

KIC 002166200

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})
002166200-01	OBS	3735.01	8.096949	132.644603	73315.4	3.570	327.8	173.0	1.42	6572	54.99	481.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002166200-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_KIC_POS

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.

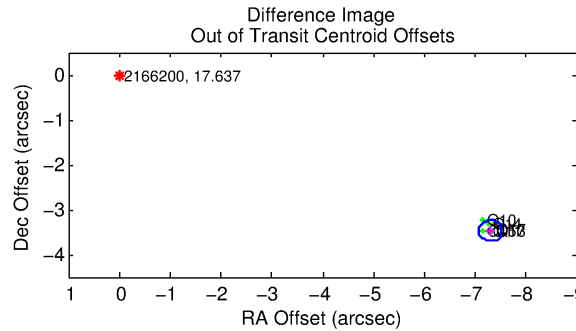
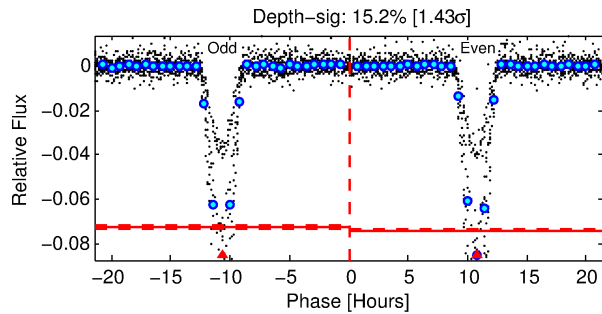
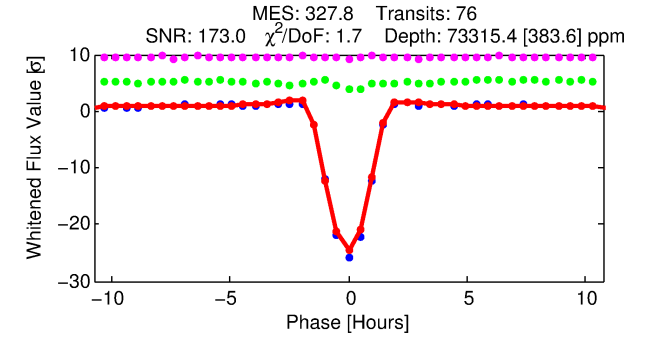
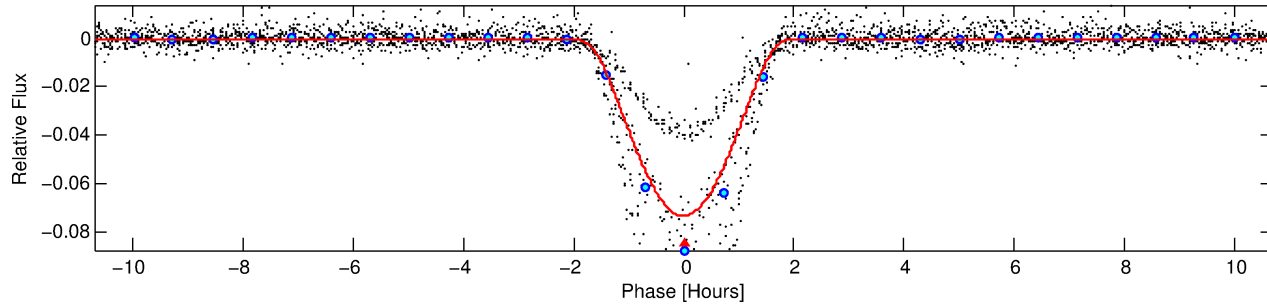
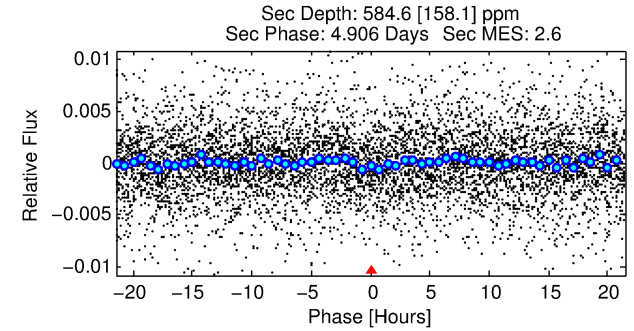
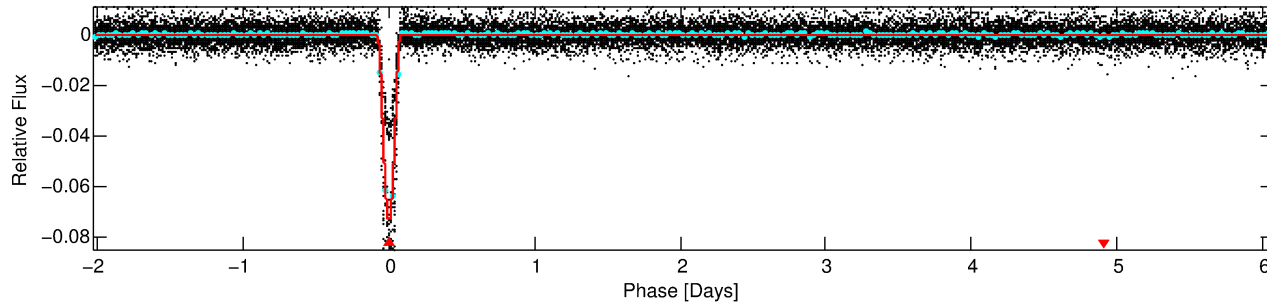
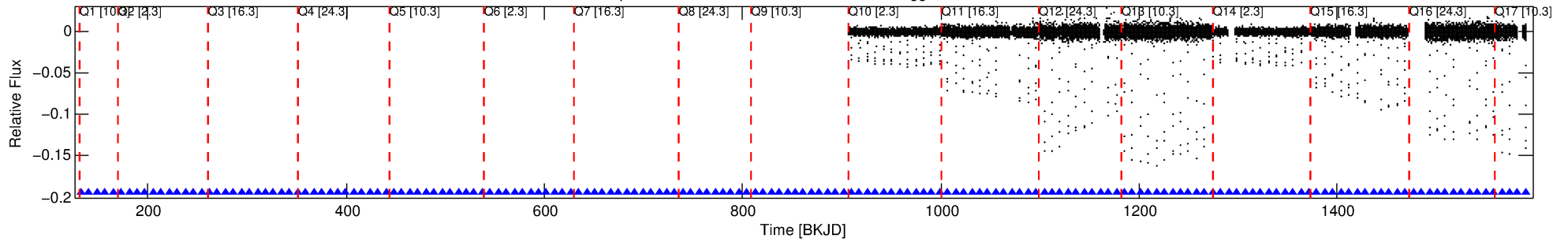
Ephemeris Match Information For 002166200-01

No Significant Match Found

DV One-Page Summary

KIC: 2166200 Candidate: 1 of 1 Period: 8.097 d
KOI: K03735.01 Corr: 0.991

Kp: 17.64 R*: 1.42 Rs Teff: 6572.0 K Logg: 4.21 Fe/H: -0.280



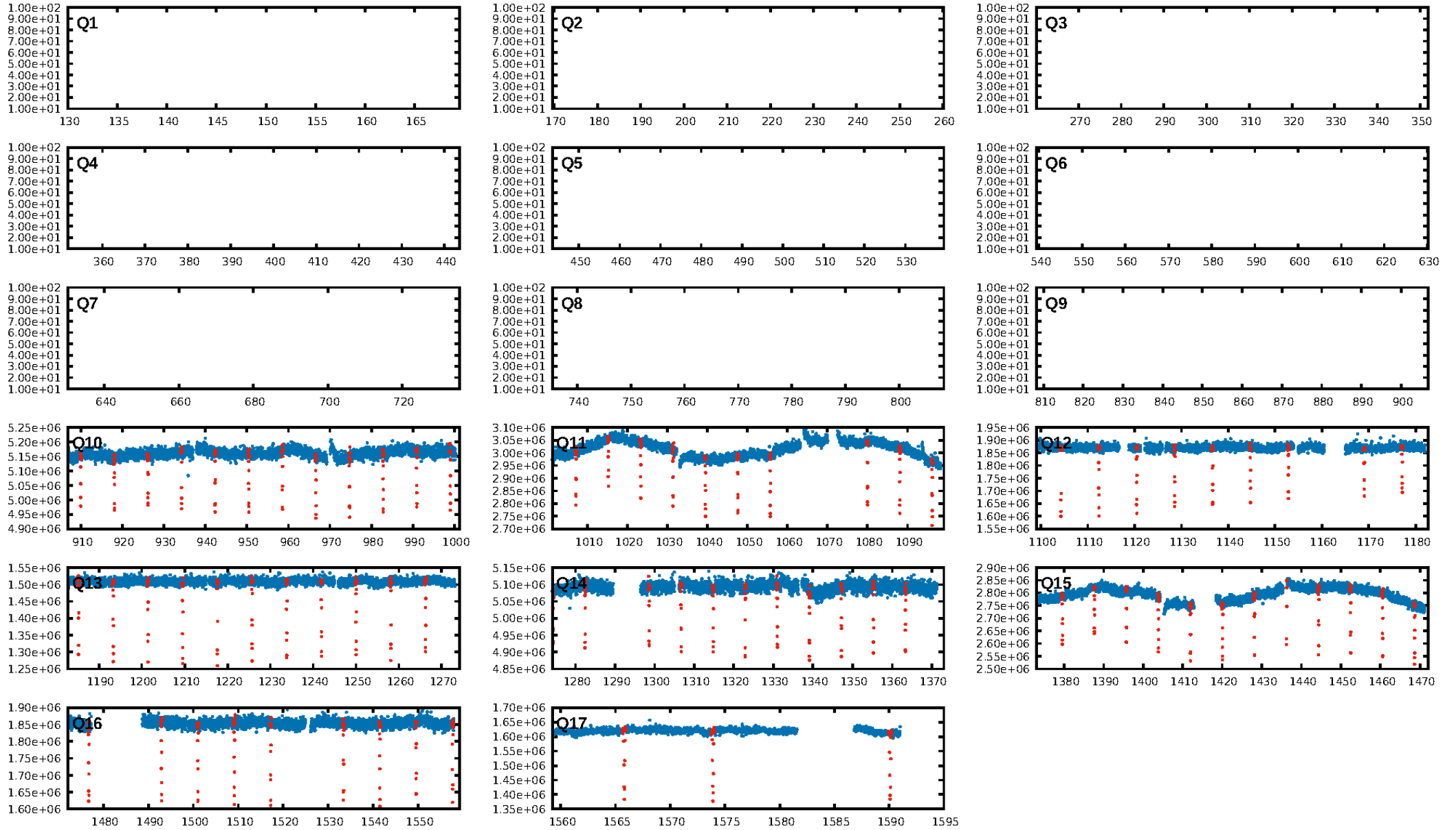
DV Fit Results:

Period = 8.09695 [0.00001] d
Epoch = 132.6446 [0.0008] BKJD
Rp/R* = 0.3554 [0.0824]
a/R* = 17.52 [0.21]
b = 0.90 [0.13]
Seff = 481.99 [171.75]
Teq = 1195 [106] K
Rp = 54.99 [20.14] Re
a = 0.0835 [0.0194] AU
Ag = 0.74 [0.47] [-0.55σ]
Teffp = 1714 [238] K [2.00σ]

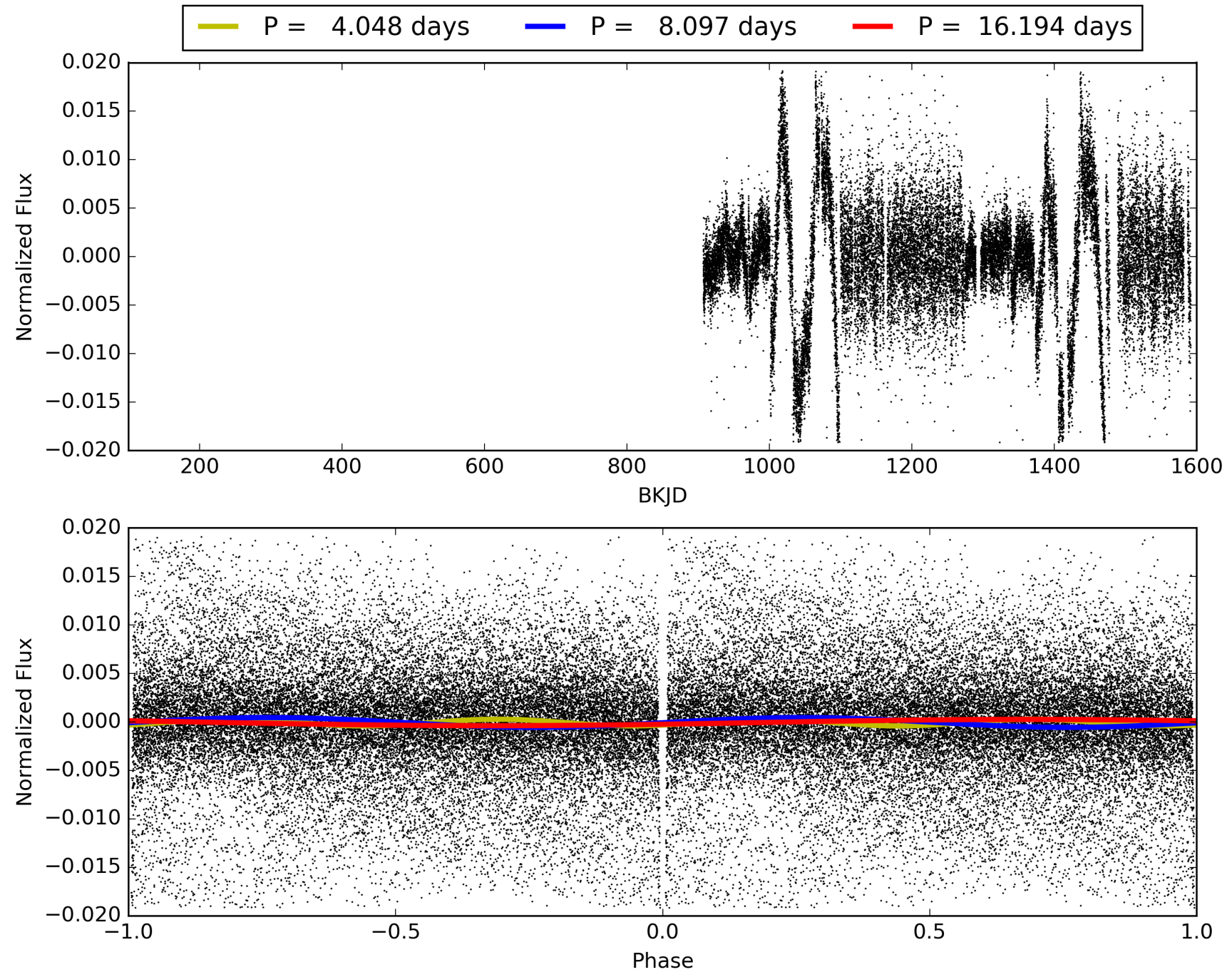
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [73/73]
GhostDiagnostic-chr: 1.3
Centroid-sig: 0.0%
Centroid-so: 3.294 arcsec [800.26σ]
OotOffset-rm: 8.075 arcsec [103.40σ]
KicOffset-rm: 0.167 arcsec [2.12σ]
OotOffset-st: 2/2/0/2 [6]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 002166200-01, PDC Light Curves

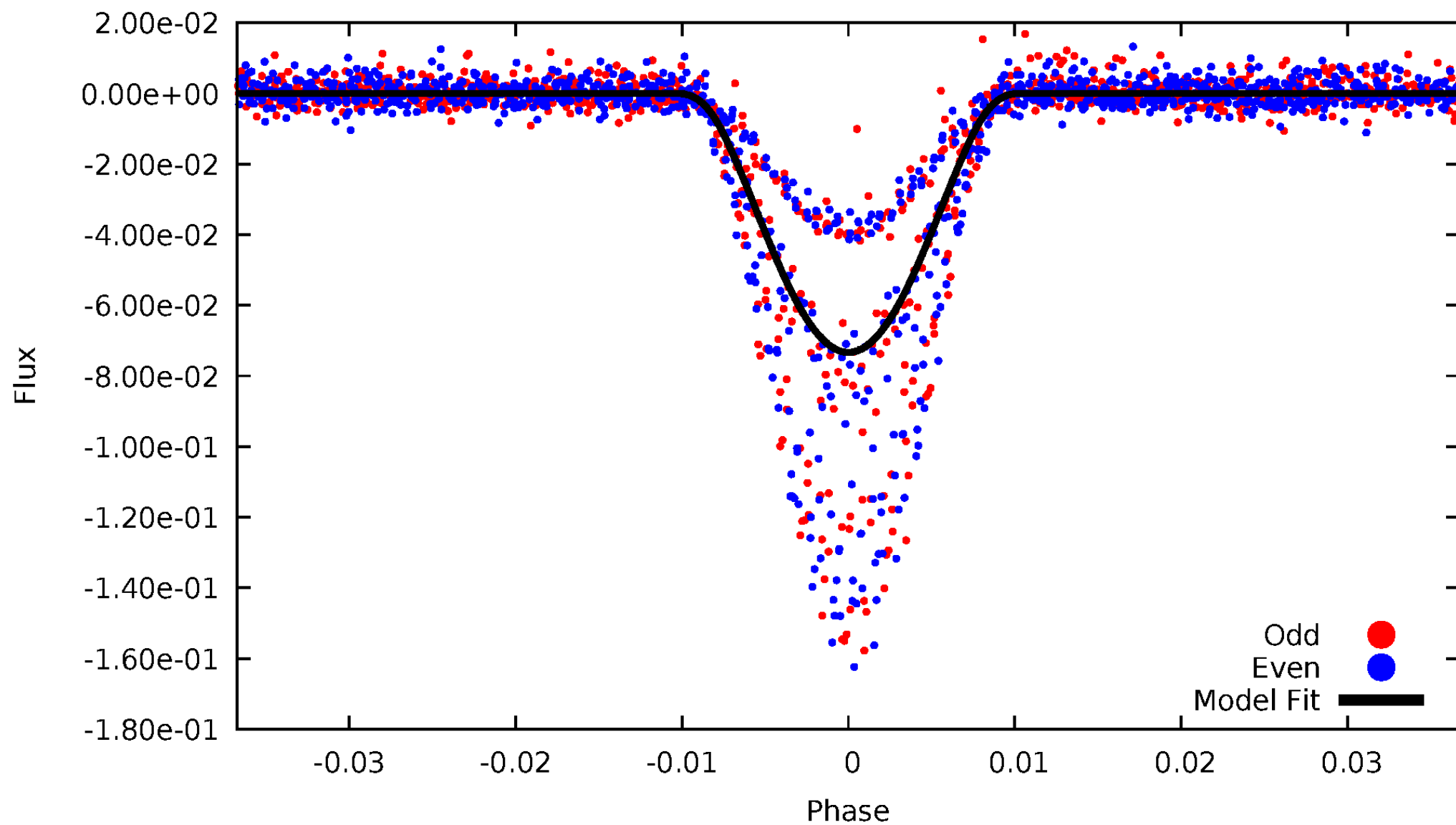


TCE 002166200-01



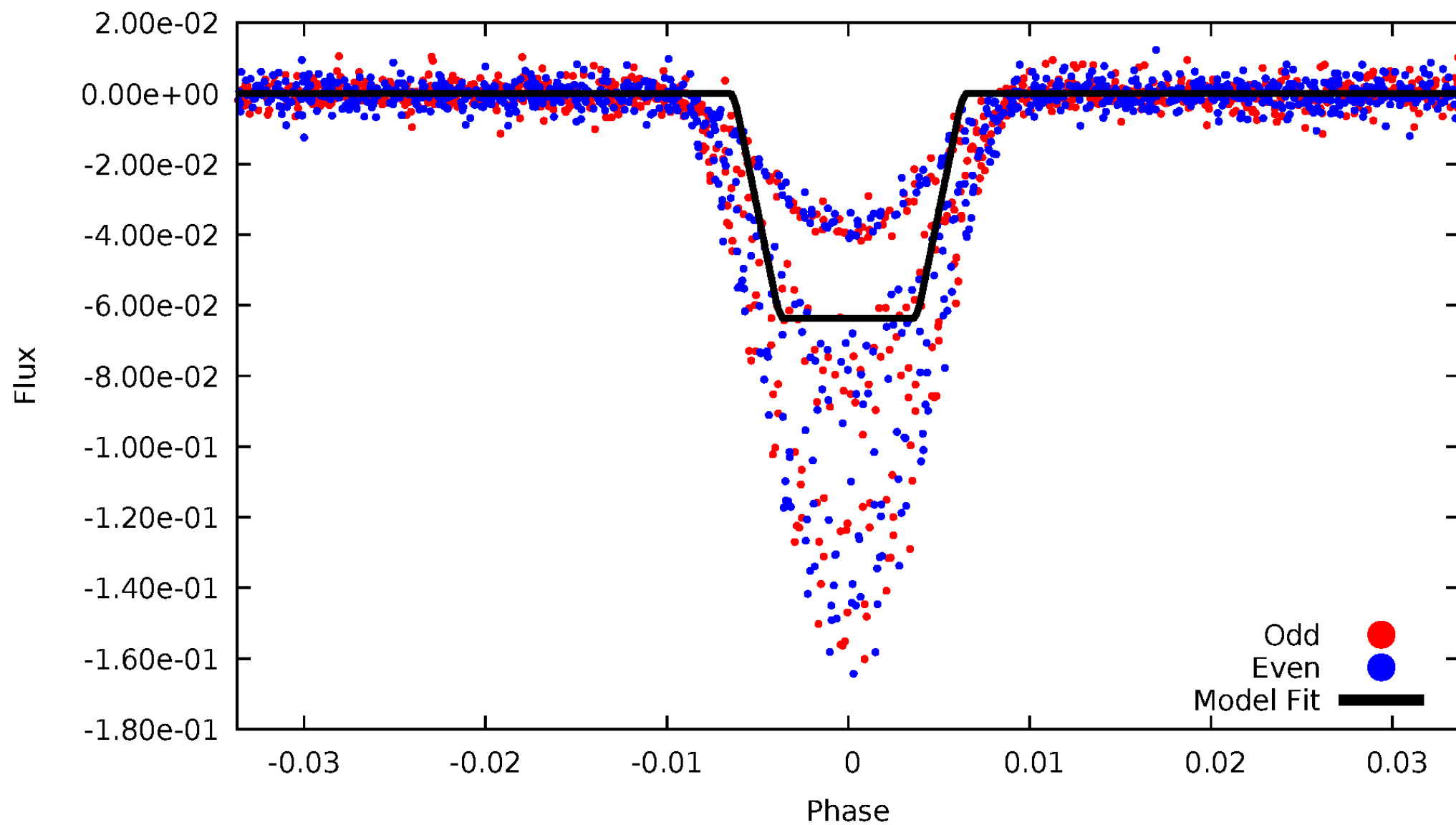
DV Odd/Even

TCE 002166200-01



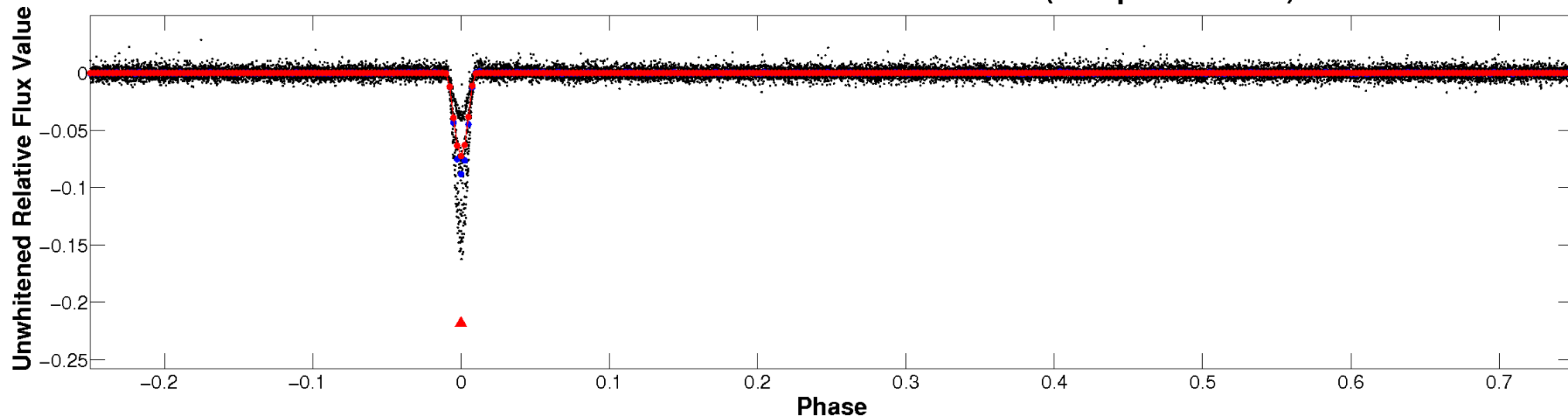
ALT Odd/Even

TCE 002166200-01

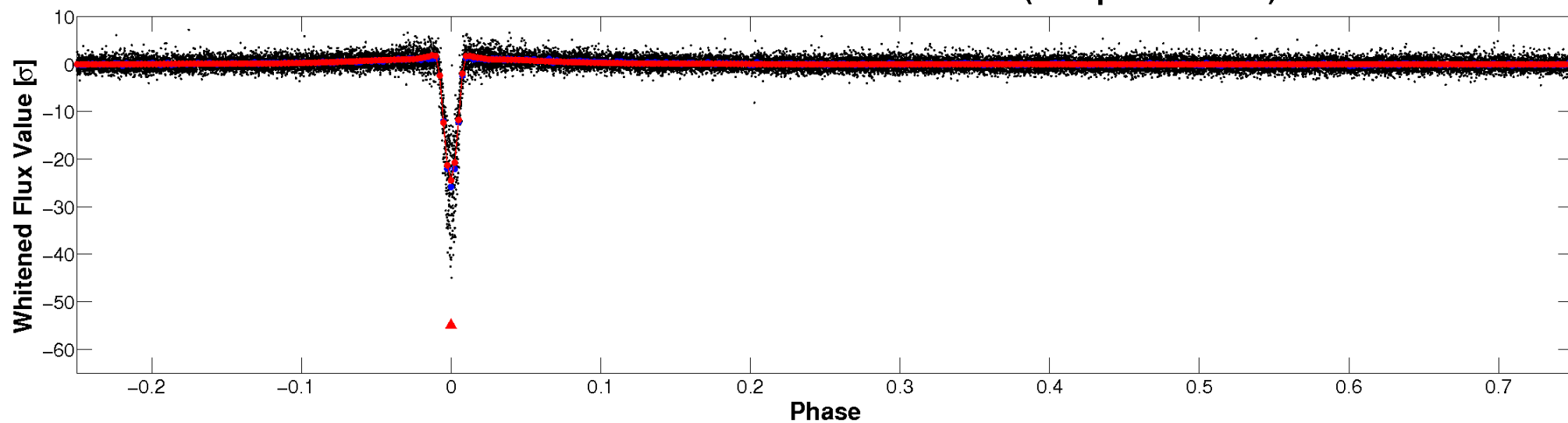


Non-Whitened Vs. Whitened Light Curve

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

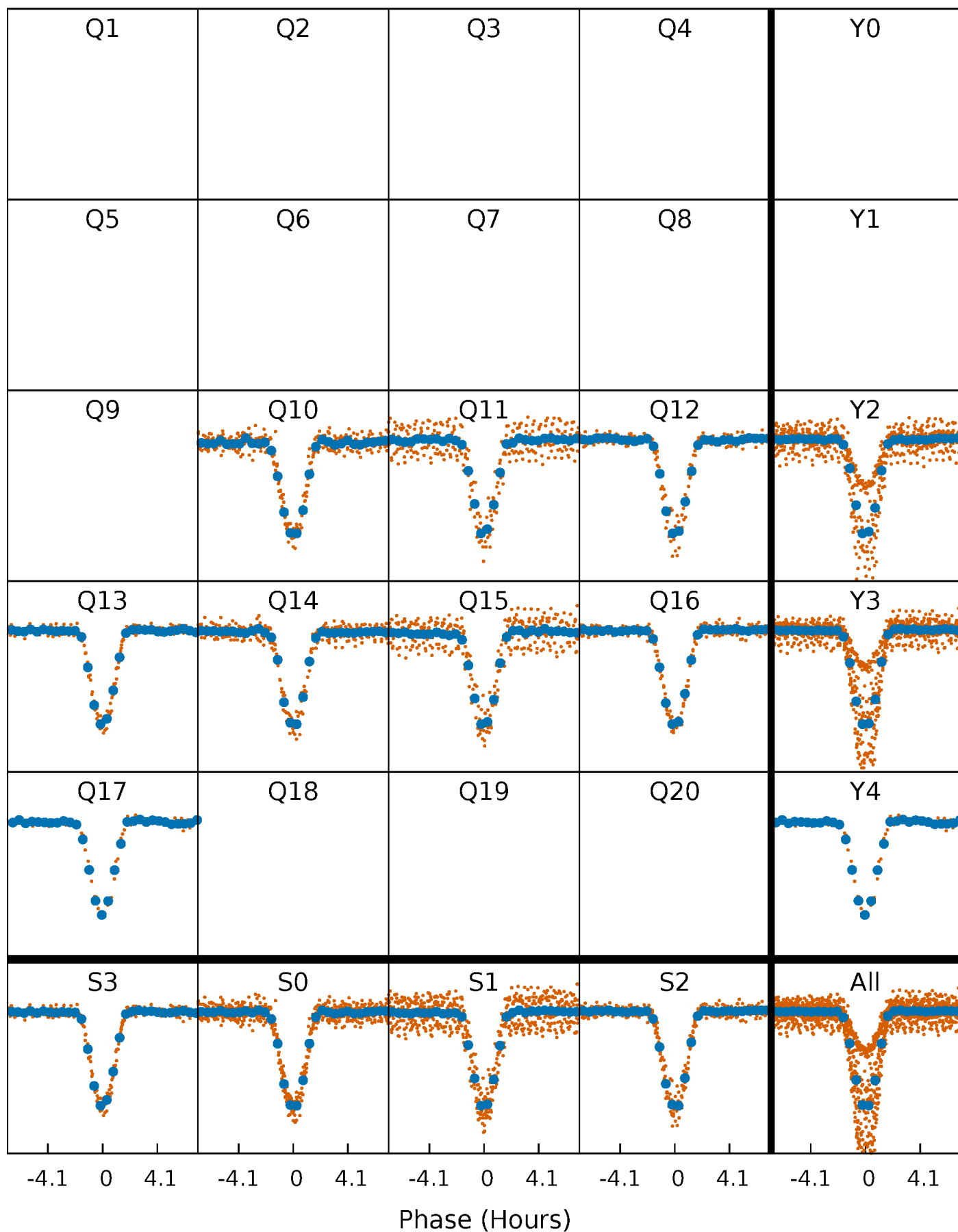


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



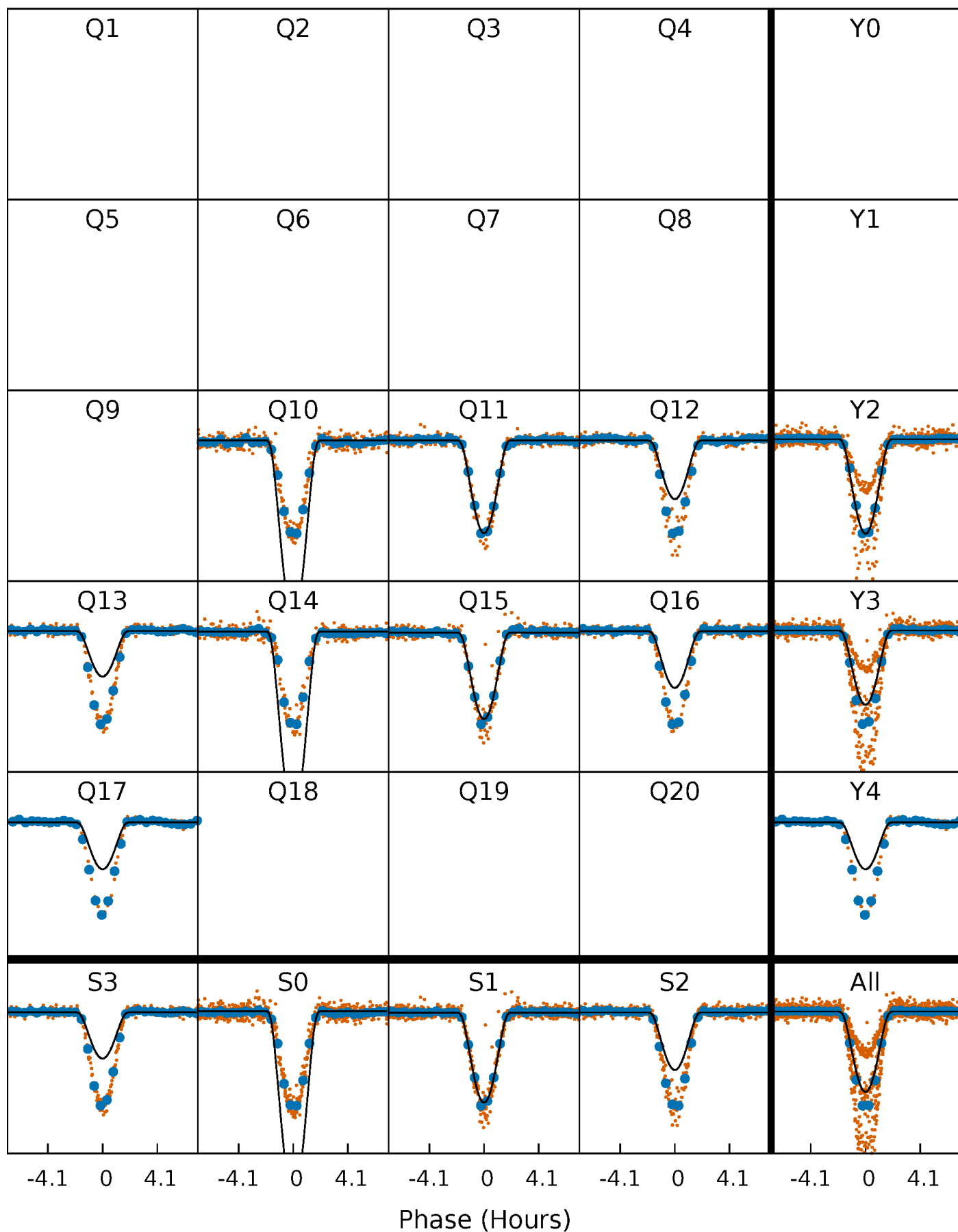
PDC Quarter-Phased Transit Curves

TCE 002166200-01 P= 8.096949 Days $T_0=132.644603$ (BKJD)



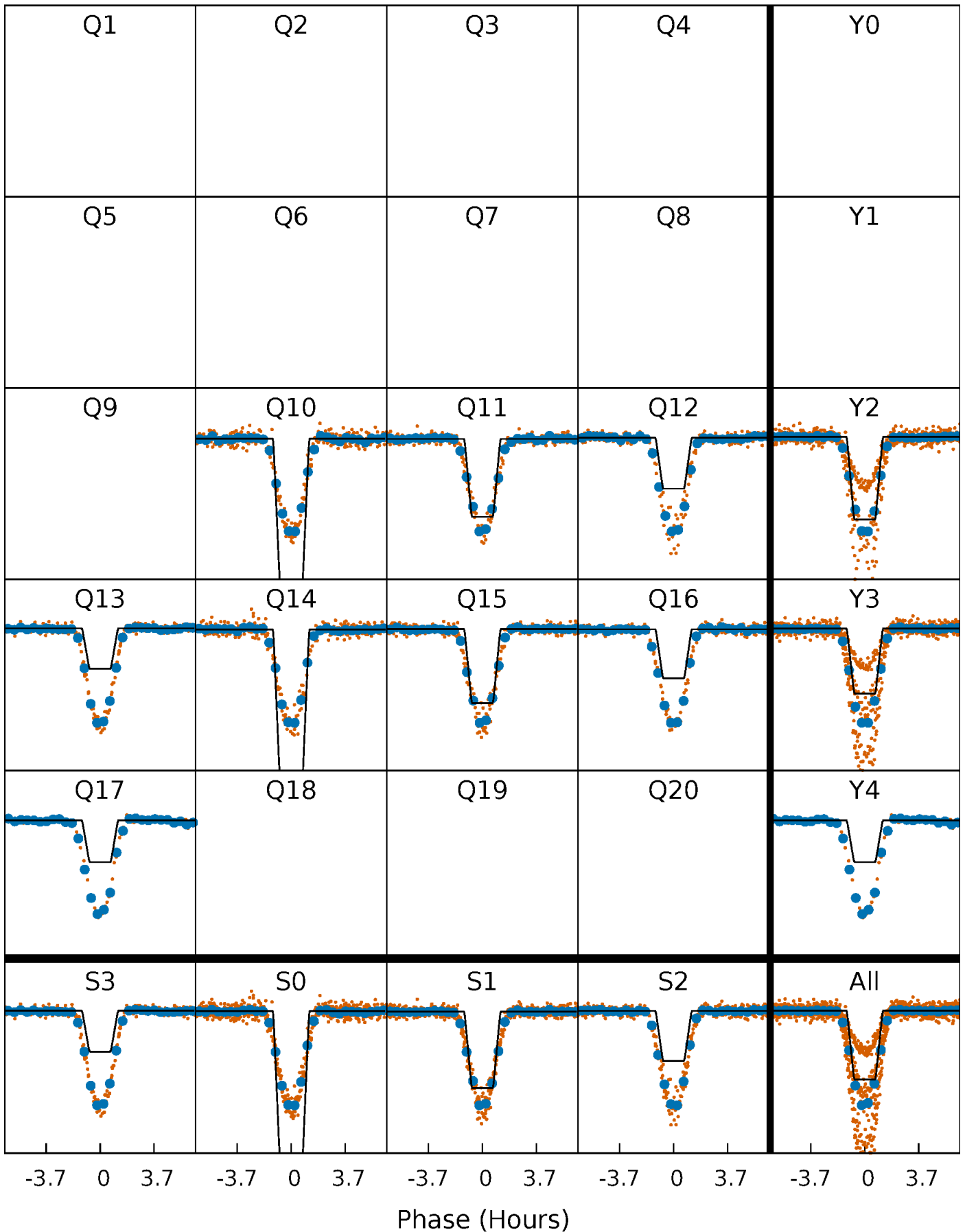
DV Quarter-Phased Transit Curves

TCE 002166200-01 P= 8.096949 Days $T_0=132.644603$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

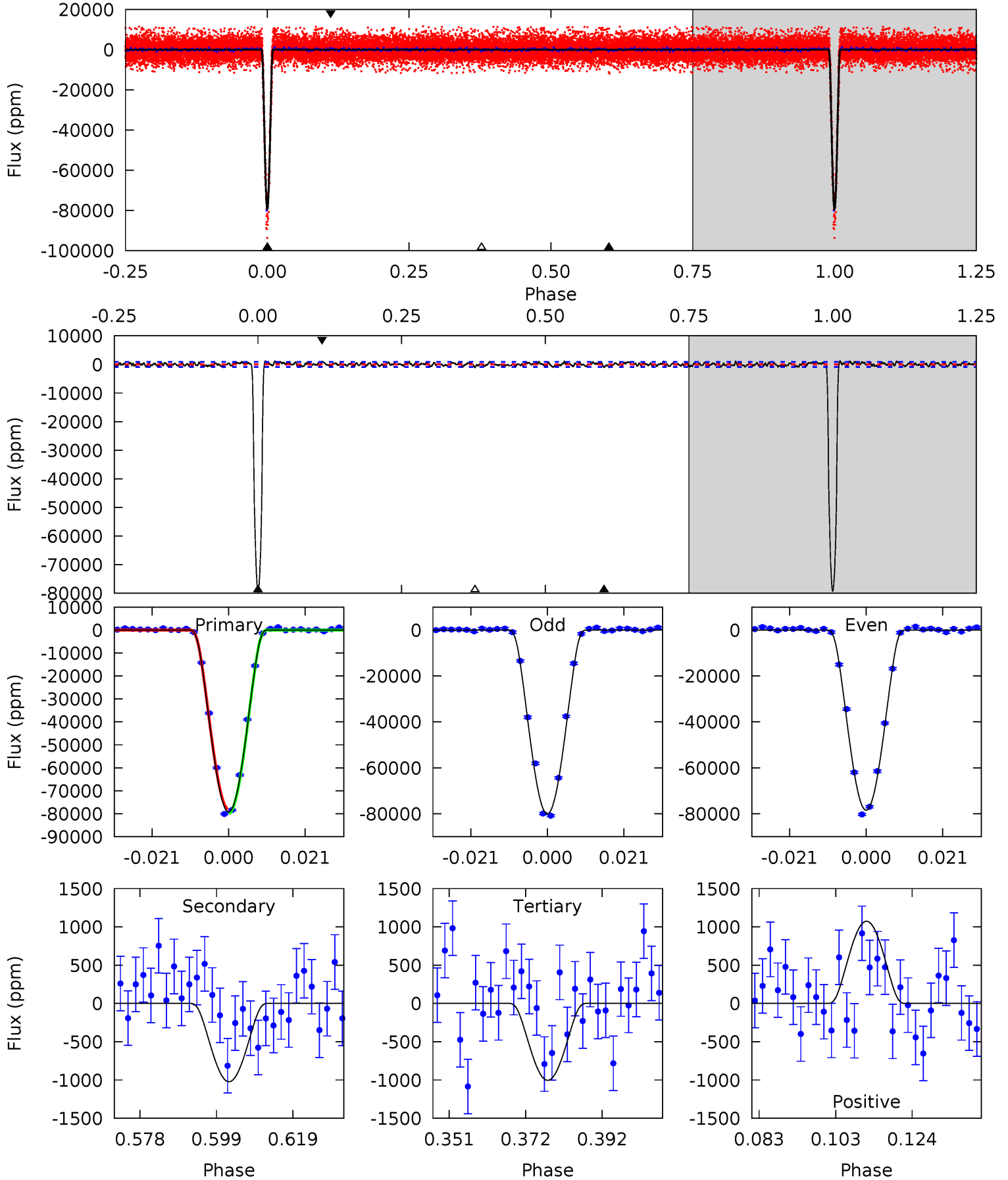
TCE 002166200-01 P= 8.096968 Days $T_0=132.642515$ (BKJD)



DV Model-Shift Uniqueness Test

002166200-01, P = 8.096949 Days, E = 132.644603 Days

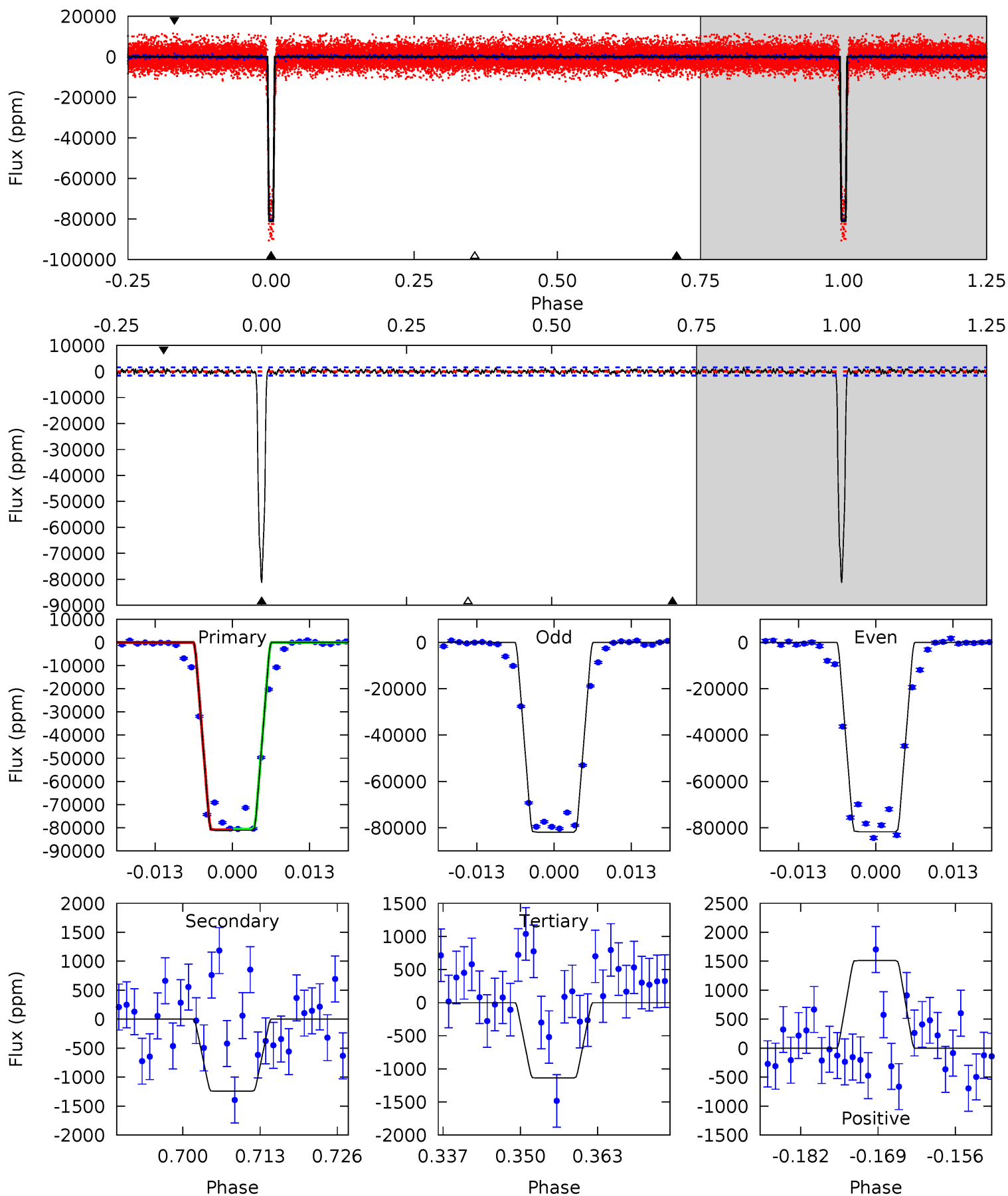
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
445.4	5.75	5.64	6.04	4.89	2.31	2.26	439.8	439.4	0.10	-0.29	4.51	1.09	0.02	0



Alt Model-Shift Uniqueness Test

002166200-01, P = 8.096968 Days, E = 132.642515 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
252.5	3.87	3.54	4.71	4.98	2.48	1.33	249.0	247.8	0.33	-0.84	0.26	1.07	0.02	0.46



Stellar Parameters For KIC 002166200

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6572^{+181}_{-227}	$4.208^{+0.175}_{-0.175}$	$-0.280^{+0.250}_{-0.300}$	$1.418^{+0.402}_{-0.329}$	$1.190^{+0.188}_{-0.188}$	$0.587^{+0.549}_{-0.285}$
	+3%/-3%	+4%/-4%	+89%/-107%	+28%/-23%	+16%/-16%	+93%/-48%
Source	KIC0	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 002166200-01 / KOI 3735.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1022 ± 178	$54.82^{+16.18}_{-13.51}$	1673^{+114}_{-125}	2624^{+265}_{-208}	$1.295^{+1.038}_{-0.558}$
Alt.	-1243 ± 321	$39.51^{+15.55}_{-13.96}$	1666^{+121}_{-112}	3001^{+458}_{-282}	$2.954^{+4.487}_{-1.516}$

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

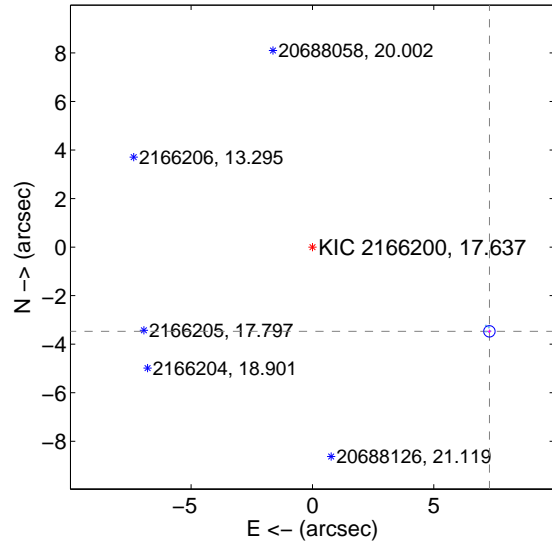
Supplemental centroid analysis for 002166200-01. Kepler magnitude: 17.64. Transit SNR 172.98

There are 8 quarters with good PRF difference image offsets

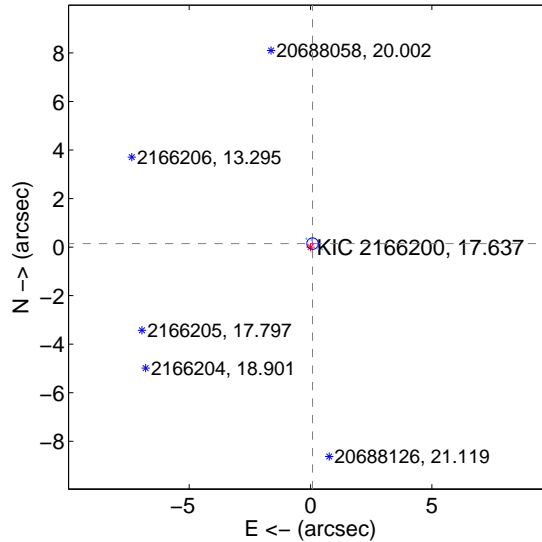
The OOT PRF centroid is offset from the target star catalog position by about 8.12 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.075 ± 0.078	103.40	-7.291 ± 0.074	-3.471 ± 0.076
PRF-fit source offset from KIC position	0.167 ± 0.079	2.12	-0.084 ± 0.084	0.145 ± 0.077
photometric centroid source offset	3.29 ± 0.00	800.26	3.23 ± 0.00	0.65 ± 0.00

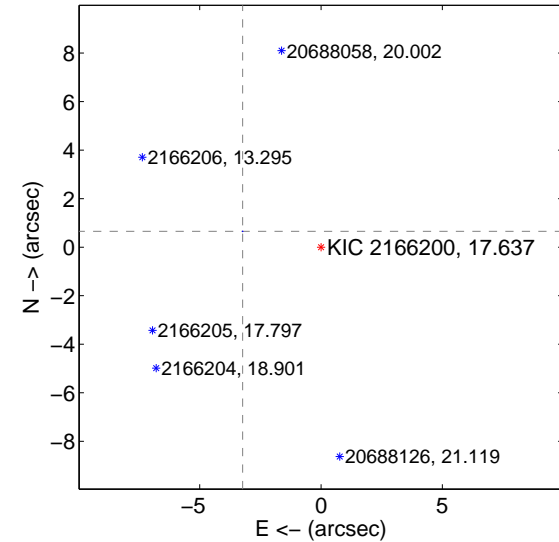
offset from difference PRF-fit to OOT PRF-fit



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.

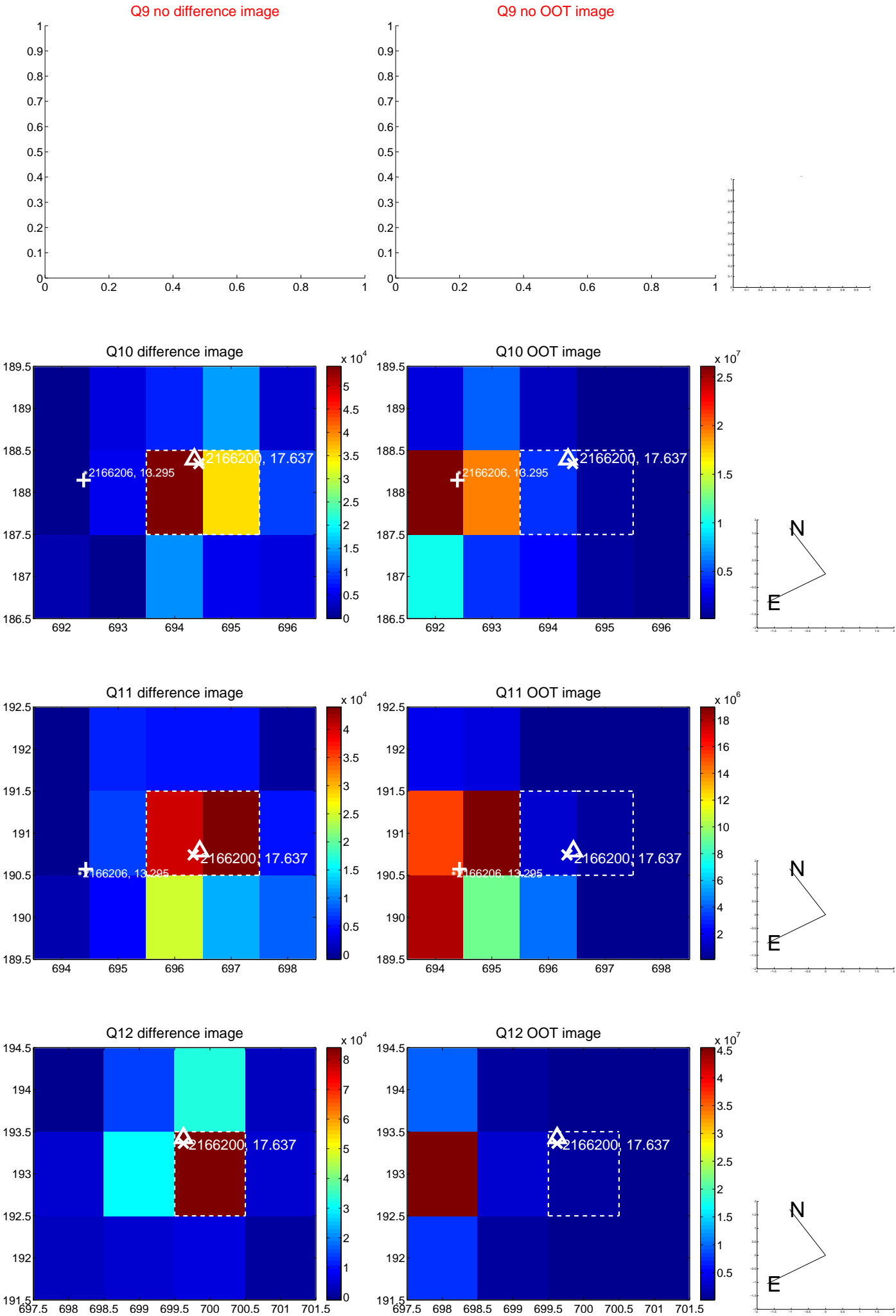
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



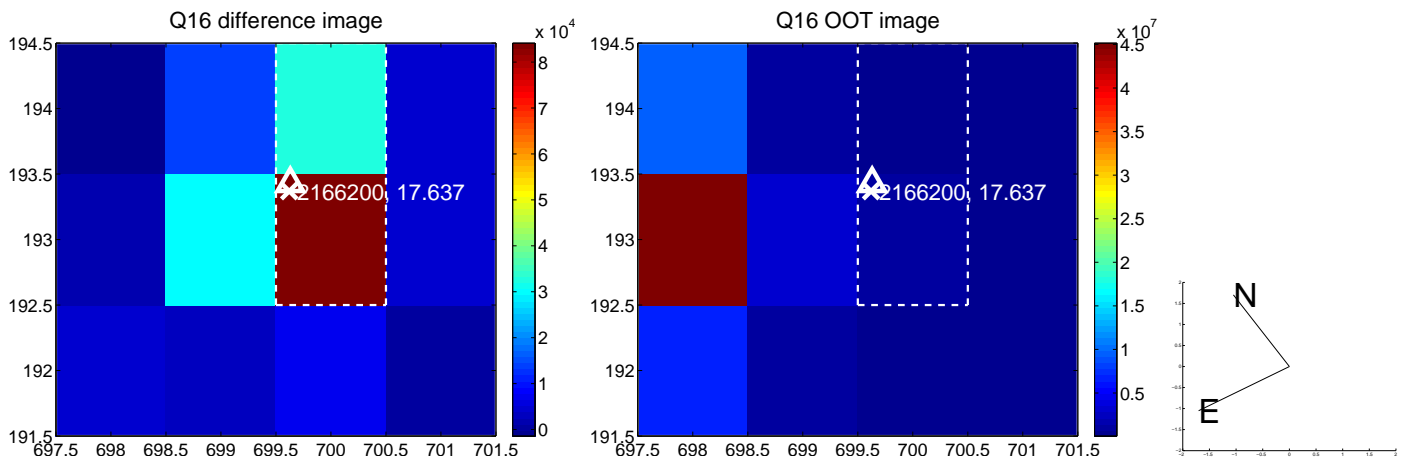
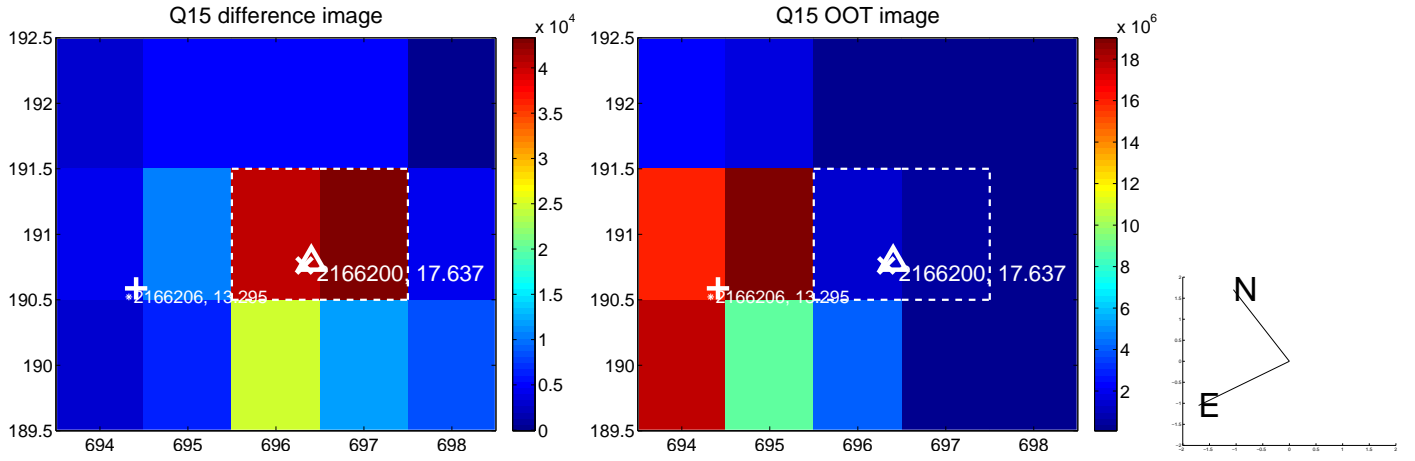
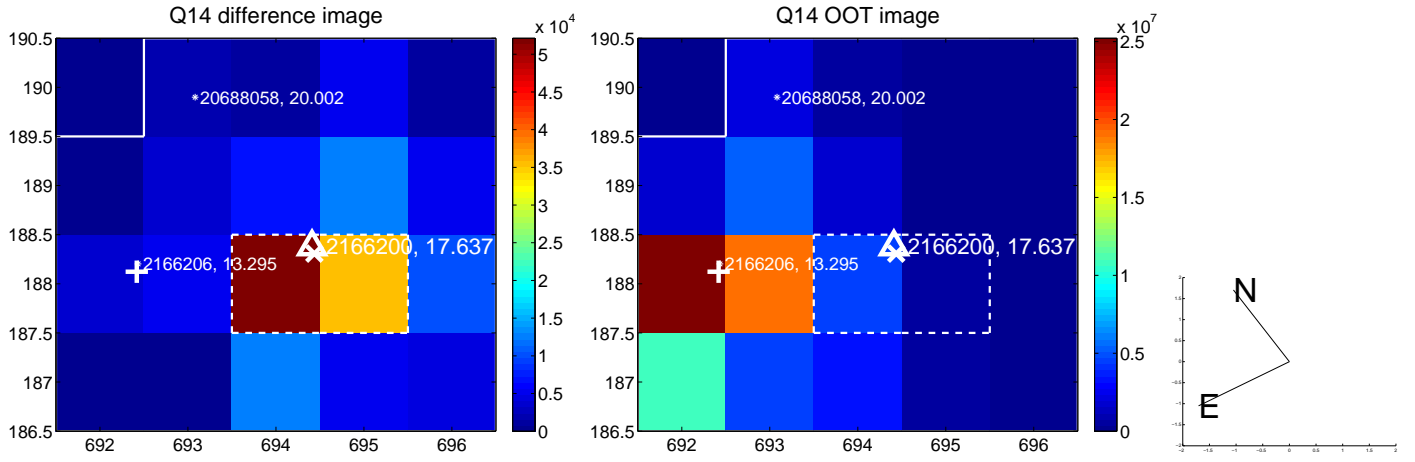
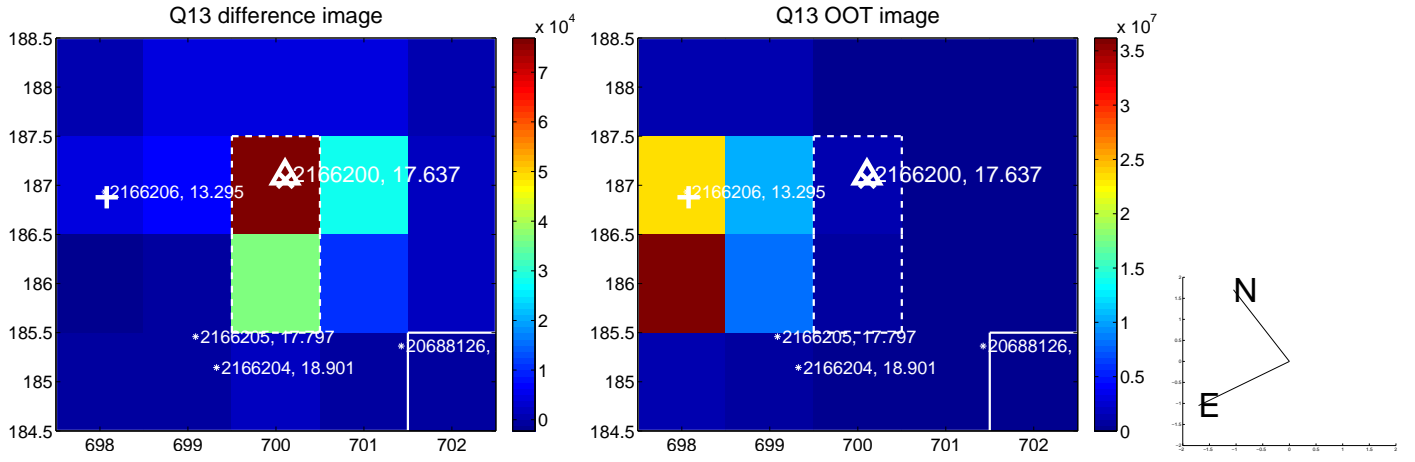
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



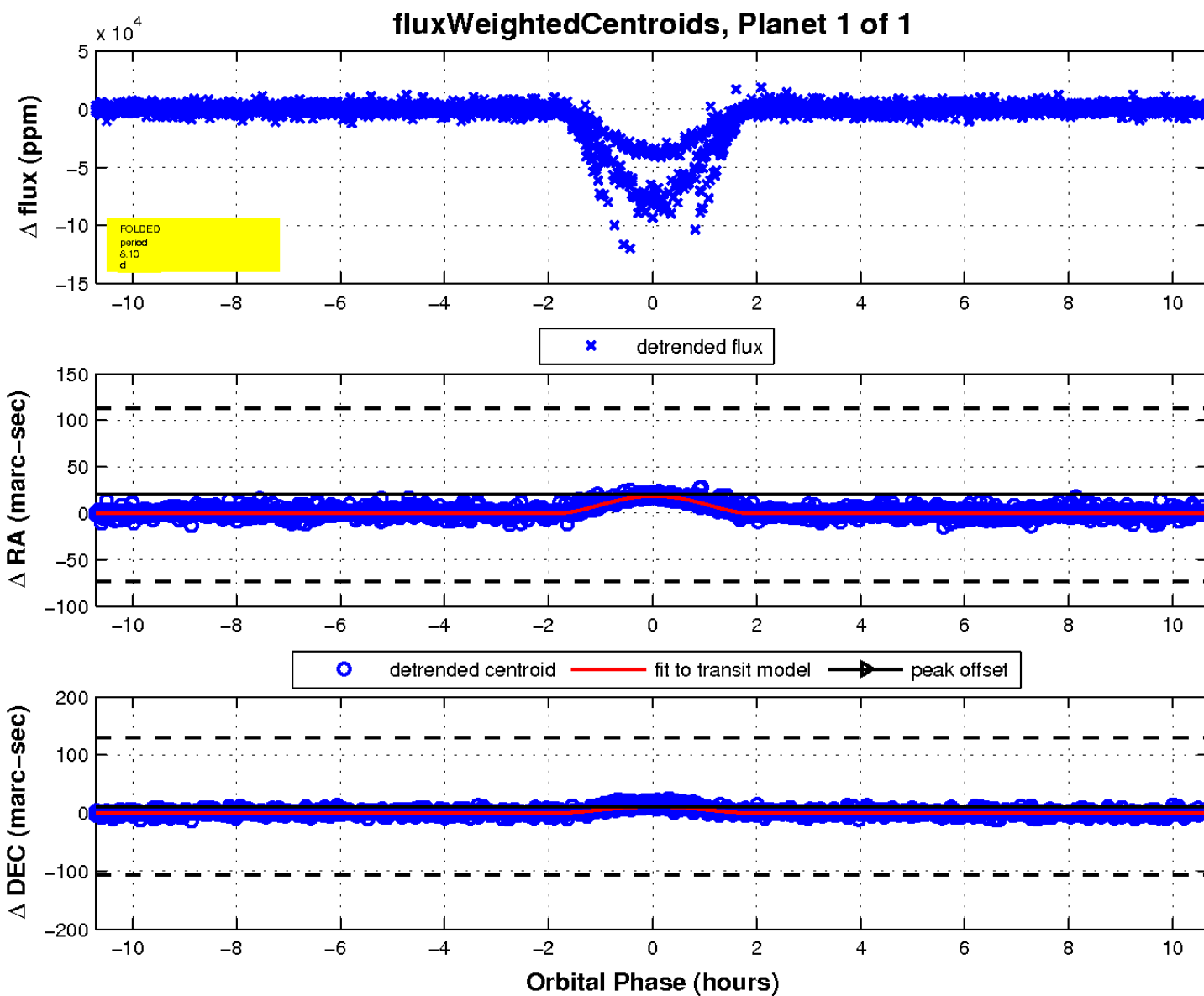
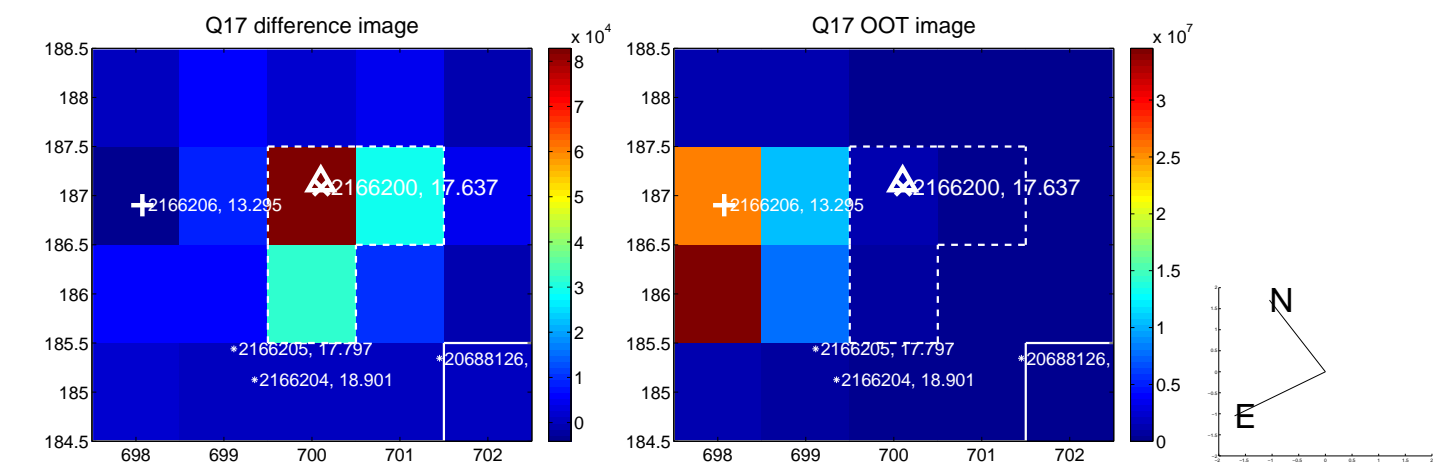
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UKIRT Image

Declination

