

KIC 009813499

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})
009813499-01	OBS	1505.01	5.032565	132.293761	441.6	4.191	23.8	26.0	0.91	5970	2.49	284.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009813499-01	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.

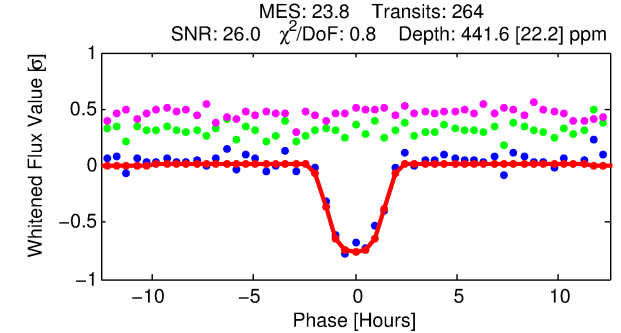
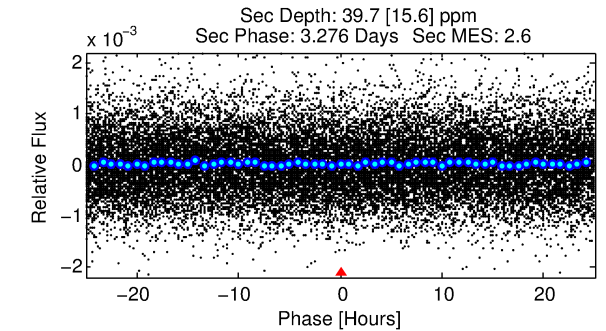
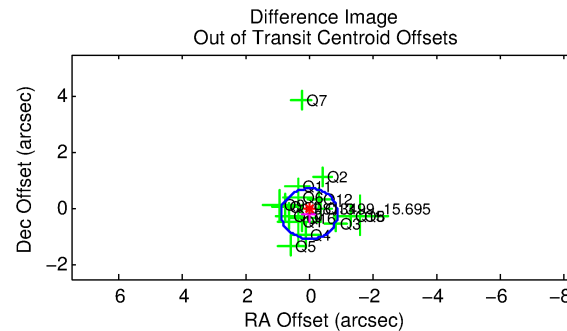
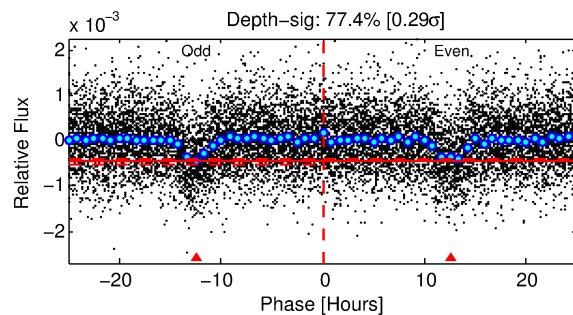
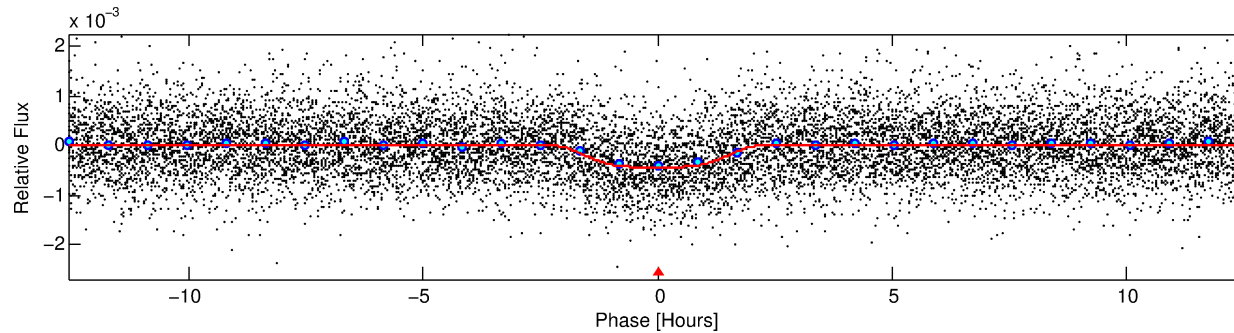
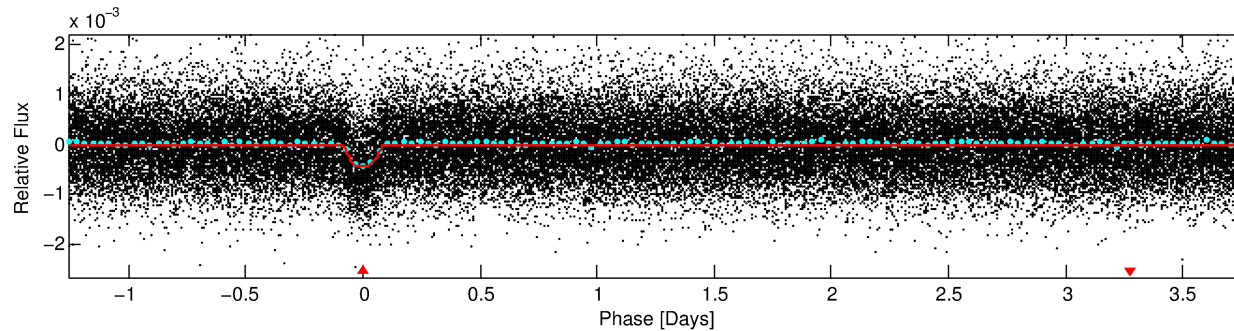
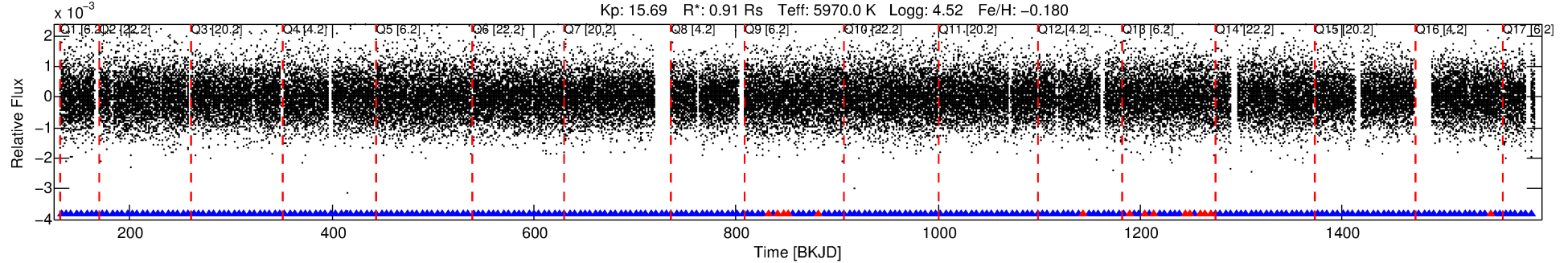
Ephemeris Match Information For 009813499-01

No Significant Match Found

DV One-Page Summary

KIC: 9813499 Candidate: 1 of 1 Period: 5.033 d
KOI: K01505.01 Corr: 0.887

Kp: 15.69 R*: 0.91 Rs Teff: 5970.0 K Logg: 4.52 Fe/H: -0.180



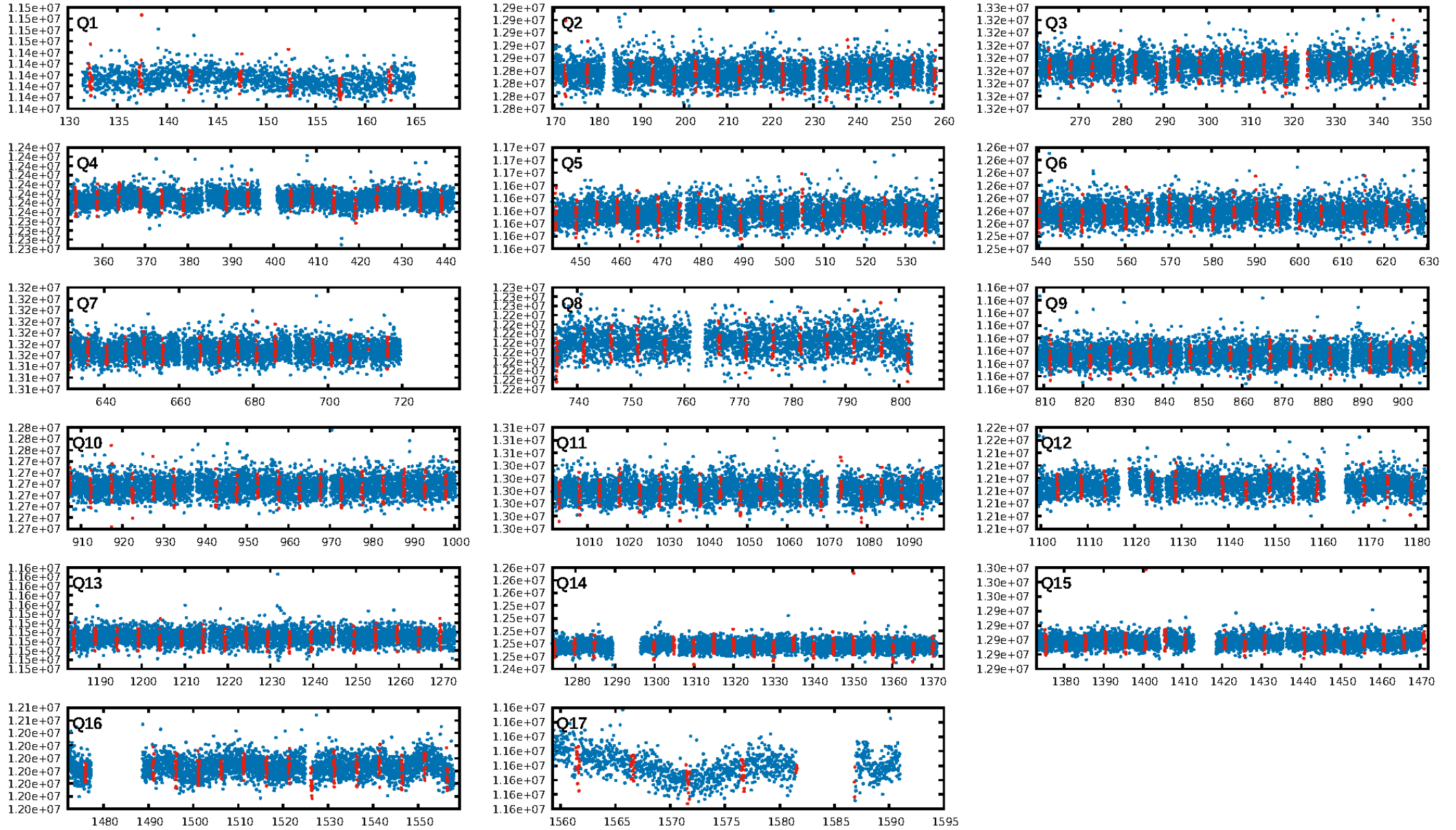
DV Fit Results:

Period = 5.03256 [0.00002] d
Epoch = 132.2938 [0.0036] BKJD
Rp/R* = 0.0251 [0.0010]
a/R* = 3.29 [0.34]
b = 0.97 [0.01]
Seff = 284.31 [120.22]
Teq = 1047 [111] K
Rp = 2.49 [0.81] Re
a = 0.0574 [0.0157] AU
Ag = 11.66 [6.61] [1.61σ]
Teffp = 2992 [315] K [5.82σ]

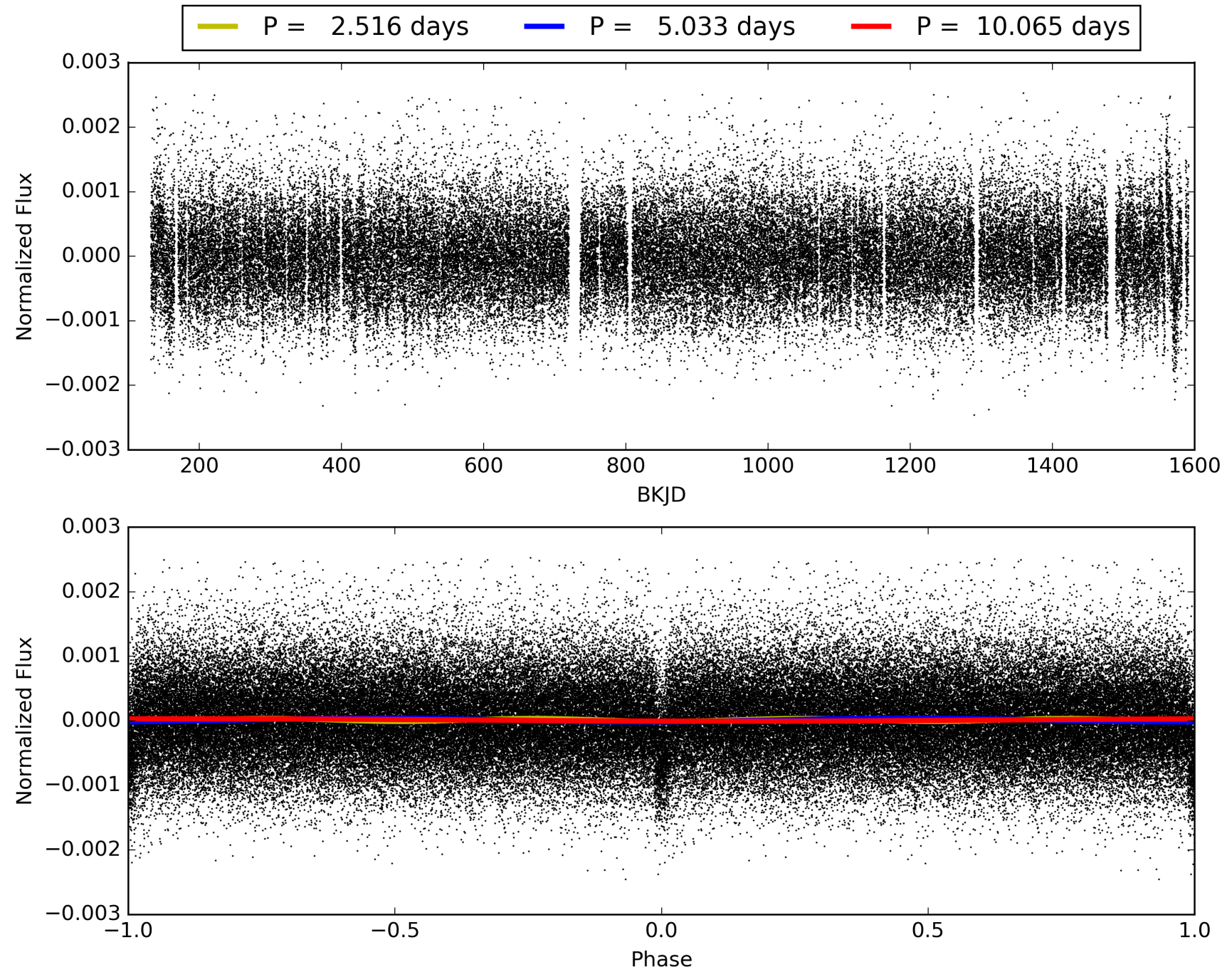
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.08e-119
RollingBand-fgt: 0.94 [237/252]
GhostDiagnostic-chr: 4.252
Centroid-sig: 0.0%
Centroid-so: 1.916 arcsec [3.23σ]
OotOffset-rm: 0.177 arcsec [0.60σ]
KicOffset-rm: 0.121 arcsec [0.42σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009813499-01, PDC Light Curves

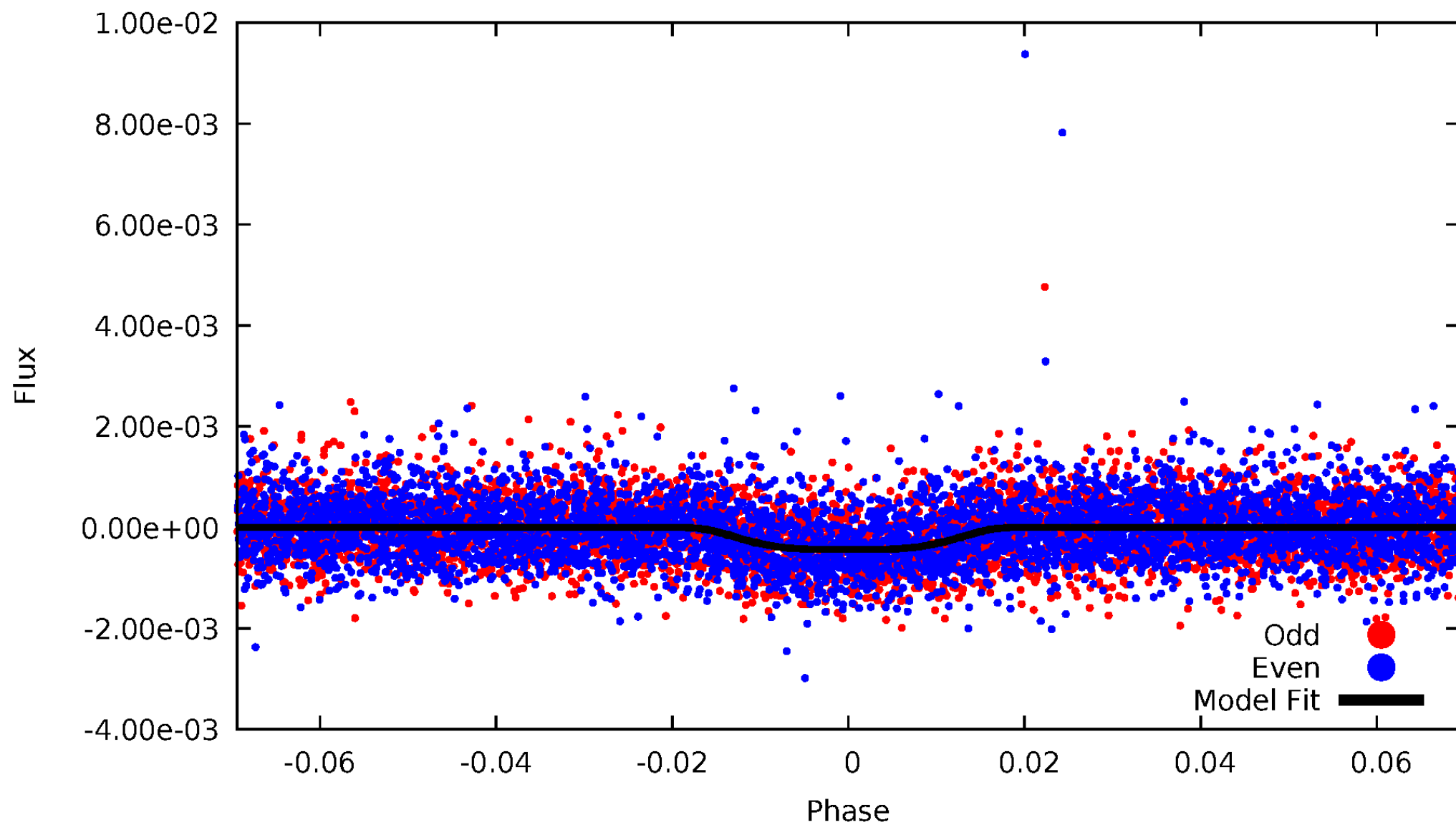


TCE 009813499-01



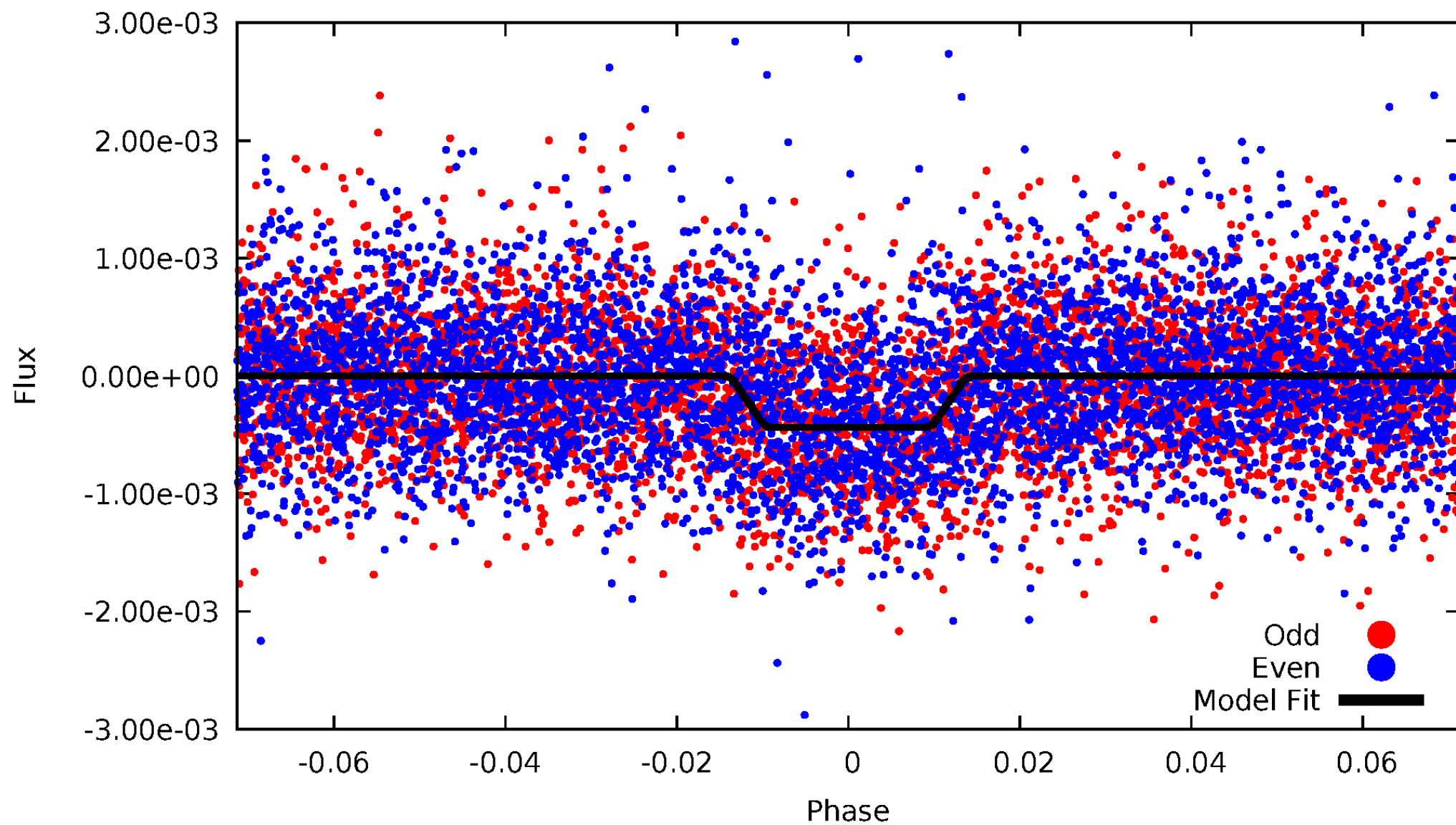
DV Odd/Even

TCE 009813499-01



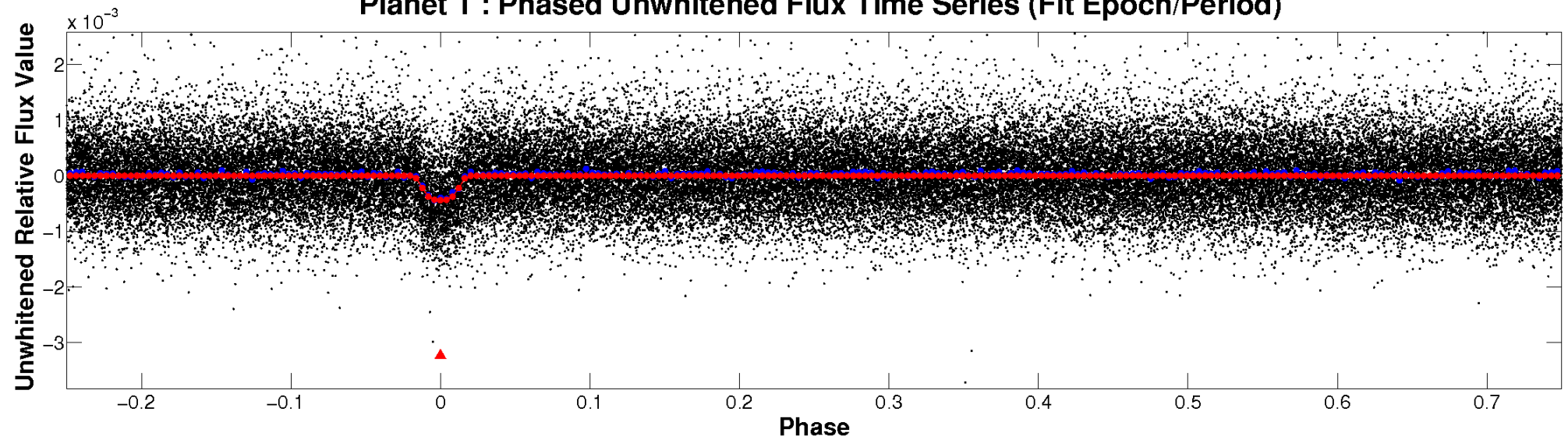
ALT Odd/Even

TCE 009813499-01

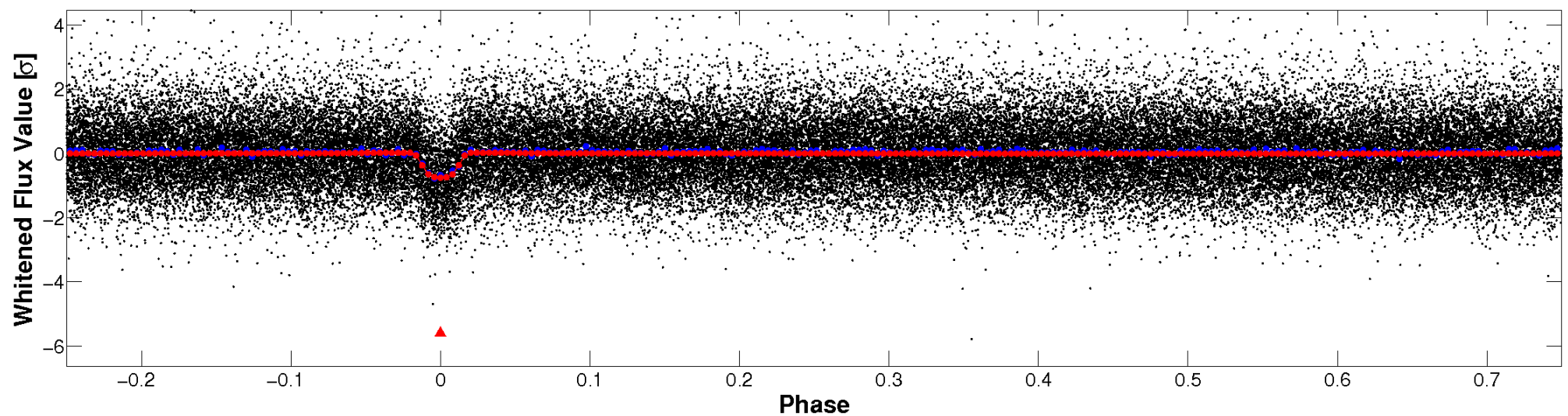


Non-Whitened Vs. Whitened Light Curve

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

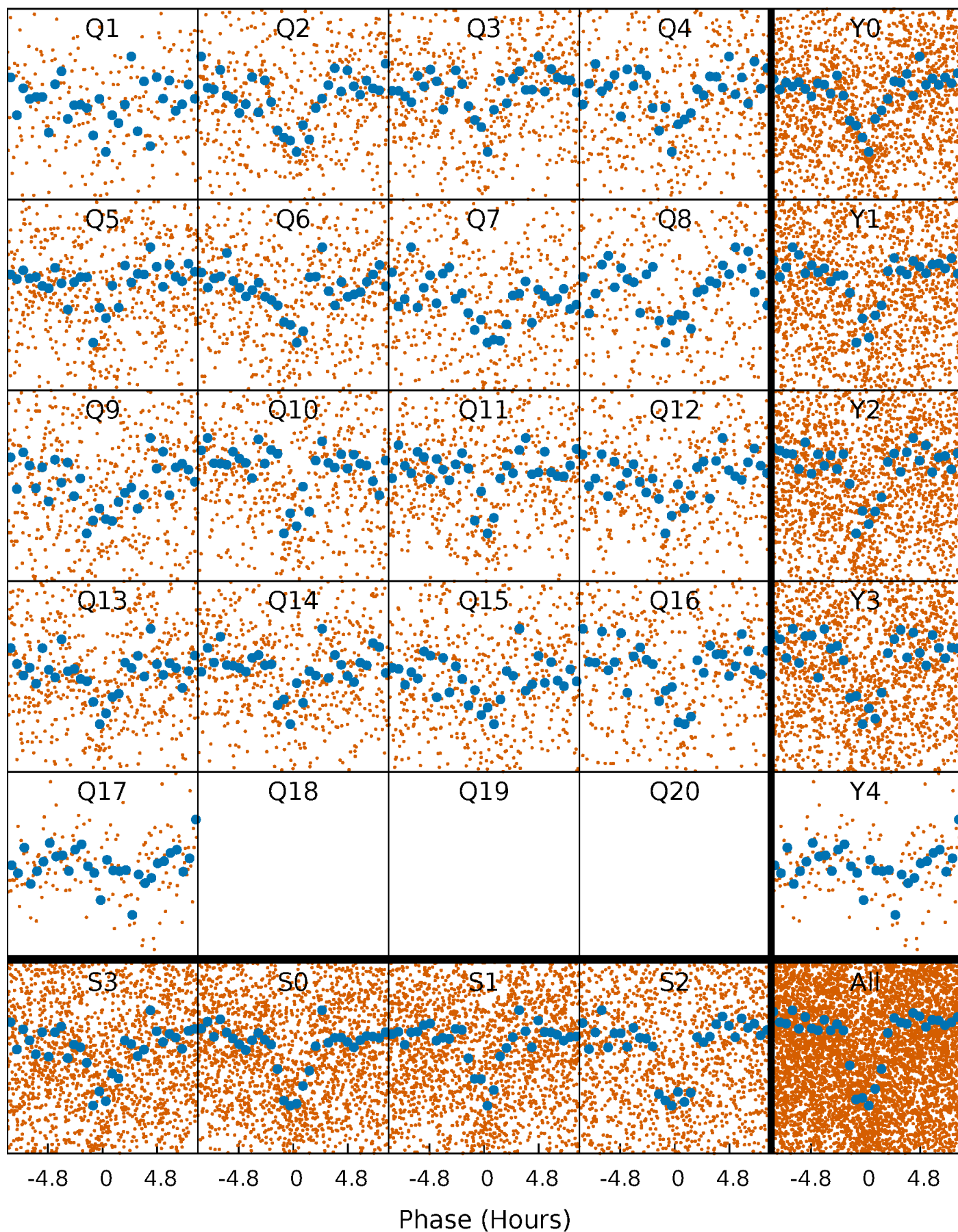


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



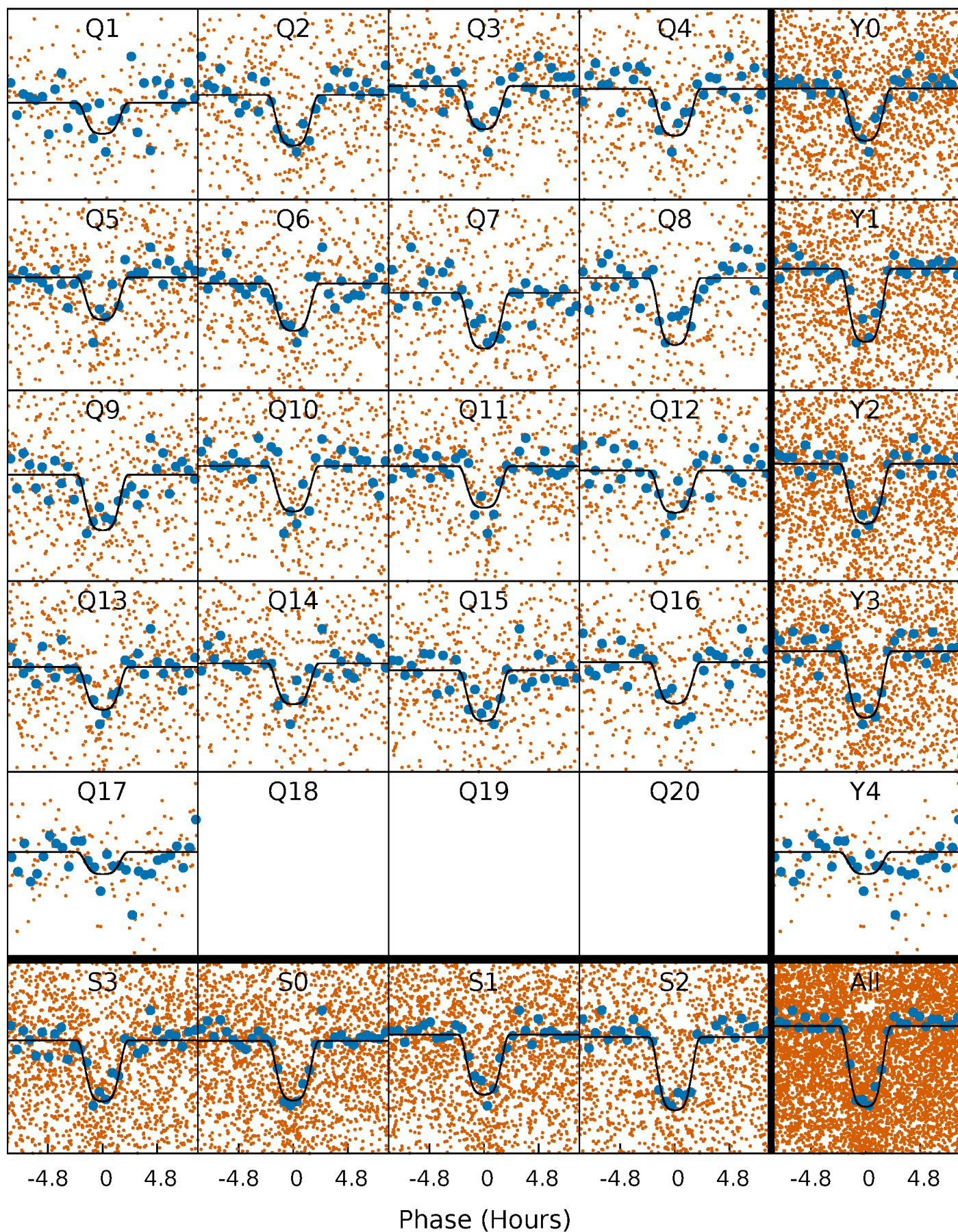
PDC Quarter-Phased Transit Curves

TCE 009813499-01 P= 5.032565 Days $T_0=132.293761$ (BKJD)



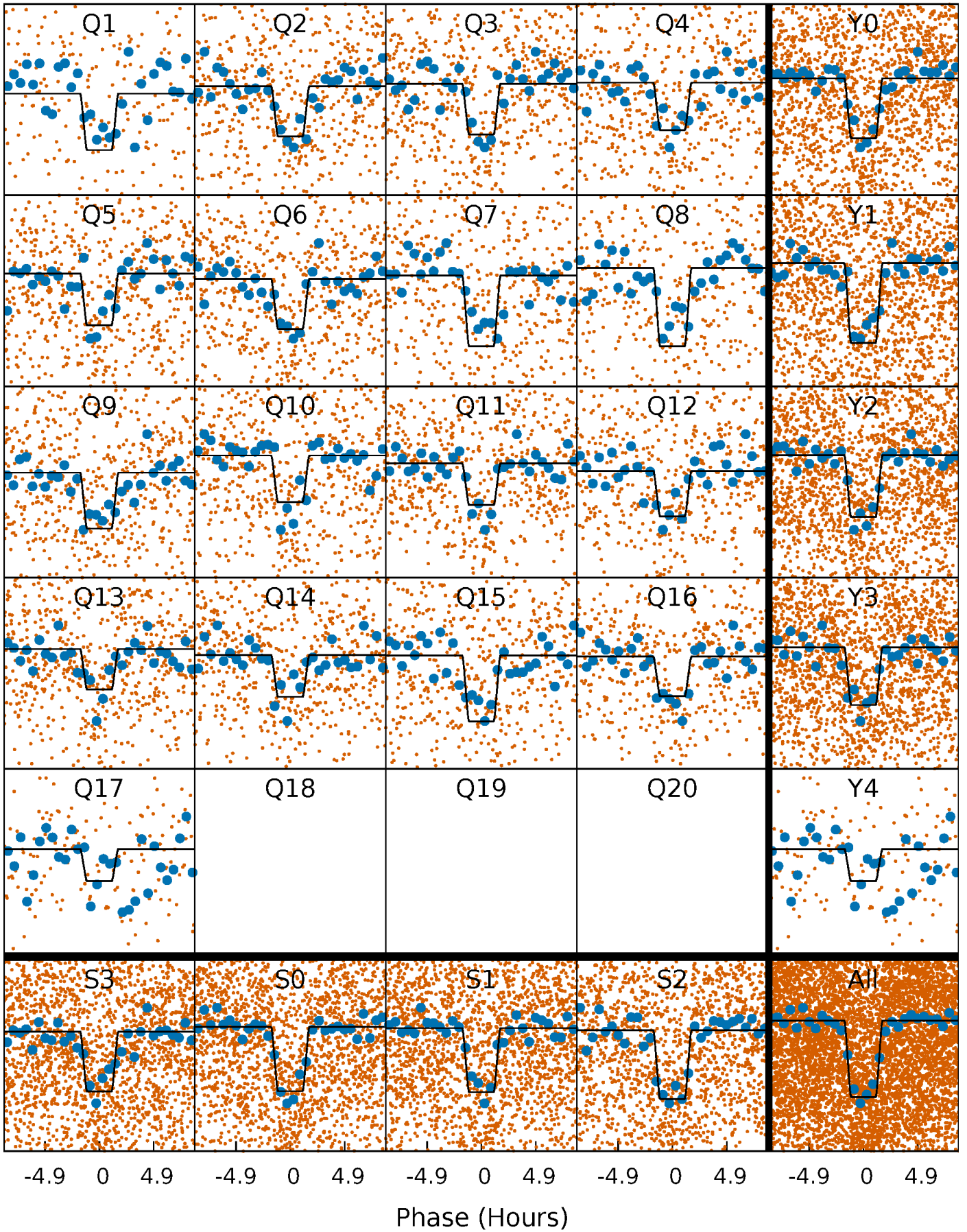
DV Quarter-Phased Transit Curves

TCE 009813499-01 P= 5.032565 Days $T_0=132.293761$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

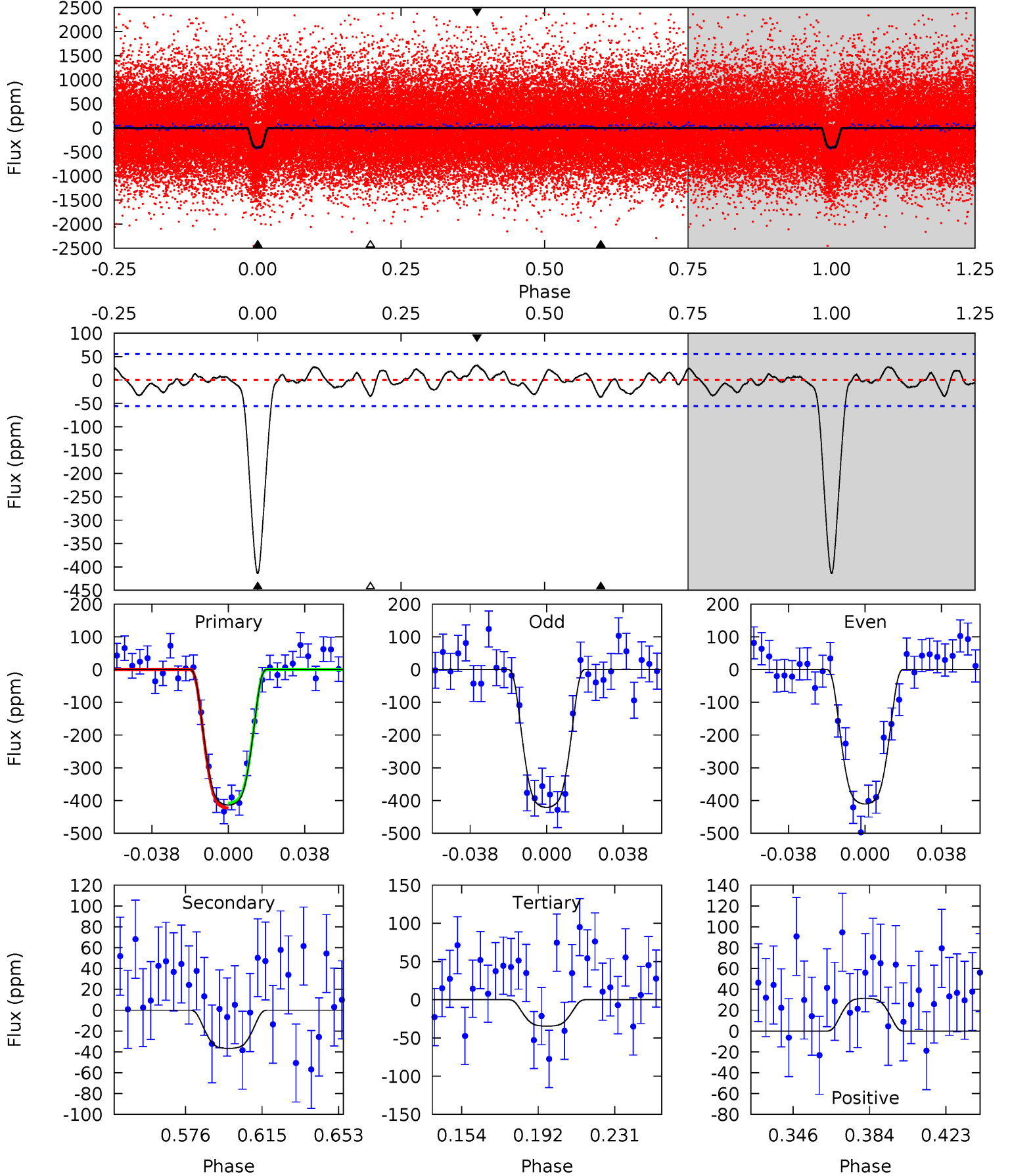
TCE 009813499-01 P= 5.032636 Days $T_0=132.283463$ (BKJD)



DV Model-Shift Uniqueness Test

009813499-01, P = 5.032565 Days, E = 127.261196 Days

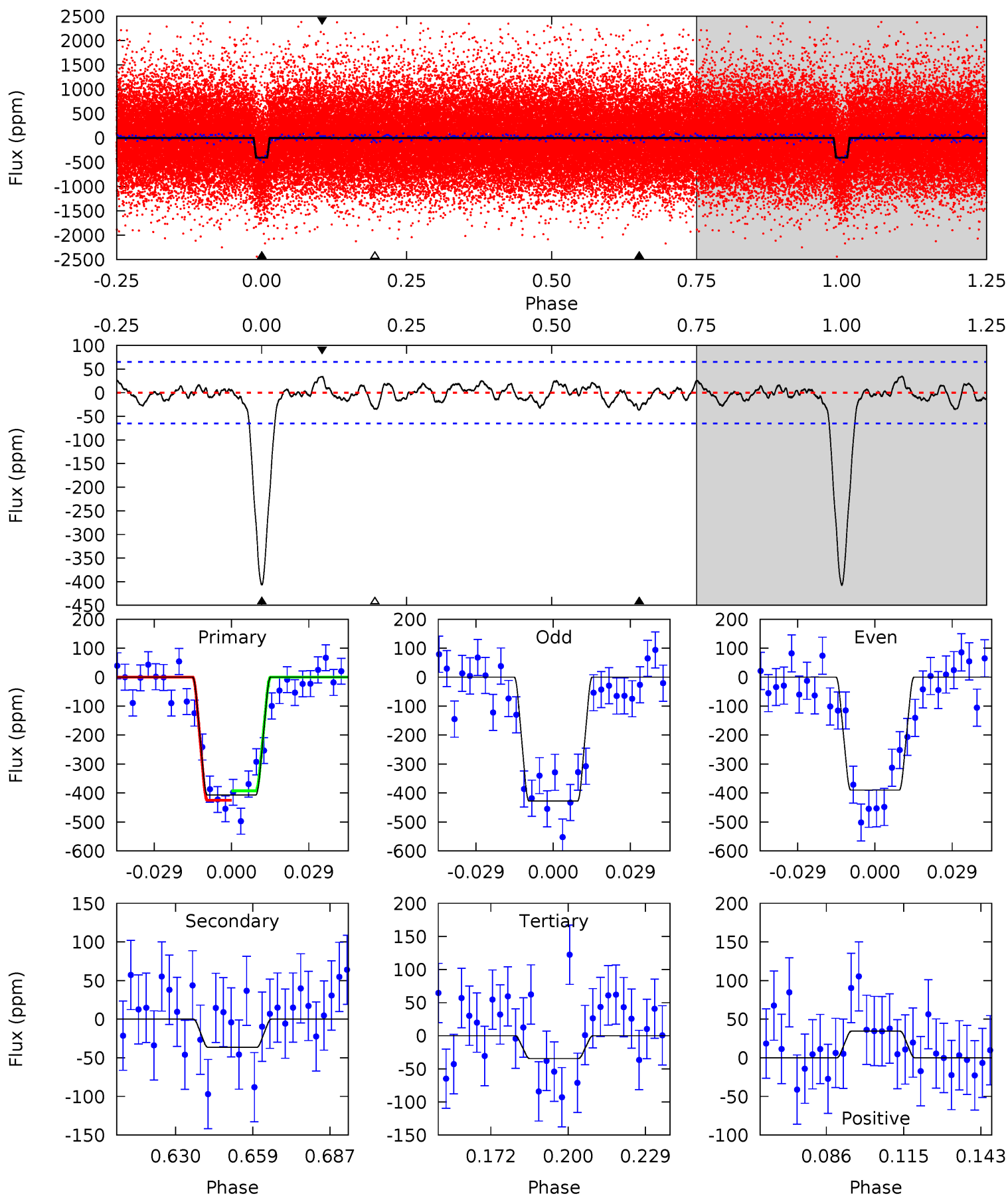
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.3	3.13	2.95	2.68	4.76	2.07	1.22	32.4	32.6	0.19	0.45	0.44	0.97	0.07	0.63



Alt Model-Shift Uniqueness Test

009813499-01, P = 5.032636 Days, E = 127.250827 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.1	2.70	2.55	2.54	4.82	2.19	0.98	27.5	27.5	0.15	0.15	1.40	1.02	0.08	1.20



Stellar Parameters For KIC 009813499

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5970^{+161}_{-197}	$4.521^{+0.039}_{-0.221}$	$-0.180^{+0.300}_{-0.300}$	$0.908^{+0.293}_{-0.078}$	$0.996^{+0.118}_{-0.131}$	$1.877^{+0.407}_{-1.028}$
	+3%/-3%	+1%/-5%	+167%/-167%	+32%/-9%	+12%/-13%	+22%/-55%
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 009813499-01 / KOI 1505.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-37 ± 12	$2.59^{+0.44}_{-0.24}$	1500^{+106}_{-68}	3413^{+166}_{-230}	$9.257^{+3.721}_{-3.523}$
Alt.	-36 ± 14	$2.13^{+0.36}_{-0.19}$	1491^{+106}_{-68}	3615^{+229}_{-270}	13^{+6}_{-5}

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 $A_{obs} \gg 1.0$

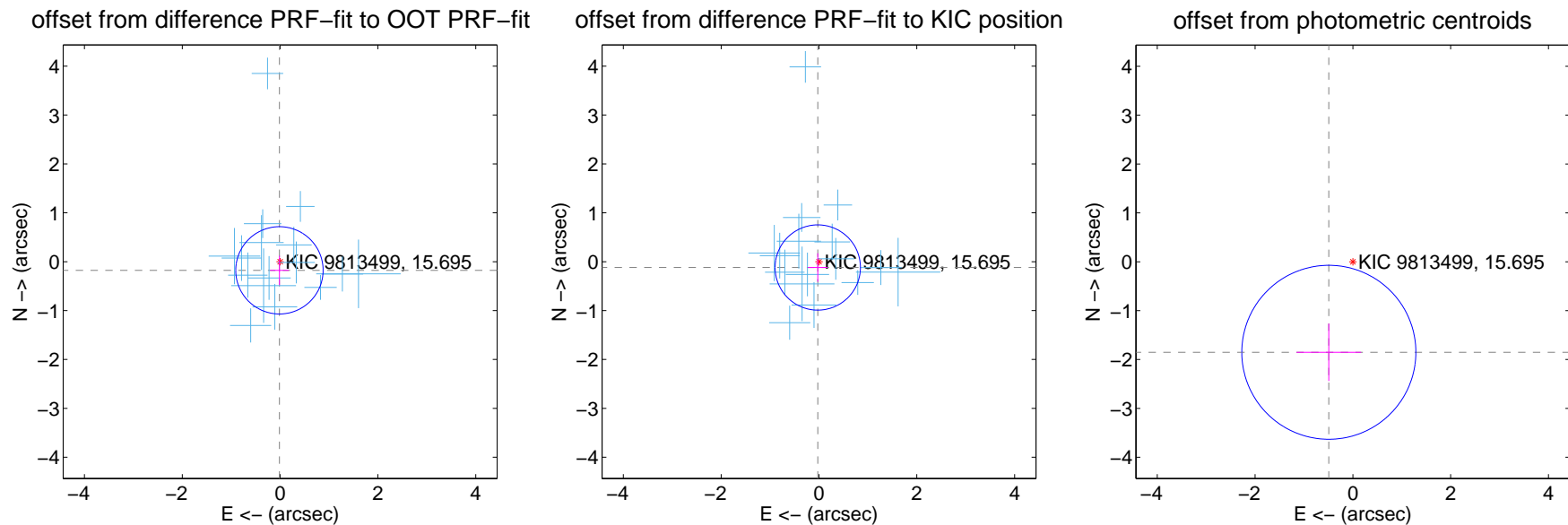
DV Centroid Data

Supplemental centroid analysis for 009813499-01. Kepler magnitude: 15.70. Transit SNR 25.98

There are 16 quarters with good PRF difference image offsets

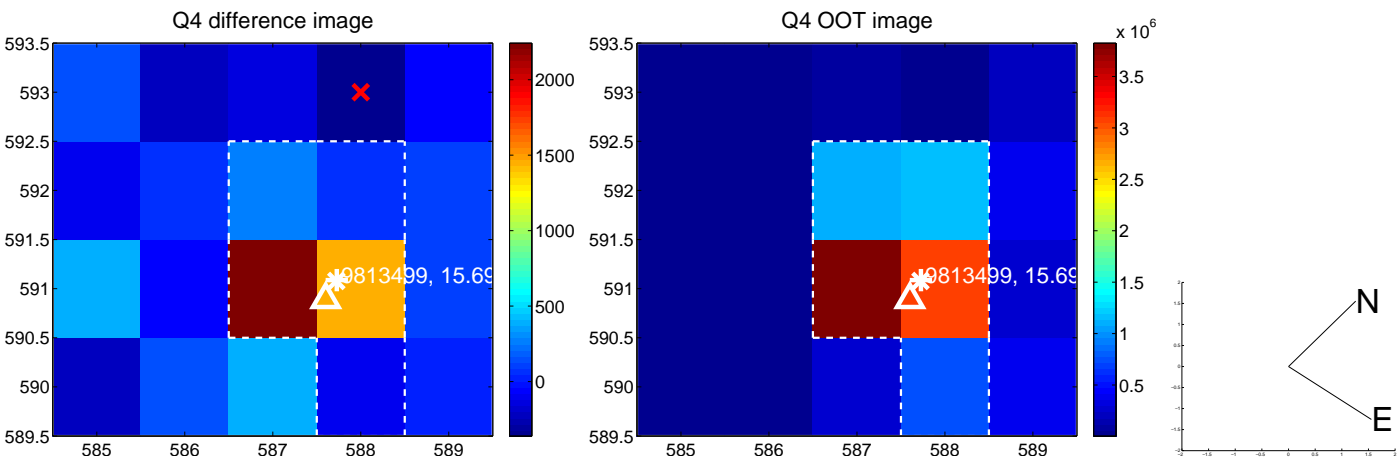
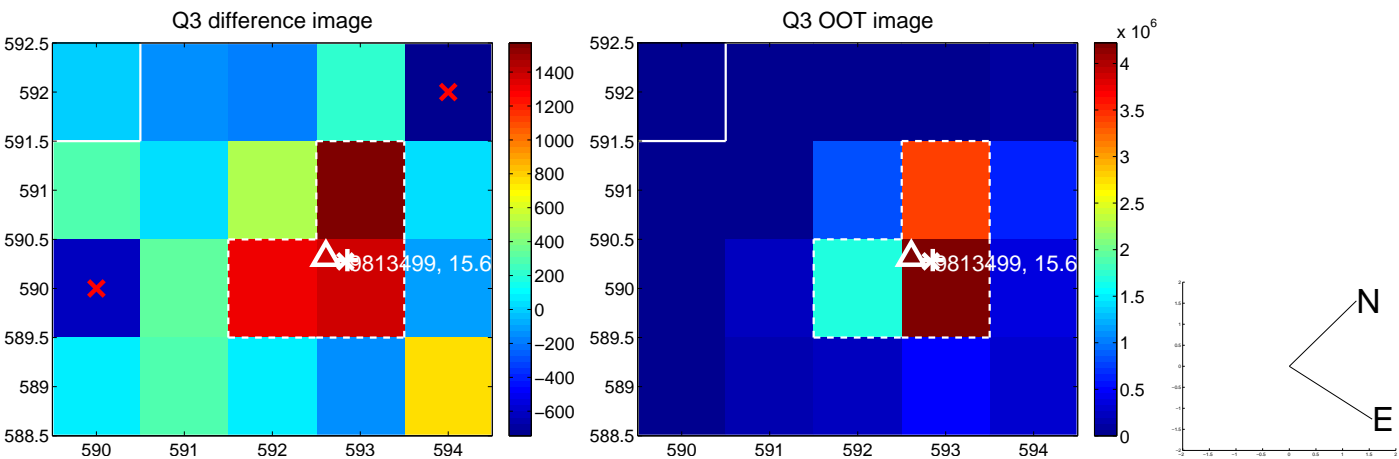
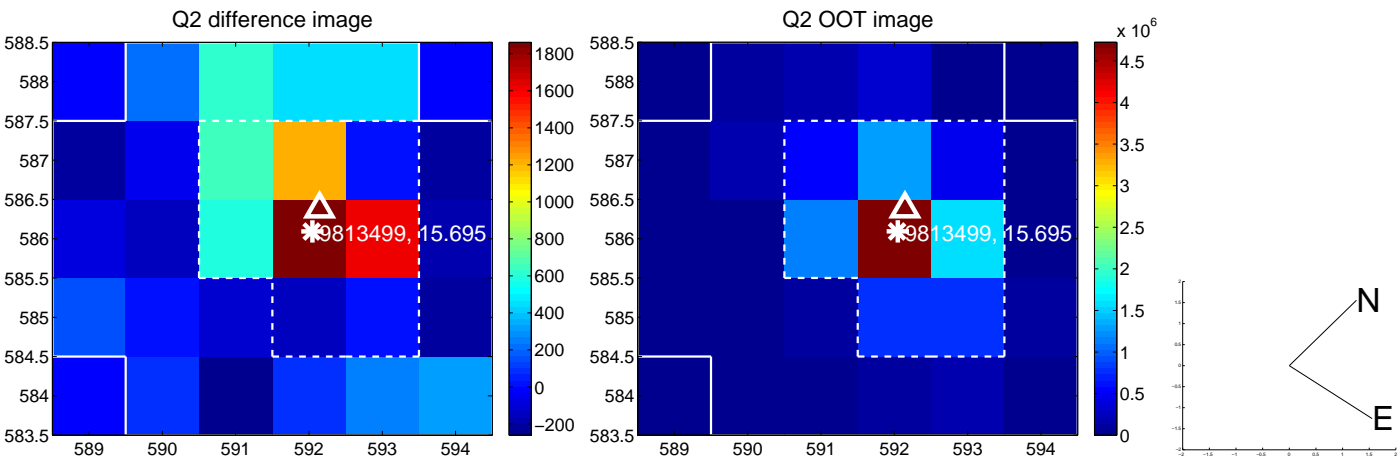
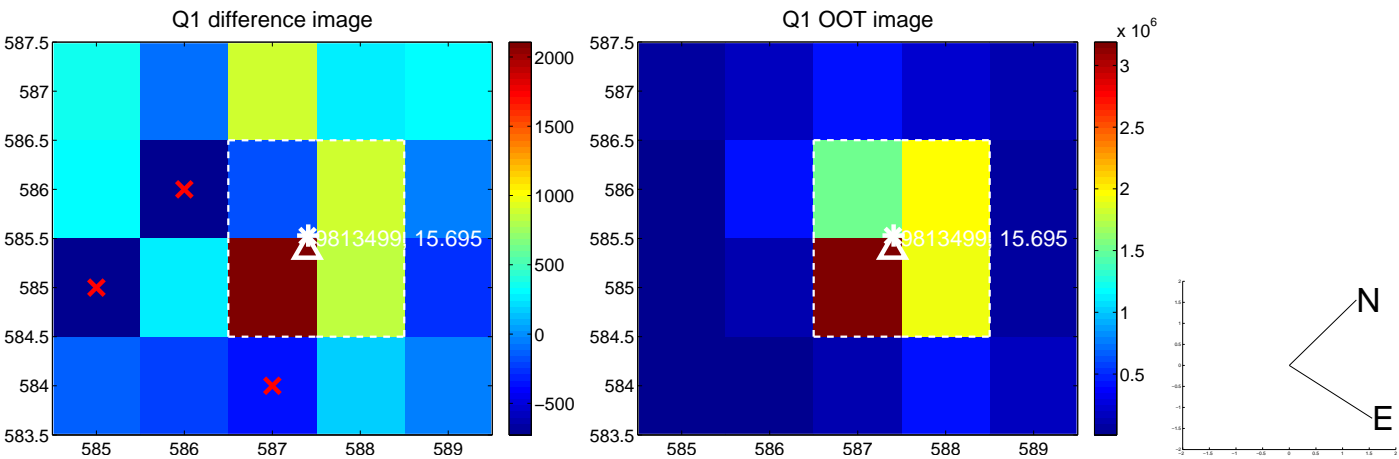
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.177 ± 0.298	0.60	0.014 ± 0.193	-0.177 ± 0.300
PRF-fit source offset from KIC position	0.121 ± 0.291	0.42	0.025 ± 0.202	-0.119 ± 0.292
photometric centroid source offset	1.92 ± 0.59	3.23	0.49 ± 0.66	-1.85 ± 0.59

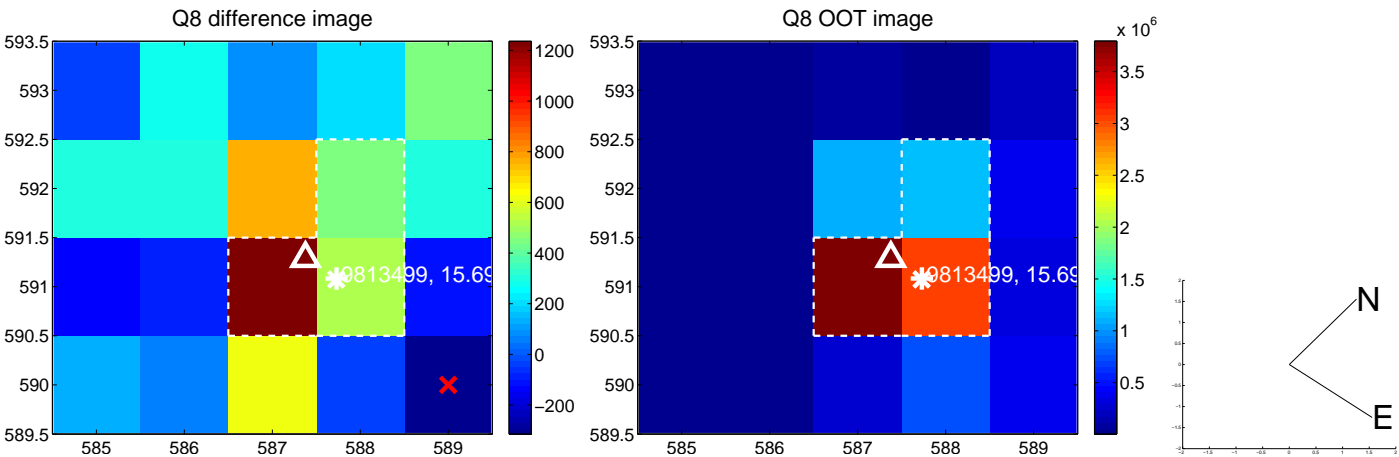
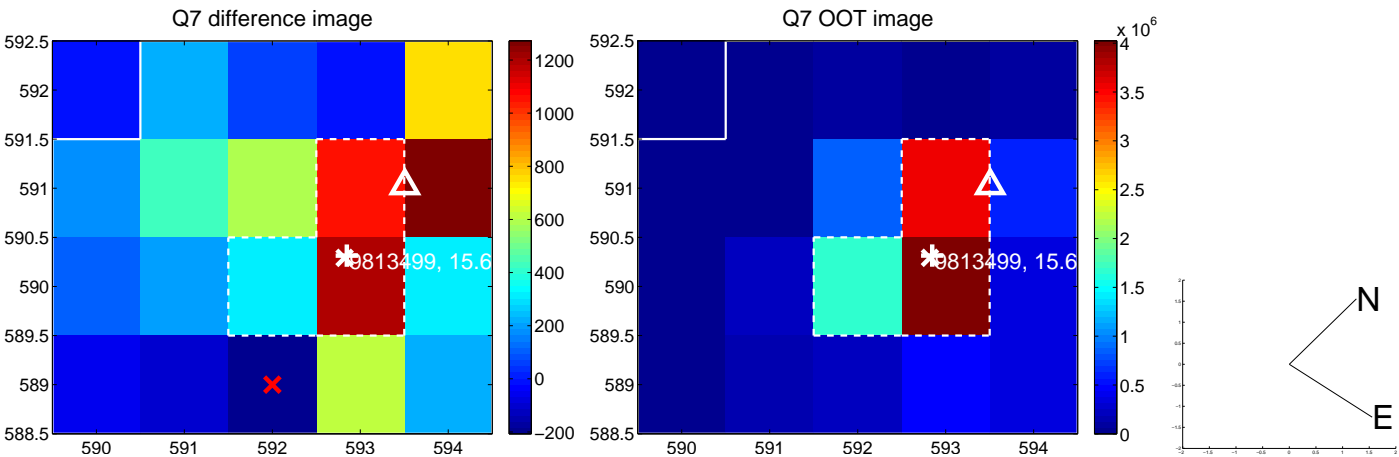
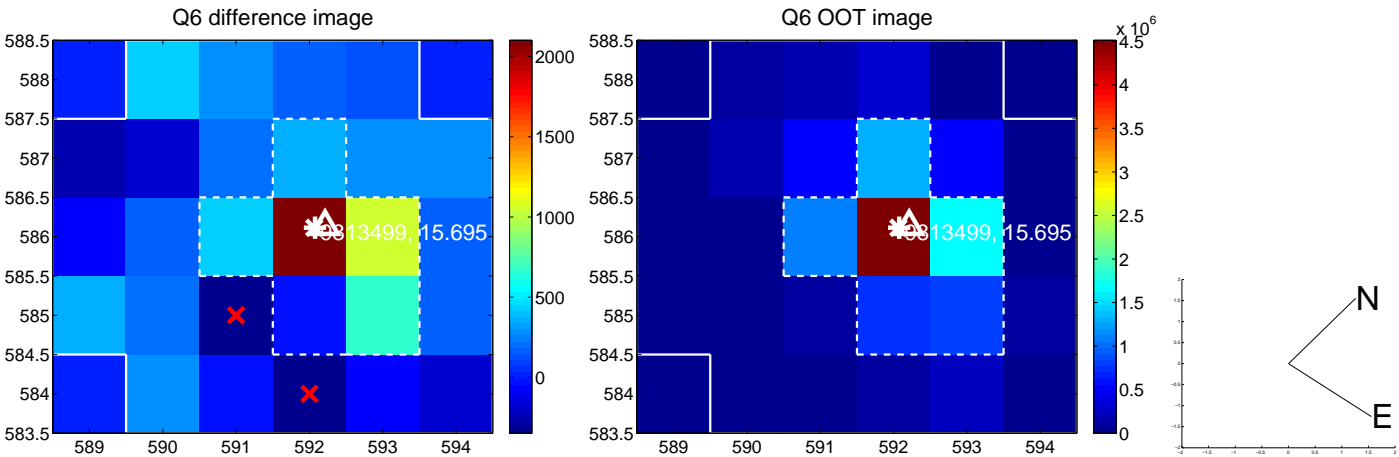
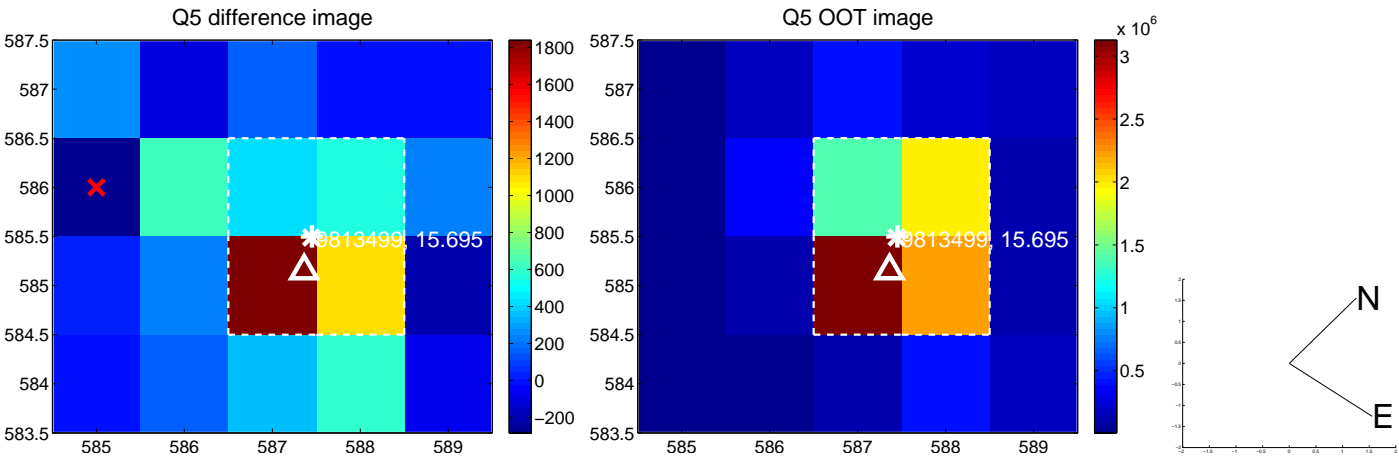


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

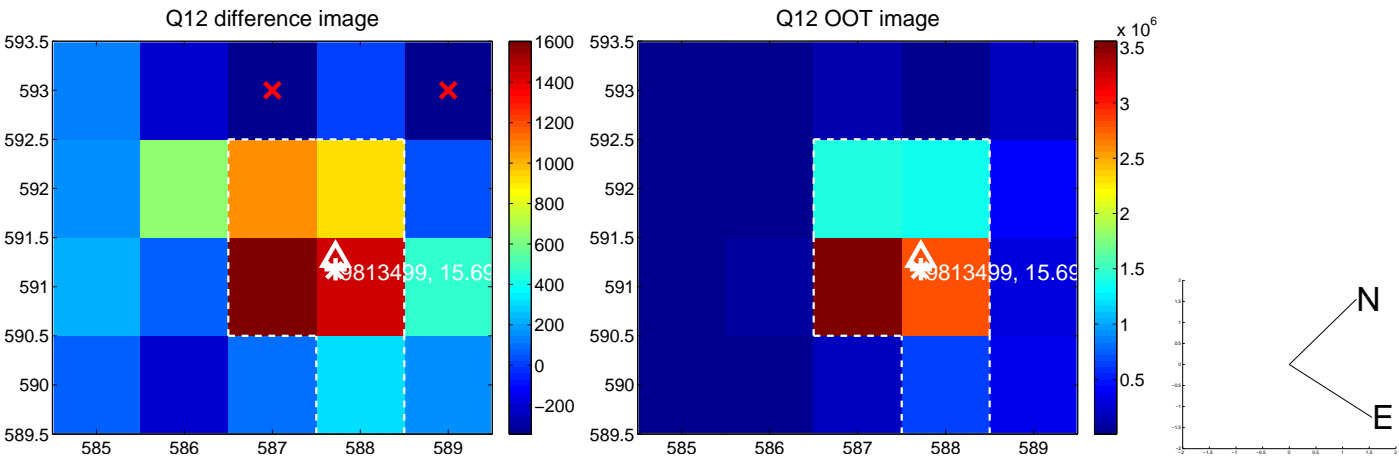
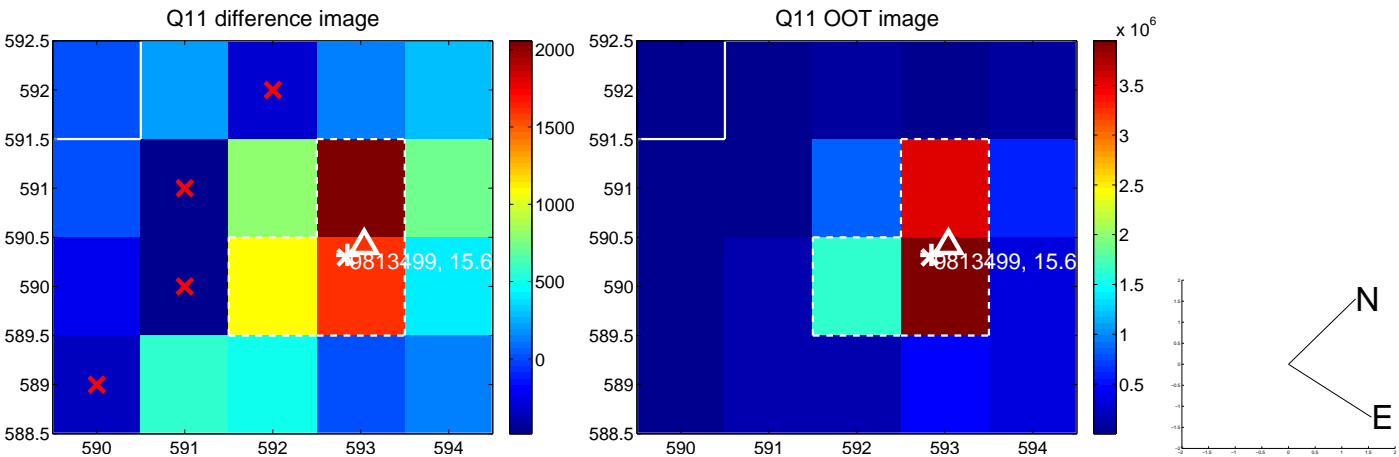
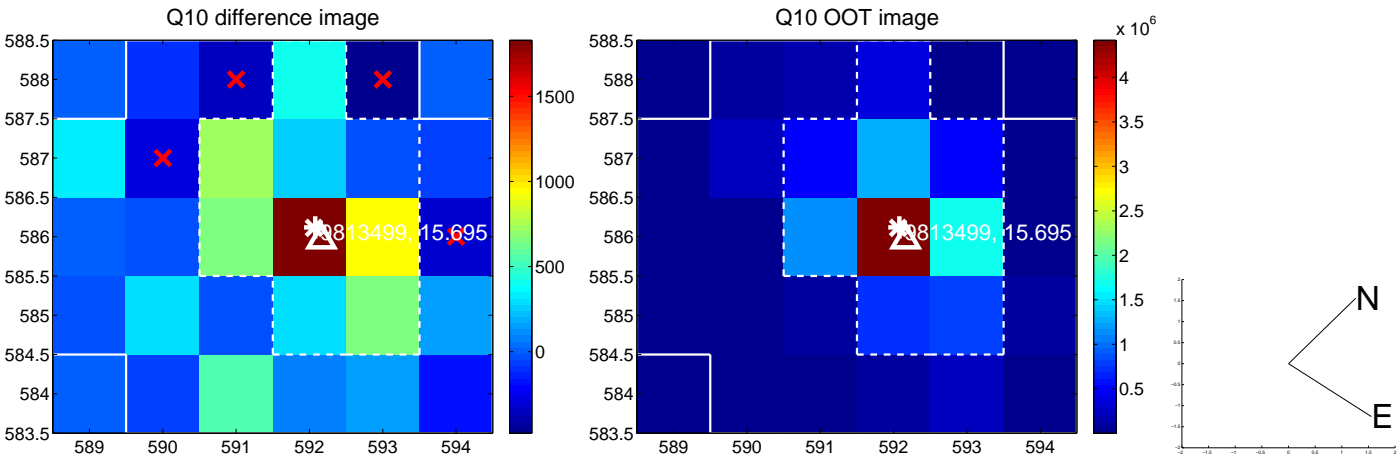
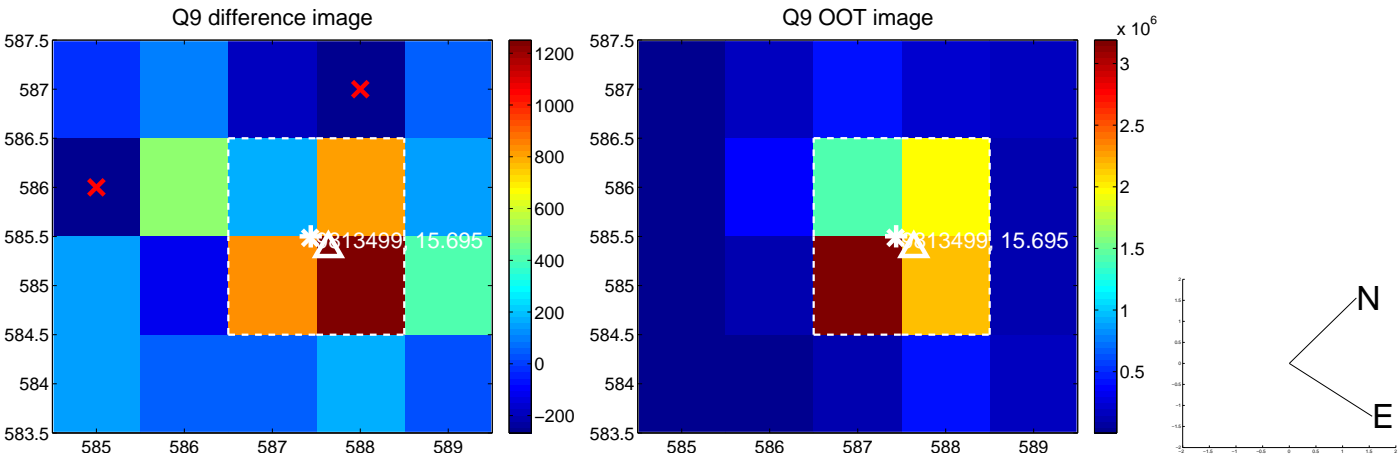
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



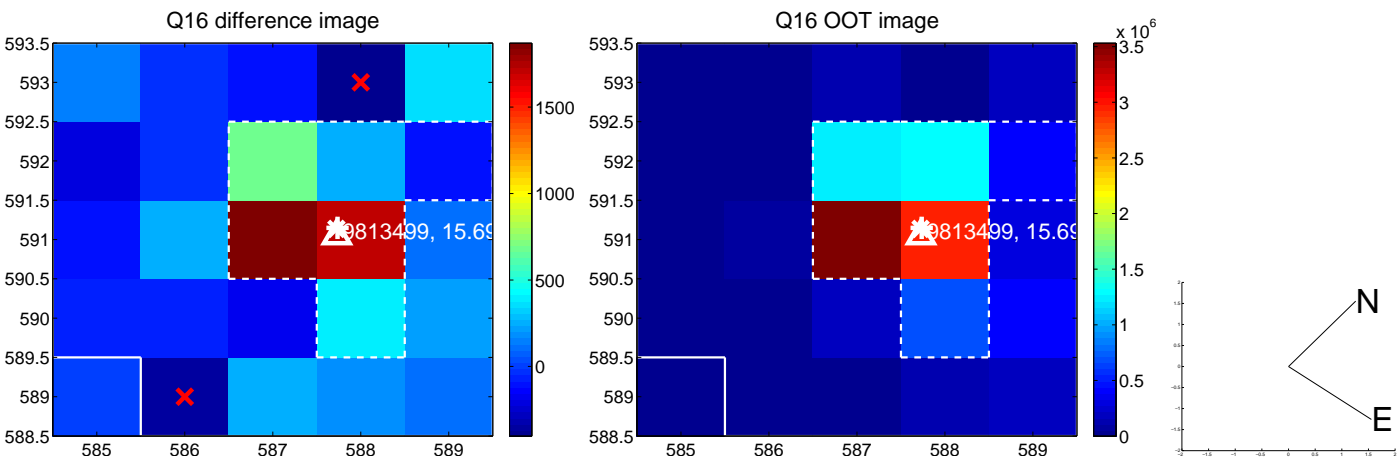
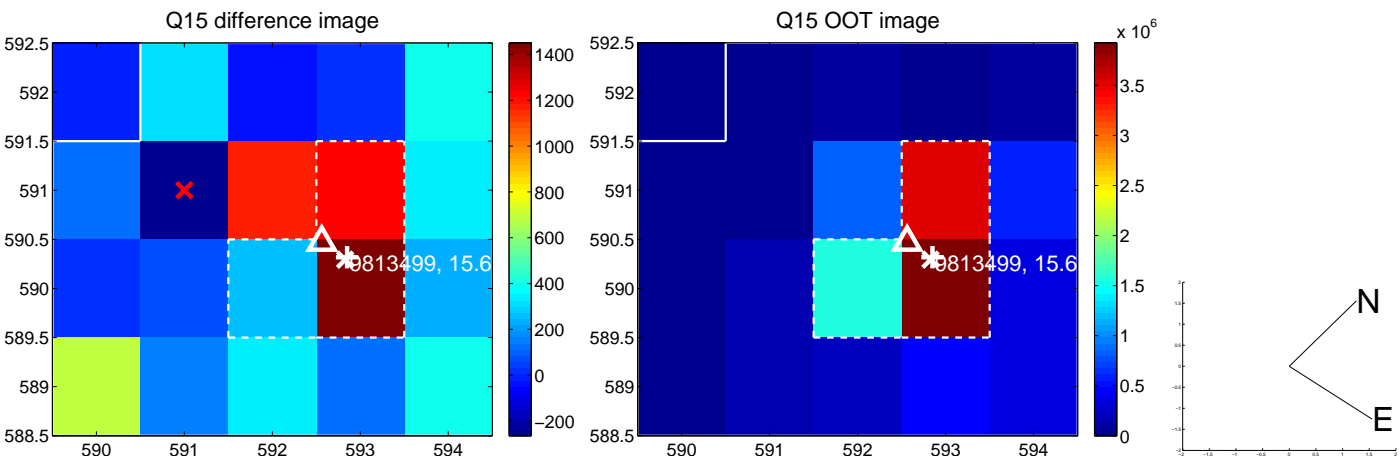
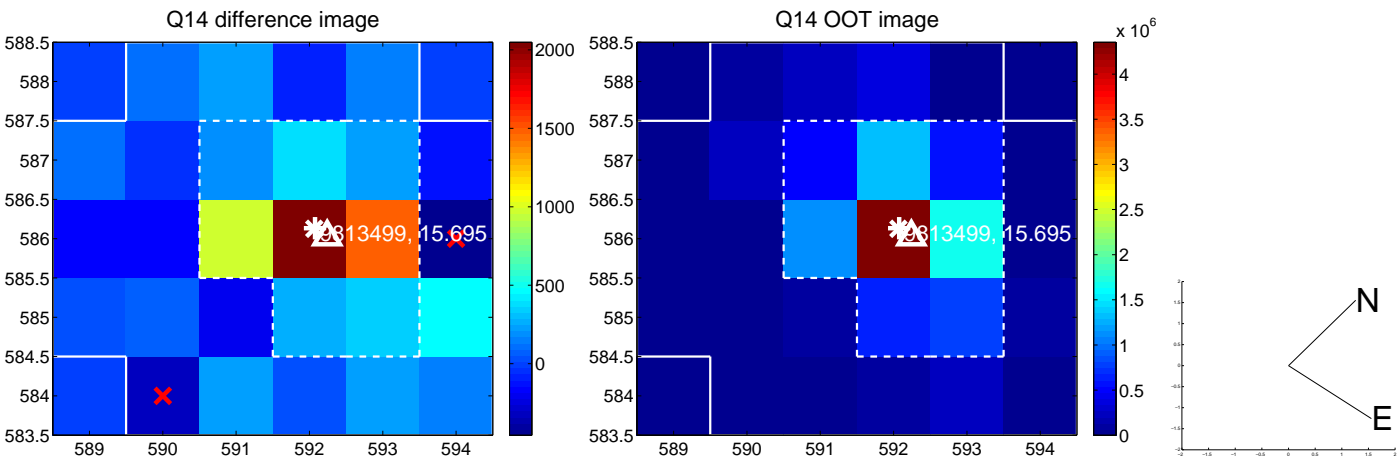
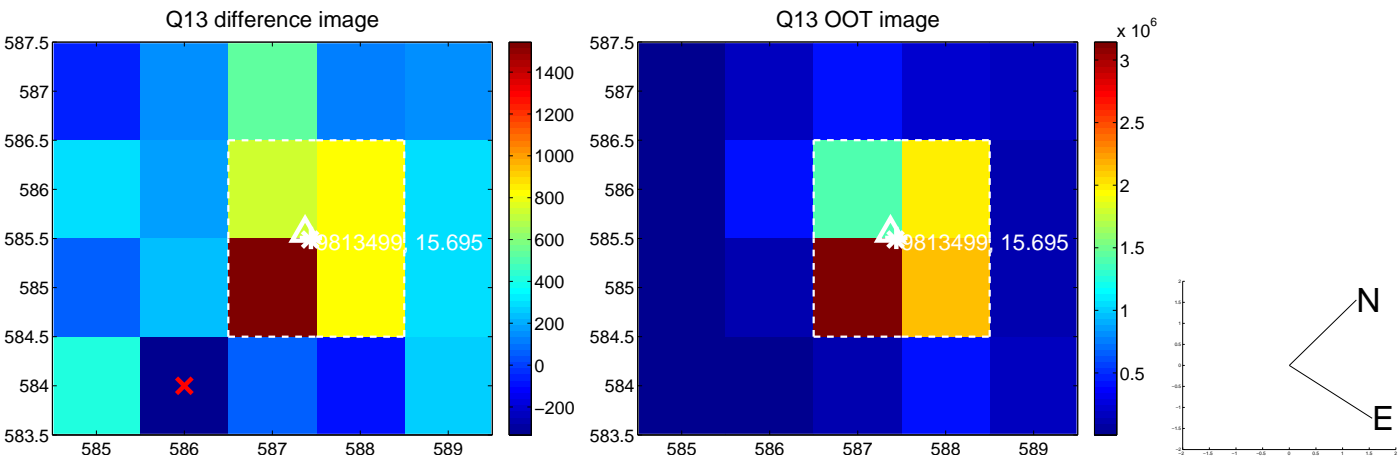
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



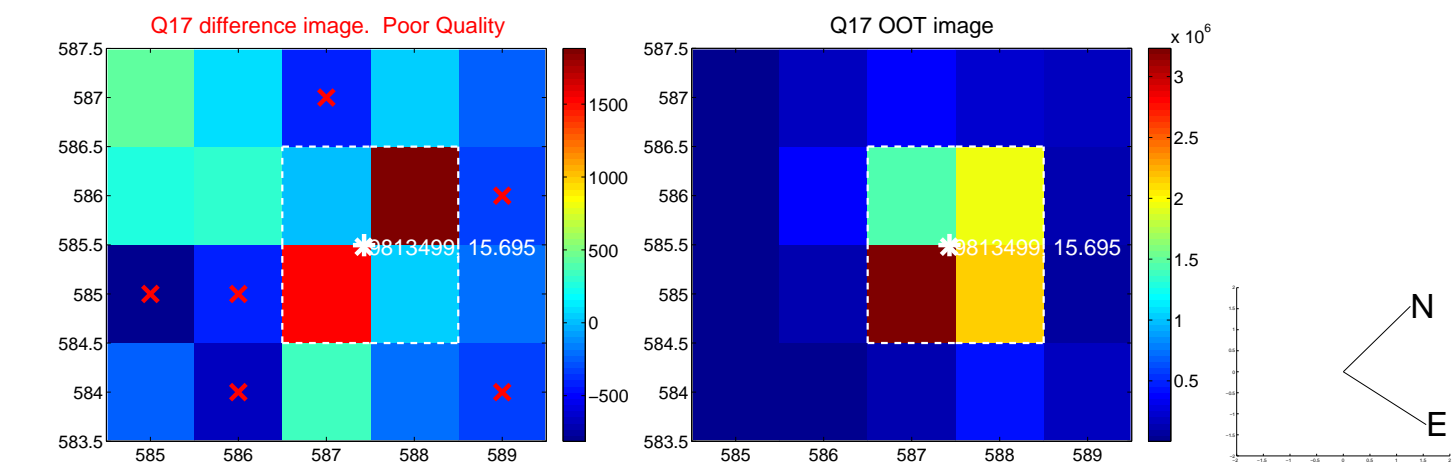
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



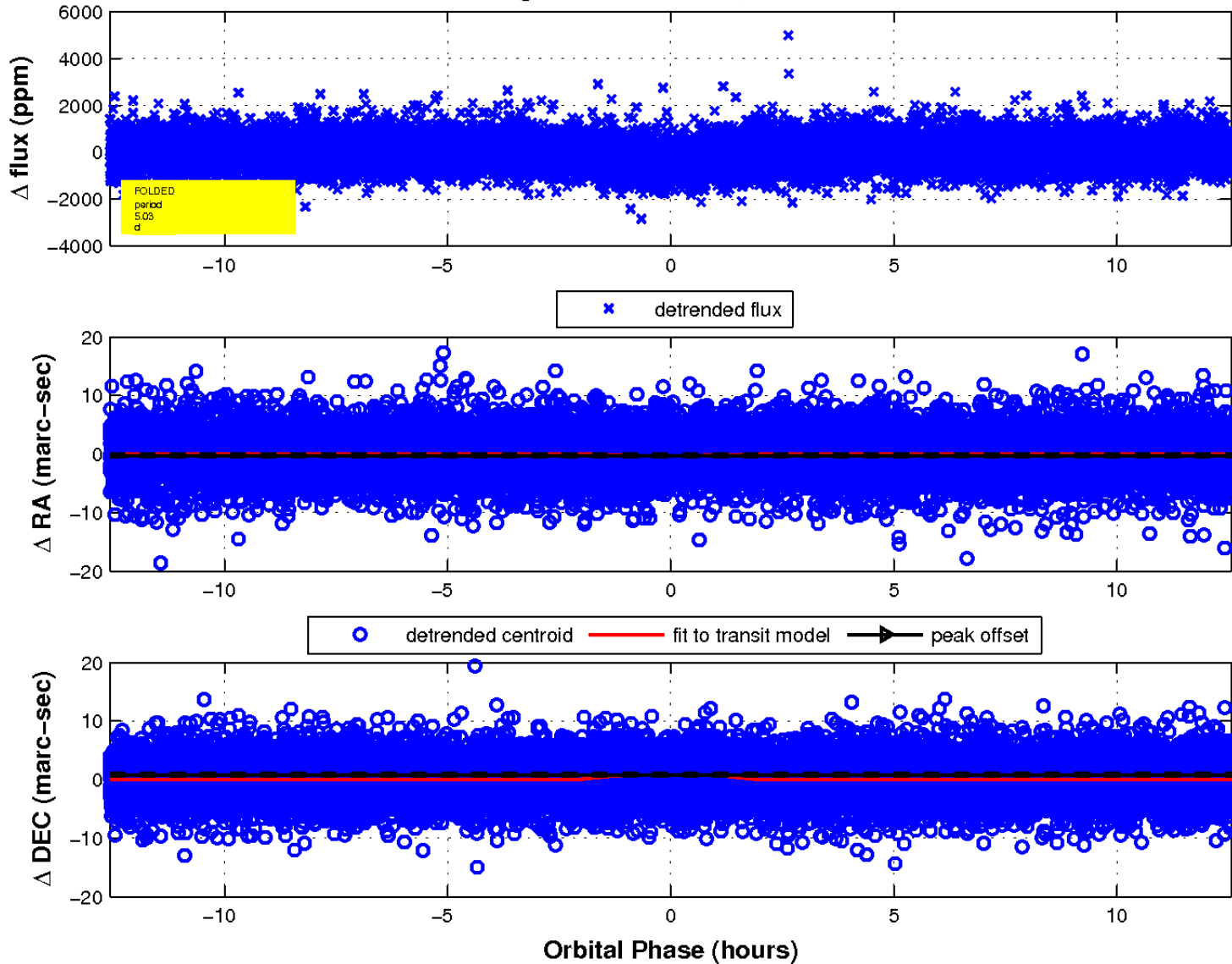
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

