

KIC 007816680

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})
007816680-01	OBS	6920.01	4.292602	131.769895	137564.9	4.903	6210.0	4670.0	1.17	6467	61.46	716.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007816680-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—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.

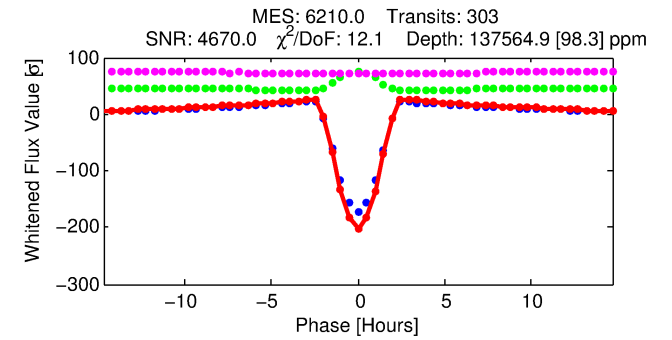
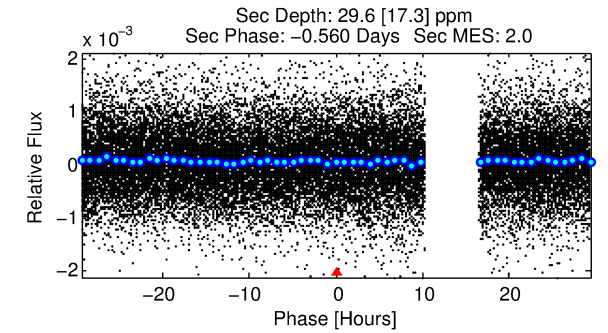
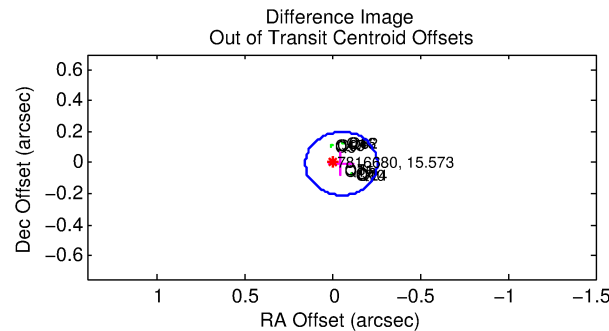
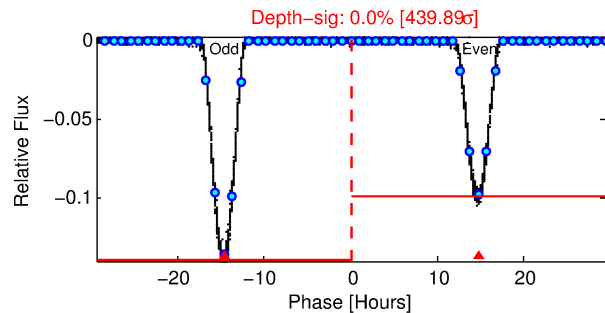
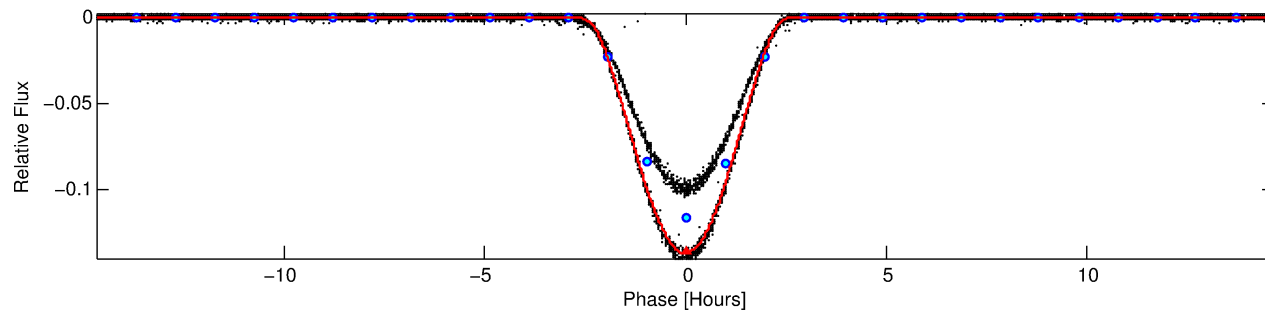
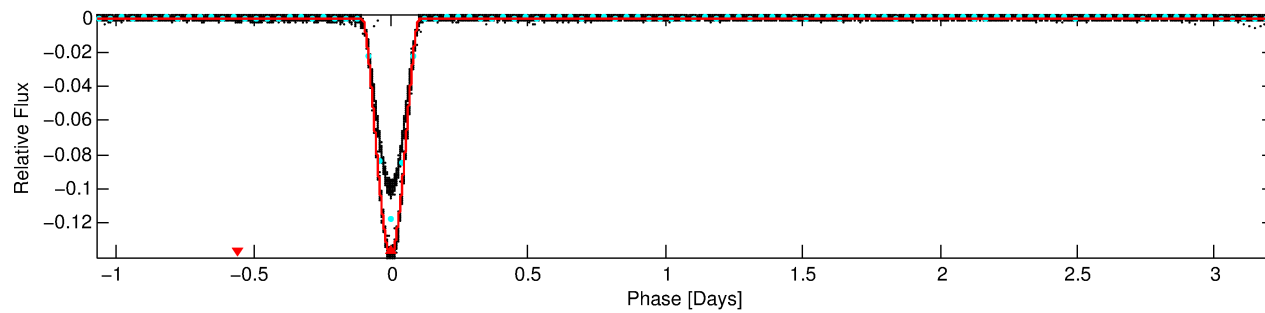
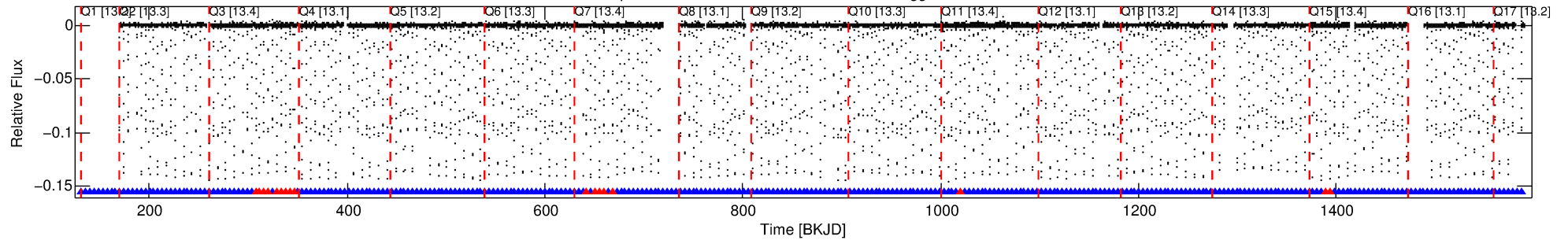
Ephemeris Match Information For 007816680-01

No Significant Match Found

DV One-Page Summary

KIC: 7816680 Candidate: 1 of 1 Period: 4.293 d
KOI: K06920.01 Corr: 0.997

Kp: 15.57 R*: 1.17 Rs Teff: 6467.0 K Logg: 4.38 Fe/H: -0.060



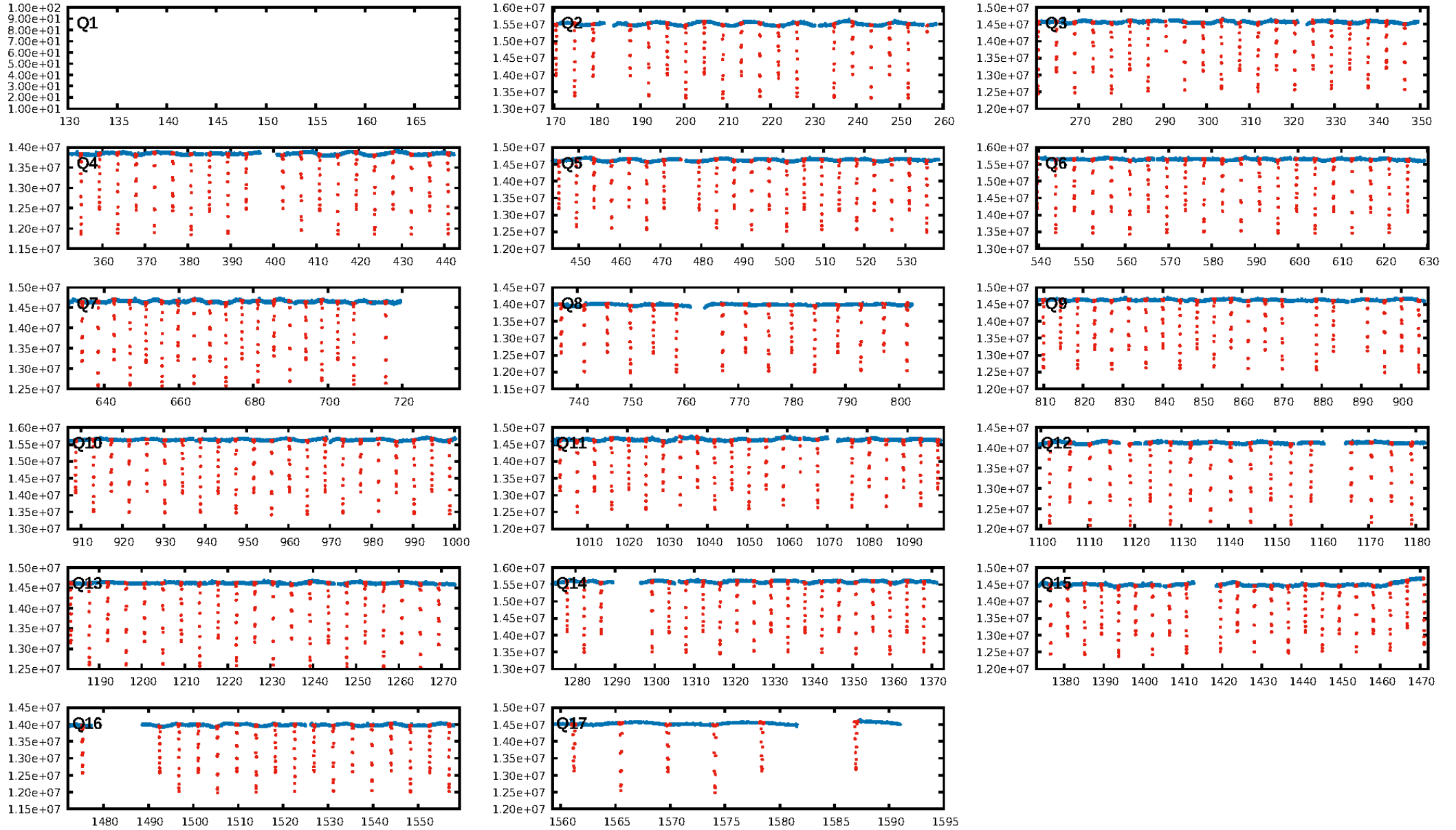
DV Fit Results:

Period = 4.29260 [0.00000] d
Epoch = 131.7699 [0.0001] BKJD
Rp/R* = 0.4798 [0.0374]
a/R* = 8.09 [0.04]
b = 0.87 [0.06]
Seff = 716.46 [266.82]
Teq = 1319 [123] K
Rp = 61.46 [18.69] Re
a = 0.0549 [0.0134] AU
Ag = 0.01 [0.01] [-108.73σ]
Teffp = 689 [106] K [-3.88σ]

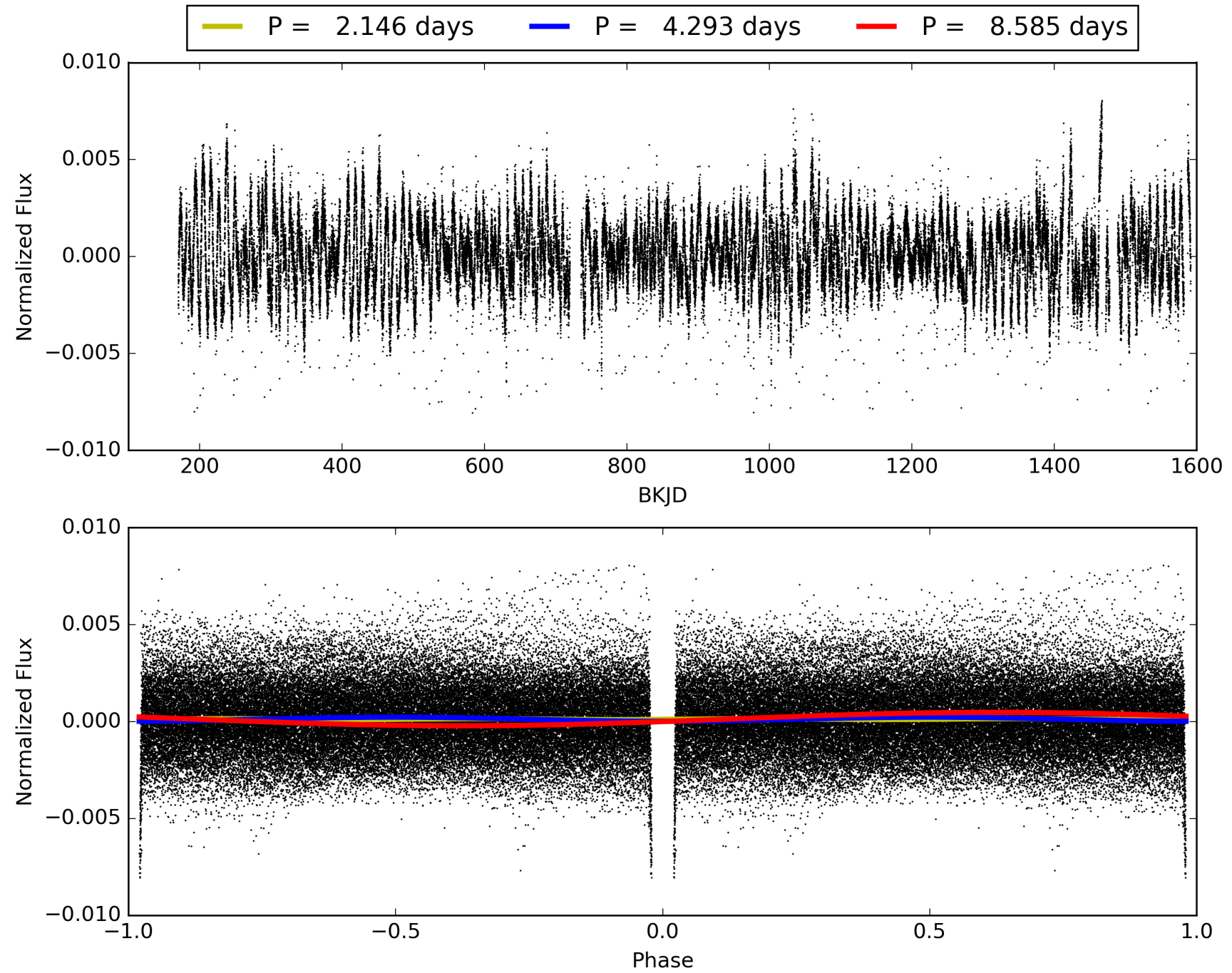
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.94 [280/297]
GhostDiagnostic-chr: 1.779
Centroid-sig: 0.0%
Centroid-so: 0.187 arcsec [125.45σ]
OotOffset-rm: 0.050 arcsec [0.73σ]
KicOffset-rm: 0.013 arcsec [0.20σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 007816680-01, PDC Light Curves

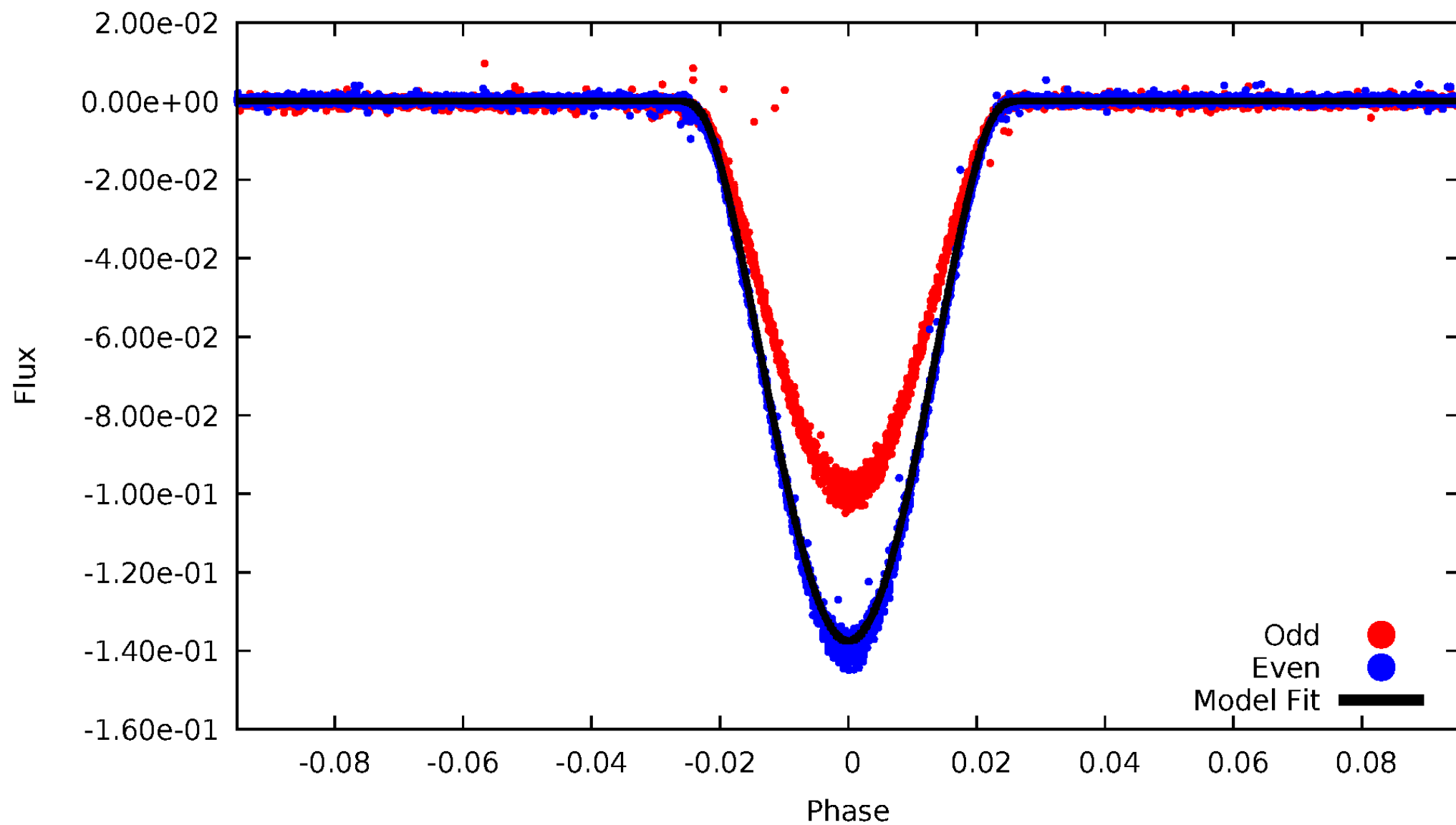


TCE 007816680-01



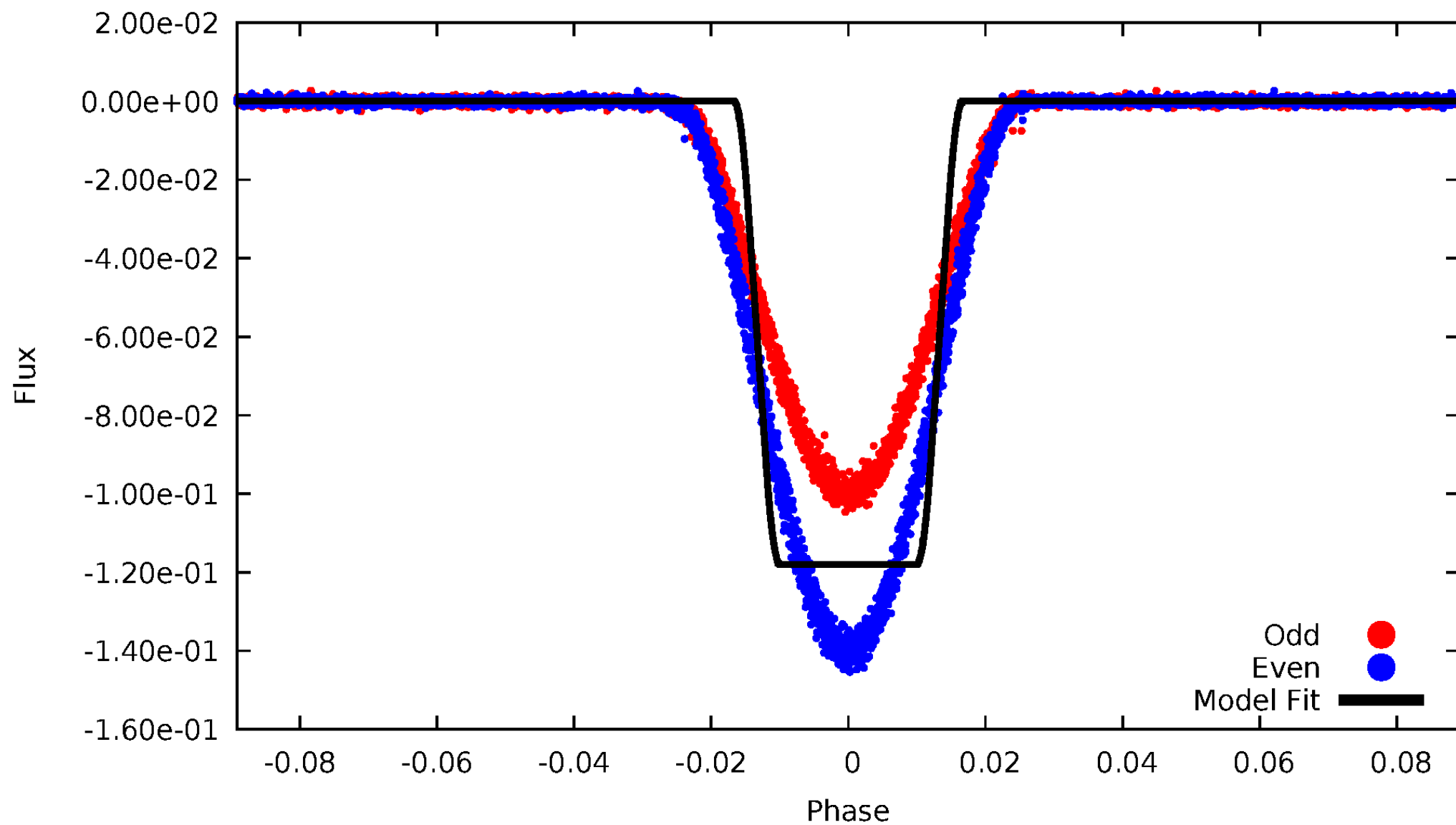
DV Odd/Even

TCE 007816680-01



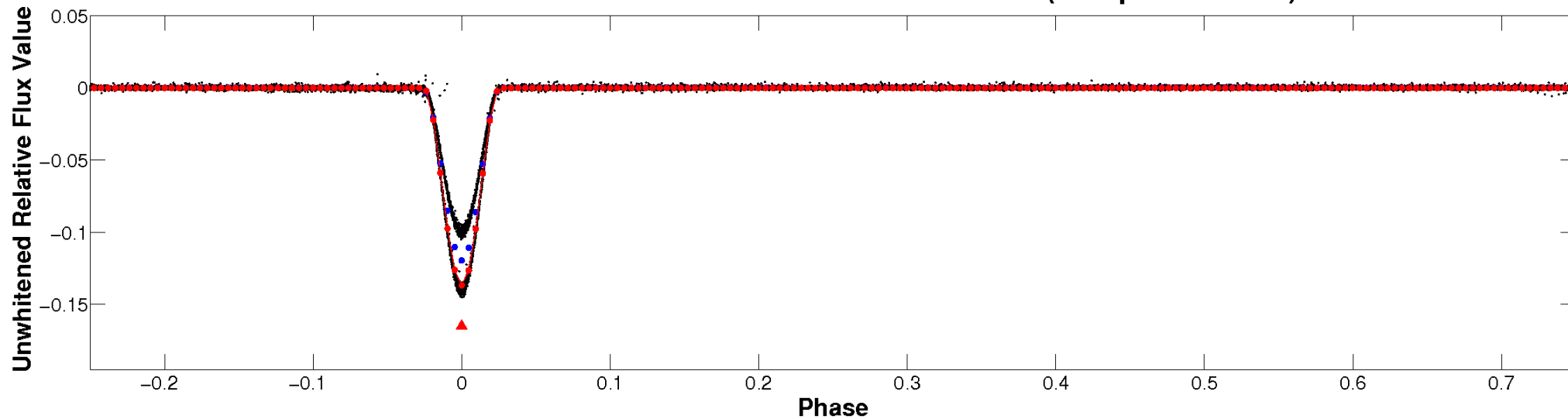
ALT Odd/Even

TCE 007816680-01

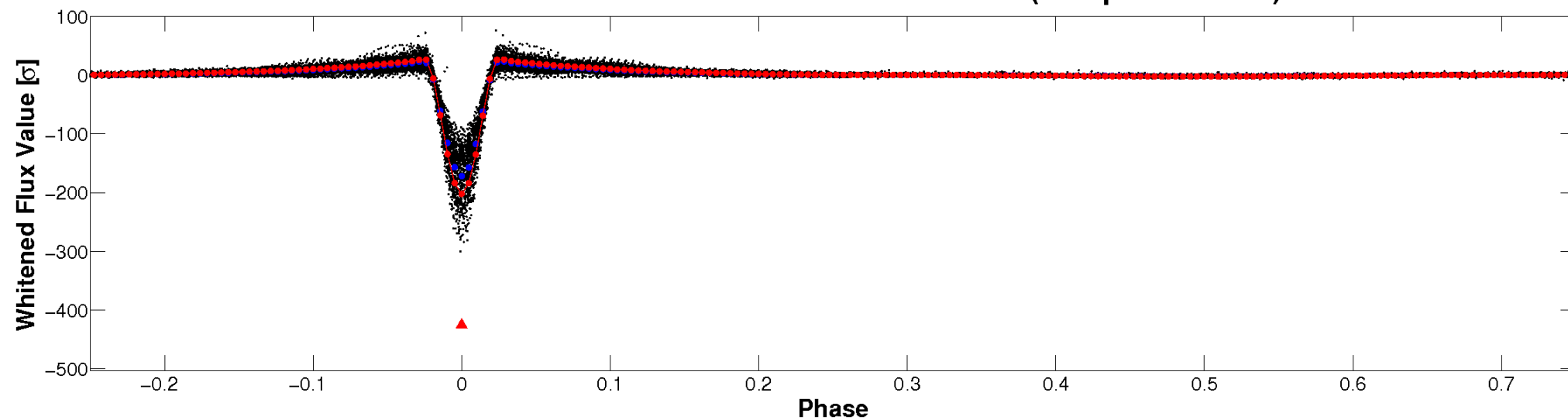


Non-Whitened Vs. Whitened Light Curve

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

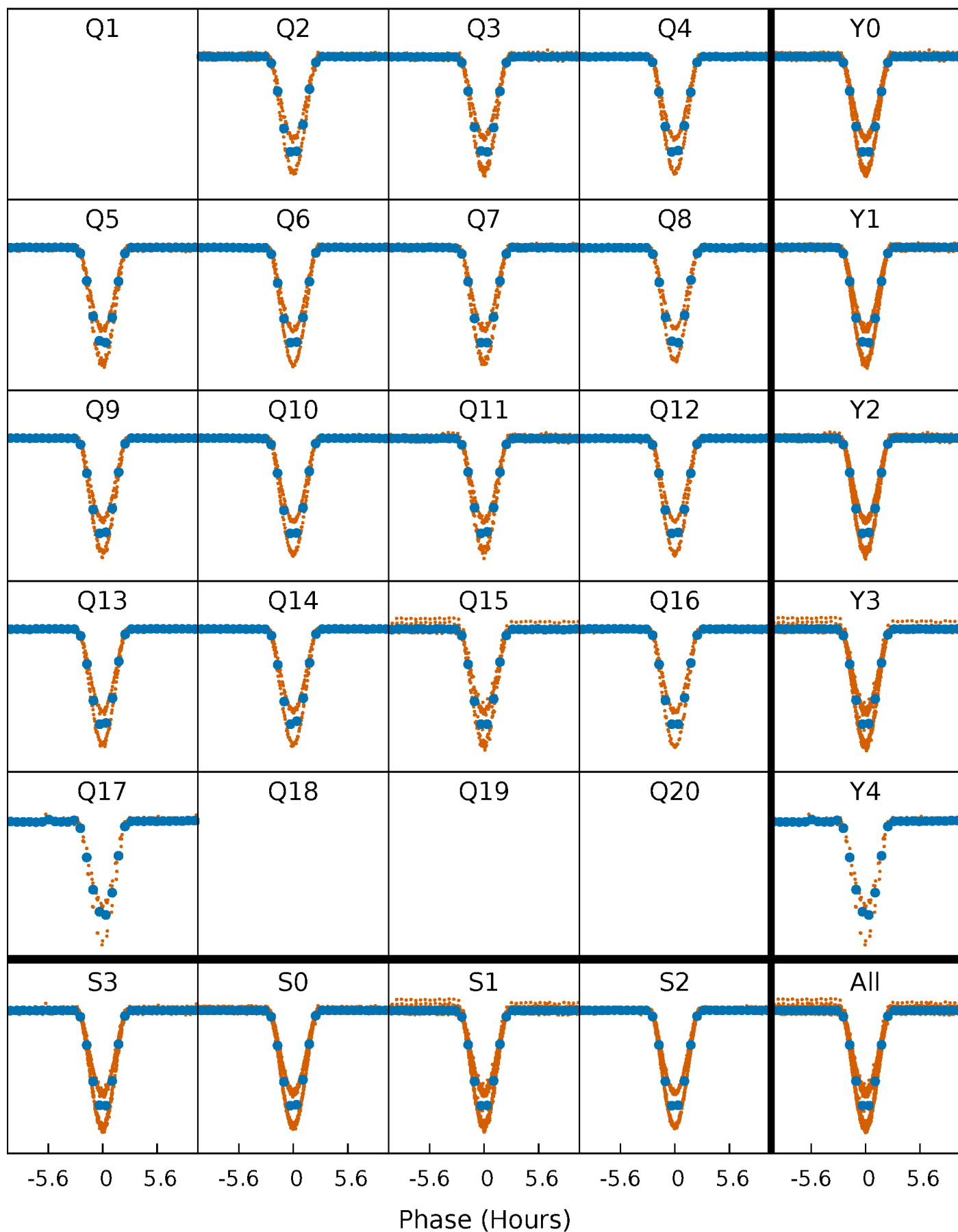


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



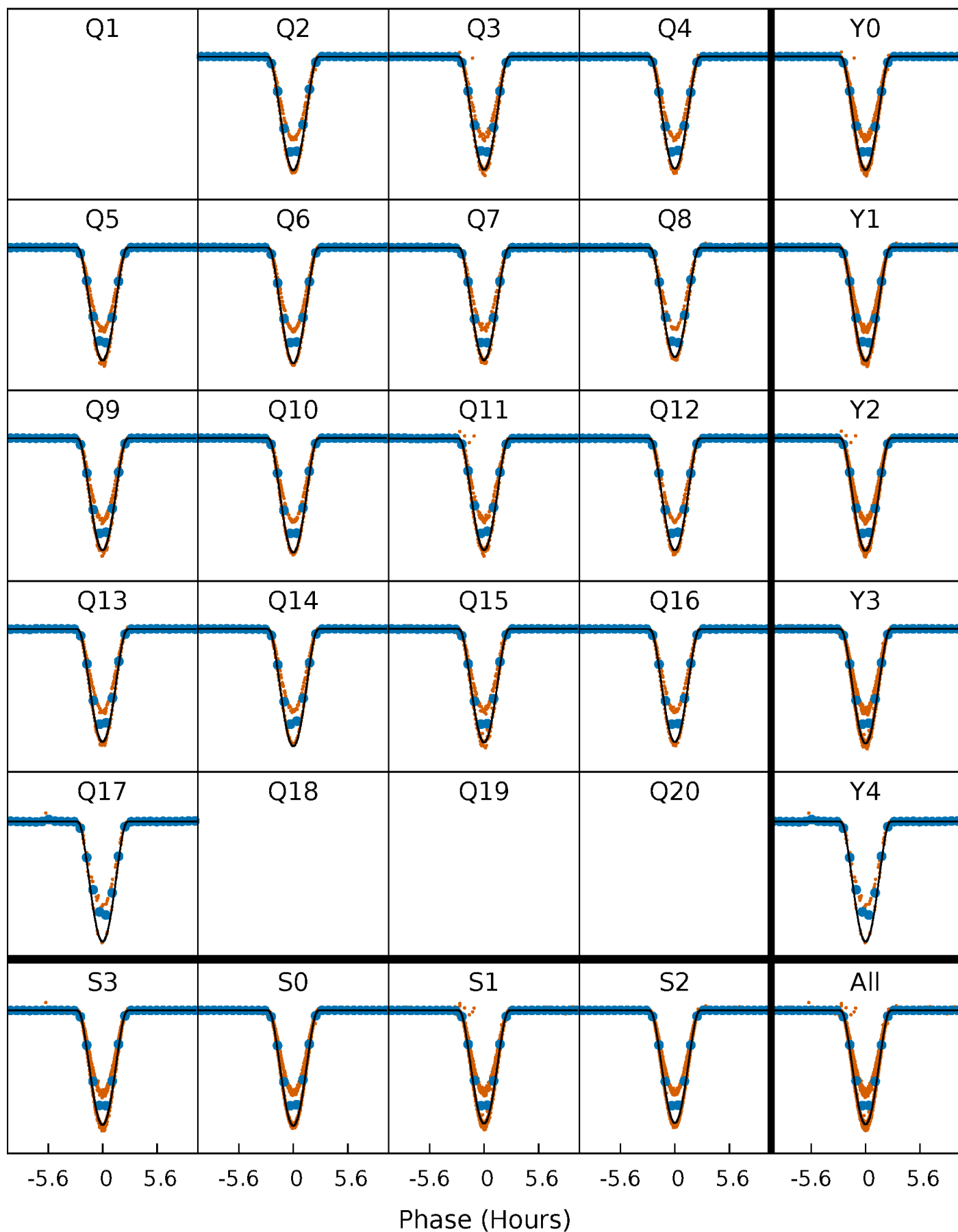
PDC Quarter-Phased Transit Curves

TCE 007816680-01 P= 4.292602 Days $T_0=131.769895$ (BKJD)



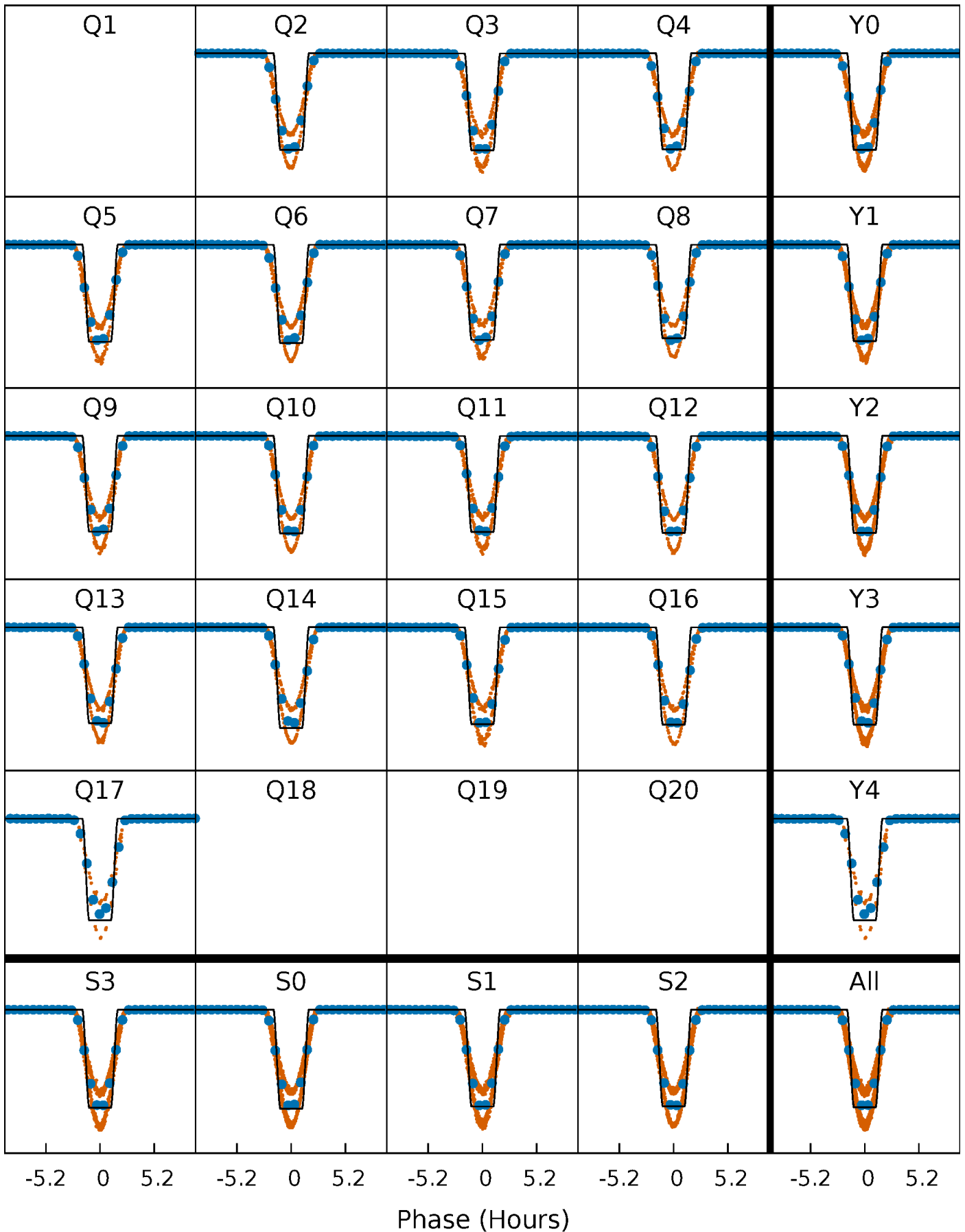
DV Quarter-Phased Transit Curves

TCE 007816680-01 P= 4.292602 Days $T_0=131.769895$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

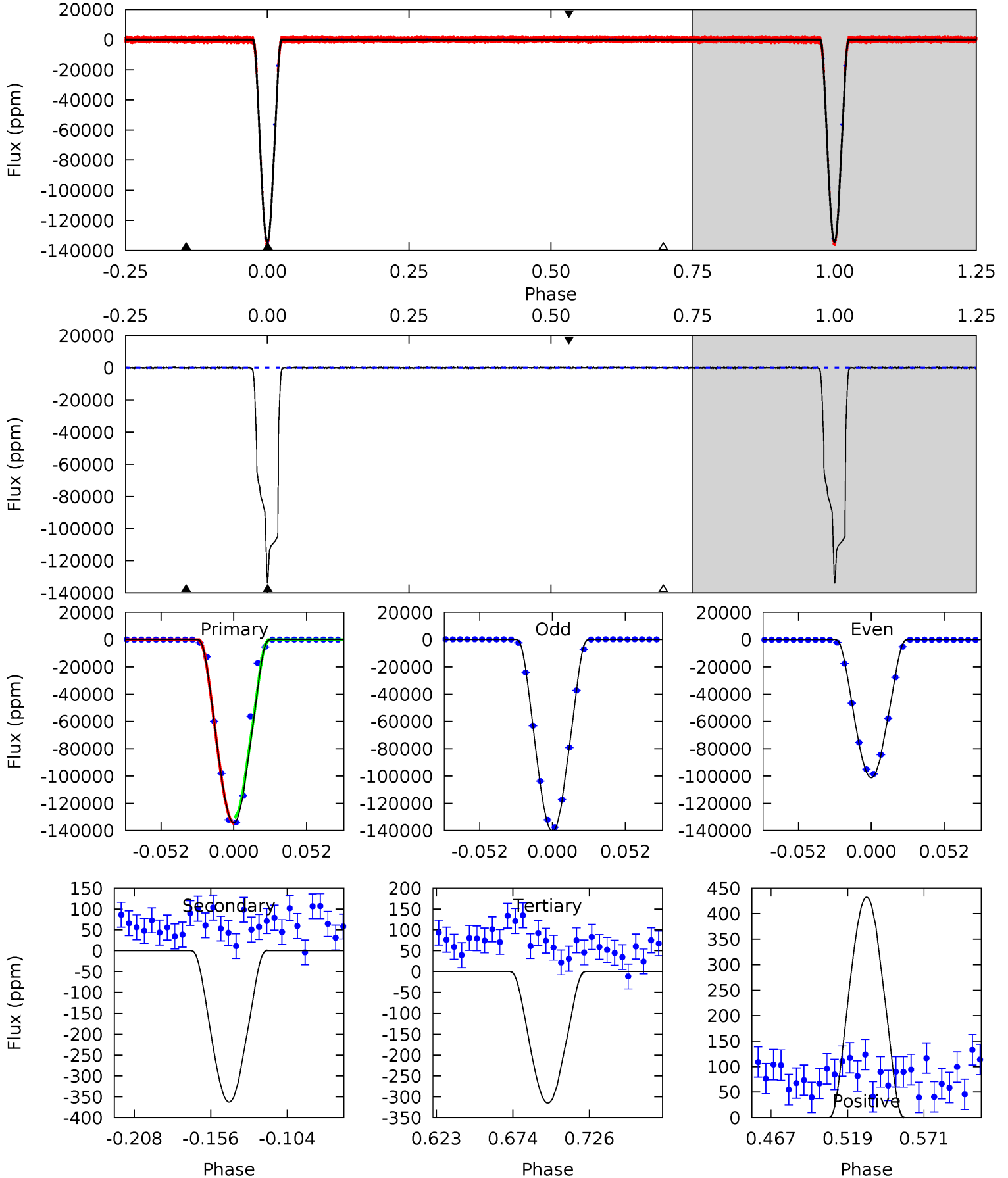
TCE 007816680-01 P= 4.292579 Days $T_0=131.773904$ (BKJD)



DV Model-Shift Uniqueness Test

007816680-01, P = 4.292602 Days, E = 131.769895 Days

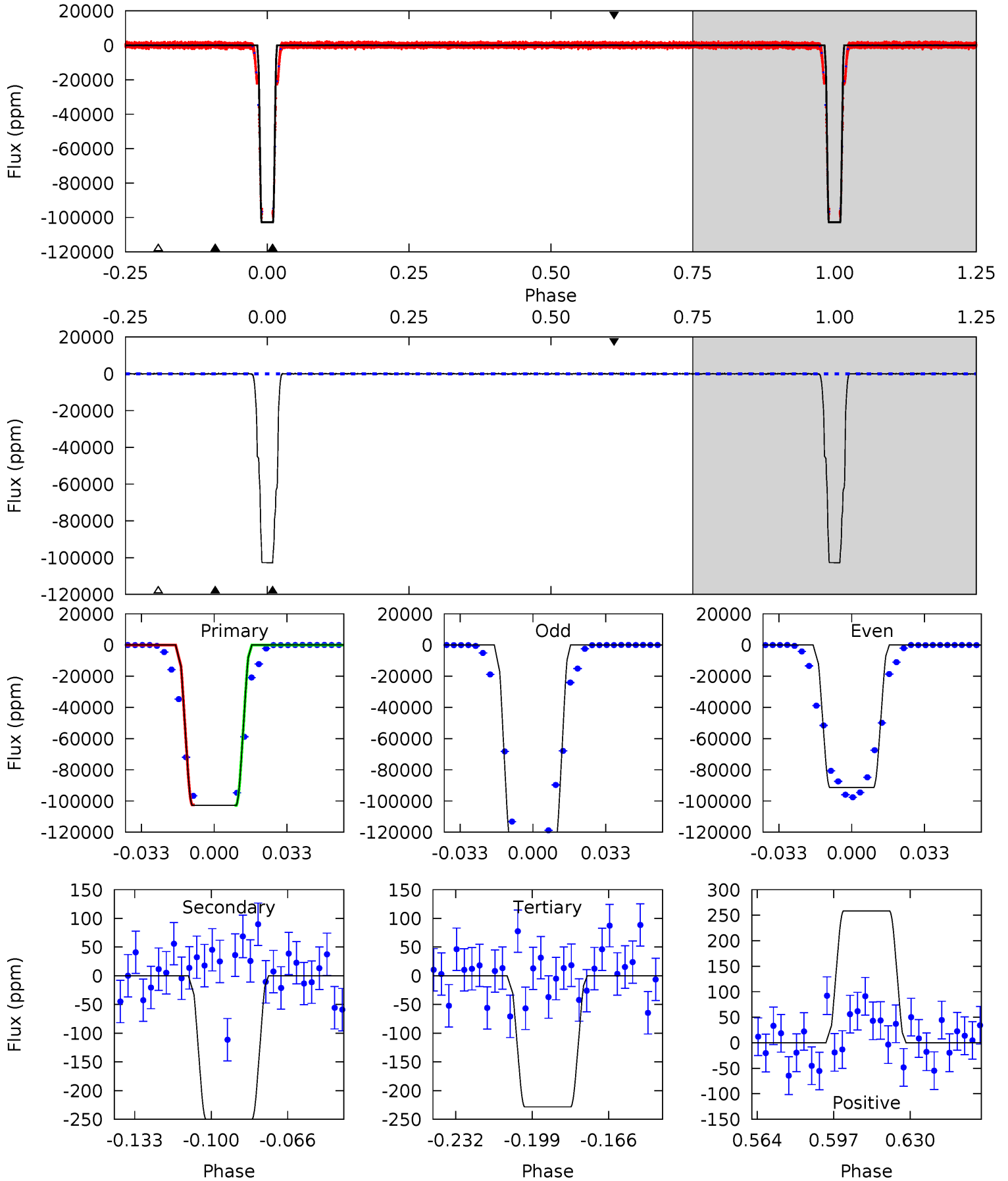
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6485	17.5	15.2	20.9	4.70	1.94	4.87	6470	6464	2.30	-3.35	1795	0.96	0.00	0



Alt Model-Shift Uniqueness Test

007816680-01, P = 4.292579 Days, E = 131.773904 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1858	4.52	4.13	4.67	4.79	2.13	1.86	1854	1854	0.39	-0.15	903.2	0.90	0.00	0



Stellar Parameters For KIC 007816680

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6467^{+173}_{-211}	$4.377^{+0.062}_{-0.188}$	$-0.060^{+0.250}_{-0.300}$	$1.174^{+0.345}_{-0.148}$	$1.197^{+0.169}_{-0.169}$	$1.043^{+0.337}_{-0.498}$
	+3%/-3%	+1%/-4%	+417%/-500%	+29%/-13%	+14%/-14%	+32%/-48%
Source	PHO1	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 007816680-01 / KOI 6920.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-362 ± 21	$63.27^{+10.13}_{-7.90}$	1872^{+108}_{-89}	-2227^{+100}_{-114}	$0.147^{+0.043}_{-0.034}$
Alt.	-250 ± 55	$45.47^{+8.32}_{-6.30}$	1878^{+119}_{-92}	-2155^{+358}_{-155}	$0.189^{+0.092}_{-0.060}$

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 $A_{obs} \gg 1.0$

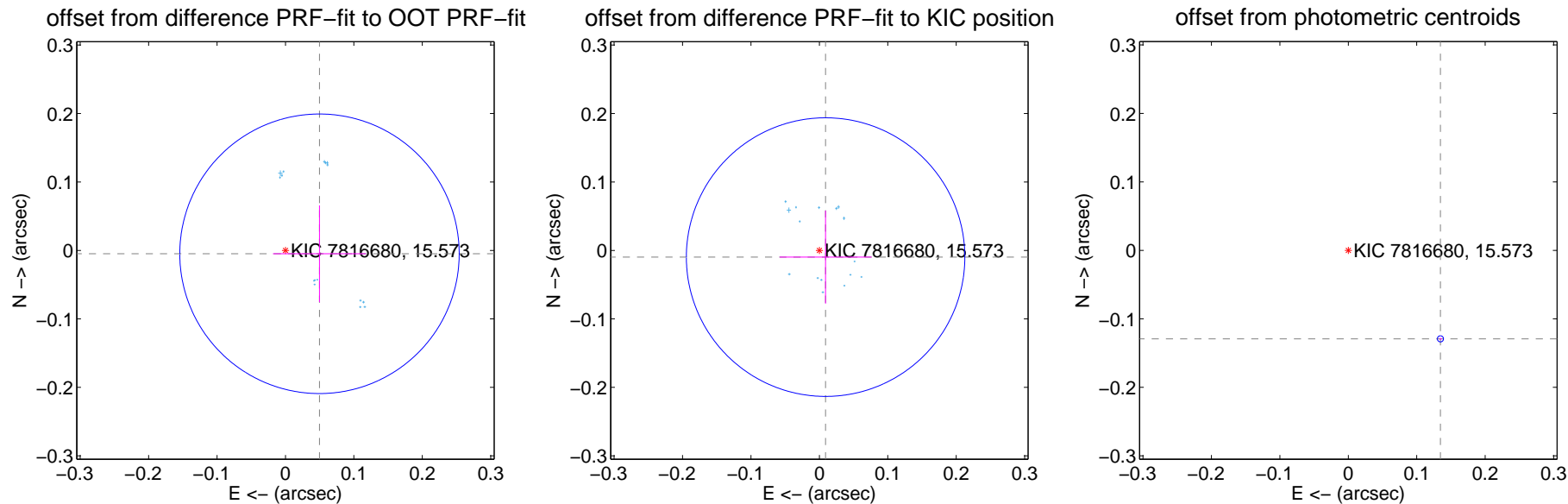
DV Centroid Data

Supplemental centroid analysis for 007816680-01. Kepler magnitude: 15.57. Transit SNR 4669.95

There are 16 quarters with good PRF difference image offsets

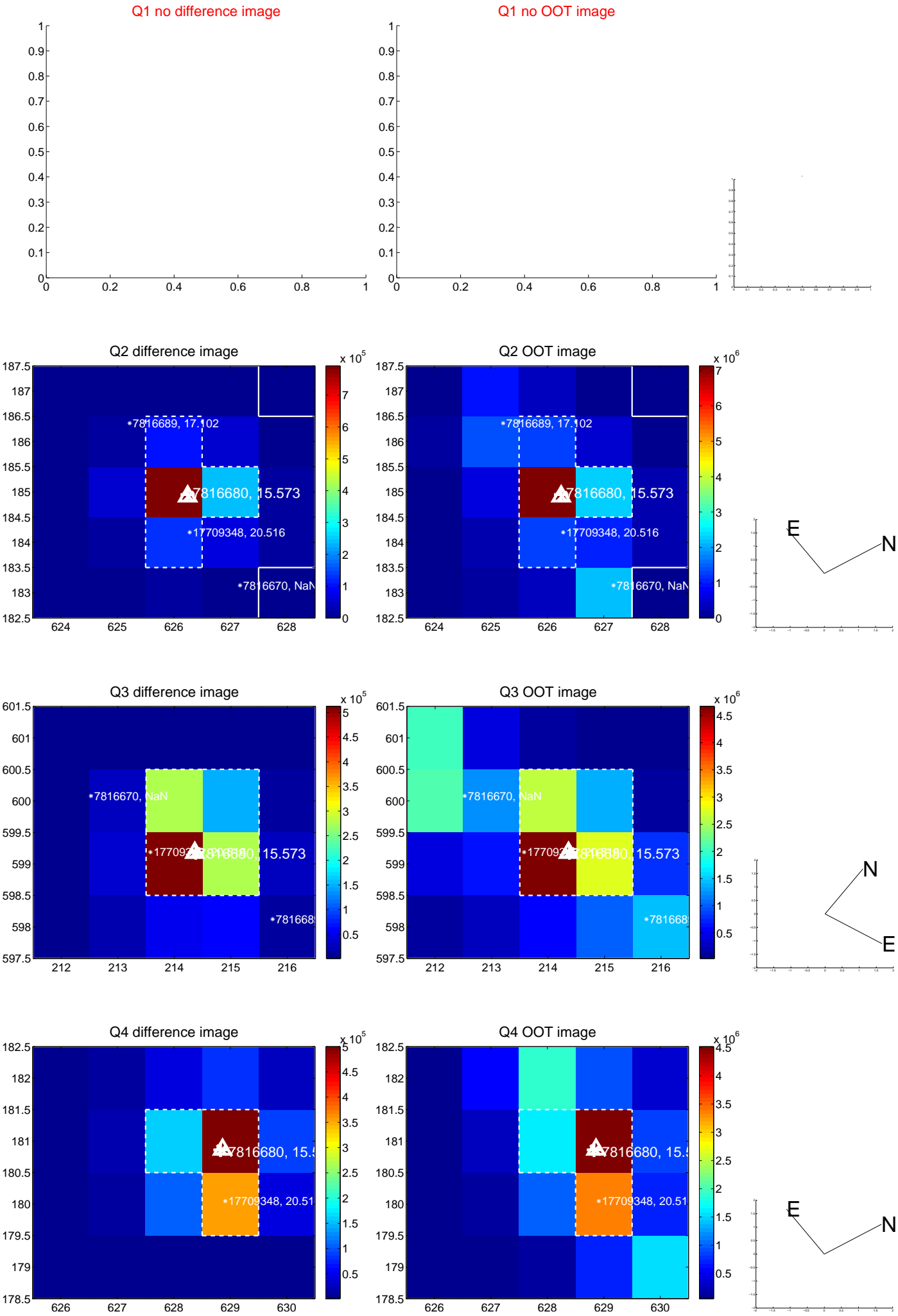
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.068	0.73	-0.050 ± 0.068	-0.005 ± 0.071
PRF-fit source offset from KIC position	0.013 ± 0.068	0.20	-0.009 ± 0.067	-0.010 ± 0.068
photometric centroid source offset	0.19 ± 0.00	125.45	-0.13 ± 0.00	-0.13 ± 0.00

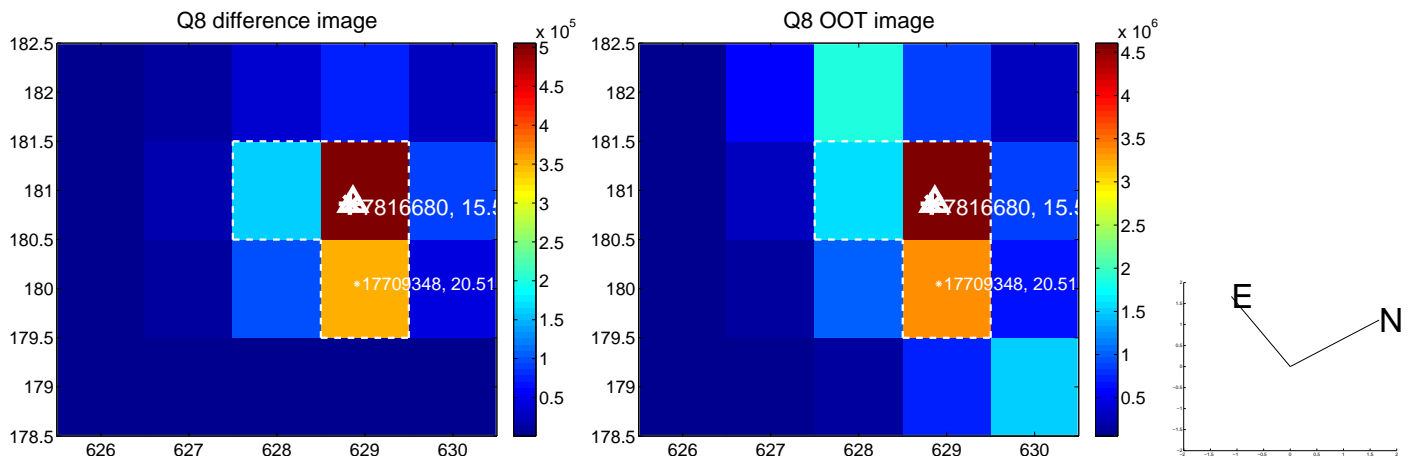
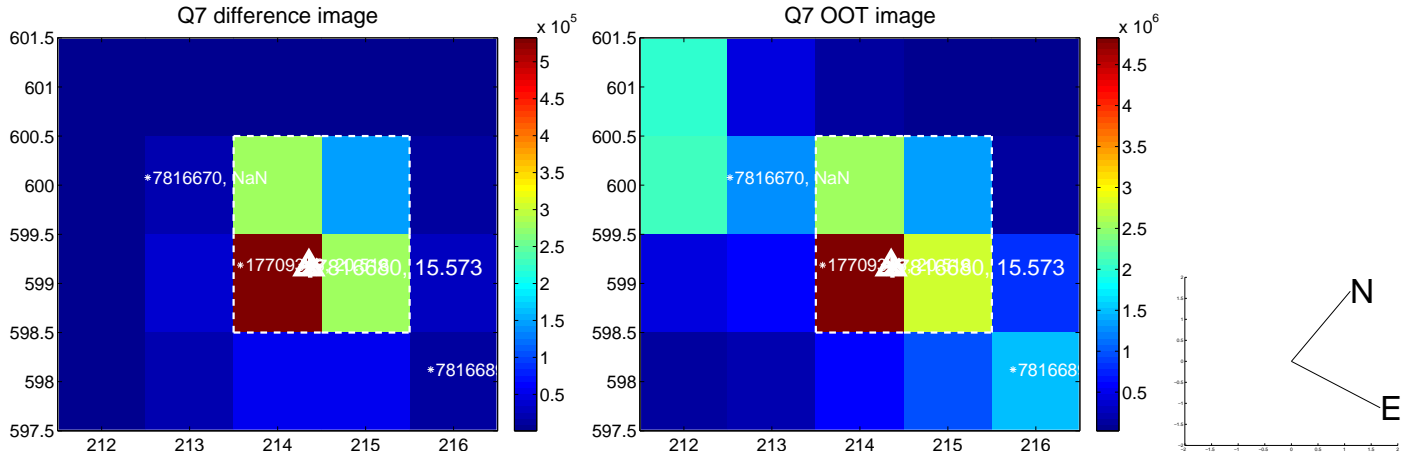
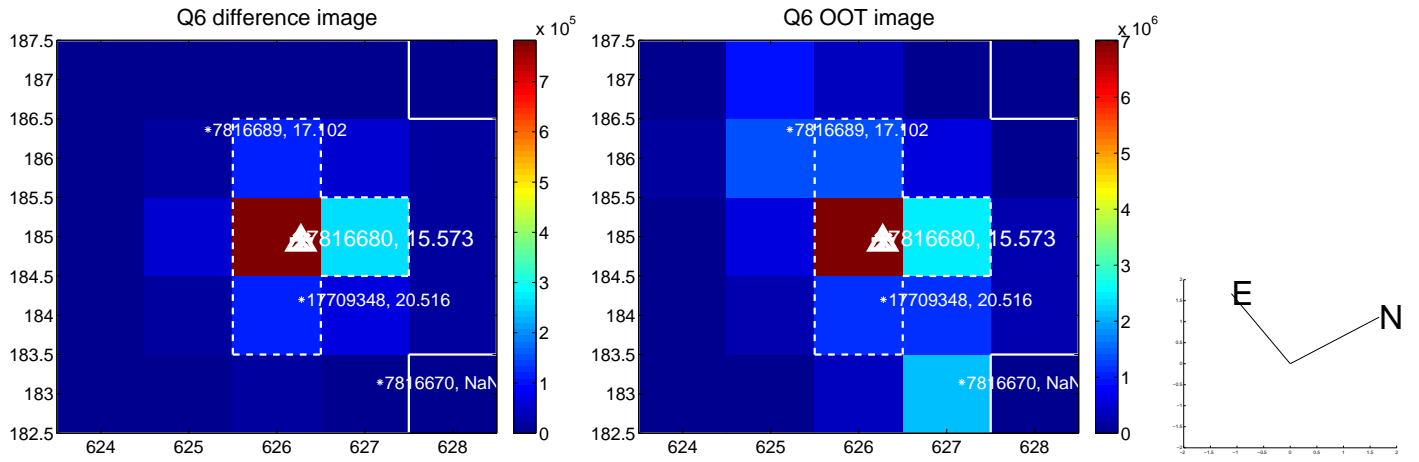
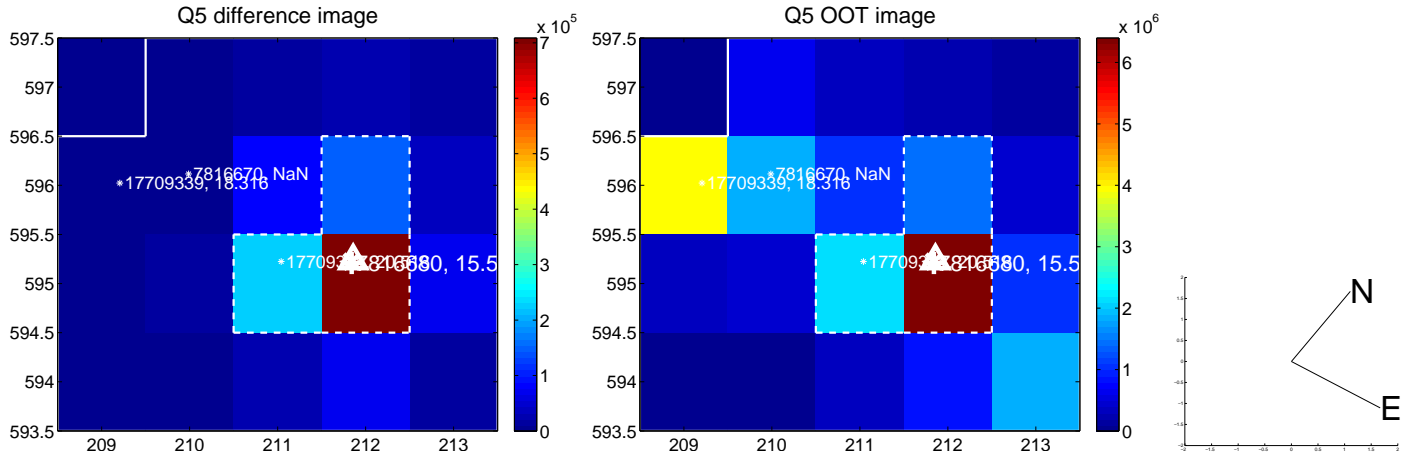


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

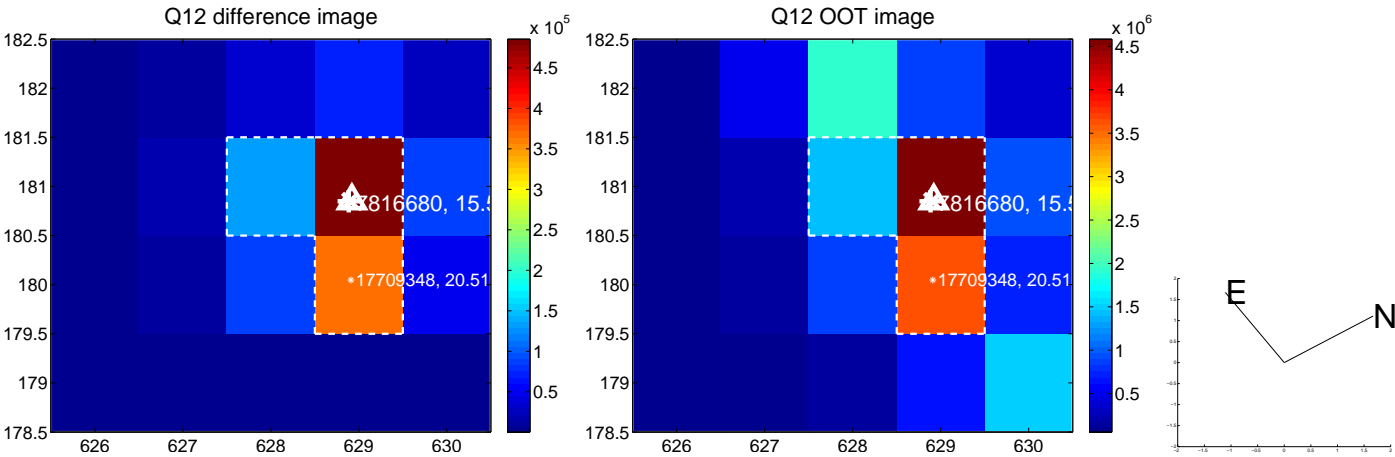
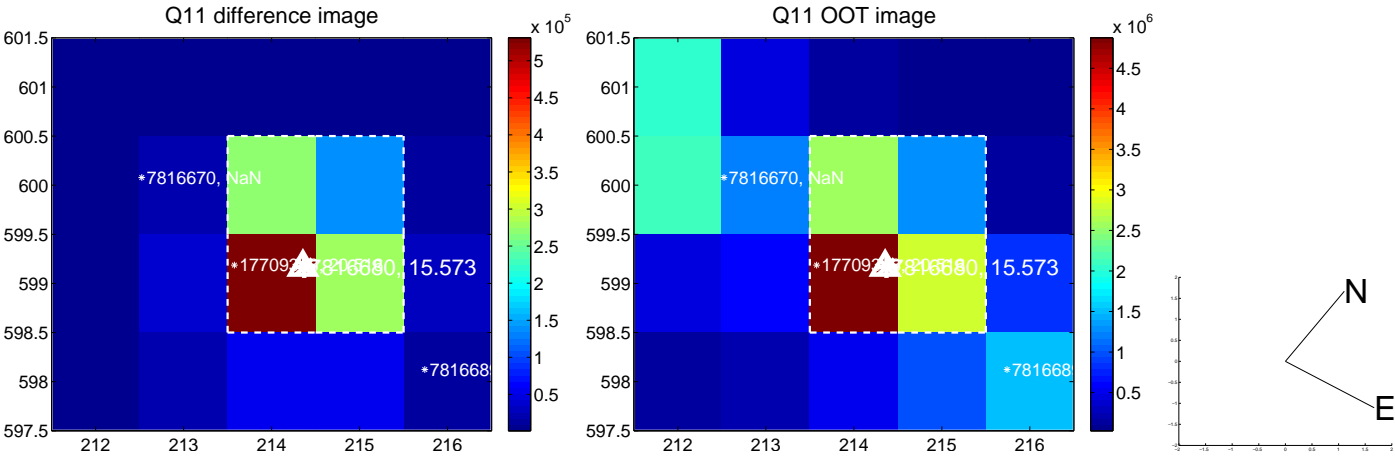
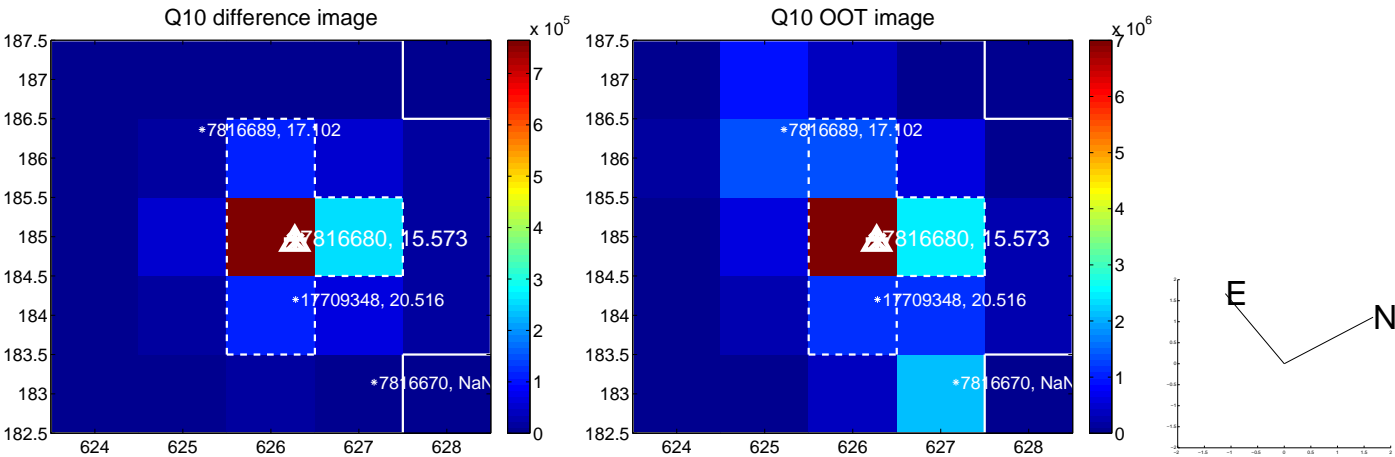
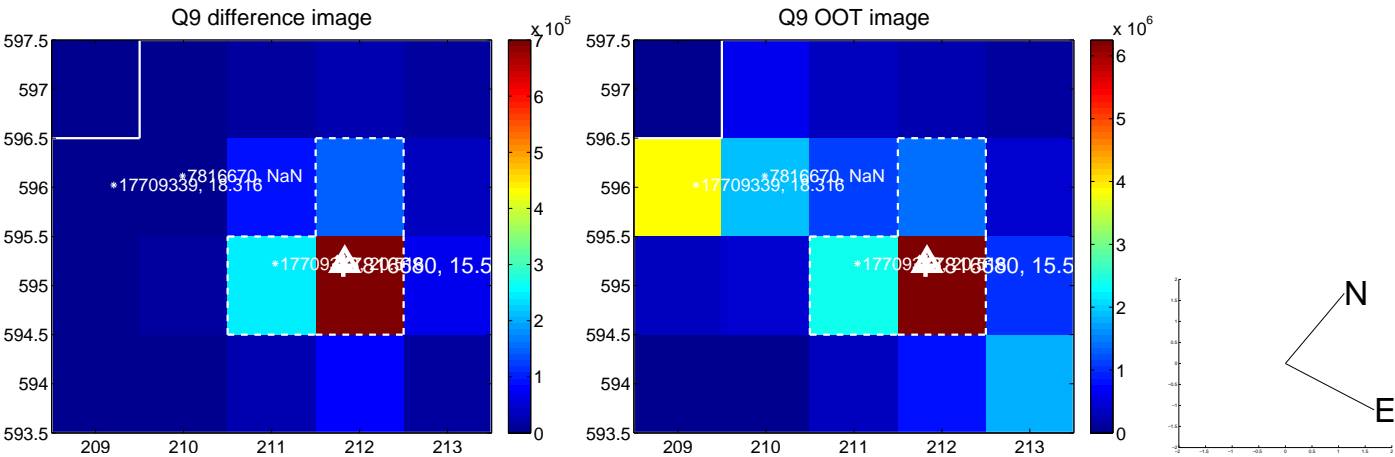
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



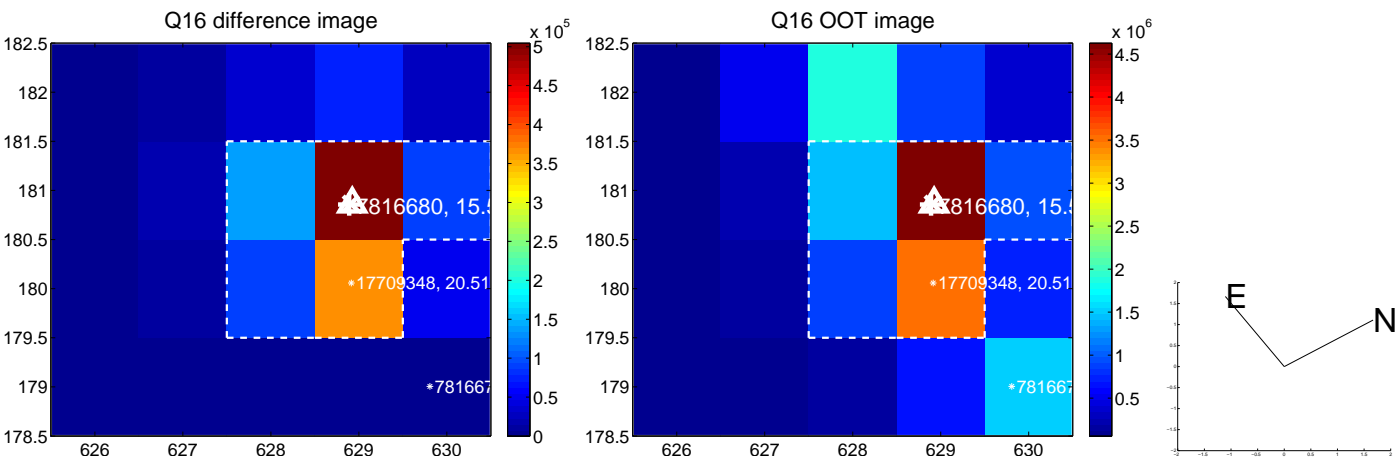
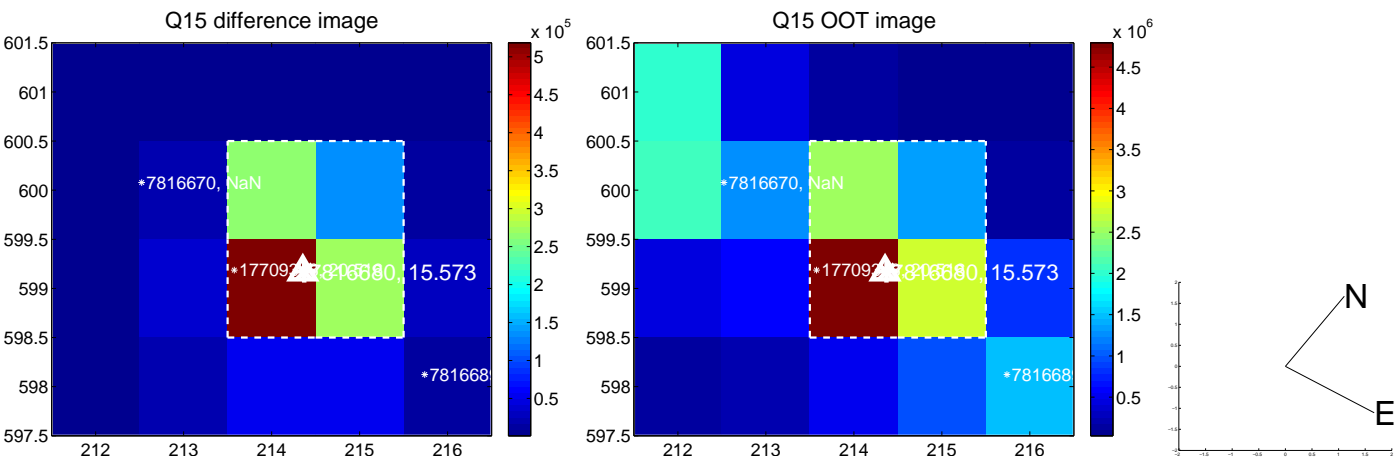
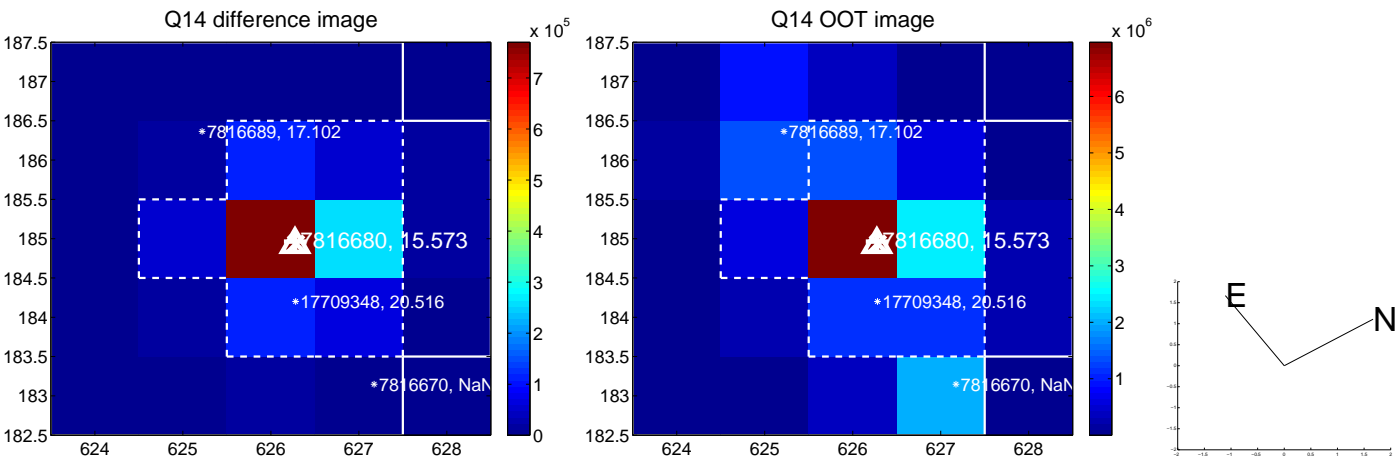
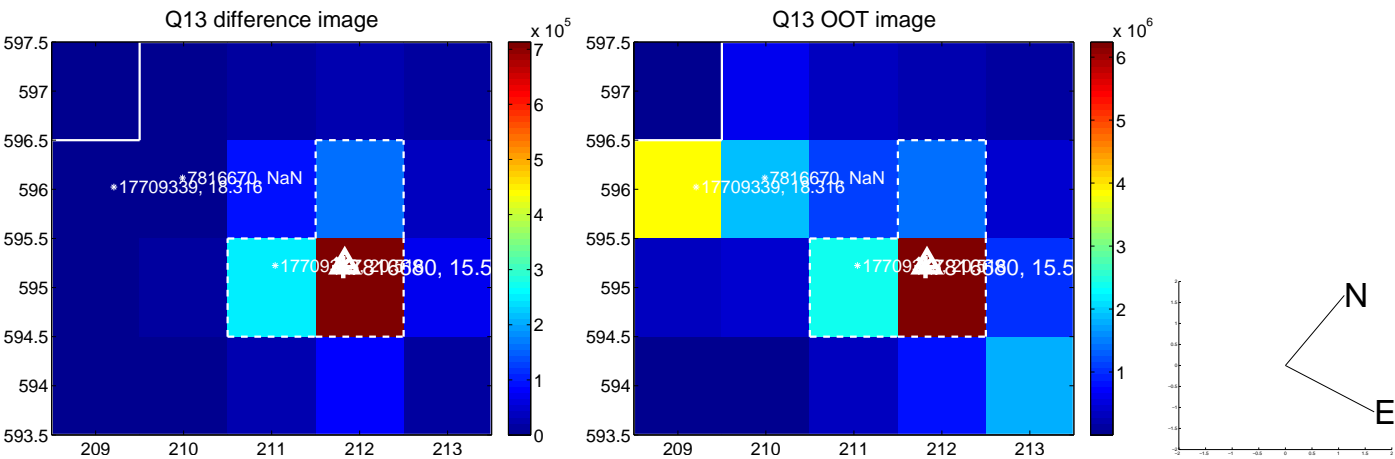
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

