

KIC 012121470

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})
012121470-01	OBS	2142.01	1.877370	132.258533	181.3	1.749	19.8	22.2	1.06	6382	1.65	1756.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012121470-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET—HALO_GHOST

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.

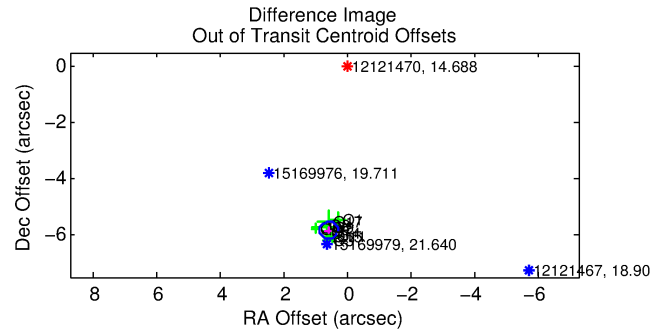
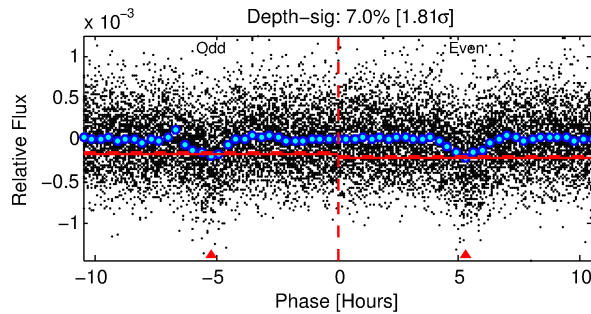
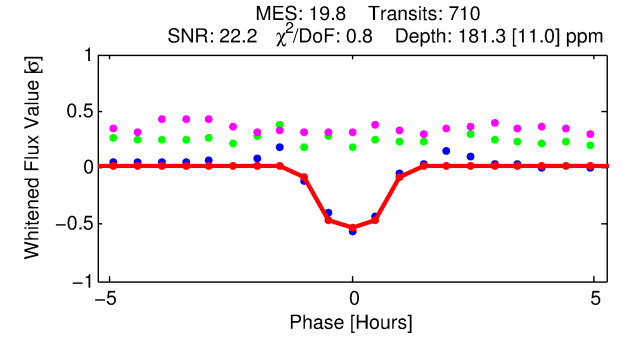
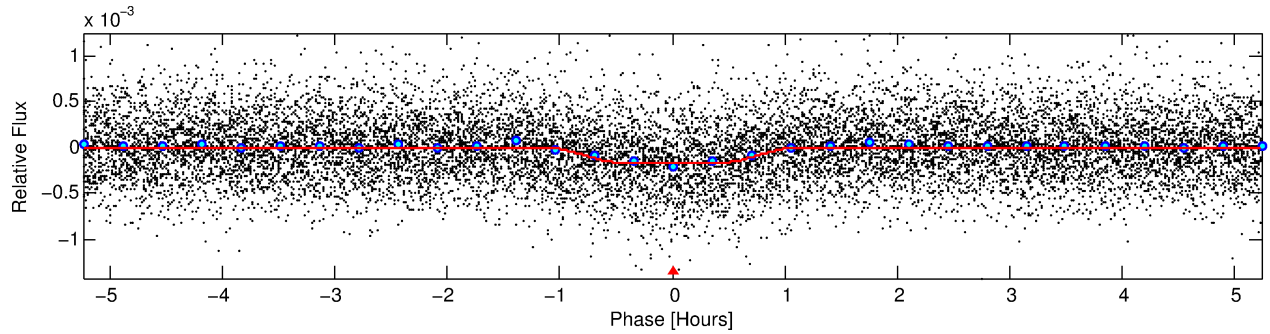
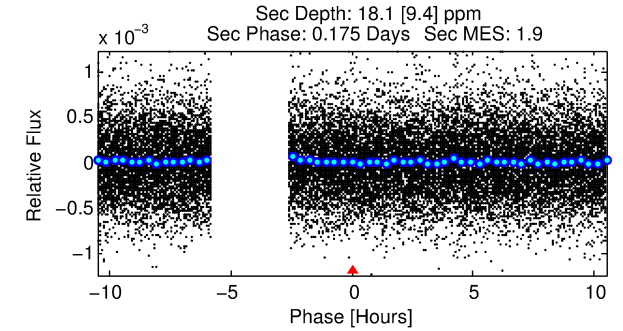
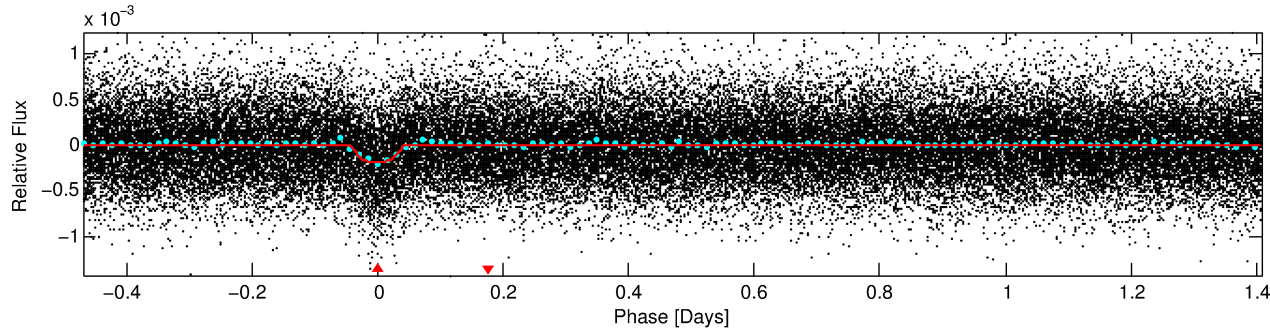
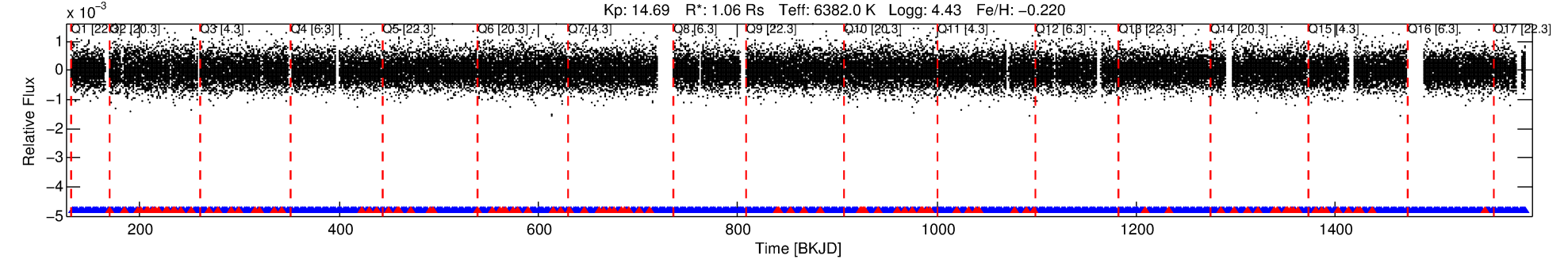
Ephemeris Match Information For 012121470-01

No Significant Match Found

DV One-Page Summary

KIC: 12121470 Candidate: 1 of 1 Period: 1.877 d
KOI: K02142.01 Corr: 0.966

Kp: 14.69 R*: 1.06 Rs Teff: 6382.0 K Logg: 4.43 Fe/H: -0.220



DV Fit Results:

Period = 1.87737 [0.00001] d
Epoch = 132.2585 [0.0012] BKJD
Rp/R* = 0.0143 [0.0048]
a/R* = 4.16 [7.29]
b = 0.89 [0.46]
Seff = 1756.25 [734.20]
Teq = 1651 [173] K
Rp = 1.65 [0.77] Re
a = 0.0308 [0.0085] AU
Ag = 3.45 [3.22] [0.76σ]
Teffp = 3478 [744] K [2.39σ]

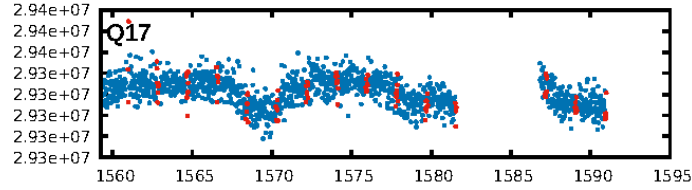
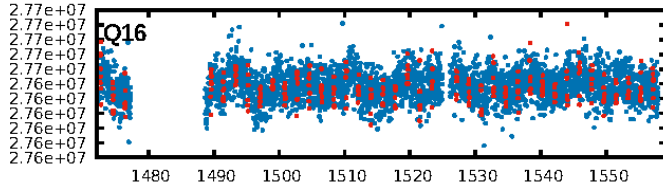
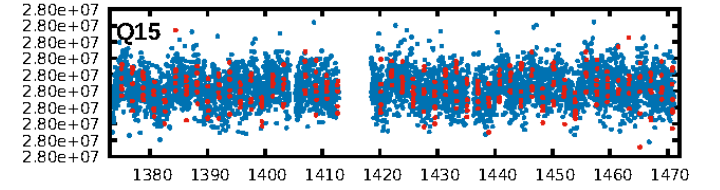
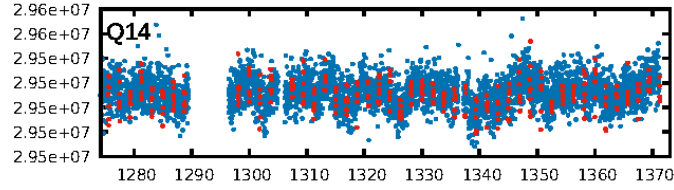
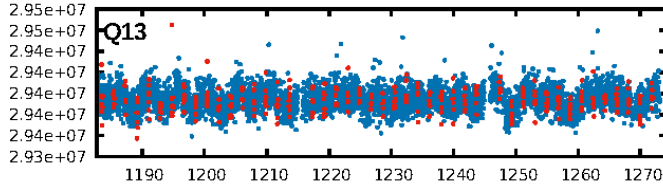
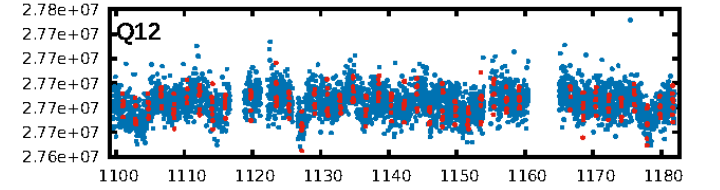
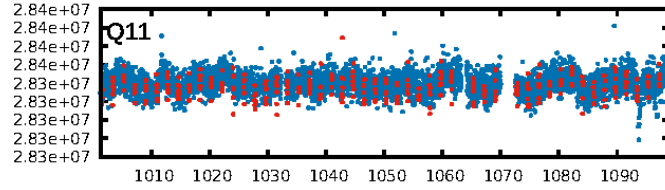
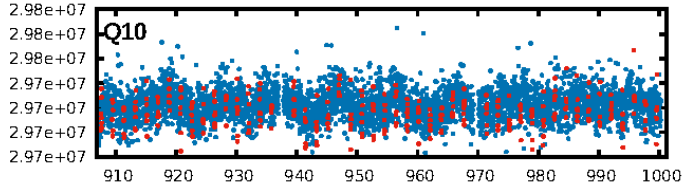
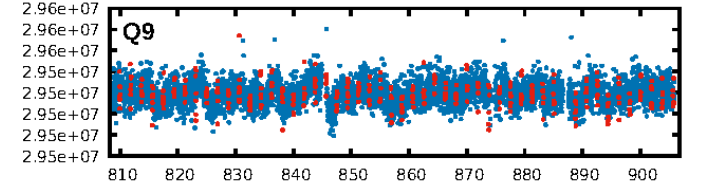
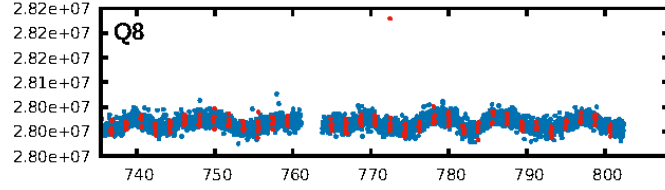
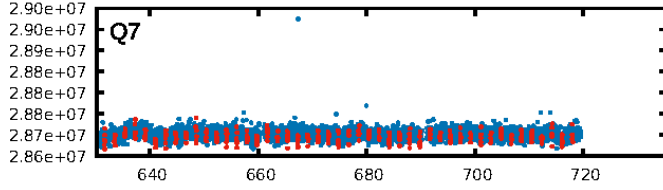
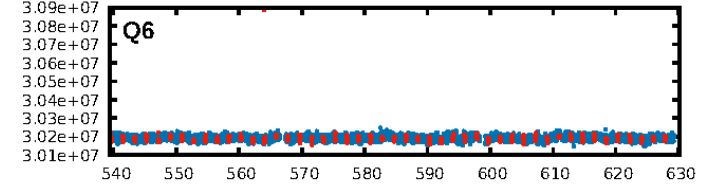
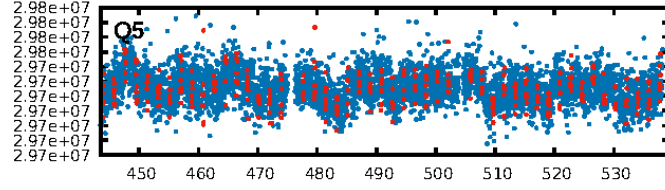
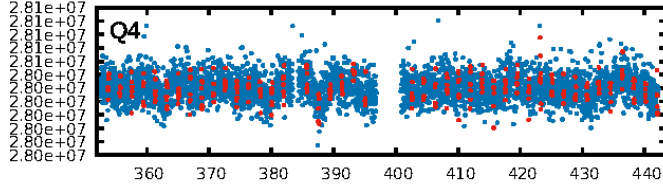
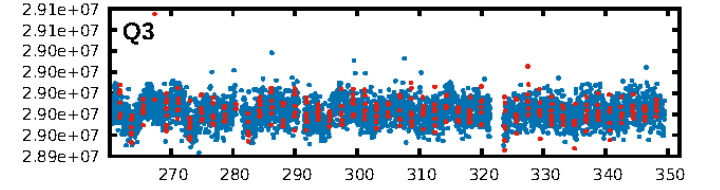
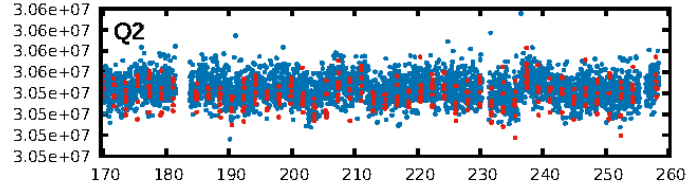
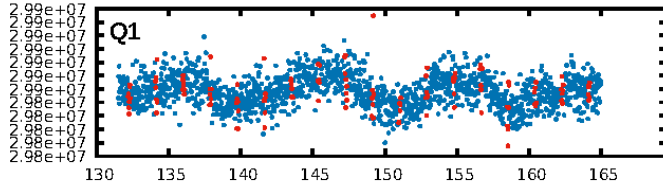
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.61e-85
RollingBand-fgt: 0.85 [578/677]
GhostDiagnostic-chr: -0.1743
Centroid-sig: 0.0%
Centroid-so: 11.341 arcsec [16.84σ]
OotOffset-rm: 5.873 arcsec [59.51σ]
KicOffset-rm: 5.996 arcsec [64.44σ]
OotOffset-st: 4/4/0/3 [11]
KicOffset-st: 4/4/0/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [17/17]

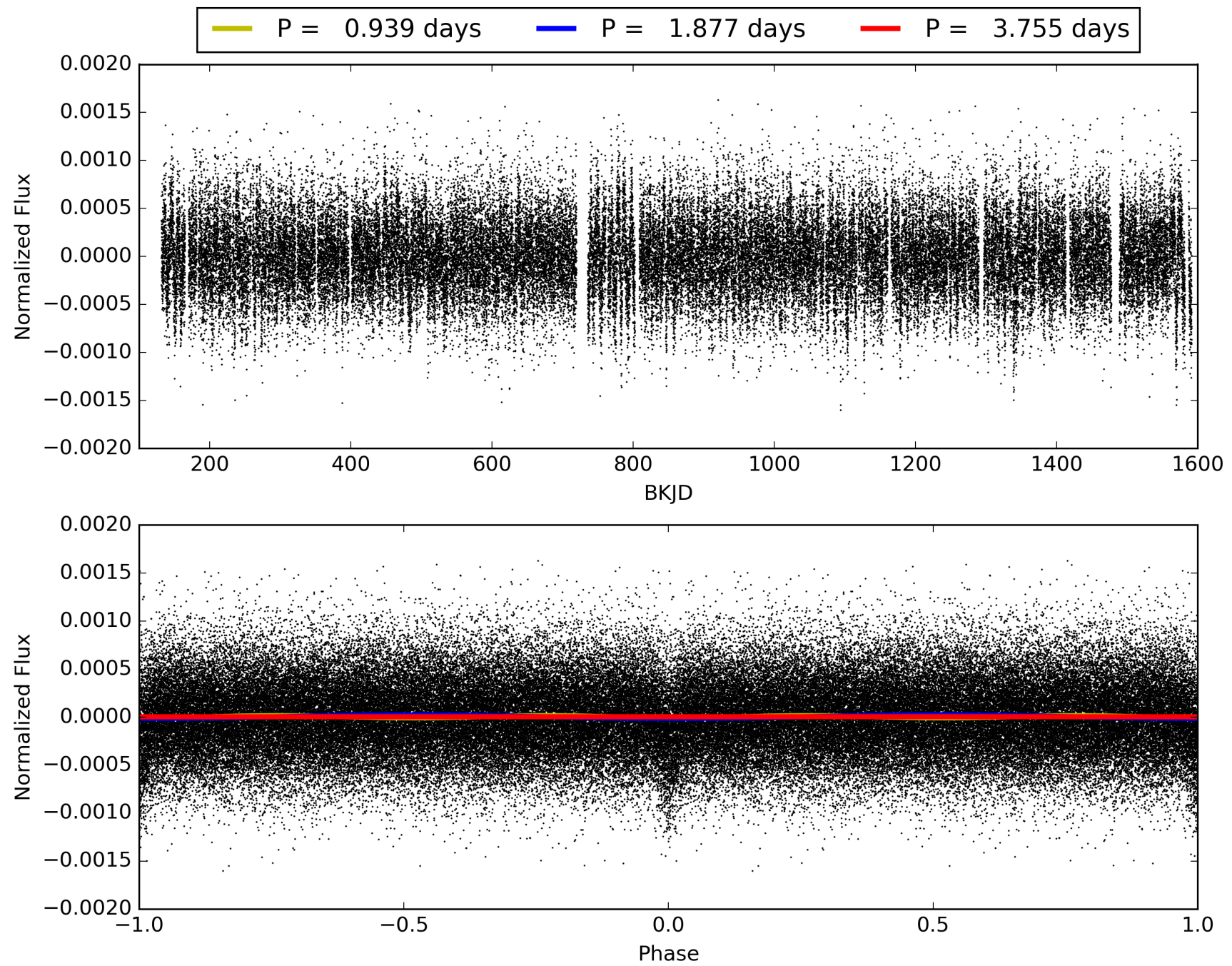
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:18:37 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 012121470-01, PDC Light Curves

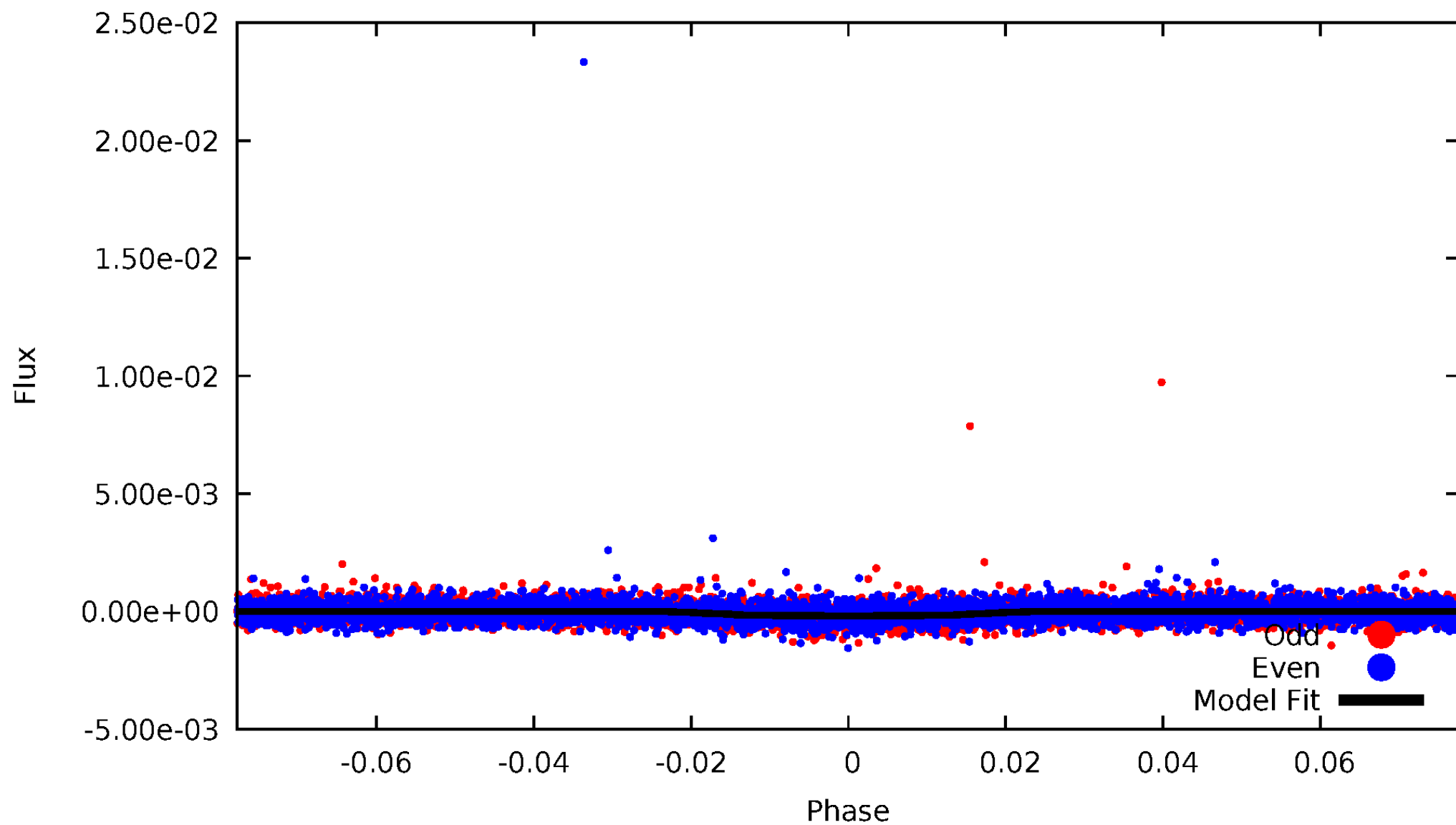


TCE 012121470-01



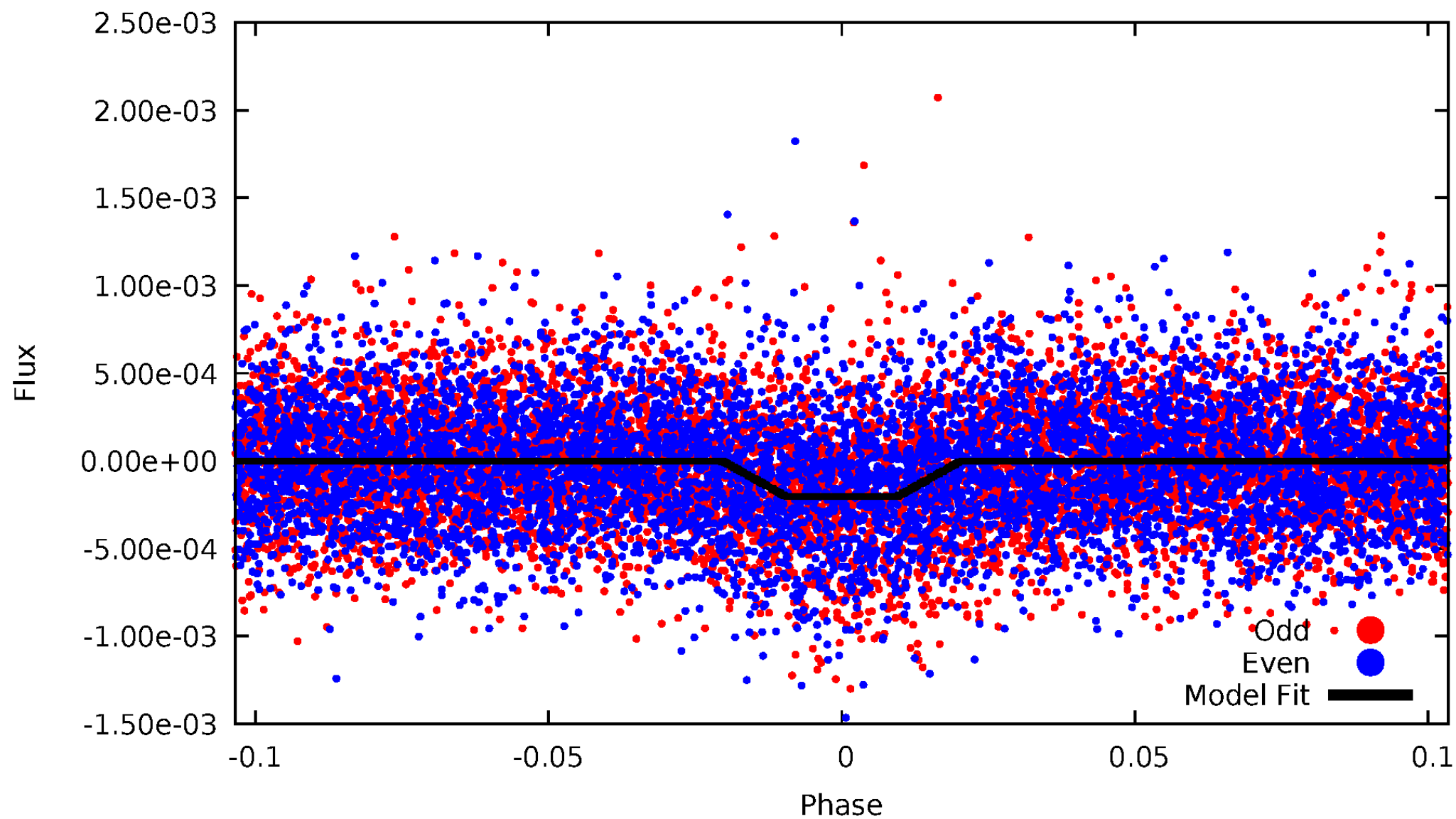
DV Odd/Even

TCE 012121470-01



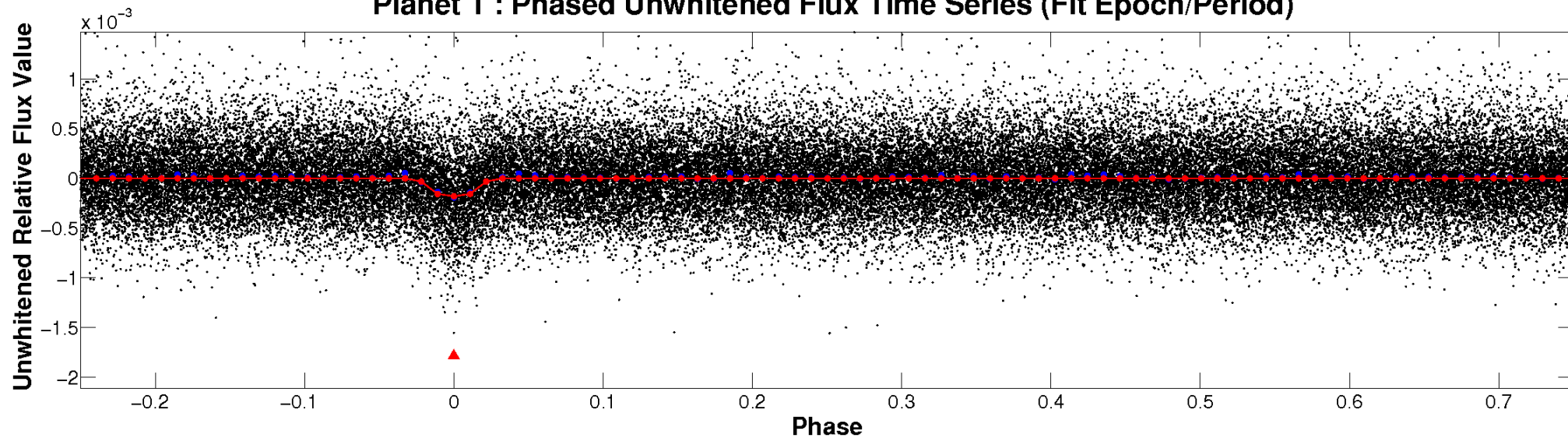
ALT Odd/Even

TCE 012121470-01

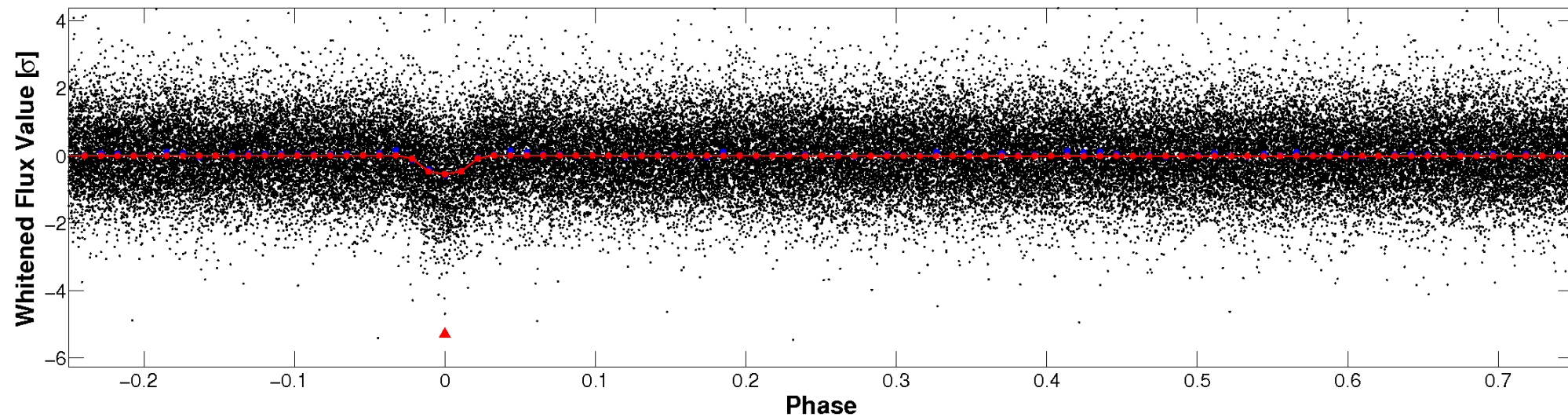


Non-Whitened Vs. Whitened Light Curve

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

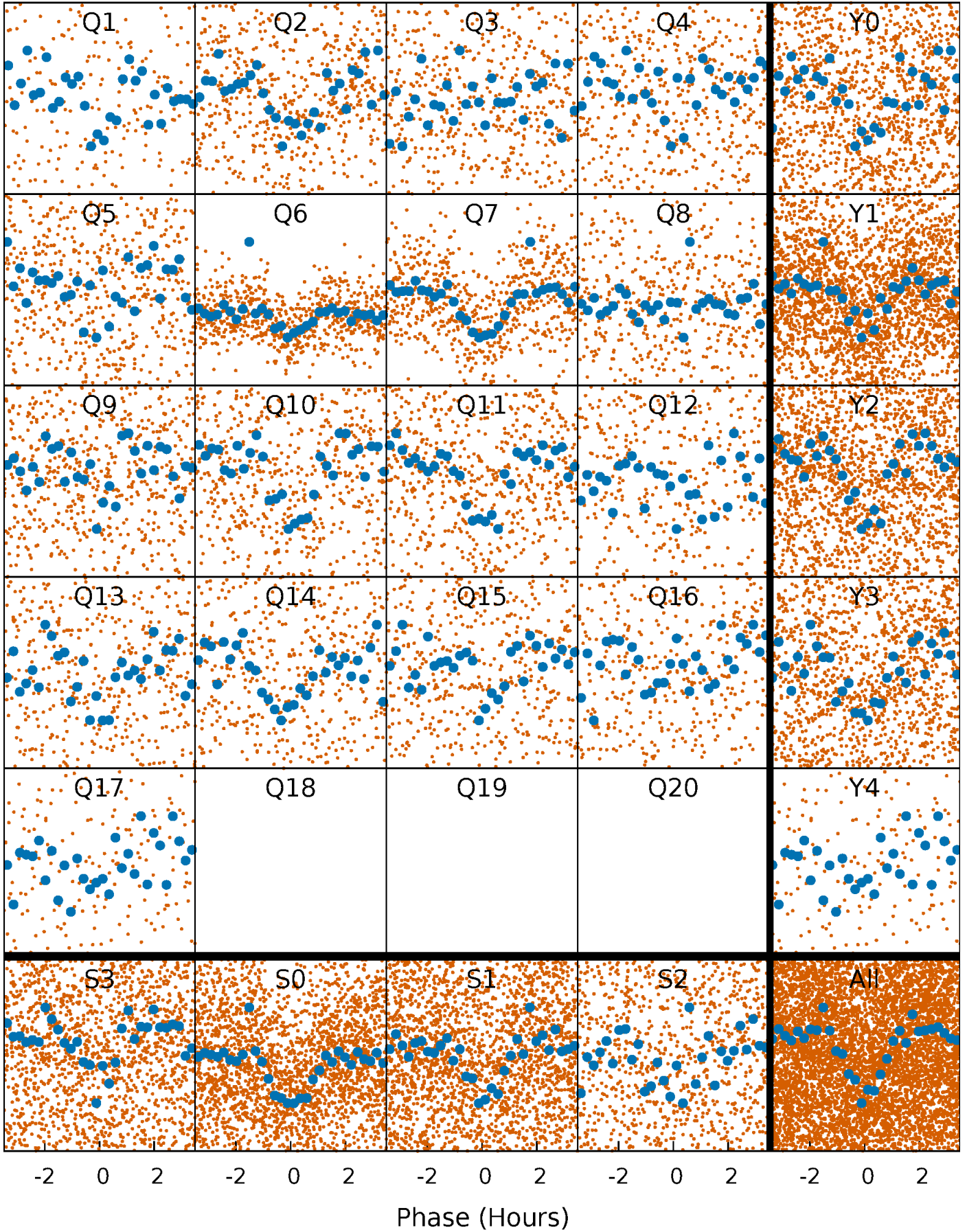


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



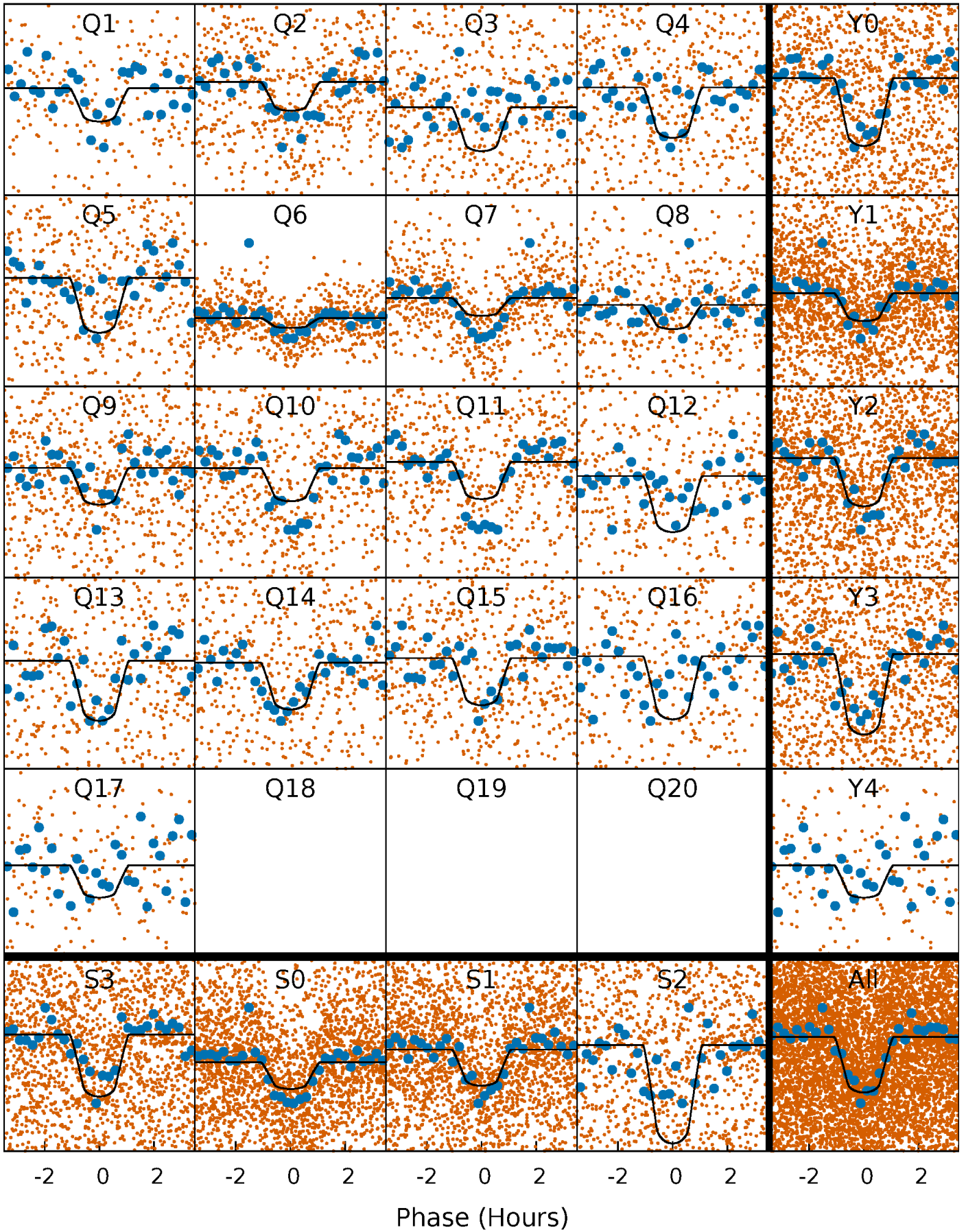
PDC Quarter-Phased Transit Curves

TCE 012121470-01 P= 1.877370 Days $T_0=132.258533$ (BKJD)



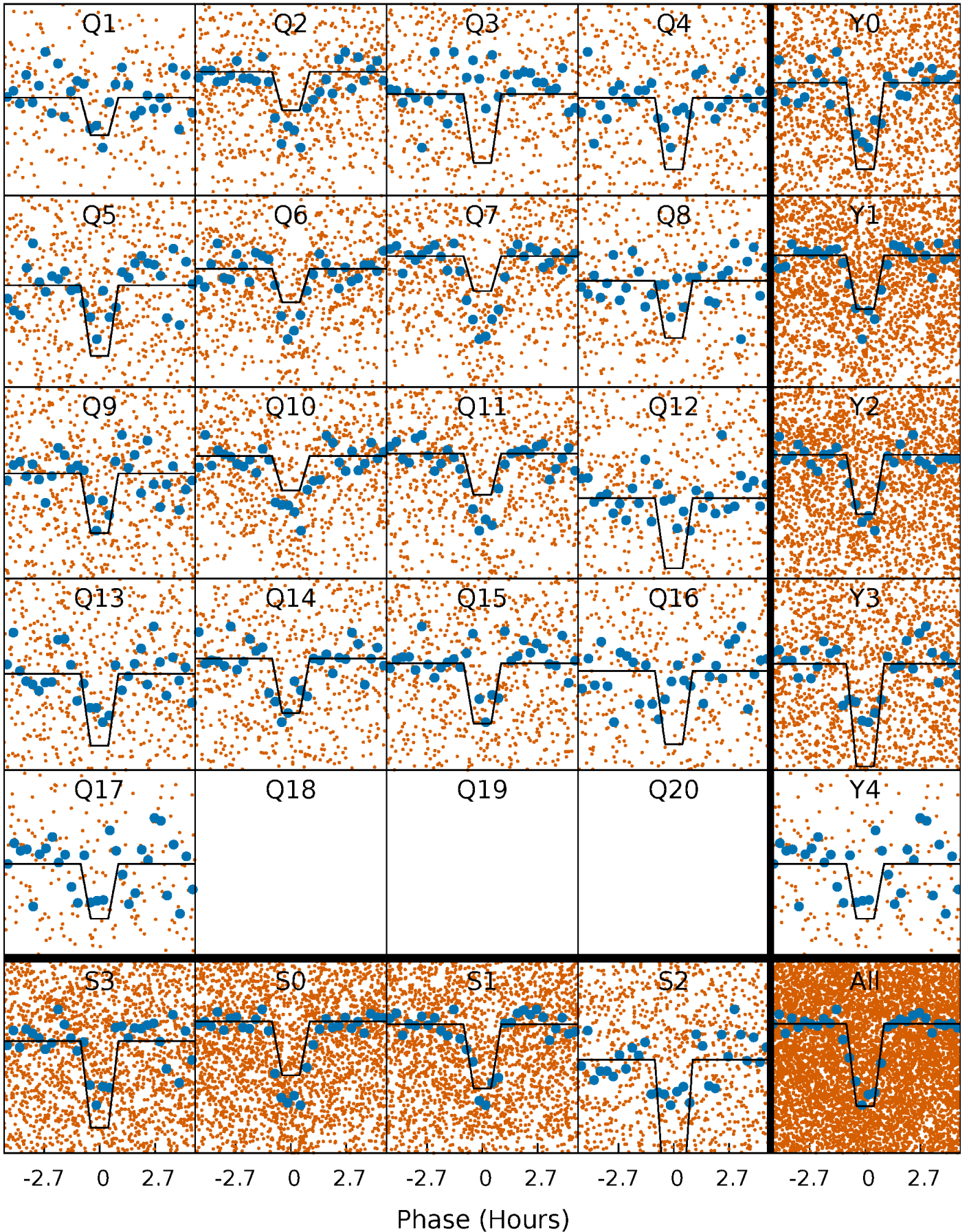
DV Quarter-Phased Transit Curves

TCE 012121470-01 P= 1.877370 Days $T_0=132.258533$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

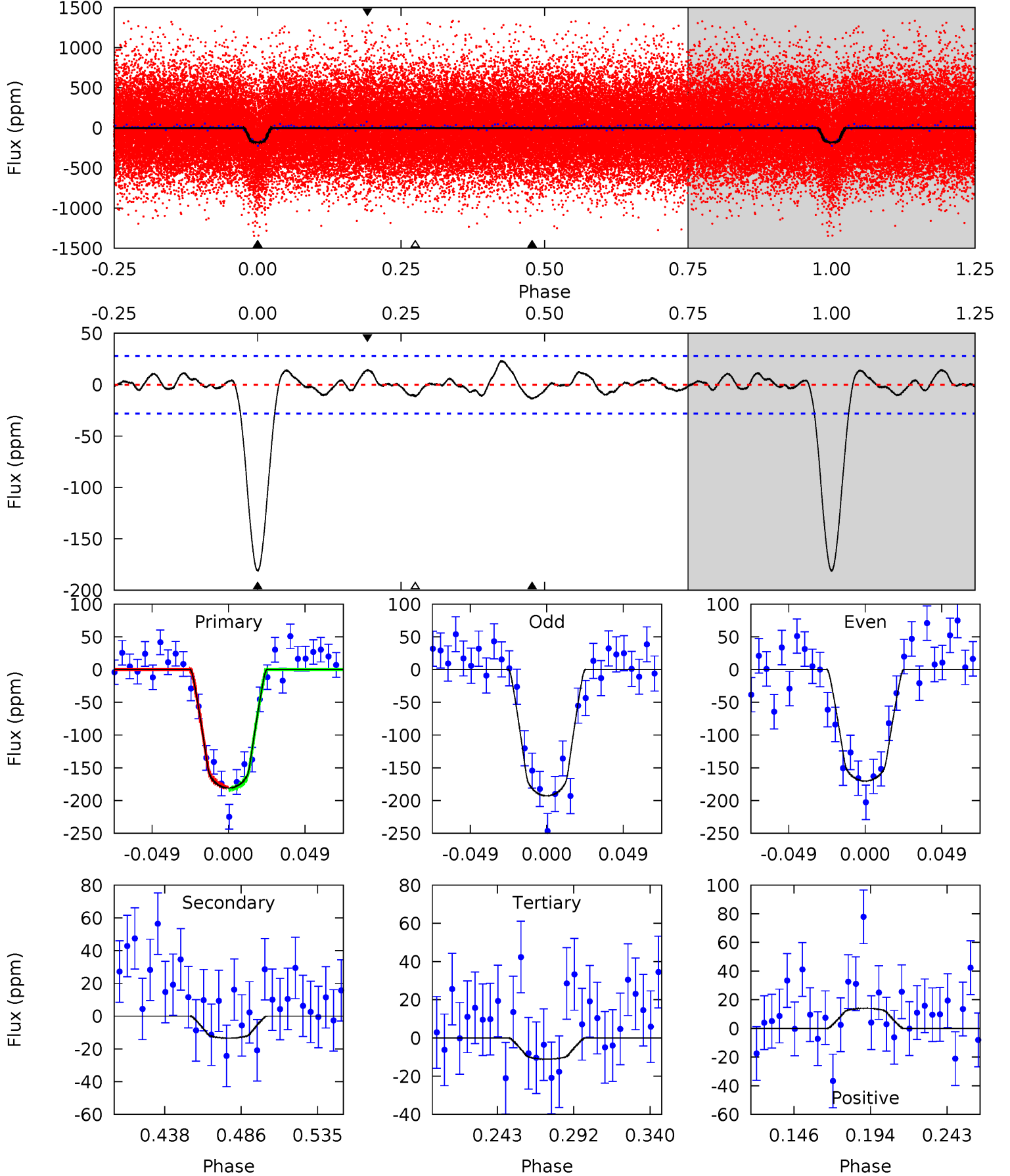
TCE 012121470-01 P= 1.877366 Days $T_0=132.260240$ (BKJD)



DV Model-Shift Uniqueness Test

012121470-01, P = 1.877370 Days, E = 130.381163 Days

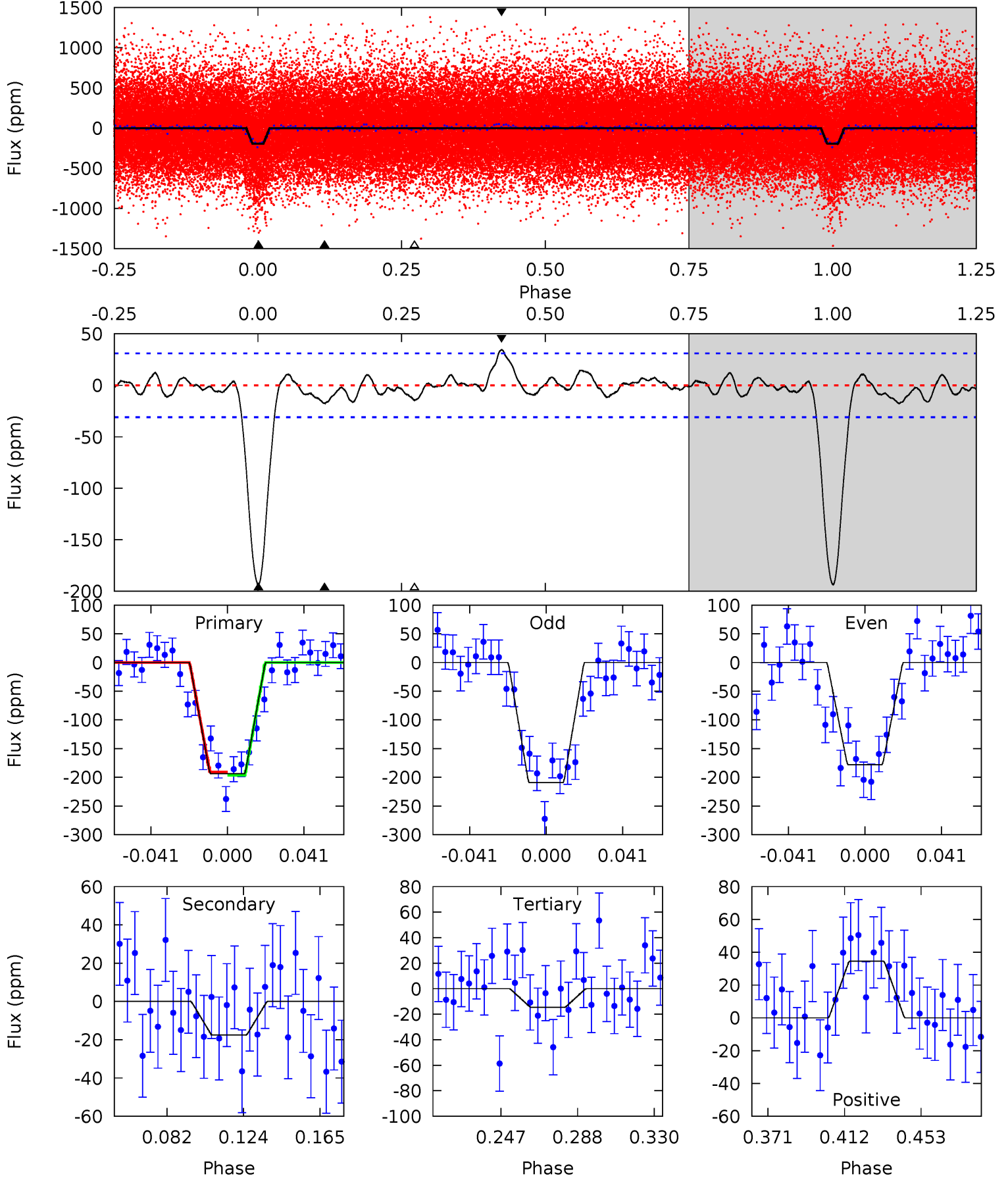
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.5	2.26	1.86	2.36	4.71	1.97	1.05	28.6	28.1	0.40	-0.09	1.92	1.01	0.11	0.24



Alt Model-Shift Uniqueness Test

012121470-01, P = 1.877366 Days, E = 130.382874 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.7	2.69	2.22	5.29	4.75	2.04	1.28	27.4	24.4	0.47	-2.60	2.40	1.04	0.15	0.41



Stellar Parameters For KIC 012121470

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6382^{+170}_{-207}	$4.432^{+0.054}_{-0.216}$	$-0.220^{+0.250}_{-0.300}$	$1.059^{+0.348}_{-0.116}$	$1.104^{+0.153}_{-0.138}$	$1.310^{+0.383}_{-0.706}$
	+3%/-3%	+1%/-5%	+114%/-136%	+33%/-11%	+14%/-12%	+29%/-54%
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 012121470-01 / KOI 2142.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 6	$1.76^{+0.60}_{-0.61}$	2352^{+175}_{-119}	3542^{+641}_{-514}	$2.197^{+3.074}_{-1.225}$
Alt.	-18 ± 7	$1.66^{+0.67}_{-0.57}$	2349^{+174}_{-102}	3774^{+759}_{-525}	$3.091^{+4.605}_{-1.733}$

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

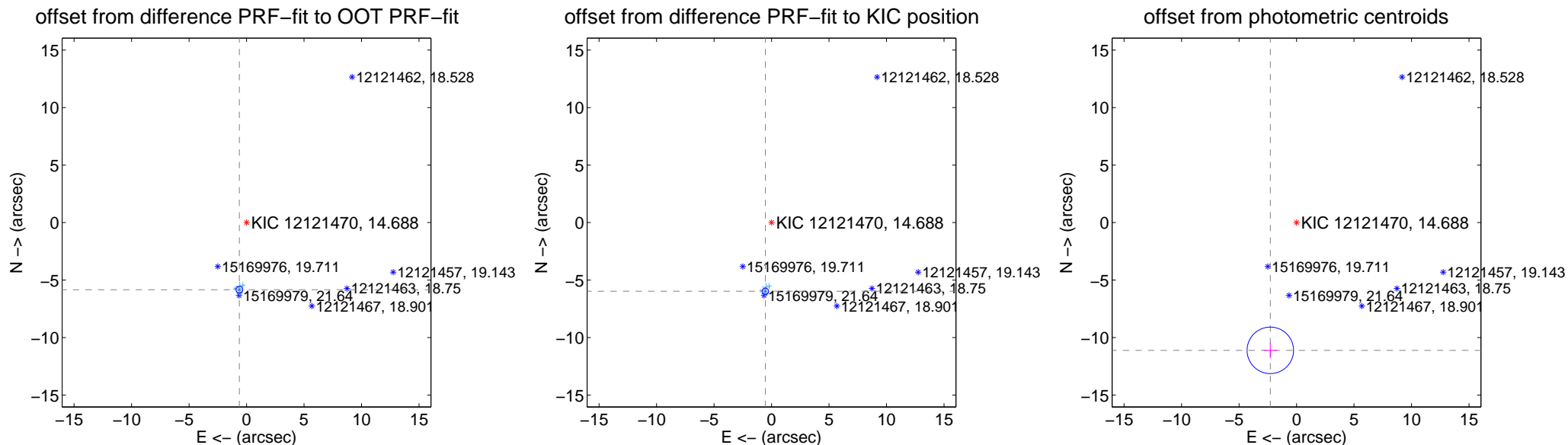
DV Centroid Data

Supplemental centroid analysis for 012121470-01. Kepler magnitude: 14.69. Transit SNR 22.23

There are 11 quarters with good PRF difference image offsets

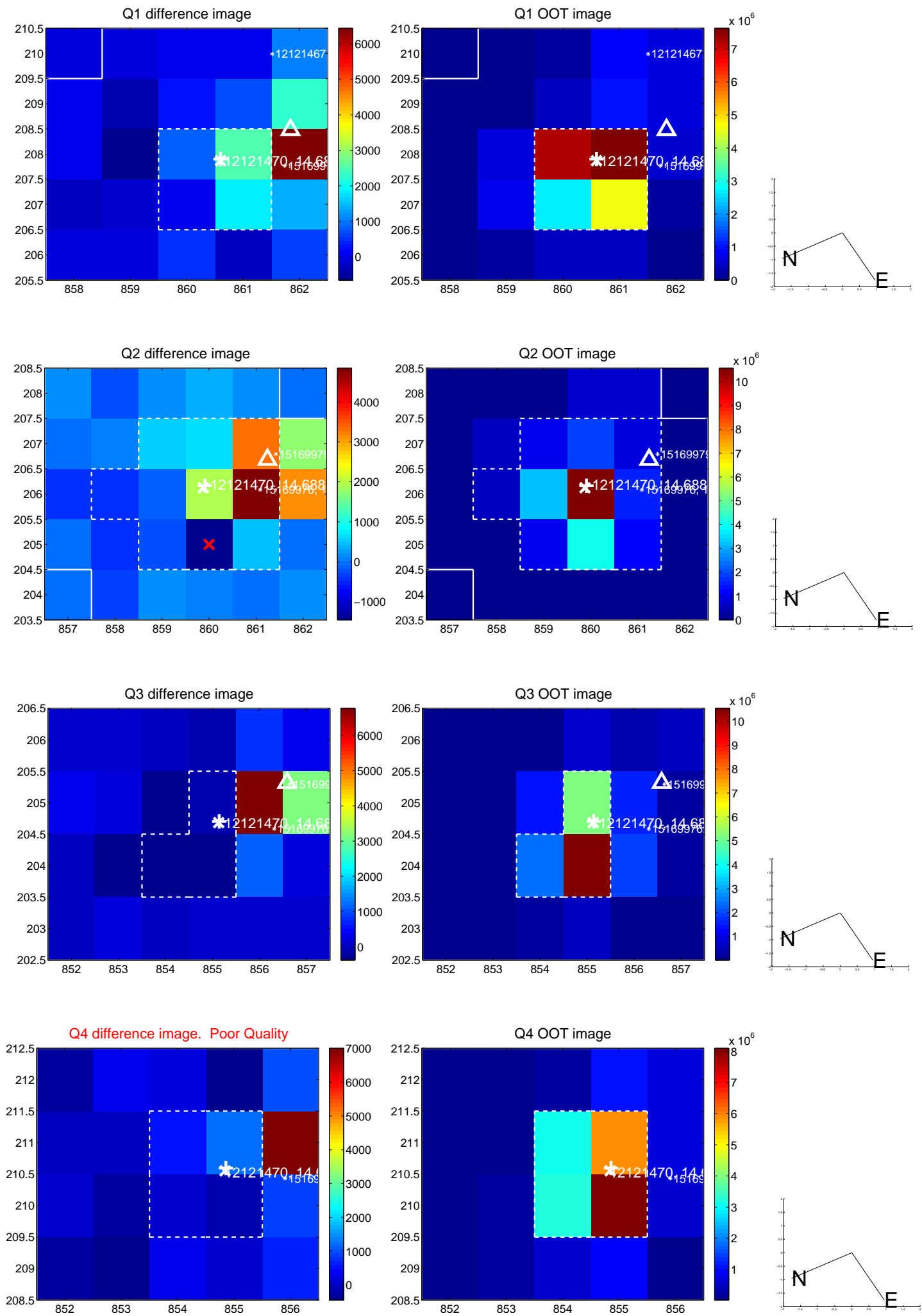
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.873 \pm 0.099	59.51	0.623 \pm 0.087	-5.840 \pm 0.099
PRF-fit source offset from KIC position	5.996 \pm 0.093	64.44	0.537 \pm 0.087	-5.972 \pm 0.093
photometric centroid source offset	11.34 \pm 0.67	16.84	2.28 \pm 0.58	-11.11 \pm 0.68

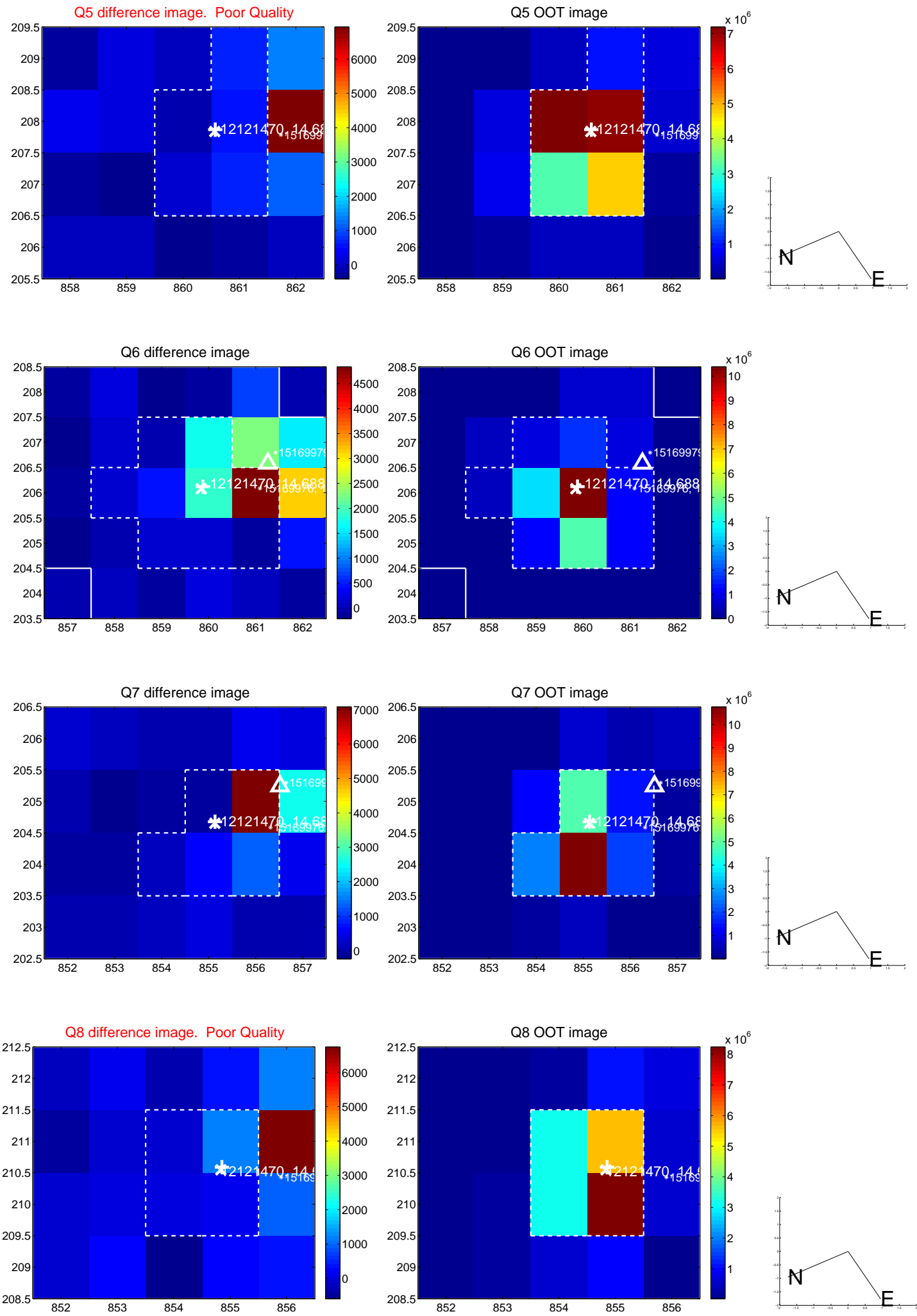


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

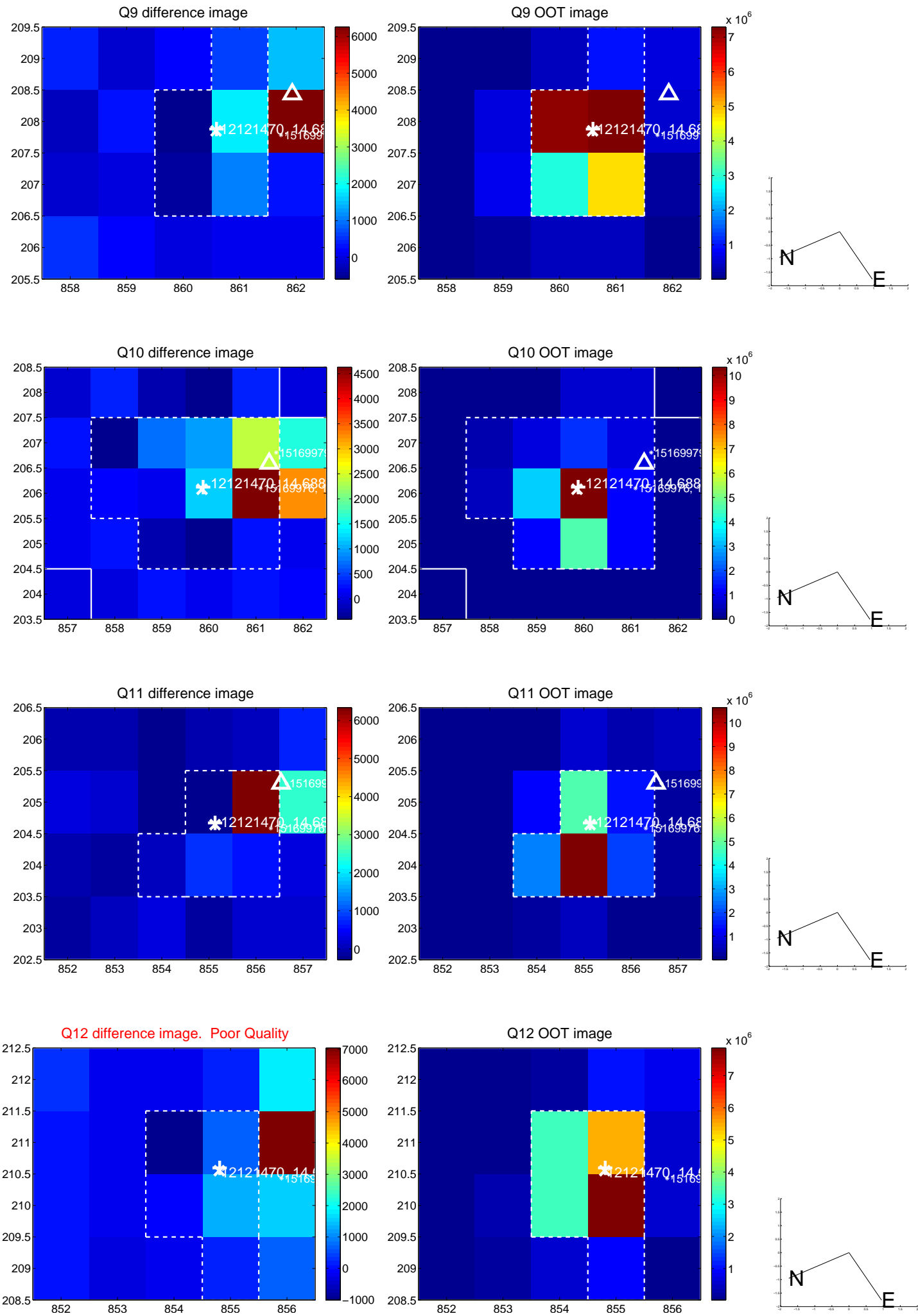
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



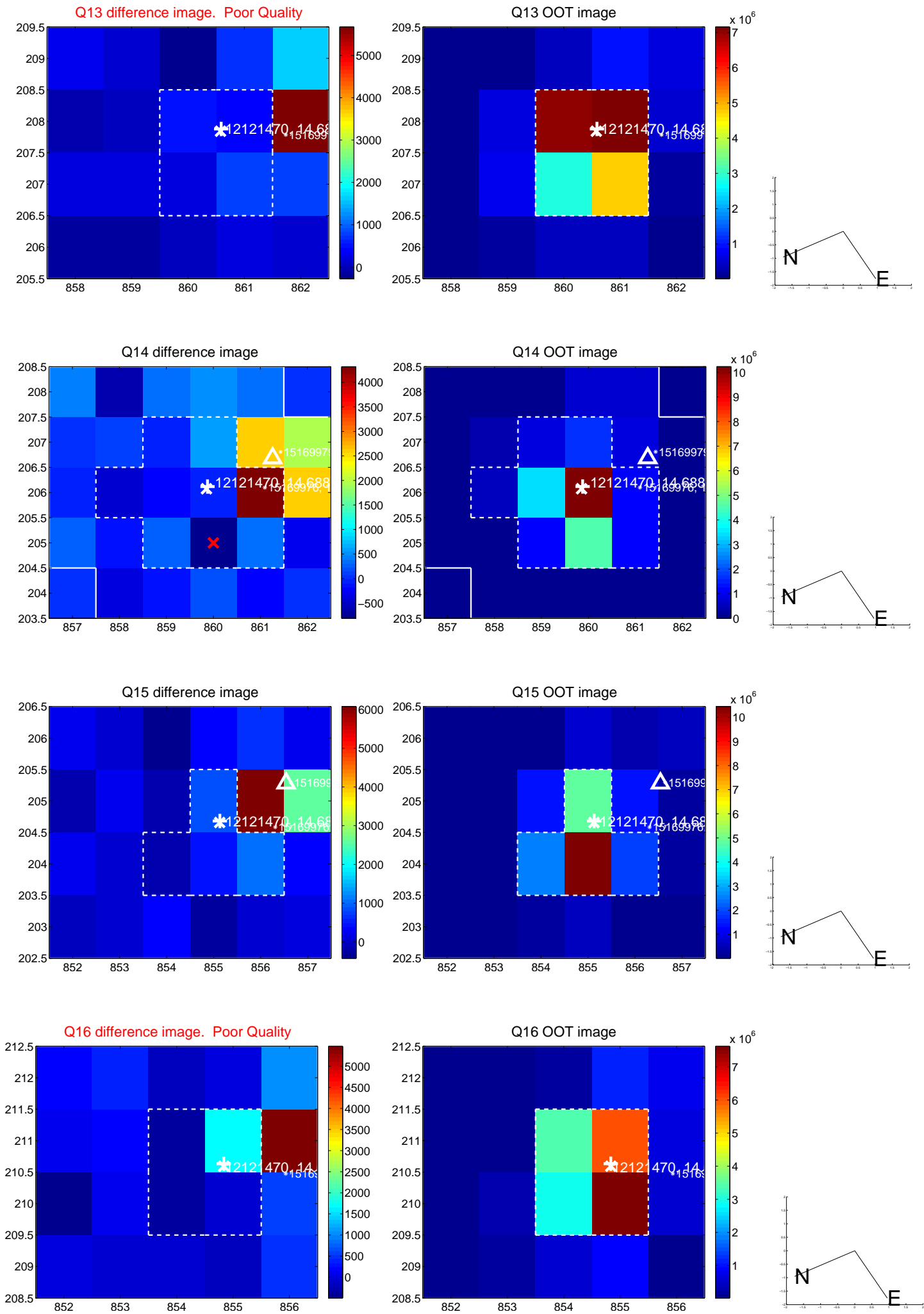
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



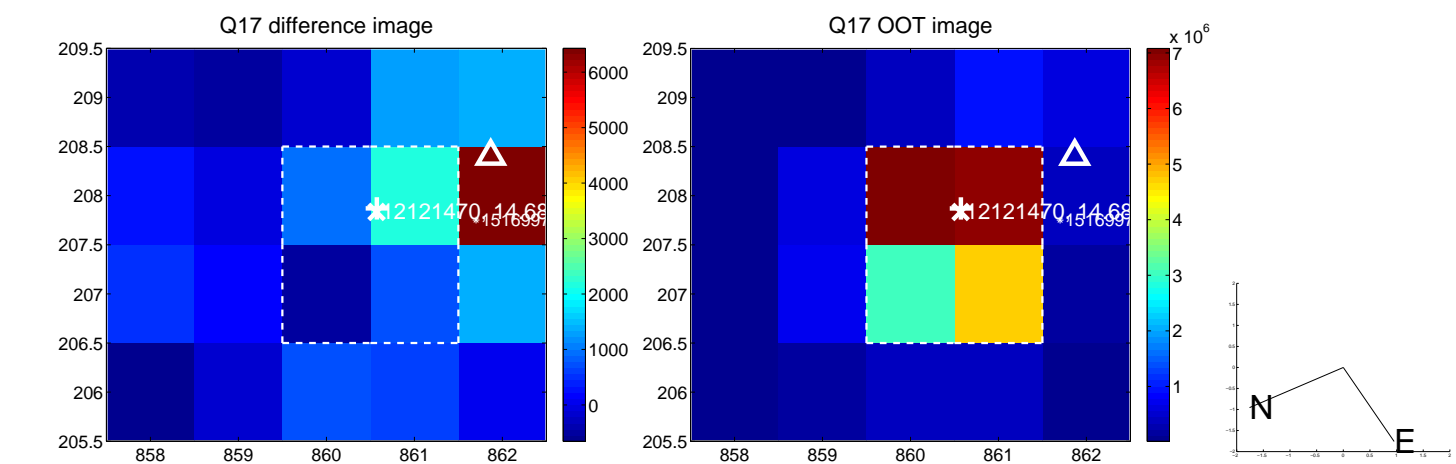
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



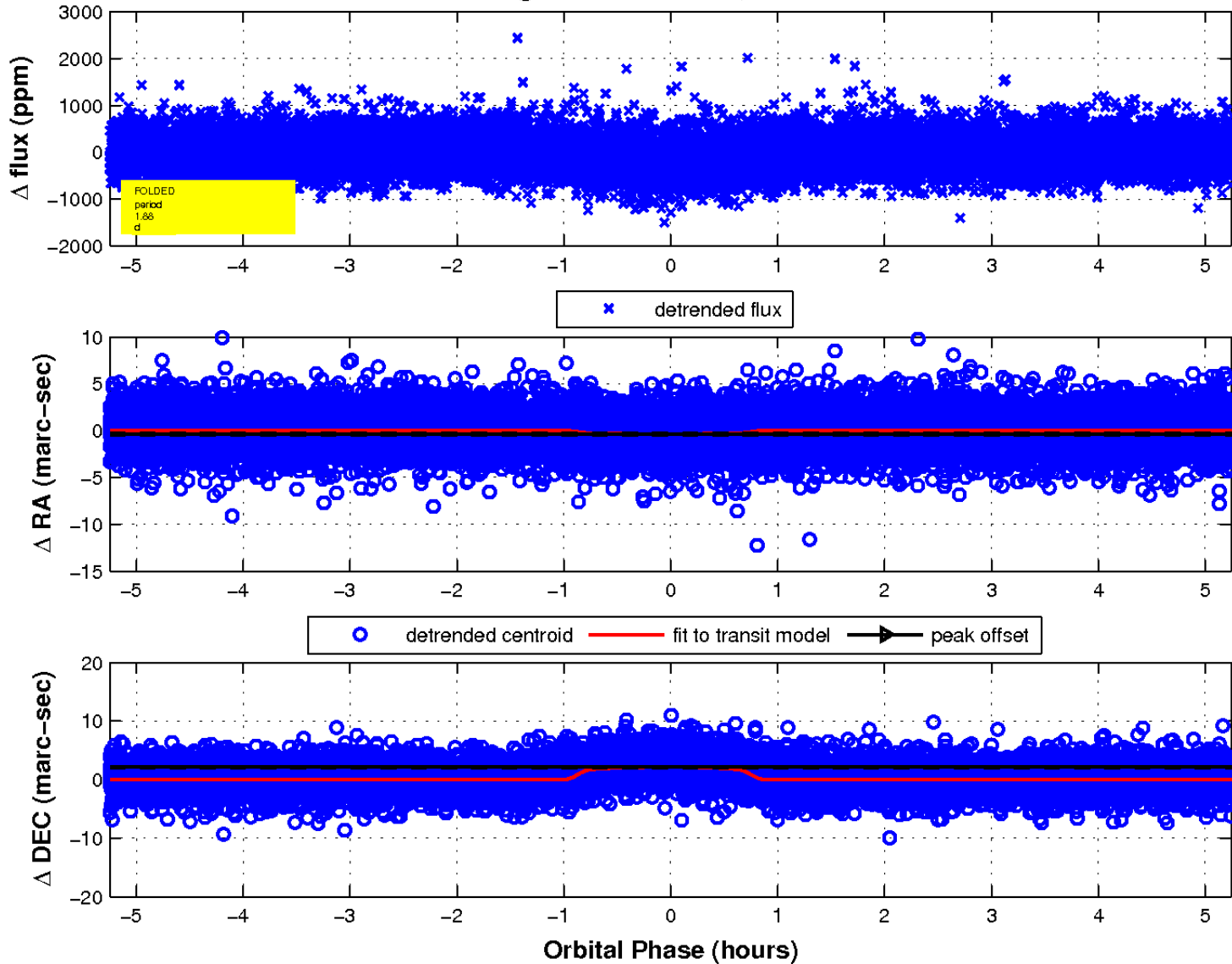
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

