

KIC 005709226

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})
005709226-01	OBS	8104.01	317.995195	393.029229	697.9	7.413	9.9	9.6	0.82	5665	2.31	0.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005709226-01	OBS	FP	0.05	1	0	0	0	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.

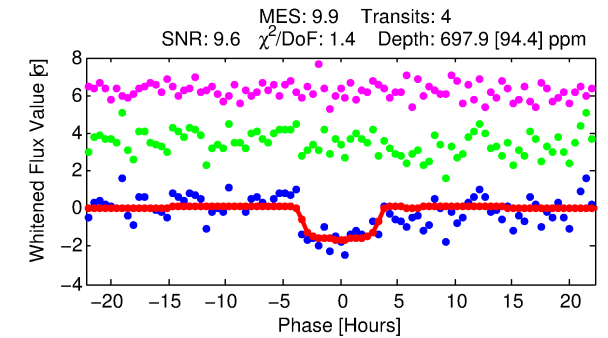
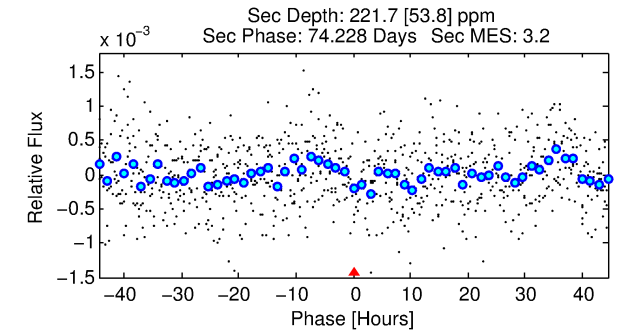
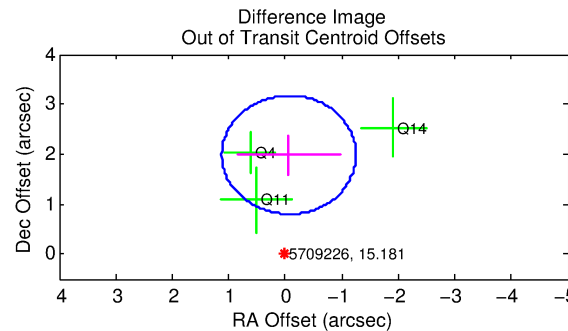
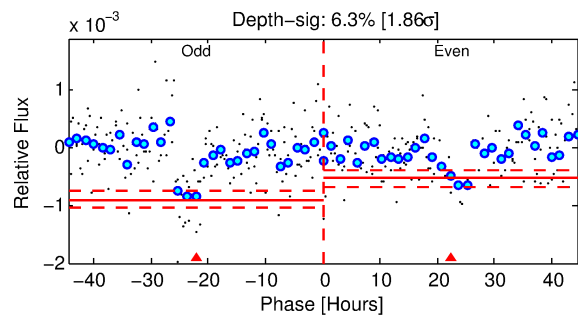
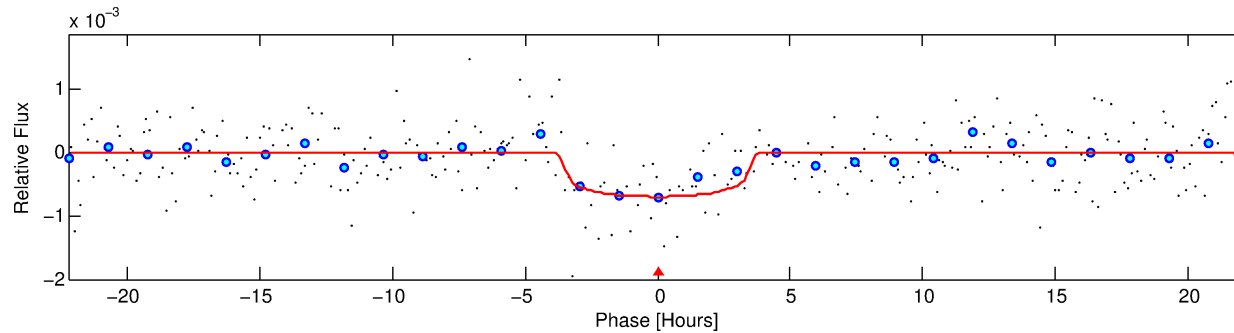
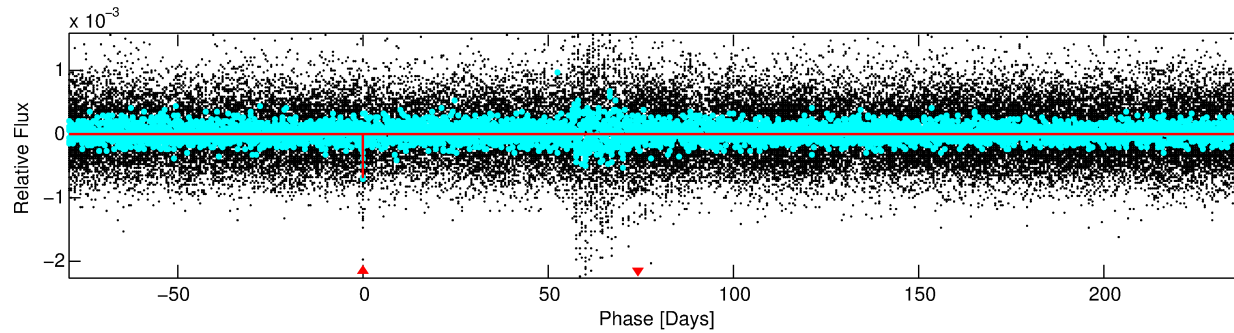
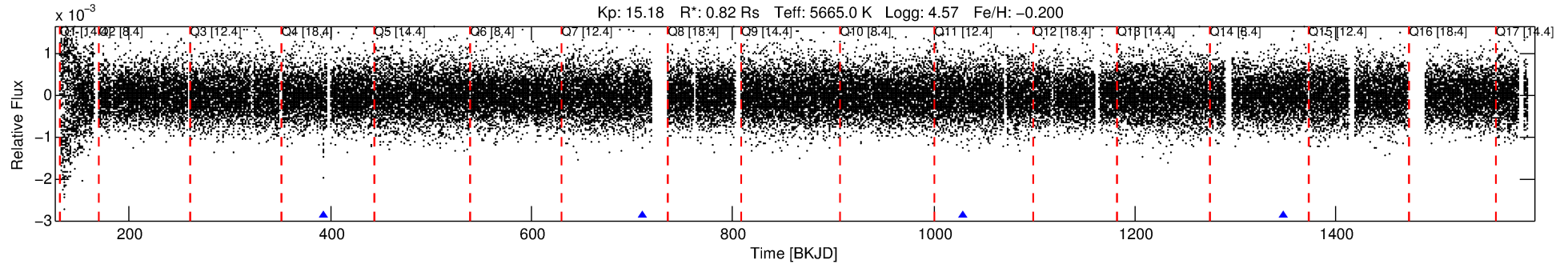
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005709226-01

No Significant Match Found

DV One-Page Summary

KIC: 5709226 Candidate: 1 of 1 Period: 317.995 d



DV Fit Results:

Period = 317.99519 [0.00789] d
Epoch = 393.0292 [0.0175] BKJD
Rp/R* = 0.0258 [0.0201]
a/R* = 246.08 [829.08]
b = 0.70 [2.50]
Seff = 0.80 [0.28]
Teq = 241 [21] K
Rp = 2.31 [1.90] Re
a = 0.8828 [0.1964] AU
Ag = 17791.88 [28637.21] [0.62 σ]
Teffp = 4301 [1700] K [2.39 σ]

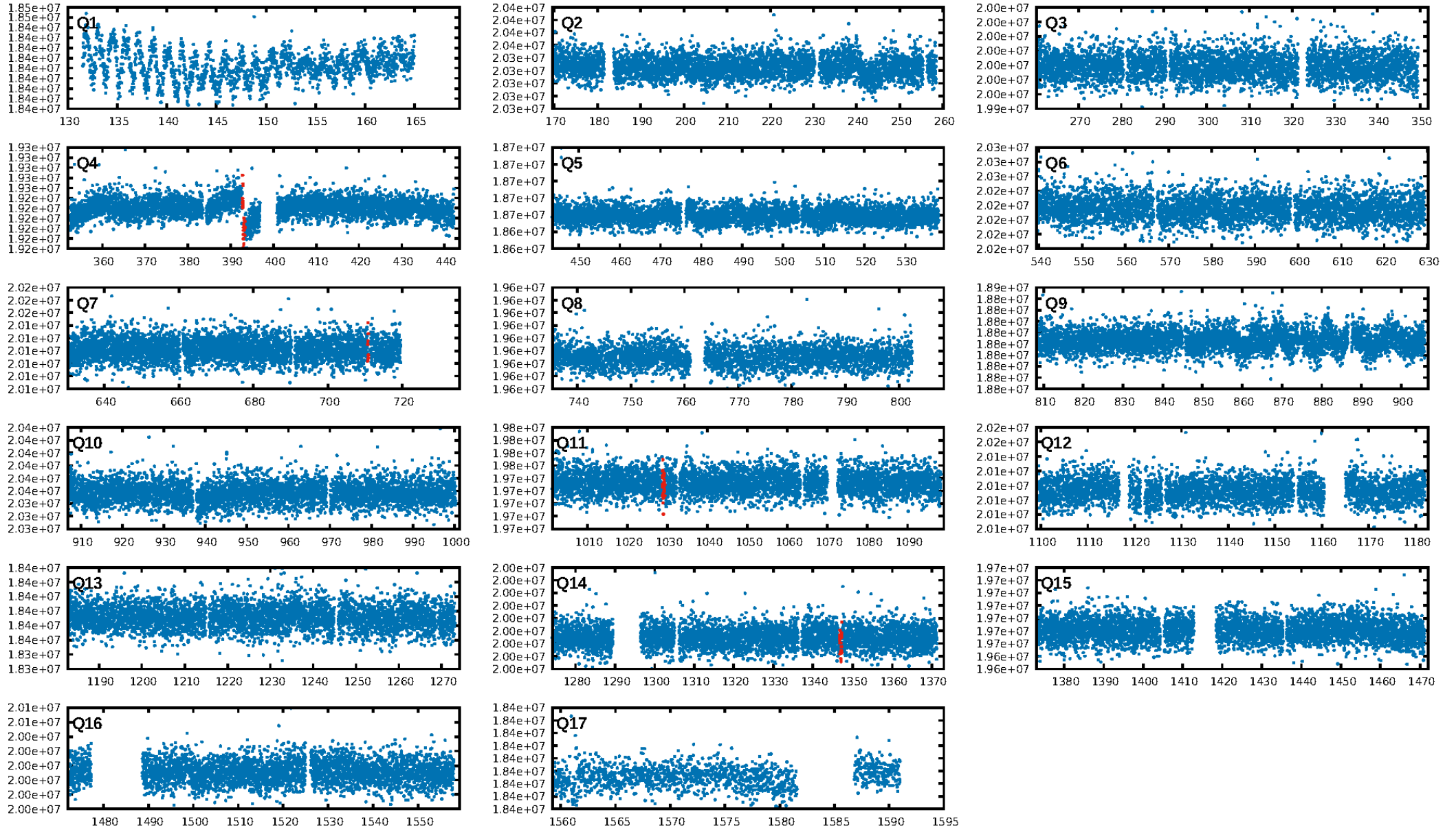
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 95.9%
Bootstrap-pfa: 2.30e-17
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -54.17
Centroid-sig: 63.5%
Centroid-so: 0.530 arcsec [0.41 σ]
OotOffset-rm: 1.986 arcsec [5.02 σ]
KicOffset-rm: 1.906 arcsec [4.96 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

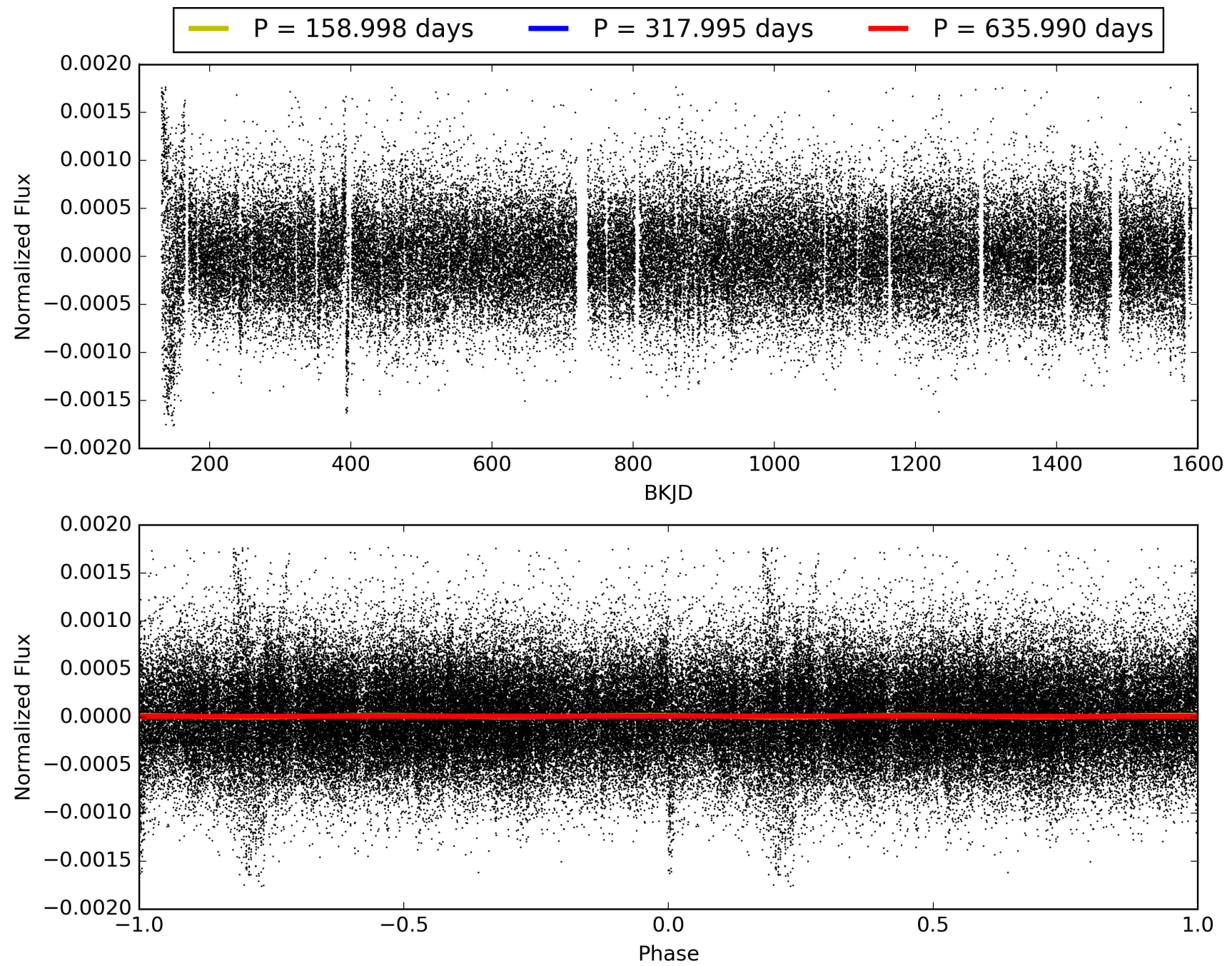
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:00:06 Z

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

TCE 005709226-01, PDC Light Curves

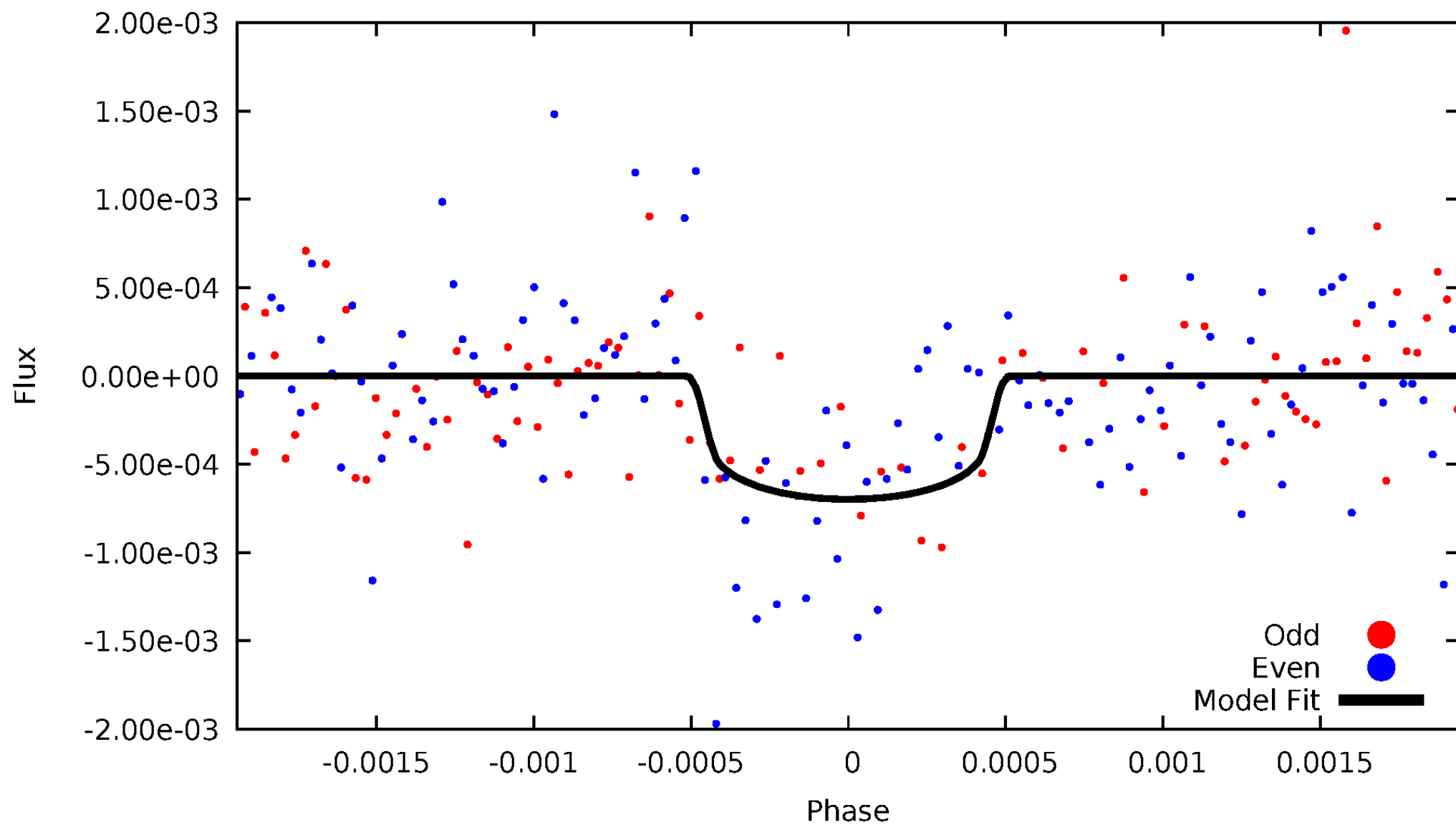


TCE 005709226-01



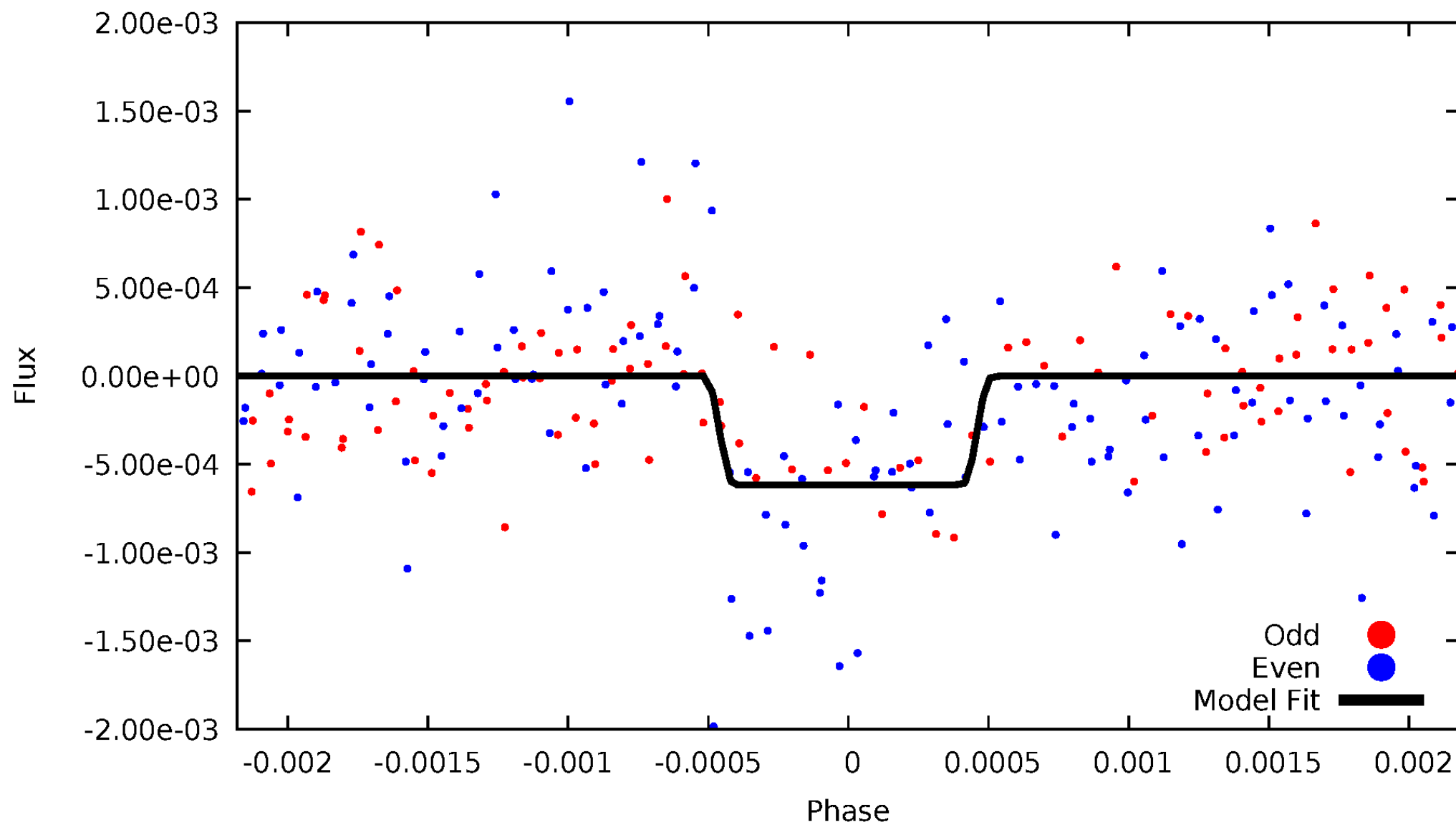
DV Odd/Even

TCE 005709226-01

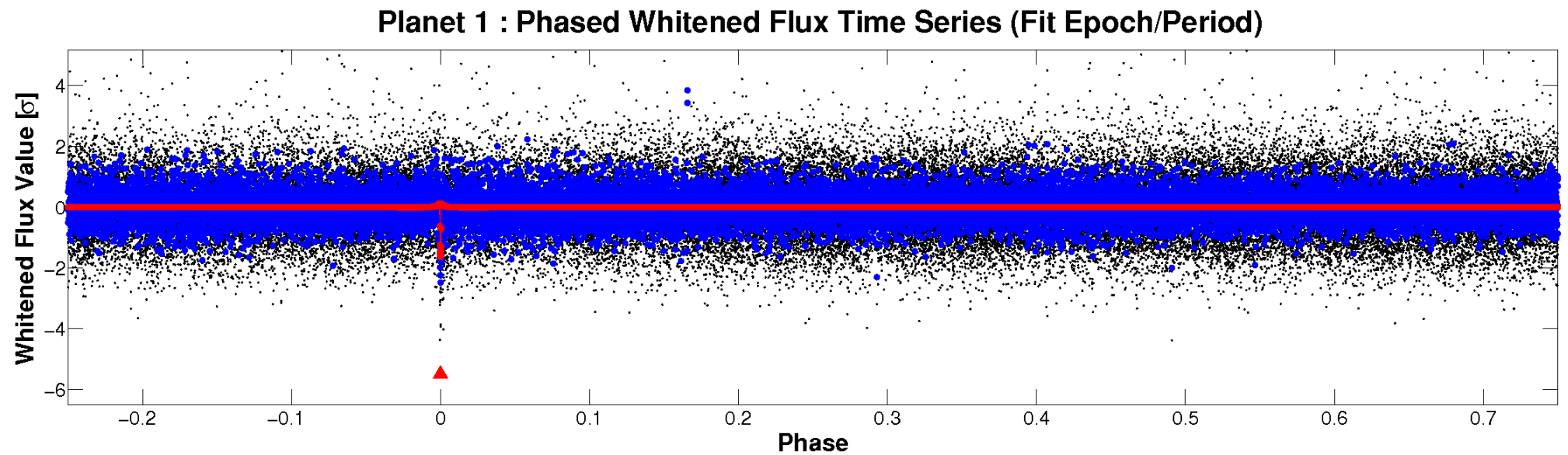
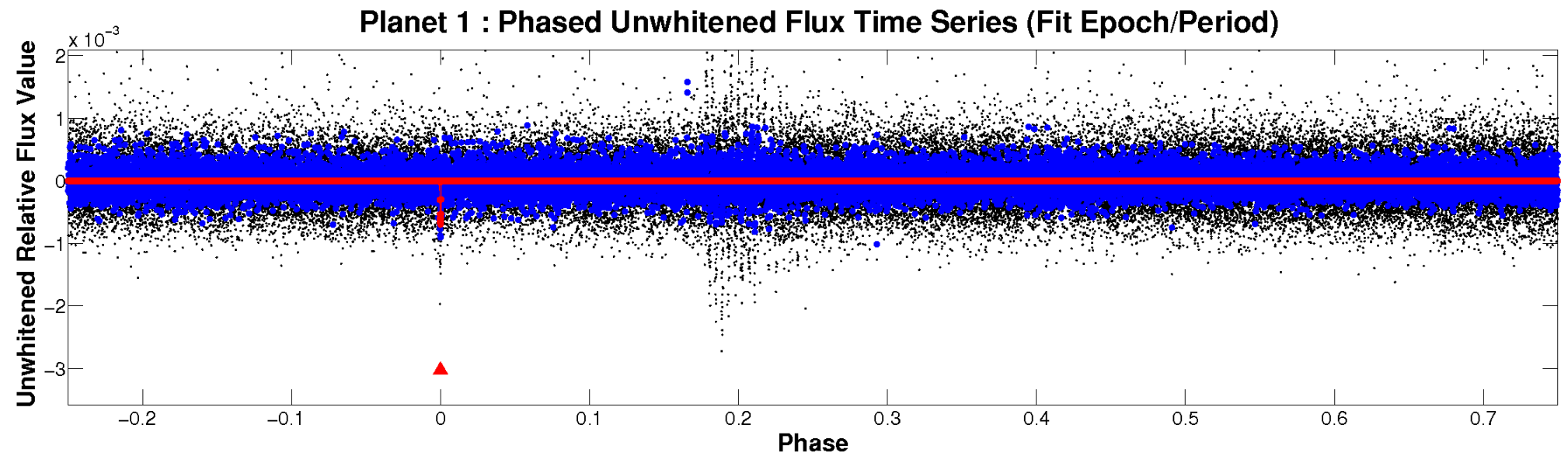


ALT Odd/Even

TCE 005709226-01

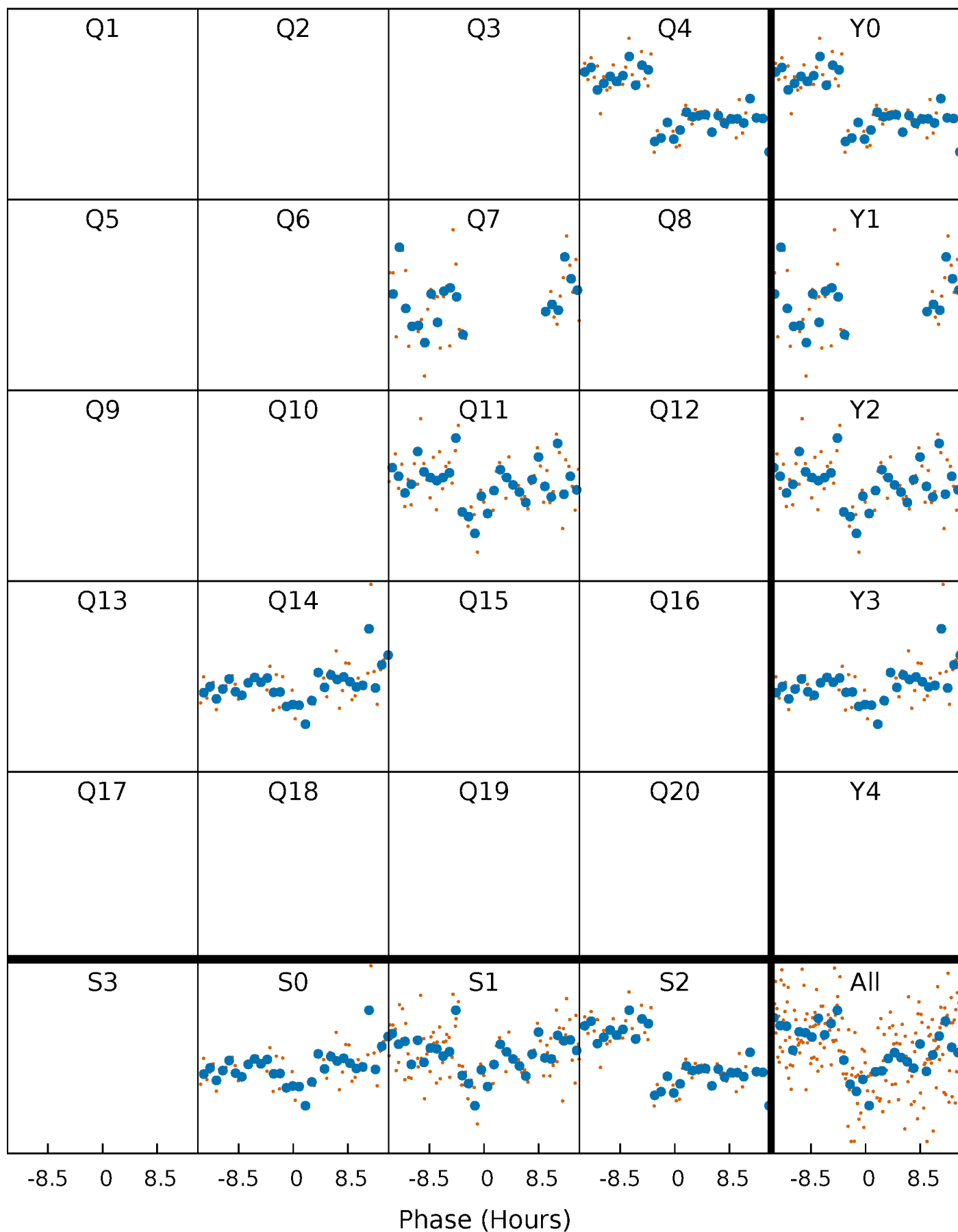


Non-Whitened Vs. Whitened Light Curve



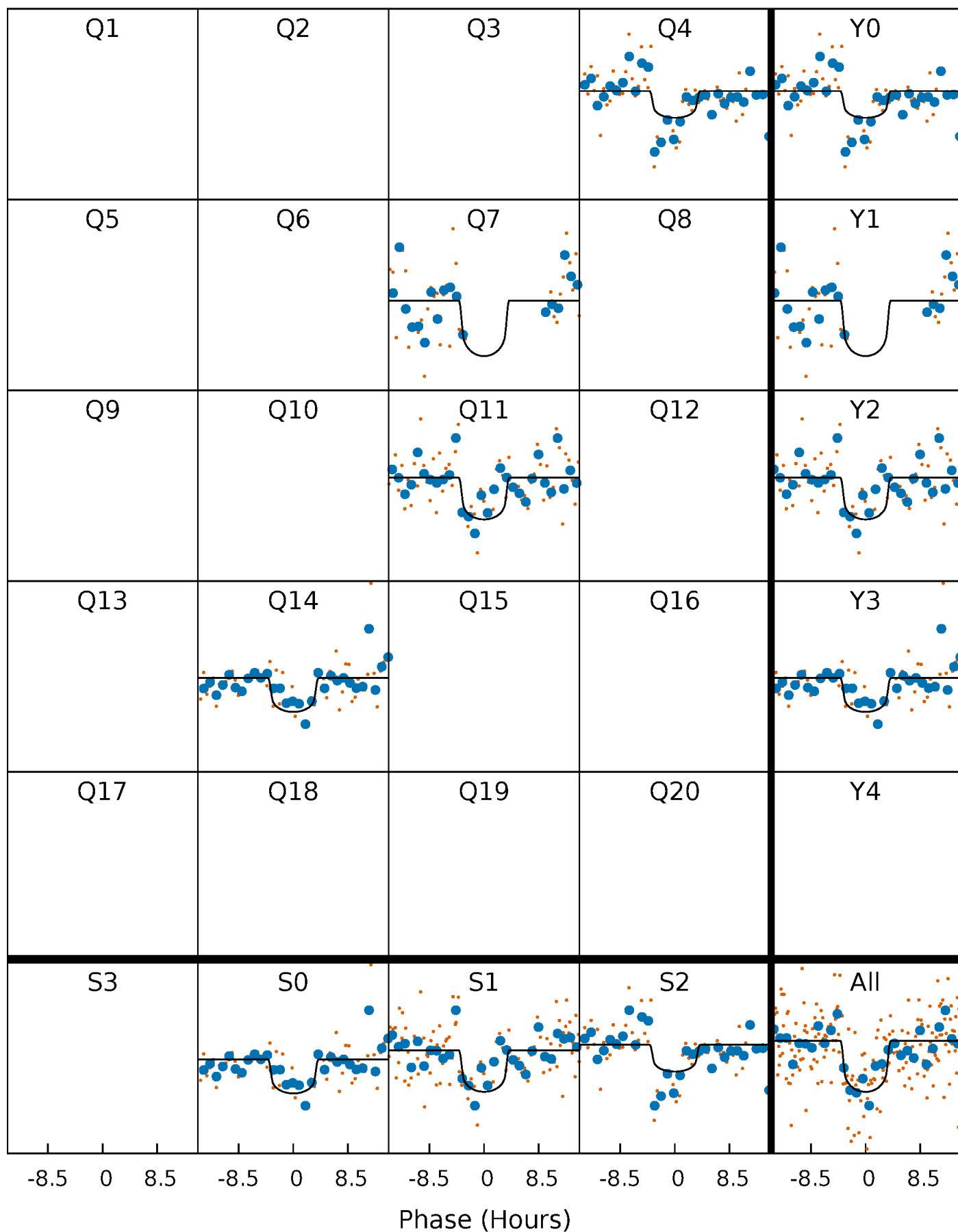
PDC Quarter-Phased Transit Curves

TCE 005709226-01 P=317.995195 Days $T_0=393.029229$ (BKJD)



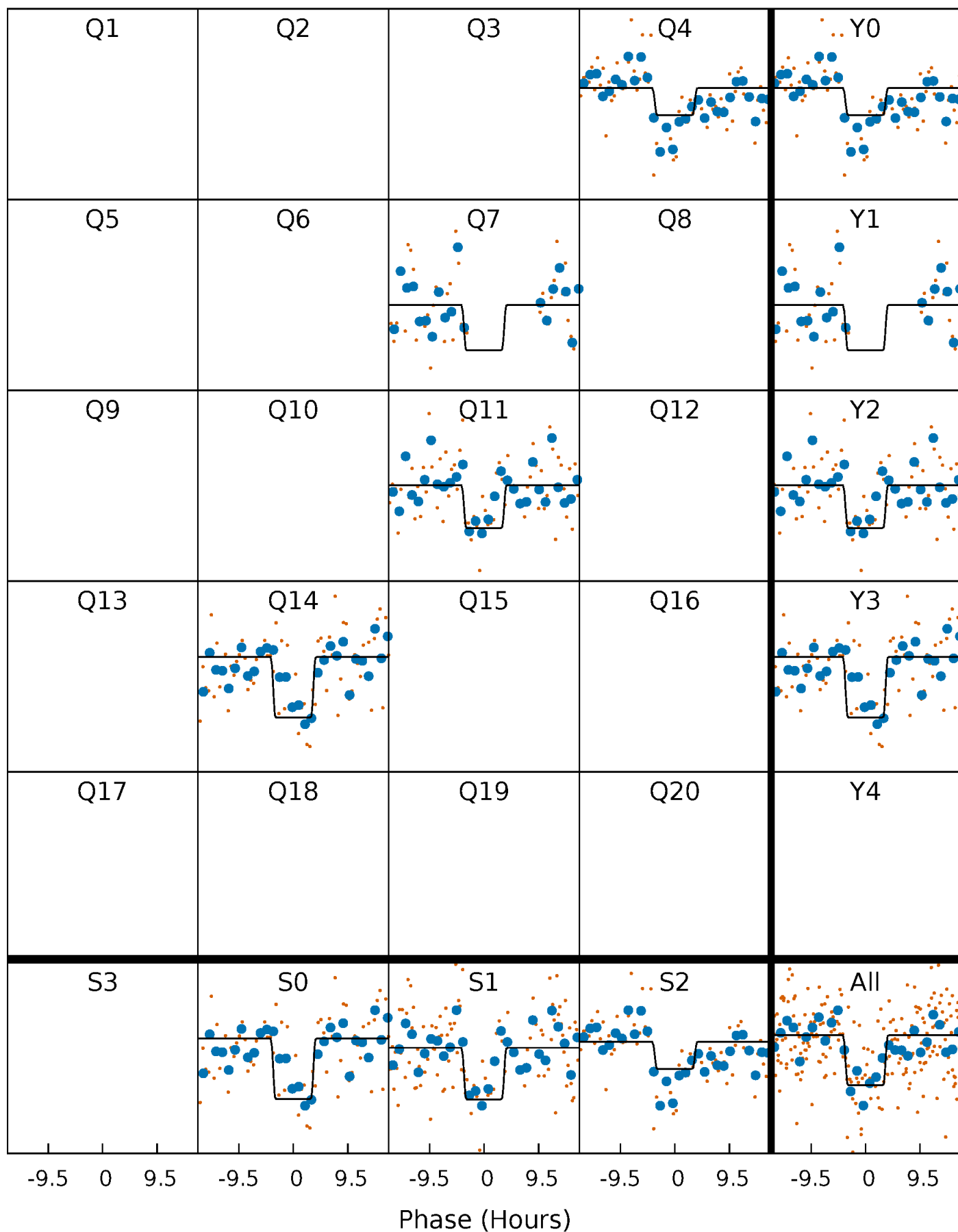
DV Quarter-Phased Transit Curves

TCE 005709226-01 P=317.995195 Days $T_0=393.029229$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

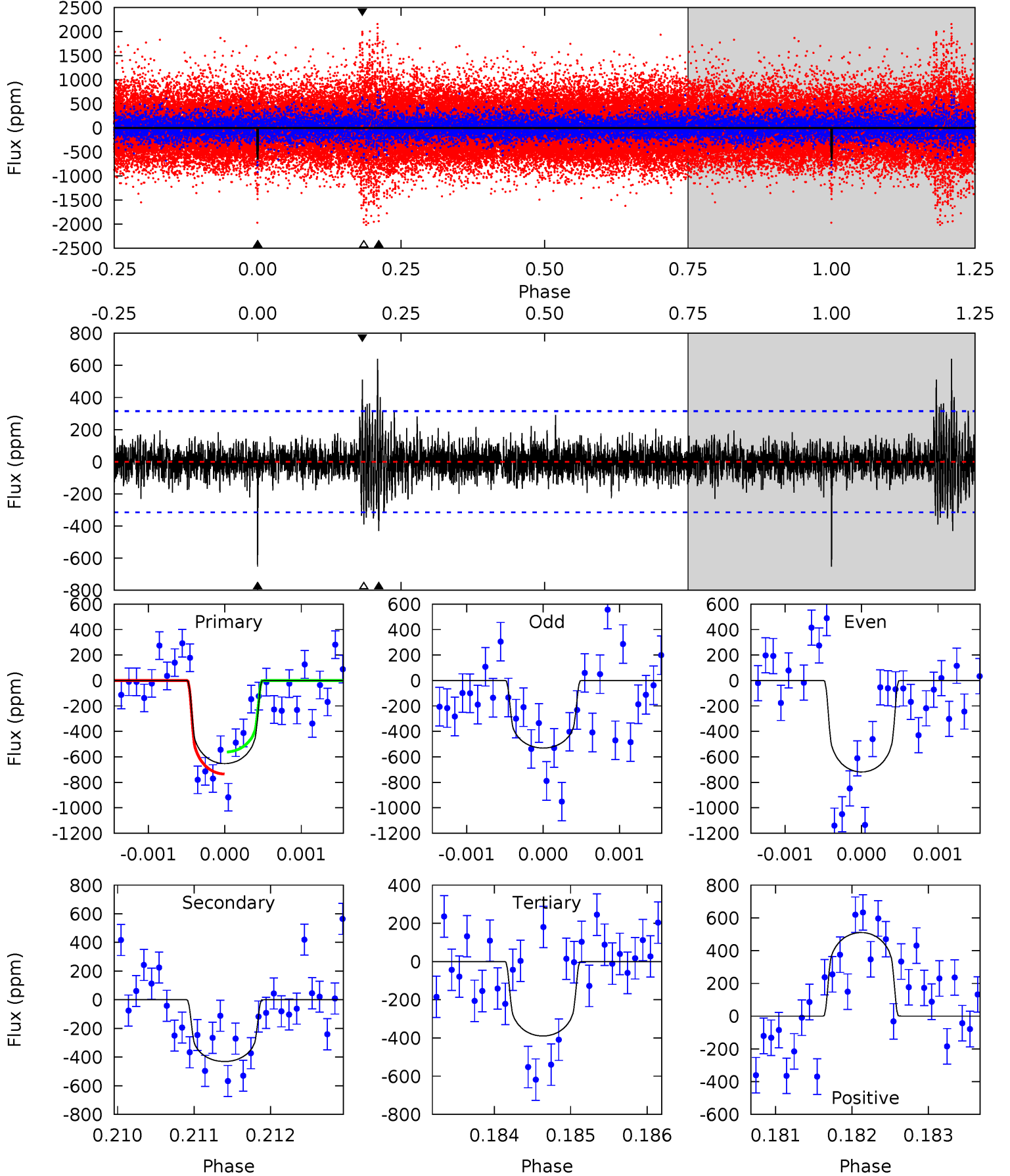
TCE 005709226-01 P=317.980250 Days $T_0=393.048556$ (BKJD)



DV Model-Shift Uniqueness Test

005709226-01, P = 317.995195 Days, E = 75.034034 Days

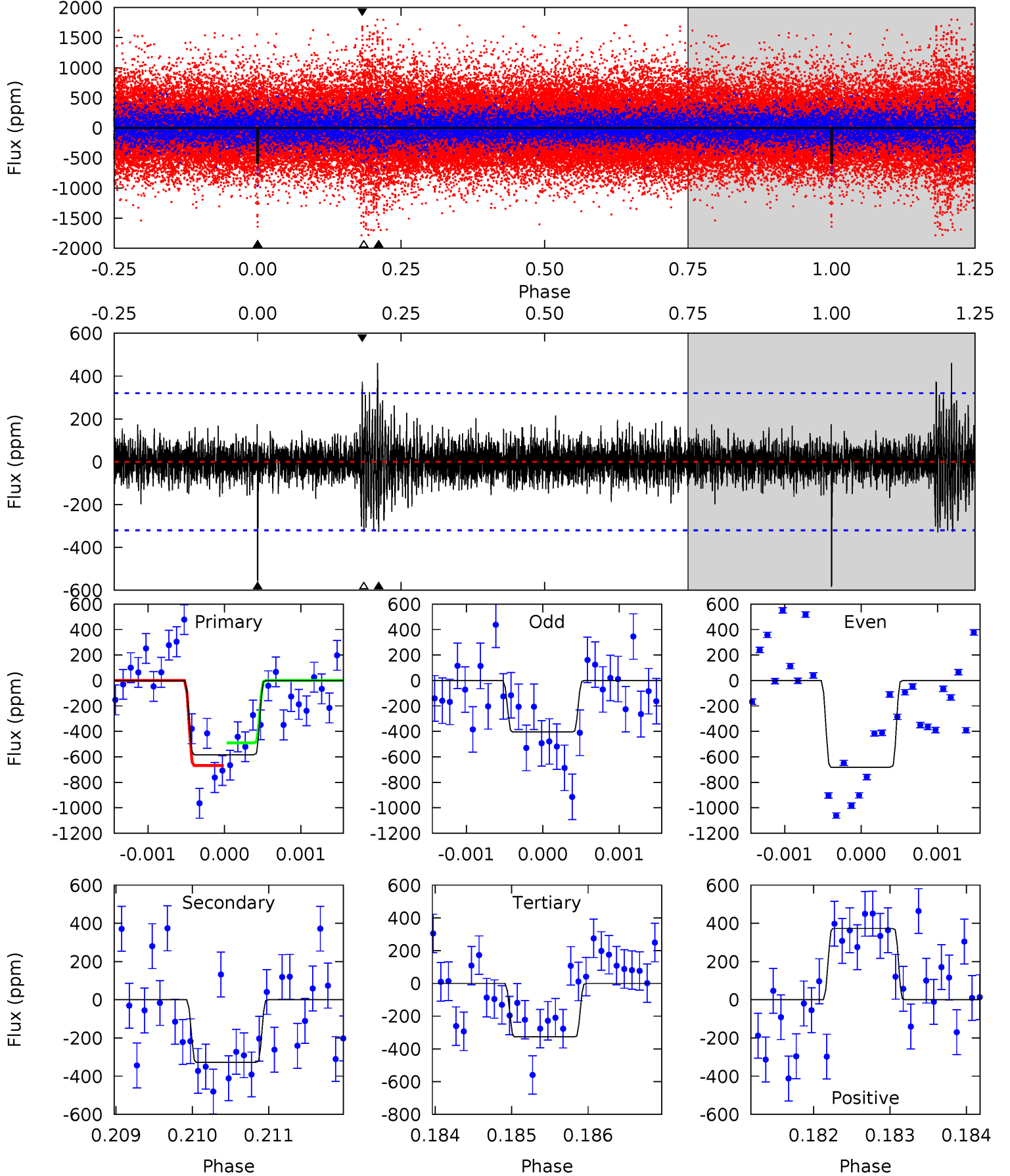
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	7.45	6.73	8.82	5.44	3.28	1.36	4.55	2.46	0.71	-1.37	1.55	1.11	0.50	1.49



Alt Model-Shift Uniqueness Test

005709226-01, $P = 317.980250$ Days, $E = 75.068306$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.93	5.57	5.57	6.36	5.45	3.29	1.10	4.36	3.57	0.01	-0.79	2.25	1.36	0.44	1.51



Stellar Parameters For KIC 005709226

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5665^{+169}_{-169}	$4.568^{+0.031}_{-0.178}$	$-0.200^{+0.300}_{-0.300}$	$0.820^{+0.216}_{-0.072}$	$0.916^{+0.092}_{-0.102}$	$2.336^{+0.411}_{-1.117}$
	+3%/-3%	+1%/-4%	+150%/-150%	+26%/-9%	+10%/-11%	+18%/-48%
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 005709226-01 / KOI 8104.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-431 ± 58	$2.69^{+1.90}_{-1.61}$	345^{+21}_{-15}	4924^{+2779}_{-927}	$25625^{+118106}_{-16843}$
Alt.	-327 ± 59	$2.55^{+1.93}_{-1.60}$	345^{+22}_{-15}	4752^{+2707}_{-896}	$21559^{+127719}_{-14518}$

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 $A_{obs} \gg 1.0$

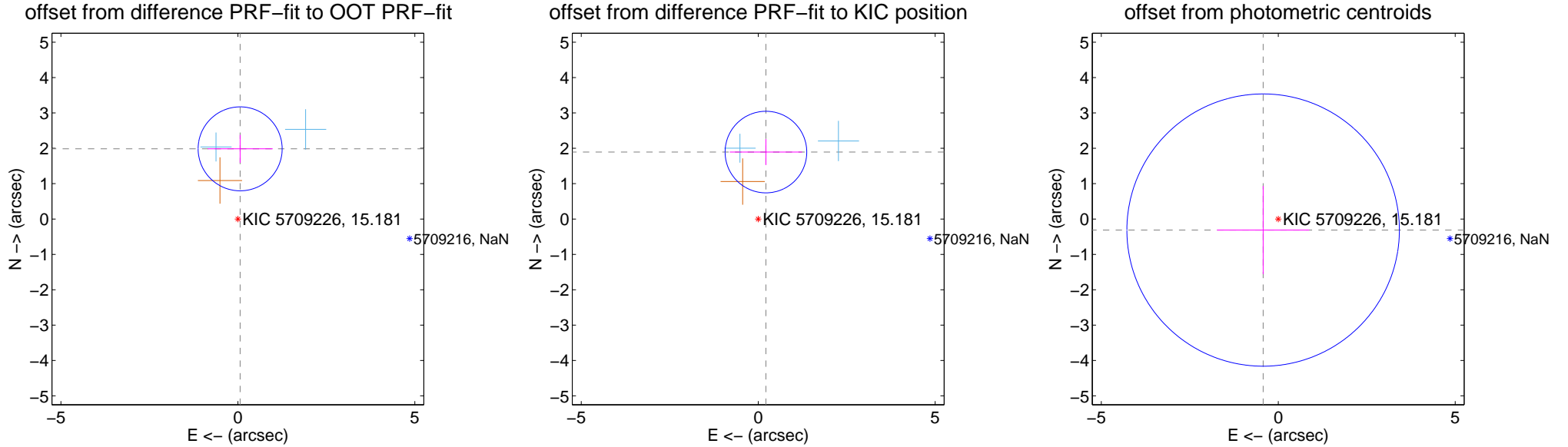
DV Centroid Data

Supplemental centroid analysis for 005709226-01. Kepler magnitude: 15.18. Transit SNR 9.64

There are 2 quarters with good PRF difference image offsets

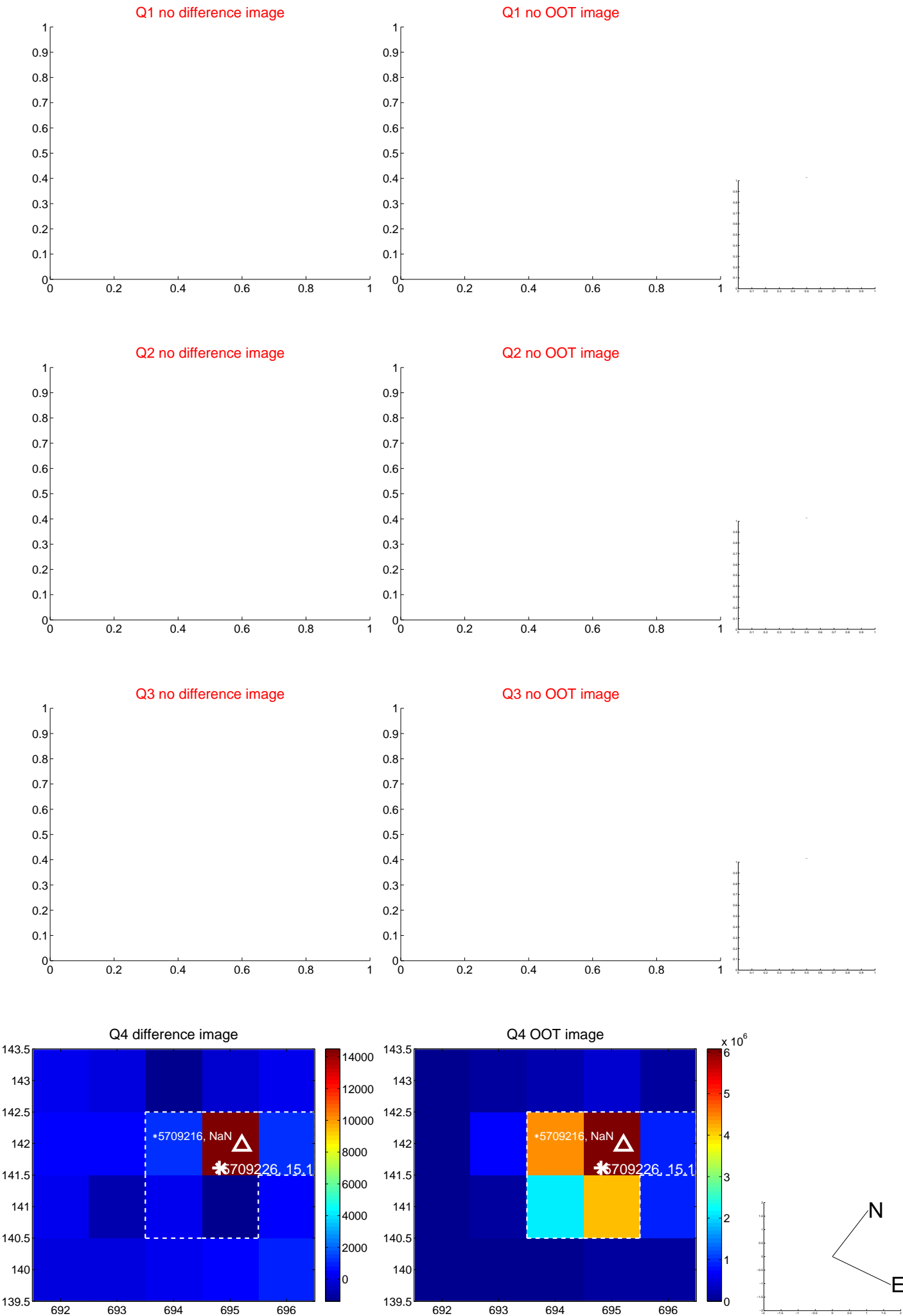
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.986 ± 0.396	5.02	-0.064 ± 0.919	1.985 ± 0.395
PRF-fit source offset from KIC position	1.906 ± 0.385	4.96	-0.218 ± 1.023	1.894 ± 0.369
photometric centroid source offset	0.53 ± 1.28	0.41	0.43 ± 1.30	-0.31 ± 1.25



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.

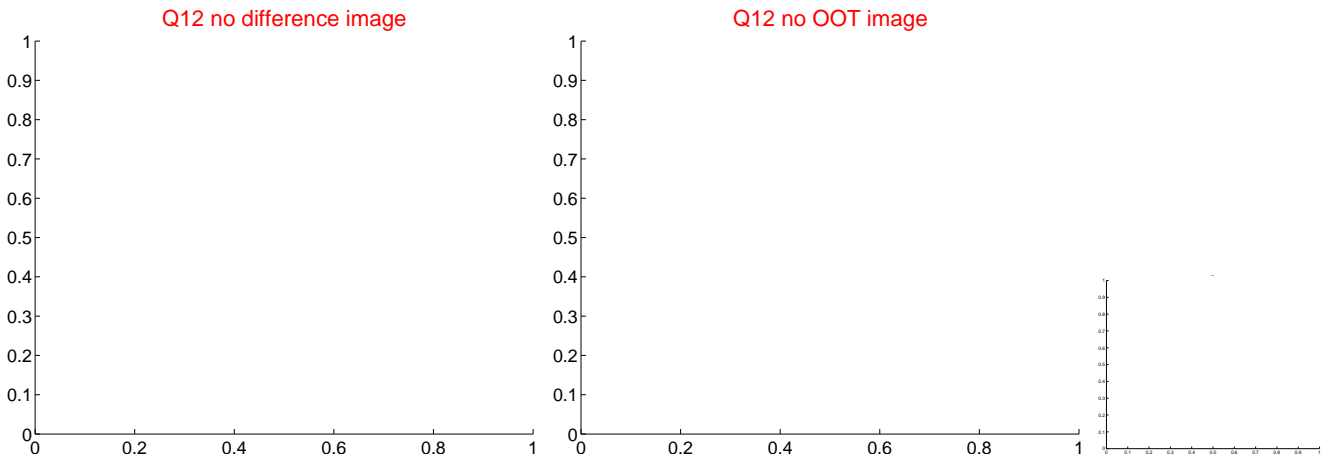
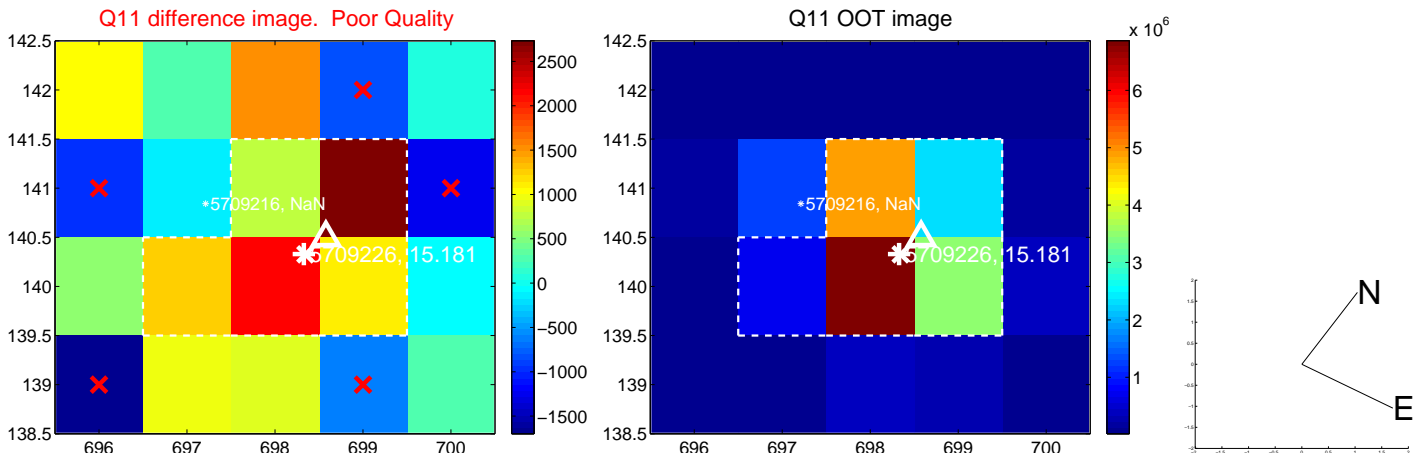
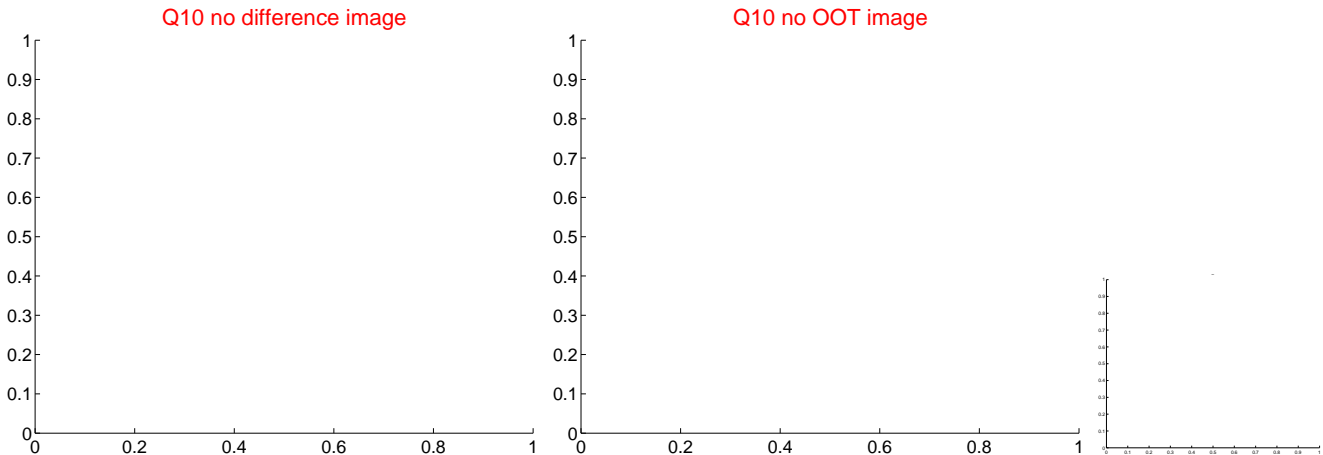
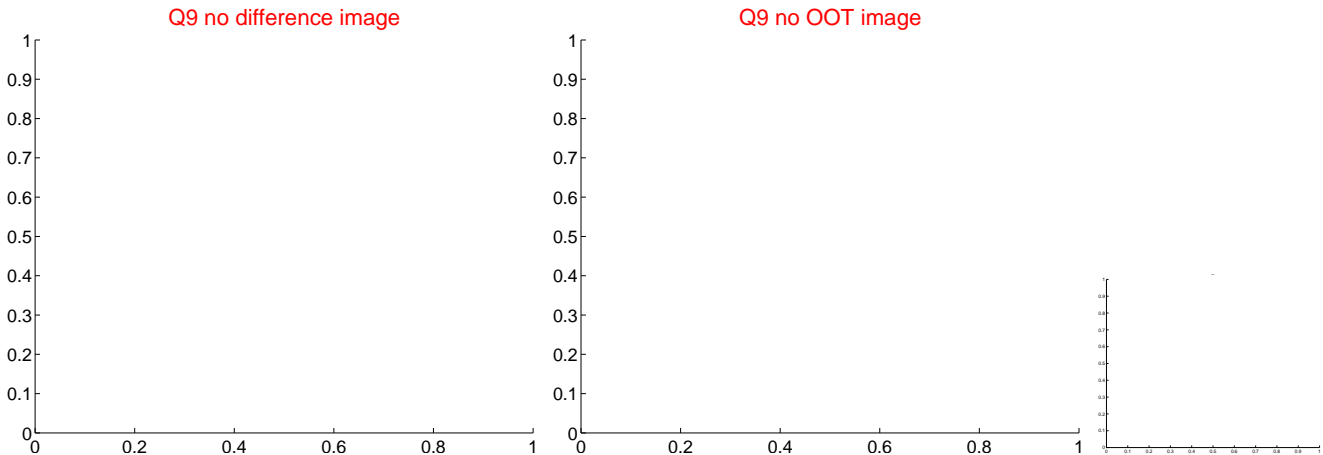
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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

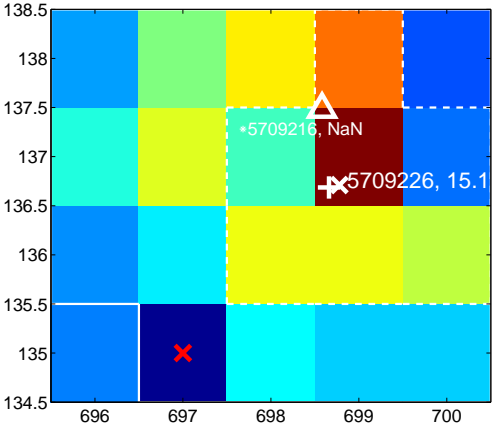
Q13 no difference image



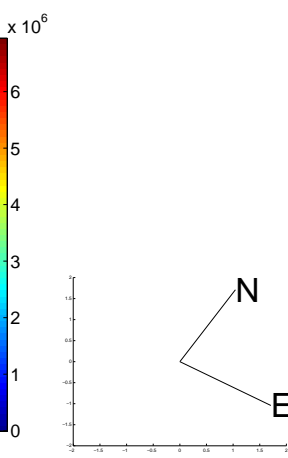
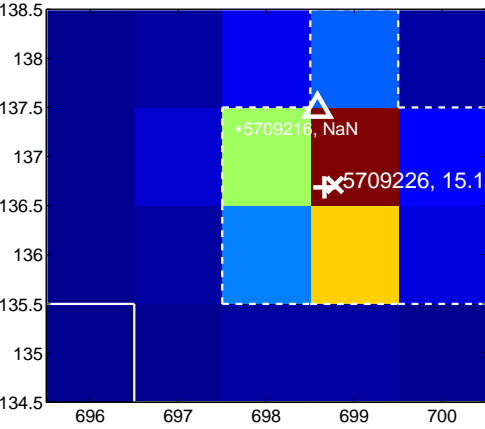
Q13 no OOT image



Q14 difference image



Q14 OOT image



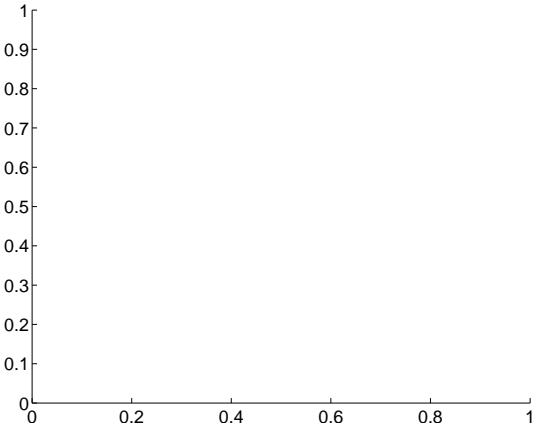
Q15 no difference image



Q15 no OOT image



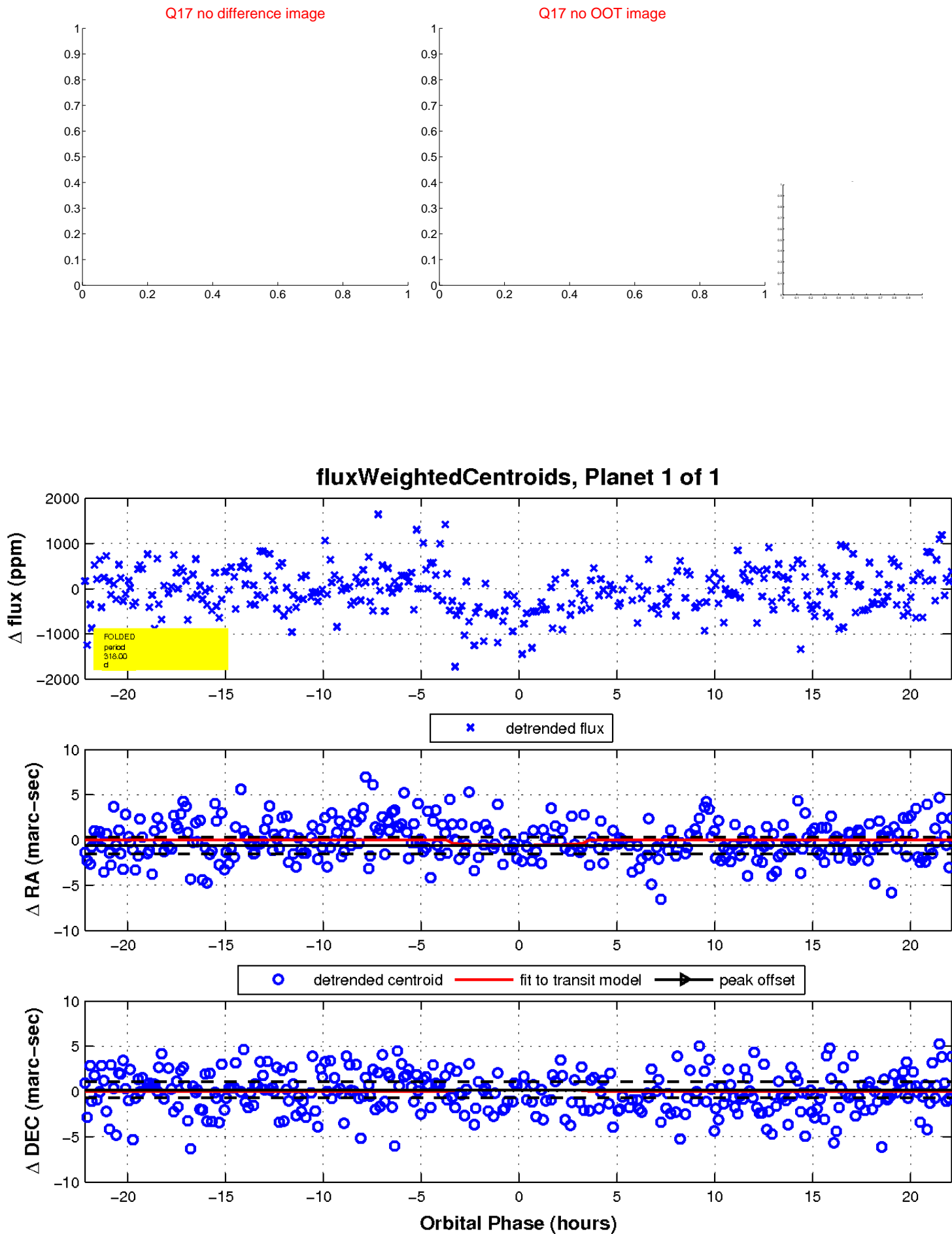
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

