

KIC 004570931

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})
004570931-01	OBS	1343.01	1.544905	132.010175	99.6	1.261	20.5	21.1	1.13	6309	1.15	2618.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004570931-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH

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 004570931-01

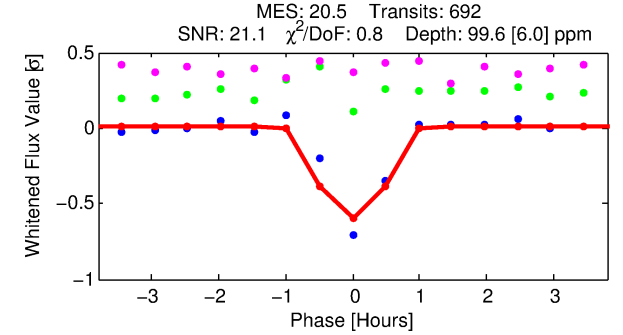
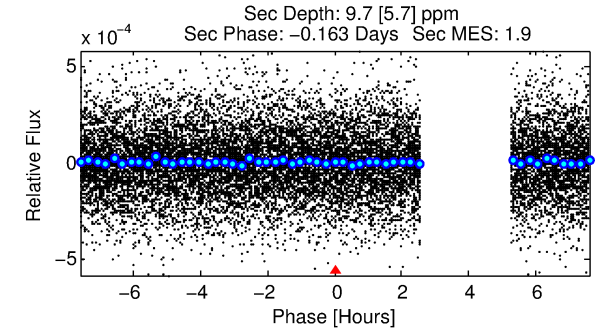
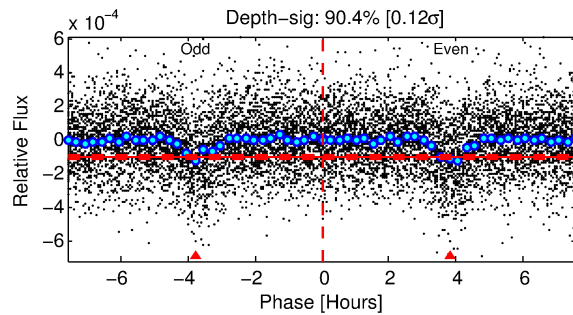
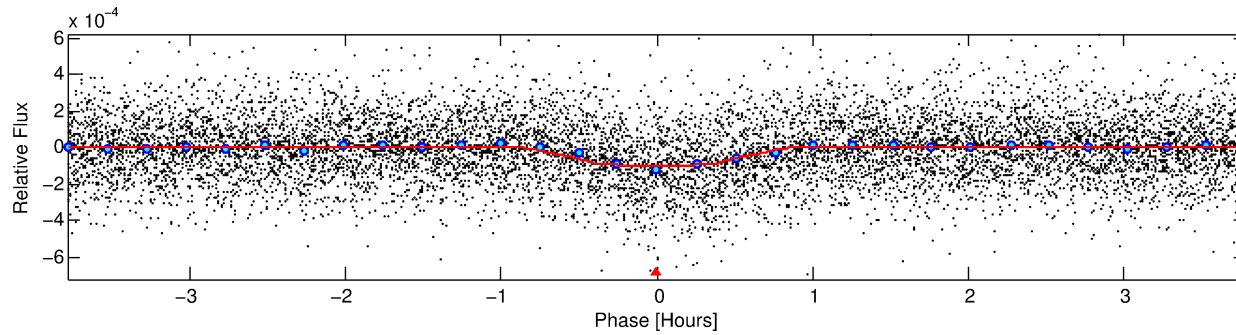
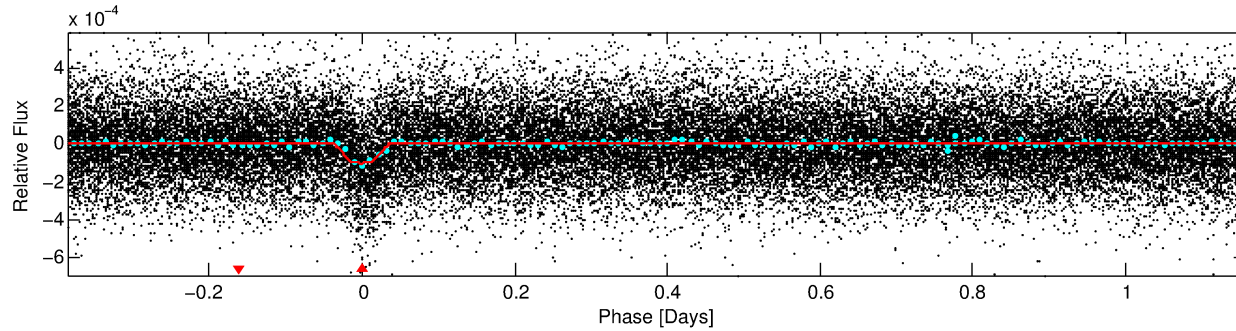
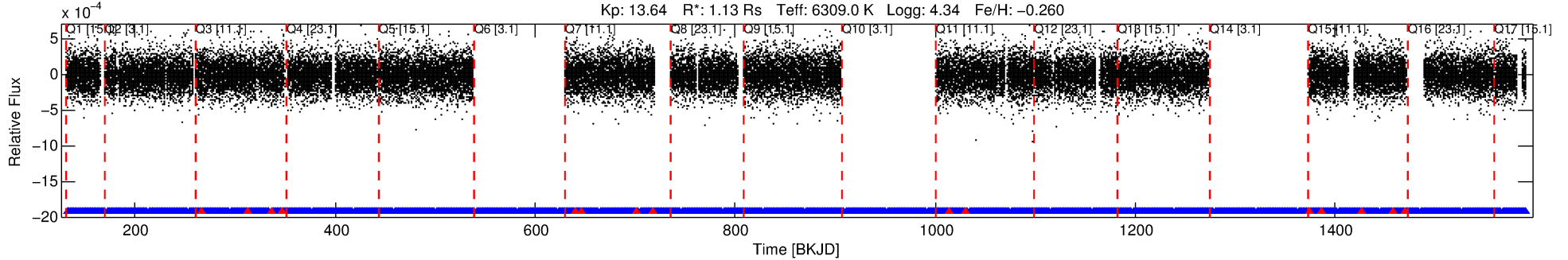
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004570931-01	4570931	1658.01	4570949	1:1	9.6	0	-2	13.31	13.65	59.15	Direct-PRF	0	1.22	0.39

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4570931 Candidate: 1 of 1 Period: 1.545 d
KOI: K01343.01 Corr: 0.843

Kp: 13.64 R*: 1.13 Rs Teff: 6309.0 K Logg: 4.34 Fe/H: -0.260



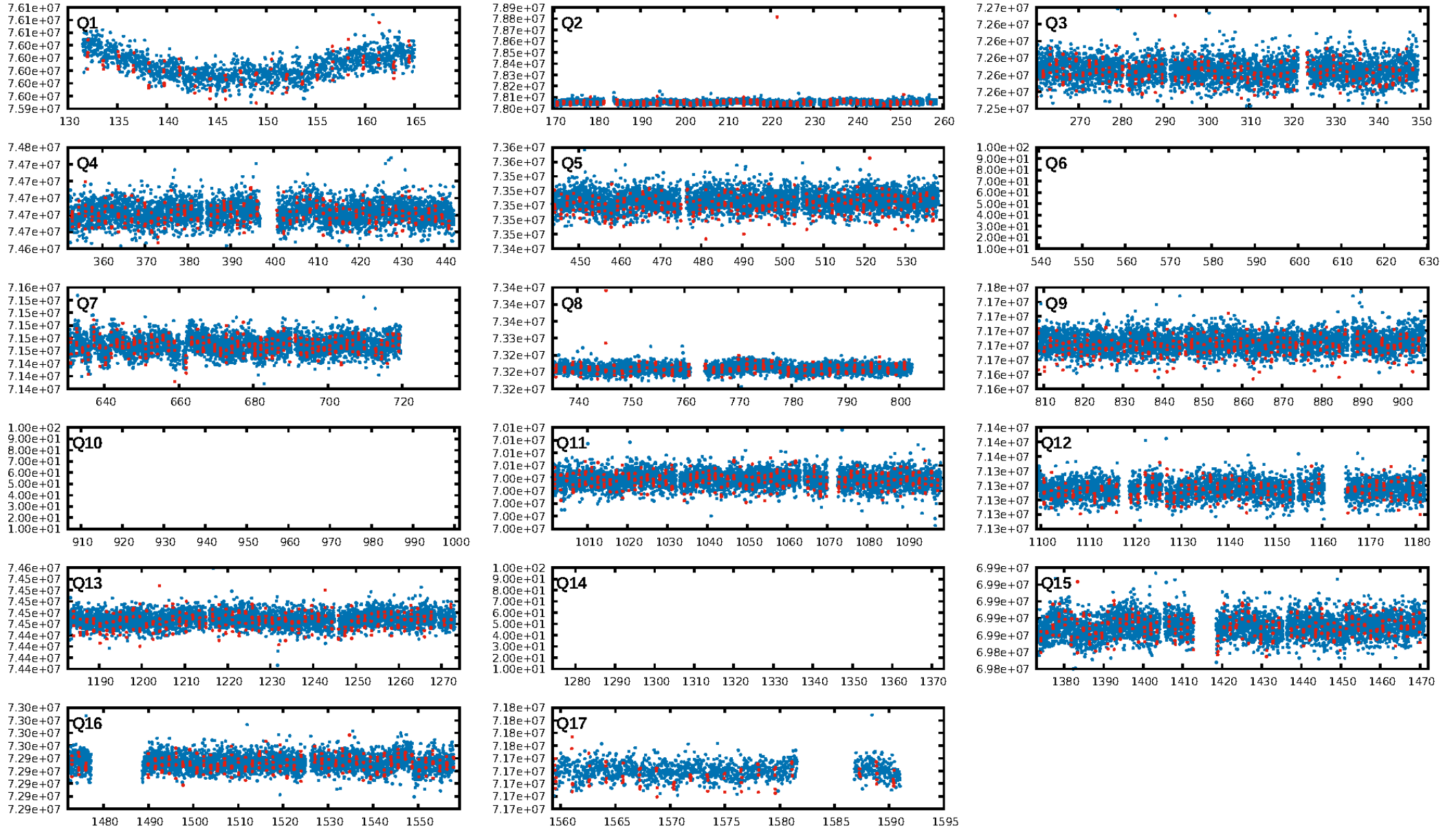
DV Fit Results:

Period = 1.54490 [0.00001] d
Epoch = 132.0102 [0.0010] BKJD
Rp/R* = 0.0093 [0.0030]
a/R* = 8.89 [14.78]
b = 0.35 [4.28]
Seff = 2618.78 [1022.73]
Teq = 1824 [178] K
Rp = 1.15 [0.51] Re
a = 0.0264 [0.0067] AU
Ag = 2.80 [2.66] [0.68σ]
Teffp = 3648 [808] K [2.21σ]

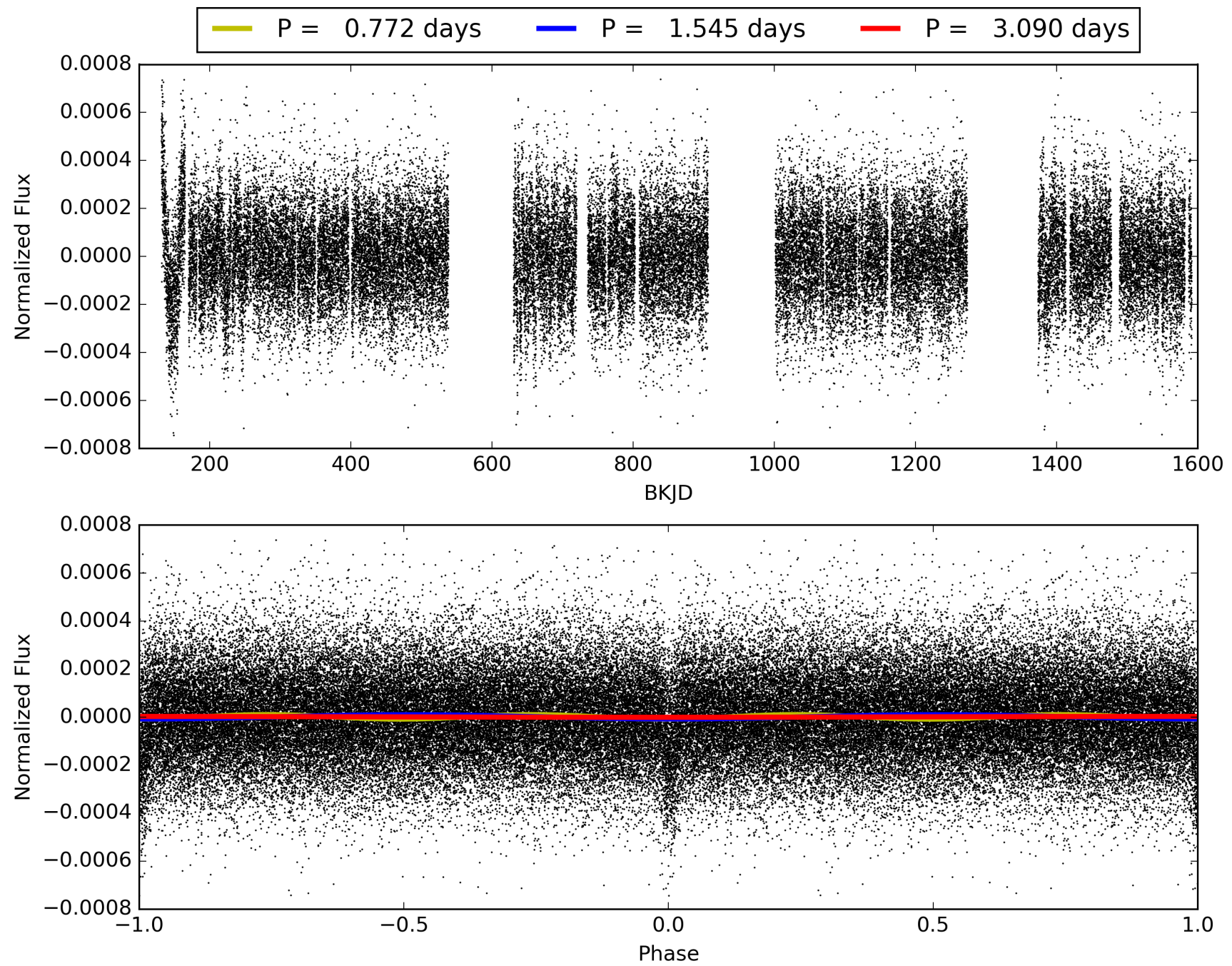
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.74e-89
RollingBand-fgt: 0.98 [637/652]
GhostDiagnostic-chr: -0.4316
Centroid-sig: 0.0%
Centroid-so: 55.024 arcsec [112.93σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004570931-01, PDC Light Curves

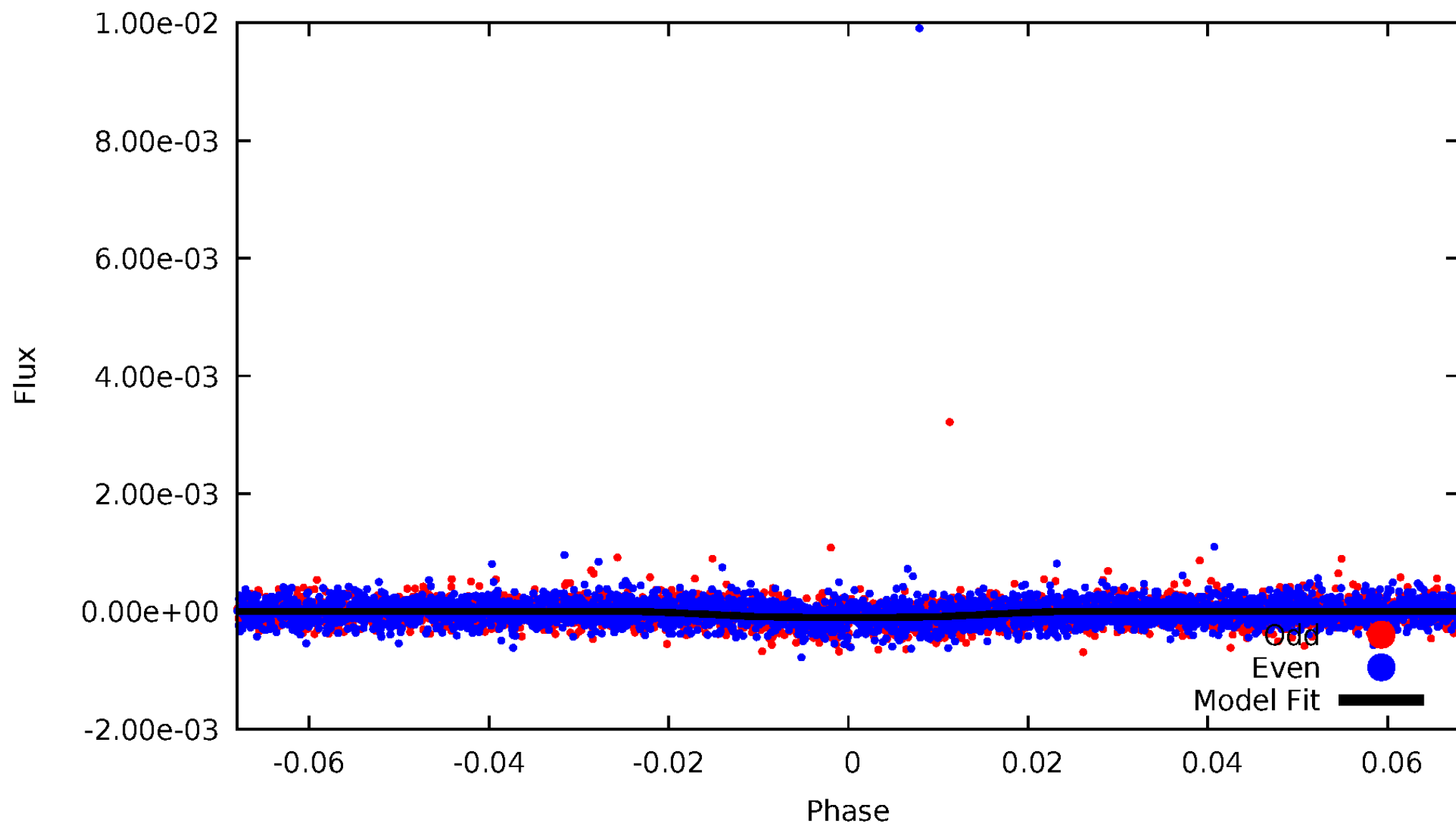


TCE 004570931-01



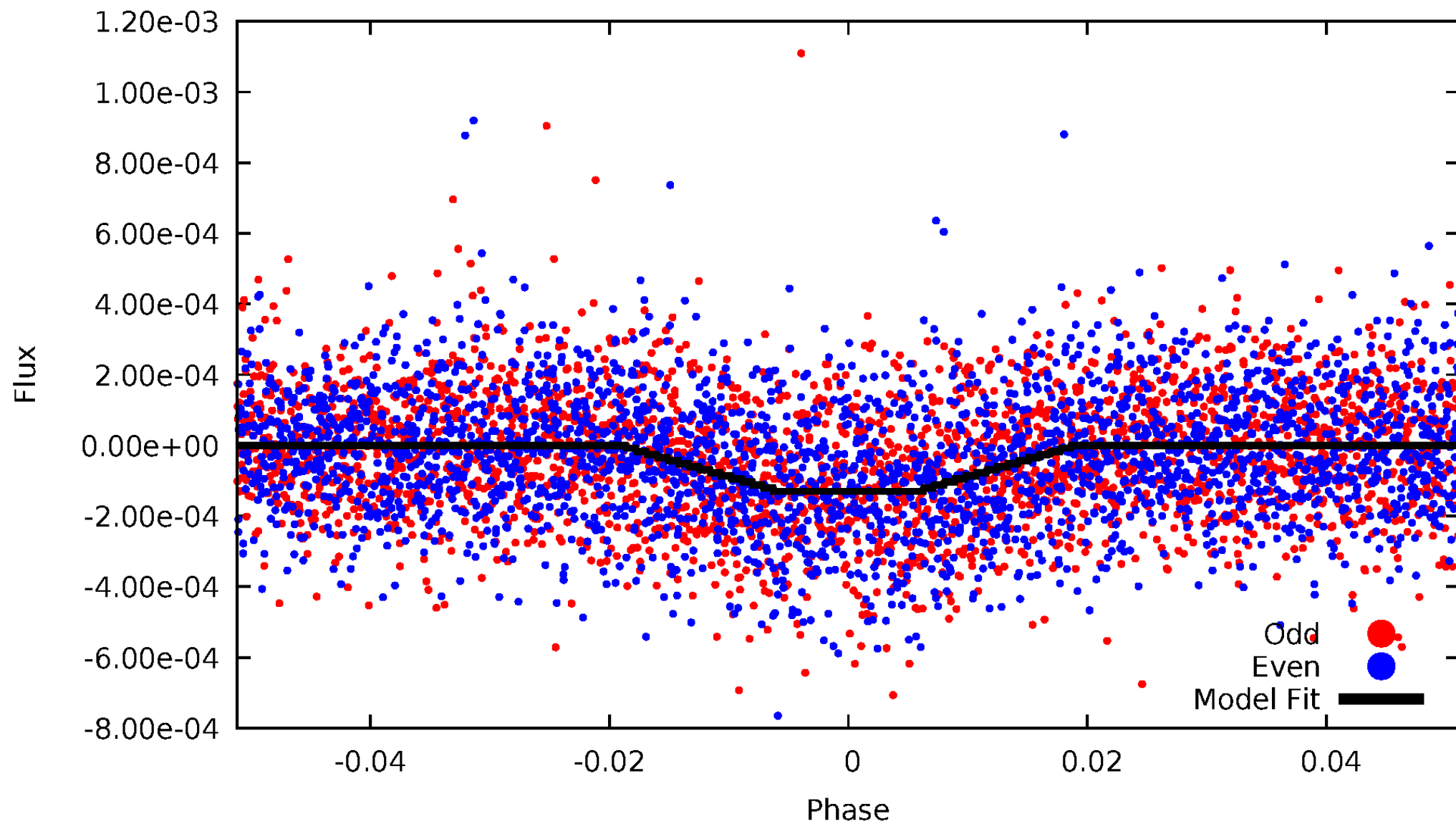
DV Odd/Even

TCE 004570931-01

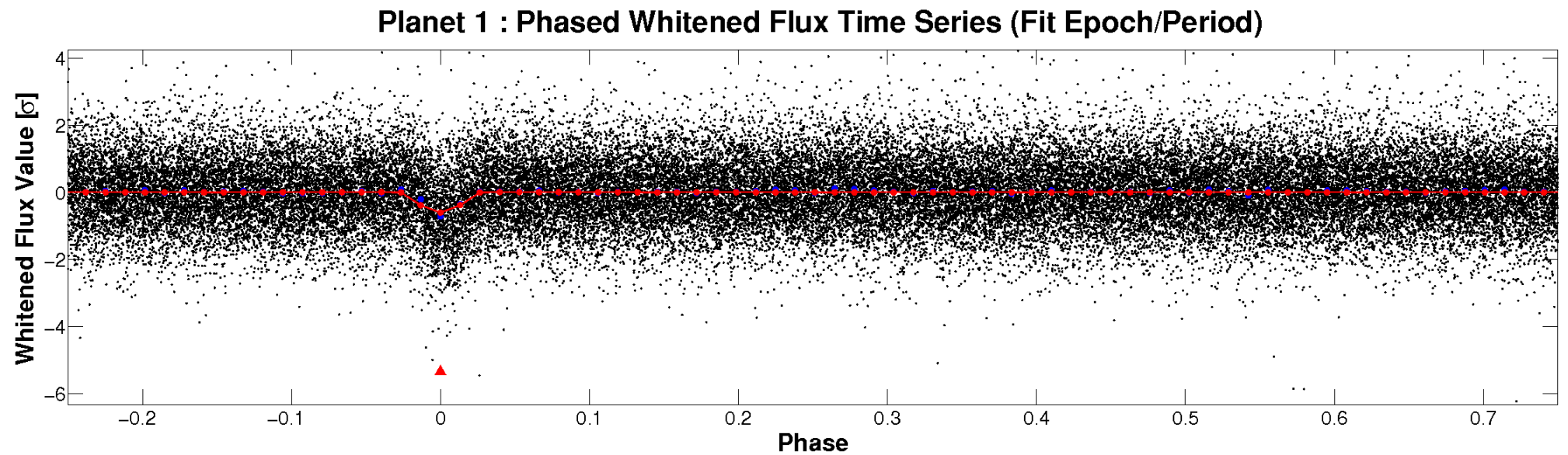
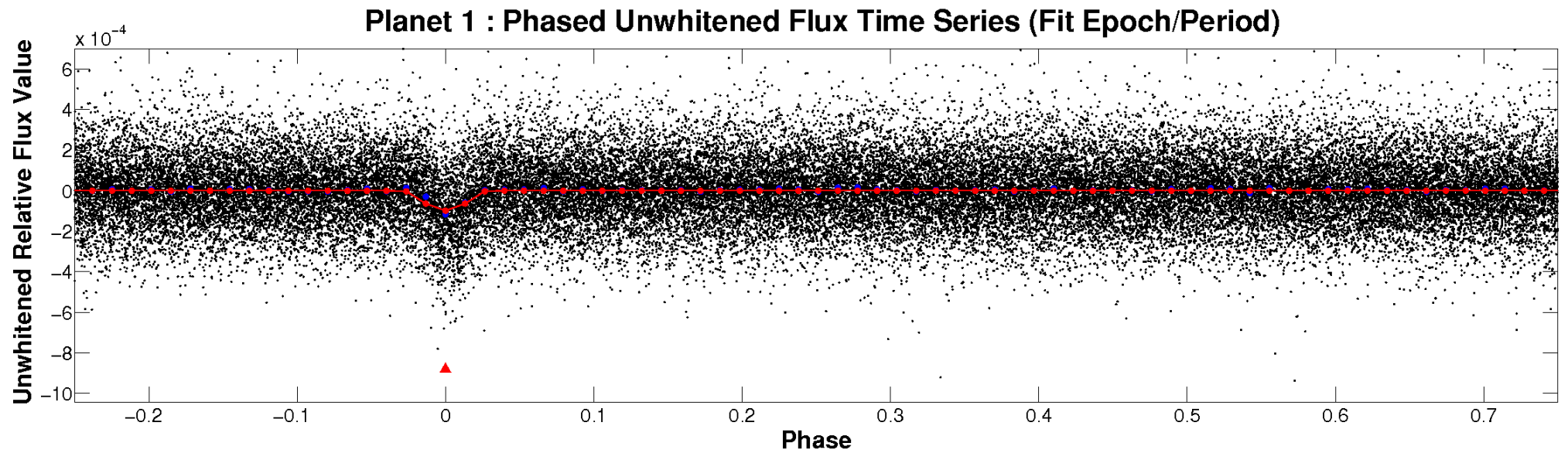


ALT Odd/Even

TCE 004570931-01

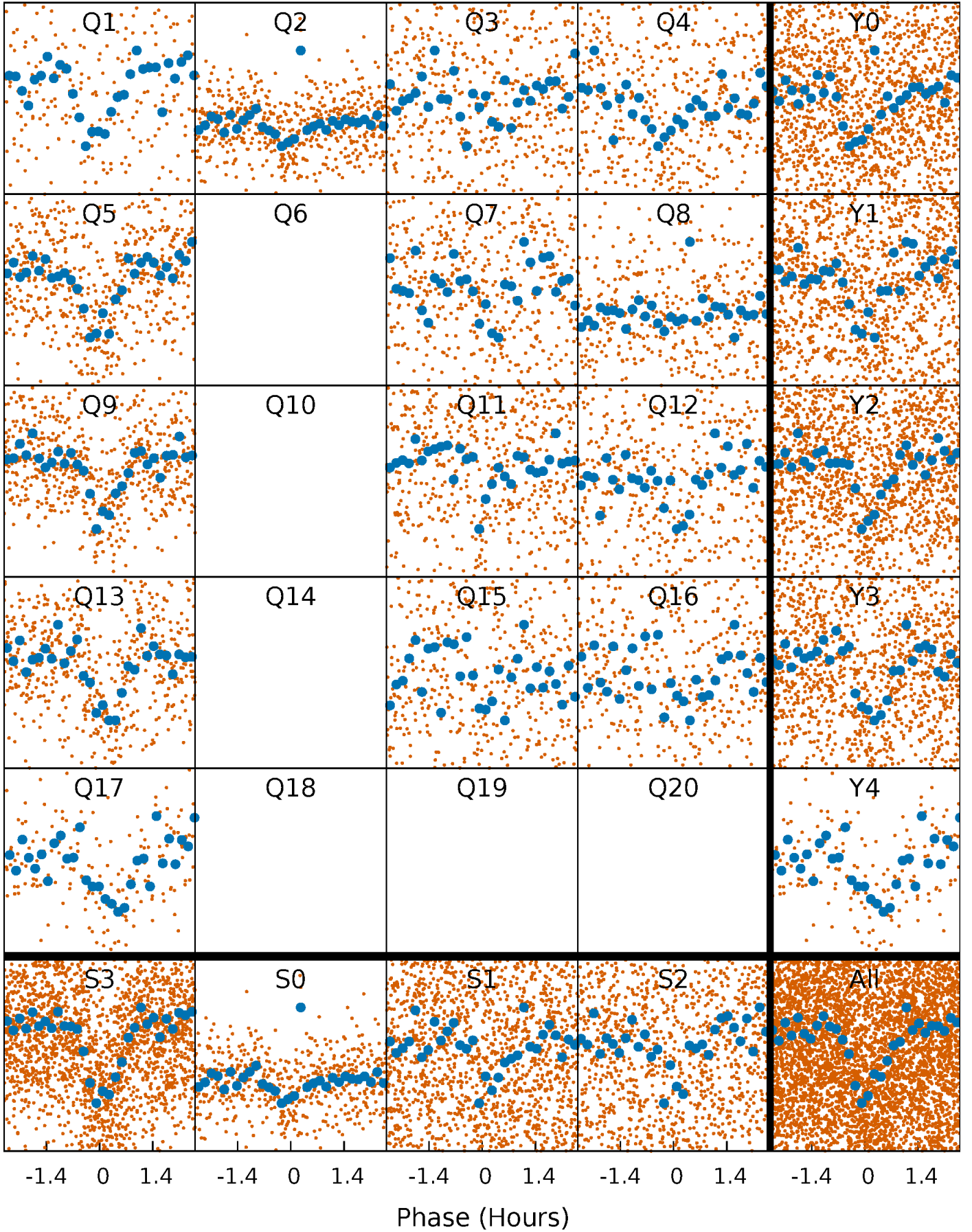


Non-Whitened Vs. Whitened Light Curve



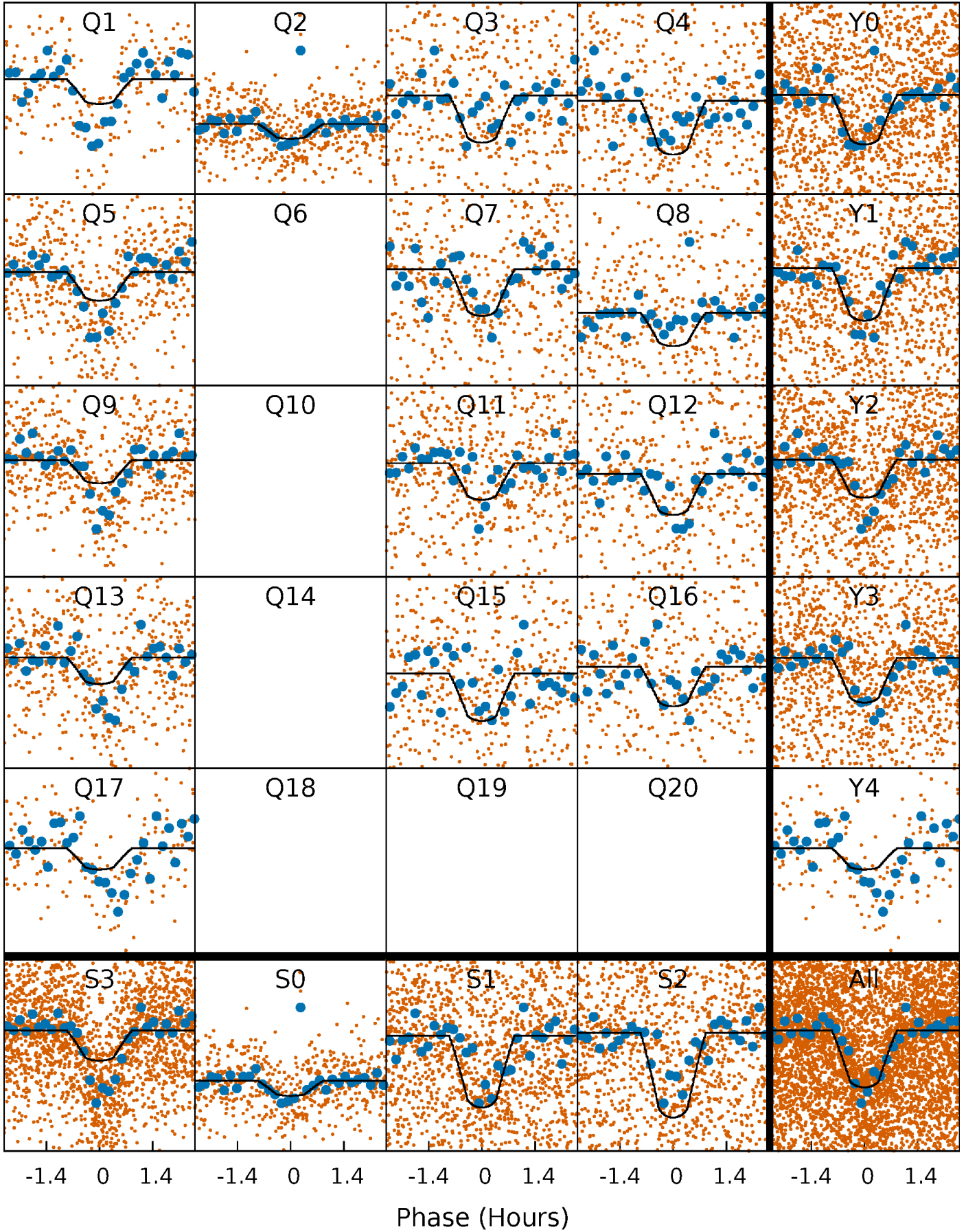
PDC Quarter-Phased Transit Curves

TCE 004570931-01 P= 1.544905 Days $T_0=132.010175$ (BKJD)



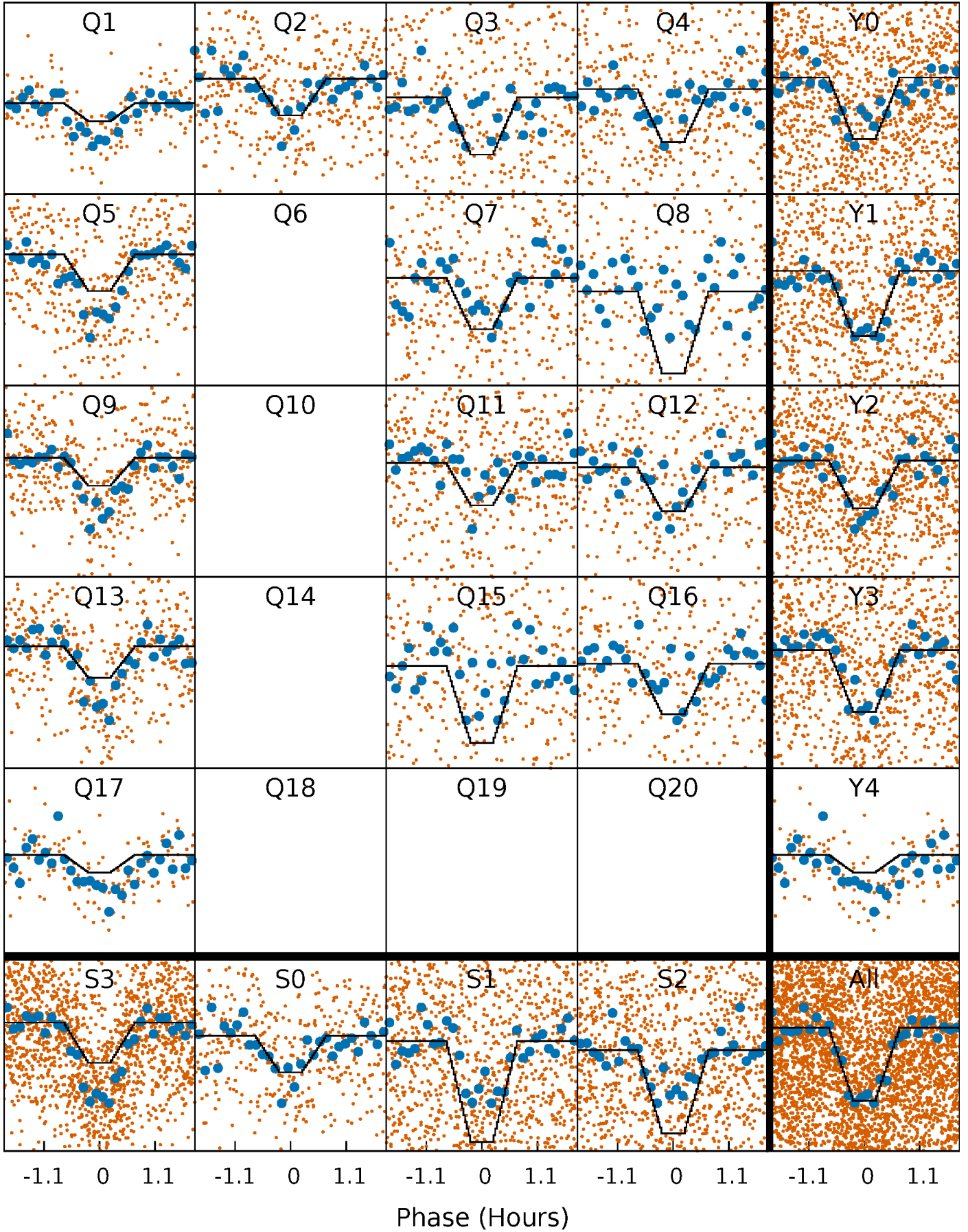
DV Quarter-Phased Transit Curves

TCE 004570931-01 P= 1.544905 Days $T_0=132.010175$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

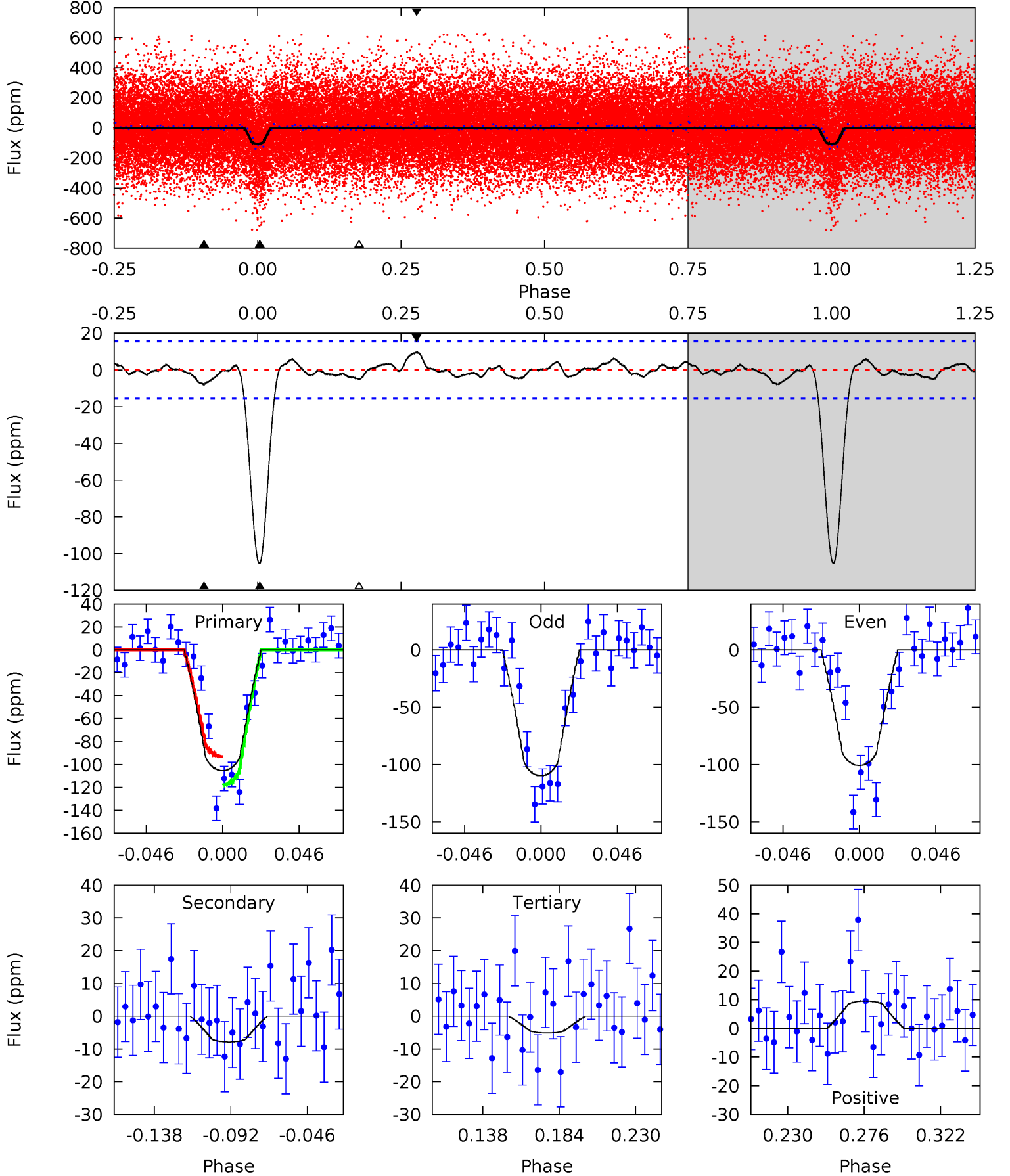
TCE 004570931-01 P= 1.544917 Days $T_0=132.008583$ (BKJD)



DV Model-Shift Uniqueness Test

004570931-01, P = 1.544905 Days, E = 130.465270 Days

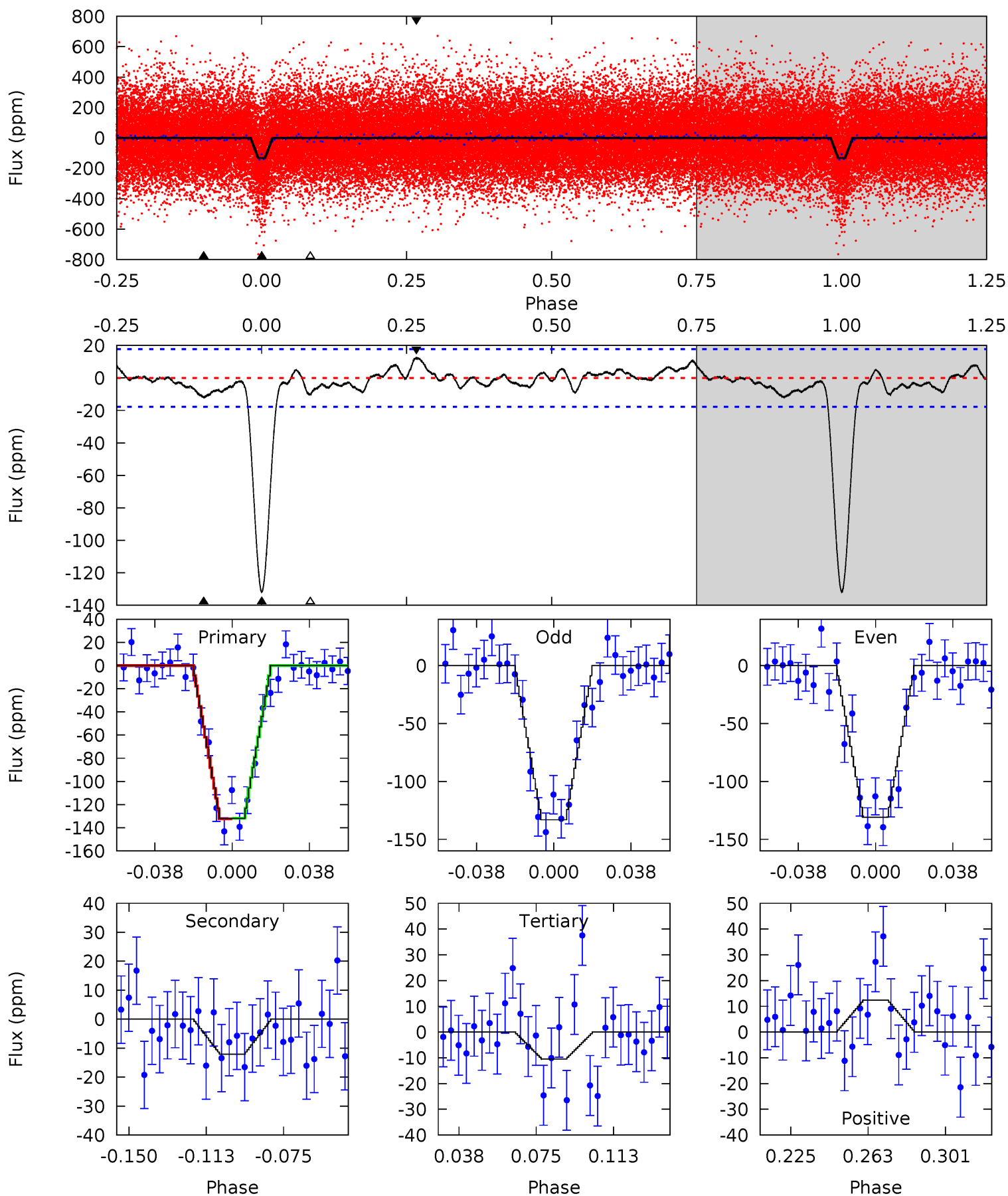
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.8	2.38	1.54	2.89	4.72	2.00	0.88	30.3	28.9	0.84	-0.50	1.35	0.93	0.08	3.77



Alt Model-Shift Uniqueness Test

004570931-01, P = 1.544917 Days, E = 130.463666 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.4	3.25	2.80	3.32	4.77	2.08	1.17	32.6	32.1	0.45	-0.07	0.29	1.03	0.09	0.08



Stellar Parameters For KIC 004570931

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6309^{+169}_{-207}	$4.340^{+0.108}_{-0.201}$	$-0.260^{+0.250}_{-0.300}$	$1.132^{+0.340}_{-0.157}$	$1.018^{+0.172}_{-0.115}$	$0.990^{+0.492}_{-0.528}$
	+3%/-3%	+2%/-5%	+96%/-115%	+30%/-14%	+17%/-11%	+50%/-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 004570931-01 / KOI 1343.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 3	$1.20^{+0.42}_{-0.38}$	2565^{+187}_{-135}	3664^{+696}_{-494}	$2.007^{+2.720}_{-1.067}$
Alt.	-12 ± 4	$1.46^{+0.43}_{-0.42}$	2579^{+187}_{-148}	3754^{+498}_{-443}	$2.198^{+2.164}_{-1.080}$

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 $A_{obs} \gg 1.0$

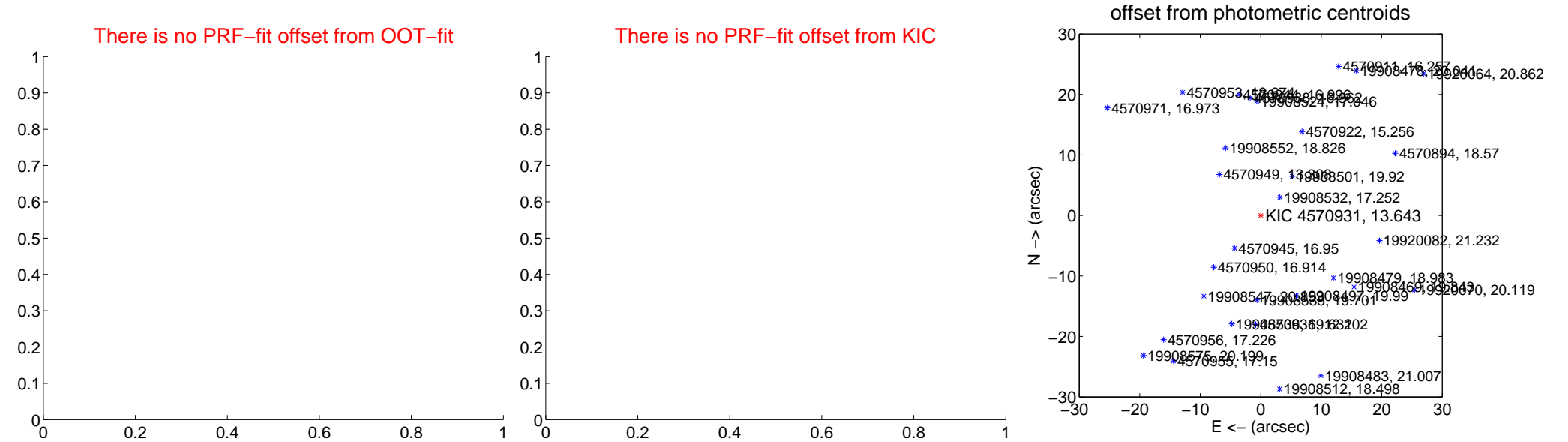
DV Centroid Data

Supplemental centroid analysis for 004570931-01. Kepler magnitude: 13.64. Transit SNR 21.13

There are 0 quarters with good PRF difference image offsets

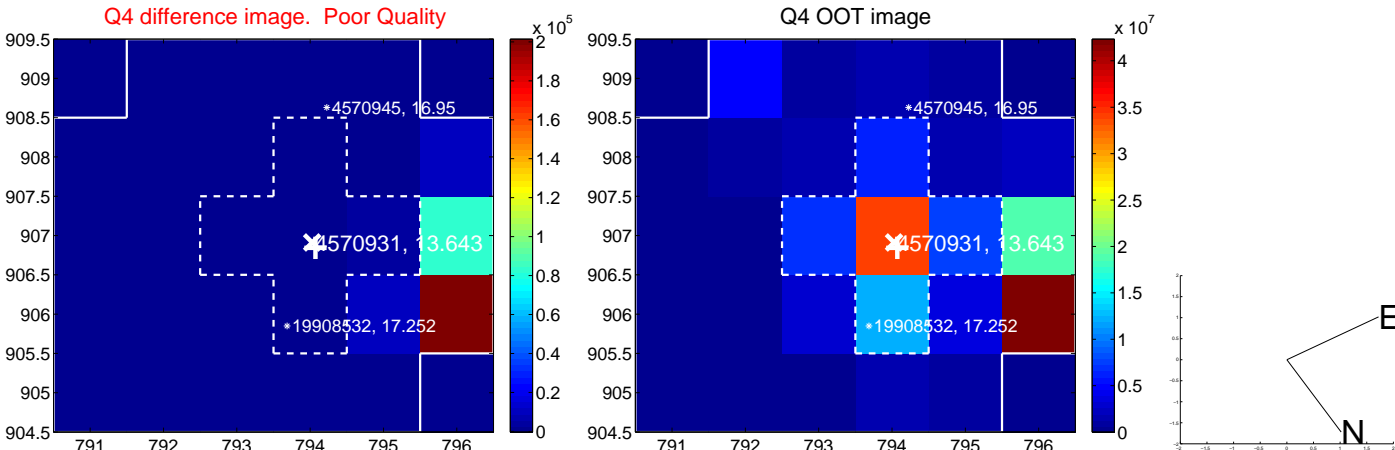
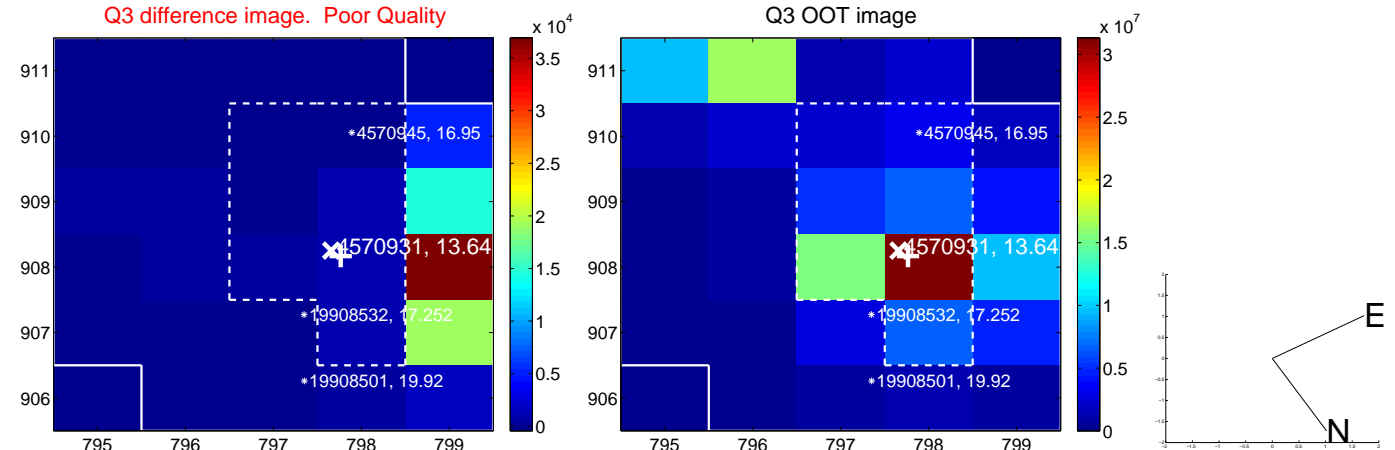
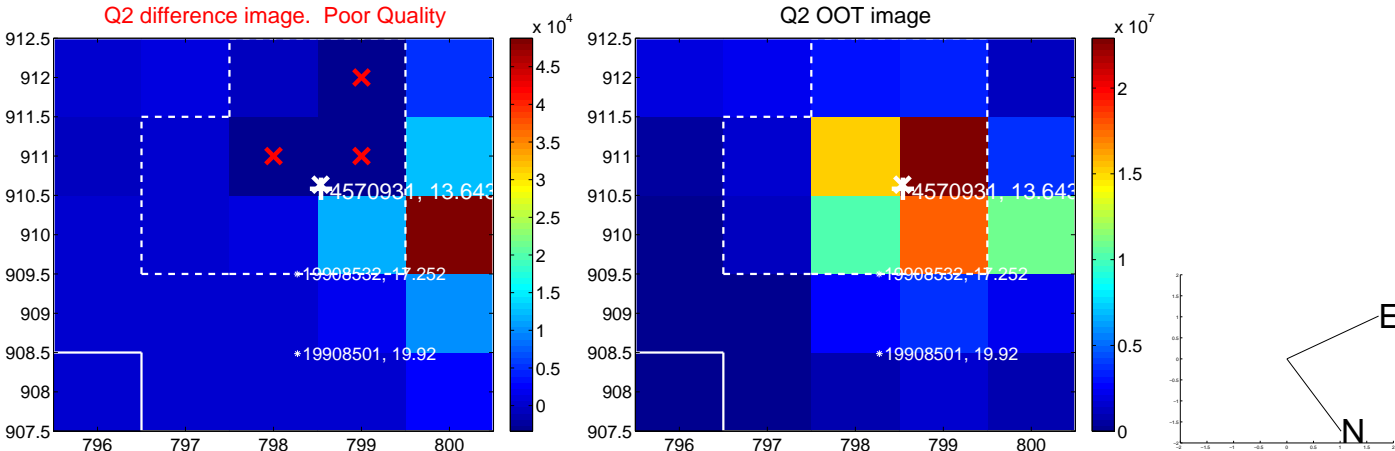
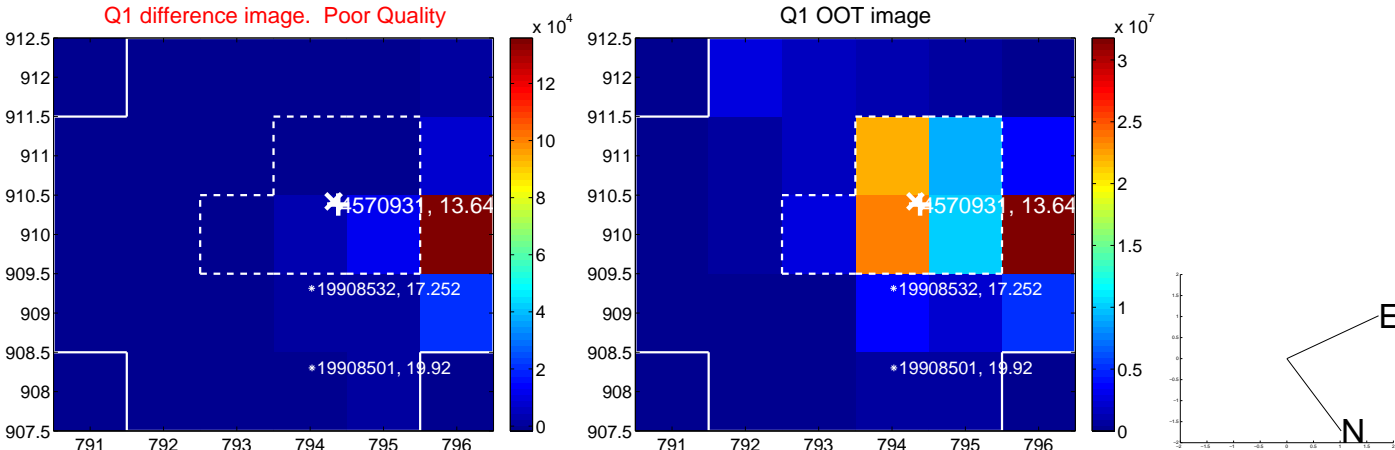
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	55.02 ± 0.49	112.92	42.87 ± 0.45	34.48 ± 0.54

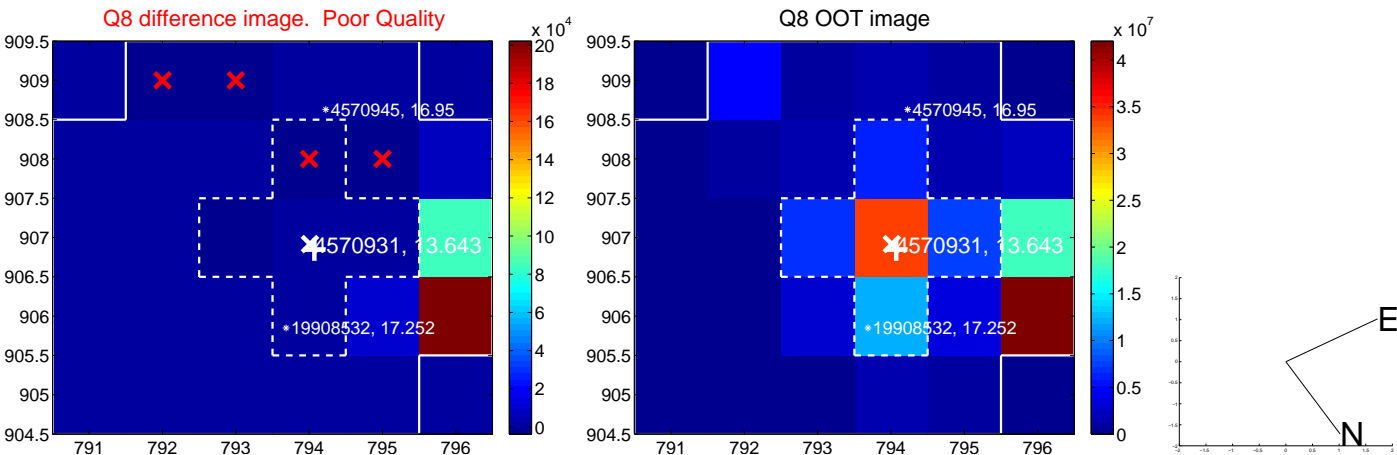
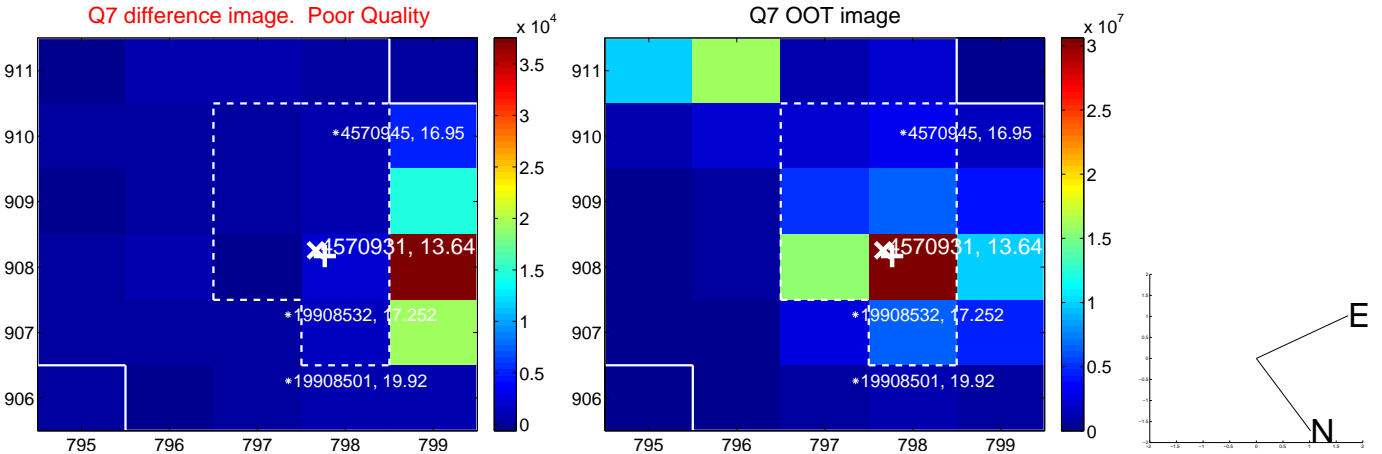
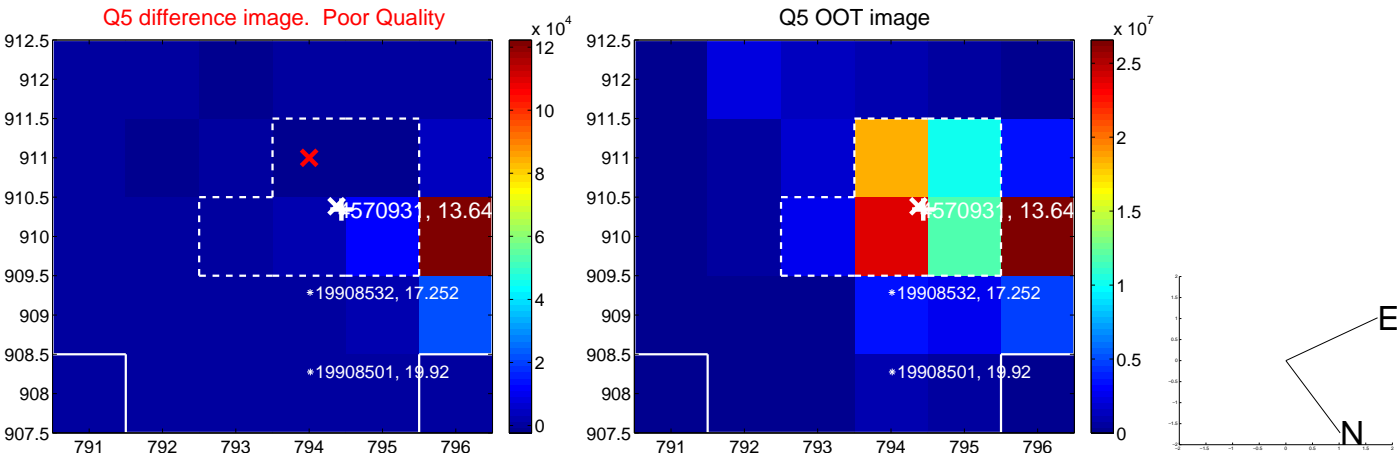


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

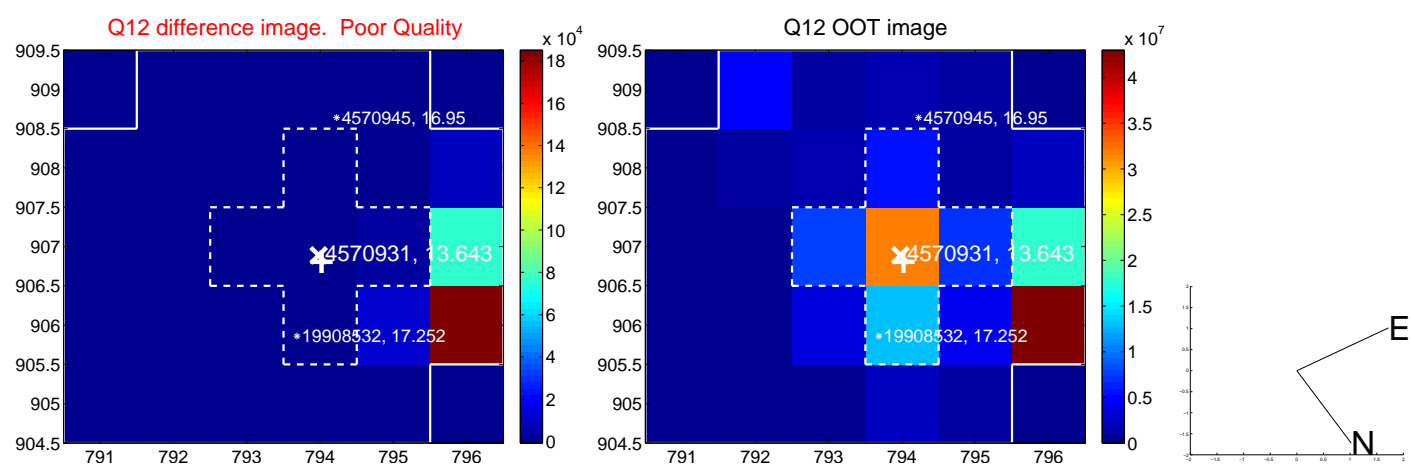
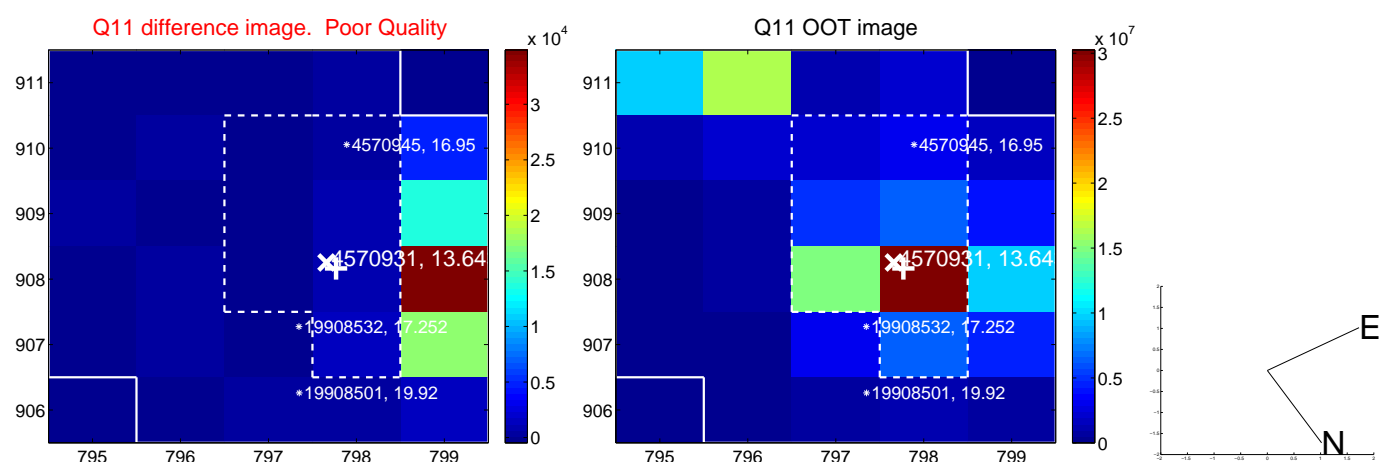
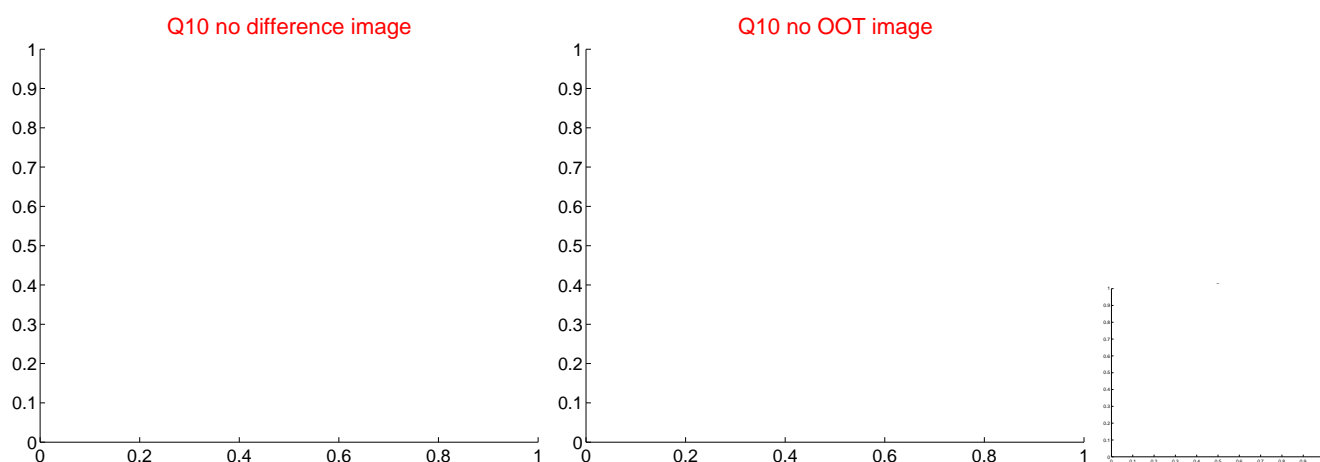
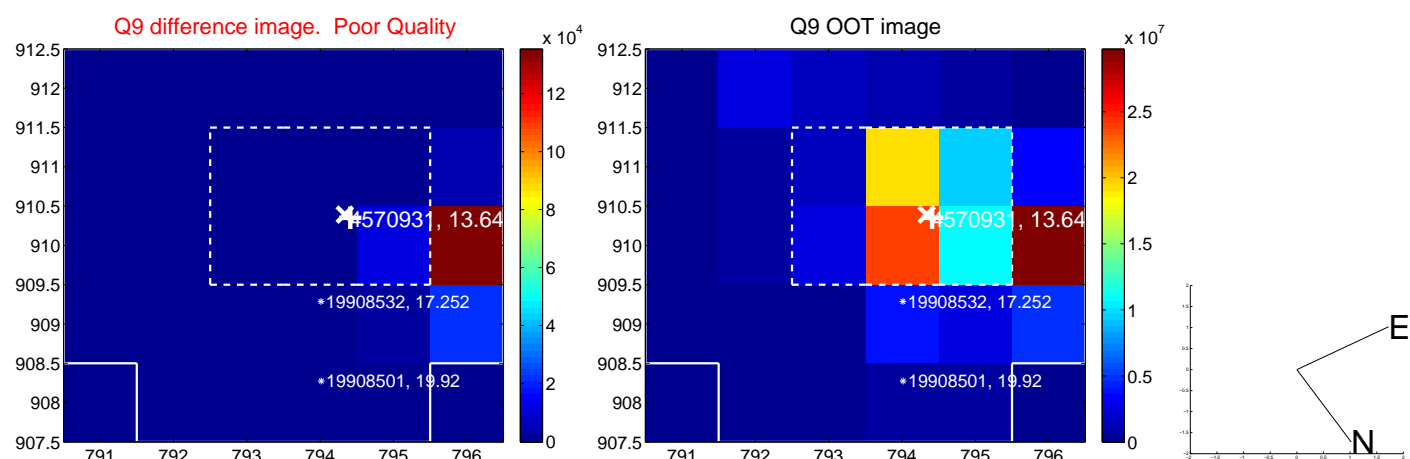
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



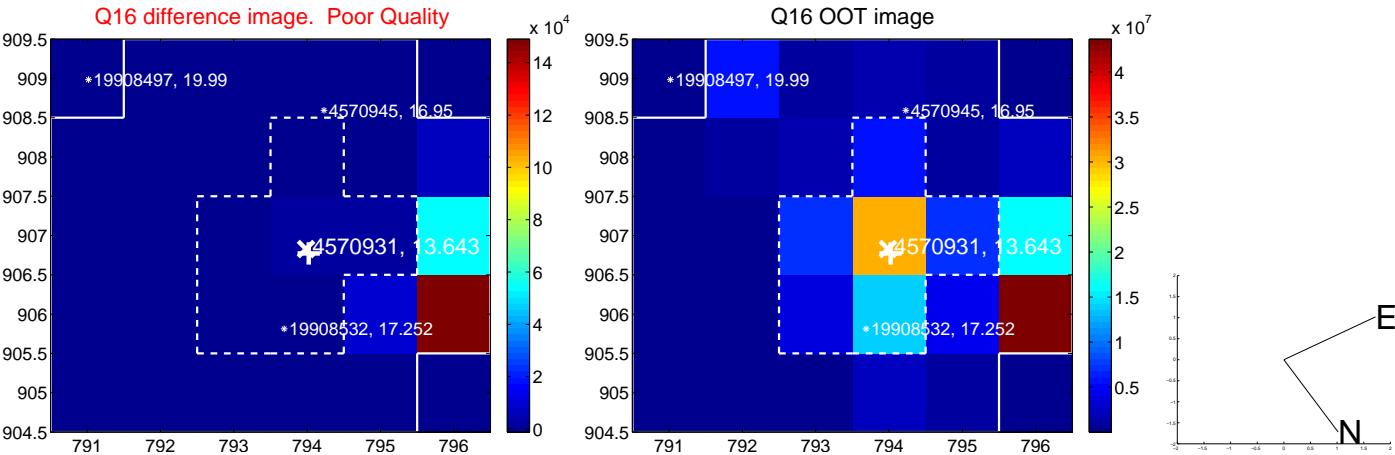
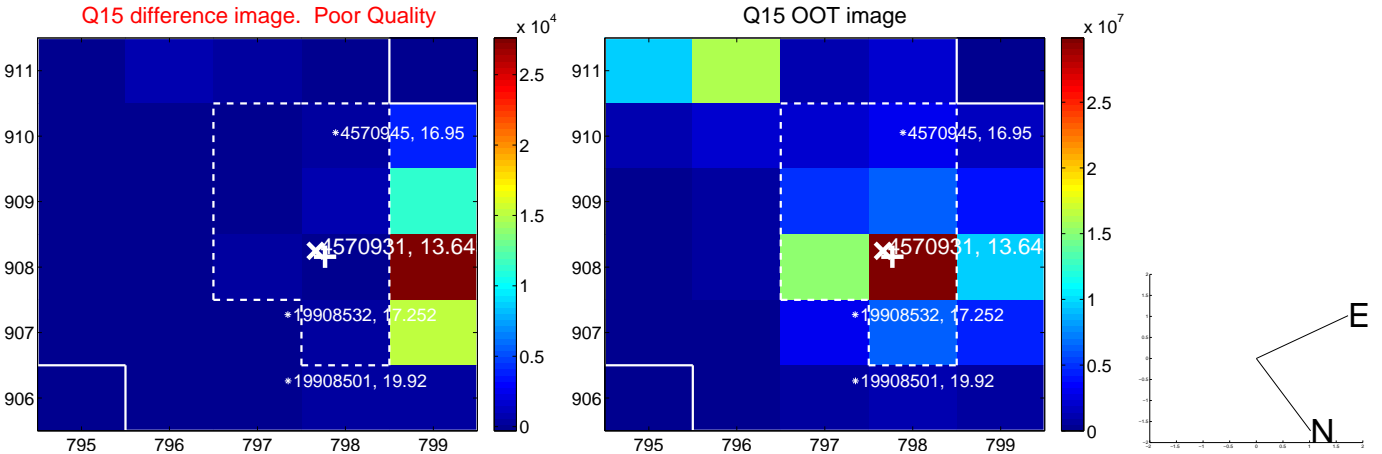
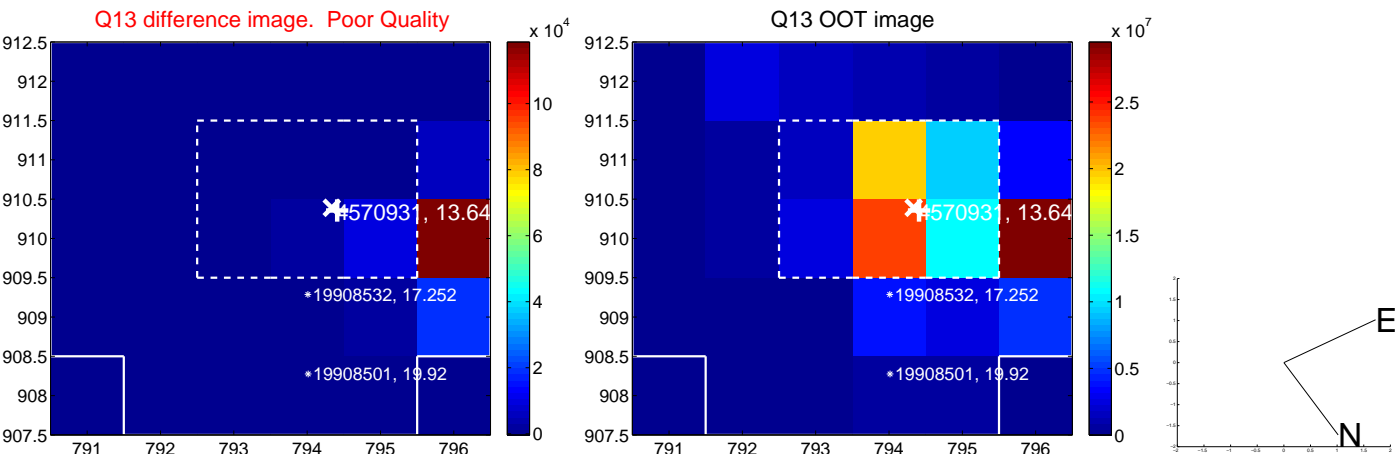
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



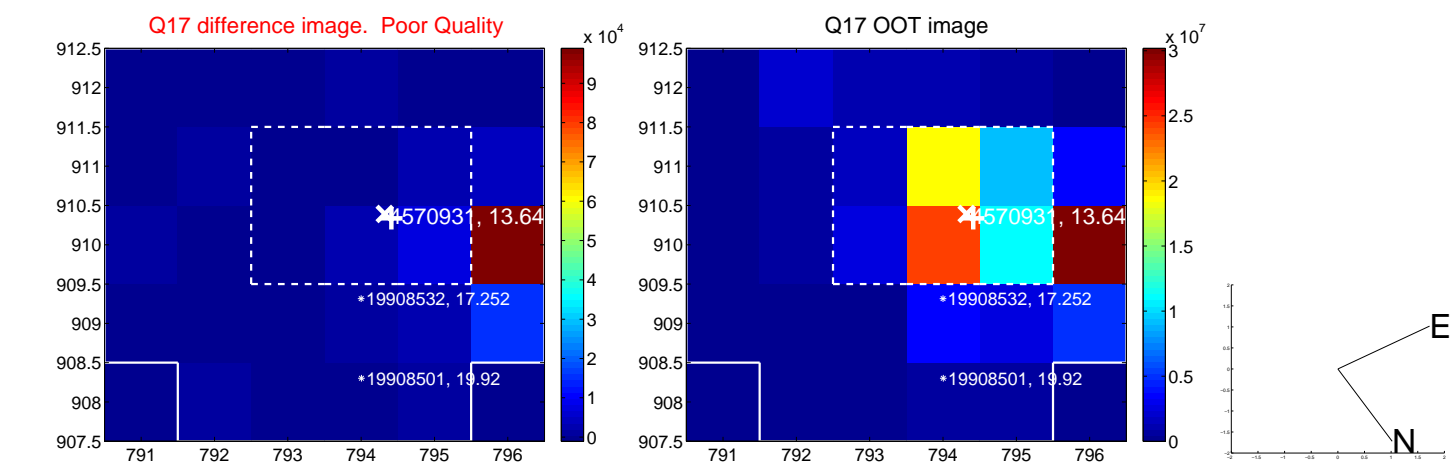
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



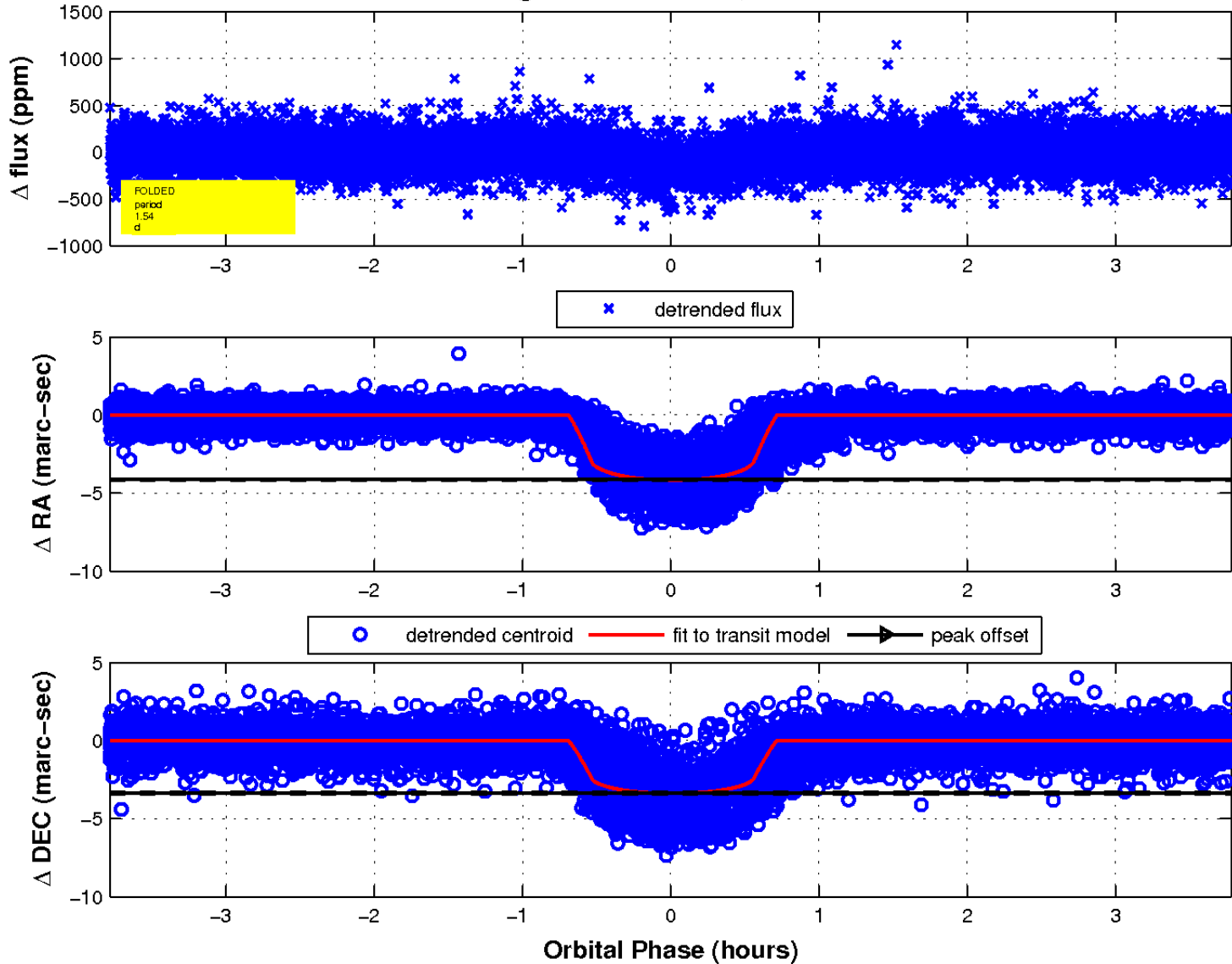
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

