

KIC 002166206

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})
002166206-01	OBS	1028.01	8.096968	132.644397	220.6	3.411	31.5	28.3	1.71	5949	3.75	485.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002166206-01	OBS	FP	0.00	0	0	1	1	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 002166206-01

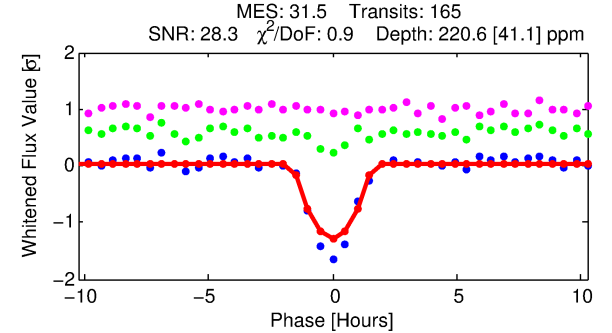
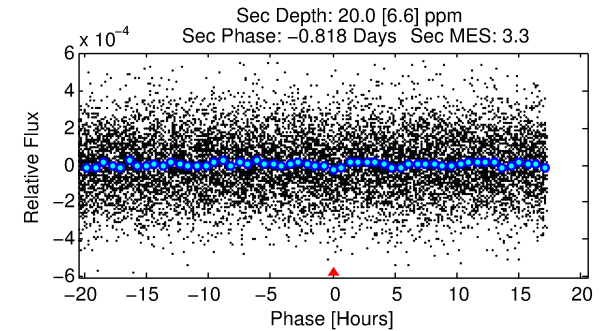
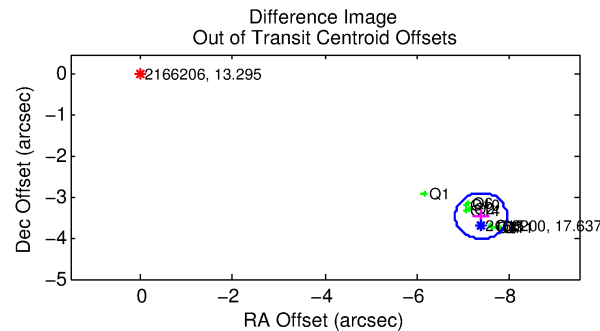
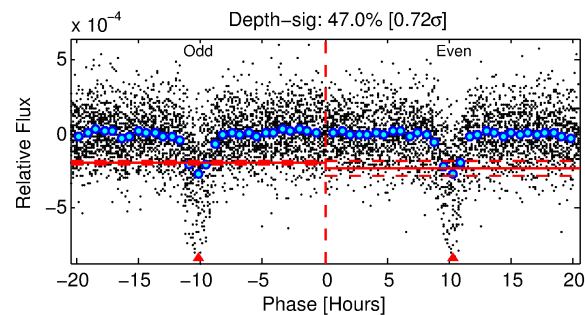
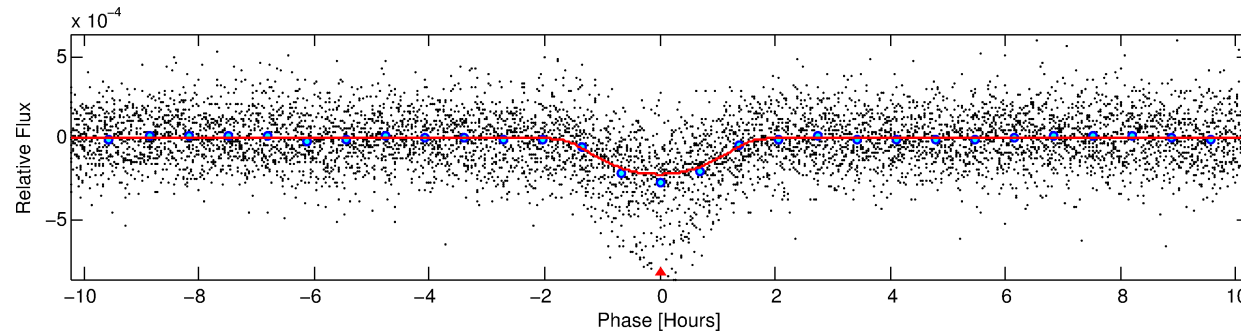
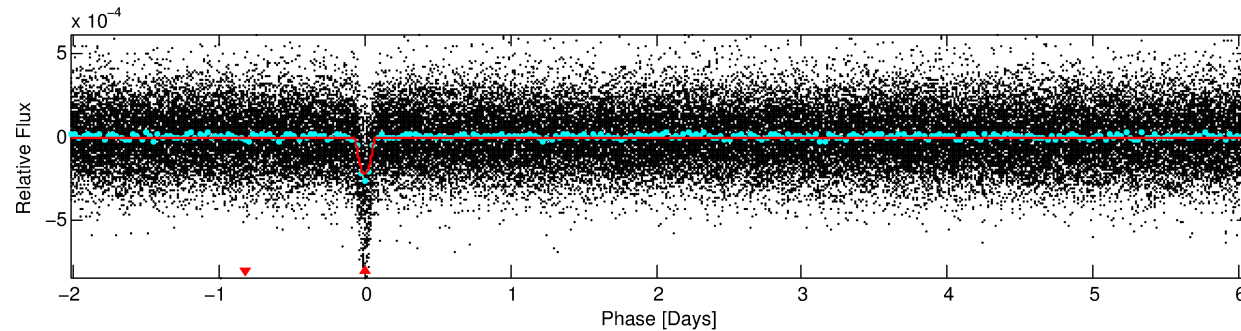
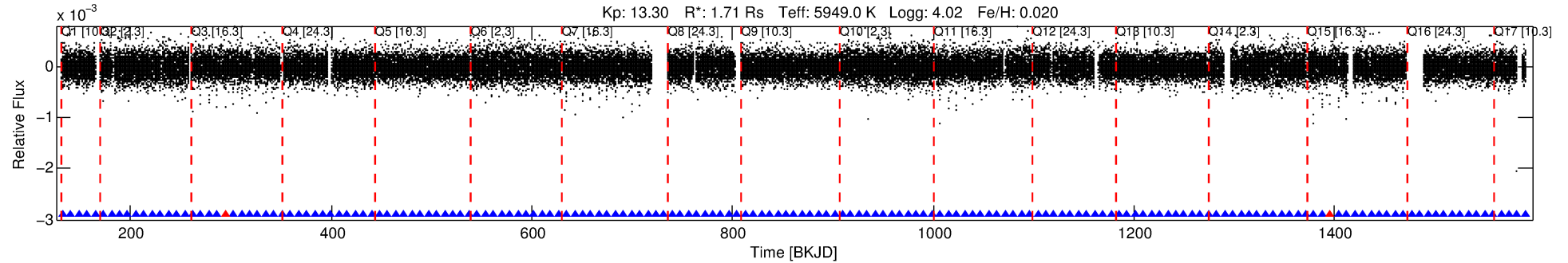
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
002166206-01	2166206	3735.01	2166200	1:1	8.3	-1	-2	17.64	13.30	567.06	Direct-PRF	0	0.14	0.06

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: 2166206 Candidate: 1 of 1 Period: 8.097 d
KOI: K01028.01 Corr: 0.991

Kp: 13.30 R*: 1.71 Rs Teff: 5949.0 K Logg: 4.02 Fe/H: 0.020



DV Fit Results:

Period = 8.09697 [0.00003] d
Epoch = 132.6444 [0.0029] BKJD
Rp/R* = 0.0201 [0.0054]
a/R* = 4.84 [0.75]
b = 0.99 [0.01]
Seff = 485.73 [170.57]
Teq = 1197 [105] K
Rp = 3.75 [1.33] Re
a = 0.0820 [0.0179] AU
Ag = 5.25 [3.80] [1.12σ]
Teffp = 2802 [446] K [3.51σ]

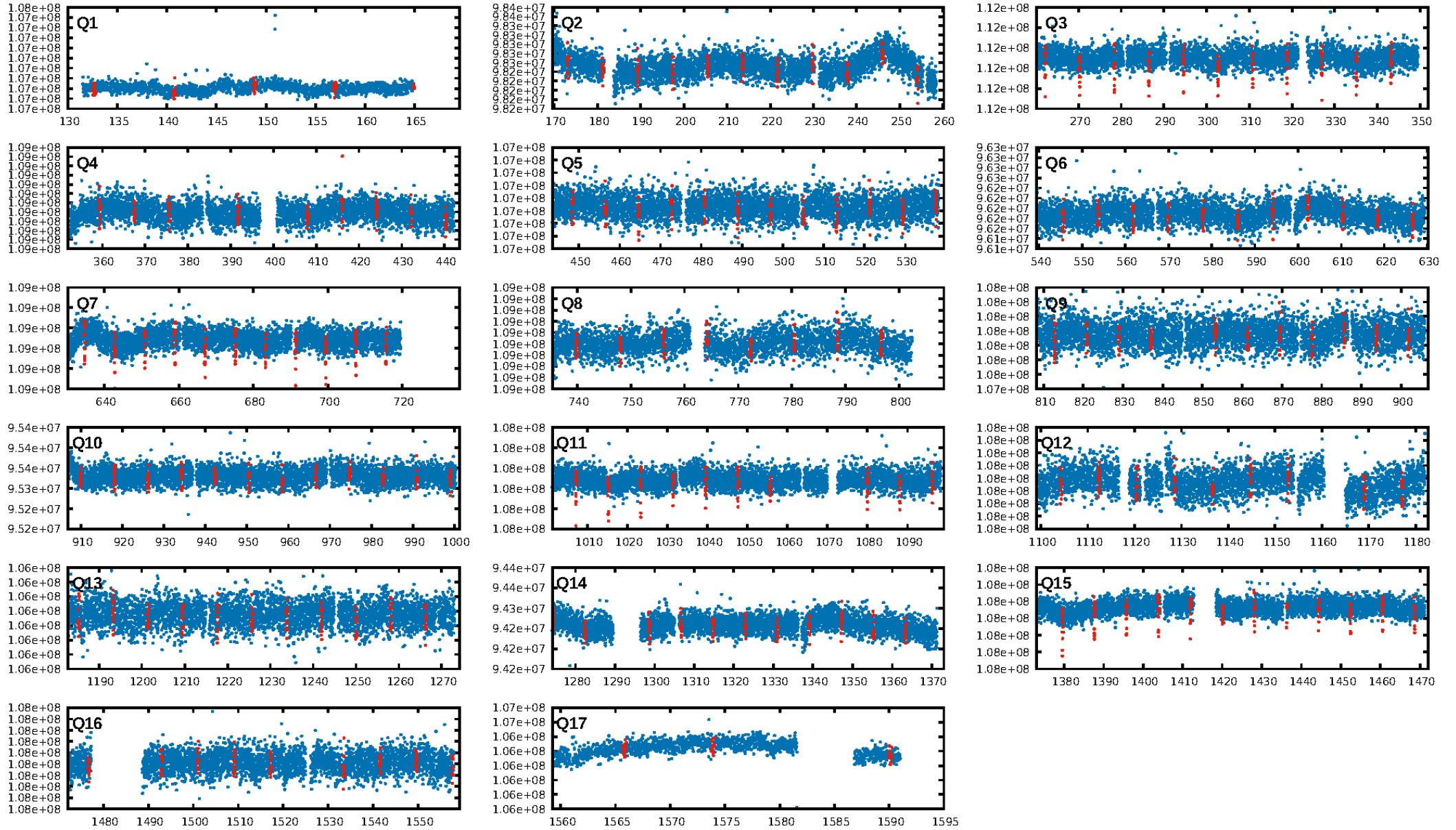
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 7.90e-212
RollingBand-fgt: 0.99 [155/157]
GhostDiagnostic-chr: -0.3756
Centroid-sig: 0.0%
Centroid-so: 32.879 arcsec [76.62σ]
OotOffset-rm: 8.144 arcsec [43.48σ]
KicOffset-rm: 8.201 arcsec [40.86σ]
OotOffset-st: 4/4/0/1 [9]
KicOffset-st: 4/4/0/1 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [17/17]

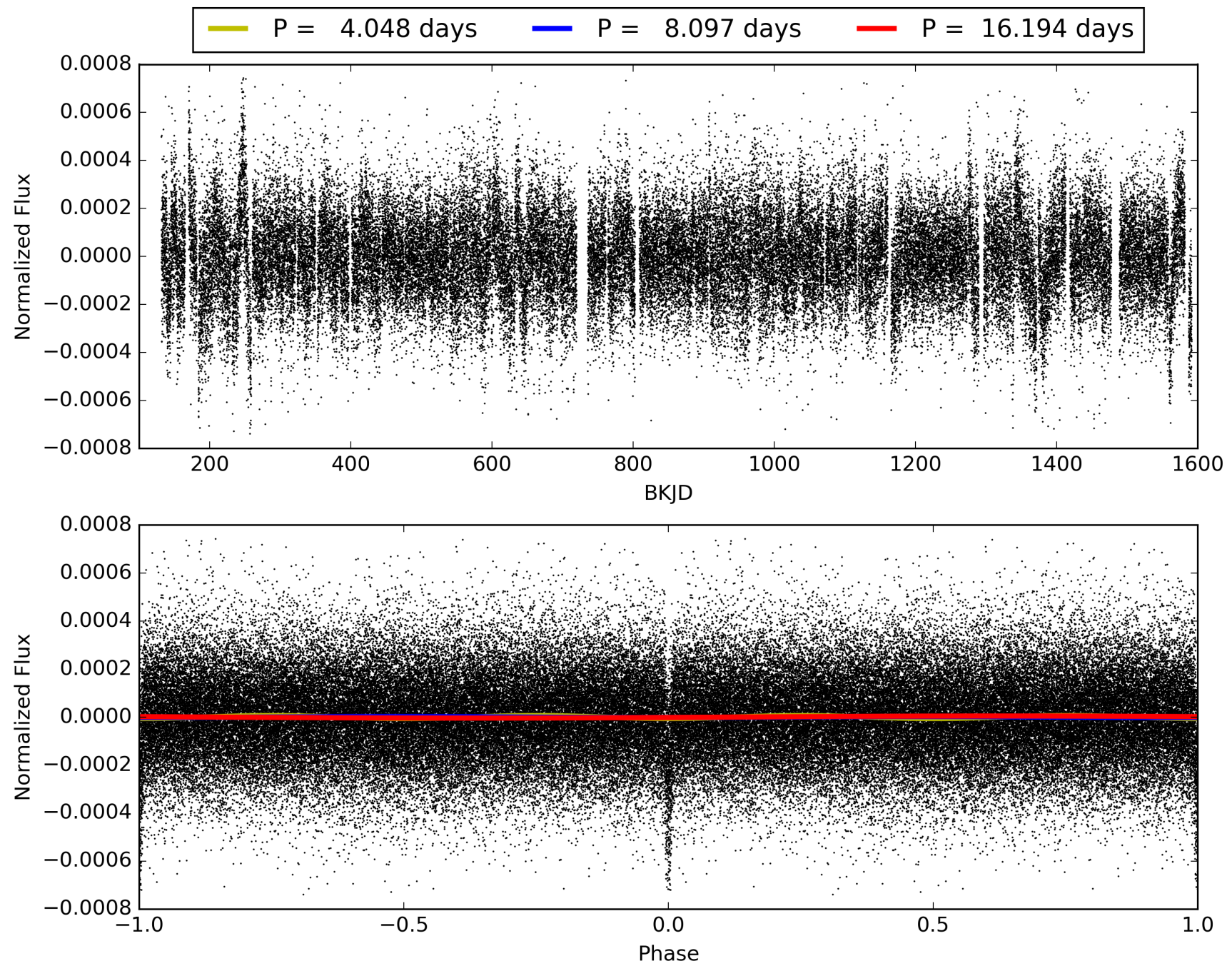
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:04:53 Z

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

TCE 002166206-01, PDC Light Curves

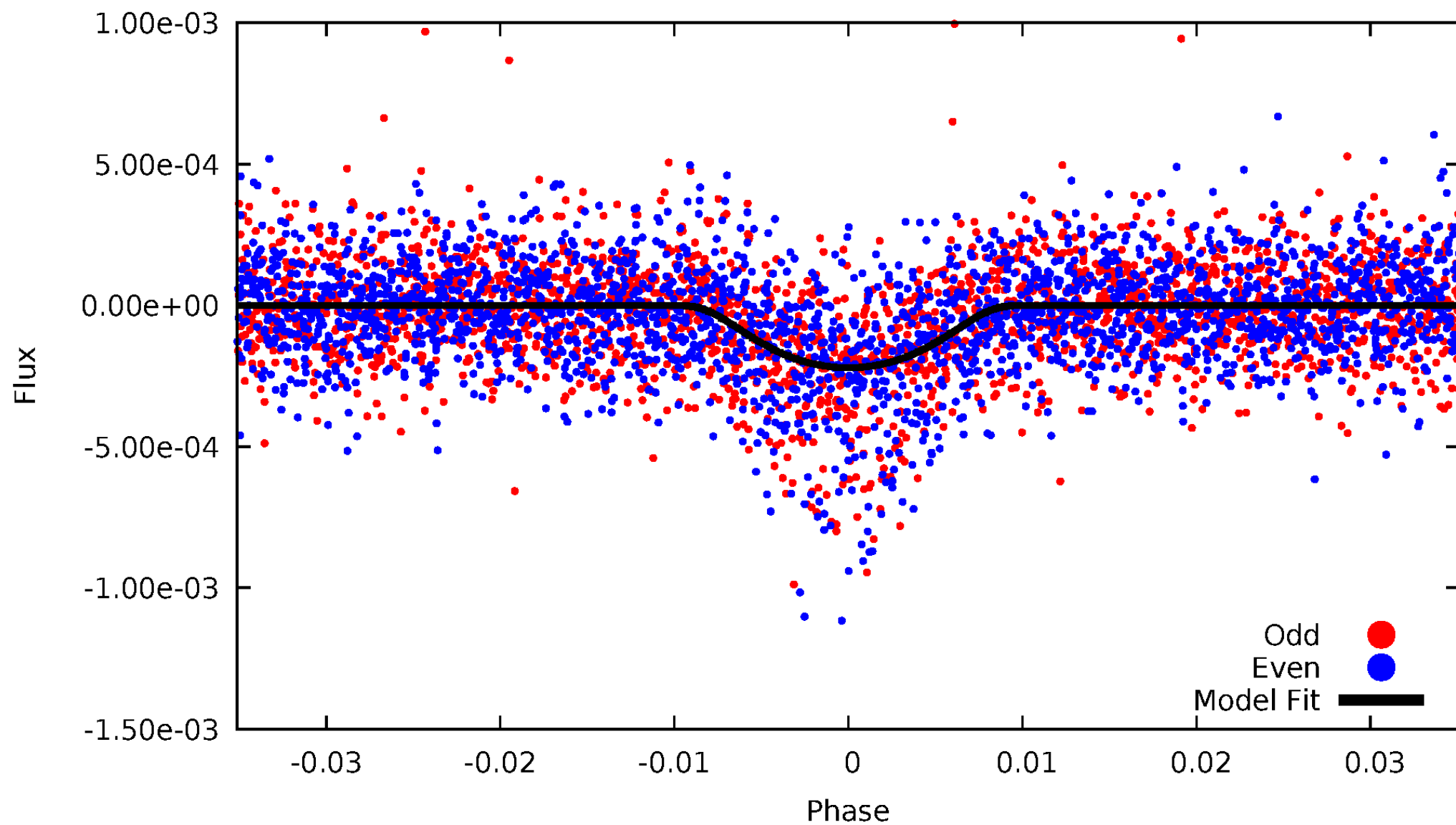


TCE 002166206-01



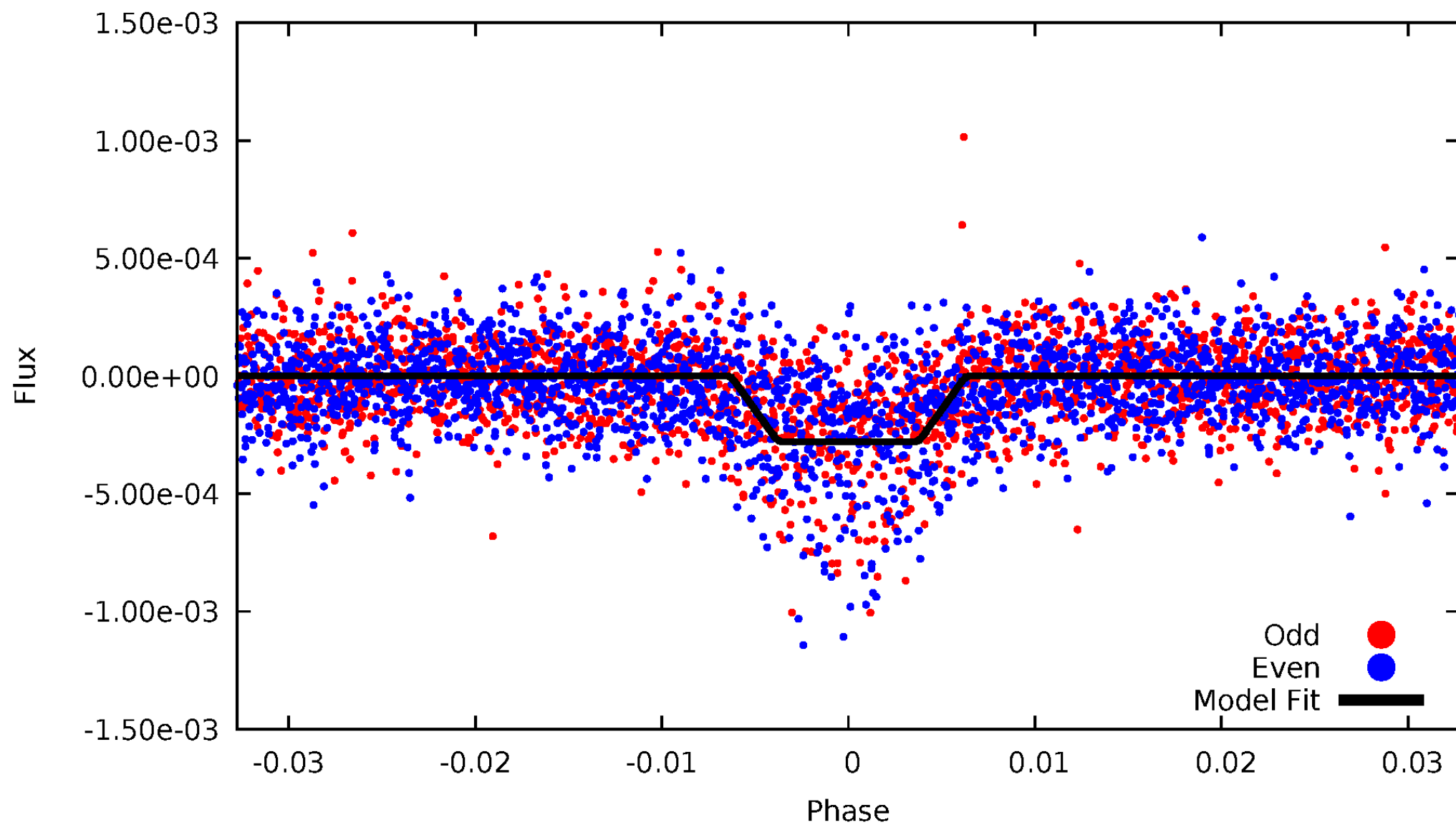
DV Odd/Even

TCE 002166206-01



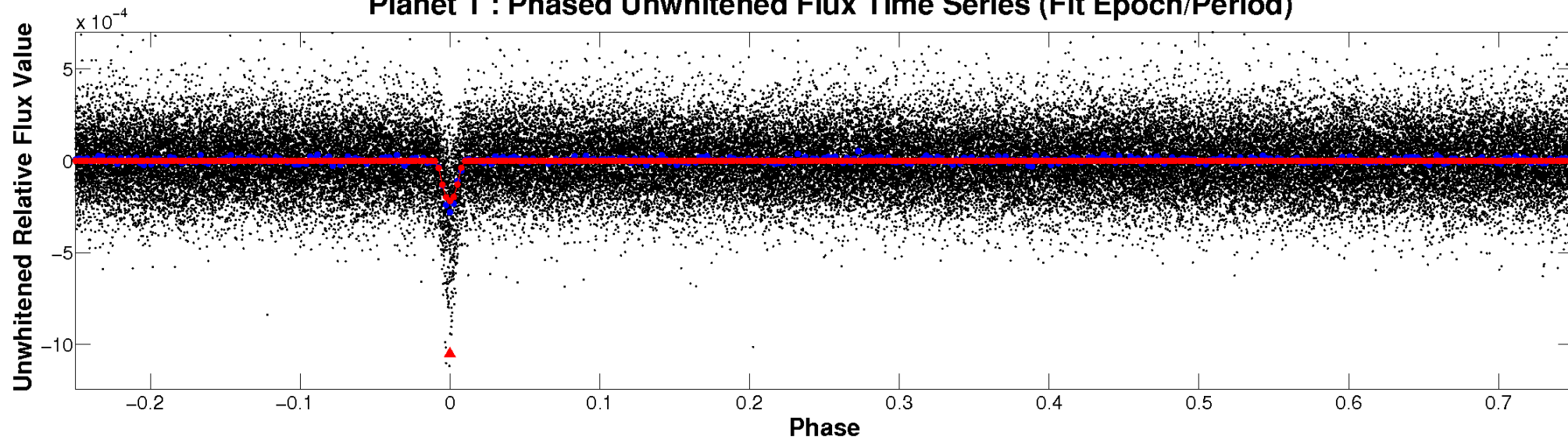
ALT Odd/Even

TCE 002166206-01

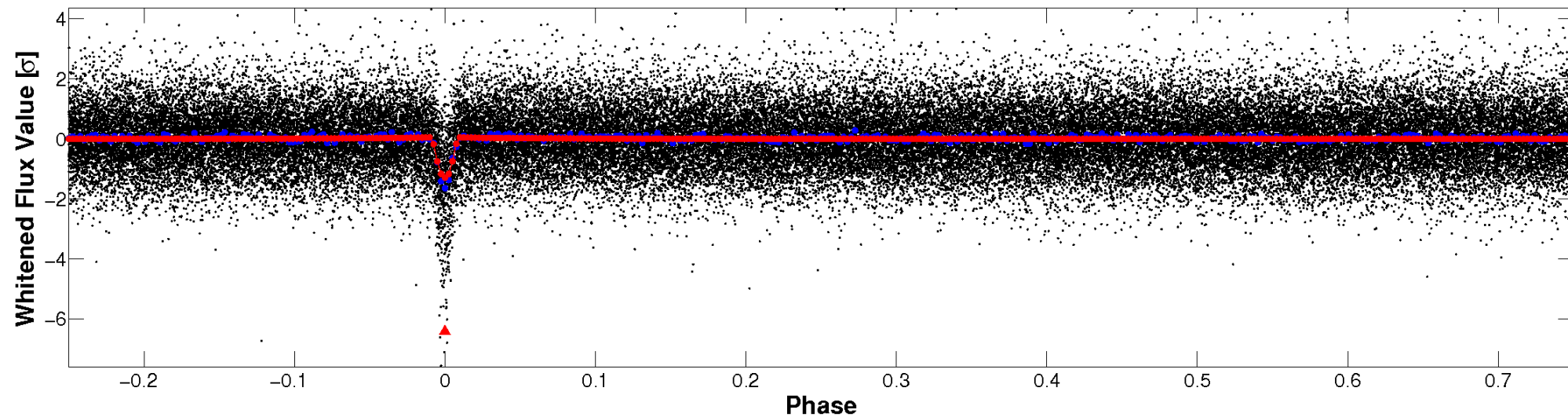


Non-Whitened Vs. Whitened Light Curve

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

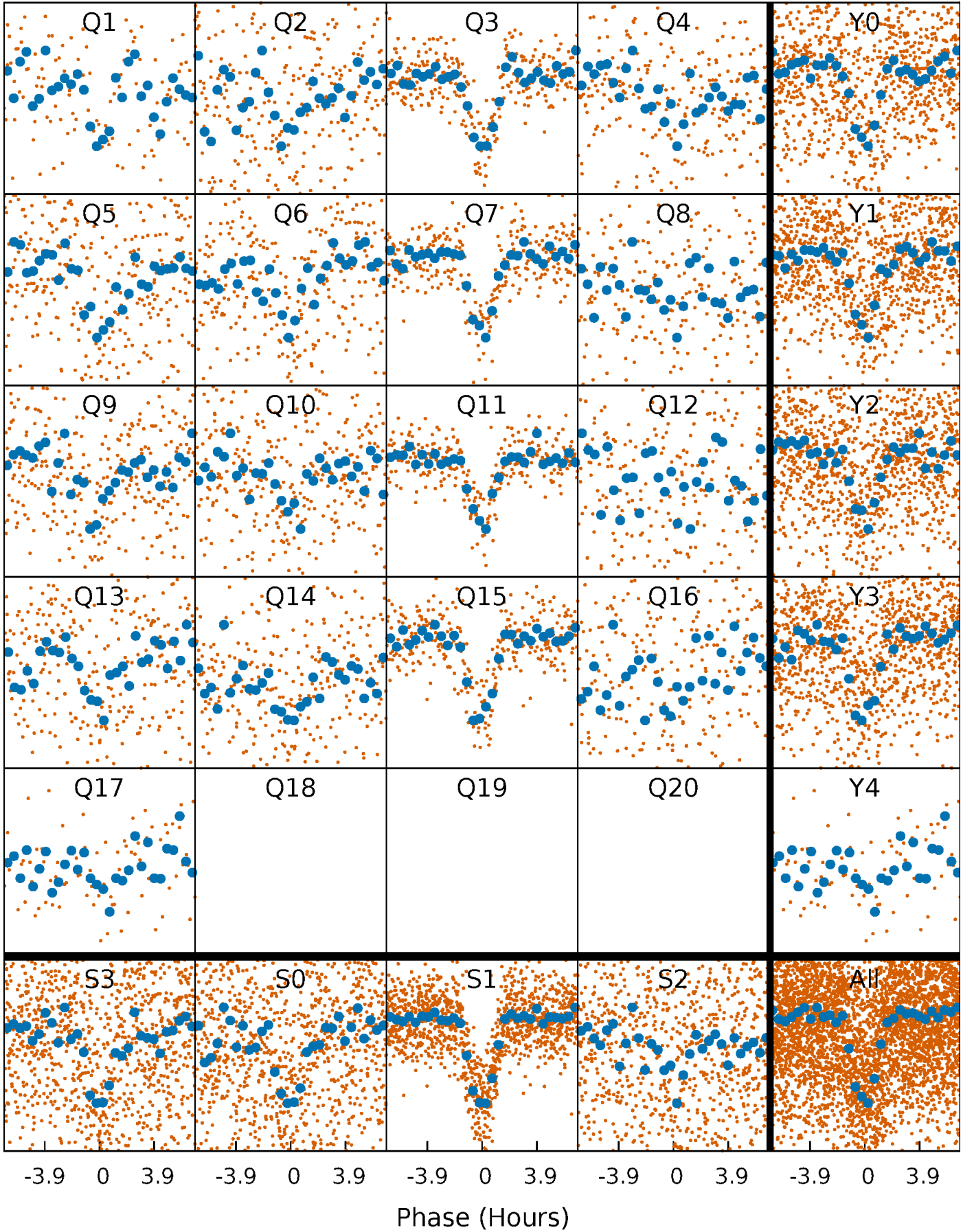


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



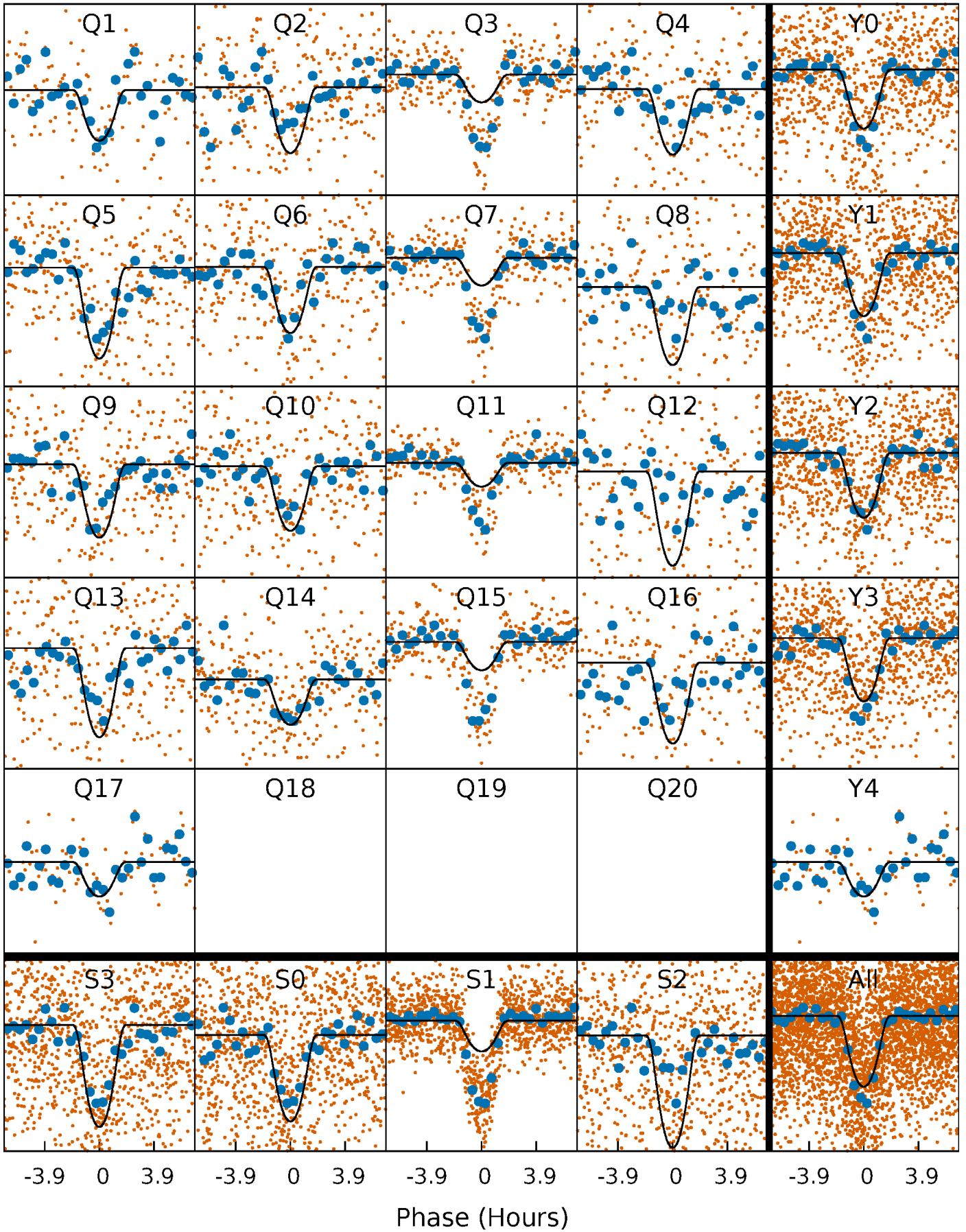
PDC Quarter-Phased Transit Curves

TCE 002166206-01 P= 8.096968 Days $T_0=132.644396$ (BKJD)



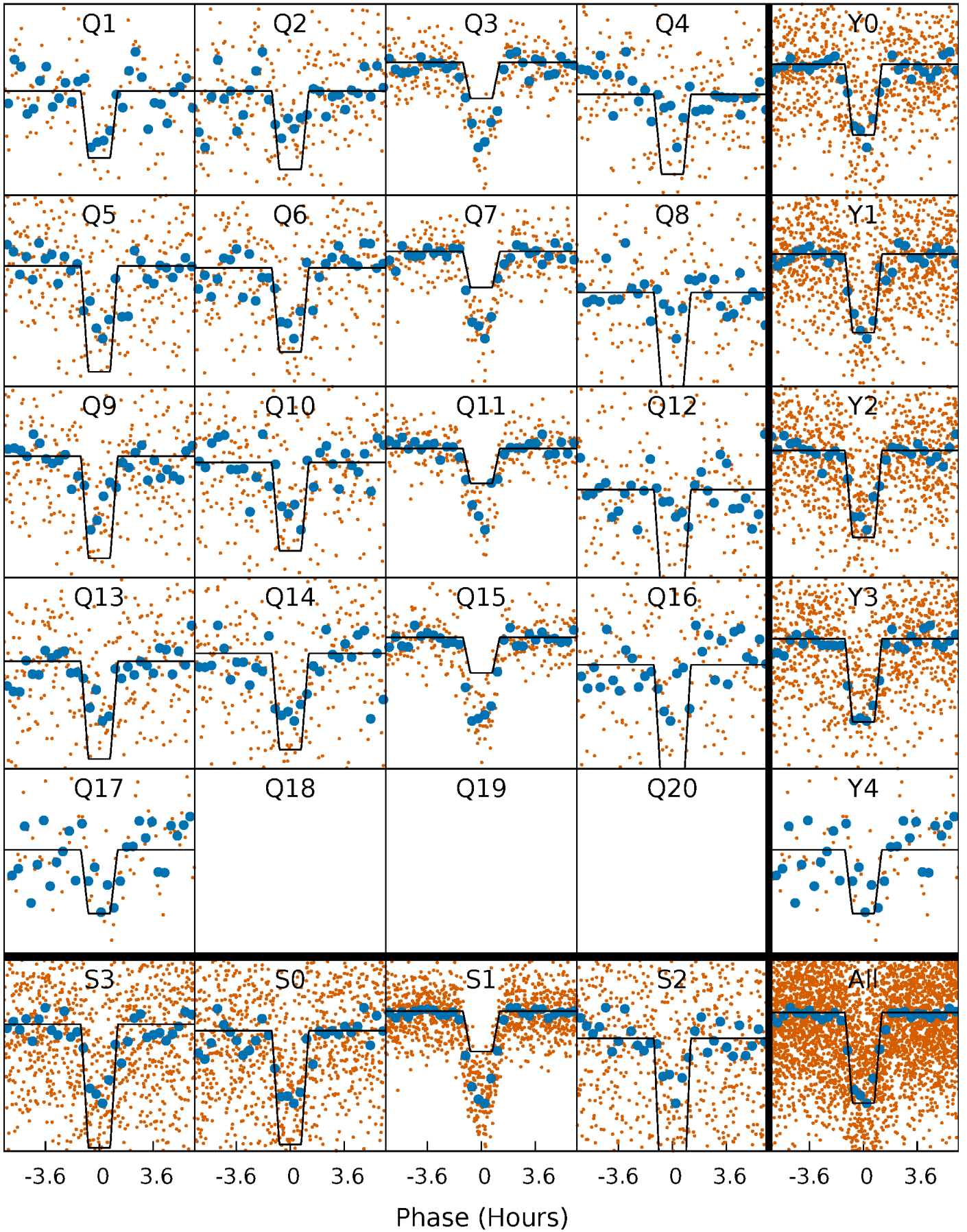
DV Quarter-Phased Transit Curves

TCE 002166206-01 P= 8.096968 Days $T_0=132.644396$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

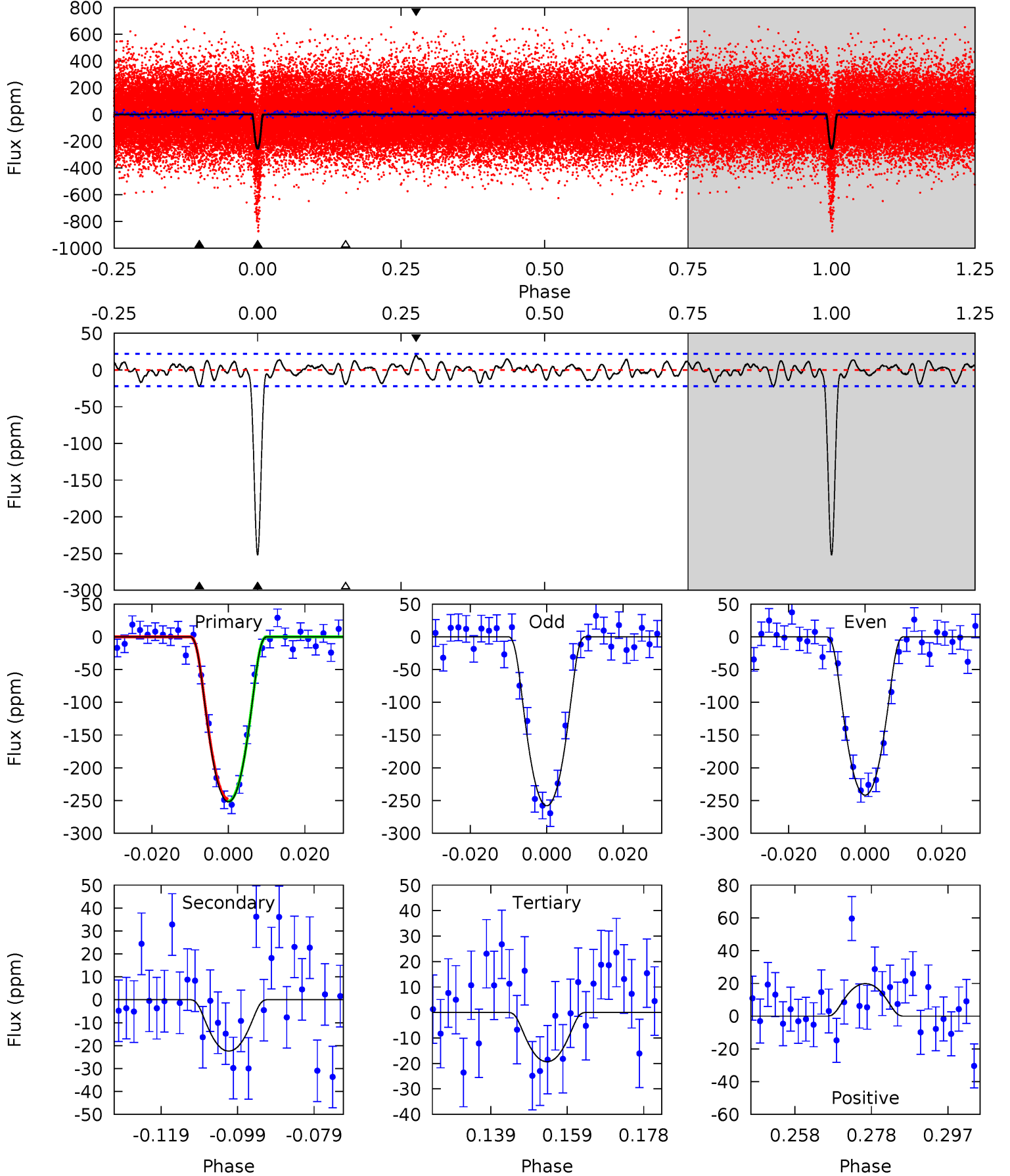
TCE 002166206-01 P= 8.096968 Days $T_0=132.643505$ (BKJD)



DV Model-Shift Uniqueness Test

002166206-01, P = 8.096968 Days, E = 124.547428 Days

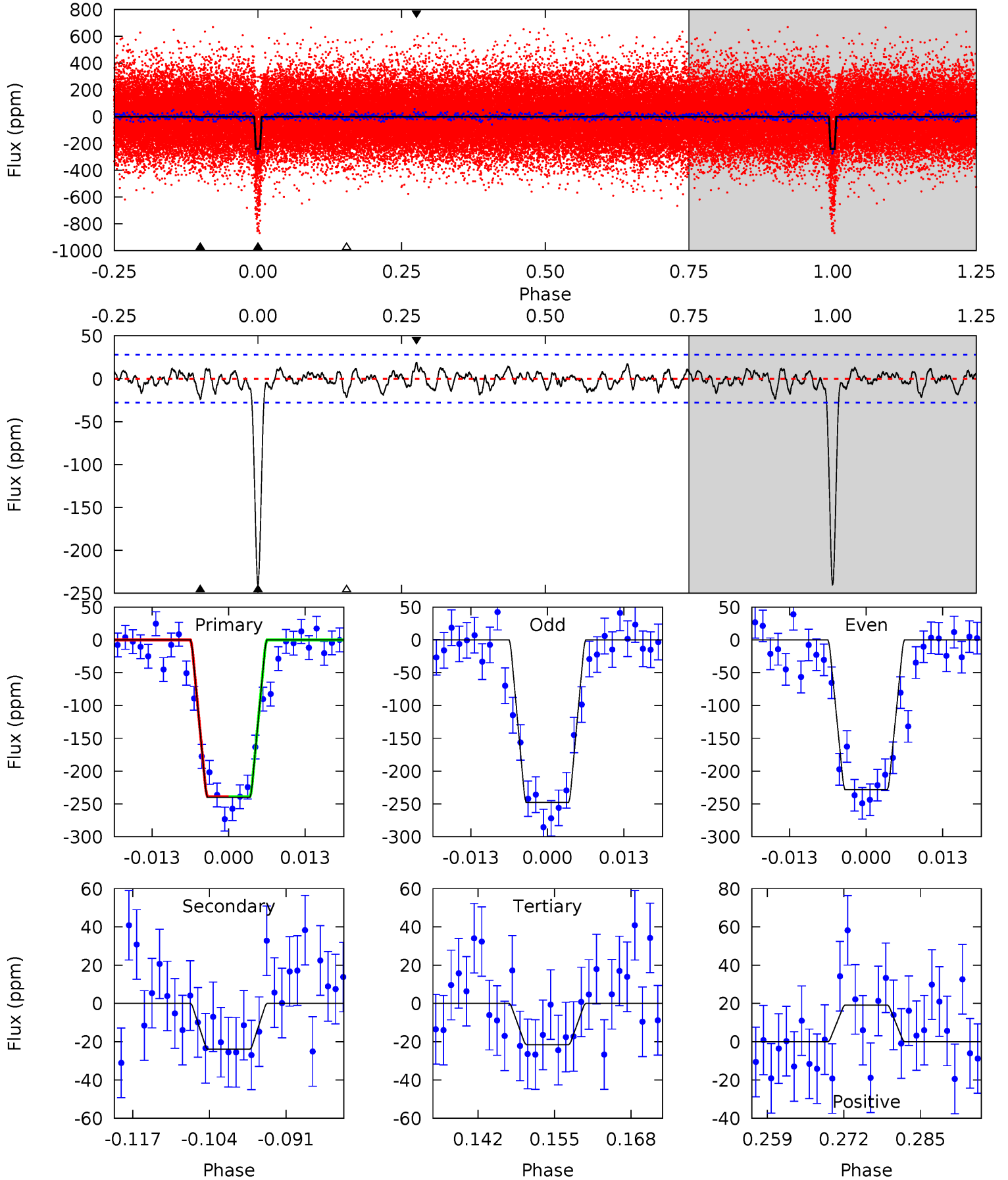
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.0	4.97	4.29	4.40	4.89	2.33	1.63	51.7	51.6	0.68	0.57	1.80	1.38	0.07	0.34



Alt Model-Shift Uniqueness Test

002166206-01, P = 8.096968 Days, E = 124.546537 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.9	4.27	3.84	3.42	4.98	2.49	1.27	39.1	39.5	0.43	0.85	1.76	1.50	0.07	0.00



Stellar Parameters For KIC 002166206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5949^{+80}_{-80}	$4.024^{+0.203}_{-0.087}$	$0.020^{+0.150}_{-0.150}$	$1.707^{+0.261}_{-0.391}$	$1.122^{+0.127}_{-0.101}$	$0.318^{+0.342}_{-0.096}$
	+1%/-1%	+5%/-2%	+750%/-750%	+15%/-23%	+11%/-9%	+108%/-30%
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 002166206-01 / KOI 1028.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-22 ± 5	$3.57^{+1.08}_{-0.98}$	1658^{+73}_{-94}	3380^{+375}_{-274}	$6.327^{+6.430}_{-2.762}$
Alt.	-24 ± 6	$2.90^{+1.10}_{-0.93}$	1657^{+75}_{-114}	3665^{+554}_{-368}	10^{+13}_{-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 $A_{\text{obs}} \gg 1.0$

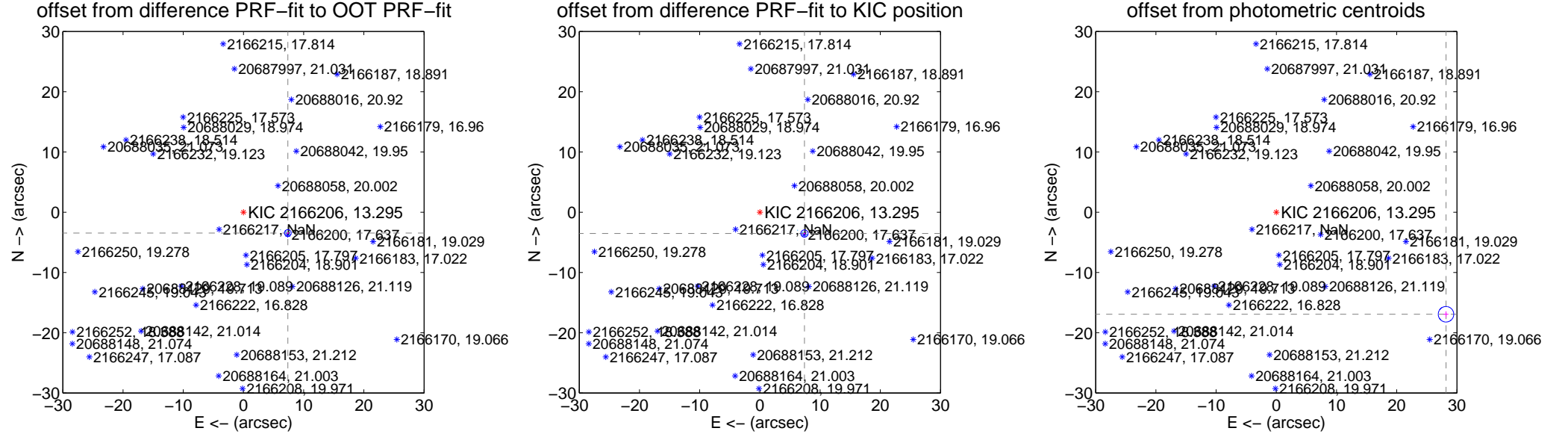
DV Centroid Data

Supplemental centroid analysis for 002166206-01. Kepler magnitude: 13.29. Transit SNR 28.29

There are 9 quarters with good PRF difference image offsets

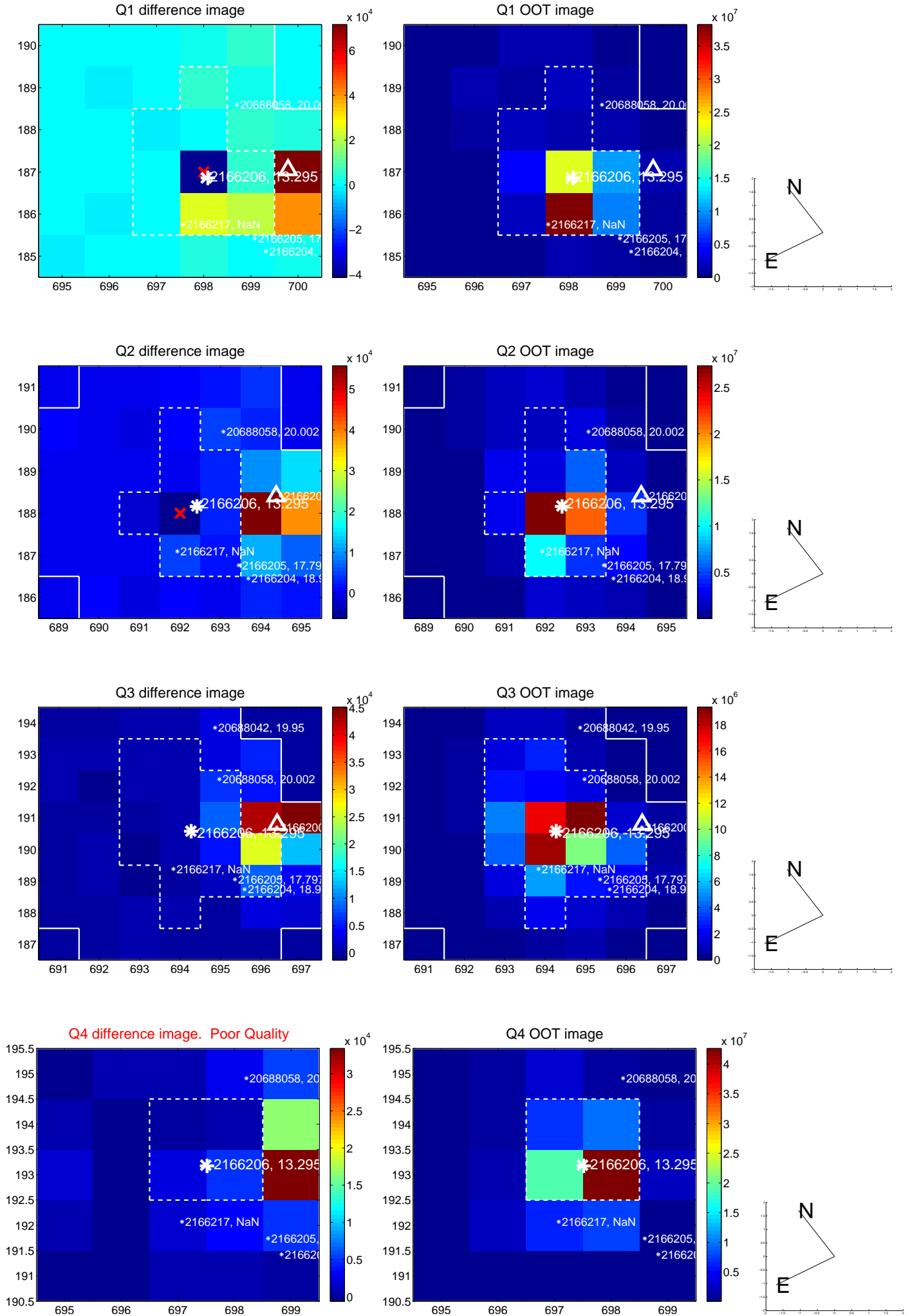
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.144 ± 0.187	43.48	-7.375 ± 0.165	-3.454 ± 0.116
PRF-fit source offset from KIC position	8.201 ± 0.201	40.86	-7.401 ± 0.177	-3.532 ± 0.119
photometric centroid source offset	32.88 ± 0.43	76.63	-28.18 ± 0.41	-16.93 ± 0.49

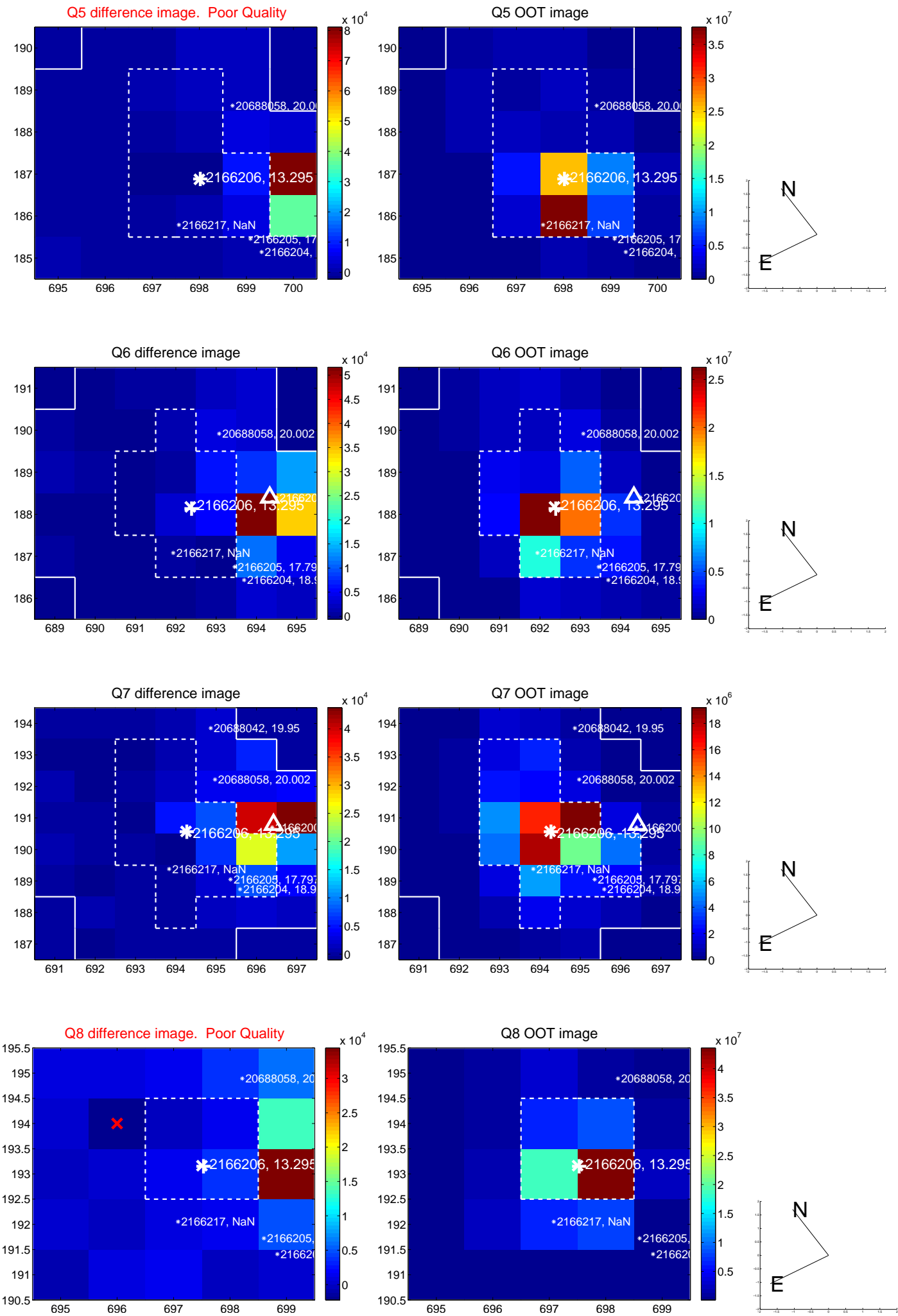


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

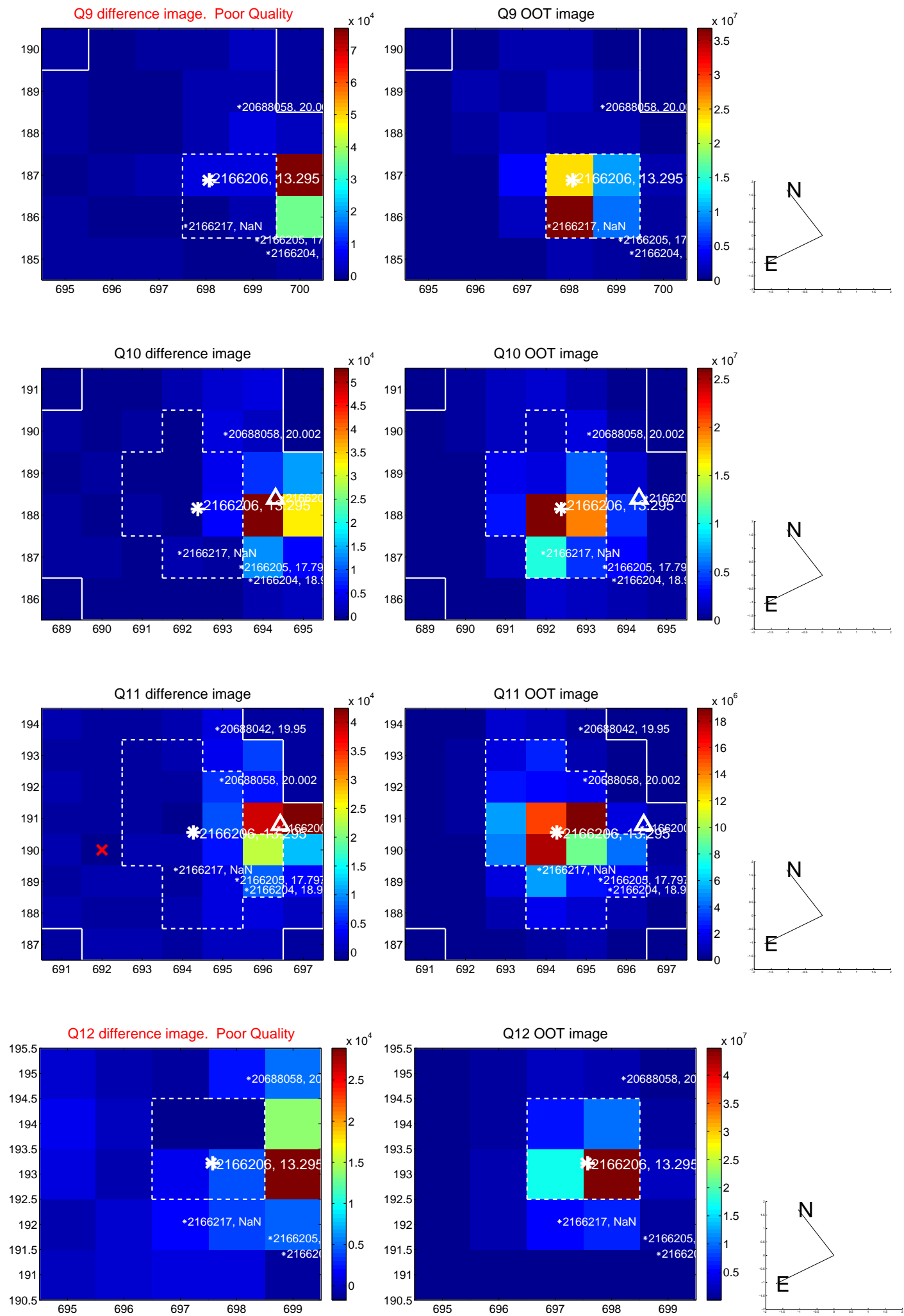
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



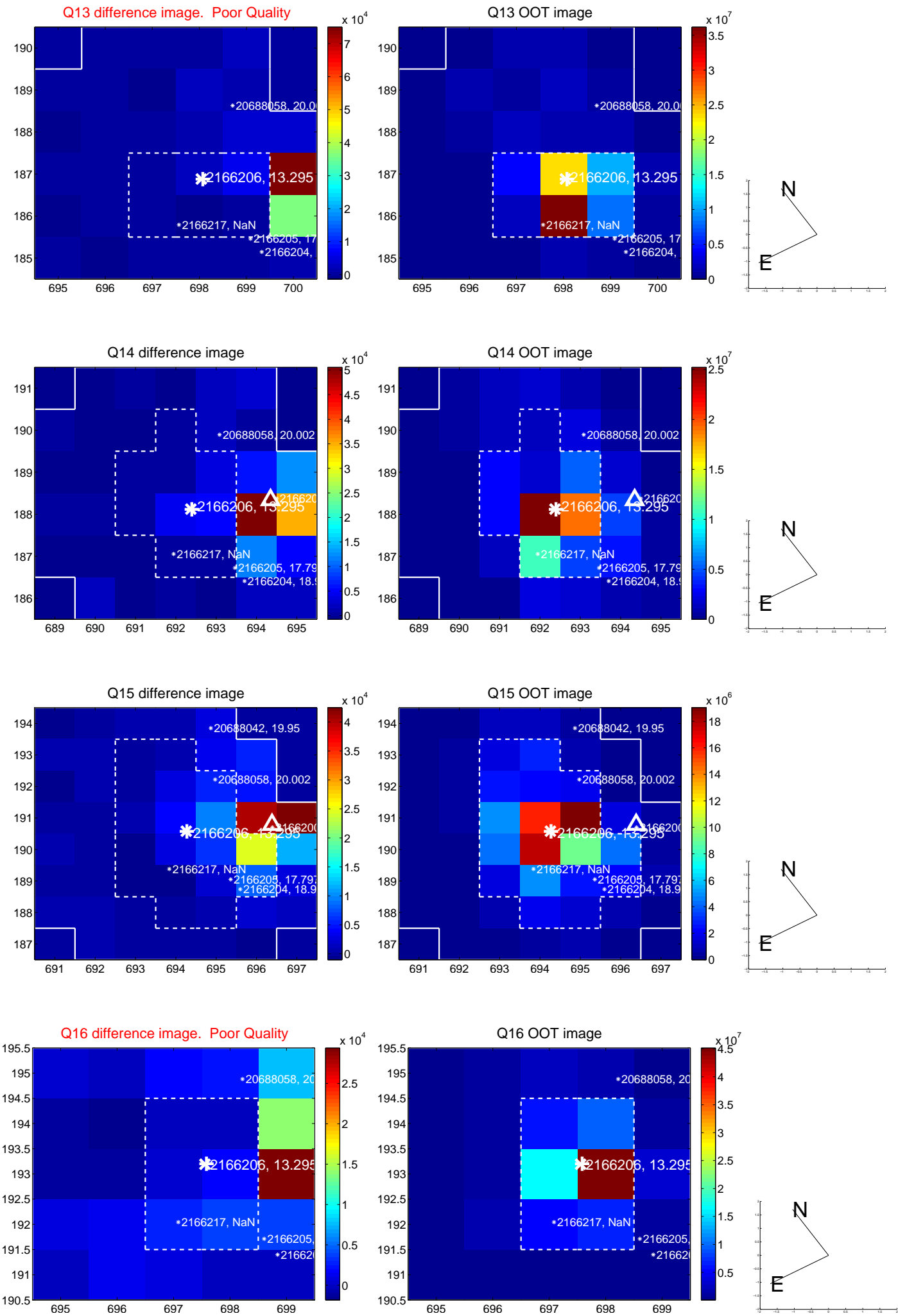
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



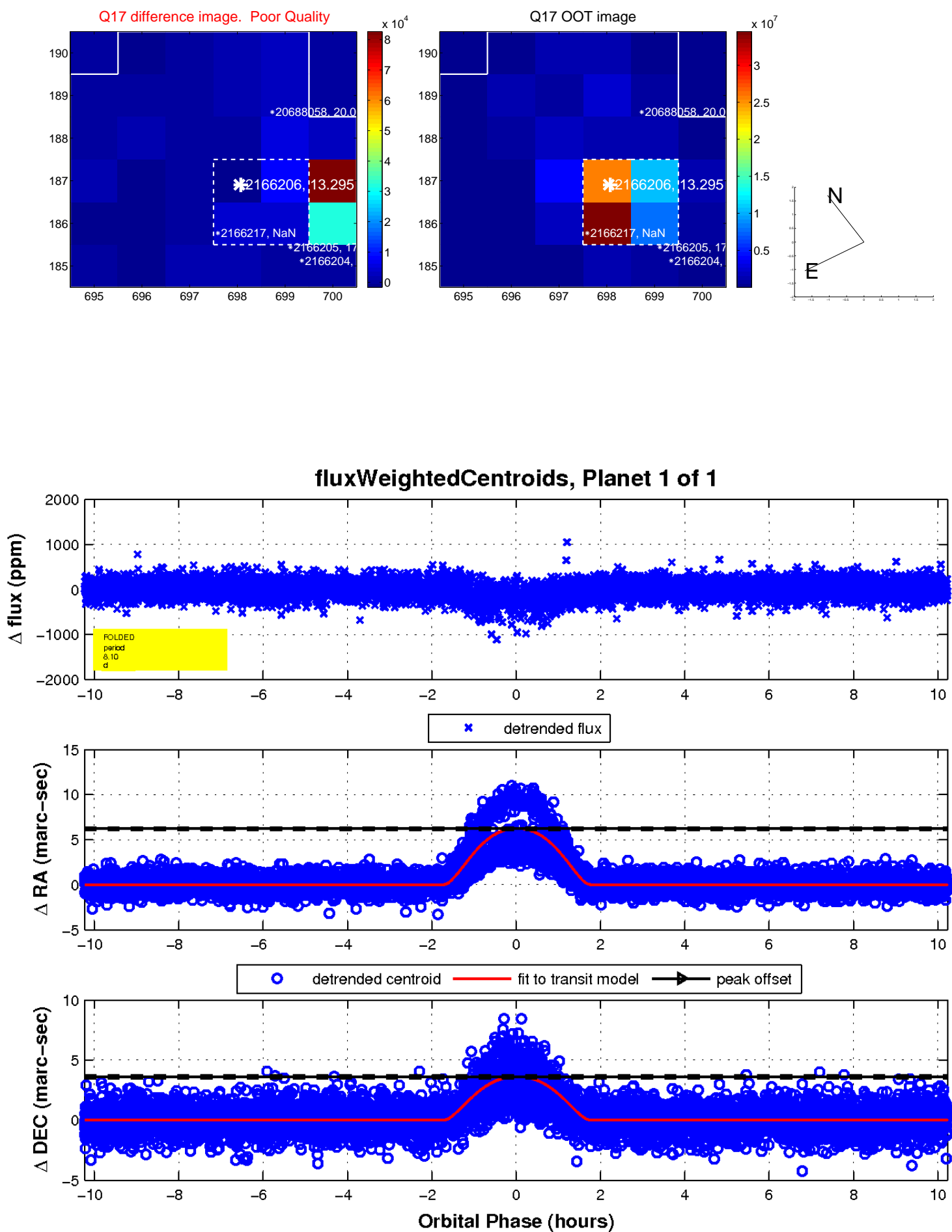
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

