

KIC 009267996

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})
009267996-01	OBS	3431.01	19.599375	138.616058	303.3	7.699	18.7	19.1	0.93	6003	1.90	49.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009267996-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

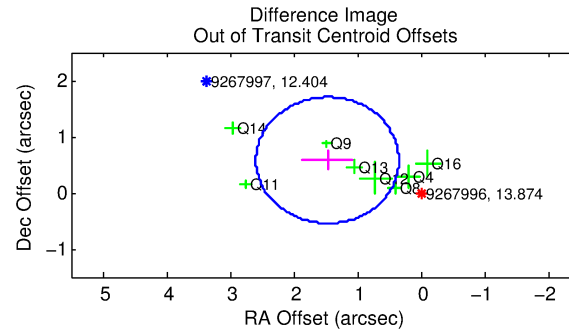
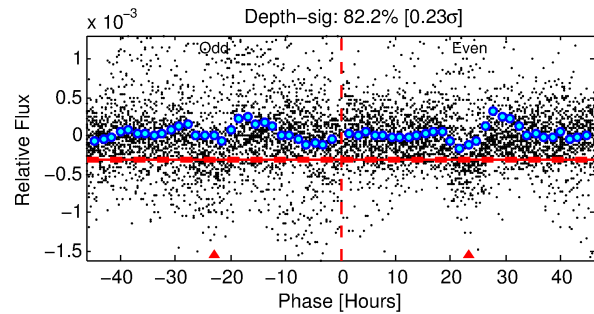
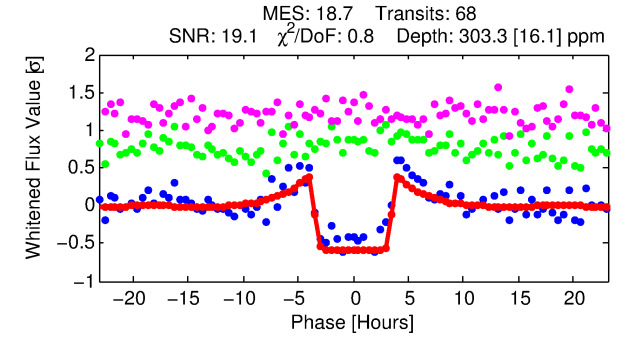
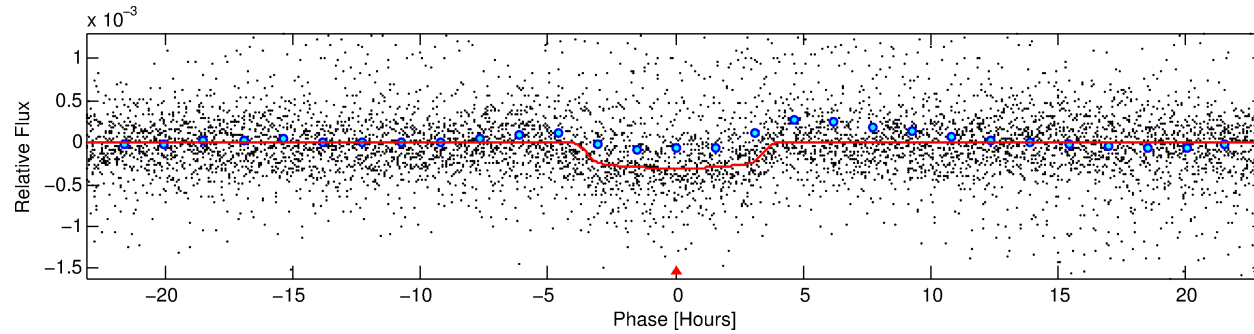
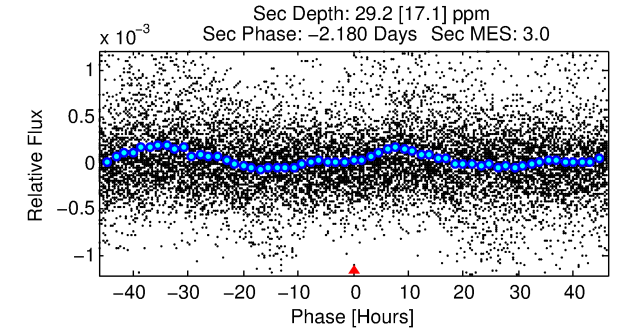
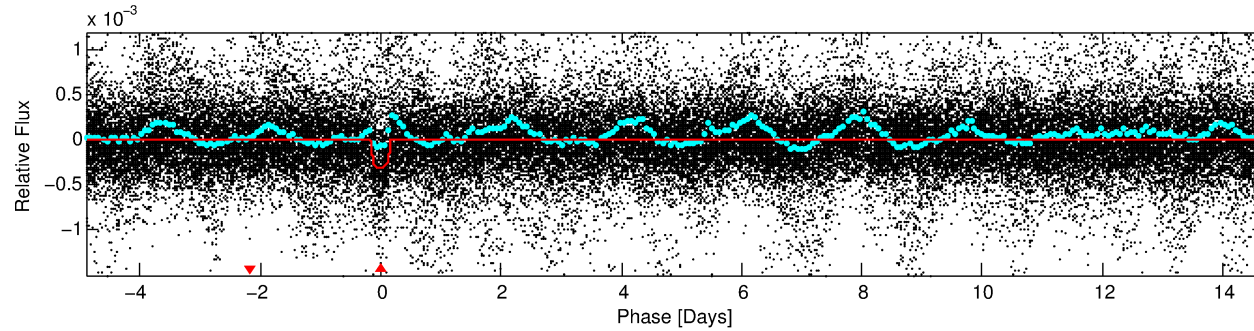
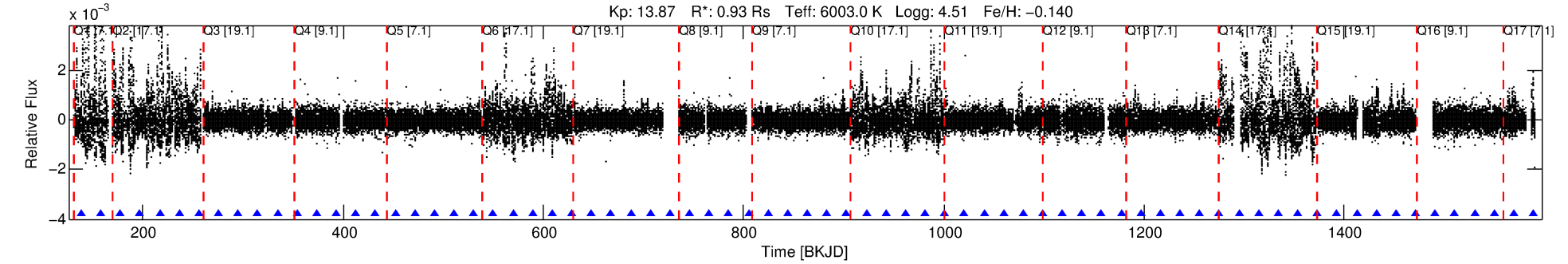
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009267996-01

No Significant Match Found

DV One-Page Summary

KIC: 9267996 Candidate: 1 of 1 Period: 19.599 d
KOI: K03431.01 Corr: 0.942



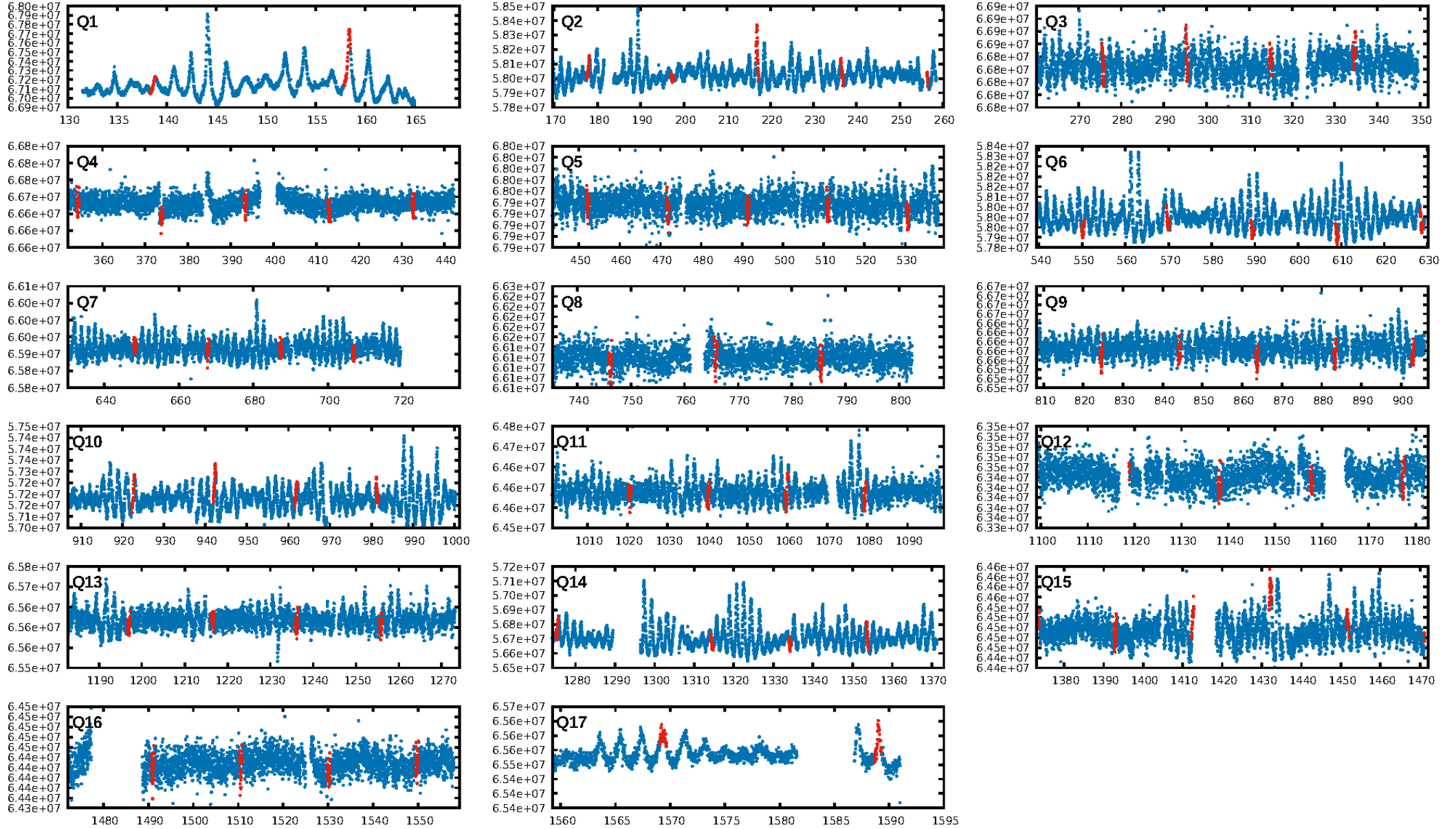
DV Fit Results:

Period = 19.59937 [0.00011] d
Epoch = 138.6161 [0.0045] BKJD
Rp/R* = 0.0187 [0.0011]
a/R* = 9.55 [2.40]
b = 0.89 [0.06]
Seff = 49.32 [18.26]
Teq = 676 [63] K
Rp = 1.90 [0.55] Re
a = 0.1432 [0.0344] AU
Ag = 90.77 [62.98] [1.43σ]
Teffp = 3225 [492] K [5.14σ]

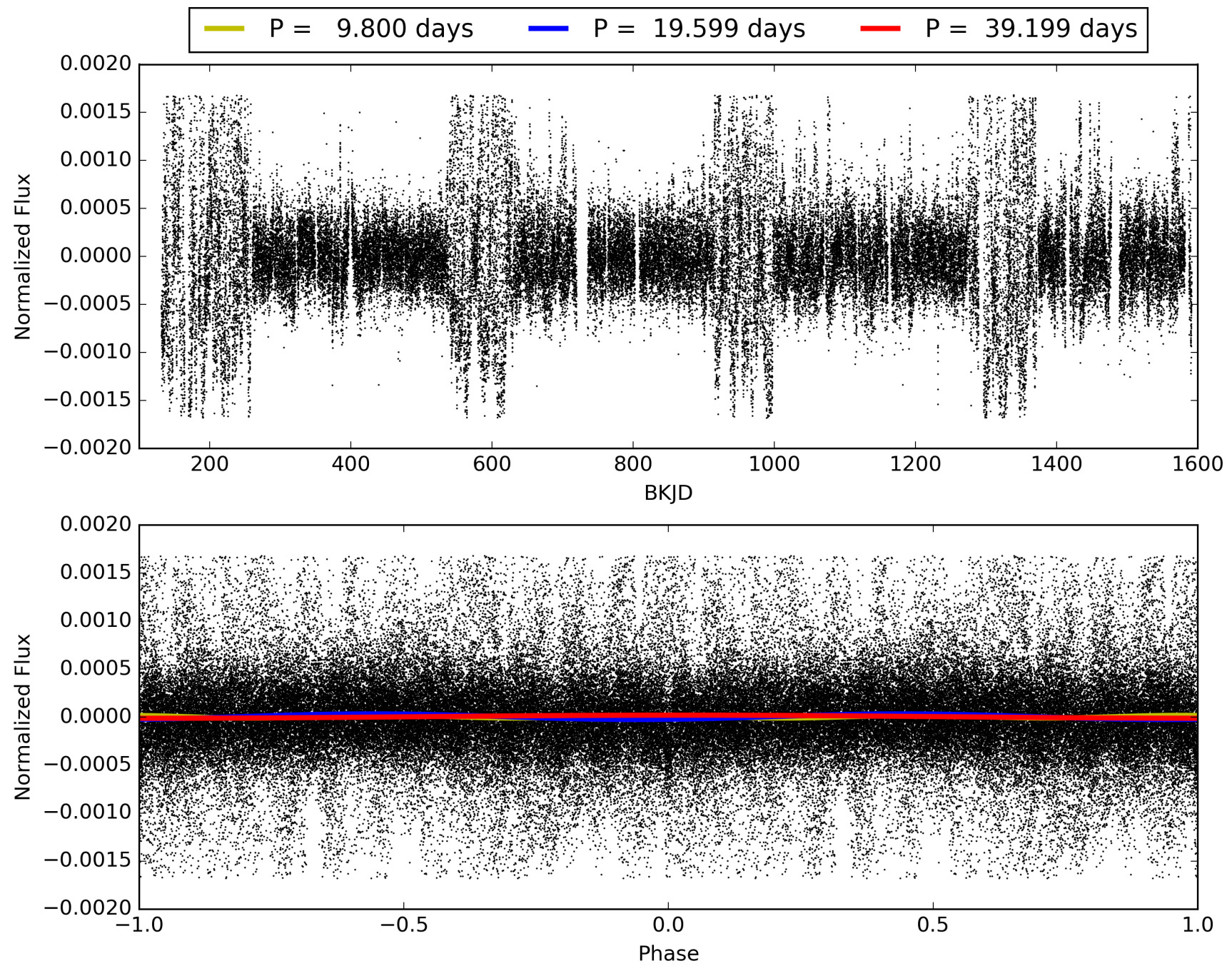
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 73.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.38e-69
RollingBand-fgt: 1.00 [64/64]
GhostDiagnostic-chr: -2.085
Centroid-sig: 0.0%
Centroid-so: 0.660 arcsec [1.42σ]
OotOffset-rm: 1.579 arcsec [4.21σ]
KicOffset-rm: 2.315 arcsec [3.44σ]
OotOffset-st: 1/1/4/2 [8]
KicOffset-st: 1/1/4/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009267996-01, PDC Light Curves

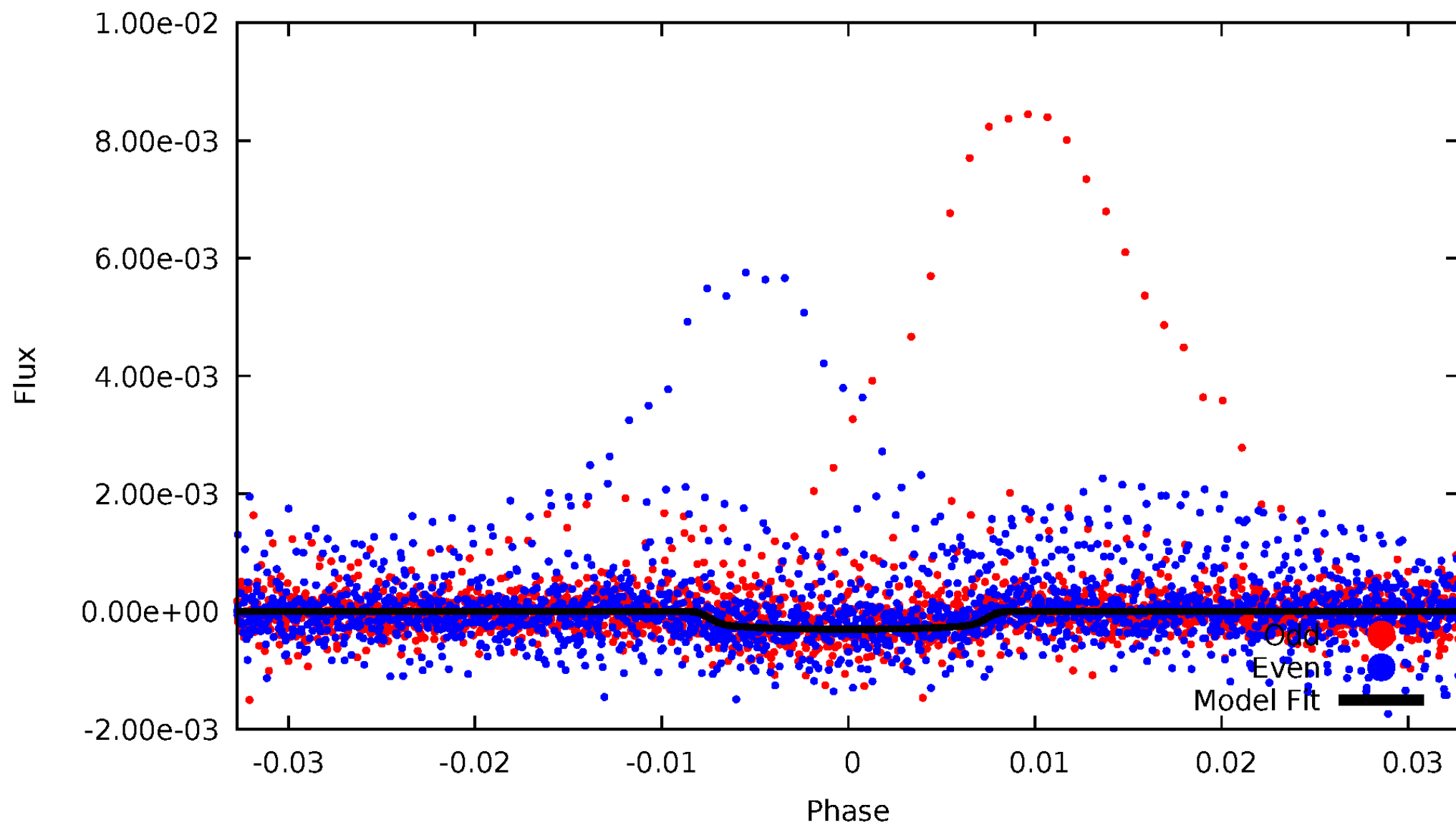


TCE 009267996-01



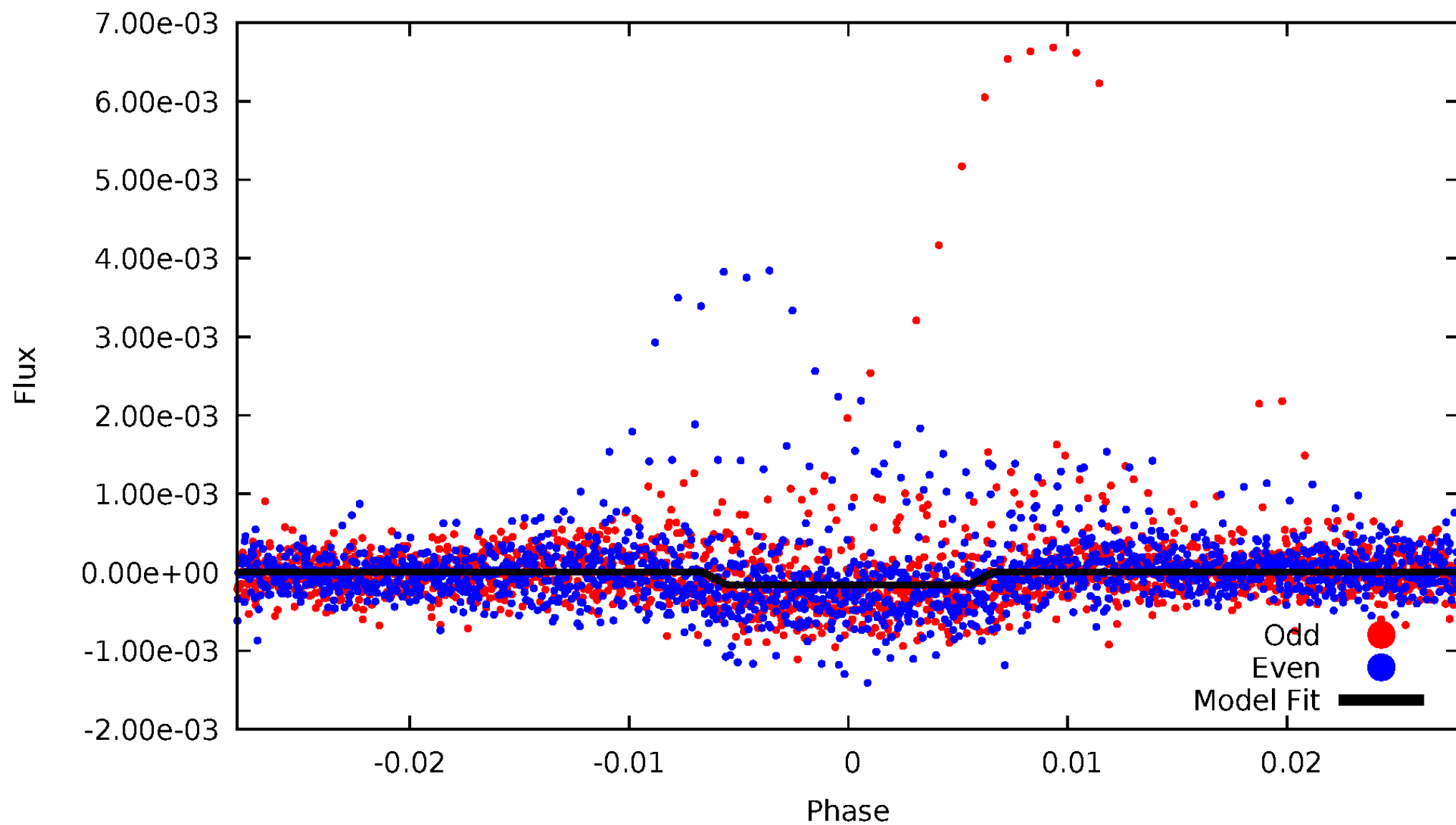
DV Odd/Even

TCE 009267996-01



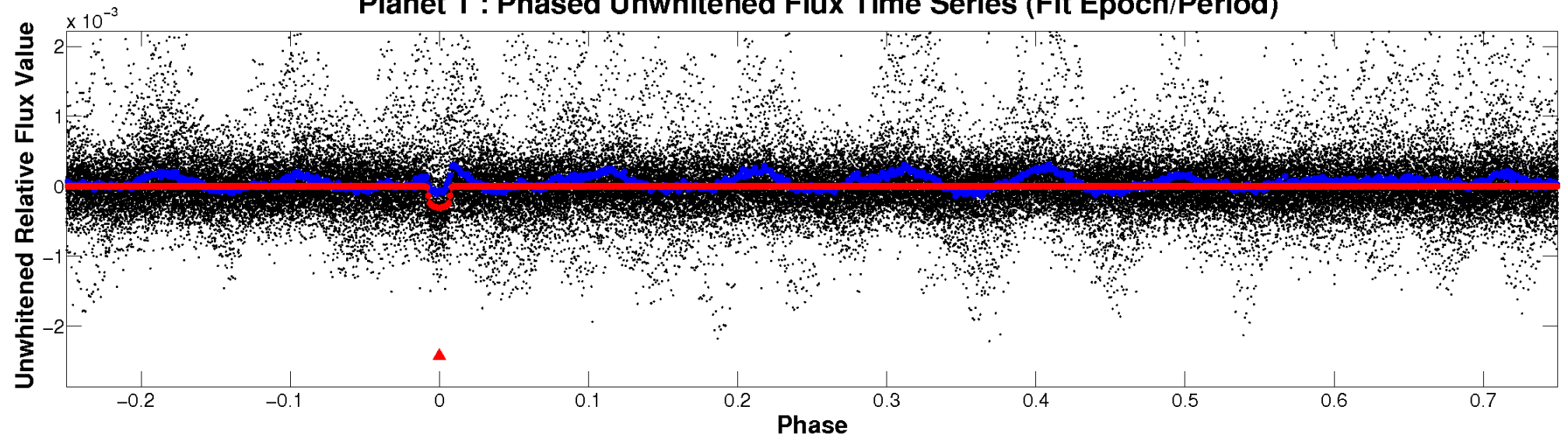
ALT Odd/Even

TCE 009267996-01

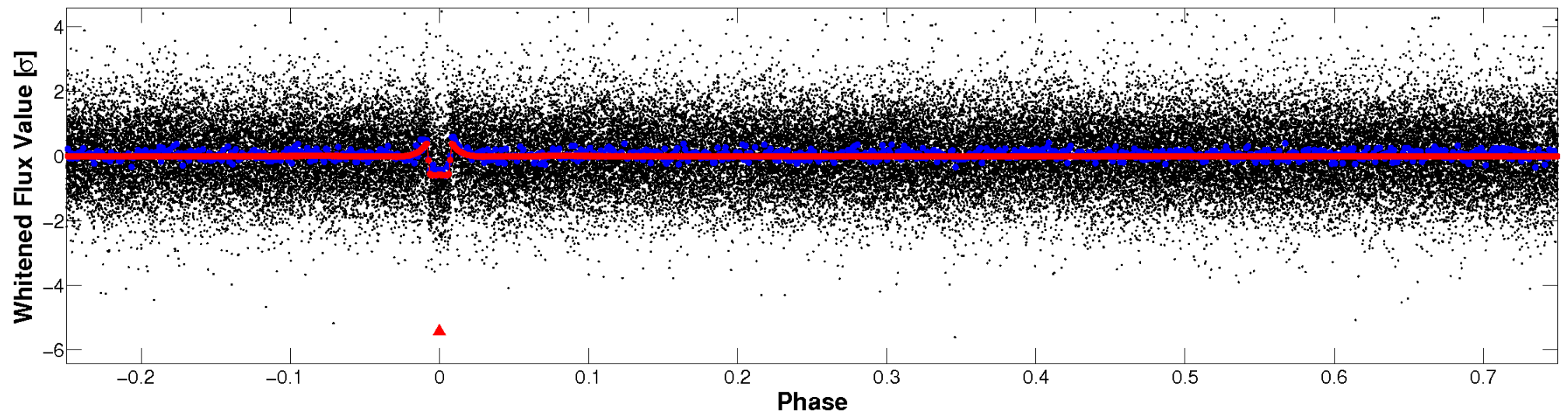


Non-Whitened Vs. Whitened Light Curve

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

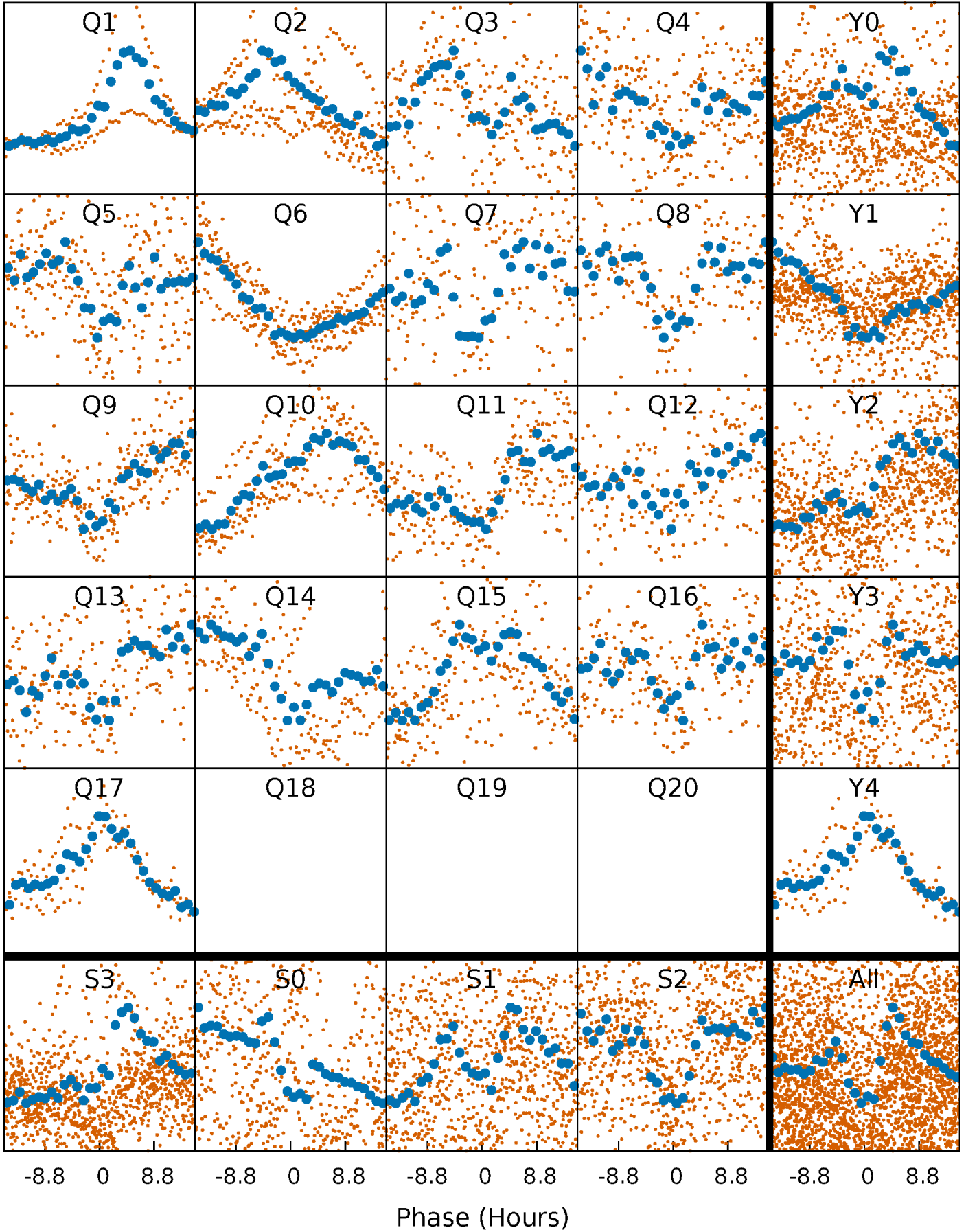


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



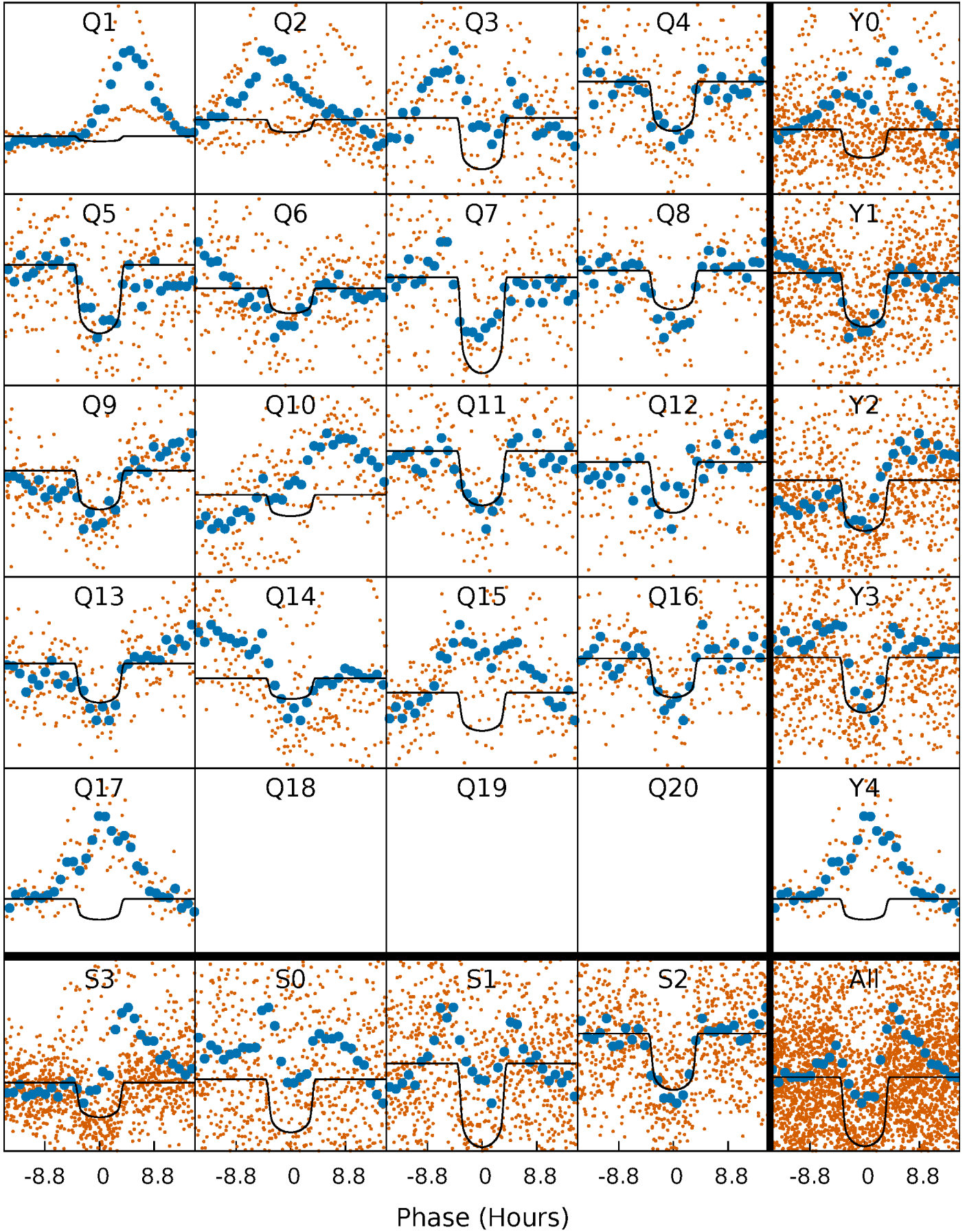
PDC Quarter-Phased Transit Curves

TCE 009267996-01 P= 19.599375 Days $T_0=138.616058$ (BKJD)



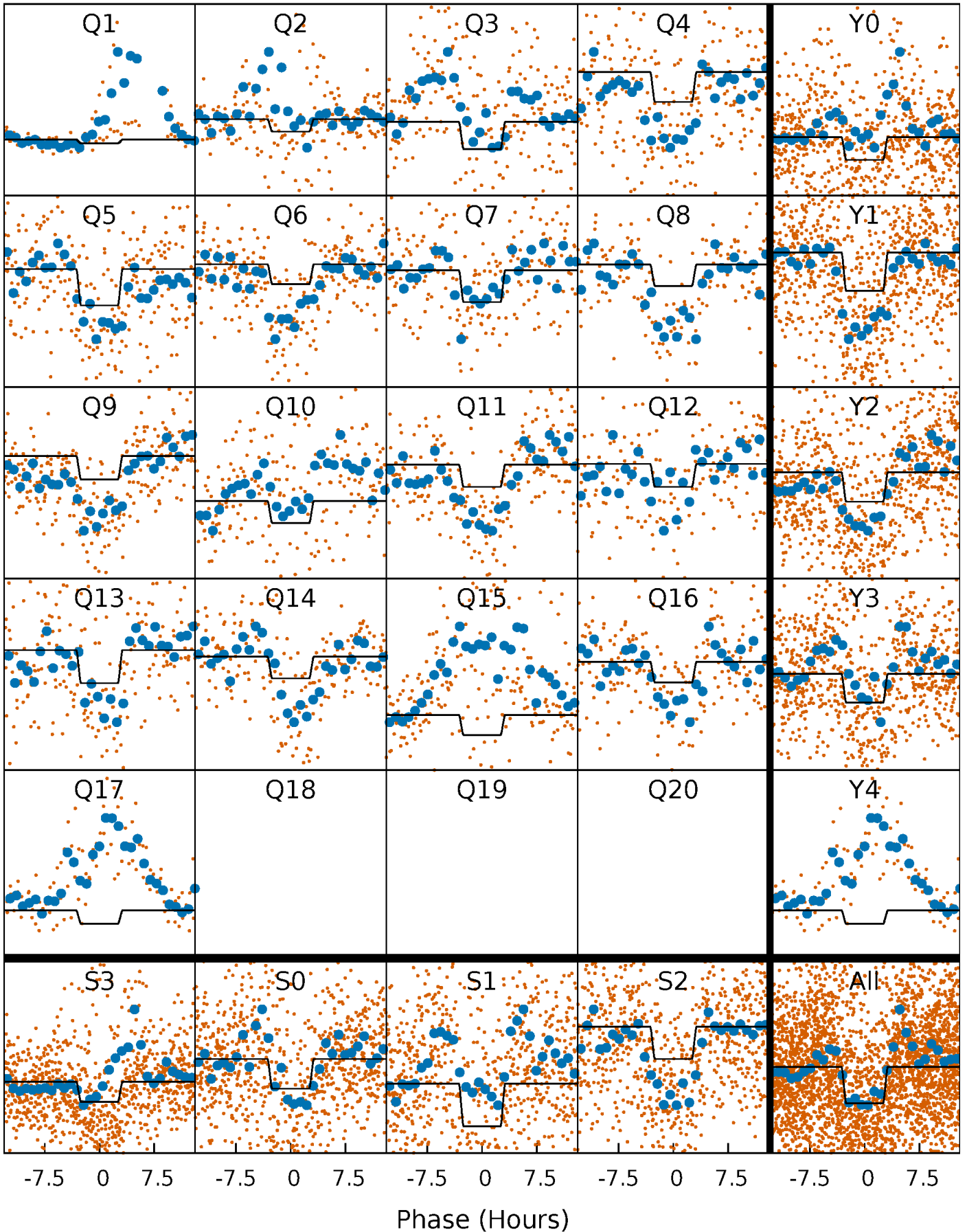
DV Quarter-Phased Transit Curves

TCE 009267996-01 P= 19.599375 Days $T_0=138.616058$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

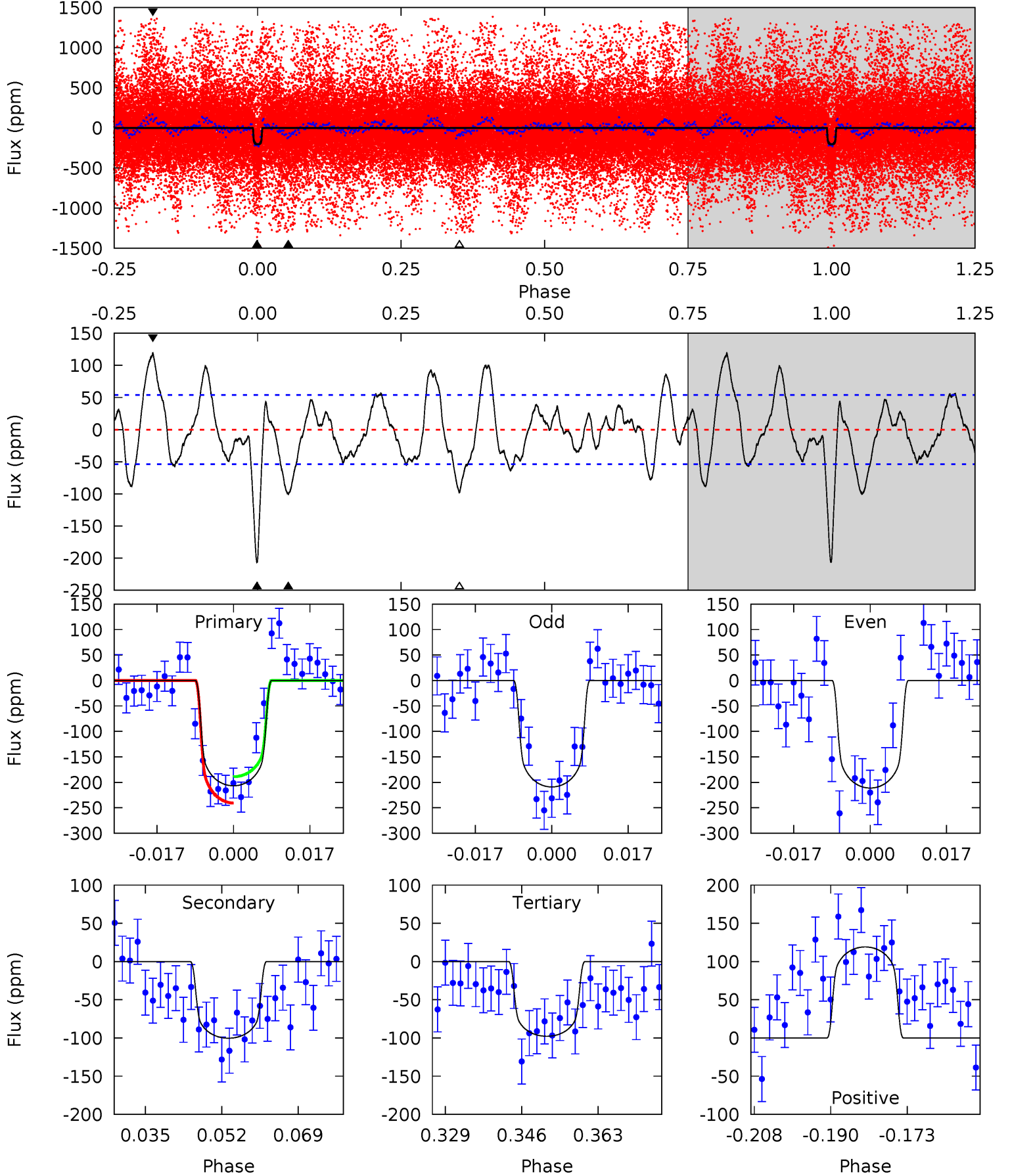
TCE 009267996-01 P= 19.598824 Days $T_0=138.622032$ (BKJD)



DV Model-Shift Uniqueness Test

009267996-01, $P = 19.599375$ Days, $E = 119.016683$ Days

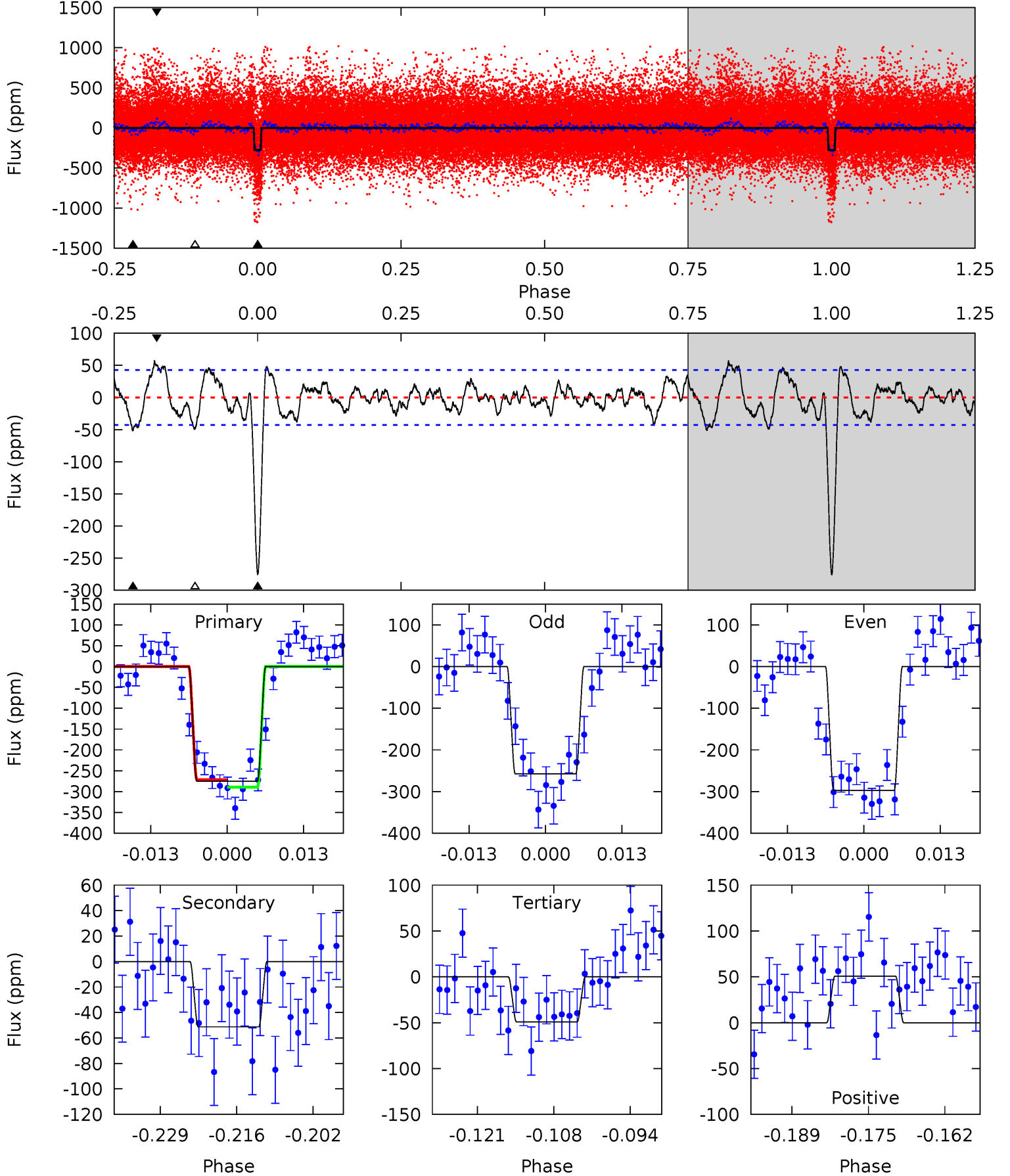
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	9.16	8.93	10.9	4.92	2.38	3.96	9.95	8.00	0.23	-1.71	0.10	0.18	0.37	2.36



Alt Model-Shift Uniqueness Test

009267996-01, $P = 19.598824$ Days, $E = 119.023208$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.0	5.97	5.73	5.91	4.97	2.47	2.20	26.3	26.1	0.24	0.06	2.32	0.47	0.17	1.06



Stellar Parameters For KIC 009267996

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6003^{+161}_{-179}	$4.507^{+0.048}_{-0.192}$	$-0.140^{+0.300}_{-0.300}$	$0.932^{+0.265}_{-0.088}$	$1.019^{+0.118}_{-0.131}$	$1.772^{+0.437}_{-0.861}$
	+3%/-3%	+1%/-4%	+214%/-214%	+28%/-9%	+12%/-13%	+25%/-49%
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 009267996-01 / KOI 3431.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-100 ± 11	$1.97^{+0.30}_{-0.20}$	964^{+62}_{-47}	4560^{+186}_{-200}	284^{+63}_{-67}
Alt.	-51 ± 9	$1.35^{+0.23}_{-0.16}$	968^{+67}_{-50}	4637^{+269}_{-258}	308^{+106}_{-91}

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

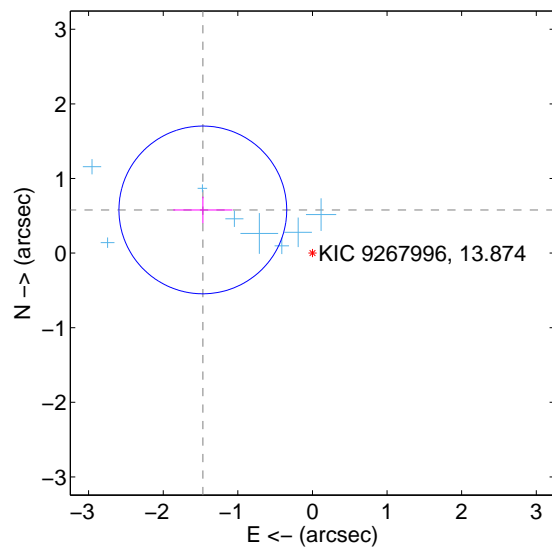
Supplemental centroid analysis for 009267996-01. Kepler magnitude: 13.87. Transit SNR 19.13

There are 8 quarters with good PRF difference image offsets

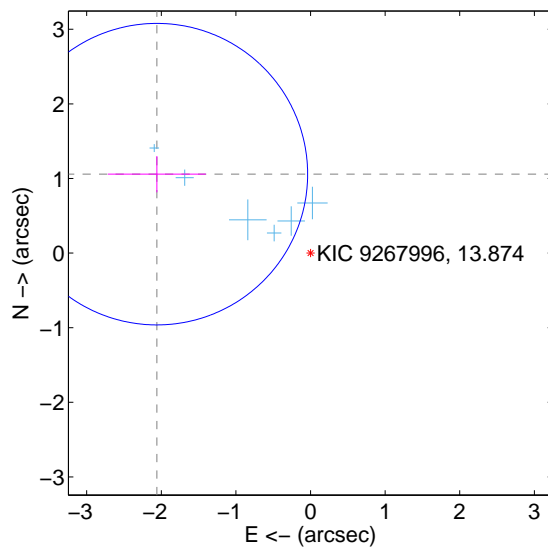
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.579 ± 0.375	4.21	1.469 ± 0.397	0.579 ± 0.178
PRF-fit source offset from KIC position	2.315 ± 0.673	3.44	2.059 ± 0.658	1.058 ± 0.243
photometric centroid source offset	0.66 ± 0.47	1.42	-0.20 ± 0.68	-0.63 ± 0.44

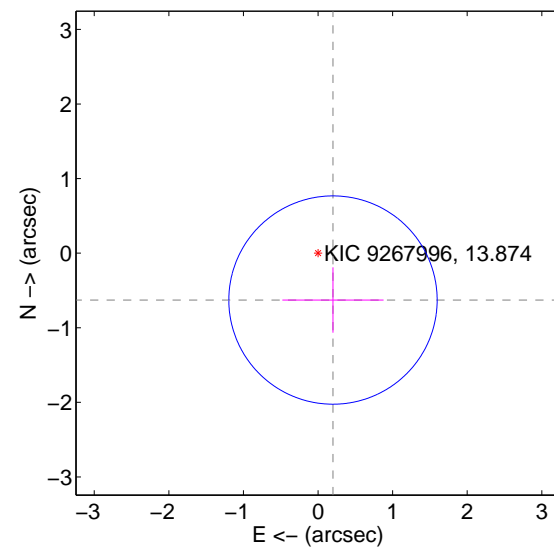
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

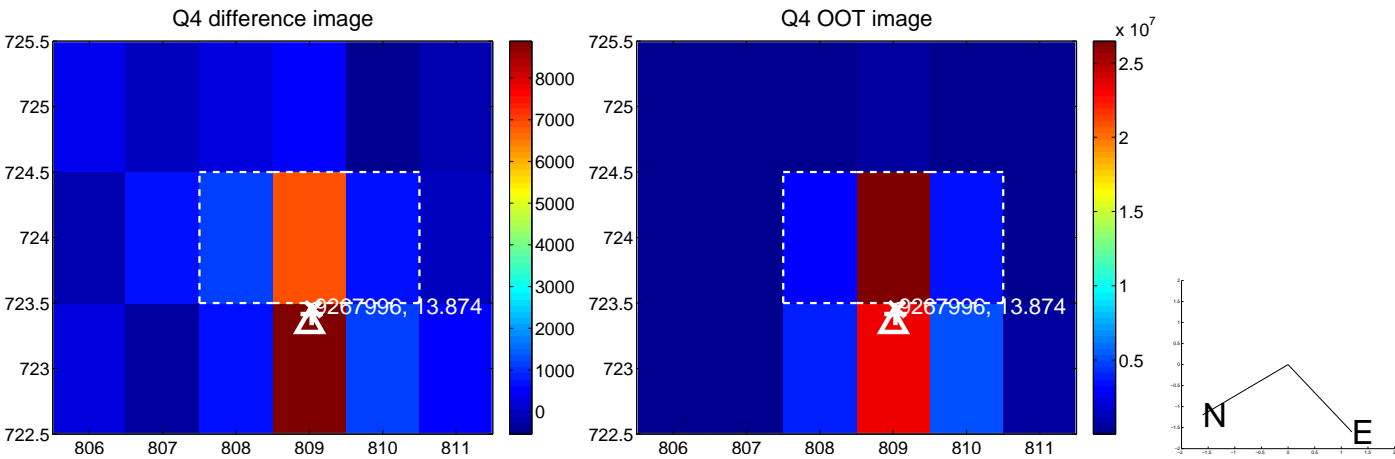
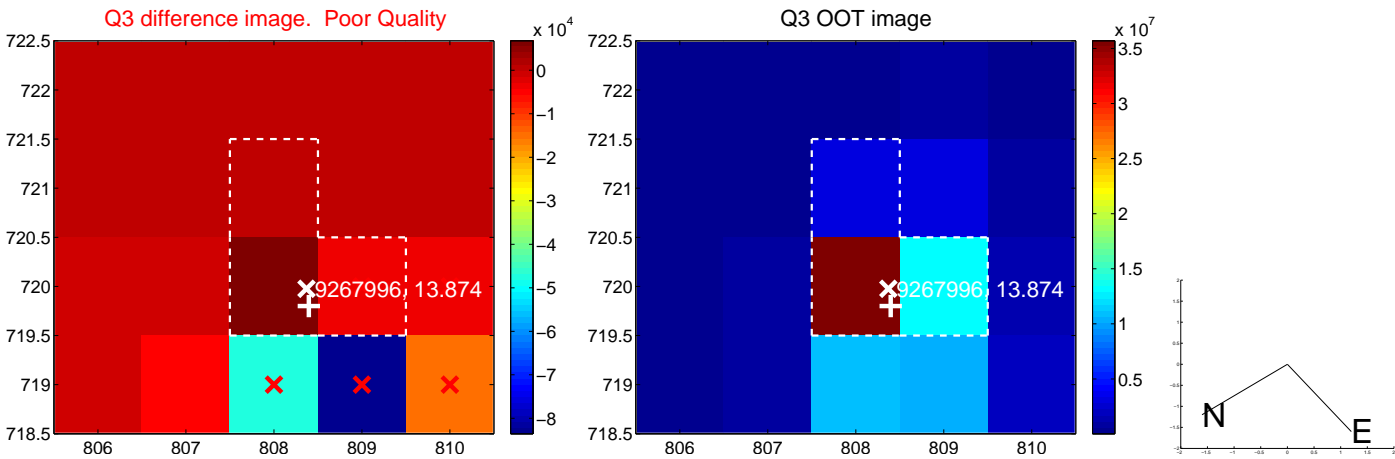
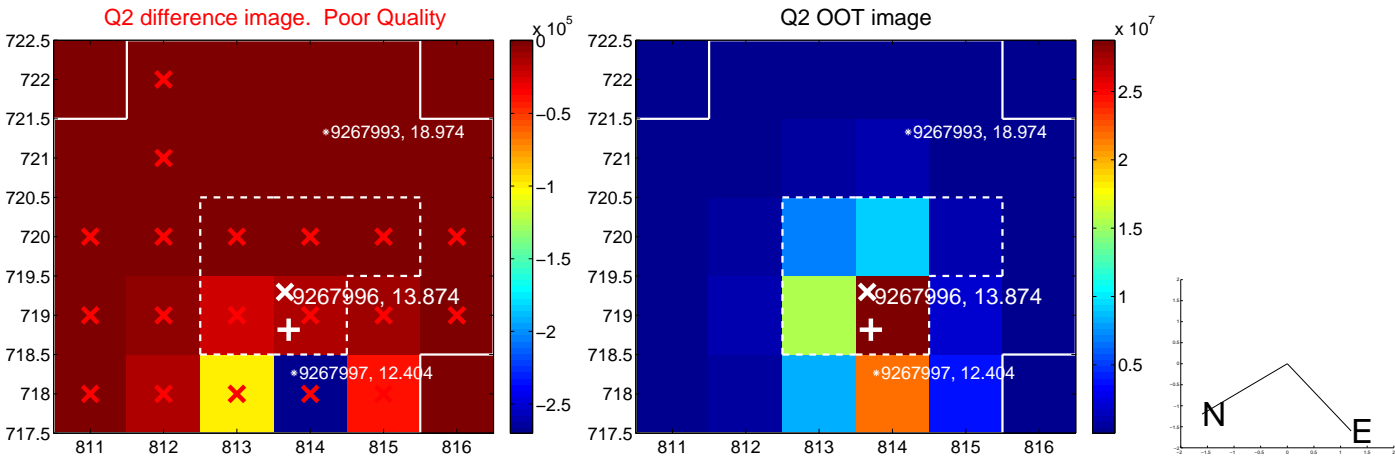
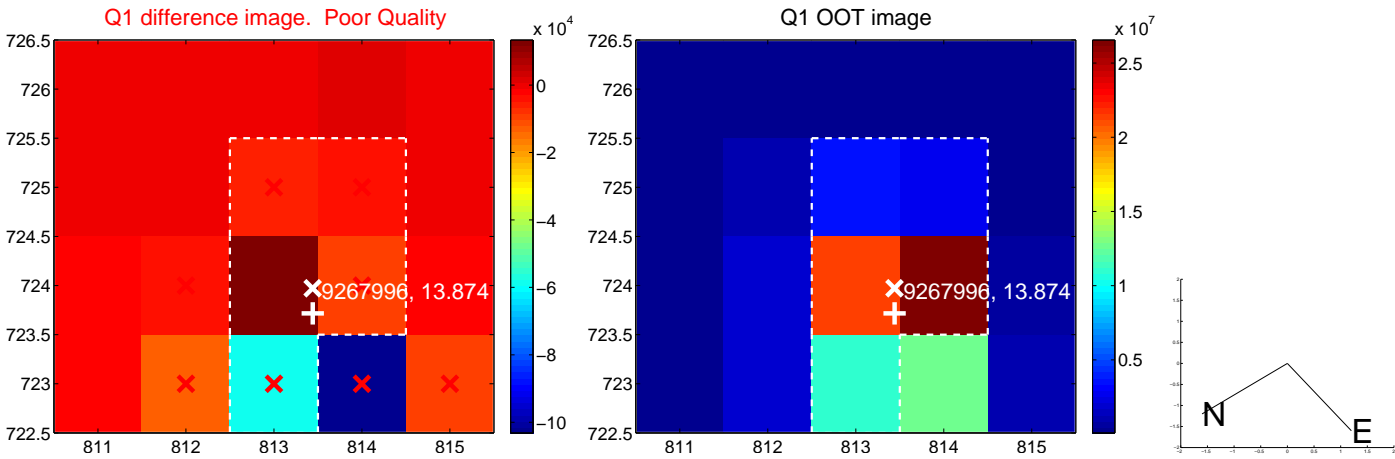


offset from photometric centroids

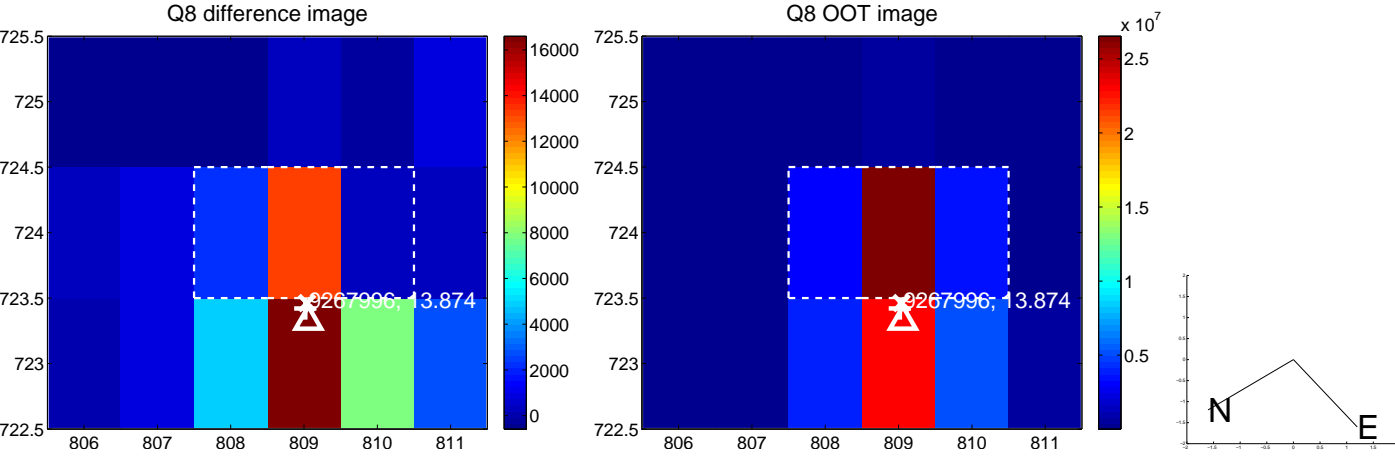
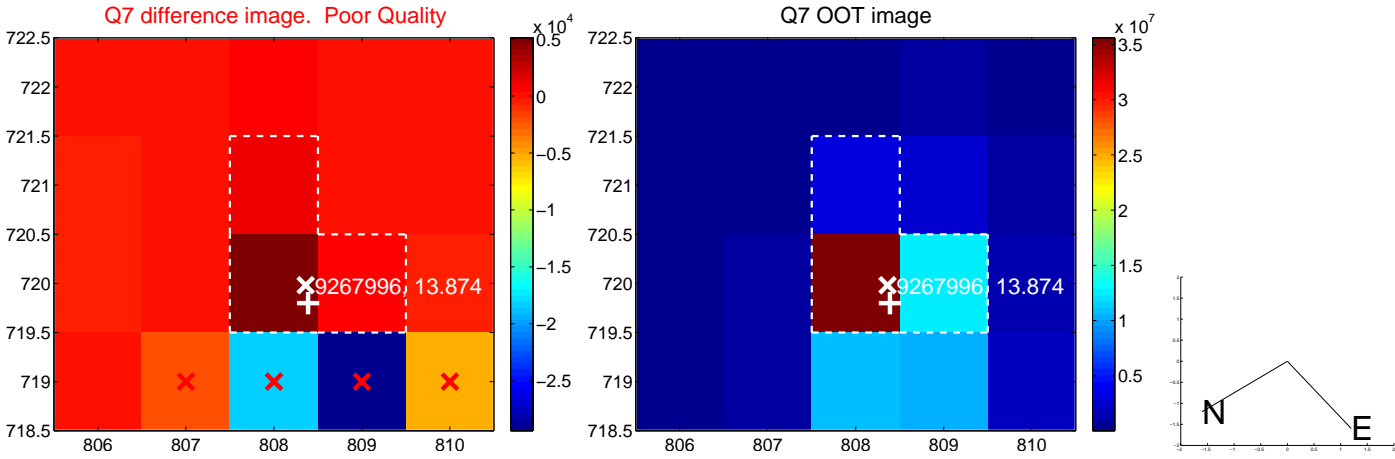
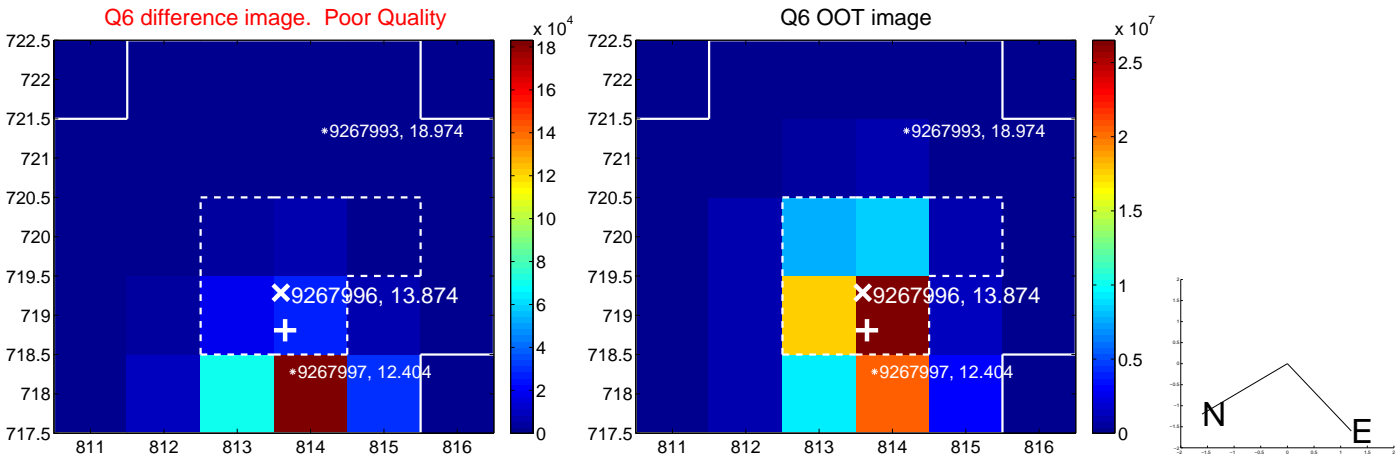
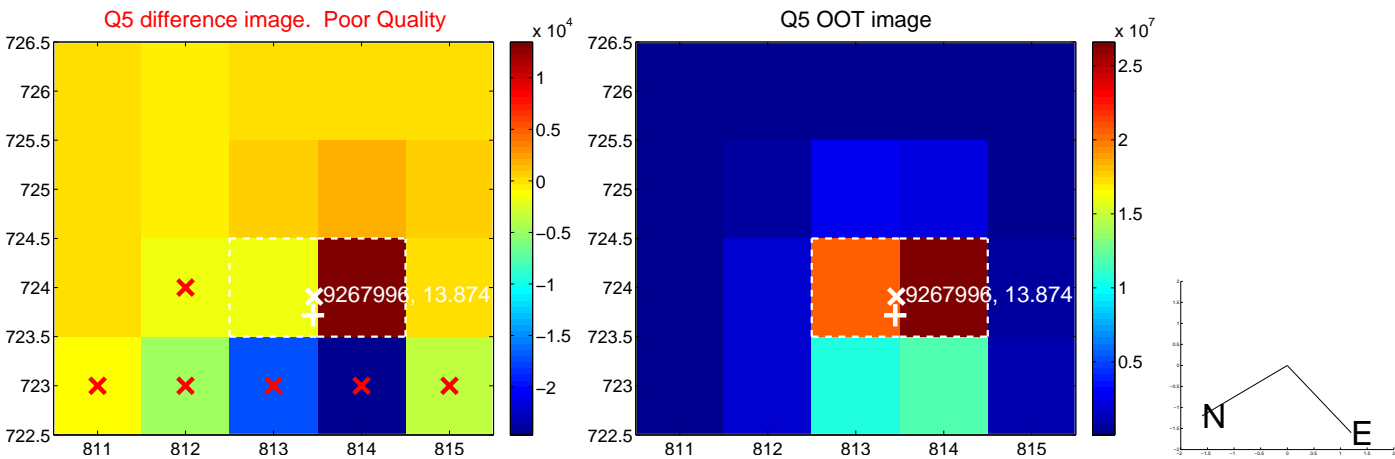


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

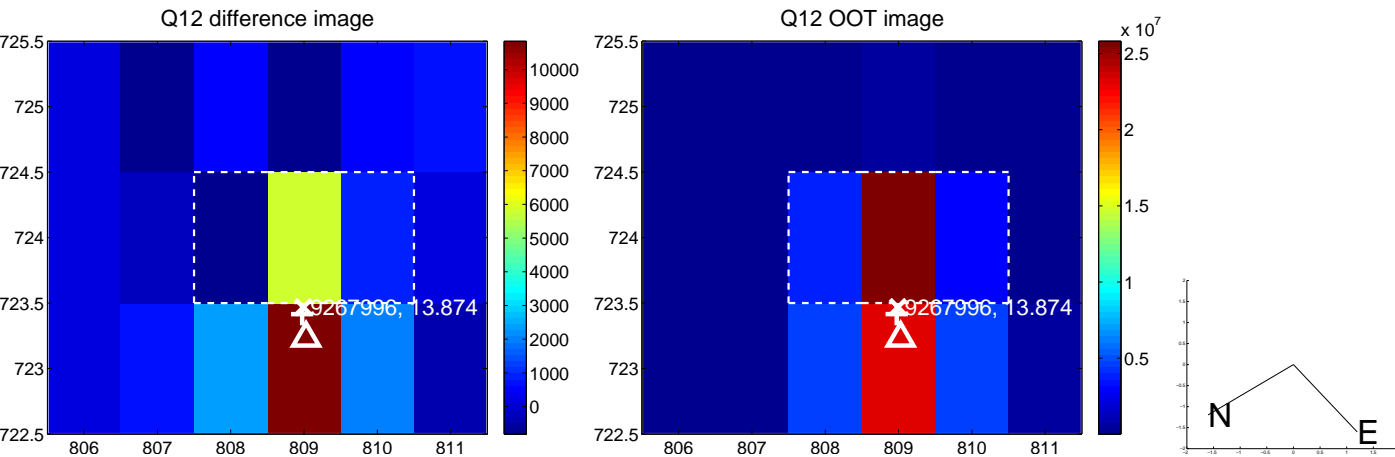
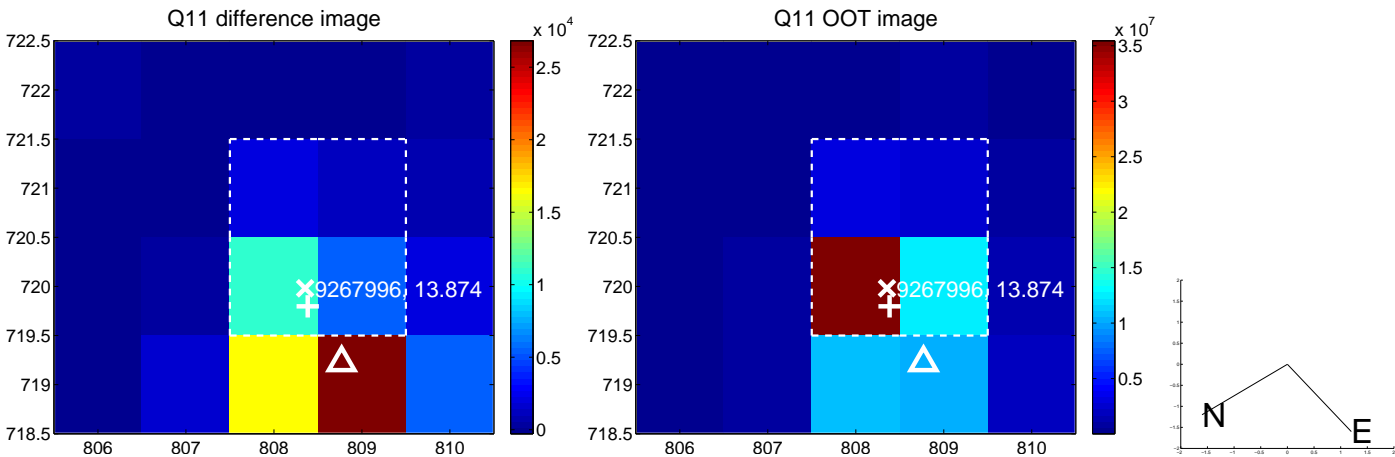
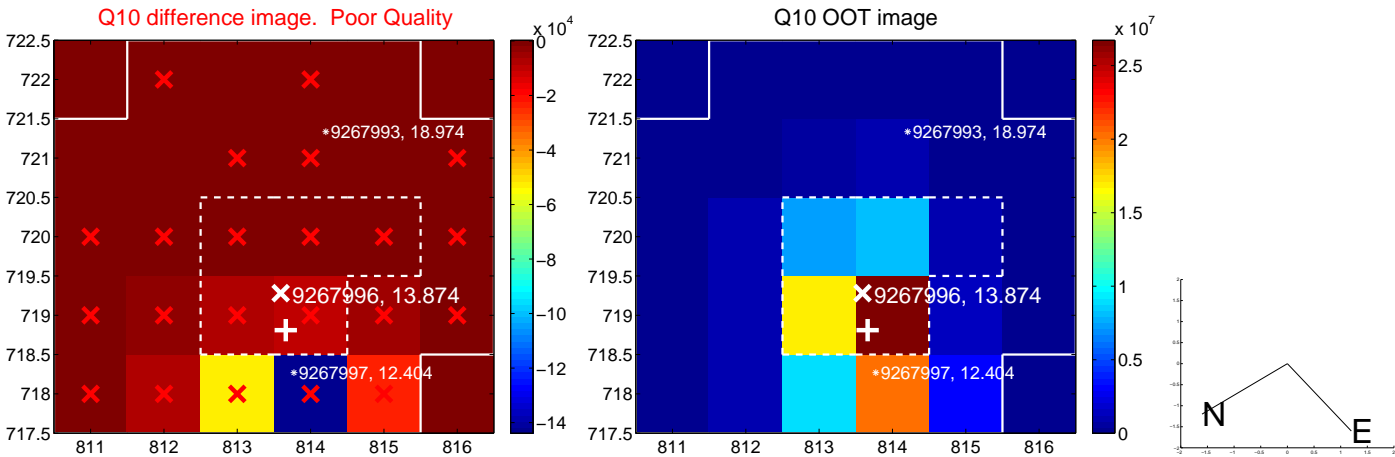
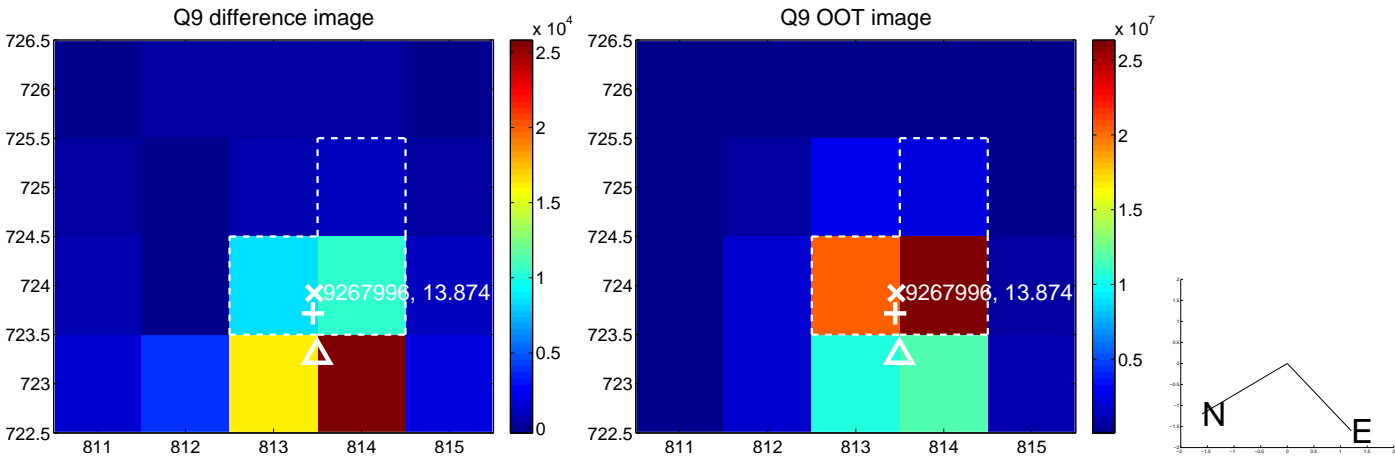
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



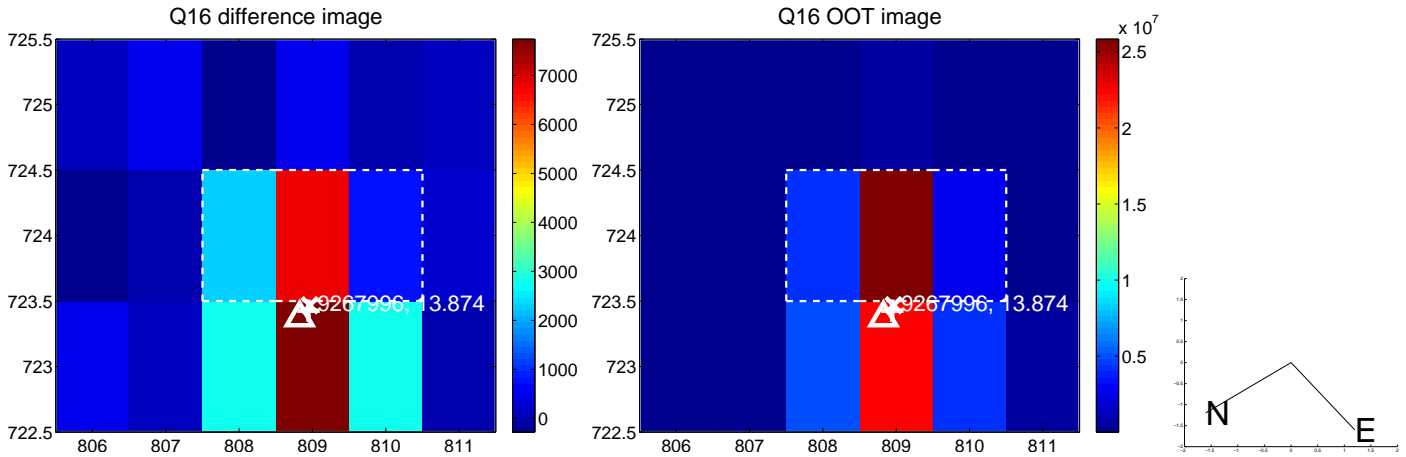
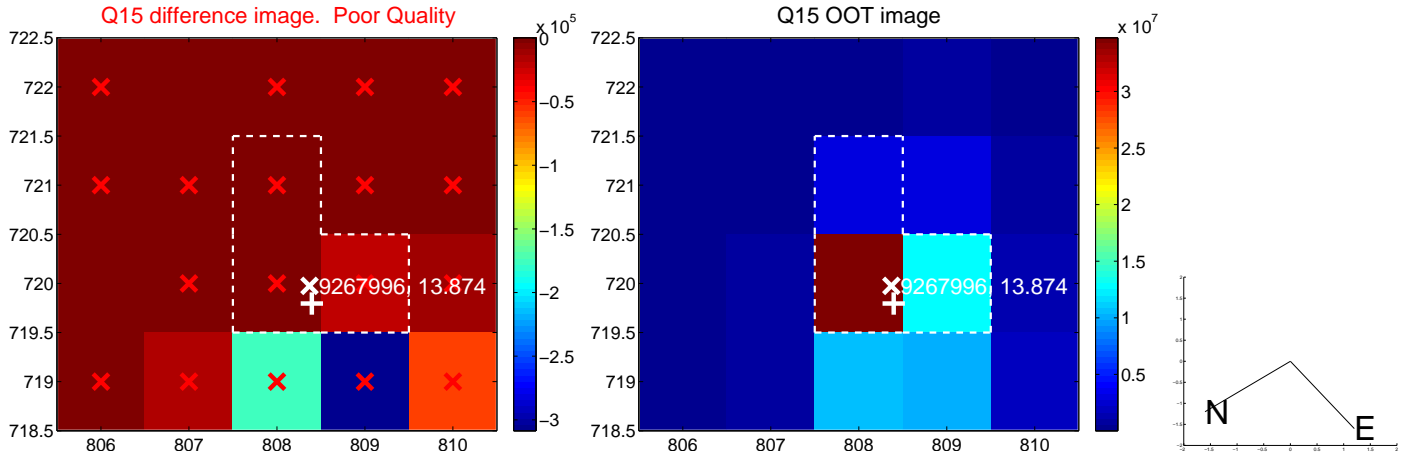
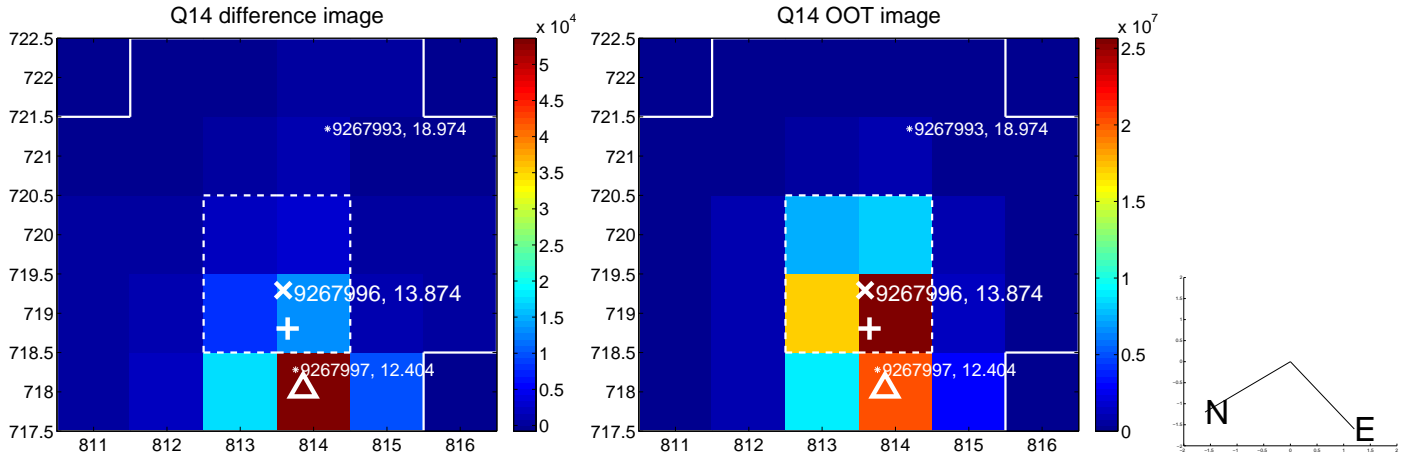
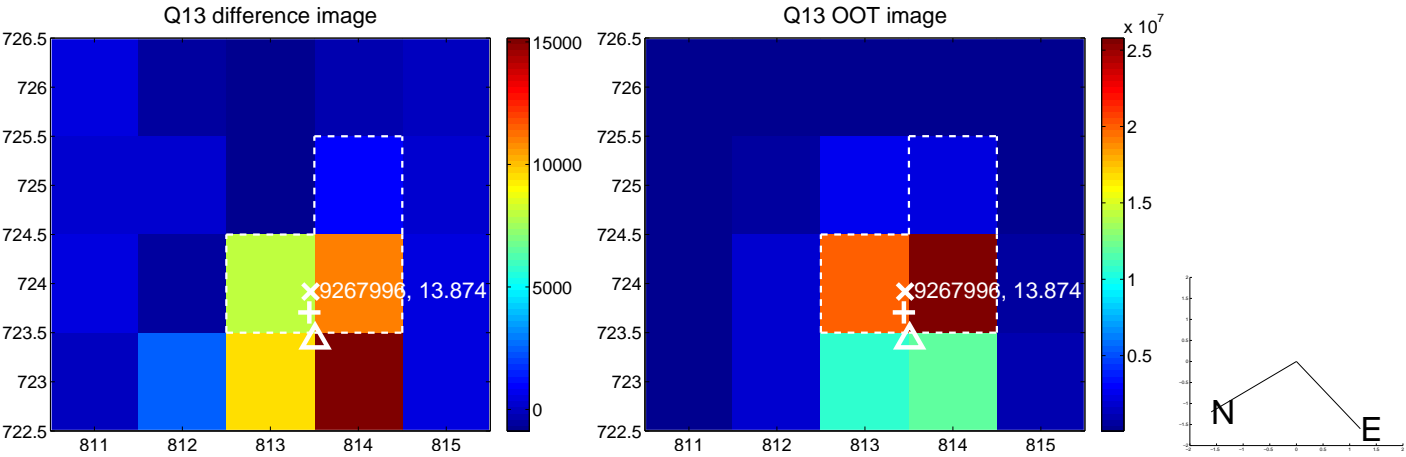
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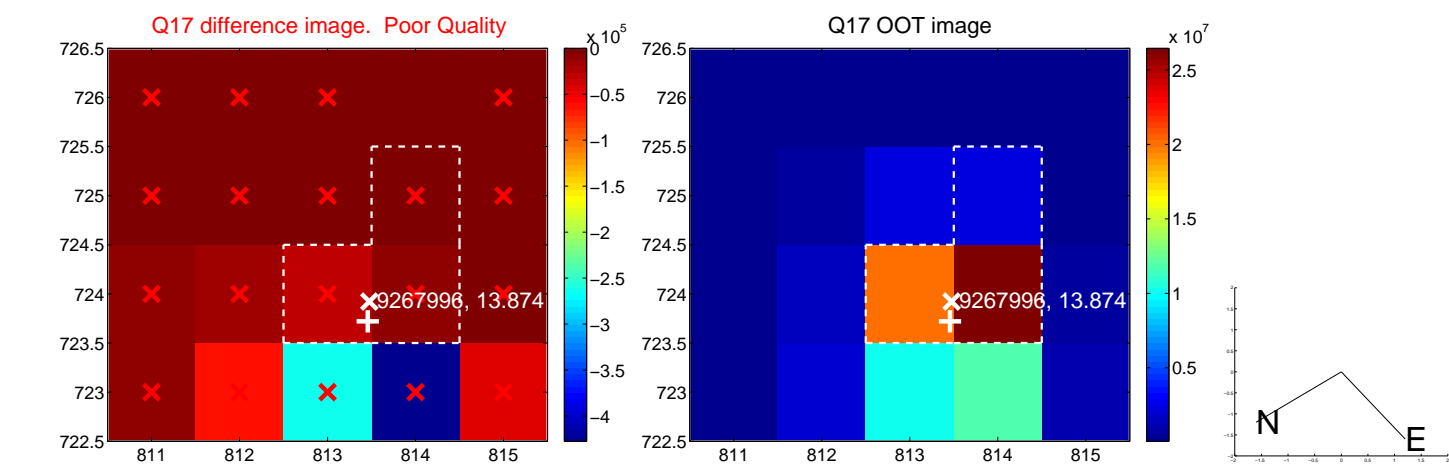
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



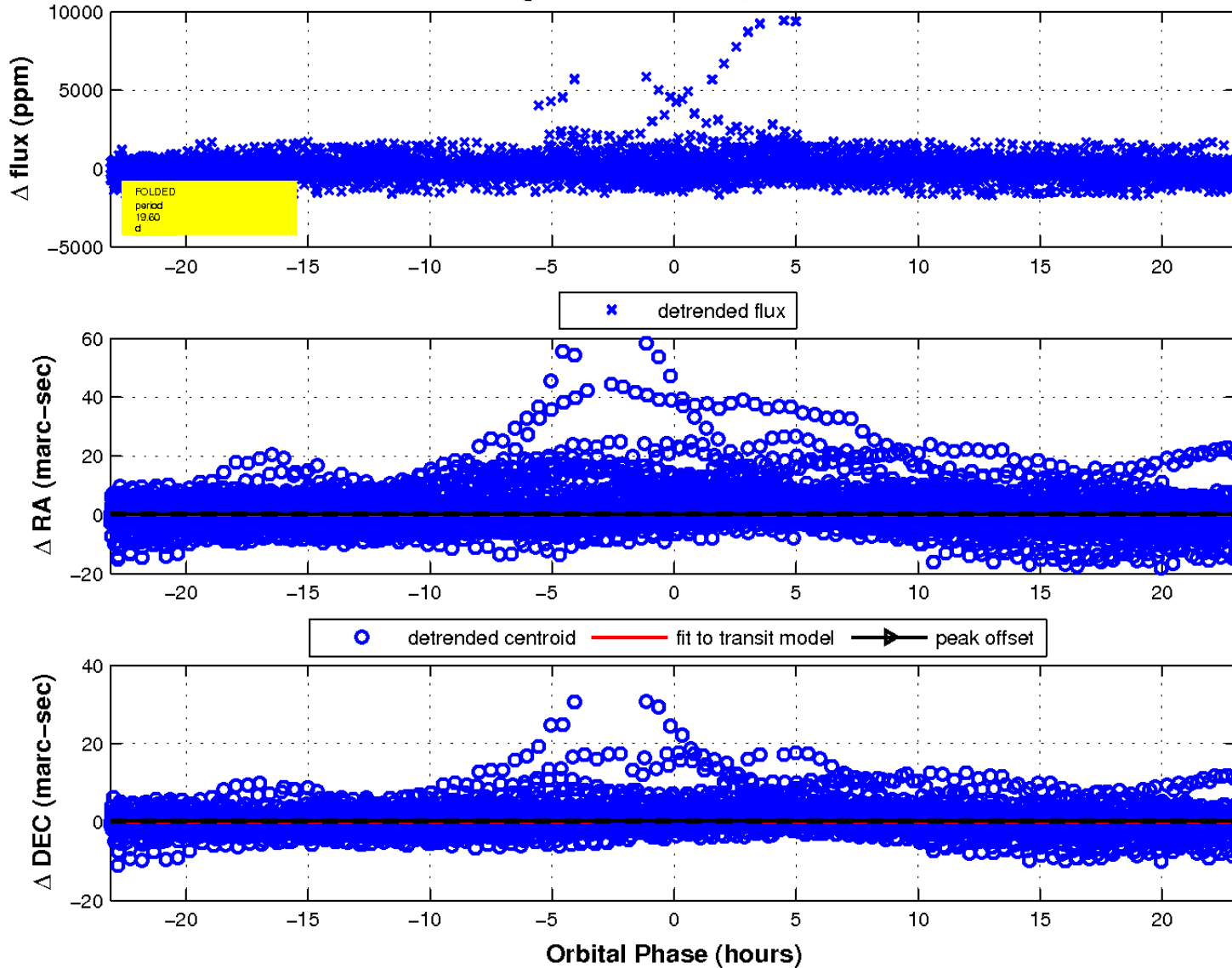
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

