

KIC 004164994

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})
004164994-01	OBS	1320.01	10.506827	139.438960	13390.7	3.860	337.0	333.8	0.78	5127	9.24	47.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004164994-01	OBS	PC	1.00	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.

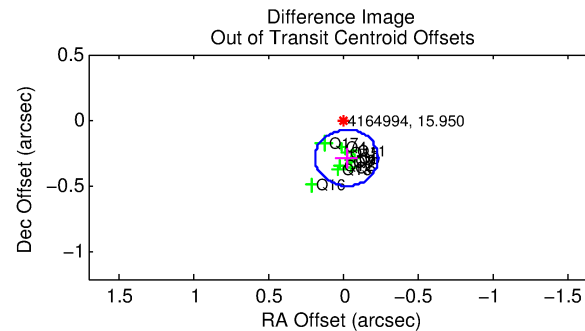
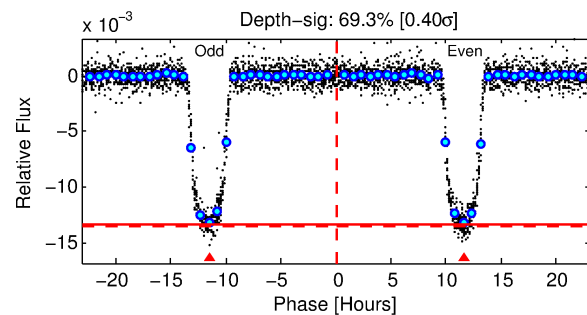
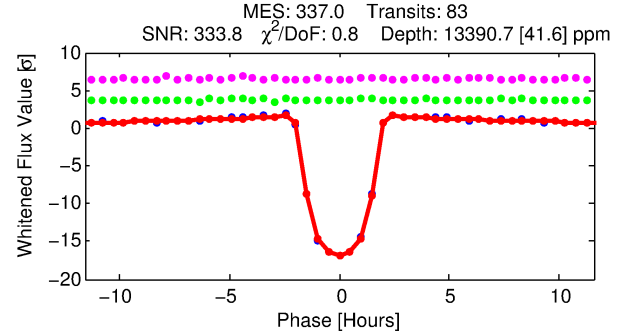
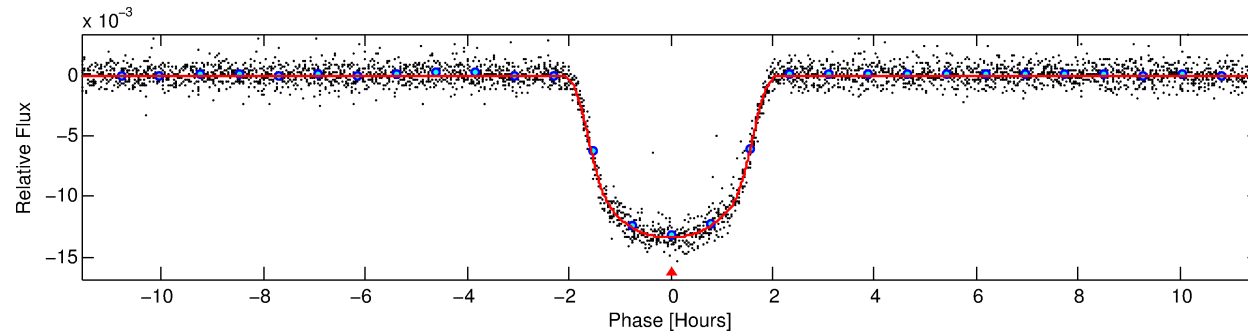
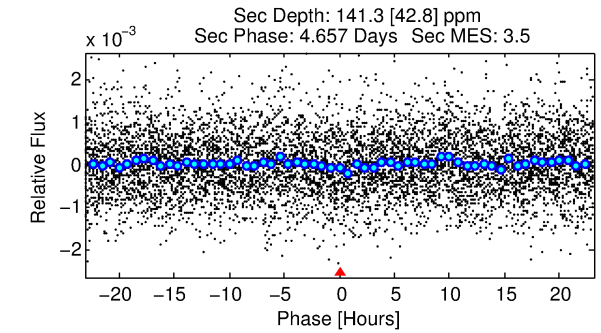
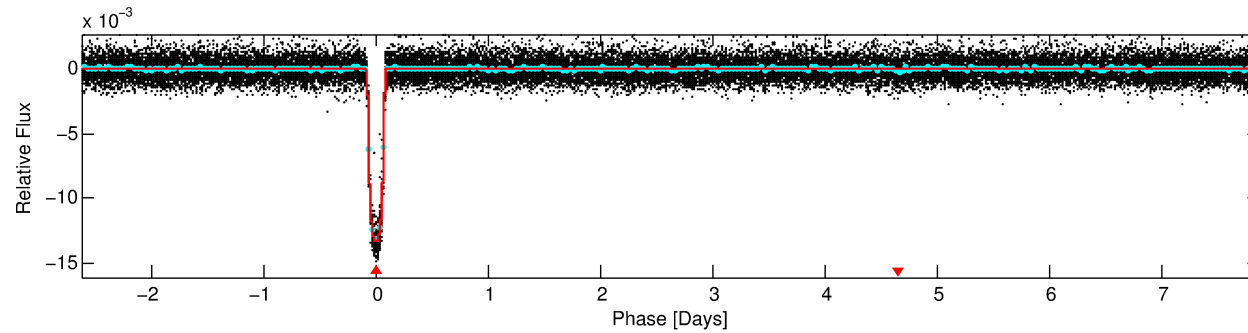
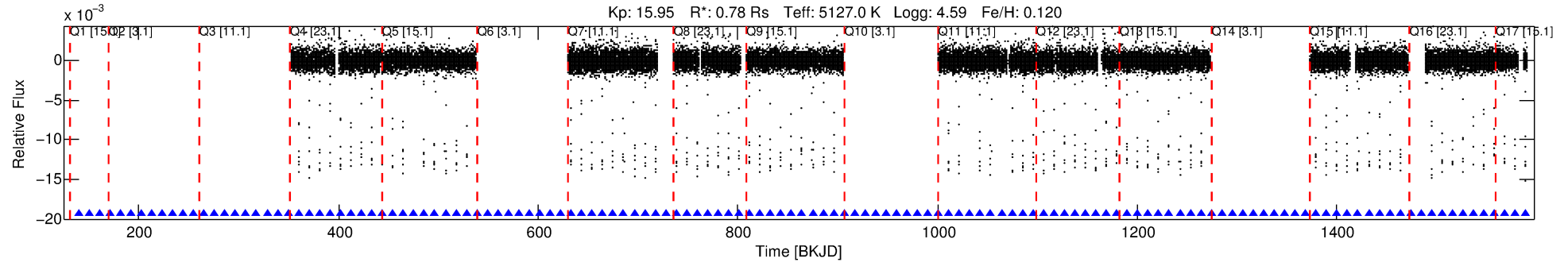
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004164994-01

No Significant Match Found

DV One-Page Summary

KIC: 4164994 Candidate: 1 of 1 Period: 10.507 d
KOI: K01320.01 Corr: 0.985



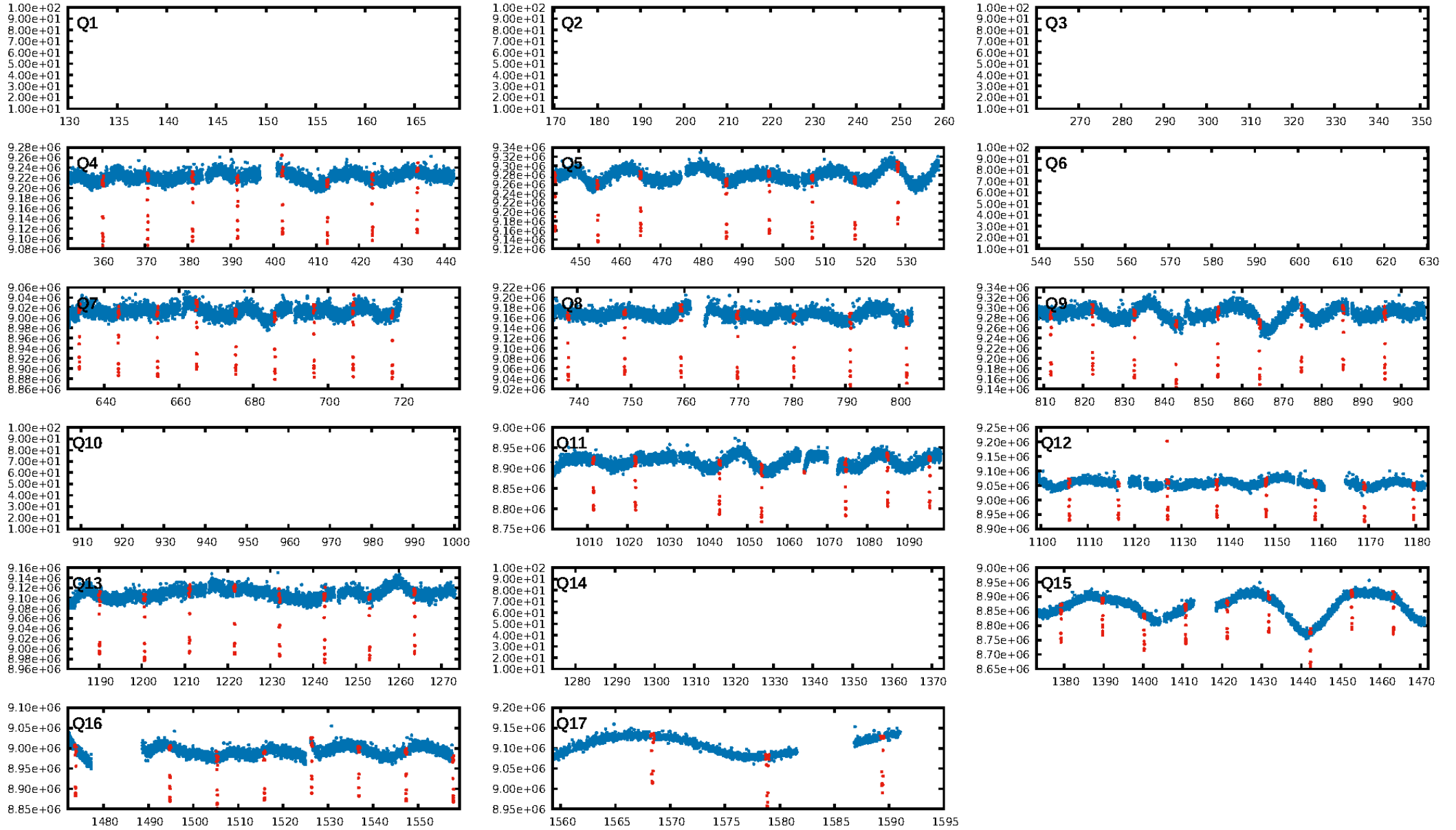
DV Fit Results:

Period = 10.50683 [0.00000] d
Epoch = 139.4390 [0.0003] BKJD
Rp/R* = 0.1083 [0.0010]
a/R* = 20.07 [0.60]
b = 0.55 [0.04]
Seff = 47.26 [10.33]
Teq = 669 [37] K
Rp = 9.25 [1.23] Re
a = 0.0895 [0.0101] AU
Ag = 7.28 [2.51] [2.50 σ]
Teffp = 1698 [143] K [6.99 σ]

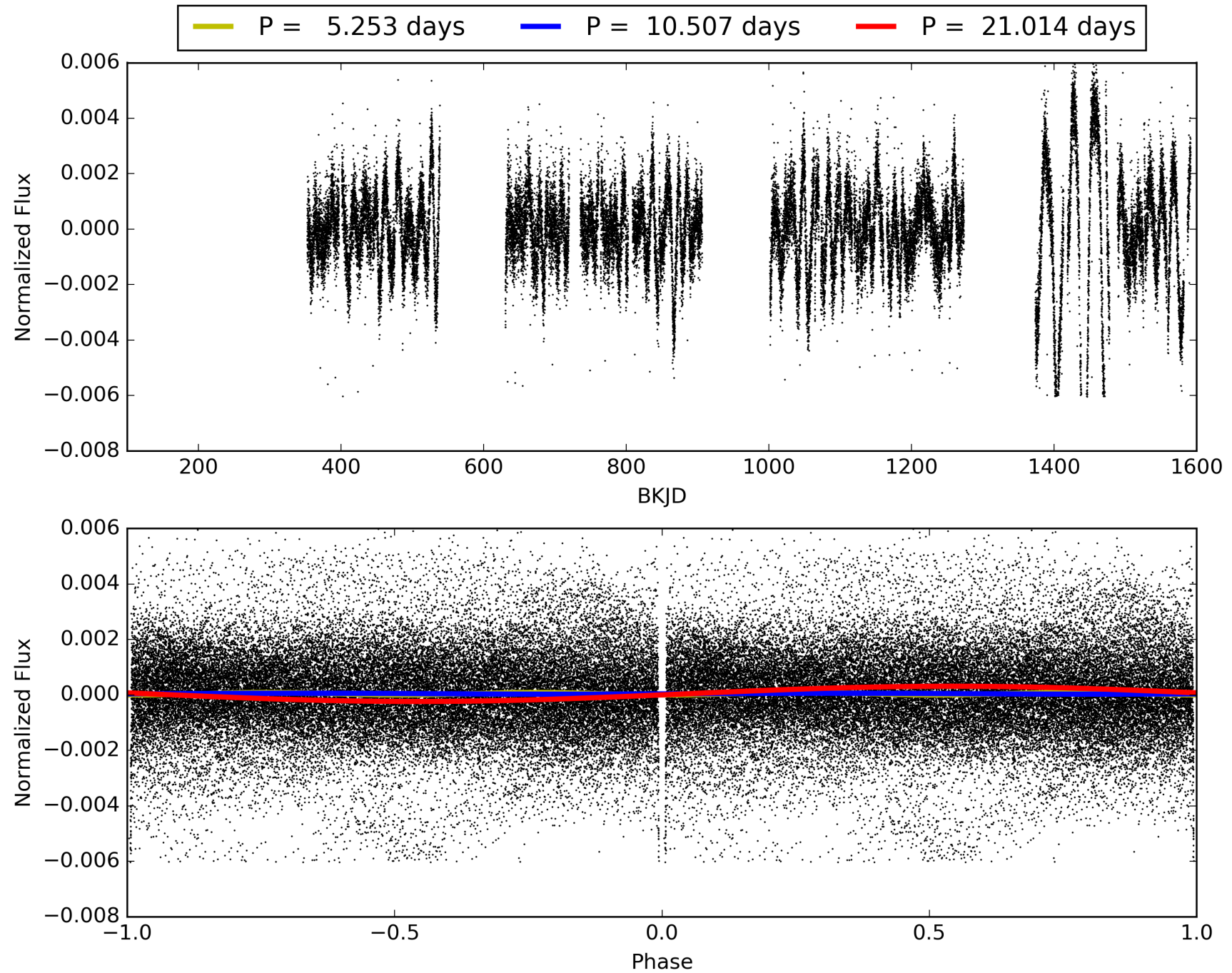
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [80/80]
GhostDiagnostic-chr: 4.357
Centroid-sig: 0.0%
Centroid-so: 0.598 arcsec [16.47 σ]
OotOffset-rm: 0.285 arcsec [4.03 σ]
KicOffset-rm: 0.145 arcsec [1.47 σ]
OotOffset-st: 0/3/4/4 [11]
KicOffset-st: 0/3/4/4 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [11/11]

TCE 004164994-01, PDC Light Curves

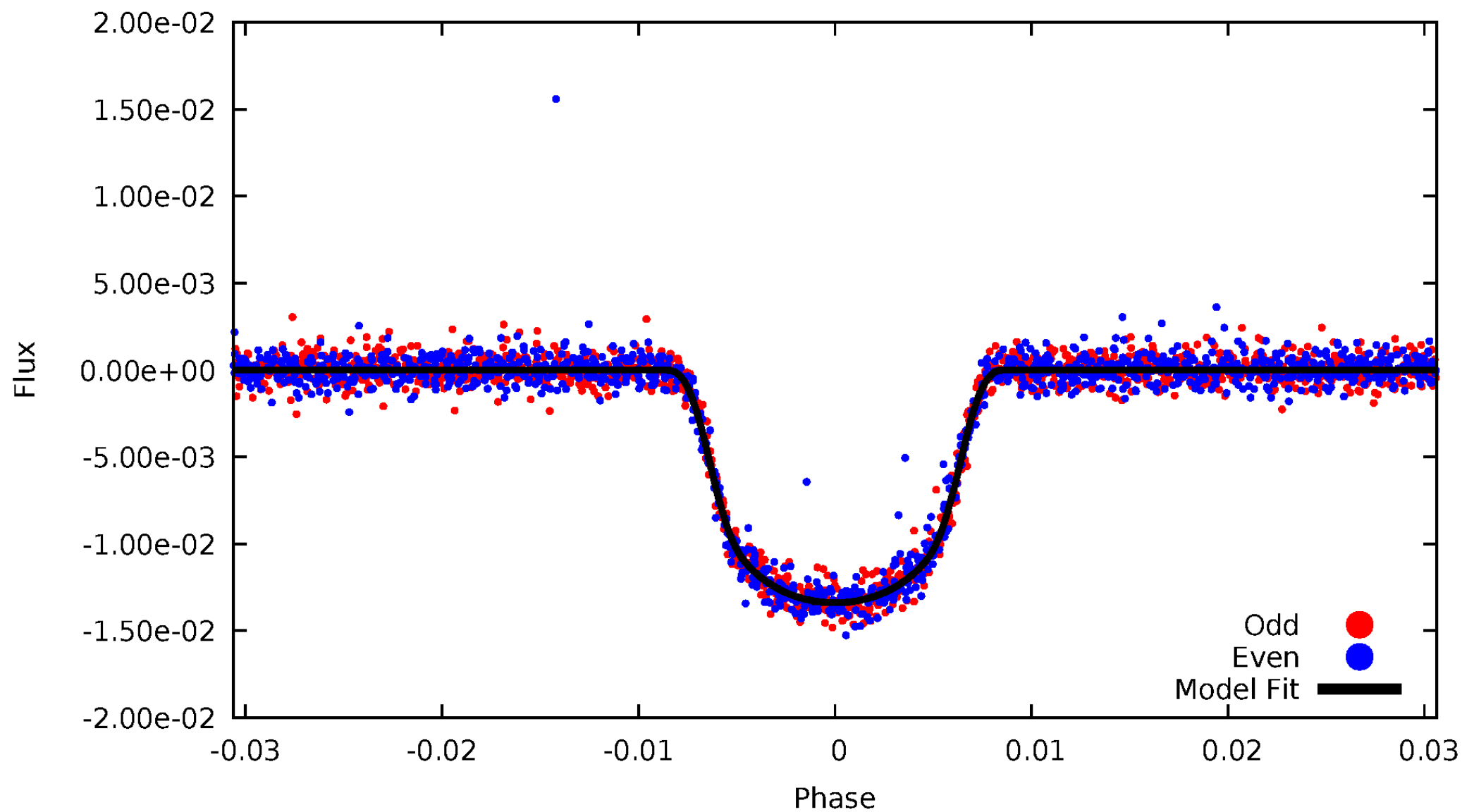


TCE 004164994-01



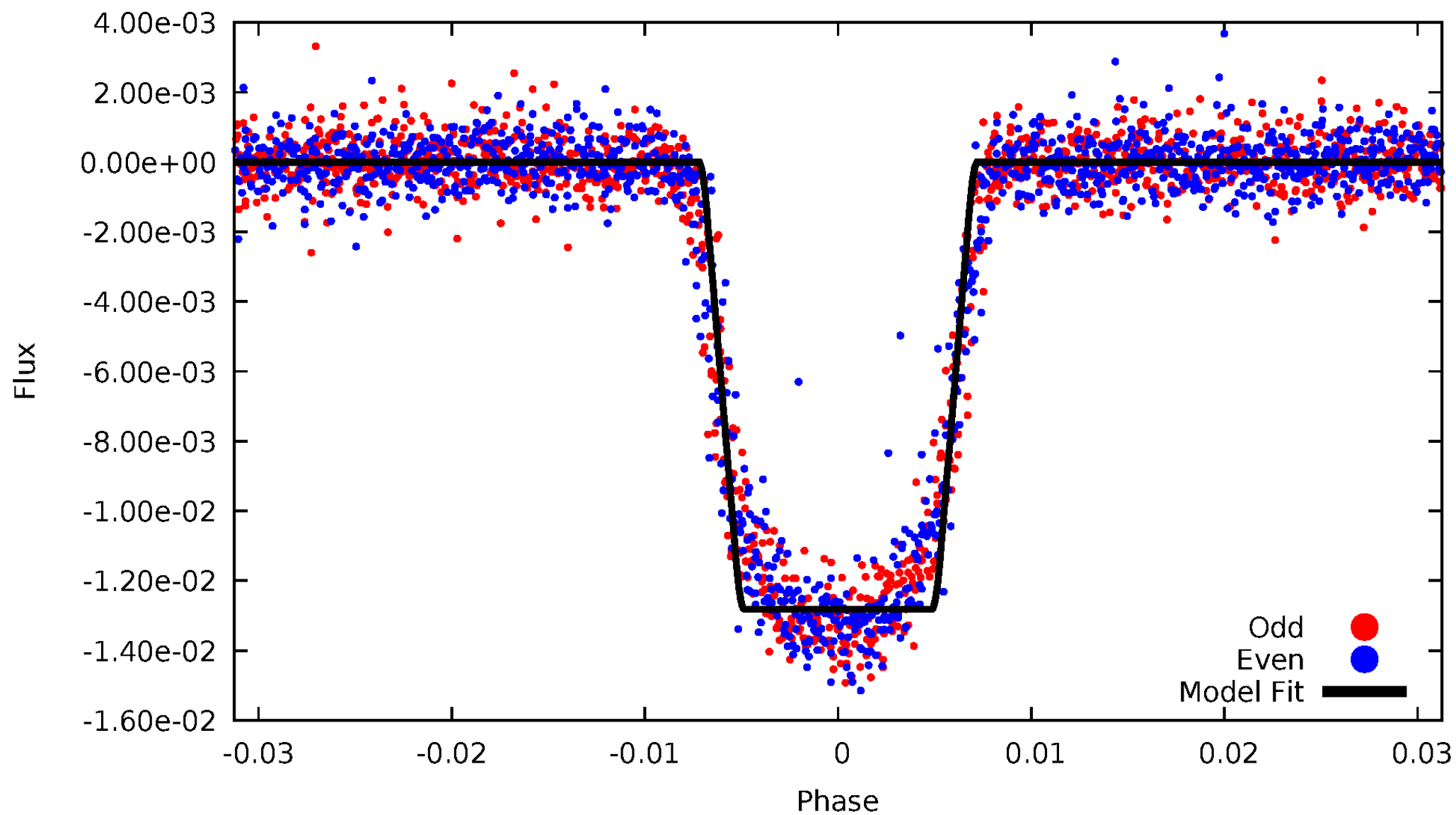
DV Odd/Even

TCE 004164994-01



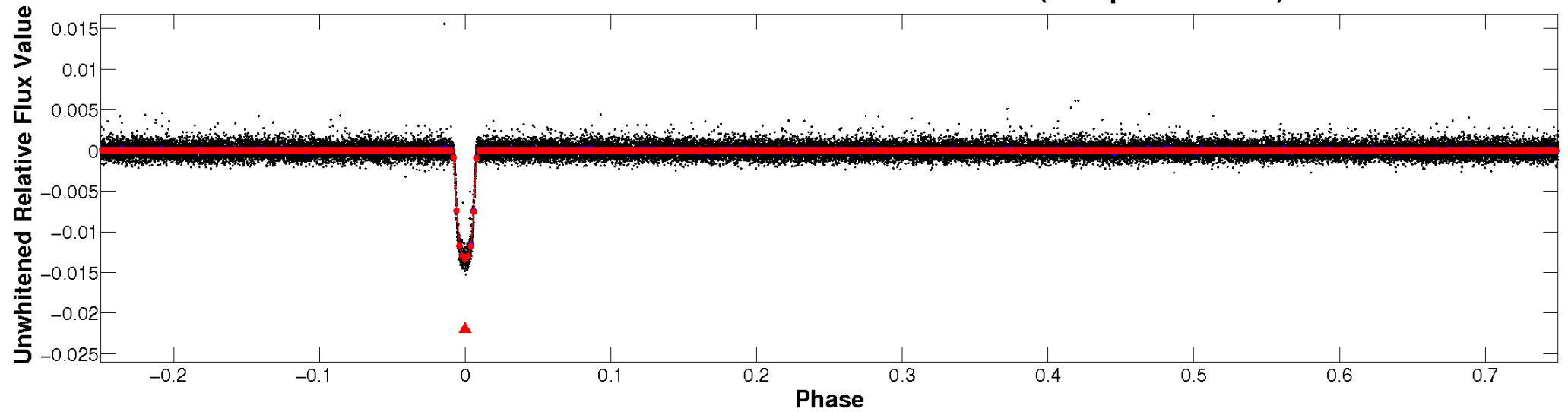
ALT Odd/Even

TCE 004164994-01

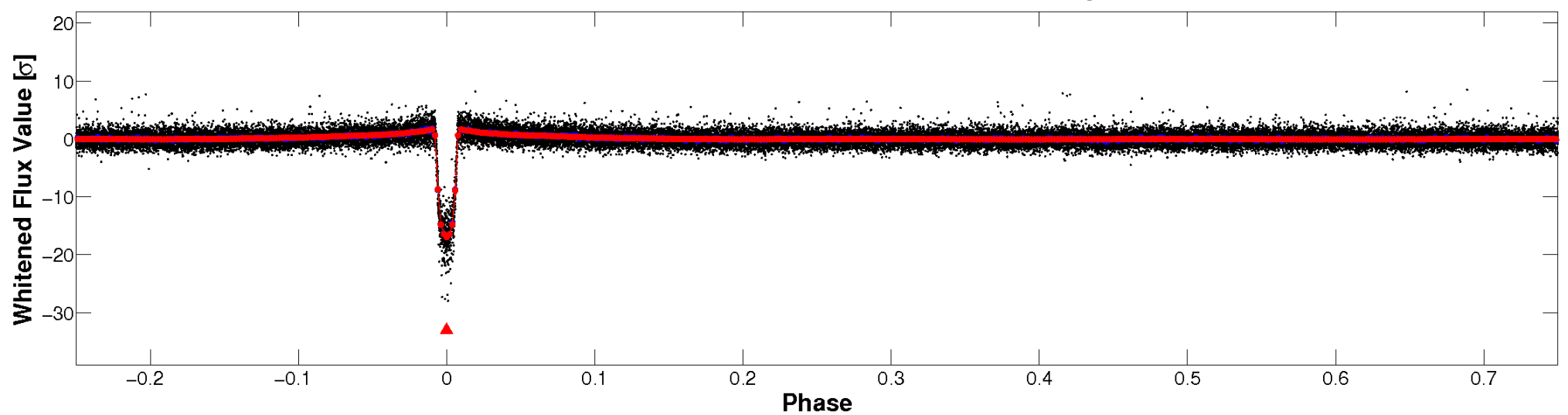


Non-Whitened Vs. Whitened Light Curve

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

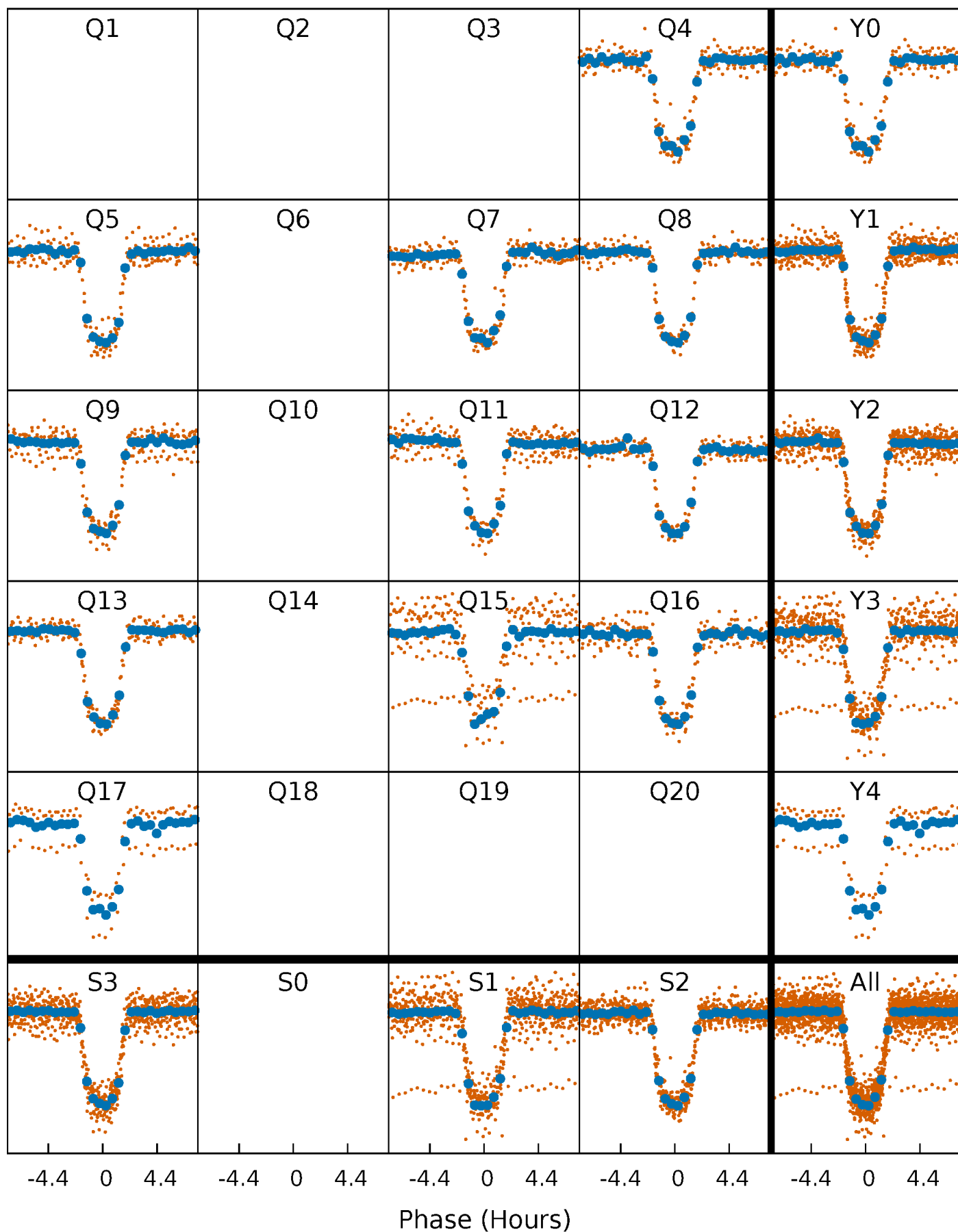


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



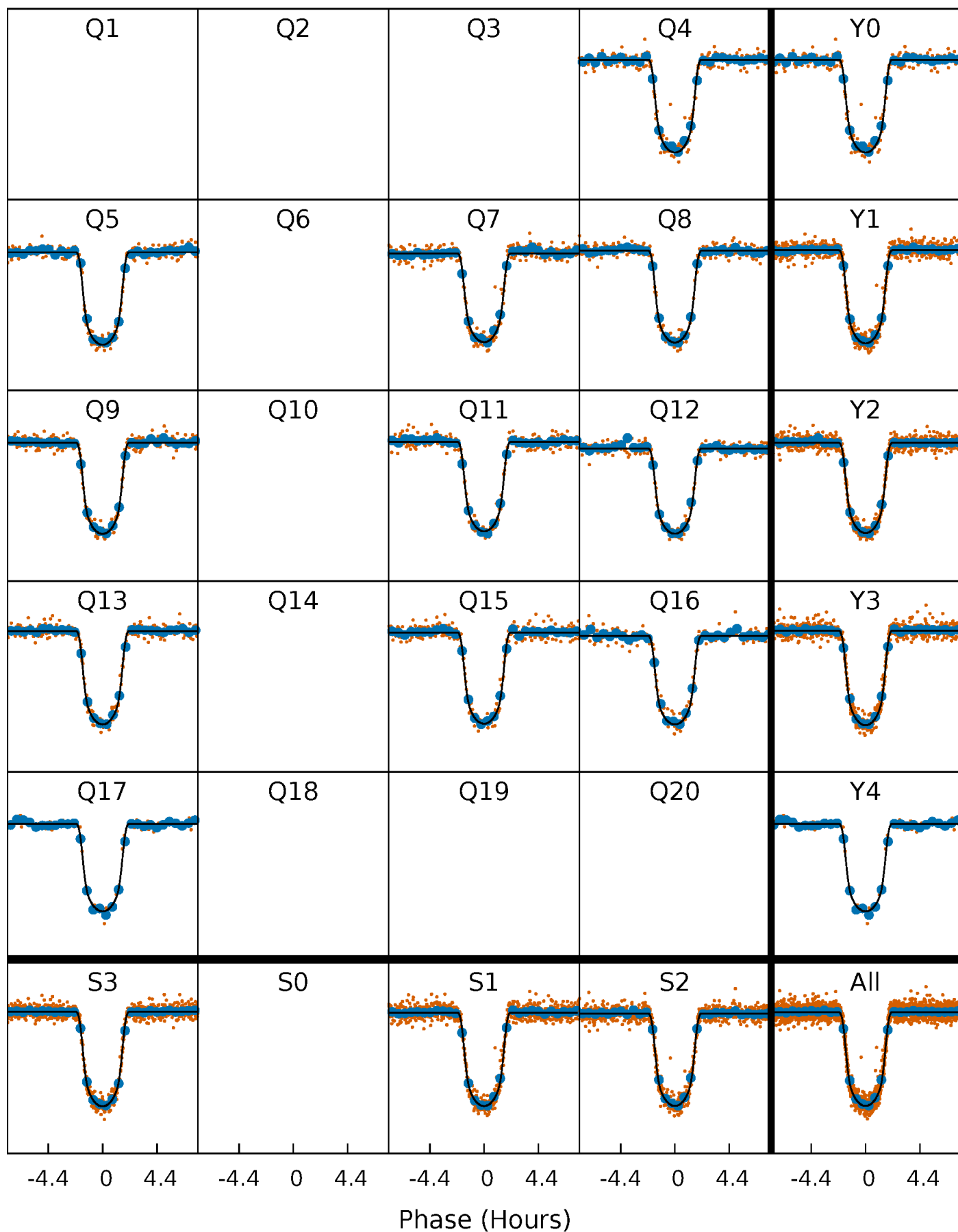
PDC Quarter-Phased Transit Curves

TCE 004164994-01 P= 10.506827 Days $T_0=139.438960$ (BKJD)



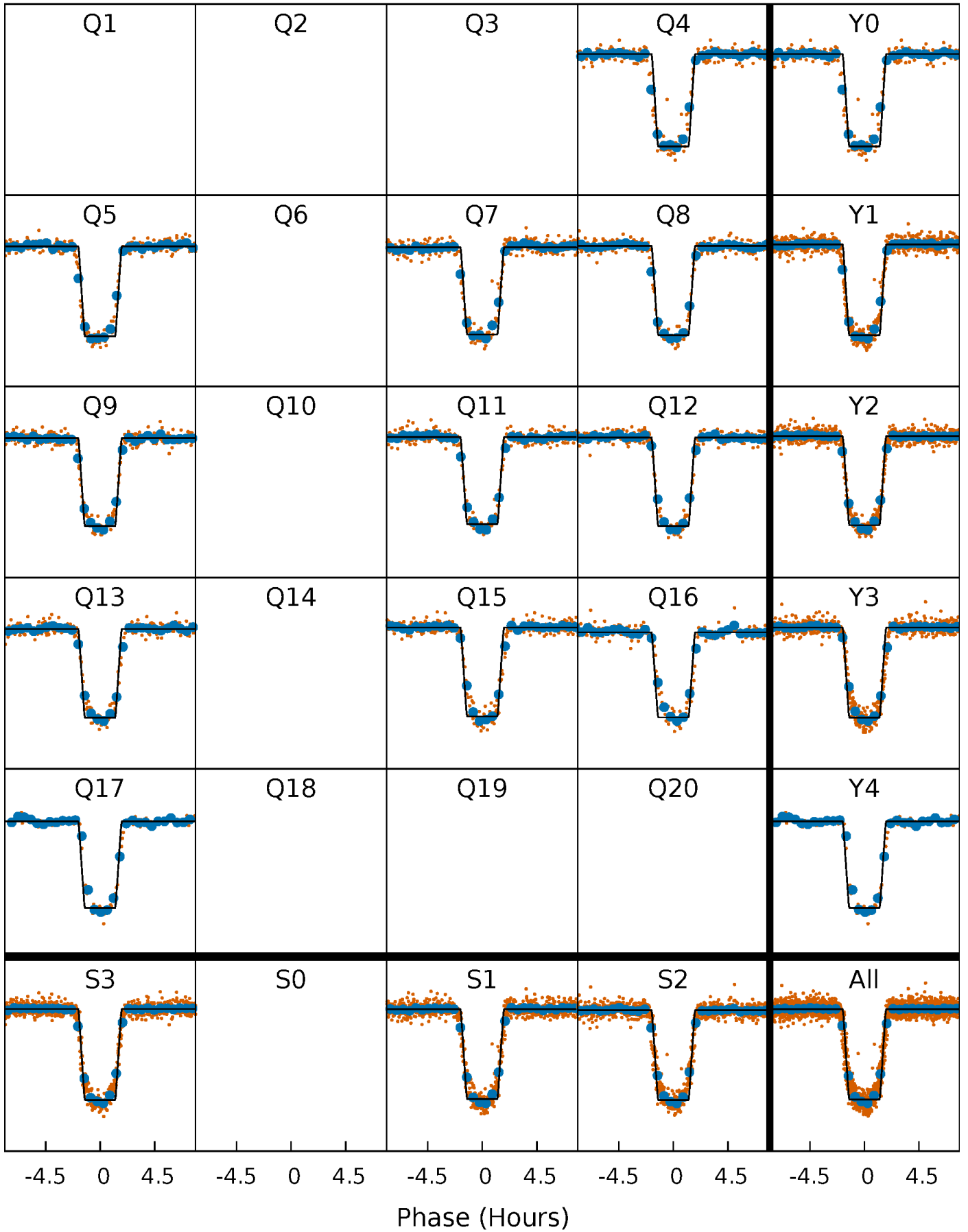
DV Quarter-Phased Transit Curves

TCE 004164994-01 P= 10.506827 Days $T_0=139.438960$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

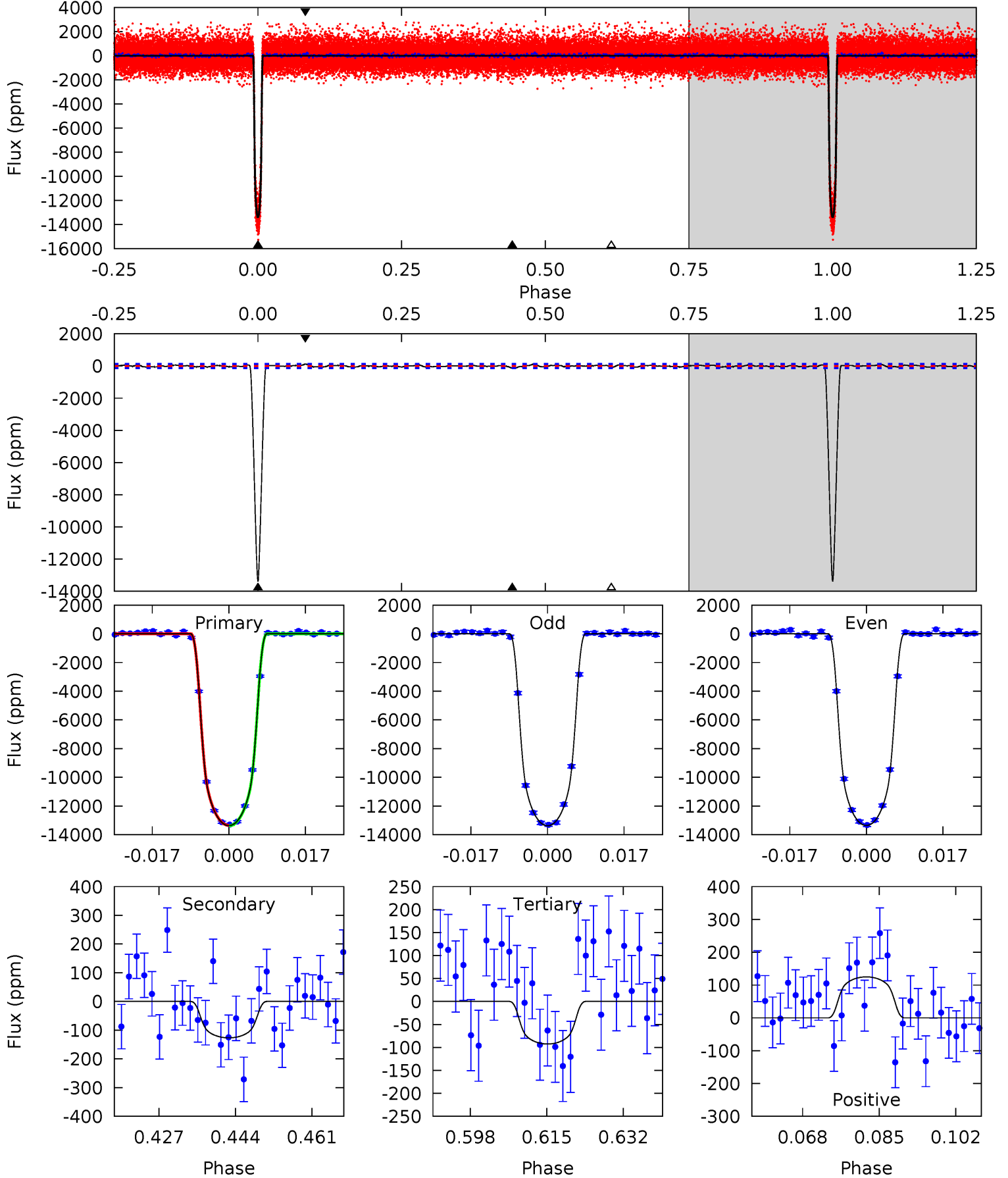
TCE 004164994-01 P= 10.506715 Days $T_0=139.448002$ (BKJD)



DV Model-Shift Uniqueness Test

004164994-01, P = 10.506827 Days, E = 139.438960 Days

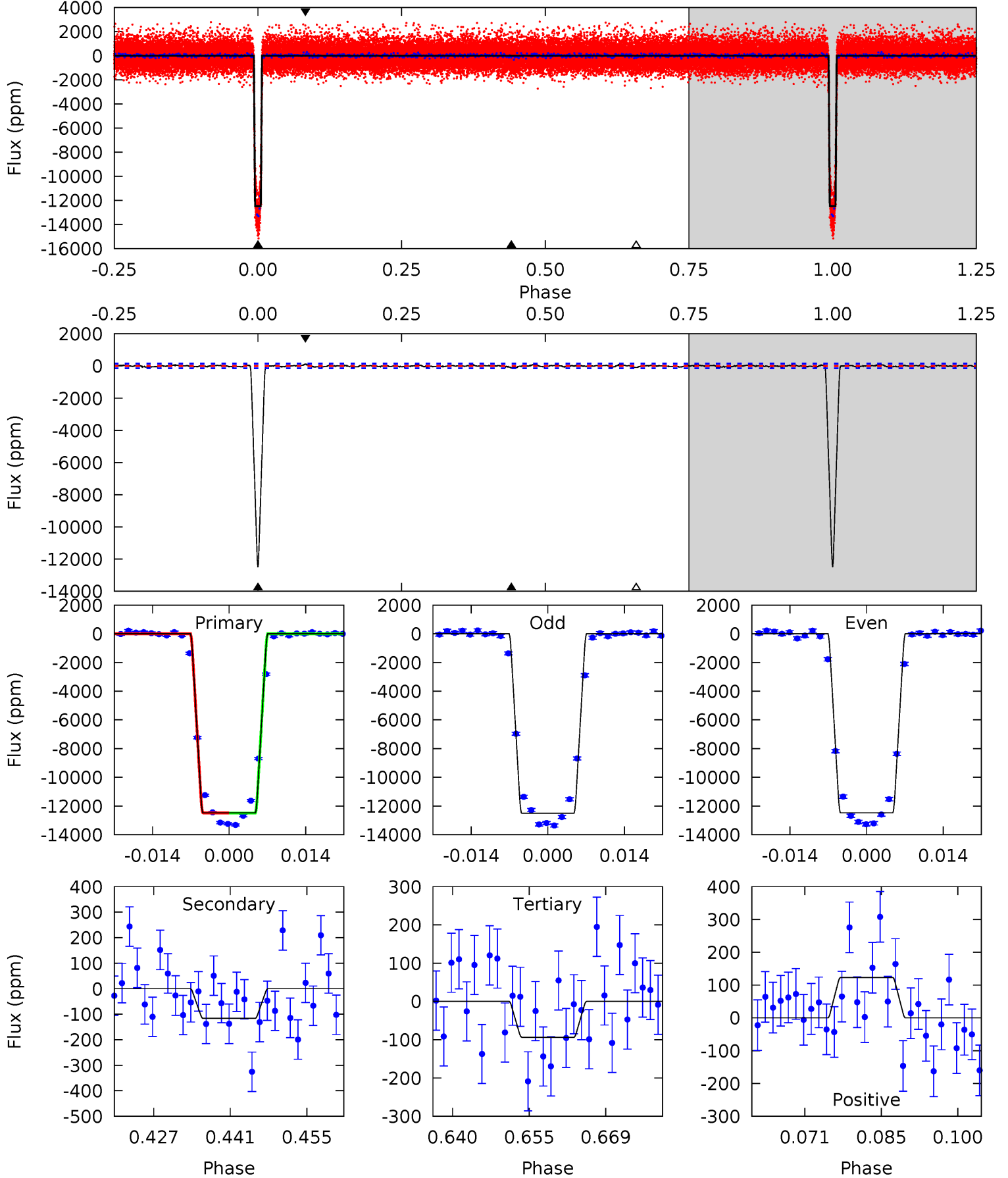
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
507.8	4.81	3.52	4.75	4.92	2.39	1.33	504.3	503.0	1.30	0.07	0.38	1.00	0.01	0.58



Alt Model-Shift Uniqueness Test

004164994-01, P = 10.506715 Days, E = 139.448002 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
432.7	4.02	3.24	4.26	4.96	2.45	1.08	429.5	428.5	0.78	-0.24	0.54	0.99	0.01	0.18



Stellar Parameters For KIC 004164994

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5127^{+185}_{-185}	$4.589^{+0.030}_{-0.090}$	$0.120^{+0.250}_{-0.300}$	$0.782^{+0.104}_{-0.061}$	$0.872^{+0.057}_{-0.092}$	$2.571^{+0.405}_{-0.745}$
	+4%/-4%	+1%/-2%	+208%/-250%	+13%/-8%	+7%/-11%	+16%/-29%
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 004164994-01 / KOI 1320.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-127 ± 26	$9.39^{+0.64}_{-0.49}$	945^{+42}_{-41}	2470^{+73}_{-81}	$6.163^{+1.338}_{-1.313}$
Alt.	-116 ± 29	$9.85^{+0.71}_{-0.57}$	947^{+41}_{-40}	2421^{+88}_{-106}	$5.146^{+1.547}_{-1.321}$

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

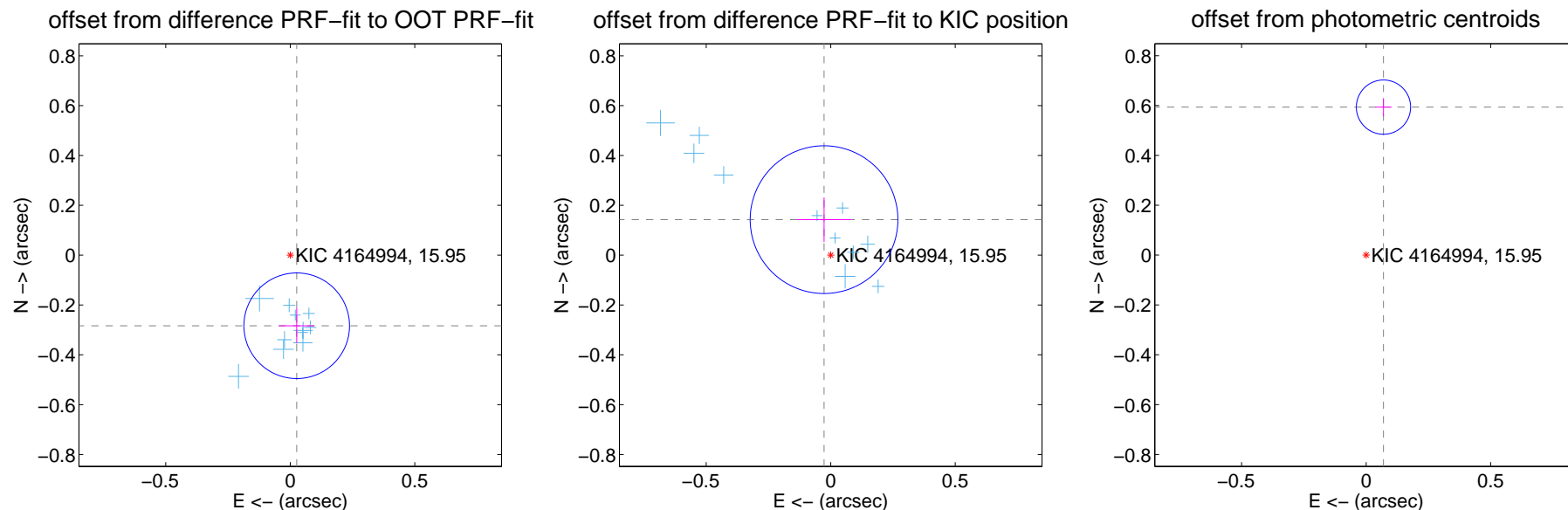
DV Centroid Data

Supplemental centroid analysis for 004164994-01. Kepler magnitude: 15.95. Transit SNR 333.77

There are 11 quarters with good PRF difference image offsets

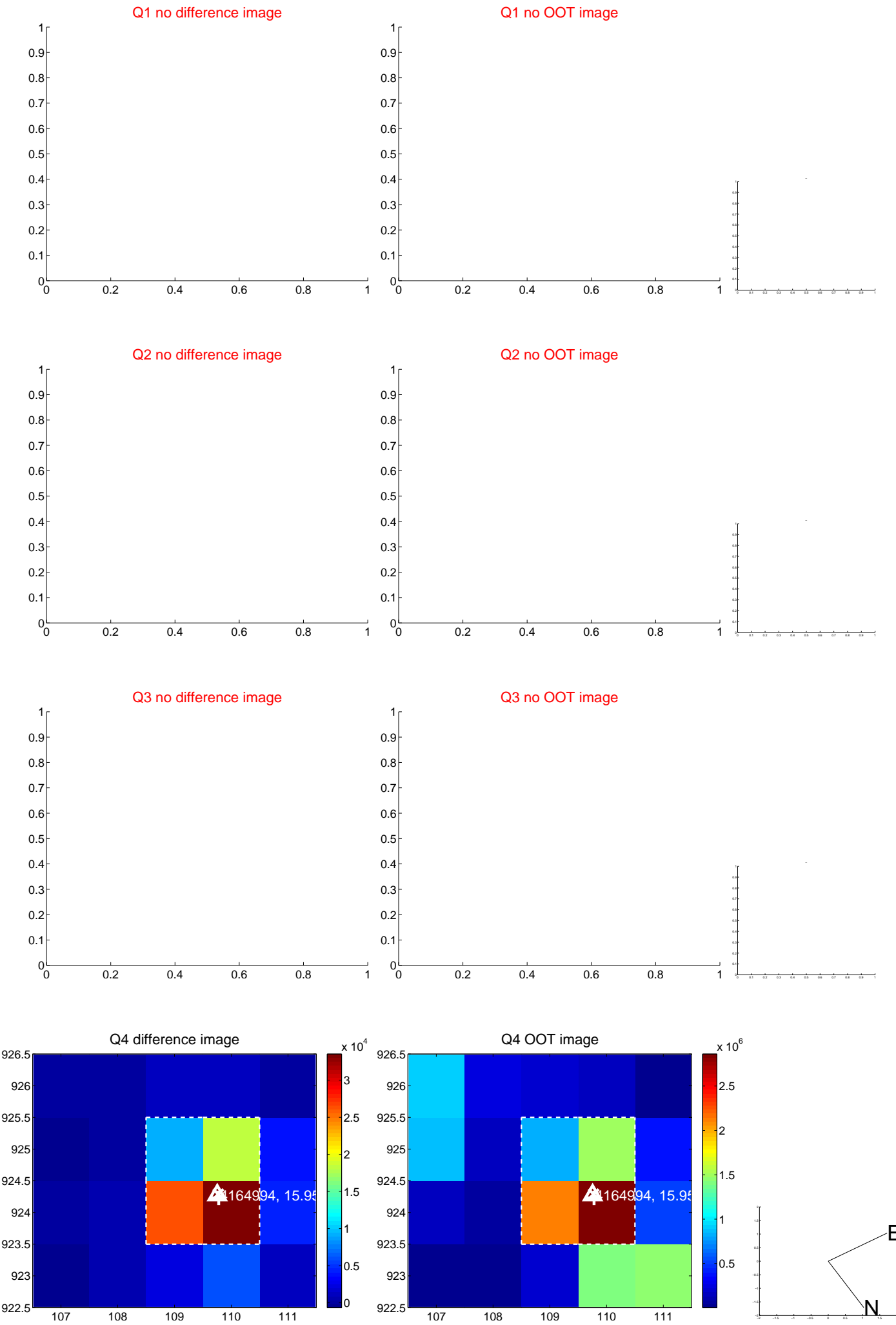
The direct PRF centroid is offset from the target star catalog position by about 0.90 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.285 ± 0.071	4.03	-0.026 ± 0.071	-0.283 ± 0.071
PRF-fit source offset from KIC position	0.145 ± 0.099	1.47	0.027 ± 0.108	0.143 ± 0.089
photometric centroid source offset	0.60 ± 0.04	16.47	-0.07 ± 0.03	0.59 ± 0.04

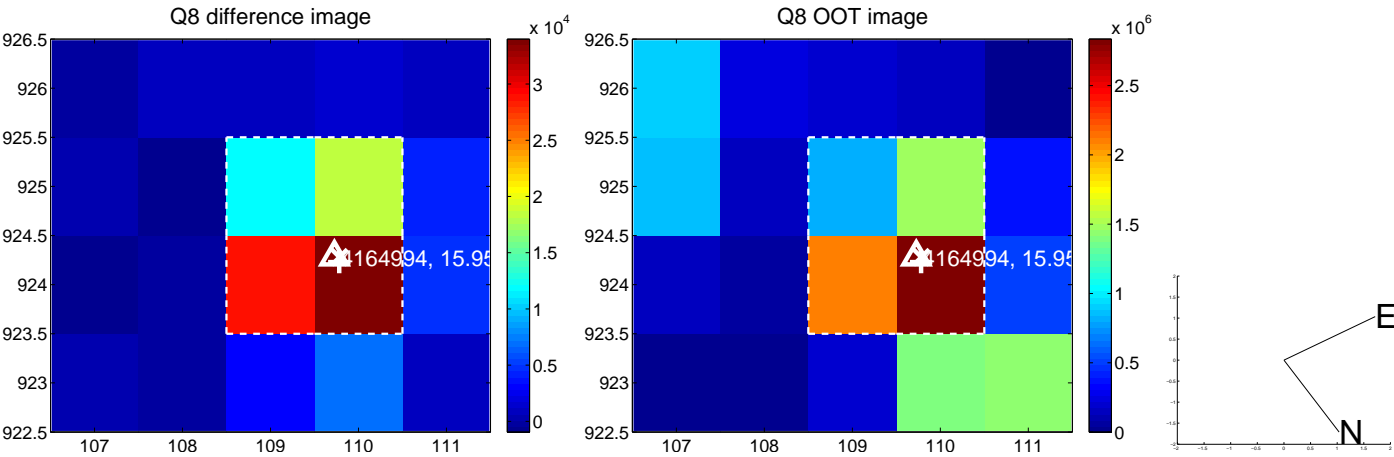
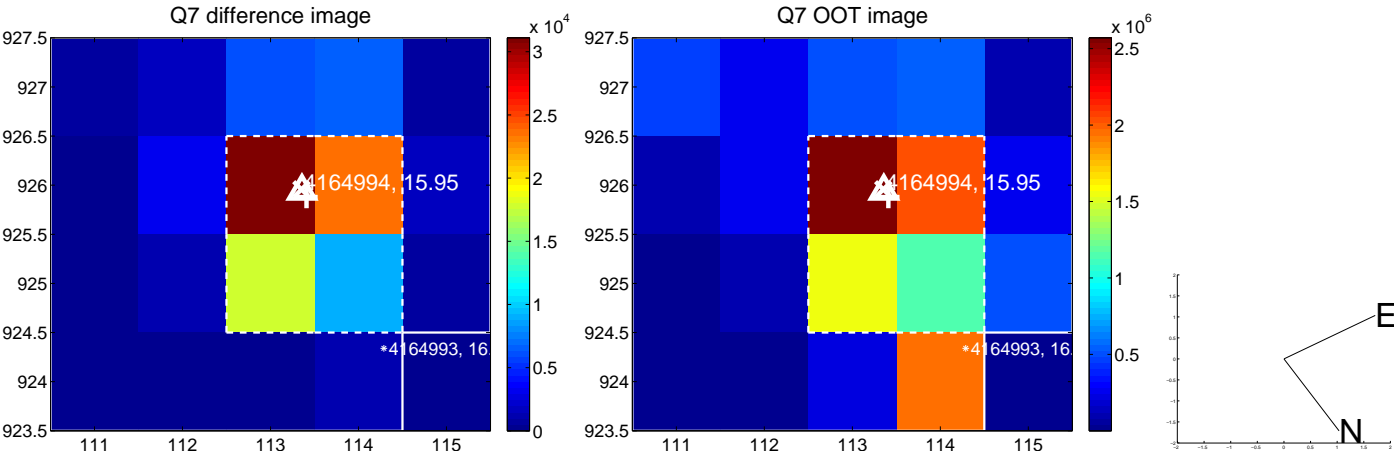
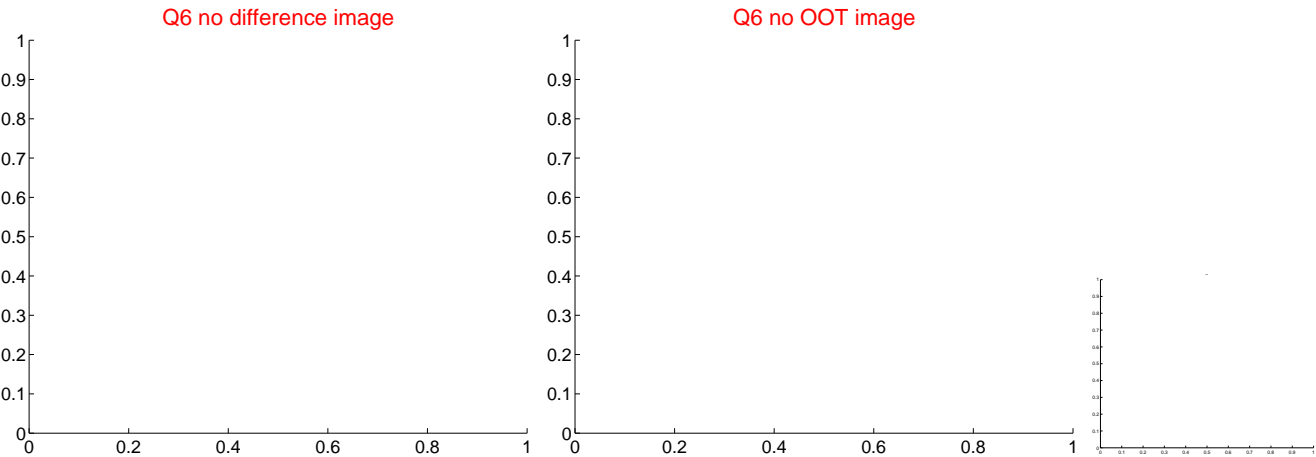
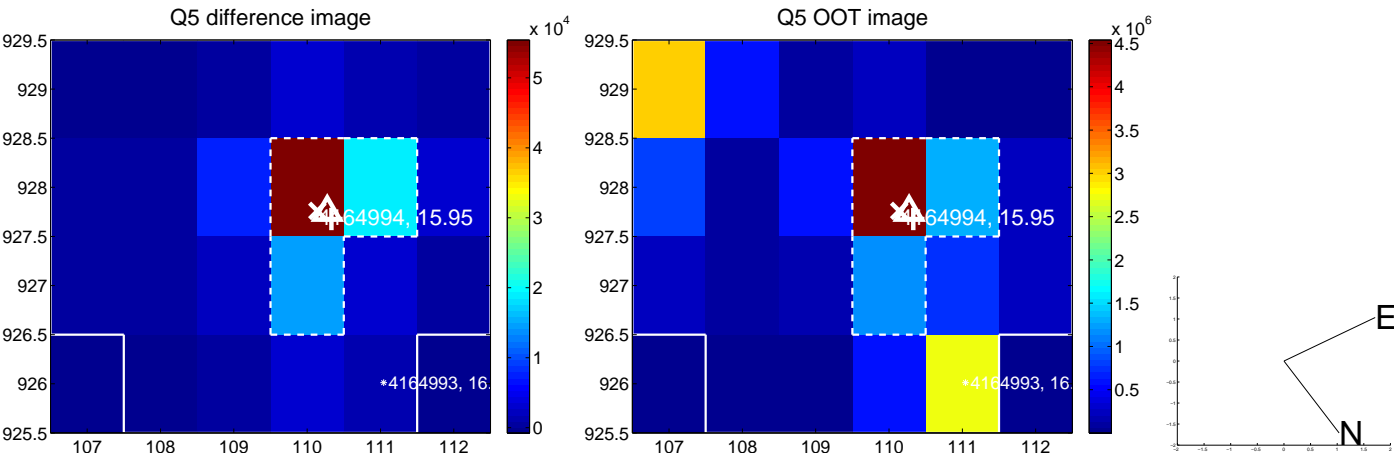


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

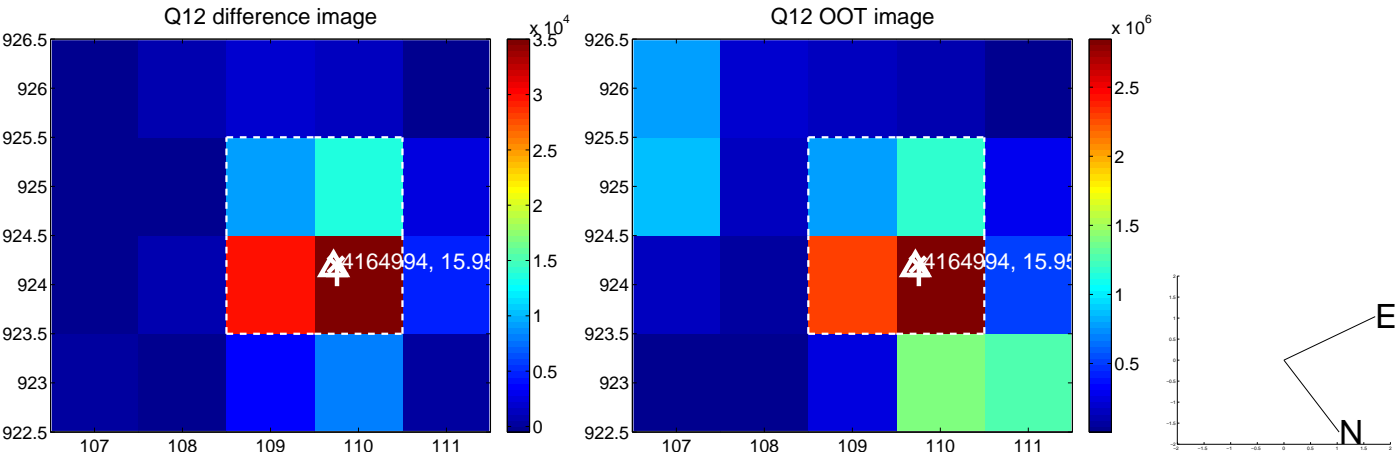
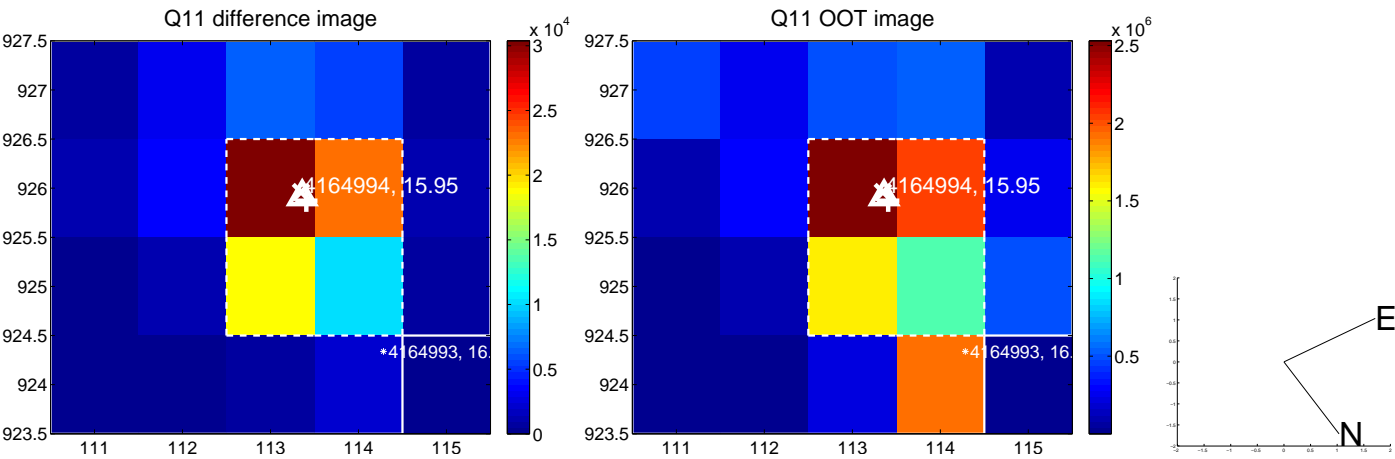
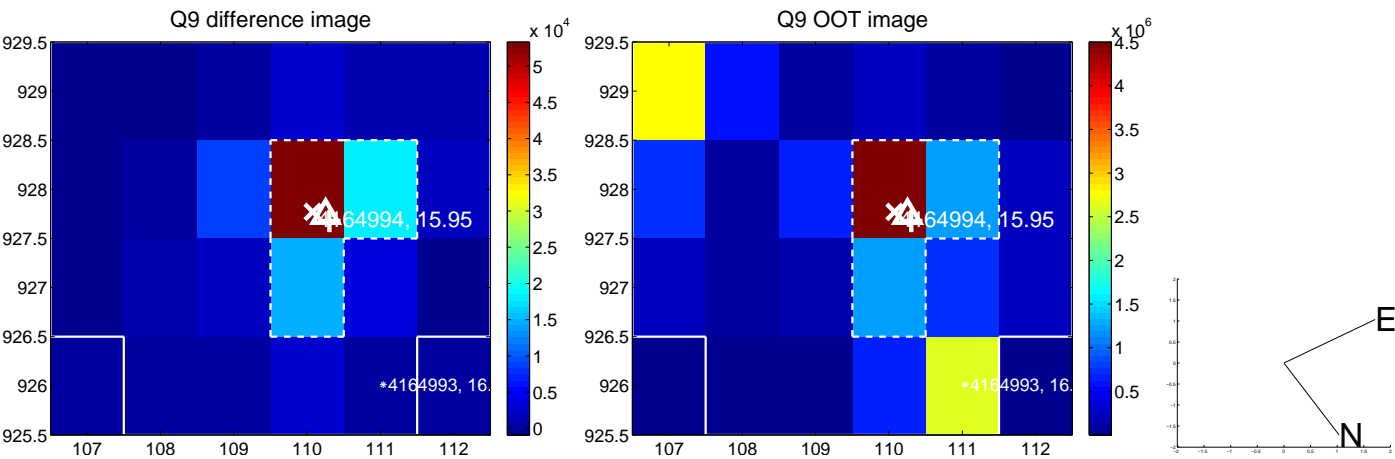
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



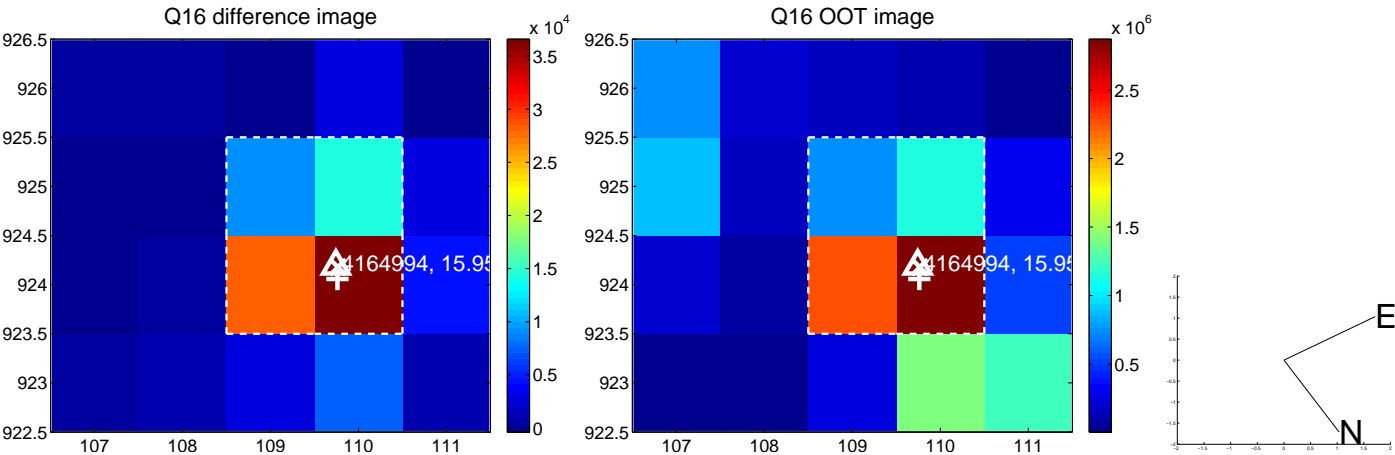
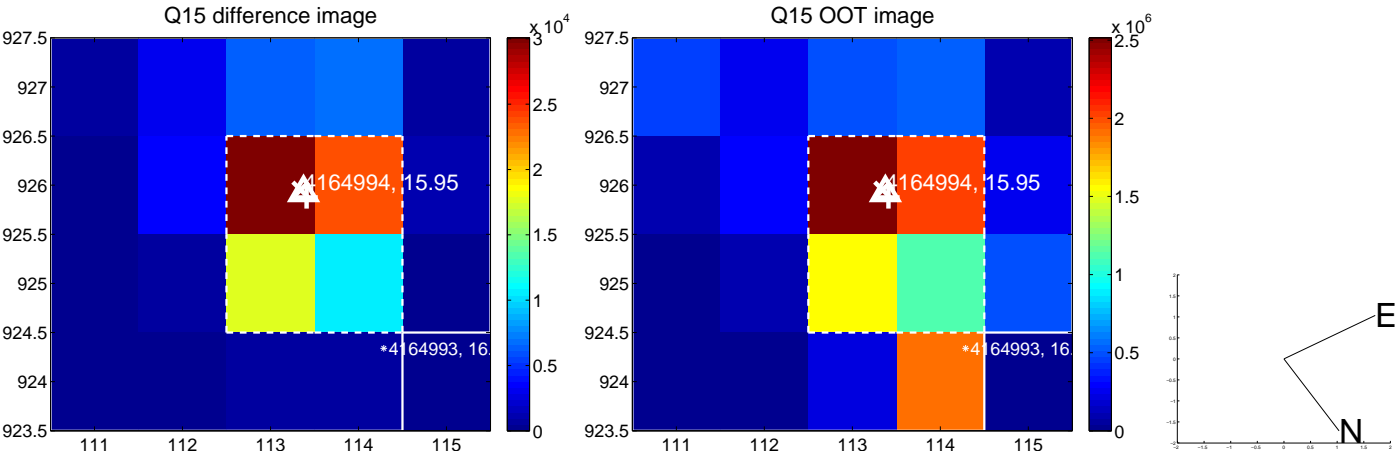
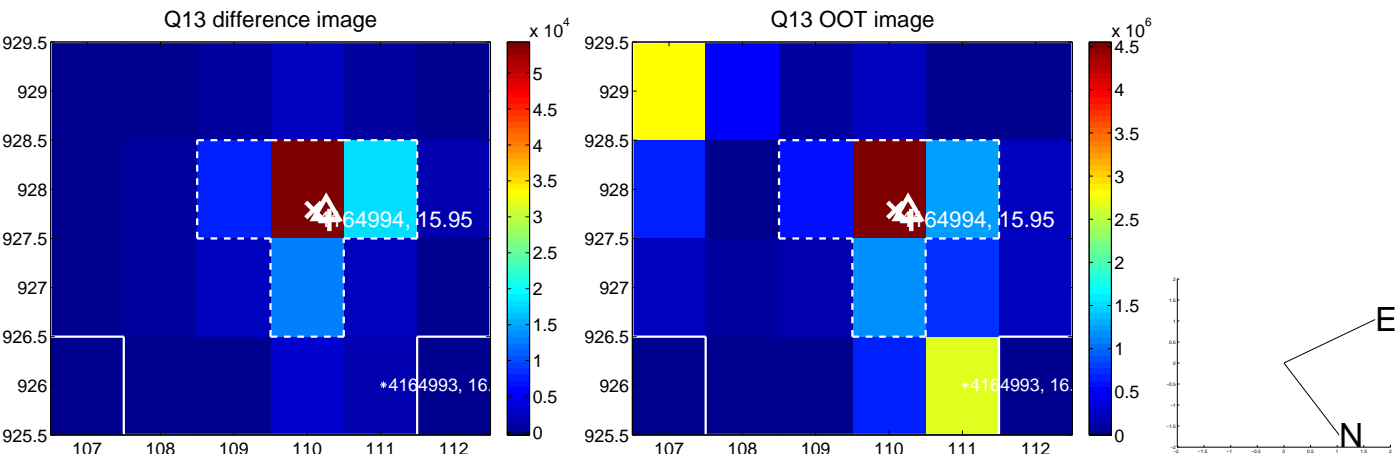
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



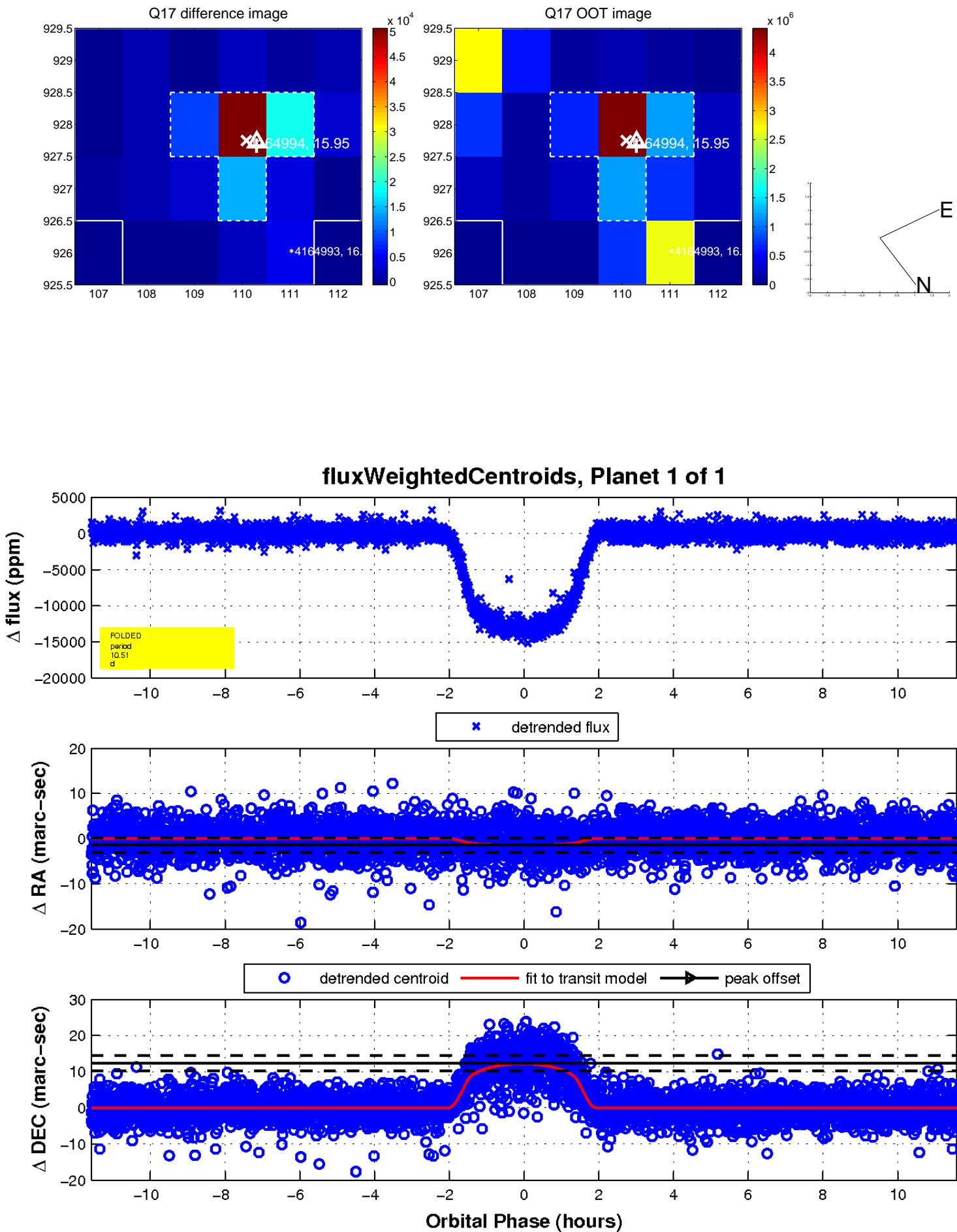
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UKIRT Image

Declination

