

KIC 010005020

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})
010005020-01	OBS	0724.01	6.971056	132.877287	410.4	4.079	35.7	37.6	0.98	5871	2.32	189.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010005020-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_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.

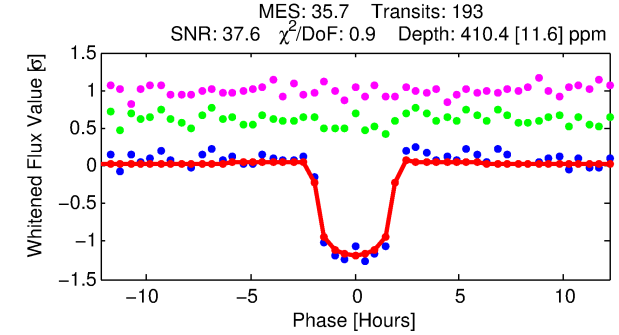
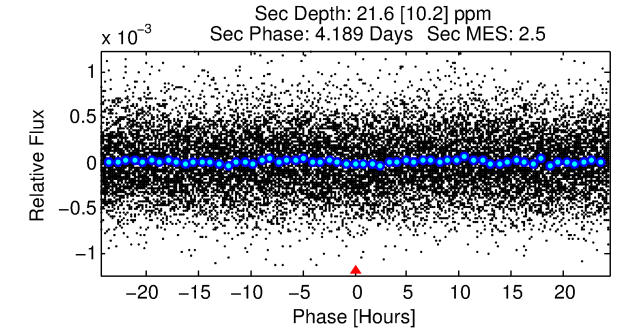
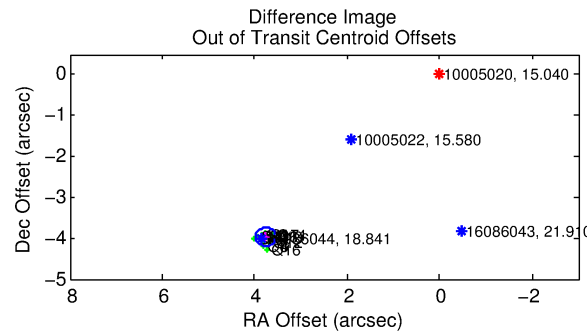
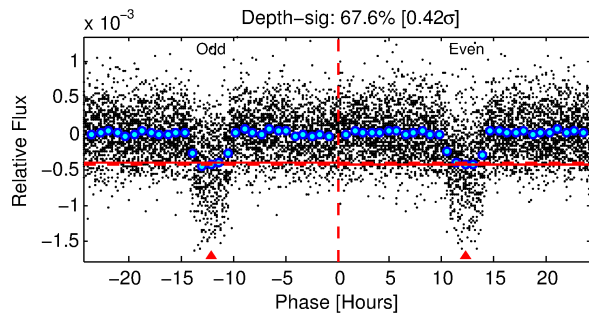
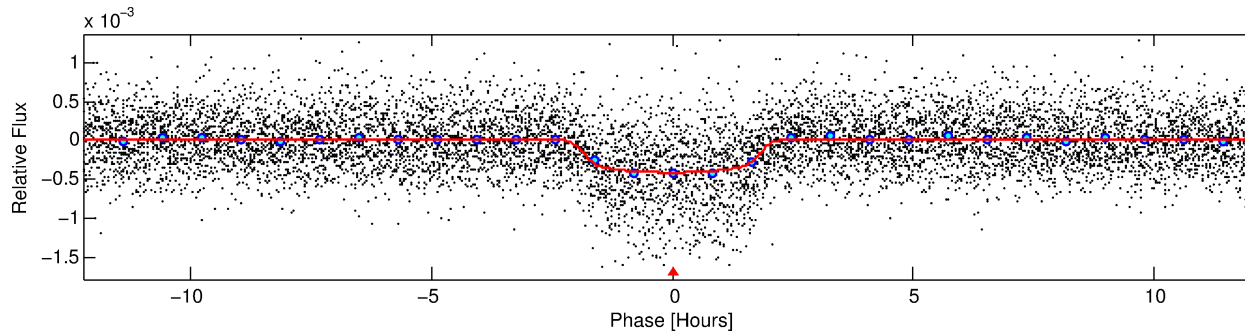
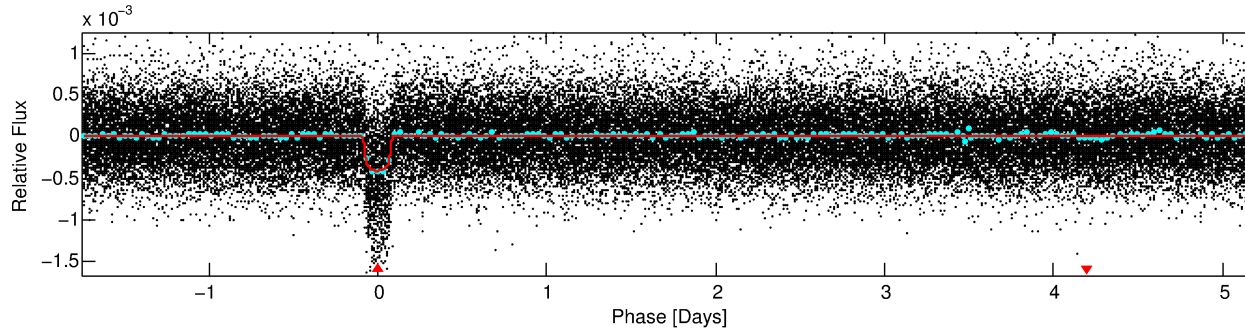
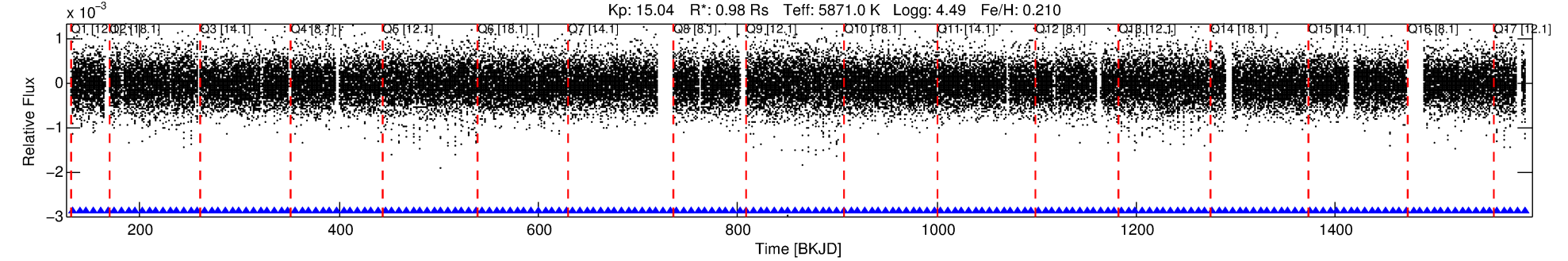
Ephemeris Match Information For 010005020-01

No Significant Match Found

DV One-Page Summary

KIC: 10005020 Candidate: 1 of 1 Period: 6.971 d
KOI: K00724.01 Corr: 0.974

Kp: 15.04 R*: 0.98 Rs Teff: 5871.0 K Logg: 4.49 Fe/H: 0.210



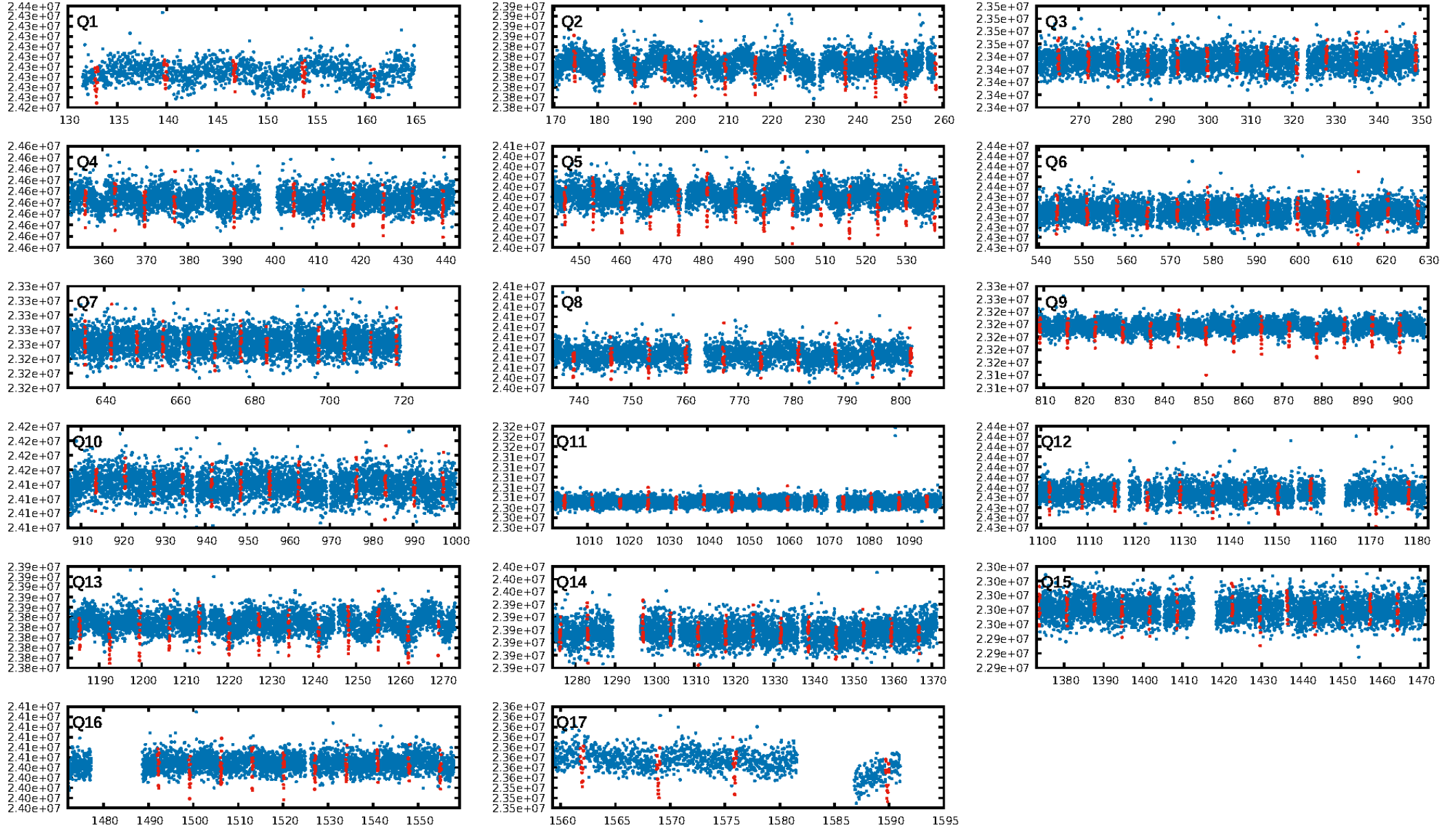
DV Fit Results:

Period = 6.97106 [0.00002] d
Epoch = 132.8773 [0.0021] BKJD
Rp/R* = 0.0216 [0.0024]
a/R* = 6.94 [3.39]
b = 0.88 [0.14]
Seff = 189.55 [73.05]
Teq = 946 [91] K
Rp = 2.32 [0.68] Re
a = 0.0737 [0.0177] AU
Ag = 12.01 [7.59] [1.45σ]
Teffp = 2723 [363] K [4.75σ]

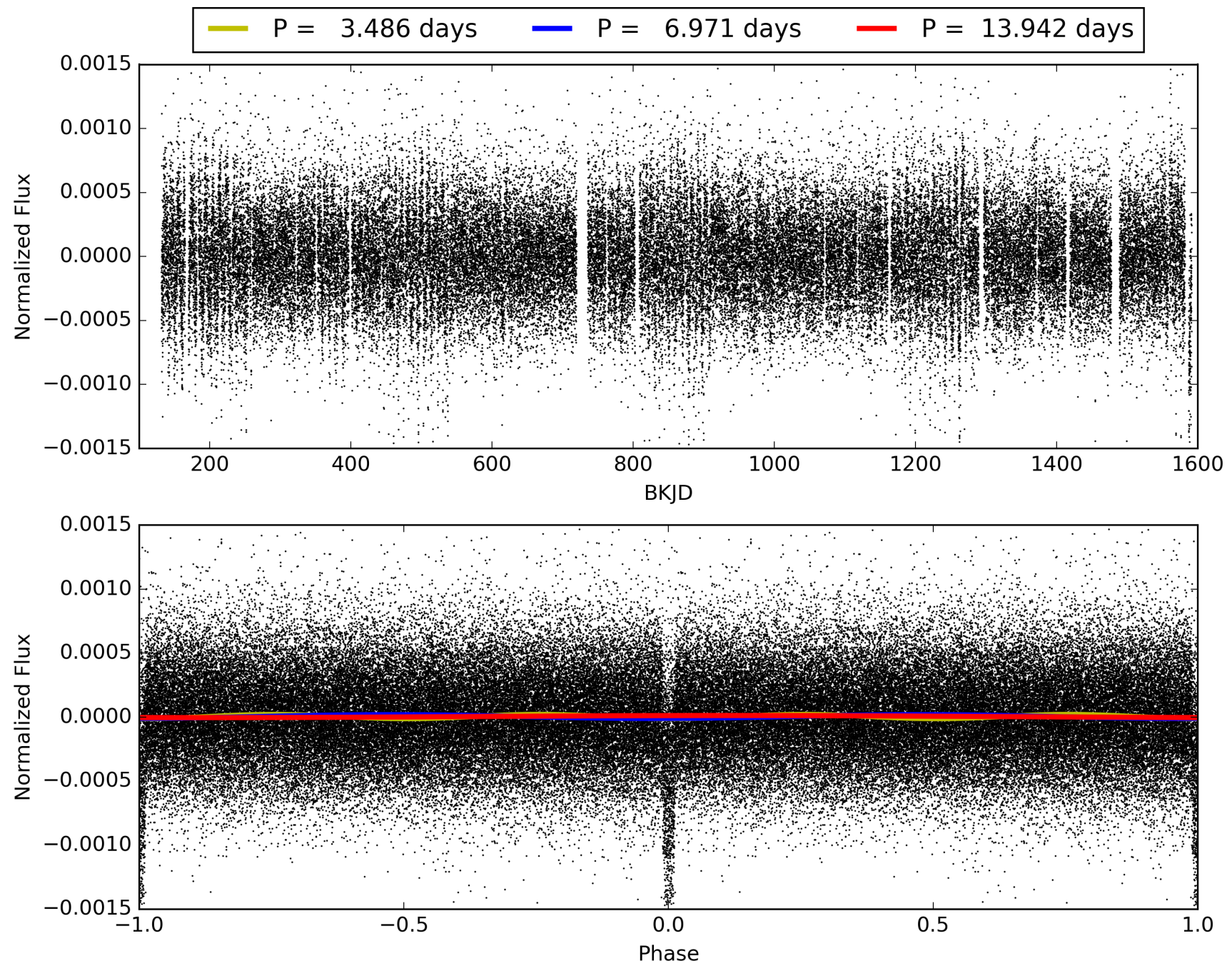
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.22e-269
RollingBand-fgt: 1.00 [184/184]
GhostDiagnostic-chr: -0.06393
Centroid-sig: 0.0%
Centroid-so: 20.564 arcsec [51.85σ]
OotOffset-rm: 5.475 arcsec [72.83σ]
KicOffset-rm: 5.537 arcsec [77.73σ]
OotOffset-st: 4/0/4/5 [13]
KicOffset-st: 4/0/4/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010005020-01, PDC Light Curves

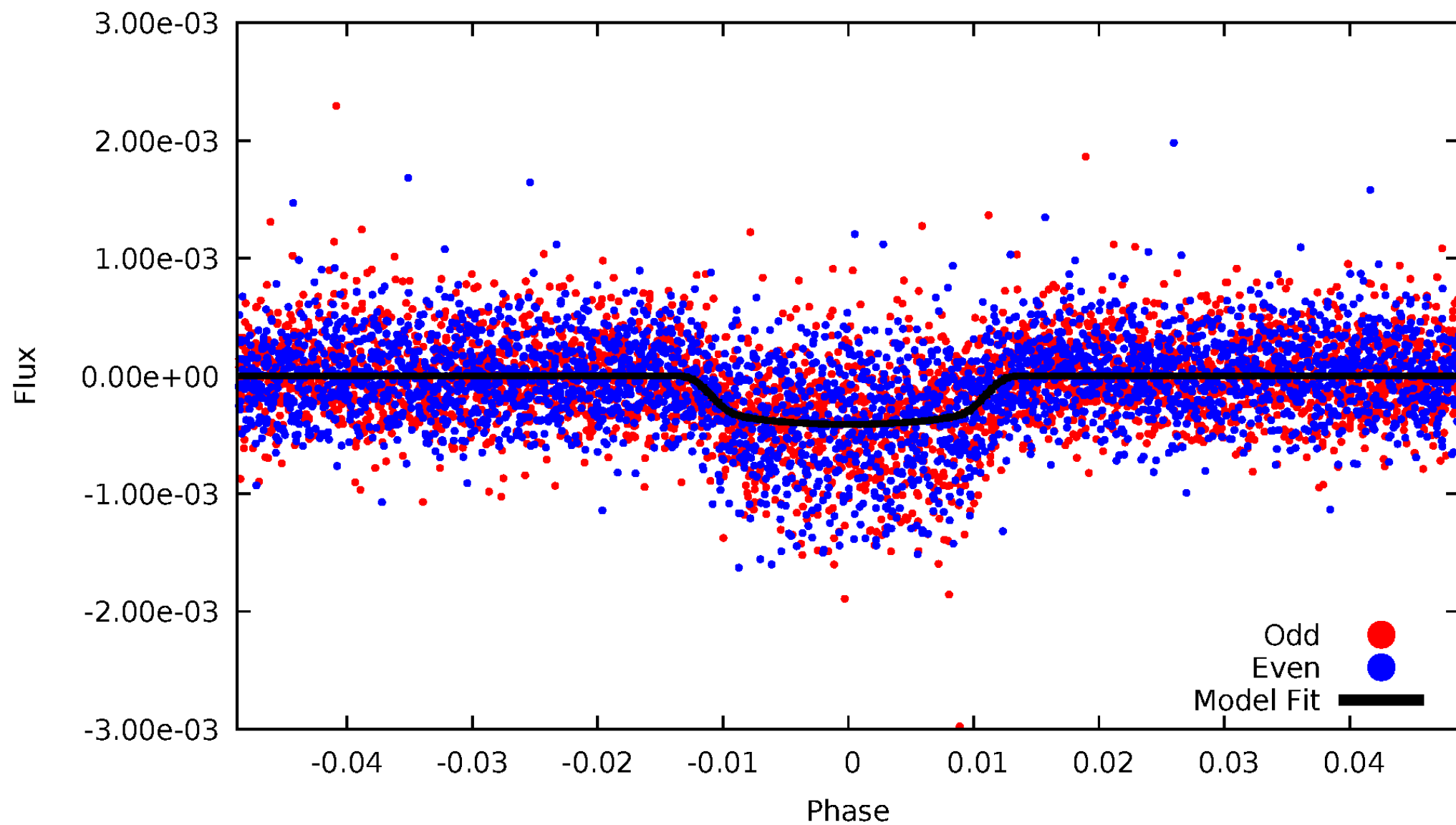


TCE 010005020-01



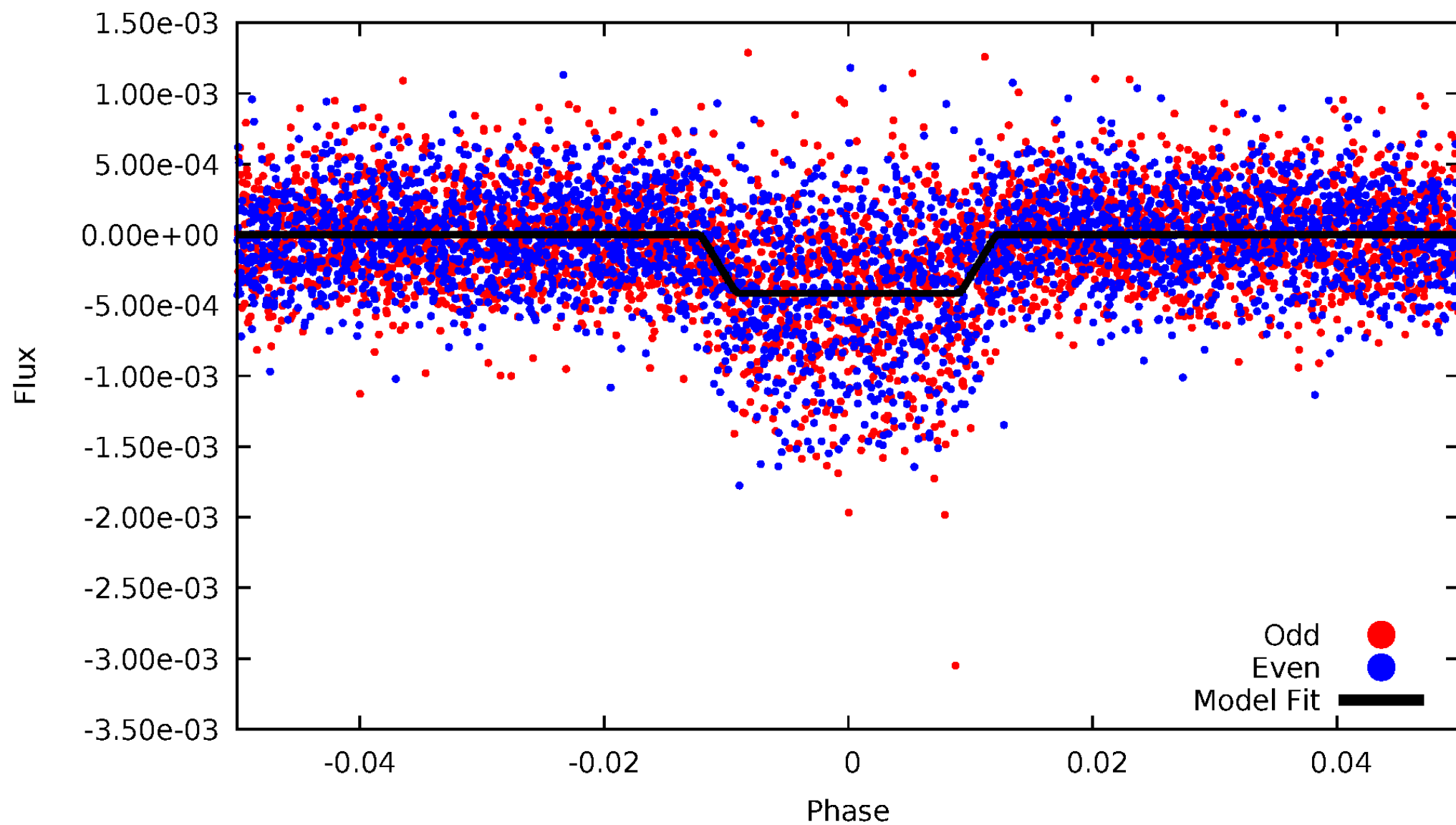
DV Odd/Even

TCE 010005020-01



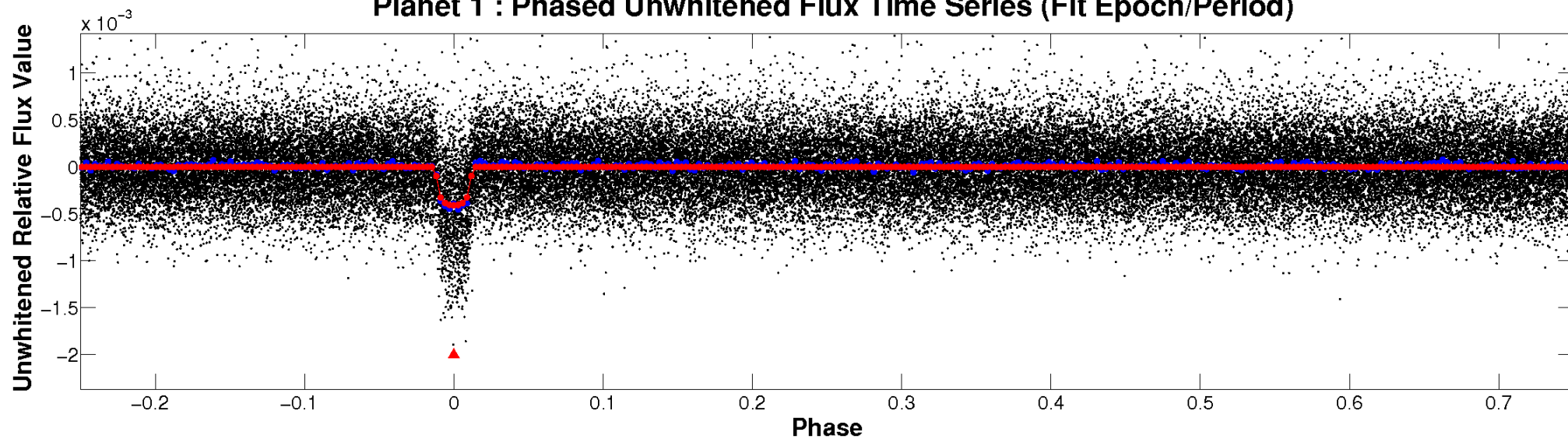
ALT Odd/Even

TCE 010005020-01

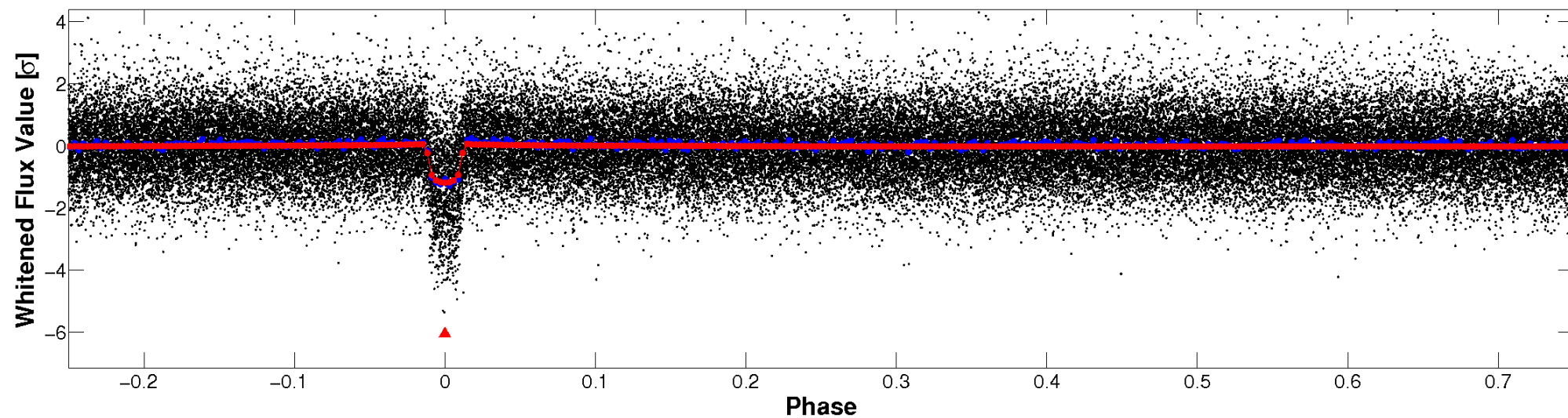


Non-Whitened Vs. Whitened Light Curve

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

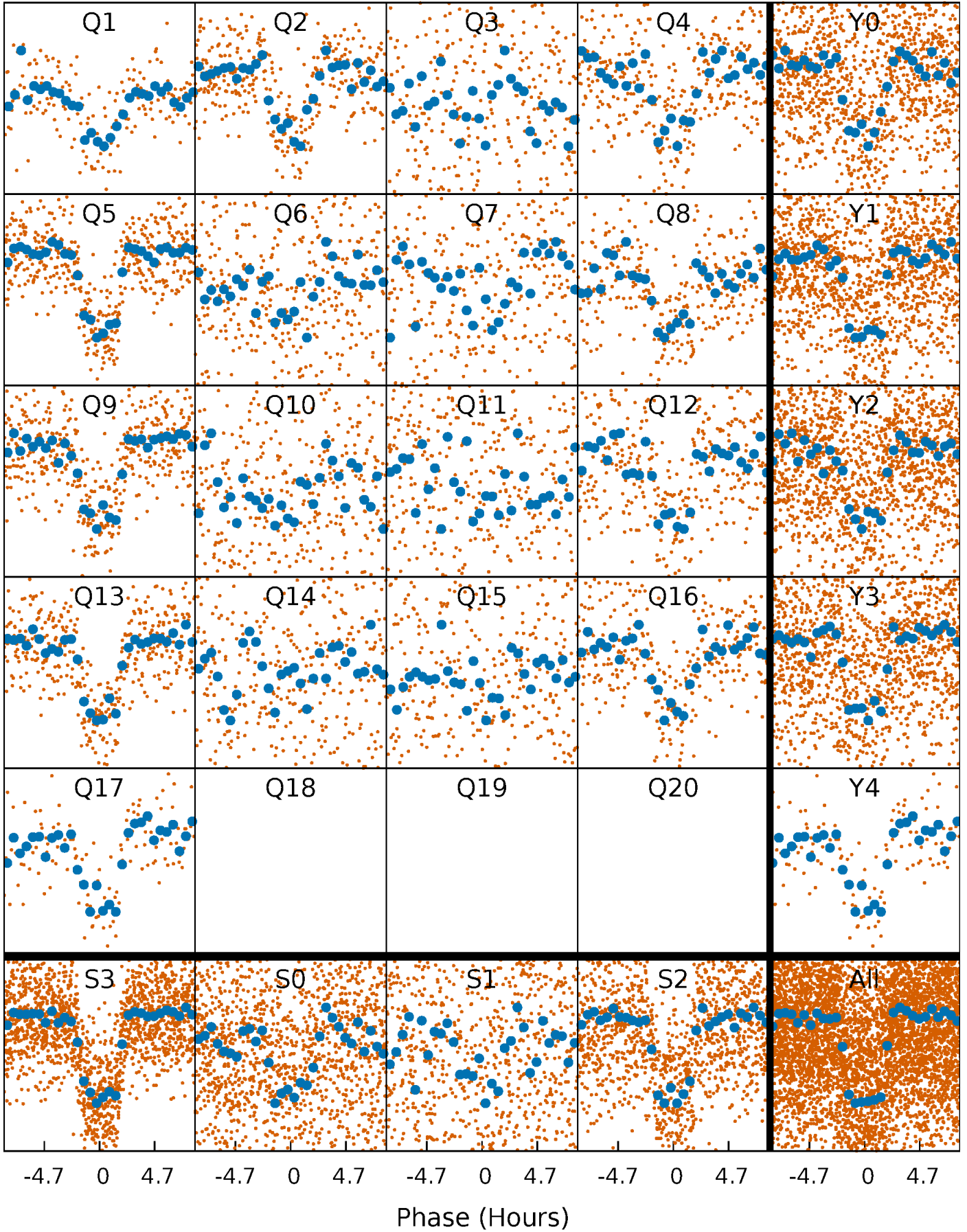


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



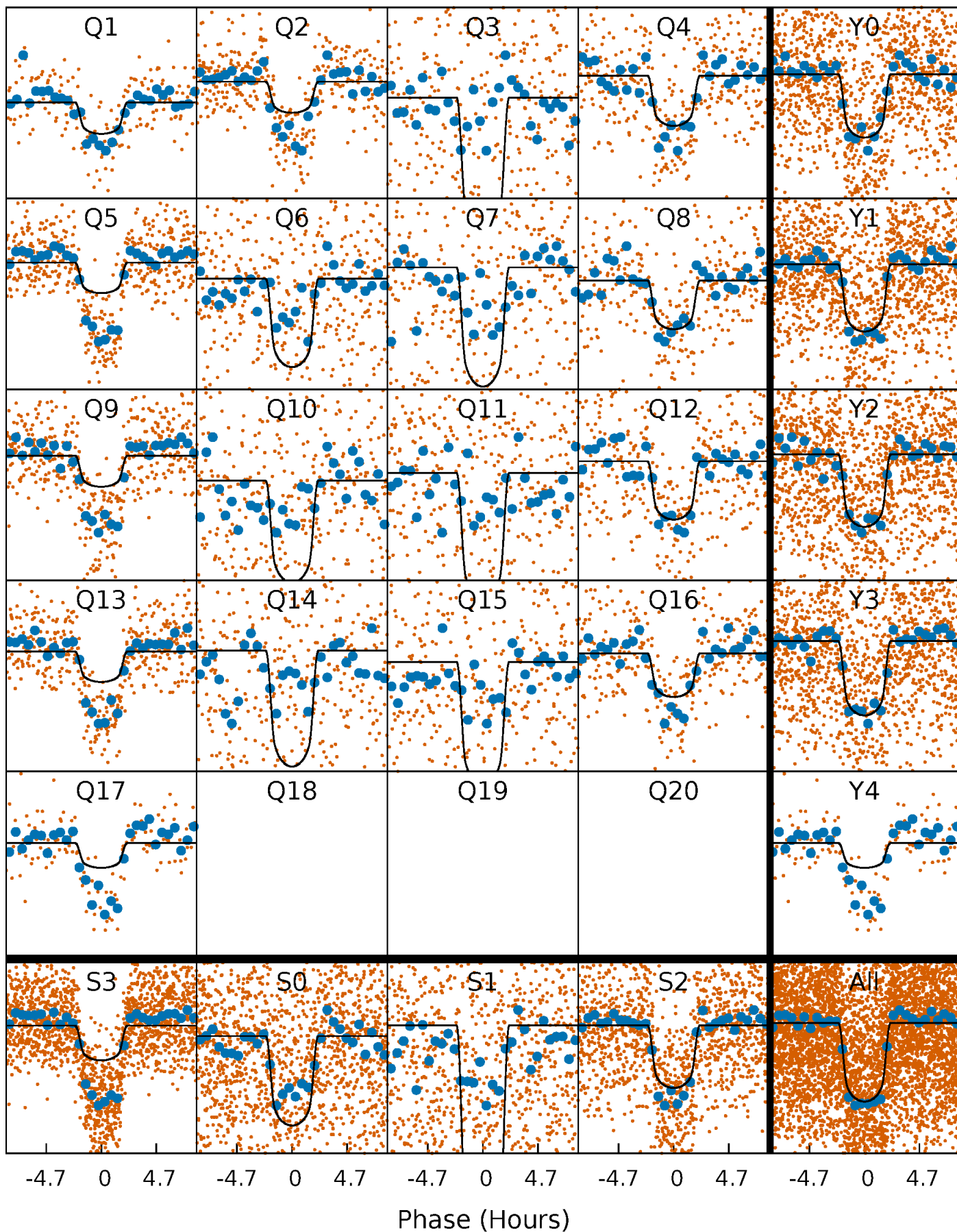
PDC Quarter-Phased Transit Curves

TCE 010005020-01 P= 6.971056 Days $T_0=132.877287$ (BKJD)



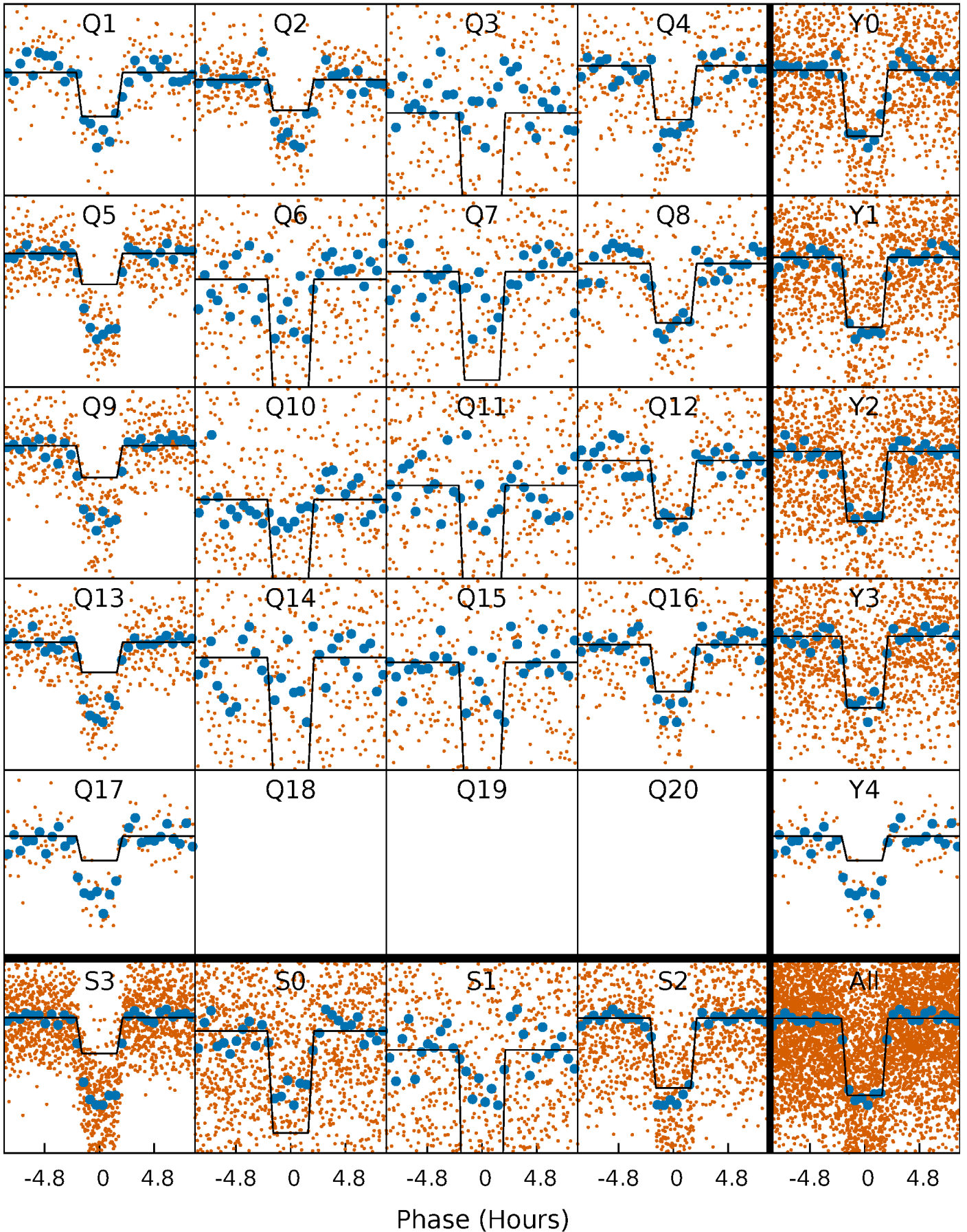
DV Quarter-Phased Transit Curves

TCE 010005020-01 P= 6.971056 Days $T_0=132.877287$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

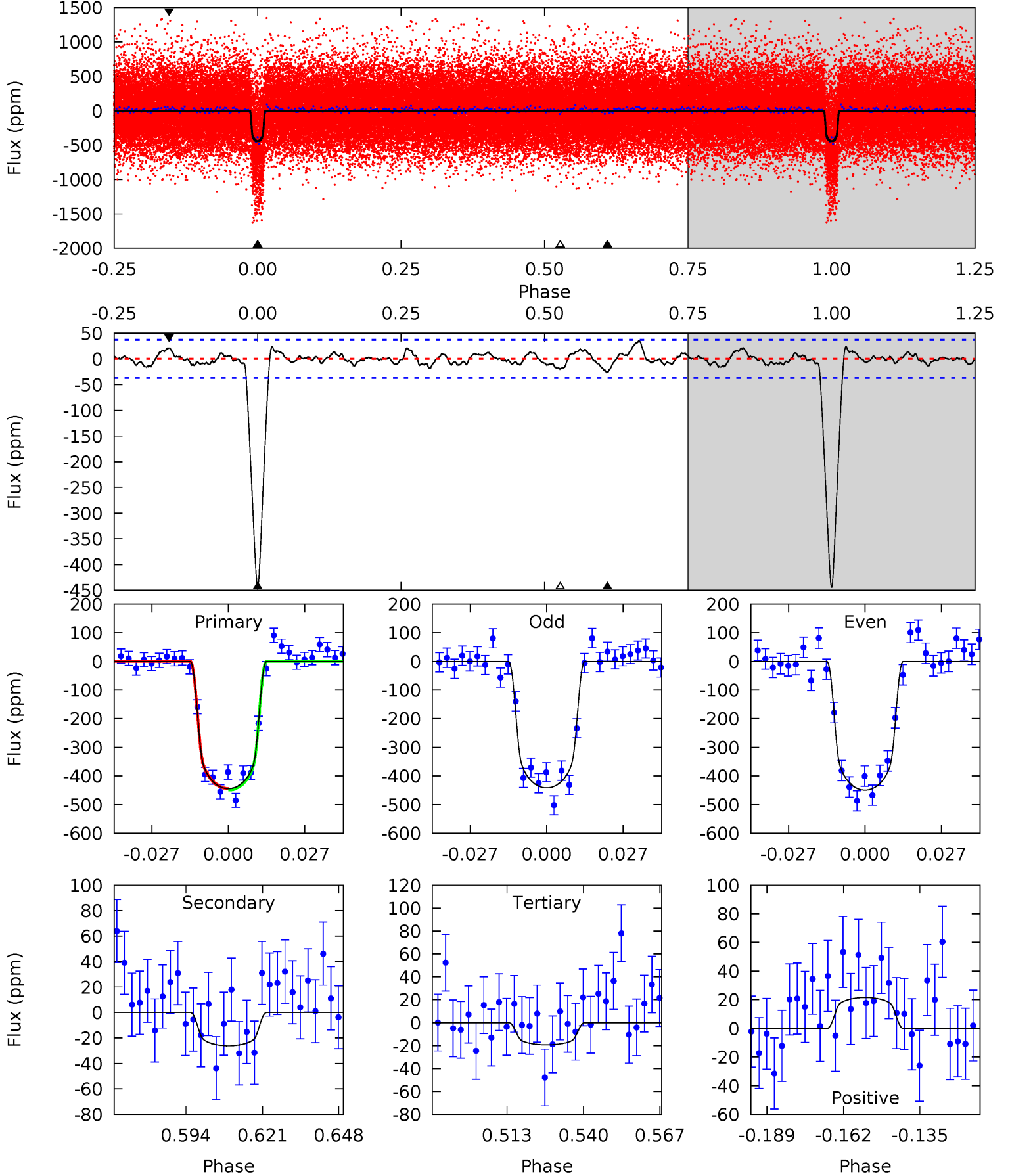
TCE 010005020-01 P= 6.971118 Days $T_0=132.871743$ (BKJD)



DV Model-Shift Uniqueness Test

010005020-01, P = 6.971056 Days, E = 125.906231 Days

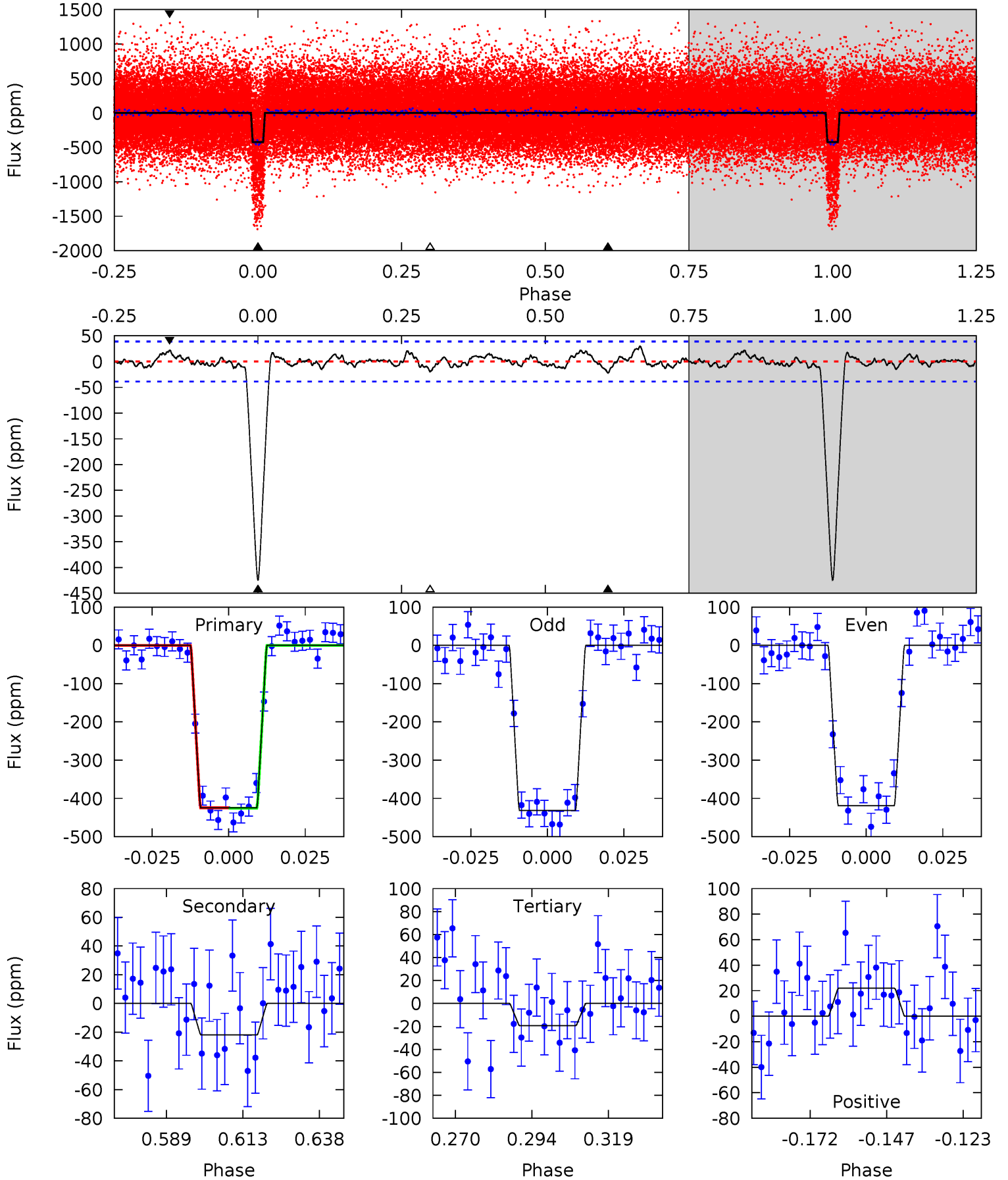
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.6	3.39	2.51	2.80	4.83	2.21	1.25	55.1	54.8	0.89	0.60	0.51	1.16	0.07	0.33



Alt Model-Shift Uniqueness Test

010005020-01, P = 6.971118 Days, E = 125.900625 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.8	2.72	2.40	2.73	4.85	2.25	1.08	50.4	50.1	0.32	-0.00	0.75	1.14	0.07	0.08



Stellar Parameters For KIC 010005020

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5871^{+156}_{-191}	$4.493^{+0.048}_{-0.204}$	$0.210^{+0.200}_{-0.300}$	$0.983^{+0.270}_{-0.096}$	$1.097^{+0.100}_{-0.150}$	$1.624^{+0.334}_{-0.860}$
	+3%/-3%	+1%/-5%	+95%/-143%	+27%/-10%	+9%/-14%	+21%/-53%
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 010005020-01 / KOI 0724.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-26 ± 8	$2.40^{+0.45}_{-0.33}$	1350^{+81}_{-61}	3359^{+203}_{-217}	13^{+6}_{-5}
Alt.	-22 ± 8	$2.25^{+0.39}_{-0.31}$	1353^{+87}_{-66}	3340^{+229}_{-271}	12^{+7}_{-5}

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

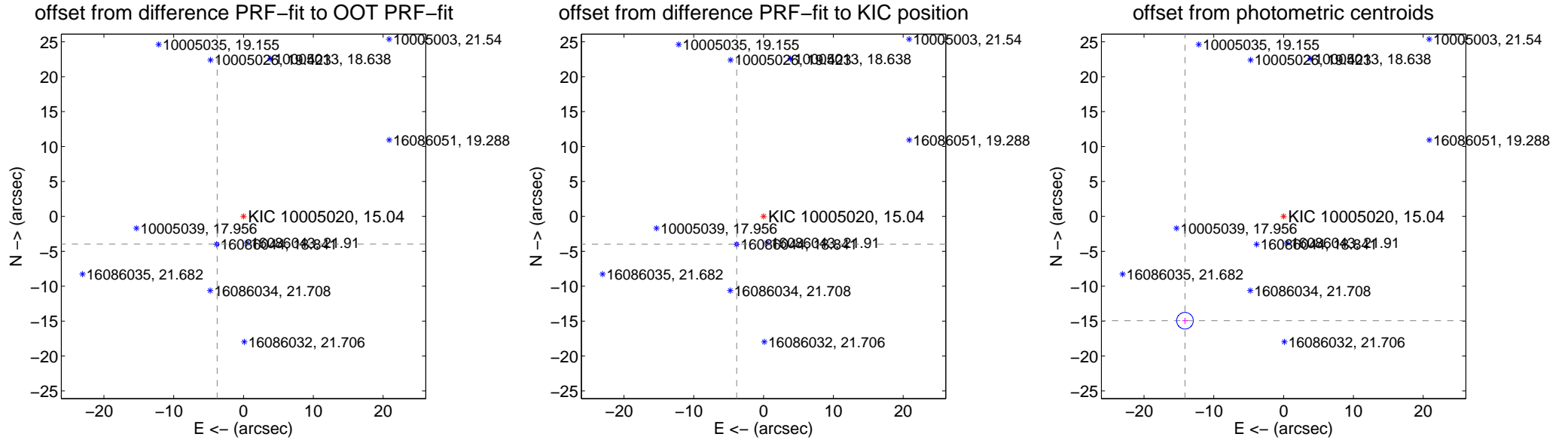
DV Centroid Data

Supplemental centroid analysis for 010005020-01. Kepler magnitude: 15.04. Transit SNR 37.63

There are 13 quarters with good PRF difference image offsets

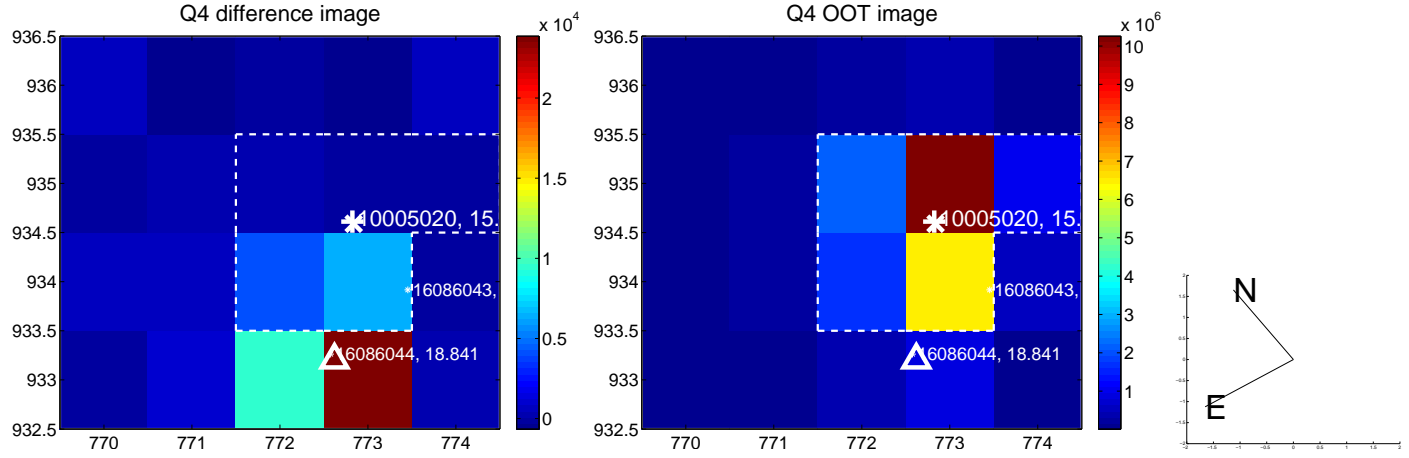
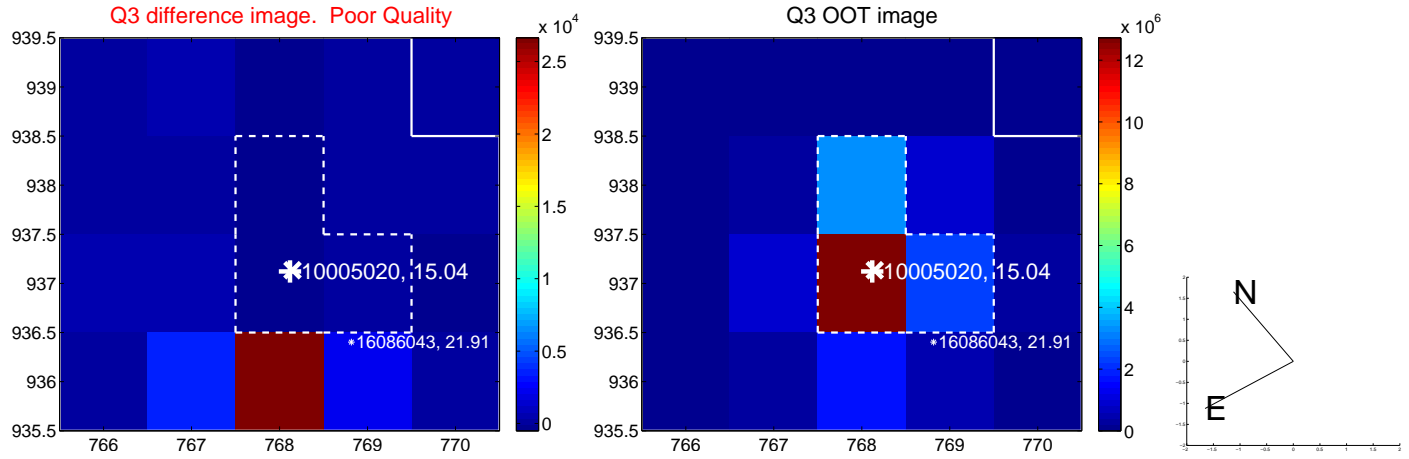
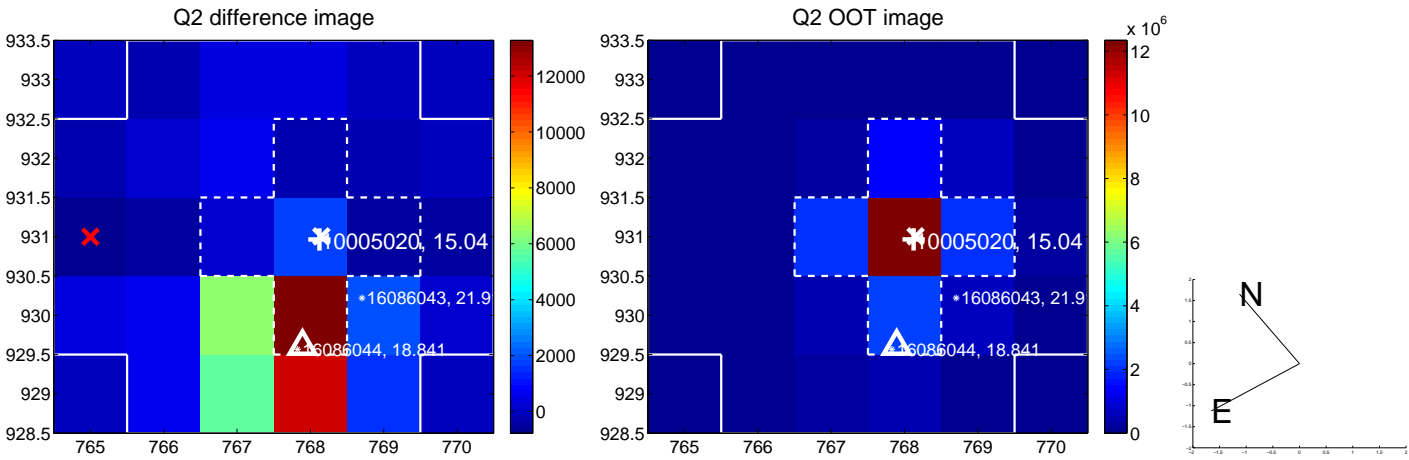
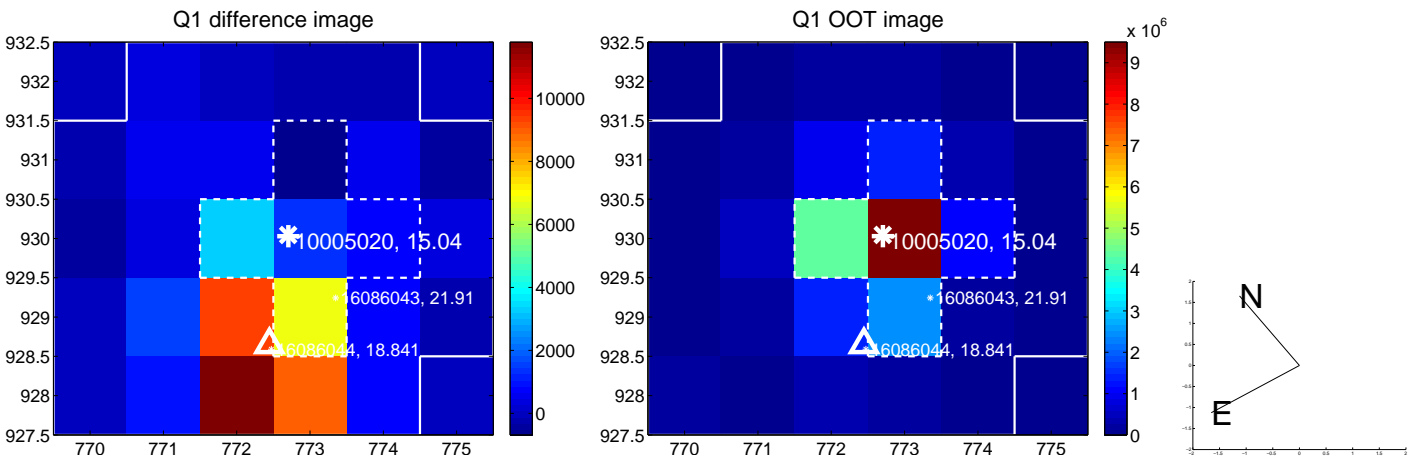
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.475 \pm 0.075	72.83	3.770 \pm 0.078	-3.971 \pm 0.073
PRF-fit source offset from KIC position	5.537 \pm 0.071	77.73	3.848 \pm 0.073	-3.981 \pm 0.069
photometric centroid source offset	20.56 \pm 0.40	51.85	14.13 \pm 0.39	-14.94 \pm 0.40

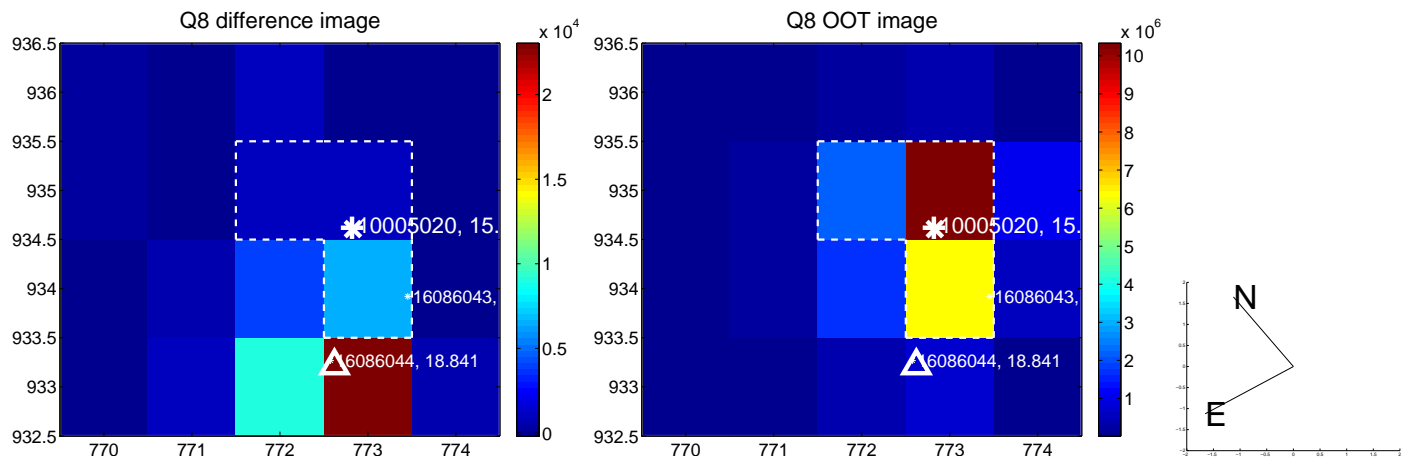
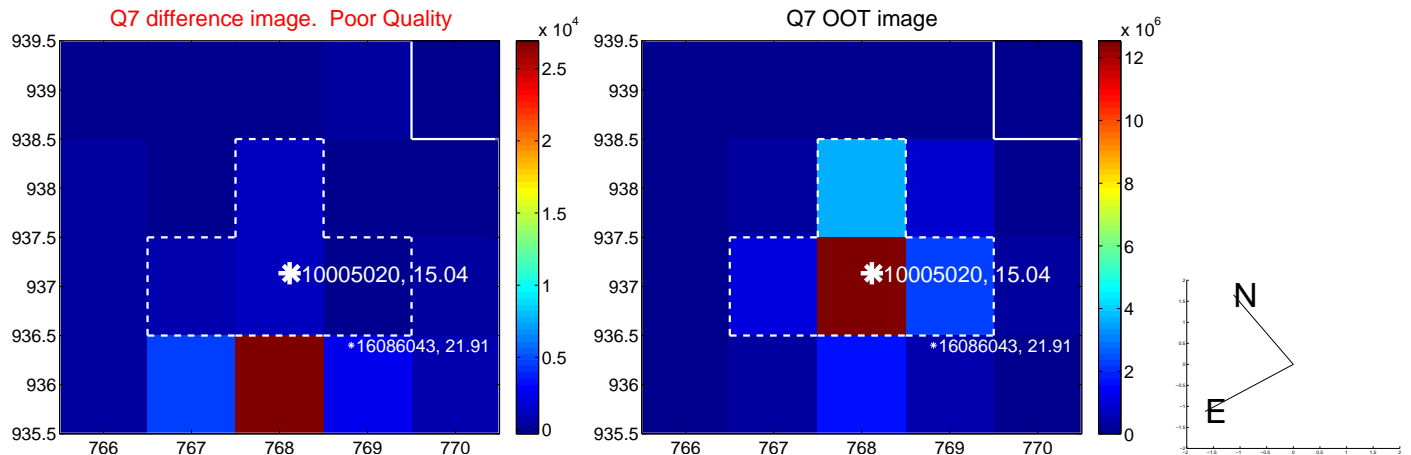
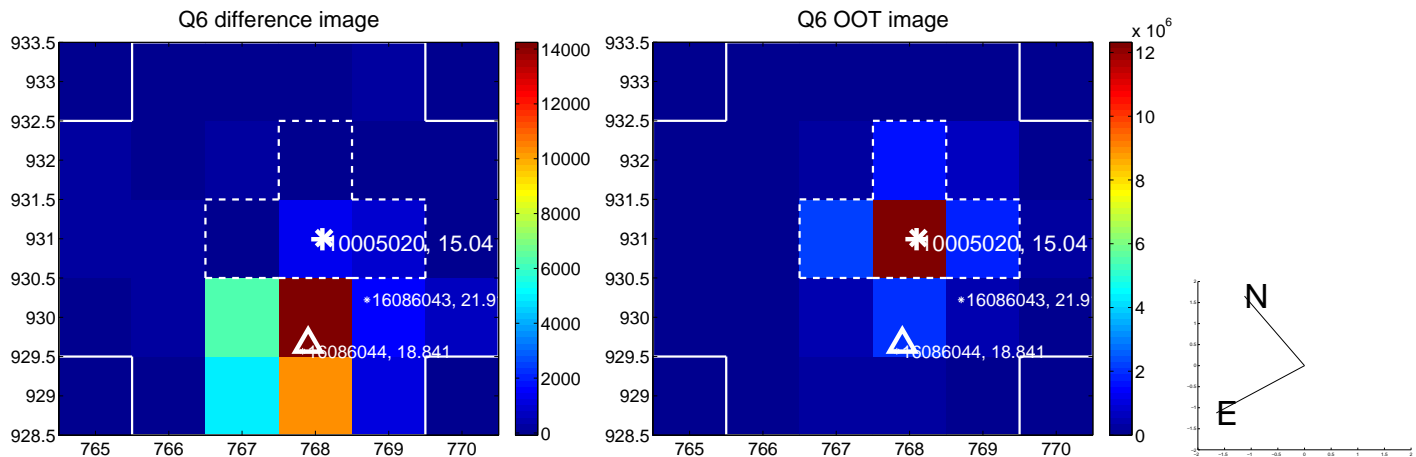
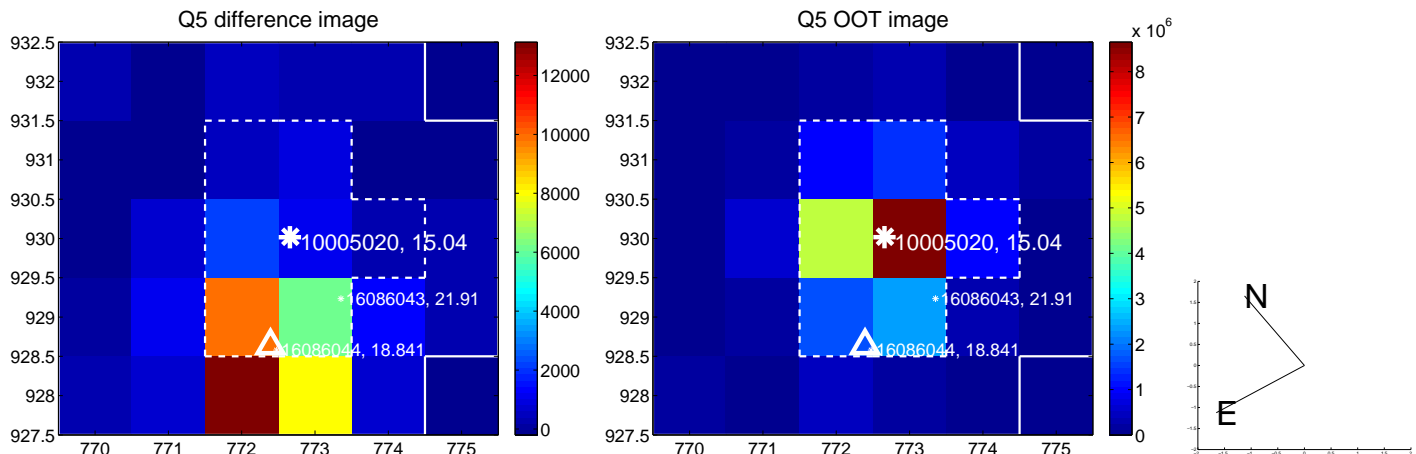


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

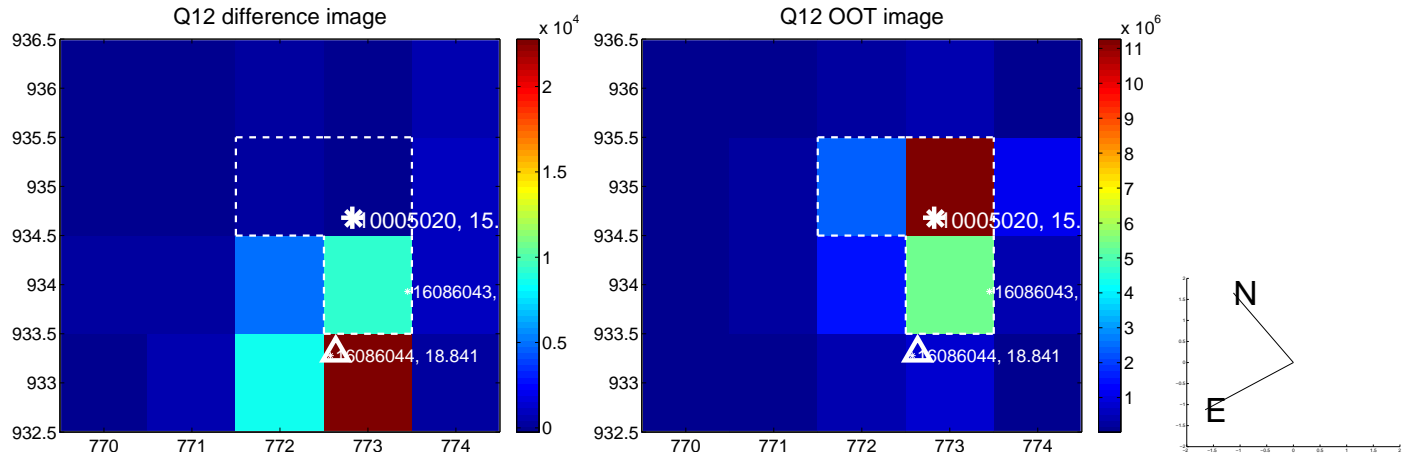
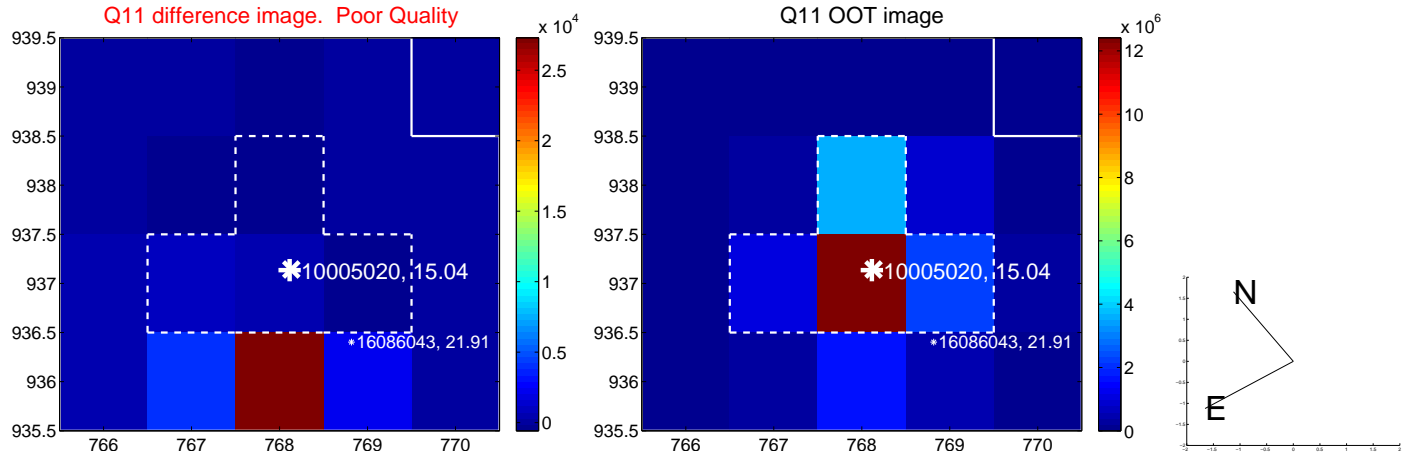
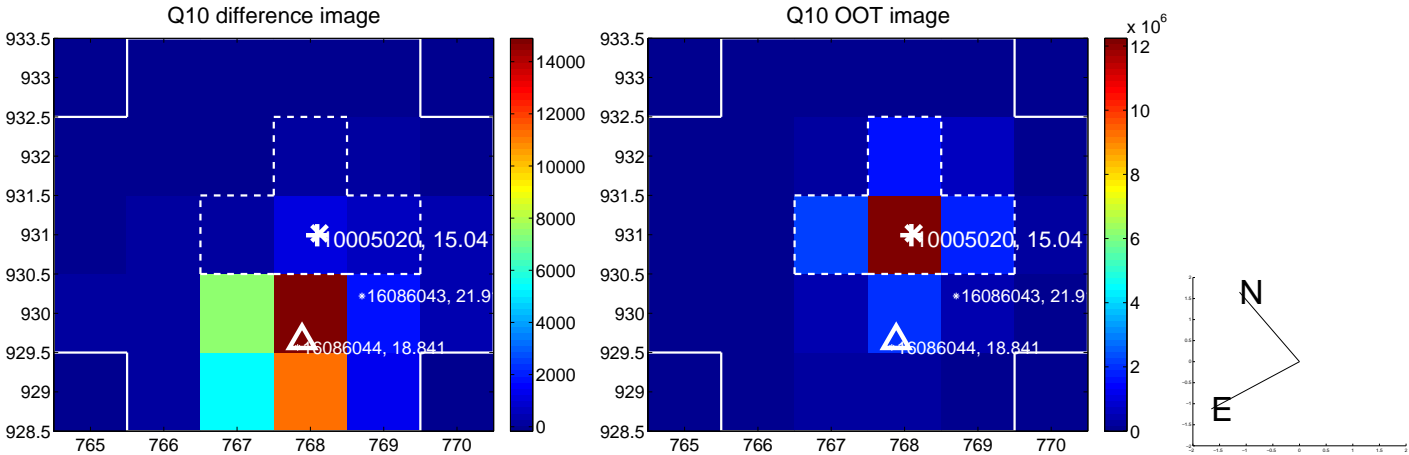
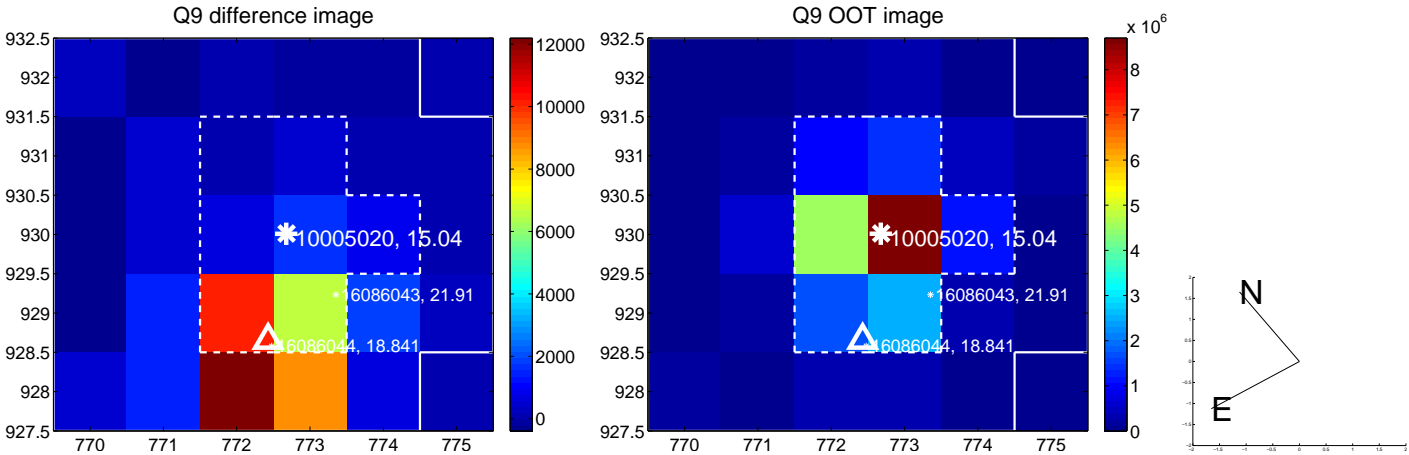
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



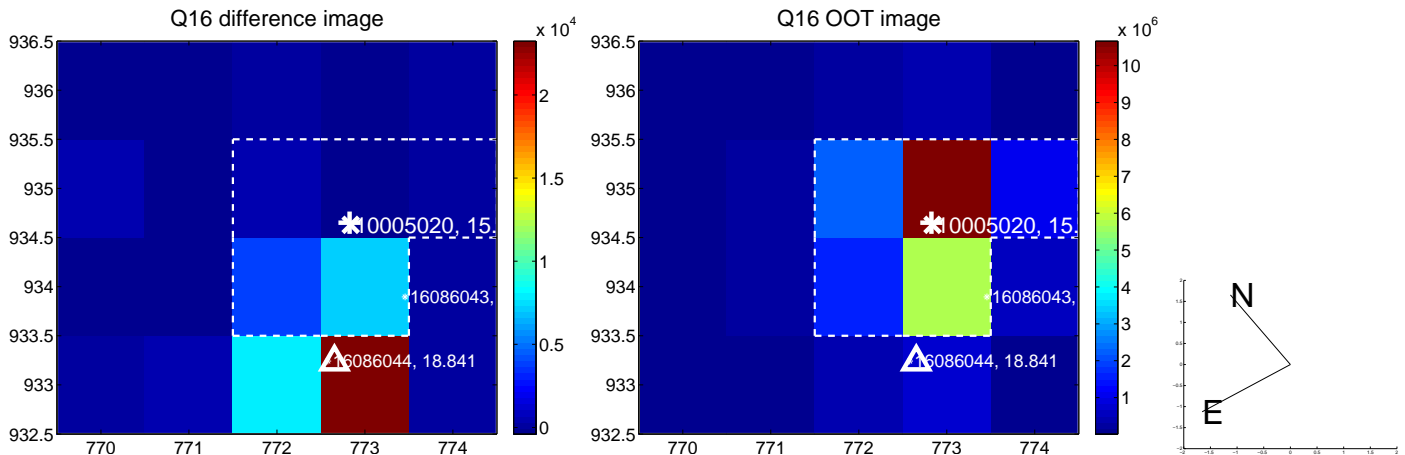
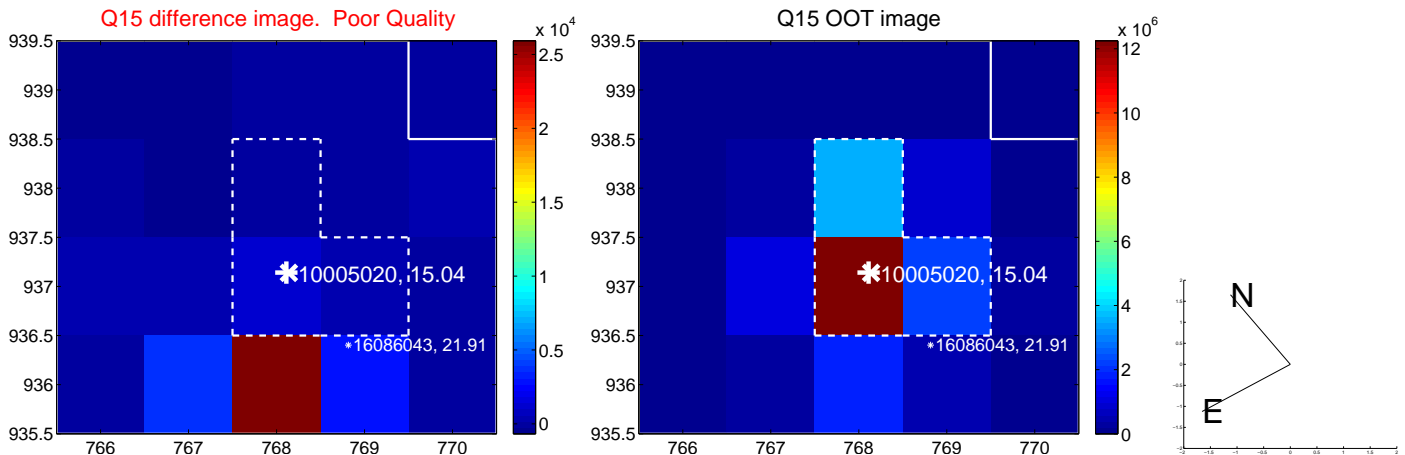
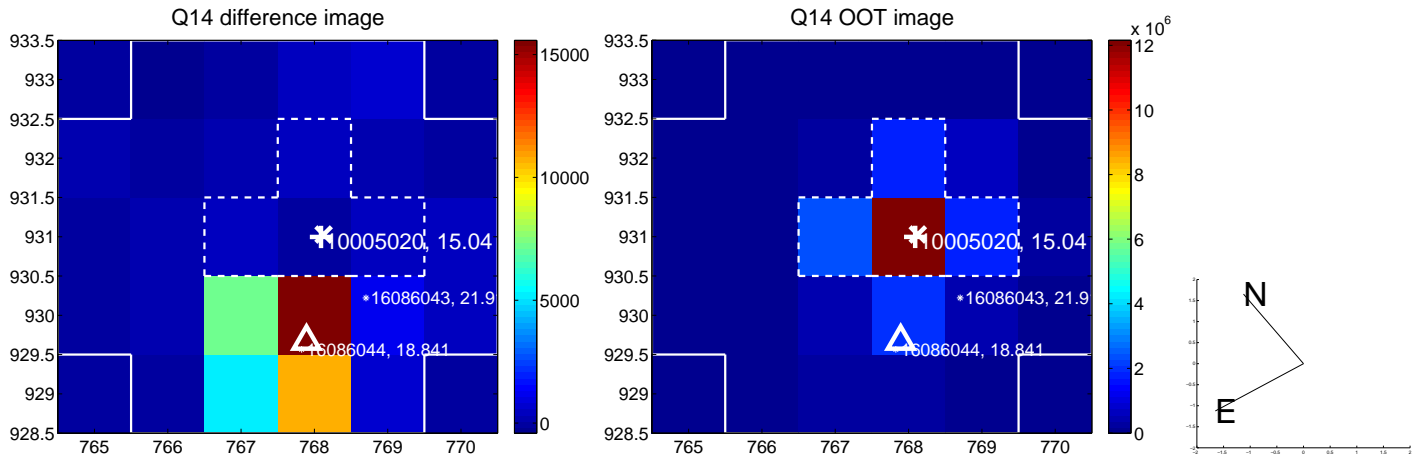
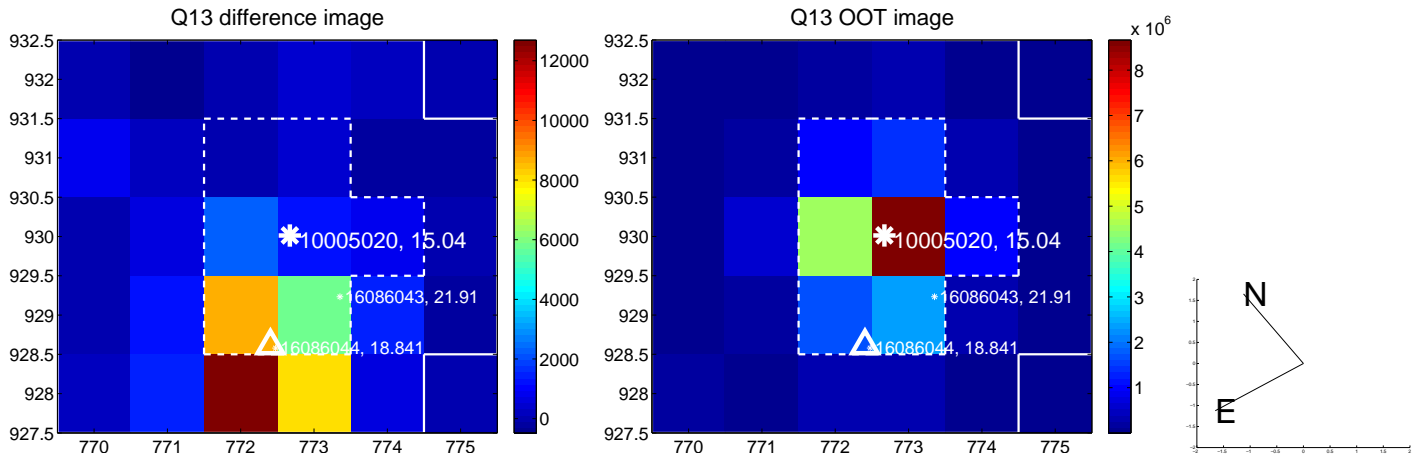
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



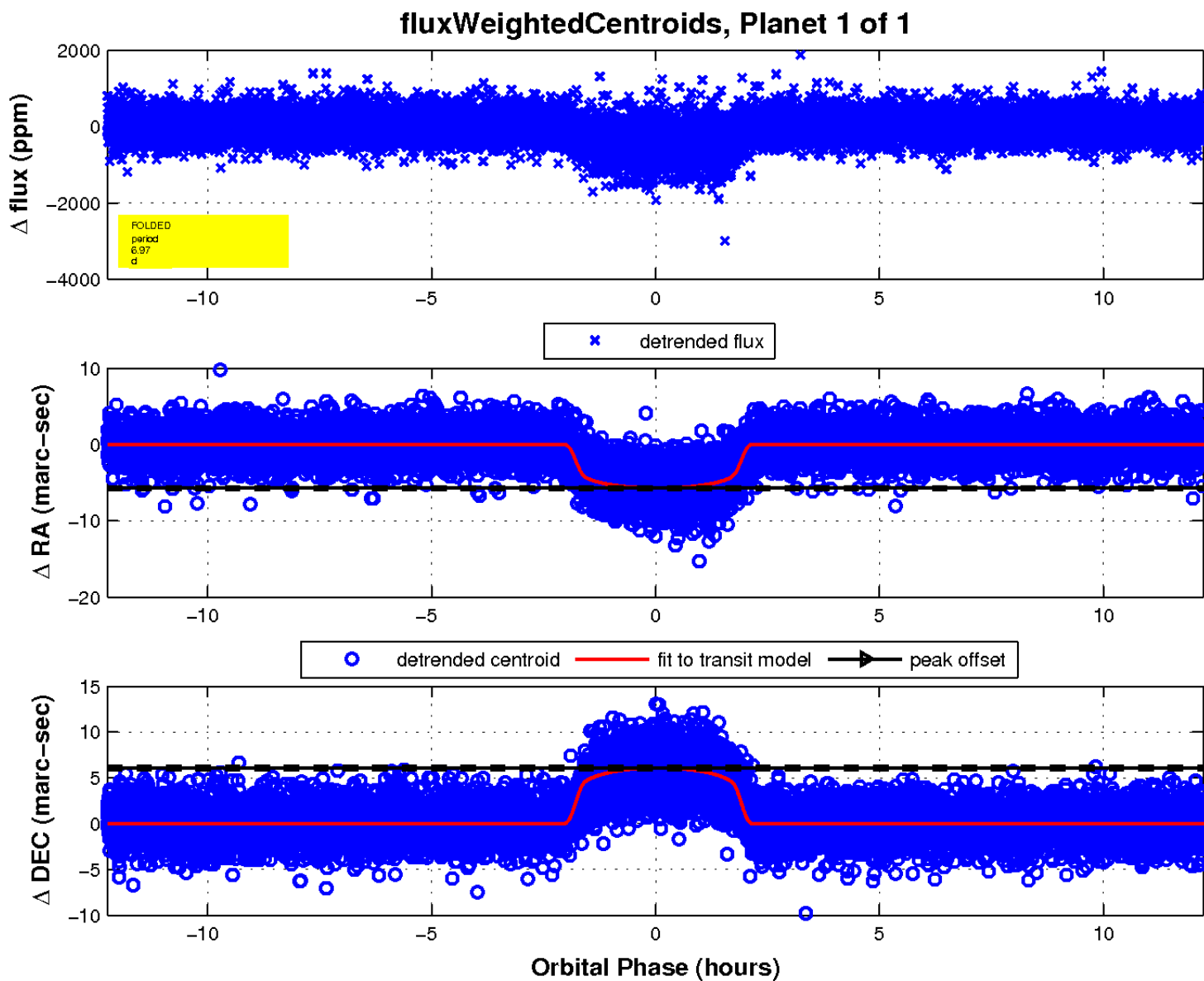
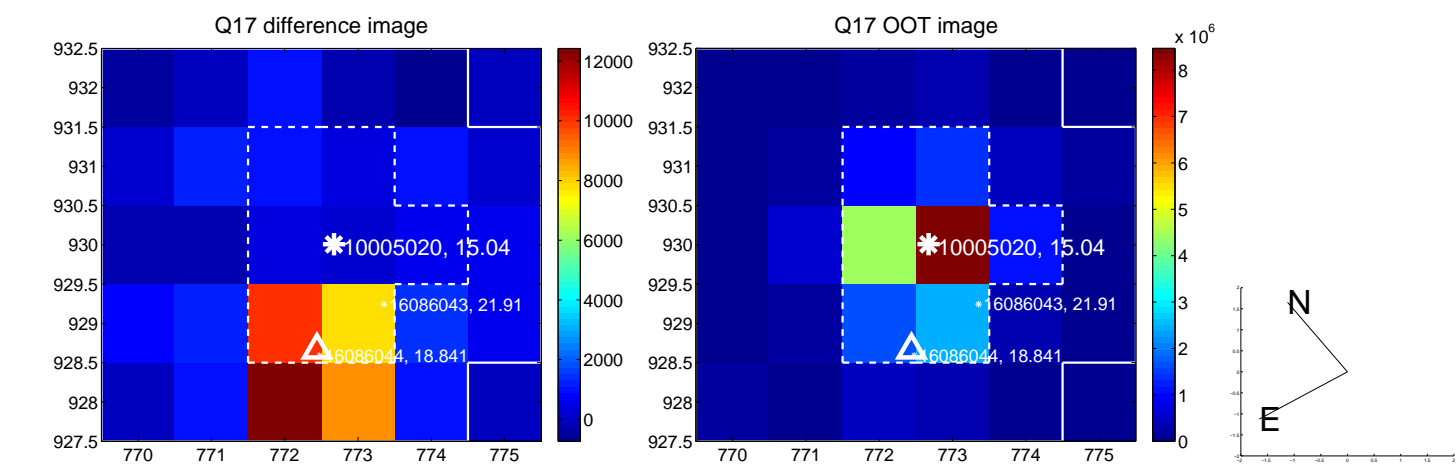
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UKIRT Image

Declination

