

KIC 007870789

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})
007870789-01	OBS	No	420.168670	317.347720	85.7	22.239	8.4	6.3	1.39	6200	1.46	2.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007870789-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

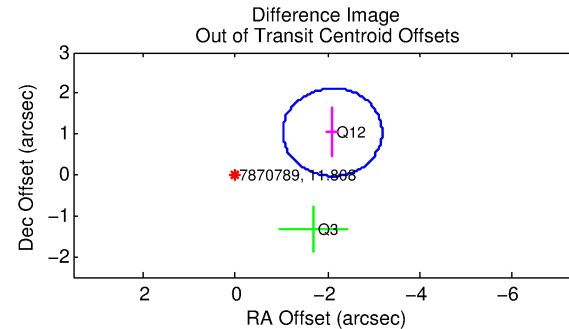
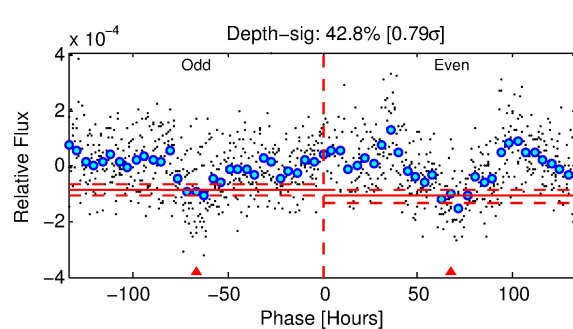
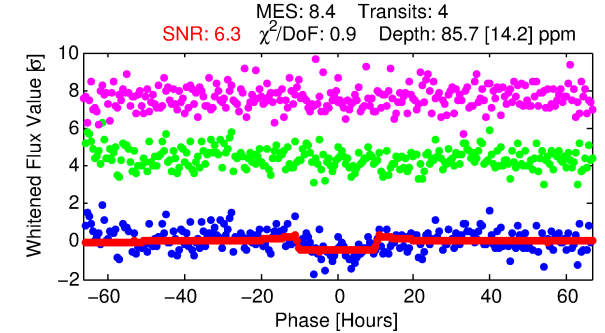
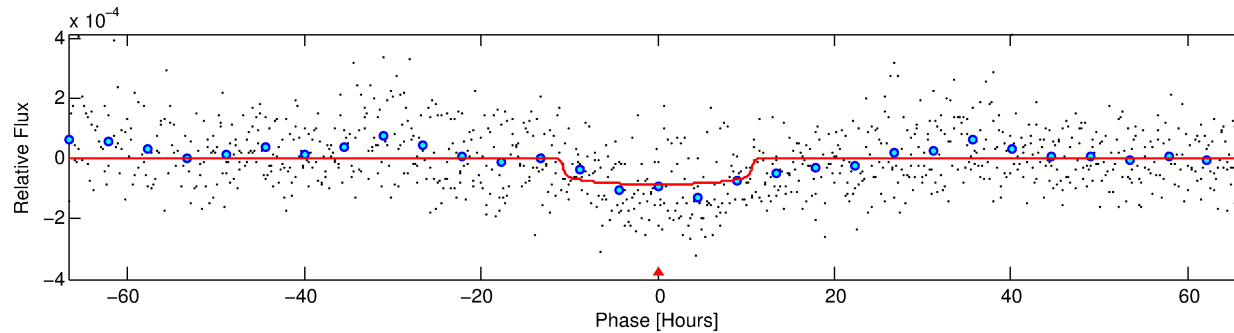
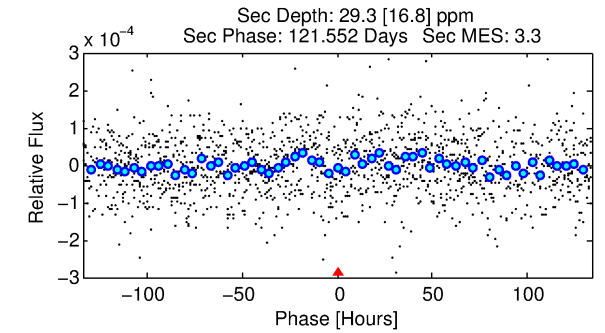
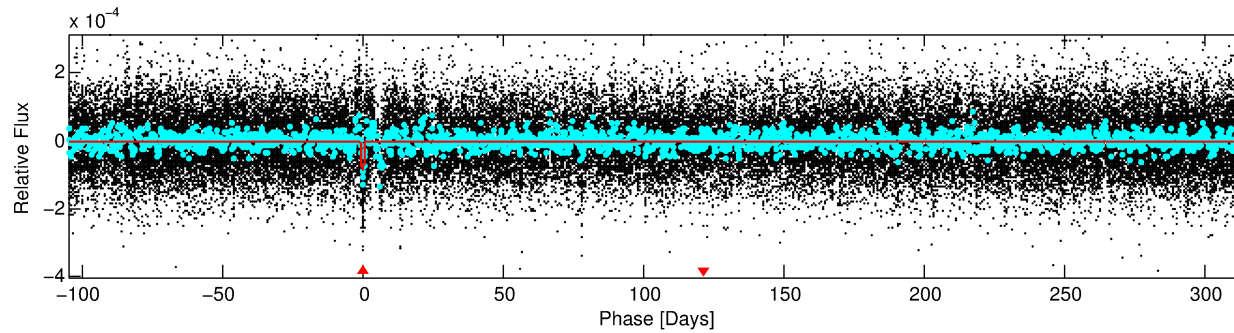
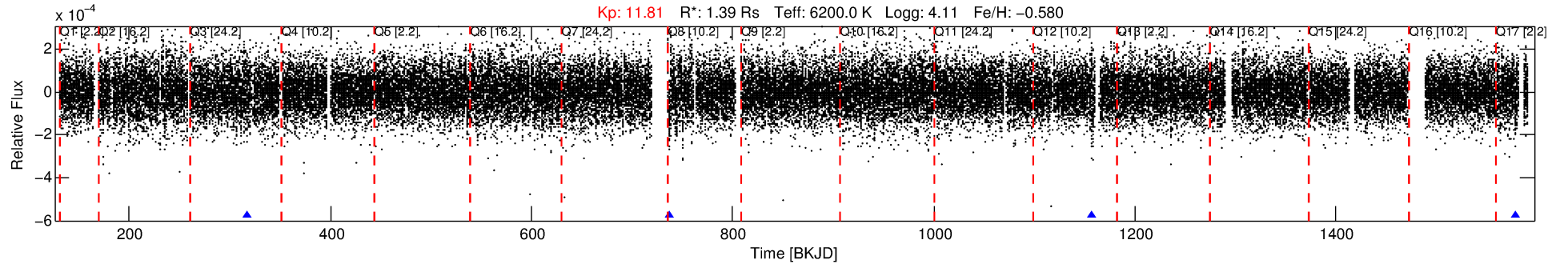
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007870789-01

No Significant Match Found

DV One-Page Summary

KIC: 7870789 Candidate: 1 of 1 Period: 420.169 d



DV Fit Results:

Period = 420.16867 [0.01463] d
Epoch = 317.3477 [0.0281] BKJD
Rp/R* = 0.0096 [0.0016]
a/R* = 78.39 [62.23]
b = 0.85 [0.26]
Seff = 2.25 [1.27]
Teq = 312 [44] K
Rp = 1.46 [0.55] Re
a = 1.0676 [0.3587] AU
Ag = 8632.09 [7453.41] [1.16σ]
Teffp = 4655 [794] K [5.46σ]

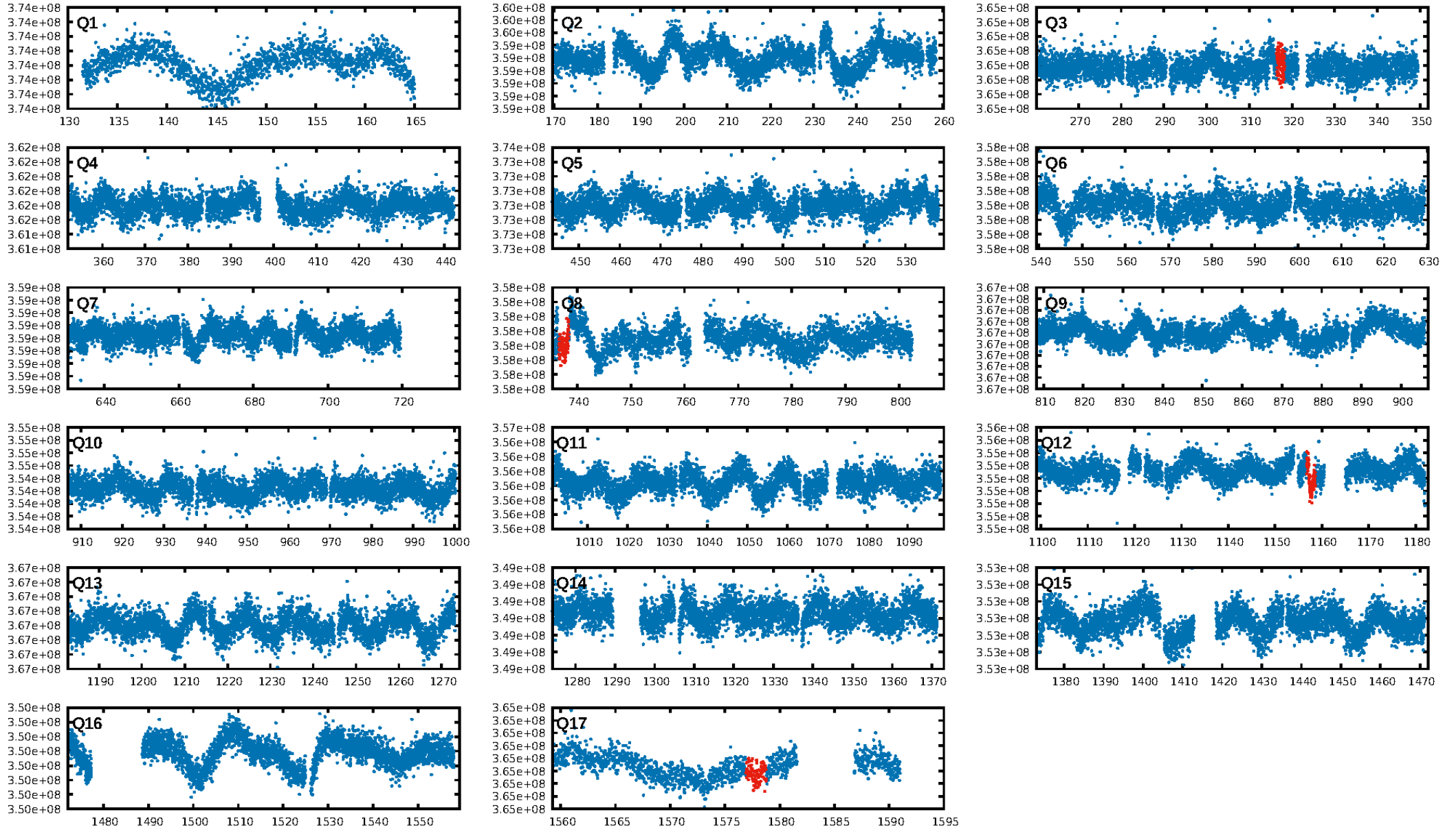
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.17e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4181
Centroid-sig: 93.7%
Centroid-so: 0.403 arcsec [0.24σ]
OotOffset-rm: 2.349 arcsec [6.56σ]
KicOffset-rm: 2.249 arcsec [3.74σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

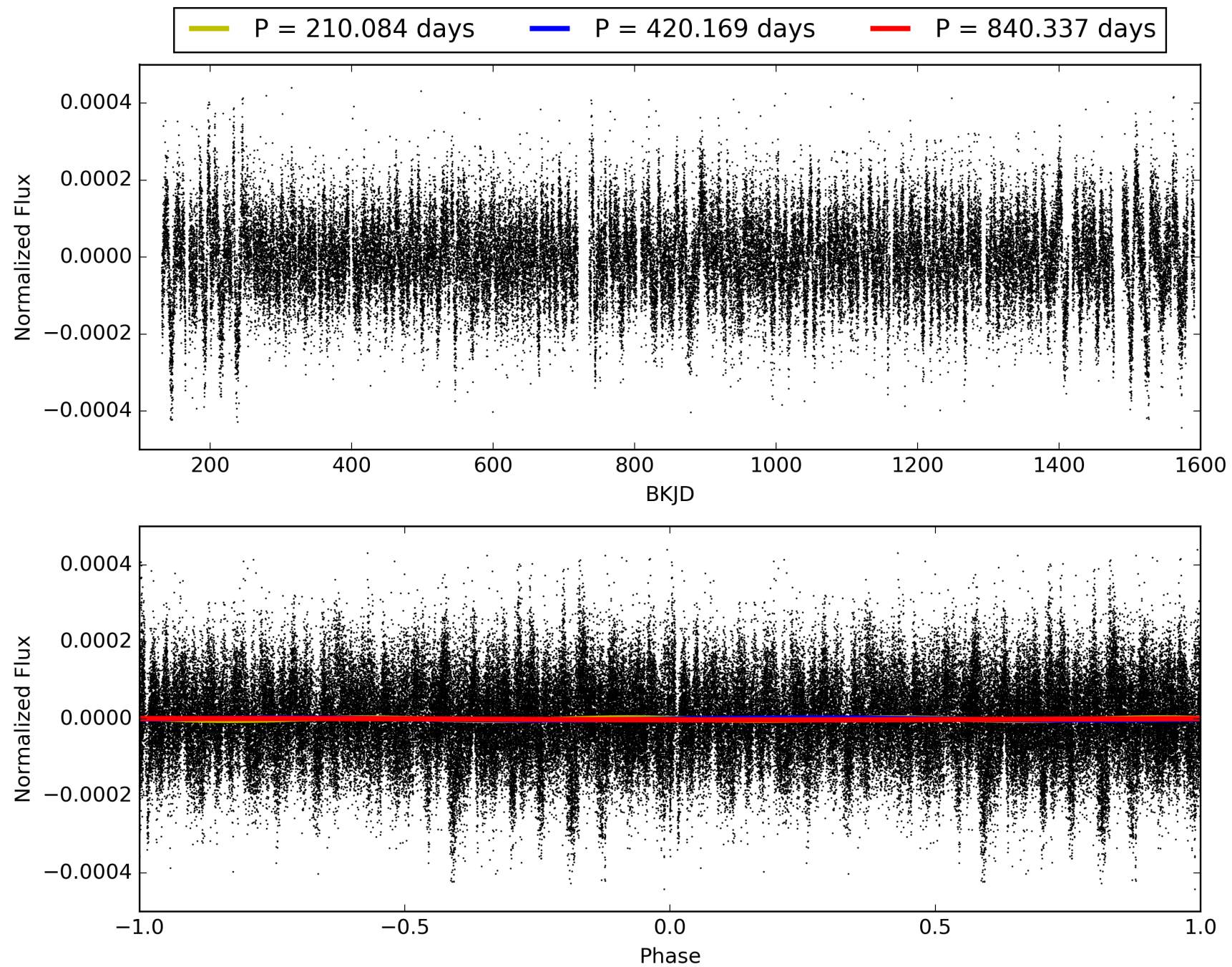
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:23:53 Z

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

TCE 007870789-01, PDC Light Curves

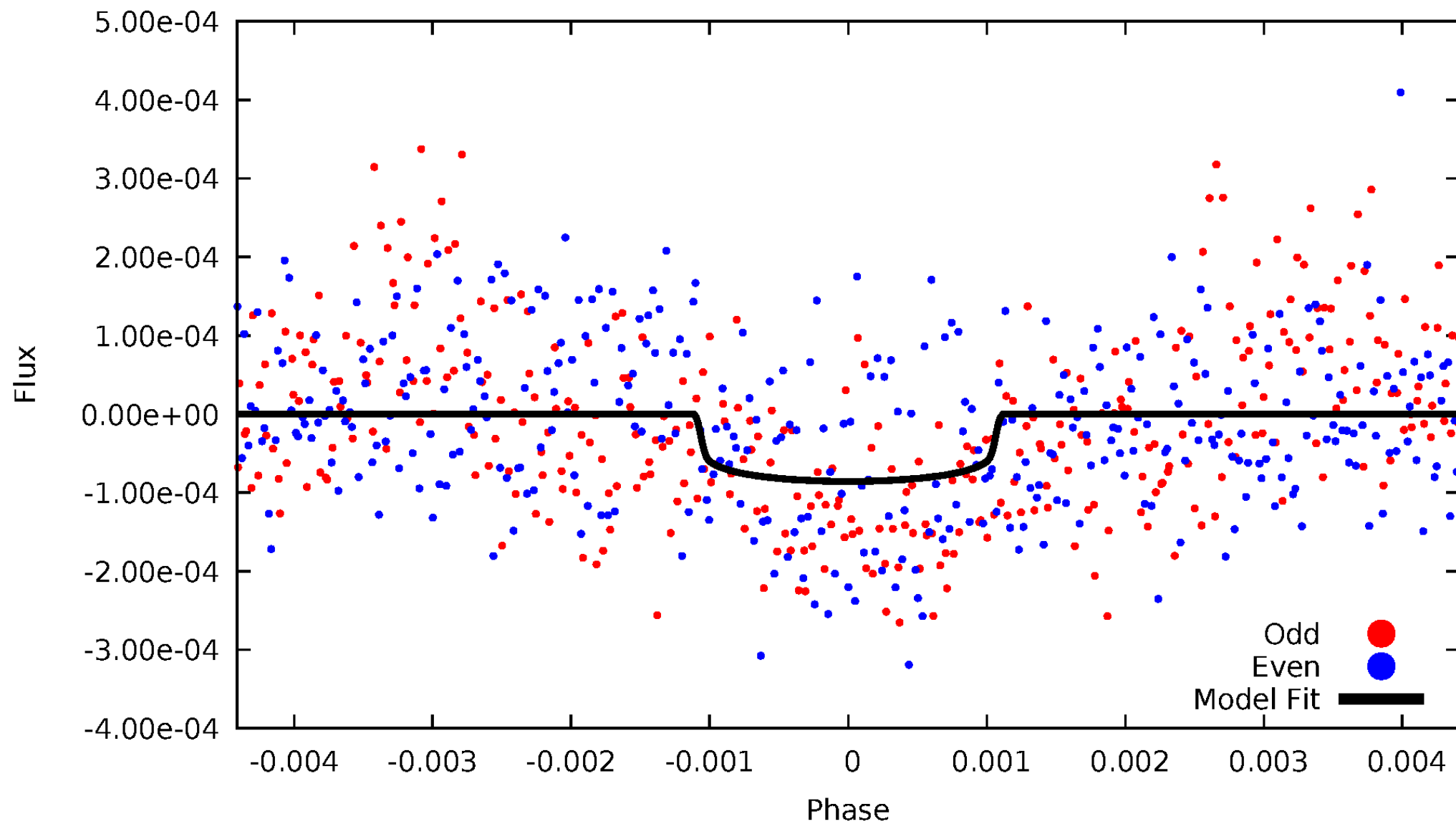


TCE 007870789-01



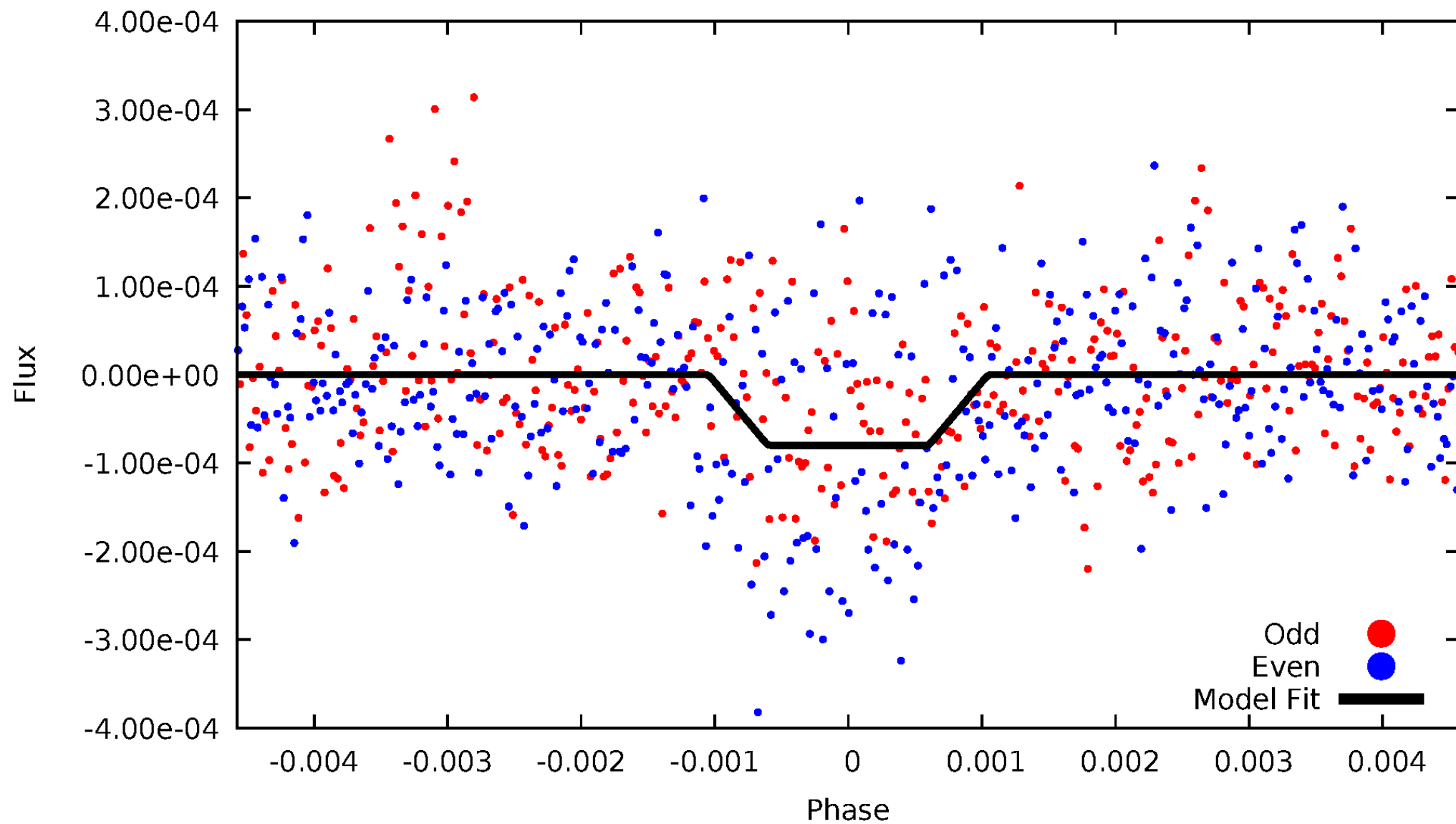
DV Odd/Even

TCE 007870789-01



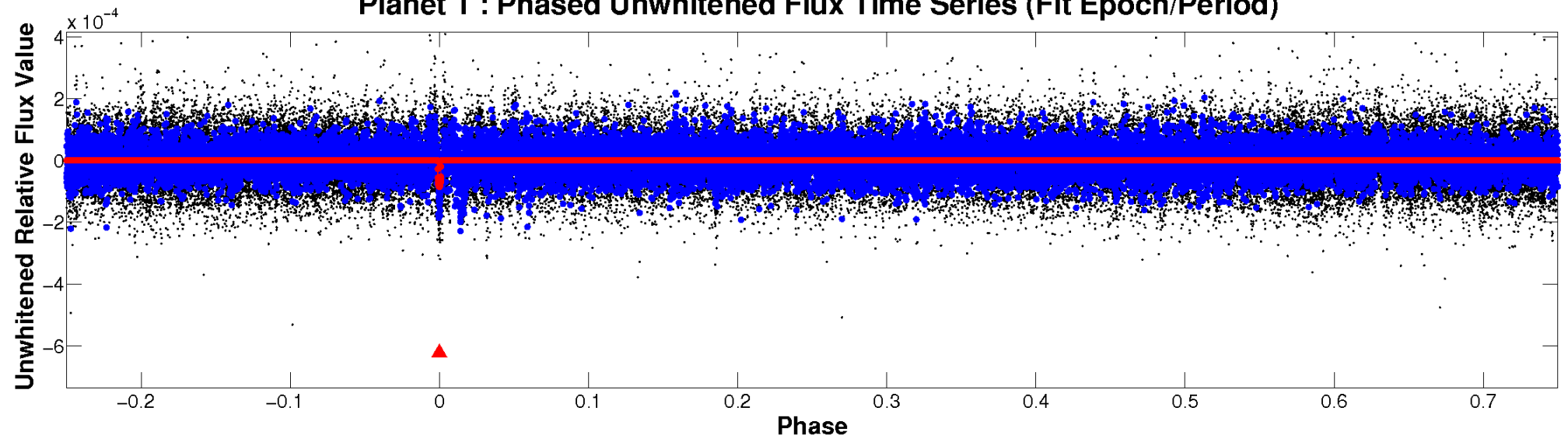
ALT Odd/Even

TCE 007870789-01

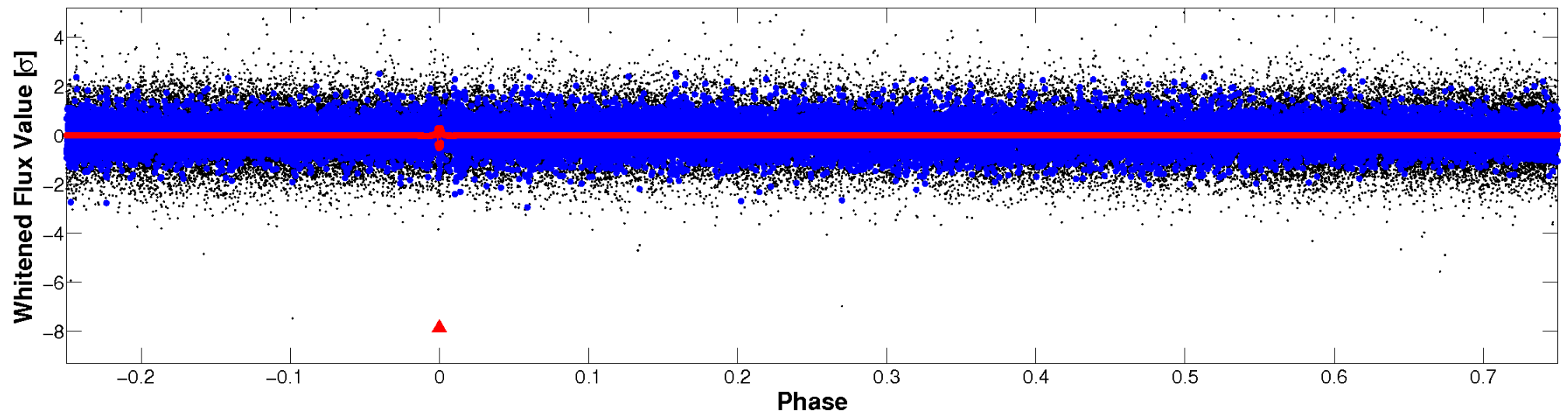


Non-Whitened Vs. Whitened Light Curve

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

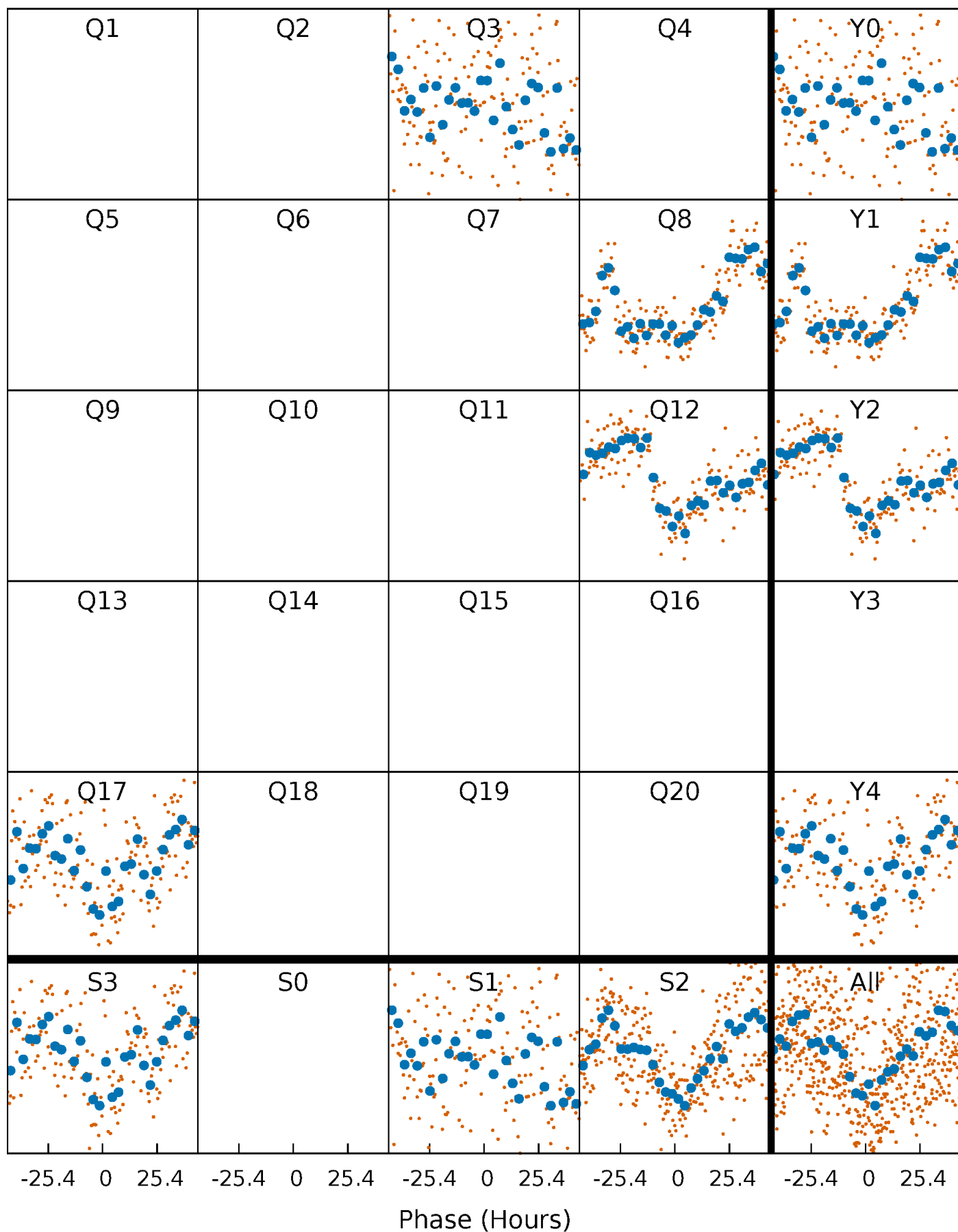


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



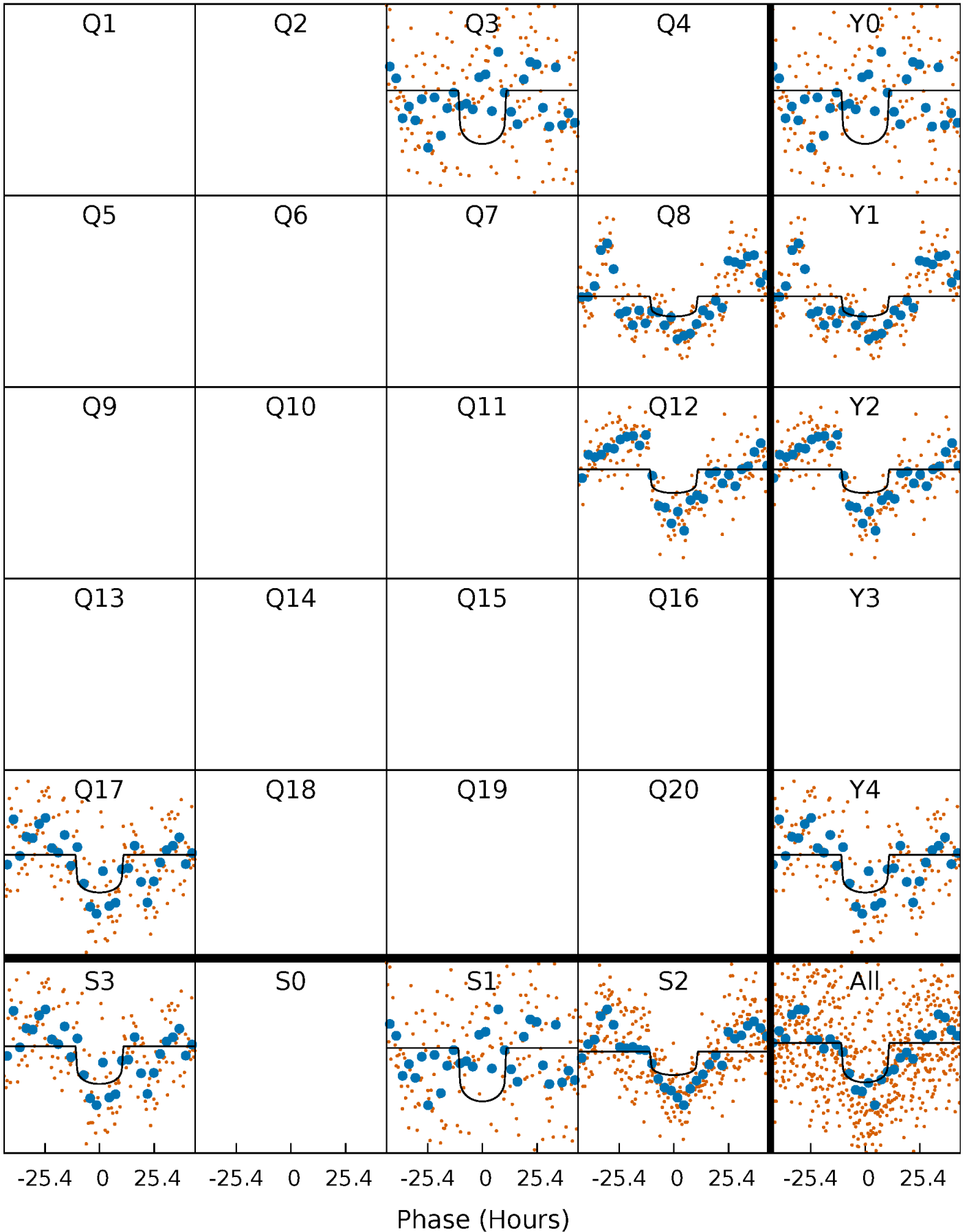
PDC Quarter-Phased Transit Curves

TCE 007870789-01 P=420.168670 Days $T_0=317.347720$ (BKJD)



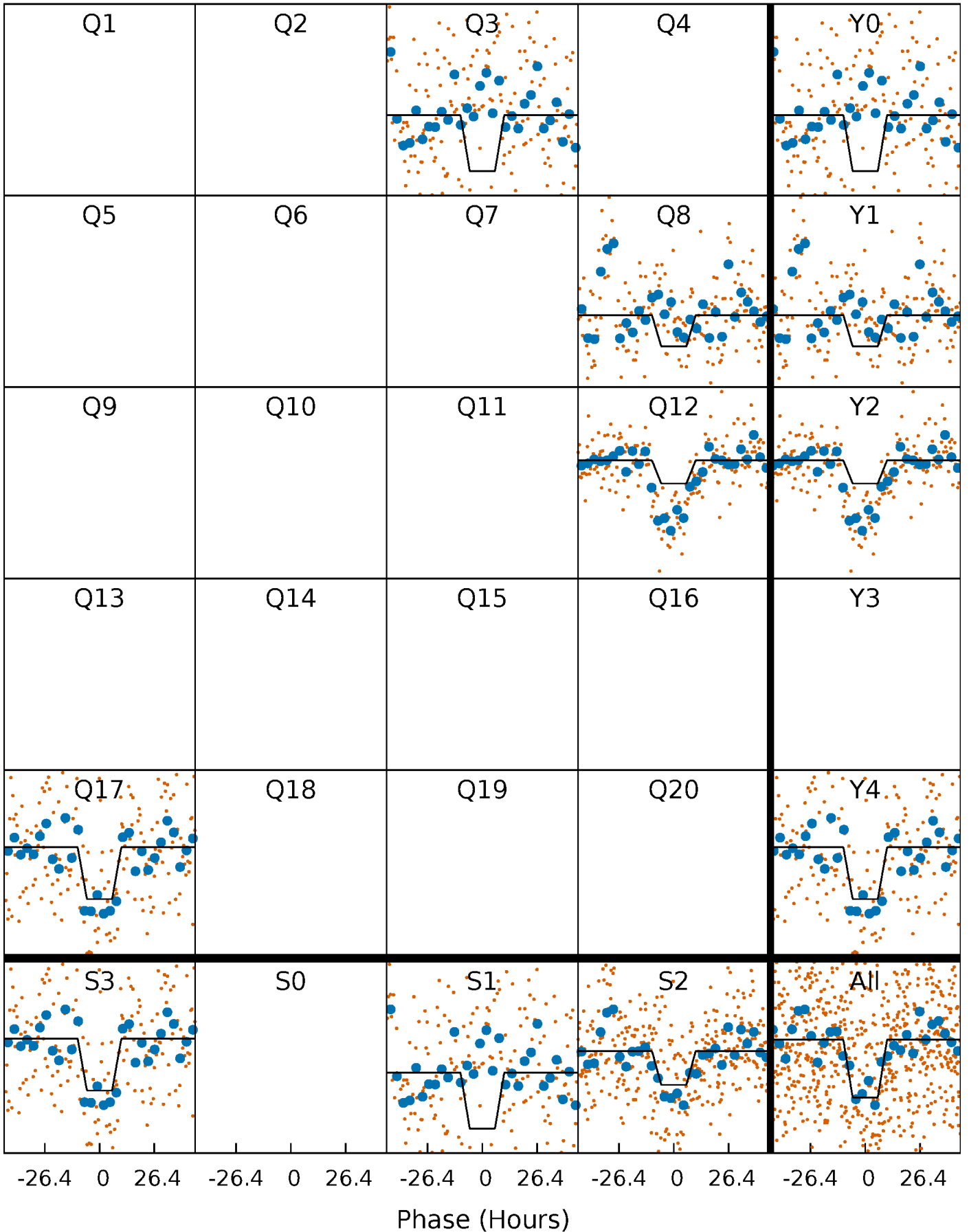
DV Quarter-Phased Transit Curves

TCE 007870789-01 P=420.168670 Days $T_0=317.347720$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

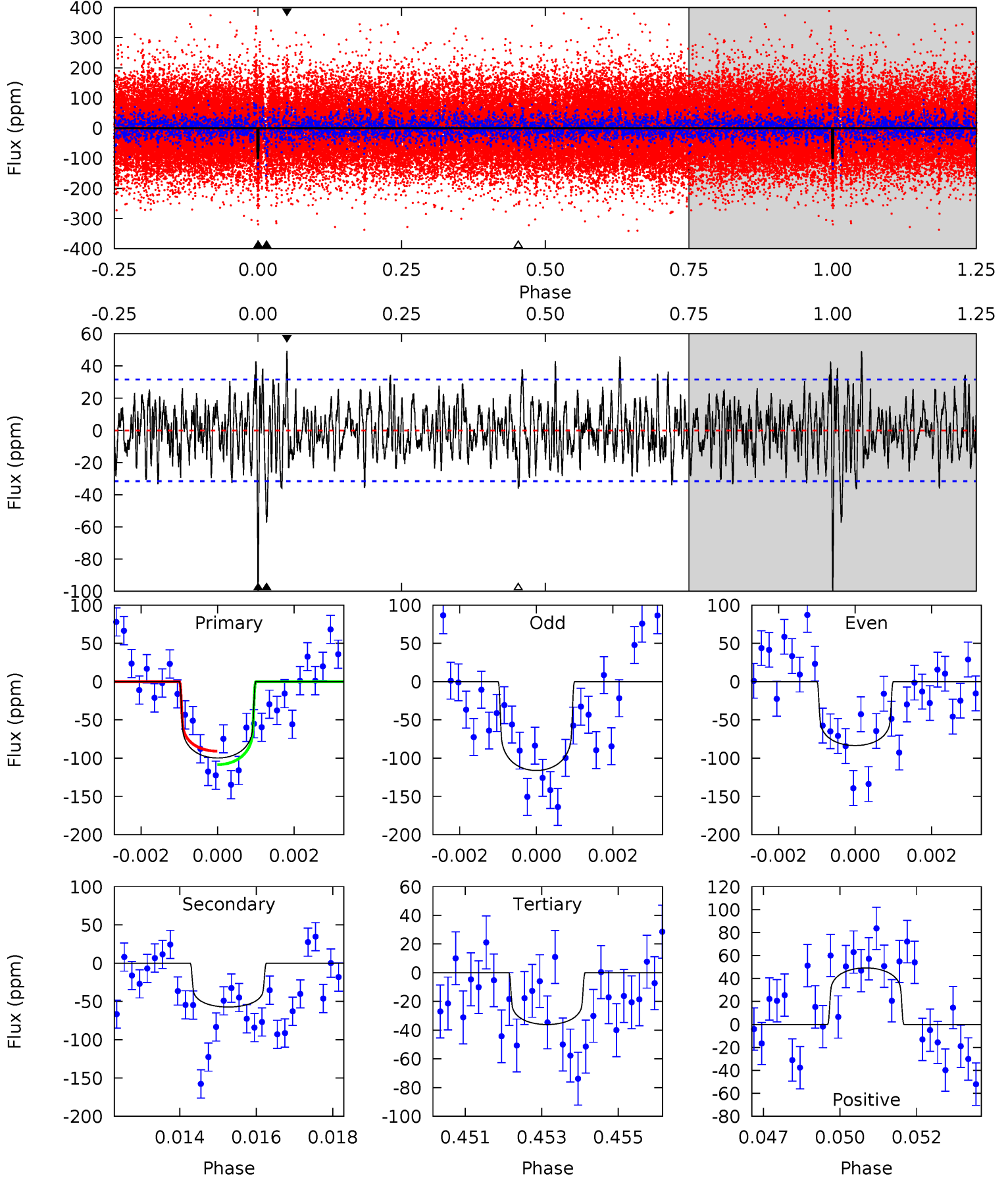
TCE 007870789-01 P=420.182105 Days $T_0=317.339643$ (BKJD)



DV Model-Shift Uniqueness Test

007870789-01, P = 420.168670 Days, E = 317.347720 Days

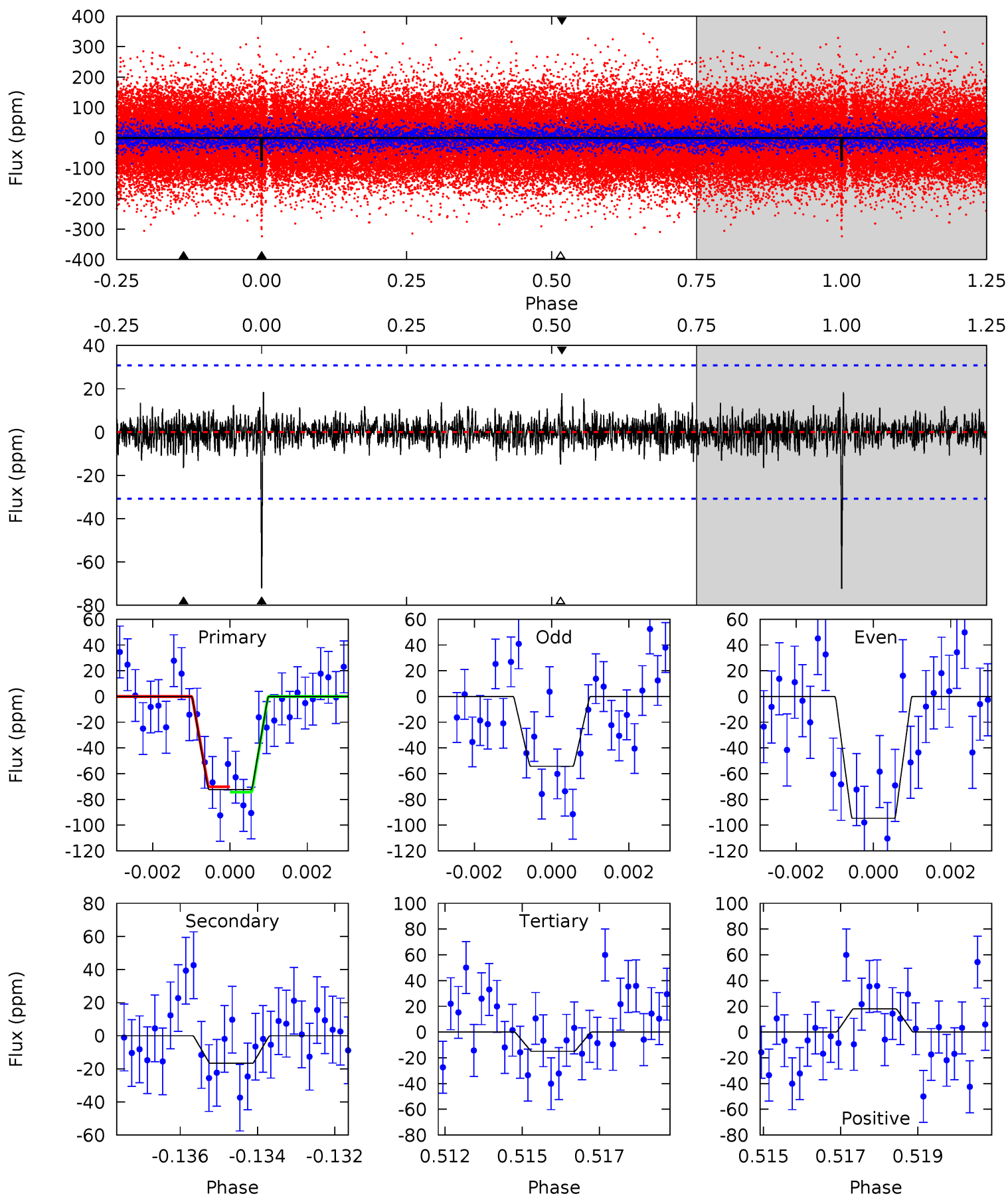
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	9.63	6.06	8.26	5.31	3.05	2.26	10.7	8.51	3.56	1.36	2.74	0.85	0.33	1.47



Alt Model-Shift Uniqueness Test

007870789-01, P = 420.182105 Days, E = 317.339643 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	2.87	2.59	3.10	5.32	3.07	0.77	9.89	9.37	0.29	-0.23	3.50	1.37	0.20	0.36



Stellar Parameters For KIC 007870789

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6200^{+219}_{-219}	$4.114^{+0.325}_{-0.175}$	$-0.580^{+0.300}_{-0.300}$	$1.392^{+0.385}_{-0.470}$	$0.919^{+0.128}_{-0.105}$	$0.479^{+1.107}_{-0.233}$
	+4%/-4%	+8%/-4%	+52%/-52%	+28%/-34%	+14%/-11%	+231%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 007870789-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-57 ± 6	$1.40^{+0.36}_{-0.33}$	429^{+40}_{-39}	5539^{+571}_{-440}	18262^{+13516}_{-6980}
Alt.	-17 ± 6	$1.33^{+0.39}_{-0.32}$	434^{+37}_{-45}	4380^{+513}_{-408}	5946^{+5679}_{-2878}

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

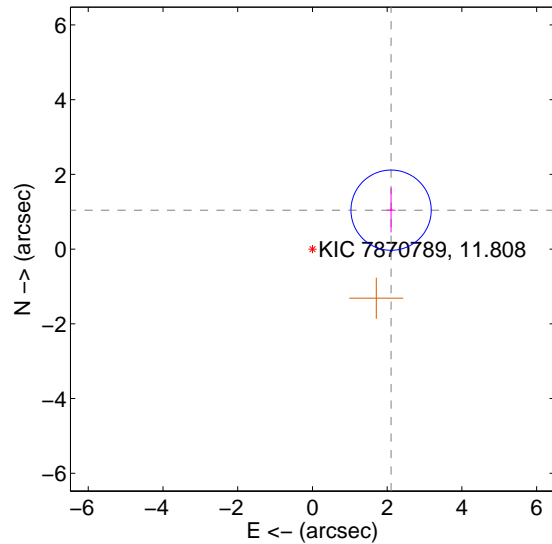
Supplemental centroid analysis for 007870789-01. **Kepler magnitude: 11.81.** Transit SNR 6.31

There are 0 quarters with good PRF difference image offsets

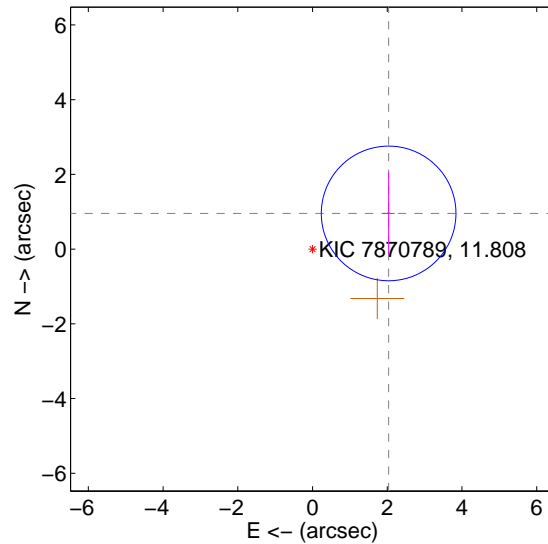
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.349 ± 0.358	6.56	-2.106 ± 0.120	1.042 ± 0.596
PRF-fit source offset from KIC position	2.249 ± 0.601	3.74	-2.037 ± 0.160	0.955 ± 1.098
photometric centroid source offset	0.40 ± 1.67	0.24	-0.40 ± 1.67	0.06 ± 1.45

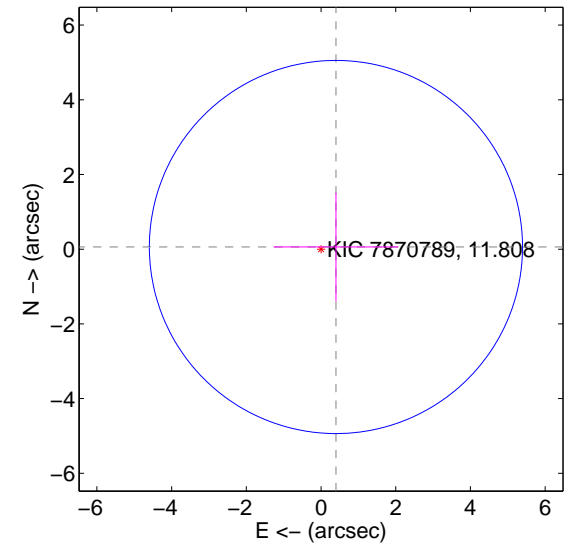
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

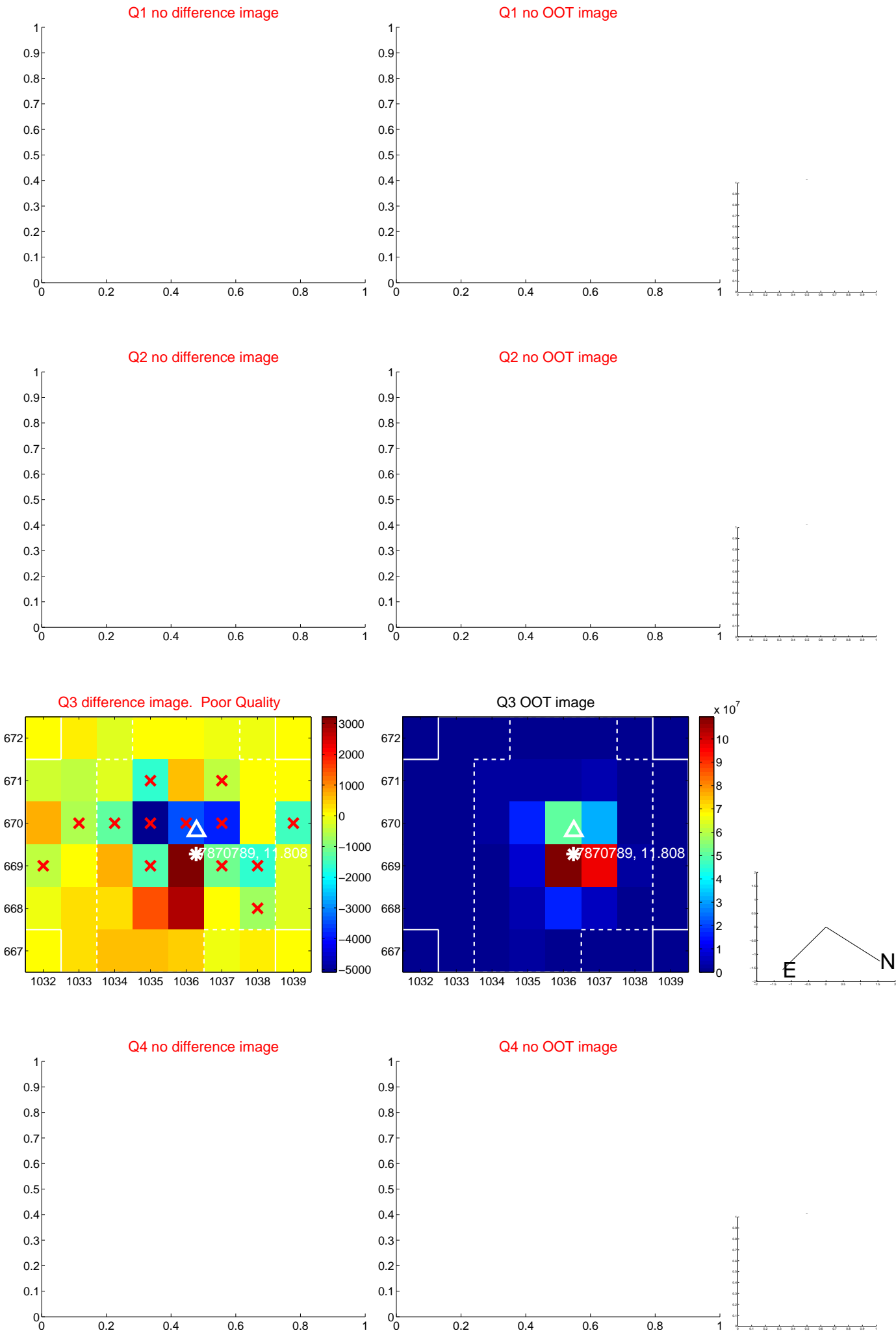


offset from photometric centroids



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.

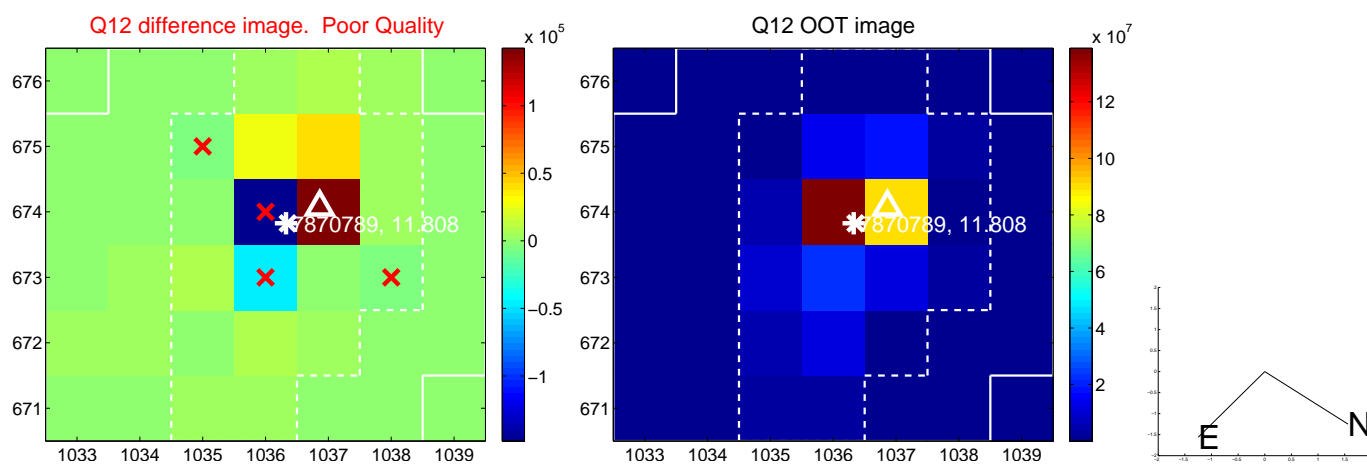
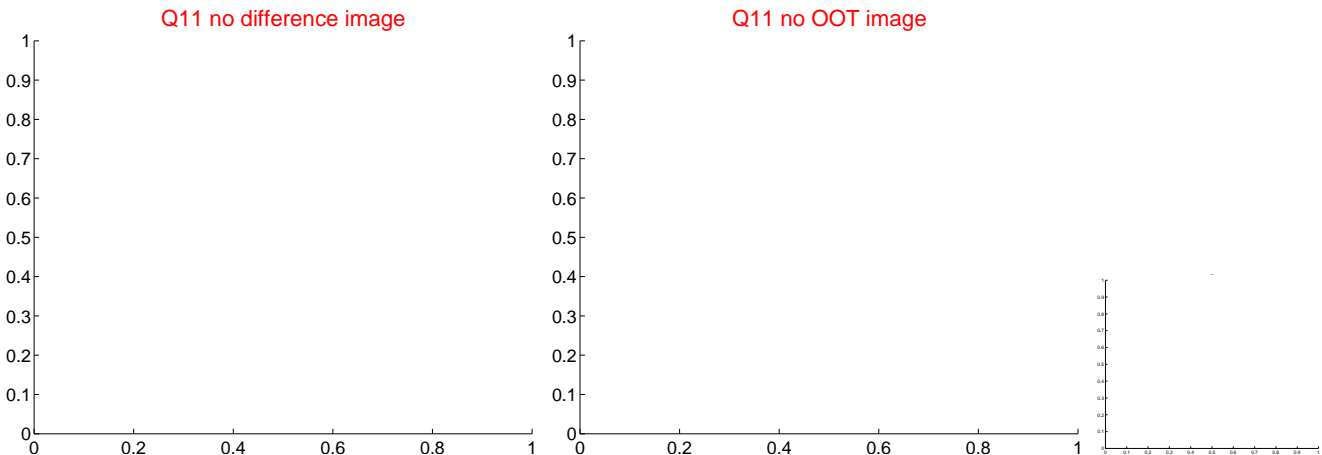
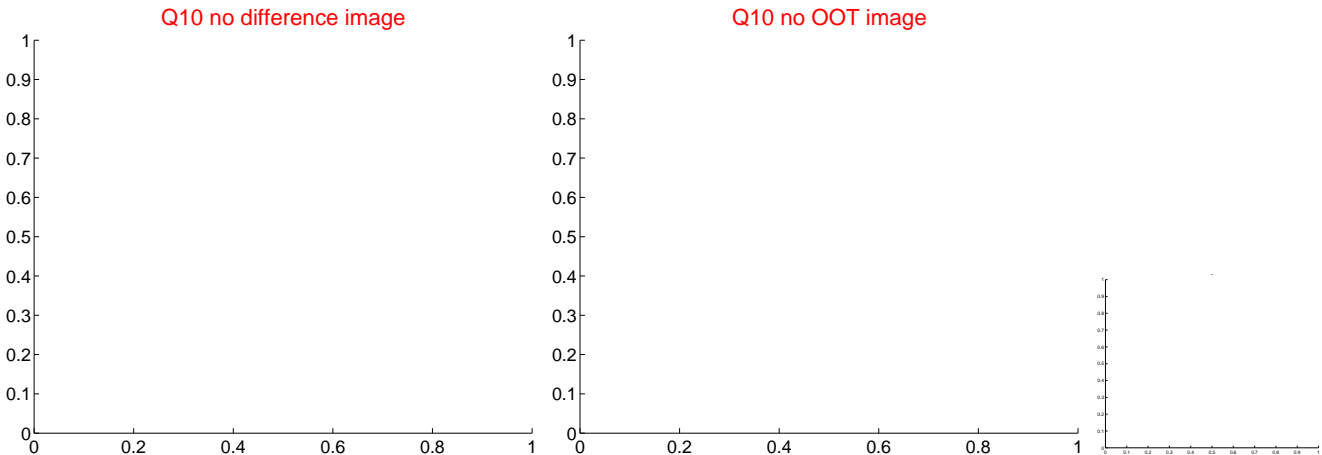
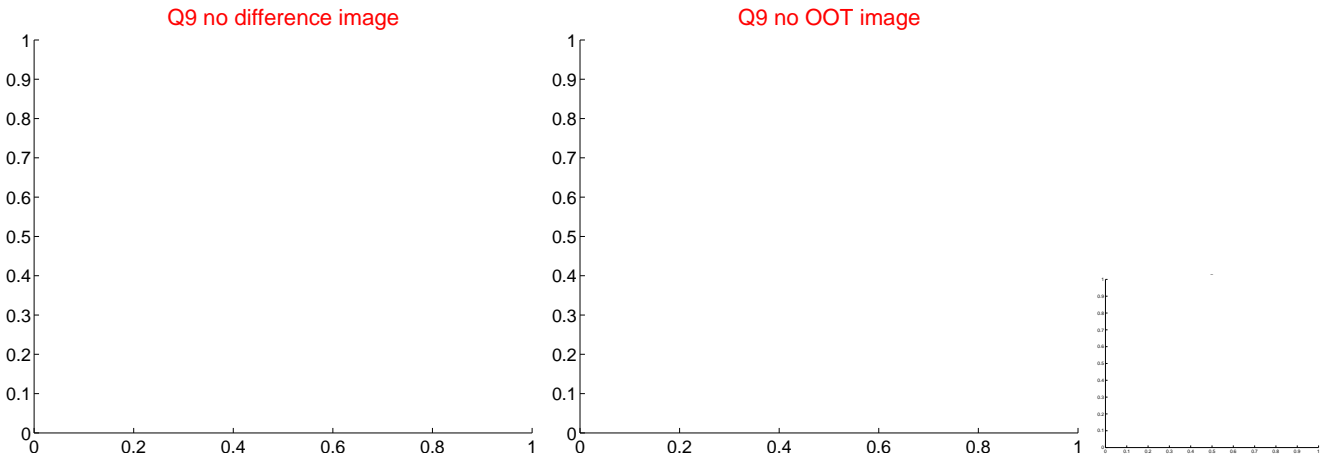
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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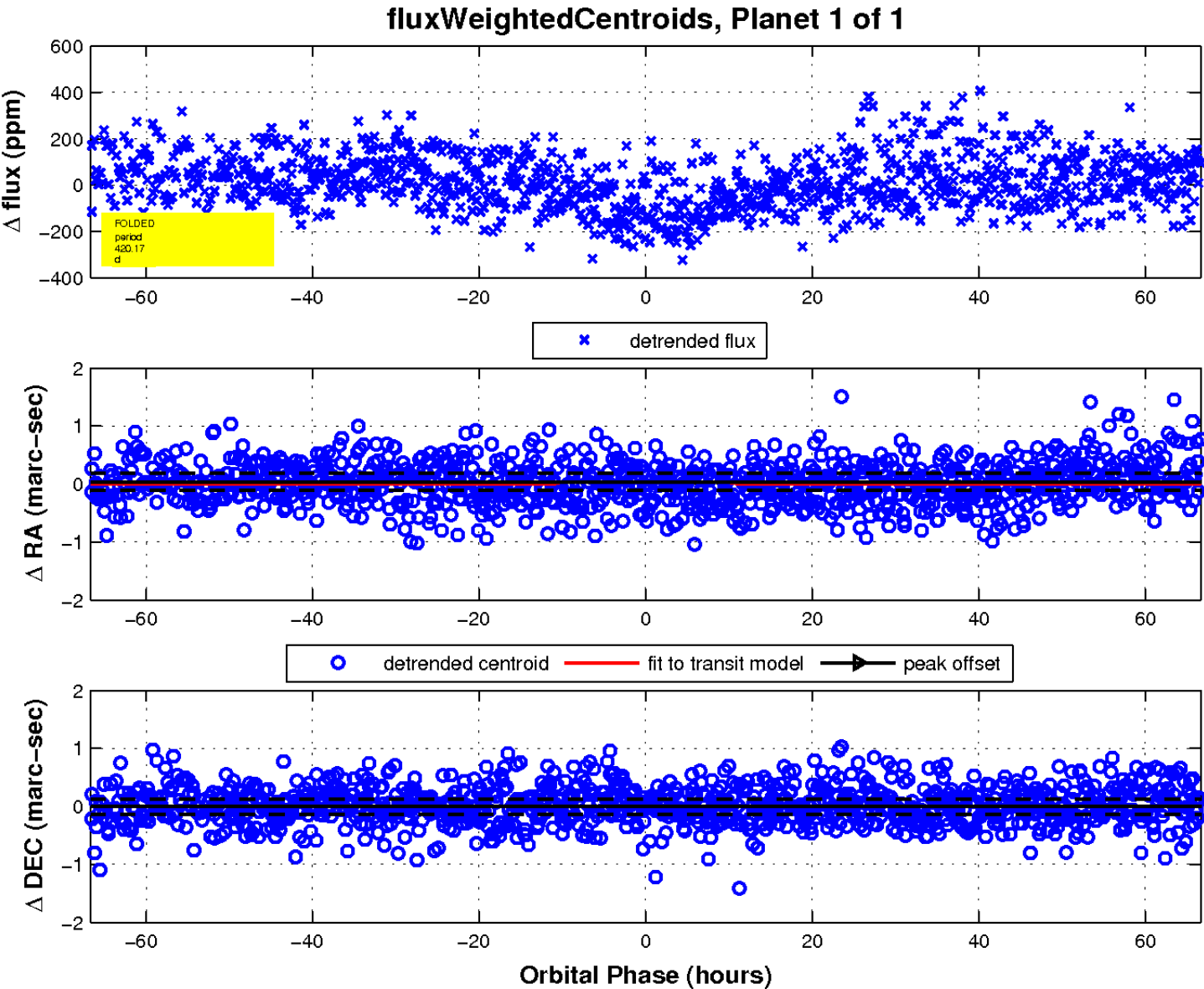
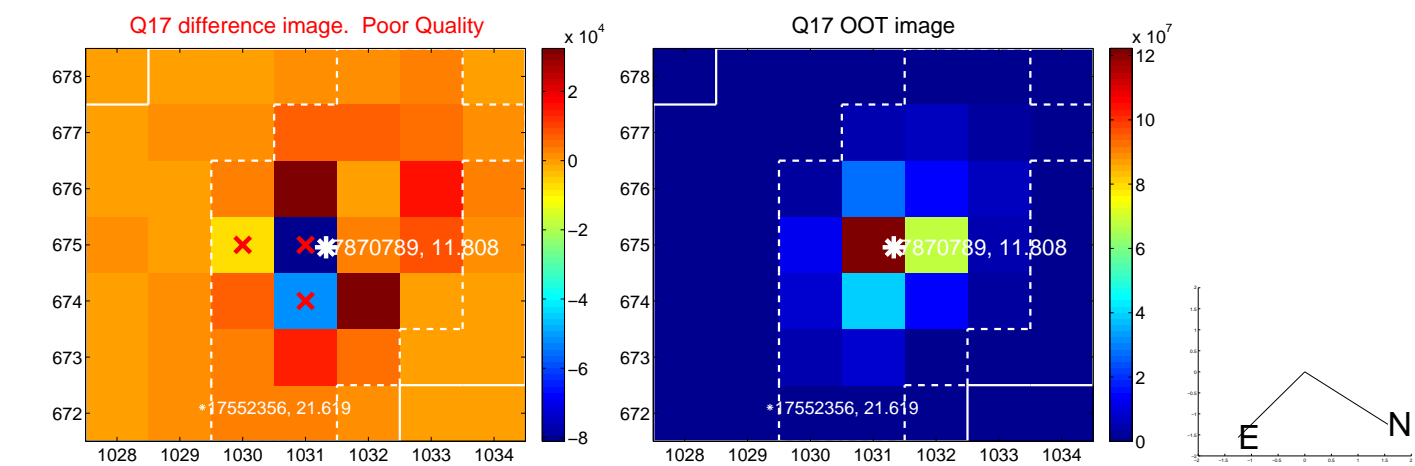
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image

Declination

