

KIC 009008220

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})
009008220-01	OBS	0466.01	9.391045	132.975092	2896.8	2.856	166.8	166.3	1.50	5944	11.95	308.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009008220-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

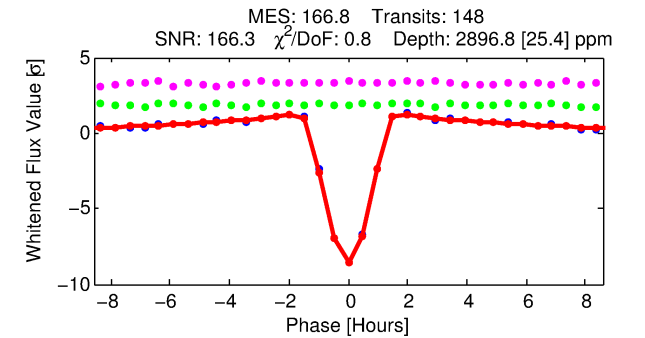
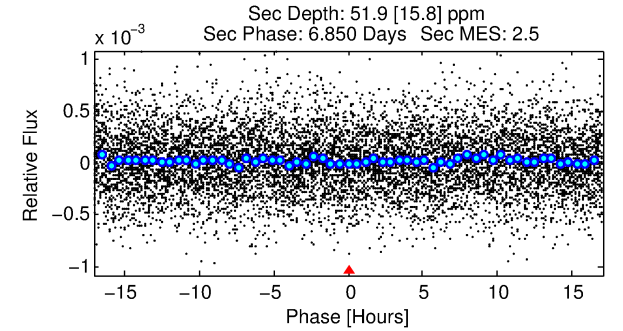
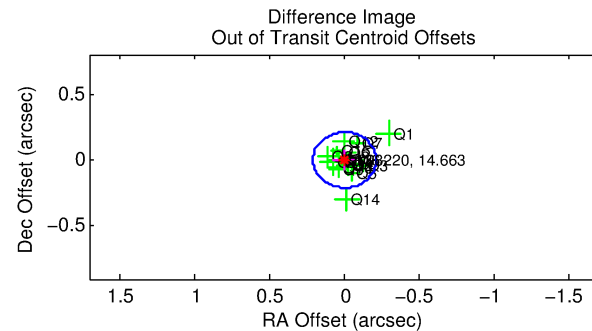
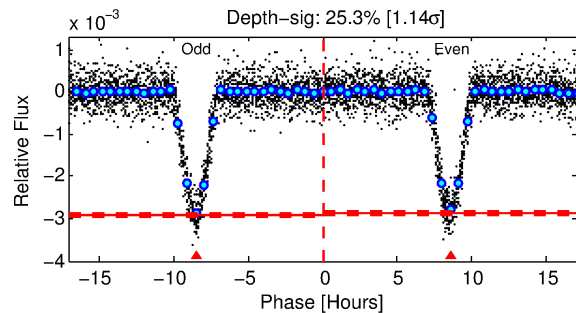
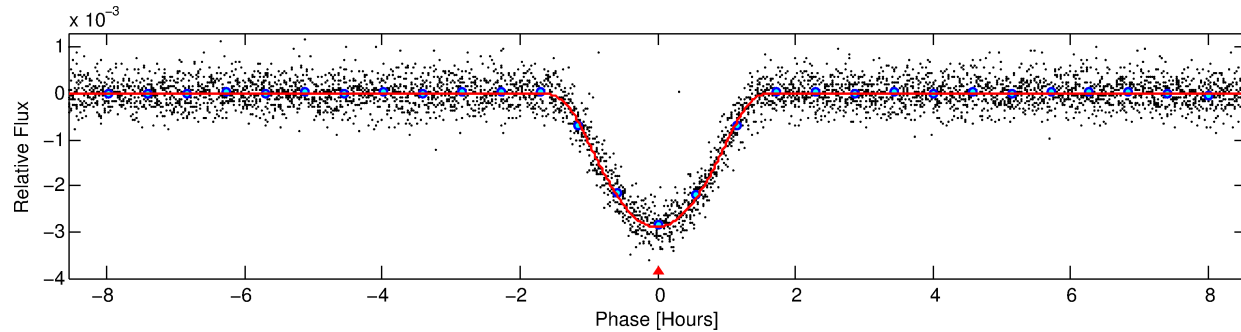
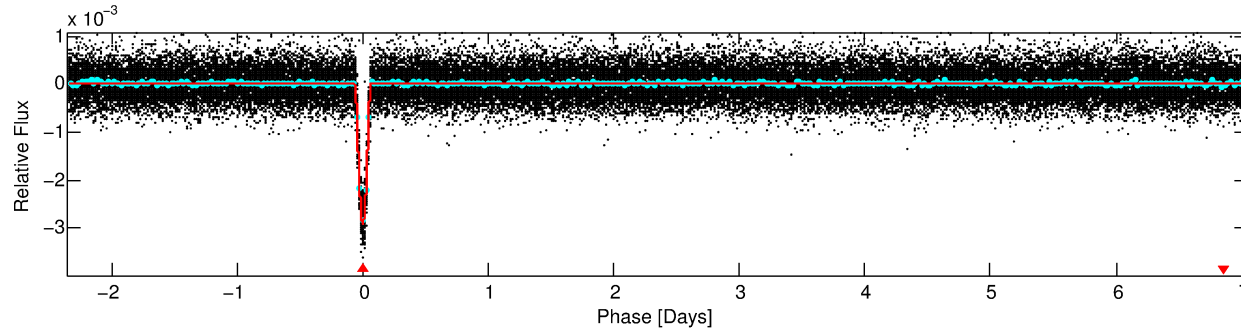
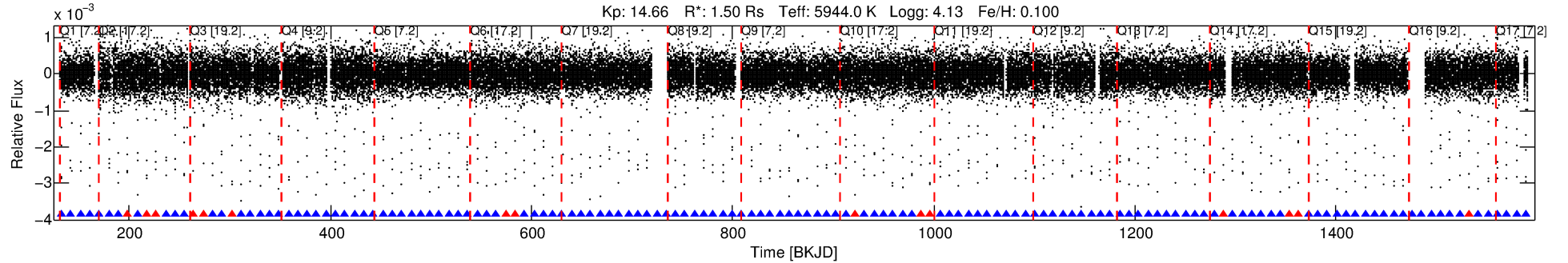
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009008220-01

No Significant Match Found

DV One-Page Summary

KIC: 9008220 Candidate: 1 of 1 Period: 9.391 d
KOI: K00466.01 Corr: 0.998



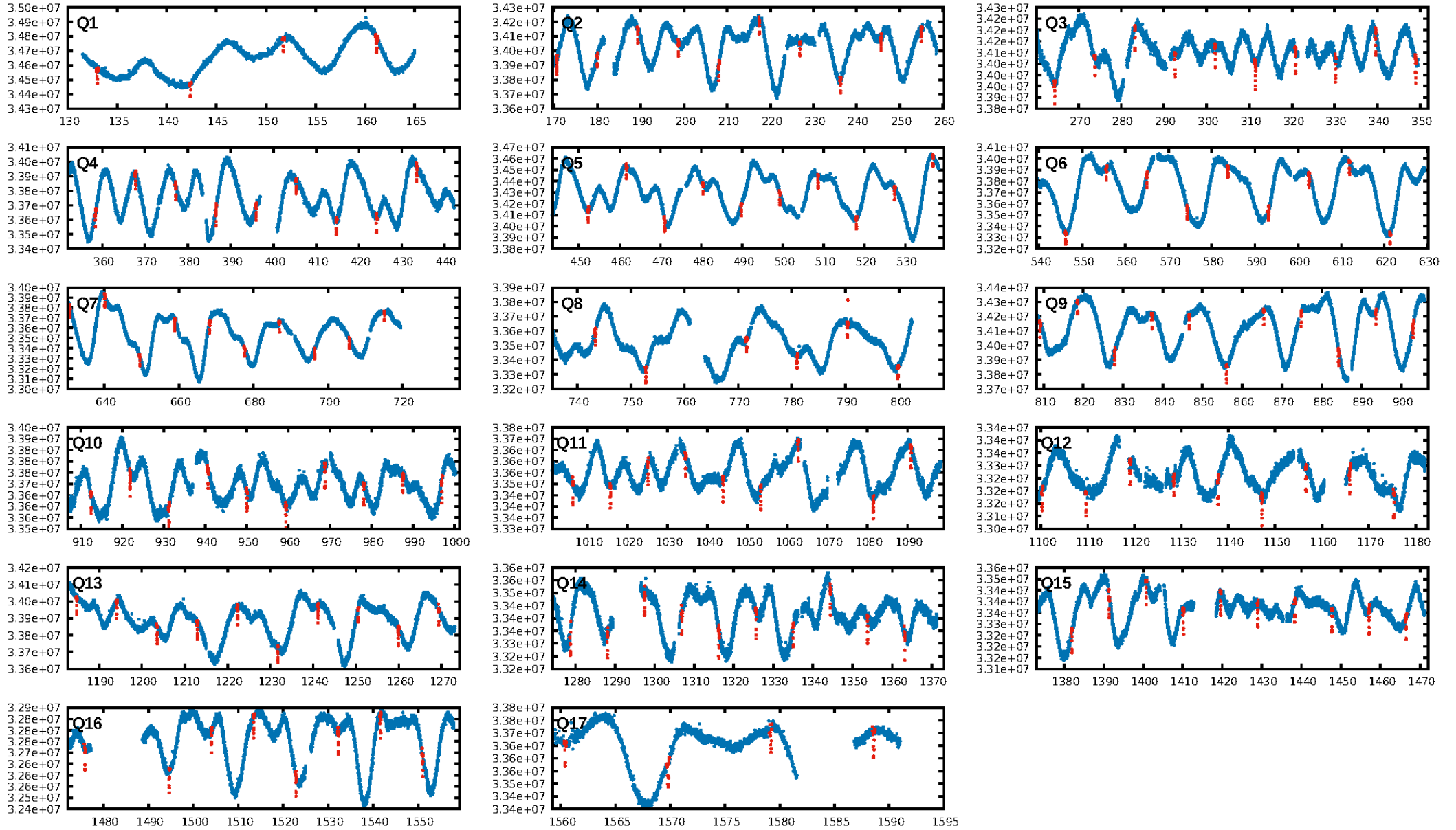
DV Fit Results:

Period = 9.39104 [0.00000] d
Epoch = 132.9751 [0.0004] BKJD
Rp/R* = 0.0731 [0.0073]
a/R* = 11.70 [0.42]
b = 0.97 [0.01]
Seff = 308.51 [96.81]
Teq = 1069 [84] K
Rp = 11.95 [2.66] Re
a = 0.0902 [0.0174] AU
Ag = 1.63 [0.78] [0.81 σ]
Teffp = 1866 [172] K [4.18 σ]

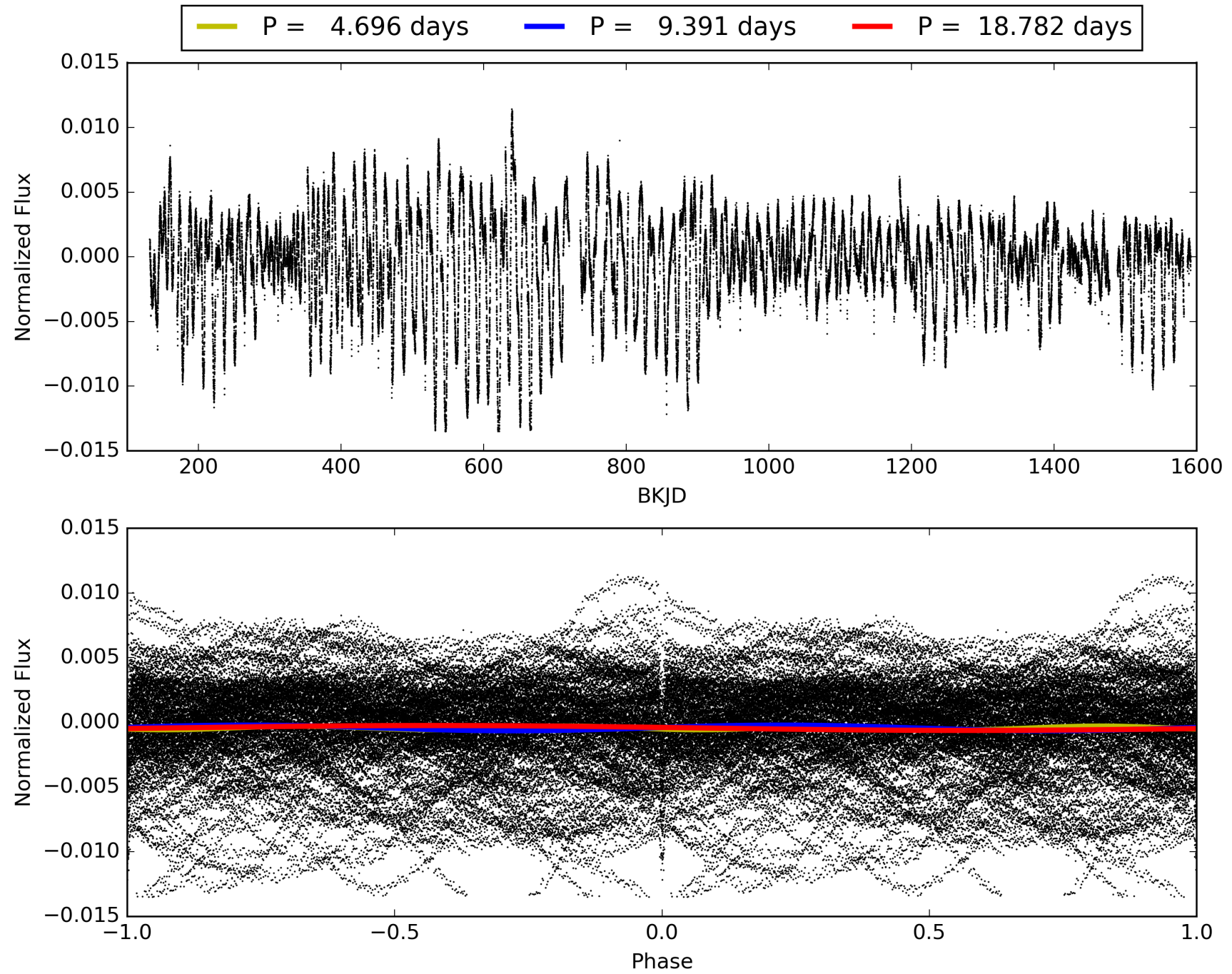
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.89 [125/140]
GhostDiagnostic-chr: 5.291
Centroid-sig: 5.0%
Centroid-so: 0.106 arcsec [1.55 σ]
OotOffset-rm: 0.006 arcsec [0.09 σ]
KicOffset-rm: 0.082 arcsec [1.11 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009008220-01, PDC Light Curves

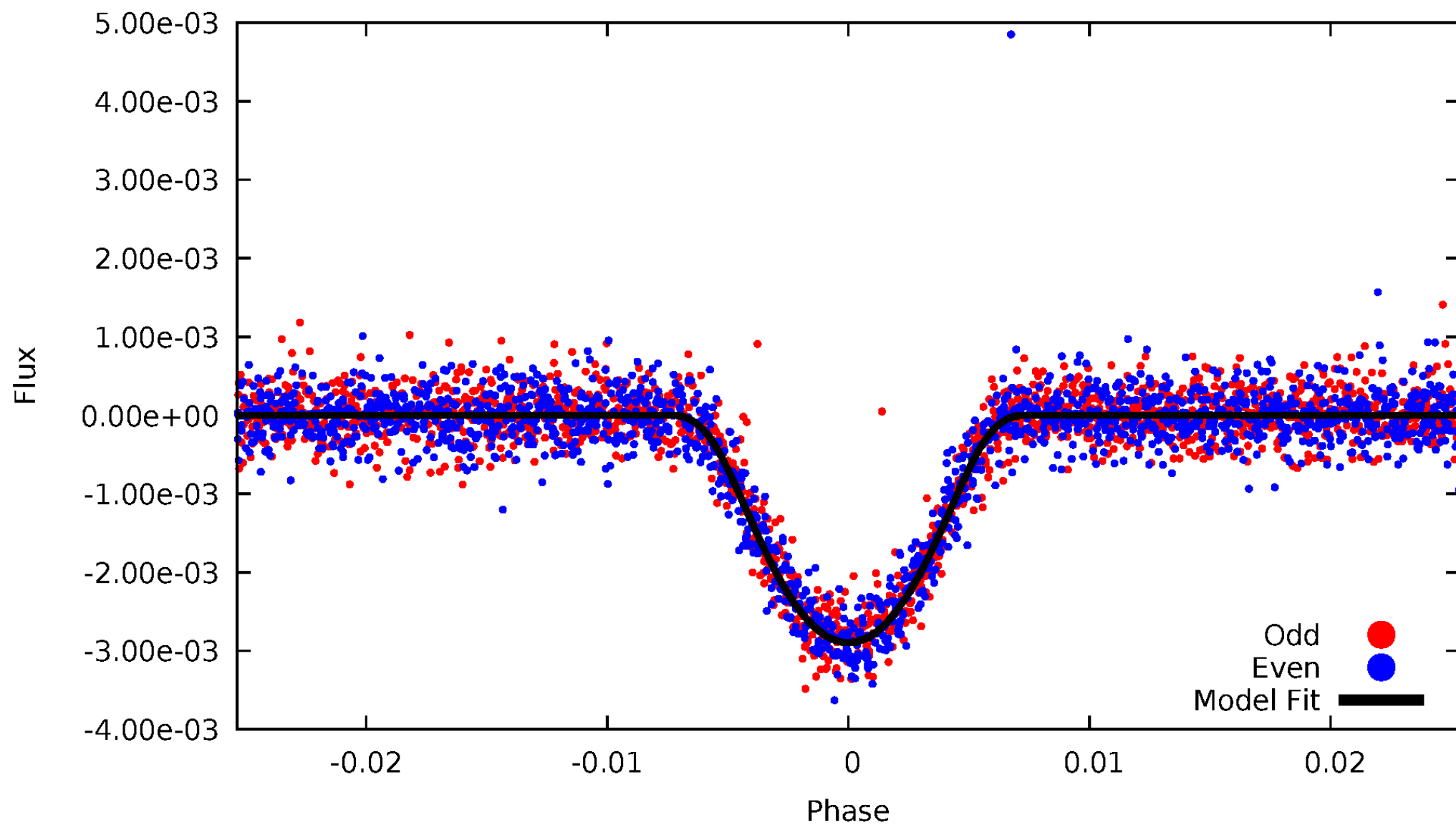


TCE 009008220-01



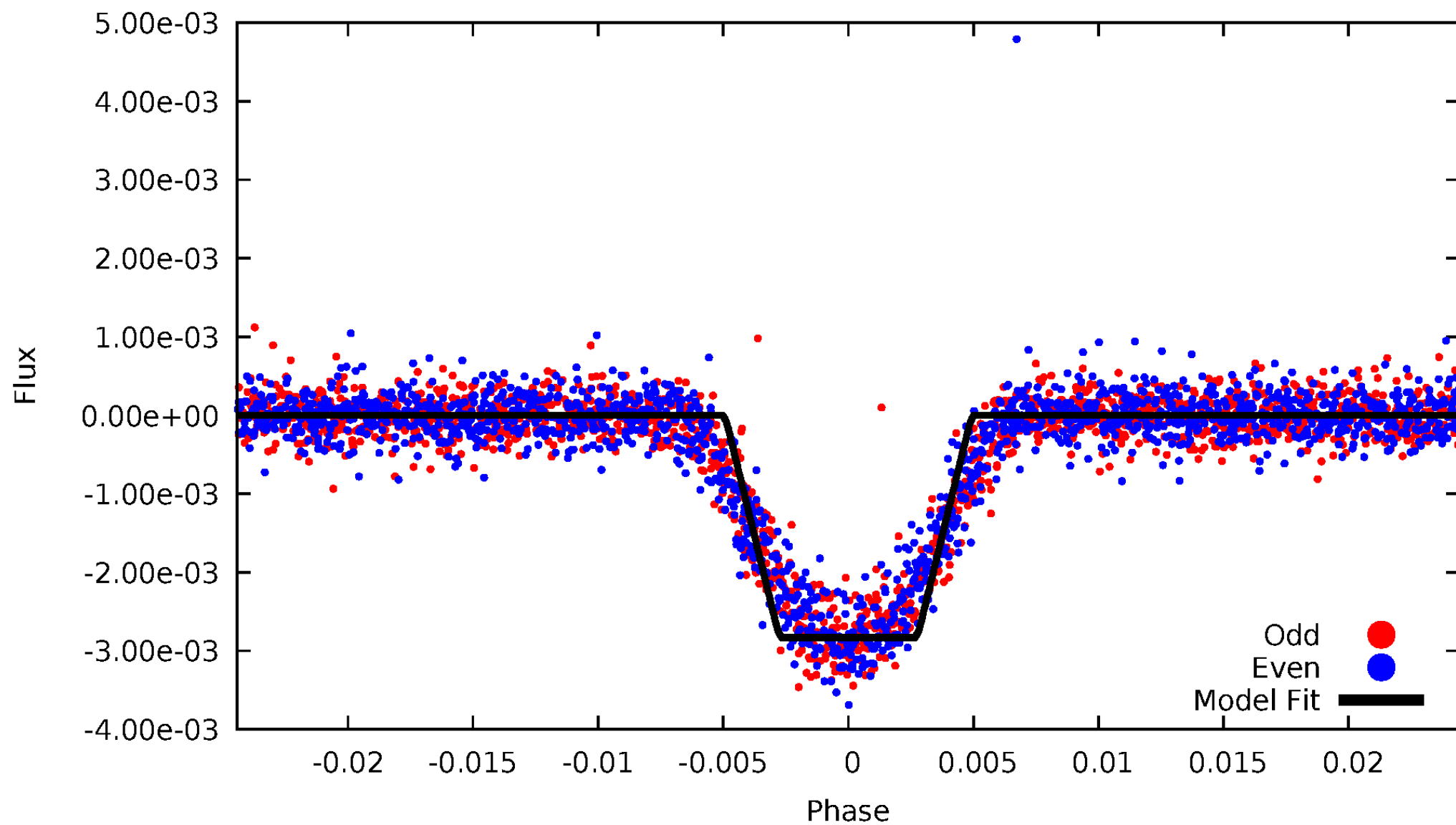
DV Odd/Even

TCE 009008220-01



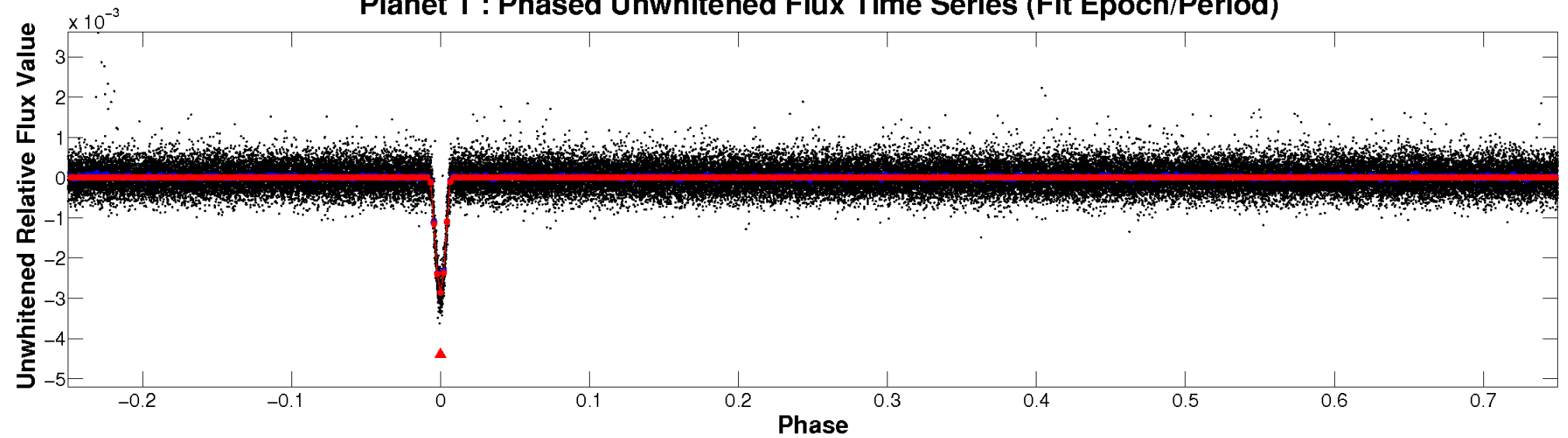
ALT Odd/Even

TCE 009008220-01

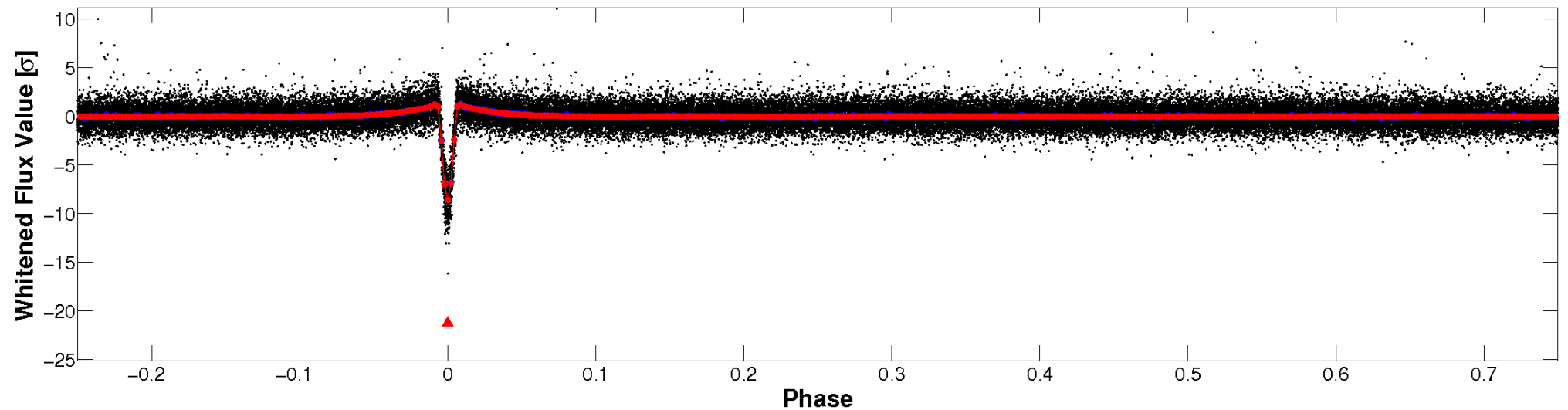


Non-Whitened Vs. Whitened Light Curve

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

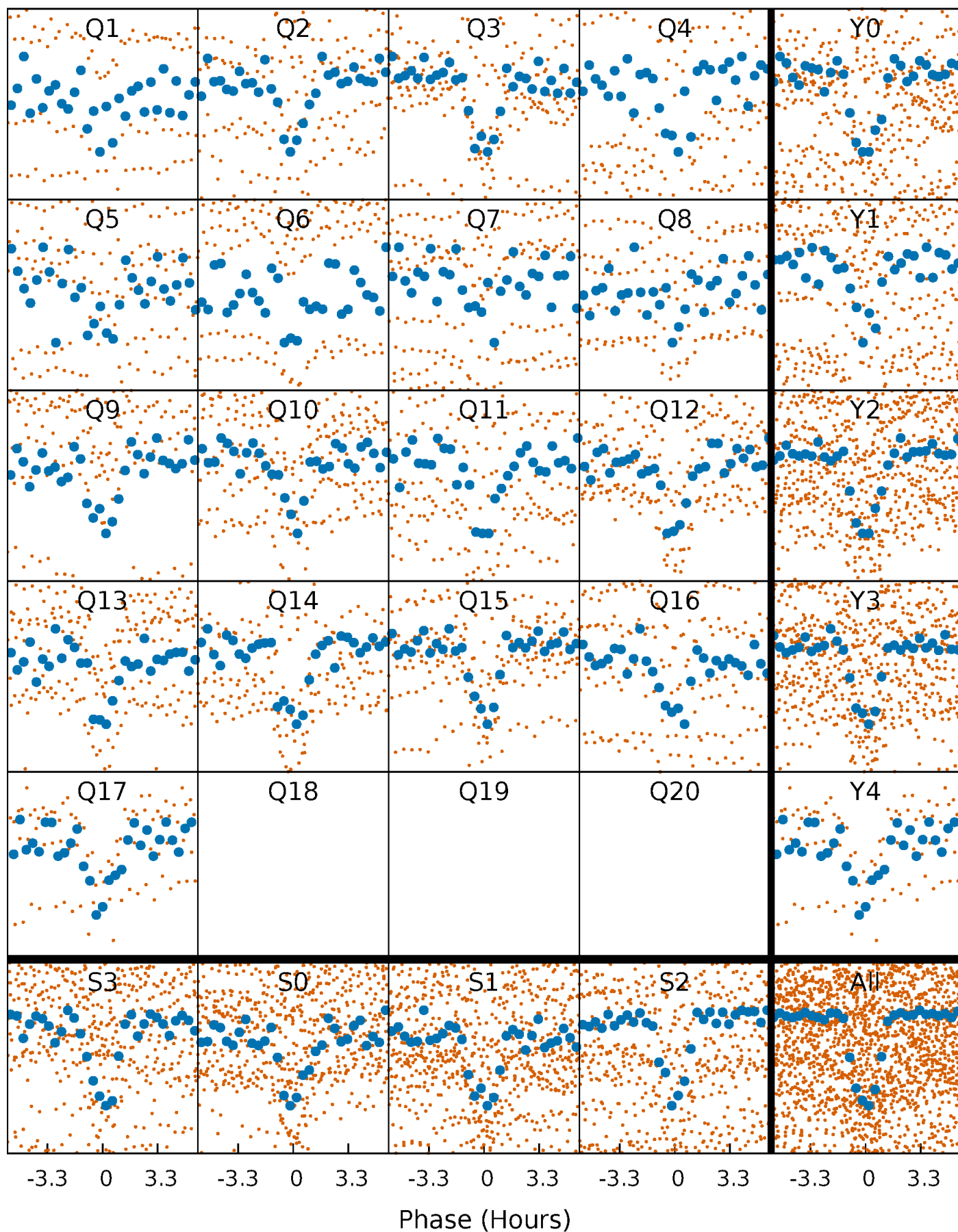


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



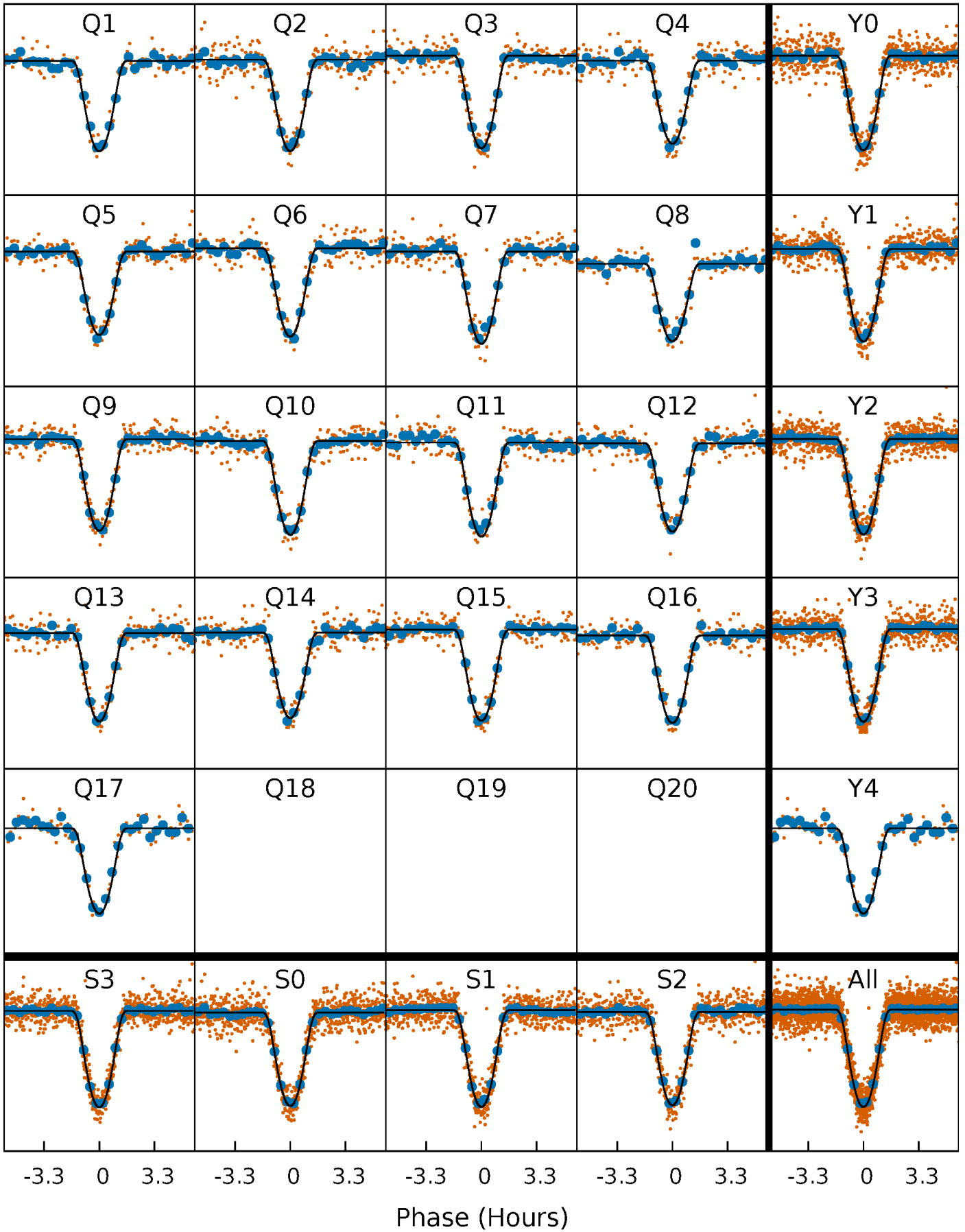
PDC Quarter-Phased Transit Curves

TCE 009008220-01 P= 9.391045 Days $T_0=132.975092$ (BKJD)



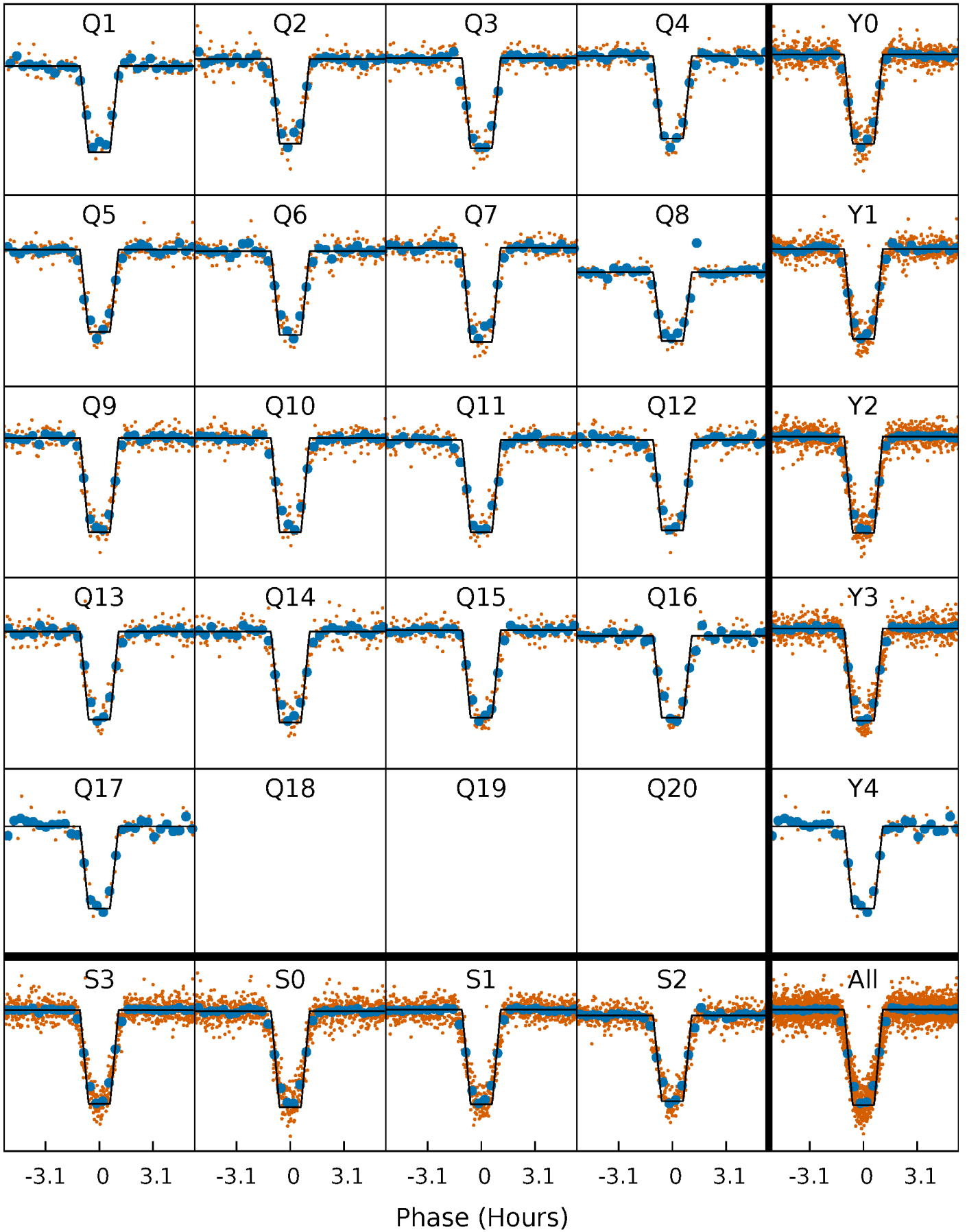
DV Quarter-Phased Transit Curves

TCE 009008220-01 P= 9.391045 Days $T_0=132.975092$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

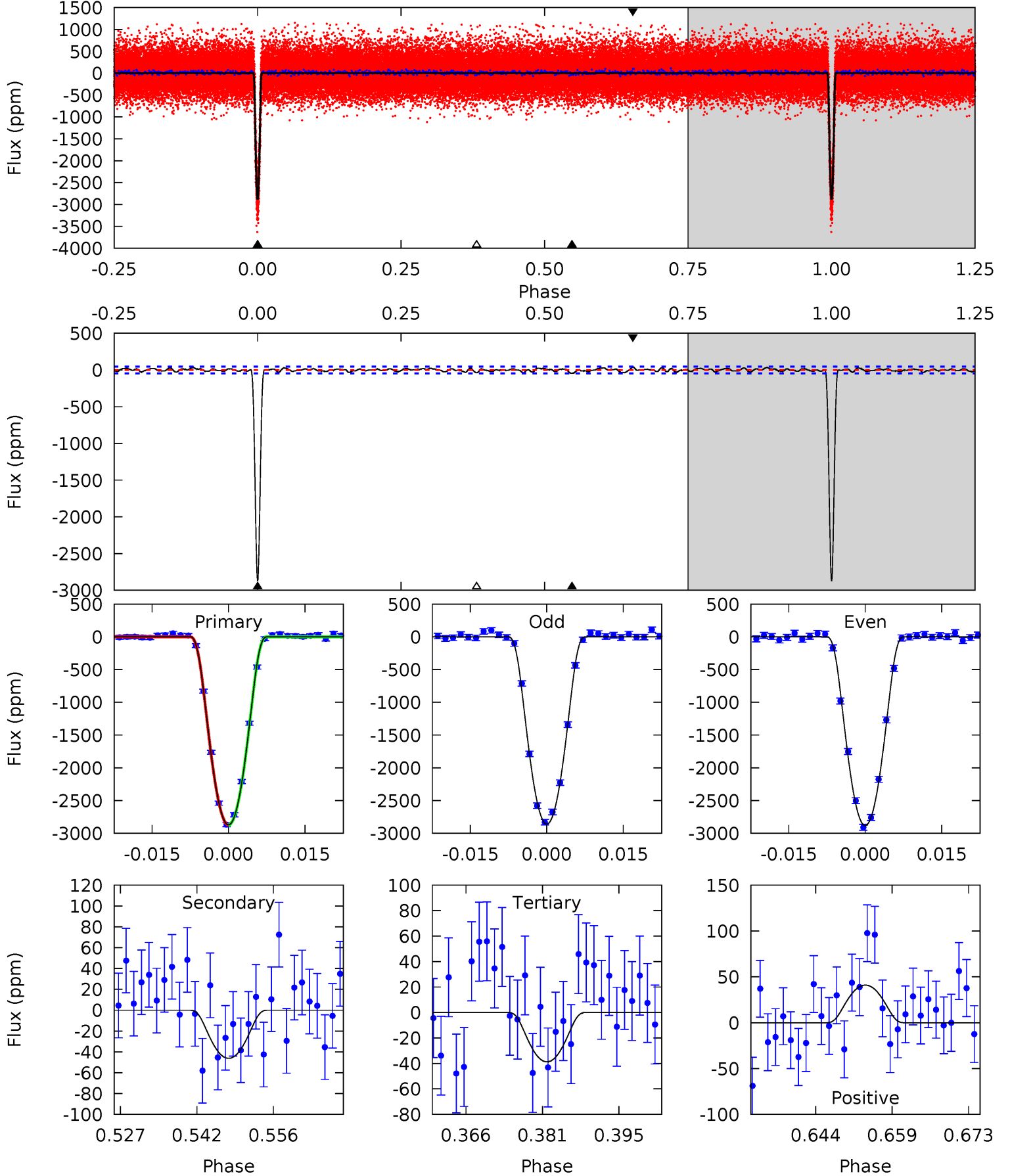
TCE 009008220-01 P= 9.391012 Days $T_0=132.977600$ (BKJD)



DV Model-Shift Uniqueness Test

009008220-01, P = 9.391045 Days, E = 123.584047 Days

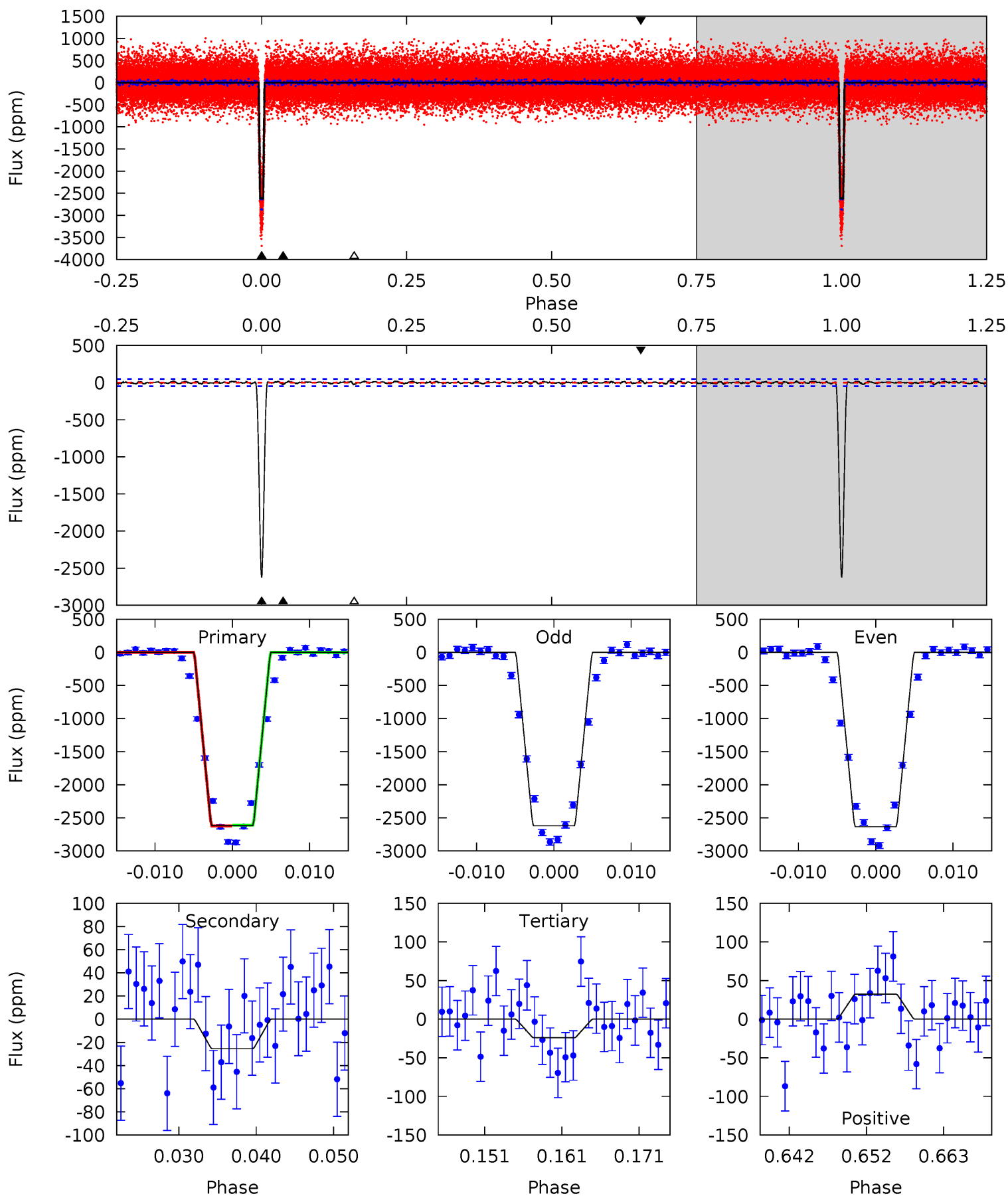
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
311.0	5.01	4.20	4.44	4.95	2.44	1.61	306.8	306.6	0.81	0.57	1.20	0.99	0.01	0.01



Alt Model-Shift Uniqueness Test

009008220-01, P = 9.391012 Days, E = 123.586588 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
274.1	2.66	2.53	3.39	5.03	2.57	0.90	271.6	270.7	0.13	-0.73	0.68	1.00	0.01	0.51



Stellar Parameters For KIC 009008220

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5944^{+79}_{-79}	$4.132^{+0.182}_{-0.098}$	$0.100^{+0.150}_{-0.150}$	$1.498^{+0.244}_{-0.298}$	$1.110^{+0.119}_{-0.079}$	$0.465^{+0.427}_{-0.153}$
	+1%/-1%	+4%/-2%	+150%/-150%	+16%/-20%	+11%/-7%	+92%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 009008220-01 / KOI 0466.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-46 ± 9	$11.82^{+1.77}_{-1.73}$	1483^{+67}_{-82}	2554^{+111}_{-120}	$1.511^{+0.626}_{-0.445}$
Alt.	-25 ± 10	$8.53^{+1.56}_{-1.42}$	1483^{+63}_{-85}	2557^{+191}_{-204}	$1.553^{+1.019}_{-0.666}$

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 $A_{obs} \gg 1.0$

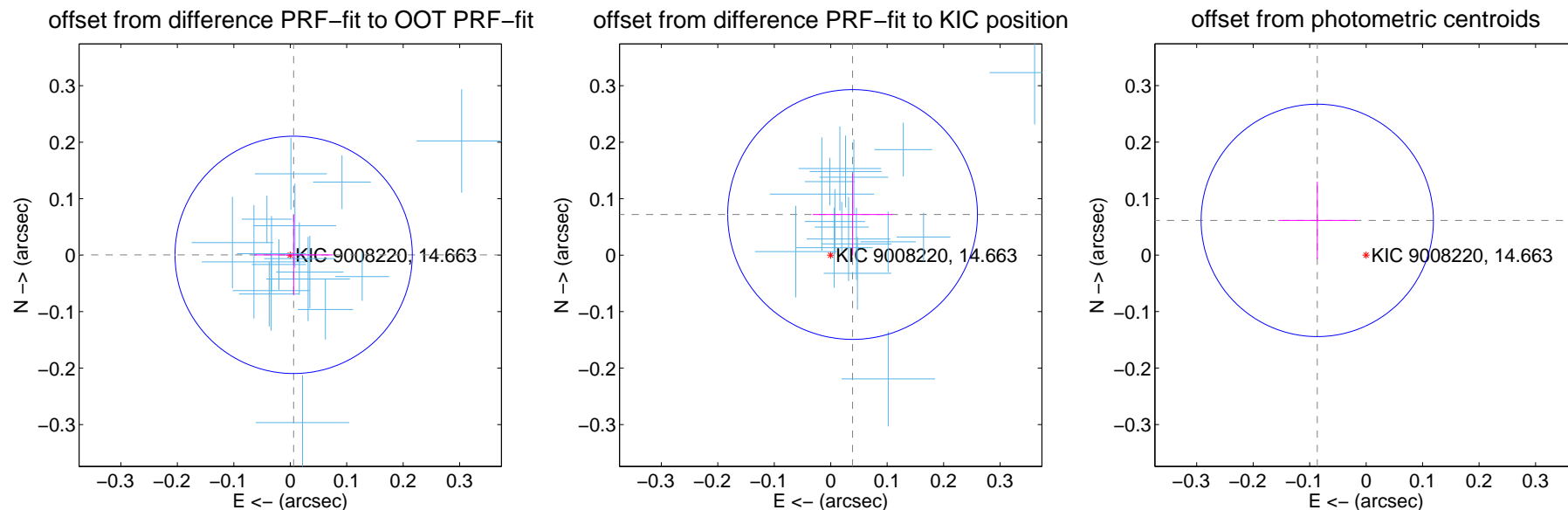
DV Centroid Data

Supplemental centroid analysis for 009008220-01. Kepler magnitude: 14.66. Transit SNR 166.30

There are 17 quarters with good PRF difference image offsets

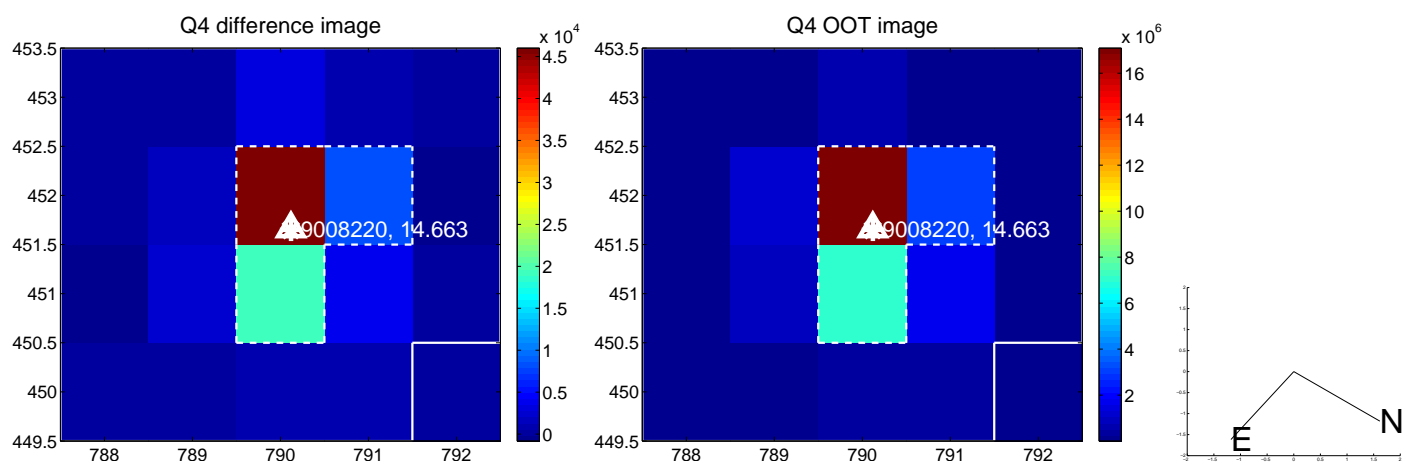
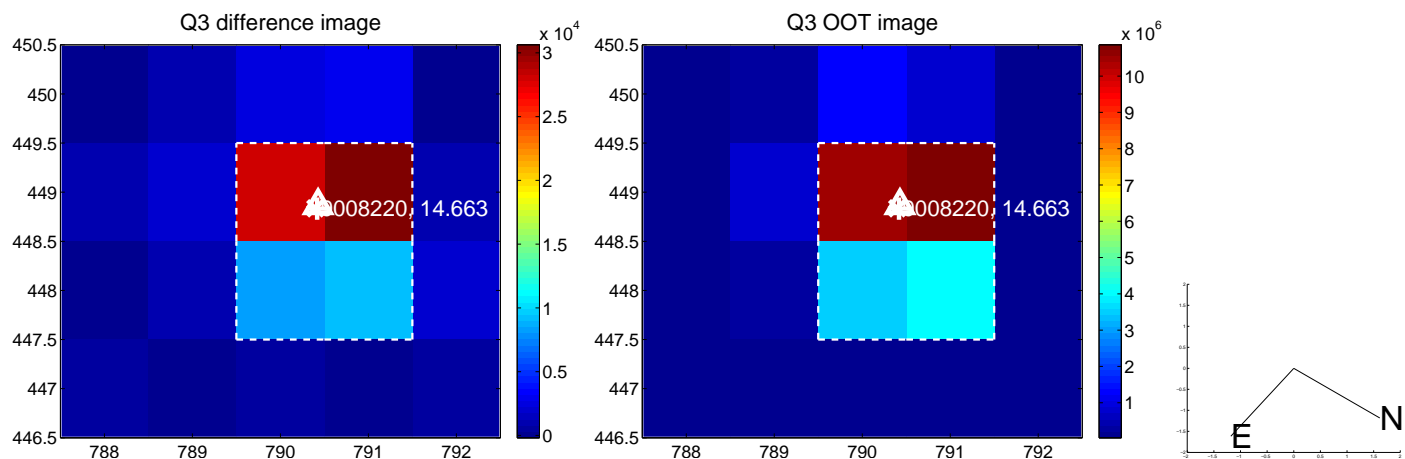
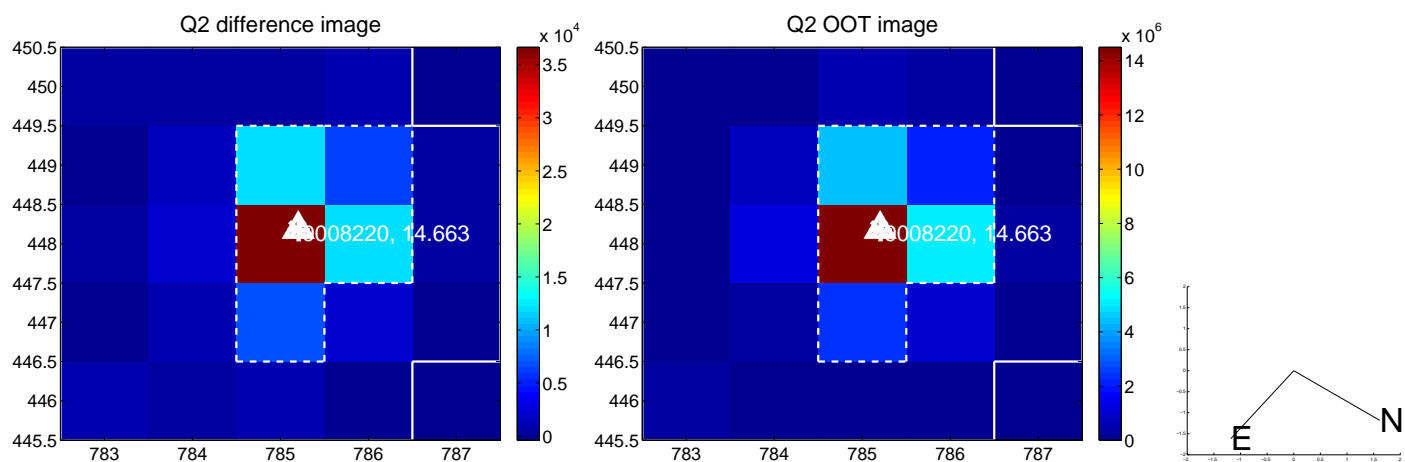
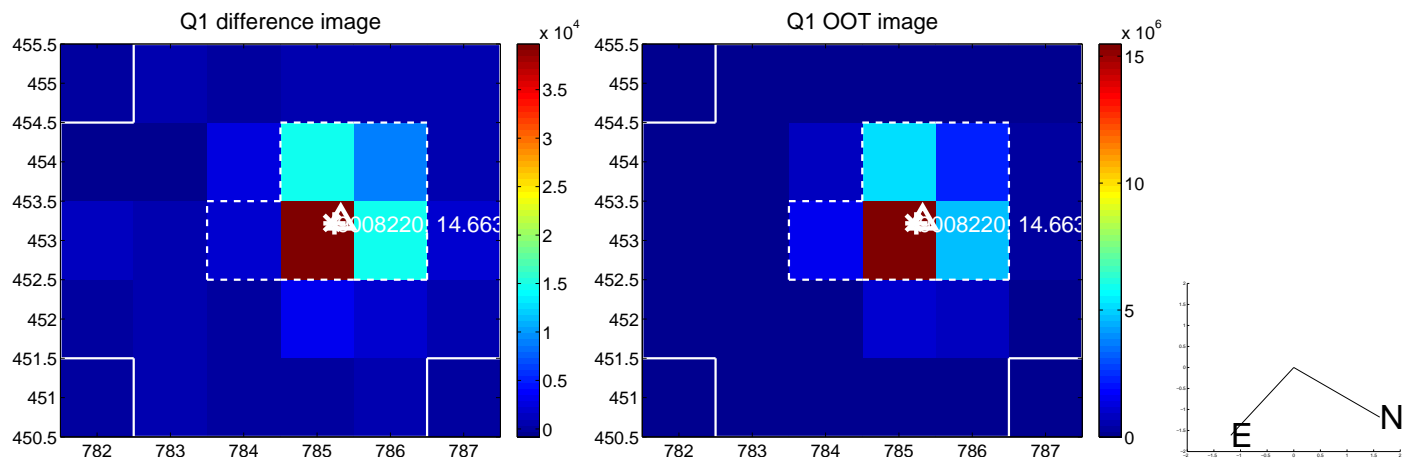
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.006 ± 0.070	0.09	-0.006 ± 0.070	0.001 ± 0.072
PRF-fit source offset from KIC position	0.082 ± 0.074	1.11	-0.039 ± 0.071	0.072 ± 0.072
photometric centroid source offset	0.11 ± 0.07	1.55	0.09 ± 0.07	0.06 ± 0.07

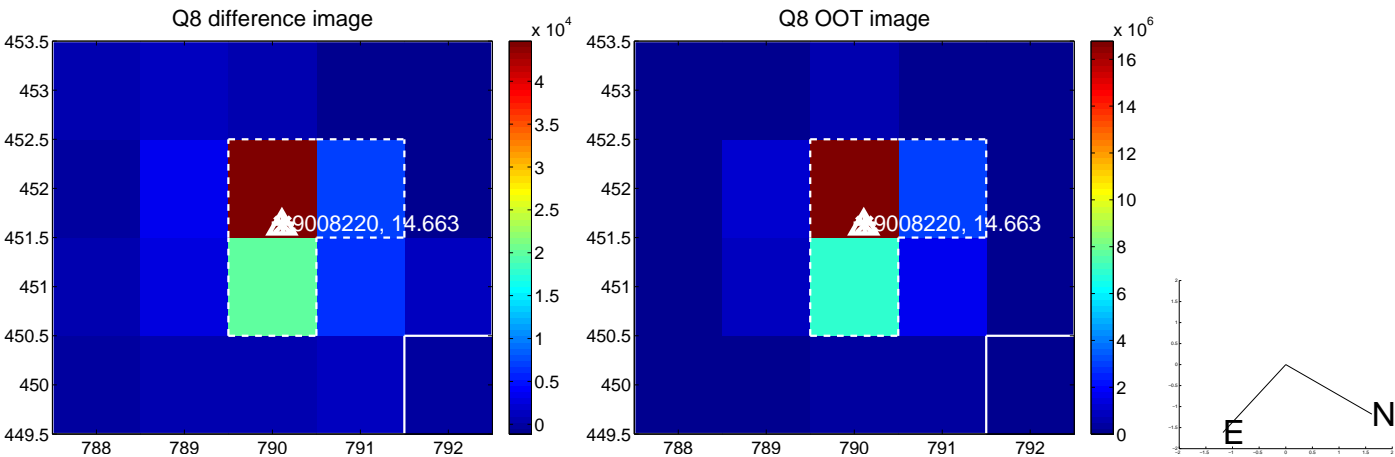
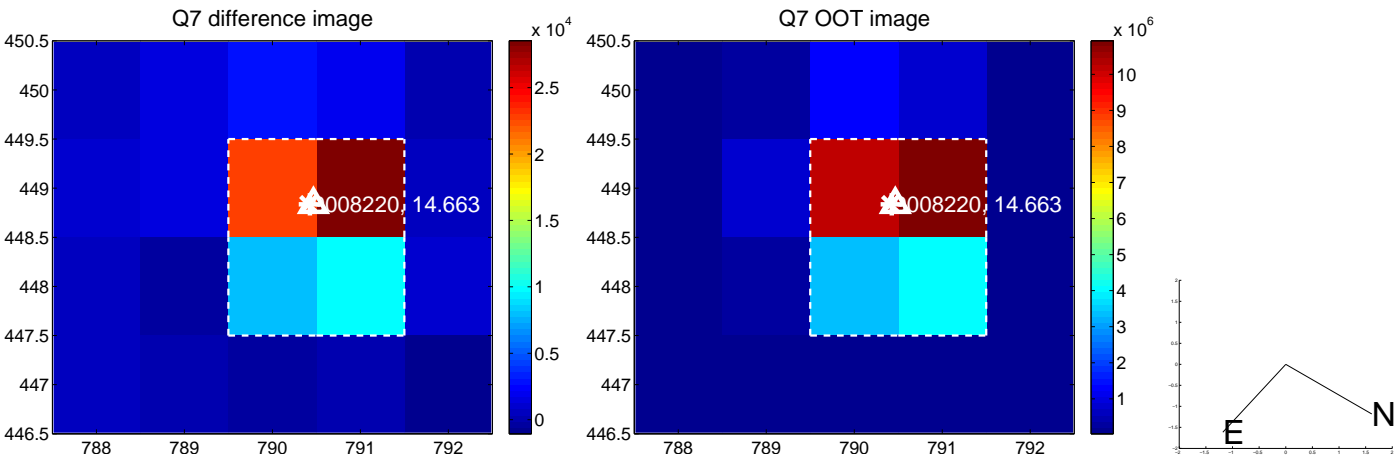
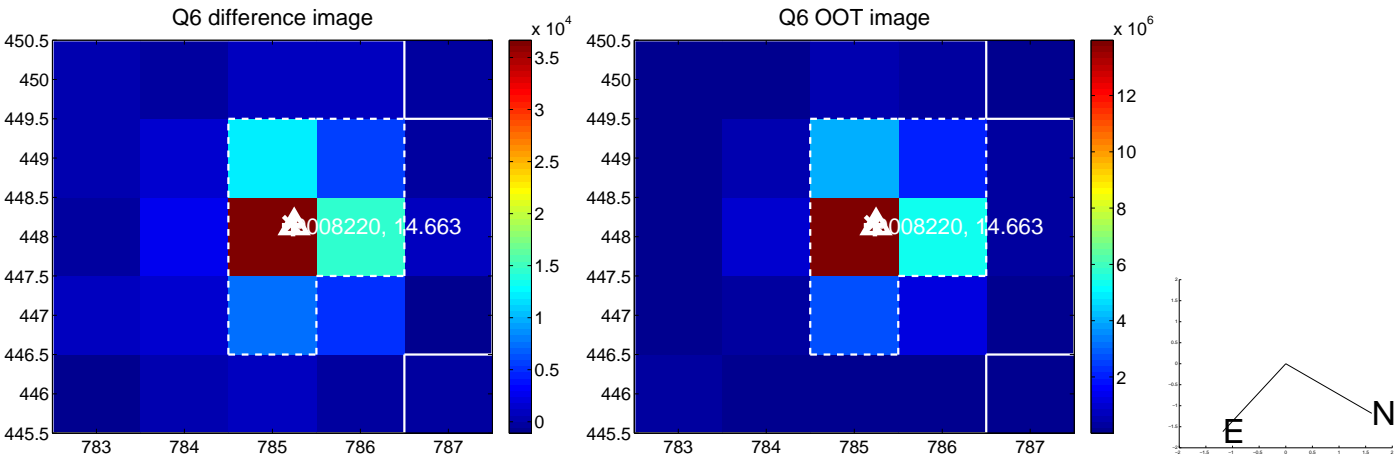
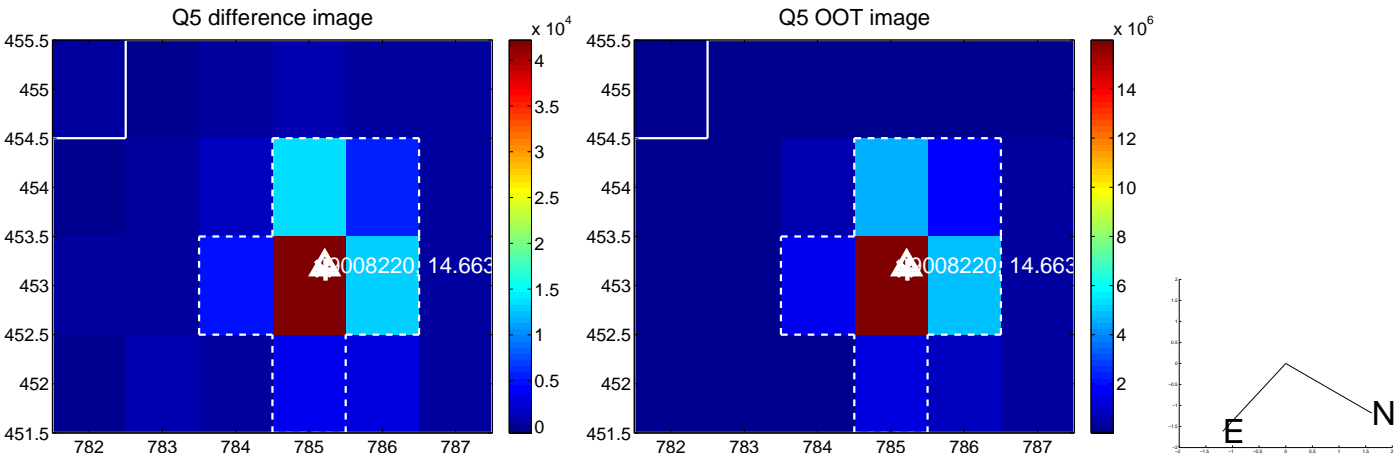


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

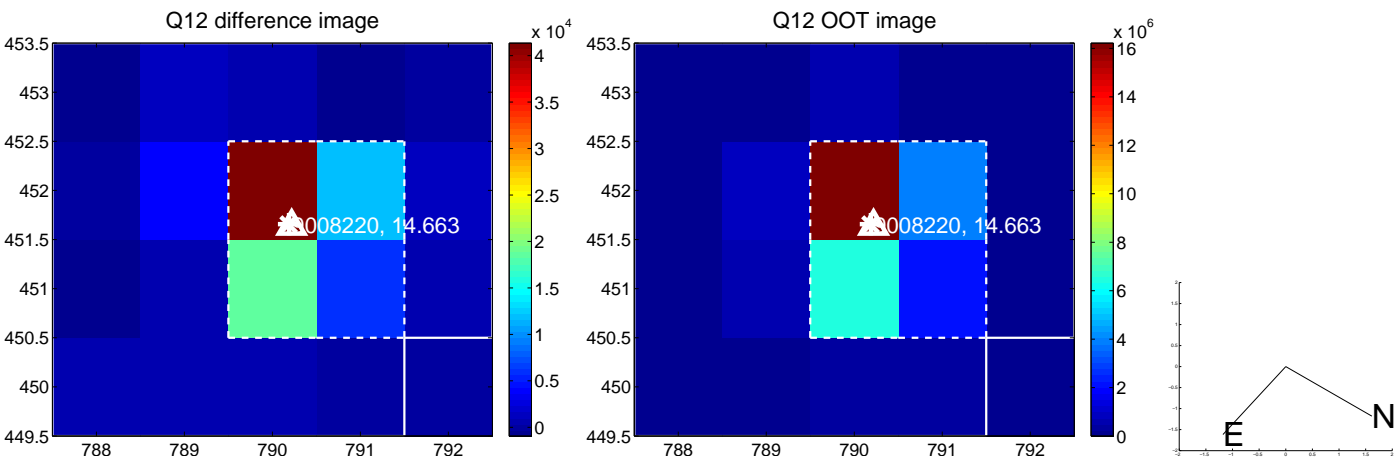
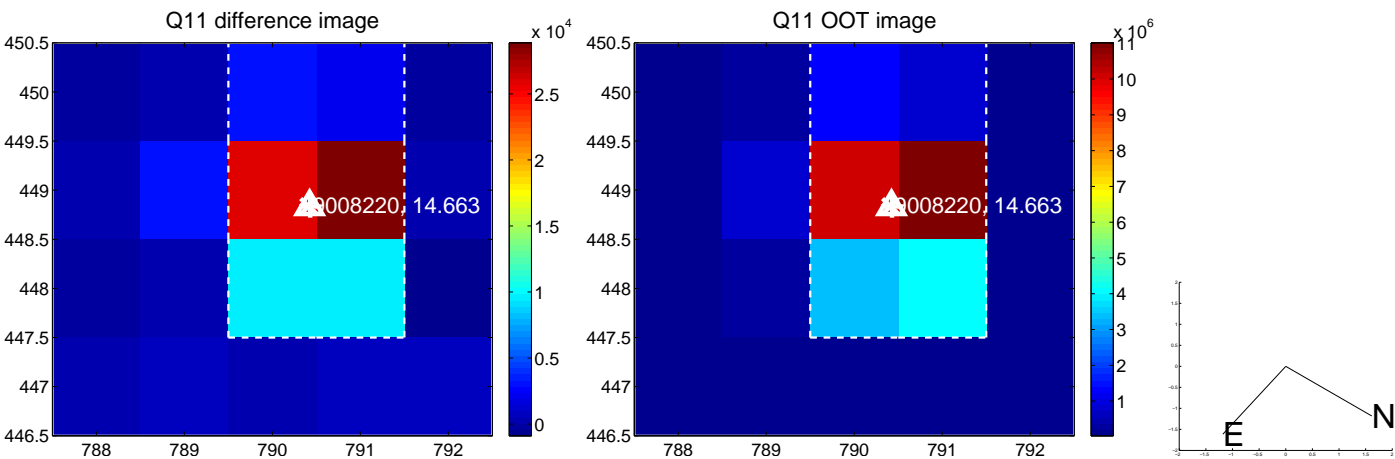
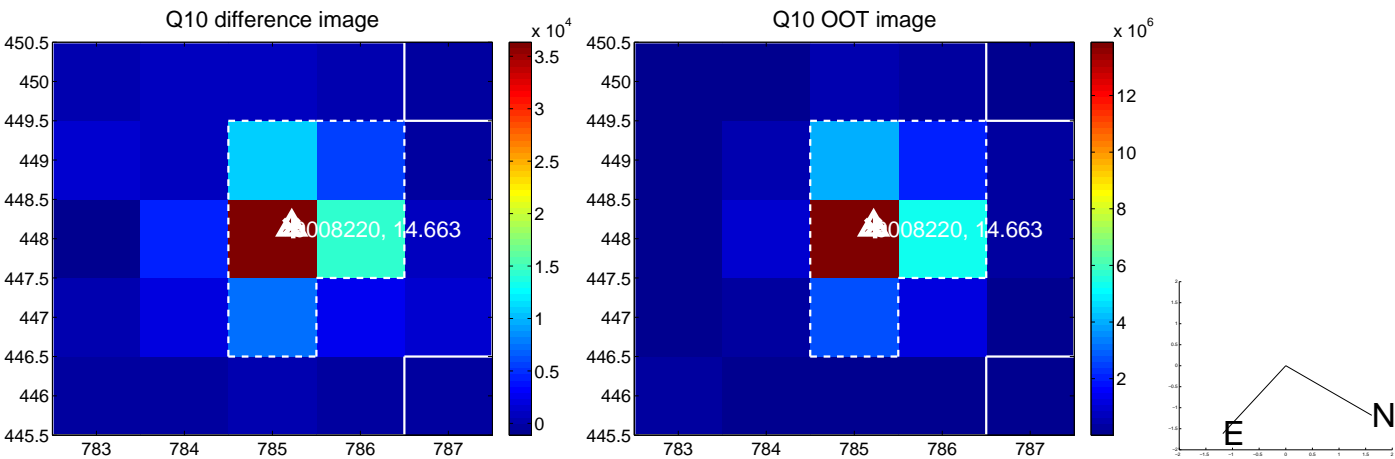
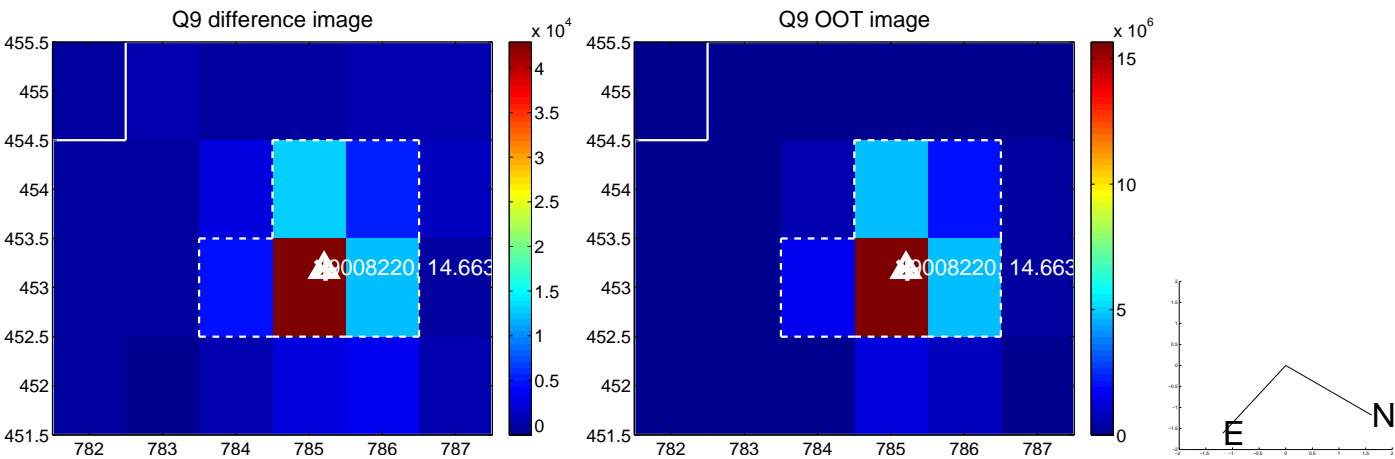
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



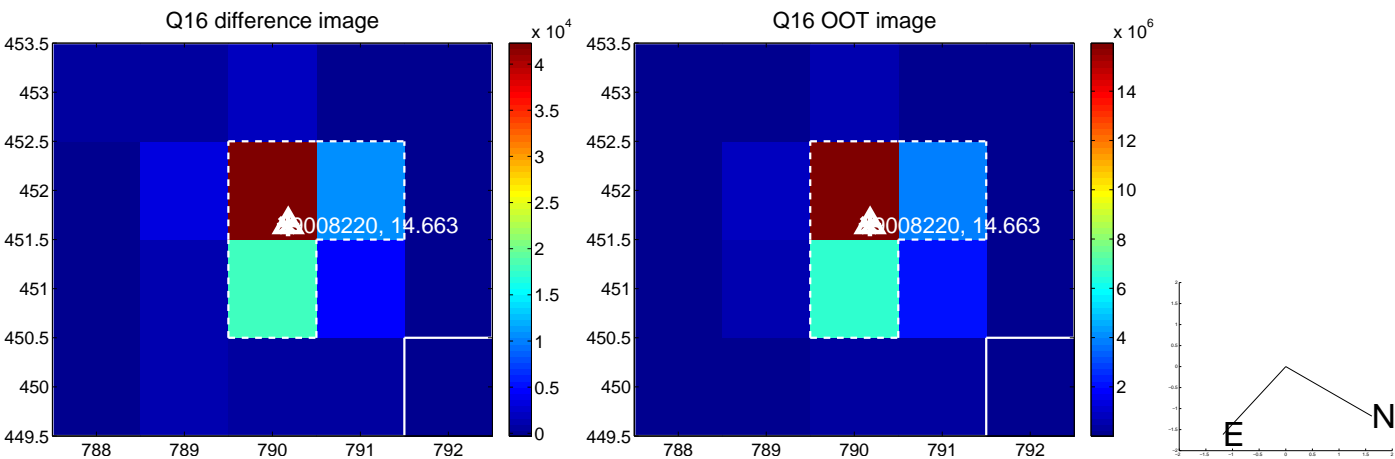
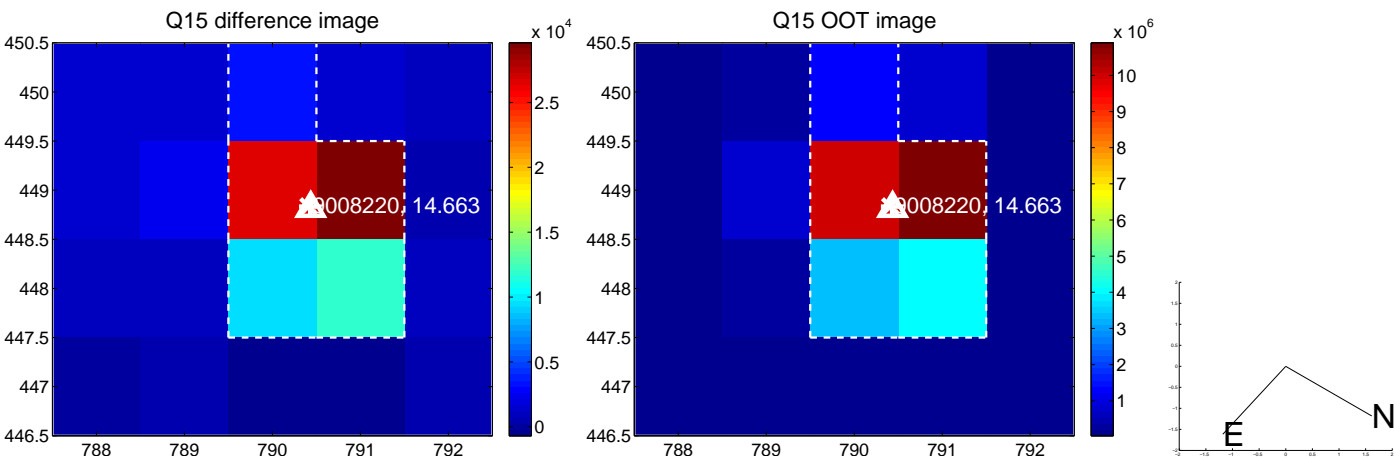
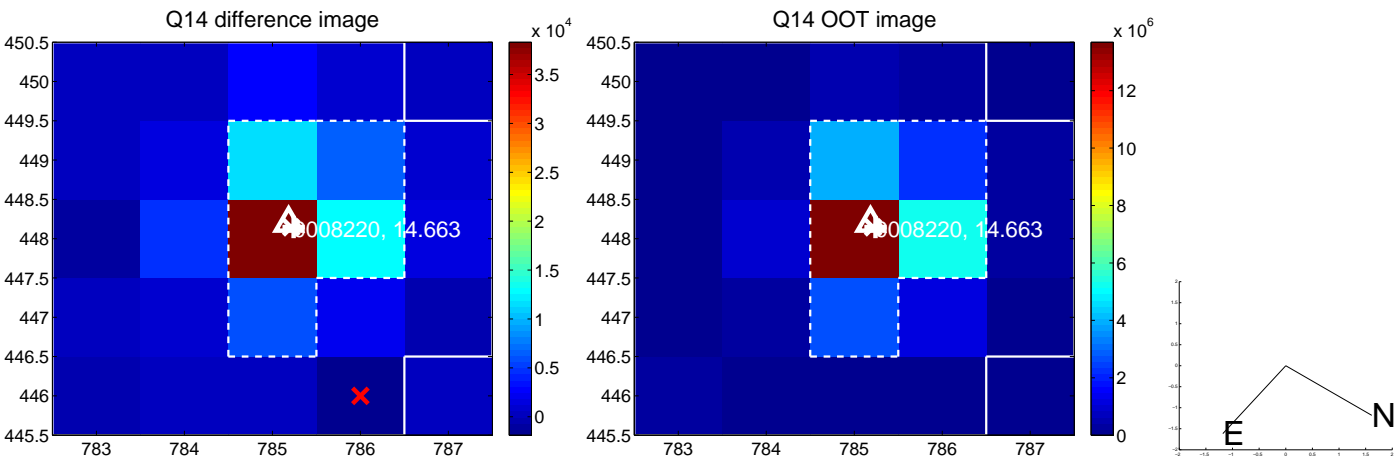
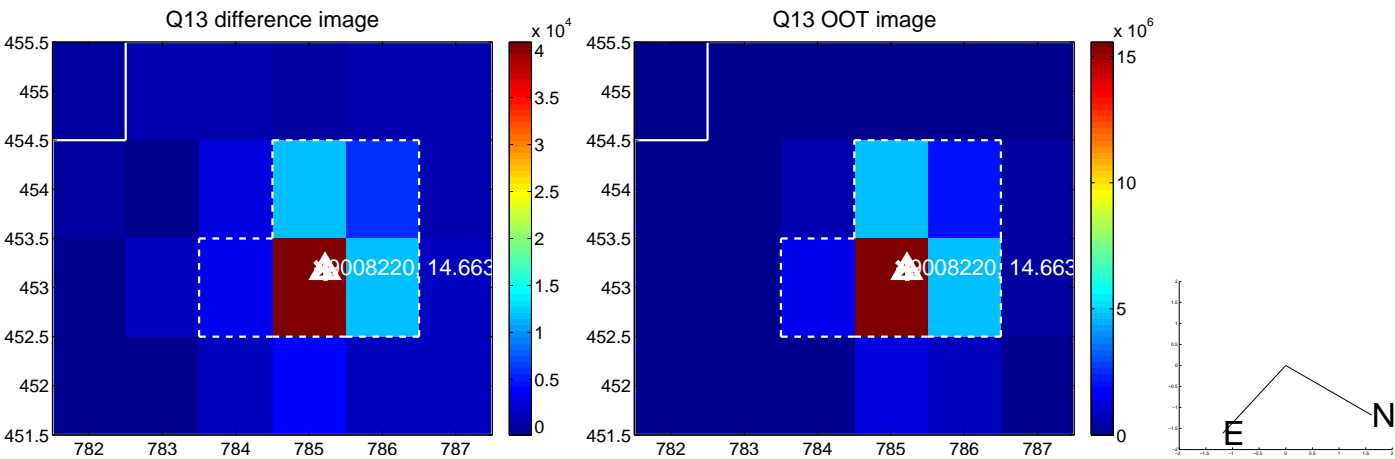
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



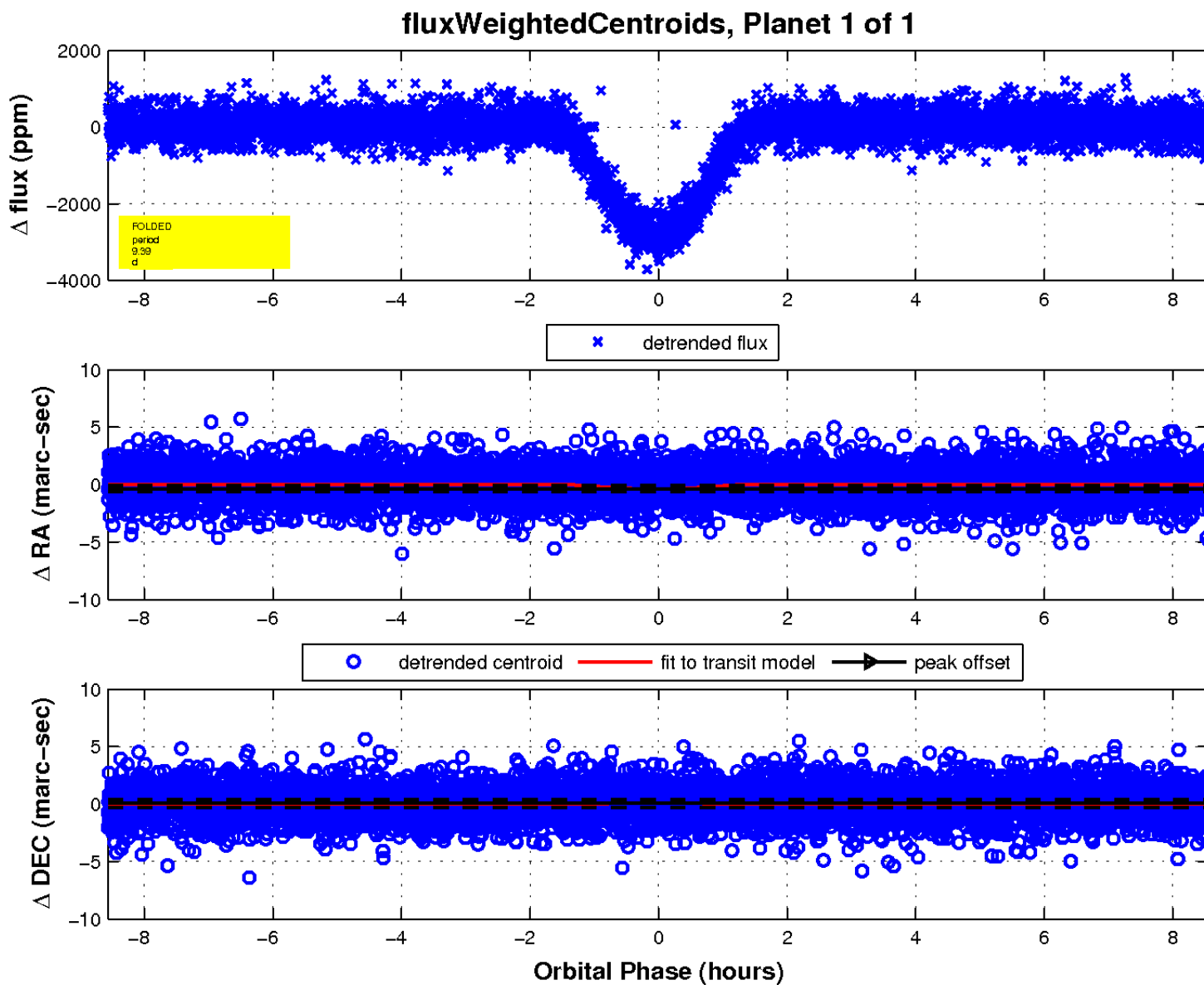
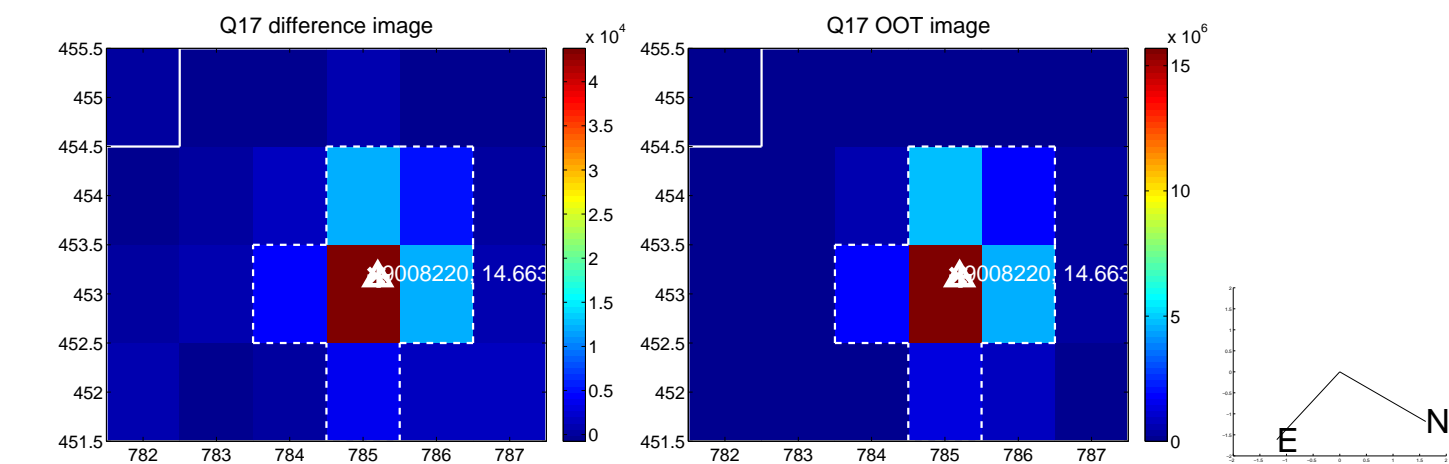
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UKIRT Image

Declination

