

KIC 002163457

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})
002163457-01	OBS	No	503.521887	534.748185	1186.3	24.439	11.5	13.2	0.72	5364	2.59	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002163457-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—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.

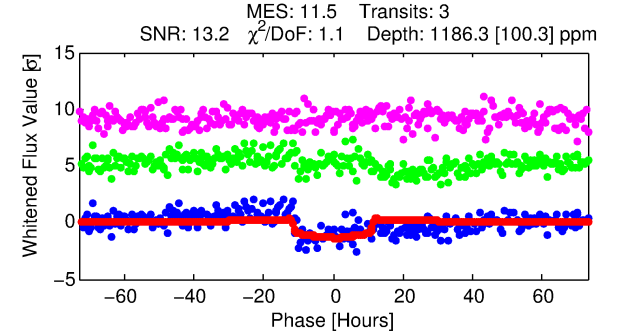
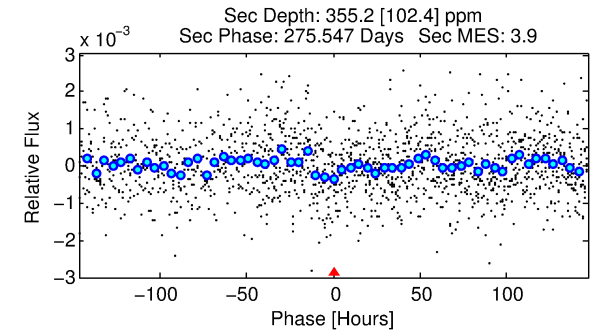
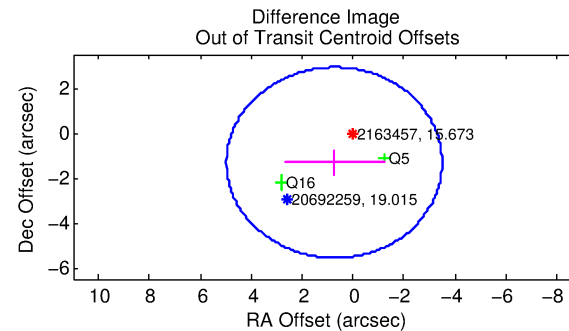
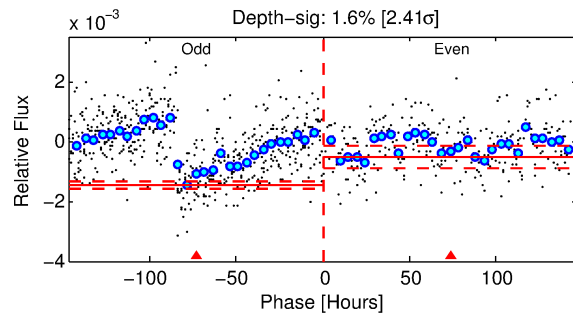
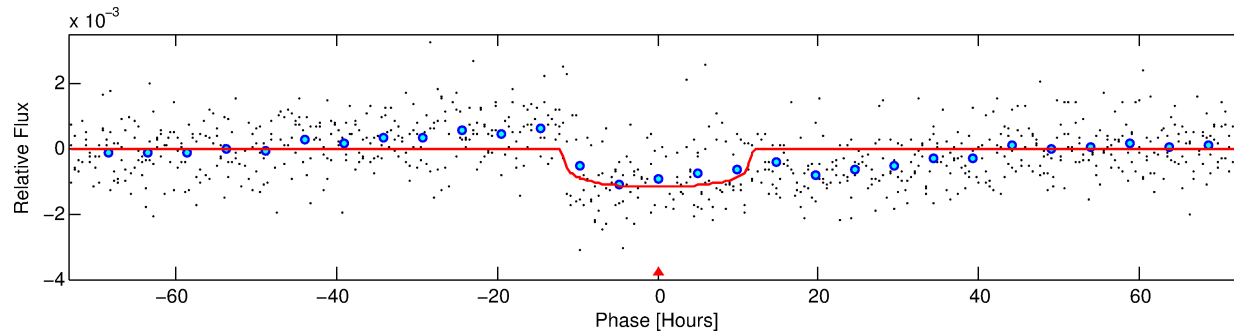
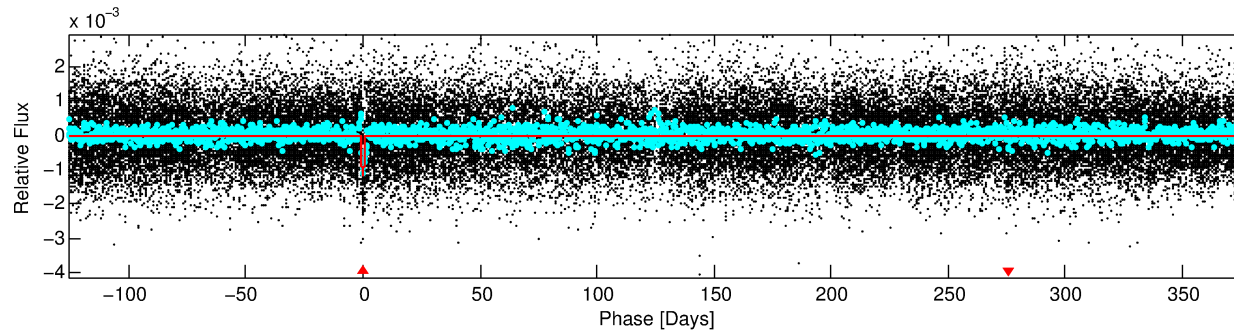
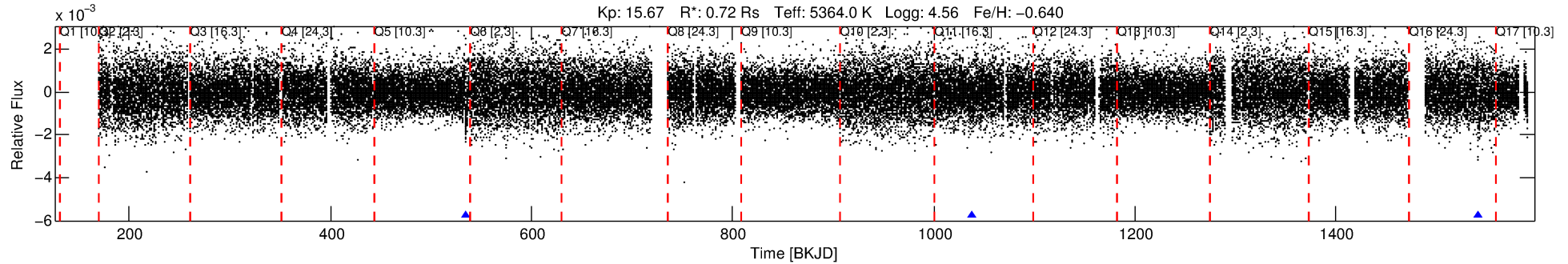
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002163457-01

No Significant Match Found

DV One-Page Summary

KIC: 2163457 Candidate: 1 of 1 Period: 503.522 d



DV Fit Results:

Period = 503.52189 [0.01720] d
Epoch = 534.7482 [0.0198] BKJD
Rp/R* = 0.0329 [0.0063]
a/R* = 131.40 [105.01]
b = 0.61 [0.83]
Seff = 0.32 [0.06]
Teq = 192 [9] K
Rp = 2.59 [0.58] Re
a = 1.0943 [0.1109] AU
Ag = 34821.04 [17628.94] [1.98 σ]
Teffp = 4062 [504] K [7.67 σ]

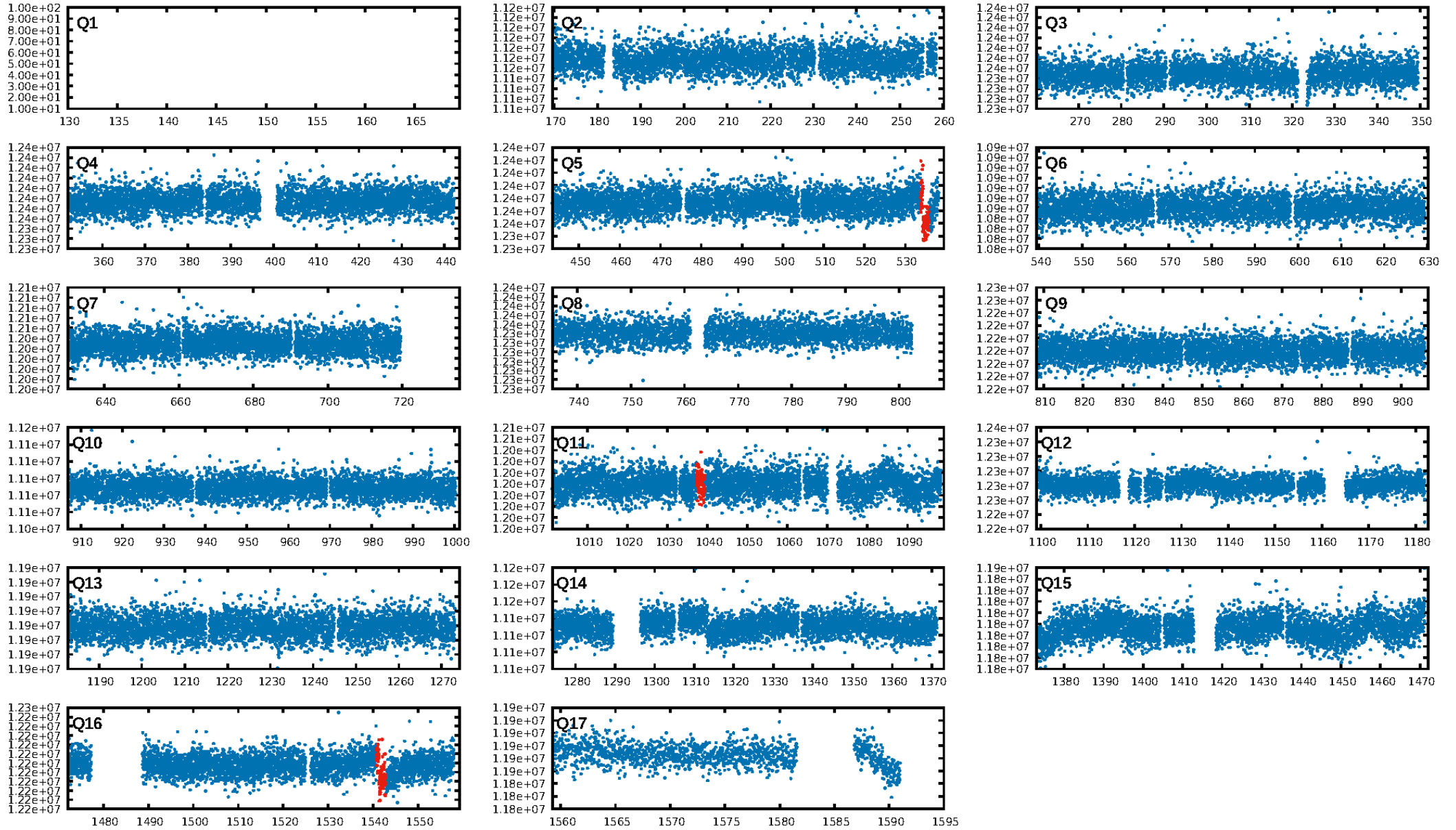
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 6.28e-19
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.65
Centroid-sig: 64.1%
Centroid-so: 0.653 arcsec [0.76 σ]
OotOffset-rm: 1.510 arcsec [1.07 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 1.599 arcsec [1.28 σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

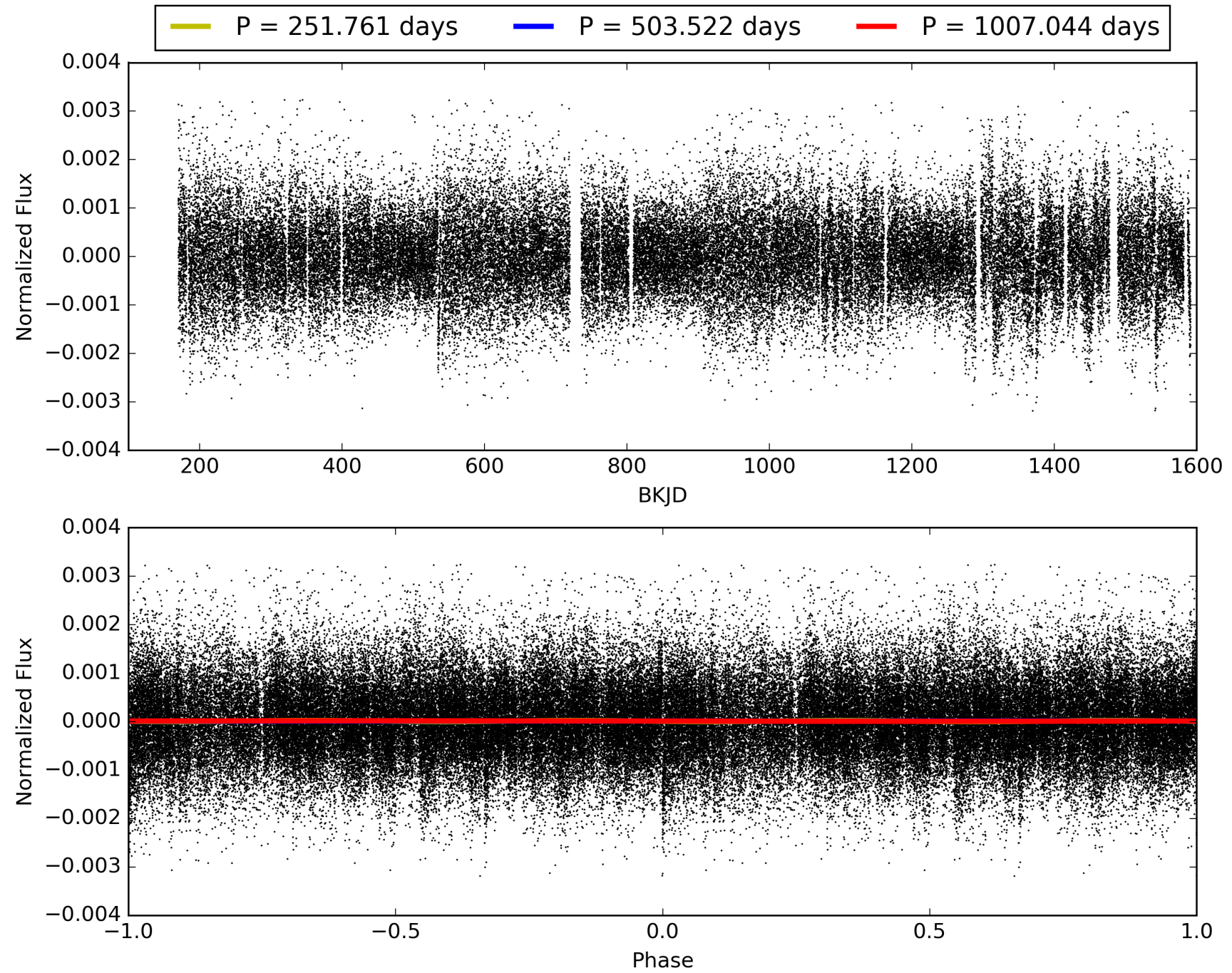
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:14:16 Z

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

TCE 002163457-01, PDC Light Curves

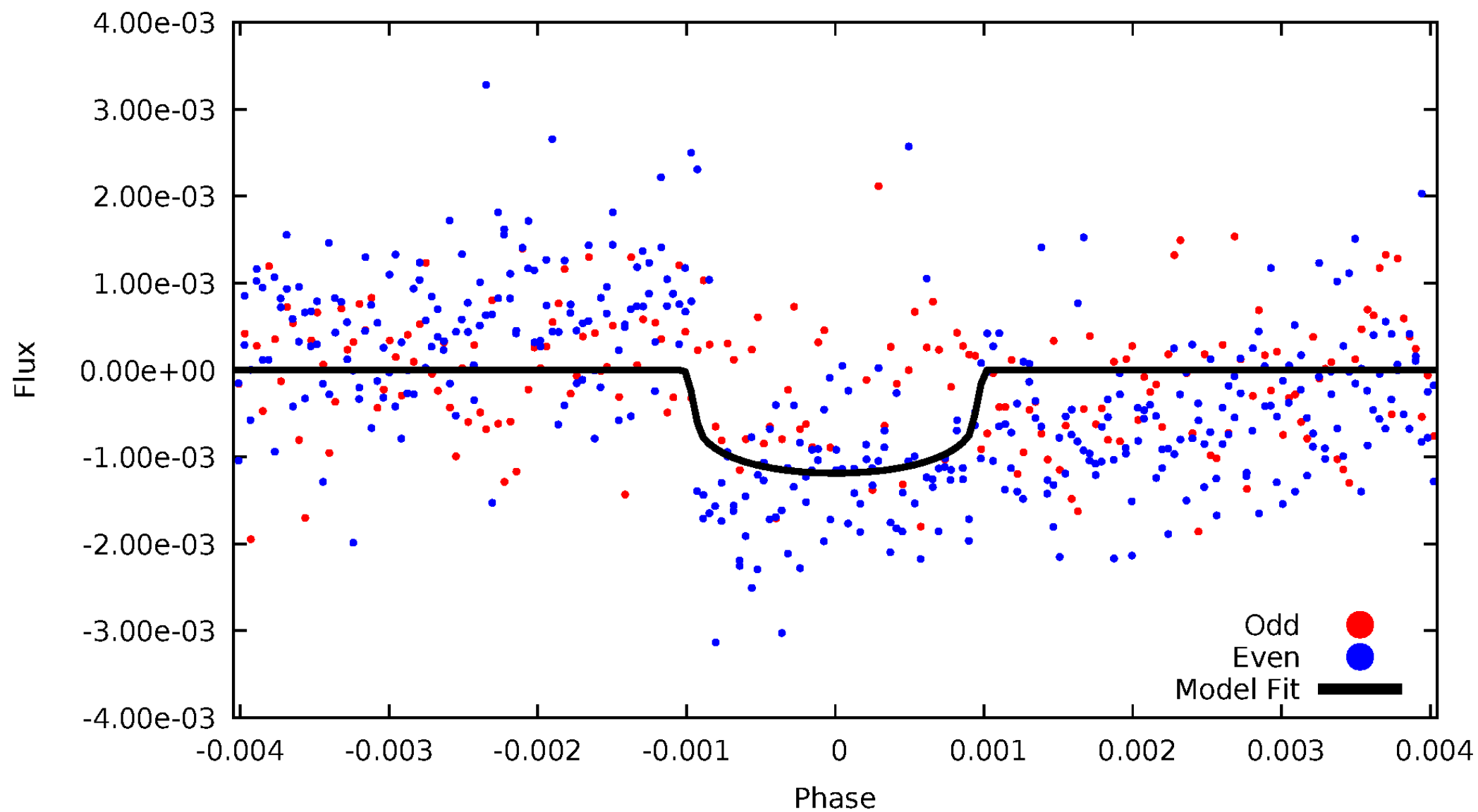


TCE 002163457-01



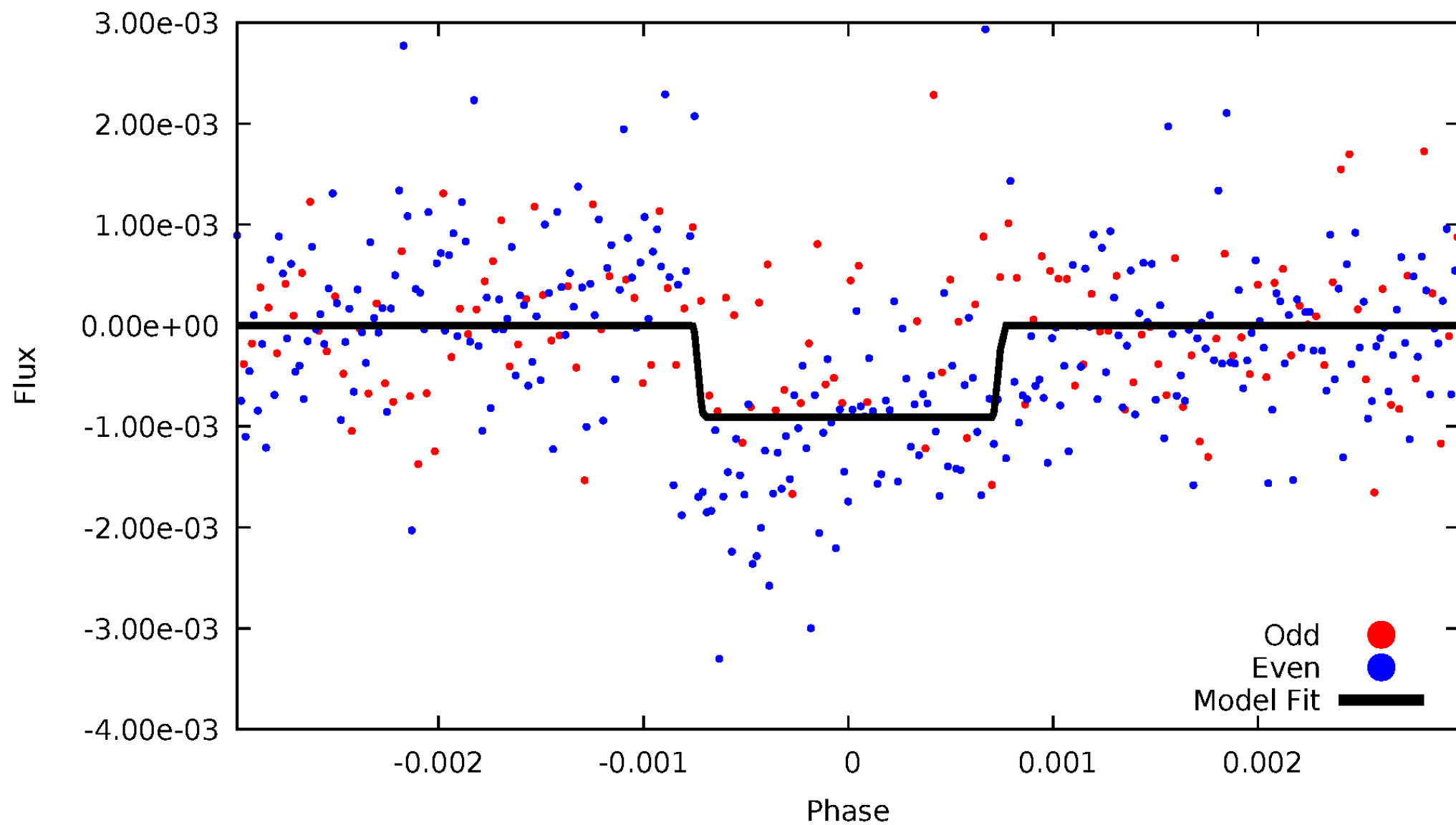
DV Odd/Even

TCE 002163457-01

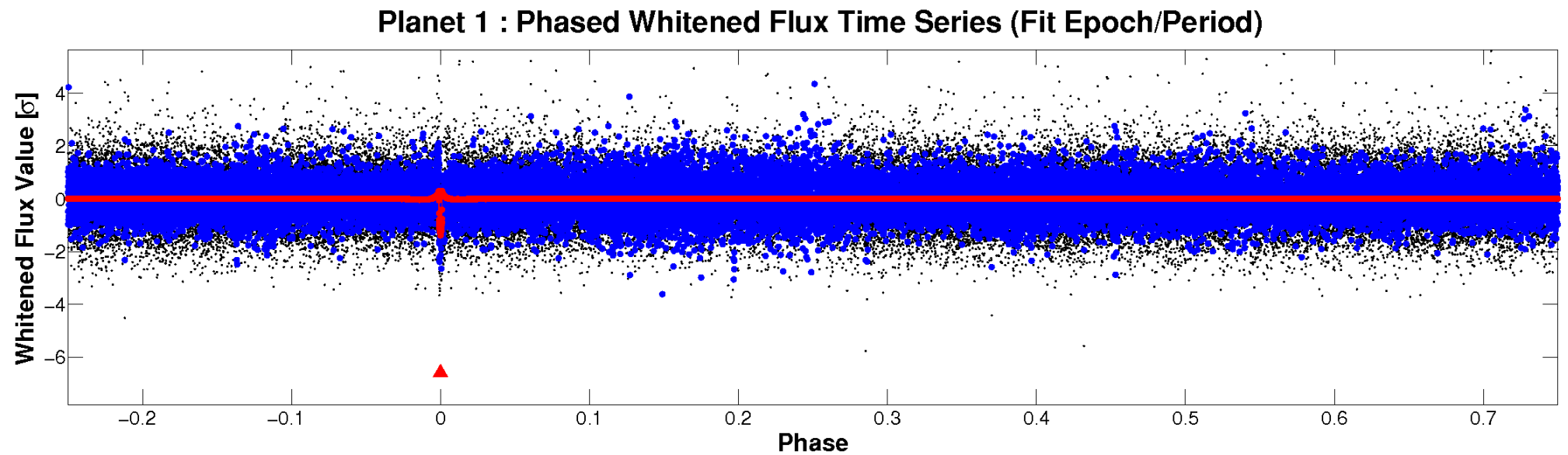
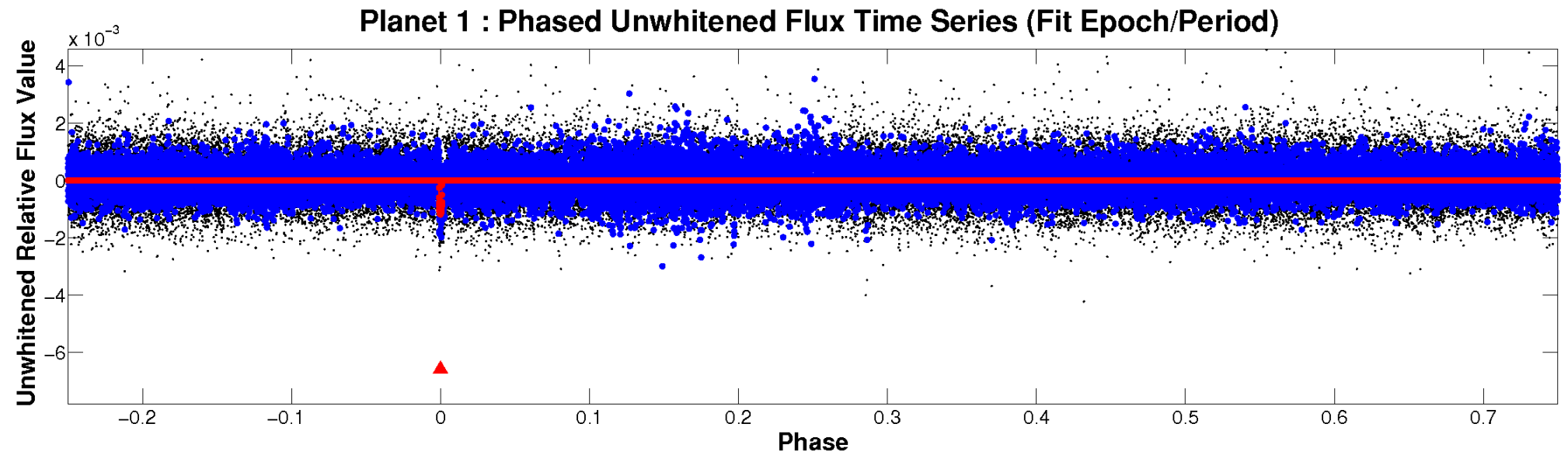


ALT Odd/Even

TCE 002163457-01

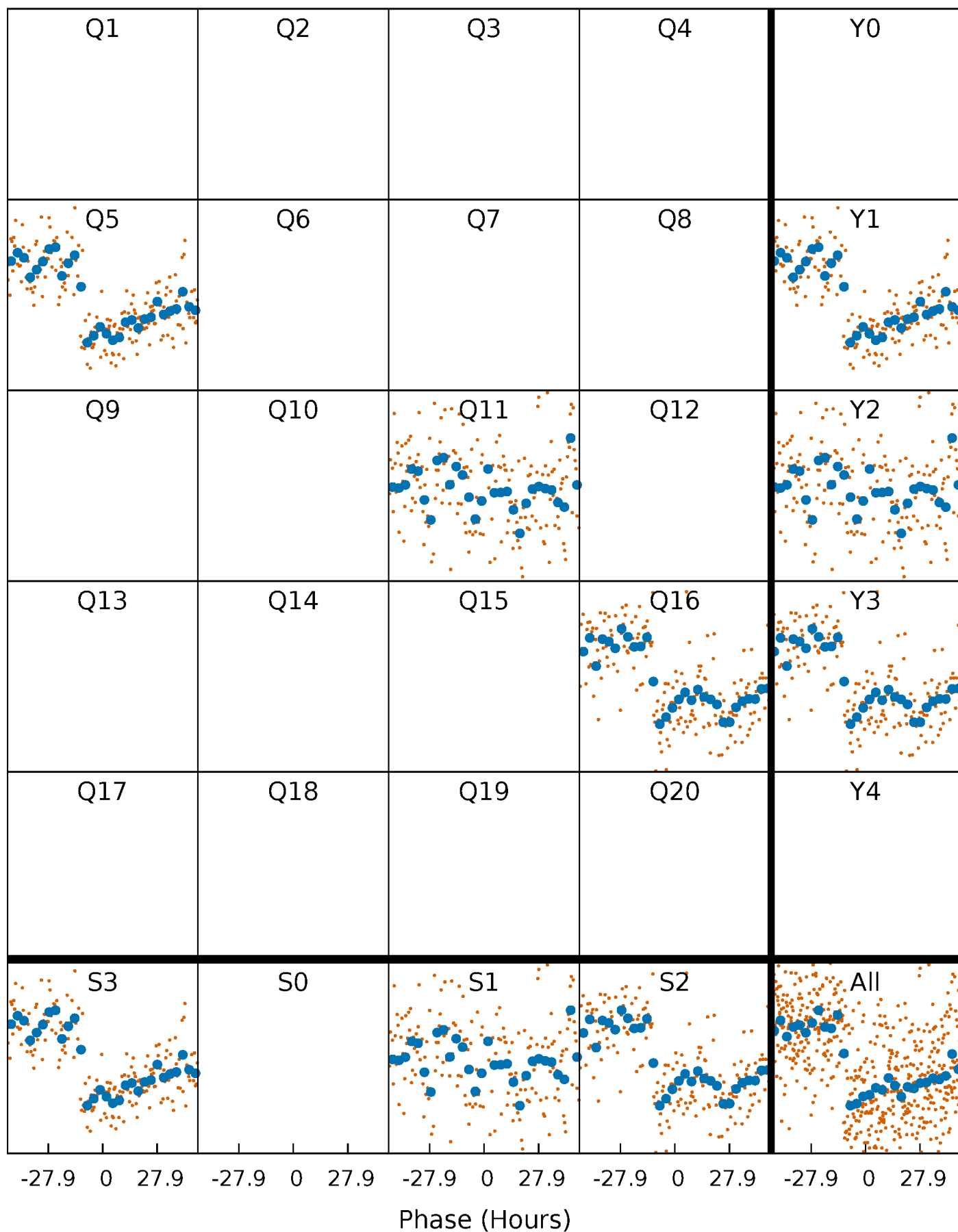


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 002163457-01 P=503.521887 Days $T_0=534.748185$ (BKJD)



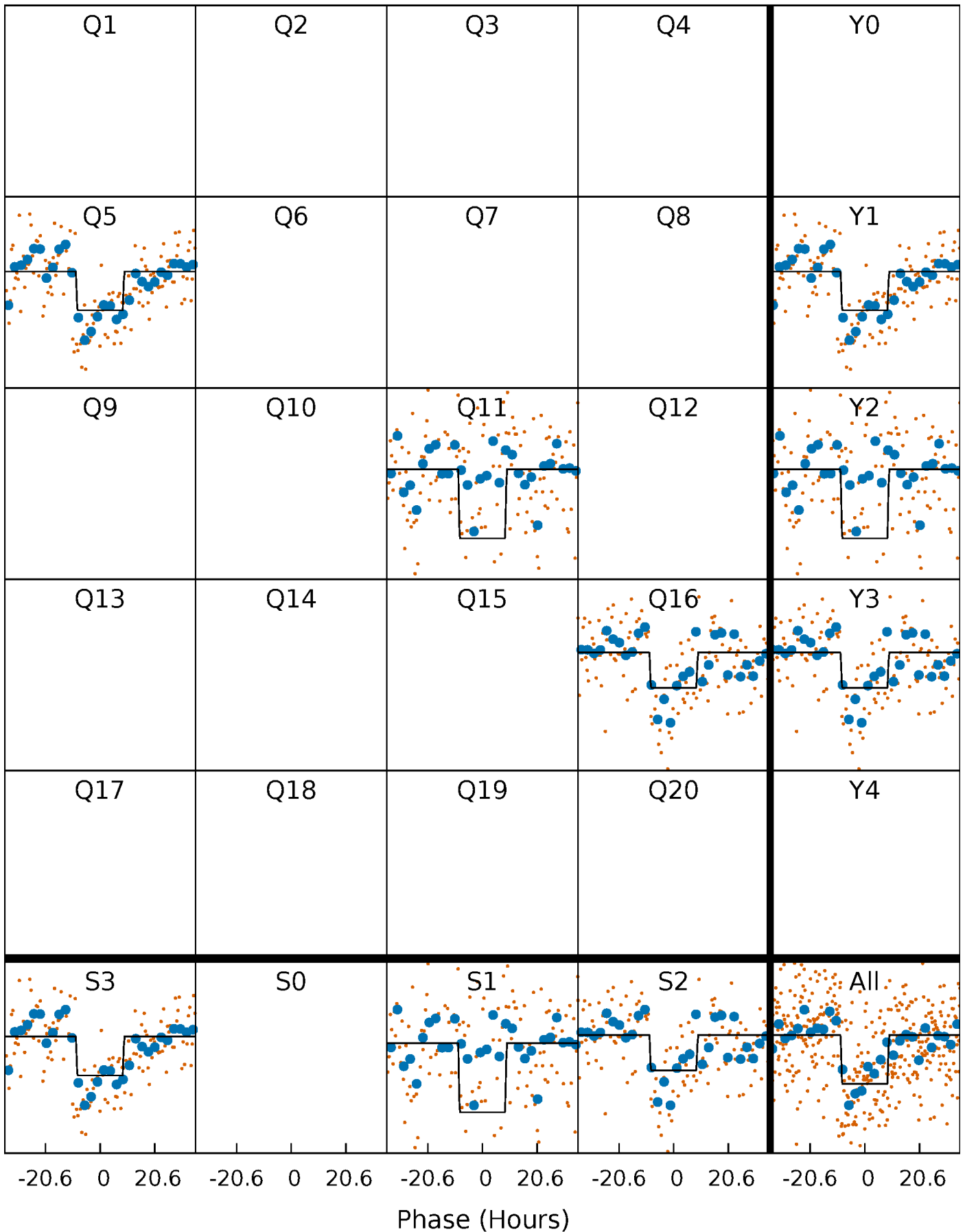
DV Quarter-Phased Transit Curves

TCE 002163457-01 P=503.521887 Days $T_0=534.748185$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

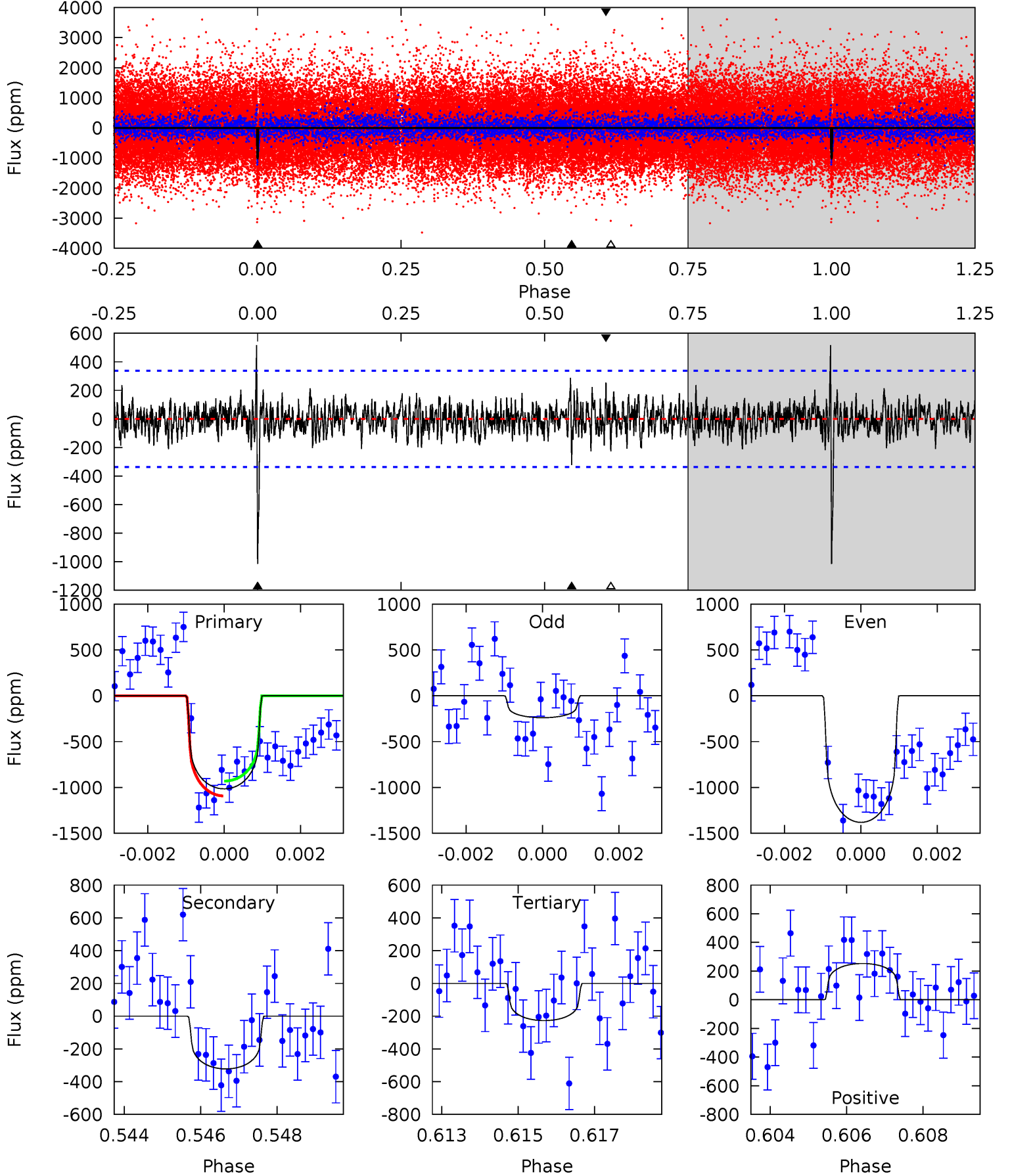
TCE 002163457-01 P=503.496541 Days $T_0=534.710208$ (BKJD)



DV Model-Shift Uniqueness Test

002163457-01, P = 503.521887 Days, E = 31.226298 Days

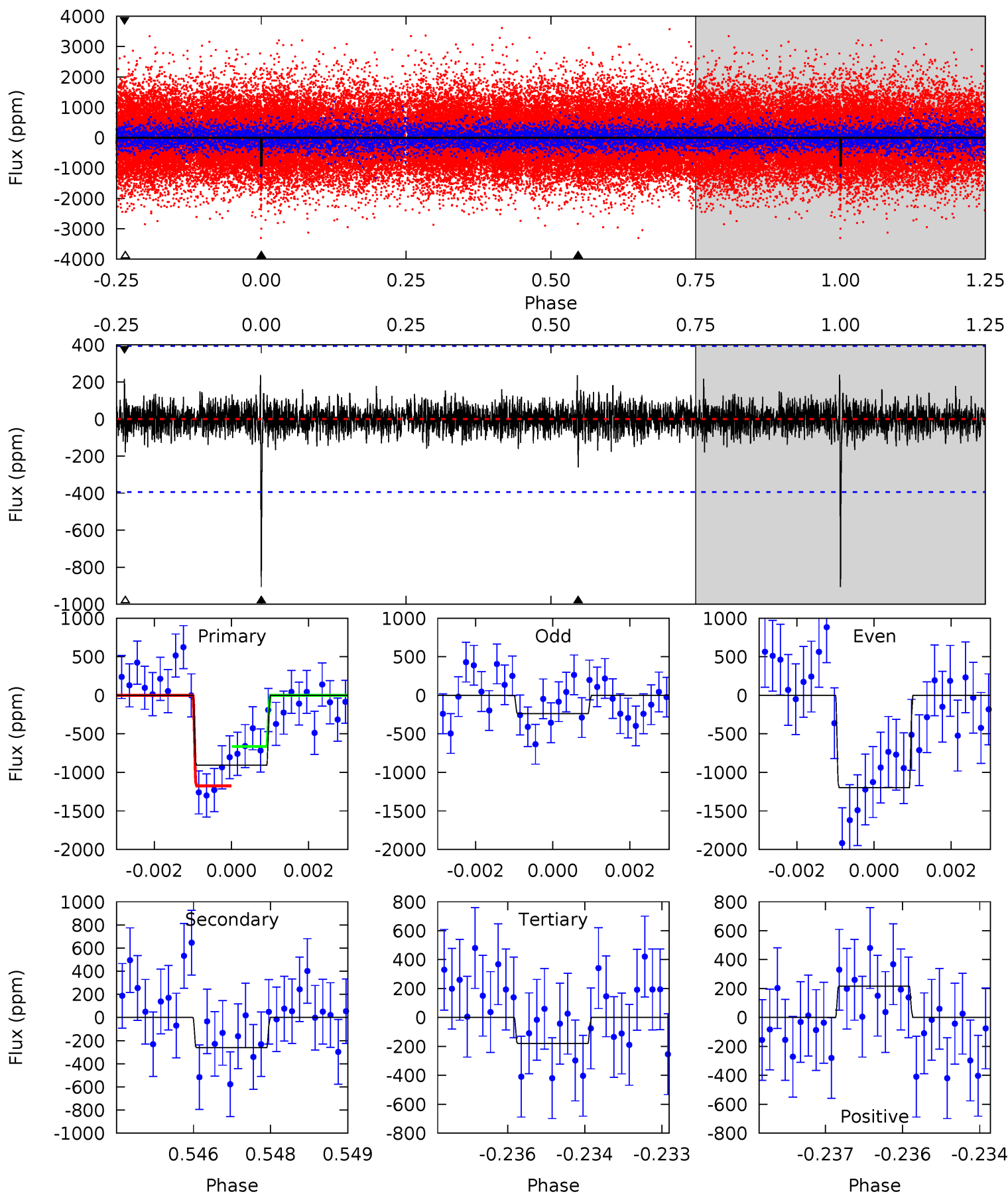
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	5.08	3.58	3.99	5.32	3.08	1.24	12.4	12.0	1.50	1.09	8.40	0.81	0.34	1.28



Alt Model-Shift Uniqueness Test

002163457-01, P = 503.496541 Days, E = 31.213667 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	3.56	2.44	2.95	5.38	3.17	0.68	9.91	9.40	1.11	0.60	6.06	0.77	0.21	3.46



Stellar Parameters For KIC 002163457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5364^{+160}_{-160}	$4.558^{+0.088}_{-0.064}$	$-0.640^{+0.350}_{-0.300}$	$0.723^{+0.082}_{-0.073}$	$0.689^{+0.090}_{-0.039}$	$2.566^{+0.914}_{-0.567}$
	+3%/-3%	+2%/-1%	+55%/-47%	+11%/-10%	+13%/-6%	+36%/-22%
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 002163457-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-322 ± 63	$2.60^{+0.52}_{-0.50}$	267^{+10}_{-11}	4185^{+398}_{-286}	31761^{+19935}_{-10593}
Alt.	-261 ± 73	$2.35^{+0.51}_{-0.49}$	267^{+12}_{-10}	4162^{+452}_{-348}	30925^{+23105}_{-11996}

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

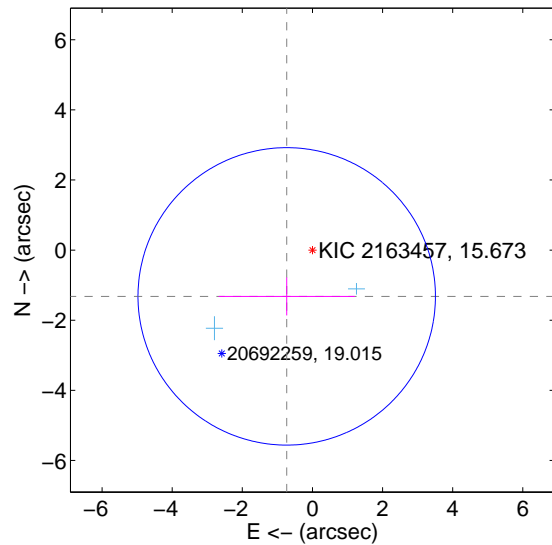
Supplemental centroid analysis for 002163457-01. Kepler magnitude: 15.67. Transit SNR 13.25

There are 2 quarters with good PRF difference image offsets

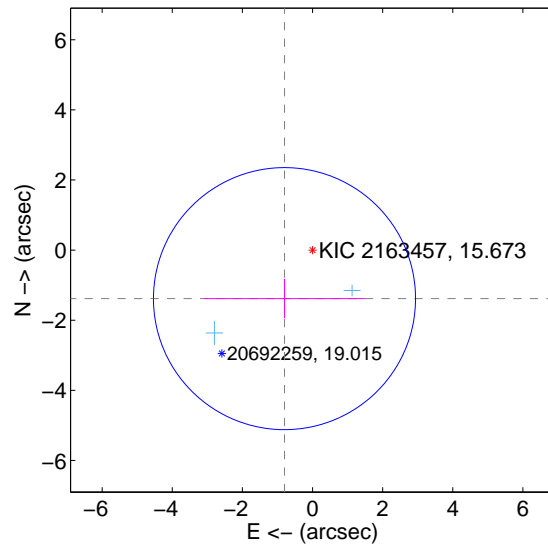
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.510 ± 1.414	1.07	0.734 ± 1.940	-1.320 ± 0.542
PRF-fit source offset from KIC position	1.599 ± 1.246	1.28	0.799 ± 2.294	-1.385 ± 0.561
photometric centroid source offset	0.65 ± 0.86	0.76	0.19 ± 0.97	-0.62 ± 0.85

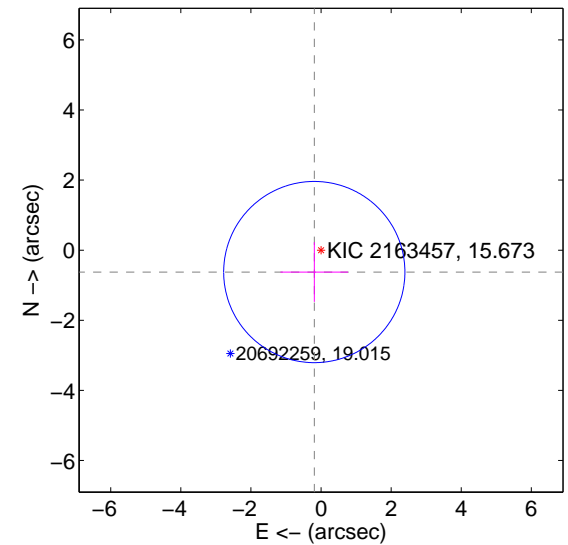
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

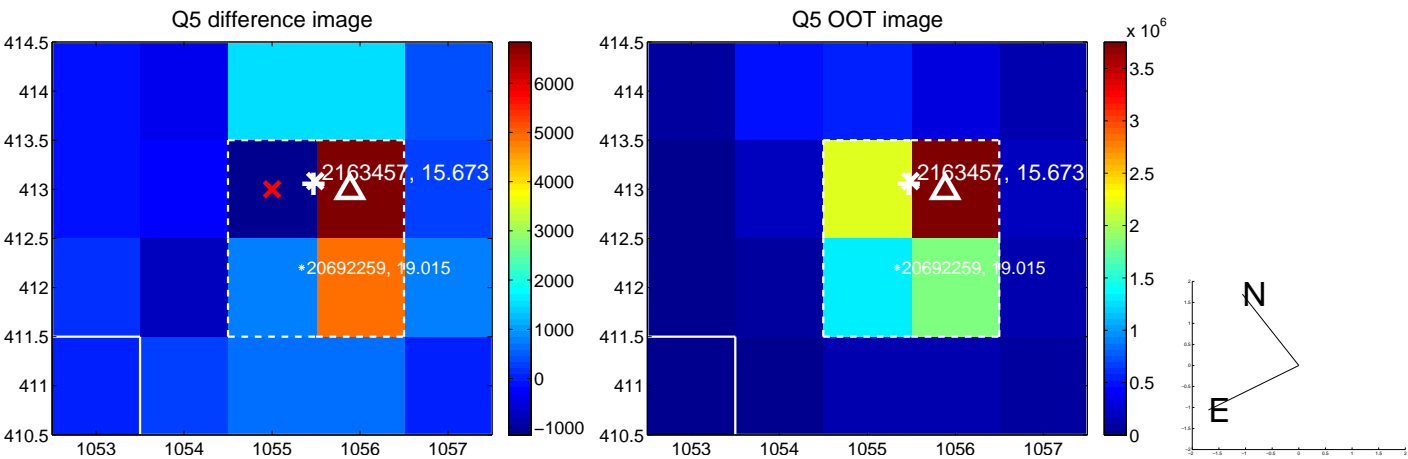


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



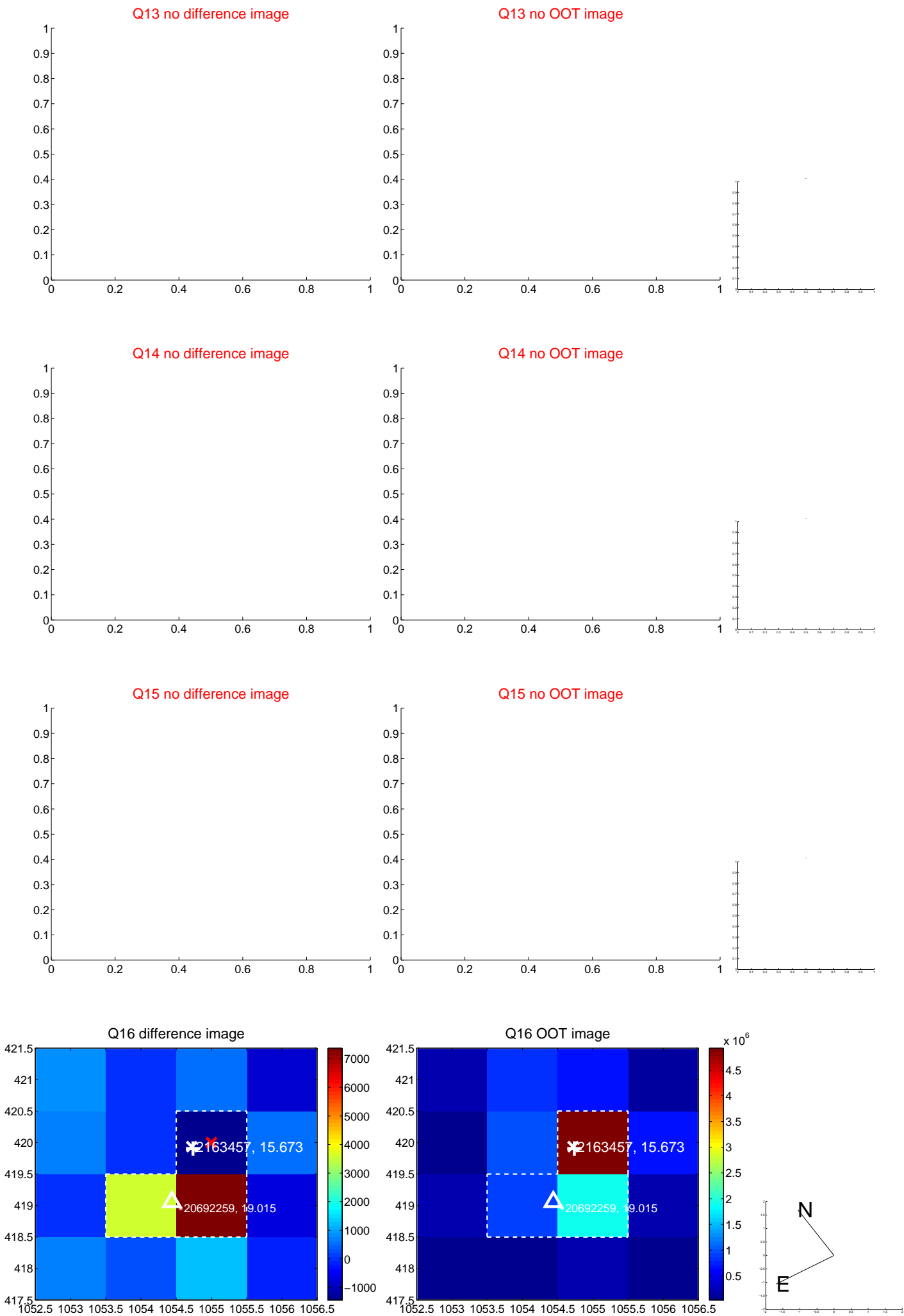
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



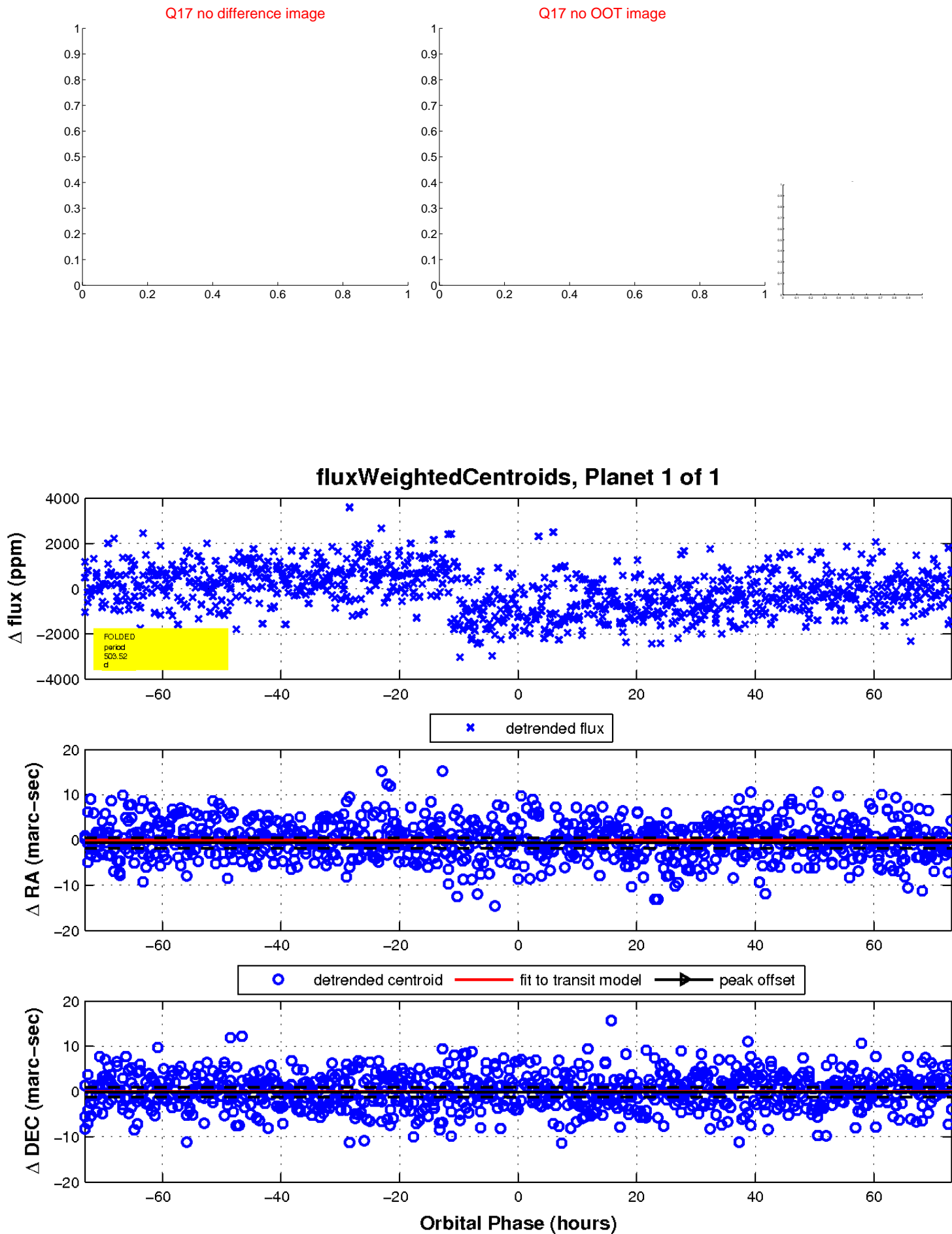
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

