

KIC 012053419

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})
012053419-01	OBS	No	588.636658	253.122585	137.9	11.889	7.2	6.8	1.47	6397	1.91	1.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012053419-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

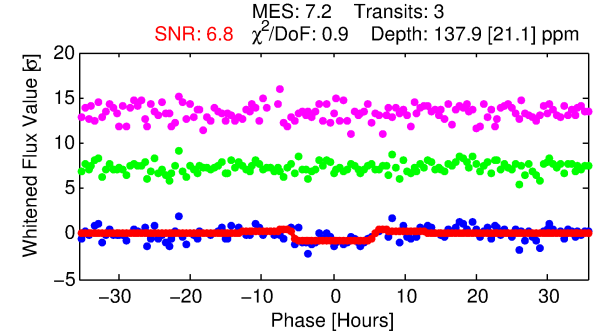
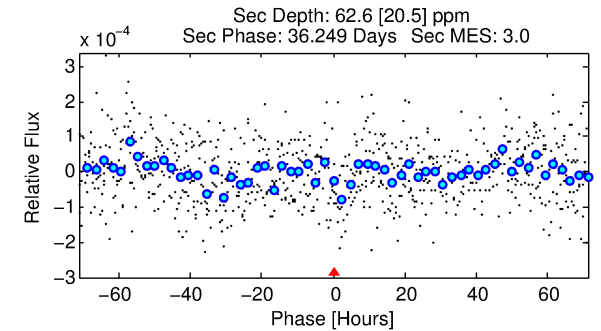
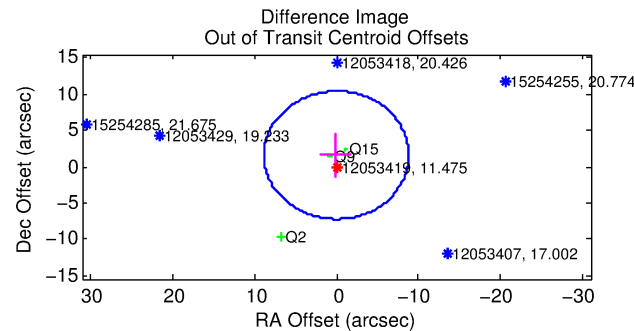
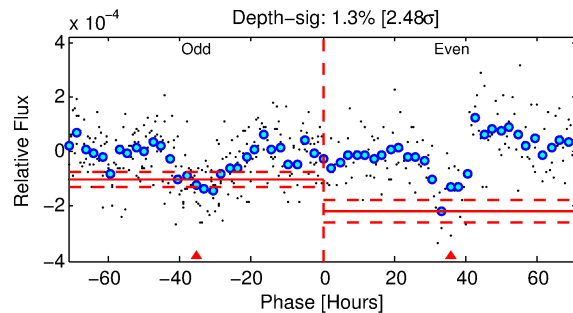
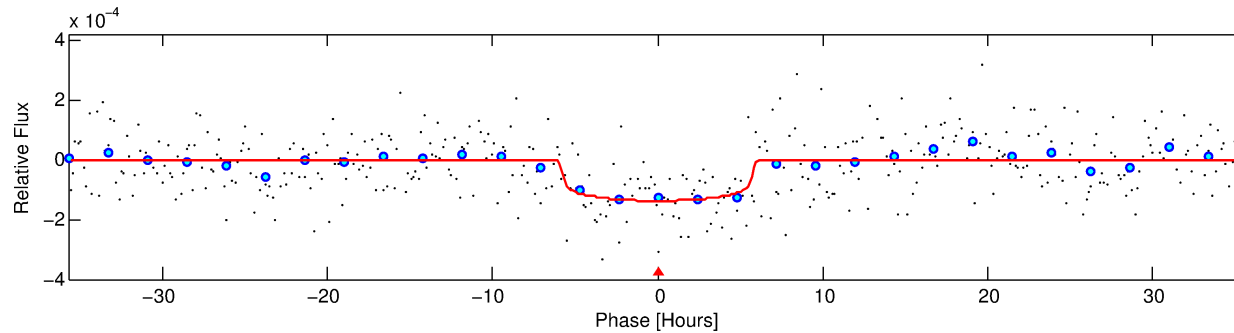
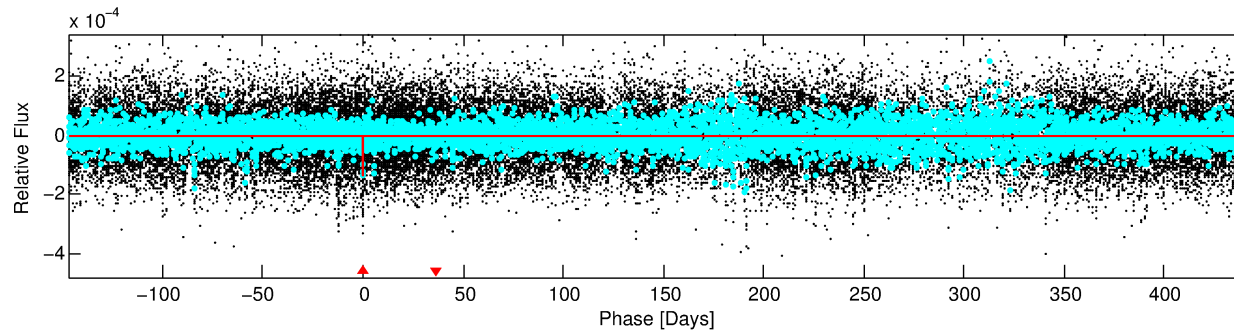
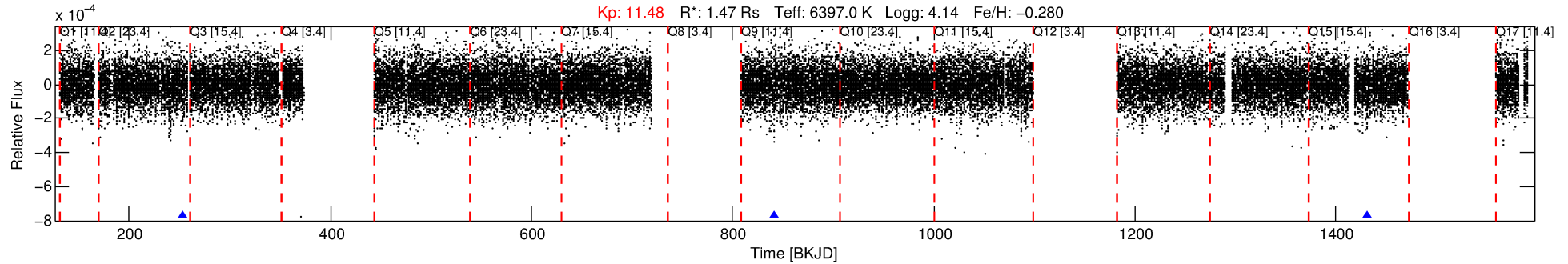
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012053419-01

No Significant Match Found

DV One-Page Summary

KIC: 12053419 Candidate: 1 of 1 Period: 588.637 d



DV Fit Results:

Period = 588.63666 [0.01117] d
Epoch = 253.1226 [0.0146] BKJD
Rp/R* = 0.0119 [0.0034]
a/R* = 234.19 [341.80]
b = 0.80 [0.66]
Seff = 1.62 [0.72]
Teq = 288 [32] K
Rp = 1.91 [0.75] Re
a = 1.4175 [0.3718] AU
Ag = 18994.22 [14748.37] [1.29 σ]
Teffp = 5220 [873] K [5.65 σ]

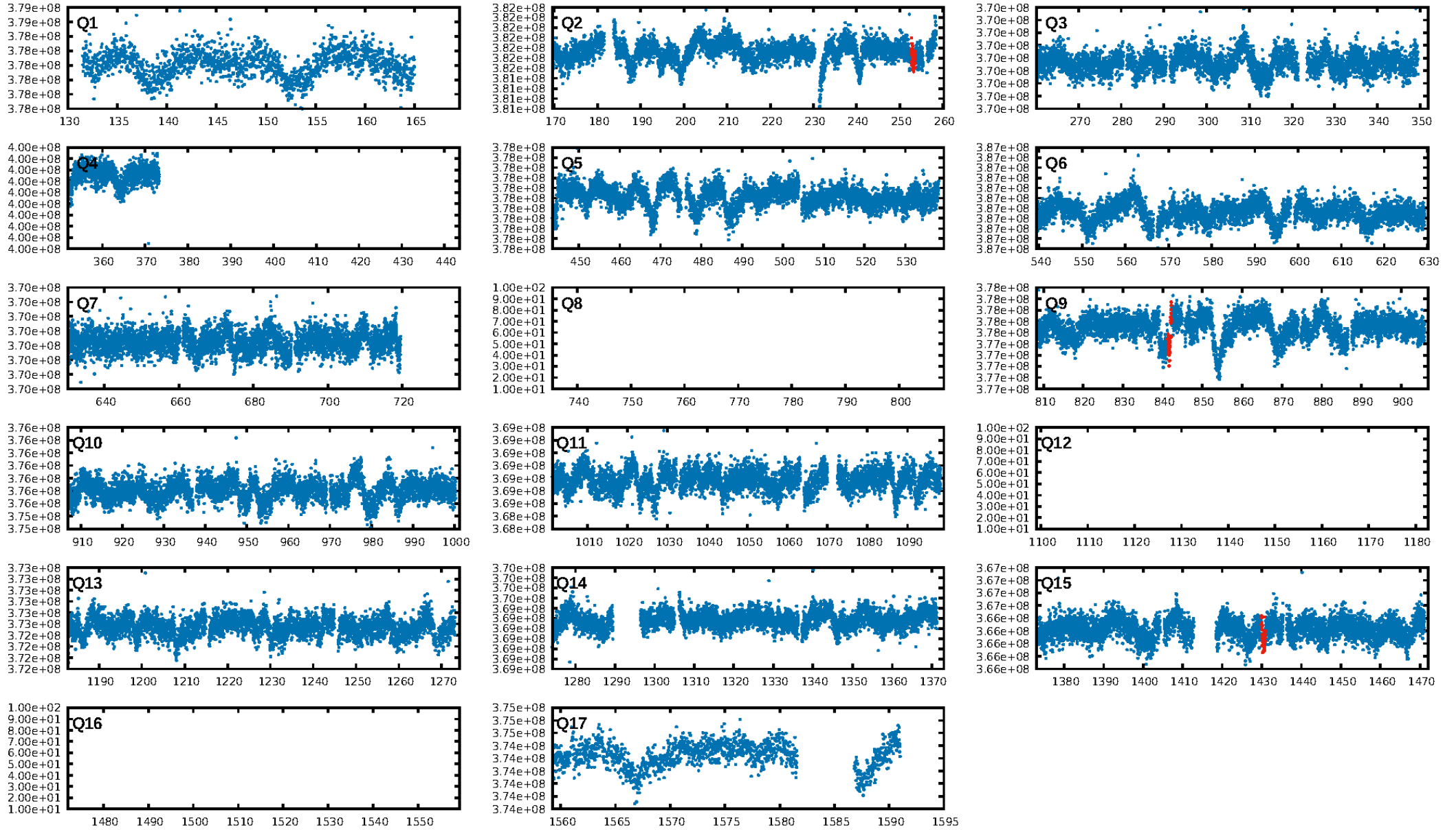
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 17.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.86e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.335
Centroid-sig: 76.4%
Centroid-so: 0.978 arcsec [0.66 σ]
OotOffset-rm: 1.586 arcsec [0.54 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 1.657 arcsec [0.50 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

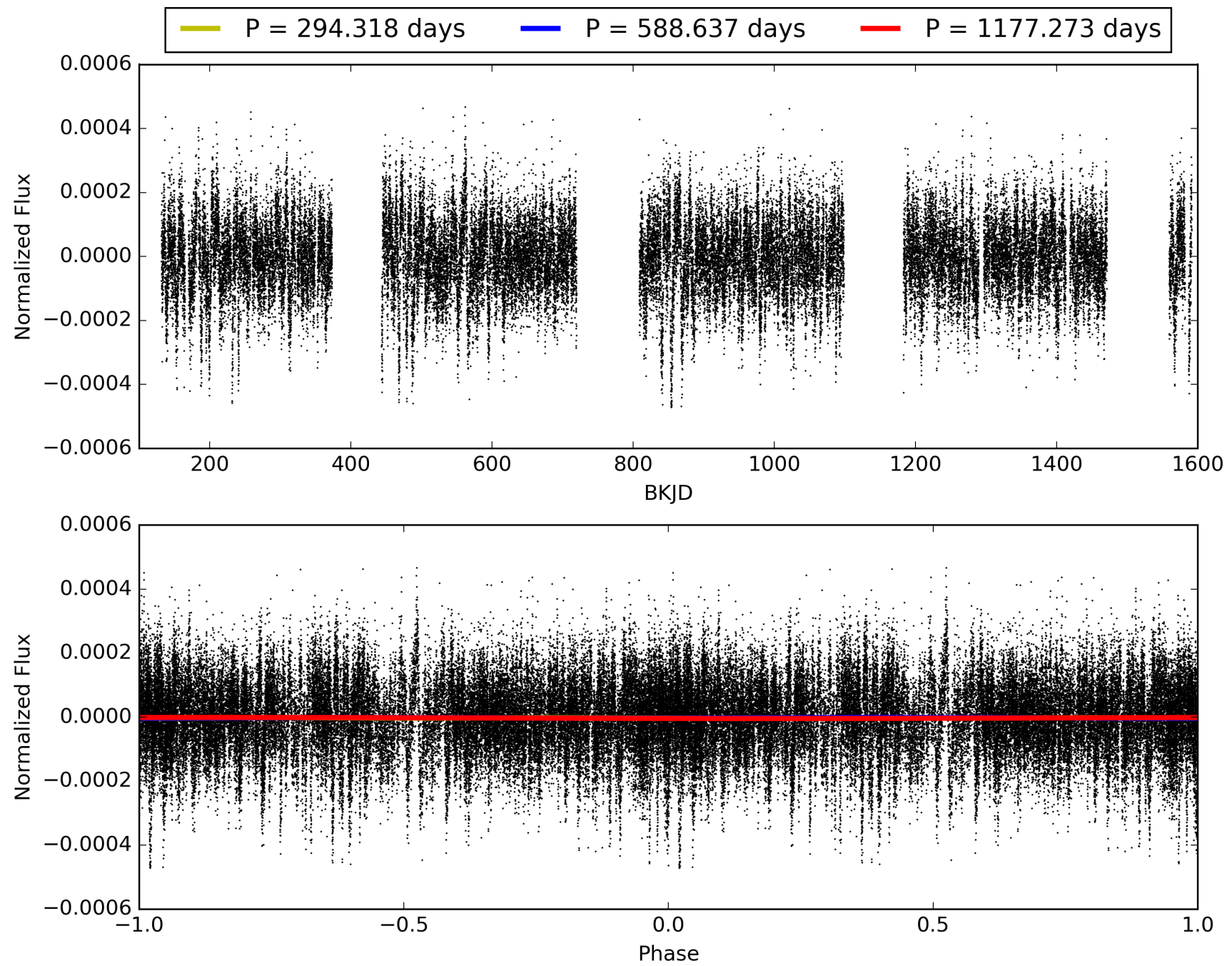
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:08:04 Z

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

TCE 012053419-01, PDC Light Curves

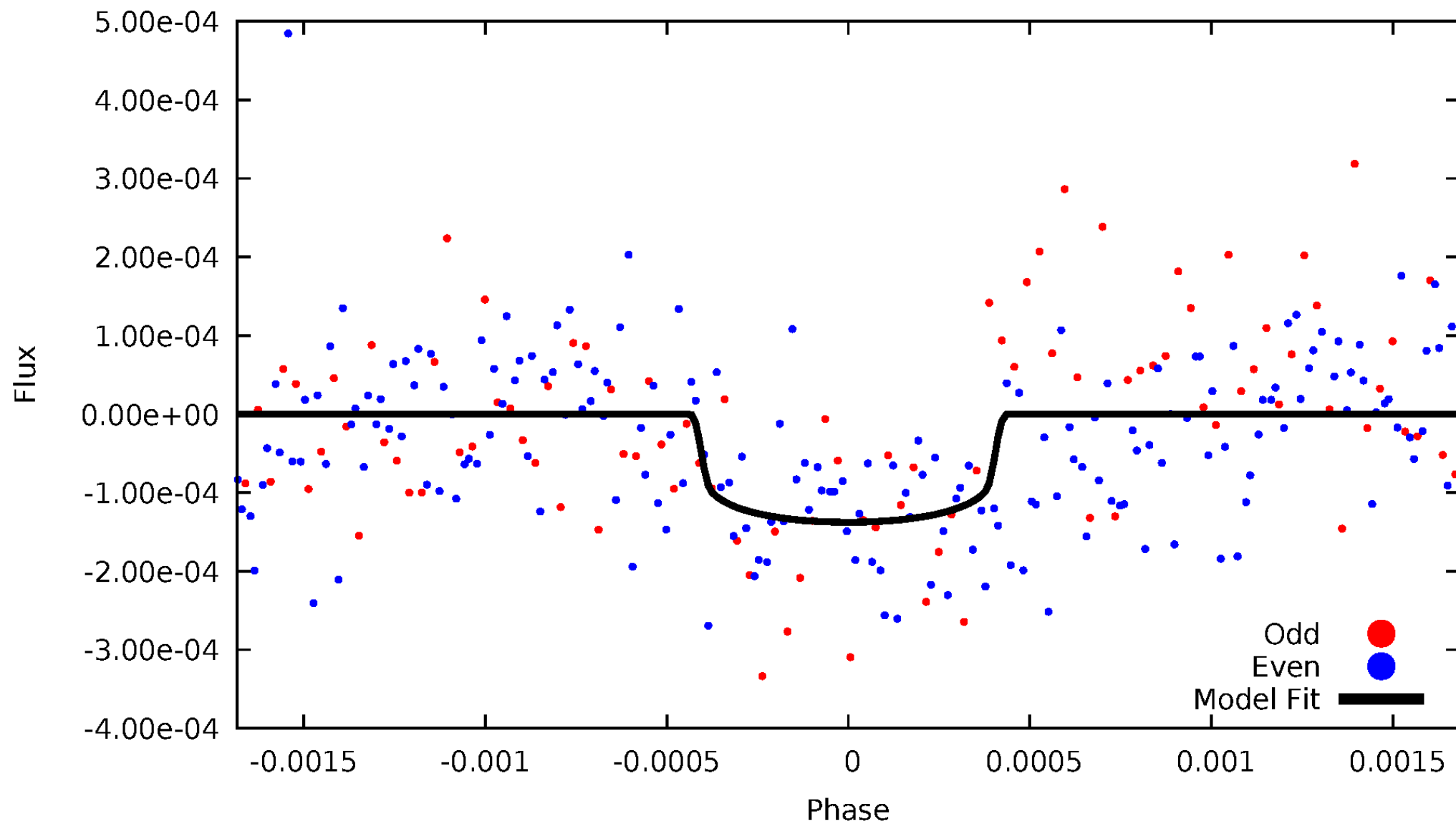


TCE 012053419-01



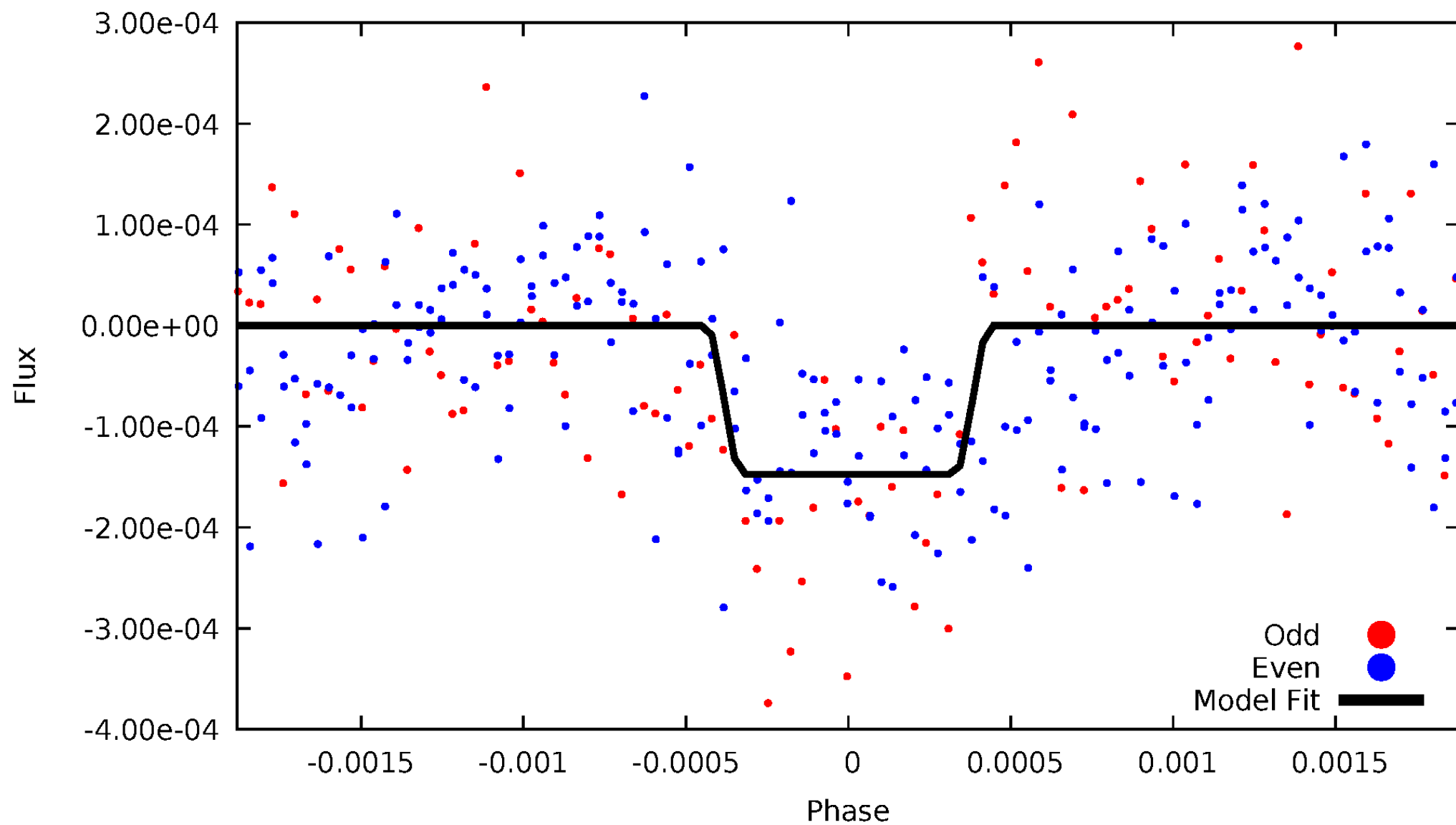
DV Odd/Even

TCE 012053419-01



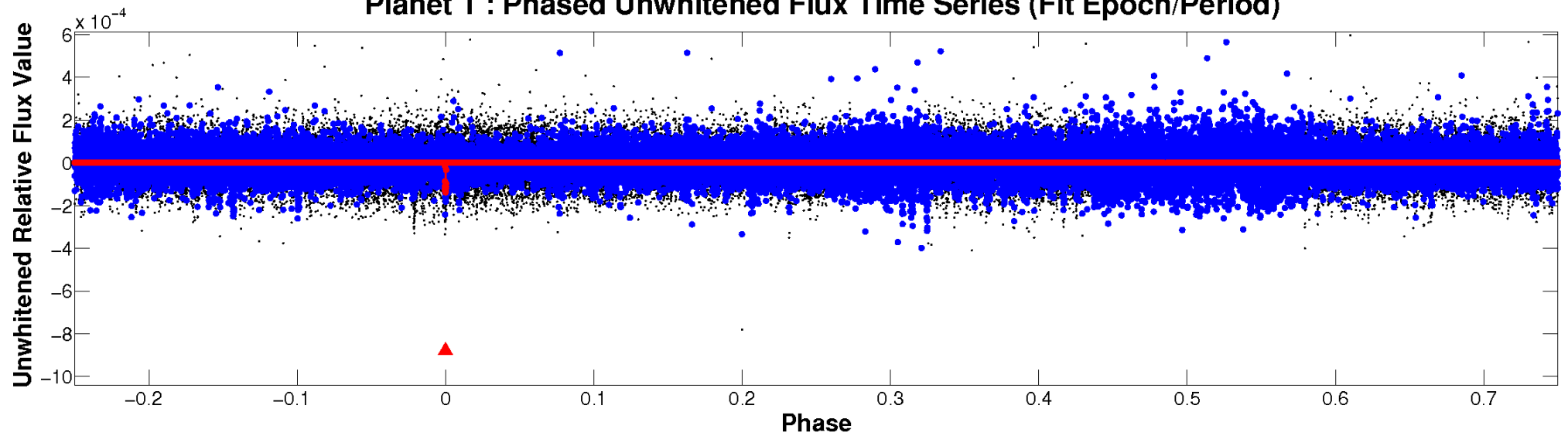
ALT Odd/Even

TCE 012053419-01

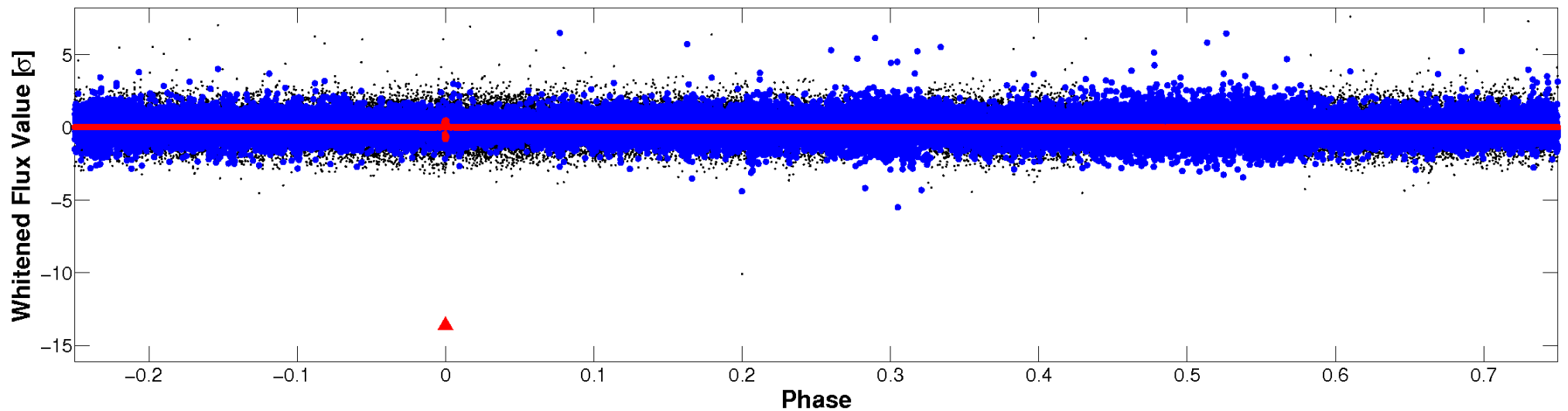


Non-Whitened Vs. Whitened Light Curve

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

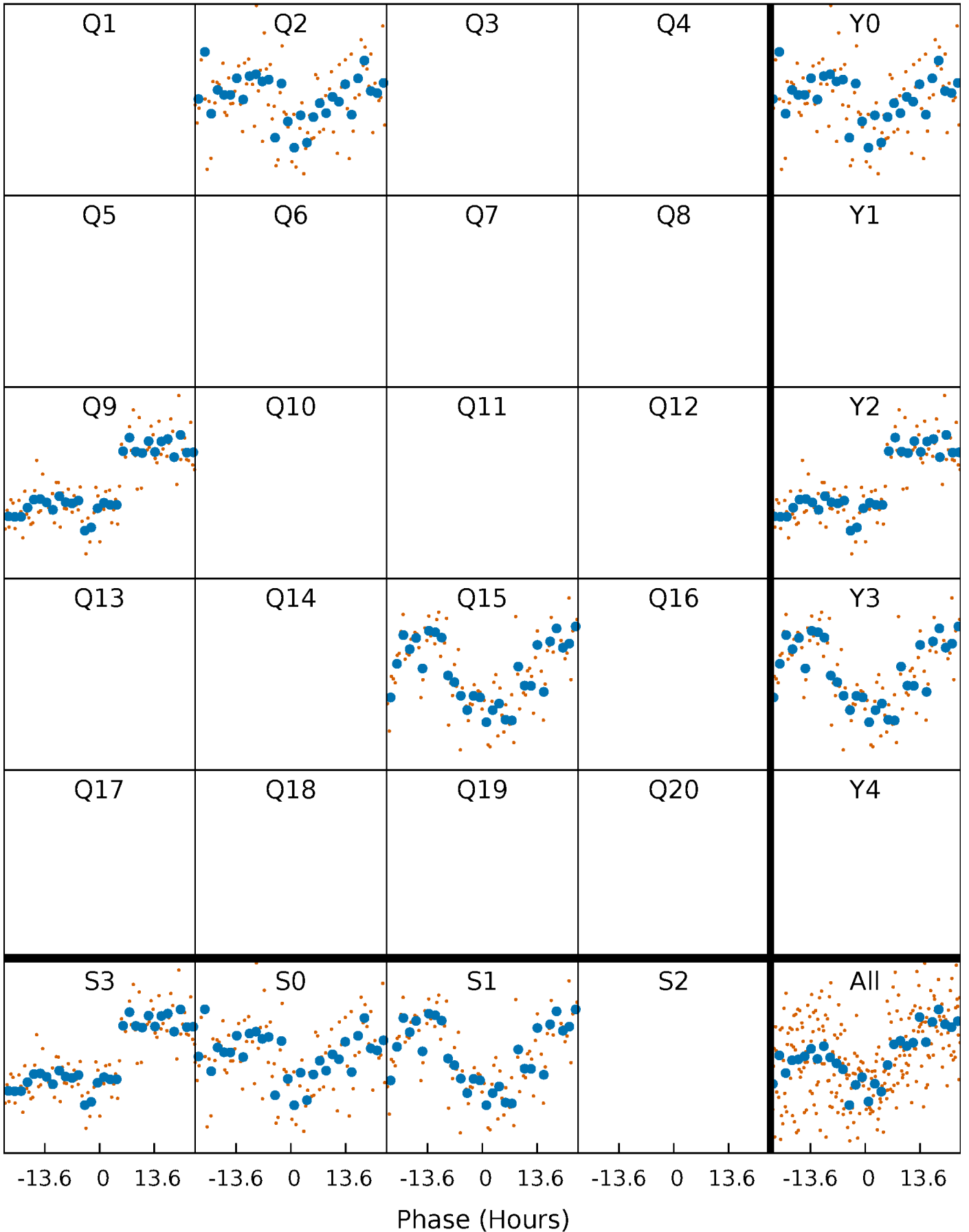


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



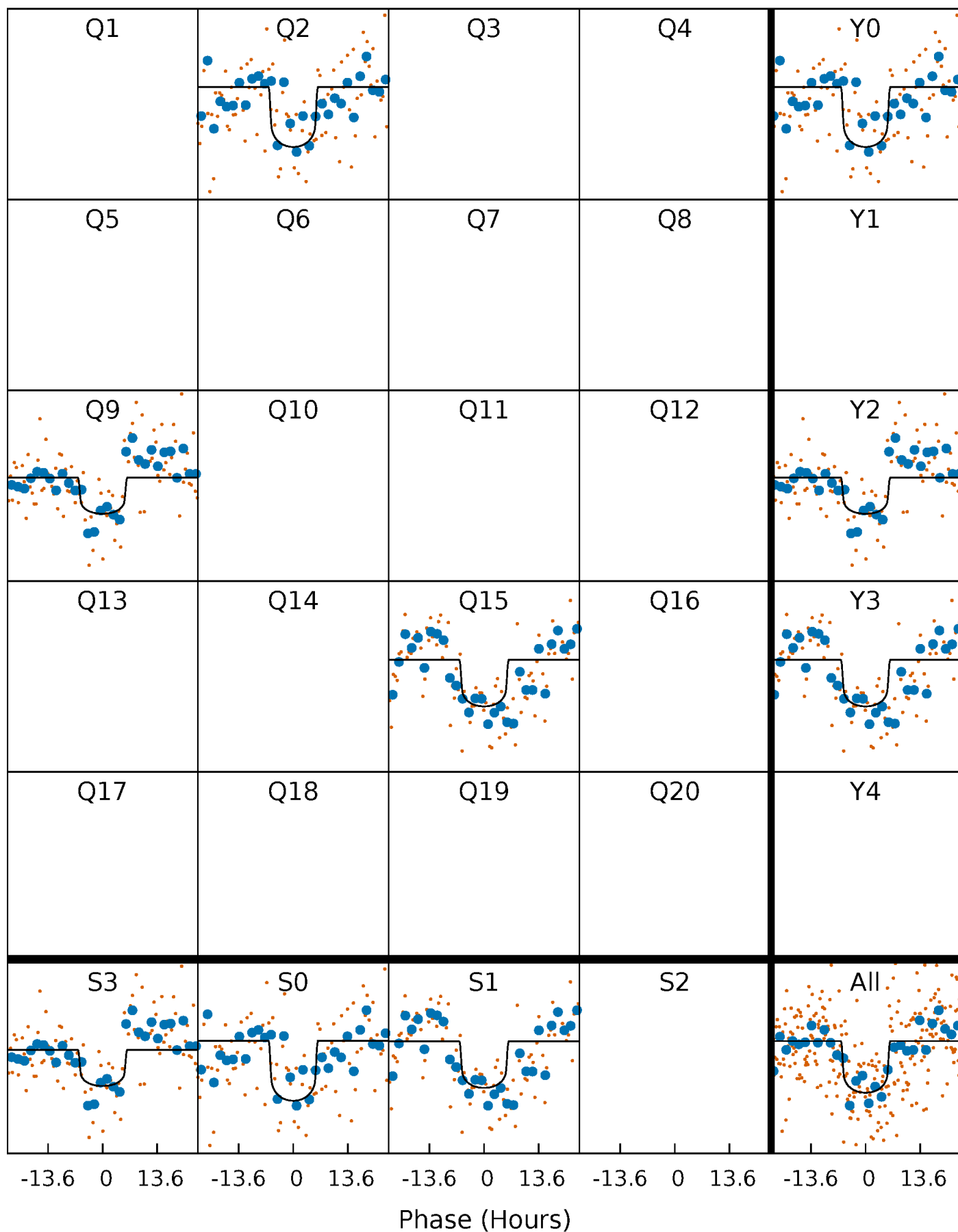
PDC Quarter-Phased Transit Curves

TCE 012053419-01 P=588.636658 Days $T_0=253.122585$ (BKJD)



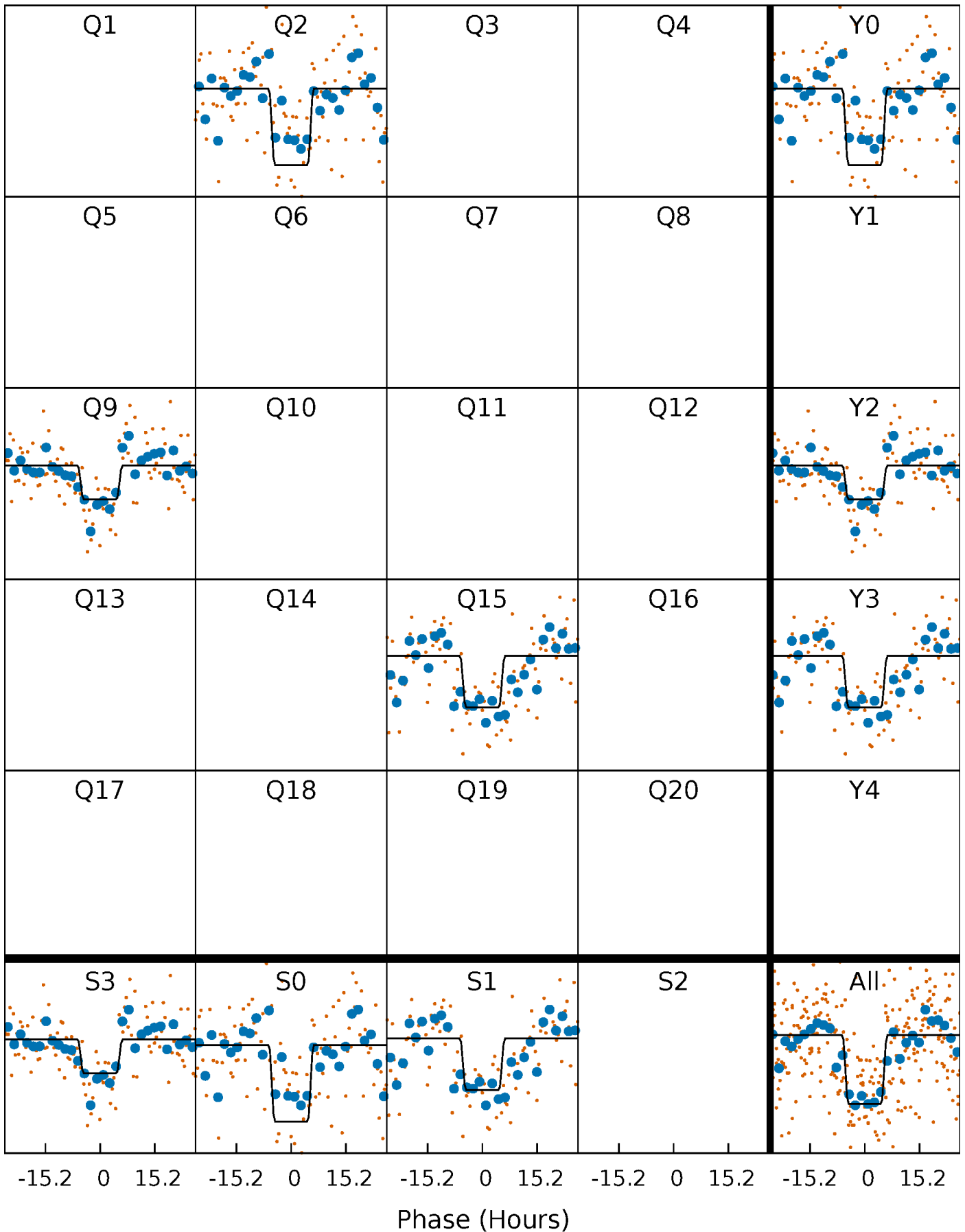
DV Quarter-Phased Transit Curves

TCE 012053419-01 P=588.636658 Days $T_0=253.122585$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

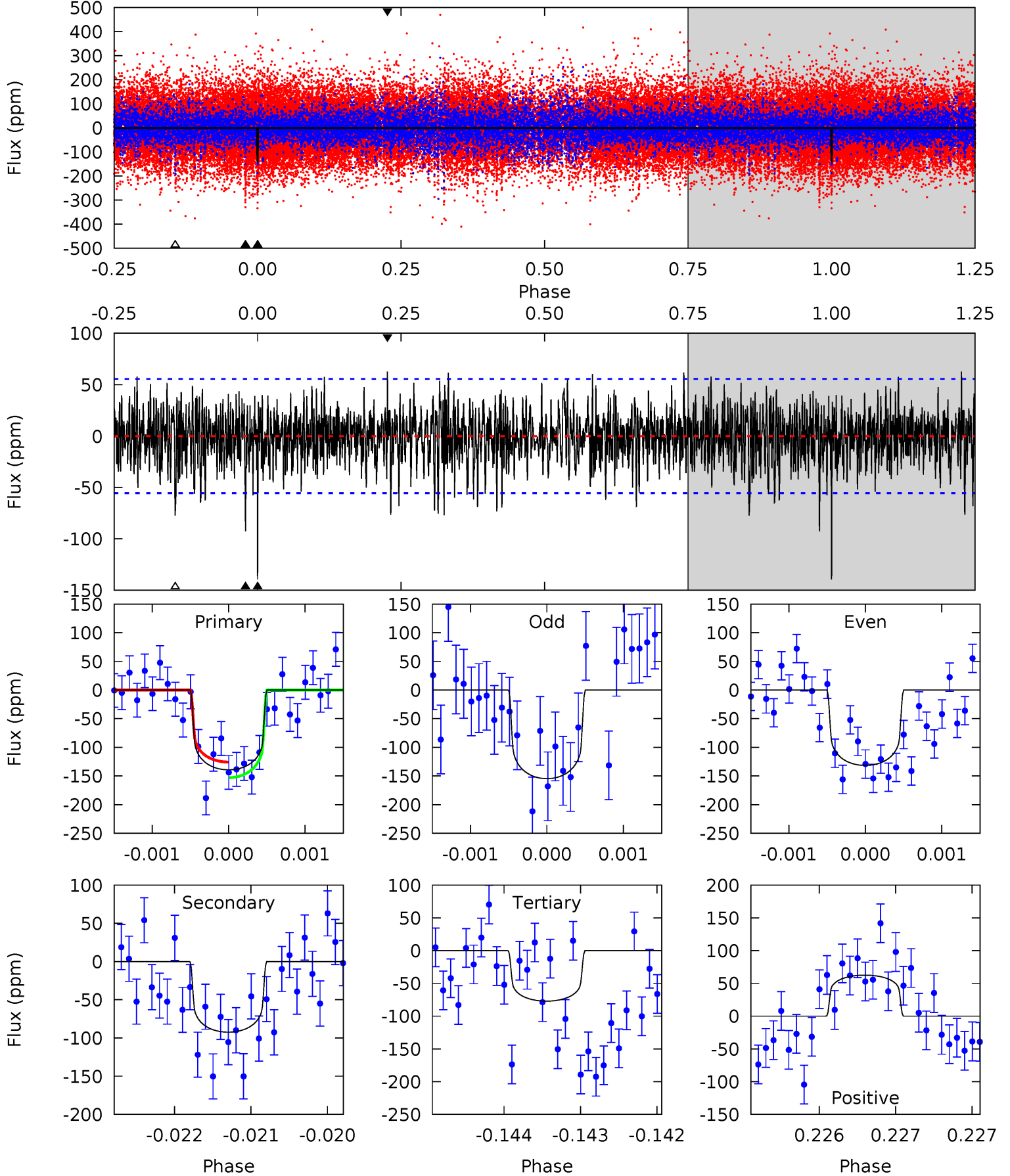
TCE 012053419-01 P=588.629563 Days $T_0=253.135624$ (BKJD)



DV Model-Shift Uniqueness Test

012053419-01, P = 588.636658 Days, E = 253.122585 Days

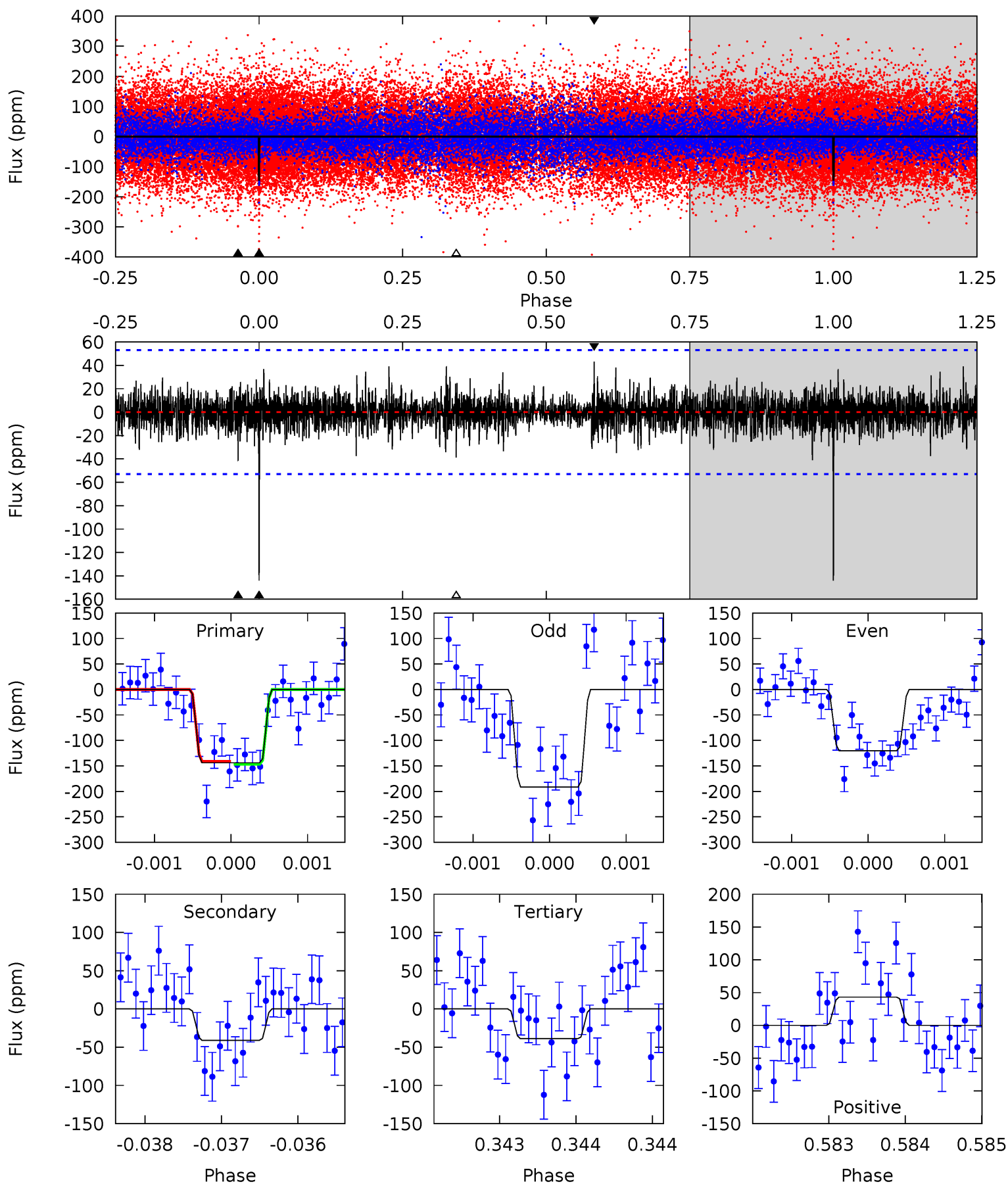
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	9.10	7.59	6.16	5.48	3.33	2.03	6.12	7.56	1.51	2.94	1.08	0.90	0.31	1.34



Alt Model-Shift Uniqueness Test

012053419-01, P = 588.629563 Days, E = 253.135624 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	4.24	4.02	4.46	5.48	3.34	1.01	10.9	10.4	0.22	-0.23	3.48	0.93	0.23	0.29



Stellar Parameters For KIC 012053419

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6397^{+181}_{-227}	$4.142^{+0.246}_{-0.164}$	$-0.280^{+0.250}_{-0.300}$	$1.472^{+0.402}_{-0.402}$	$1.095^{+0.177}_{-0.145}$	$0.483^{+0.701}_{-0.217}$
	+3%/-4%	+6%/-4%	+89%/-107%	+27%/-27%	+16%/-13%	+145%/-45%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 012053419-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-92 ± 10	$1.88^{+0.59}_{-0.57}$	400^{+29}_{-30}	5766^{+1056}_{-633}	28951^{+31755}_{-12196}
Alt.	-41 ± 10	$1.92^{+0.64}_{-0.60}$	398^{+33}_{-31}	4738^{+782}_{-511}	11930^{+14260}_{-5522}

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

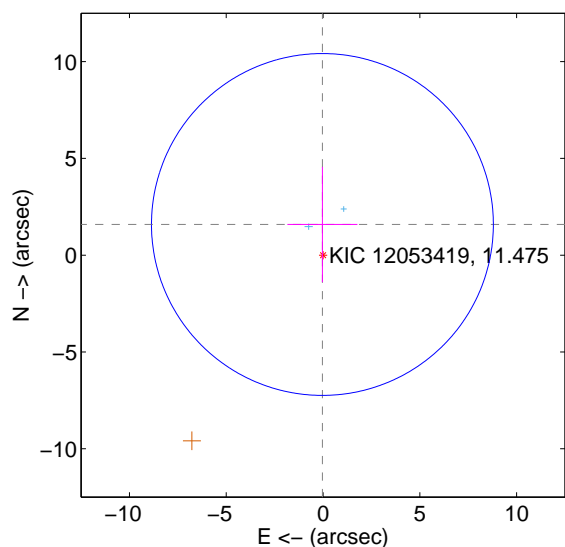
Supplemental centroid analysis for 012053419-01. **Kepler magnitude: 11.47.** Transit SNR 6.77

There are 2 quarters with good PRF difference image offsets

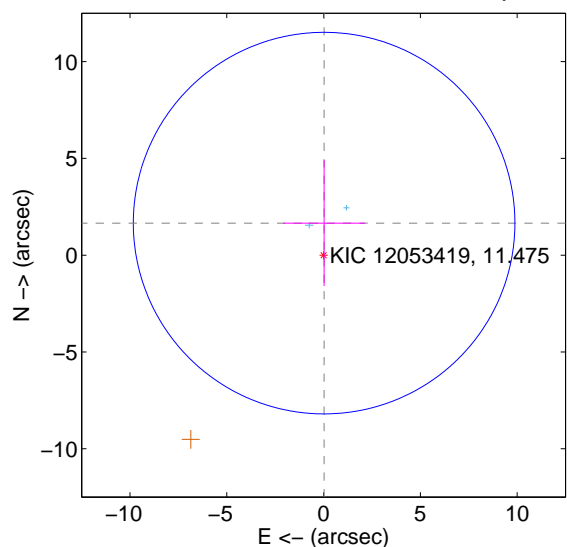
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.586 ± 2.944	0.54	0.032 ± 1.808	1.586 ± 2.980
PRF-fit source offset from KIC position	1.657 ± 3.286	0.50	-0.027 ± 2.116	1.656 ± 3.252
photometric centroid source offset	0.98 ± 1.49	0.66	0.98 ± 1.49	0.07 ± 1.76

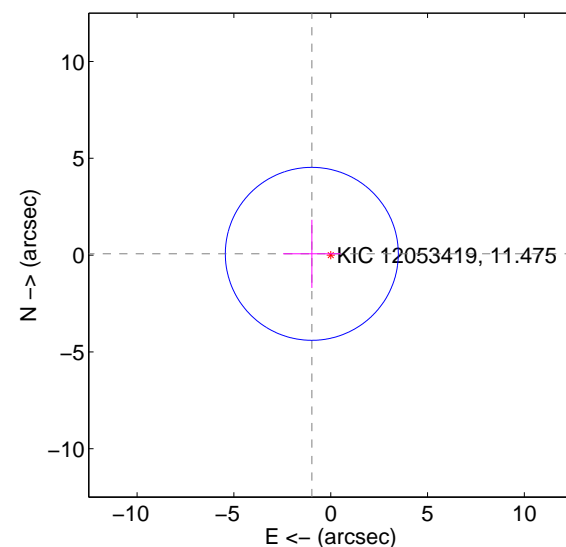
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



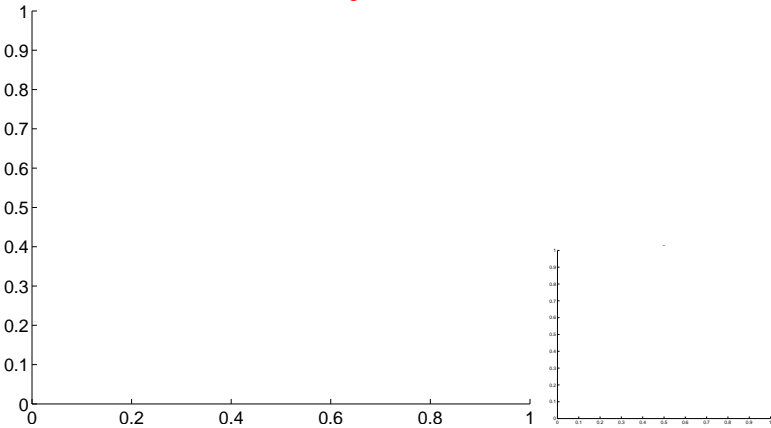
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

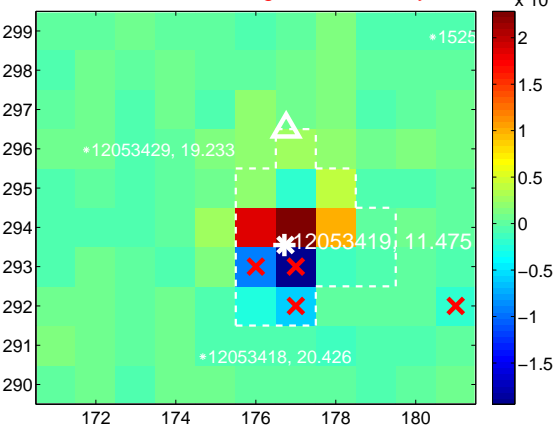
Q1 no difference image



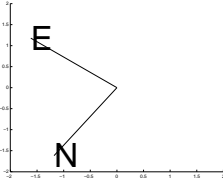
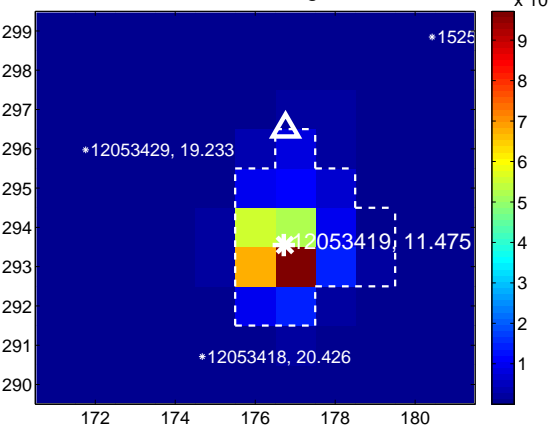
Q1 no OOT image



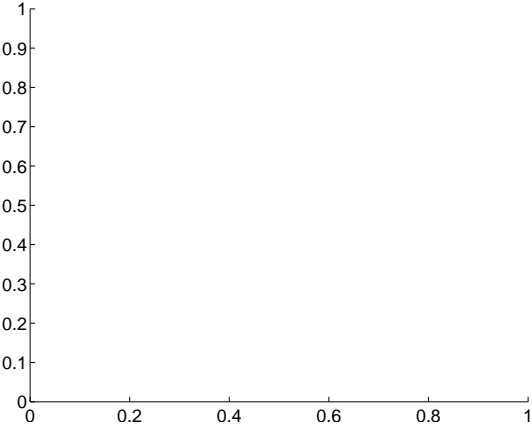
Q2 difference image. Poor Quality



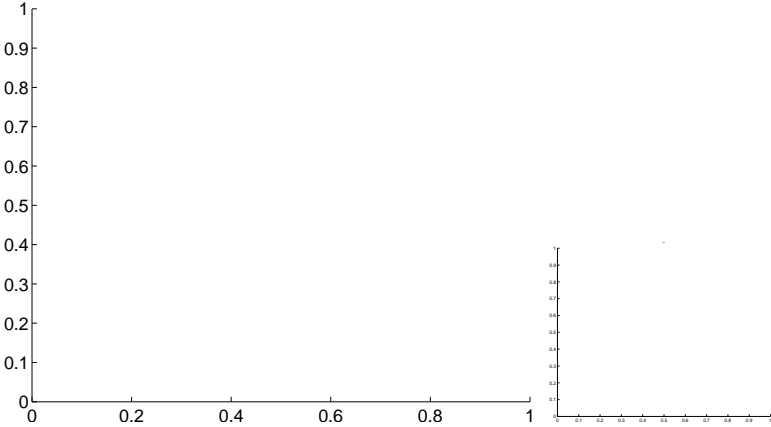
Q2 OOT image



Q3 no difference image



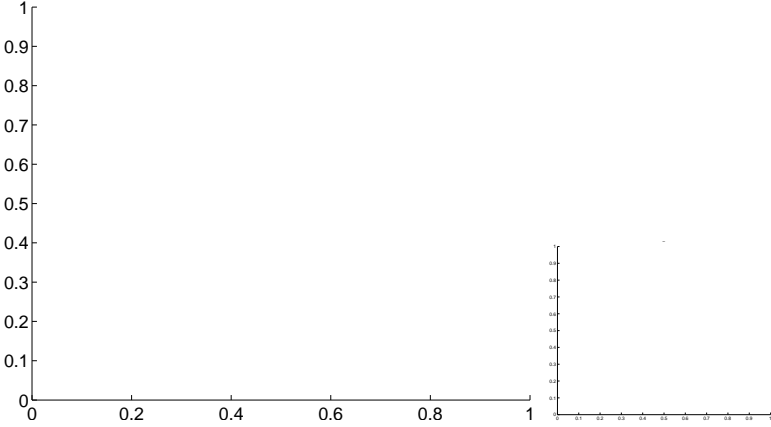
Q3 no OOT image



Q4 no difference image



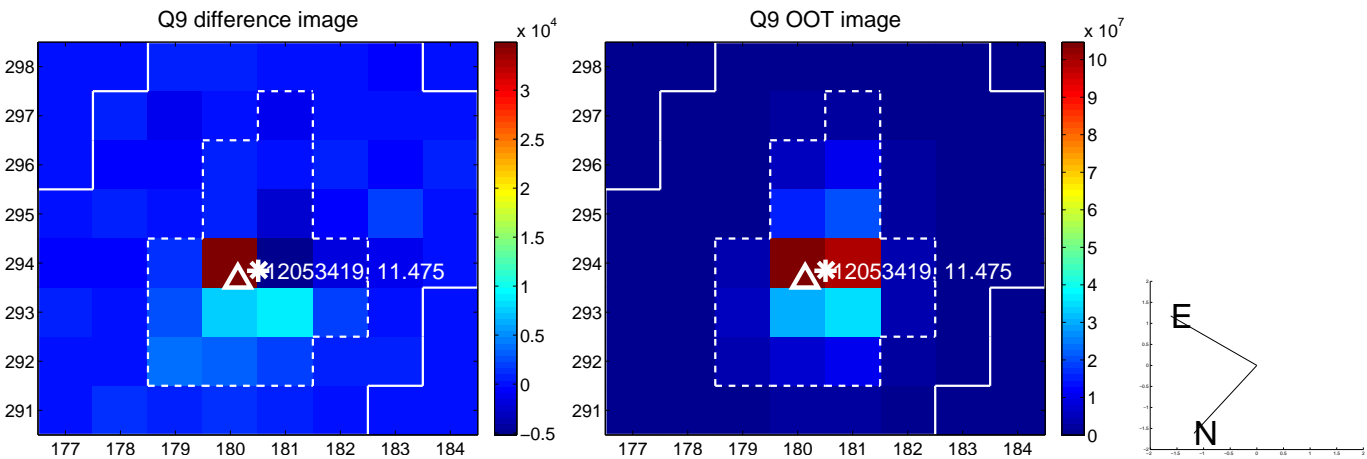
Q4 no OOT image



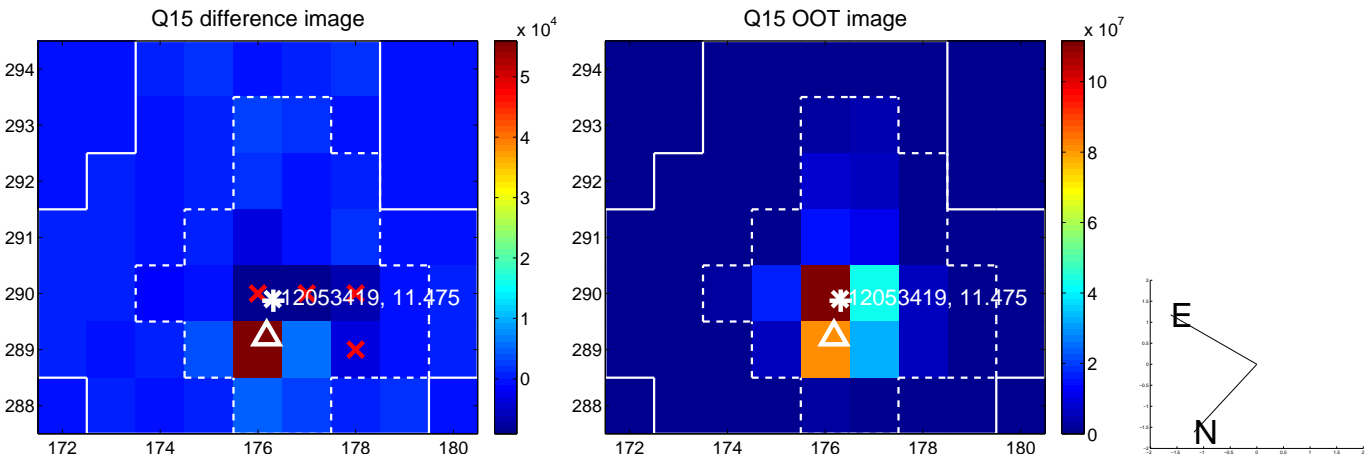
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



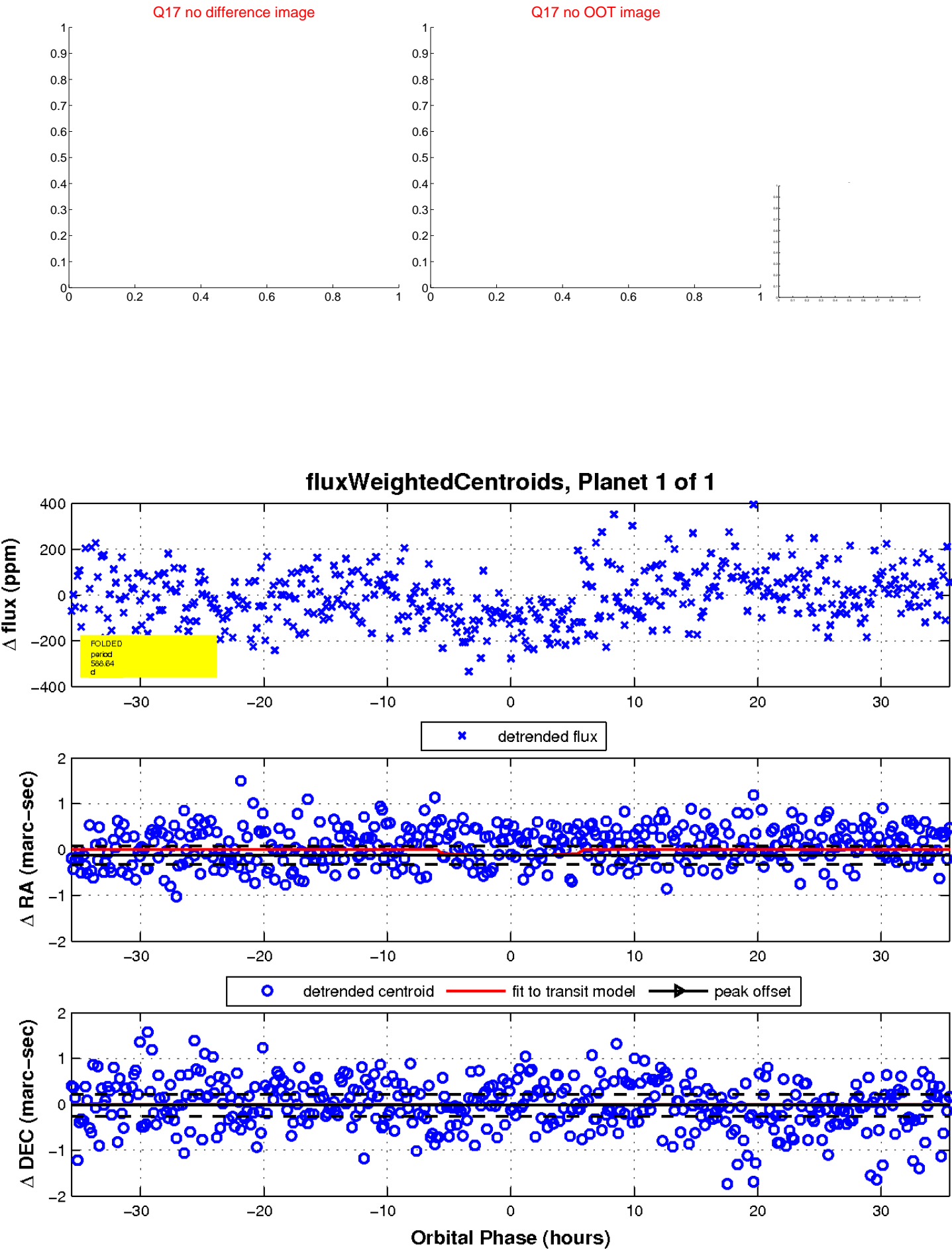
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

