

KIC 009959589

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
009959589-01	OBS	3098.01	1.332504	132.089815	146.6	3.899	19.2	19.4	0.97	6091	1.39	1990.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009959589-01	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.

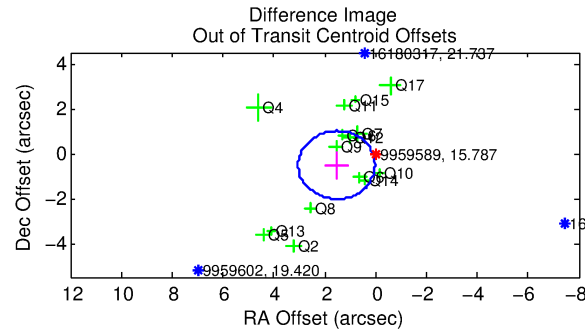
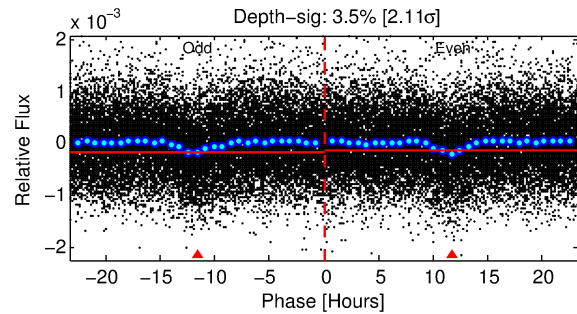
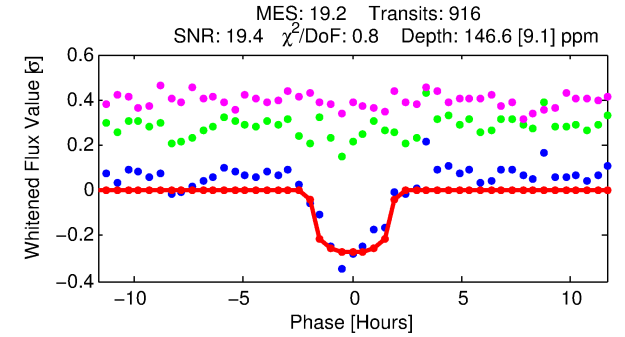
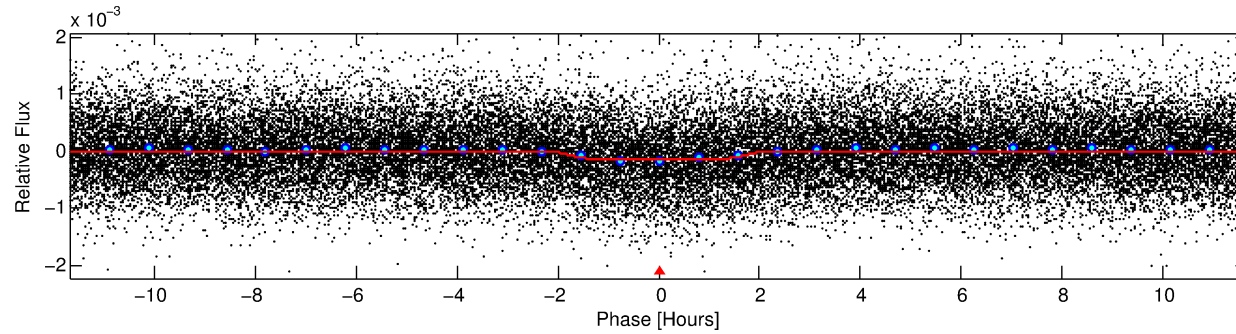
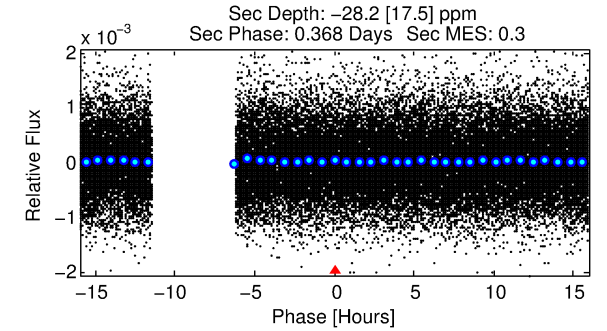
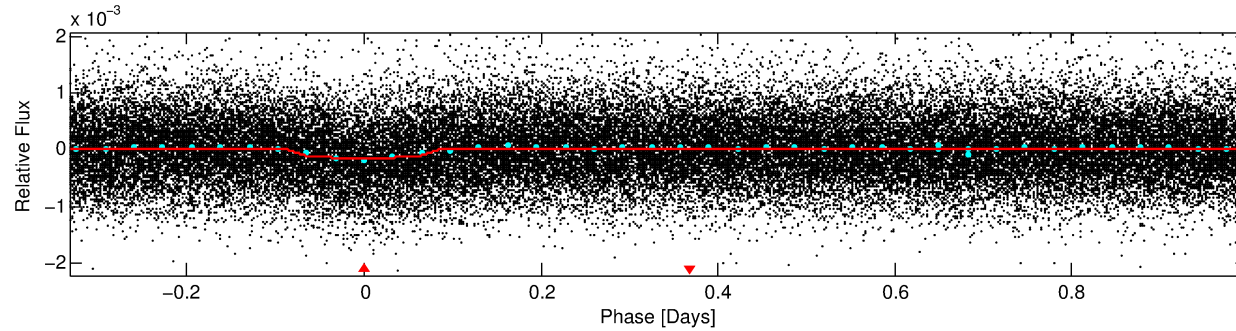
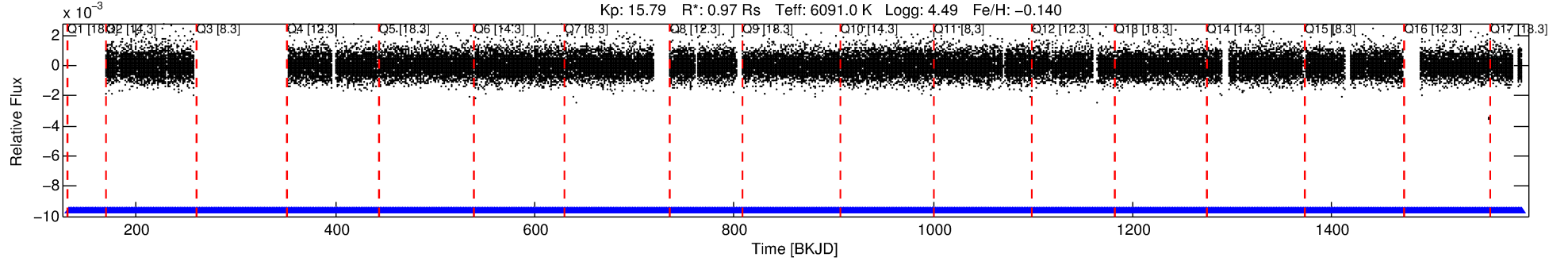
Ephemeris Match Information For 009959589-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
009959589-01	9959589	BR-Cyg-pri	9899416	1:1	127.2	-21	-25	10.03	15.79	4550.10	Direct-PRF	0	3.74	2.82

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 9959589 Candidate: 1 of 1 Period: 1.333 d
KOI: K03098.01 Corr: 0.894



DV Fit Results:

Period = 1.33250 [0.00001] d
Epoch = 132.0898 [0.0027] BKJD
Rp/R* = 0.0132 [0.0029]
a/R* = 1.51 [0.99]
b = 0.91 [0.23]
Seff = 1990.87 [805.61]
Teff = 1703 [172] K
Rp = 1.39 [0.53] Re
a = 0.0241 [0.0063] AU
Ag = N/A
Teffp = N/A

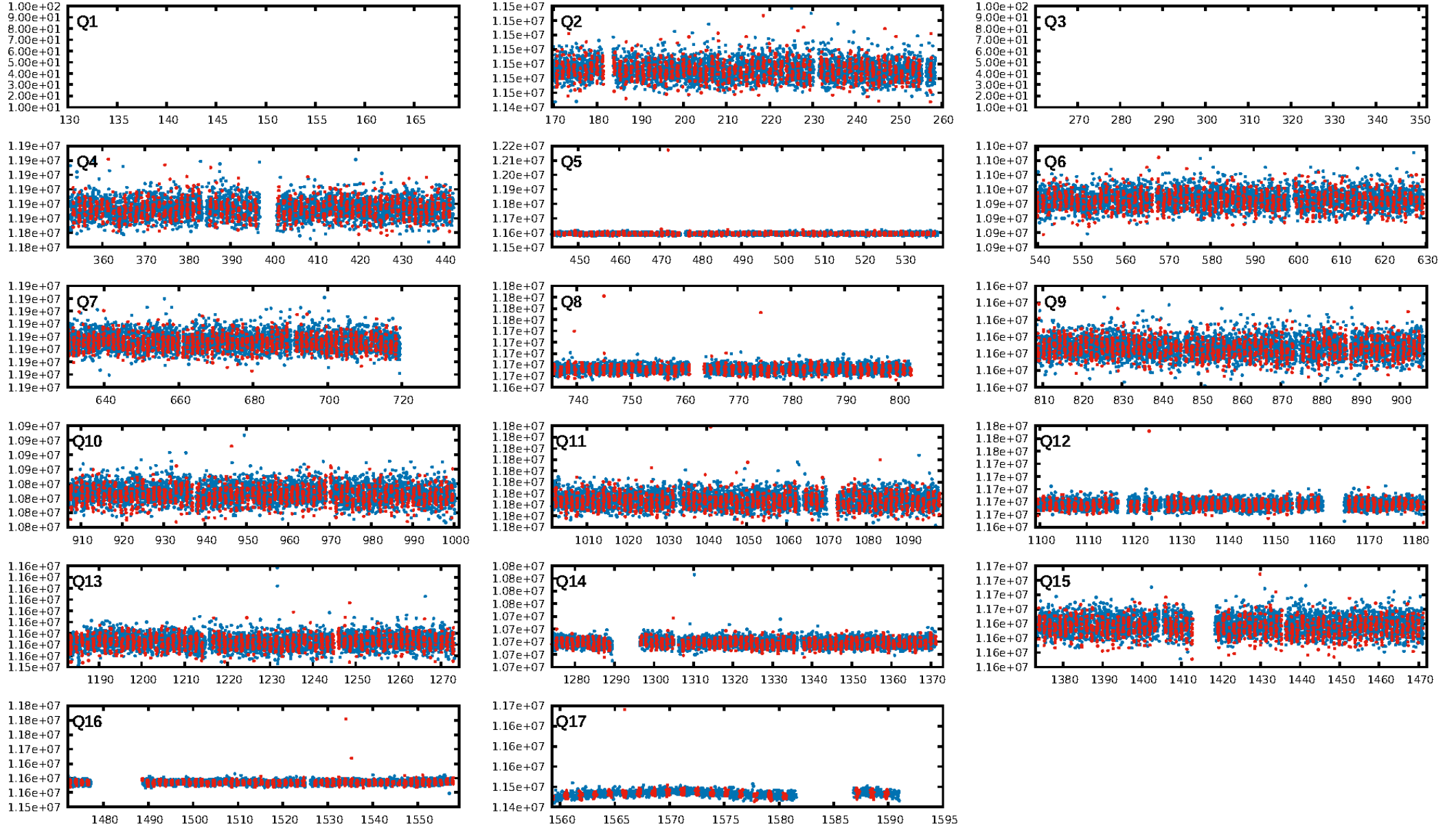
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.37e-85
RollingBand-fgt: 1.00 [896/896]
GhostDiagnostic-chr: -0.1335
Centroid-sig: 0.0%
Centroid-so: 6.570 arcsec [8.56σ]
OotOffset-rm: 1.613 arcsec [3.20σ]
KicOffset-rm: 1.632 arcsec [2.92σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.13 [2/15]
DiffImageOverlap-fno: 1.00 [15/15]

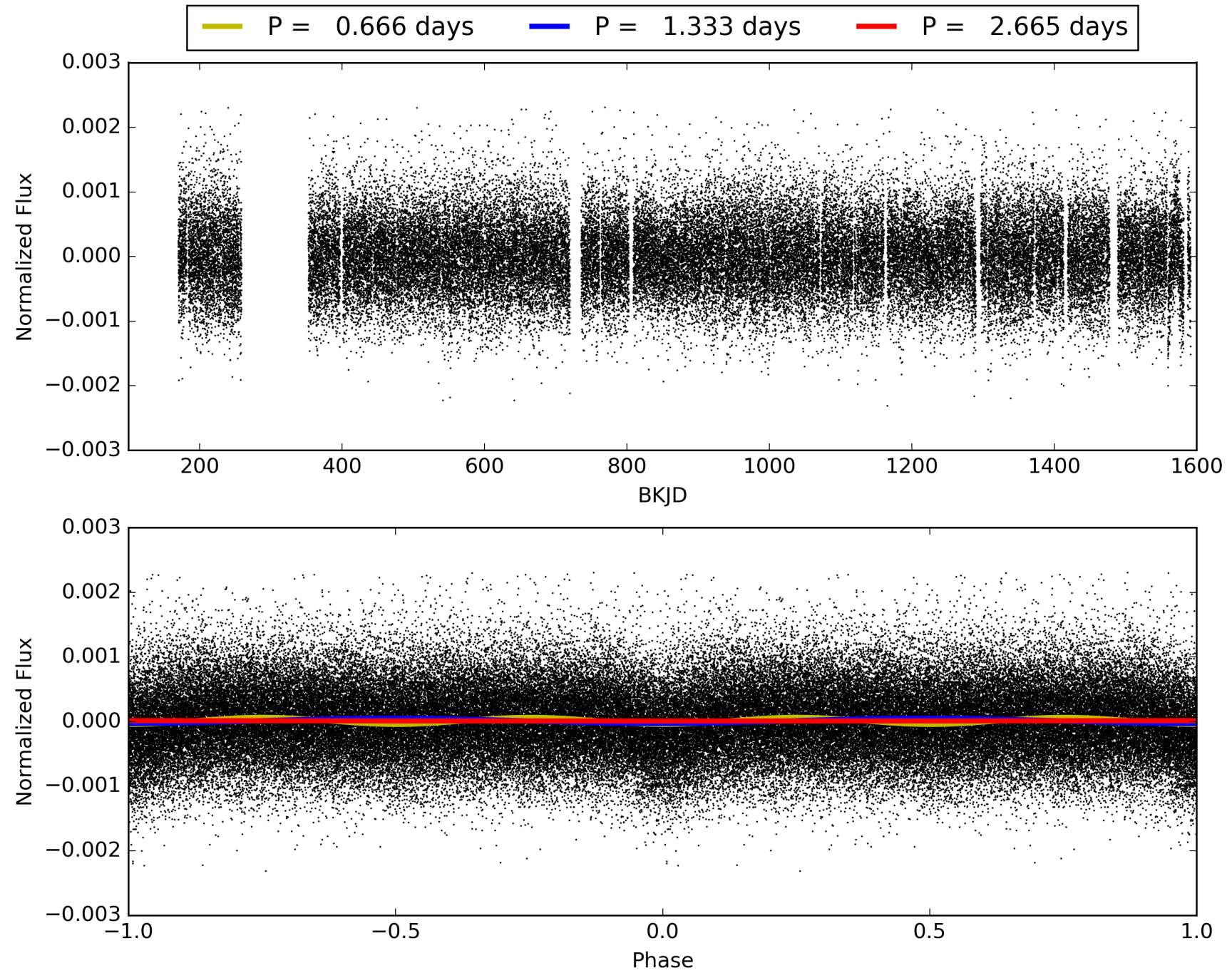
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:13:32 Z

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

TCE 009959589-01, PDC Light Curves

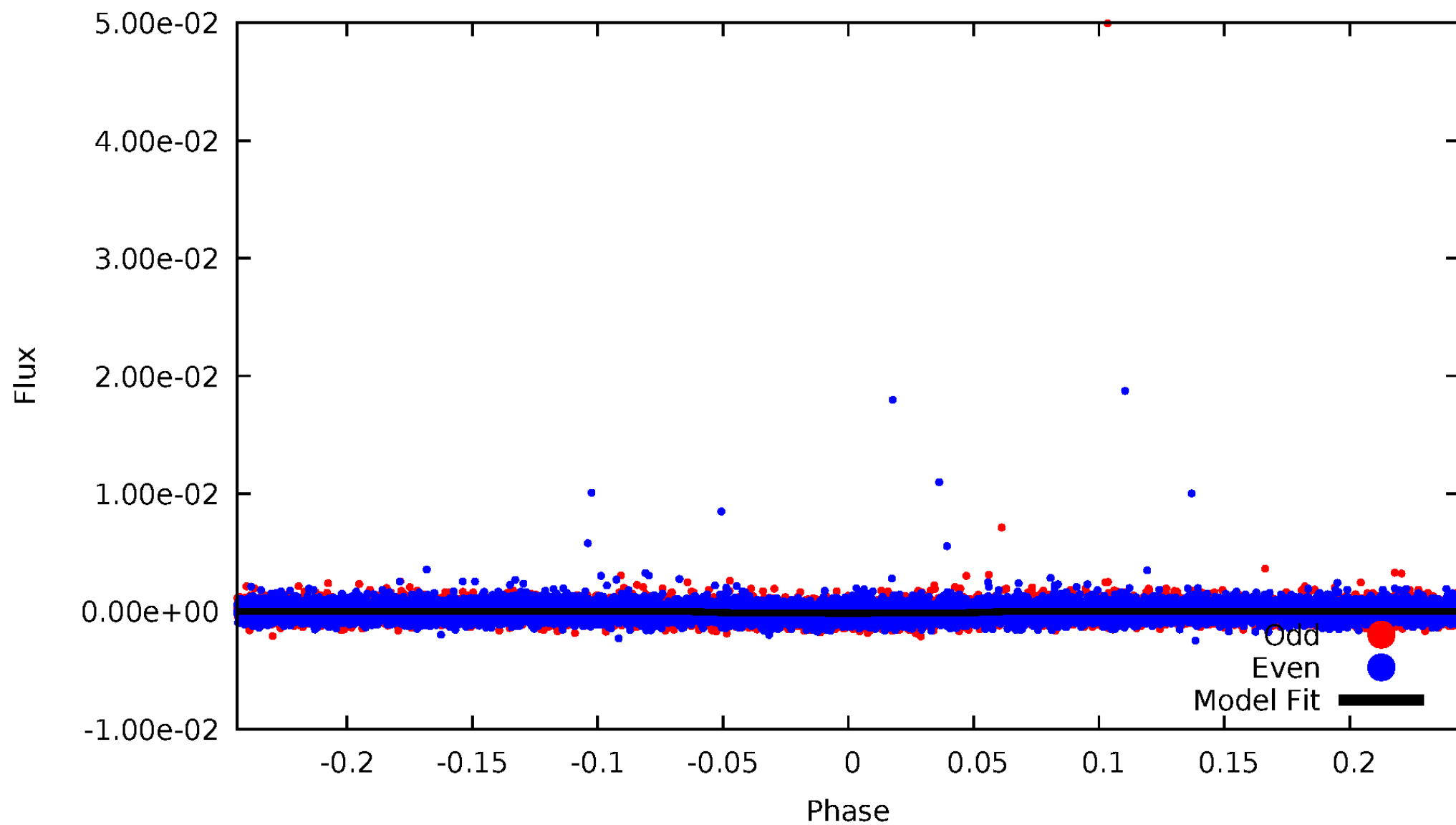


TCE 009959589-01



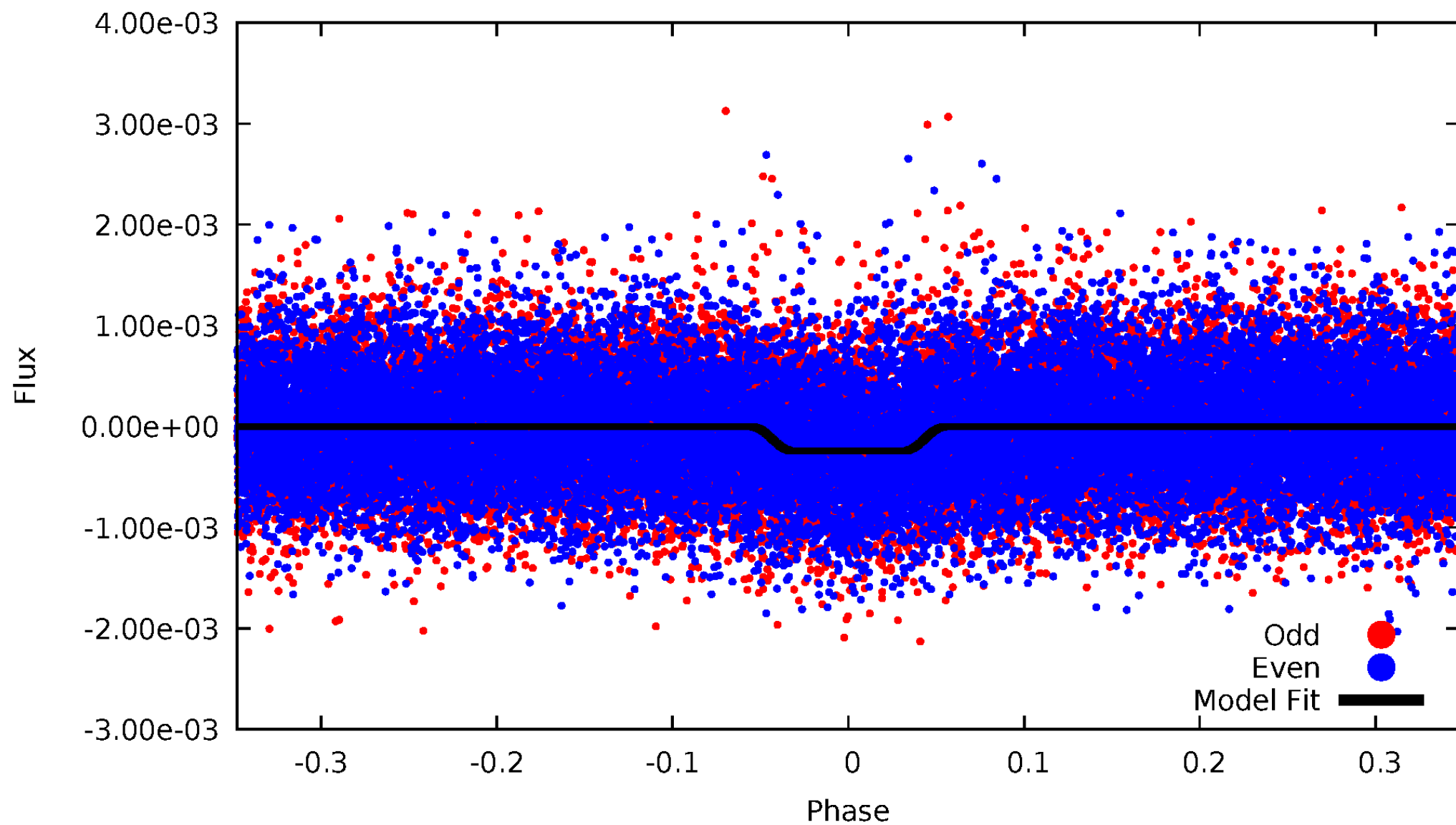
DV Odd/Even

TCE 009959589-01



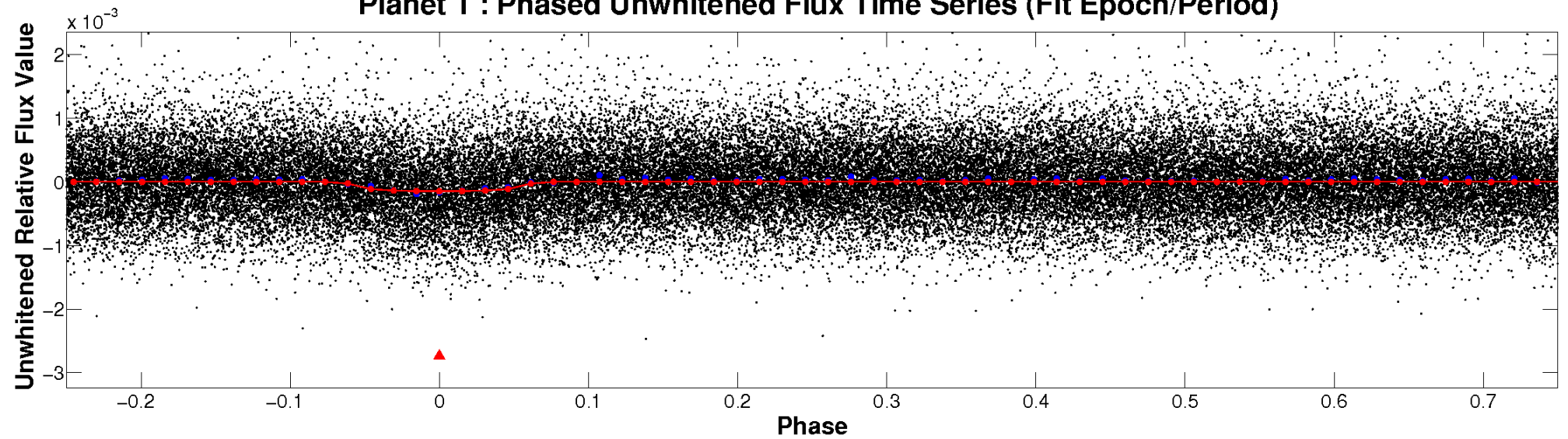
ALT Odd/Even

TCE 009959589-01

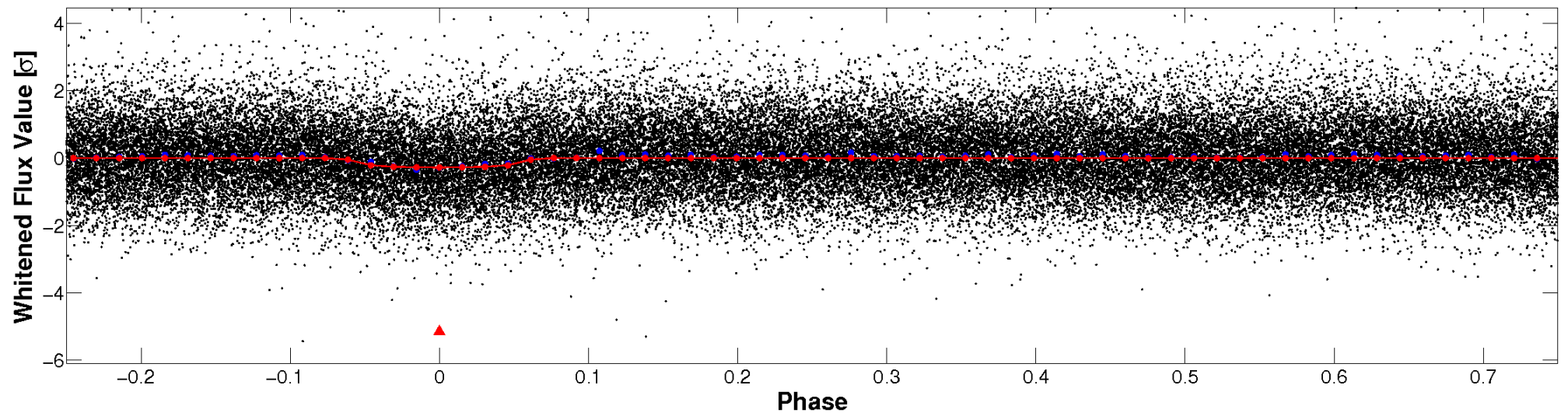


Non-Whitened Vs. Whitened Light Curve

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

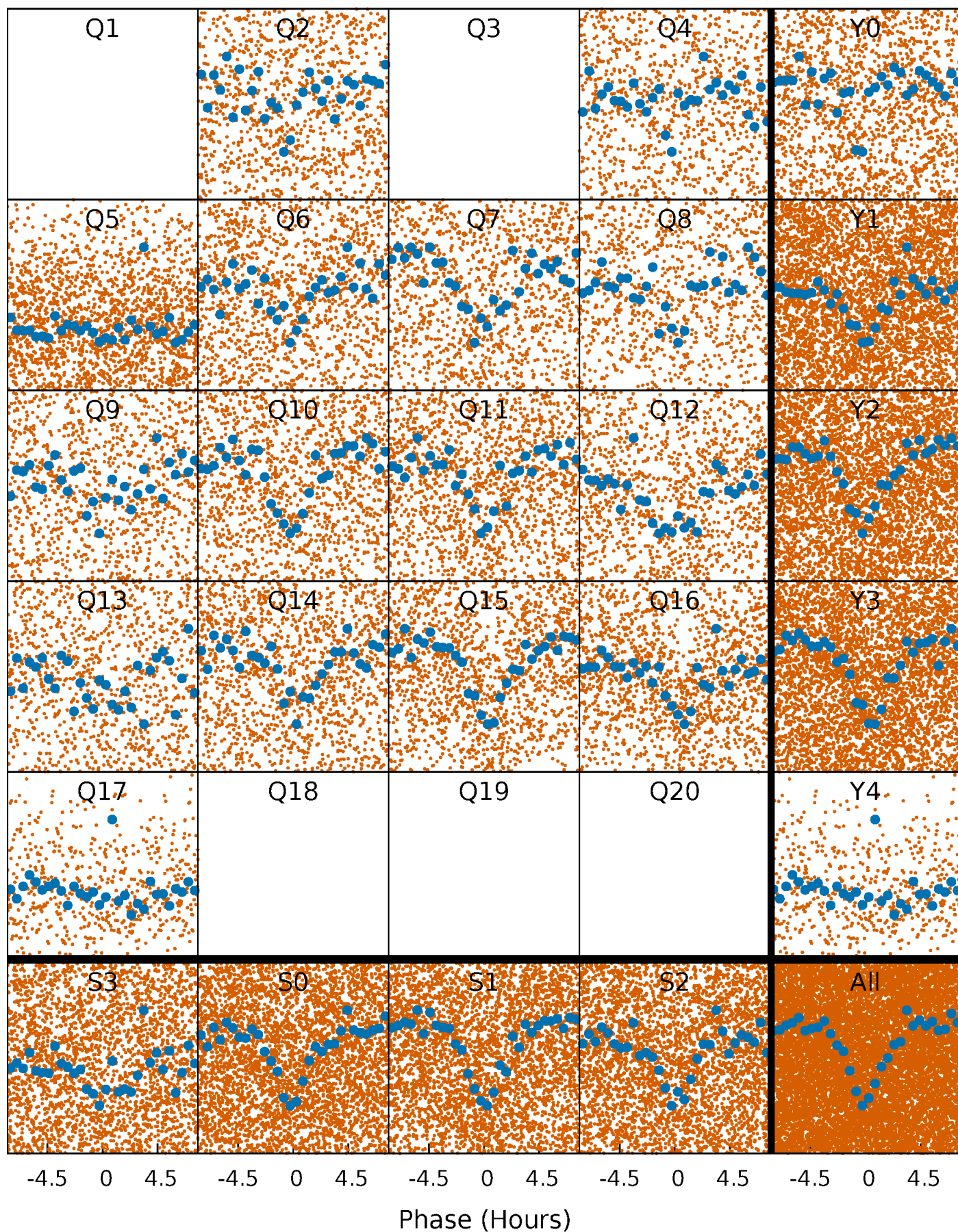


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



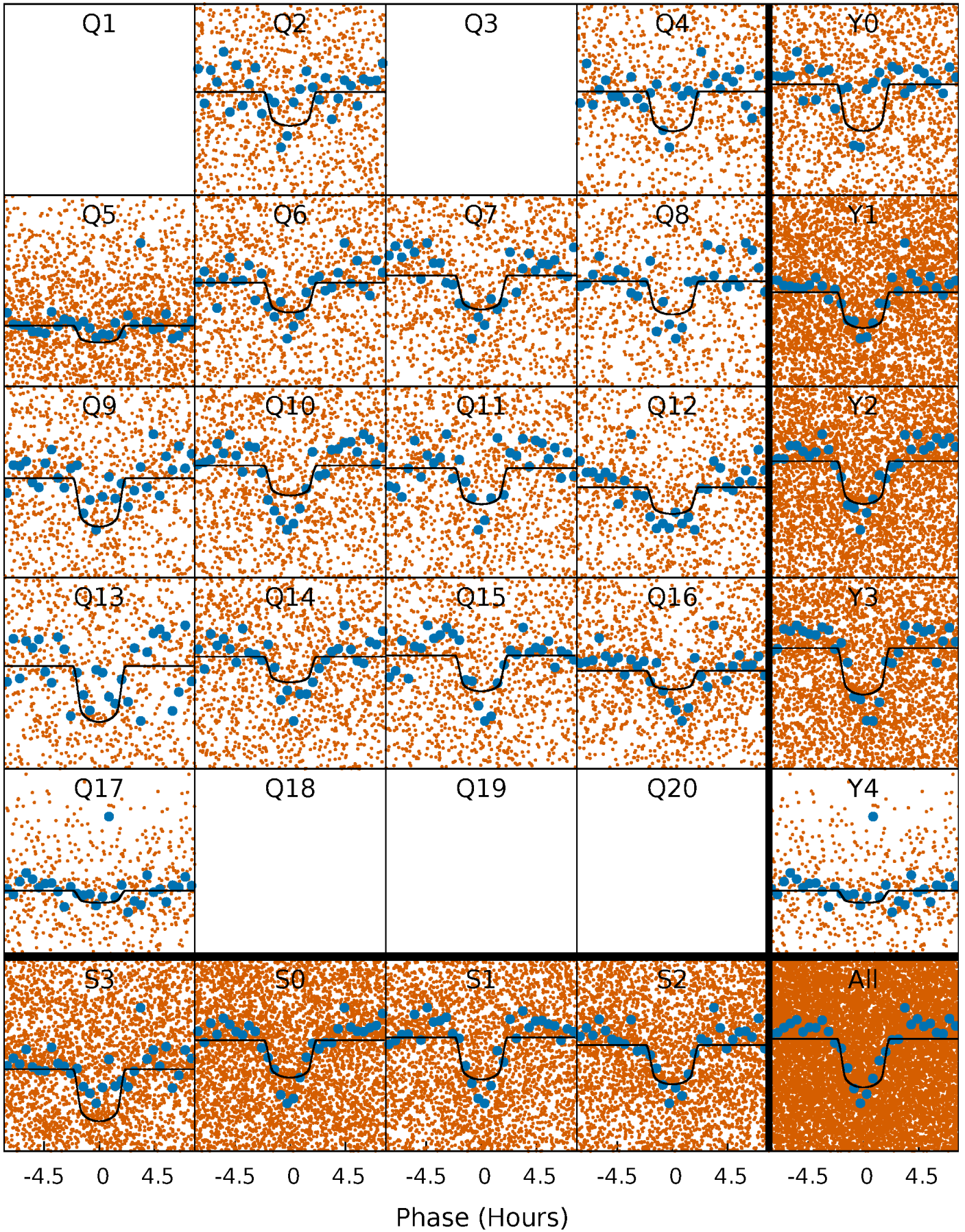
PDC Quarter-Phased Transit Curves

TCE 009959589-01 P= 1.332504 Days $T_0=132.089815$ (BKJD)



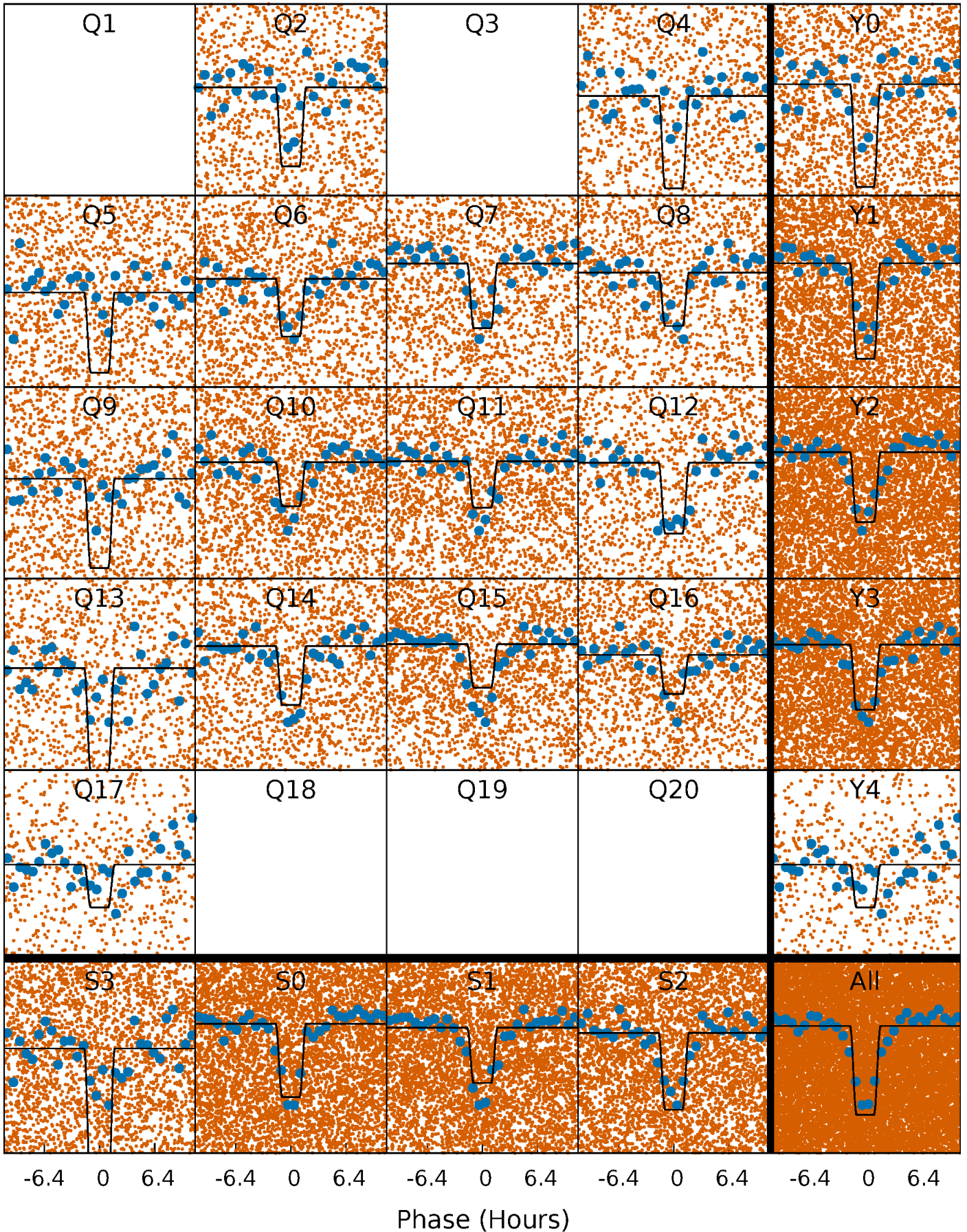
DV Quarter-Phased Transit Curves

TCE 009959589-01 P= 1.332504 Days $T_0=132.089815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

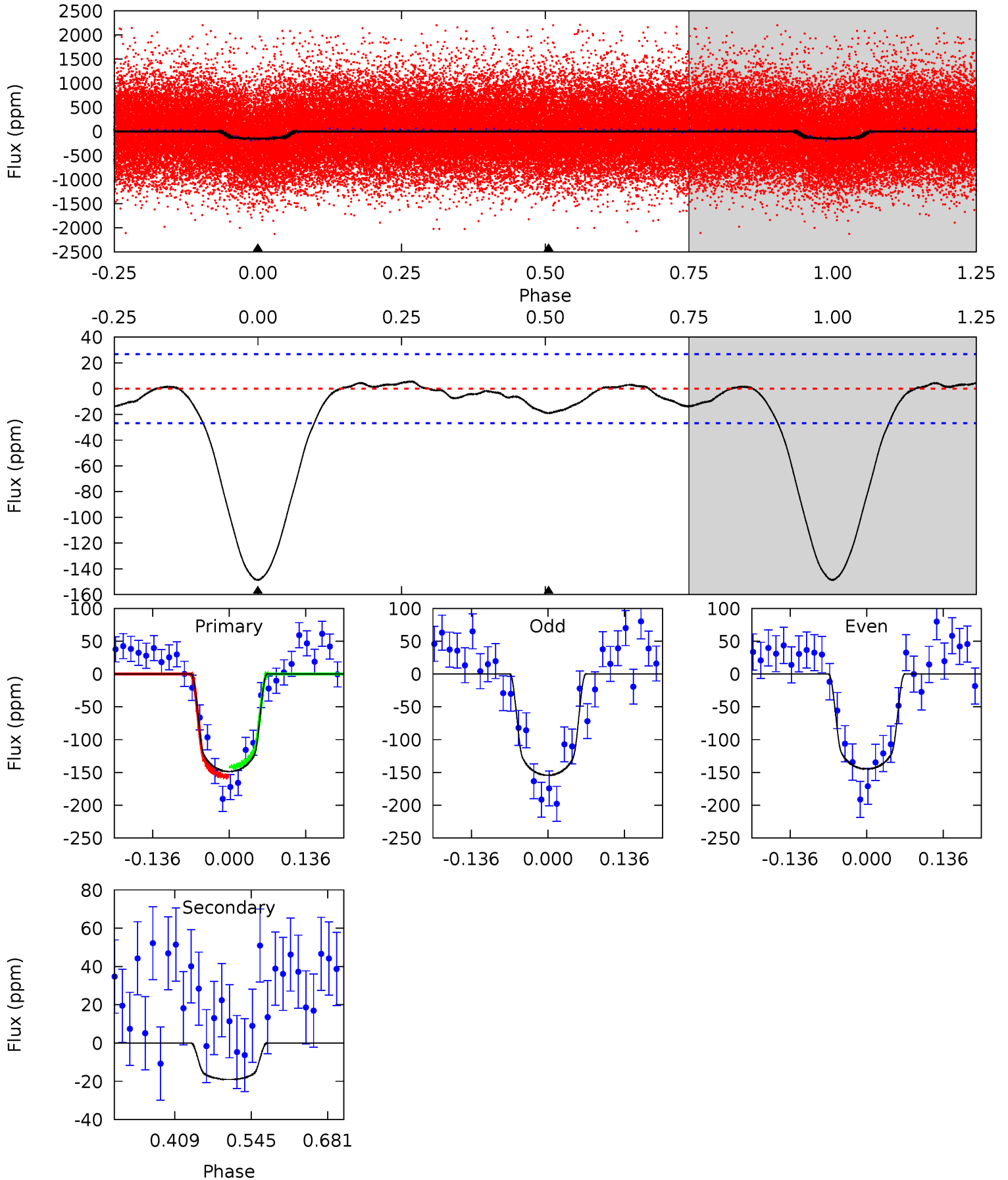
TCE 009959589-01 P= 1.332553 Days $T_0=132.058656$ (BKJD)



DV Model-Shift Uniqueness Test

009959589-01, P = 1.332504 Days, E = 132.089815 Days

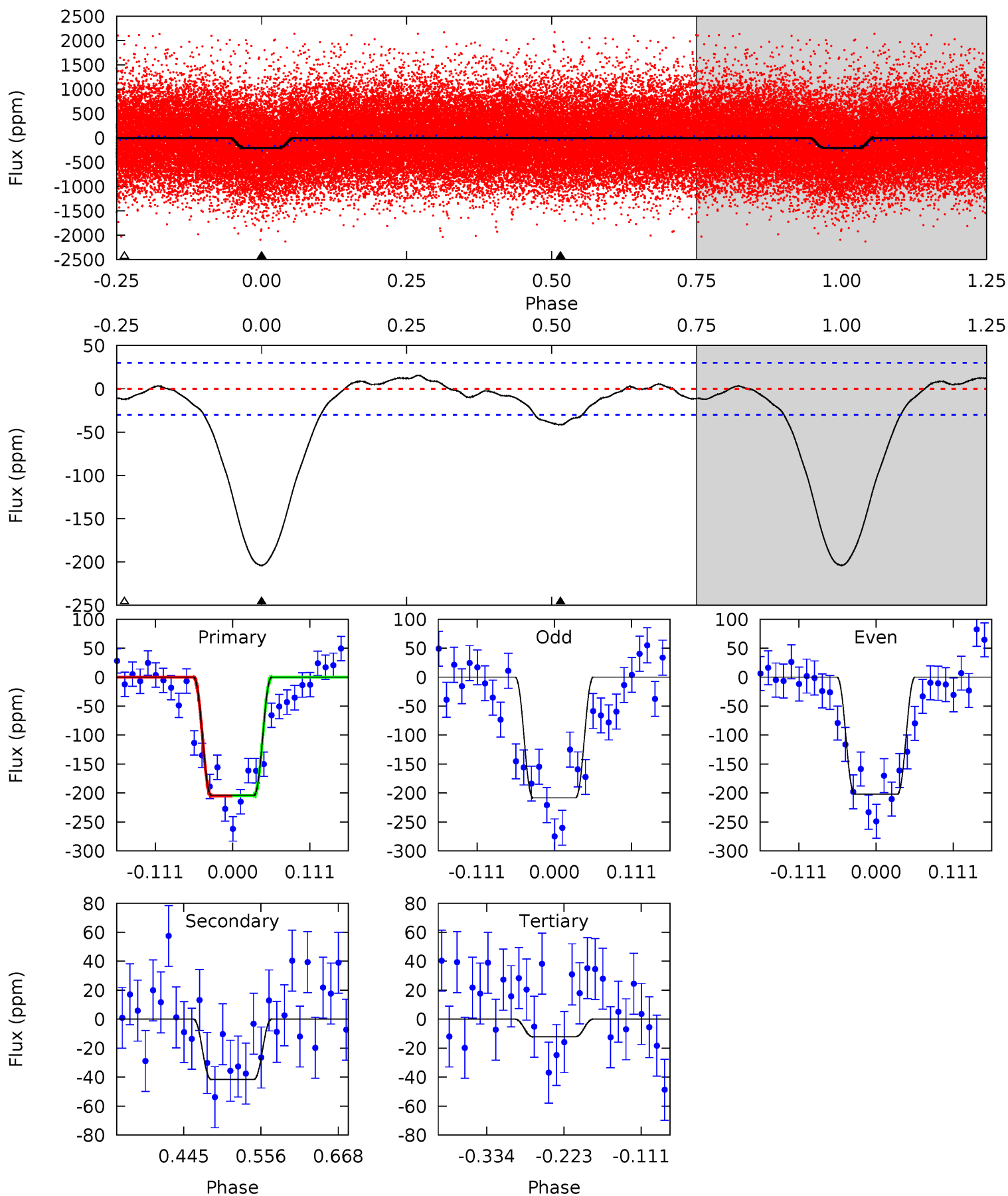
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.9	3.19	0	0	4.50	1.49	0.92	24.9	24.9	3.19	3.19	0.80	0.97	0.04	1.26



Alt Model-Shift Uniqueness Test

009959589-01, P = 1.332553 Days, E = 132.058656 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.9	6.31	1.83	0	4.54	1.59	1.23	29.1	30.9	4.48	6.31	0.48	1.06	0.07	0.04



Stellar Parameters For KIC 009959589

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6091^{+189}_{-210}	$4.487^{+0.052}_{-0.208}$	$-0.140^{+0.300}_{-0.300}$	$0.967^{+0.300}_{-0.100}$	$1.045^{+0.142}_{-0.142}$	$1.627^{+0.440}_{-0.829}$
	+3%/-3%	+1%/-5%	+214%/-214%	+31%/-10%	+14%/-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 009959589-01 / KOI 3098.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 6	$1.45^{+0.38}_{-0.35}$	2431^{+177}_{-110}	3771^{+454}_{-398}	$2.753^{+2.398}_{-1.298}$
Alt.	-42 ± 7	$1.72^{+0.40}_{-0.36}$	2431^{+183}_{-123}	4120^{+391}_{-310}	$4.395^{+2.720}_{-1.655}$

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 $A_{obs} \gg 1.0$

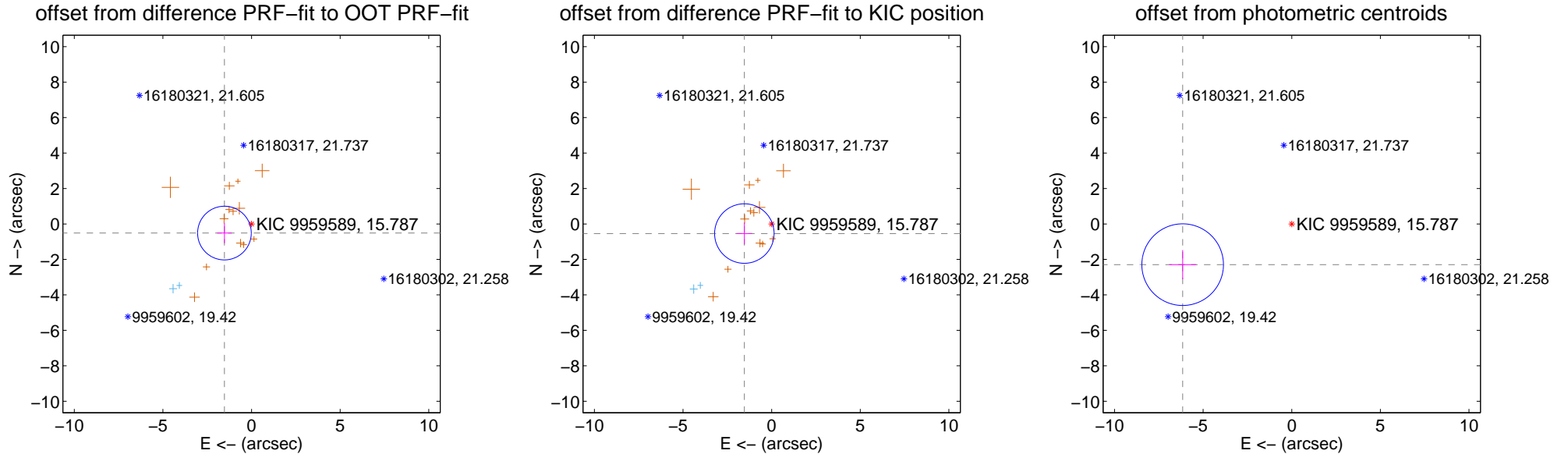
DV Centroid Data

Supplemental centroid analysis for 009959589-01. Kepler magnitude: 15.79. Transit SNR 19.35

There are 2 quarters with good PRF difference image offsets

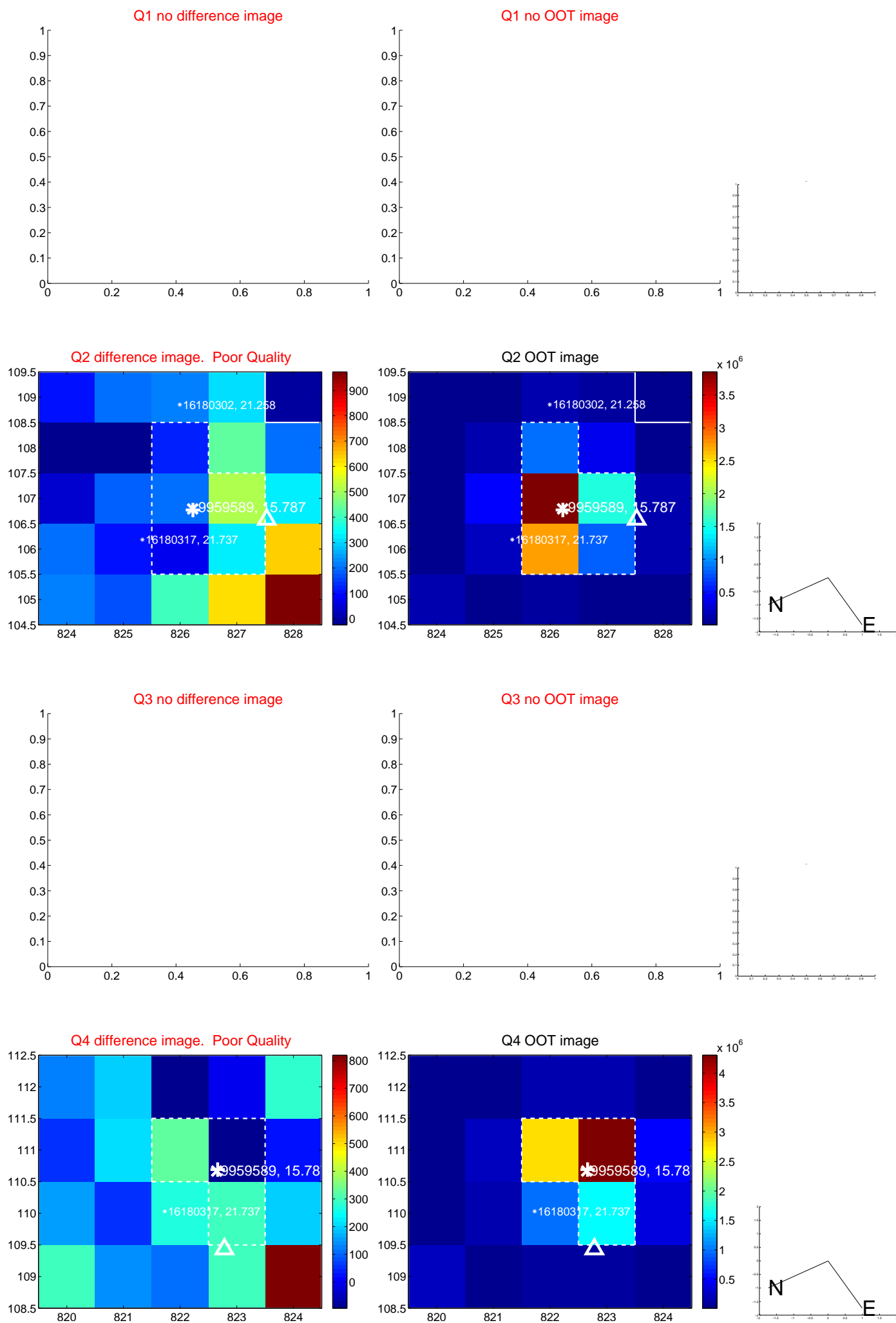
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.613 ± 0.505	3.20	1.529 ± 0.413	-0.514 ± 0.571
PRF-fit source offset from KIC position	1.632 ± 0.559	2.92	1.540 ± 0.445	-0.540 ± 0.616
photometric centroid source offset	6.57 ± 0.77	8.56	6.16 ± 0.76	-2.30 ± 0.82

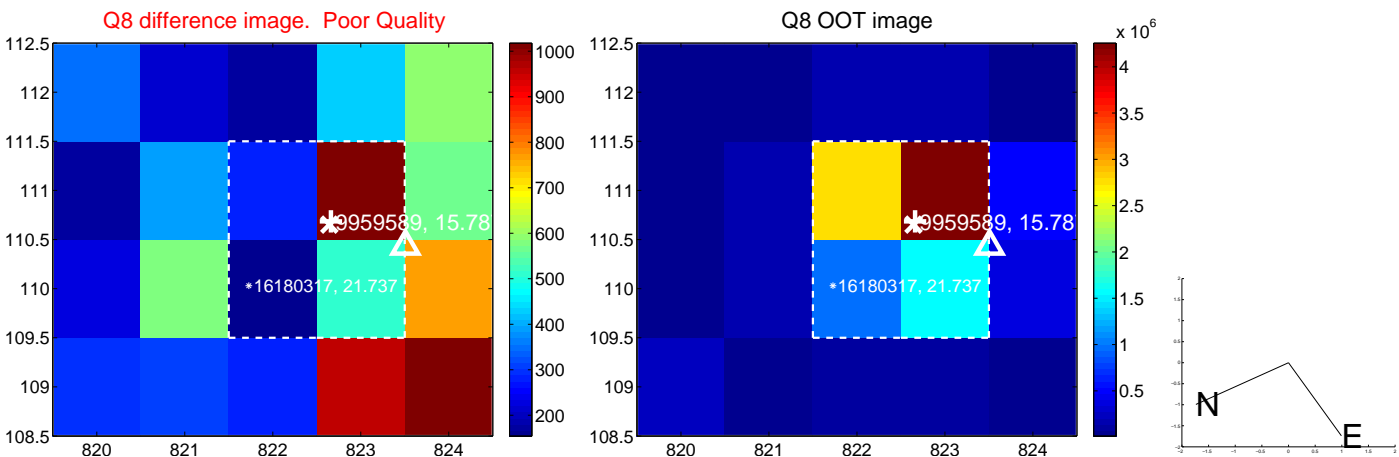
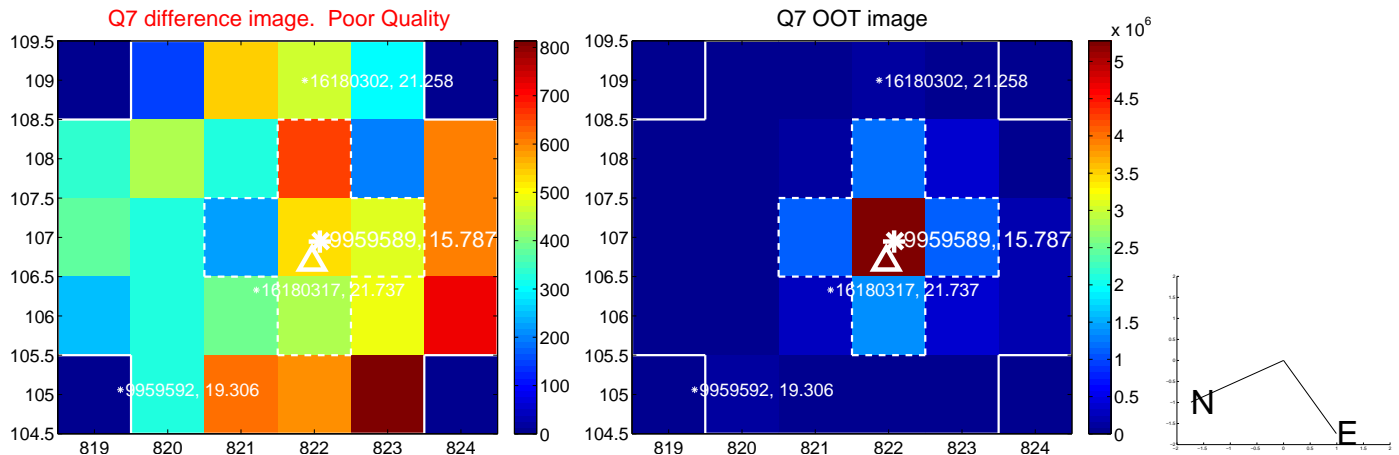
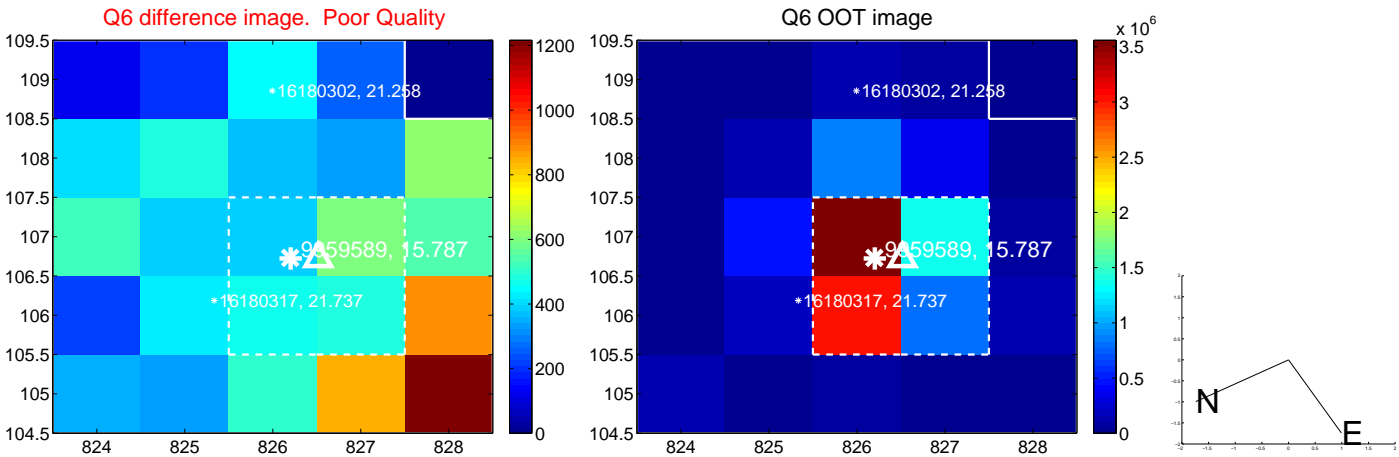
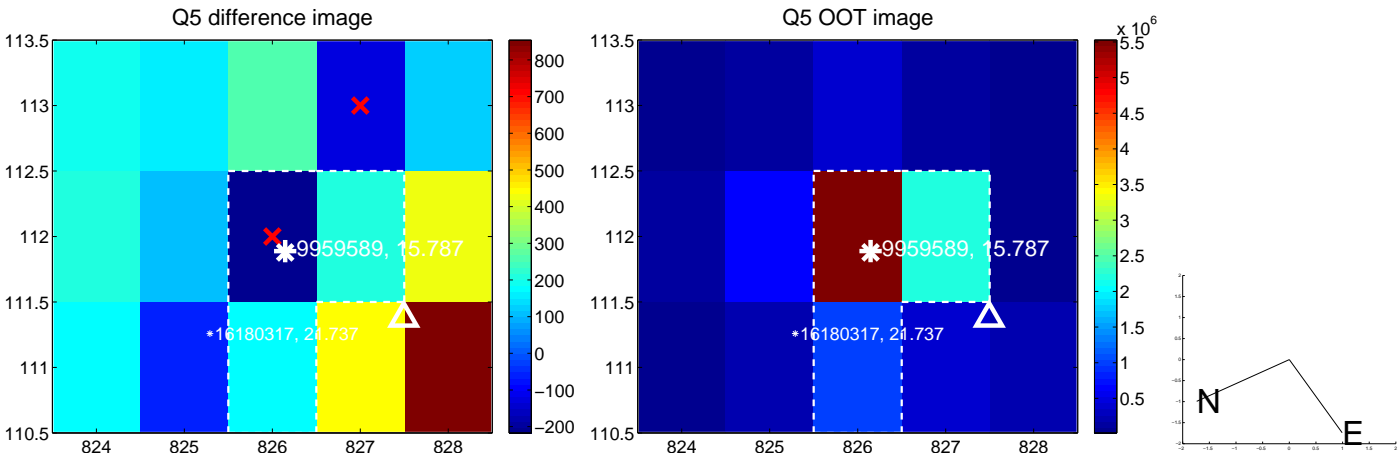


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

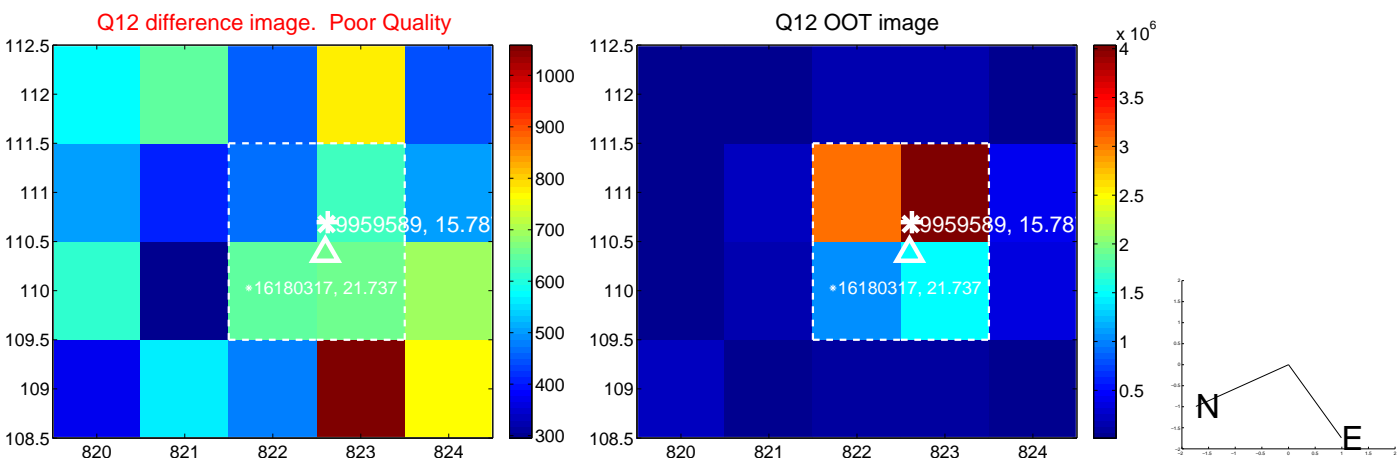
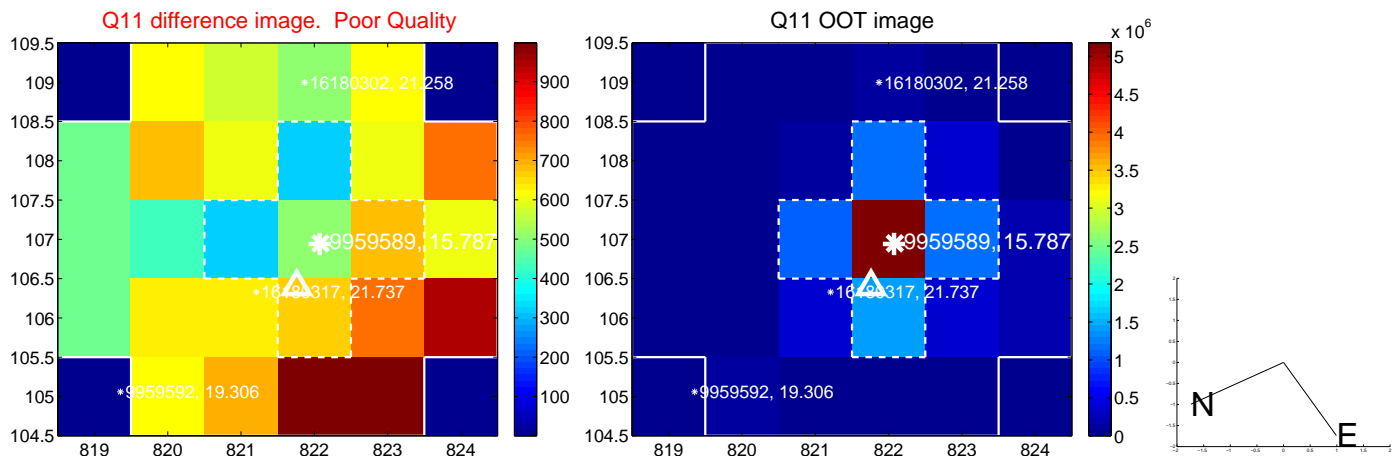
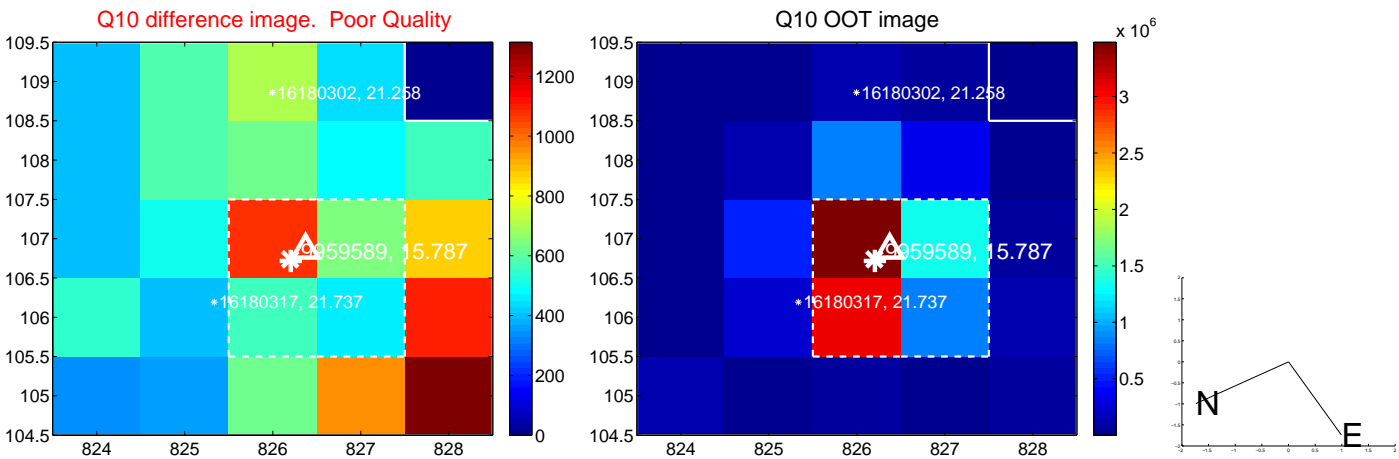
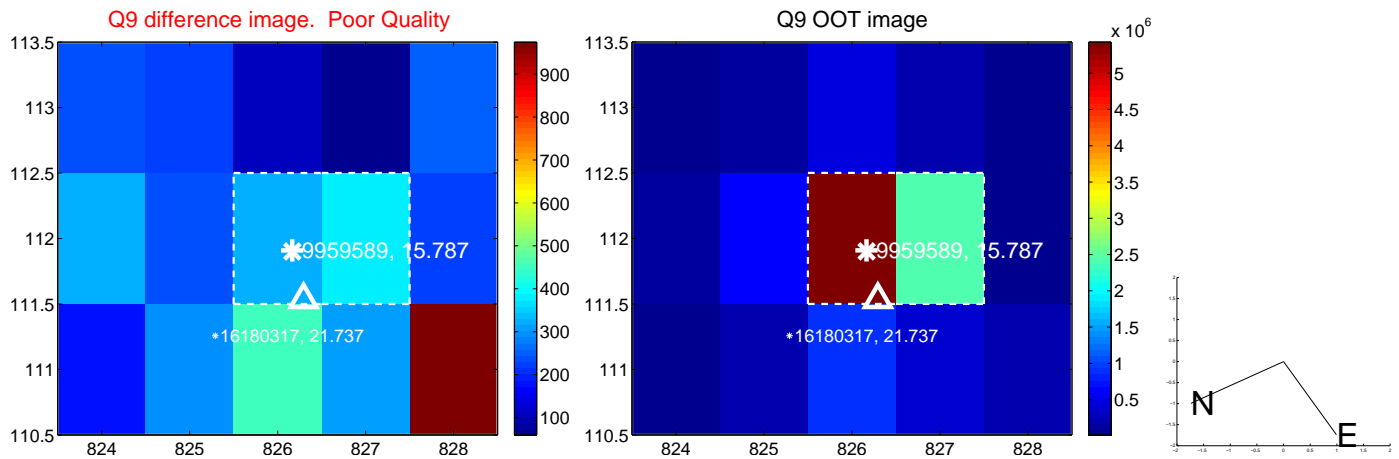
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



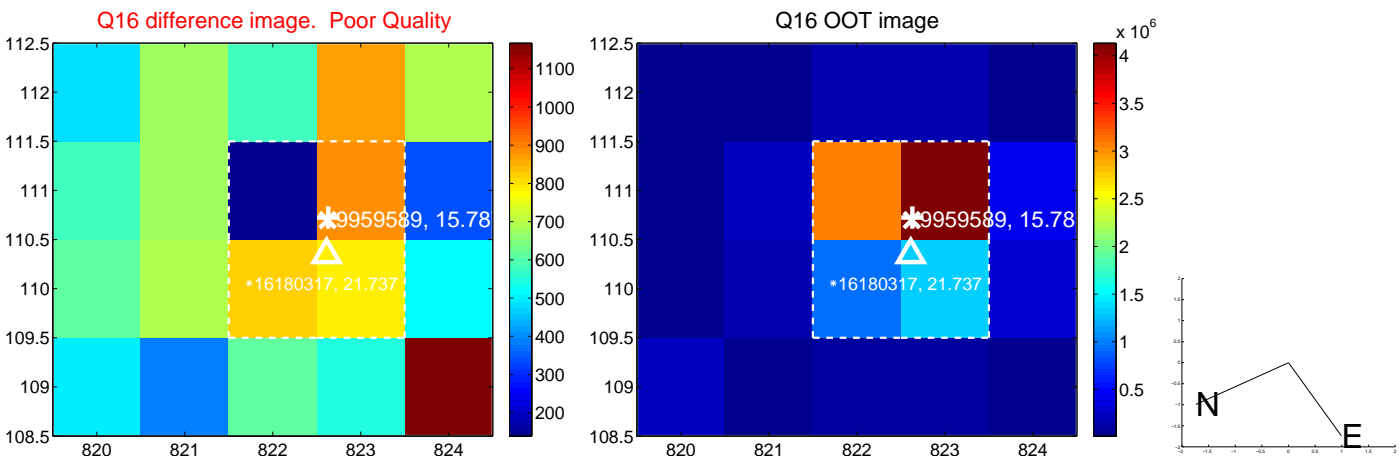
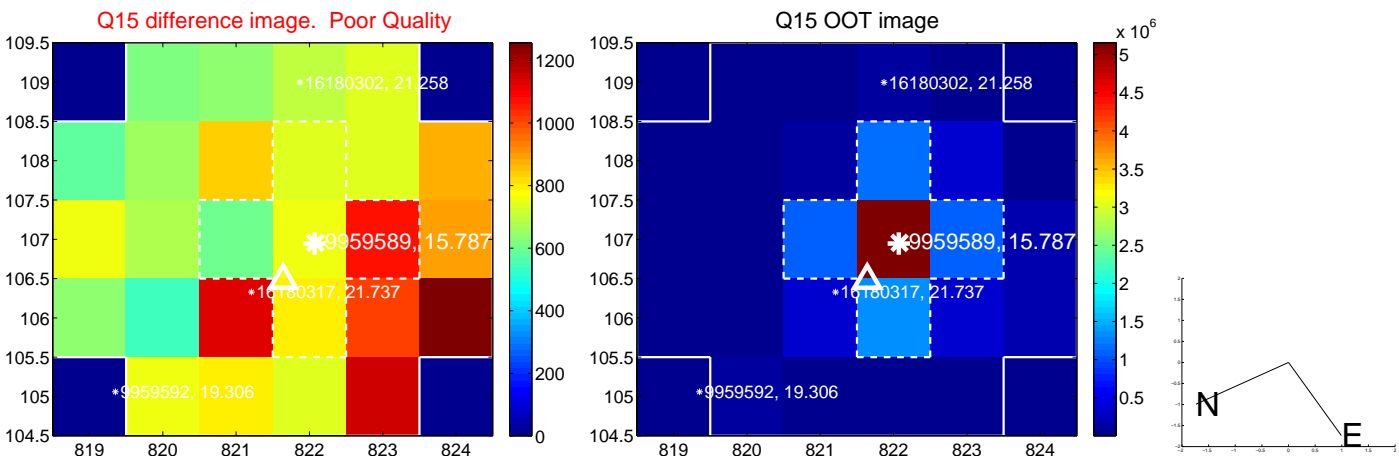
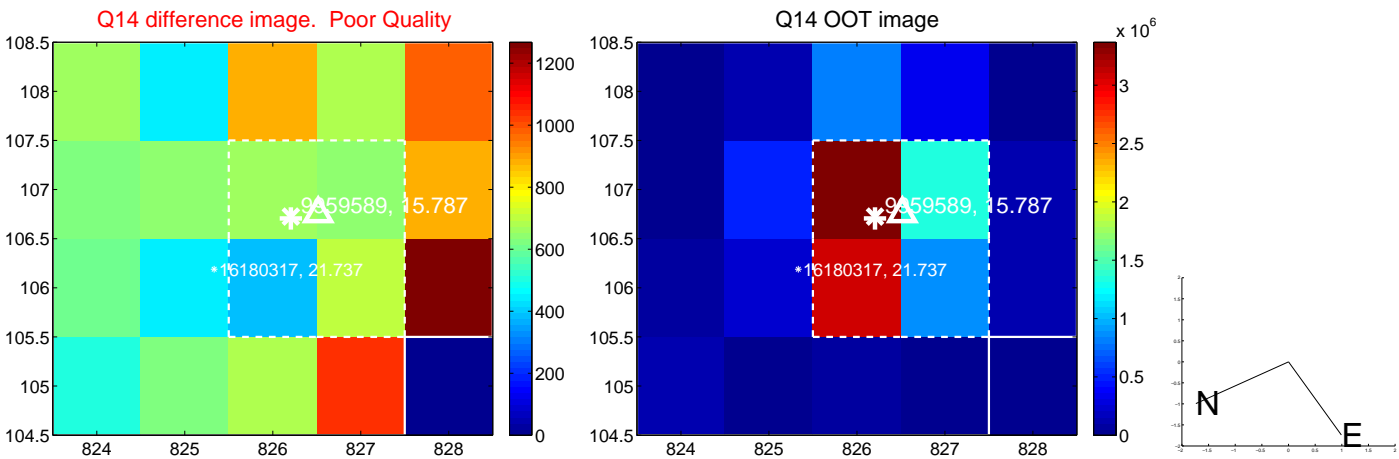
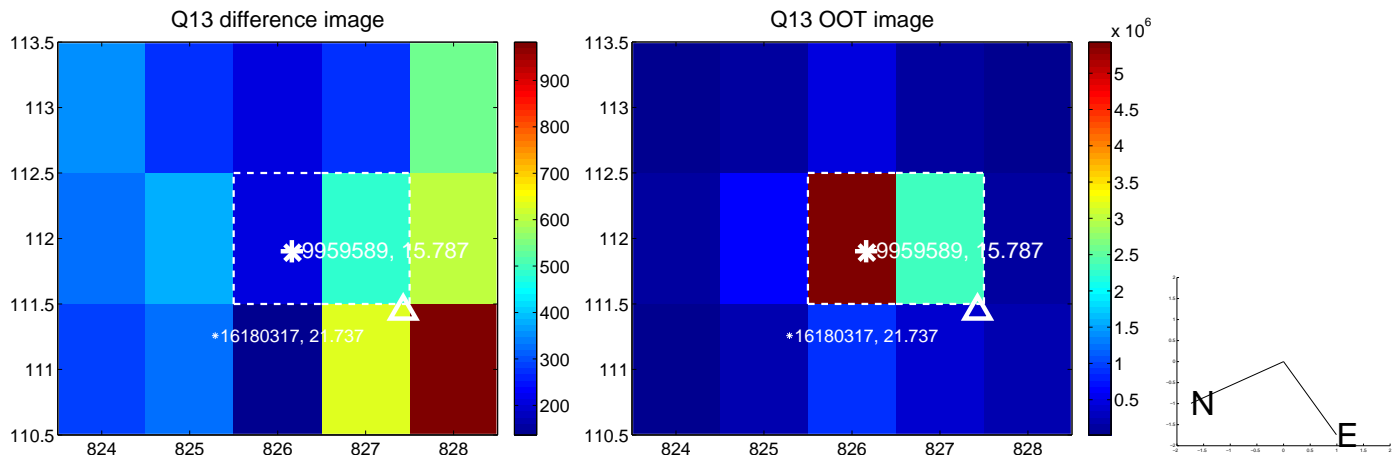
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



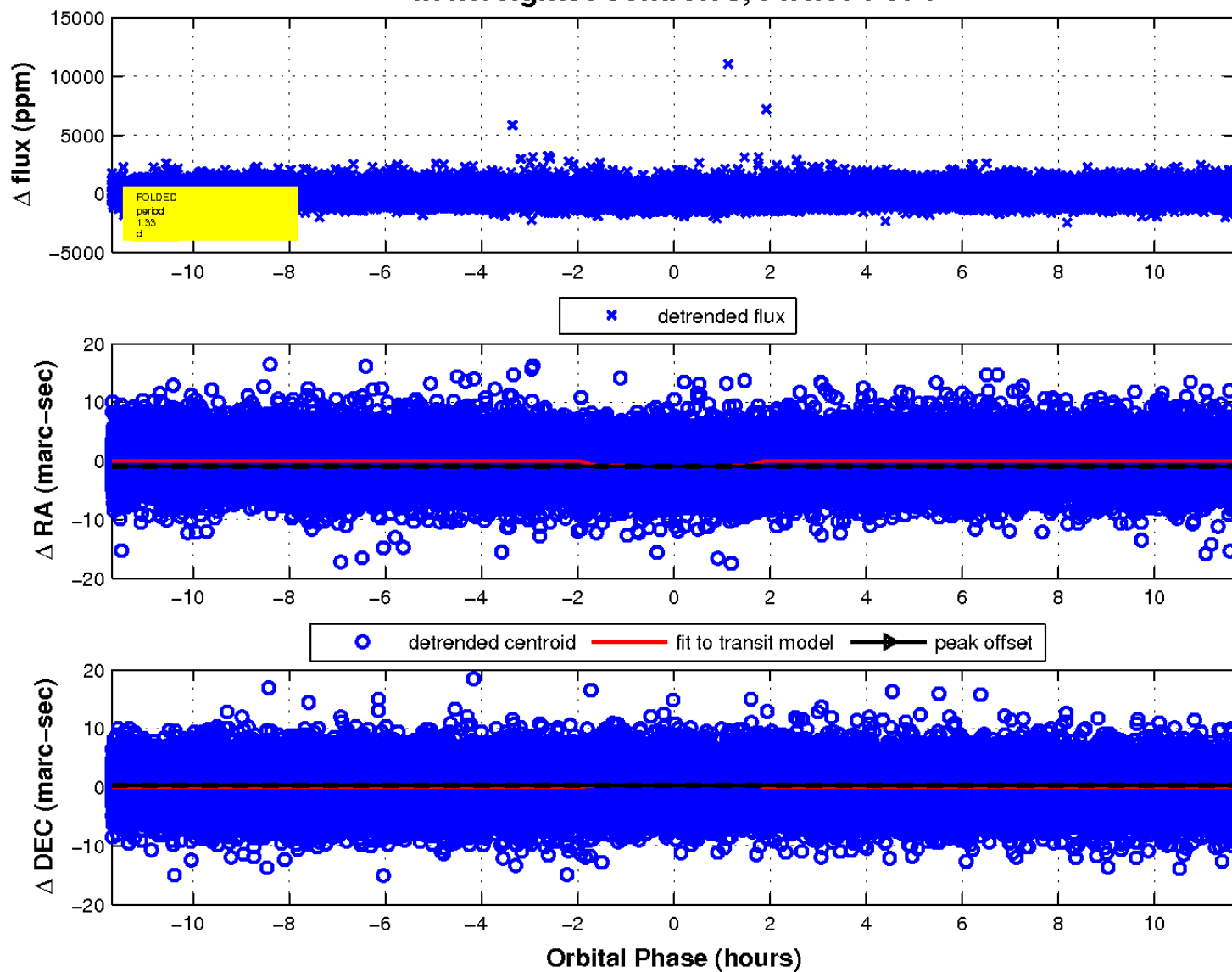
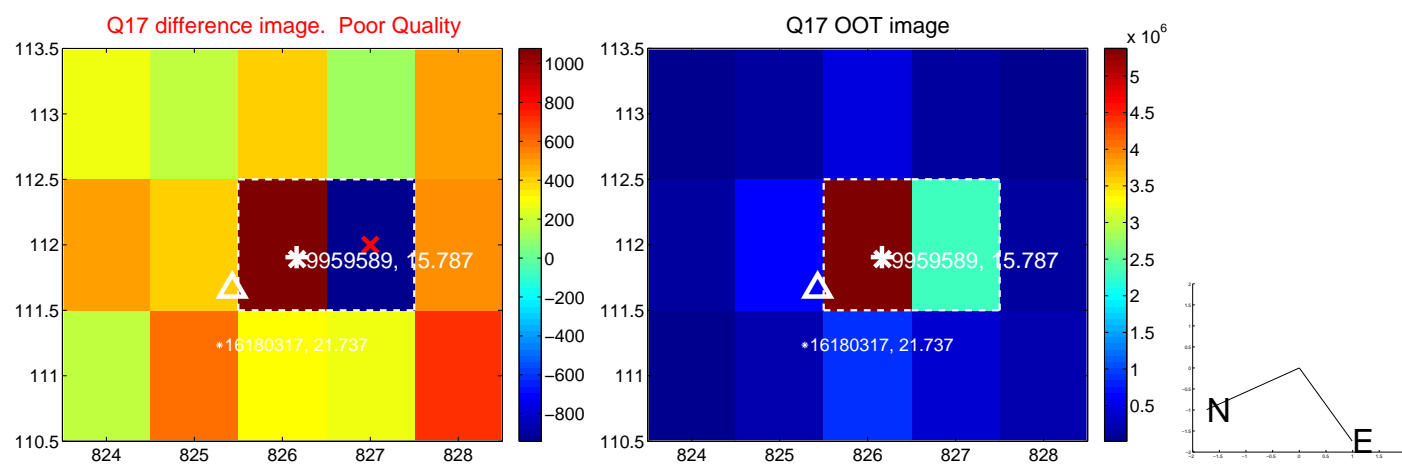
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UKIRT Image

Declination

