

KIC 005015542

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})
005015542-02	OBS	No	317.046694	279.889321	2209.3	5.697	11.6	7.9	0.68	4311	3.27	0.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005015542-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

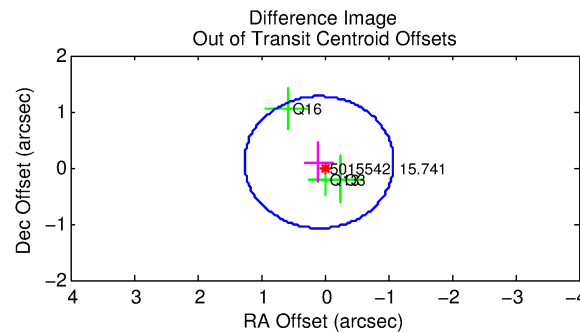
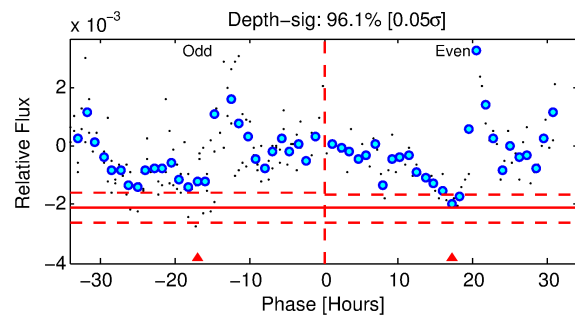
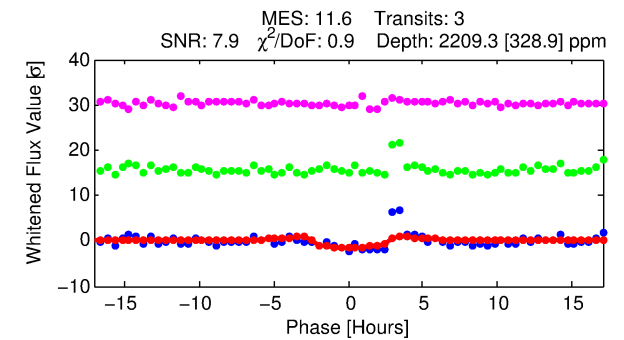
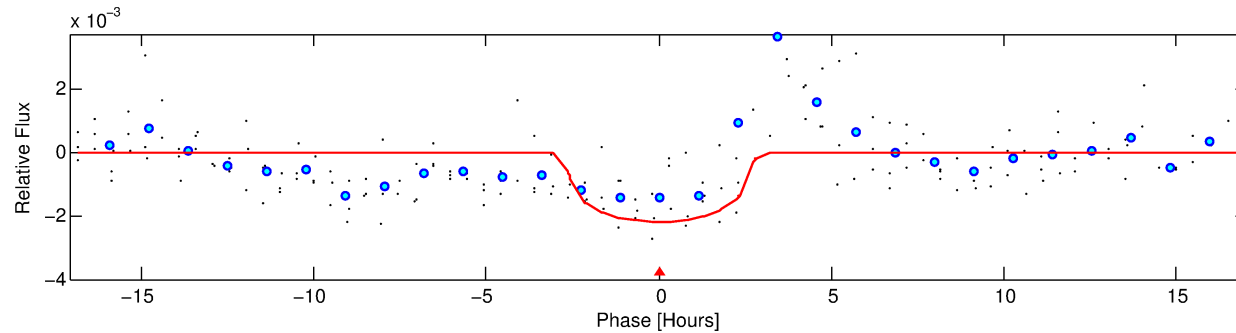
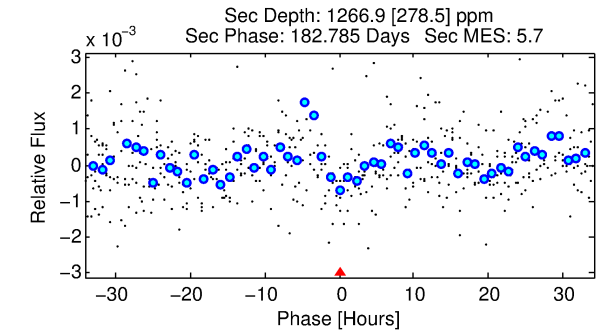
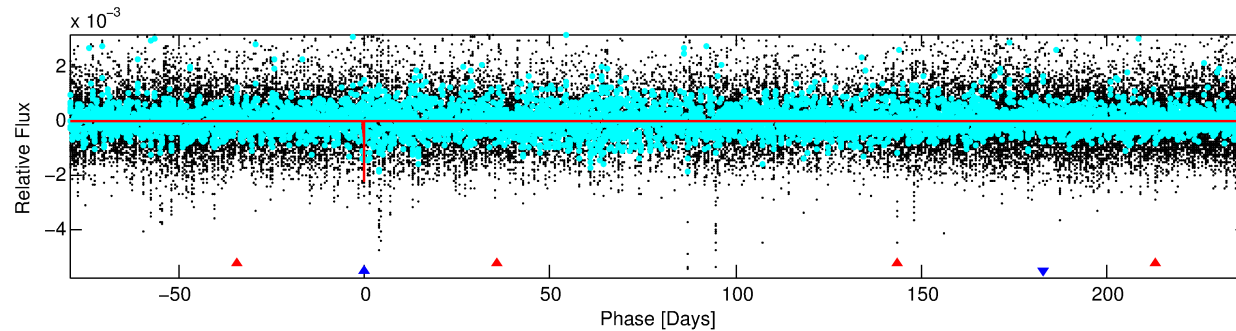
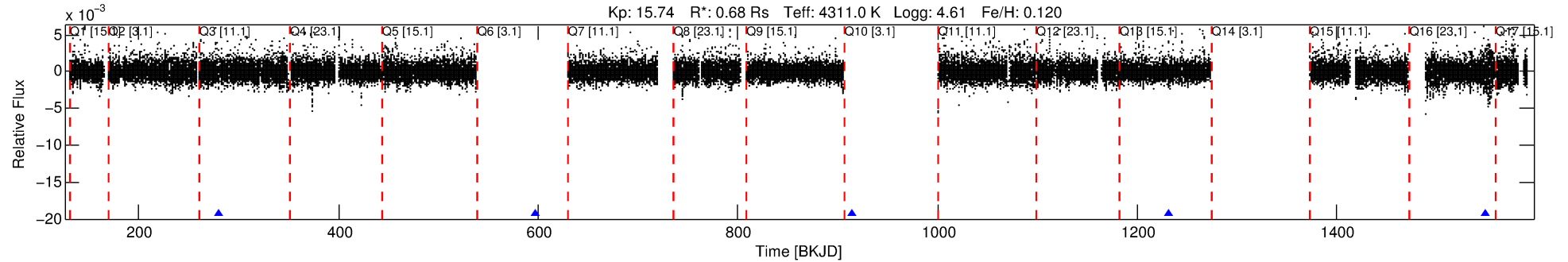
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005015542-02

No Significant Match Found

DV One-Page Summary

KIC: 5015542 Candidate: 2 of 2 Period: 317.047 d



DV Fit Results:

Period = 317.04669 [0.00342] d
Epoch = 279.8893 [0.0098] BKJD
Rp/R* = 0.0444 [0.0521]
a/R* = 361.24 [1256.05]
b = 0.61 [3.73]
Seff = 0.22 [0.04]
Teq = 175 [7] K
Rp = 3.27 [3.85] Re
a = 0.7973 [0.0566] AU
Ag = 41403.50 [97586.81] [0.42 σ]
Teffp = 3859 [2276] K [1.62 σ]

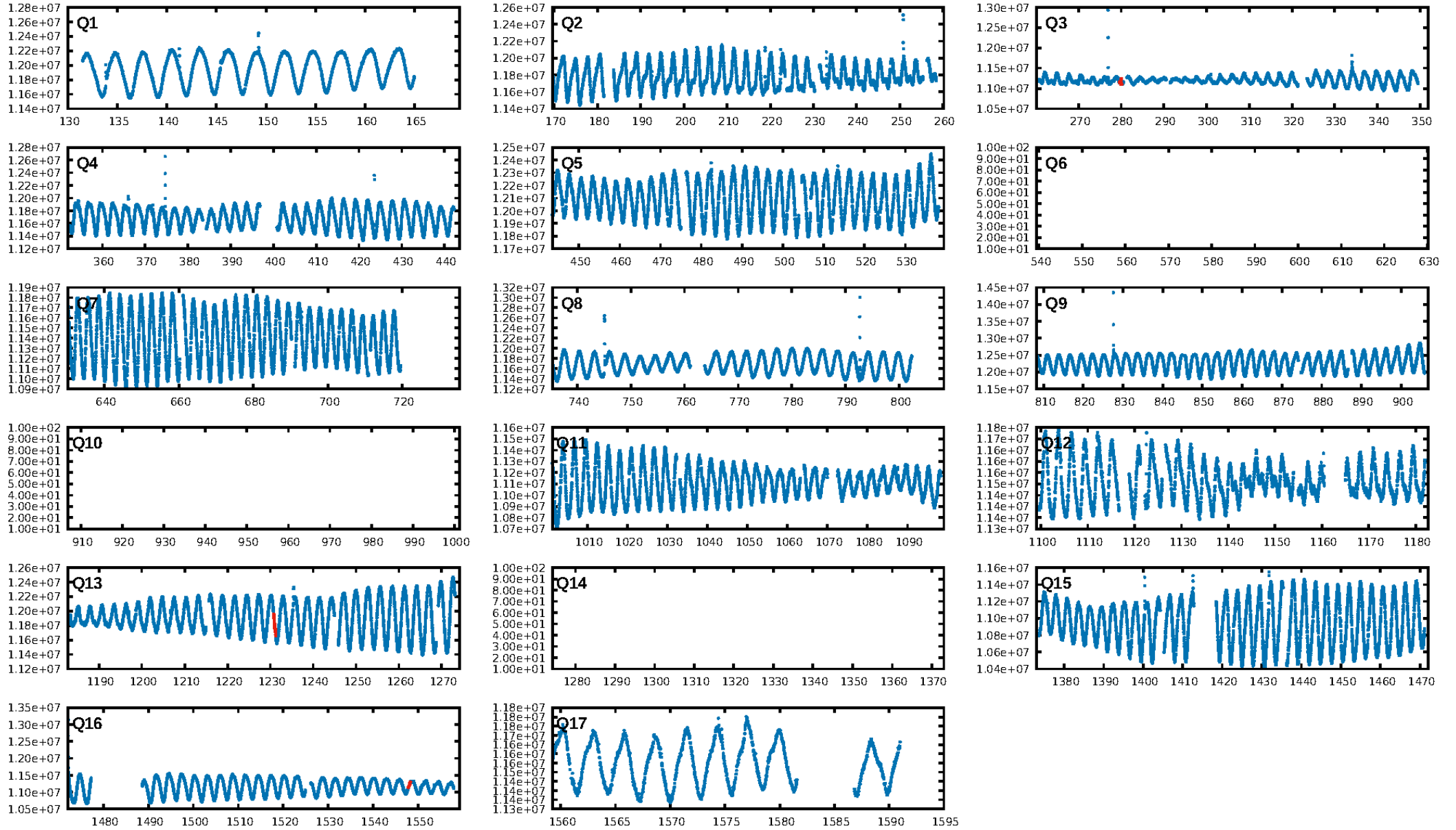
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [255.16 σ]
ModelChiSquare2-sig: 81.8%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 5.24e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.279
Centroid-sig: 5.8%
Centroid-so: 1.301 arcsec [1.24 σ]
OotOffset-rm: 0.130 arcsec [0.33 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.219 arcsec [0.54 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

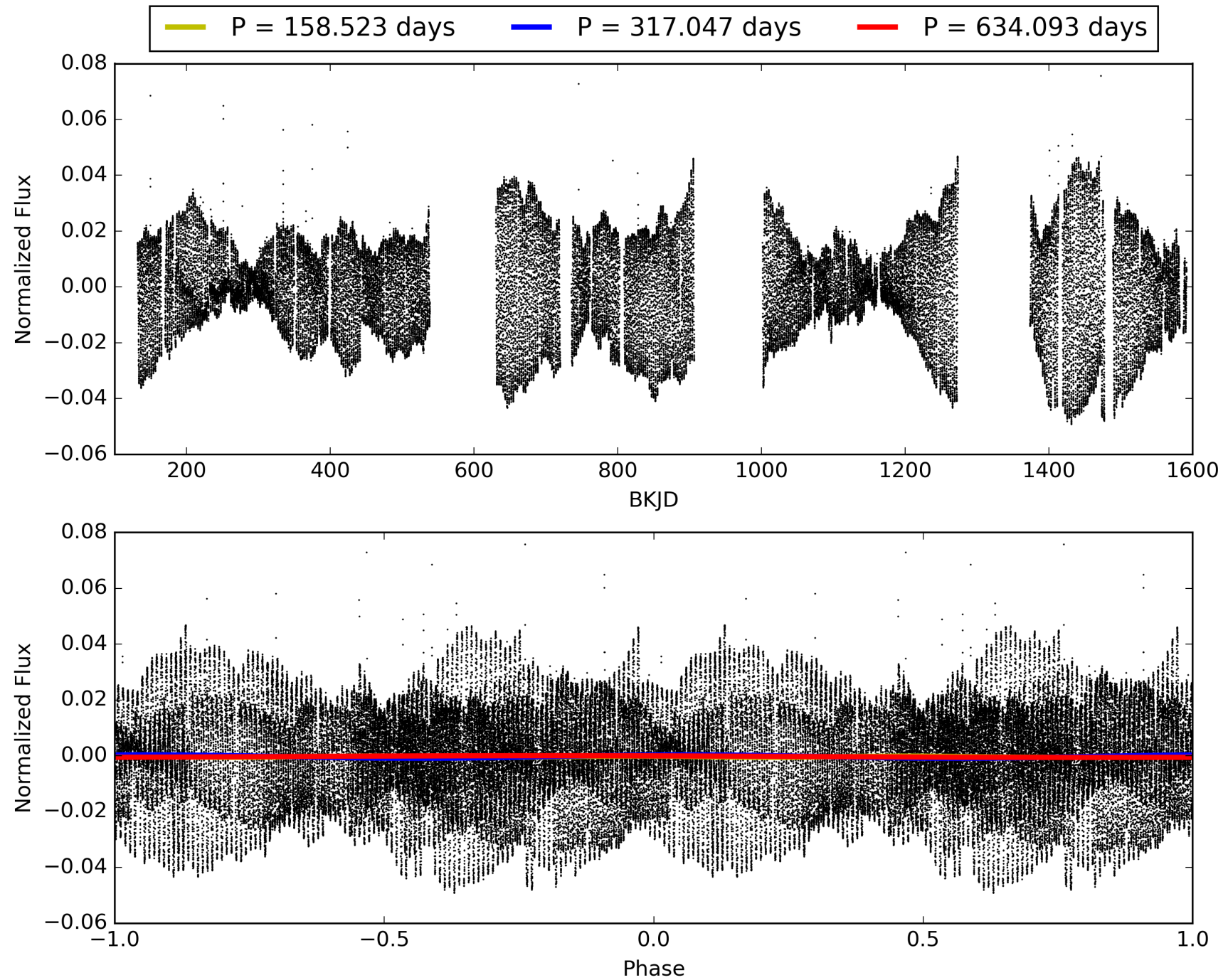
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:44:43 Z

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

TCE 005015542-02, PDC Light Curves

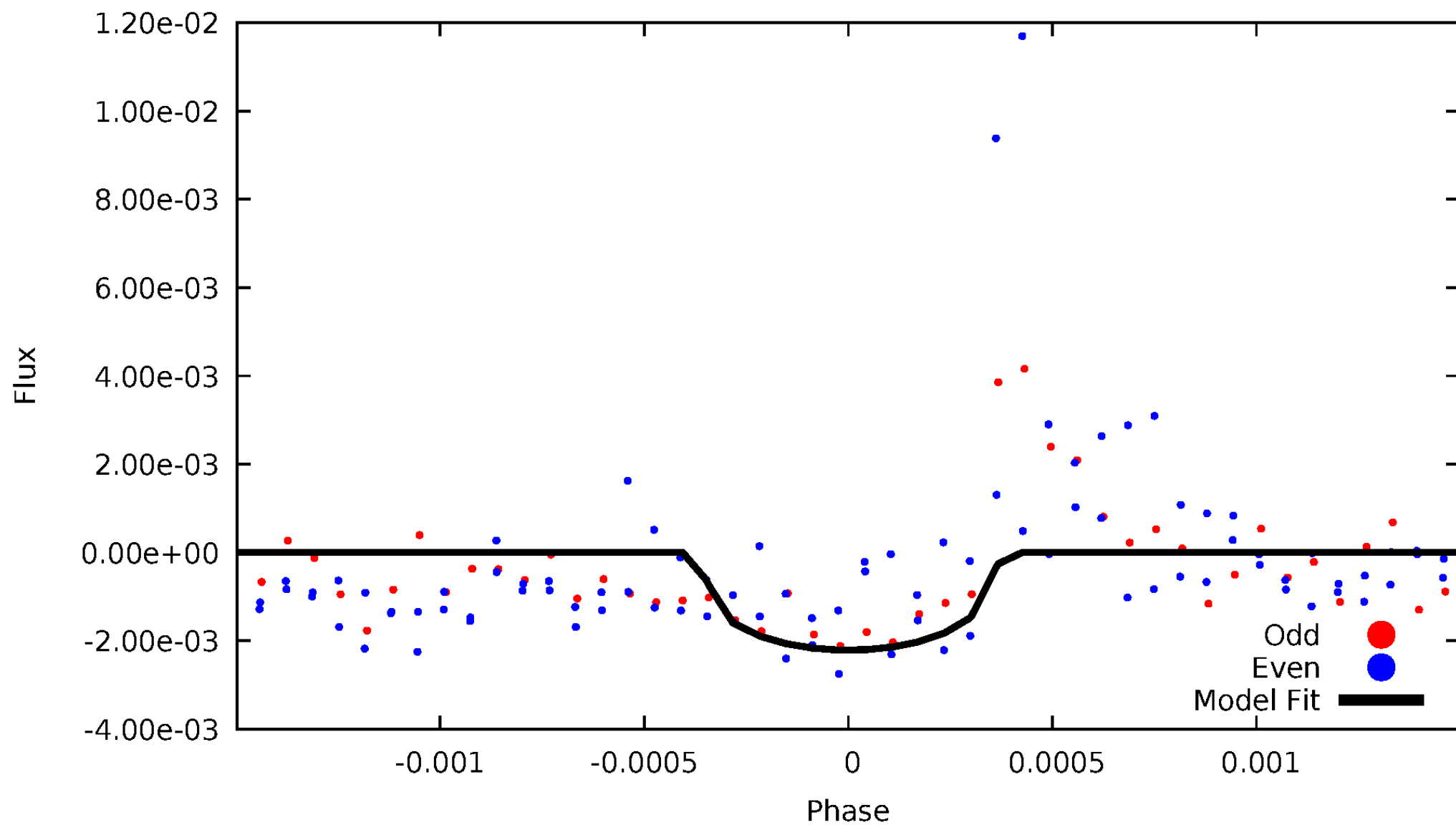


TCE 005015542-02



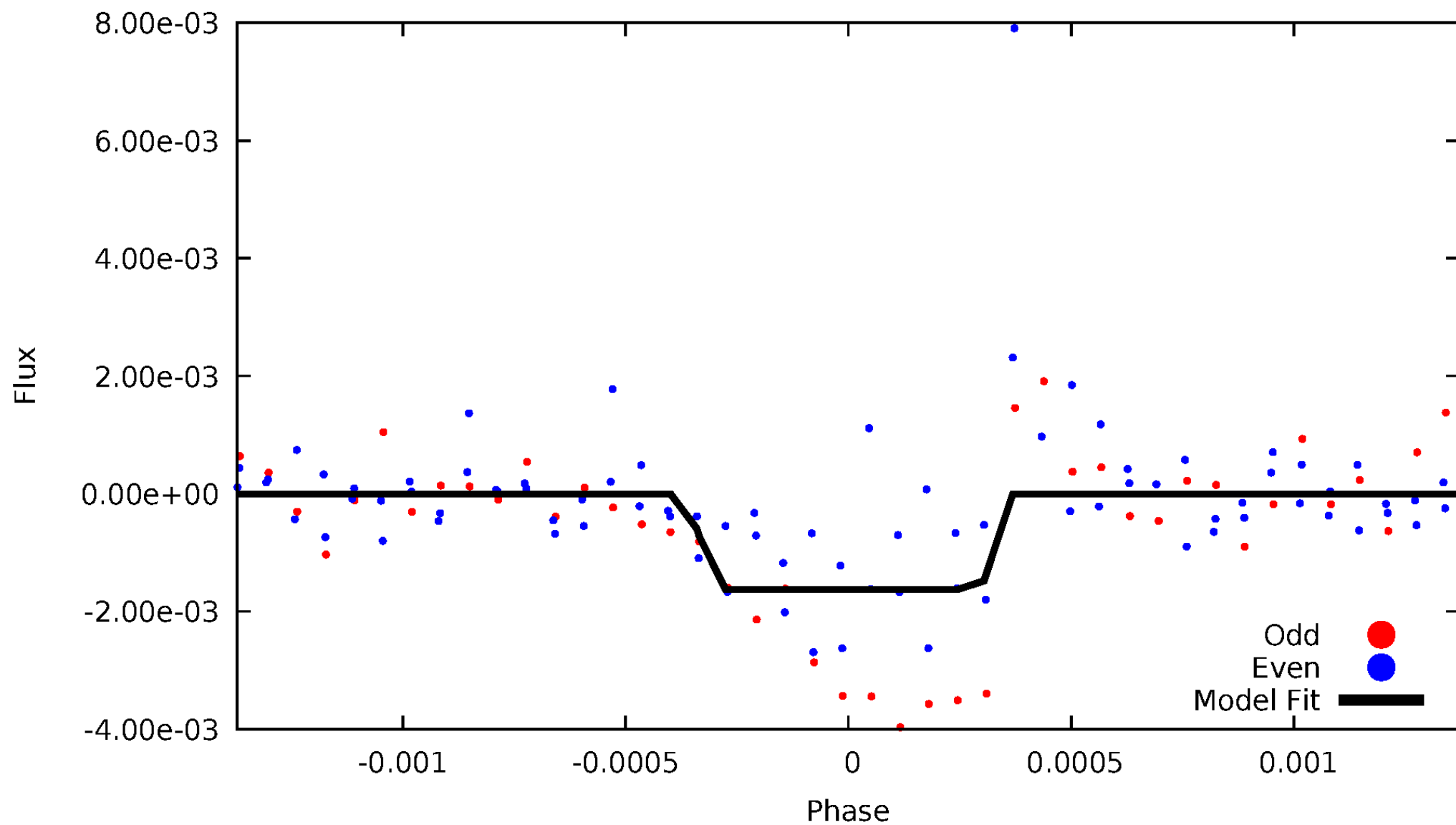
DV Odd/Even

TCE 005015542-02



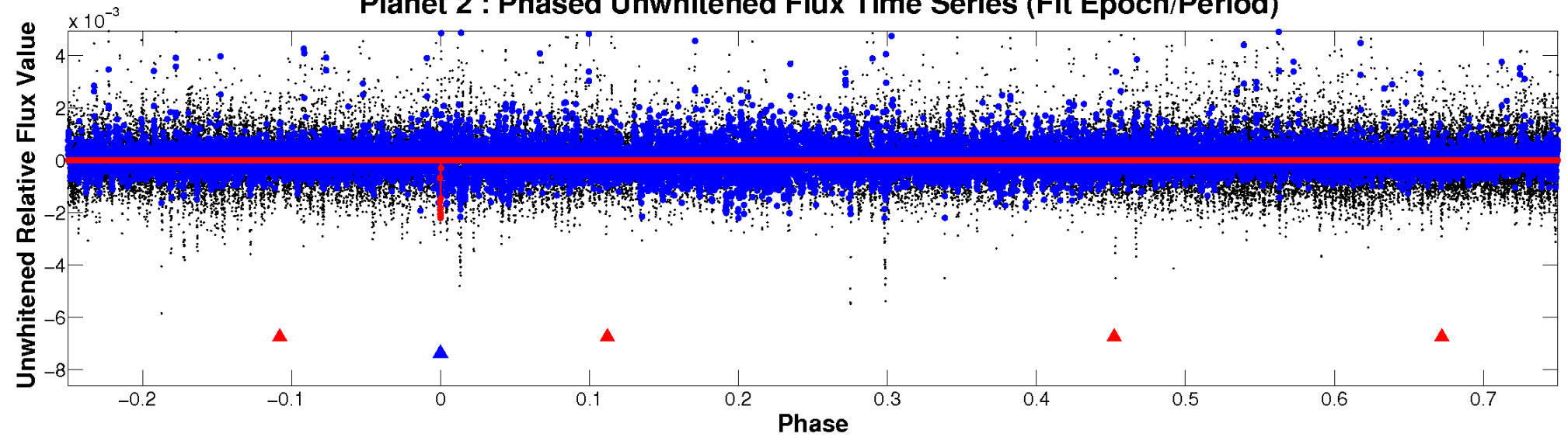
ALT Odd/Even

TCE 005015542-02

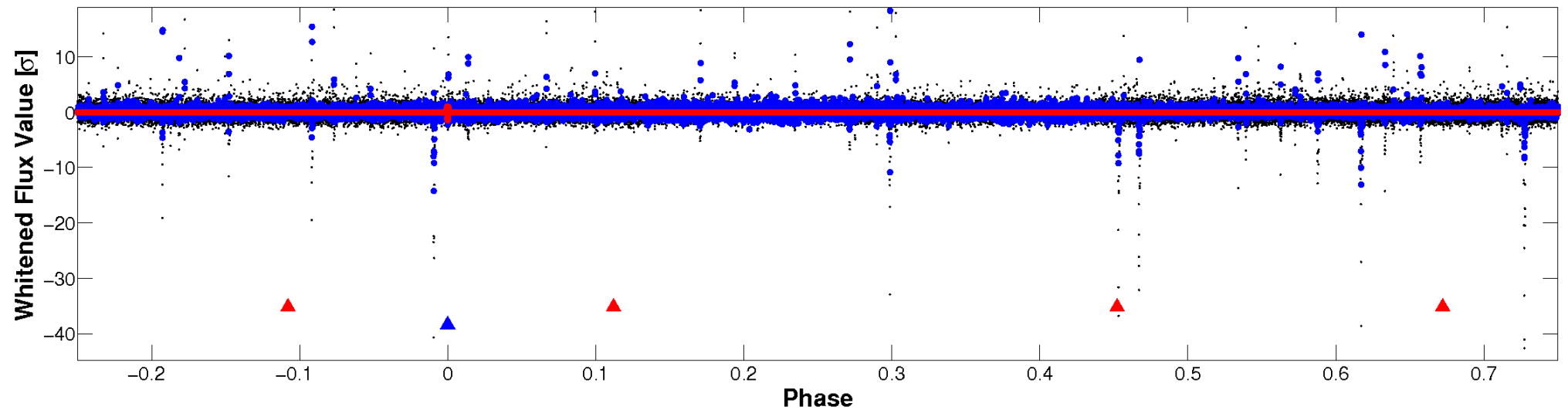


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

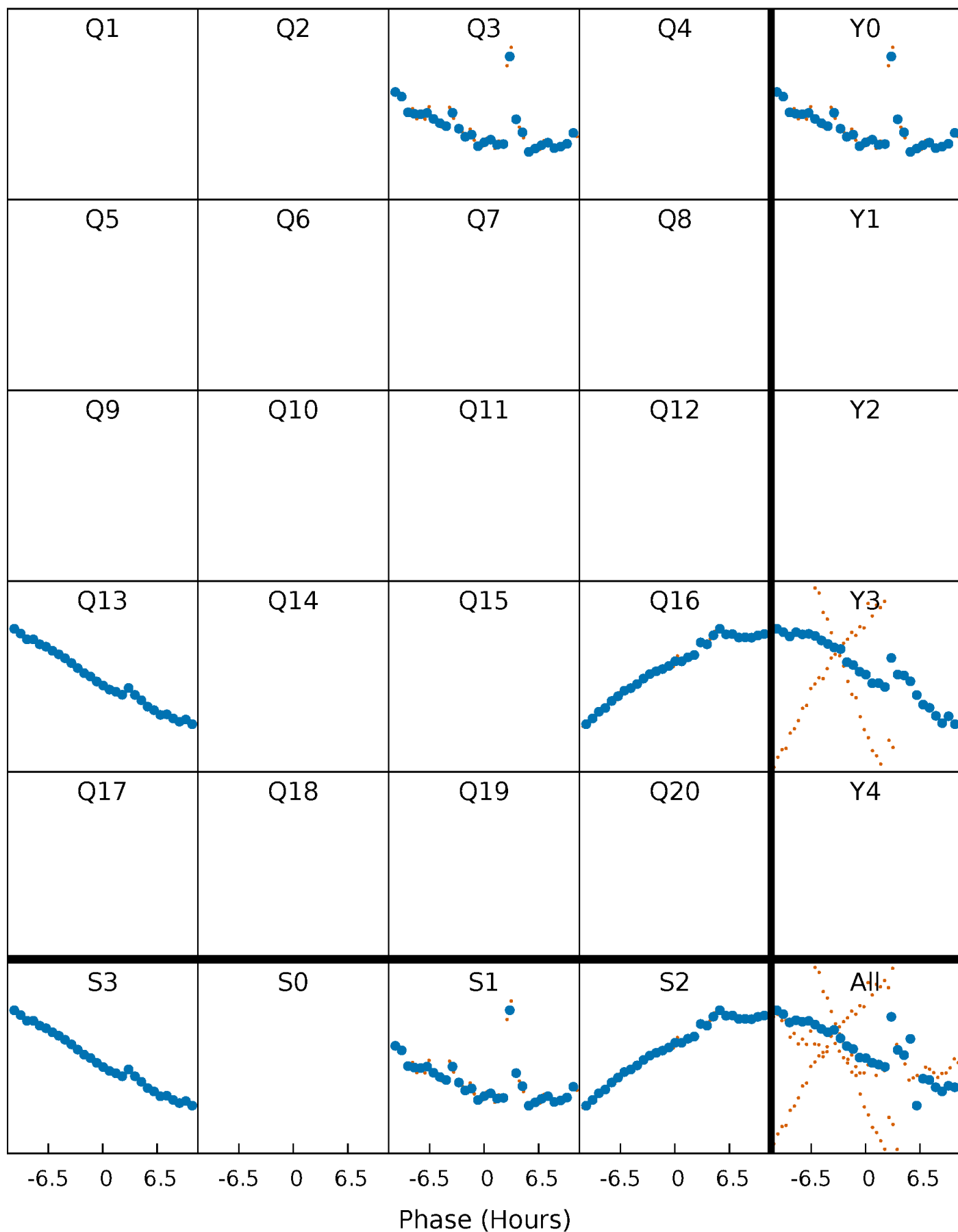


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



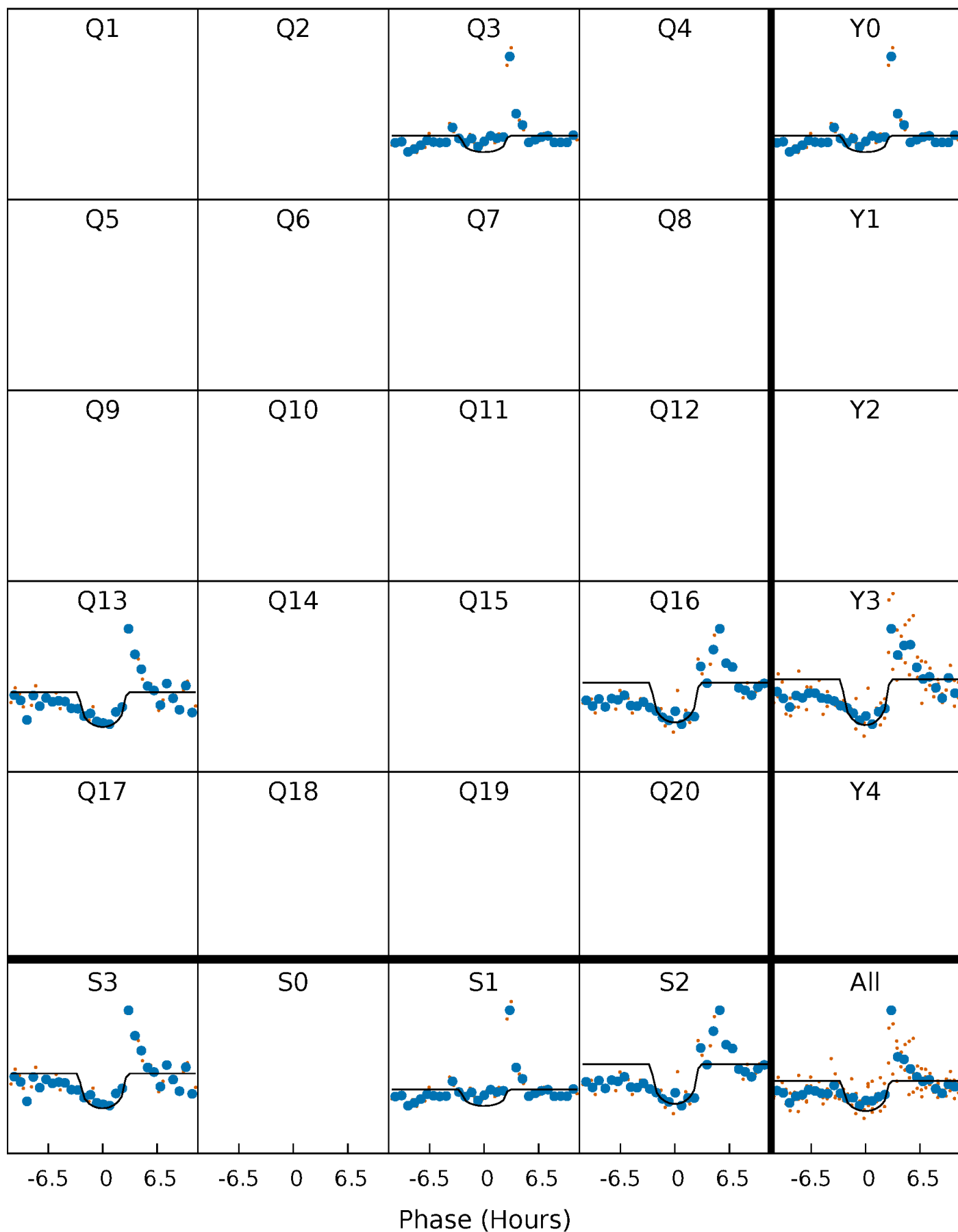
PDC Quarter-Phased Transit Curves

TCE 005015542-02 $P=317.046694$ Days $T_0=279.889321$ (BKJD)



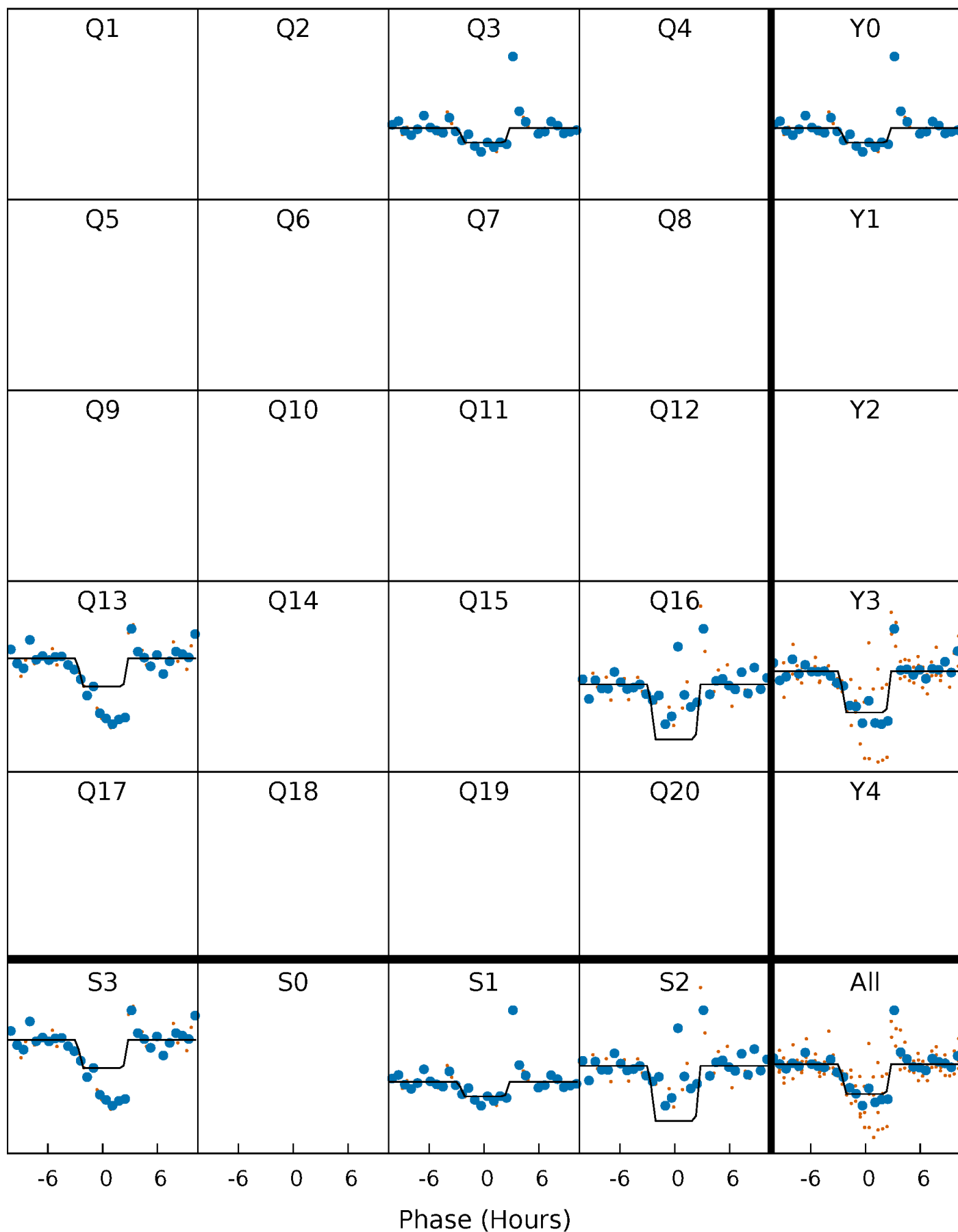
DV Quarter-Phased Transit Curves

TCE 005015542-02 $P=317.046694$ Days $T_0=279.889321$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

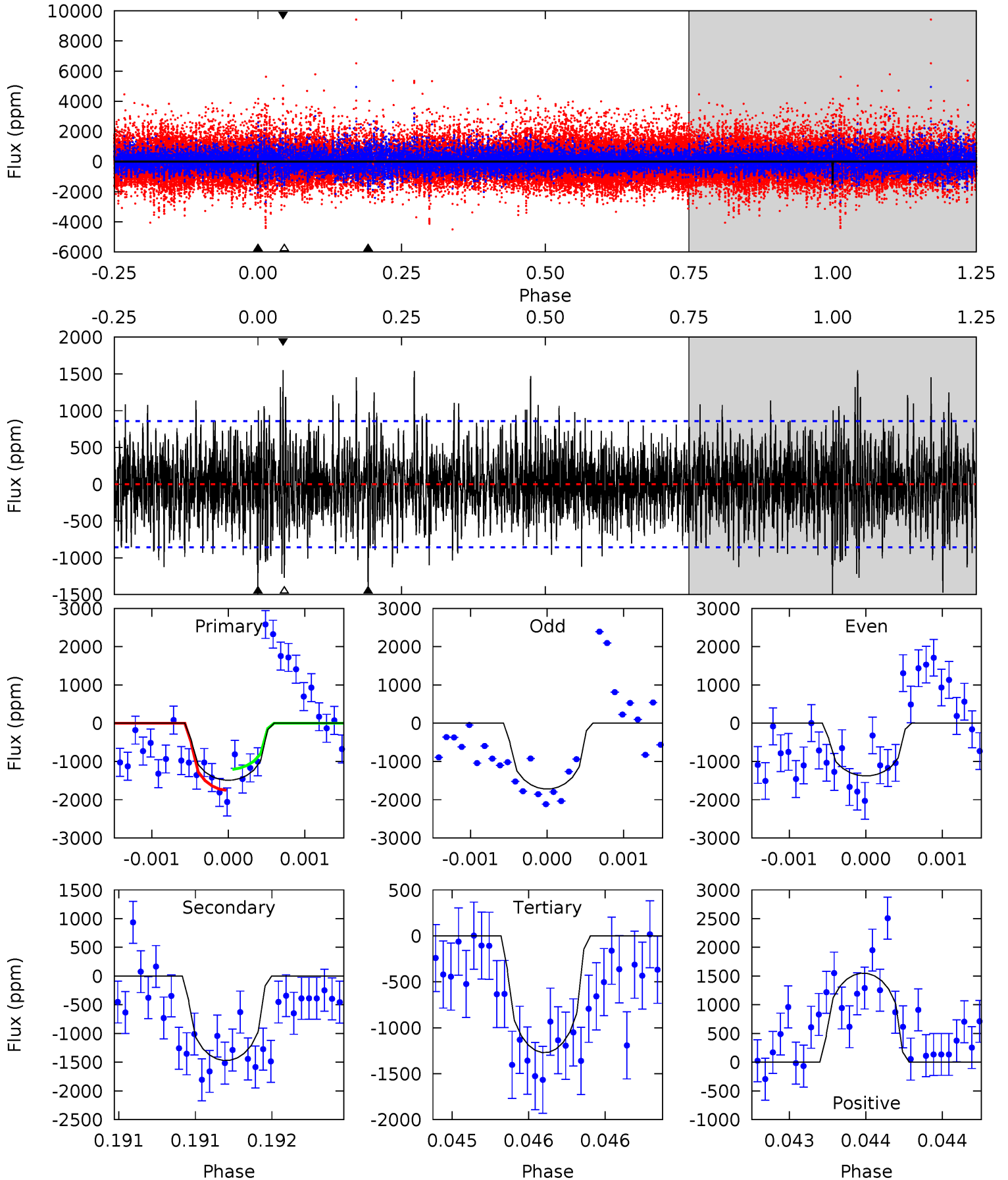
TCE 005015542-02 P=317.047117 Days $T_0=279.885785$ (BKJD)



DV Model-Shift Uniqueness Test

005015542-02, P = 317.046694 Days, E = 279.889321 Days

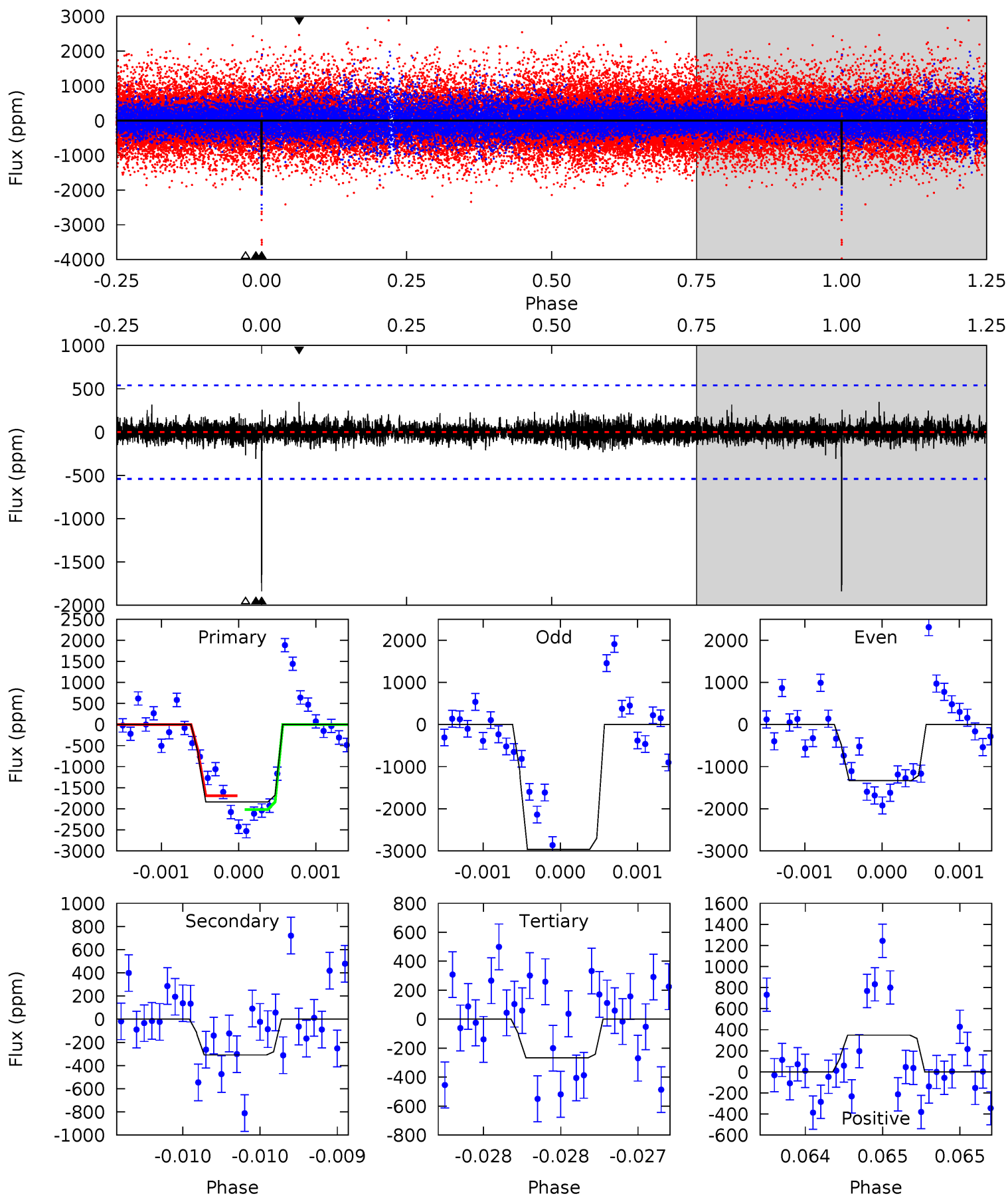
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	9.44	8.16	9.95	5.51	3.38	2.34	1.42	-0.37	1.28	-0.50	1.00	0.83	0.51	1.75



Alt Model-Shift Uniqueness Test

005015542-02, P = 317.047117 Days, E = 279.885785 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	3.16	2.73	3.57	5.53	3.41	0.62	16.1	15.3	0.43	-0.41	8.10	0.92	0.16	1.63



Stellar Parameters For KIC 005015542

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4311^{+150}_{-150}	$4.607^{+0.049}_{-0.021}$	$0.120^{+0.250}_{-0.300}$	$0.675^{+0.032}_{-0.061}$	$0.673^{+0.053}_{-0.053}$	$3.080^{+0.662}_{-0.265}$
	+3%/-3%	+1%/-0%	+208%/-250%	+5%/-9%	+8%/-8%	+21%/-9%
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 005015542-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1471 ± 156	$4.15^{+3.41}_{-2.72}$	243^{+9}_{-9}	3726^{+1982}_{-624}	$30062^{+226091}_{-21209}$
Alt.	-309 ± 98	$4.19^{+3.03}_{-2.79}$	243^{+9}_{-10}	2949^{+1265}_{-428}	6325^{+46991}_{-4402}

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 $A_{obs} \gg 1.0$

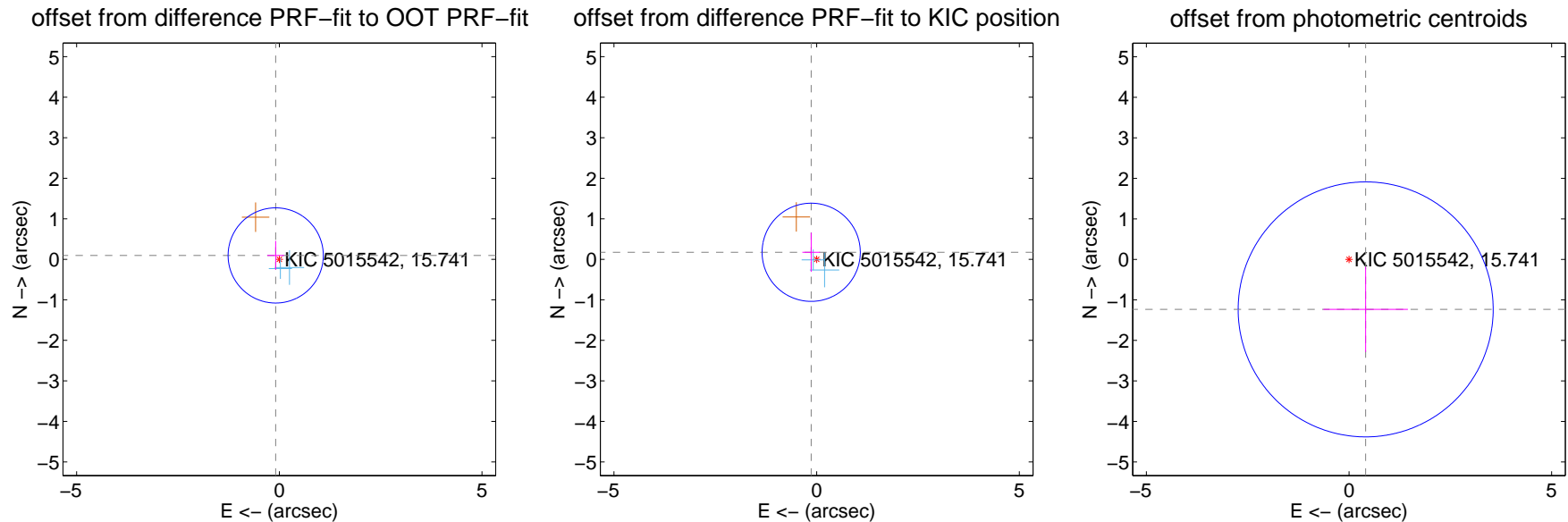
DV Centroid Data

Supplemental centroid analysis for 005015542-02. Kepler magnitude: 15.74. Transit SNR 7.92

There are 2 quarters with good PRF difference image offsets

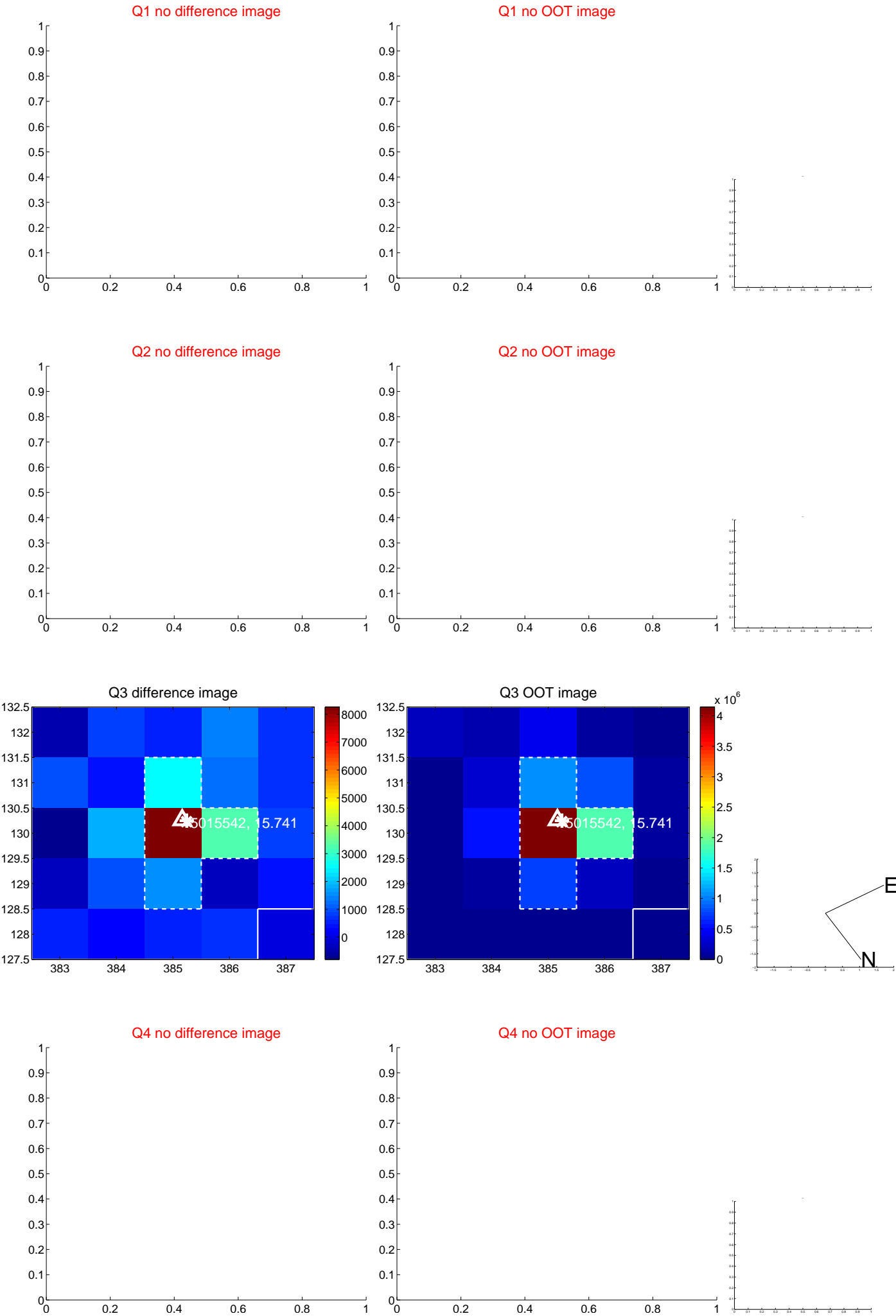
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.130 ± 0.391	0.33	0.089 ± 0.208	0.096 ± 0.357
PRF-fit source offset from KIC position	0.219 ± 0.404	0.54	0.135 ± 0.217	0.173 ± 0.483
photometric centroid source offset	1.30 ± 1.05	1.24	-0.41 ± 1.04	-1.23 ± 1.05



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.



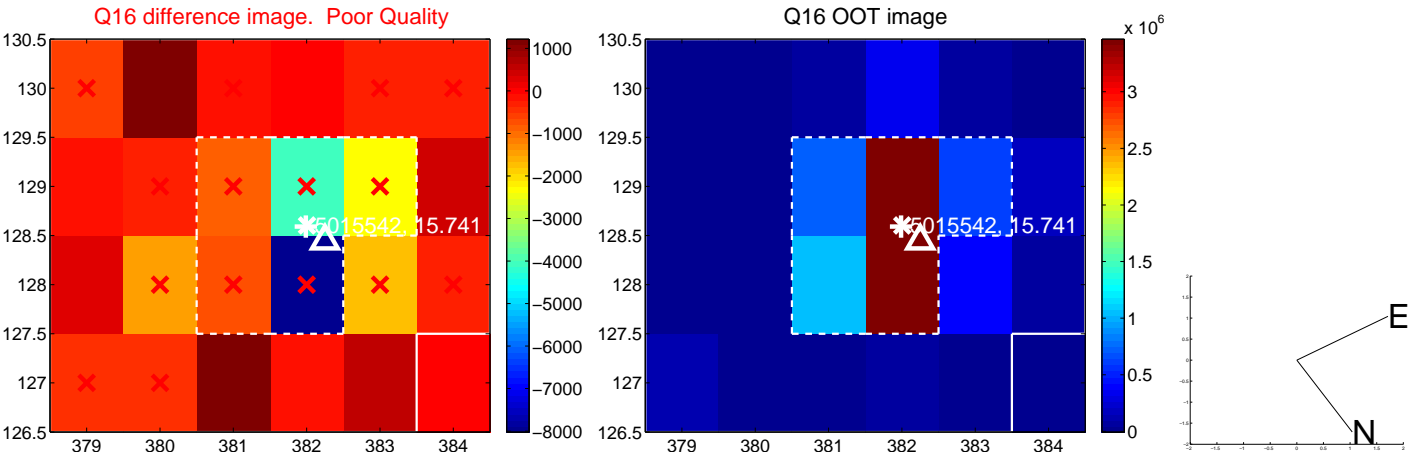
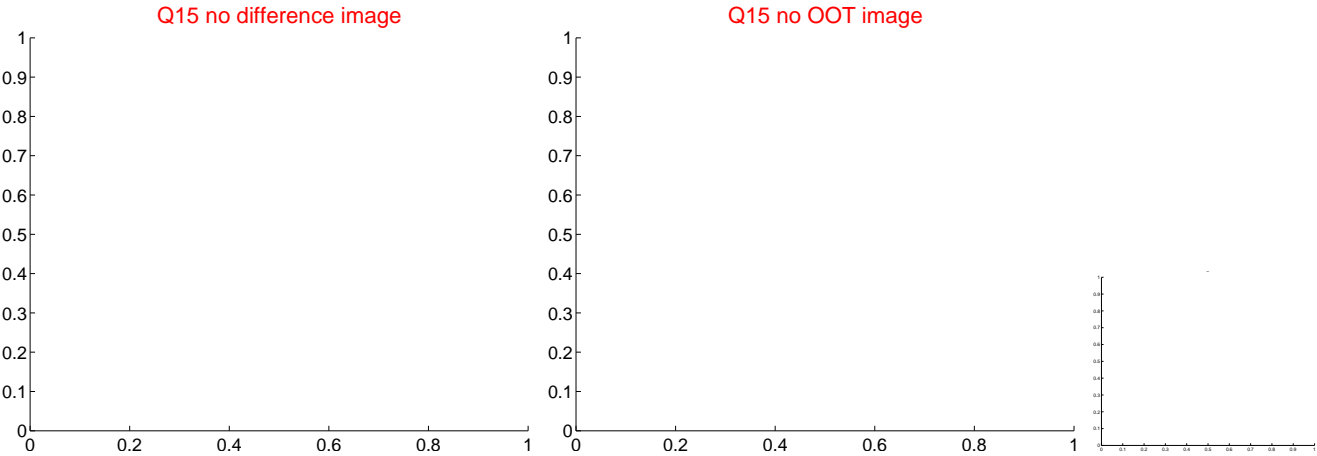
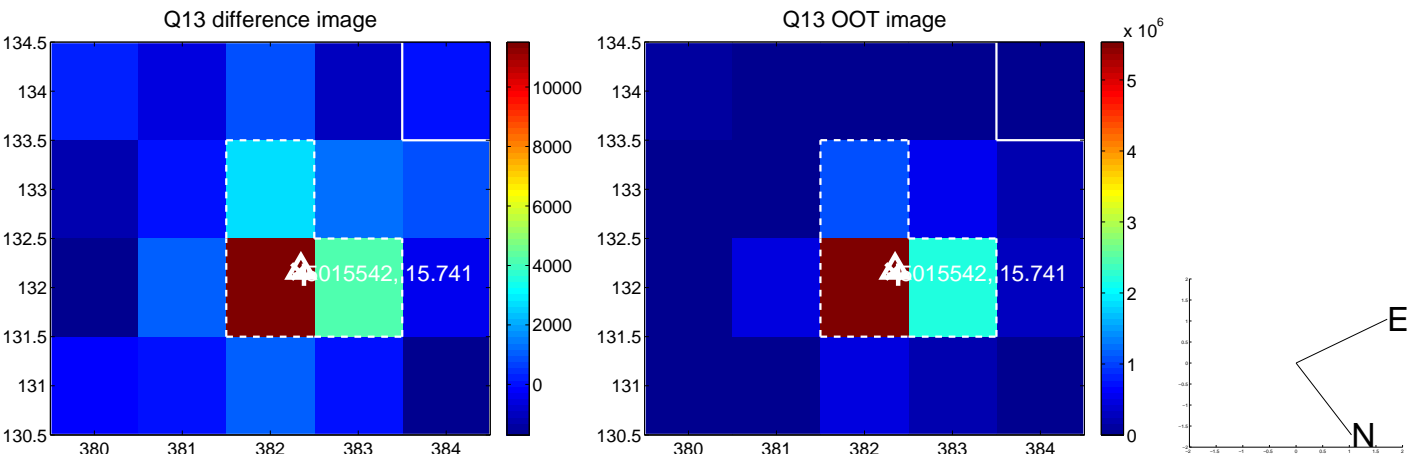
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



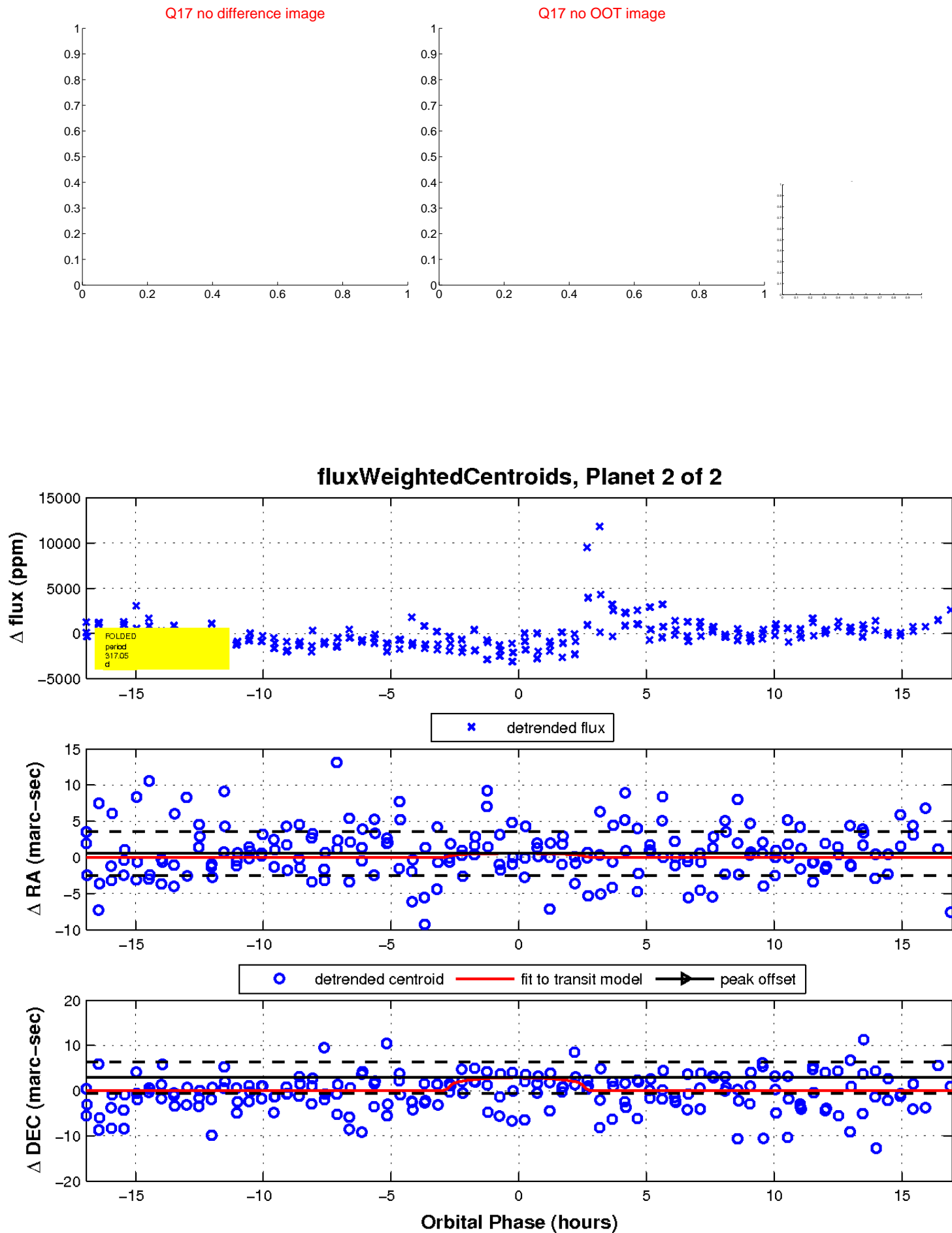
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UKIRT Image

Declination

