

KIC 005730389

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})
005730389-01	OBS	1956.01	2.759588	131.710278	199.0	4.940	27.8	31.8	0.86	5640	1.63	488.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005730389-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 005730389-01

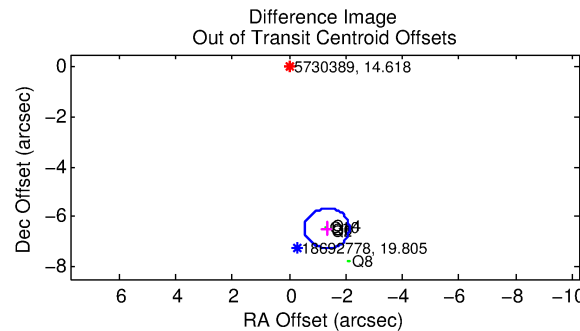
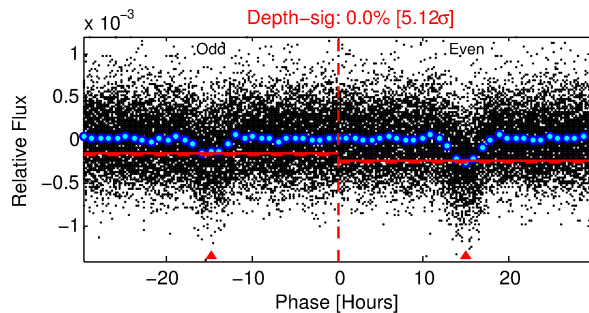
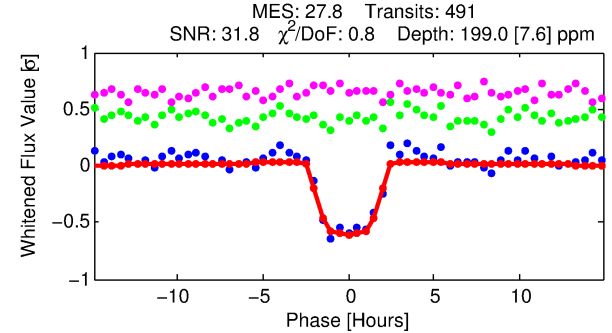
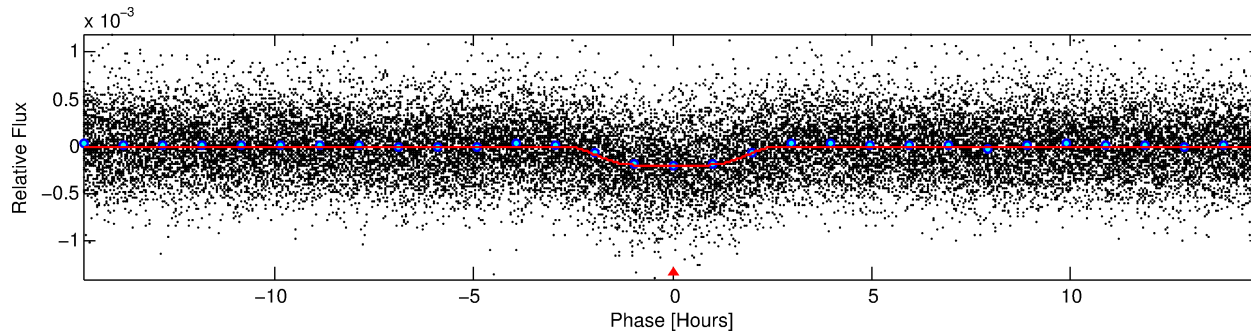
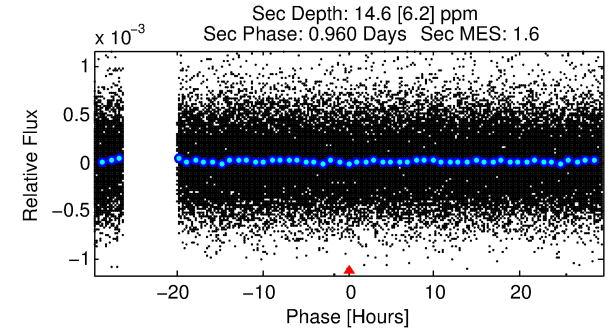
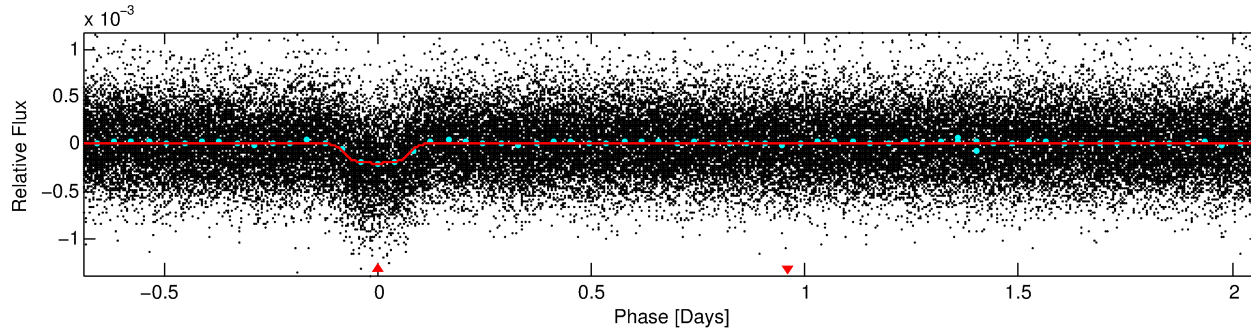
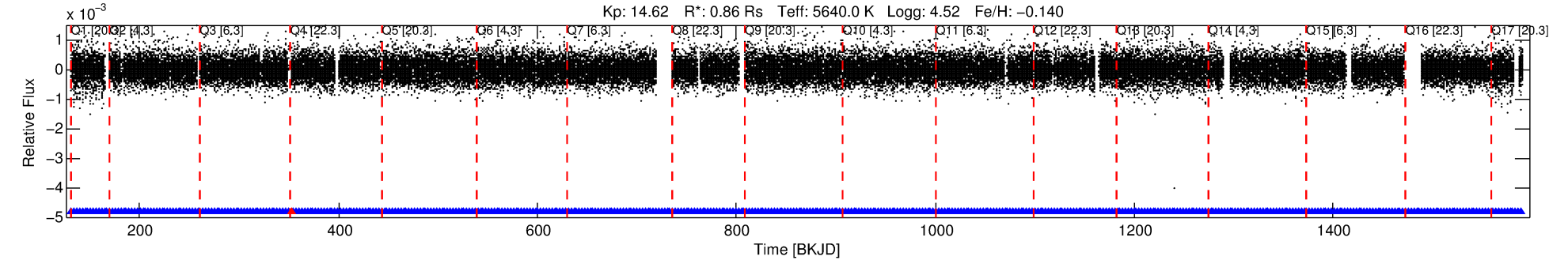
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005730389-01	5730389	3603.01	5730394	1:2	12.8	3	-1	16.12	14.62	1294.20	Direct-PRF	0	0.28	0.02

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5730389 Candidate: 1 of 1 Period: 2.760 d
KOI: K01956.01 Corr: 0.857

Kp: 14.62 R*: 0.86 Rs Teff: 5640.0 K Logg: 4.52 Fe/H: -0.140



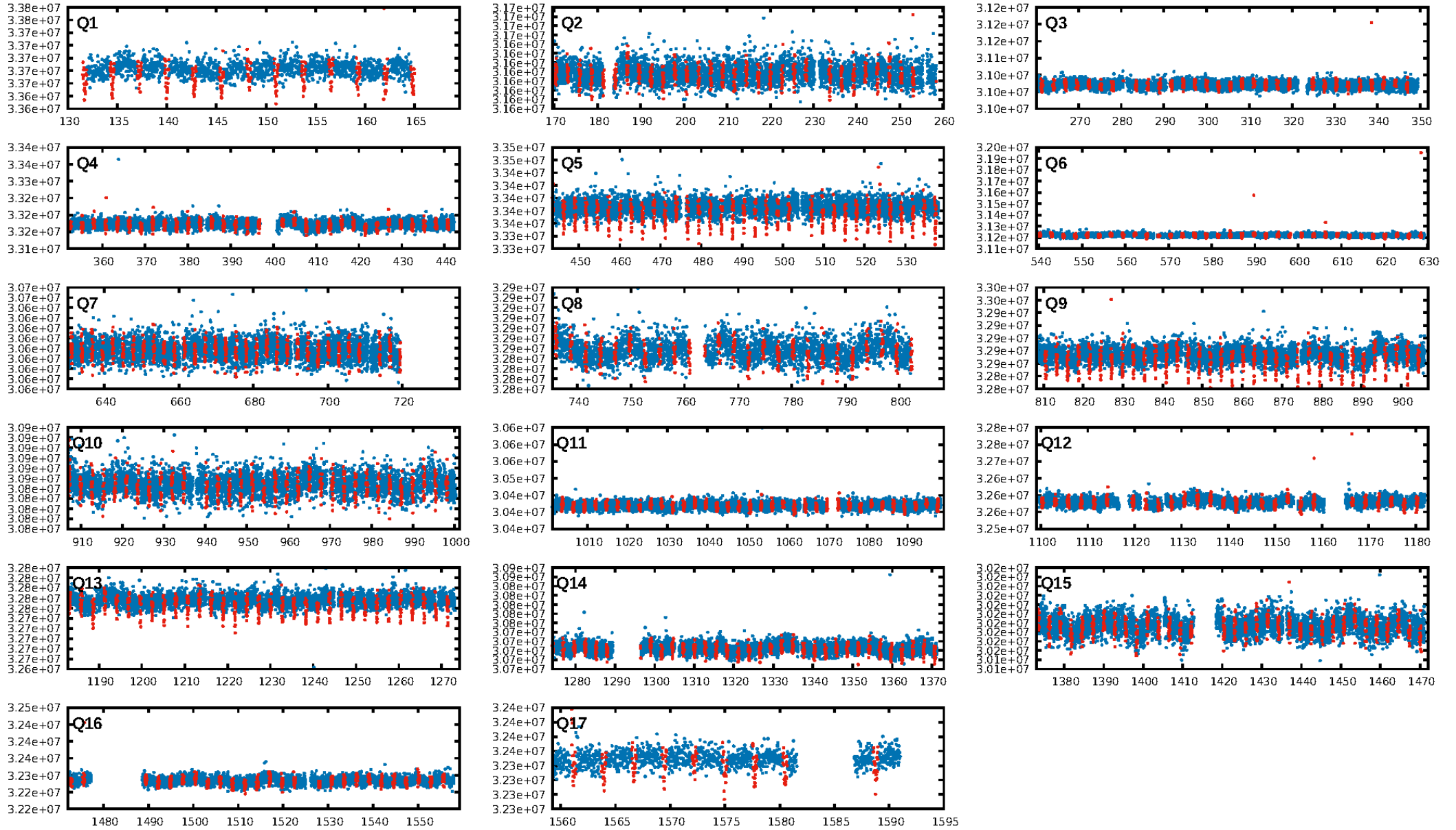
DV Fit Results:

Period = 2.75959 [0.00001] d
Epoch = 131.7103 [0.0027] BKJD
Rp/R* = 0.0174 [0.0005]
a/R* = 1.62 [0.10]
b = 0.97 [0.01]
Seff = 488.53 [165.34]
Teq = 1199 [101] K
Rp = 1.63 [0.44] Re
a = 0.0372 [0.0083] AU
Ag = 4.16 [2.22] [1.42σ]
Teff = 2647 [291] K [4.70σ]

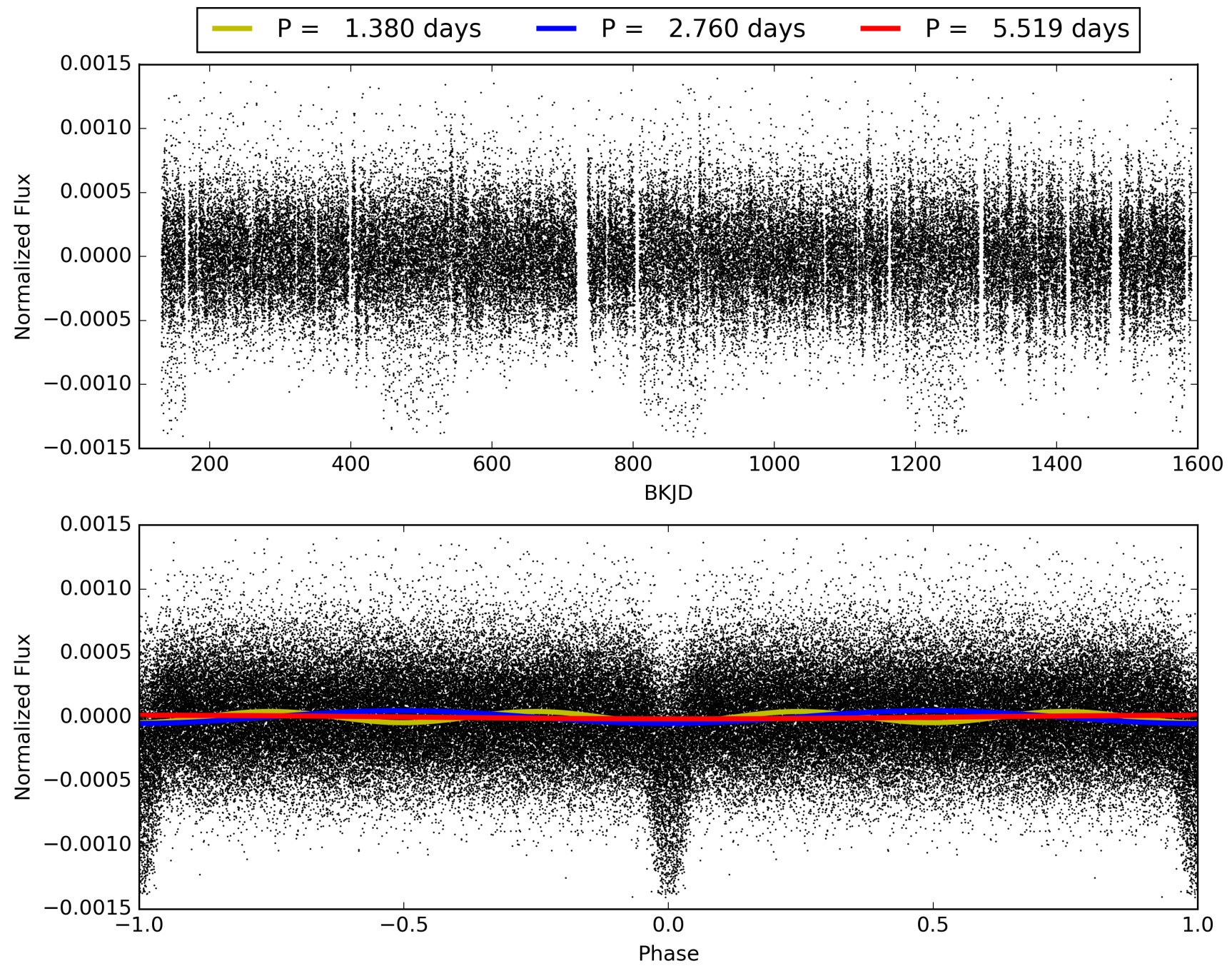
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.36e-165
RollingBand-fgt: 1.00 [468/469]
GhostDiagnostic-chr: -0.2334
Centroid-sig: 0.0%
Centroid-so: 146.239 arcsec [305.61σ]
OotOffset-rm: 6.611 arcsec [24.92σ]
KicOffset-rm: 7.035 arcsec [23.53σ]
OotOffset-st: 4/0/1/0 [5]
KicOffset-st: 4/0/1/0 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005730389-01, PDC Light Curves

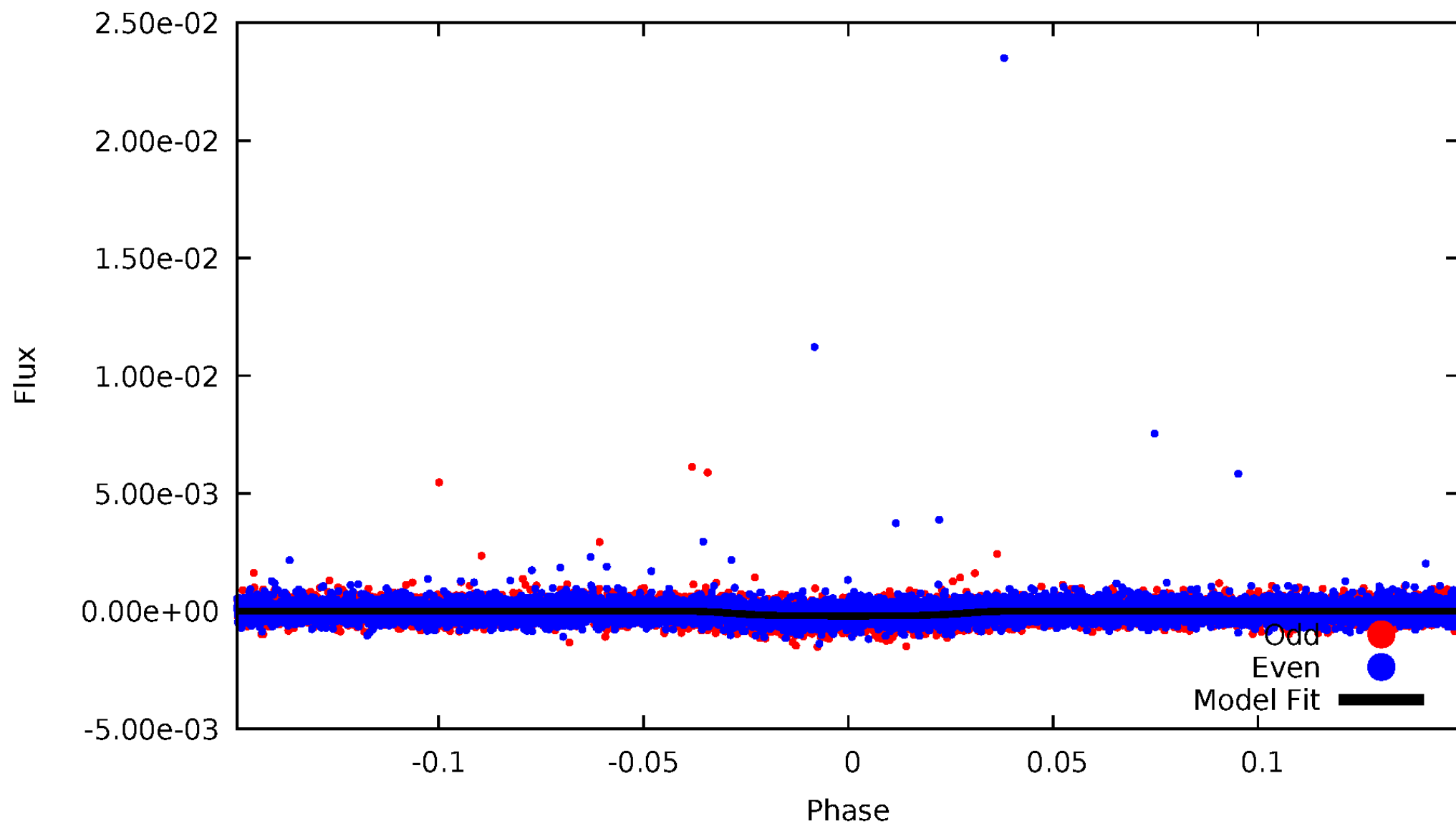


TCE 005730389-01



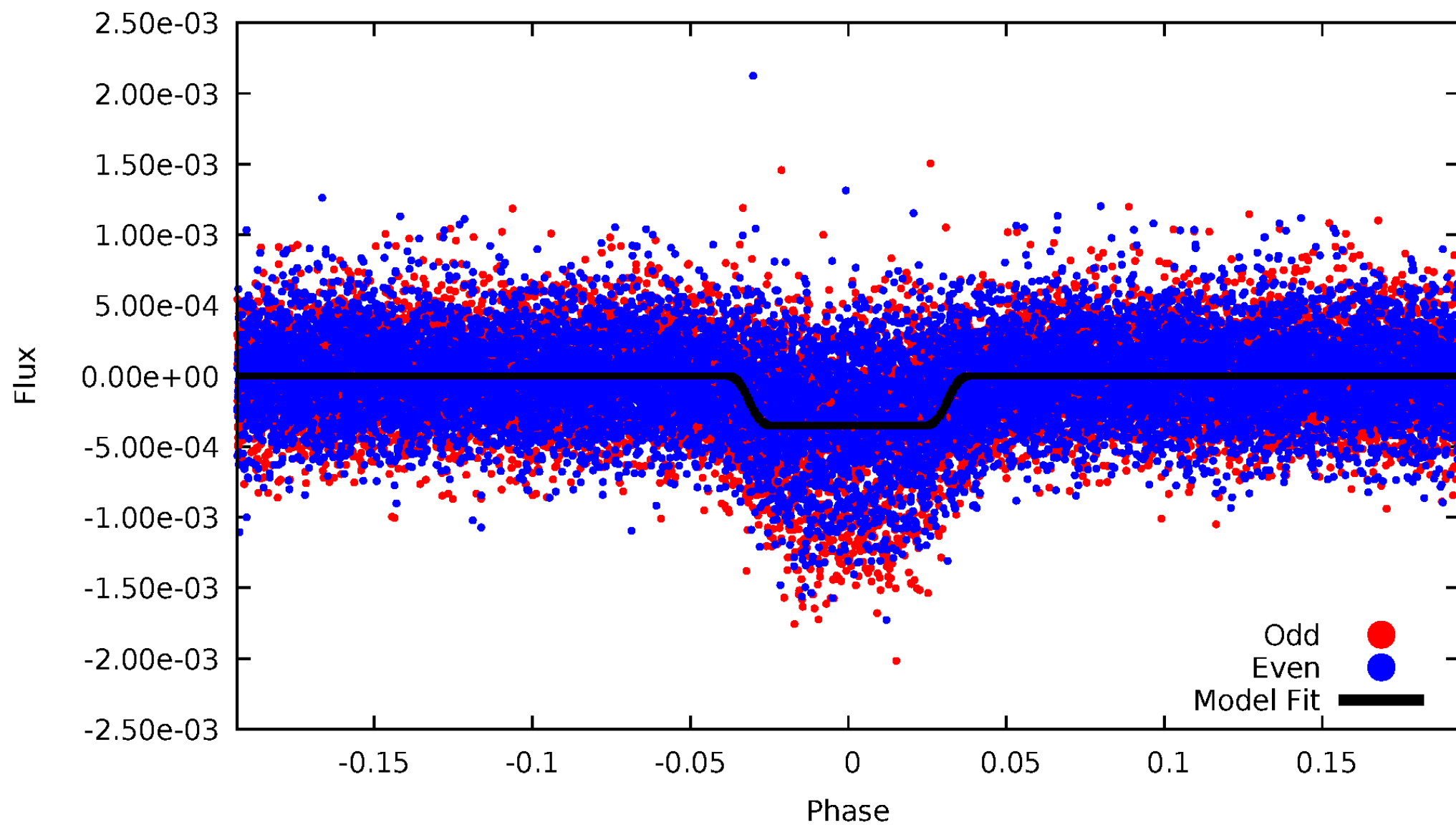
DV Odd/Even

TCE 005730389-01



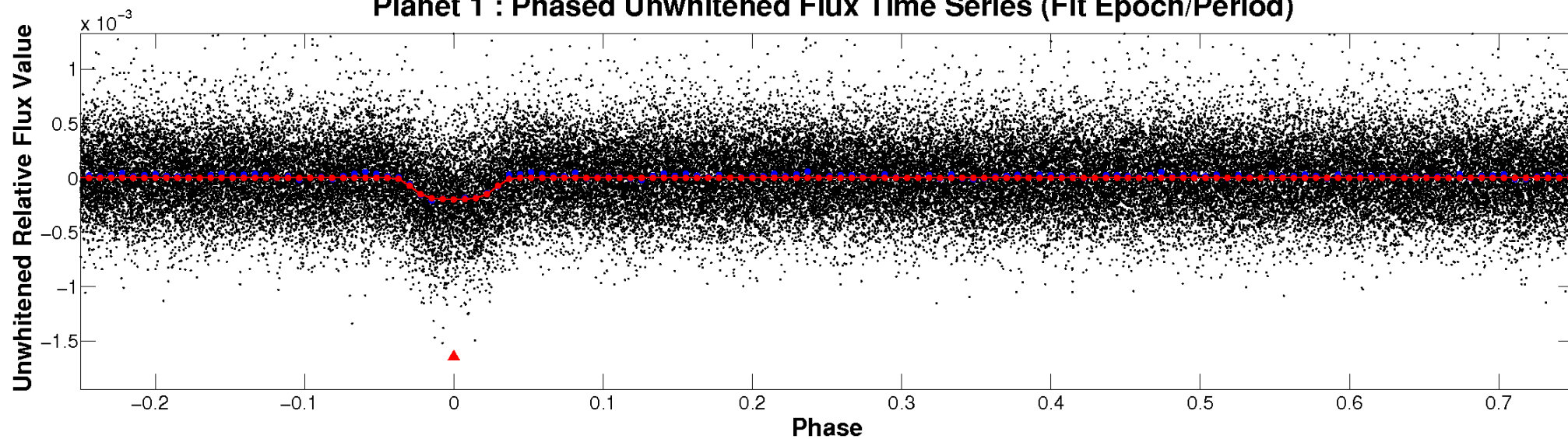
ALT Odd/Even

TCE 005730389-01

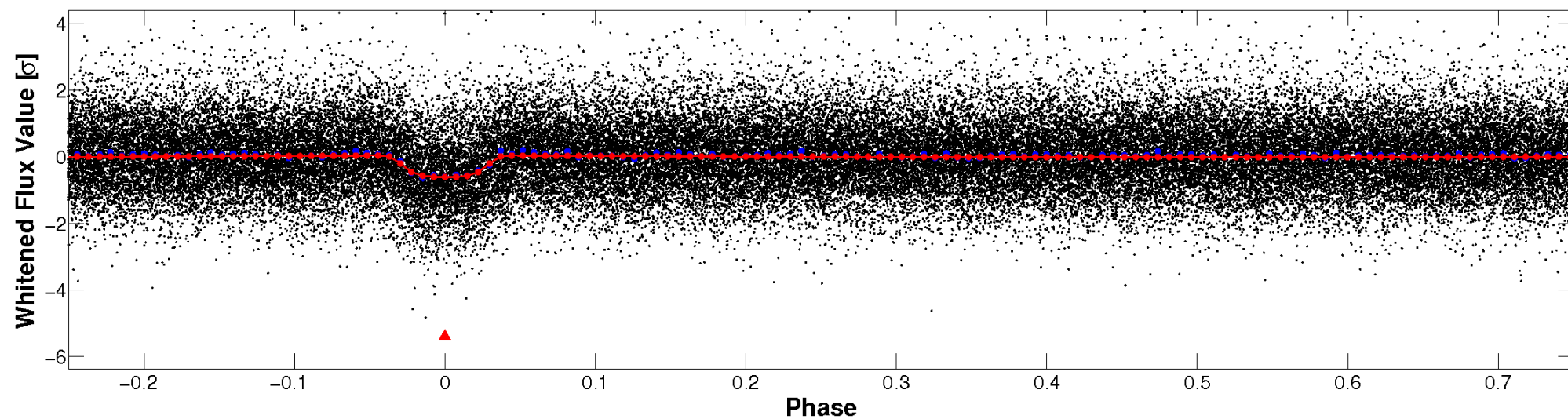


Non-Whitened Vs. Whitened Light Curve

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

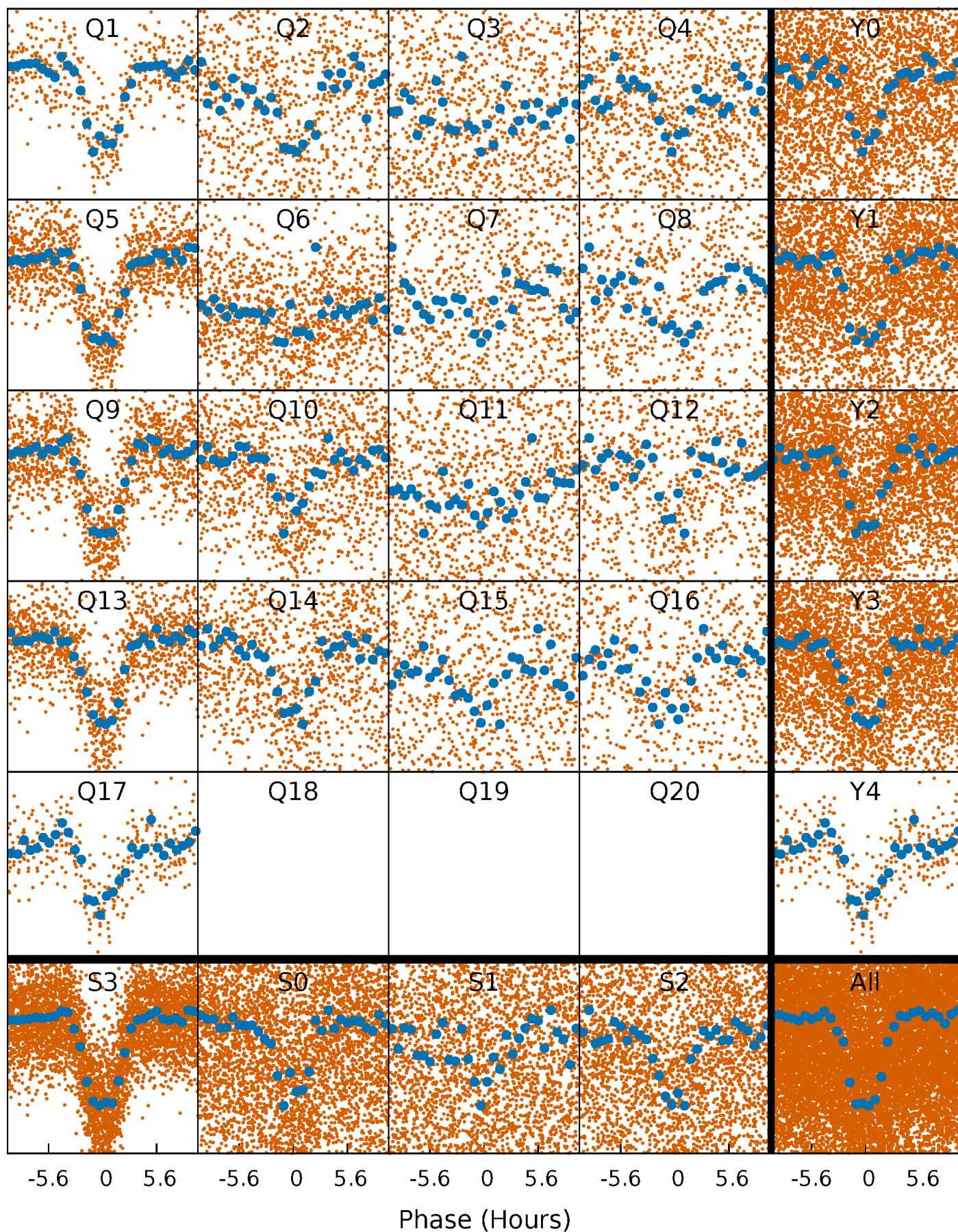


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



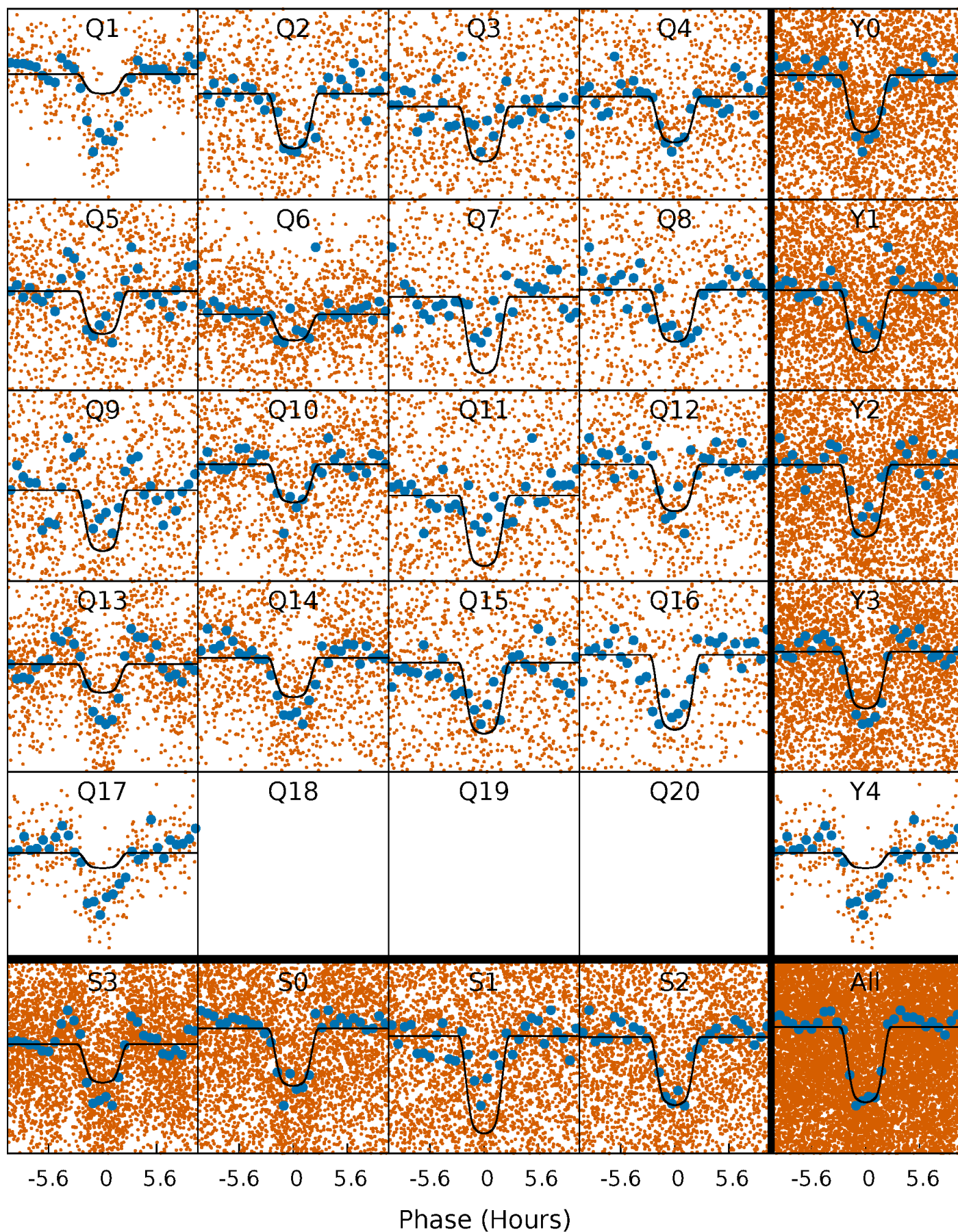
PDC Quarter-Phased Transit Curves

TCE 005730389-01 P= 2.759588 Days $T_0=131.710278$ (BKJD)



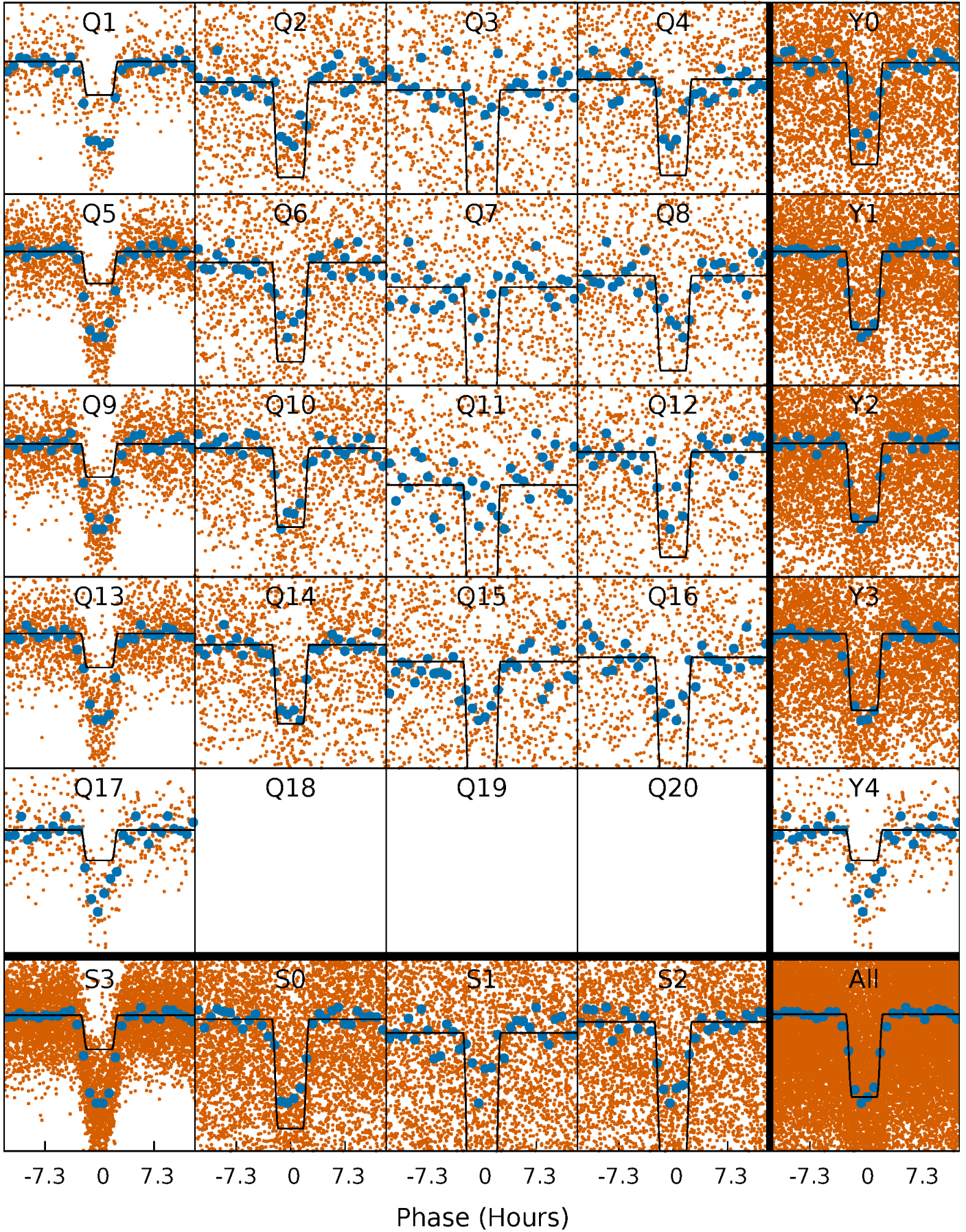
DV Quarter-Phased Transit Curves

TCE 005730389-01 P= 2.759588 Days $T_0=131.710278$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

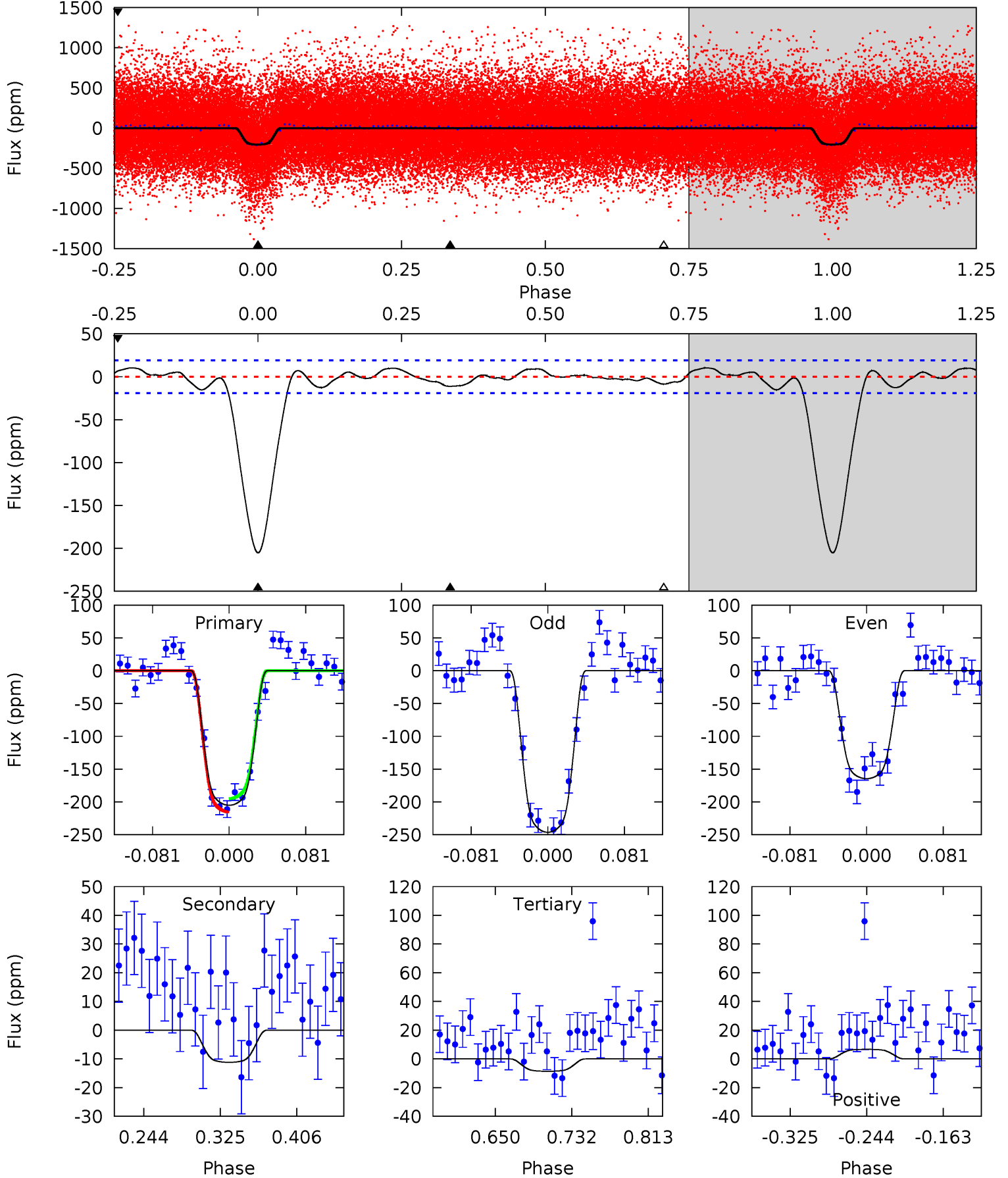
TCE 005730389-01 P= 2.759567 Days $T_0=131.715627$ (BKJD)



DV Model-Shift Uniqueness Test

005730389-01, P = 2.759588 Days, E = 128.950690 Days

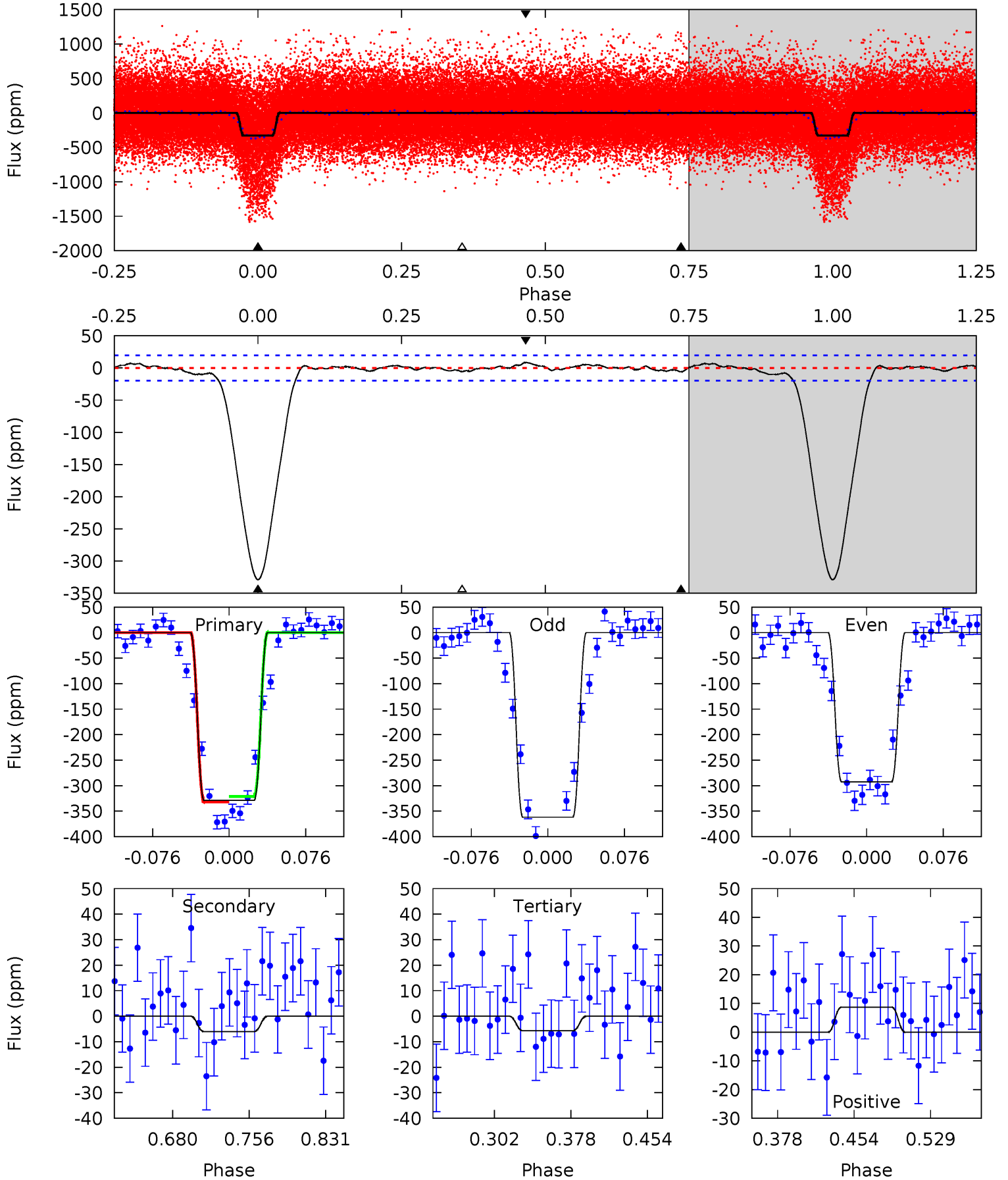
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.5	2.71	2.09	1.61	4.61	1.74	1.48	47.4	47.9	0.62	1.10	9.89	1.15	0.05	2.47



Alt Model-Shift Uniqueness Test

005730389-01, P = 2.759567 Days, E = 128.956060 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
77.5	1.42	1.34	2.05	4.62	1.78	0.86	76.2	75.5	0.08	-0.63	8.15	1.43	0.03	1.25



Stellar Parameters For KIC 005730389

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5640^{+152}_{-152}	$4.520^{+0.058}_{-0.173}$	$-0.140^{+0.300}_{-0.300}$	$0.863^{+0.233}_{-0.093}$	$0.901^{+0.104}_{-0.094}$	$1.974^{+0.476}_{-0.947}$
	+3%/-3%	+1%/-4%	+214%/-214%	+27%/-11%	+12%/-10%	+24%/-48%
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 005730389-01 / KOI 1956.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 4	$1.66^{+0.24}_{-0.13}$	1697^{+103}_{-71}	3050^{+175}_{-213}	$2.910^{+1.370}_{-1.099}$
Alt.	-6 ± 4	$1.80^{+0.25}_{-0.13}$	1705^{+99}_{-77}	2701^{+257}_{-660}	$1.353^{+1.097}_{-0.957}$

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

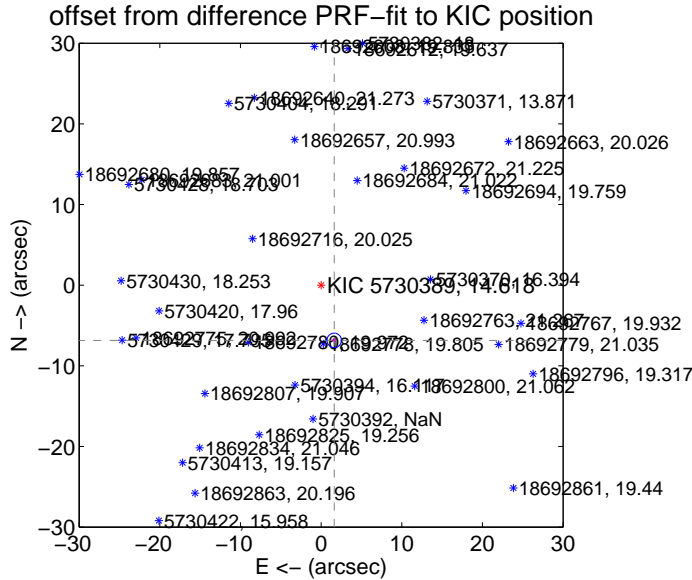
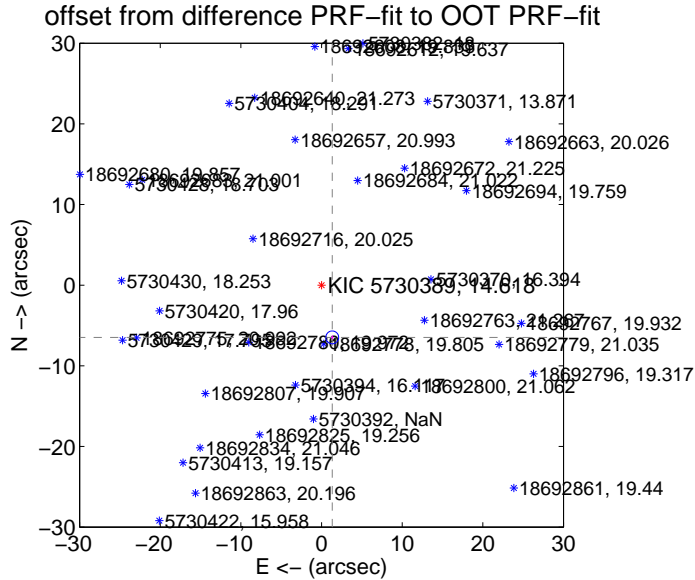
DV Centroid Data

Supplemental centroid analysis for 005730389-01. Kepler magnitude: 14.62. Transit SNR 31.80

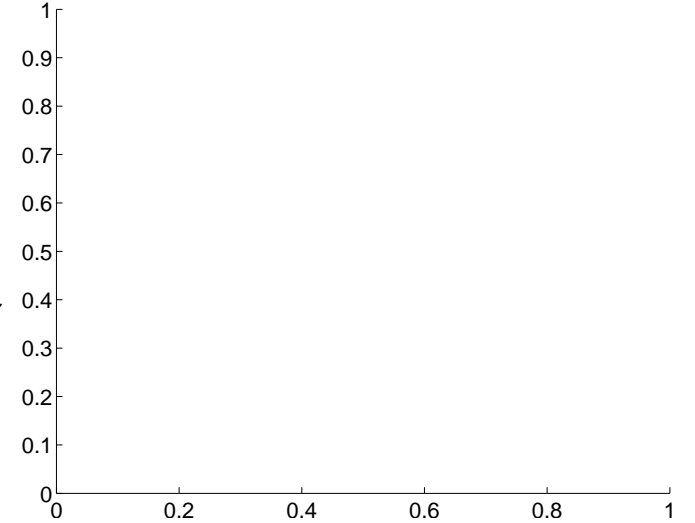
There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.611 ± 0.265	24.92	-1.329 ± 0.151	-6.476 ± 0.244
PRF-fit source offset from KIC position	7.035 ± 0.299	23.53	-1.624 ± 0.193	-6.845 ± 0.265
photometric centroid source offset	—	—	—	—

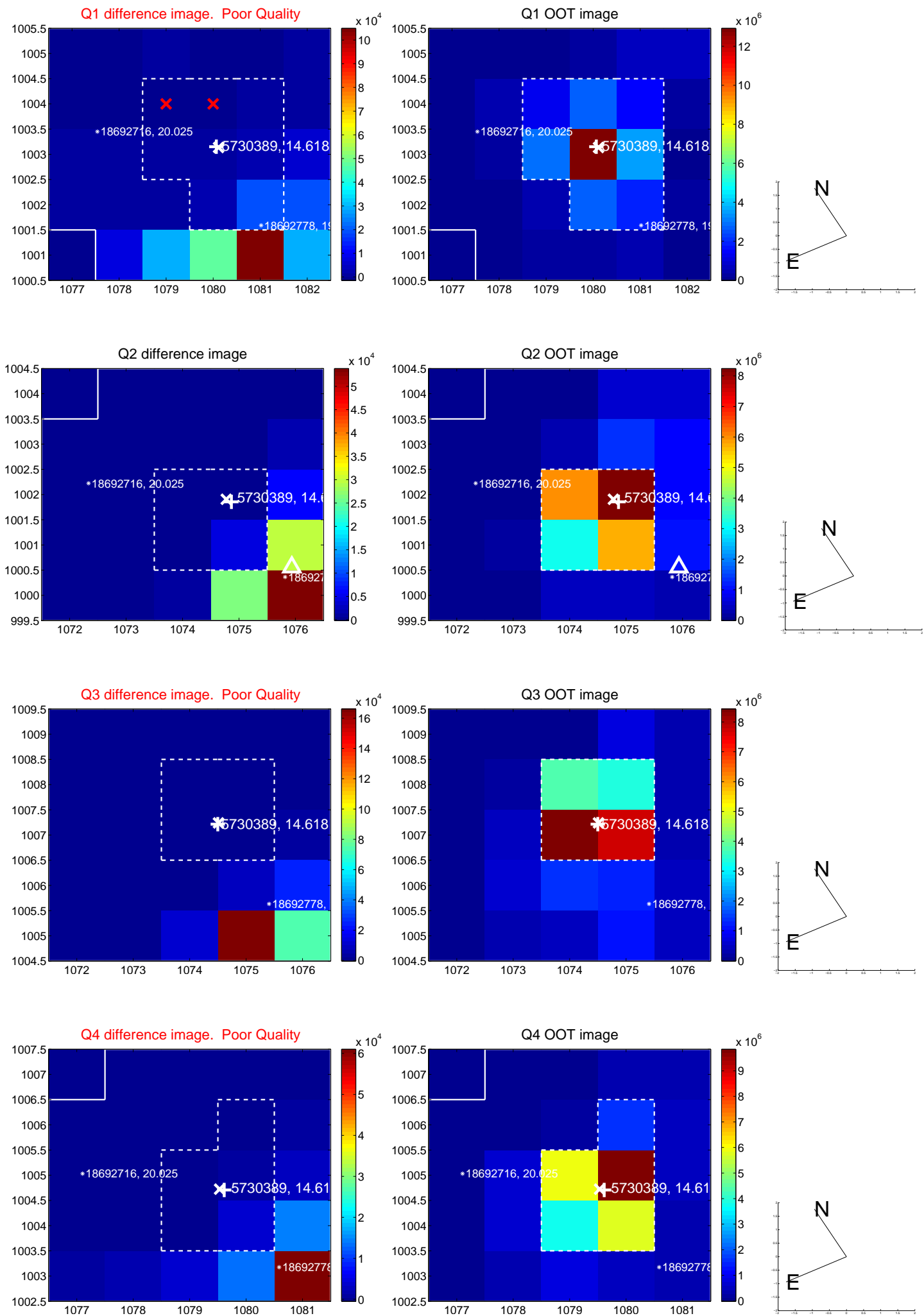


There are no photometric centroids

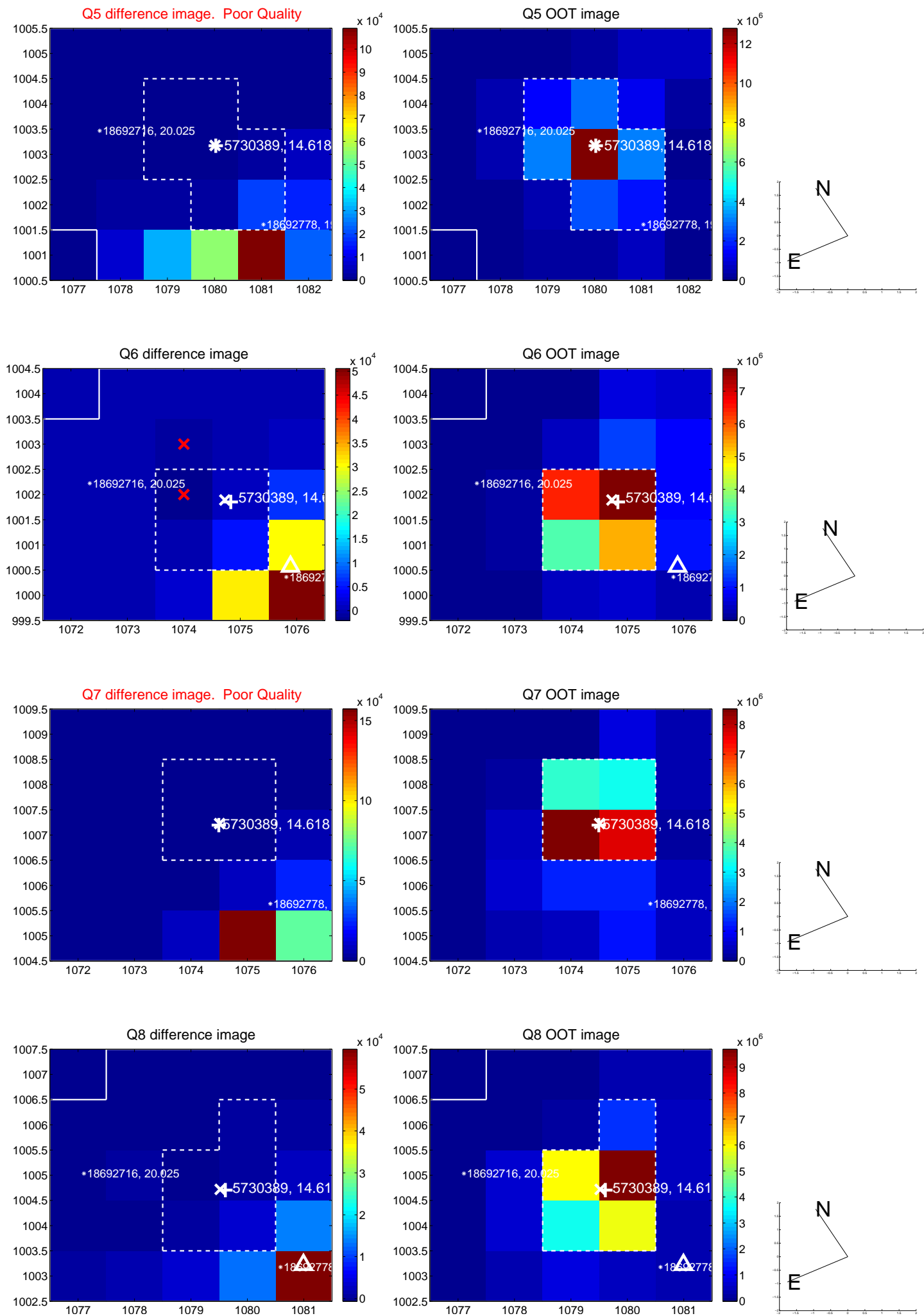


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

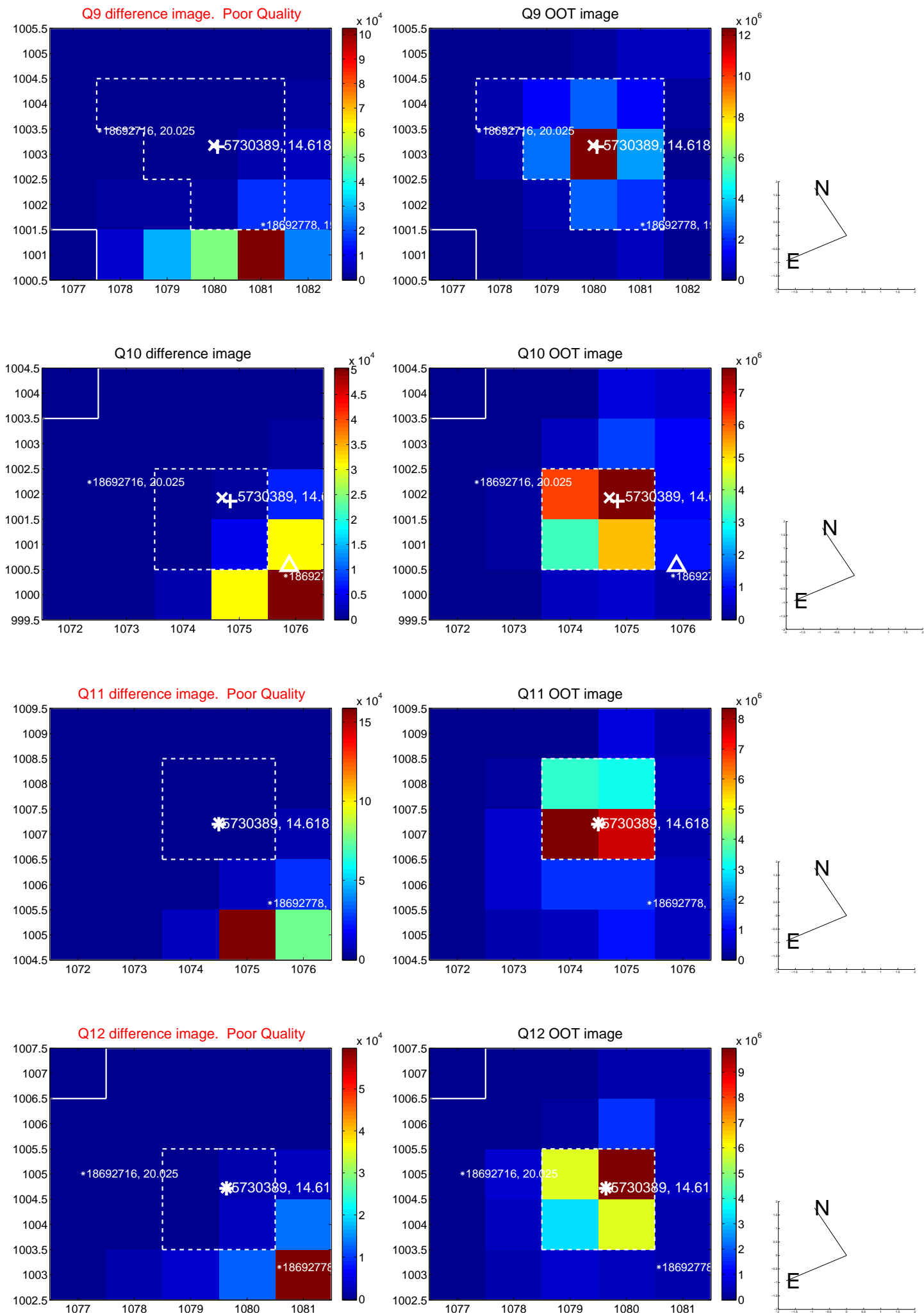
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



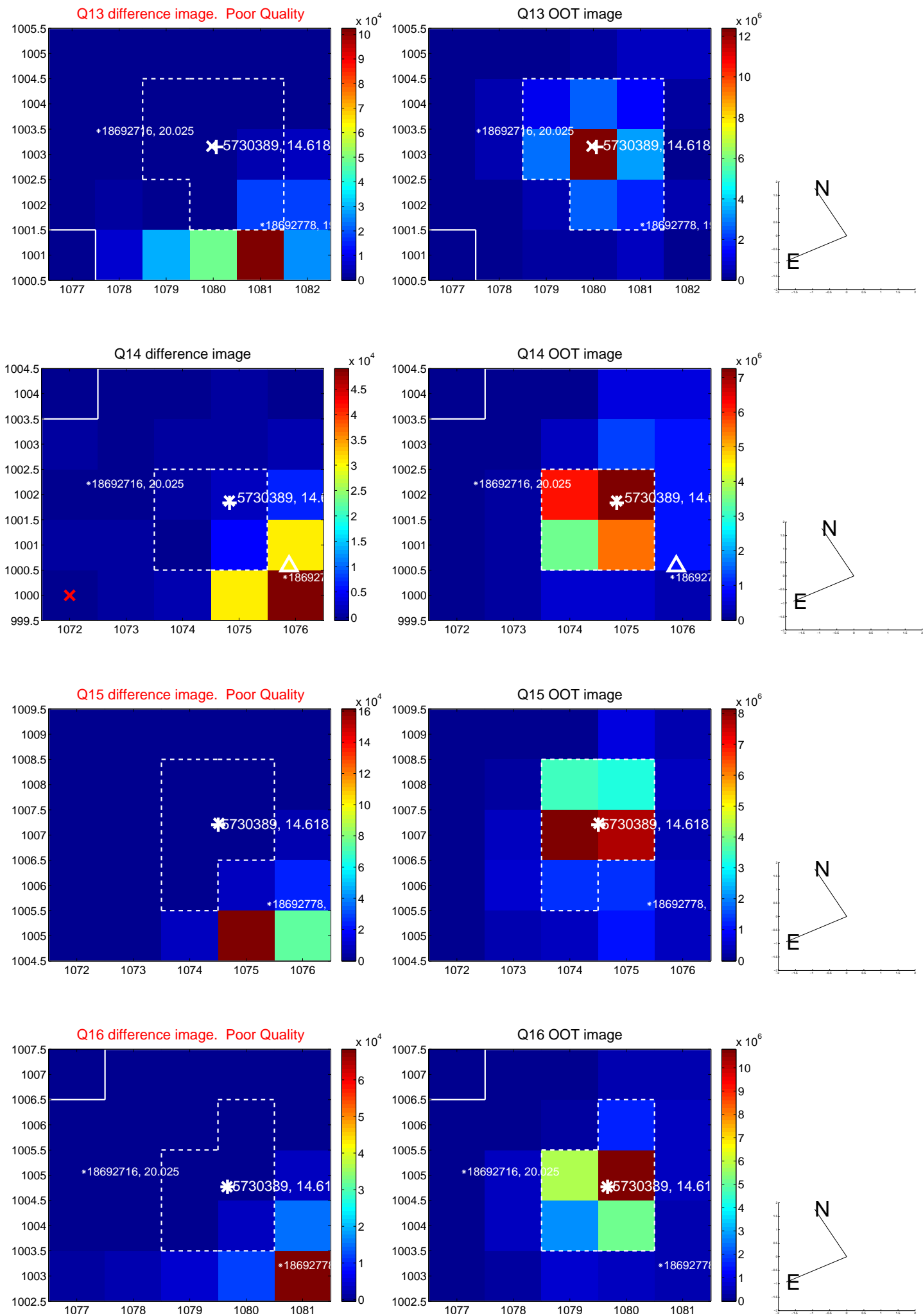
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



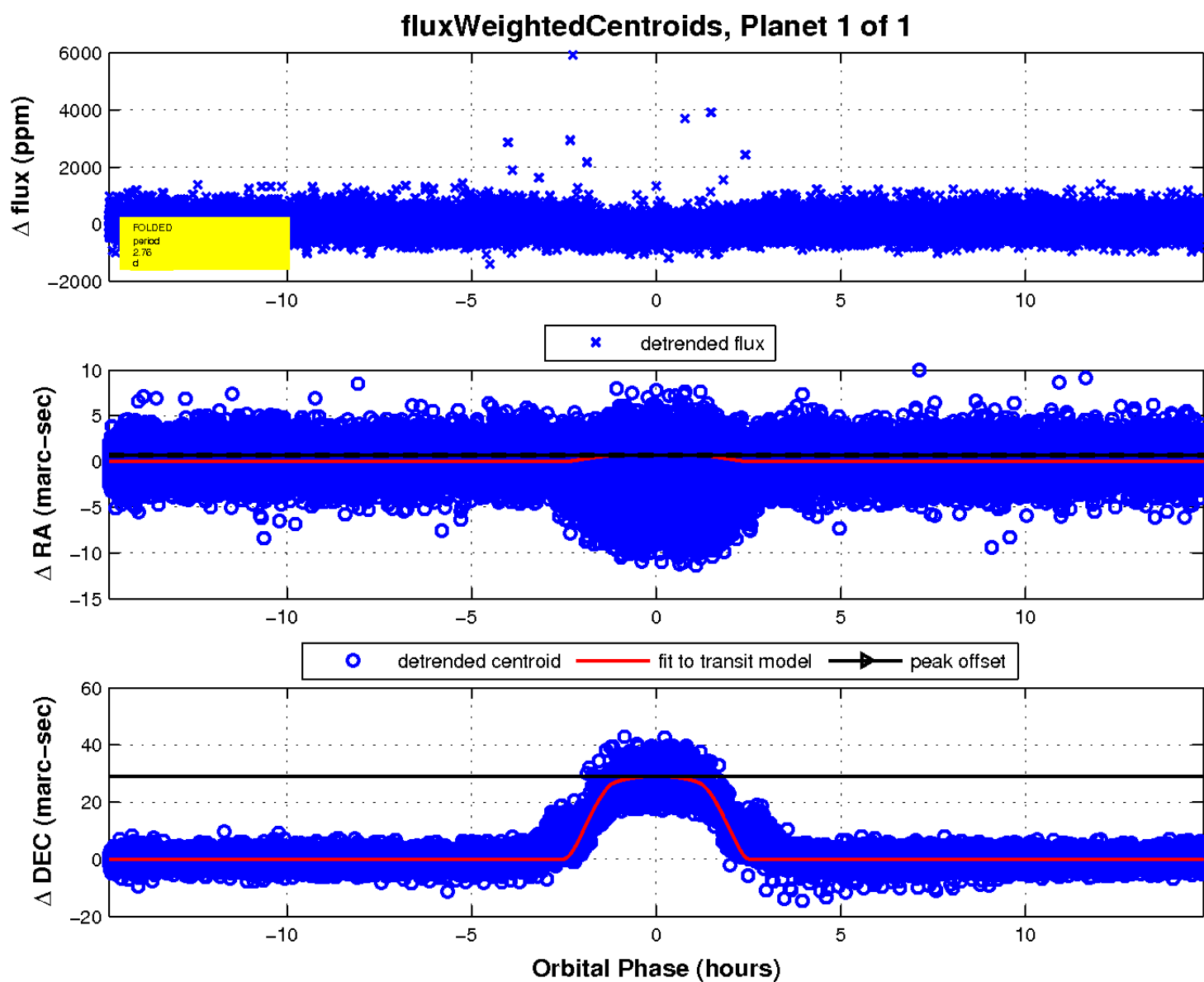
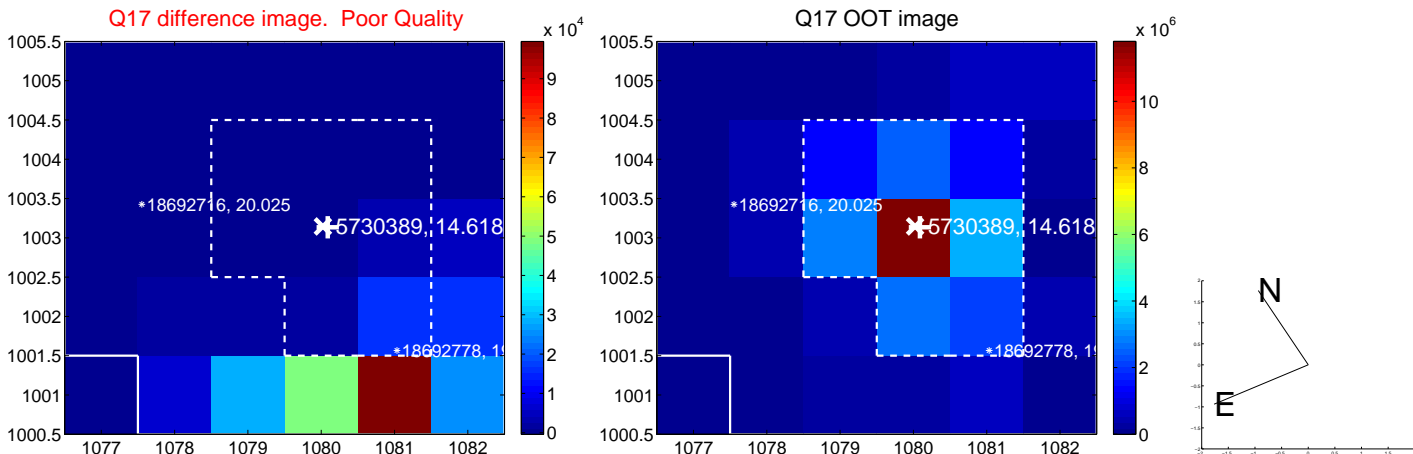
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

