

KIC 004459924

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})
004459924-01	OBS	2441.01	4.791732	134.039867	113.0	4.504	18.0	19.7	0.76	5138	0.96	144.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004459924-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

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.

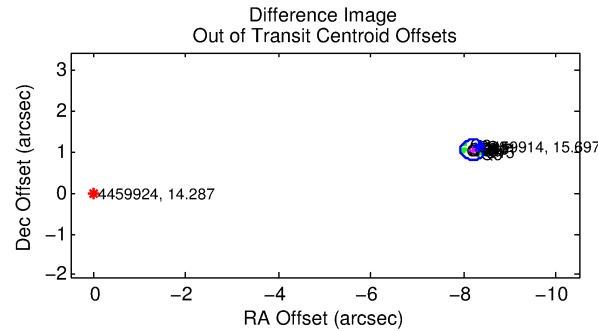
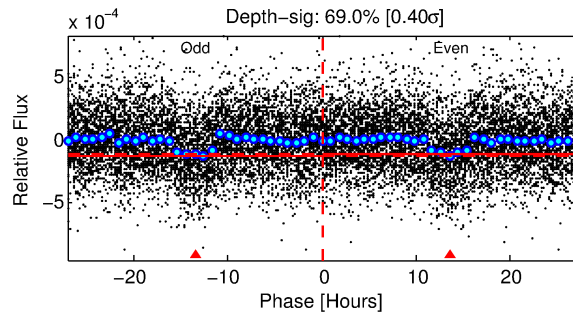
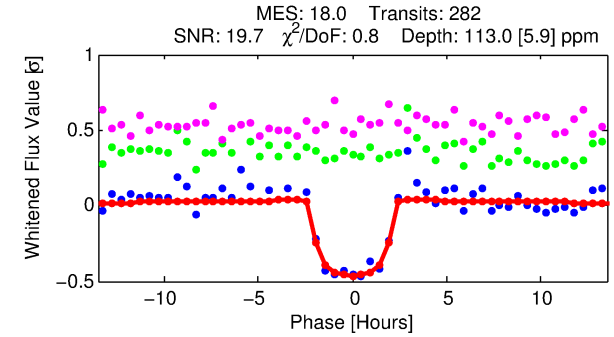
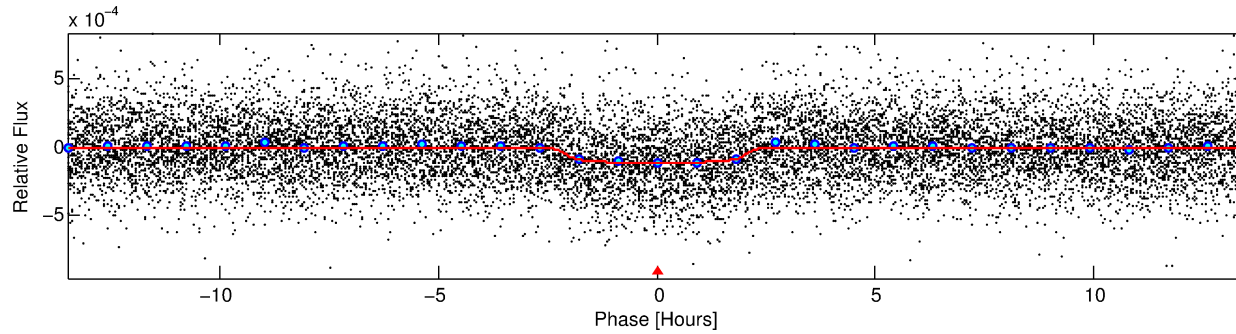
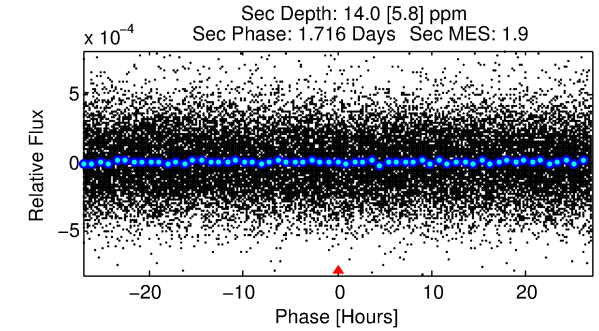
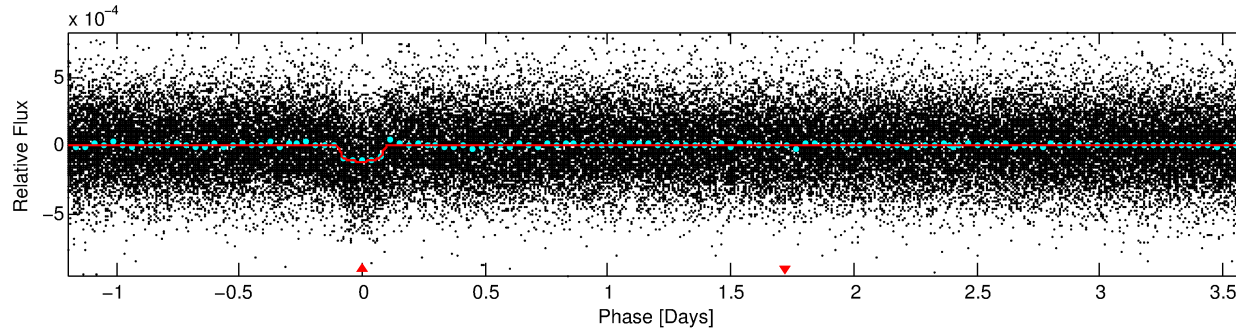
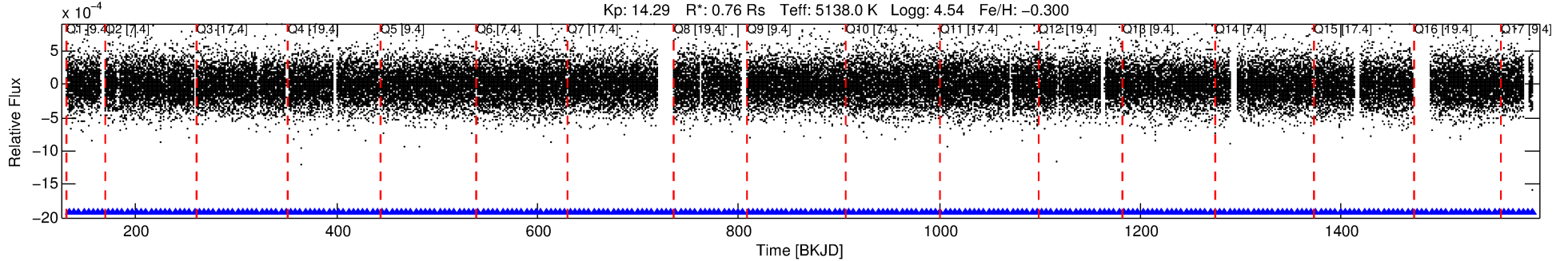
Ephemeris Match Information For 004459924-01

No Significant Match Found

DV One-Page Summary

KIC: 4459924 Candidate: 1 of 1 Period: 4.792 d
KOI: K02441.01 Corr: 0.963

Kp: 14.29 R*: 0.76 Rs Teff: 5138.0 K Logg: 4.54 Fe/H: -0.300



DV Fit Results:

Period = 4.79173 [0.00002] d
Epoch = 134.0399 [0.0035] BKJD
Rp/R* = 0.0117 [0.0034]
a/R* = 3.99 [4.63]
b = 0.89 [0.29]
Seff = 144.02 [18.55]
Teq = 883 [28] K
Rp = 0.96 [0.29] Re
a = 0.0498 [0.0035] AU
Ag = 20.57 [14.92] [1.31σ]
Teff = 2908 [523] K [3.86σ]

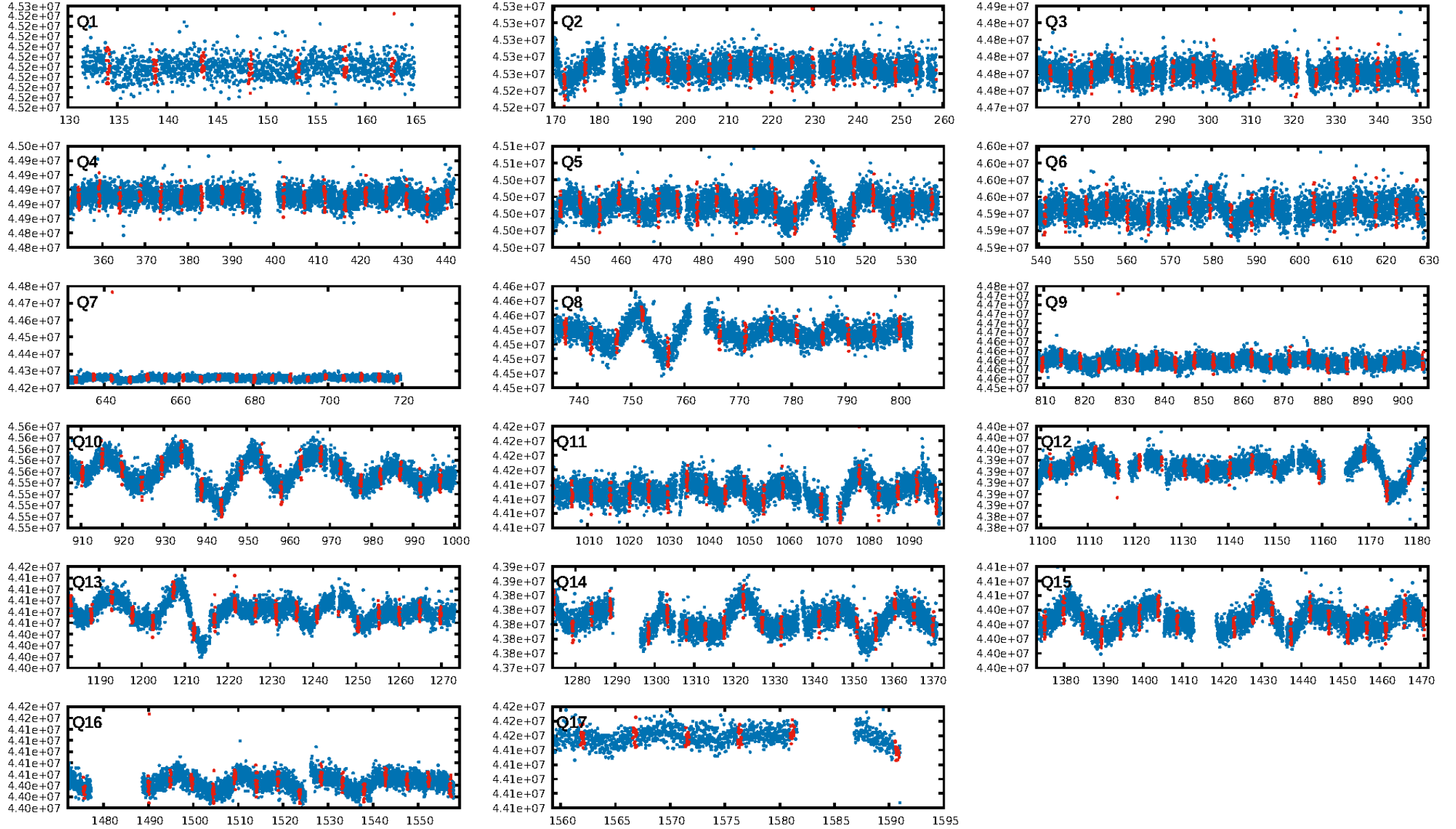
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.15e-69
RollingBand-fgt: 1.00 [269/269]
GhostDiagnostic-chr: -0.2892
Centroid-sig: 0.0%
Centroid-so: 56.178 arcsec [87.70σ]
OotOffset-rm: 8.268 arcsec [97.87σ]
KicOffset-rm: 8.462 arcsec [120.60σ]
OotOffset-st: 4/4/0/5 [13]
KicOffset-st: 4/4/0/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

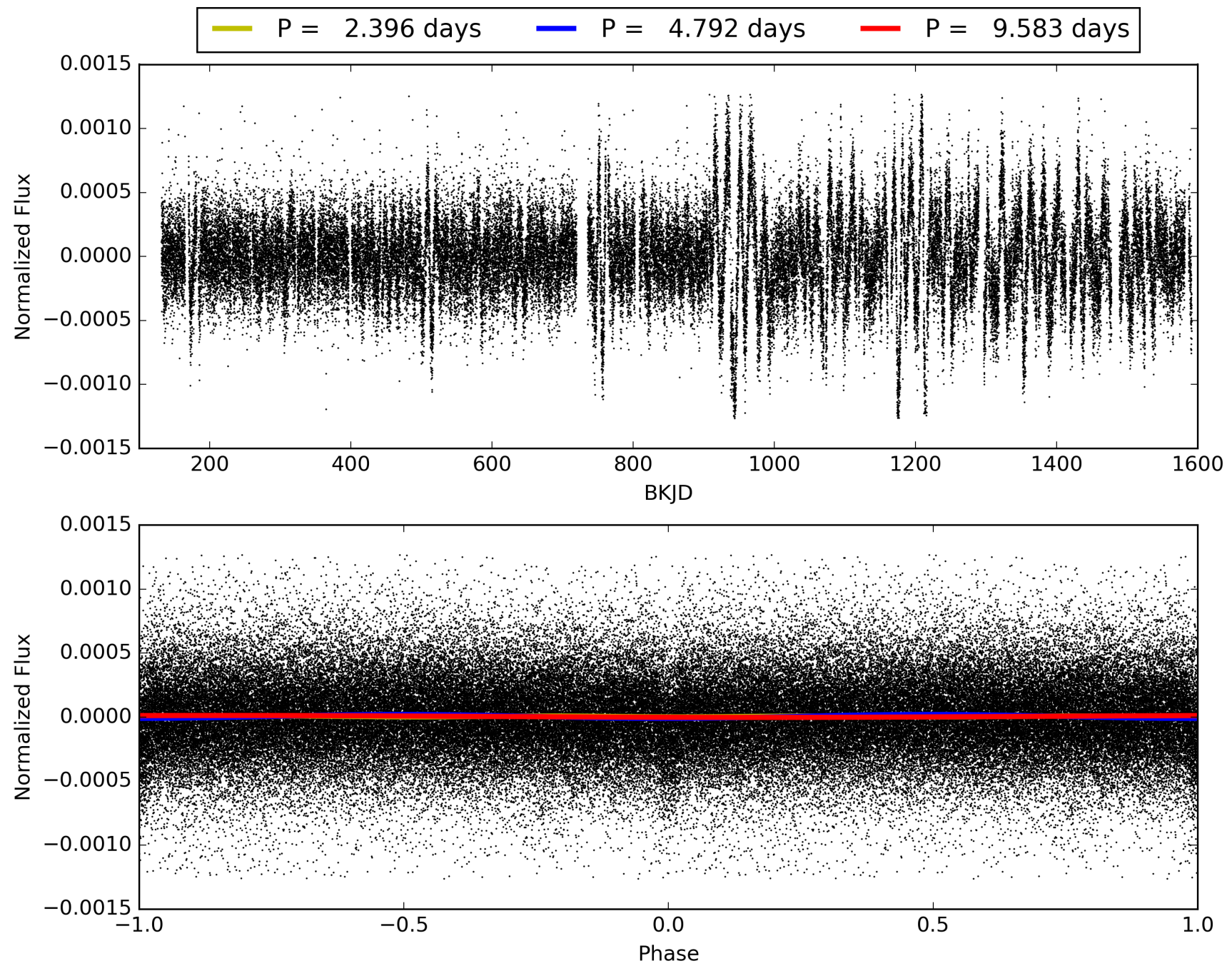
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:28:02 Z

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

TCE 004459924-01, PDC Light Curves

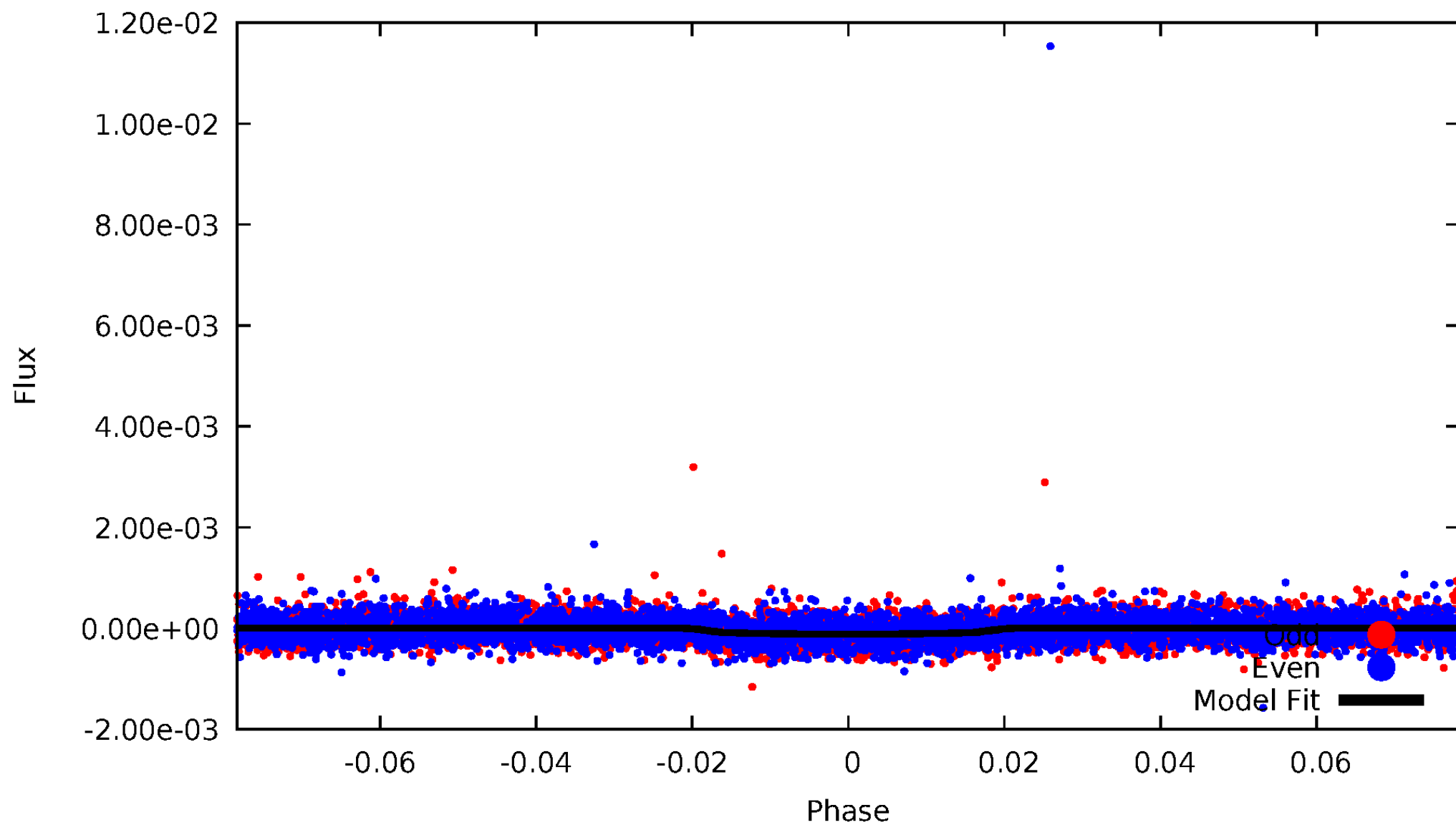


TCE 004459924-01



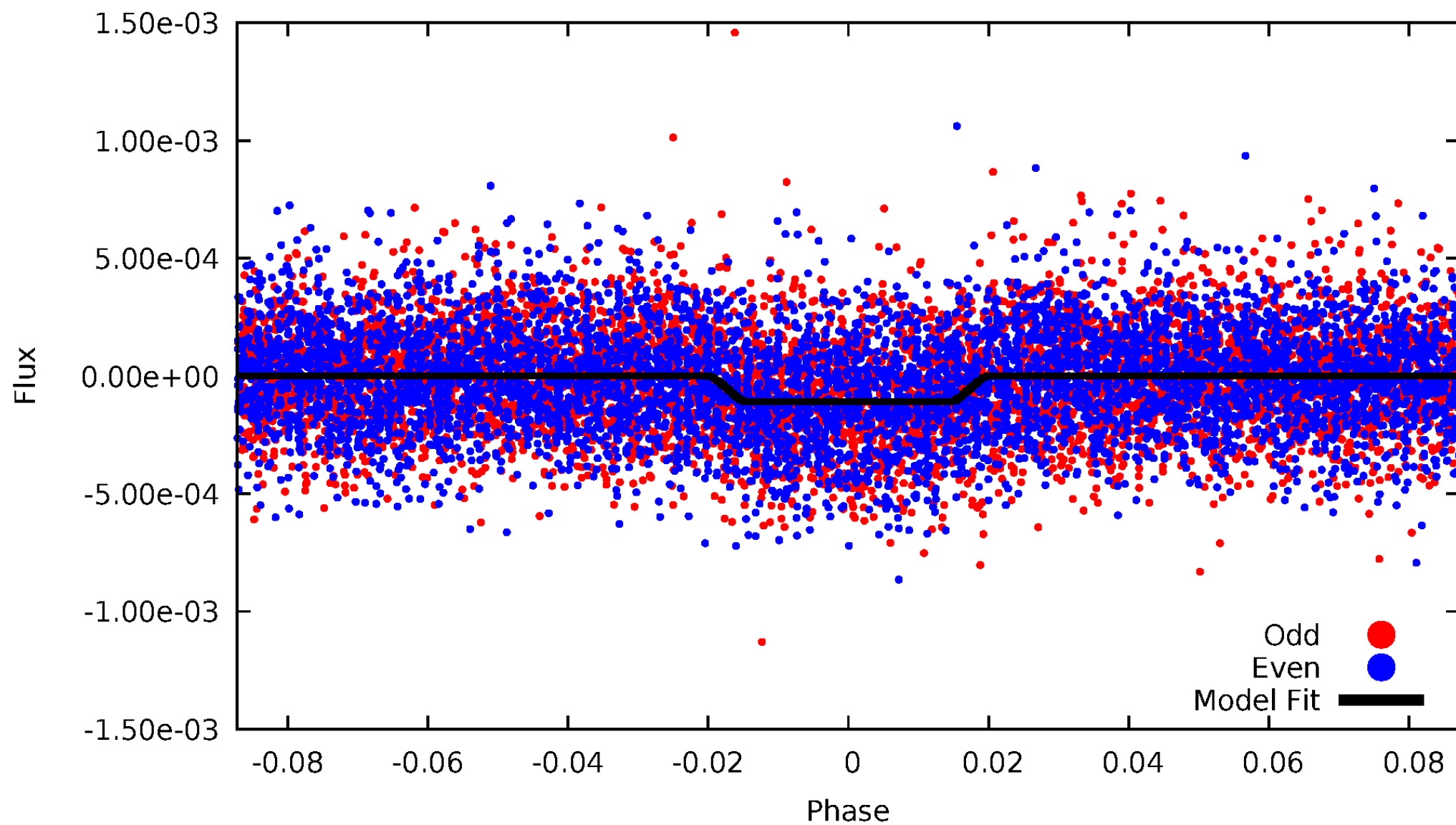
DV Odd/Even

TCE 004459924-01

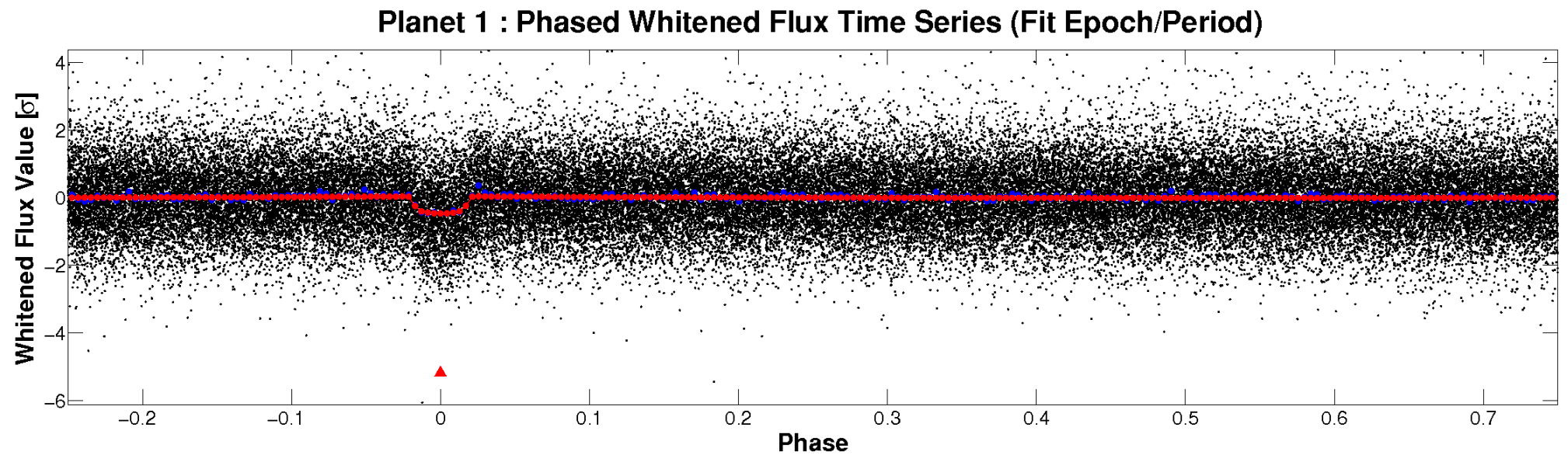
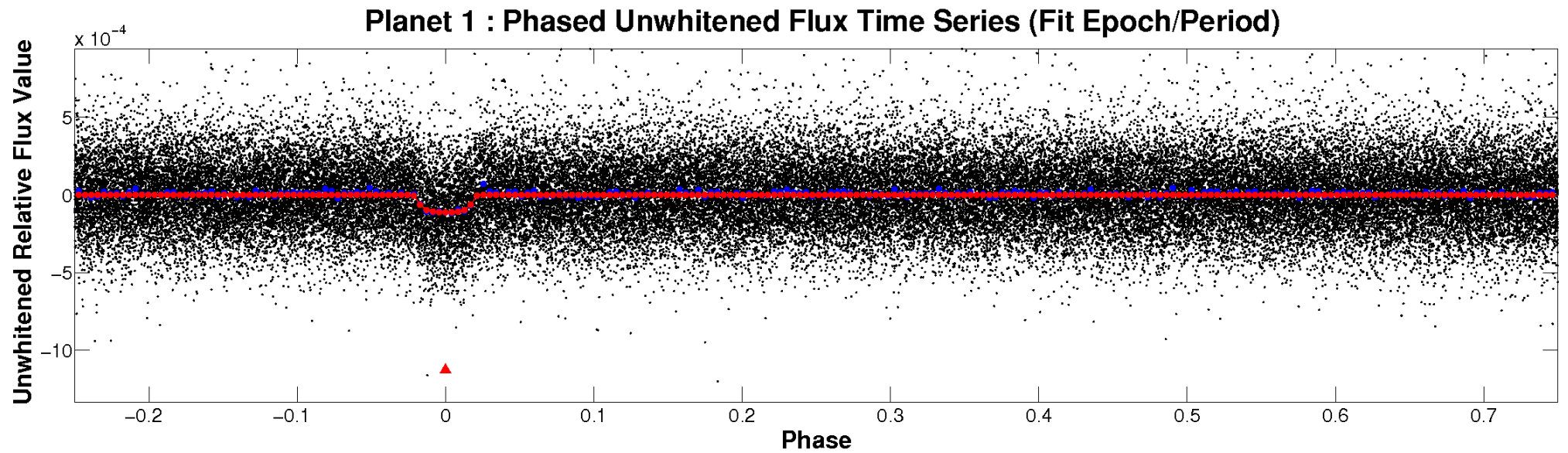


ALT Odd/Even

TCE 004459924-01

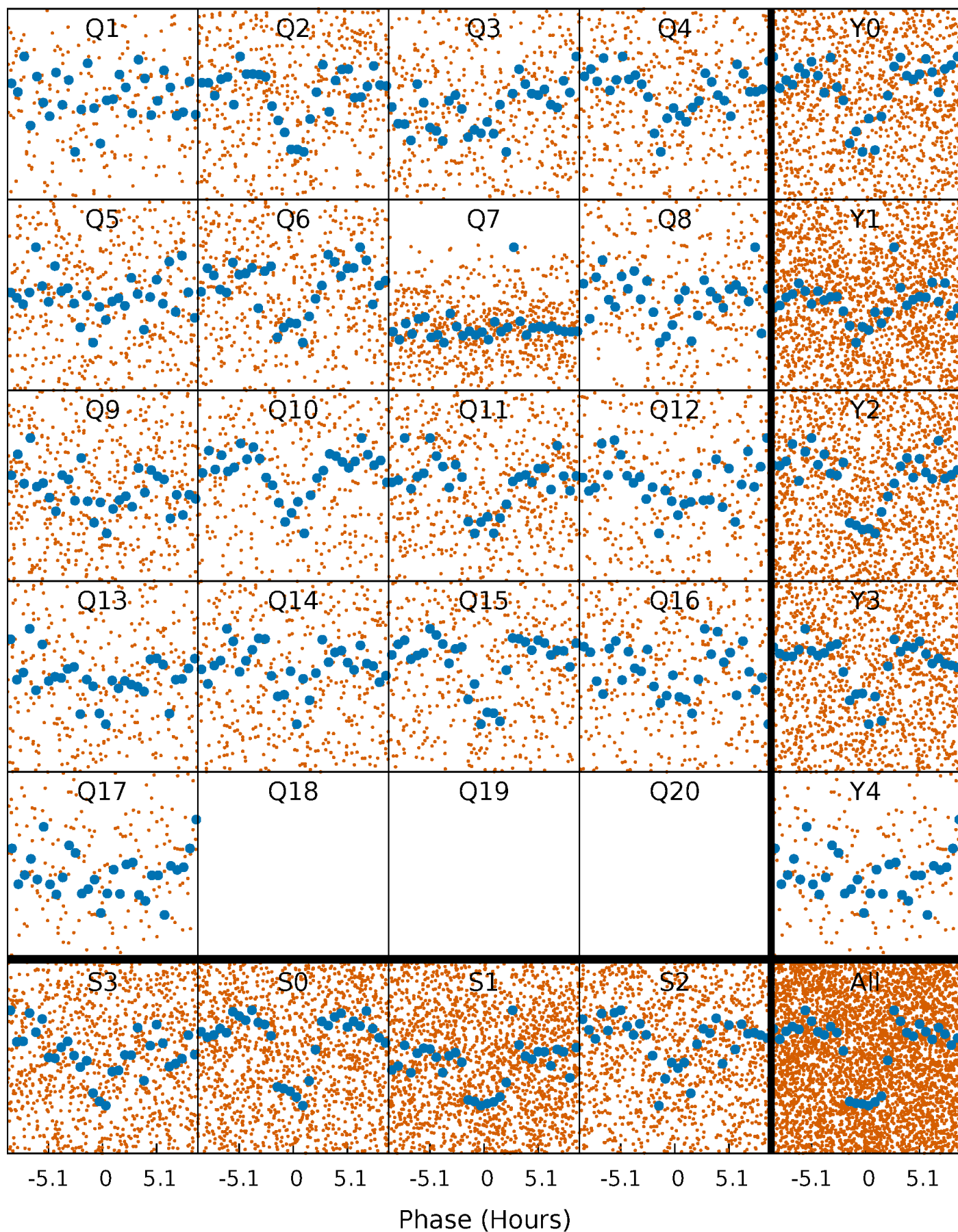


Non-Whitened Vs. Whitened Light Curve



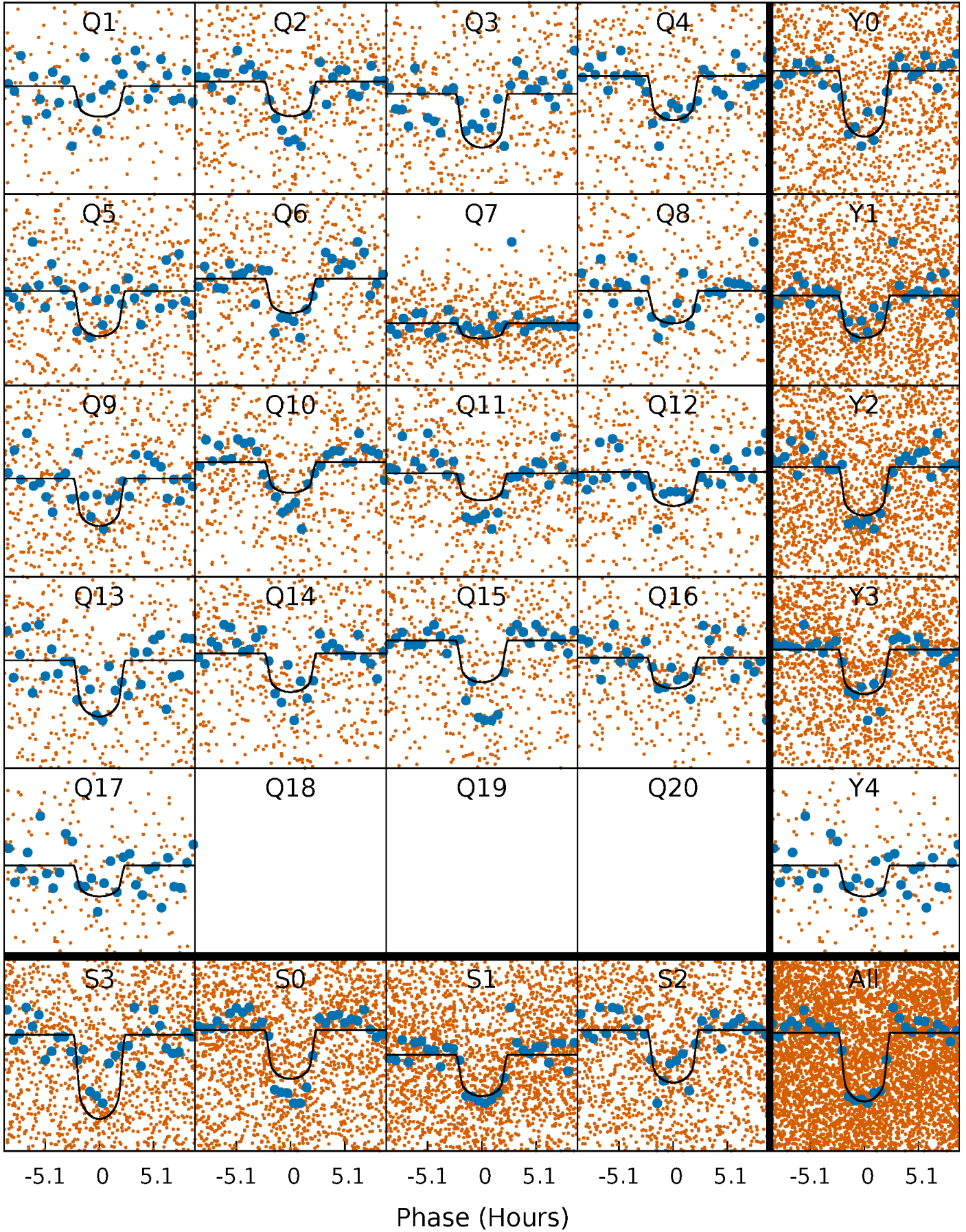
PDC Quarter-Phased Transit Curves

TCE 004459924-01 P= 4.791732 Days $T_0=134.039867$ (BKJD)



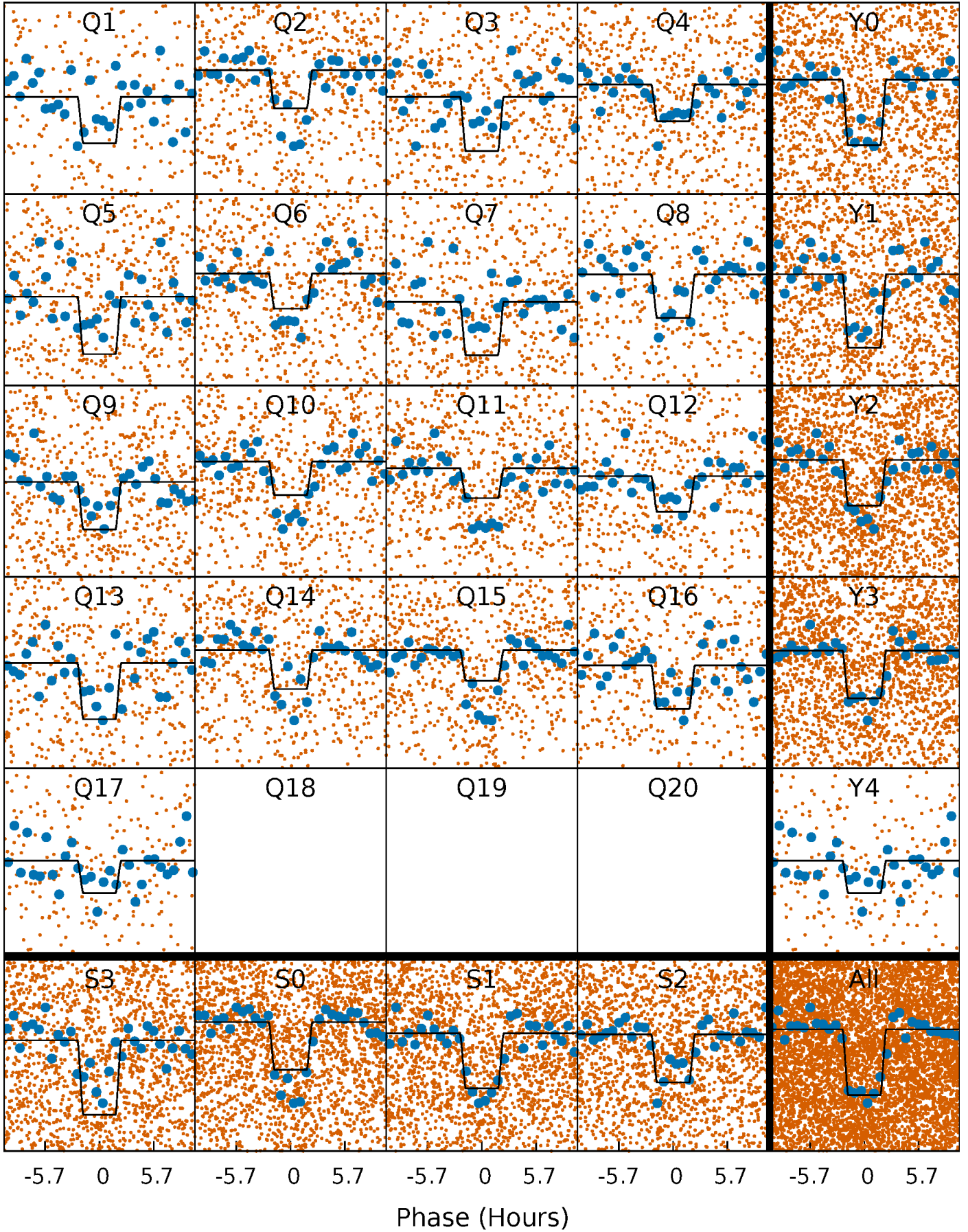
DV Quarter-Phased Transit Curves

TCE 004459924-01 P= 4.791732 Days $T_0=134.039867$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

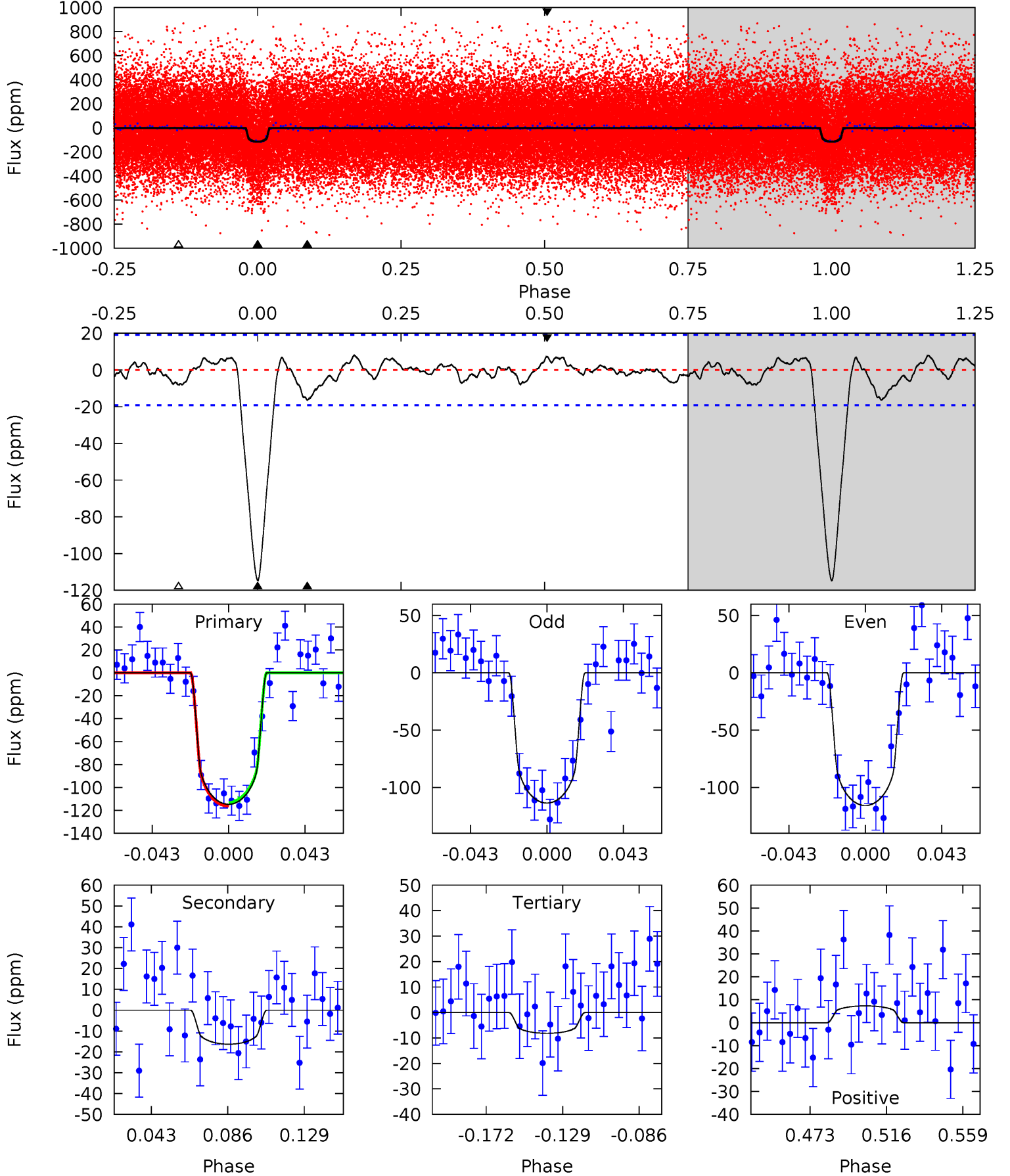
TCE 004459924-01 P= 4.791762 Days $T_0=134.033835$ (BKJD)



DV Model-Shift Uniqueness Test

004459924-01, P = 4.791732 Days, E = 129.248135 Days

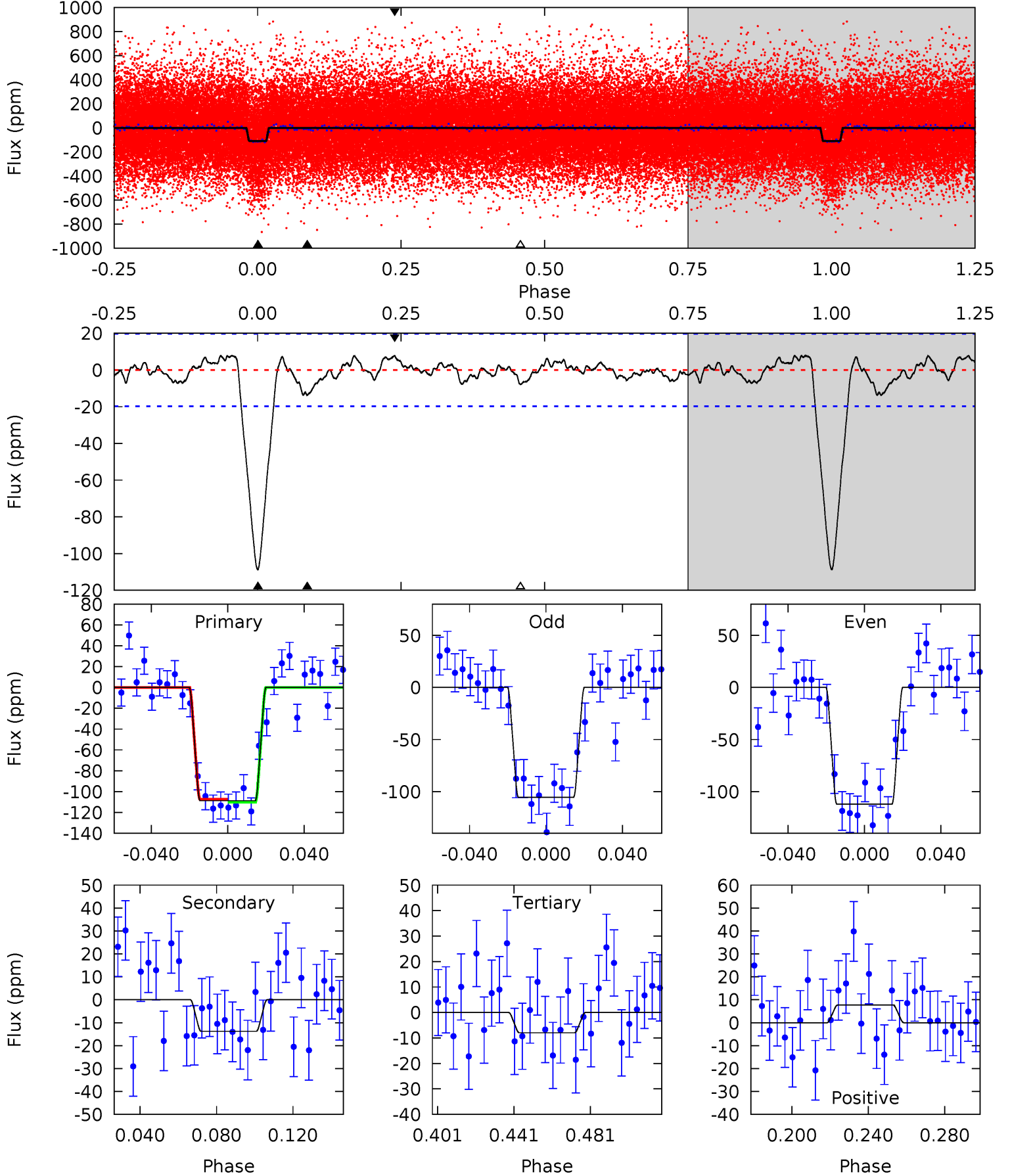
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.3	4.03	2.02	1.81	4.74	2.02	0.91	26.3	26.5	2.01	2.22	0.26	1.04	0.07	0.35



Alt Model-Shift Uniqueness Test

004459924-01, P = 4.791762 Days, E = 129.242073 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.2	3.31	1.92	1.87	4.75	2.05	0.88	24.3	24.3	1.39	1.44	0.79	1.03	0.07	0.33



Stellar Parameters For KIC 004459924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5138^{+84}_{-77}	$4.536^{+0.065}_{-0.025}$	$-0.300^{+0.150}_{-0.100}$	$0.756^{+0.036}_{-0.055}$	$0.717^{+0.056}_{-0.026}$	$2.334^{+0.589}_{-0.248}$
	+2%/-1%	+1%/-1%	+50%/-33%	+5%/-7%	+8%/-4%	+25%/-11%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004459924-01 / KOI 2441.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16 ± 4	$0.97^{+0.29}_{-0.29}$	1226^{+26}_{-28}	3460^{+426}_{-291}	24^{+25}_{-11}
Alt.	-14 ± 4	$0.85^{+0.28}_{-0.29}$	1228^{+26}_{-27}	3503^{+527}_{-365}	26^{+34}_{-13}

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

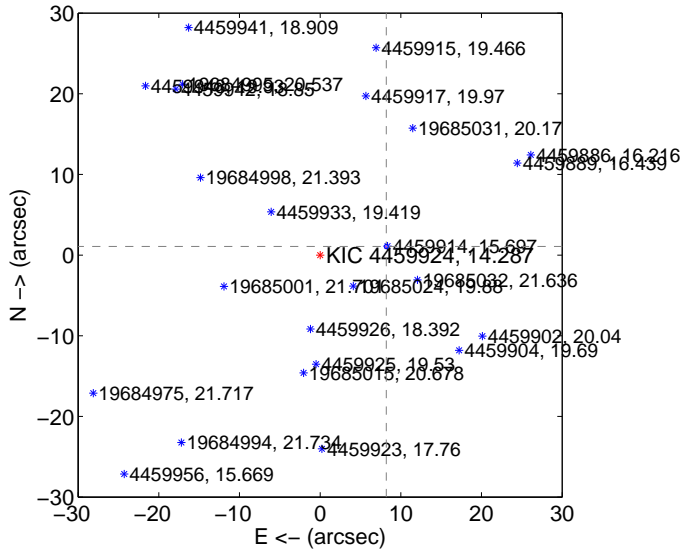
Supplemental centroid analysis for 004459924-01. Kepler magnitude: 14.29. Transit SNR 19.65

There are 13 quarters with good PRF difference image offsets

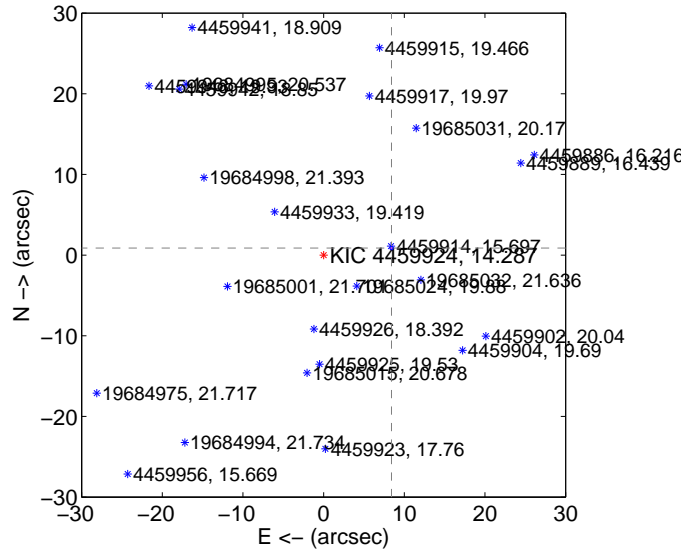
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.268 \pm 0.084	97.87	-8.199 \pm 0.085	1.066 \pm 0.069
PRF-fit source offset from KIC position	8.462 \pm 0.070	120.60	-8.416 \pm 0.070	0.875 \pm 0.072
photometric centroid source offset	56.18 \pm 0.64	87.70	-55.86 \pm 0.64	5.96 \pm 0.53

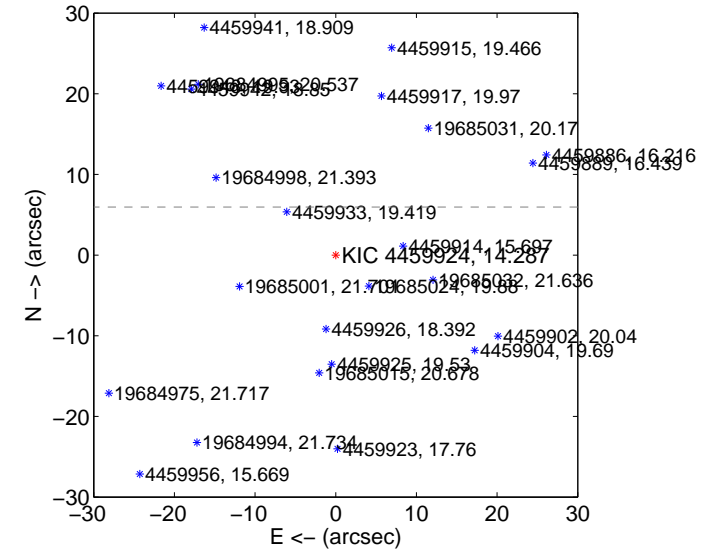
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

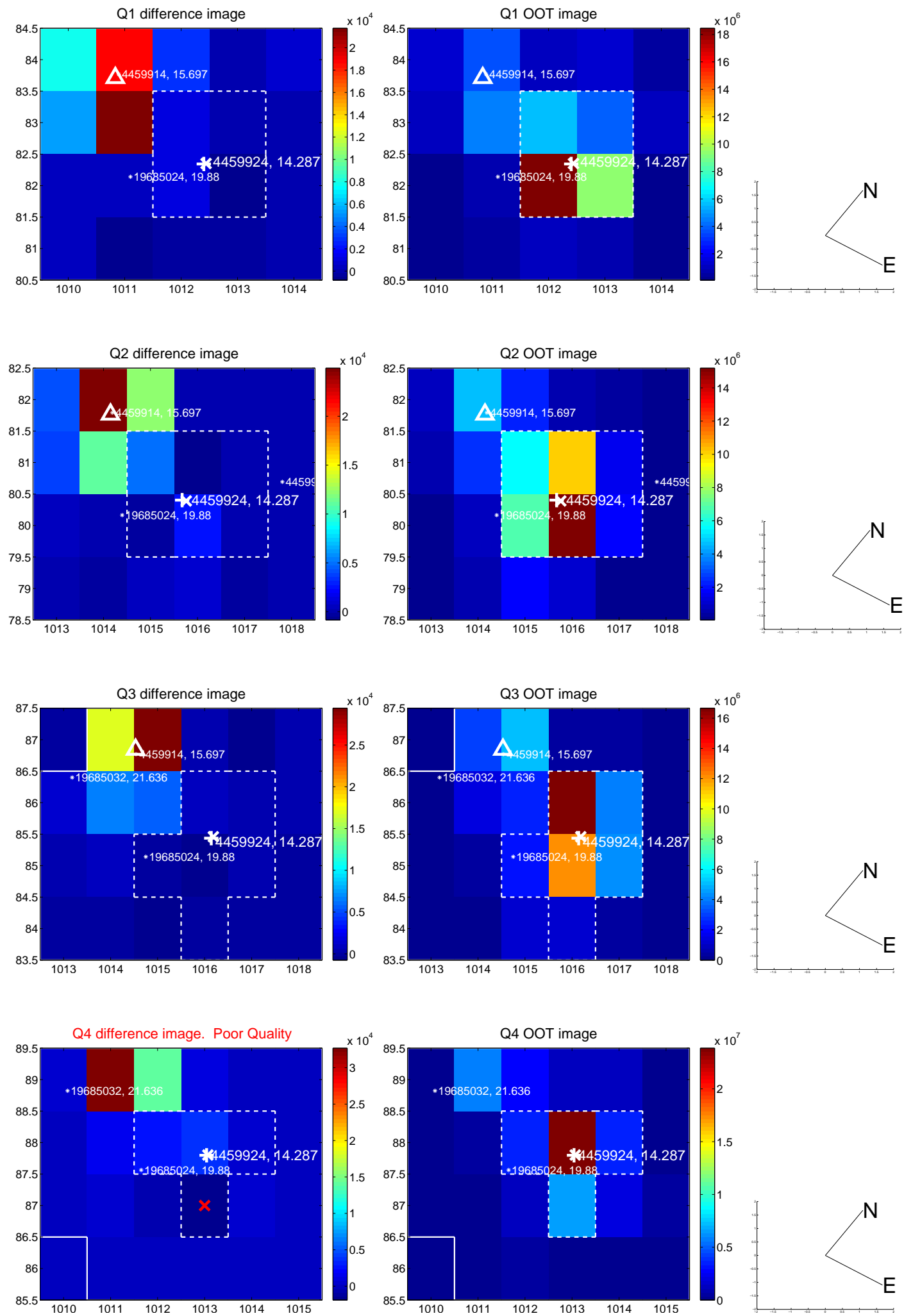


offset from photometric centroids

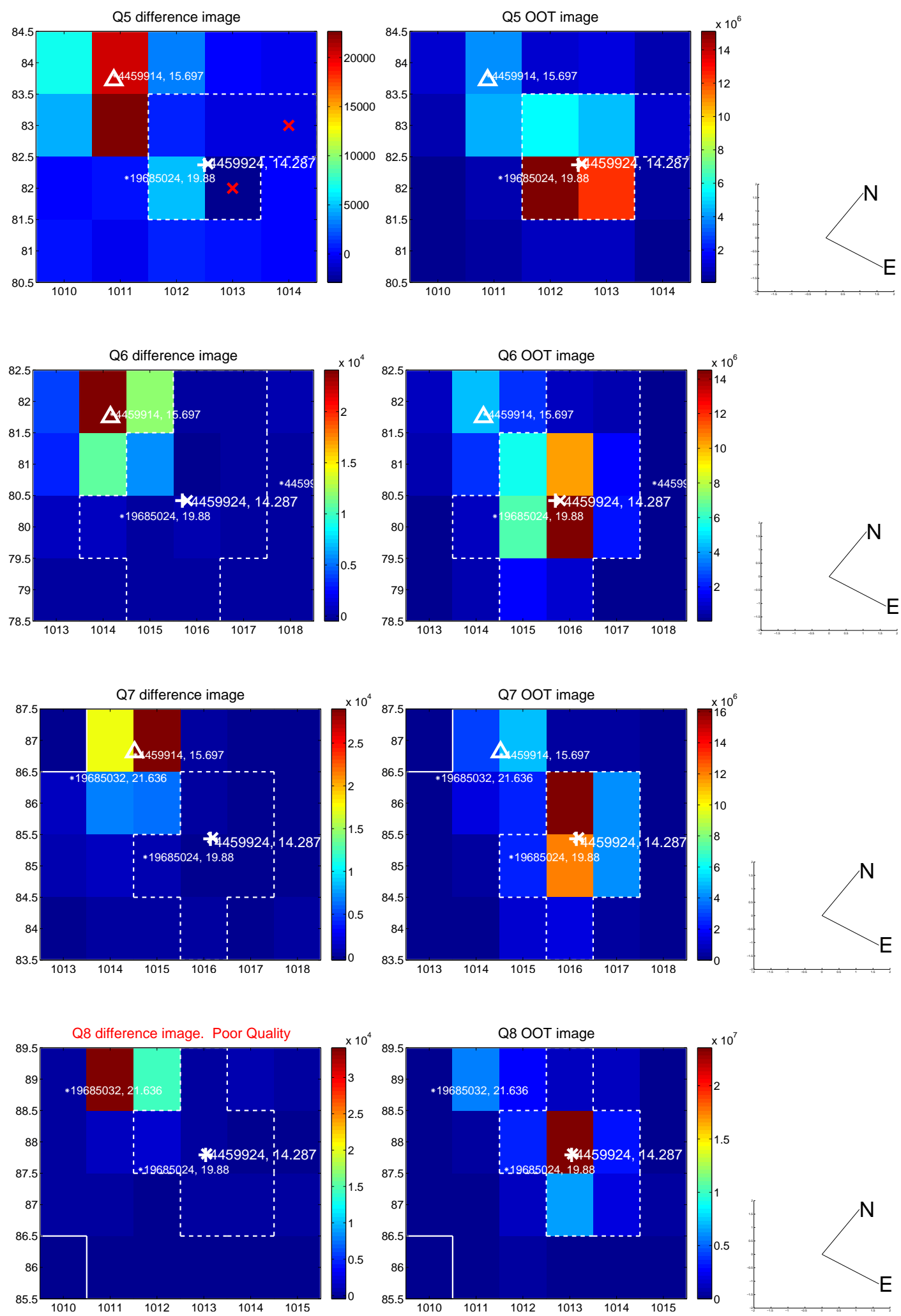


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

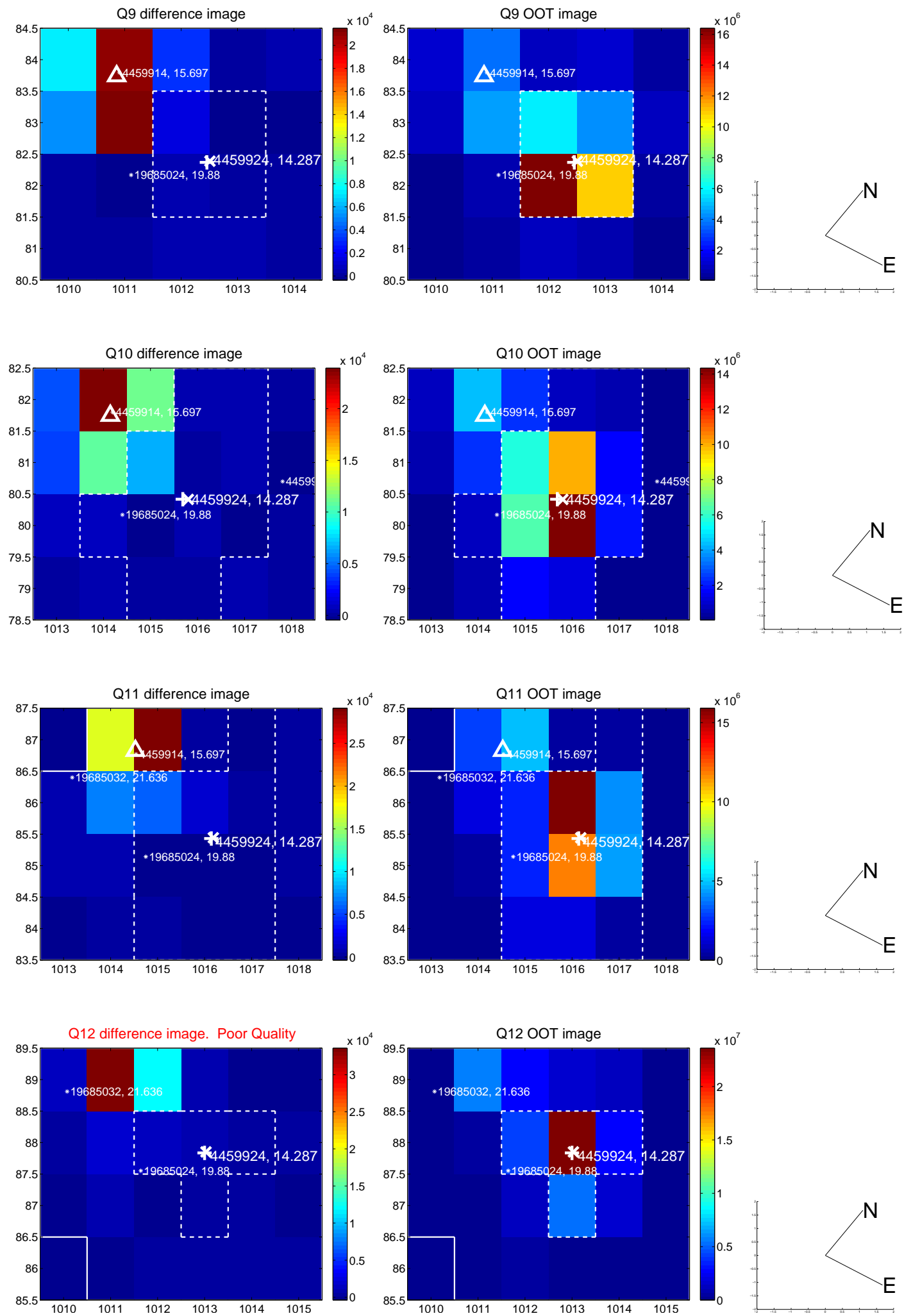
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



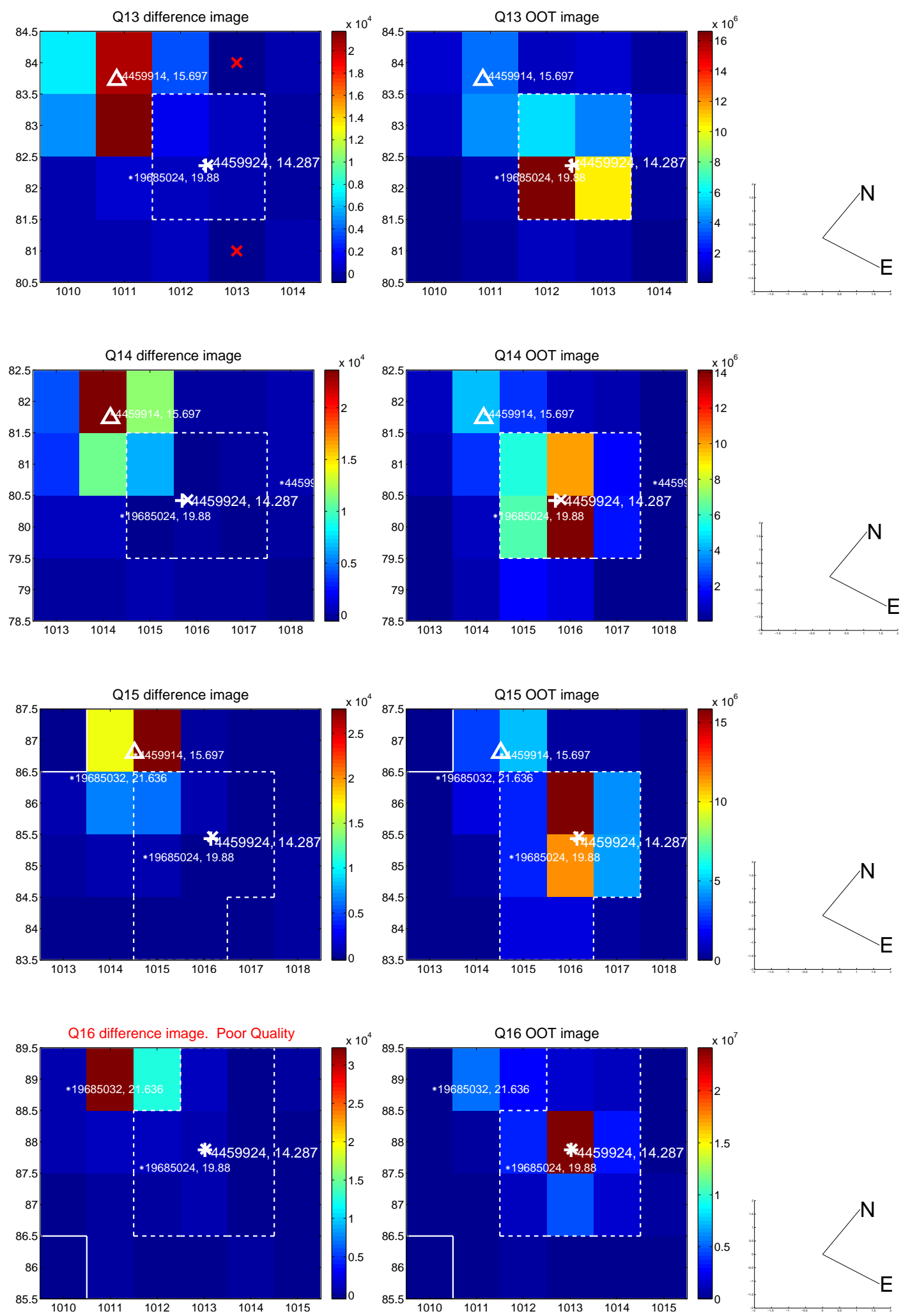
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



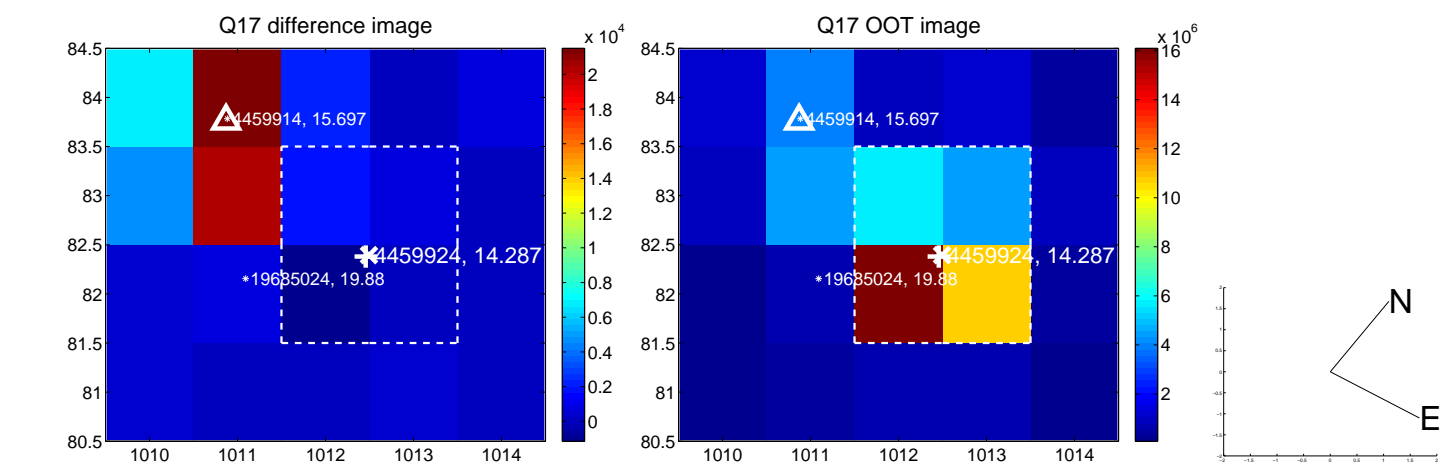
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



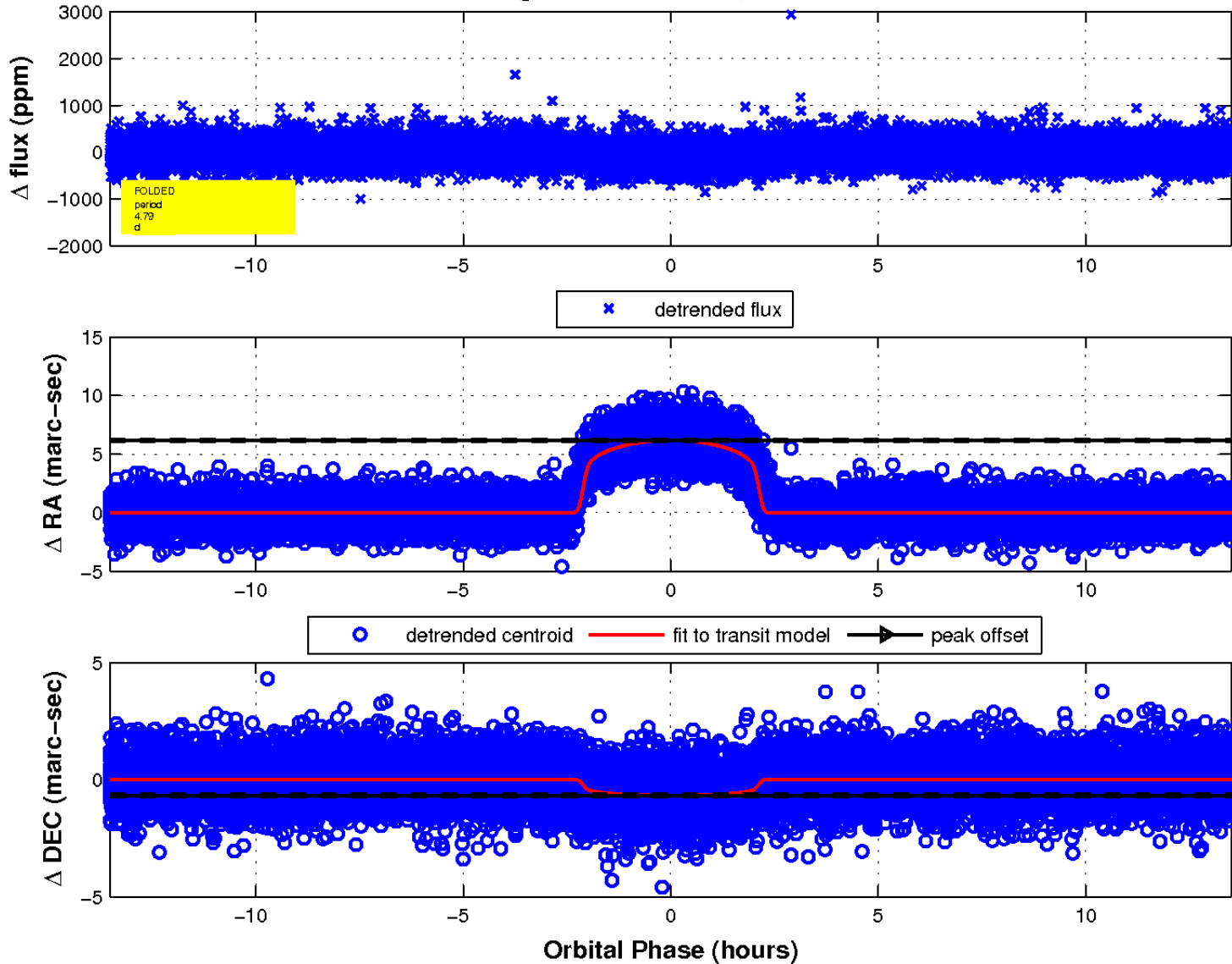
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

