

KIC 008742590

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})
008742590-01	OBS	1281.01	49.478156	141.824491	496.6	2.617	17.4	19.5	0.85	5776	2.17	10.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008742590-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

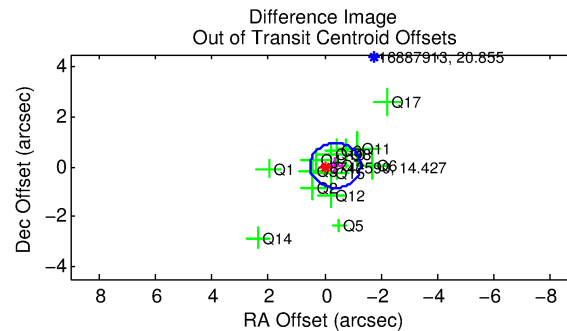
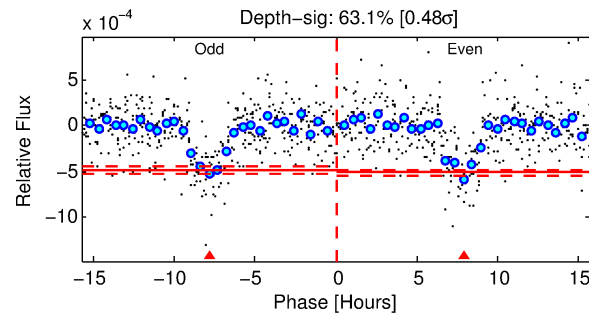
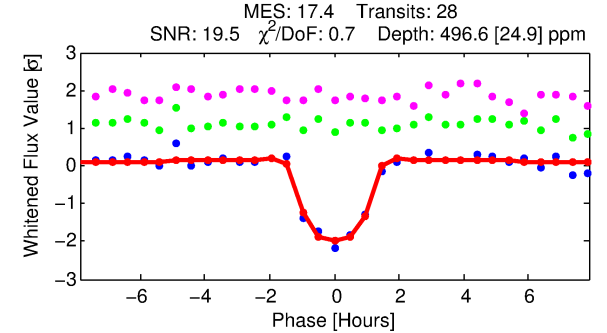
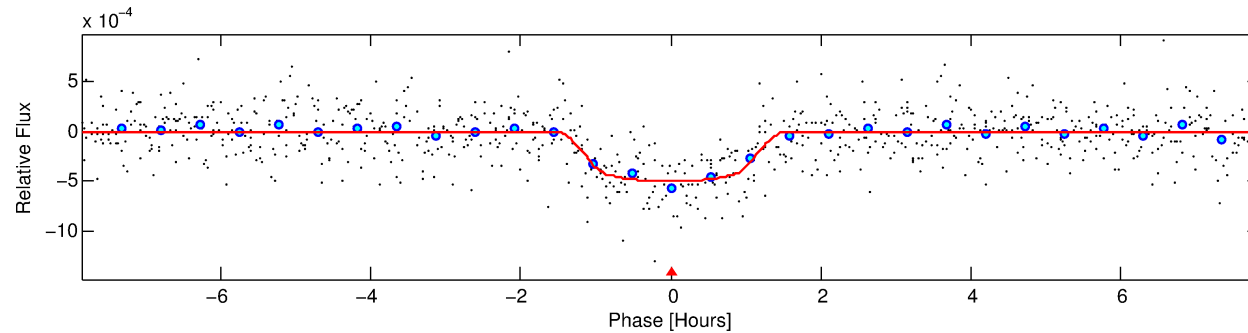
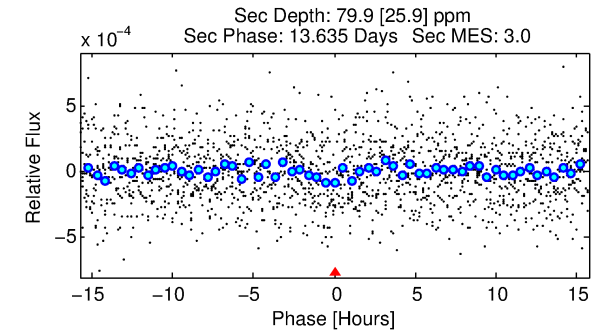
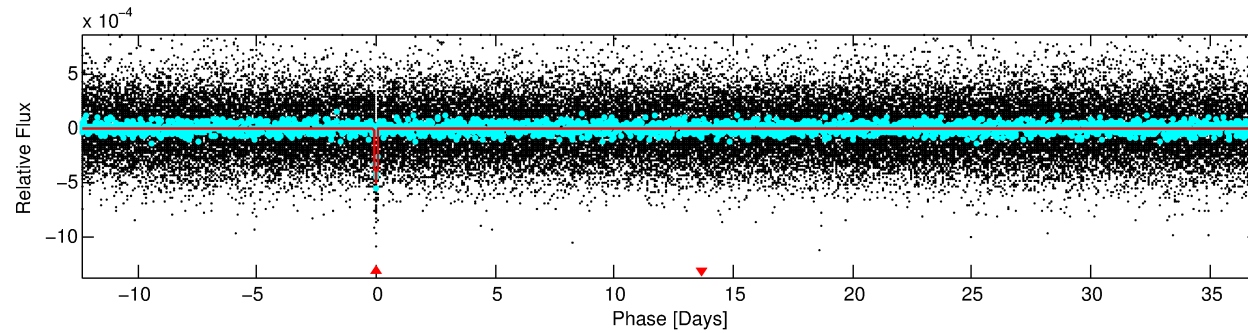
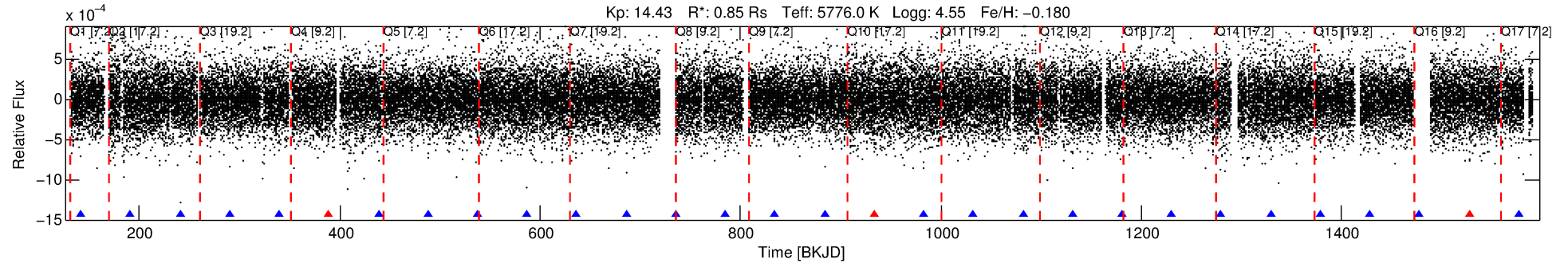
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008742590-01

No Significant Match Found

DV One-Page Summary

KIC: 8742590 Candidate: 1 of 1 Period: 49.478 d
KOI: K01281.01 Corr: 0.973



DV Fit Results:

Period = 49.47816 [0.00017] d
Epoch = 141.8245 [0.0028] BKJD
Rp/R* = 0.0235 [0.0072]
a/R* = 80.17 [114.52]
b = 0.86 [0.44]
Seff = 10.75 [3.97]
Teq = 462 [43] K
Rp = 2.17 [0.90] Re
a = 0.2586 [0.0617] AU
Ag = 621.66 [483.87] [1.28σ]
Teffp = 3565 [625] K [4.95σ]

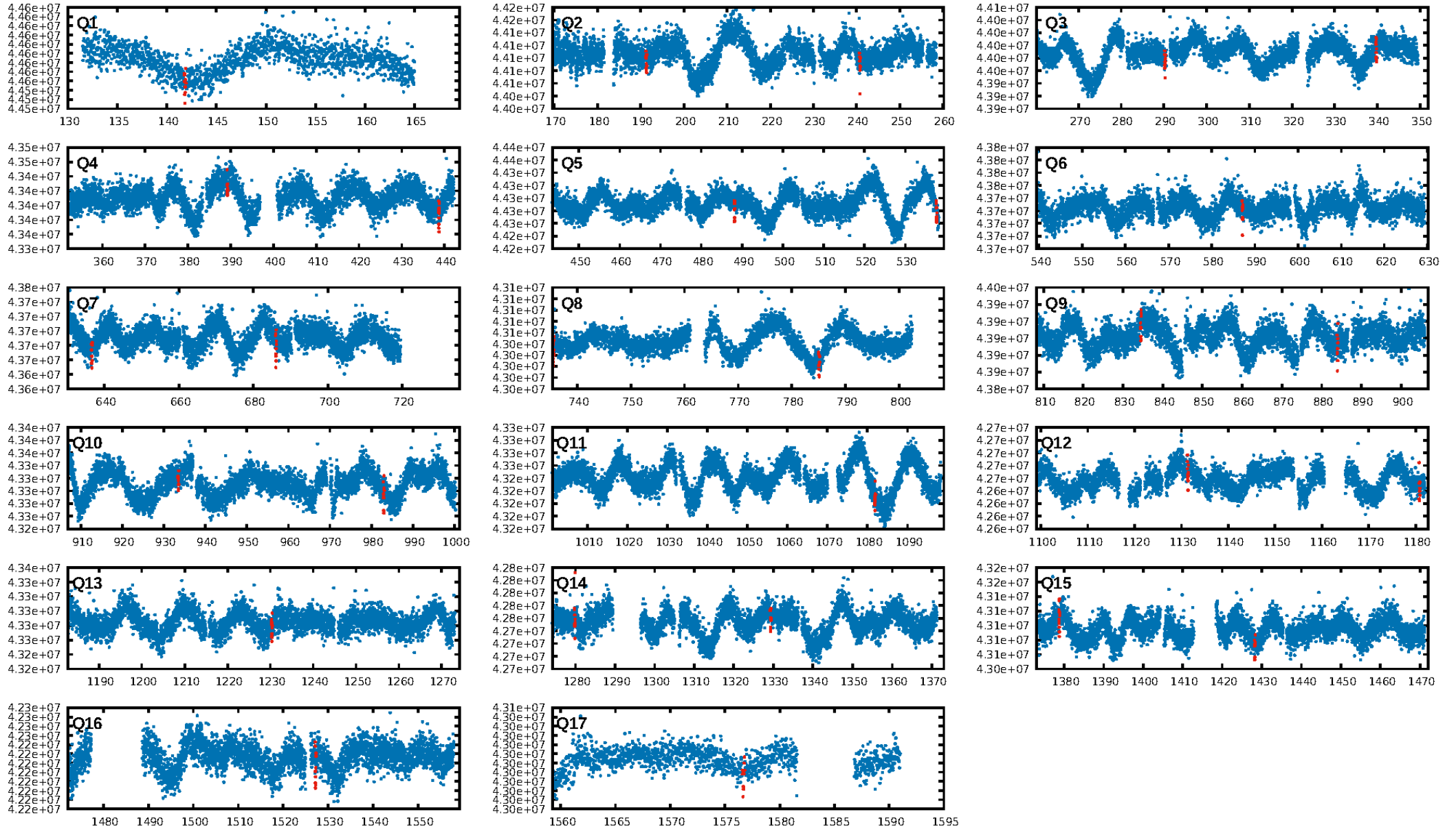
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.29e-65
RollingBand-fgt: 0.88 [23/26]
GhostDiagnostic-chr: 2.472
Centroid-sig: 0.4%
Centroid-so: 1.434 arcsec [2.10σ]
OotOffset-rm: 0.375 arcsec [1.26σ]
KicOffset-rm: 0.426 arcsec [1.68σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [16/16]

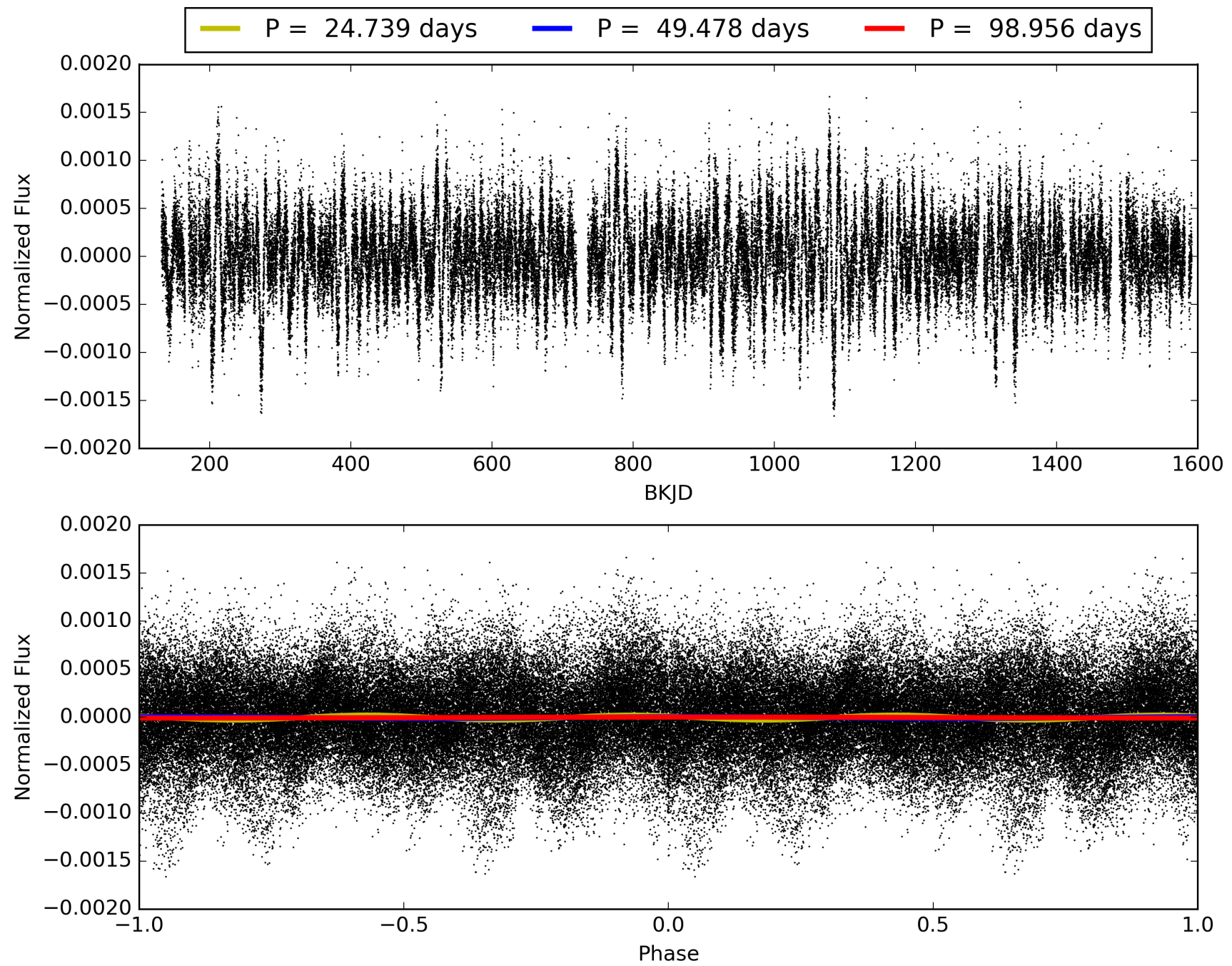
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:59:12 Z

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

TCE 008742590-01, PDC Light Curves

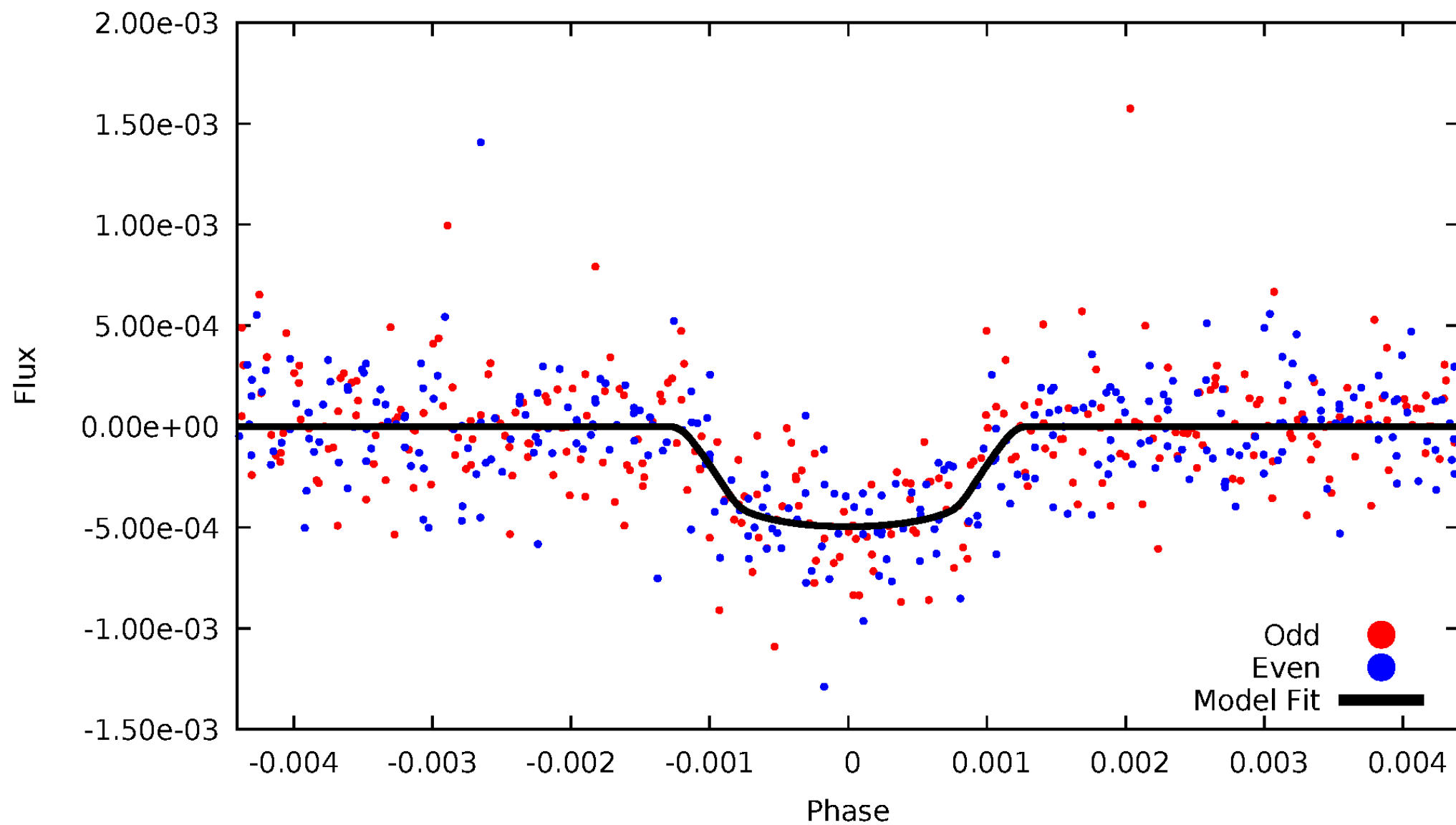


TCE 008742590-01



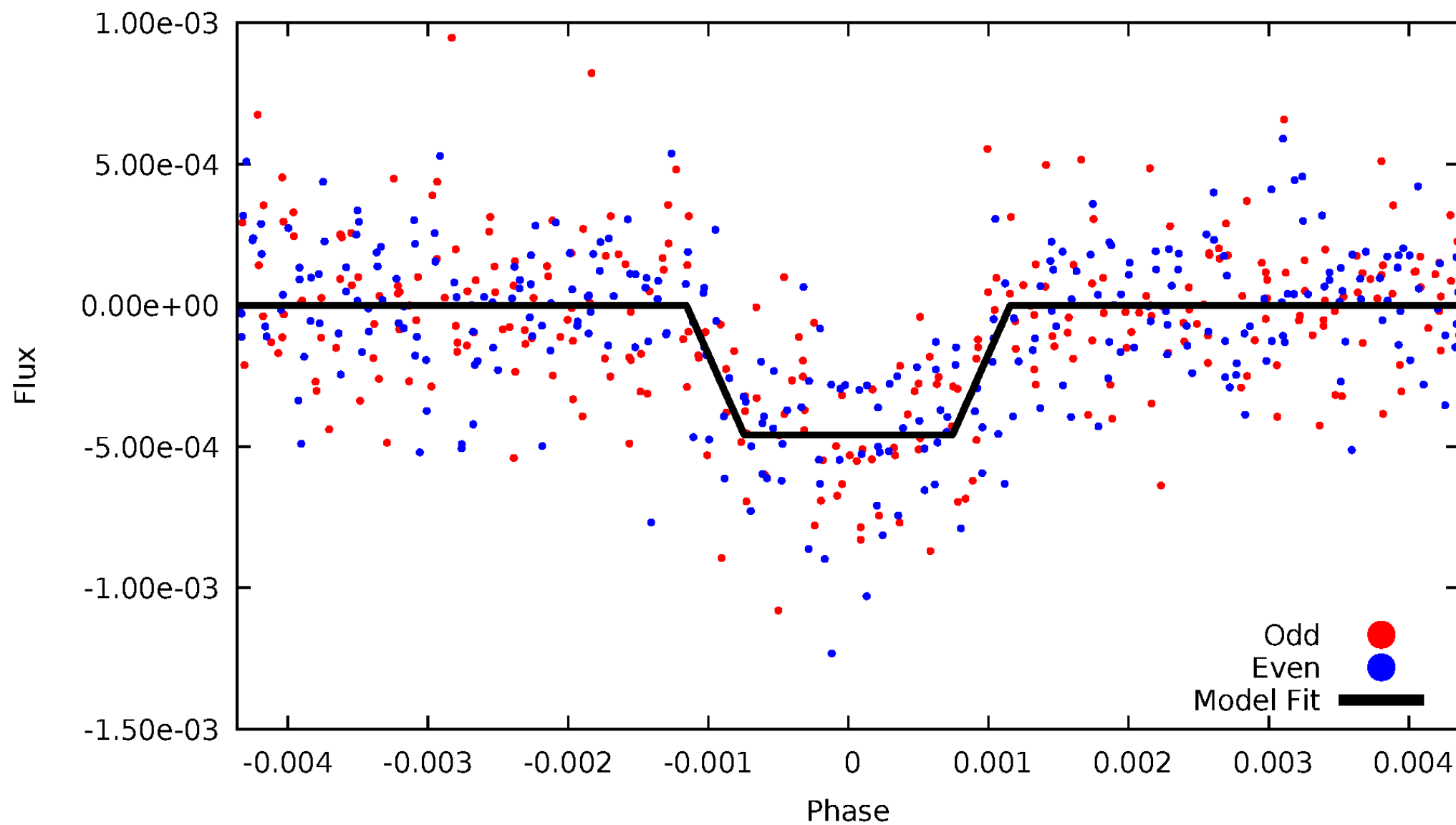
DV Odd/Even

TCE 008742590-01



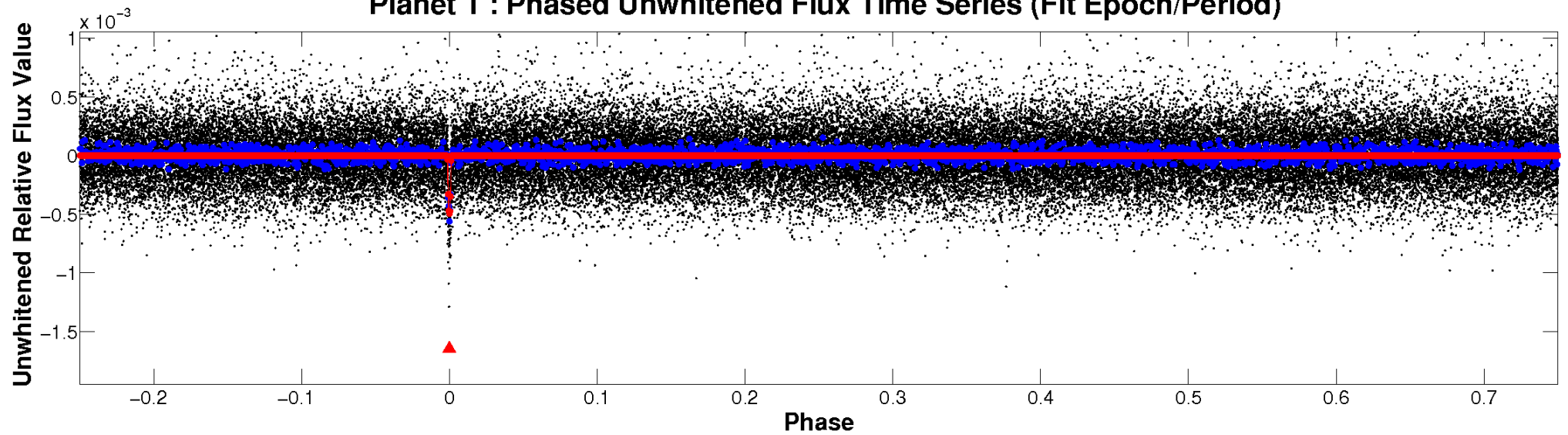
ALT Odd/Even

TCE 008742590-01

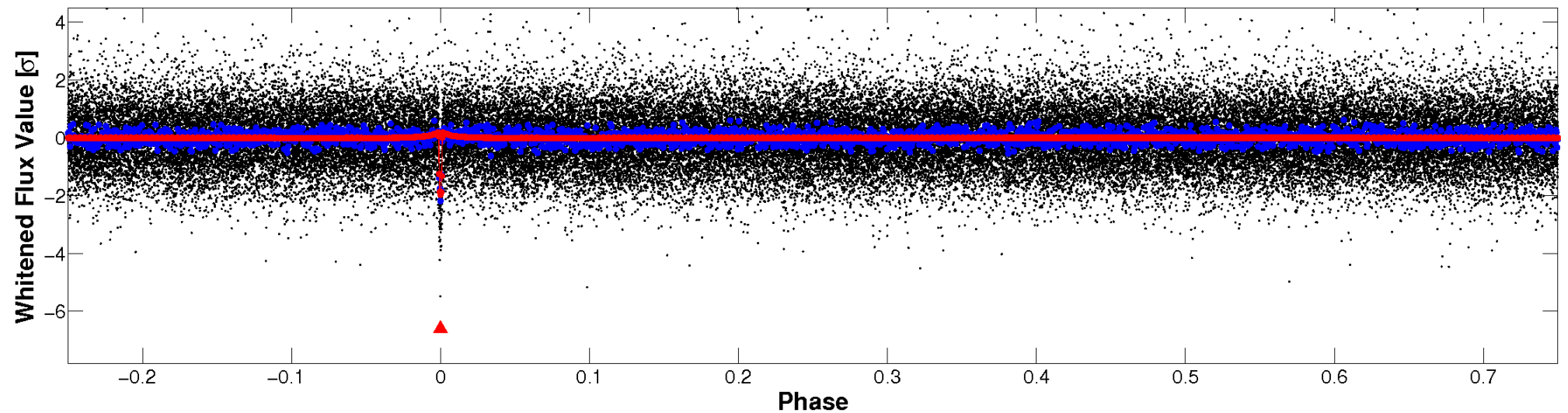


Non-Whitened Vs. Whitened Light Curve

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

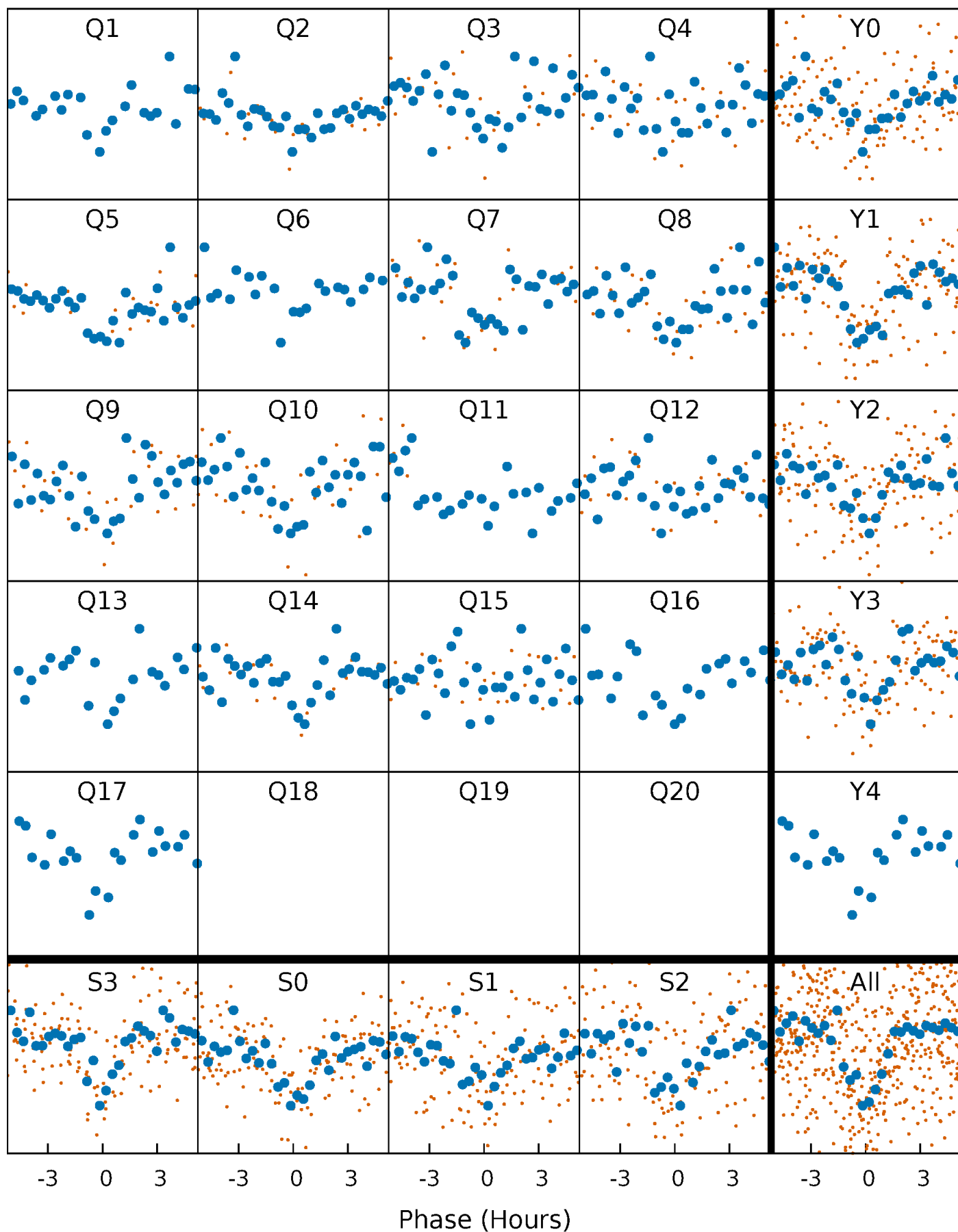


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



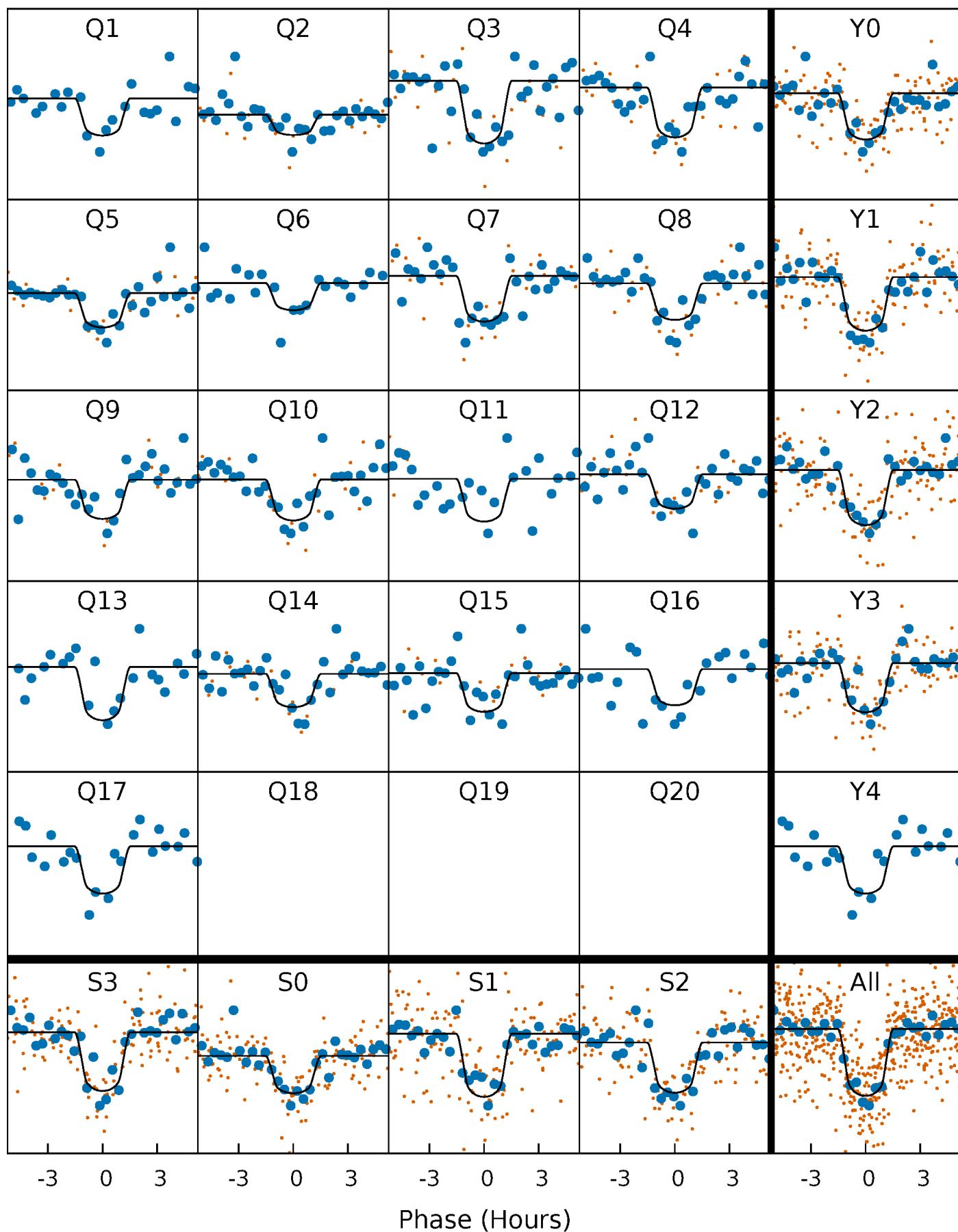
PDC Quarter-Phased Transit Curves

TCE 008742590-01 P= 49.478156 Days $T_0=141.824491$ (BKJD)



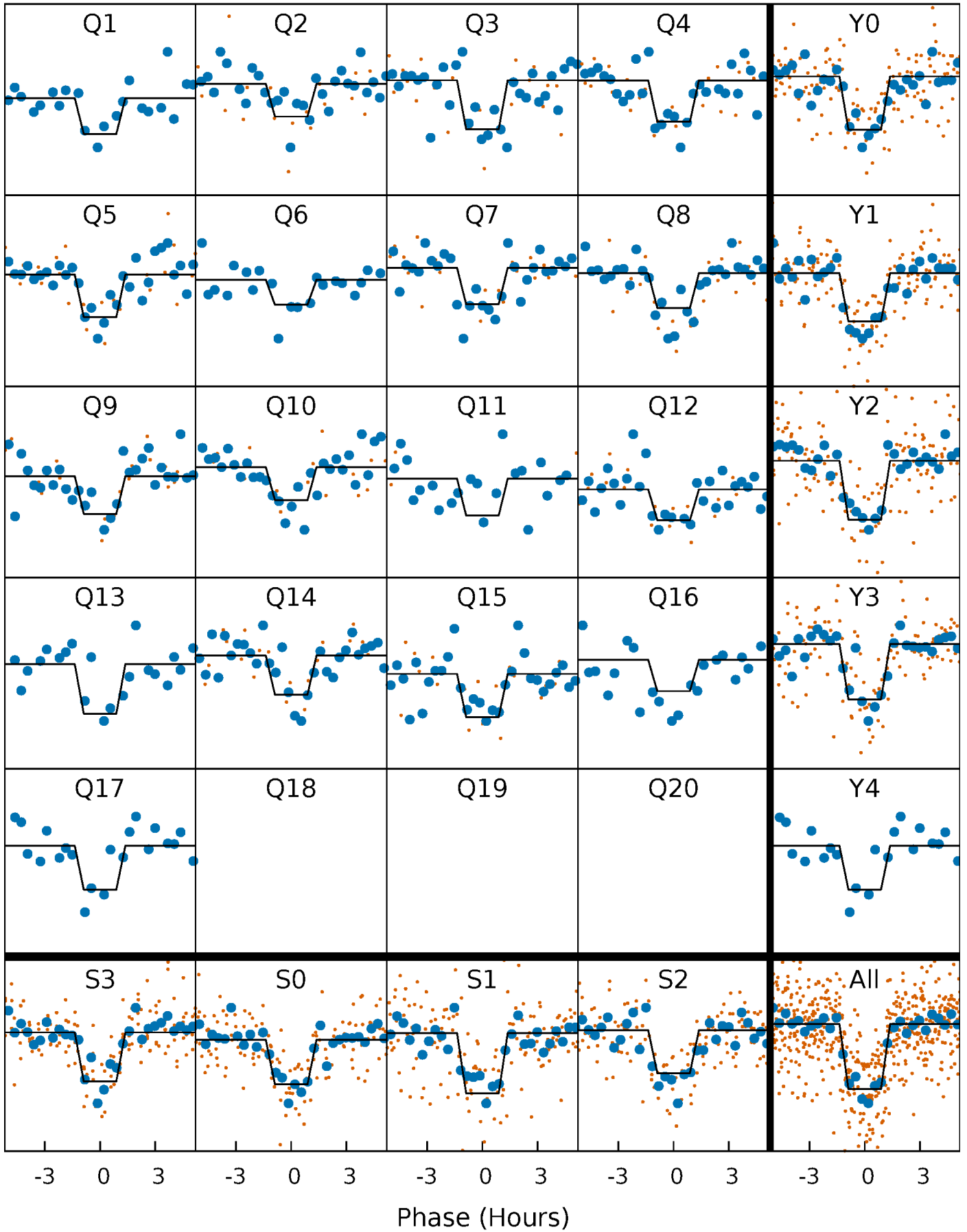
DV Quarter-Phased Transit Curves

TCE 008742590-01 P= 49.478156 Days $T_0=141.824491$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

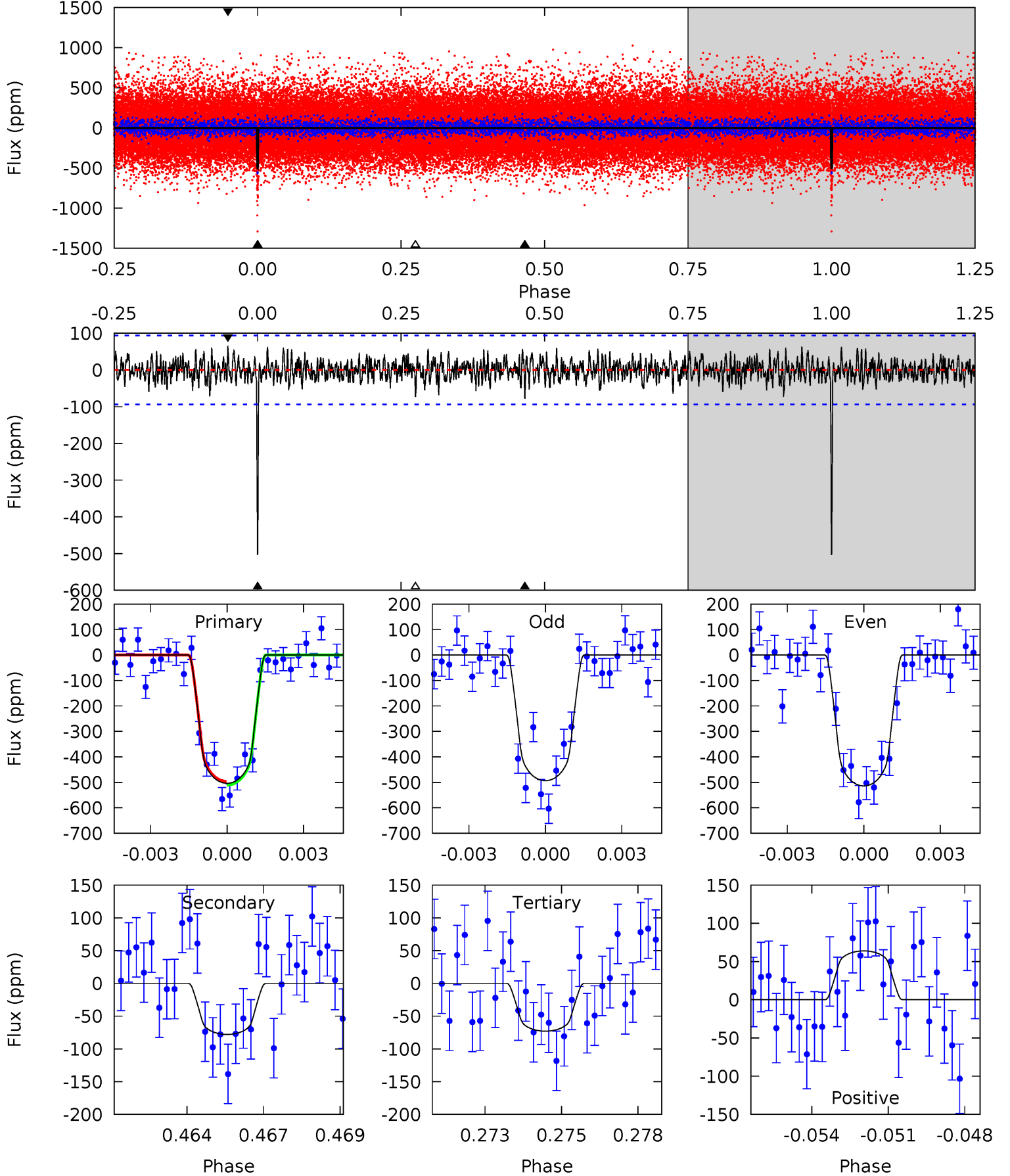
TCE 008742590-01 P= 49.478322 Days $T_0=141.821430$ (BKJD)



DV Model-Shift Uniqueness Test

008742590-01, P = 49.478156 Days, E = 92.346335 Days

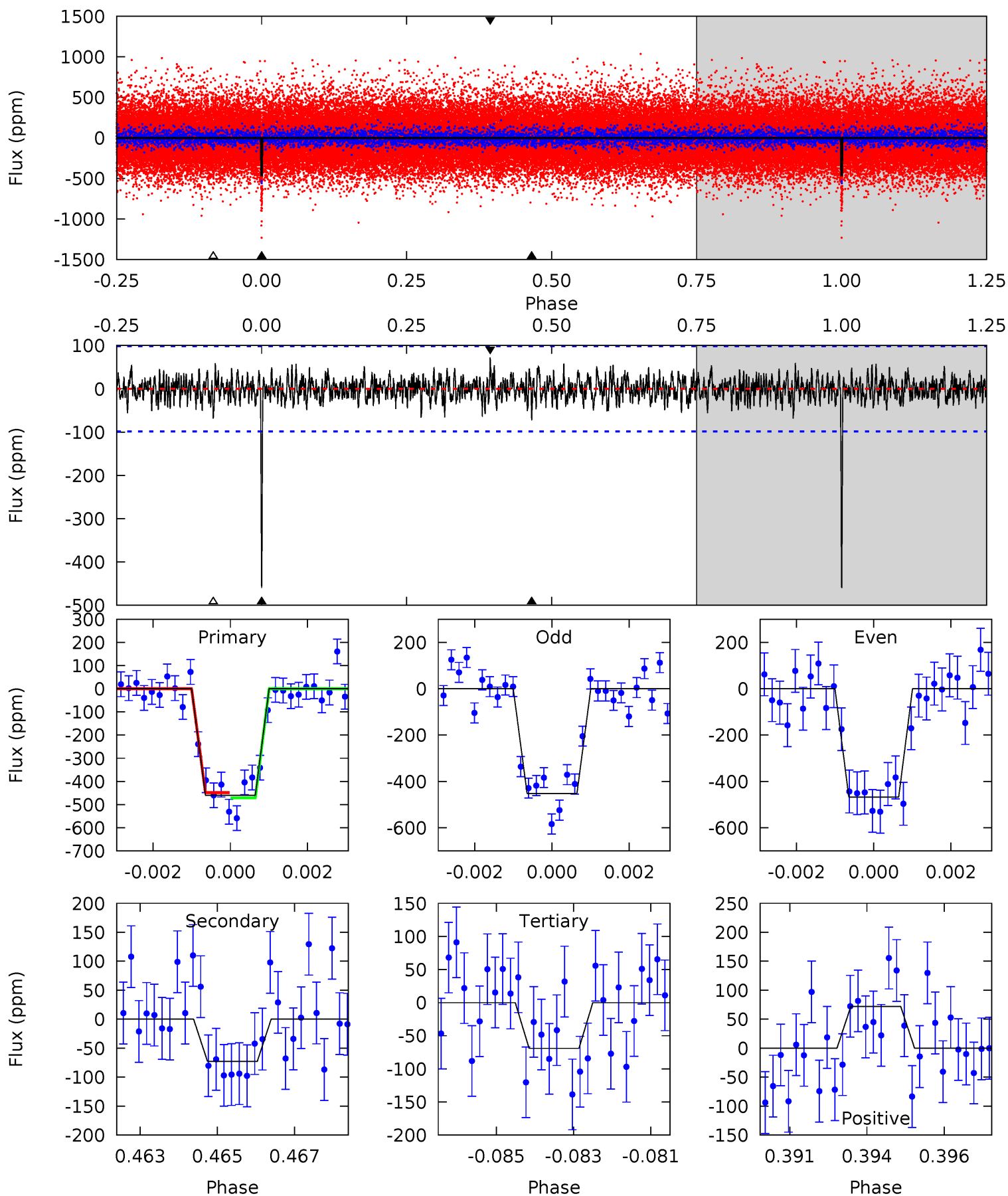
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.4	4.39	4.11	3.60	5.28	3.02	1.25	24.2	24.8	0.28	0.79	0.58	1.00	0.11	0.40



Alt Model-Shift Uniqueness Test

008742590-01, P = 49.478322 Days, E = 92.343108 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.8	3.91	3.72	3.88	5.30	3.05	1.13	21.0	20.9	0.19	0.04	0.42	1.02	0.14	0.62



Stellar Parameters For KIC 008742590

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5776^{+138}_{-155}	$4.554^{+0.035}_{-0.196}$	$-0.180^{+0.300}_{-0.300}$	$0.849^{+0.236}_{-0.079}$	$0.939^{+0.098}_{-0.120}$	$2.161^{+0.420}_{-1.105}$
	+2%/-3%	+1%/-4%	+167%/-167%	+28%/-9%	+10%/-13%	+19%/-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 008742590-01 / KOI 1281.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-78 ± 18	$2.25^{+0.79}_{-0.70}$	661^{+42}_{-28}	3907^{+587}_{-403}	547^{+668}_{-263}
Alt.	-73 ± 19	$2.02^{+0.85}_{-0.74}$	660^{+44}_{-27}	3995^{+735}_{-461}	615^{+939}_{-314}

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 $A_{obs} \gg 1.0$

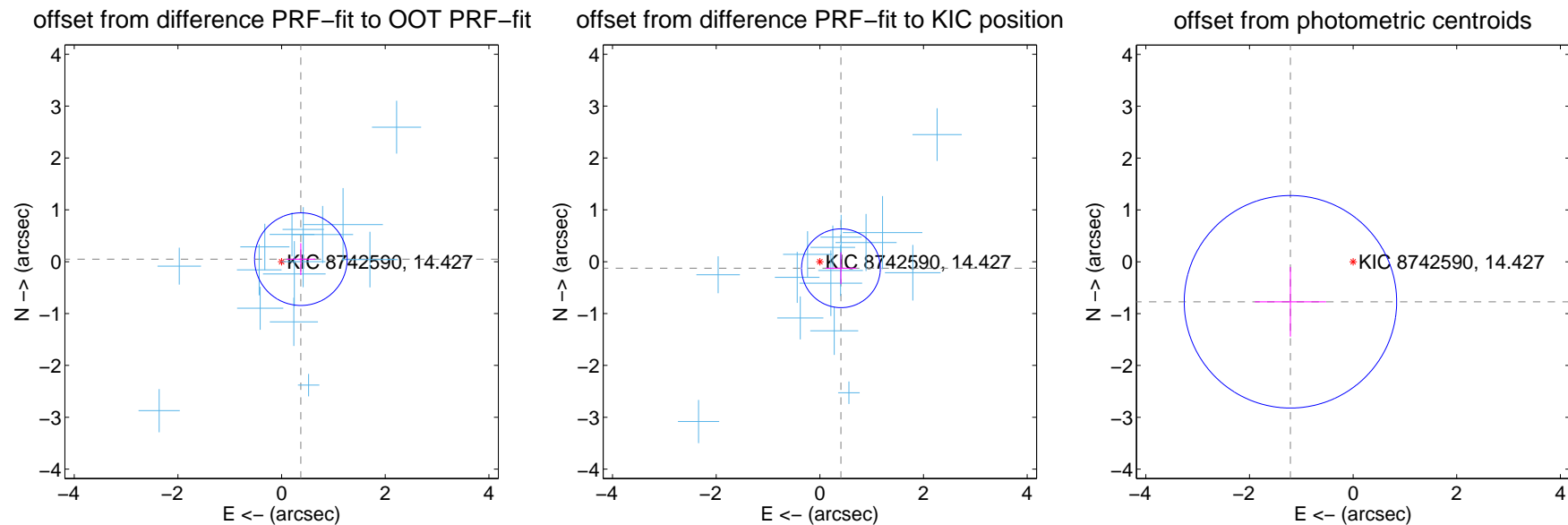
DV Centroid Data

Supplemental centroid analysis for 008742590-01. Kepler magnitude: 14.43. Transit SNR 19.53

There are 15 quarters with good PRF difference image offsets

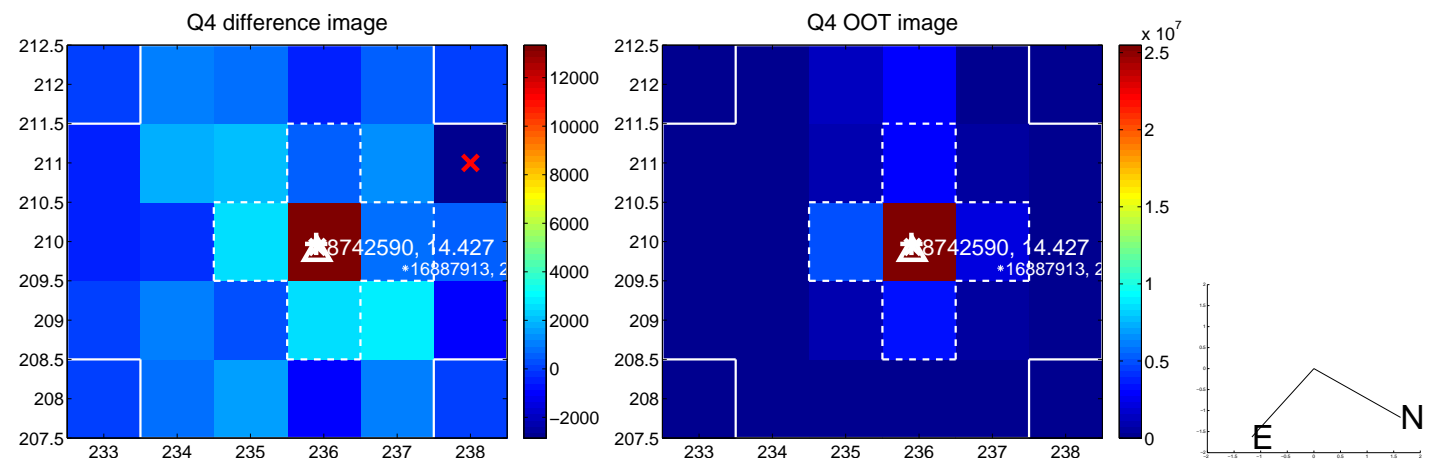
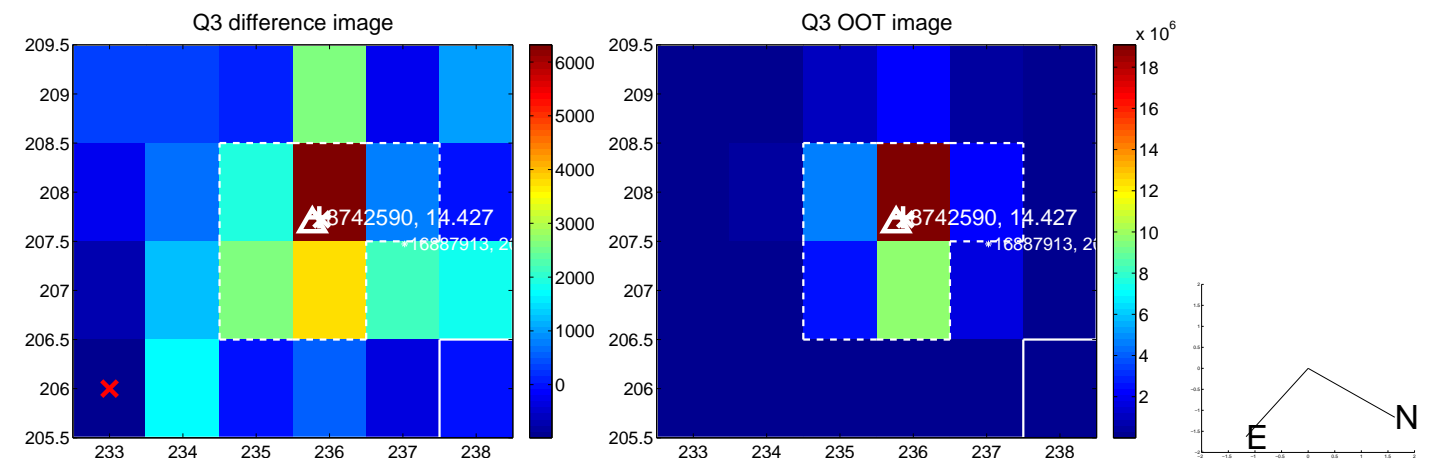
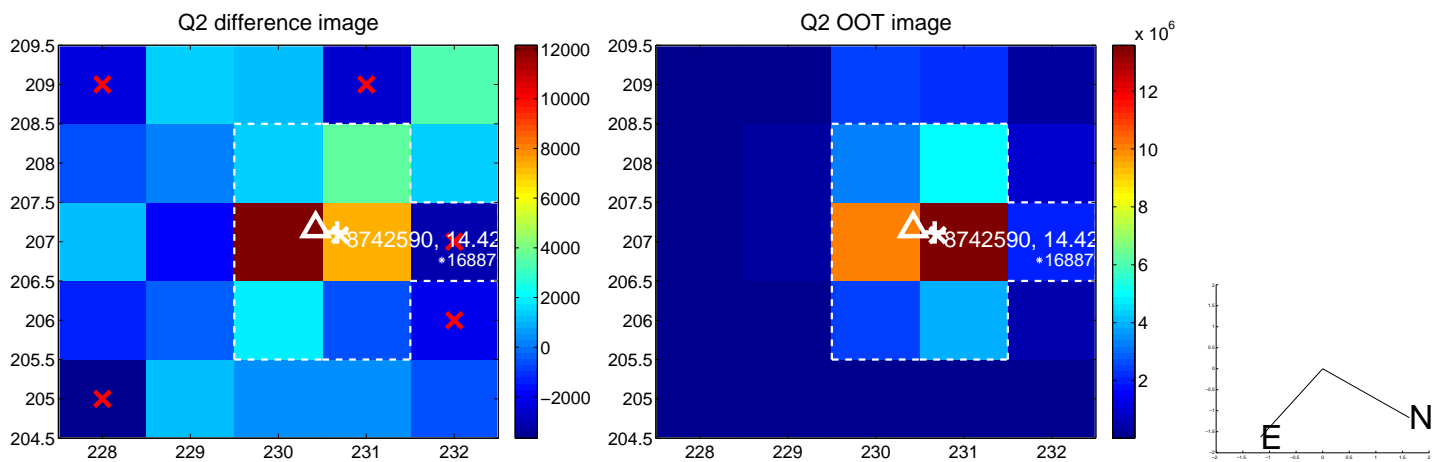
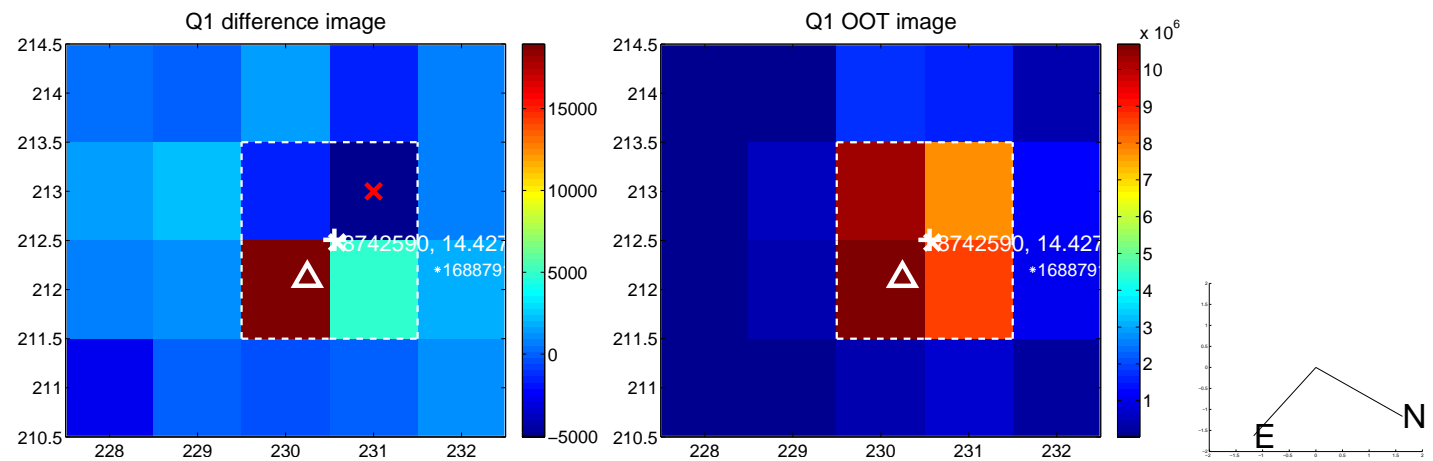
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.375 ± 0.298	1.26	-0.372 ± 0.276	0.049 ± 0.308
PRF-fit source offset from KIC position	0.426 ± 0.253	1.68	-0.407 ± 0.296	-0.127 ± 0.307
photometric centroid source offset	1.43 ± 0.68	2.10	1.21 ± 0.69	-0.77 ± 0.67

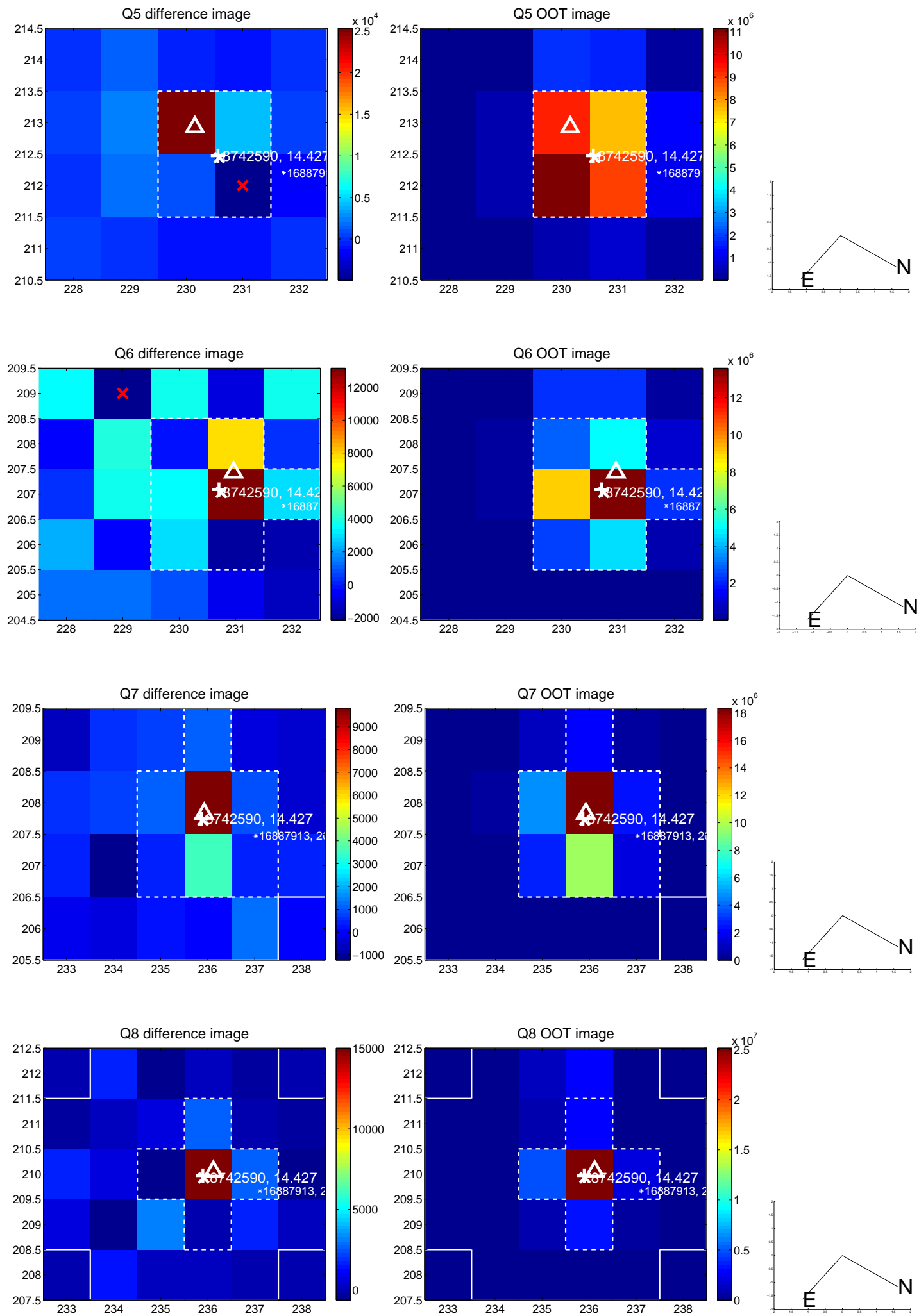


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

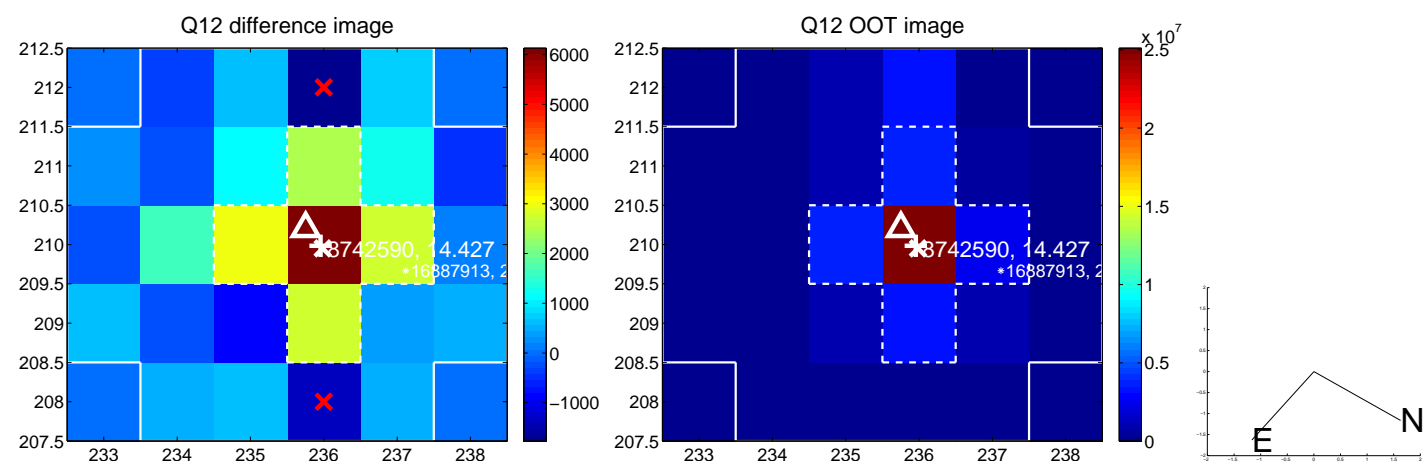
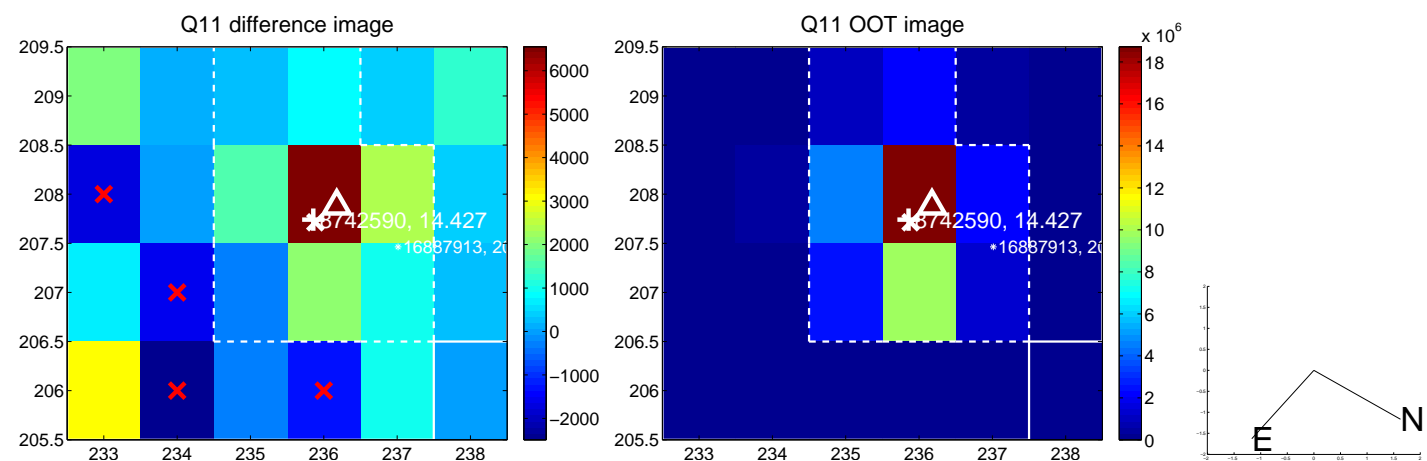
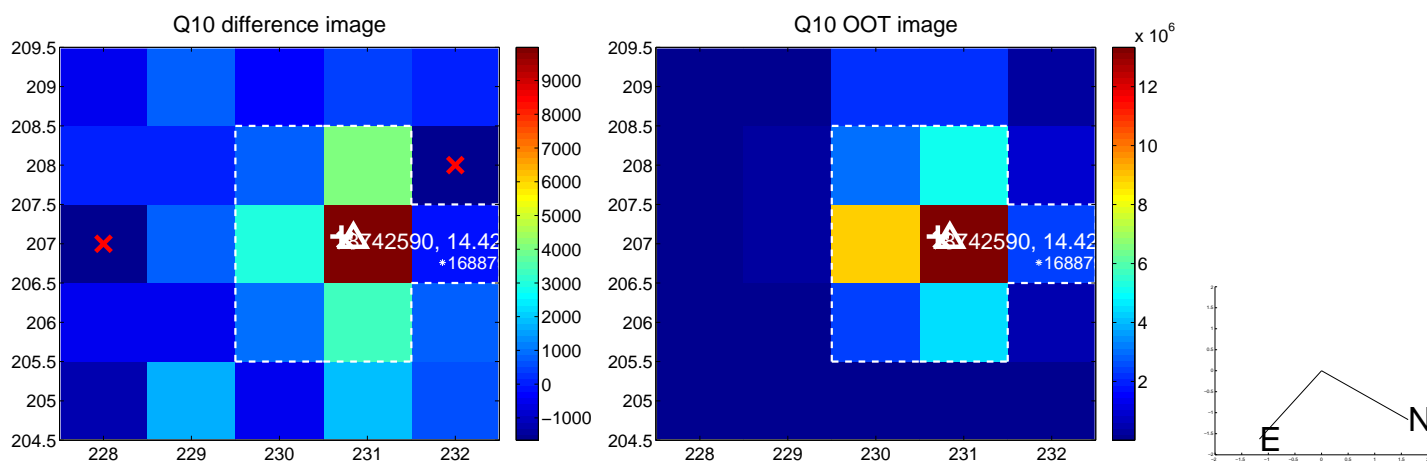
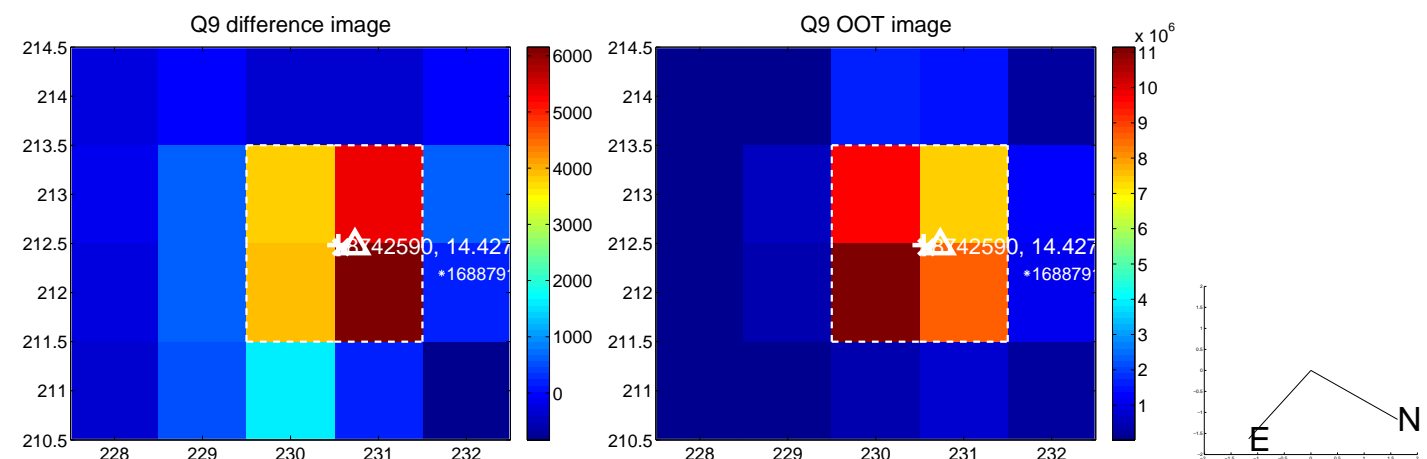
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



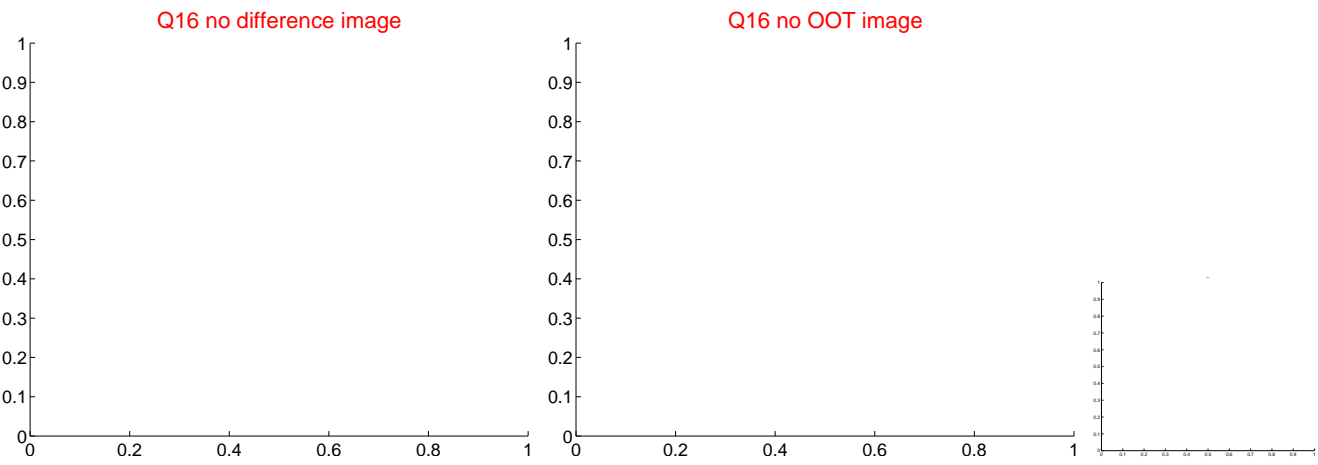
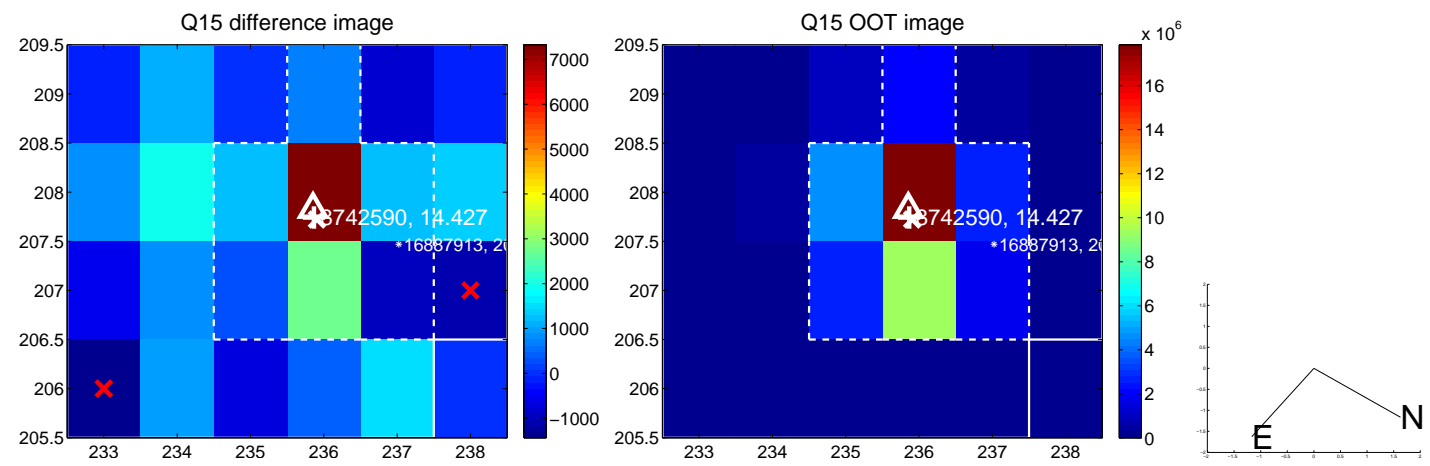
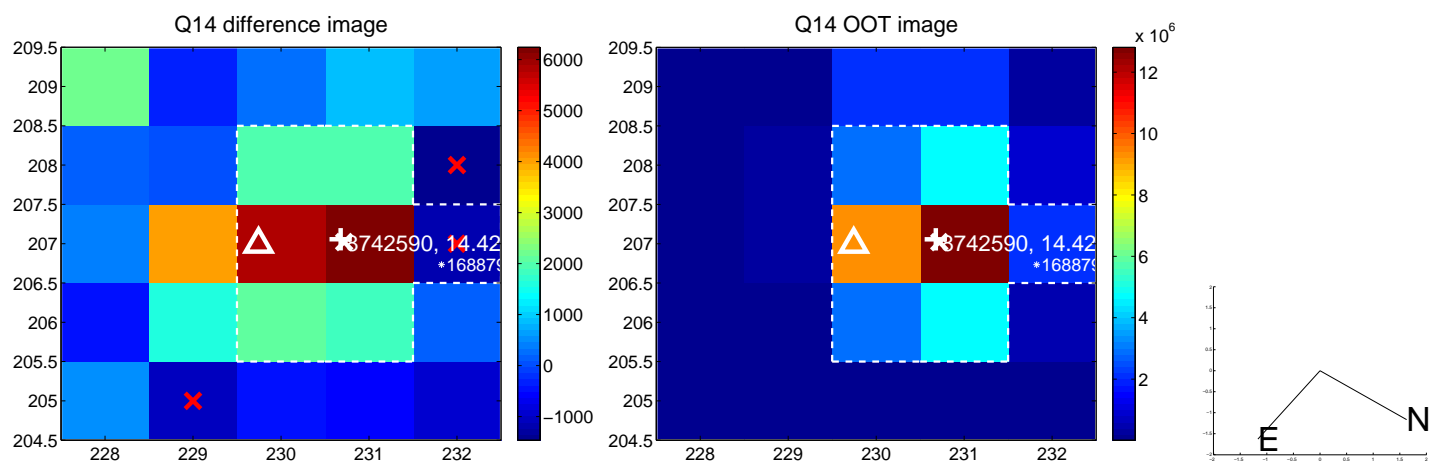
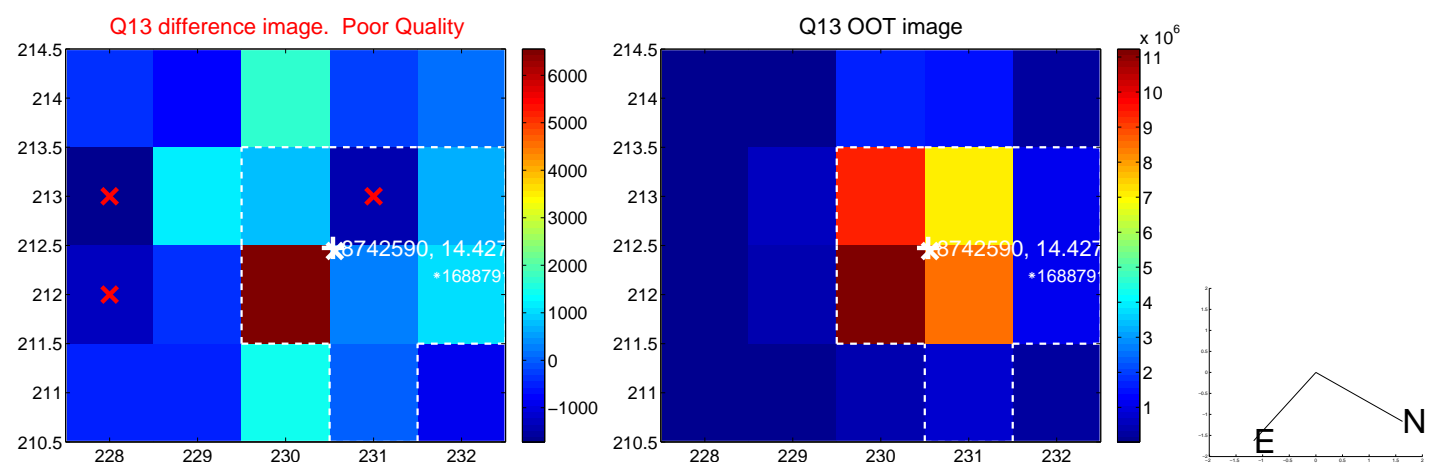
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



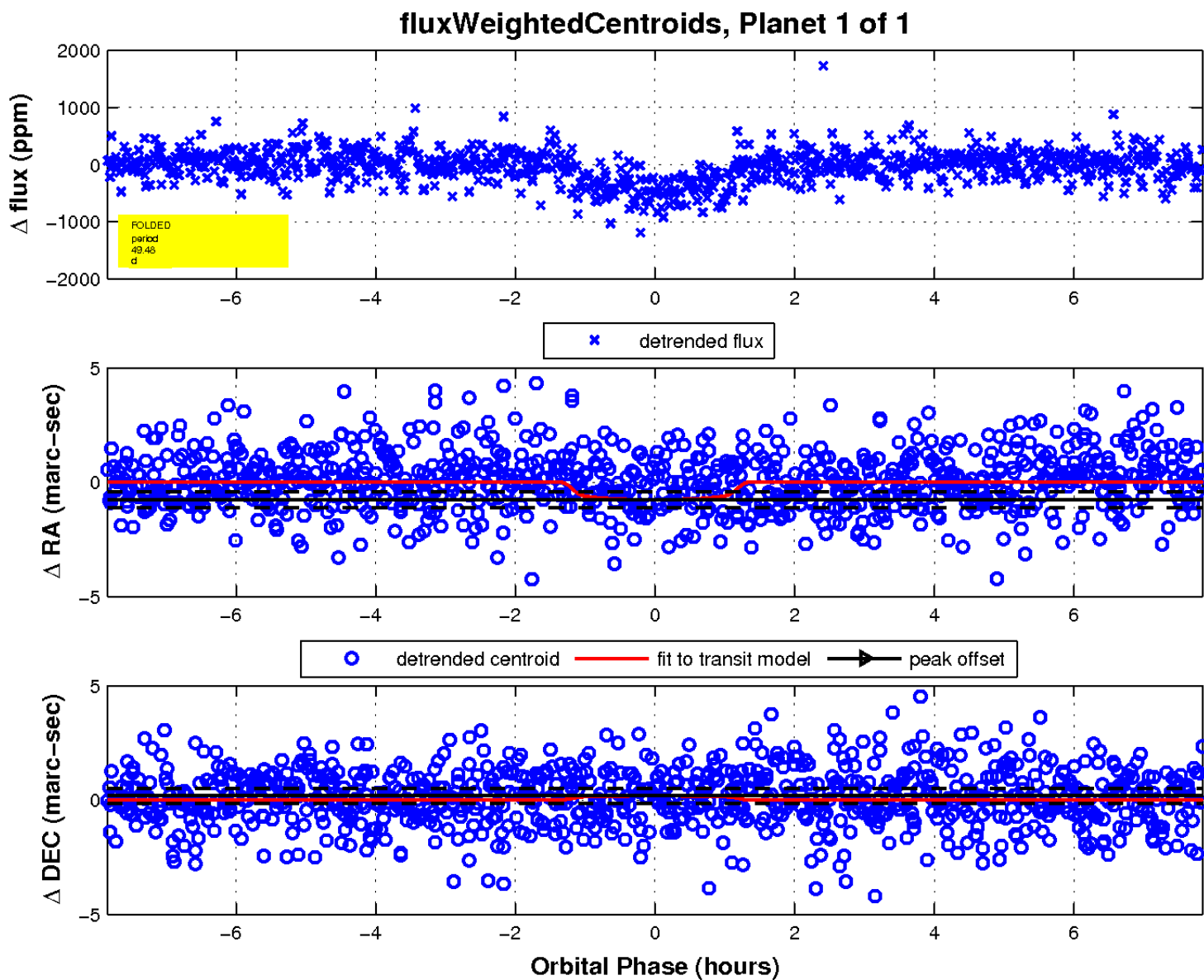
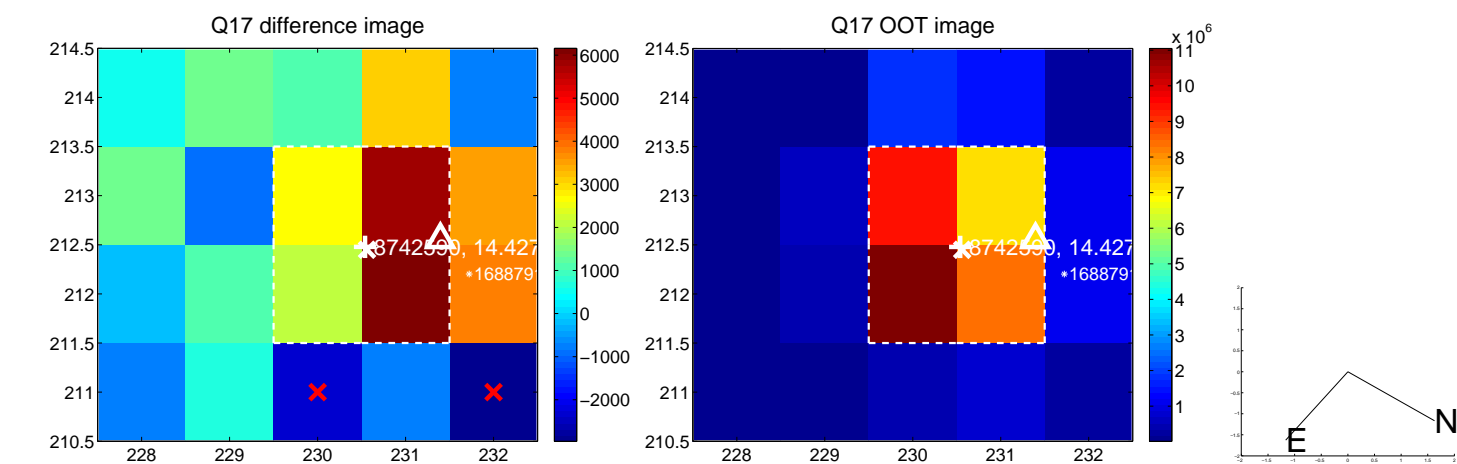
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

