KIC 005868793

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 ($S_\oplus$)
005868793-01	OBS	4290.01	4.838134	135.150255	1589.7	1.226	11.0	13.7	0.20	3187	0.87	3.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005868793-01	OBS	PC	0.91	0	0	0	0	CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
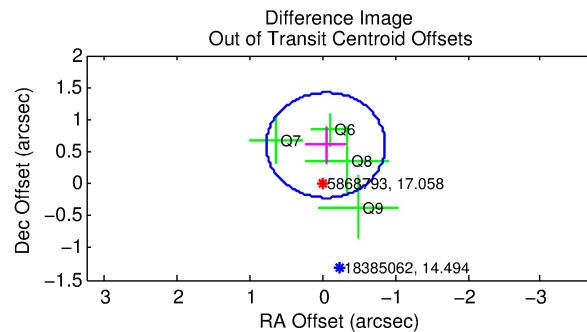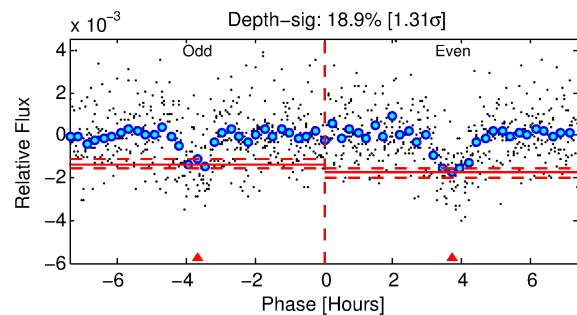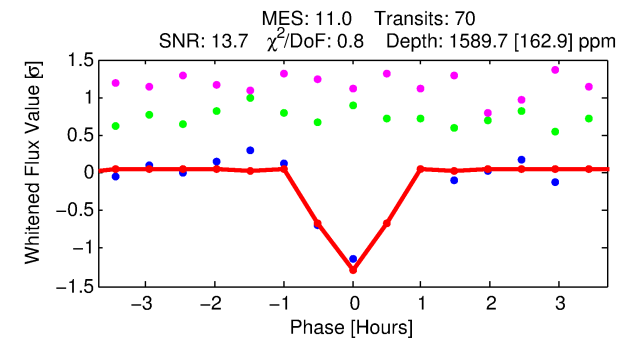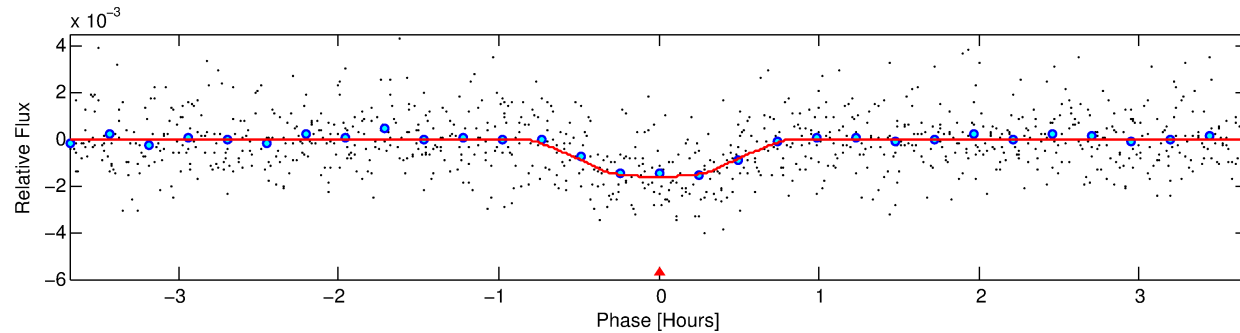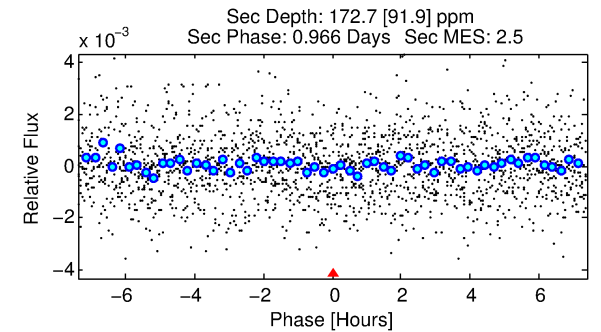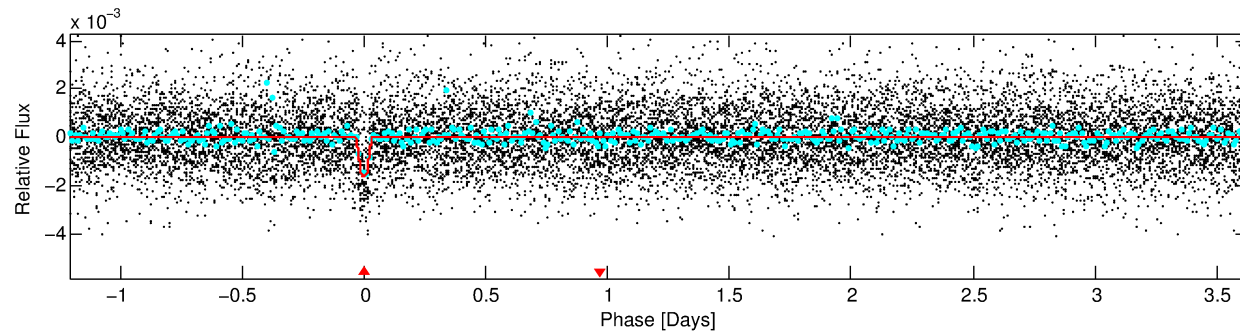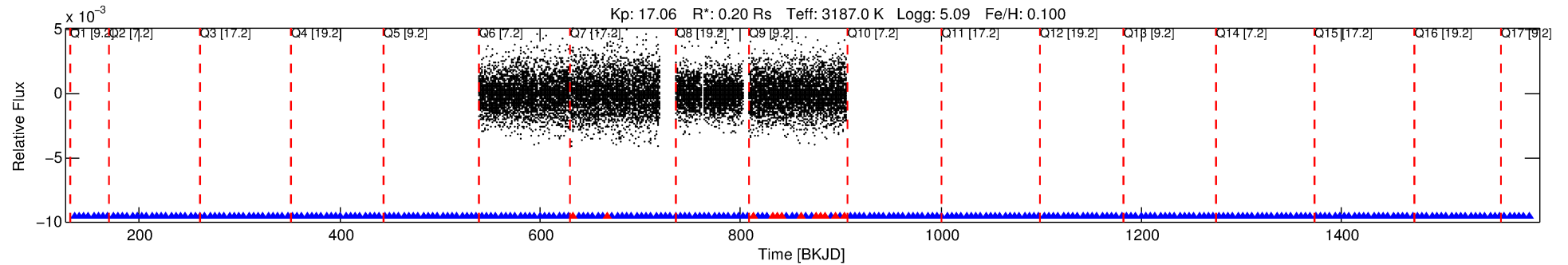See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

Ephemeris Match Information For 005868793-01

No Significant Match Found

DV One-Page Summary

KIC: 5868793   Candidate: 1 of 1   Period: 4.838 d
KOI: K04290.01   Corr: 0.922

Kp: 17.06   R*: 0.20 Rs   Teff: 3187.0 K   Logg: 5.09   Fe/H: 0.100

Sec Depth: 172.7 [91.9] ppm
Sec Phase: 0.966 Days   Sec MES: 2.5

MES: 11.0   Transits: 70
SNR: 13.7 χ^2/DoF: 0.8   Depth: 1589.7 [162.9] ppm

Depth-sig: 18.9% [1.31σ]

Difference Image
Out of Transit Centroid Offsets

DV Fit Results:

Period = 4.83813 [0.00003] d
Epoch = 135.1503 [0.0036] BKJD
Rp/R* = 0.0399 [0.0331]
a/R* = 21.74 [73.59]
b = 0.75 [2.01]

Seff = 3.70 [0.55]
Teq = 354 [13] K
Rp = 0.87 [0.73] Re
a = 0.0316 [0.0032] AU

Ag = 125.03 [218.23] [0.57σ]
Teffp = 1828 [798] K [1.85σ]

DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.33e-27
RollingBand-fgt: 0.83 [58/70]
GhostDiagnostic-chr: 1.926

Centroid-sig: 8.8%
Centroid-so: 2.584 arcsec [2.21σ]
OotOffset-rm: 0.602 arcsec [2.20σ]
KicOffset-rm: 1.051 arcsec [3.65σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
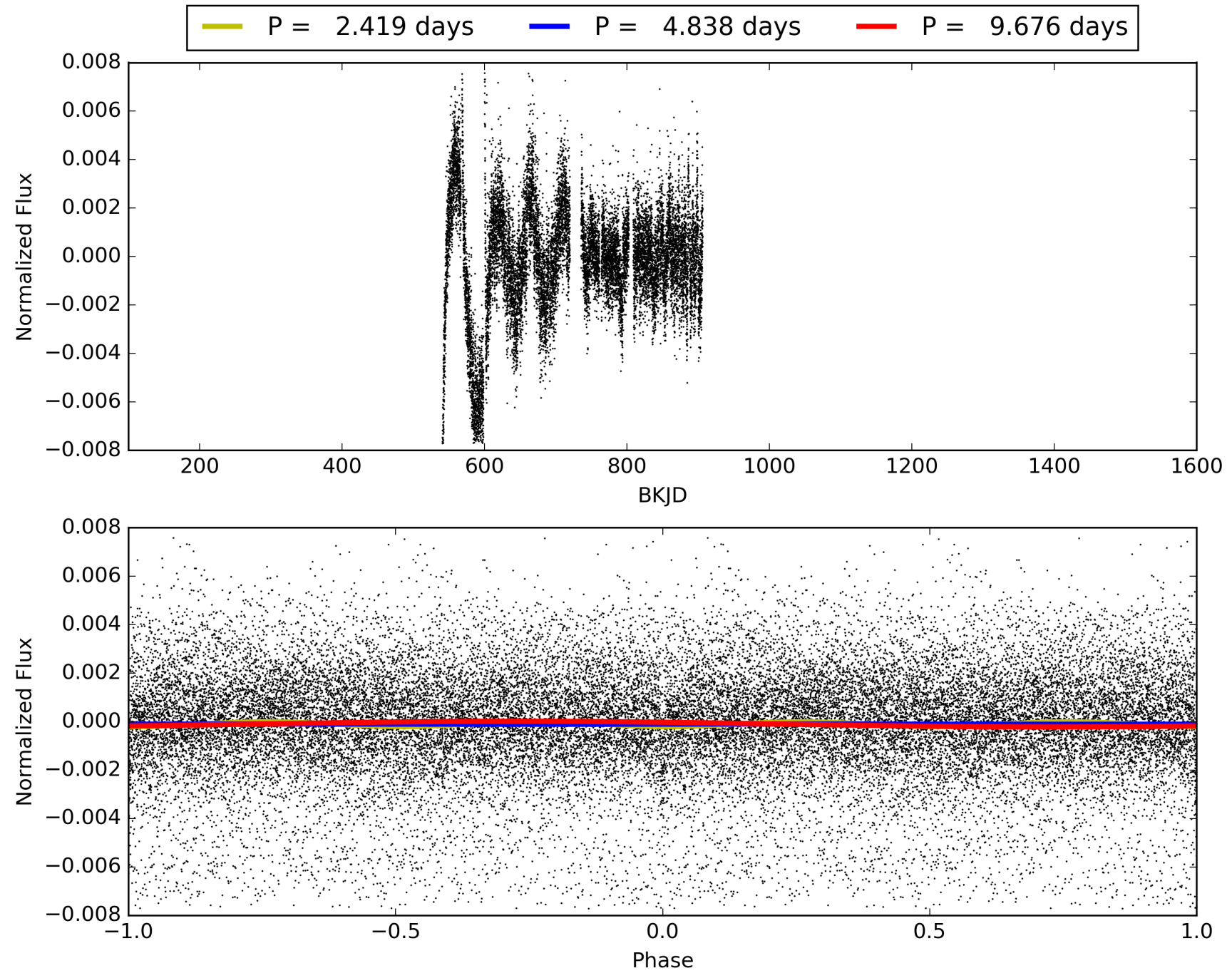DiffImageOverlap-fno: 1.00 [4/4]
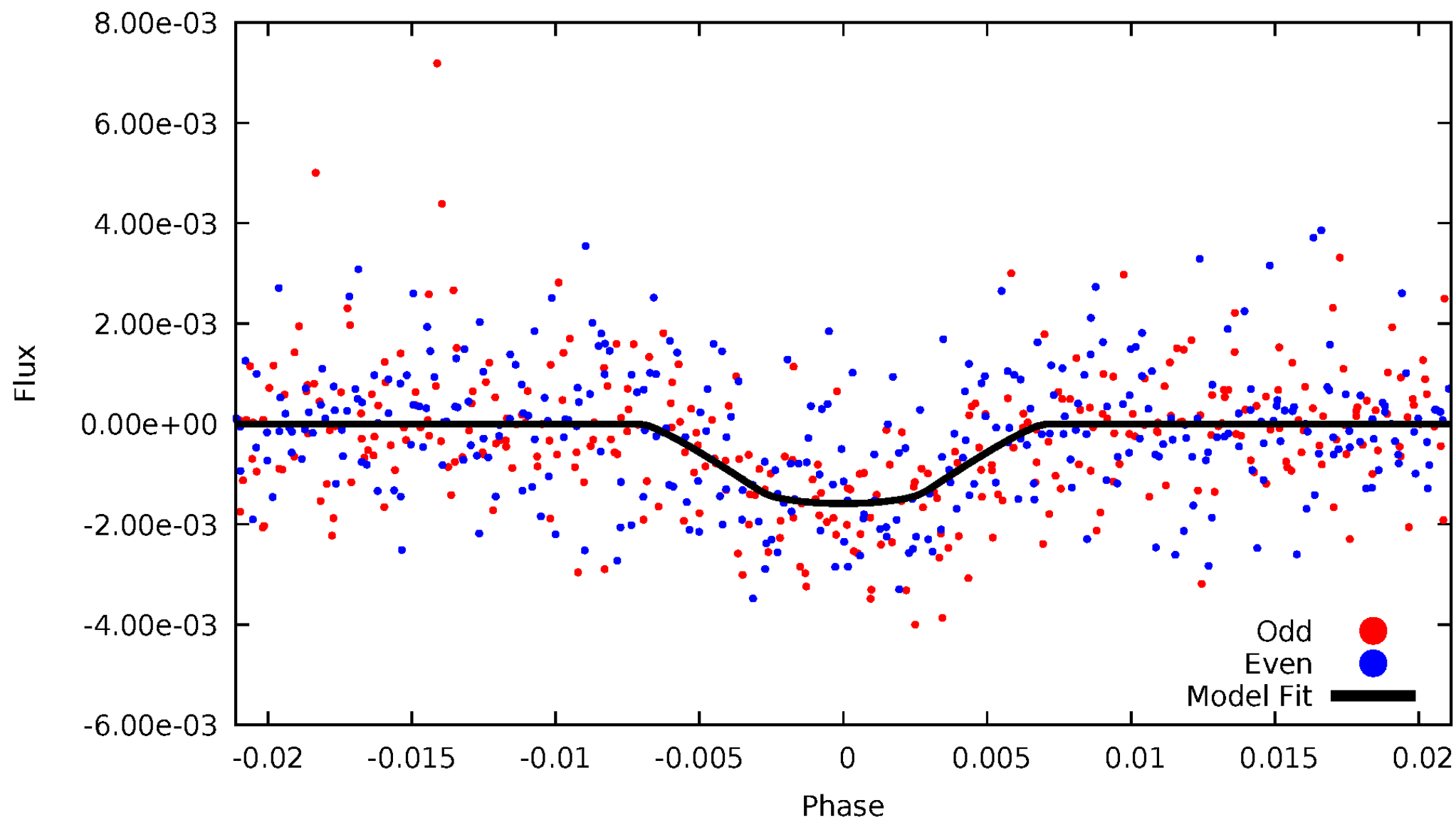
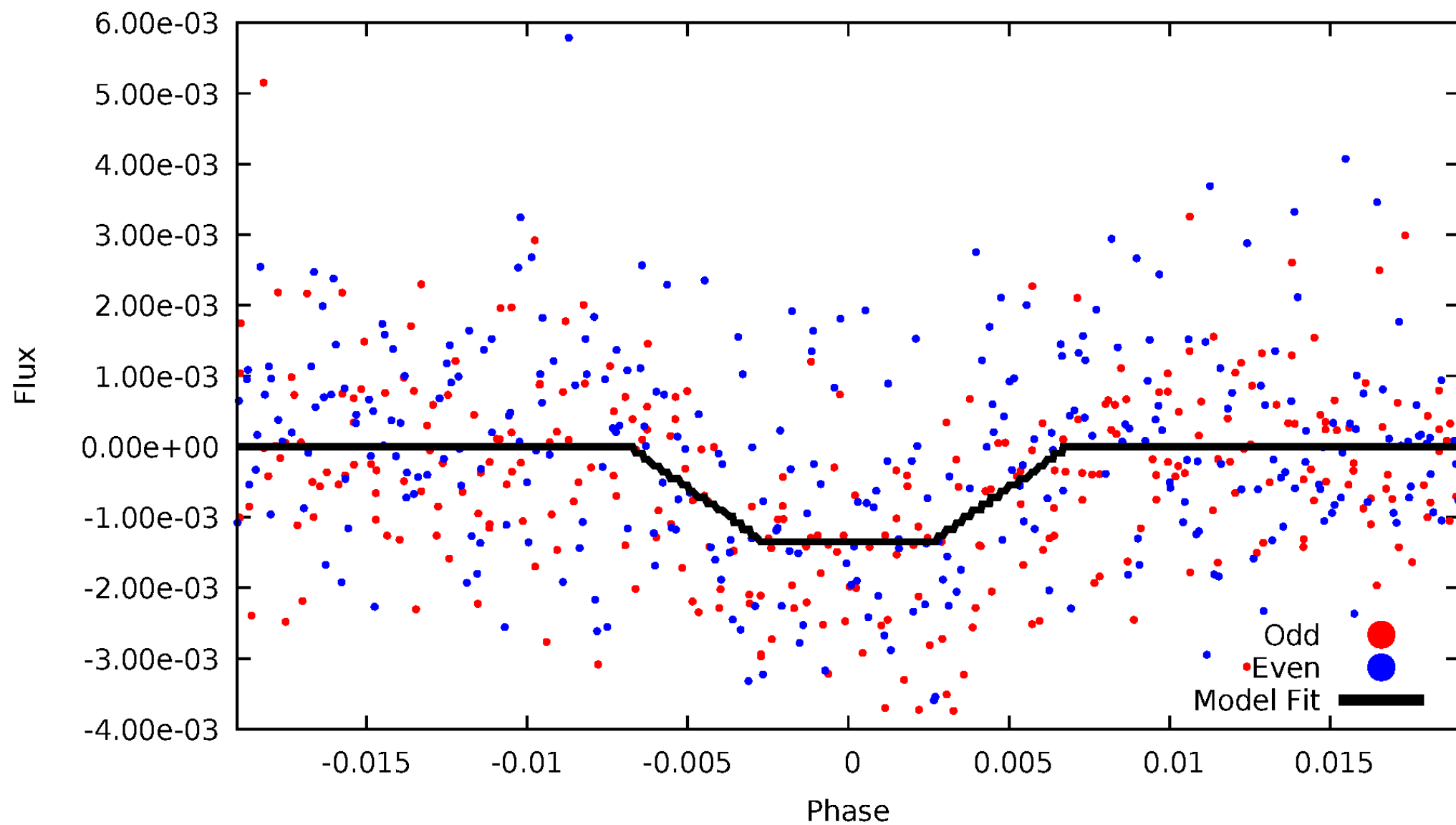# TCE 005868793-01, PDC Light Curves
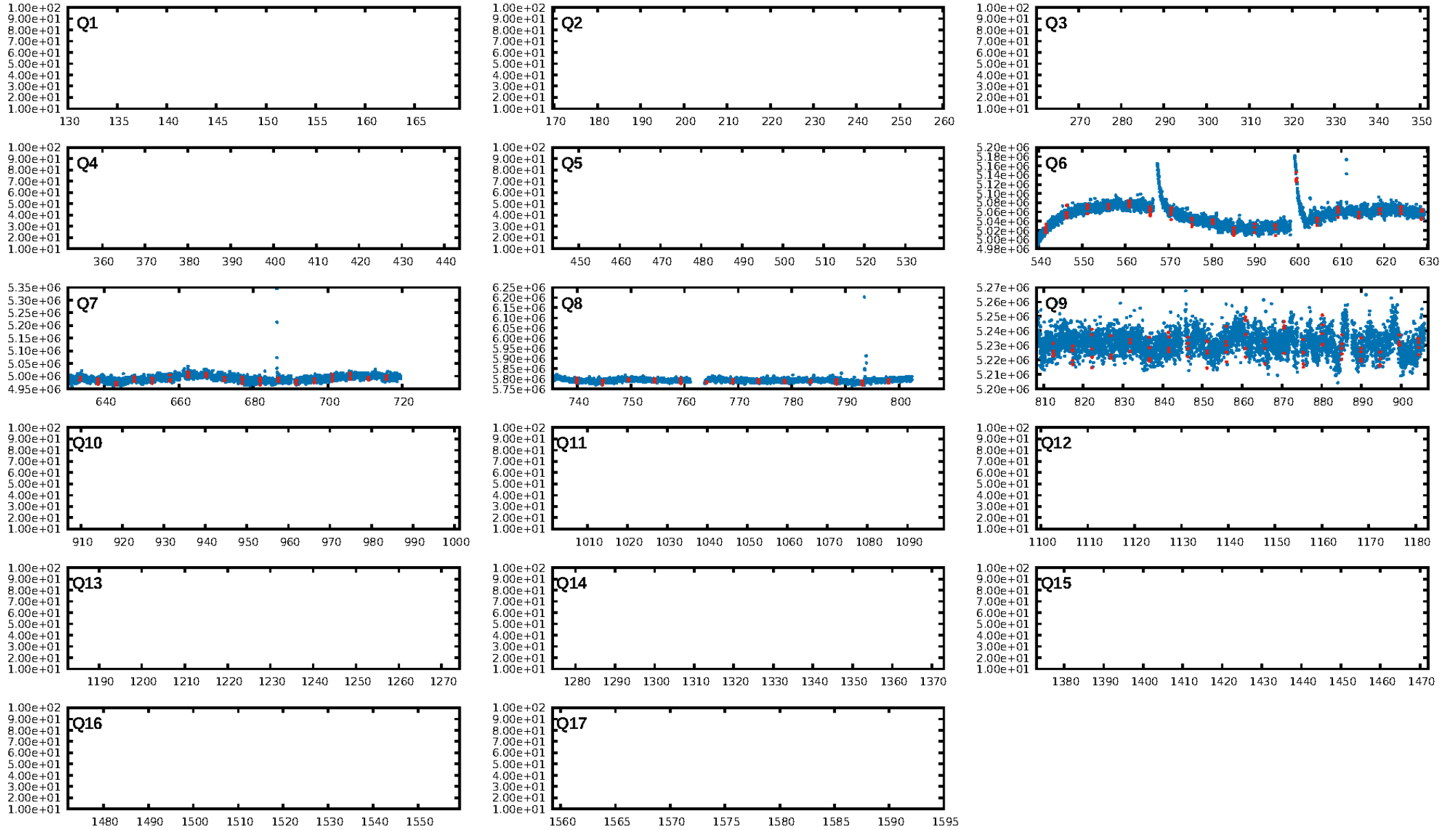
TCE 005868793-01

DV Odd/Even

TCE 005868793-01

ALT Odd/Even

TCE 005868793-01

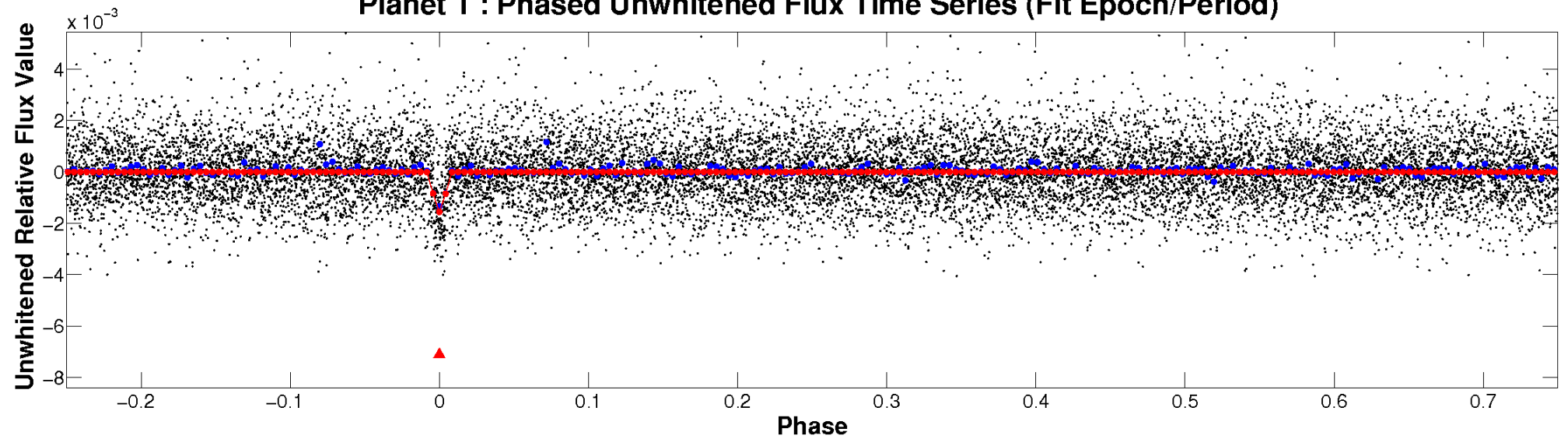# Non-Whitened Vs. Whitened Light Curve

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

Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)
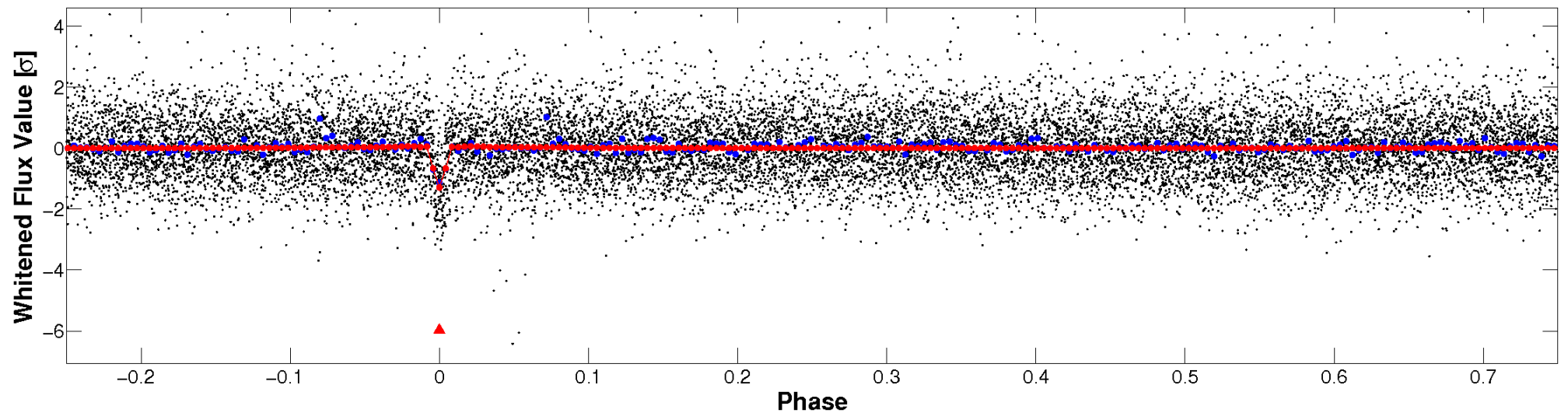
PDC Quarter-Phased Transit Curves

TCE 005868793-01   P= 4.838134 Days T_0=135.150255 (BKJD)

DV Quarter-Phased Transit Curves

TCE 005868793-01   P= 4.838134 Days T_0=135.150255 (BKJD)

Phase (Hours)

Alt. Detrend Quarter-Phased Transit Curves

TCE 005868793-01   P= 4.838283 Days T_0=135.133288 (BKJD)

Phase (Hours)
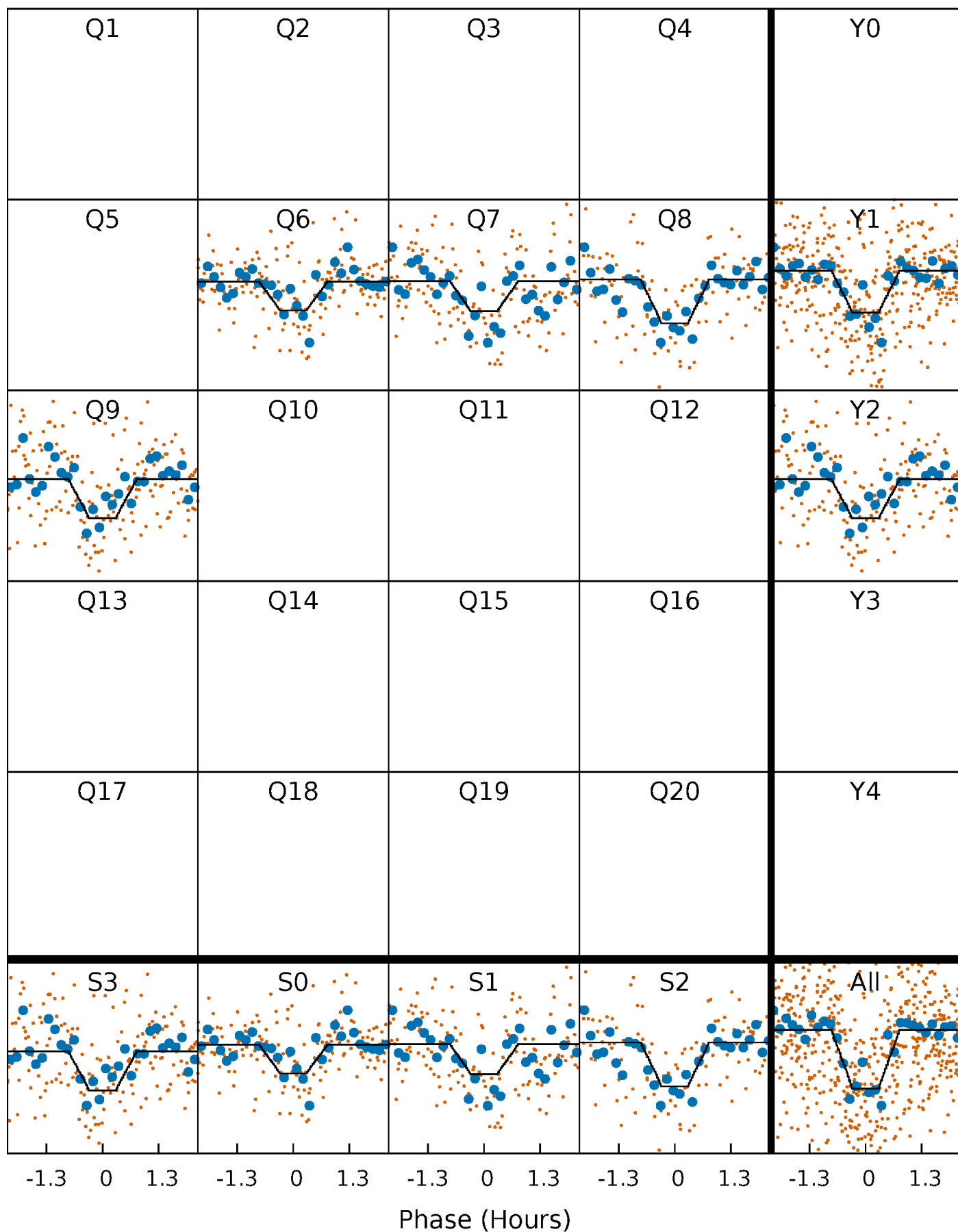
DV Model-Shift Uniqueness Test

005868793-01, P = 4.838134 Days, E = 135.150255 Days

Pri	Sec	Ter	Pos	FA₁	FA₂	F_Red	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	5.04	3.08	3.32	4.96	2.45	1.25	17.3	17.1	1.95	1.72	3.44	0.94	0.14	2.44
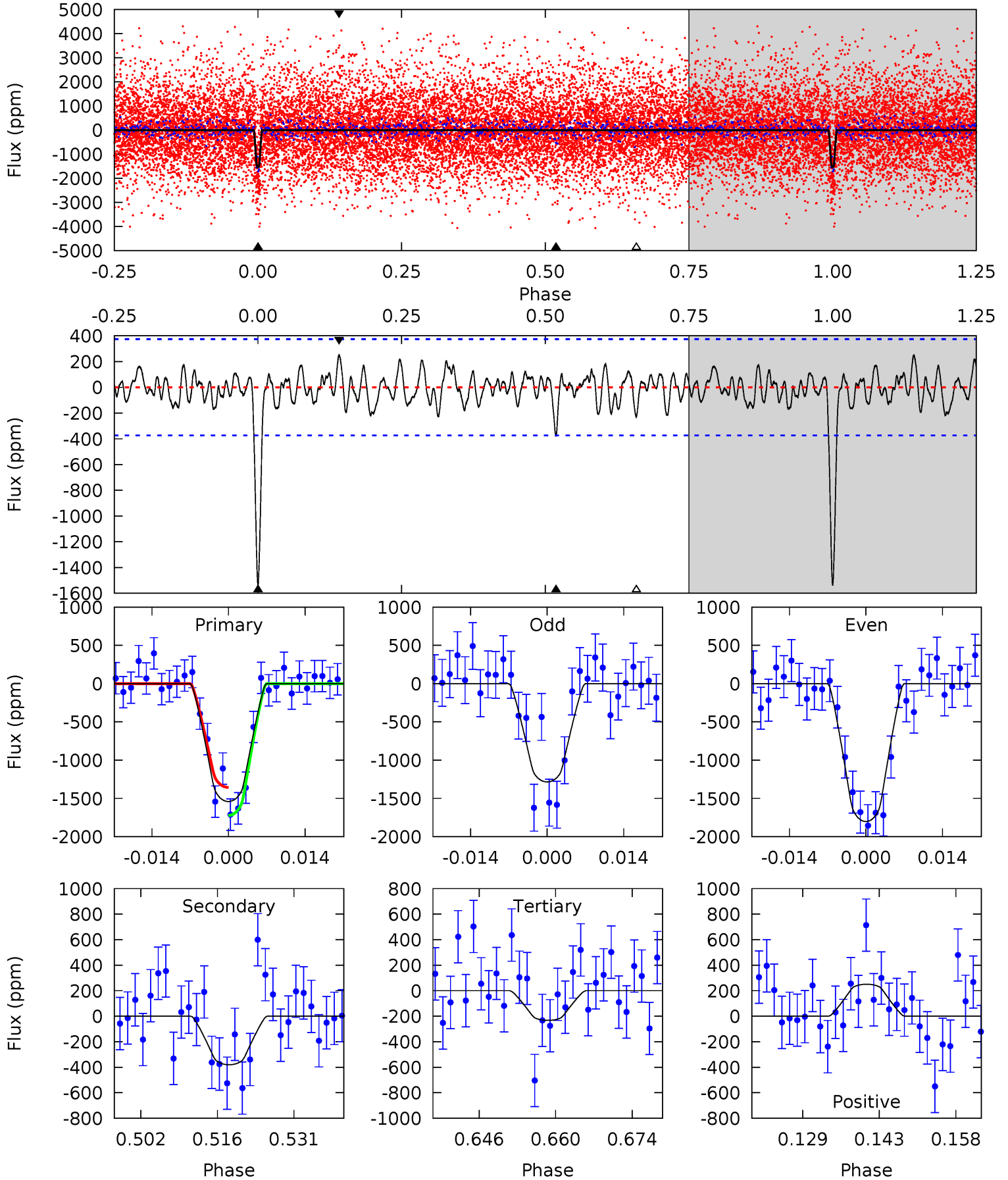
Alt Model-Shift Uniqueness Test

005868793-01, P = 4.838283 Days, E = 135.133288 Days

Pri	Sec	Ter	Pos	FA$_1$	FA$_2$	F$_{Red}$	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	4.20	2.62	3.50	4.97	2.48	1.13	14.3	13.5	1.58	0.70	4.82	0.93	0.17	1.24
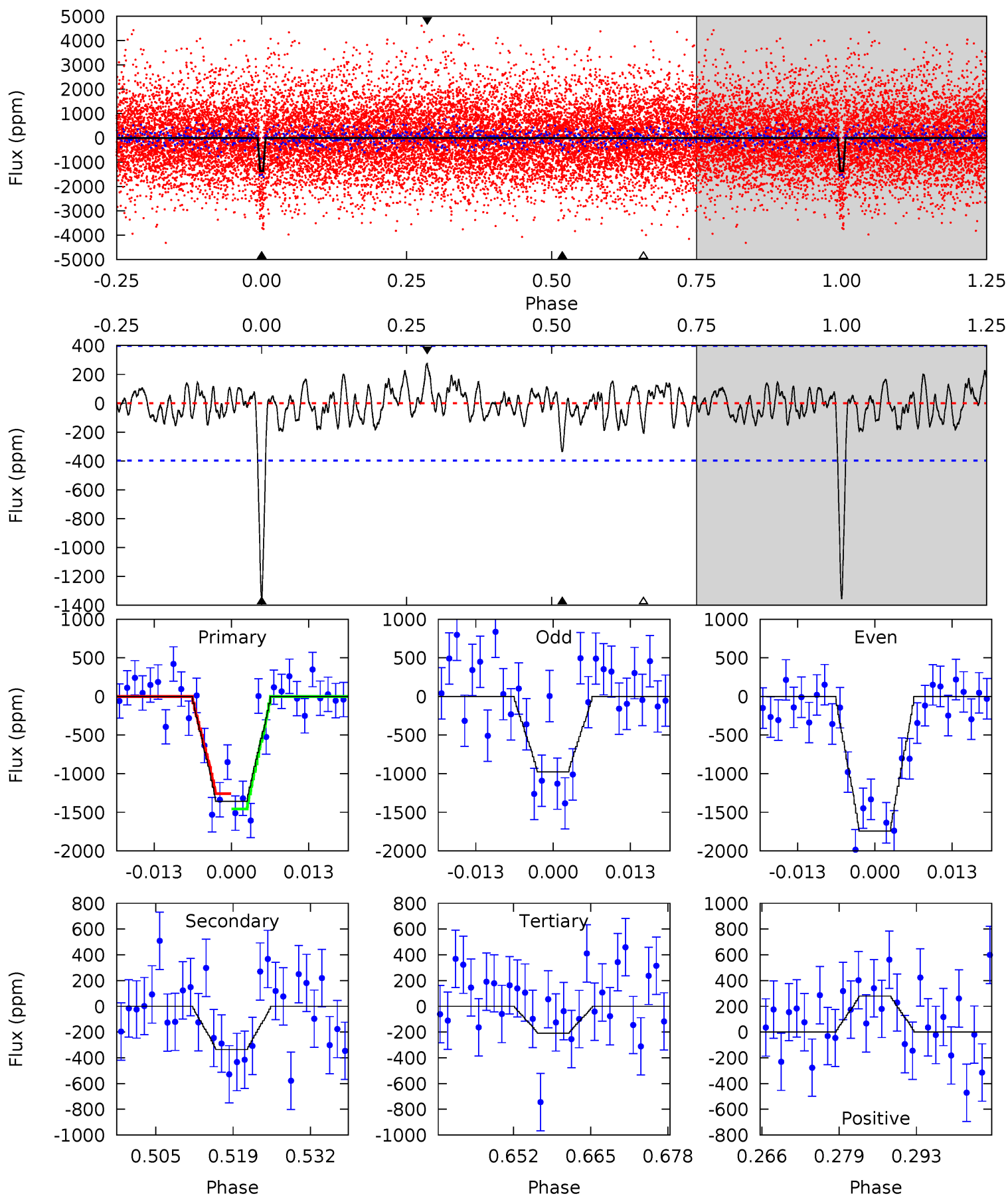
Stellar Parameters For KIC 005868793

	$T_{eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	M($M_\odot$)	$p_\star$ (g·cm^{-3})
	3187^{+62}_{-88}	$5.091^{+0.010}_{-0.010}$	$0.100^{+0.160}_{-0.160}$	$0.200^{+0.030}_{-0.030}$	$0.180^{+0.040}_{-0.040}$	$22.500^{+1.125}_{-1.125}$
	+2%/-3%	+0%/-0%	+160%/-160%	+15%/-15%	+22%/-22%	+5%/-5%
Source	SPE70	SPE70	SPE70	MULT70		

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

Secondary Eclipse Parameters for KIC 005868793-01 / KOI 4290.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-380±75	$0.97^{+0.69}_{-0.58}$	493^{+13}_{-15}	2538^{+741}_{-312}	222^{+1087}_{-150}
Alt.	-336±80	$0.96^{+0.69}_{-0.58}$	494^{+13}_{-14}	2513^{+707}_{-300}	199^{+1054}_{-132}

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 $A_{obs} \gg 1.0$
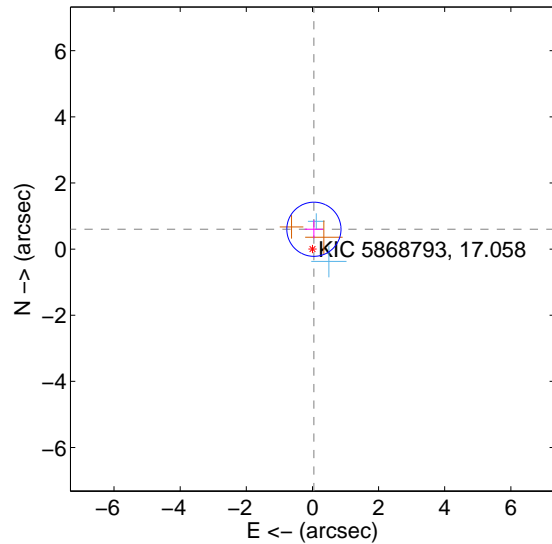
DV Centroid Data

Supplemental centroid analysis for 005868793-01. Kepler magnitude: 17.06. Transit SNR 13.75
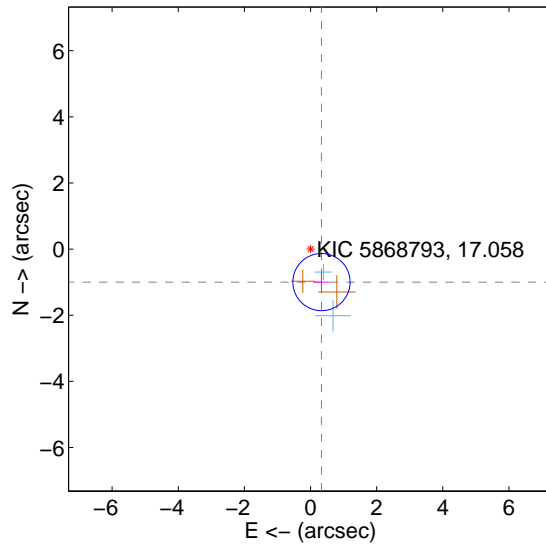There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 1.65 arcsec

|	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.602 ± 0.273	2.20	-0.044 ± 0.279	0.600 ± 0.273
PRF-fit source offset from KIC position	1.051 ± 0.288	3.65	-0.331 ± 0.243	-0.998 ± 0.293
photometric centroid source offset	2.58 ± 1.17	2.21	1.00 ± 1.11	-2.38 ± 1.18

offset from difference PRF−fit to OOT PRF−fit   offset from difference PRF−fit to KIC position   offset from photometric centroids
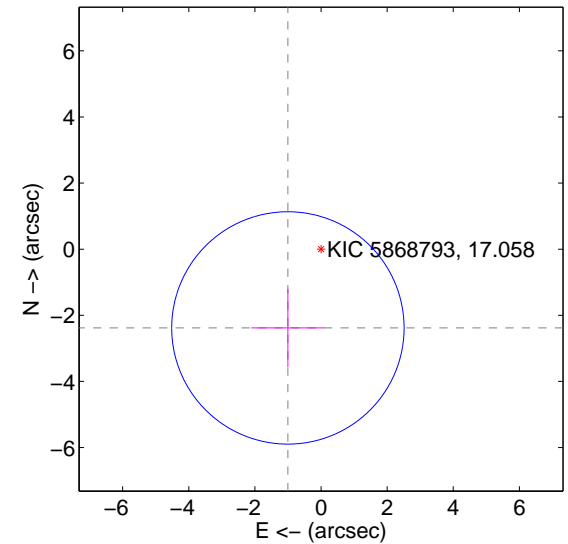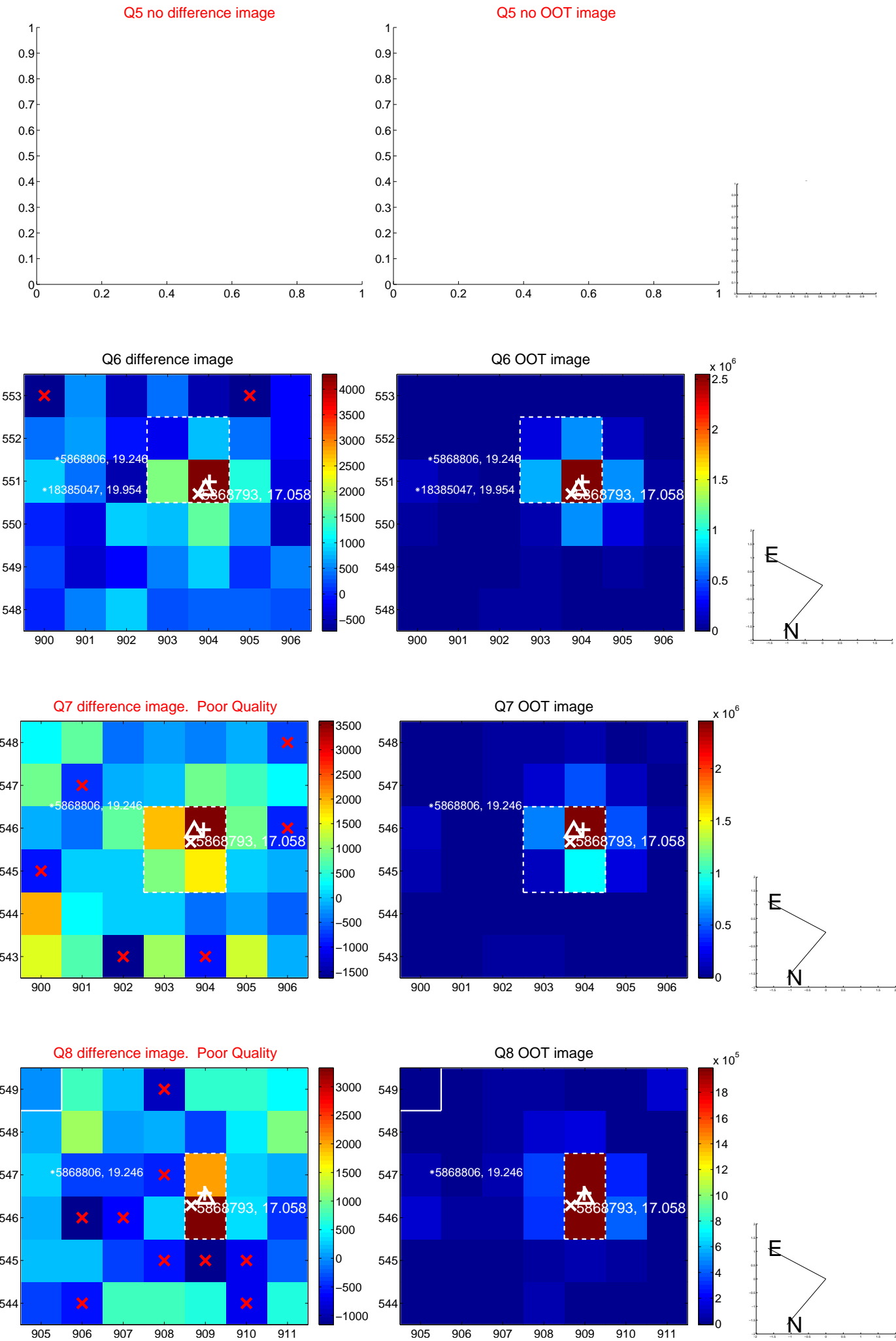
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red *: 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.
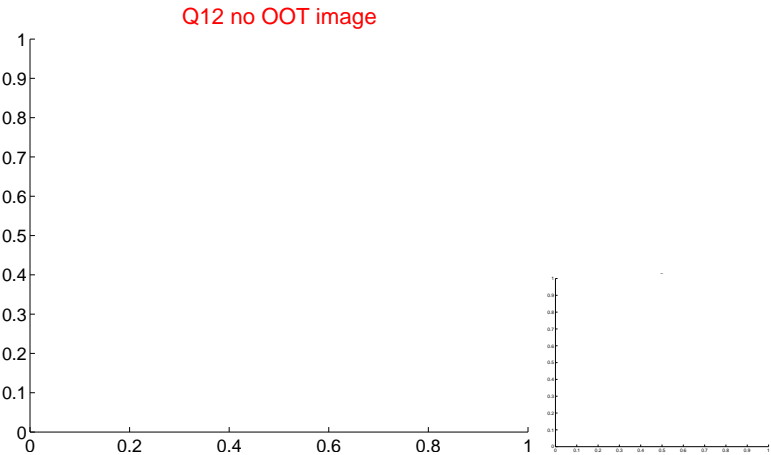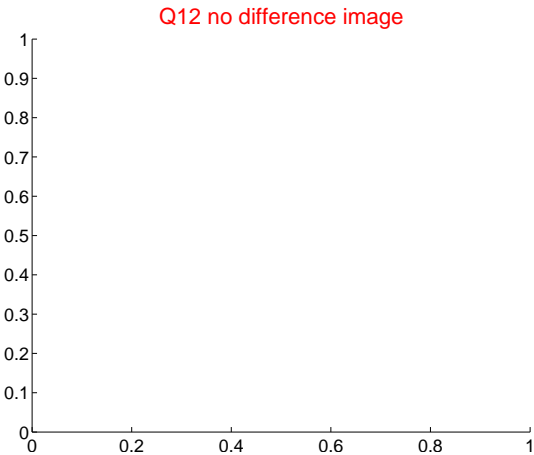
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

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 no difference image

Q4 no OOT image

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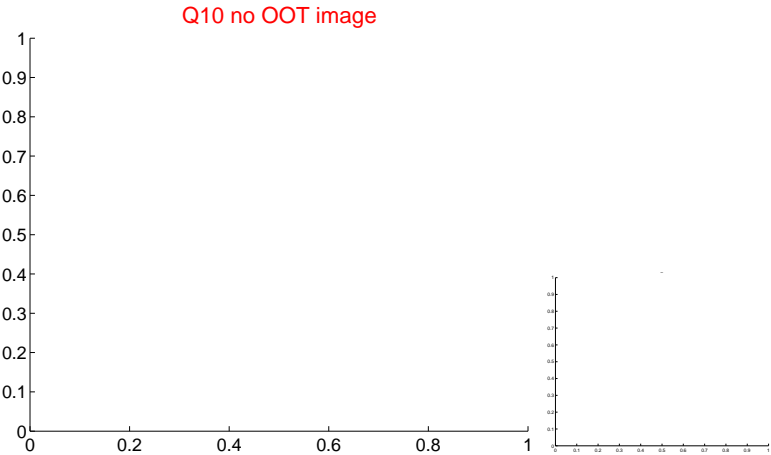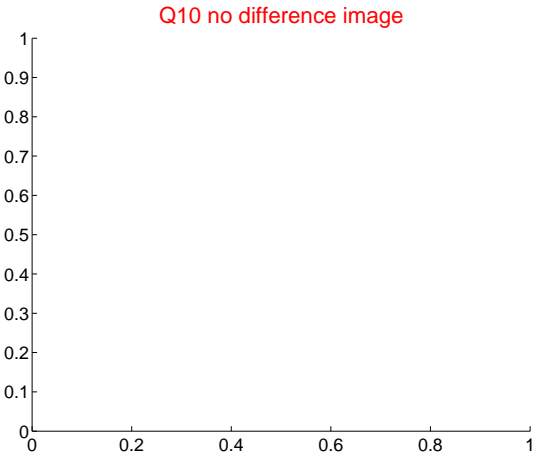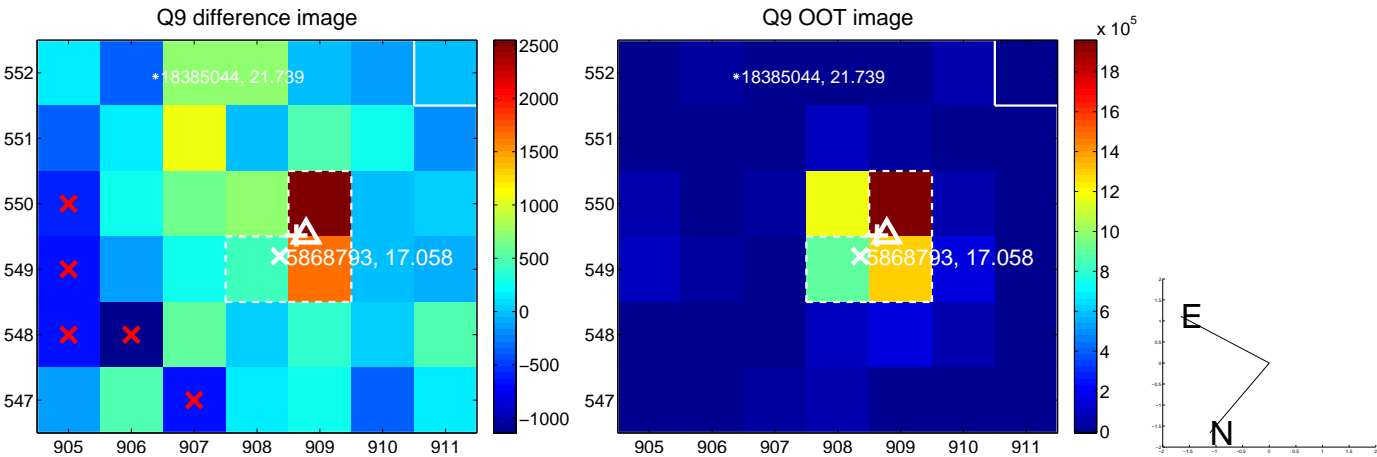
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q9 difference image

*18385044, 21.739

✕5868793, 17.058

Q9 OOT image

*18385044, 21.739

✕5868793, 17.058

x 10⁵

E

N

Q10 no difference image

Q10 no OOT image

Q11 no difference image

Q11 no OOT image

Q12 no difference image

Q12 no OOT image

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

Q13 no difference image

Q13 no OOT image

Q14 no difference image

Q14 no OOT image

Q15 no difference image

Q15 no OOT image

Q16 no difference image

Q16 no OOT image

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

Q17 no difference image

Q17 no OOT image

fluxWeightedCentroids, Planet 1 of 1

FOLDED
period
4.84
d

detrended flux

○ detrended centroid ——— fit to transit model ▶ peak offset

Orbital Phase (hours)

UKIRT Image