

KIC 007031656

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})
007031656-01	OBS	No	0.566740	131.885048	17.4	3.959	8.8	3.1	1.06	6542	0.46	9661.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007031656-01	OBS	FP	0.00	1	0	1	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—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.

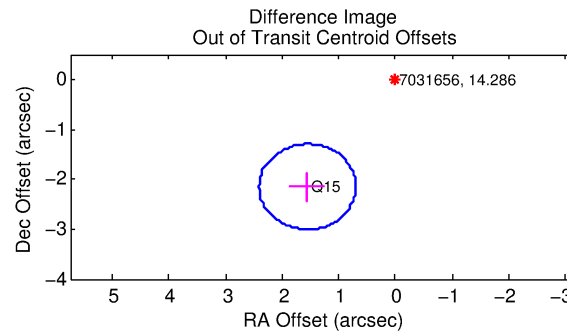
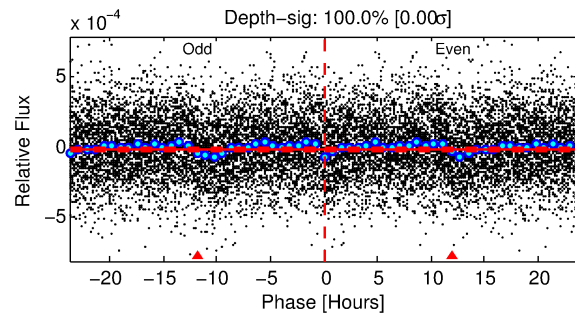
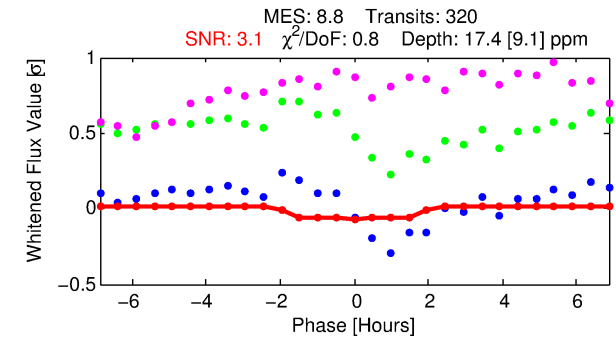
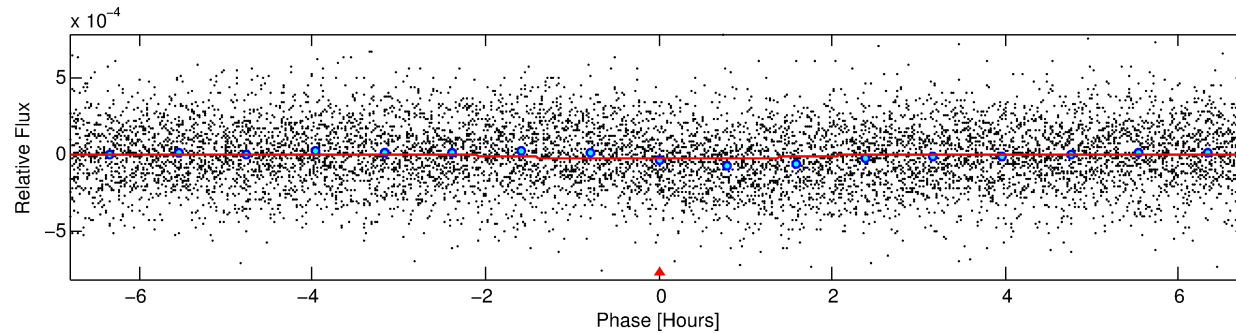
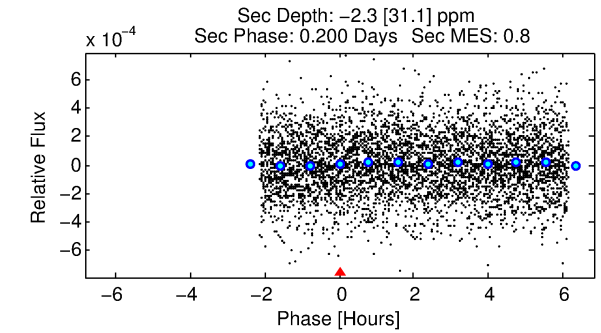
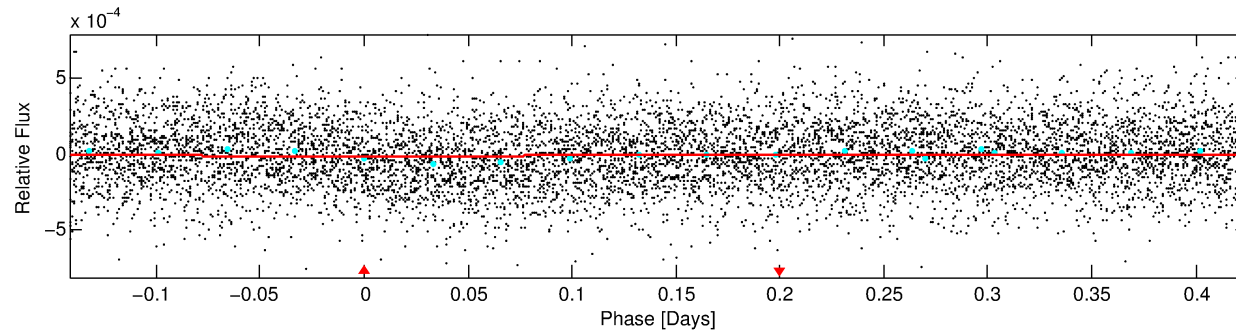
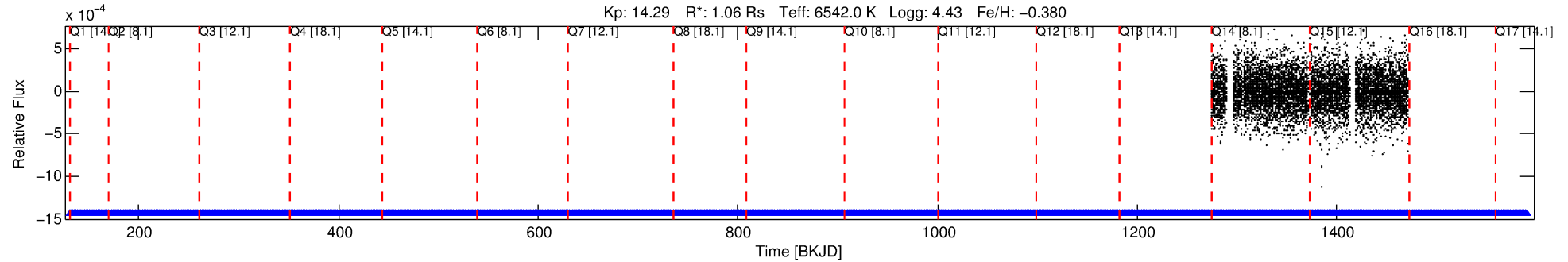
Ephemeris Match Information For 007031656-01

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
007031656-01	7031656	RR-Lyr-pri	7198959	1:1	926.9	87	-217	7.86	14.28	36664.00	Direct-PRF	0	1.66	20.05

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: 7031656 Candidate: 1 of 1 Period: 0.567 d



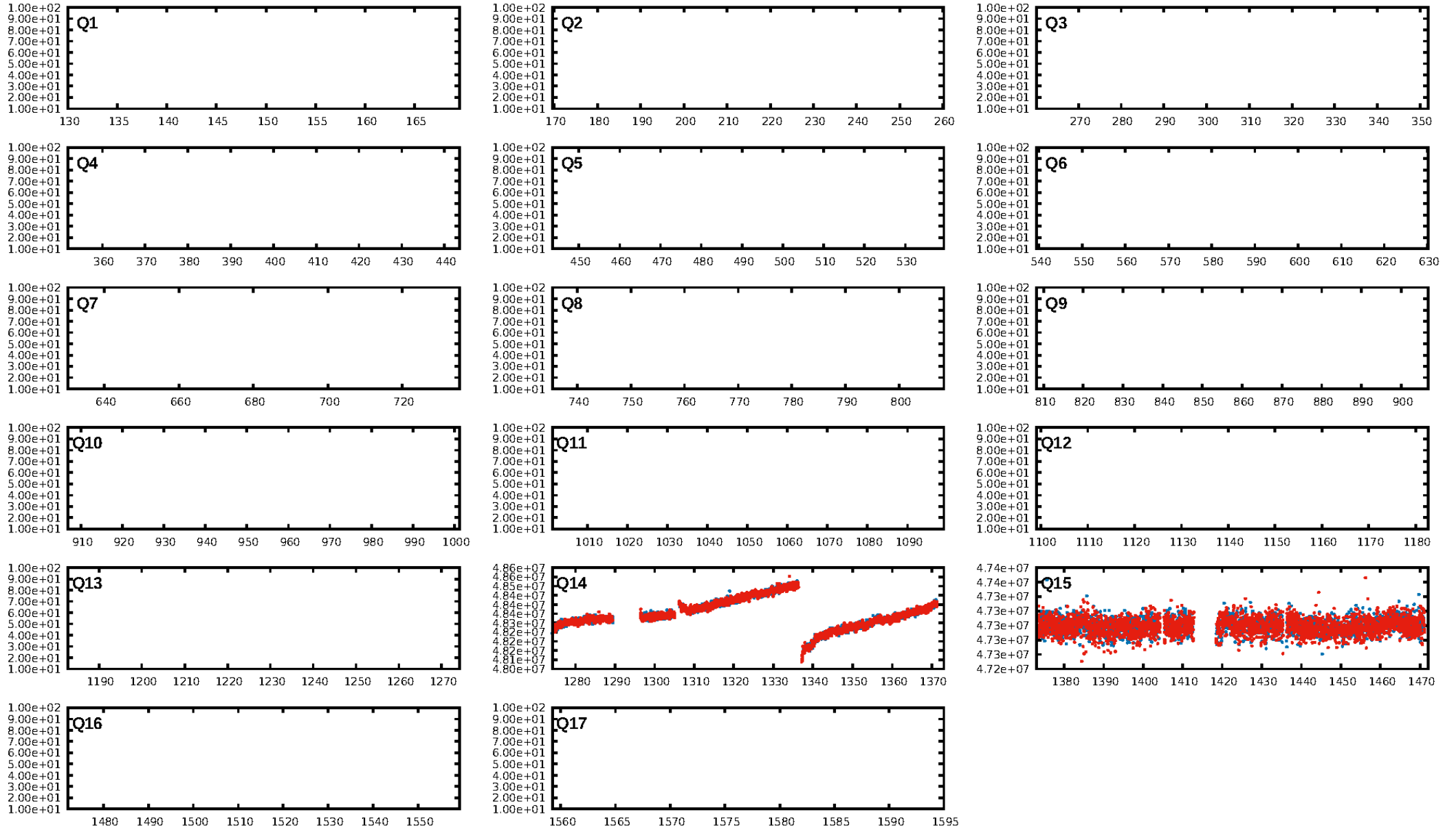
DV Fit Results:

Period = 0.56674 [0.00003] d
Epoch = 131.8850 [0.0129] BKJD
Rp/R* = 0.0040 [0.0080]
a/R* = 1.21 [4.17]
b = 0.50 [16.71]
Seff = 9661.30 [3916.86]
Teff = 2528 [256] K
Rp = 0.46 [0.94] Re
a = 0.0138 [0.0036] AU
Ag = N/A
Teffp = N/A

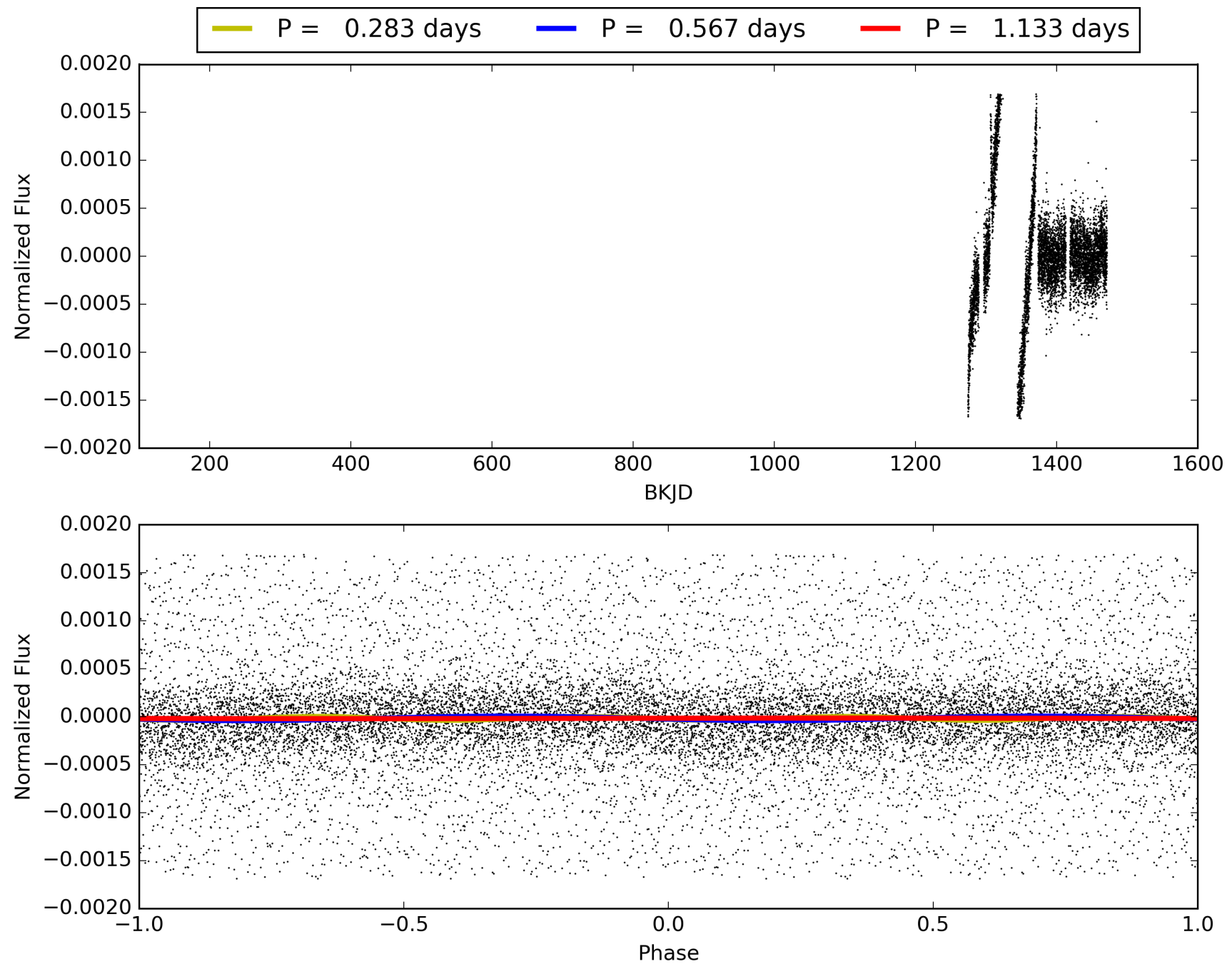
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 4.32e-06
RollingBand-fgt: 1.00 [320/320]
GhostDiagnostic-chr: 0.001435
Centroid-sig: N/A
Centroid-so: 9.674 arcsec [2.10σ]
OotOffset-rm: 2.655 arcsec [9.31σ]
KicOffset-rm: 2.391 arcsec [8.42σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 007031656-01, PDC Light Curves

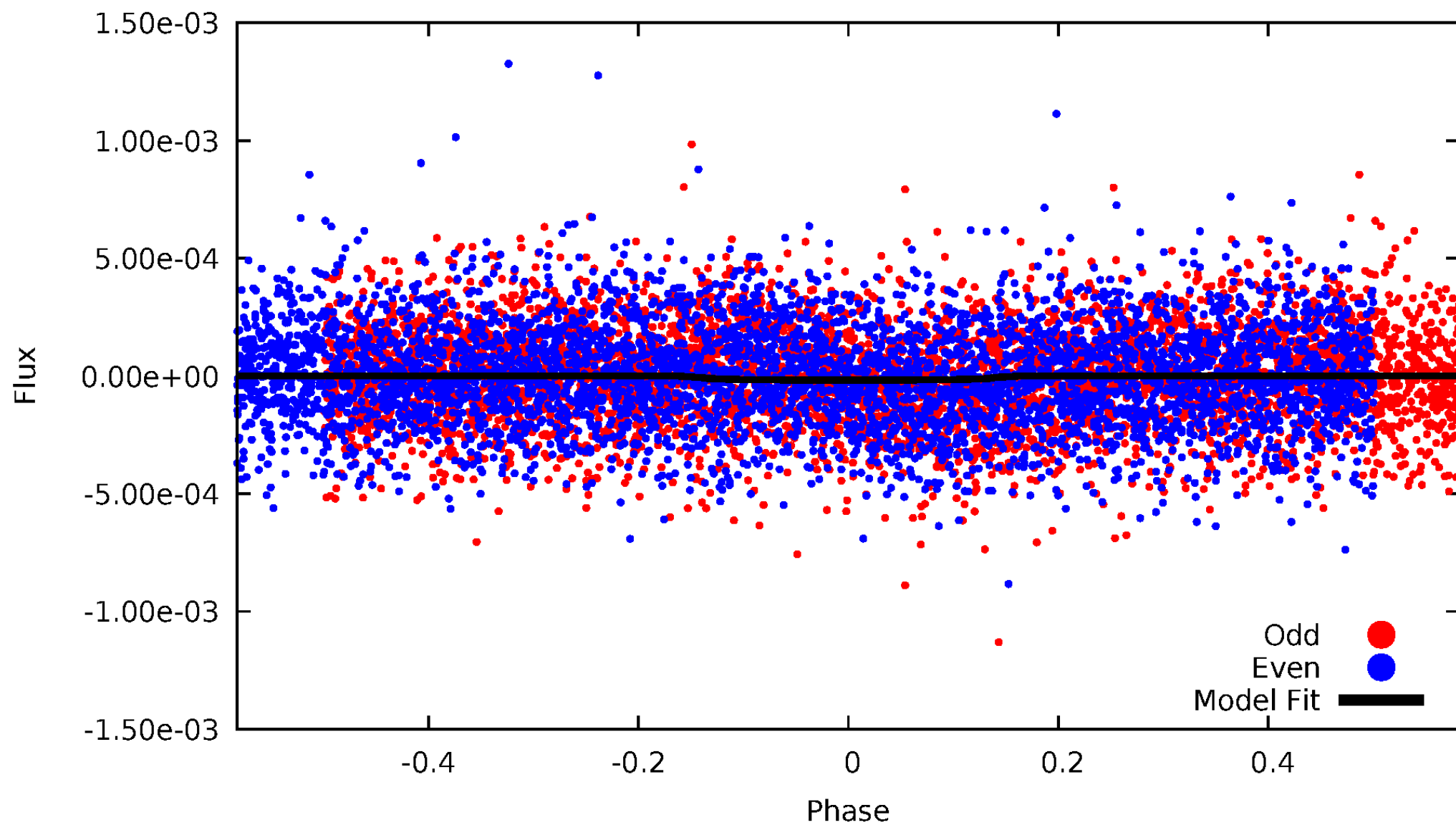


TCE 007031656-01



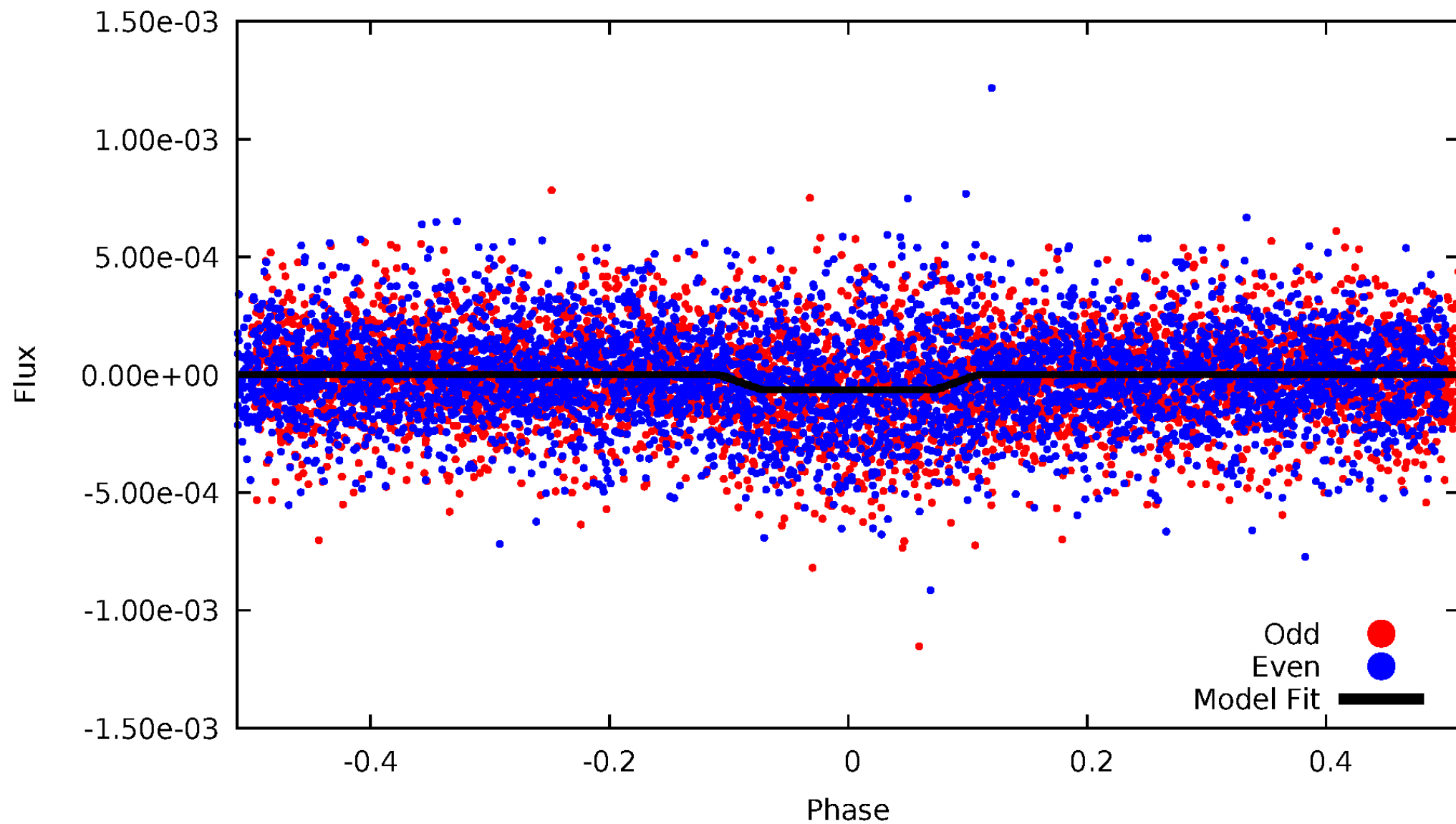
DV Odd/Even

TCE 007031656-01



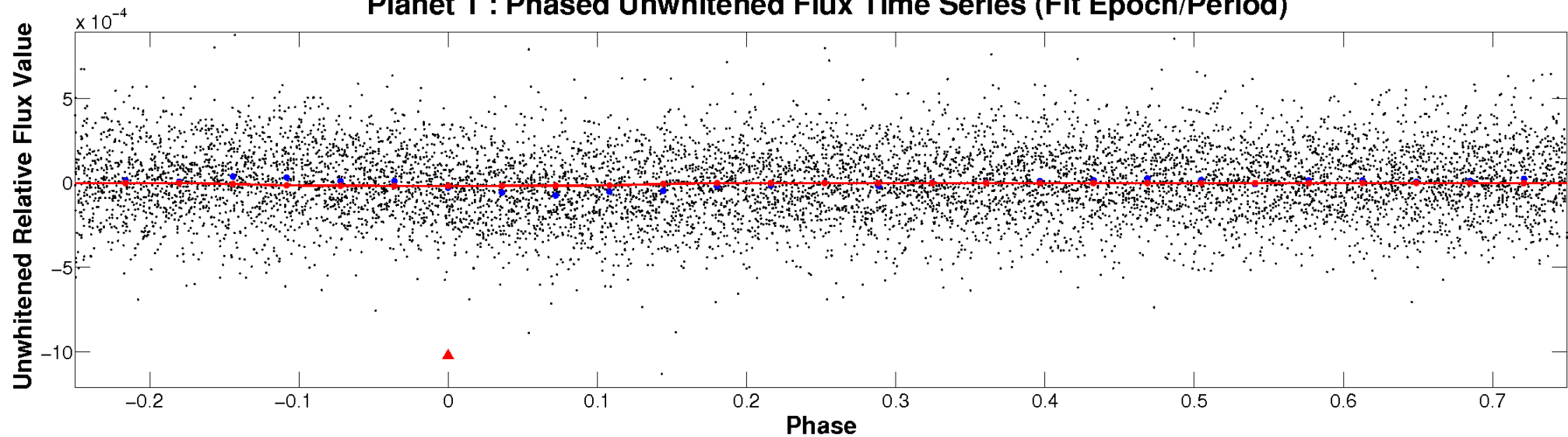
ALT Odd/Even

TCE 007031656-01

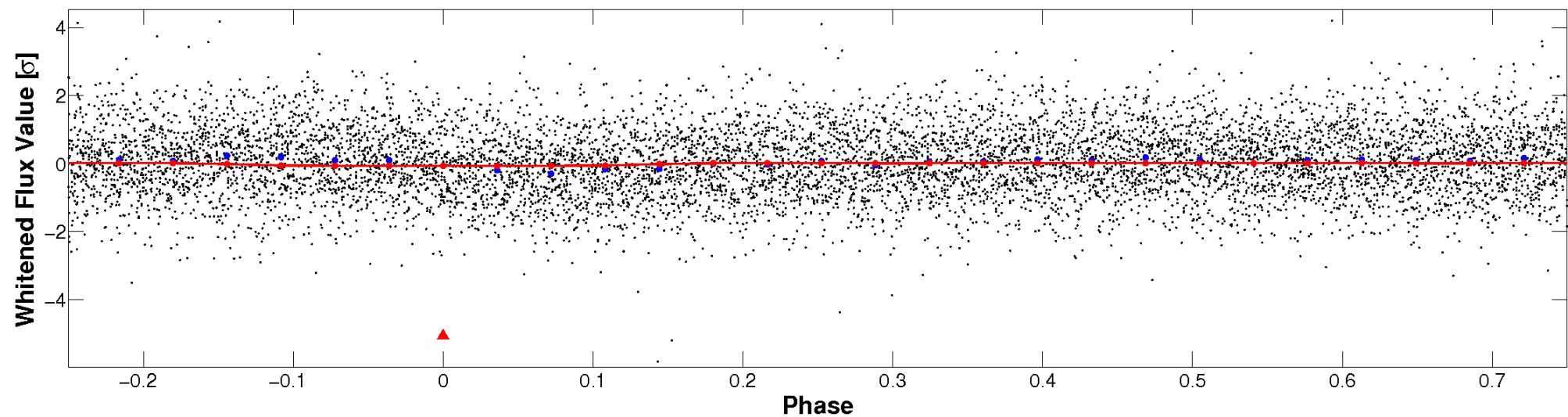


Non-Whitened Vs. Whitened Light Curve

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

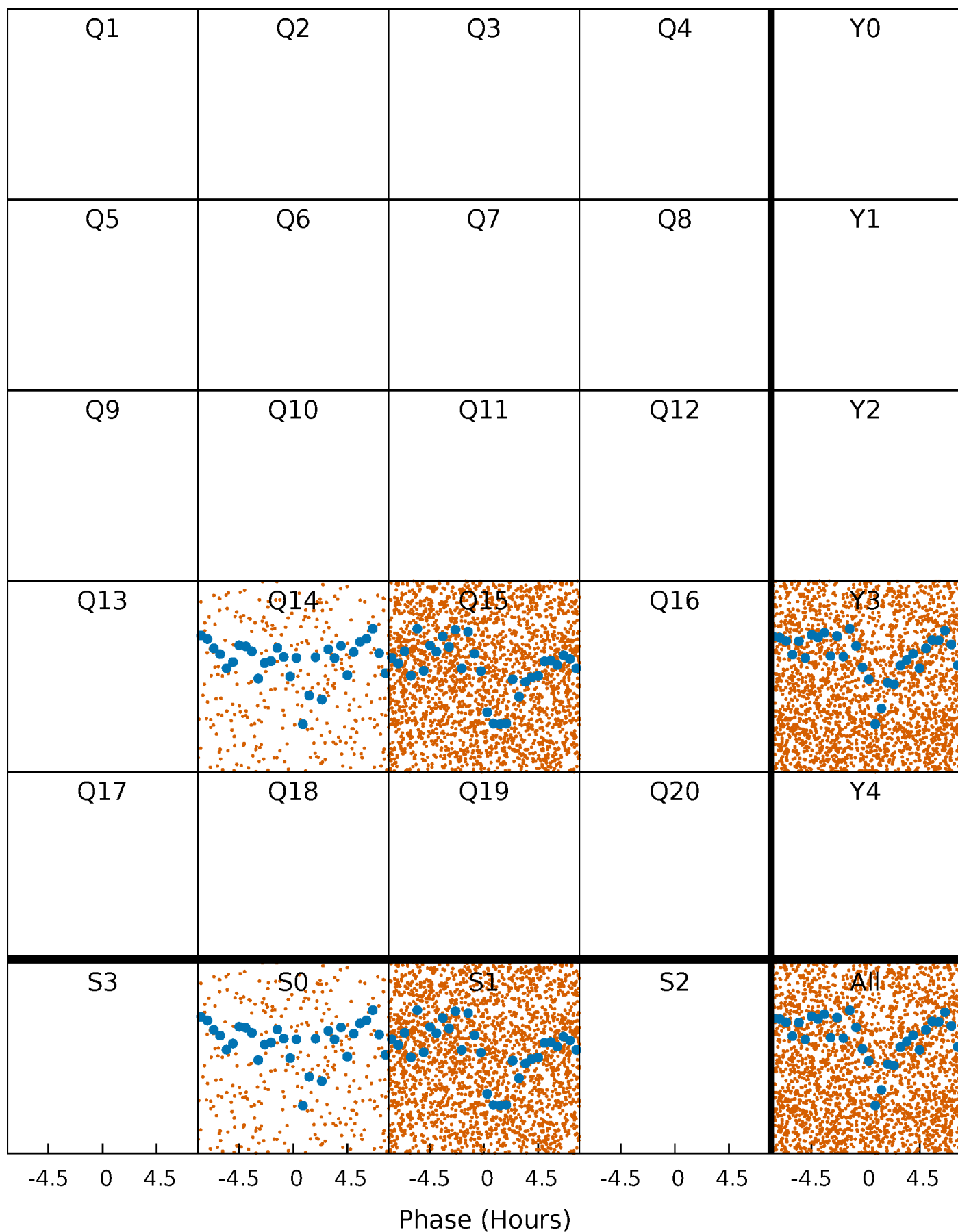


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



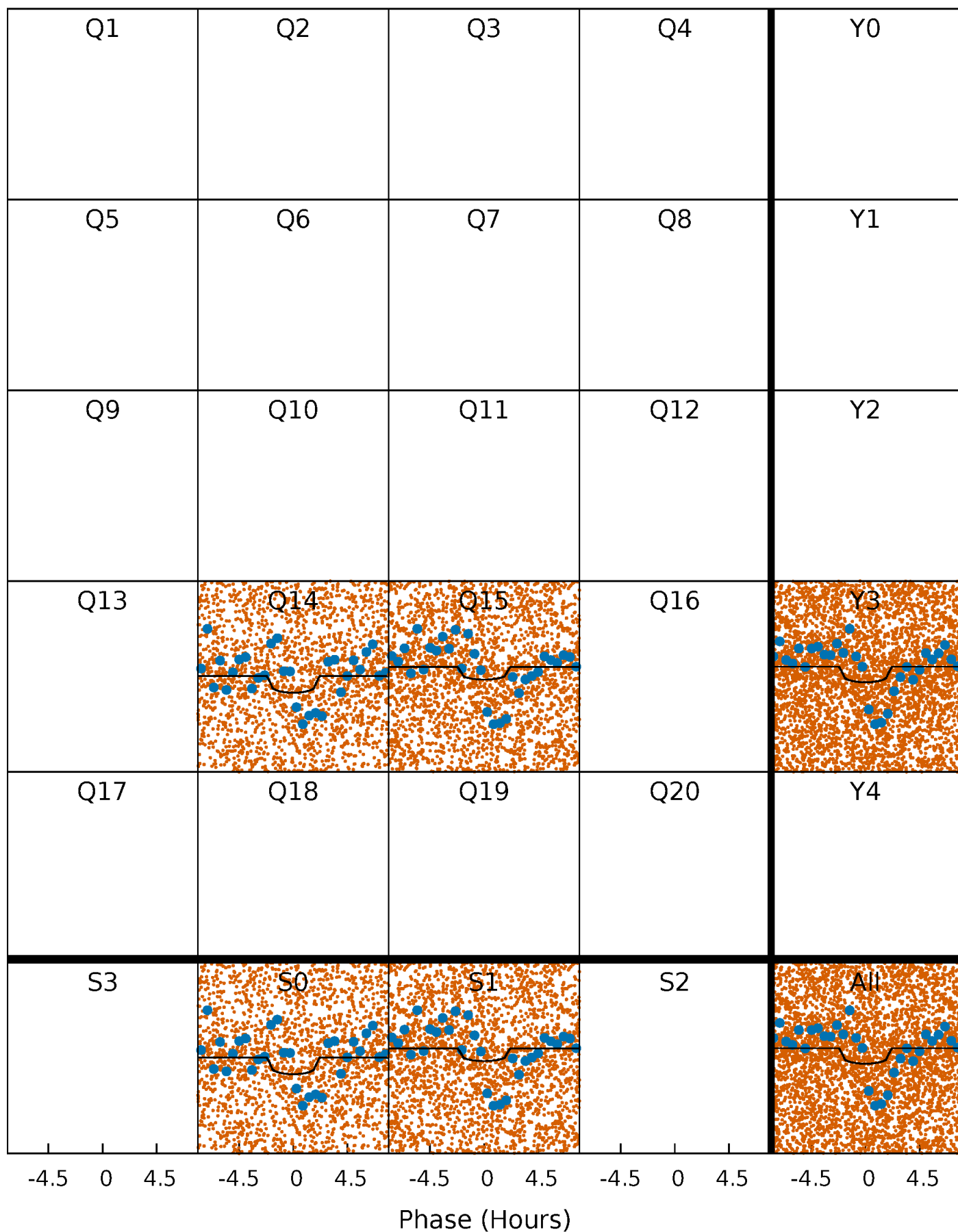
PDC Quarter-Phased Transit Curves

TCE 007031656-01 P= 0.566740 Days $T_0=131.885048$ (BKJD)



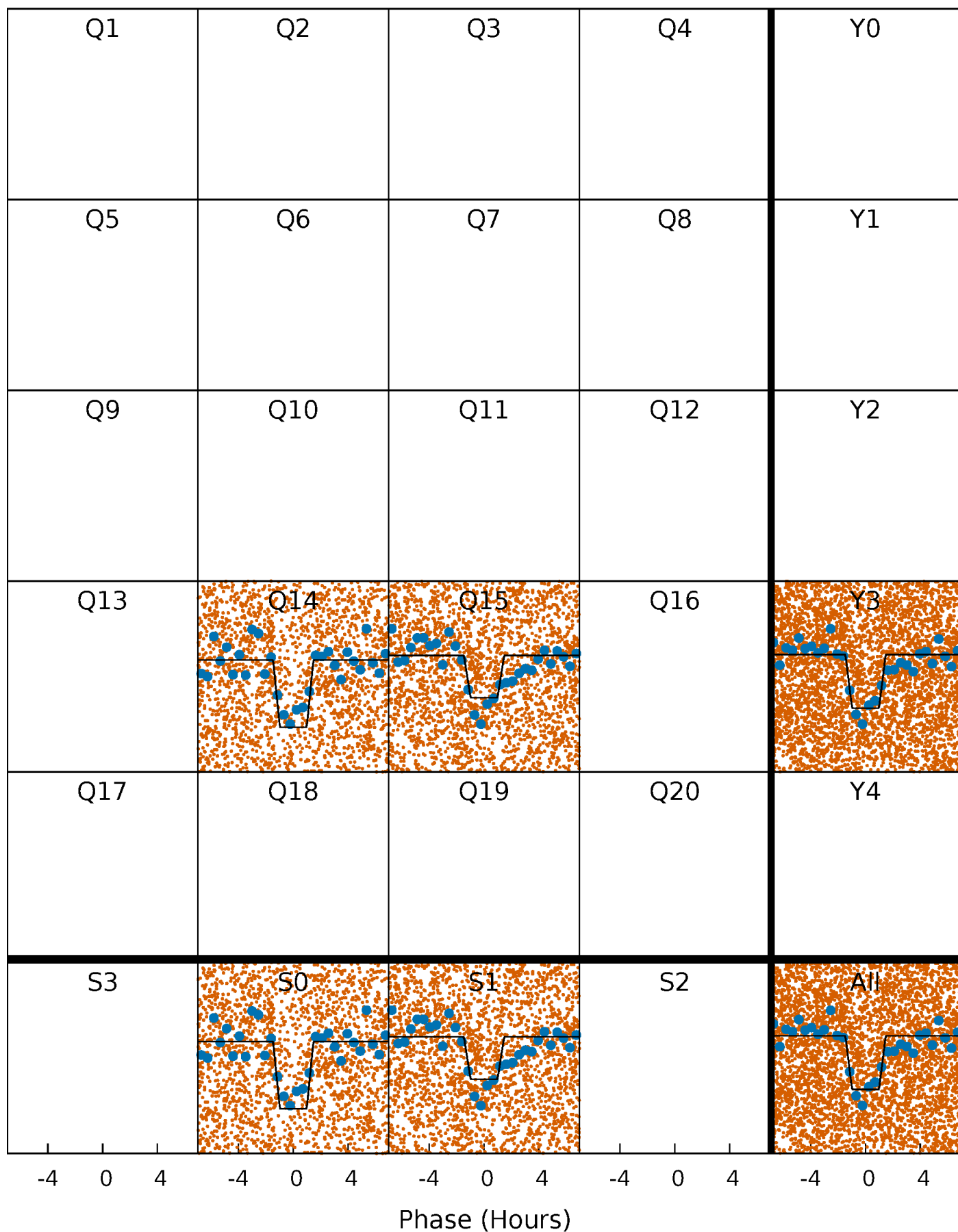
DV Quarter-Phased Transit Curves

TCE 007031656-01 P= 0.566740 Days $T_0=131.885048$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

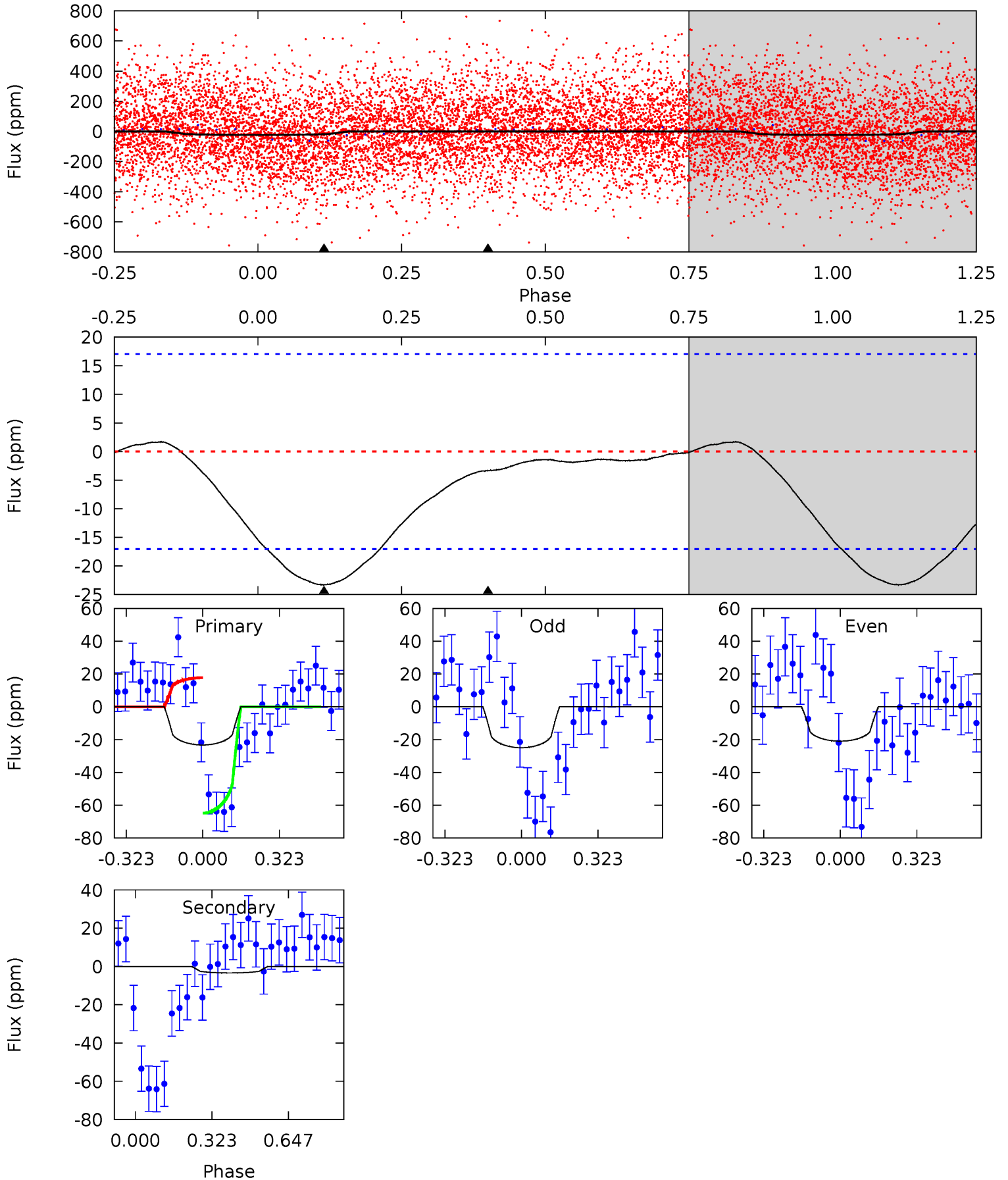
TCE 007031656-01 P= 0.566775 Days $T_0=131.853624$ (BKJD)



DV Model-Shift Uniqueness Test

007031656-01, P = 0.566740 Days, E = 131.885048 Days

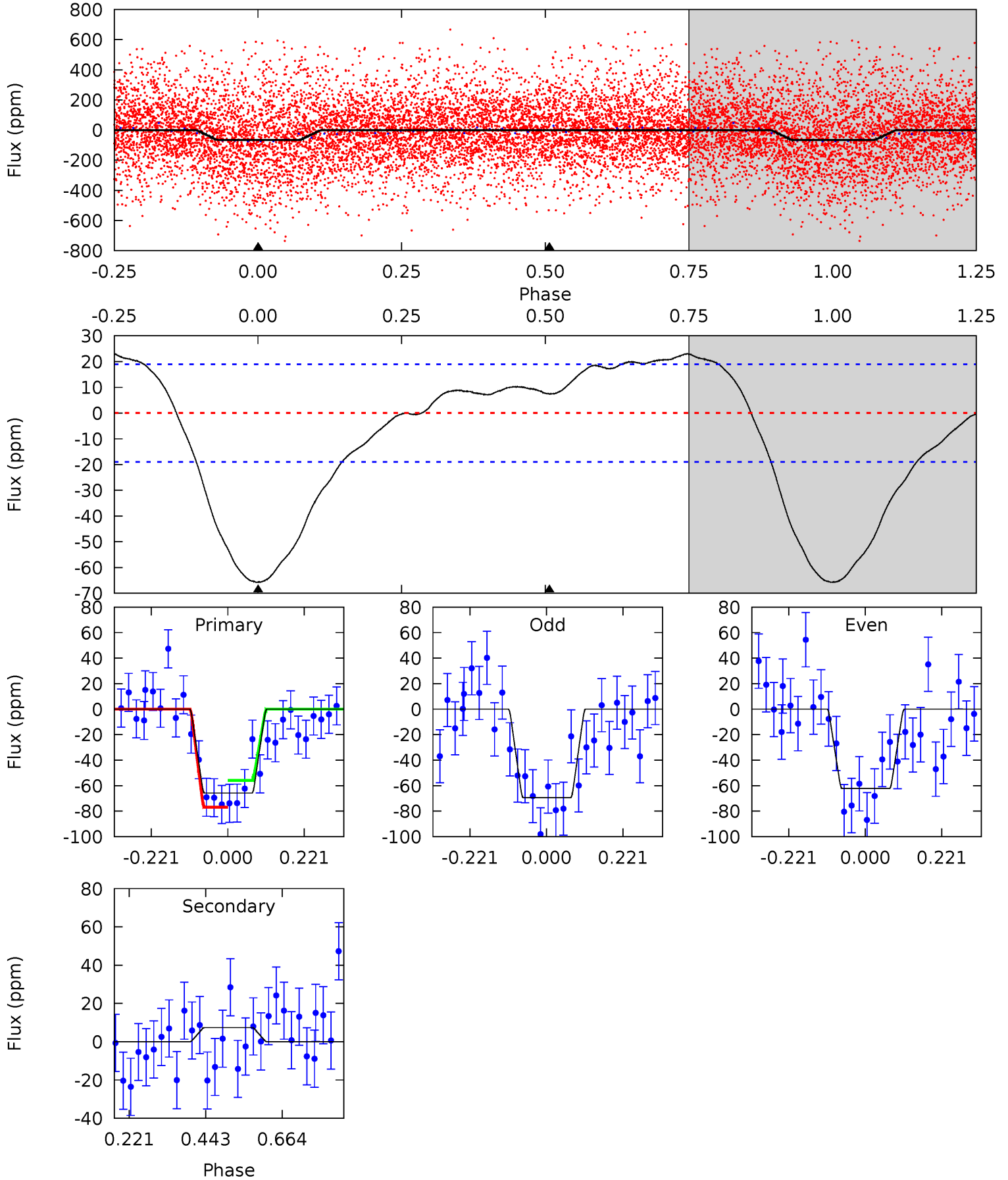
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.89	0.85	0	0	4.31	0.99	0.17	5.89	5.89	0.85	0.85	0.50	1.08	0.07	6.04



Alt Model-Shift Uniqueness Test

007031656-01, P = 0.566775 Days, E = 131.853624 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	-1.72	0	0	4.40	1.22	2.66	15.2	15.2	-1.72	-1.72	0.84	0.99	0.26	2.44



Stellar Parameters For KIC 007031656

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6542^{+183}_{-252}	$4.427^{+0.068}_{-0.203}$	$-0.380^{+0.250}_{-0.300}$	$1.061^{+0.332}_{-0.133}$	$1.096^{+0.146}_{-0.146}$	$1.292^{+0.452}_{-0.646}$
	+3%/-4%	+2%/-5%	+66%/-79%	+31%/-13%	+13%/-13%	+35%/-50%
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 007031656-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 4	$0.83^{+0.82}_{-0.54}$	3589^{+256}_{-193}	2359^{+2922}_{-5984}	$0.320^{+3.124}_{-0.360}$
Alt.	7 ± 4	$1.20^{+0.88}_{-0.74}$	3597^{+259}_{-191}	-4077^{+425}_{-1400}	$-0.469^{+0.347}_{-2.969}$

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

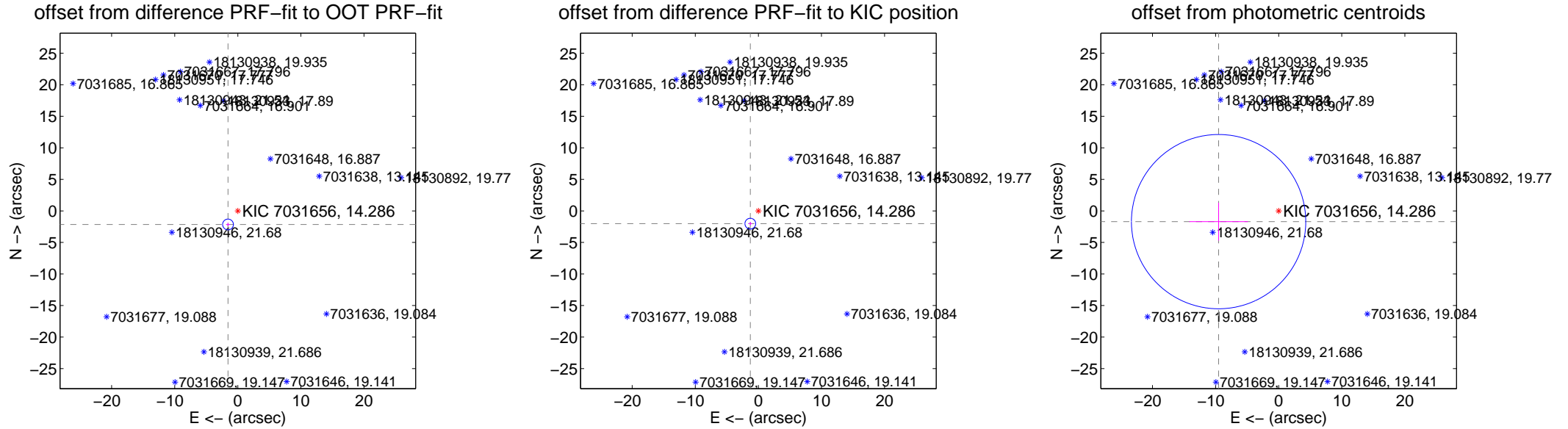
DV Centroid Data

Supplemental centroid analysis for 007031656-01. Kepler magnitude: 14.29. Transit SNR 3.05

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.655 \pm 0.285	9.31	1.554 \pm 0.298	-2.152 \pm 0.278
PRF-fit source offset from KIC position	2.391 \pm 0.284	8.42	1.278 \pm 0.298	-2.021 \pm 0.278
photometric centroid source offset	9.67 \pm 4.61	2.10	9.52 \pm 4.65	-1.70 \pm 3.00



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.

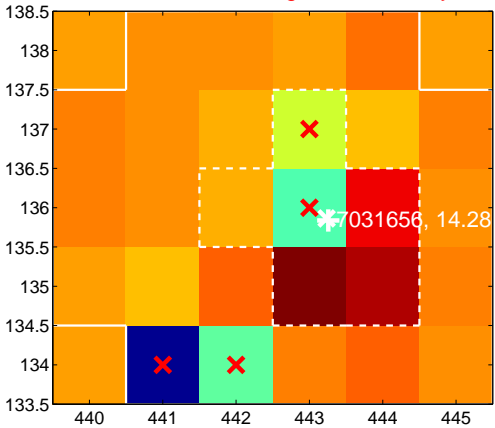
Q13 no difference image



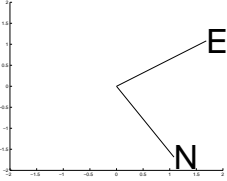
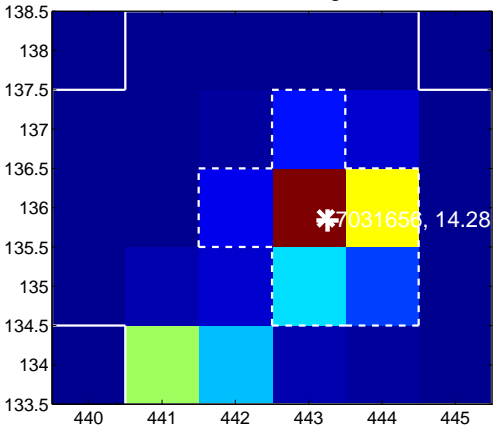
Q13 no OOT image



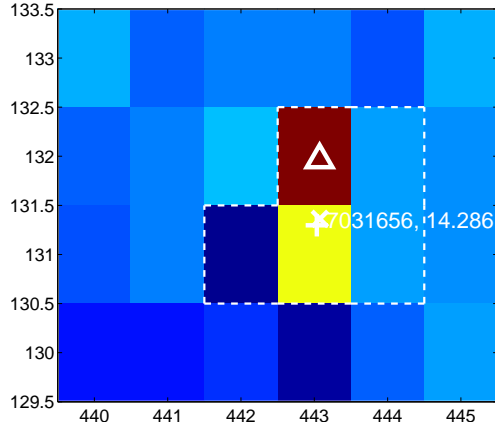
Q14 difference image. Poor Quality



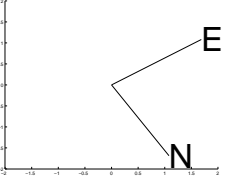
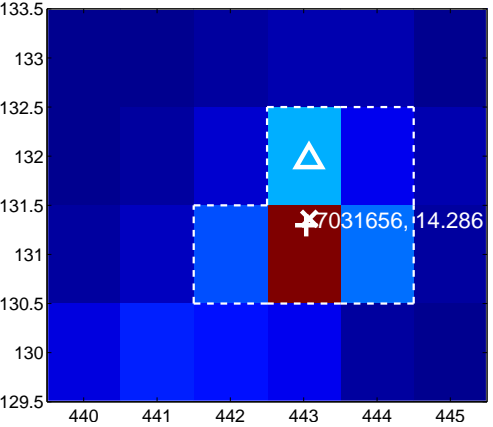
Q14 OOT image



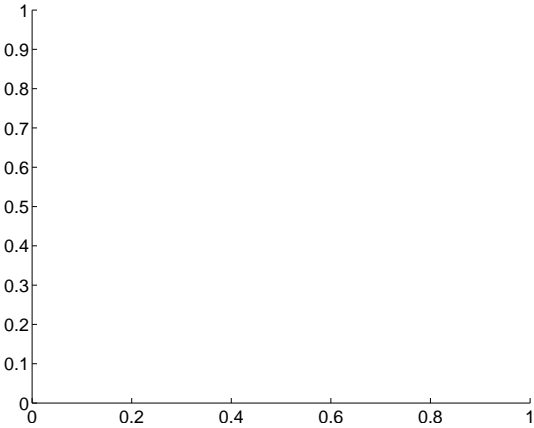
Q15 difference image



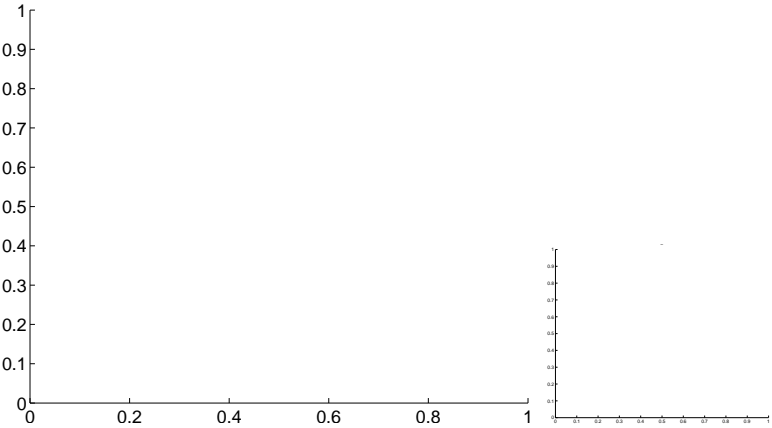
Q15 OOT image



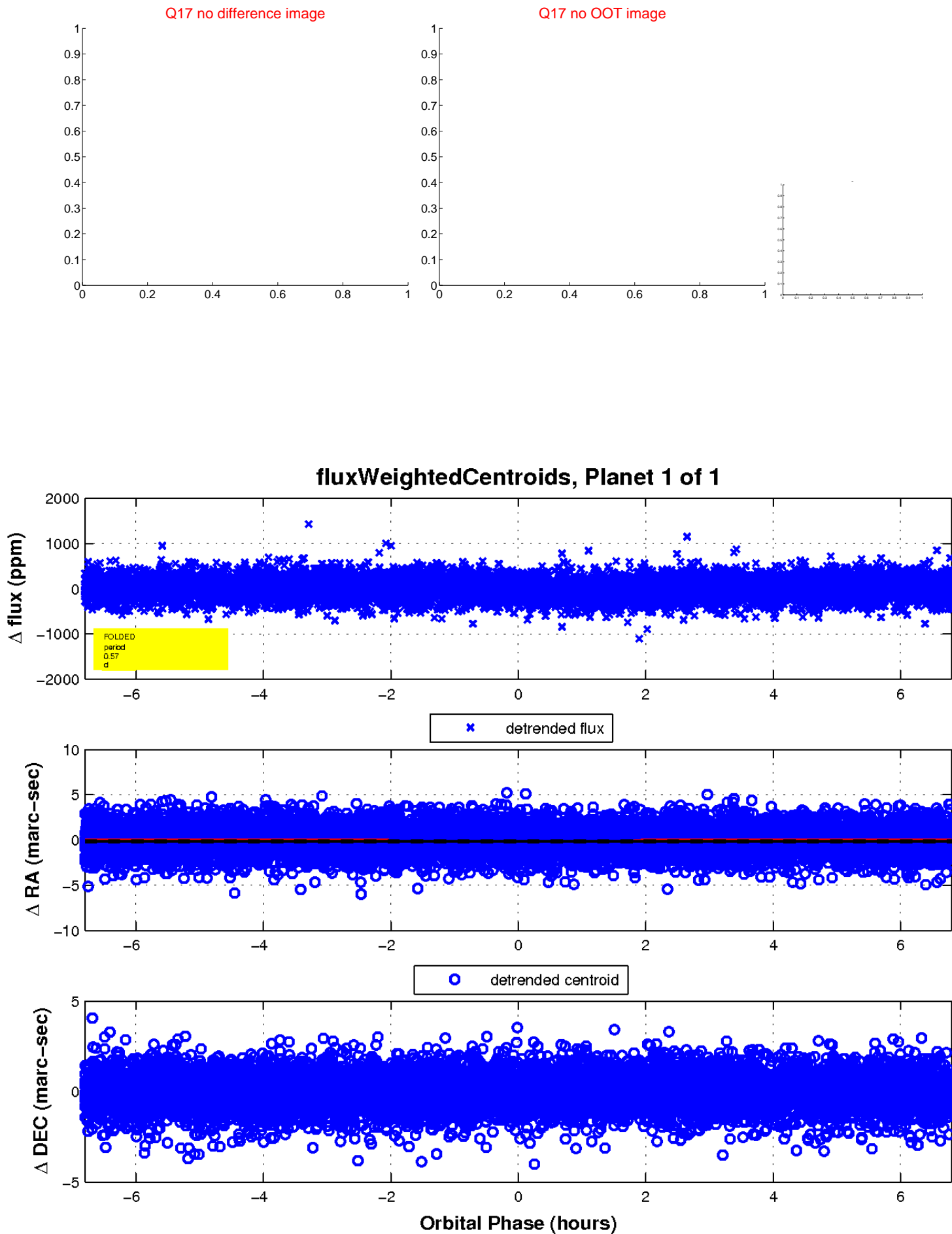
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

