

KIC 009178501

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})
009178501-01	OBS	No	1.399258	131.969988	17.0	6.481	8.8	8.9	1.71	7163	0.83	8835.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009178501-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

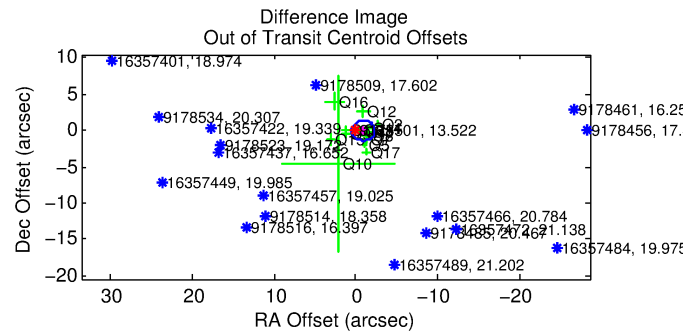
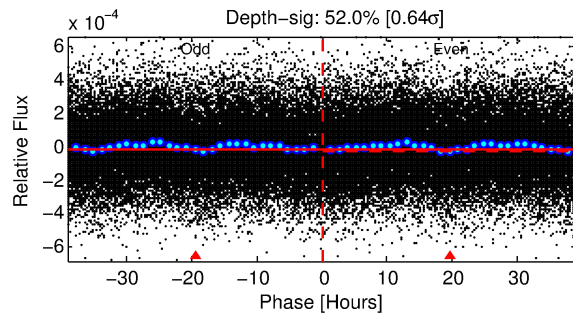
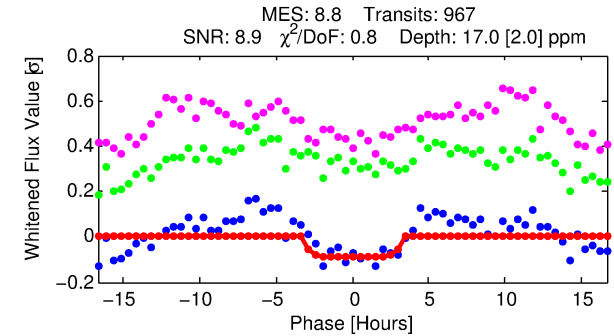
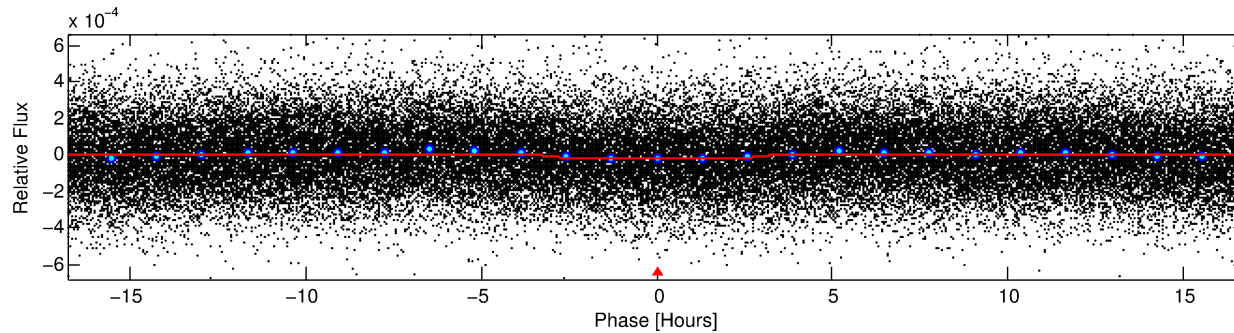
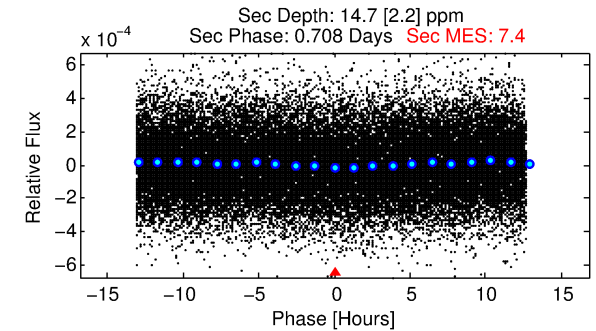
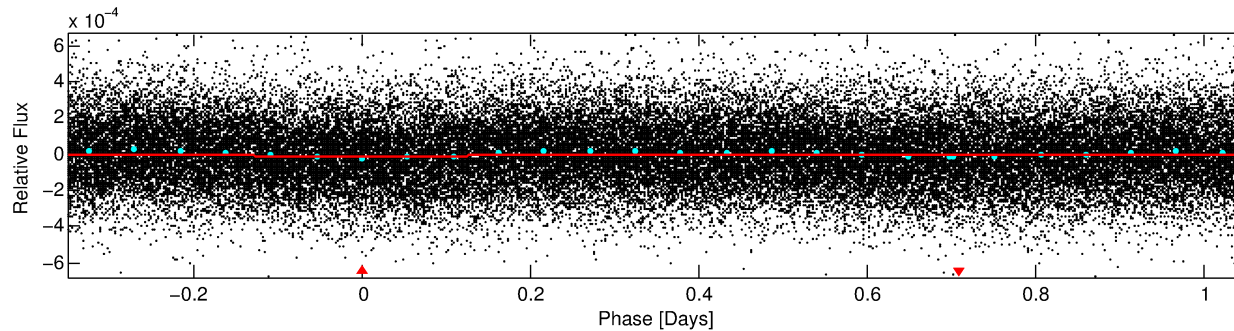
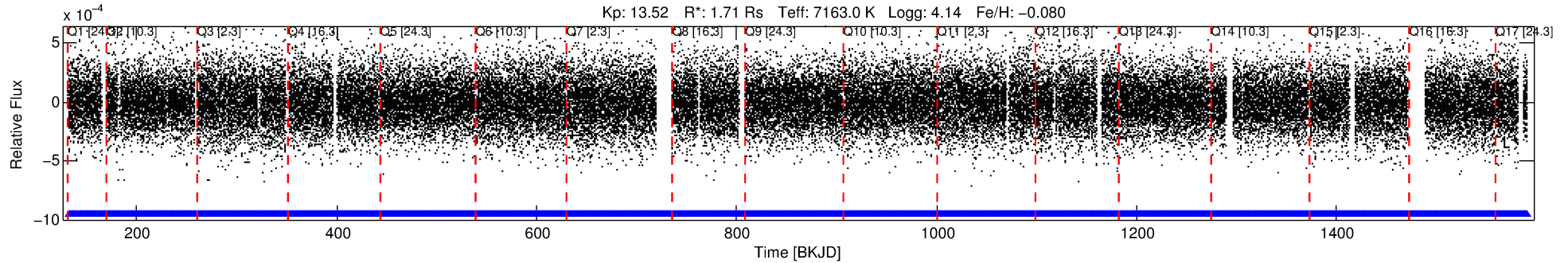
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009178501-01

No Significant Match Found

DV One-Page Summary

KIC: 9178501 Candidate: 1 of 1 Period: 1.399 d



DV Fit Results:

Period = 1.39926 [0.00002] d
Epoch = 131.9700 [0.0073] BKJD
Rp/R* = 0.0045 [0.0018]
a/R* = 1.16 [0.78]
b = 0.92 [0.44]
Seff = 8835.53 [3530.38]
Teq = 2472 [247] K
Rp = 0.83 [0.42] Re
a = 0.0279 [0.0070] AU
Ag = 9.16 [8.11] [1.01σ]
Teffp = 6650 [1377] K [2.99σ]

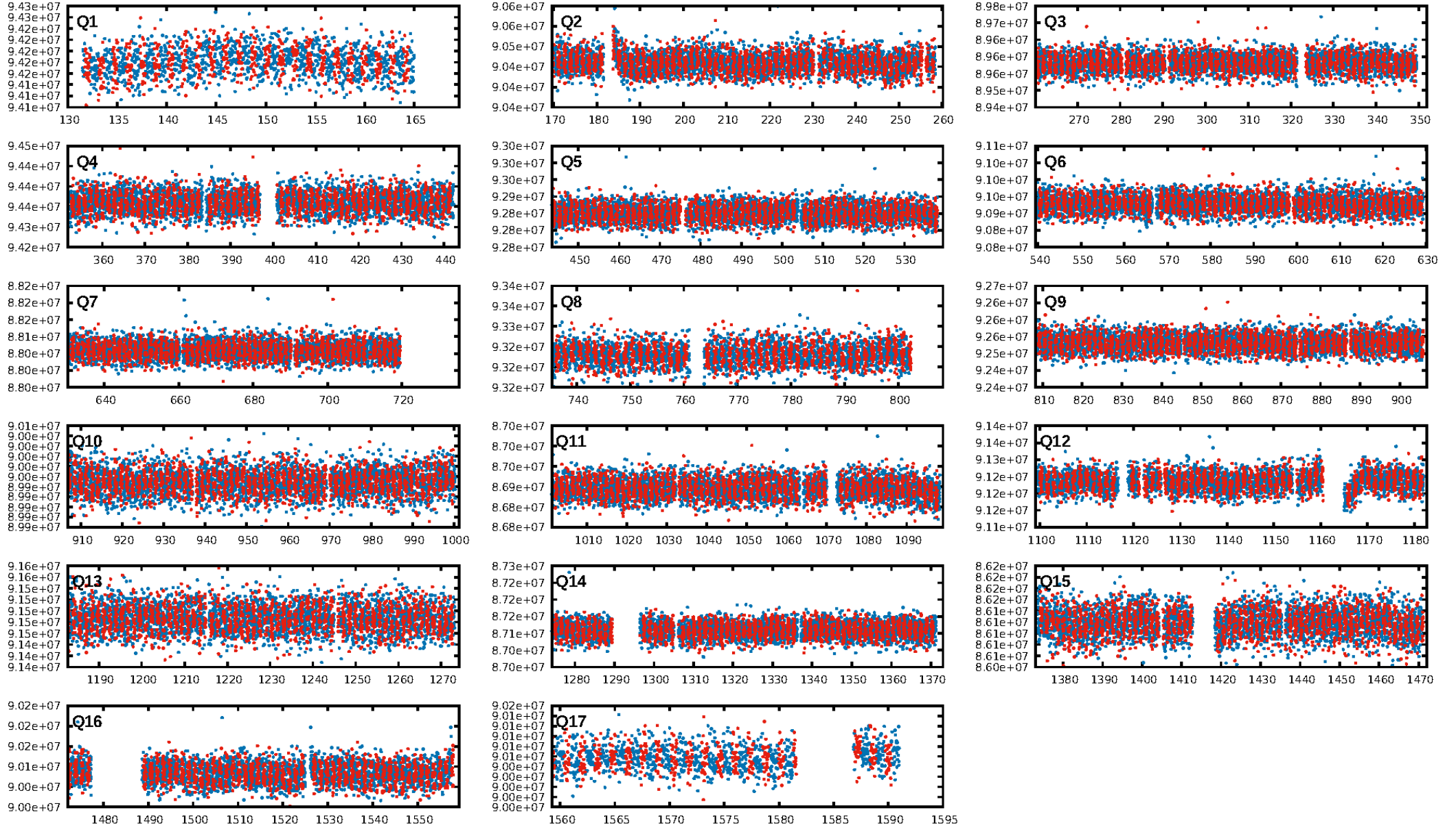
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.68e-15
RollingBand-fgt: 1.00 [923/923]
GhostDiagnostic-chr: 2.76
Centroid-sig: 11.6%
Centroid-so: 2.619 arcsec [1.48σ]
OotOffset-rm: 0.813 arcsec [1.74σ]
KicOffset-rm: 0.831 arcsec [1.79σ]
OotOffset-st: 4/4/4 [16]
KicOffset-st: 4/4/4 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

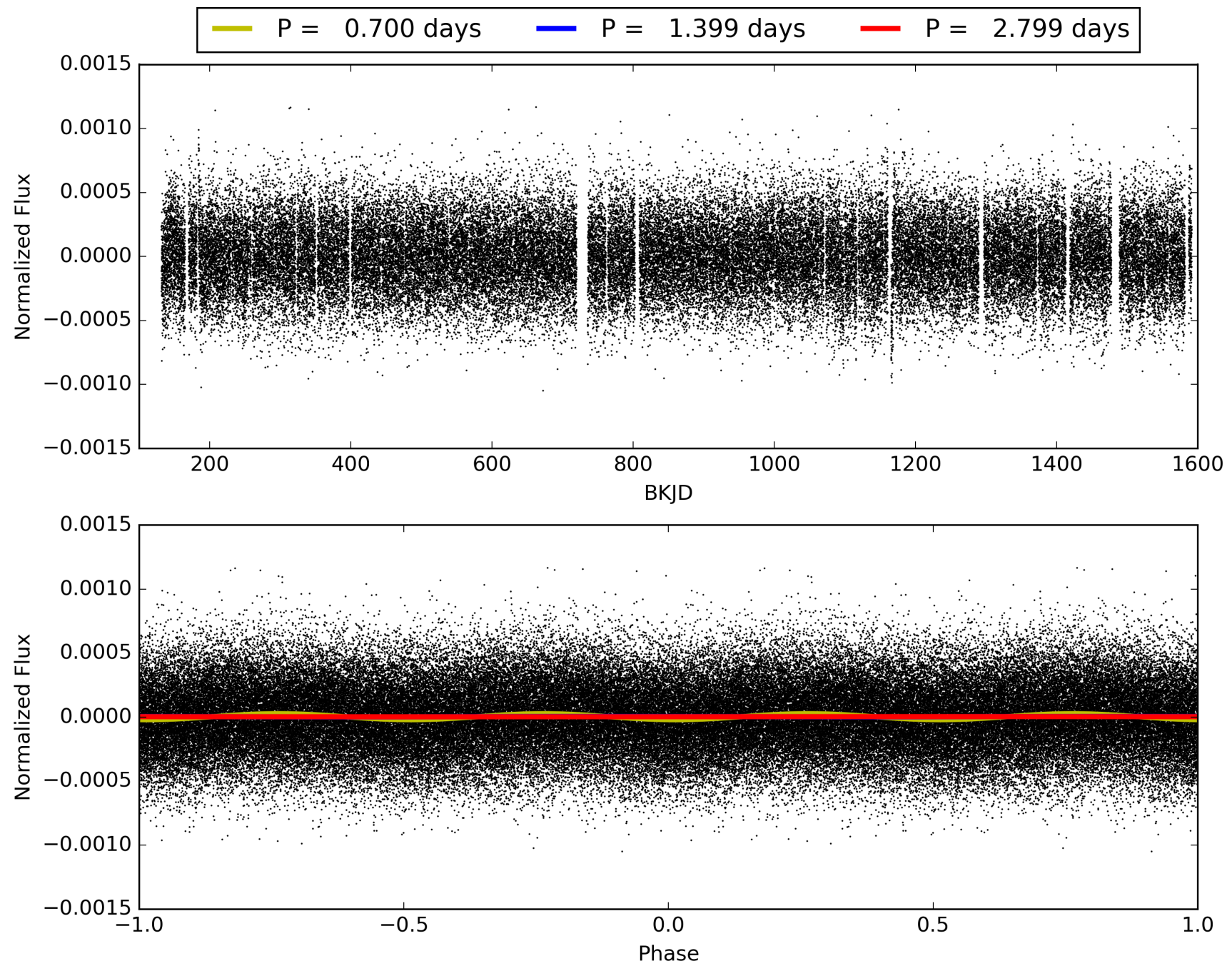
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:21:36 Z

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

TCE 009178501-01, PDC Light Curves

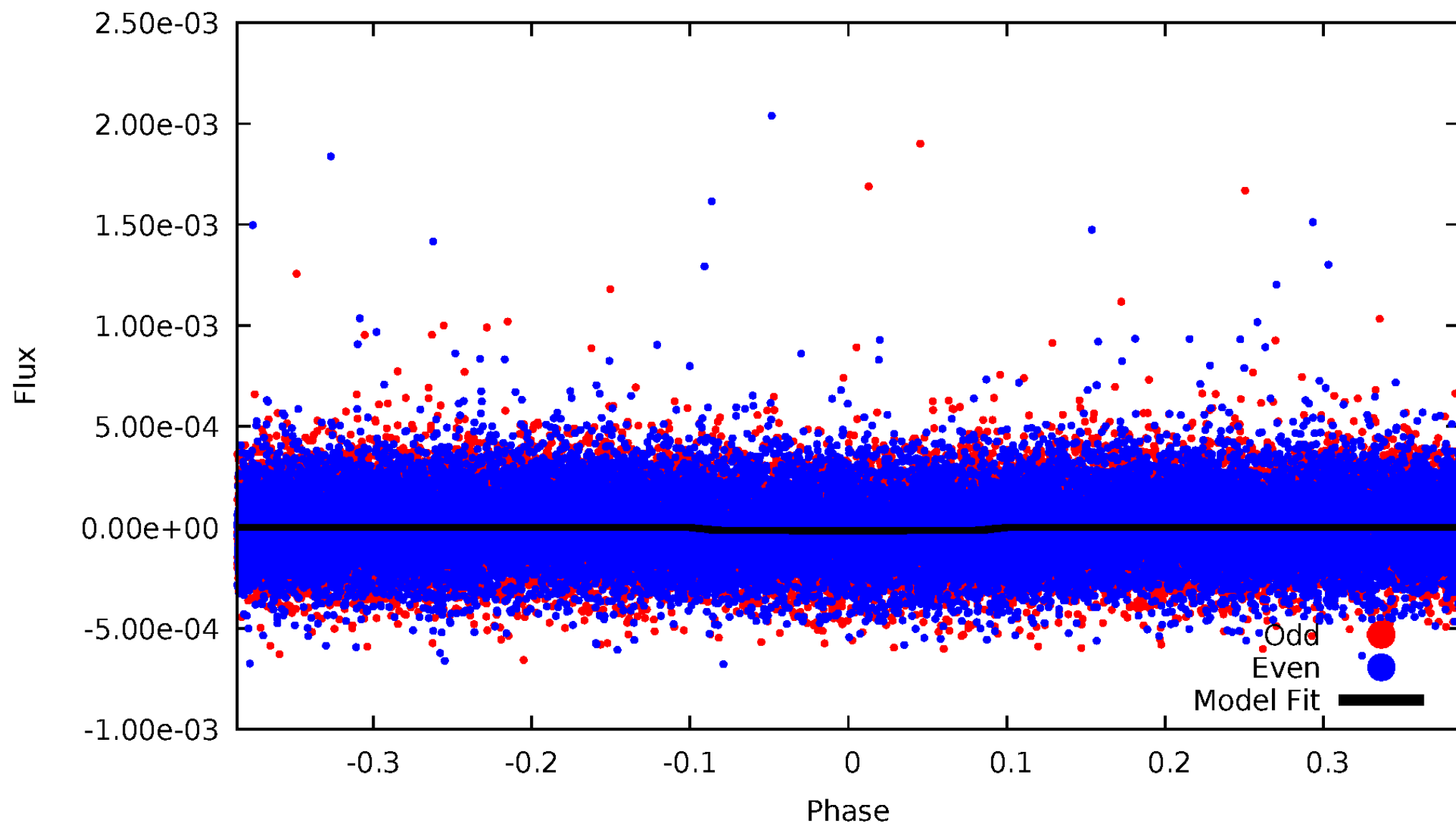


TCE 009178501-01



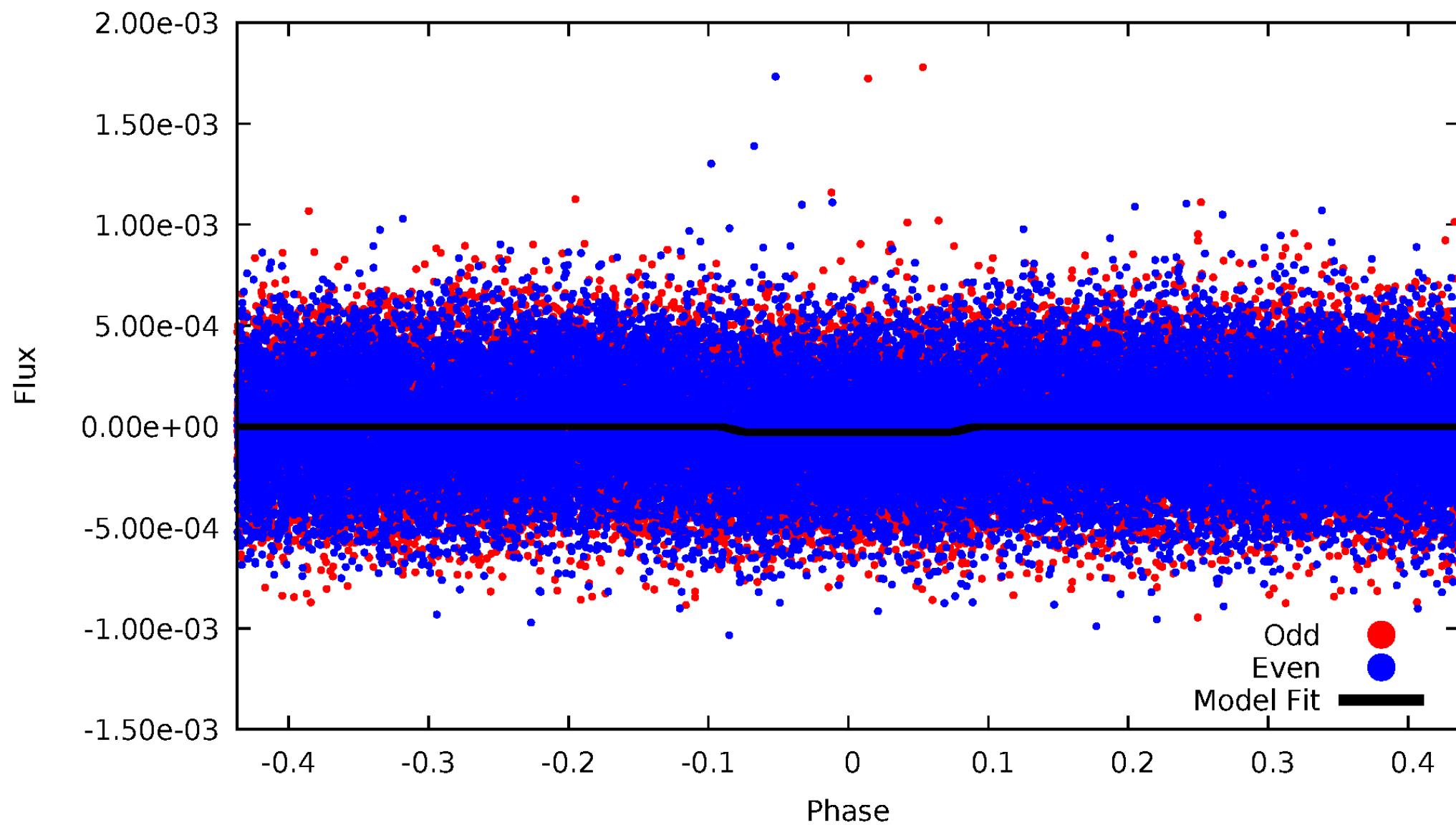
DV Odd/Even

TCE 009178501-01



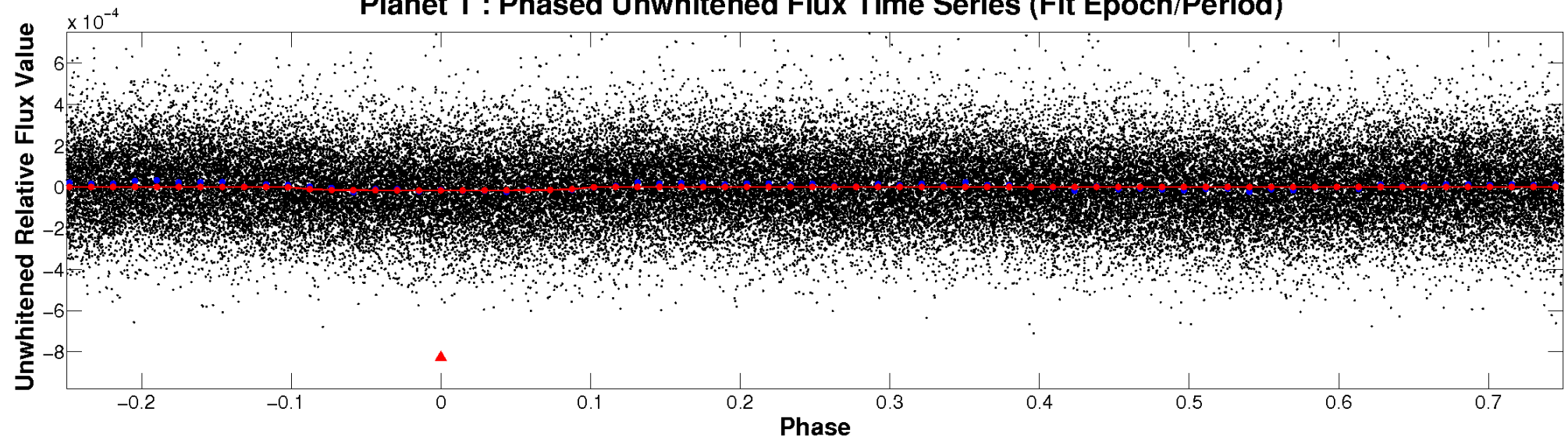
ALT Odd/Even

TCE 009178501-01

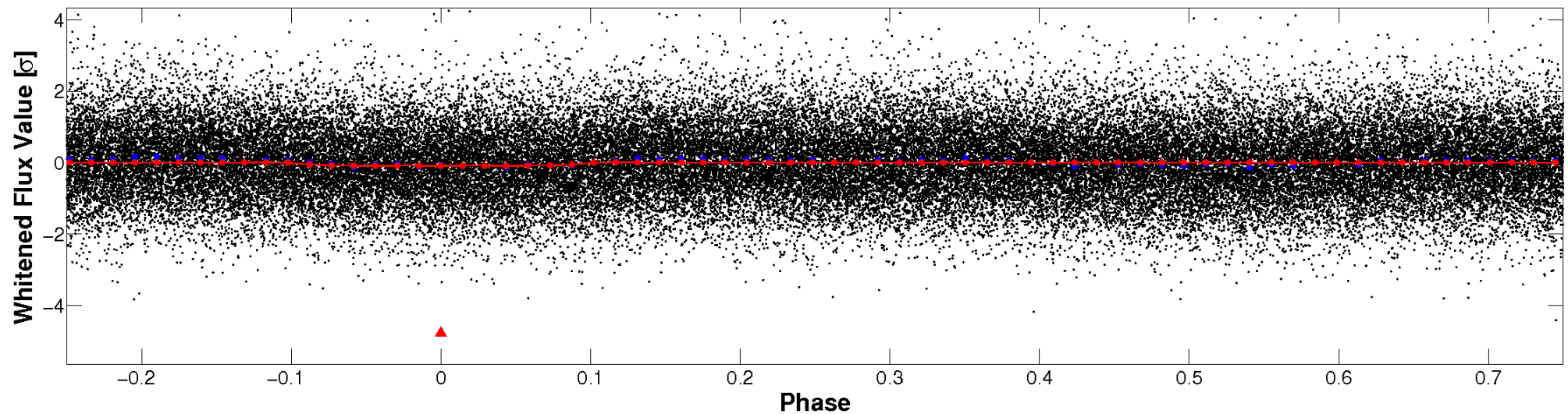


Non-Whitened Vs. Whitened Light Curve

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

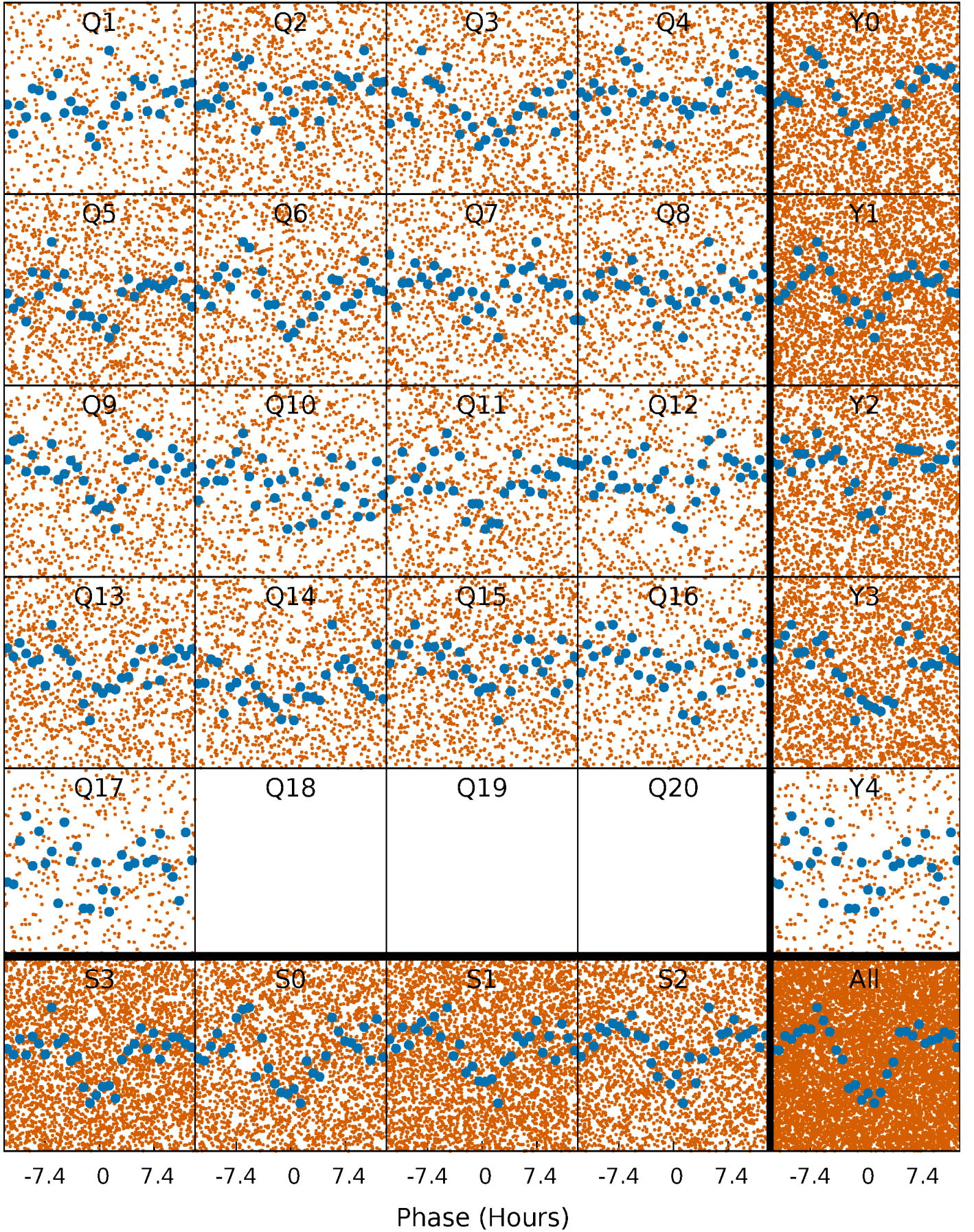


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



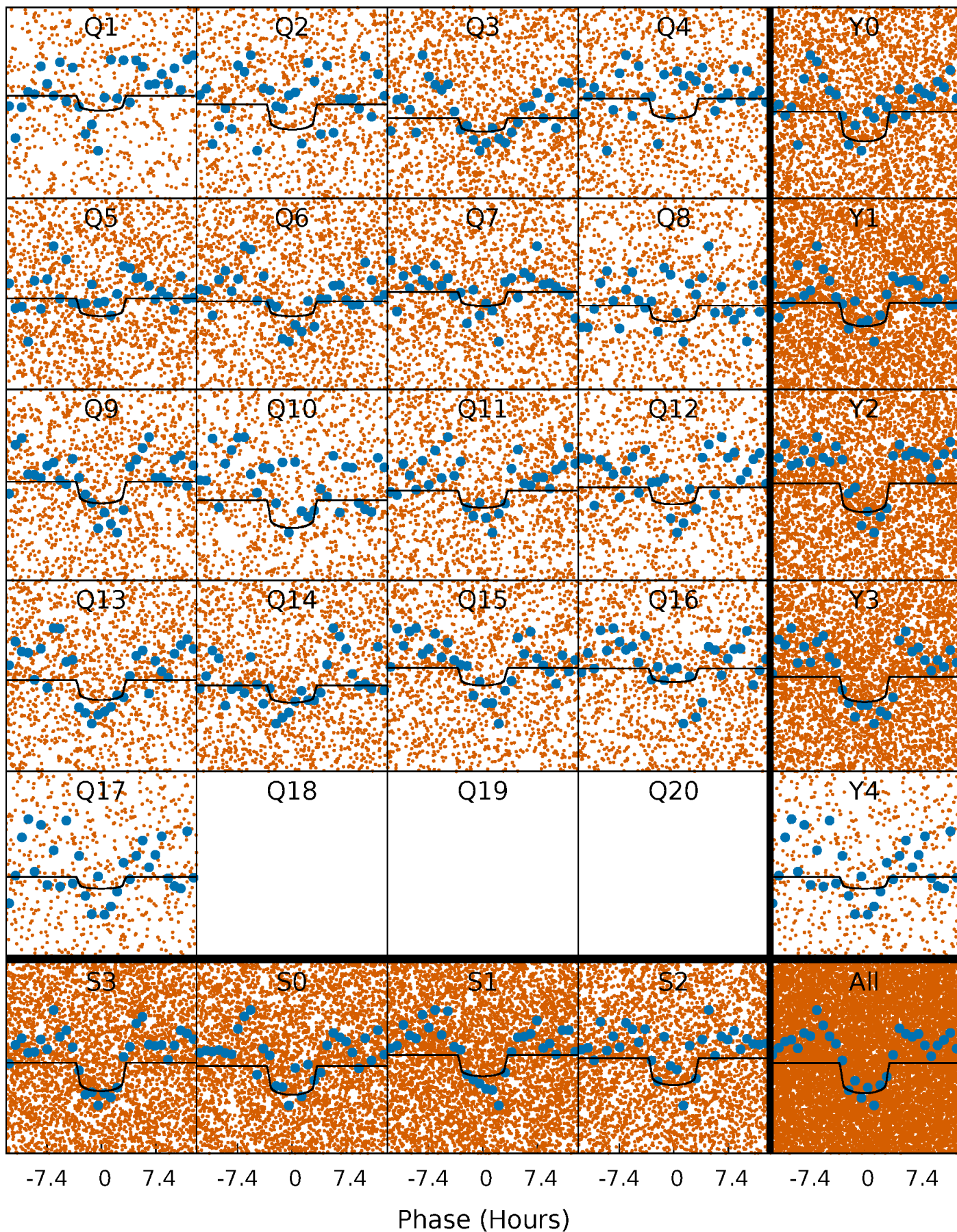
PDC Quarter-Phased Transit Curves

TCE 009178501-01 P= 1.399258 Days $T_0=131.969988$ (BKJD)



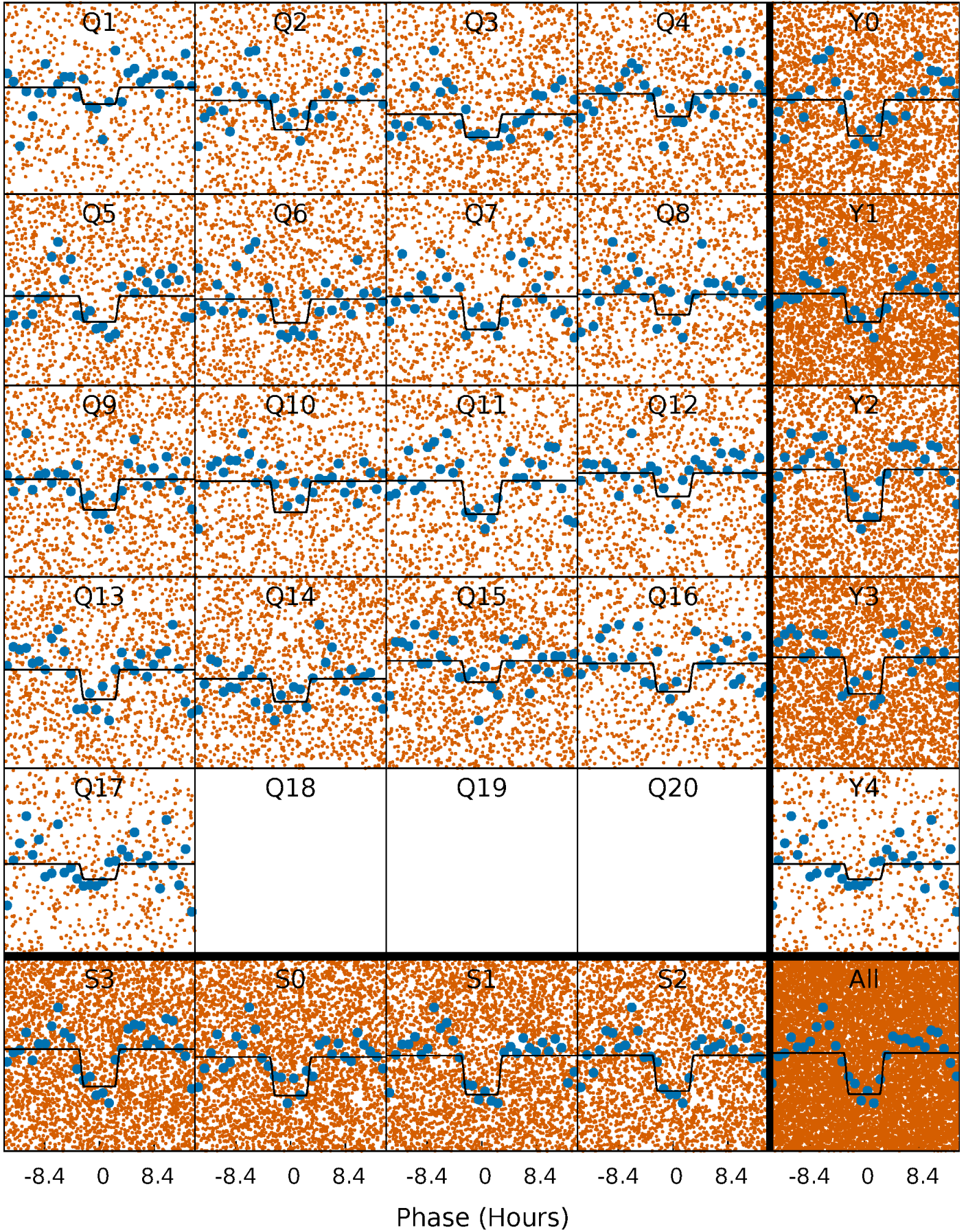
DV Quarter-Phased Transit Curves

TCE 009178501-01 P= 1.399258 Days $T_0=131.969988$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

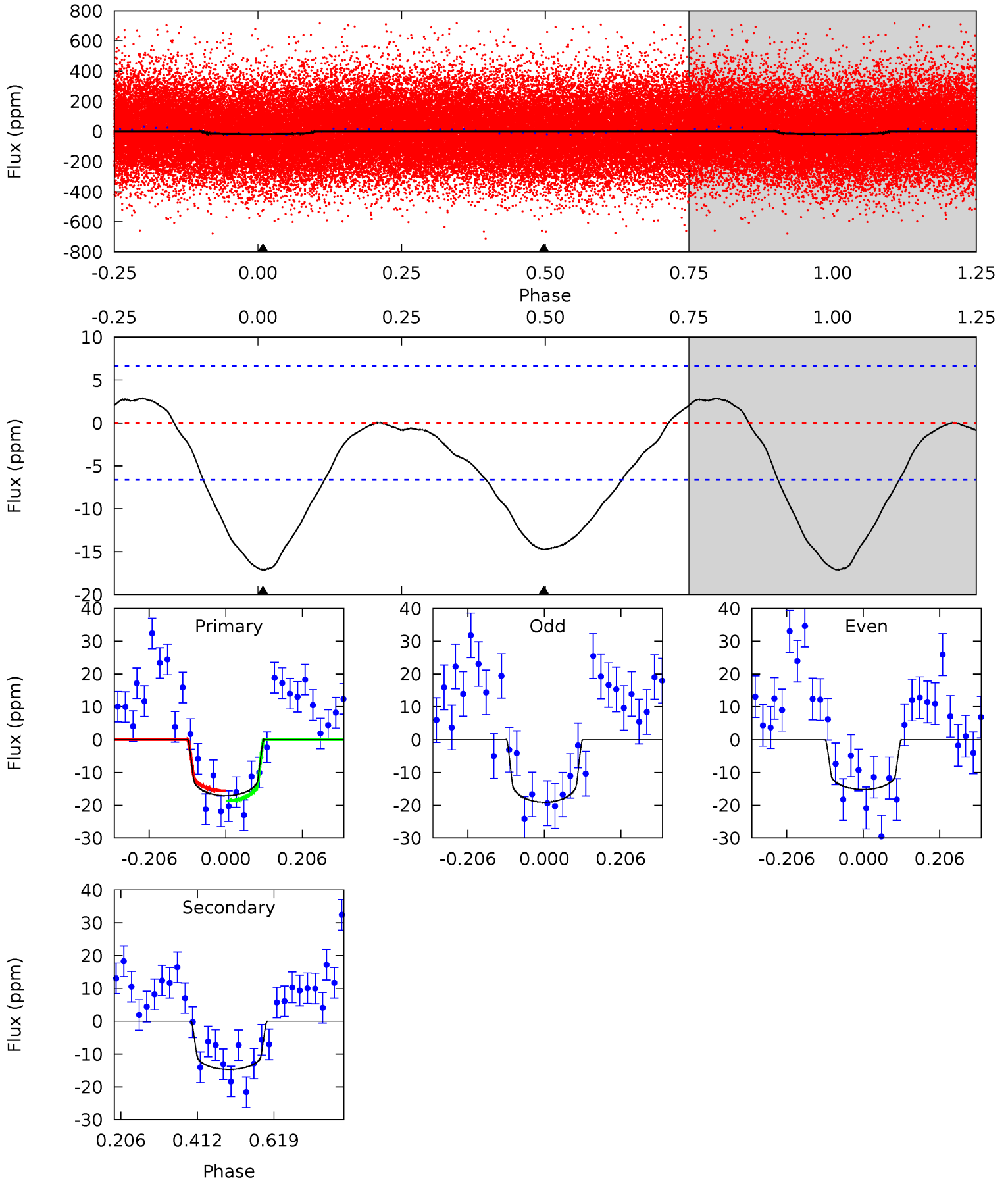
TCE 009178501-01 P= 1.399361 Days $T_0=131.926306$ (BKJD)



DV Model-Shift Uniqueness Test

009178501-01, P = 1.399258 Days, E = 130.570730 Days

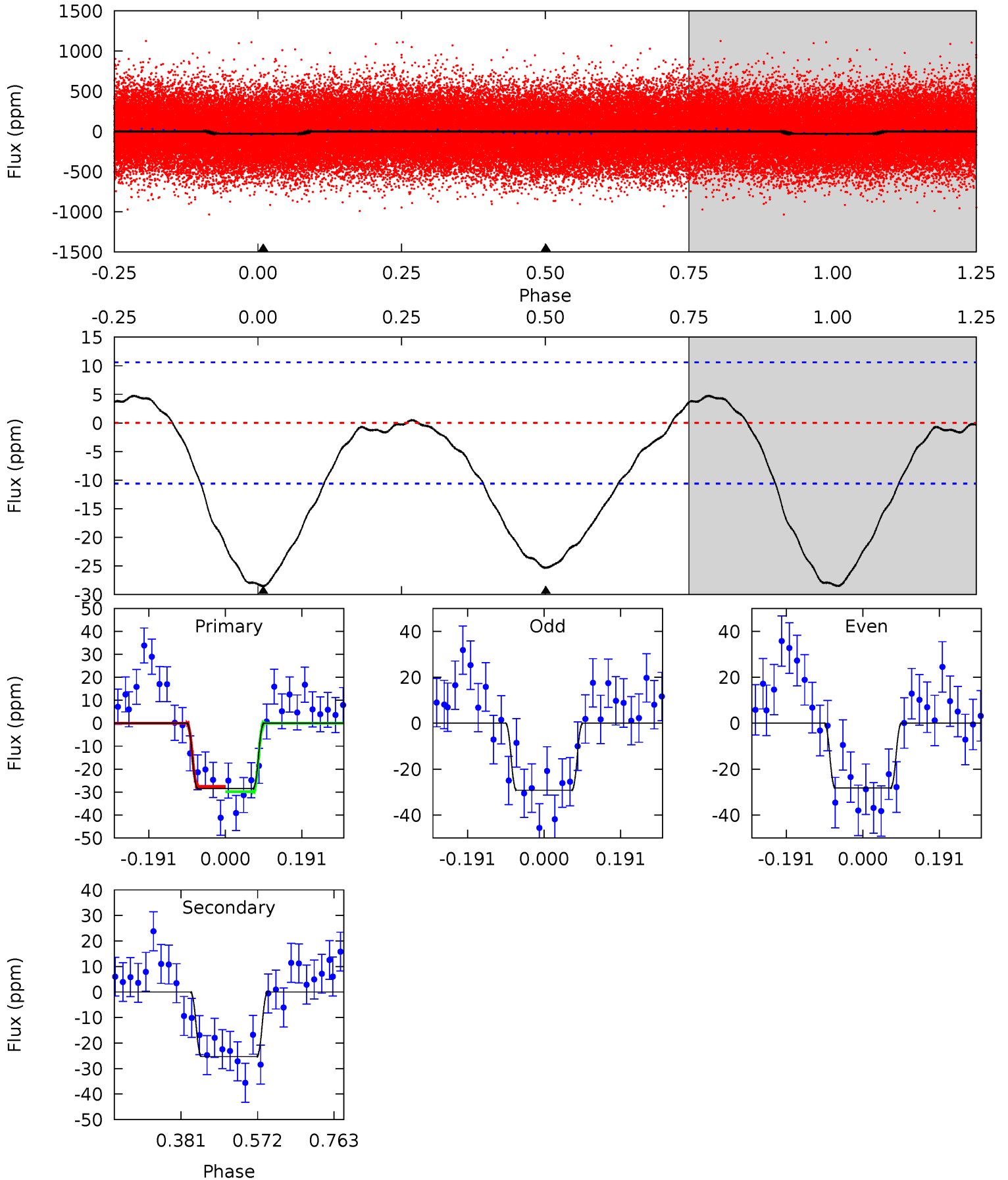
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	9.79	0	0	4.41	1.26	0.96	11.4	11.4	9.79	9.79	1.29	0.85	0.14	1.02



Alt Model-Shift Uniqueness Test

009178501-01, P = 1.399361 Days, E = 130.526945 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	10.6	0	0	4.43	1.31	0.99	11.9	11.9	10.6	10.6	0.20	0.95	0.14	0.48



Stellar Parameters For KIC 009178501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7163^{+200}_{-314}	$4.143^{+0.128}_{-0.192}$	$-0.080^{+0.250}_{-0.350}$	$1.707^{+0.525}_{-0.350}$	$1.478^{+0.218}_{-0.239}$	$0.418^{+0.313}_{-0.222}$
	+3%/-4%	+3%/-5%	+312%/-438%	+31%/-21%	+15%/-16%	+75%/-53%
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 009178501-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 2	$0.82^{+0.36}_{-0.34}$	3468^{+291}_{-225}	6616^{+2568}_{-1170}	$9.347^{+17.980}_{-5.063}$
Alt.	-25 ± 2	$1.02^{+0.38}_{-0.33}$	3481^{+262}_{-223}	6788^{+1905}_{-1028}	10^{+12}_{-5}

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

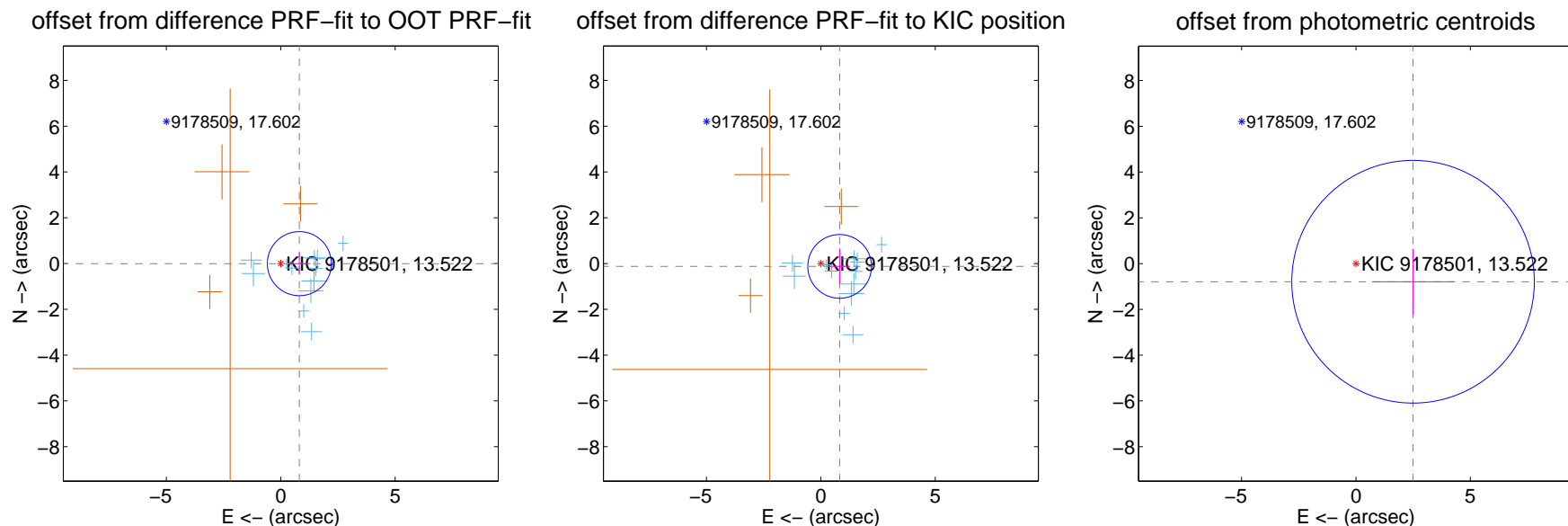
DV Centroid Data

Supplemental centroid analysis for 009178501-01. Kepler magnitude: 13.52. Transit SNR 8.89

There are 12 quarters with good PRF difference image offsets

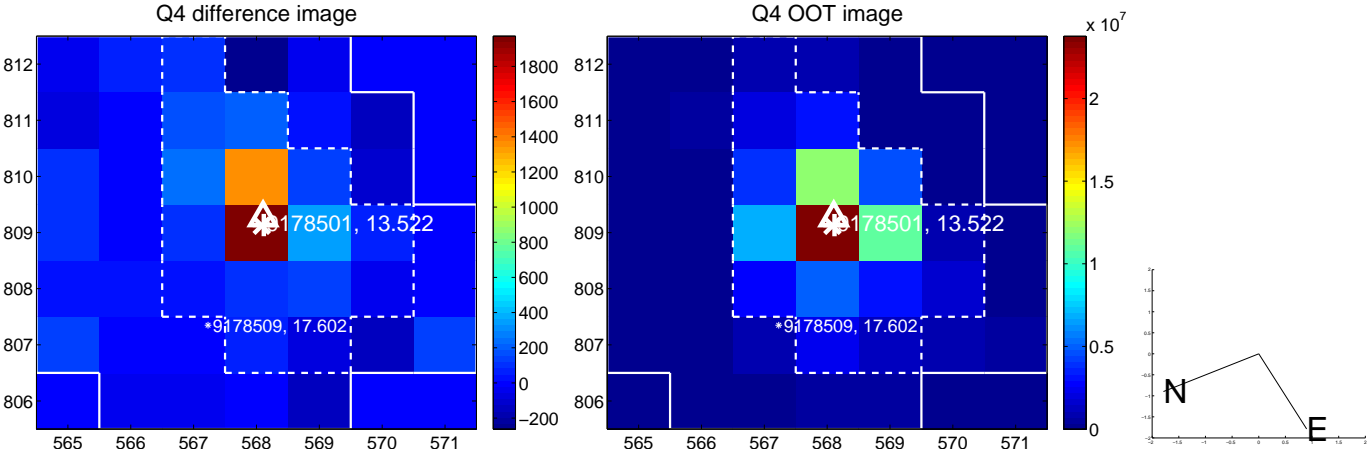
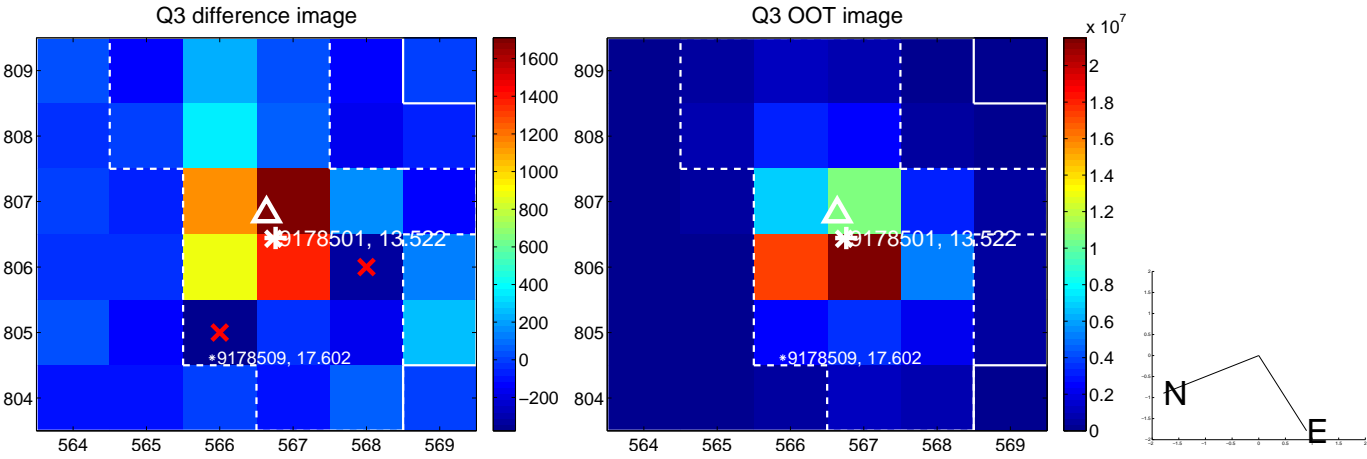
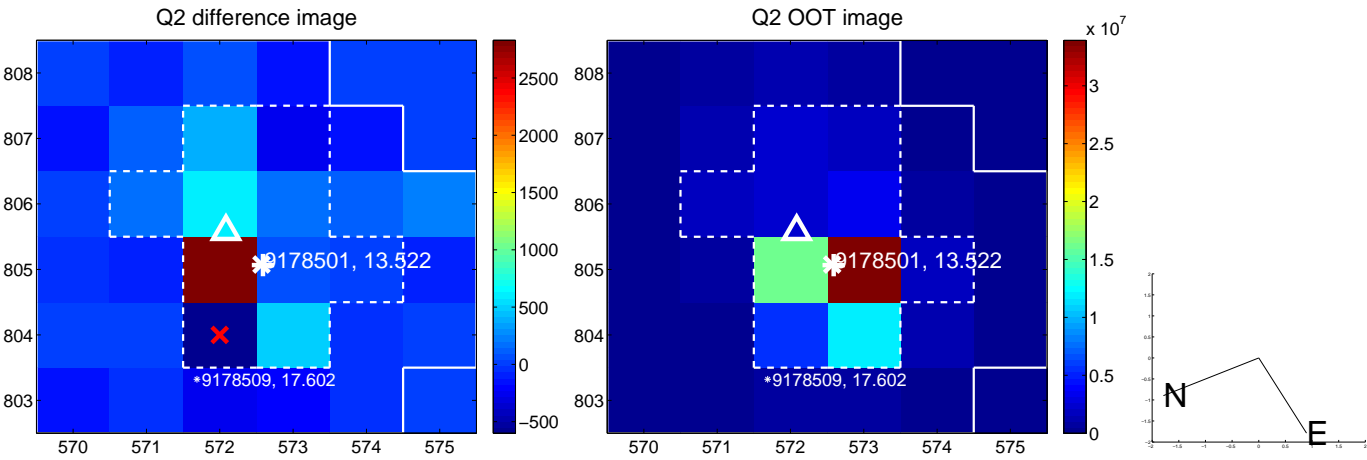
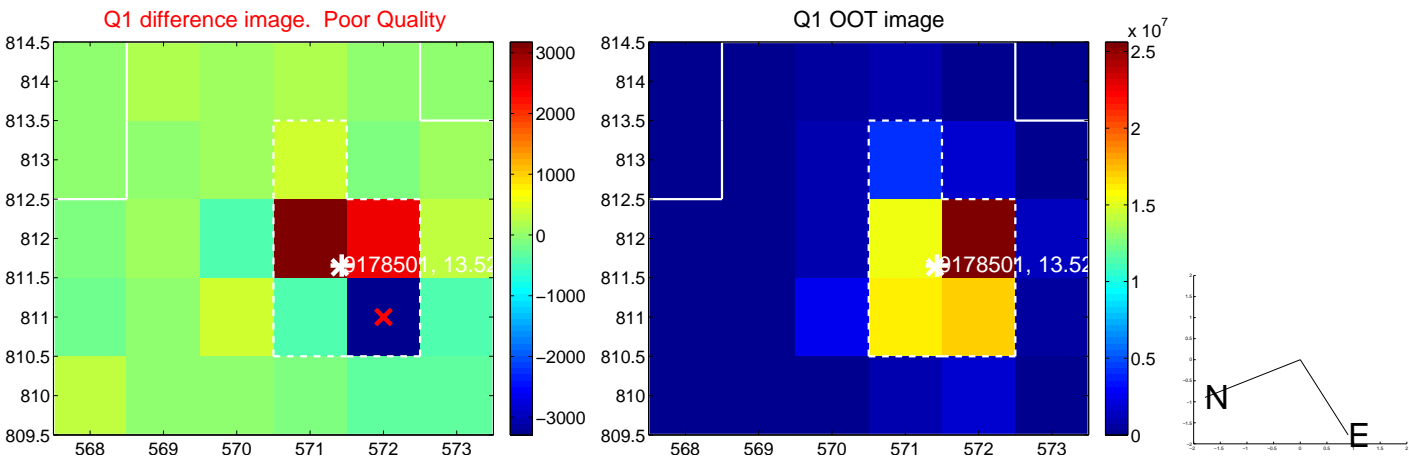
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.813 ± 0.466	1.74	-0.813 ± 0.466	-0.005 ± 0.472
PRF-fit source offset from KIC position	0.831 ± 0.464	1.79	-0.821 ± 0.454	-0.125 ± 0.779
photometric centroid source offset	2.62 ± 1.77	1.48	-2.50 ± 1.80	-0.79 ± 1.43

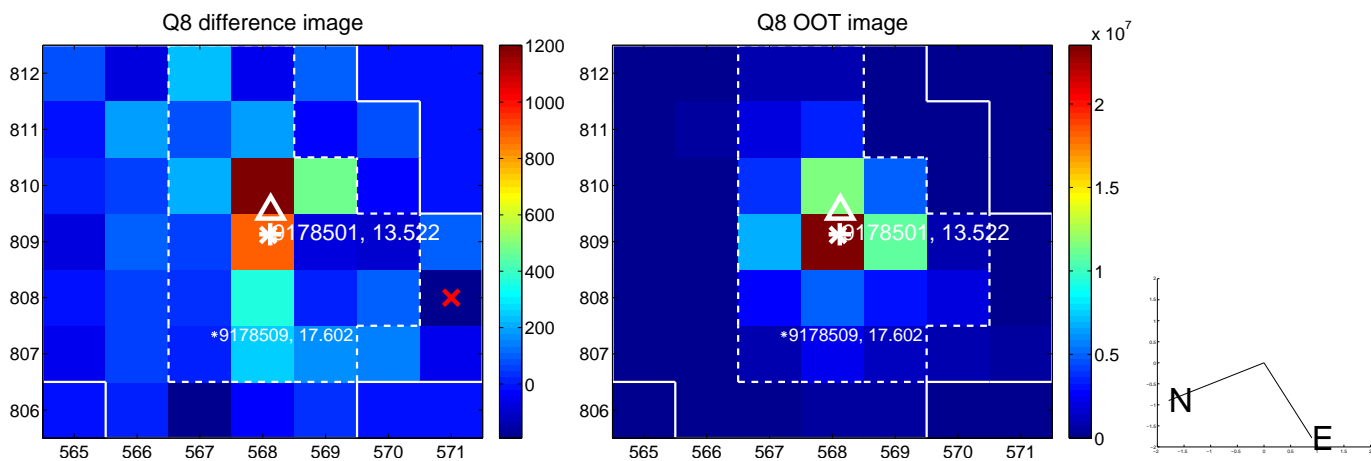
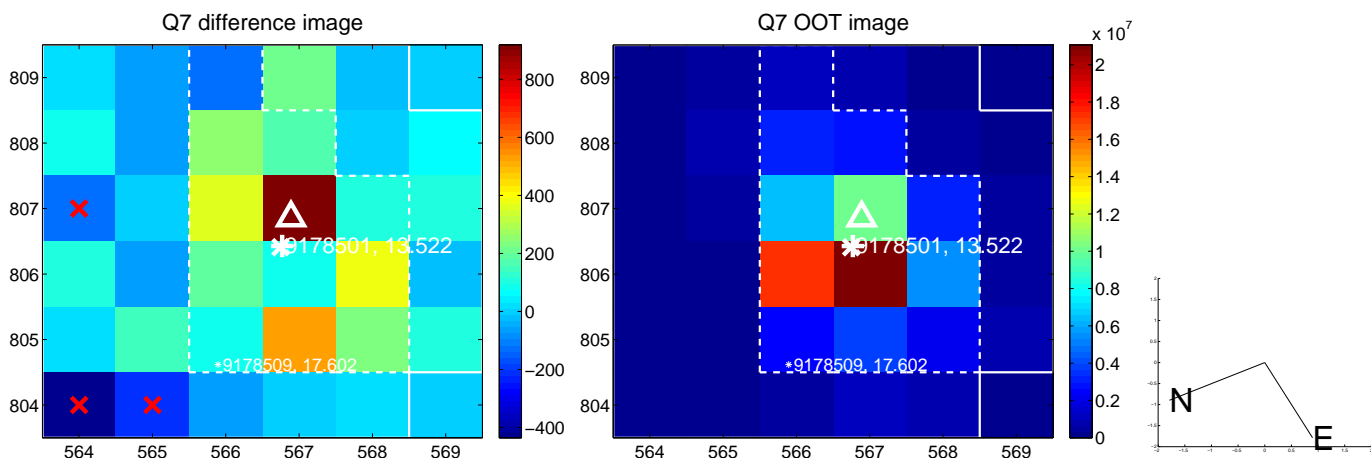
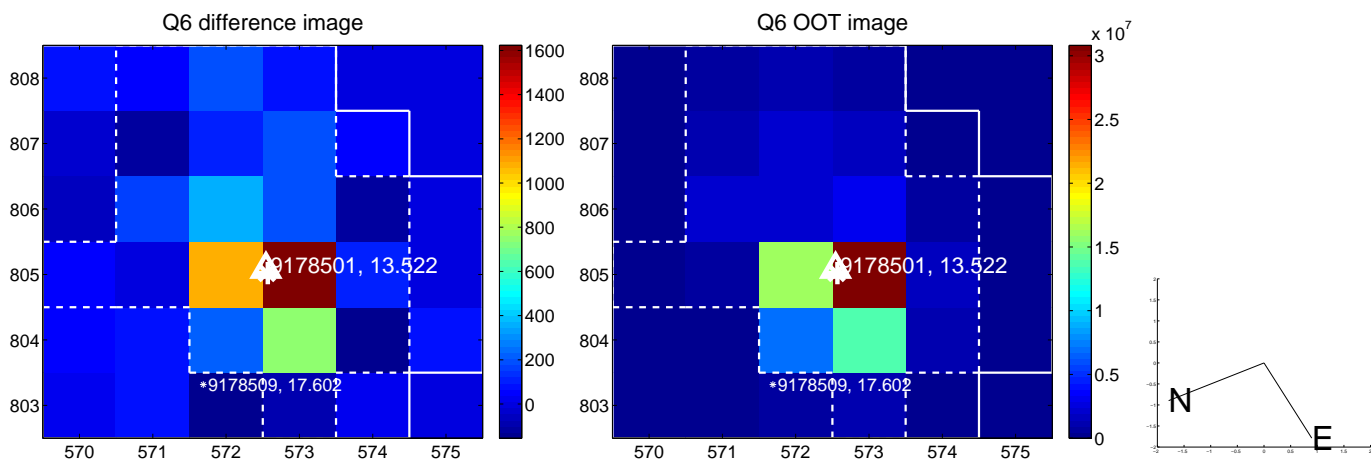
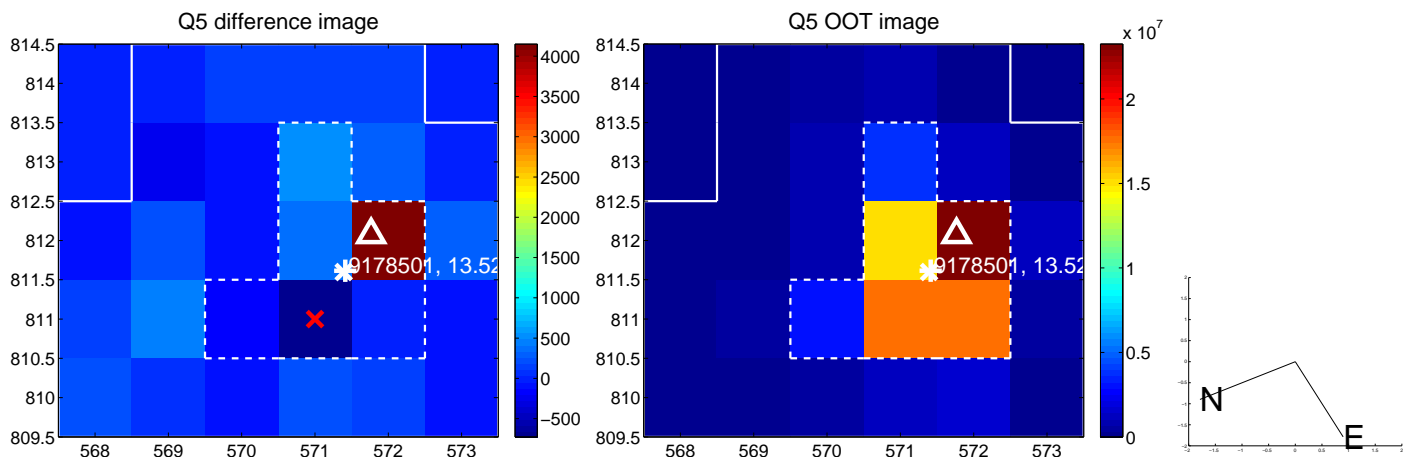


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

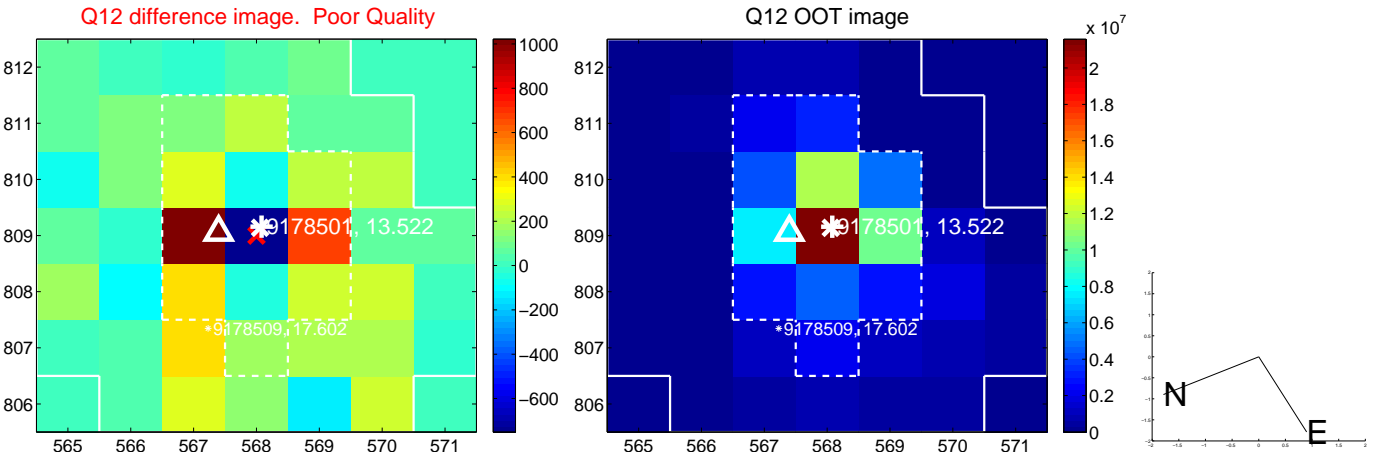
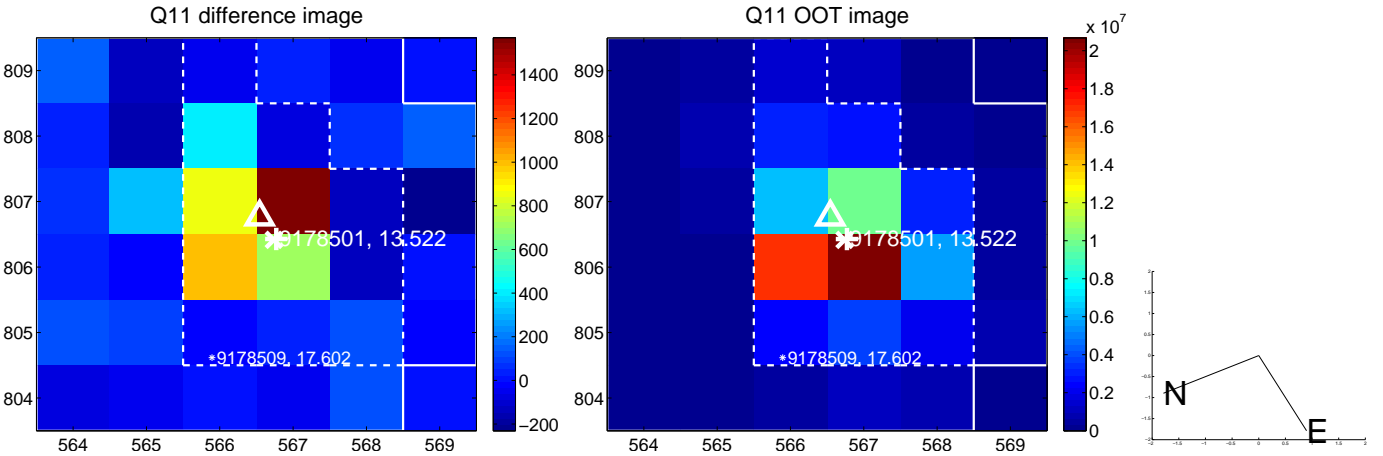
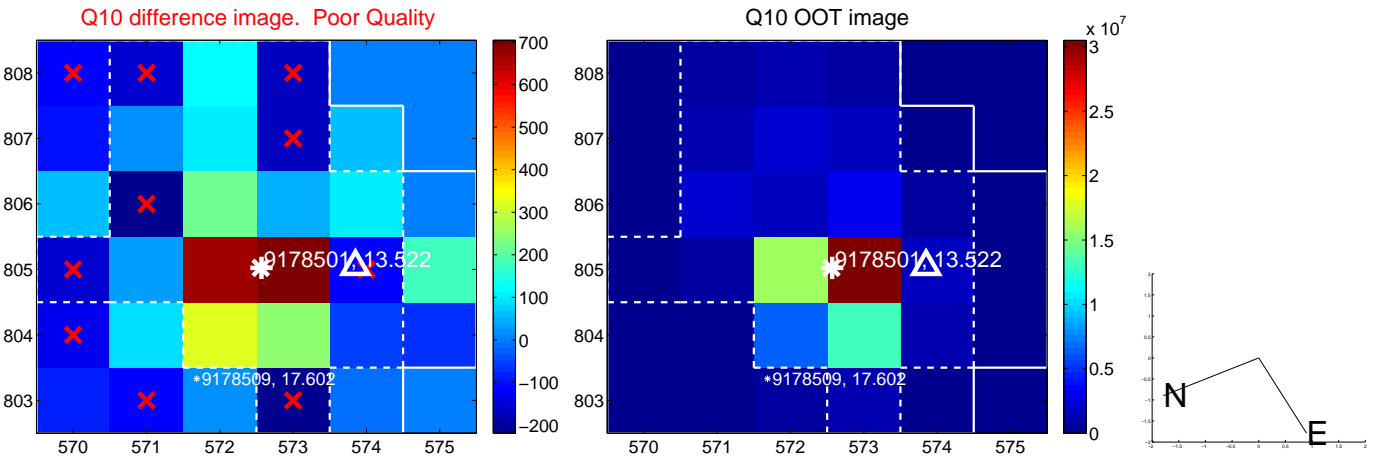
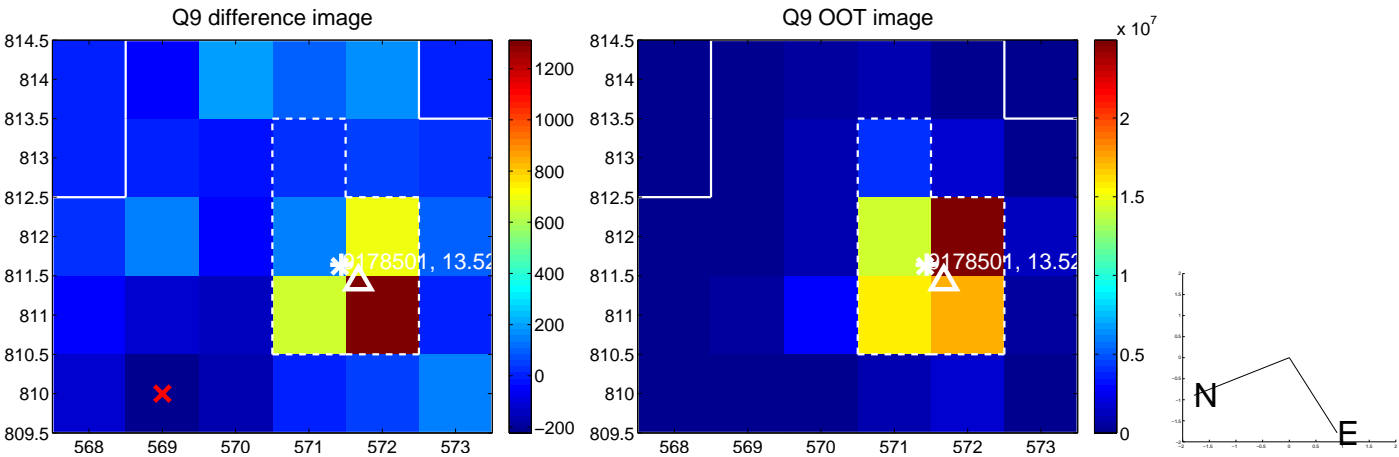
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



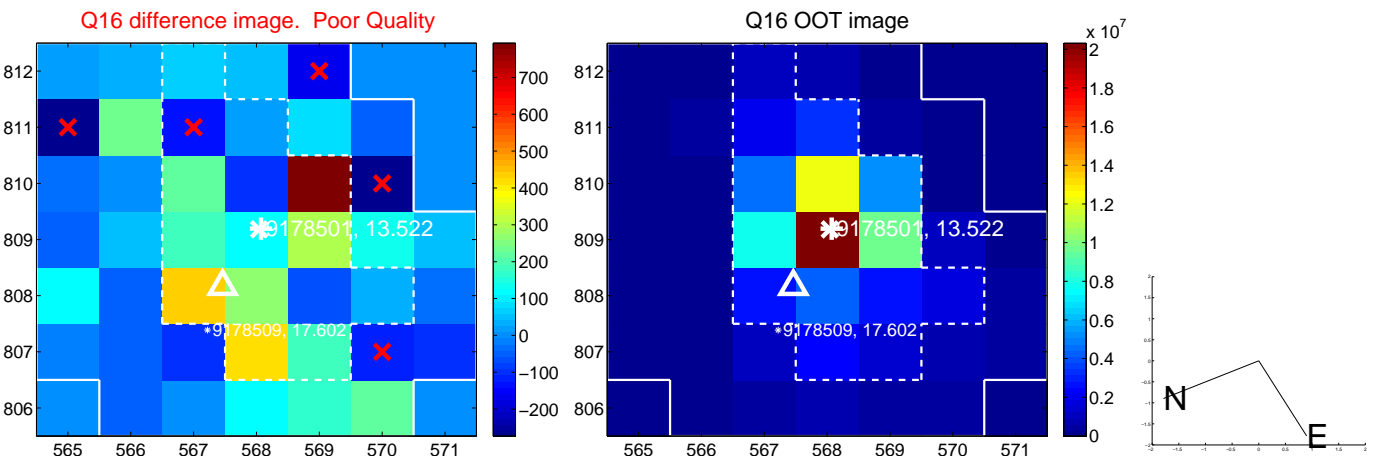
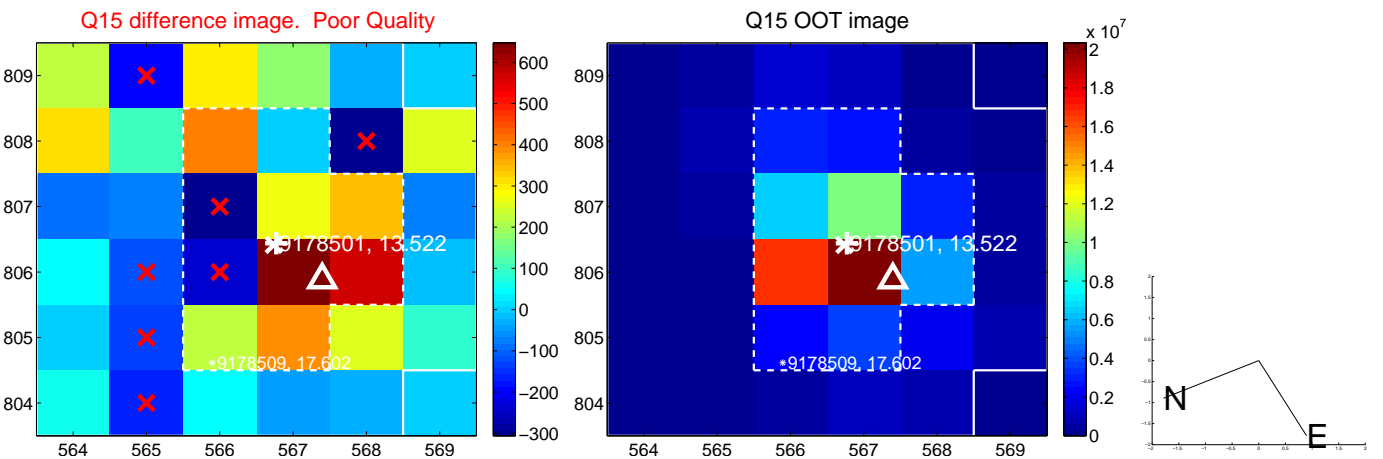
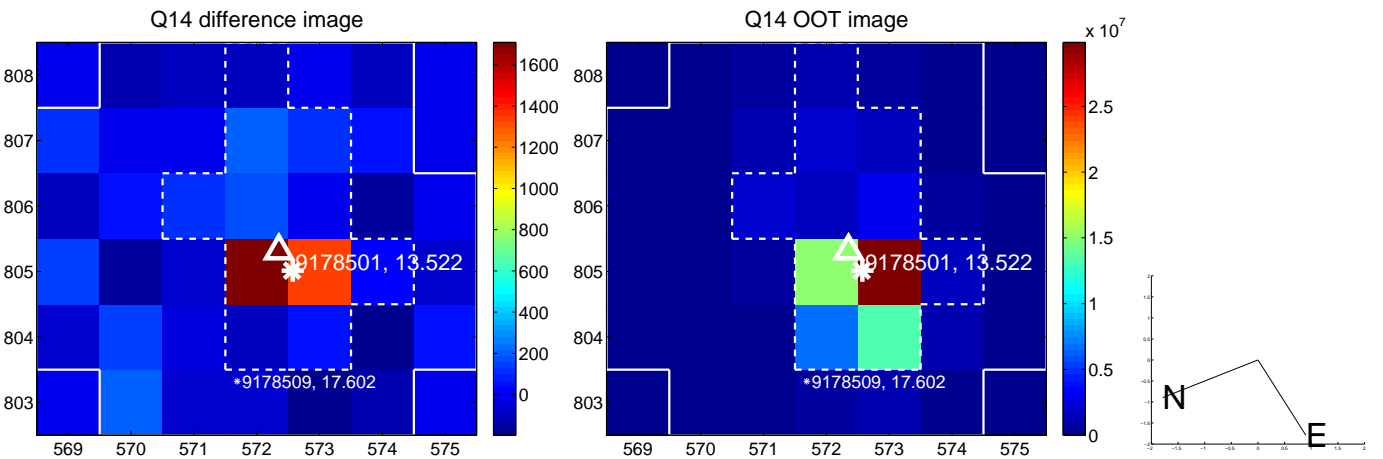
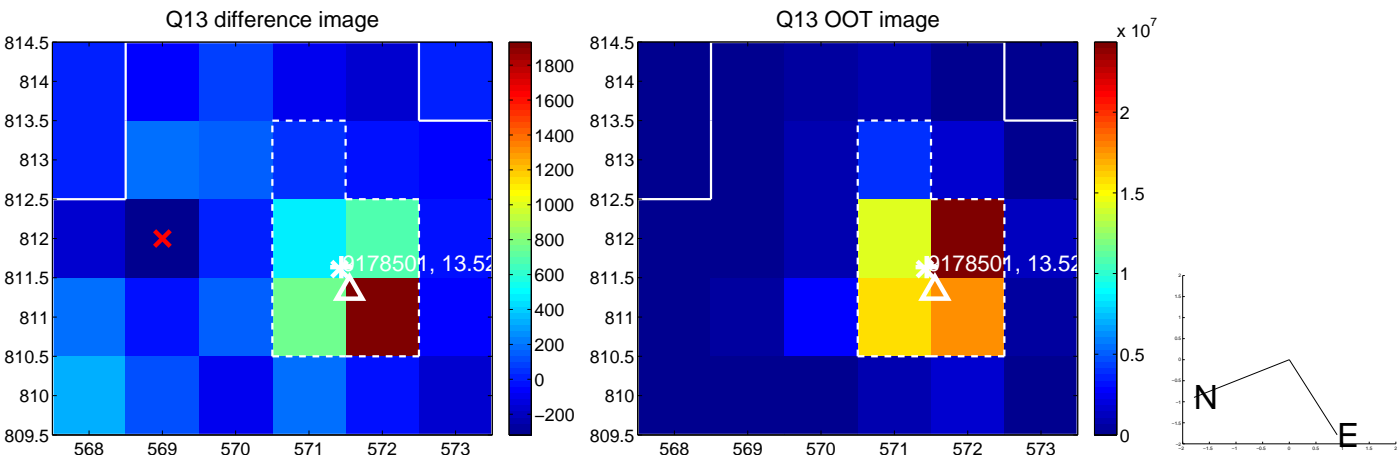
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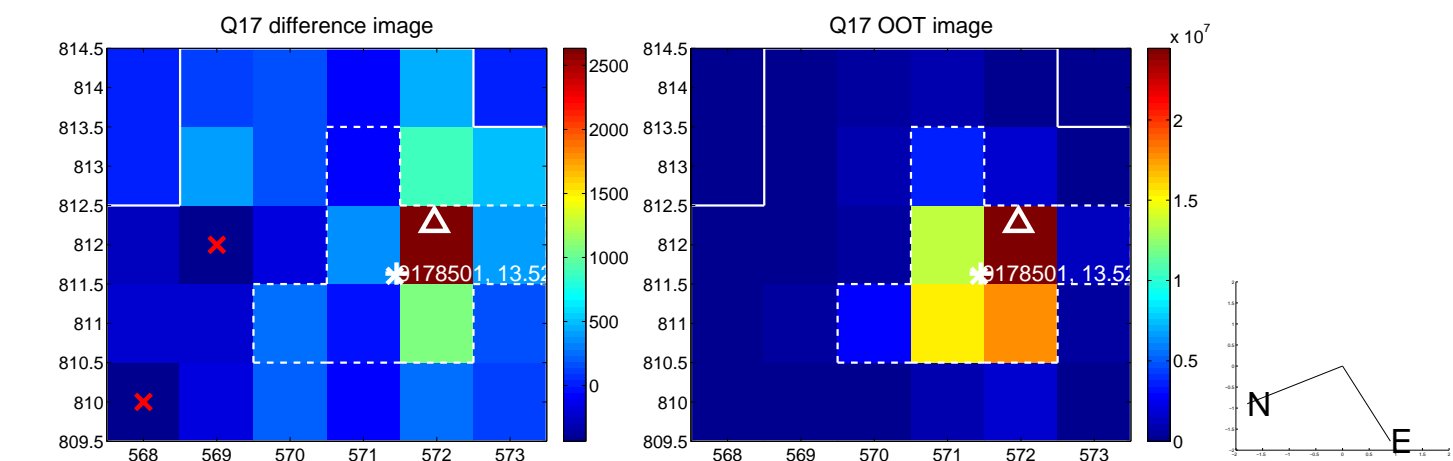
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



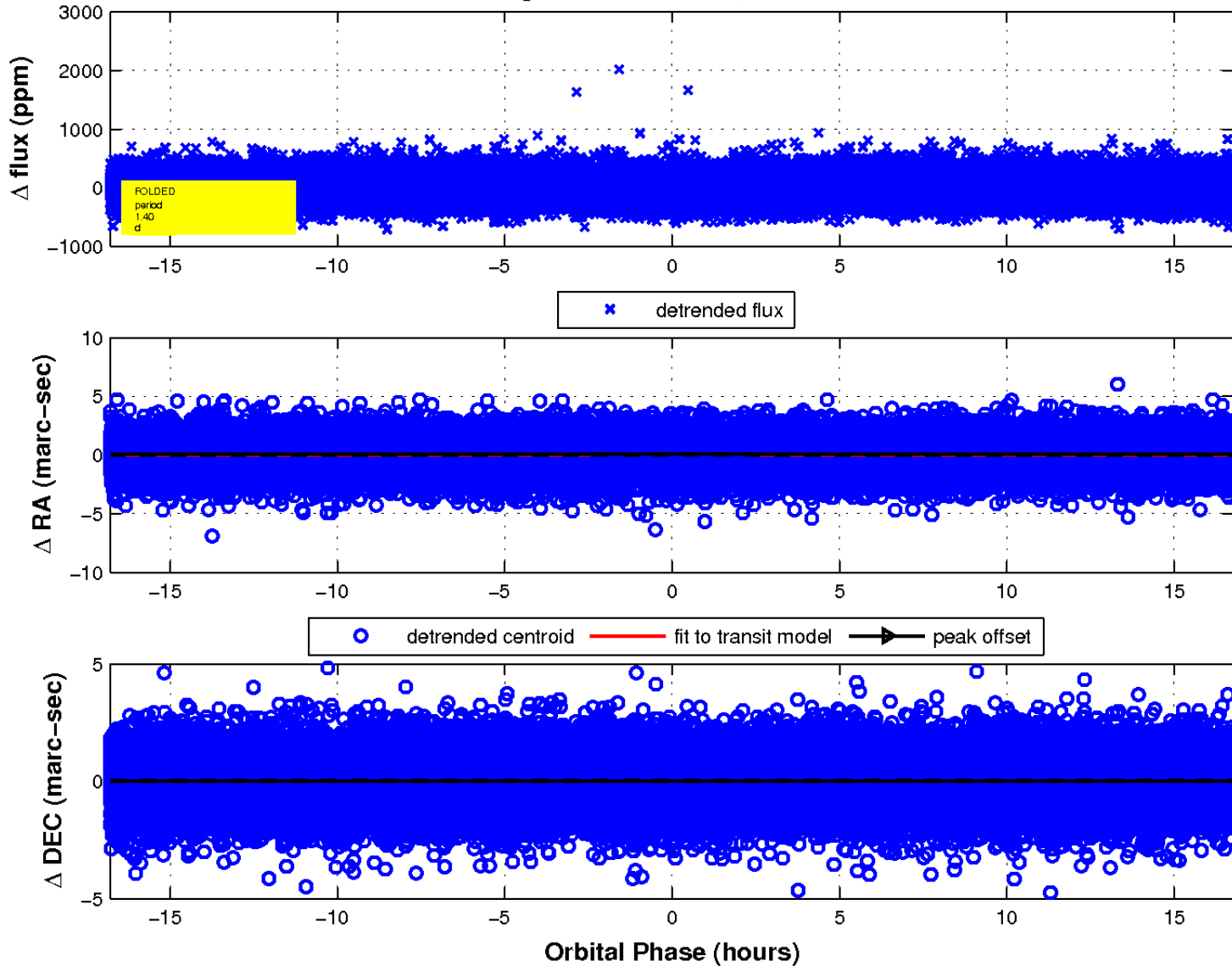
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

