

KIC 009179531

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})
009179531-01	OBS	7142.01	3.255396	132.501828	162058.5	5.864	6943.3	3137.5	0.97	5806	58.36	552.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009179531-01	OBS	FP	0.00	0	1	0	0	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.

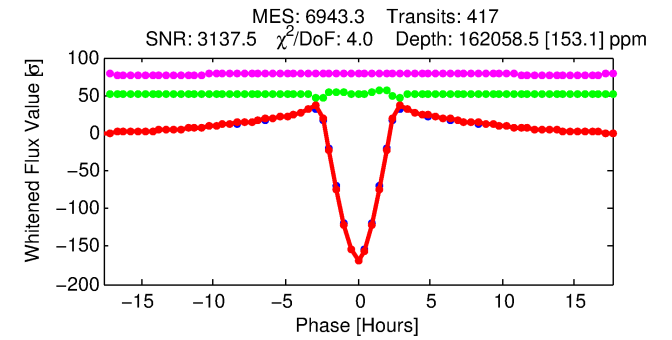
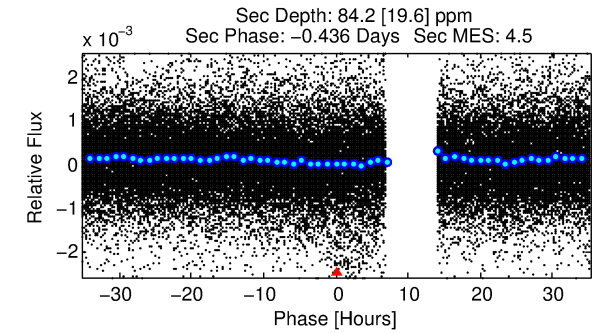
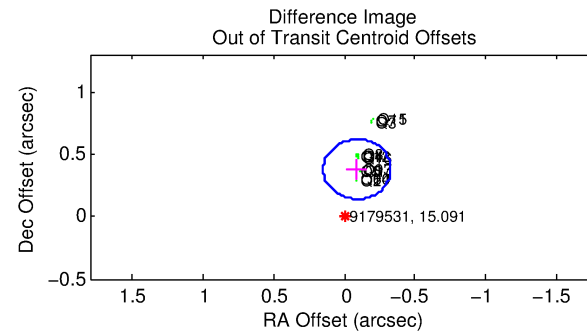
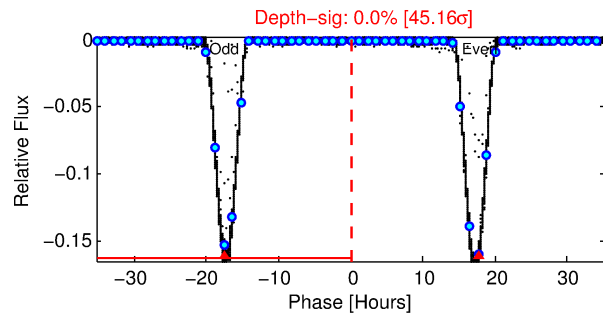
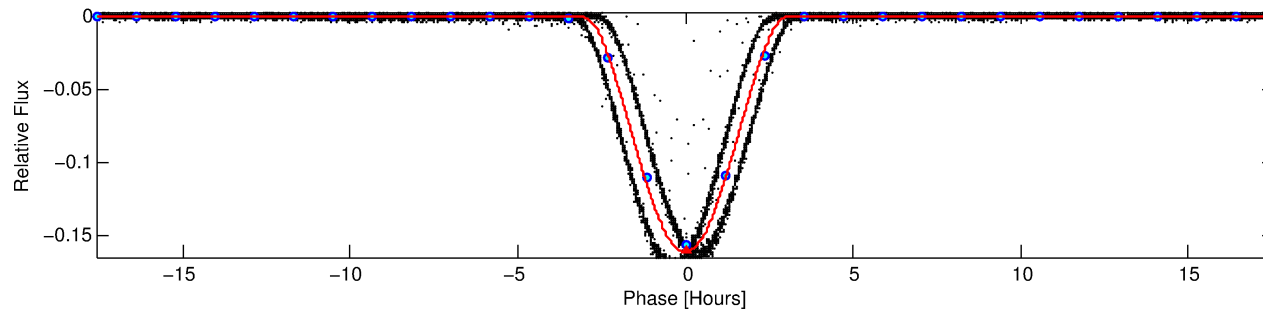
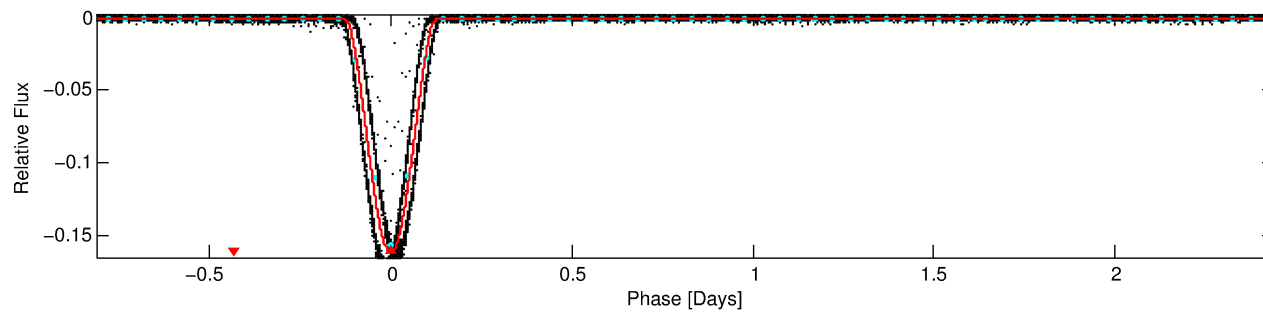
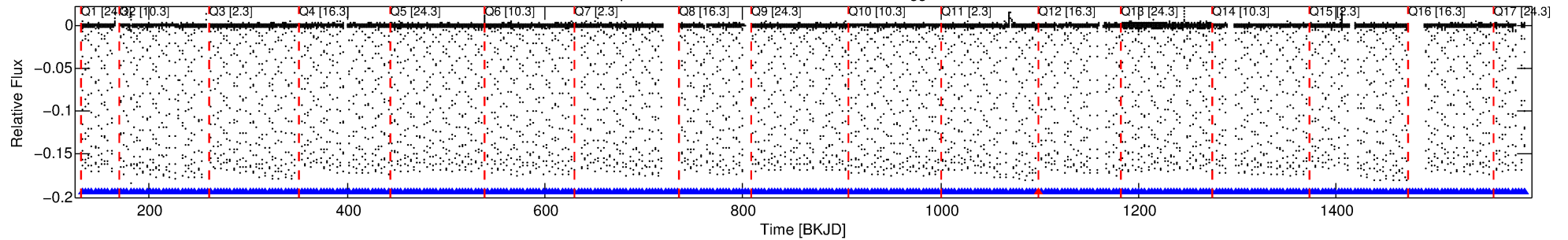
Ephemeris Match Information For 009179531-01

No Significant Match Found

DV One-Page Summary

KIC: 9179531 Candidate: 1 of 1 Period: 3.255 d
KOI: K07142.01 Corr: 0.990

Kp: 15.09 R*: 0.97 Rs Teff: 5806.0 K Logg: 4.42 Fe/H: -0.160



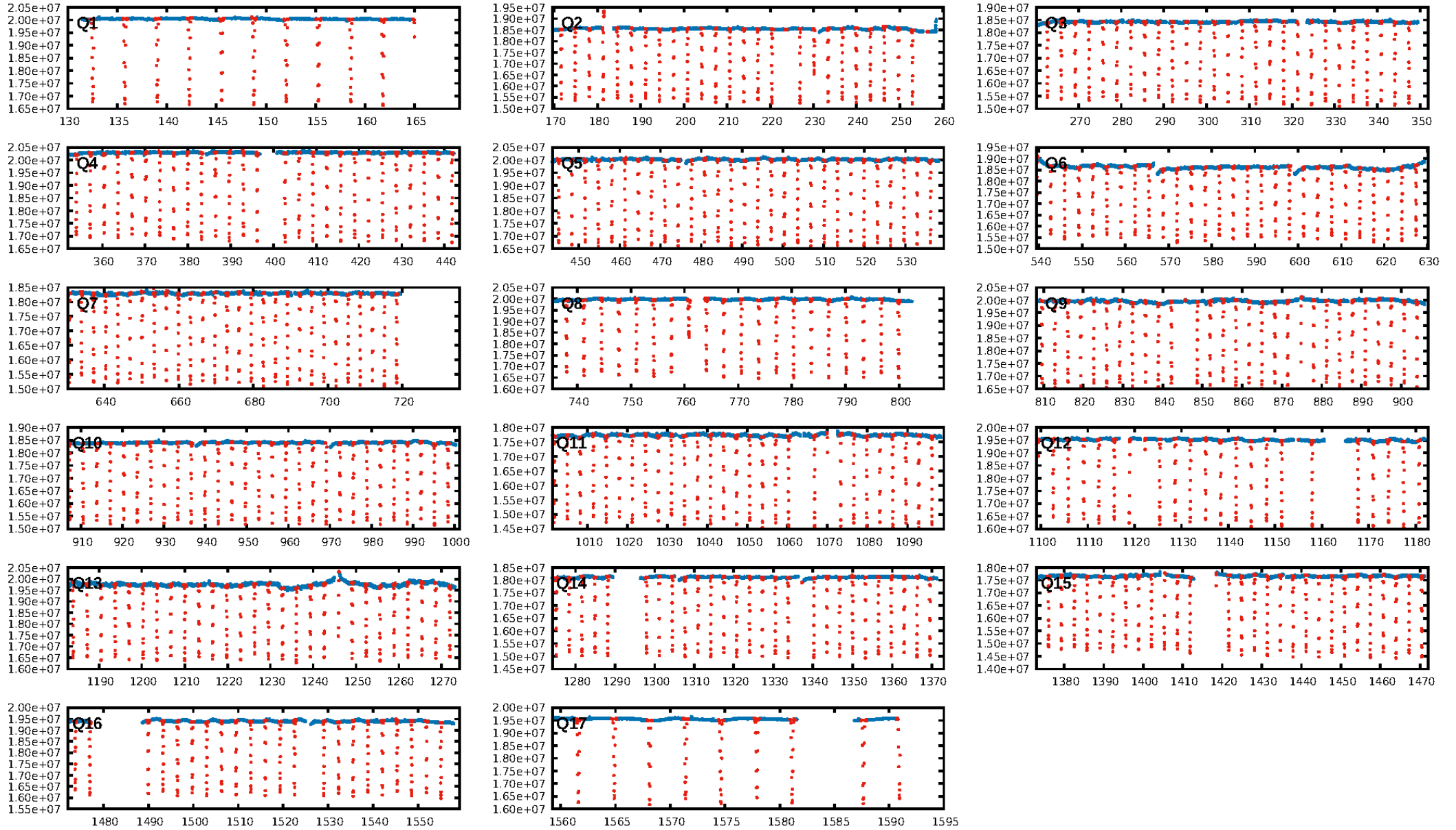
DV Fit Results:

Period = 3.25540 [0.00000] d
Epoch = 132.5018 [0.0000] BKJD
Rp/R* = 0.5485 [0.0333]
a/R* = 5.48 [0.04]
b = 0.90 [0.05]
Seff = 552.42 [205.51]
Teff = 1236 [115] K
Rp = 58.36 [17.42] Re
a = 0.0419 [0.0101] AU
Ag = 0.02 [0.01] [-93.90σ]
Teffp = 751 [55] K [-3.81σ]

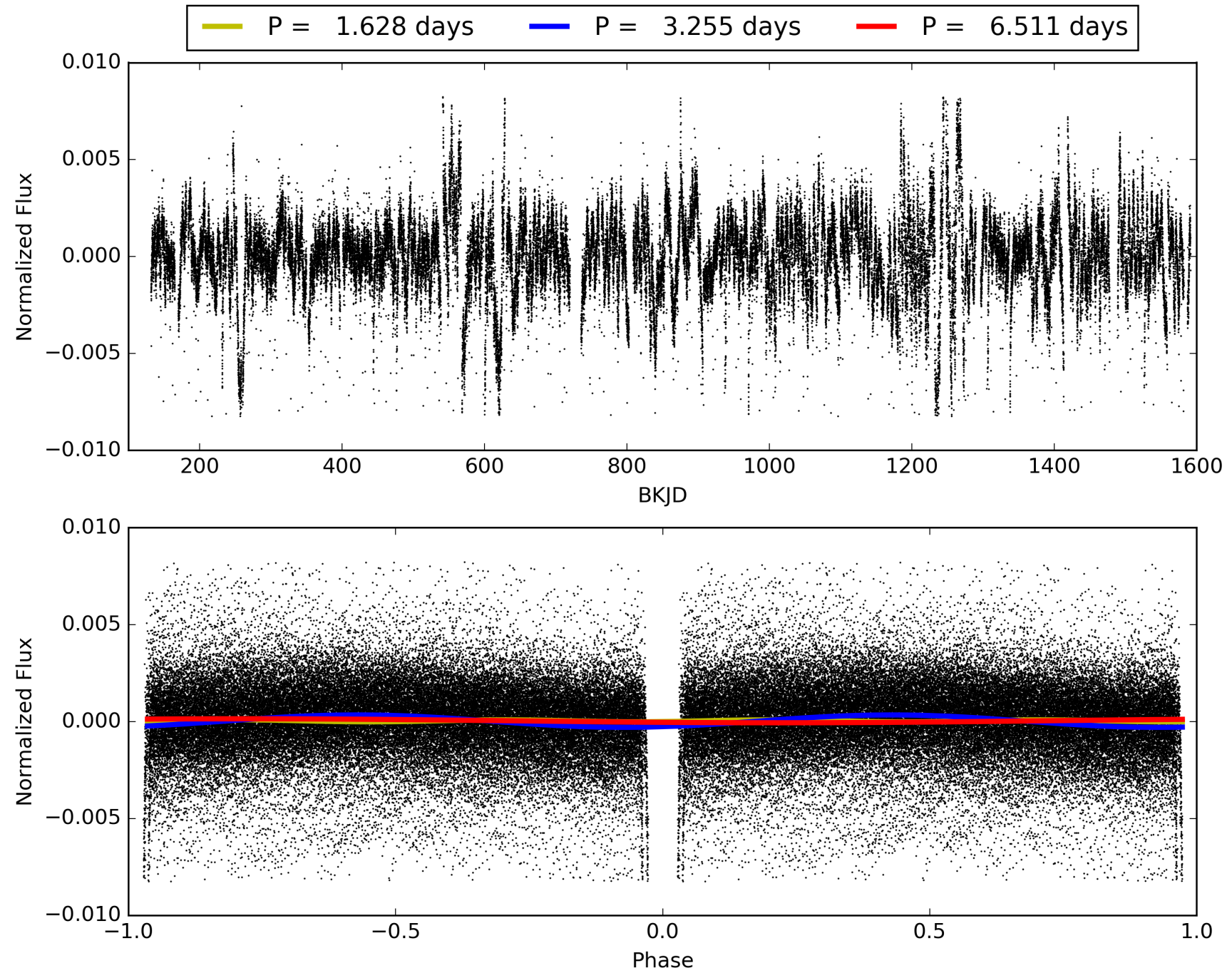
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [396/397]
GhostDiagnostic-chr: 2.459
Centroid-sig: 0.0%
Centroid-so: 0.456 arcsec [384.67σ]
OotOffset-rm: 0.390 arcsec [4.90σ]
KicOffset-rm: 0.056 arcsec [0.81σ]
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 009179531-01, PDC Light Curves

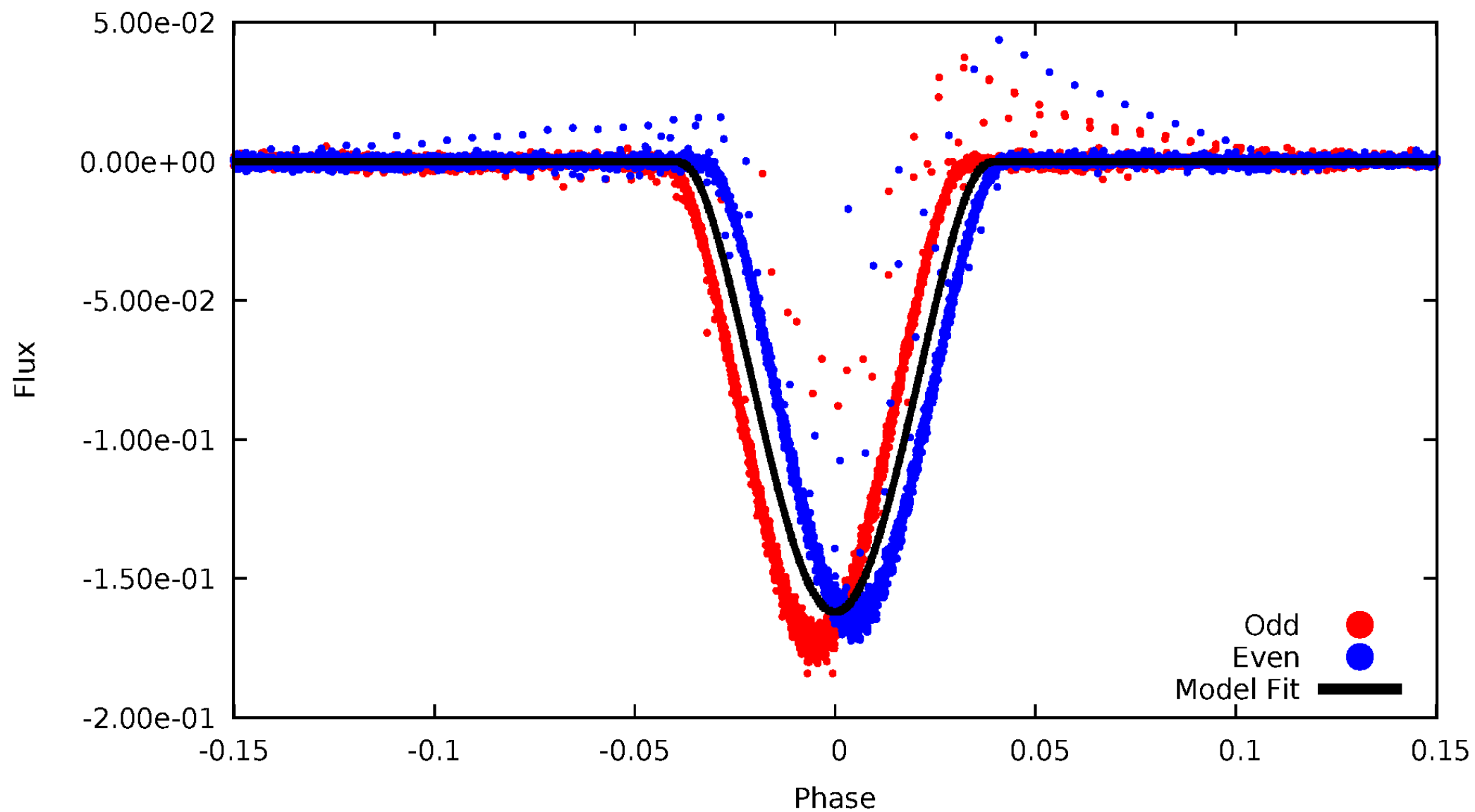


TCE 009179531-01



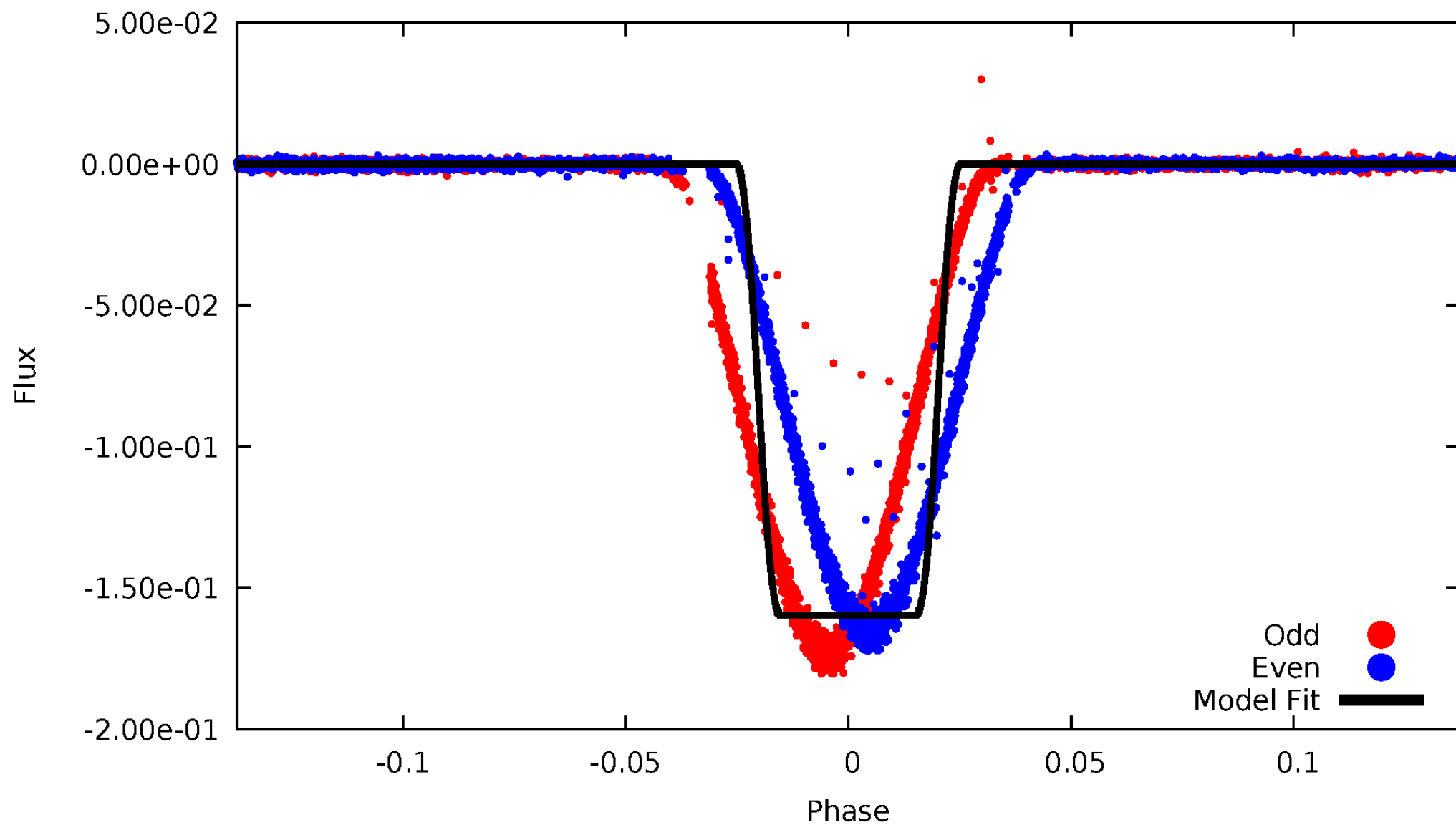
DV Odd/Even

TCE 009179531-01



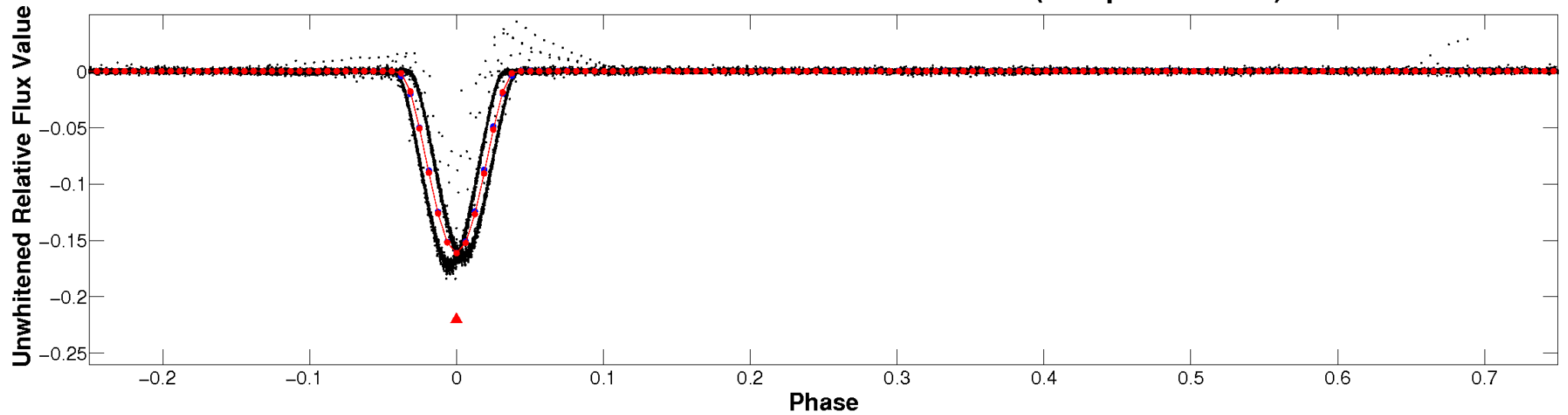
ALT Odd/Even

TCE 009179531-01

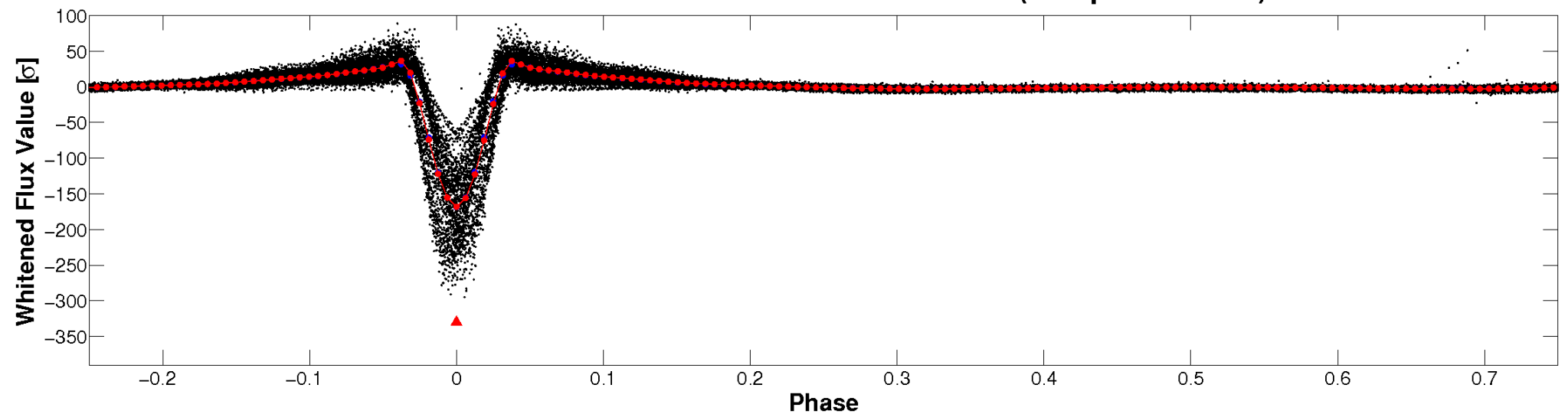


Non-Whitened Vs. Whitened Light Curve

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

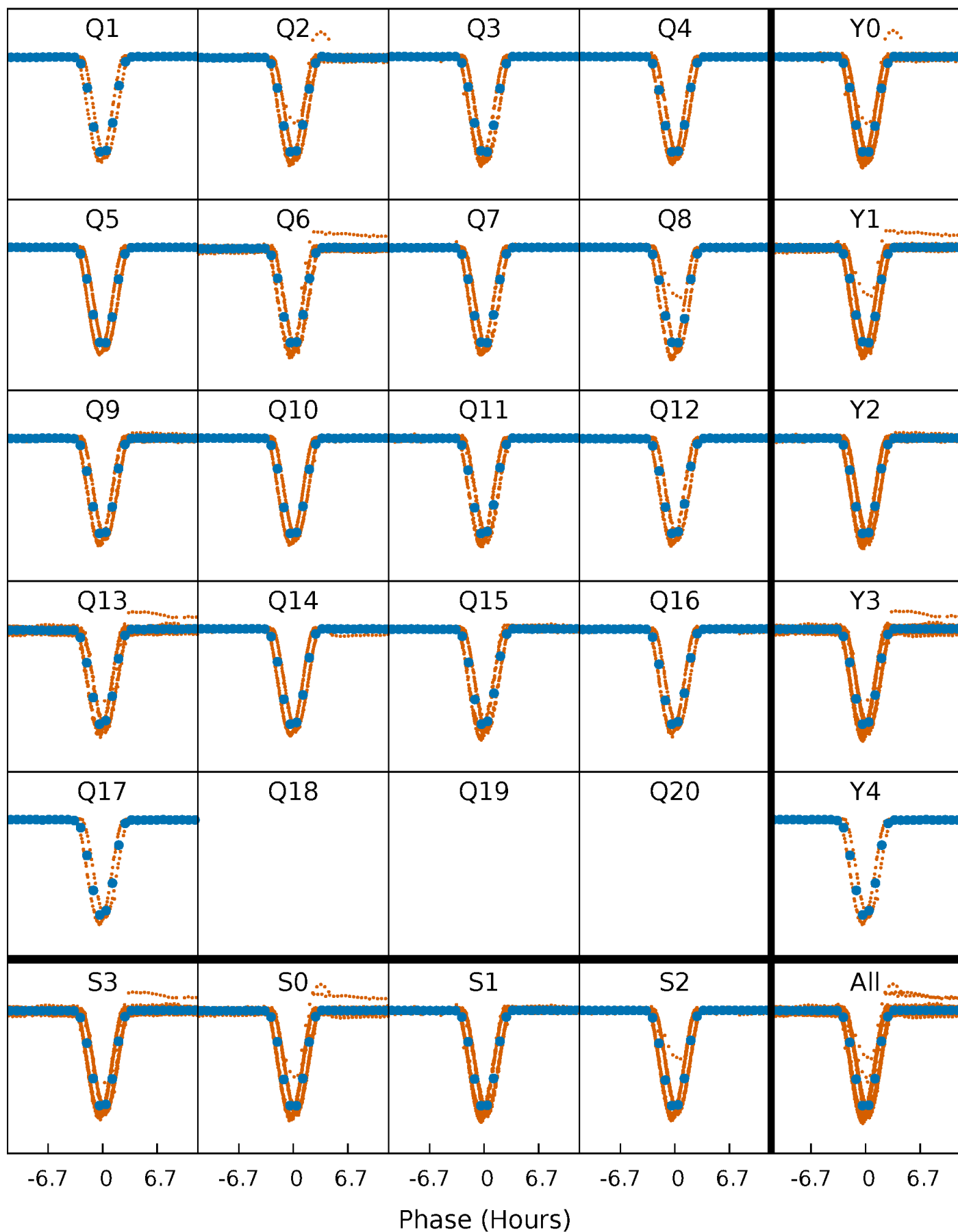


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



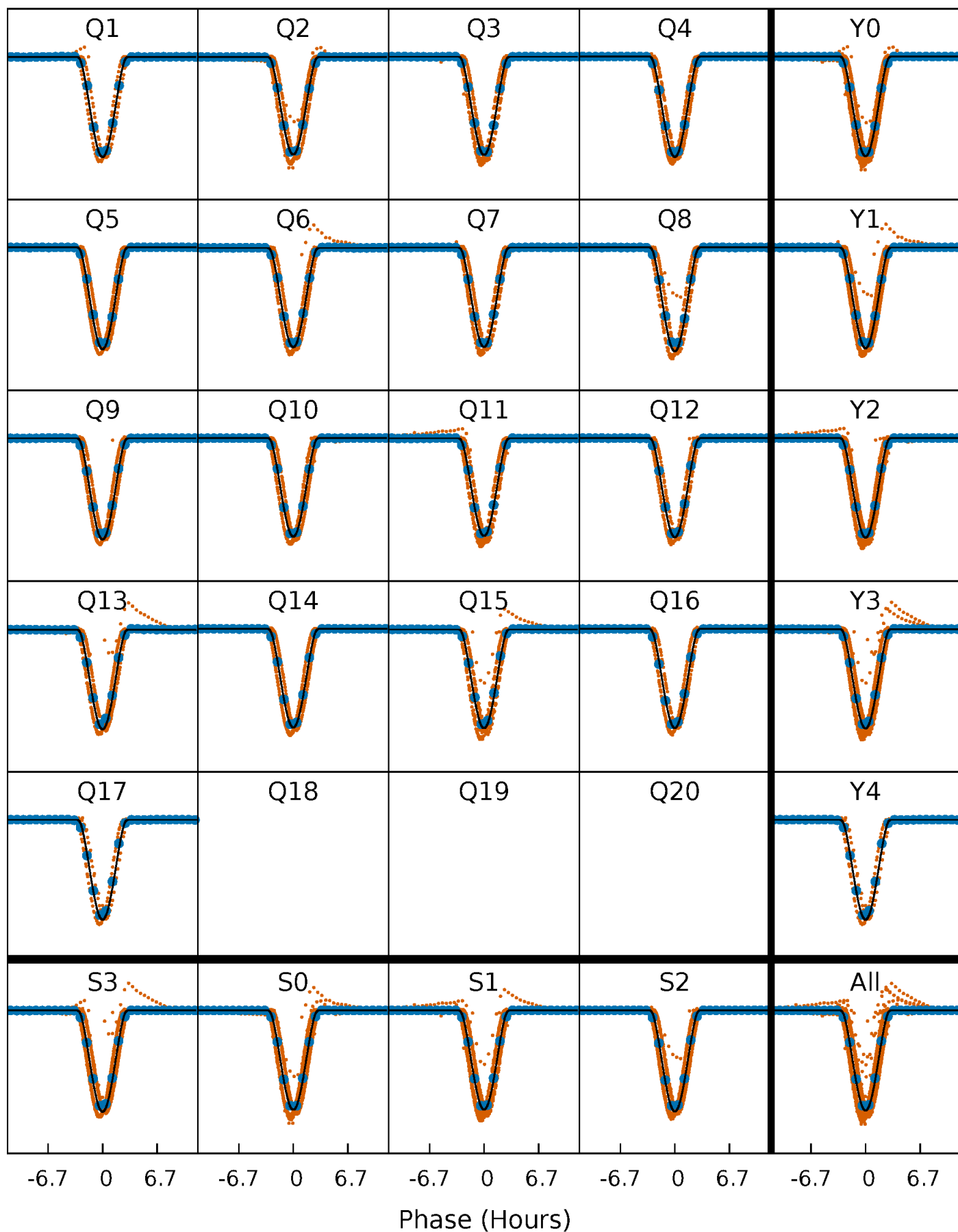
PDC Quarter-Phased Transit Curves

TCE 009179531-01 P= 3.255396 Days $T_0=132.501828$ (BKJD)



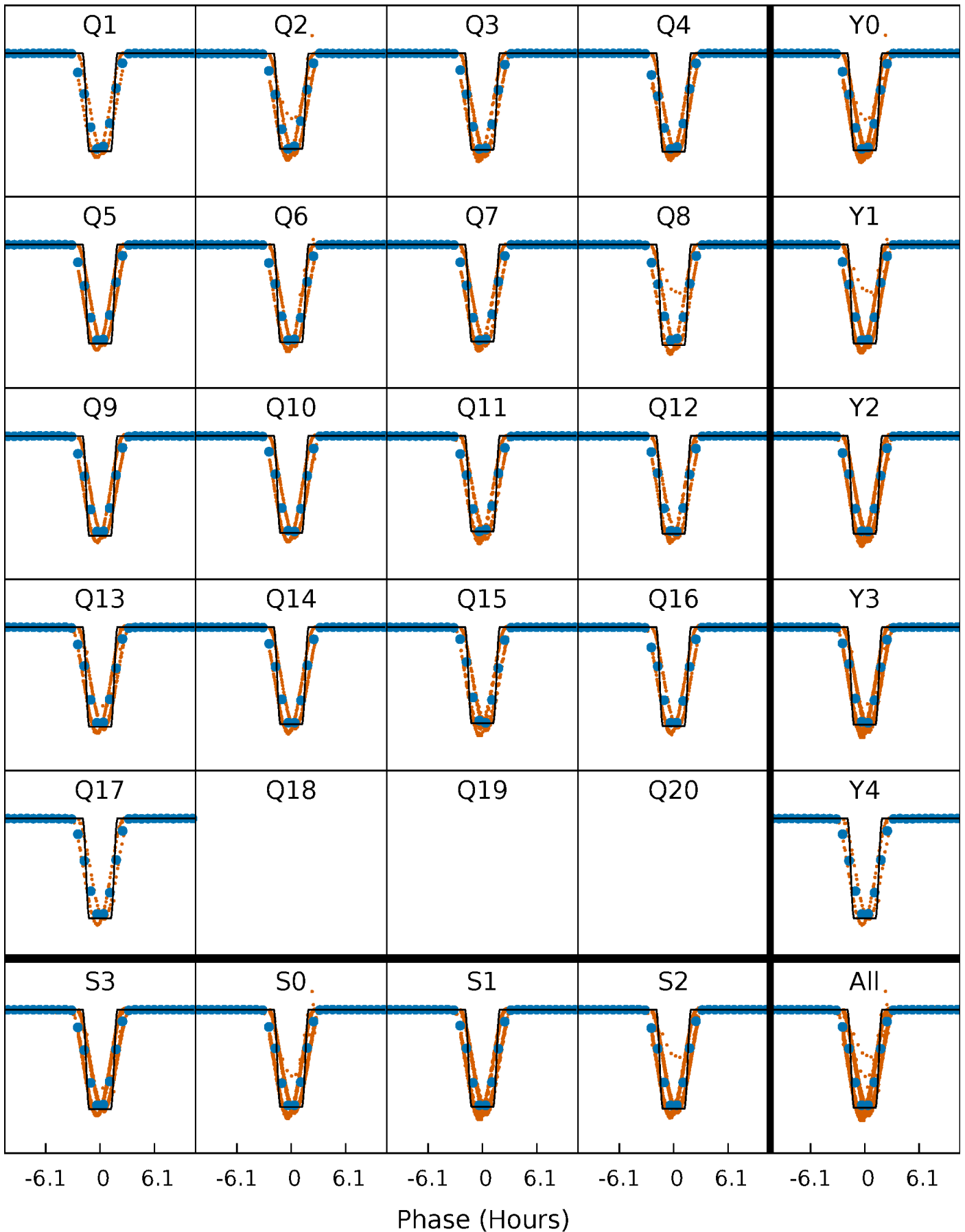
DV Quarter-Phased Transit Curves

TCE 009179531-01 P= 3.255396 Days $T_0=132.501828$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

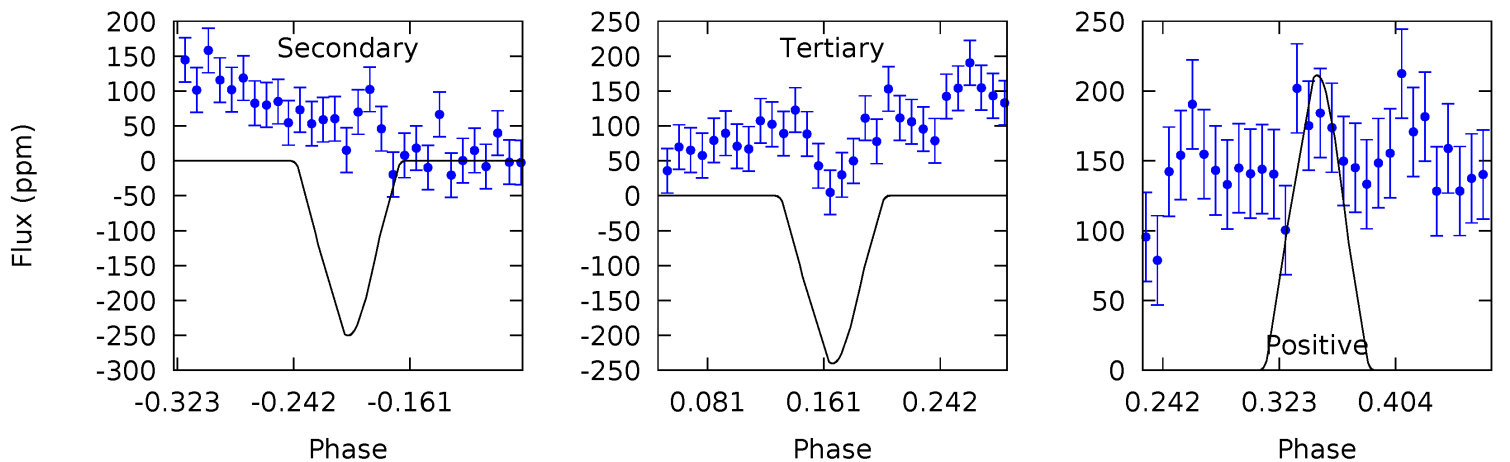
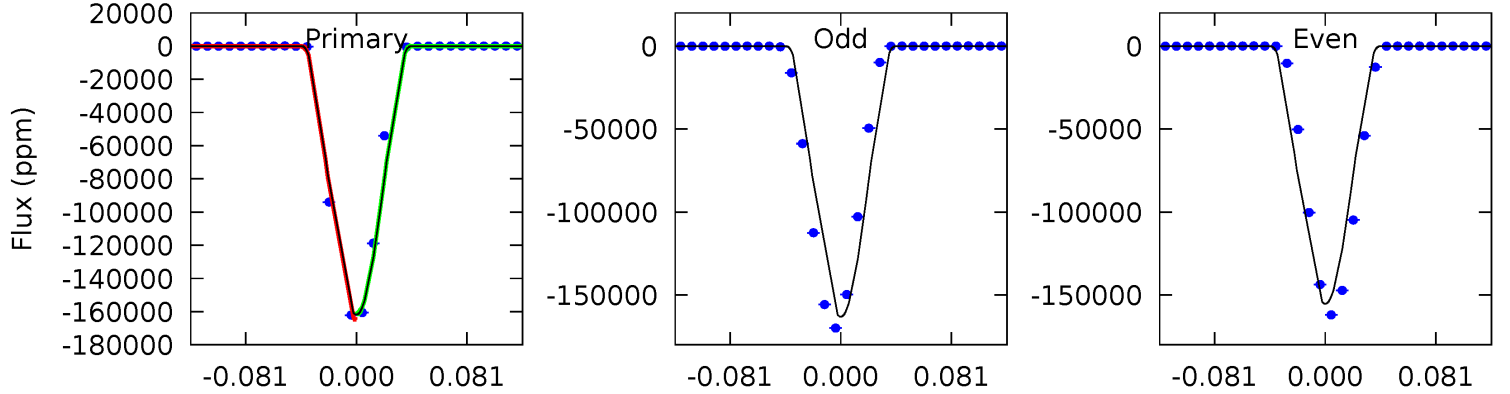
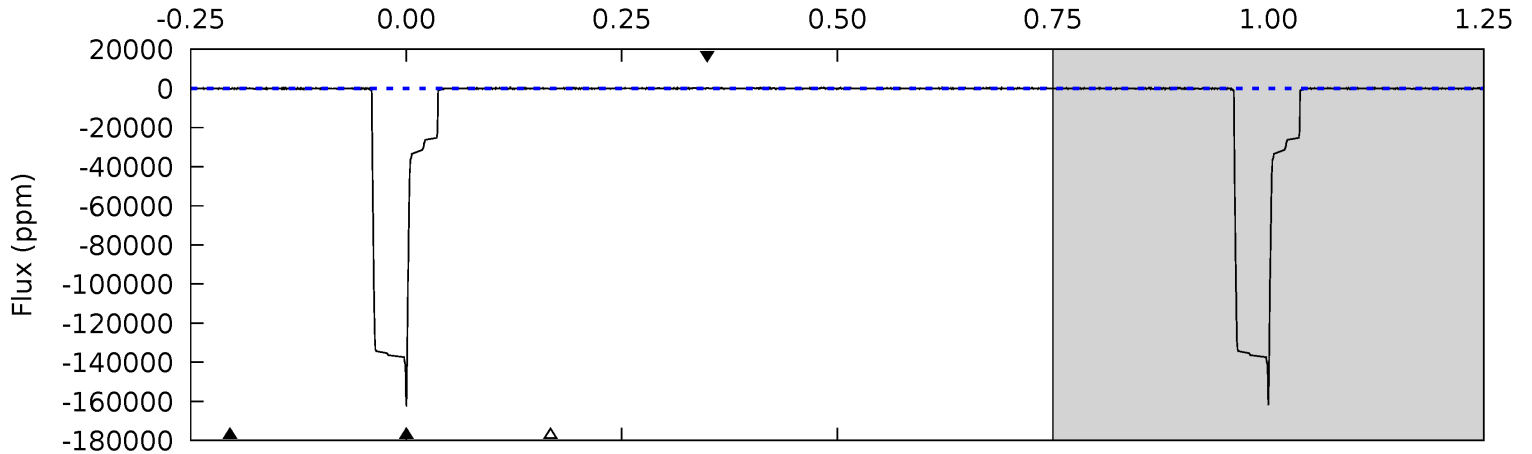
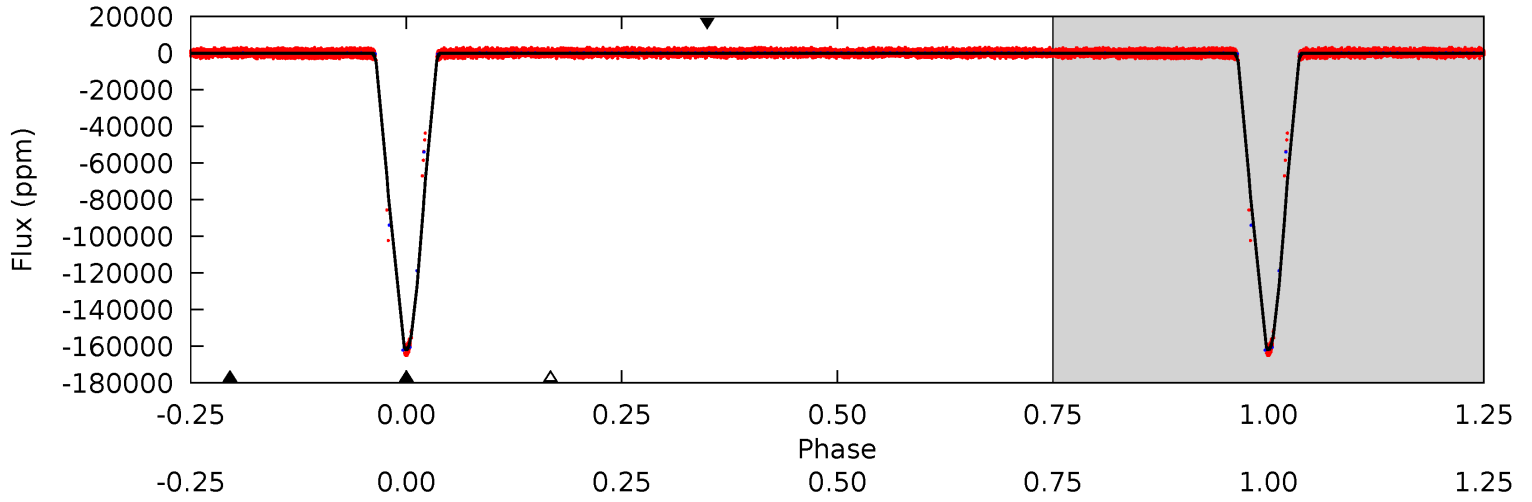
TCE 009179531-01 P= 3.255381 Days $T_0=132.504936$ (BKJD)



DV Model-Shift Uniqueness Test

009179531-01, P = 3.255396 Days, E = 129.246432 Days

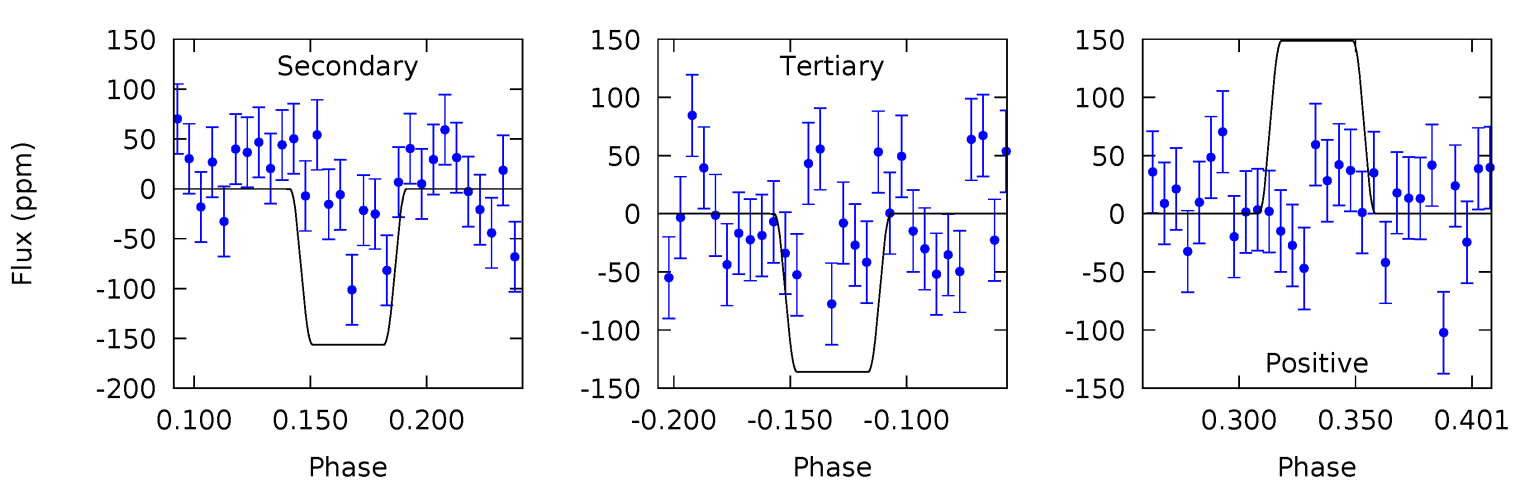
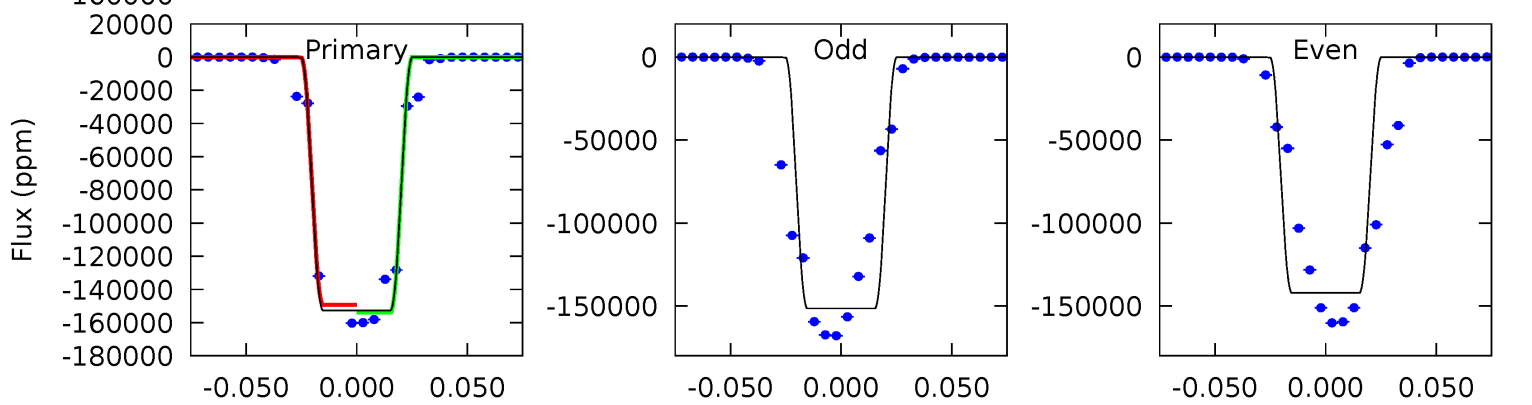
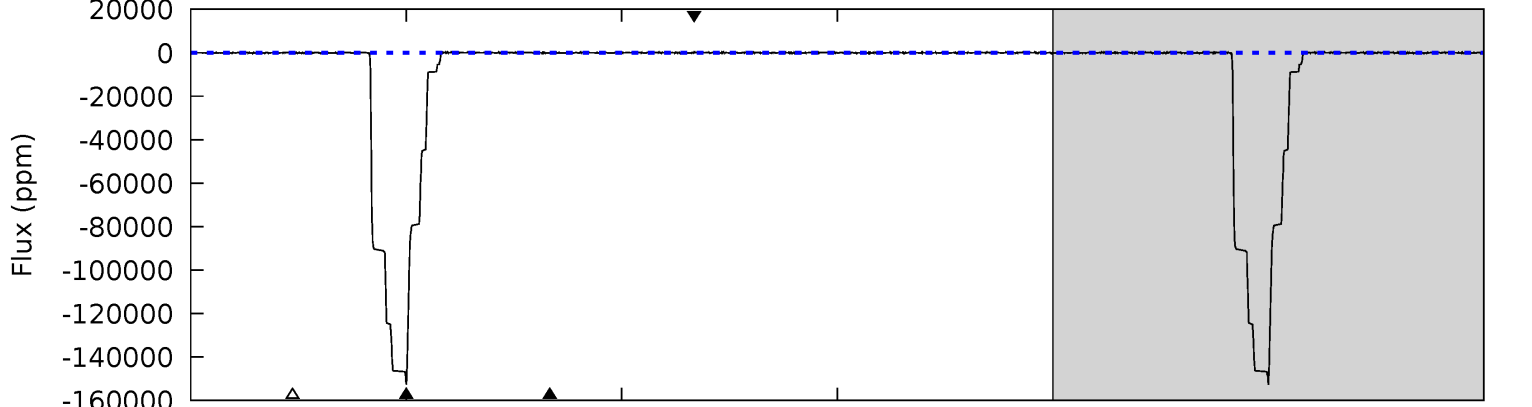
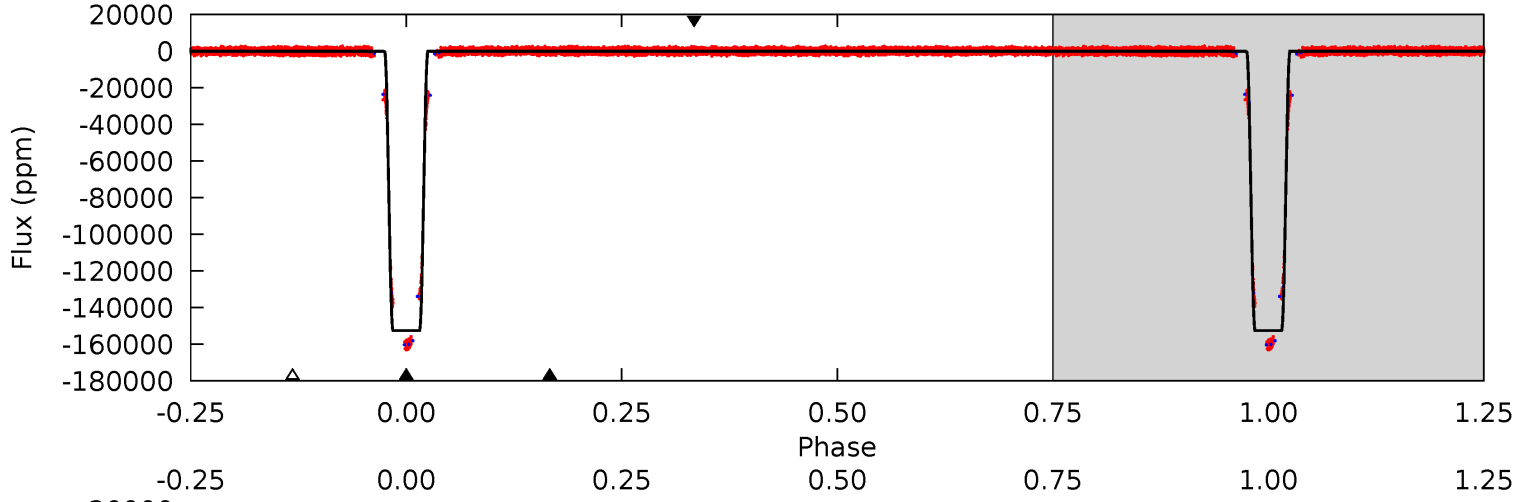
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4782	7.40	7.10	6.24	4.61	1.75	2.08	4775	4776	0.30	1.15	343.6	0.98	0.00	46.3



Alt Model-Shift Uniqueness Test

009179531-01, P = 3.255381 Days, E = 129.249555 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4301	4.41	3.83	4.19	4.71	1.96	1.19	4298	4297	0.57	0.22	251.2	1.00	0.00	0



Stellar Parameters For KIC 009179531

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5806^{+172}_{-190}	$4.425^{+0.101}_{-0.188}$	$-0.160^{+0.300}_{-0.300}$	$0.975^{+0.285}_{-0.142}$	$0.923^{+0.123}_{-0.089}$	$1.402^{+0.634}_{-0.696}$
	+3%/-3%	+2%/-4%	+188%/-188%	+29%/-15%	+13%/-10%	+45%/-50%
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 009179531-01 / KOI 7142.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-250 ± 34	$59.60^{+9.65}_{-6.82}$	1738^{+126}_{-88}	-2267^{+68}_{-93}	$0.067^{+0.020}_{-0.018}$
Alt.	-156 ± 35	$43.06^{+7.28}_{-5.13}$	1739^{+139}_{-89}	-2254^{+77}_{-97}	$0.079^{+0.032}_{-0.026}$

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 $A_{obs} \gg 1.0$

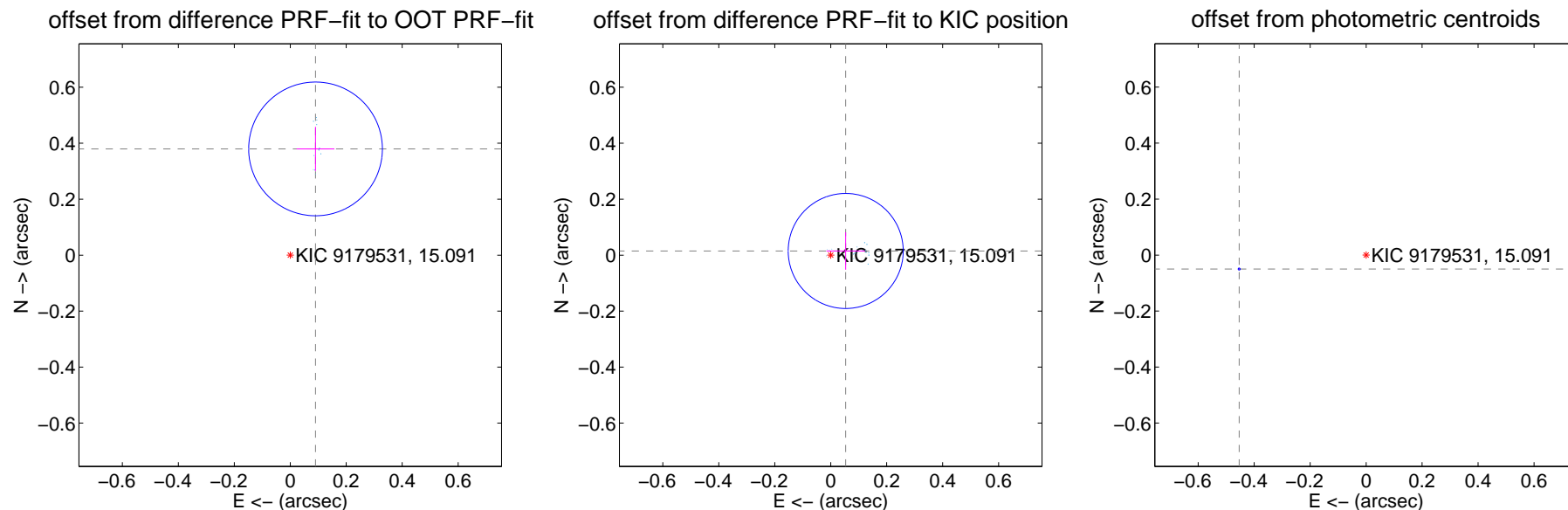
DV Centroid Data

Supplemental centroid analysis for 009179531-01. Kepler magnitude: 15.09. Transit SNR 3137.54

There are 17 quarters with good PRF difference image offsets

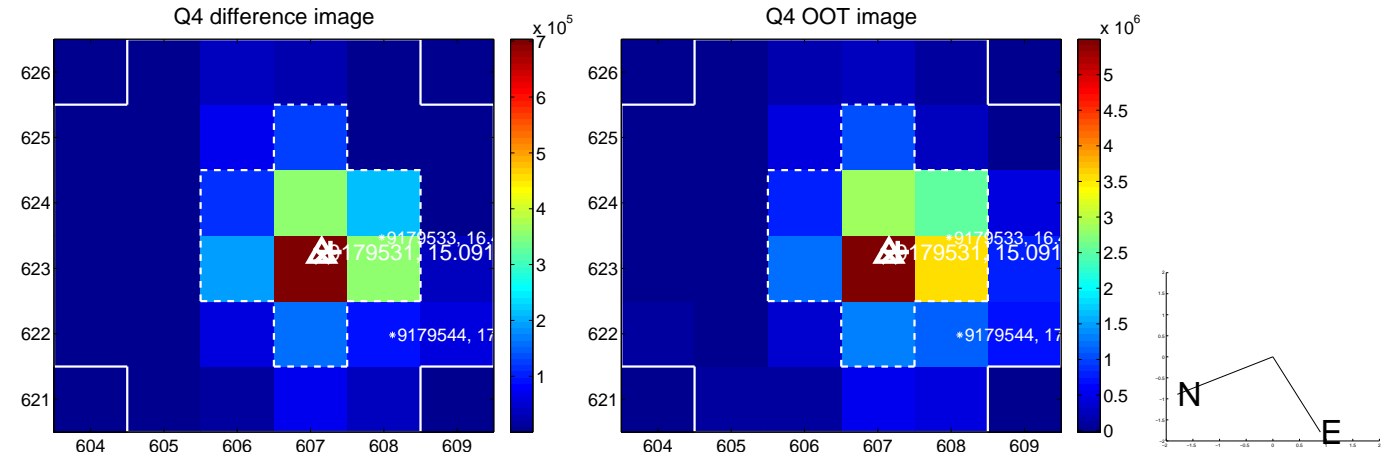
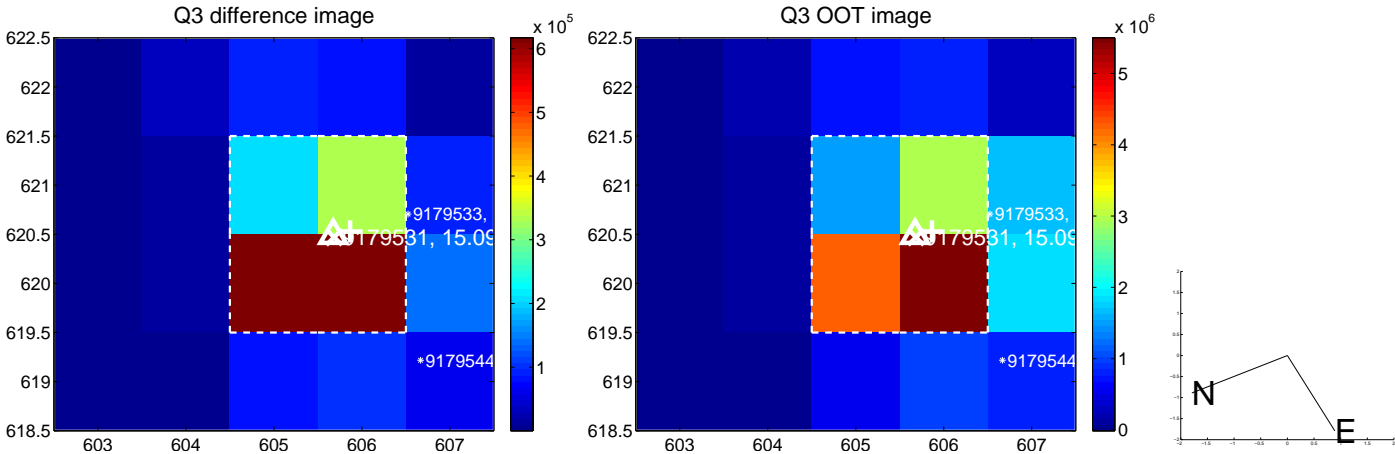
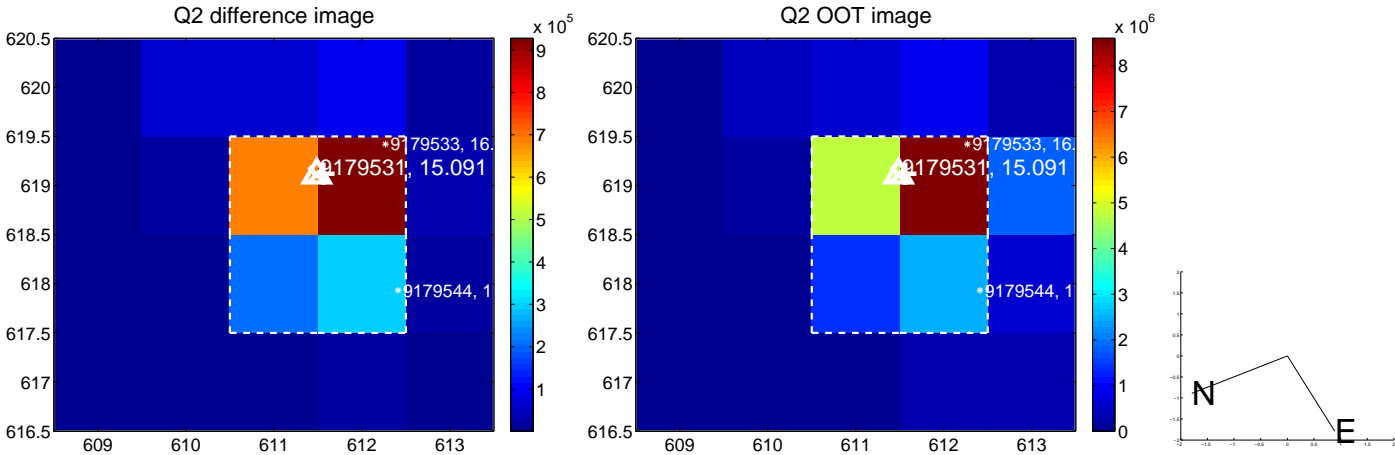
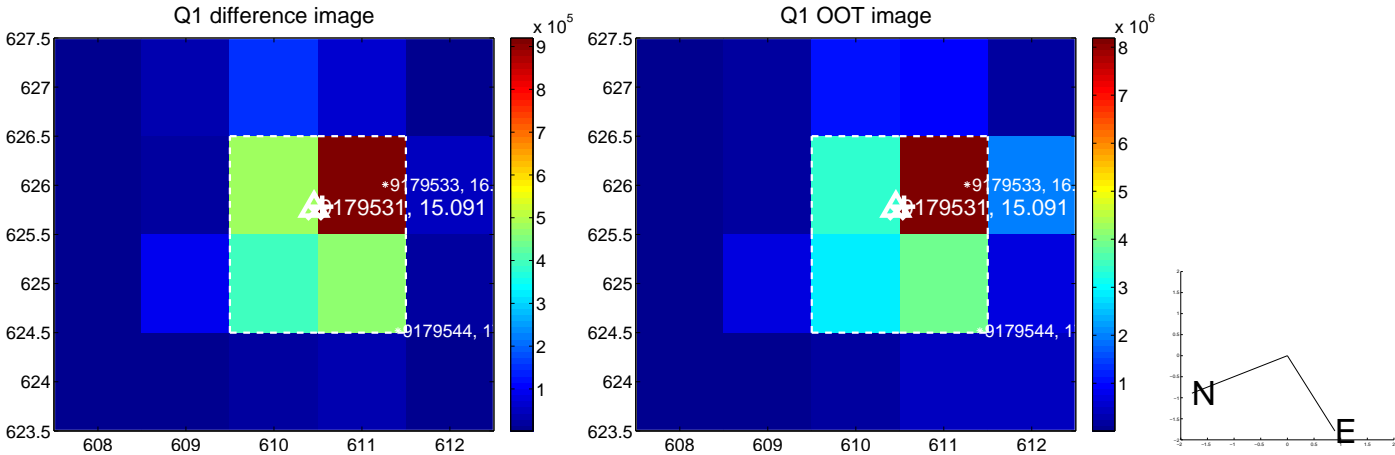
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.390 \pm 0.080	4.90	-0.090 \pm 0.068	0.379 \pm 0.079
PRF-fit source offset from KIC position	0.056 \pm 0.068	0.81	-0.054 \pm 0.069	0.015 \pm 0.067
photometric centroid source offset	0.46 \pm 0.00	384.67	0.45 \pm 0.00	-0.05 \pm 0.00

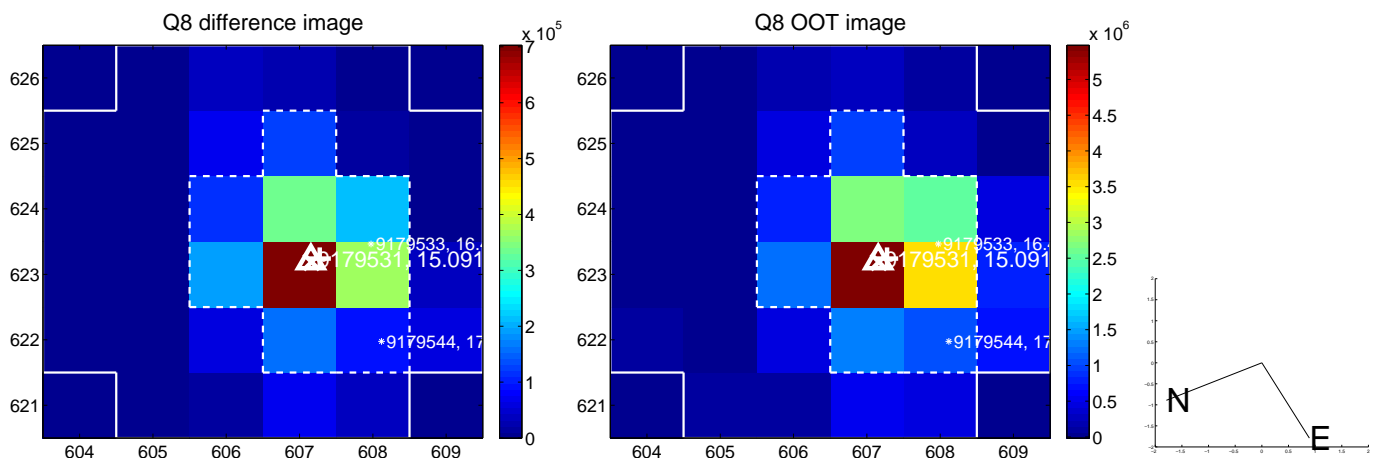
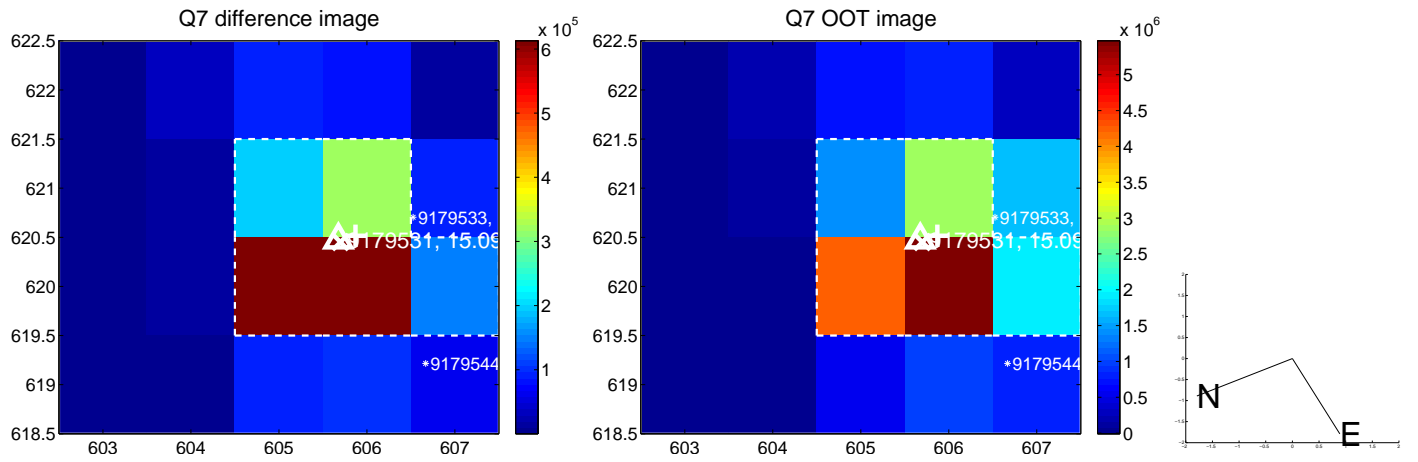
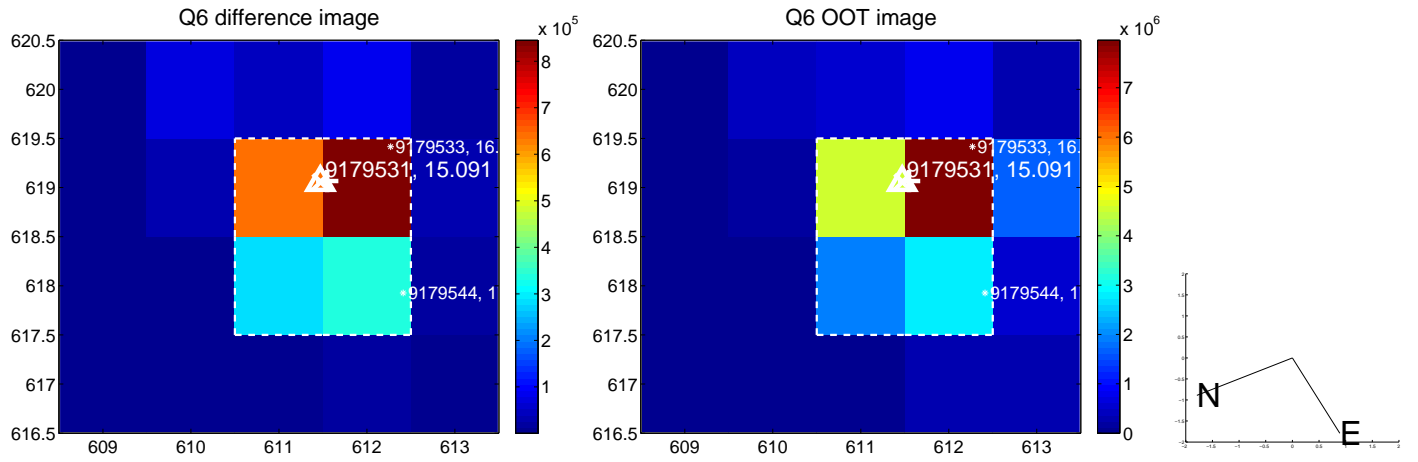
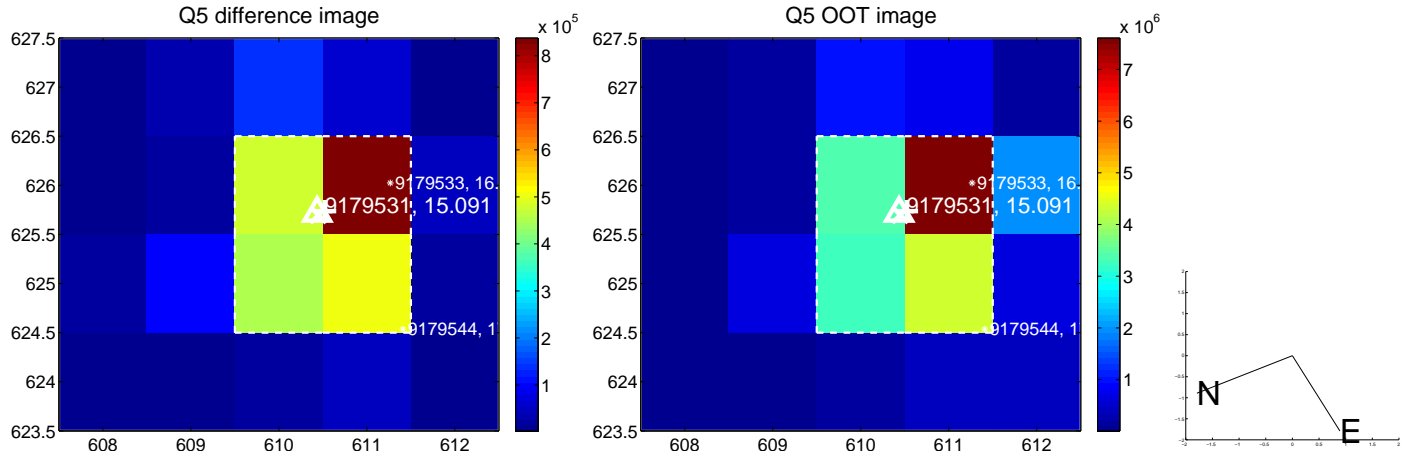


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

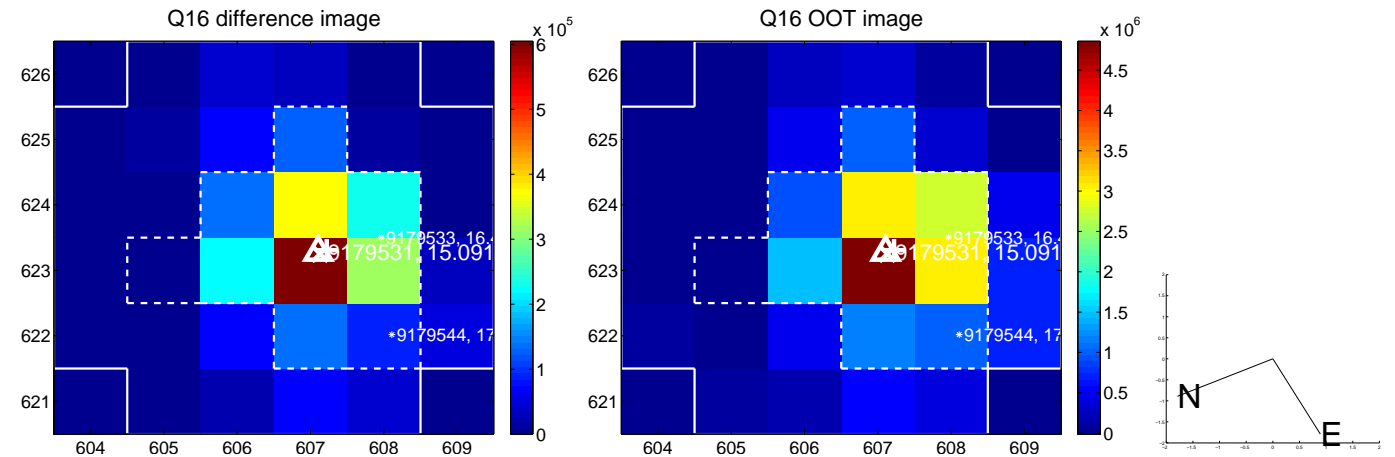
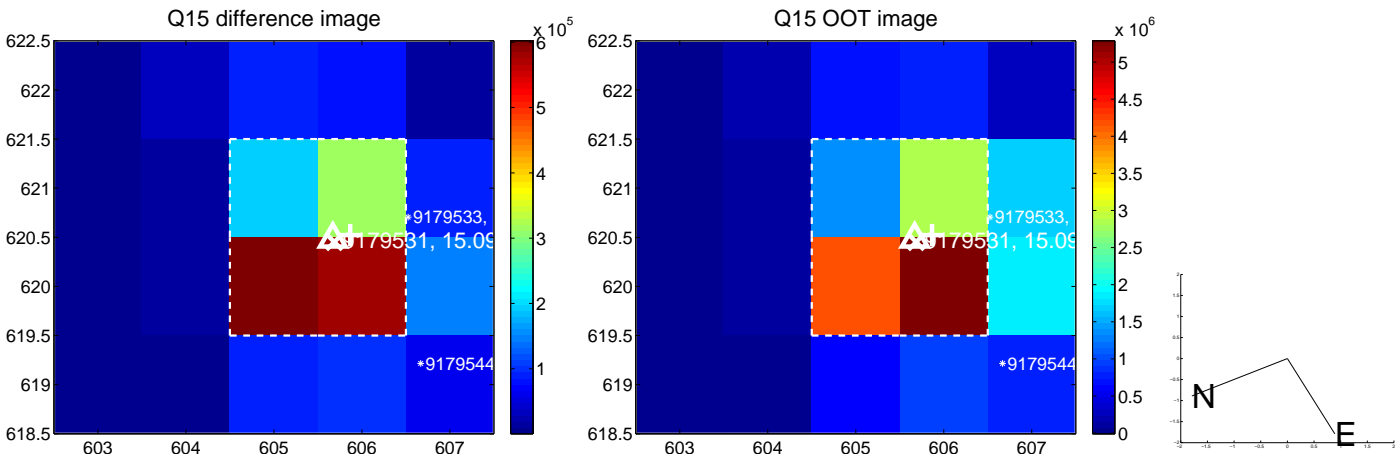
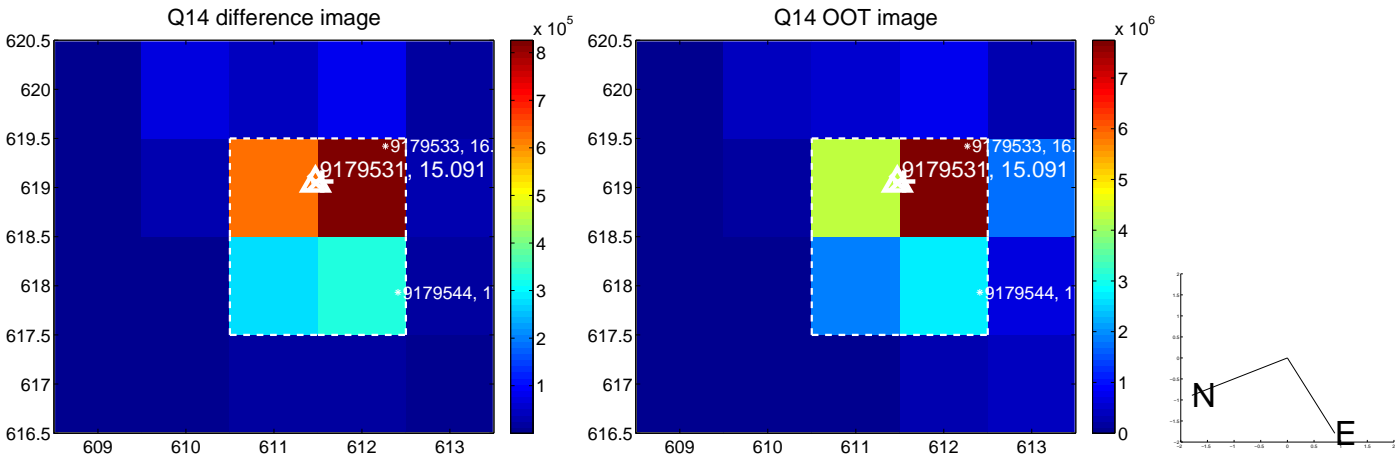
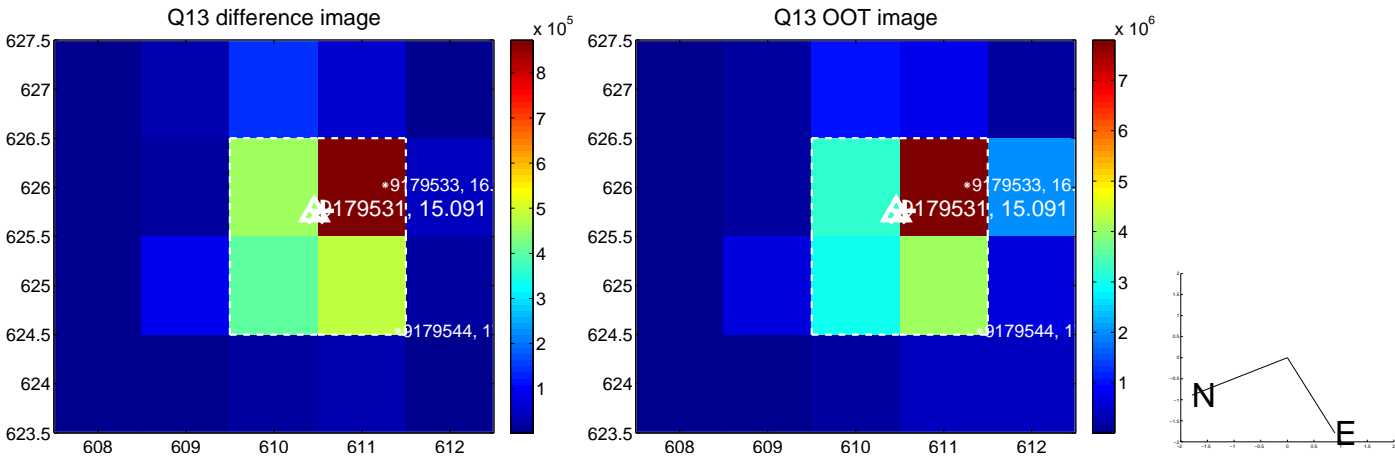
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



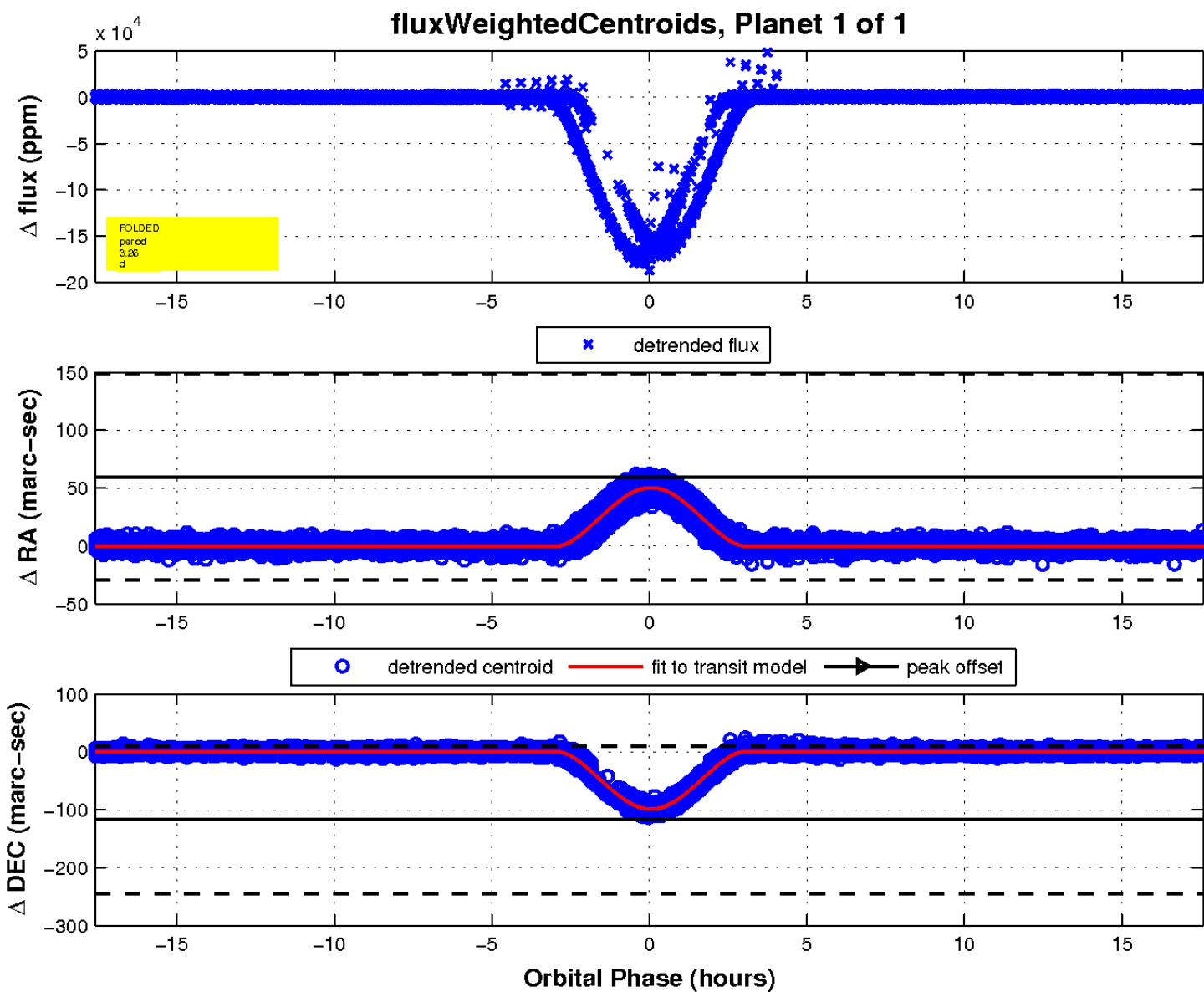
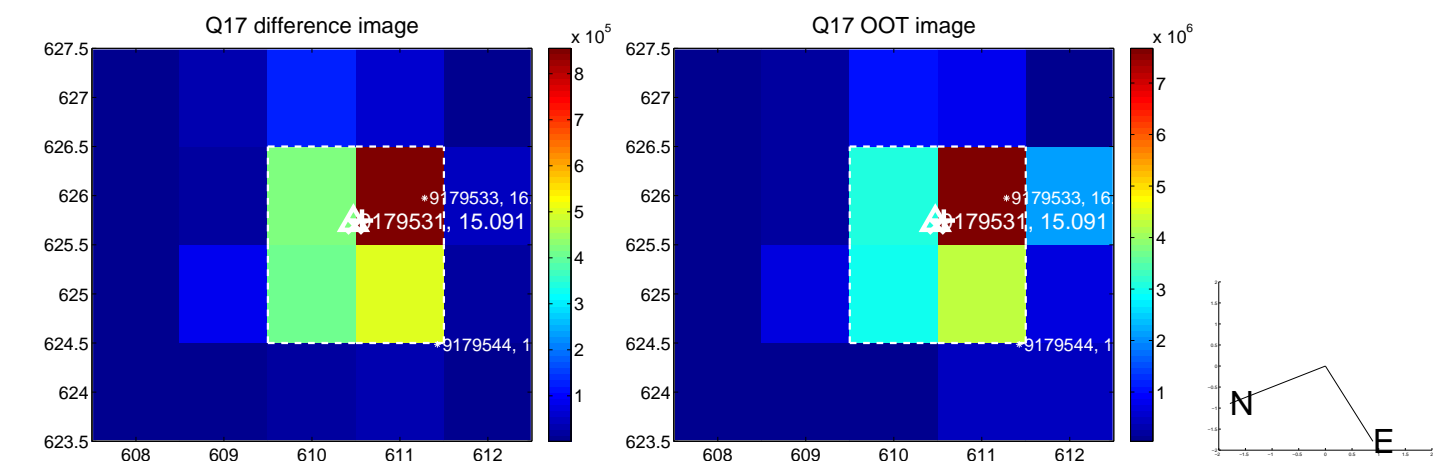
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

