

KIC 007121281

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})
007121281-01	OBS	No	638.408345	221.780103	916.3	17.694	8.1	7.7	0.68	4340	2.06	0.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007121281-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_POS_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.

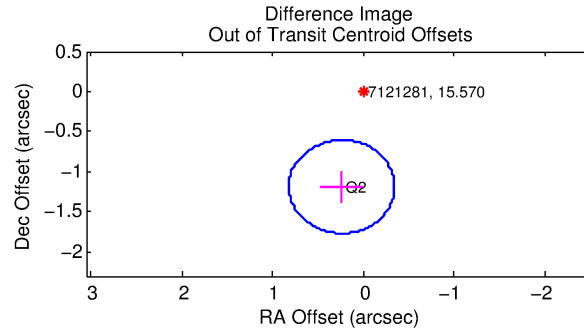
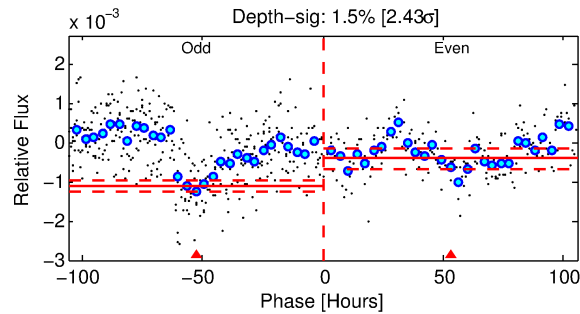
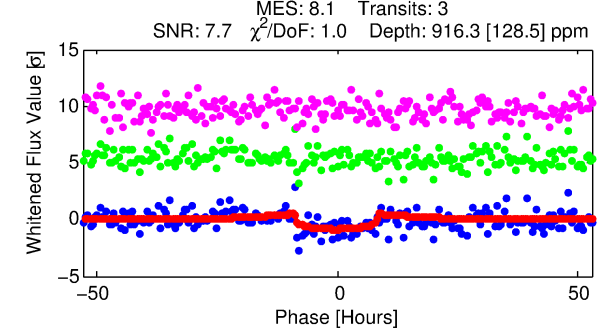
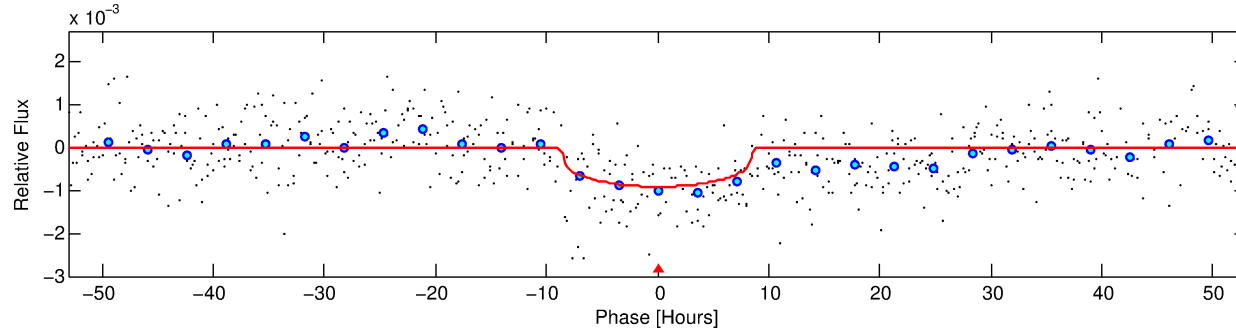
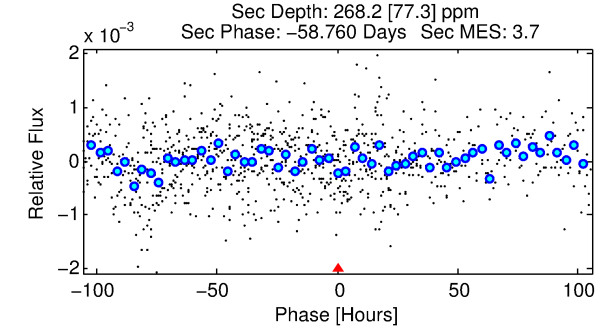
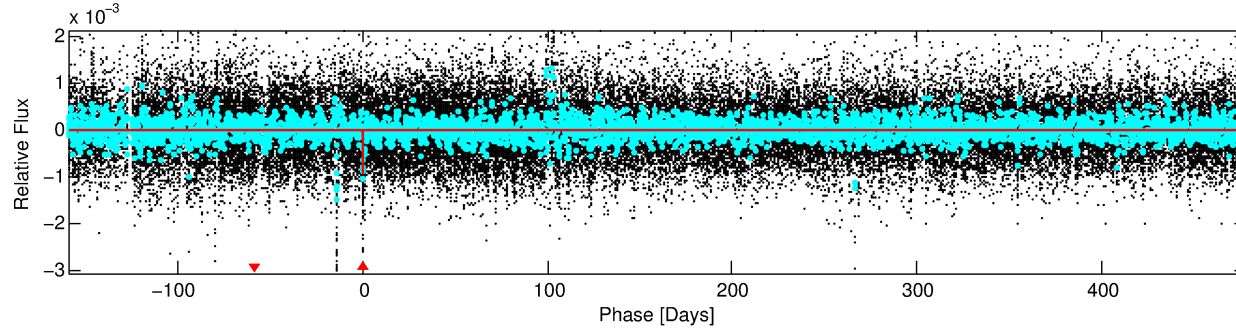
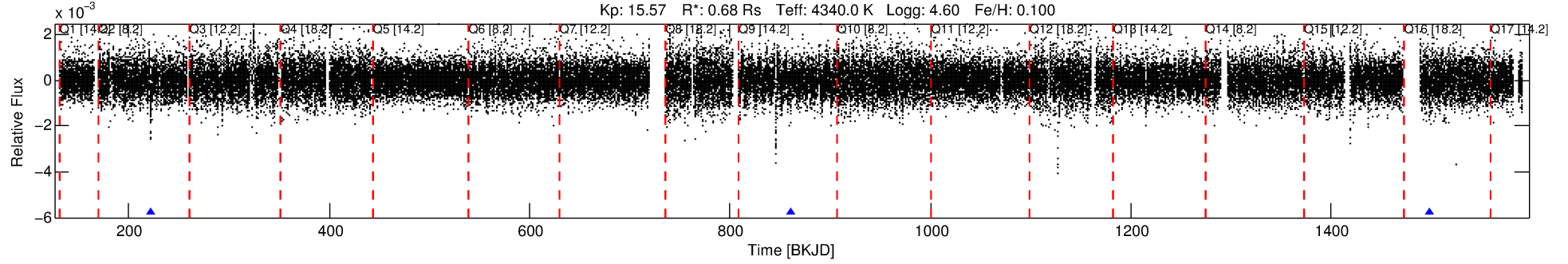
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007121281-01

No Significant Match Found

DV One-Page Summary

KIC: 7121281 Candidate: 1 of 1 Period: 638.408 d



DV Fit Results:

Period = 638.40835 [0.01636] d
Epoch = 221.7801 [0.0195] BKJD
Rp/R* = 0.0278 [0.0158]
a/R* = 247.43 [418.52]
b = 0.50 [2.57]
Seff = 0.09 [0.01]
Teq = 140 [5] K
Rp = 2.06 [1.19] Re
a = 1.2718 [0.0873] AU
Ag = 56213.94 [66293.01] [0.85σ]
Teffp = 3333 [984] K [3.24σ]

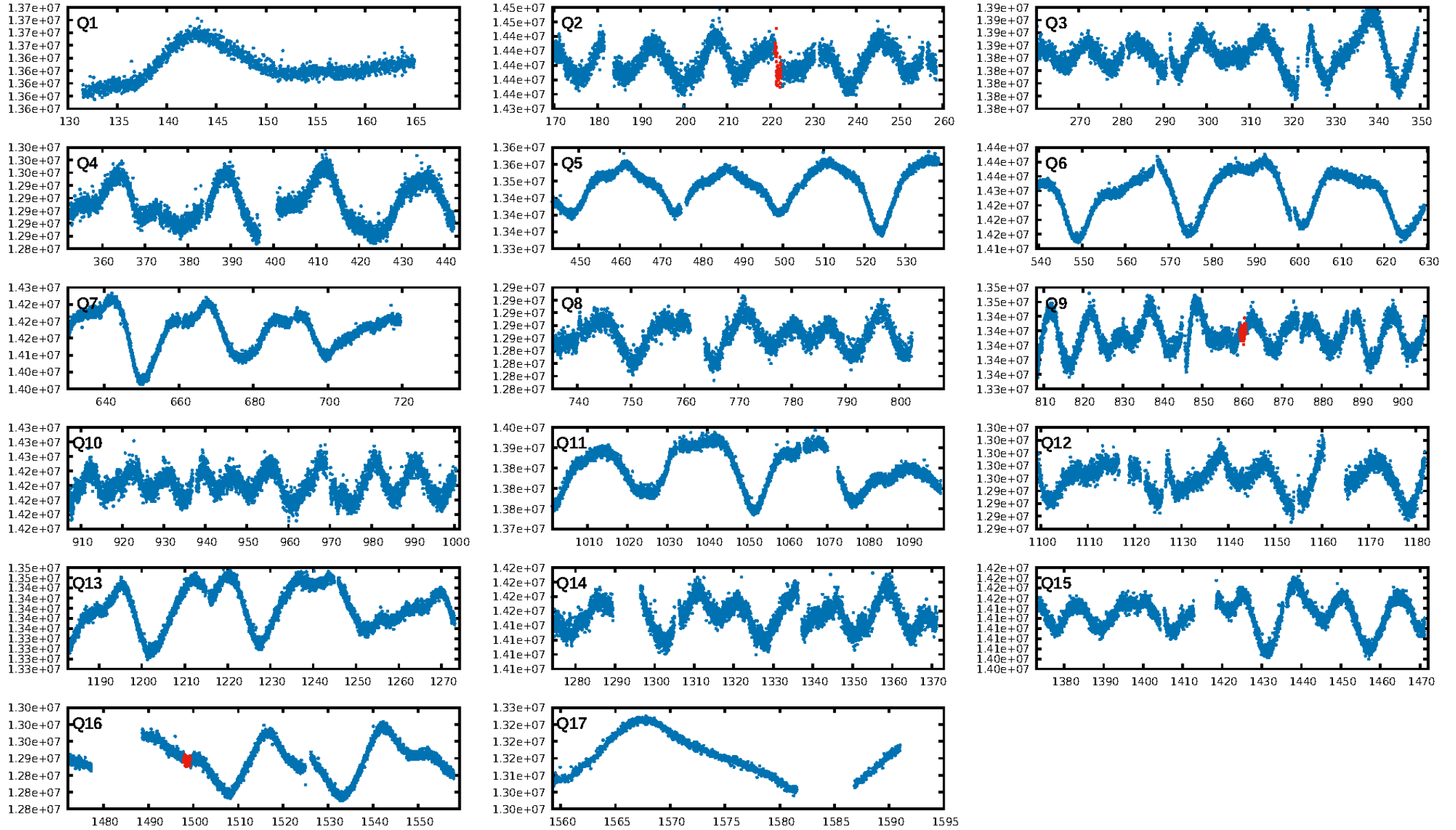
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.32e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.628
Centroid-sig: 8.5%
Centroid-so: 1.010 arcsec [0.96σ]
OotOffset-rm: 1.211 arcsec [6.25σ]
KicOffset-rm: 1.021 arcsec [5.28σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

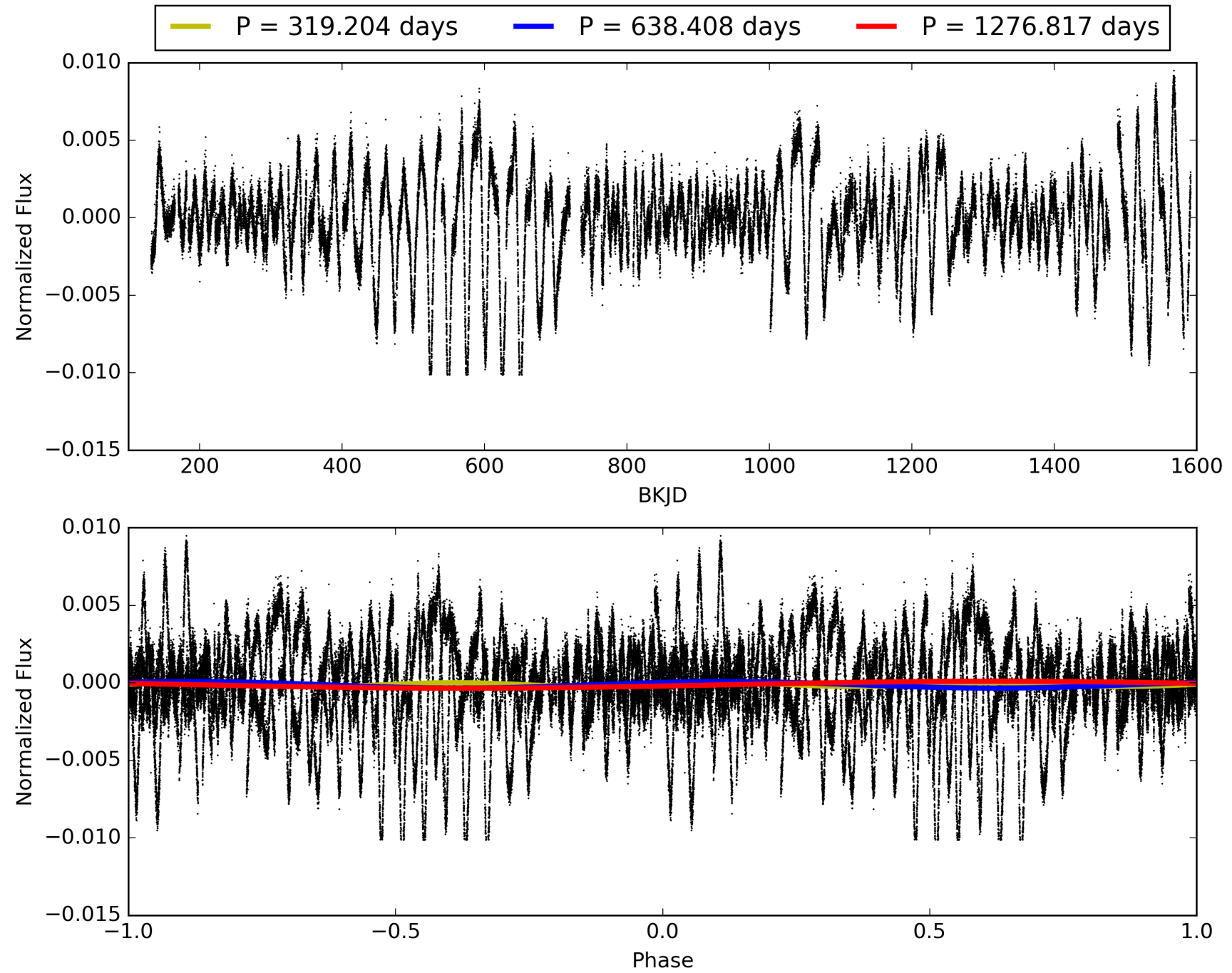
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:44:01 Z

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

TCE 007121281-01, PDC Light Curves

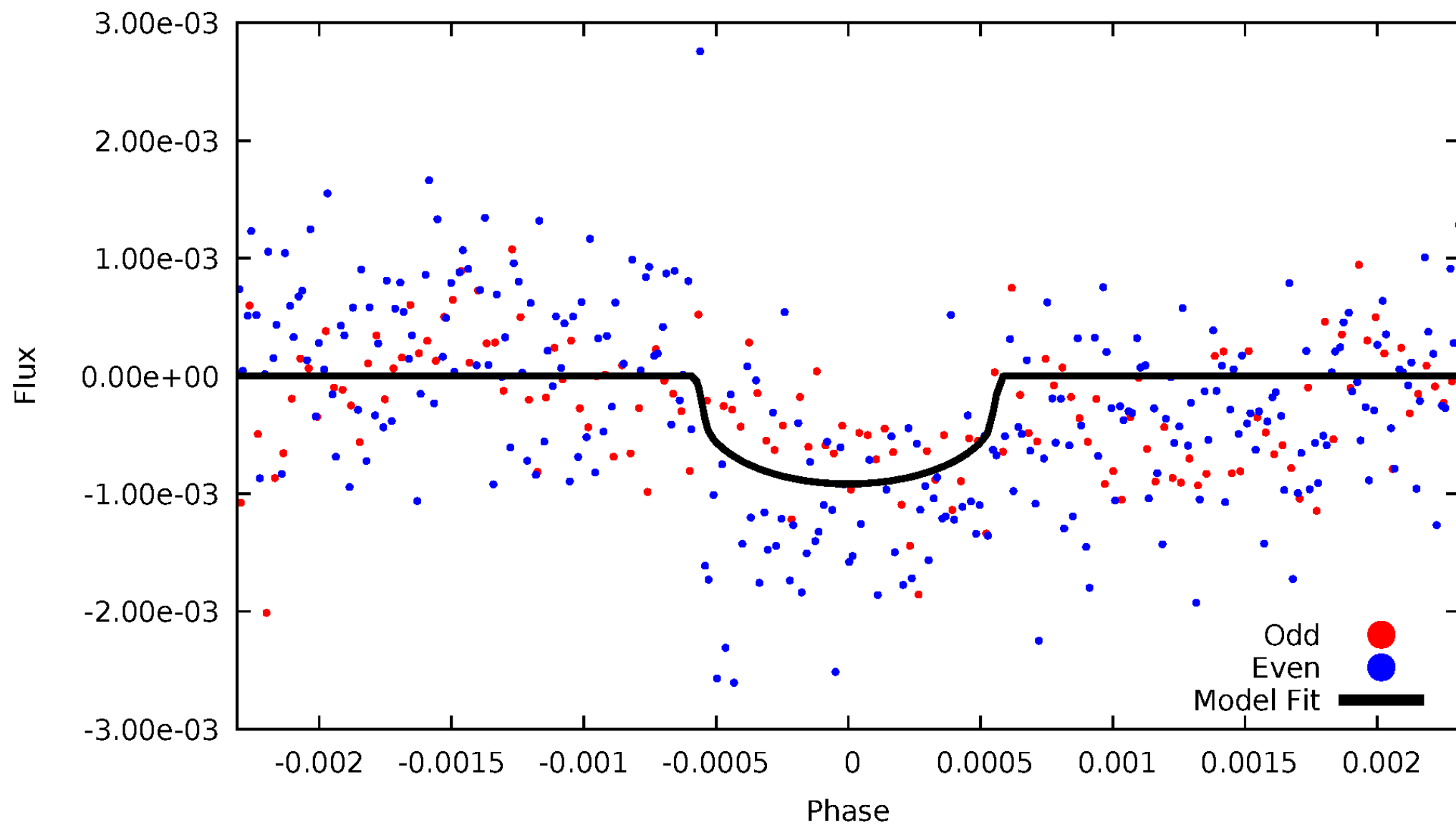


TCE 007121281-01



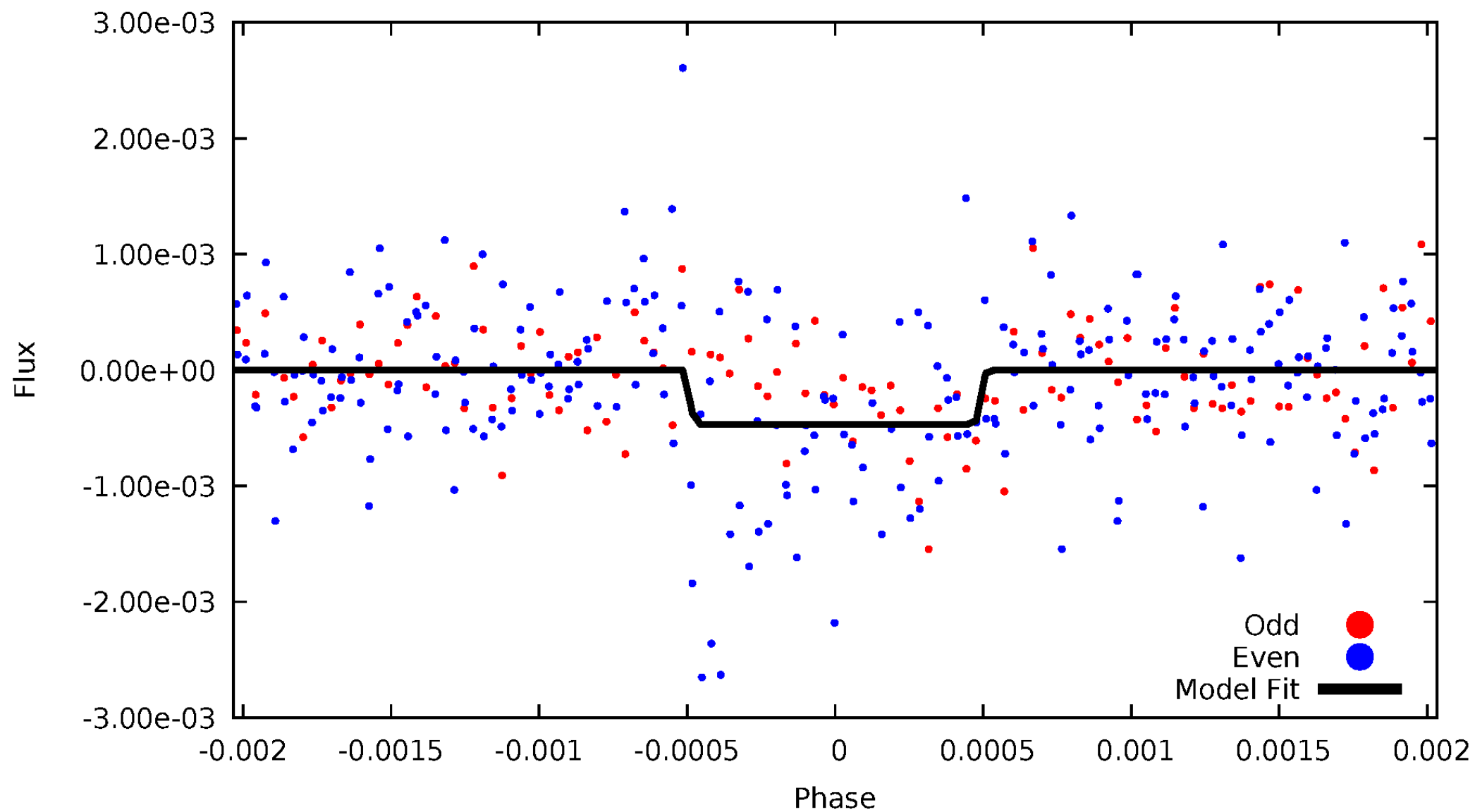
DV Odd/Even

TCE 007121281-01



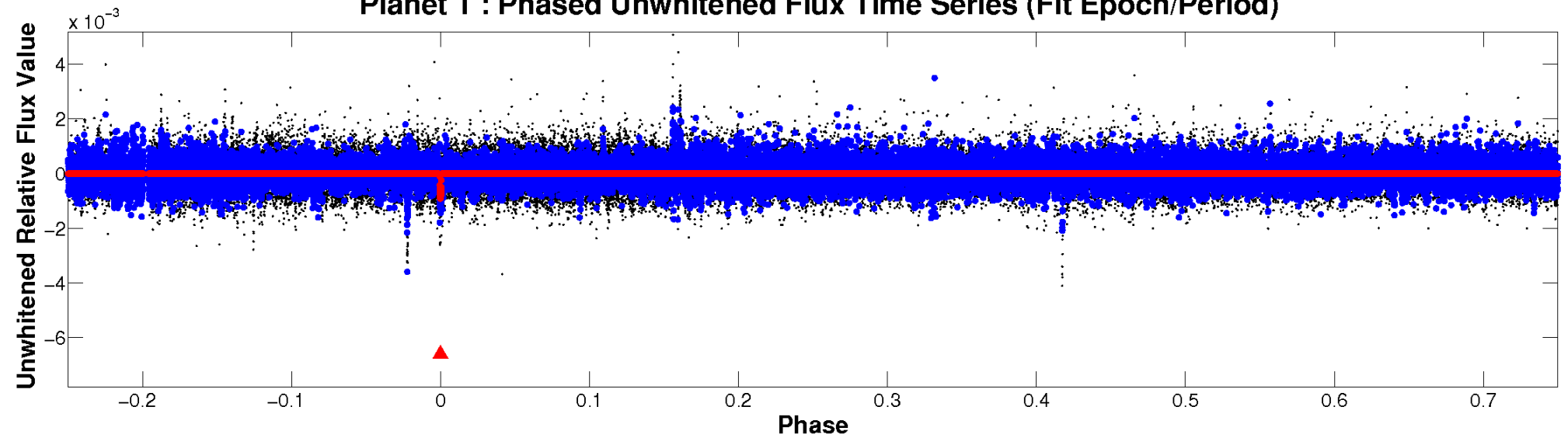
ALT Odd/Even

TCE 007121281-01

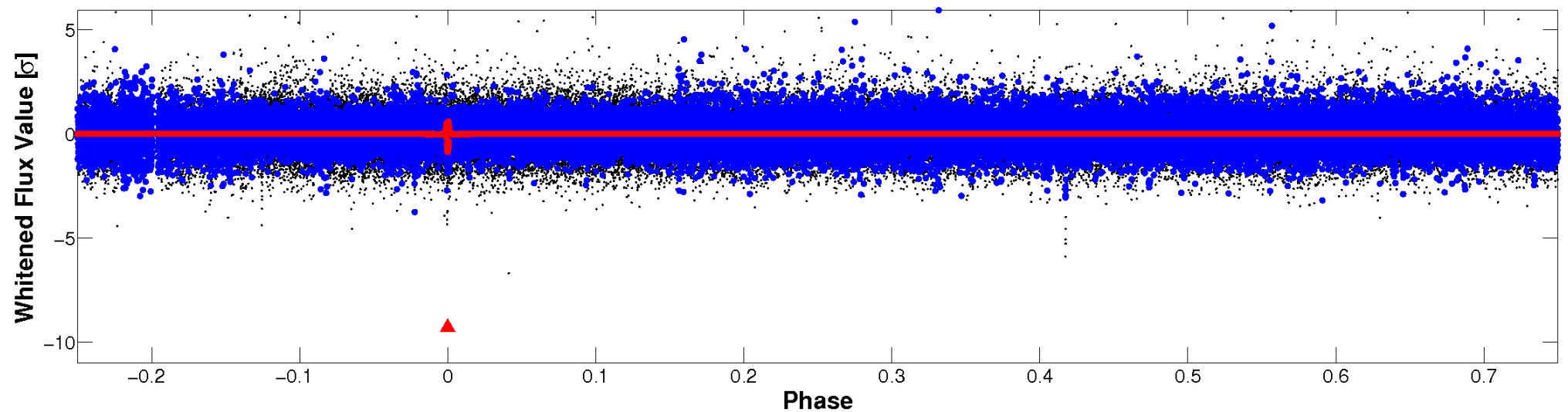


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 007121281-01 P=638.408345 Days $T_0=221.780103$ (BKJD)



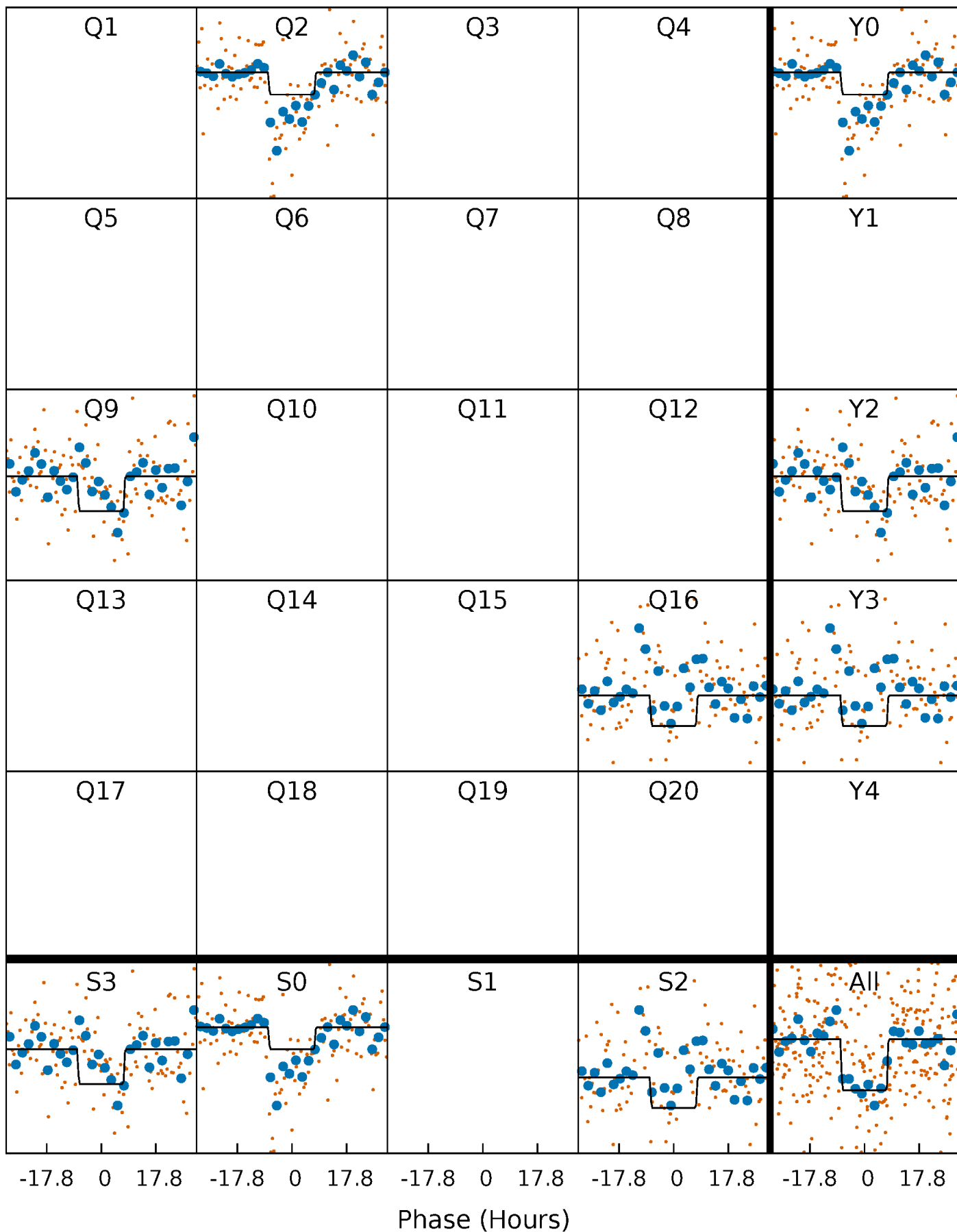
DV Quarter-Phased Transit Curves

TCE 007121281-01 P=638.408345 Days $T_0=221.780103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

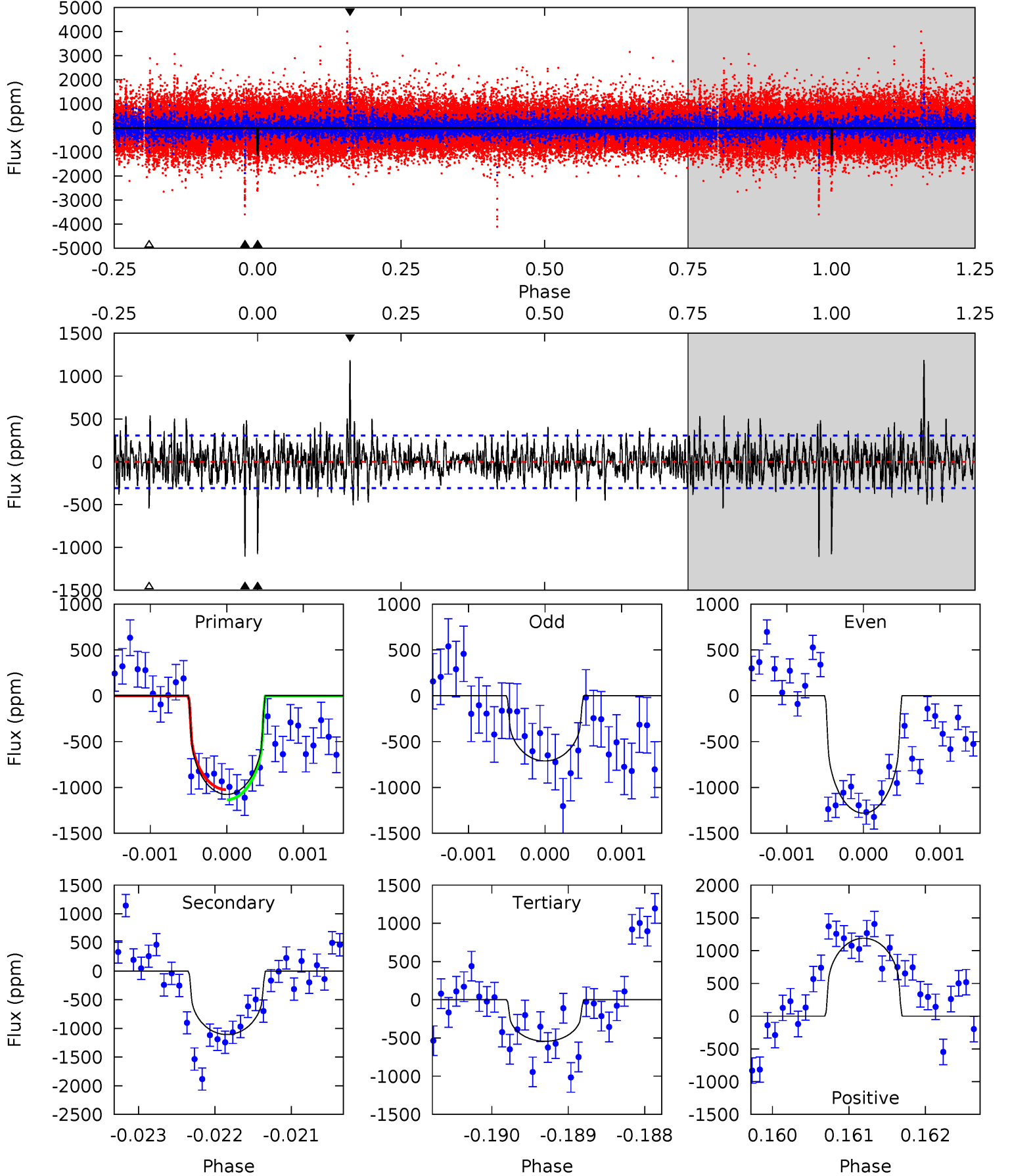
TCE 007121281-01 P=638.405715 Days $T_0=221.750651$ (BKJD)



DV Model-Shift Uniqueness Test

007121281-01, P = 638.408345 Days, E = 221.780103 Days

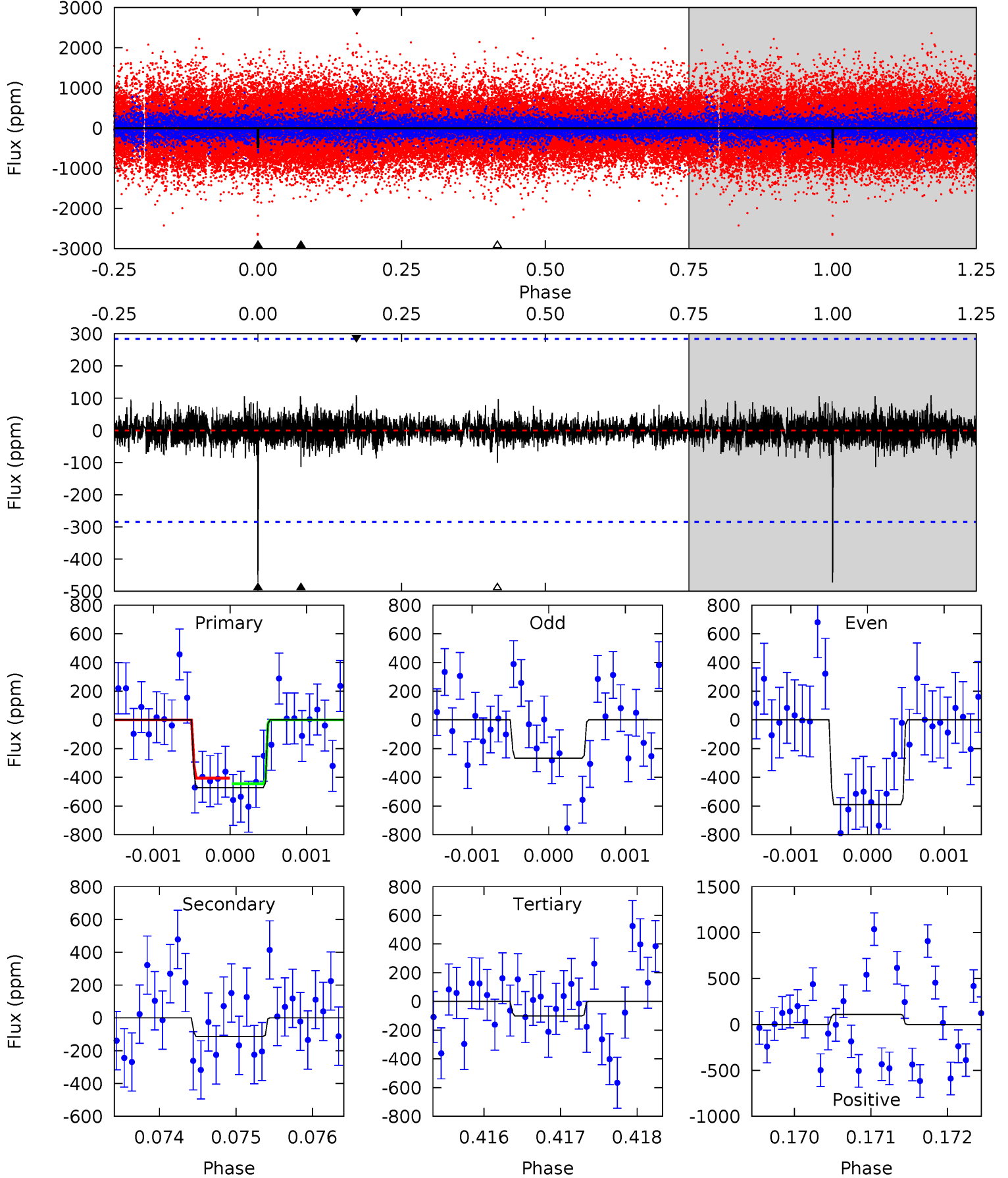
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	19.5	9.59	21.0	5.42	3.25	2.69	9.40	-1.98	9.93	-1.45	4.79	1.12	0.52	0.96



Alt Model-Shift Uniqueness Test

007121281-01, P = 638.405715 Days, E = 221.750651 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.05	2.17	1.92	2.09	5.45	3.28	0.43	7.12	6.96	0.24	0.08	2.96	1.70	0.19	0



Stellar Parameters For KIC 007121281

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4340^{+129}_{-129}	$4.601^{+0.052}_{-0.017}$	$0.100^{+0.250}_{-0.300}$	$0.680^{+0.028}_{-0.057}$	$0.673^{+0.052}_{-0.052}$	$3.016^{+0.696}_{-0.240}$
	+3%/-3%	+1%/-0%	+250%/-300%	+4%/-8%	+8%/-8%	+23%/-8%
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 007121281-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1107 ± 57	$2.04^{+1.13}_{-0.99}$	194^{+6}_{-6}	4652^{+1665}_{-722}	$243711^{+671346}_{-145326}$
Alt.	-113 ± 52	$1.77^{+1.11}_{-1.03}$	194^{+6}_{-6}	3241^{+1191}_{-460}	$29899^{+155364}_{-20042}$

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

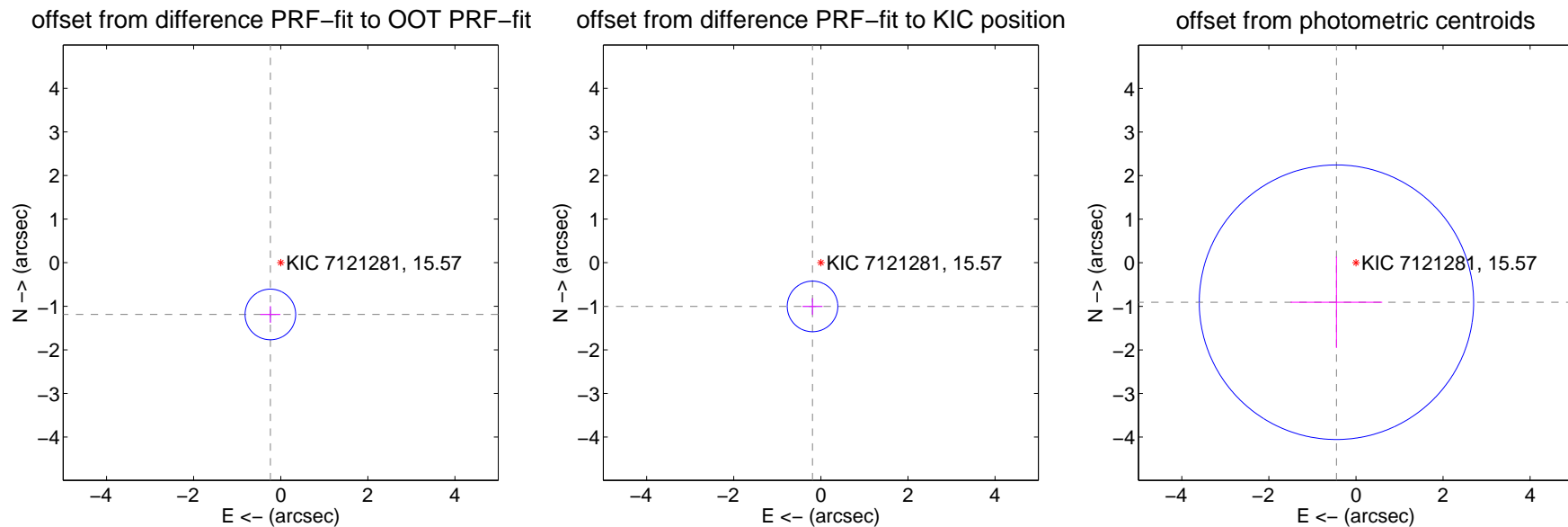
DV Centroid Data

Supplemental centroid analysis for 007121281-01. Kepler magnitude: 15.57. Transit SNR 7.74

There are 1 quarters with good PRF difference image offsets

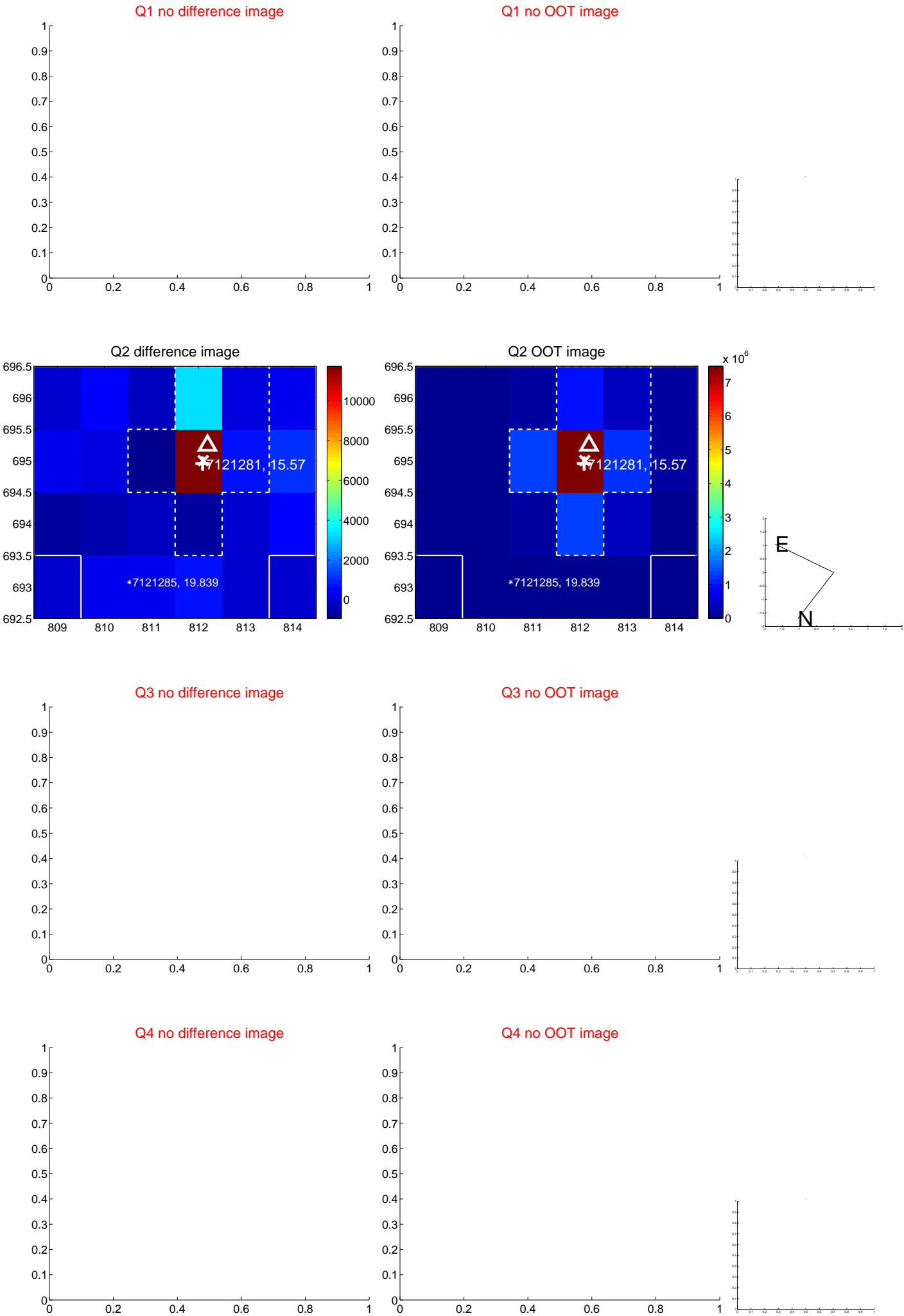
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.211 ± 0.194	6.25	0.238 ± 0.230	-1.188 ± 0.192
PRF-fit source offset from KIC position	1.021 ± 0.194	5.28	0.192 ± 0.230	-1.003 ± 0.192
photometric centroid source offset	1.01 ± 1.05	0.96	0.45 ± 1.05	-0.91 ± 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.

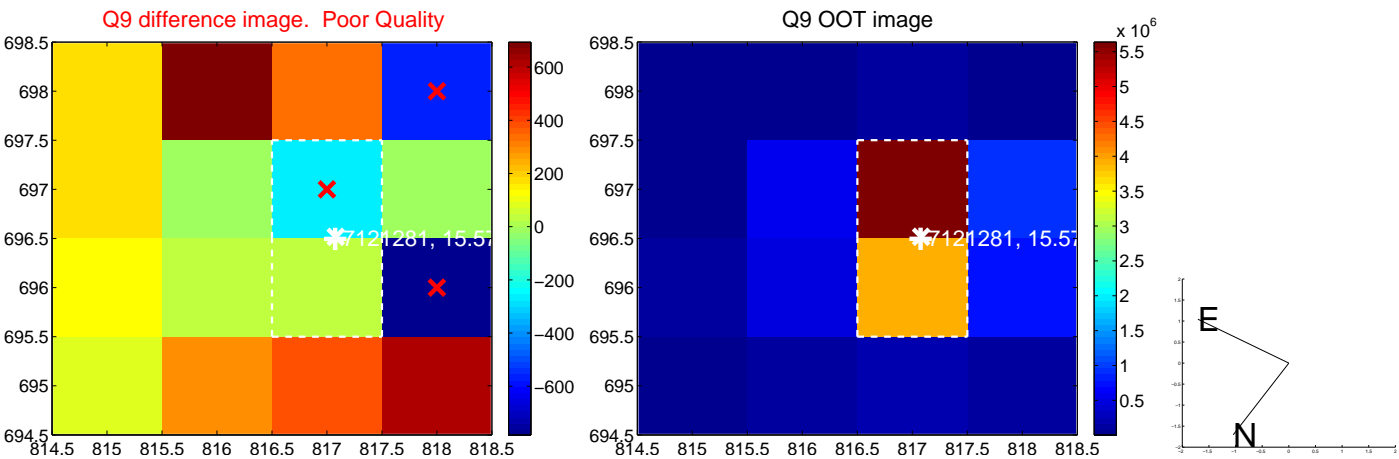
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



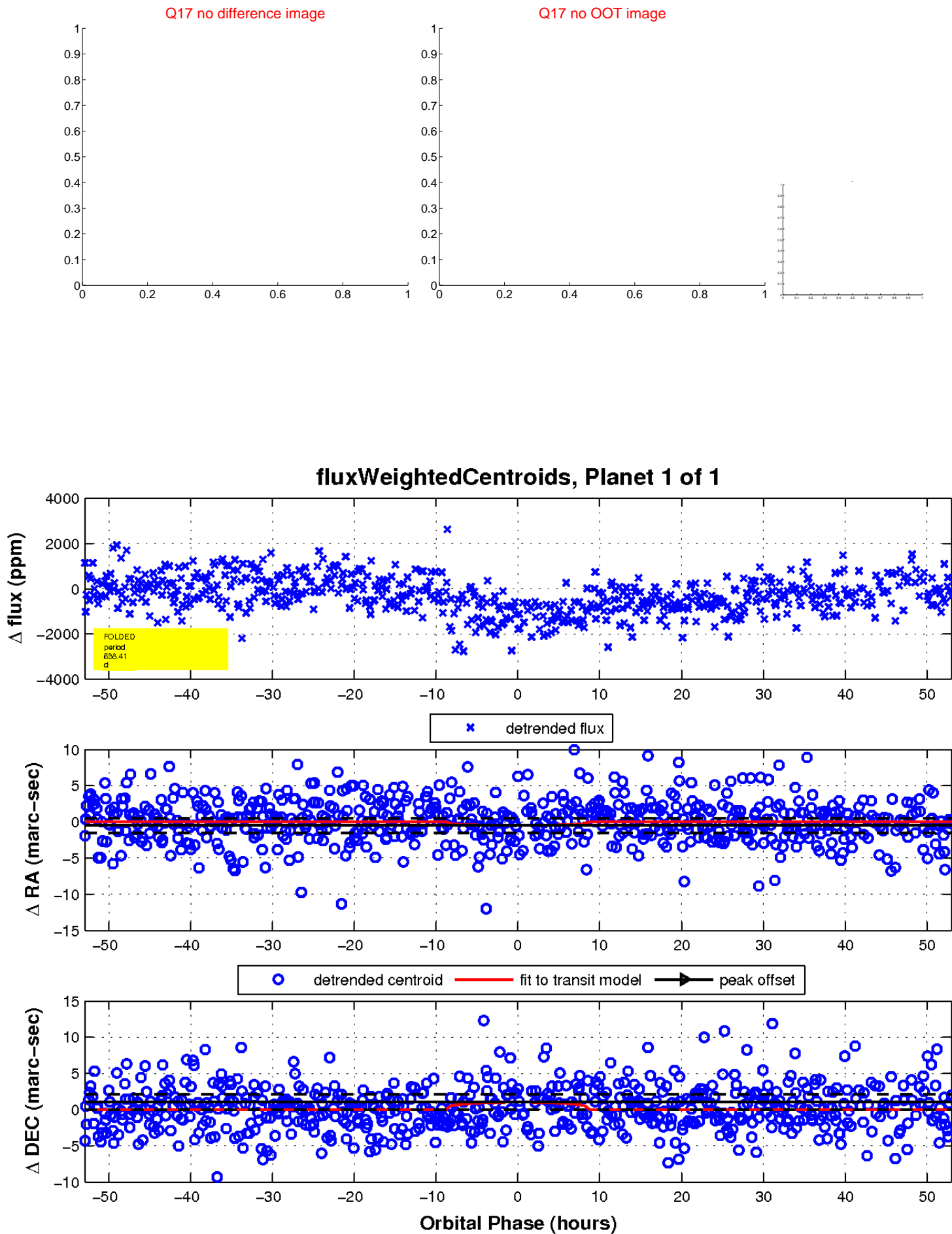
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

