

KIC 009899315

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})
009899315-01	OBS	4181.01	1.332491	132.099955	71.8	5.177	15.6	14.9	0.95	6089	0.94	1940.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009899315-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—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 009899315-01

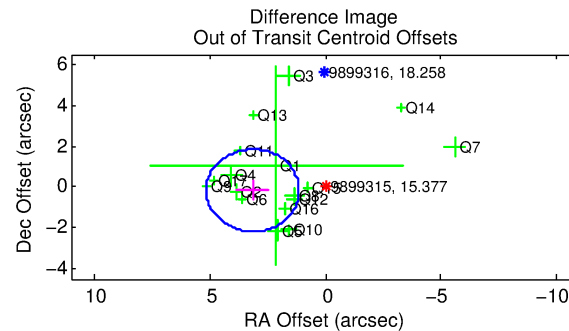
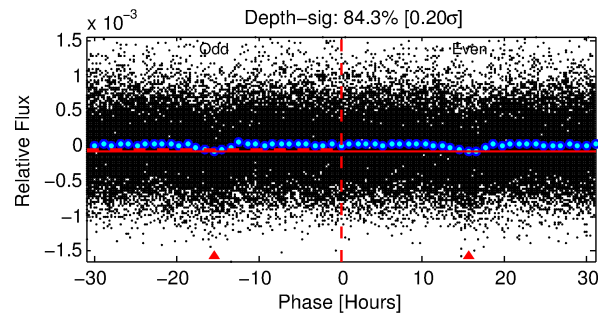
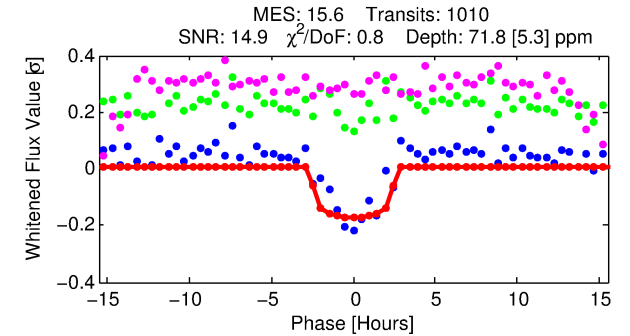
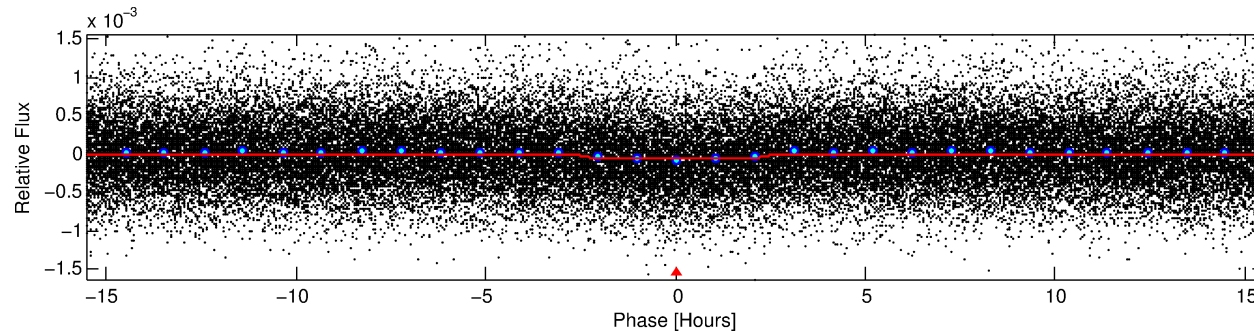
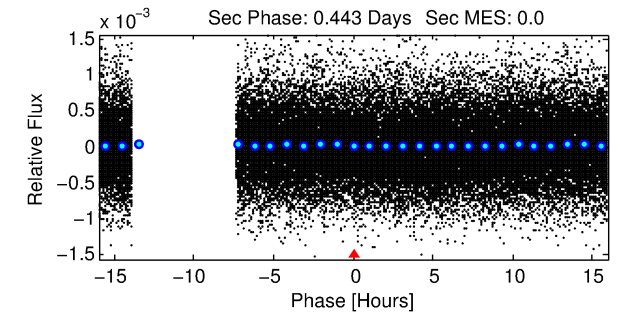
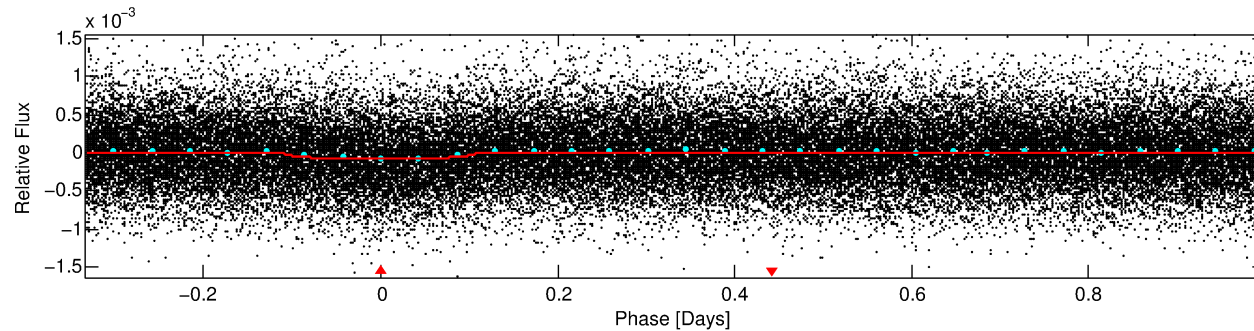
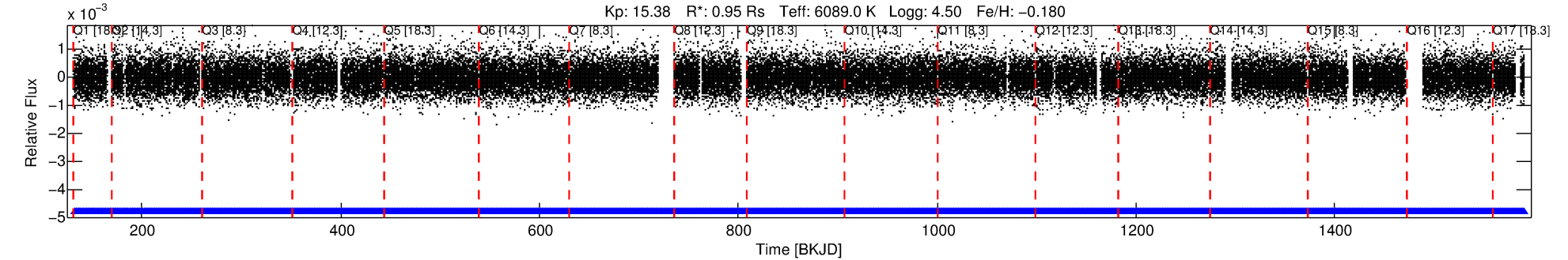
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009899315-01	9899315	BR-Cyg-pri	9899416	1:1	203.7	39	33	10.03	15.38	9289.80	Direct-PRF	0	4.54	3.53

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: 9899315 Candidate: 1 of 1 Period: 1.332 d

KOI: K04181.01 Corr: 0.839



DV Fit Results:

Period = 1.33249 [0.00001] d
Epoch = 132.1000 [0.0041] BKJD
Rp/R* = 0.0091 [0.0032]
a/R* = 1.32 [1.05]
b = 0.89 [0.44]
Seff = 1940.92 [758.60]
Teff = 1692 [165] K
Rp = 0.94 [0.44] Re
a = 0.0239 [0.0061] AU
Ag = N/A
Teffp = N/A

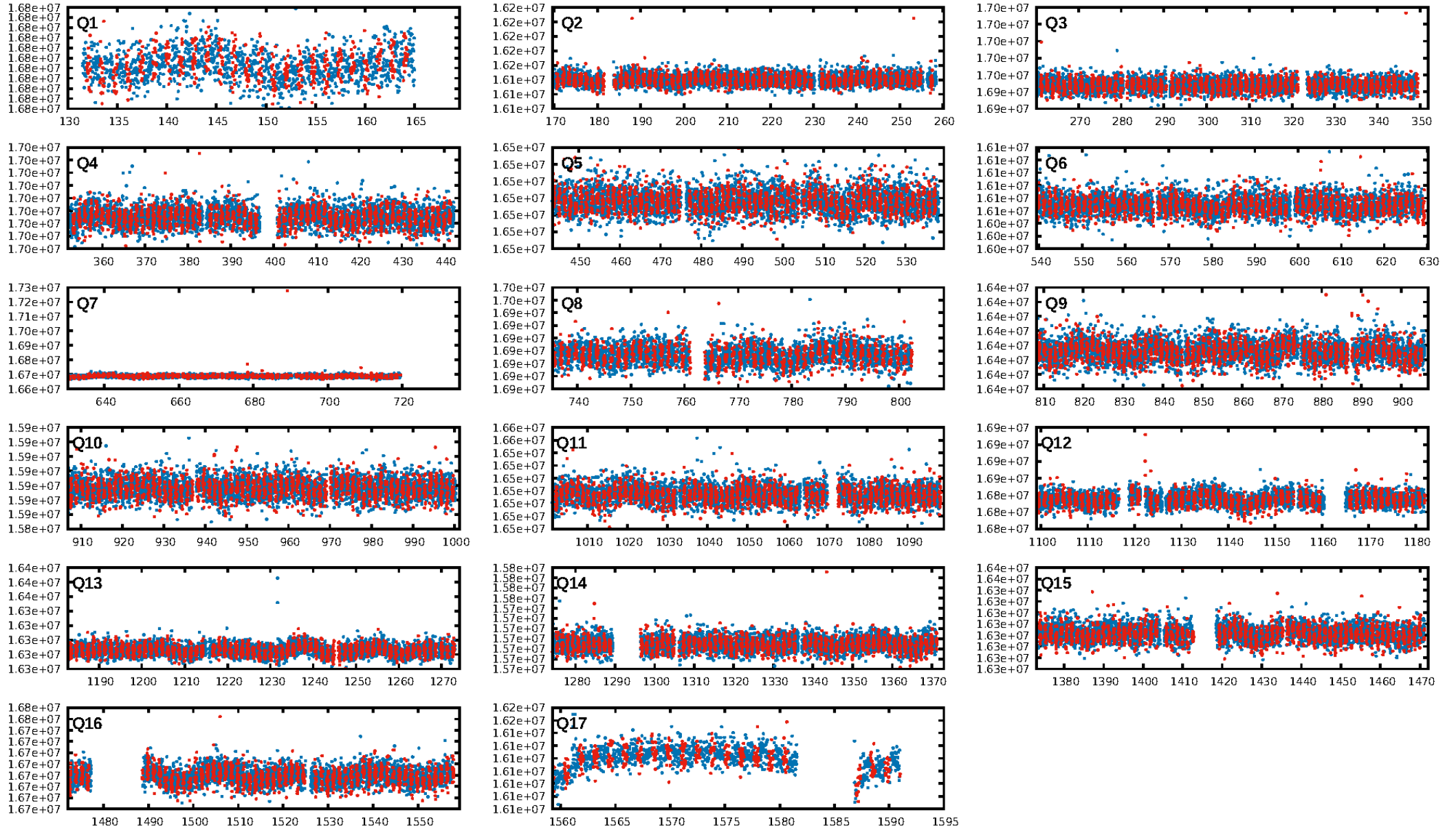
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.73e-54
RollingBand-fgt: 1.00 [965/965]
GhostDiagnostic-chr: -0.03454
Centroid-sig: 0.0%
Centroid-so: 5.215 arcsec [5.56 σ]
OotOffset-rm: 3.154 arcsec [4.70 σ]
KicOffset-rm: 3.083 arcsec [4.60 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.18 [3/17]
DiffImageOverlap-fno: 1.00 [17/17]

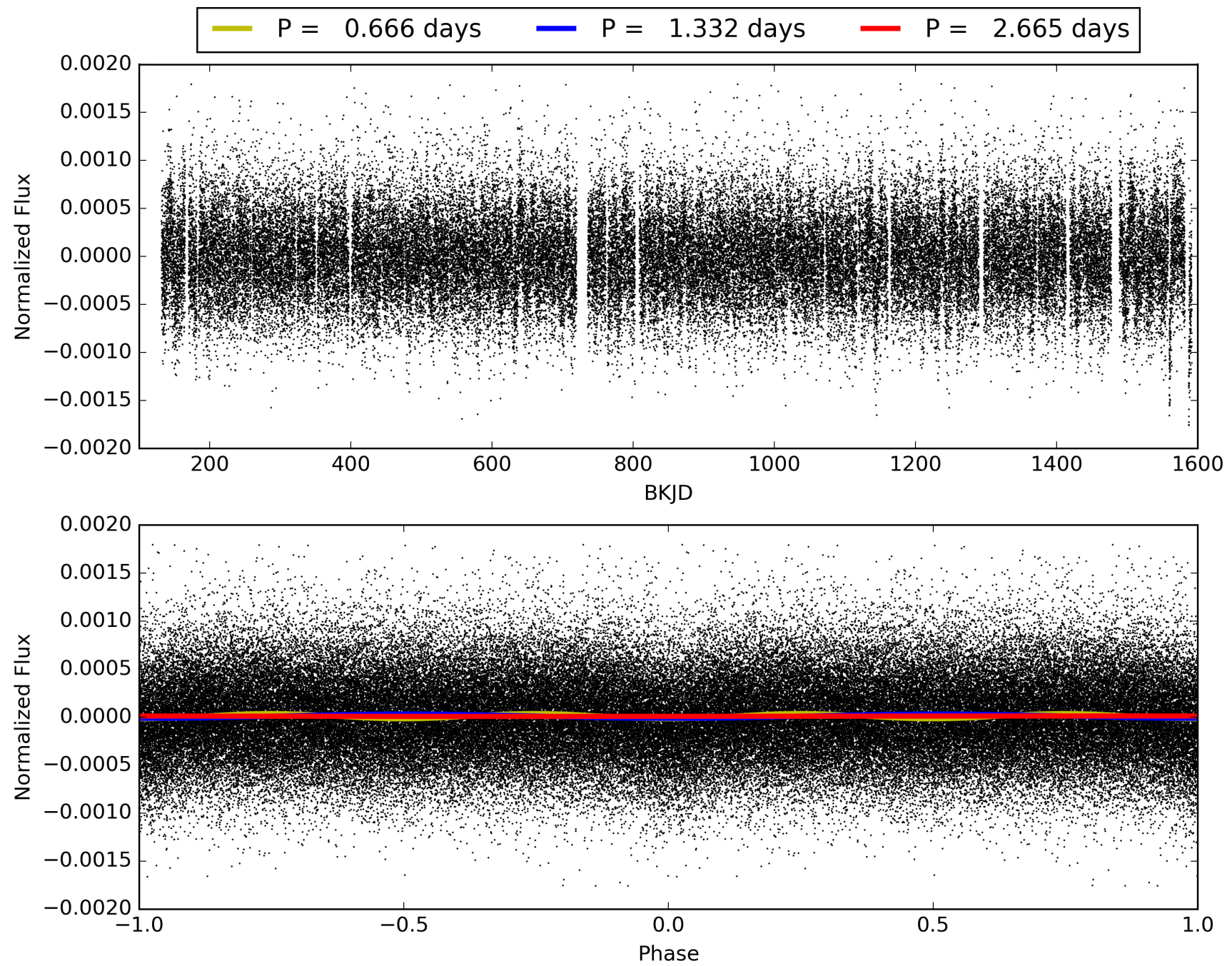
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:03:10 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009899315-01, PDC Light Curves

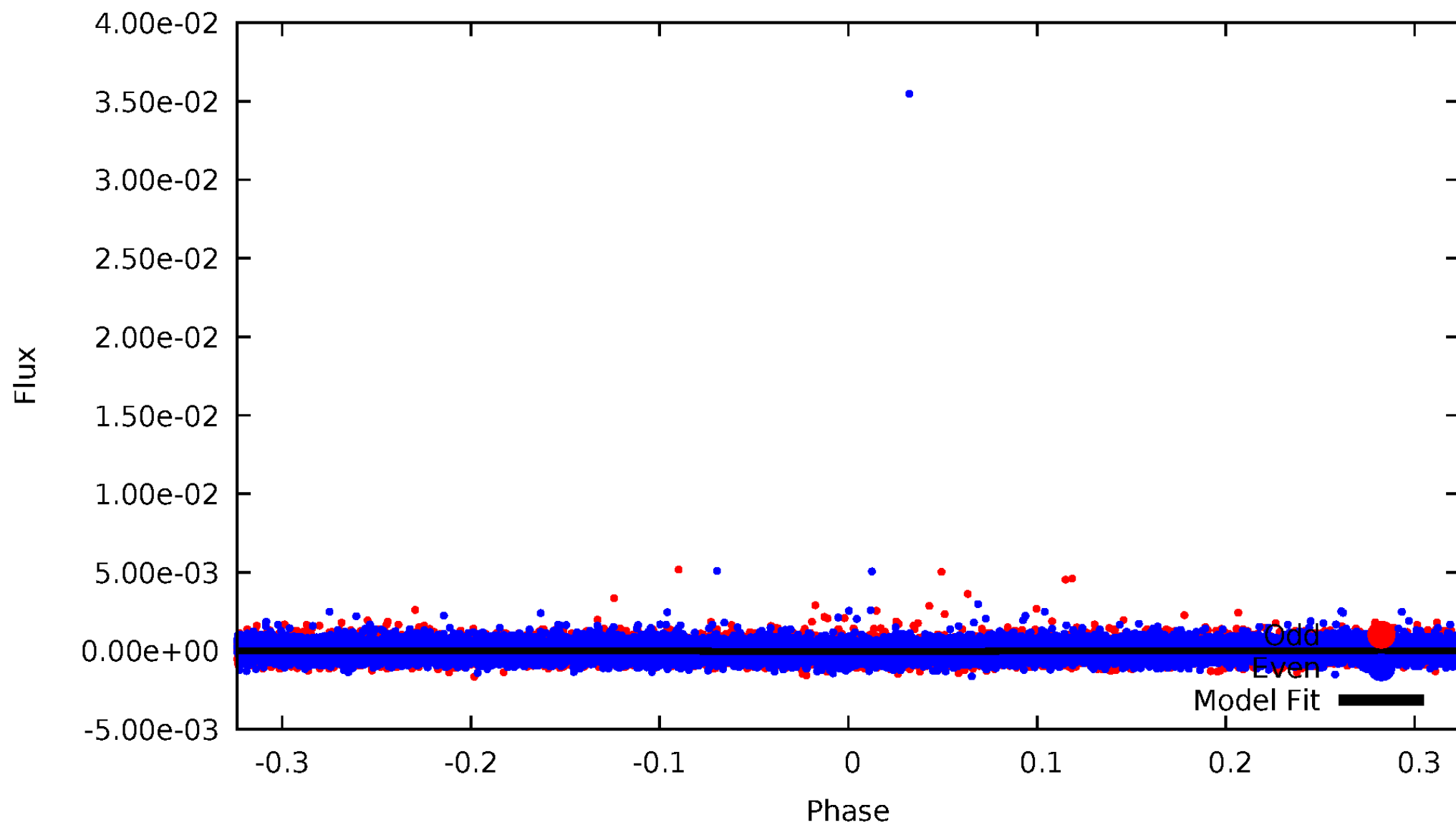


TCE 009899315-01



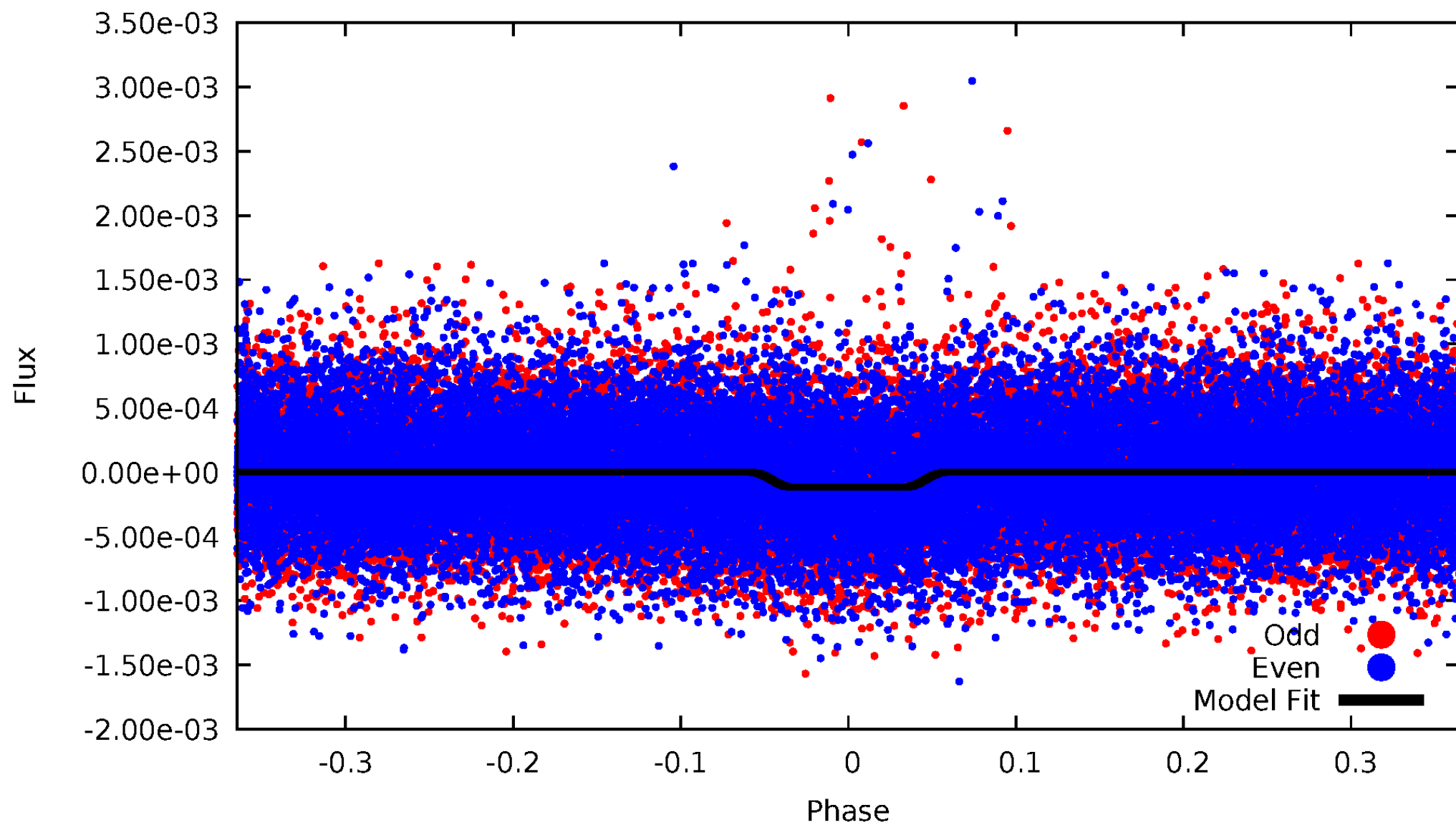
DV Odd/Even

TCE 009899315-01

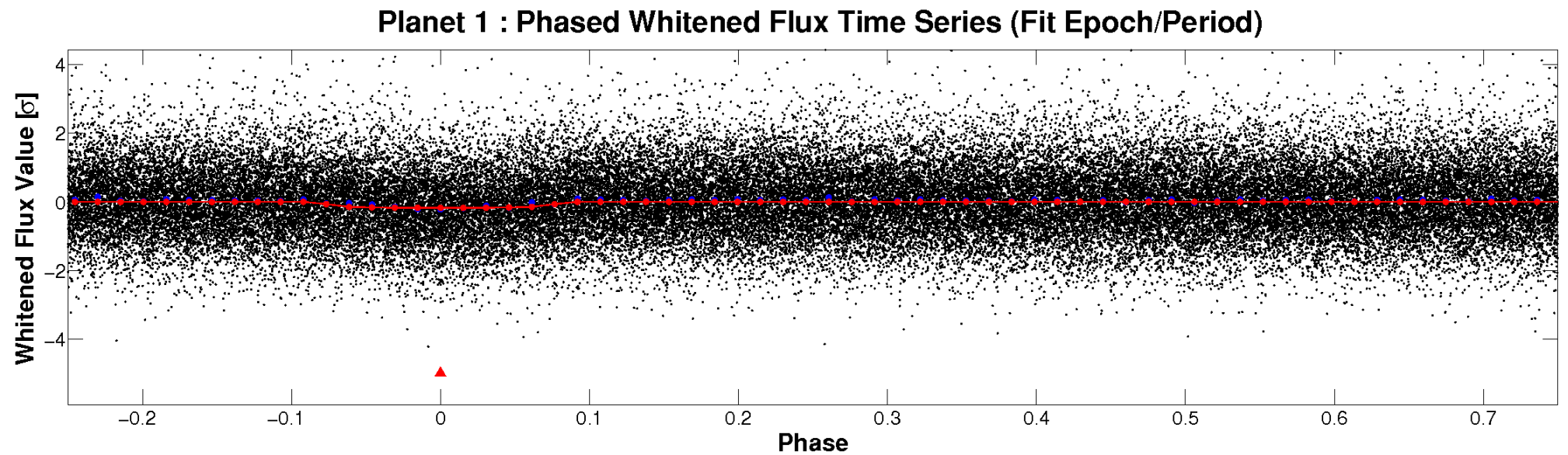
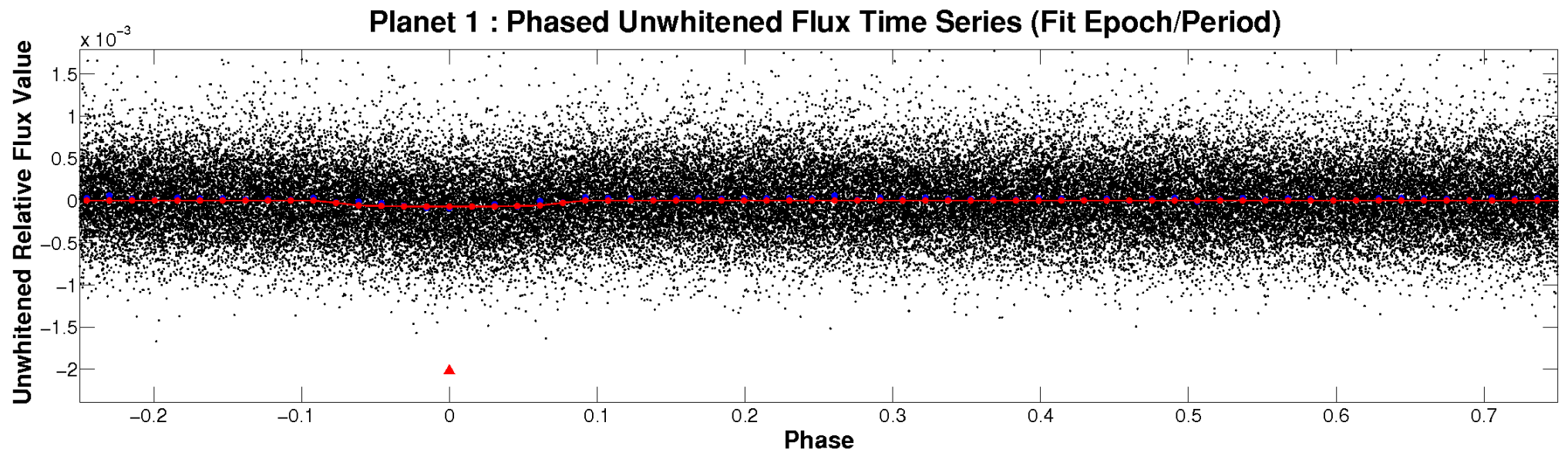


ALT Odd/Even

TCE 009899315-01

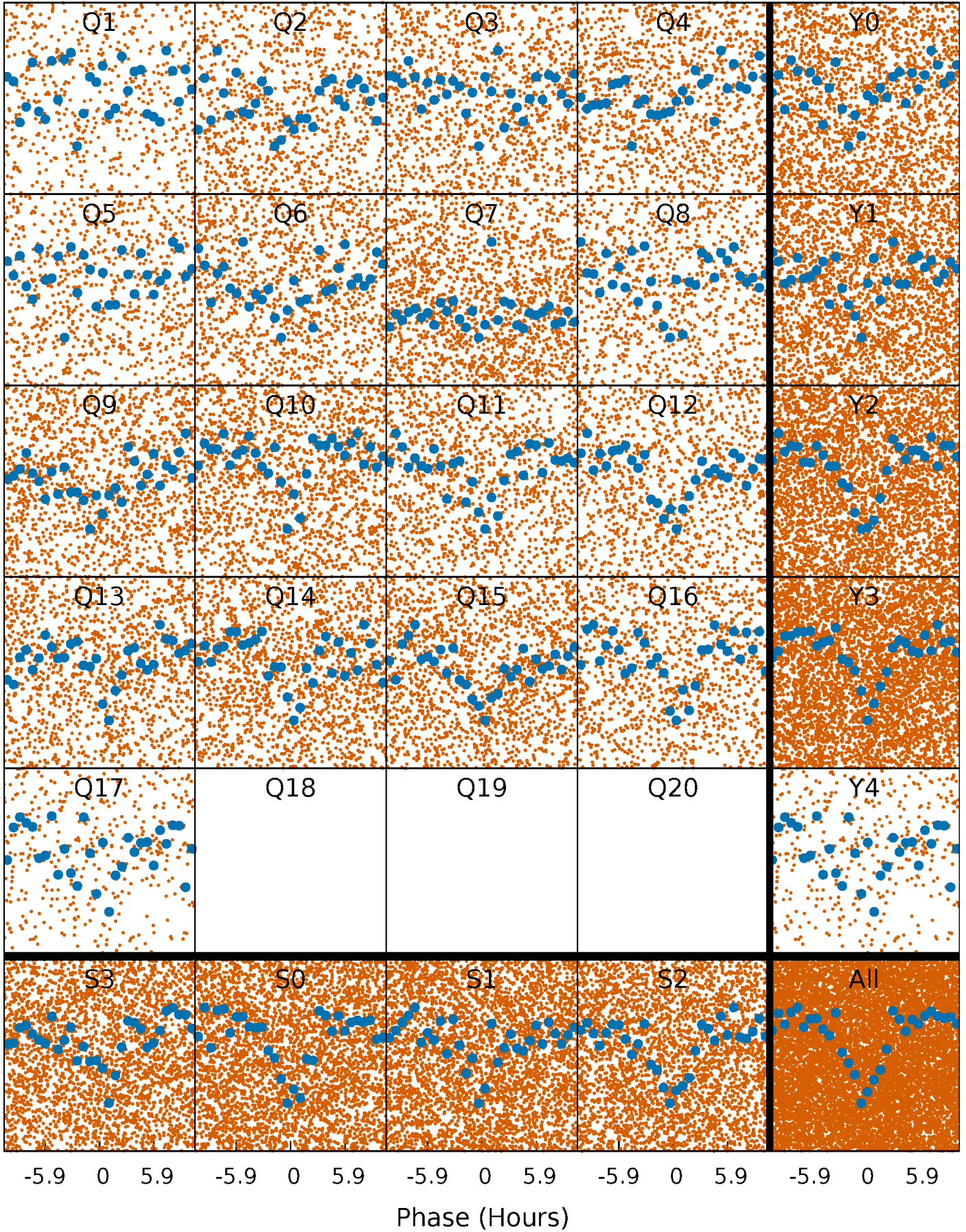


Non-Whitened Vs. Whitened Light Curve



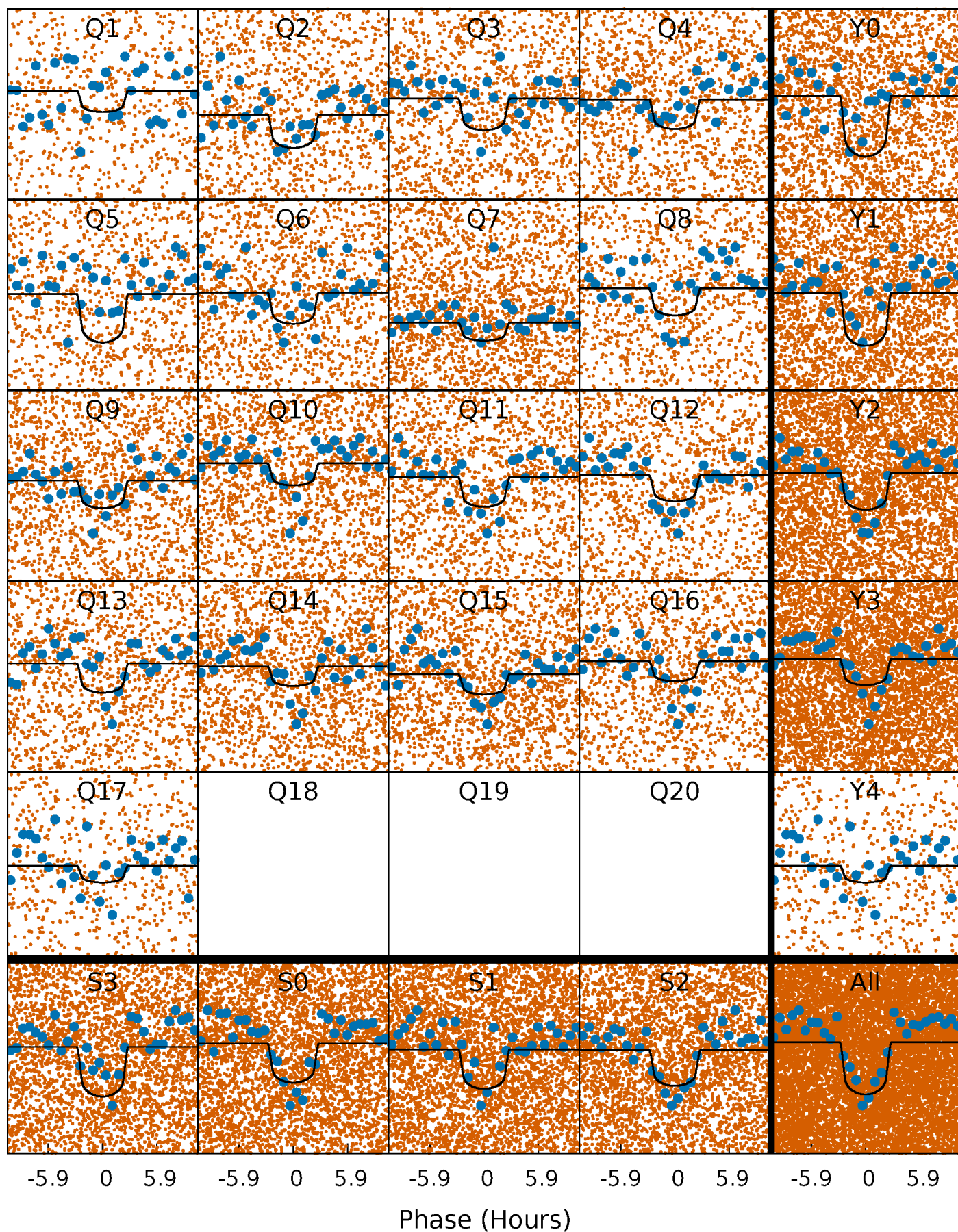
PDC Quarter-Phased Transit Curves

TCE 009899315-01 P= 1.332491 Days $T_0=132.099955$ (BKJD)



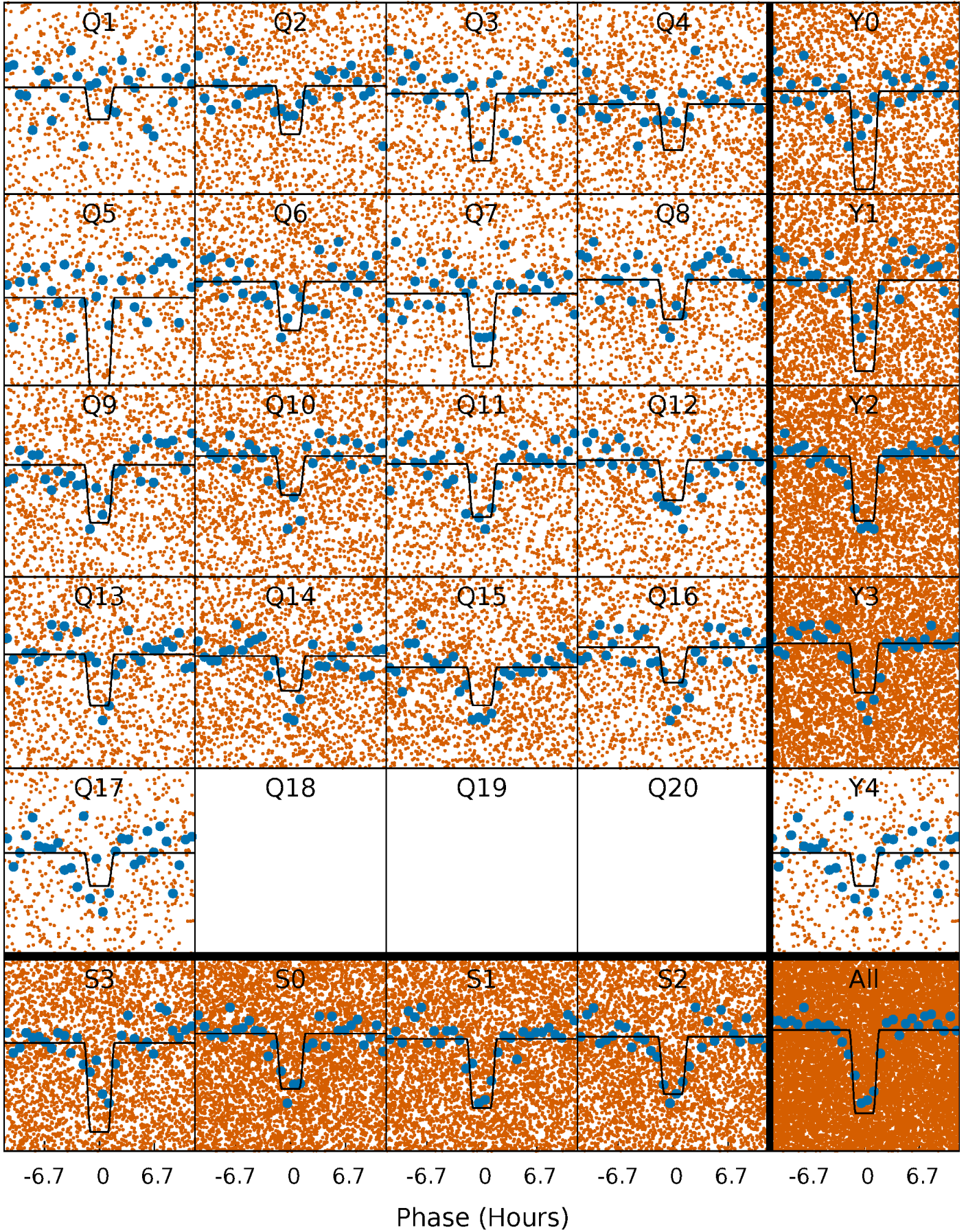
DV Quarter-Phased Transit Curves

TCE 009899315-01 P= 1.332491 Days $T_0=132.099955$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

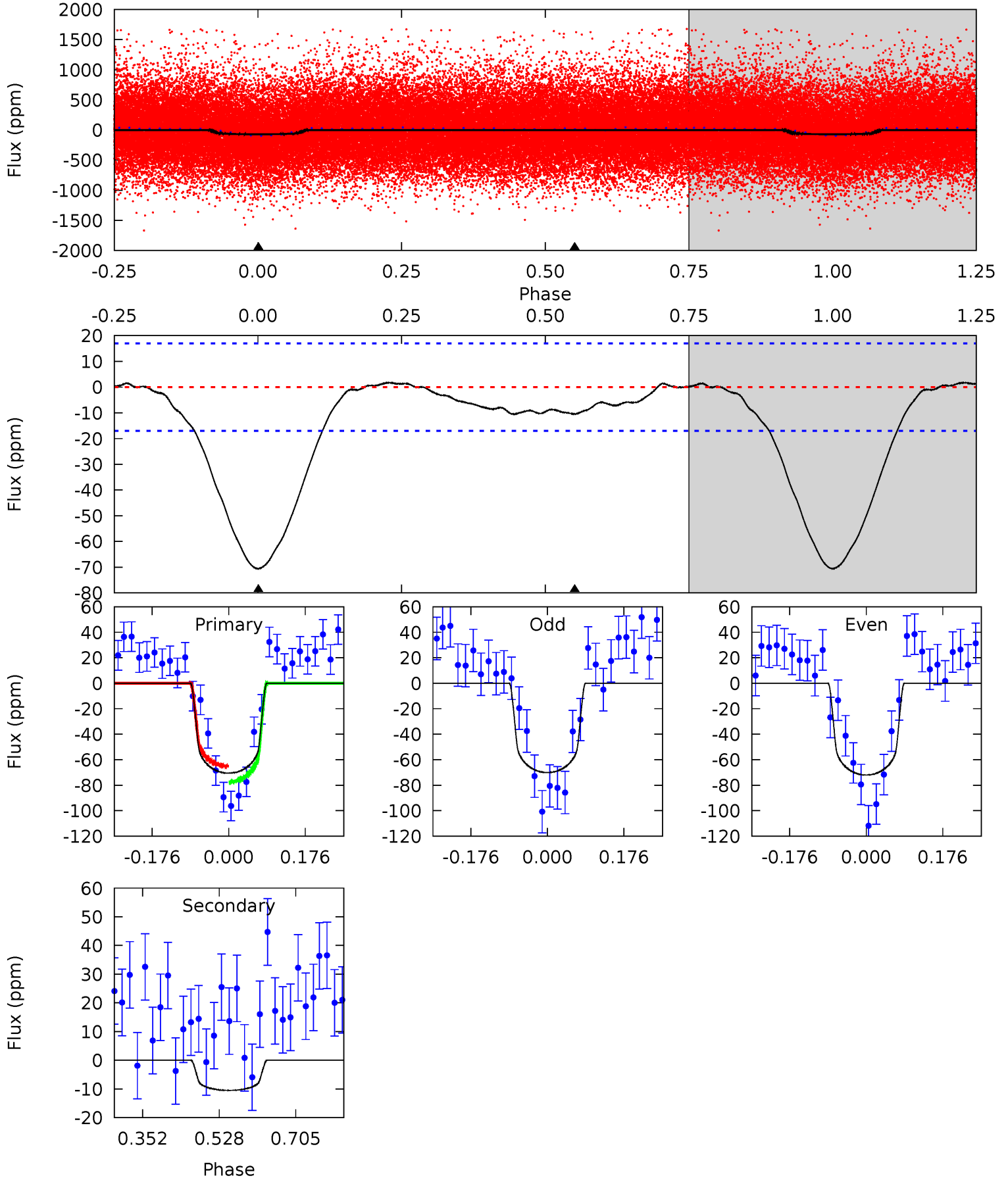
TCE 009899315-01 P= 1.332515 Days $T_0=132.088605$ (BKJD)



DV Model-Shift Uniqueness Test

009899315-01, P = 1.332491 Days, E = 130.767464 Days

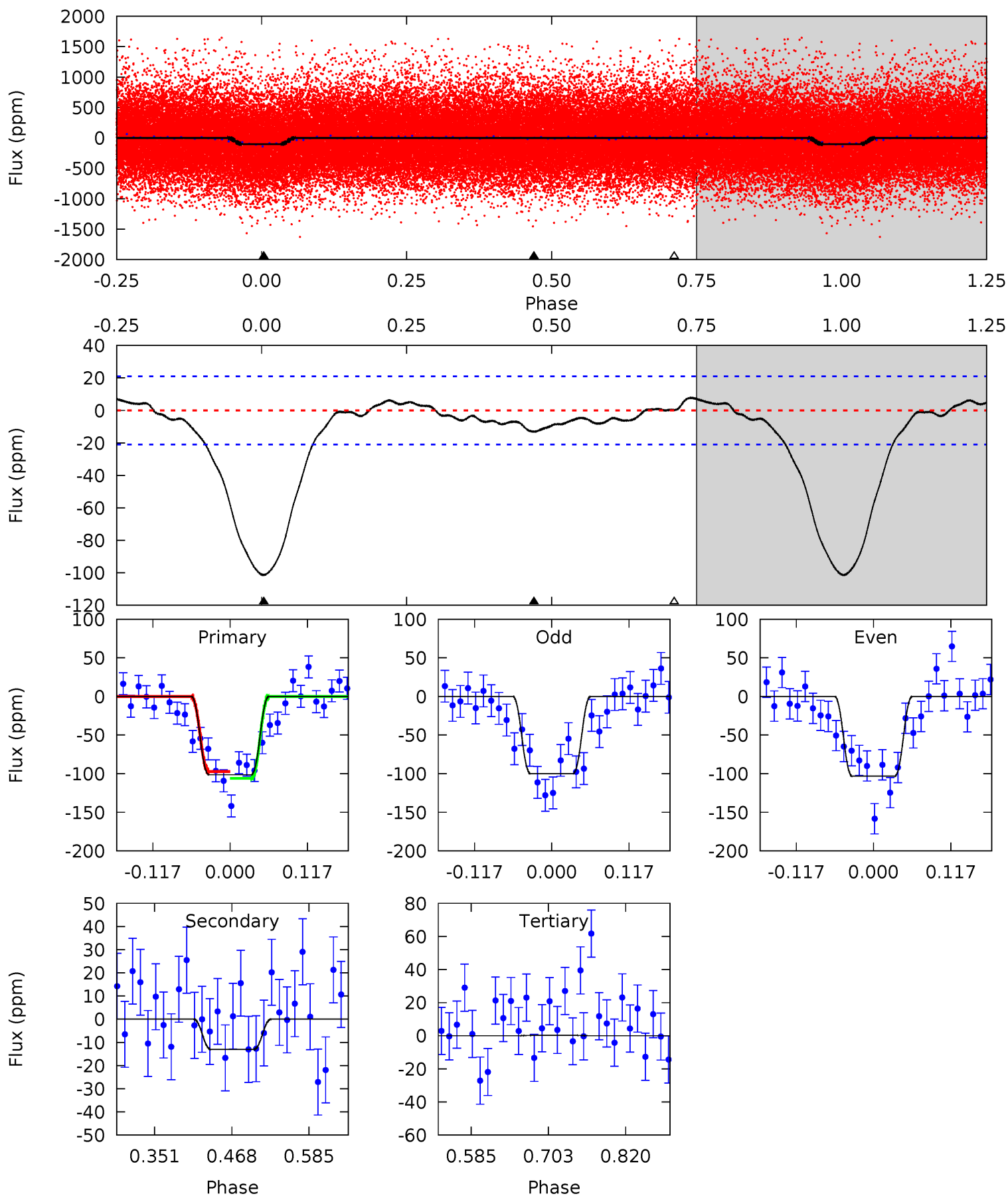
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	2.75	0	0	4.44	1.35	0.60	18.5	18.5	2.75	2.75	0.25	0.85	0.02	1.61



Alt Model-Shift Uniqueness Test

009899315-01, P = 1.332515 Days, E = 130.756090 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	2.82	-0.04	0	4.53	1.57	0.97	21.9	21.9	2.86	2.82	0.35	0.92	0.07	0.94



Stellar Parameters For KIC 009899315

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6089^{+181}_{-199}	$4.495^{+0.050}_{-0.200}$	$-0.180^{+0.250}_{-0.350}$	$0.950^{+0.290}_{-0.097}$	$1.031^{+0.126}_{-0.140}$	$1.692^{+0.461}_{-0.870}$
	+3%/-3%	+1%/-4%	+139%/-194%	+31%/-10%	+12%/-14%	+27%/-51%
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 009899315-01 / KOI 4181.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 4	$0.96^{+0.37}_{-0.35}$	2411^{+179}_{-111}	3908^{+799}_{-547}	$3.377^{+5.261}_{-1.920}$
Alt.	-13 ± 5	$1.17^{+0.40}_{-0.36}$	2426^{+161}_{-121}	3788^{+658}_{-491}	$2.842^{+3.596}_{-1.506}$

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

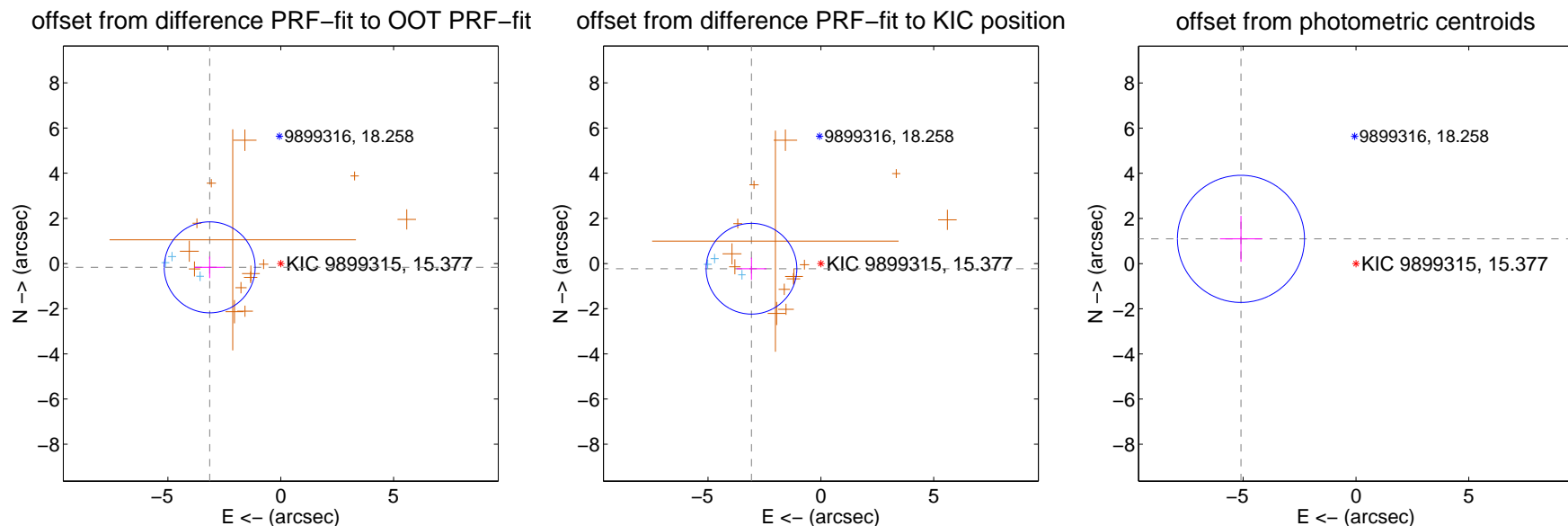
DV Centroid Data

Supplemental centroid analysis for 009899315-01. Kepler magnitude: 15.38. Transit SNR 14.86

There are 3 quarters with good PRF difference image offsets

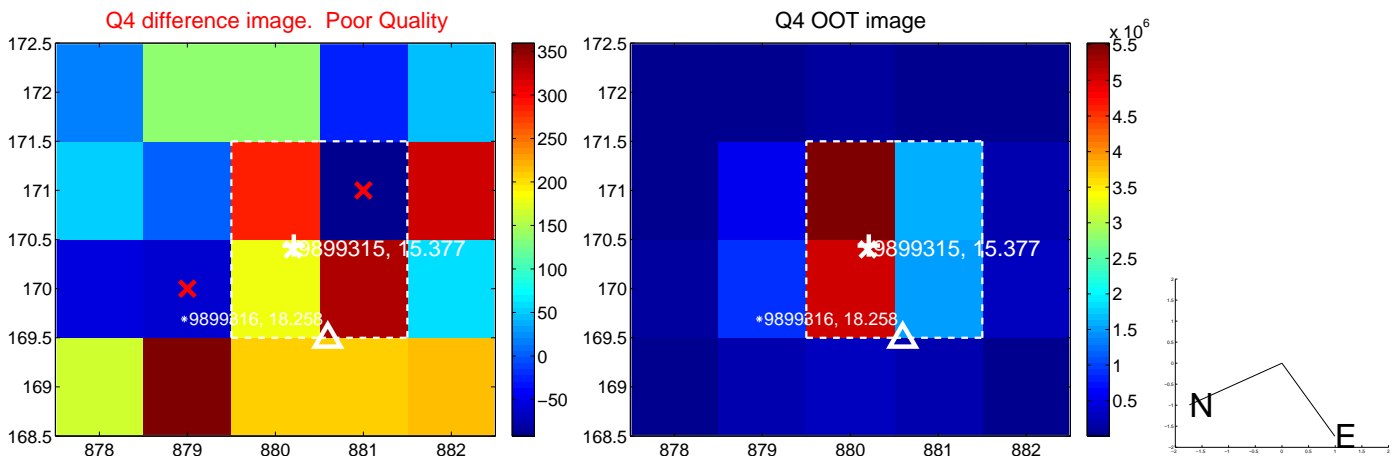
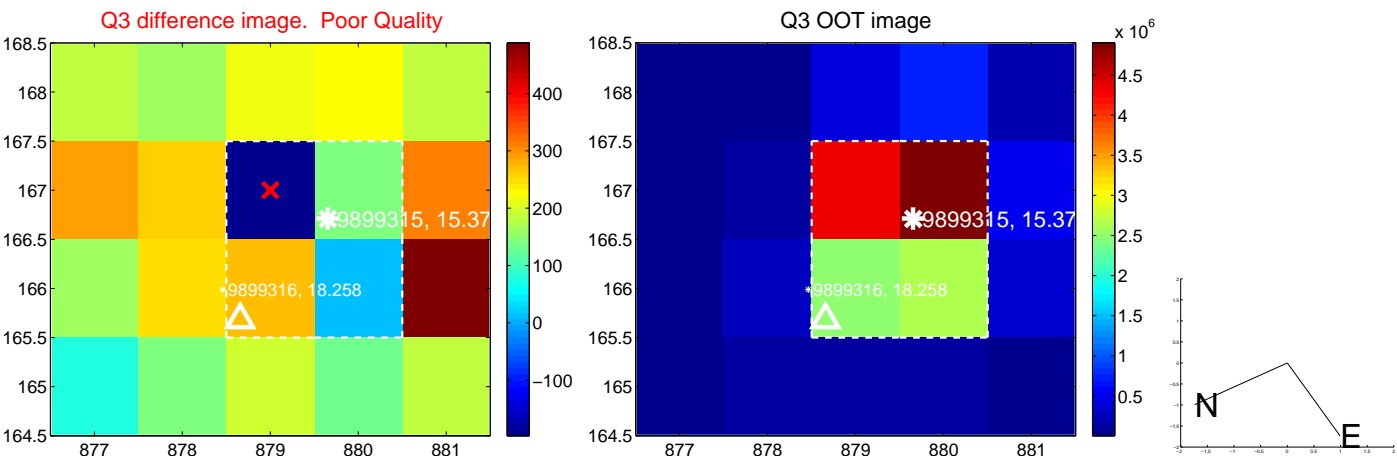
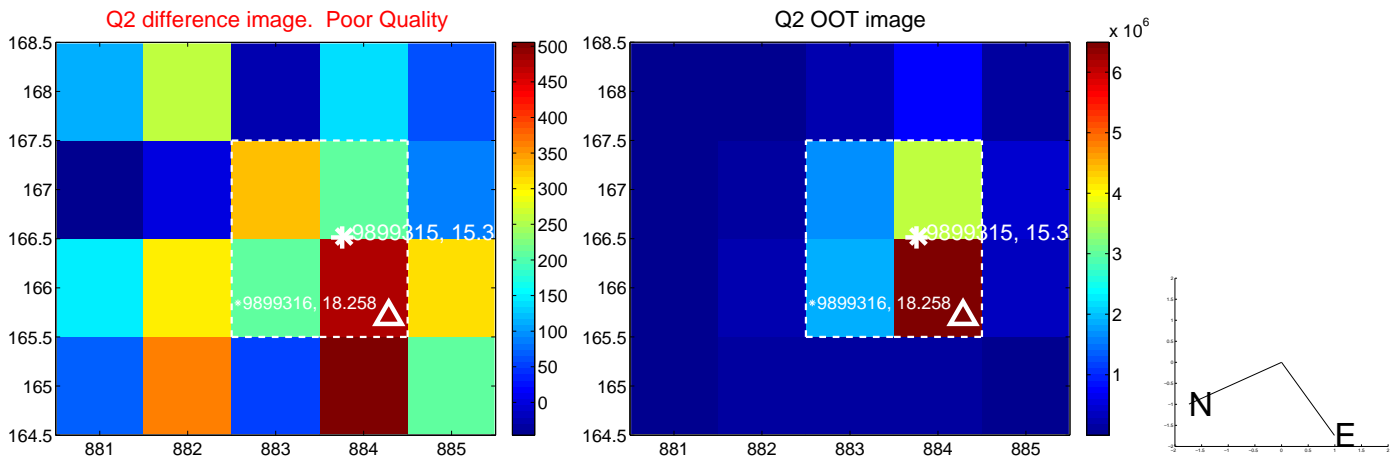
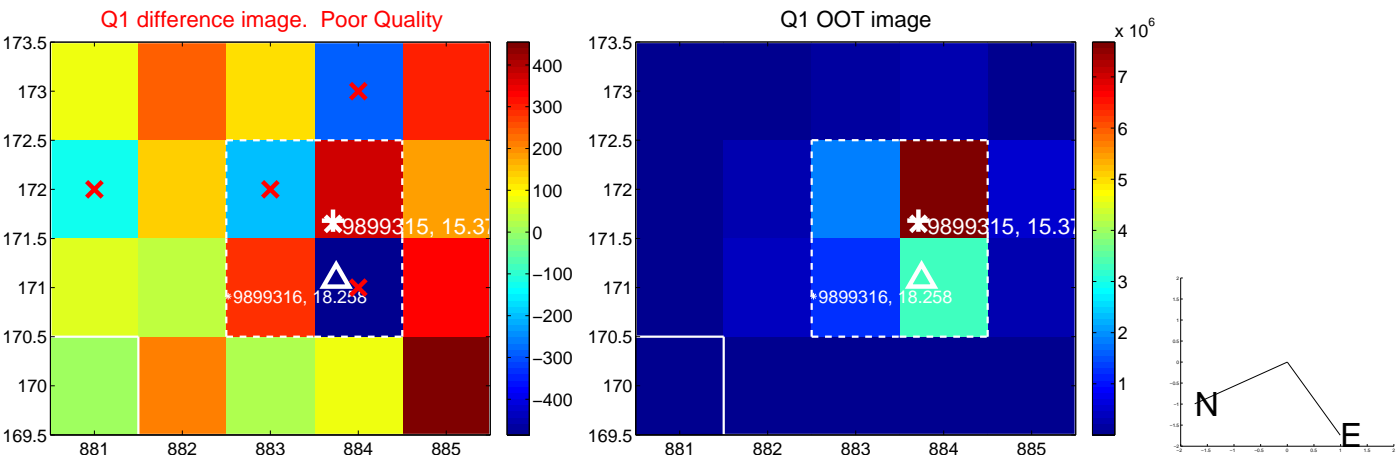
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.154 ± 0.672	4.70	3.150 ± 0.664	-0.168 ± 0.478
PRF-fit source offset from KIC position	3.083 ± 0.670	4.60	3.075 ± 0.660	-0.230 ± 0.492
photometric centroid source offset	5.21 ± 0.94	5.56	5.10 ± 0.93	1.10 ± 1.02

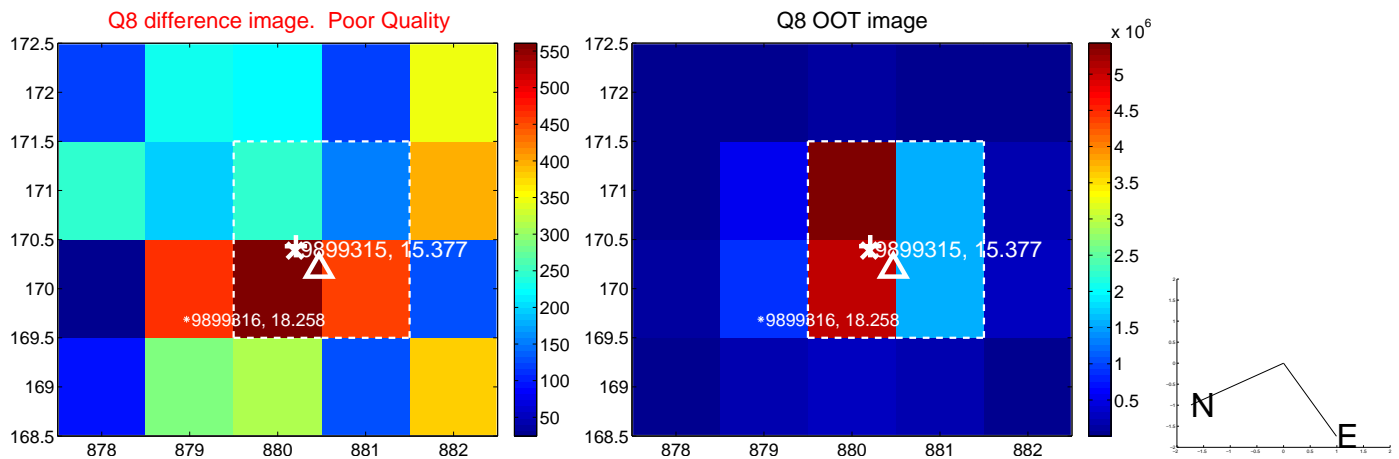
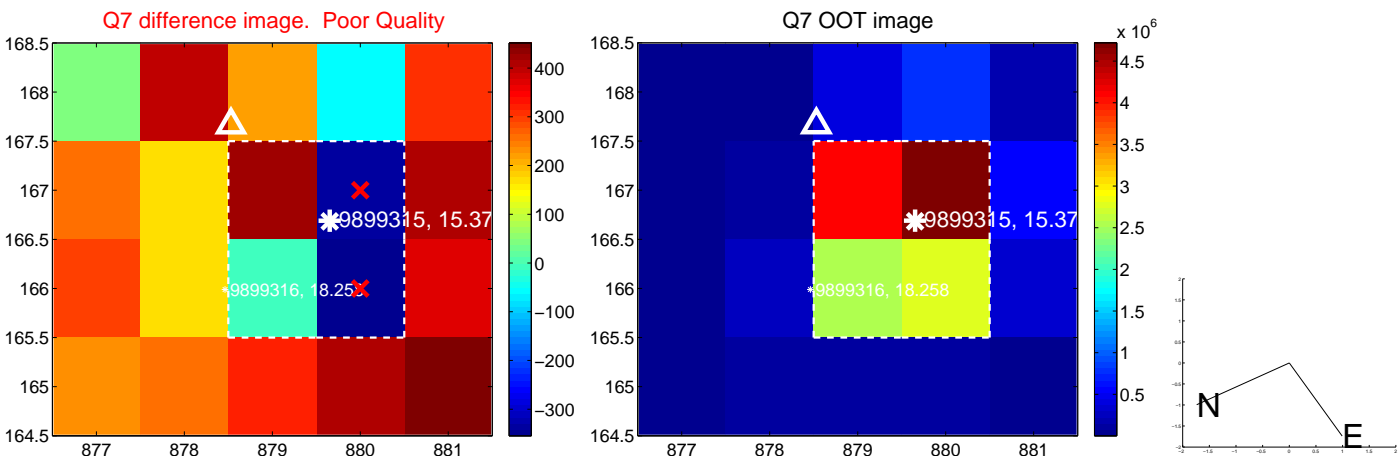
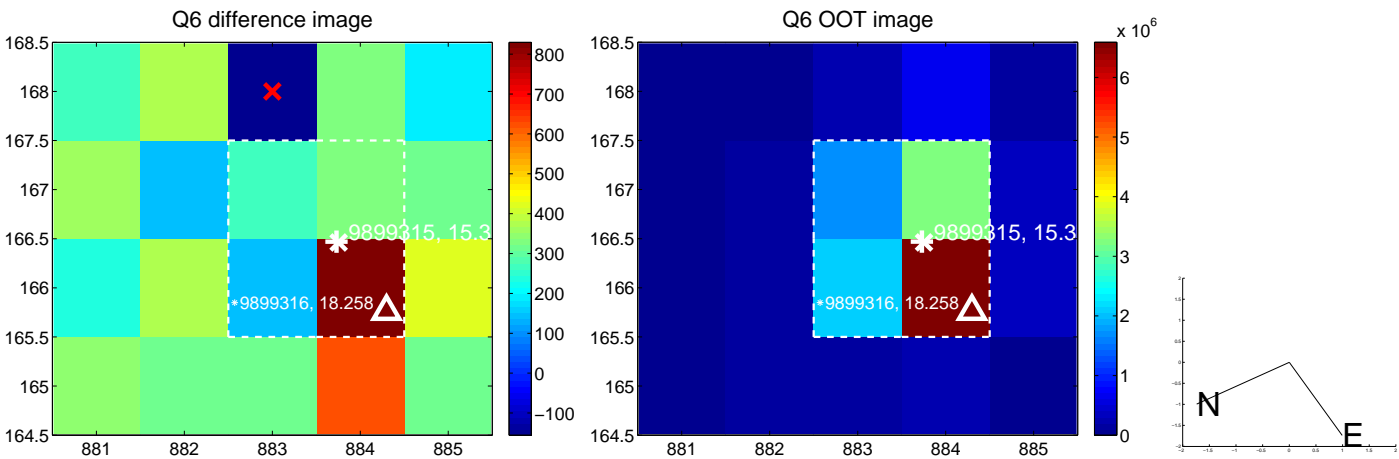
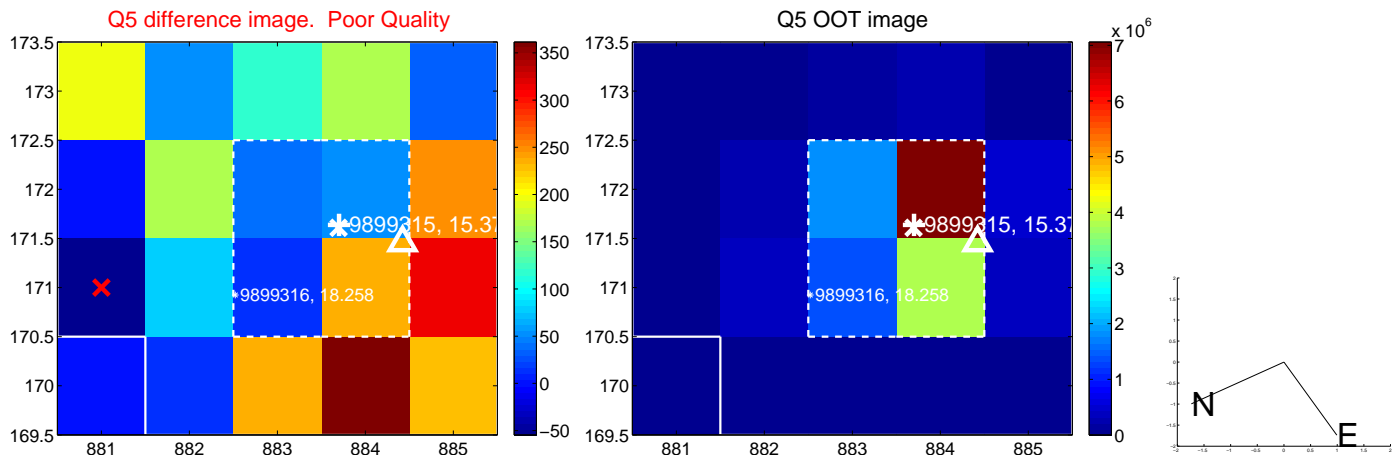


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

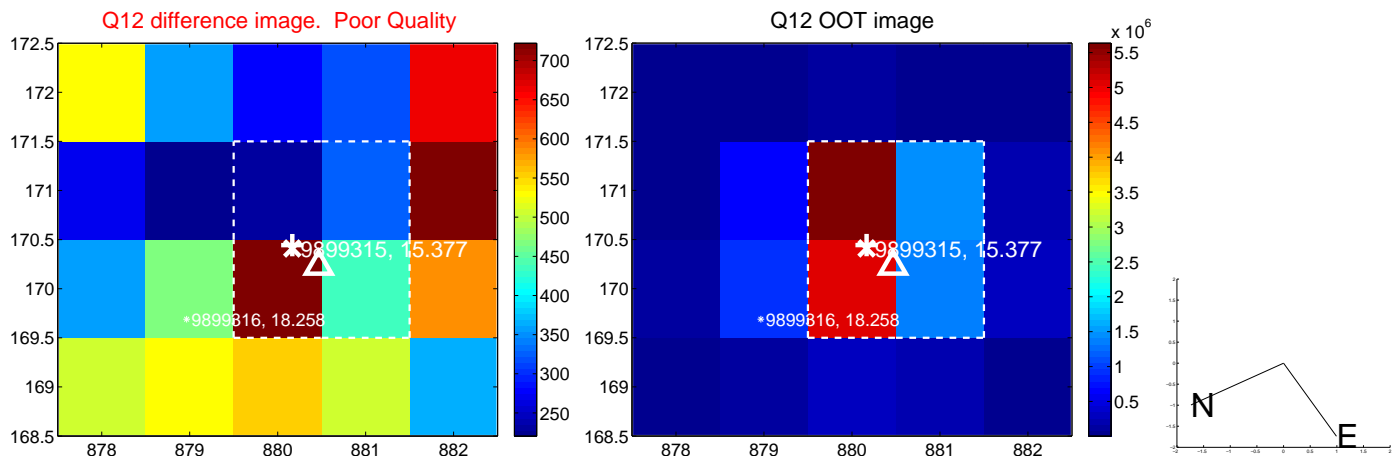
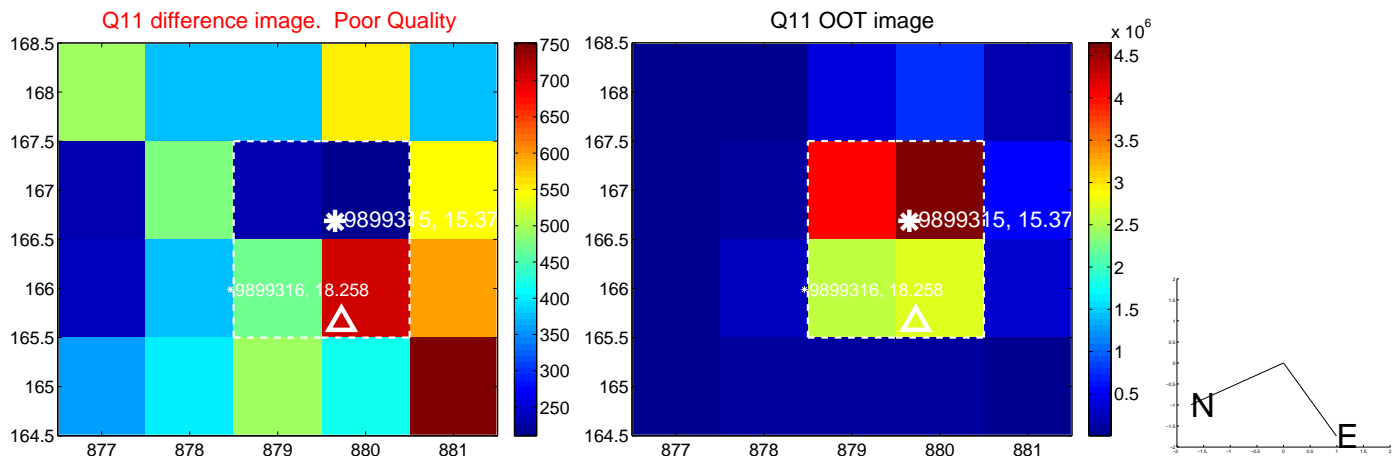
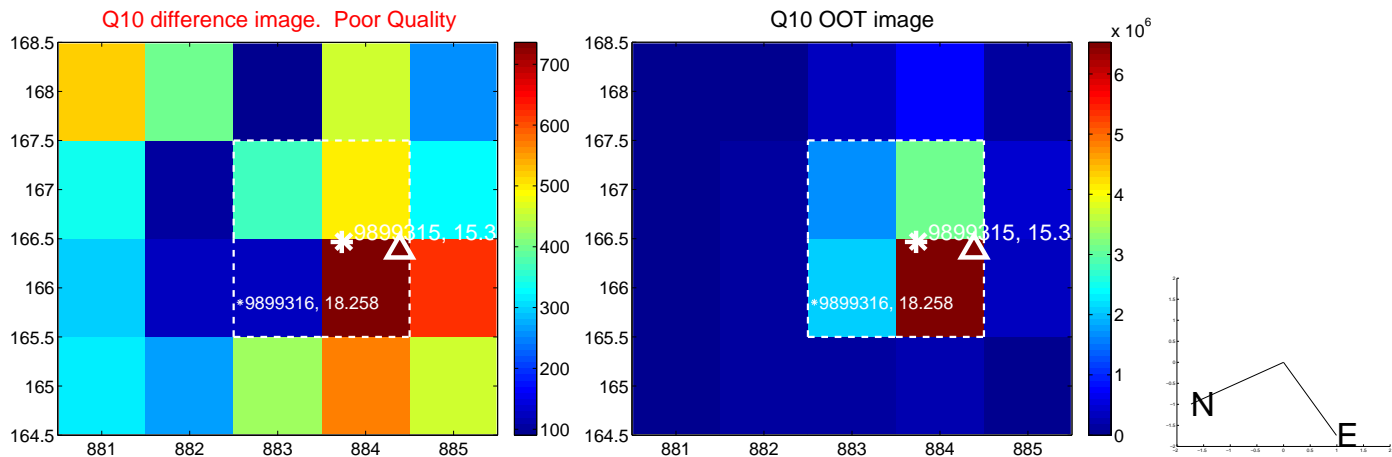
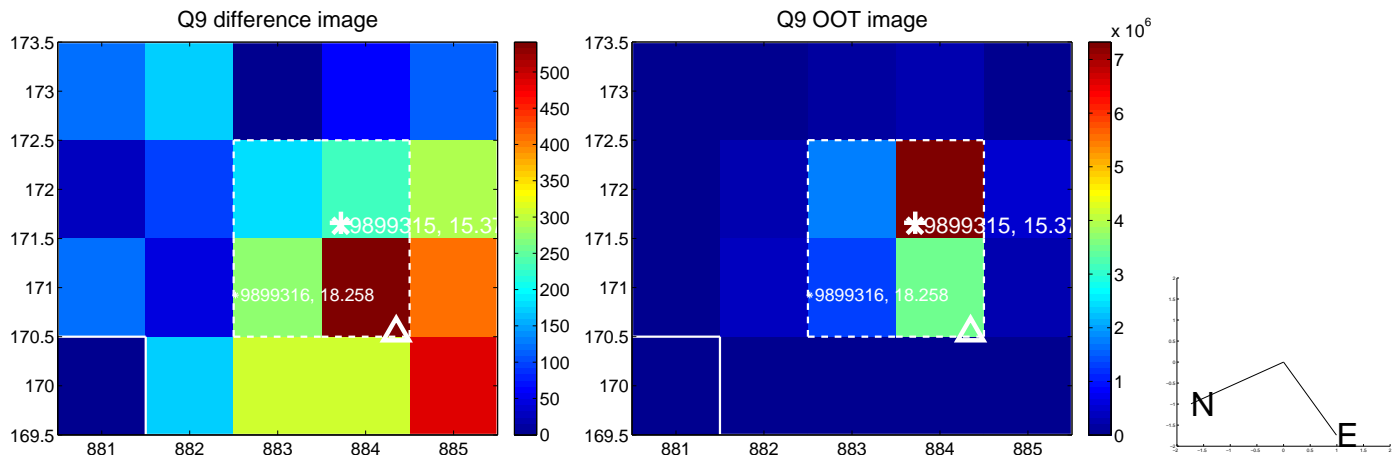
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



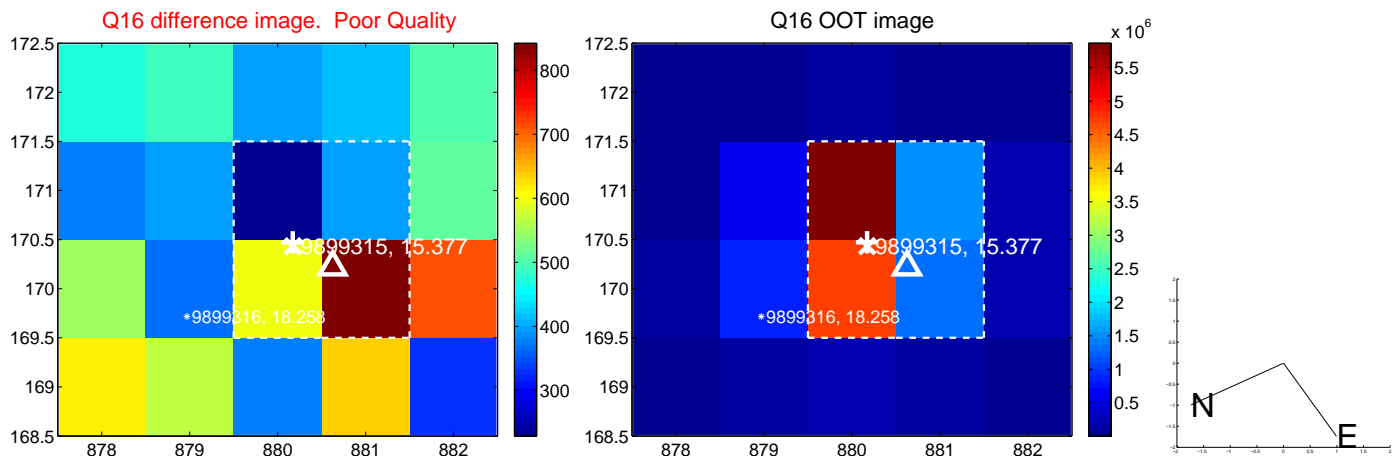
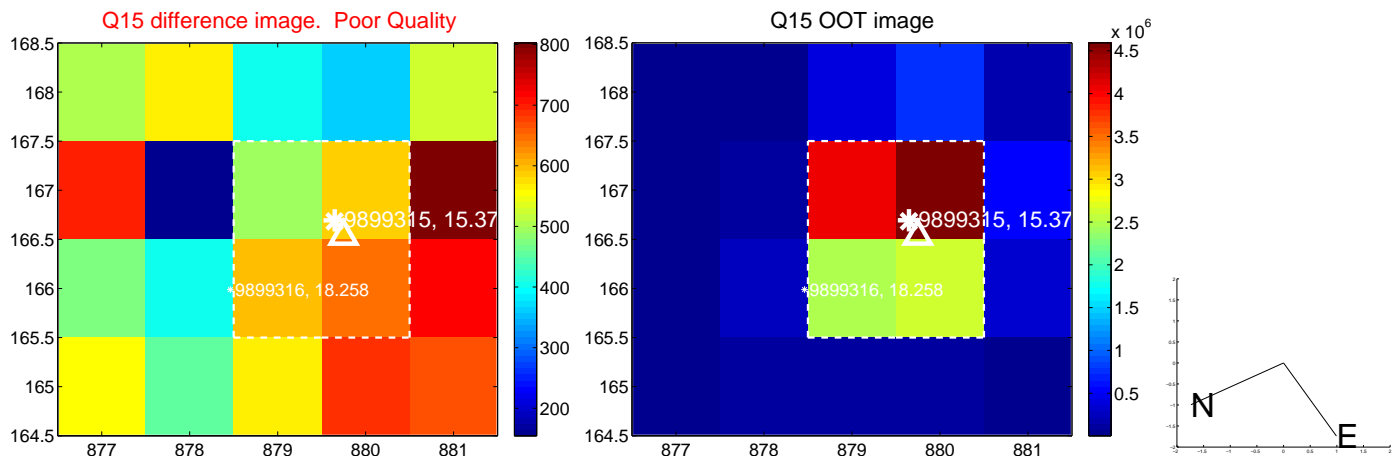
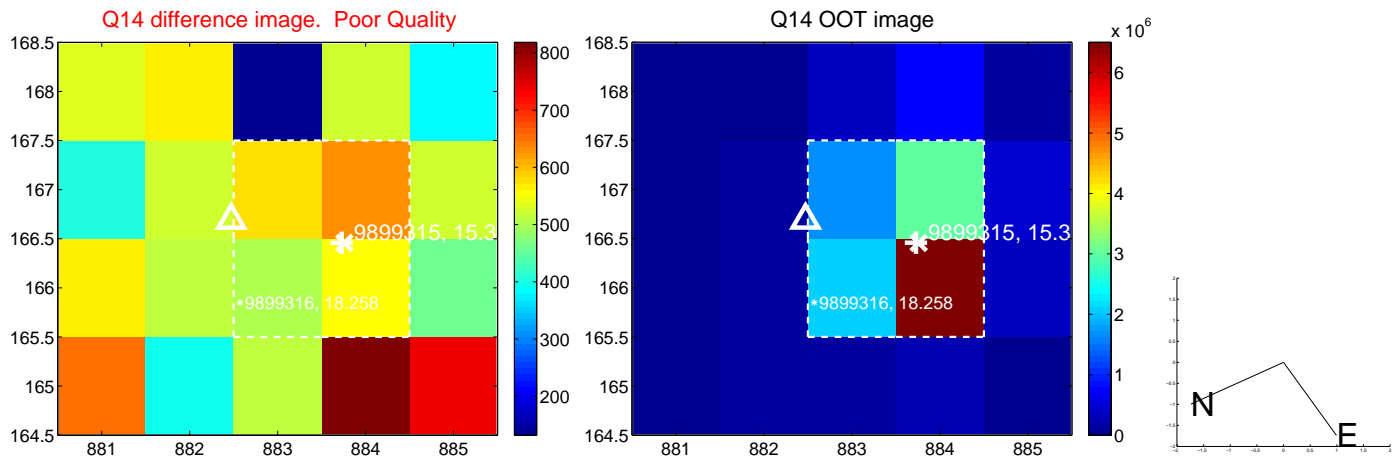
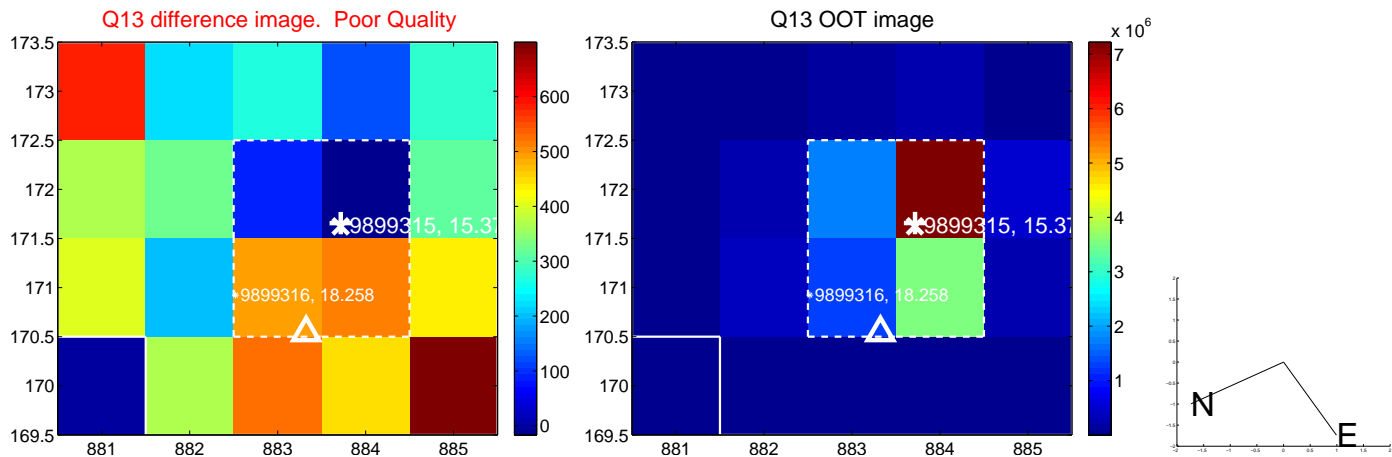
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



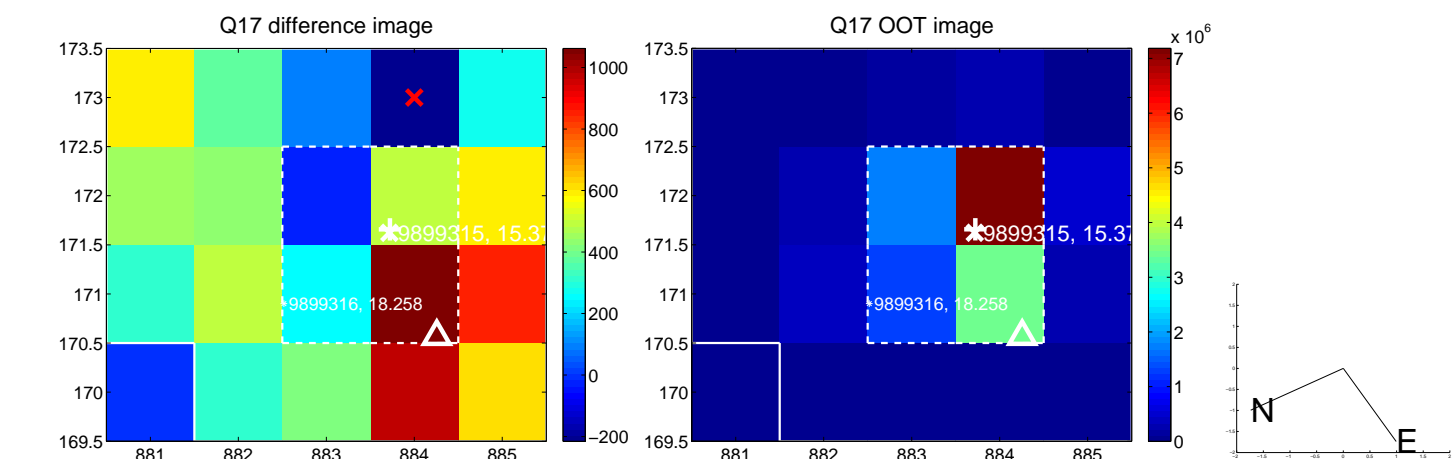
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



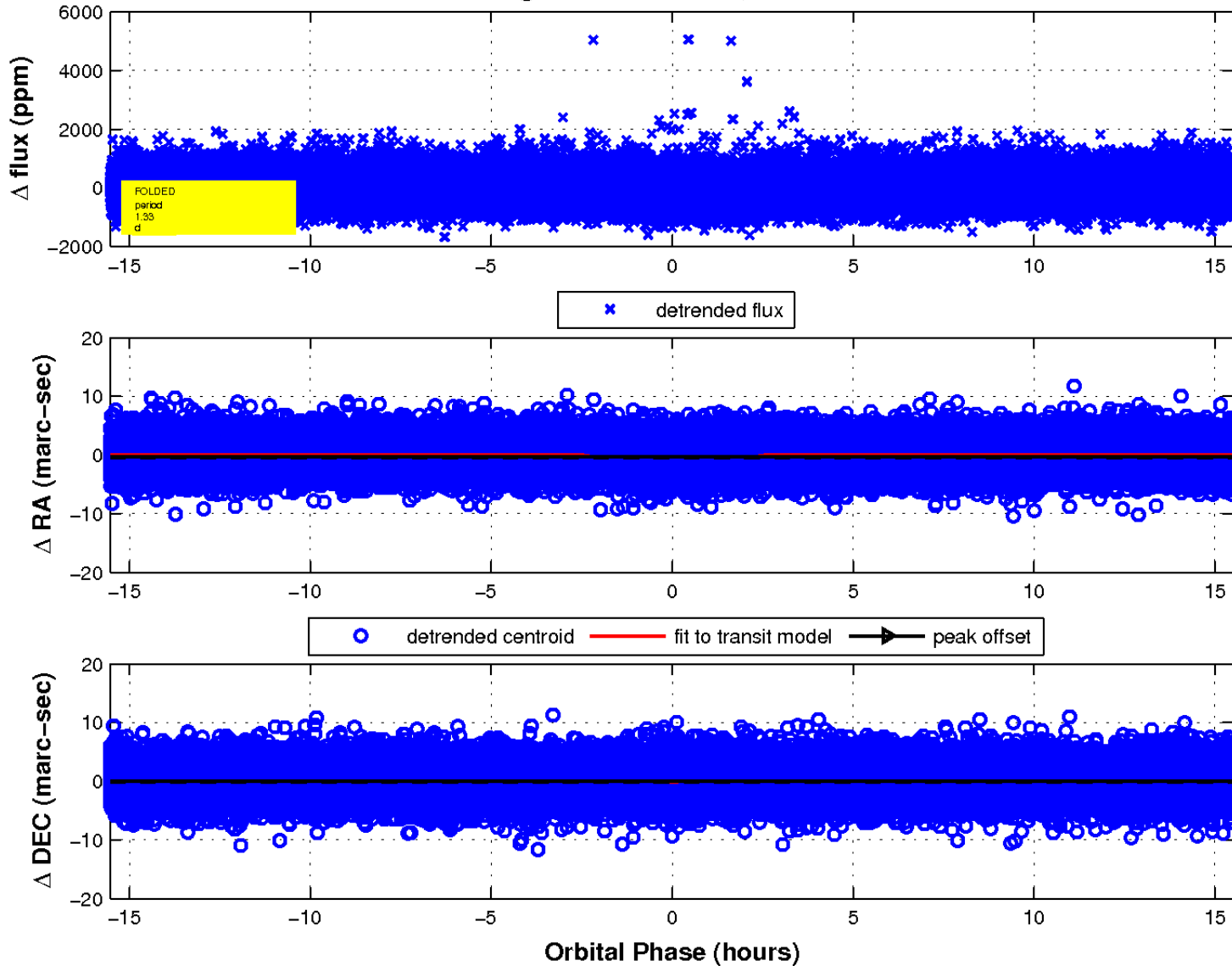
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

