

KIC 003557821

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})
003557821-01	OBS	No	408.960523	227.590940	117.5	16.036	7.8	8.3	1.16	6063	1.39	1.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003557821-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—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.

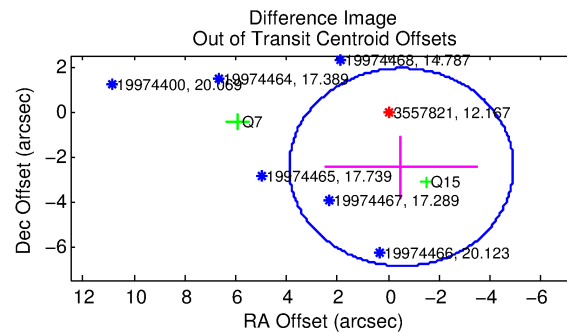
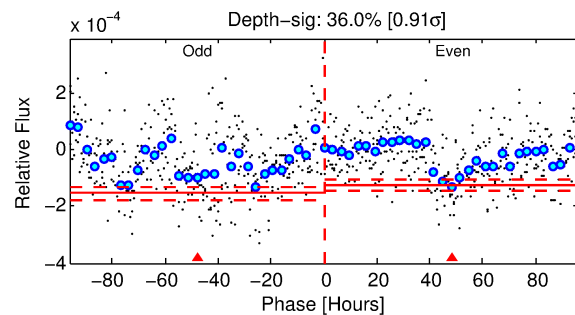
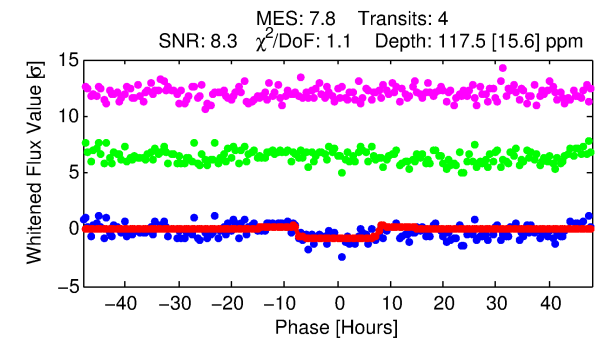
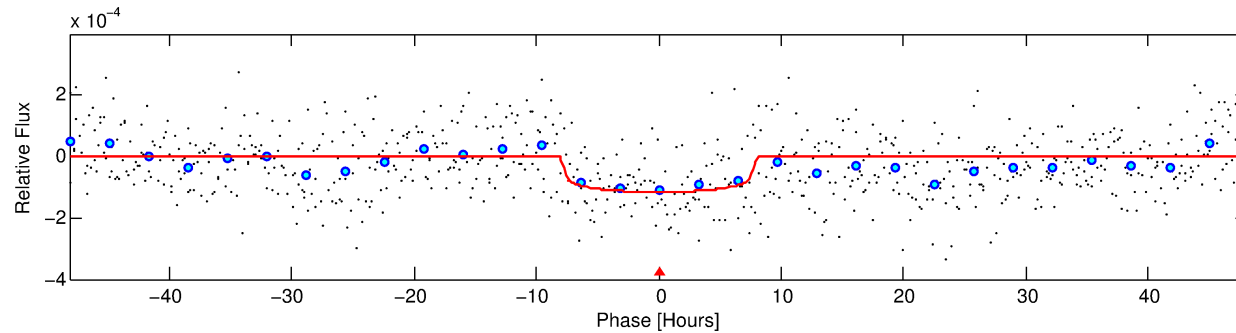
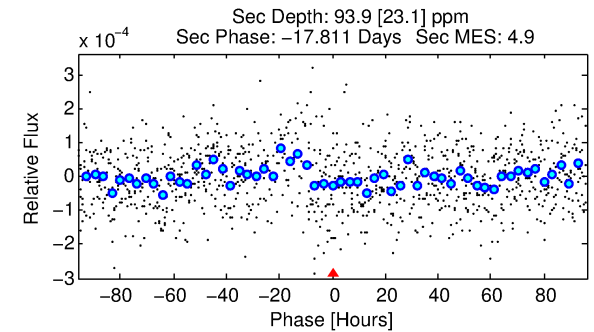
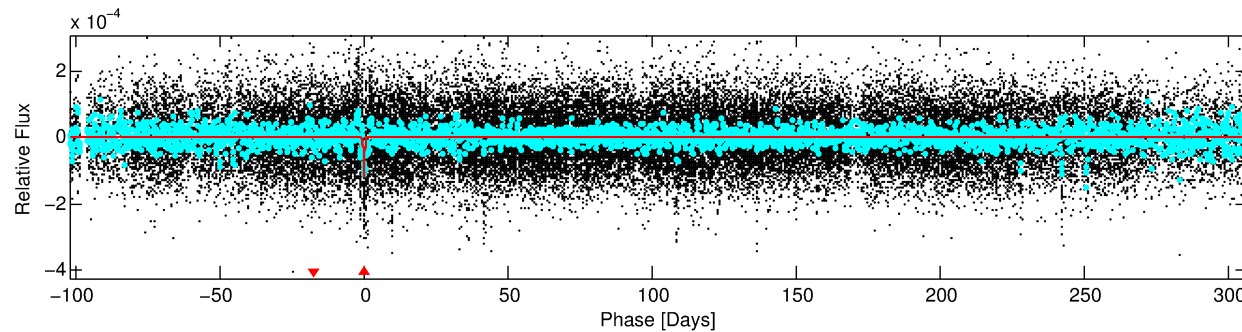
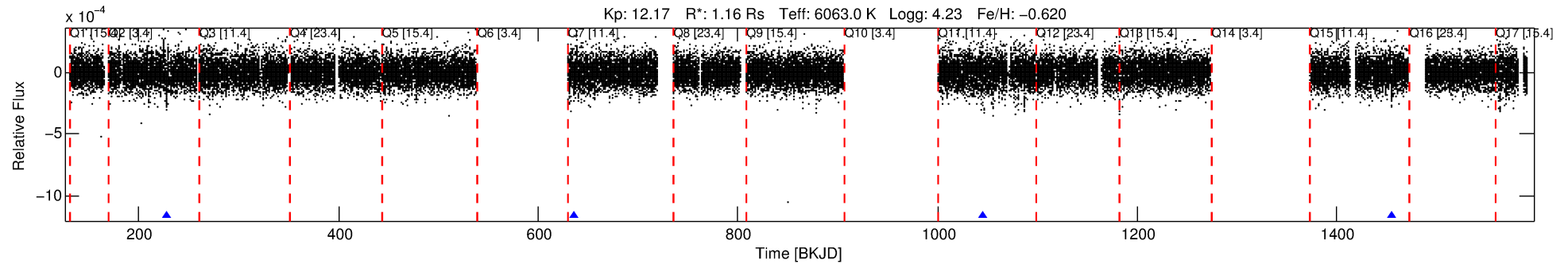
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003557821-01

No Significant Match Found

DV One-Page Summary

KIC: 3557821 Candidate: 1 of 1 Period: 408.961 d



DV Fit Results:

Period = 408.96052 [0.00896] d
Epoch = 227.5909 [0.0163] BKJD
Rp/R* = 0.0109 [0.0028]
a/R* = 122.44 [157.34]
b = 0.79 [0.61]
Seff = 1.58 [0.49]
Teq = 286 [22] K
Rp = 1.39 [0.45] Re
a = 1.0191 [0.1954] AU
Ag = 27825.84 [17889.37] [1.56σ]
Teffp = 5706 [810] K [6.69σ]

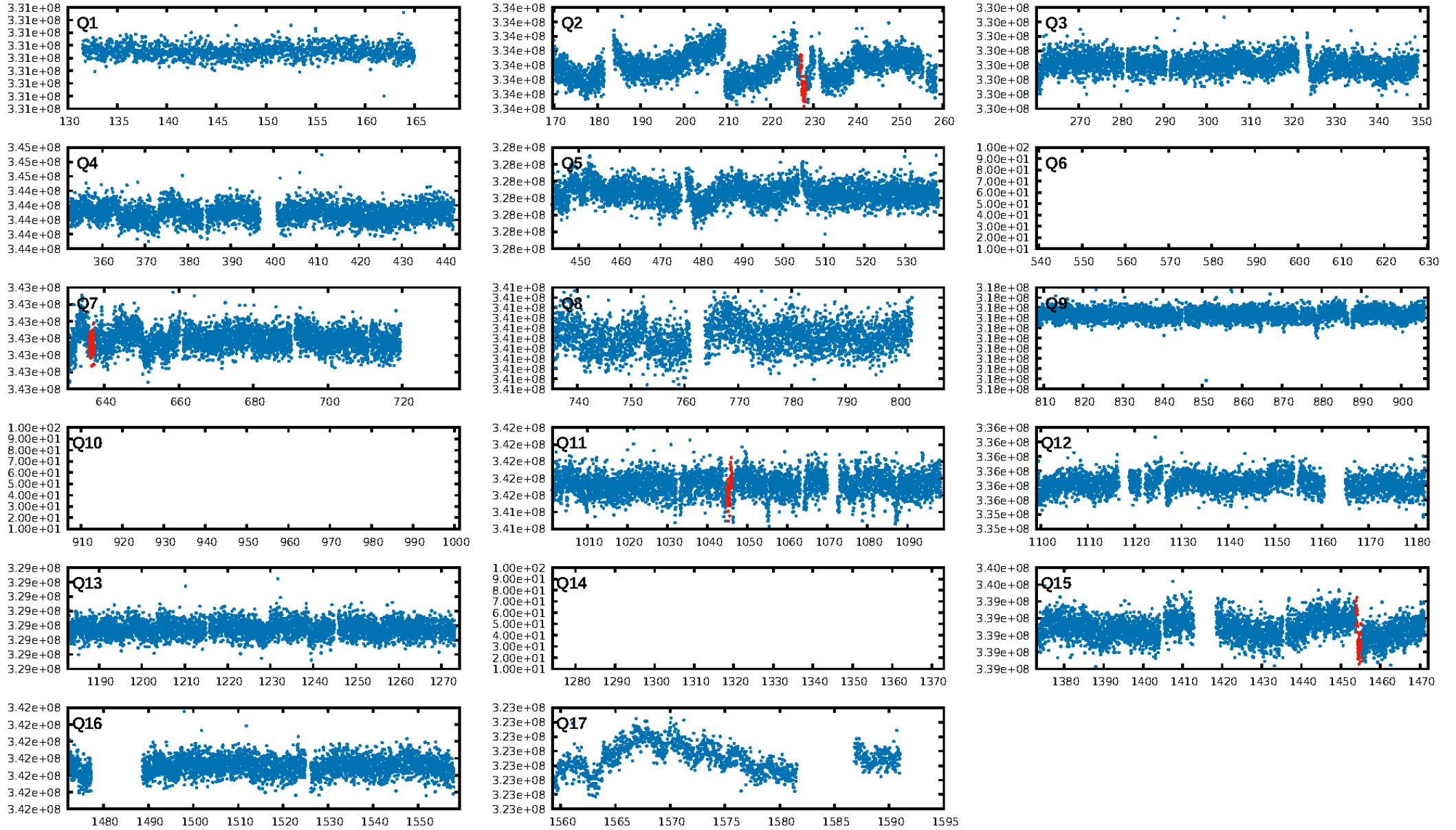
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.8%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.96e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -4.501
Centroid-sig: 0.0%
Centroid-so: 5.166 arcsec [2.62σ]
OotOffset-rm: 2.532 arcsec [1.73σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 2.829 arcsec [1.88σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [4/4]

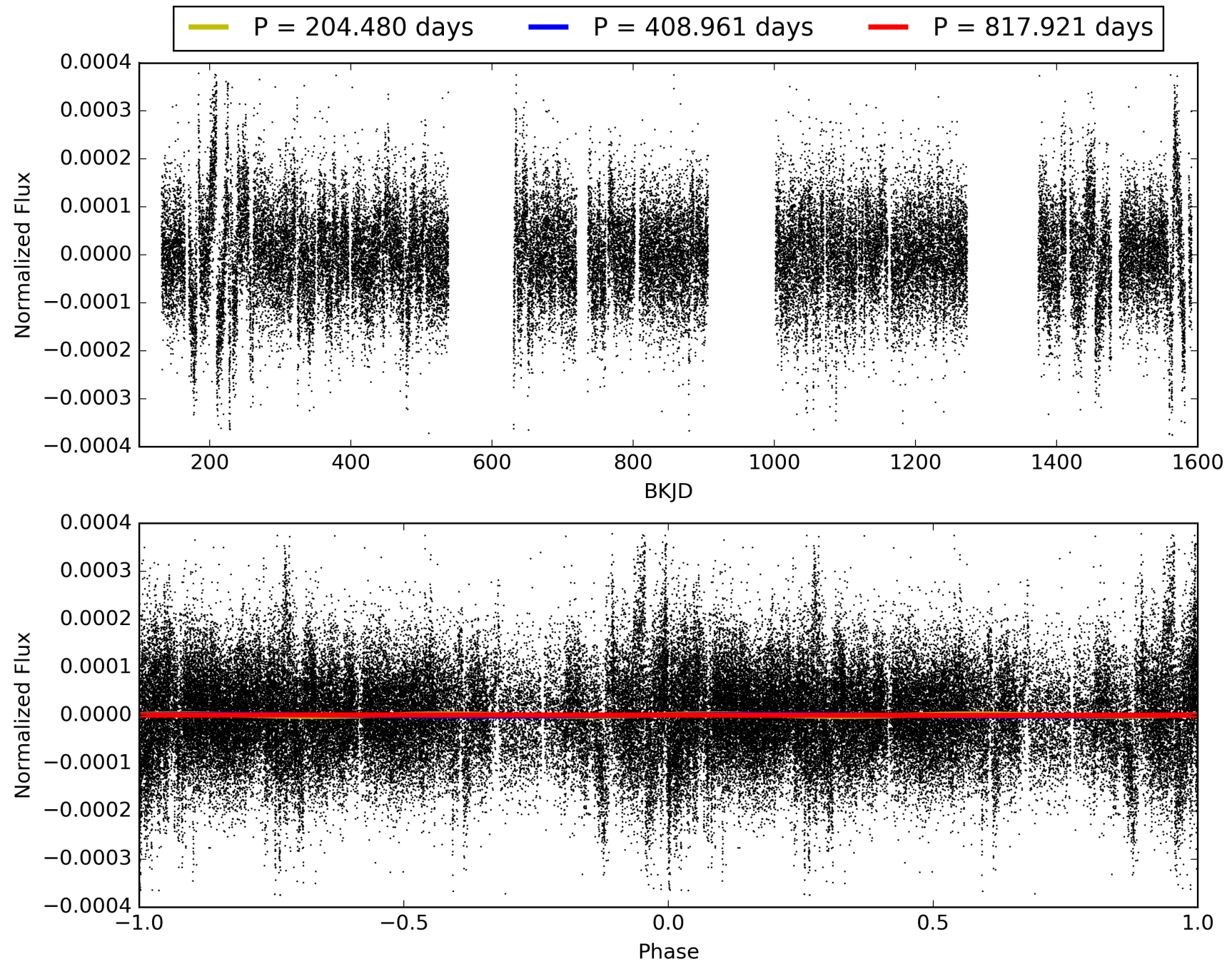
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:04:43 Z

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

TCE 003557821-01, PDC Light Curves

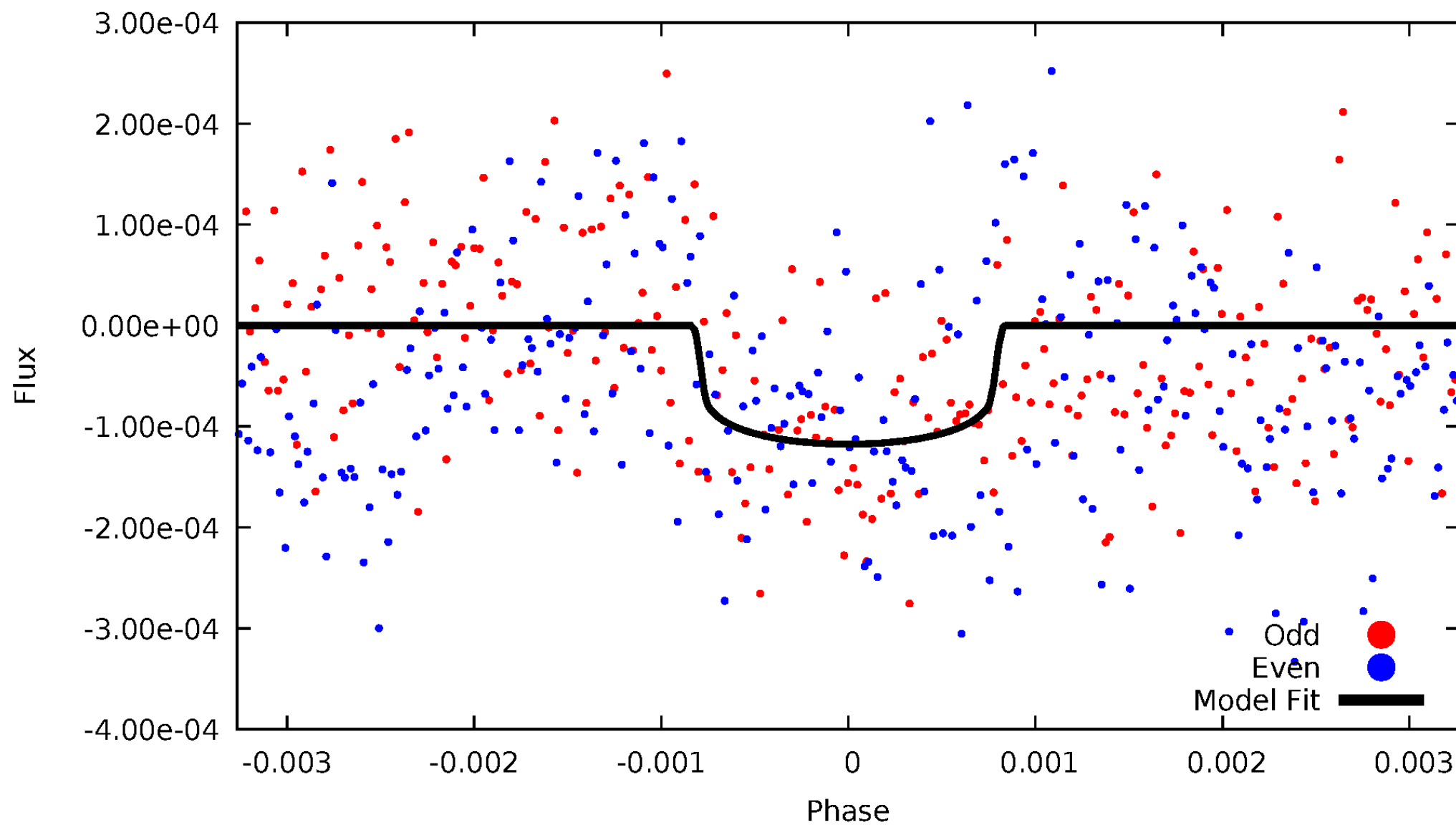


TCE 003557821-01



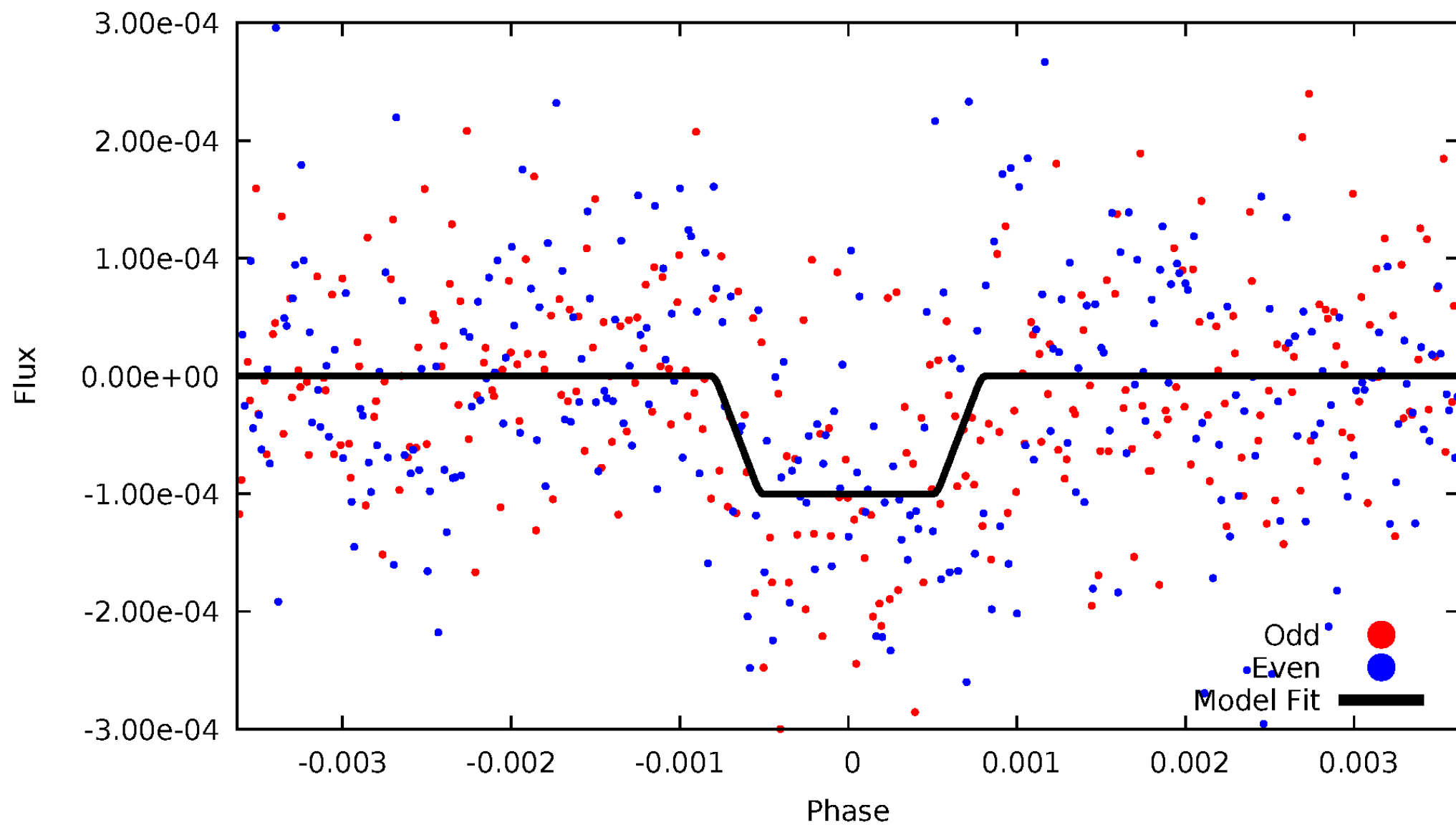
DV Odd/Even

TCE 003557821-01

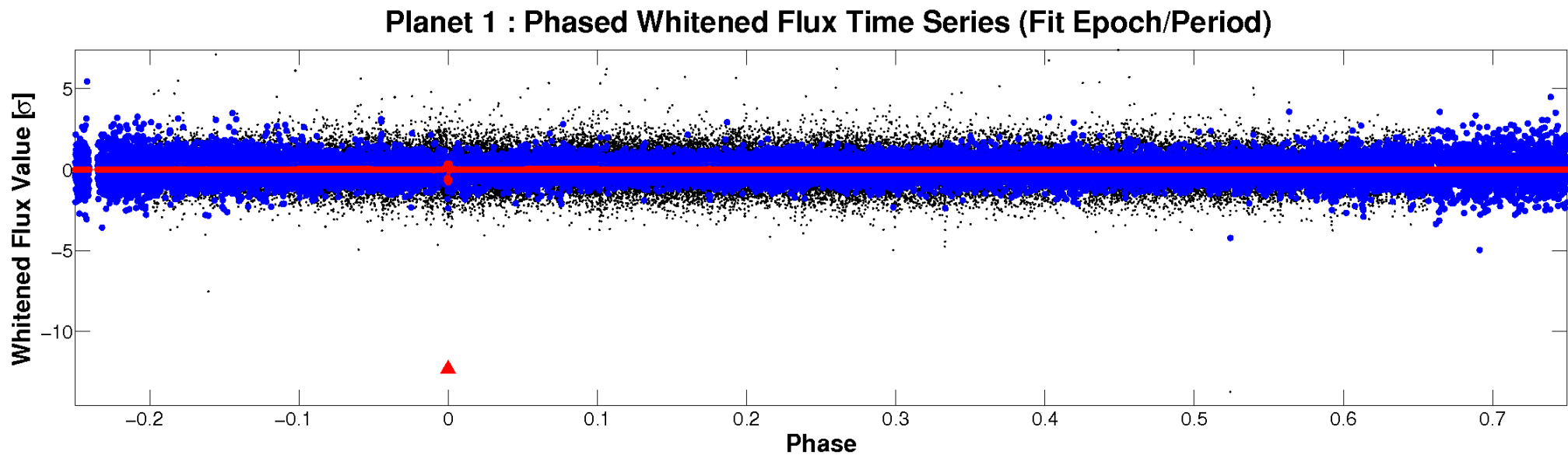
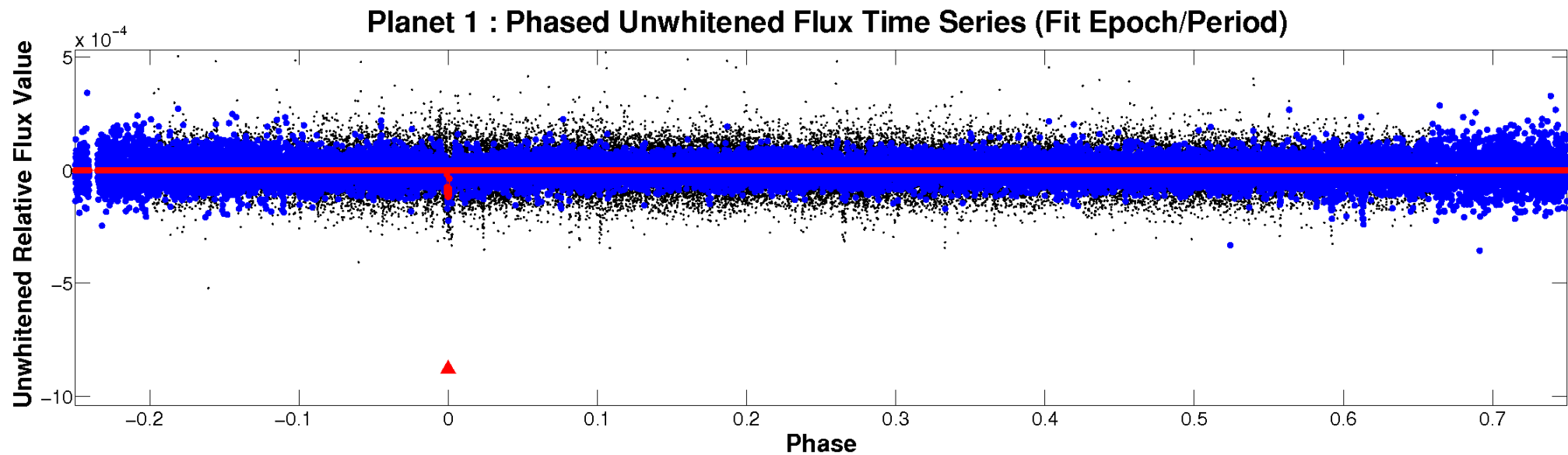


ALT Odd/Even

TCE 003557821-01

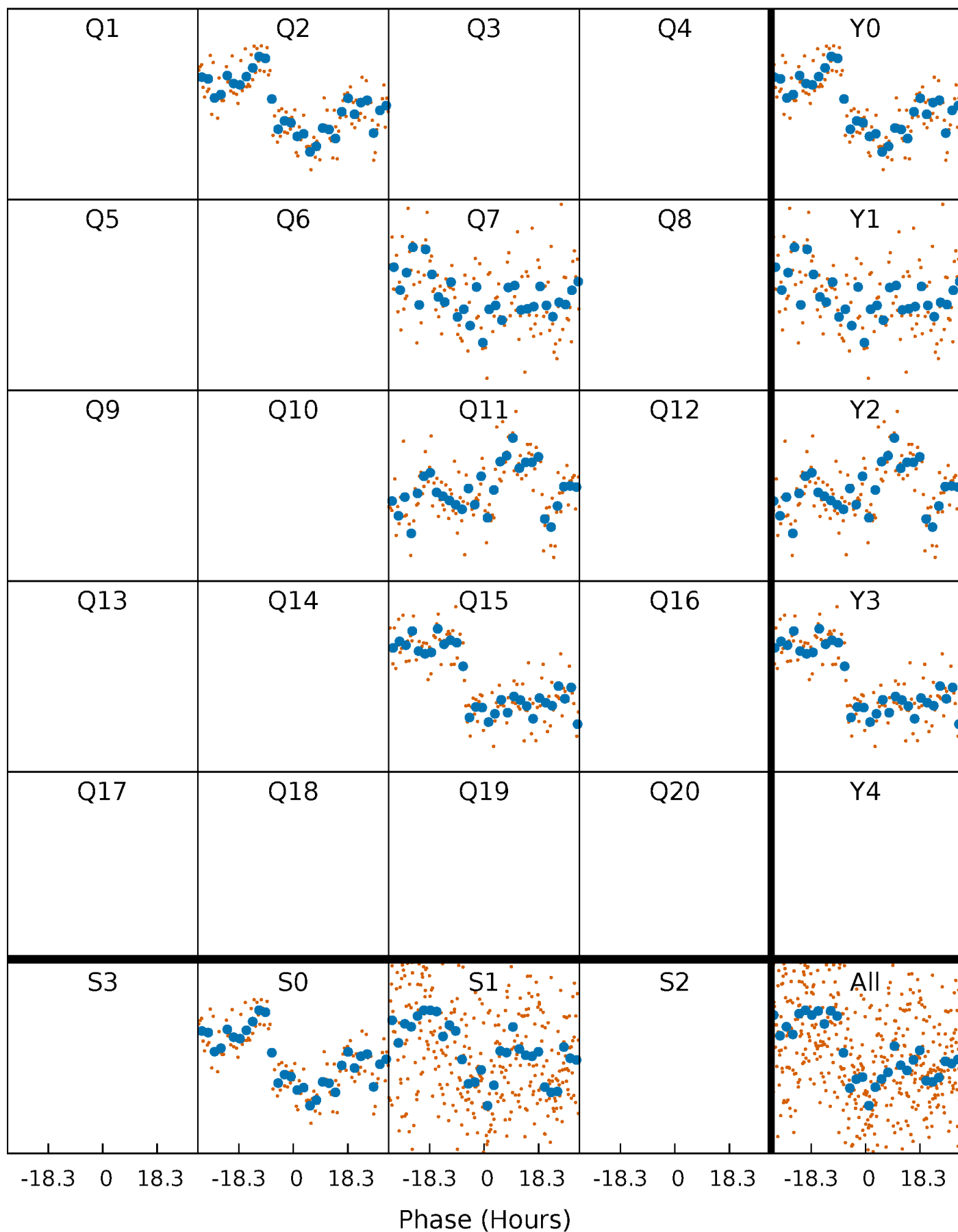


Non-Whitened Vs. Whitened Light Curve



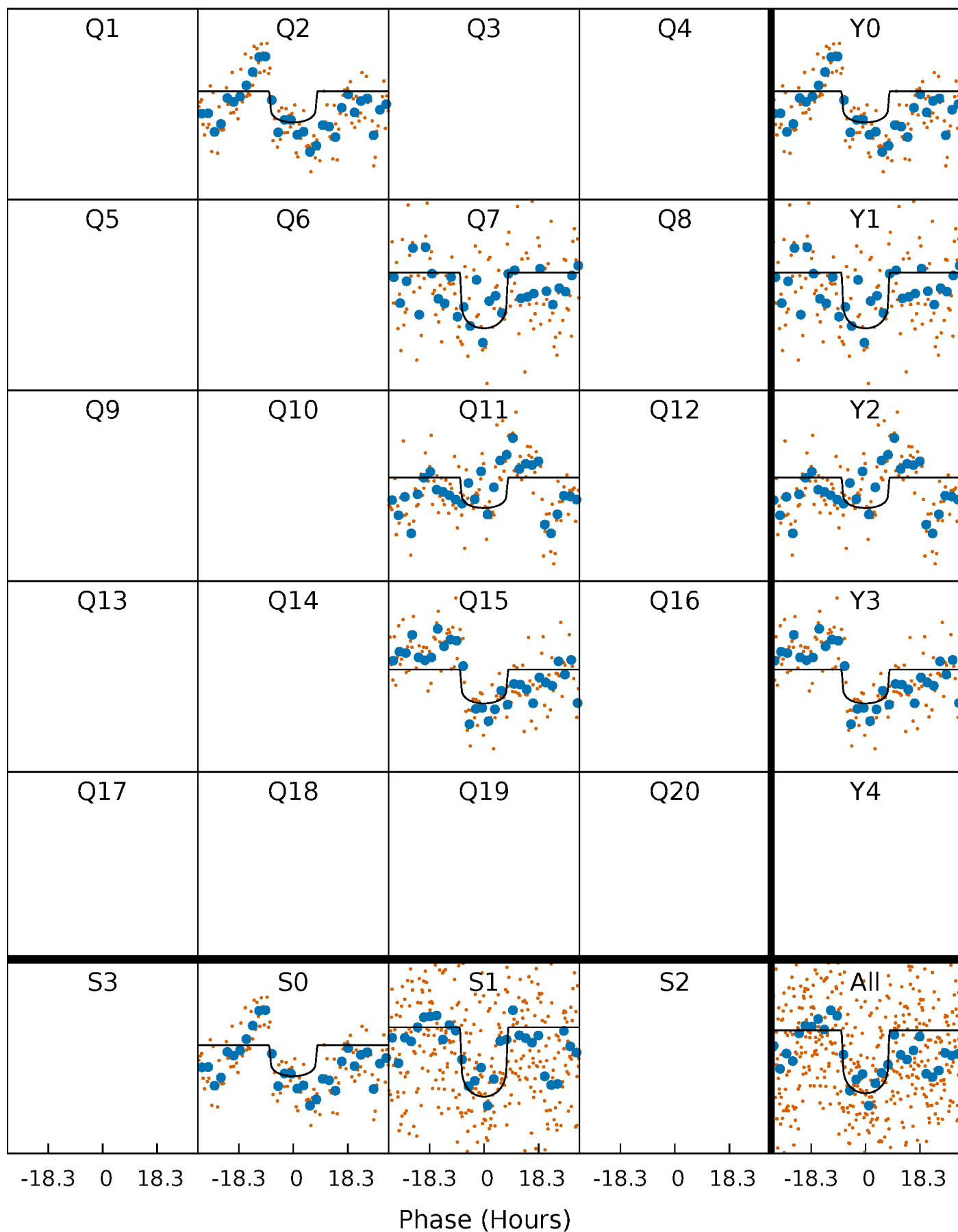
PDC Quarter-Phased Transit Curves

TCE 003557821-01 P=408.960523 Days $T_0=227.590940$ (BKJD)



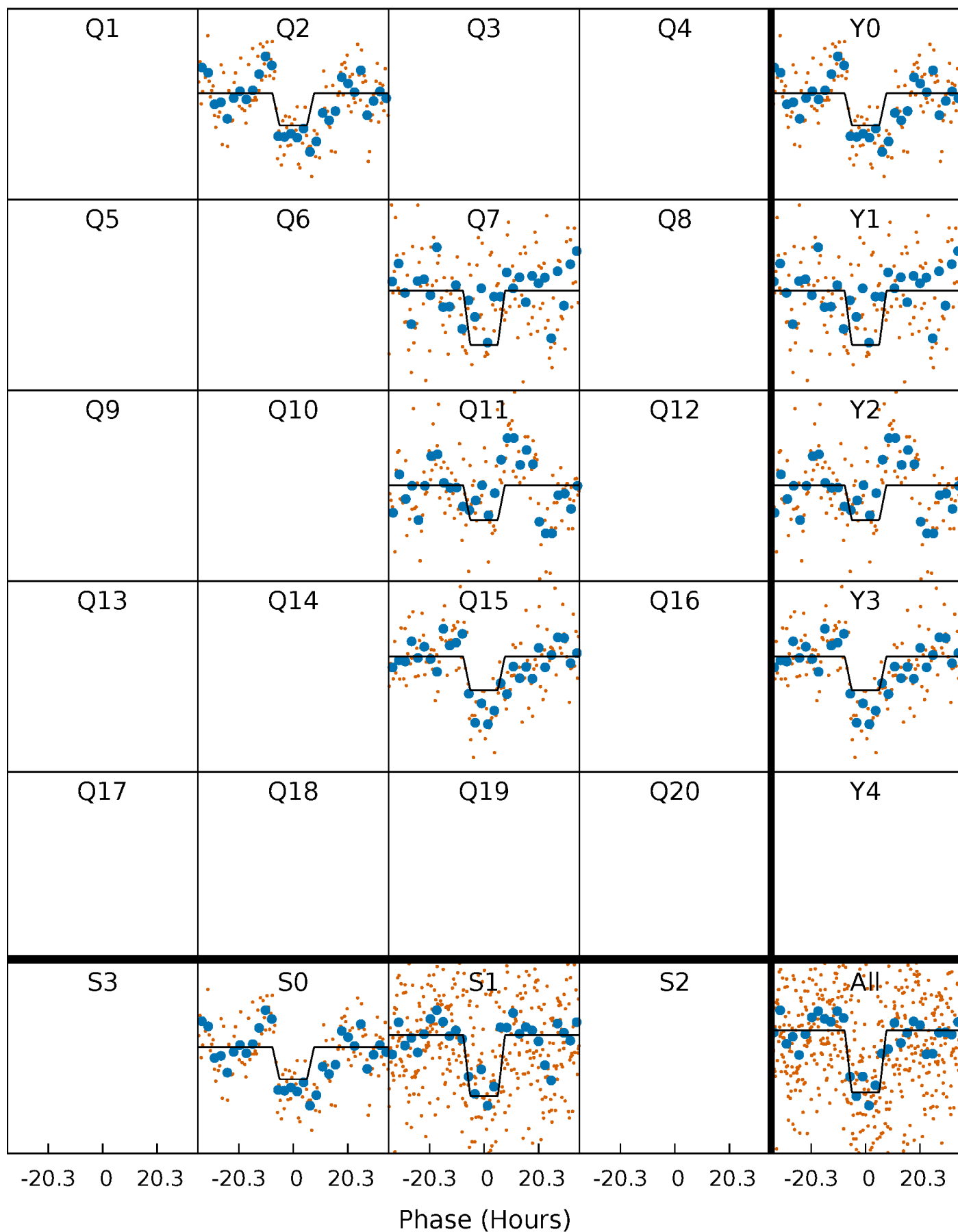
DV Quarter-Phased Transit Curves

TCE 003557821-01 P=408.960523 Days $T_0=227.590940$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

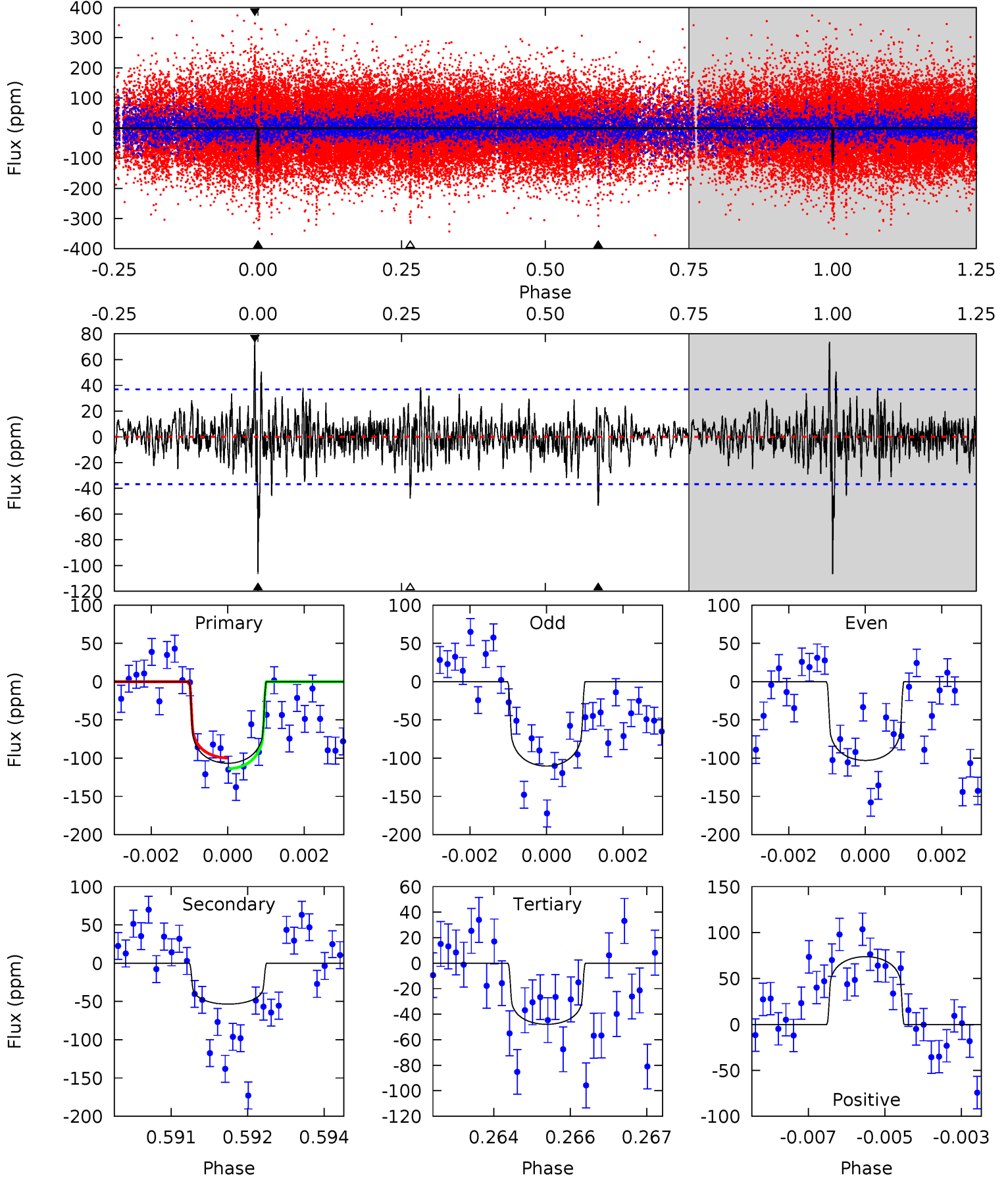
TCE 003557821-01 P=408.964081 Days $T_0=227.552038$ (BKJD)



DV Model-Shift Uniqueness Test

003557821-01, P = 408.960523 Days, E = 227.590940 Days

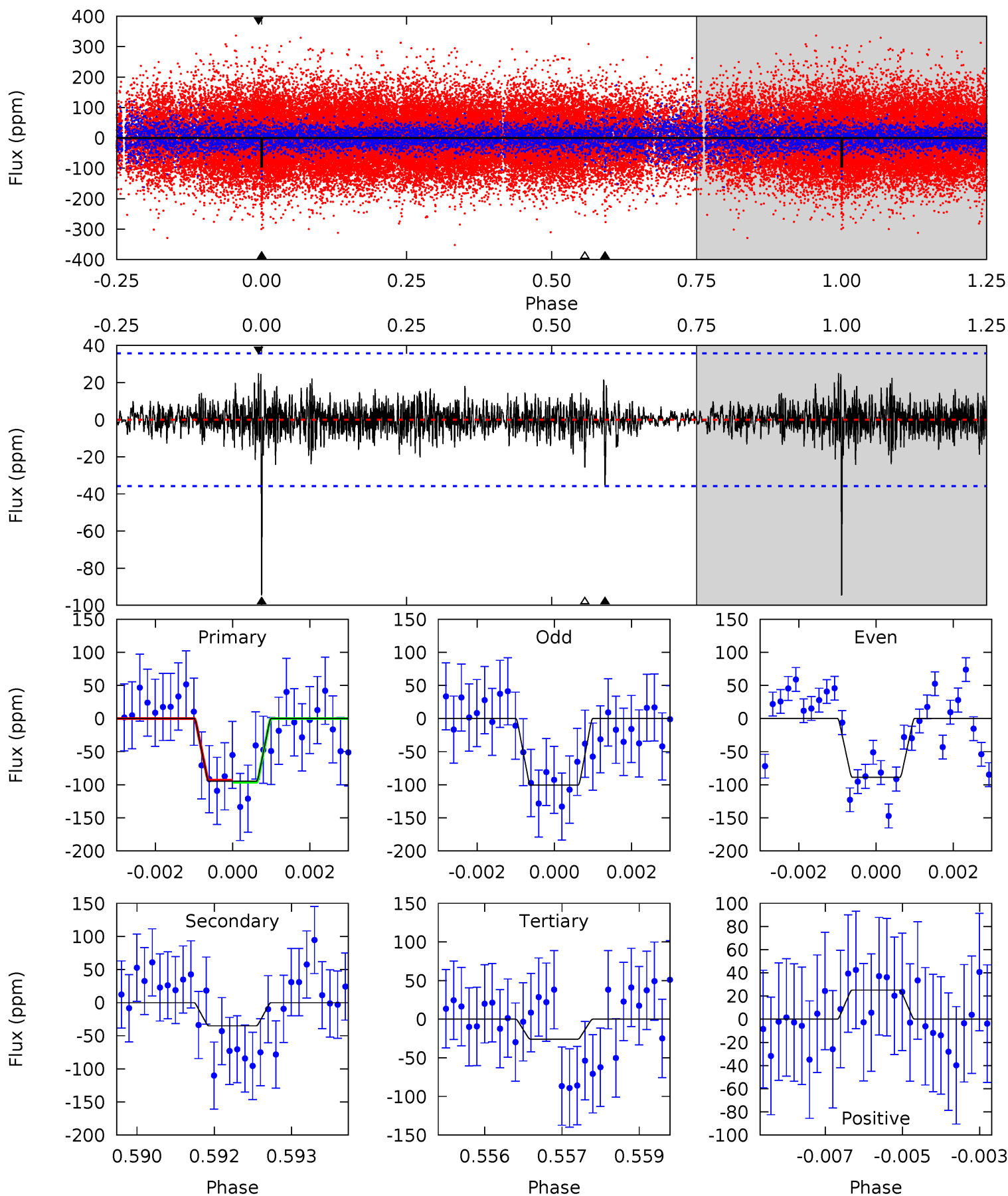
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	7.78	6.97	10.7	5.36	3.15	1.77	8.55	4.79	0.81	-2.95	0.54	0.97	0.41	1.03



Alt Model-Shift Uniqueness Test

003557821-01, P = 408.964081 Days, E = 227.552038 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	5.26	3.87	3.77	5.36	3.15	0.94	10.3	10.4	1.39	1.50	0.89	1.07	0.21	0.21



Stellar Parameters For KIC 003557821

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6063^{+81}_{-72}	$4.233^{+0.180}_{-0.105}$	$-0.620^{+0.150}_{-0.100}$	$1.163^{+0.174}_{-0.232}$	$0.842^{+0.055}_{-0.045}$	$0.754^{+0.717}_{-0.256}$
	+1%/-1%	+4%/-2%	+24%/-16%	+15%/-20%	+7%/-5%	+95%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003557821-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-53 ± 7	$1.39^{+0.38}_{-0.36}$	400^{+16}_{-22}	5028^{+720}_{-484}	15830^{+13219}_{-6259}
Alt.	-35 ± 7	$1.25^{+0.38}_{-0.35}$	397^{+18}_{-24}	4769^{+703}_{-478}	12778^{+12989}_{-5670}

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 $A_{obs} \gg 1.0$

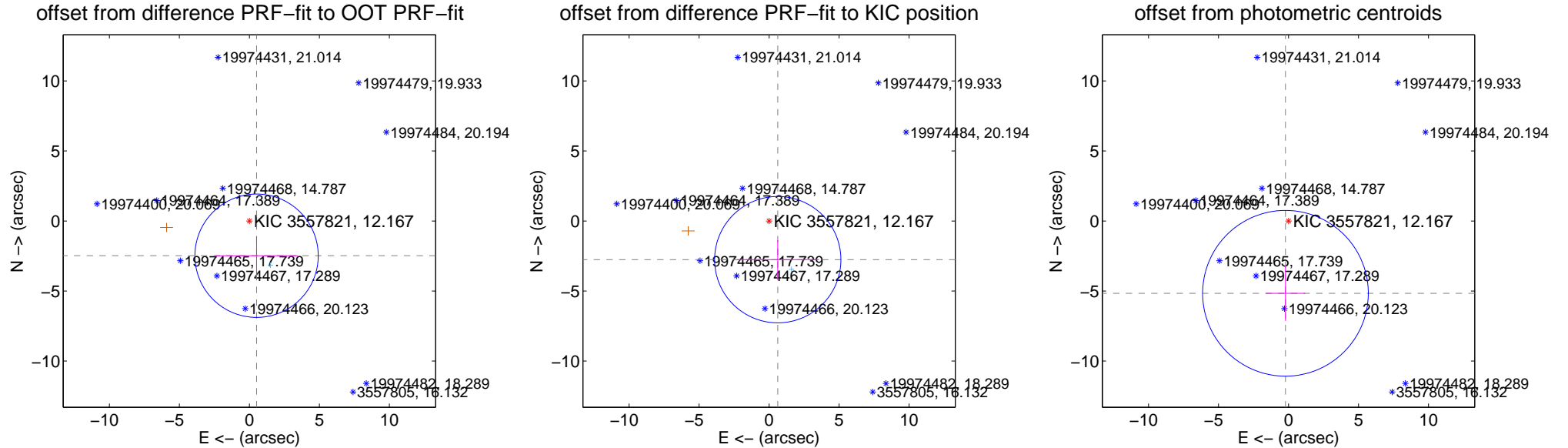
DV Centroid Data

Supplemental centroid analysis for 003557821-01. Kepler magnitude: 12.17. Transit SNR 8.30

There are 1 quarters with good PRF difference image offsets

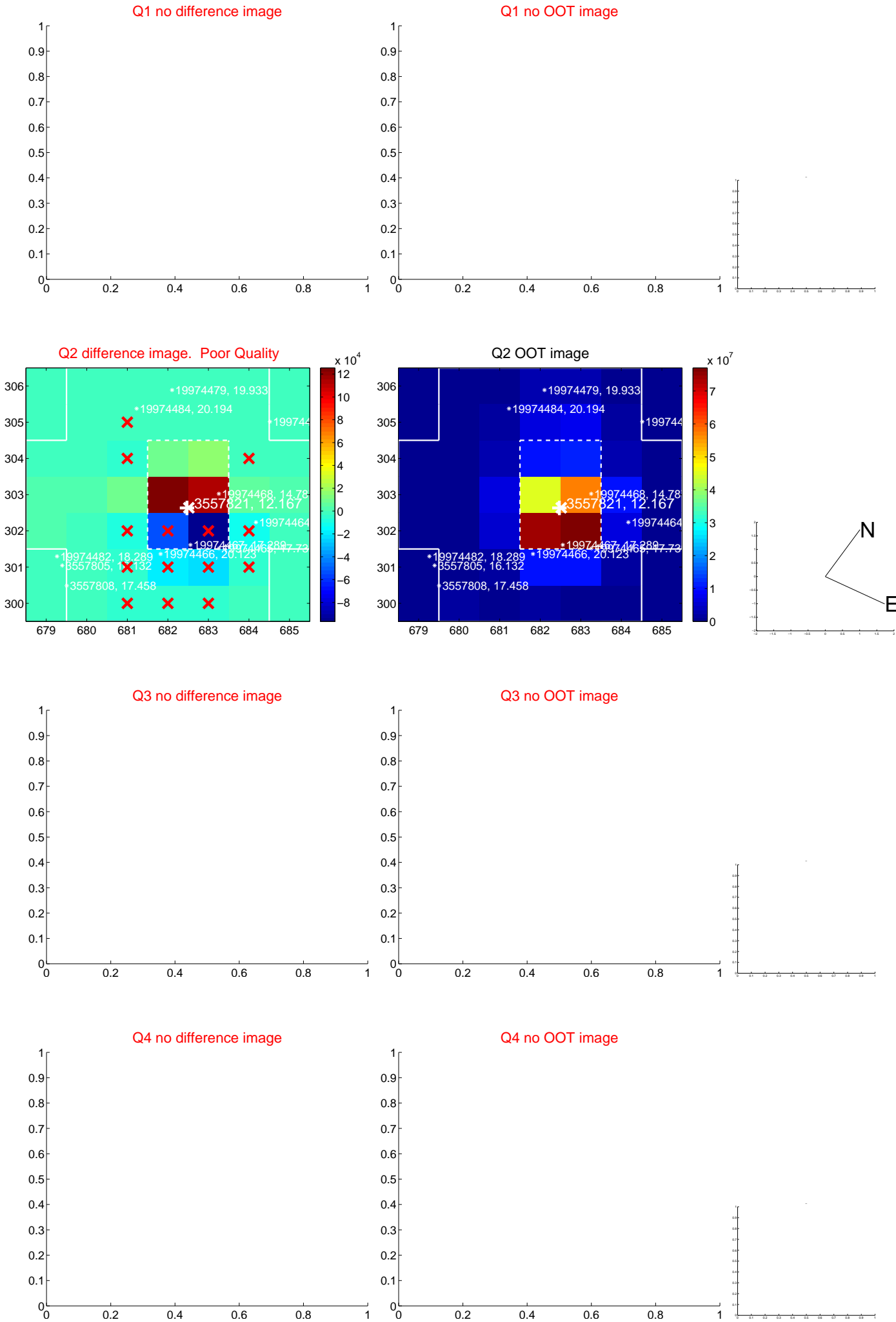
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.532 ± 1.468	1.73	-0.514 ± 2.949	-2.480 ± 1.369
PRF-fit source offset from KIC position	2.829 ± 1.503	1.88	-0.619 ± 2.935	-2.760 ± 1.393
photometric centroid source offset	5.17 ± 1.97	2.62	0.22 ± 1.41	-5.16 ± 1.97



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.

Q5 no difference image



Q5 no OOT image



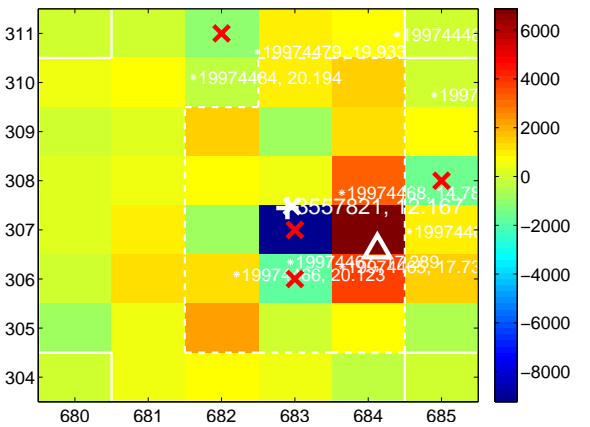
Q6 no difference image



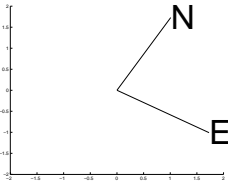
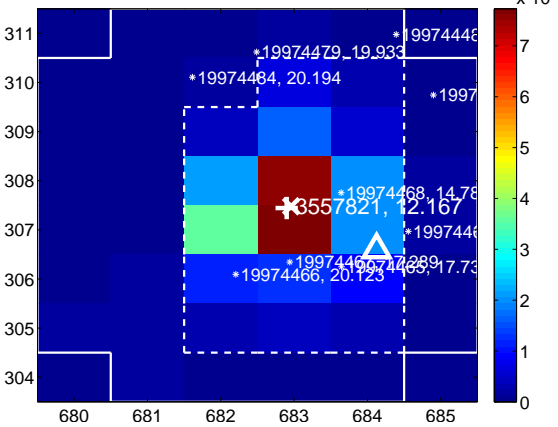
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



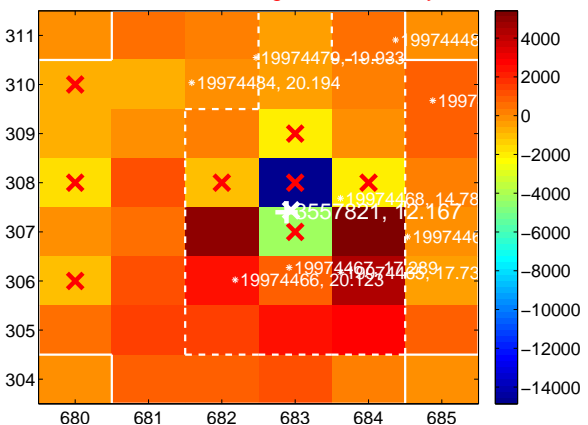
Q10 no difference image



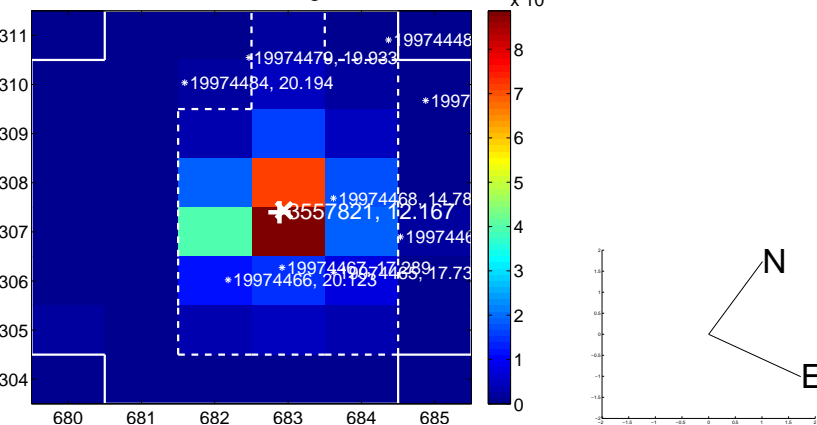
Q10 no OOT image



Q11 difference image. Poor Quality



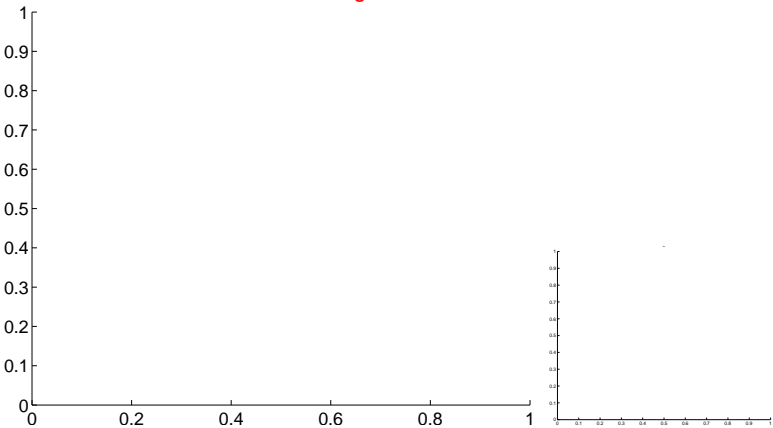
Q11 OOT image



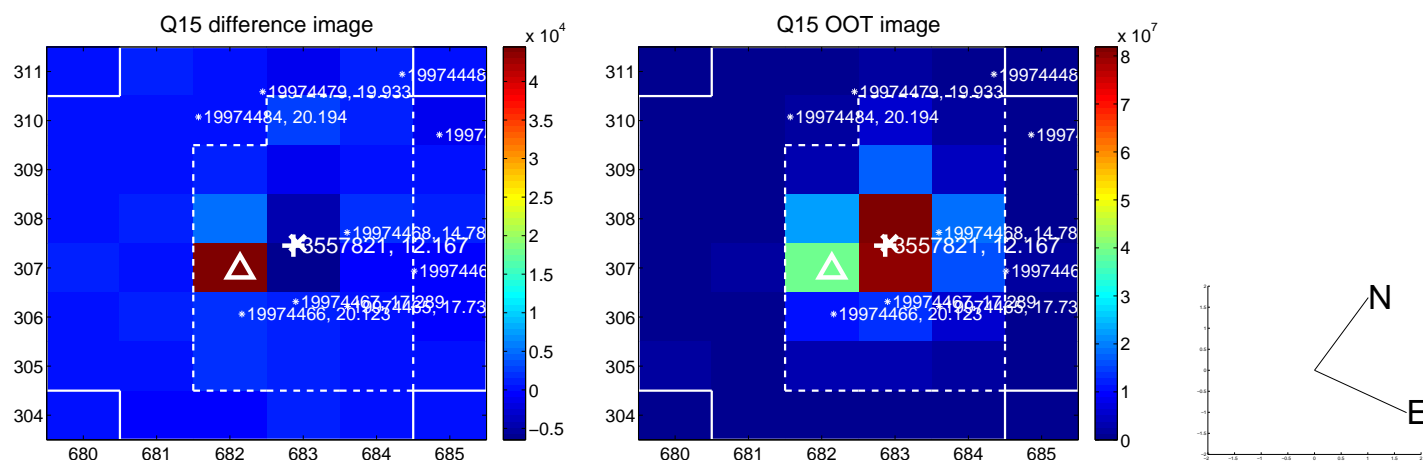
Q12 no difference image



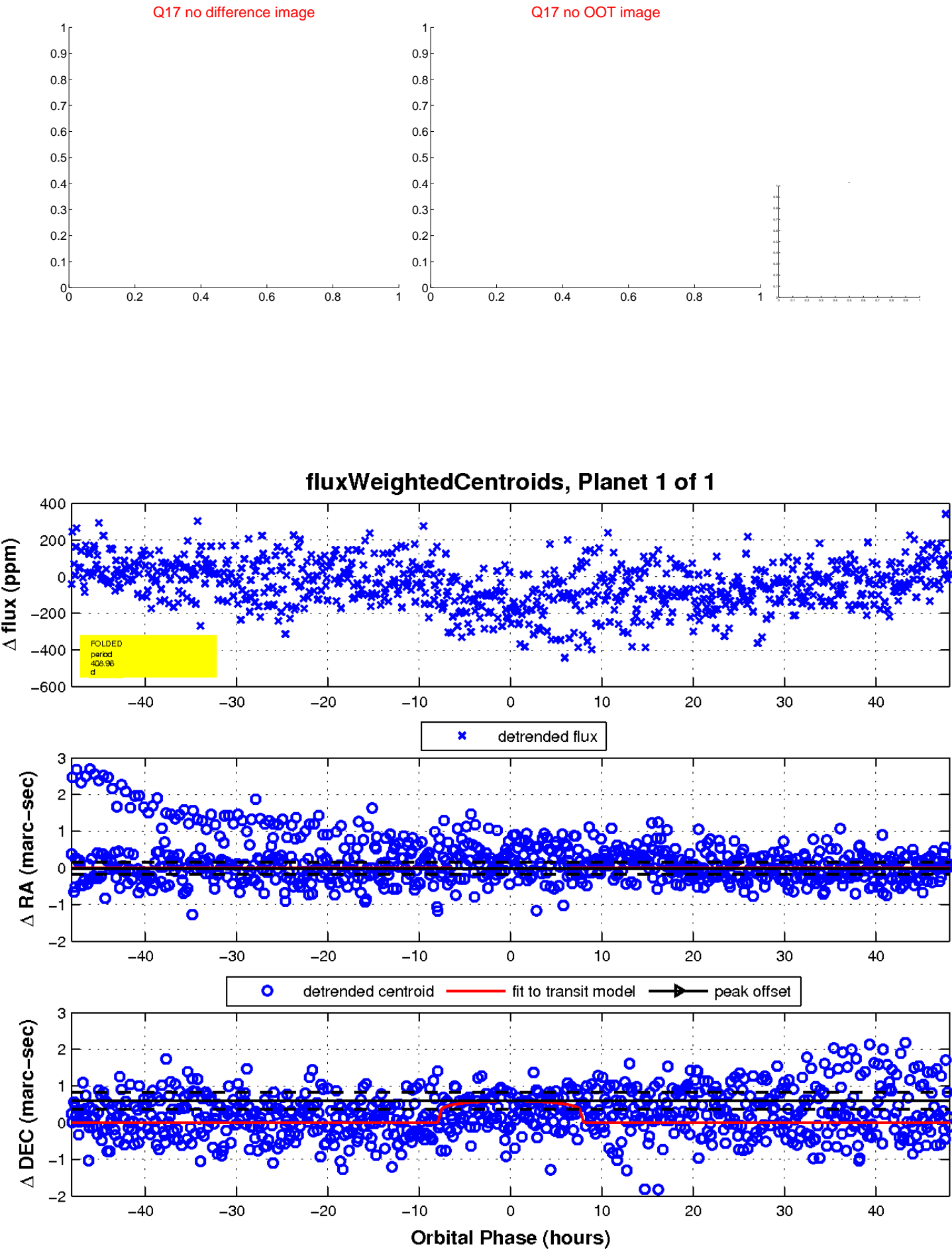
Q12 no OOT image



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



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



UKIRT Image

Declination

