

KIC 003867593

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})
003867593-01	OBS	5023.01	73.338183	136.582726	115539.5	9.007	120.4	223.3	1.32	7276	69.90	30.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003867593-01	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.

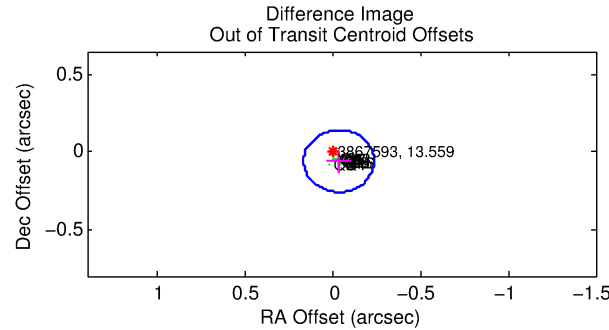
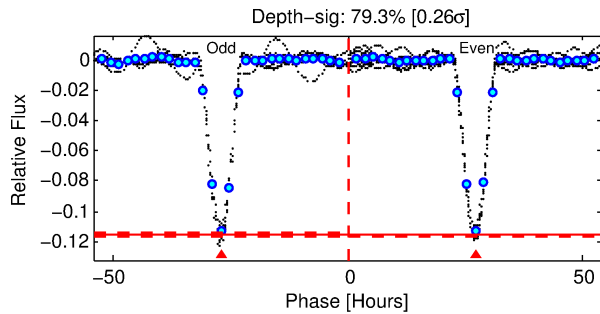
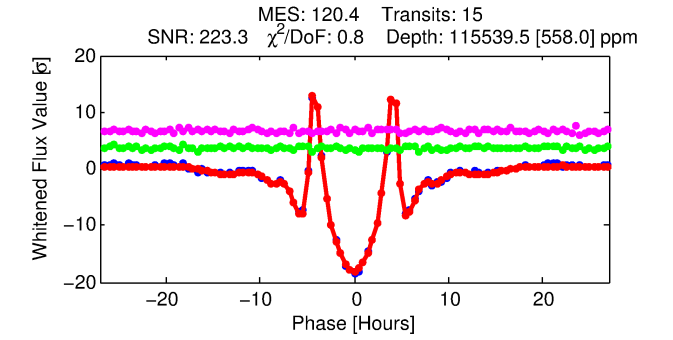
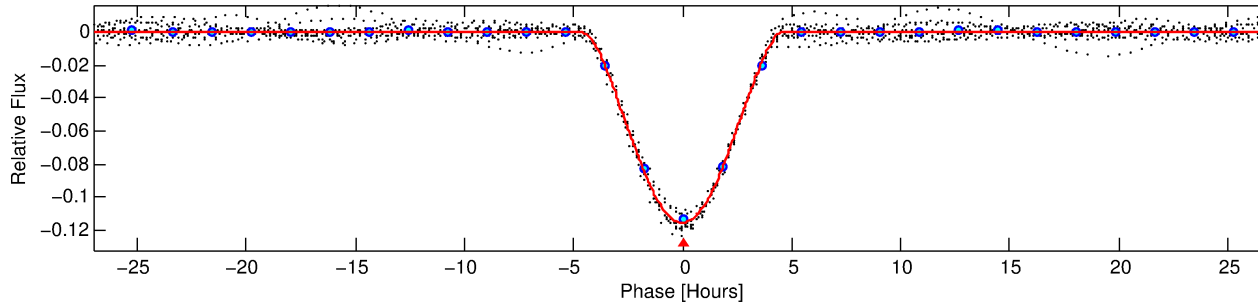
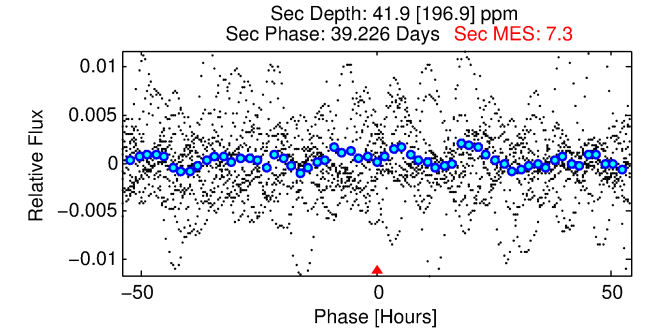
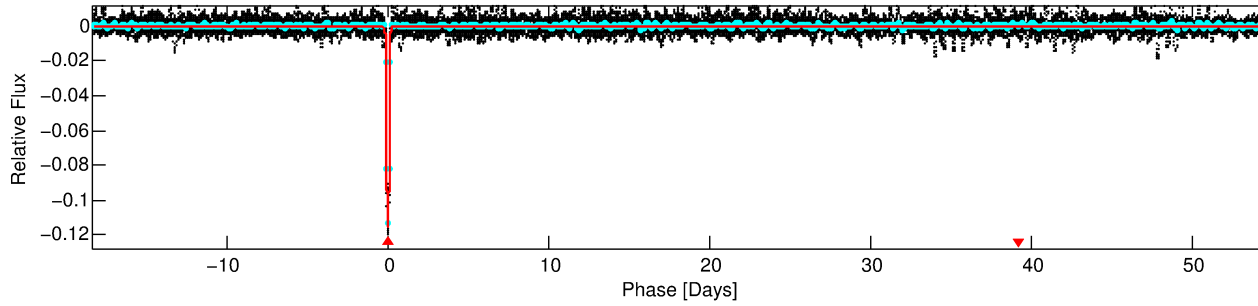
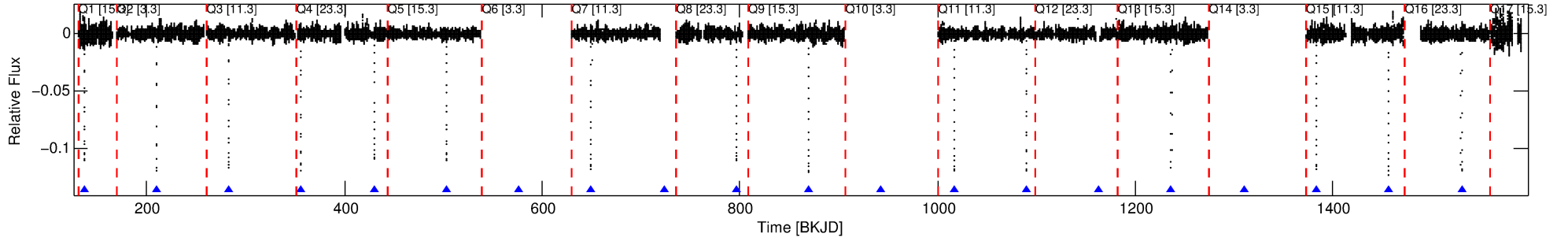
Ephemeris Match Information For 003867593-01

No Significant Match Found

DV One-Page Summary

KIC: 3867593 Candidate: 1 of 1 Period: 73.338 d
KOI: K05023.01 Corr: 0.995

Kp: 13.56 R*: 1.32 Rs Teff: 7276.0 K Logg: 4.32 Fe/H: -0.240



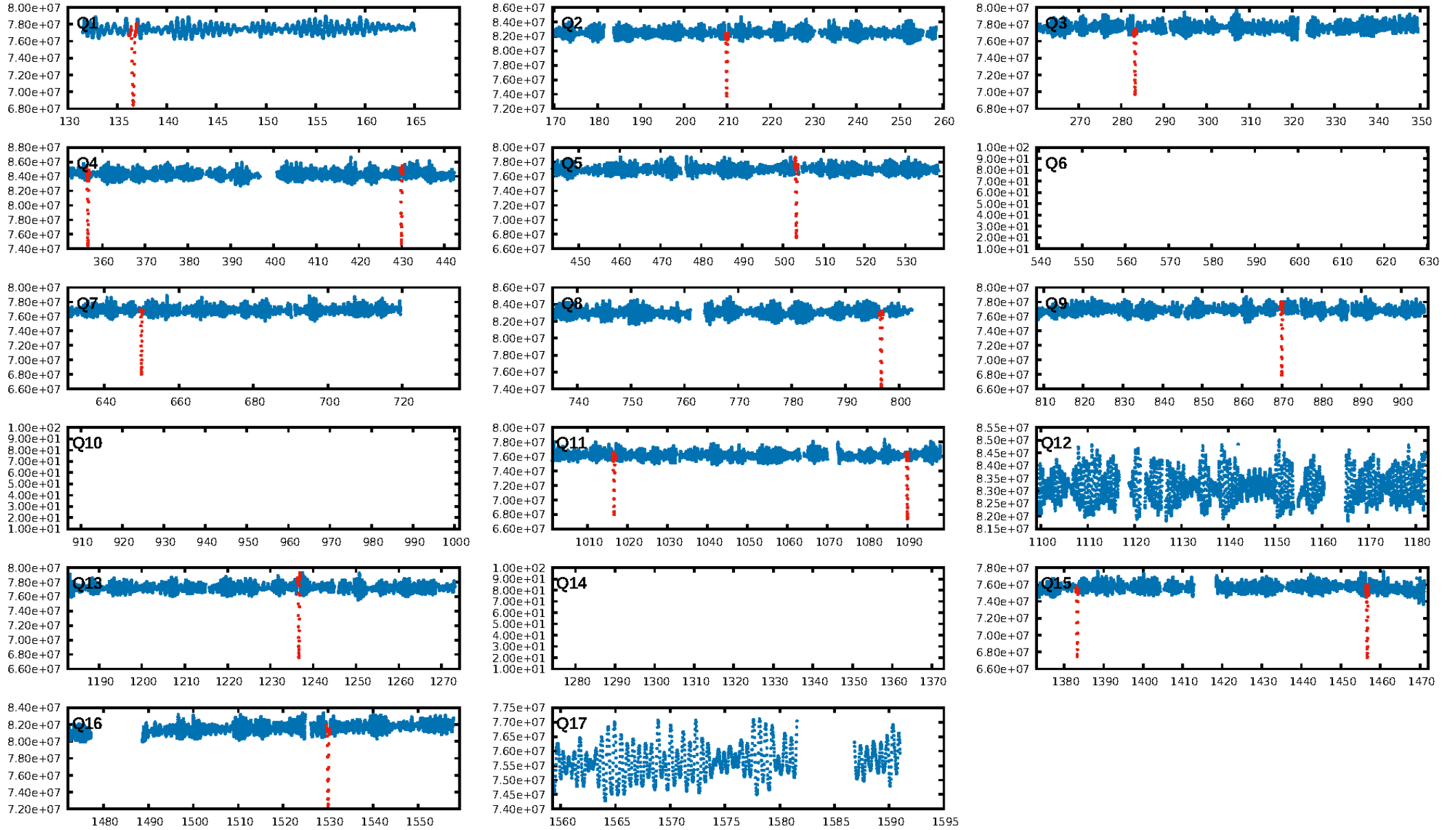
DV Fit Results:

Period = 73.33818 [0.00003] d
Epoch = 136.5827 [0.0003] BKJD
Rp/R* = 0.4849 [0.0742]
a/R* = 71.17 [0.75]
b = 0.95 [0.10]
Seff = 30.90 [14.71]
Teq = 601 [72] K
Rp = 69.90 [29.13] Re
a = 0.3766 [0.1182] AU
Ag = 0.67 [3.16] [-0.10σ]
Teffp = 841 [991] K [0.24σ]

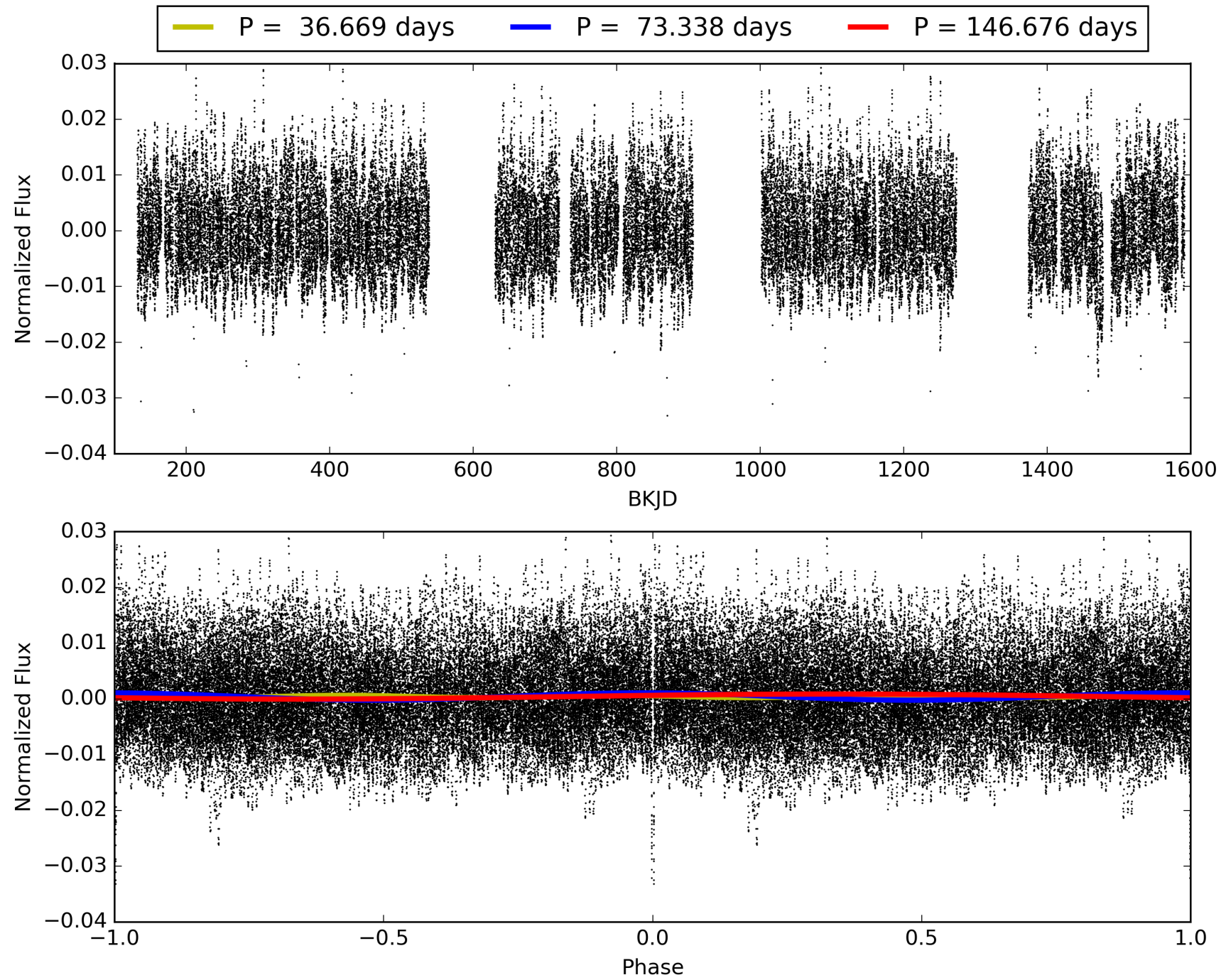
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: 1.504
Centroid-sig: 0.0%
Centroid-so: 0.074 arcsec [16.16σ]
OotOffset-rm: 0.068 arcsec [1.01σ]
KicOffset-rm: 0.108 arcsec [1.61σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

TCE 003867593-01, PDC Light Curves

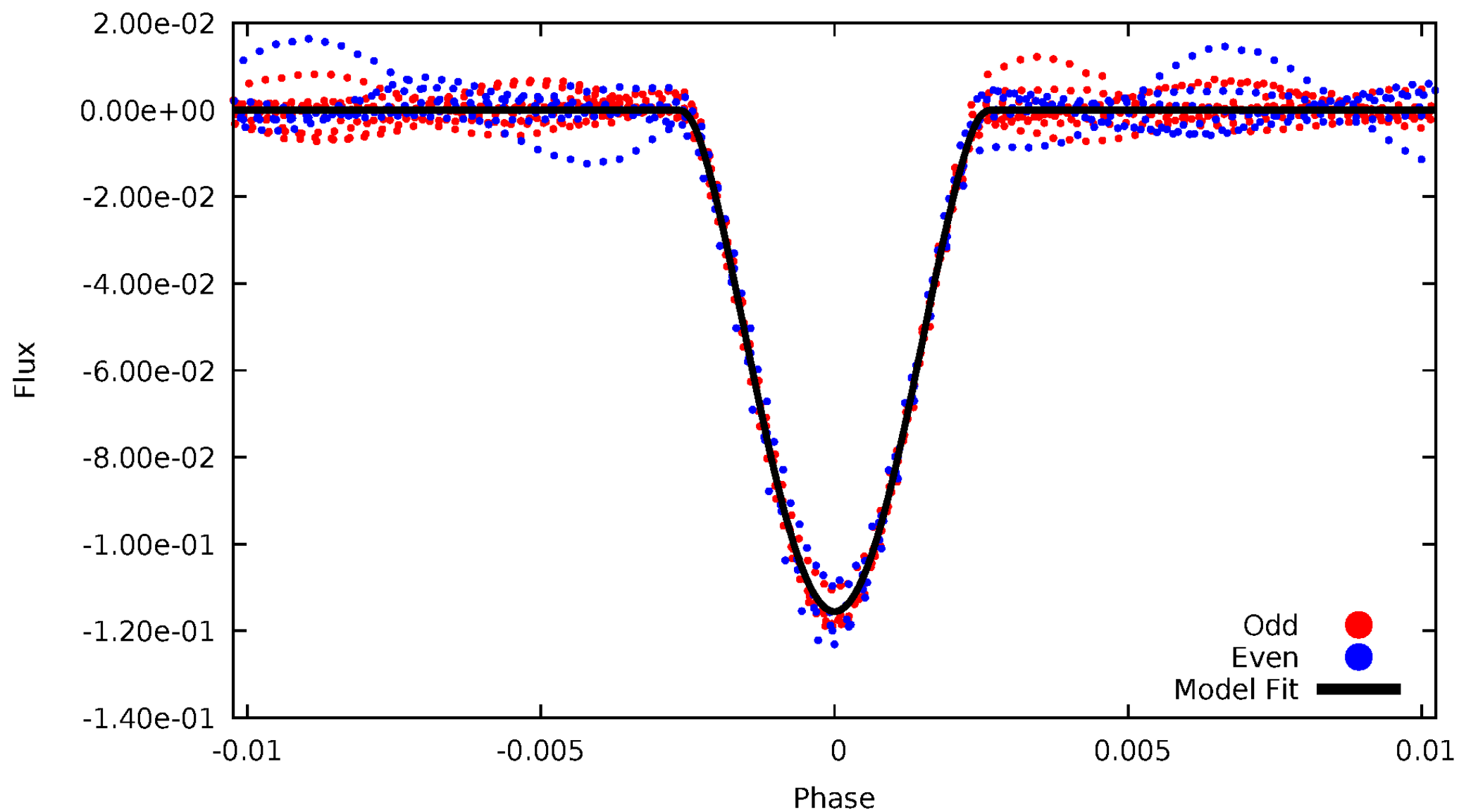


TCE 003867593-01



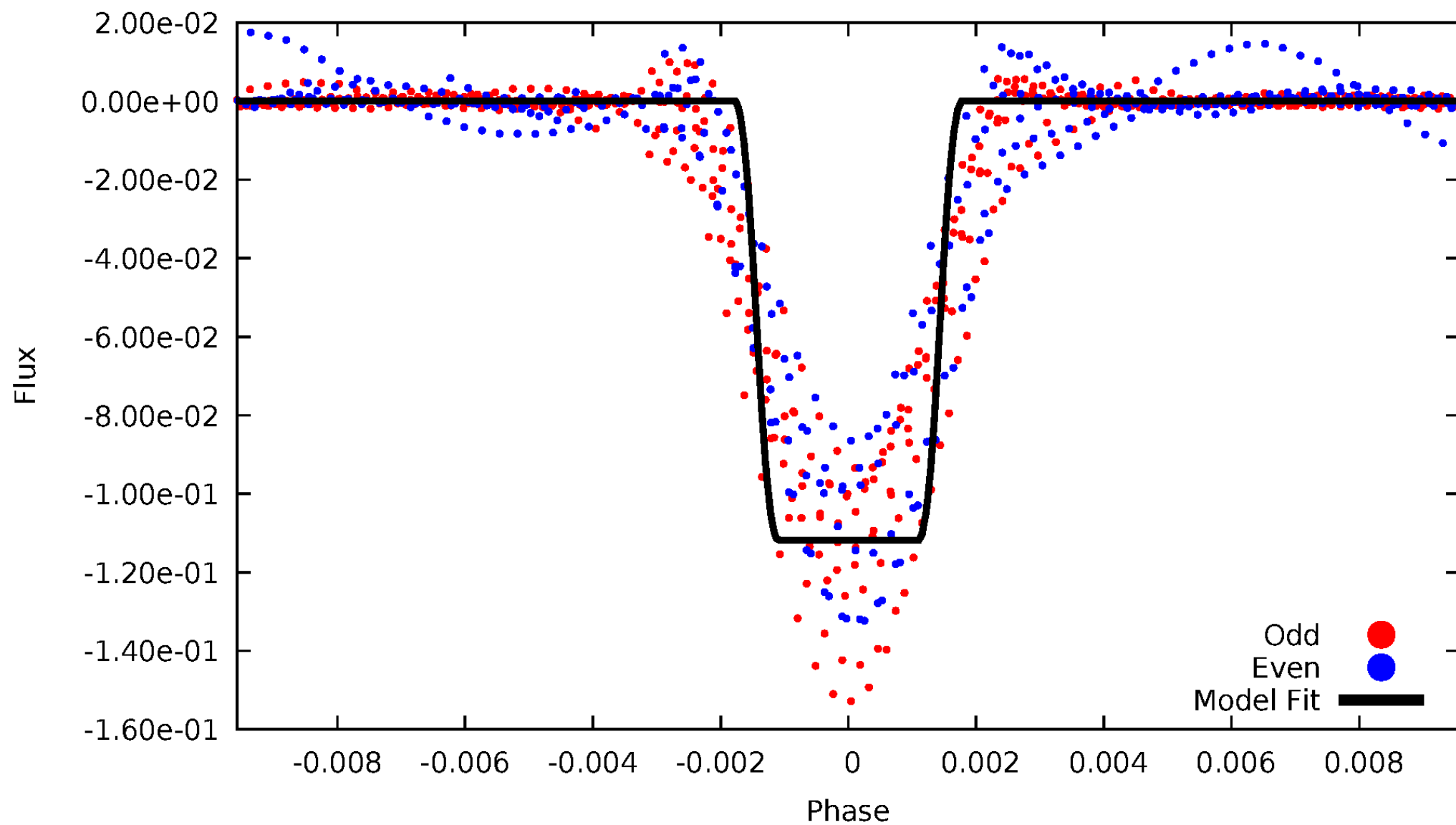
DV Odd/Even

TCE 003867593-01



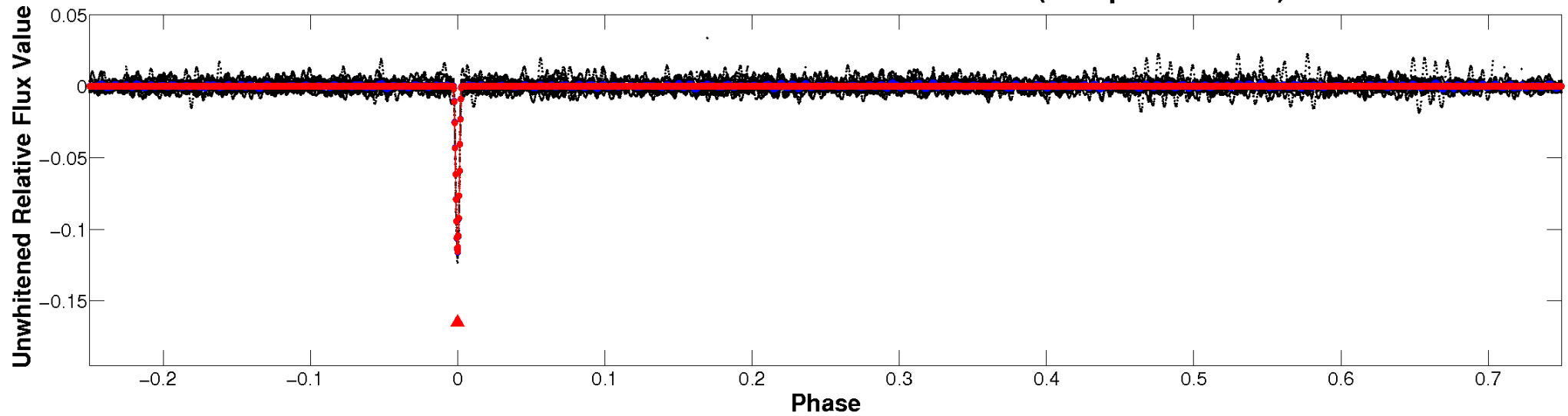
ALT Odd/Even

TCE 003867593-01

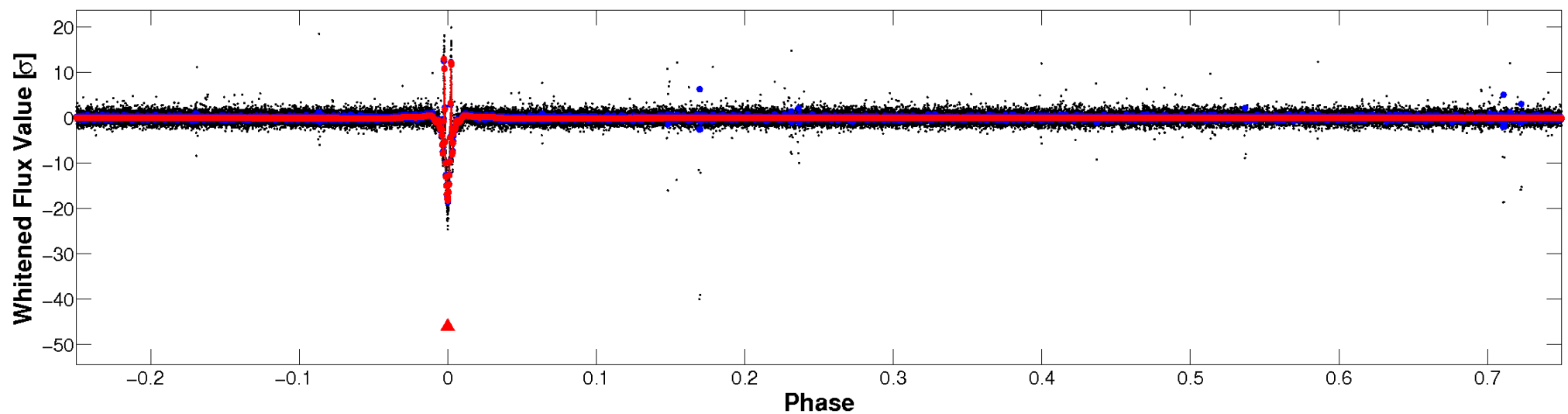


Non-Whitened Vs. Whitened Light Curve

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

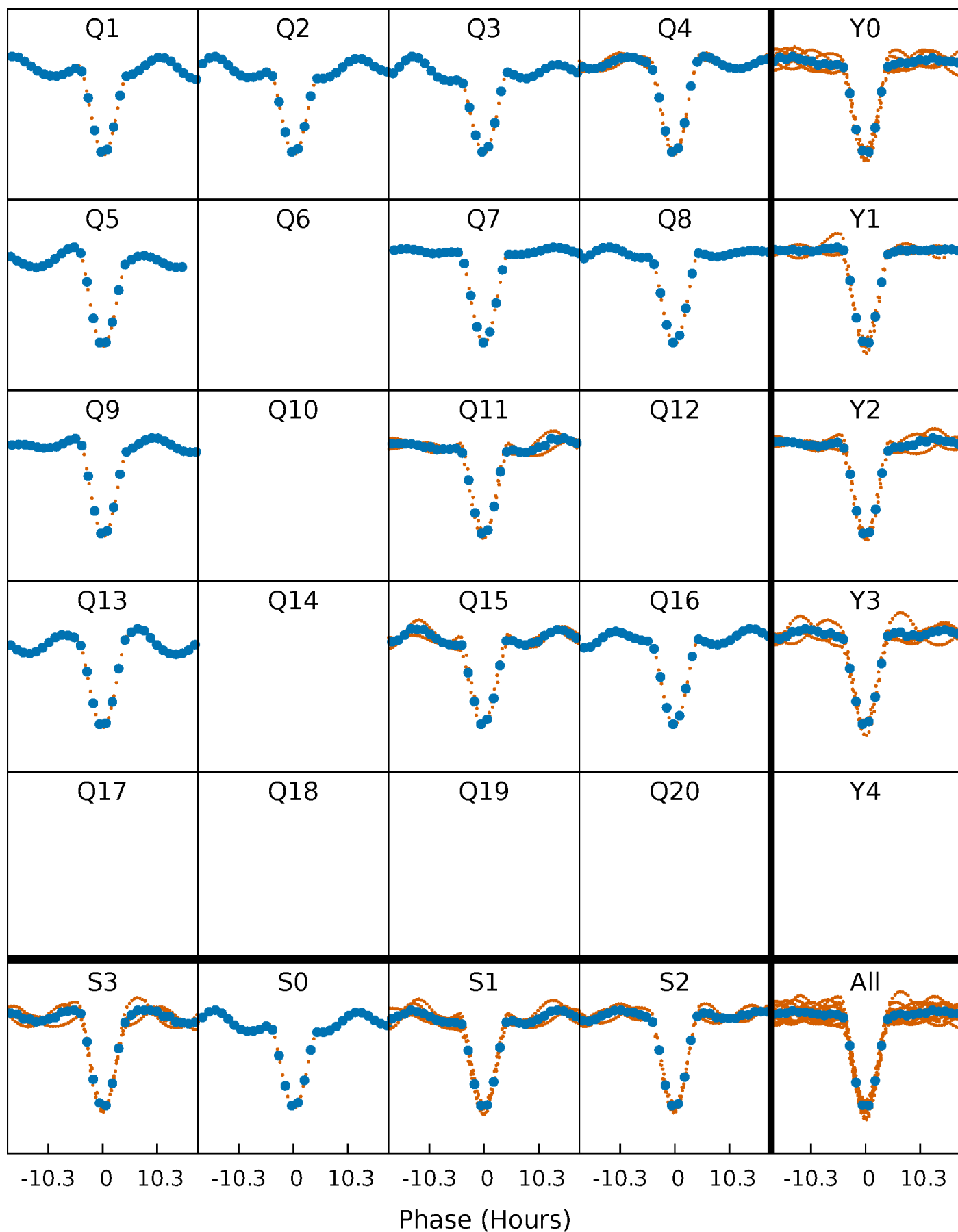


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



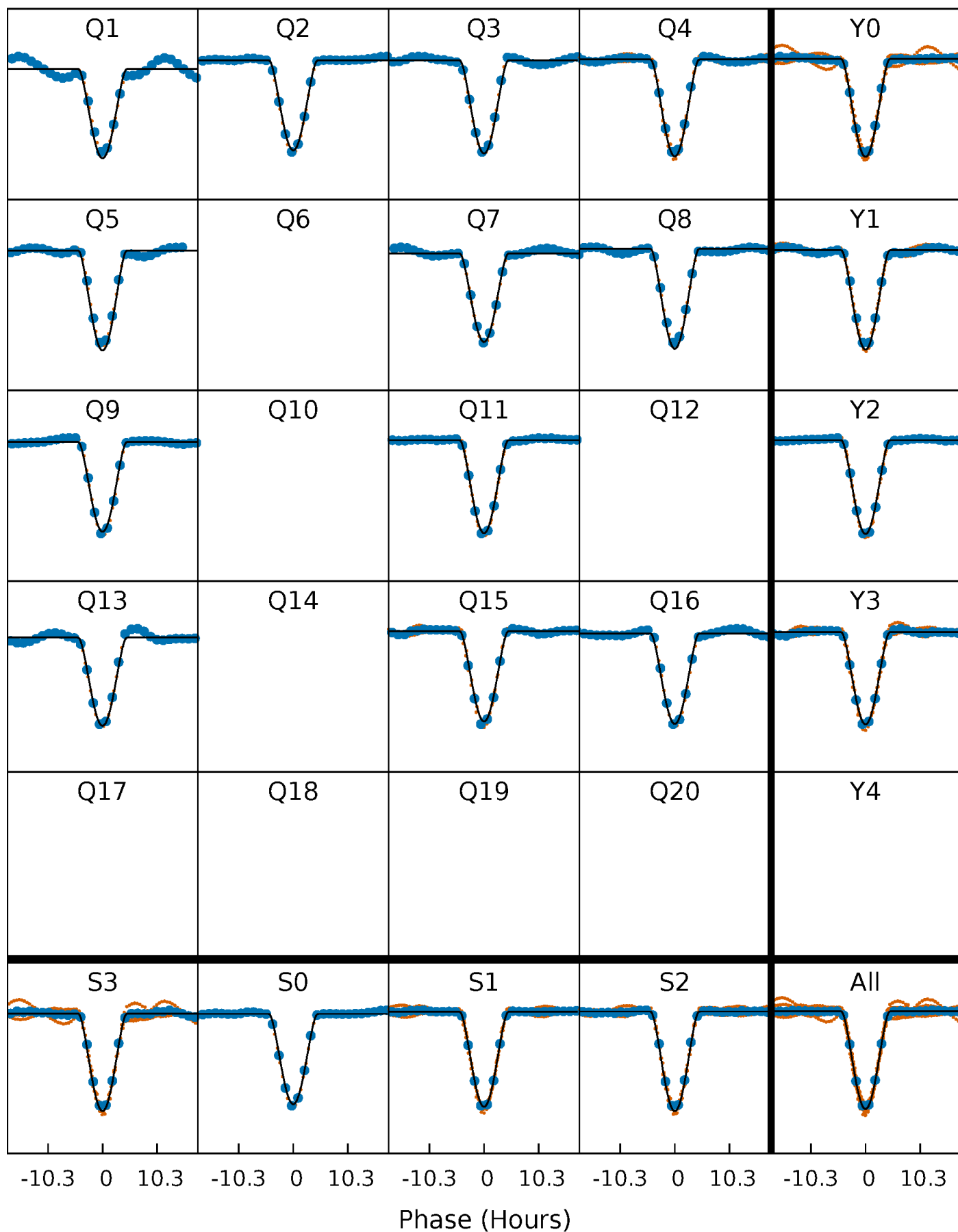
PDC Quarter-Phased Transit Curves

TCE 003867593-01 P= 73.338183 Days $T_0=136.582726$ (BKJD)



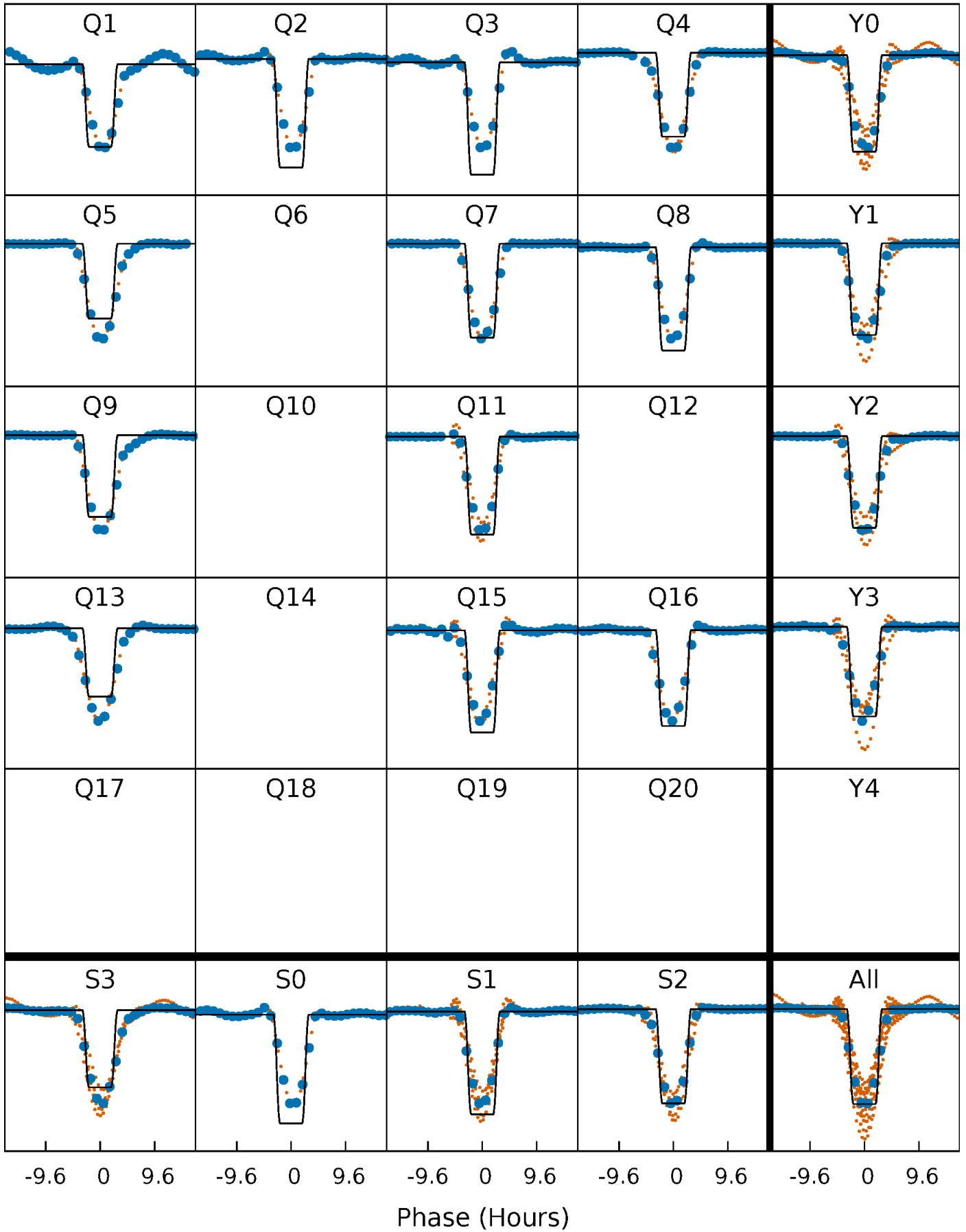
DV Quarter-Phased Transit Curves

TCE 003867593-01 P= 73.338183 Days $T_0=136.582726$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

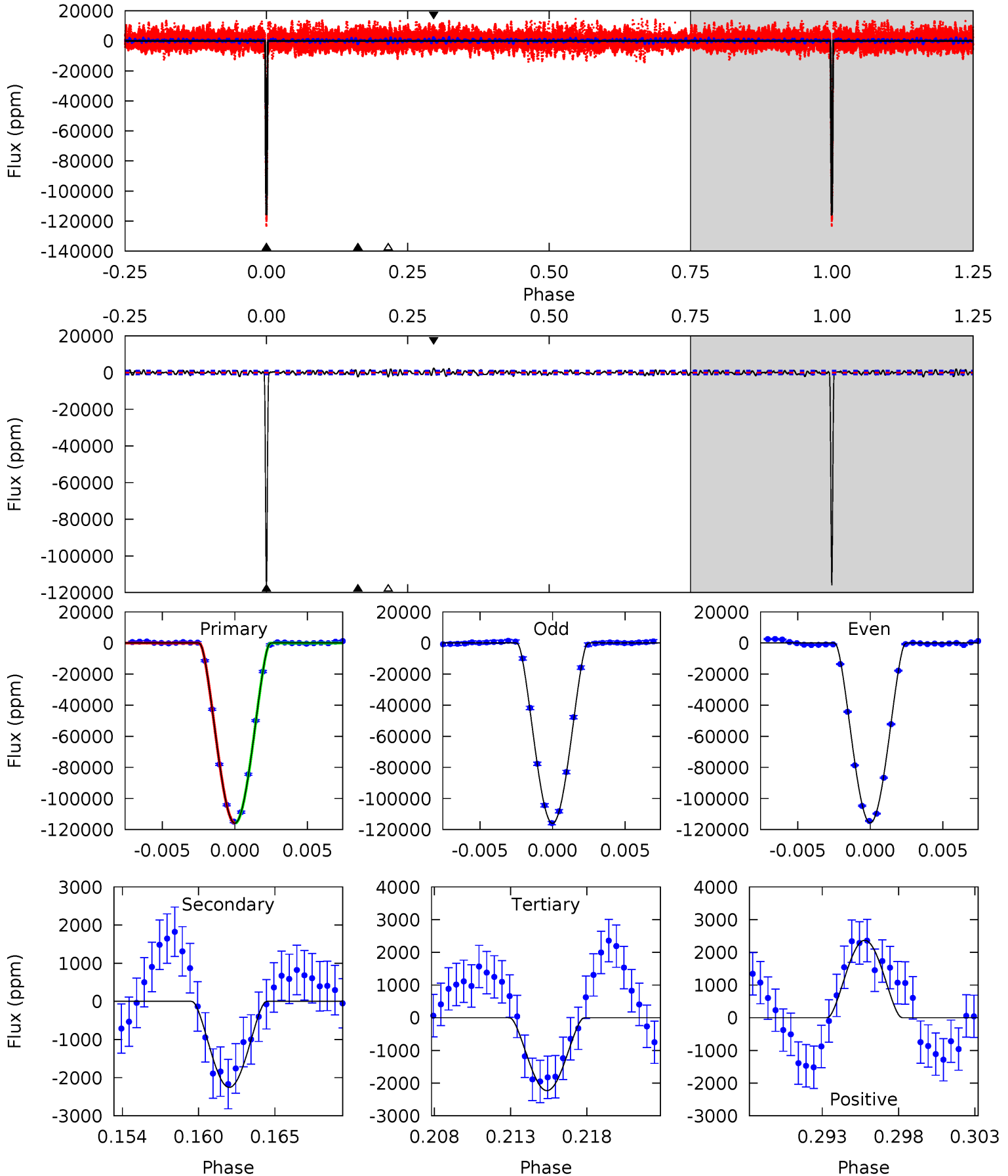
TCE 003867593-01 P= 73.339214 Days $T_0=136.571654$ (BKJD)



DV Model-Shift Uniqueness Test

003867593-01, P = 73.338183 Days, E = 63.244543 Days

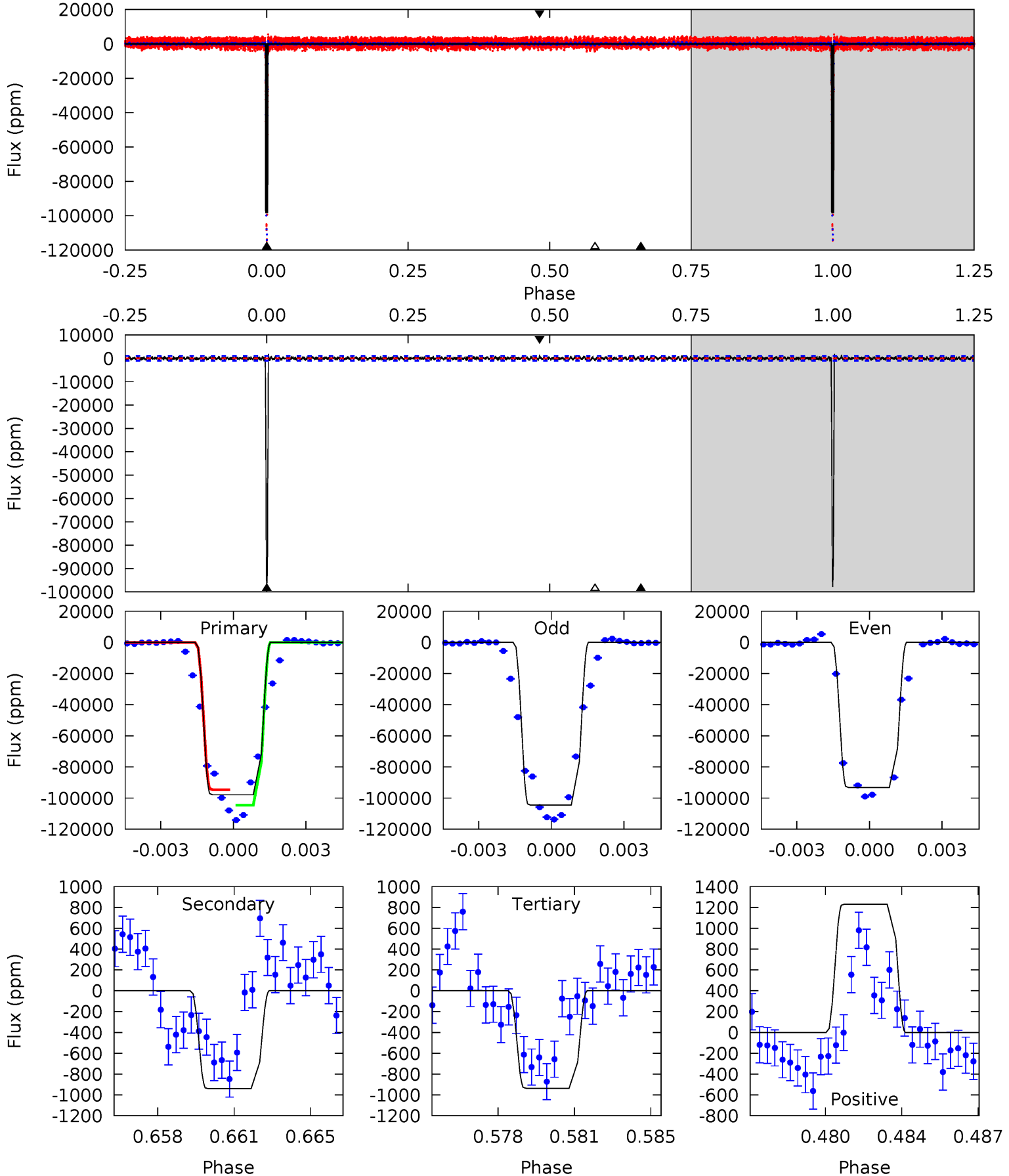
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
590.6	11.5	11.4	12.1	5.15	2.79	3.61	579.3	578.6	0.13	-0.57	0.87	0.99	0.02	0.14



Alt Model-Shift Uniqueness Test

003867593-01, P = 73.339214 Days, E = 63.232440 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
524.3	5.03	5.01	6.59	5.23	2.92	1.54	519.2	517.7	0.02	-1.56	29.2	1.02	0.02	0



Stellar Parameters For KIC 003867593

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7276^{+203}_{-330}	$4.318^{+0.072}_{-0.232}$	$-0.240^{+0.250}_{-0.350}$	$1.321^{+0.512}_{-0.160}$	$1.342^{+0.225}_{-0.184}$	$0.819^{+0.258}_{-0.456}$
	+3%/-5%	+2%/-5%	+104%/-146%	+39%/-12%	+17%/-14%	+31%/-56%
Source	KIC0	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 003867593-01 / KOI 5023.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2256 ± 196	$74.00^{+17.37}_{-15.10}$	854^{+73}_{-50}	2937^{+159}_{-134}	32^{+19}_{-11}
Alt.	-940 ± 187	$51.25^{+14.63}_{-12.38}$	854^{+67}_{-50}	2864^{+230}_{-185}	27^{+21}_{-11}

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

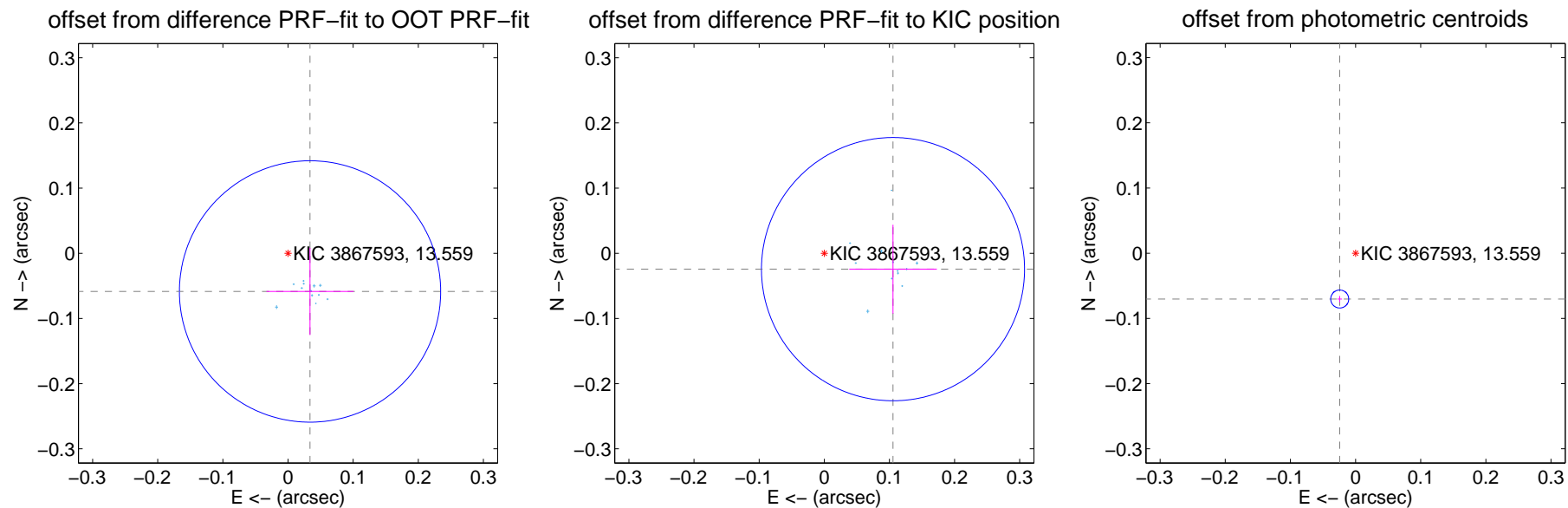
DV Centroid Data

Supplemental centroid analysis for 003867593-01. Kepler magnitude: 13.56. Transit SNR 223.28

There are 12 quarters with good PRF difference image offsets

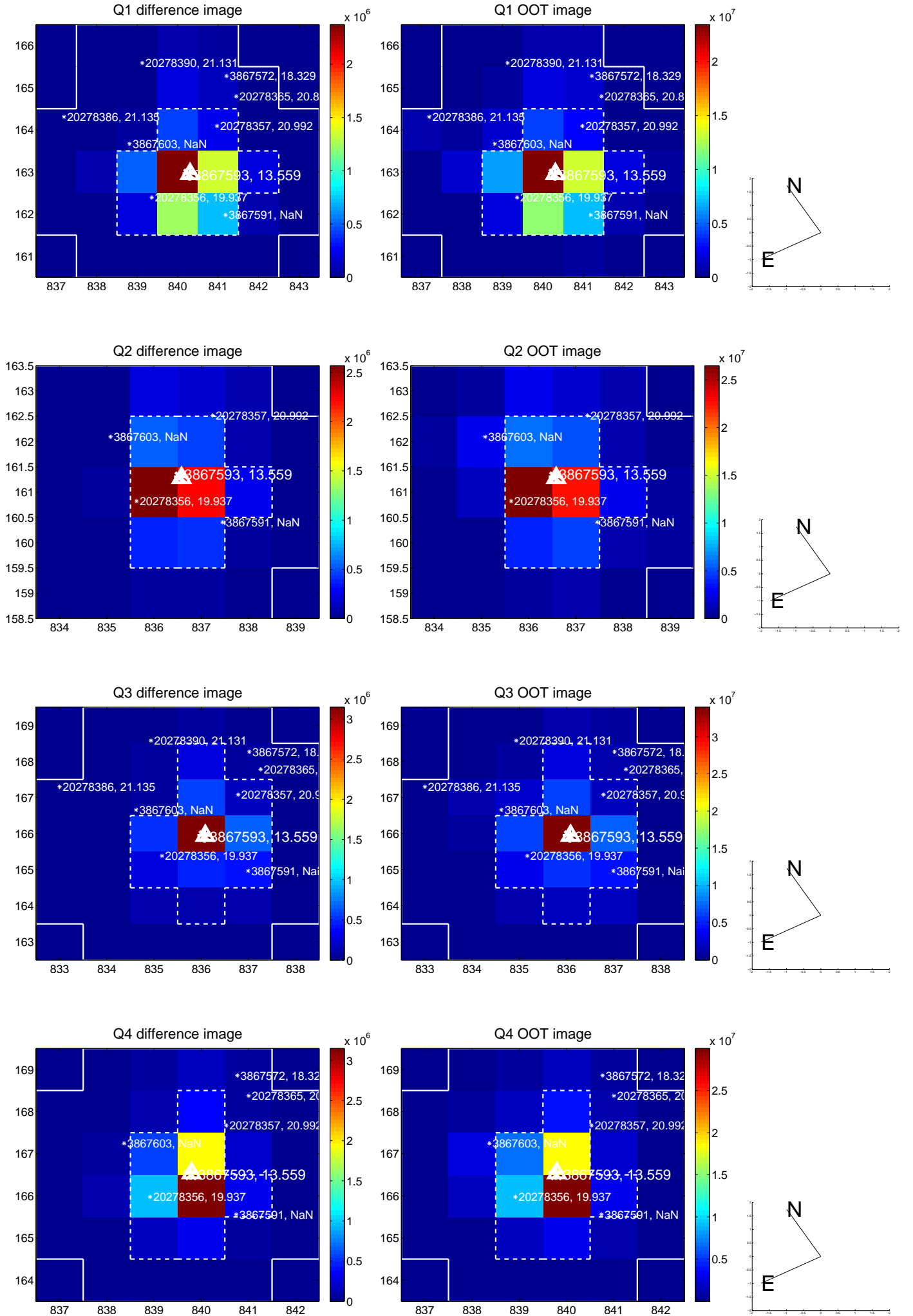
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.068 ± 0.067	1.01	-0.034 ± 0.067	-0.059 ± 0.067
PRF-fit source offset from KIC position	0.108 ± 0.067	1.61	-0.105 ± 0.067	-0.024 ± 0.068
photometric centroid source offset	0.07 ± 0.00	16.16	0.02 ± 0.00	-0.07 ± 0.00

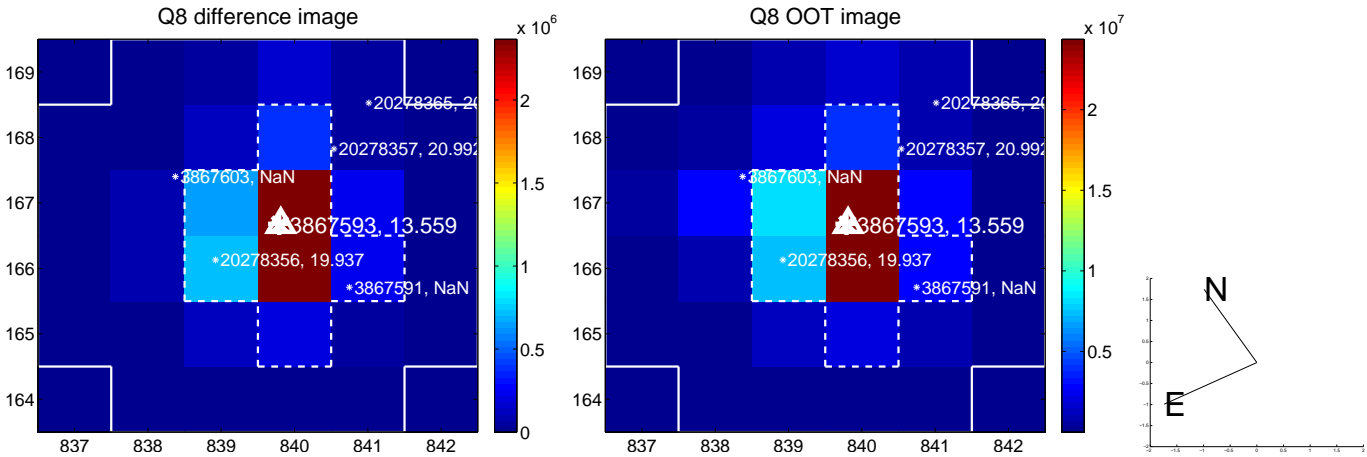
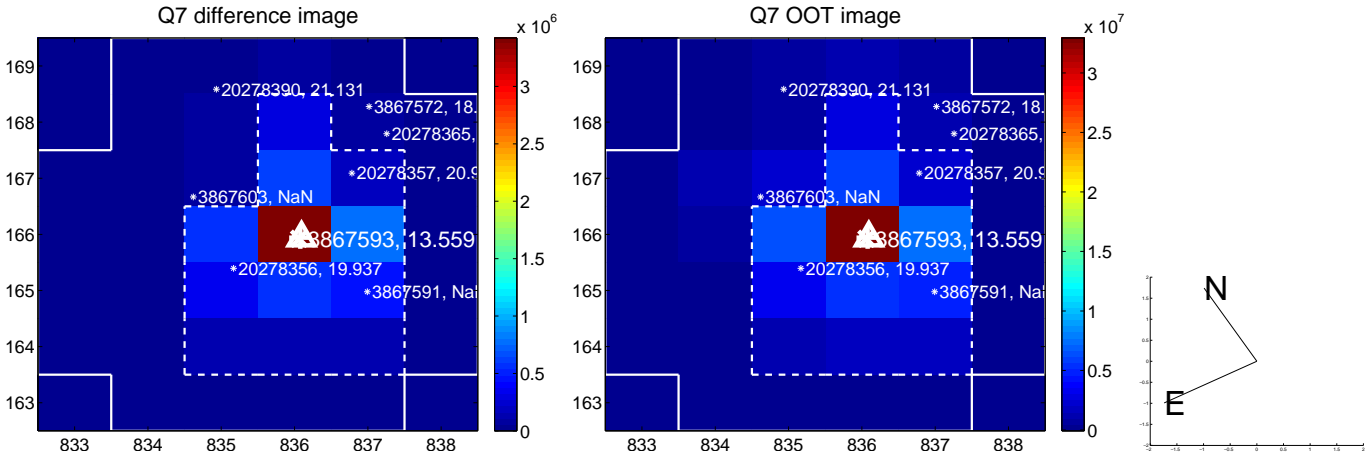
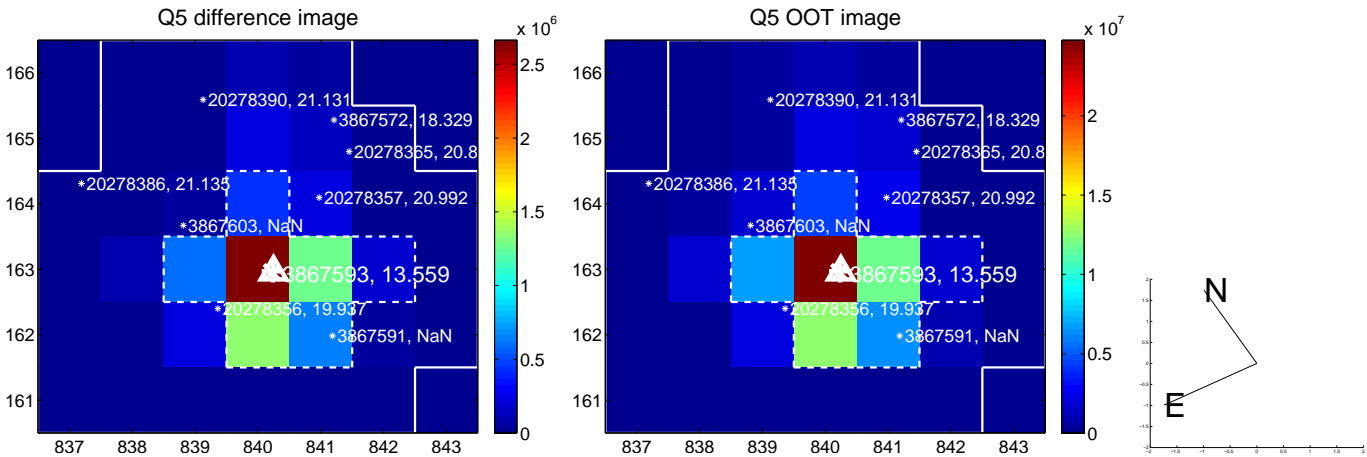


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

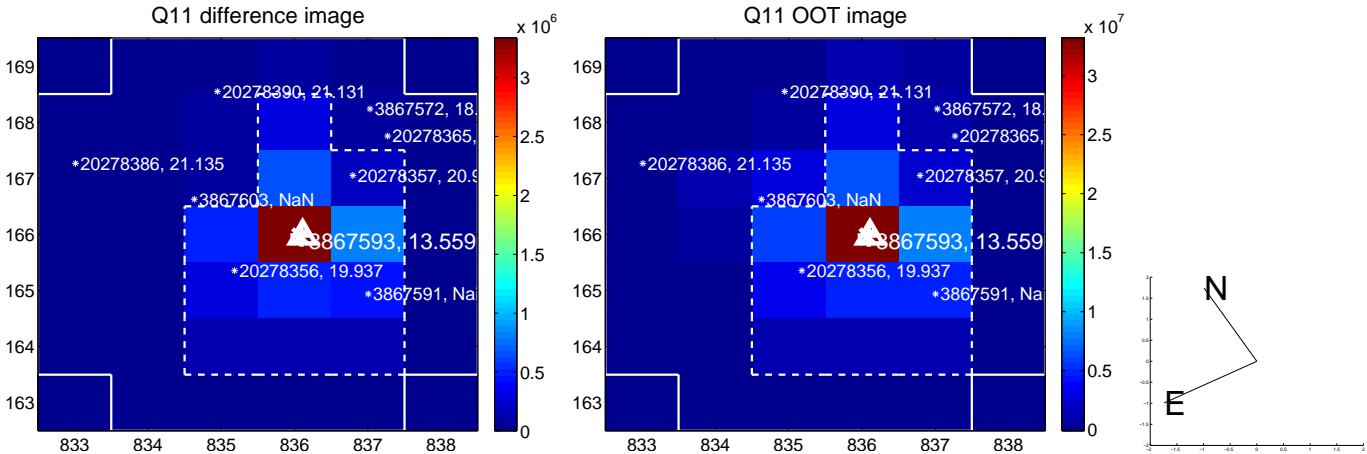
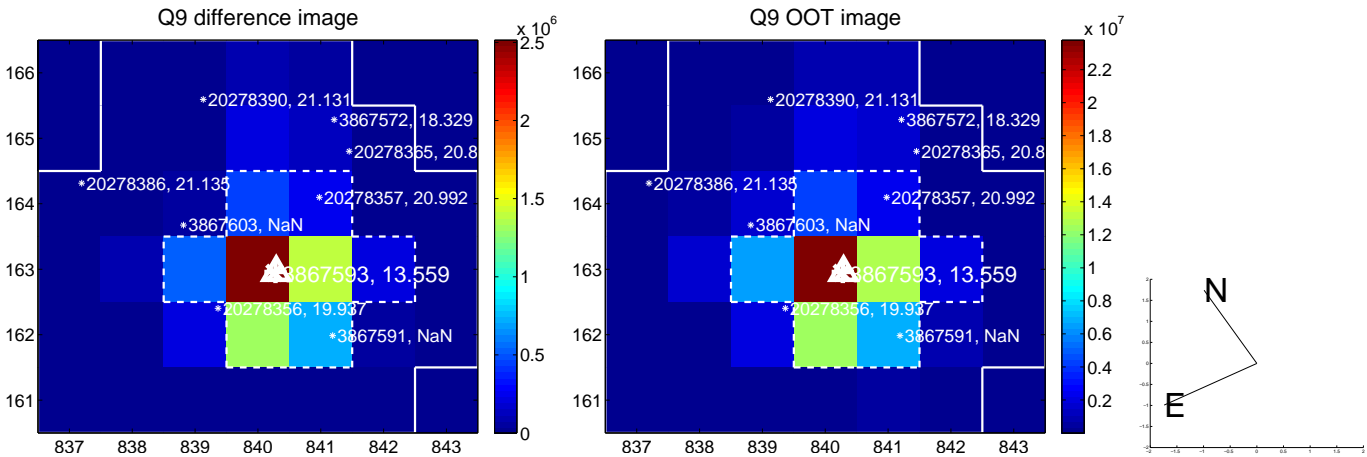
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



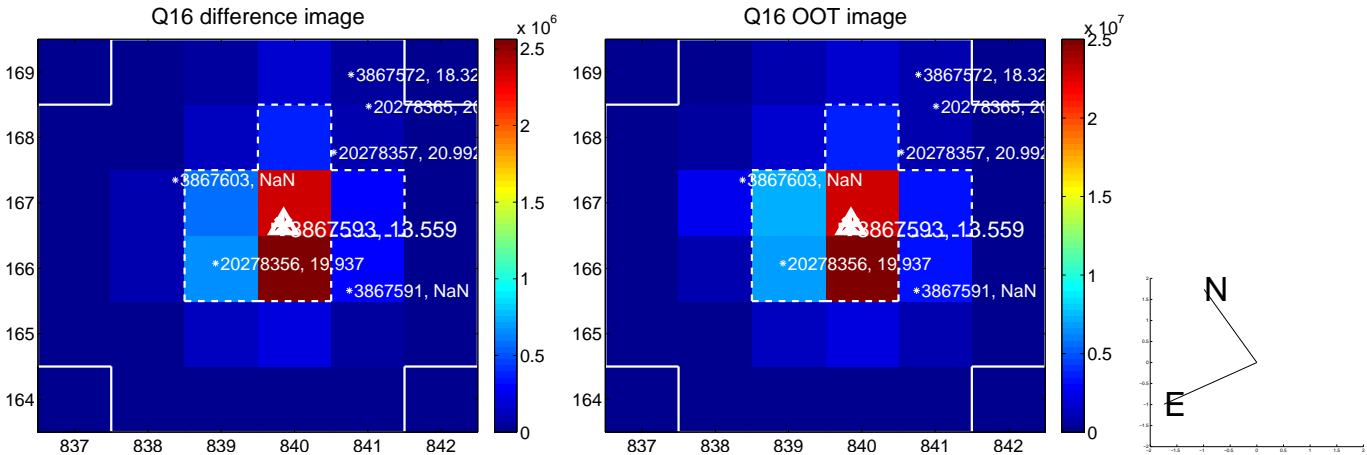
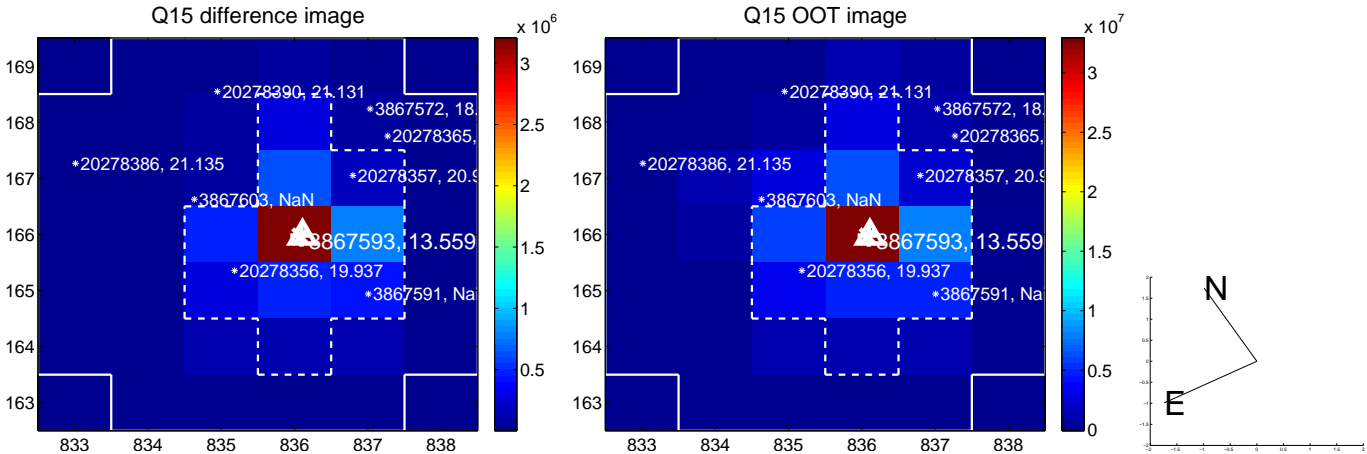
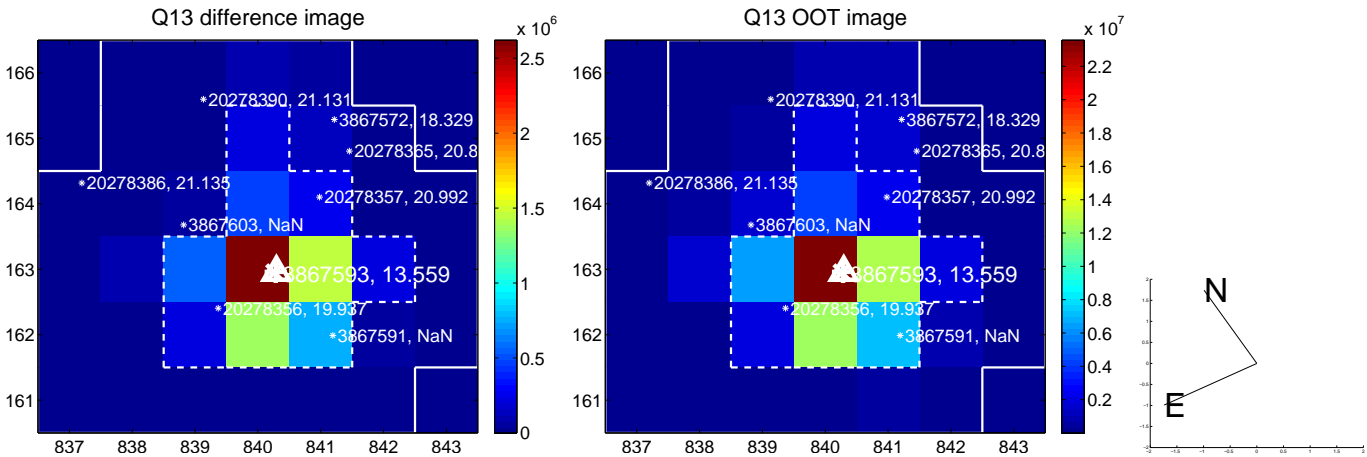
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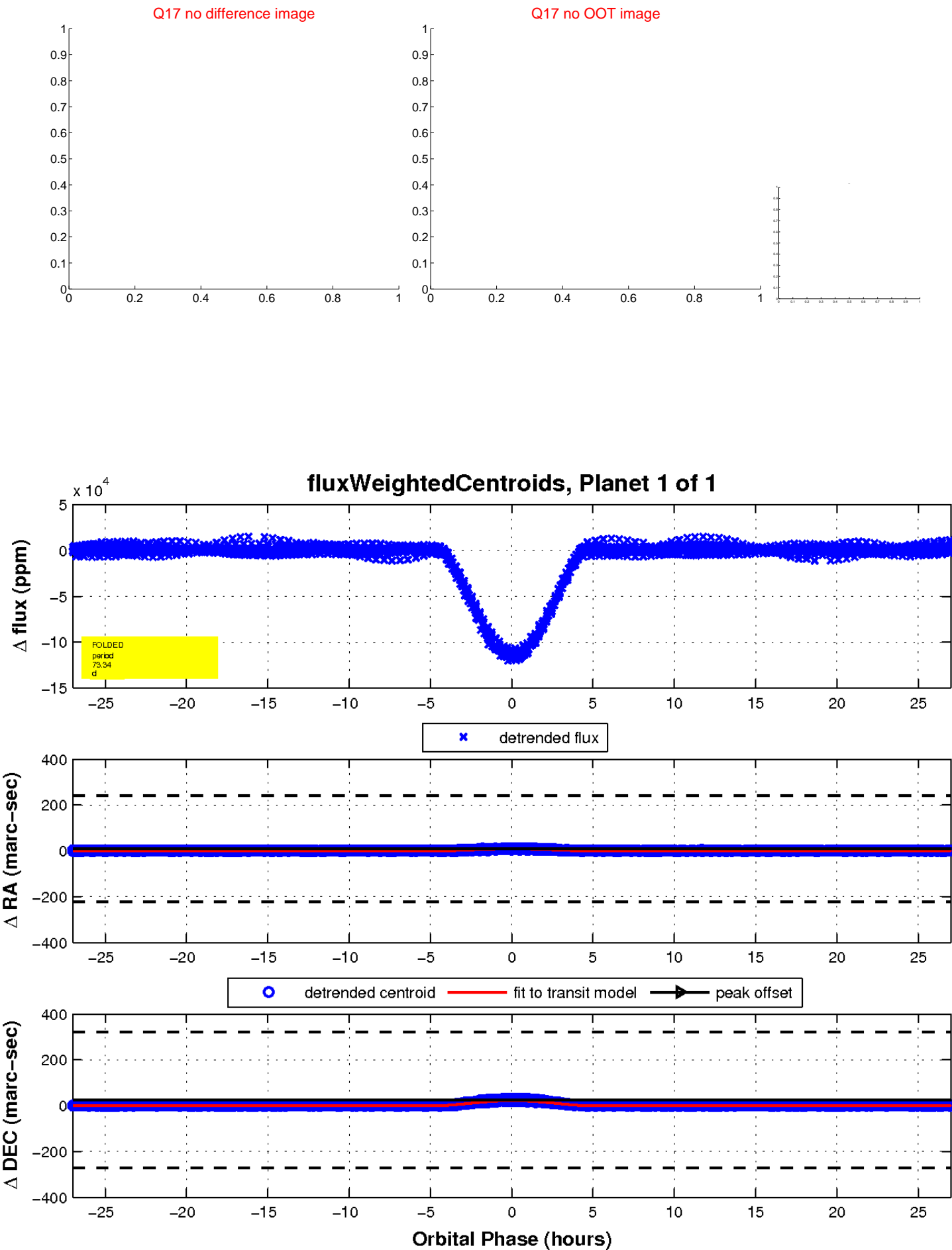
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UKIRT Image

Declination

