

KIC 004568298

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 _⊕)
004568298-01	OBS	2986.01	0.562553	131.744633	132.2	1.678	13.6	13.6	0.83	5793	1.14	4153.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004568298-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—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 004568298-01

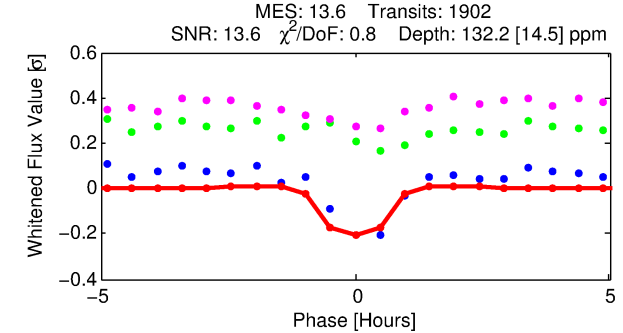
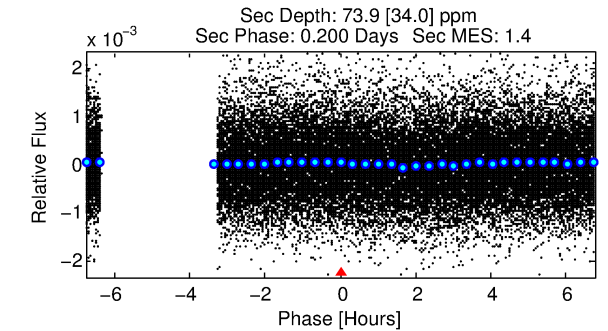
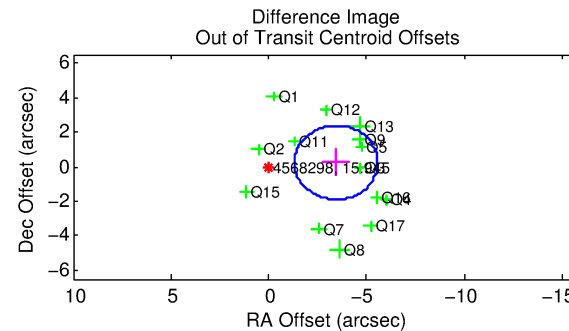
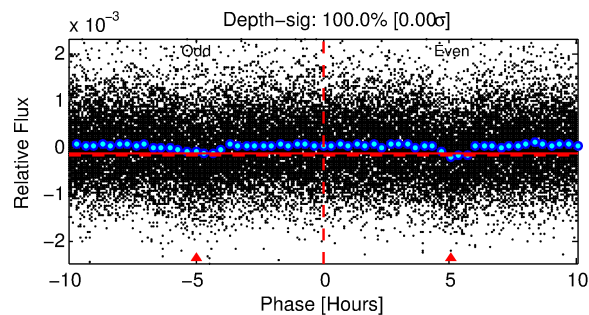
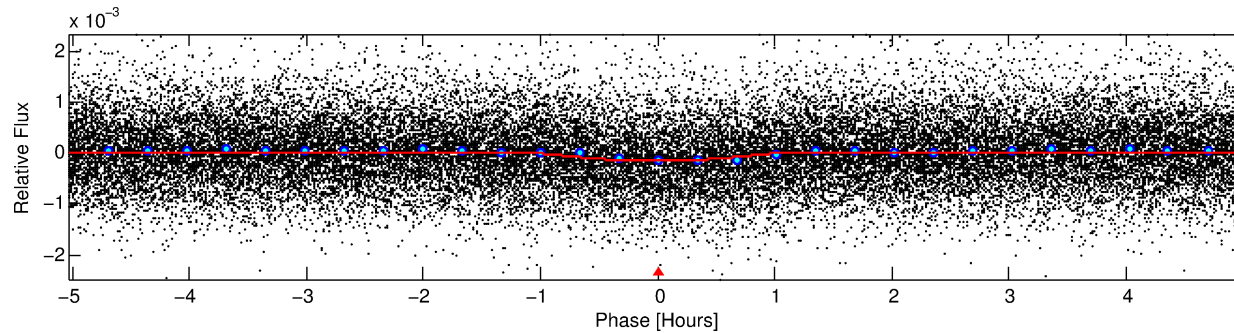
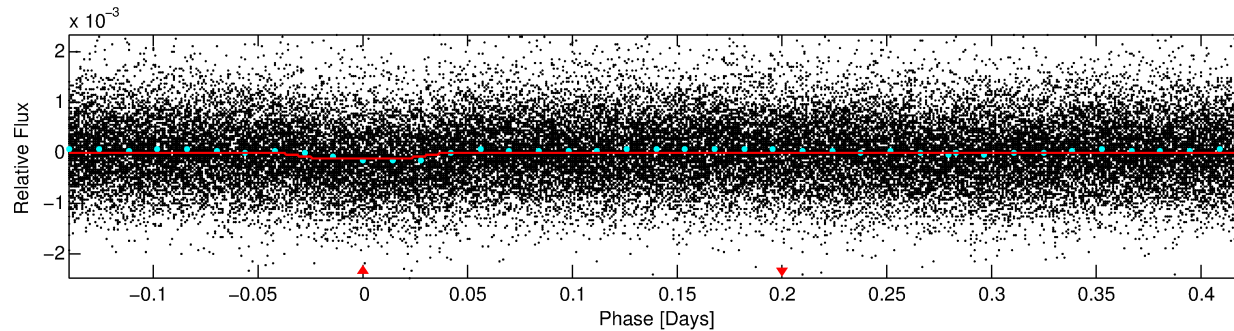
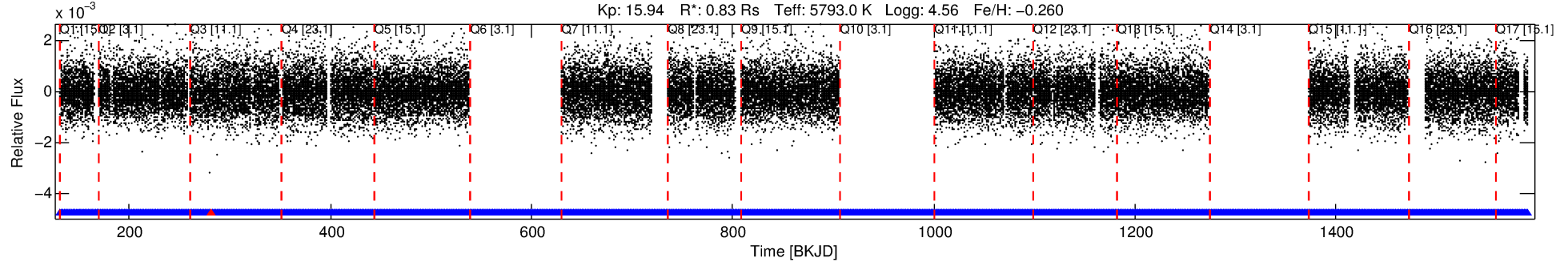
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
004568298-01	4568298	V1130-Cyg-pri	4660997	1:1	99.0	25	3	12.32	15.95	4559.80	Direct-PRF	0	1.44	0.56

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: 4568298 Candidate: 1 of 1 Period: 0.563 d
KOI: K02986.01 Corr: 0.904

Kp: 15.94 R*: 0.83 Rs Teff: 5793.0 K Logg: 4.56 Fe/H: -0.260



DV Fit Results:

Period = 0.56255 [0.00001] d
Epoch = 131.7446 [0.0018] BKJD
Rp/R* = 0.0125 [0.0085]
a/R* = 1.51 [2.88]
b = 0.90 [0.73]
Seff = 4153.10 [1312.37]
Teff = 2047 [162] K
Rp = 1.14 [0.82] Re
a = 0.0130 [0.0026] AU
Ag = 5.30 [7.76] [0.55σ]
Teffp = 4802 [1729] K [1.59σ]

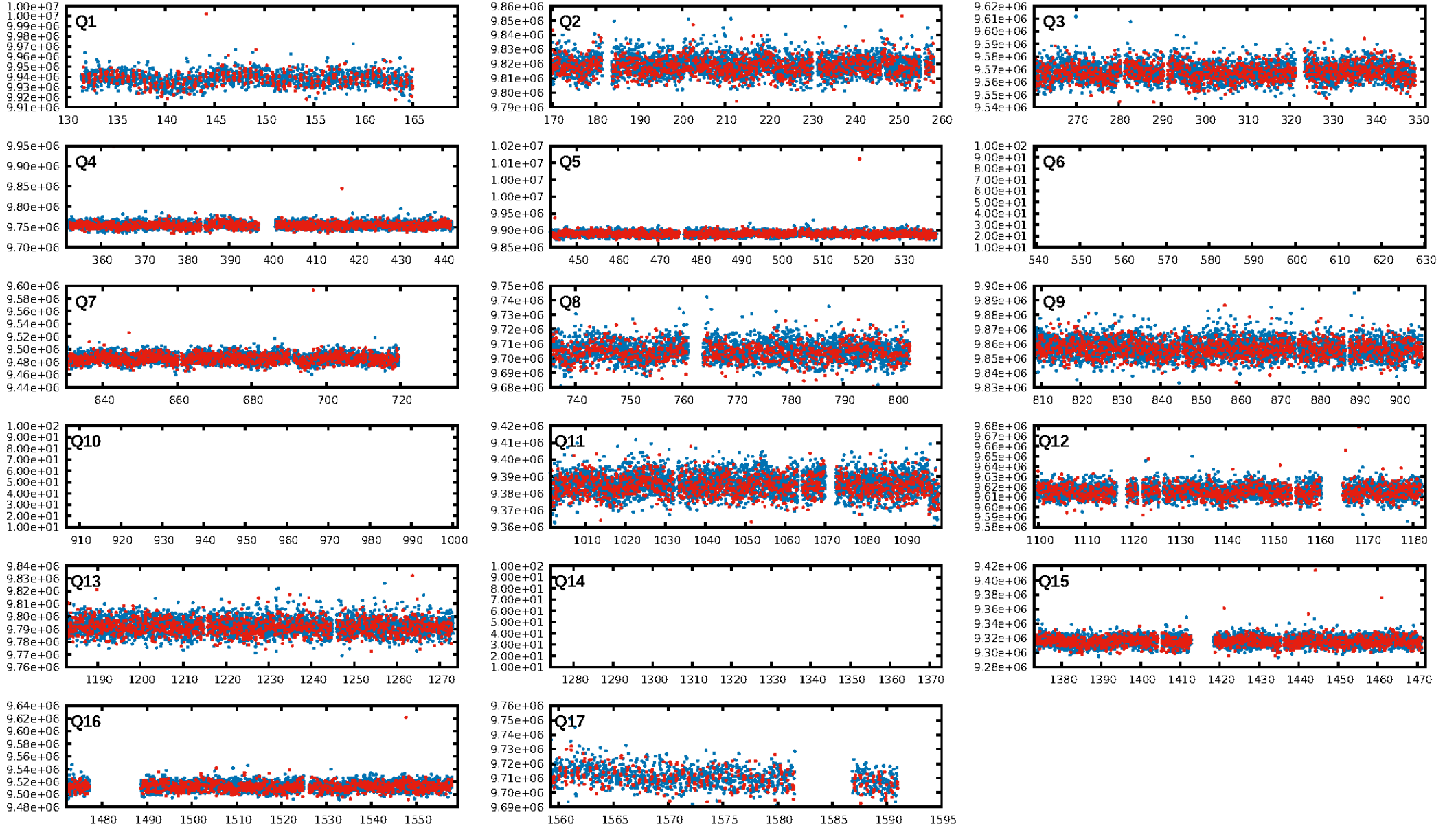
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.41e-41
RollingBand-fgt: 1.00 [1793/1794]
GhostDiagnostic-chr: 0.3558
Centroid-sig: 0.0%
Centroid-so: 3.381 arcsec [2.76σ]
OotOffset-rm: 3.436 arcsec [4.82σ]
KicOffset-rm: 3.417 arcsec [4.70σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

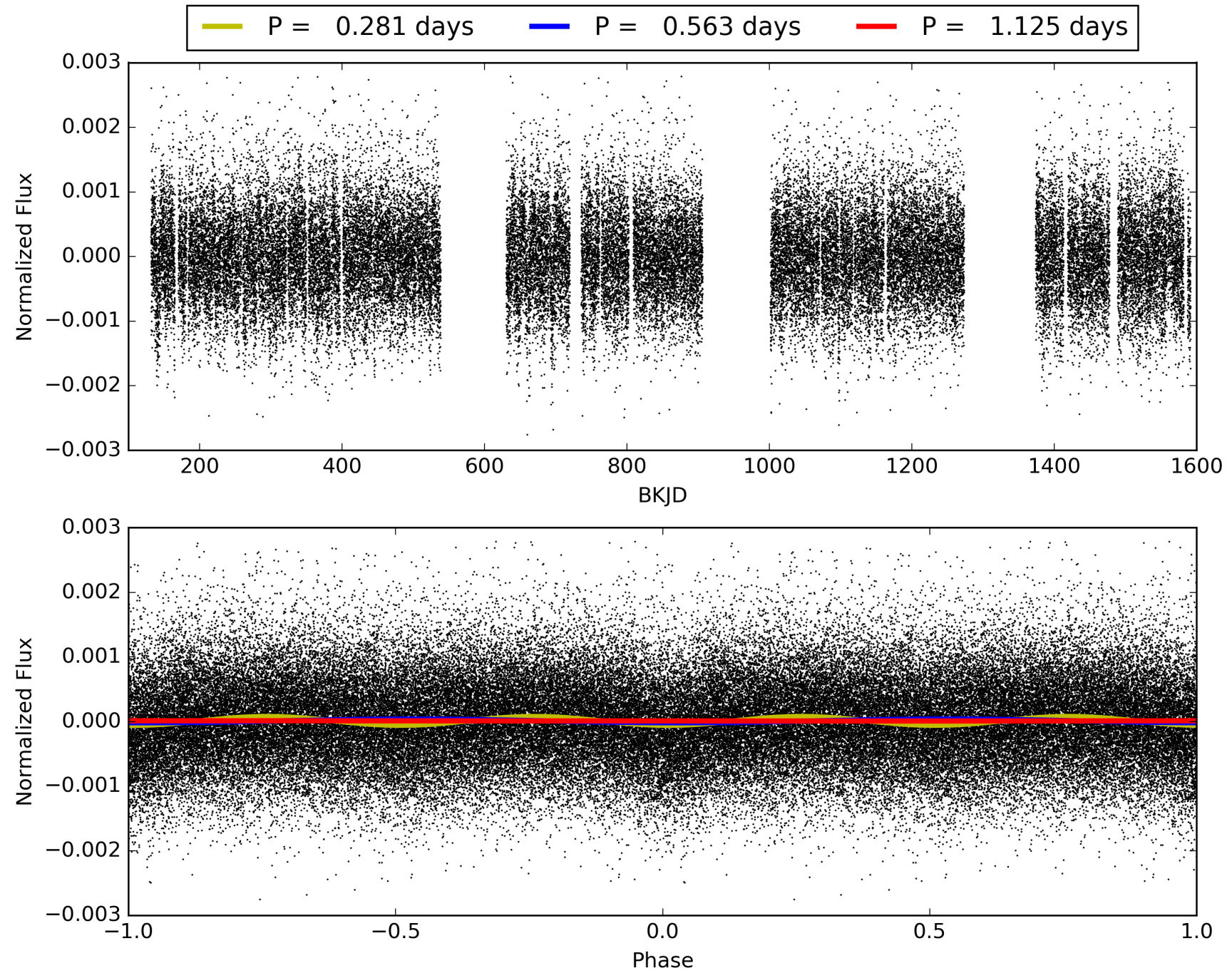
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:34:01 Z

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

TCE 004568298-01, PDC Light Curves

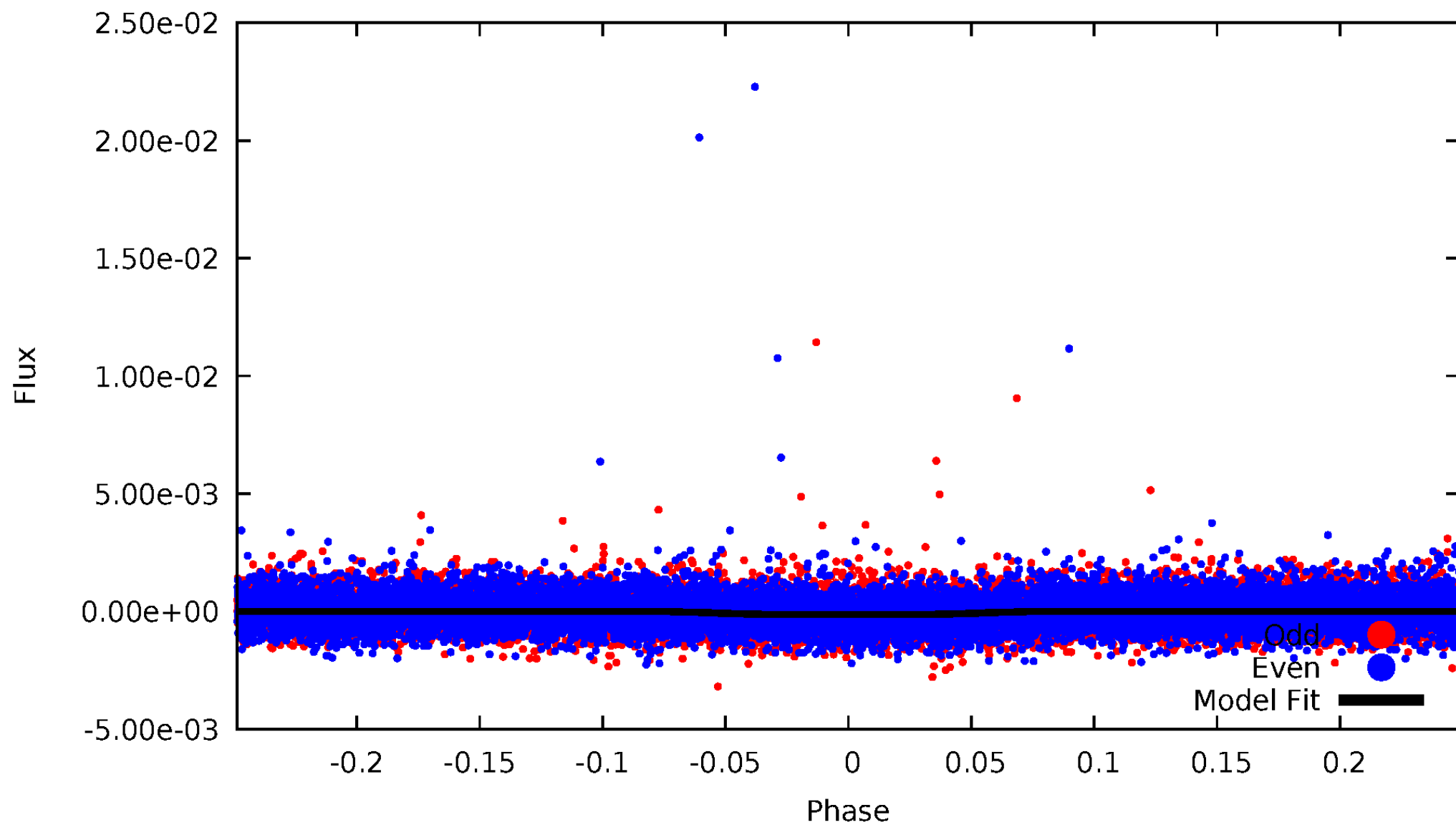


TCE 004568298-01



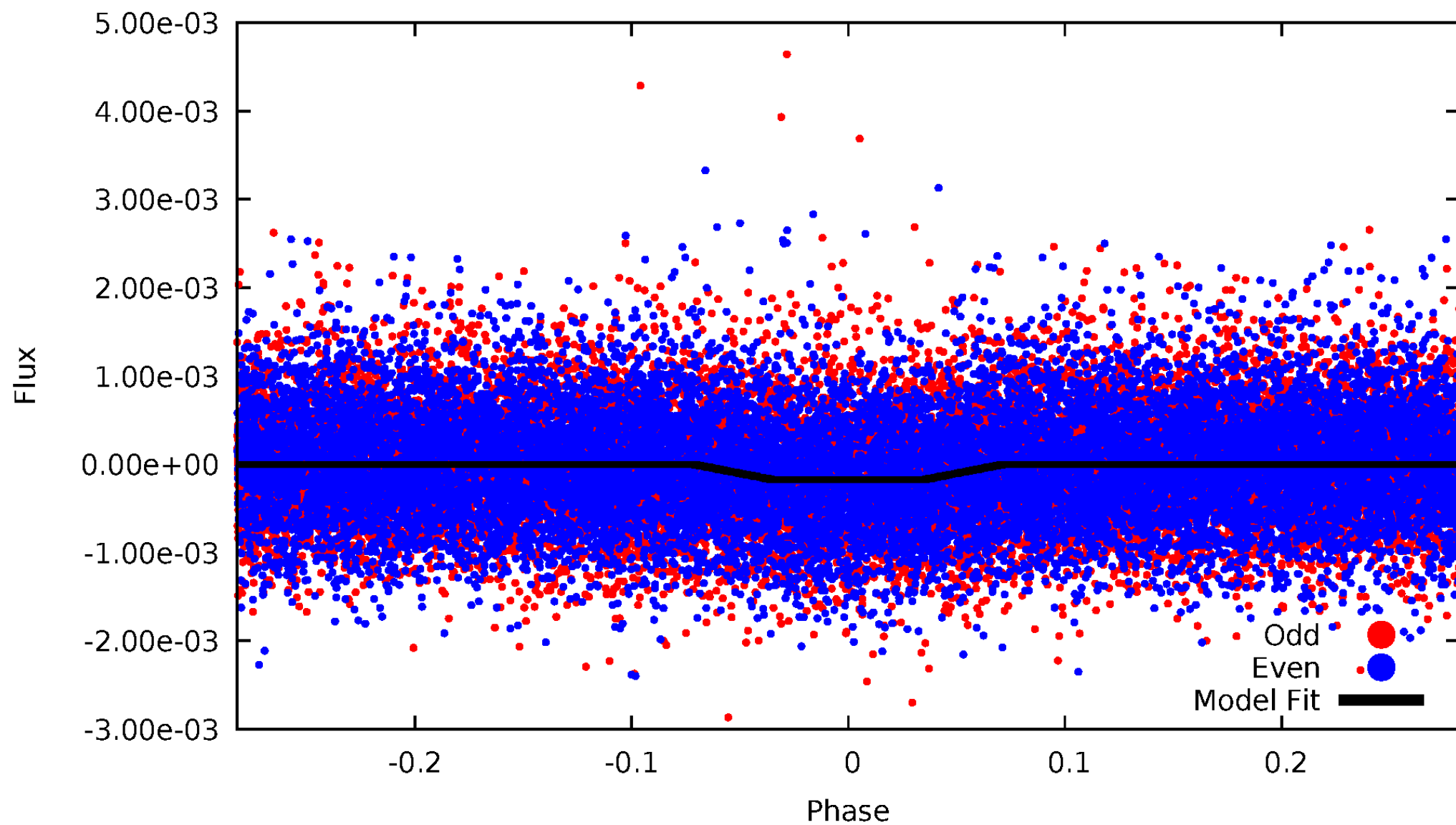
DV Odd/Even

TCE 004568298-01

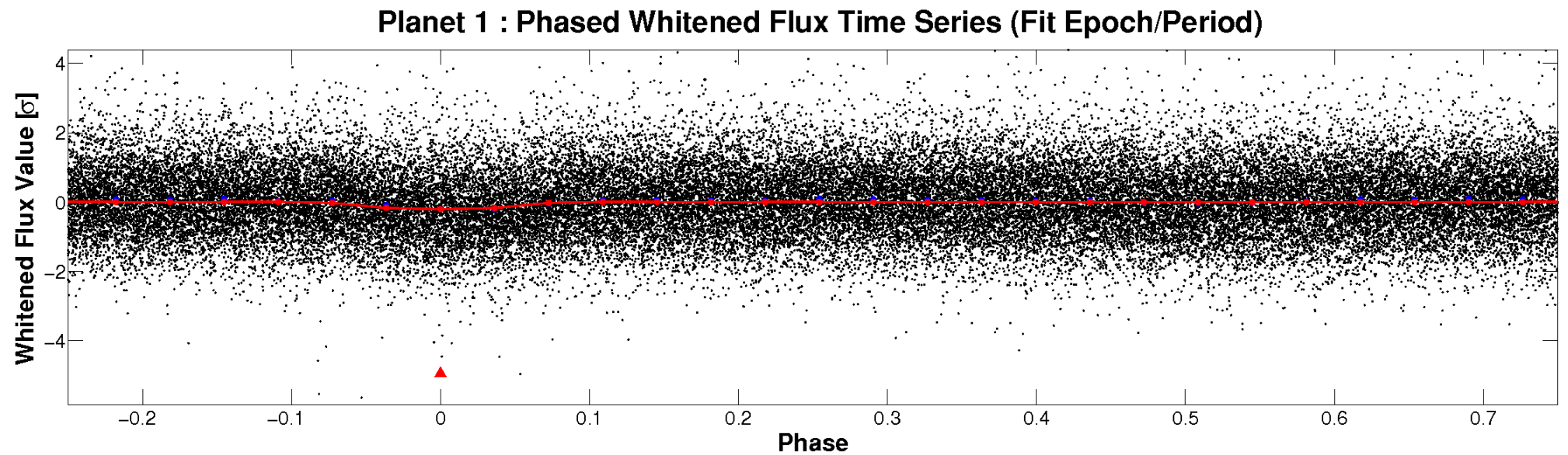
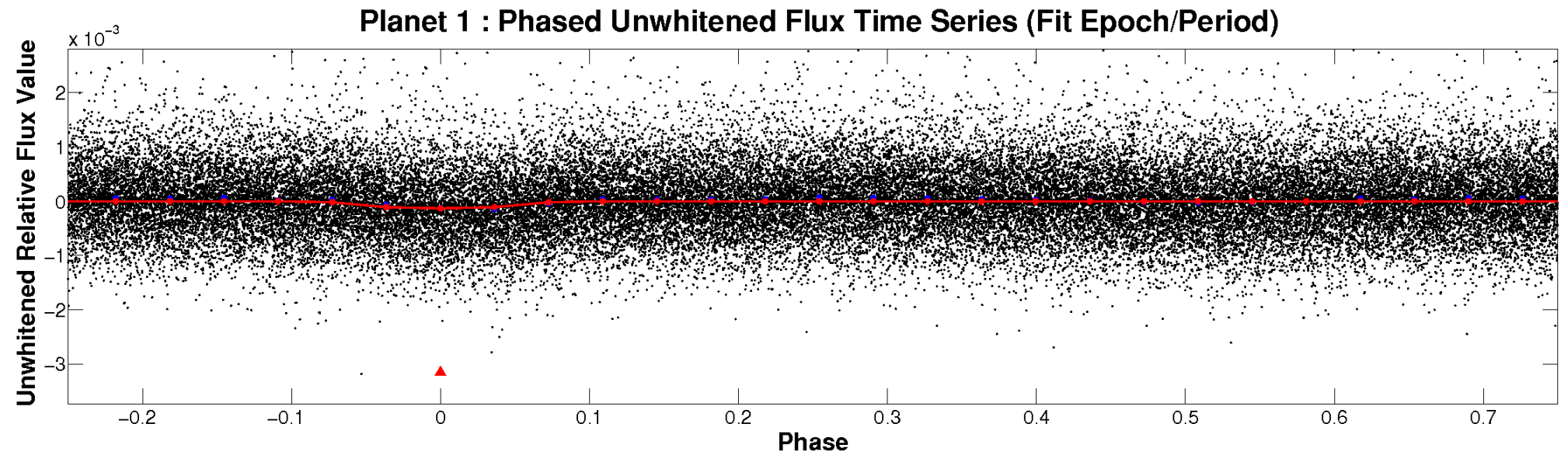


ALT Odd/Even

TCE 004568298-01

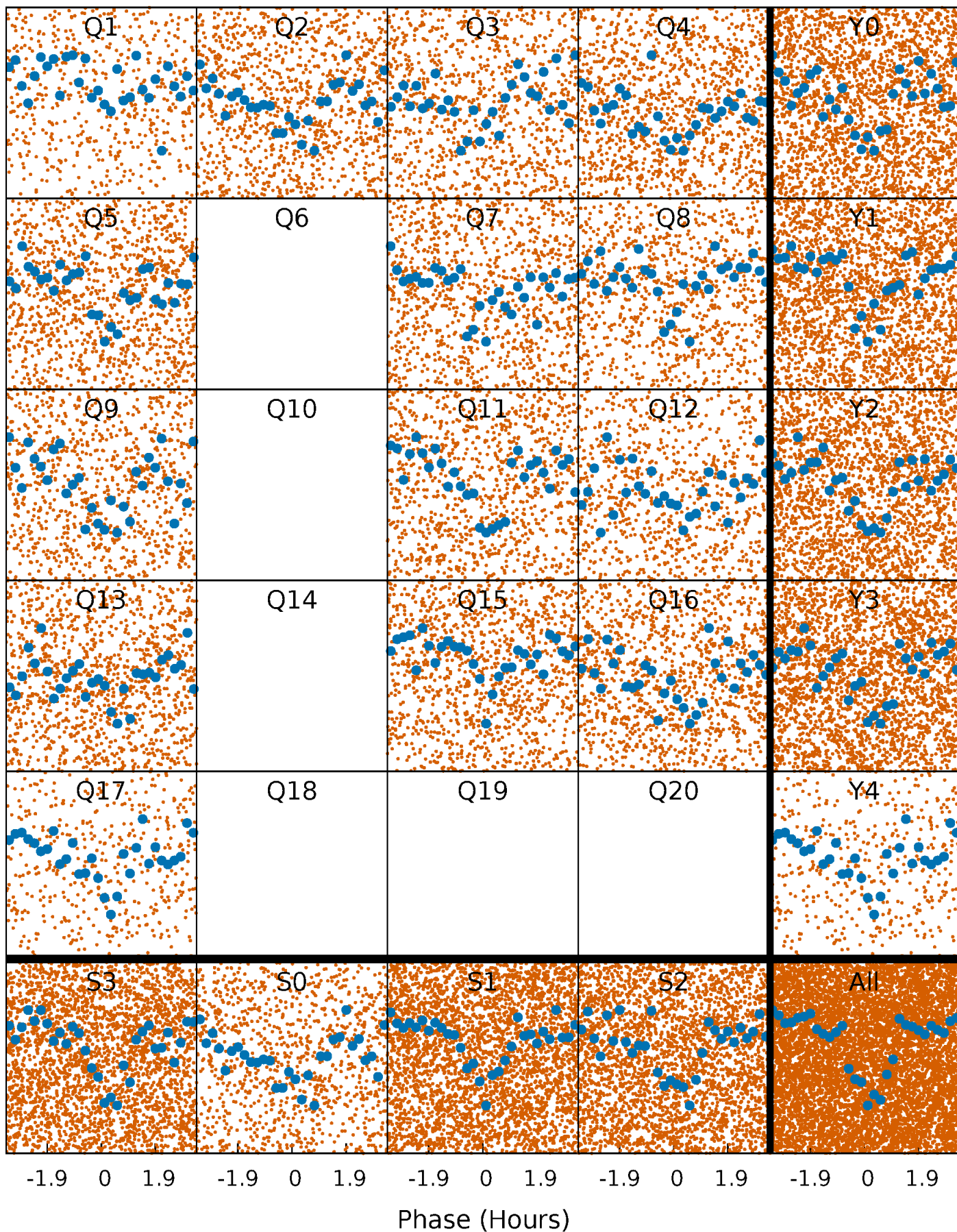


Non-Whitened Vs. Whitened Light Curve



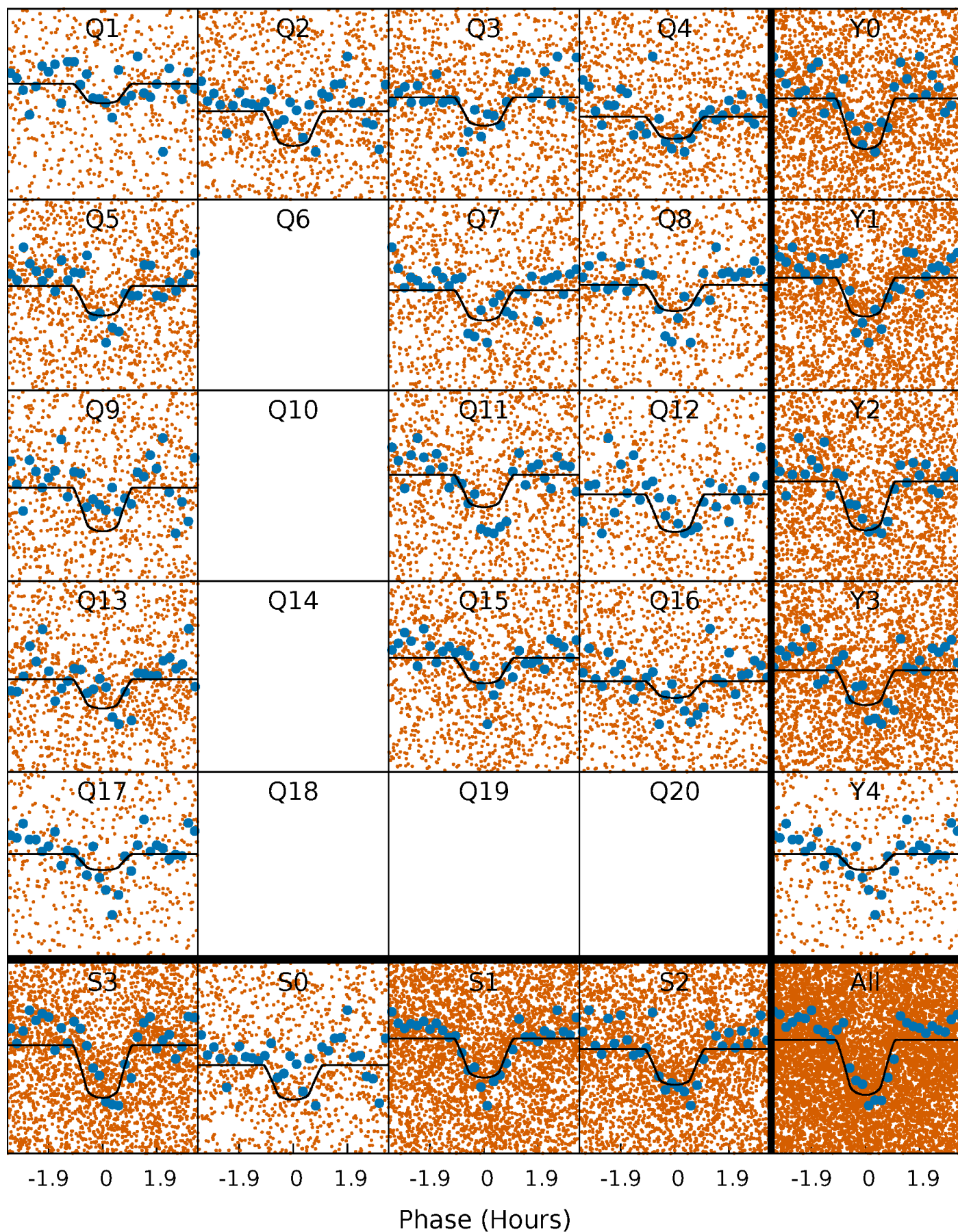
PDC Quarter-Phased Transit Curves

TCE 004568298-01 P= 0.562553 Days $T_0=131.744633$ (BKJD)



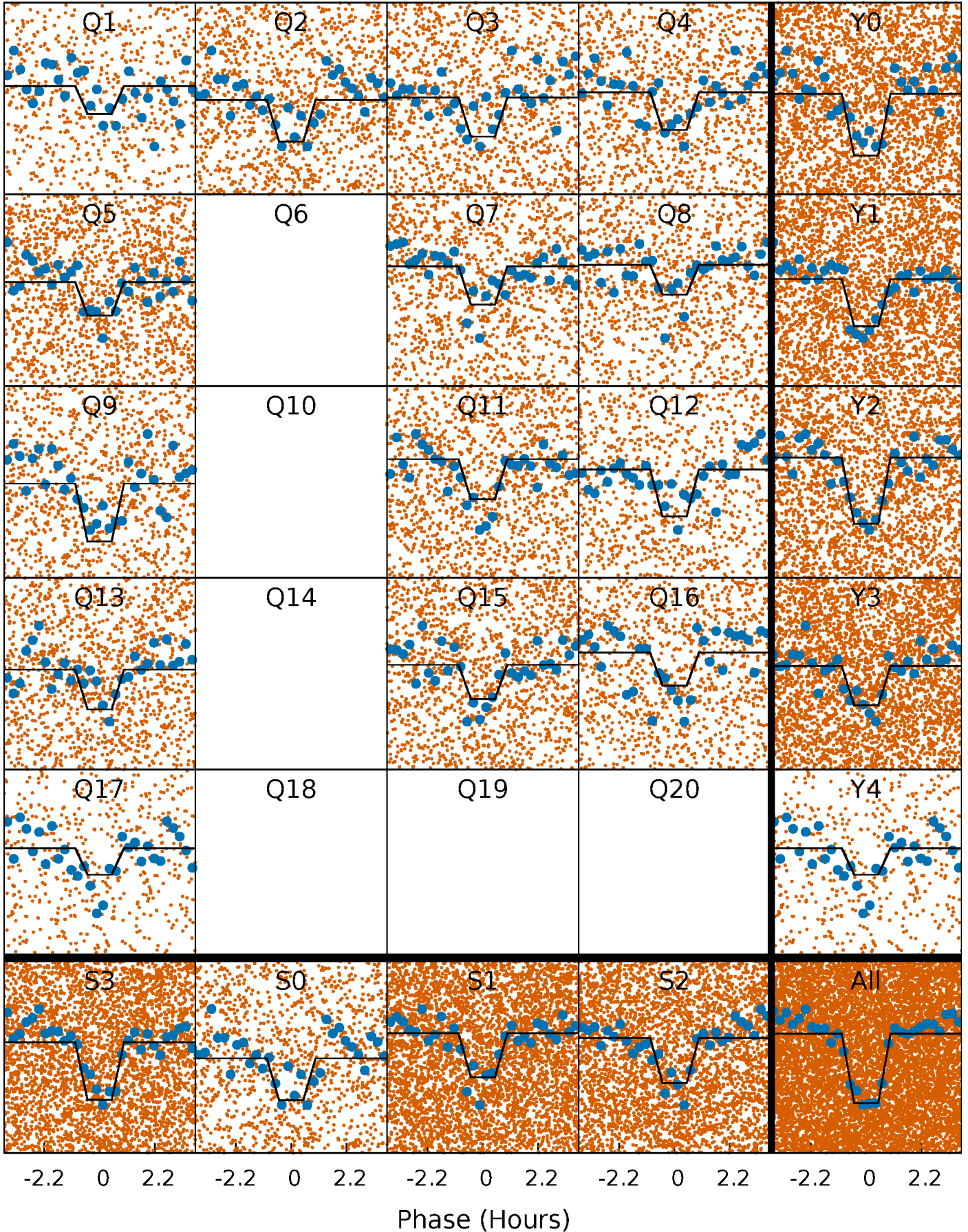
DV Quarter-Phased Transit Curves

TCE 004568298-01 P= 0.562553 Days $T_0=131.744633$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

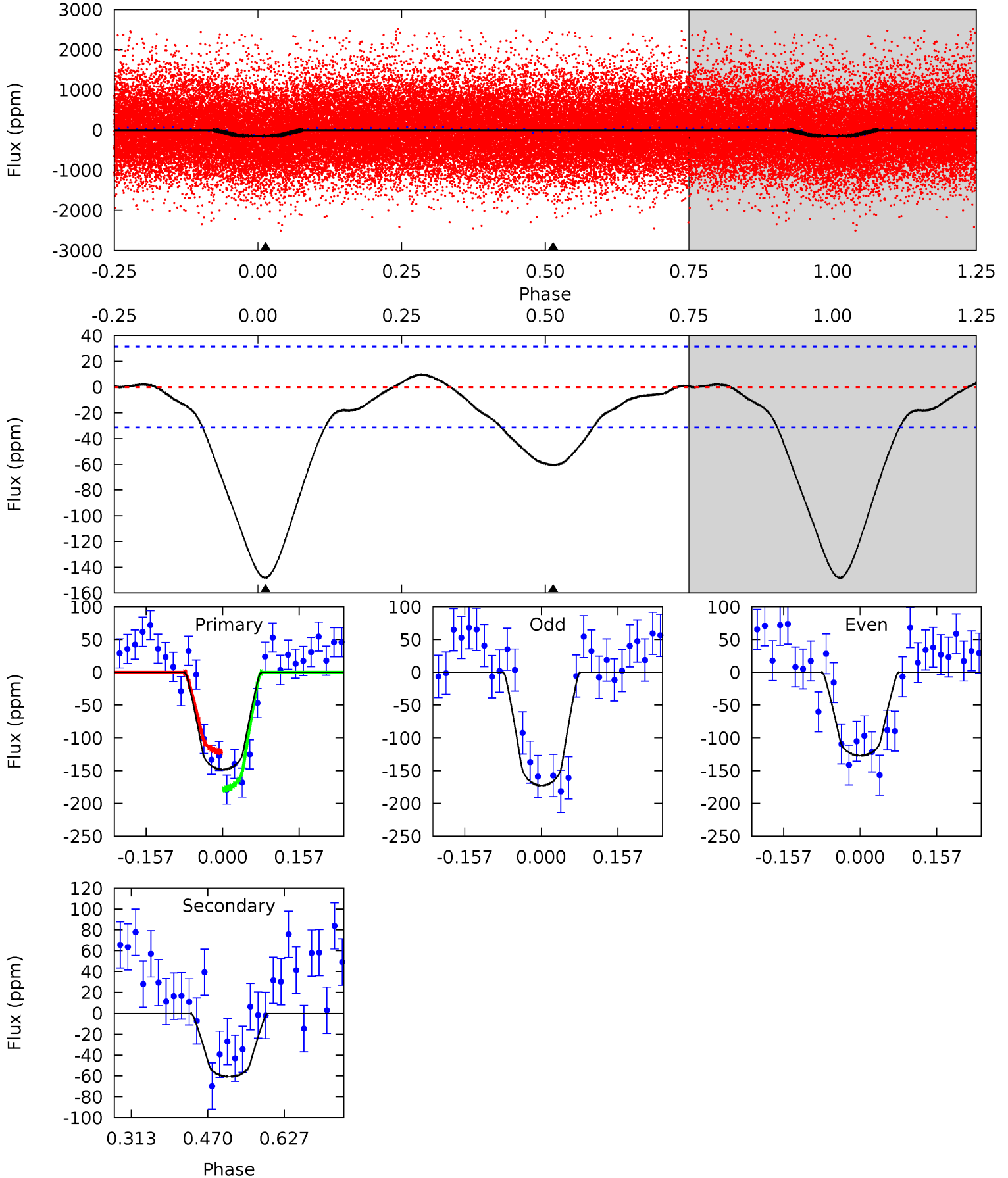
TCE 004568298-01 P= 0.562559 Days $T_0=131.744383$ (BKJD)



DV Model-Shift Uniqueness Test

004568298-01, P = 0.562553 Days, E = 131.182080 Days

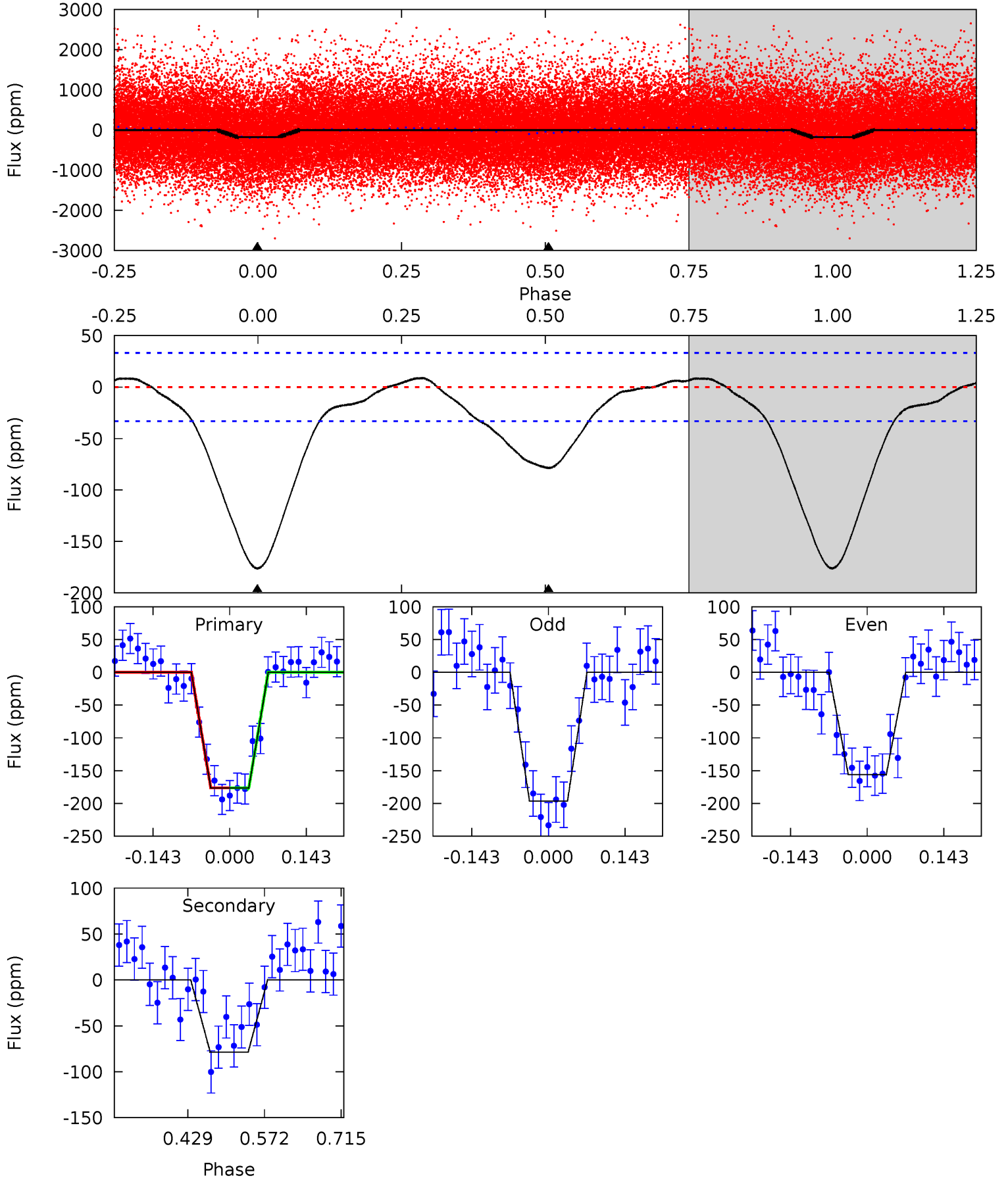
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	8.66	0	0	4.47	1.42	0.87	21.1	21.1	8.66	8.66	3.27	0.90	0.06	4.07



Alt Model-Shift Uniqueness Test

004568298-01, P = 0.562559 Days, E = 131.181824 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.9	10.6	0	0	4.49	1.47	1.16	23.9	23.9	10.6	10.6	2.73	0.91	0.05	0.01



Stellar Parameters For KIC 004568298

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5793^{+155}_{-172}	$4.561^{+0.040}_{-0.160}$	$-0.260^{+0.300}_{-0.300}$	$0.832^{+0.199}_{-0.080}$	$0.921^{+0.100}_{-0.110}$	$2.251^{+0.463}_{-0.960}$
	+3%/-3%	+1%/-4%	+115%/-115%	+24%/-10%	+11%/-12%	+21%/-43%
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 004568298-01 / KOI 2986.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-61 ± 7	$1.25^{+0.76}_{-0.68}$	2913^{+163}_{-122}	4548^{+2138}_{-880}	$3.569^{+13.802}_{-2.215}$
Alt.	-79 ± 7	$1.28^{+0.81}_{-0.75}$	2908^{+162}_{-116}	4734^{+2563}_{-929}	$4.245^{+21.360}_{-2.610}$

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

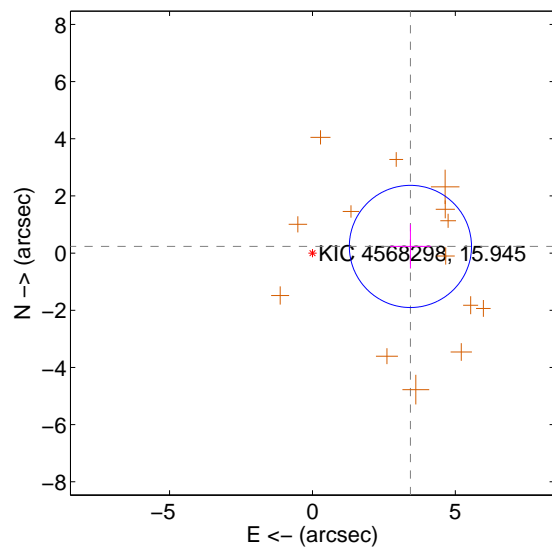
Supplemental centroid analysis for 004568298-01. Kepler magnitude: 15.95. Transit SNR 13.58

There are 0 quarters with good PRF difference image offsets

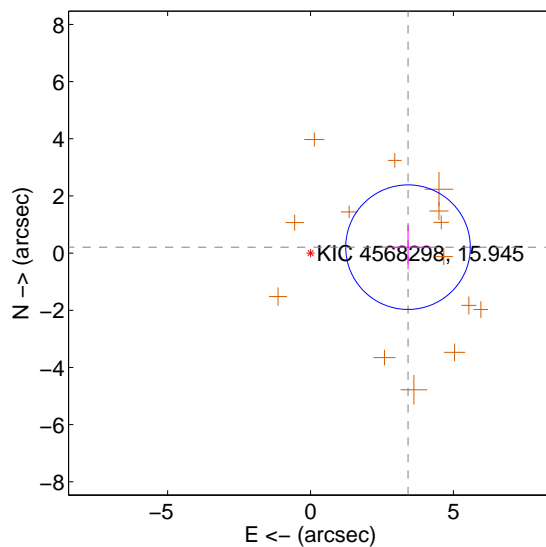
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.436 ± 0.712	4.82	-3.428 ± 0.712	0.233 ± 0.771
PRF-fit source offset from KIC position	3.417 ± 0.727	4.70	-3.411 ± 0.726	0.208 ± 0.769
photometric centroid source offset	3.38 ± 1.23	2.76	-0.39 ± 1.19	3.36 ± 1.23

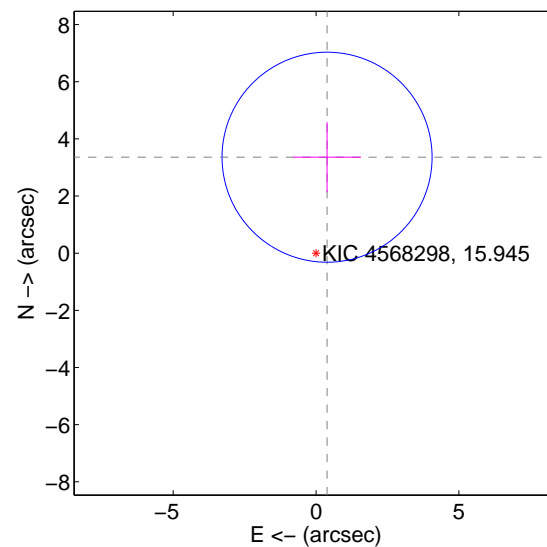
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

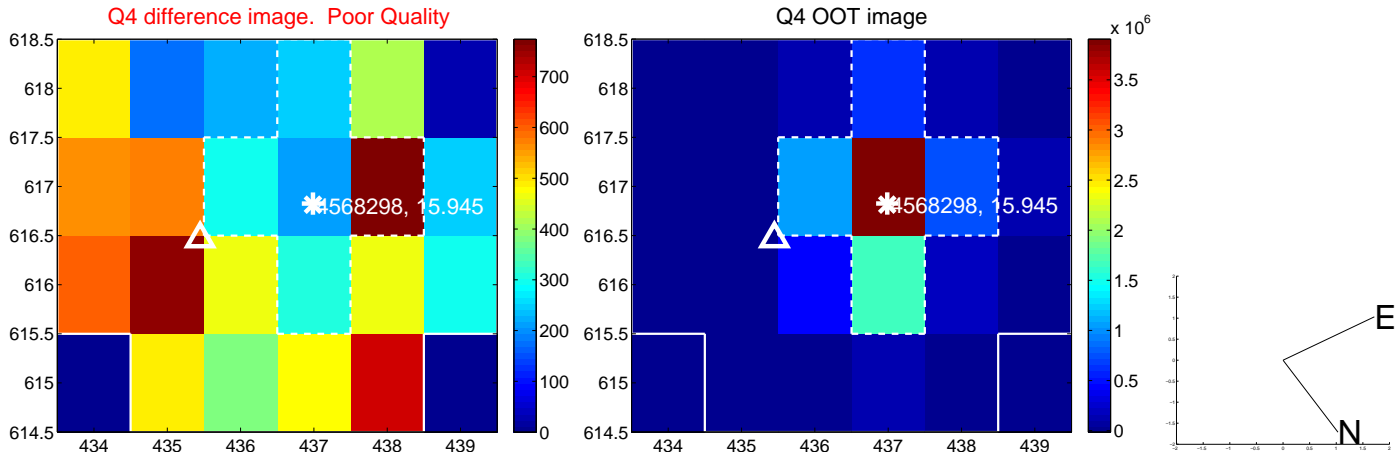
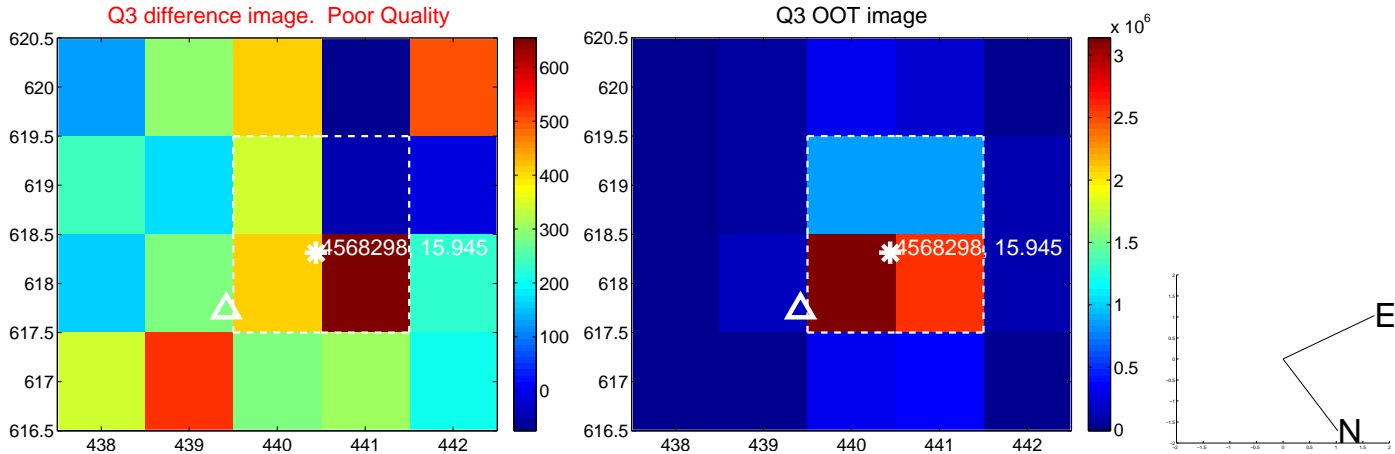
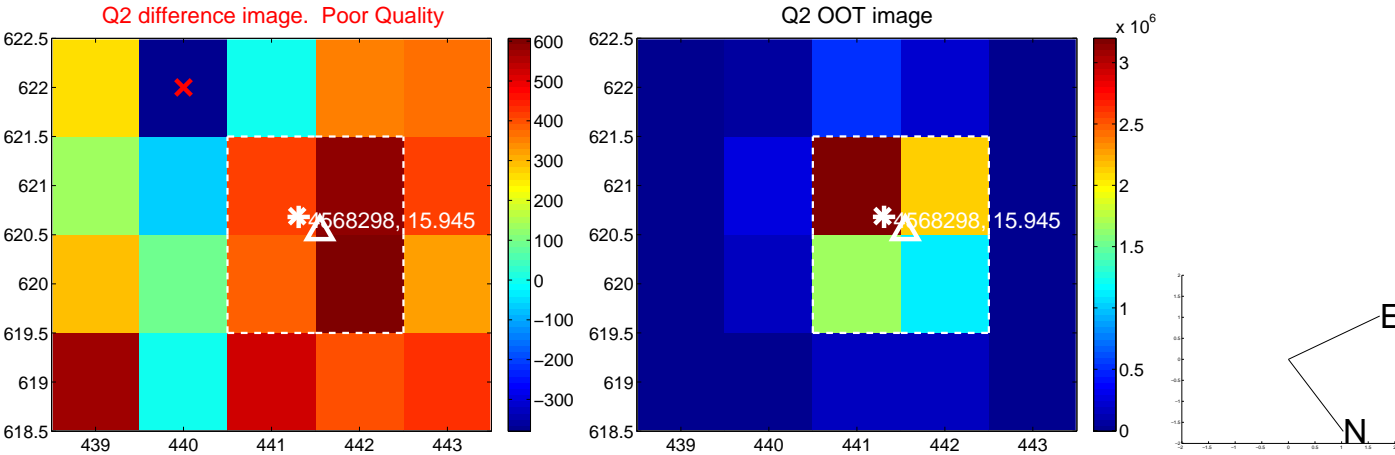
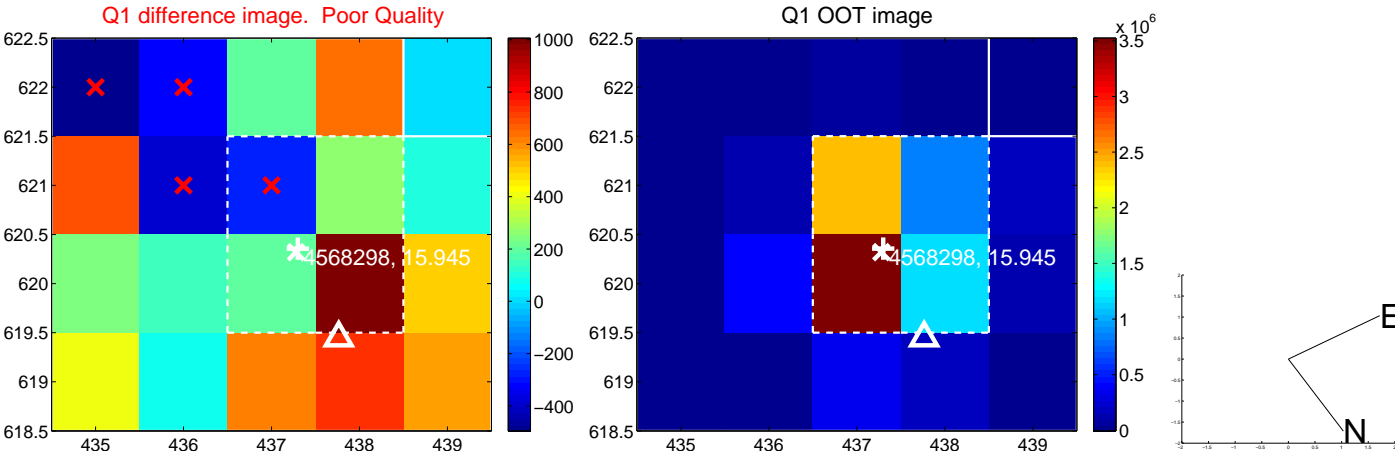


offset from photometric centroids

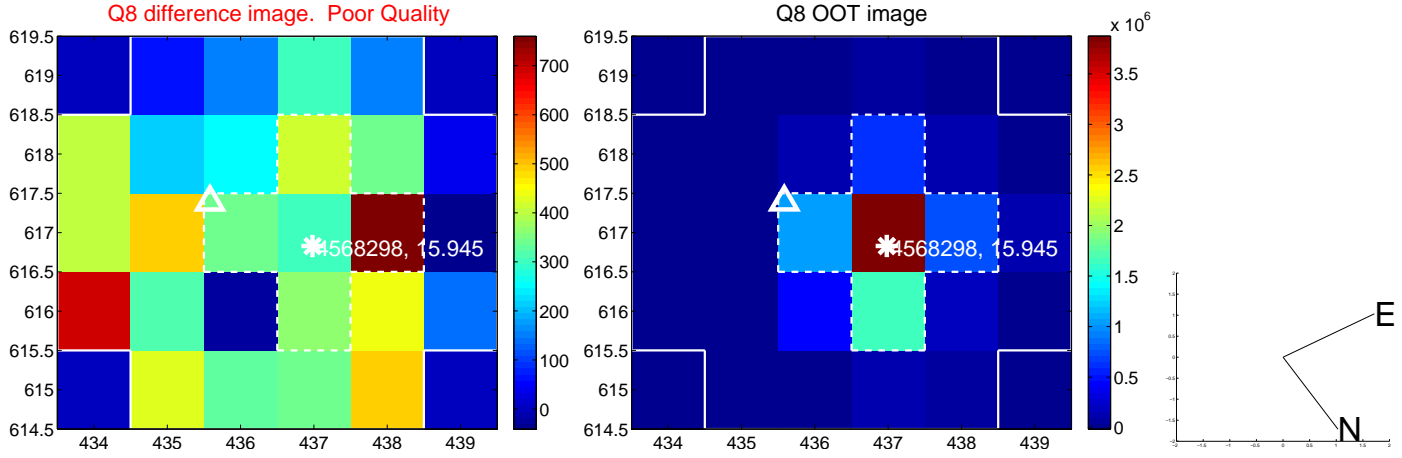
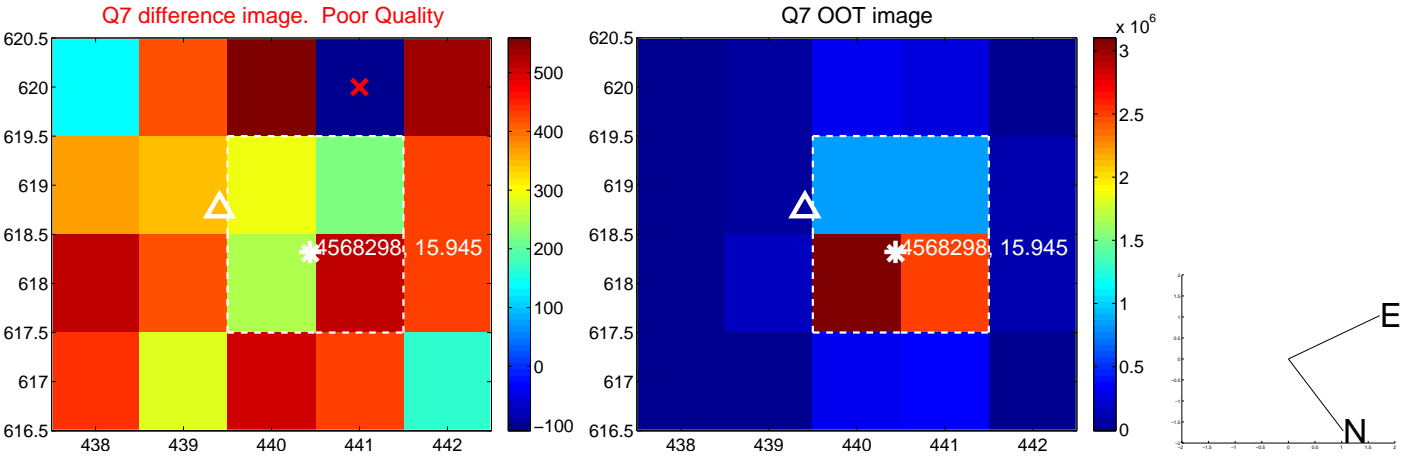
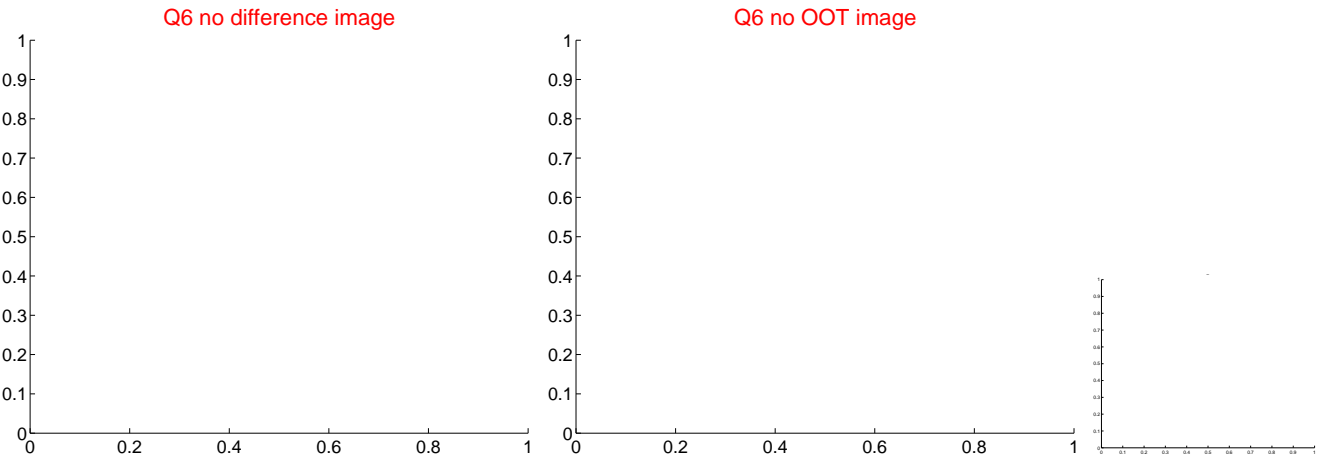
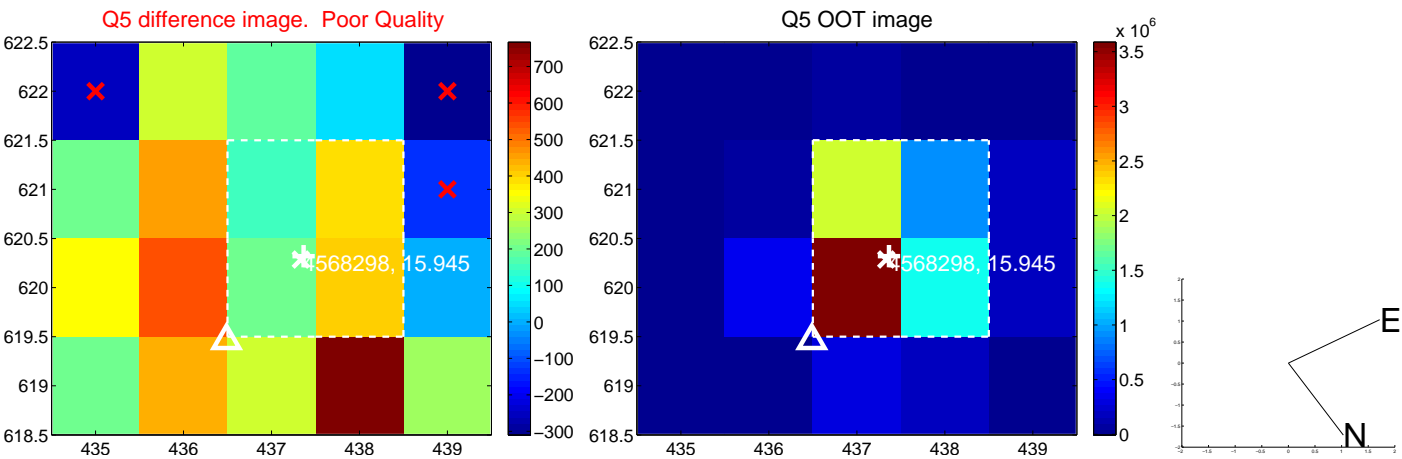


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

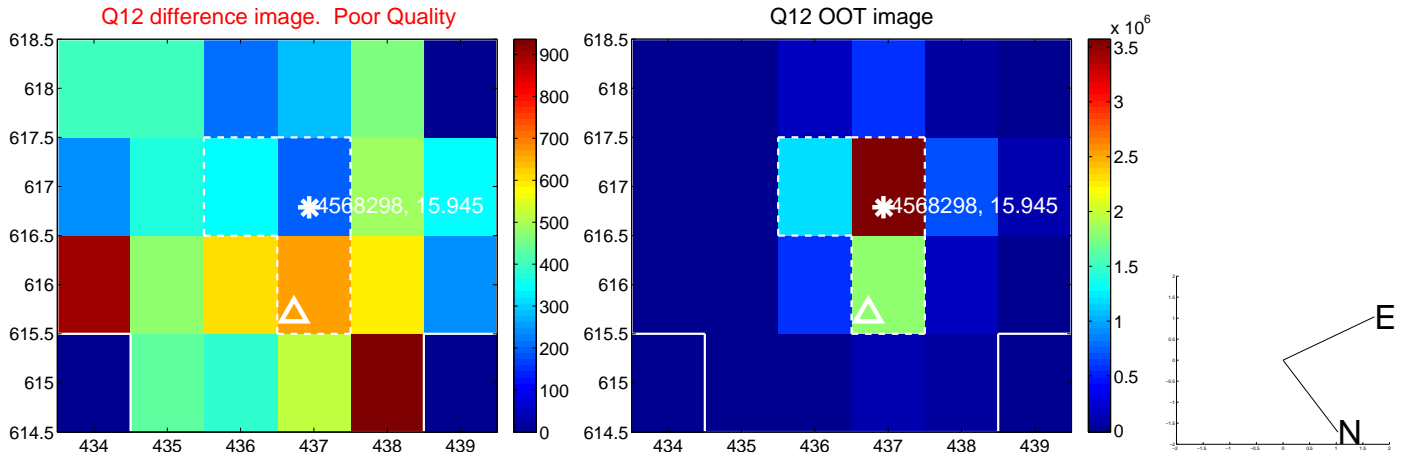
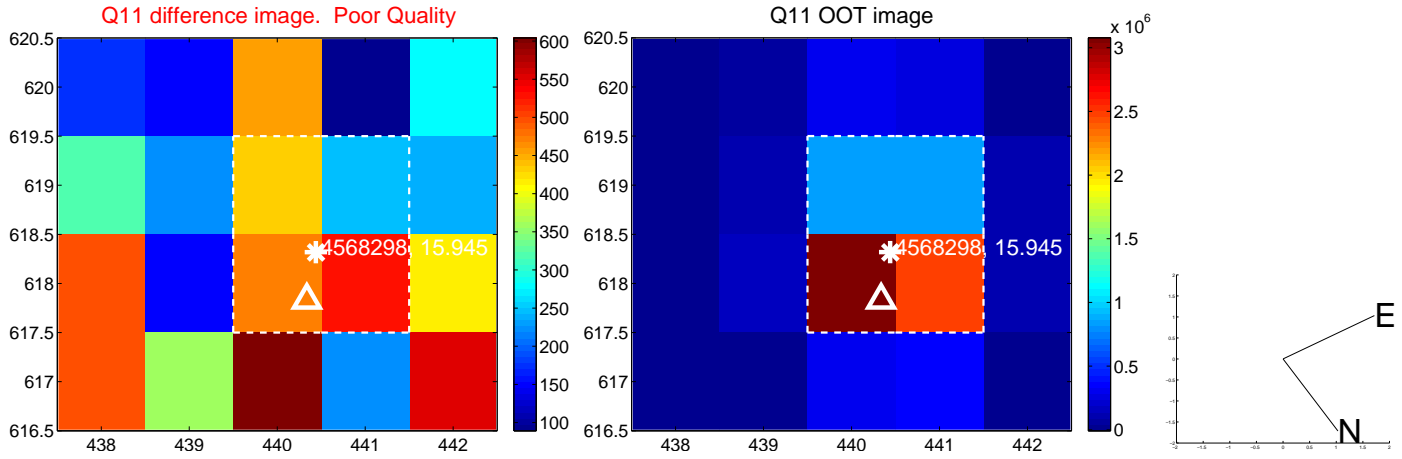
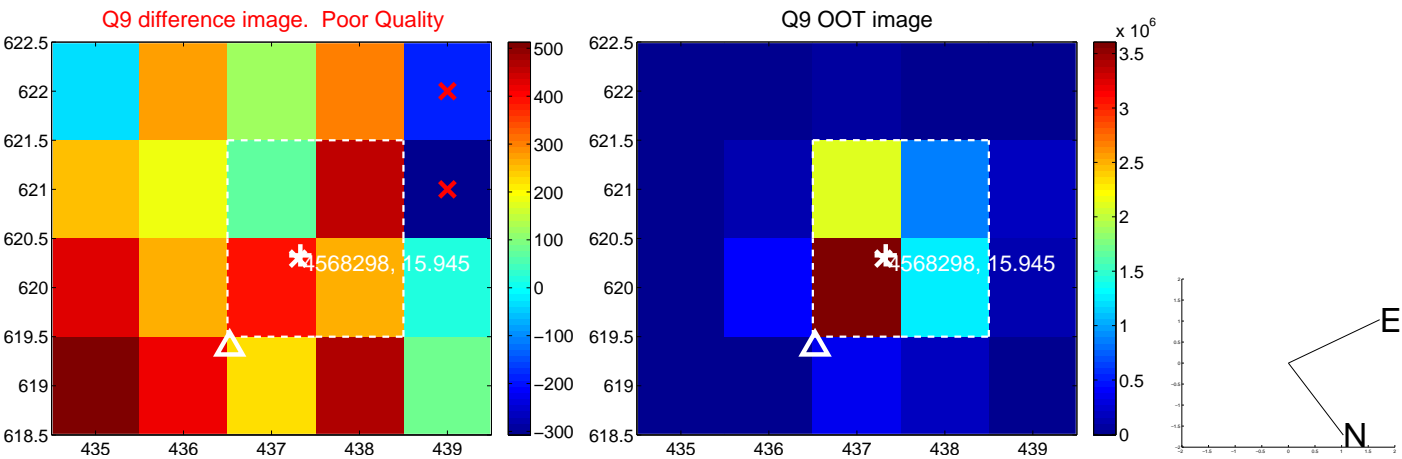
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



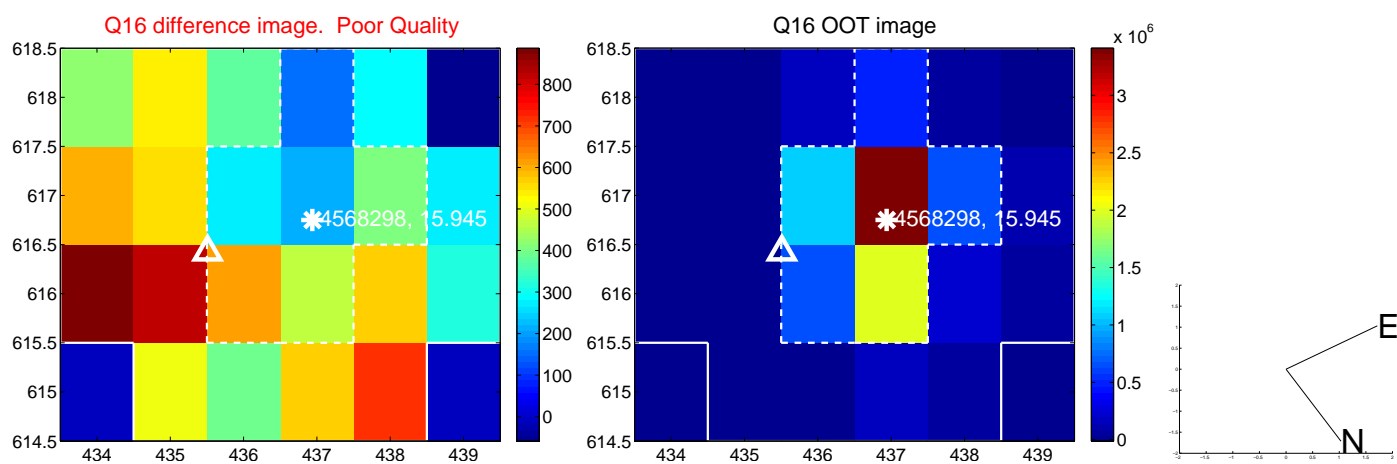
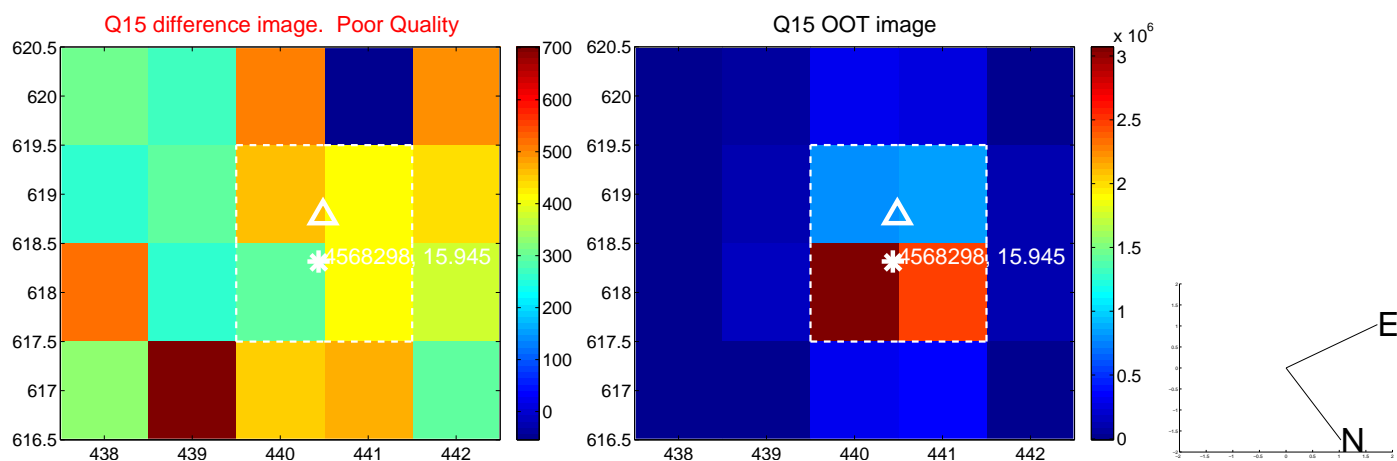
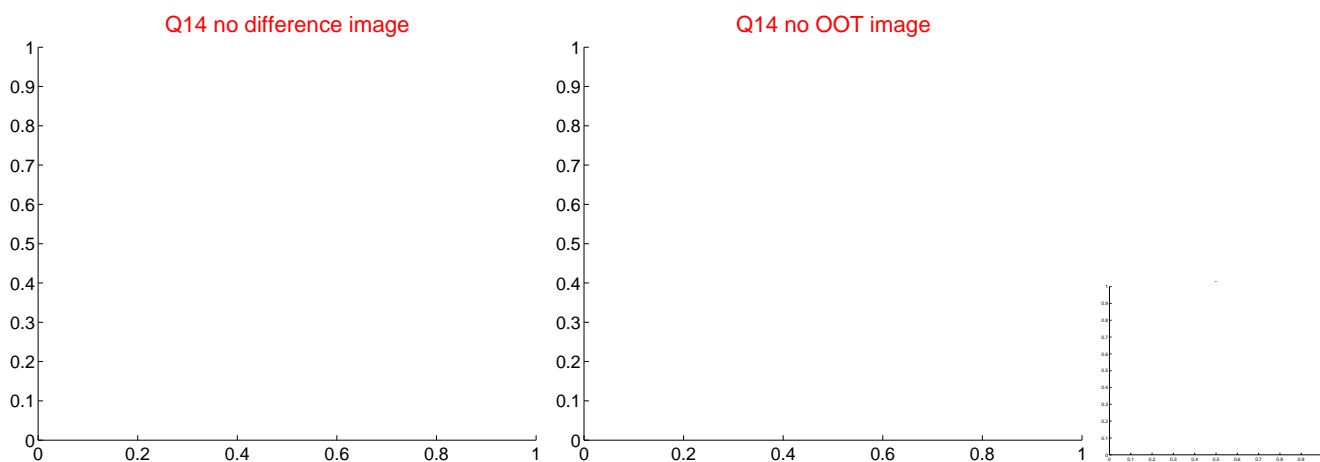
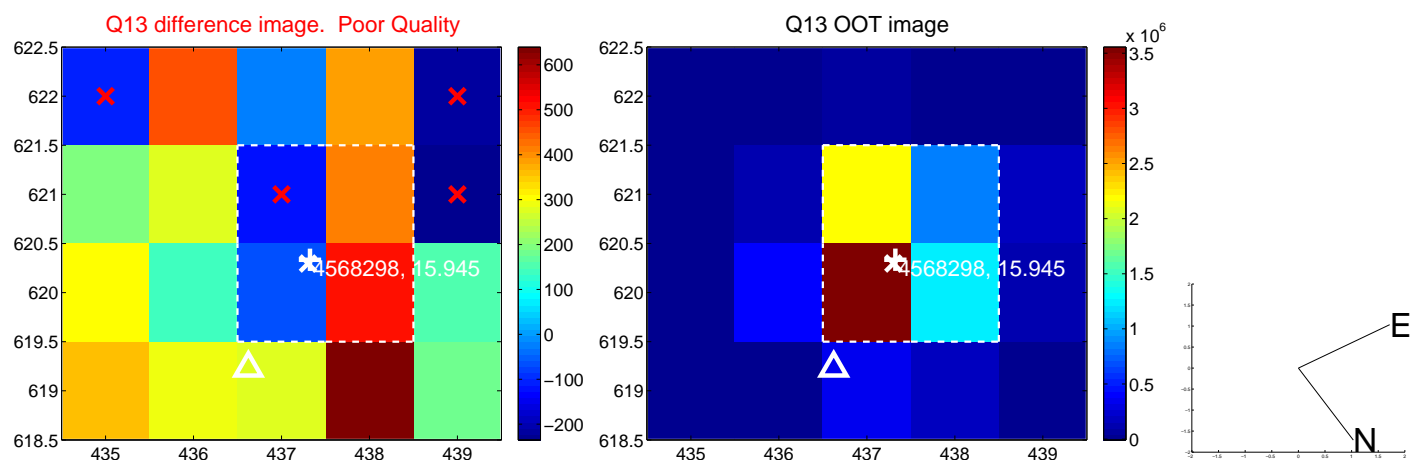
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



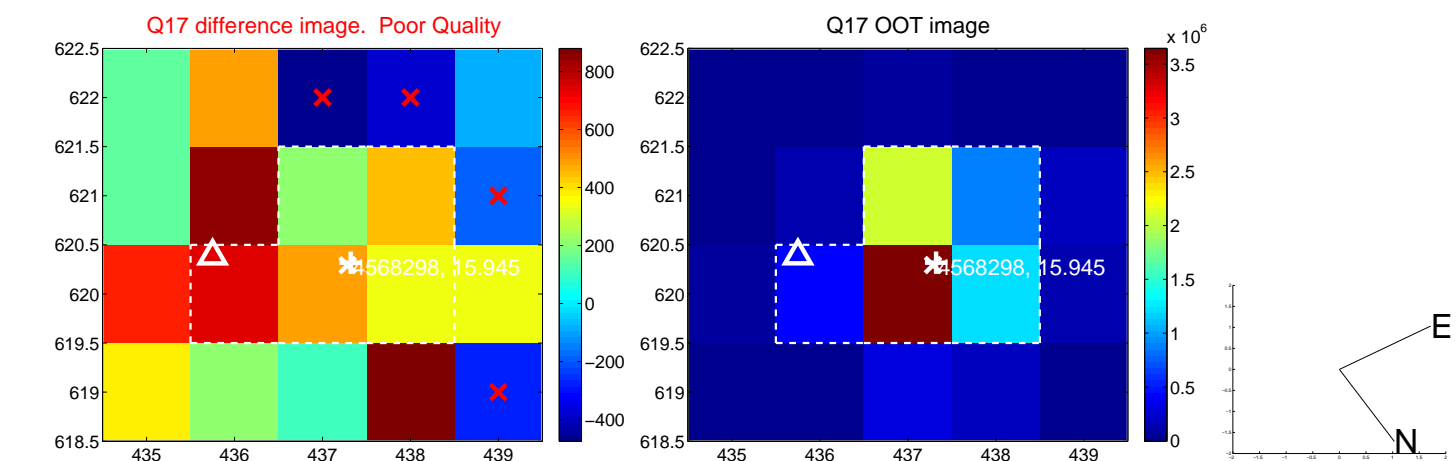
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



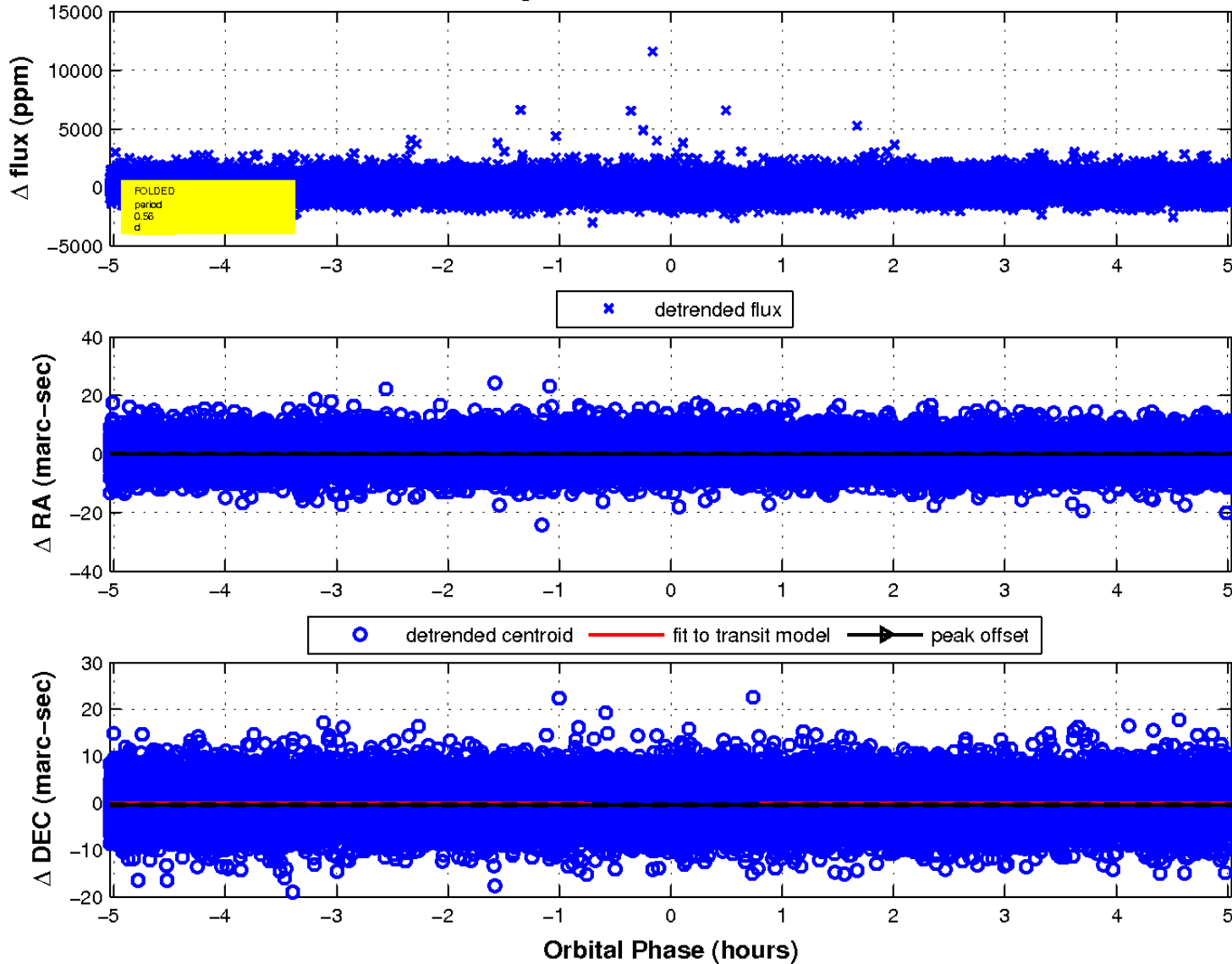
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

