

KIC 005428657

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})
005428657-01	OBS	6130.01	1.542882	132.614199	366.9	1.327	19.0	22.3	0.54	4530	1.31	243.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005428657-01	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.

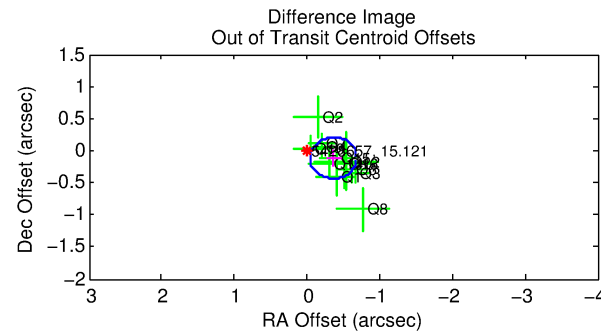
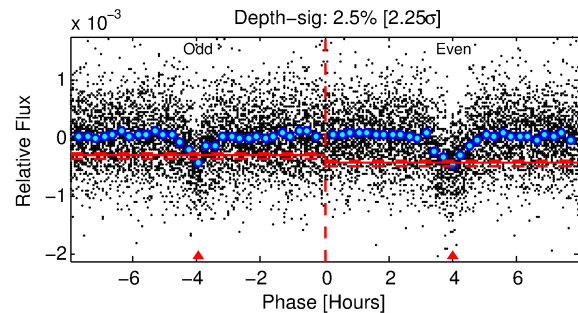
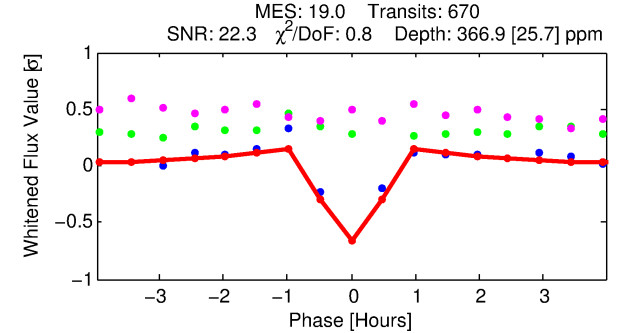
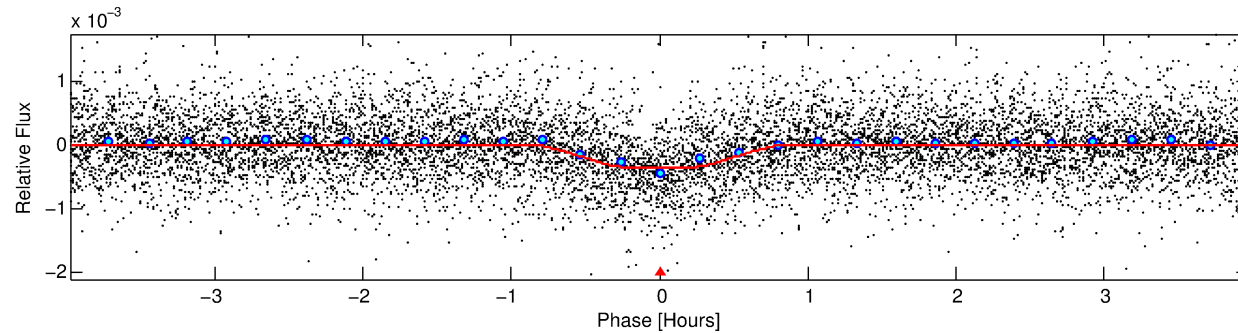
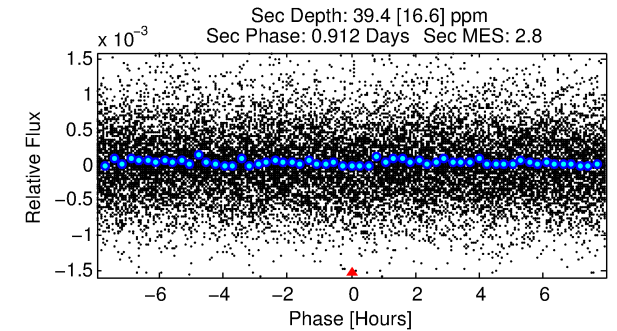
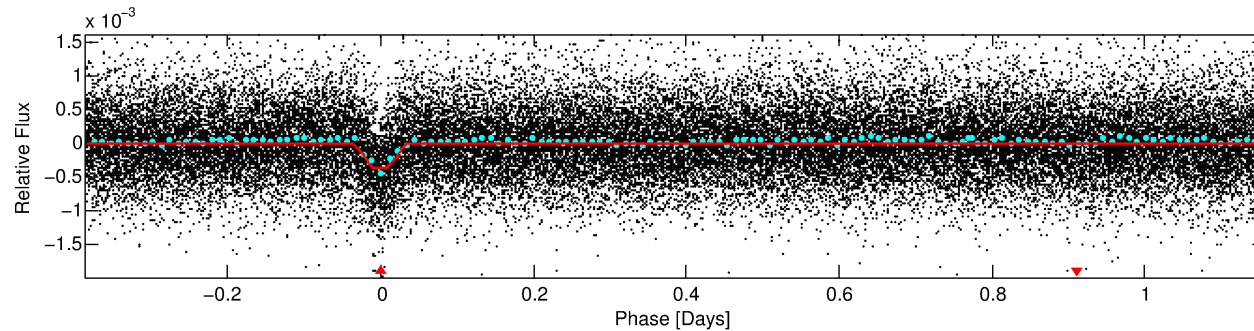
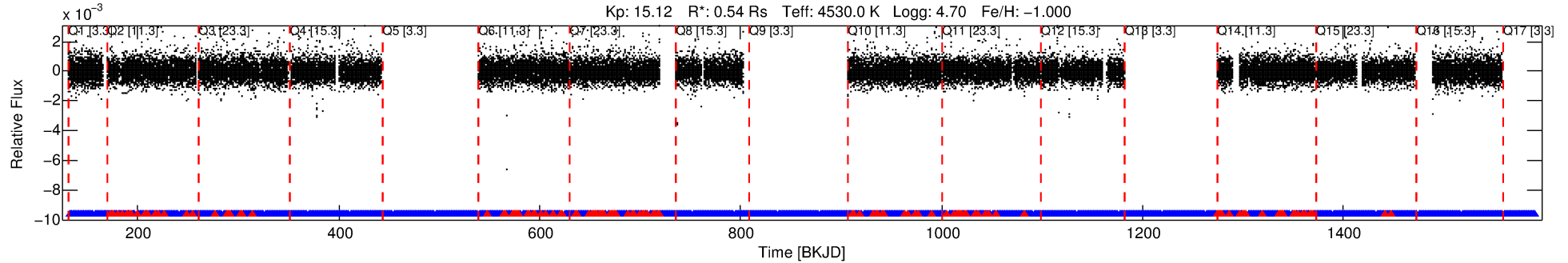
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005428657-01

No Significant Match Found

DV One-Page Summary

KIC: 5428657 Candidate: 1 of 1 Period: 1.543 d
KOI: K06130.01 Corr: 0.904



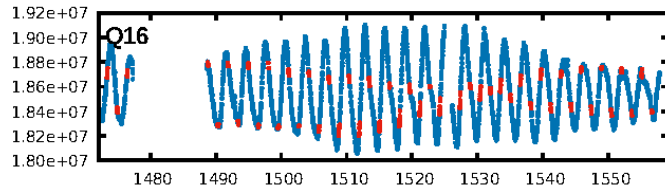
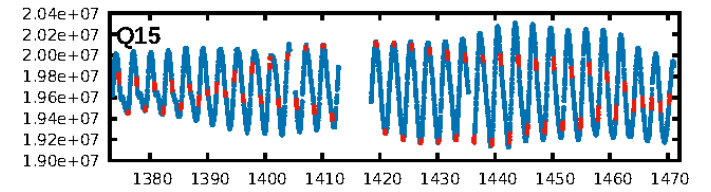
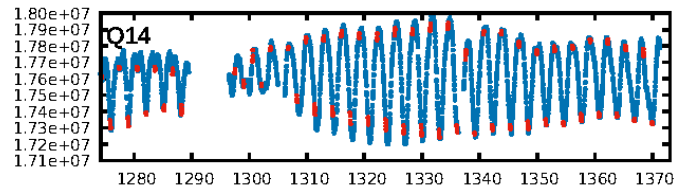
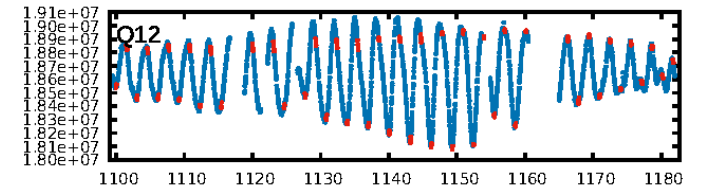
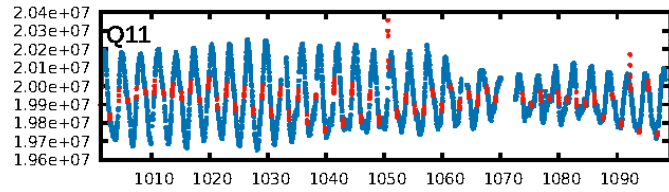
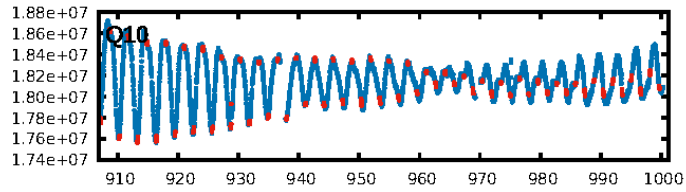
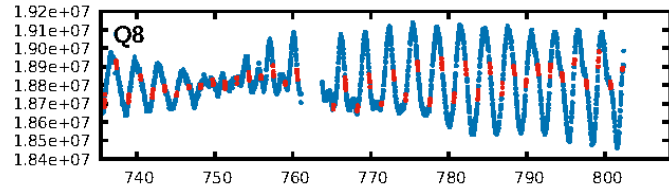
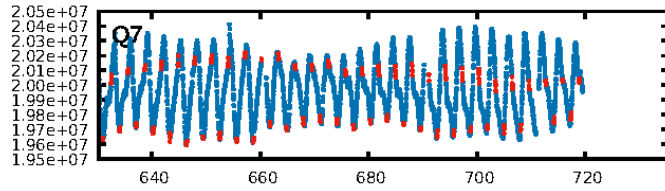
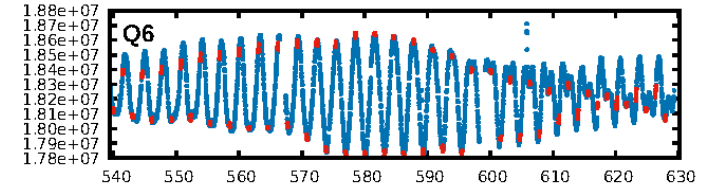
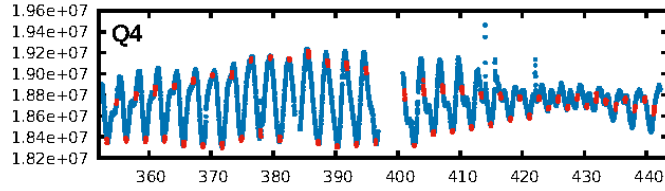
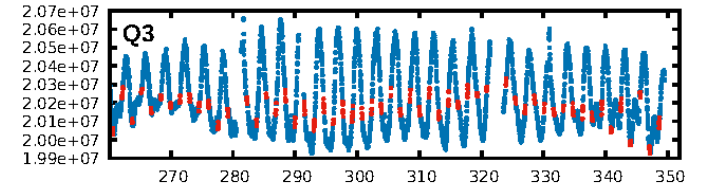
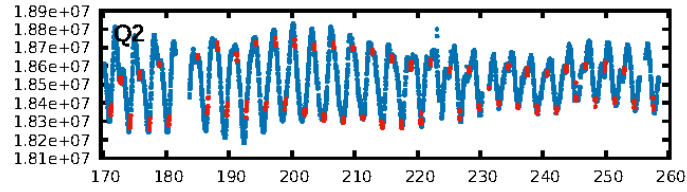
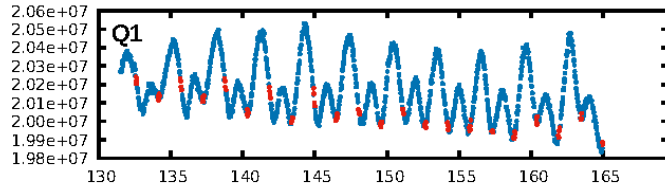
DV Fit Results:

Period = 1.54288 [0.00000] d
Epoch = 132.6142 [0.0008] BKJD
Rp/R* = 0.0222 [0.0053]
a/R* = 3.94 [3.47]
b = 0.93 [0.15]
Seff = 243.17 [37.48]
Teff = 1007 [39] K
Rp = 1.31 [0.32] Re
a = 0.0212 [0.0013] AU
Ag = 5.72 [3.67] [1.29σ]
Teffp = 2408 [389] K [3.59σ]

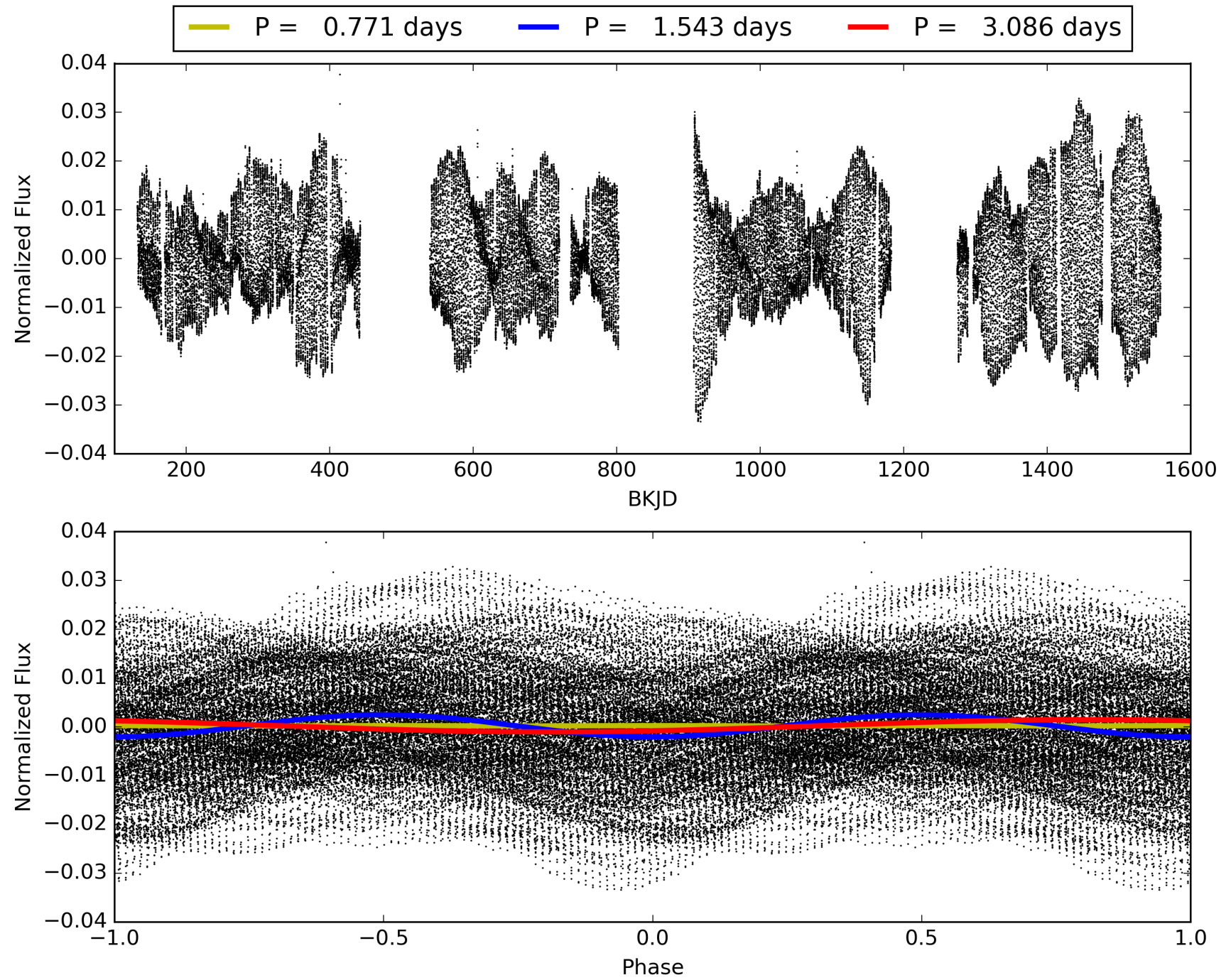
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.43e-66
RollingBand-fgt: 0.82 [531/648]
GhostDiagnostic-chr: 2.554
Centroid-sig: 0.6%
Centroid-so: 1.610 arcsec [2.77σ]
OotOffset-rm: 0.377 arcsec [3.52σ]
KicOffset-rm: 0.674 arcsec [5.59σ]
OotOffset-st: 4/3/4/1 [12]
KicOffset-st: 4/3/4/1 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 005428657-01, PDC Light Curves

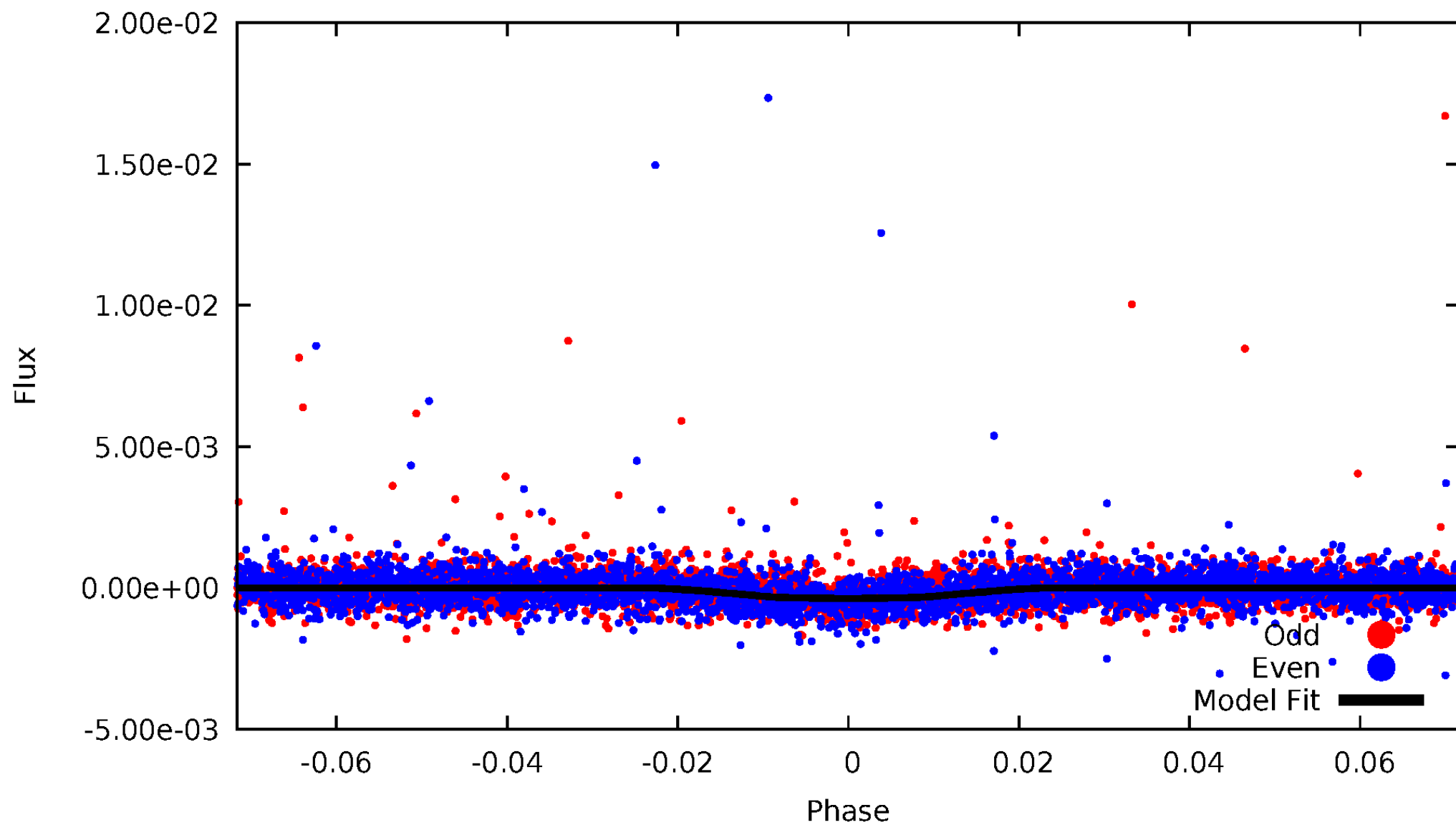


TCE 005428657-01



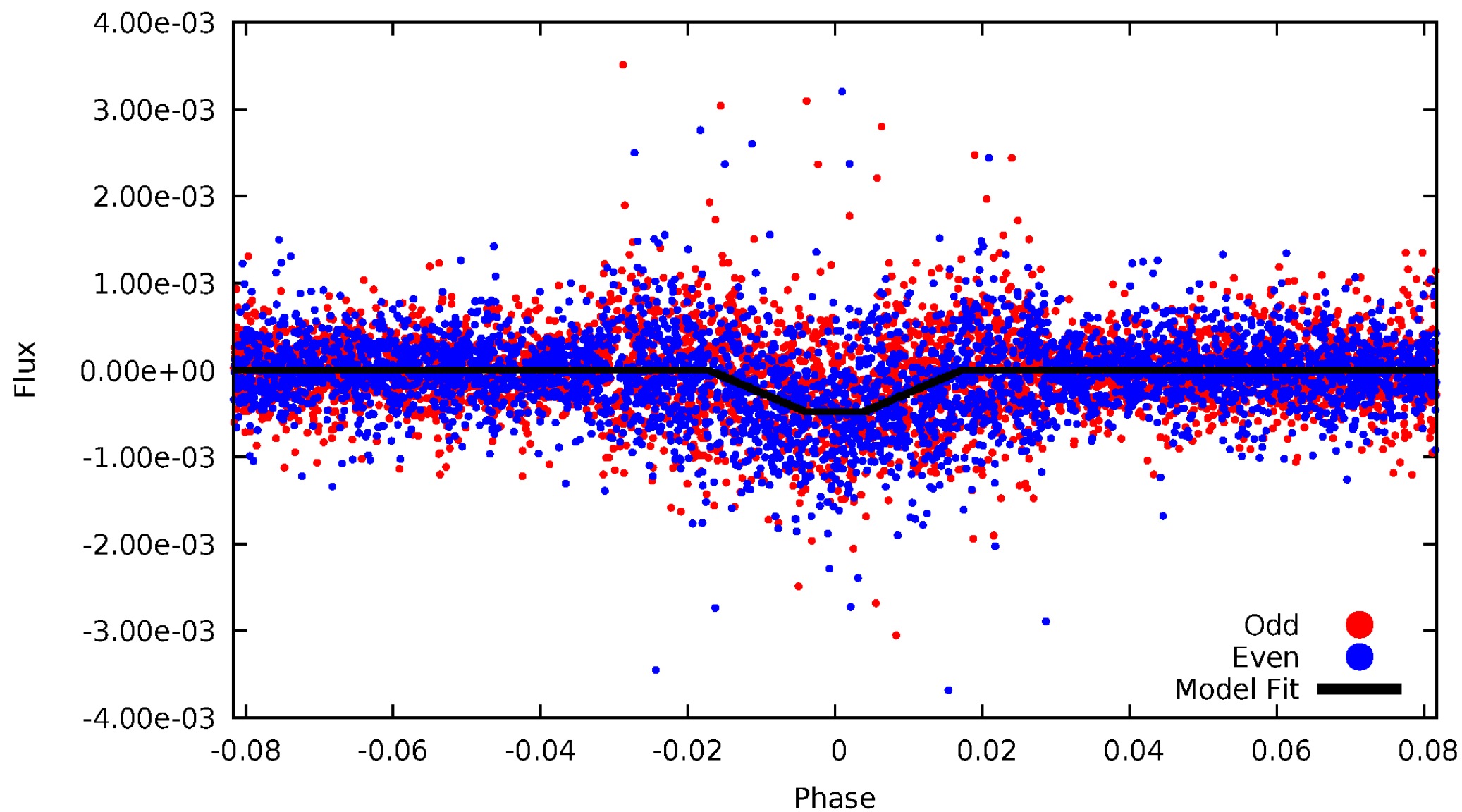
DV Odd/Even

TCE 005428657-01



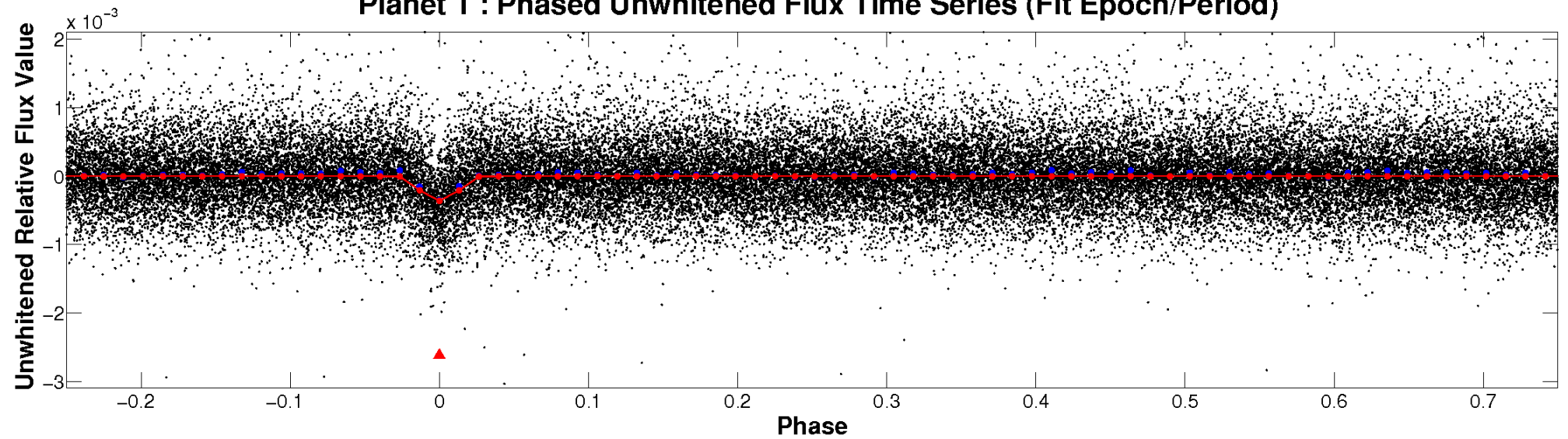
ALT Odd/Even

TCE 005428657-01

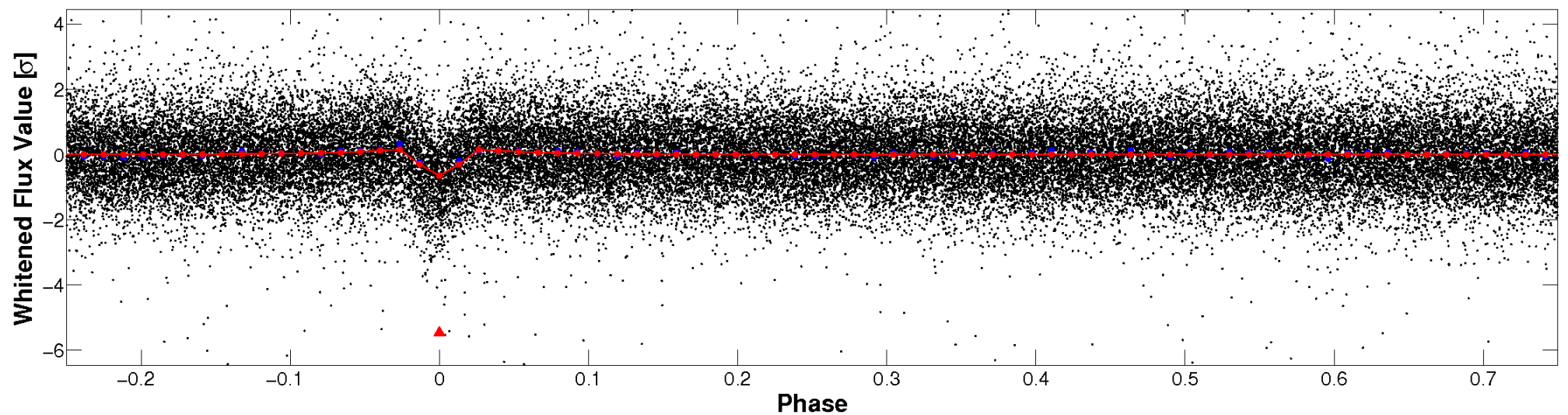


Non-Whitened Vs. Whitened Light Curve

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

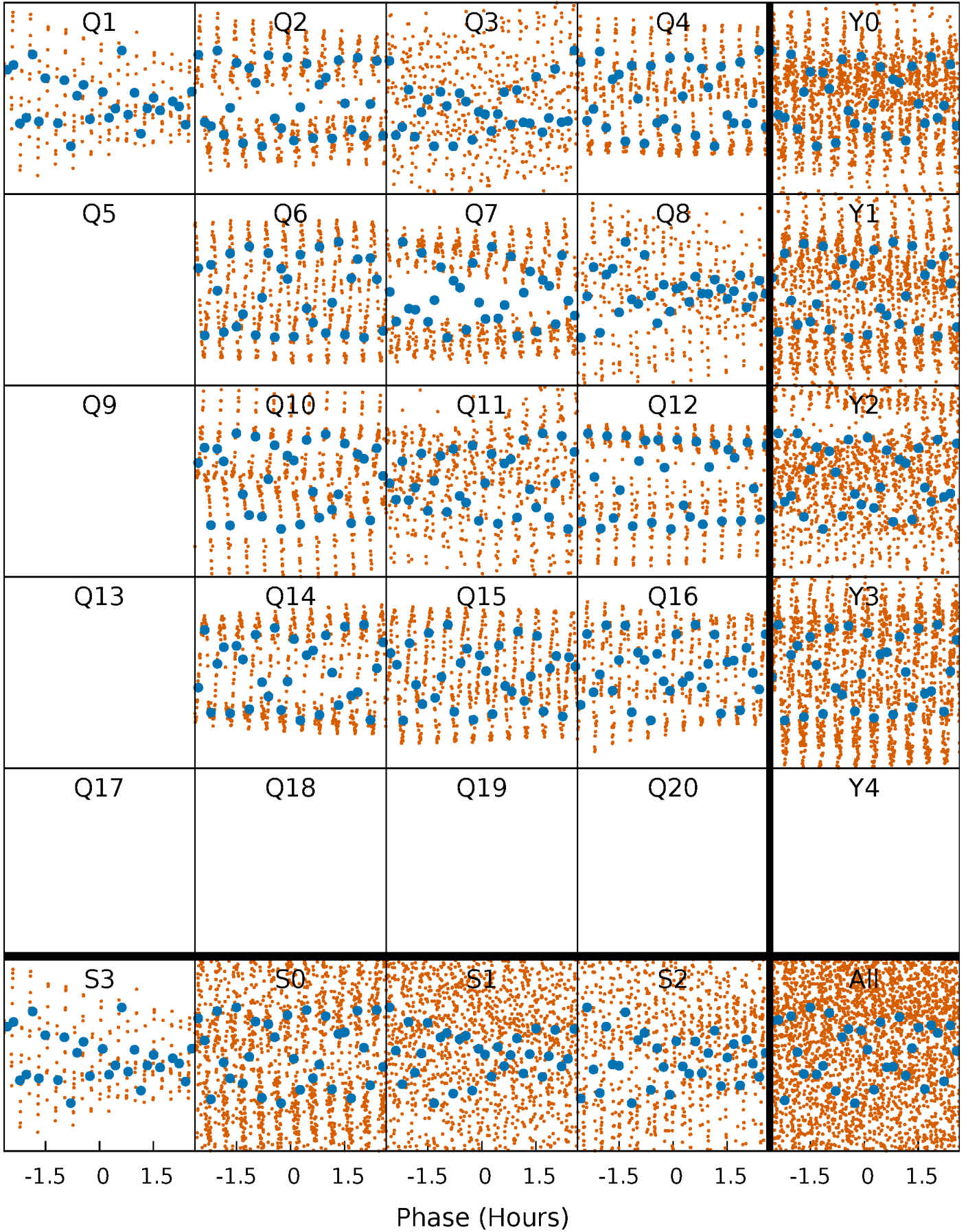


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



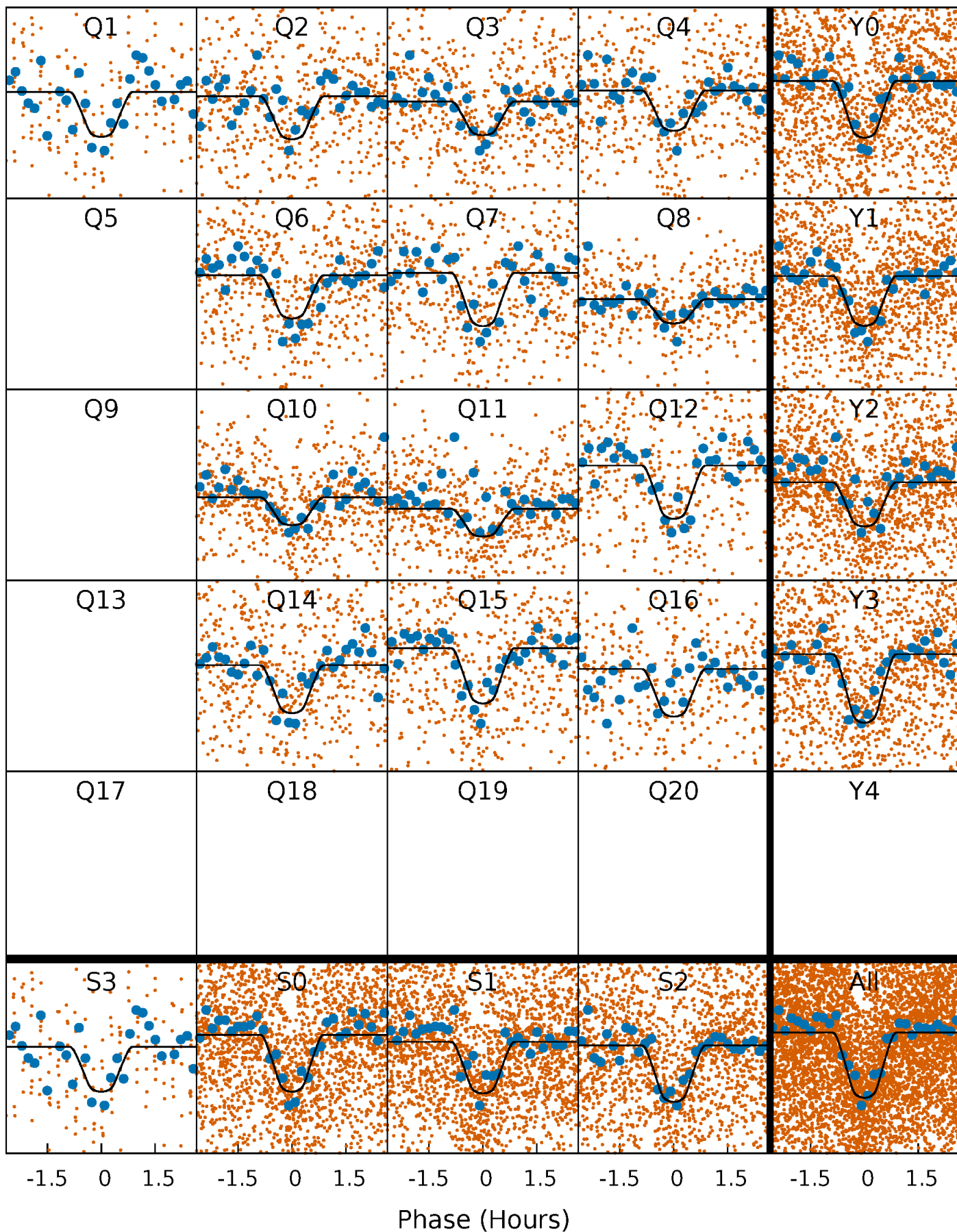
PDC Quarter-Phased Transit Curves

TCE 005428657-01 P= 1.542882 Days $T_0=132.614199$ (BKJD)



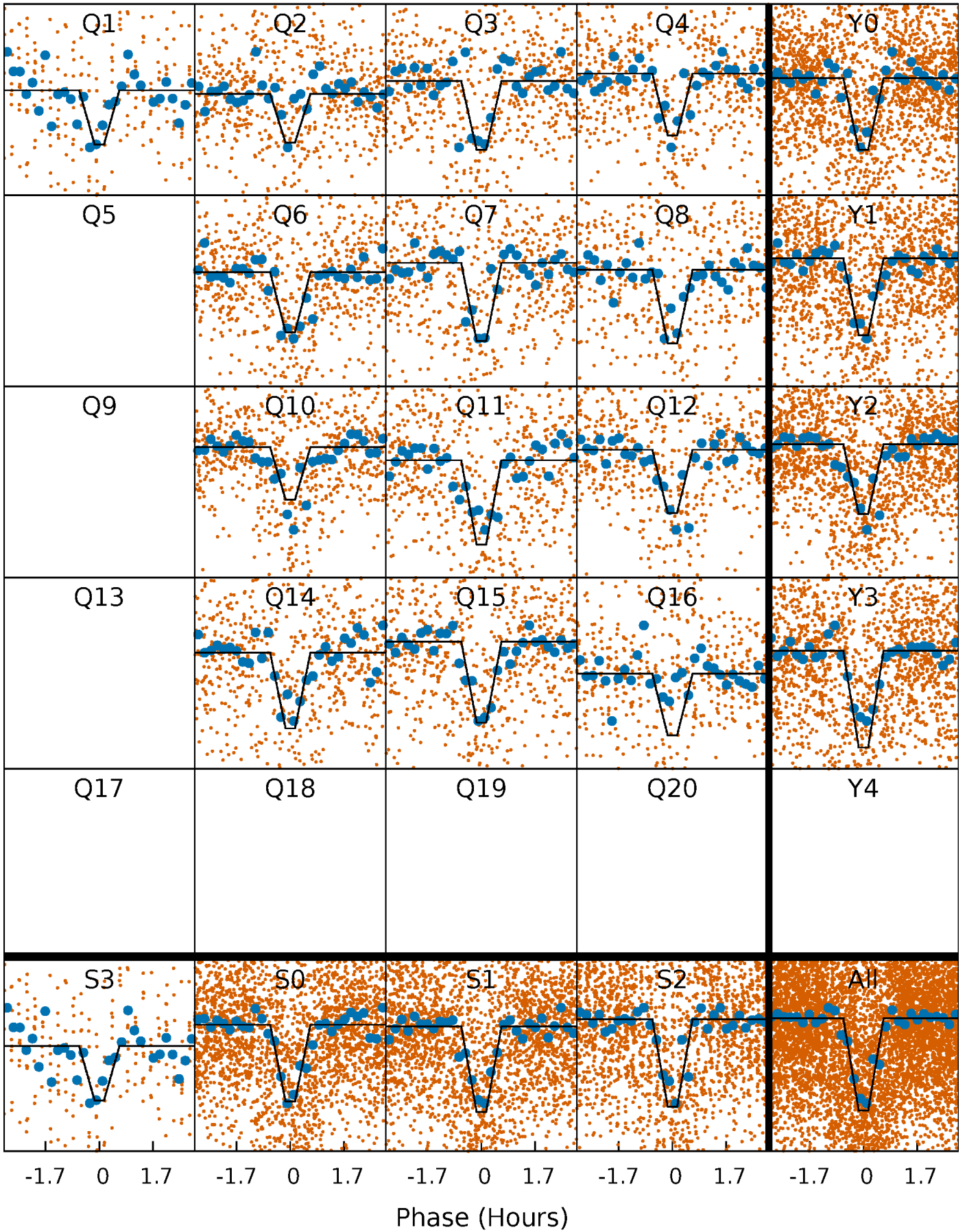
DV Quarter-Phased Transit Curves

TCE 005428657-01 P= 1.542882 Days $T_0=132.614199$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

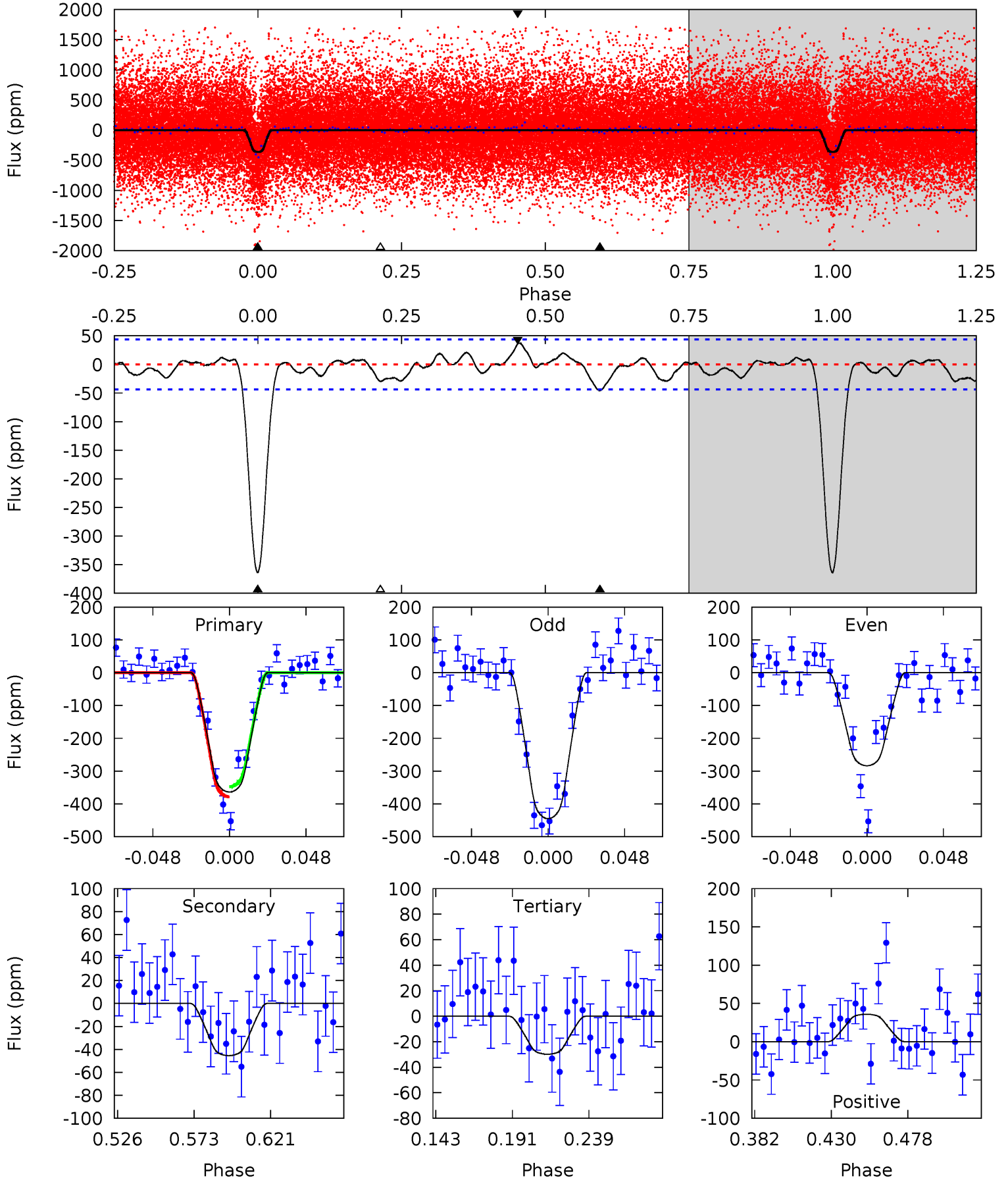
TCE 005428657-01 P= 1.542868 Days $T_0=132.618965$ (BKJD)



DV Model-Shift Uniqueness Test

005428657-01, P = 1.542882 Days, E = 131.071317 Days

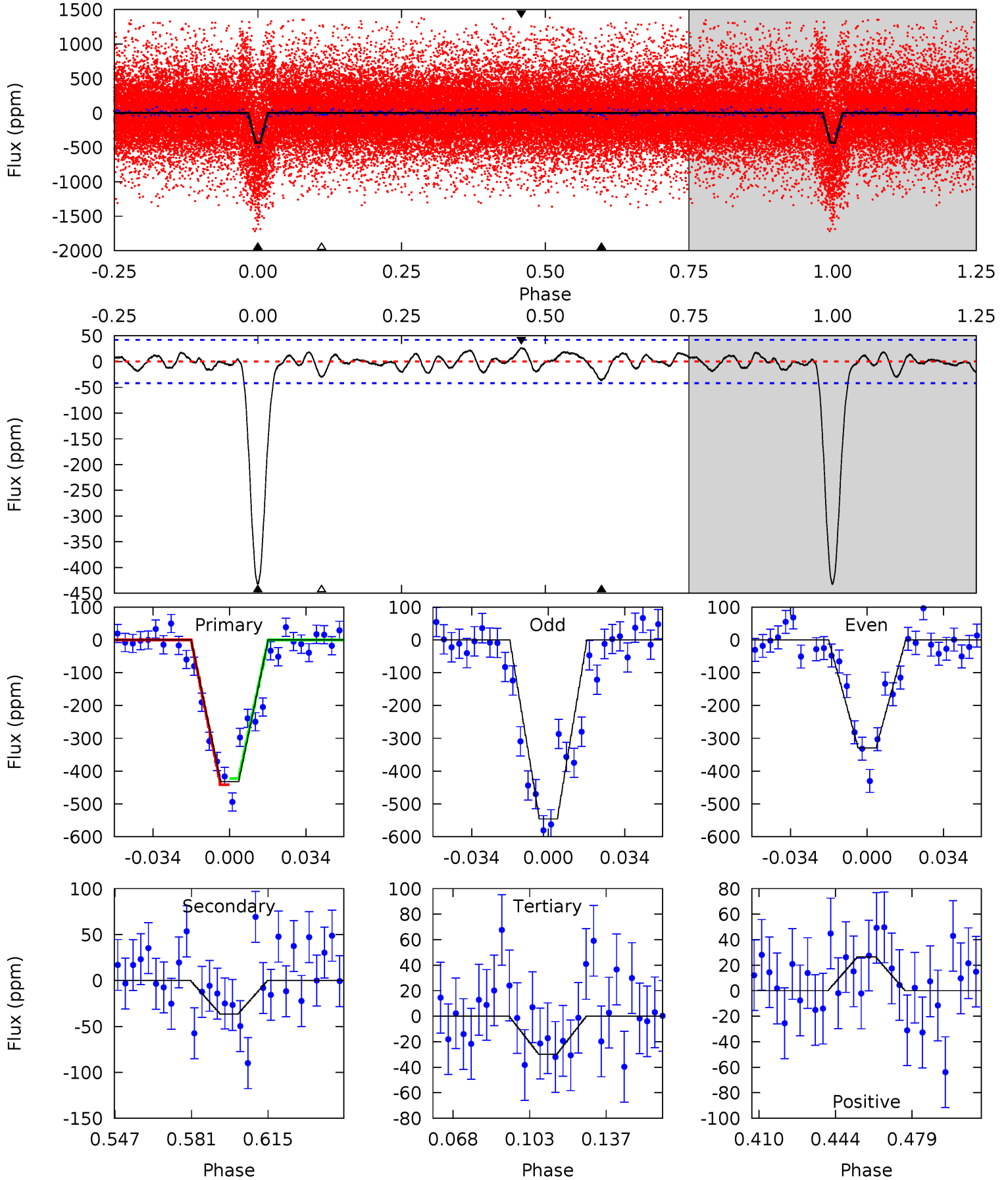
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.3	4.91	3.22	3.88	4.72	1.98	1.45	36.1	35.4	1.69	1.03	8.75	0.89	0.09	1.68



Alt Model-Shift Uniqueness Test

005428657-01, P = 1.542868 Days, E = 131.076097 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.4	4.16	3.41	3.03	4.79	2.12	1.24	45.9	46.3	0.75	1.12	12.4	0.95	0.06	1.08



Stellar Parameters For KIC 005428657

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4530^{+139}_{-139}	$4.704^{+0.052}_{-0.032}$	$-1.000^{+0.300}_{-0.300}$	$0.539^{+0.039}_{-0.039}$	$0.537^{+0.043}_{-0.028}$	$4.814^{+1.027}_{-0.650}$
	+3%/-3%	+1%/-1%	+30%/-30%	+7%/-7%	+8%/-5%	+21%/-14%
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 005428657-01 / KOI 6130.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-45 ± 9	$1.28^{+0.33}_{-0.30}$	1399^{+49}_{-49}	3038^{+282}_{-212}	$6.807^{+5.089}_{-2.653}$
Alt.	-36 ± 9	$1.27^{+0.31}_{-0.29}$	1399^{+52}_{-51}	2934^{+270}_{-211}	$5.447^{+4.441}_{-2.146}$

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

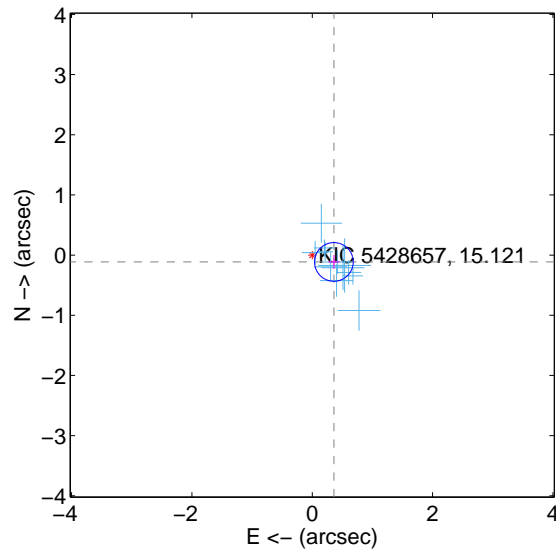
Supplemental centroid analysis for 005428657-01. Kepler magnitude: 15.12. Transit SNR 22.34

There are 12 quarters with good PRF difference image offsets

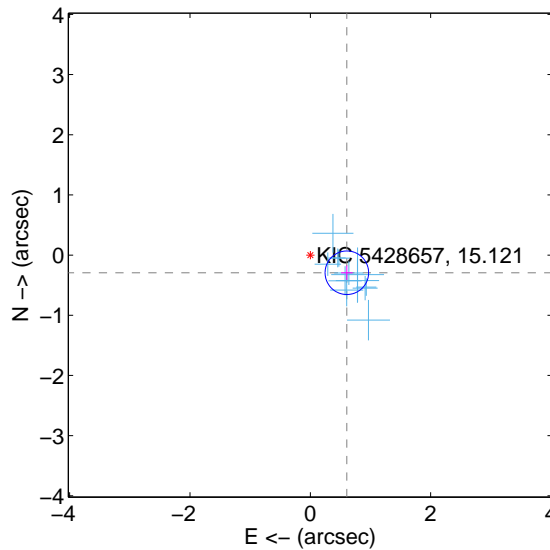
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.377 ± 0.107	3.52	-0.360 ± 0.091	-0.114 ± 0.117
PRF-fit source offset from KIC position	0.674 ± 0.121	5.59	-0.607 ± 0.095	-0.293 ± 0.122
photometric centroid source offset	1.61 ± 0.58	2.77	-1.33 ± 0.60	-0.91 ± 0.55

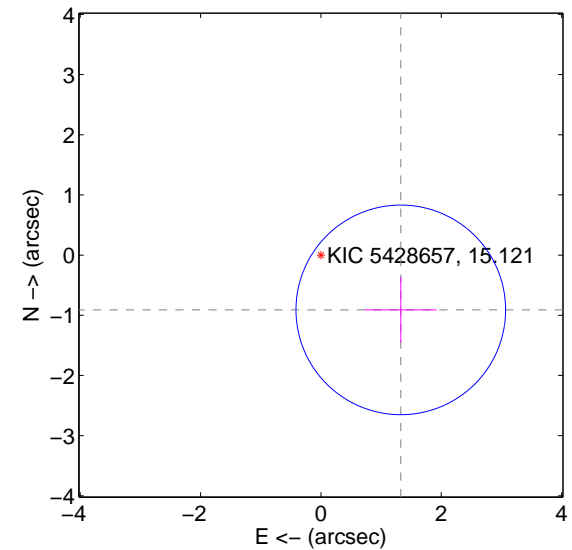
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

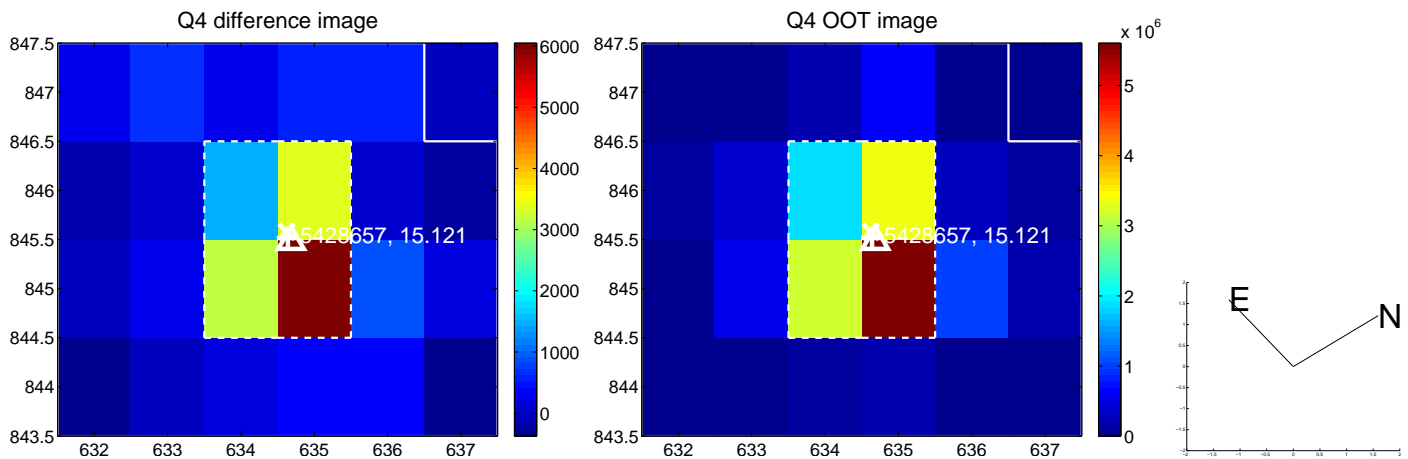
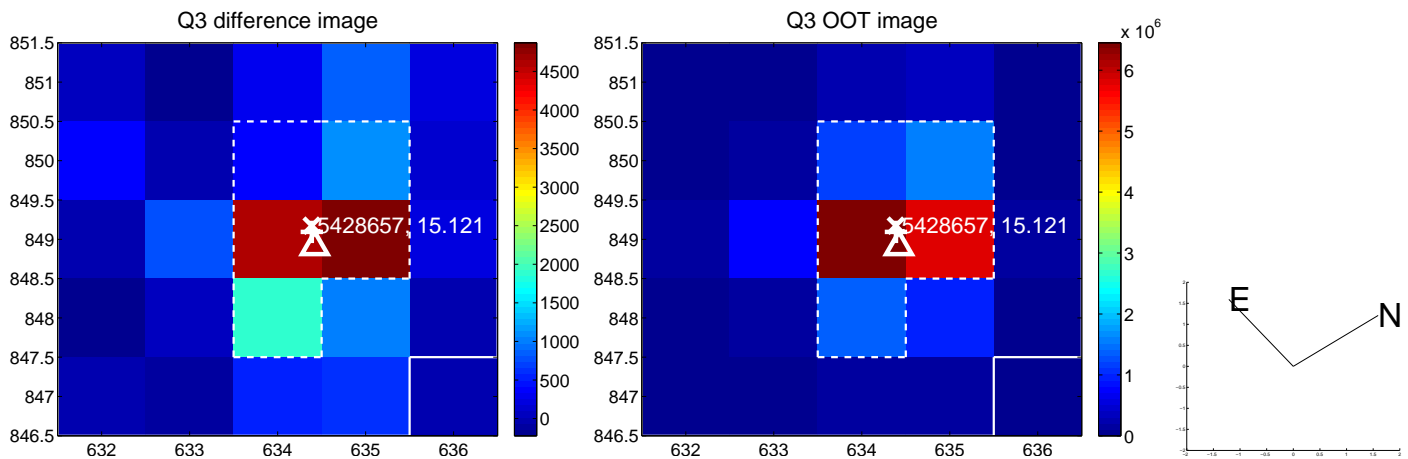
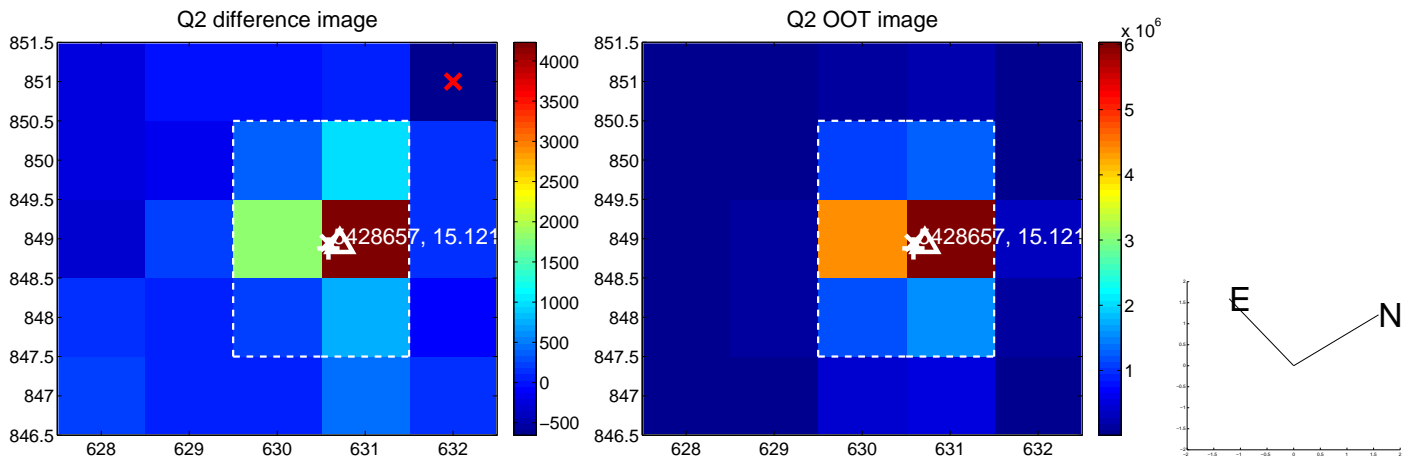
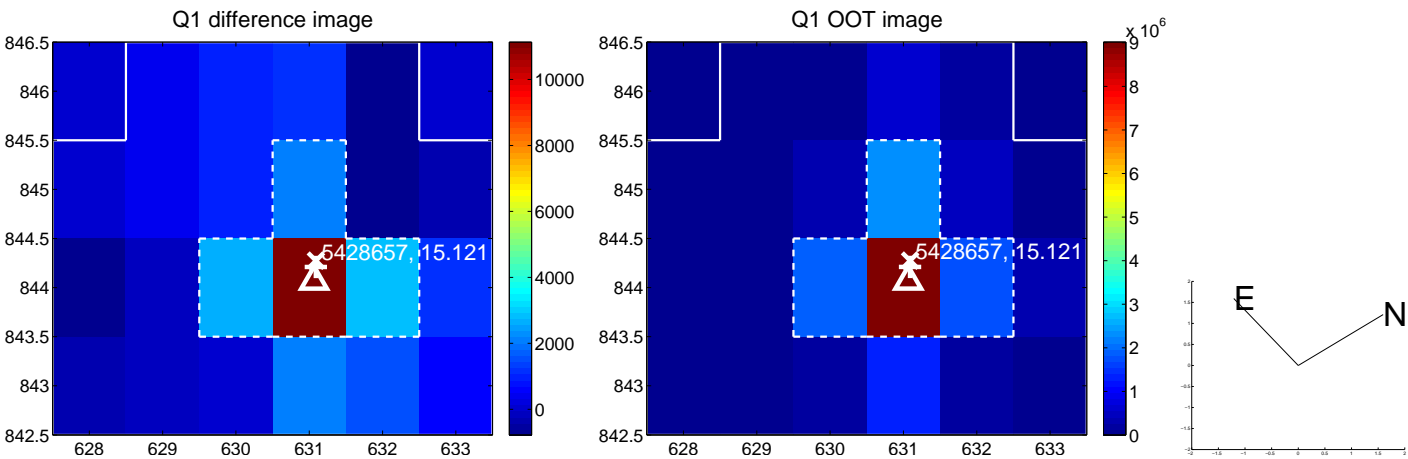


offset from photometric centroids

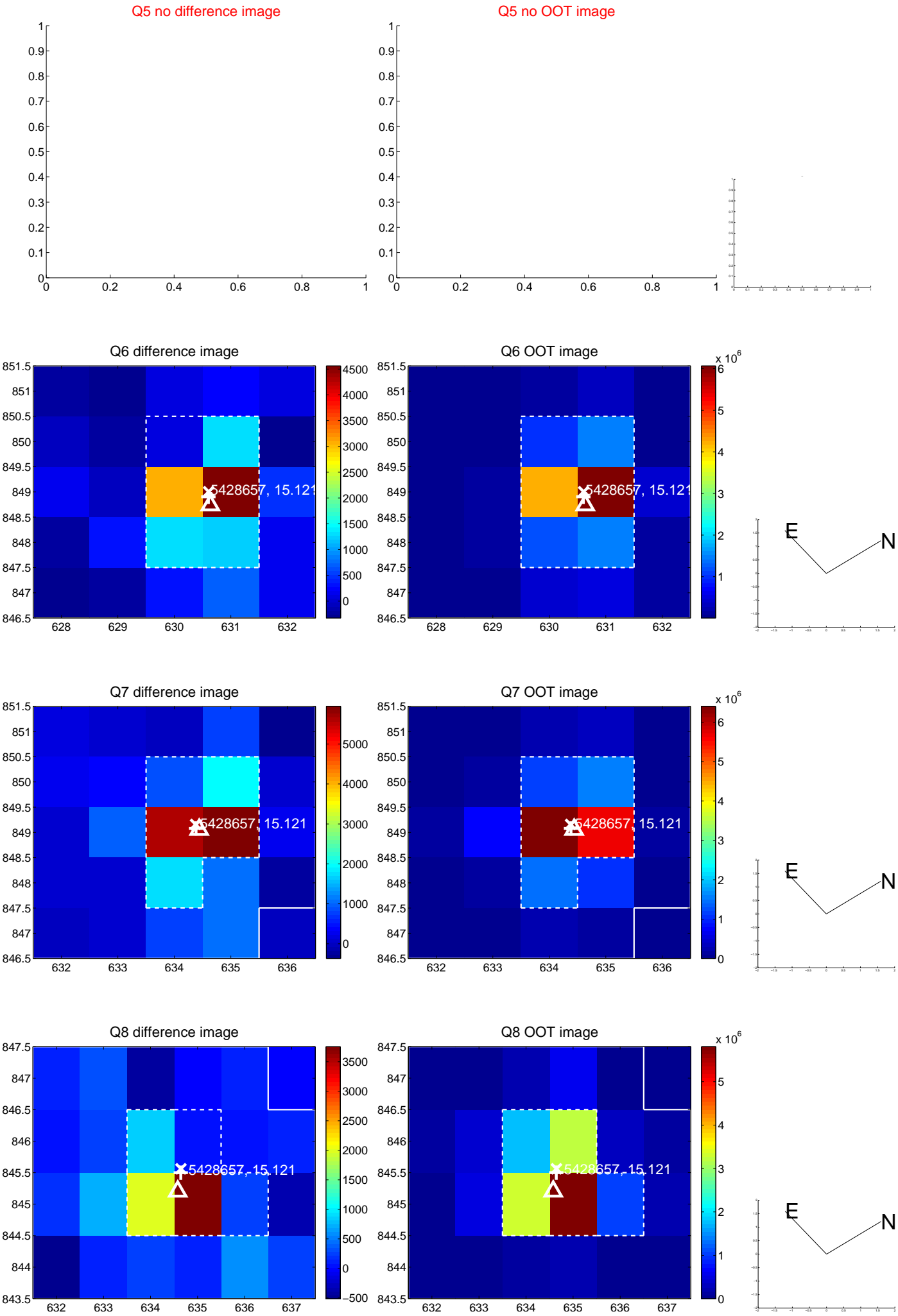


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

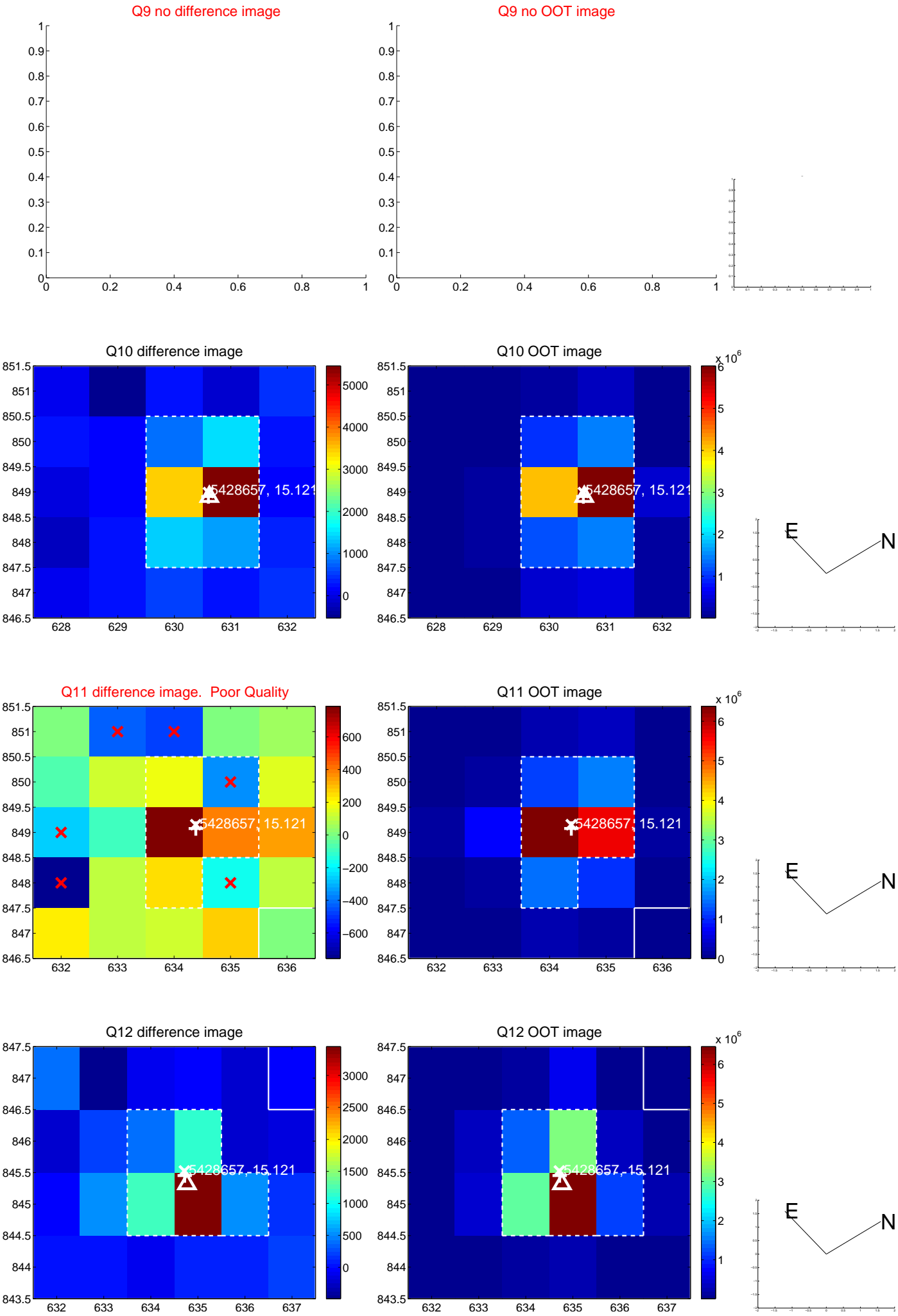
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



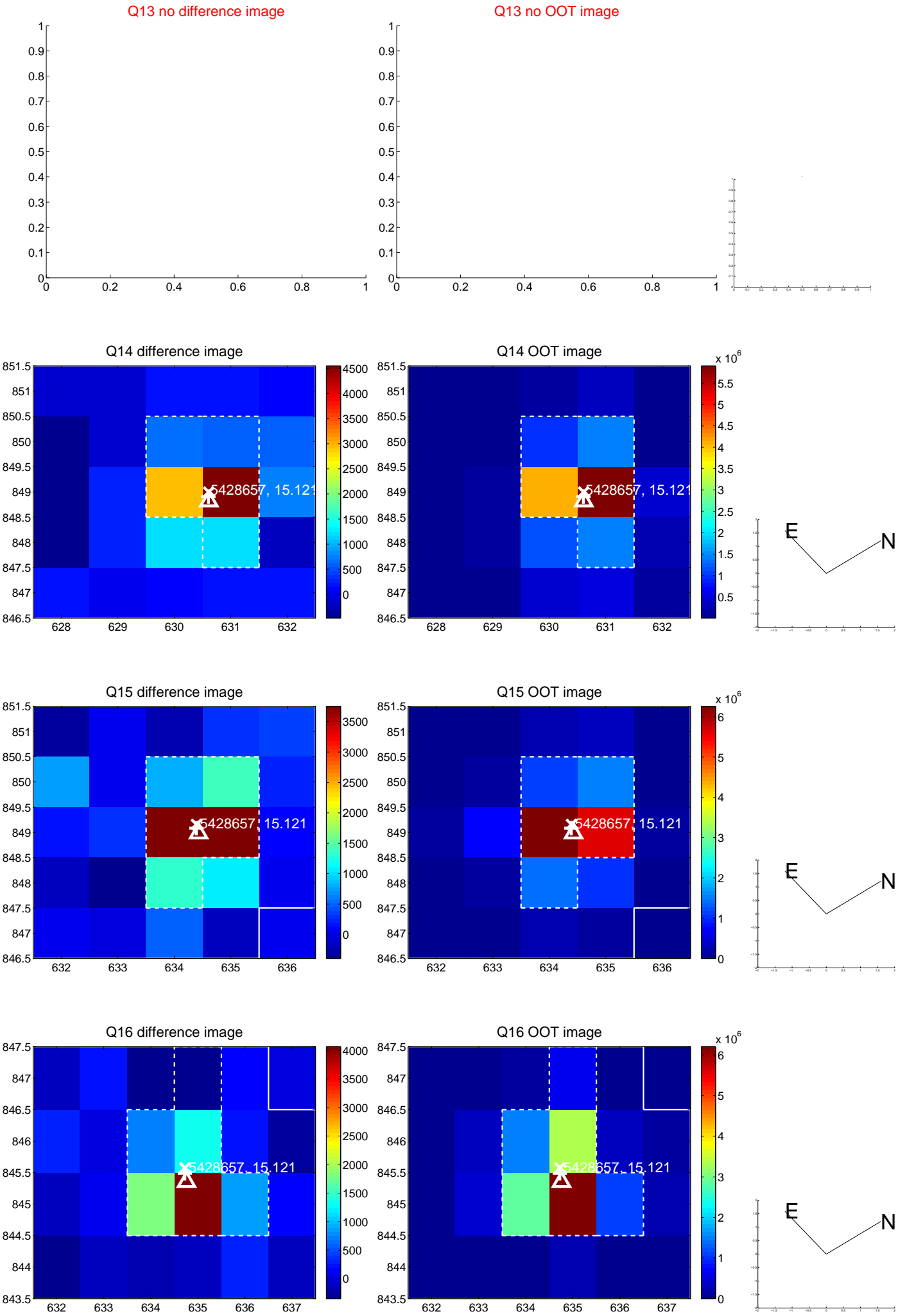
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



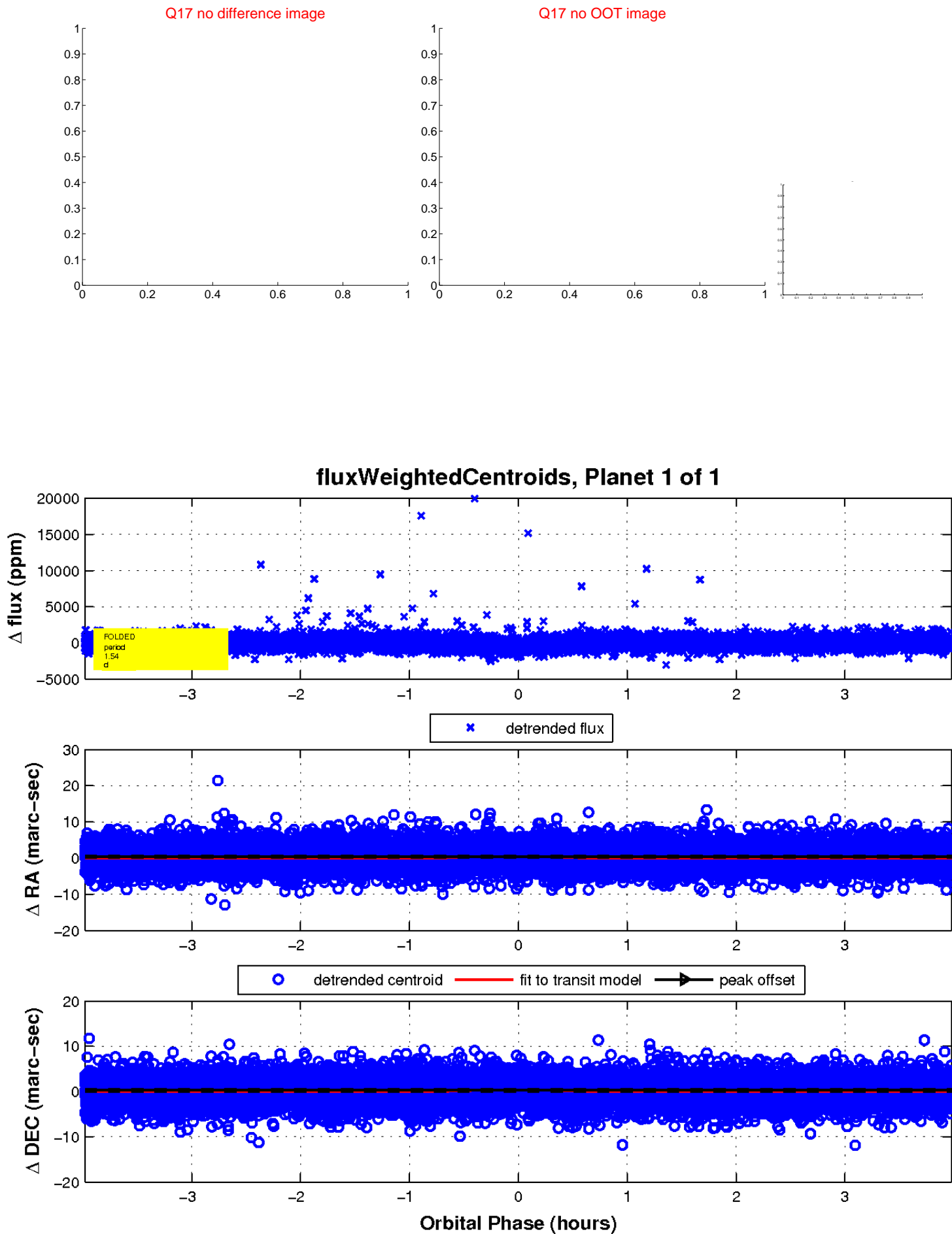
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

