

KIC 007428736

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})
007428736-01	OBS	2827.01	7.063187	132.528229	198.0	2.449	14.2	15.6	0.82	5305	1.35	110.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007428736-01	OBS	PC	0.99	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.

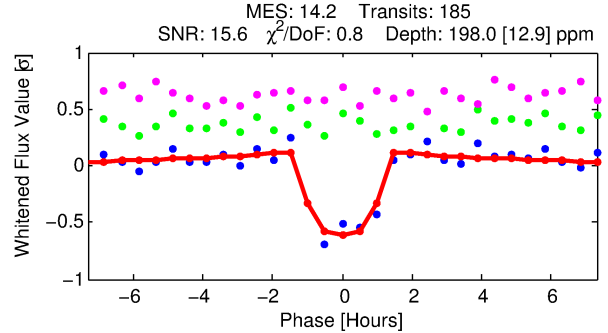
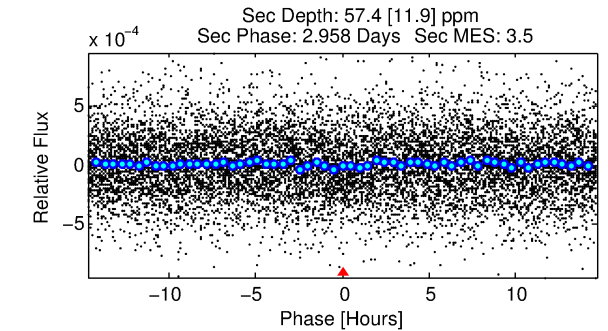
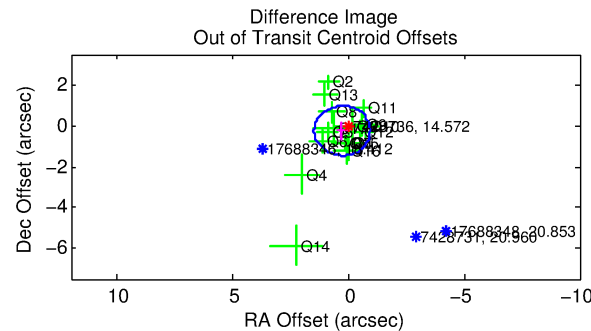
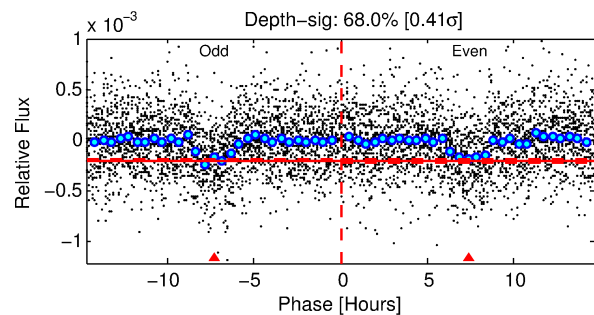
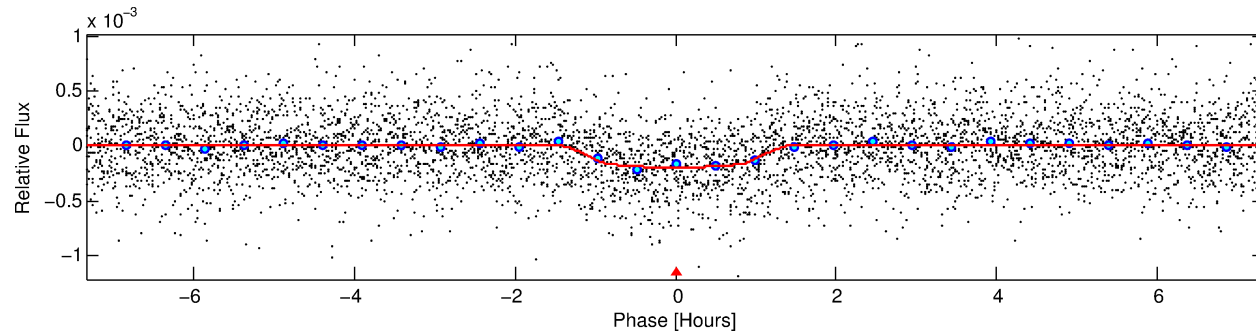
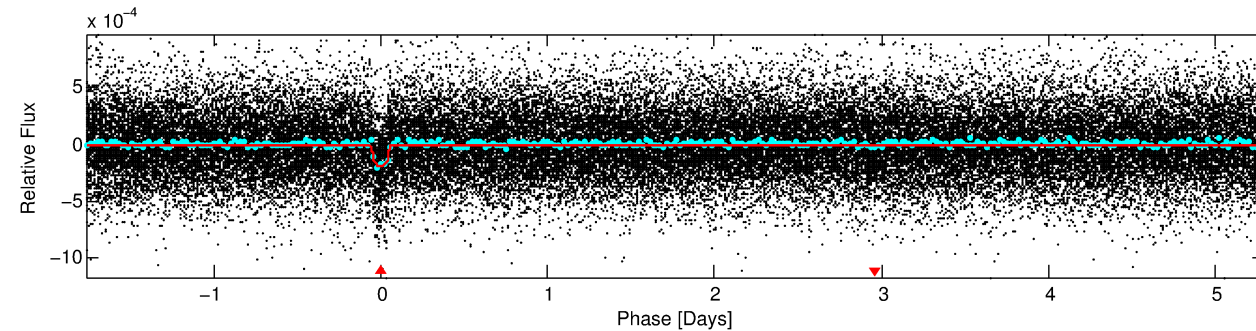
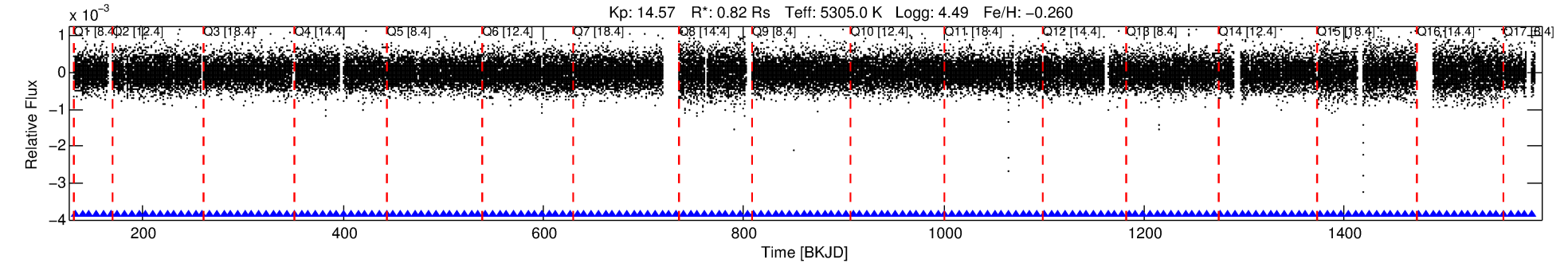
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007428736-01

No Significant Match Found

DV One-Page Summary

KIC: 7428736 Candidate: 1 of 1 Period: 7.063 d
KOI: K02827.01 Corr: 0.961



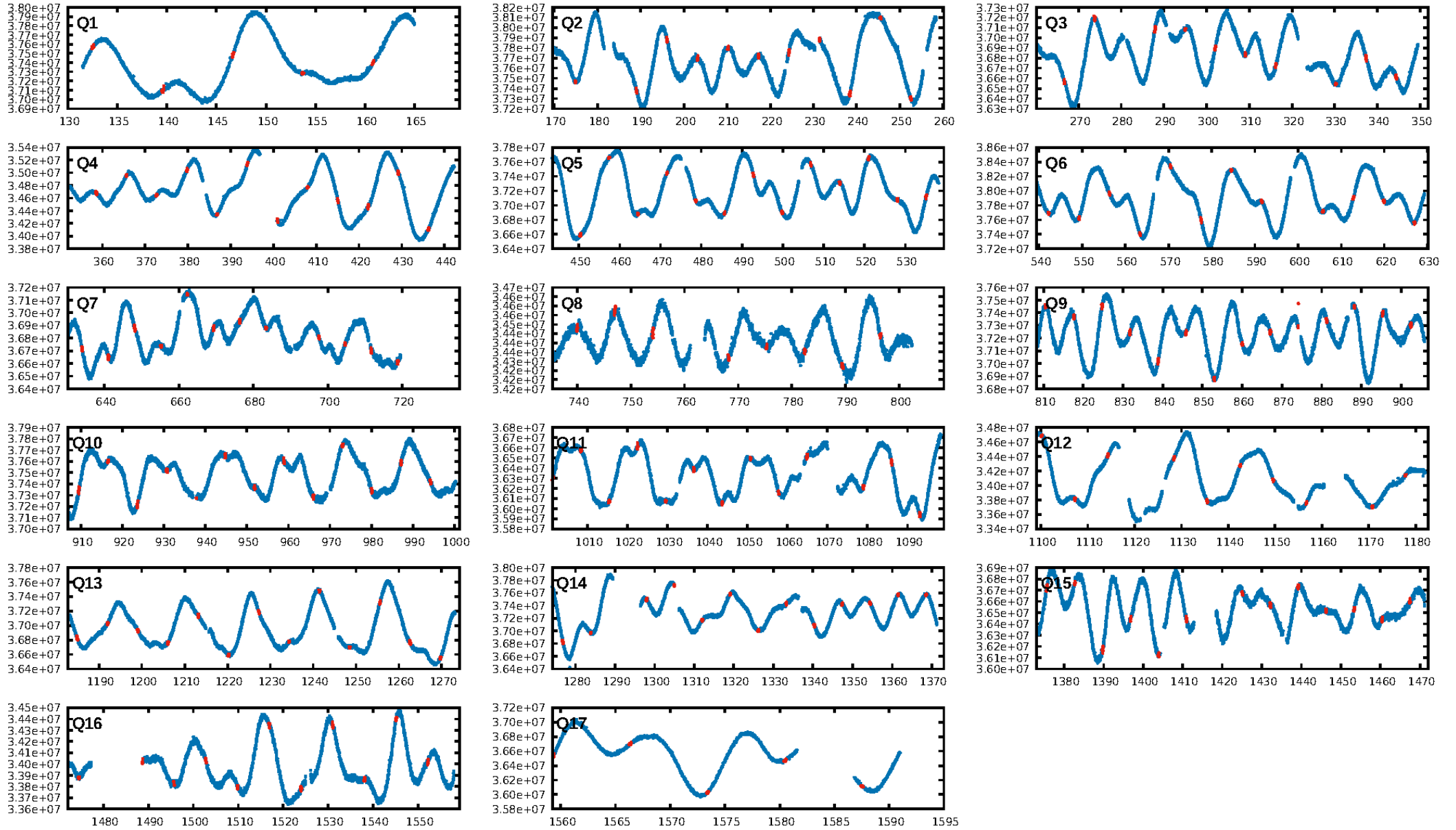
DV Fit Results:

Period = 7.06319 [0.00003] d
Epoch = 132.5282 [0.0028] BKJD
Rp/R* = 0.0151 [0.0081]
a/R* = 11.42 [25.68]
b = 0.87 [0.63]
Seff = 110.53 [28.54]
Teq = 827 [53] K
Rp = 1.35 [0.75] Re
a = 0.0655 [0.0096] AU
Ag = 74.40 [82.74] [0.89 σ]
Teffp = 3754 [1028] K [2.84 σ]

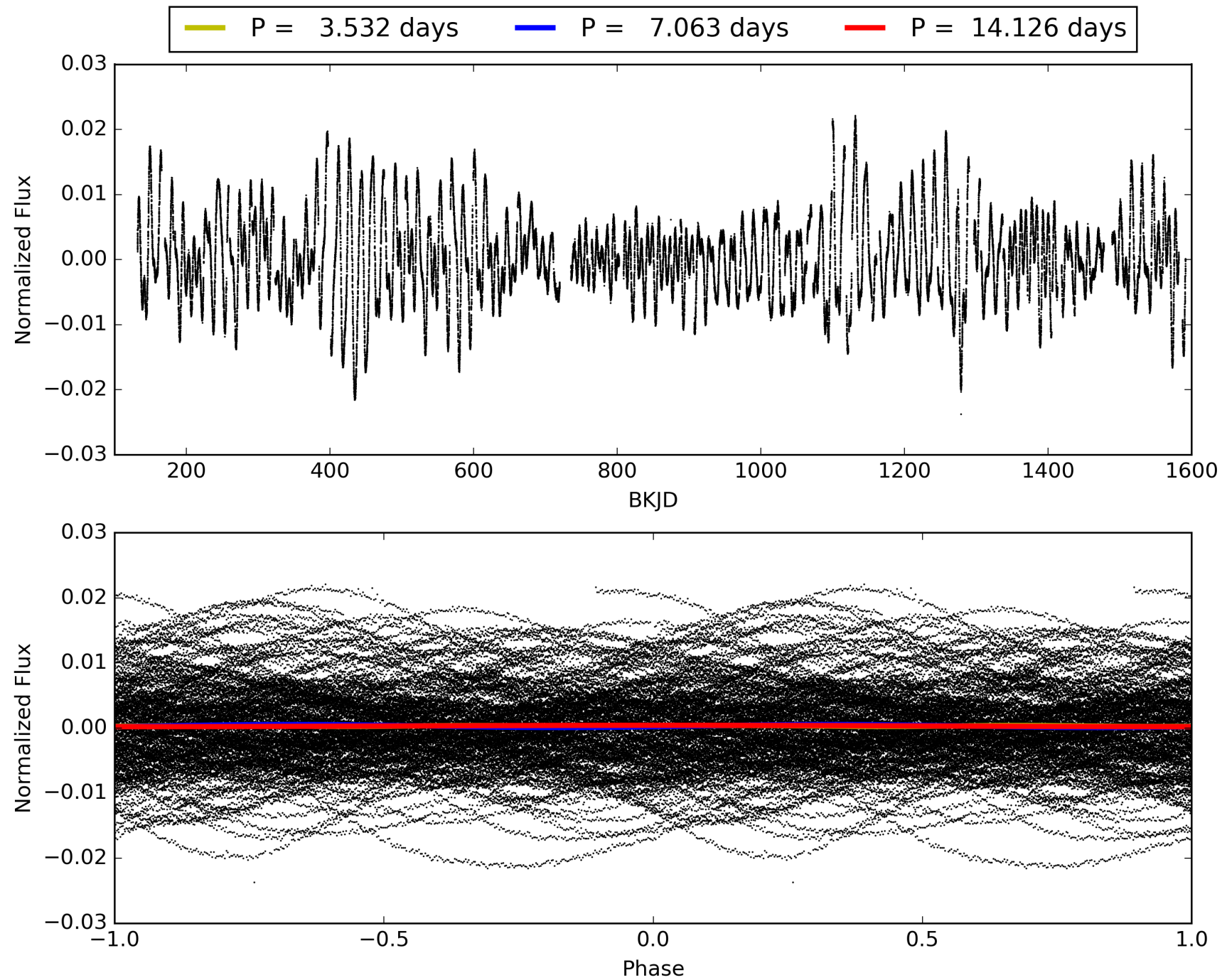
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.72e-43
RollingBand-fgt: 1.00 [175/175]
GhostDiagnostic-chr: 4.633
Centroid-sig: 83.7%
Centroid-so: 0.275 arcsec [0.37 σ]
OotOffset-rm: 0.365 arcsec [0.90 σ]
KicOffset-rm: 0.459 arcsec [1.28 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007428736-01, PDC Light Curves

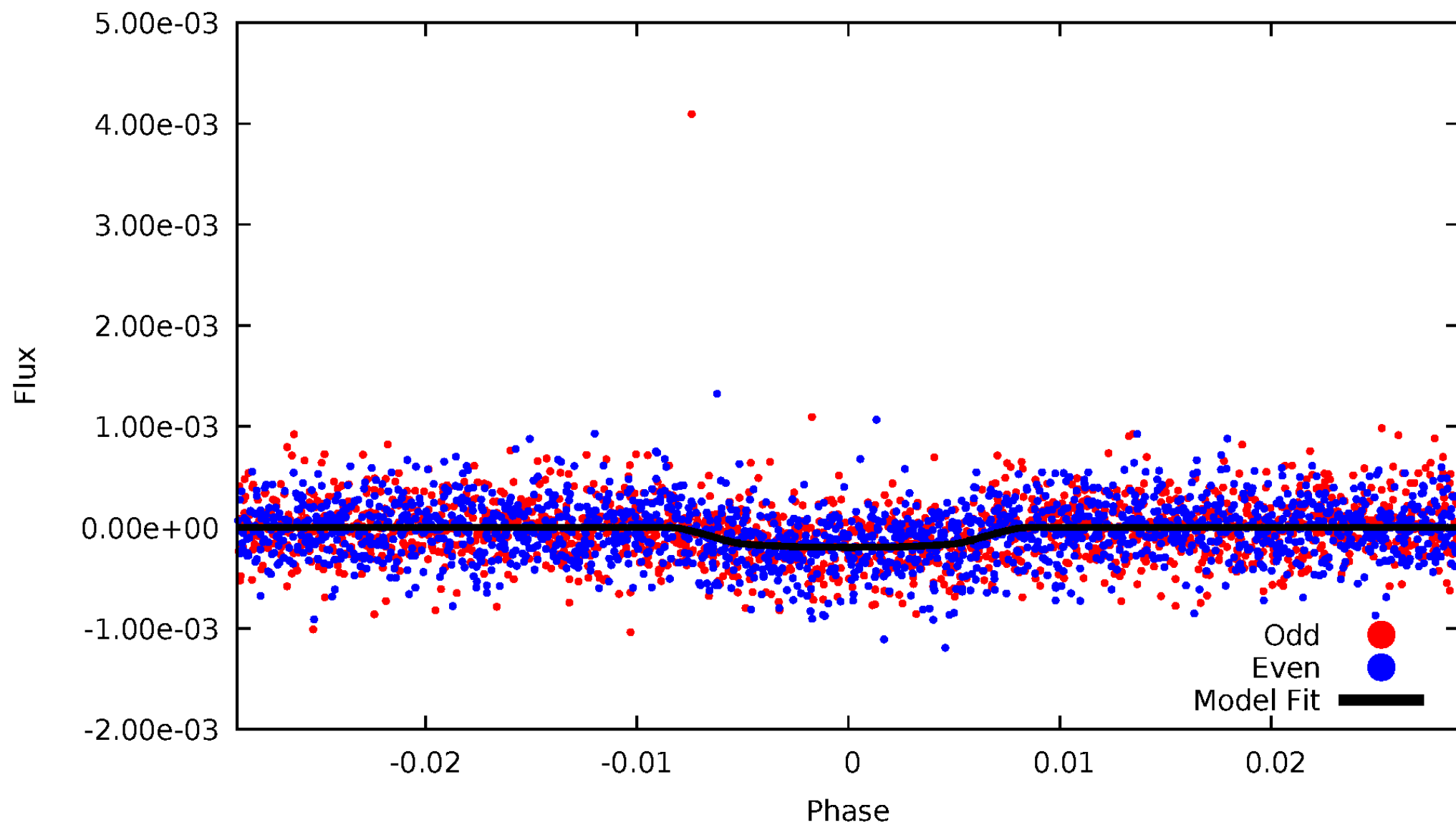


TCE 007428736-01



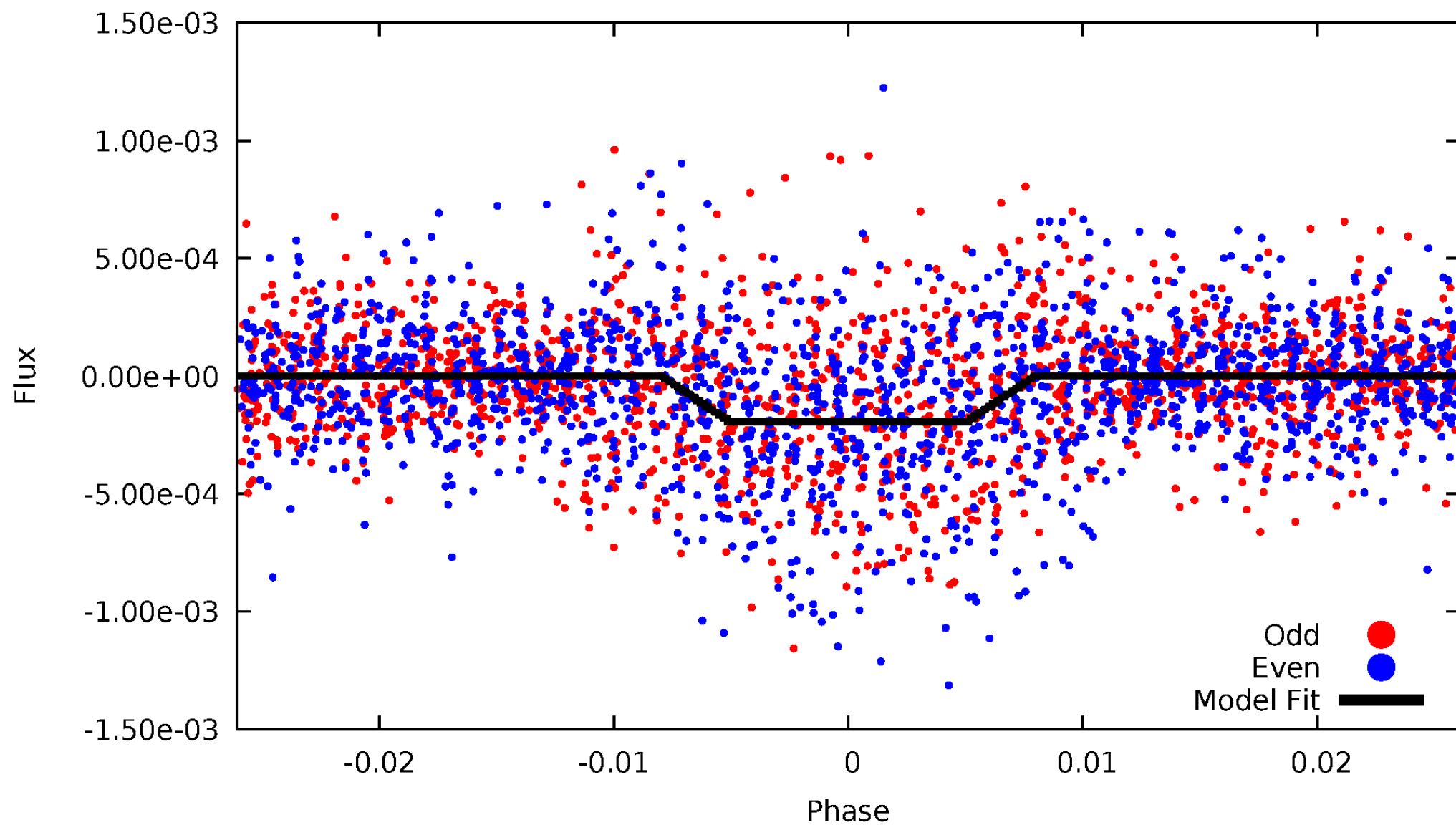
DV Odd/Even

TCE 007428736-01



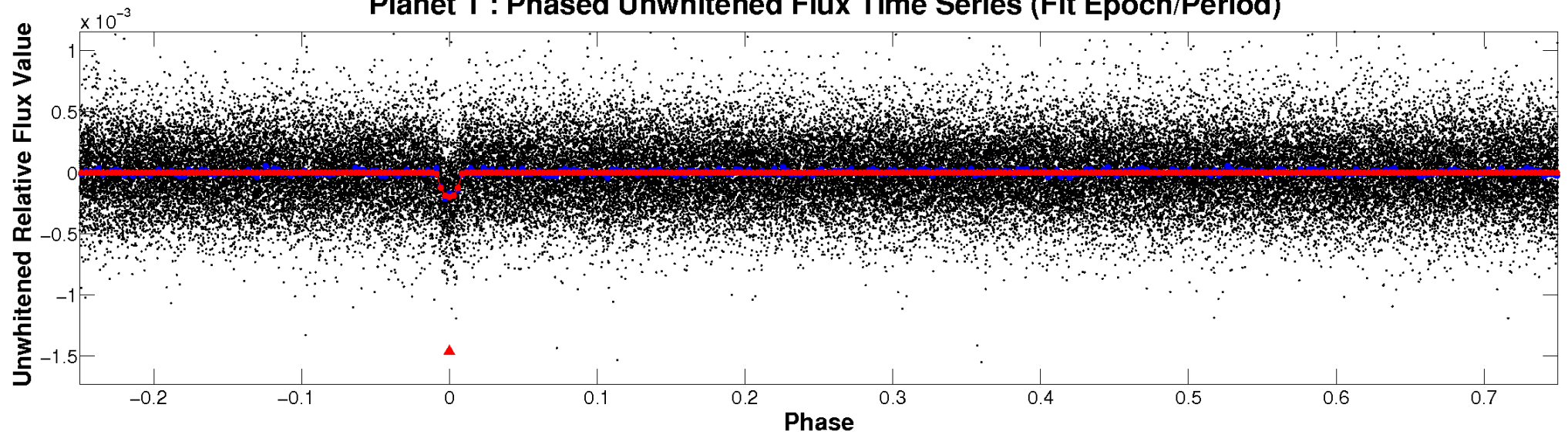
ALT Odd/Even

TCE 007428736-01

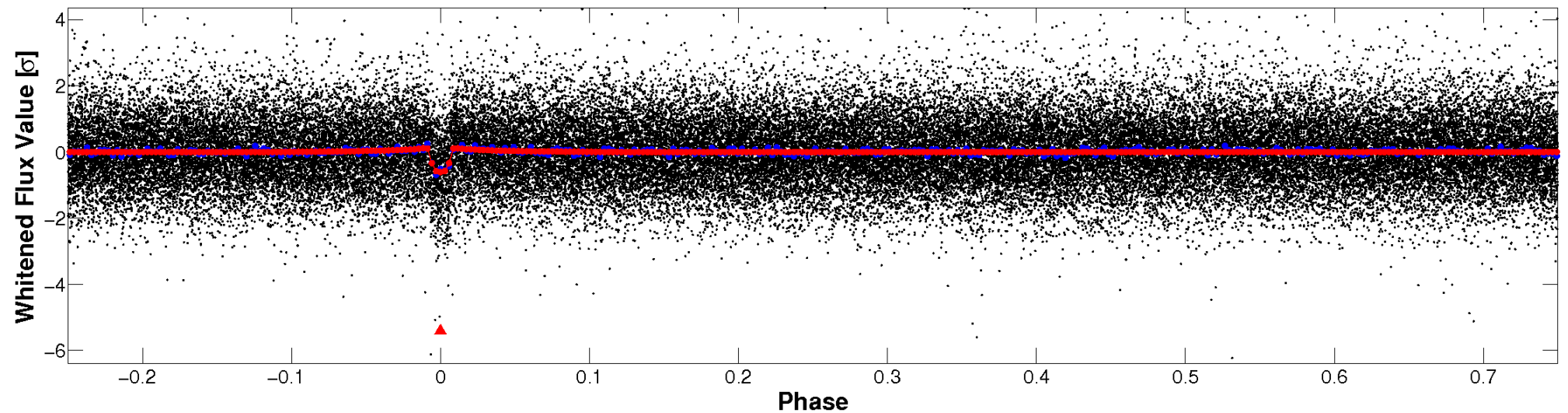


Non-Whitened Vs. Whitened Light Curve

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

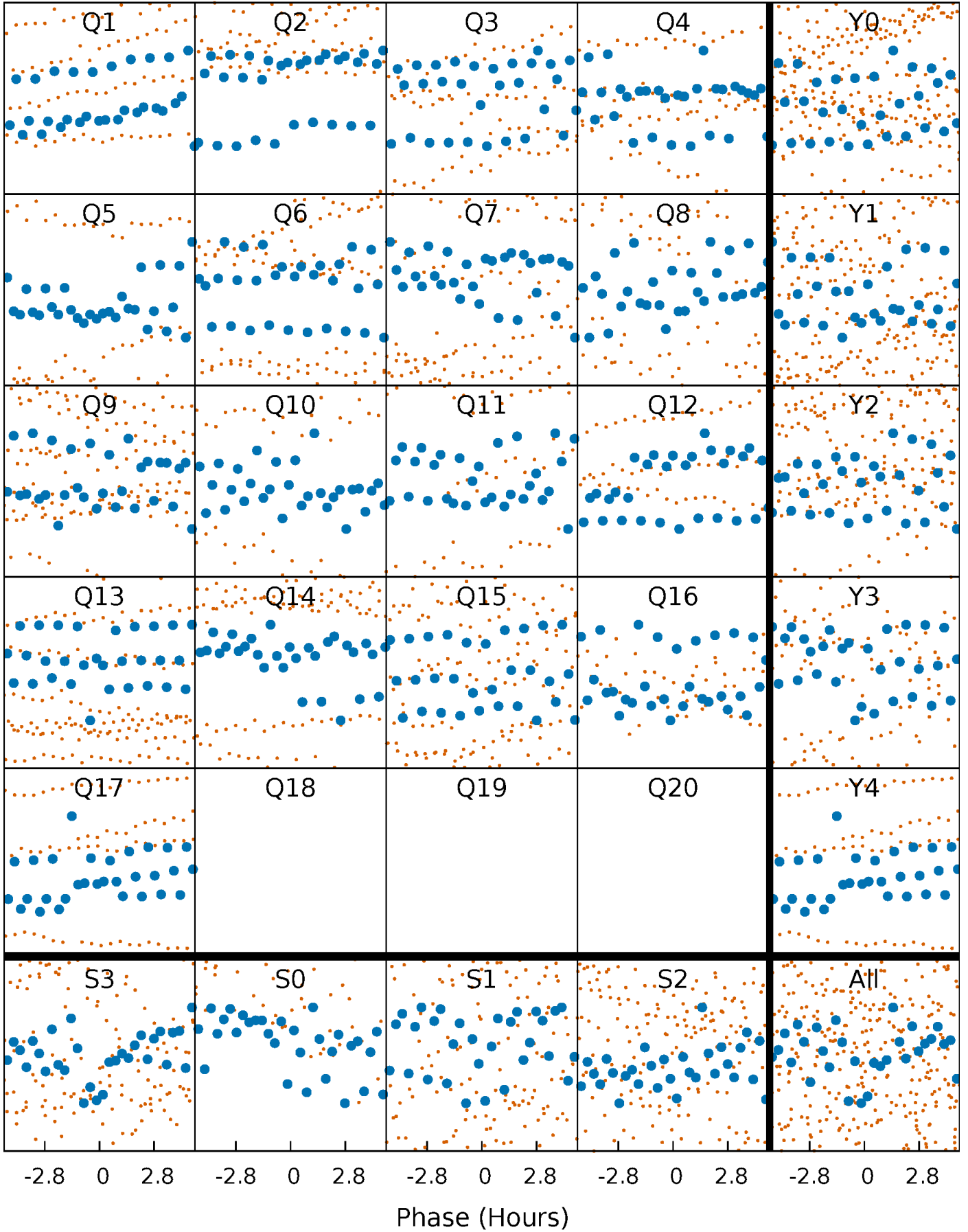


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



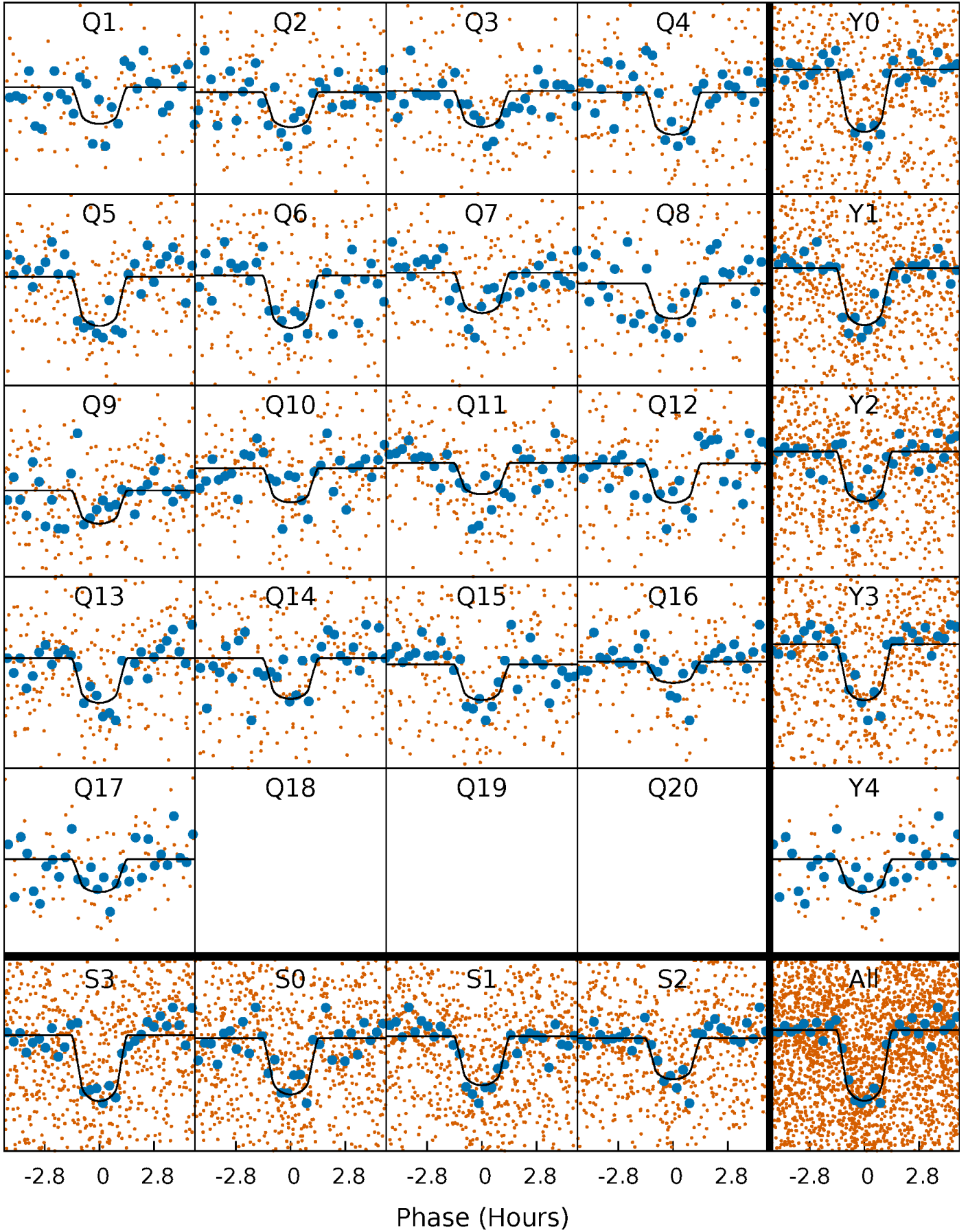
PDC Quarter-Phased Transit Curves

TCE 007428736-01 P= 7.063187 Days $T_0=132.528230$ (BKJD)



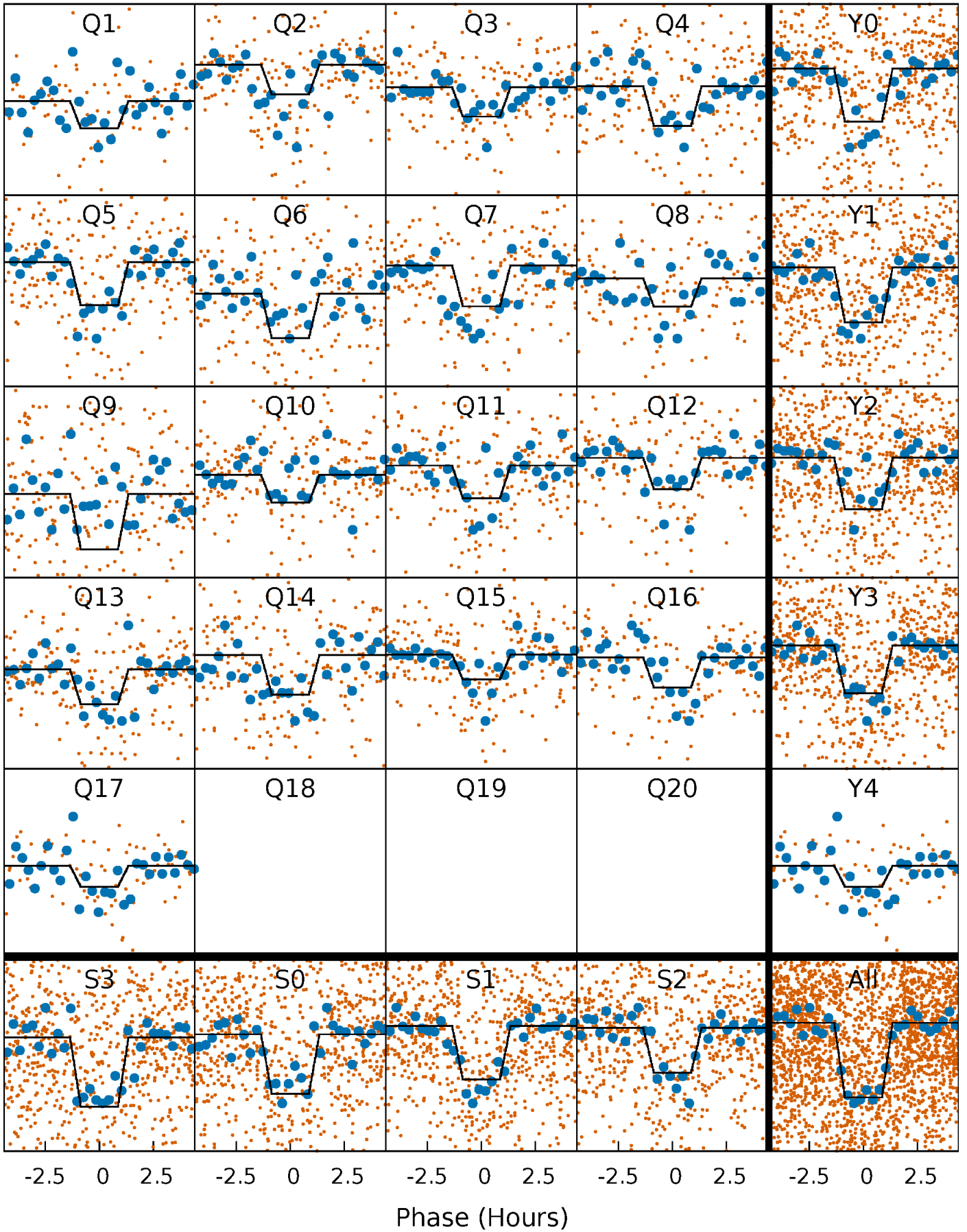
DV Quarter-Phased Transit Curves

TCE 007428736-01 P= 7.063187 Days $T_0=132.528230$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

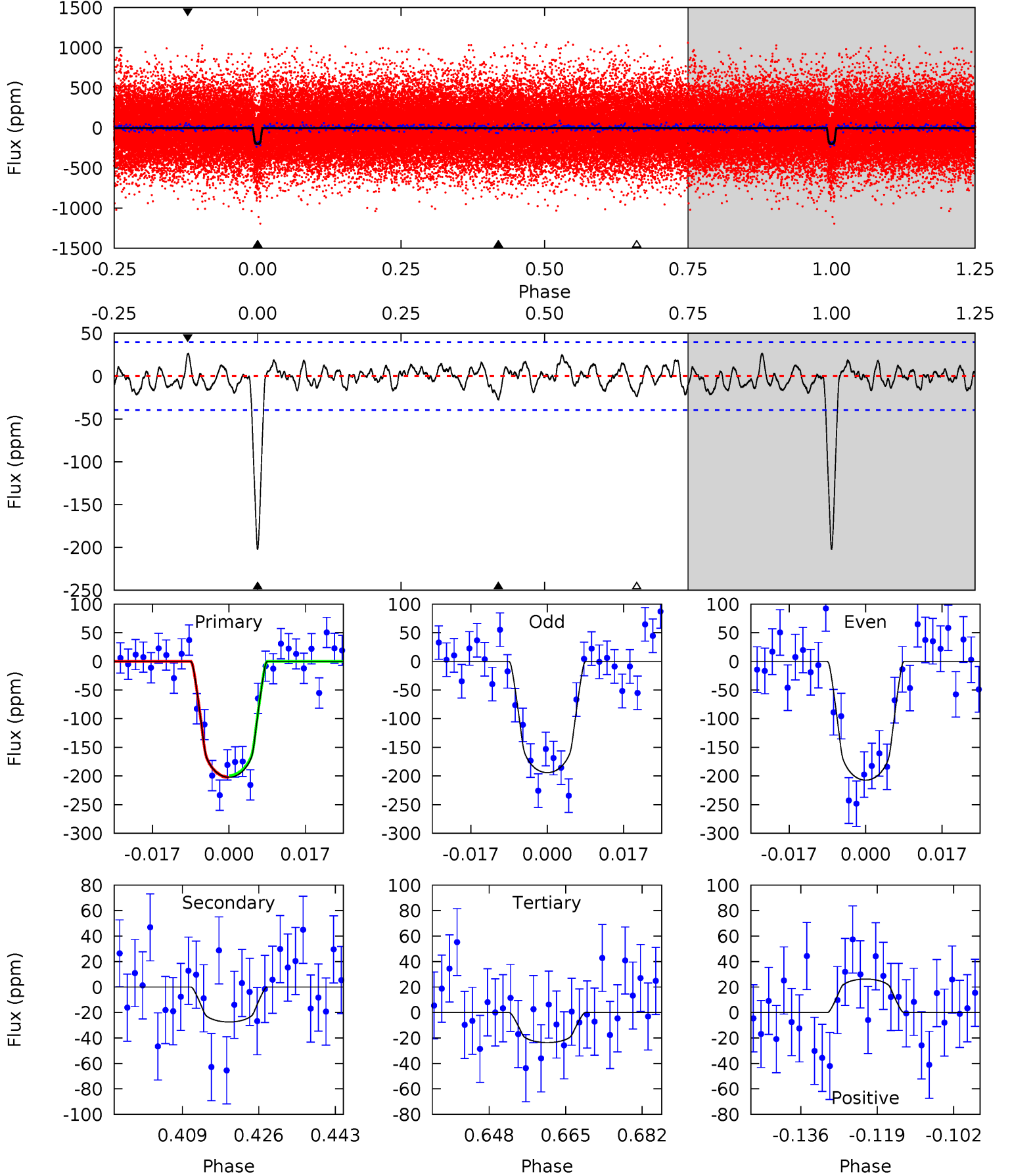
TCE 007428736-01 P= 7.063100 Days $T_0=132.537945$ (BKJD)



DV Model-Shift Uniqueness Test

007428736-01, P = 7.063187 Days, E = 125.465043 Days

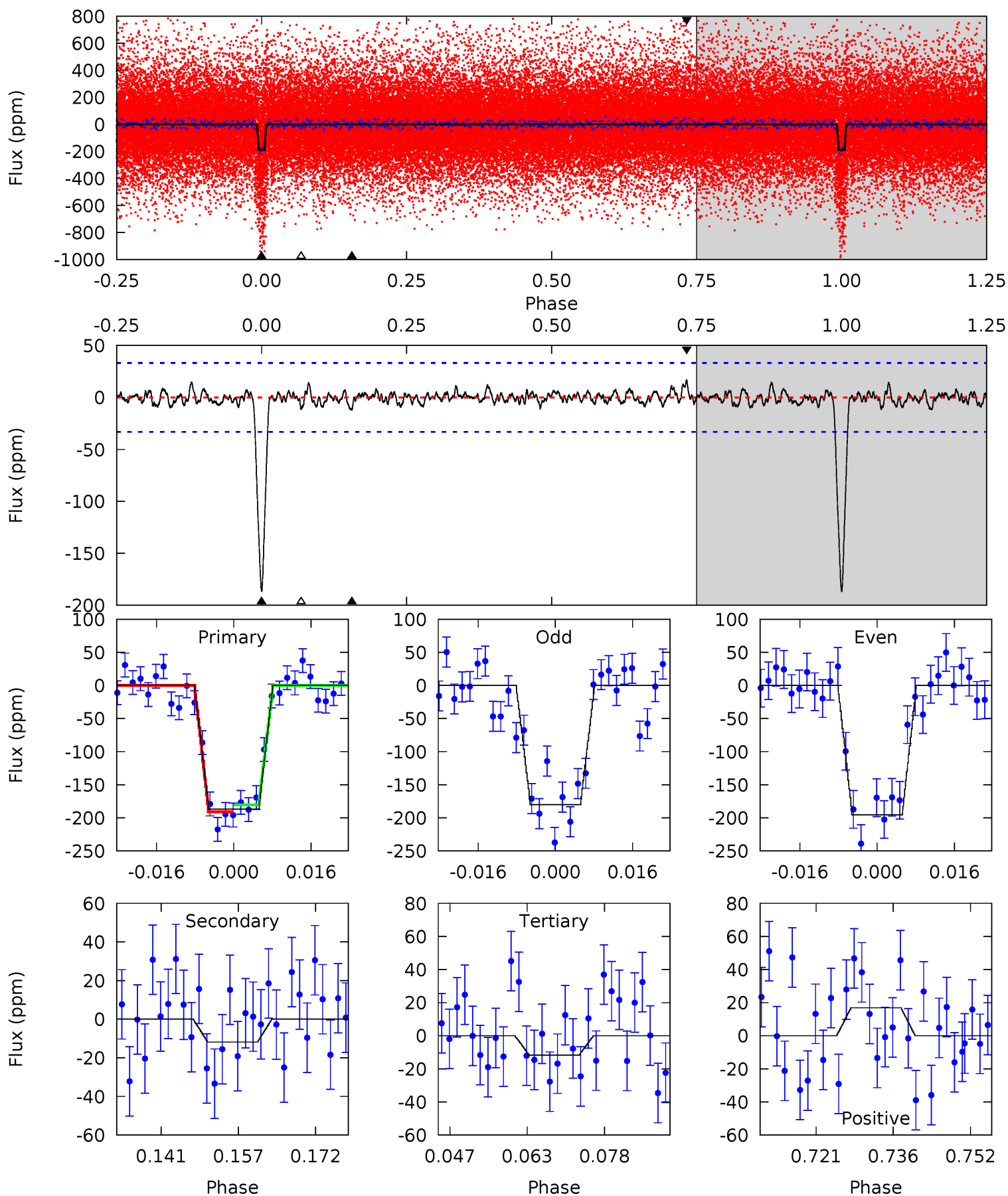
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.1	3.40	2.93	3.26	4.92	2.39	1.17	22.1	21.8	0.47	0.15	0.81	1.04	0.11	0.18



Alt Model-Shift Uniqueness Test

007428736-01, P = 7.063100 Days, E = 125.474845 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.8	1.77	1.74	2.51	4.94	2.42	0.66	26.1	25.3	0.02	-0.75	1.17	1.01	0.08	0.79



Stellar Parameters For KIC 007428736

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5305^{+159}_{-159}	$4.489^{+0.108}_{-0.132}$	$-0.260^{+0.300}_{-0.300}$	$0.818^{+0.130}_{-0.106}$	$0.753^{+0.110}_{-0.055}$	$1.935^{+0.831}_{-0.637}$
	+3%/-3%	+2%/-3%	+115%/-115%	+16%/-13%	+15%/-7%	+43%/-33%
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 007428736-01 / KOI 2827.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 8	$1.47^{+0.69}_{-0.71}$	1160^{+65}_{-59}	3471^{+887}_{-433}	31^{+83}_{-19}
Alt.	-12 ± 7	$1.29^{+0.75}_{-0.73}$	1156^{+66}_{-49}	3148^{+1015}_{-476}	16^{+71}_{-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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

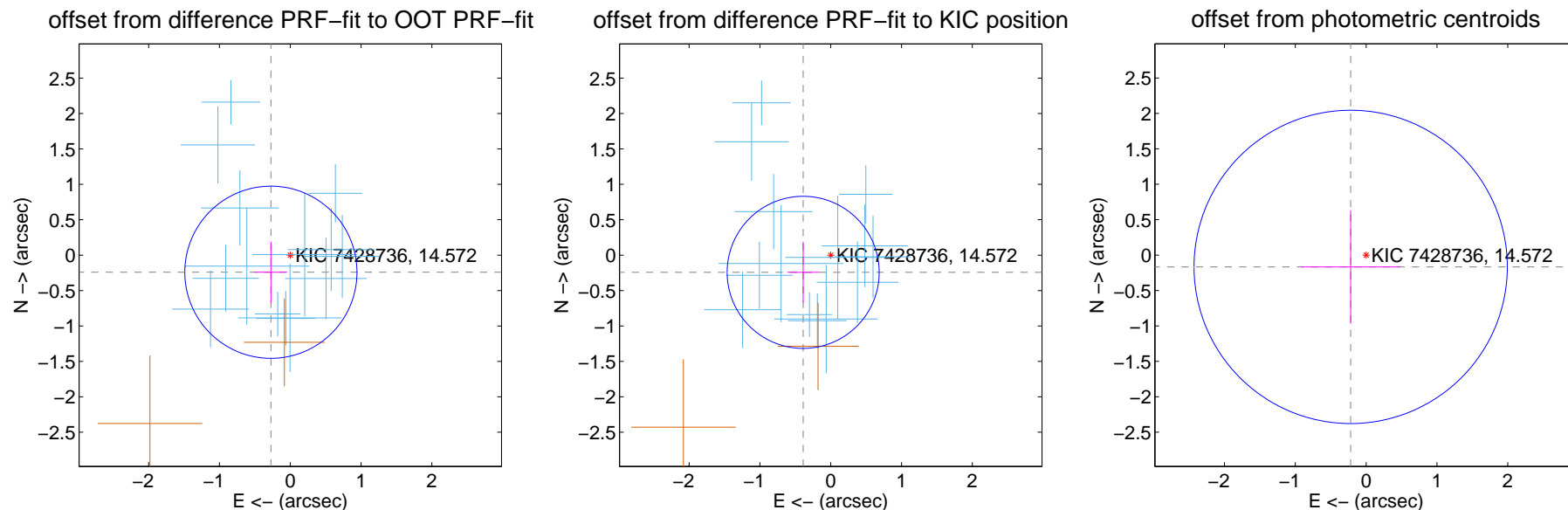
DV Centroid Data

Supplemental centroid analysis for 007428736-01. Kepler magnitude: 14.57. Transit SNR 15.58

There are 14 quarters with good PRF difference image offsets

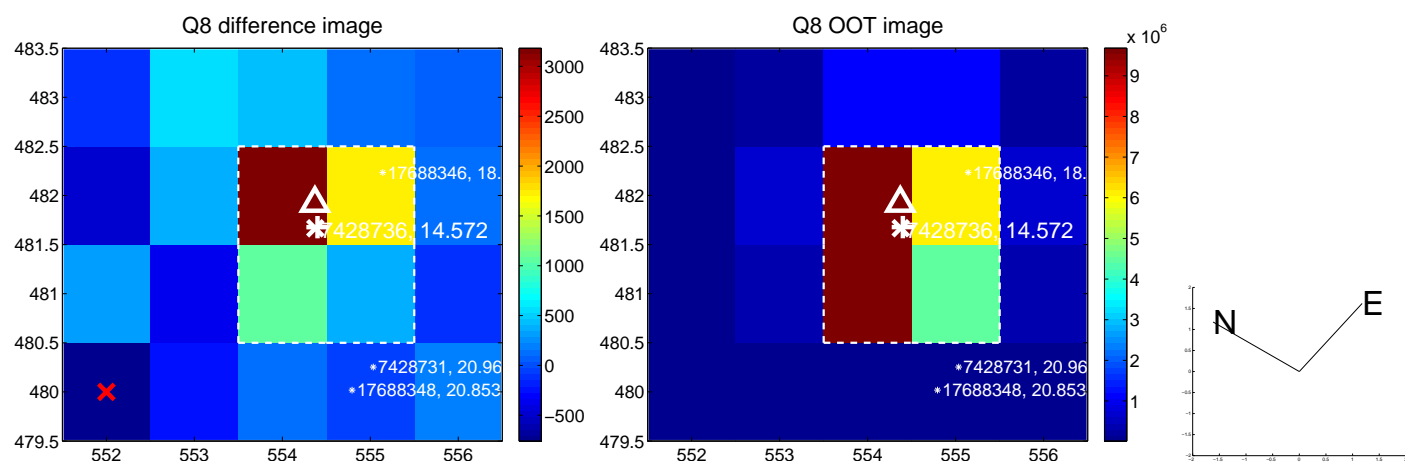
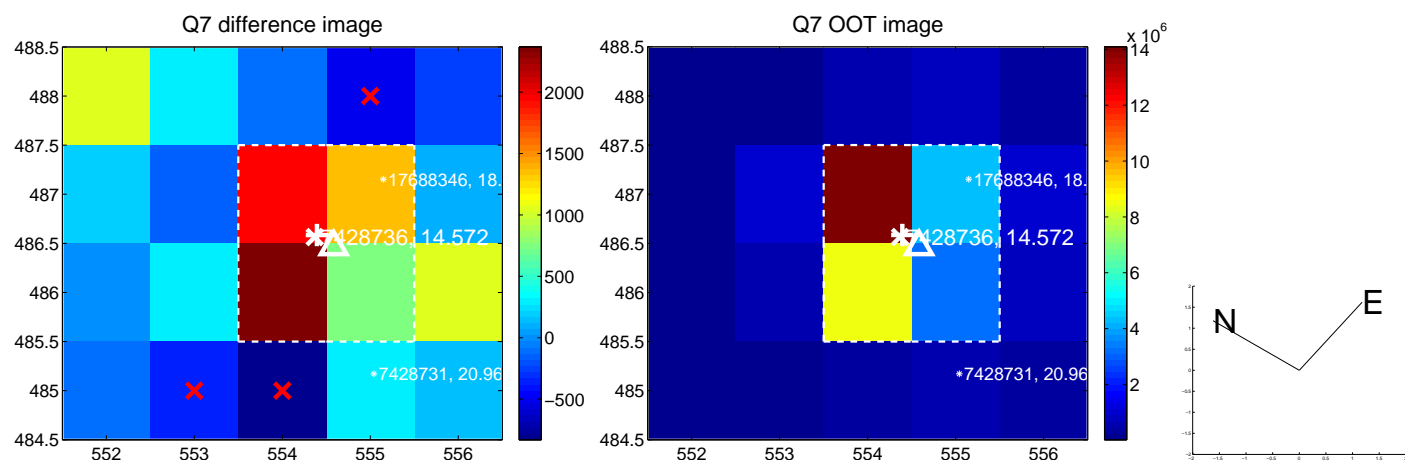
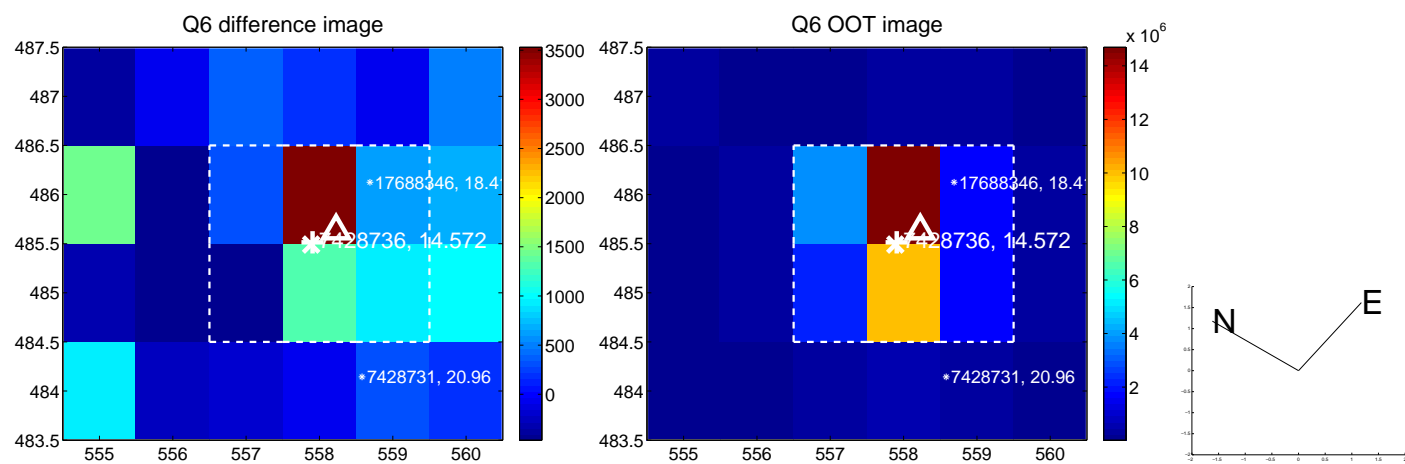
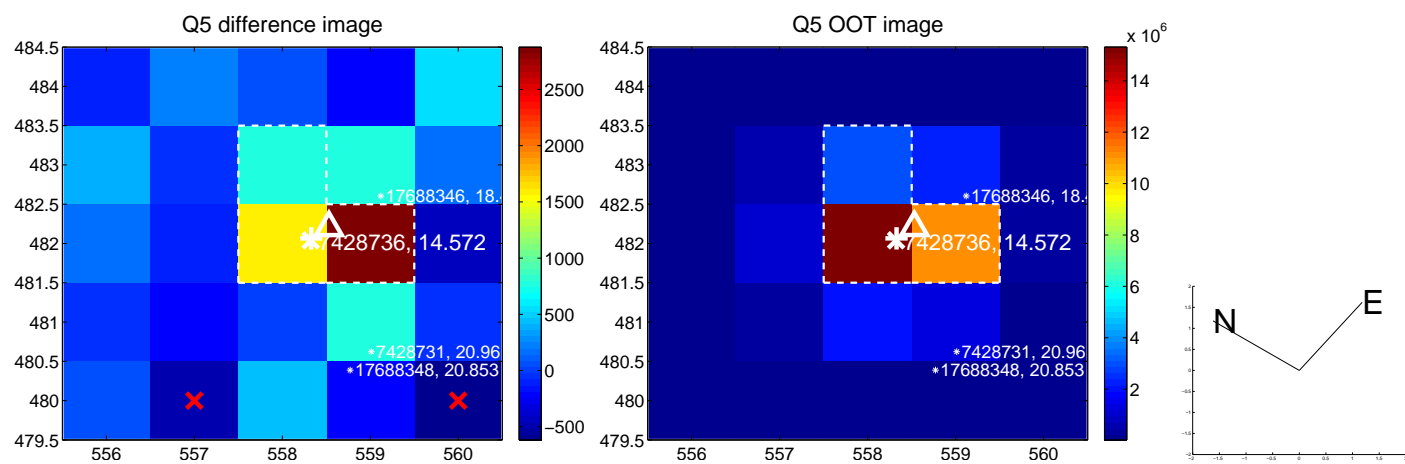
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.365 ± 0.405	0.90	0.274 ± 0.228	-0.241 ± 0.431
PRF-fit source offset from KIC position	0.459 ± 0.358	1.28	0.389 ± 0.222	-0.243 ± 0.428
photometric centroid source offset	0.27 ± 0.74	0.37	0.22 ± 0.70	-0.17 ± 0.80

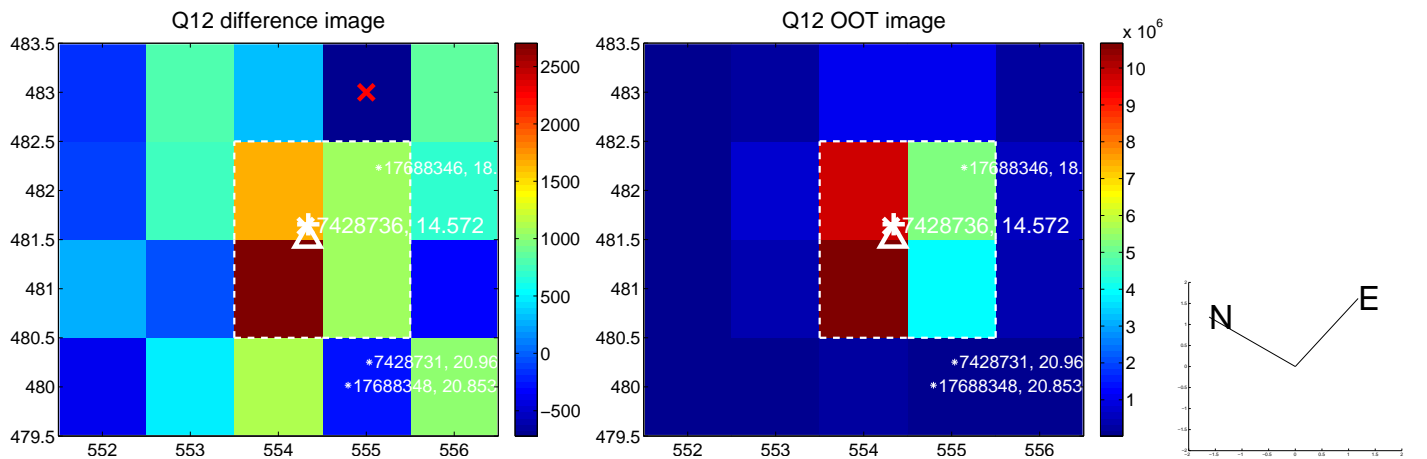
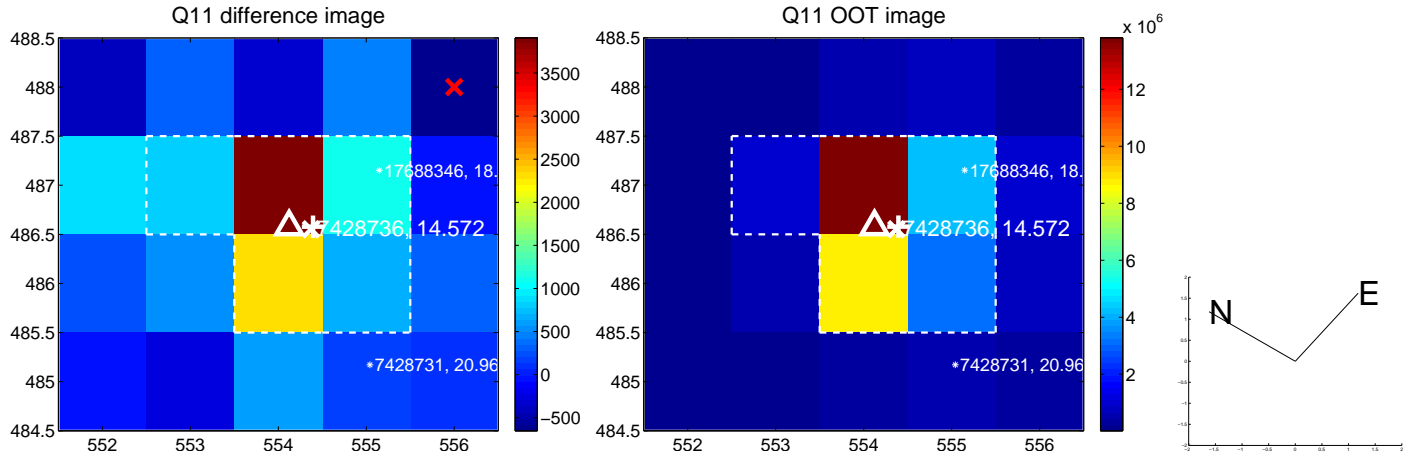
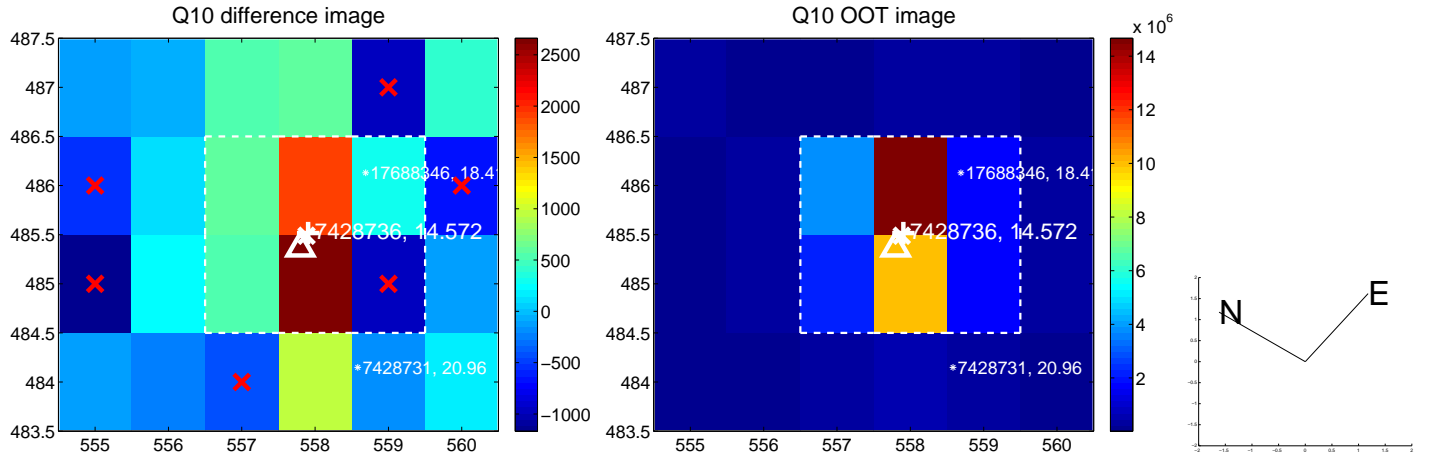
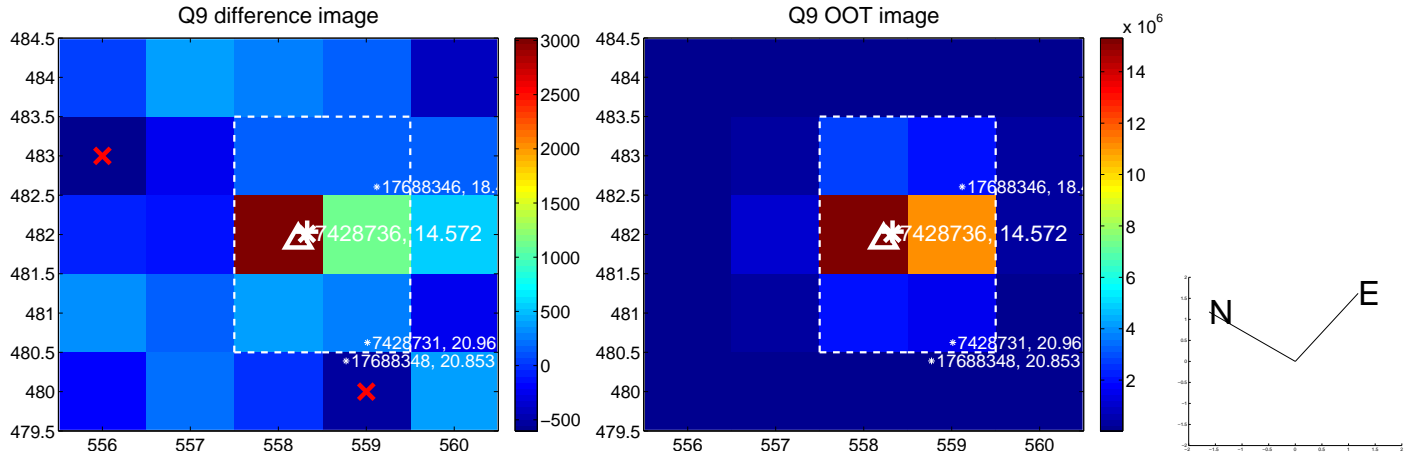


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

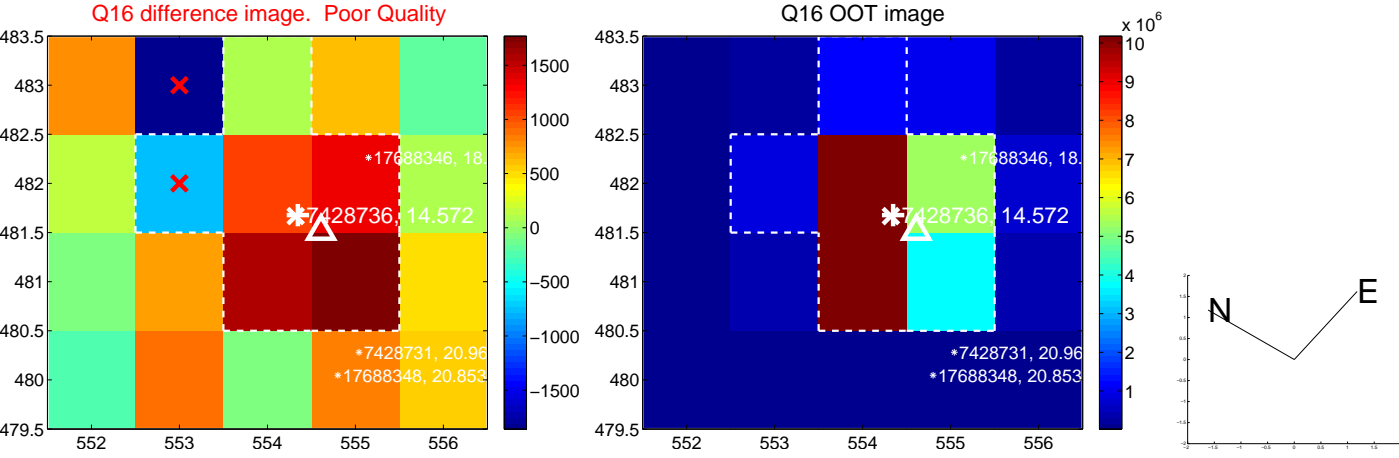
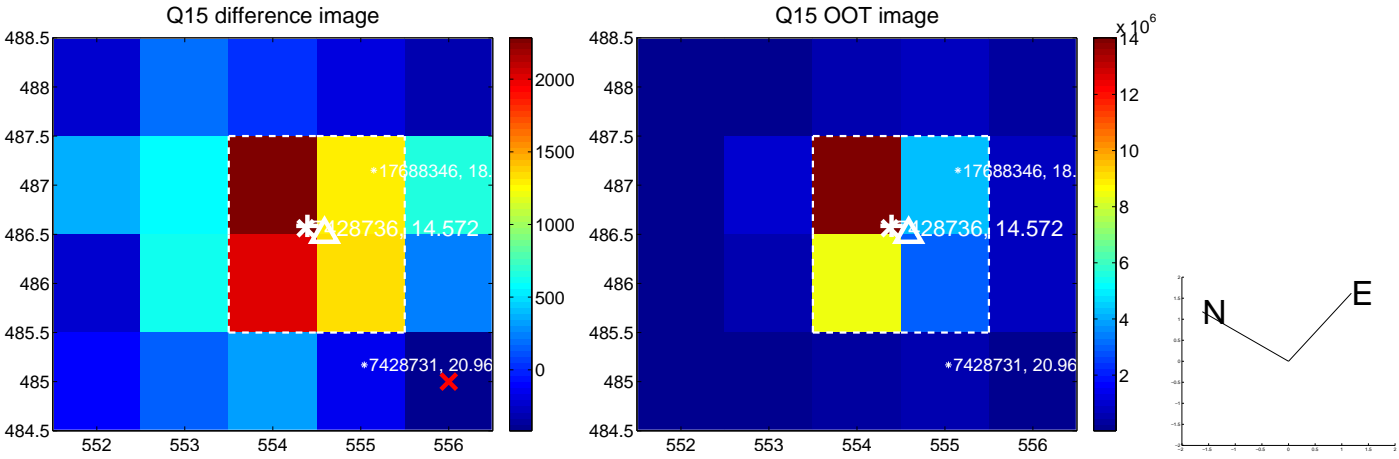
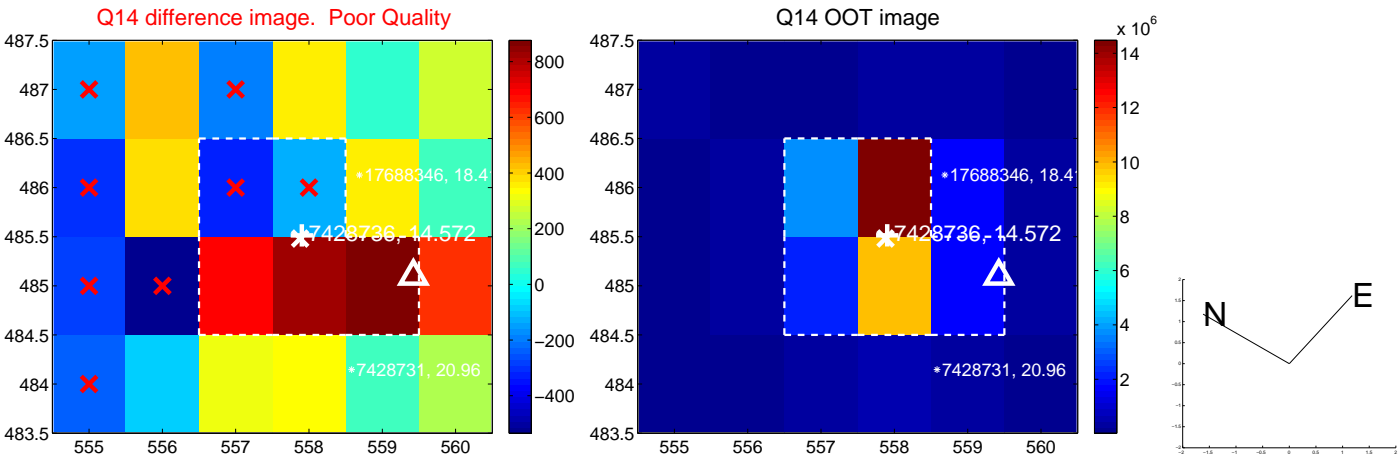
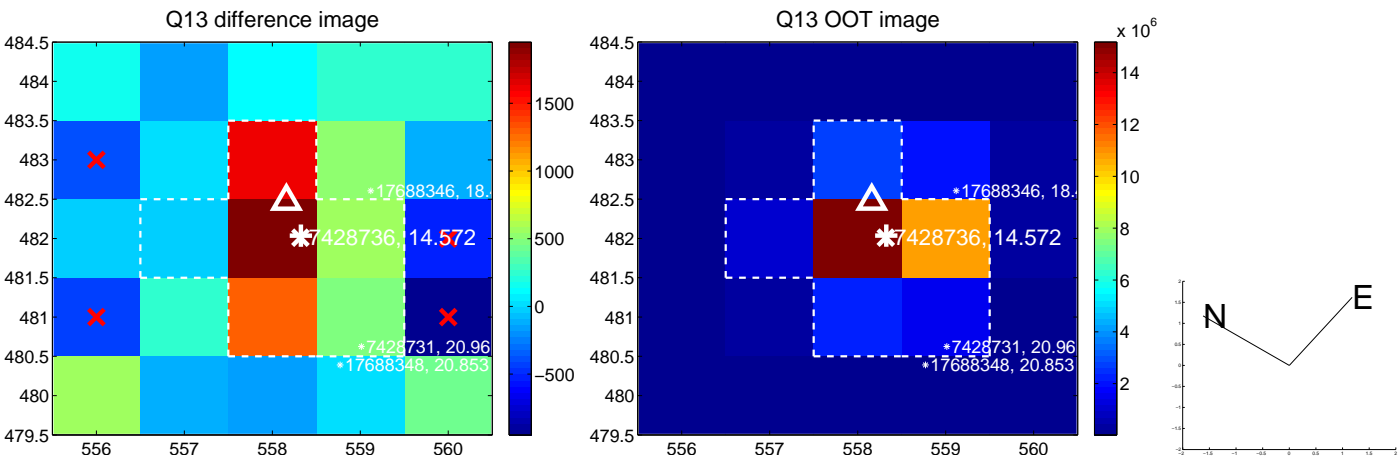
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

