

KIC 009426071

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})
009426071-01	OBS	0706.01	28.714216	153.894430	43768.2	6.062	2281.6	2052.7	1.42	6706	43.73	93.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009426071-01	OBS	FP	0.00	0	1	0	0	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.

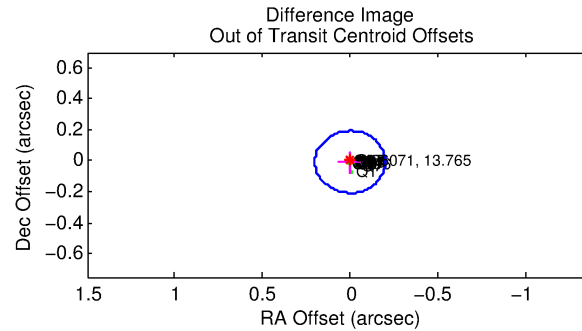
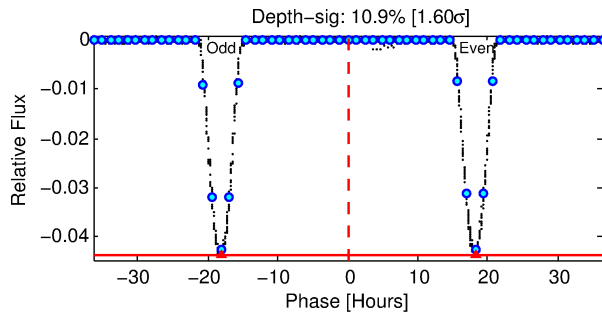
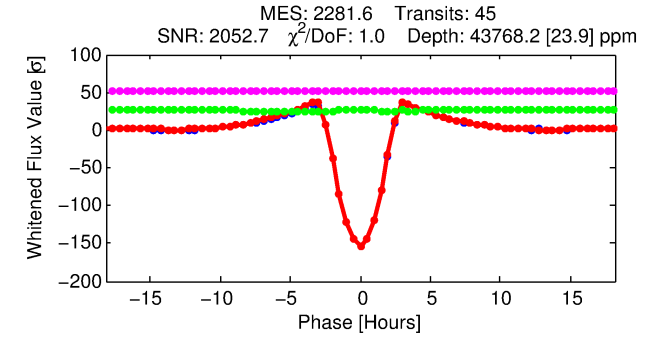
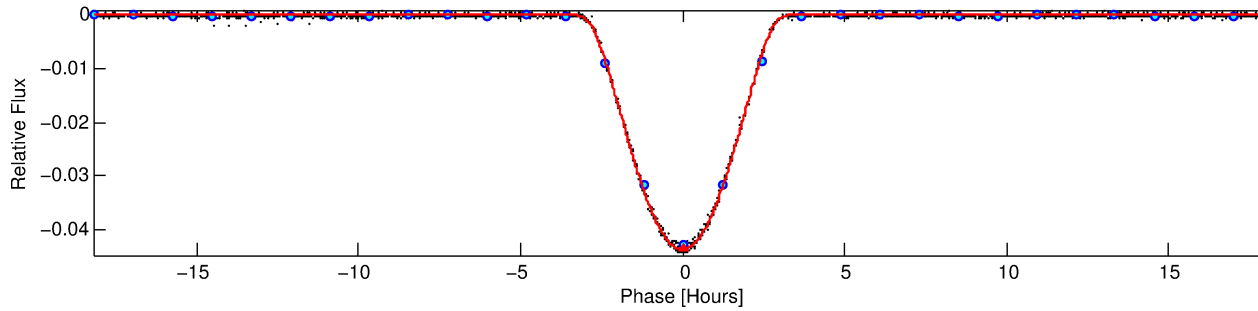
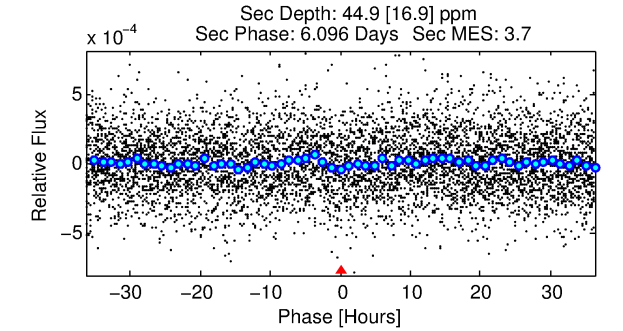
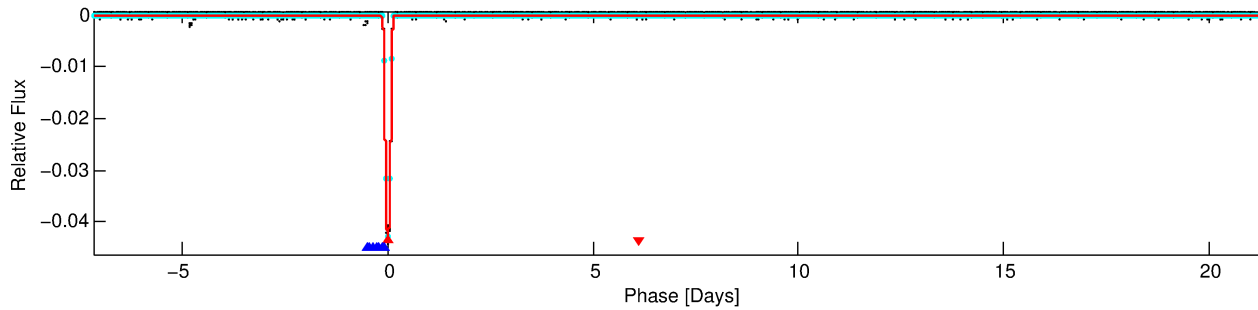
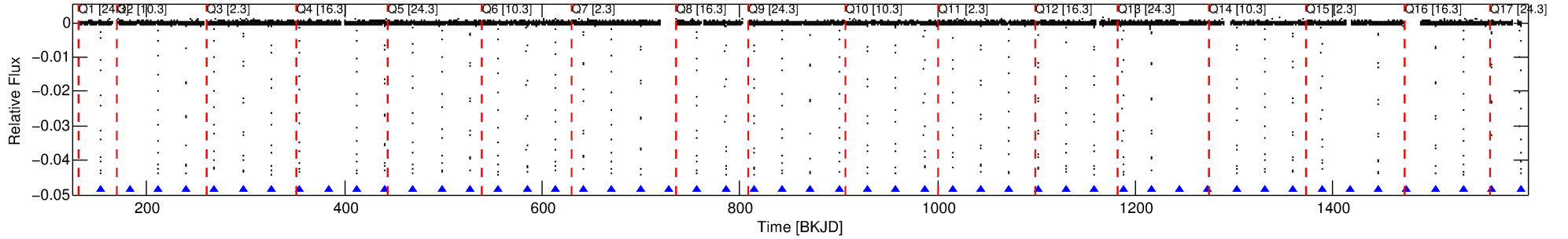
Ephemeris Match Information For 009426071-01

No Significant Match Found

DV One-Page Summary

KIC: 9426071 Candidate: 1 of 2 Period: 28.714 d
KOI: K00706.01 Corr: 0.998

Kp: 13.77 R*: 1.42 Rs Teff: 6706.0 K Logg: 4.23 Fe/H: -0.260



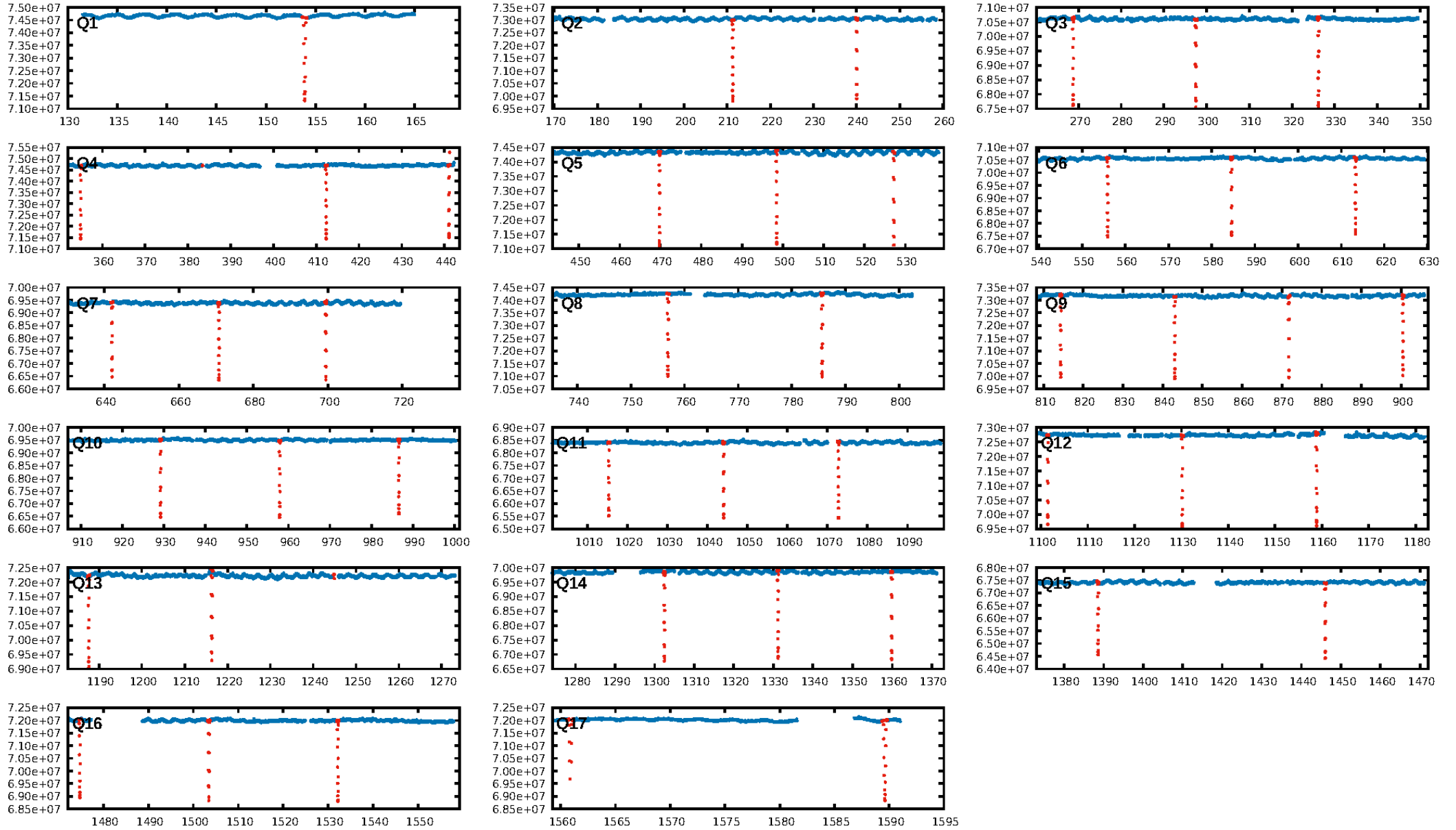
DV Fit Results:

Period = 28.71422 [0.00000] d
Epoch = 153.8944 [0.0001] BKJD
Rp/R* = 0.2828 [0.0045]
a/R* = 31.75 [0.05]
b = 0.94 [0.01]
Seff = 93.94 [34.88]
Teff = 794 [74] K
Rp = 43.73 [13.13] Re
a = 0.1968 [0.0480] AU
Ag = 0.50 [0.26] [-1.96σ]
Teffp = 1032 [104] K [1.87σ]

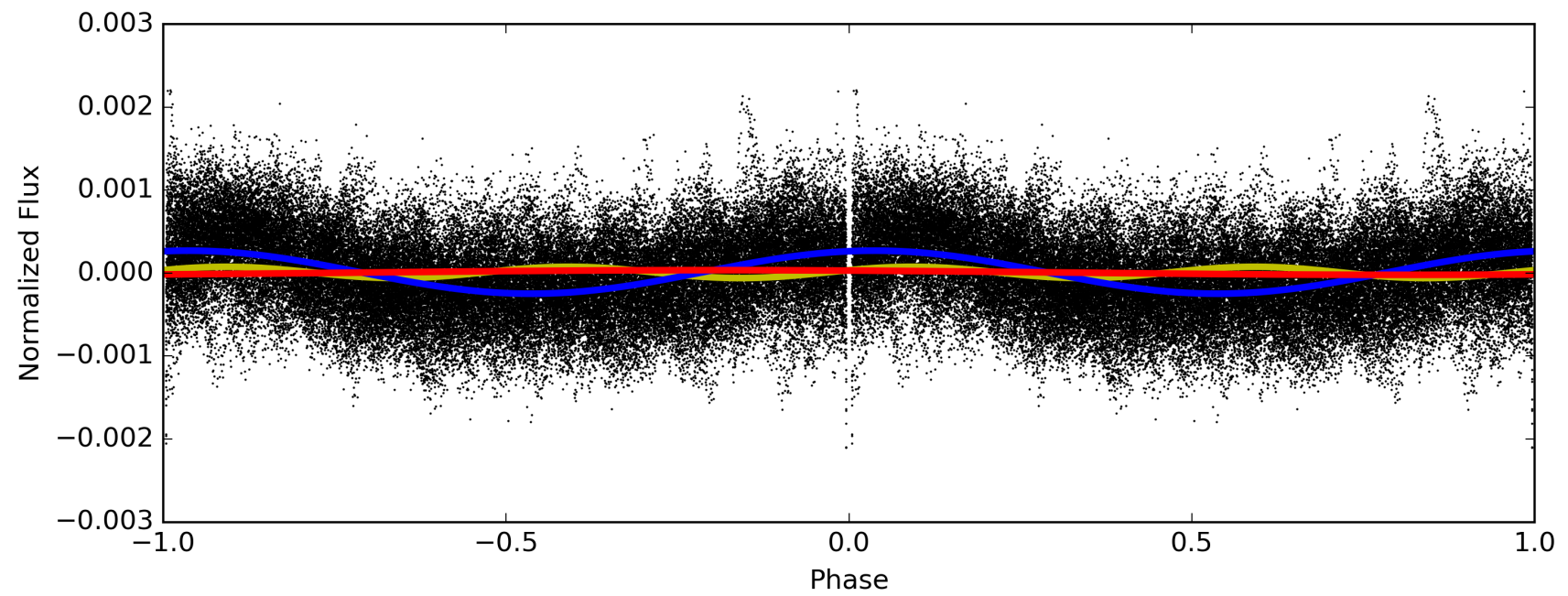
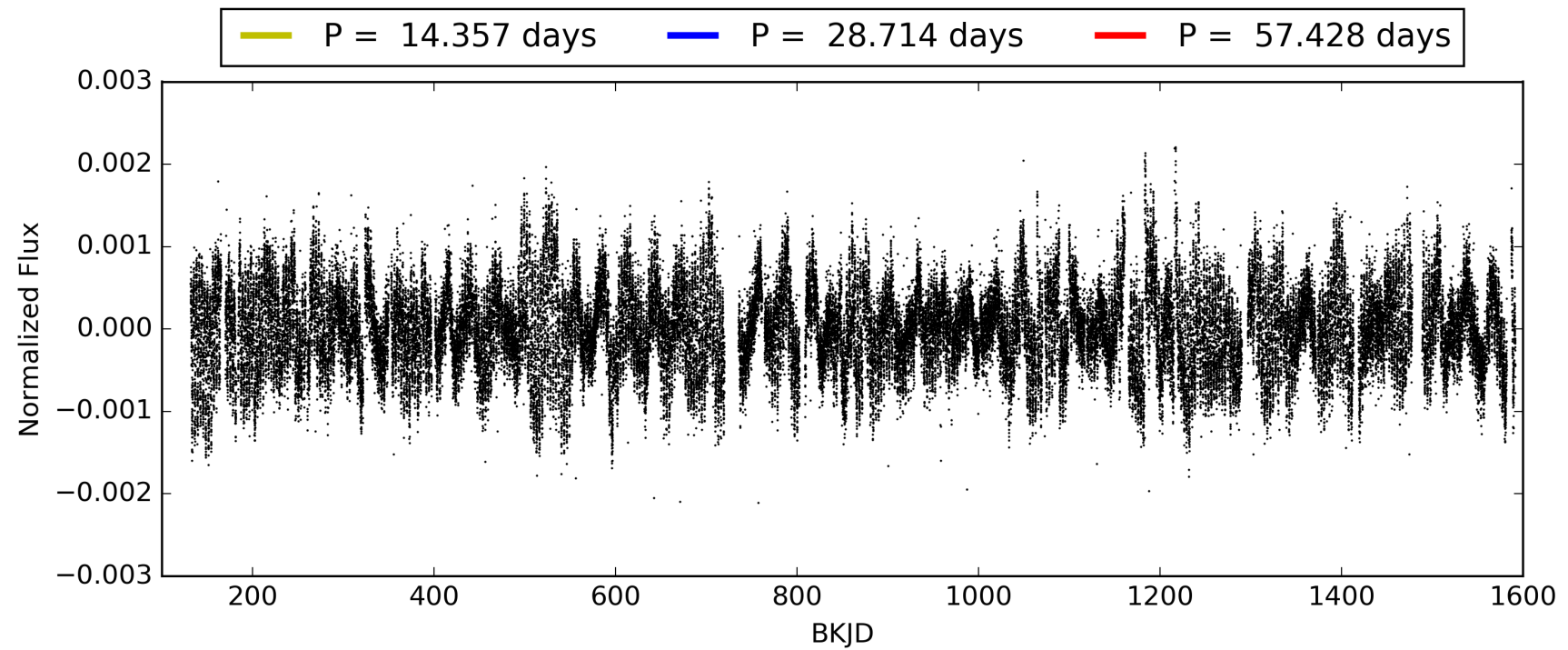
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [601.38σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [42/42]
GhostDiagnostic-chr: 4.349
Centroid-sig: 0.0%
Centroid-so: 0.232 arcsec [43.84σ]
OotOffset-rm: 0.008 arcsec [0.11σ]
KicOffset-rm: 0.076 arcsec [1.12σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.94 [15/16]

TCE 009426071-01, PDC Light Curves

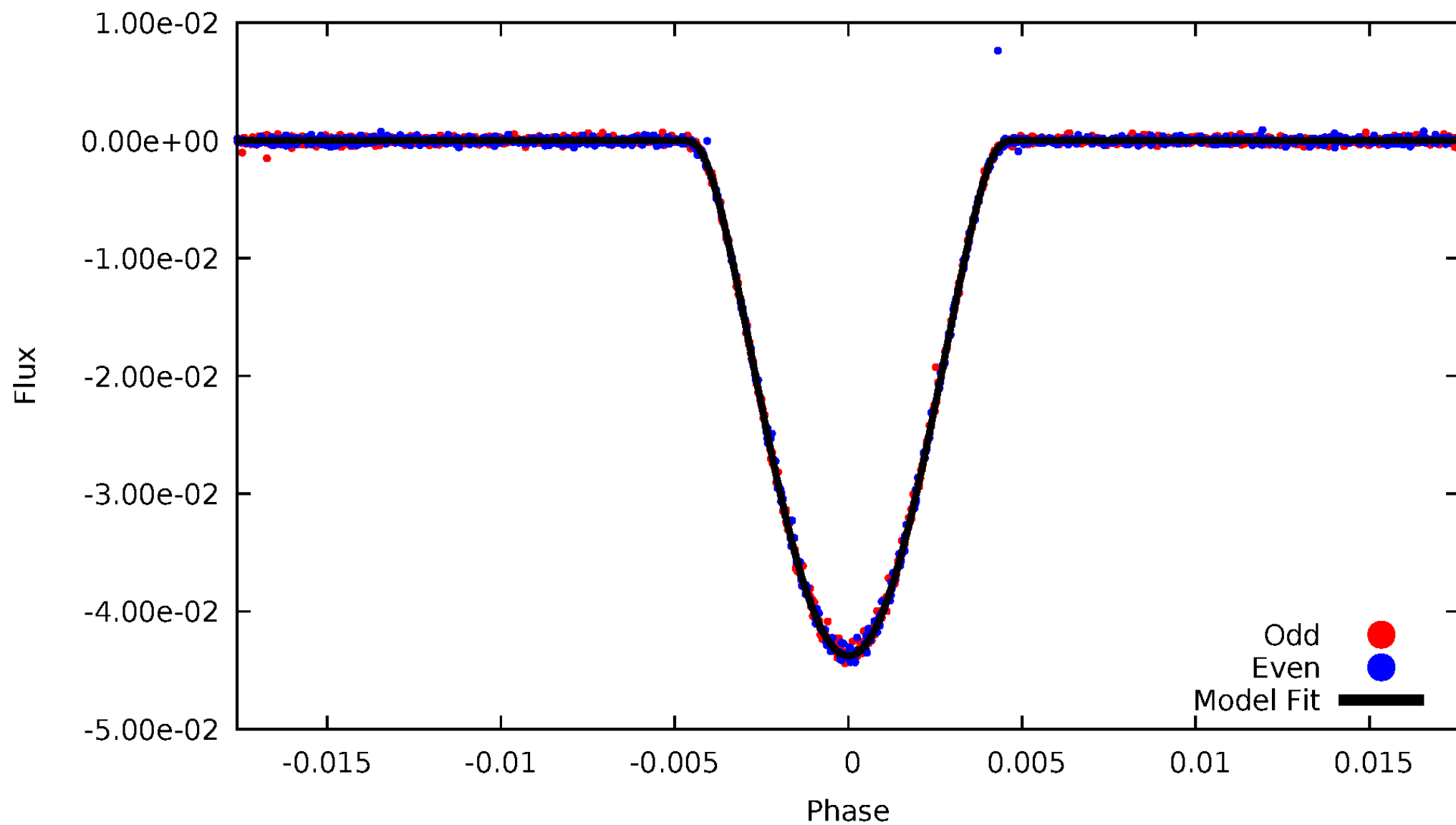


TCE 009426071-01



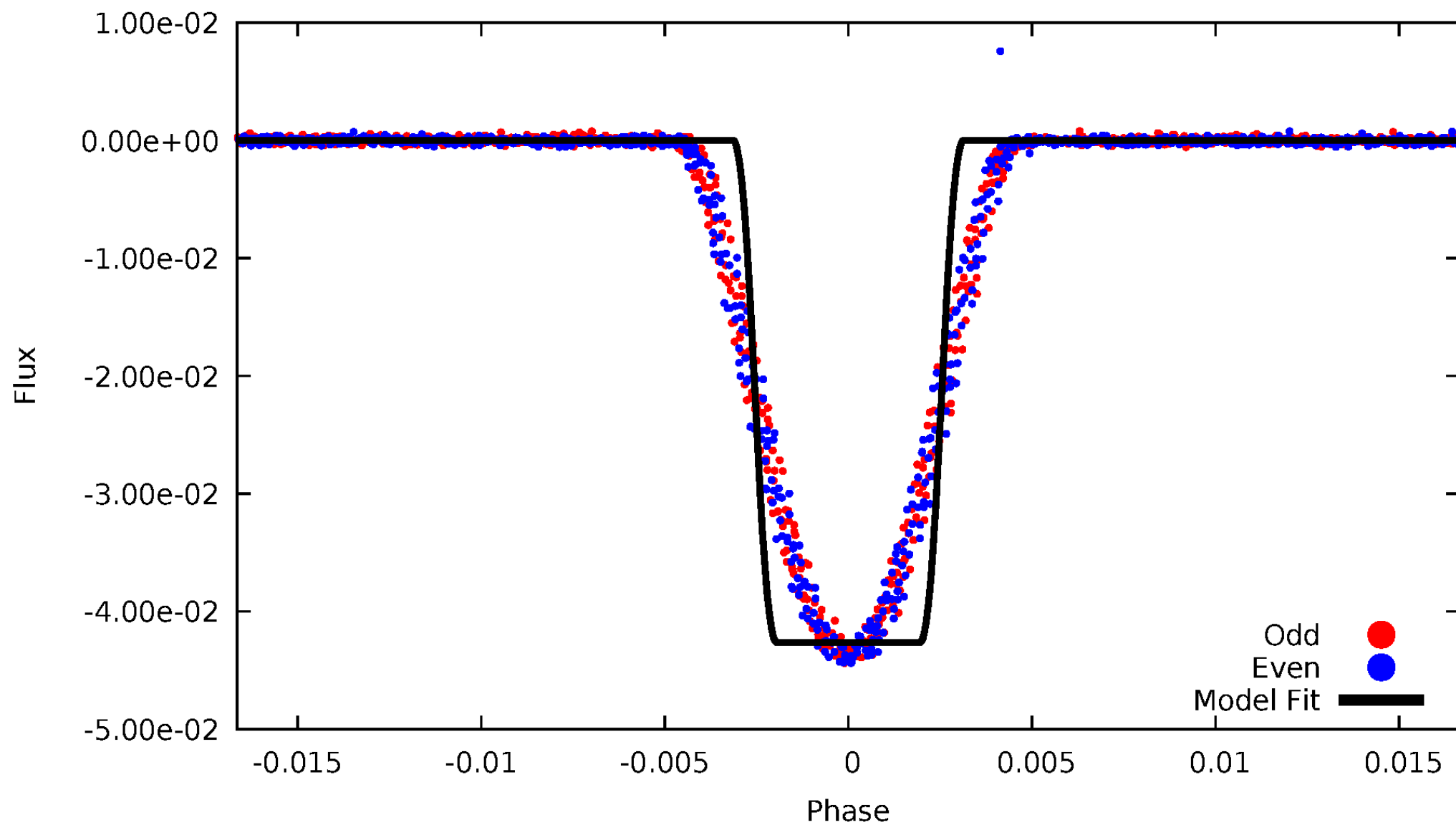
DV Odd/Even

TCE 009426071-01



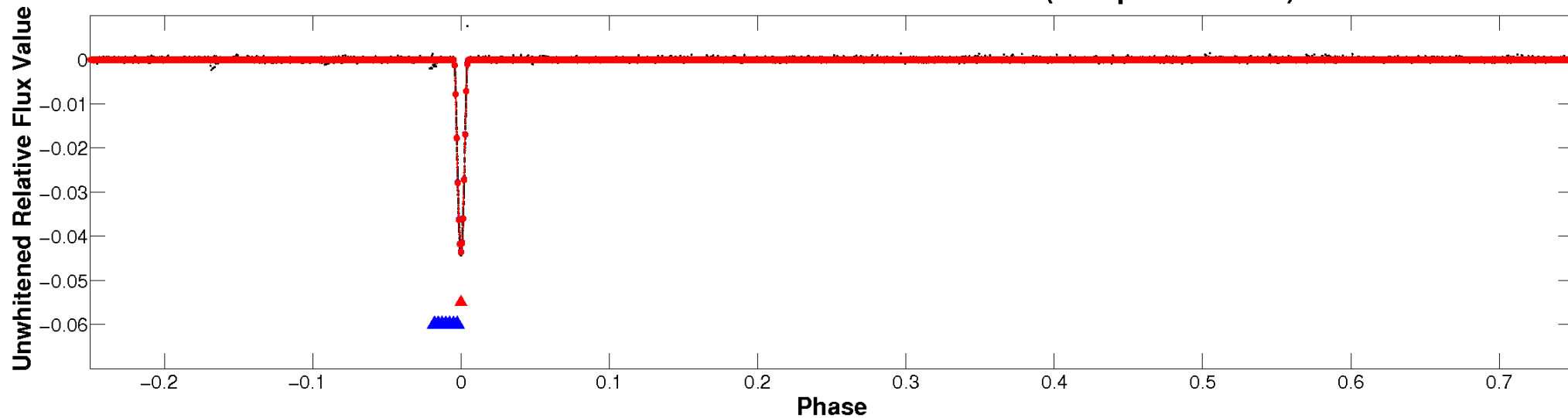
ALT Odd/Even

TCE 009426071-01

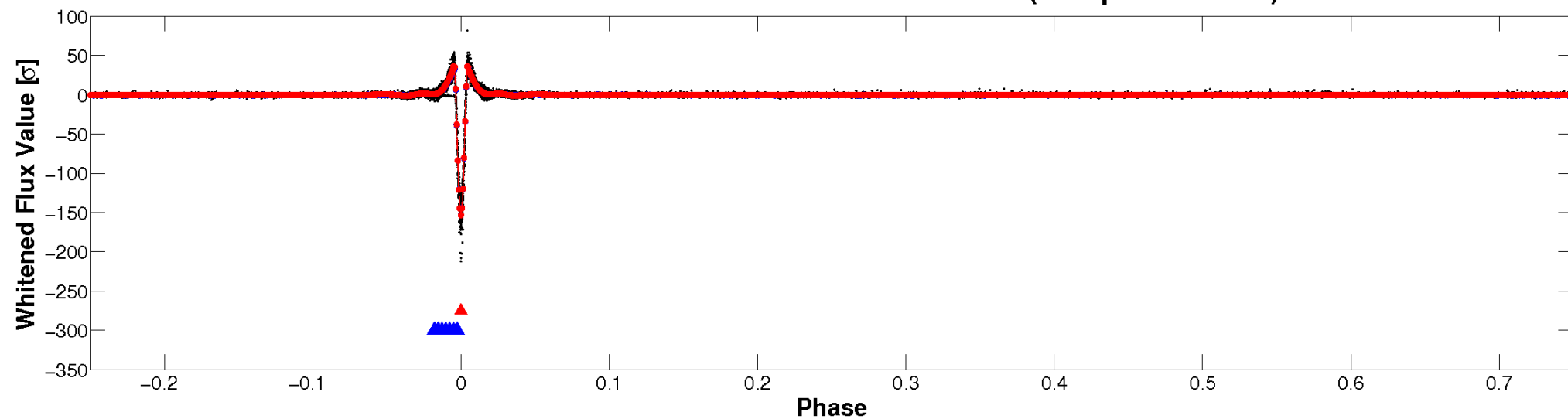


Non-Whitened Vs. Whitened Light Curve

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

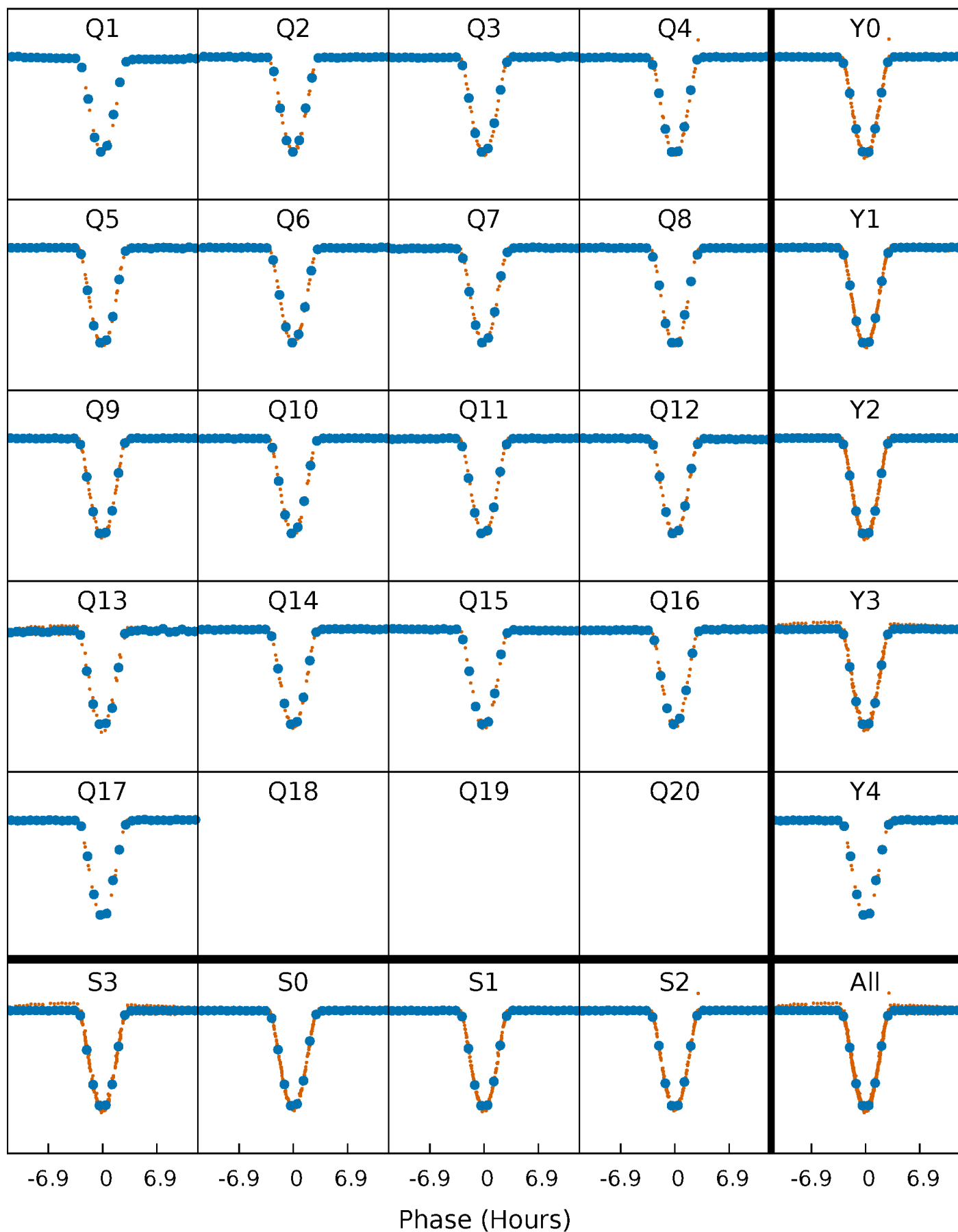


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



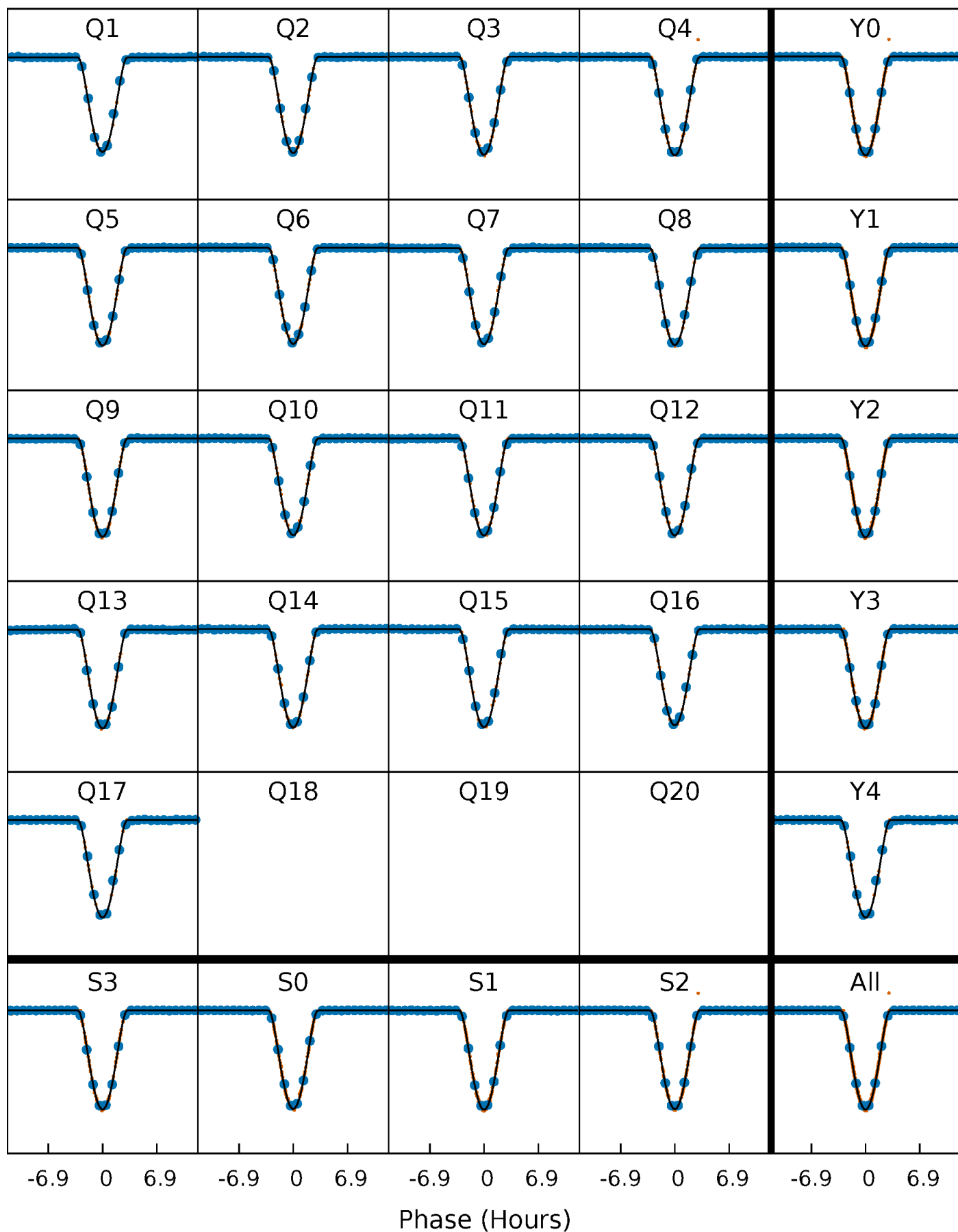
PDC Quarter-Phased Transit Curves

TCE 009426071-01 P= 28.714216 Days $T_0=153.894430$ (BKJD)



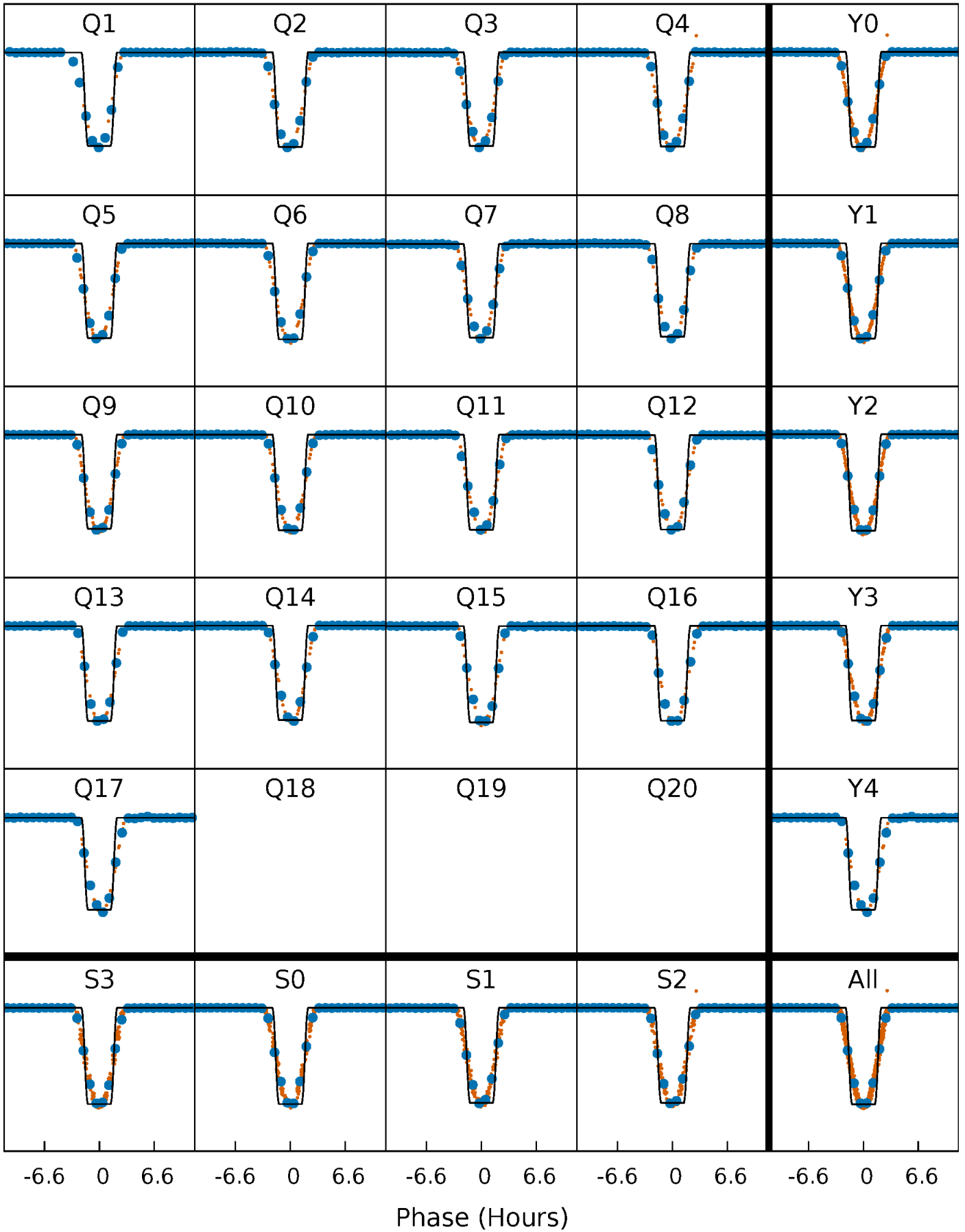
DV Quarter-Phased Transit Curves

TCE 009426071-01 P= 28.714216 Days $T_0=153.894430$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

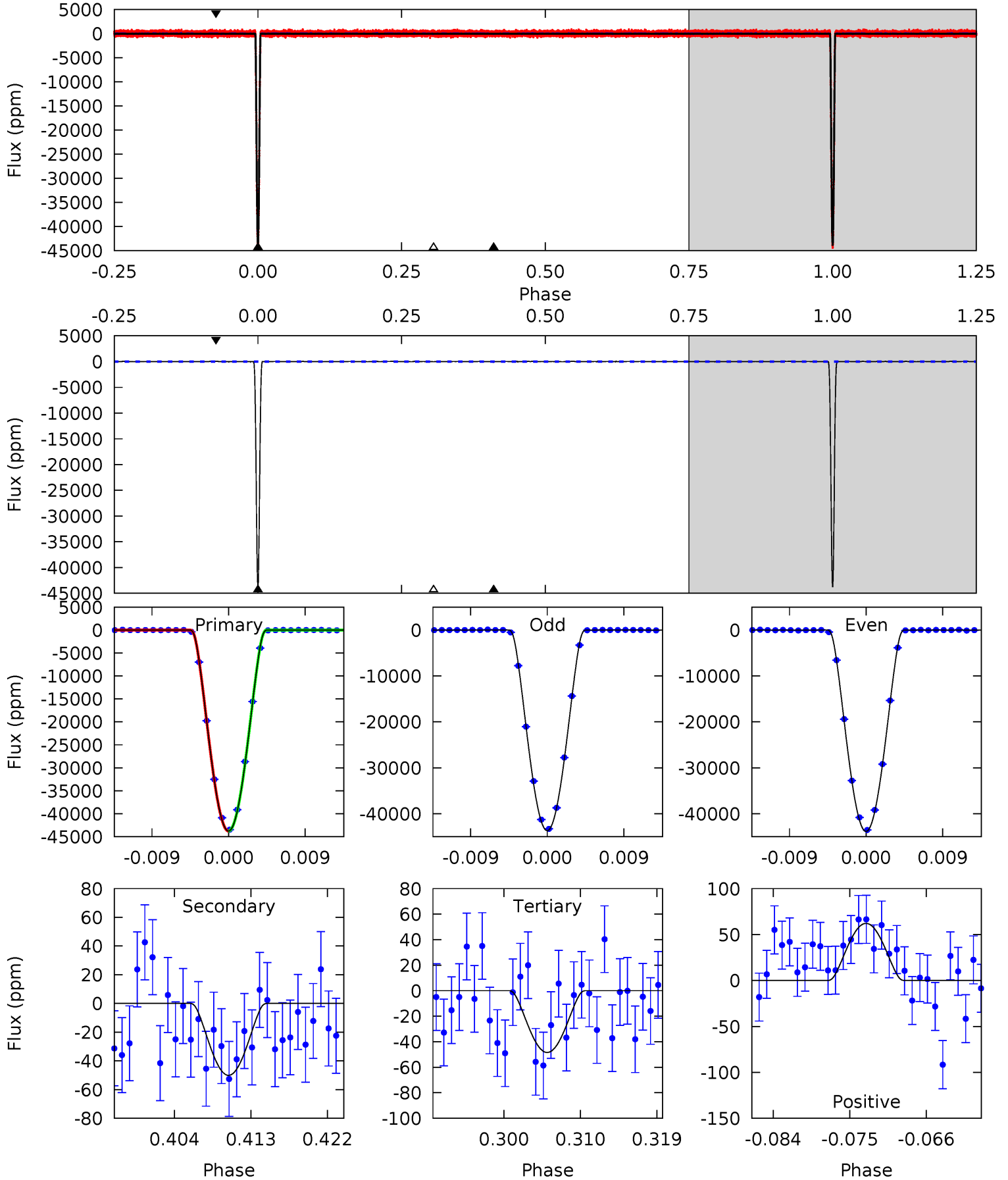
TCE 009426071-01 P= 28.713867 Days $T_0=153.902791$ (BKJD)



DV Model-Shift Uniqueness Test

009426071-01, P = 28.714216 Days, E = 125.180214 Days

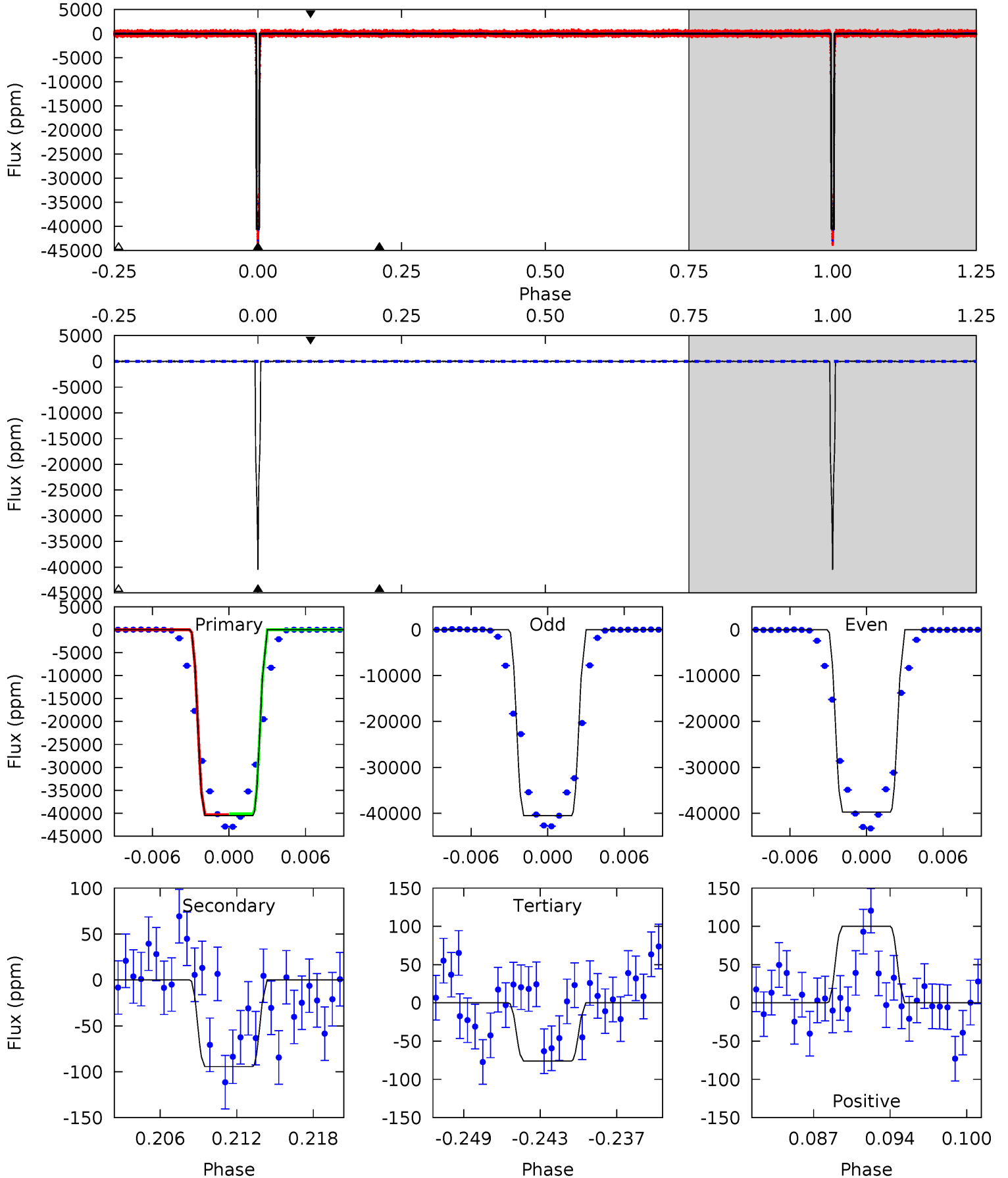
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4899	5.60	5.42	6.95	5.04	2.60	2.06	4893	4892	0.18	-1.35	9.94	1.00	0.00	1.46



Alt Model-Shift Uniqueness Test

009426071-01, P = 28.713867 Days, E = 125.188924 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2070	4.83	3.89	5.12	5.12	2.74	1.15	2066	2065	0.94	-0.29	20.1	1.00	0.00	4.36



Stellar Parameters For KIC 009426071

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6706^{+189}_{-236}	$4.226^{+0.132}_{-0.182}$	$-0.260^{+0.250}_{-0.300}$	$1.417^{+0.425}_{-0.283}$	$1.240^{+0.189}_{-0.189}$	$0.614^{+0.468}_{-0.309}$
	+3%/-4%	+3%/-4%	+96%/-115%	+30%/-20%	+15%/-15%	+76%/-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 009426071-01 / KOI 0706.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-50 ± 9	$44.22^{+6.90}_{-4.98}$	1116^{+85}_{-70}	1877^{+85}_{-141}	$0.525^{+0.173}_{-0.145}$
Alt.	-94 ± 20	$32.60^{+4.79}_{-3.71}$	1120^{+78}_{-69}	2303^{+71}_{-87}	$1.847^{+0.661}_{-0.564}$

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 $A_{obs} \gg 1.0$

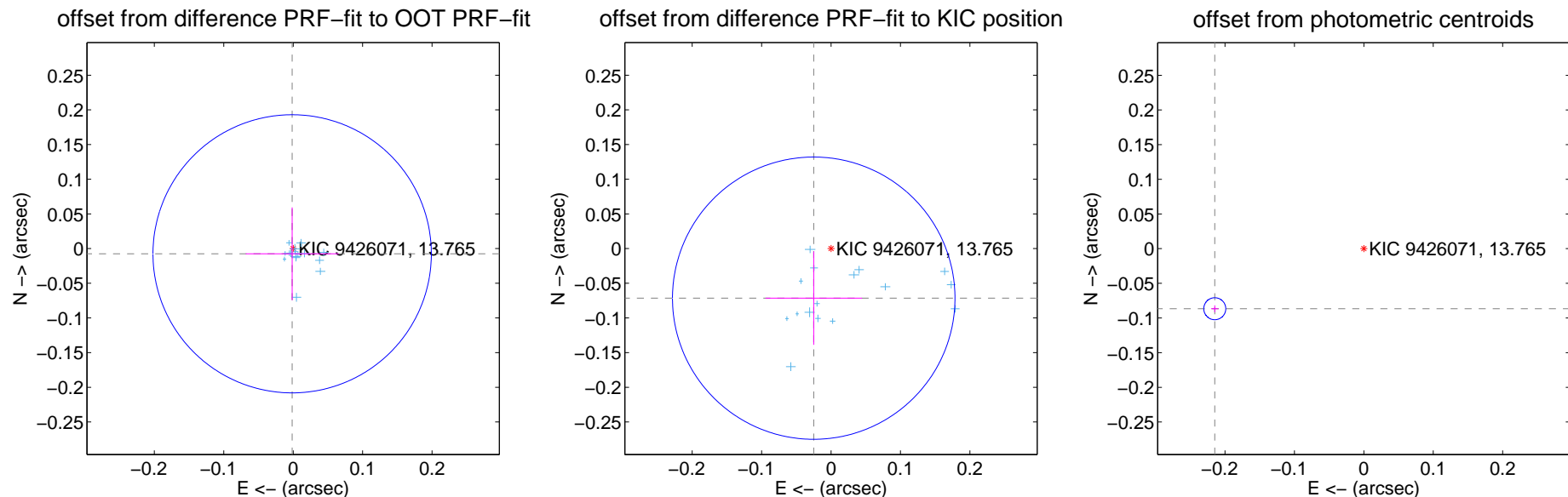
DV Centroid Data

Supplemental centroid analysis for 009426071-01. Kepler magnitude: 13.77. Transit SNR 2052.73

There are 16 quarters with good PRF difference image offsets

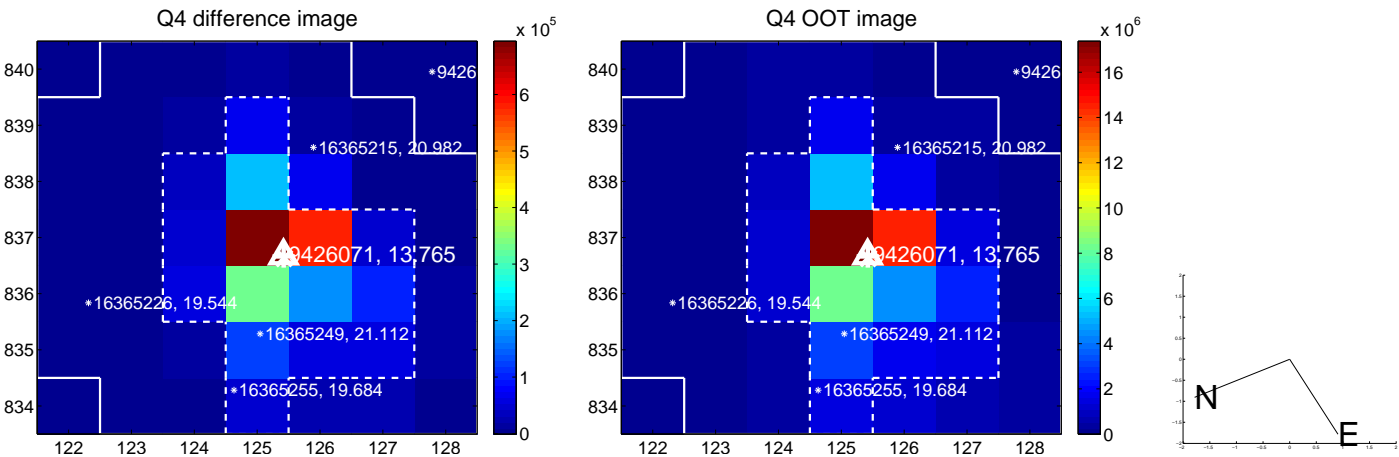
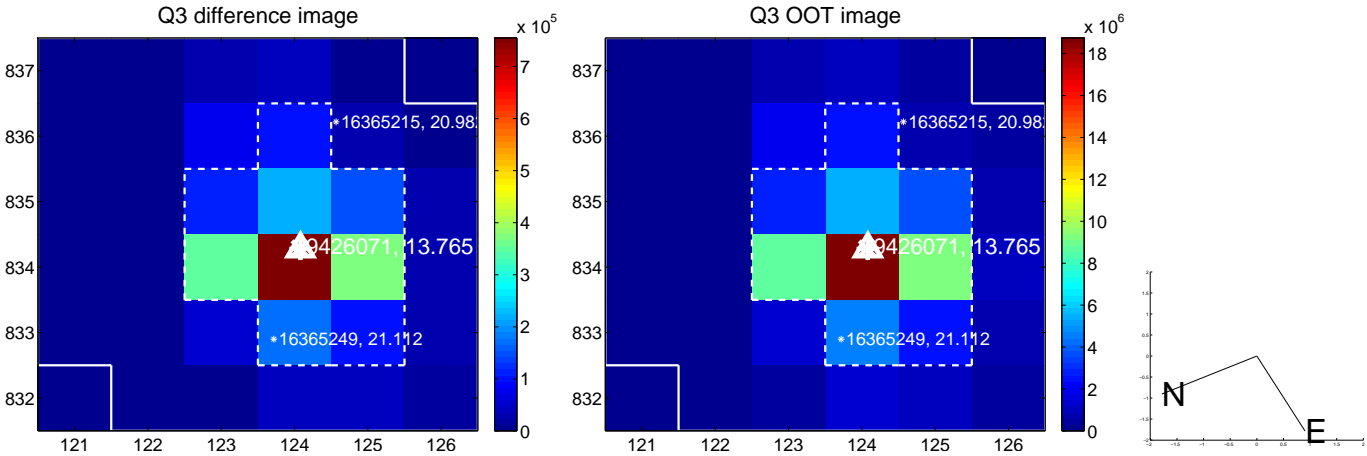
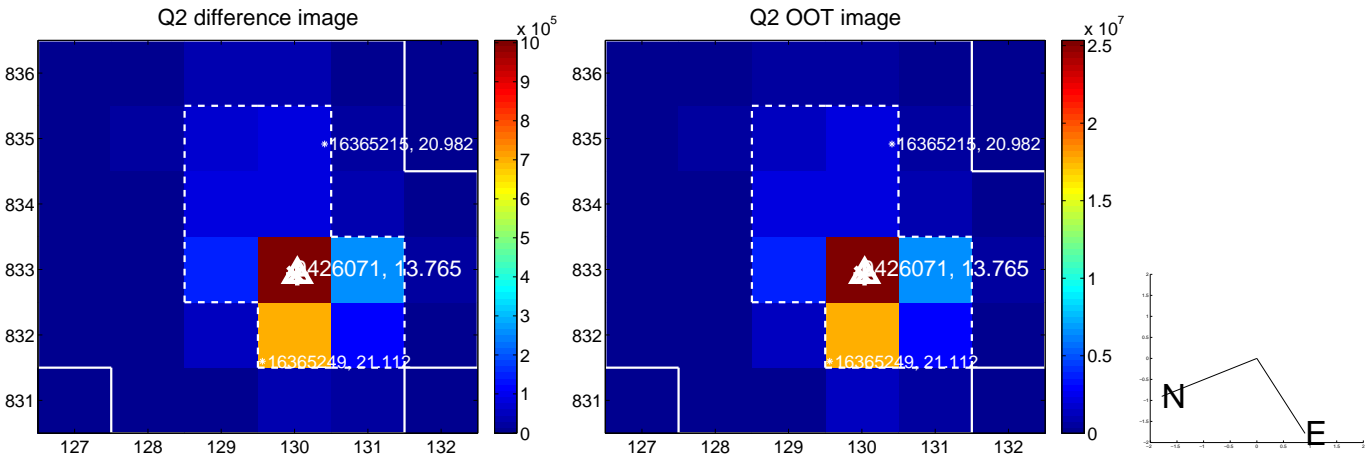
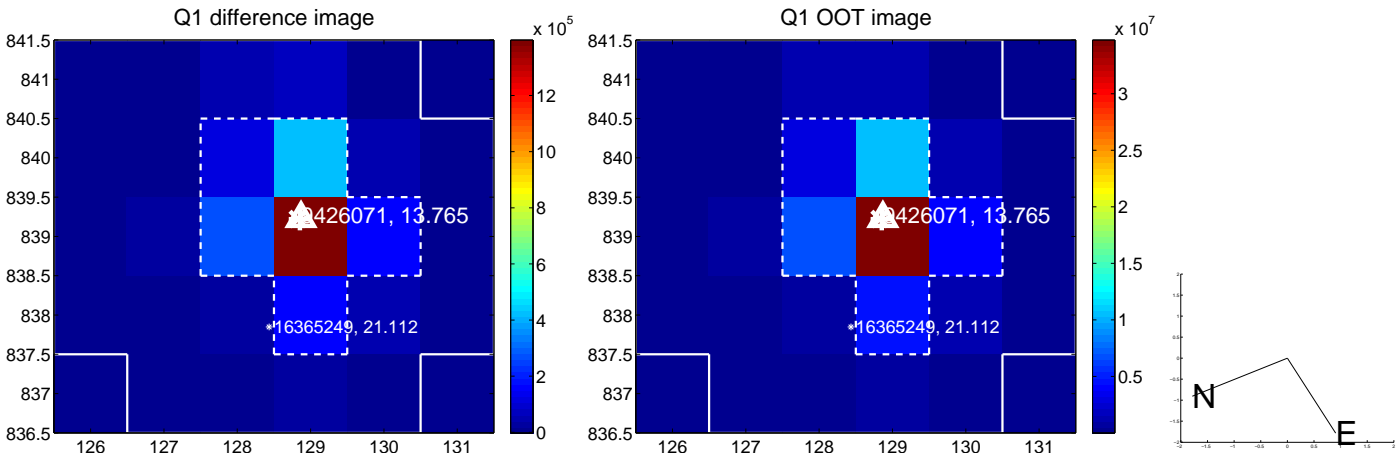
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.008 ± 0.067	0.11	0.001 ± 0.067	-0.008 ± 0.067
PRF-fit source offset from KIC position	0.076 ± 0.068	1.12	0.025 ± 0.069	-0.071 ± 0.067
photometric centroid source offset	0.23 ± 0.01	43.84	0.21 ± 0.01	-0.09 ± 0.00

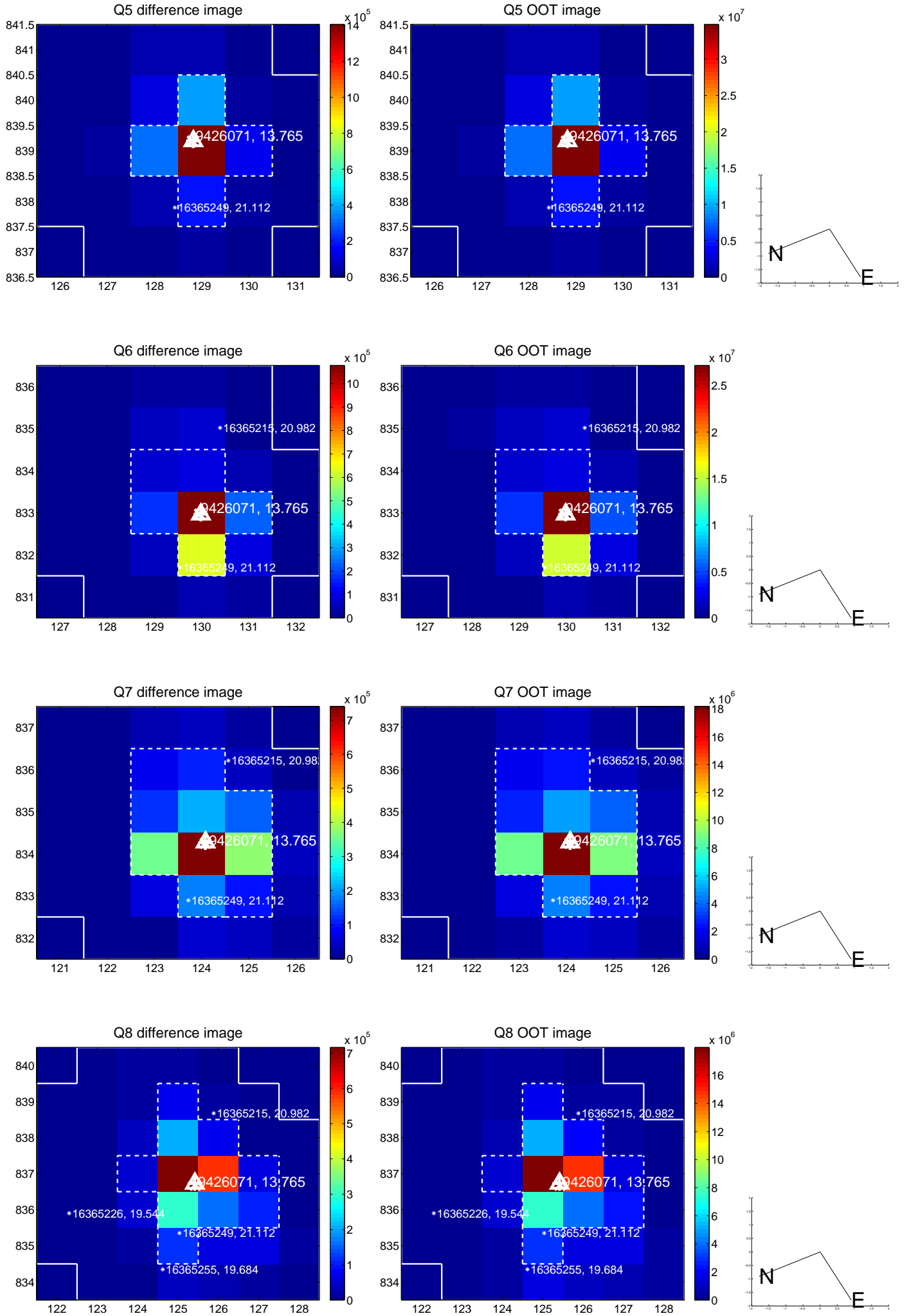


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

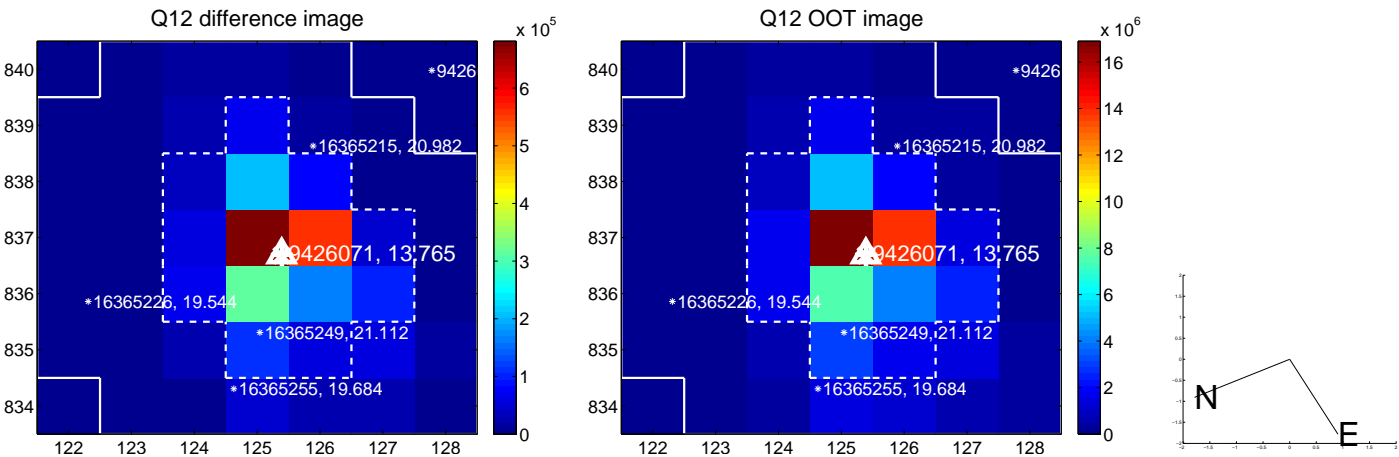
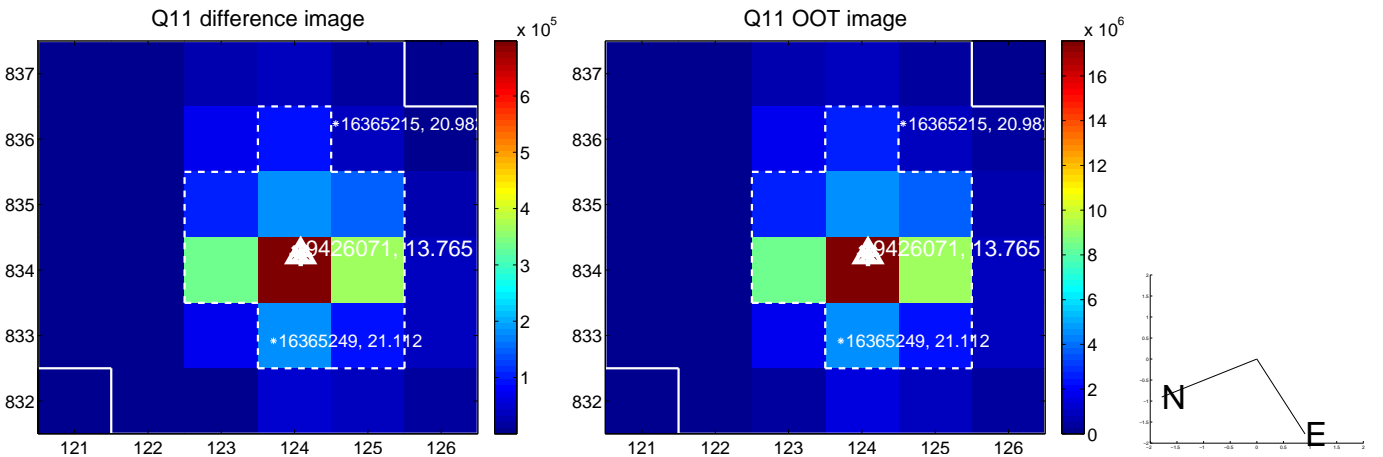
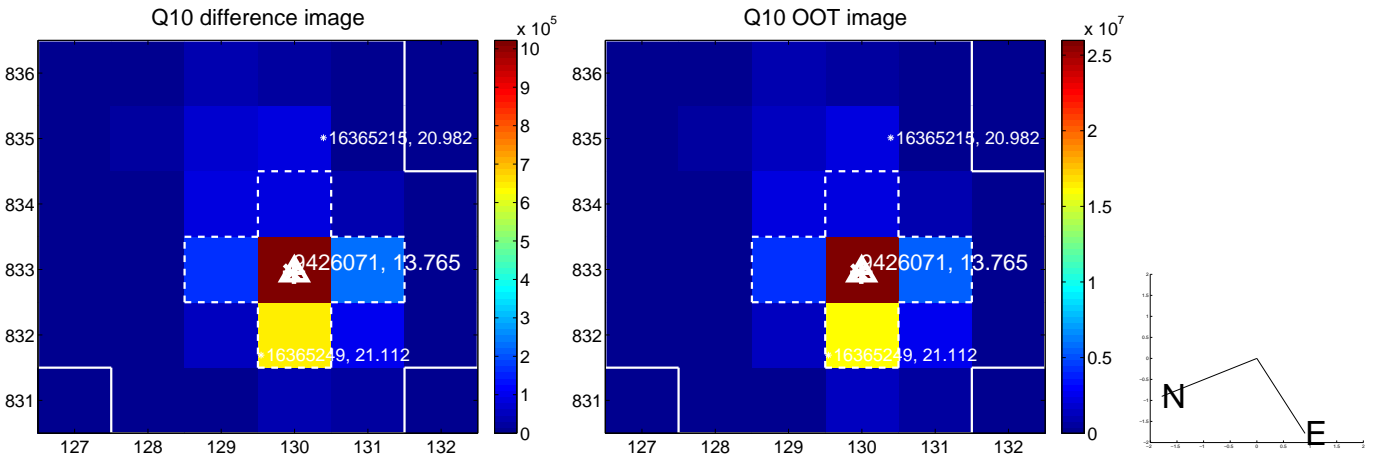
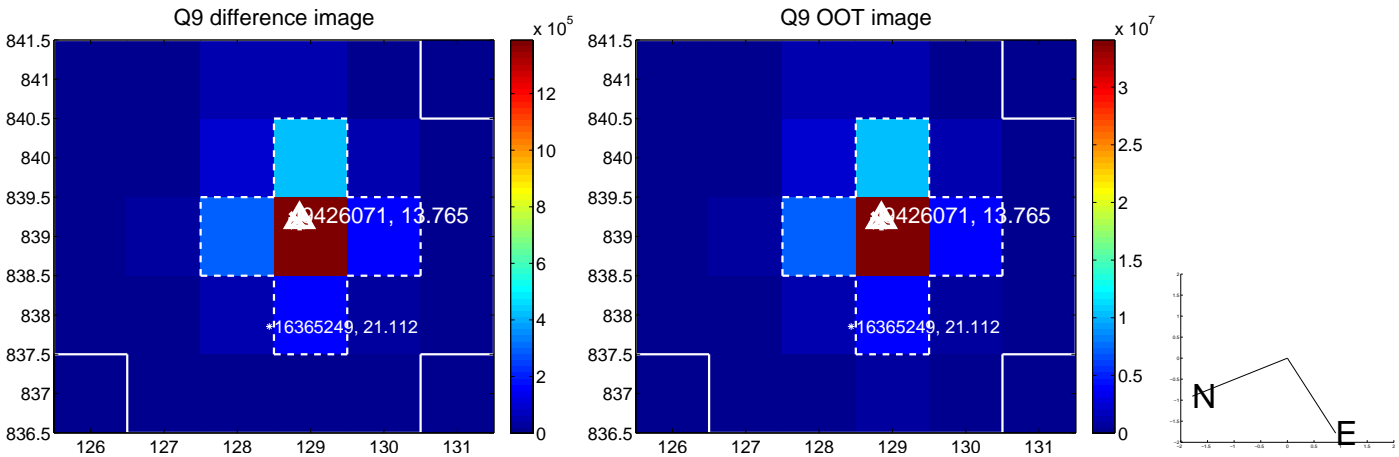
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



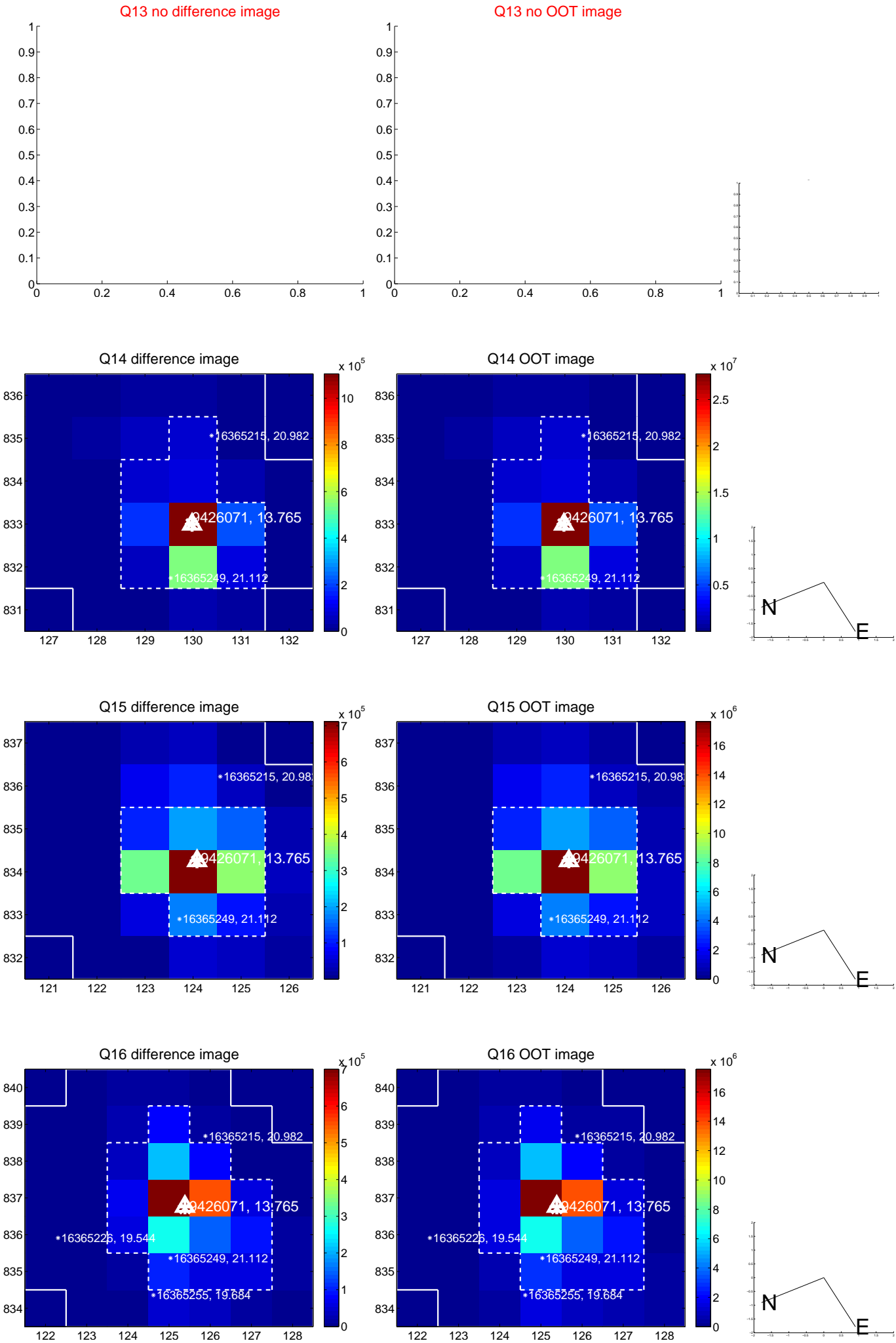
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



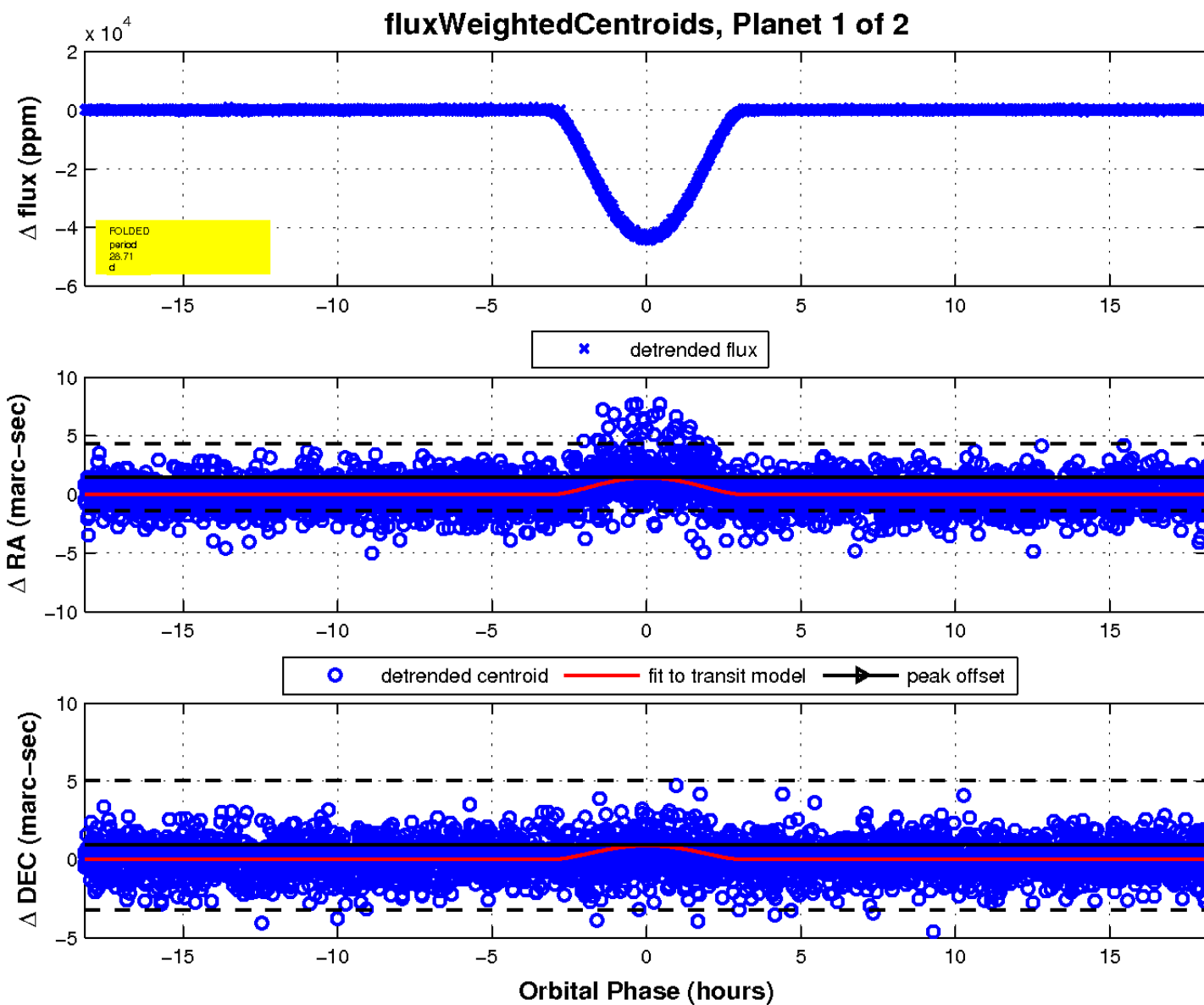
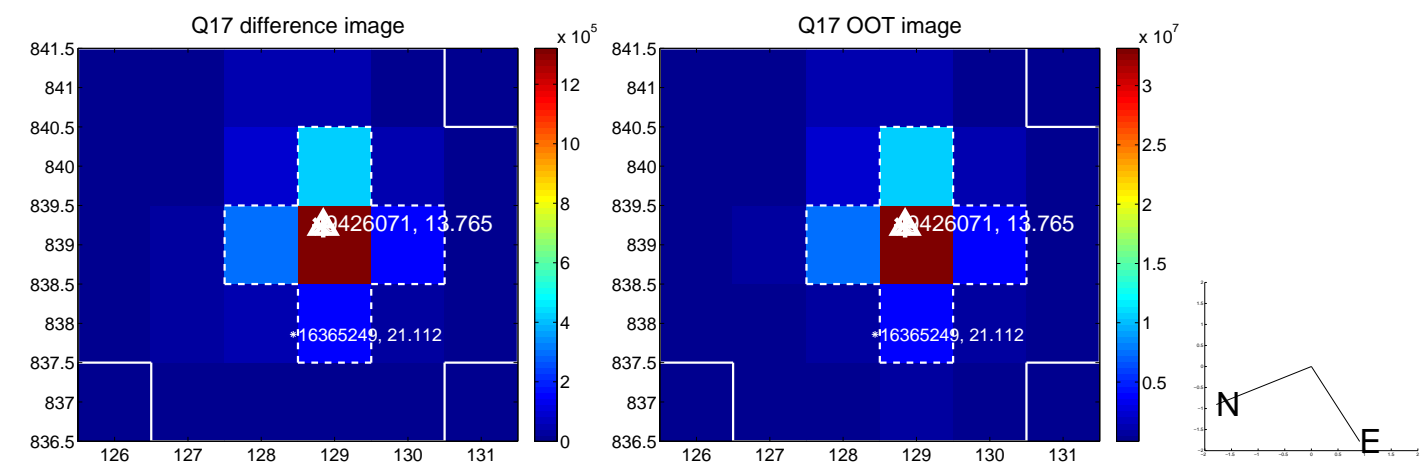
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UKIRT Image

Declination

