

KIC 009303041

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})
009303041-01	OBS	No	0.796175	132.102691	76.8	9.554	10.5	18.3	1.75	7232	1.95	20258.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009303041-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

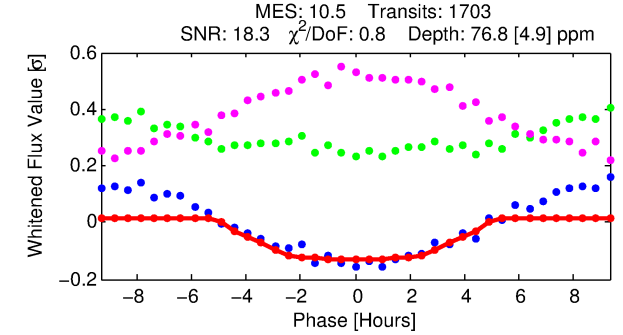
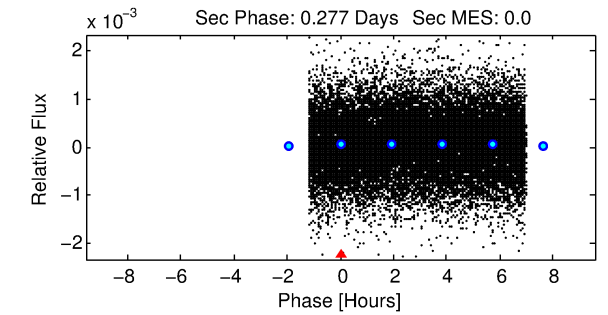
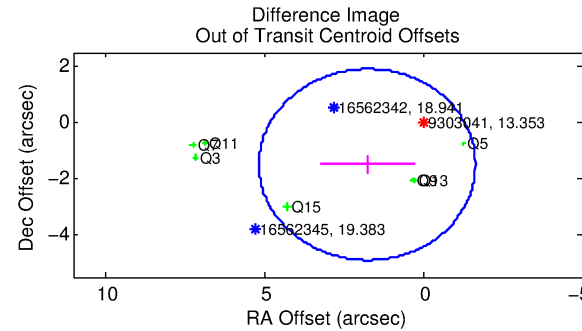
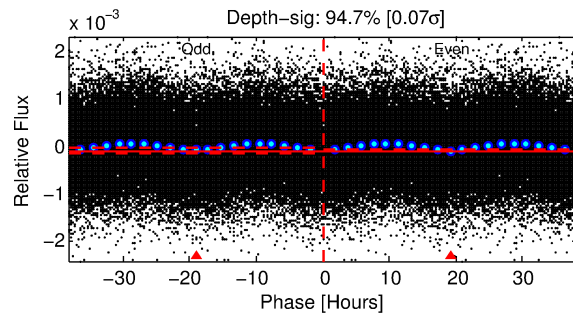
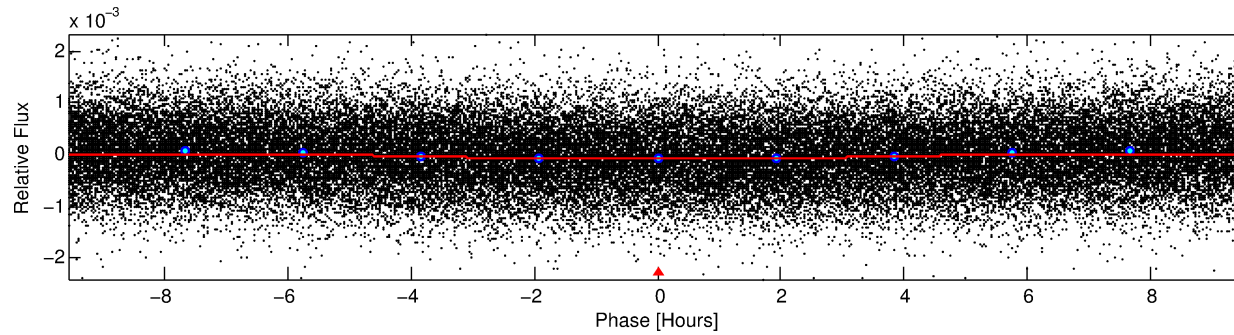
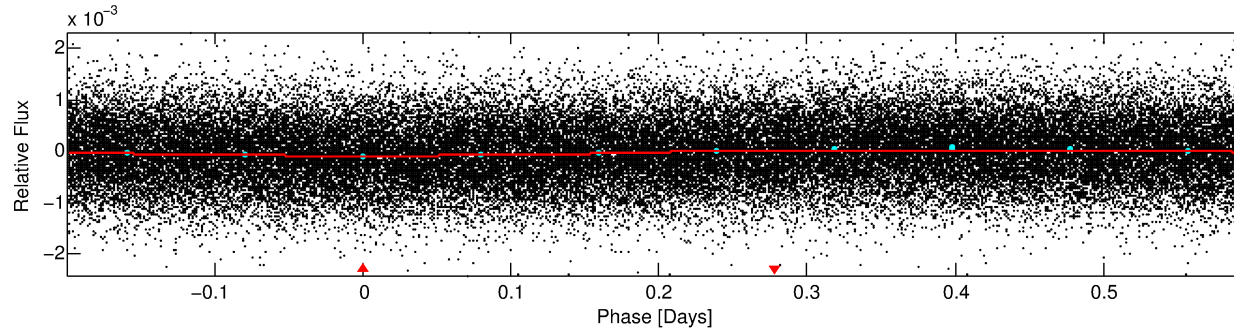
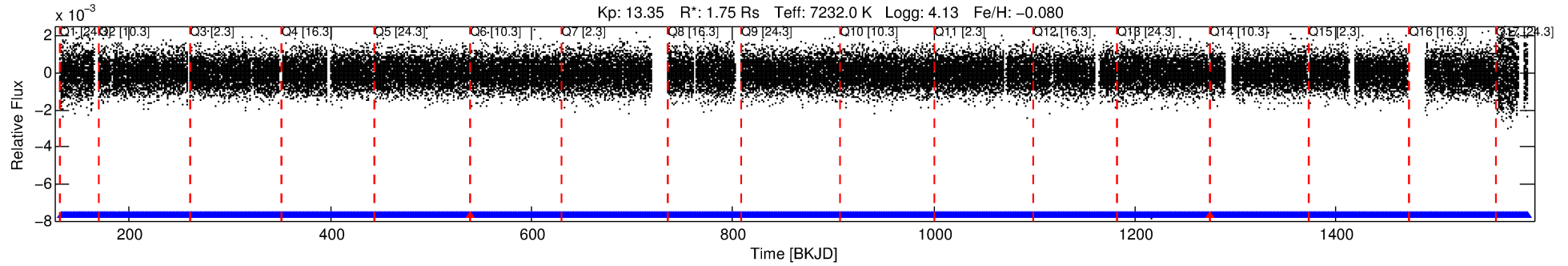
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009303041-01

No Significant Match Found

DV One-Page Summary

KIC: 9303041 Candidate: 1 of 1 Period: 0.796 d



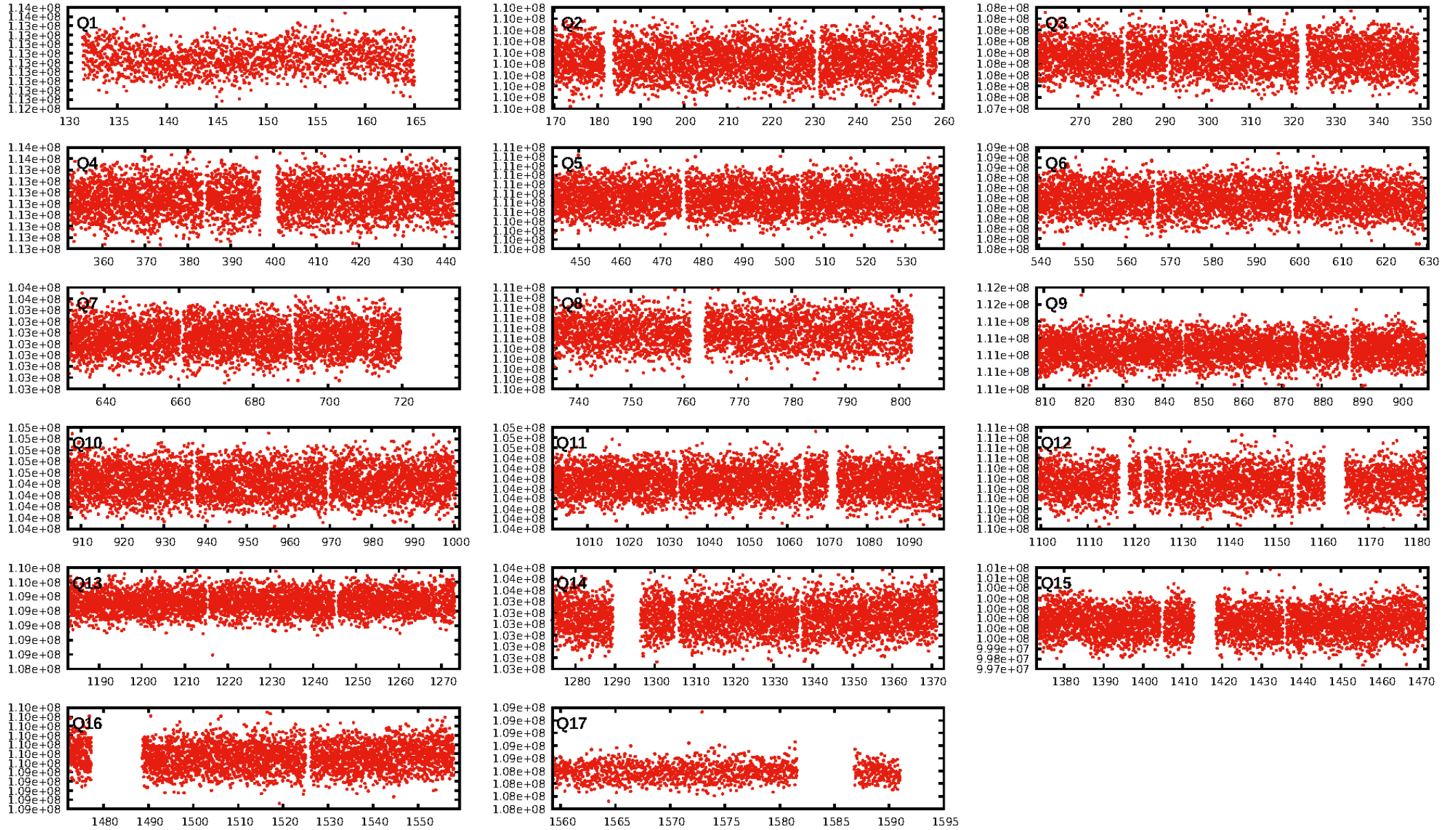
DV Fit Results:

Period = 0.79617 [0.00001] d
Epoch = 132.1027 [0.0072] BKJD
Rp/R* = 0.0102 [0.0005]
a/R* = 1.00 [0.00]
b = 0.97 [0.01]
Seff = 20258.58 [8025.58]
Teq = 3042 [301] K
Rp = 1.95 [0.61] Re
a = 0.0192 [0.0048] AU
Ag = N/A
Teffp = N/A

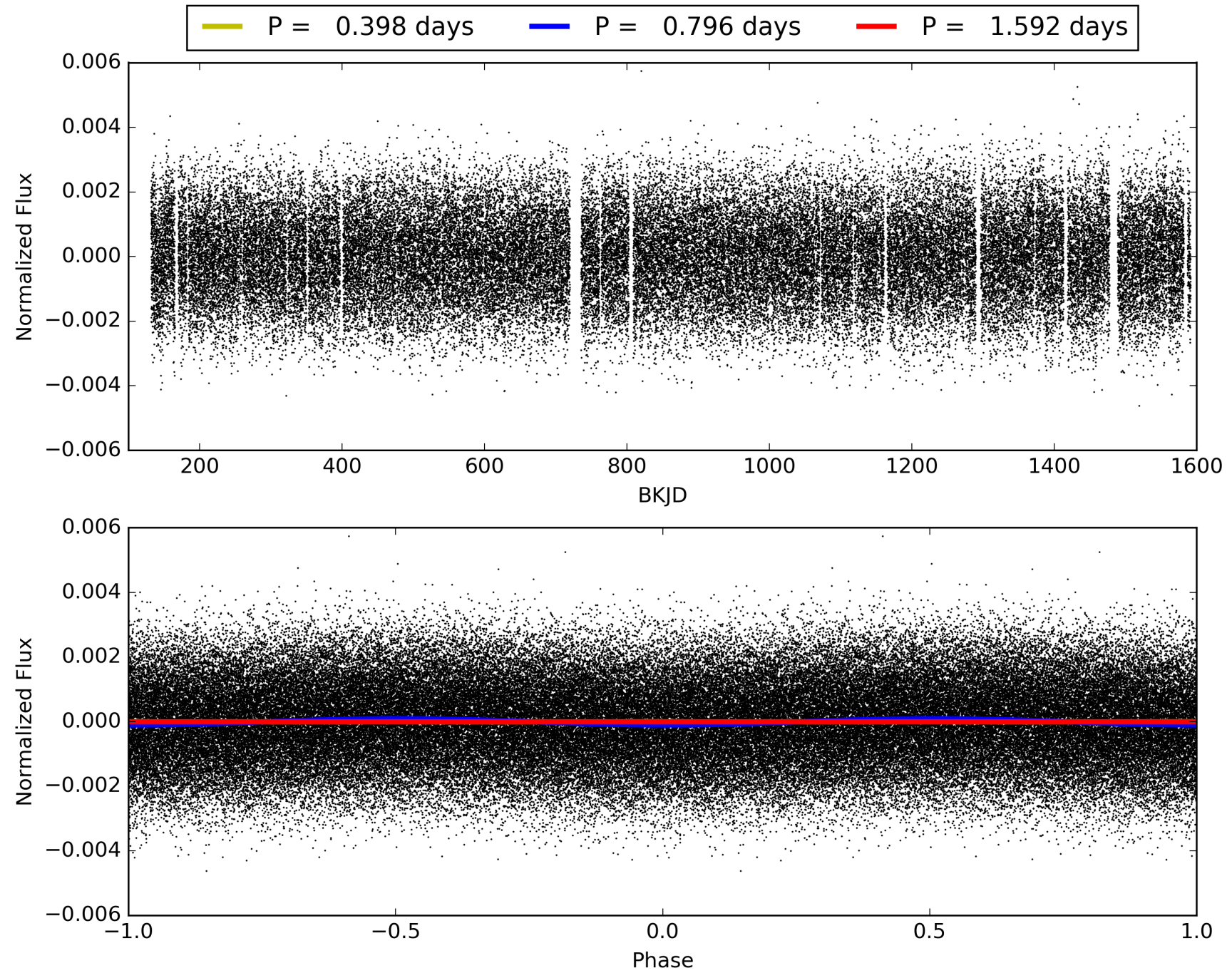
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1624/1626]
GhostDiagnostic-chr: 1.876
Centroid-sig: 0.0%
Centroid-so: 0.660 arcsec [3.42 σ]
OotOffset-rm: 2.303 arcsec [2.03 σ]
KicOffset-rm: 0.765 arcsec [0.69 σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.29 [2/7]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009303041-01, PDC Light Curves

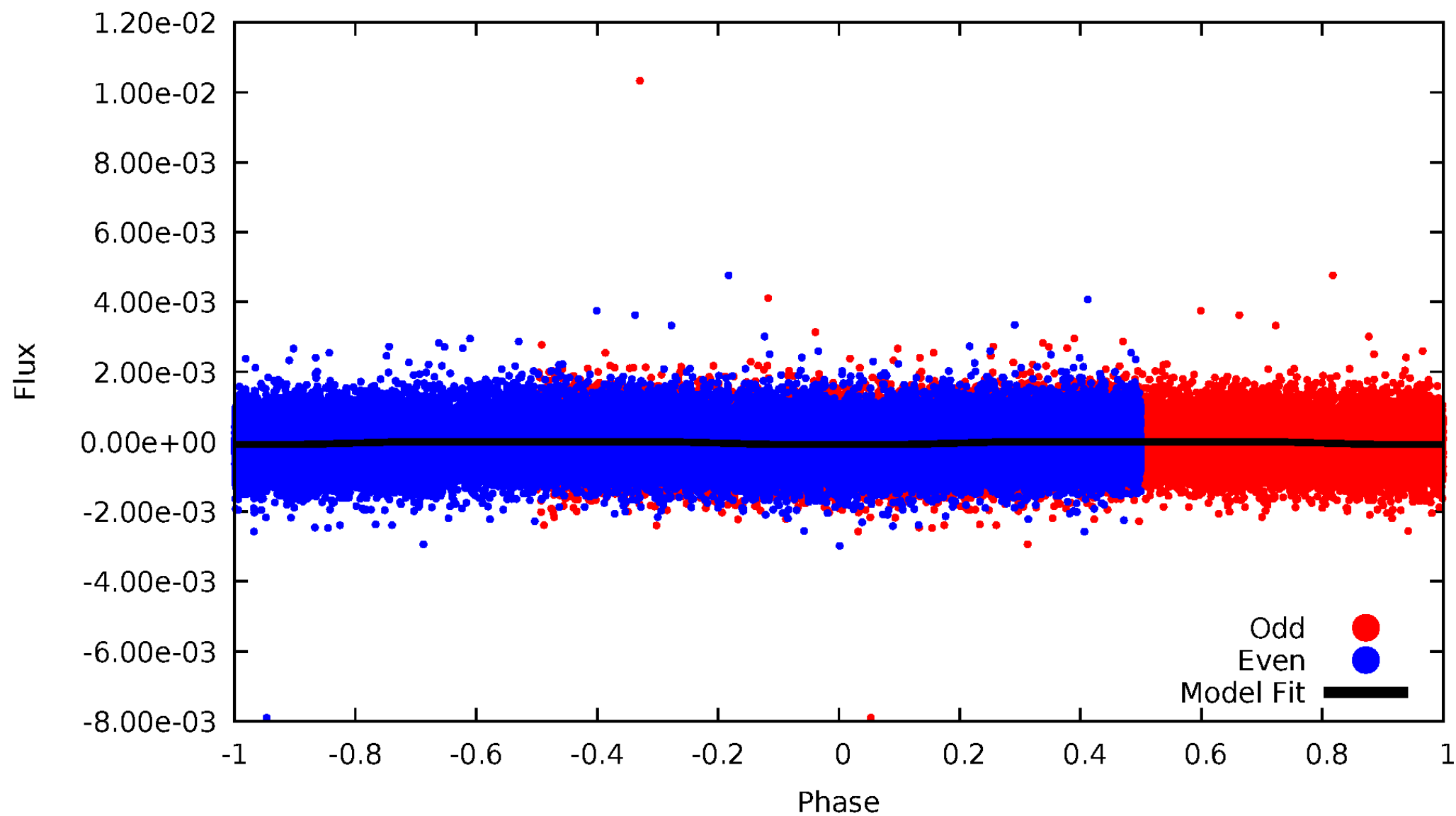


TCE 009303041-01



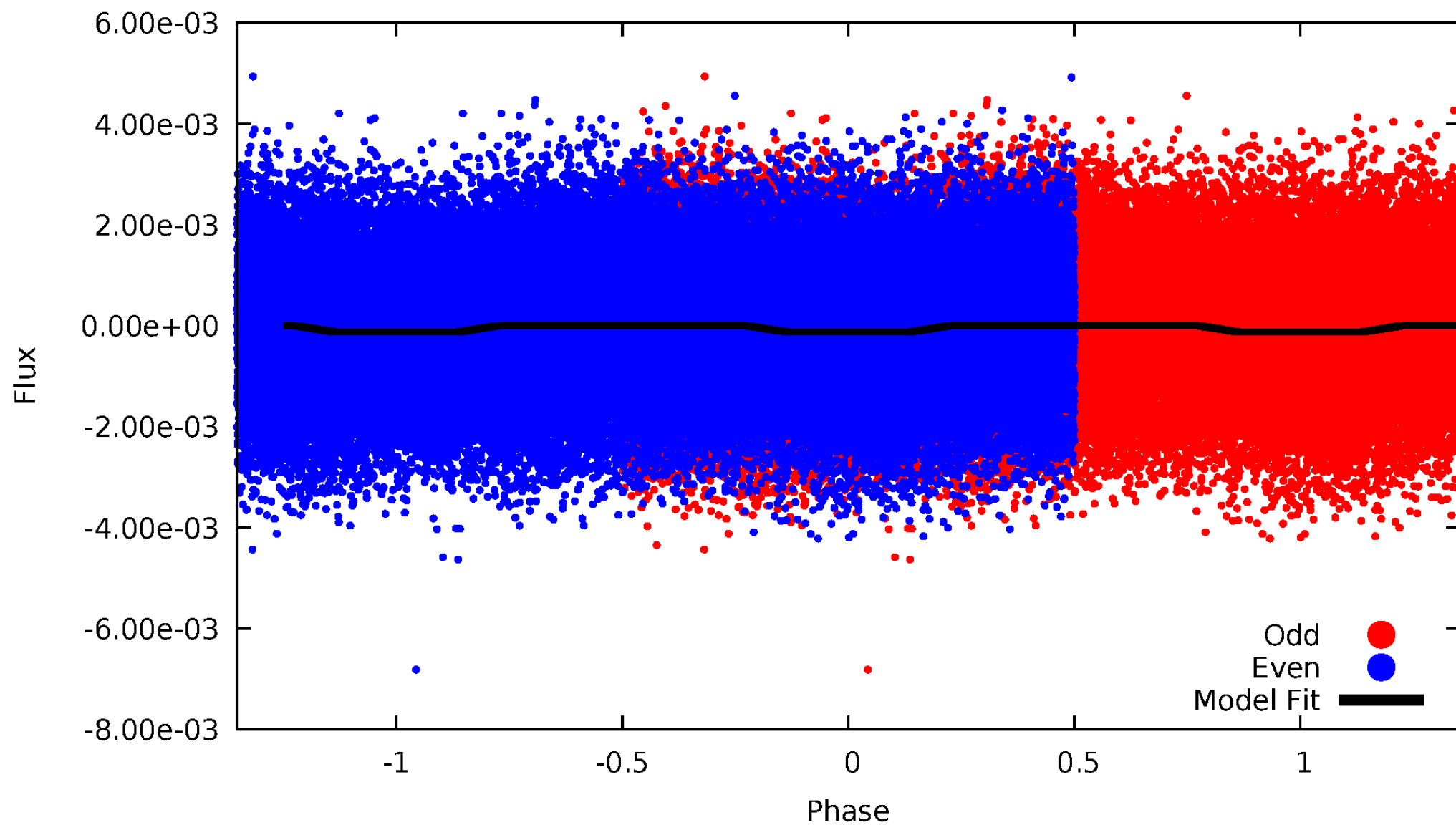
DV Odd/Even

TCE 009303041-01

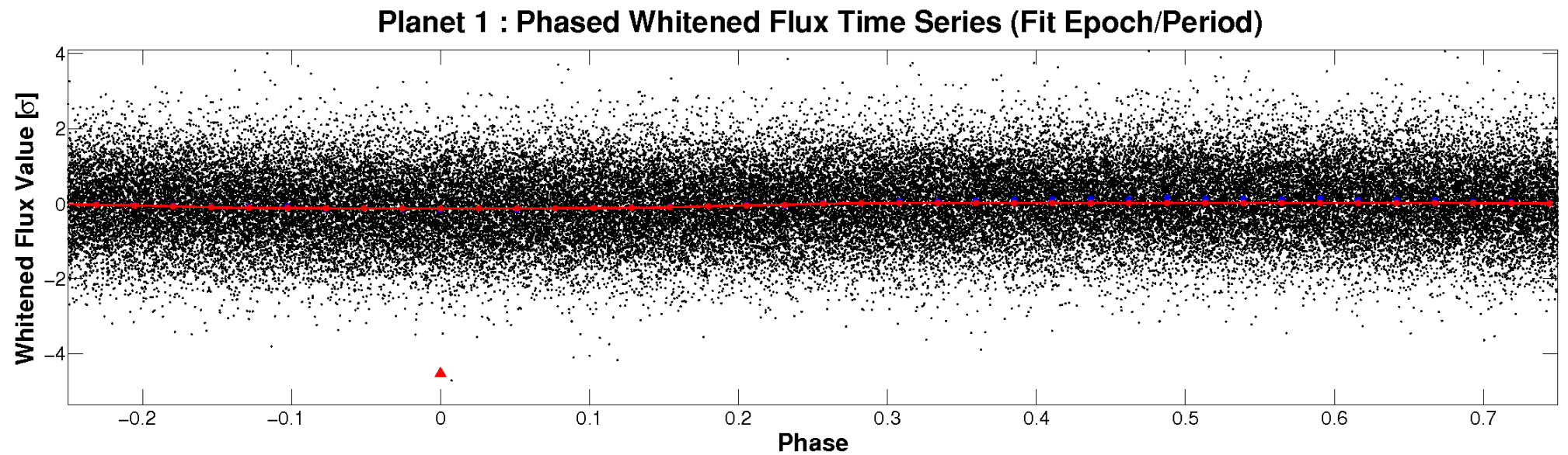
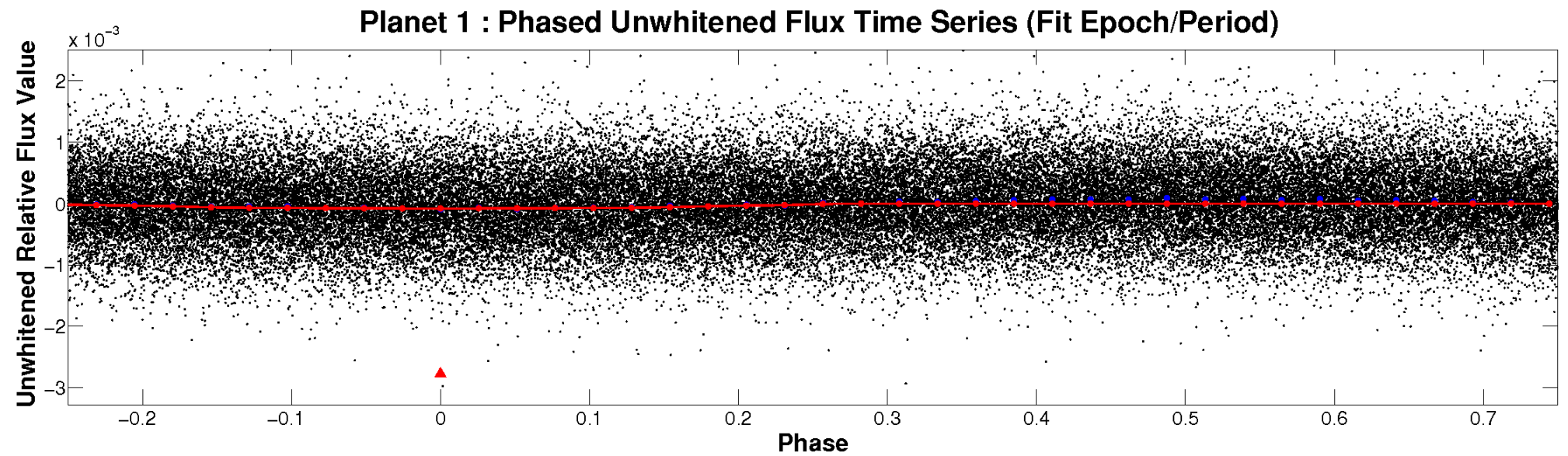


ALT Odd/Even

TCE 009303041-01

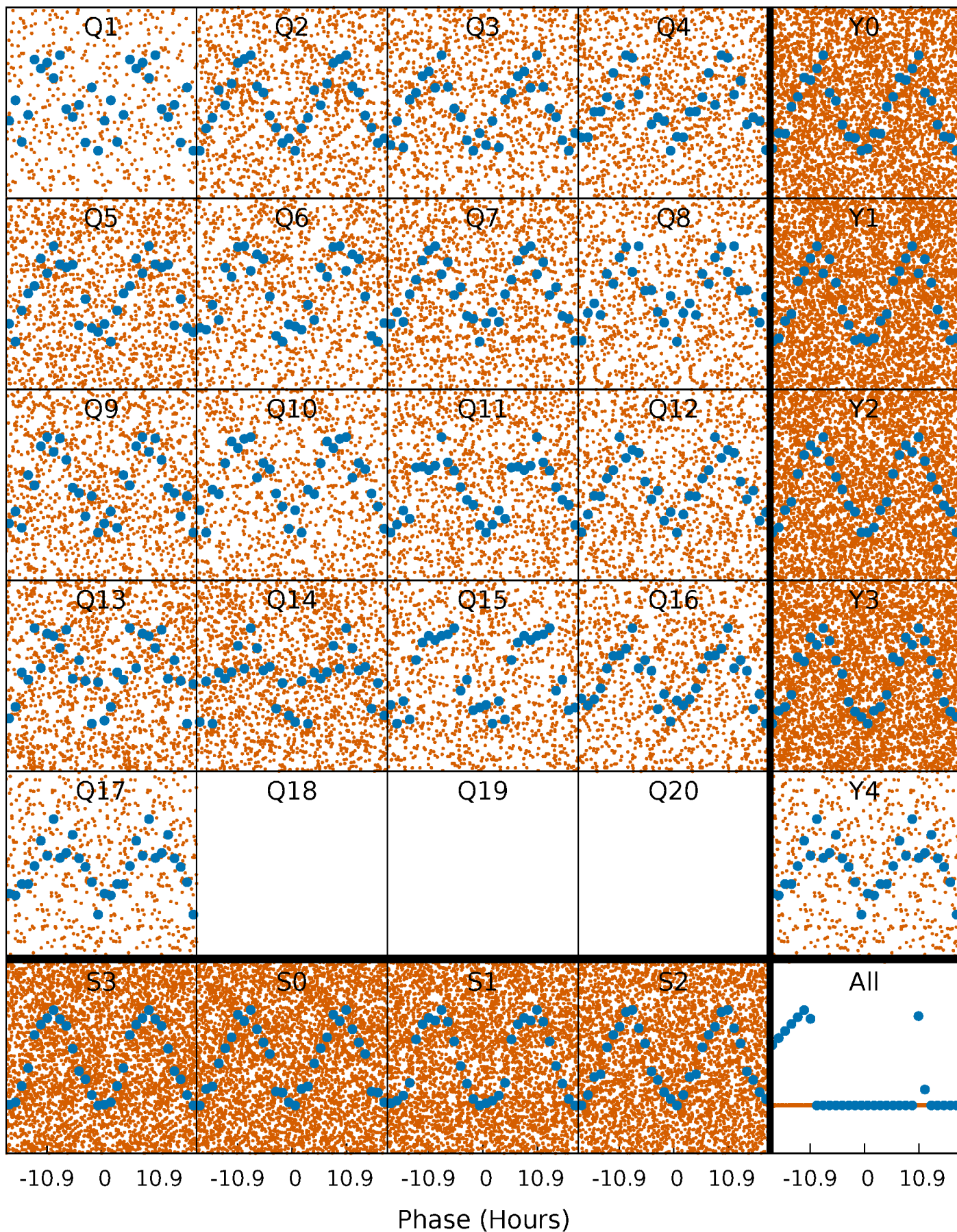


Non-Whitened Vs. Whitened Light Curve



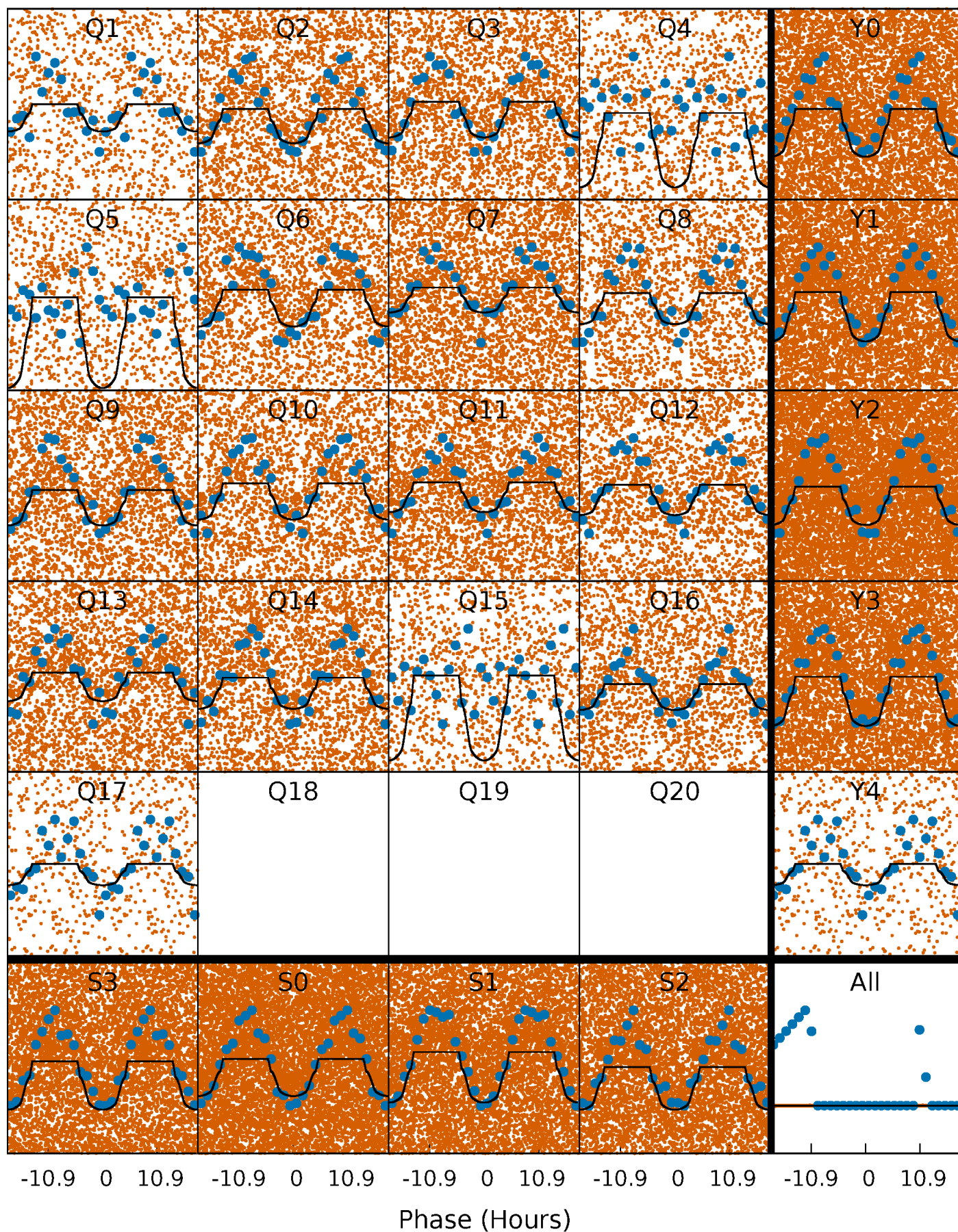
PDC Quarter-Phased Transit Curves

TCE 009303041-01 P= 0.796175 Days $T_0=132.102691$ (BKJD)



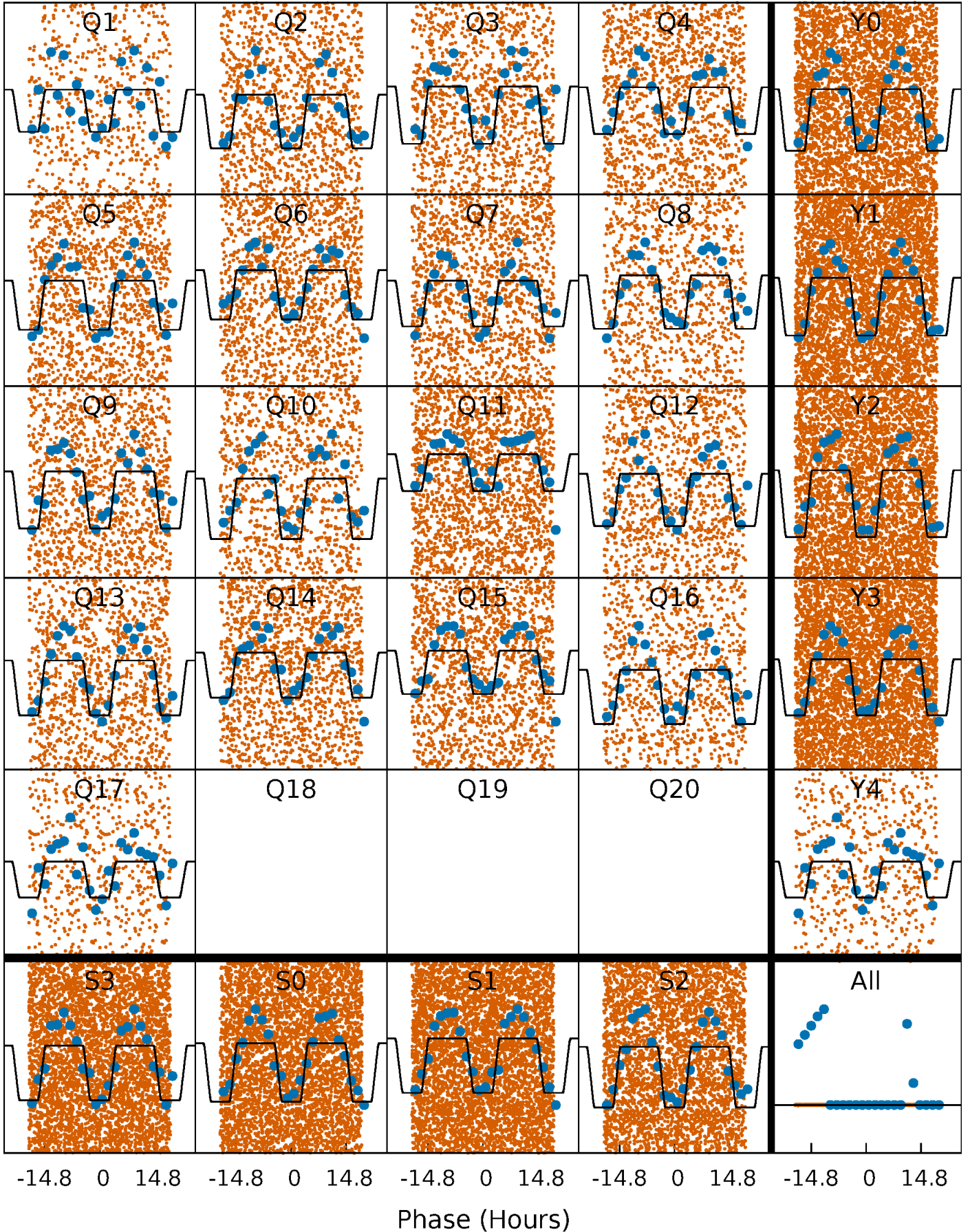
DV Quarter-Phased Transit Curves

TCE 009303041-01 P= 0.796175 Days $T_0=132.102691$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

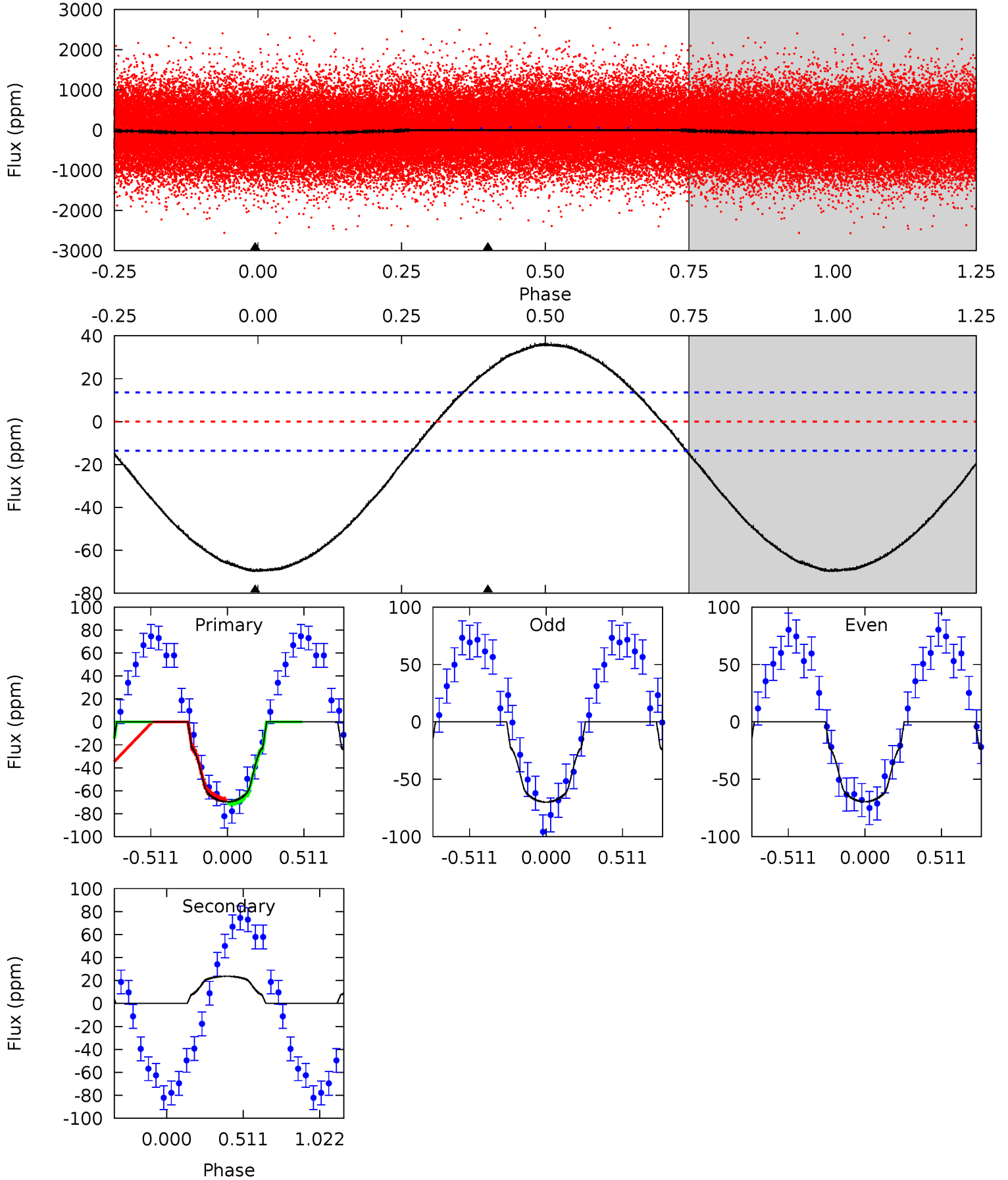
TCE 009303041-01 P= 0.796174 Days $T_0=132.111448$ (BKJD)



DV Model-Shift Uniqueness Test

009303041-01, P = 0.796175 Days, E = 131.306516 Days

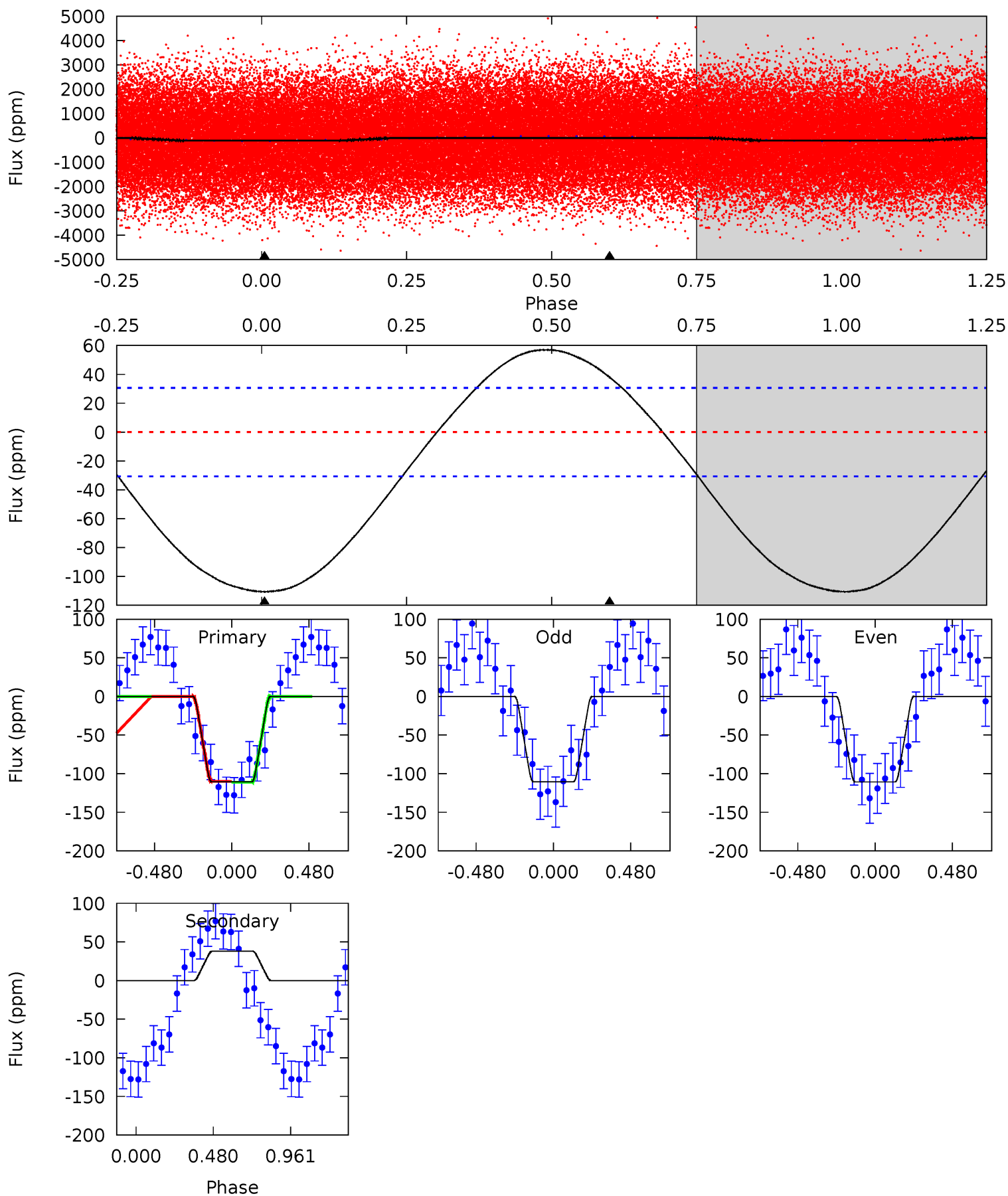
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.6	-7.33	0	0	4.21	0.66	2.88	21.6	21.6	-7.33	-7.33	0.05	1.03	0.35	0.53



Alt Model-Shift Uniqueness Test

009303041-01, P = 0.796174 Days, E = 131.315274 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	-5.23	0	0	4.22	0.71	1.93	15.2	15.2	-5.23	-5.23	0.01	1.13	0.34	0.08



Stellar Parameters For KIC 009303041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7232^{+201}_{-345}	$4.128^{+0.132}_{-0.182}$	$-0.080^{+0.250}_{-0.350}$	$1.750^{+0.541}_{-0.361}$	$1.501^{+0.221}_{-0.243}$	$0.394^{+0.296}_{-0.196}$
	+3%/-5%	+3%/-4%	+312%/-438%	+31%/-21%	+15%/-16%	+75%/-50%
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 009303041-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	24 ± 3	$1.98^{+0.31}_{-0.25}$	4262^{+295}_{-268}	-5241^{+216}_{-233}	$-1.195^{+0.301}_{-0.413}$
Alt.	38 ± 7	$2.19^{+0.37}_{-0.27}$	4267^{+323}_{-280}	-5523^{+327}_{-276}	$-1.566^{+0.474}_{-0.594}$

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

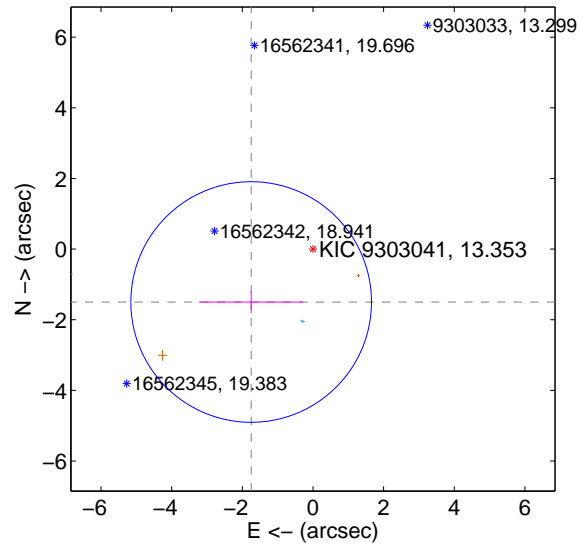
Supplemental centroid analysis for 009303041-01. Kepler magnitude: 13.35. Transit SNR 18.30

There are 2 quarters with good PRF difference image offsets

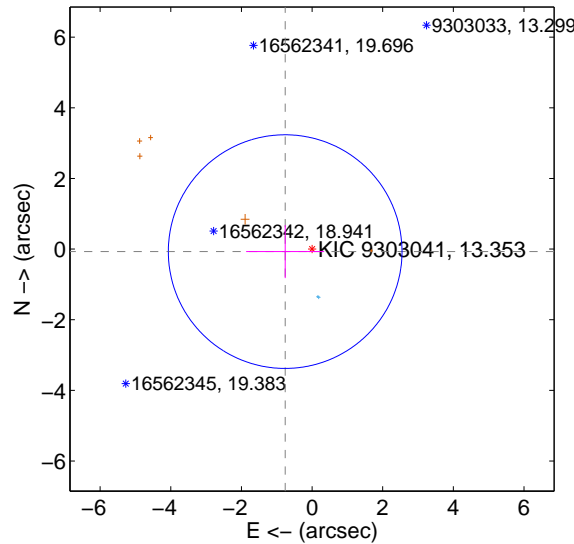
The OOT PRF centroid is offset from the target star catalog position by about 4.52 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.303 ± 1.135	2.03	1.750 ± 1.470	-1.498 ± 0.313
PRF-fit source offset from KIC position	0.765 ± 1.102	0.69	0.761 ± 1.105	-0.071 ± 0.751
photometric centroid source offset	0.66 ± 0.19	3.42	0.61 ± 0.19	-0.26 ± 0.22

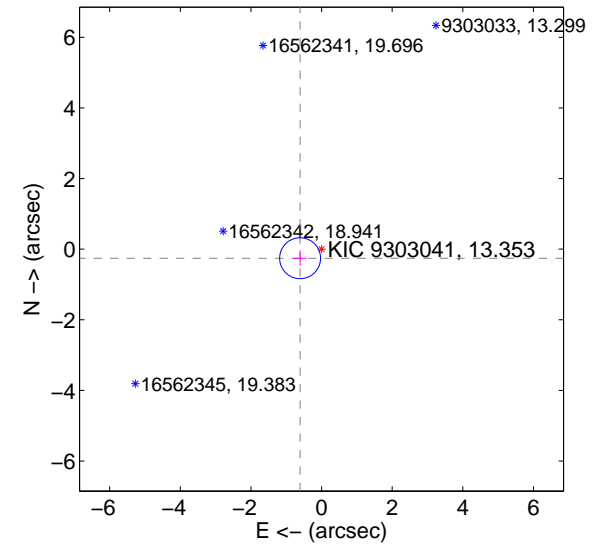
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

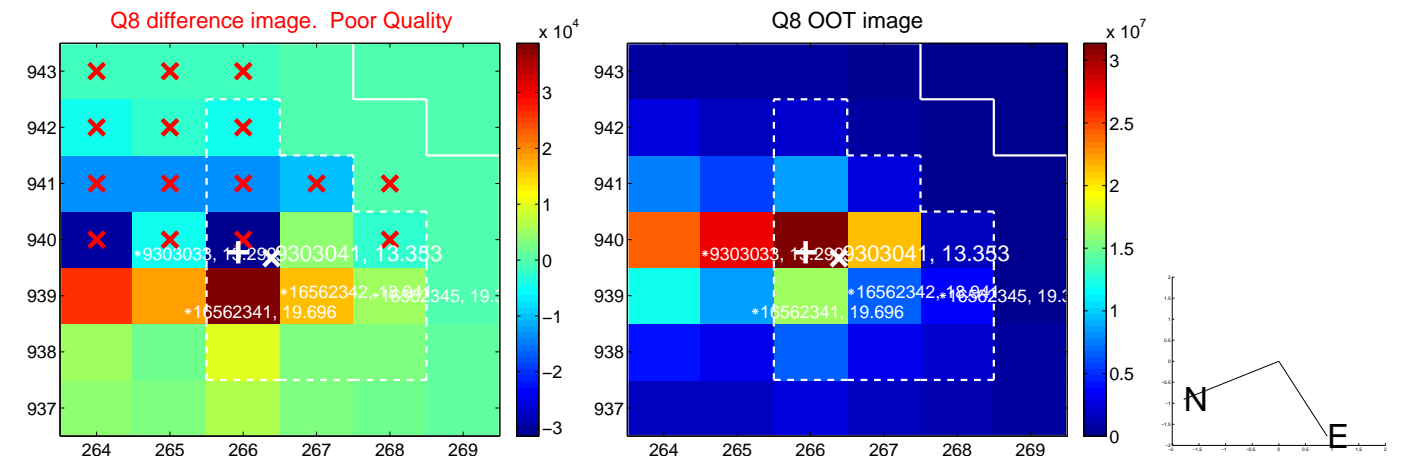
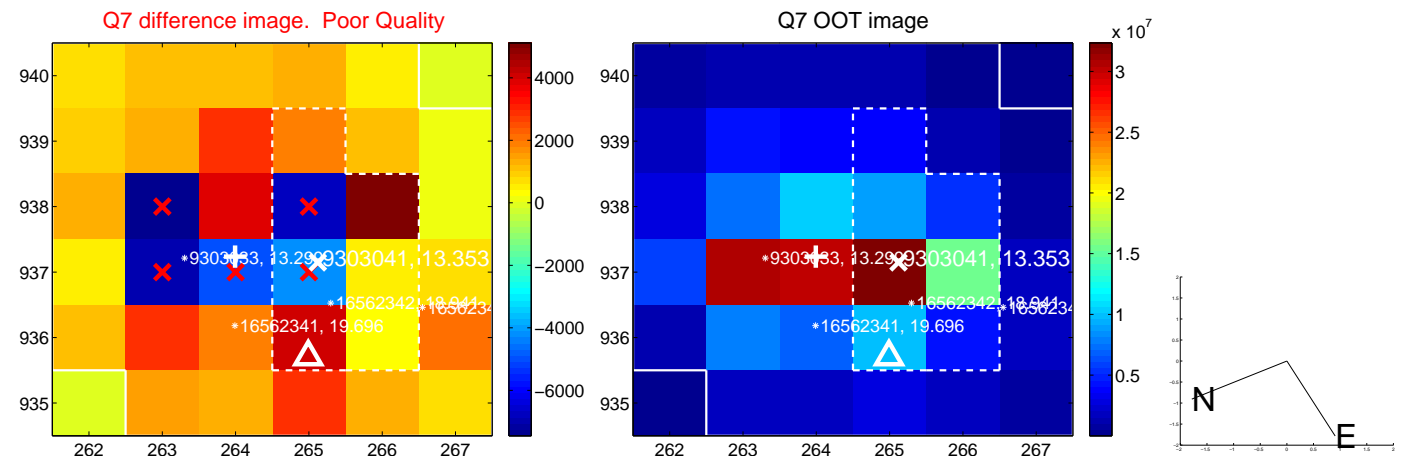
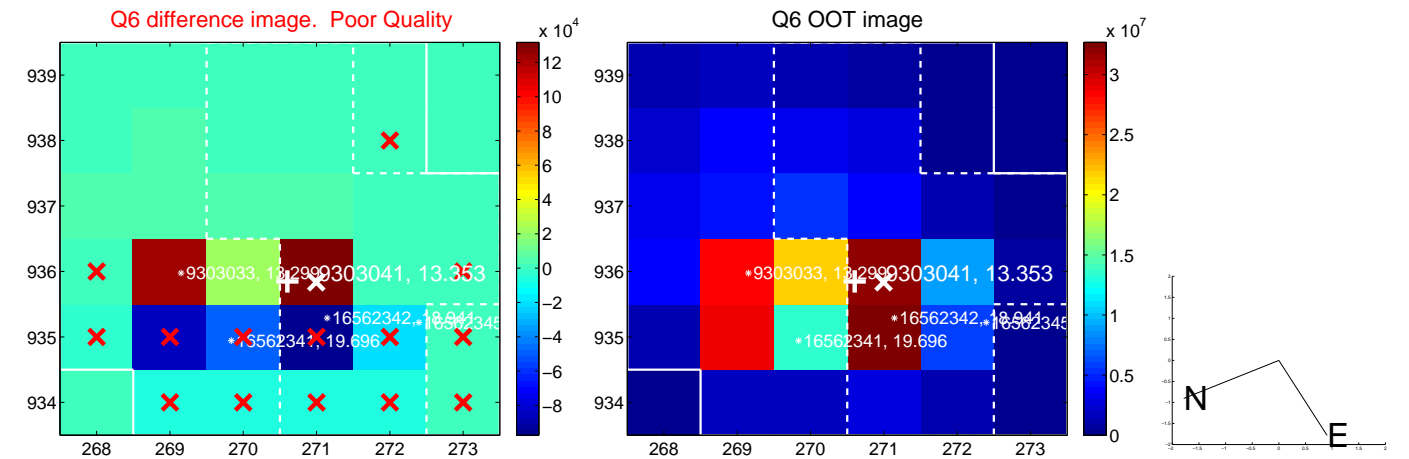
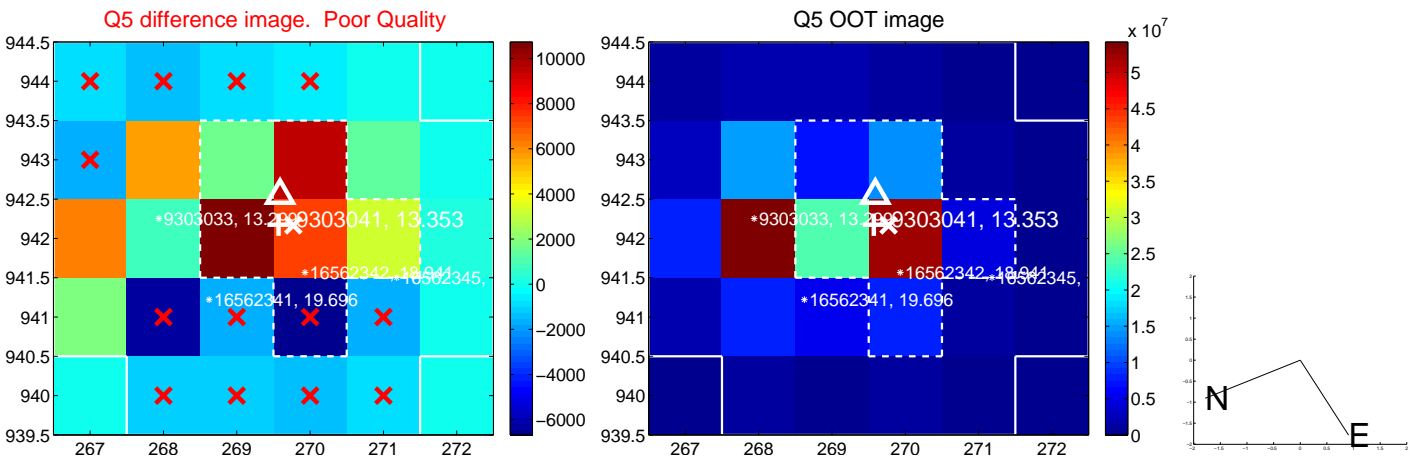


offset from photometric centroids

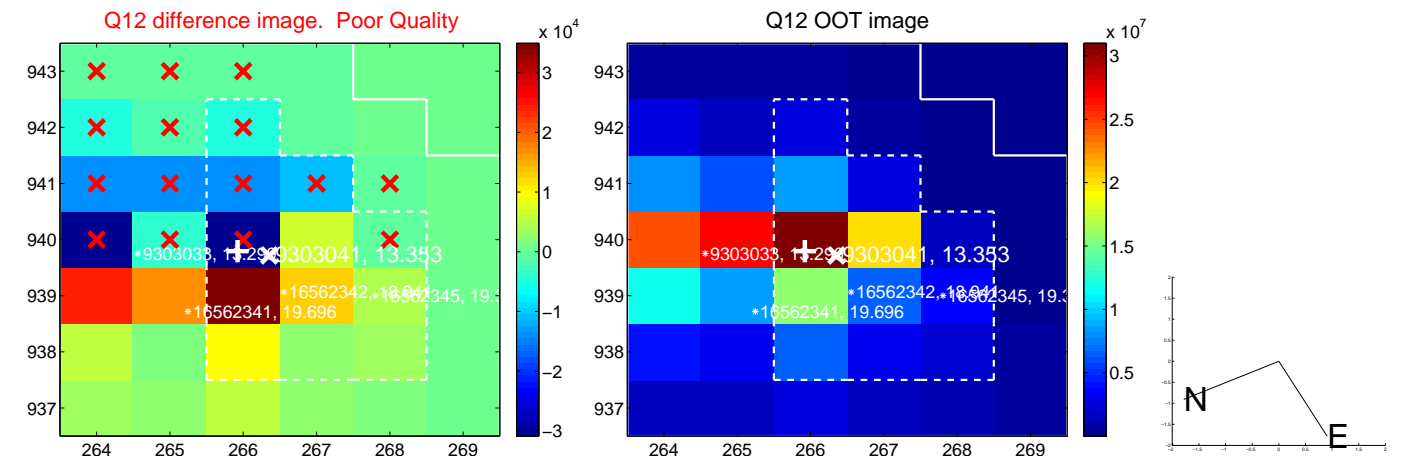
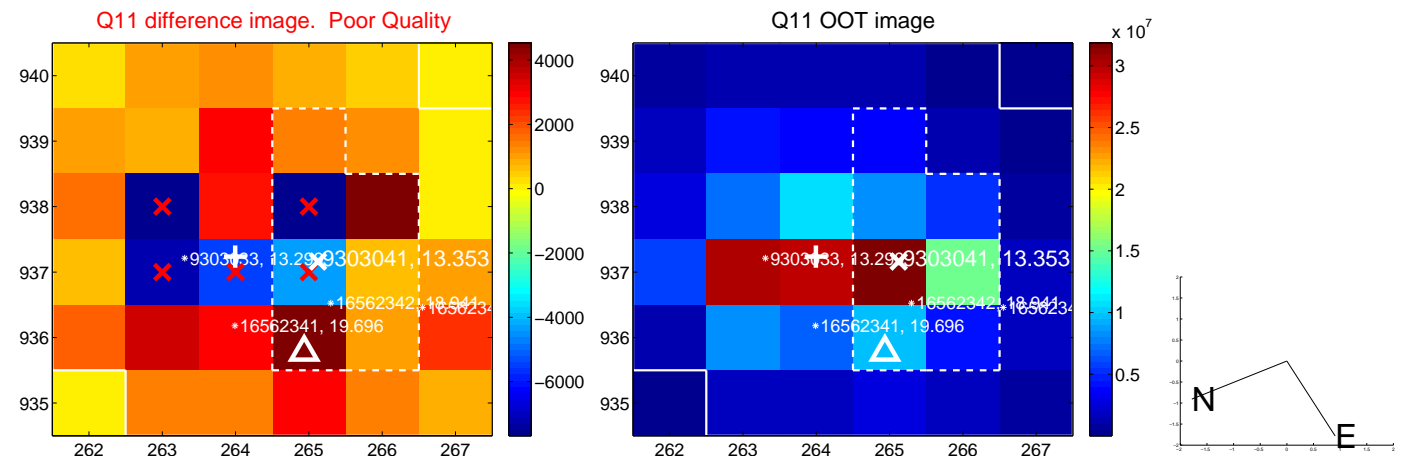
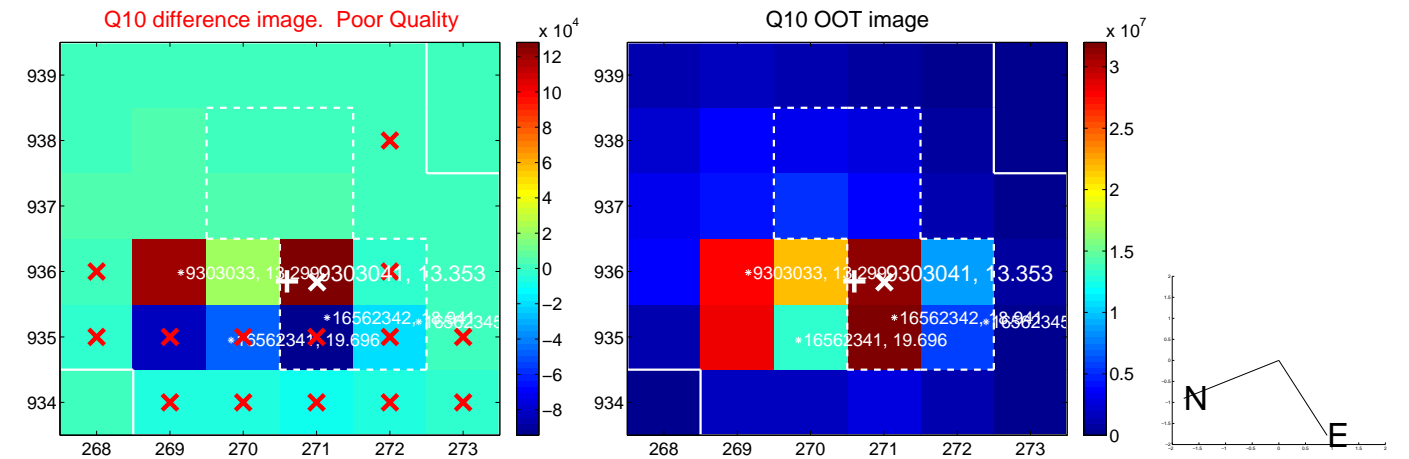
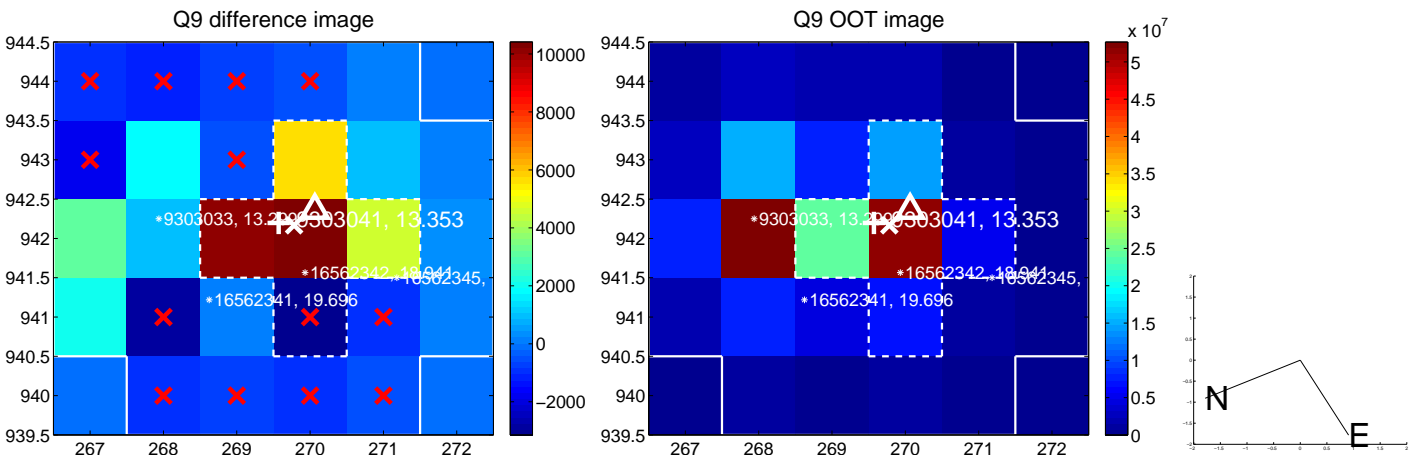


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

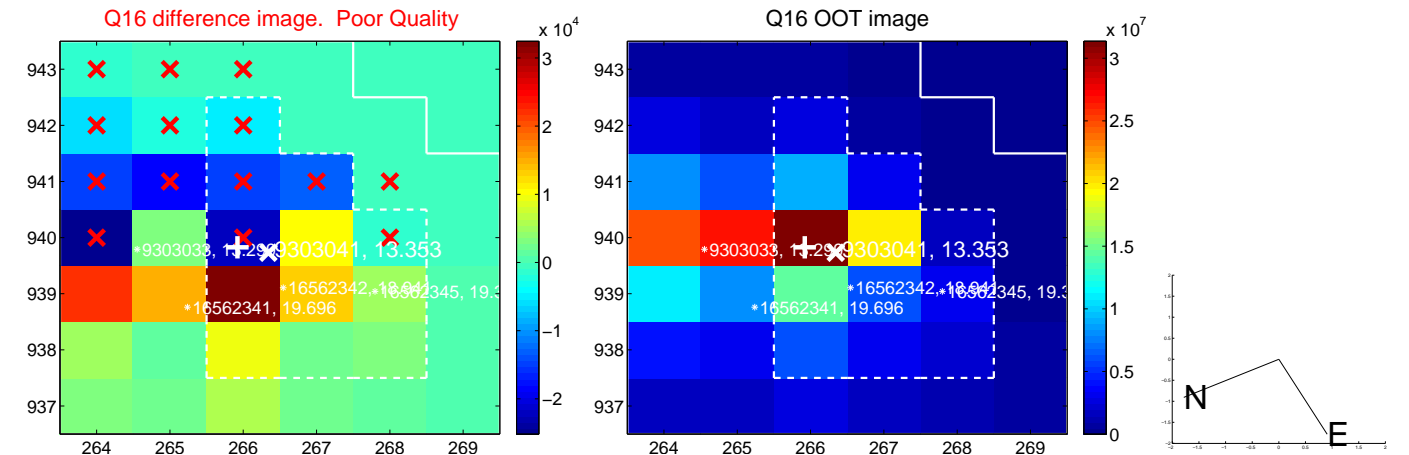
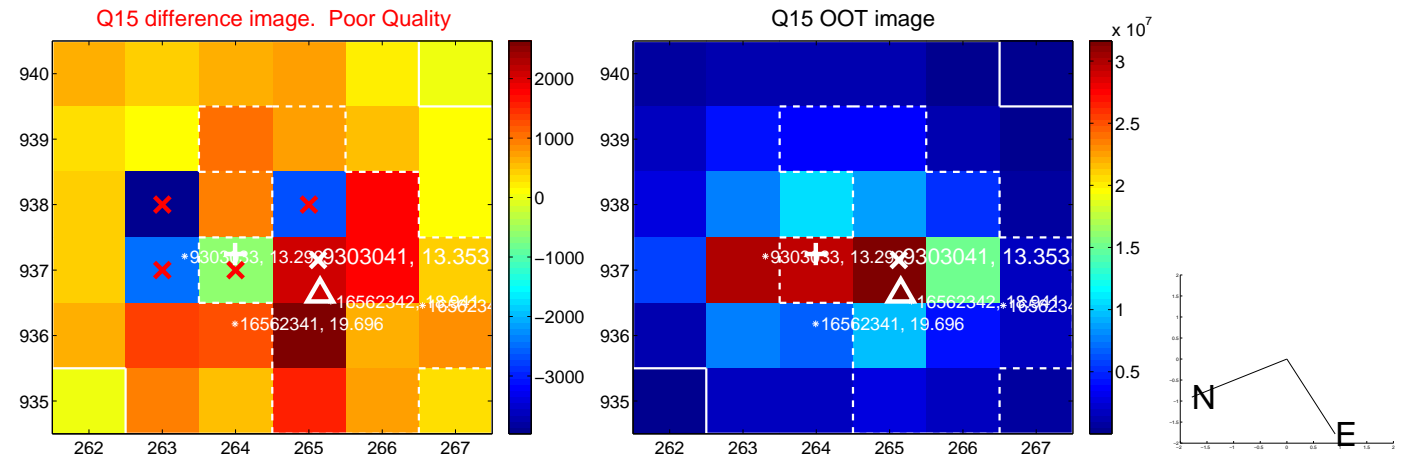
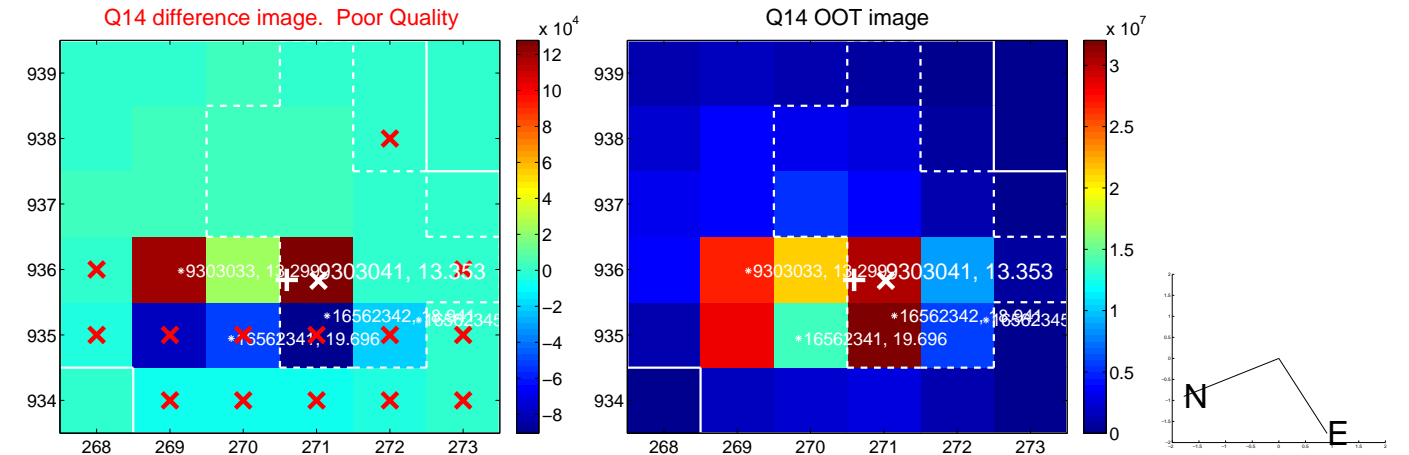
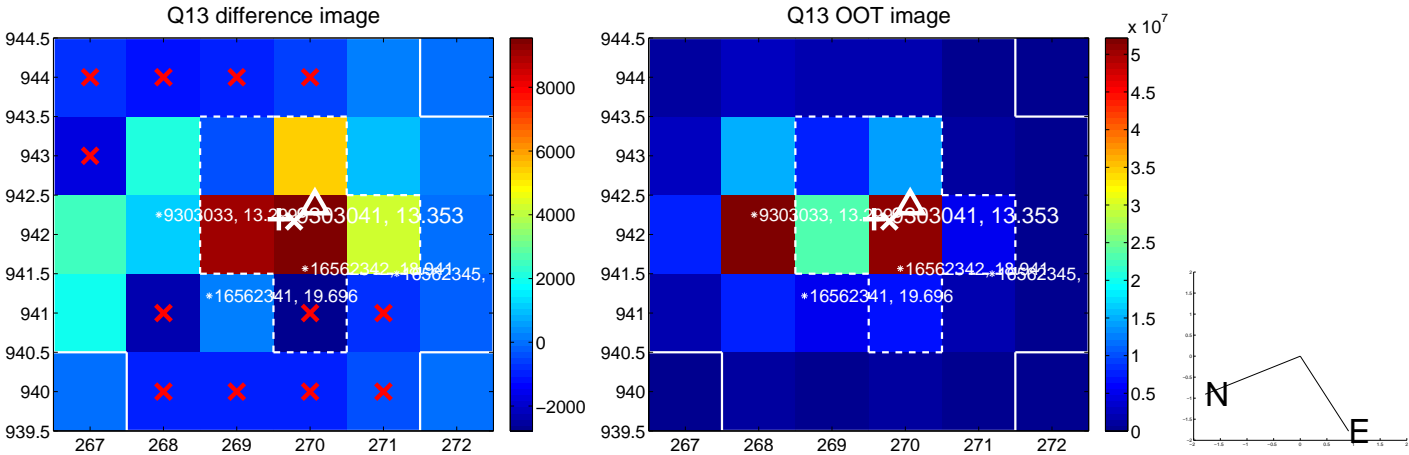
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



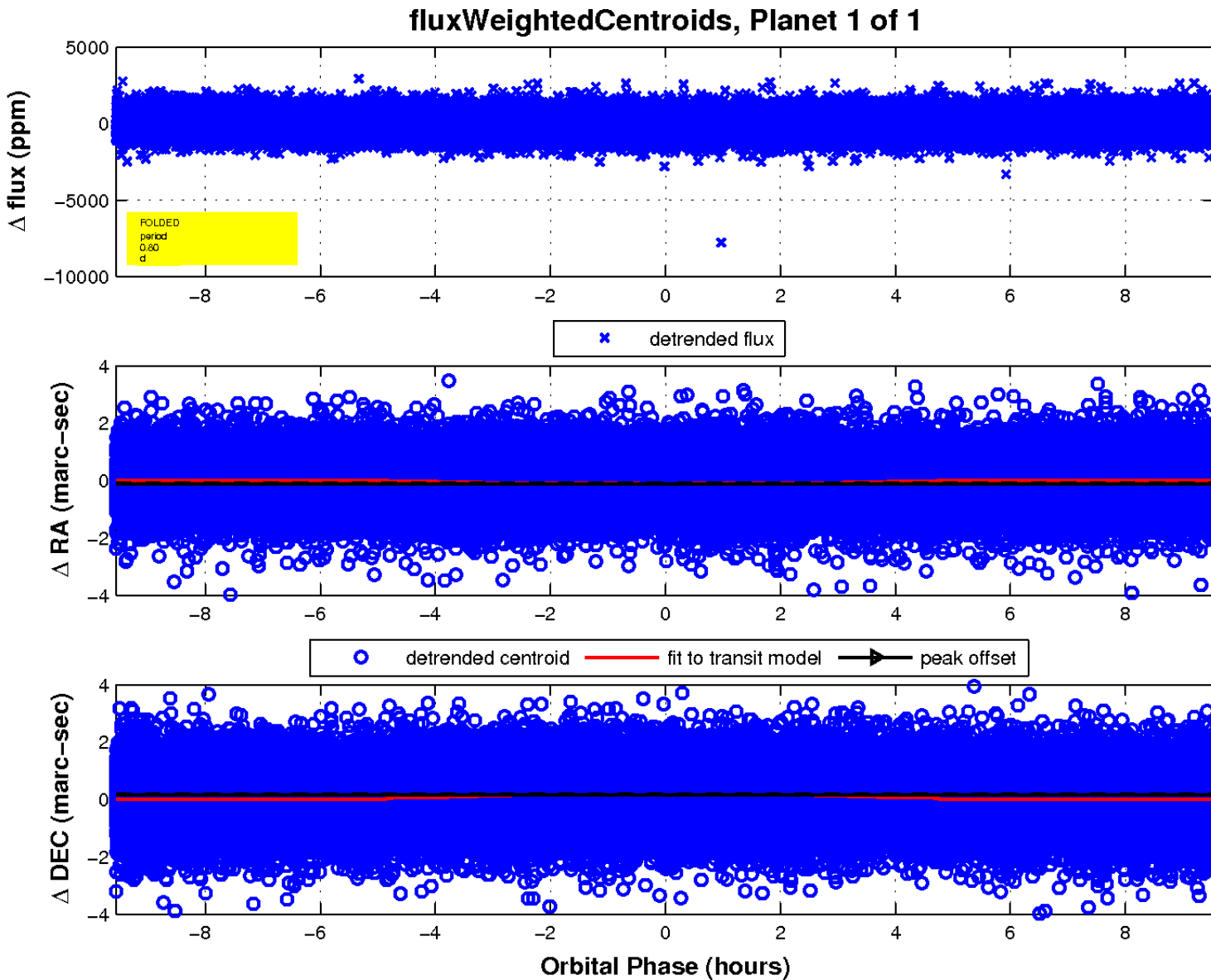
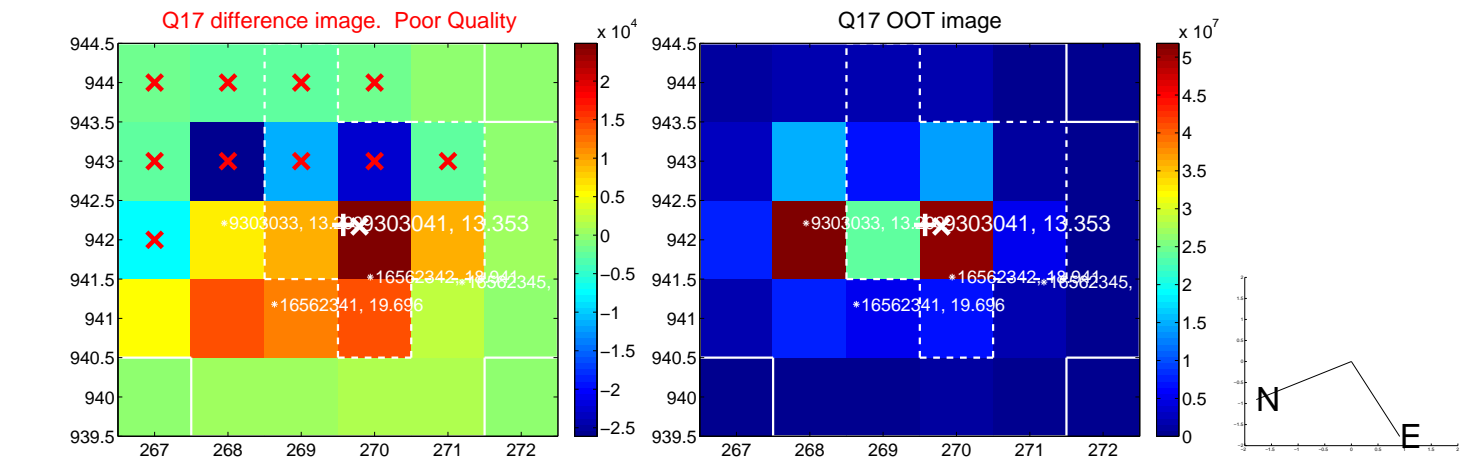
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

