

KIC 005471170

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})
005471170-01	OBS	No	12.423940	141.707787	27.6	23.289	8.6	8.9	3.62	5219	2.06	580.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005471170-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—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.

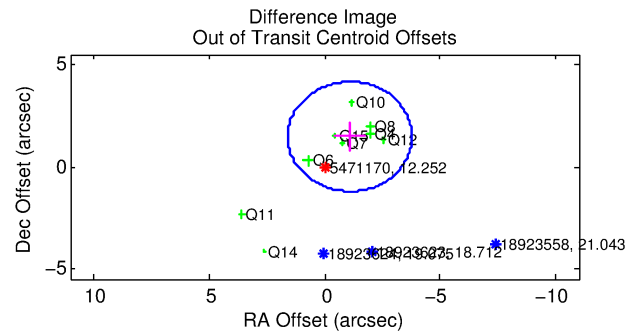
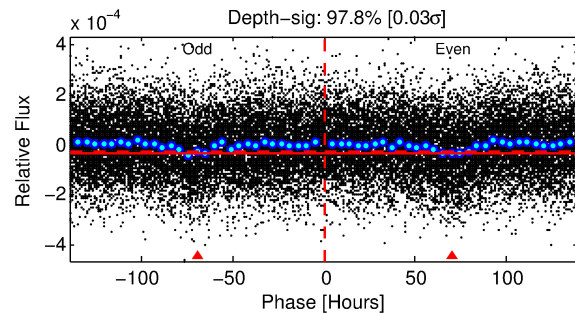
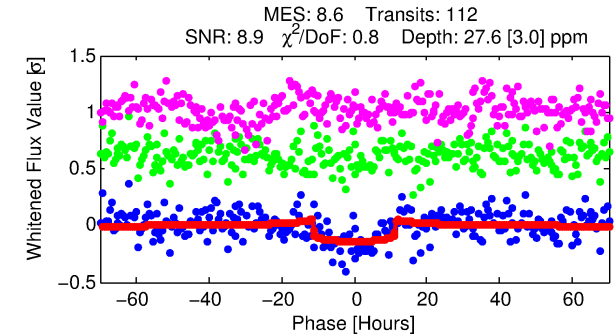
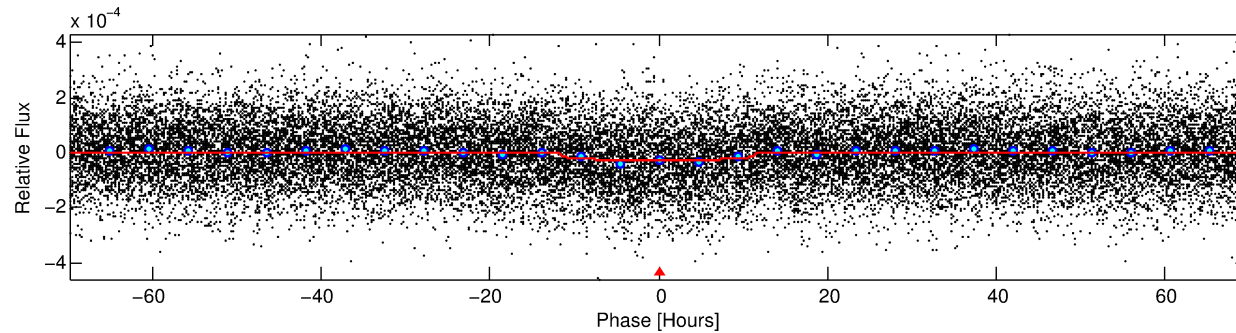
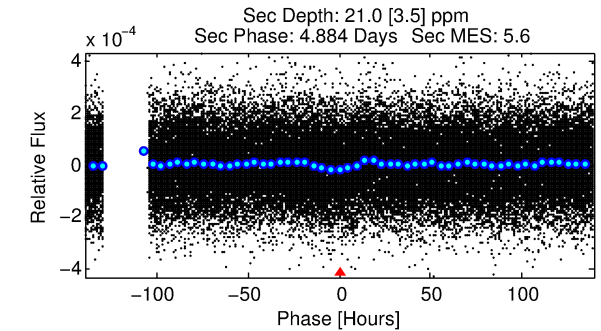
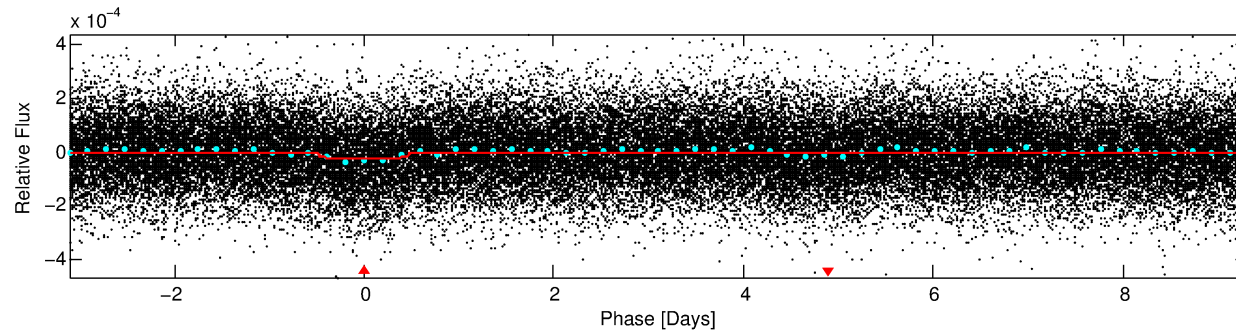
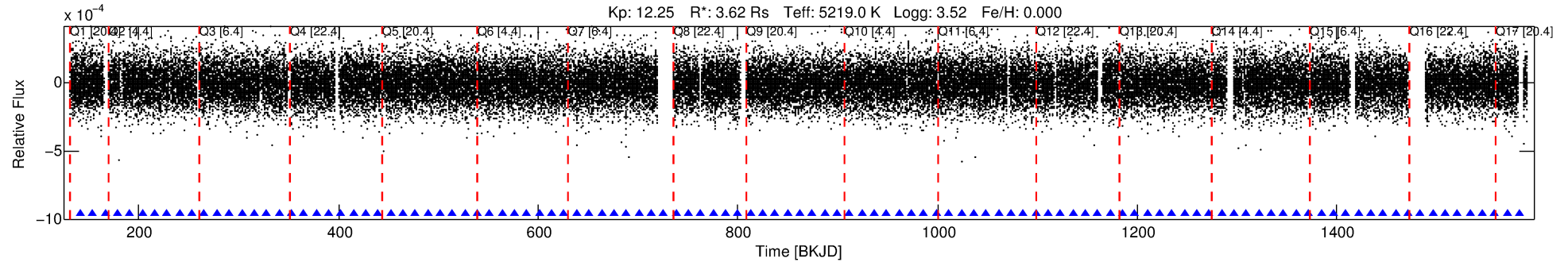
Ephemeris Match Information For 005471170-01

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
005471170-01	5471170	6586.01	5471415	1:1	317.6	80	-4	12.62	12.25	46.75	Col-Anomaly	1	4.99	4.98

Notes: P₁:P₂ 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. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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: 5471170 Candidate: 1 of 1 Period: 12.424 d



DV Fit Results:

Period = 12.42394 [0.00034] d
Epoch = 141.7078 [0.0222] BKJD
Rp/R* = 0.0052 [0.0013]
a/R* = 2.88 [2.44]
b = 0.74 [0.58]
Seff = 580.03 [202.69]
Teq = 1251 [109] K
Rp = 2.06 [0.80] Re
a = 0.1226 [0.0292] AU
Ag = 40.67 [25.60] [1.55σ]
Teffp = 4886 [658] K [5.45σ]

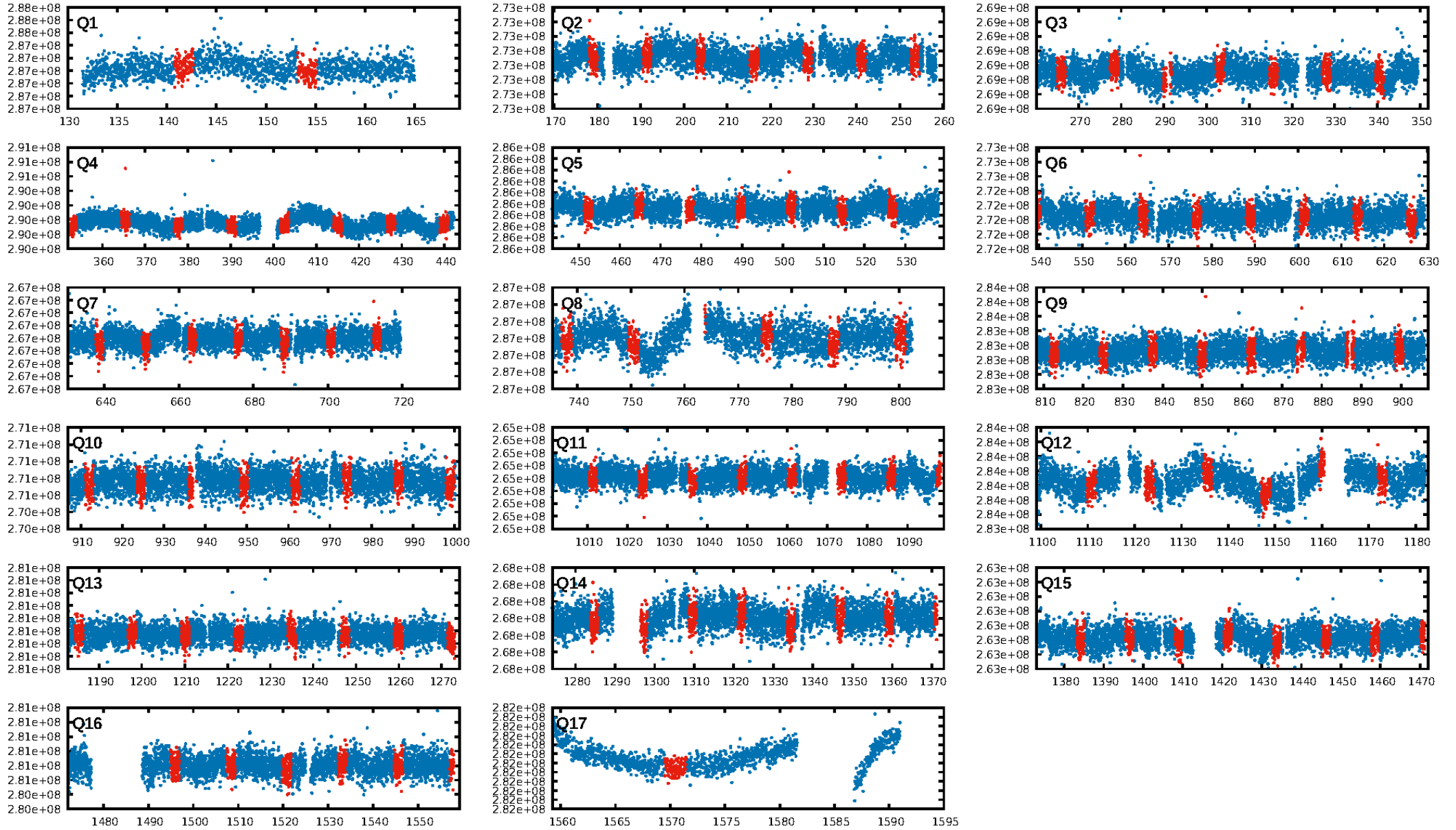
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 89.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.00e-16
RollingBand-fgt: 1.00 [109/109]
GhostDiagnostic-chr: 0.4399
Centroid-sig: 3.5%
Centroid-so: 2.174 arcsec [1.67σ]
OotOffset-rm: 1.830 arcsec [2.04σ]
KicOffset-rm: 1.832 arcsec [1.86σ]
OotOffset-st: 3/3/3/0 [9]
KicOffset-st: 3/3/3/0 [9]
DiffImageQuality-fgm: 0.78 [7/9]
DiffImageOverlap-fno: 1.00 [17/17]

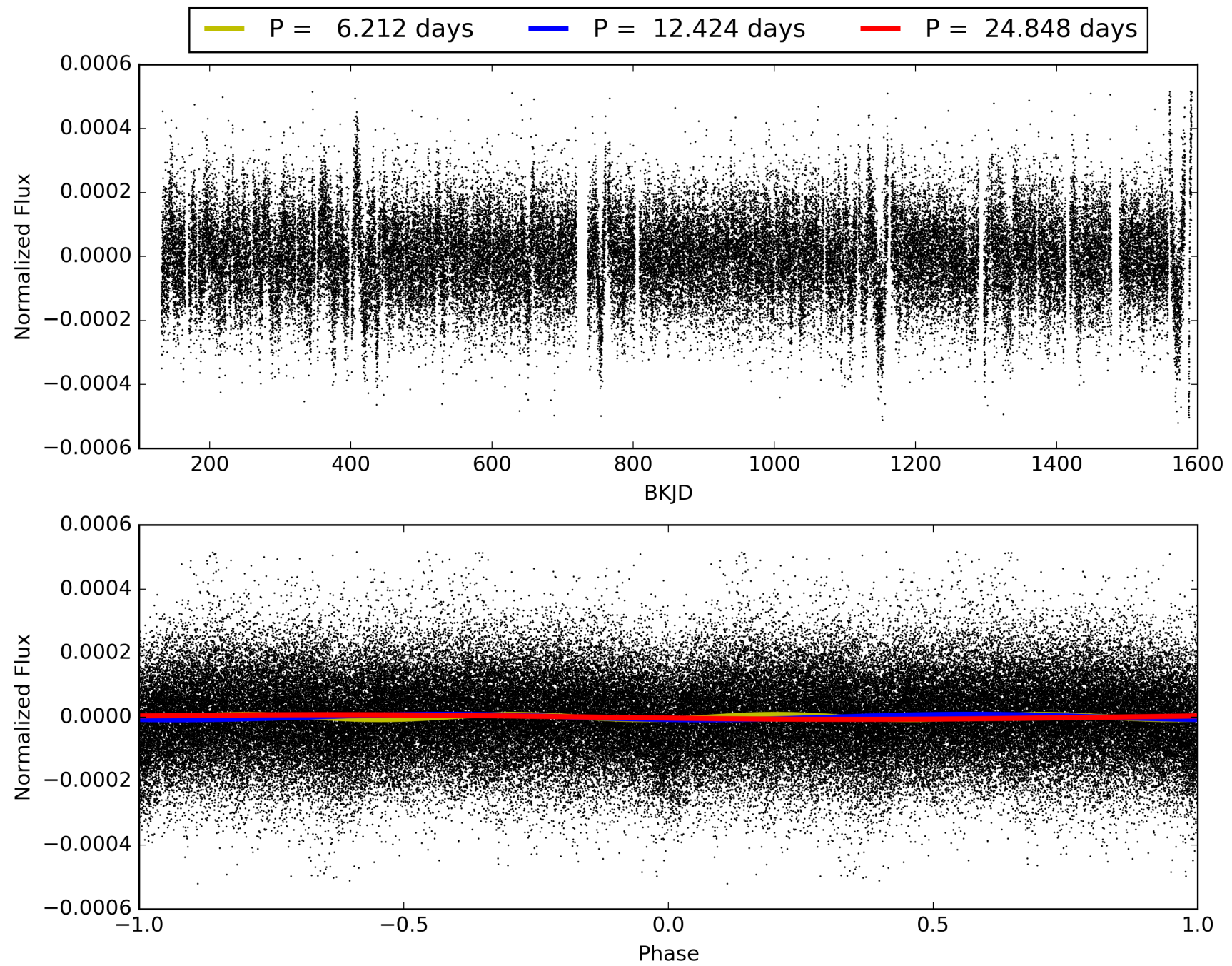
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:15:18 Z

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

TCE 005471170-01, PDC Light Curves

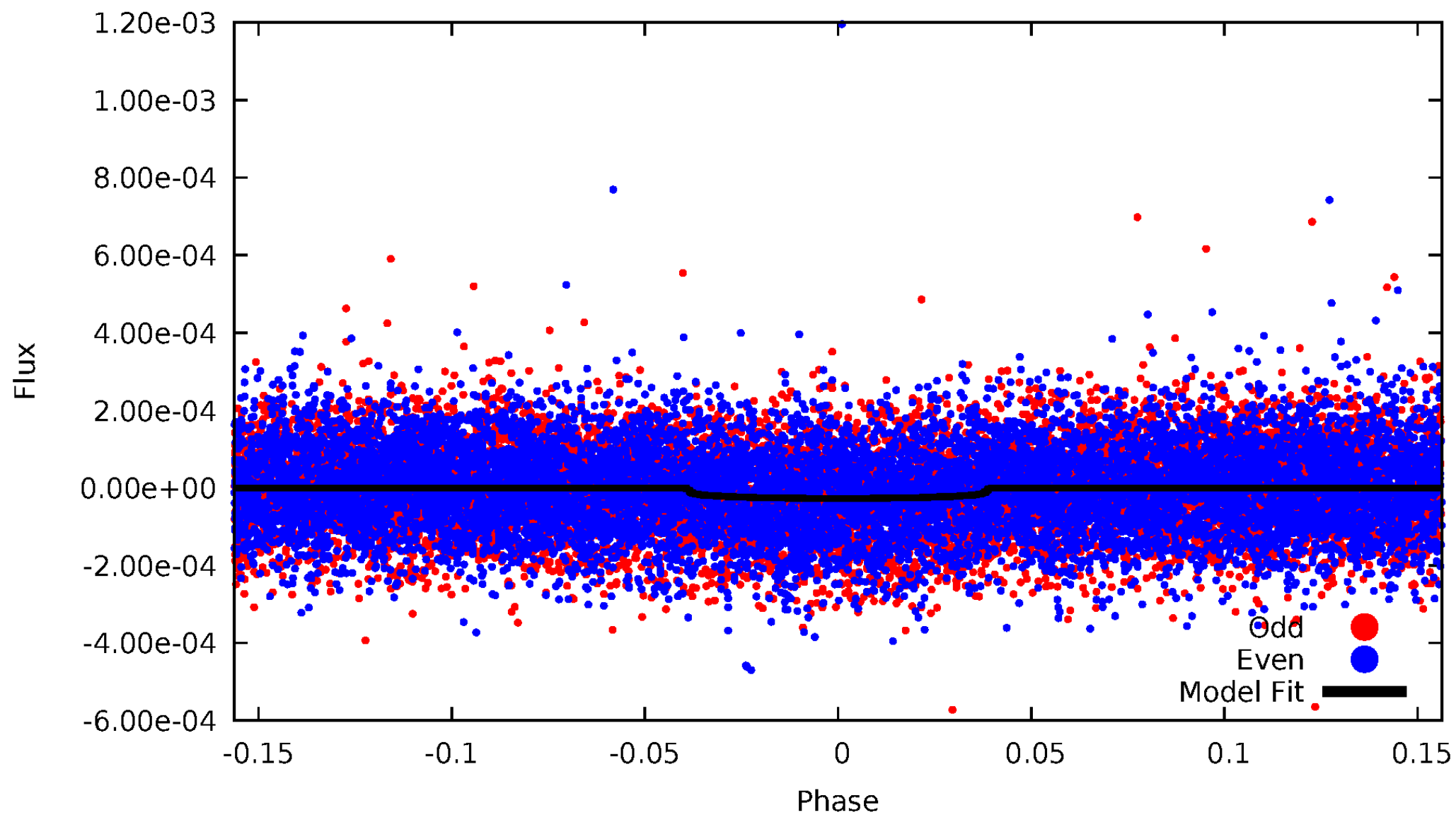


TCE 005471170-01



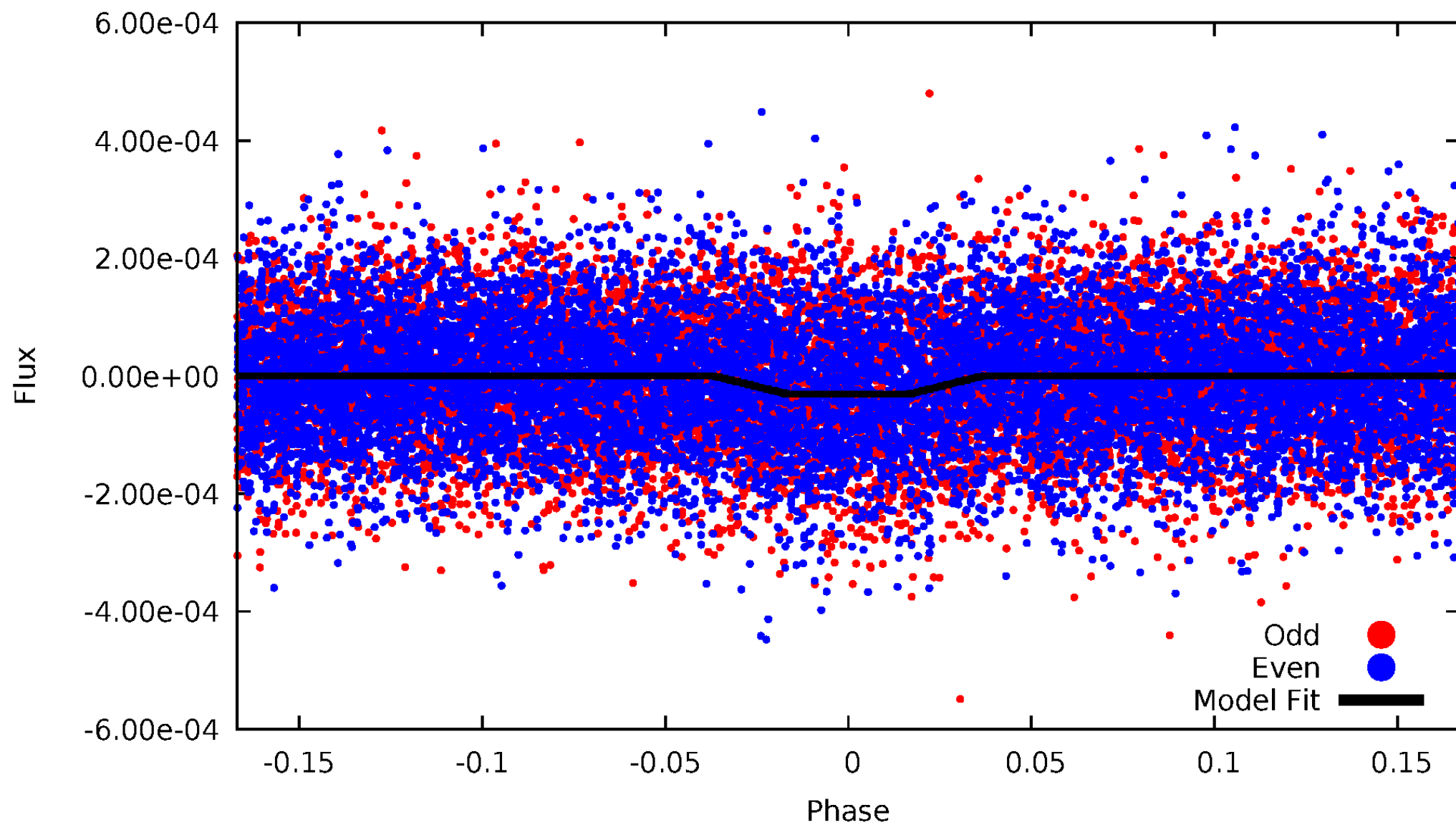
DV Odd/Even

TCE 005471170-01

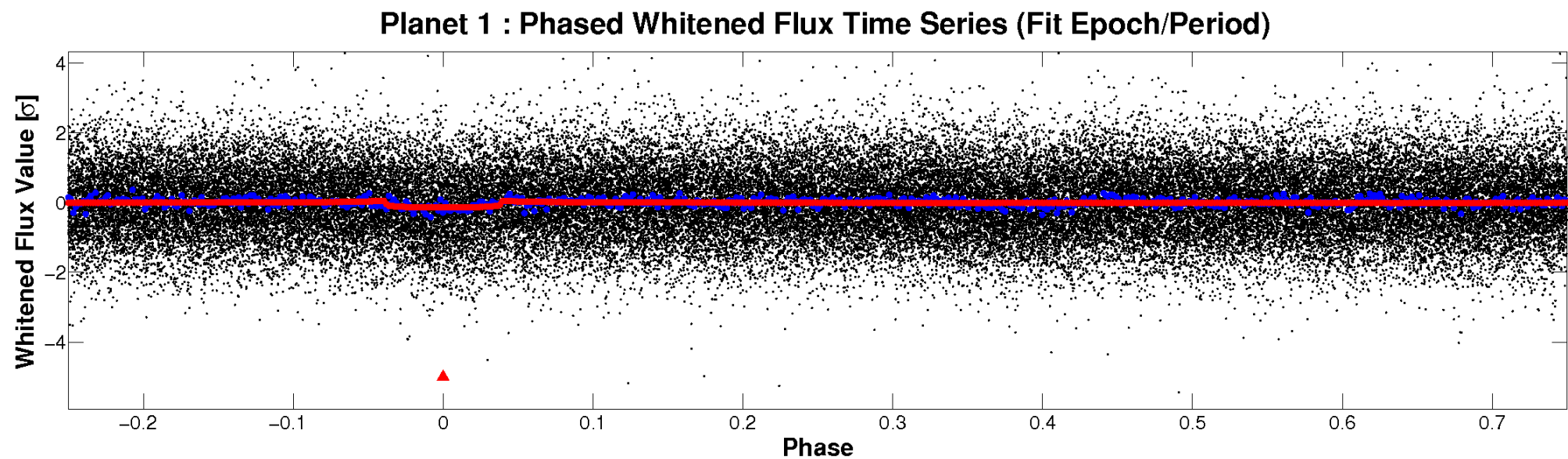
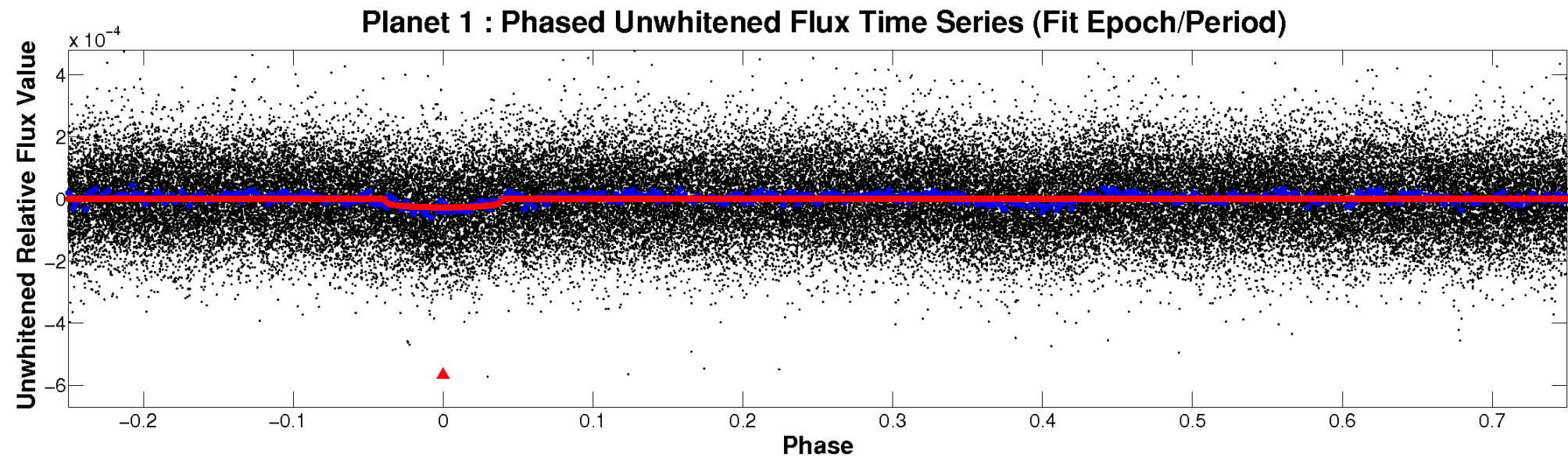


ALT Odd/Even

TCE 005471170-01

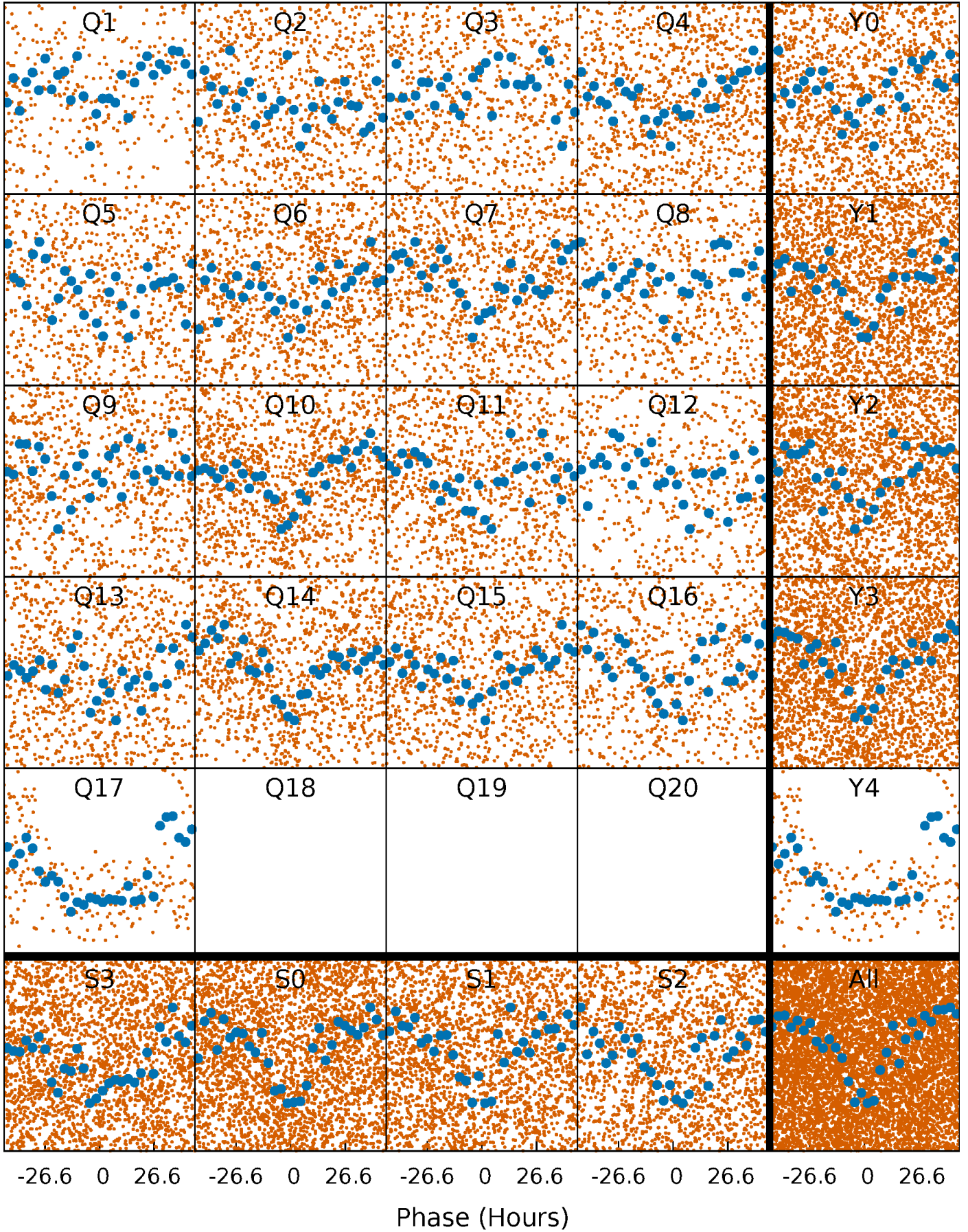


Non-Whitened Vs. Whitened Light Curve



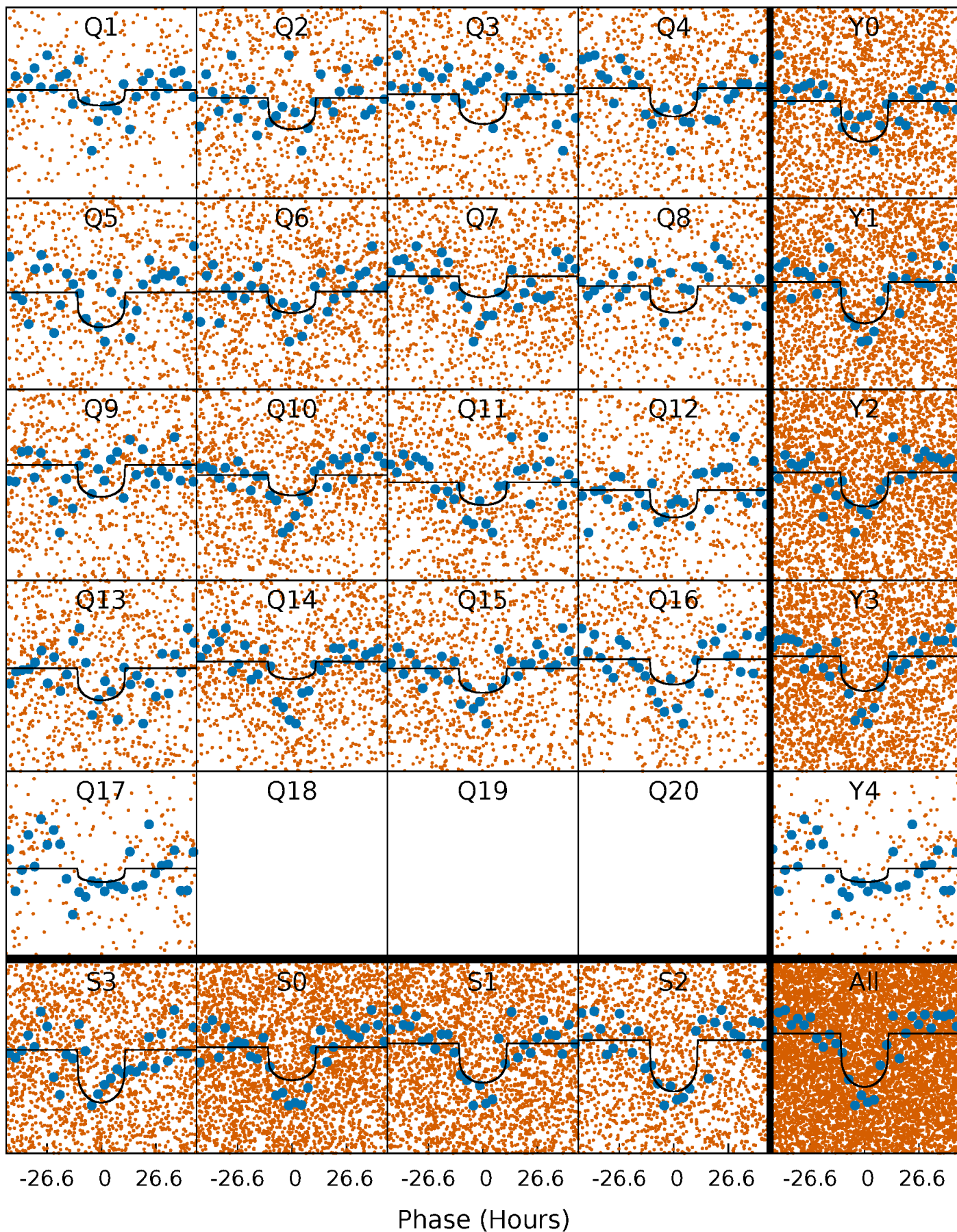
PDC Quarter-Phased Transit Curves

TCE 005471170-01 P= 12.423940 Days $T_0=141.707787$ (BKJD)



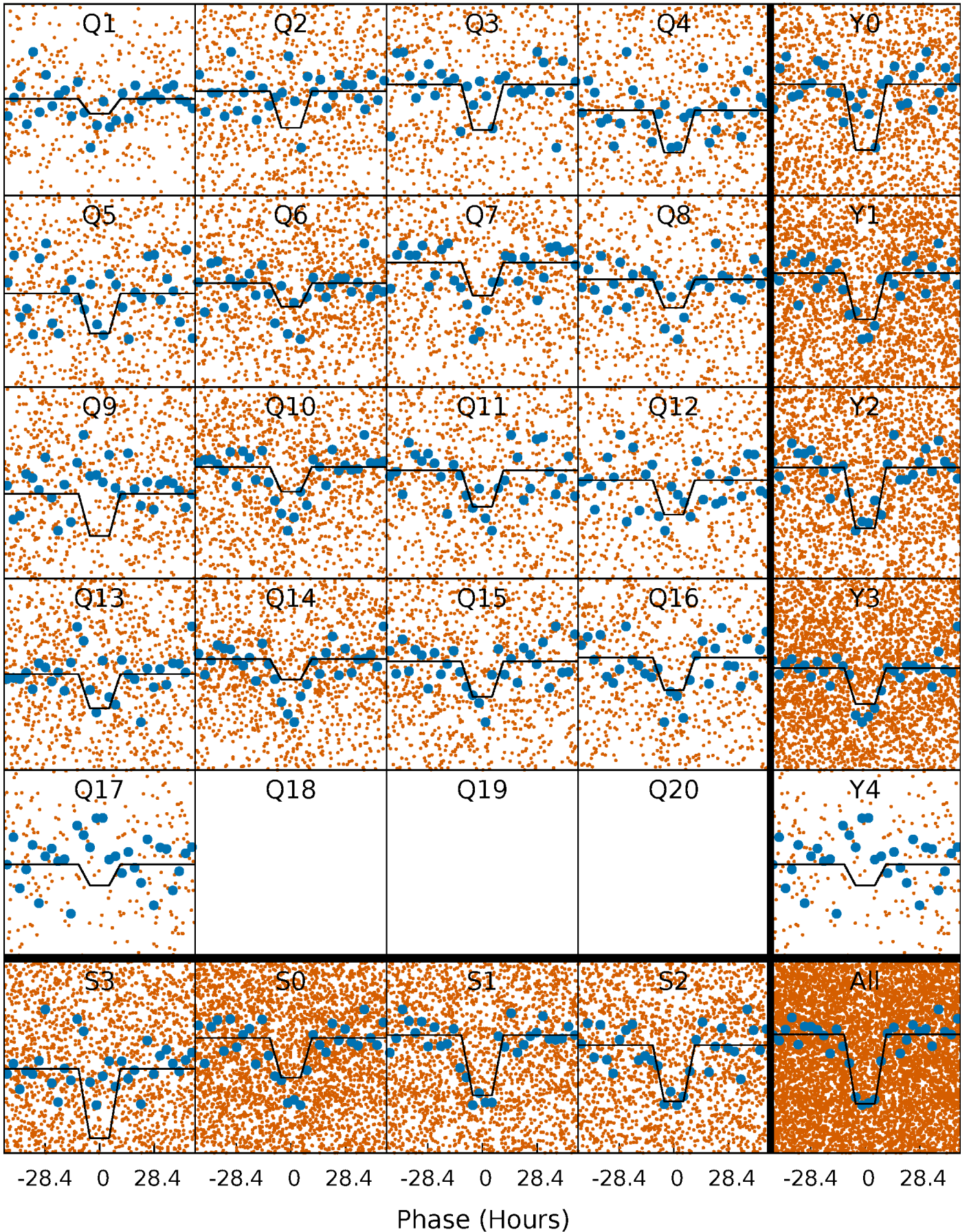
DV Quarter-Phased Transit Curves

TCE 005471170-01 P= 12.423940 Days $T_0=141.707787$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

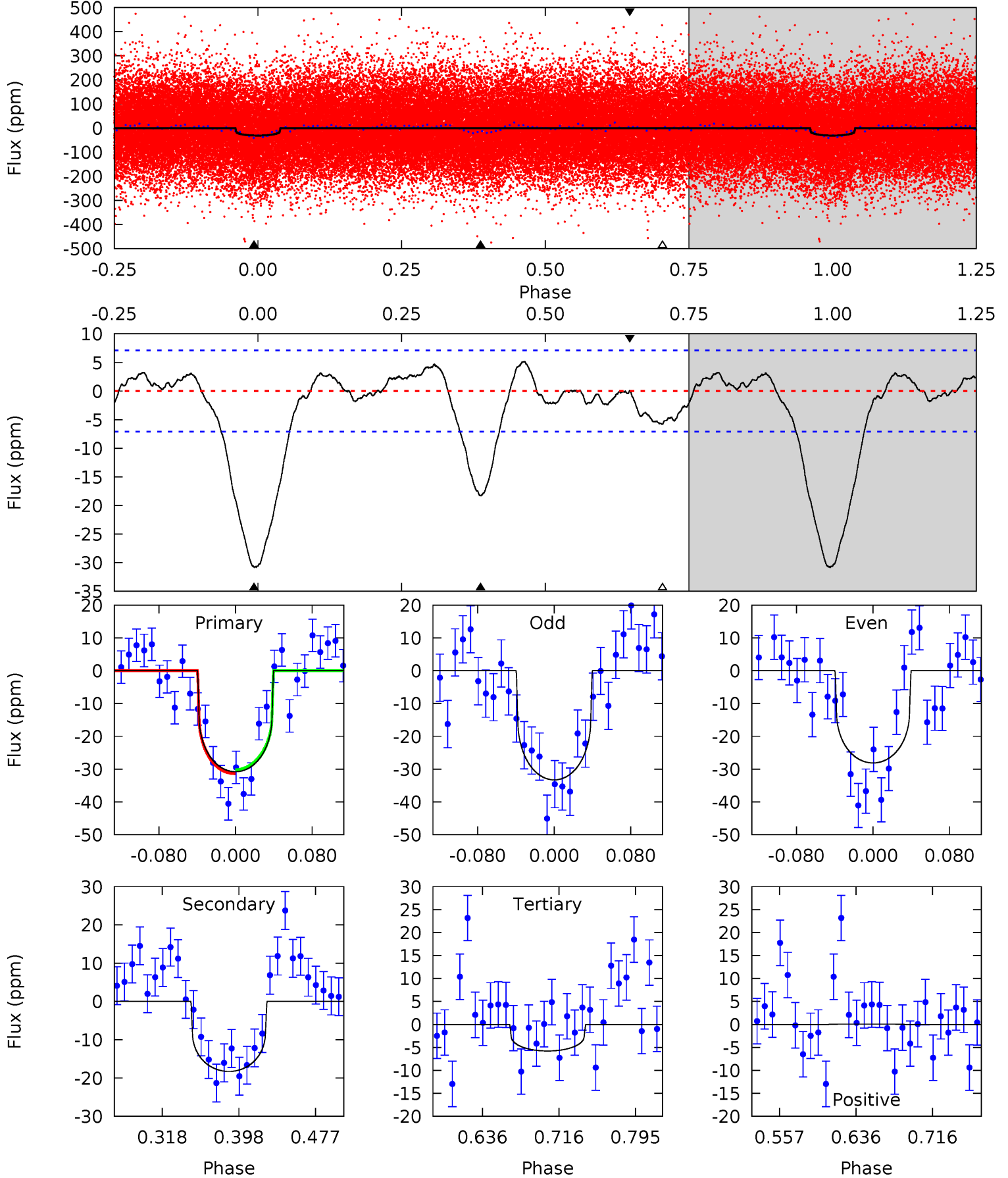
TCE 005471170-01 P= 12.423554 Days $T_0=141.723813$ (BKJD)



DV Model-Shift Uniqueness Test

005471170-01, P = 12.423940 Days, E = 129.283847 Days

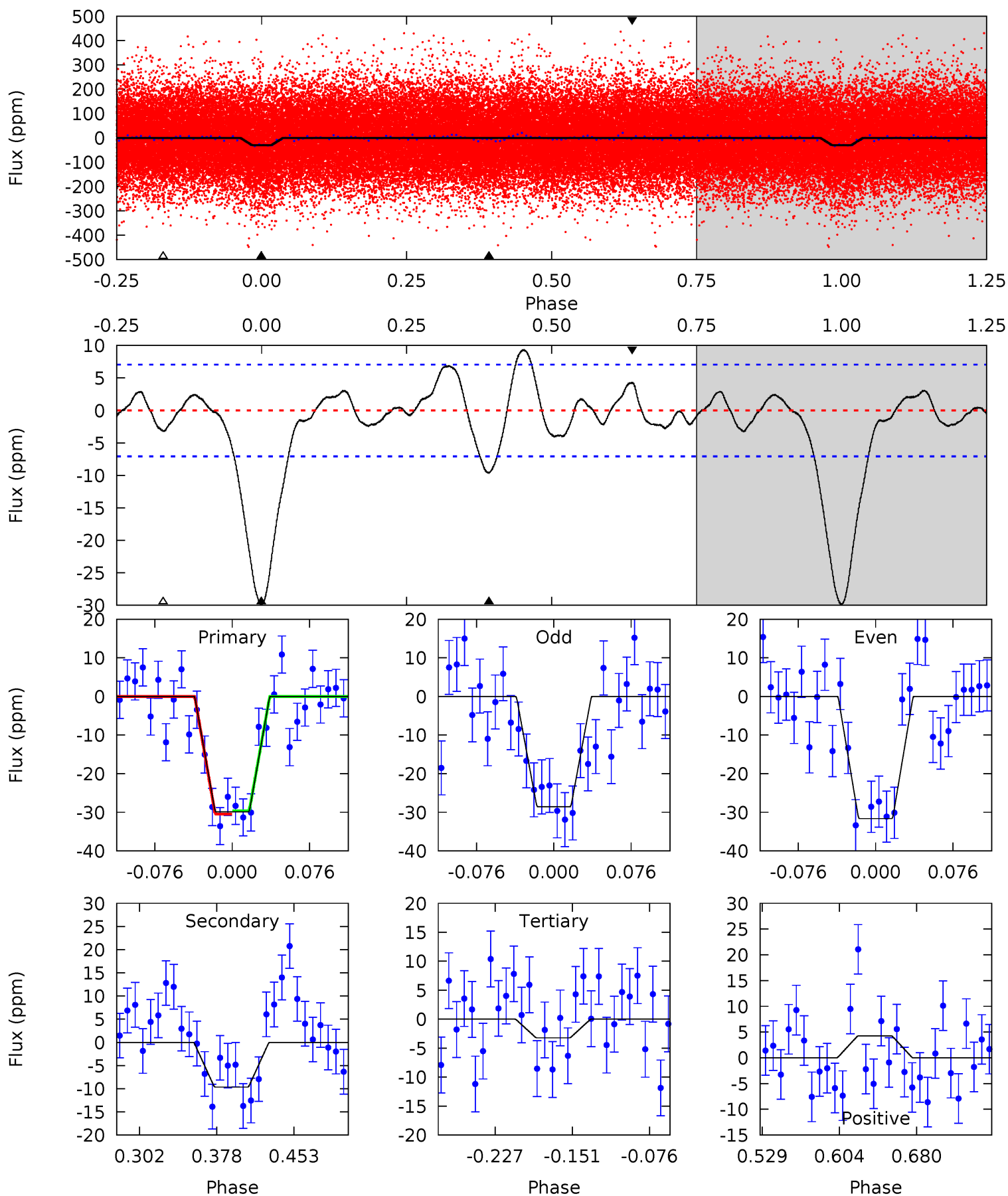
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	11.9	3.75	0.05	4.61	1.75	1.58	16.2	19.9	8.11	11.8	1.68	0.91	0.14	0.39



Alt Model-Shift Uniqueness Test

005471170-01, P = 12.423554 Days, E = 129.300259 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	6.32	2.11	2.81	4.62	1.78	1.42	17.5	16.8	4.21	3.52	1.02	1.23	0.24	0.28



Stellar Parameters For KIC 005471170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5219^{+62}_{-117}	$3.522^{+0.180}_{-0.105}$	$0.000^{+0.150}_{-0.200}$	$3.621^{+0.568}_{-1.055}$	$1.589^{+0.150}_{-0.419}$	$0.047^{+0.054}_{-0.016}$
	+1%/-2%	+5%/-3%	+inf%/-inf%	+16%/-29%	+9%/-26%	+114%/-34%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005471170-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-18 ± 2	$1.99^{+0.56}_{-0.54}$	1744^{+74}_{-116}	4753^{+658}_{-407}	37^{+32}_{-14}
Alt.	-10 ± 2	$2.17^{+0.62}_{-0.56}$	1737^{+90}_{-106}	4081^{+472}_{-305}	16^{+14}_{-7}

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

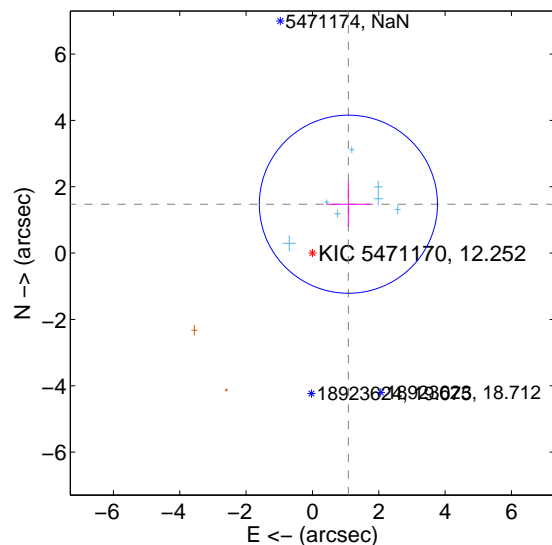
Supplemental centroid analysis for 005471170-01. Kepler magnitude: 12.25. Transit SNR 8.88

There are 7 quarters with good PRF difference image offsets

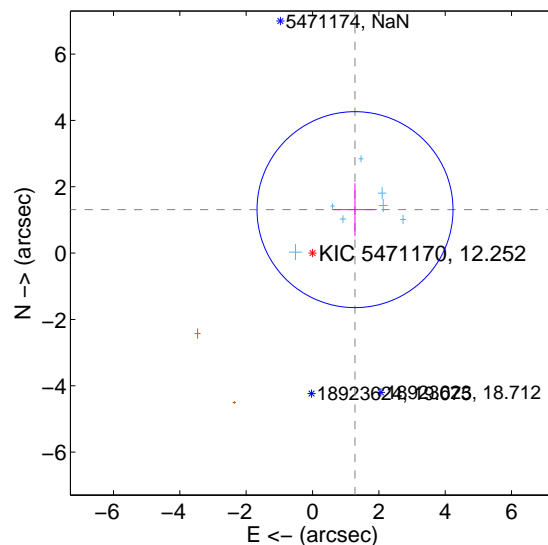
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.830 ± 0.895	2.04	-1.084 ± 0.656	1.474 ± 0.680
PRF-fit source offset from KIC position	1.832 ± 0.985	1.86	-1.281 ± 0.650	1.310 ± 0.794
photometric centroid source offset	2.17 ± 1.30	1.67	1.46 ± 1.33	-1.61 ± 1.28

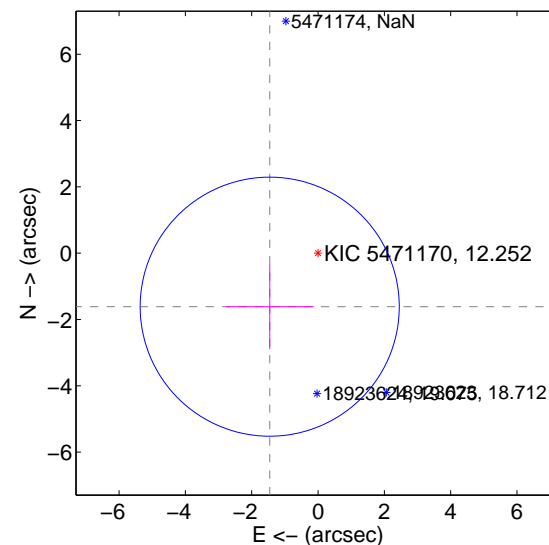
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

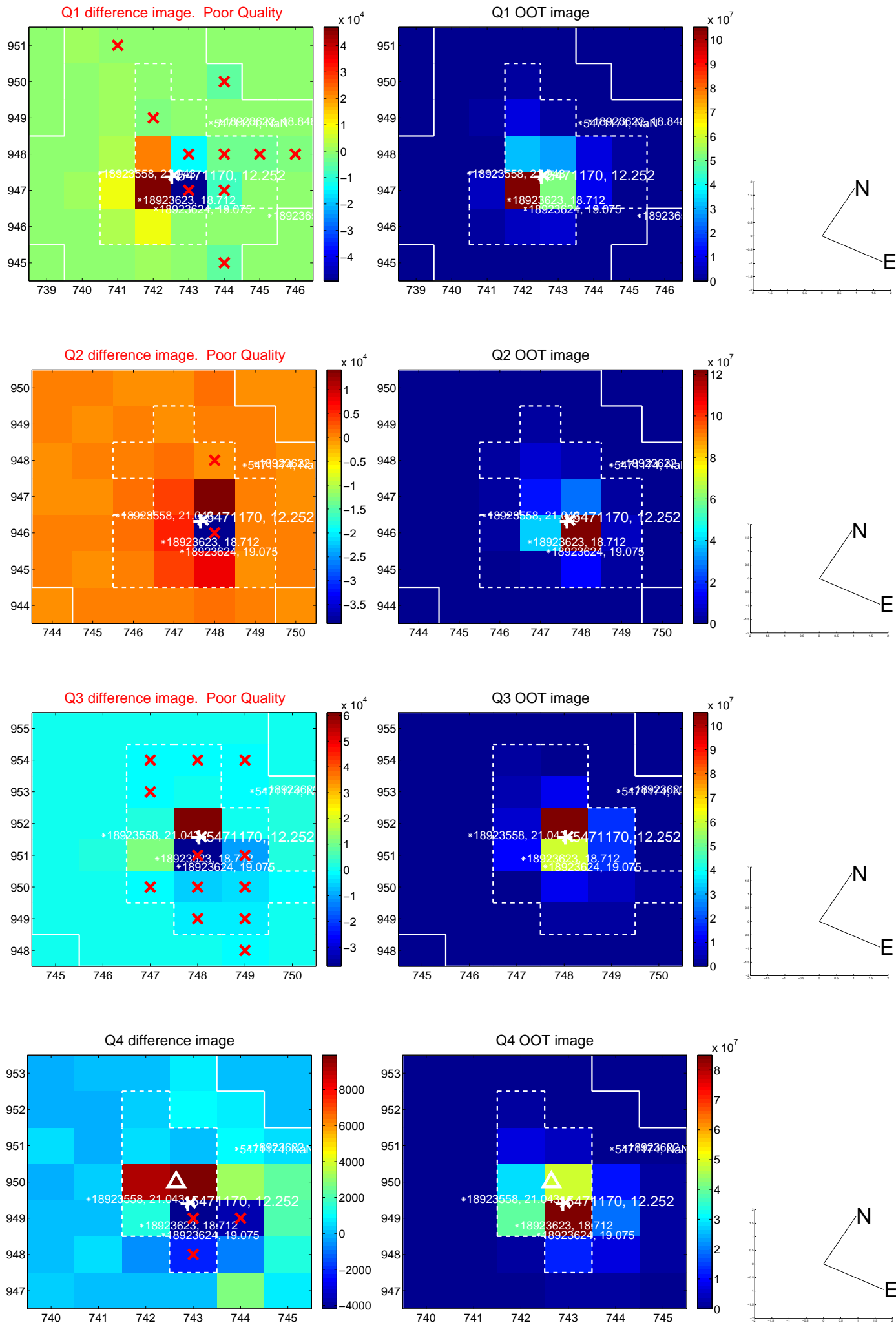


offset from photometric centroids

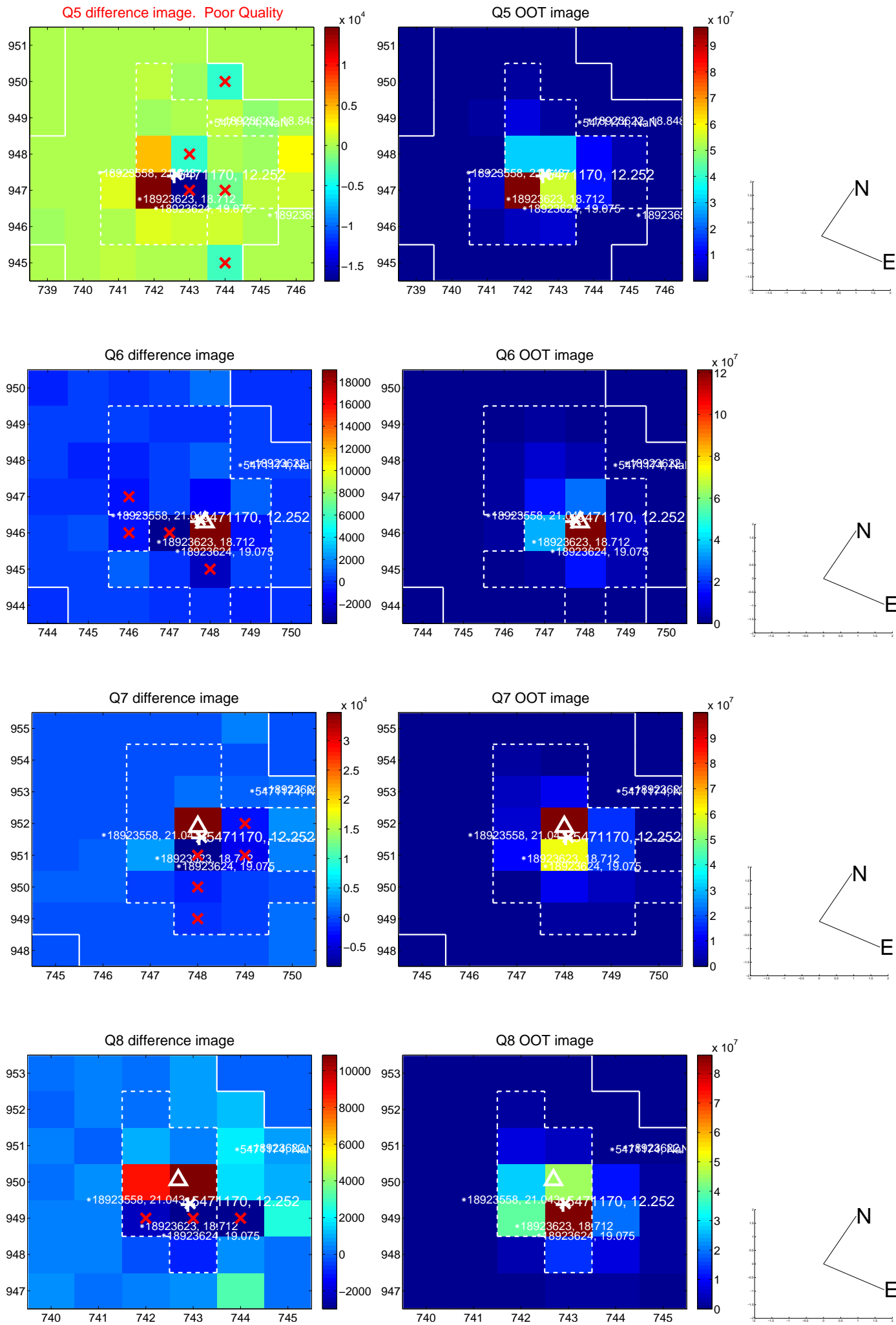


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

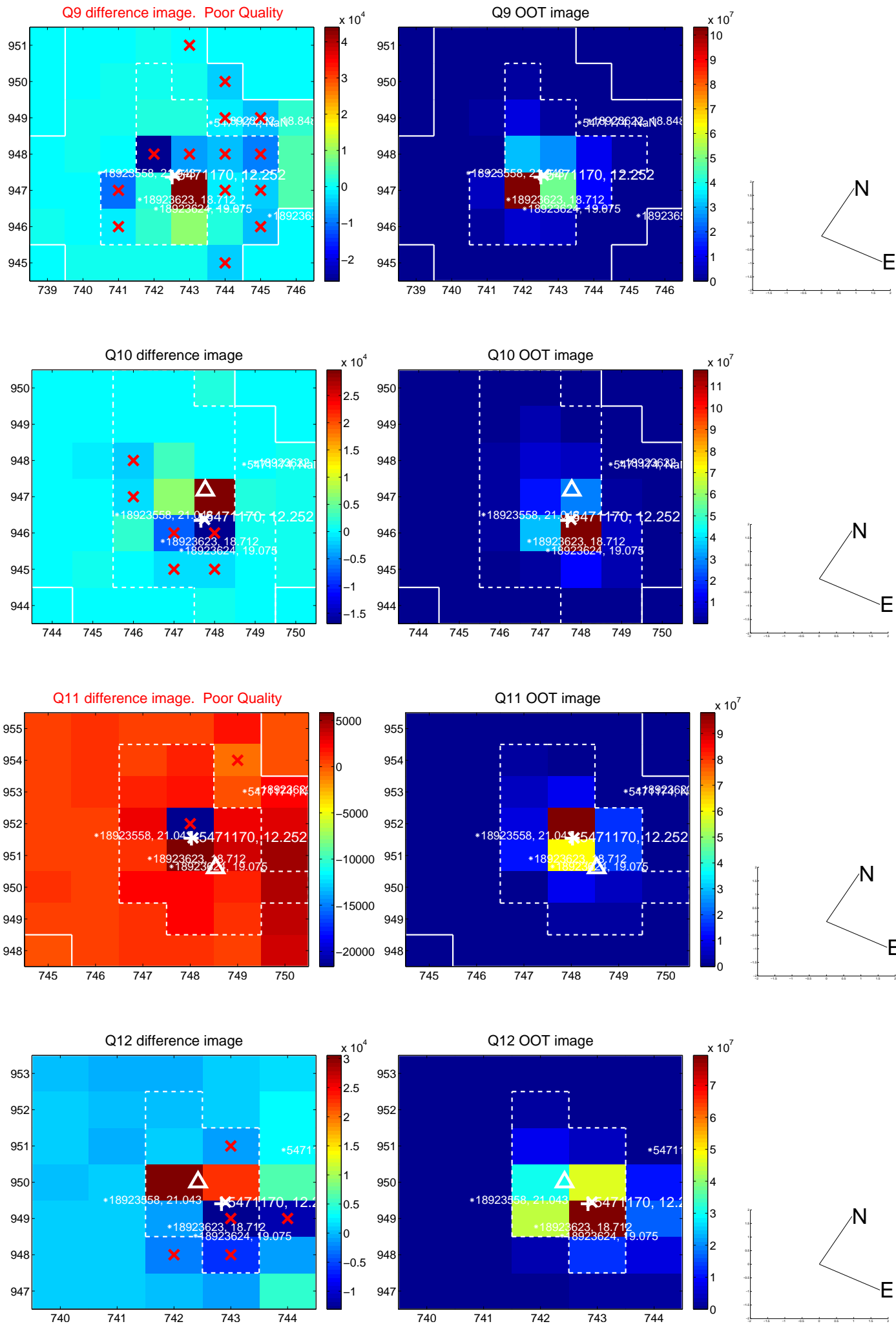
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



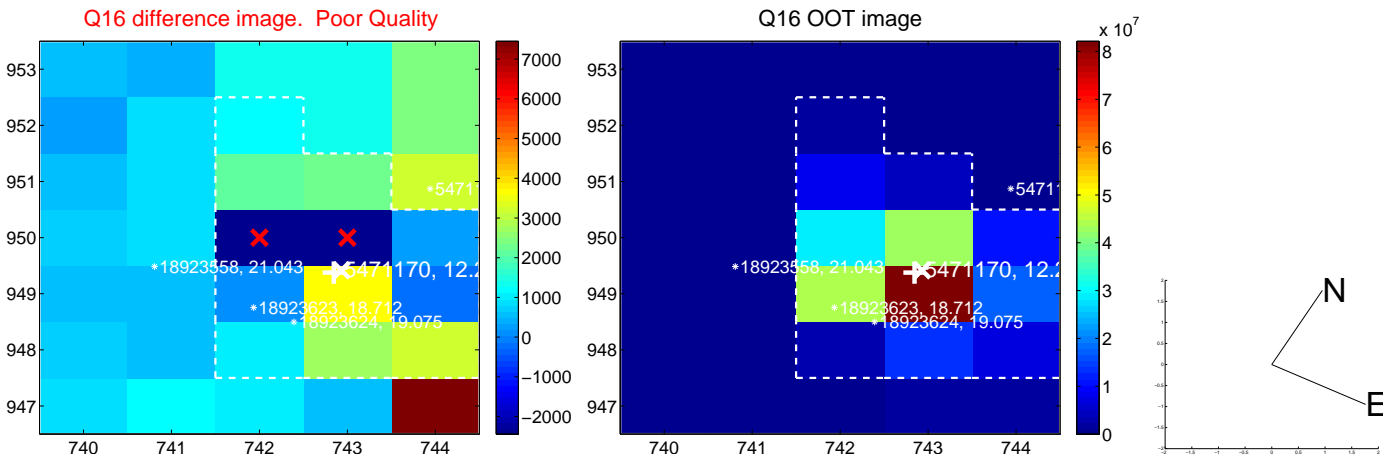
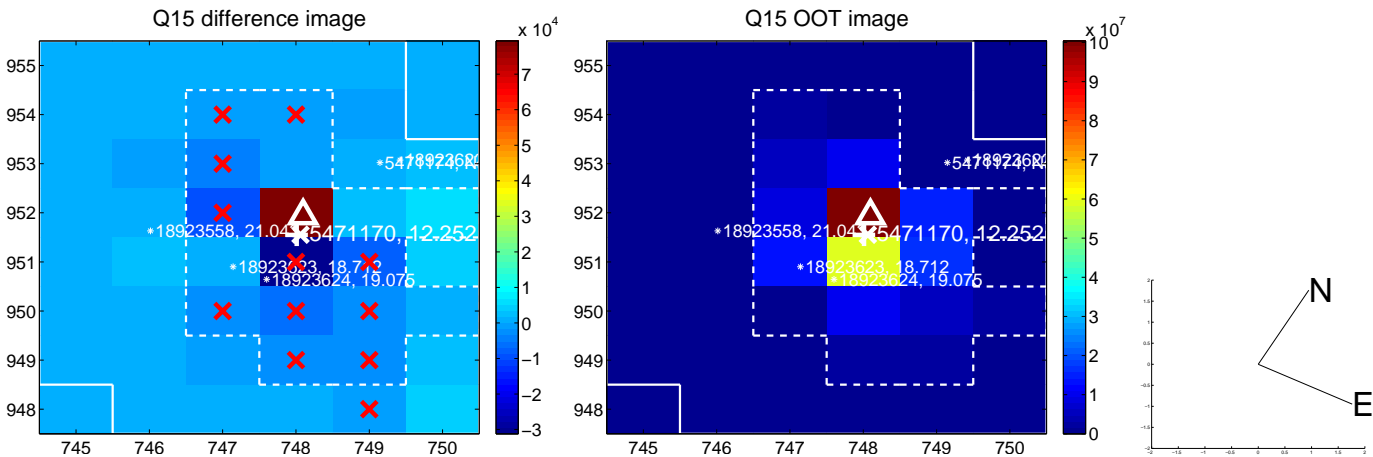
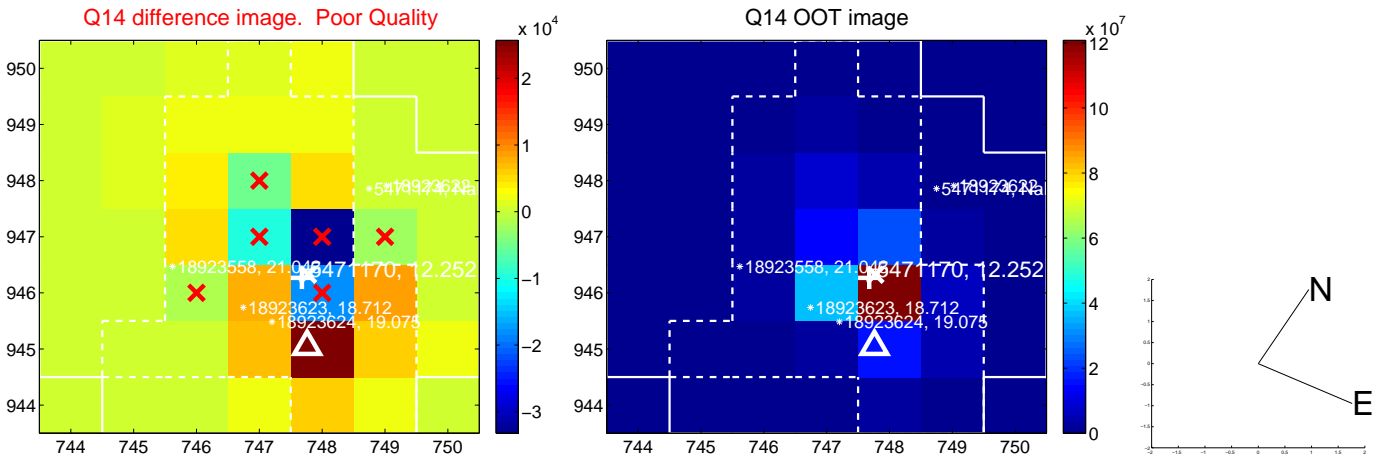
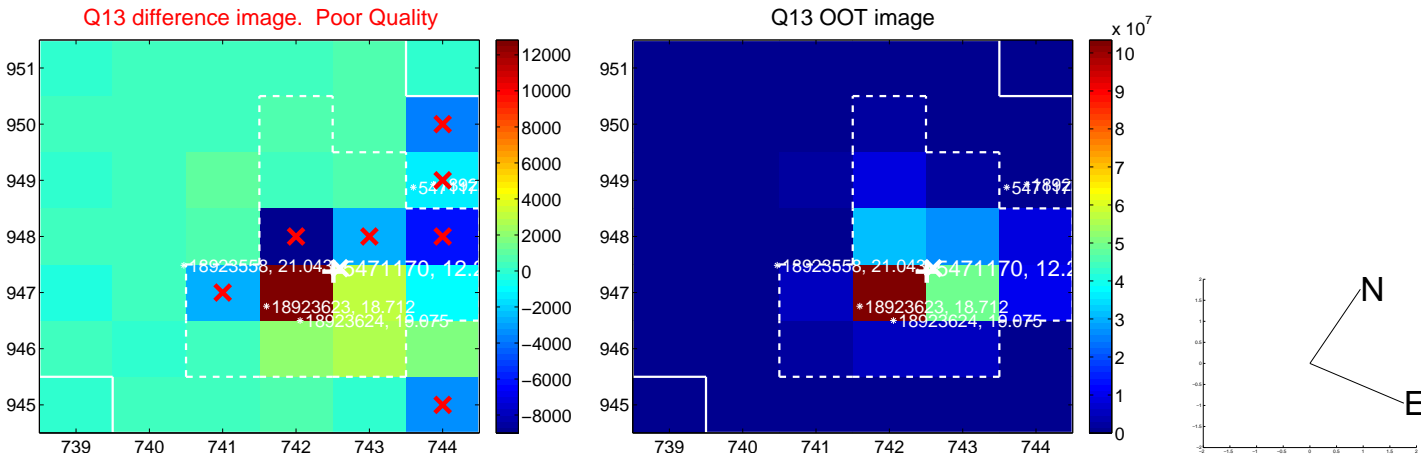
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



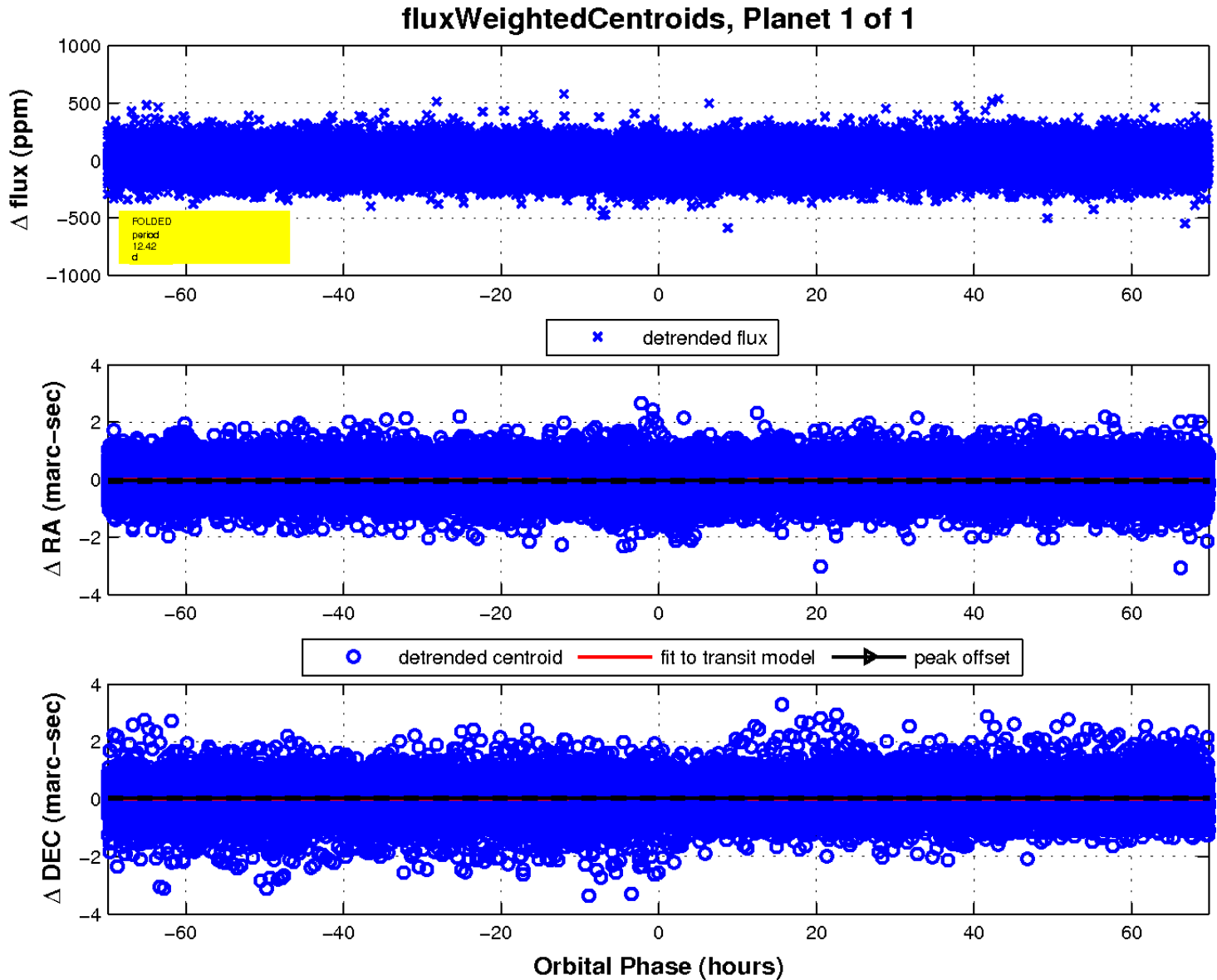
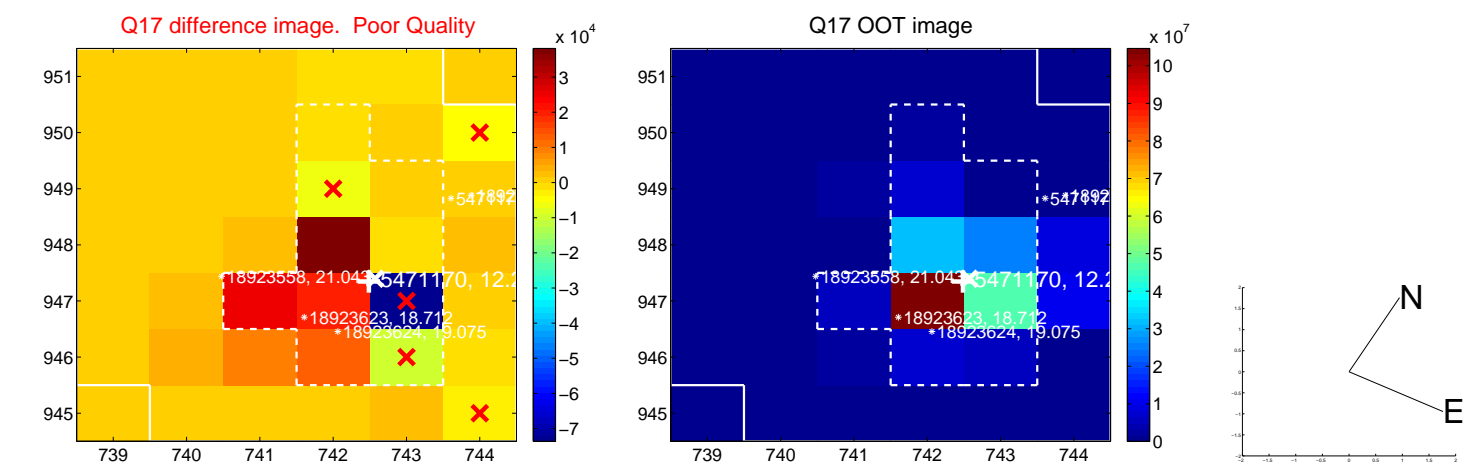
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UKIRT Image

