

KIC 009850912

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})
009850912-01	OBS	7239.01	8.480309	135.852126	313.5	6.830	10.8	11.4	1.00	6092	2.10	176.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009850912-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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 009850912-01

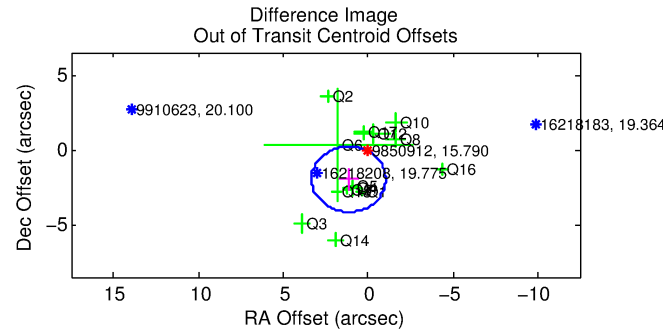
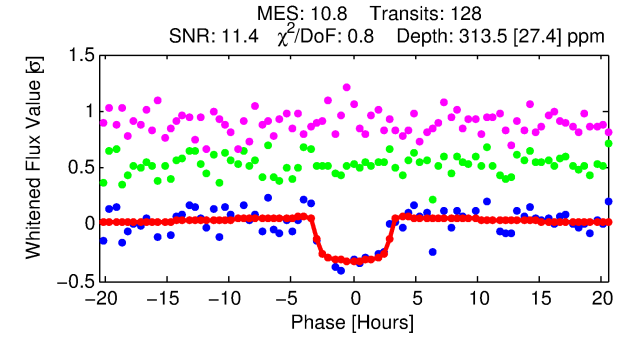
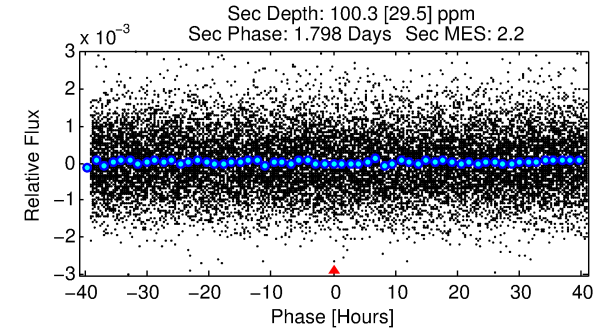
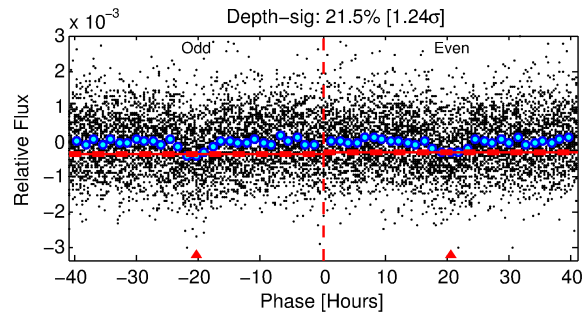
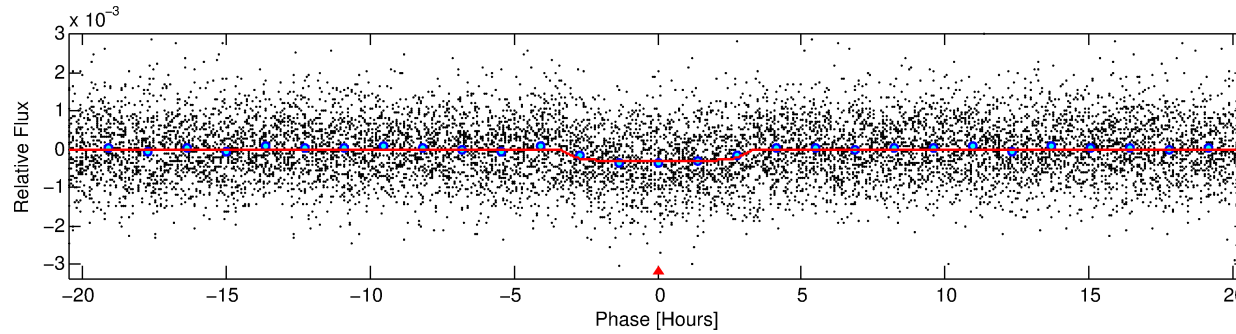
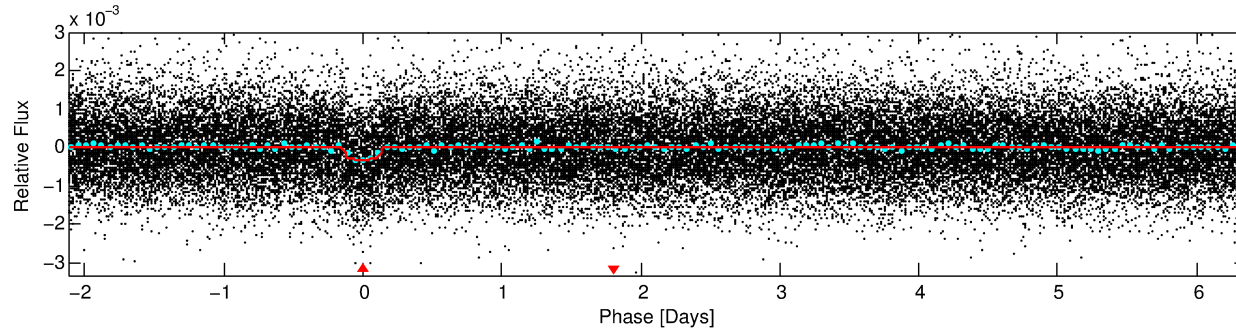
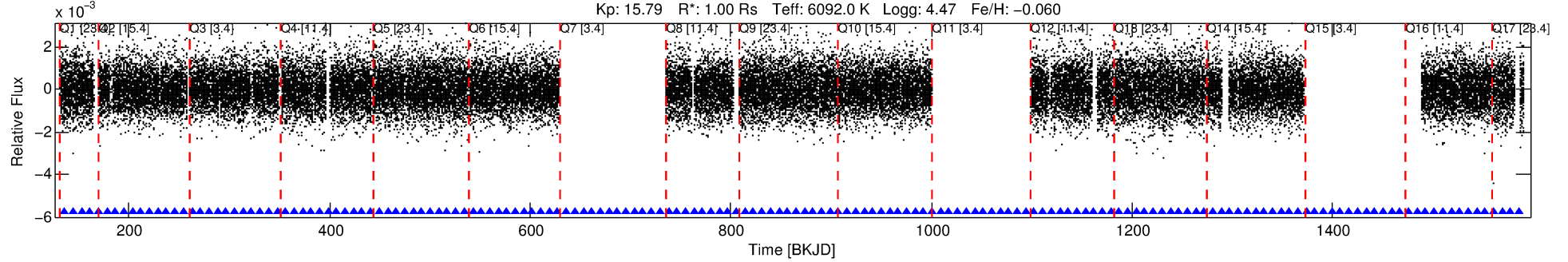
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009850912-01	9850912	009851142-pri	9851142	1:1	202.8	22	46	7.63	15.79	291.05	Direct-PRF	0	0.04	0.11

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: 9850912 Candidate: 1 of 1 Period: 8.480 d
KOI: K07239.01 Corr: 0.967

Kp: 15.79 R*: 1.00 Rs Teff: 6092.0 K Logg: 4.47 Fe/H: -0.060



DV Fit Results:

Period = 8.48031 [0.00010] d
Epoch = 135.8521 [0.0090] BKJD
Rp/R* = 0.0193 [0.0024]
a/R* = 4.46 [2.56]
b = 0.91 [0.12]
Seff = 176.80 [69.84]
Teq = 930 [92] K
Rp = 2.10 [0.67] Re
a = 0.0834 [0.0208] AU
Ag = 86.90 [46.28] [1.86σ]
Teffp = 4389 [458] K [7.41σ]

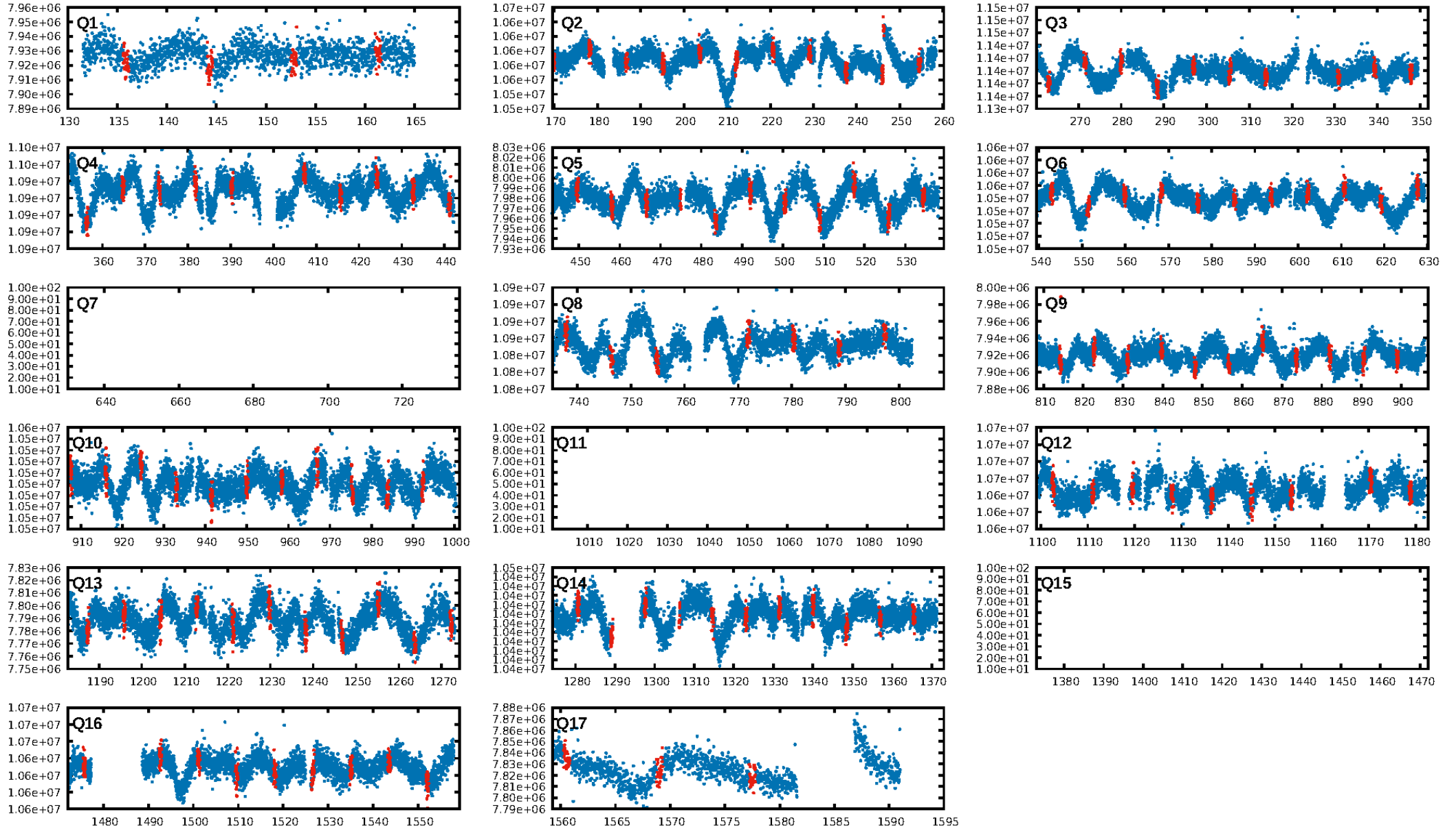
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 65.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.93e-26
RollingBand-fgt: 1.00 [121/121]
GhostDiagnostic-chr: 0.1051
Centroid-sig: 0.0%
Centroid-so: 4.525 arcsec [3.66σ]
OotOffset-rm: 2.282 arcsec [3.13σ]
KicOffset-rm: 2.370 arcsec [3.10σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

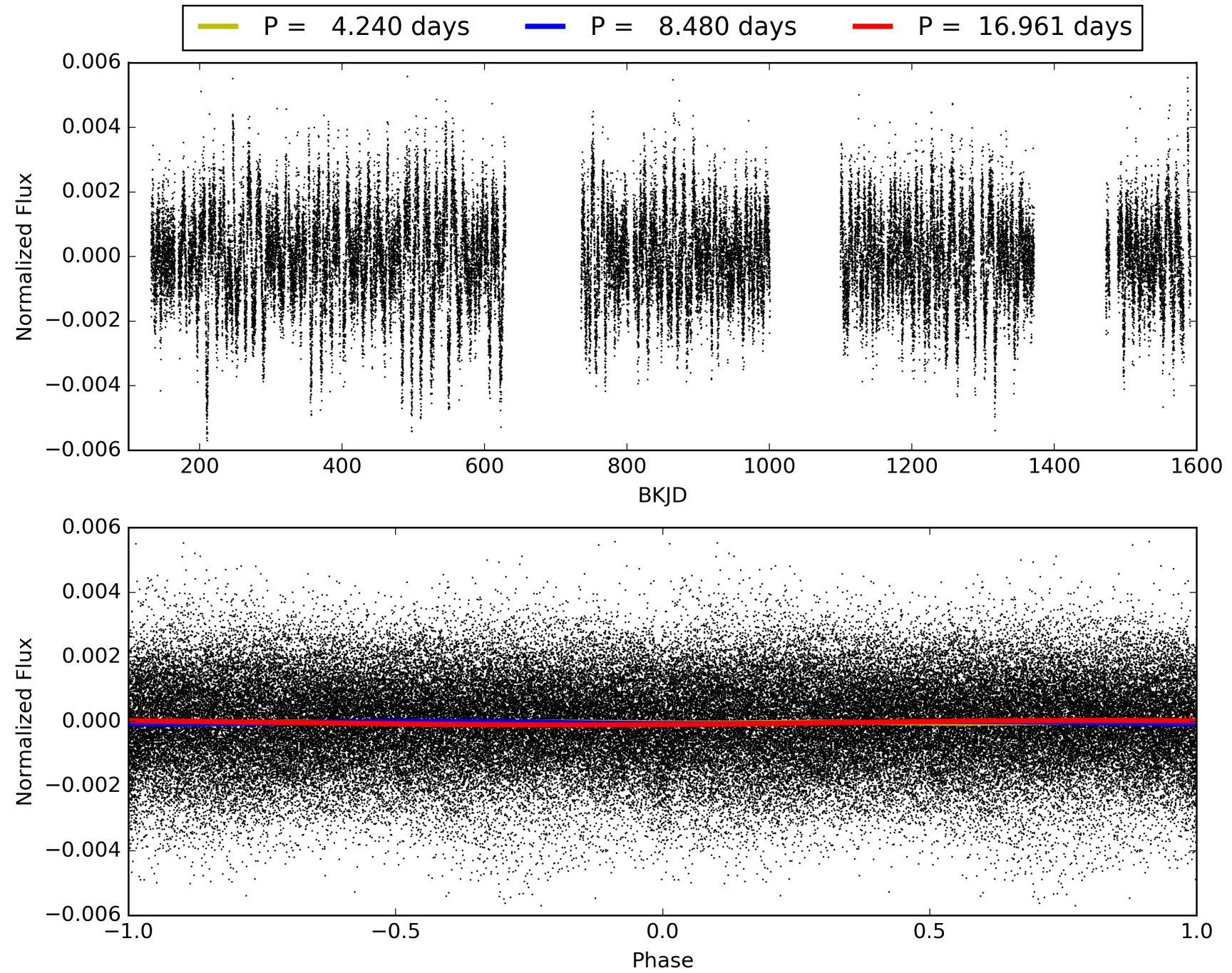
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:22:51 Z

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

TCE 009850912-01, PDC Light Curves

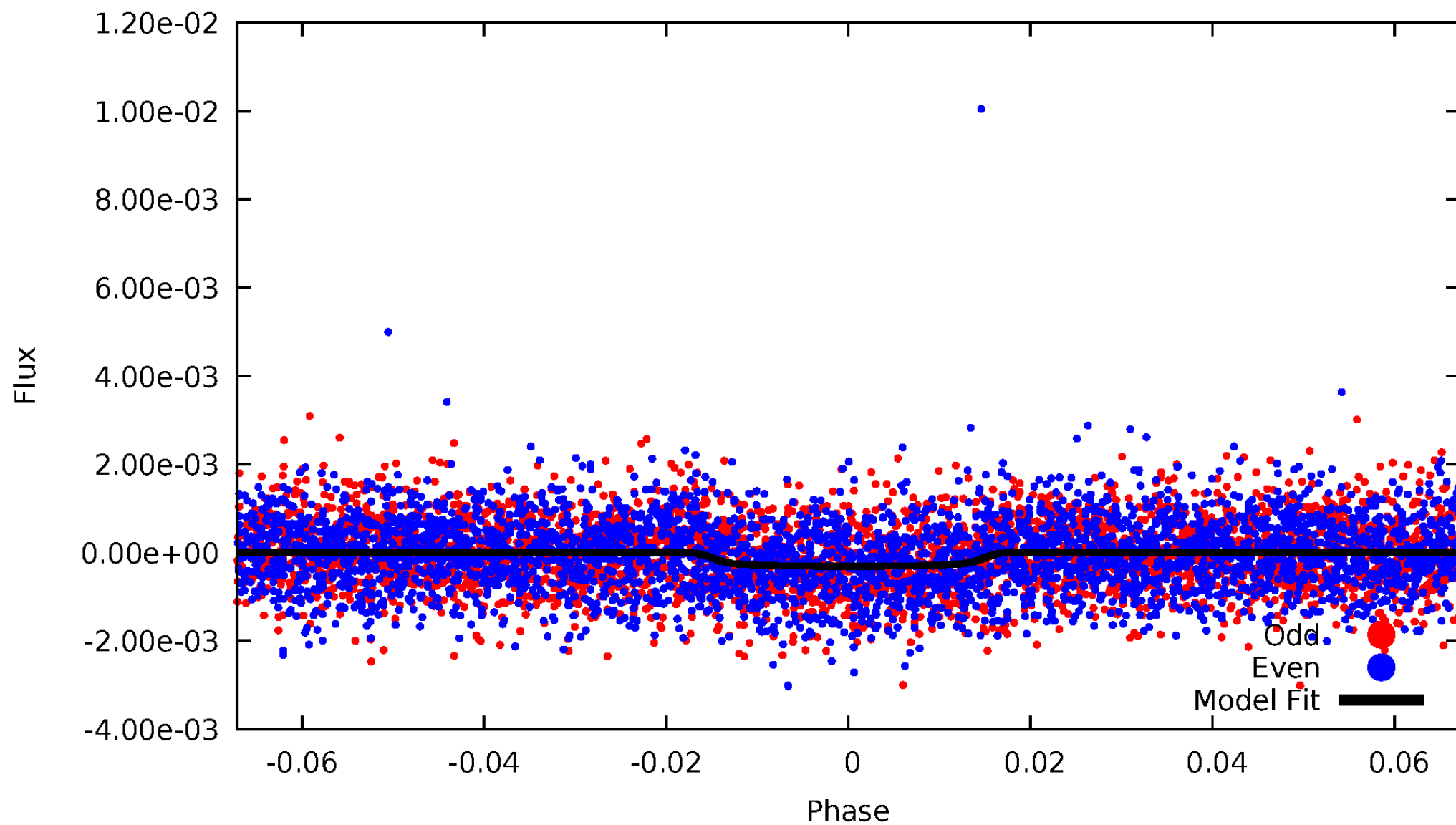


TCE 009850912-01



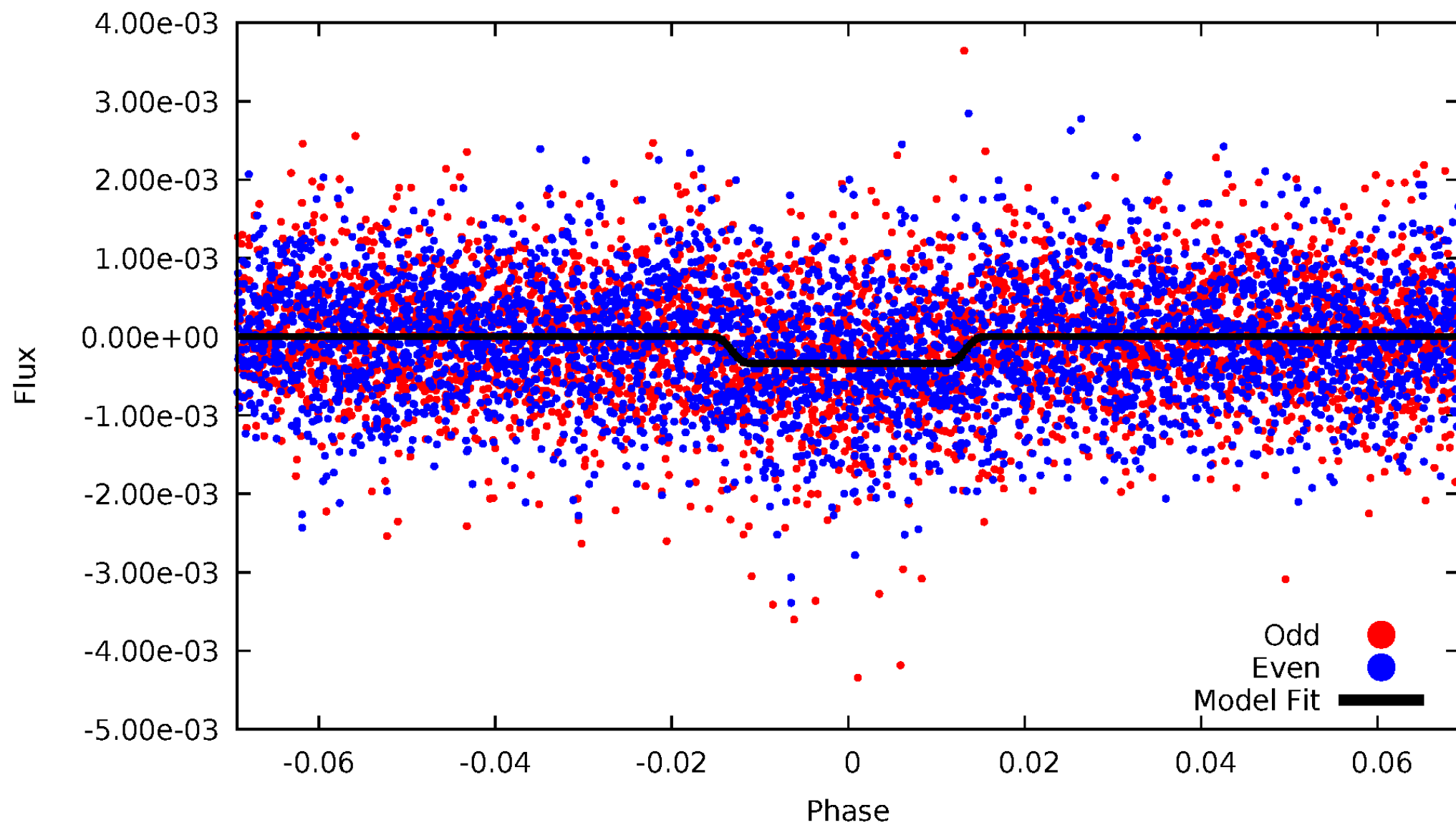
DV Odd/Even

TCE 009850912-01



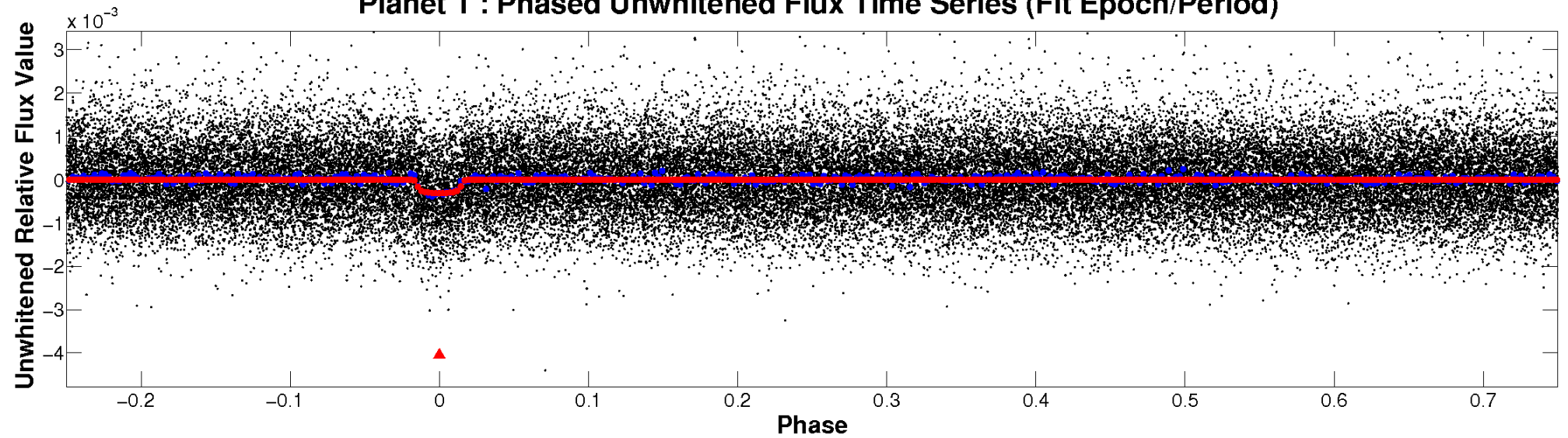
ALT Odd/Even

TCE 009850912-01

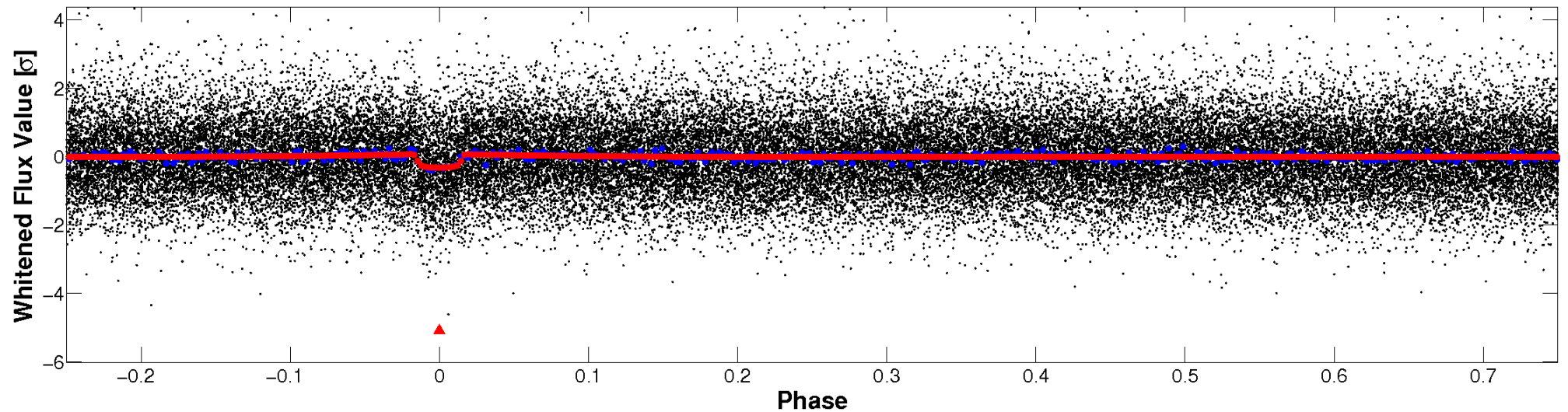


Non-Whitened Vs. Whitened Light Curve

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

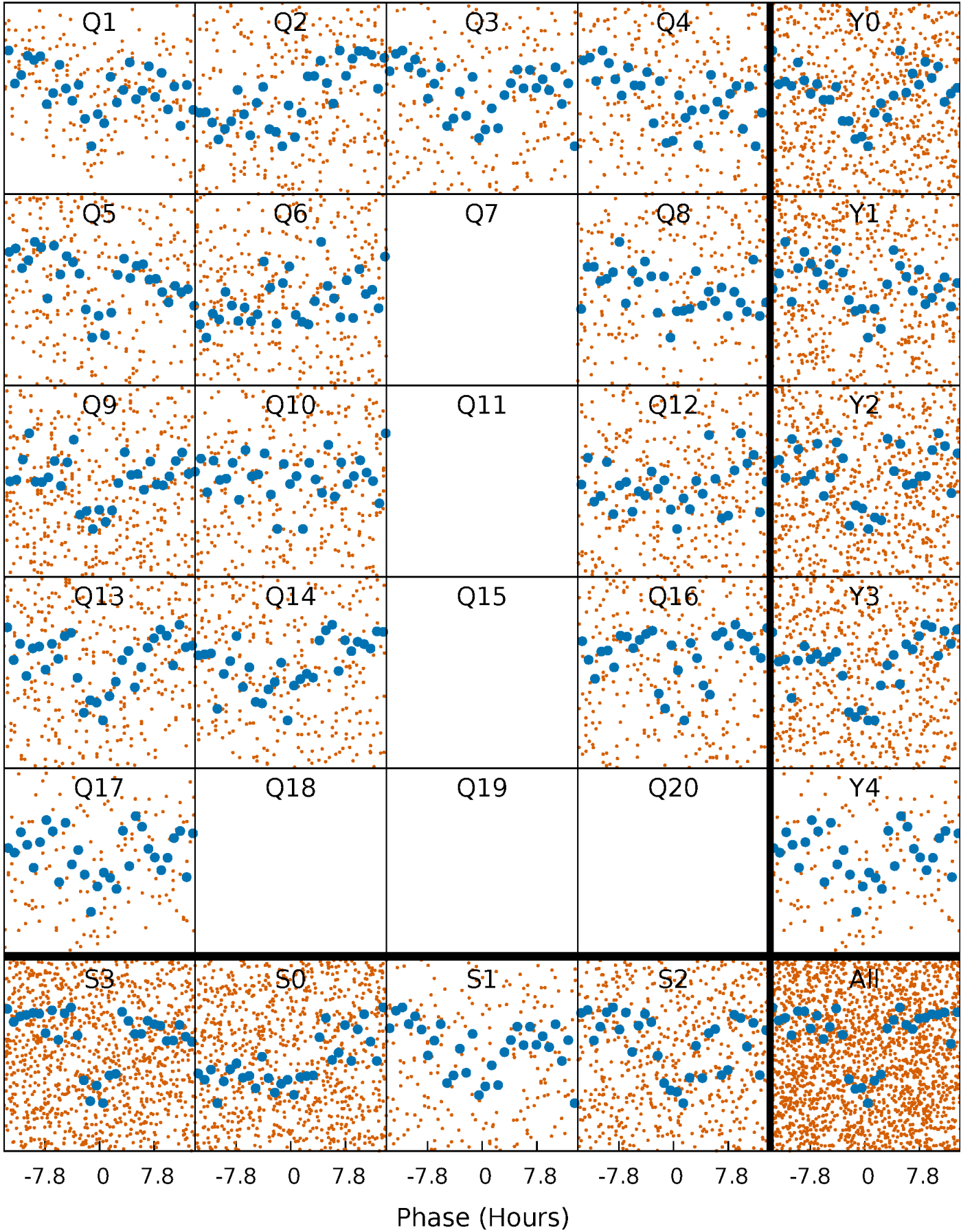


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



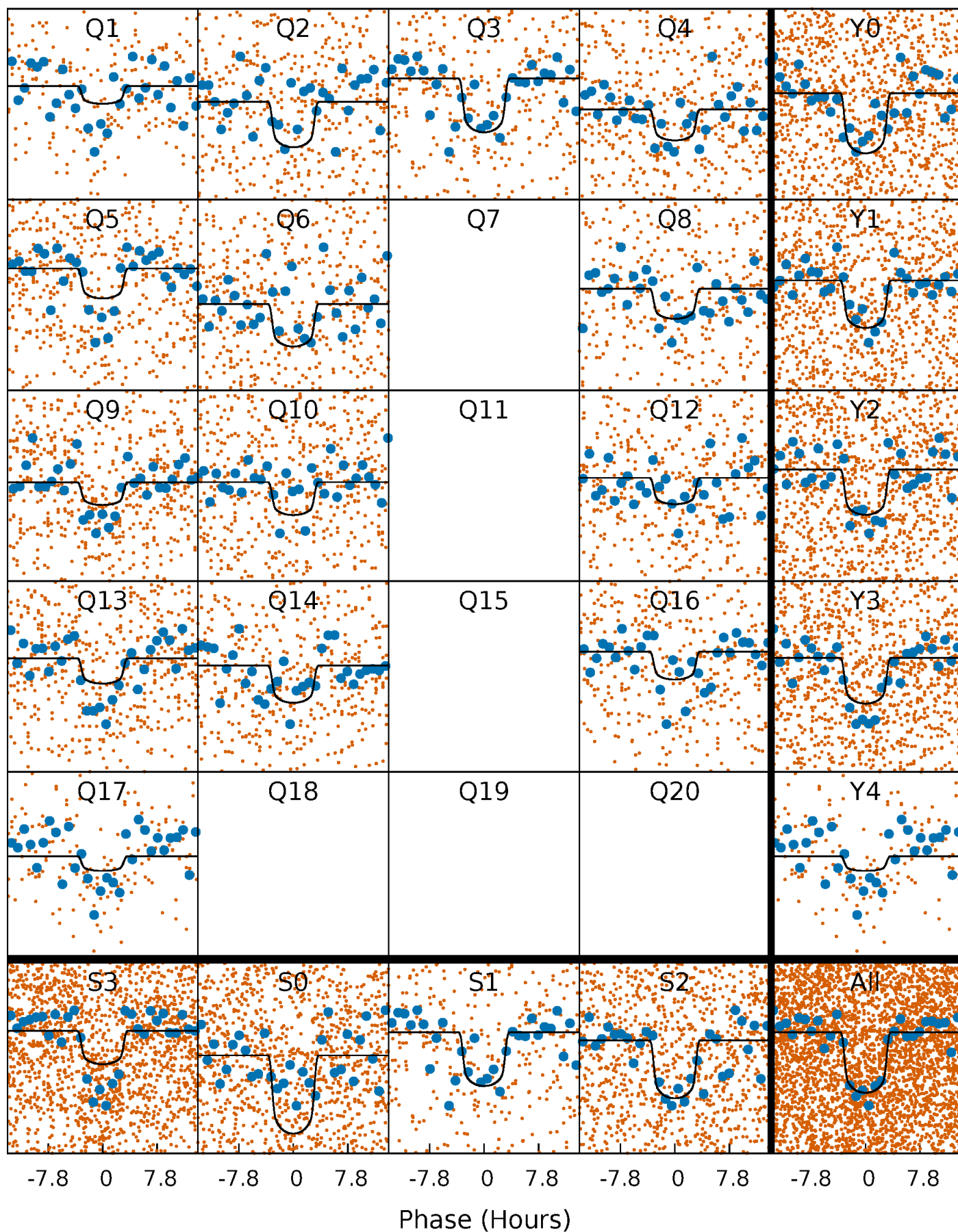
PDC Quarter-Phased Transit Curves

TCE 009850912-01 P= 8.480309 Days $T_0=135.852126$ (BKJD)



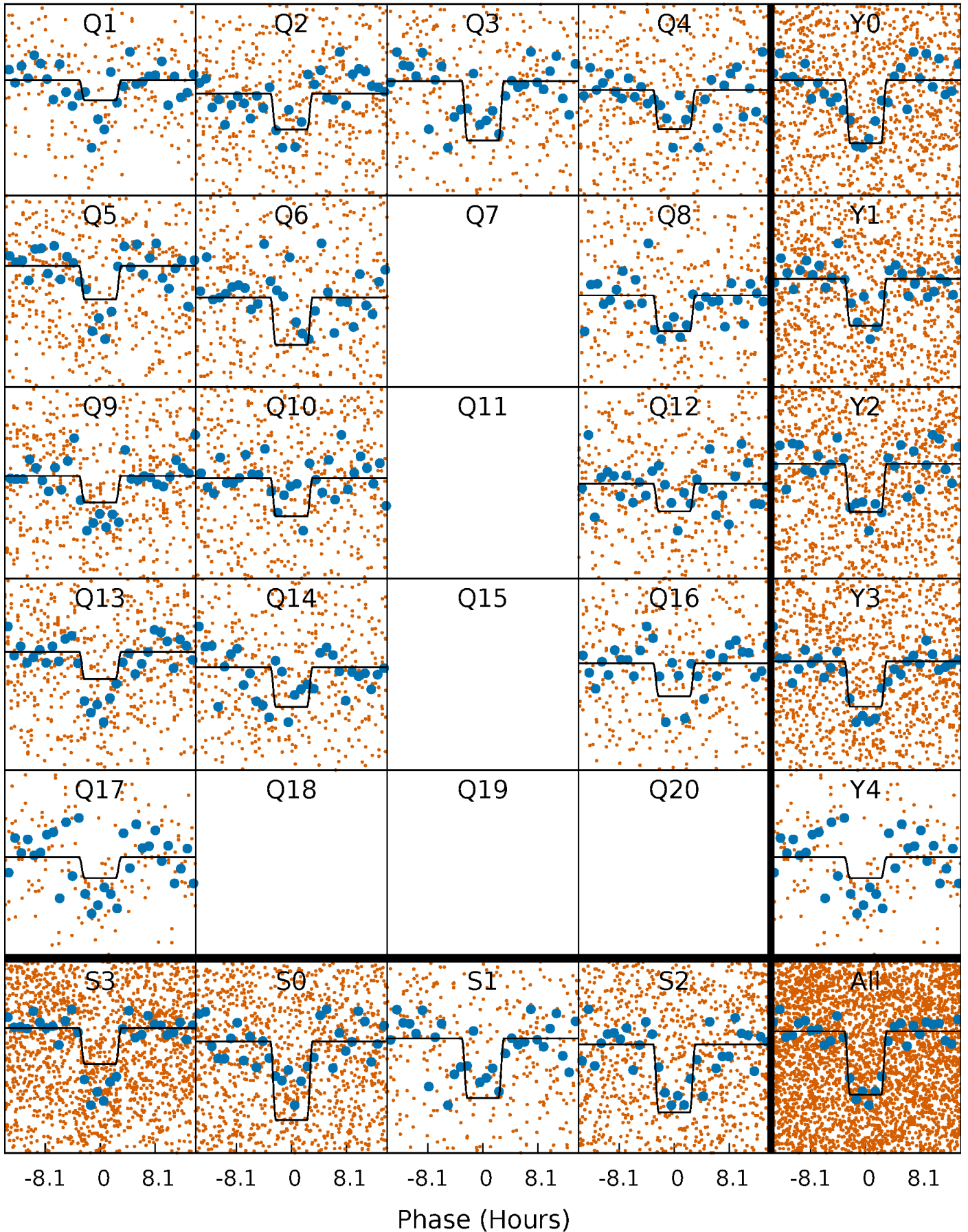
DV Quarter-Phased Transit Curves

TCE 009850912-01 P= 8.480309 Days $T_0=135.852126$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

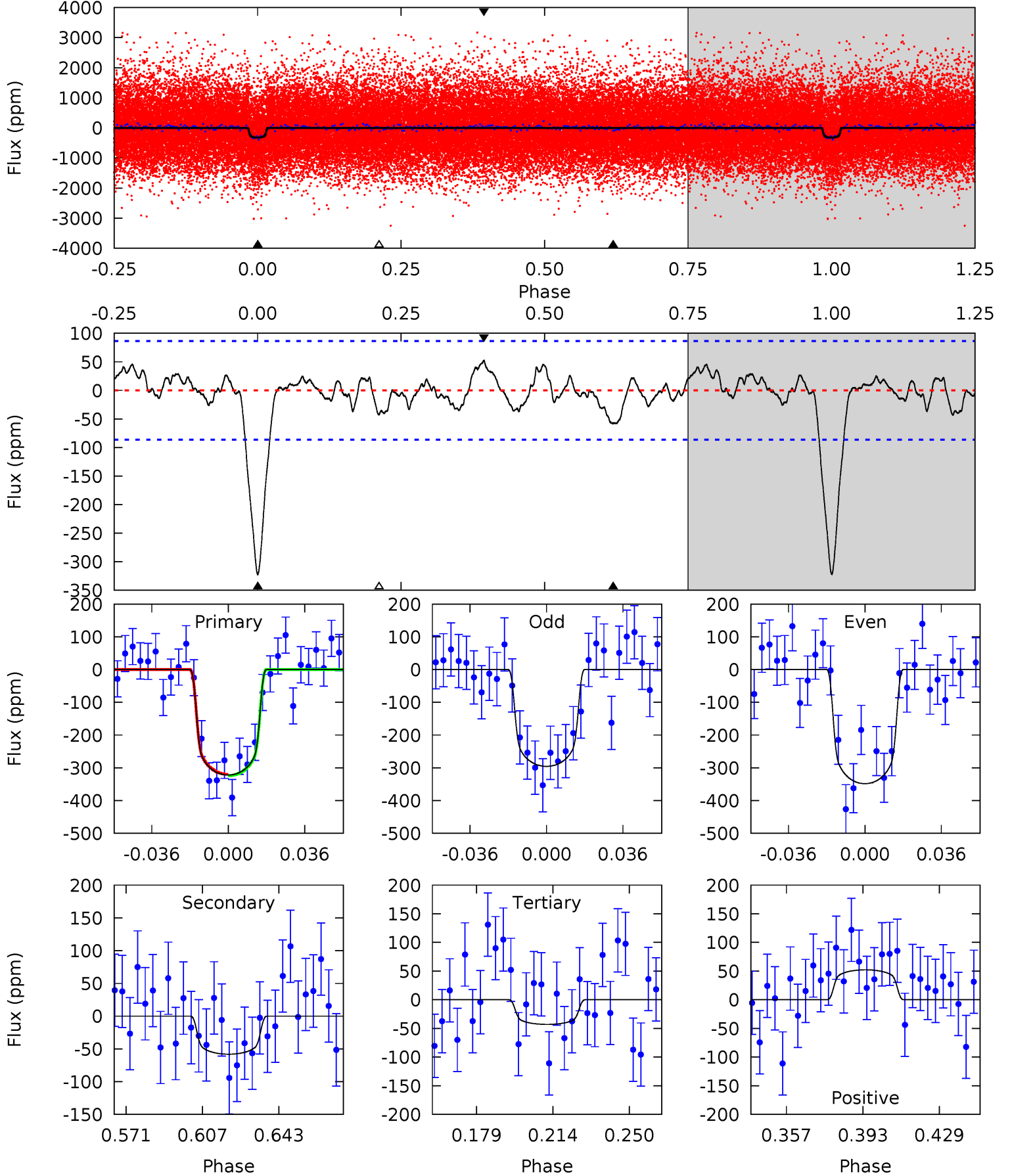
TCE 009850912-01 P= 8.480296 Days $T_0=135.852637$ (BKJD)



DV Model-Shift Uniqueness Test

009850912-01, P = 8.480309 Days, E = 127.371817 Days

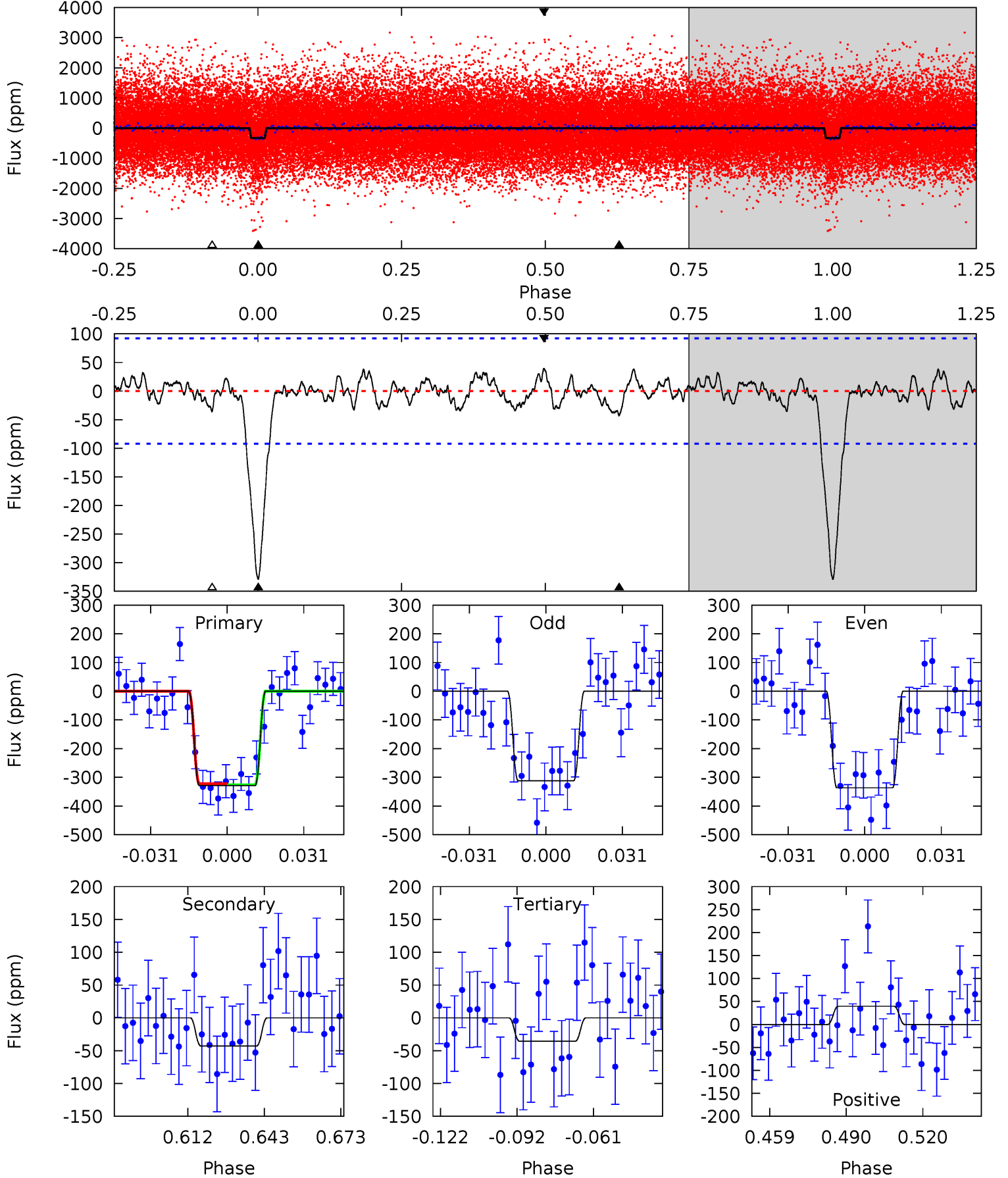
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	3.21	2.38	2.89	4.78	2.10	1.11	15.4	14.9	0.83	0.33	1.46	0.99	0.14	0.11



Alt Model-Shift Uniqueness Test

009850912-01, P = 8.480296 Days, E = 127.372341 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	2.24	1.86	2.07	4.81	2.16	0.82	15.3	15.1	0.38	0.17	0.64	1.06	0.11	0.09



Stellar Parameters For KIC 009850912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6092^{+189}_{-232}	$4.471^{+0.050}_{-0.200}$	$-0.060^{+0.250}_{-0.300}$	$0.998^{+0.294}_{-0.105}$	$1.074^{+0.139}_{-0.153}$	$1.522^{+0.413}_{-0.787}$
	+3%/-4%	+1%/-4%	+417%/-500%	+29%/-11%	+13%/-14%	+27%/-52%
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 009850912-01 / KOI 7239.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-58 ± 18	$2.19^{+0.42}_{-0.31}$	1331^{+86}_{-64}	4092^{+323}_{-331}	43^{+24}_{-17}
Alt.	-43 ± 19	$2.07^{+0.38}_{-0.31}$	1329^{+94}_{-66}	3952^{+379}_{-393}	36^{+23}_{-18}

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

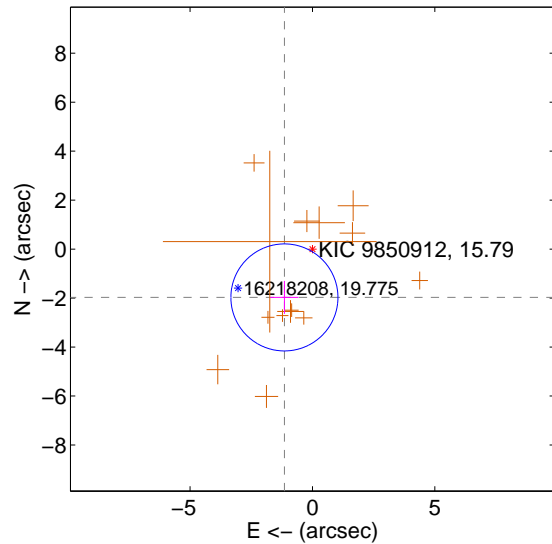
Supplemental centroid analysis for 009850912-01. Kepler magnitude: 15.79. Transit SNR 11.39

There are 0 quarters with good PRF difference image offsets

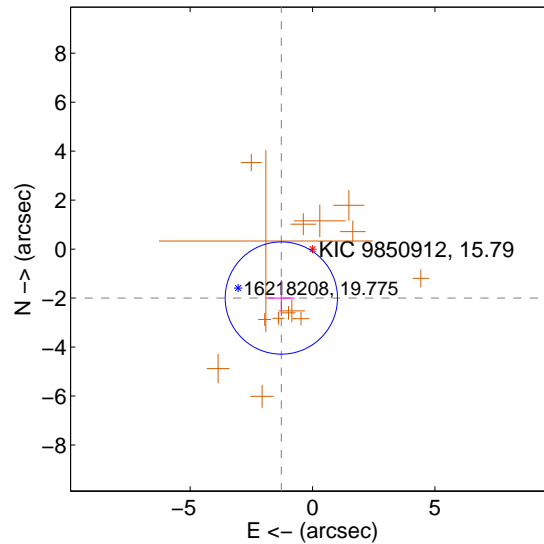
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.282 ± 0.729	3.13	1.145 ± 0.578	-1.974 ± 0.674
PRF-fit source offset from KIC position	2.370 ± 0.764	3.10	1.274 ± 0.544	-1.999 ± 0.736
photometric centroid source offset	4.52 ± 1.24	3.66	-2.41 ± 1.16	3.83 ± 1.27

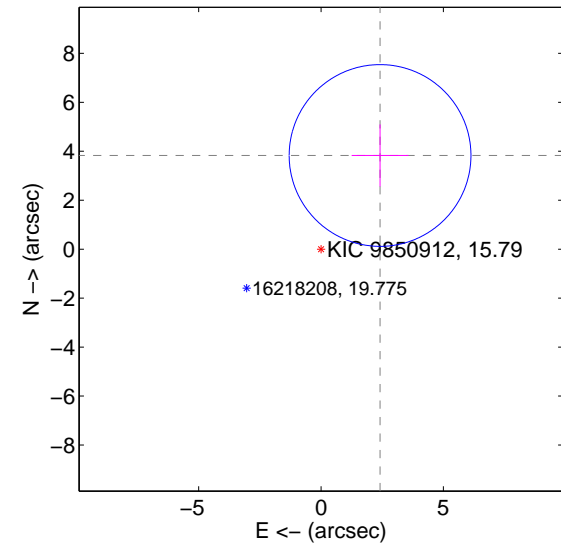
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

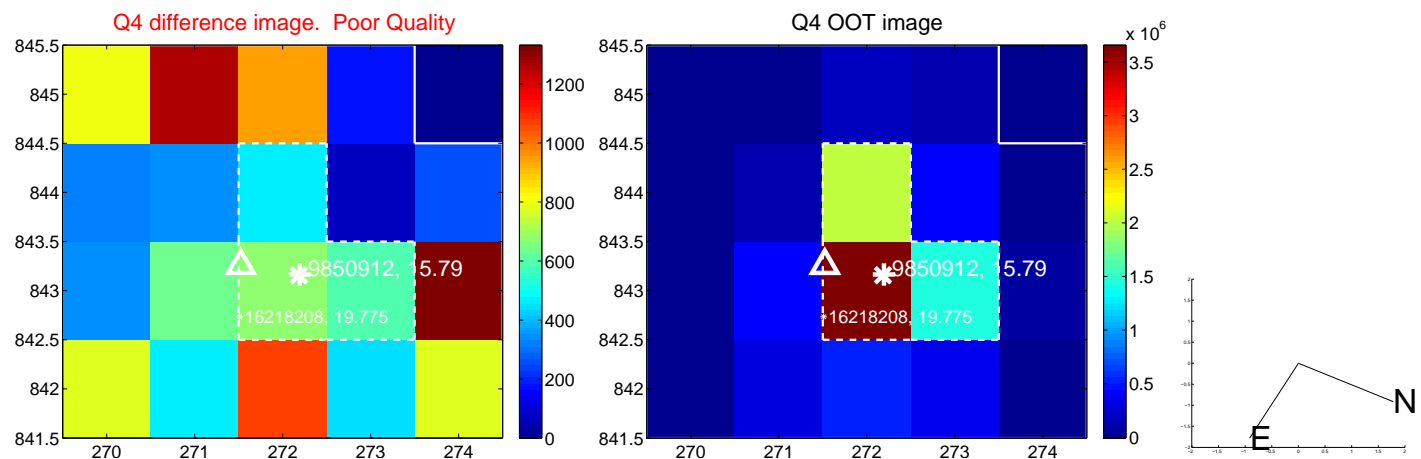
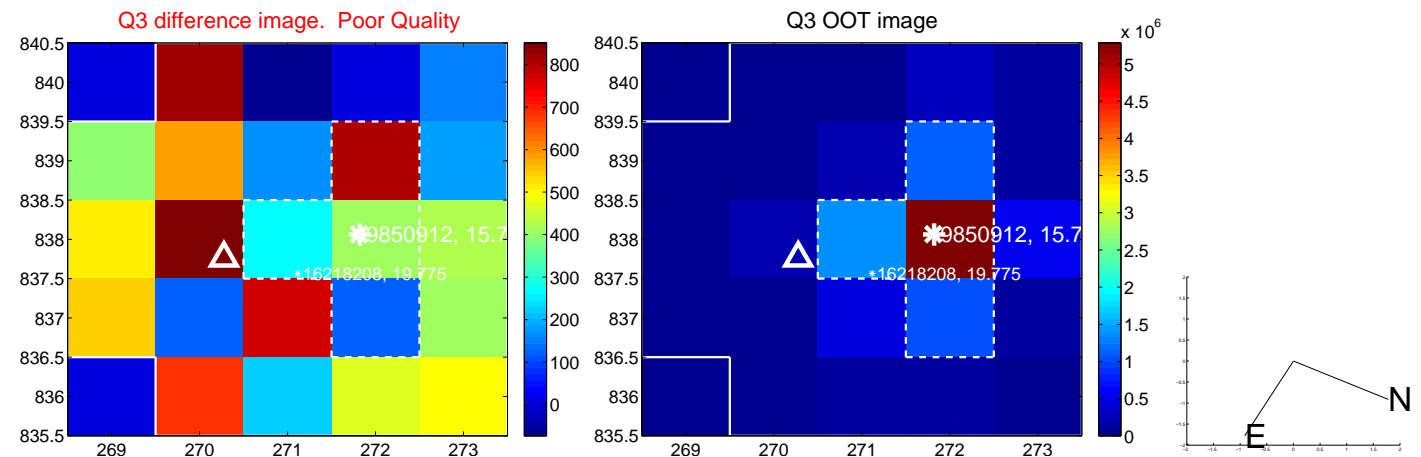
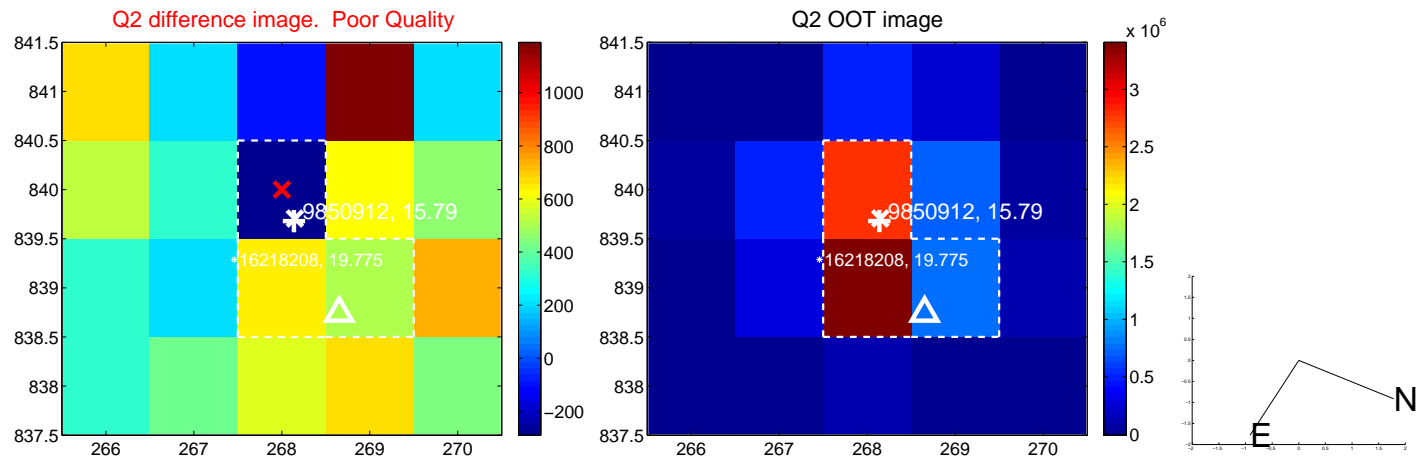
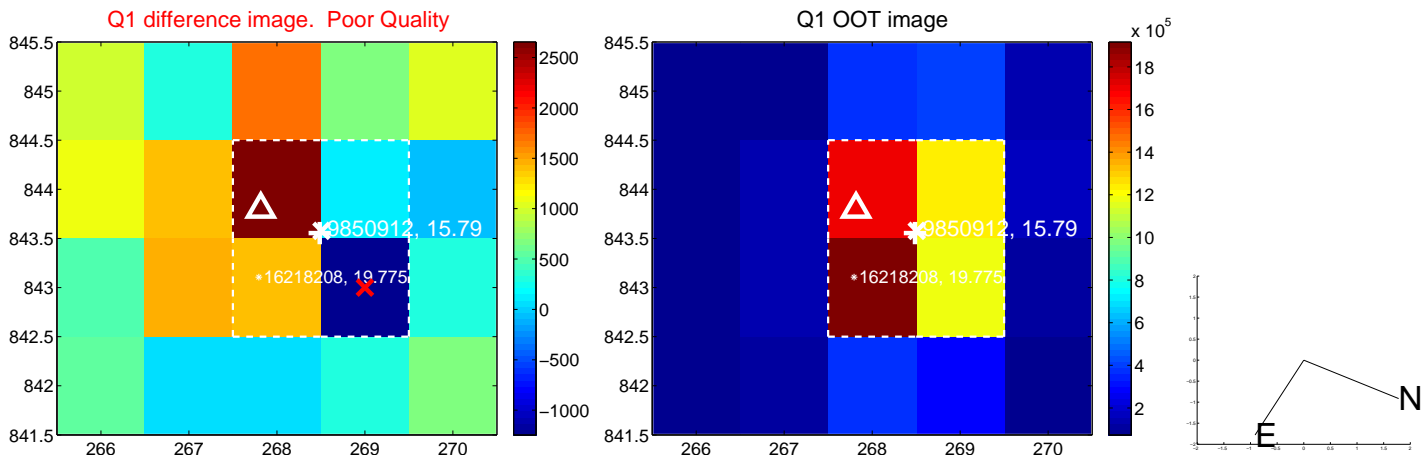


offset from photometric centroids

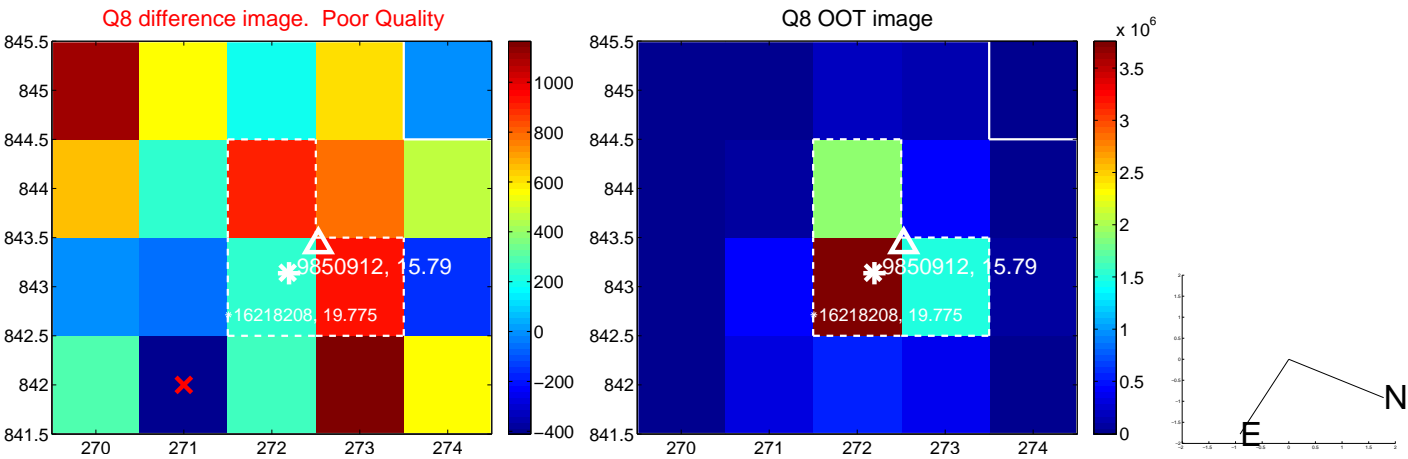
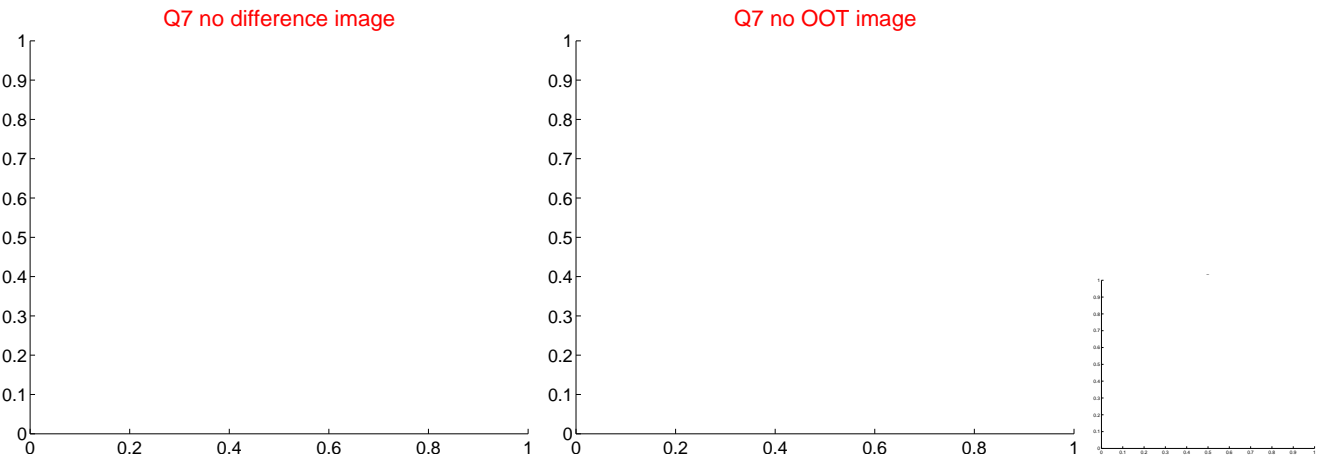
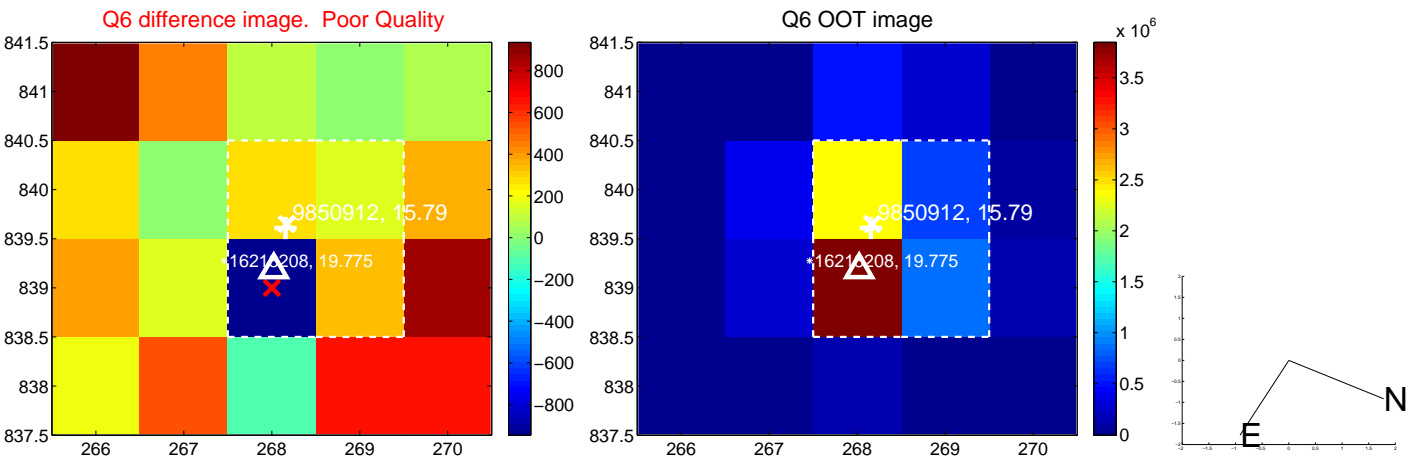
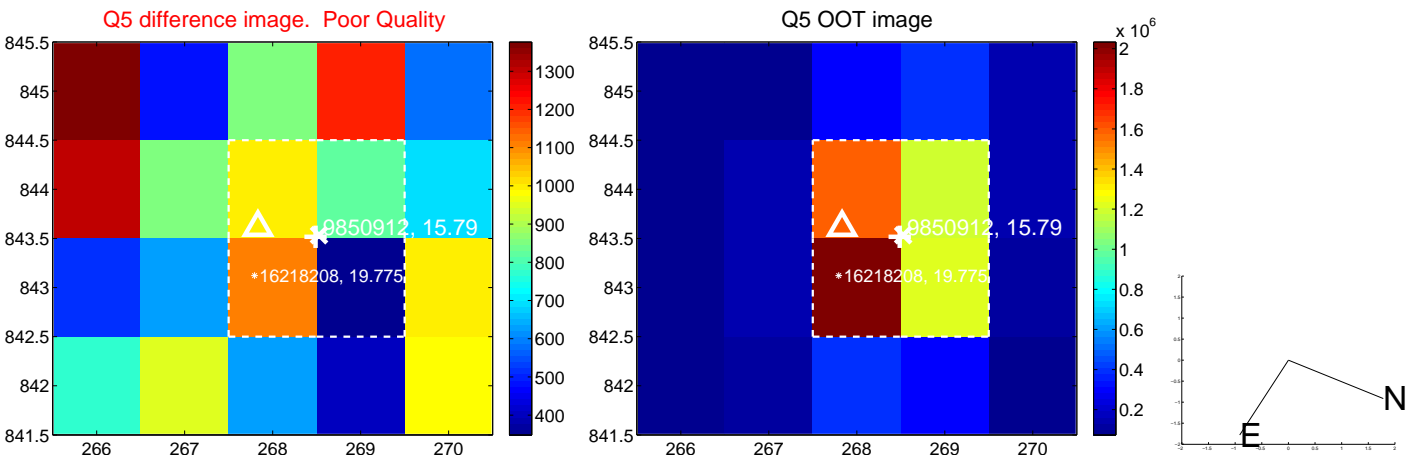


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

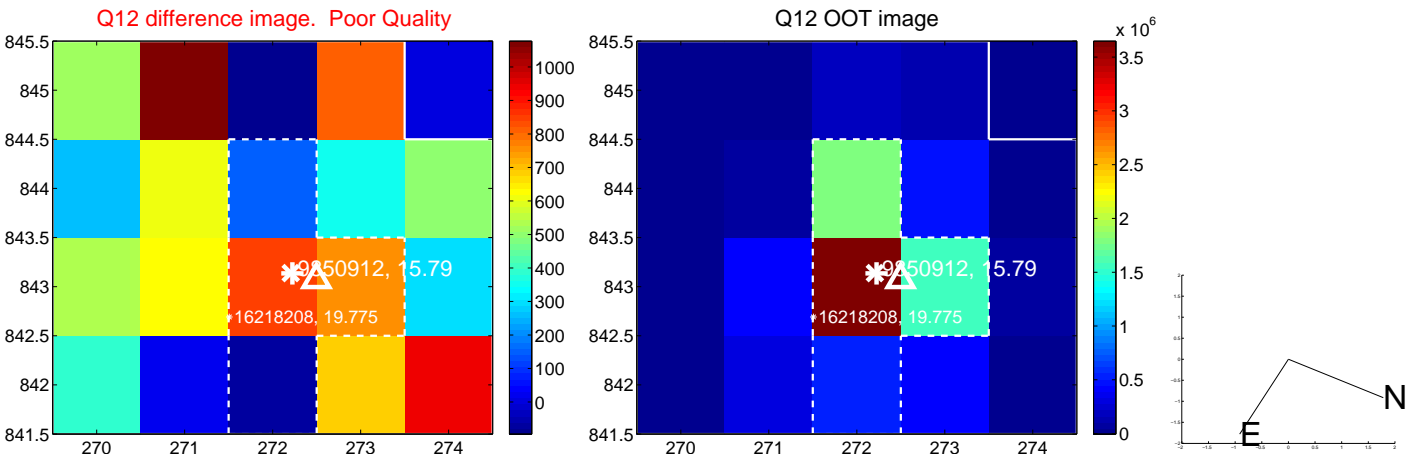
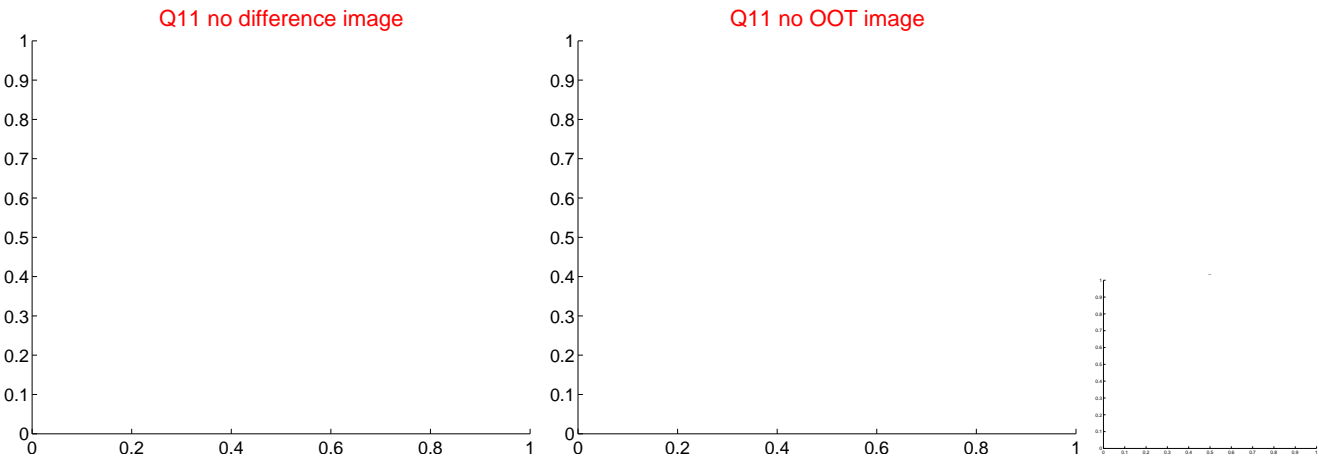
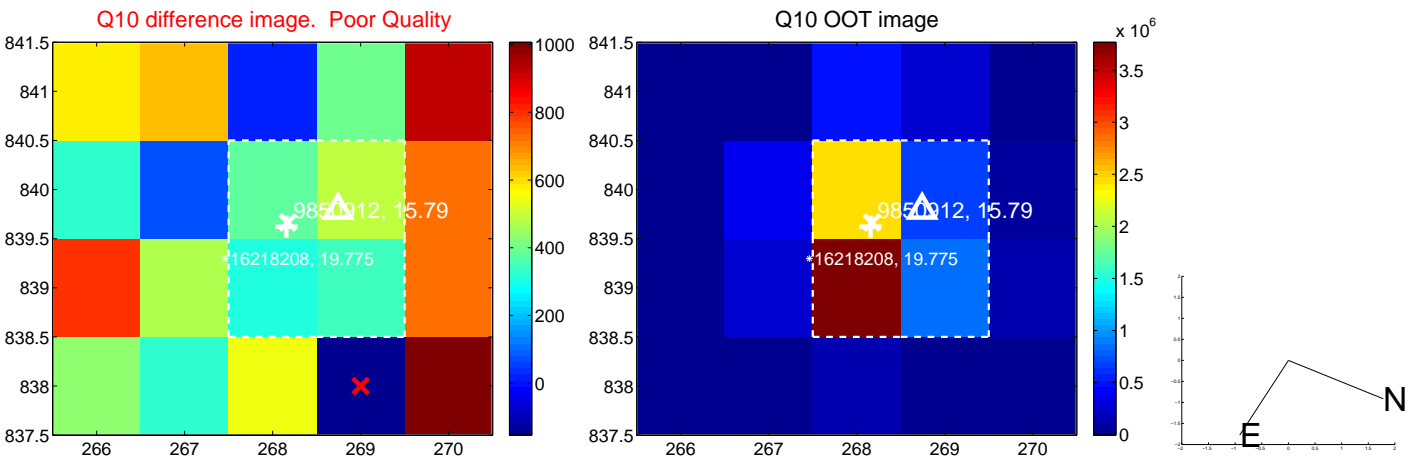
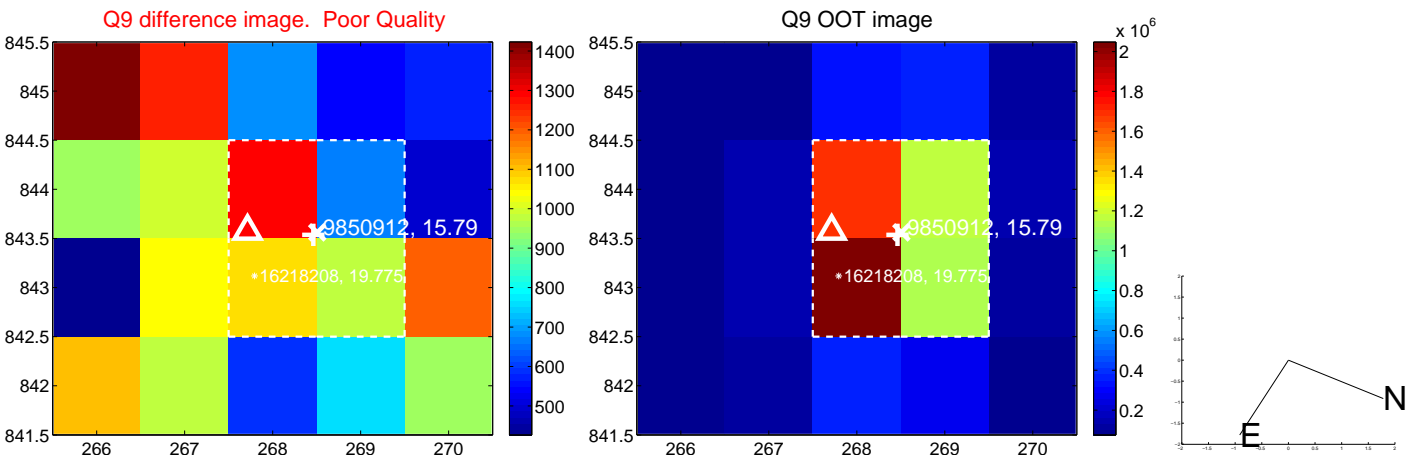
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



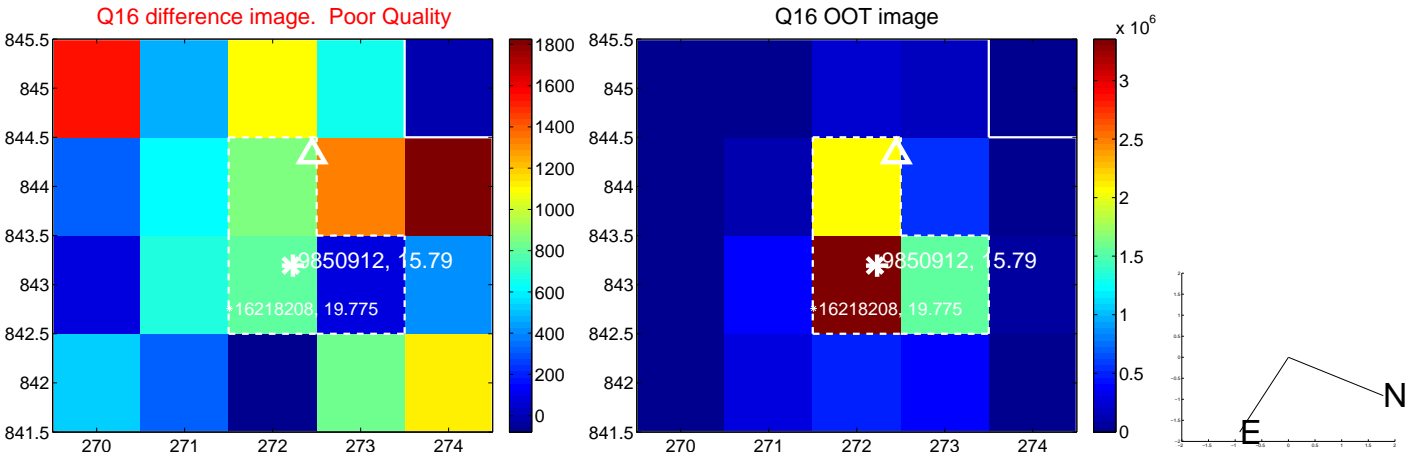
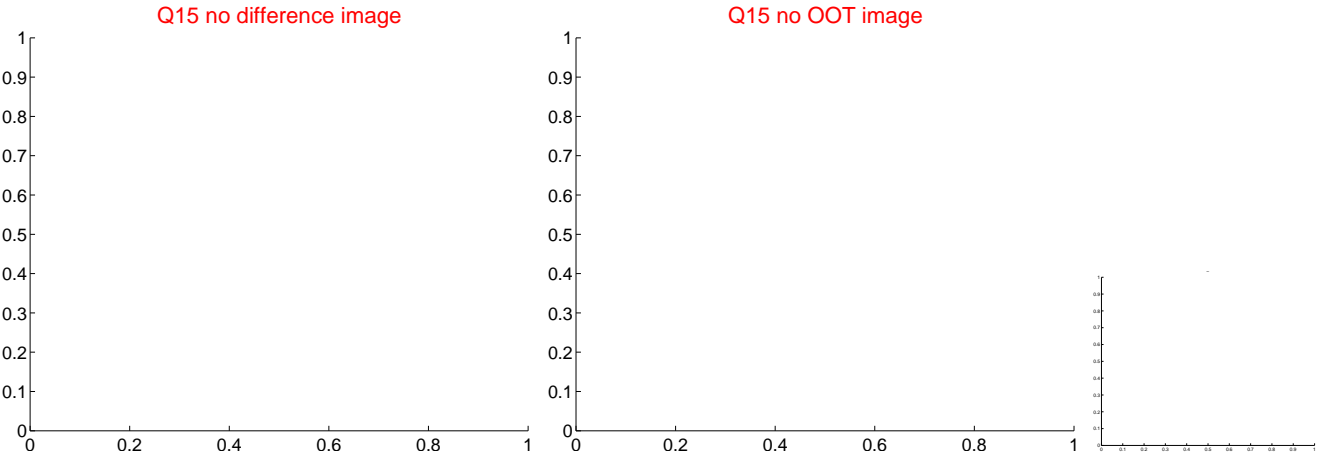
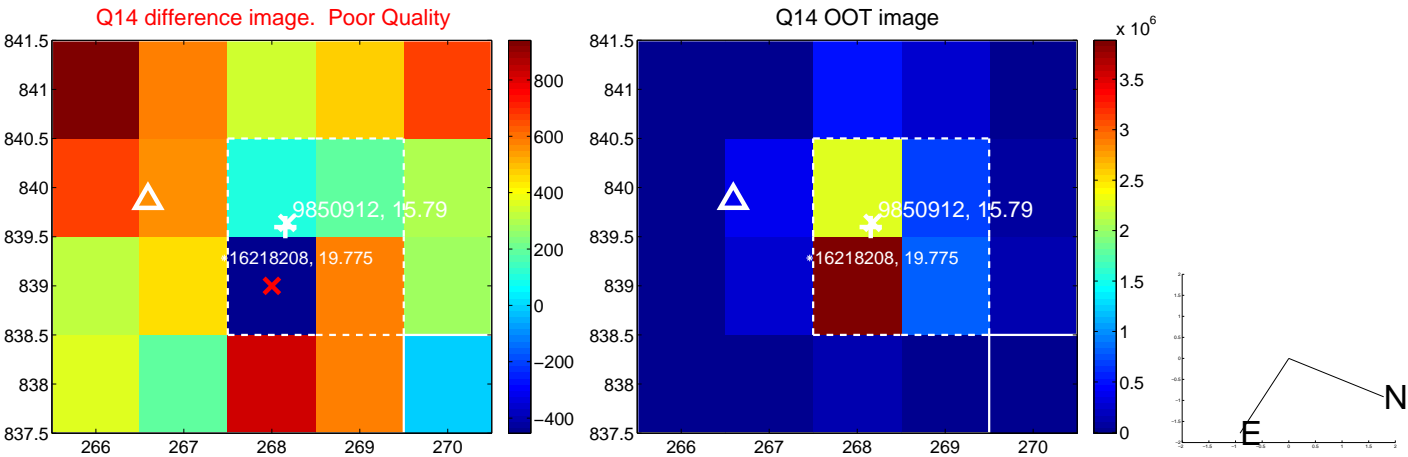
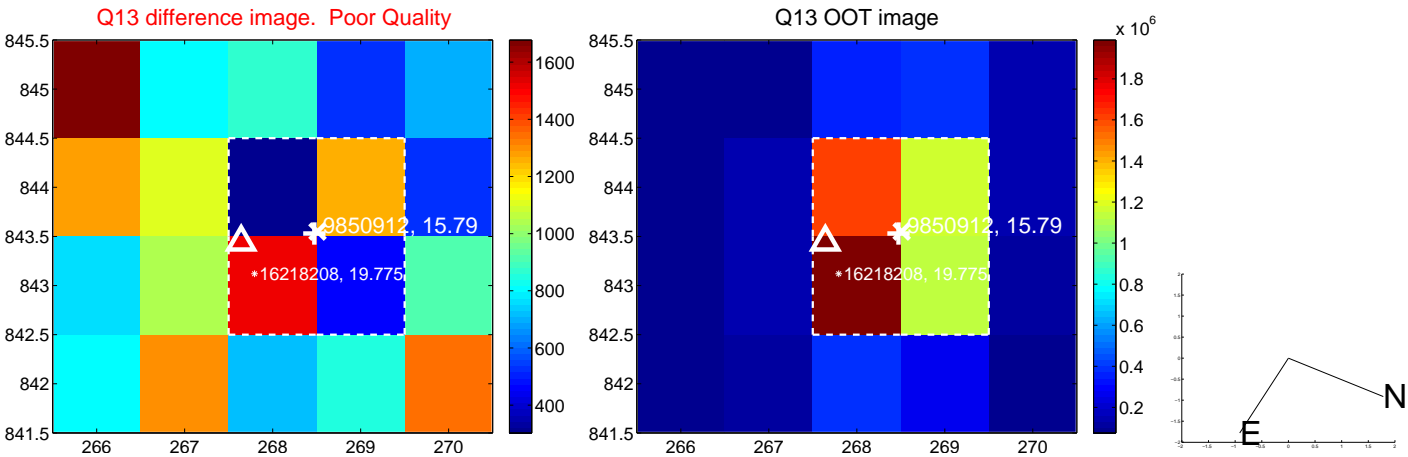
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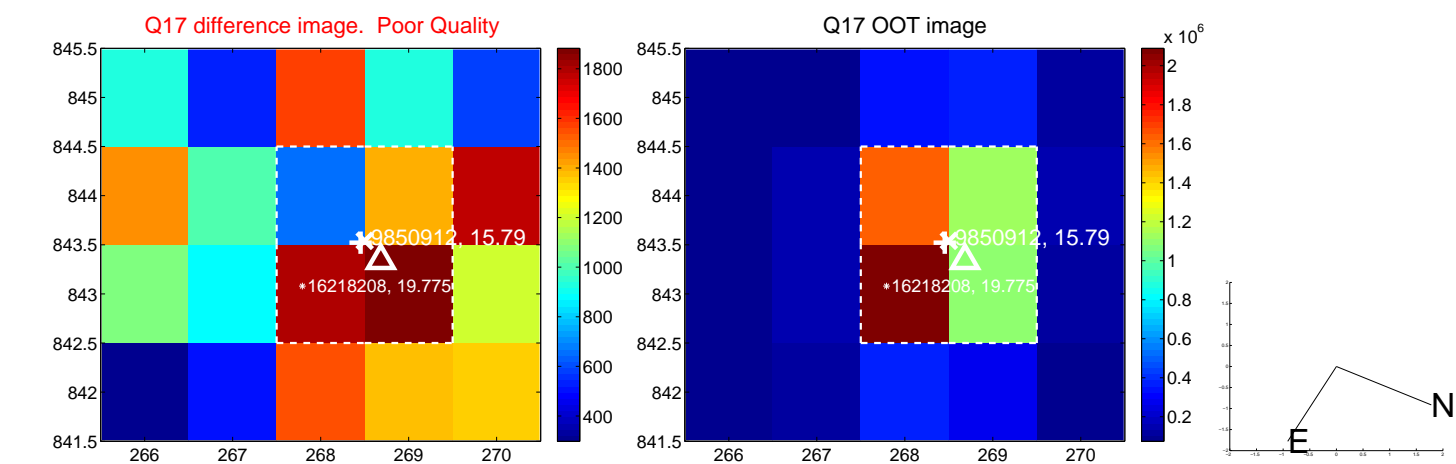
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



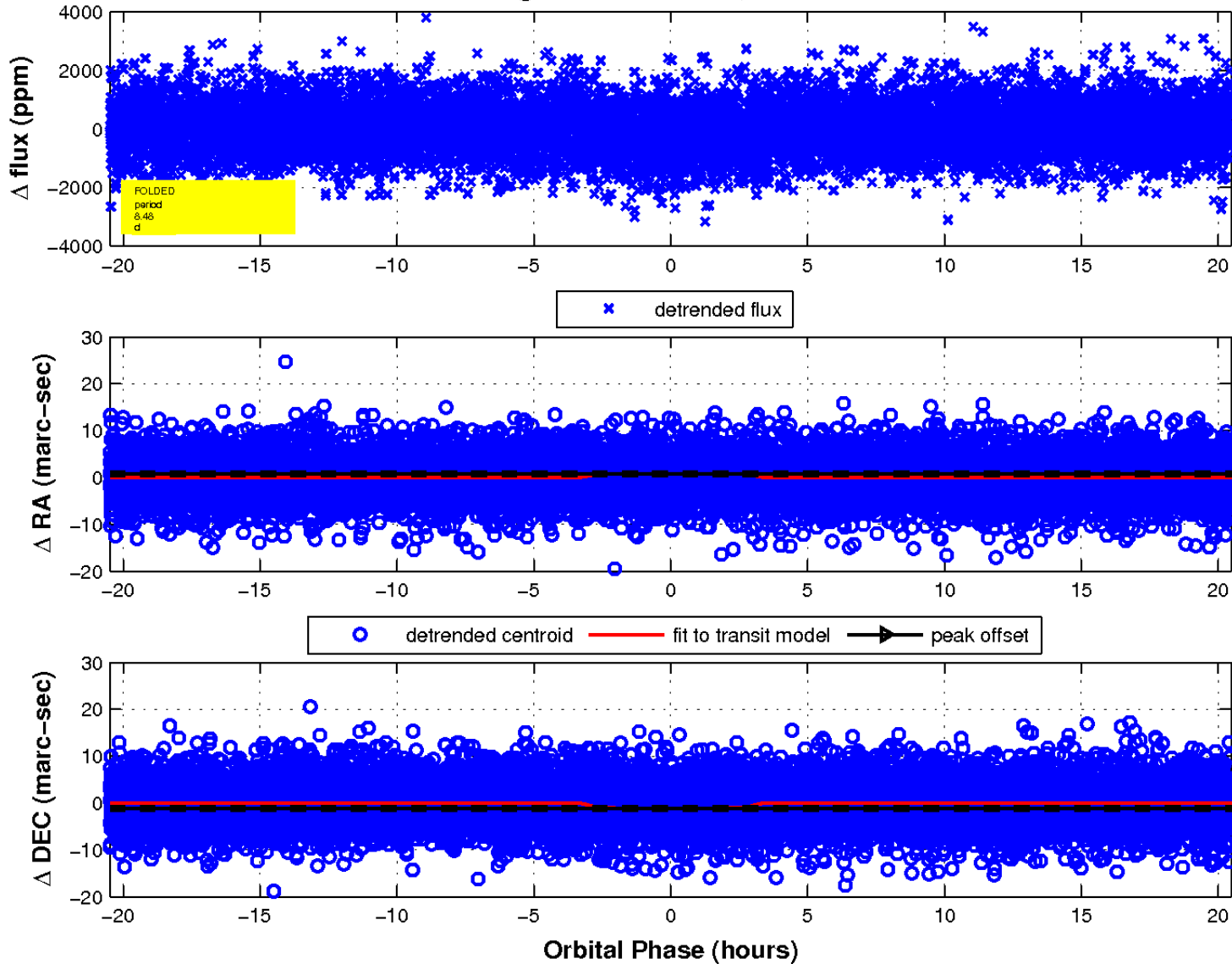
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

