

KIC 012737015

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})
012737015-01	OBS	4245.01	24.668271	136.635639	105.6	8.656	12.3	12.8	1.55	6059	1.80	91.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012737015-01	OBS	PC	0.96	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.

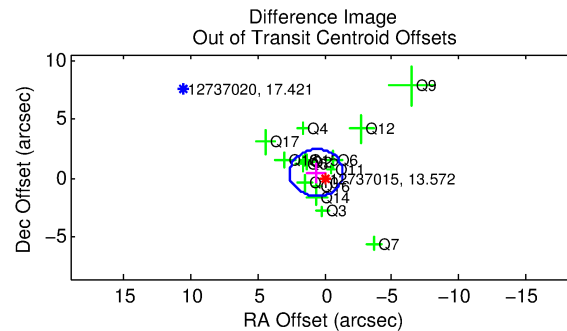
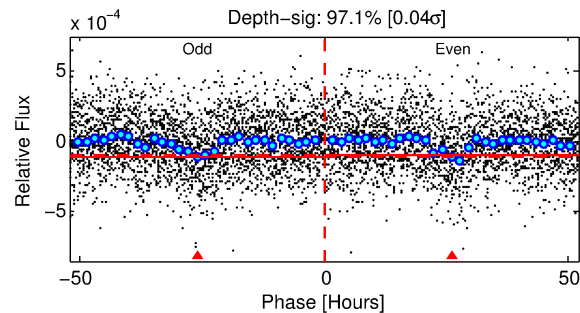
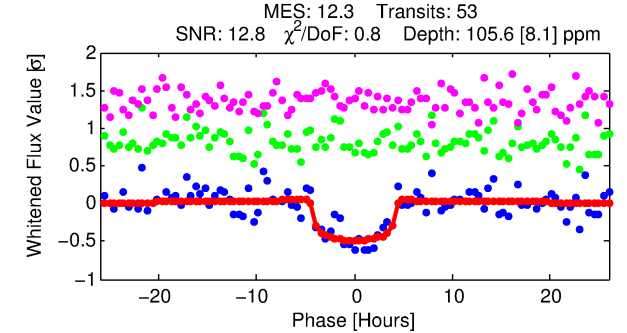
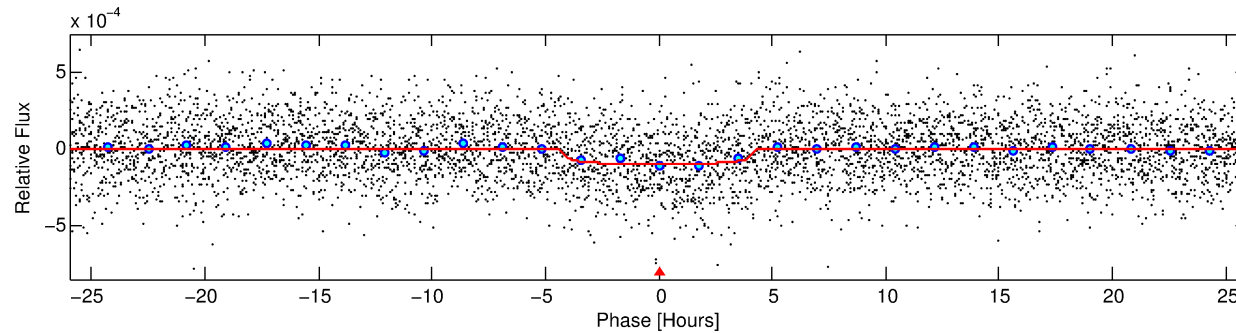
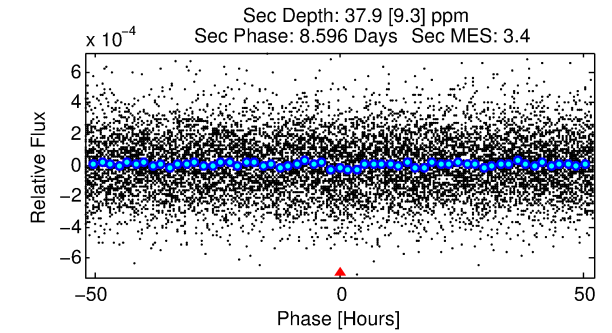
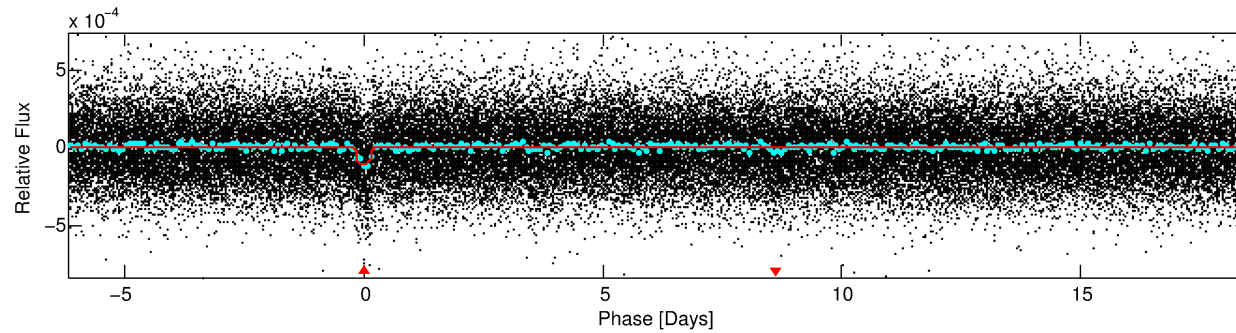
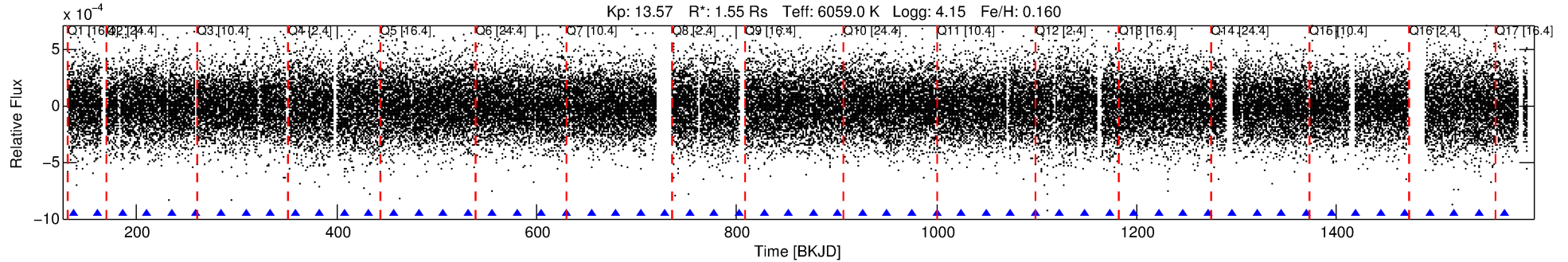
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012737015-01

No Significant Match Found

DV One-Page Summary

KIC: 12737015 Candidate: 1 of 1 Period: 24.668 d
KOI: K04245.01 Corr: 0.974



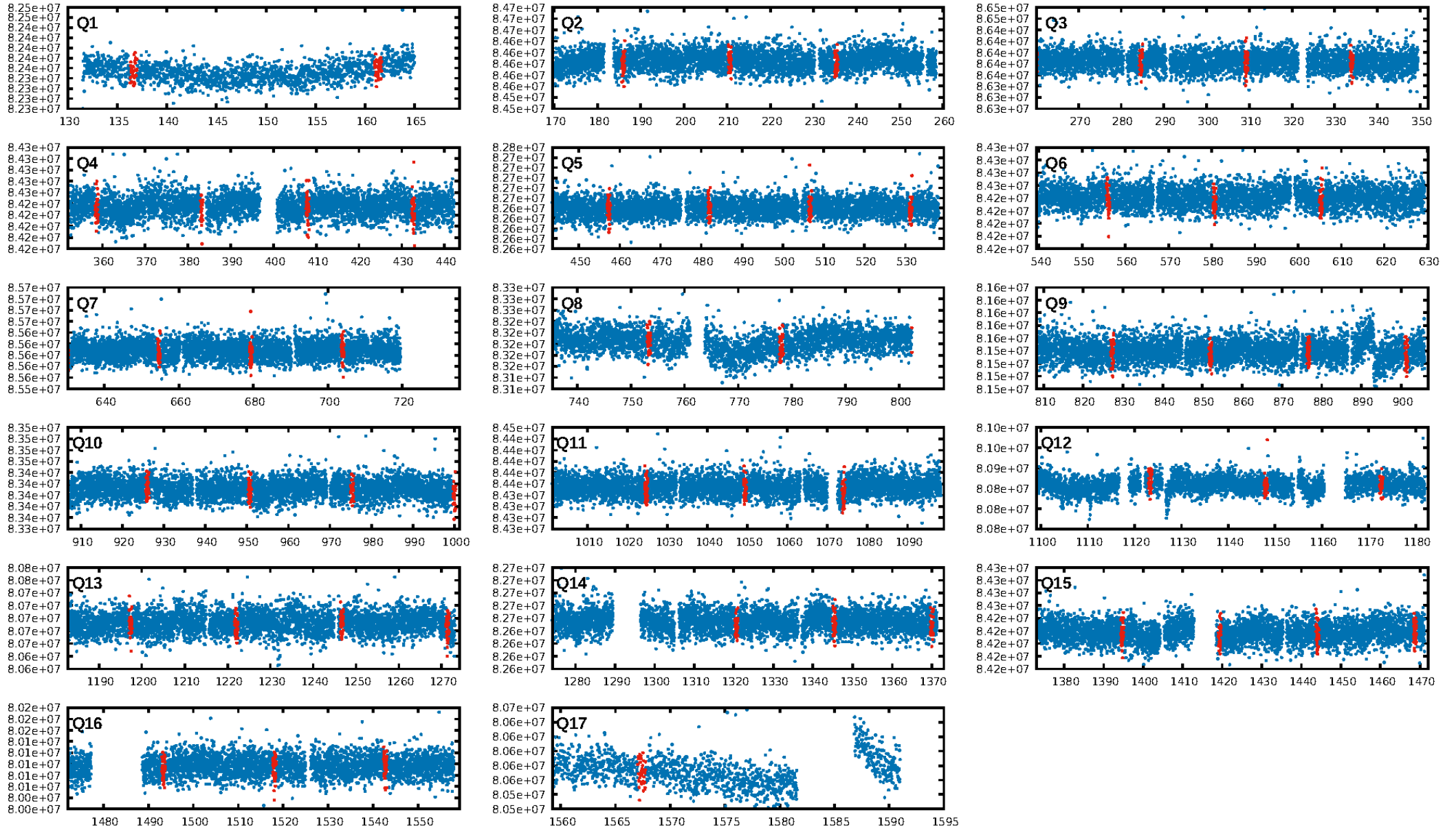
DV Fit Results:

Period = 24.66827 [0.00033] d
Epoch = 136.6356 [0.0112] BKJD
Rp/R* = 0.0106 [0.0035]
a/R* = 12.53 [20.02]
b = 0.83 [0.60]
Seff = 91.47 [28.28]
Teq = 789 [61] K
Rp = 1.80 [0.70] Re
a = 0.1785 [0.0341] AU
Ag = 205.63 [156.29] [1.31σ]
Teffp = 4617 [817] K [4.67σ]

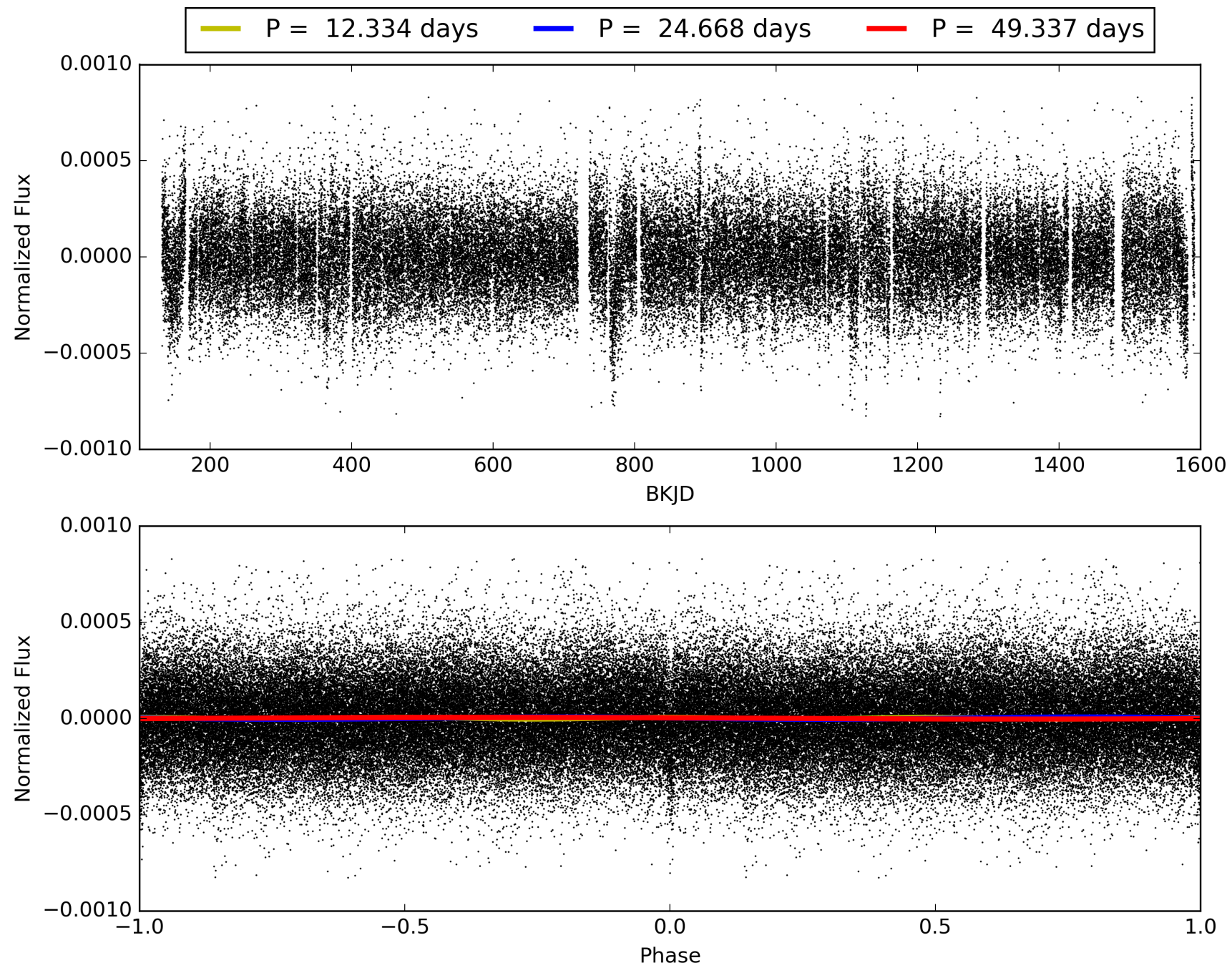
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.91e-34
RollingBand-fgt: 1.00 [50/50]
GhostDiagnostic-chr: 1.62
Centroid-sig: 28.6%
Centroid-so: 1.727 arcsec [1.67σ]
OotOffset-rm: 0.779 arcsec [1.18σ]
KicOffset-rm: 0.829 arcsec [1.26σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.47 [7/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012737015-01, PDC Light Curves

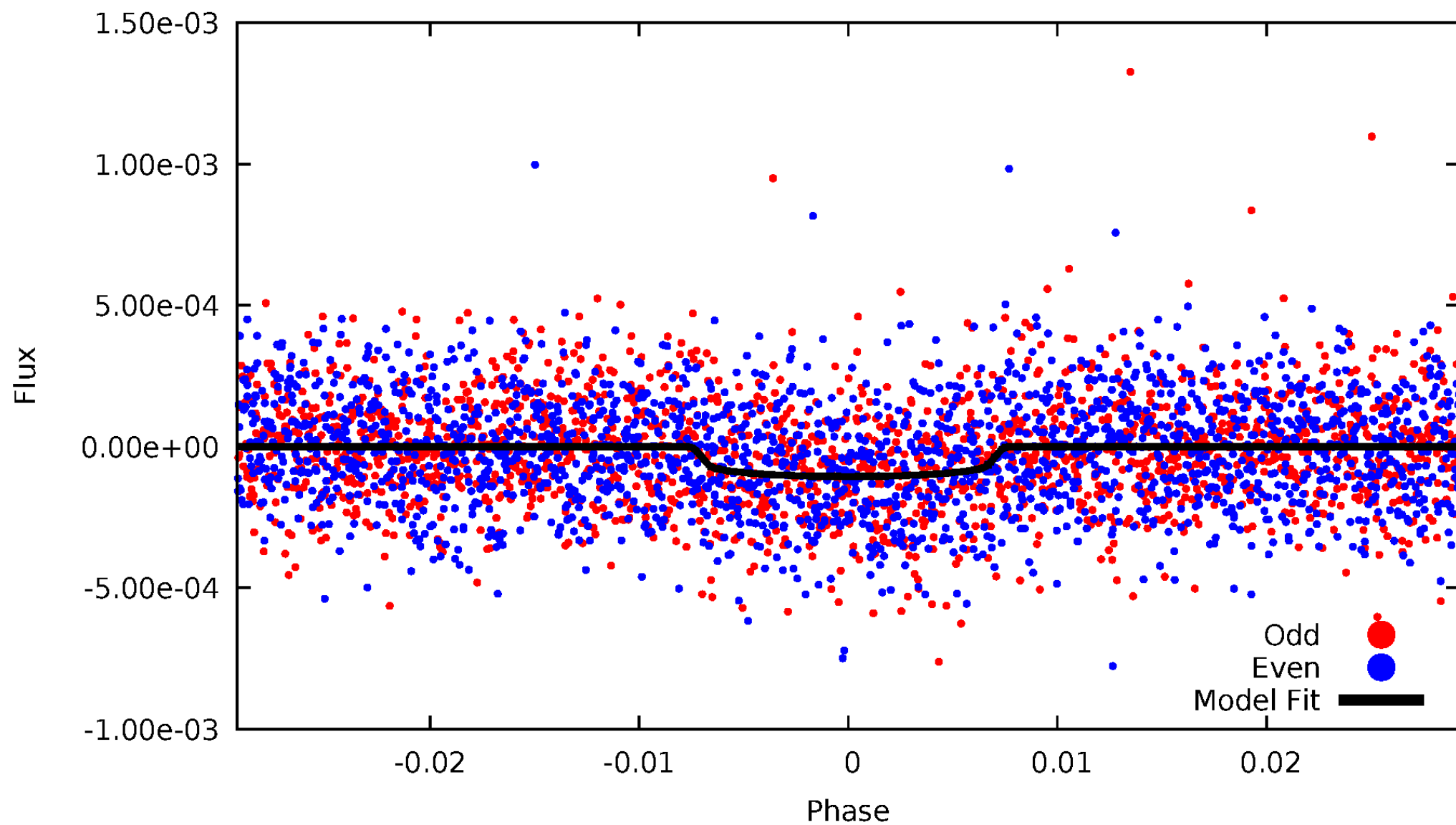


TCE 012737015-01



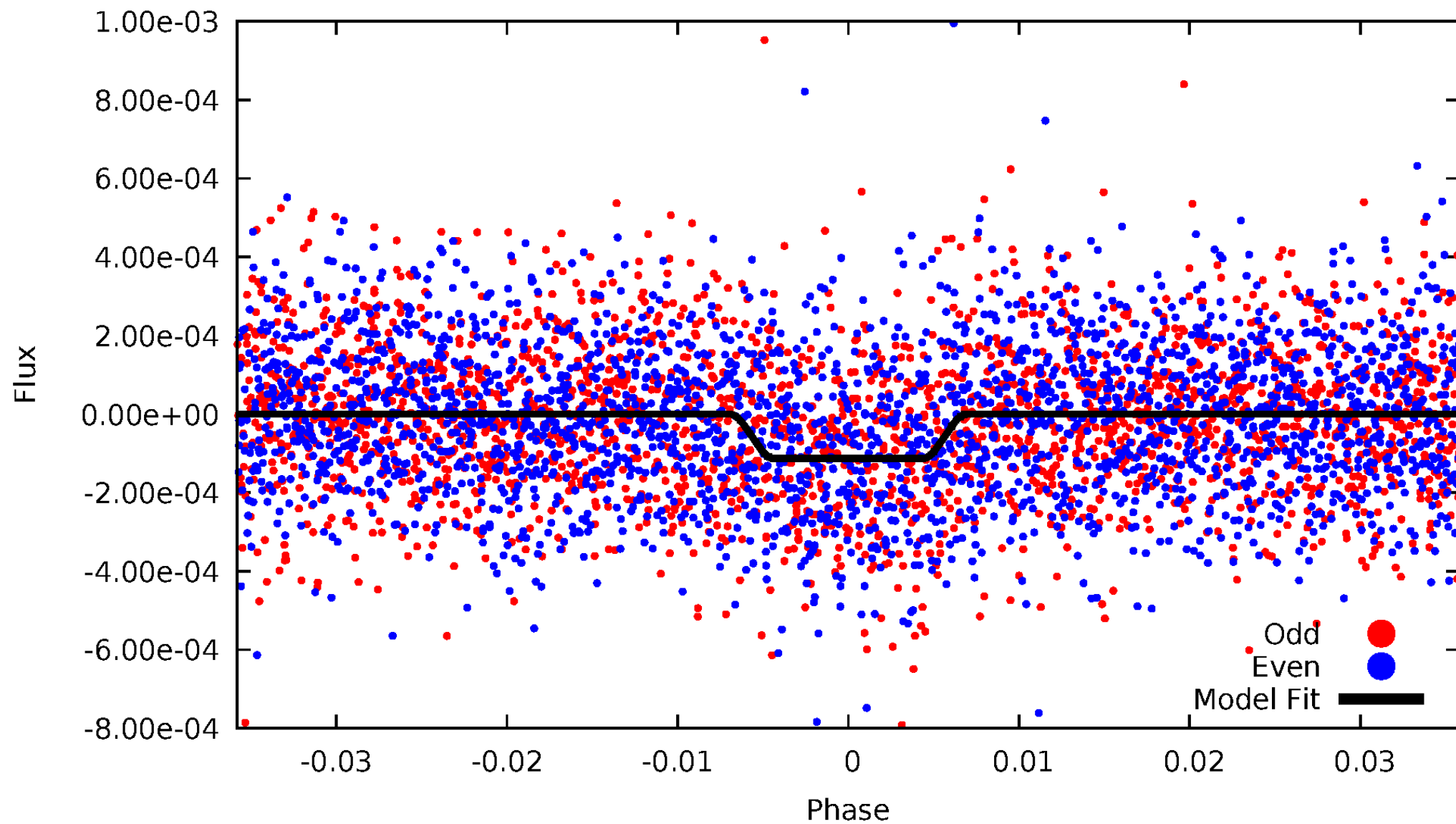
DV Odd/Even

TCE 012737015-01

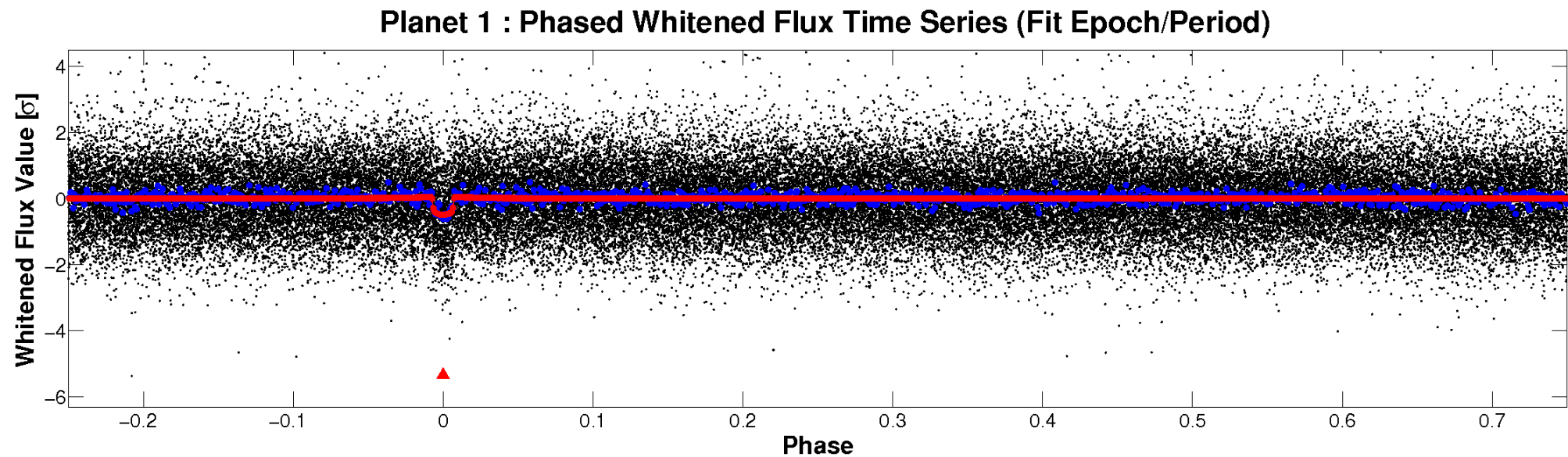
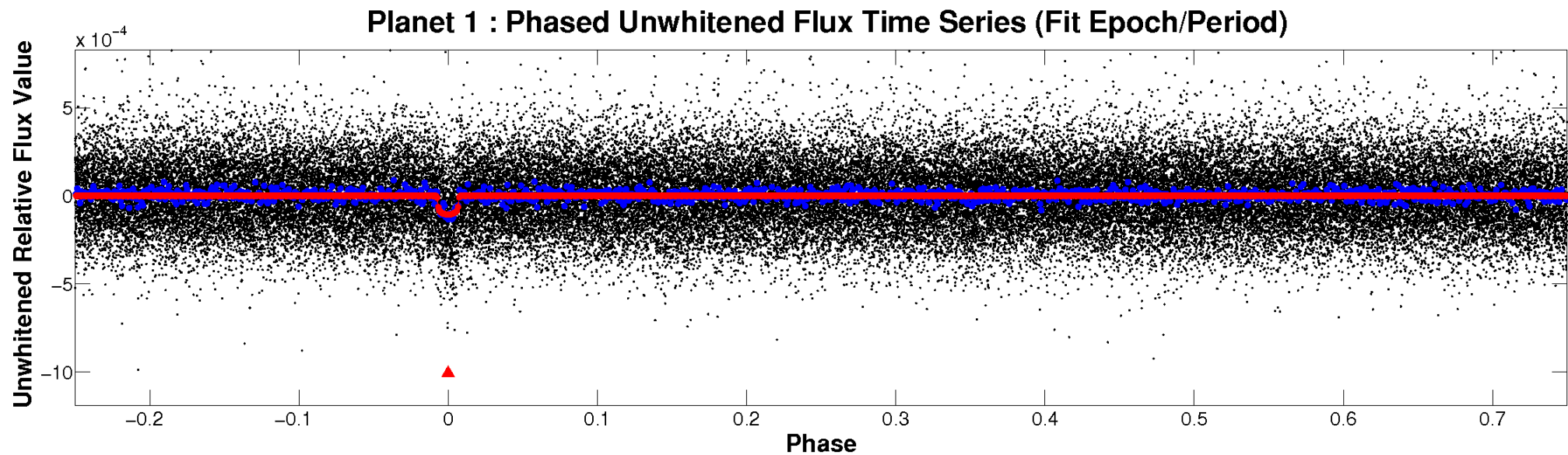


ALT Odd/Even

TCE 012737015-01

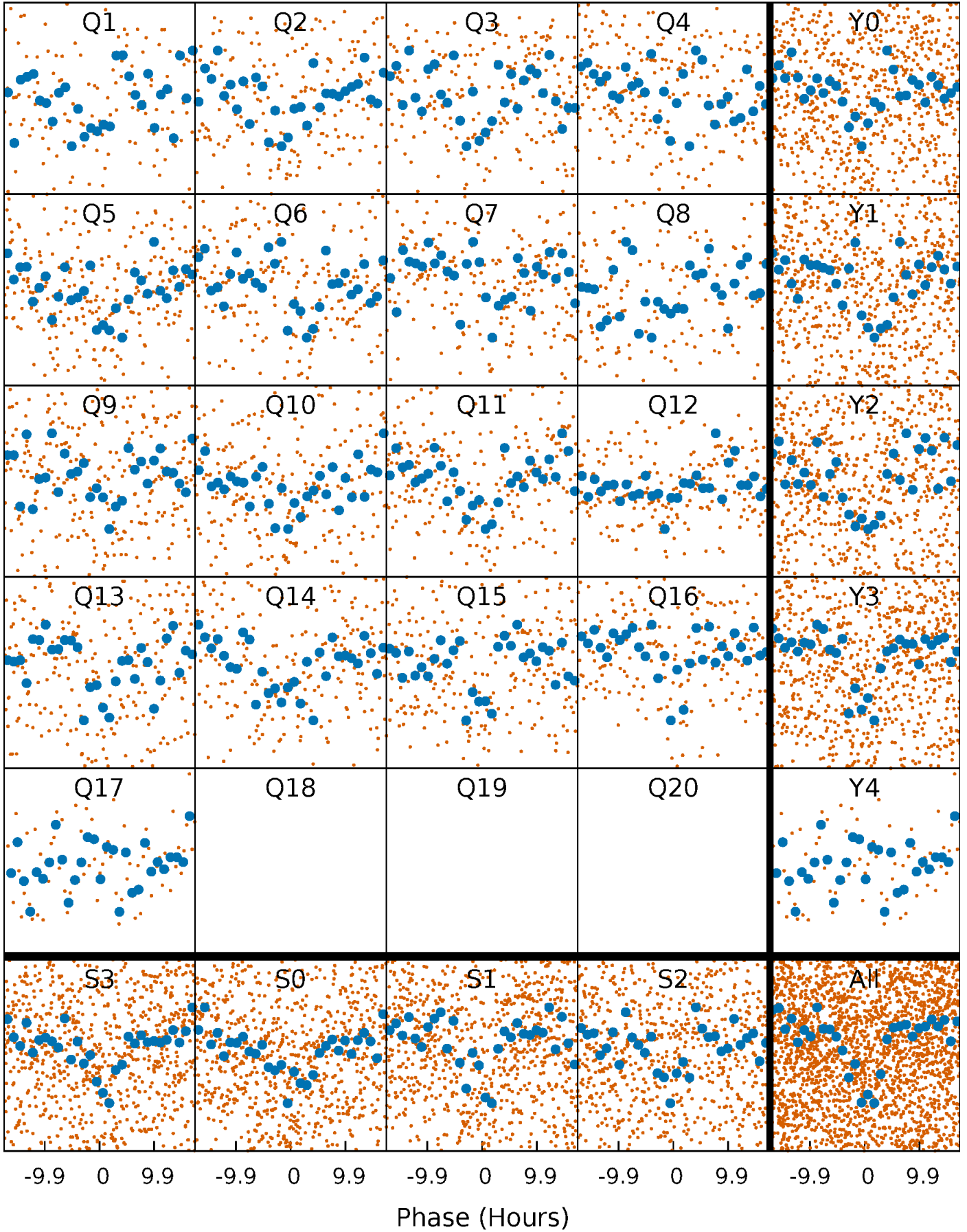


Non-Whitened Vs. Whitened Light Curve



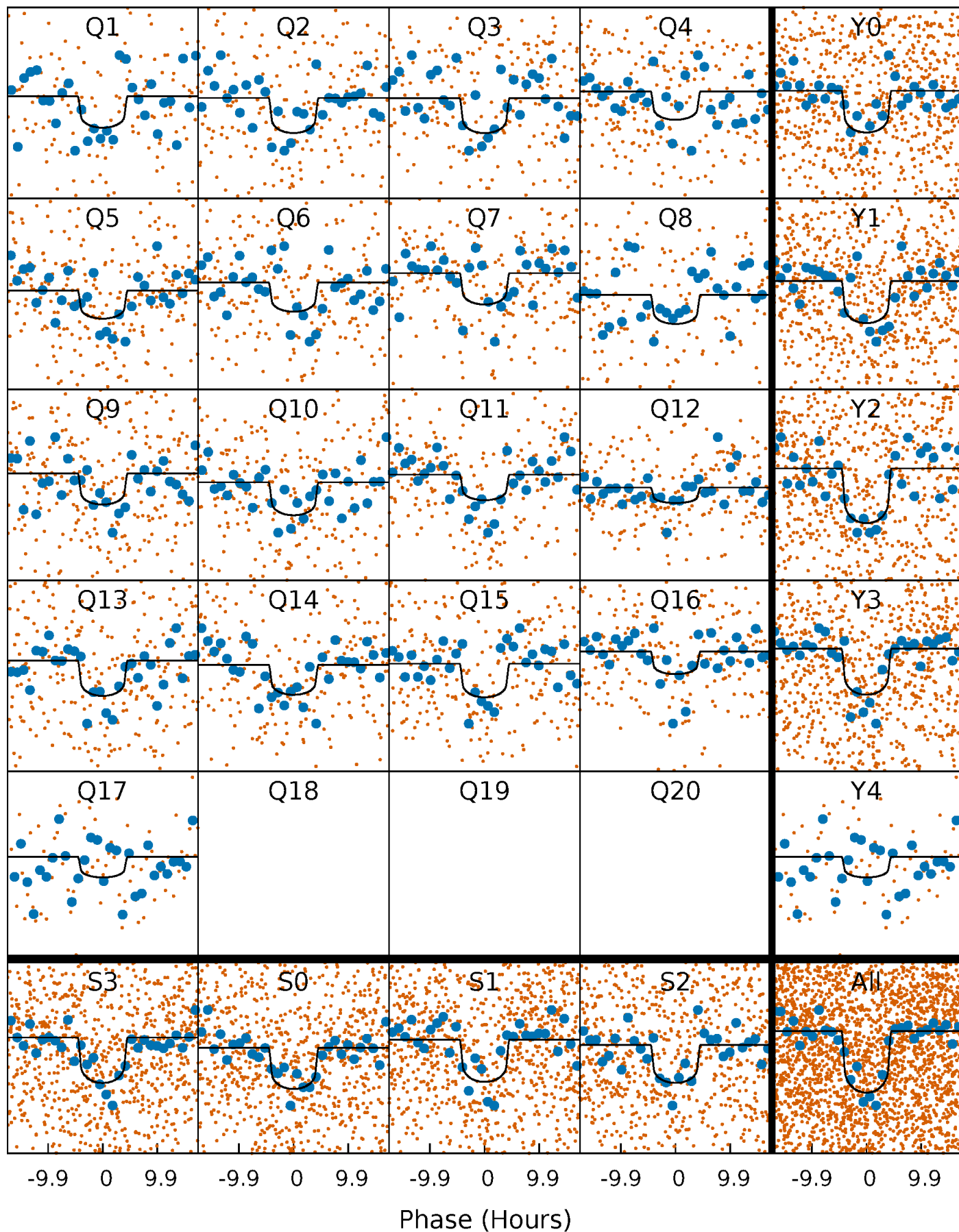
PDC Quarter-Phased Transit Curves

TCE 012737015-01 P= 24.668271 Days $T_0=136.635639$ (BKJD)



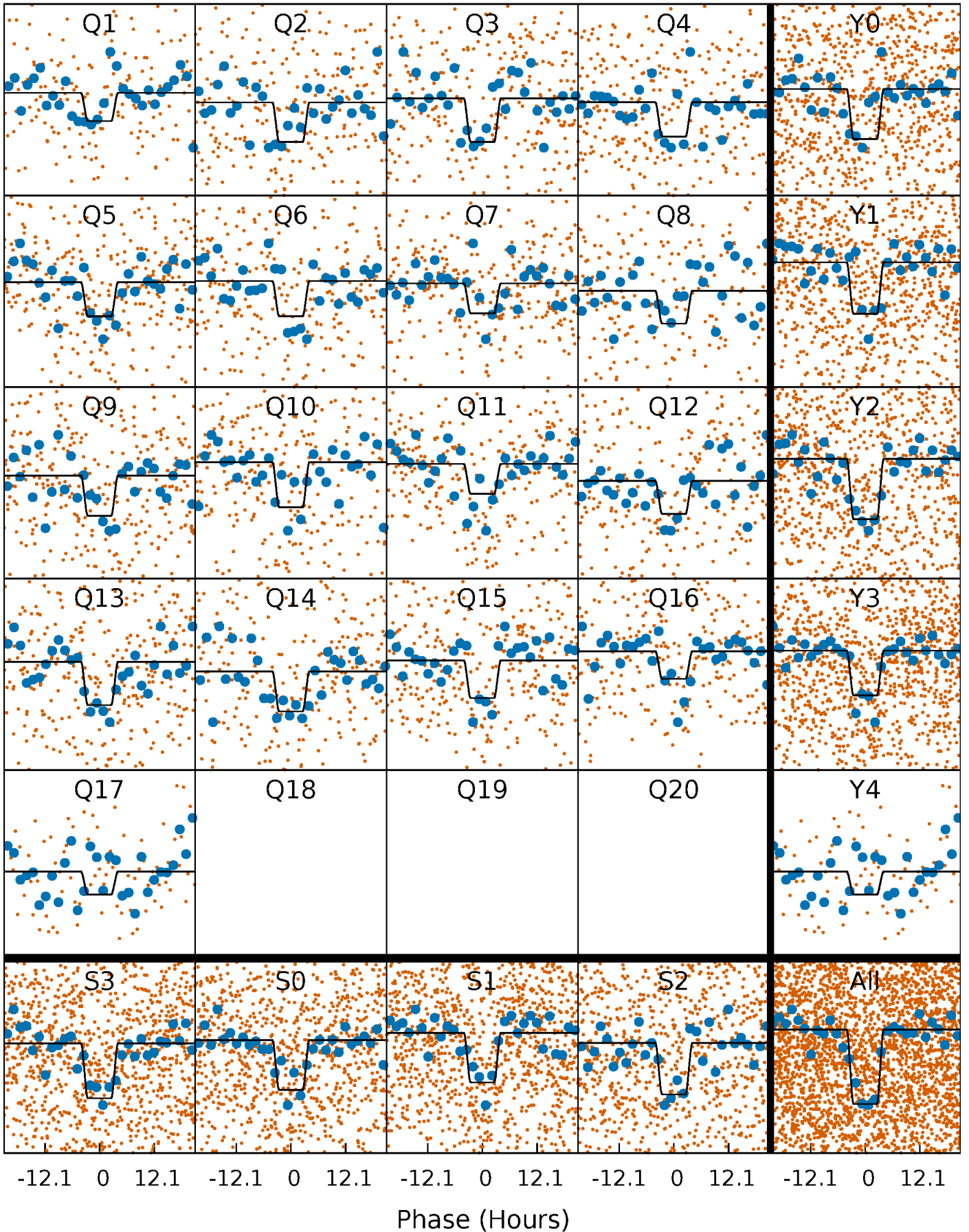
DV Quarter-Phased Transit Curves

TCE 012737015-01 P= 24.668271 Days $T_0=136.635639$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

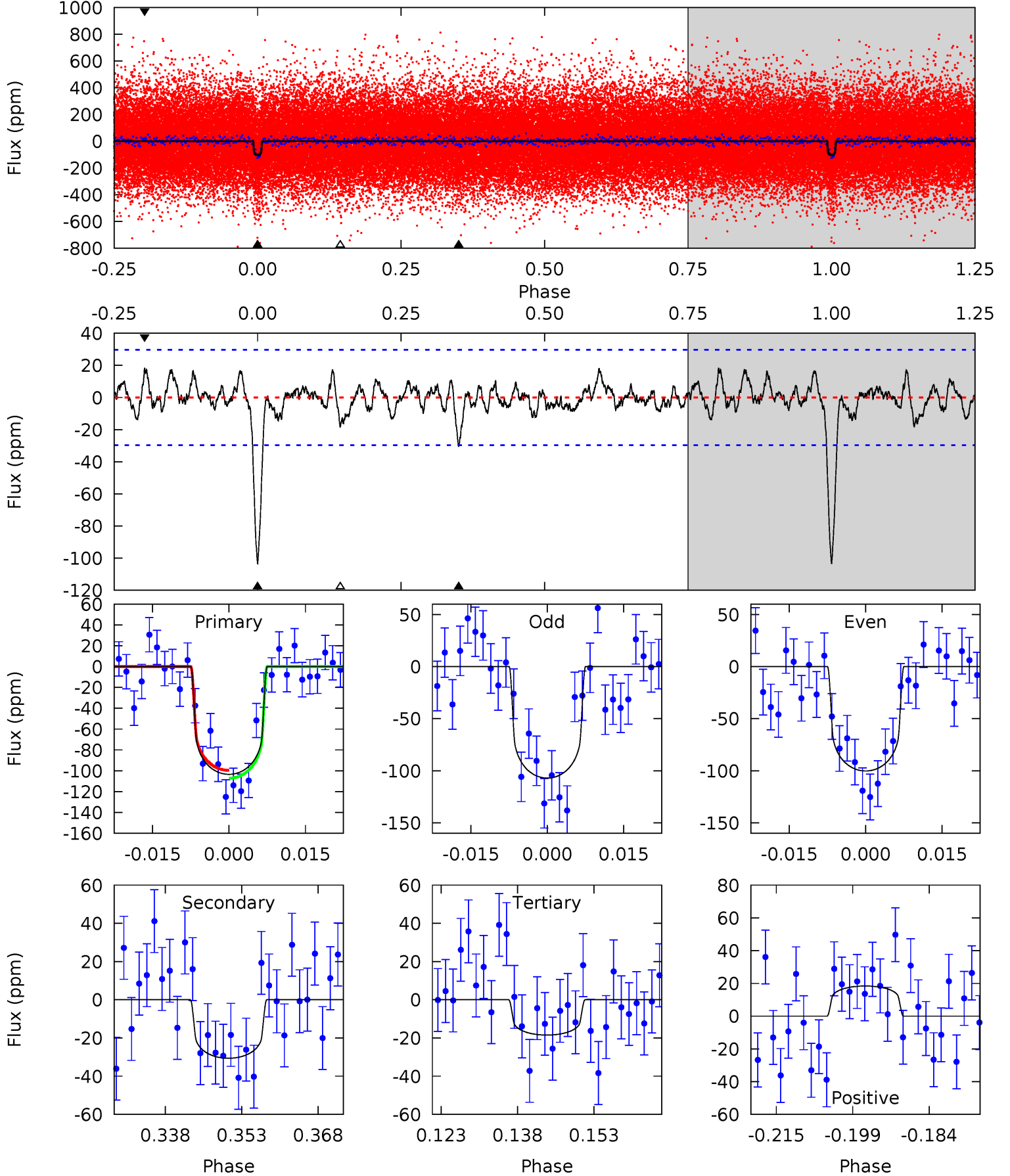
TCE 012737015-01 P= 24.666671 Days $T_0=136.692108$ (BKJD)



DV Model-Shift Uniqueness Test

012737015-01, P = 24.668271 Days, E = 111.967368 Days

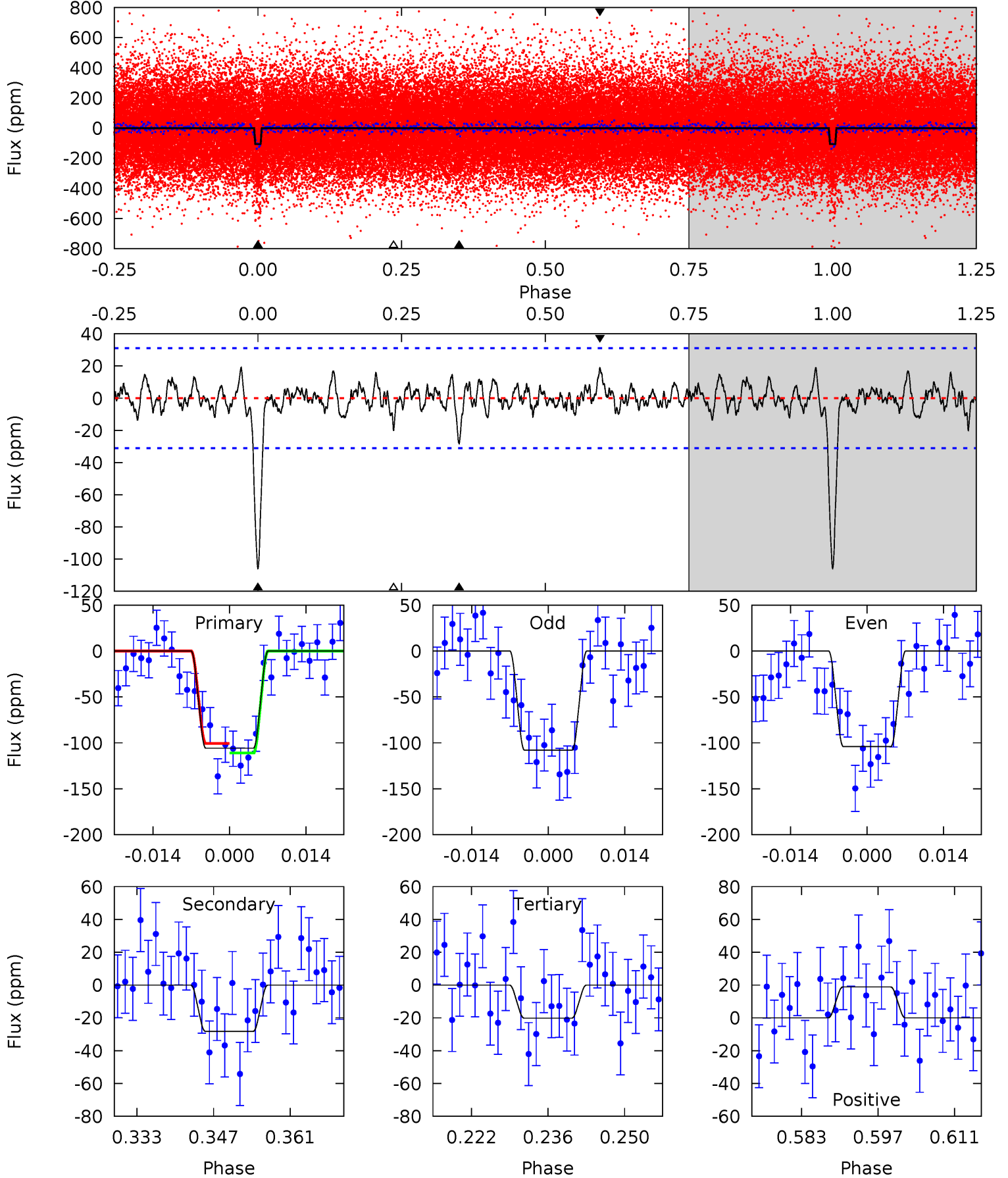
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	5.10	3.08	3.07	4.94	2.42	1.06	14.2	14.2	2.02	2.04	0.57	1.01	0.15	0.63



Alt Model-Shift Uniqueness Test

012737015-01, $P = 24.666671$ Days, $E = 112.025437$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	4.52	3.22	3.02	4.96	2.46	0.96	13.7	13.9	1.30	1.50	0.32	0.98	0.15	0.83



Stellar Parameters For KIC 012737015

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6059^{+109}_{-146}	$4.151^{+0.168}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.554^{+0.269}_{-0.328}$	$1.249^{+0.095}_{-0.143}$	$0.469^{+0.396}_{-0.156}$
	+2%/-2%	+4%/-3%	+94%/-94%	+17%/-21%	+8%/-11%	+84%/-33%
Source	SPE12	SPE12	SPE12	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 012737015-01 / KOI 4245.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-31 ± 6	$1.70^{+0.64}_{-0.59}$	1092^{+56}_{-63}	4579^{+933}_{-509}	181^{+270}_{-89}
Alt.	-28 ± 6	$1.73^{+0.65}_{-0.54}$	1097^{+53}_{-62}	4489^{+767}_{-534}	163^{+198}_{-82}

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

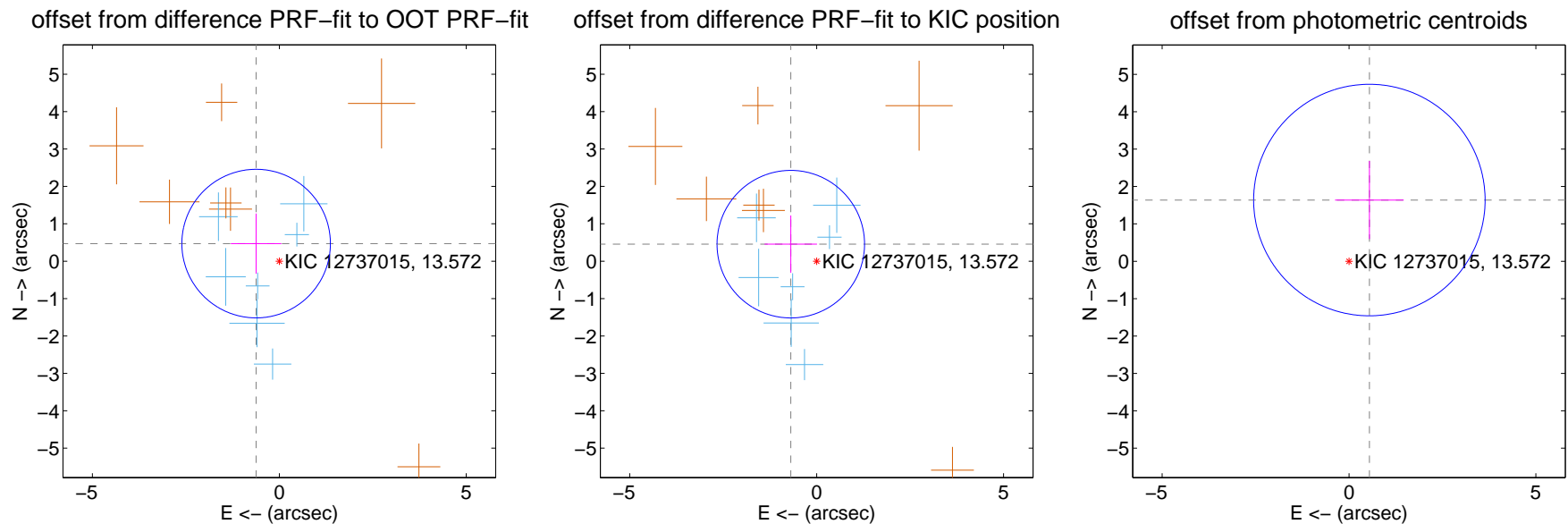
DV Centroid Data

Supplemental centroid analysis for 012737015-01. Kepler magnitude: 13.57. Transit SNR 12.80

There are 7 quarters with good PRF difference image offsets

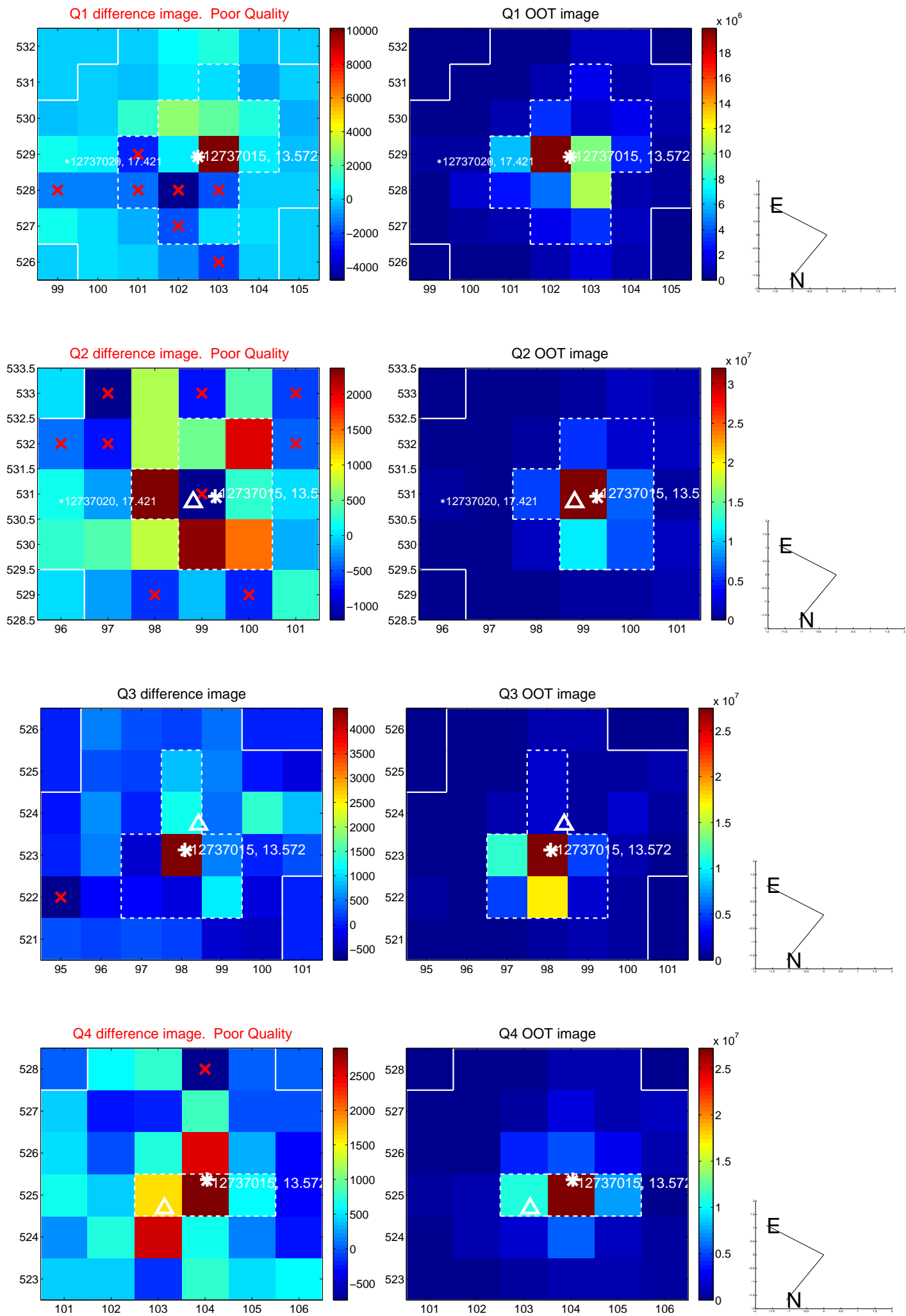
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.779 ± 0.662	1.18	0.620 ± 0.676	0.471 ± 0.805
PRF-fit source offset from KIC position	0.829 ± 0.658	1.26	0.692 ± 0.701	0.455 ± 0.767
photometric centroid source offset	1.73 ± 1.03	1.67	-0.55 ± 0.92	1.64 ± 1.04

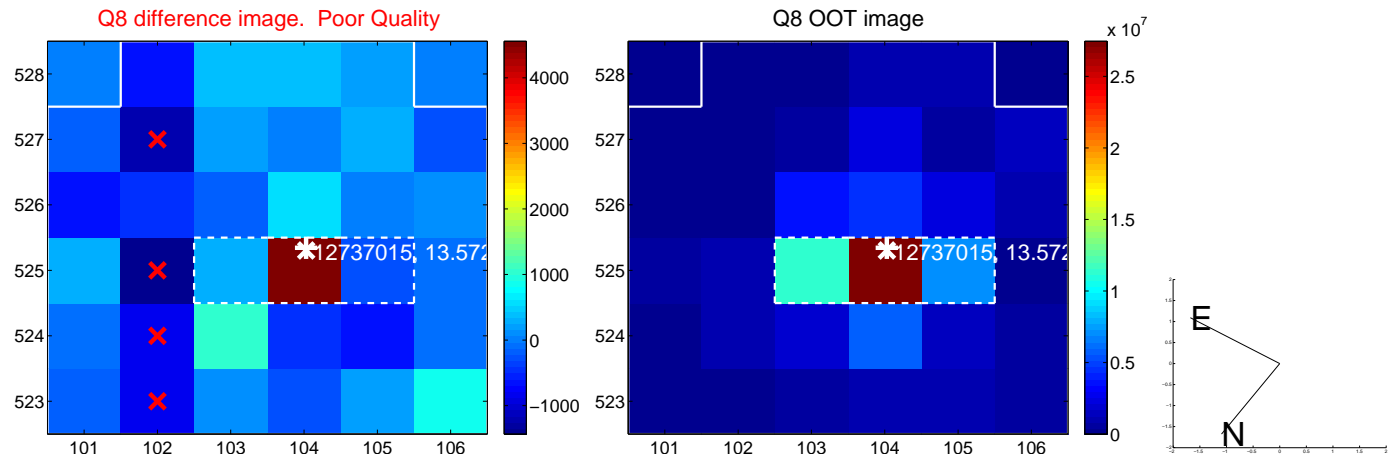
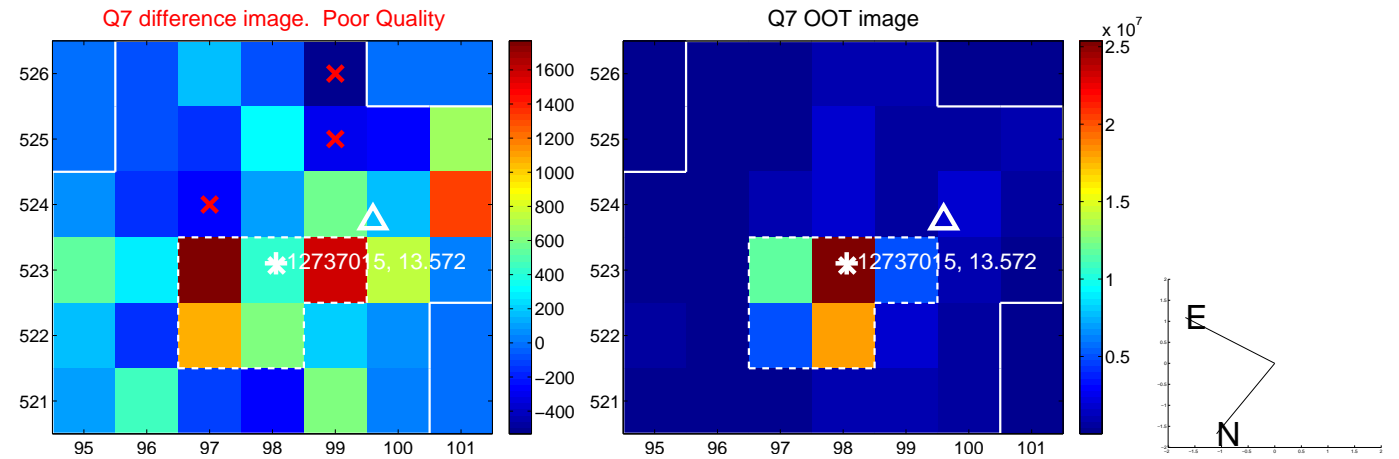
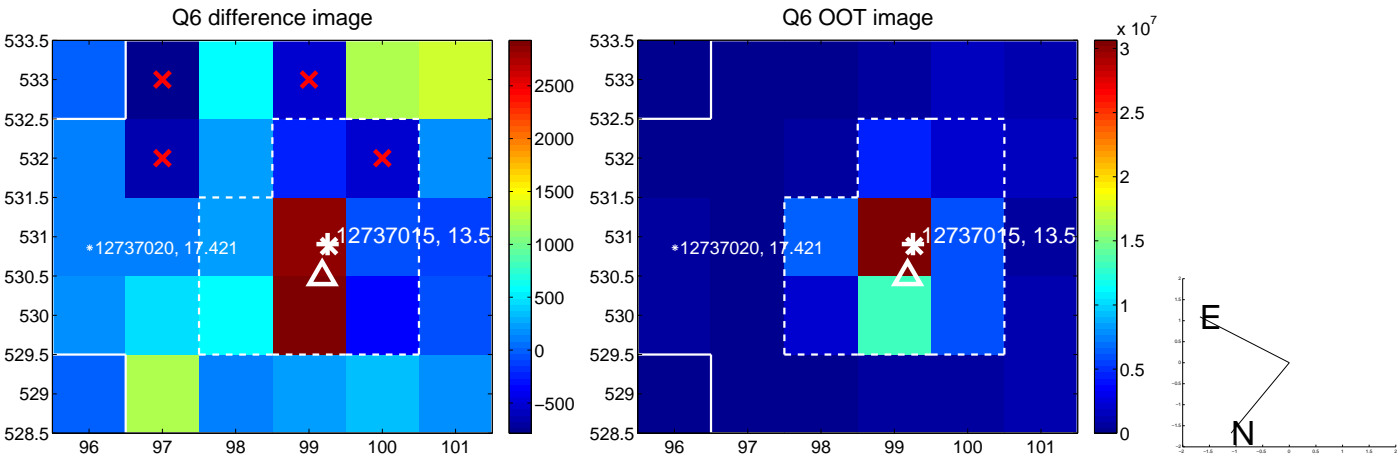
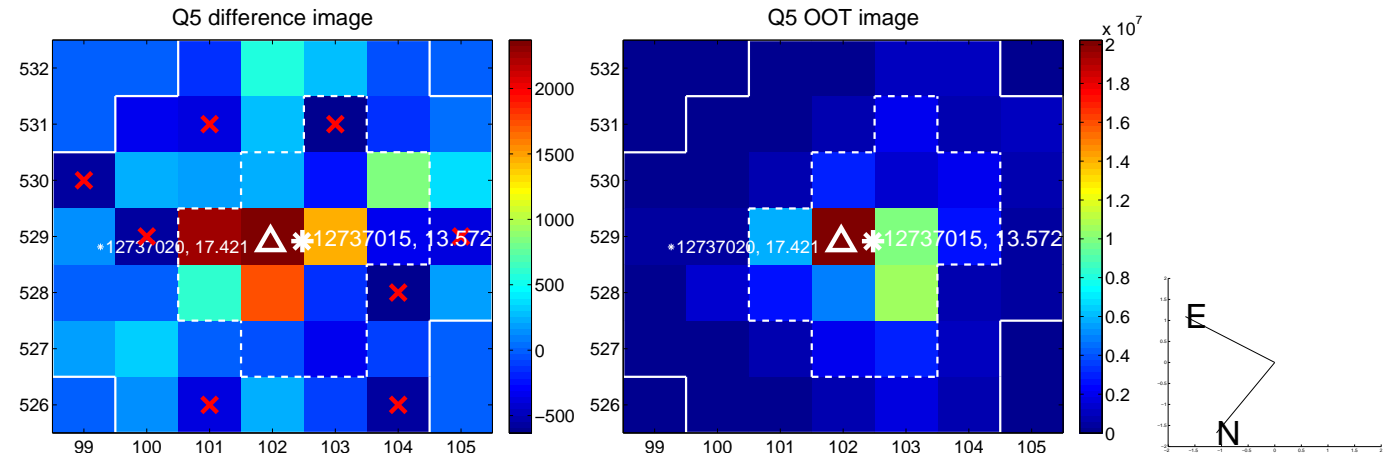


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

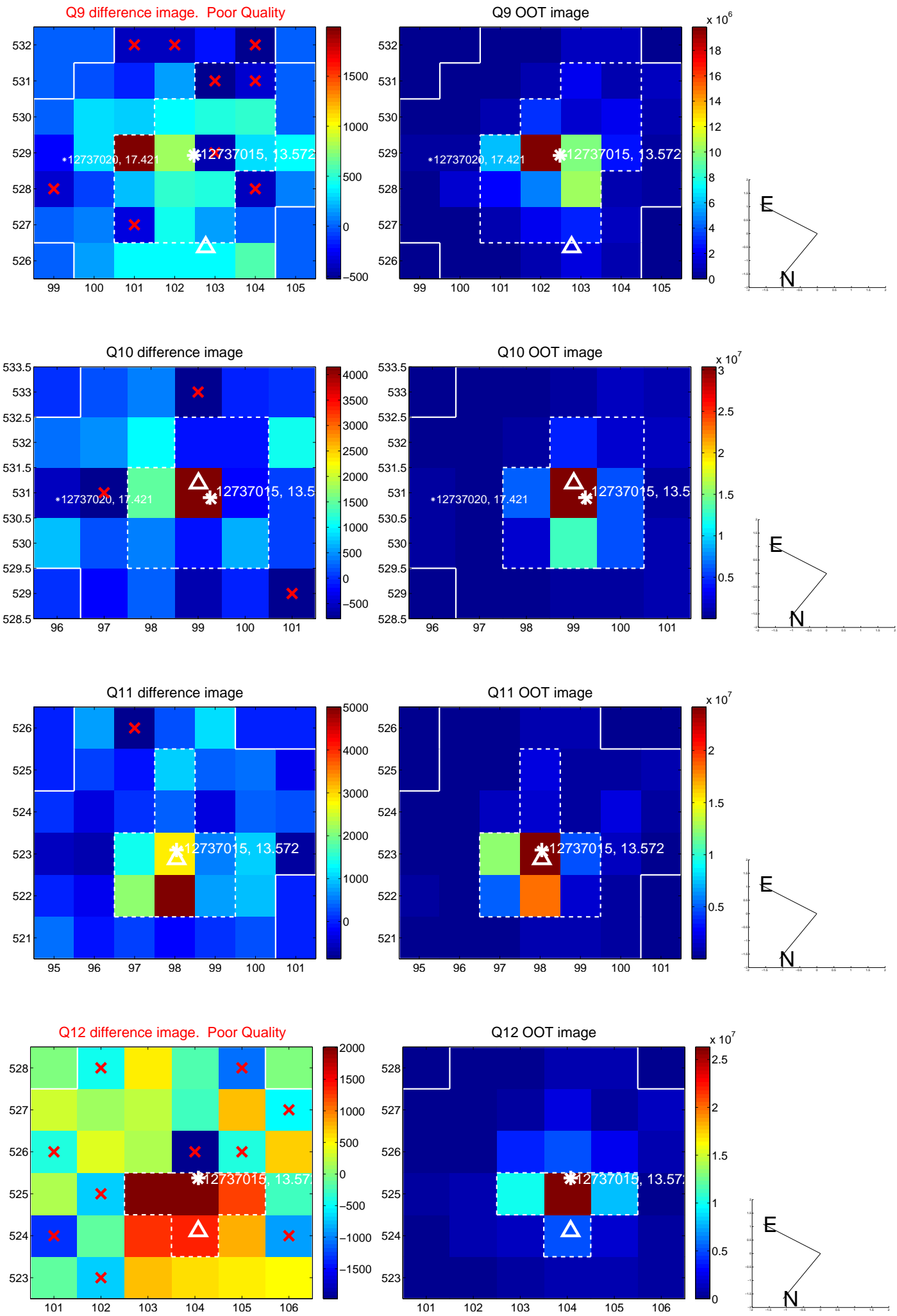
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



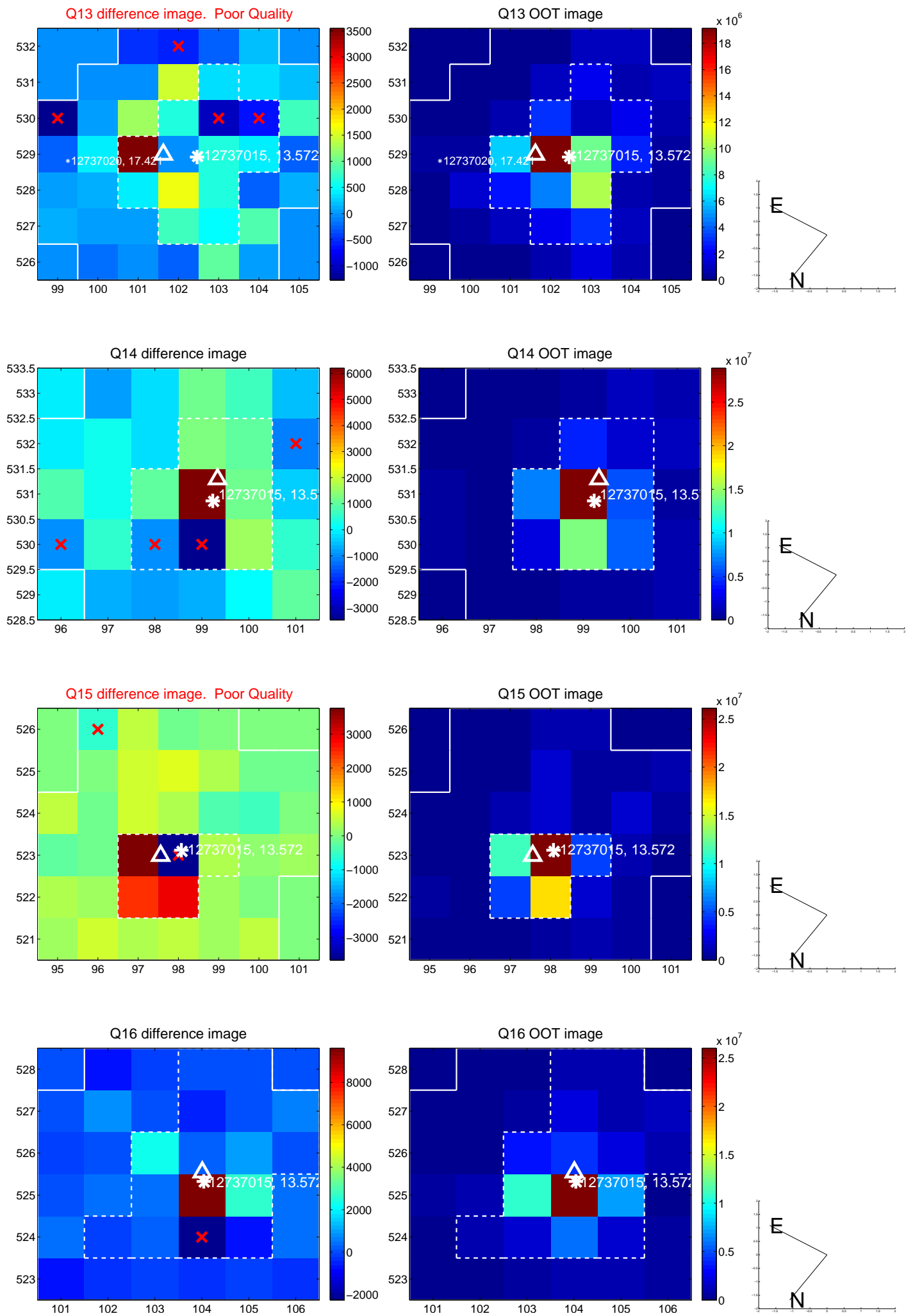
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



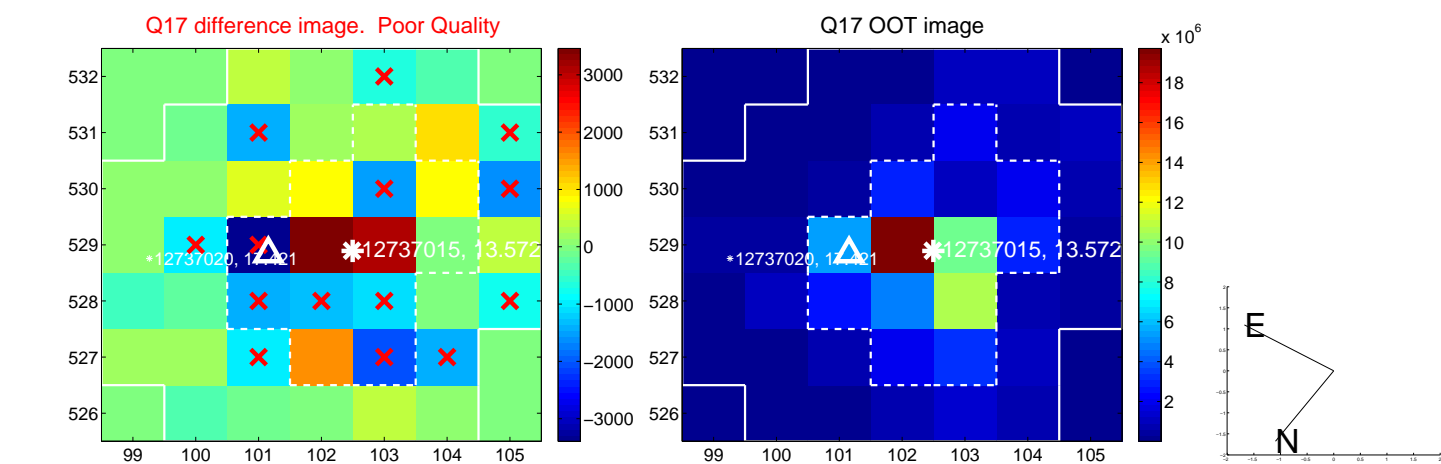
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



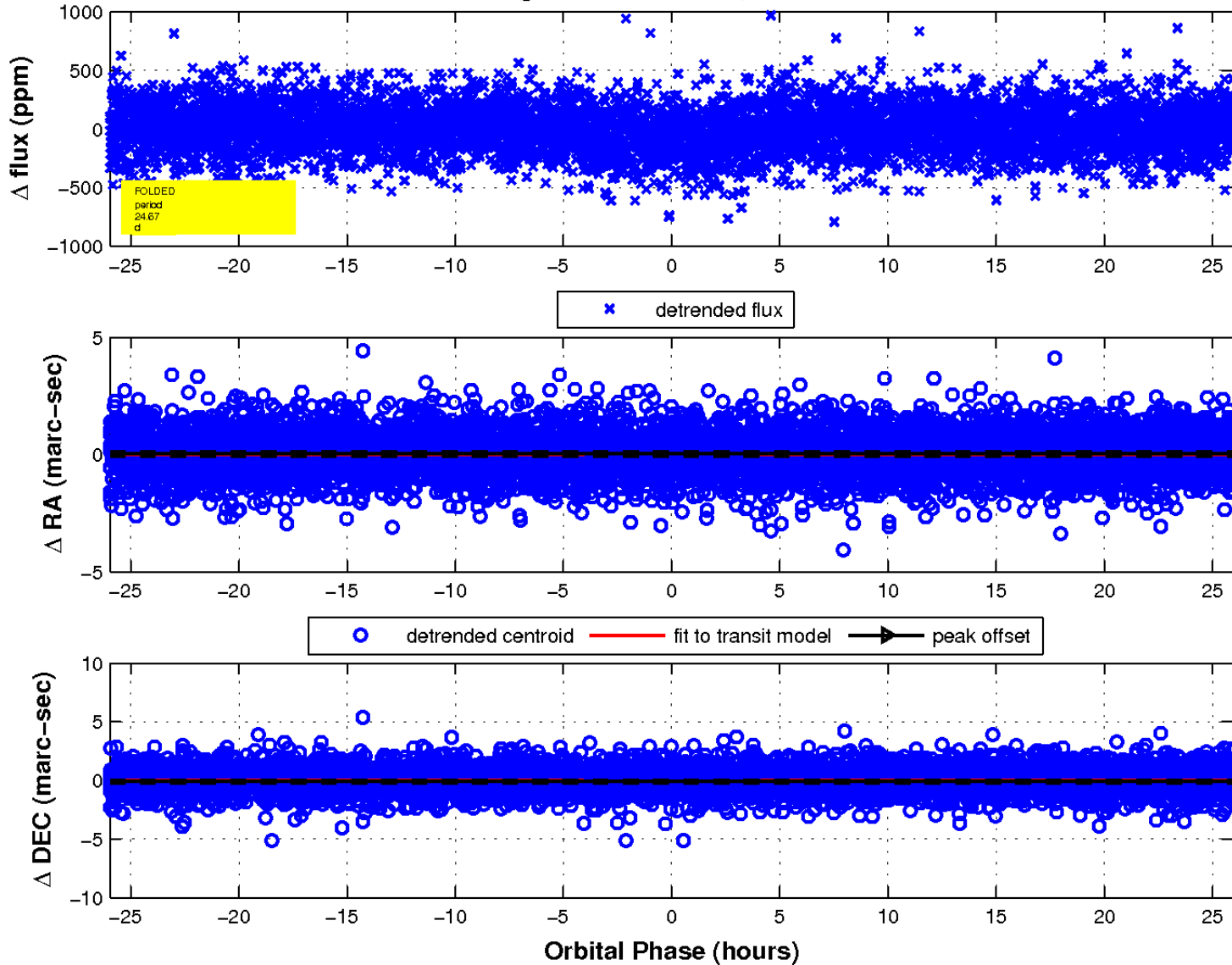
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

