

KIC 008430053

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})
008430053-01	OBS	4603.01	15.951288	146.460006	99.8	2.339	8.9	9.5	1.17	6451	1.36	123.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008430053-01	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.

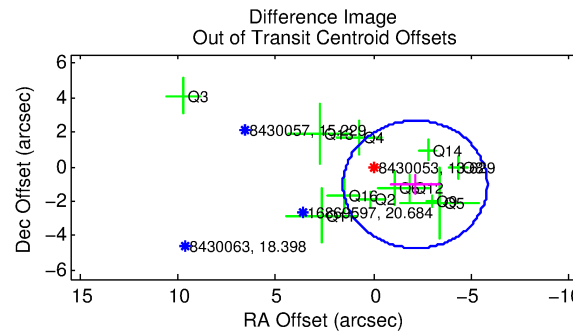
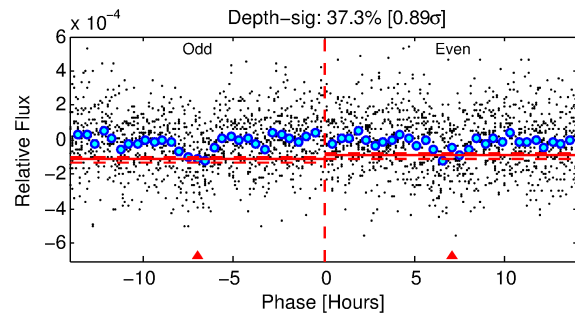
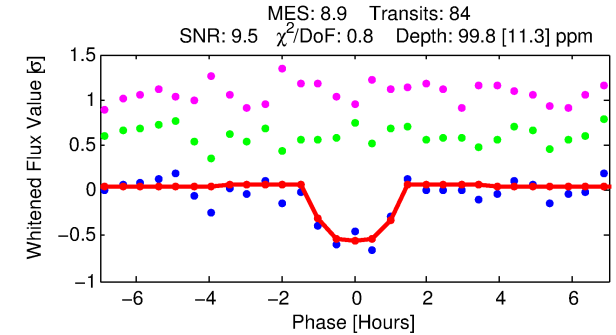
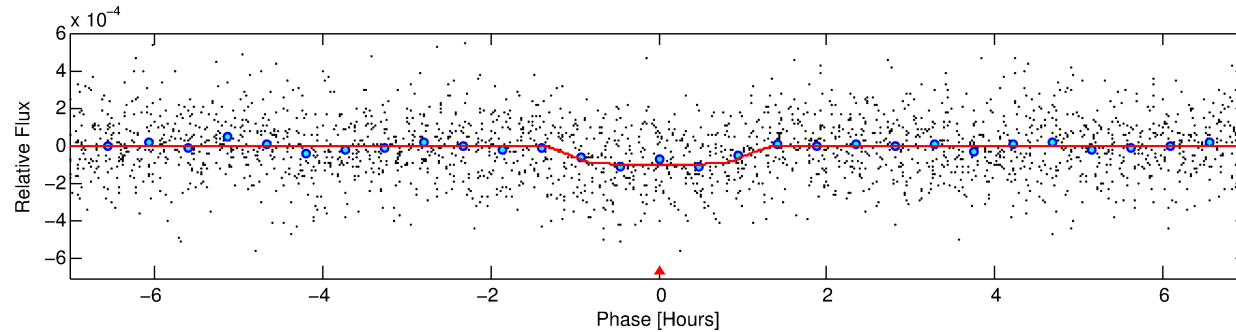
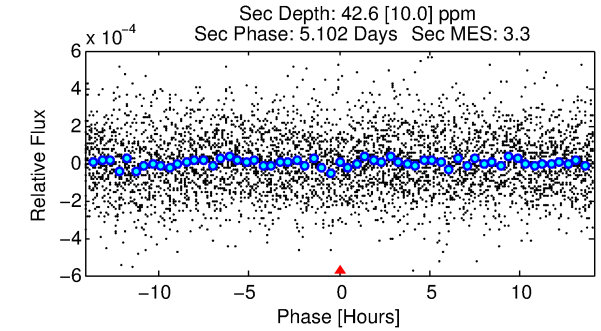
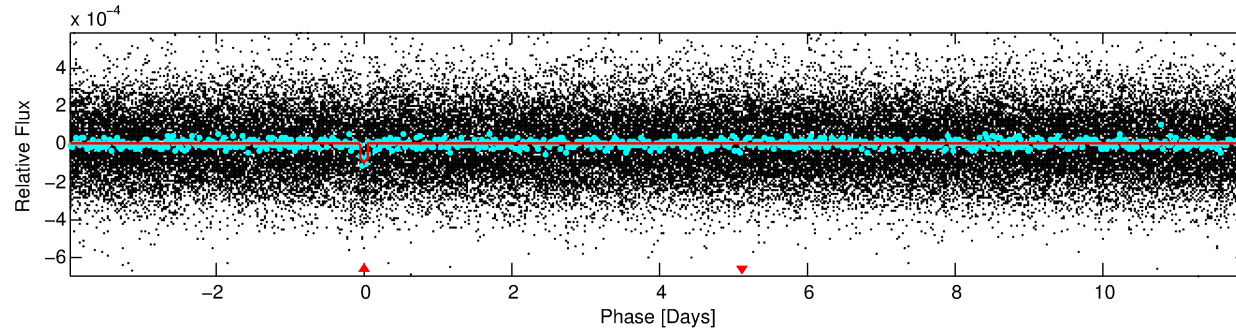
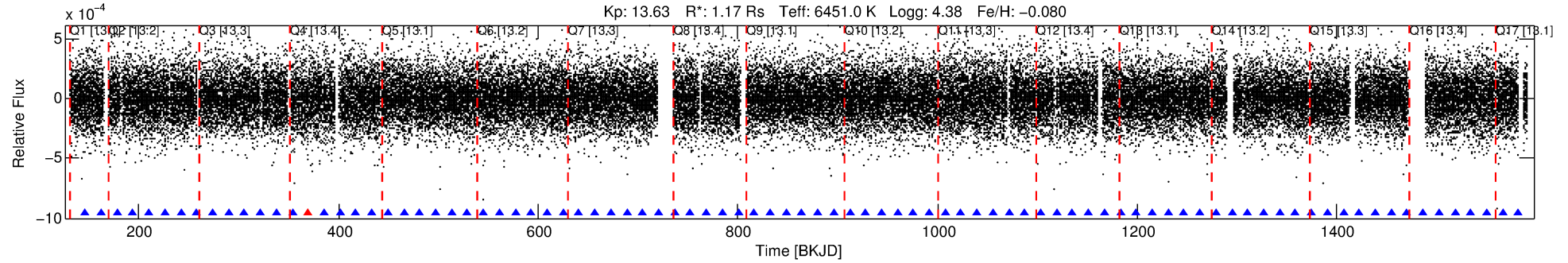
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008430053-01

No Significant Match Found

DV One-Page Summary

KIC: 8430053 Candidate: 1 of 1 Period: 15.951 d
KOI: K04603.01 Corr: 0.983



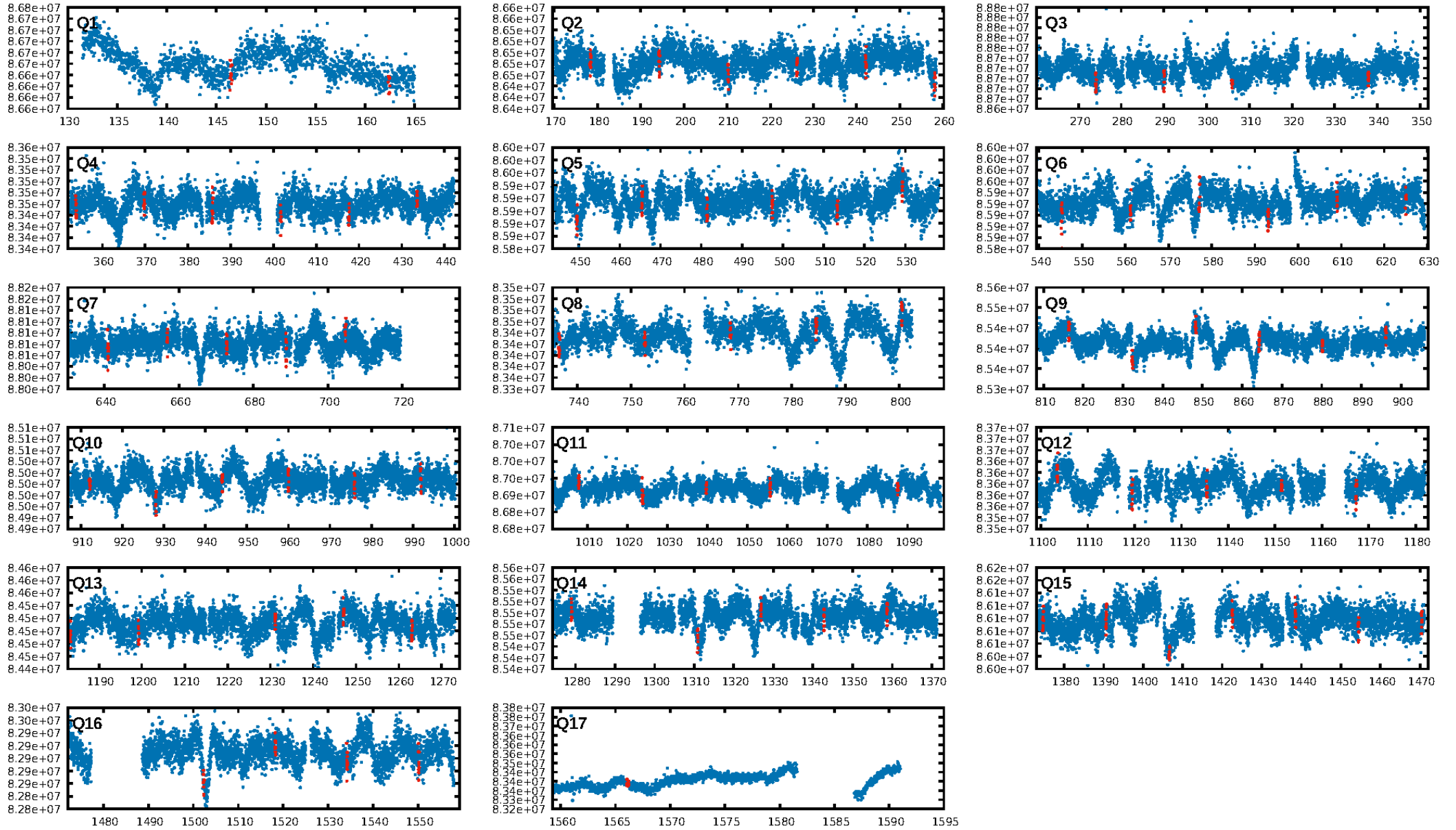
DV Fit Results:

Period = 15.95129 [0.00011] d
Epoch = 146.4600 [0.0057] BKJD
Rp/R* = 0.0107 [0.0061]
a/R* = 24.15 [77.99]
b = 0.90 [0.71]
Seff = 123.21 [51.55]
Teq = 850 [89] K
Rp = 1.36 [0.92] Re
a = 0.1311 [0.0372] AU
Ag = 216.36 [267.40] [0.81σ]
Teffp = 5038 [1482] K [2.82σ]

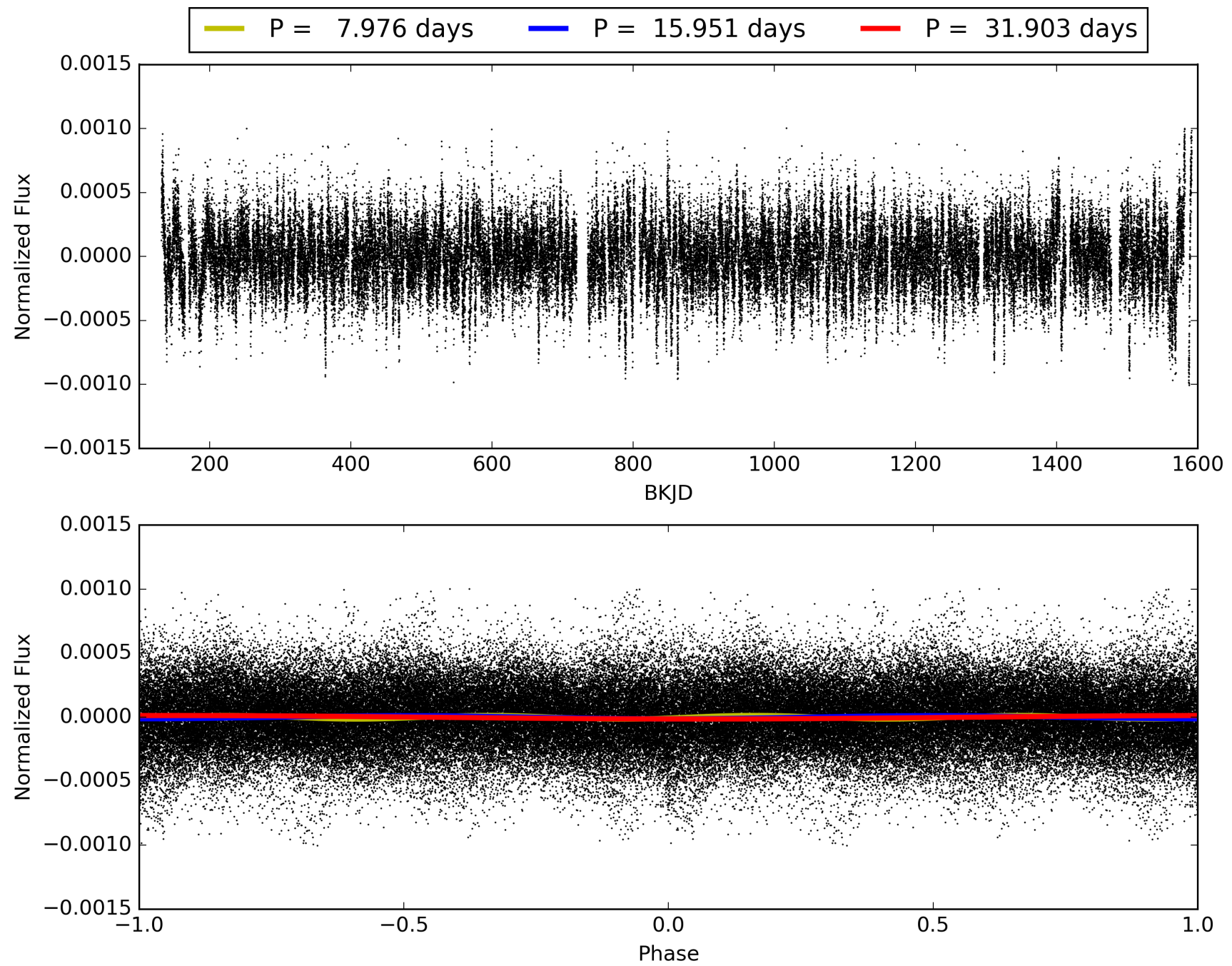
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 80.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.64e-19
RollingBand-fgt: 0.99 [80/81]
GhostDiagnostic-chr: -2.166
Centroid-sig: 1.7%
Centroid-so: 1.532 arcsec [1.26σ]
OotOffset-rm: 2.368 arcsec [1.93σ]
KicOffset-rm: 2.200 arcsec [1.85σ]
OotOffset-st: 3/2/4/3 [12]
KicOffset-st: 3/2/4/3 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008430053-01, PDC Light Curves

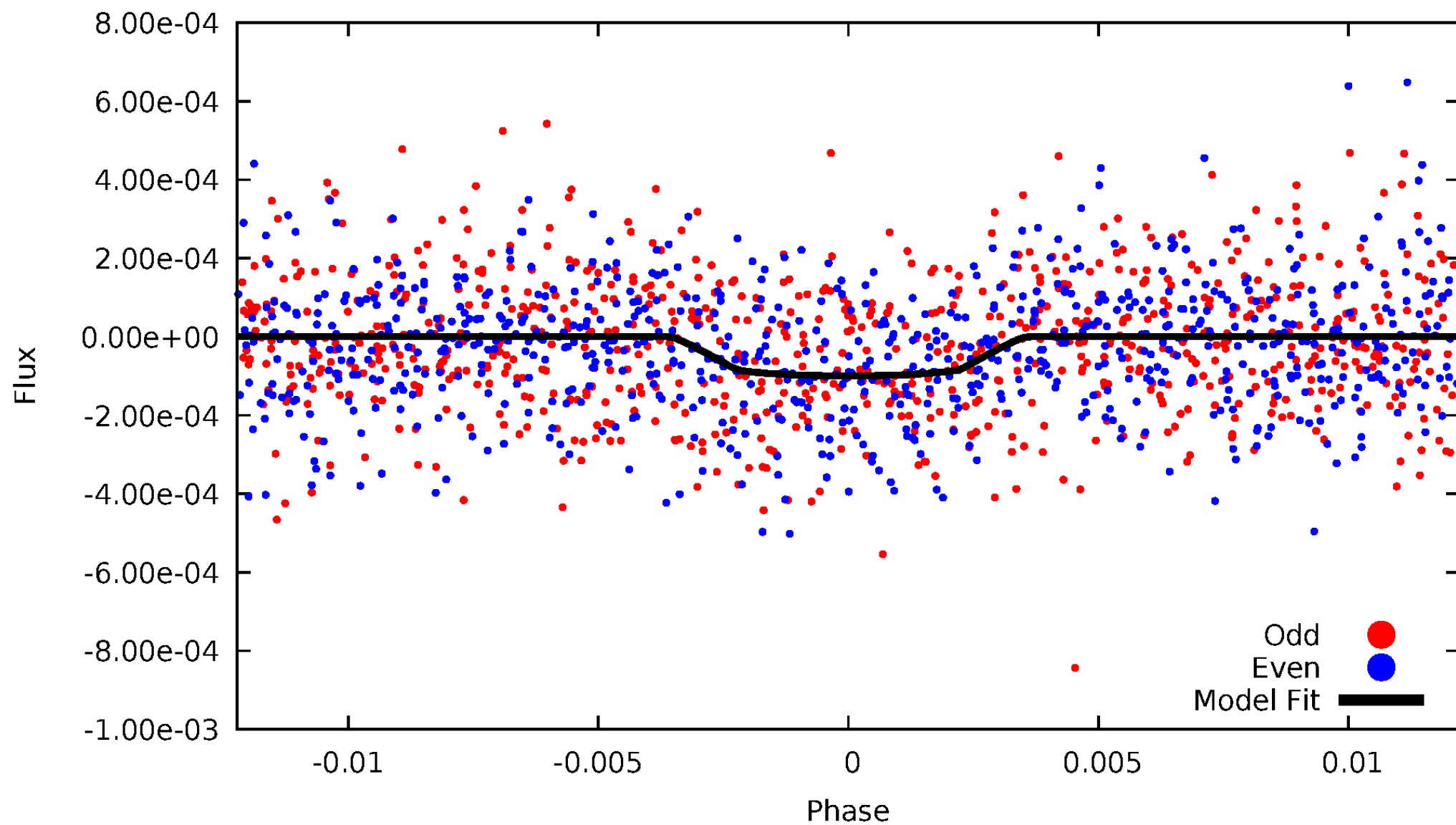


TCE 008430053-01



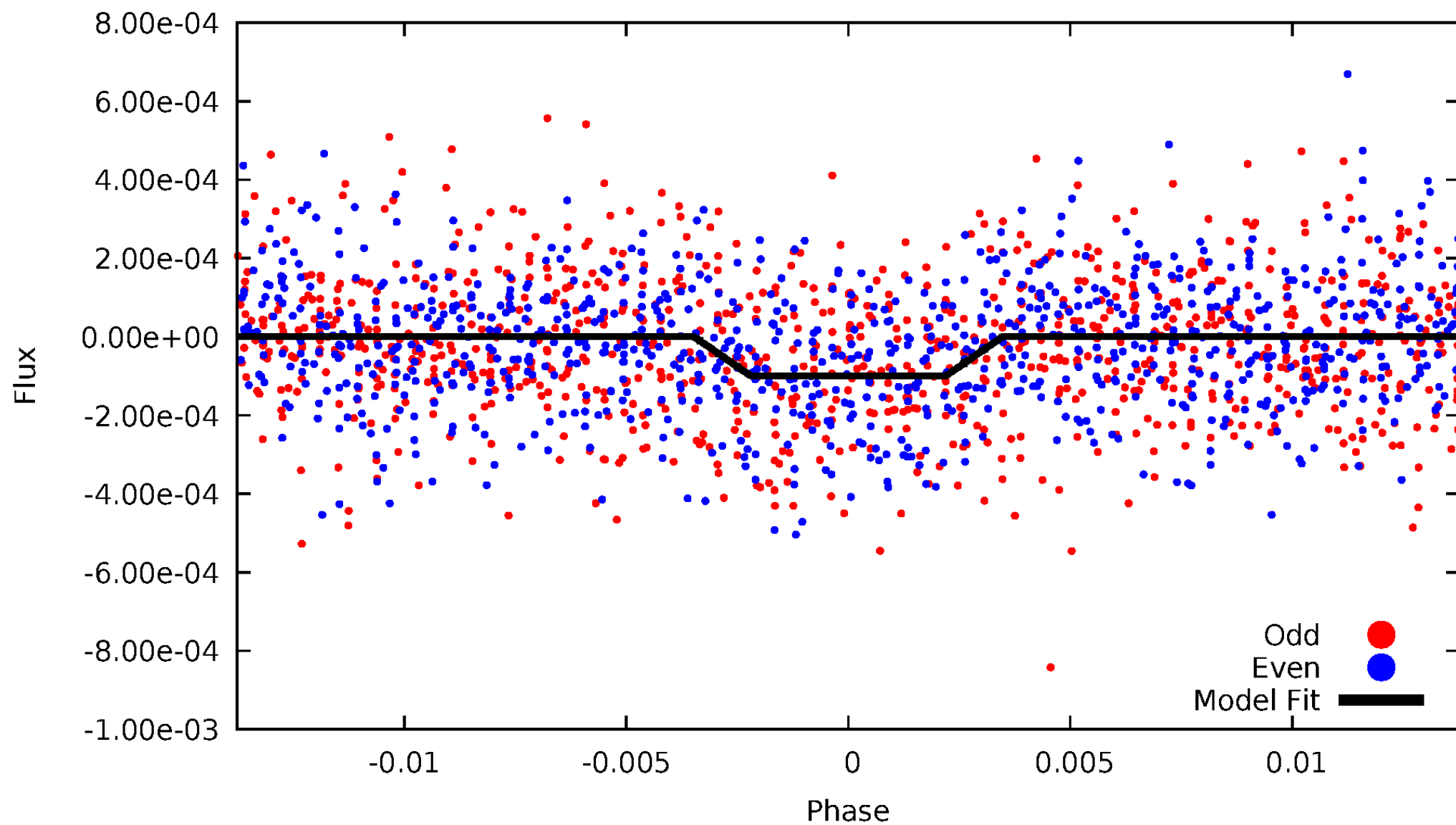
DV Odd/Even

TCE 008430053-01



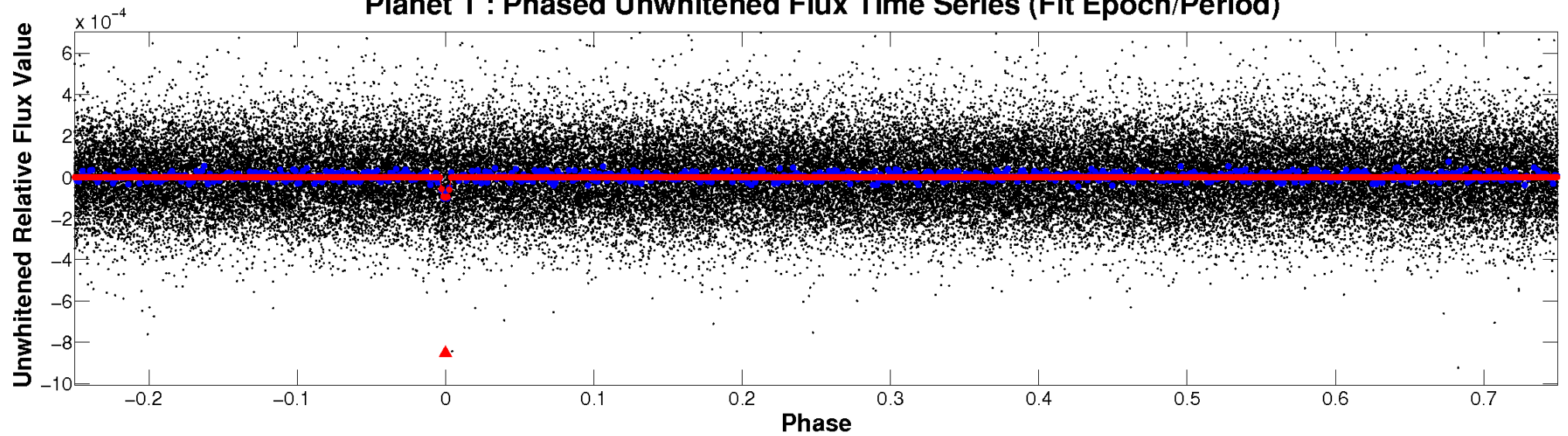
ALT Odd/Even

TCE 008430053-01

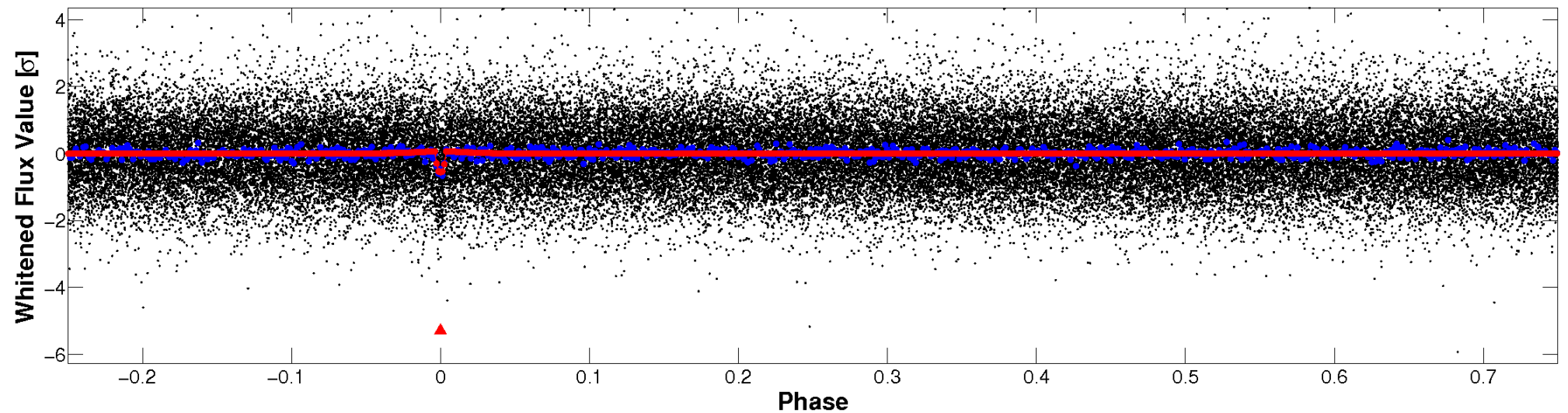


Non-Whitened Vs. Whitened Light Curve

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

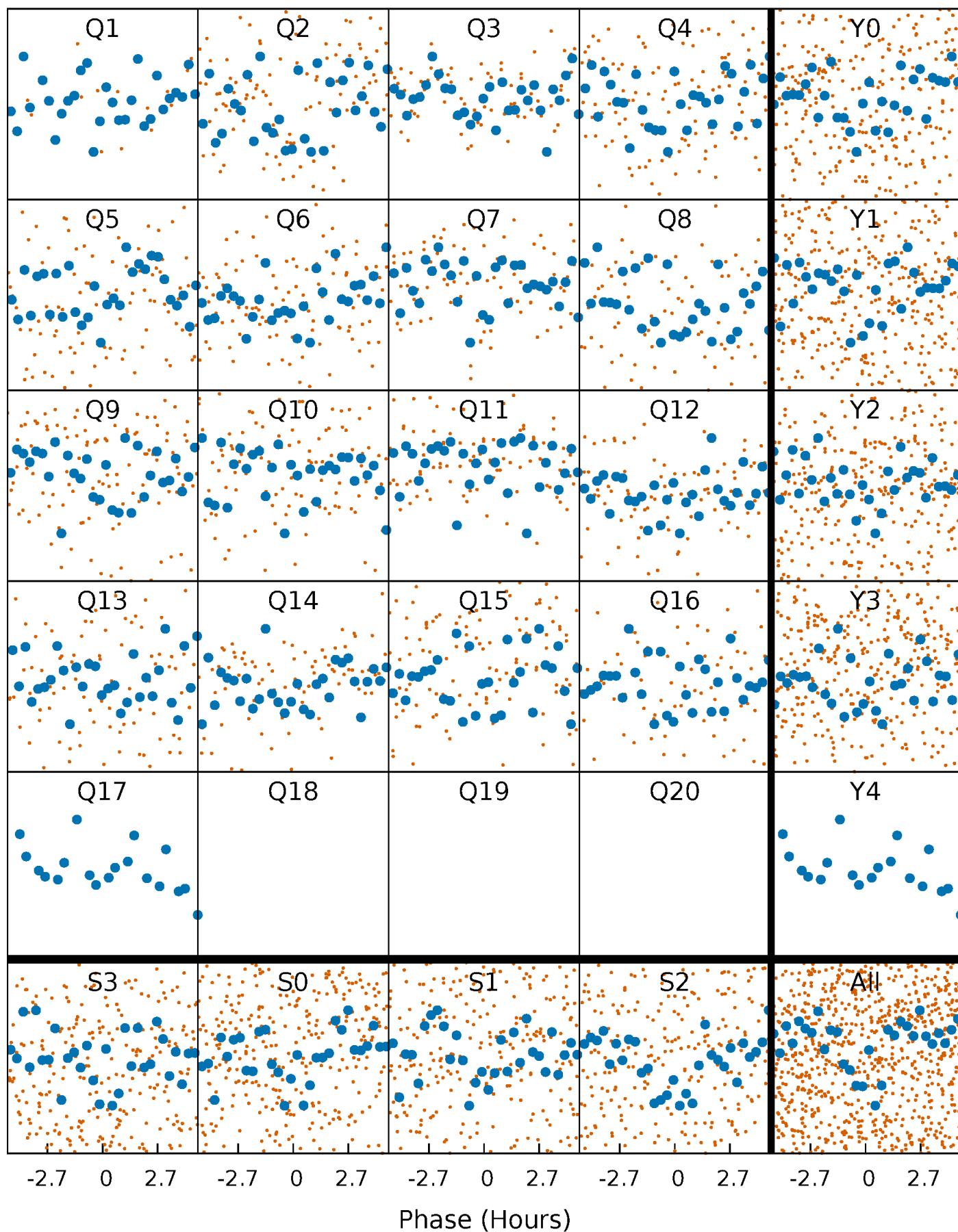


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



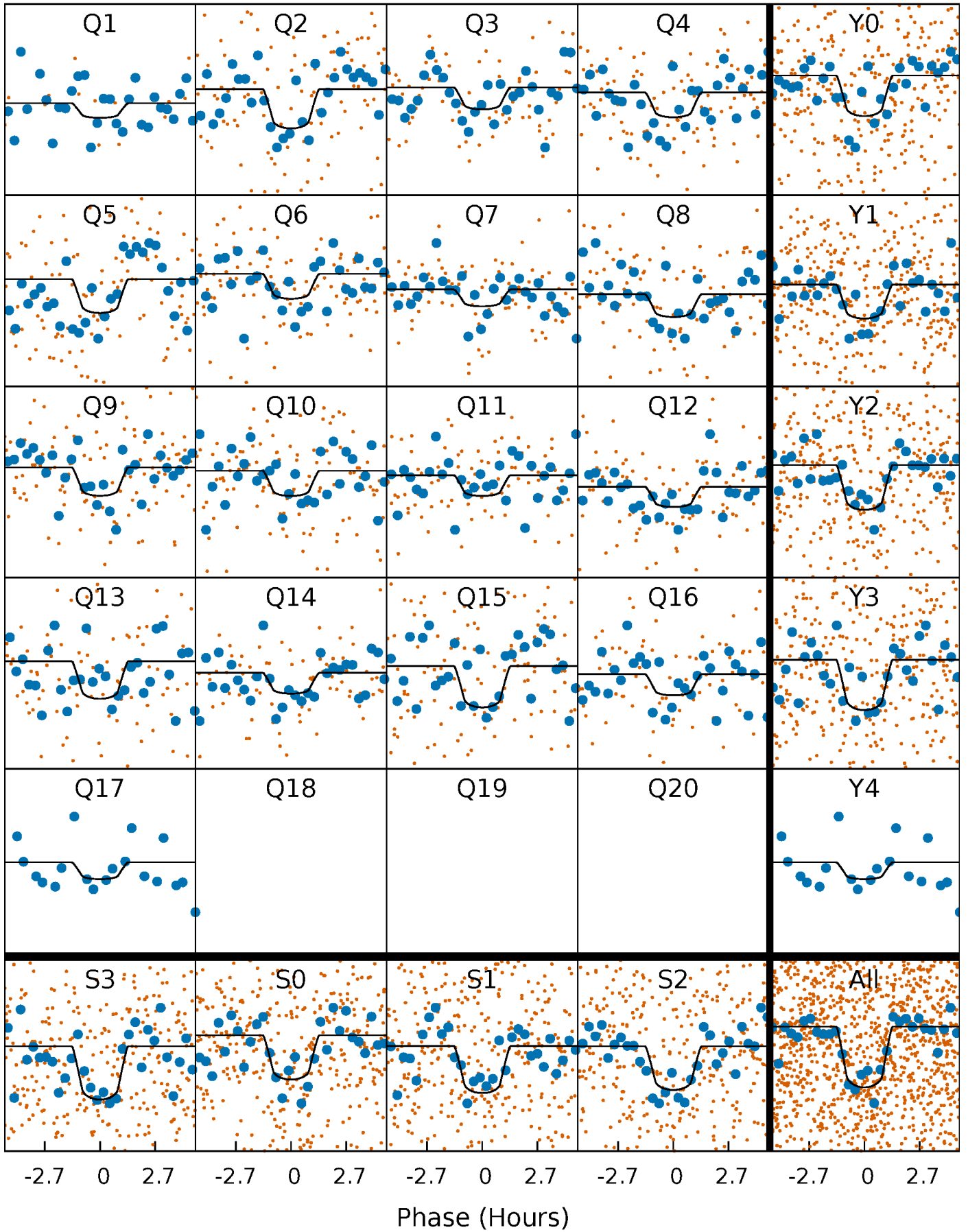
PDC Quarter-Phased Transit Curves

TCE 008430053-01 P= 15.951288 Days $T_0=146.460006$ (BKJD)



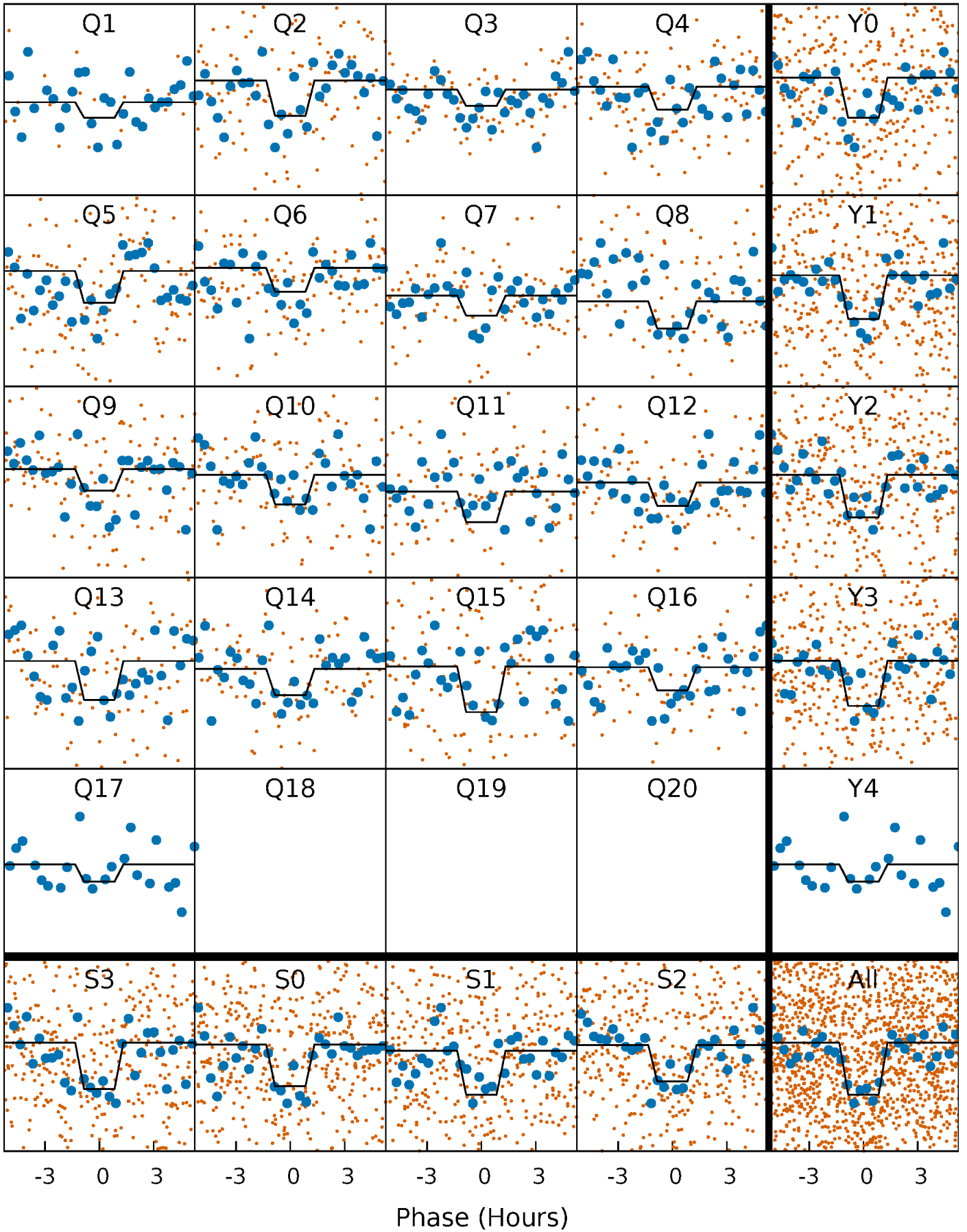
DV Quarter-Phased Transit Curves

TCE 008430053-01 P= 15.951288 Days $T_0=146.460006$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

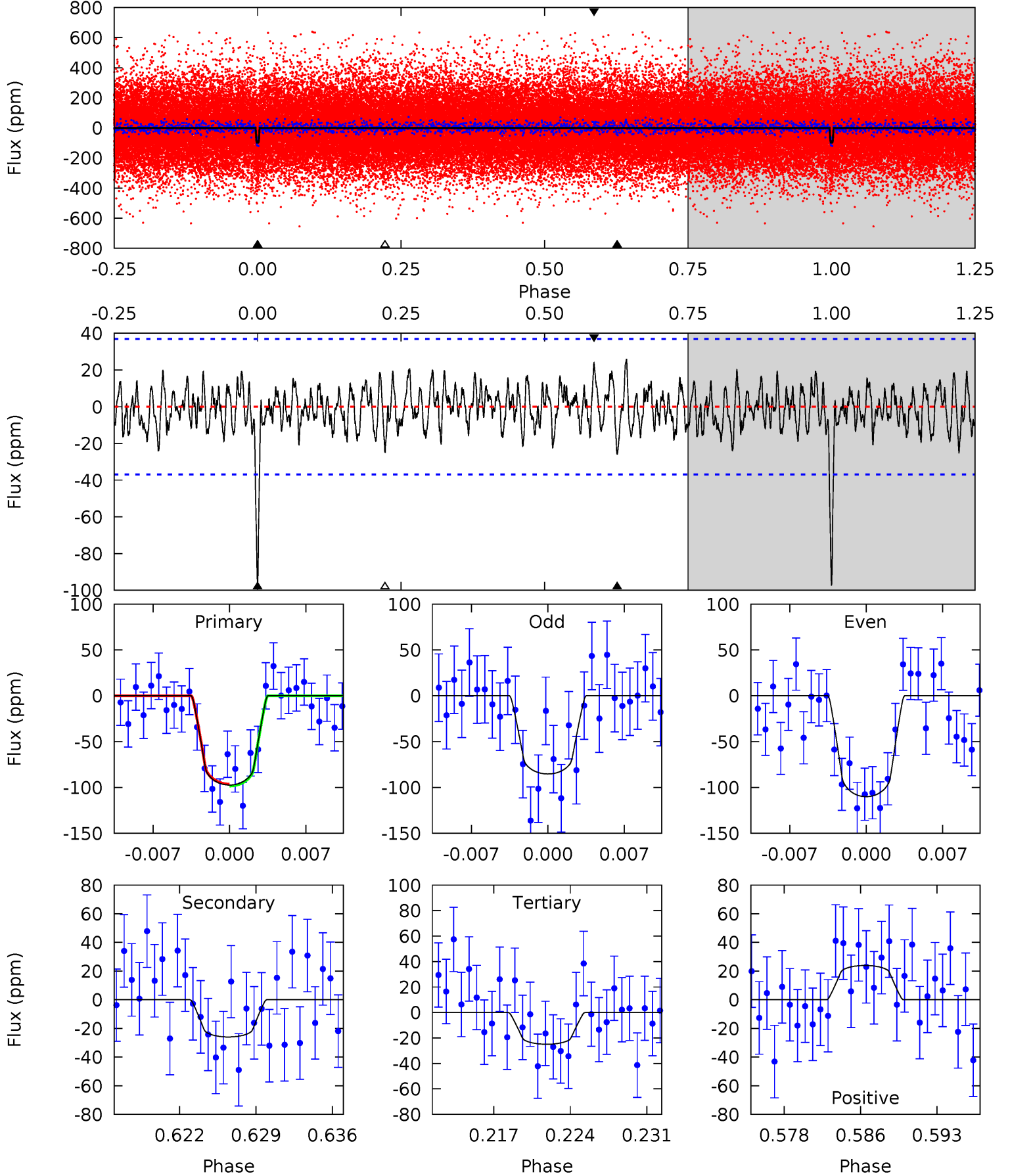
TCE 008430053-01 P= 15.951237 Days $T_0=146.460916$ (BKJD)



DV Model-Shift Uniqueness Test

008430053-01, $P = 15.951288$ Days, $E = 130.508718$ Days

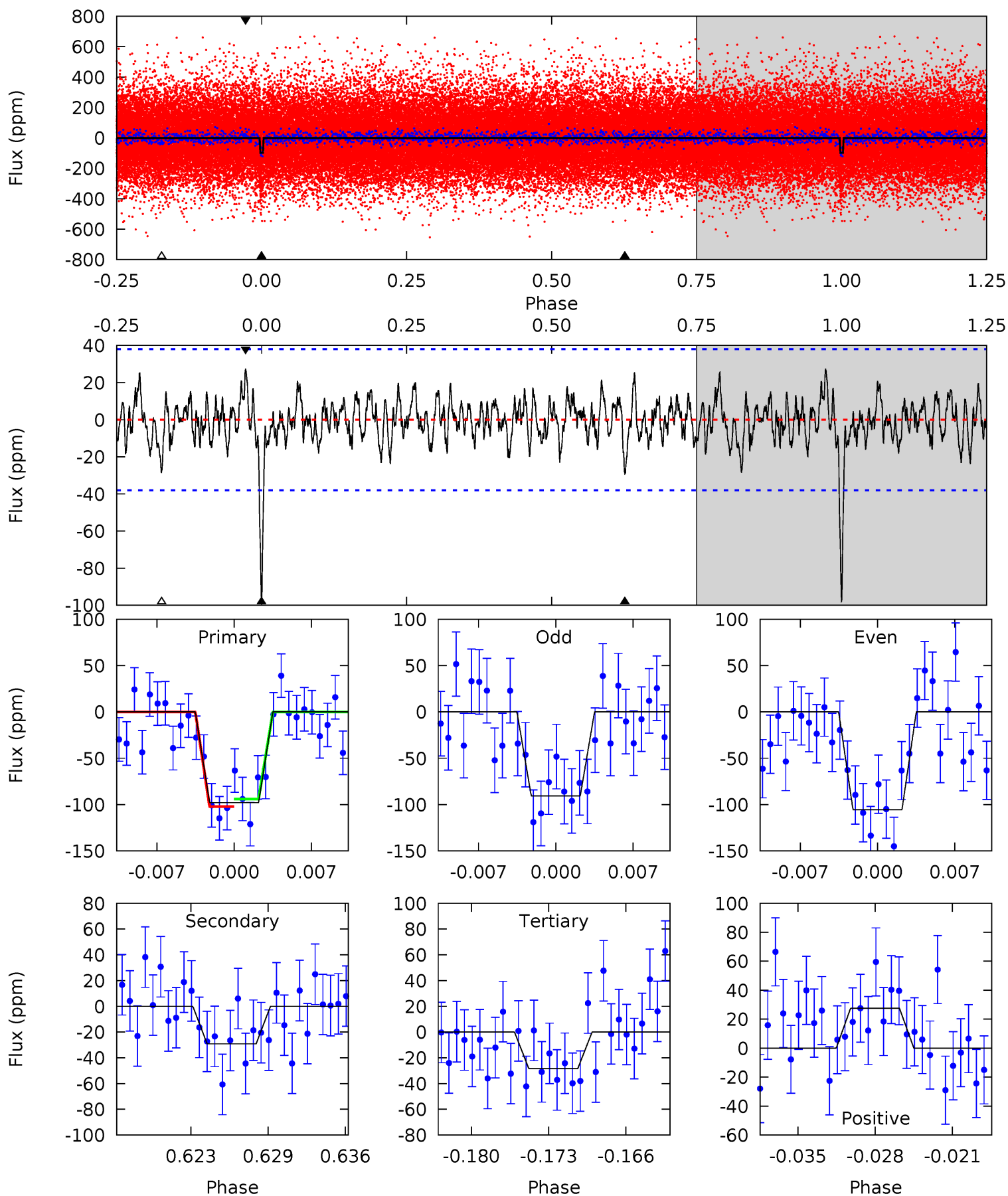
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	3.58	3.44	3.30	5.09	2.69	1.27	9.99	10.1	0.15	0.28	1.71	1.01	0.21	0.14



Alt Model-Shift Uniqueness Test

008430053-01, P = 15.951237 Days, E = 130.509679 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	3.91	3.81	3.68	5.10	2.70	1.22	9.33	9.46	0.11	0.23	1.00	0.97	0.22	0.54



Stellar Parameters For KIC 008430053

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6451^{+144}_{-208}	$4.375^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$1.168^{+0.409}_{-0.136}$	$1.181^{+0.185}_{-0.152}$	$1.044^{+0.324}_{-0.586}$
	+2%/-3%	+2%/-5%	+312%/-375%	+35%/-12%	+16%/-13%	+31%/-56%
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 008430053-01 / KOI 4603.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-26 ± 7	$1.54^{+0.80}_{-0.83}$	1212^{+81}_{-69}	4472^{+1792}_{-700}	104^{+386}_{-64}
Alt.	-29 ± 7	$1.35^{+0.84}_{-0.68}$	1203^{+94}_{-57}	4786^{+1720}_{-819}	148^{+432}_{-94}

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 $A_{obs} \gg 1.0$

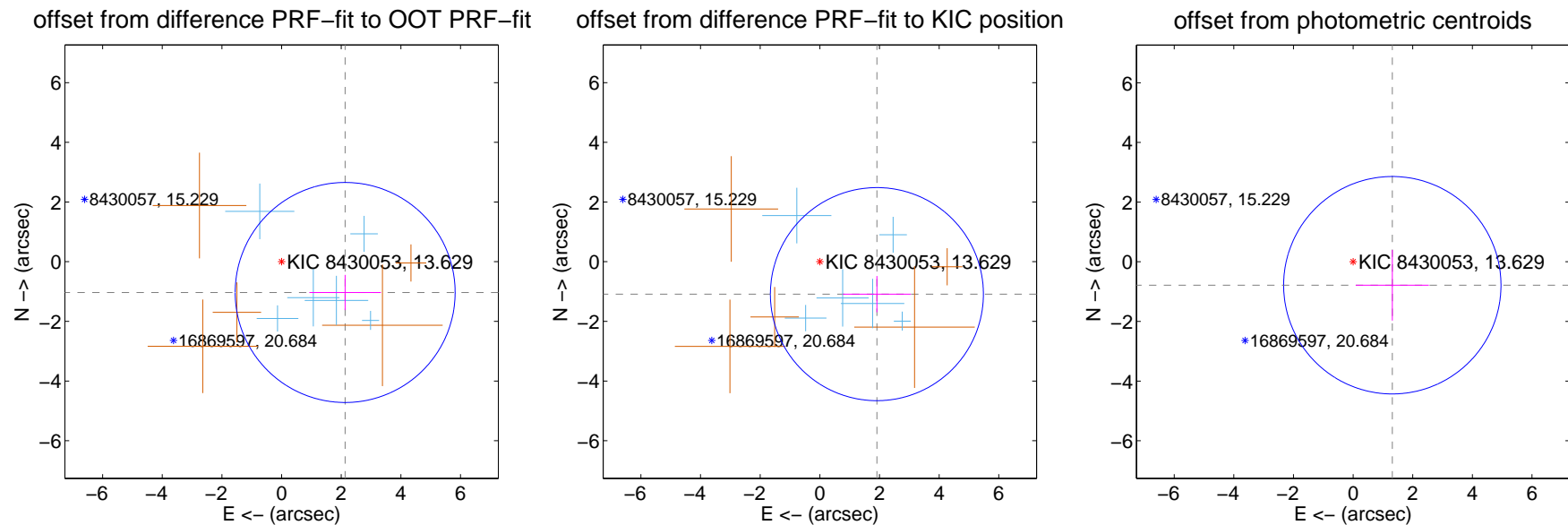
DV Centroid Data

Supplemental centroid analysis for 008430053-01. Kepler magnitude: 13.63. Transit SNR 9.47

There are 6 quarters with good PRF difference image offsets

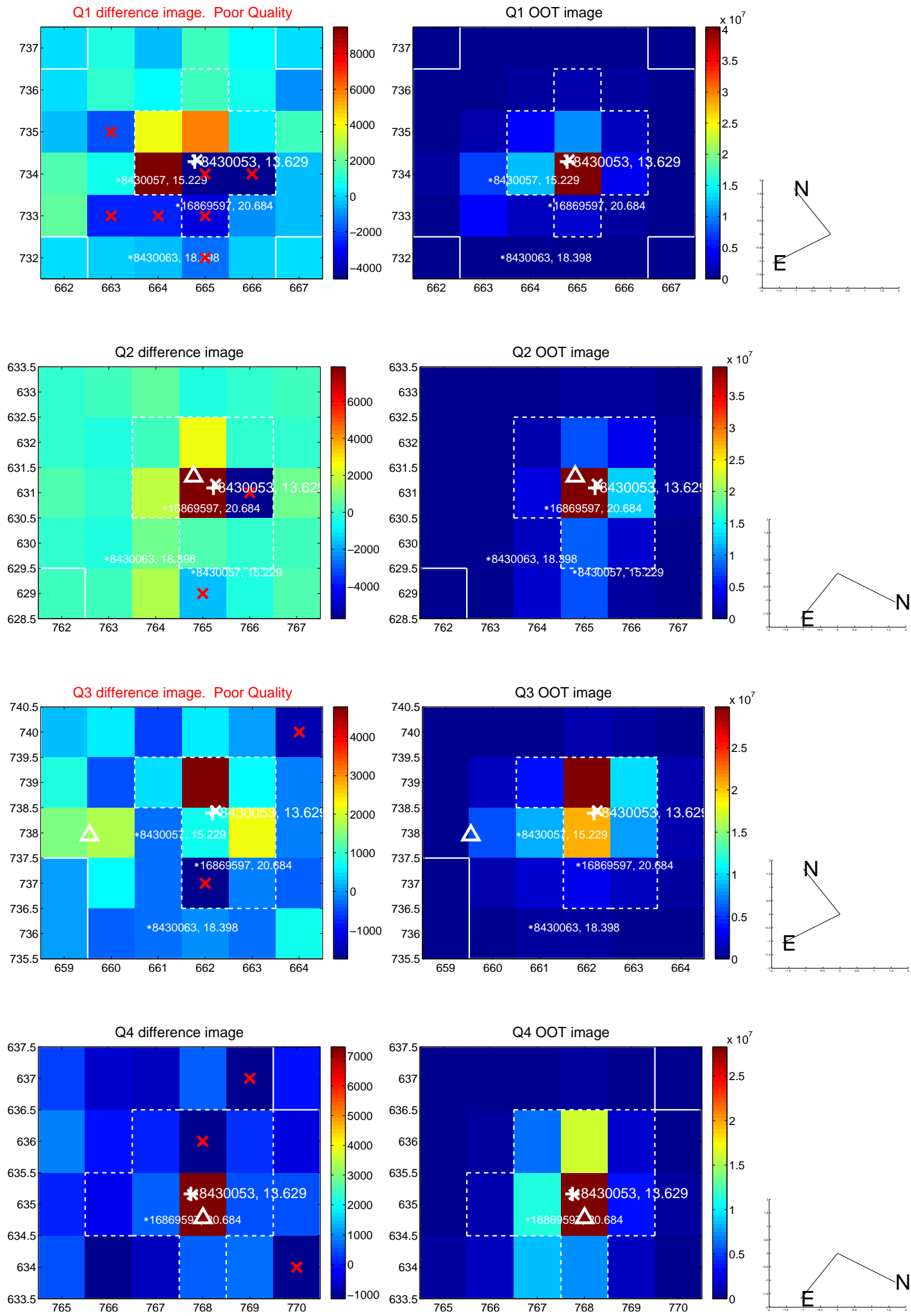
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.368 ± 1.229	1.93	-2.132 ± 1.200	-1.032 ± 0.589
PRF-fit source offset from KIC position	2.200 ± 1.190	1.85	-1.913 ± 1.141	-1.087 ± 0.607
photometric centroid source offset	1.53 ± 1.22	1.26	-1.31 ± 1.23	-0.79 ± 1.18

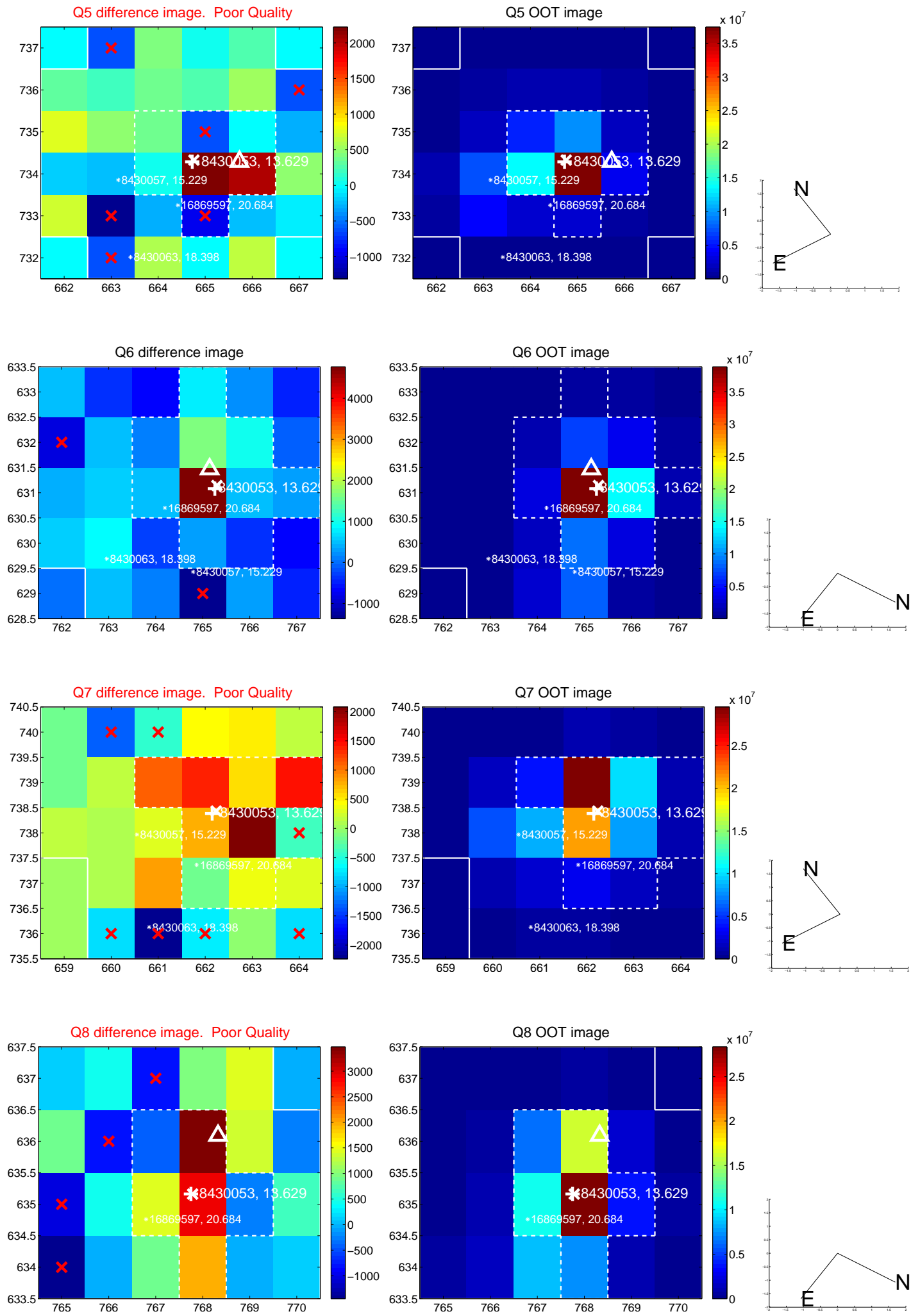


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

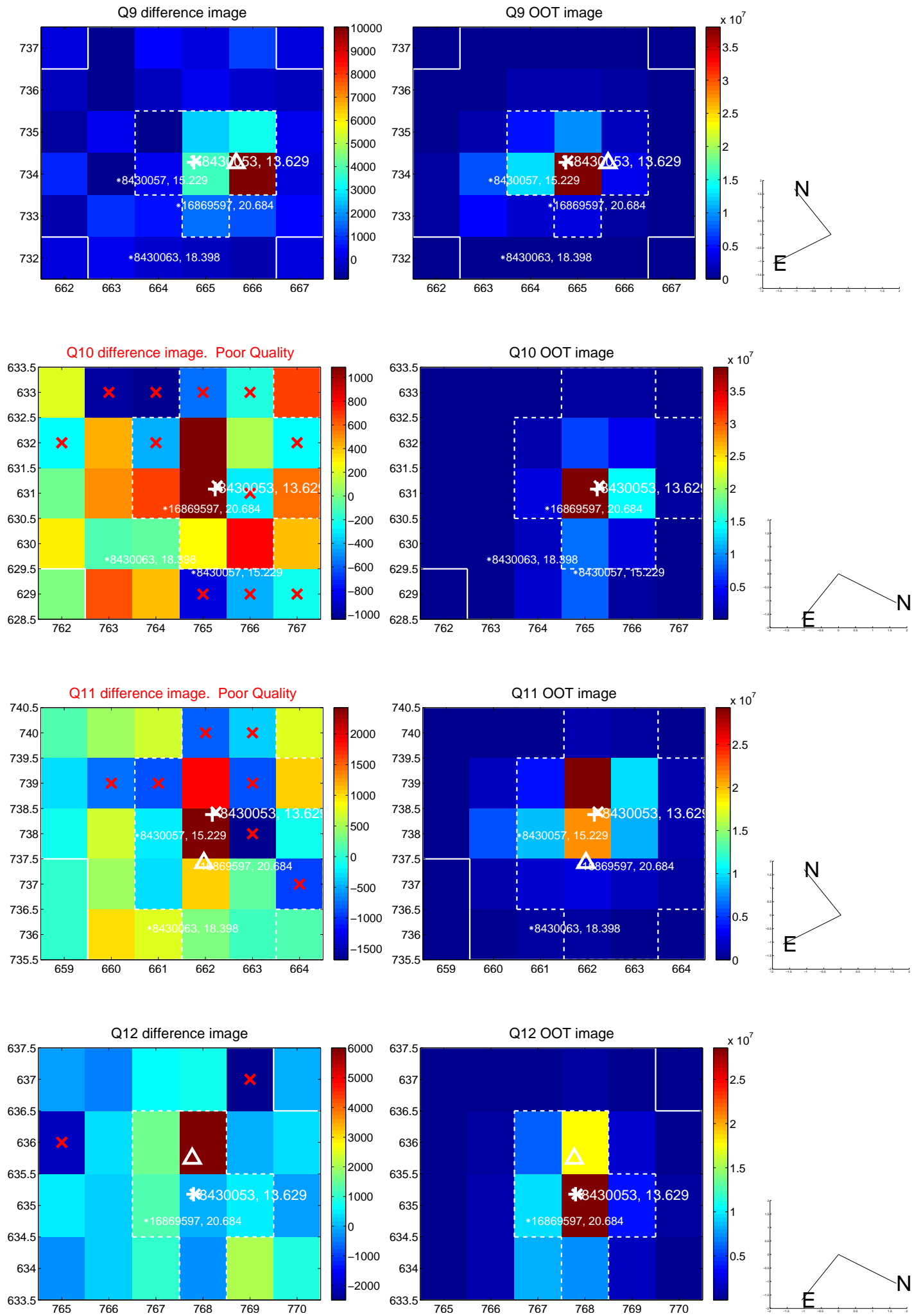
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



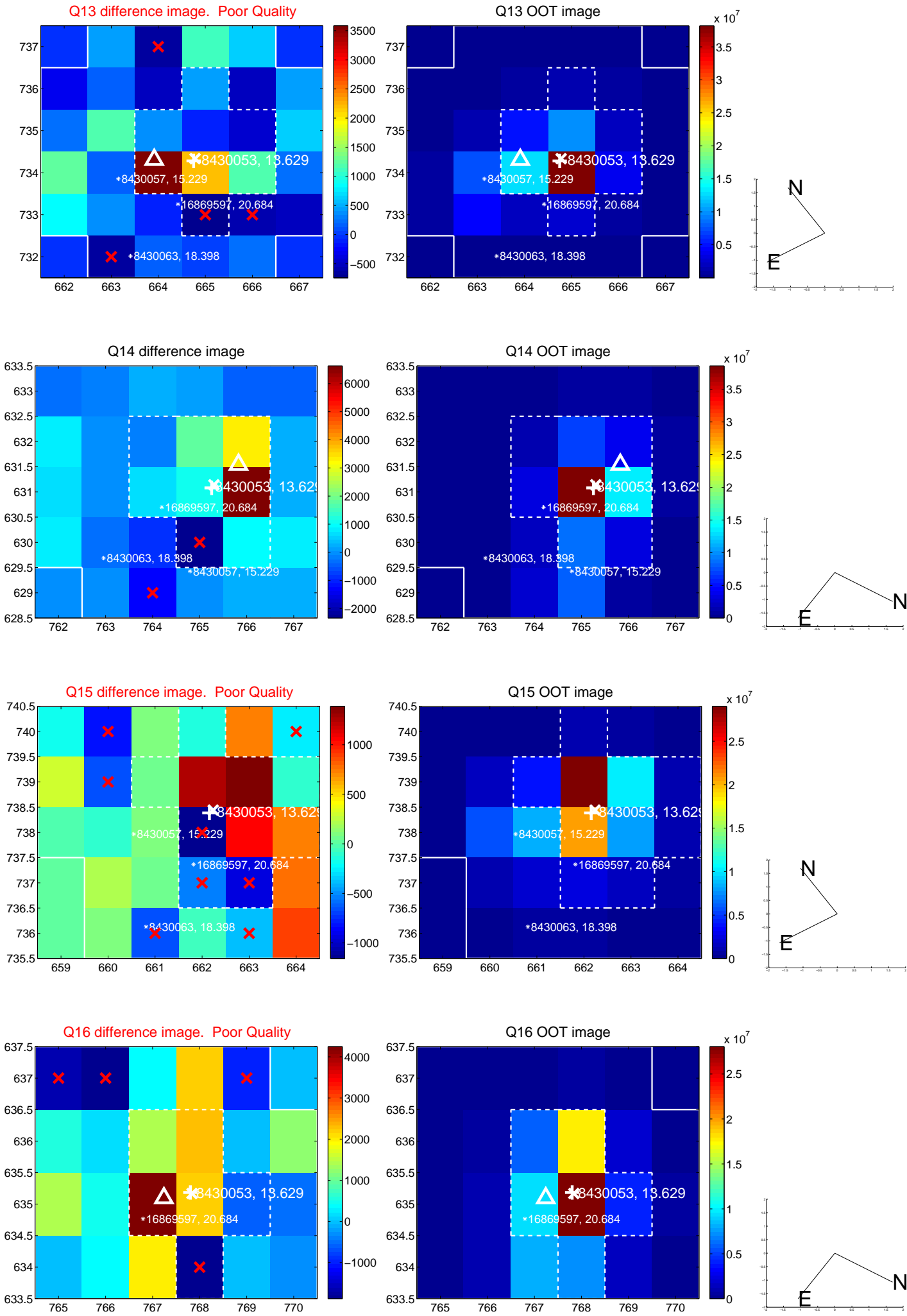
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



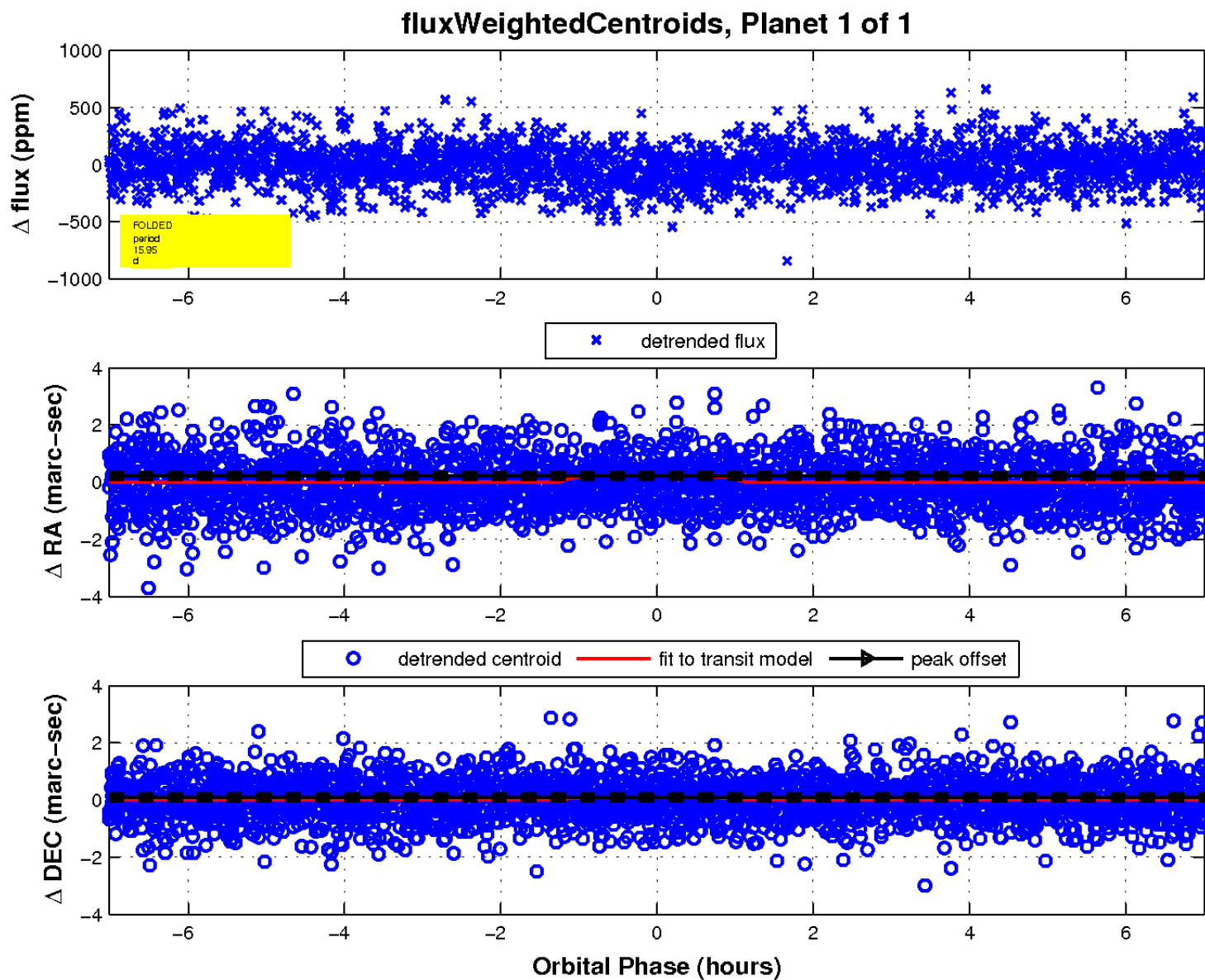
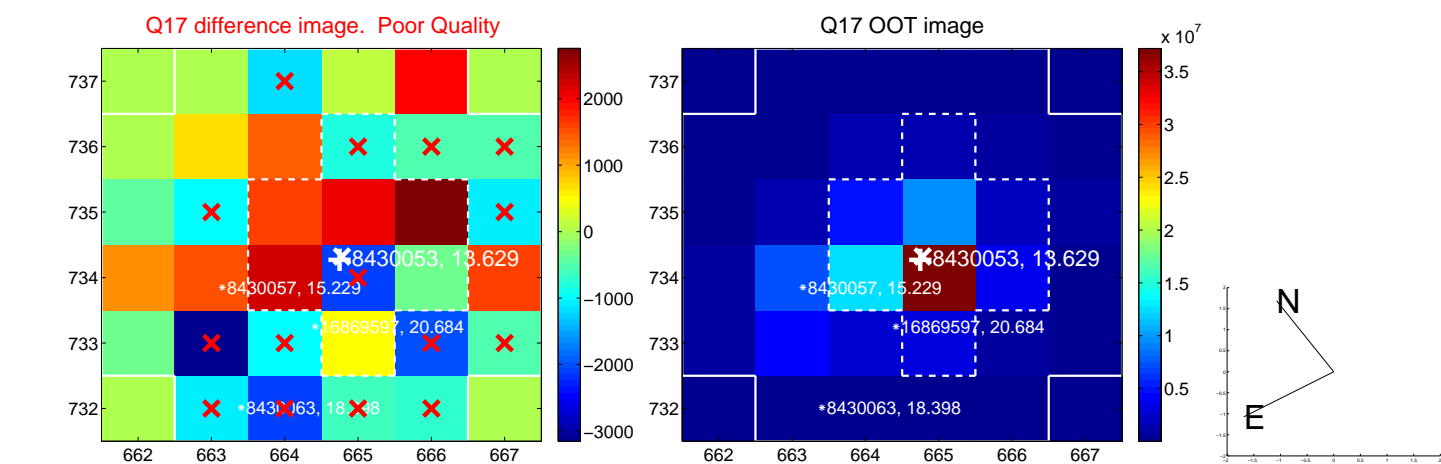
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

