

KIC 009840429

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})
009840429-01	OBS	No	0.878421	132.126048	34.3	3.663	7.6	4.3	0.84	5662	0.51	2108.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009840429-01	OBS	FP	0.00	1	0	1	1	LPP_DV—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.

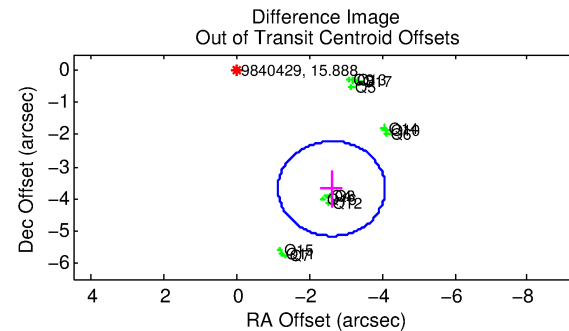
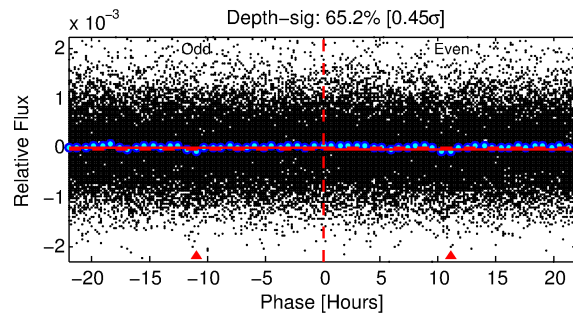
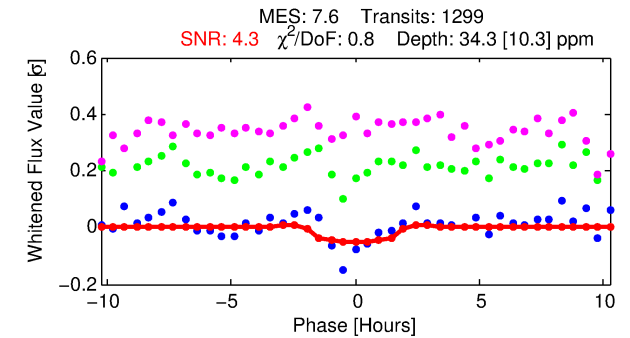
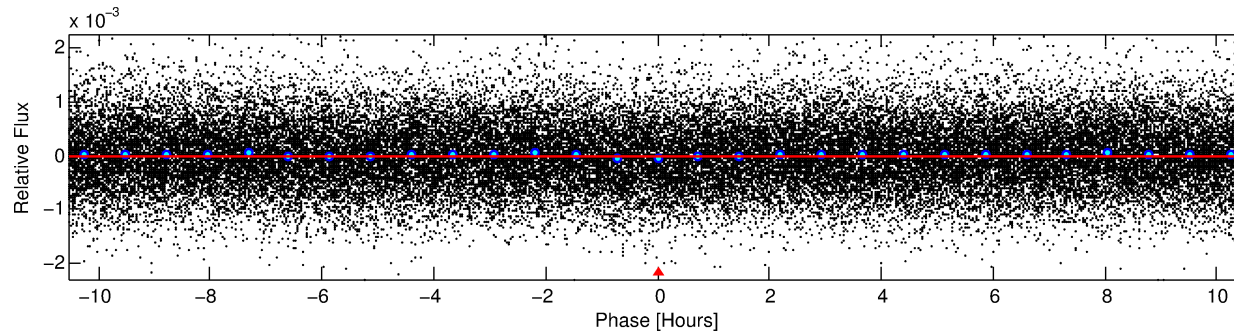
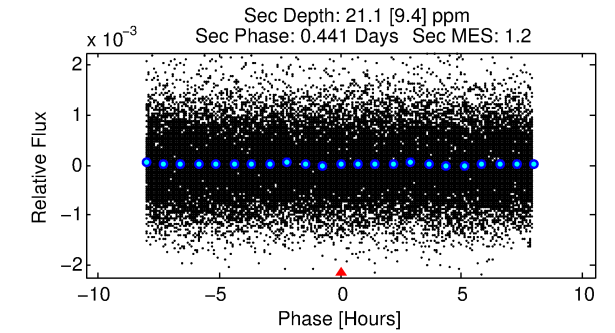
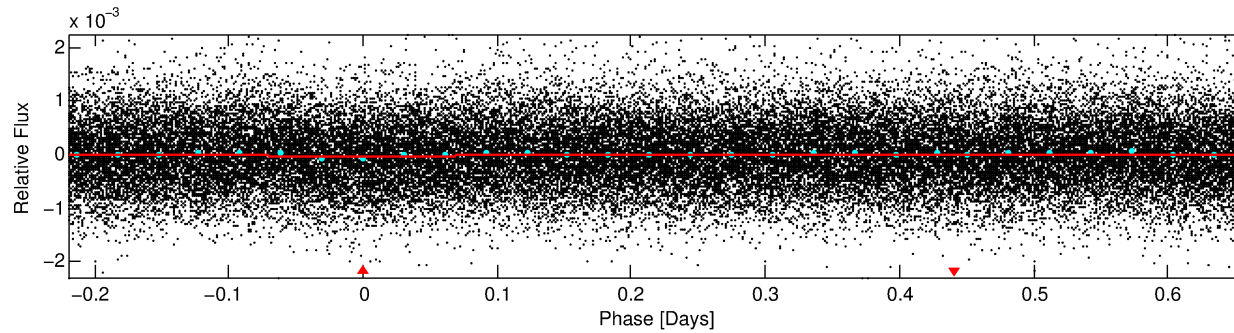
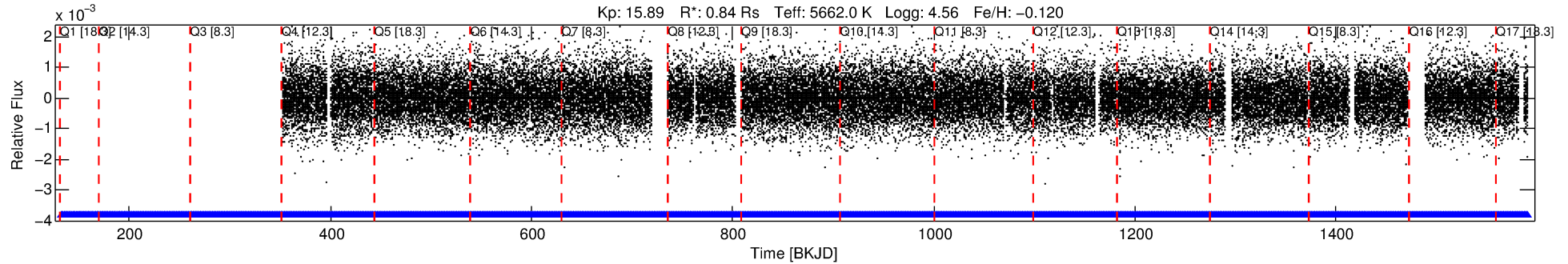
Ephemeris Match Information For 009840429-01

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
009840429-01	9840429	009840412-pri	9840412	1:1	19.8	-4	-3	12.84	15.88	5561.80	Direct-PRF	0	3.81	2.15

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: 9840429 Candidate: 1 of 1 Period: 0.878 d



DV Fit Results:

Period = 0.87842 [0.00002] d
Epoch = 132.1260 [0.0098] BKJD
Rp/R* = 0.0055 [0.0072]
a/R* = 1.73 [6.41]
b = 0.53 [7.66]
Seff = 2108.74 [678.08]
Teq = 1728 [139] K
Rp = 0.51 [0.67] Re
a = 0.0176 [0.0035] AU
Ag = 14.03 [37.16] [0.35σ]
Teffp = 5171 [3408] K [1.01σ]

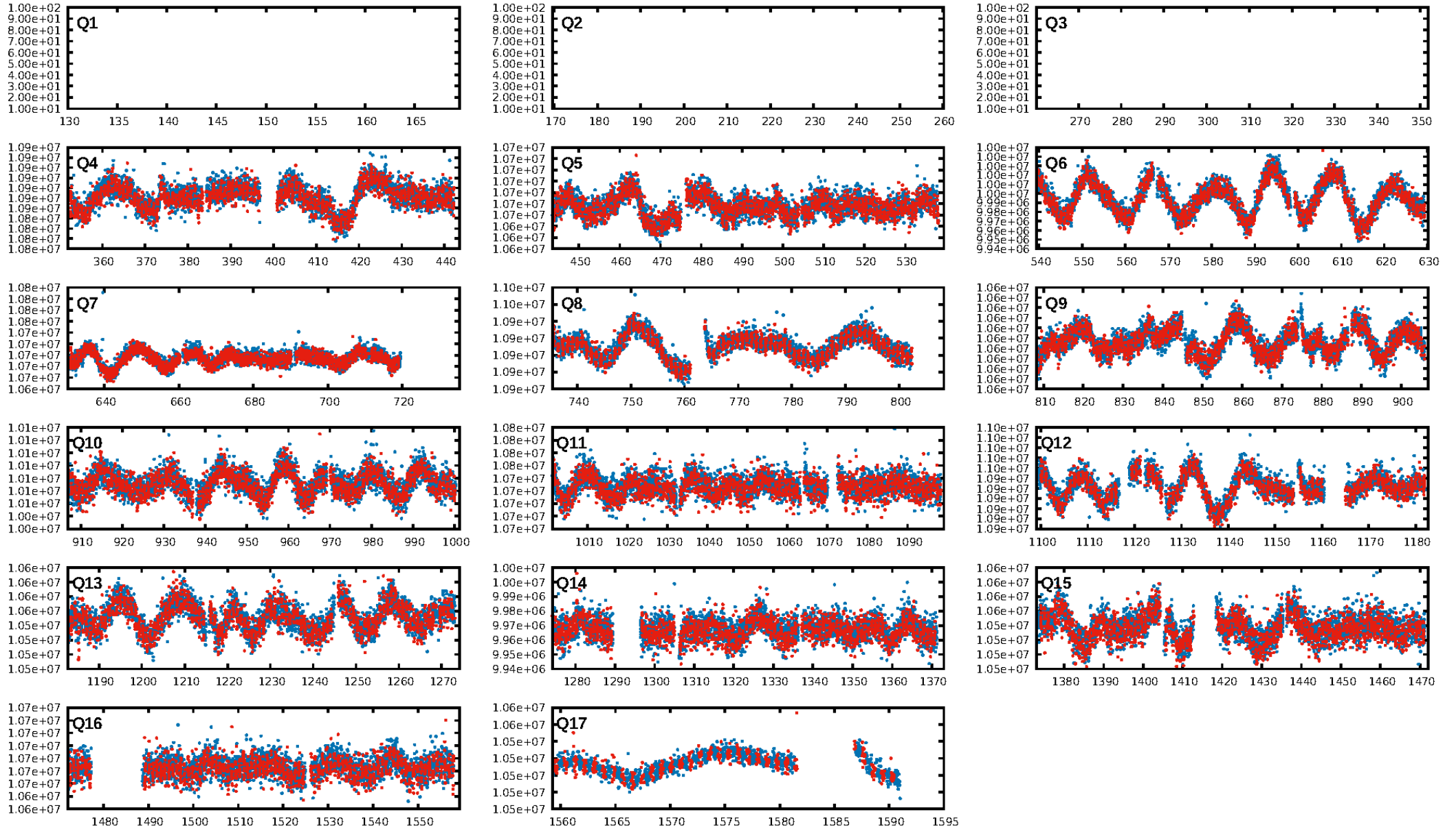
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.11e-13
RollingBand-fgt: 1.00 [1268/1268]
GhostDiagnostic-chr: -0.2256
Centroid-sig: 0.0%
Centroid-so: 10.729 arcsec [4.10σ]
OotOffset-rm: 4.519 arcsec [9.18σ]
KicOffset-rm: 4.535 arcsec [9.52σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:29:26 Z

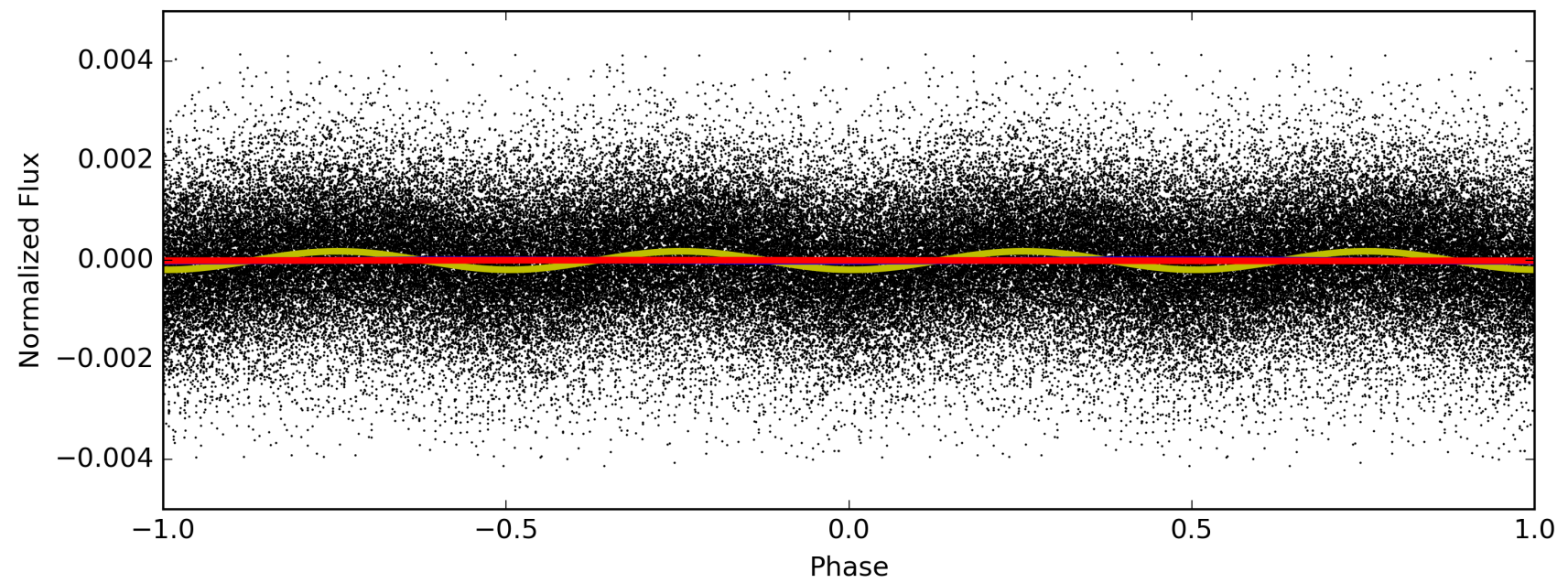
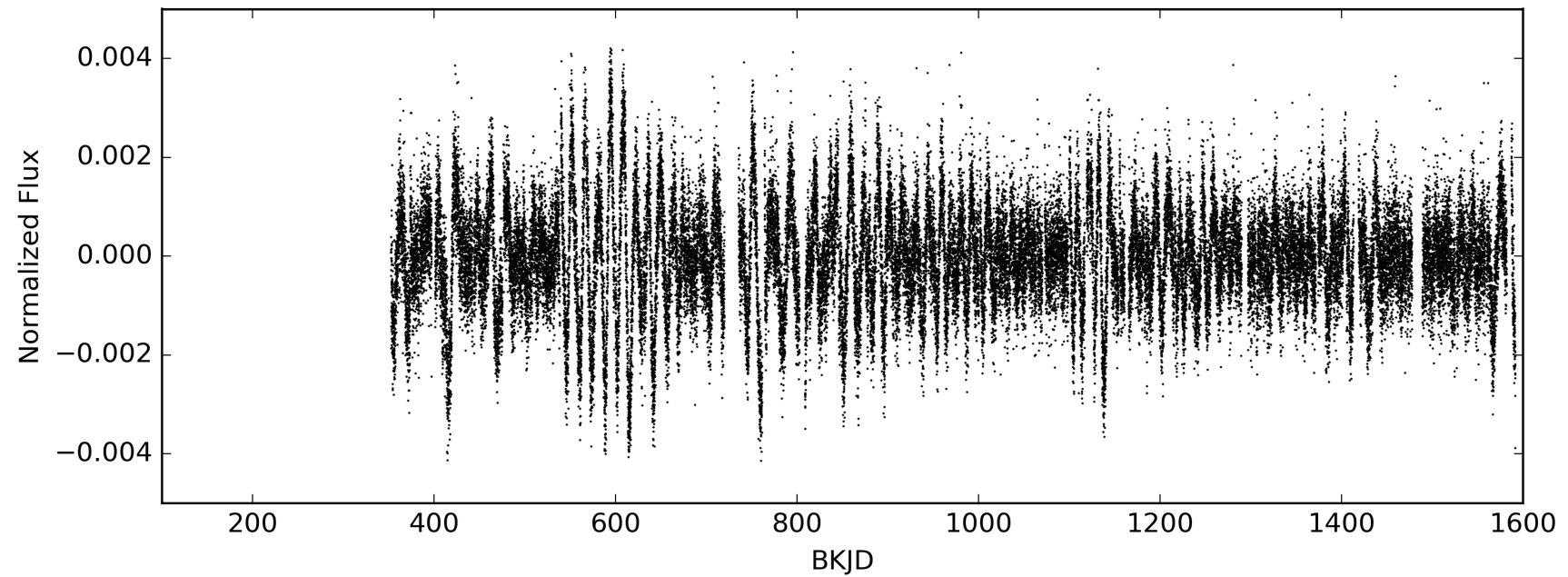
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009840429-01, PDC Light Curves



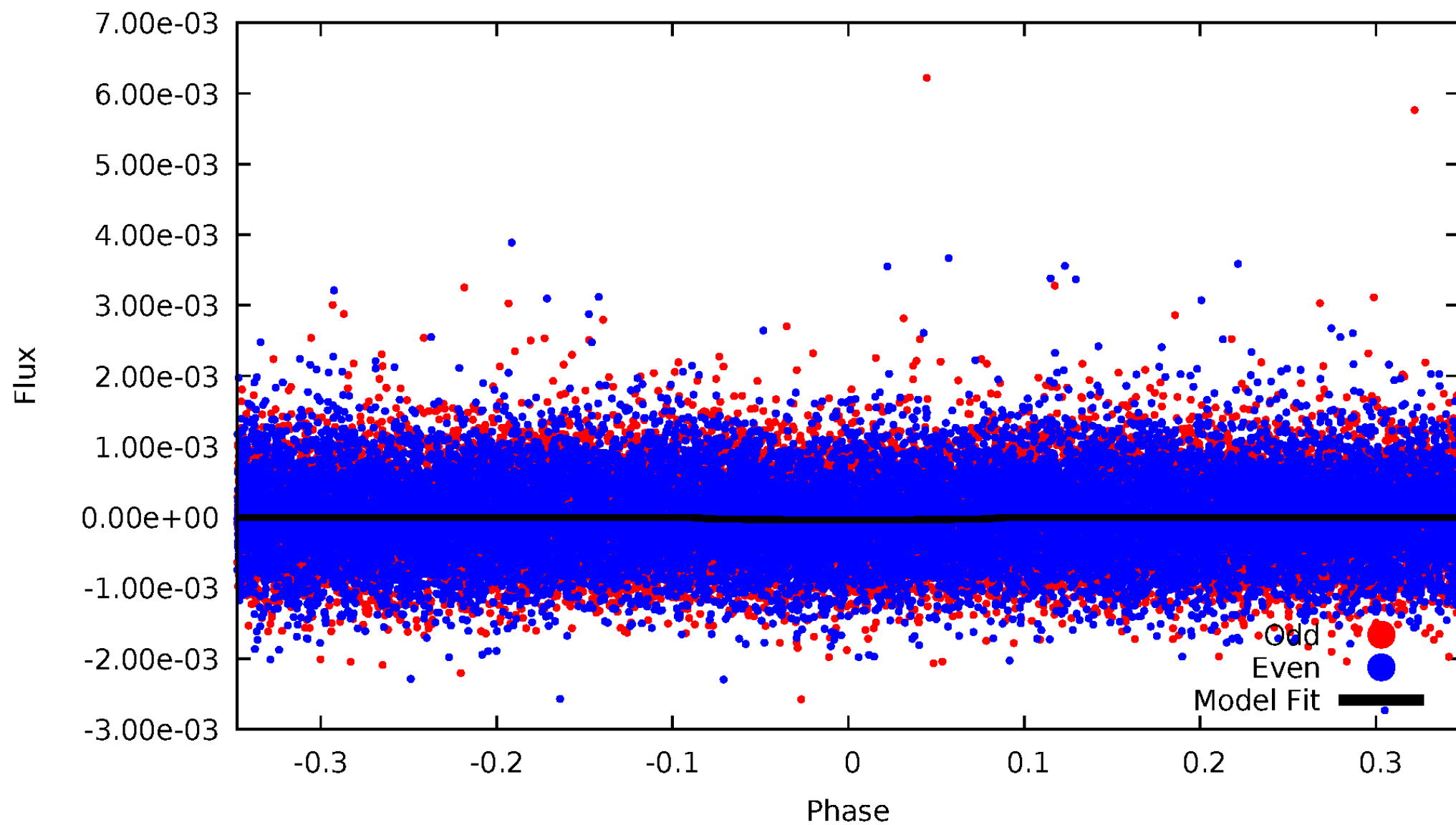
TCE 009840429-01

— P = 0.439 days — P = 0.878 days — P = 1.757 days



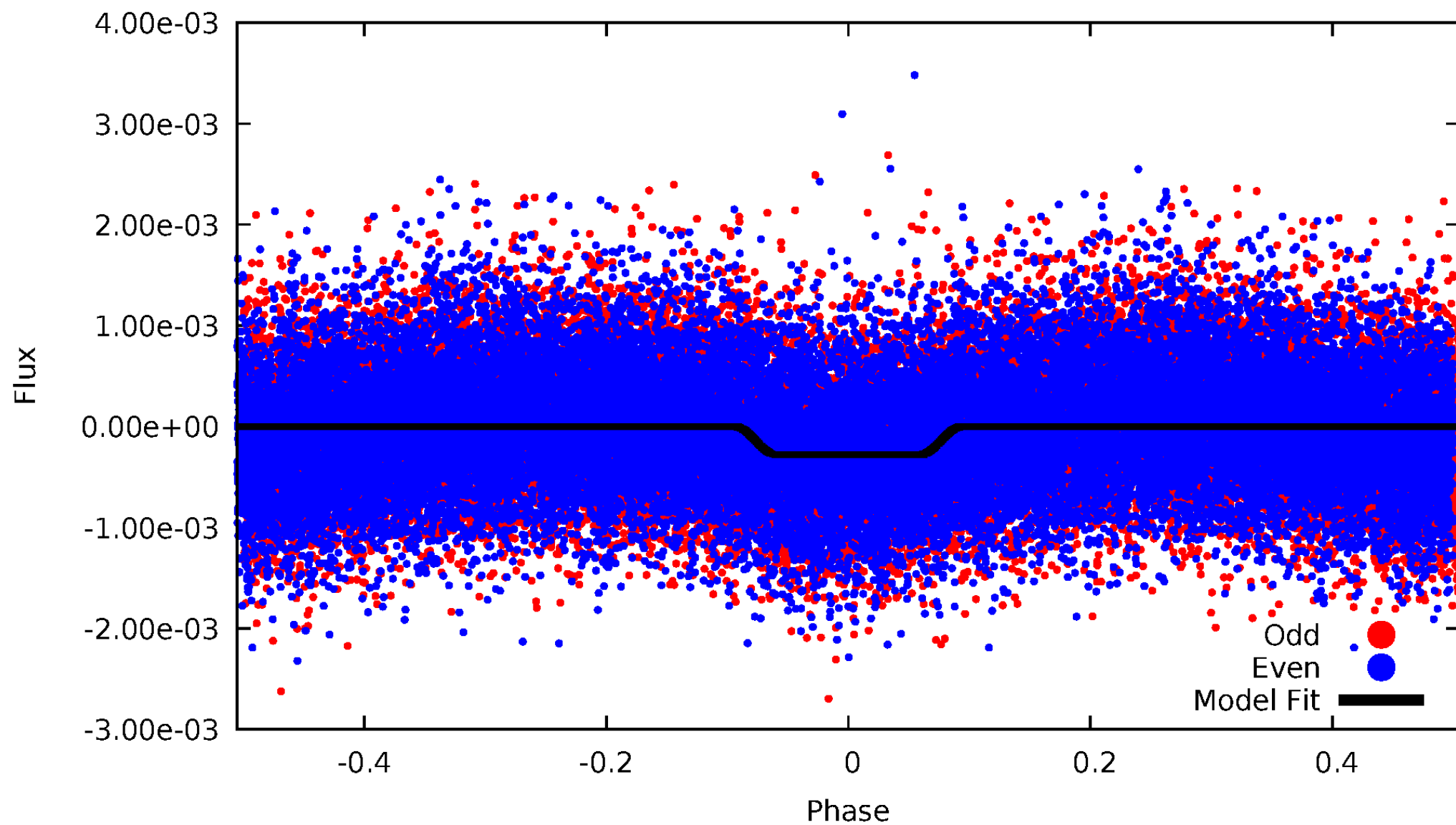
DV Odd/Even

TCE 009840429-01

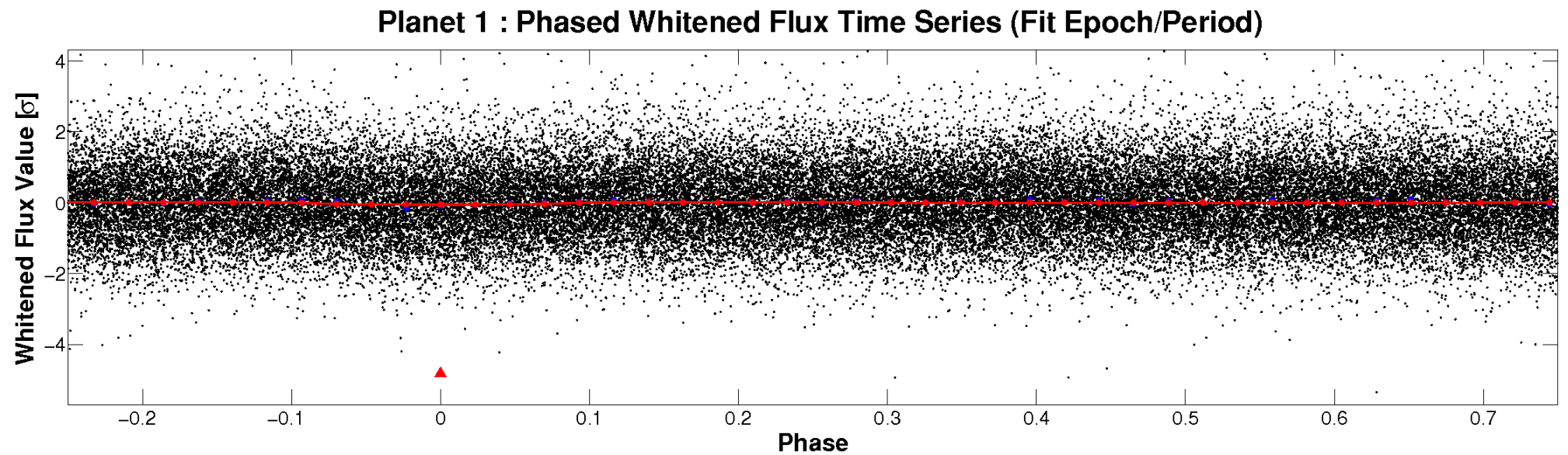
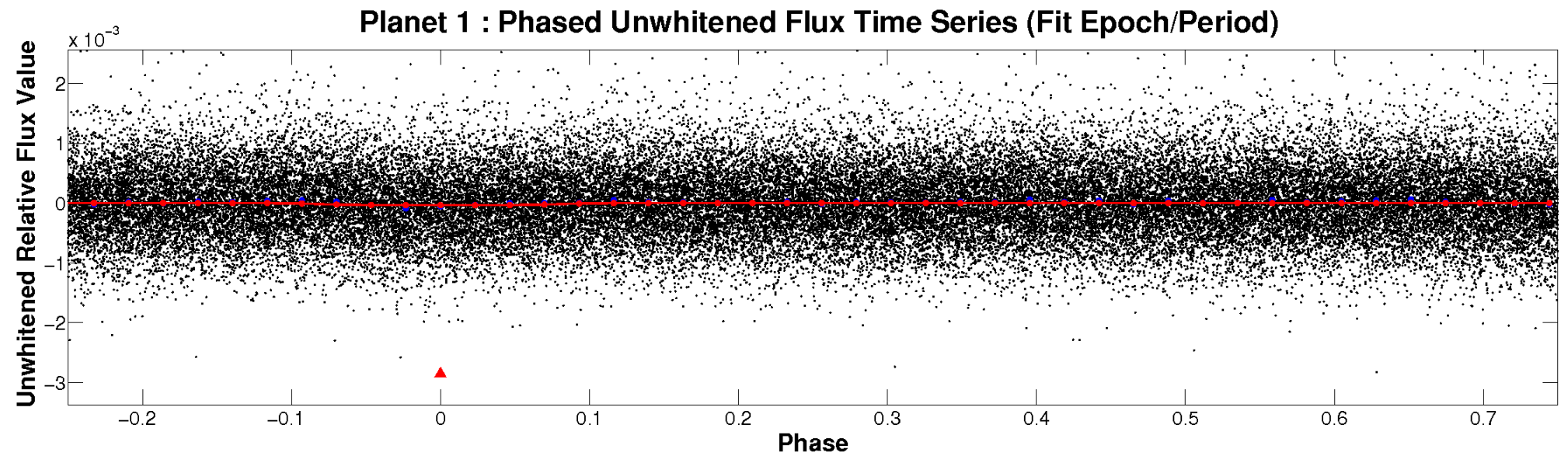


ALT Odd/Even

TCE 009840429-01

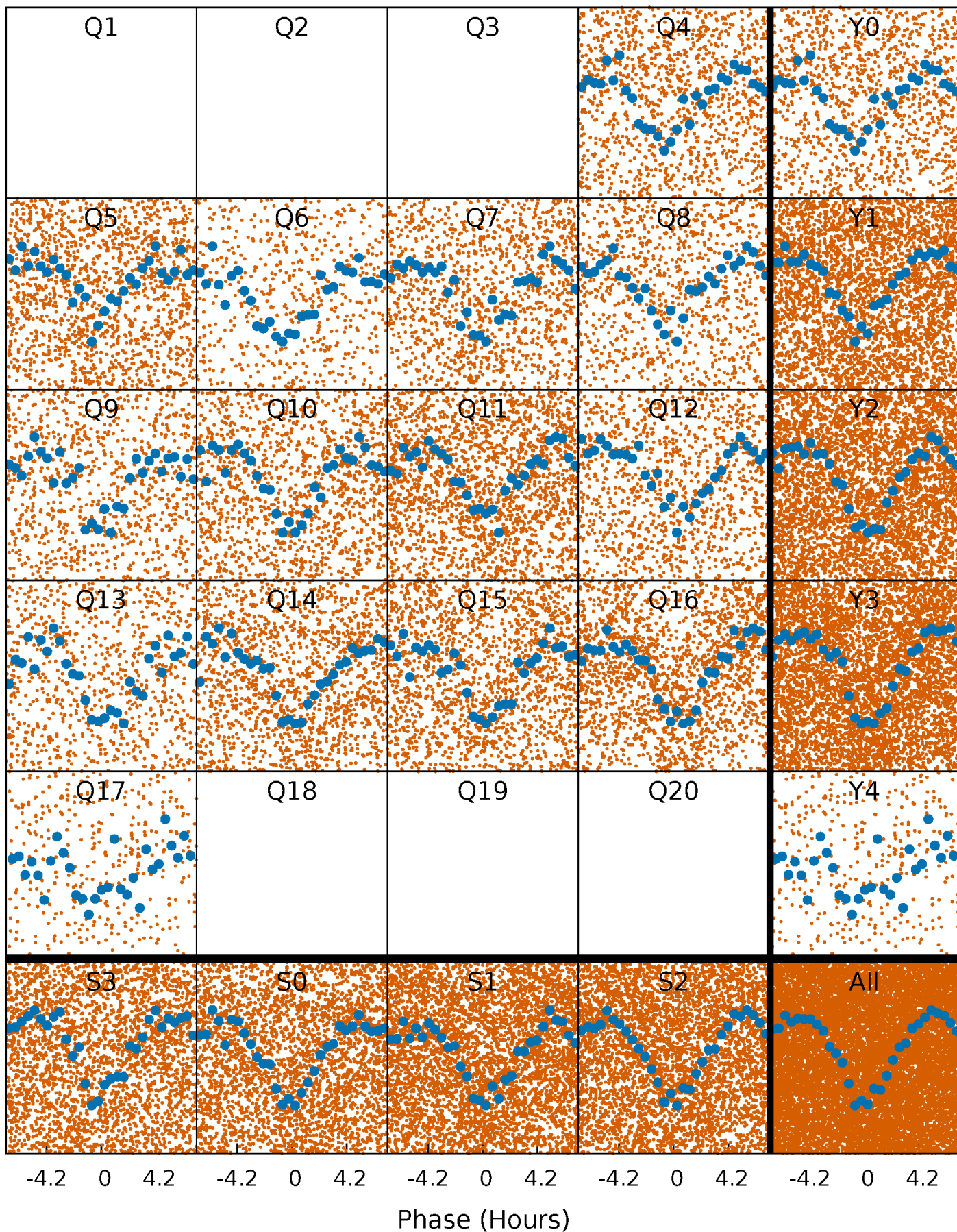


Non-Whitened Vs. Whitened Light Curve



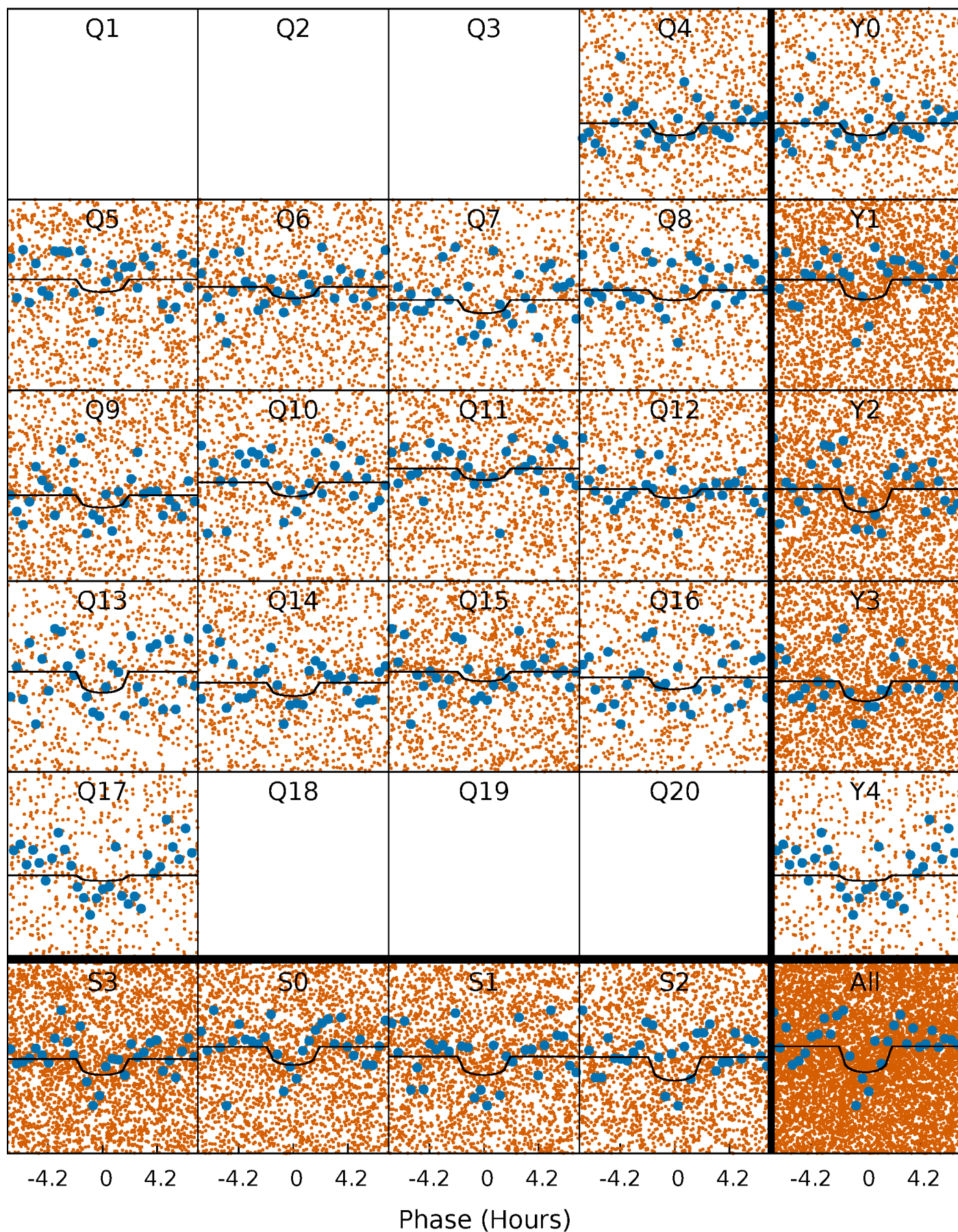
PDC Quarter-Phased Transit Curves

TCE 009840429-01 P= 0.878421 Days $T_0=132.126048$ (BKJD)



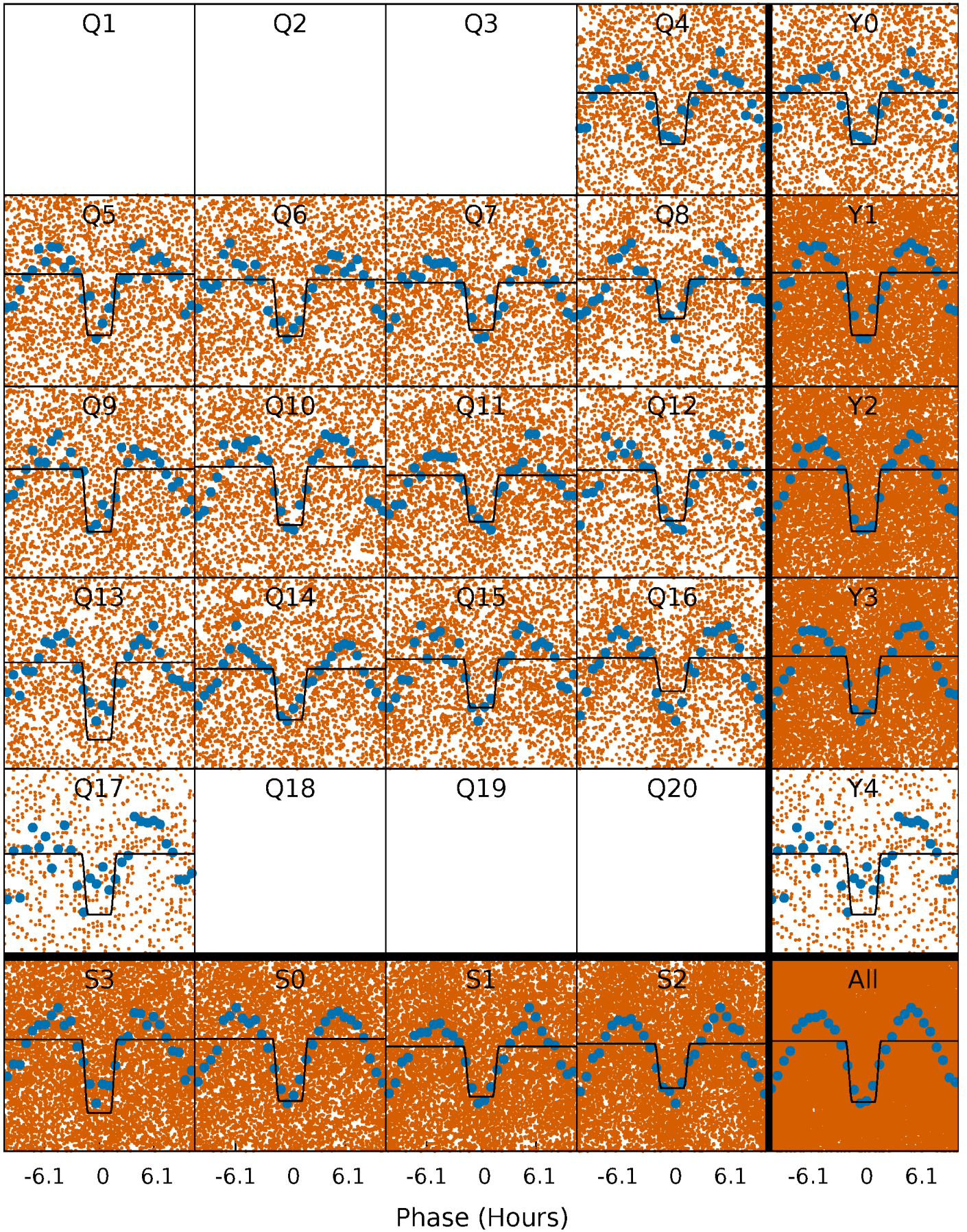
DV Quarter-Phased Transit Curves

TCE 009840429-01 P= 0.878421 Days $T_0=132.126048$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

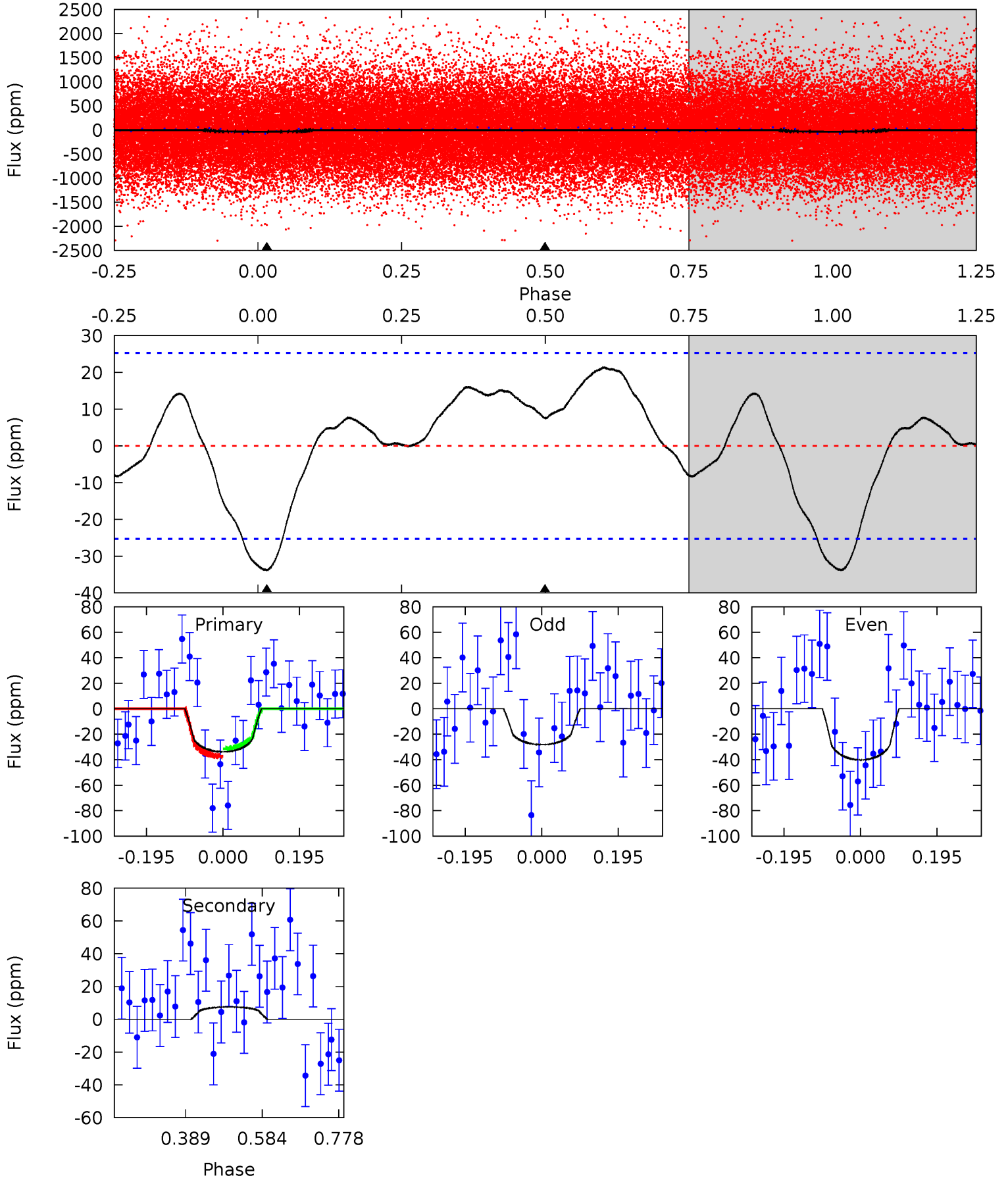
TCE 009840429-01 P= 0.878457 Days $T_0=132.094394$ (BKJD)



DV Model-Shift Uniqueness Test

009840429-01, P = 0.878421 Days, E = 132.126048 Days

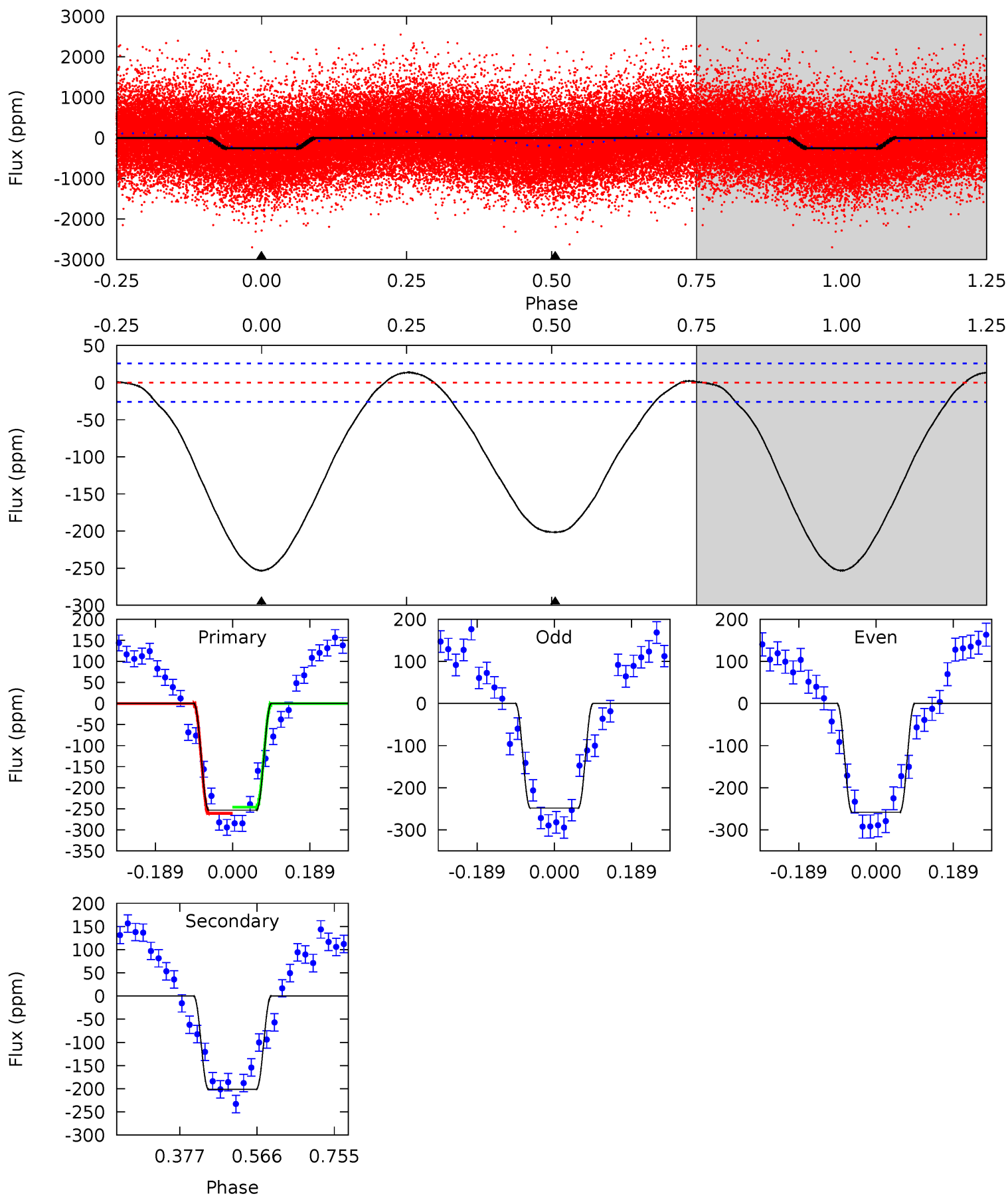
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.91	-1.31	0	0	4.42	1.30	0.62	5.91	5.91	-1.31	-1.31	1.05	0.85	0.39	0.52



Alt Model-Shift Uniqueness Test

009840429-01, P = 0.878457 Days, E = 132.094394 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.4	34.5	0	0	4.43	1.31	1.45	43.4	43.4	34.5	34.5	0.84	0.97	0.05	1.24



Stellar Parameters For KIC 009840429

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5662^{+177}_{-197}	$4.560^{+0.040}_{-0.160}$	$-0.120^{+0.300}_{-0.300}$	$0.840^{+0.194}_{-0.078}$	$0.937^{+0.094}_{-0.115}$	$2.228^{+0.461}_{-0.958}$
	+3%/-3%	+1%/-4%	+250%/-250%	+23%/-9%	+10%/-12%	+21%/-43%
Source	KIC0	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 009840429-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	8 ± 6	$0.70^{+0.61}_{-0.47}$	2463^{+136}_{-112}	-3804^{+753}_{-1940}	$-2.119^{+1.825}_{-17.095}$
Alt.	-202 ± 6	$1.62^{+0.69}_{-0.69}$	2454^{+136}_{-106}	5146^{+1552}_{-689}	13^{+26}_{-6}

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 $A_{obs} \gg 1.0$

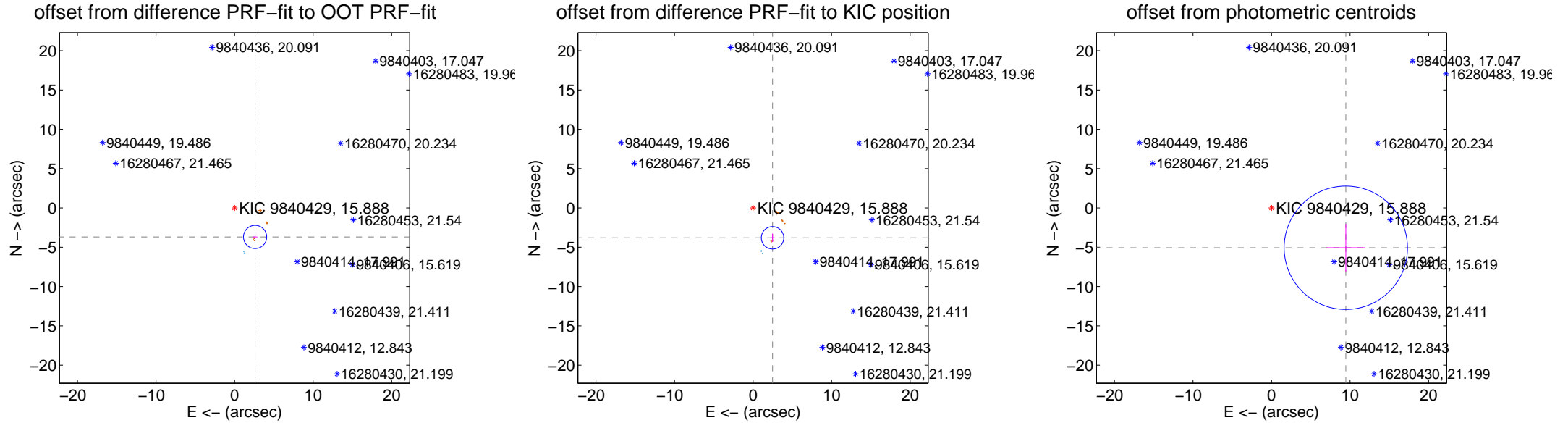
DV Centroid Data

Supplemental centroid analysis for 009840429-01. Kepler magnitude: 15.89. Transit SNR 4.27

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.519 ± 0.492	9.18	-2.612 ± 0.298	-3.687 ± 0.565
PRF-fit source offset from KIC position	4.535 ± 0.476	9.52	-2.481 ± 0.287	-3.795 ± 0.537
photometric centroid source offset	10.73 ± 2.62	4.10	-9.46 ± 2.49	-5.06 ± 3.03



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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



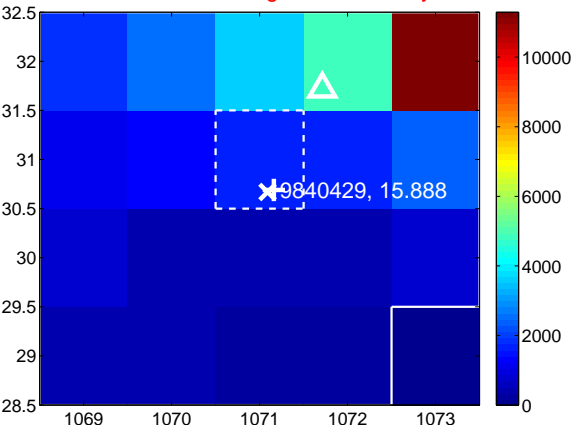
Q3 no difference image



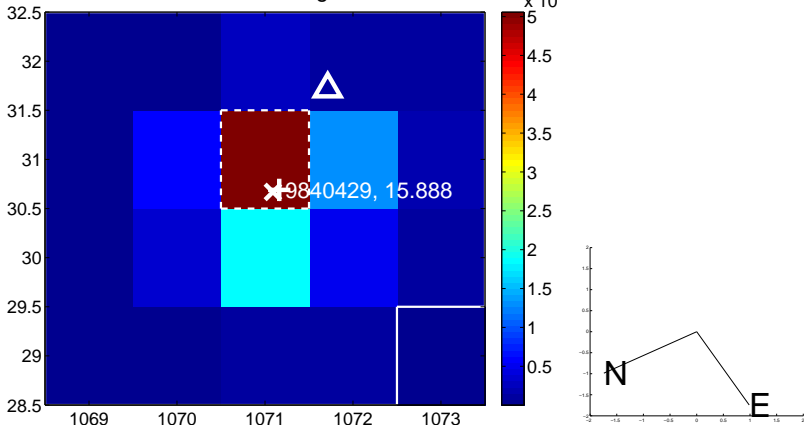
Q3 no OOT image



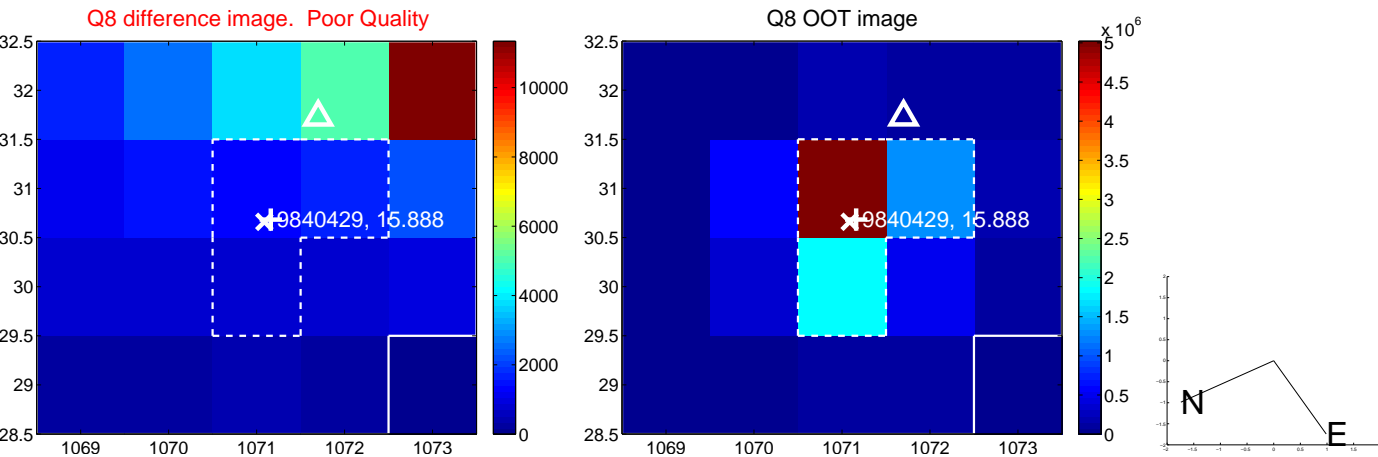
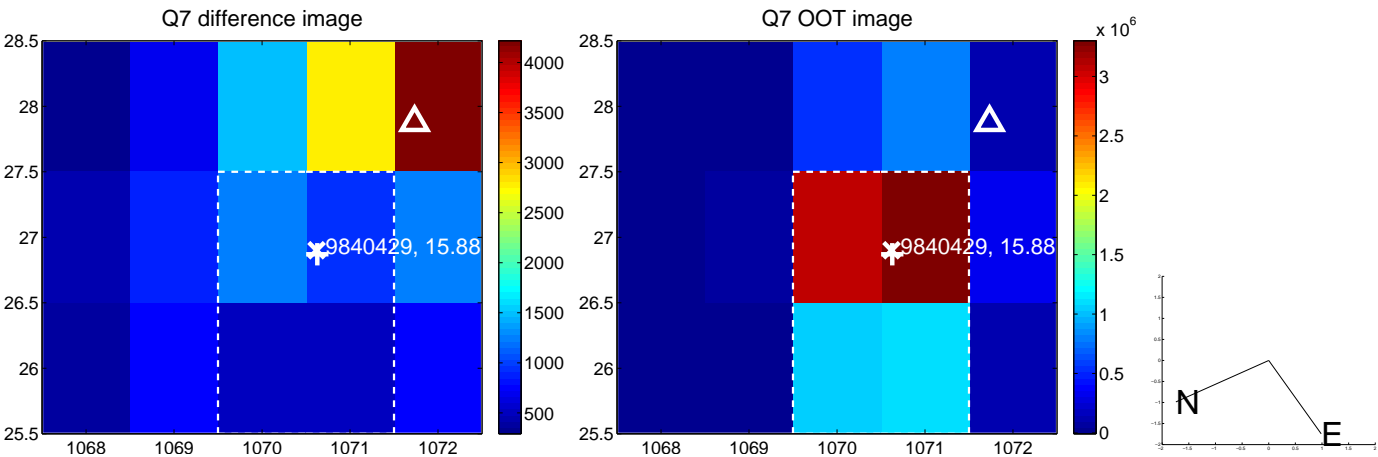
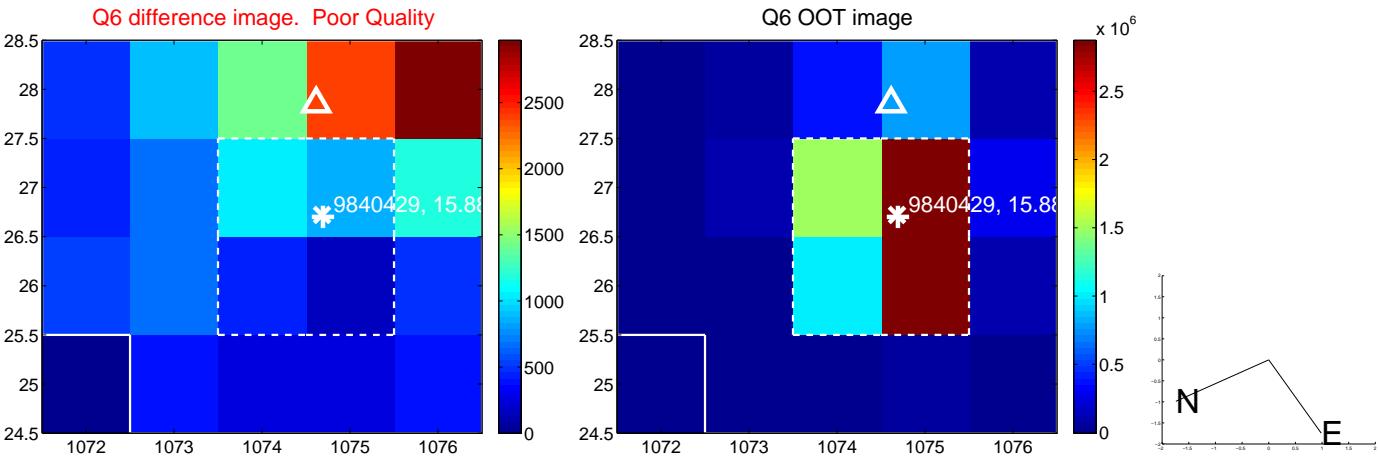
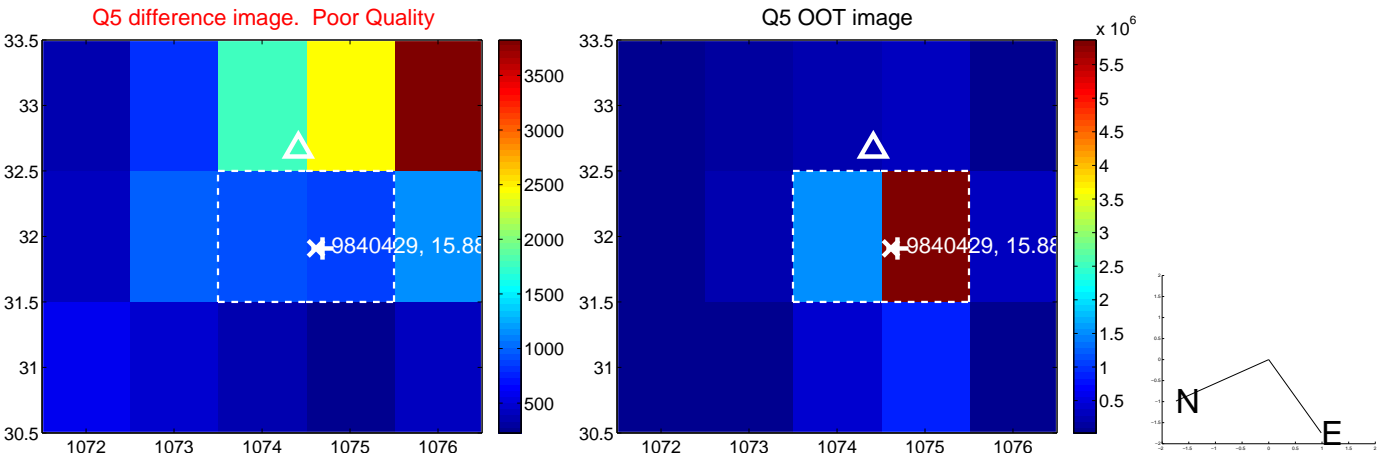
Q4 difference image. Poor Quality



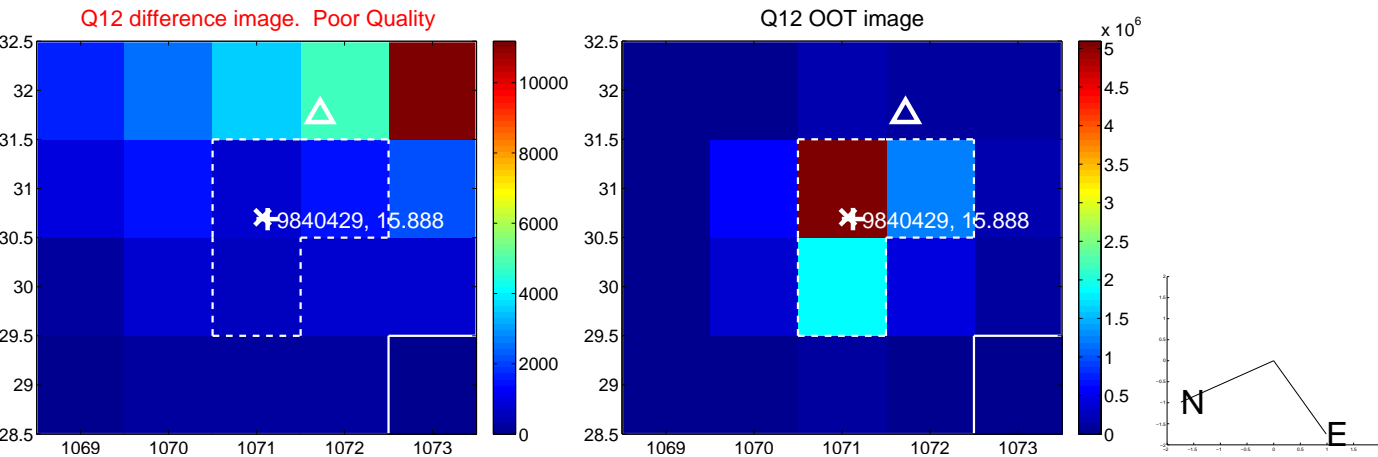
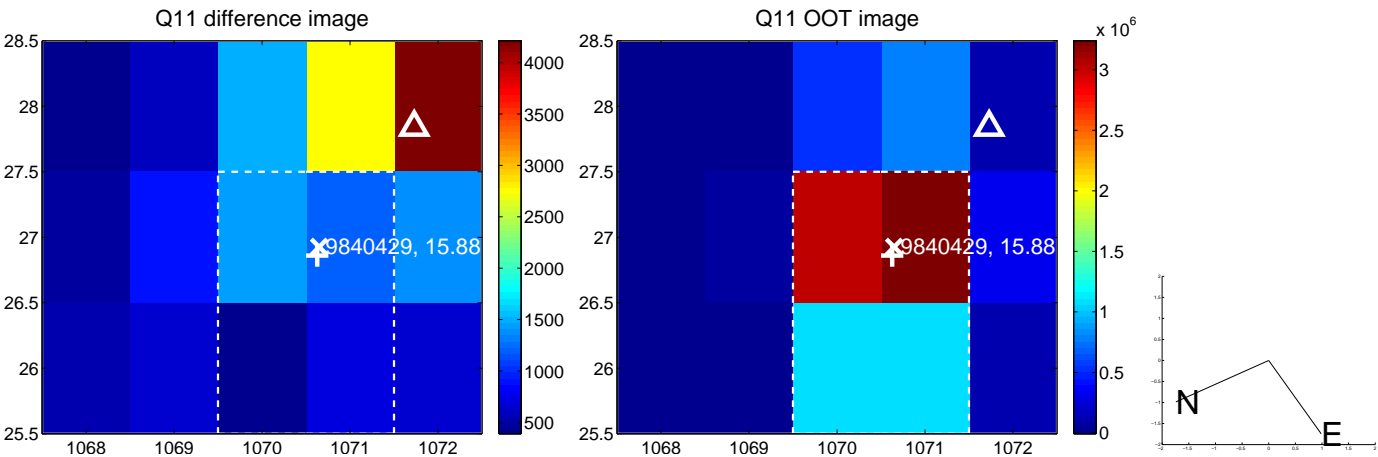
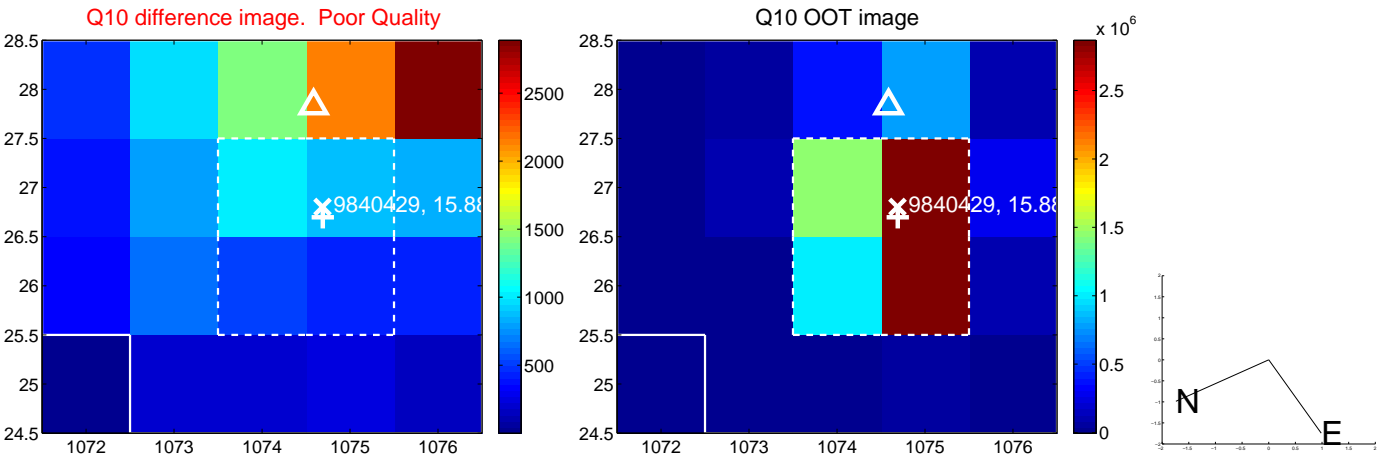
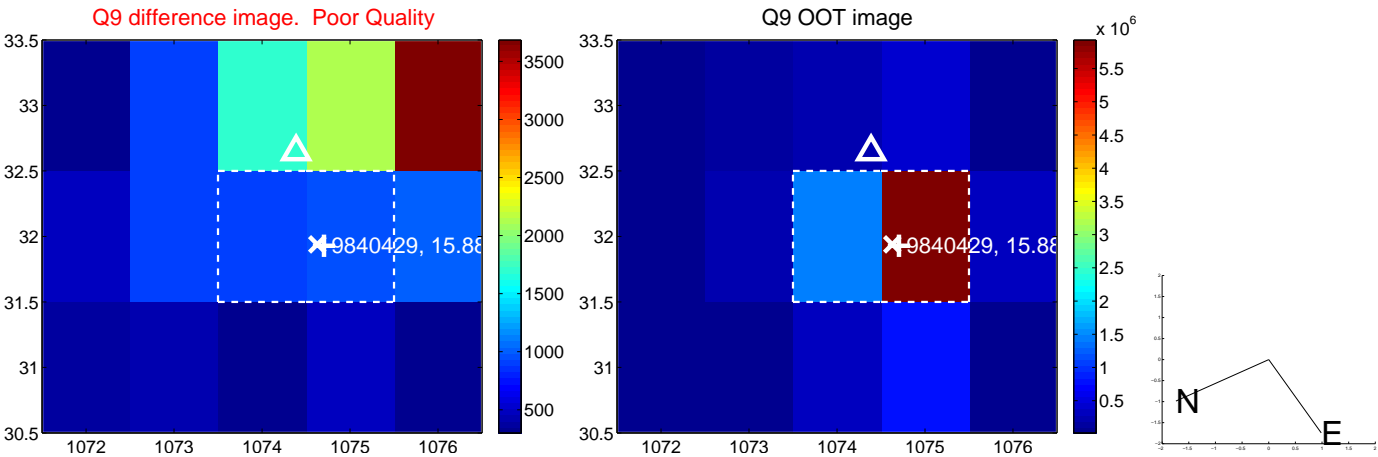
Q4 OOT image



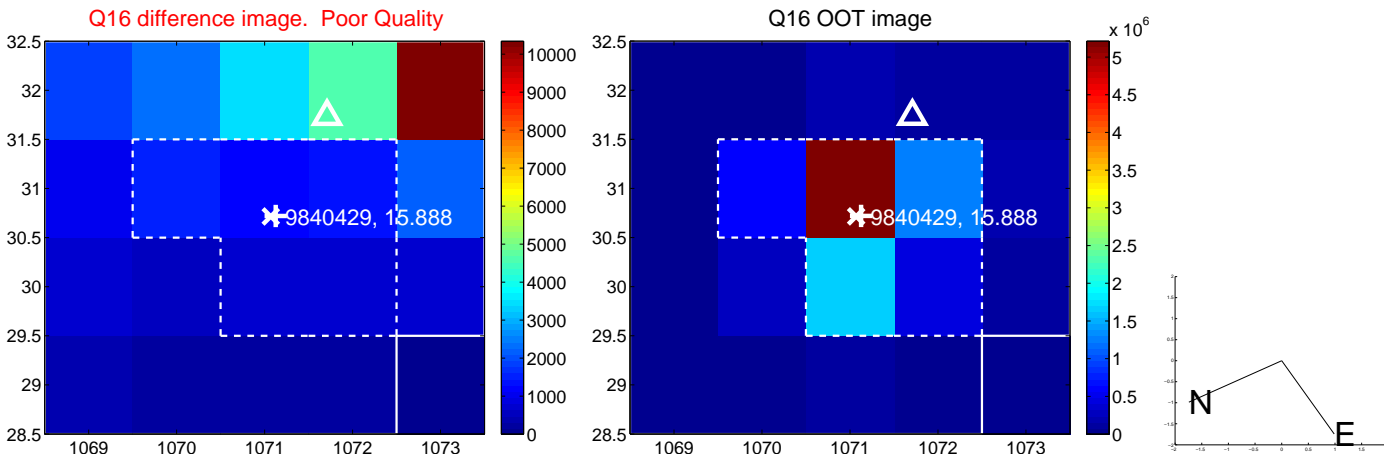
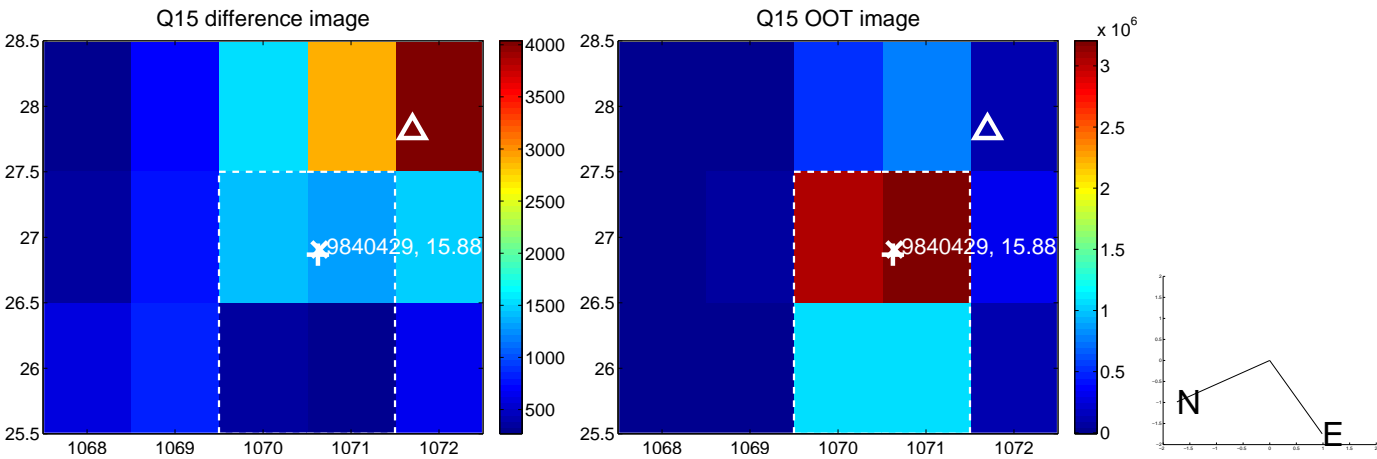
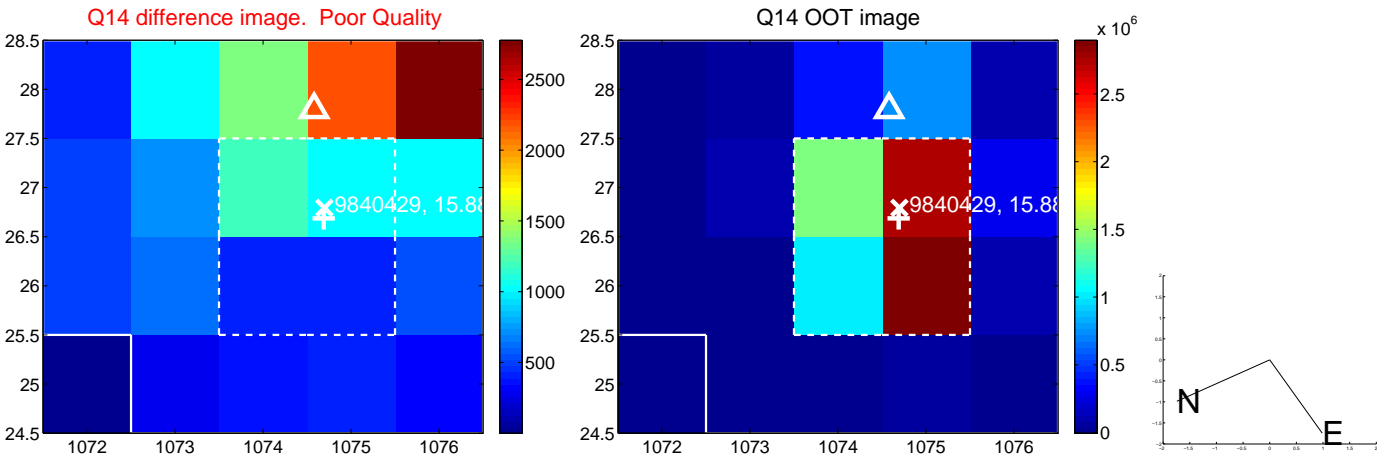
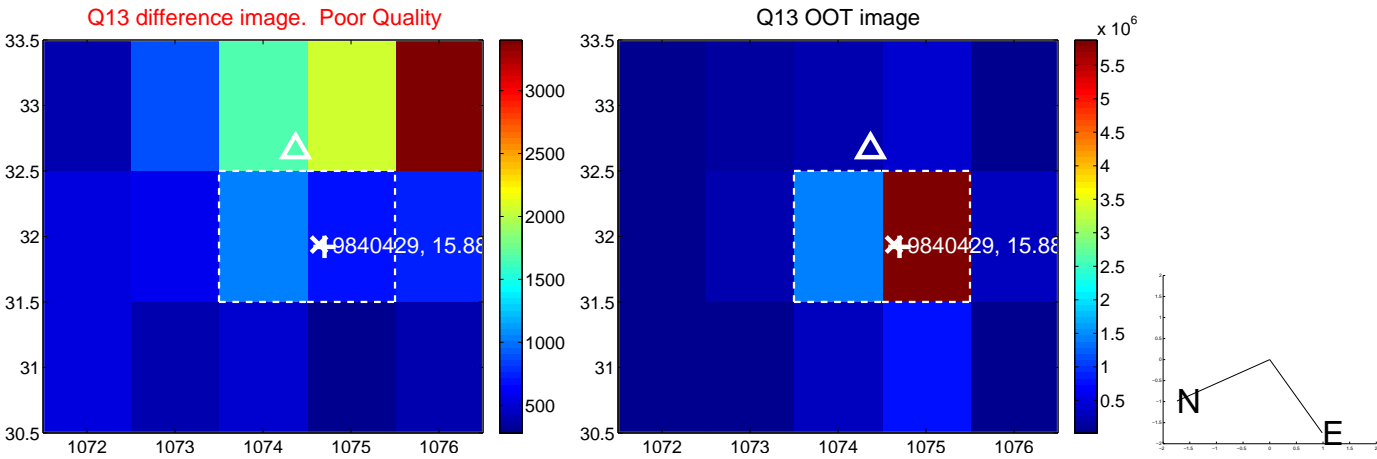
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



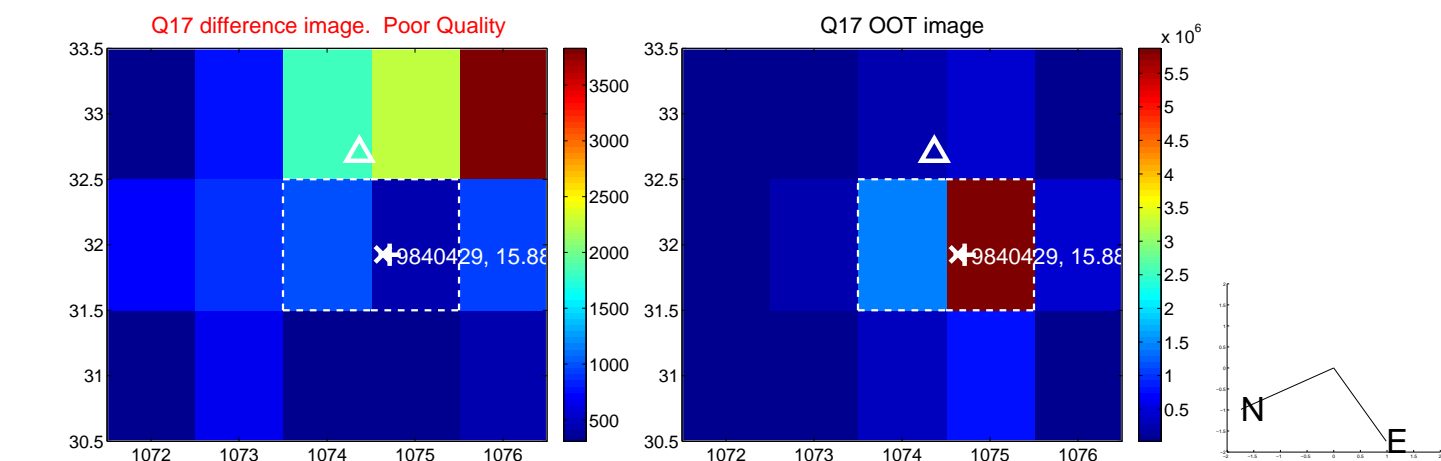
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



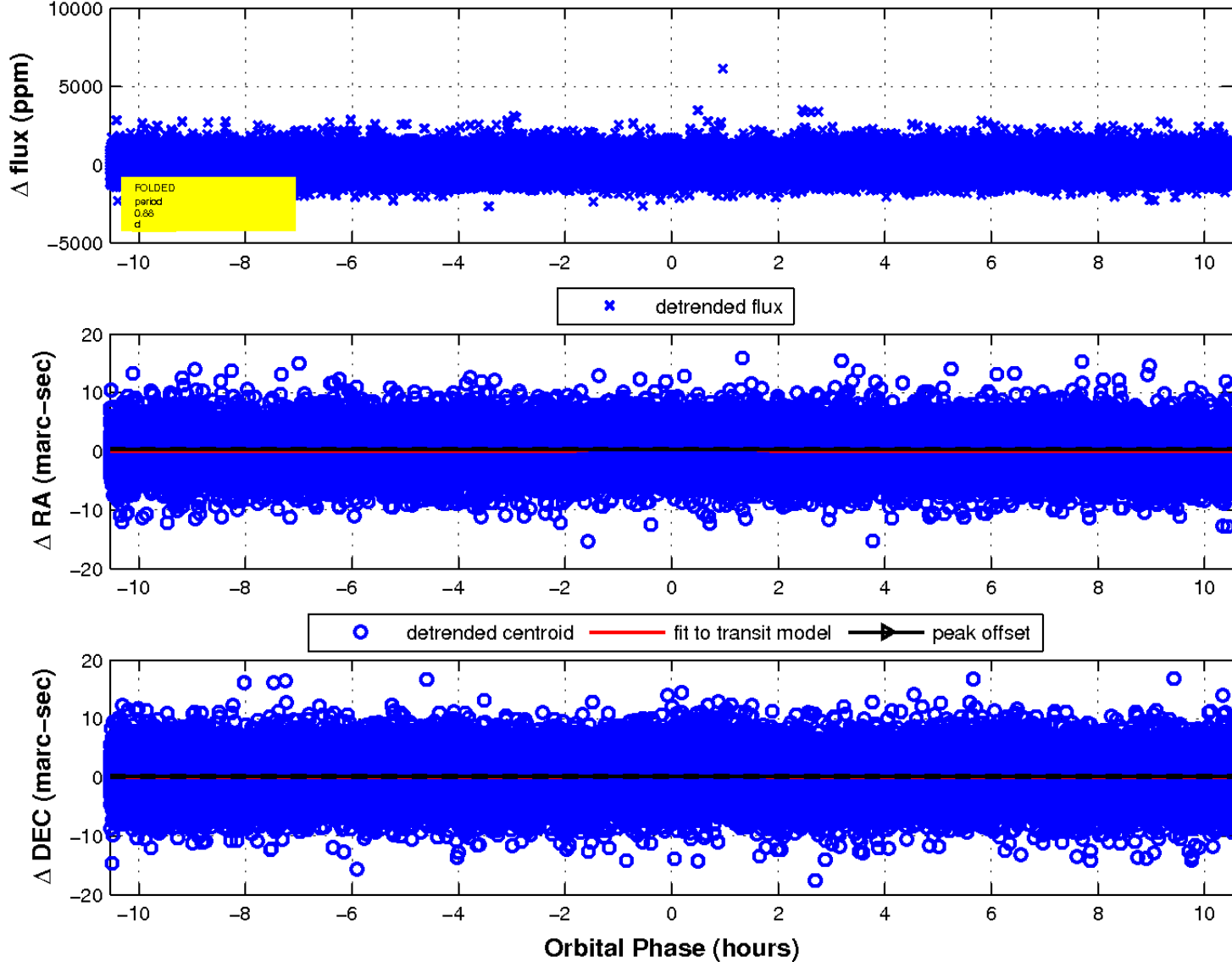
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

