

KIC 003329643

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})
003329643-01	OBS	6322.01	1.015066	131.541229	70.7	6.457	13.2	17.0	1.12	5910	1.11	3634.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003329643-01	OBS	FP	0.00	1	0	1	1	LPP_DV—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 003329643-01

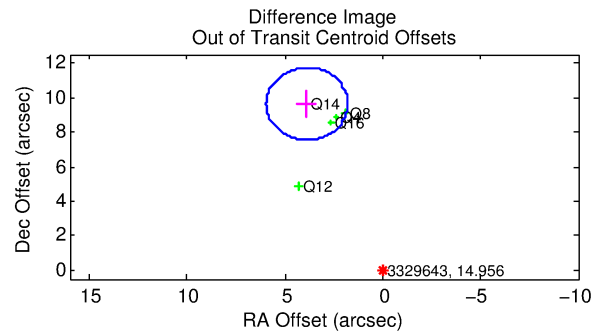
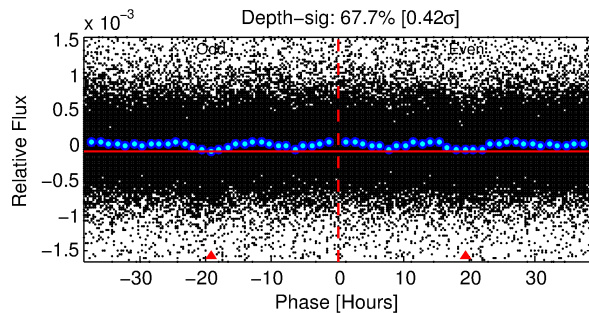
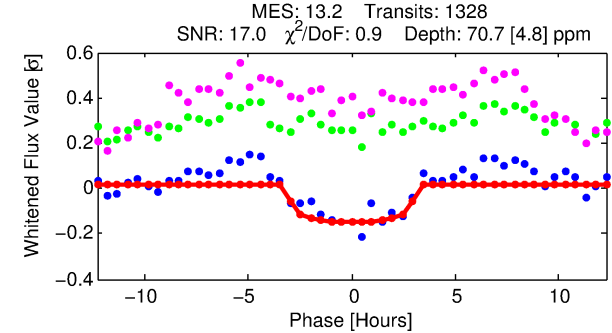
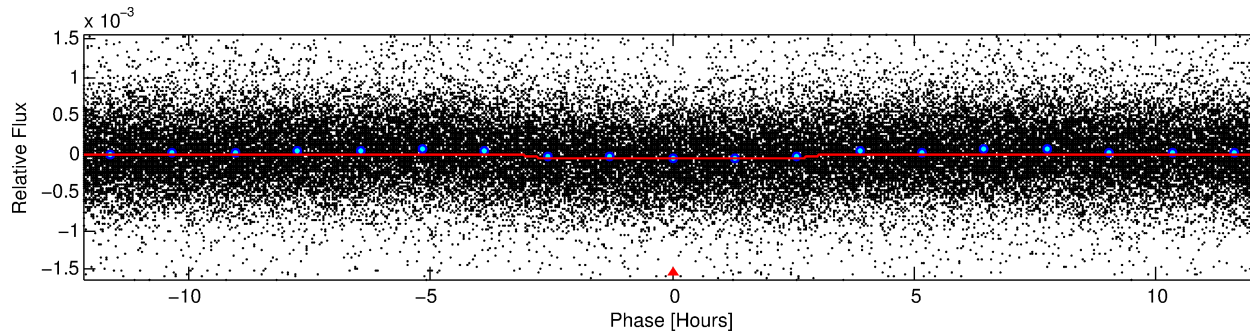
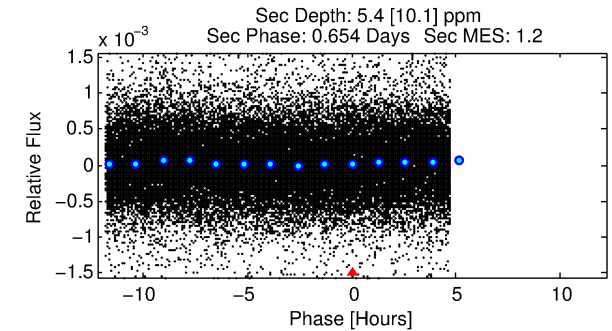
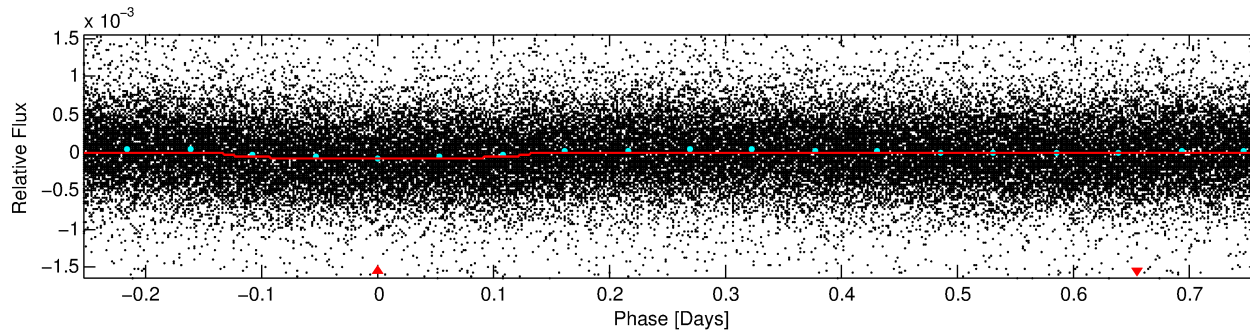
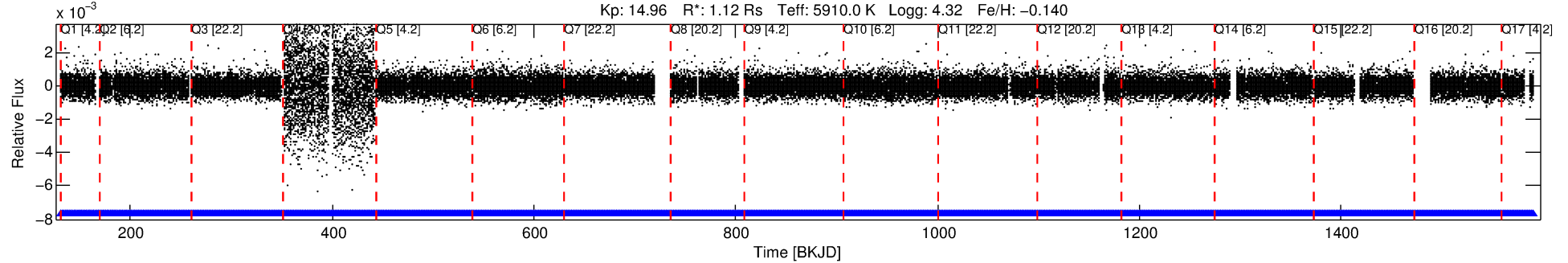
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
003329643-01	3329643	003431321-pri	3431321	1:1	20.9	4	-2	11.20	14.96	129.58	Direct-PRF	0	1.55	1.96

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: 3329643 Candidate: 1 of 1 Period: 1.015 d
KOI: K06322.01 Corr: 0.900

Kp: 14.96 R*: 1.12 Rs Teff: 5910.0 K Logg: 4.32 Fe/H: -0.140



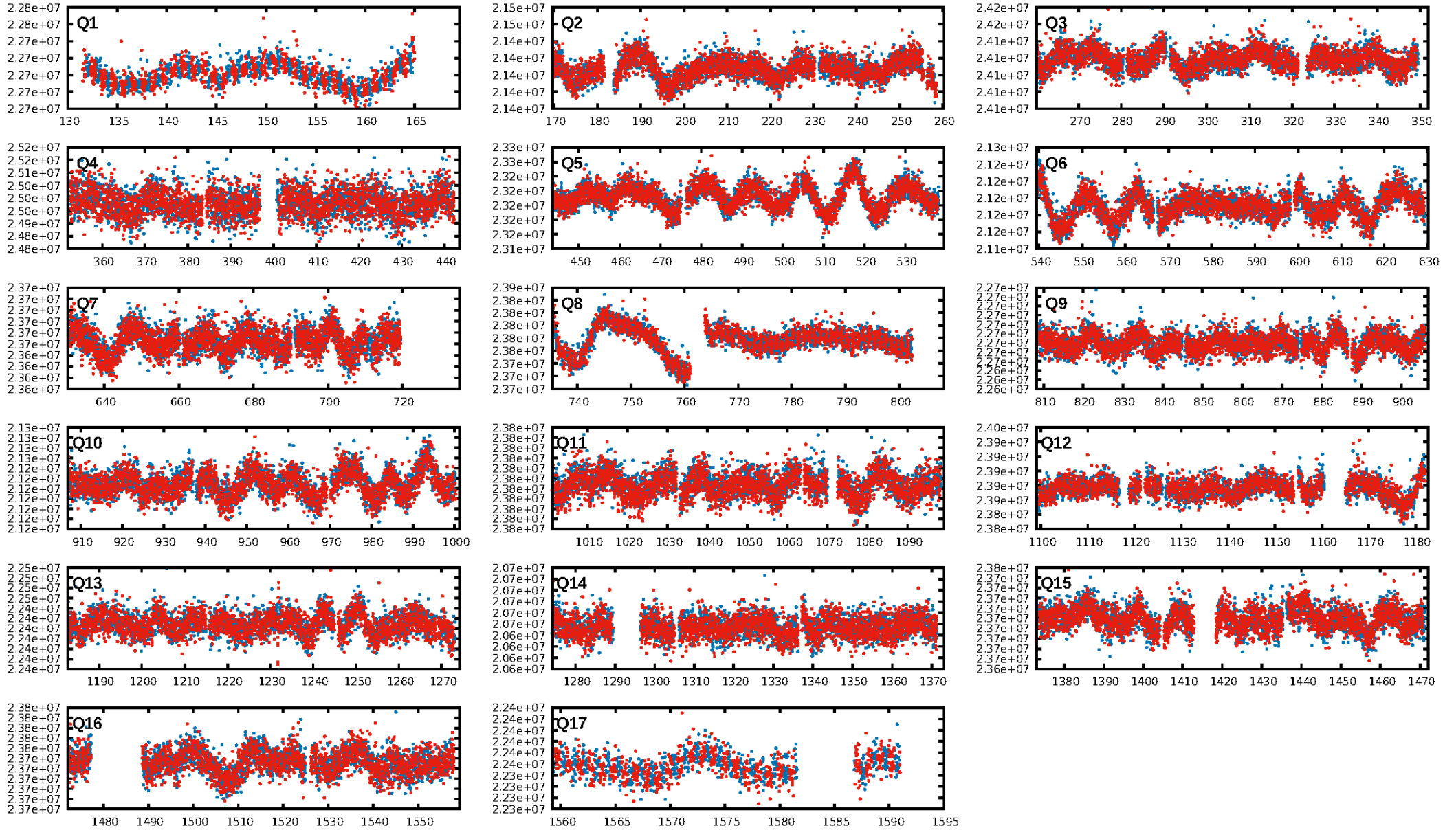
DV Fit Results:

Period = 1.01507 [0.00001] d
Epoch = 131.5412 [0.0039] BKJD
Rp/R* = 0.0091 [0.0022]
a/R* = 1.09 [0.22]
b = 0.90 [0.27]
Seff = 3634.37 [1358.28]
Teq = 1980 [185] K
Rp = 1.11 [0.42] Re
a = 0.0195 [0.0047] AU
Ag = 0.91 [1.79] [-0.05σ]
Teffp = 2986 [1454] K [0.69σ]

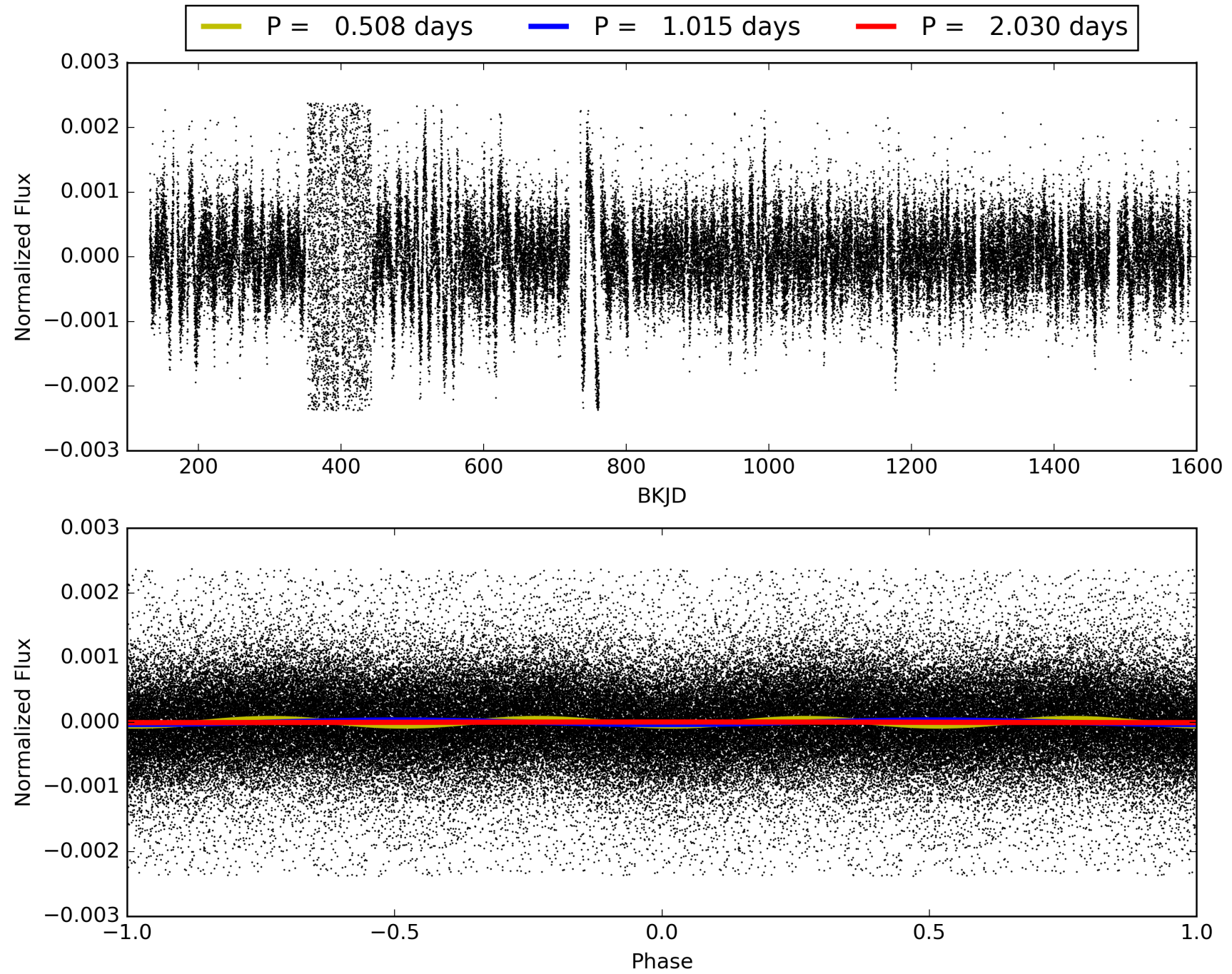
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.94e-21
RollingBand-fgt: 1.00 [1268/1268]
GhostDiagnostic-chr: -0.6705
Centroid-sig: 0.0%
Centroid-so: 6.127 arcsec [9.20σ]
OotOffset-rm: 10.386 arcsec [14.92σ]
KicOffset-rm: 10.485 arcsec [13.57σ]
OotOffset-st: 1/0/4/0 [5]
KicOffset-st: 1/0/4/0 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003329643-01, PDC Light Curves

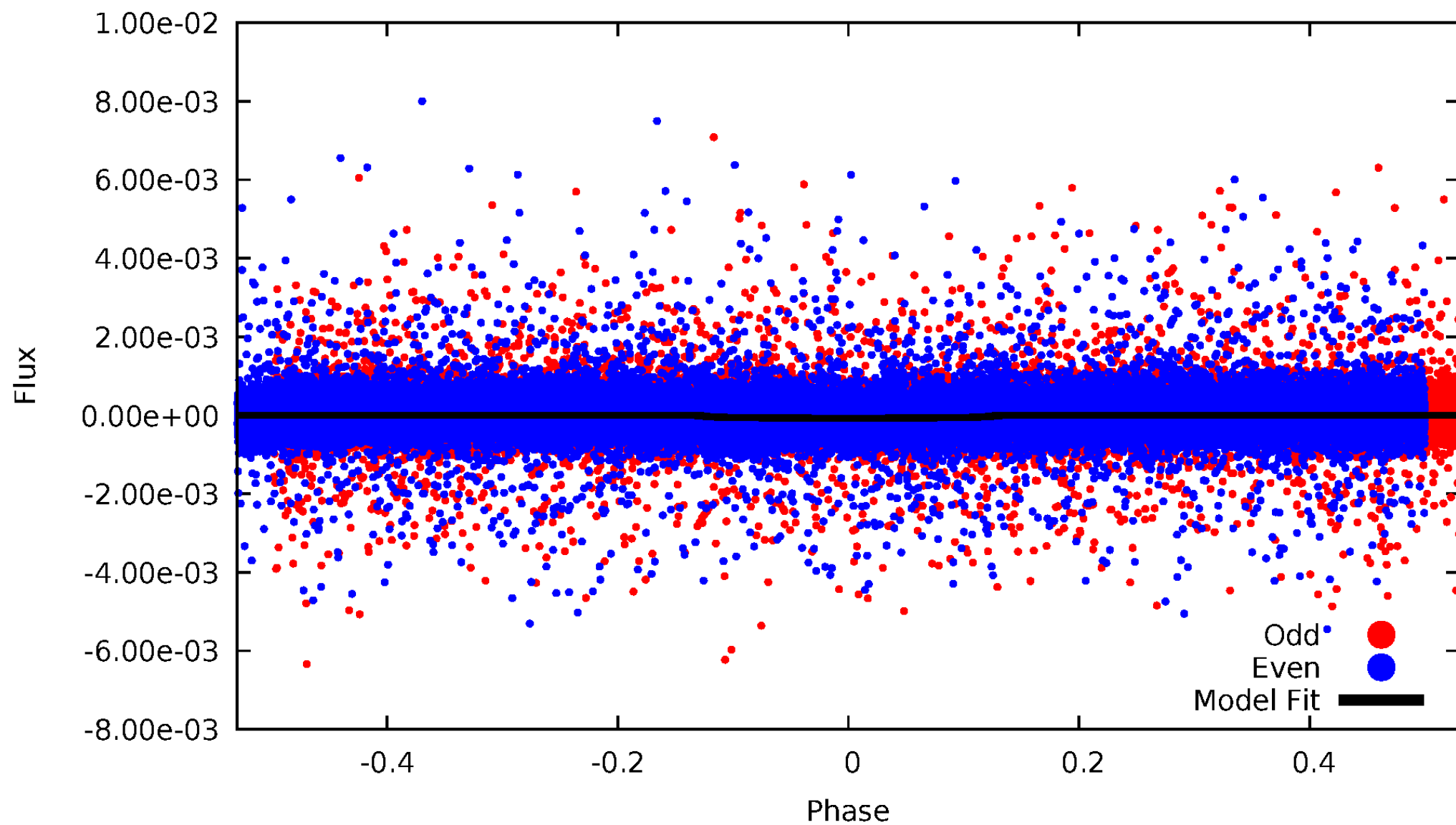


TCE 003329643-01



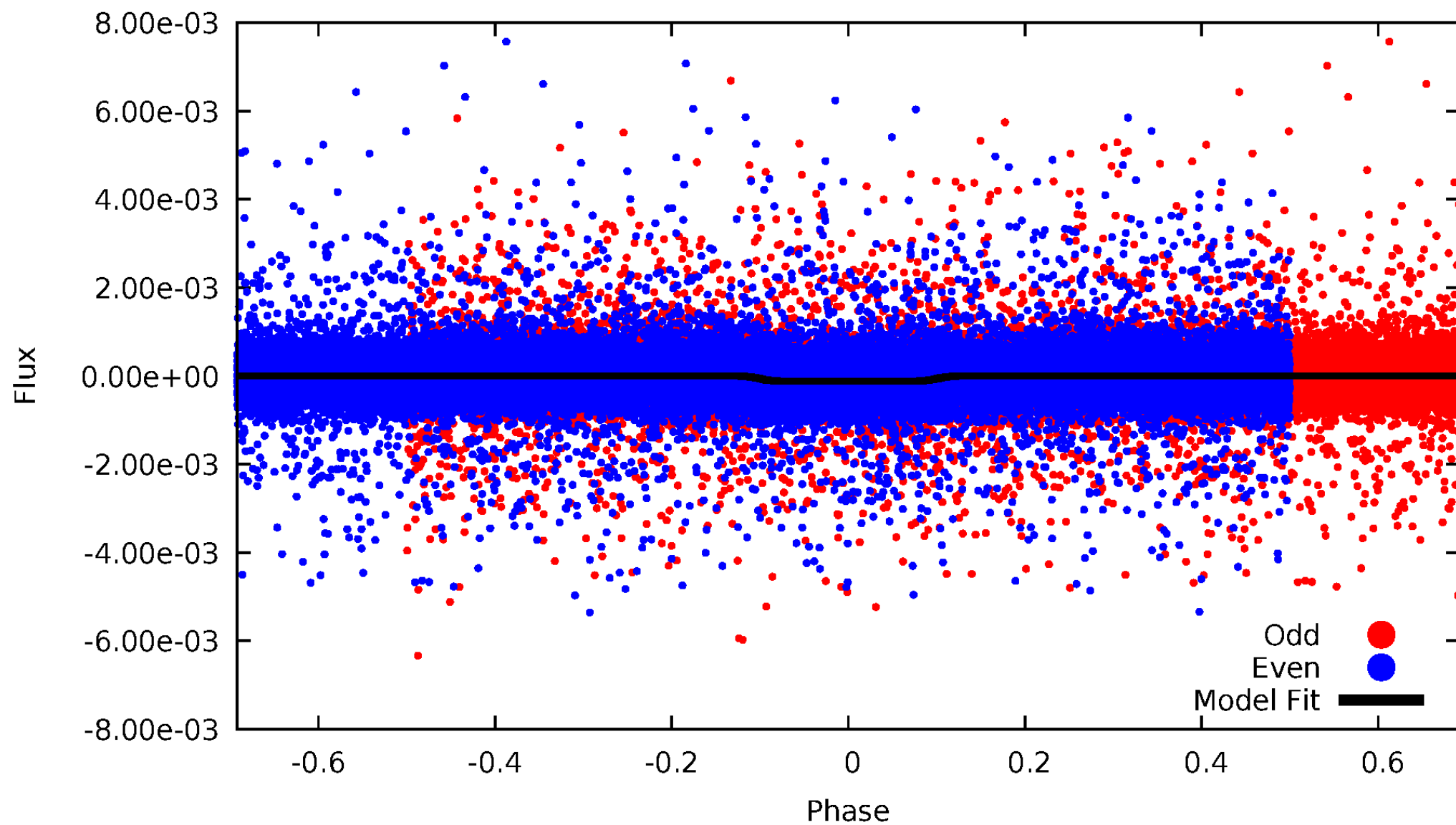
DV Odd/Even

TCE 003329643-01



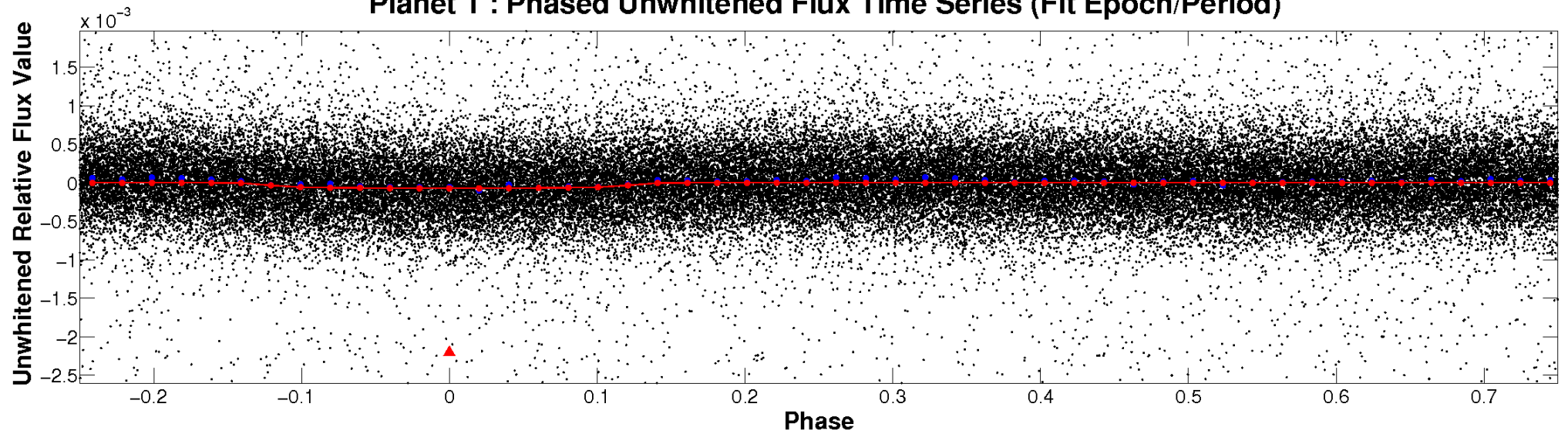
ALT Odd/Even

TCE 003329643-01

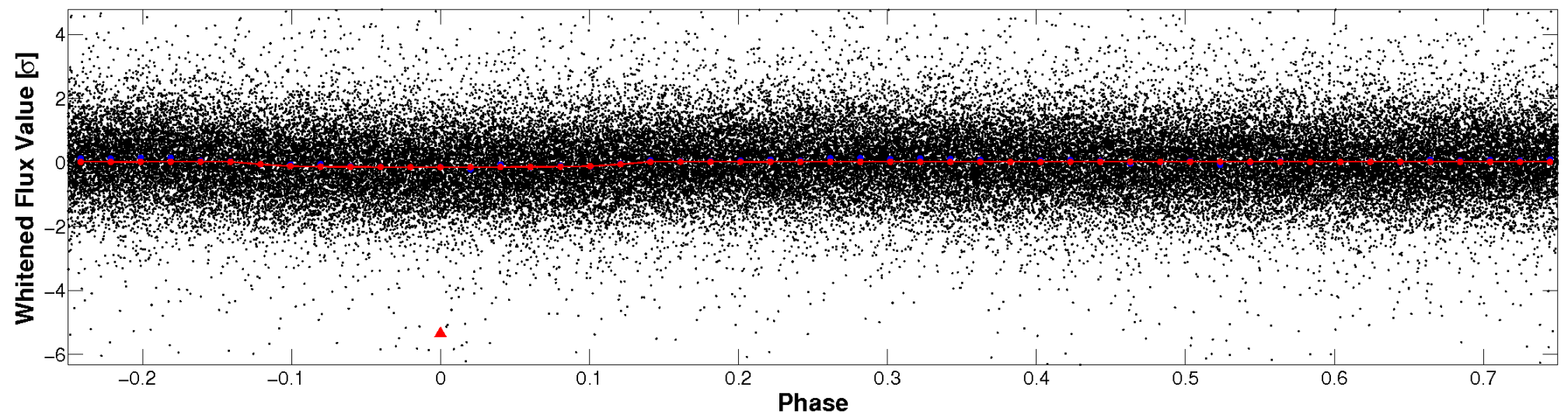


Non-Whitened Vs. Whitened Light Curve

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

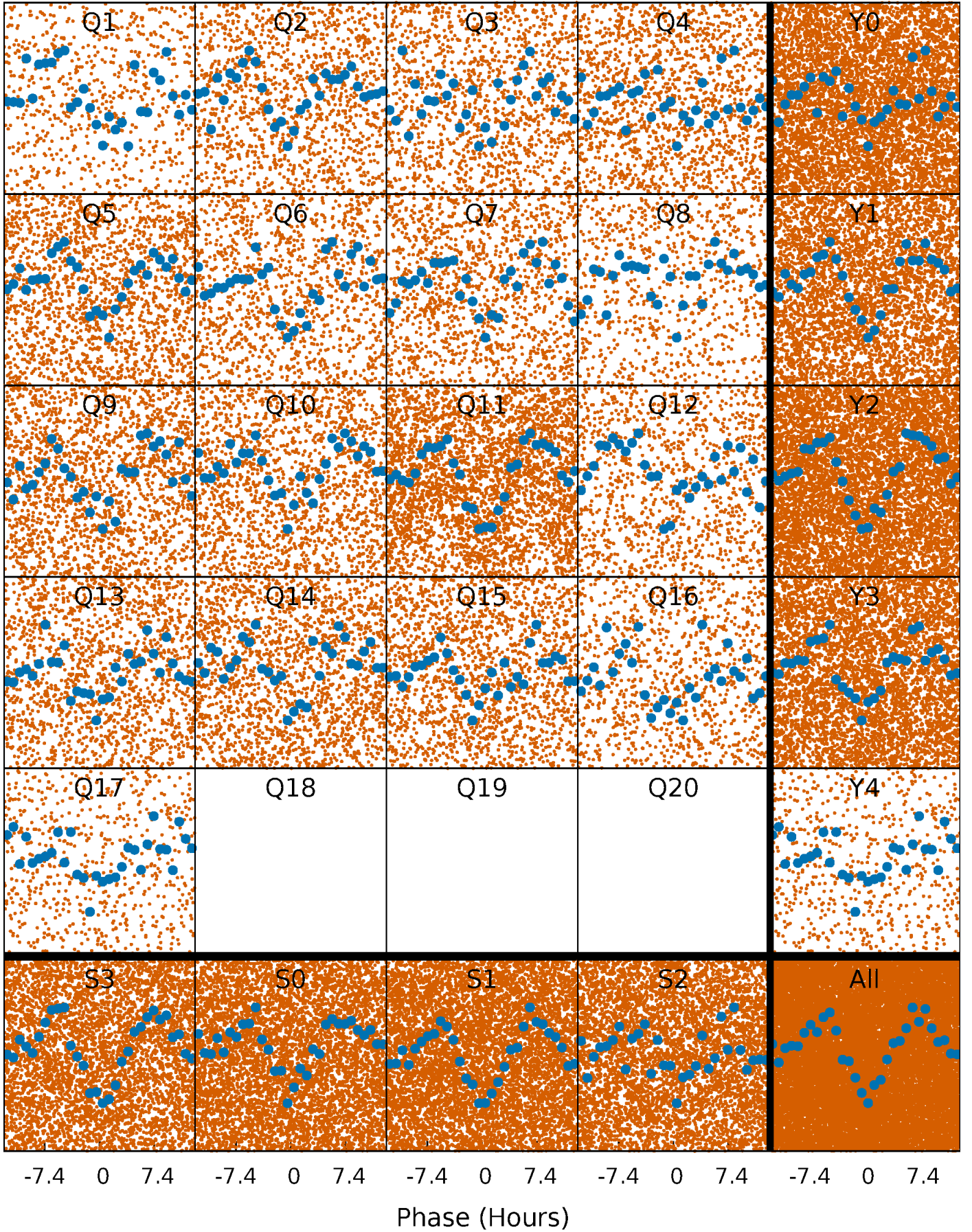


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



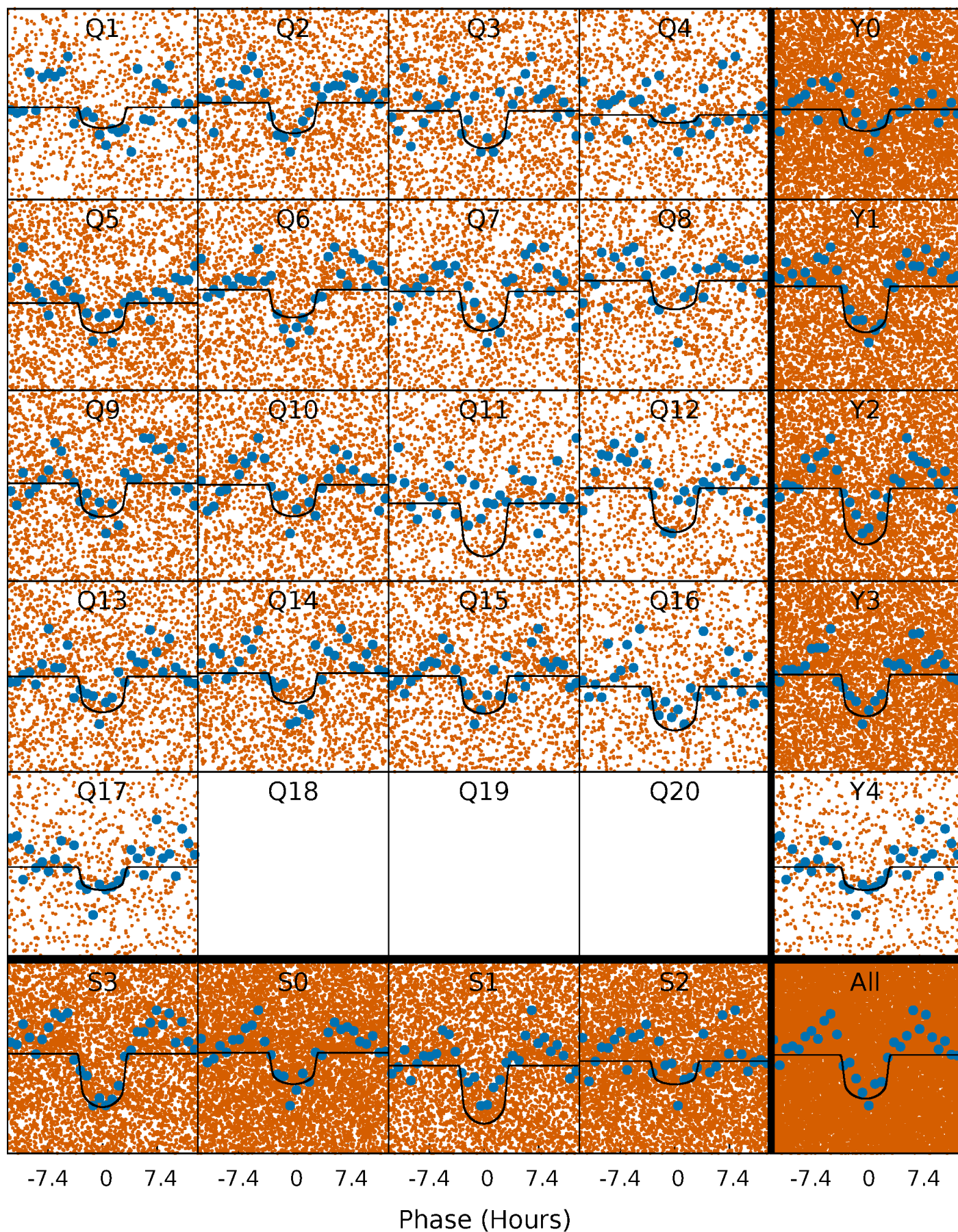
PDC Quarter-Phased Transit Curves

TCE 003329643-01 P= 1.015066 Days $T_0=131.541229$ (BKJD)



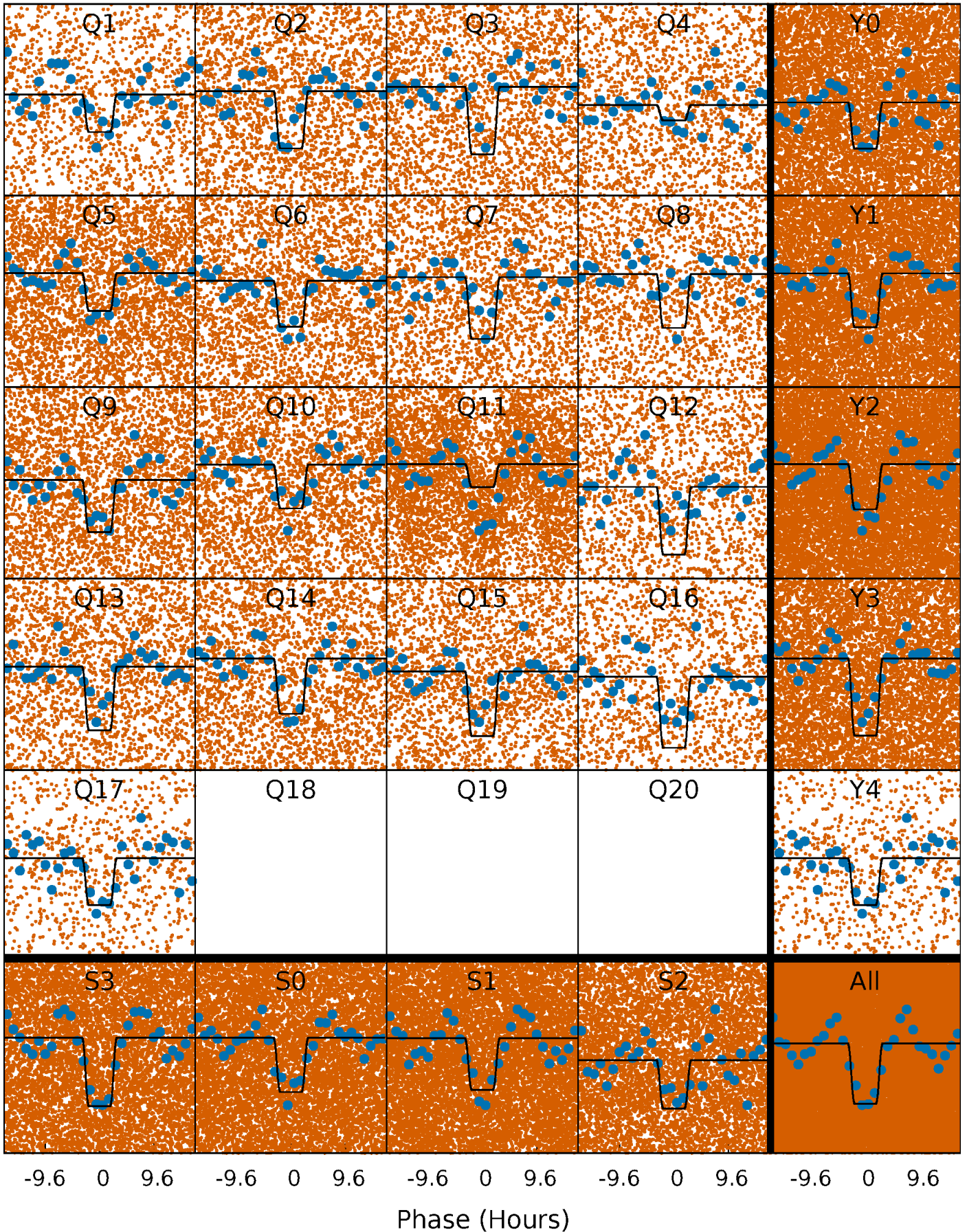
DV Quarter-Phased Transit Curves

TCE 003329643-01 P= 1.015066 Days $T_0=131.541229$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

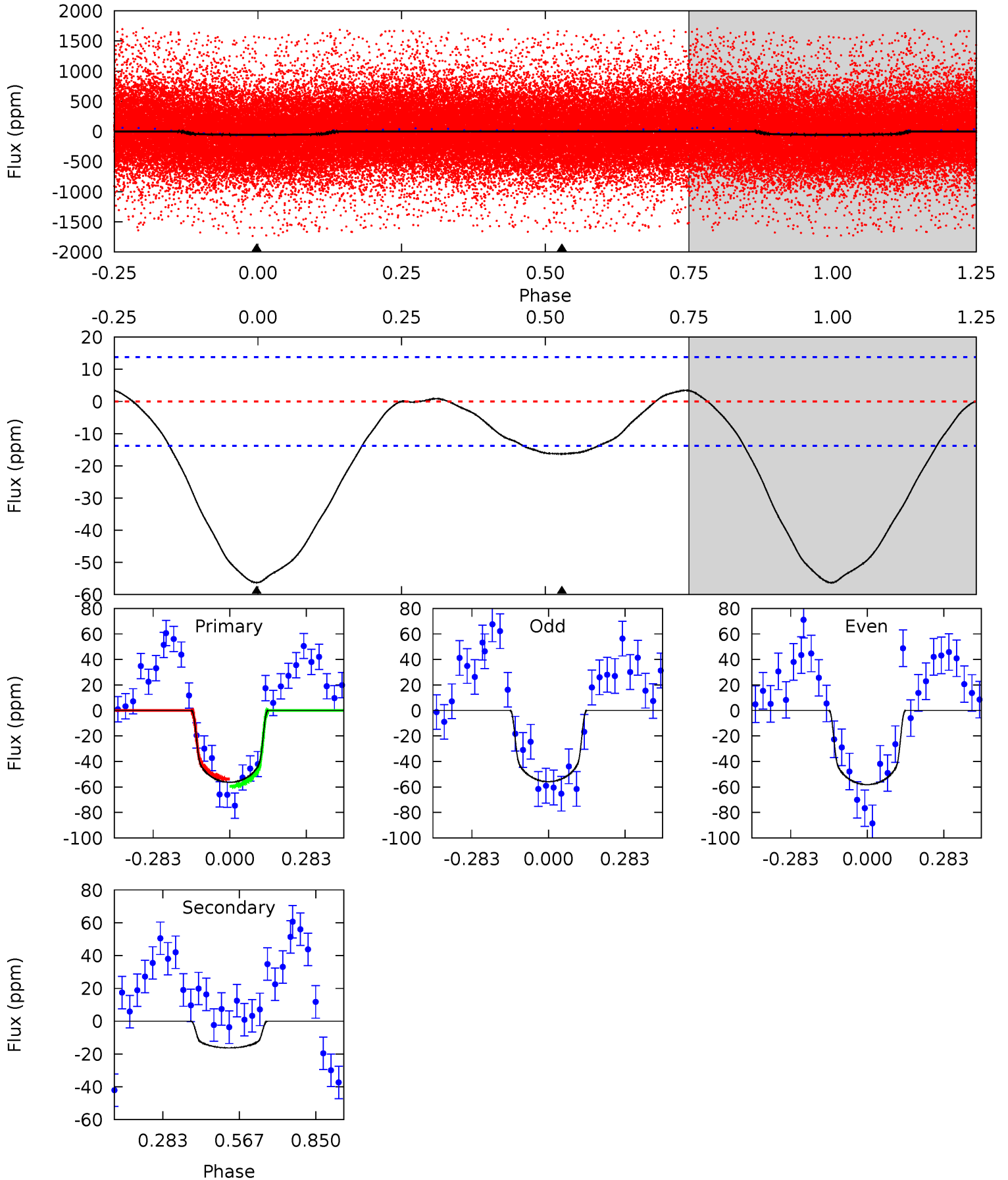
TCE 003329643-01 P= 1.015039 Days $T_0=131.565858$ (BKJD)



DV Model-Shift Uniqueness Test

003329643-01, P = 1.015066 Days, E = 130.526163 Days

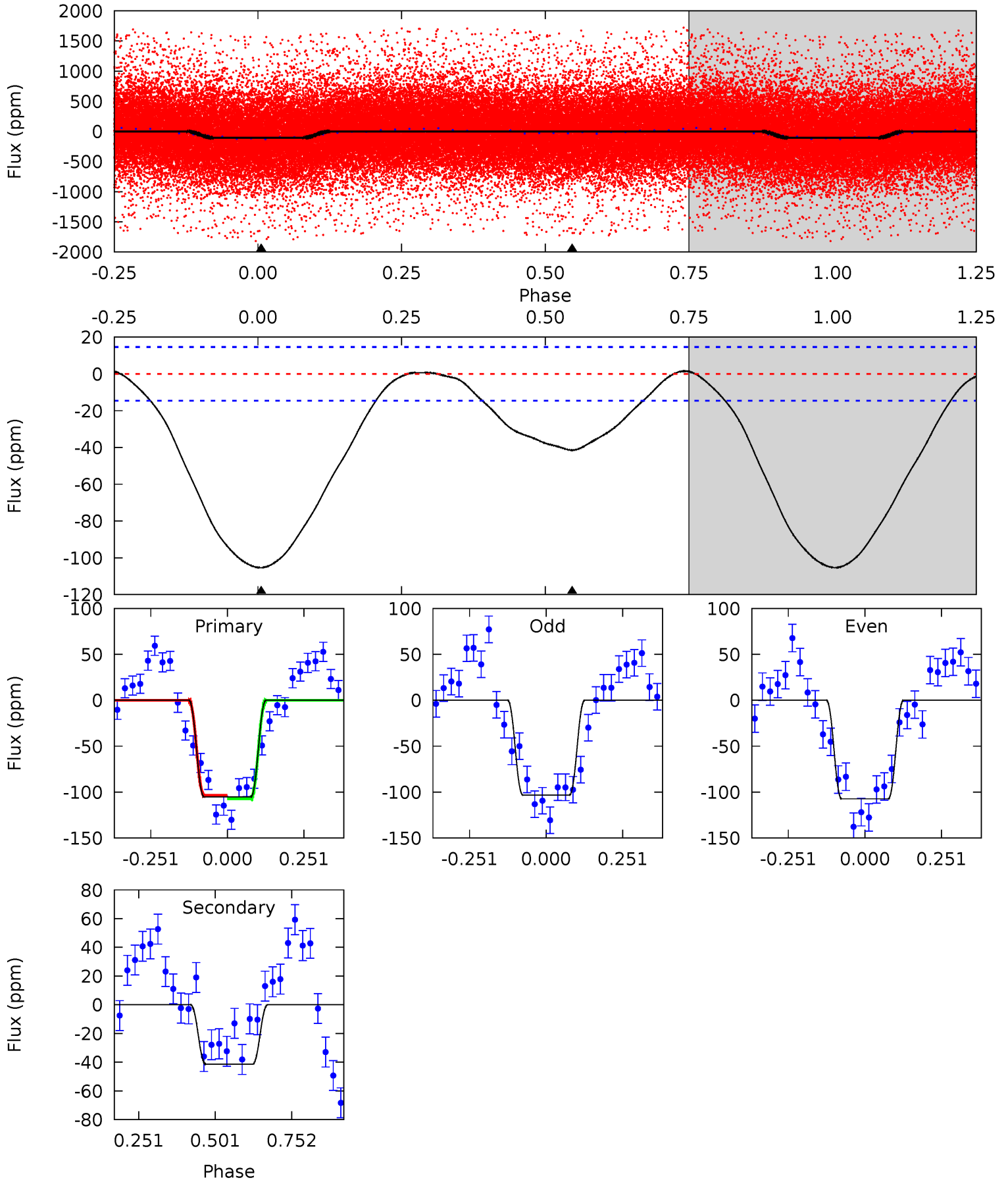
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	5.13	0	0	4.34	1.07	0.46	17.7	17.7	5.13	5.13	0.37	1.04	0.06	0.91



Alt Model-Shift Uniqueness Test

003329643-01, P = 1.015039 Days, E = 130.550819 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.5	12.4	0	0	4.37	1.15	0.51	31.5	31.5	12.4	12.4	0.63	1.06	0.01	0.57



Stellar Parameters For KIC 003329643

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5910^{+160}_{-178}	$4.318^{+0.175}_{-0.193}$	$-0.140^{+0.300}_{-0.300}$	$1.124^{+0.326}_{-0.217}$	$0.959^{+0.135}_{-0.110}$	$0.952^{+0.724}_{-0.473}$
	+3%/-3%	+4%/-4%	+214%/-214%	+29%/-19%	+14%/-11%	+76%/-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 003329643-01 / KOI 6322.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 3	$1.13^{+0.33}_{-0.31}$	2764^{+234}_{-175}	4103^{+569}_{-419}	$2.646^{+2.634}_{-1.116}$
Alt.	-41 ± 3	$1.32^{+0.37}_{-0.30}$	2759^{+237}_{-180}	4660^{+517}_{-384}	$5.037^{+3.465}_{-1.923}$

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

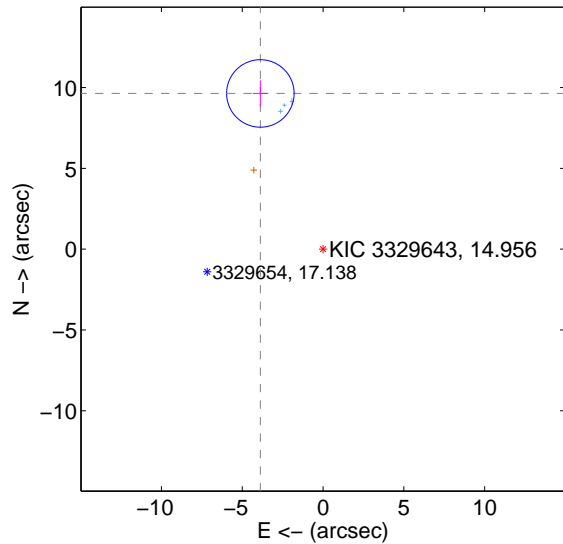
Supplemental centroid analysis for 003329643-01. Kepler magnitude: 14.96. Transit SNR 16.97

There are 4 quarters with good PRF difference image offsets

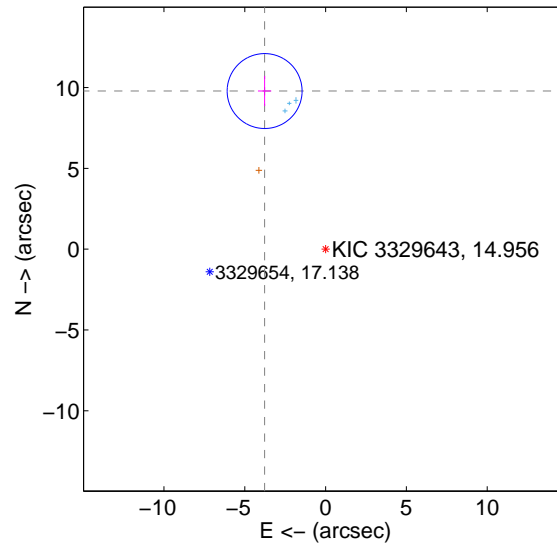
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.386 ± 0.696	14.92	3.878 ± 0.468	9.635 ± 0.802
PRF-fit source offset from KIC position	10.485 ± 0.773	13.57	3.772 ± 0.413	9.784 ± 0.935
photometric centroid source offset	6.13 ± 0.67	9.20	5.62 ± 0.62	2.45 ± 0.86

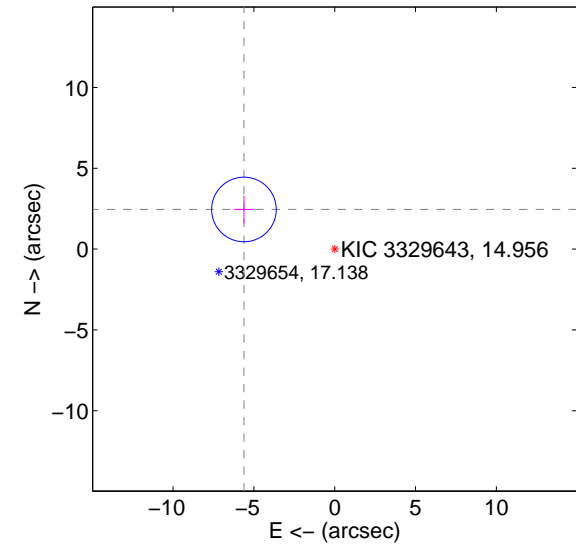
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

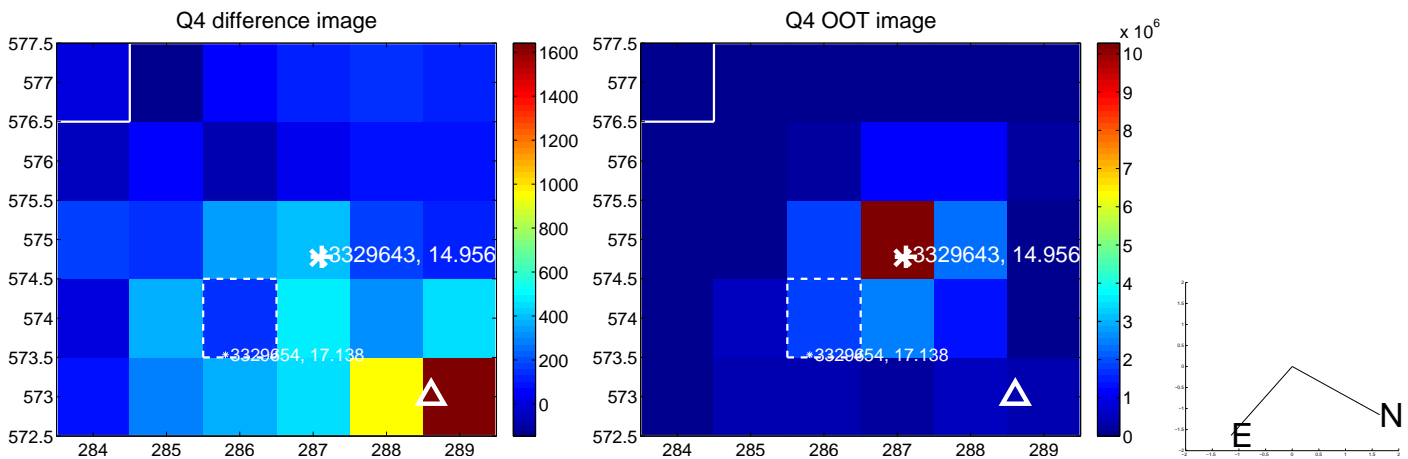
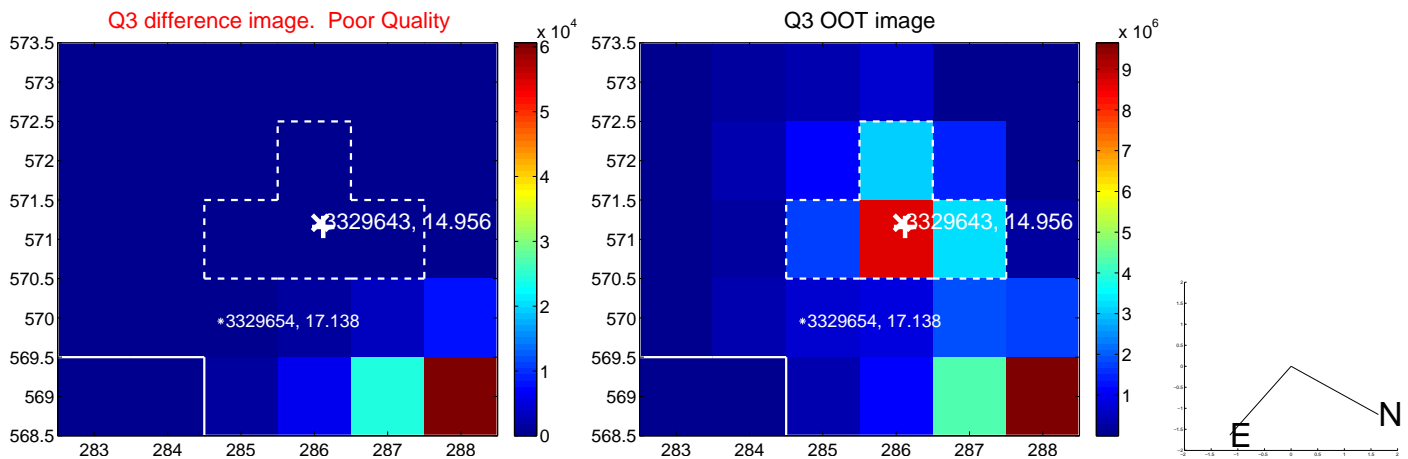
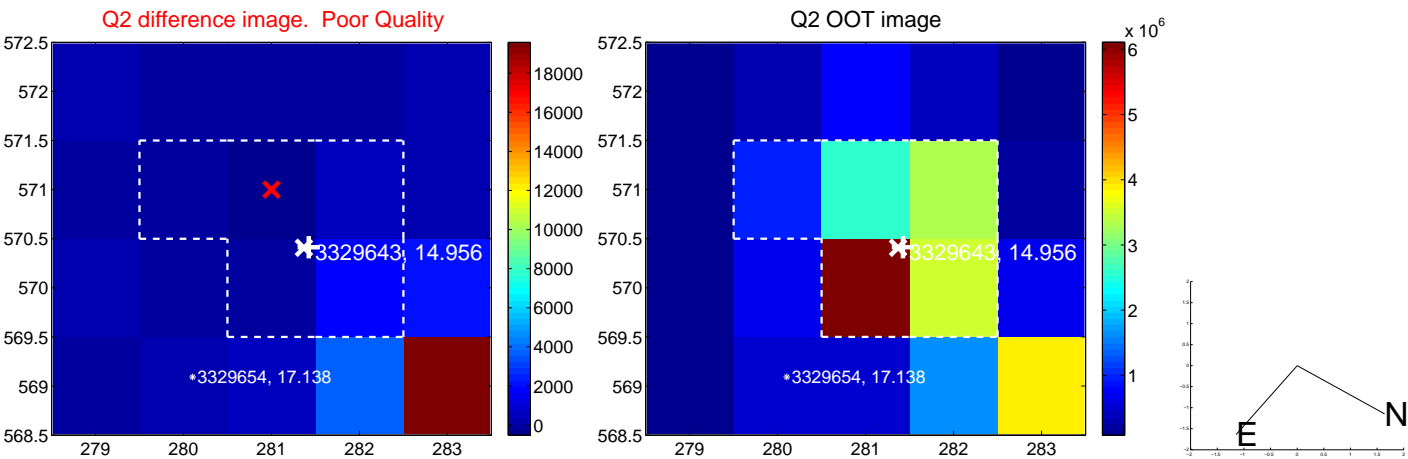
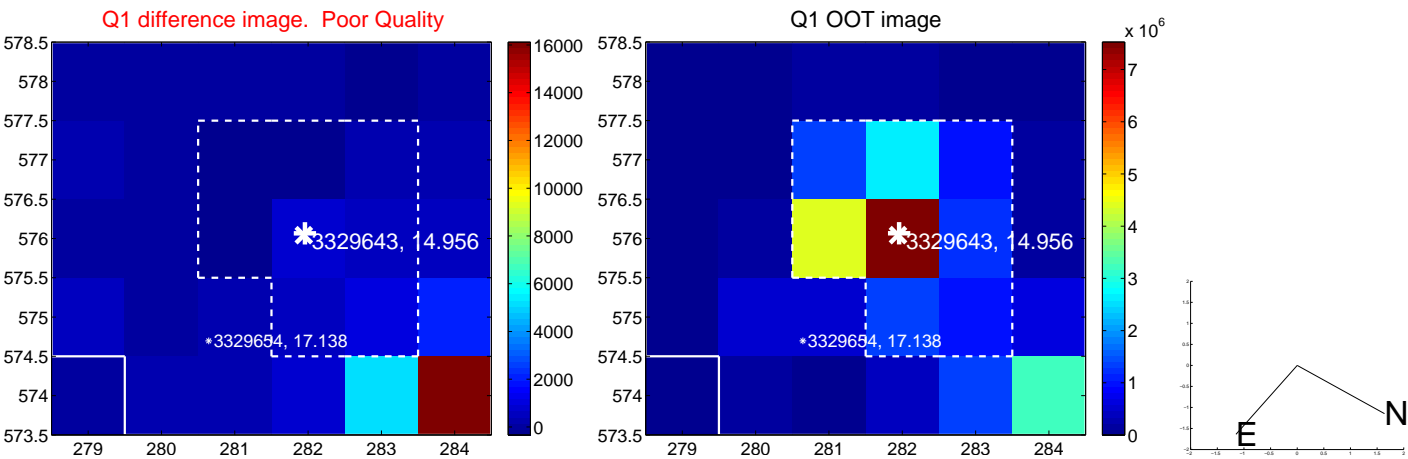


offset from photometric centroids

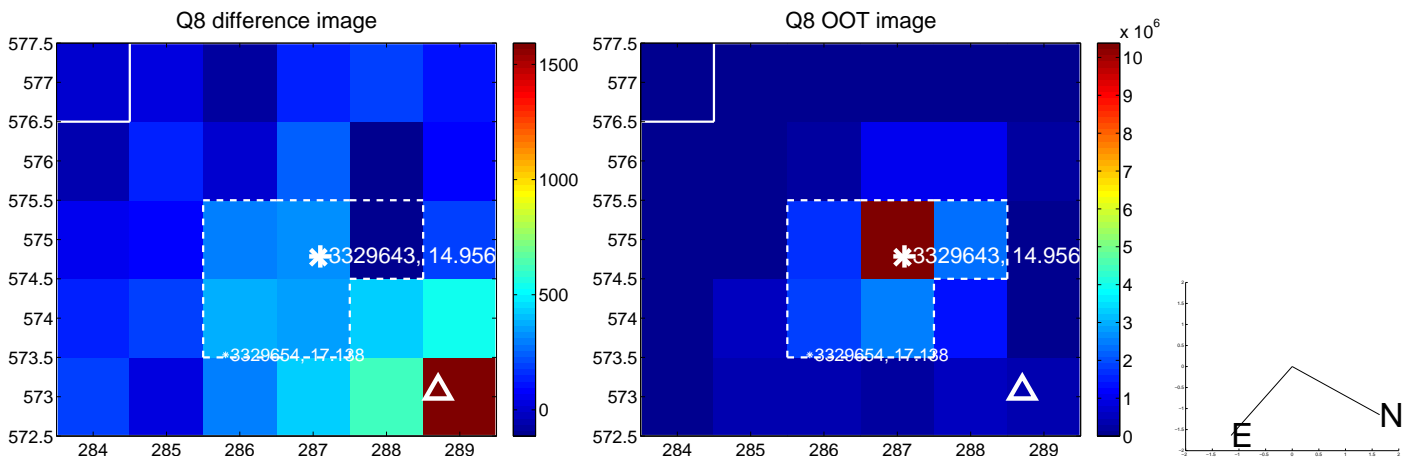
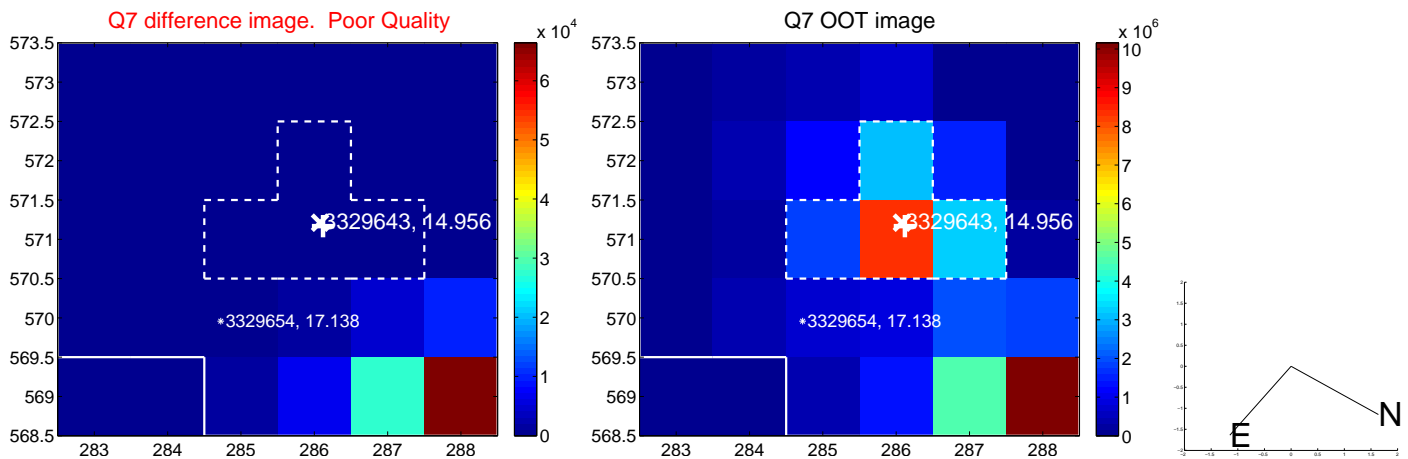
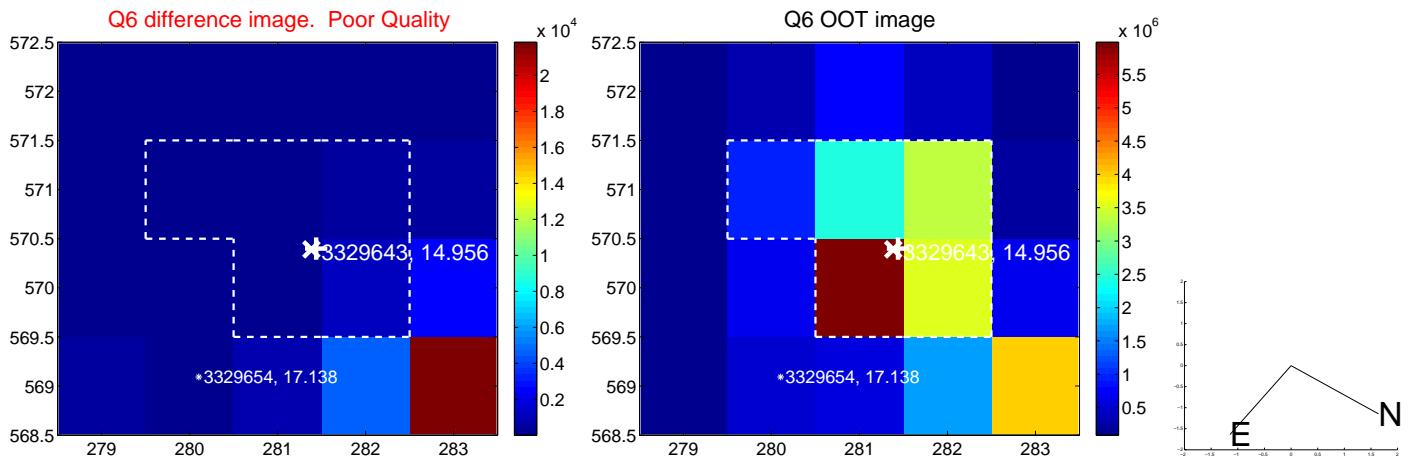
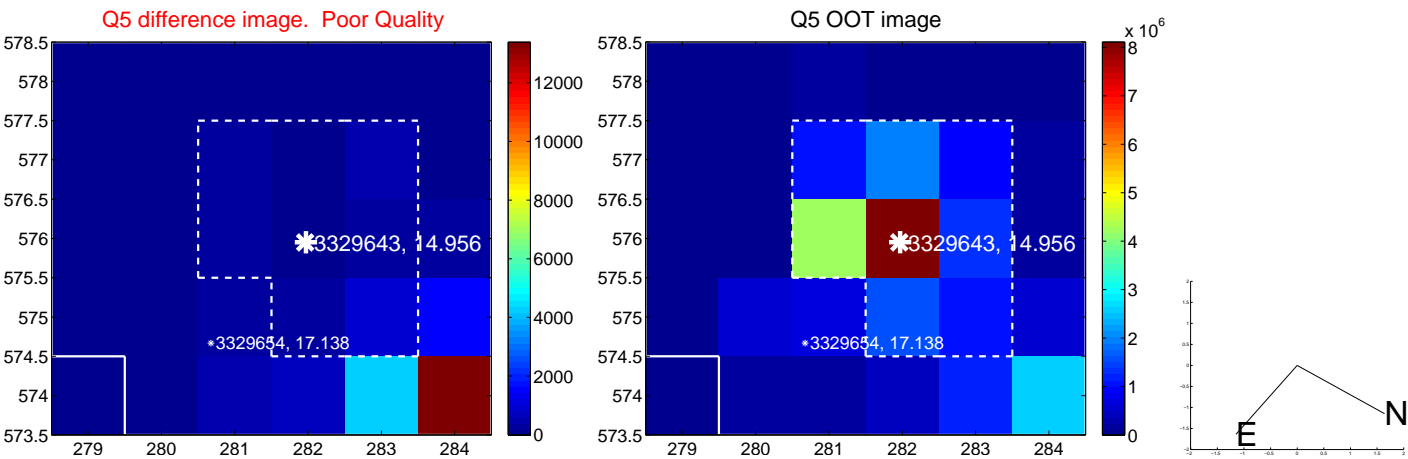


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

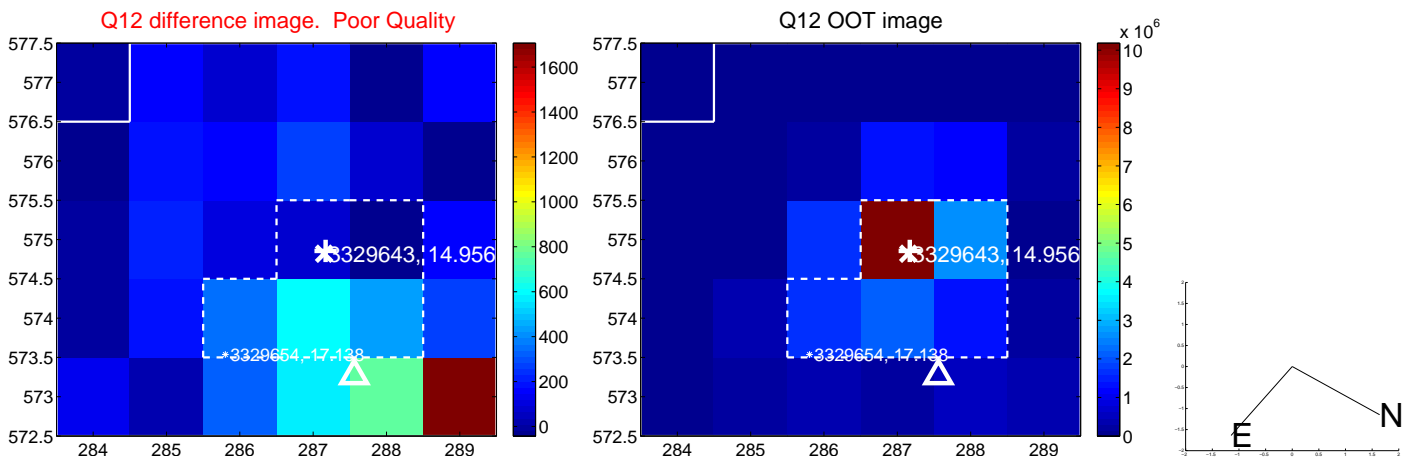
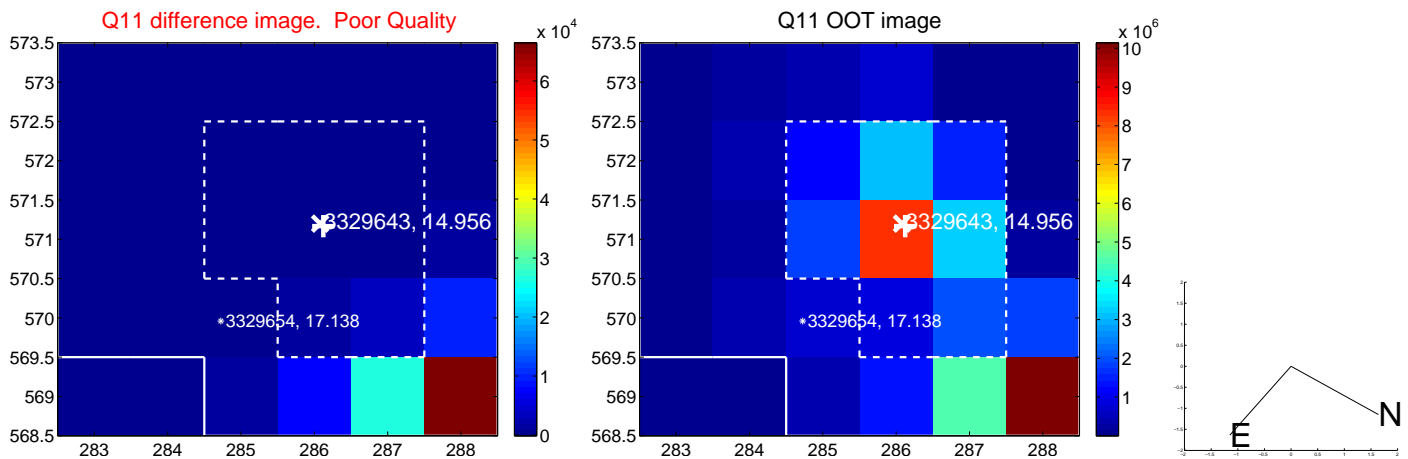
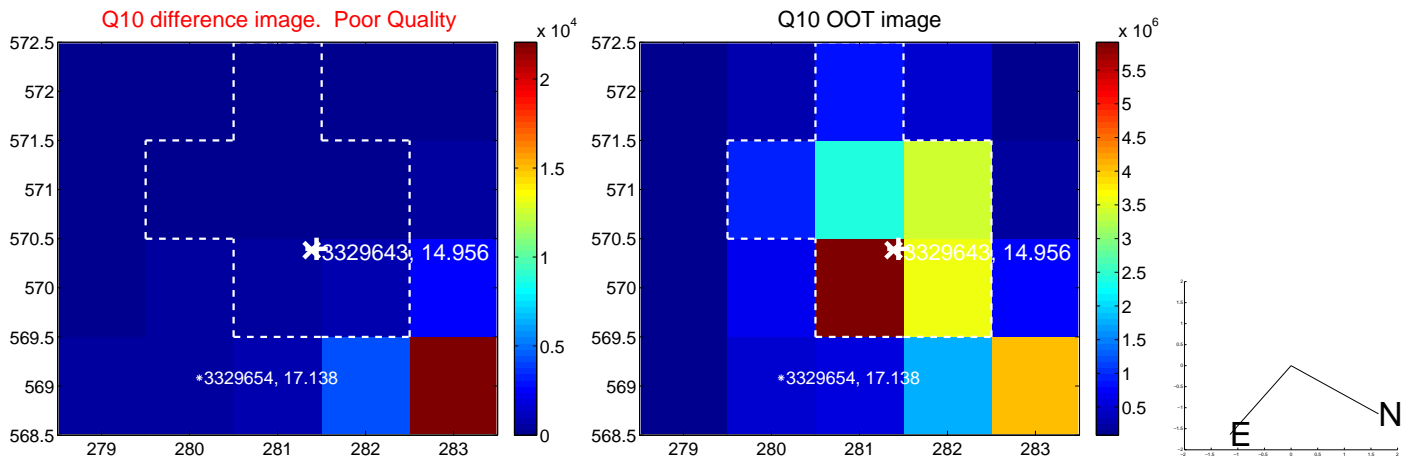
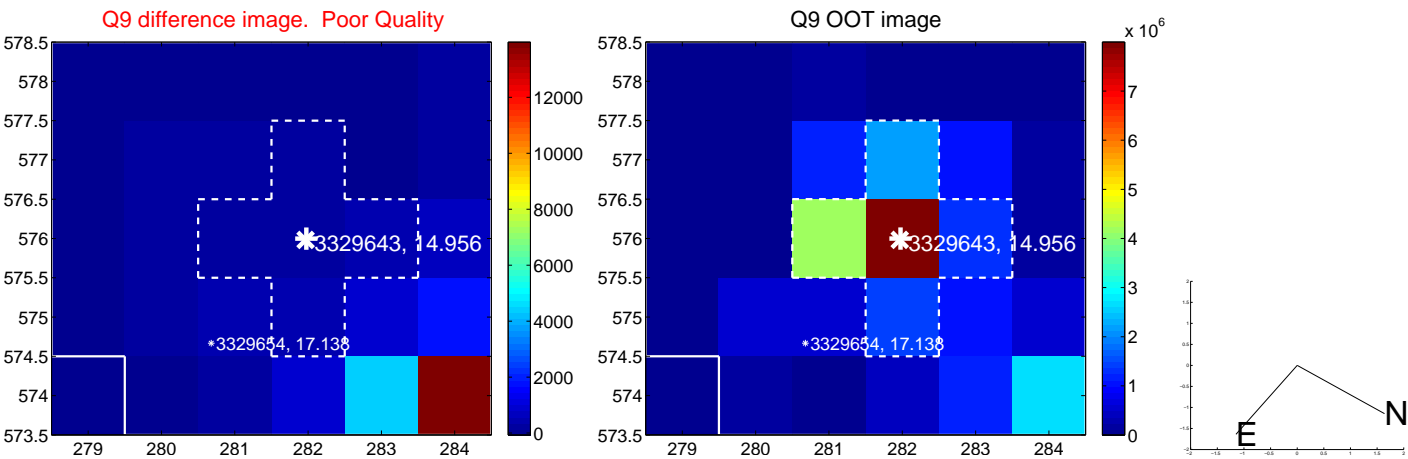
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



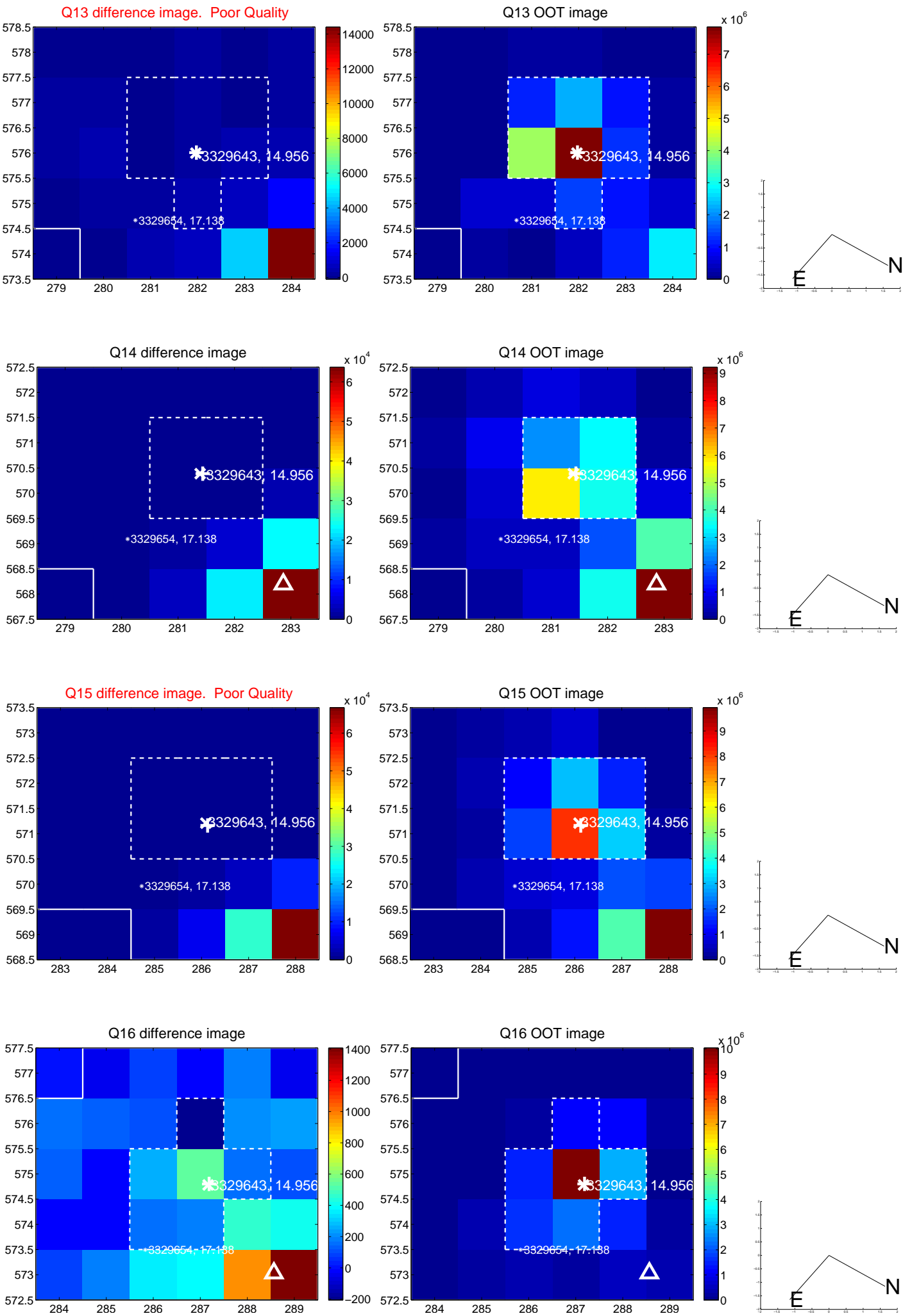
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



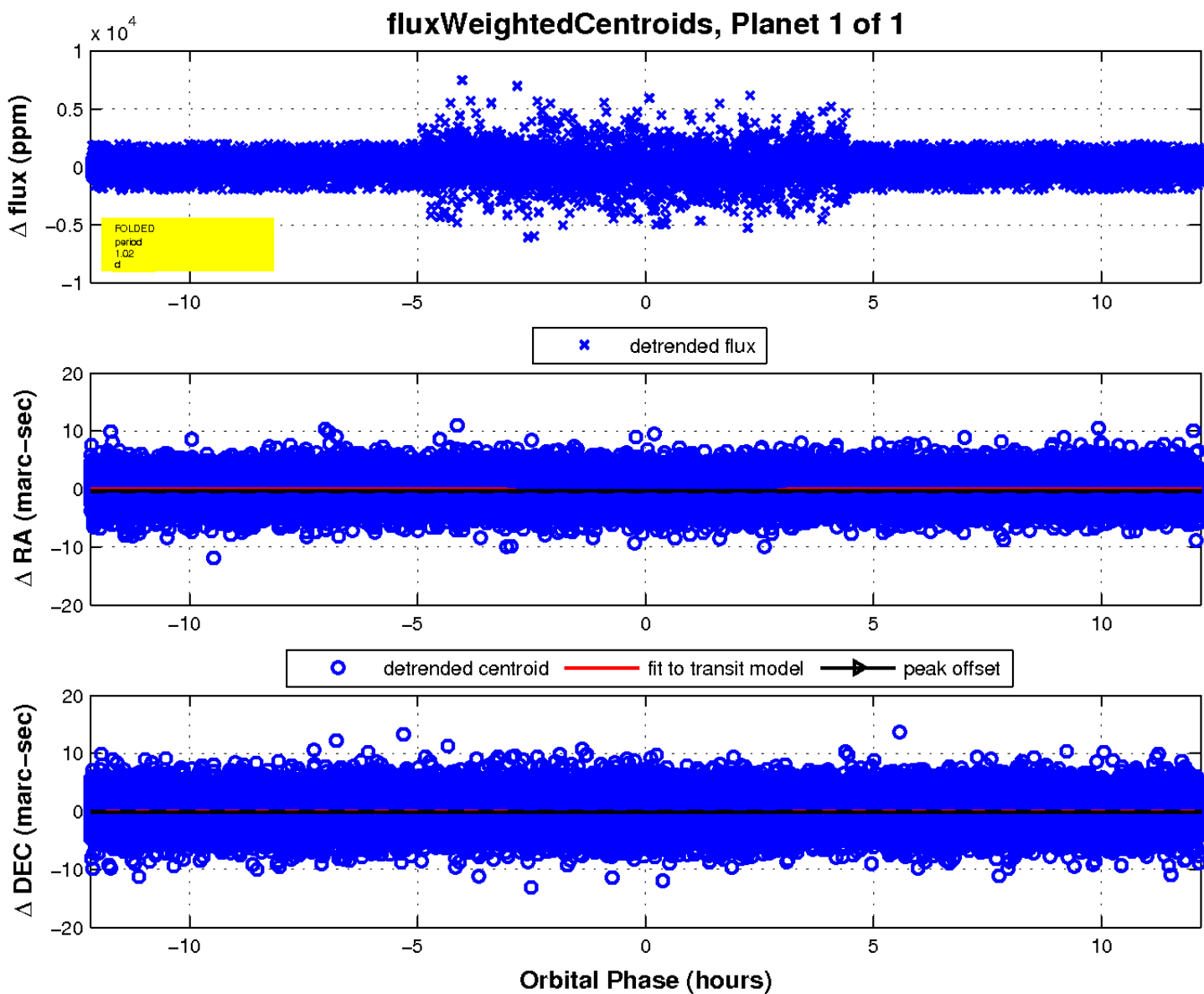
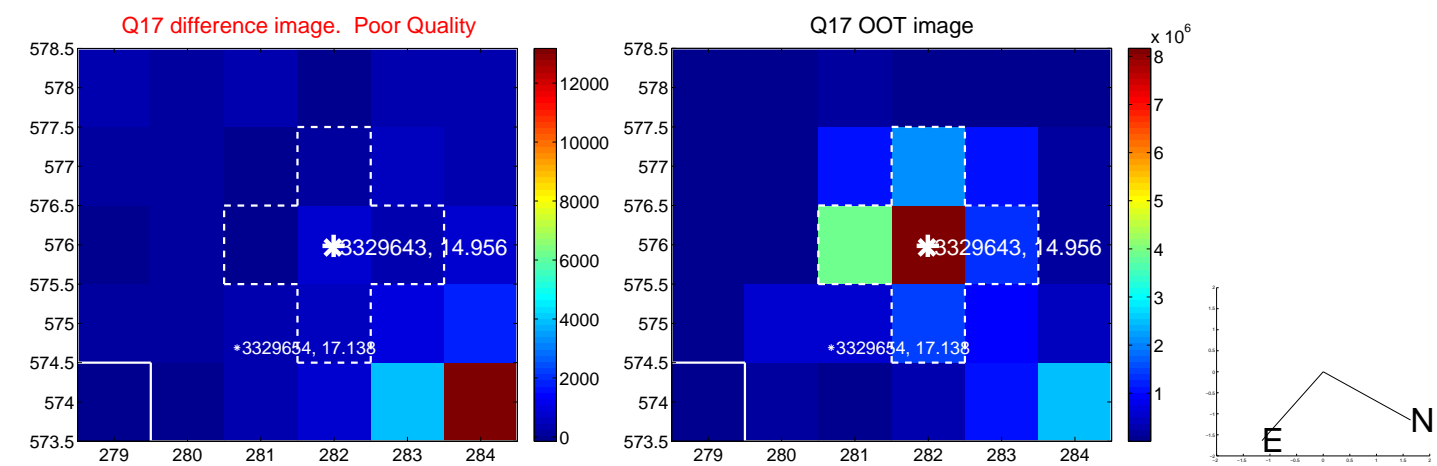
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

