

KIC 008142721

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})
008142721-01	OBS	No	639.447076	154.124189	225.1	28.955	9.1	9.9	1.01	6046	1.56	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008142721-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

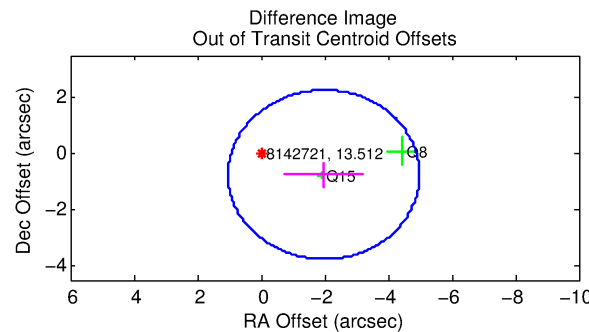
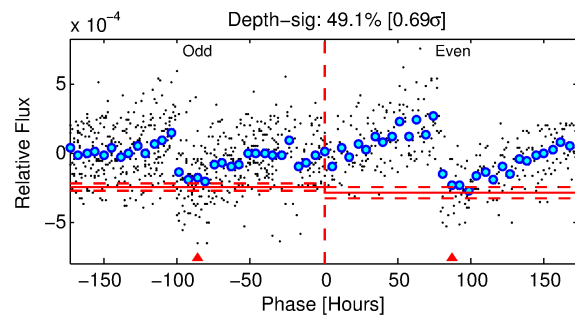
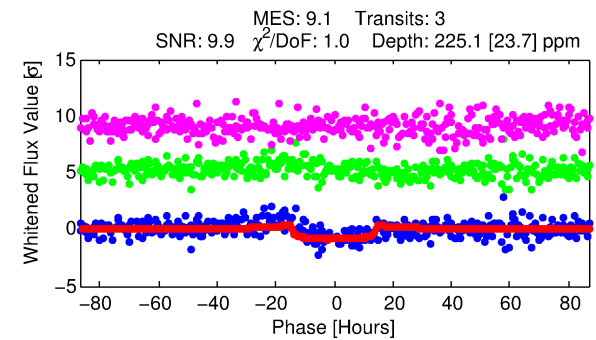
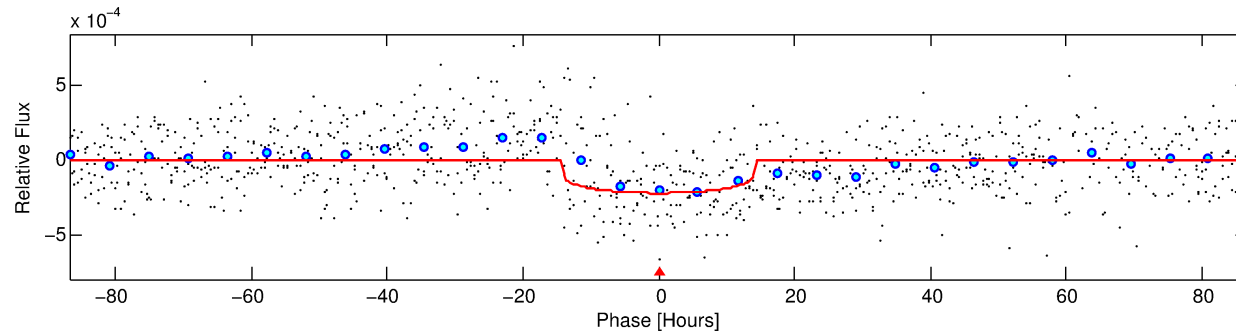
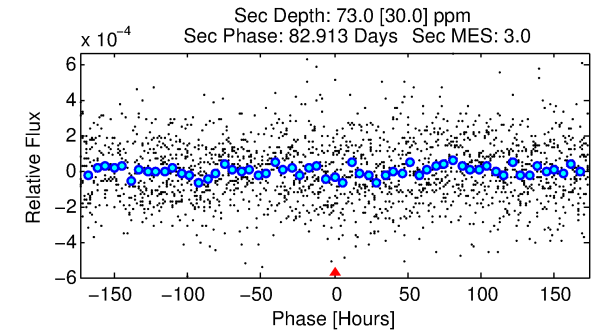
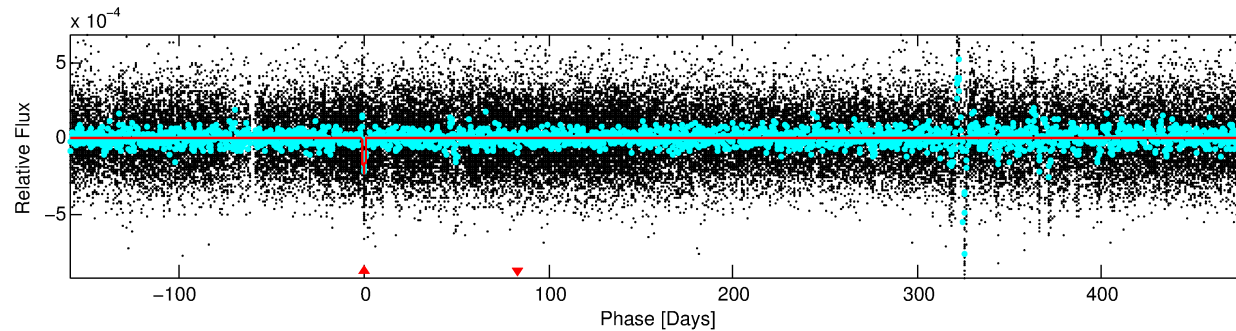
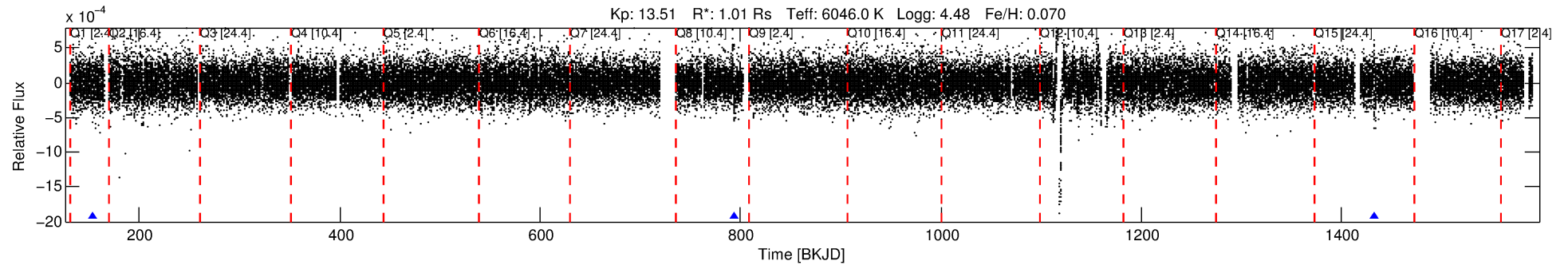
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008142721-01

No Significant Match Found

DV One-Page Summary

KIC: 8142721 Candidate: 1 of 1 Period: 639.447 d



DV Fit Results:

Period = 639.44708 [0.01989] d
Epoch = 154.1242 [0.0266] BKJD
Rp/R* = 0.0142 [0.0041]
a/R* = 145.57 [195.48]
b = 0.53 [1.81]
Seff = 0.54 [0.21]
Teq = 218 [21] K
Rp = 1.56 [0.65] Re
a = 1.5052 [0.3794] AU
Ag = 37550.34 [30047.06] [1.25σ]
Teffp = 4696 [849] K [5.27σ]

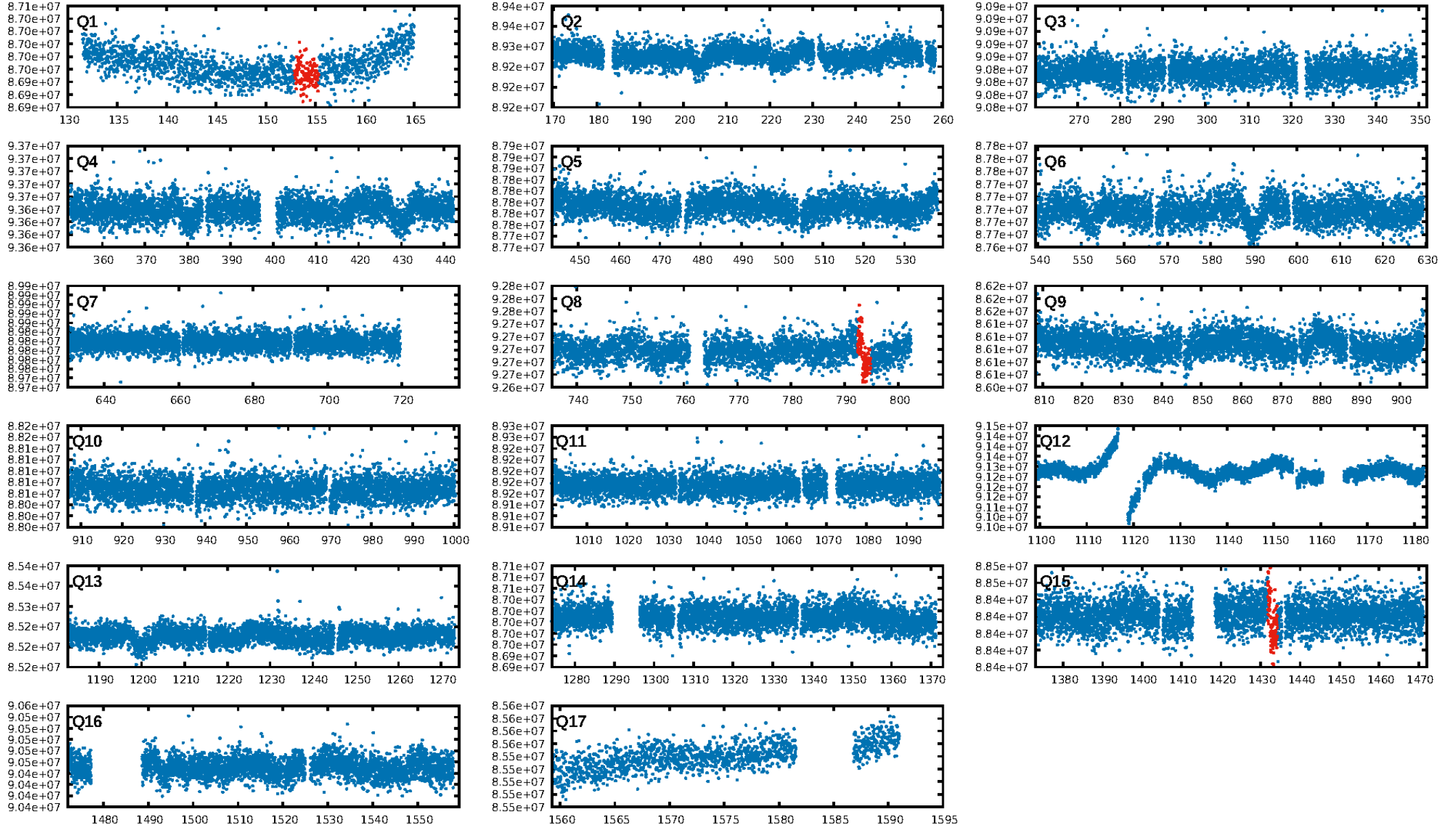
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.63e-14
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.977
Centroid-sig: 10.3%
Centroid-so: 1.571 arcsec [1.24σ]
OotOffset-rm: 2.110 arcsec [2.10σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 2.015 arcsec [4.08σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

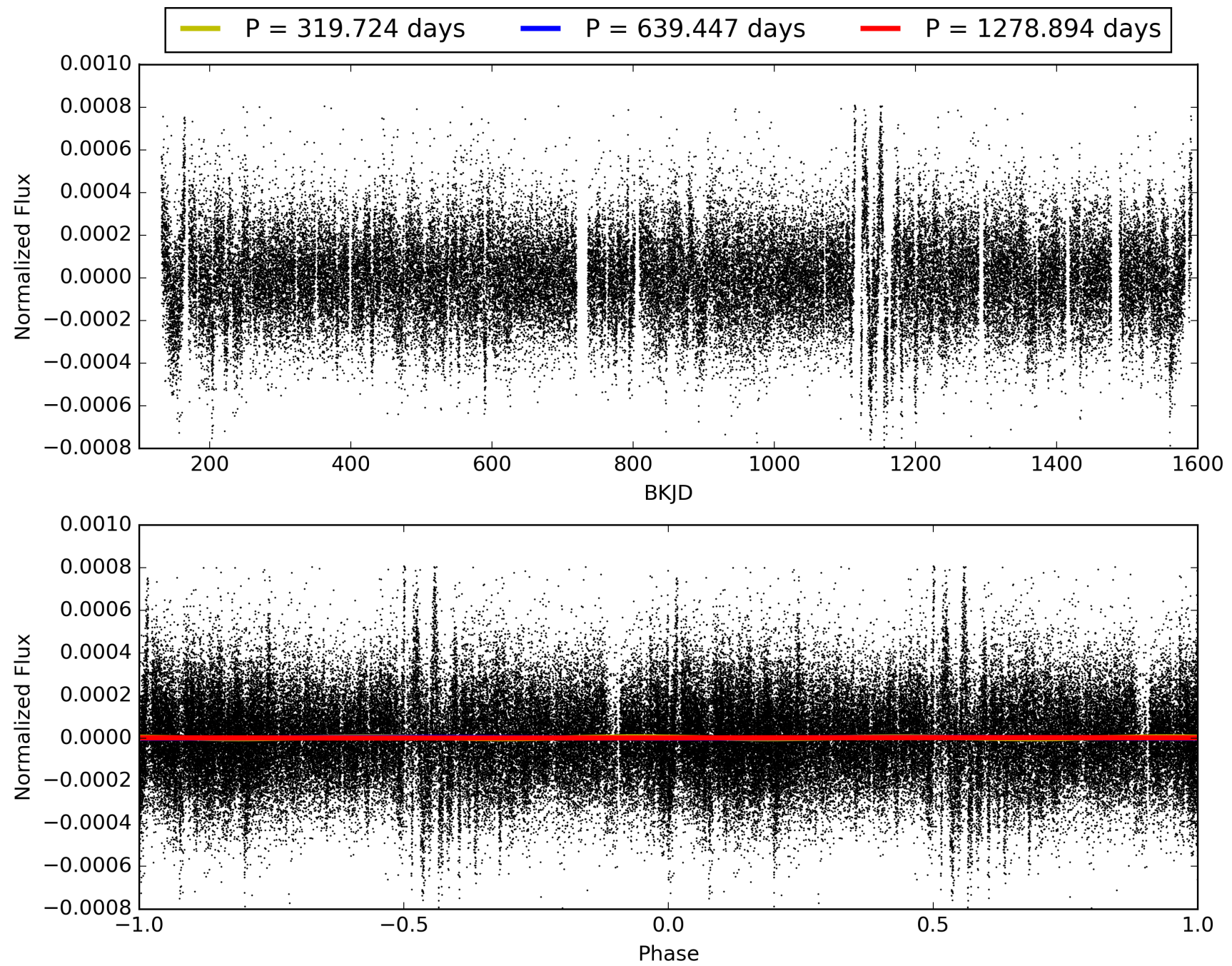
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:41:12 Z

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

TCE 008142721-01, PDC Light Curves

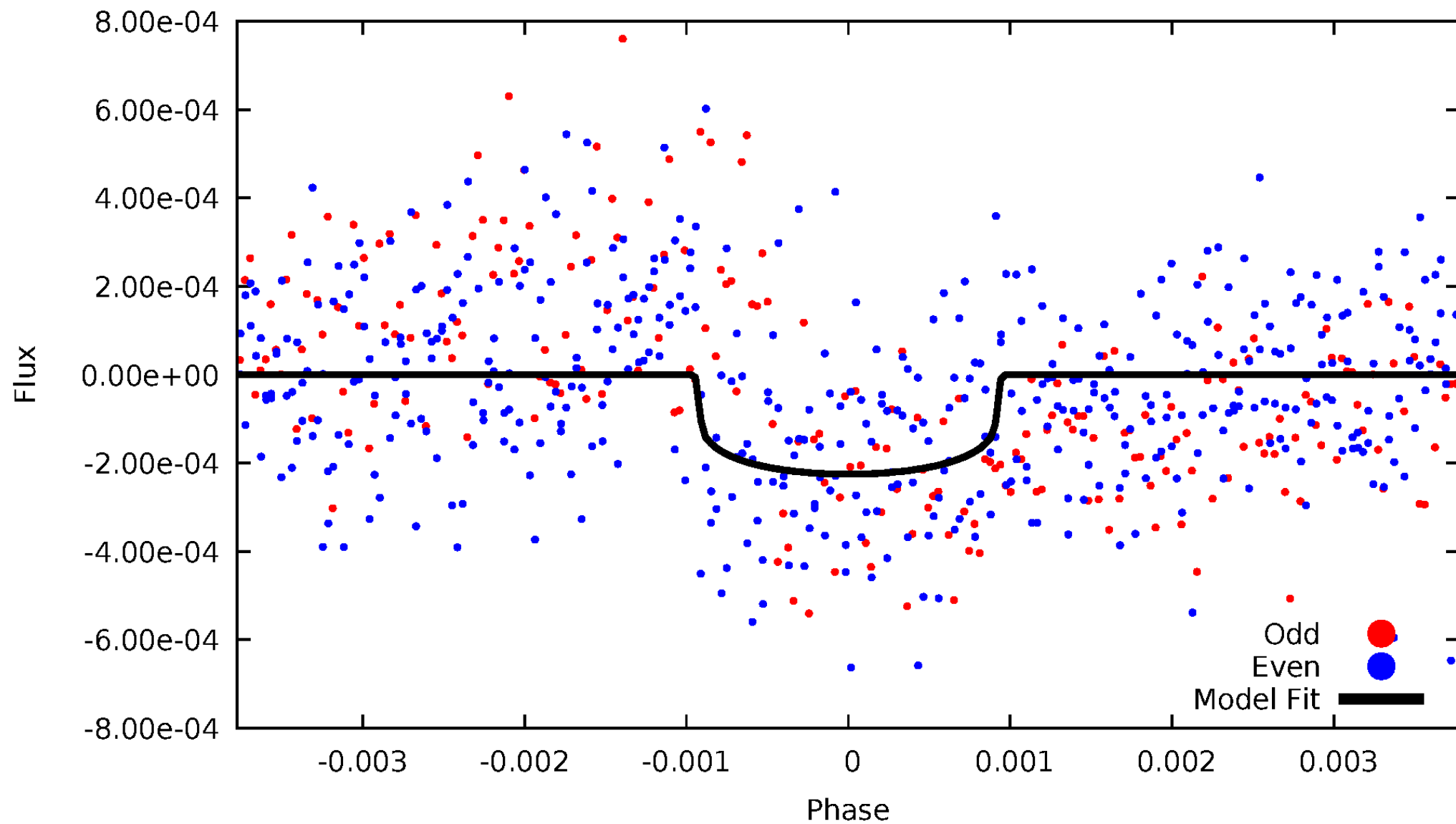


TCE 008142721-01



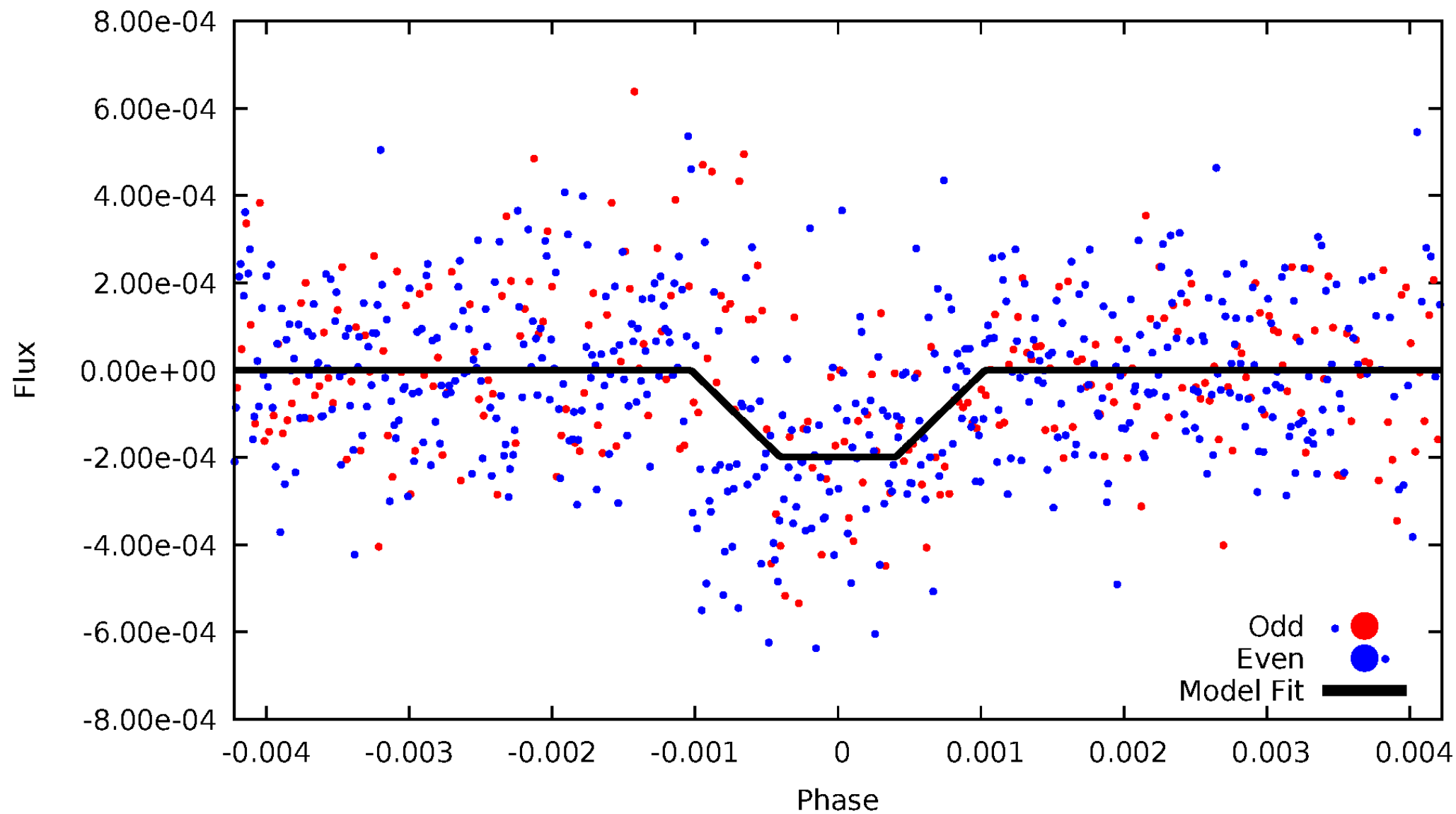
DV Odd/Even

TCE 008142721-01



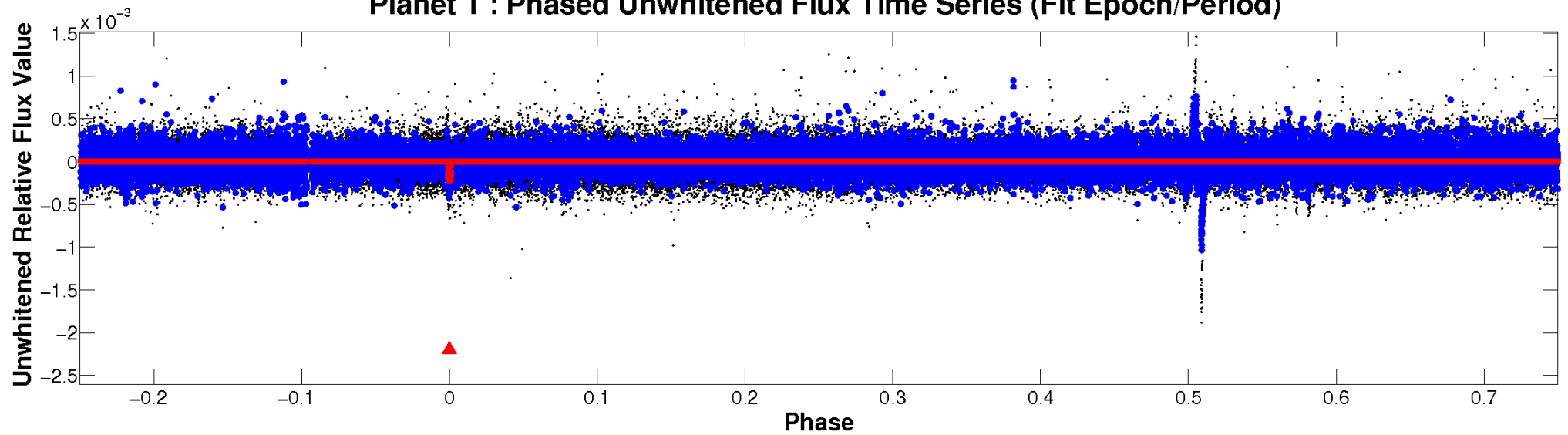
ALT Odd/Even

TCE 008142721-01

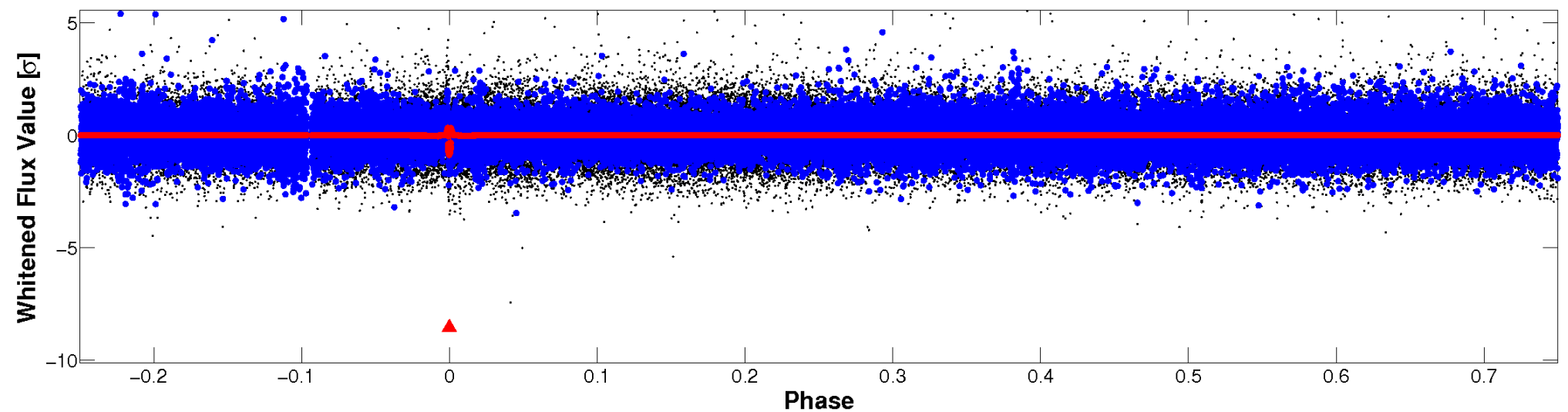


Non-Whitened Vs. Whitened Light Curve

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 008142721-01 P=639.447076 Days $T_0=154.124189$ (BKJD)



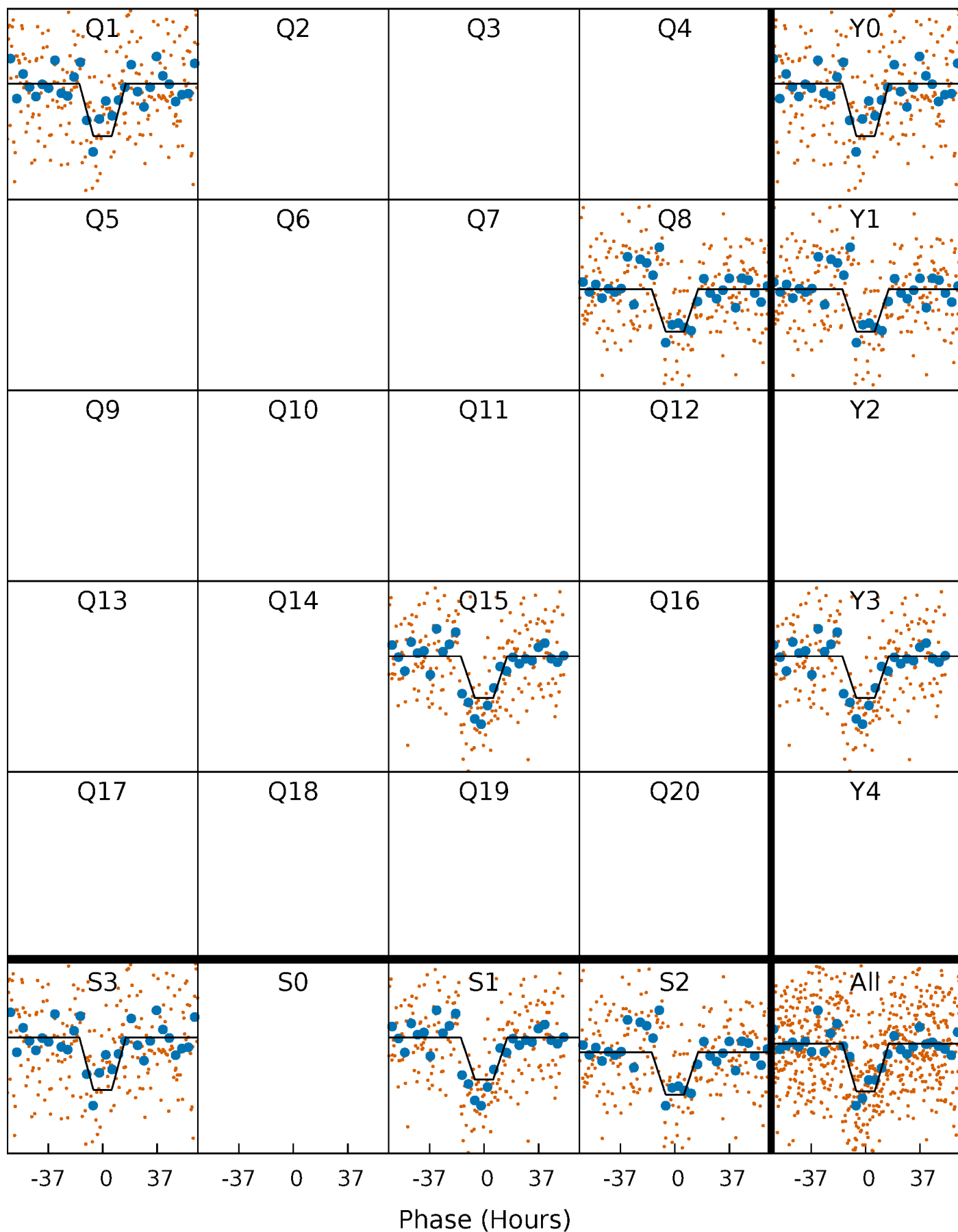
DV Quarter-Phased Transit Curves

TCE 008142721-01 P=639.447076 Days $T_0=154.124189$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

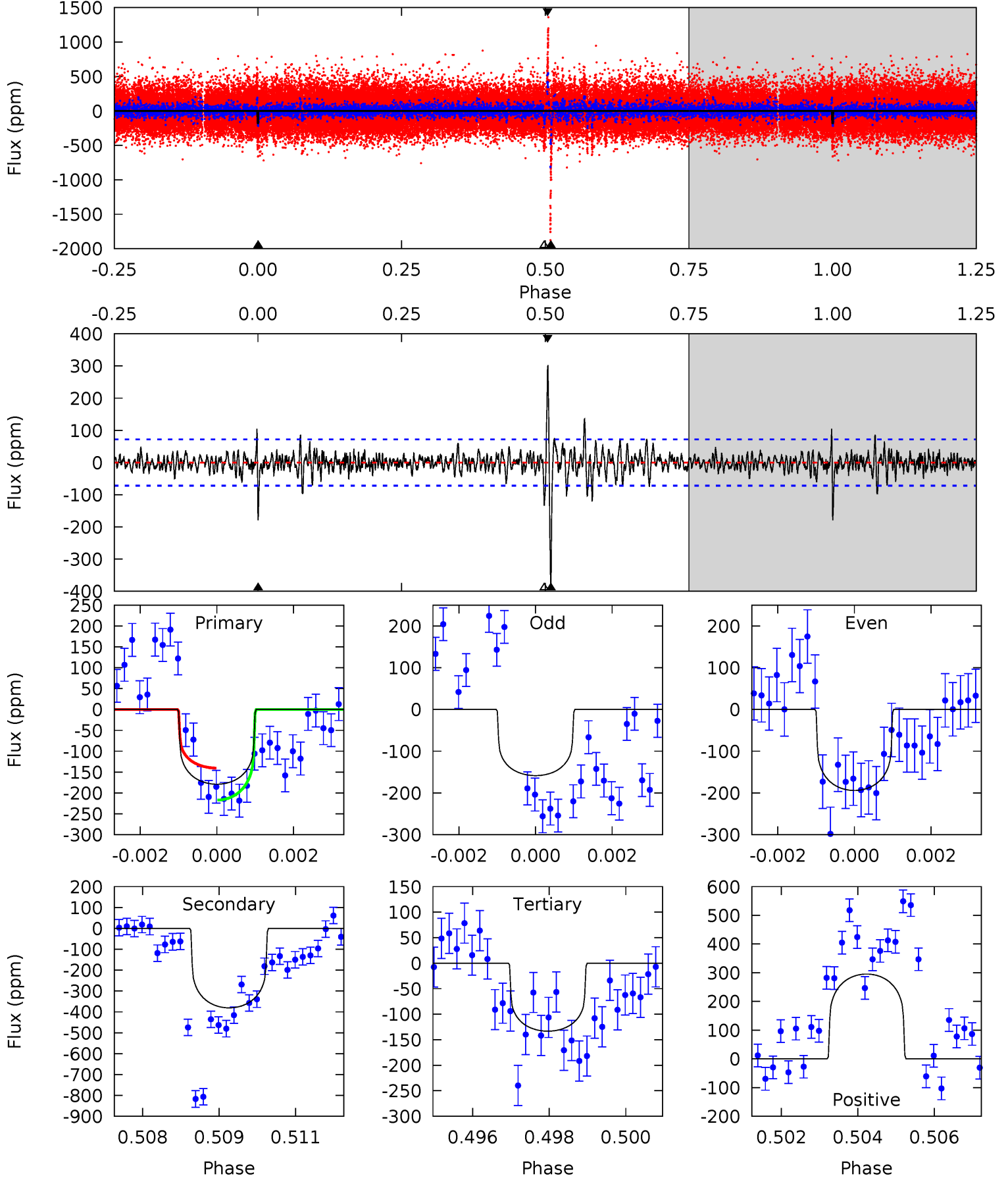
TCE 008142721-01 P=639.536372 Days $T_0=154.054994$ (BKJD)



DV Model-Shift Uniqueness Test

008142721-01, P = 639.447076 Days, E = 154.124189 Days

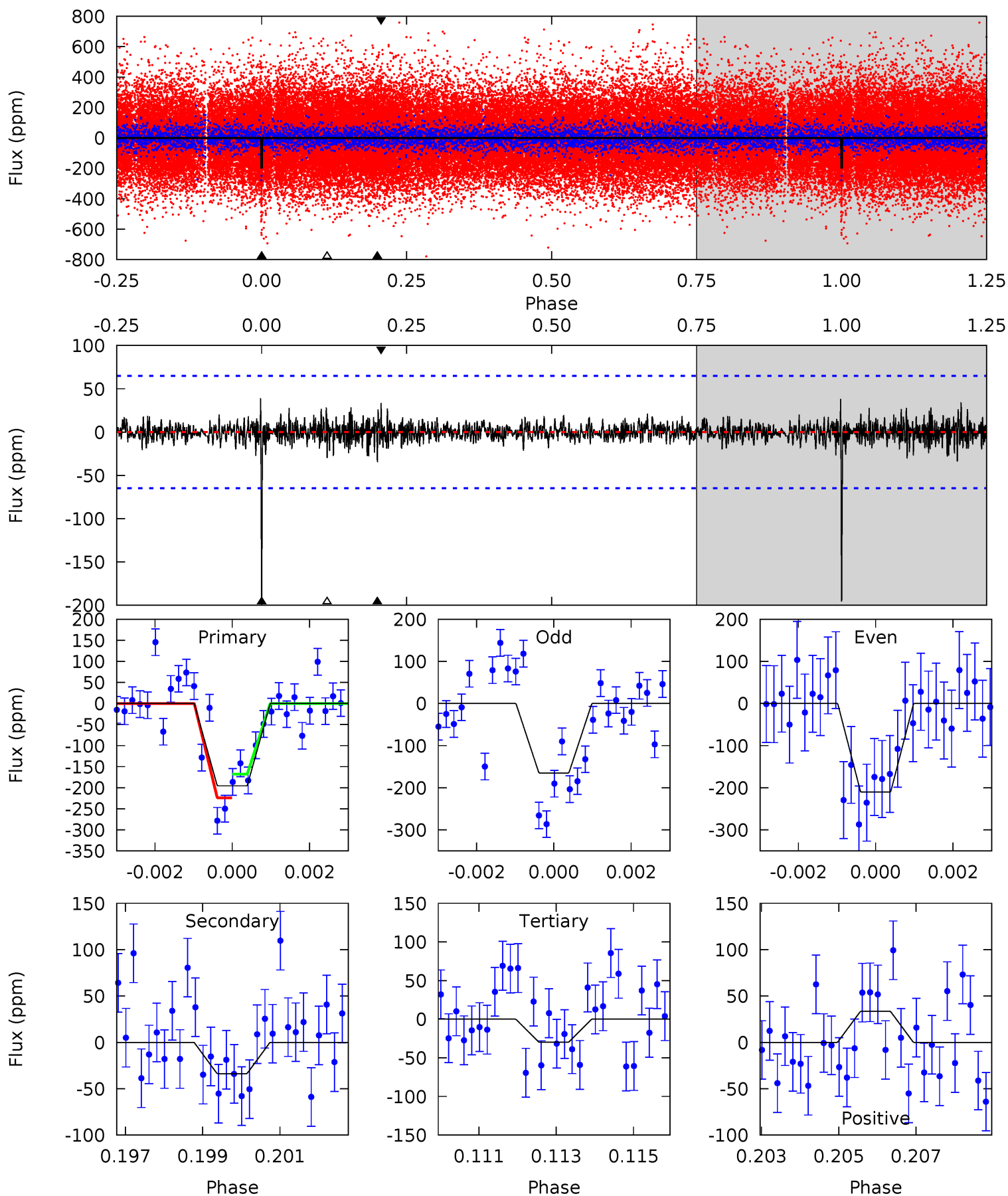
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	28.2	9.88	21.9	5.34	3.11	2.09	3.40	-8.63	18.4	6.33	1.25	1.13	0.44	2.84



Alt Model-Shift Uniqueness Test

008142721-01, P = 639.536372 Days, E = 154.054994 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	2.77	2.44	2.74	5.32	3.08	0.63	13.6	13.3	0.33	0.02	1.75	1.18	0.16	2.30



Stellar Parameters For KIC 008142721

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+163}_{-199}	$4.478^{+0.050}_{-0.200}$	$0.070^{+0.250}_{-0.300}$	$1.007^{+0.302}_{-0.101}$	$1.111^{+0.120}_{-0.147}$	$1.532^{+0.317}_{-0.773}$
	+3%/-3%	+1%/-4%	+357%/-429%	+30%/-10%	+11%/-13%	+21%/-50%
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 008142721-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-381 ± 13	$1.61^{+0.50}_{-0.49}$	311^{+19}_{-14}	7129^{+1877}_{-922}	$178425^{+190302}_{-74086}$
Alt.	-34 ± 12	$1.59^{+0.56}_{-0.43}$	312^{+21}_{-16}	4148^{+615}_{-464}	15229^{+16468}_{-7936}

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

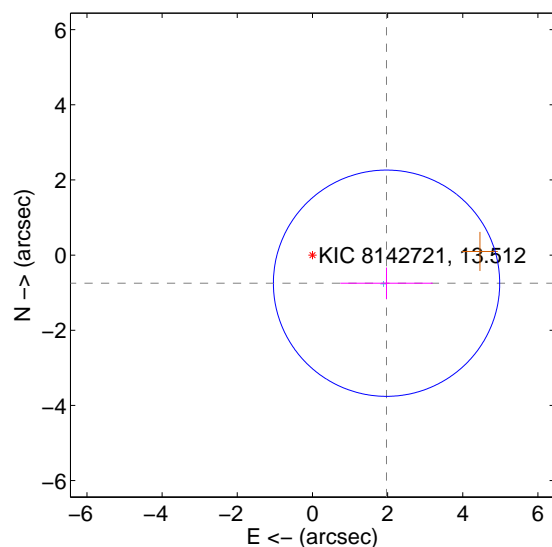
Supplemental centroid analysis for 008142721-01. Kepler magnitude: 13.51. Transit SNR 9.92

There are 1 quarters with good PRF difference image offsets

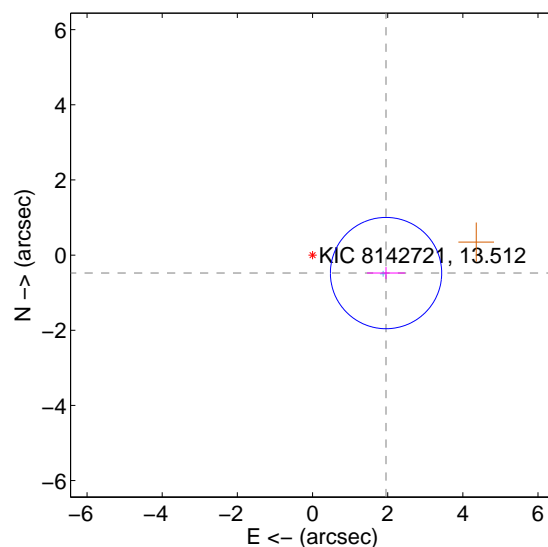
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.110 ± 1.004	2.10	-1.972 ± 1.230	-0.748 ± 0.419
PRF-fit source offset from KIC position	2.015 ± 0.494	4.08	-1.957 ± 0.507	-0.479 ± 0.159
photometric centroid source offset	1.57 ± 1.27	1.24	-0.32 ± 1.26	1.54 ± 1.27

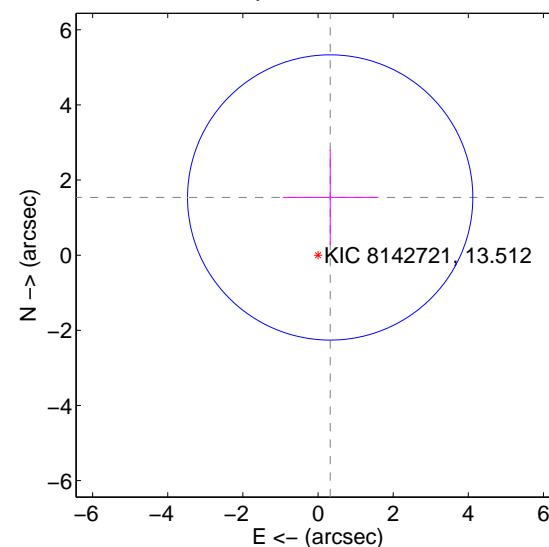
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

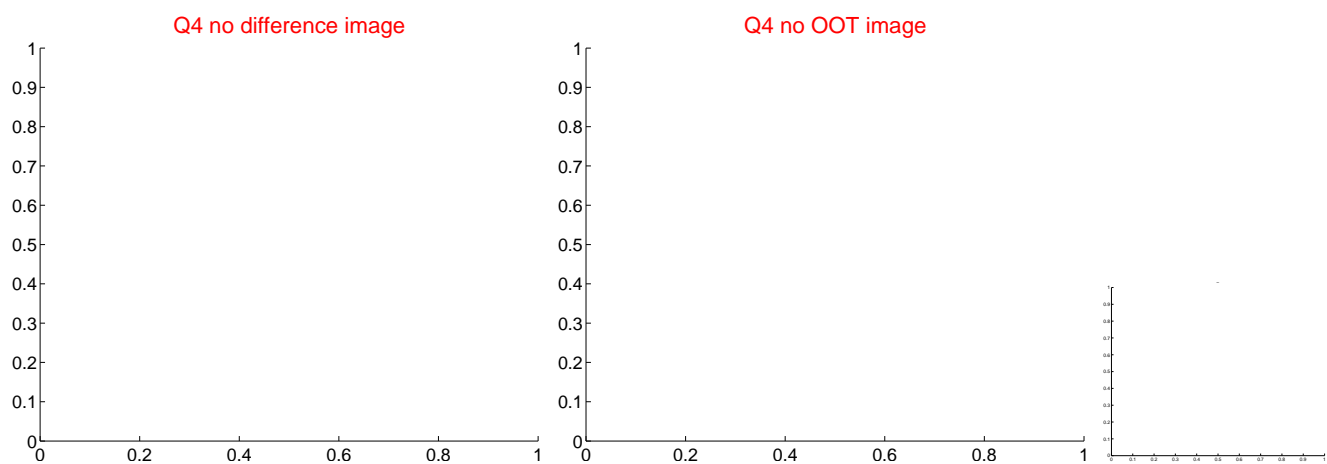
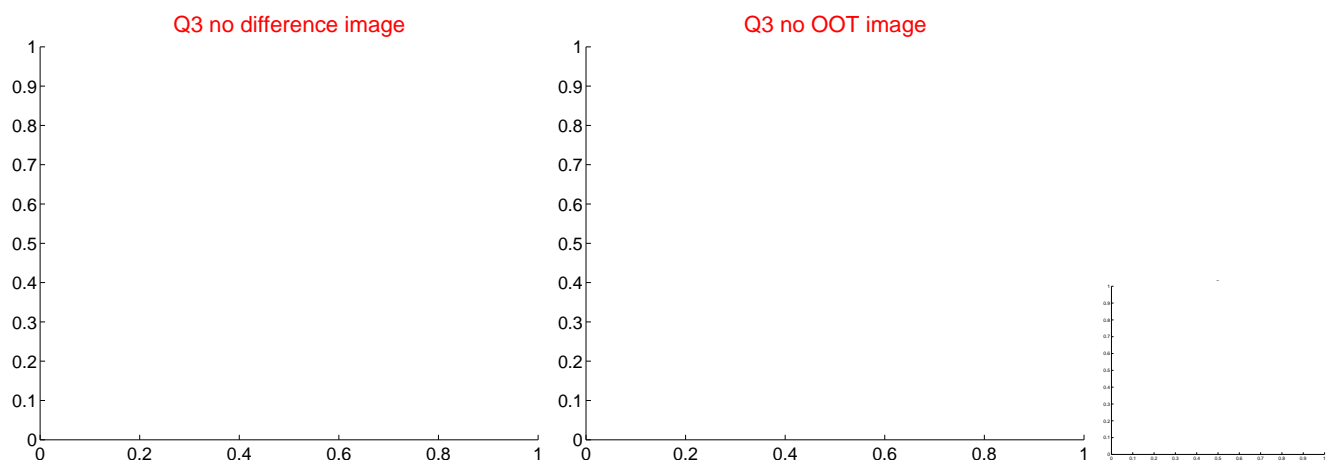
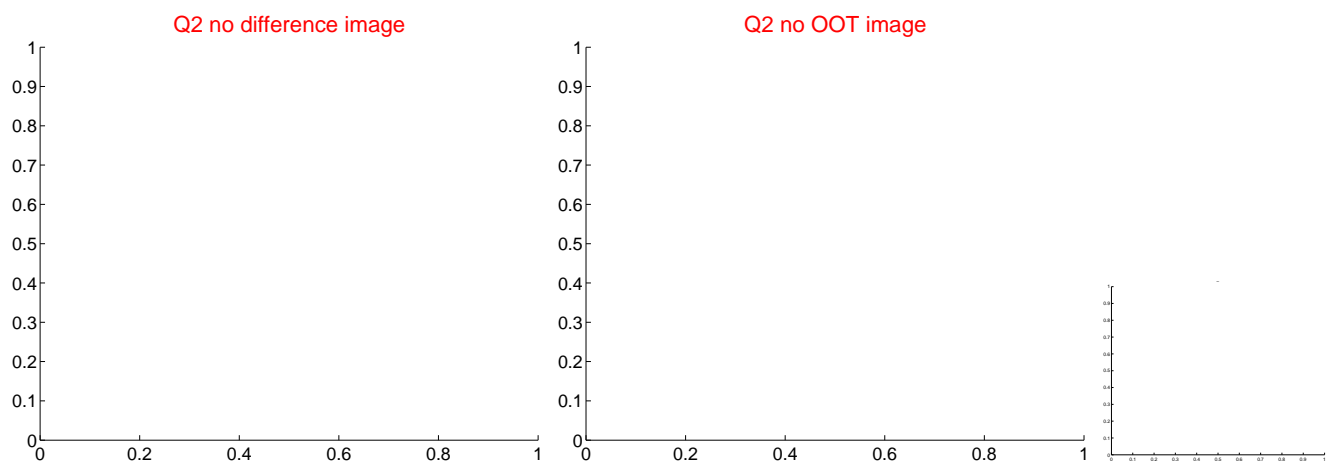
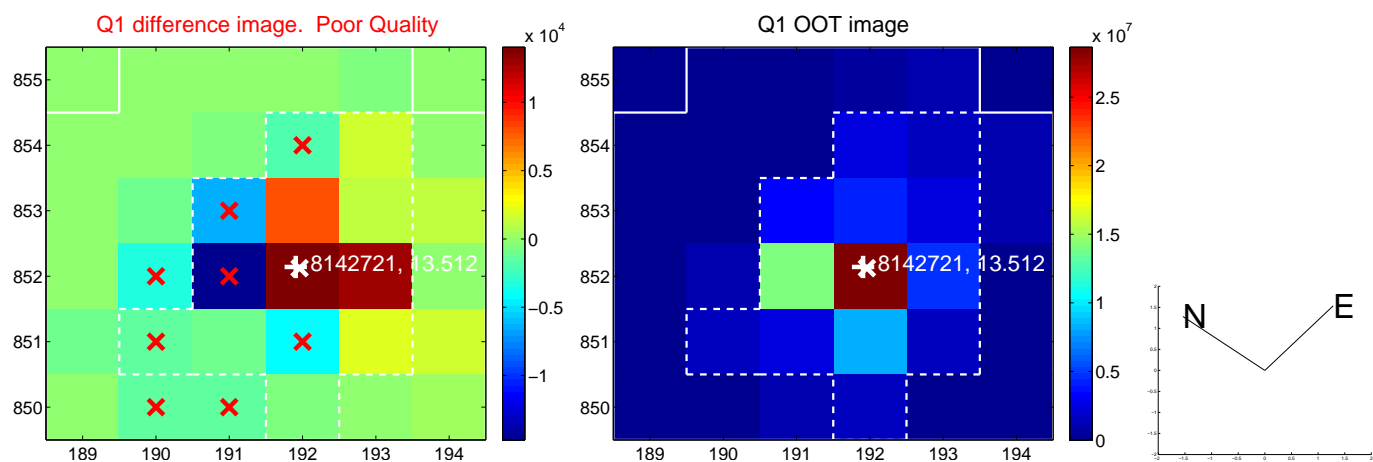


offset from photometric centroids

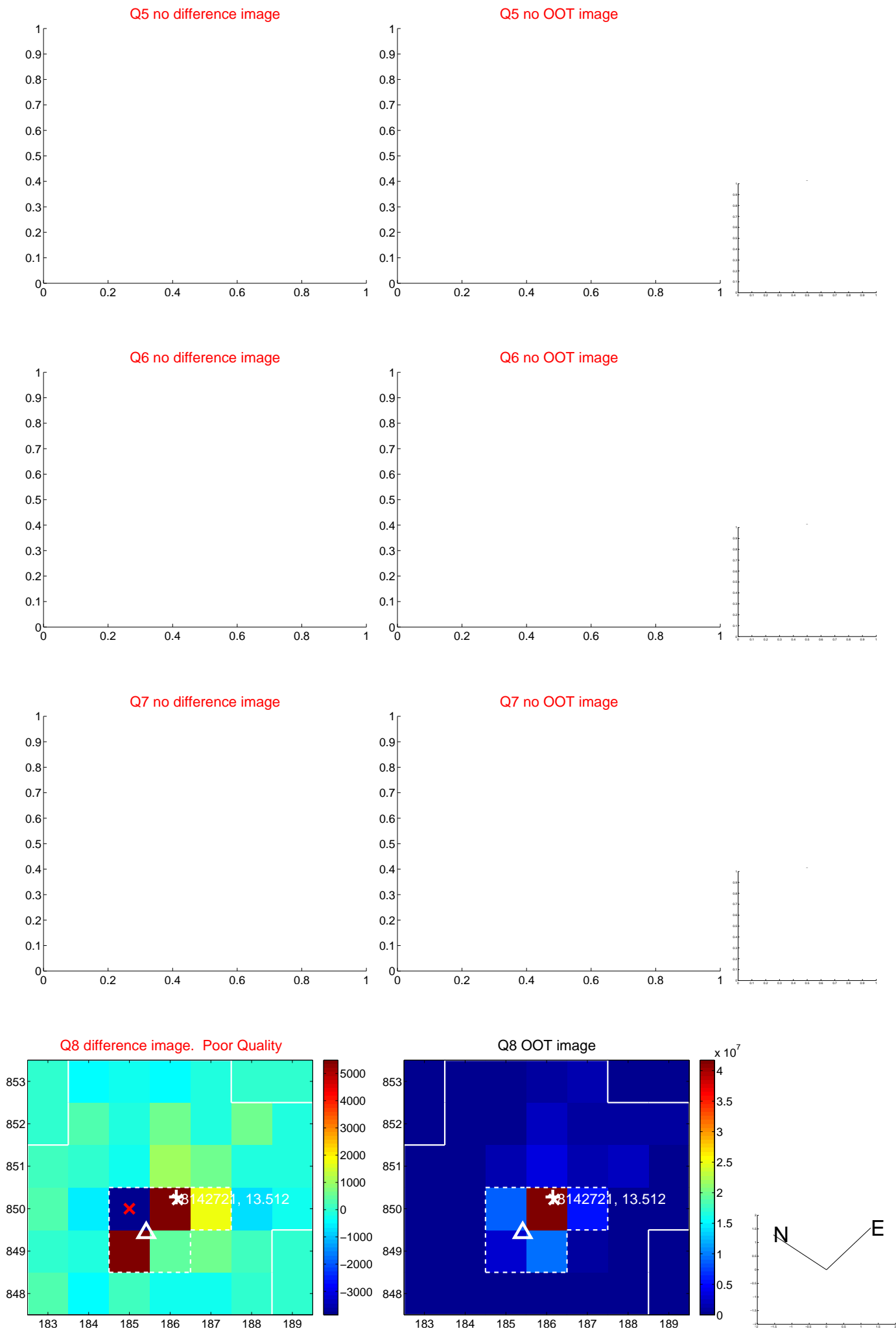


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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



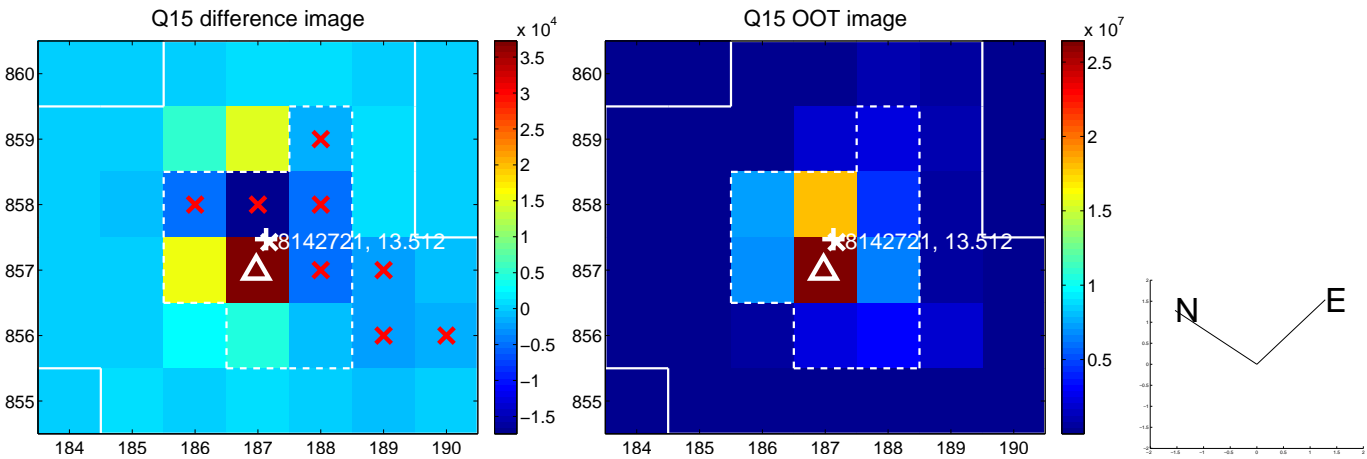
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



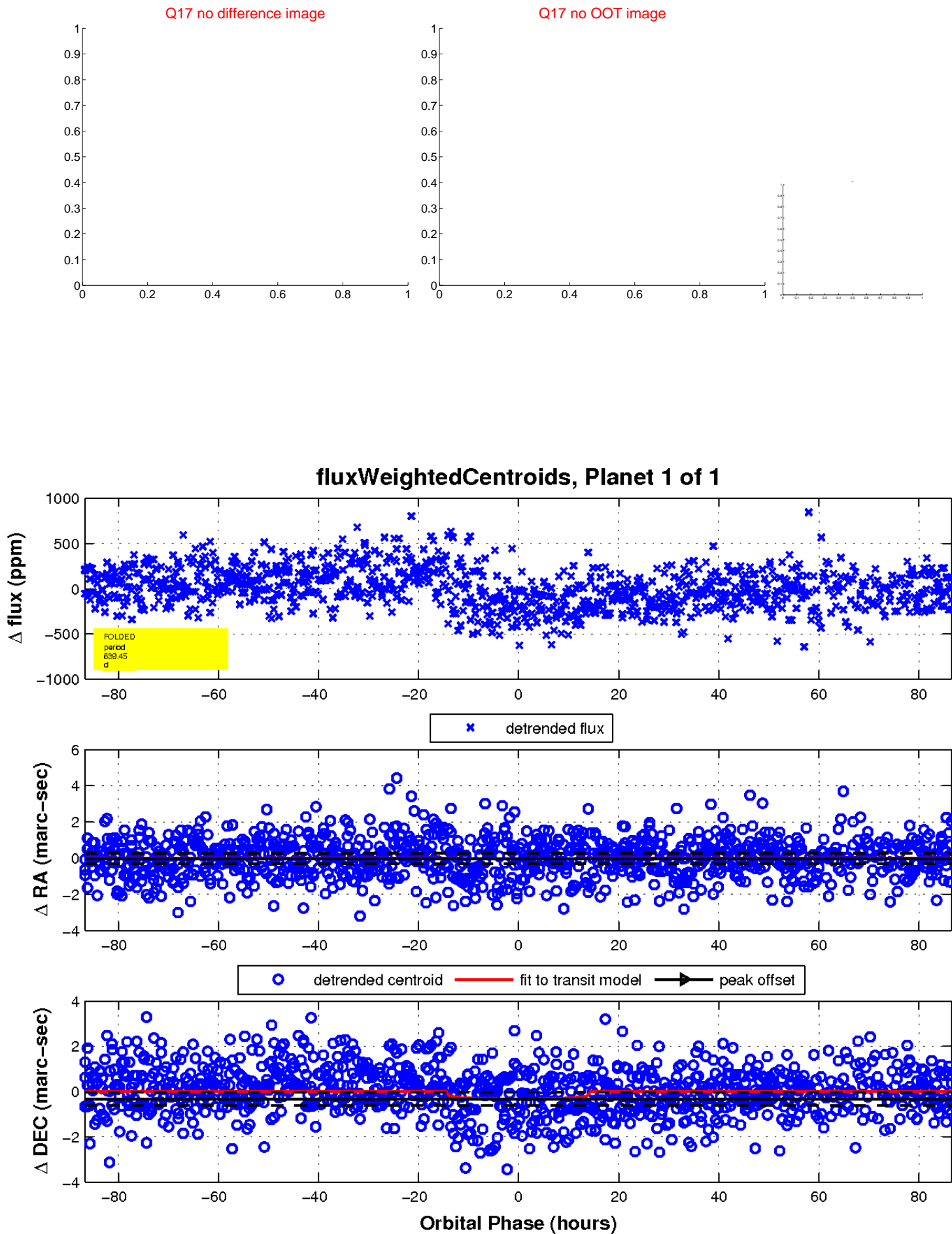
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

