

KIC 009577855

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})
009577855-01	OBS	4522.01	2.210313	133.576972	101.6	3.088	10.5	11.3	1.09	6355	1.48	1446.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009577855-01	OBS	FP	0.01	0	0	1	0	CENT_RESOLVED_OFFSET—HALO_GHOST

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.

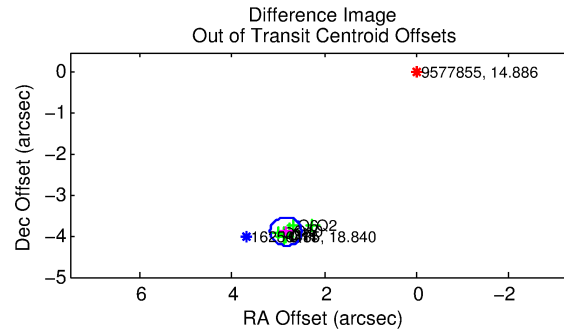
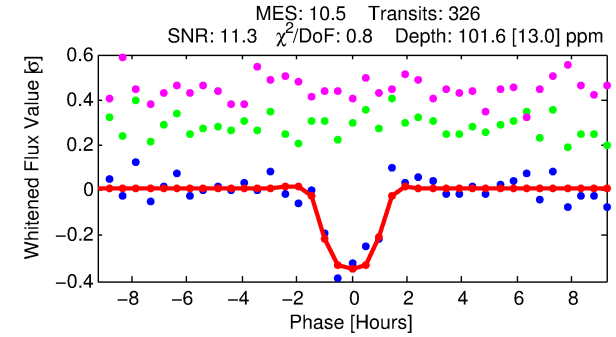
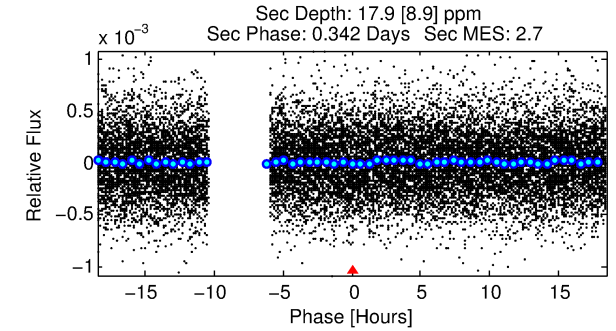
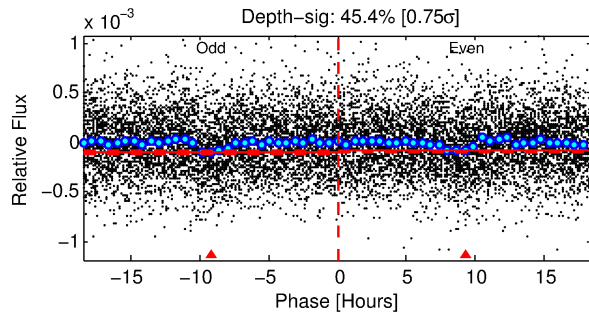
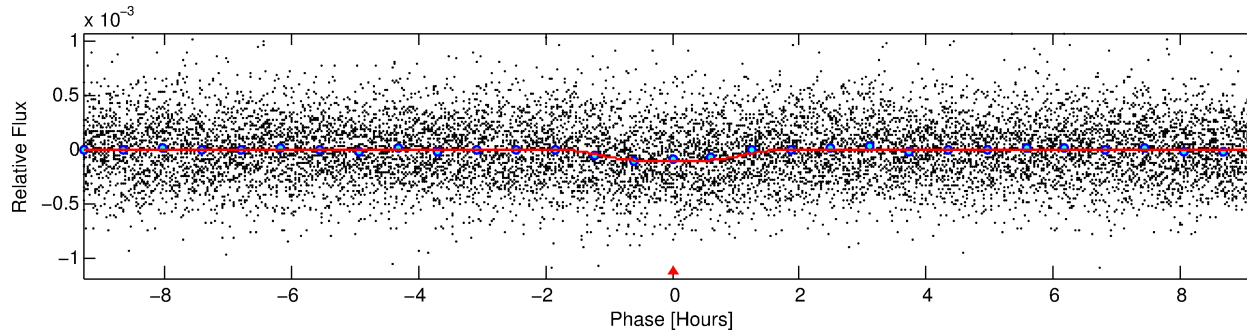
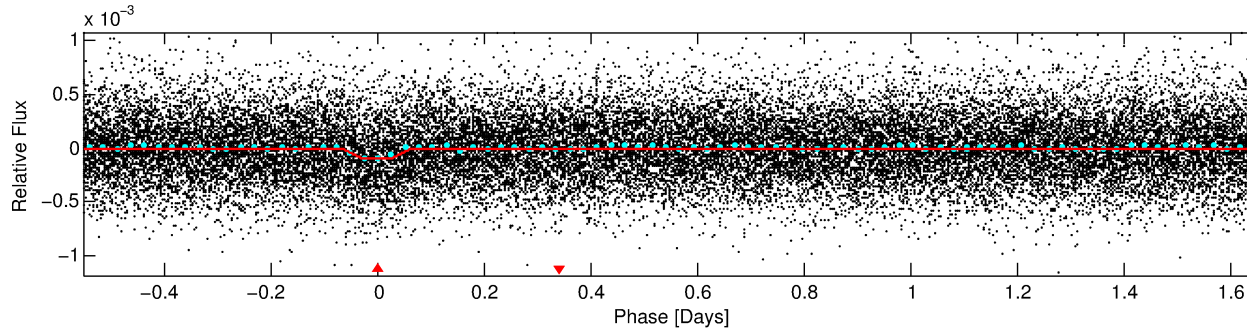
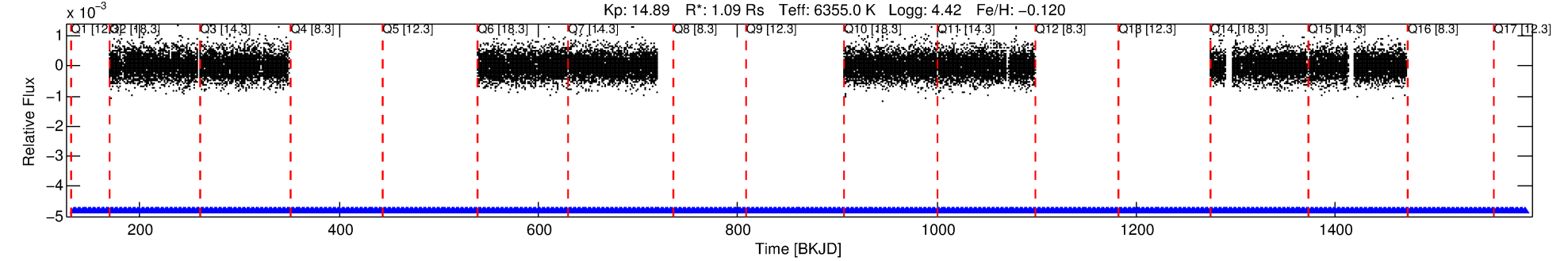
Ephemeris Match Information For 009577855-01

No Significant Match Found

DV One-Page Summary

KIC: 9577855 Candidate: 1 of 1 Period: 2.210 d
KOI: K04522.01 Corr: 0.905

Kp: 14.89 R*: 1.09 Rs Teff: 6355.0 K Logg: 4.42 Fe/H: -0.120



DV Fit Results:

Period = 2.21031 [0.00002] d
Epoch = 133.5770 [0.0043] BKJD
Rp/R* = 0.0125 [0.0011]
a/R* = 1.66 [0.29]
b = 0.98 [0.01]
Seff = 1446.67 [579.87]
Teq = 1573 [158] K
Rp = 1.48 [0.50] Re
a = 0.0346 [0.0092] AU
Ag = 5.38 [3.49] [1.26σ]
Teffp = 3703 [503] K [4.04σ]

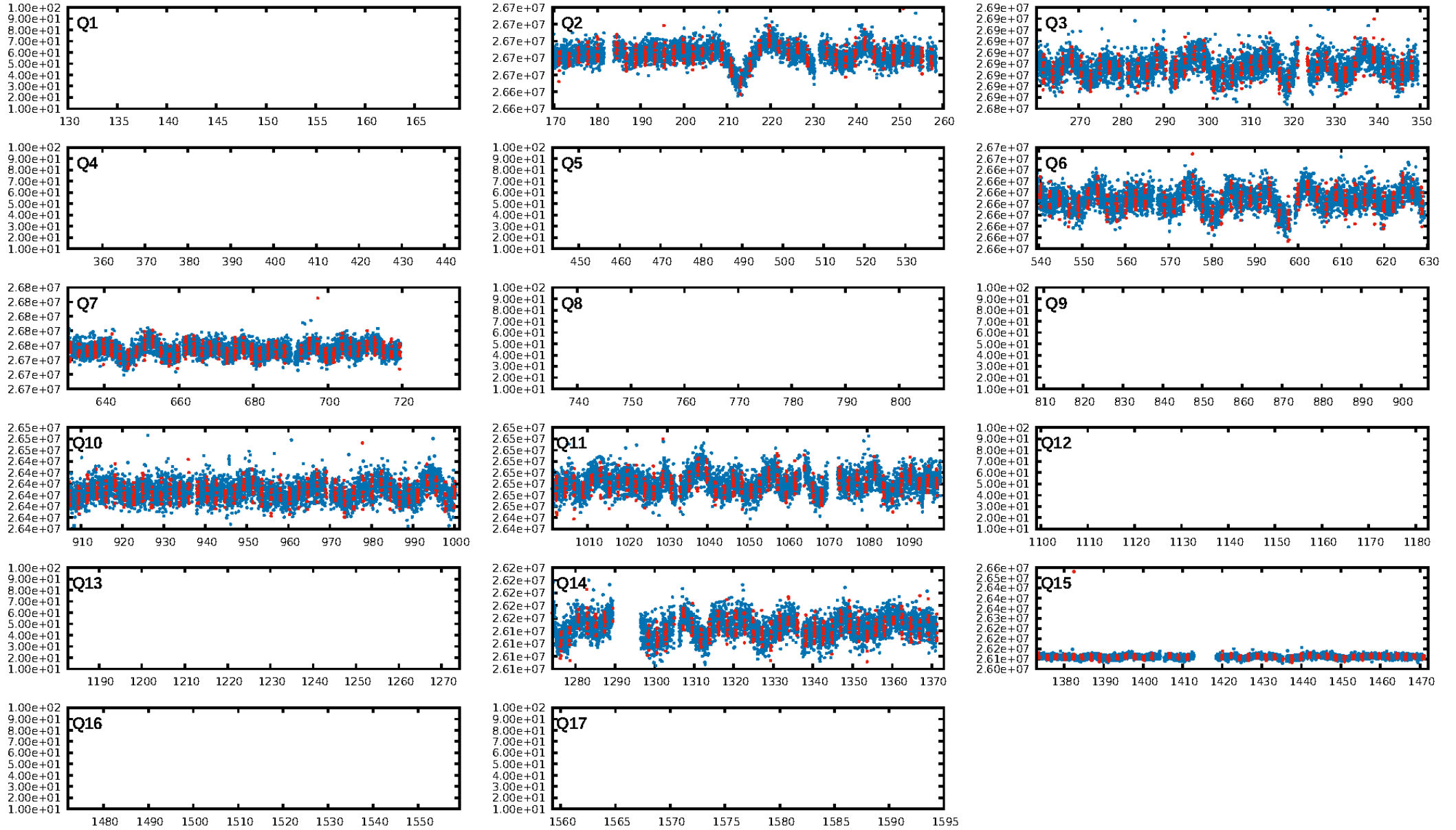
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.69e-24
RollingBand-fgt: 1.00 [326/326]
GhostDiagnostic-chr: -0.2441
Centroid-sig: 0.0%
Centroid-so: 23.744 arcsec [19.80σ]
OotOffset-rm: 4.810 arcsec [41.74σ]
KicOffset-rm: 4.952 arcsec [53.36σ]
OotOffset-st: 4/4/0/0 [8]
KicOffset-st: 4/4/0/0 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

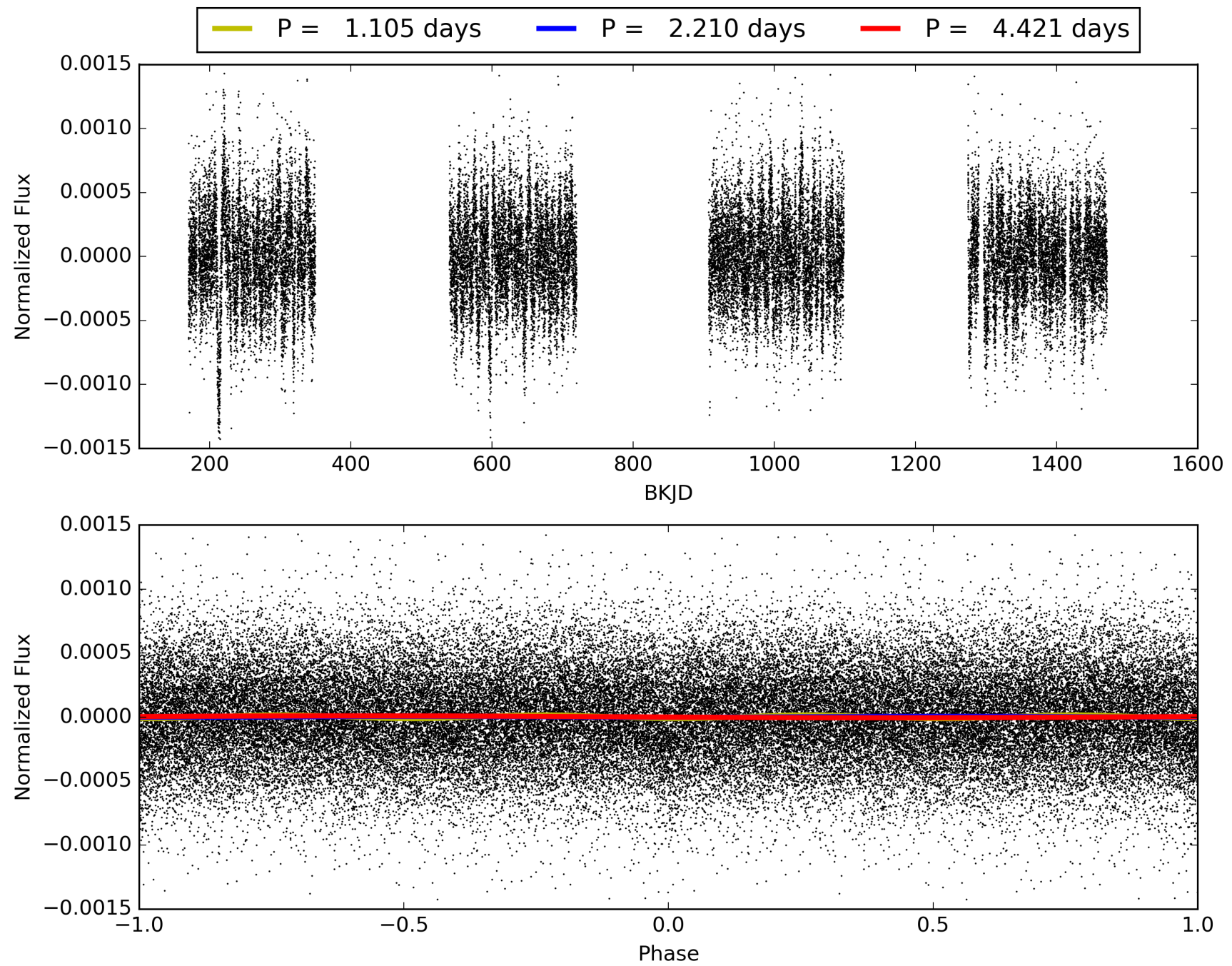
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:18:09 Z

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

TCE 009577855-01, PDC Light Curves

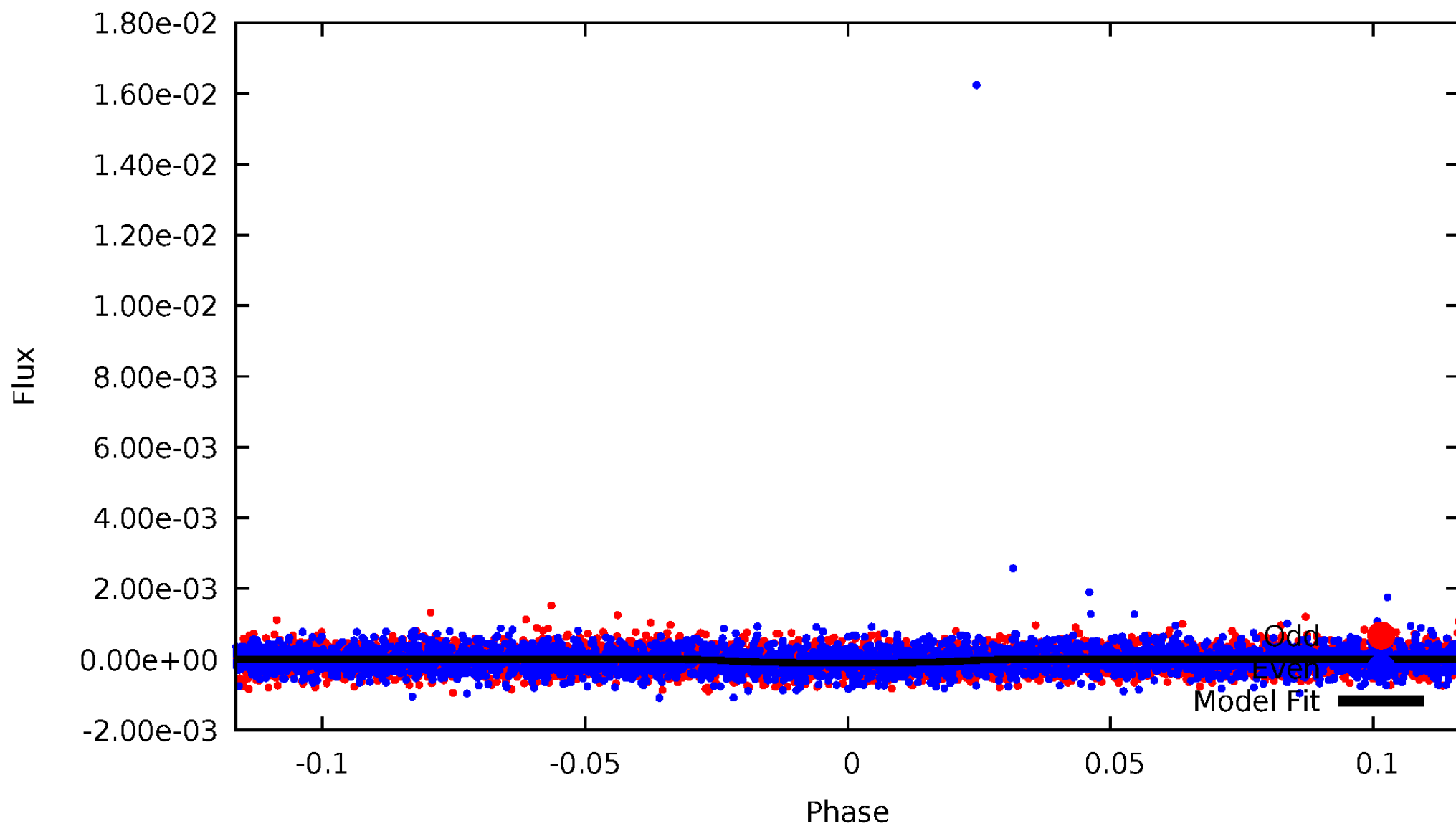


TCE 009577855-01



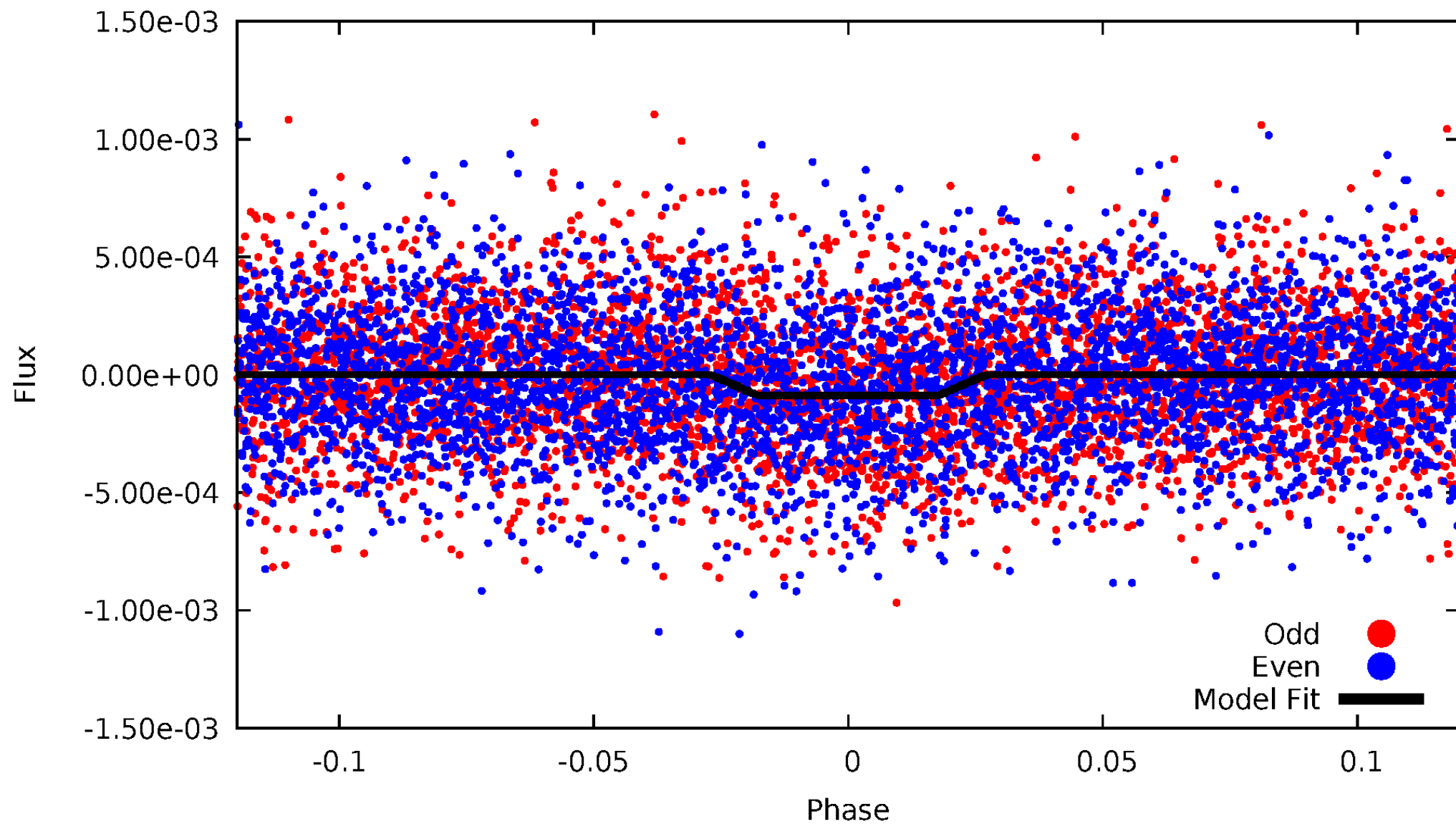
DV Odd/Even

TCE 009577855-01

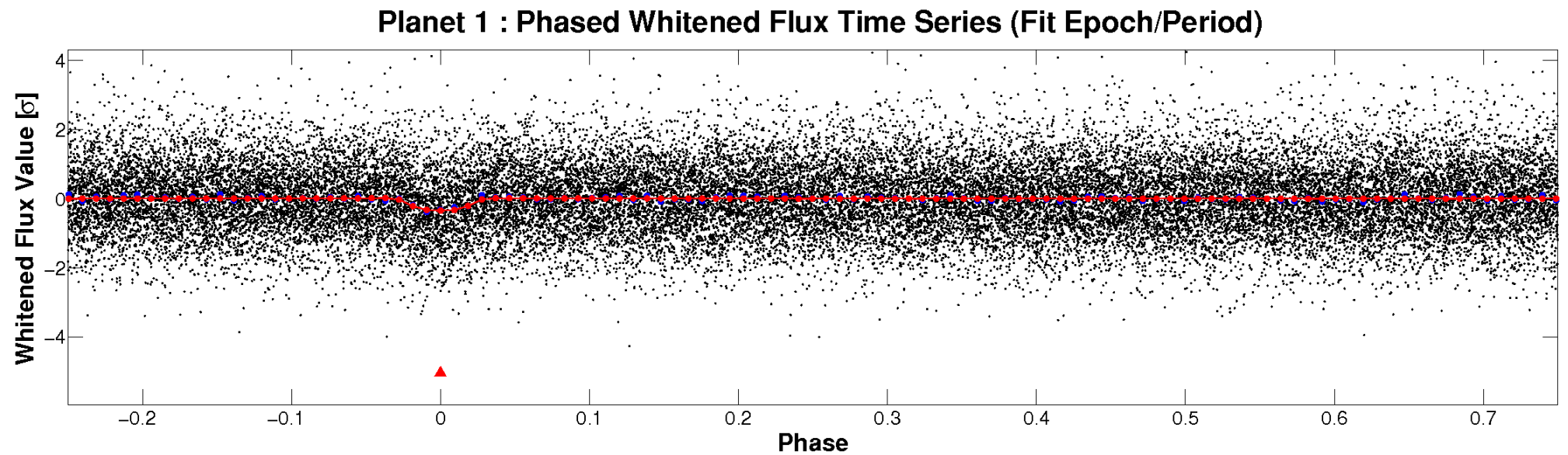
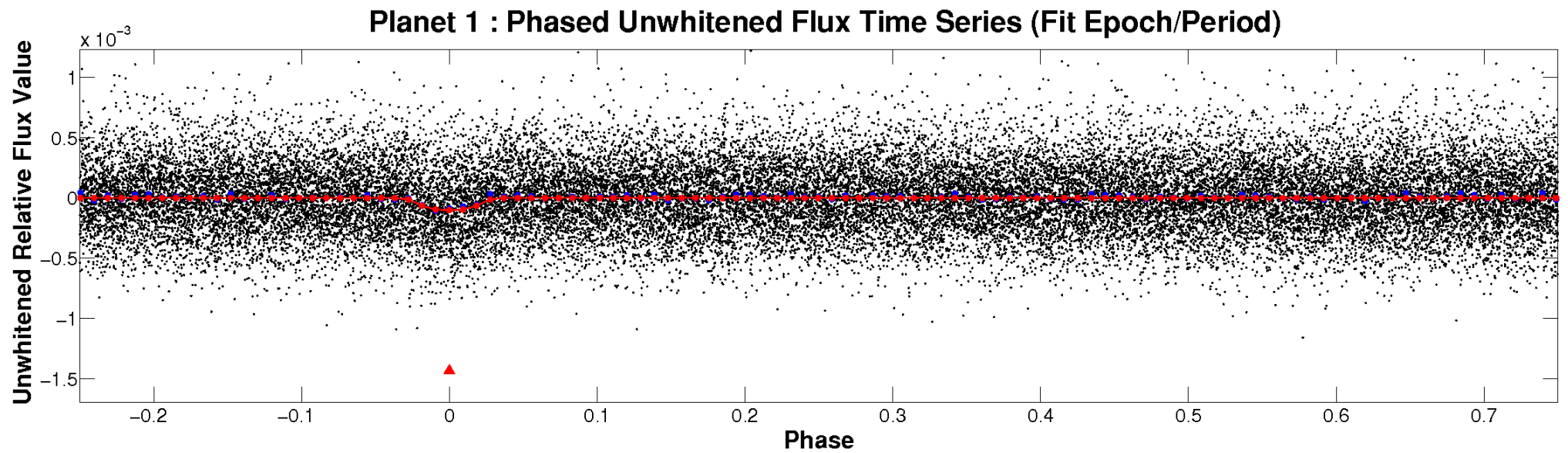


ALT Odd/Even

TCE 009577855-01

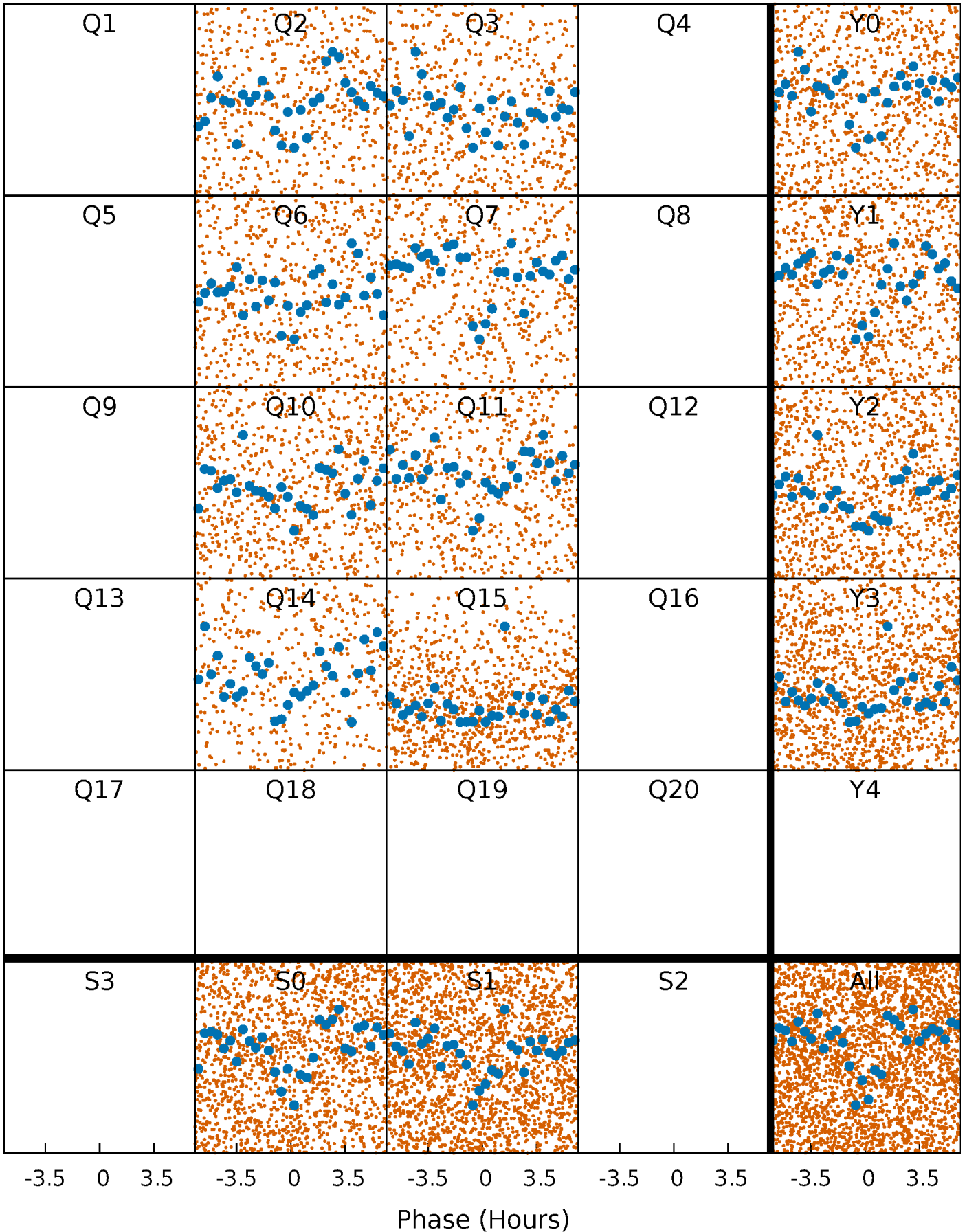


Non-Whitened Vs. Whitened Light Curve



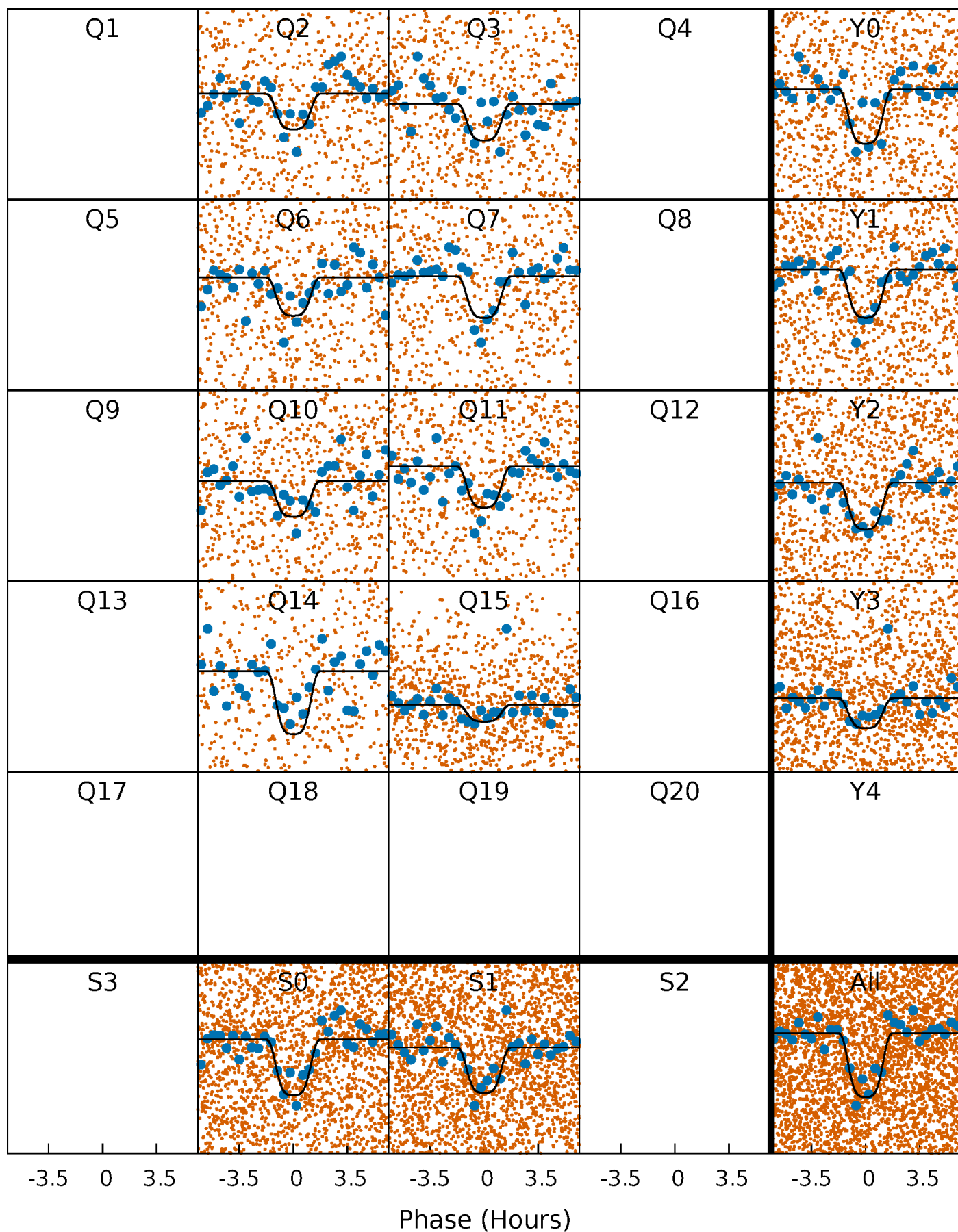
PDC Quarter-Phased Transit Curves

TCE 009577855-01 P= 2.210313 Days $T_0=133.576972$ (BKJD)



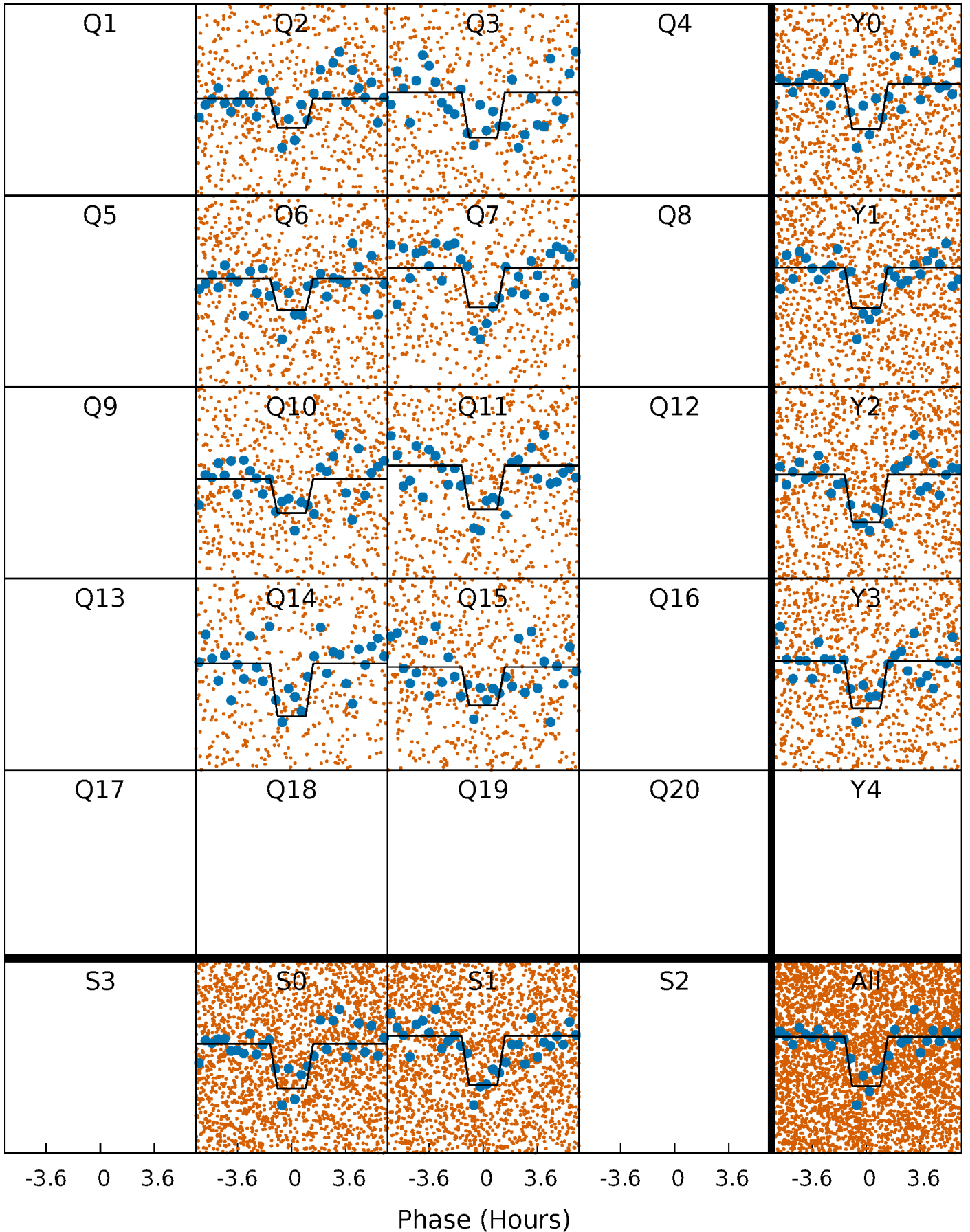
DV Quarter-Phased Transit Curves

TCE 009577855-01 P= 2.210313 Days $T_0=133.576972$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

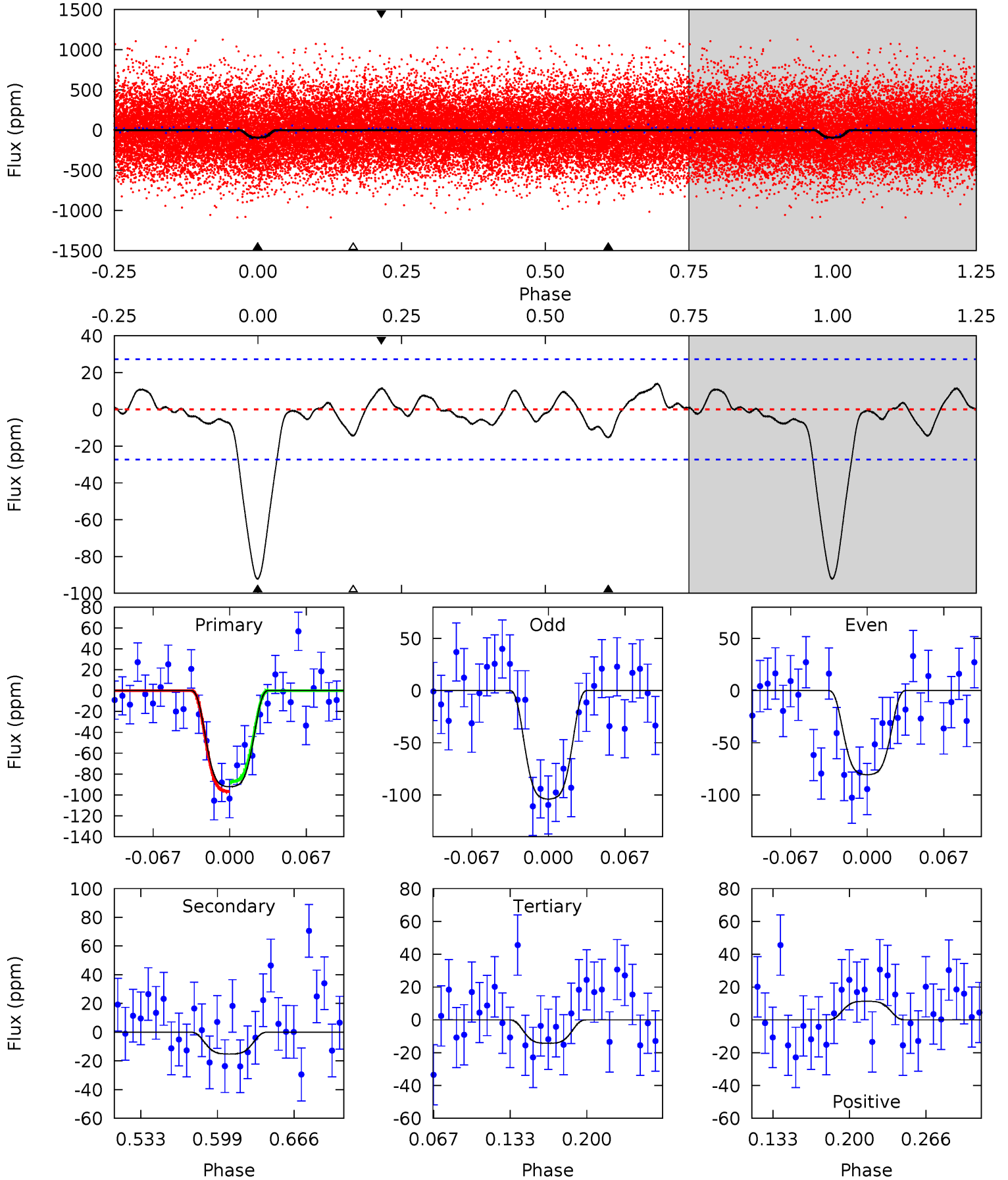
TCE 009577855-01 P= 2.210303 Days $T_0=133.580248$ (BKJD)



DV Model-Shift Uniqueness Test

009577855-01, P = 2.210313 Days, E = 133.576972 Days

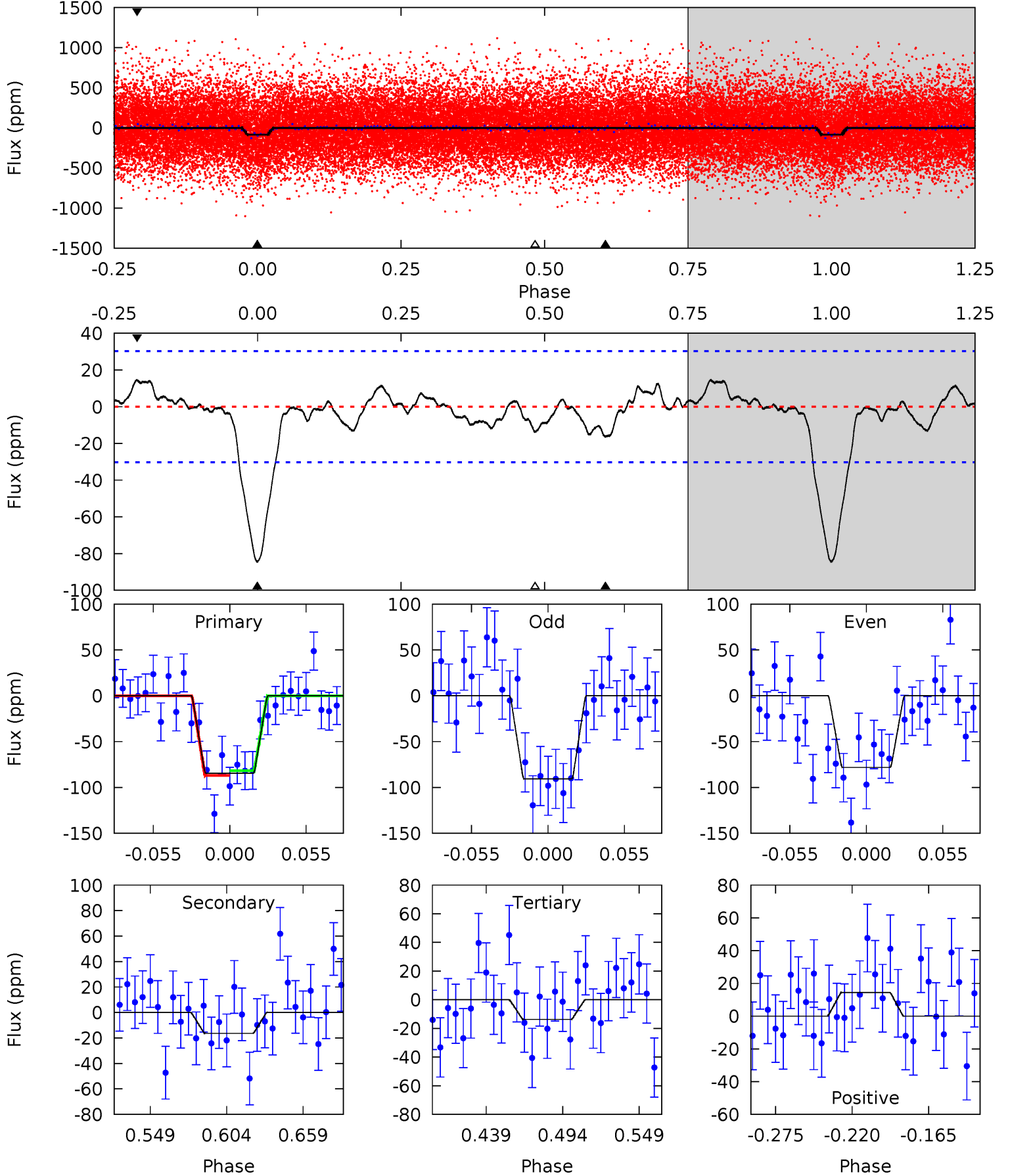
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	2.60	2.44	1.94	4.65	1.83	1.02	13.3	13.8	0.16	0.66	1.99	1.02	0.13	0.79



Alt Model-Shift Uniqueness Test

009577855-01, P = 2.210303 Days, E = 133.580248 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	2.53	2.12	2.24	4.69	1.92	0.98	11.0	10.8	0.41	0.29	0.98	0.94	0.15	0.39



Stellar Parameters For KIC 009577855

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6355^{+153}_{-211}	$4.418^{+0.067}_{-0.202}$	$-0.120^{+0.250}_{-0.300}$	$1.090^{+0.354}_{-0.118}$	$1.134^{+0.165}_{-0.150}$	$1.234^{+0.358}_{-0.661}$
	+2%/-3%	+2%/-5%	+208%/-250%	+32%/-11%	+15%/-13%	+29%/-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 009577855-01 / KOI 4522.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15 ± 6	$1.52^{+0.25}_{-0.18}$	2219^{+144}_{-109}	3831^{+325}_{-371}	$4.142^{+2.519}_{-1.892}$
Alt.	-16 ± 6	$1.15^{+0.23}_{-0.17}$	2223^{+158}_{-104}	4319^{+413}_{-392}	$7.846^{+4.450}_{-3.538}$

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

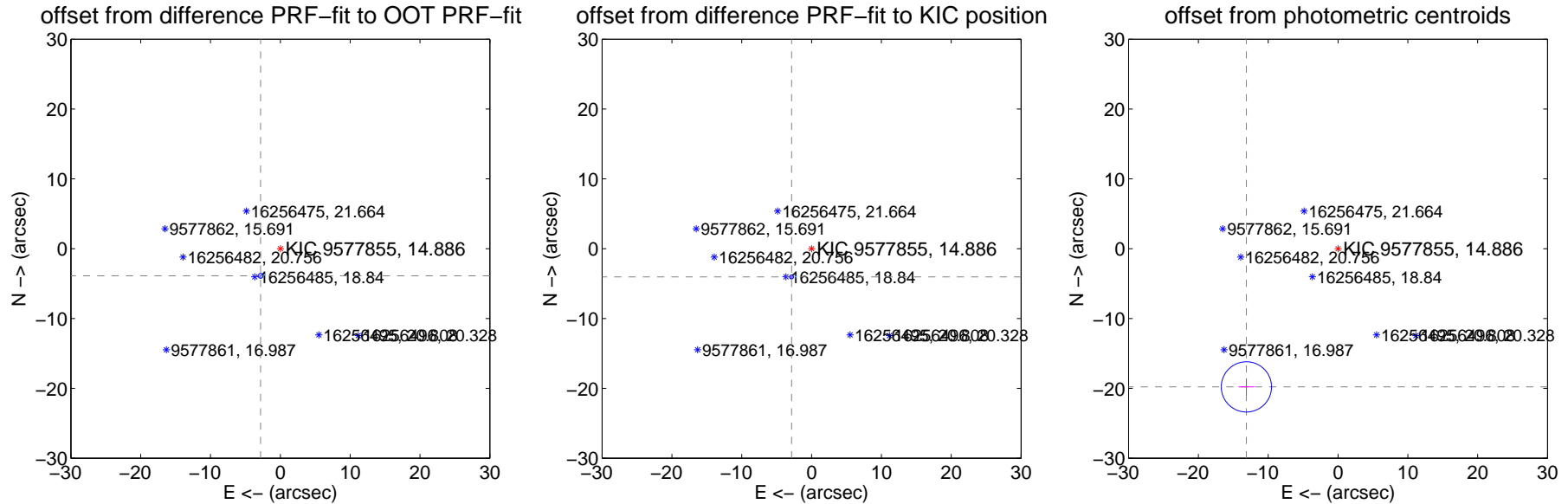
DV Centroid Data

Supplemental centroid analysis for 009577855-01. Kepler magnitude: 14.89. Transit SNR 11.26

There are 8 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

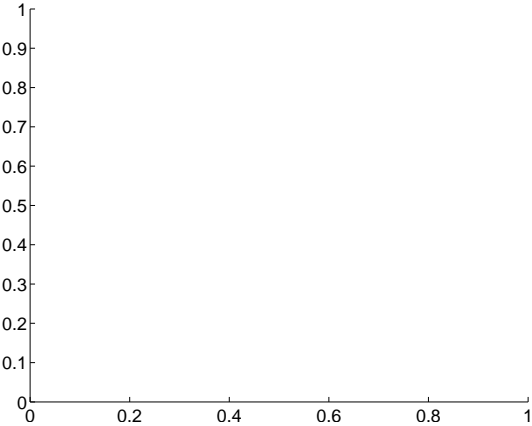
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.810 \pm 0.115	41.74	2.830 \pm 0.119	-3.889 \pm 0.082
PRF-fit source offset from KIC position	4.952 \pm 0.093	53.36	2.862 \pm 0.107	-4.041 \pm 0.074
photometric centroid source offset	23.74 \pm 1.20	19.80	13.12 \pm 1.13	-19.79 \pm 1.23



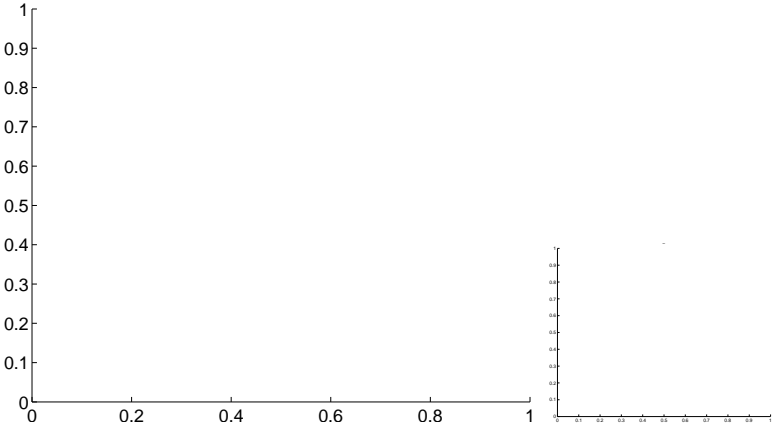
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

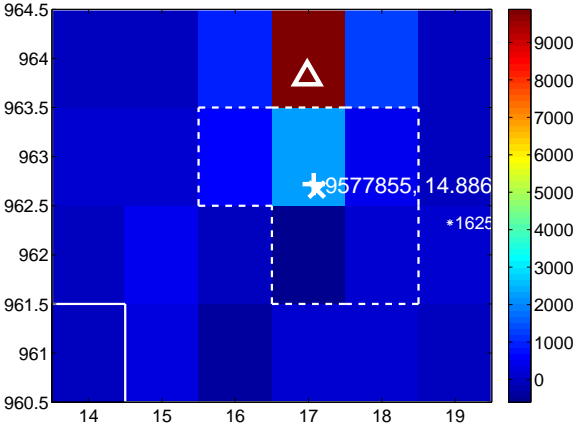
Q1 no difference image



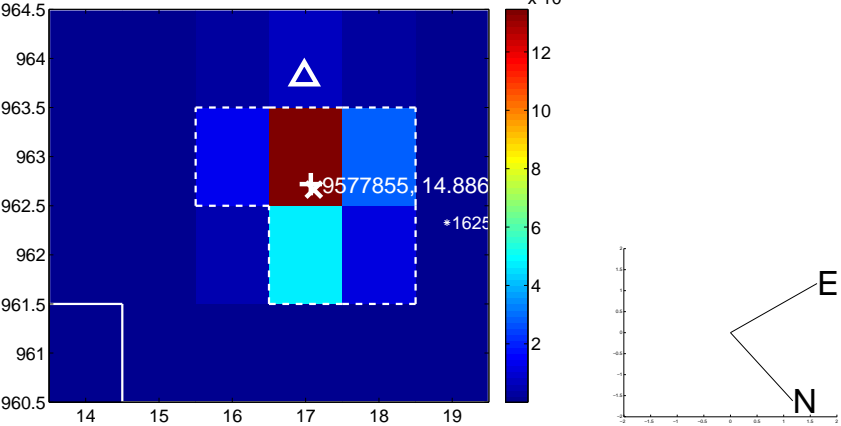
Q1 no OOT image



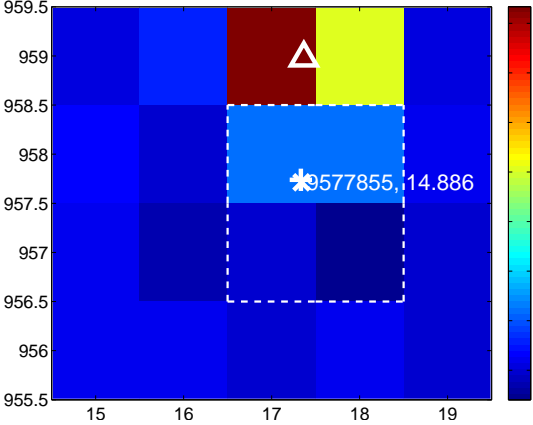
Q2 difference image



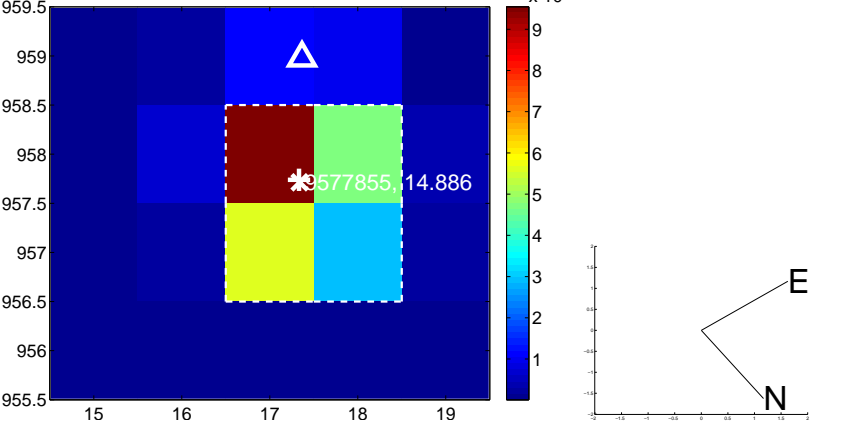
Q2 OOT image



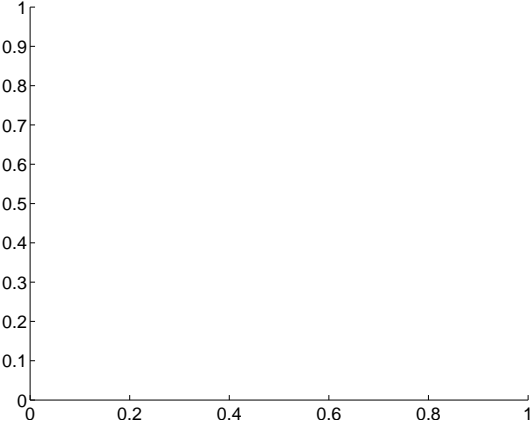
Q3 difference image



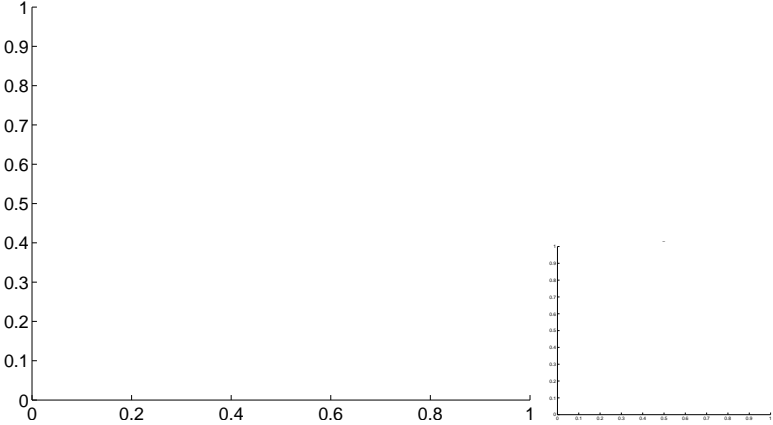
Q3 OOT image



Q4 no difference image



Q4 no OOT image



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

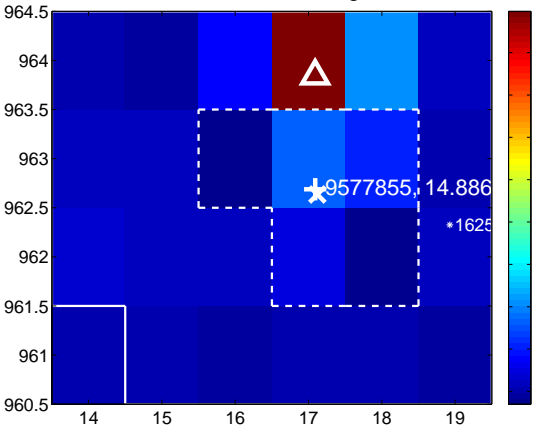
Q5 no difference image



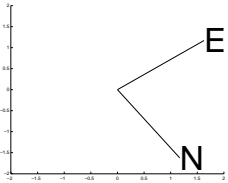
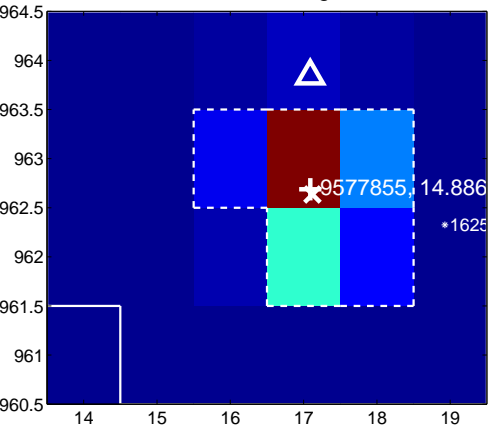
Q5 no OOT image



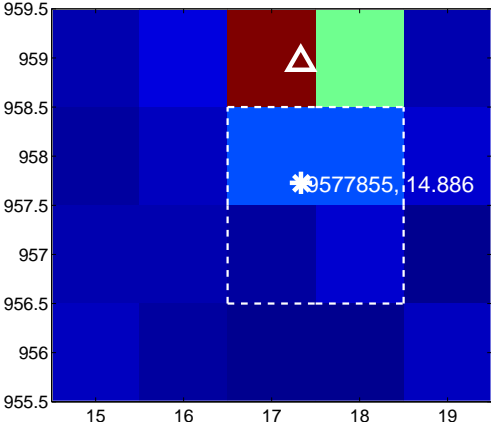
Q6 difference image



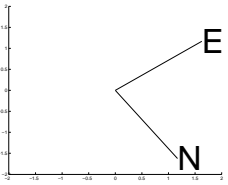
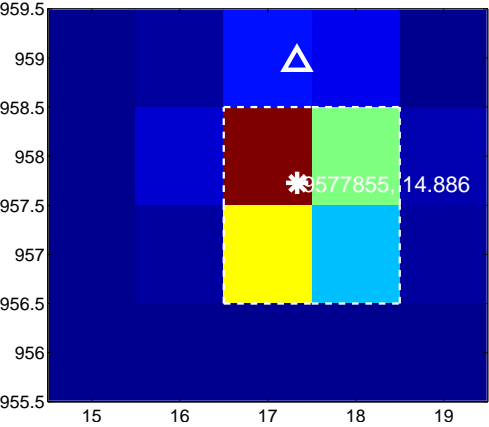
Q6 OOT image



Q7 difference image



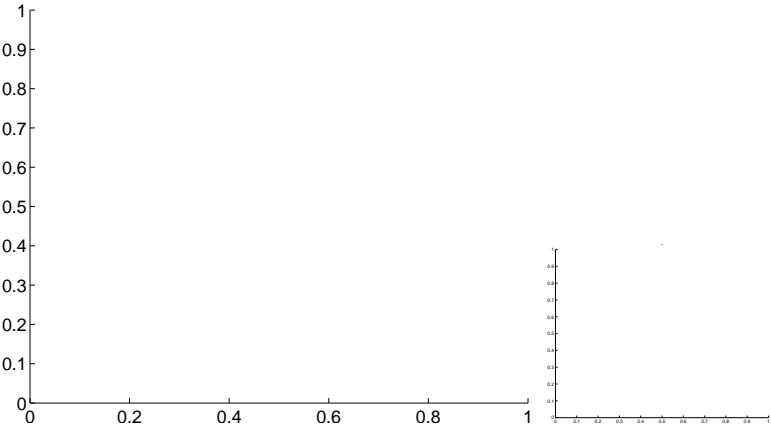
Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

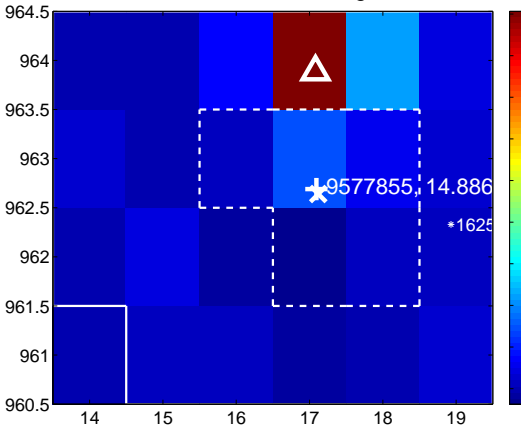
Q9 no difference image



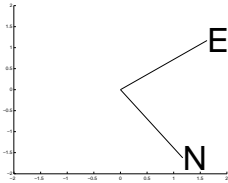
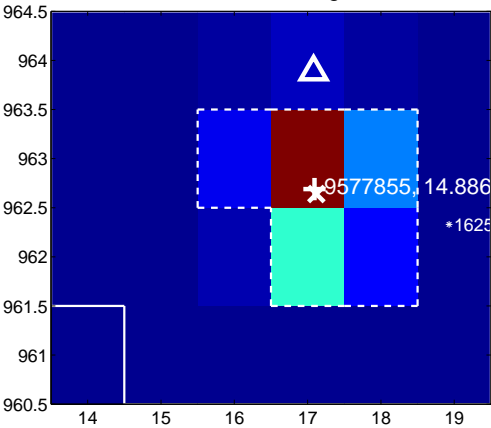
Q9 no OOT image



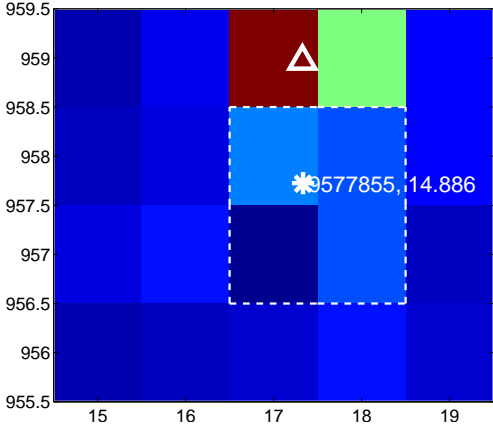
Q10 difference image



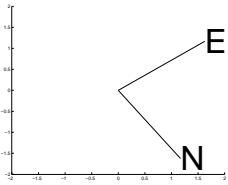
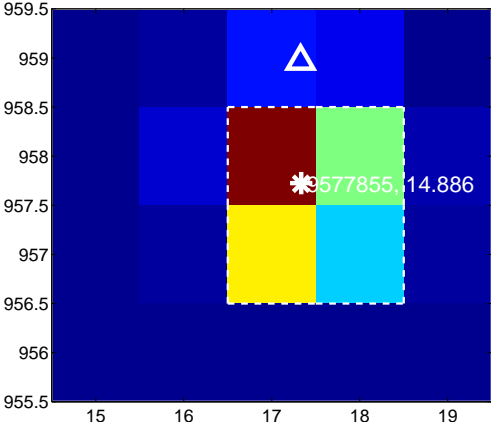
Q10 OOT image



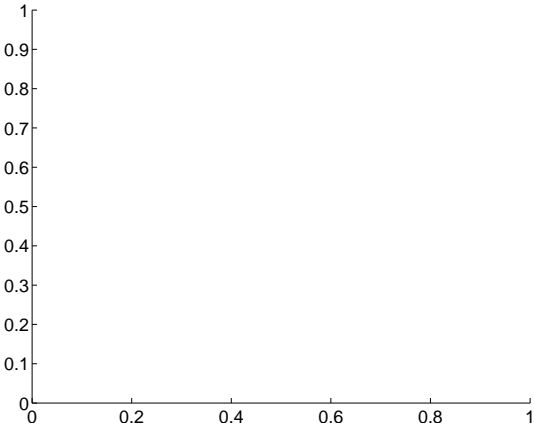
Q11 difference image



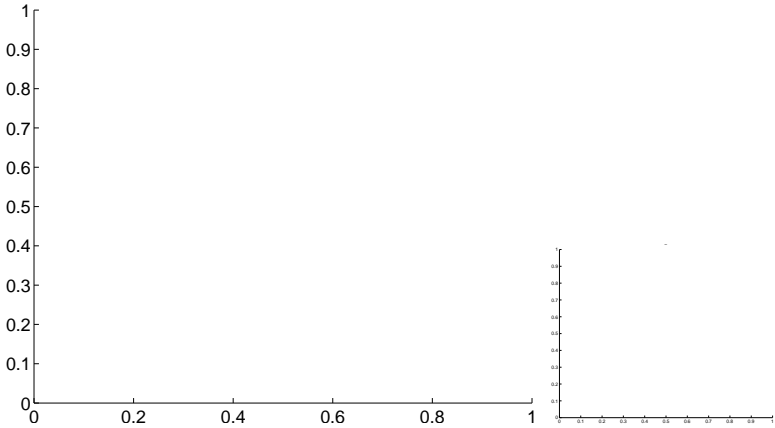
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

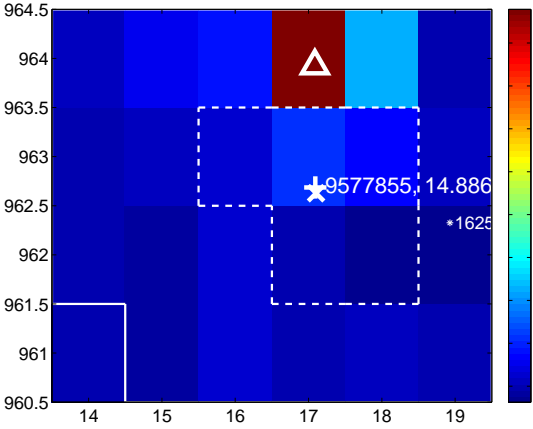
Q13 no difference image



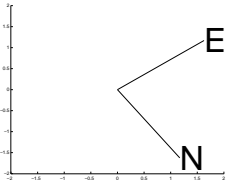
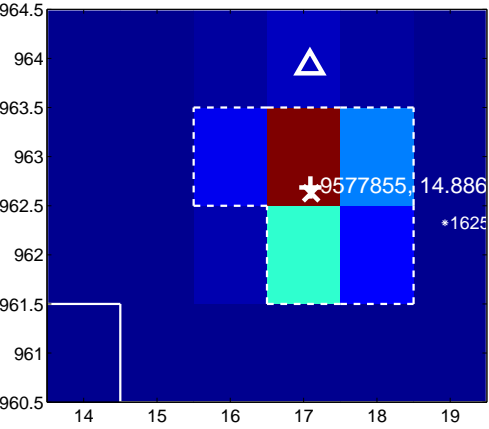
Q13 no OOT image



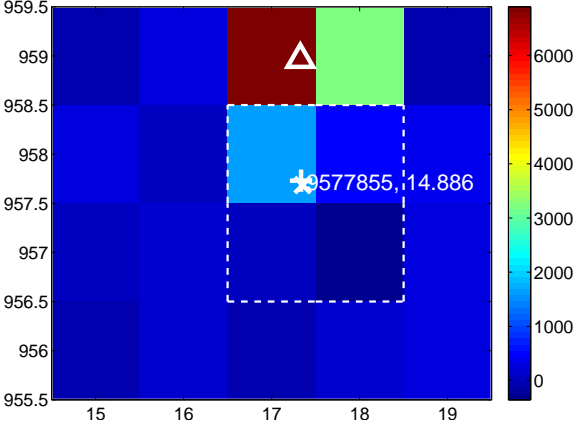
Q14 difference image



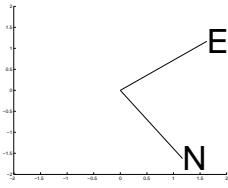
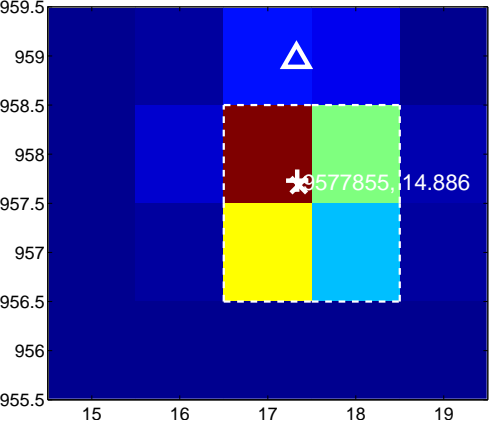
Q14 OOT image



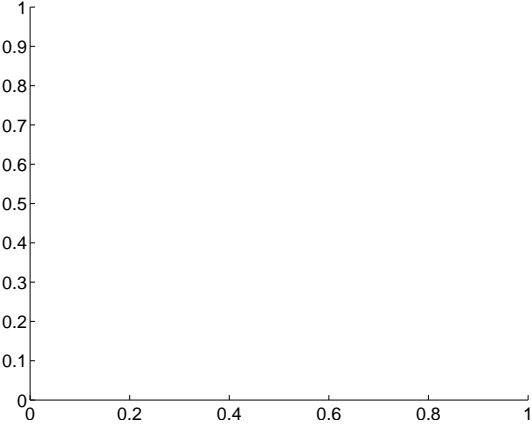
Q15 difference image



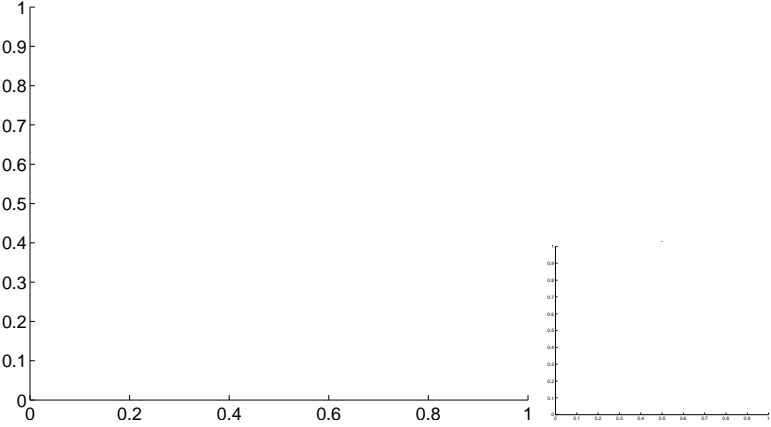
Q15 OOT image



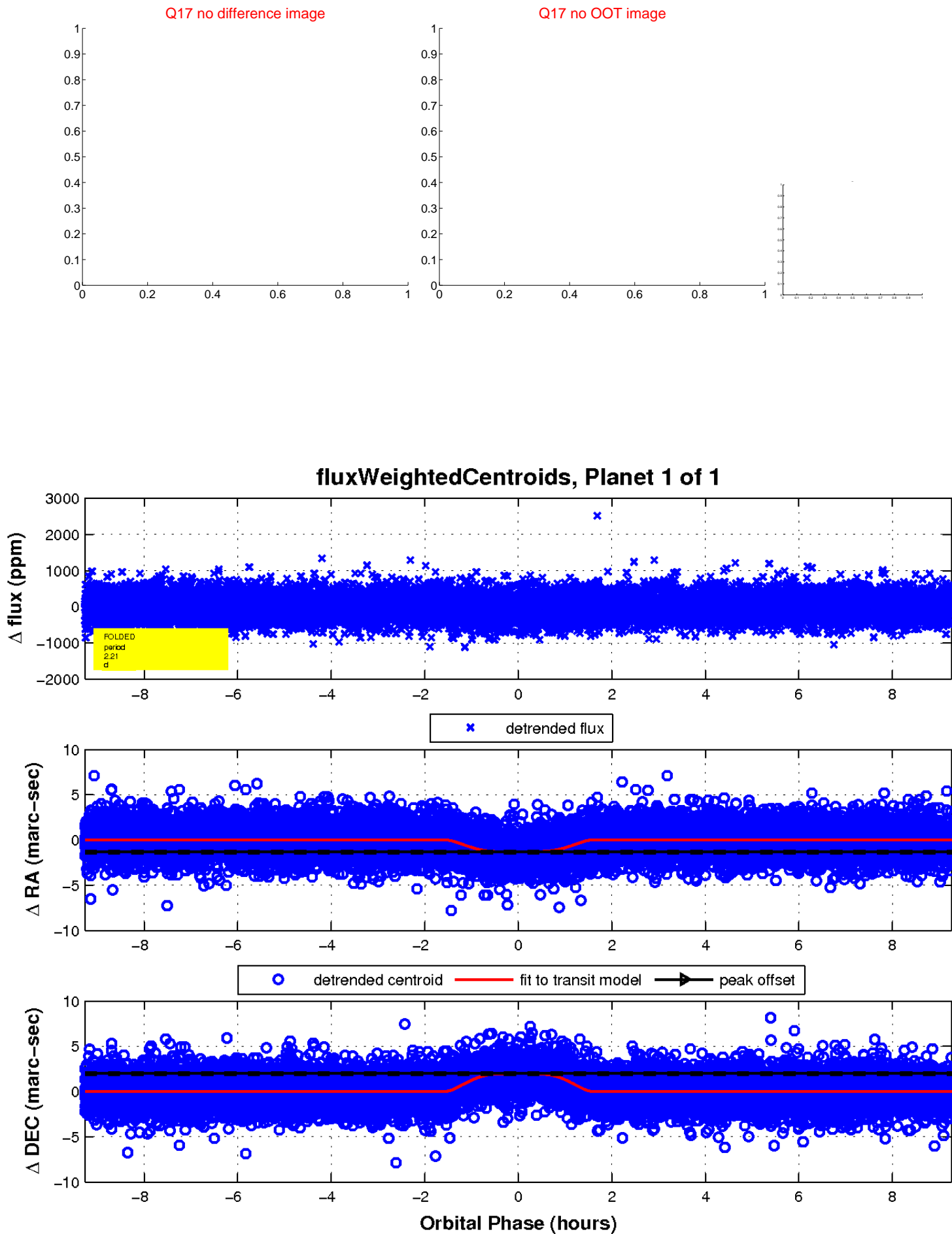
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

