

KIC 002708270

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})
002708270-01	OBS	4951.01	1.891333	132.669839	132.7	3.961	14.2	11.9	14.89	4449	16.38	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002708270-01	OBS	FP	0.00	0	1	1	1	PLANET_IN_STAR—MOD_SEC_DV—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 002708270-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
002708270-01	2708270	6286.01	2708156	1:1	87.5	2	22	10.67	13.98	4818.90	Direct-PRF	0	2.49	0.78

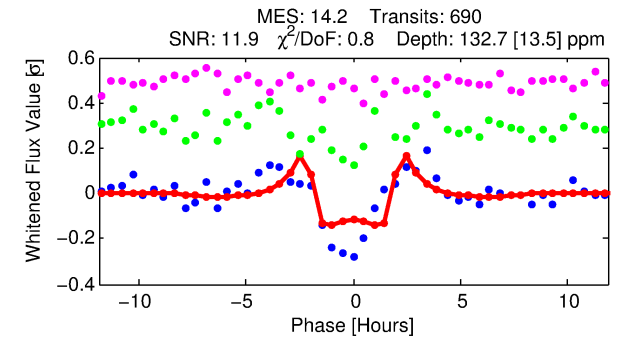
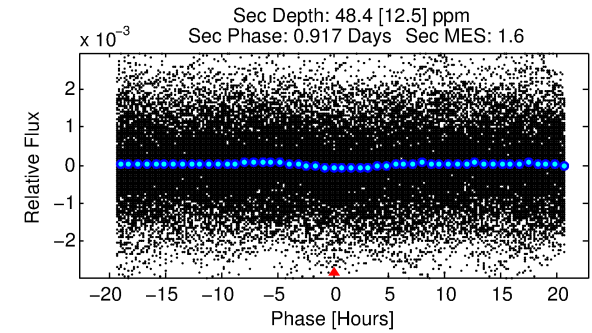
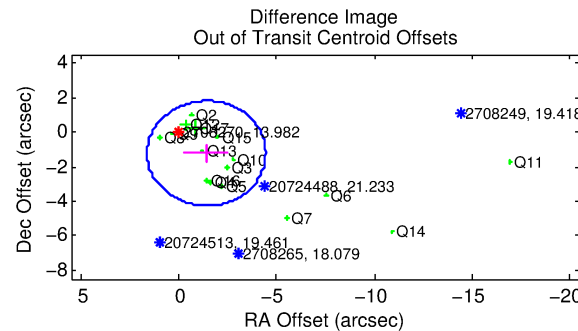
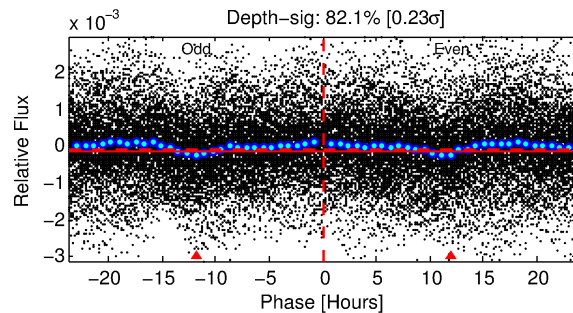
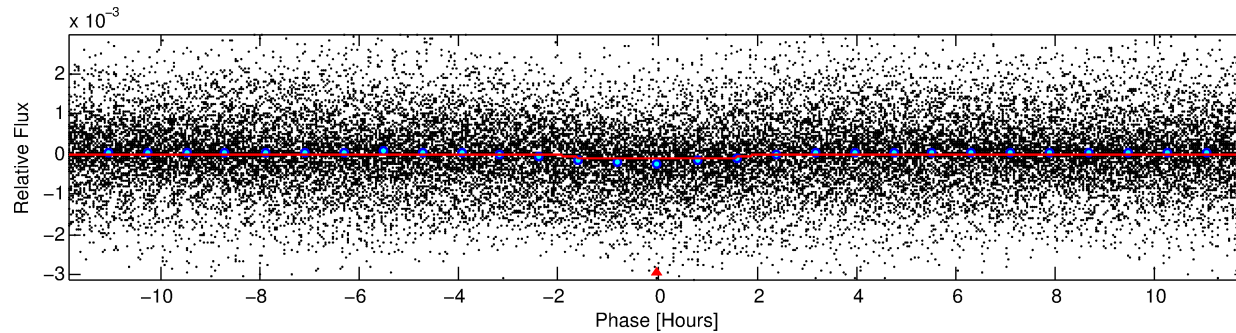
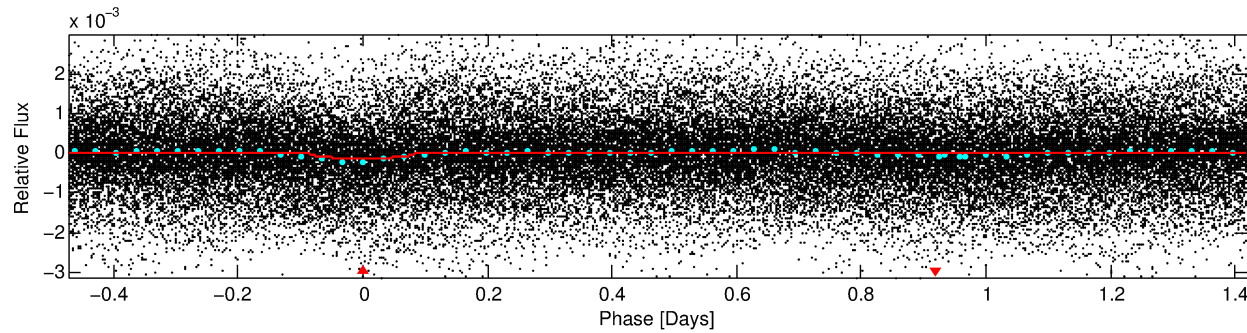
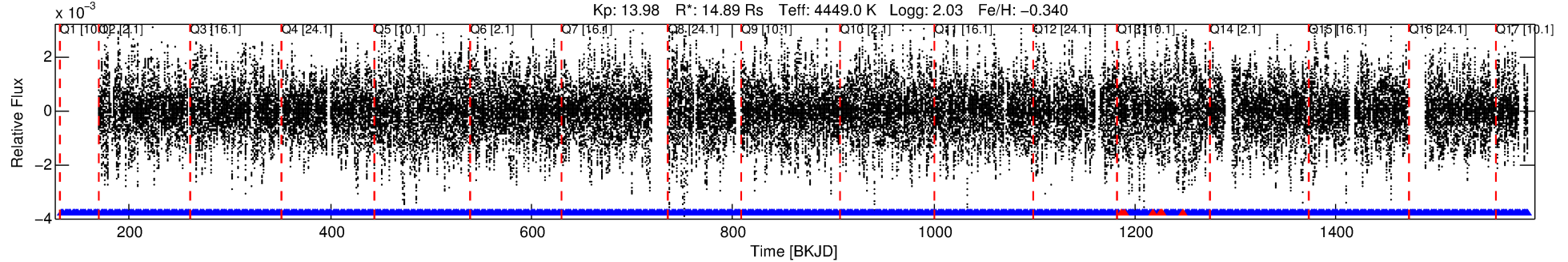
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. 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: 2708270 Candidate: 1 of 1 Period: 1.891 d

KOI: K04951.01 Corr: 0.757

Kp: 13.98 R*: 14.89 Rs Teff: 4449.0 K Logg: 2.03 Fe/H: -0.340



DV Fit Results:

Period = 1.89133 [0.00001] d
Epoch = 132.6698 [0.0017] BKJD
Rp/R* = 0.0101 [0.0043]
a/R* = 3.73 [4.42]
b = 0.04 [36.58]
Seff = N/A
Teq = N/A
Rp = 16.38 [8.66] Re
a = N/A
Ag = N/A
Teffp = N/A

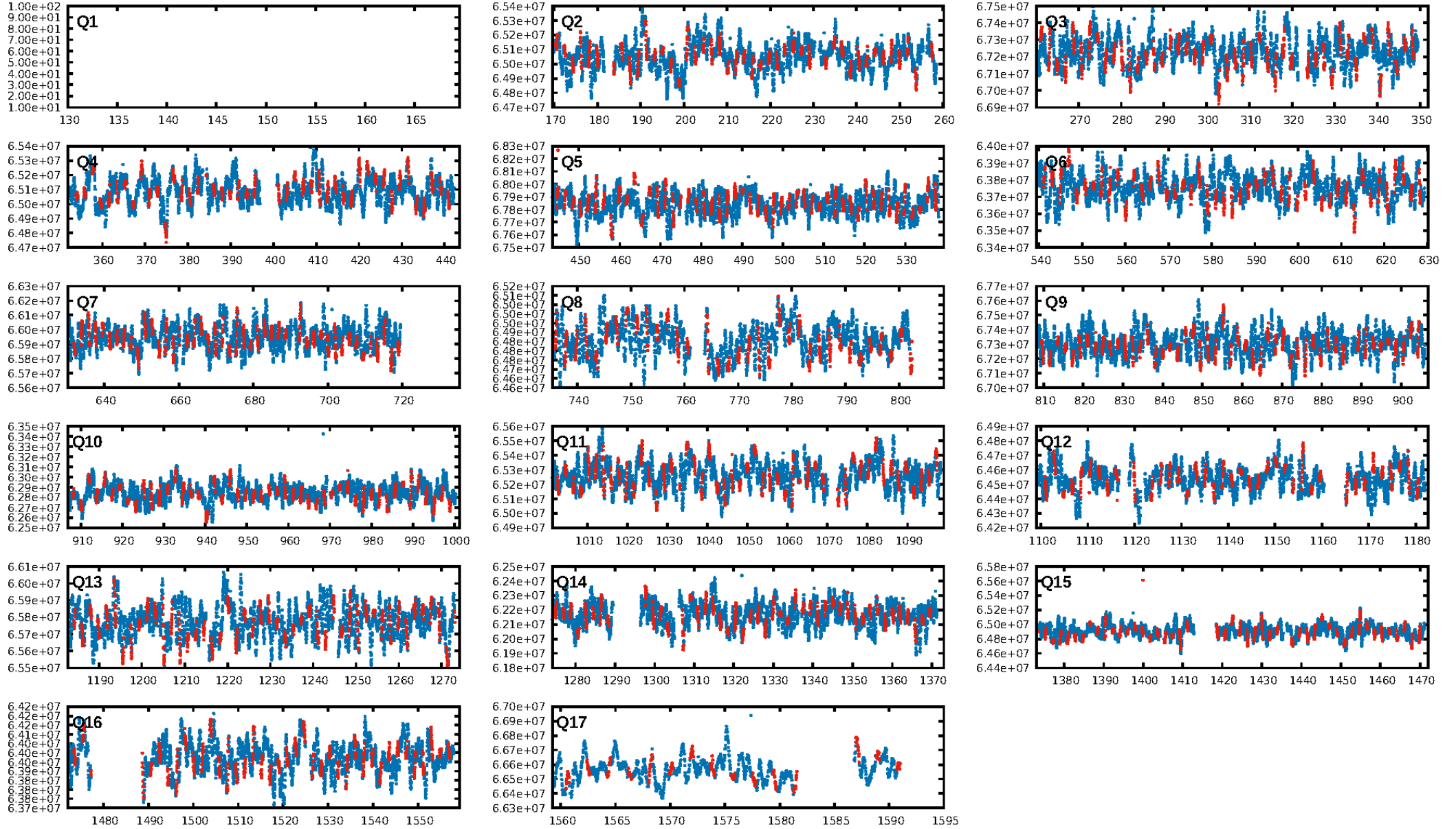
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.89e-45
RollingBand-fgt: 0.99 [669/675]
GhostDiagnostic-chr: -0.06066
Centroid-sig: 0.0%
Centroid-so: 3.077 arcsec [7.70σ]
OotOffset-rm: 1.873 arcsec [1.85σ]
KicOffset-rm: 2.057 arcsec [1.92σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.25 [4/16]
DiffImageOverlap-fno: 1.00 [16/16]

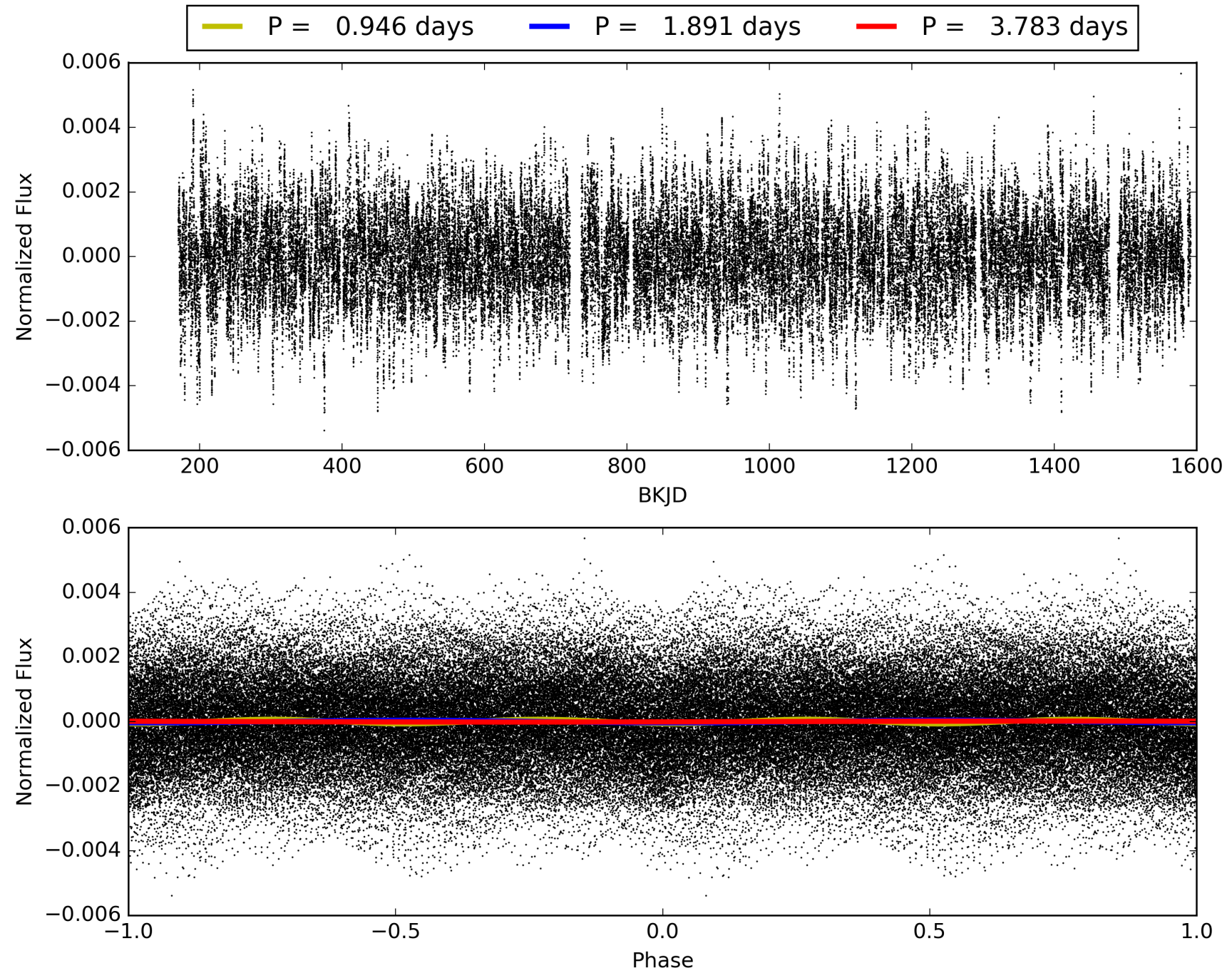
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:29:47 Z

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

TCE 002708270-01, PDC Light Curves

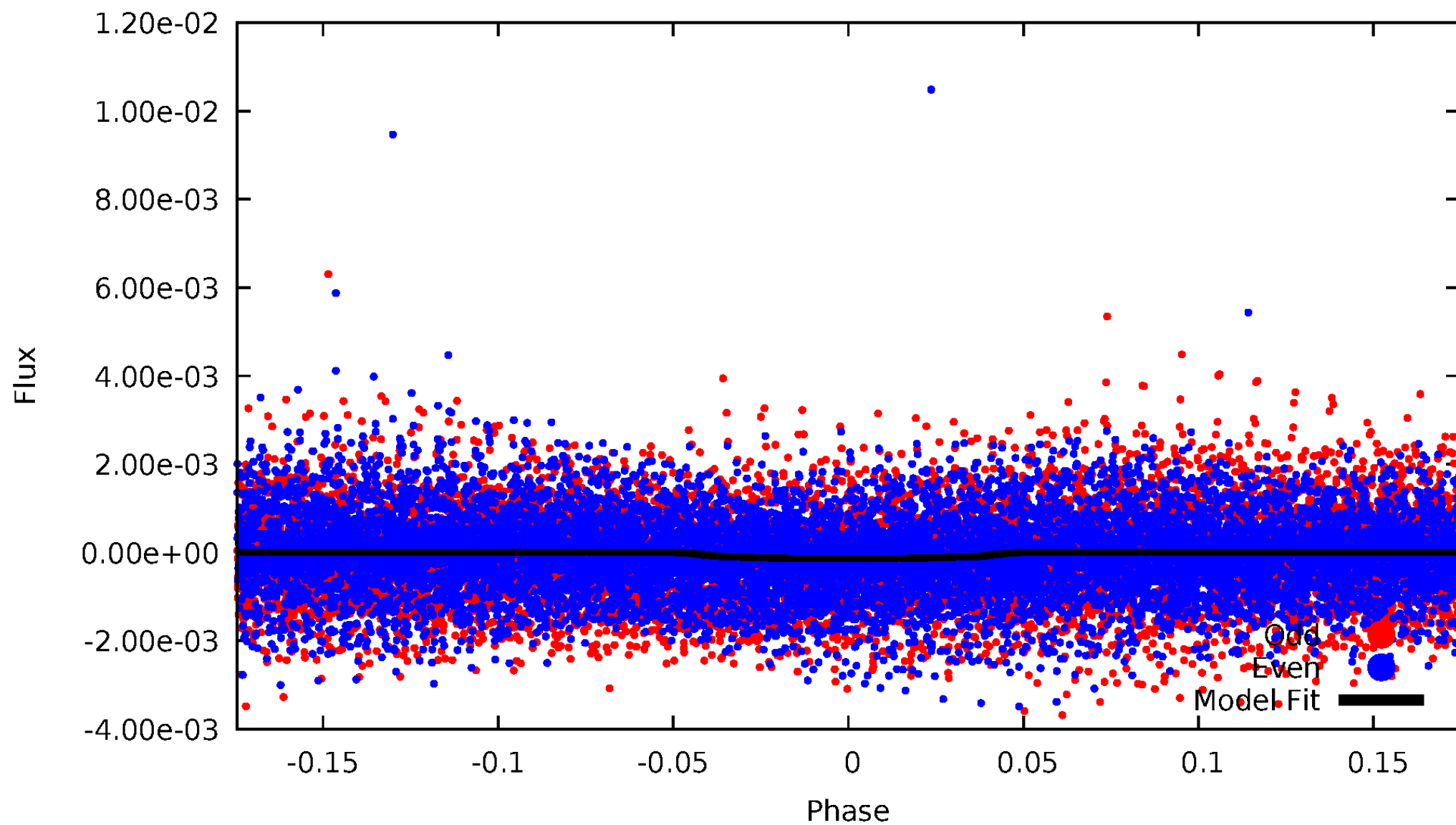


TCE 002708270-01



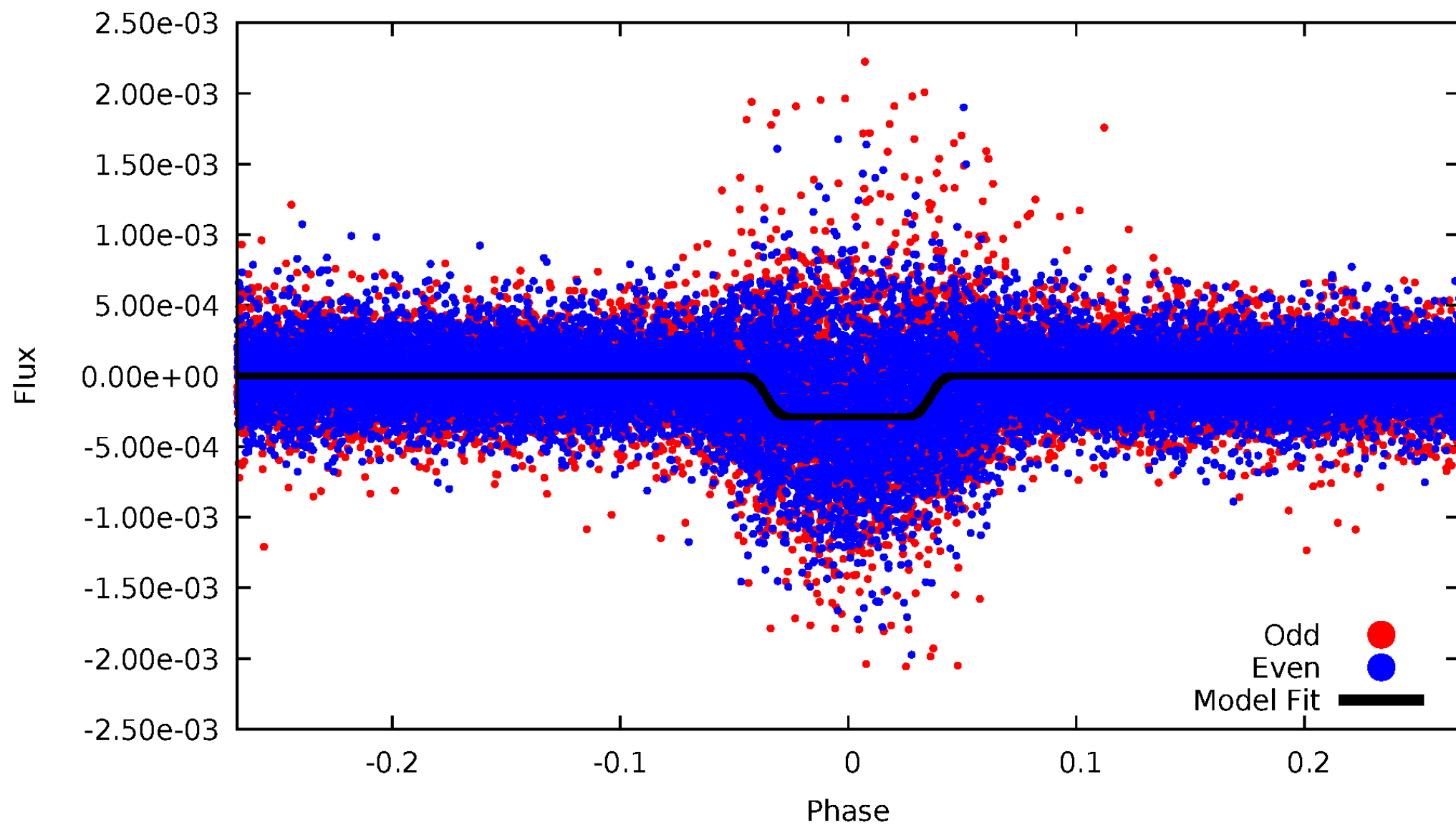
DV Odd/Even

TCE 002708270-01

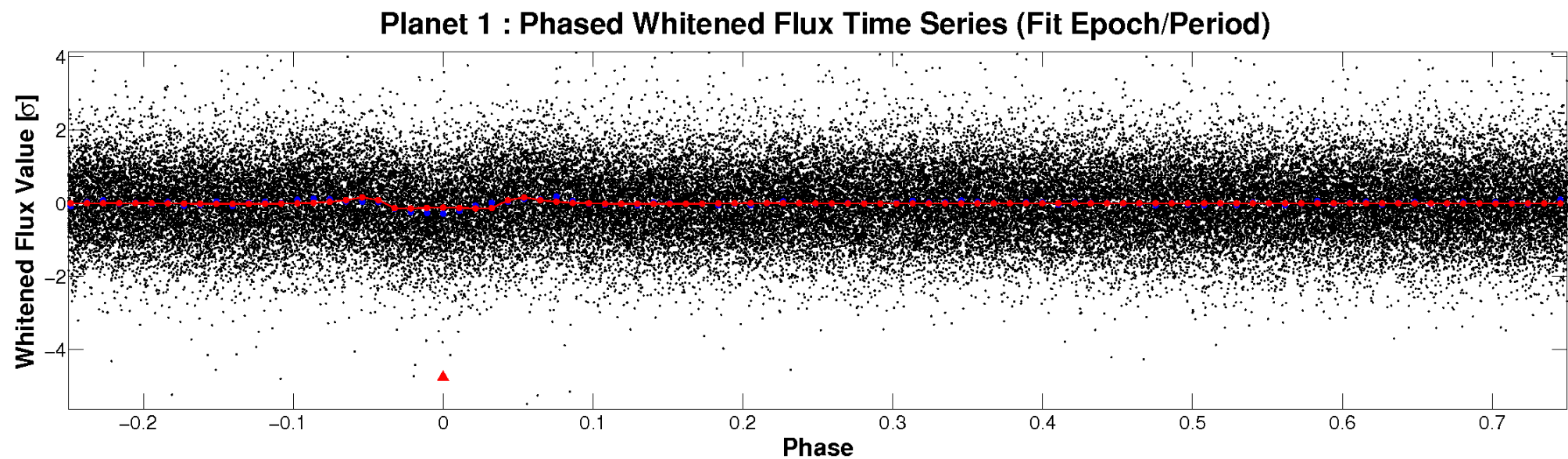
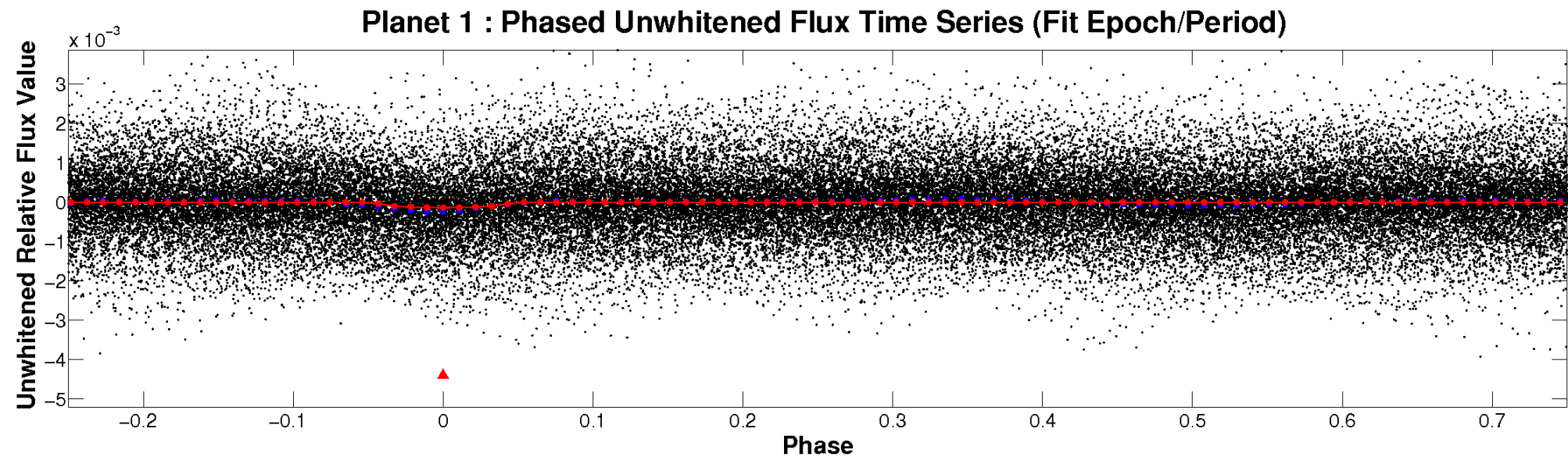


ALT Odd/Even

TCE 002708270-01

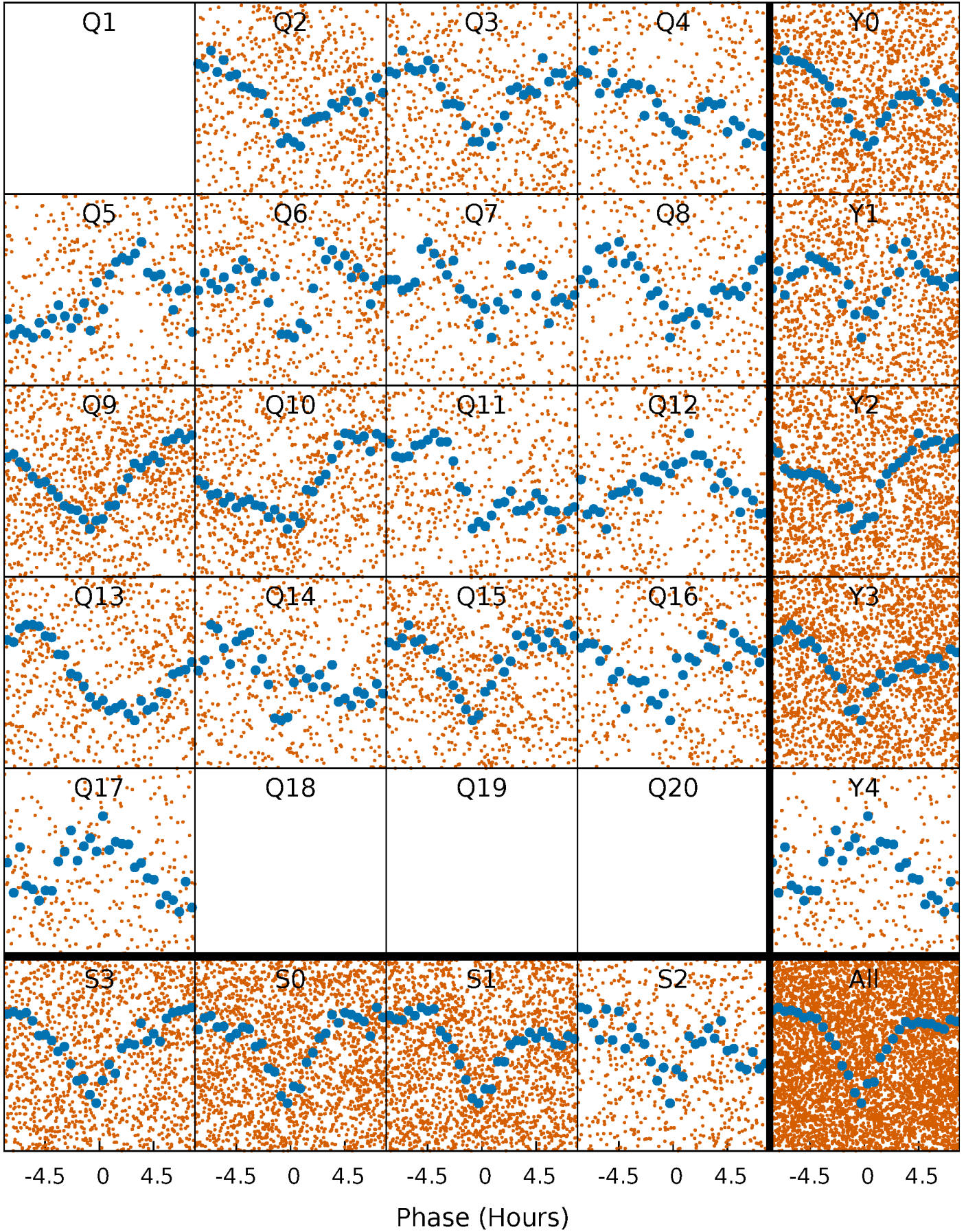


Non-Whitened Vs. Whitened Light Curve



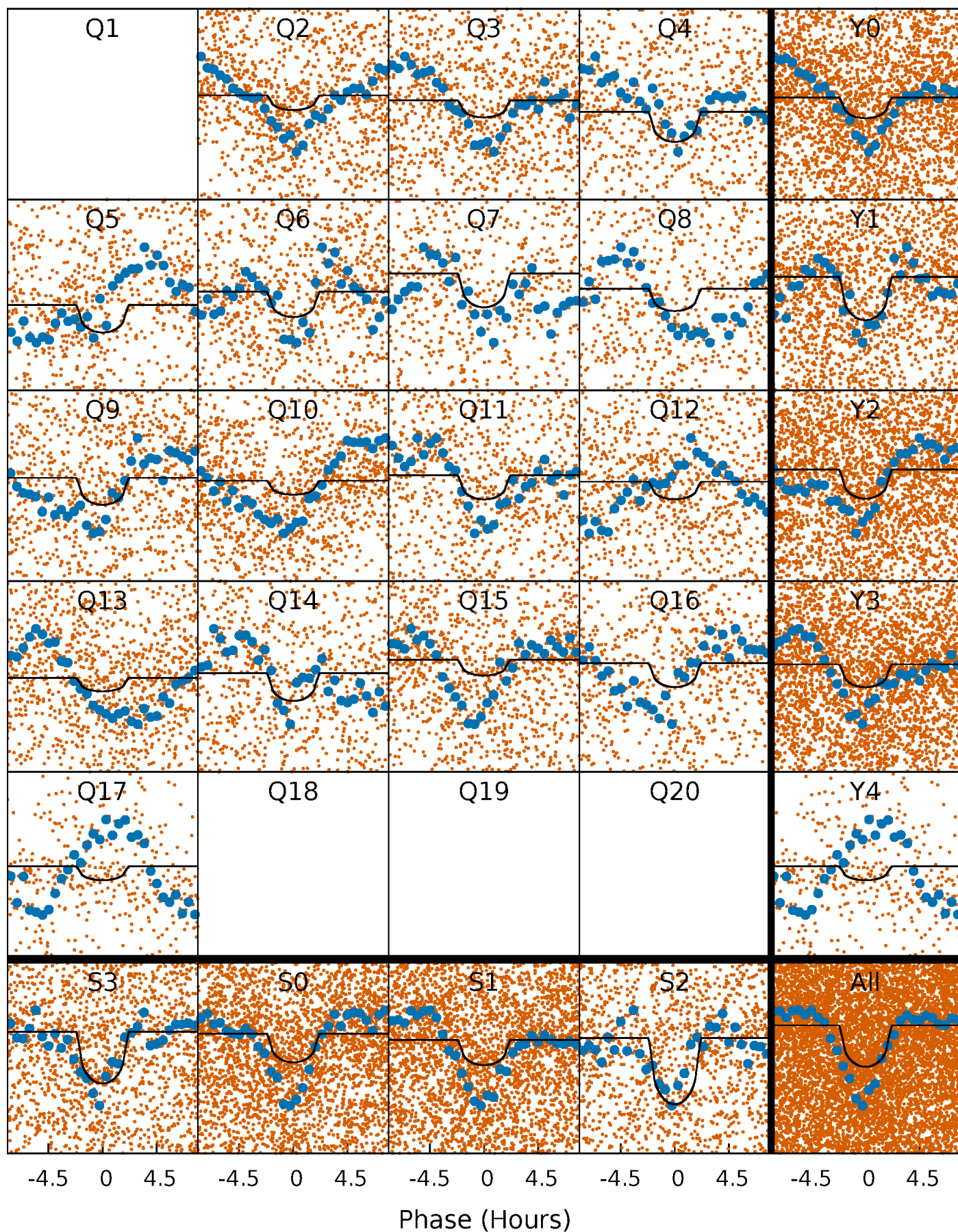
PDC Quarter-Phased Transit Curves

TCE 002708270-01 P= 1.891333 Days $T_0=132.669839$ (BKJD)



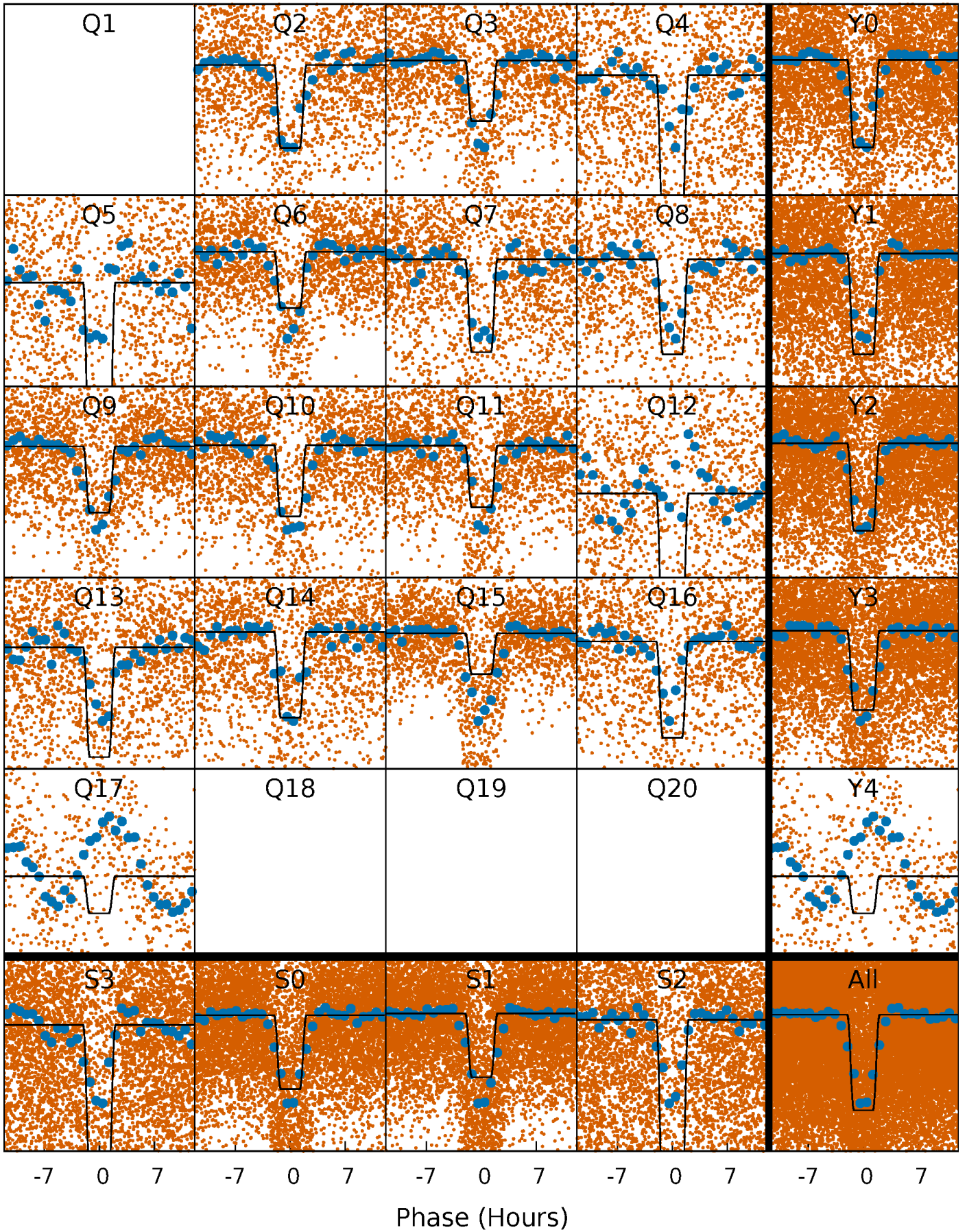
DV Quarter-Phased Transit Curves

TCE 002708270-01 P= 1.891333 Days $T_0=132.669839$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

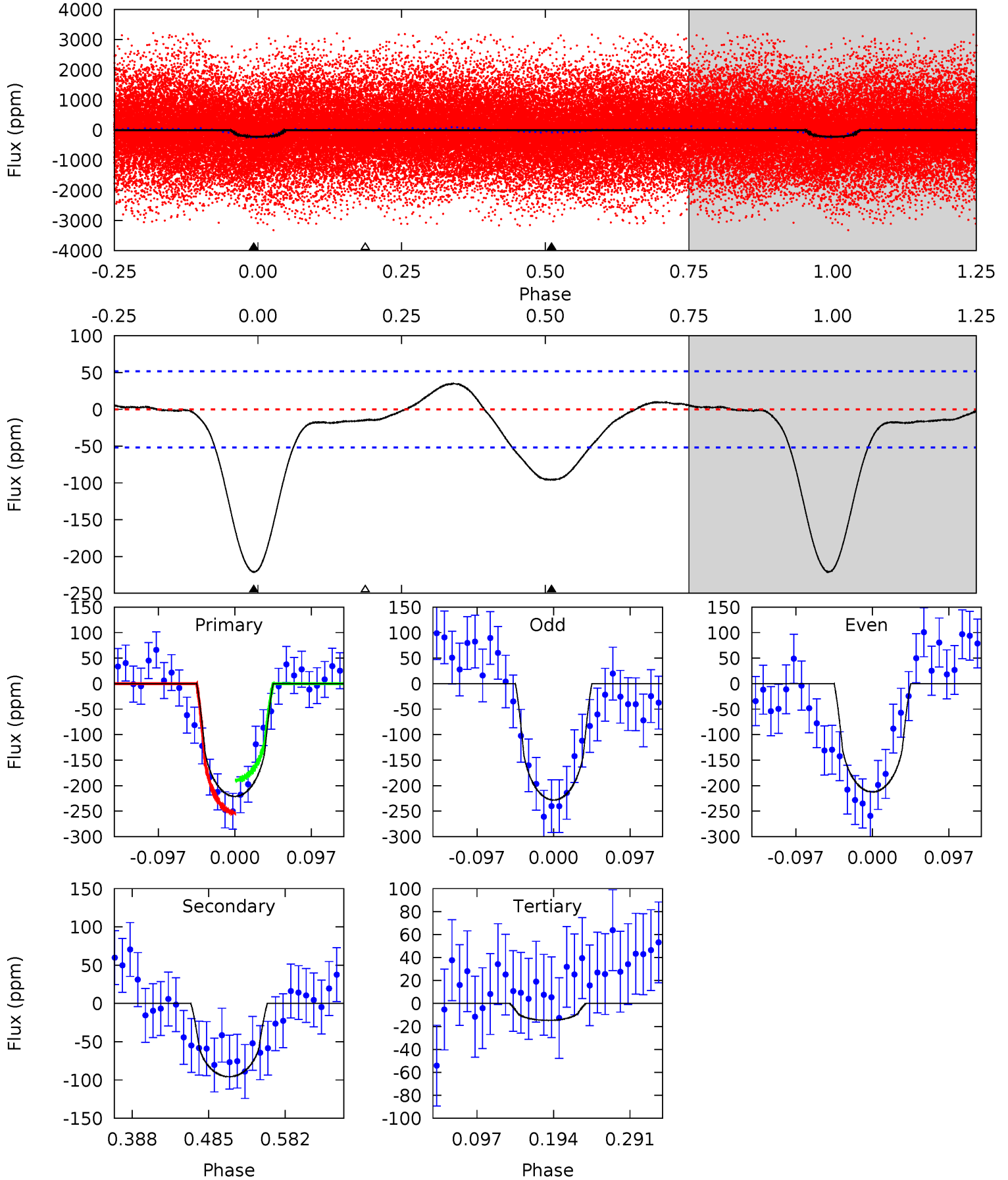
TCE 002708270-01 P= 1.891253 Days $T_0=132.686948$ (BKJD)



DV Model-Shift Uniqueness Test

002708270-01, P = 1.891333 Days, E = 132.669839 Days

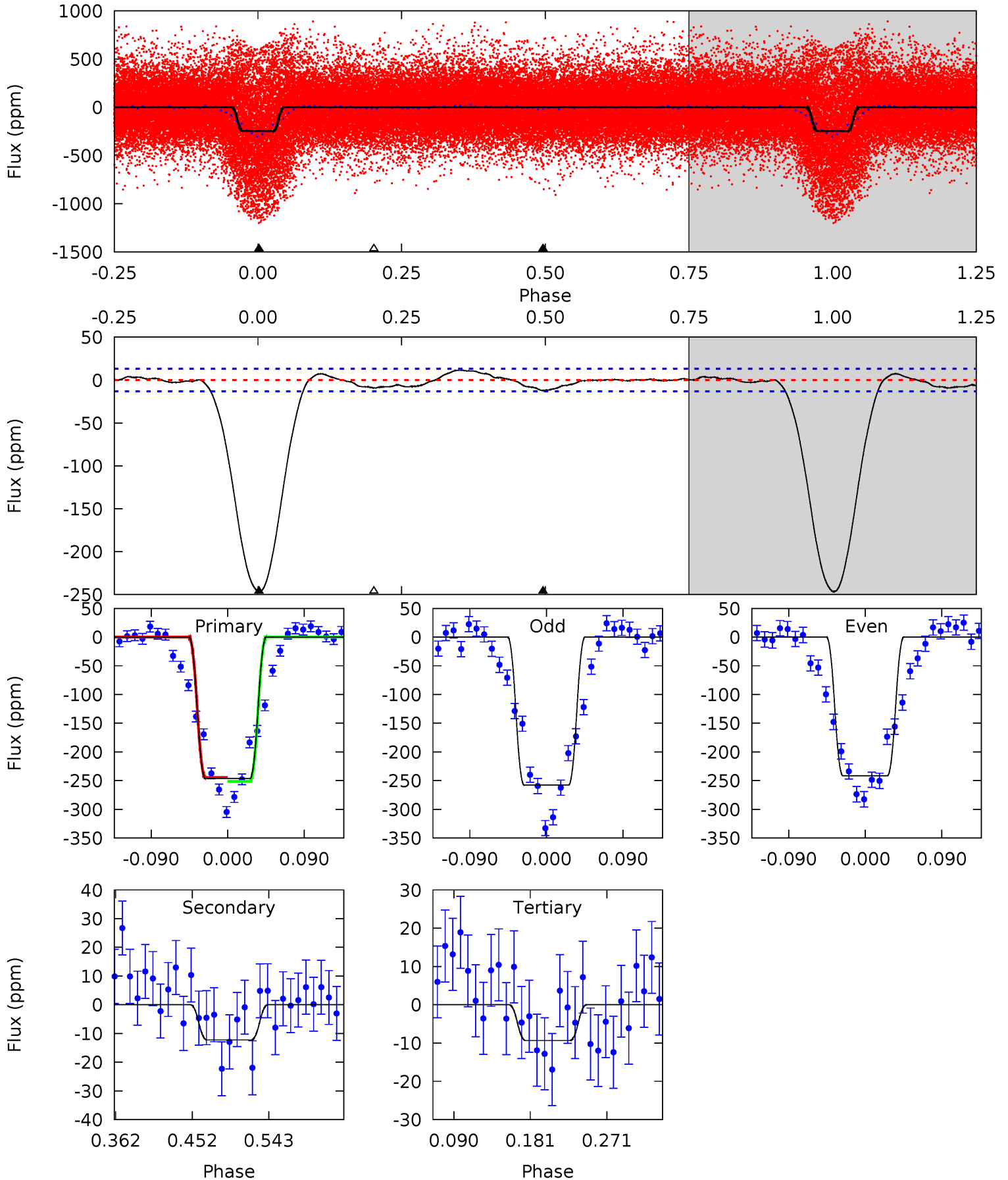
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	8.44	1.30	0	4.57	1.66	1.29	18.2	19.5	7.14	8.44	0.70	1.19	0.14	2.82



Alt Model-Shift Uniqueness Test

002708270-01, P = 1.891253 Days, E = 132.686948 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
86.5	4.29	3.28	0	4.59	1.69	1.78	83.2	86.5	1.02	4.29	2.84	0.99	0.04	1.19



Stellar Parameters For KIC 002708270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4449^{+135}_{-90}	$2.031^{+0.033}_{-0.030}$	$-0.340^{+0.250}_{-0.200}$	$14.894^{+4.564}_{-0.507}$	$0.870^{+0.635}_{-0.033}$	$0.000^{+0.000}_{-0.000}$
	+3%/-2%	+2%/-1%	+74%/-59%	+31%/-3%	+73%/-4%	+8%/-25%
Source	PHO54	AST54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002708270-01 / KOI 4951.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-96 ± 11	$16.87^{+7.32}_{-7.59}$	6265^{+223}_{-160}	-4301^{+8849}_{-432}	$0.154^{+0.328}_{-0.078}$
Alt.	-12 ± 3	$27.82^{+7.98}_{-7.78}$	6265^{+222}_{-163}	-4957^{+126}_{-195}	$0.007^{+0.007}_{-0.003}$

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

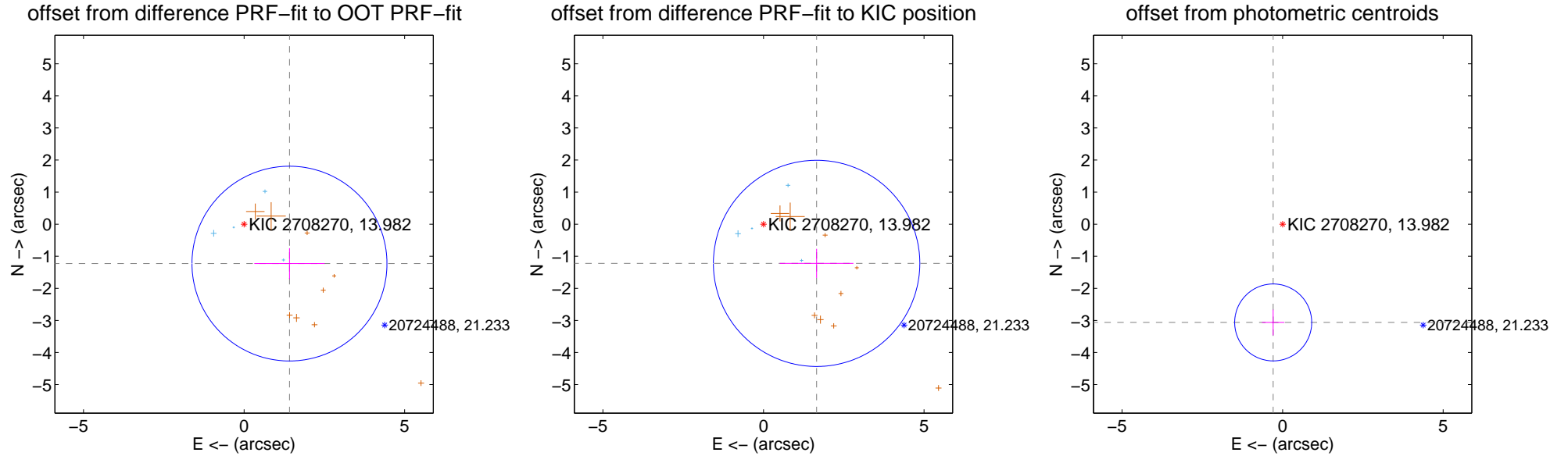
DV Centroid Data

Supplemental centroid analysis for 002708270-01. Kepler magnitude: 13.98. Transit SNR 11.88

There are 4 quarters with good PRF difference image offsets

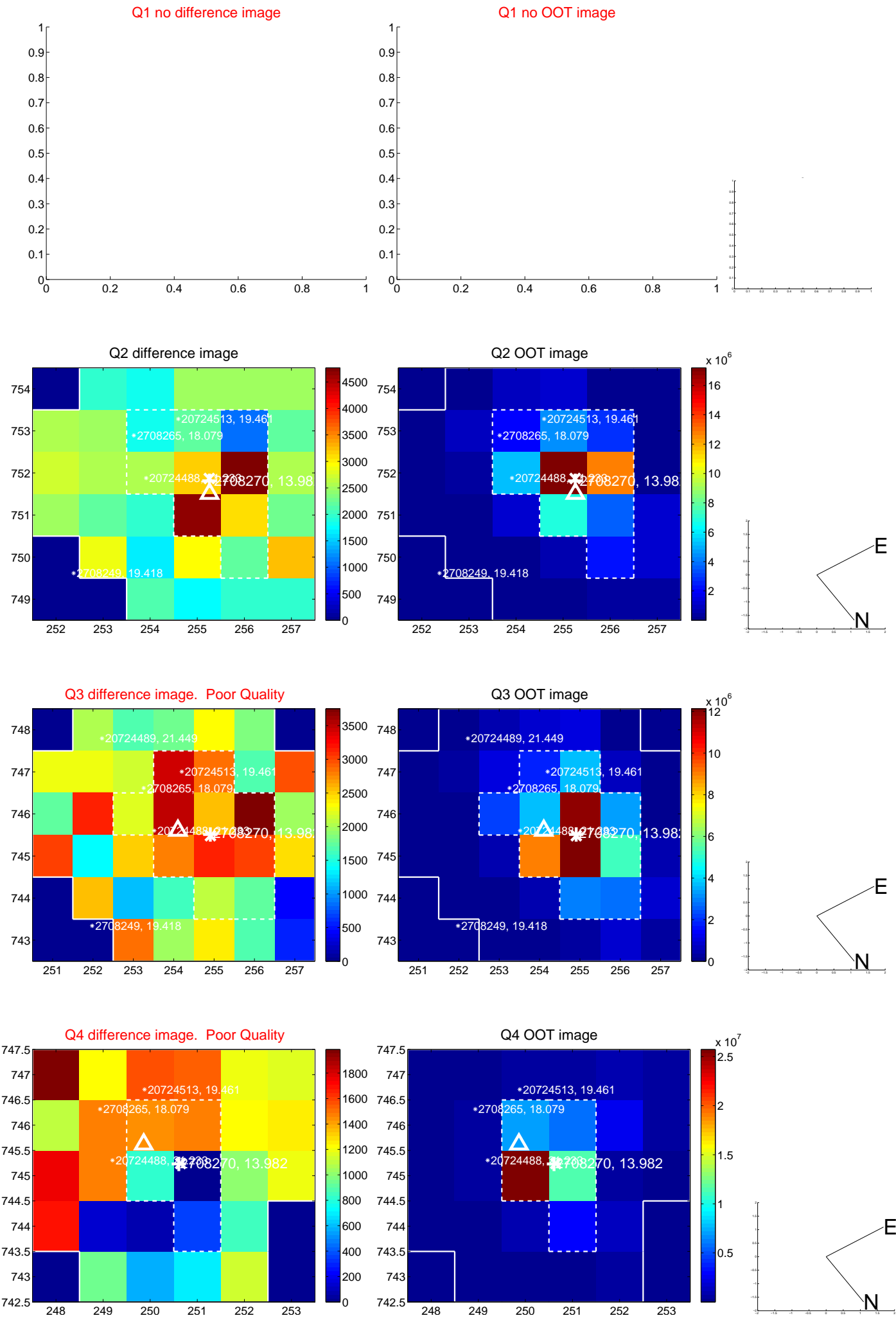
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.873 ± 1.012	1.85	-1.413 ± 1.095	-1.229 ± 0.480
PRF-fit source offset from KIC position	2.057 ± 1.071	1.92	-1.654 ± 1.146	-1.222 ± 0.454
photometric centroid source offset	3.08 ± 0.40	7.70	0.29 ± 0.35	-3.06 ± 0.40

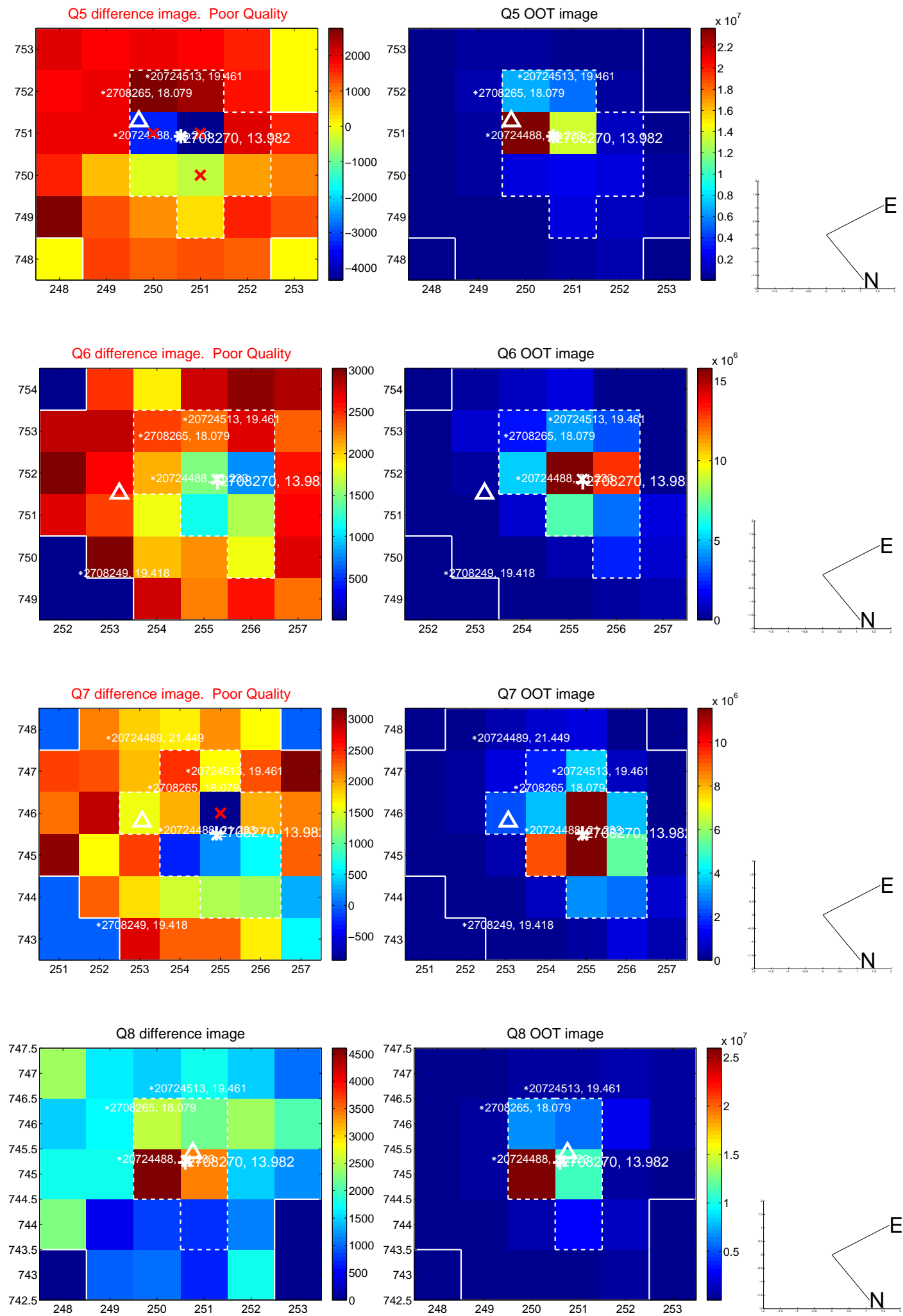


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

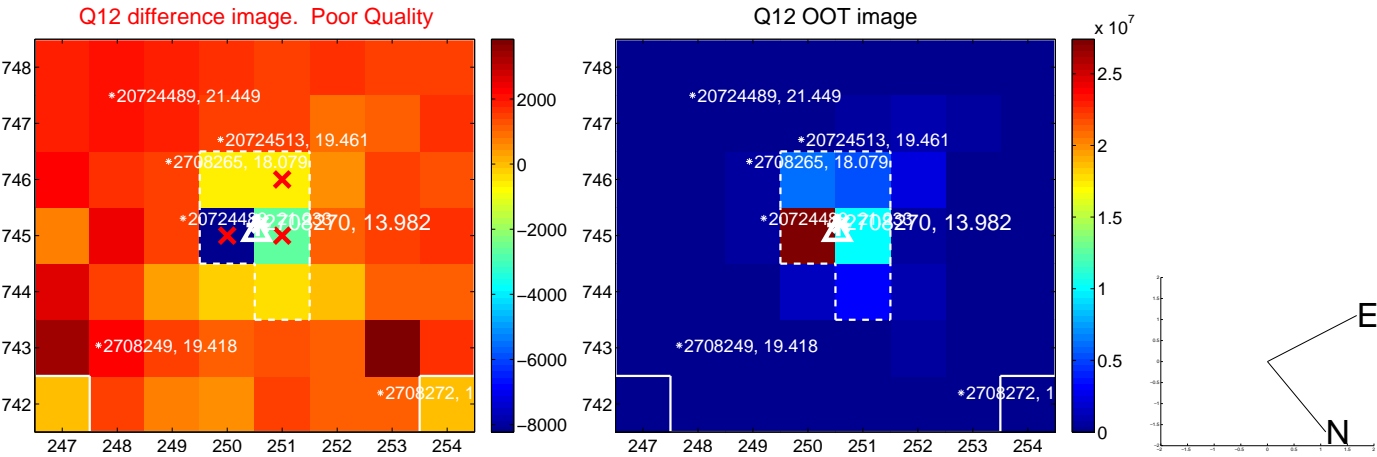
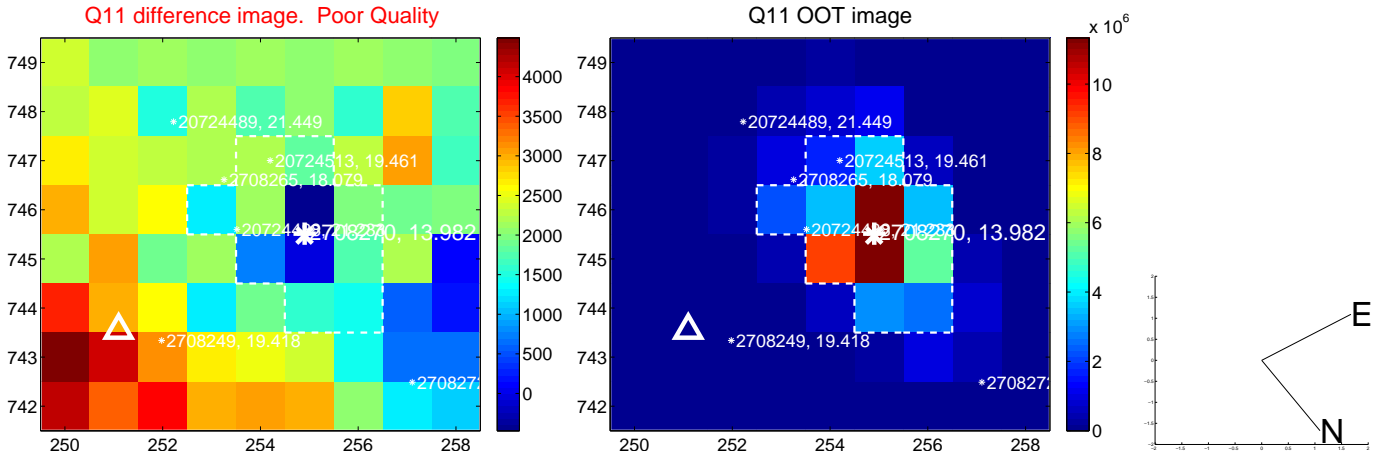
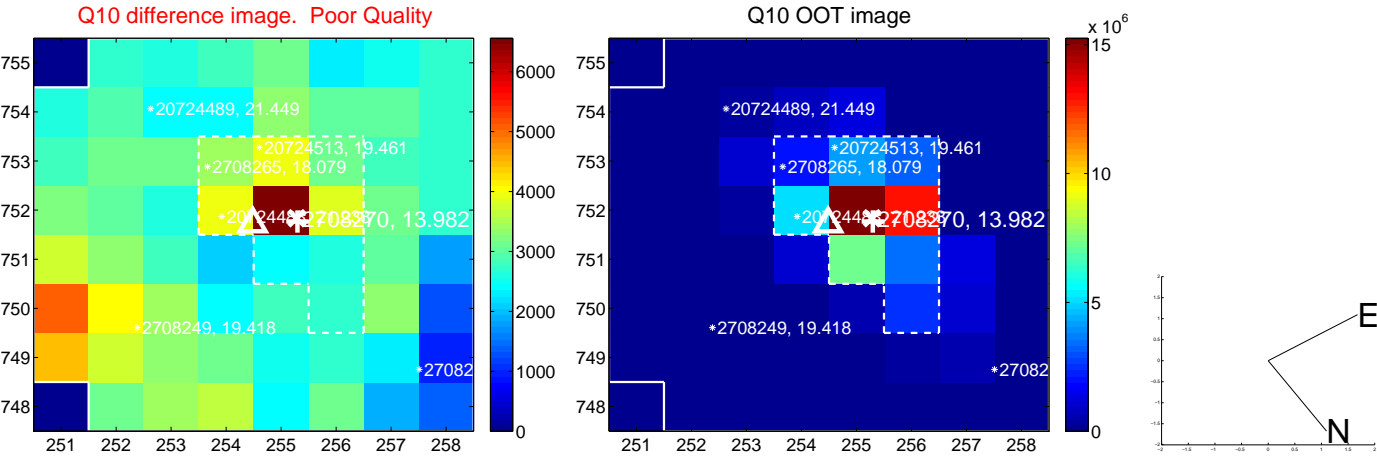
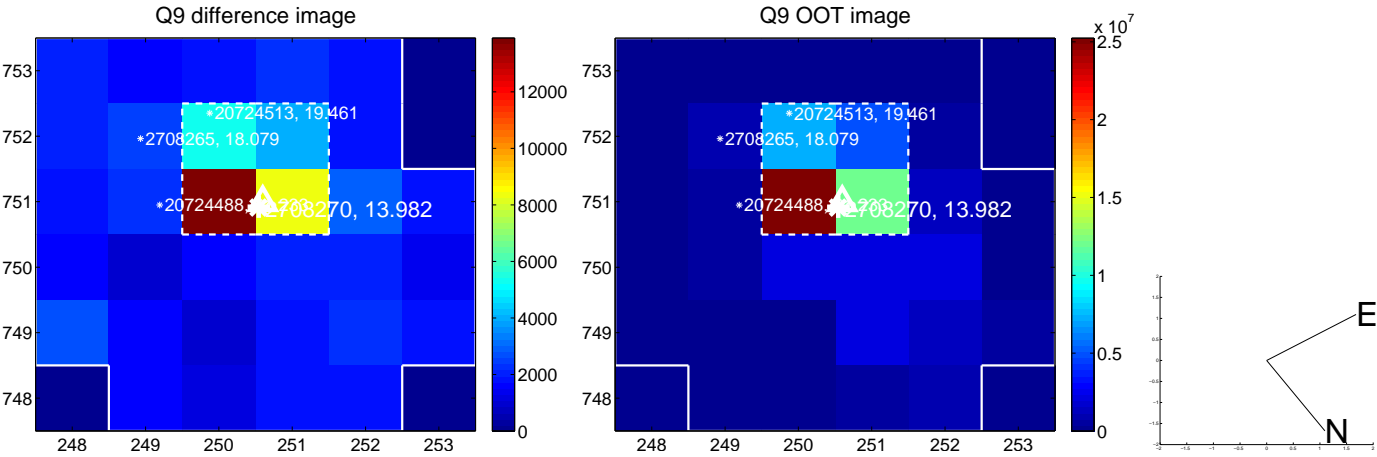
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



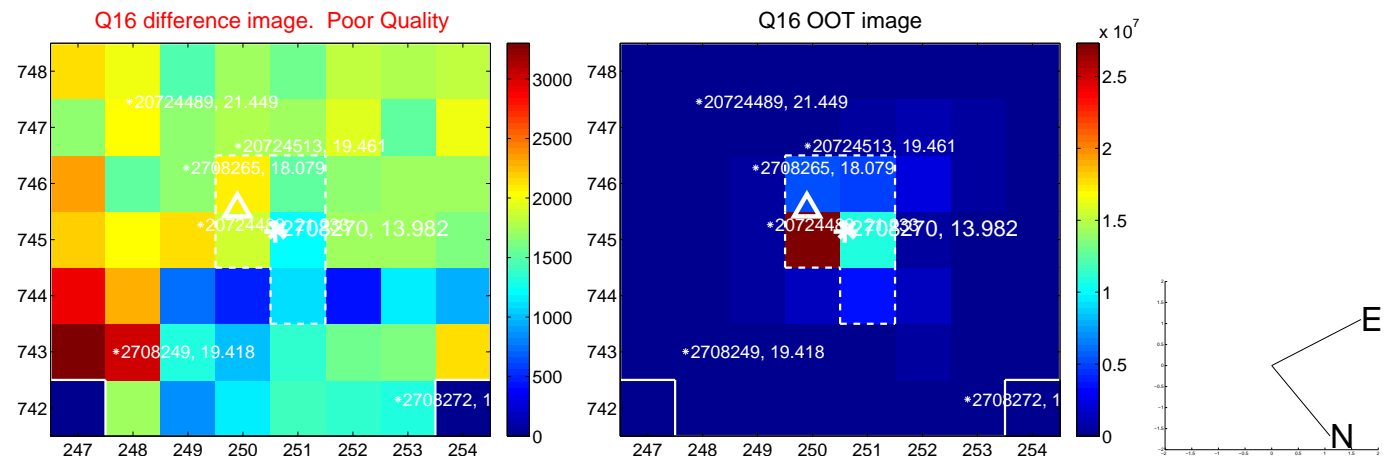
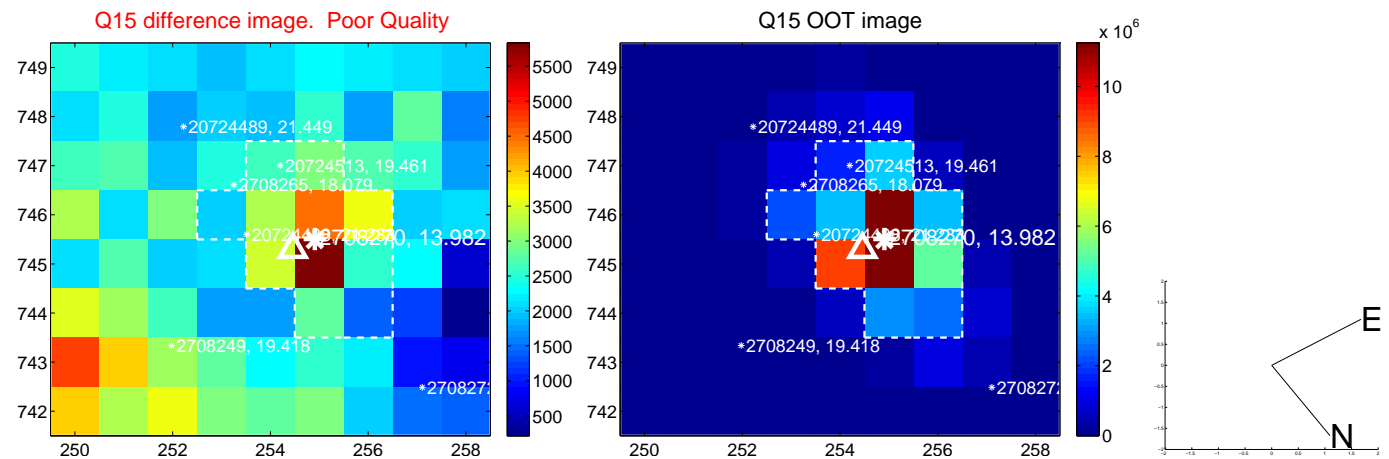
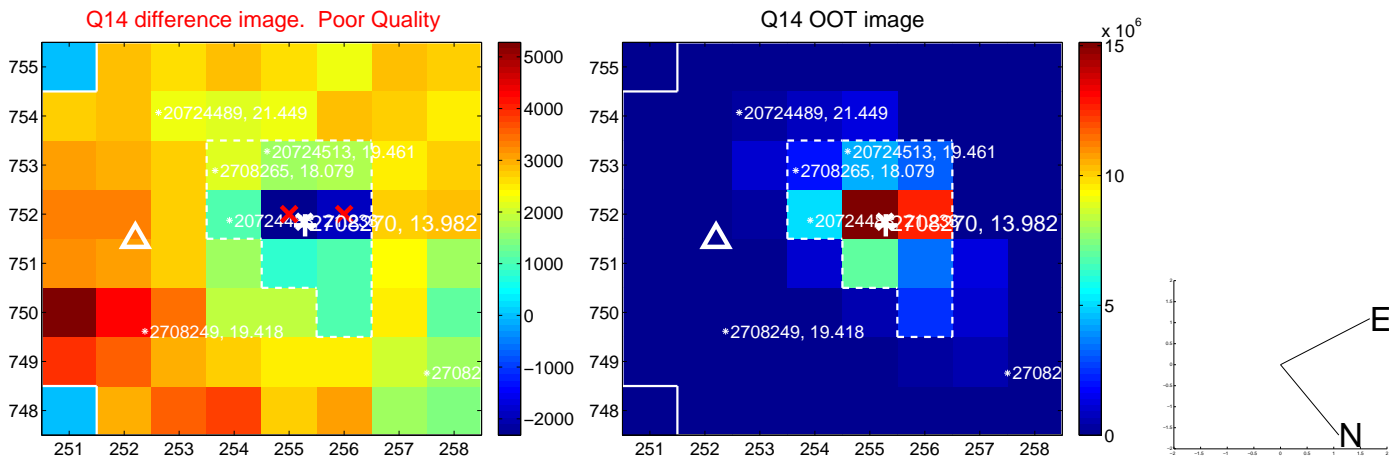
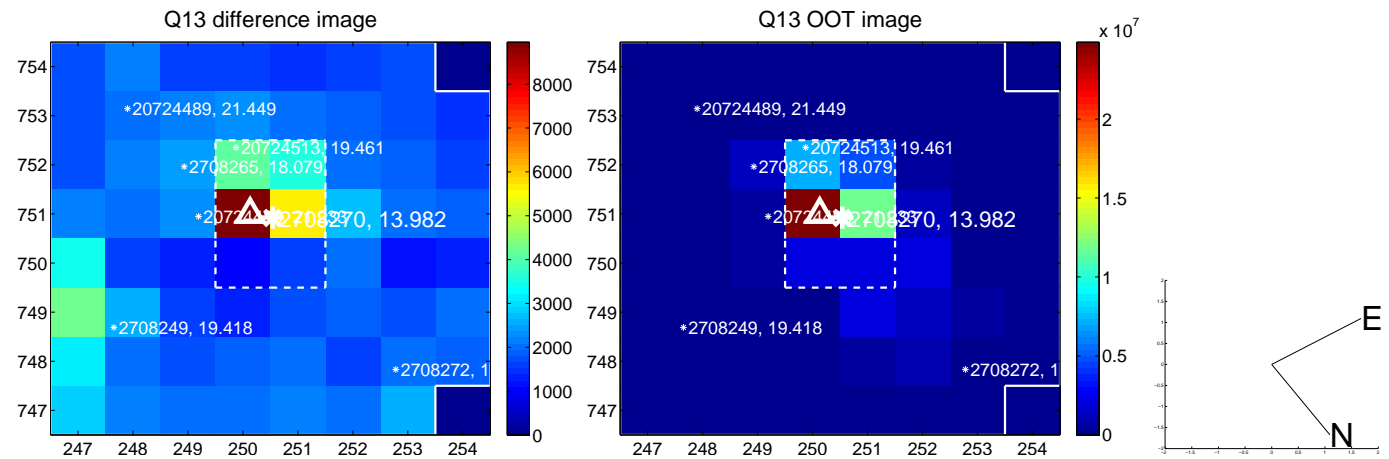
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



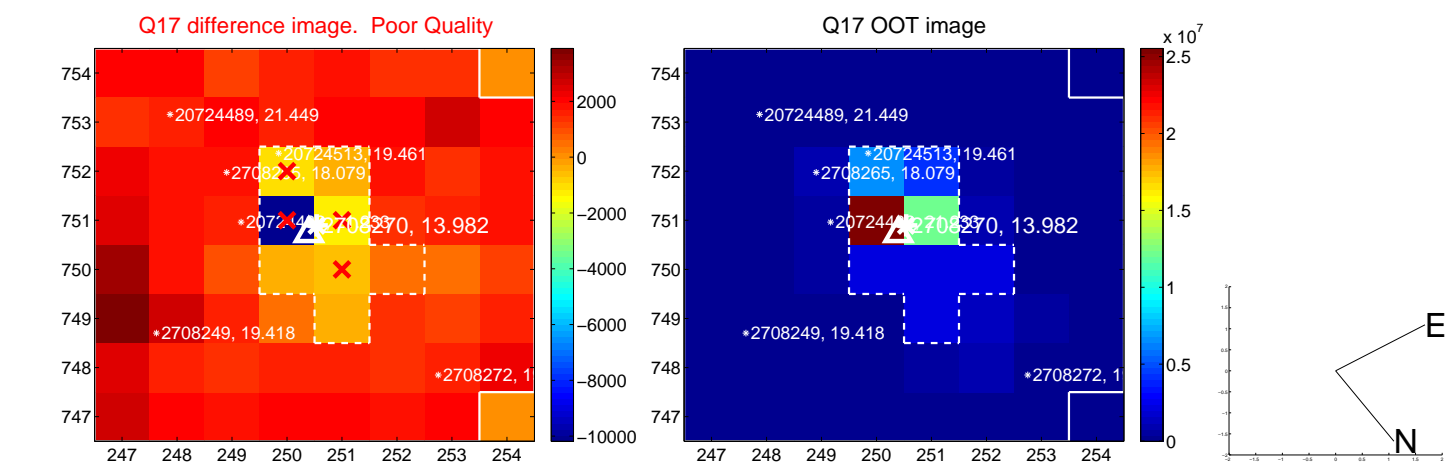
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



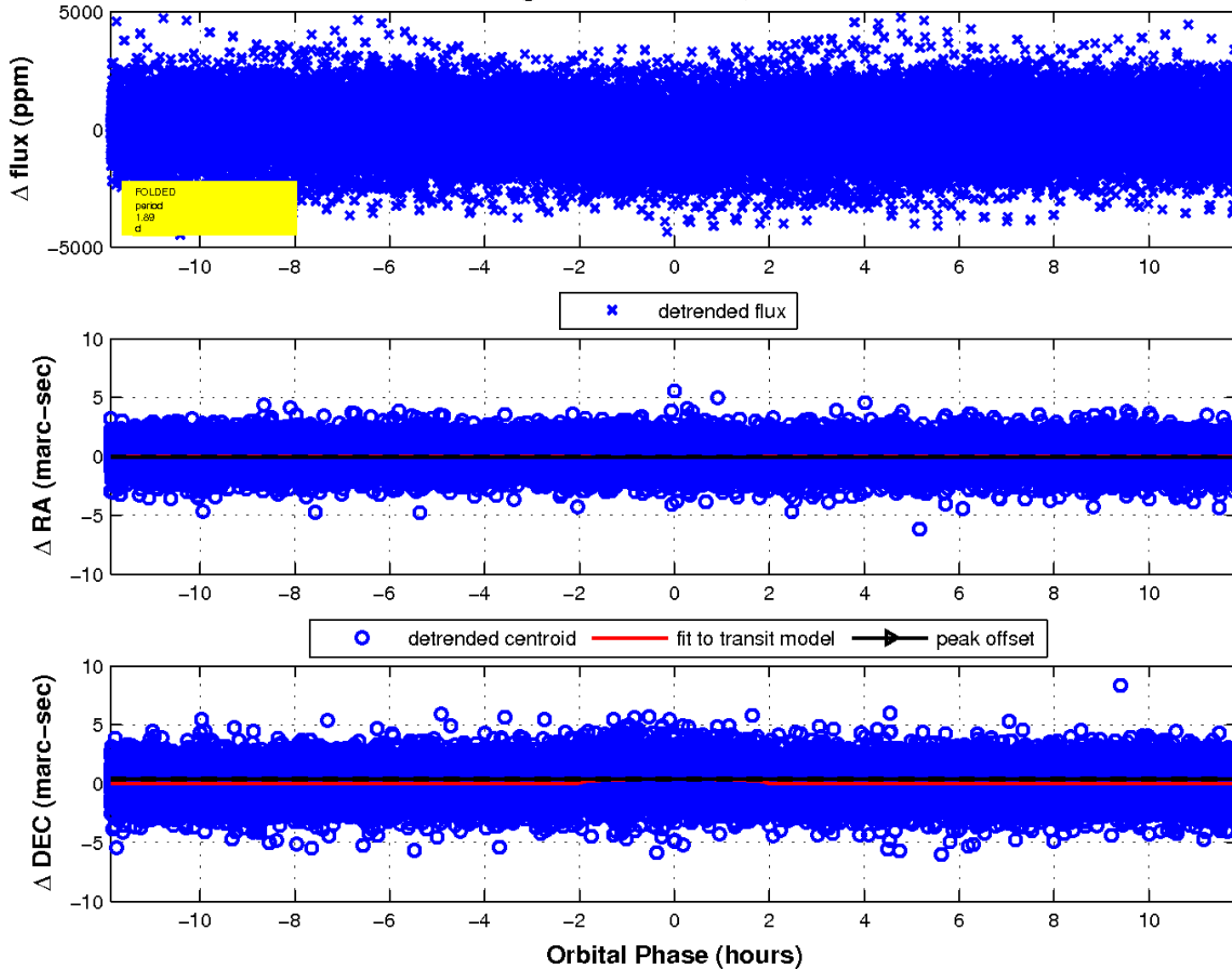
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

