

KIC 012405333

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})
012405333-01	OBS	3009.01	0.764865	132.131789	134.3	1.260	11.1	13.7	0.86	5231	1.21	2135.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012405333-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

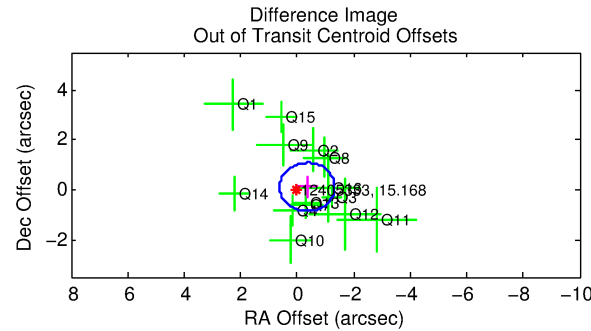
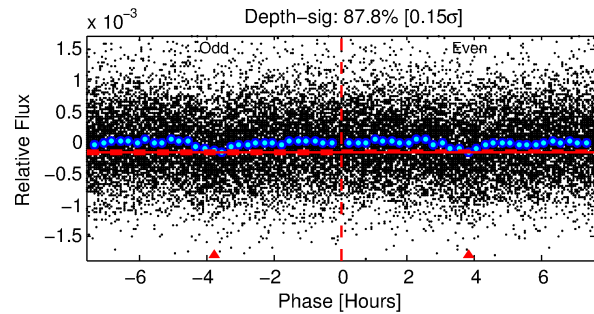
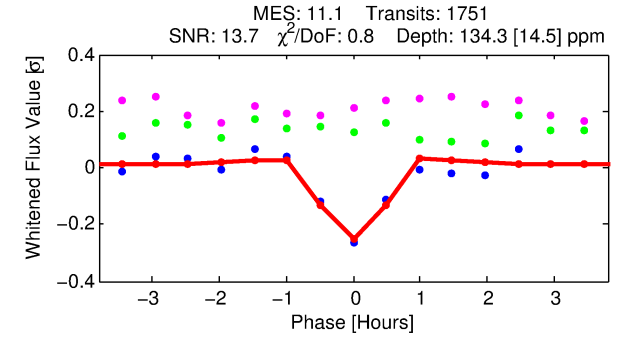
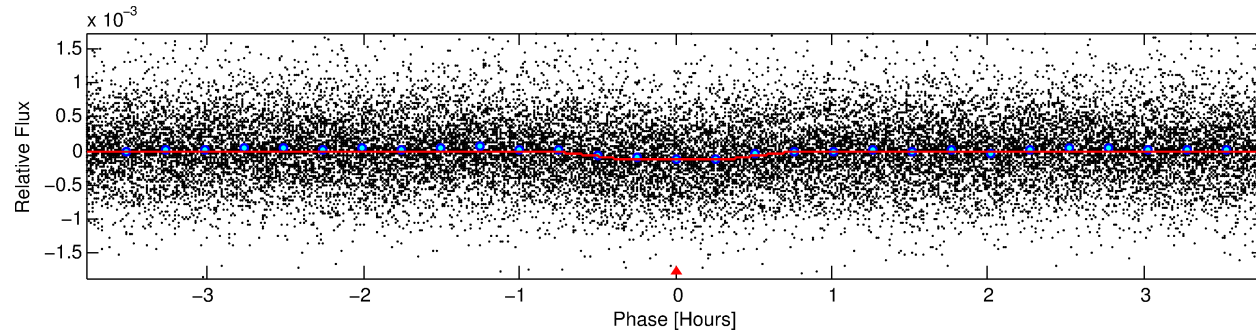
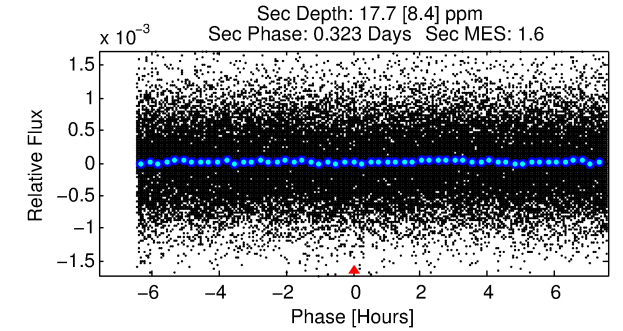
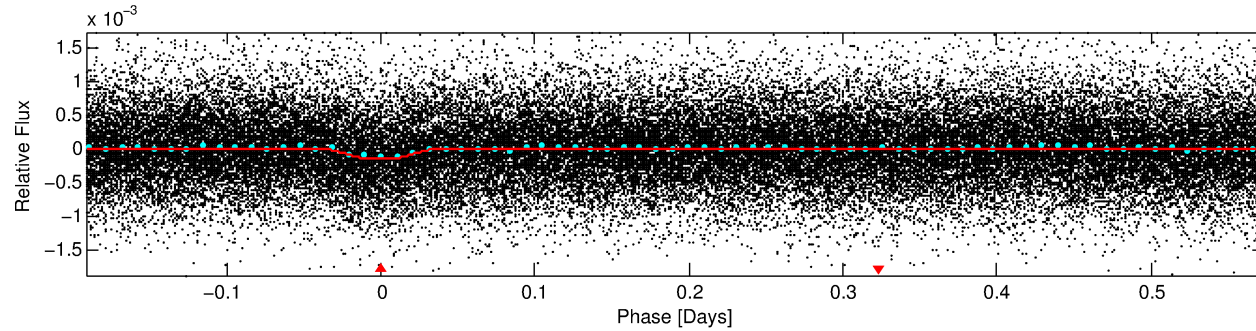
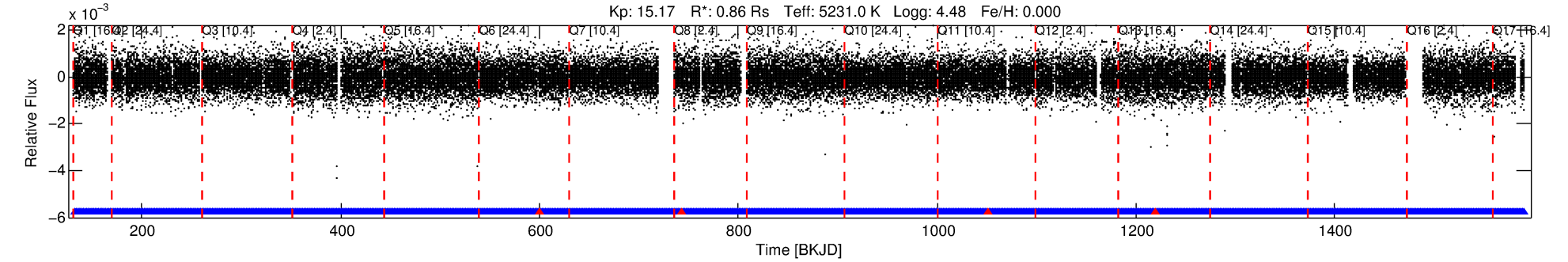
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012405333-01

No Significant Match Found

DV One-Page Summary

KIC: 12405333 Candidate: 1 of 1 Period: 0.765 d
KOI: K03009.01 Corr: 0.967



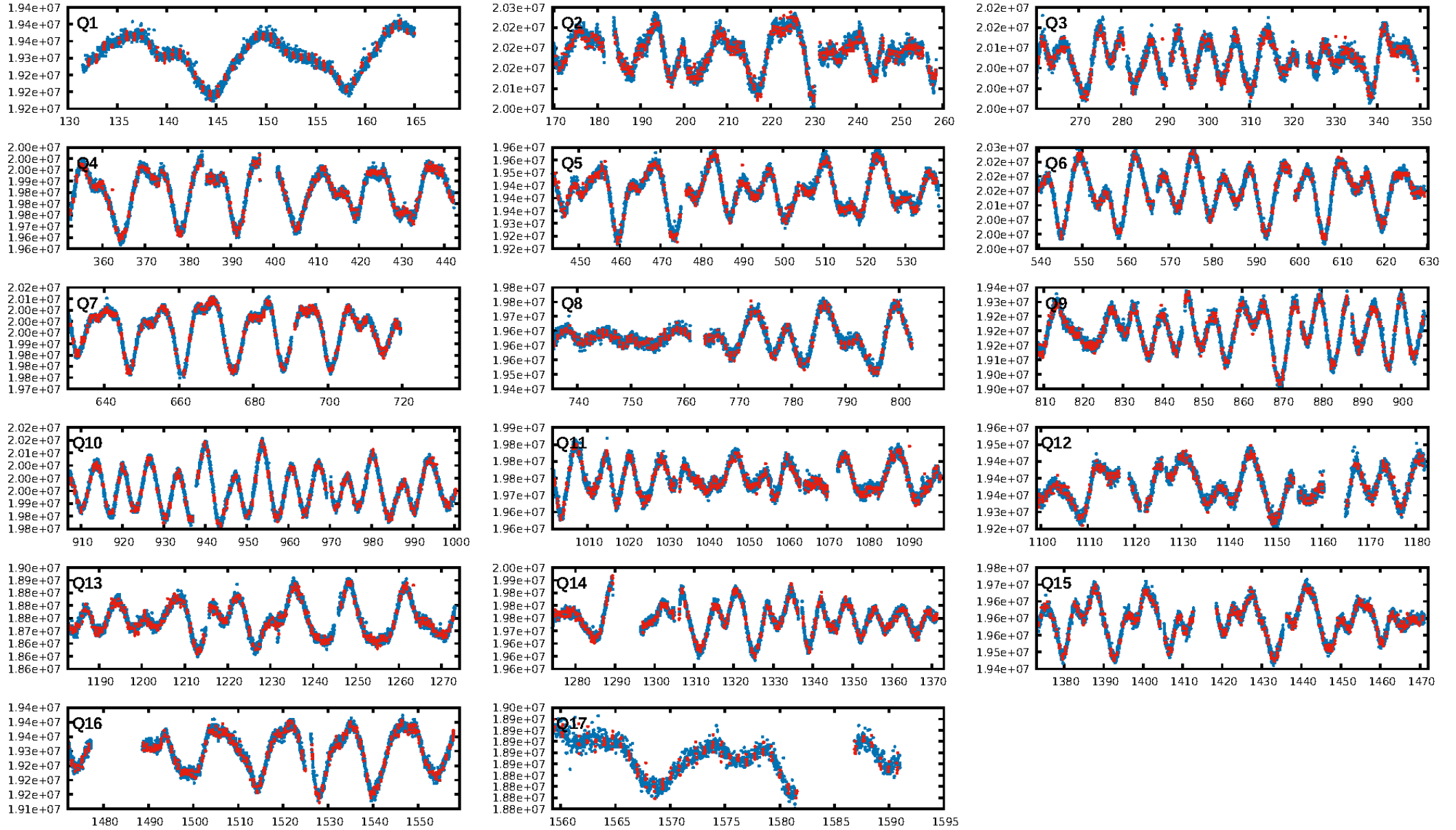
DV Fit Results:

Period = 0.76487 [0.00001] d
Epoch = 132.1318 [0.0013] BKJD
Rp/R* = 0.0129 [0.0087]
a/R* = 2.39 [5.55]
b = 0.90 [0.64]
Seff = 2135.27 [500.17]
Teff = 1733 [102] K
Rp = 1.21 [0.84] Re
a = 0.0152 [0.0019] AU
Ag = 1.55 [2.25] [0.24 σ]
Teffp = 2991 [1081] K [1.16 σ]

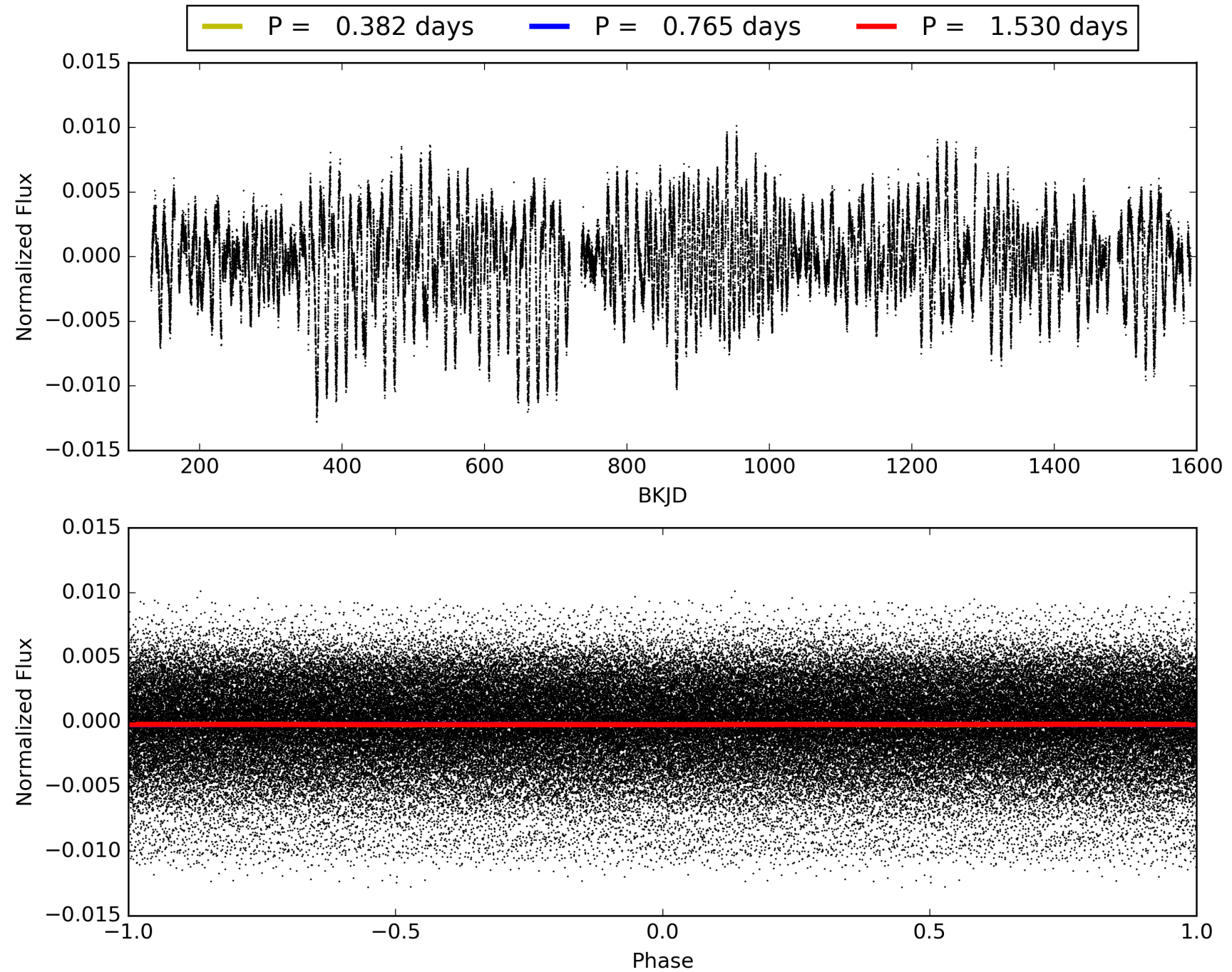
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.52e-26
RollingBand-fgt: 1.00 [1668/1672]
GhostDiagnostic-chr: 8.165
Centroid-sig: 74.6%
Centroid-so: 0.910 arcsec [0.92 σ]
OotOffset-rm: 0.361 arcsec [1.11 σ]
KicOffset-rm: 0.520 arcsec [1.64 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012405333-01, PDC Light Curves

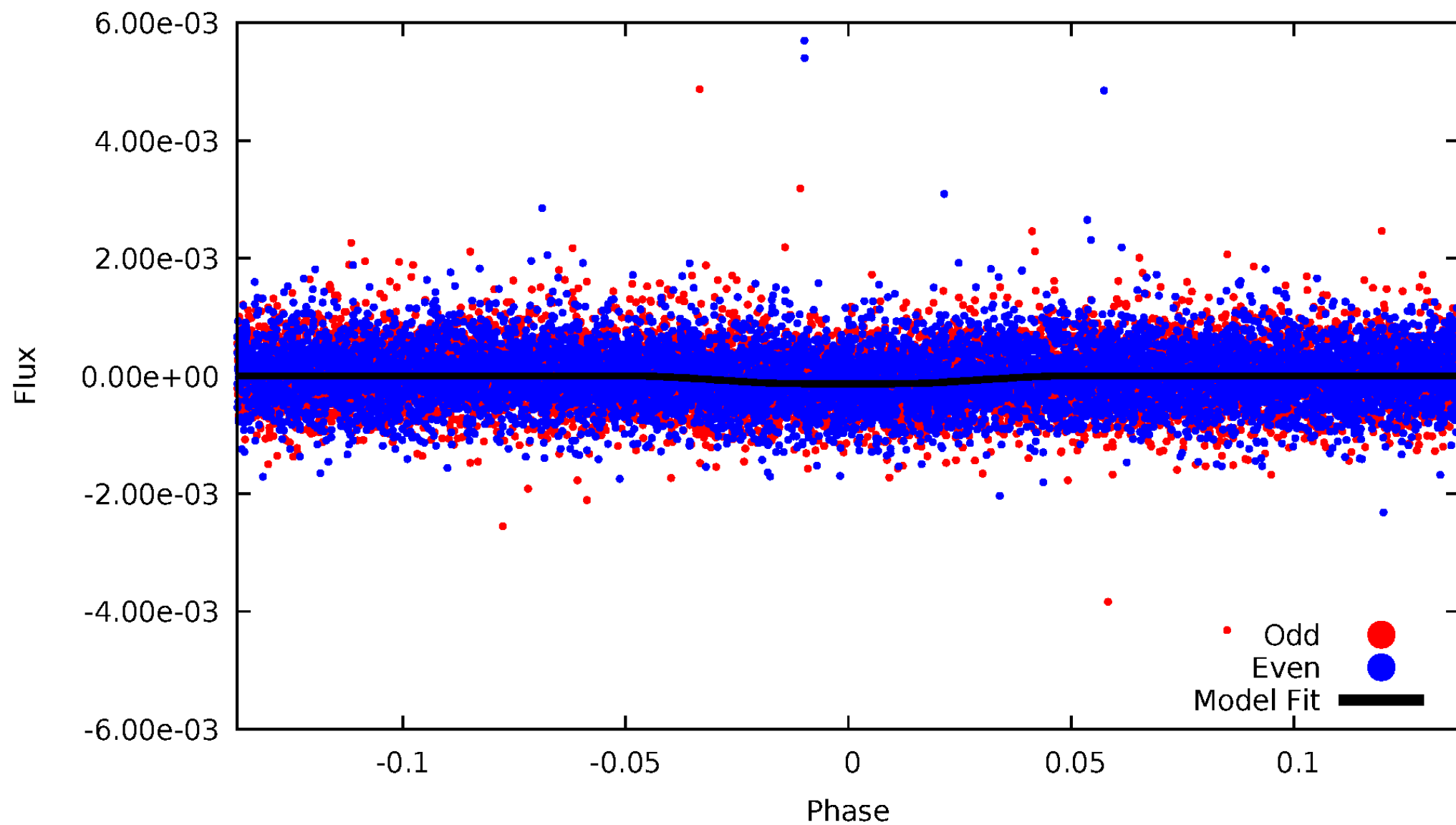


TCE 012405333-01



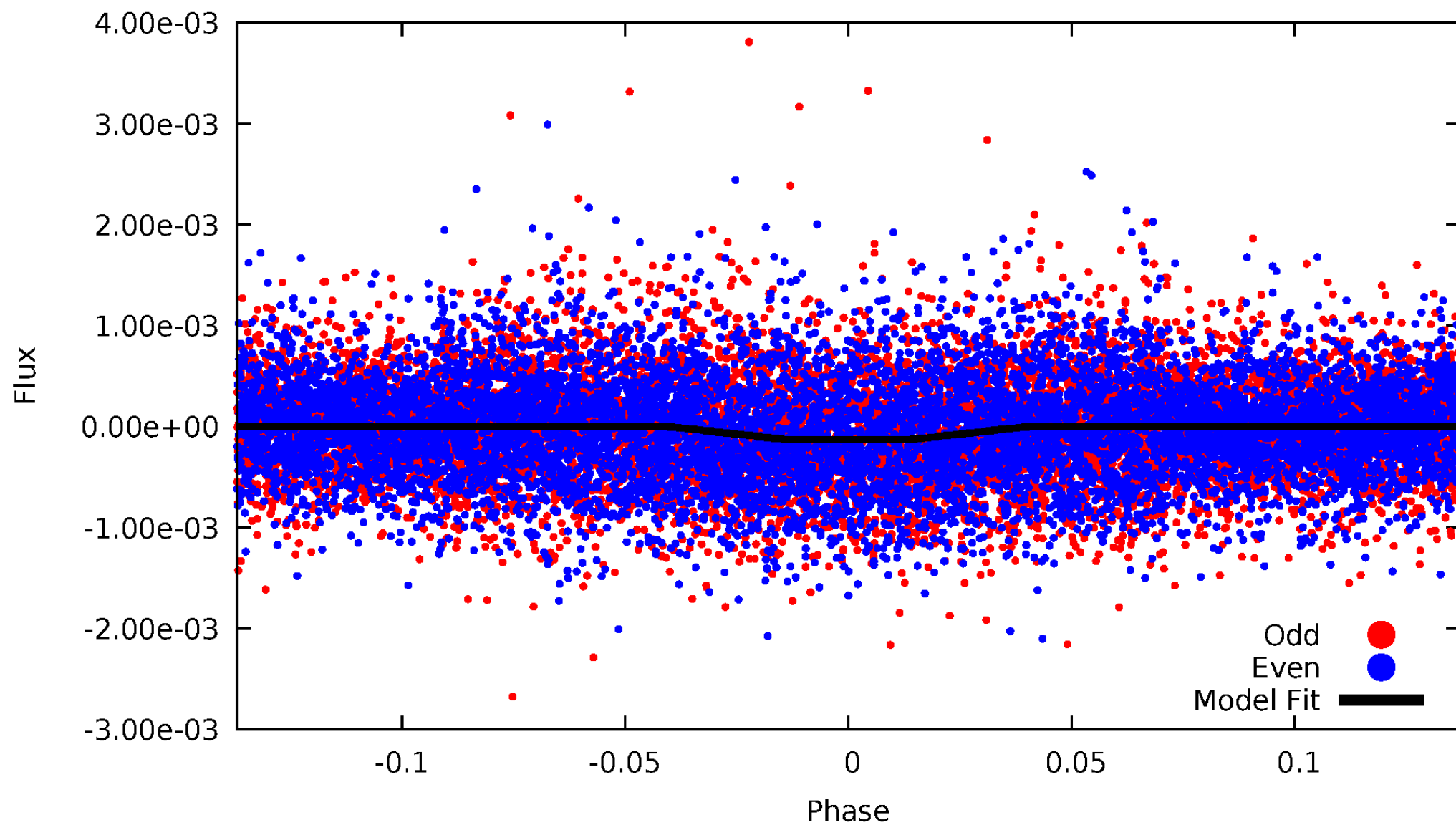
DV Odd/Even

TCE 012405333-01

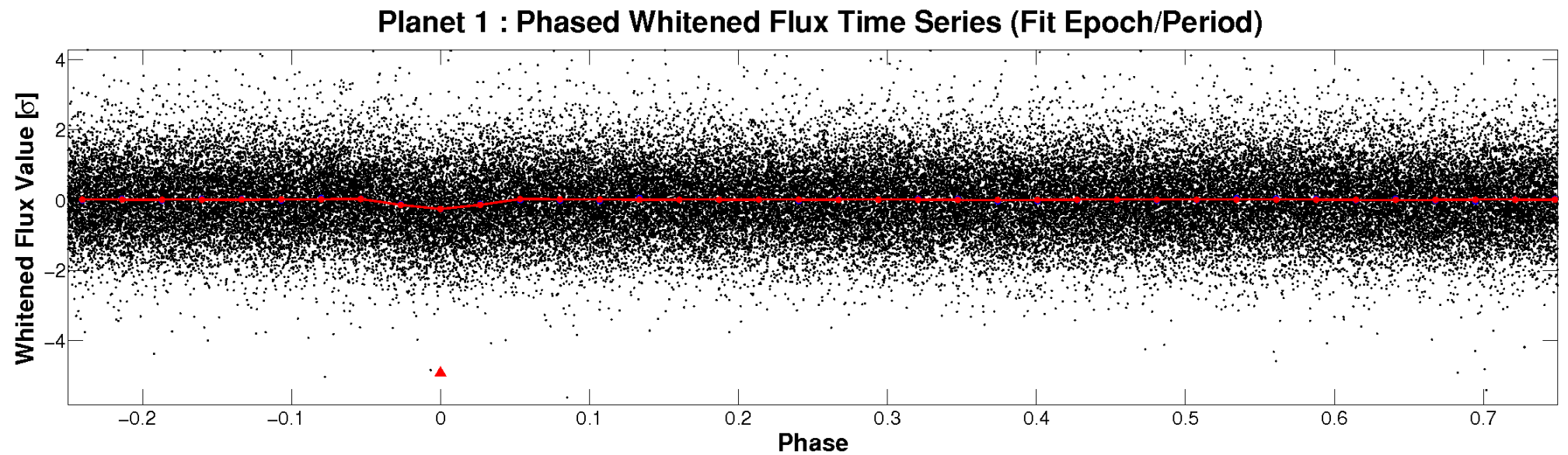
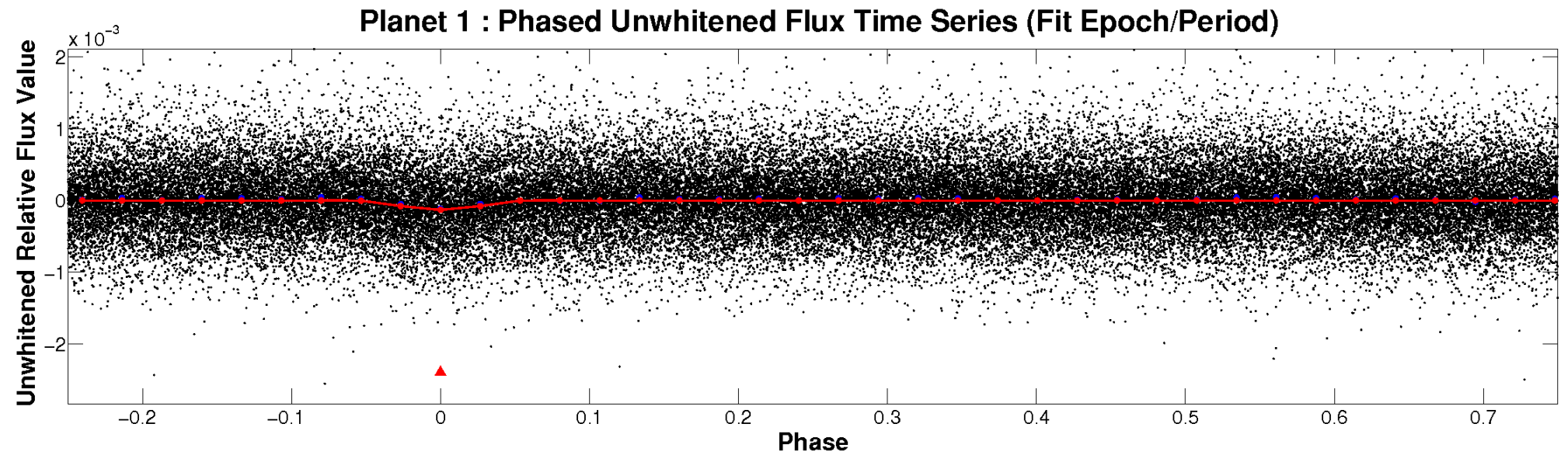


ALT Odd/Even

TCE 012405333-01

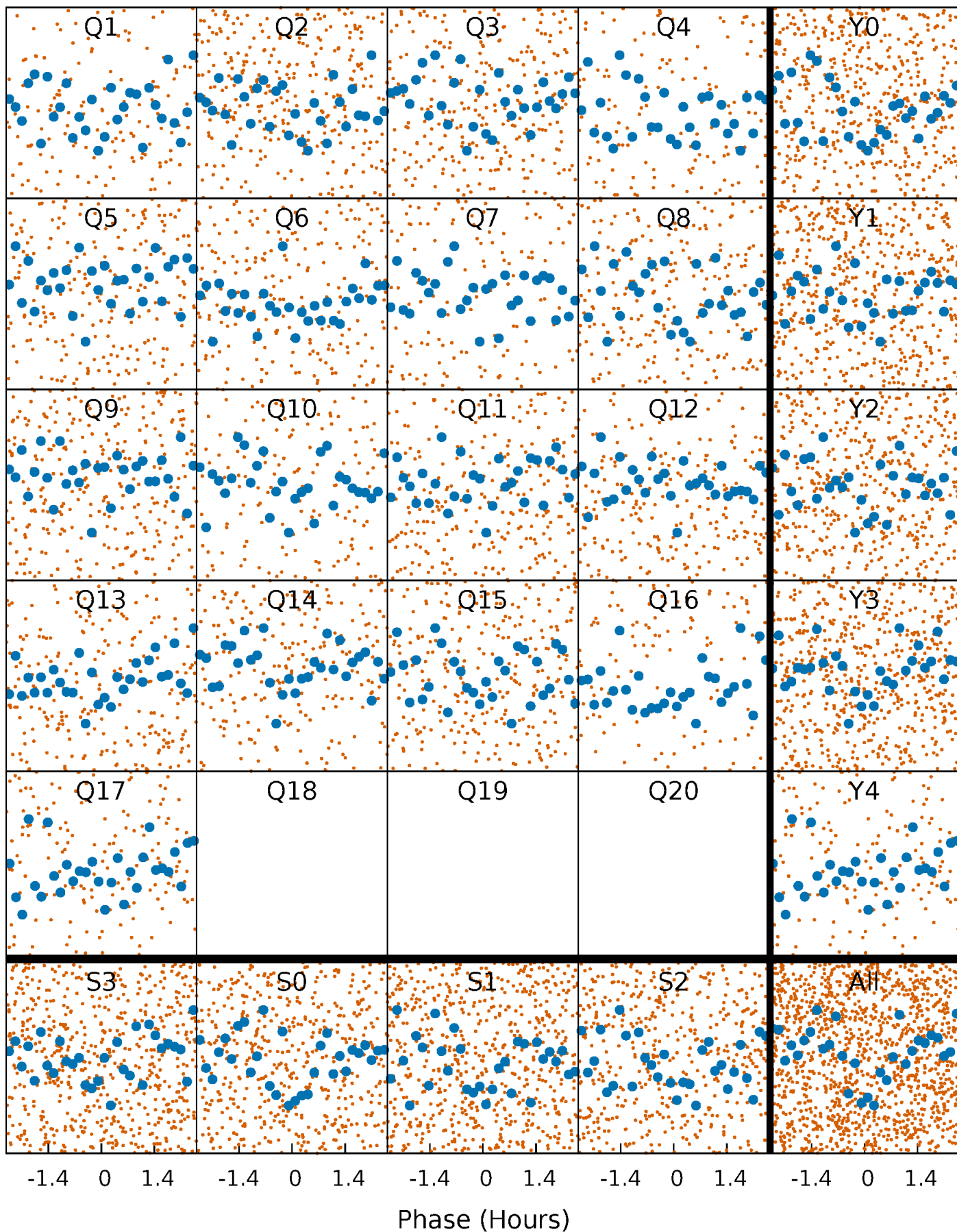


Non-Whitened Vs. Whitened Light Curve



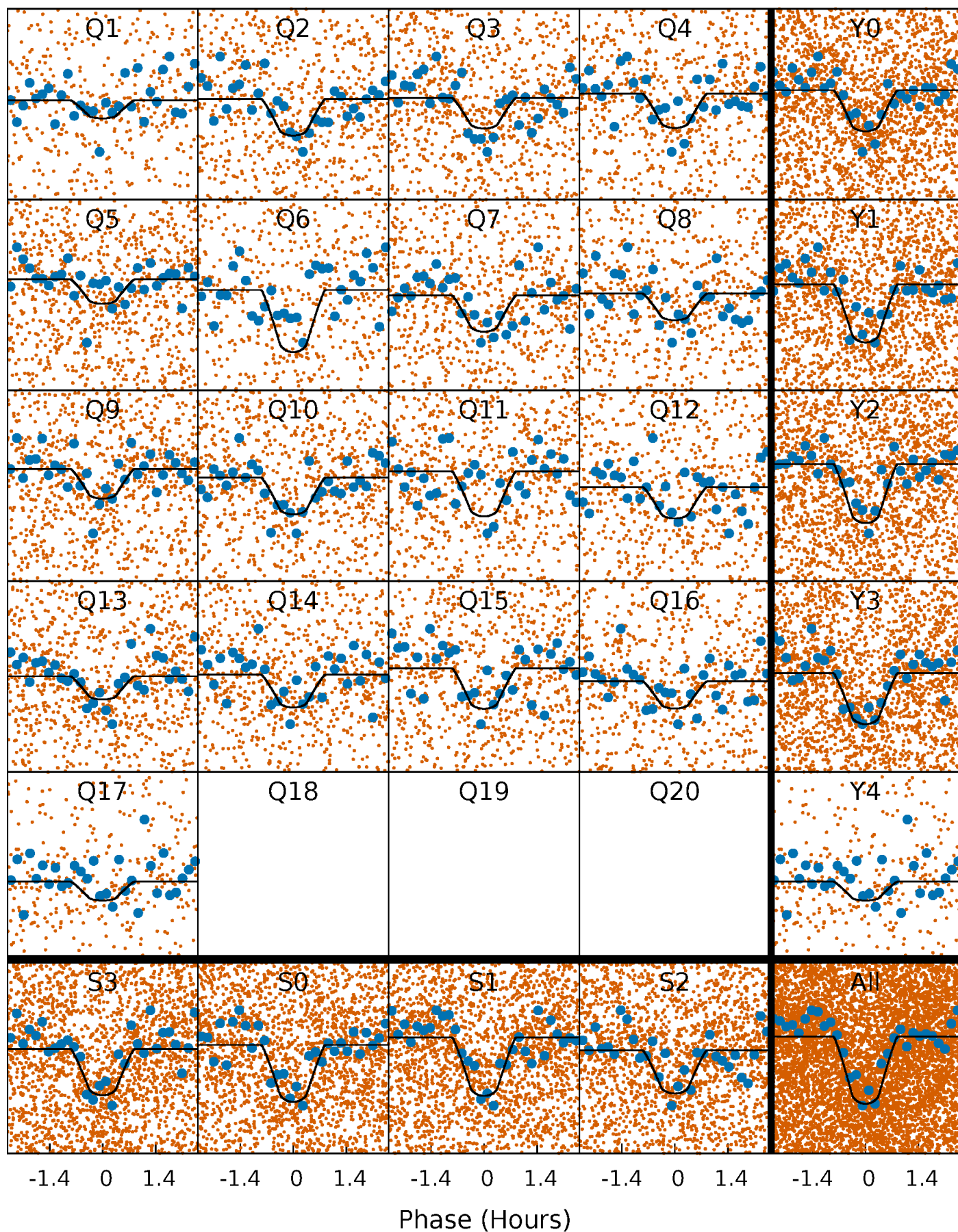
PDC Quarter-Phased Transit Curves

TCE 012405333-01 P= 0.764865 Days $T_0=132.131789$ (BKJD)



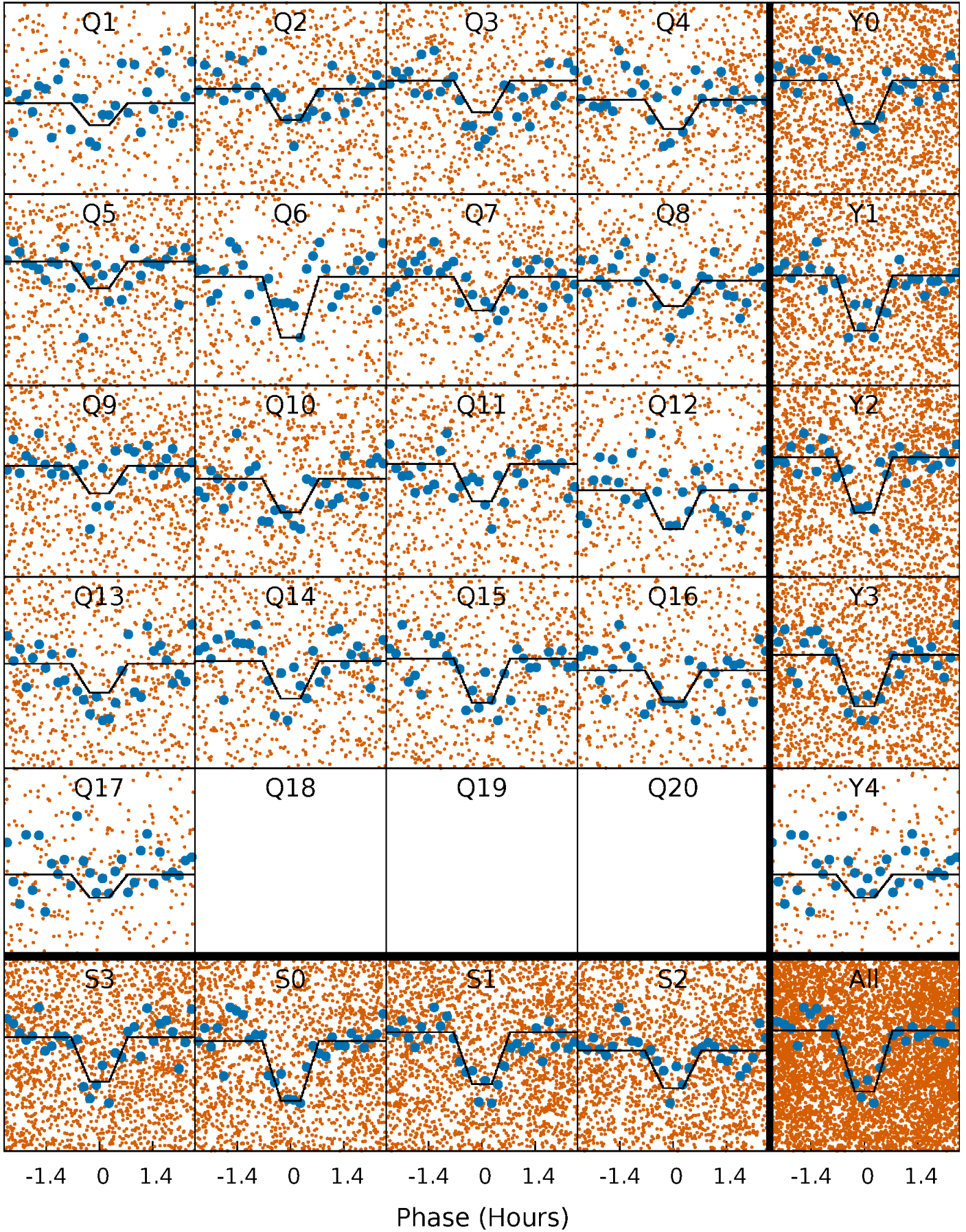
DV Quarter-Phased Transit Curves

TCE 012405333-01 P= 0.764865 Days $T_0=132.131789$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

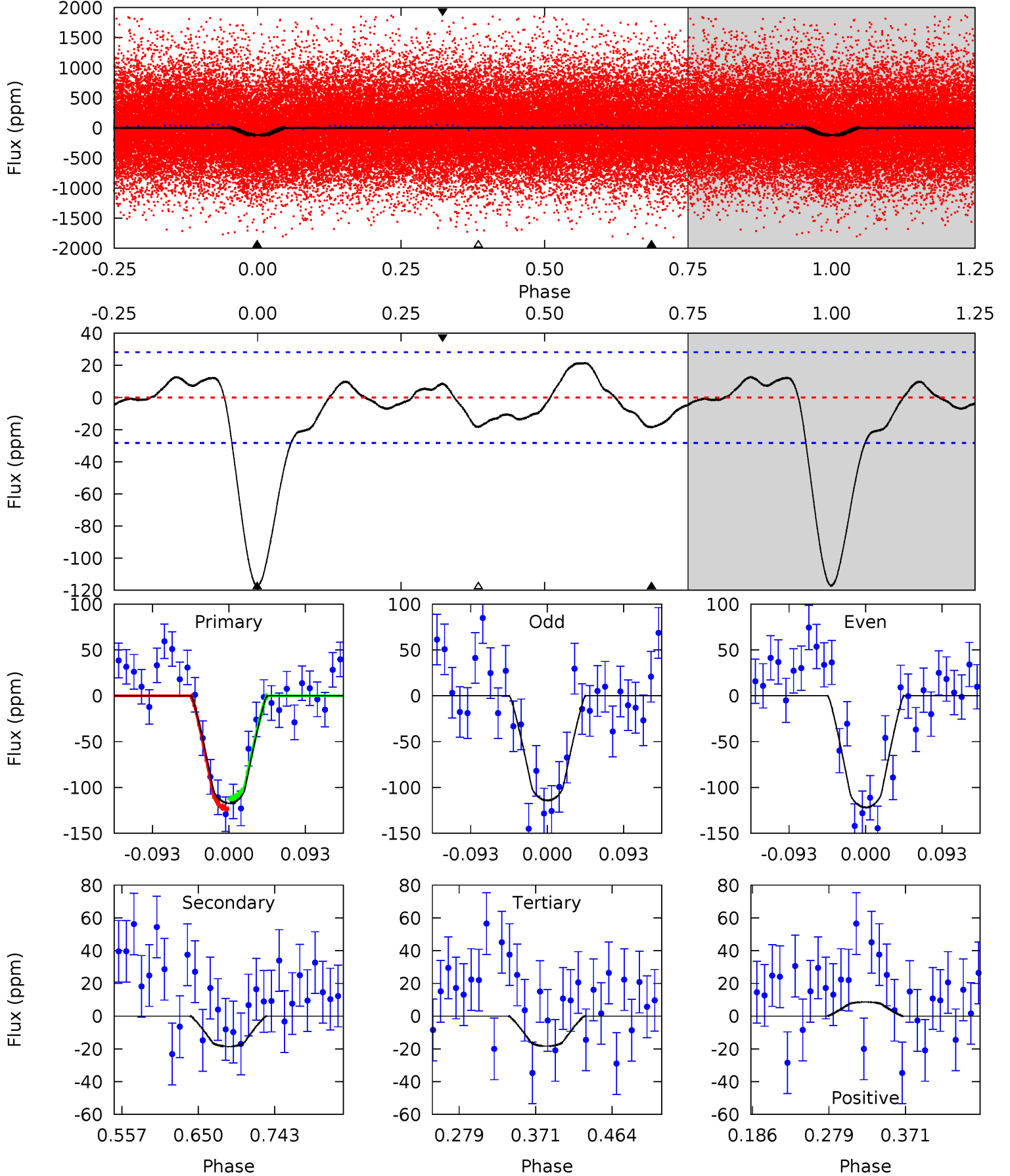
TCE 012405333-01 P= 0.764864 Days $T_0=132.132642$ (BKJD)



DV Model-Shift Uniqueness Test

012405333-01, P = 0.764865 Days, E = 131.366924 Days

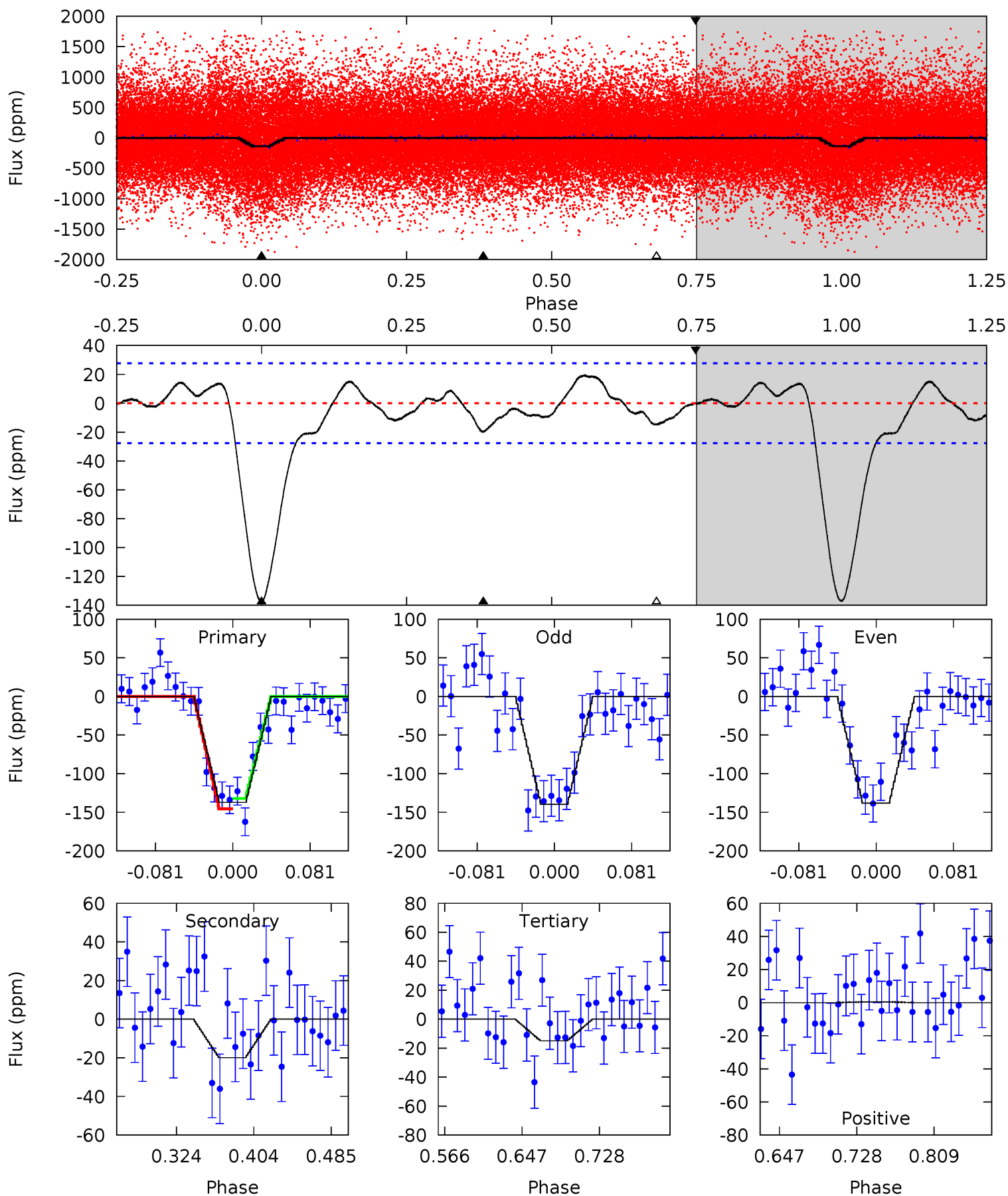
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	3.01	2.98	1.40	4.58	1.68	1.65	16.0	17.6	0.03	1.62	0.62	0.90	0.15	0.91



Alt Model-Shift Uniqueness Test

012405333-01, P = 0.764864 Days, E = 131.367778 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	3.32	2.50	0.07	4.61	1.75	1.58	20.3	22.8	0.82	3.25	0.12	0.93	0.12	1.12



Stellar Parameters For KIC 012405333

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5231^{+174}_{-142}	$4.476^{+0.090}_{-0.110}$	$0.000^{+0.300}_{-0.300}$	$0.860^{+0.120}_{-0.109}$	$0.808^{+0.095}_{-0.060}$	$1.791^{+0.763}_{-0.577}$
	+3%/-3%	+2%/-2%	+inf%/-inf%	+14%/-13%	+12%/-7%	+43%/-32%
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 012405333-01 / KOI 3009.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19 ± 6	$1.29^{+0.82}_{-0.69}$	2432^{+130}_{-110}	3309^{+1150}_{-719}	$1.458^{+5.136}_{-0.982}$
Alt.	-20 ± 6	$1.20^{+0.80}_{-0.68}$	2431^{+118}_{-109}	3461^{+1354}_{-745}	$1.809^{+7.968}_{-1.227}$

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

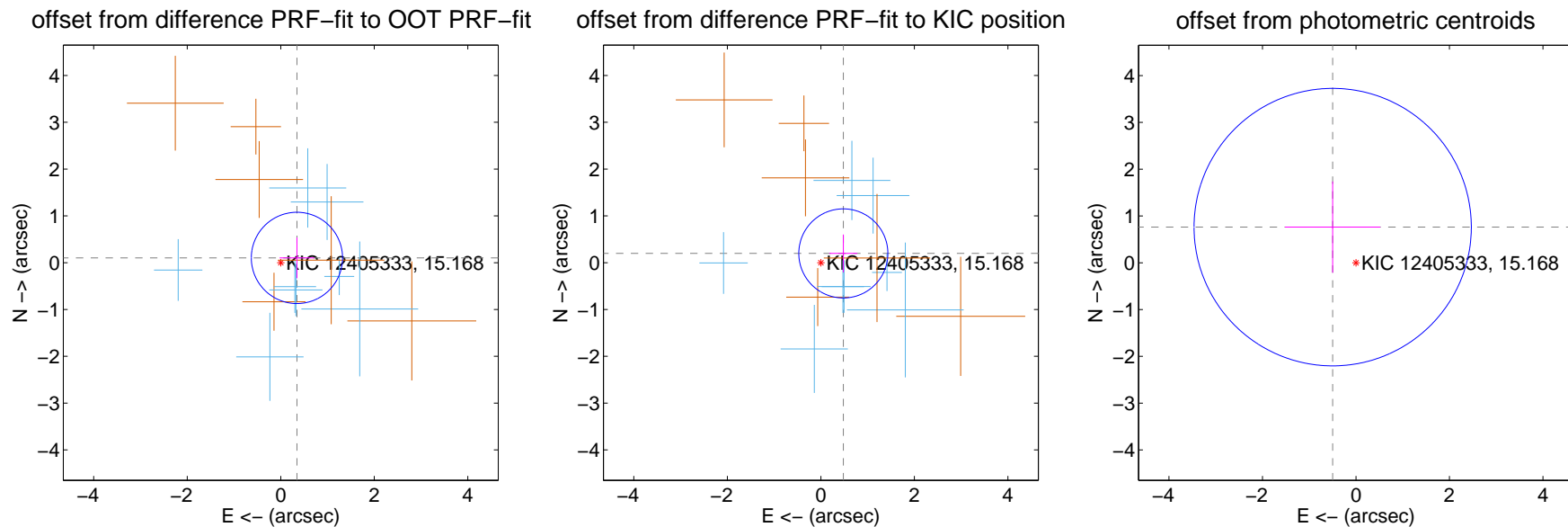
DV Centroid Data

Supplemental centroid analysis for 012405333-01. Kepler magnitude: 15.17. Transit SNR 13.73

There are 8 quarters with good PRF difference image offsets

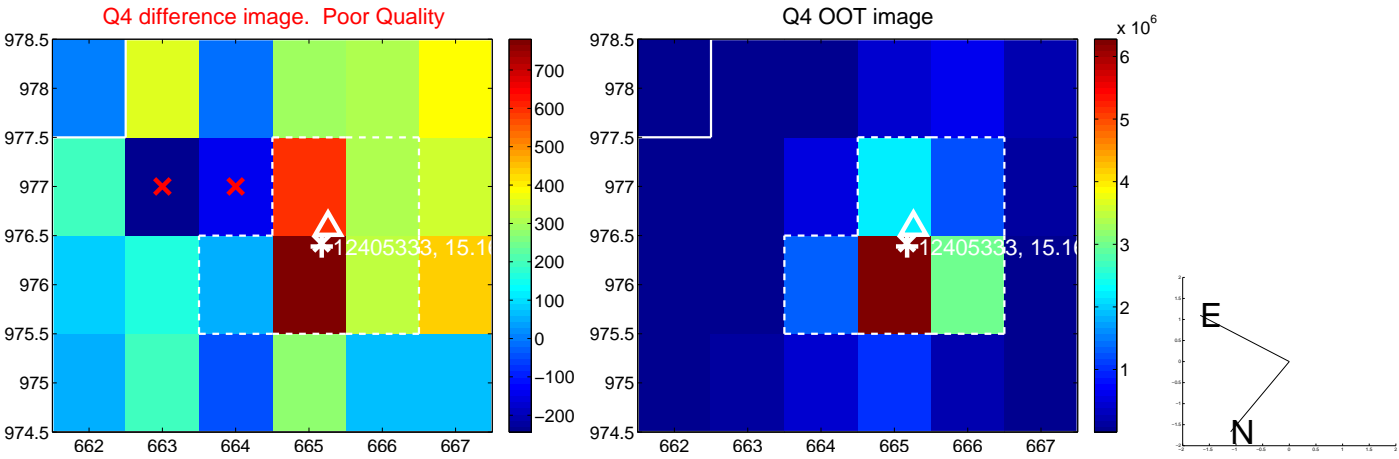
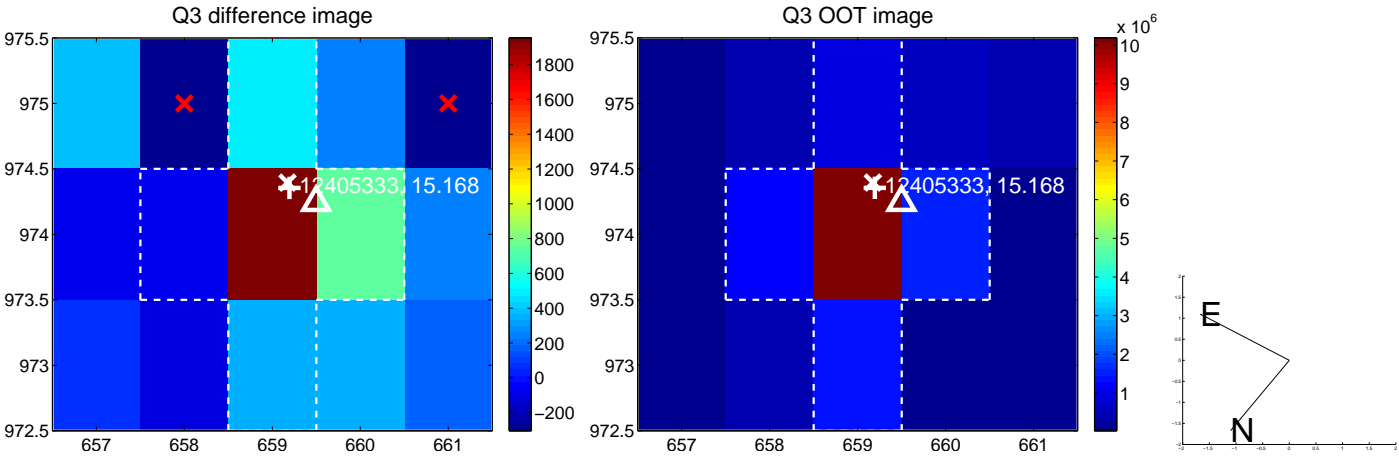
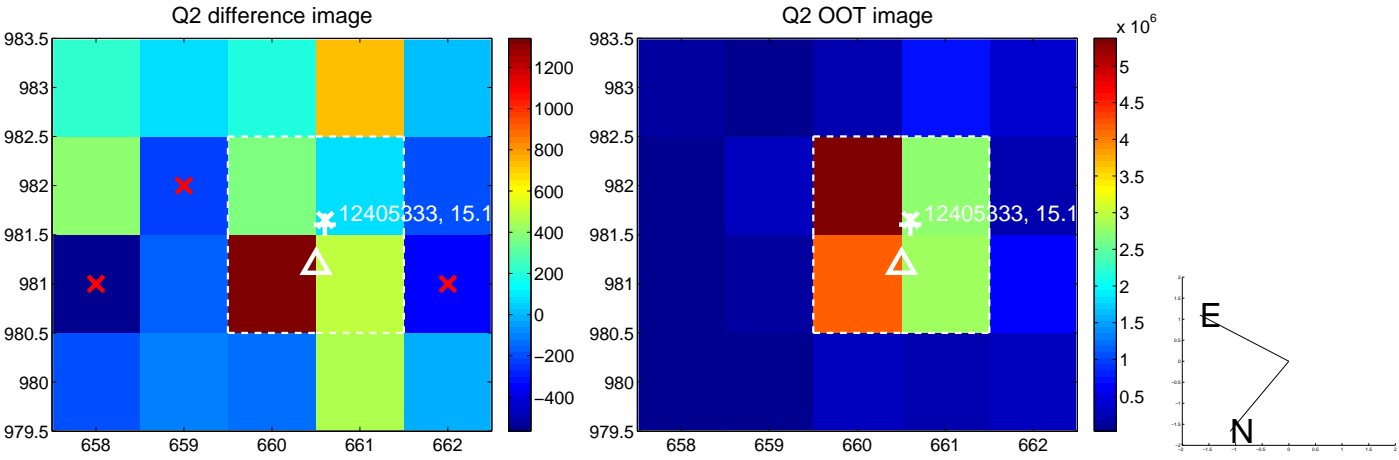
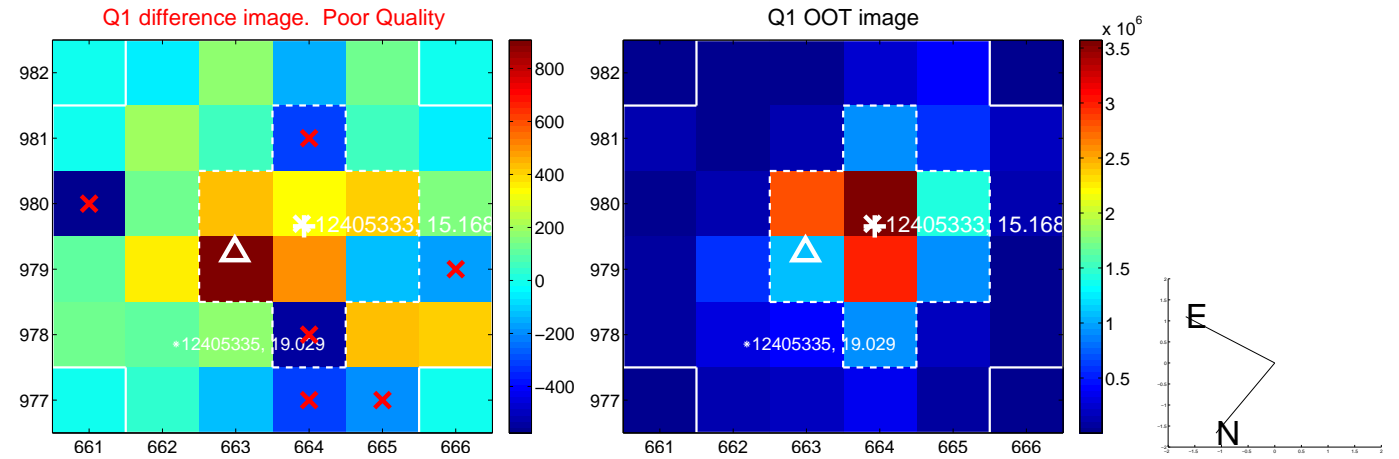
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.361 ± 0.325	1.11	-0.346 ± 0.372	0.102 ± 0.435
PRF-fit source offset from KIC position	0.520 ± 0.317	1.64	-0.480 ± 0.300	0.198 ± 0.404
photometric centroid source offset	0.91 ± 0.99	0.92	0.50 ± 1.02	0.76 ± 0.97

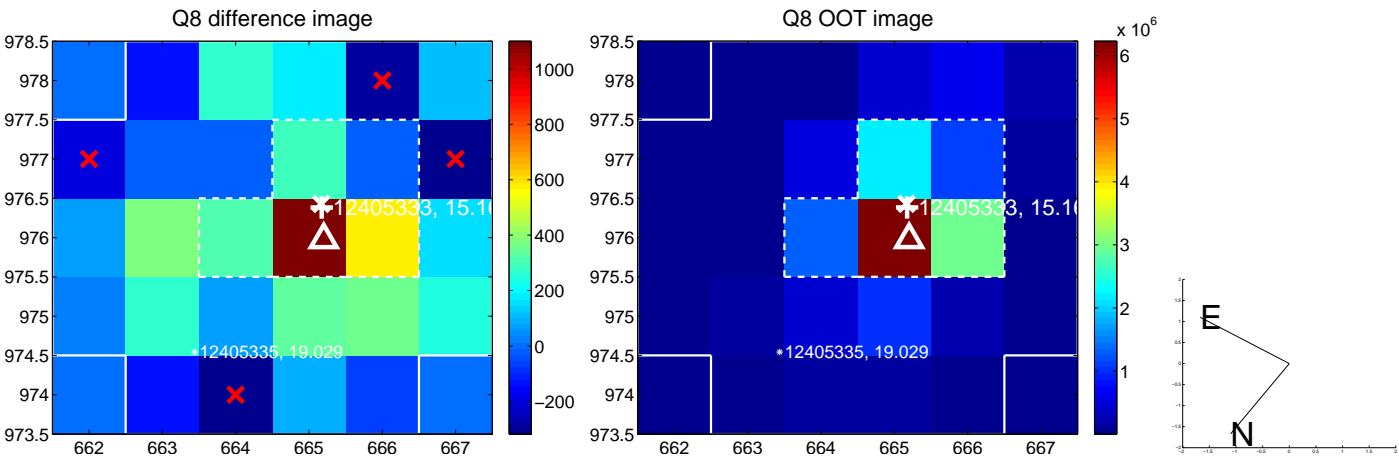
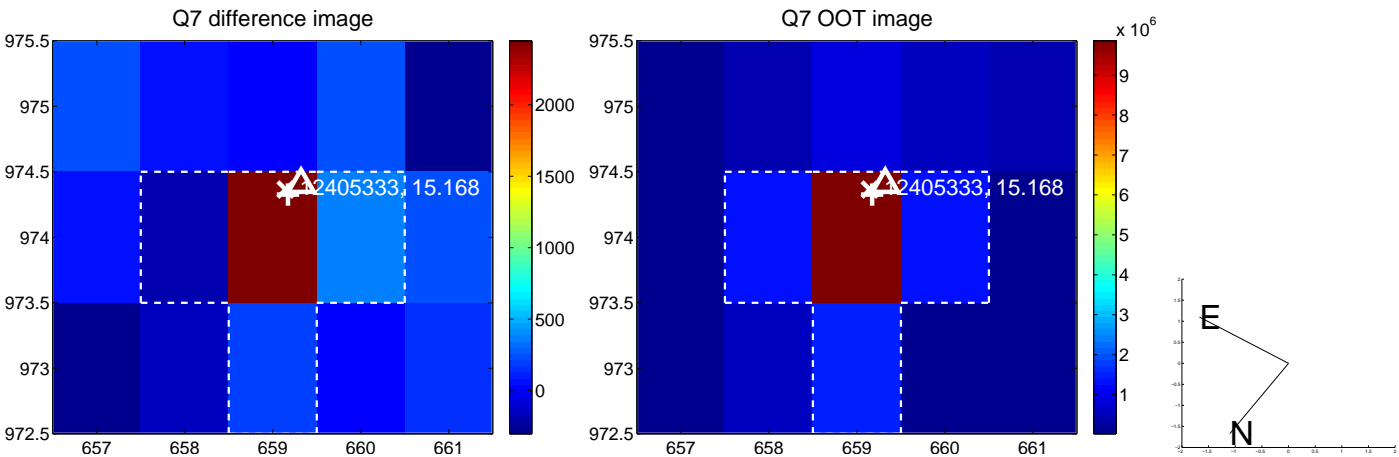
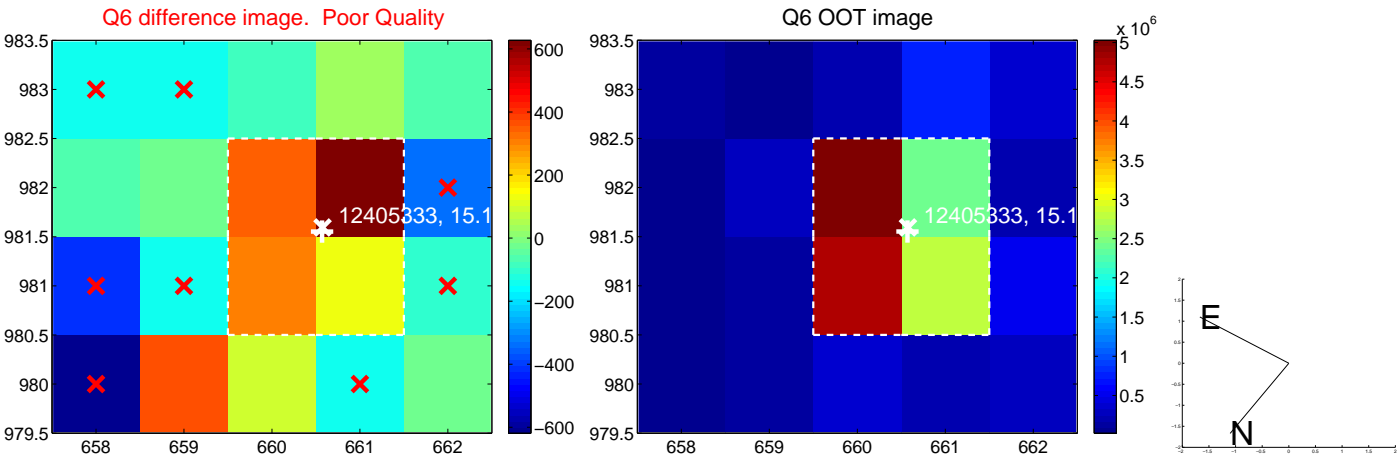
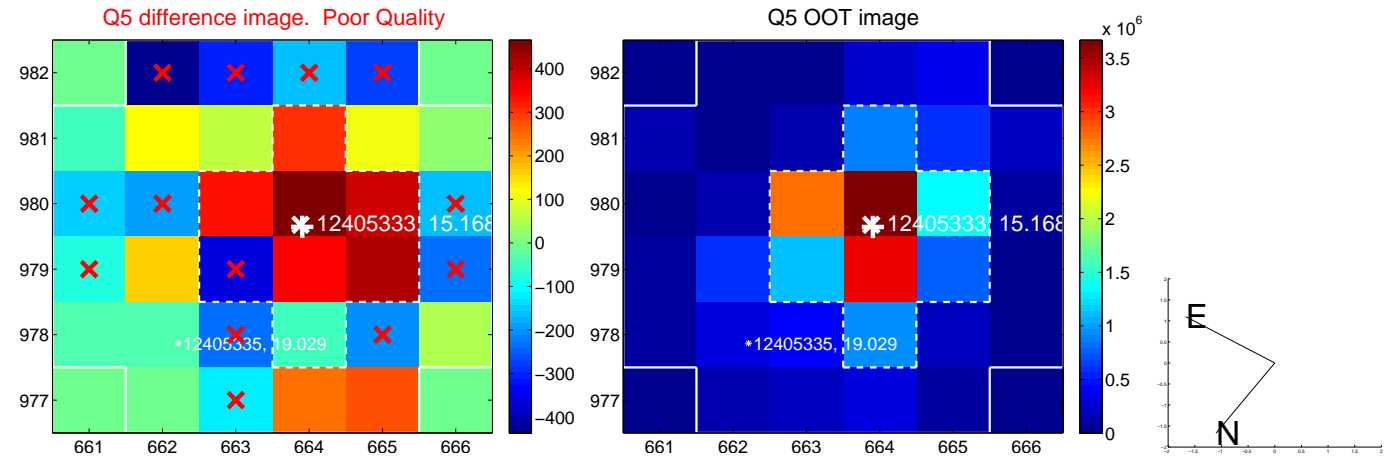


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

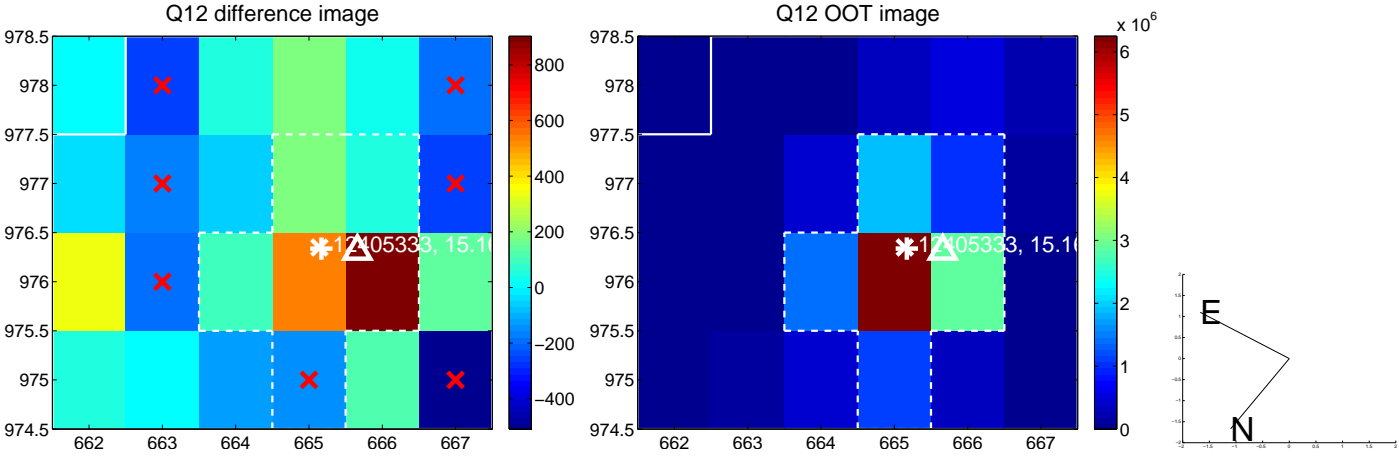
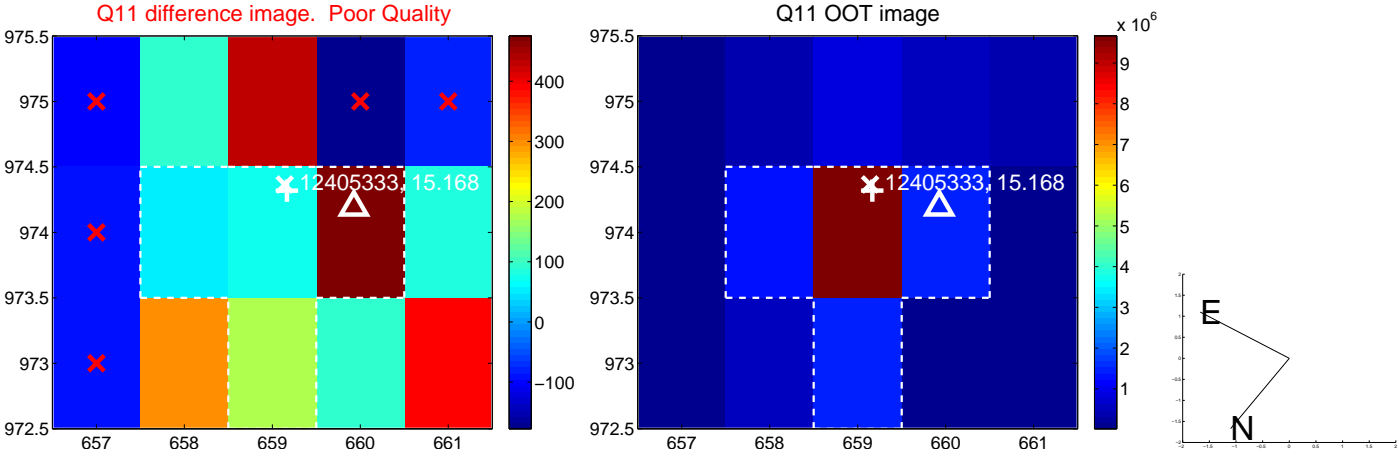
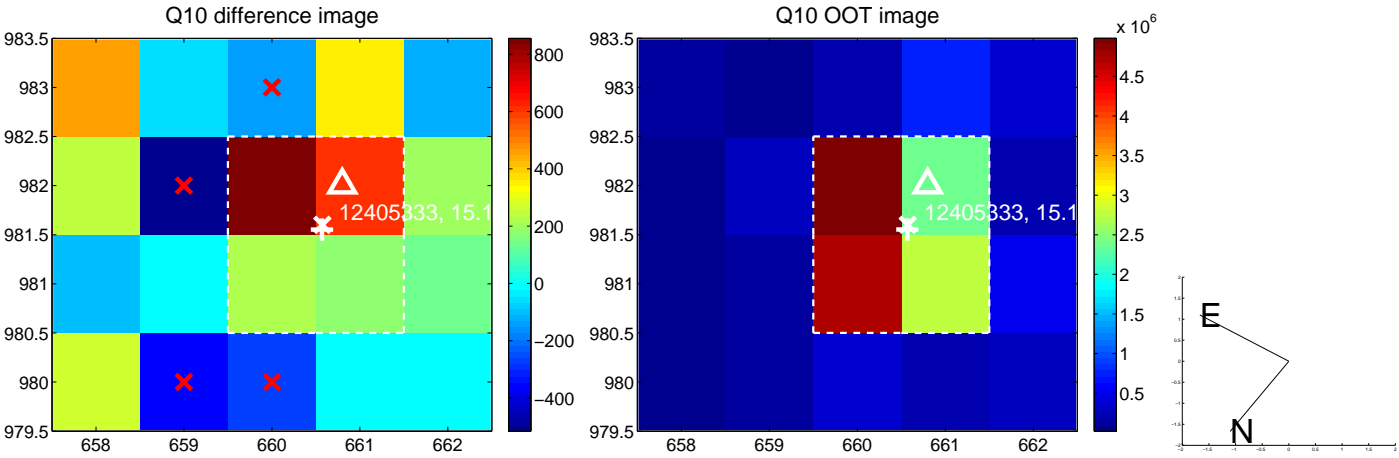
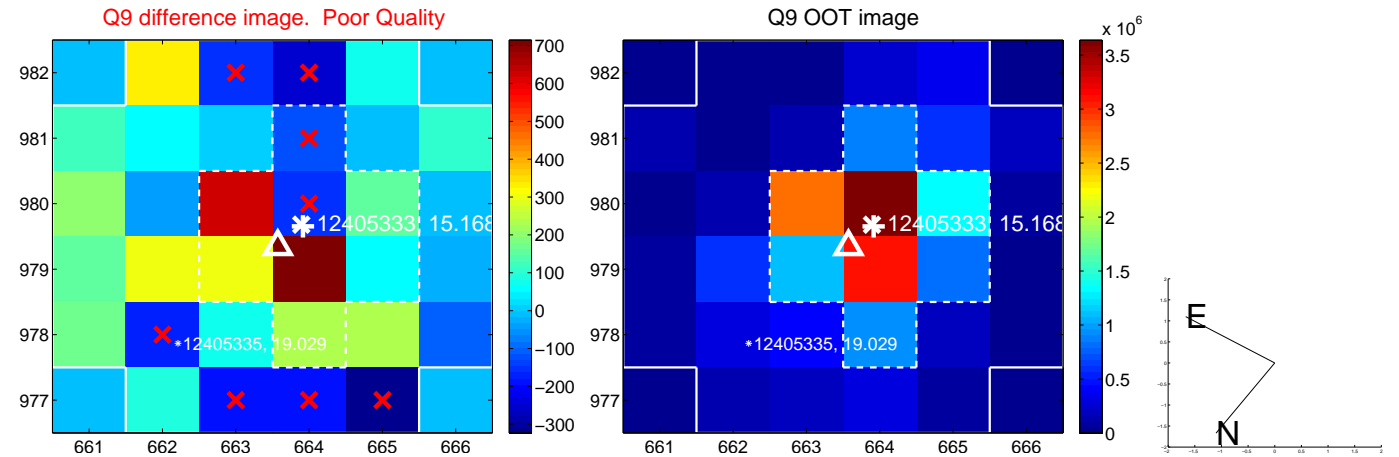
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



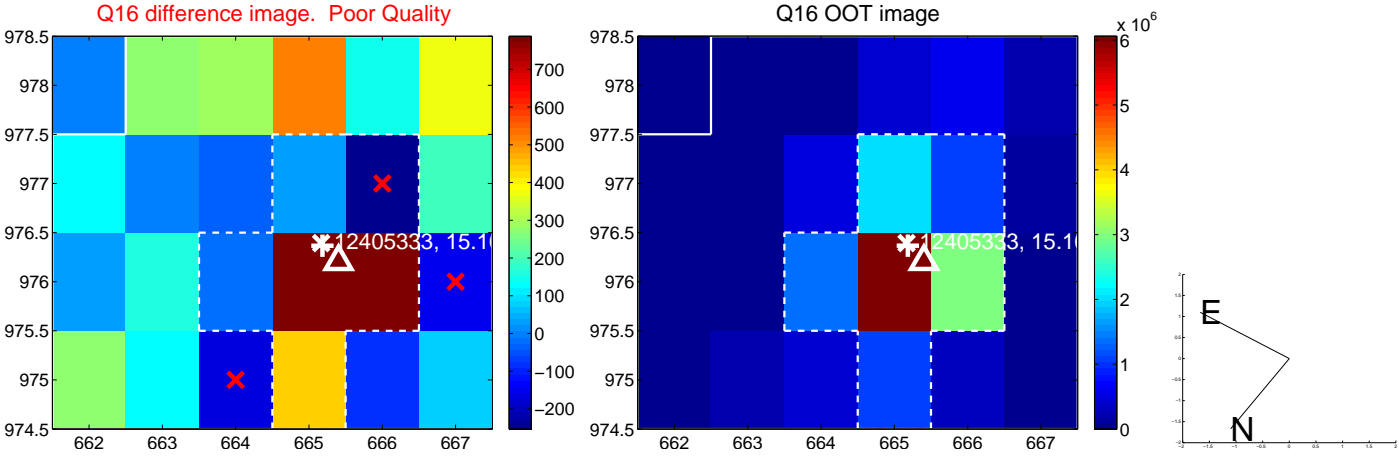
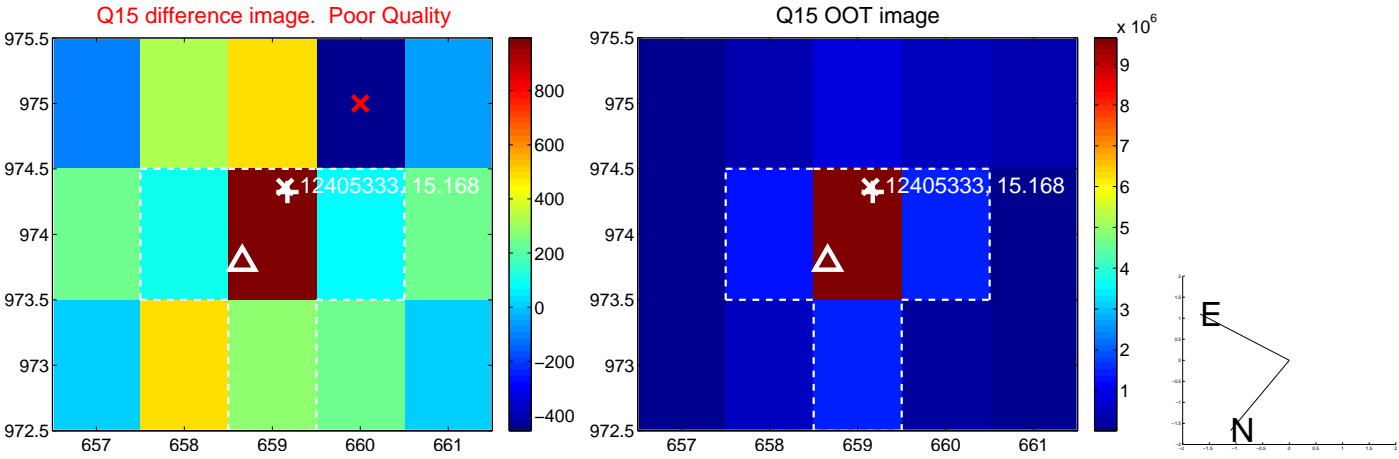
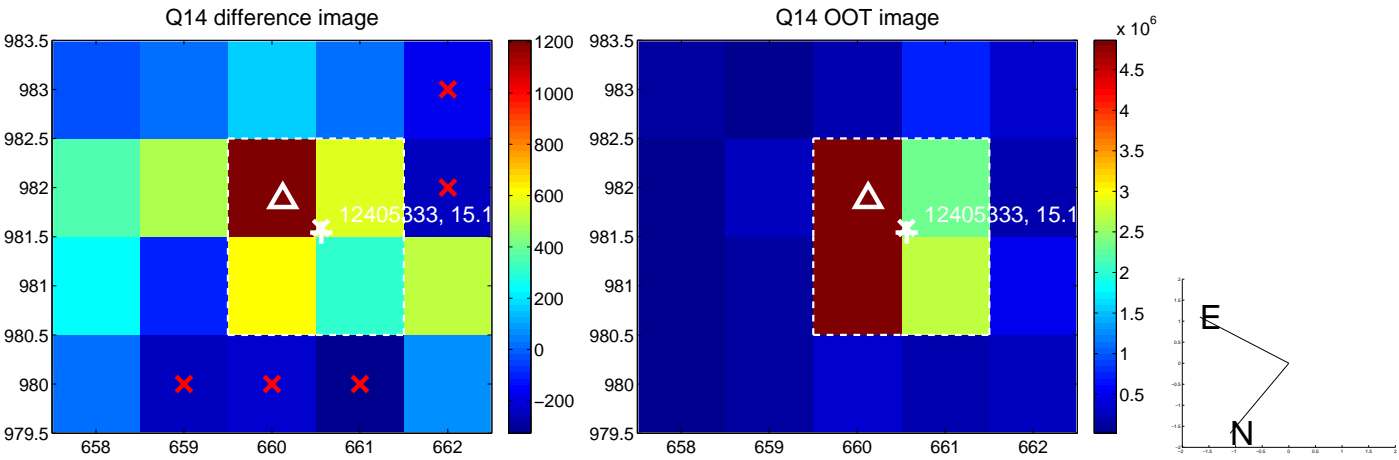
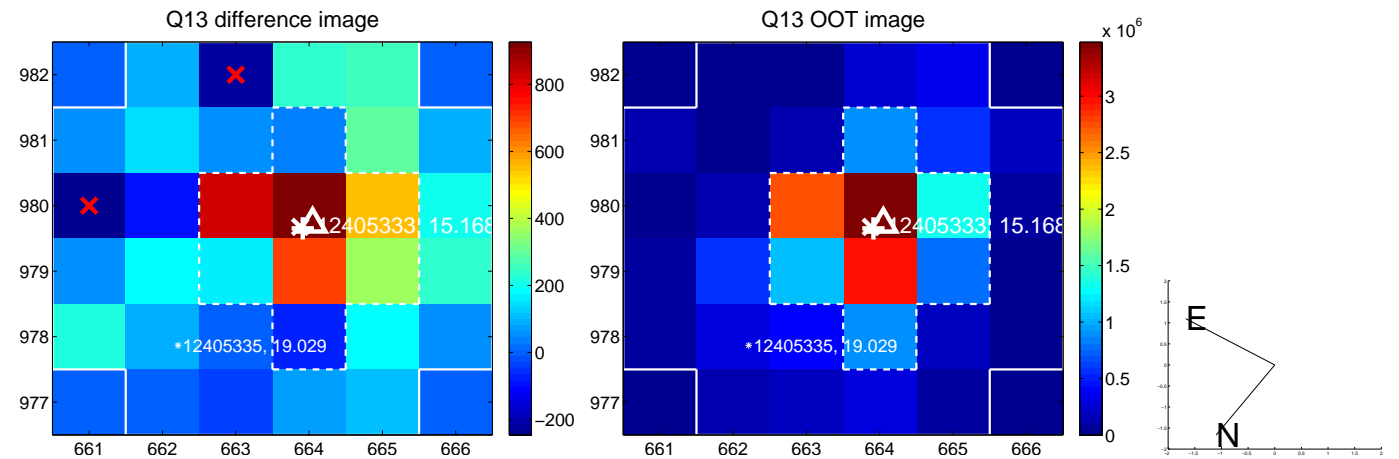
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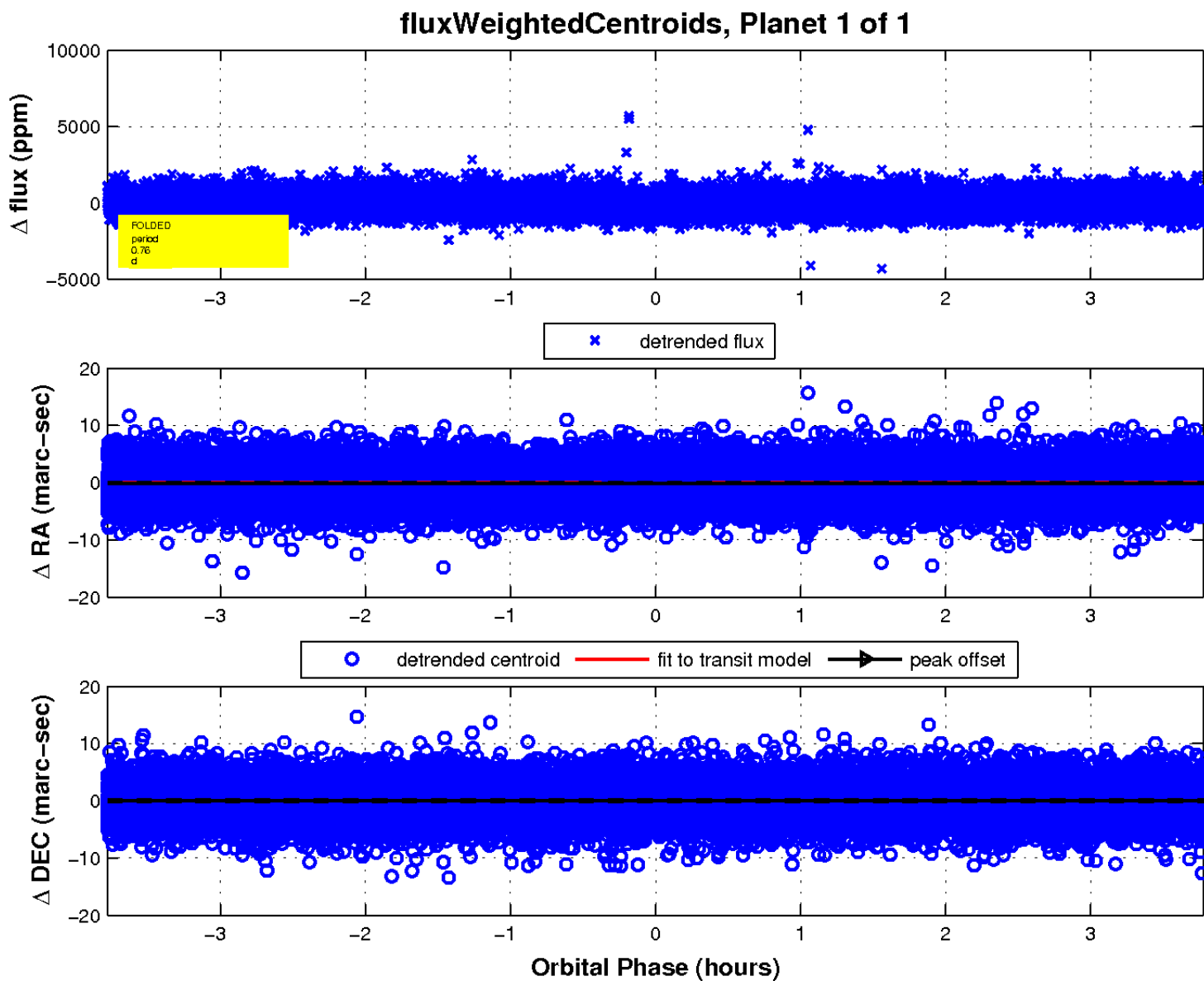
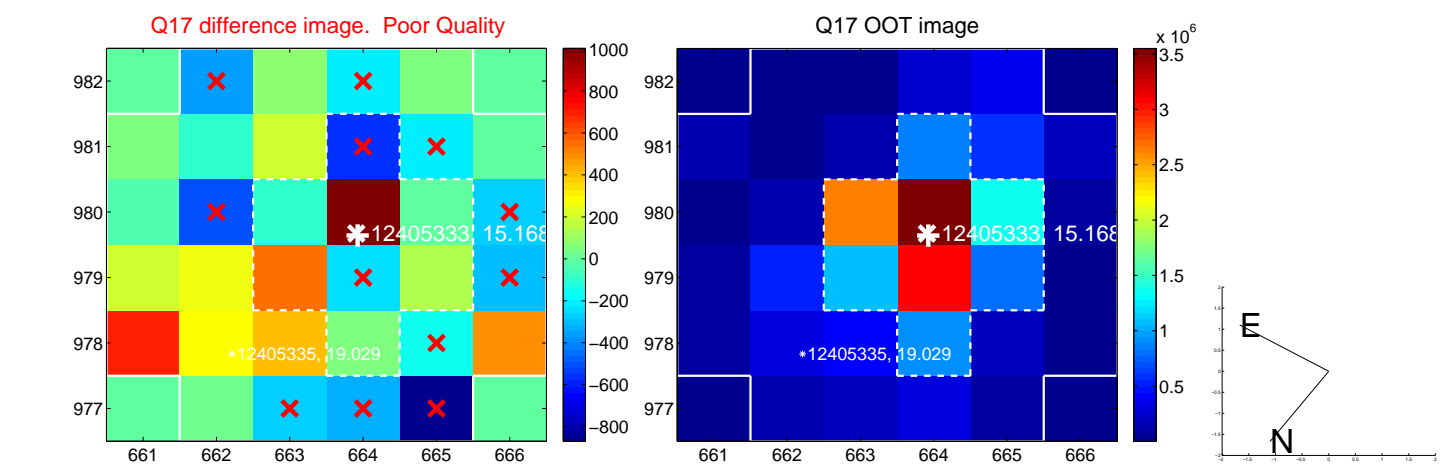
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

