

KIC 011401869

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
011401869-01	OBS	7443.01	2.161385	131.876786	60.9	5.607	10.1	9.9	1.01	6047	0.95	1156.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011401869-01	OBS	FP	0.00	0	1	0	1	MOD_SEC_DV—MOD_SEC_ALT—CENT_KIC_POS—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.

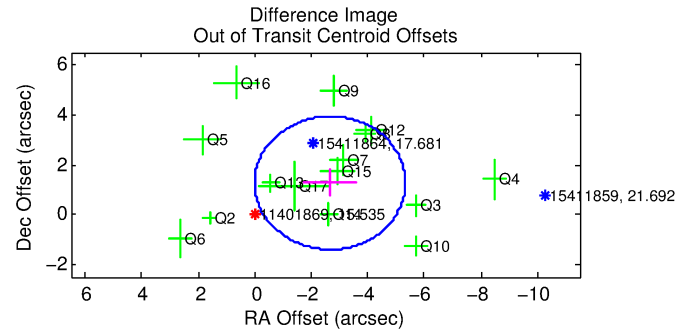
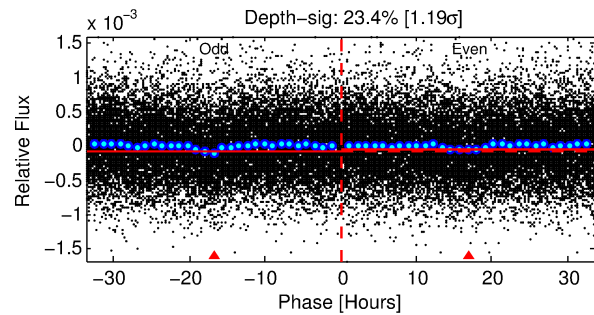
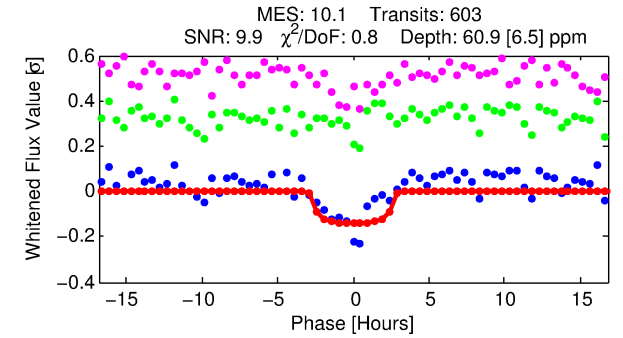
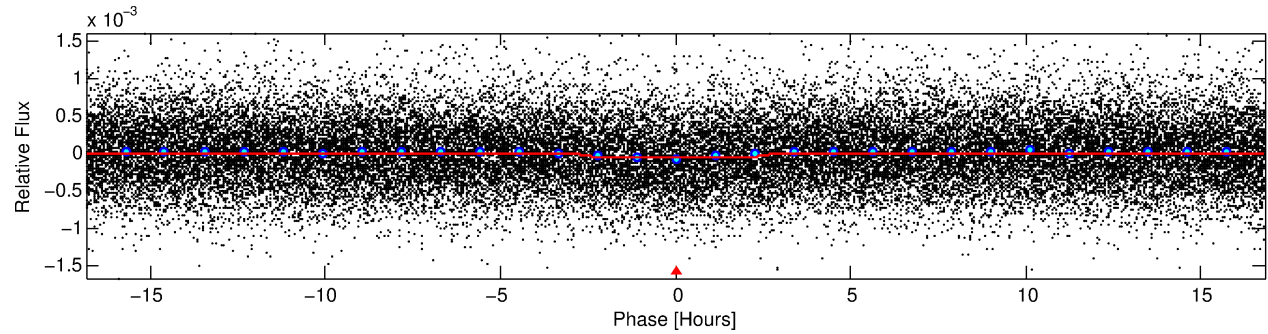
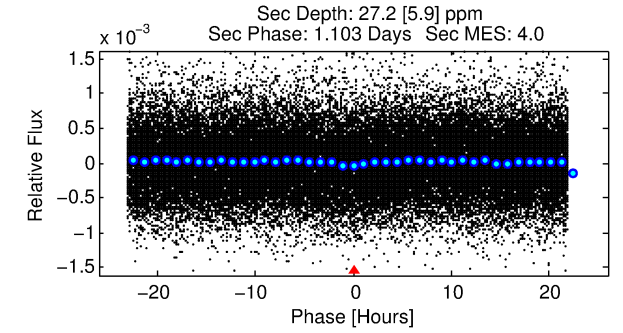
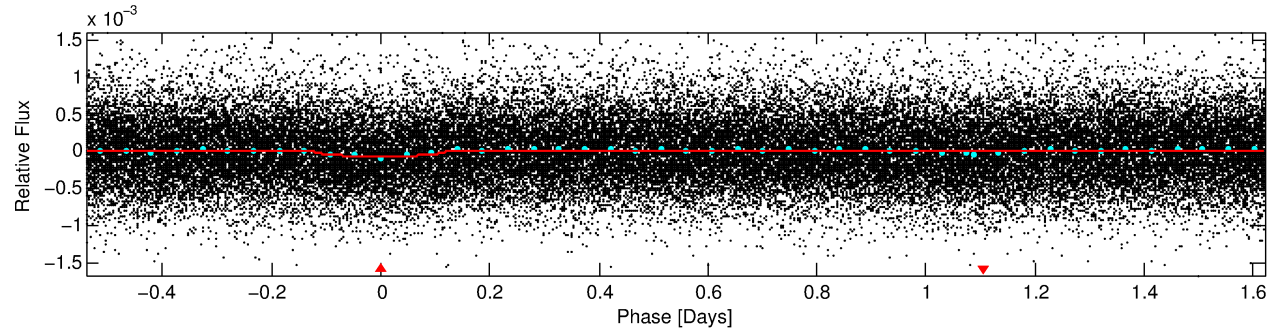
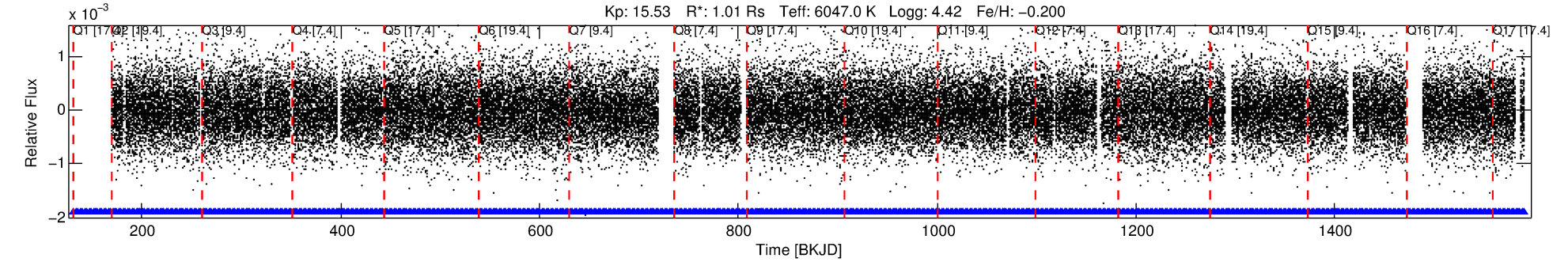
Ephemeris Match Information For 011401869-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
011401869-01	11401869	011401845-pri	11401845	1:1	30.3	5	-5	14.36	15.54	6727.90	Direct-PRF	0	0.44	0.72

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol 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 σ_P < 5.0 and σ_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: 11401869 Candidate: 1 of 1 Period: 2.161 d
KOI: K07443 Corr: No Ephemeris Match



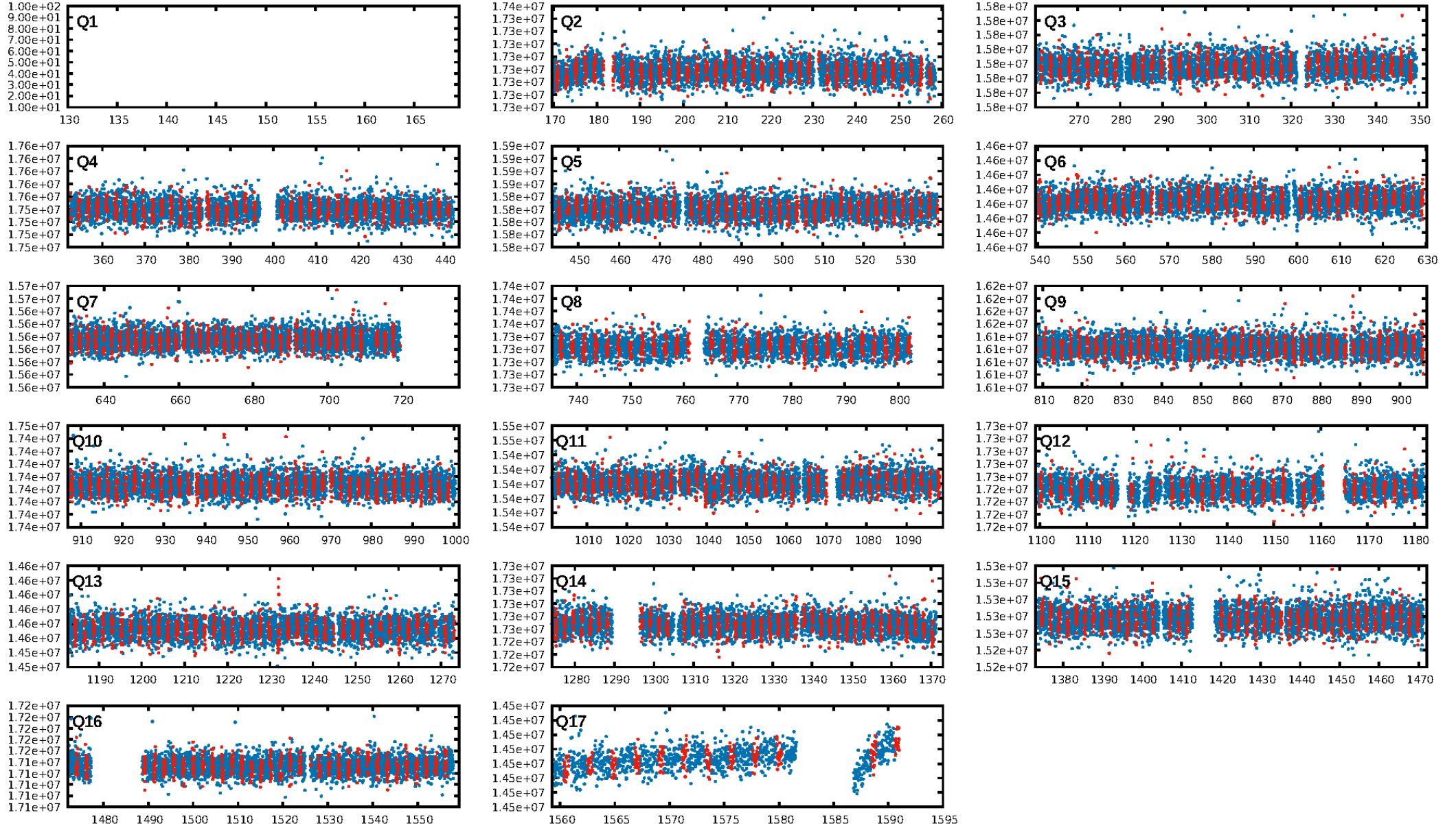
DV Fit Results:

Period = 2.16139 [0.00003] d
Epoch = 131.8768 [0.0070] BKJD
Rp/R* = 0.0086 [0.0031]
a/R* = 1.54 [1.73]
b = 0.92 [0.33]
Seff = 1156.51 [461.75]
Teff = 1487 [148] K
Rp = 0.95 [0.45] Re
a = 0.0326 [0.0084] AU
Ag = 17.61 [14.77] [1.12σ]
Teffp = 4710 [900] K [3.53σ]

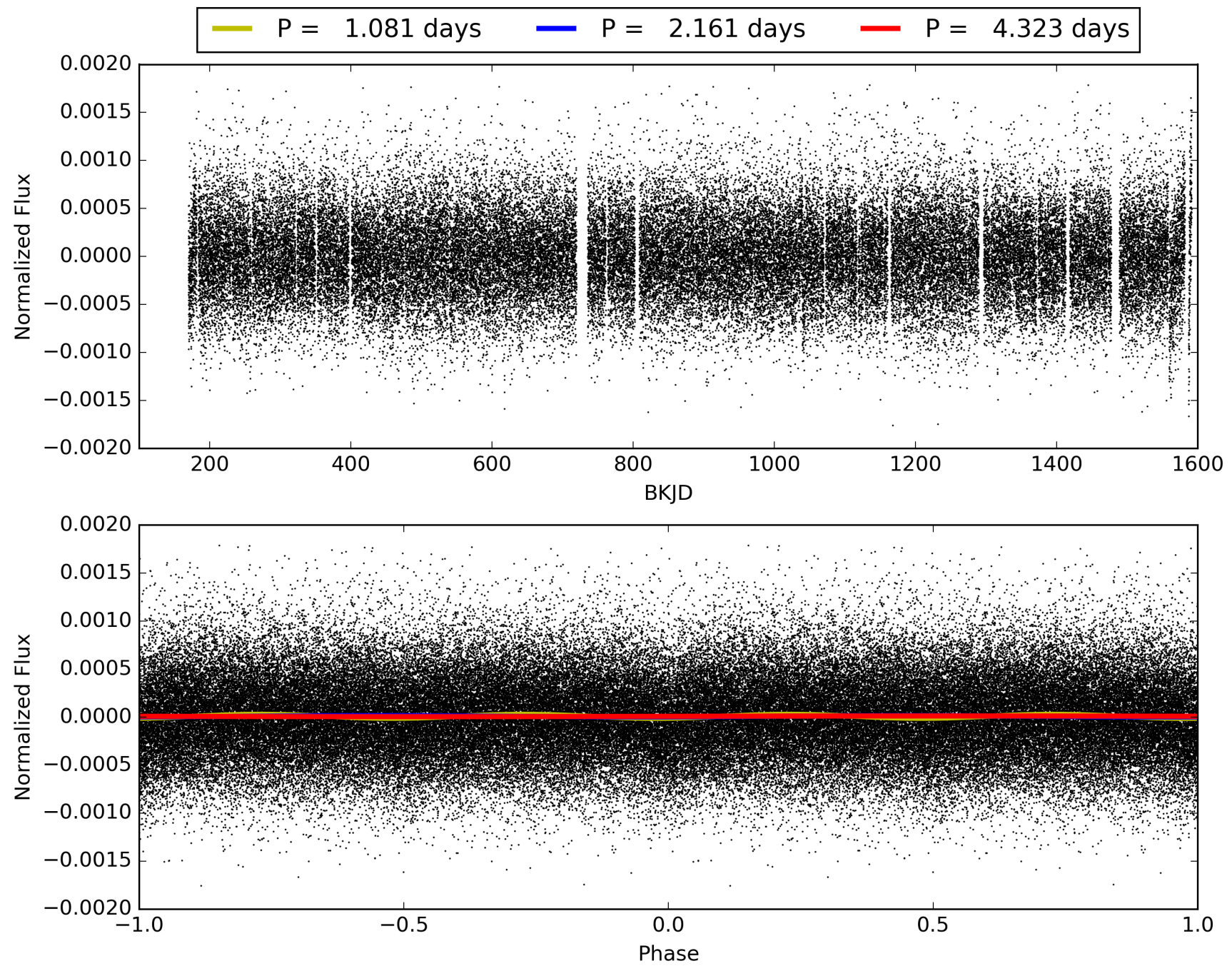
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.51e-25
RollingBand-fgt: 1.00 [591/591]
GhostDiagnostic-chr: 0.2568
Centroid-sig: 0.5%
Centroid-so: 3.980 arcsec [3.15σ]
OotOffset-rm: 2.943 arcsec [3.31σ]
KicOffset-rm: 3.368 arcsec [3.82σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.40 [6/15]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 011401869-01, PDC Light Curves

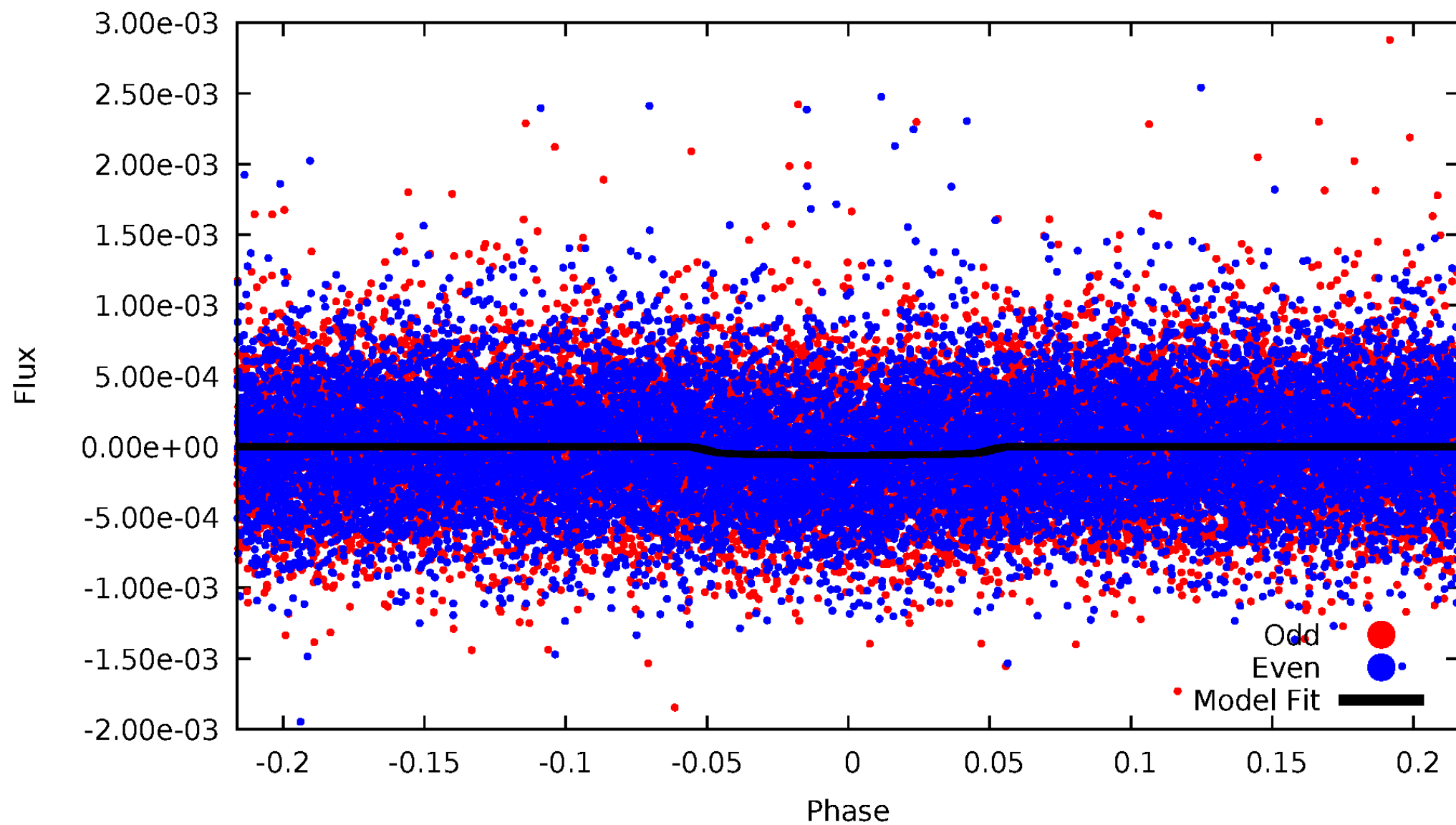


TCE 011401869-01



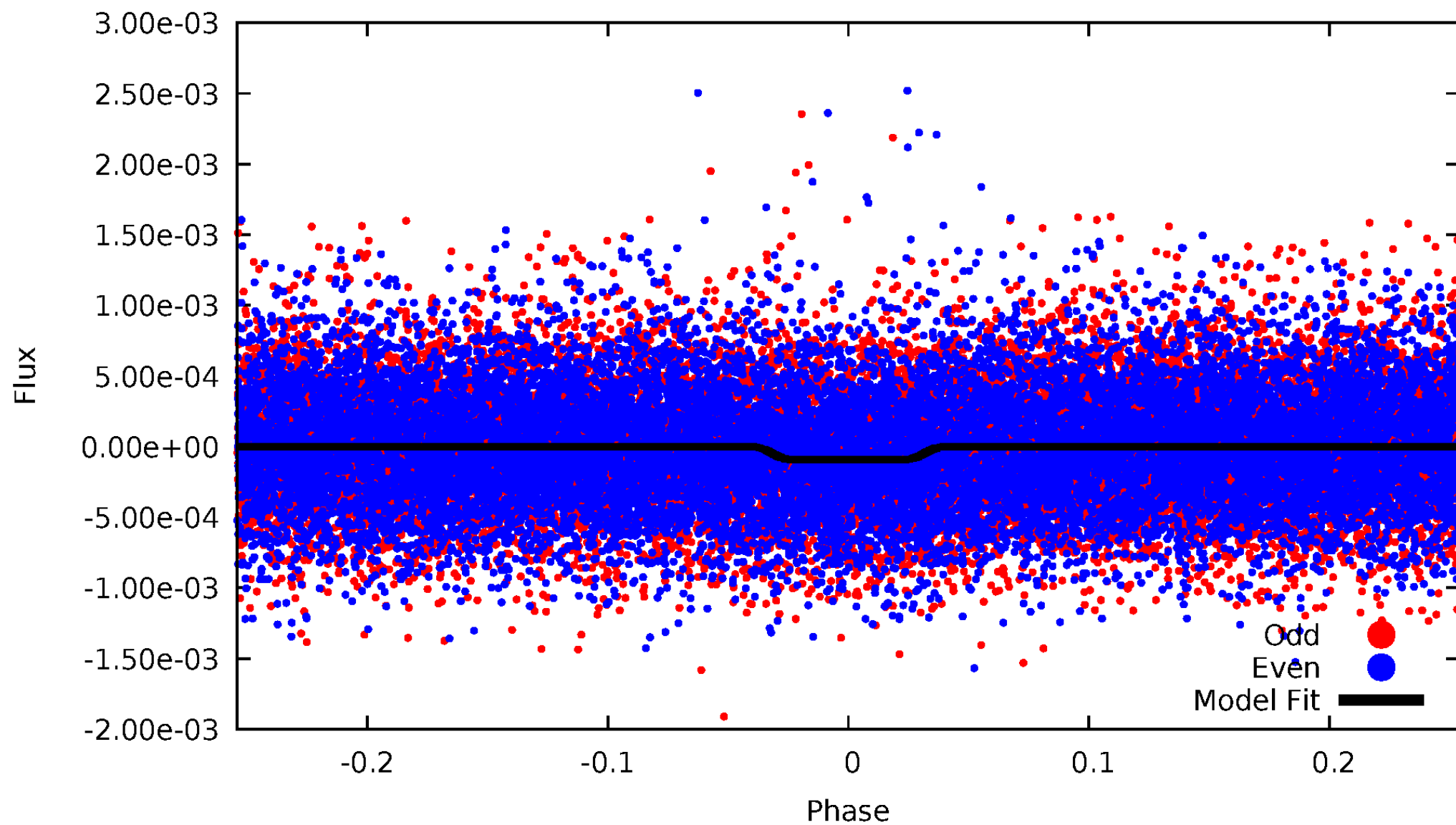
DV Odd/Even

TCE 011401869-01



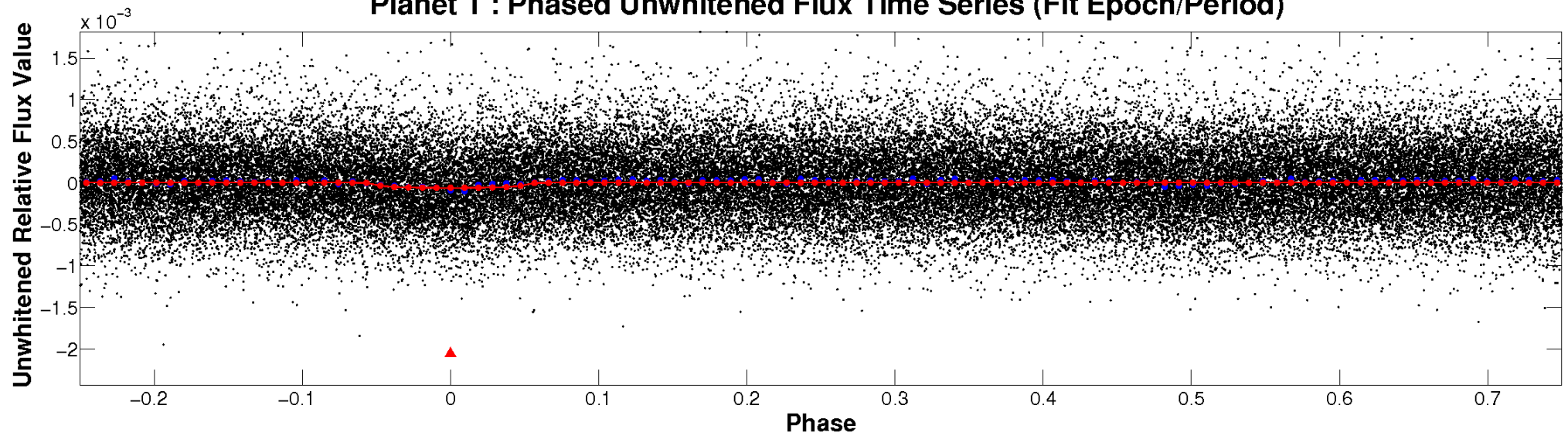
ALT Odd/Even

TCE 011401869-01

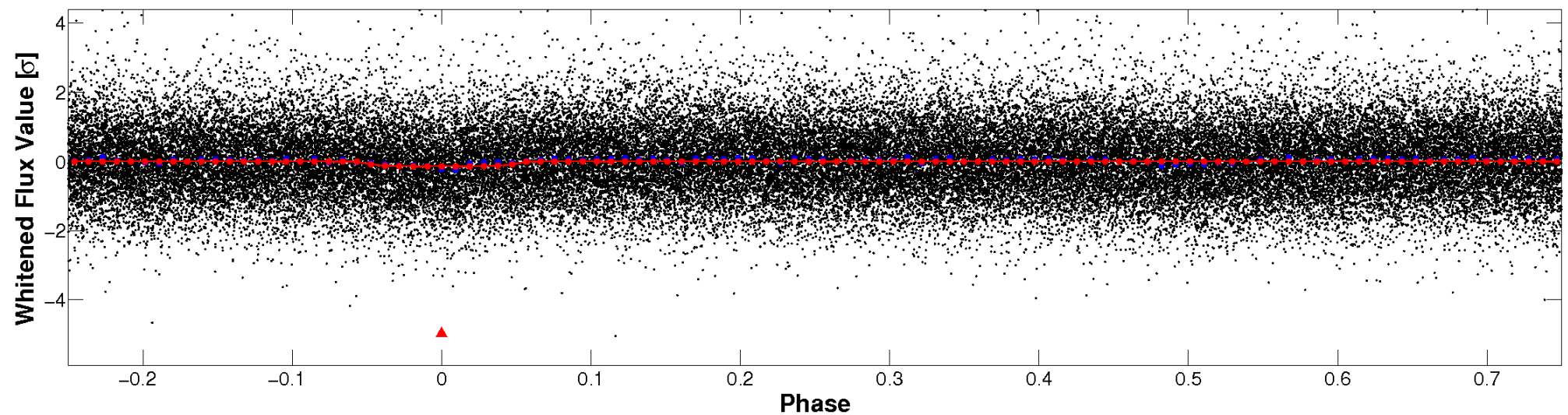


Non-Whitened Vs. Whitened Light Curve

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

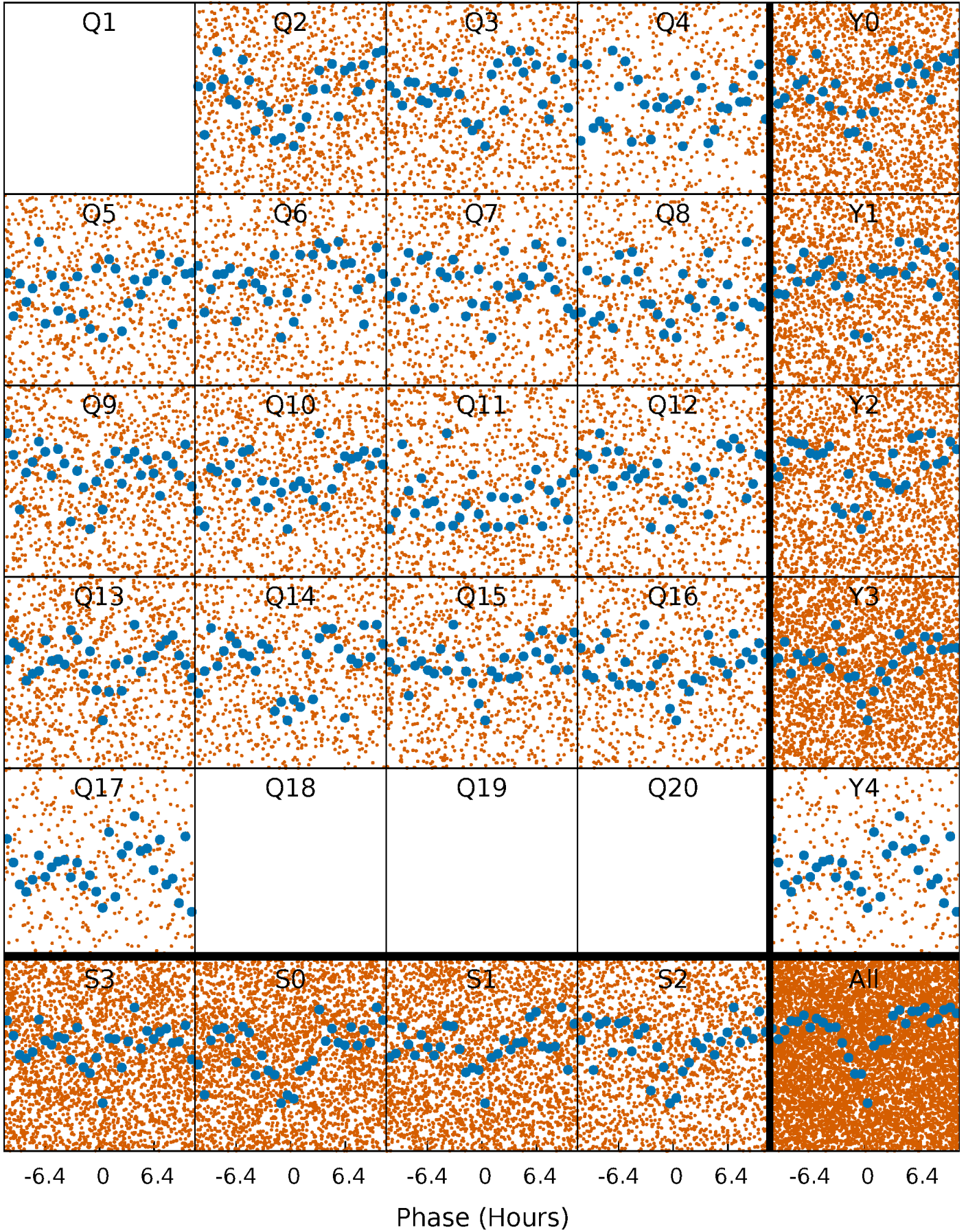


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



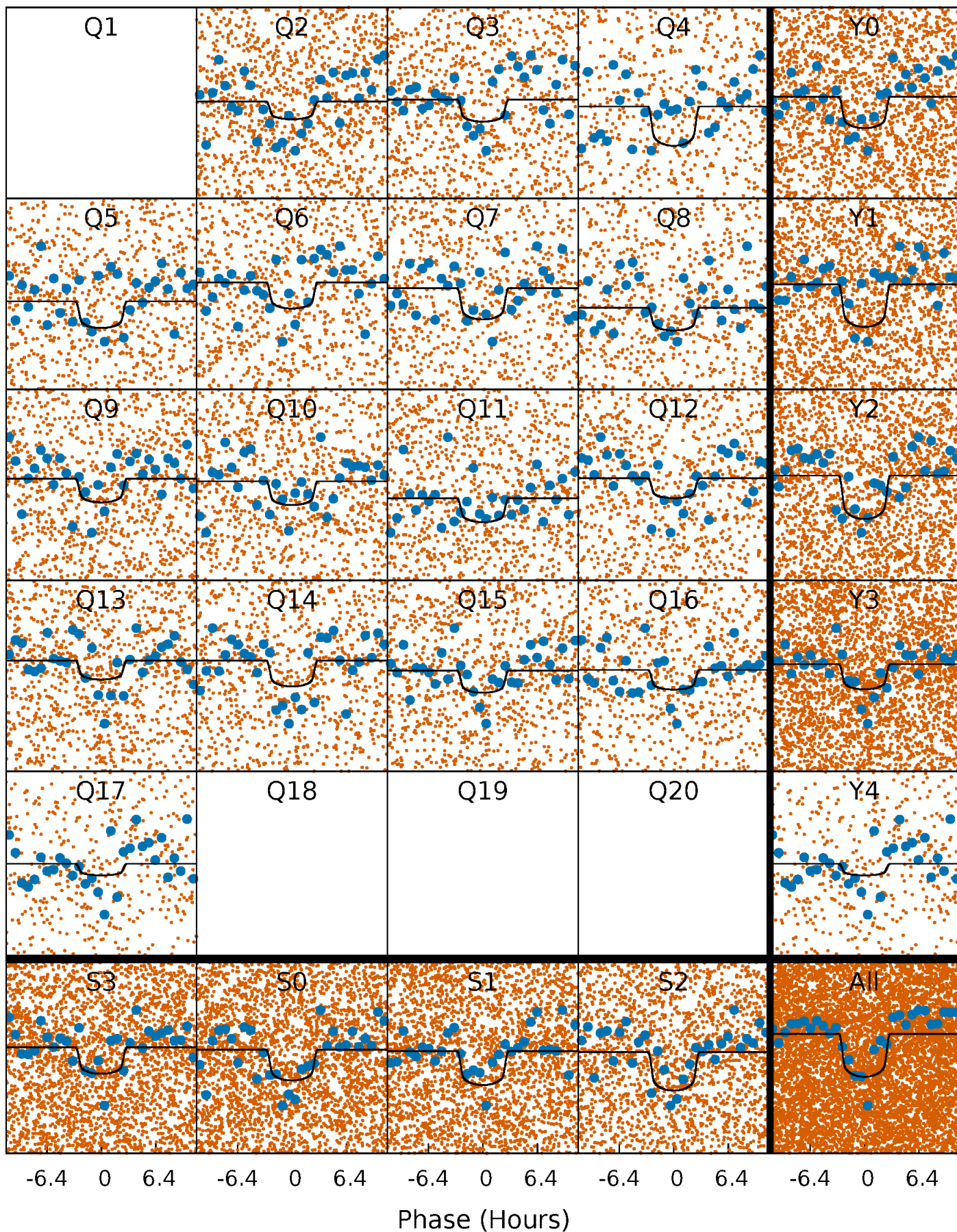
PDC Quarter-Phased Transit Curves

TCE 011401869-01 P= 2.161385 Days $T_0=131.876786$ (BKJD)



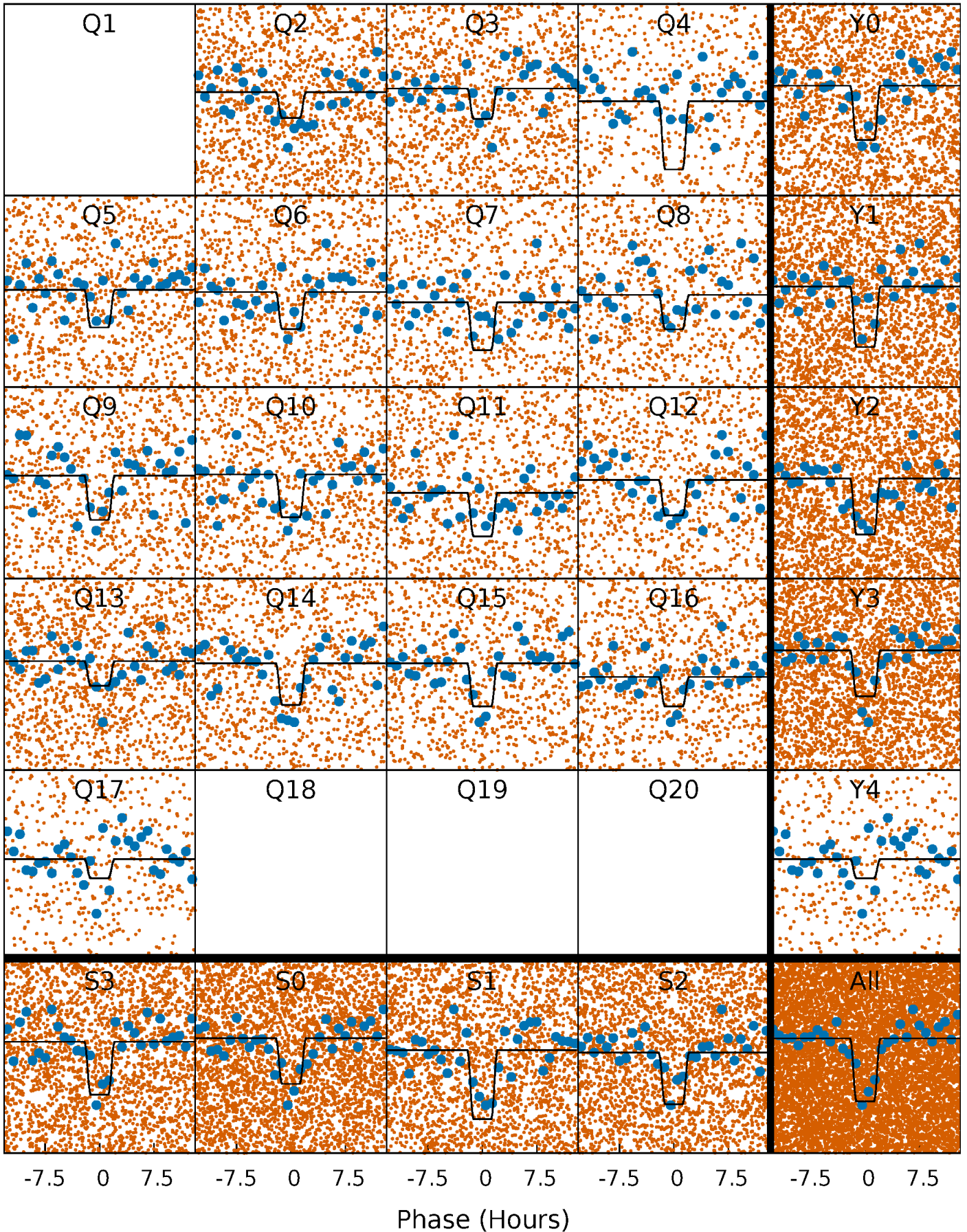
DV Quarter-Phased Transit Curves

TCE 011401869-01 P= 2.161385 Days $T_0=131.876786$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

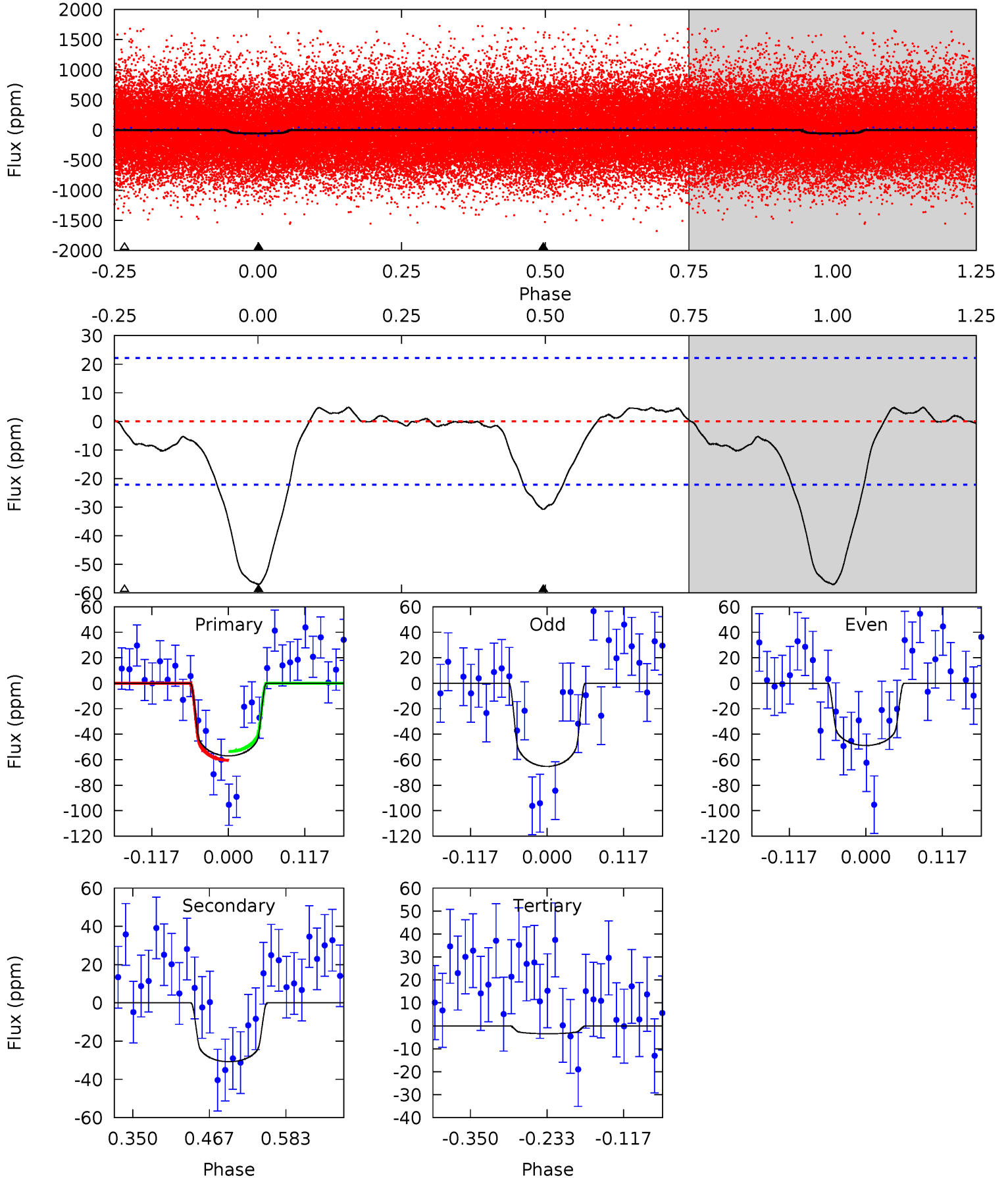
TCE 011401869-01 P= 2.161514 Days $T_0=131.814632$ (BKJD)



DV Model-Shift Uniqueness Test

011401869-01, P = 2.161385 Days, E = 131.876786 Days

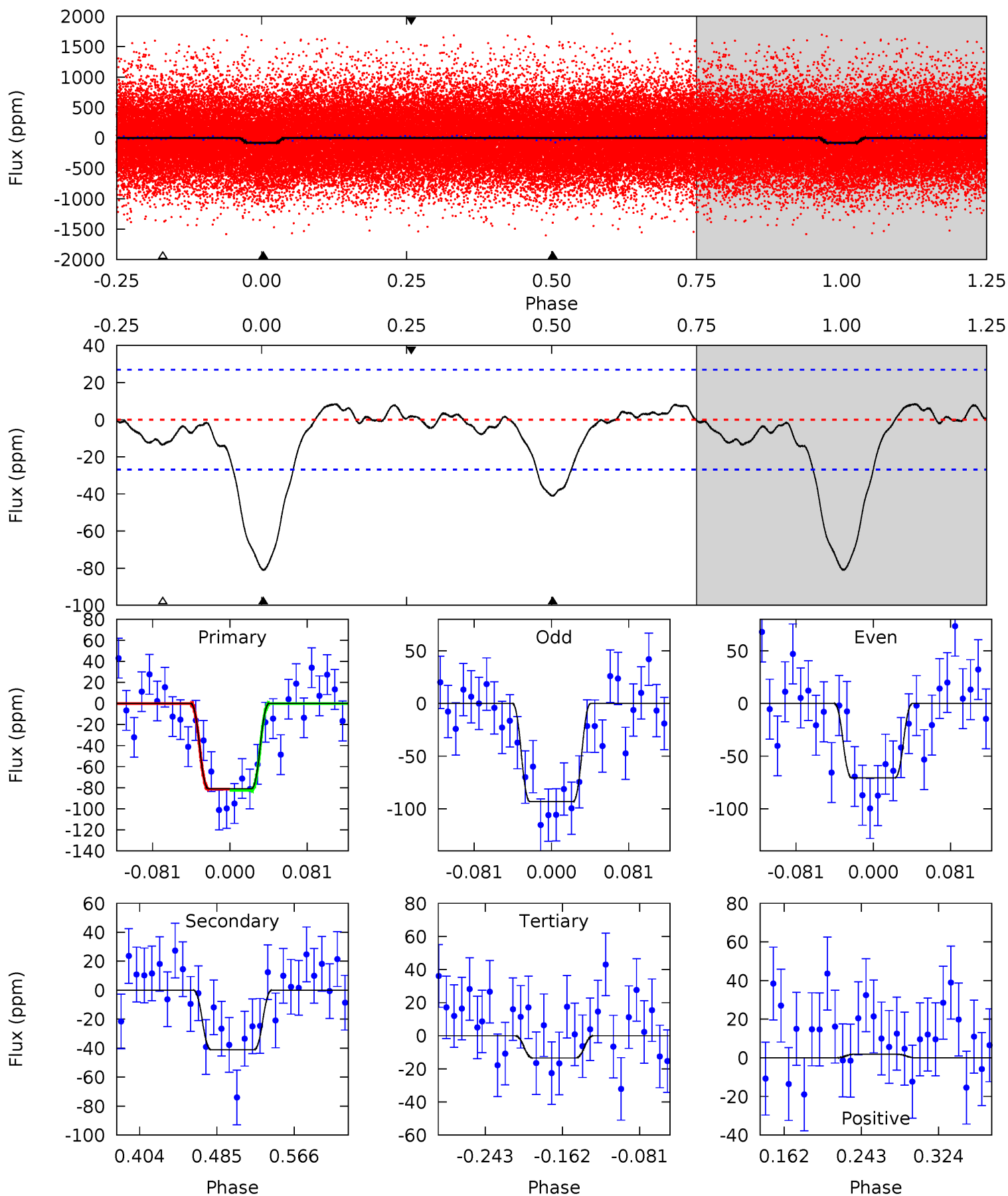
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	6.30	0.70	0	4.53	1.57	0.88	11.0	11.7	5.59	6.30	1.68	0.97	0.08	0.71



Alt Model-Shift Uniqueness Test

011401869-01, P = 2.161514 Days, E = 131.814632 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	7.03	2.30	0.32	4.61	1.75	0.91	11.6	13.5	4.73	6.72	1.93	0.99	0.09	0.10



Stellar Parameters For KIC 011401869

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6047^{+198}_{-216}	$4.422^{+0.087}_{-0.203}$	$-0.200^{+0.250}_{-0.300}$	$1.013^{+0.311}_{-0.133}$	$0.988^{+0.143}_{-0.117}$	$1.339^{+0.521}_{-0.721}$
	+3%/-4%	+2%/-5%	+125%/-150%	+31%/-13%	+14%/-12%	+39%/-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 011401869-01 / KOI 7443.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-31 ± 5	$0.98^{+0.41}_{-0.35}$	2098^{+172}_{-112}	4905^{+1146}_{-609}	18^{+31}_{-9}
Alt.	-41 ± 6	$1.12^{+0.37}_{-0.36}$	2110^{+156}_{-119}	4953^{+984}_{-542}	19^{+24}_{-8}

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

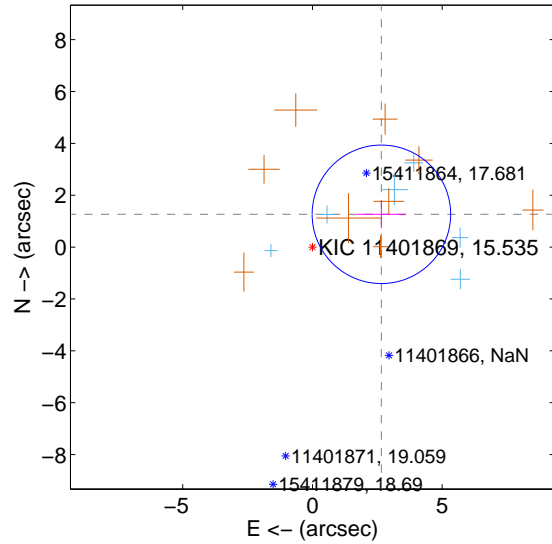
Supplemental centroid analysis for 011401869-01. Kepler magnitude: 15.54. Transit SNR 9.91

There are 6 quarters with good PRF difference image offsets

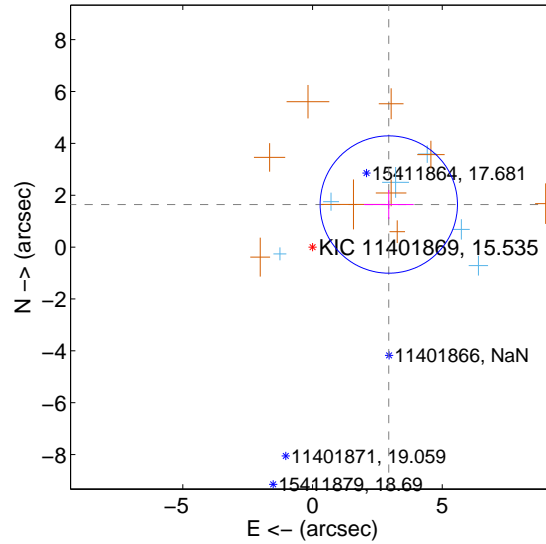
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.943 ± 0.890	3.31	-2.658 ± 0.952	1.264 ± 0.533
PRF-fit source offset from KIC position	3.368 ± 0.882	3.82	-2.940 ± 0.961	1.642 ± 0.560
photometric centroid source offset	3.98 ± 1.27	3.15	-3.84 ± 1.26	-1.03 ± 1.31

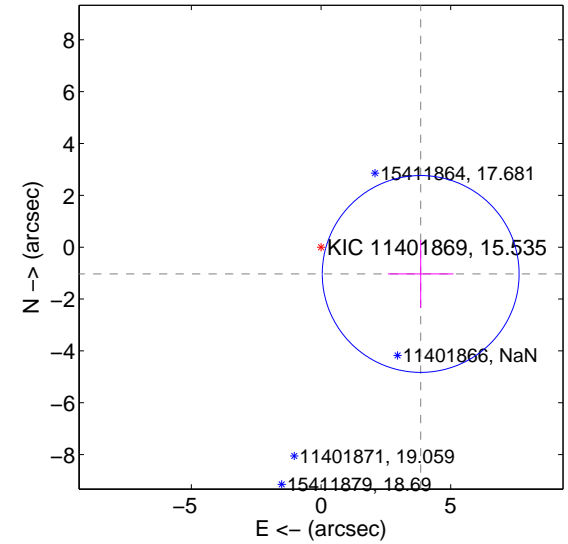
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

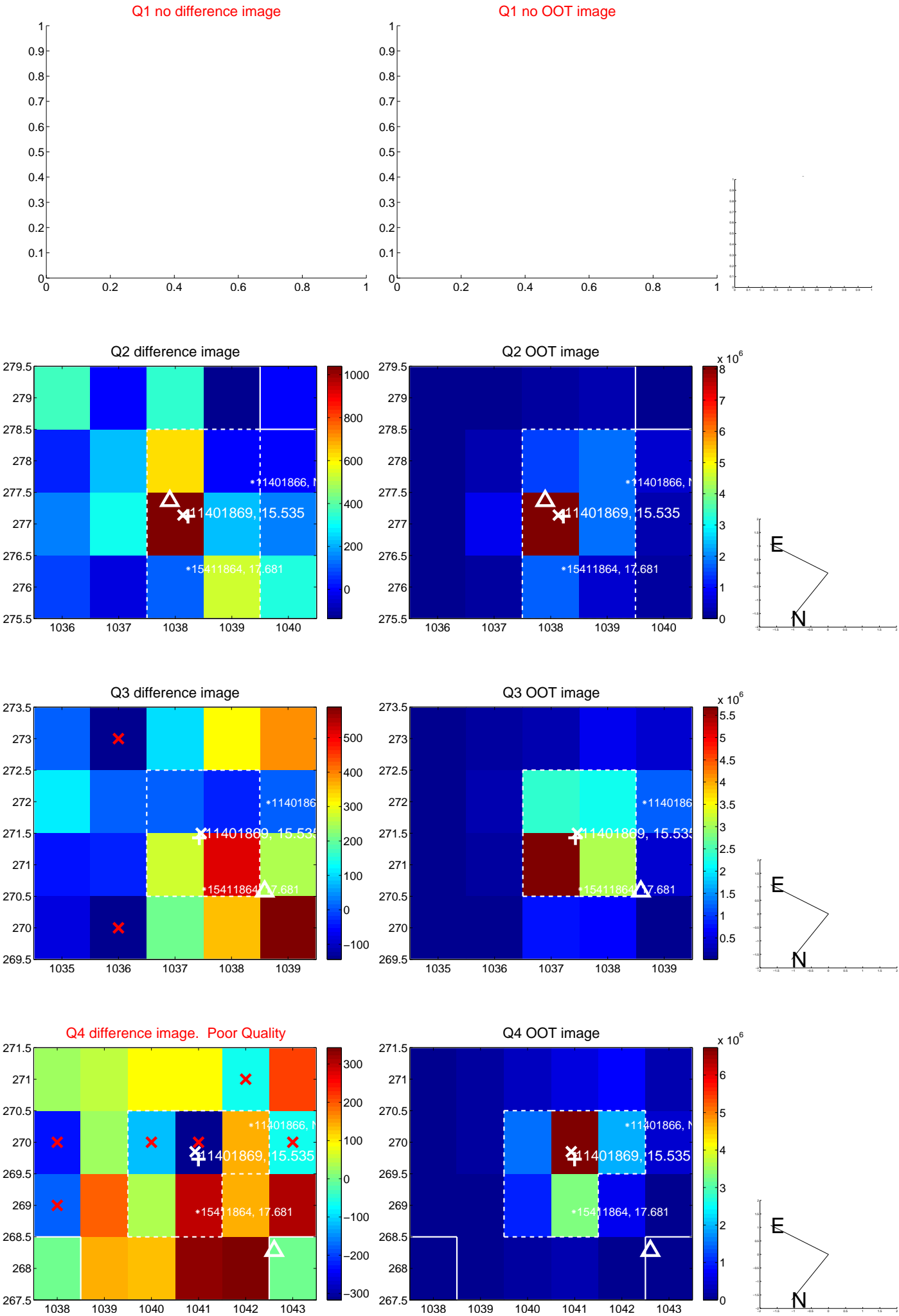


offset from photometric centroids

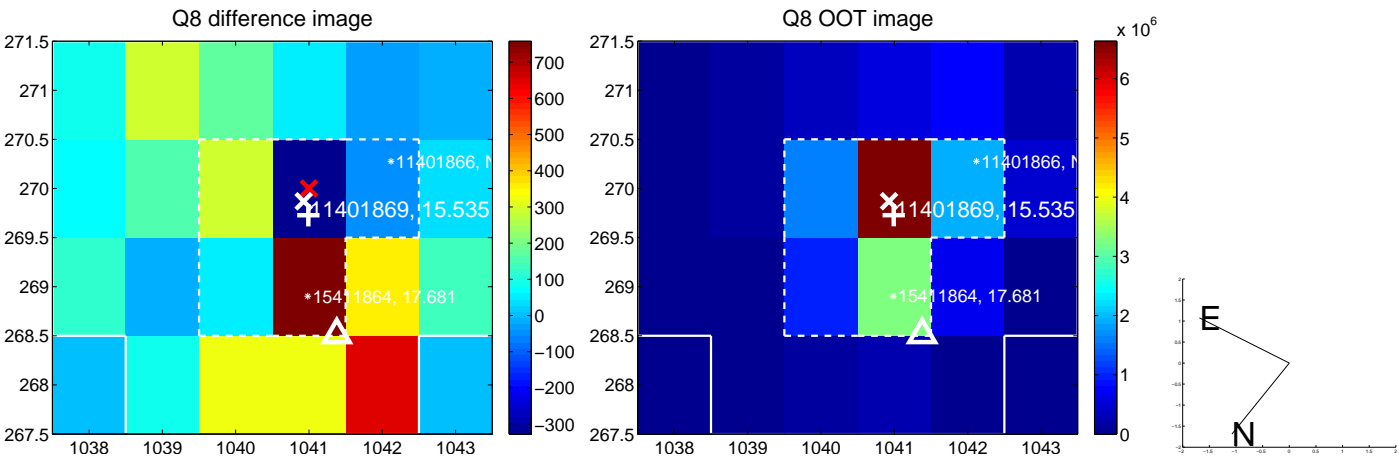
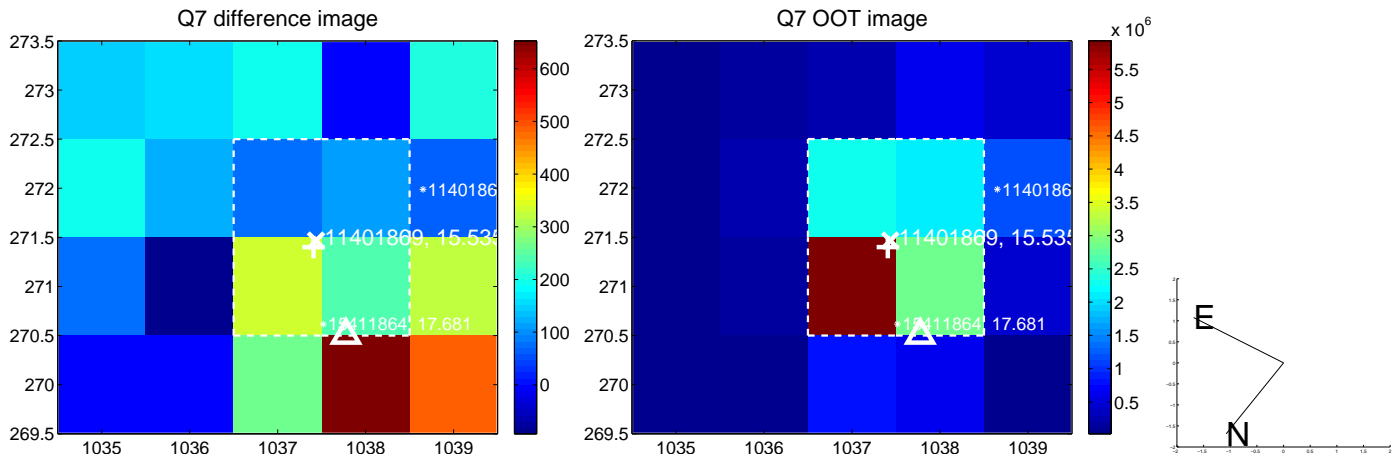
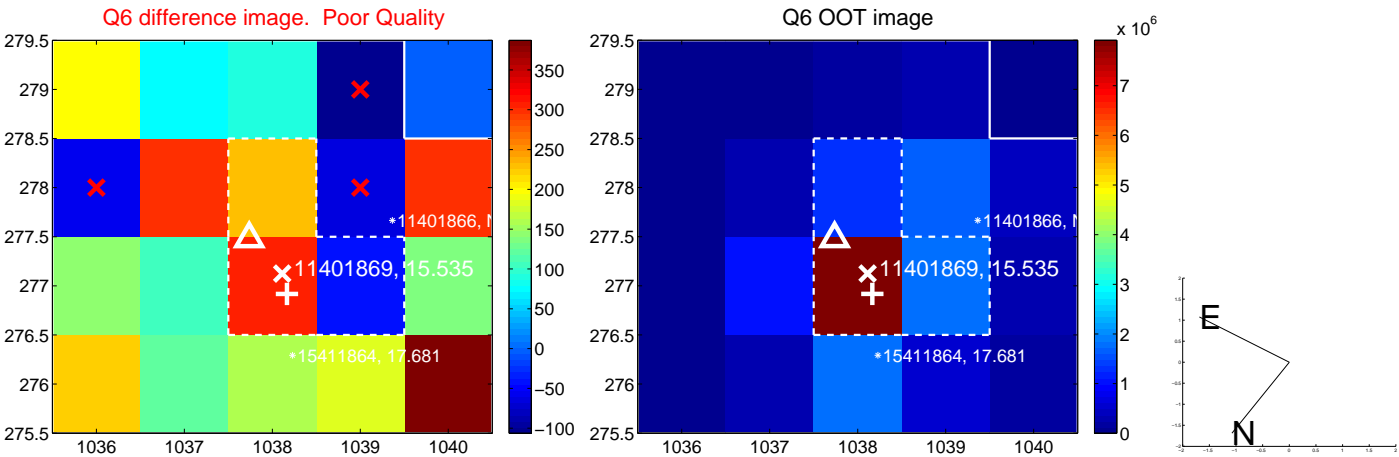
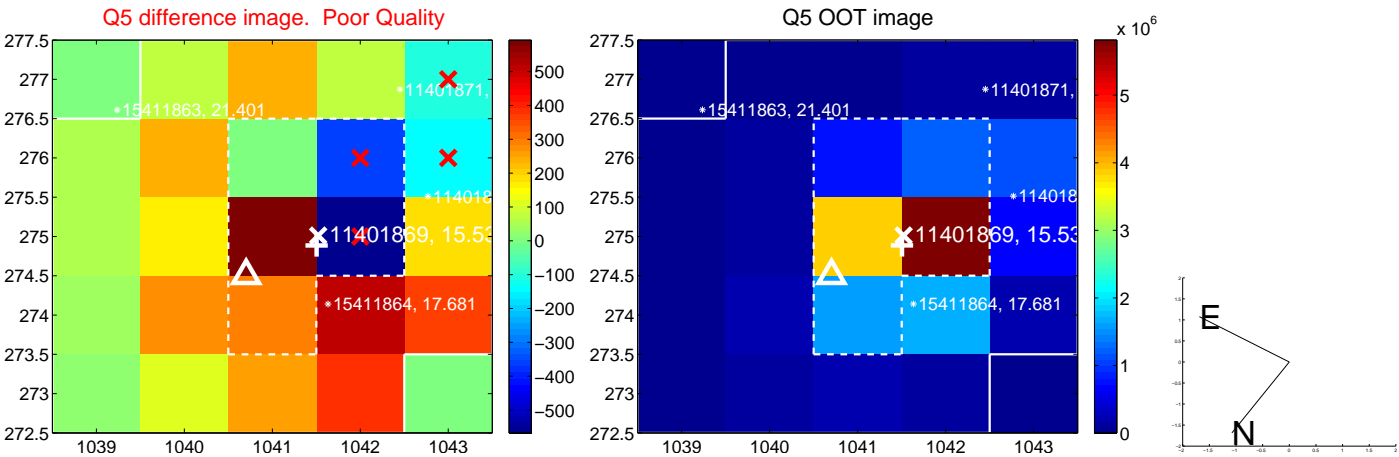


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

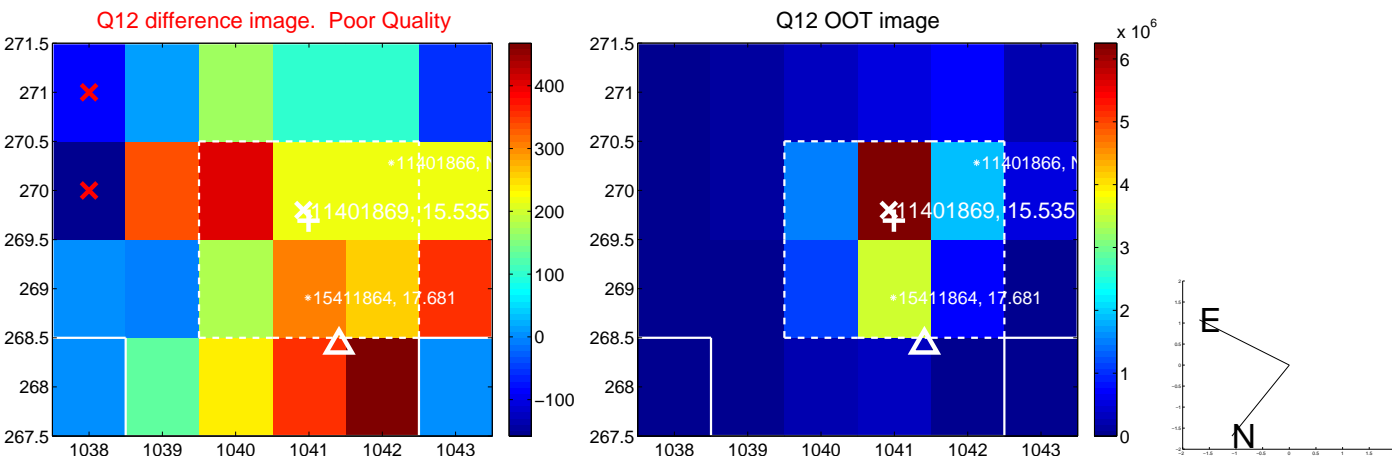
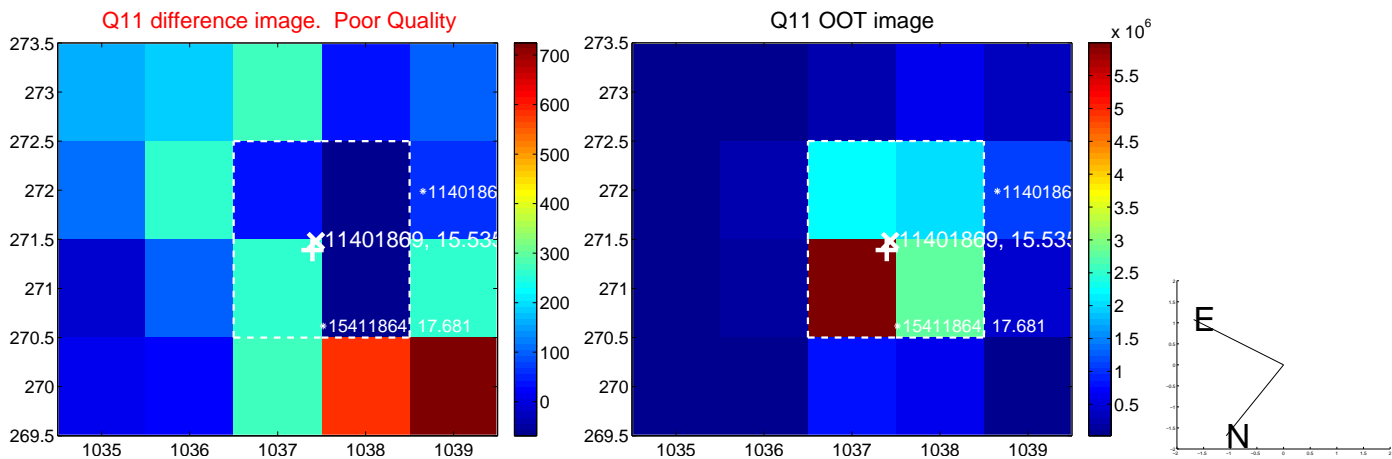
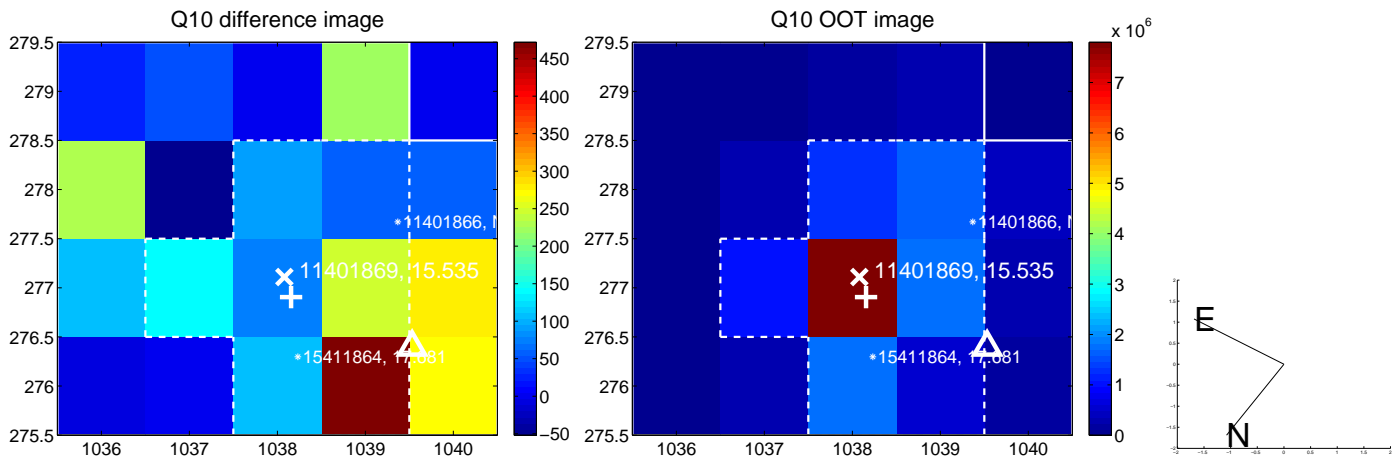
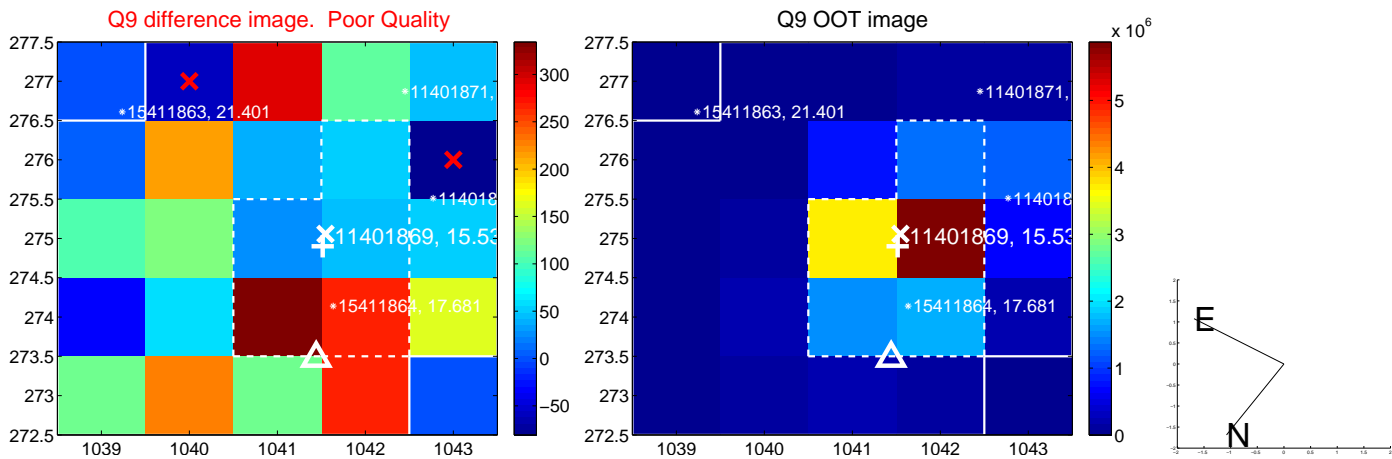
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



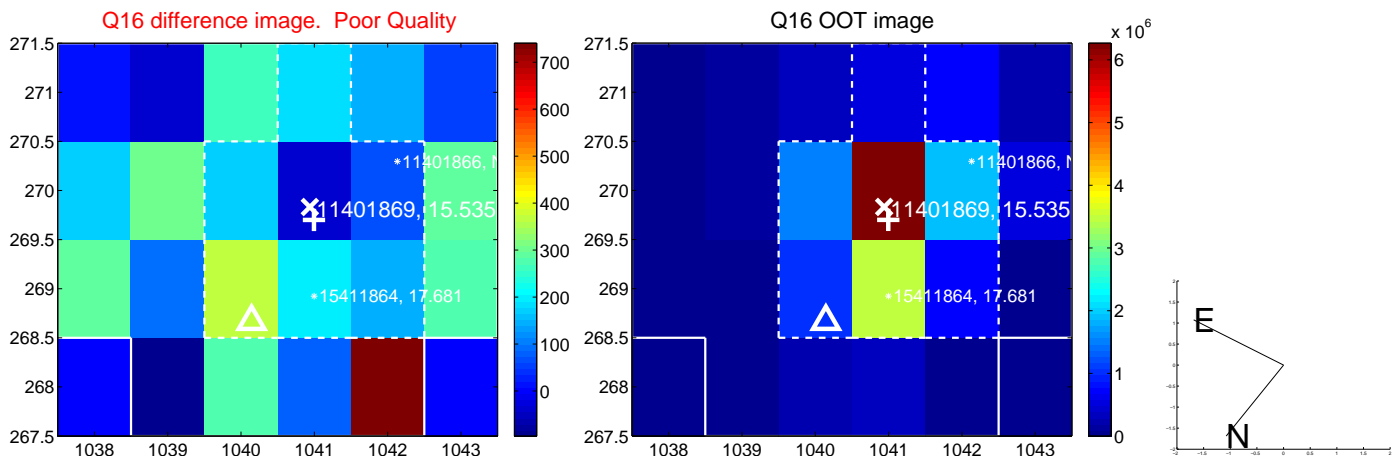
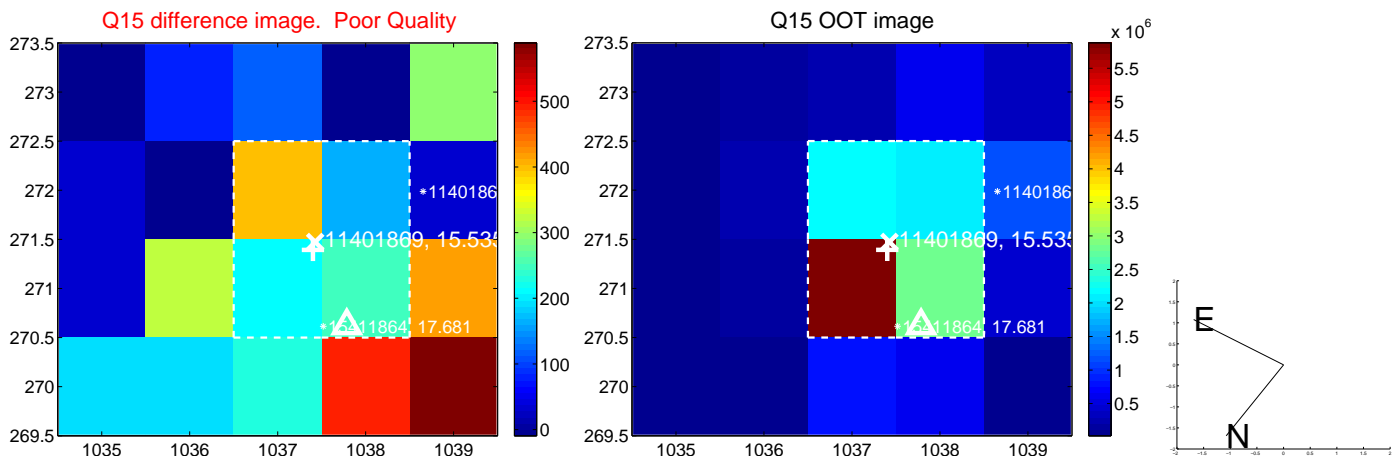
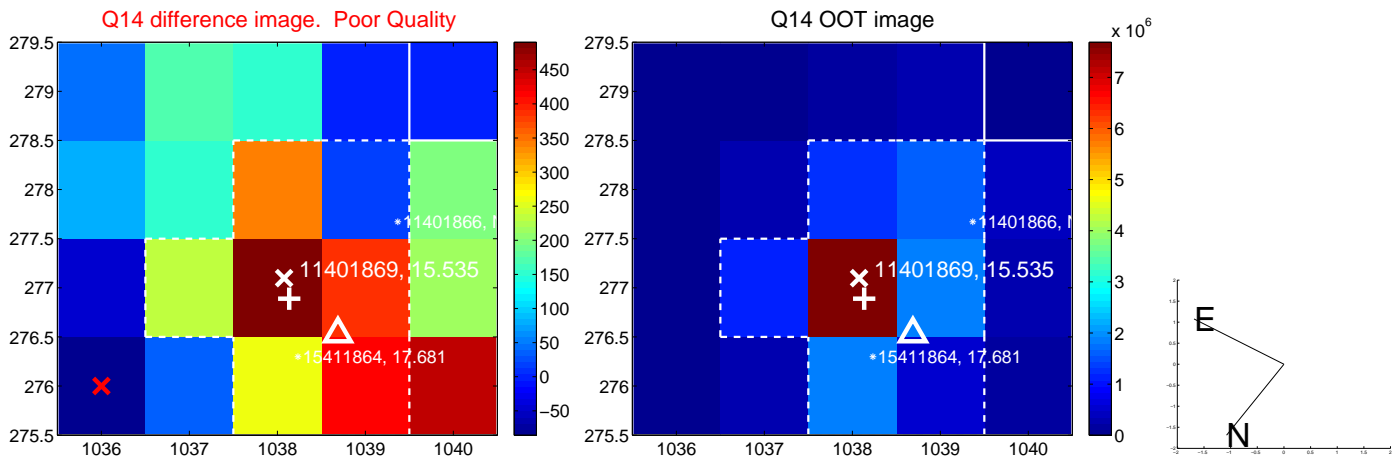
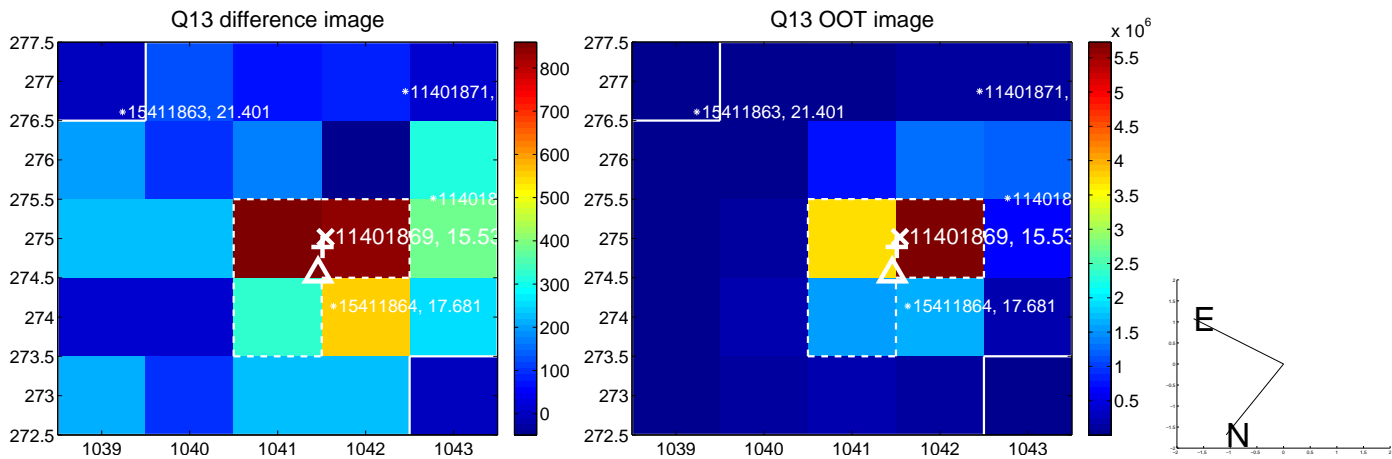
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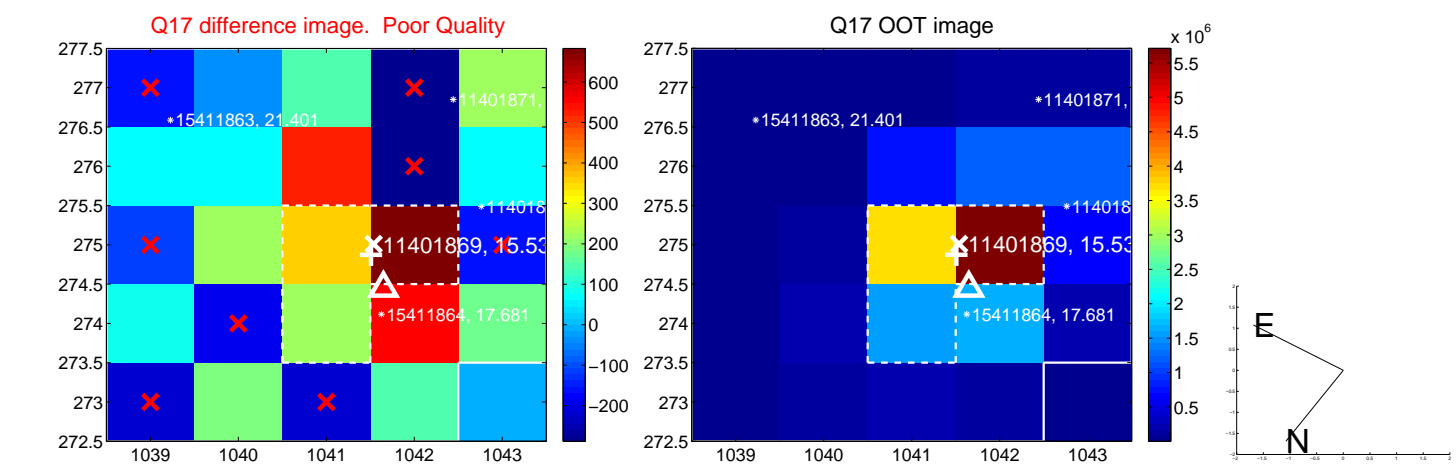
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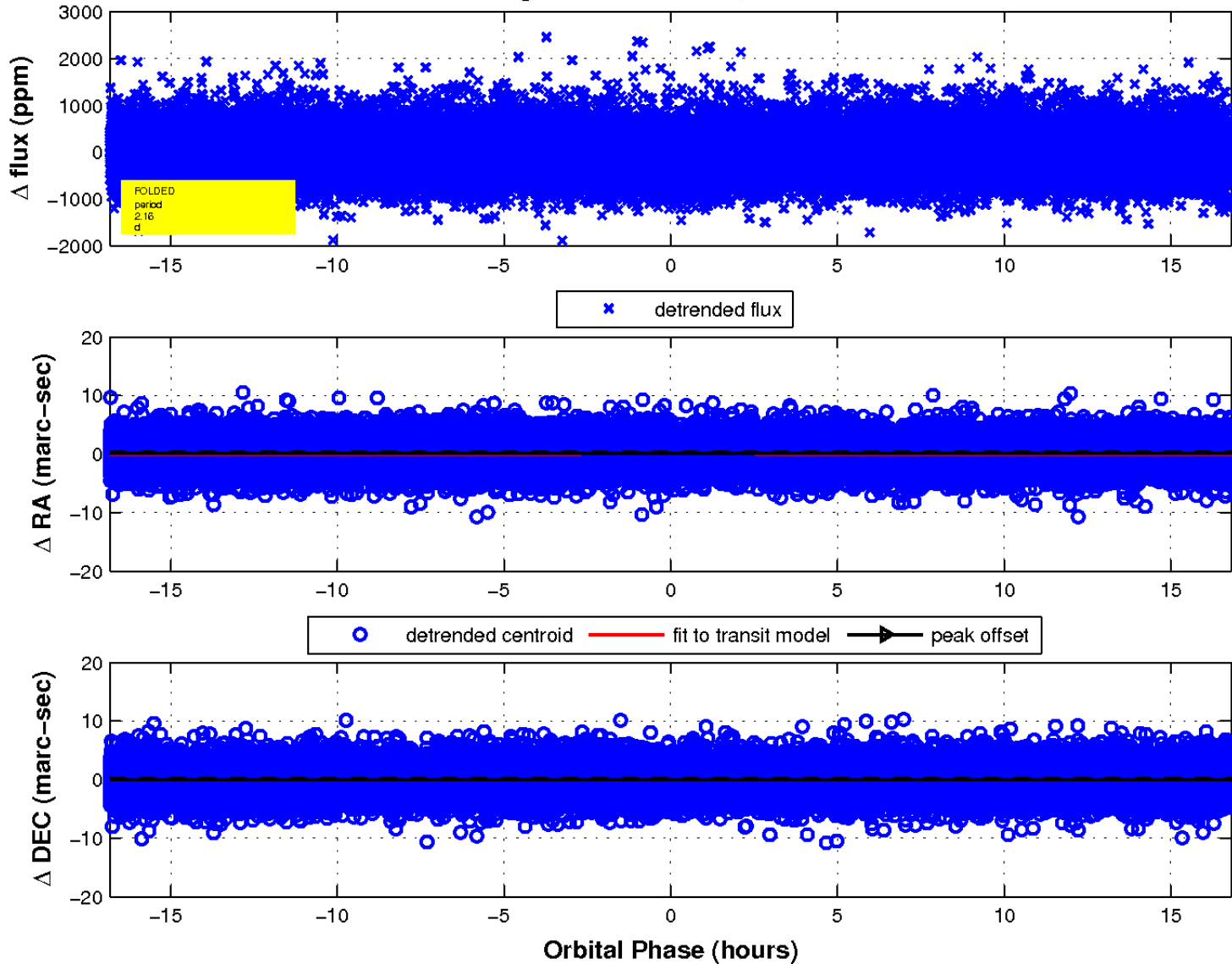
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

