

KIC 012356746

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})
012356746-01	OBS	7525.01	0.502453	131.923341	33894.1	2.211	5119.4	2432.3	0.90	6134	22.55	7050.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012356746-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_ALT—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.

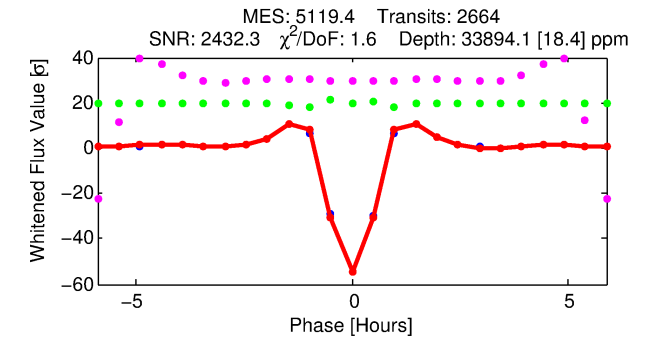
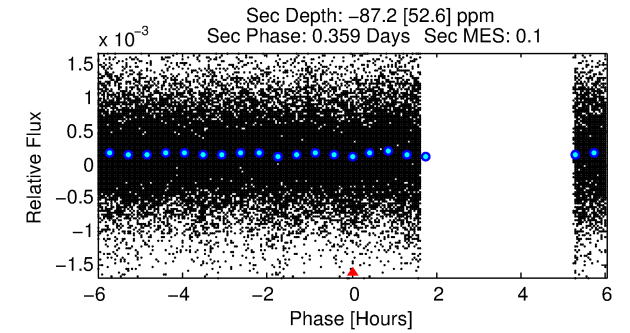
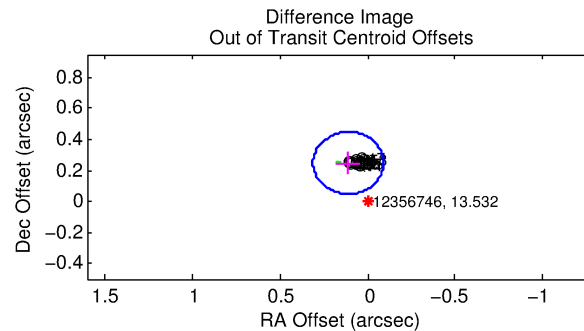
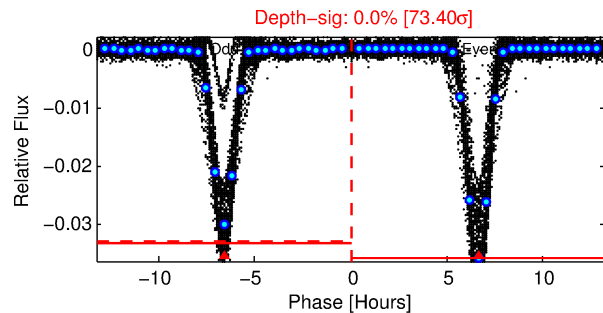
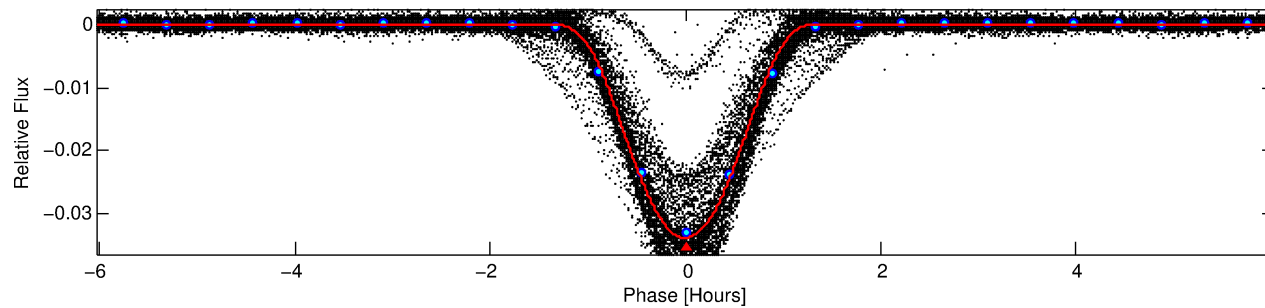
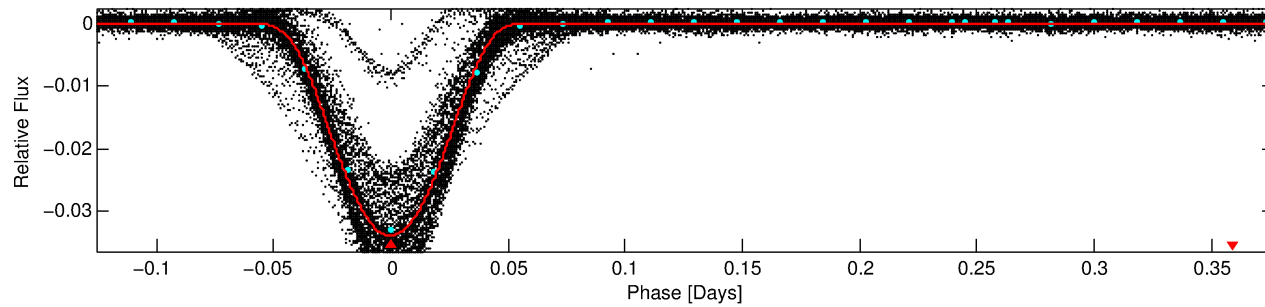
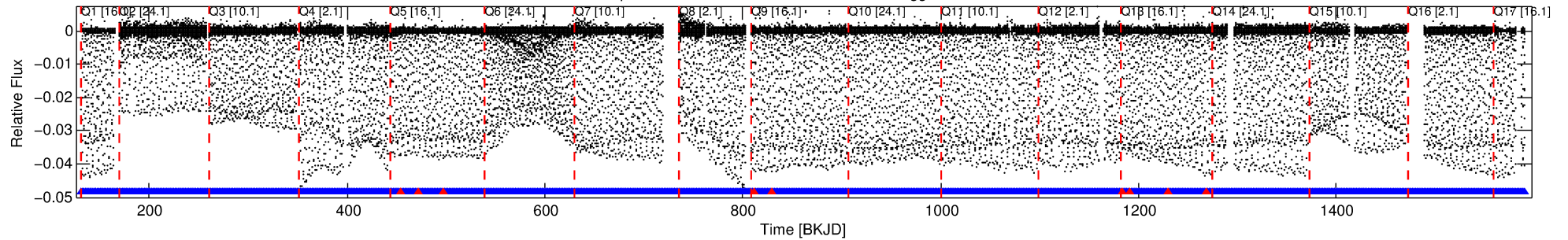
Ephemeris Match Information For 012356746-01

No Significant Match Found

DV One-Page Summary

KIC: 12356746 Candidate: 1 of 1 Period: 0.502 d
KOI: K07525.01 Corr: 0.977

Kp: 13.53 R*: 0.90 Rs Teff: 6134.0 K Logg: 4.50 Fe/H: -0.480



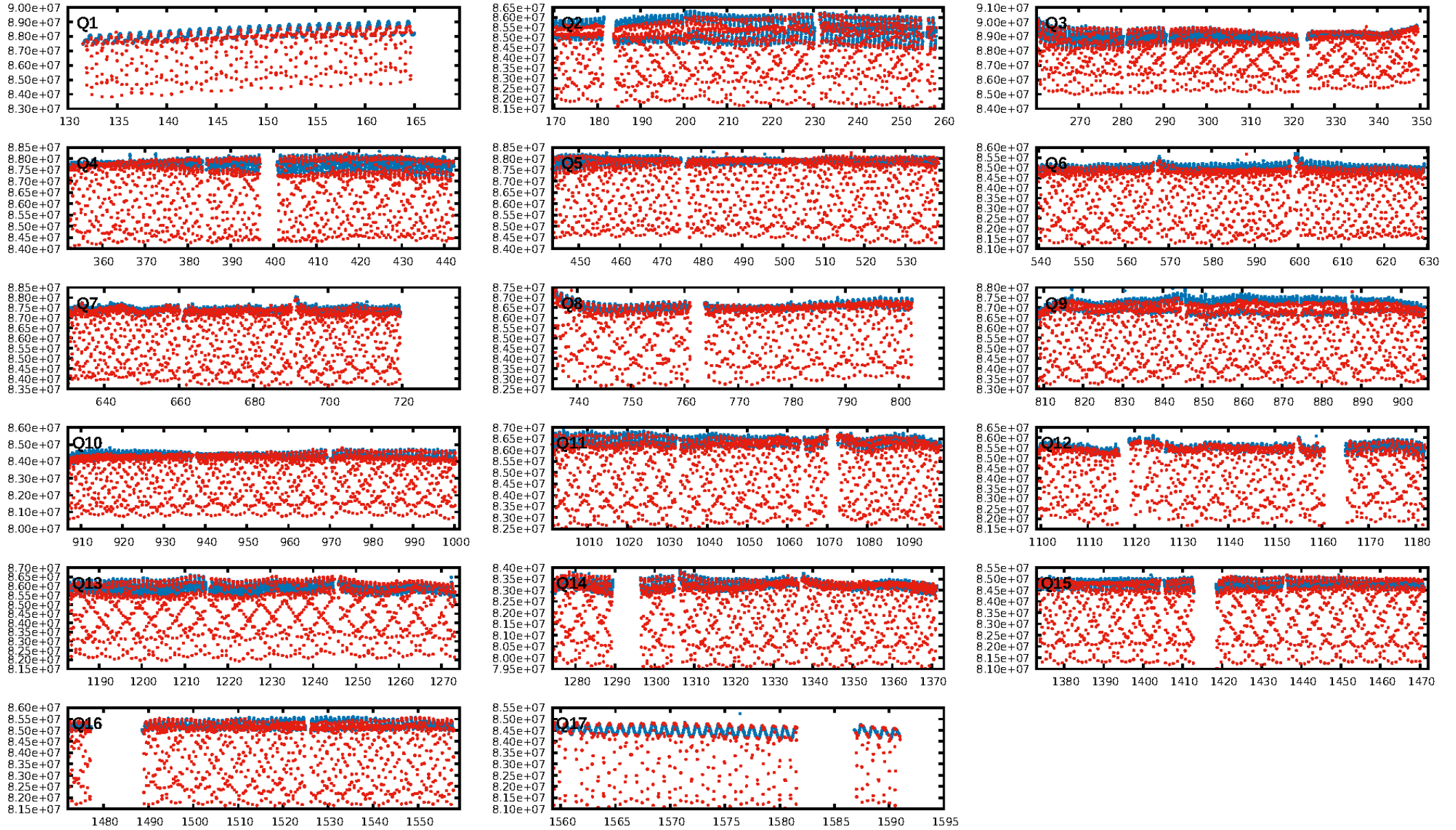
DV Fit Results:

Period = 0.50245 [0.00000] d
Epoch = 131.9233 [0.0000] BKJD
Rp/R* = 0.2293 [0.0016]
a/R* = 1.78 [0.00]
b = 0.90 [0.00]
Seff = 7050.58 [2787.04]
Teff = 2337 [231] K
Rp = 22.55 [6.76] Re
a = 0.0121 [0.0031] AU
Ag = N/A
Teffp = N/A

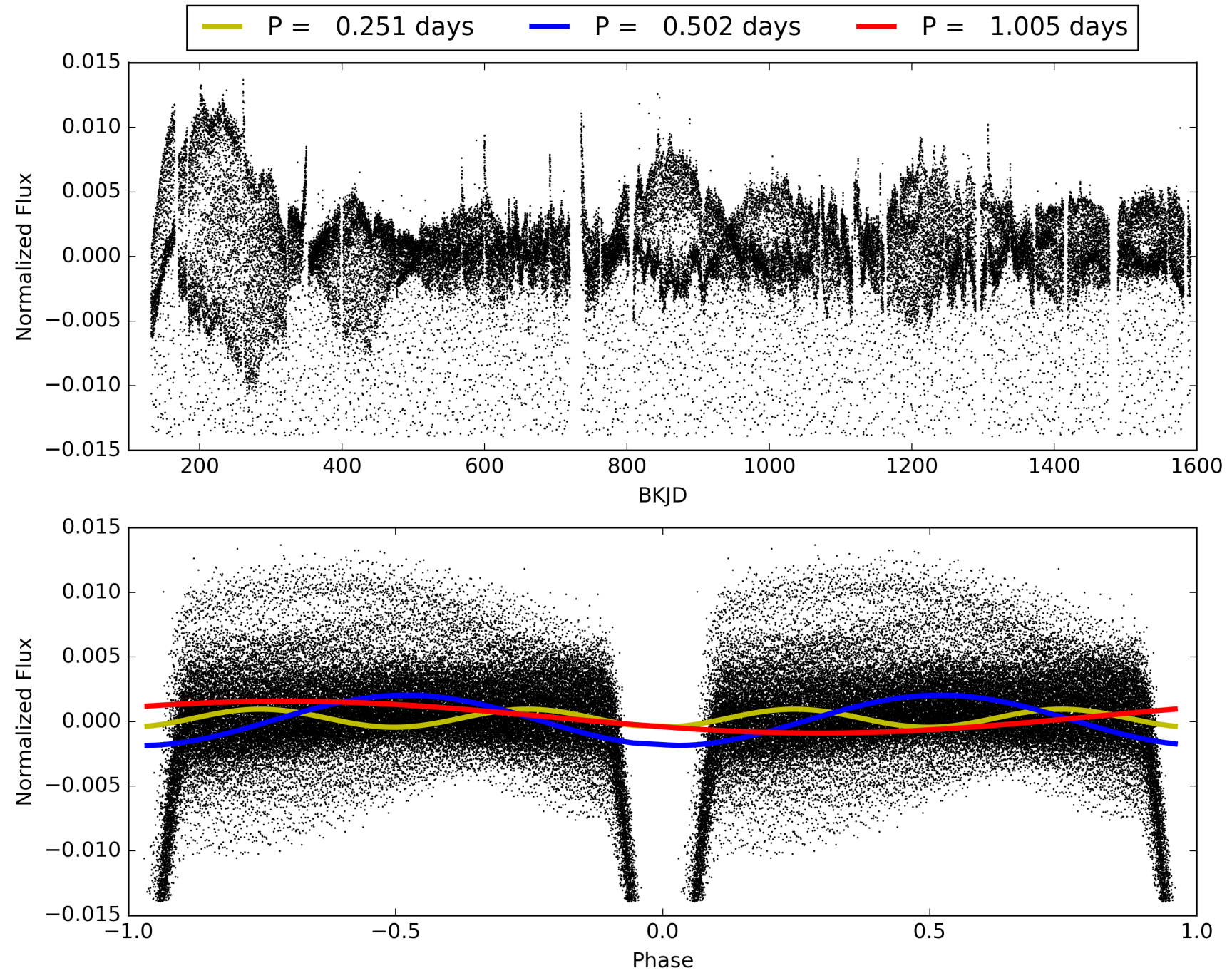
DV Diagnostic Results:

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 [2535/2545]
GhostDiagnostic-chr: 2.259
Centroid-sig: 0.0%
Centroid-so: 0.201 arcsec [157.64σ]
OOTOffset-rm: 0.272 arcsec [4.07σ]
KicOffset-rm: 0.074 arcsec [1.10σ]
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 012356746-01, PDC Light Curves

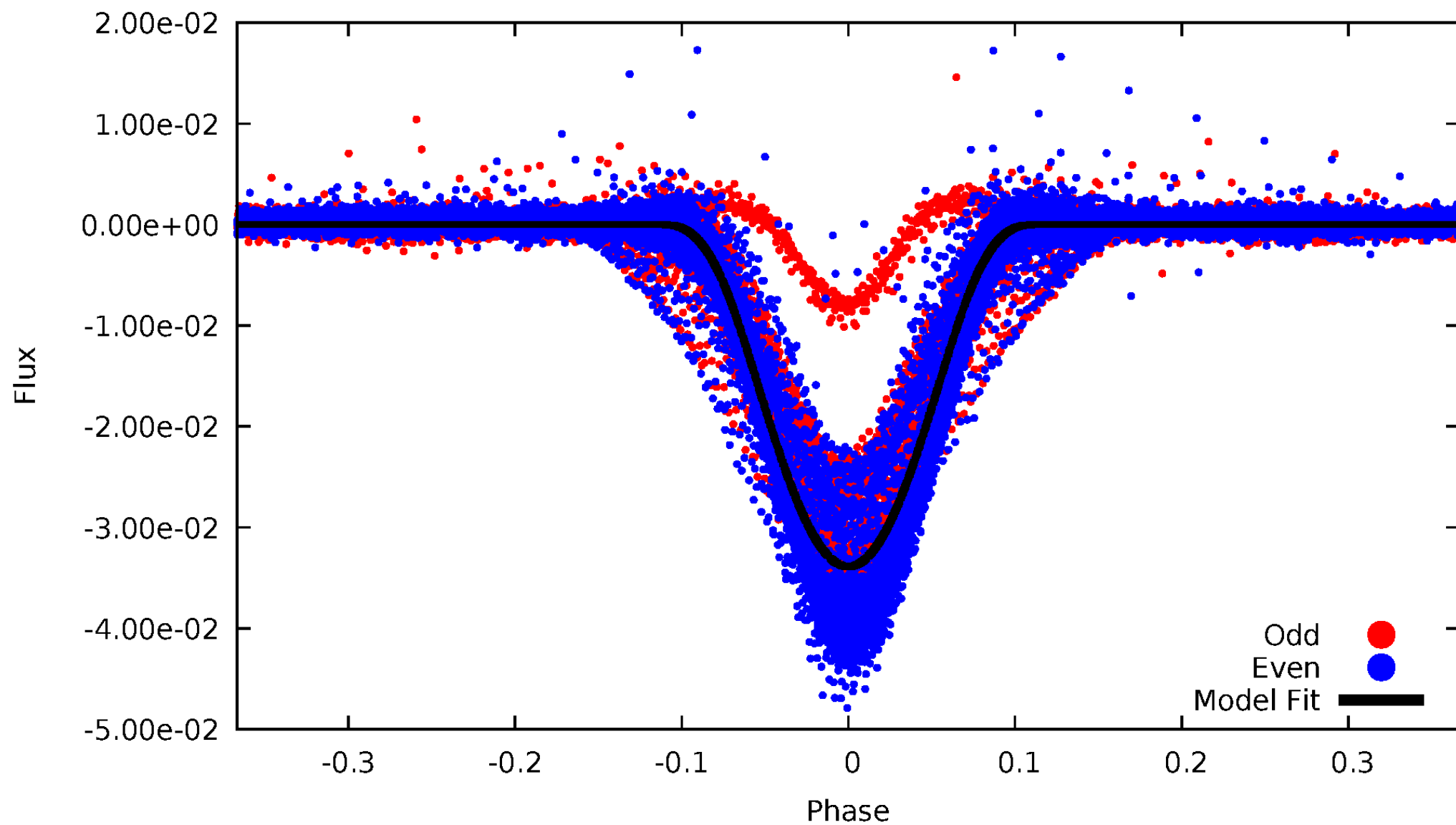


TCE 012356746-01



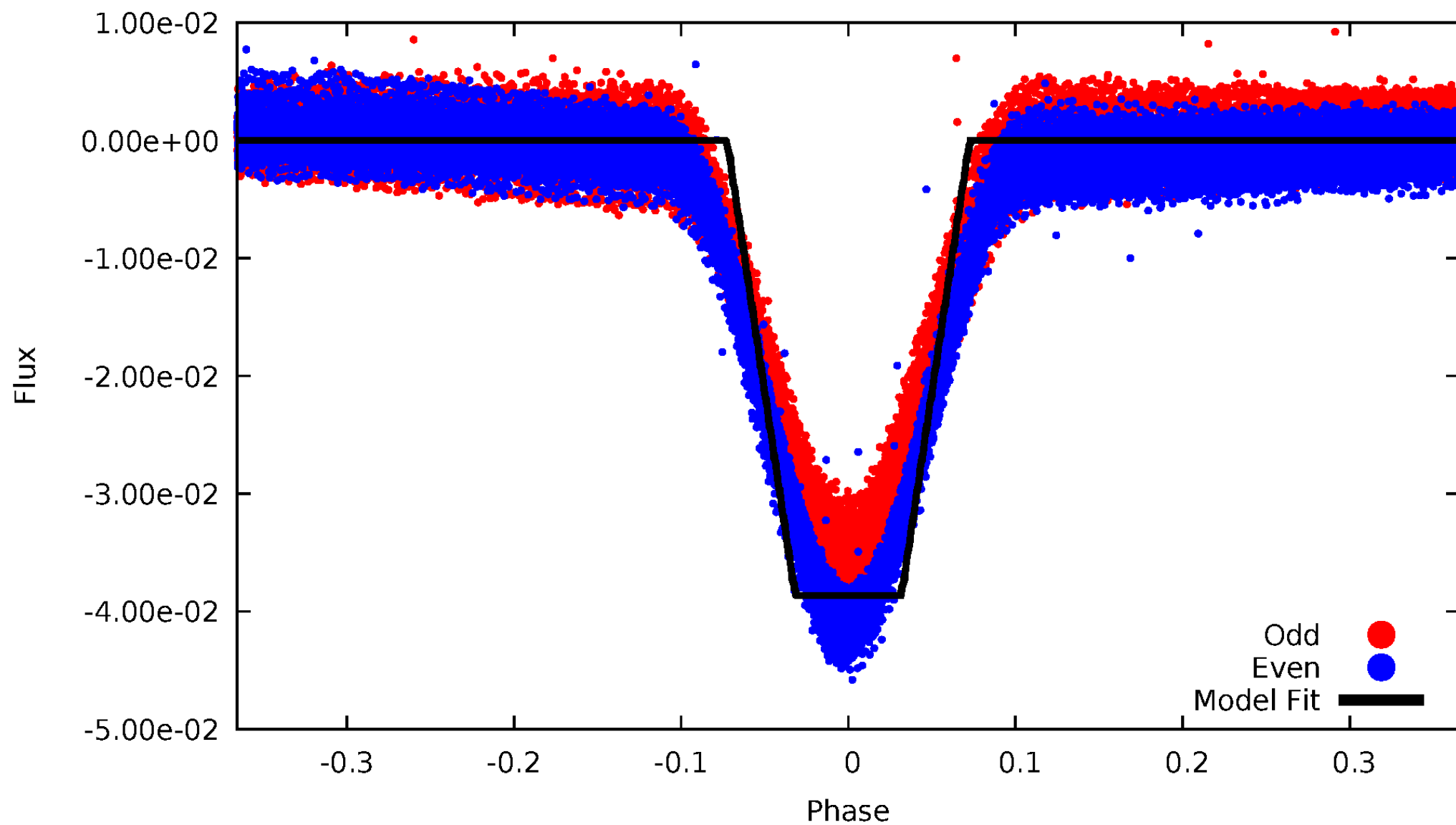
DV Odd/Even

TCE 012356746-01



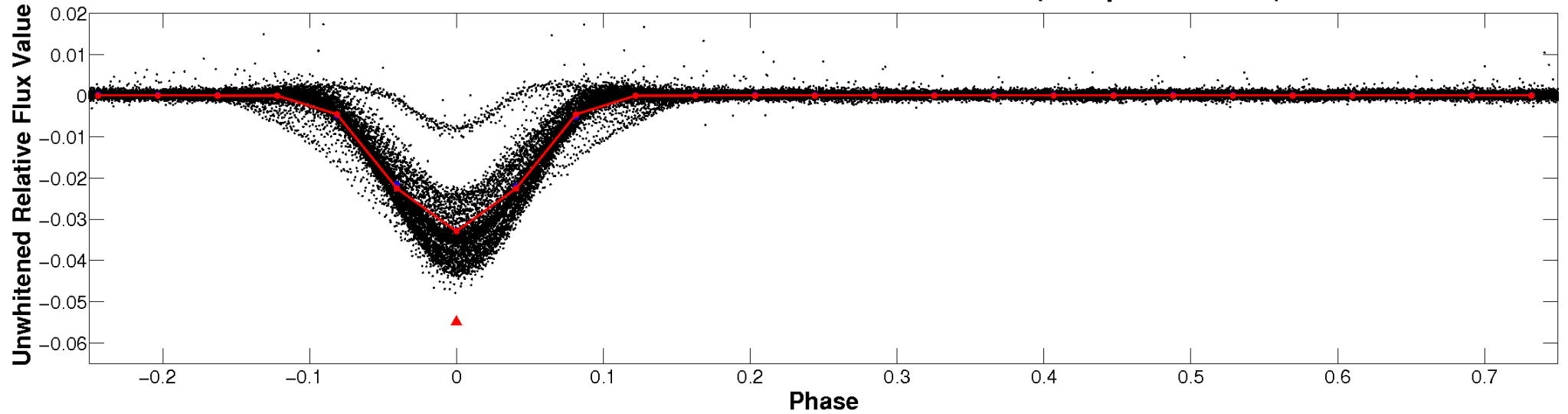
ALT Odd/Even

TCE 012356746-01

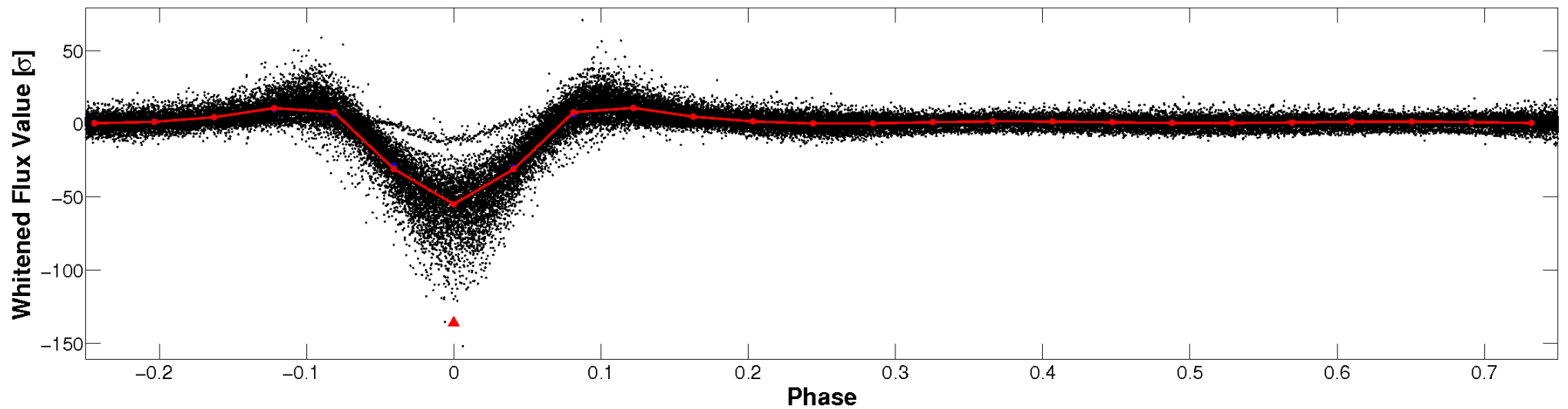


Non-Whitened Vs. Whitened Light Curve

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

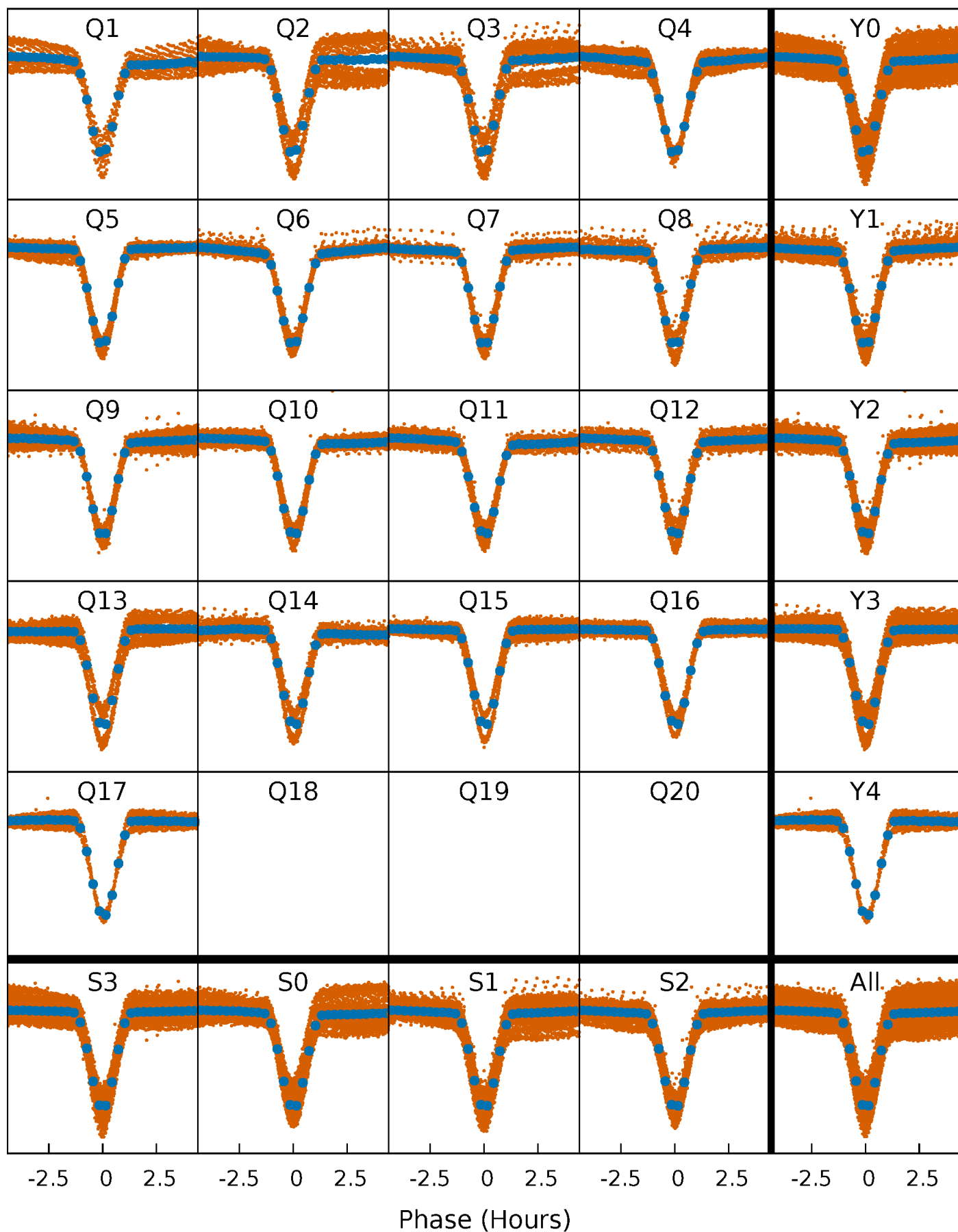


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



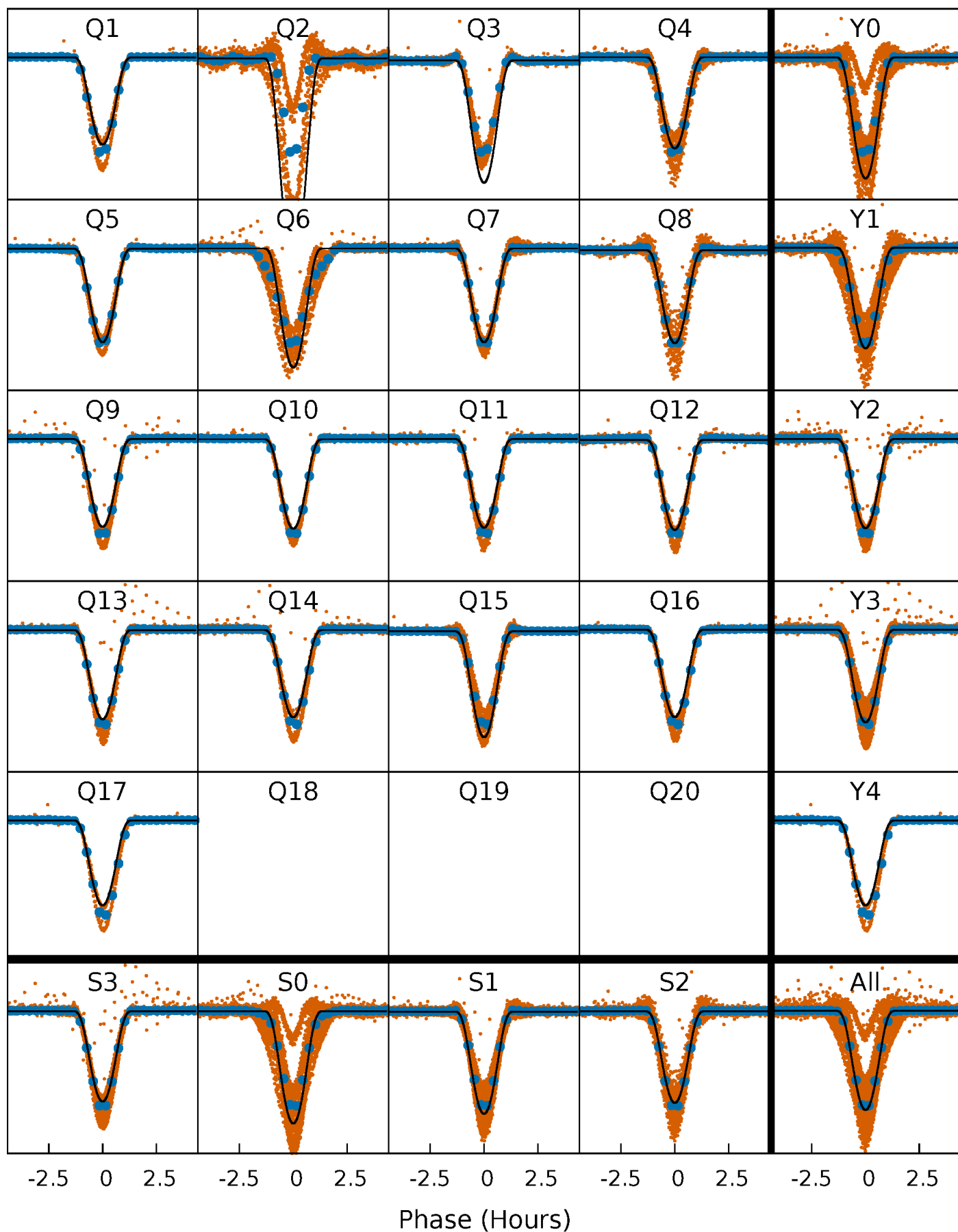
PDC Quarter-Phased Transit Curves

TCE 012356746-01 $P = 0.502453$ Days $T_0 = 131.923341$ (BKJD)



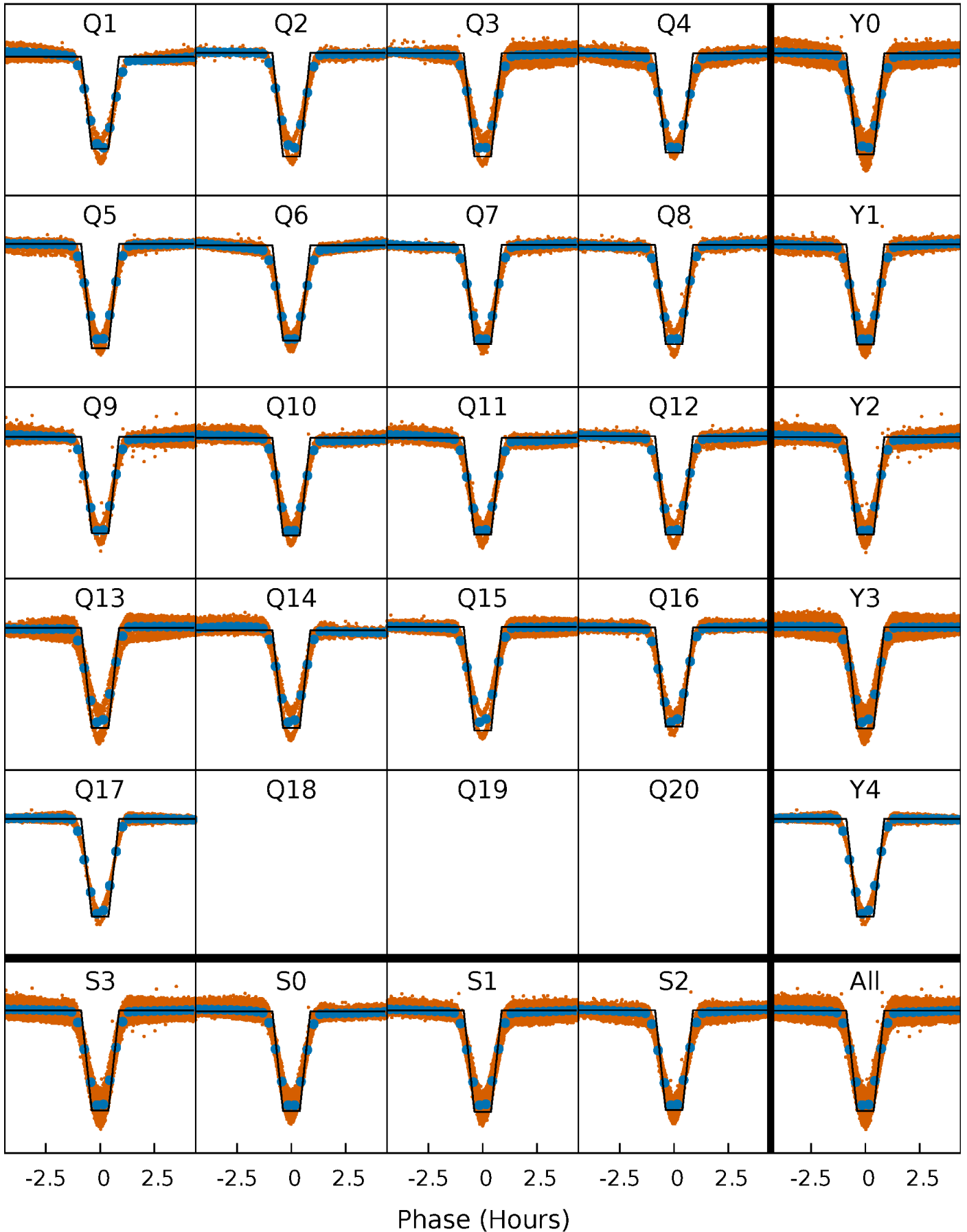
DV Quarter-Phased Transit Curves

TCE 012356746-01 P= 0.502453 Days $T_0=131.923341$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

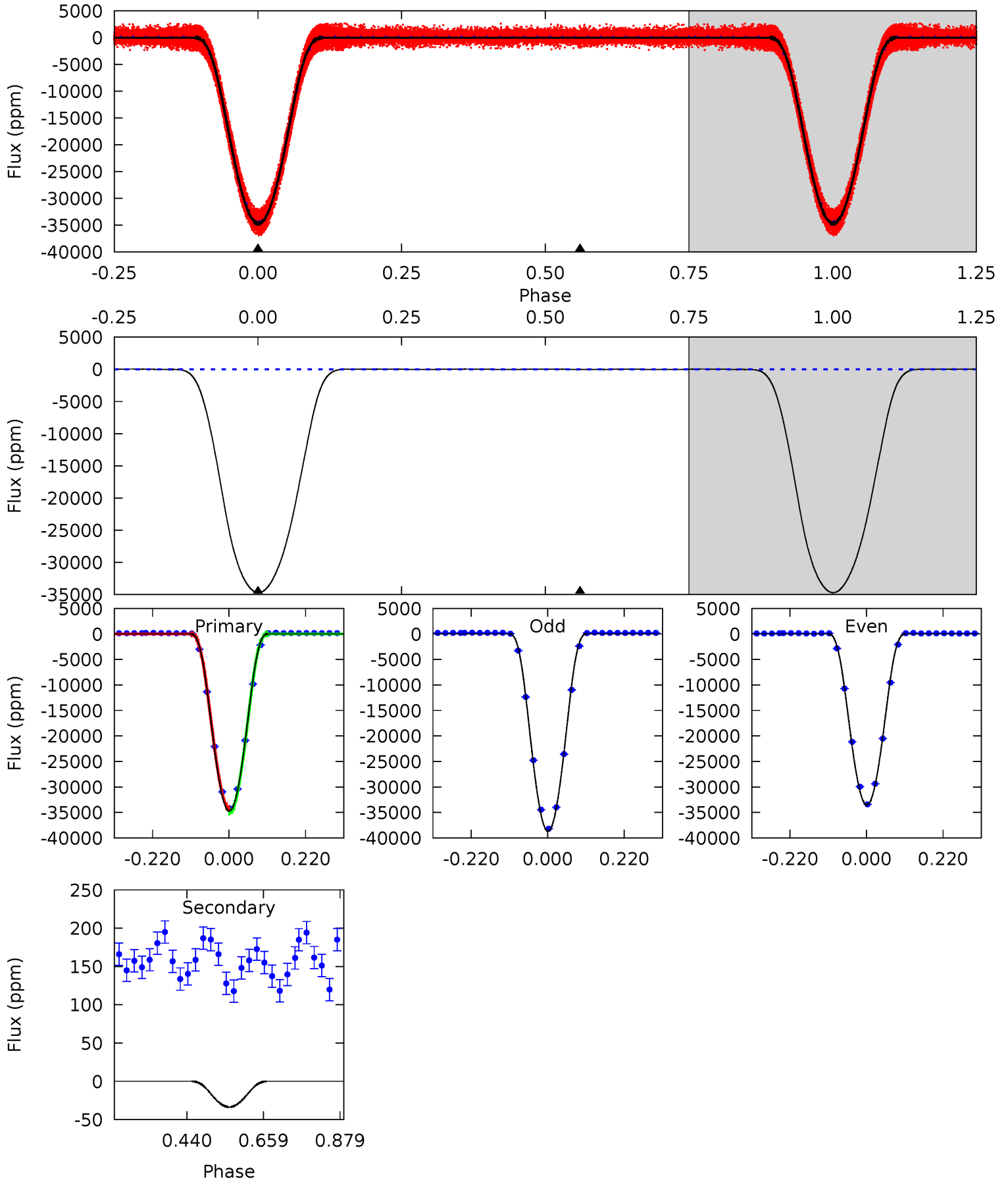
TCE 012356746-01 $P = 0.502455$ Days $T_0 = 131.921247$ (BKJD)



DV Model-Shift Uniqueness Test

012356746-01, P = 0.502453 Days, E = 131.420888 Days

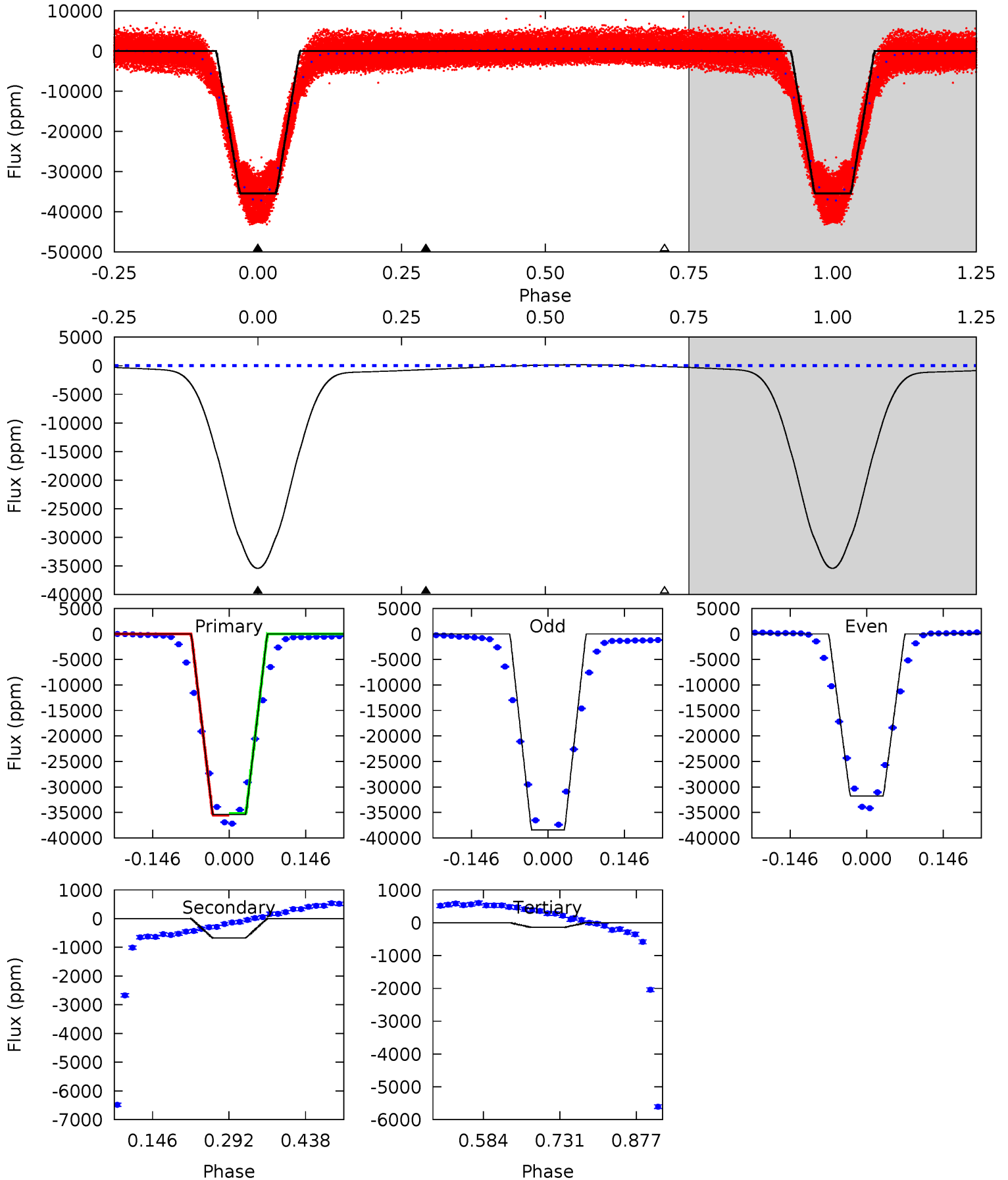
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6018	5.81	0	0	4.40	1.23	1.63	6018	6018	5.81	5.81	468.6	0.96	0.00	0



Alt Model-Shift Uniqueness Test

012356746-01, P = 0.502455 Days, E = 131.418792 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1982	37.7	7.95	0	4.48	1.45	16.1	1974	1982	29.7	37.7	184.8	0.98	0.00	9.13



Stellar Parameters For KIC 012356746

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6134^{+166}_{-184}	$4.498^{+0.052}_{-0.208}$	$-0.480^{+0.300}_{-0.300}$	$0.901^{+0.270}_{-0.090}$	$0.932^{+0.107}_{-0.107}$	$1.794^{+0.495}_{-0.934}$
	+3%/-3%	+1%/-5%	+62%/-62%	+30%/-10%	+11%/-11%	+28%/-52%
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 012356746-01 / KOI 7525.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-34 ± 6	$23.00^{+3.54}_{-1.65}$	3335^{+233}_{-158}	-3284^{+94}_{-142}	$0.005^{+0.001}_{-0.001}$
Alt.	-673 ± 18	$19.79^{+3.05}_{-1.40}$	3325^{+221}_{-157}	-3008^{+115}_{-192}	$0.136^{+0.018}_{-0.029}$

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 $A_{\text{obs}} \gg 1.0$

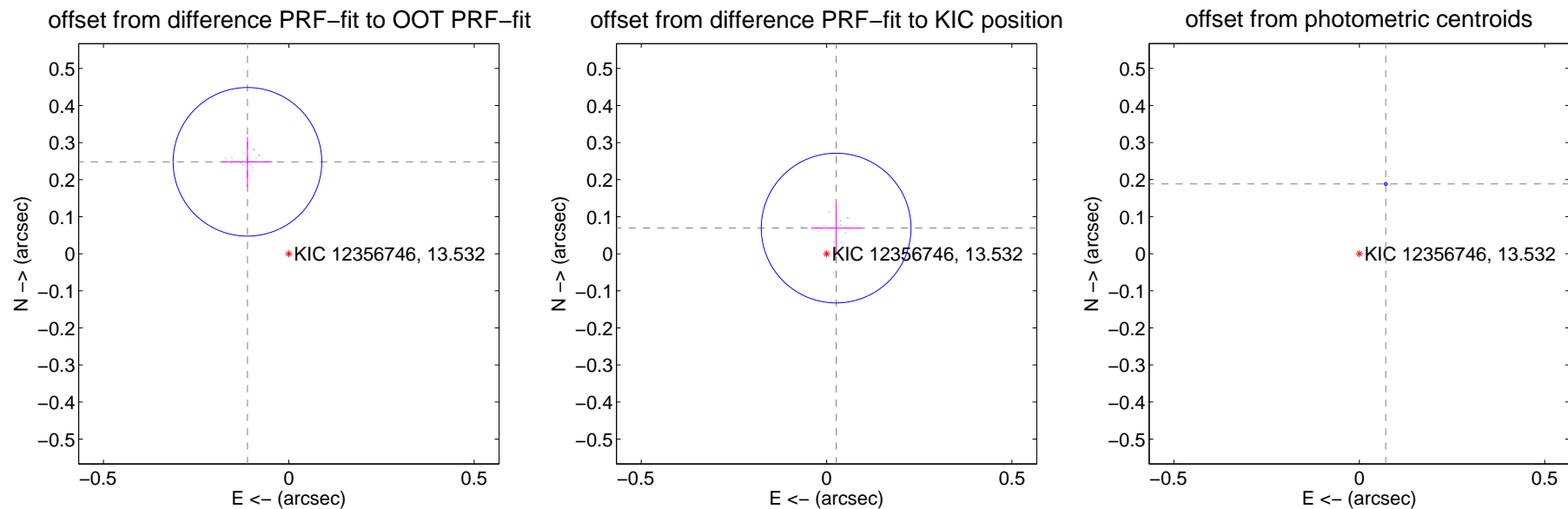
DV Centroid Data

Supplemental centroid analysis for 012356746-01. Kepler magnitude: 13.53. Transit SNR 2432.32

There are 17 quarters with good PRF difference image offsets

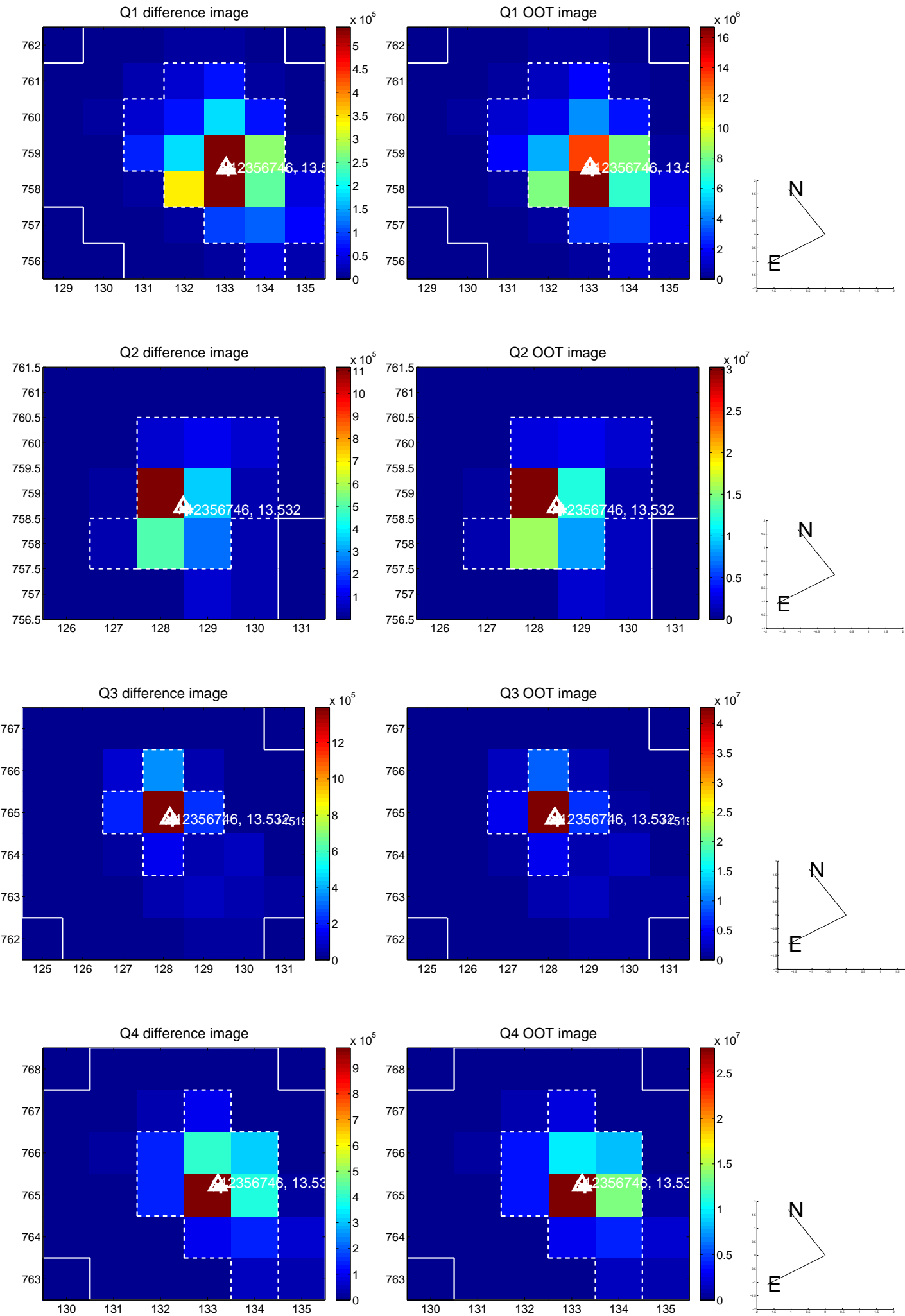
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.272 ± 0.067	4.07	0.112 ± 0.067	0.248 ± 0.067
PRF-fit source offset from KIC position	0.074 ± 0.067	1.10	-0.026 ± 0.067	0.069 ± 0.067
photometric centroid source offset	0.20 ± 0.00	157.64	-0.07 ± 0.00	0.19 ± 0.00

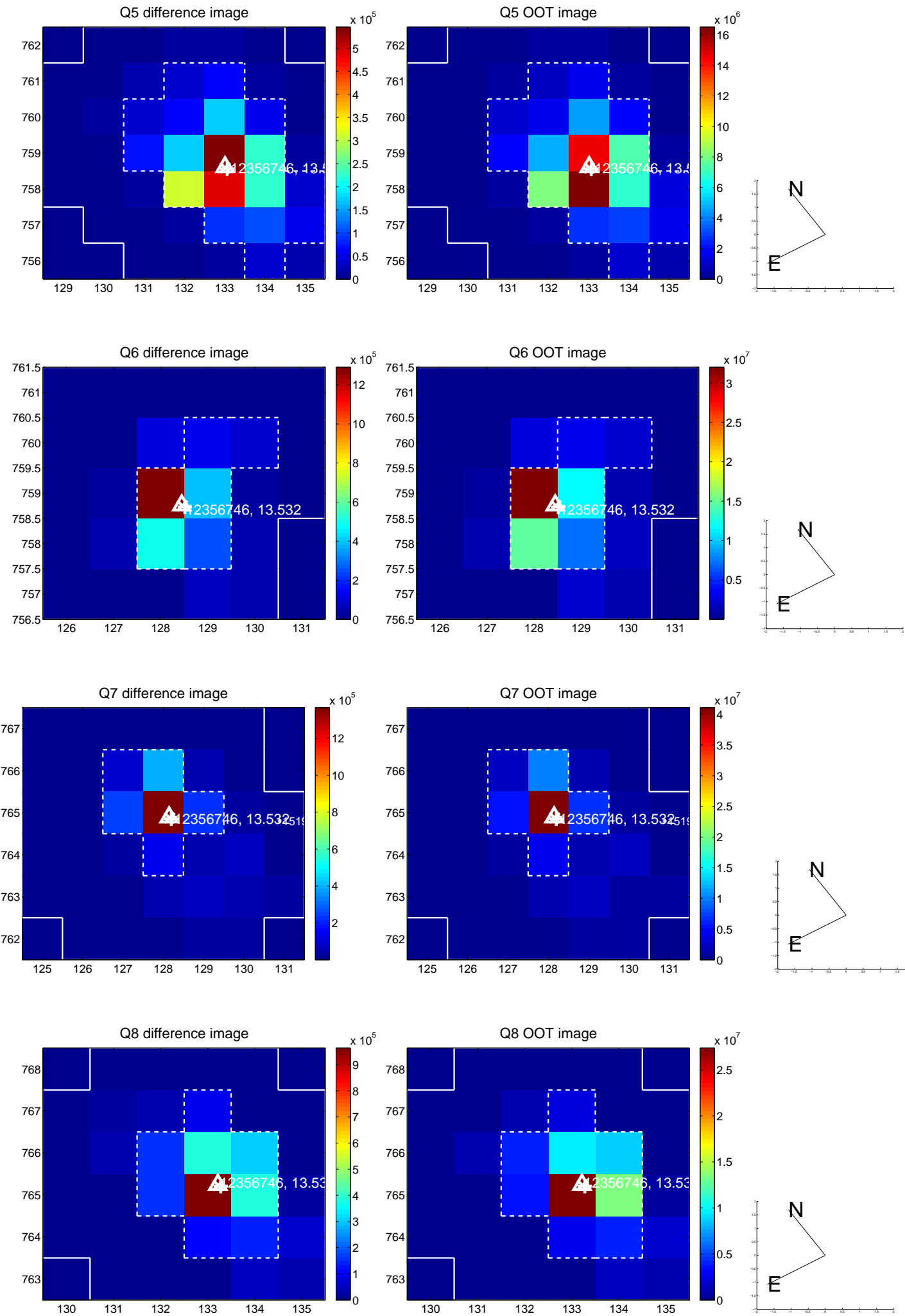


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

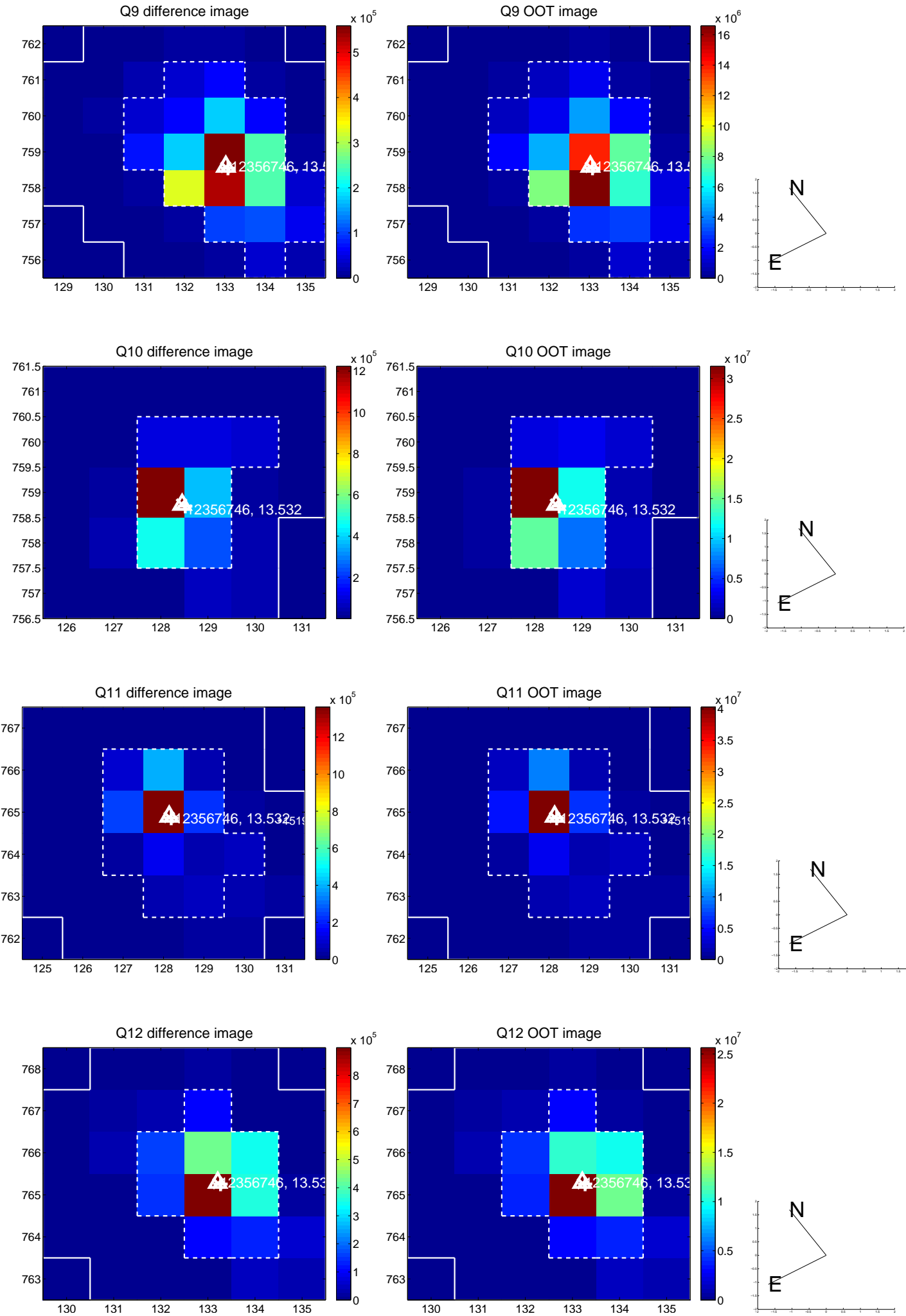
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



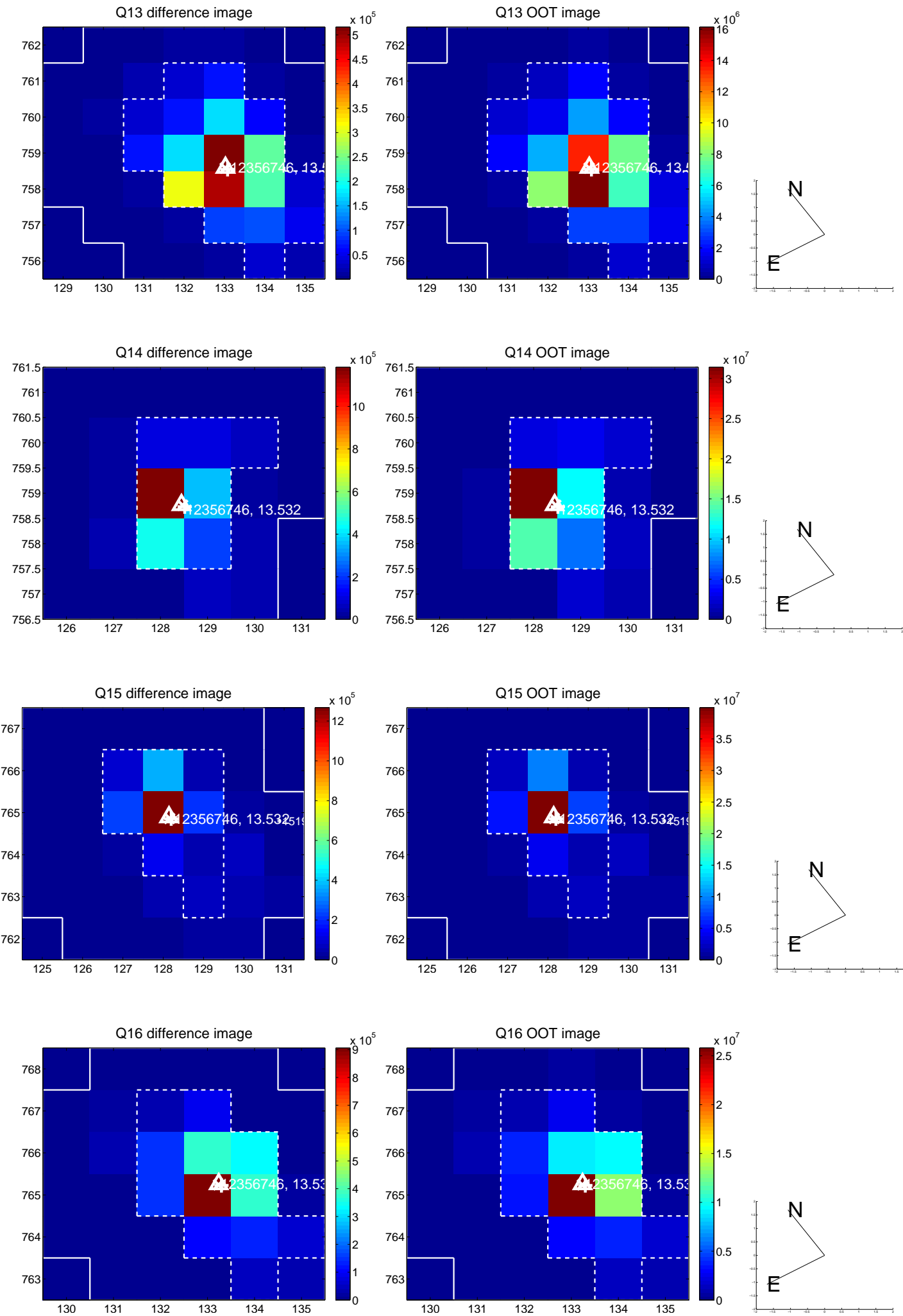
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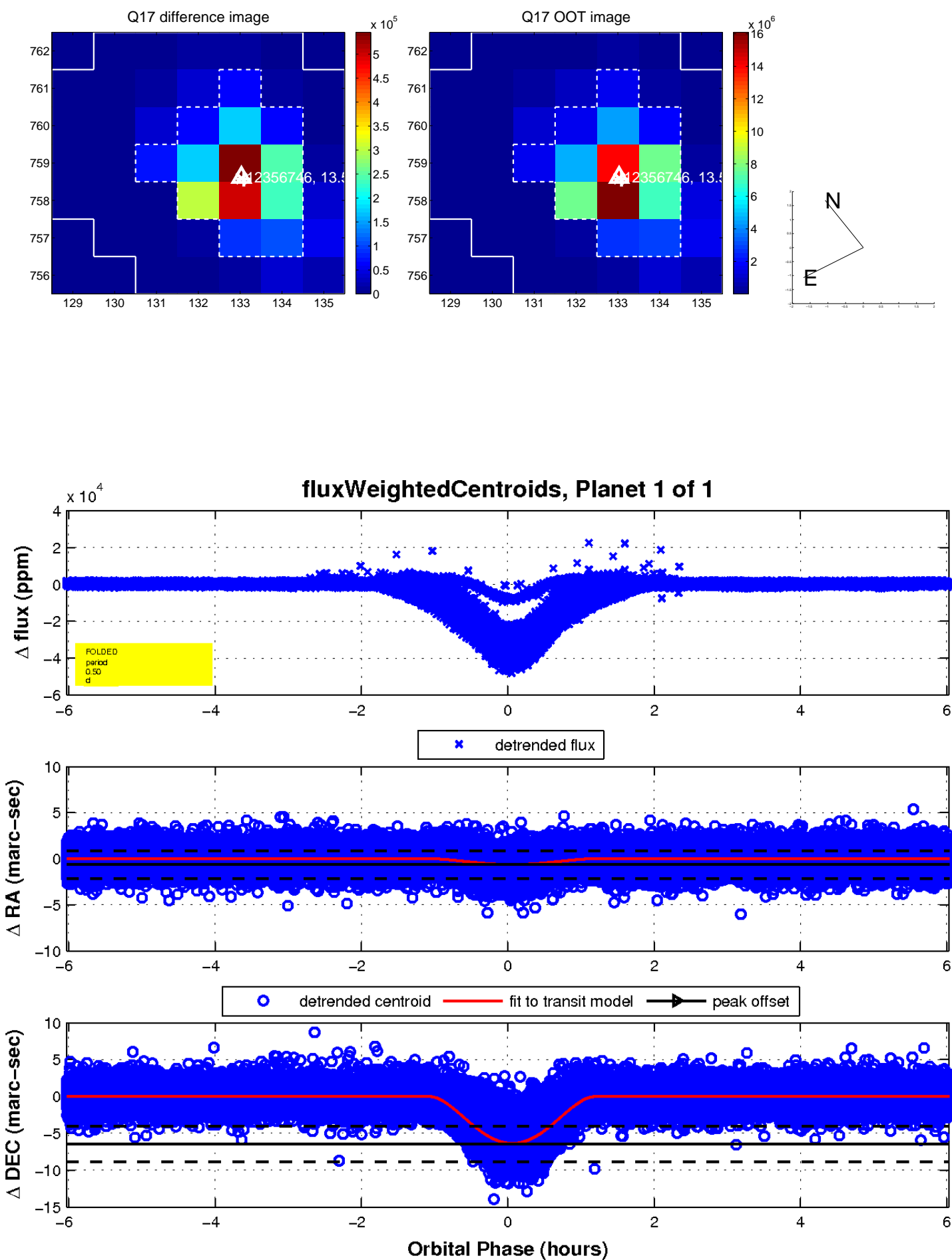
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

