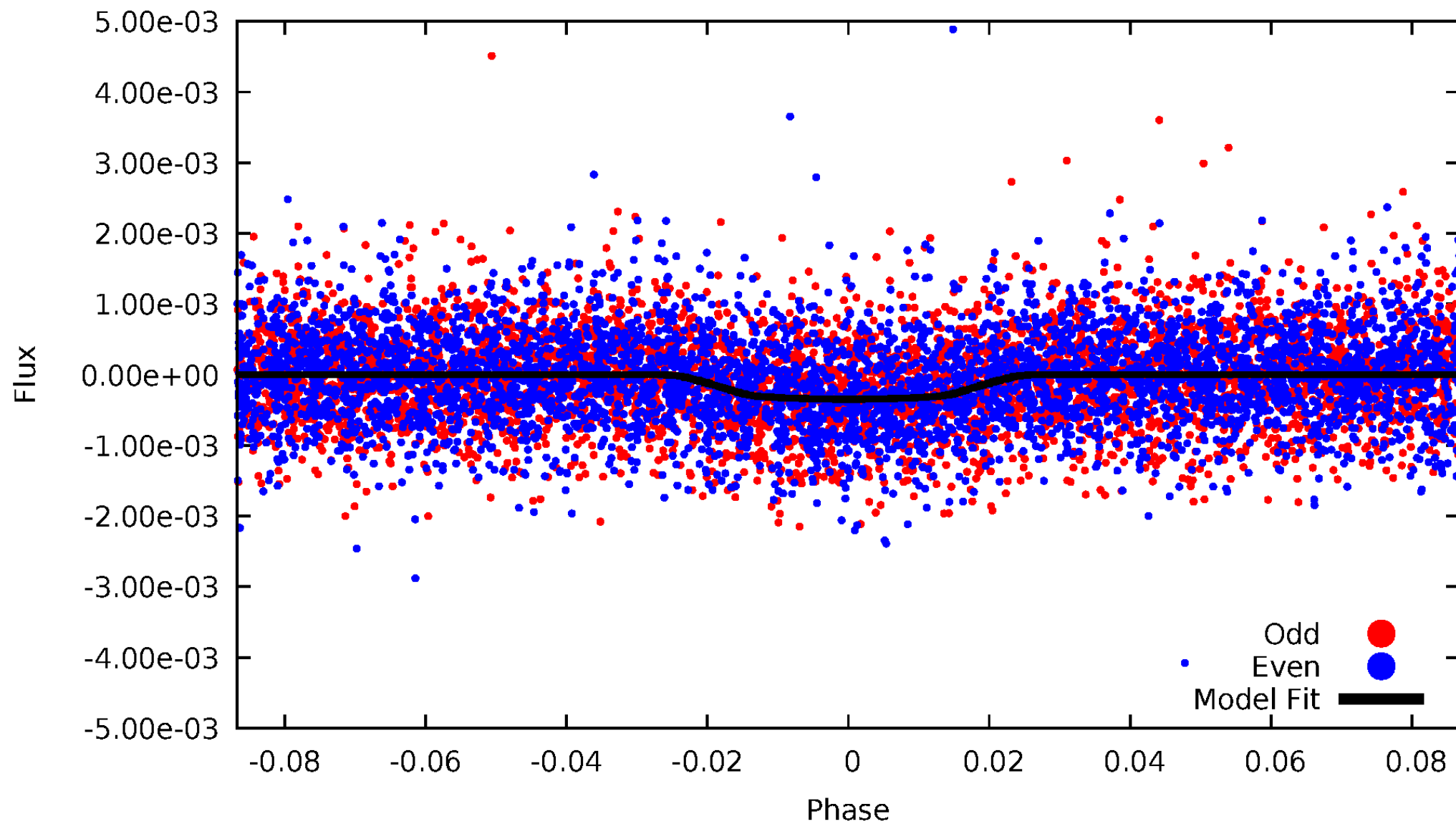


TCE 004072333-01



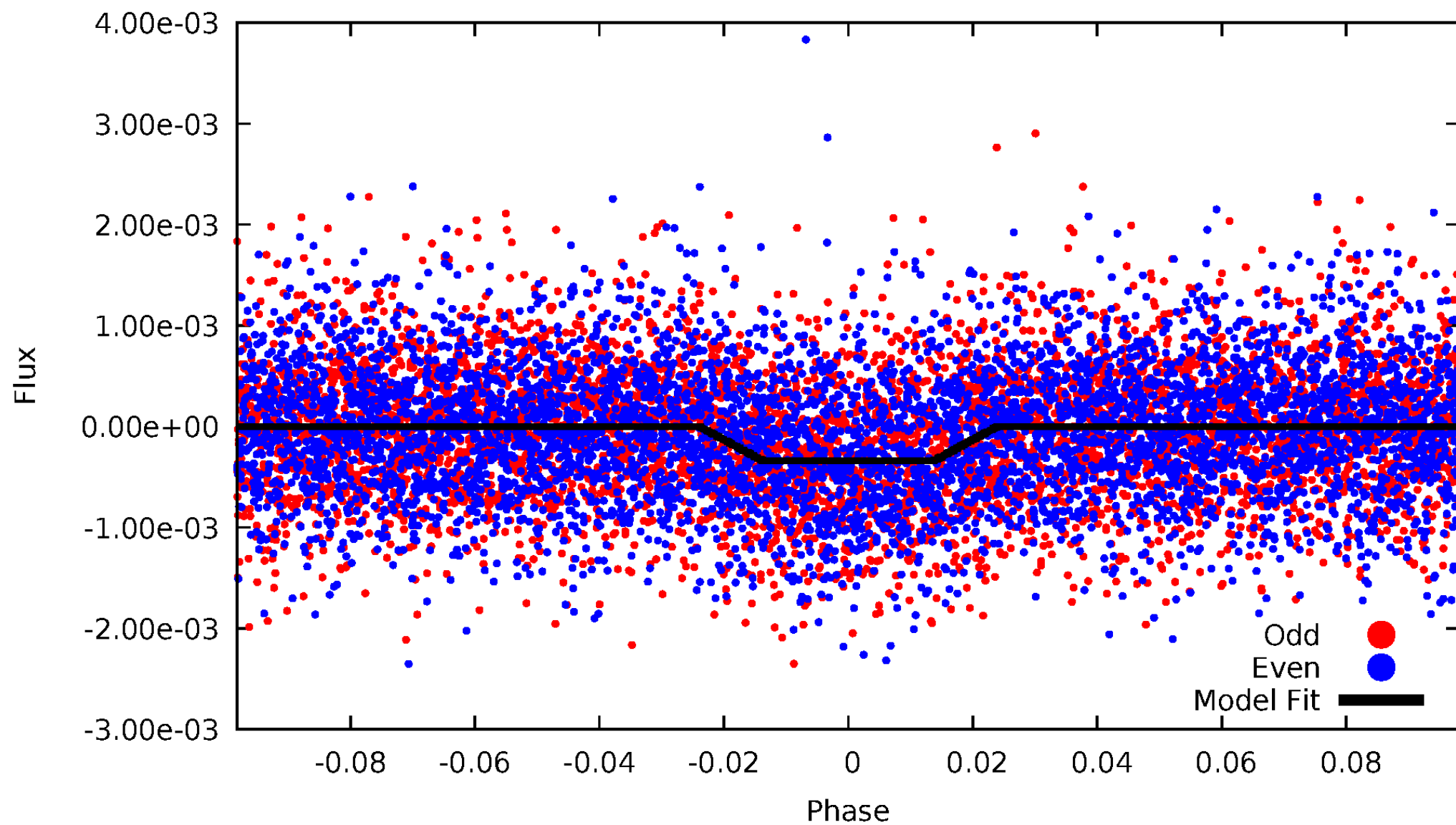
DV Odd/Even

TCE 004072333-01



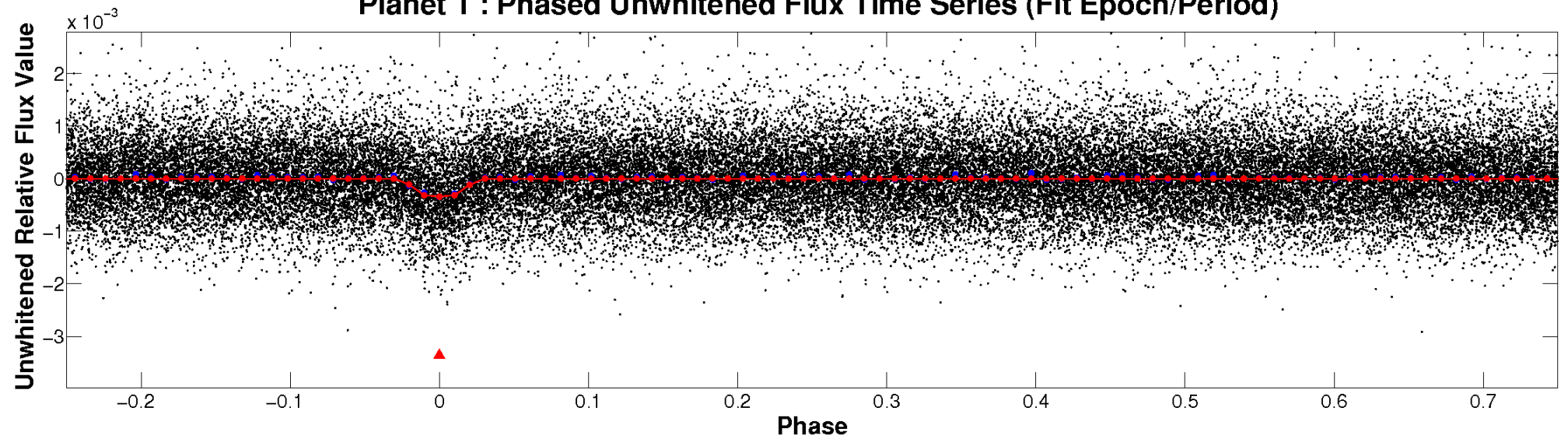
ALT Odd/Even

TCE 004072333-01

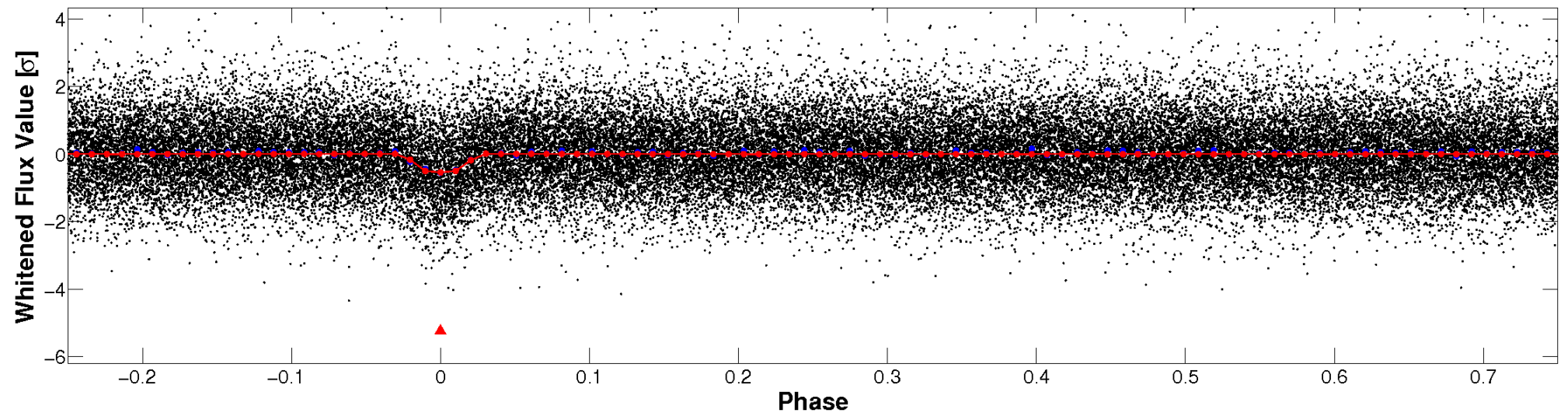


Non-Whitened Vs. Whitened Light Curve

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

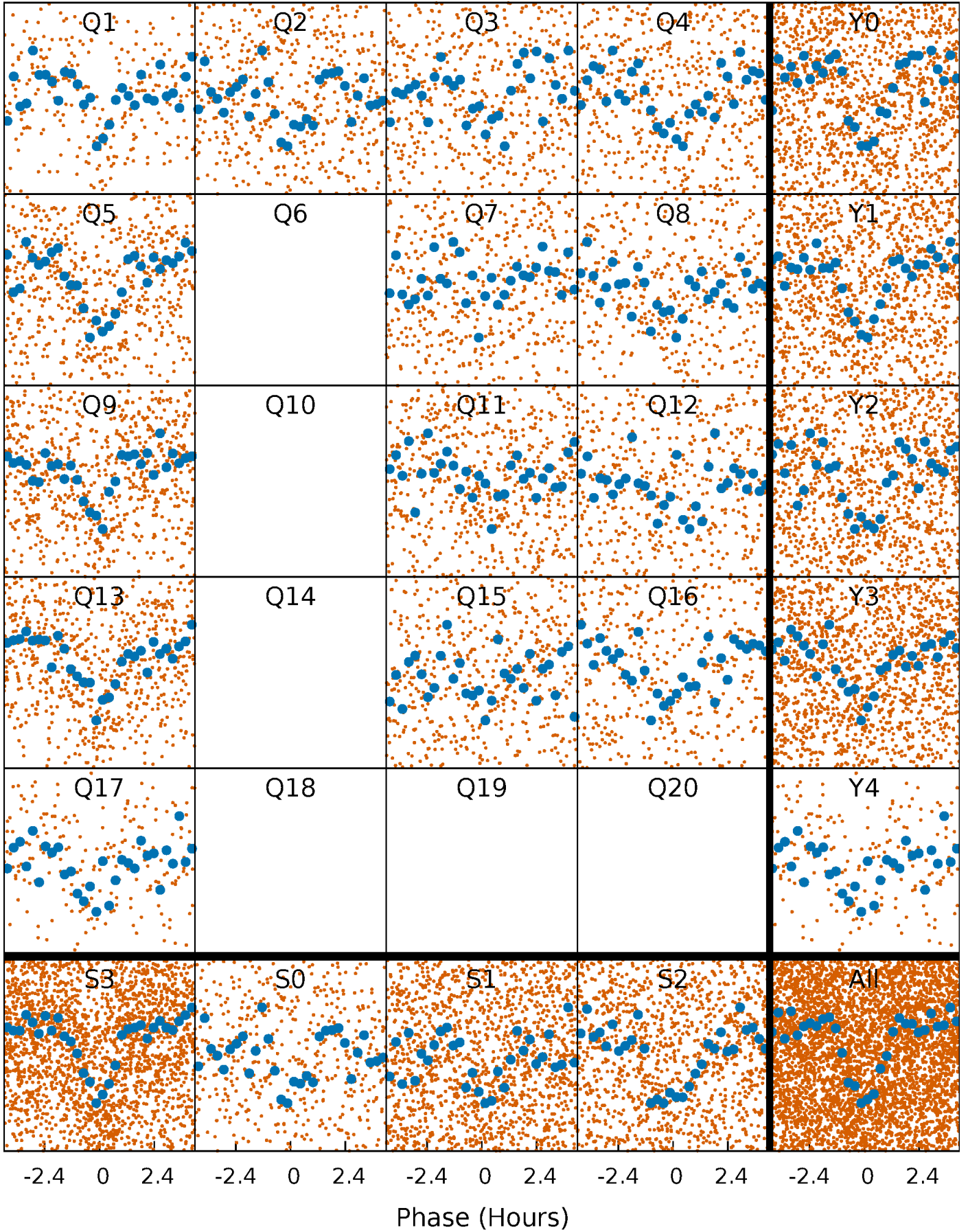


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



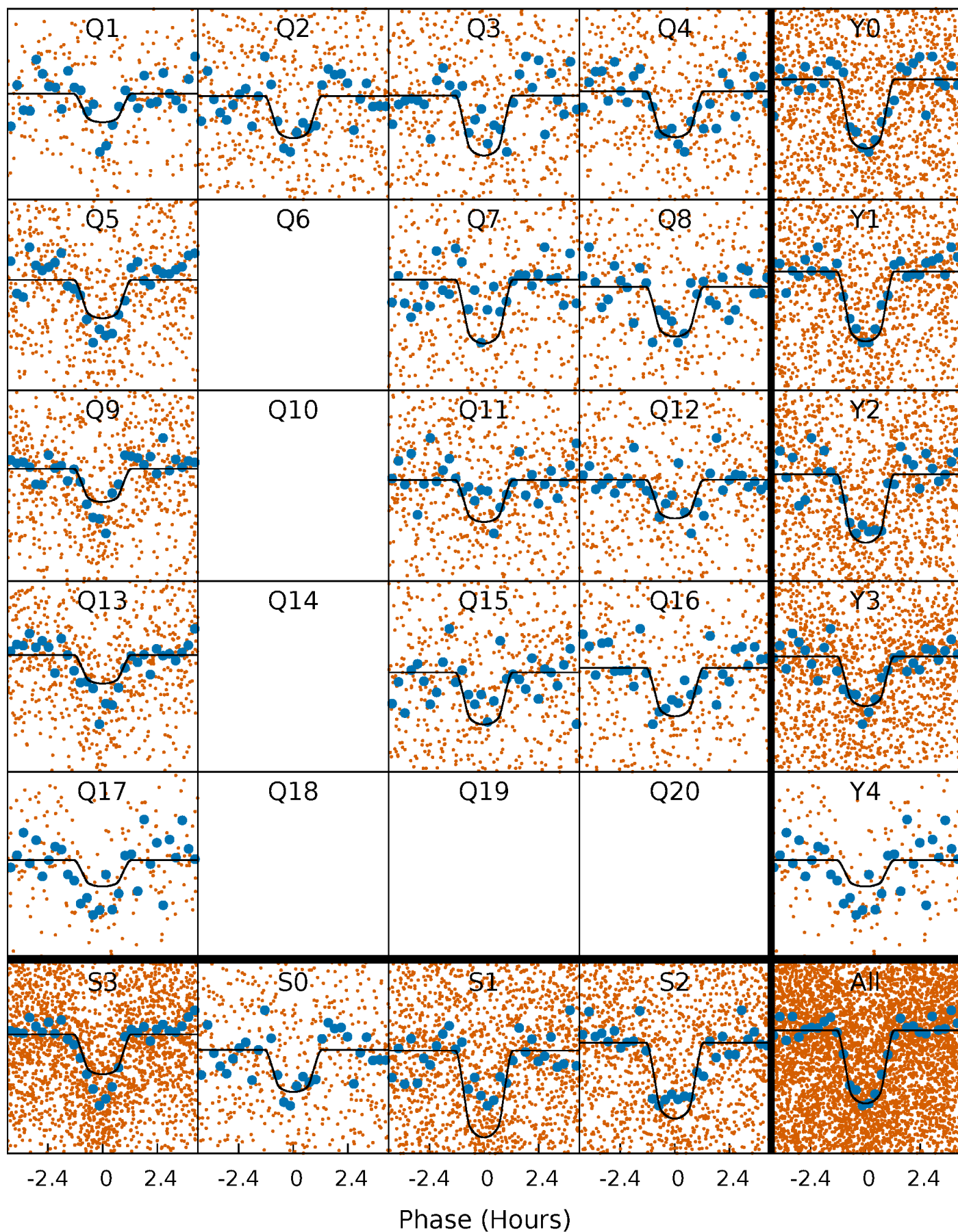
PDC Quarter-Phased Transit Curves

TCE 004072333-01 P= 2.007770 Days $T_0=132.573482$ (BKJD)



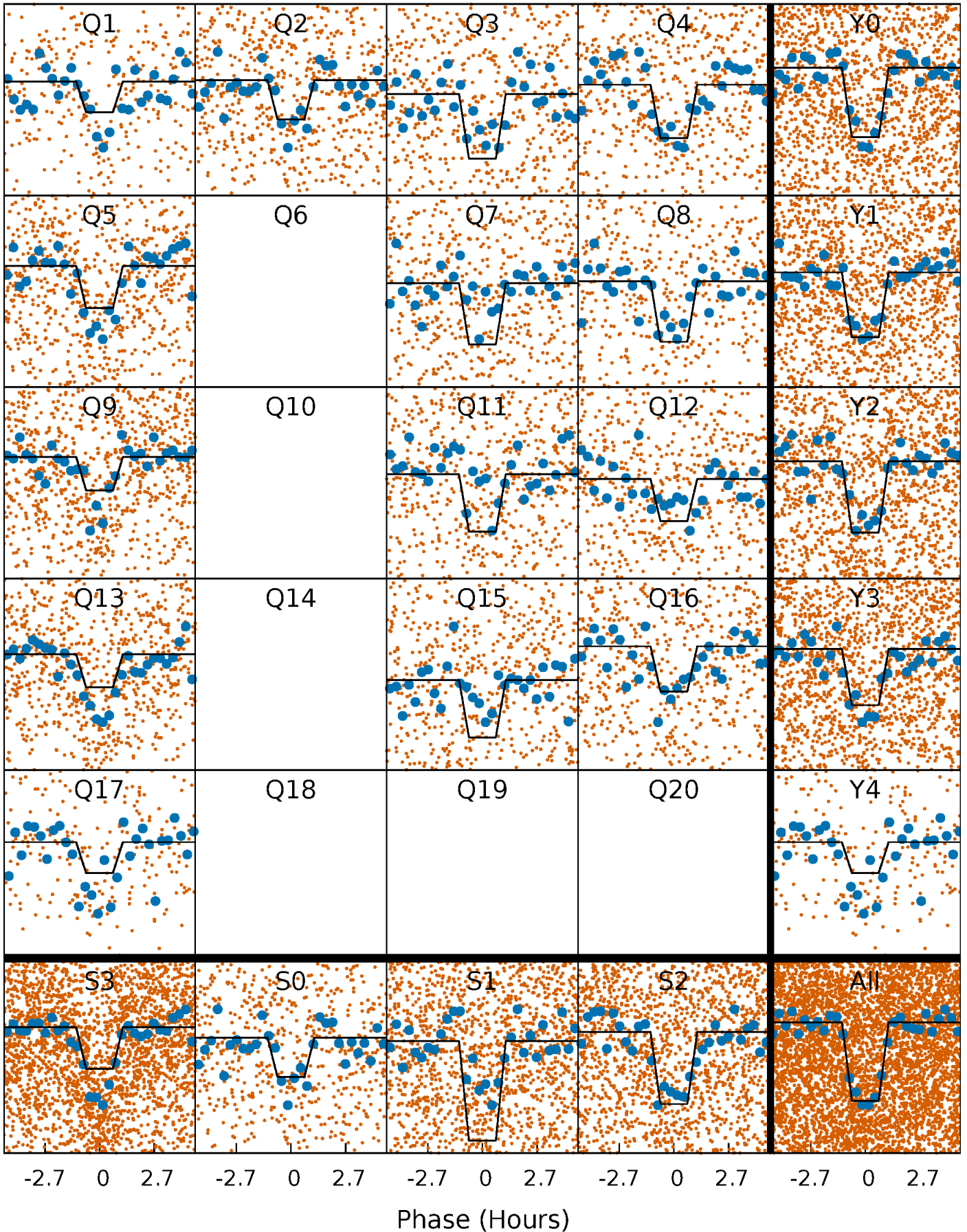
DV Quarter-Phased Transit Curves

TCE 004072333-01 P= 2.007770 Days $T_0=132.573482$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

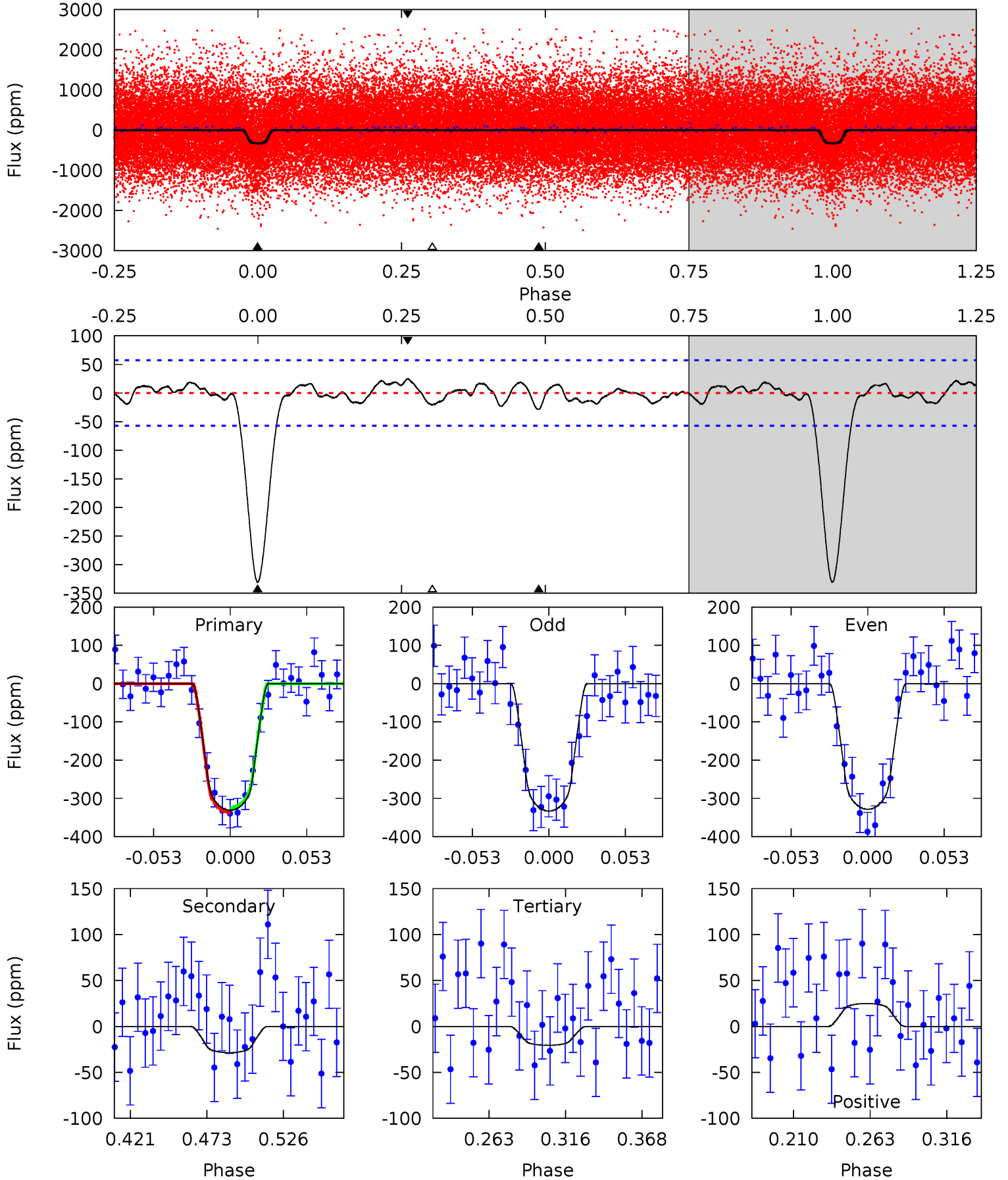
TCE 004072333-01 P= 2.007759 Days $T_0=132.575895$ (BKJD)



DV Model-Shift Uniqueness Test

004072333-01, P = 2.007770 Days, E = 130.565712 Days

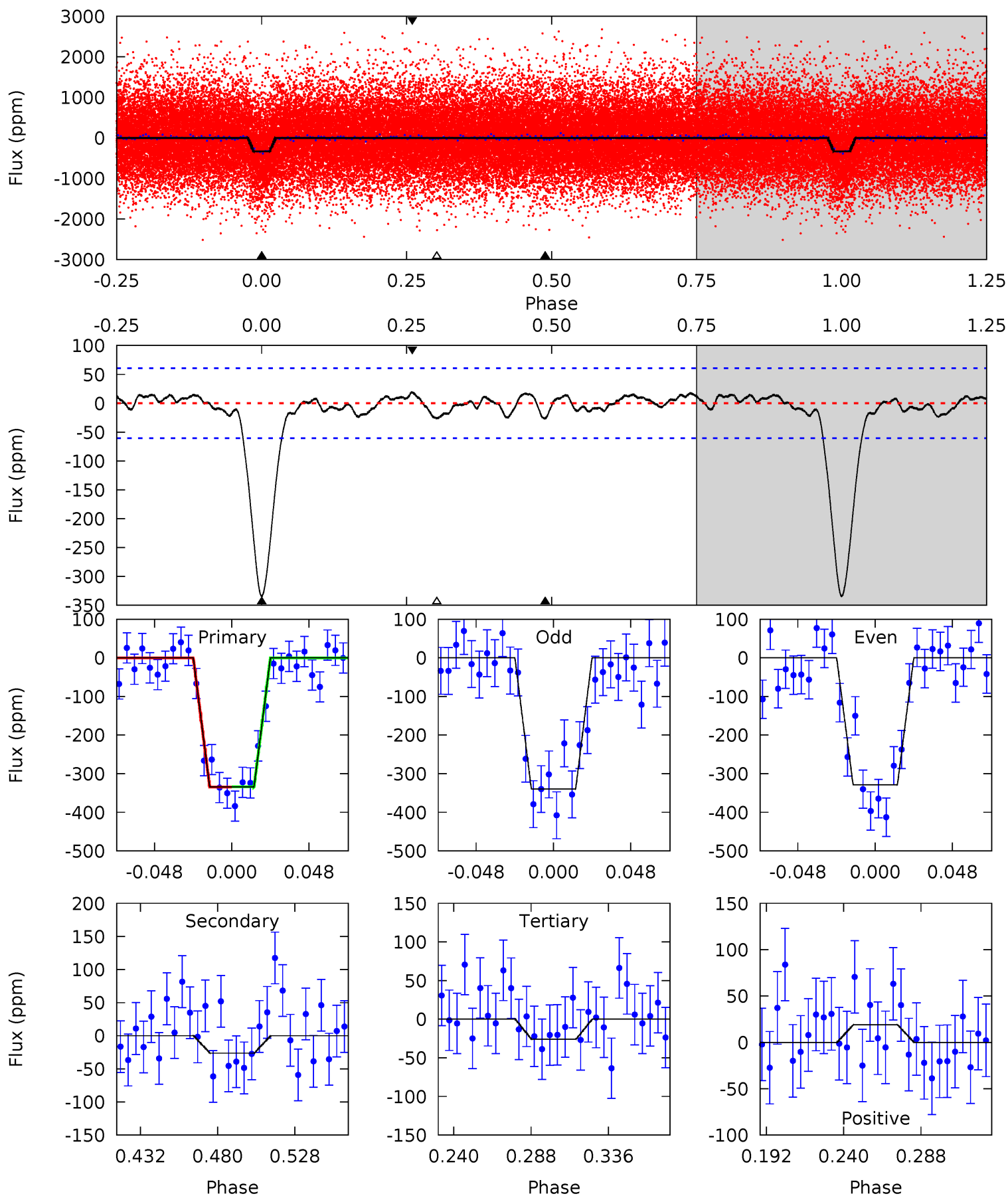
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.2	2.35	1.69	2.05	4.70	1.94	0.93	25.5	25.1	0.66	0.30	0.19	0.91	0.07	0.46



Alt Model-Shift Uniqueness Test

004072333-01, P = 2.007759 Days, E = 130.568136 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.0	2.05	2.03	1.47	4.72	1.98	0.86	24.0	24.6	0.02	0.58	0.43	0.97	0.05	0.01



Stellar Parameters For KIC 004072333

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5645^{+169}_{-169}	$4.549^{+0.040}_{-0.160}$	$0.000^{+0.250}_{-0.300}$	$0.865^{+0.193}_{-0.083}$	$0.965^{+0.083}_{-0.115}$	$2.102^{+0.432}_{-0.896}$
	+3%/-3%	+1%/-4%	+inf%/-inf%	+22%/-10%	+9%/-12%	+21%/-43%
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 004072333-01 / KOI 2731.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-29 ± 12	$1.97^{+0.69}_{-0.61}$	1880^{+110}_{-83}	3350^{+525}_{-400}	$3.568^{+5.105}_{-1.972}$
Alt.	-26 ± 13	$1.76^{+0.69}_{-0.56}$	1882^{+103}_{-84}	3403^{+612}_{-470}	$4.079^{+6.291}_{-2.518}$

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

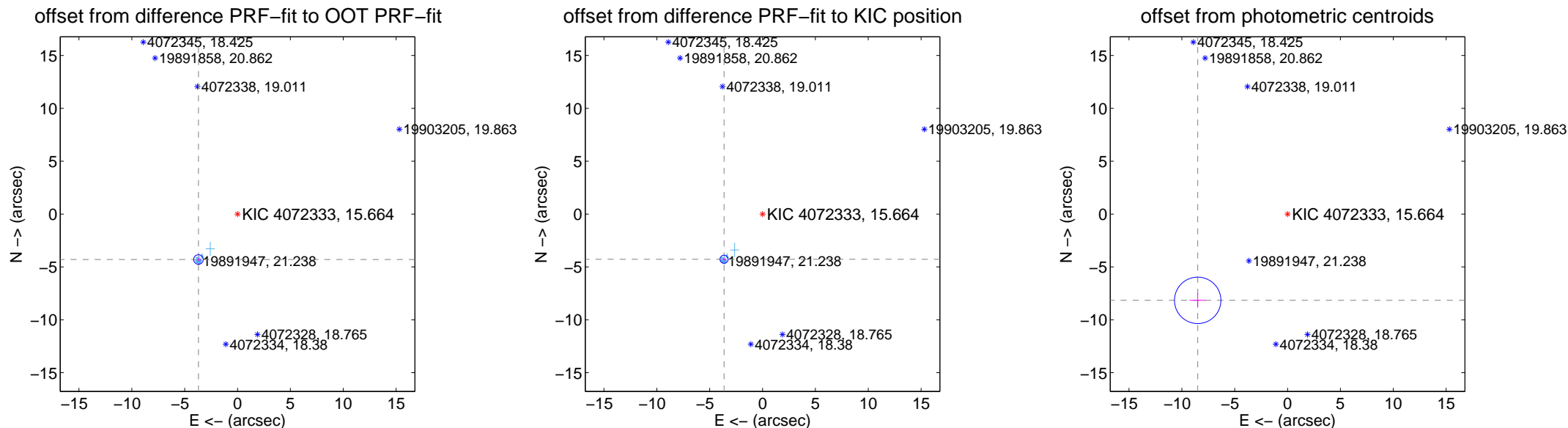
DV Centroid Data

Supplemental centroid analysis for 004072333-01. Kepler magnitude: 15.66. Transit SNR 20.75

There are 12 quarters with good PRF difference image offsets

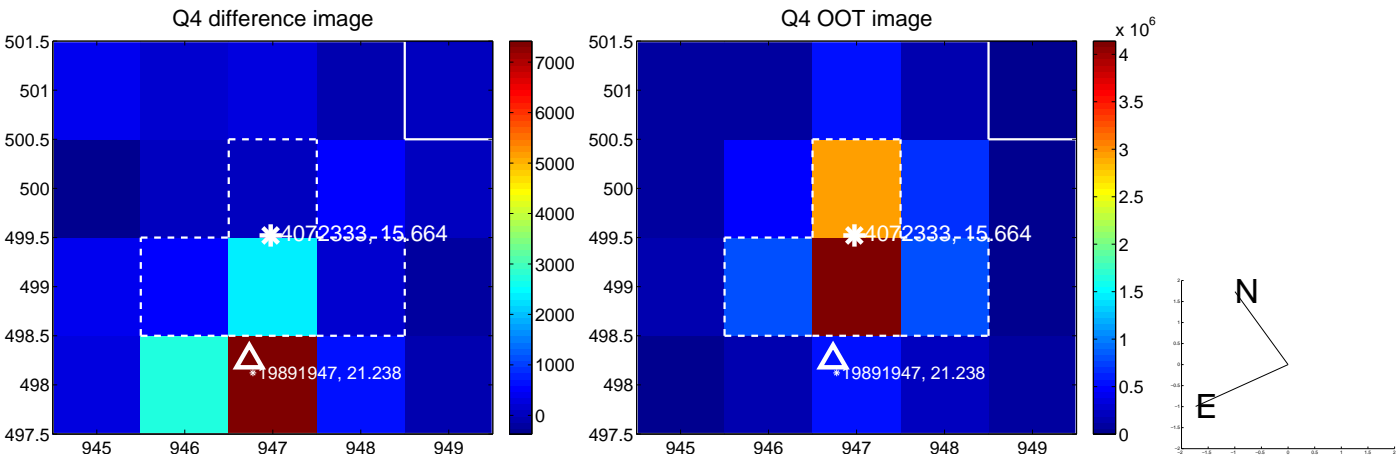
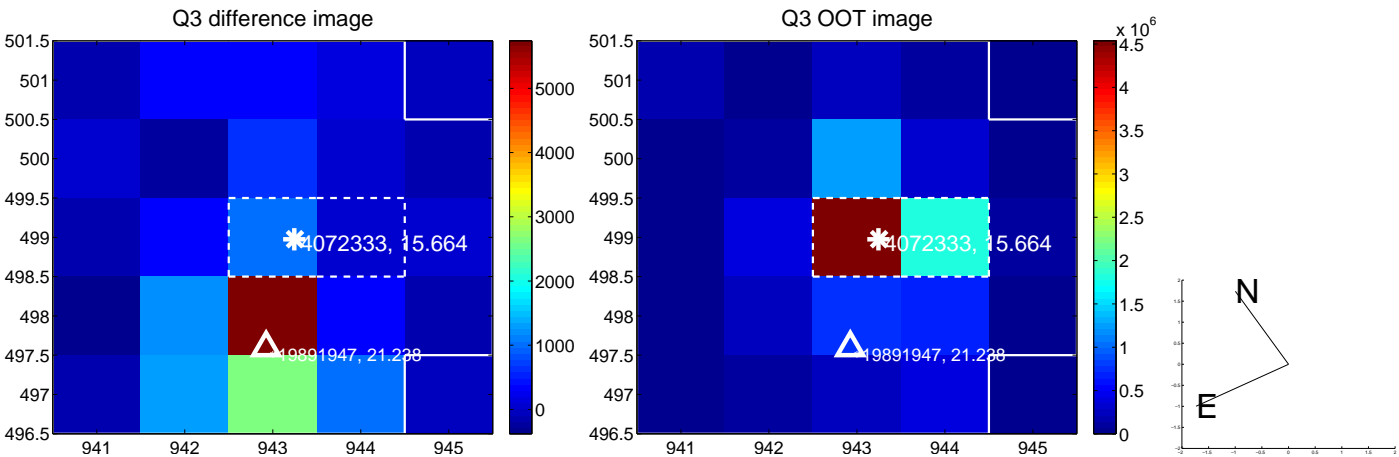
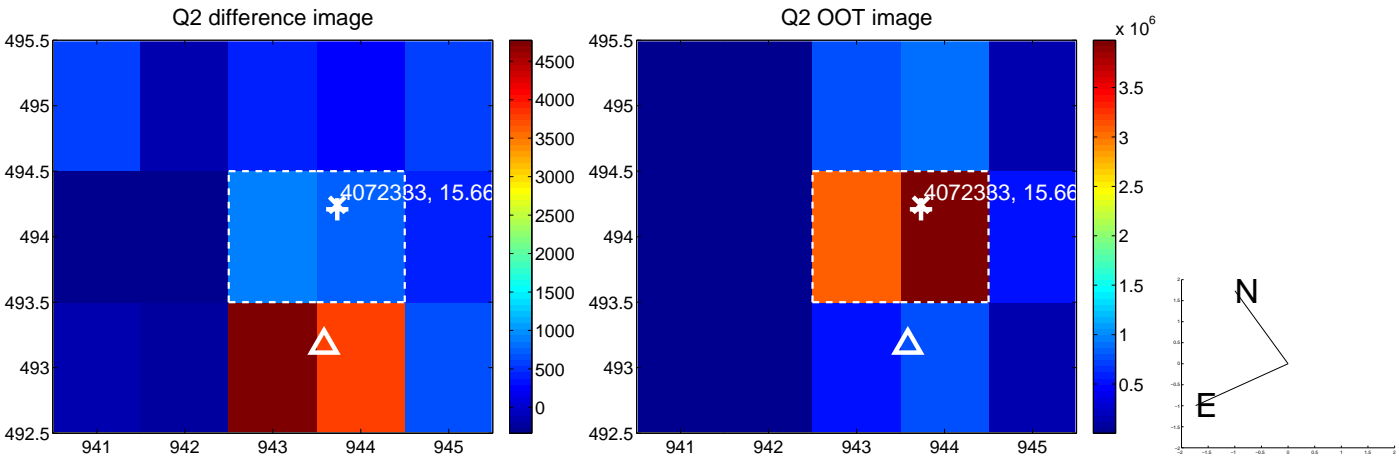
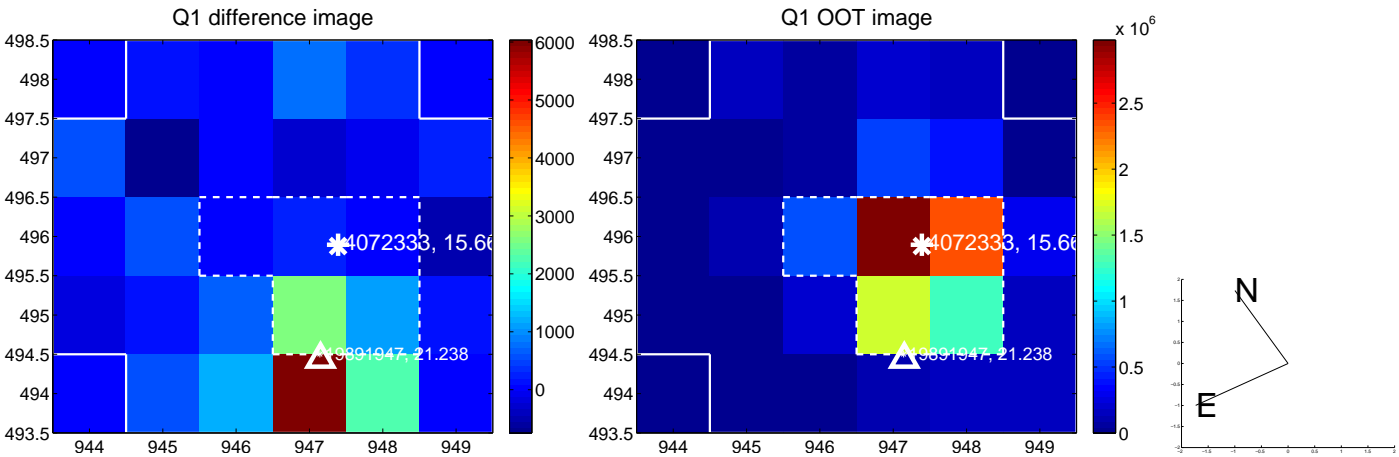
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.668 ± 0.150	37.71	3.697 ± 0.119	-4.296 ± 0.119
PRF-fit source offset from KIC position	5.613 ± 0.128	43.87	3.639 ± 0.110	-4.273 ± 0.101
photometric centroid source offset	11.78 ± 0.73	16.10	8.50 ± 0.77	-8.16 ± 0.69

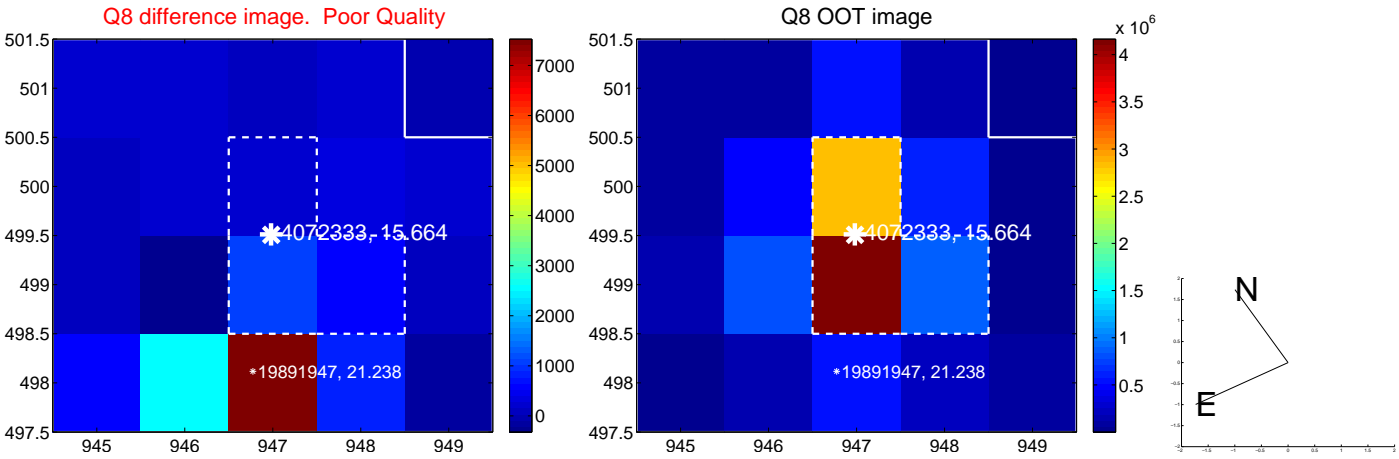
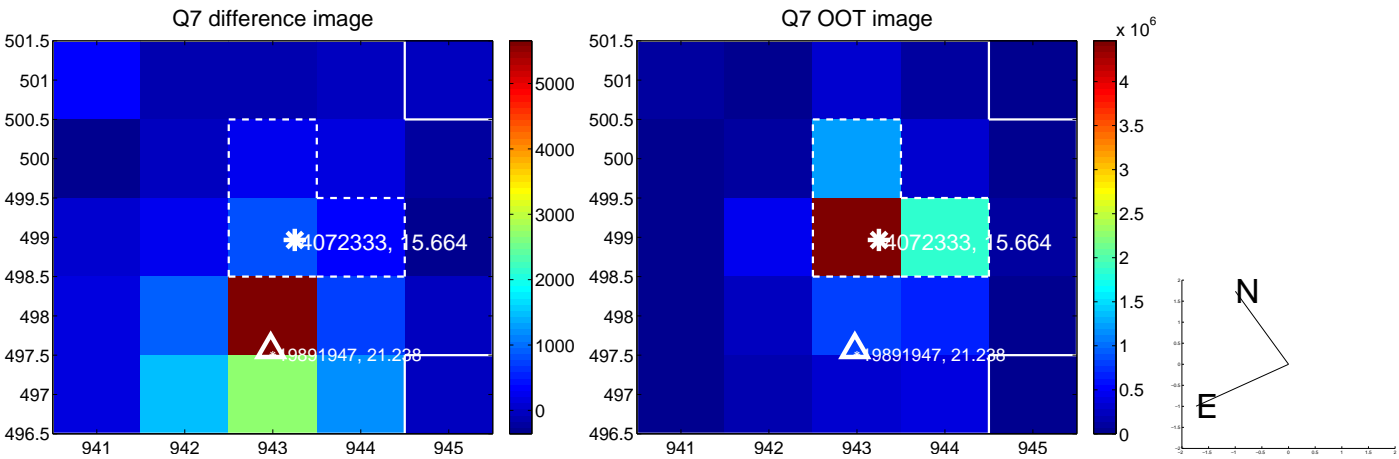
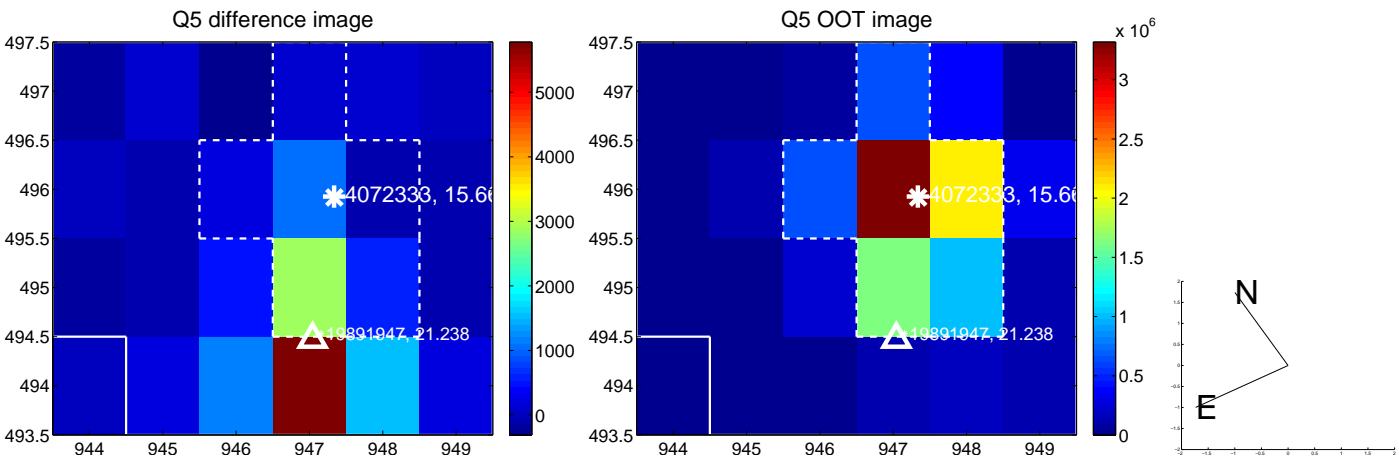


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

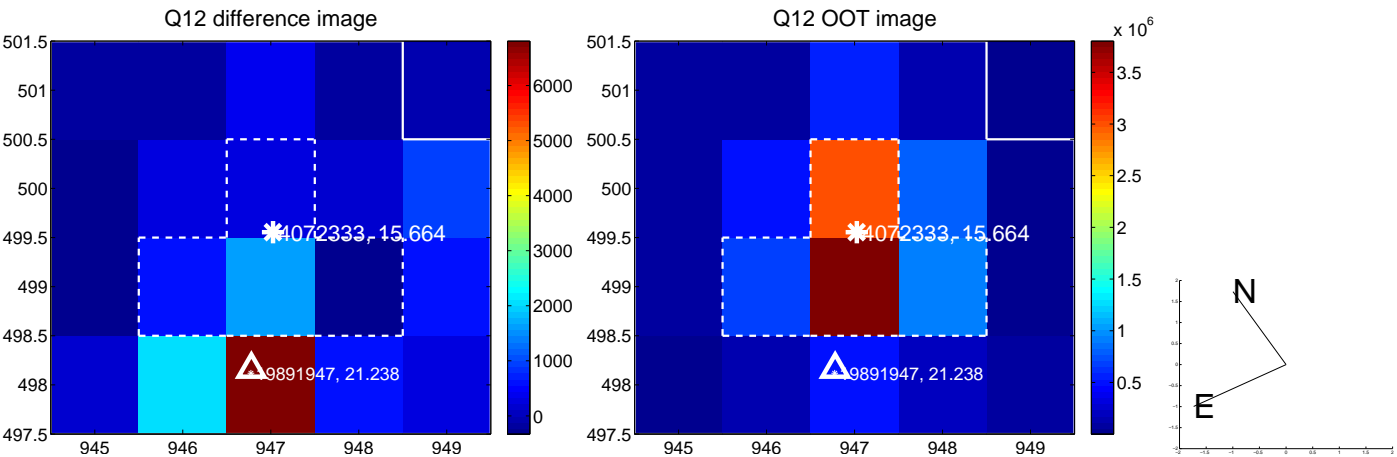
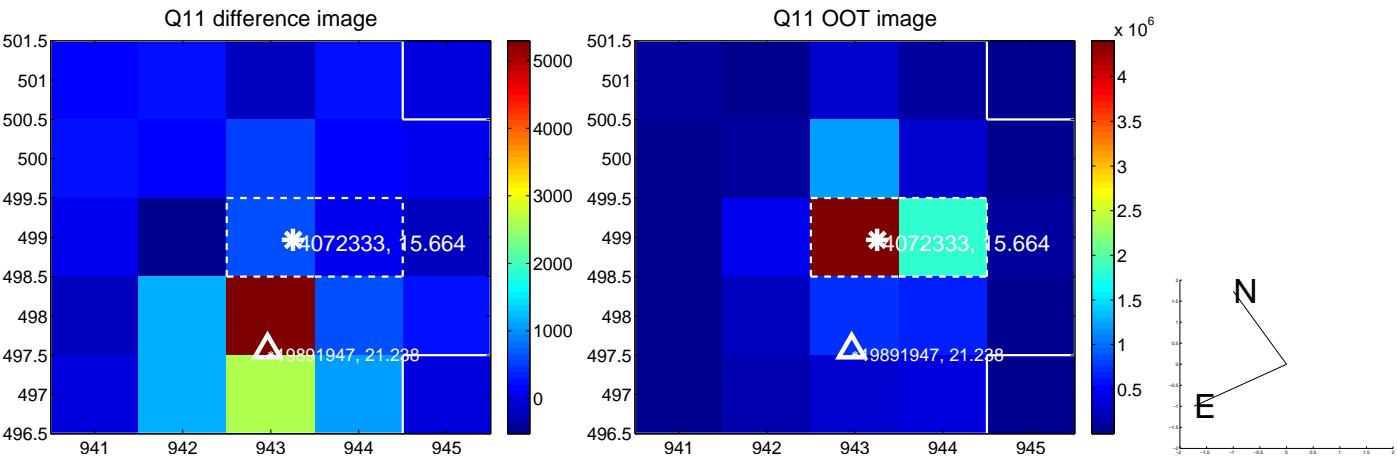
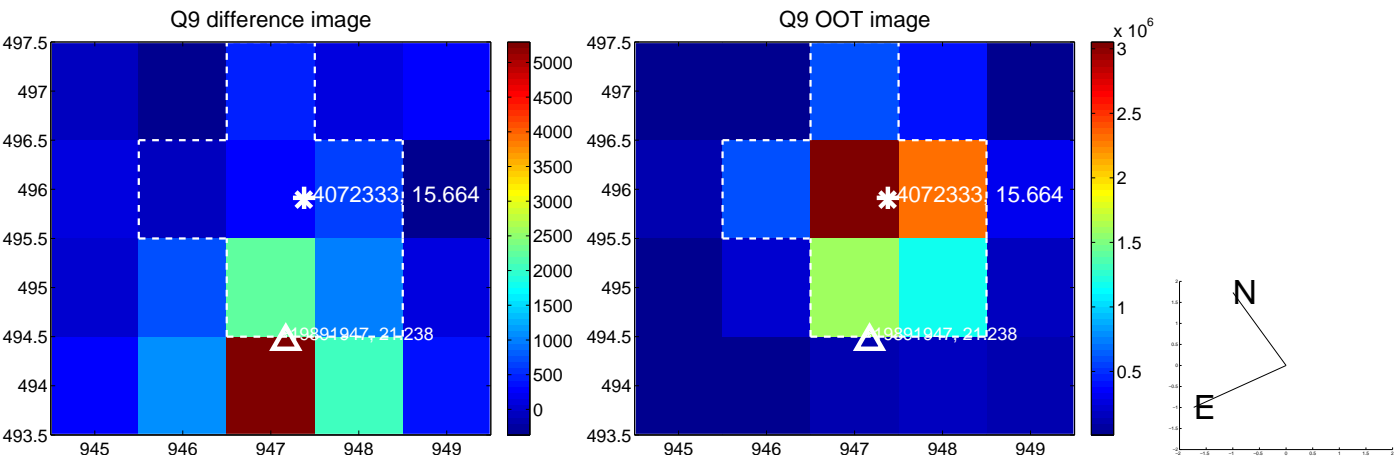
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



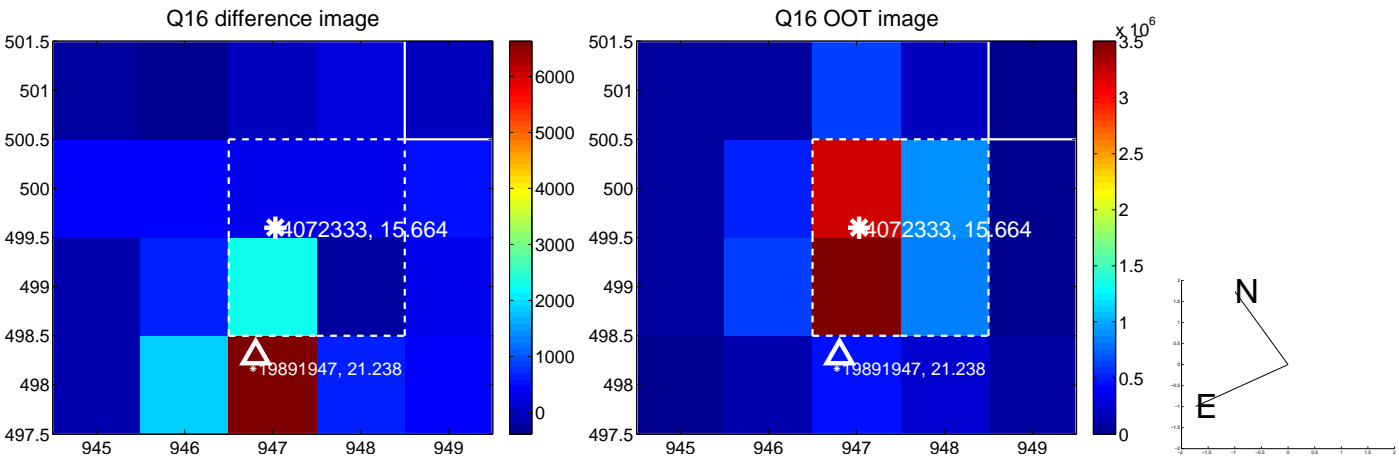
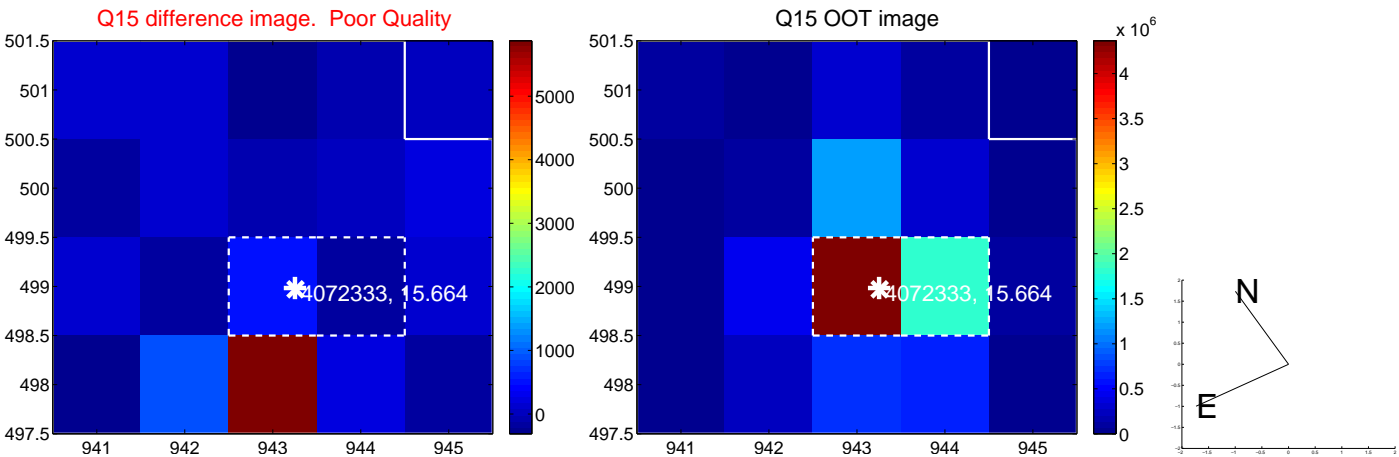
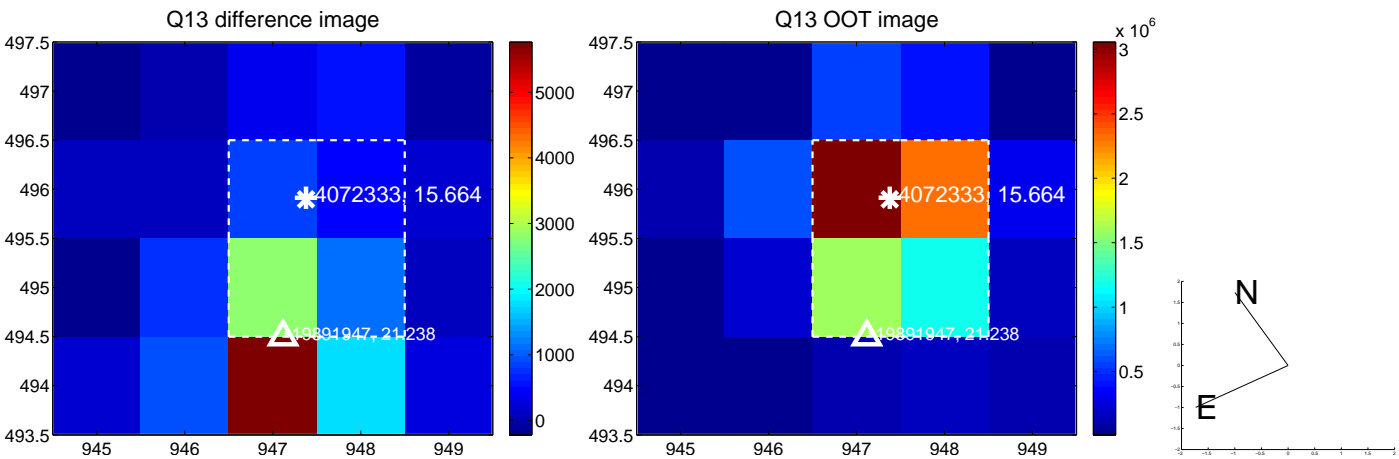
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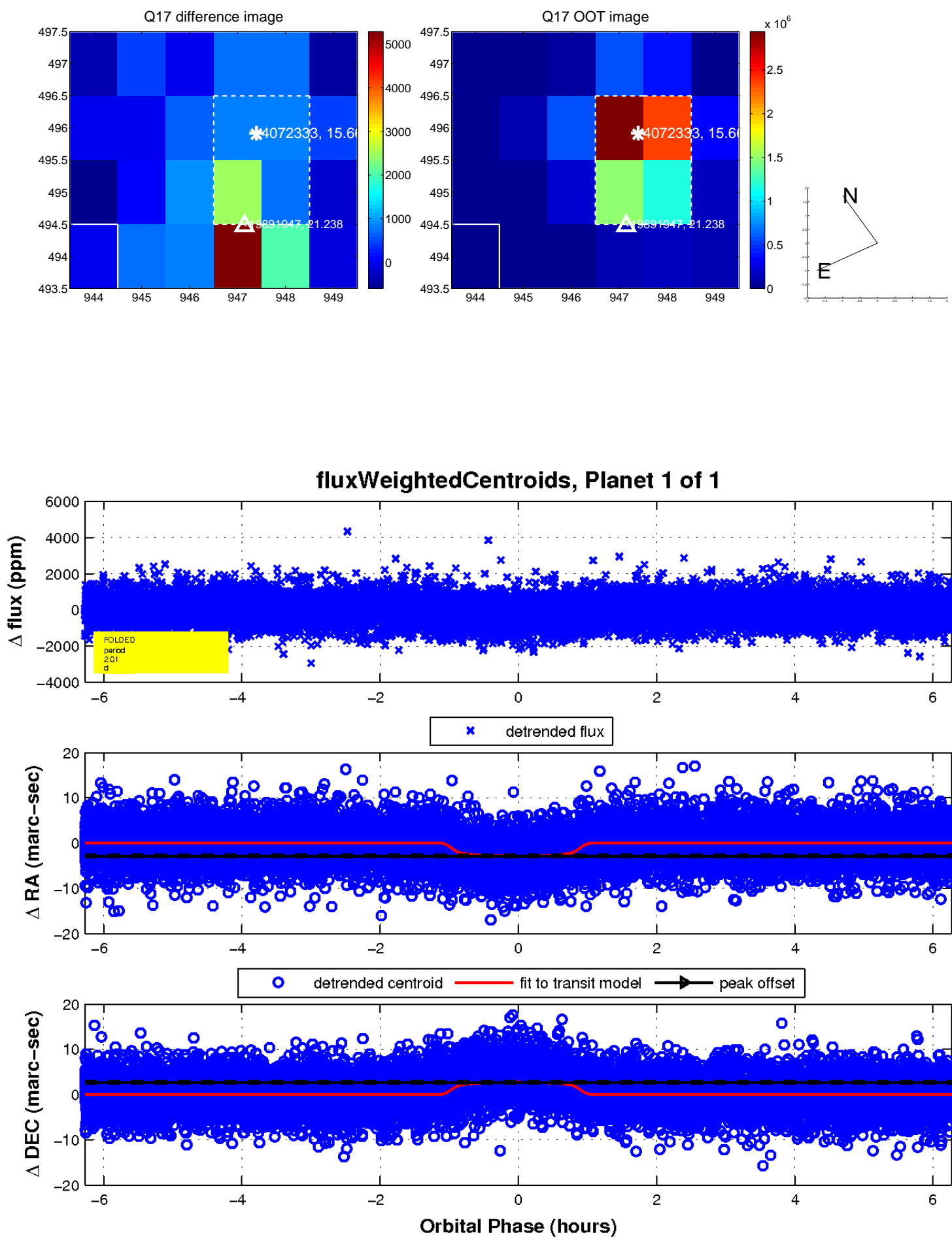
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UKIRT Image

Declination

