

KIC 003644649

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})
003644649-01	OBS	No	359.023868	295.813657	420.1	19.828	10.3	10.7	0.73	5229	1.54	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003644649-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_SKYE—CENT_FEW_DIFFS—EPHEM_MATCH

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 003644649-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
003644649-01	3644649	3511.01	3644542	3:1	210.5	52	9	8.35	14.41	711.93	Direct-PRF	0	1.92	0.35

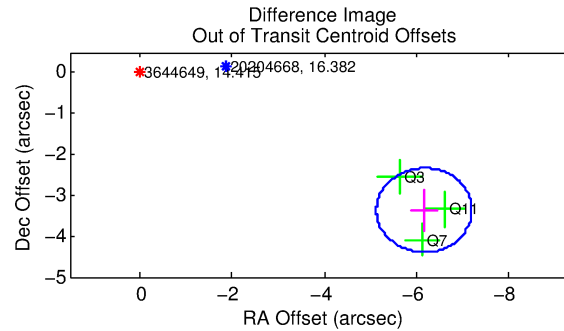
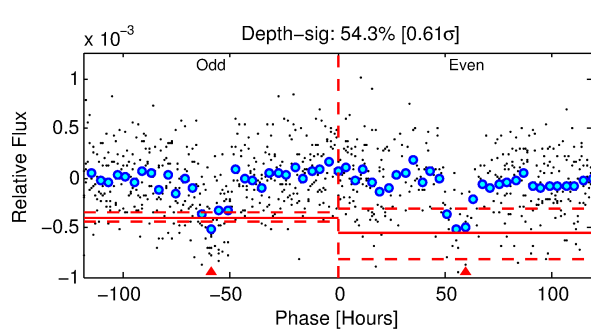
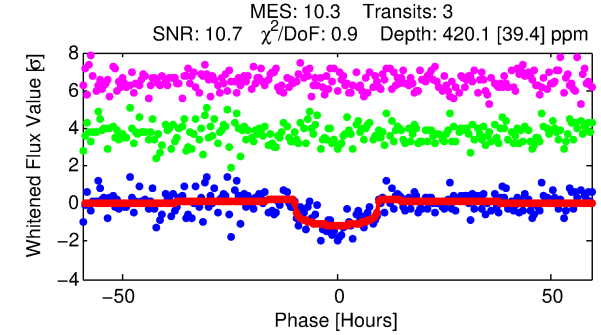
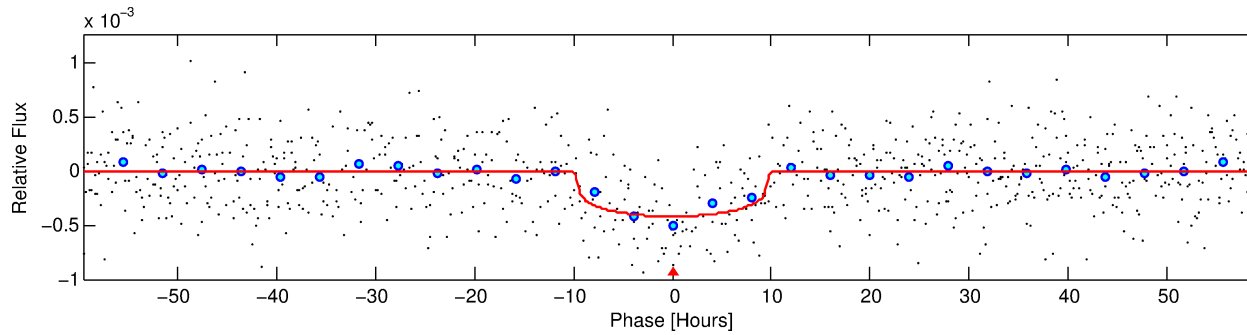
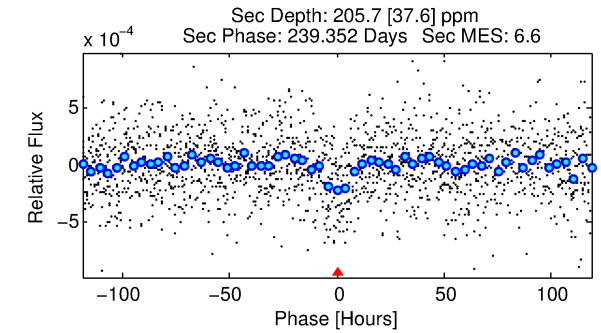
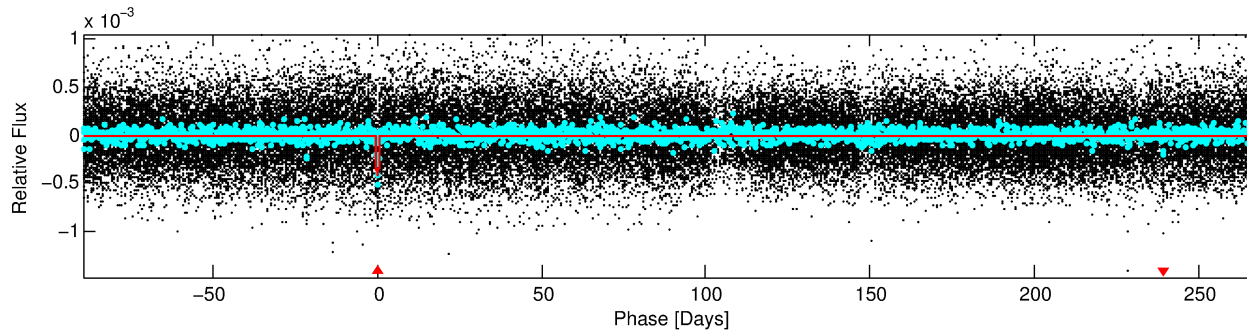
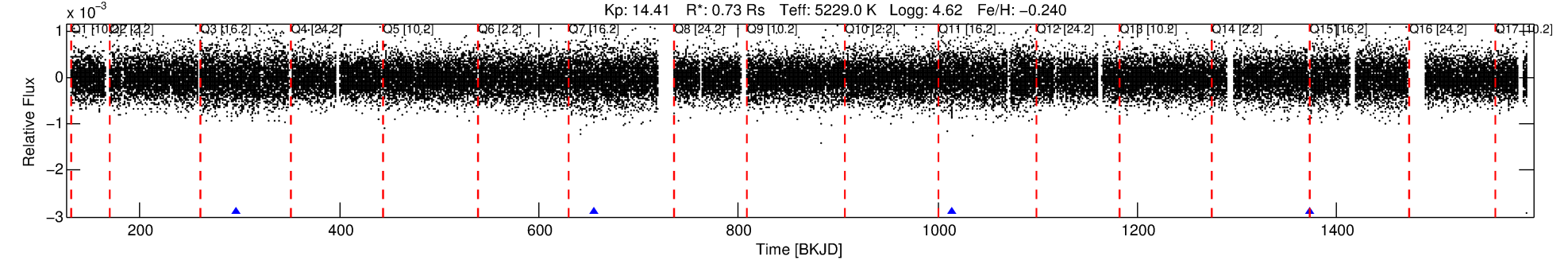
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3644649 Candidate: 1 of 1 Period: 359.024 d

KOI: K04998 Corr: No Ephemeris Match

Kp: 14.41 R*: 0.73 Rs Teff: 5229.0 K Logg: 4.62 Fe/H: -0.240



DV Fit Results:

Period = 359.02387 [0.01707] d
Epoch = 295.8137 [0.0218] BKJD
Rp/R* = 0.0194 [0.0089]
a/R* = 115.65 [200.65]
b = 0.58 [1.99]
Seff = 0.42 [0.08]
Teq = 206 [10] K
Rp = 1.54 [0.74] Re
a = 0.9206 [0.1042] AU
Ag = 40202.67 [38102.07] [1.06σ]
Teffp = 4500 [1058] K [4.06σ]

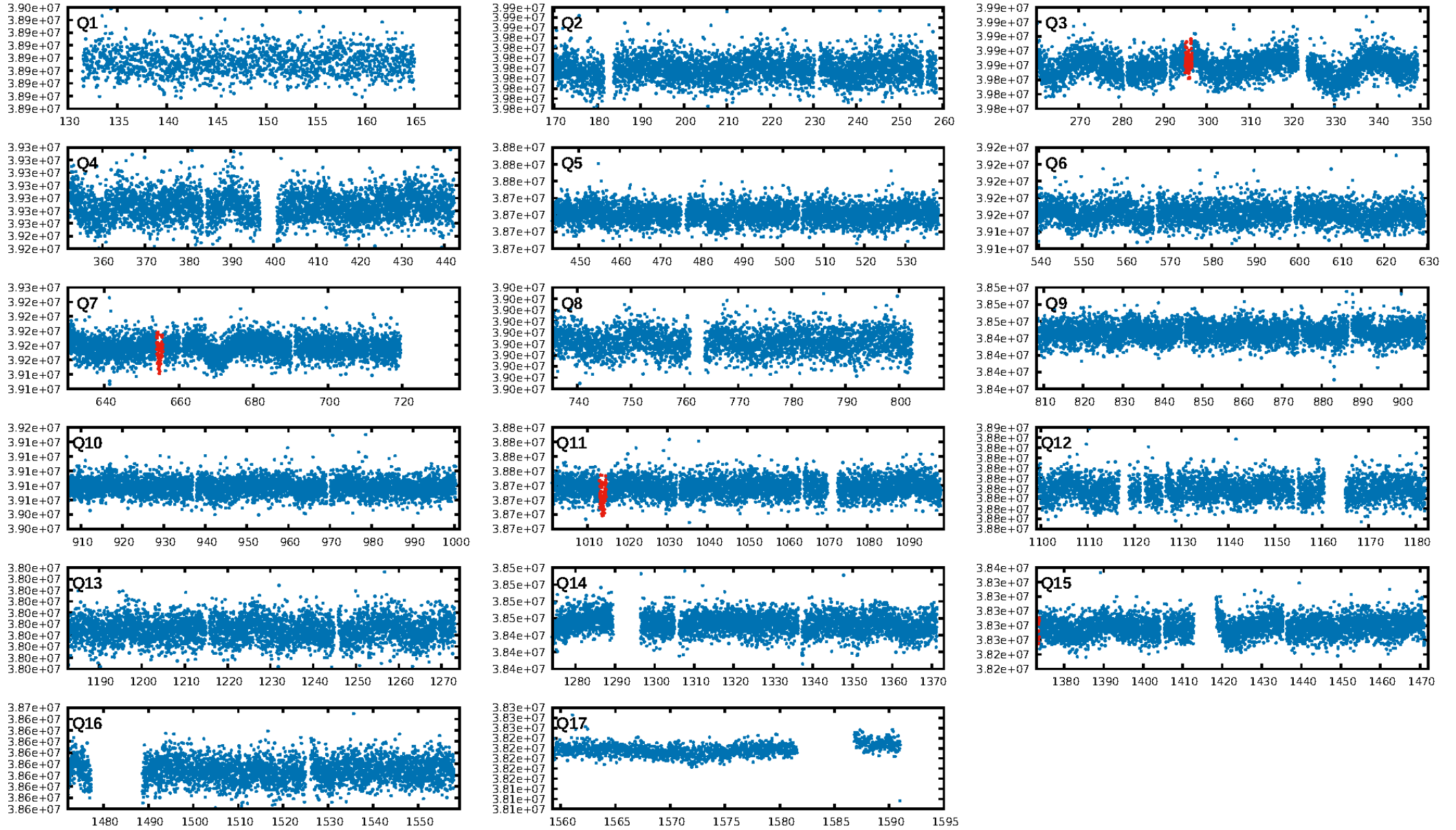
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.10e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.014
Centroid-sig: 1.4%
Centroid-so: 3.035 arcsec [2.23σ]
OotOffset-rm: 7.021 arcsec [20.39σ]
KicOffset-rm: 6.945 arcsec [21.33σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

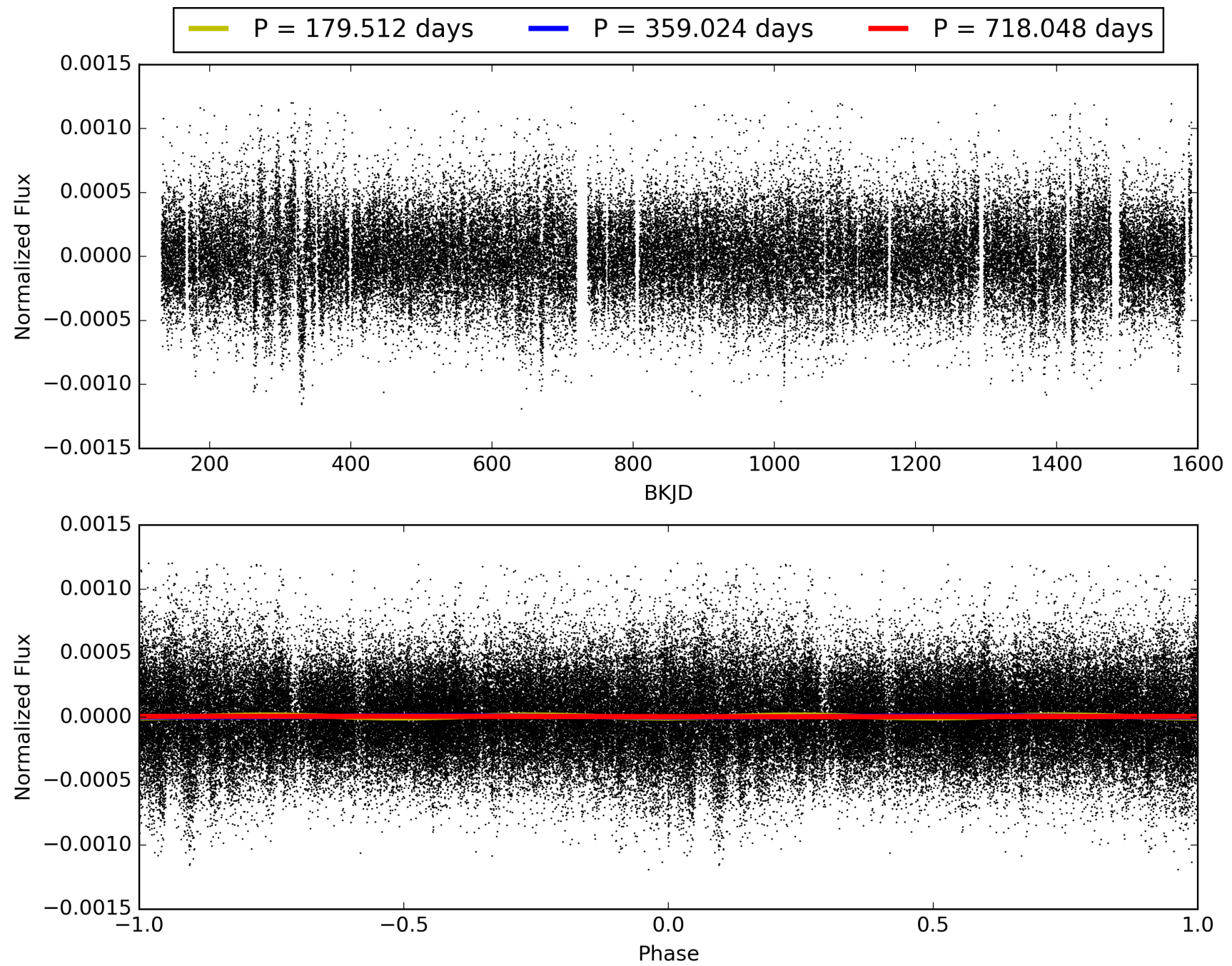
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:43:20 Z

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

TCE 003644649-01, PDC Light Curves

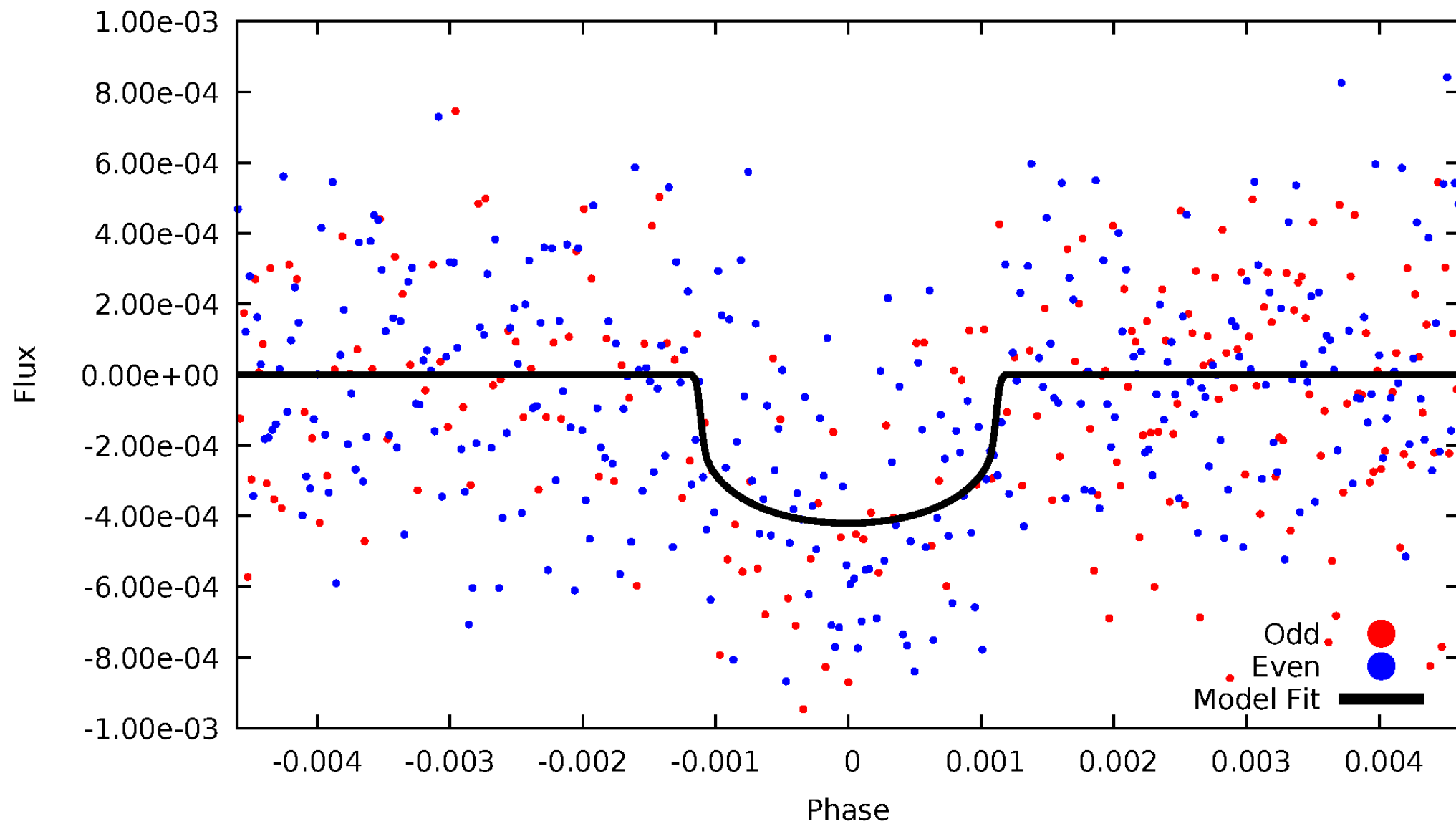


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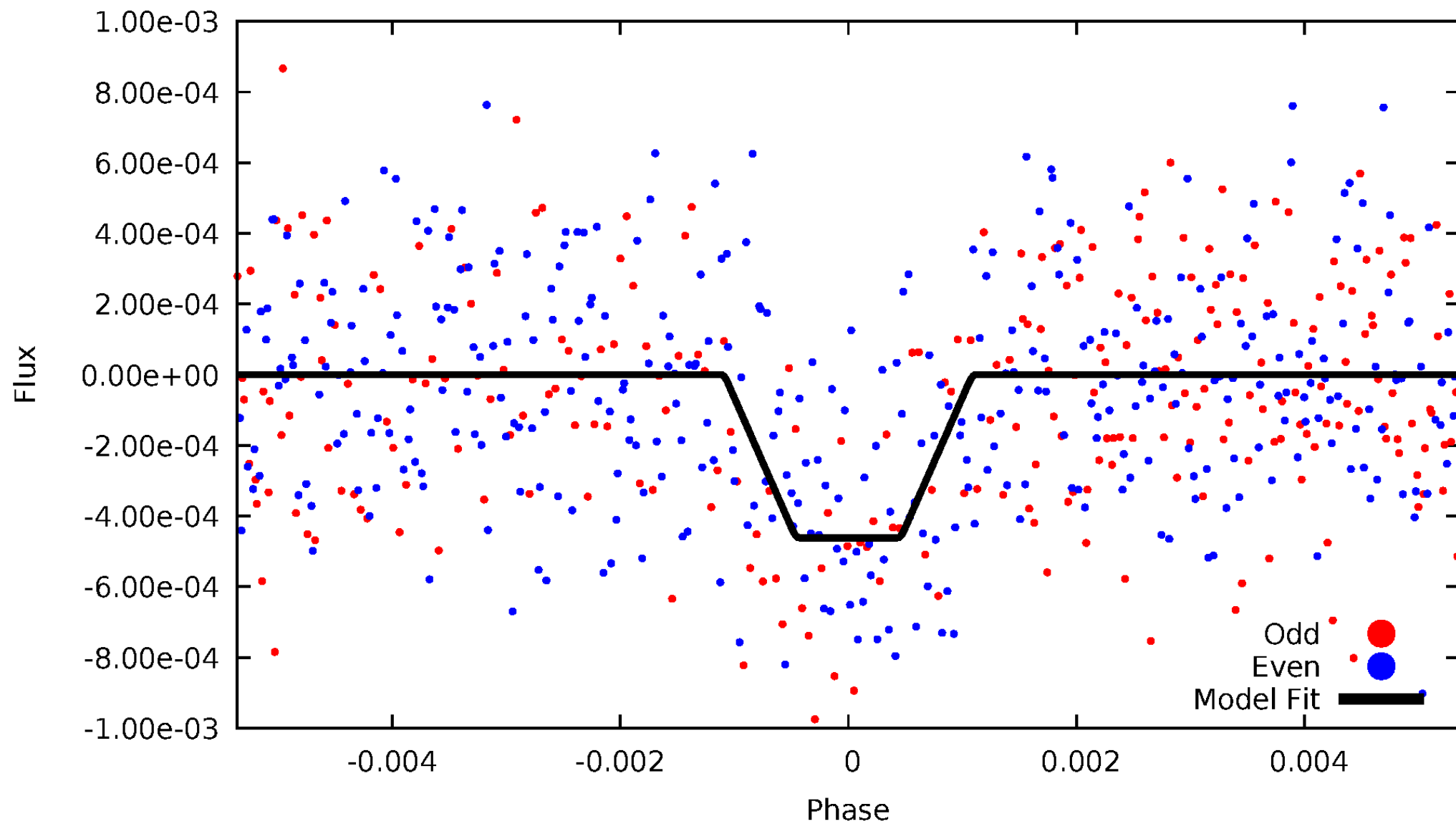
DV Odd/Even

TCE 003644649-01



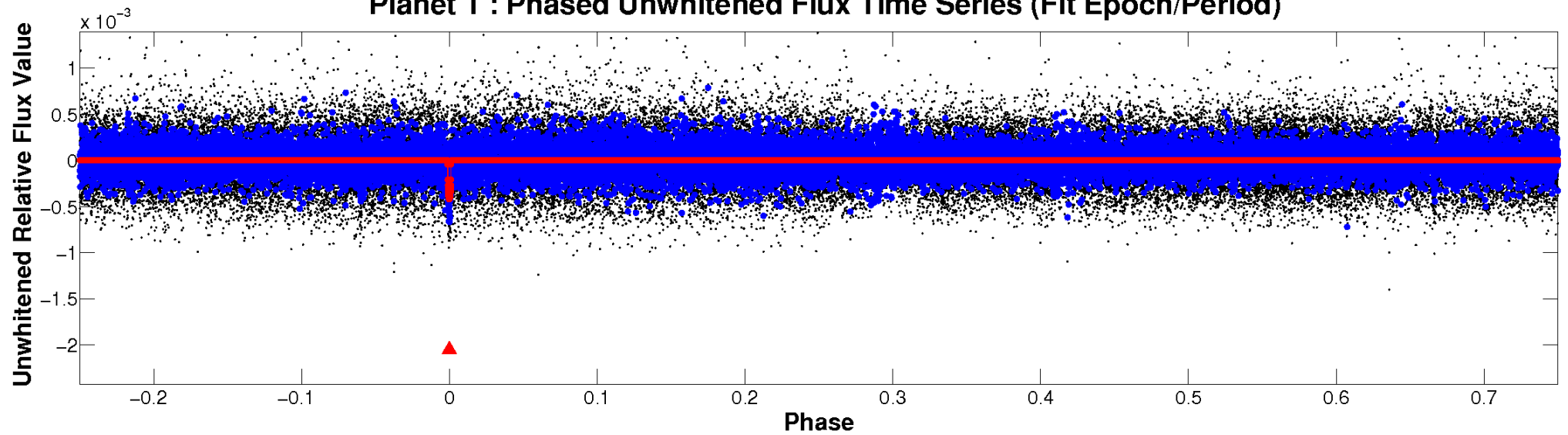
ALT Odd/Even

TCE 003644649-01

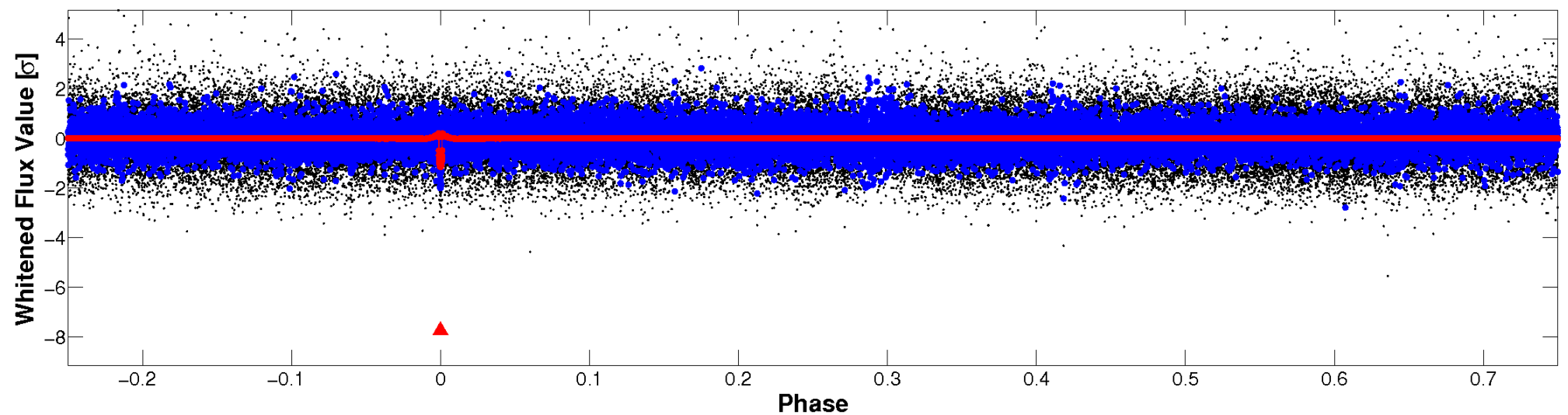


Non-Whitened Vs. Whitened Light Curve

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

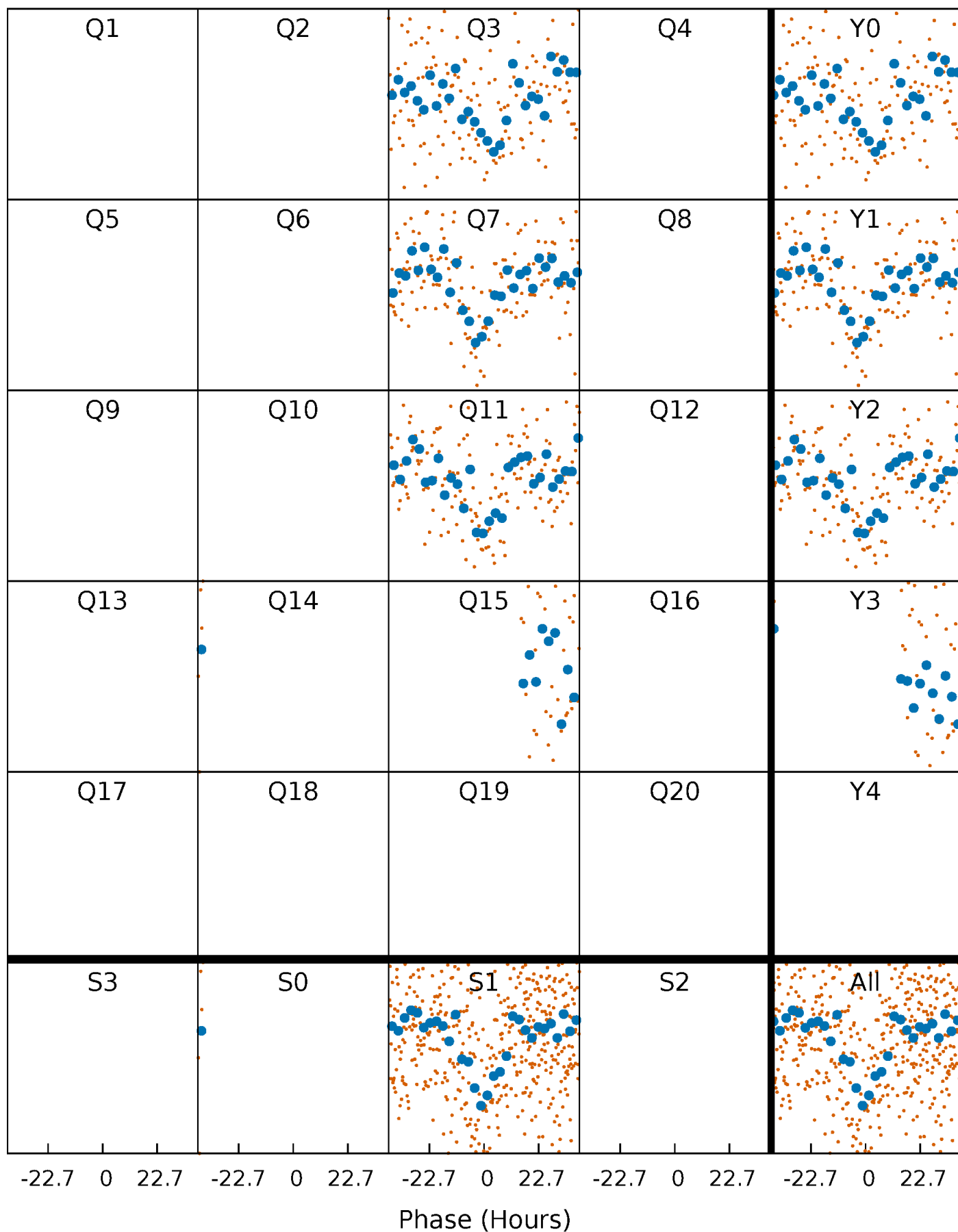


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



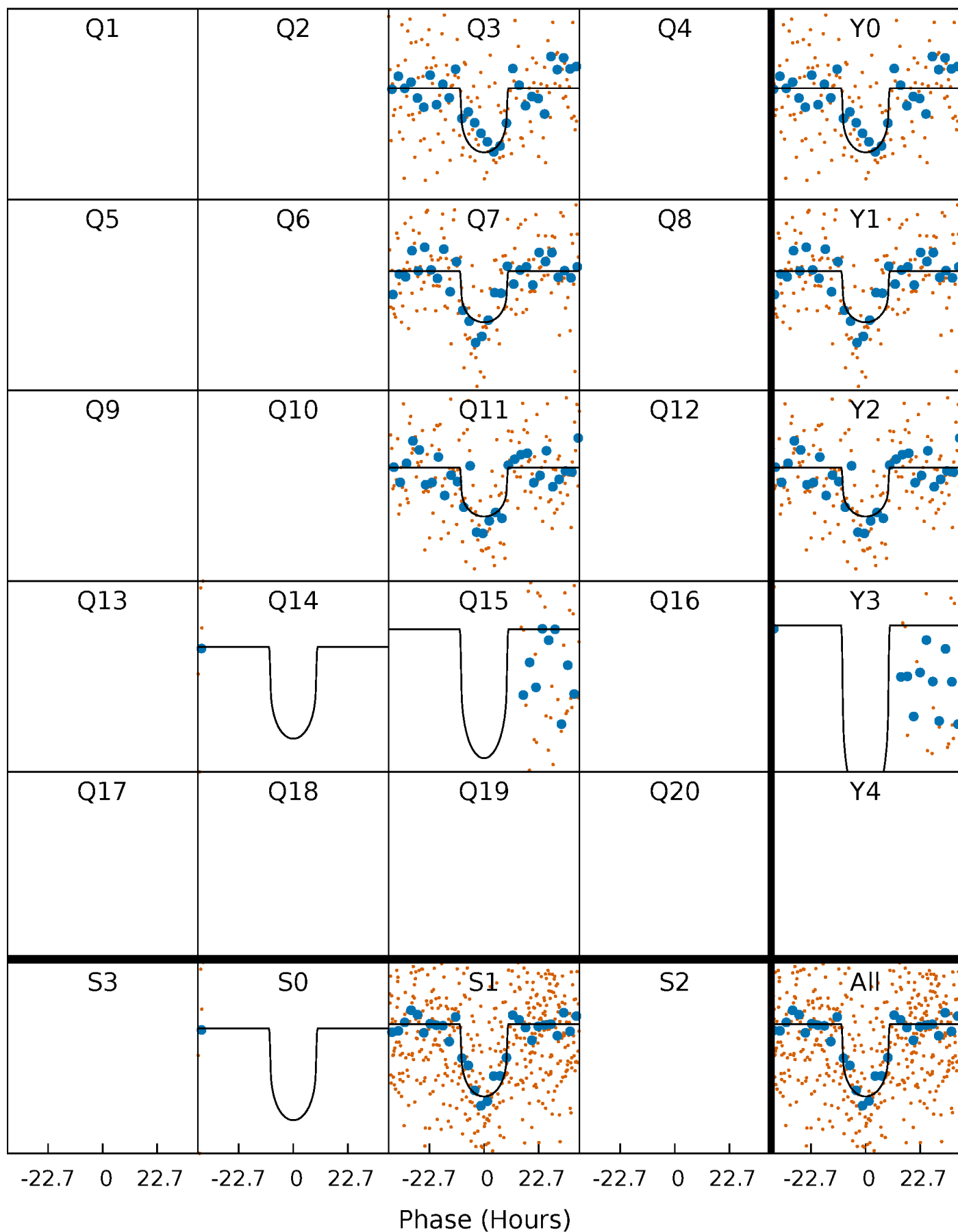
PDC Quarter-Phased Transit Curves

TCE 003644649-01 P=359.023868 Days $T_0=295.813657$ (BKJD)



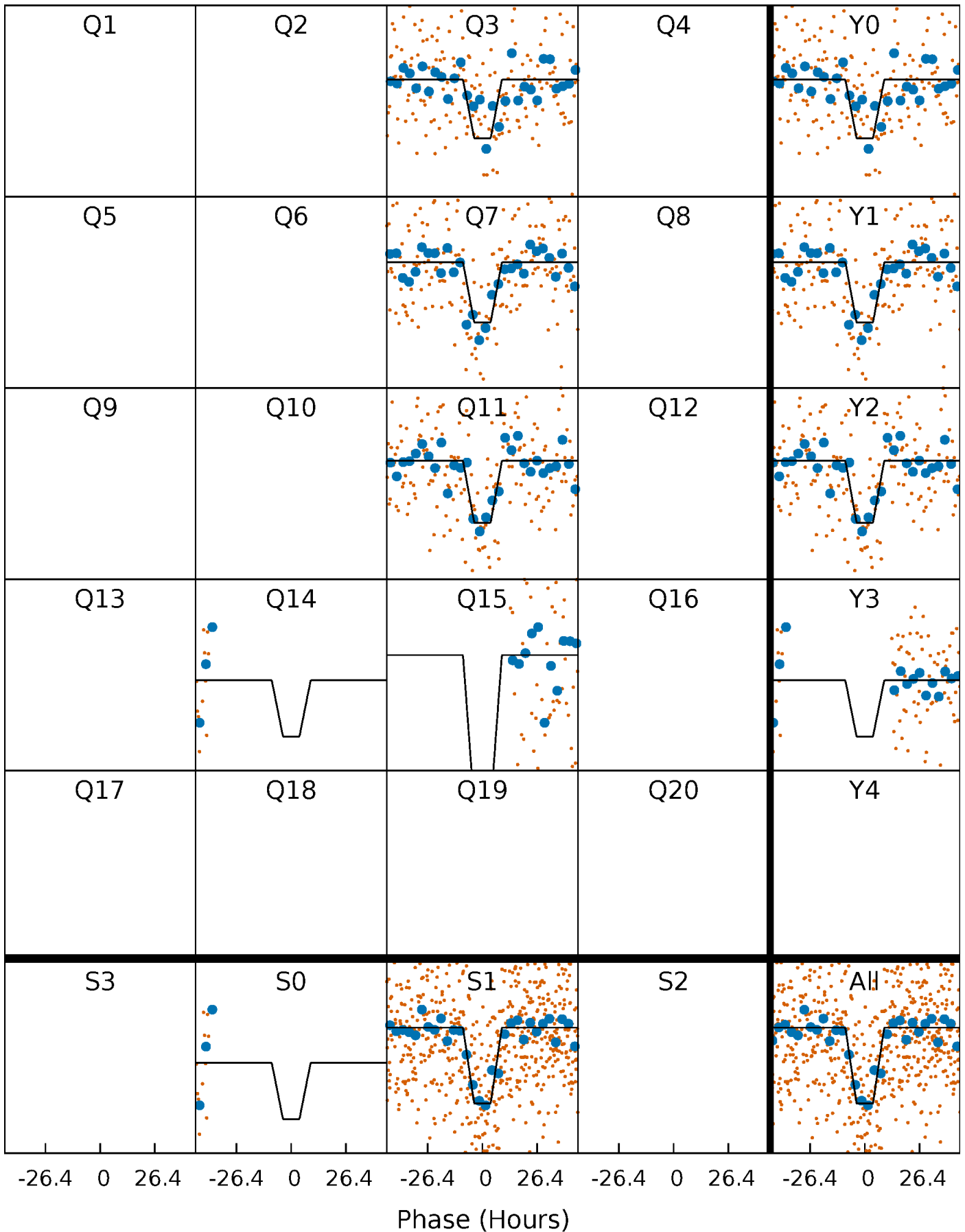
DV Quarter-Phased Transit Curves

TCE 003644649-01 P=359.023868 Days $T_0=295.813657$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

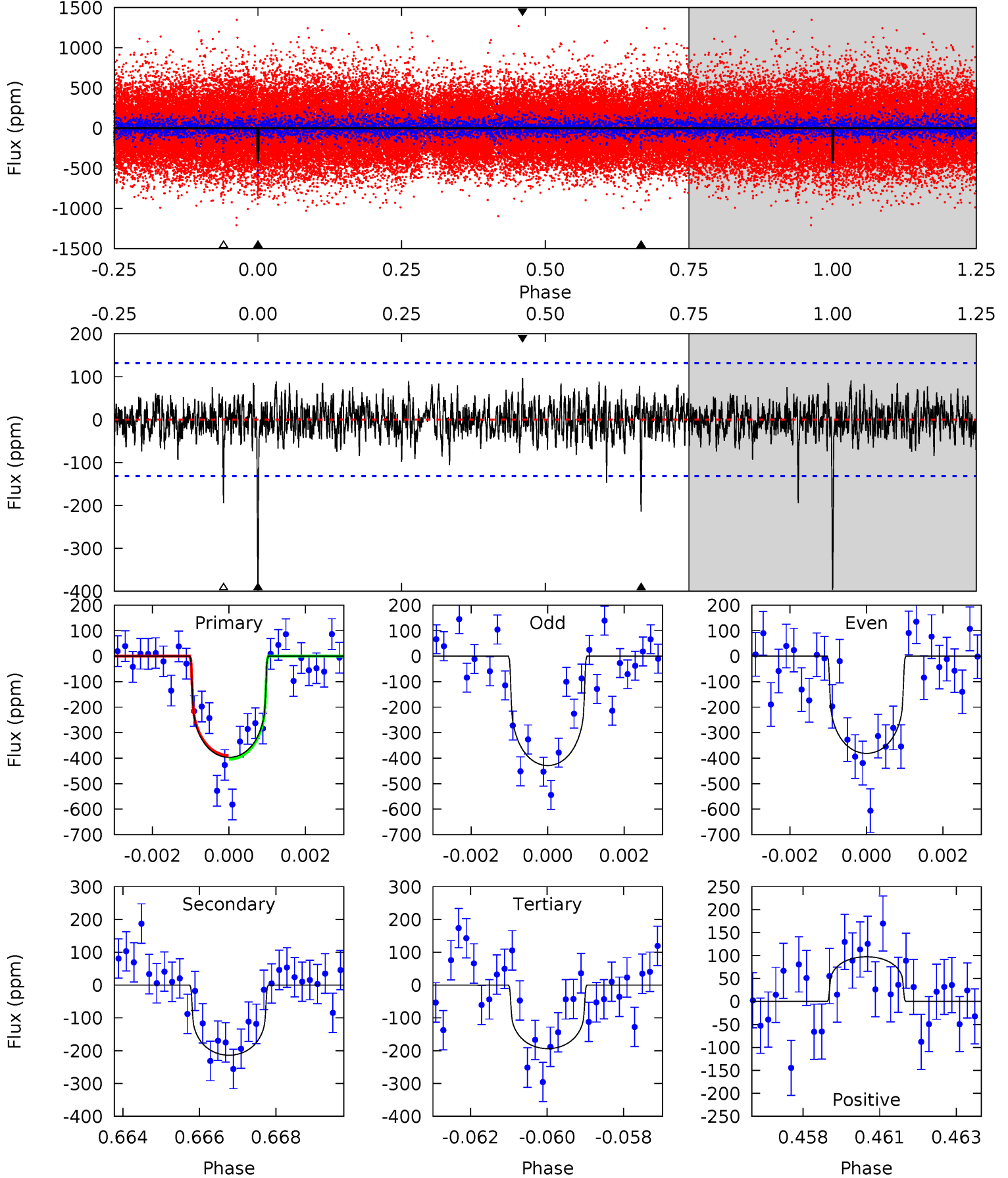
TCE 003644649-01 P=359.072139 Days $T_0=295.747993$ (BKJD)



DV Model-Shift Uniqueness Test

003644649-01, P = 359.023868 Days, E = 295.813657 Days

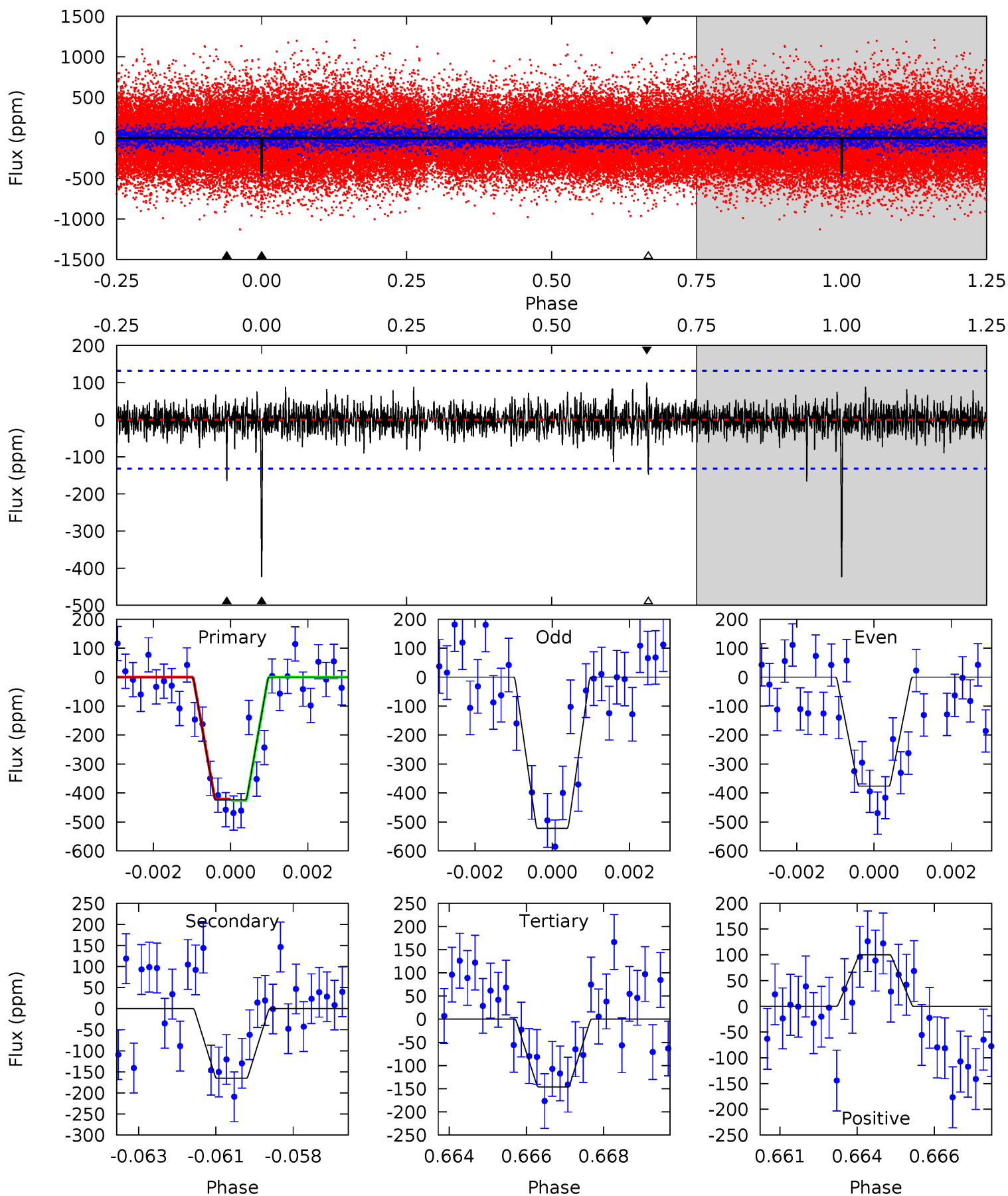
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	8.60	7.80	3.91	5.30	3.05	1.26	8.17	12.1	0.81	4.69	0.90	0.93	0.20	0.30



Alt Model-Shift Uniqueness Test

003644649-01, P = 359.072139 Days, E = 295.747993 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	6.63	5.86	4.02	5.31	3.06	1.08	11.2	13.0	0.77	2.61	2.75	0.96	0.19	0.09



Stellar Parameters For KIC 003644649

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5229^{+142}_{-142}	$4.617^{+0.036}_{-0.084}$	$-0.240^{+0.300}_{-0.300}$	$0.731^{+0.102}_{-0.062}$	$0.817^{+0.069}_{-0.095}$	$2.949^{+0.539}_{-0.789}$
	+3%/-3%	+1%/-2%	+125%/-125%	+14%/-8%	+8%/-12%	+18%/-27%
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 003644649-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-214 ± 25	$1.56^{+0.74}_{-0.69}$	290^{+11}_{-11}	4656^{+1376}_{-644}	39792^{+91809}_{-21328}
Alt.	-165 ± 25	$1.74^{+0.76}_{-0.73}$	291^{+11}_{-10}	4280^{+1031}_{-518}	25384^{+49050}_{-12995}

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

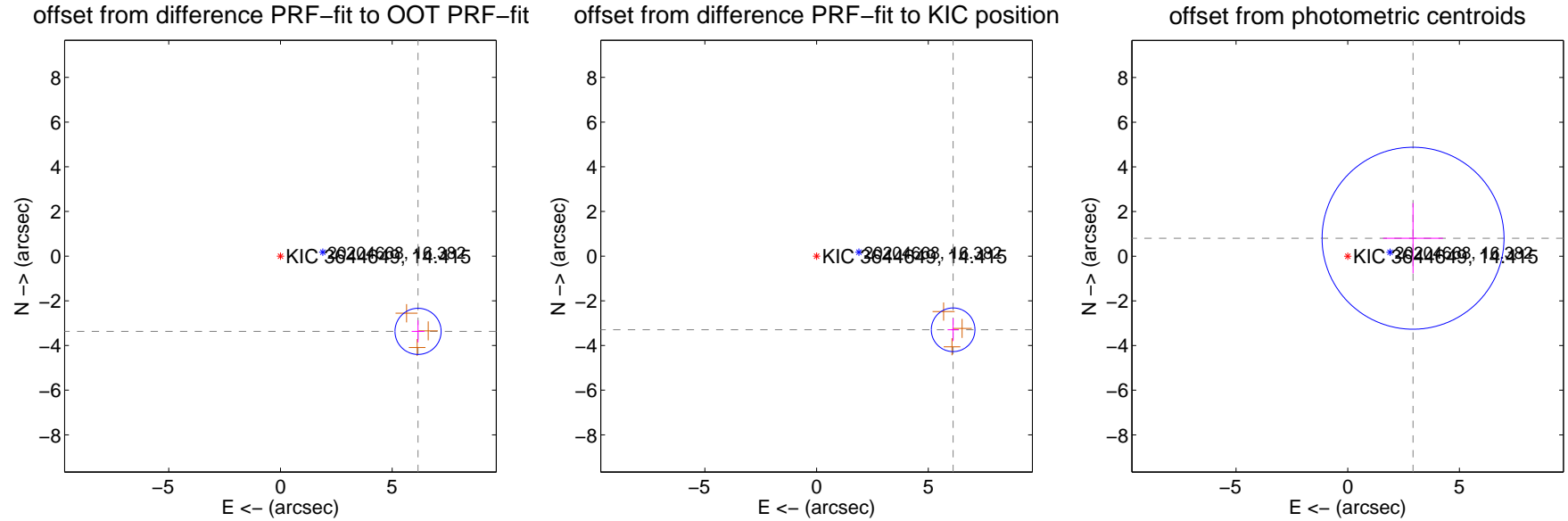
DV Centroid Data

Supplemental centroid analysis for 003644649-01. Kepler magnitude: 14.41. Transit SNR 10.67

There are 0 quarters with good PRF difference image offsets

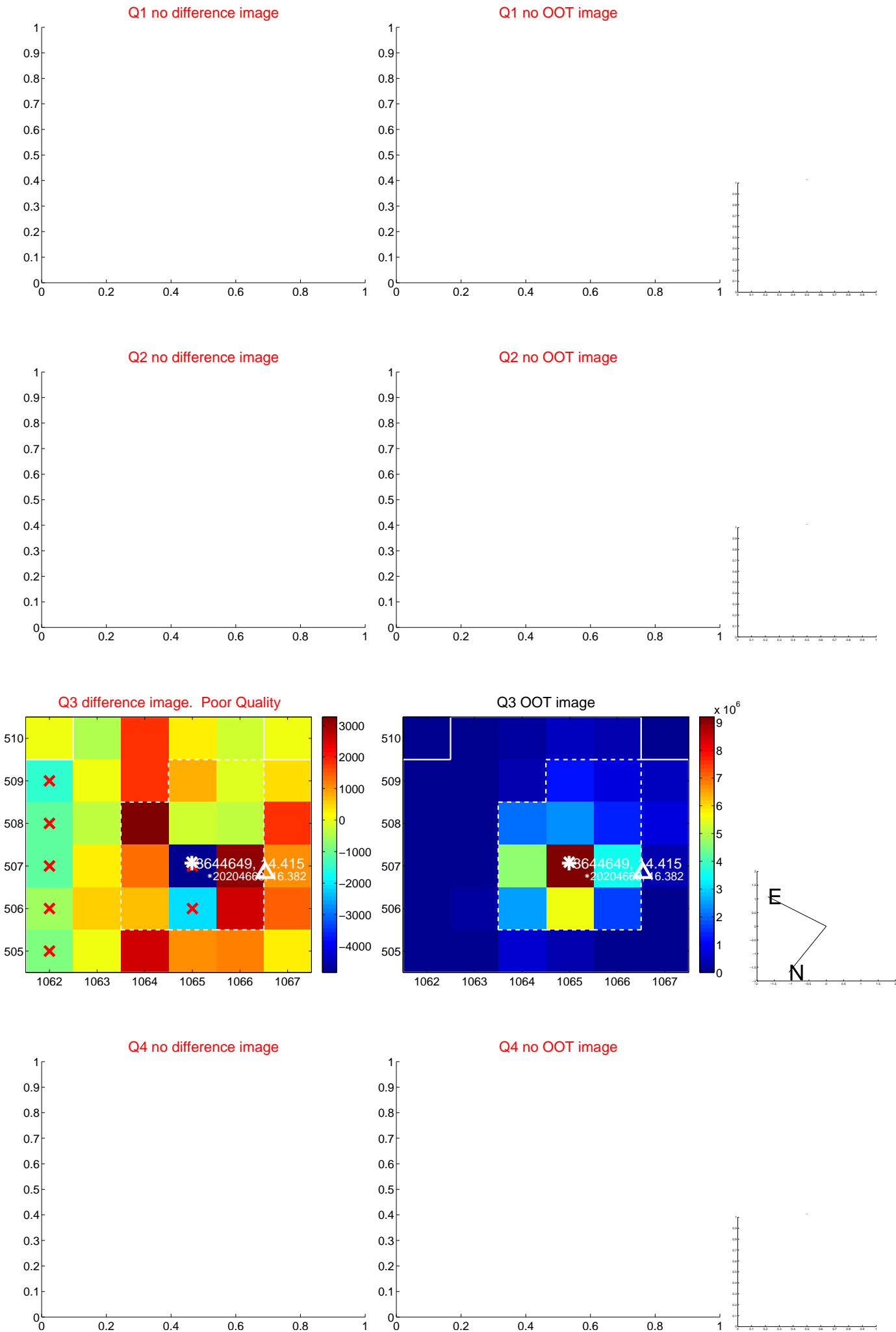
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.021 ± 0.344	20.39	-6.160 ± 0.286	-3.368 ± 0.492
PRF-fit source offset from KIC position	6.945 ± 0.326	21.33	-6.113 ± 0.250	-3.296 ± 0.507
photometric centroid source offset	3.03 ± 1.36	2.23	-2.93 ± 1.34	0.80 ± 1.57

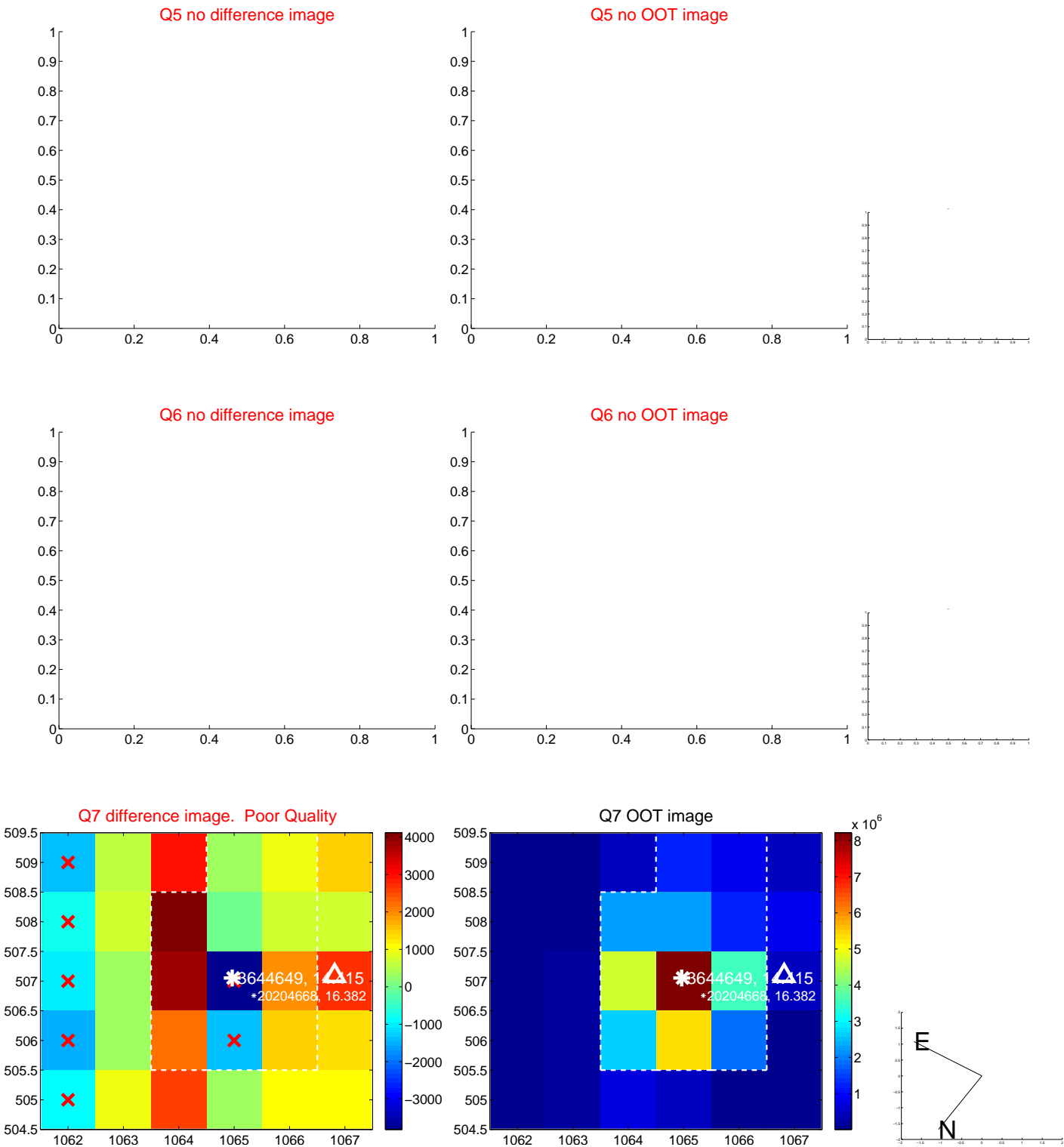


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

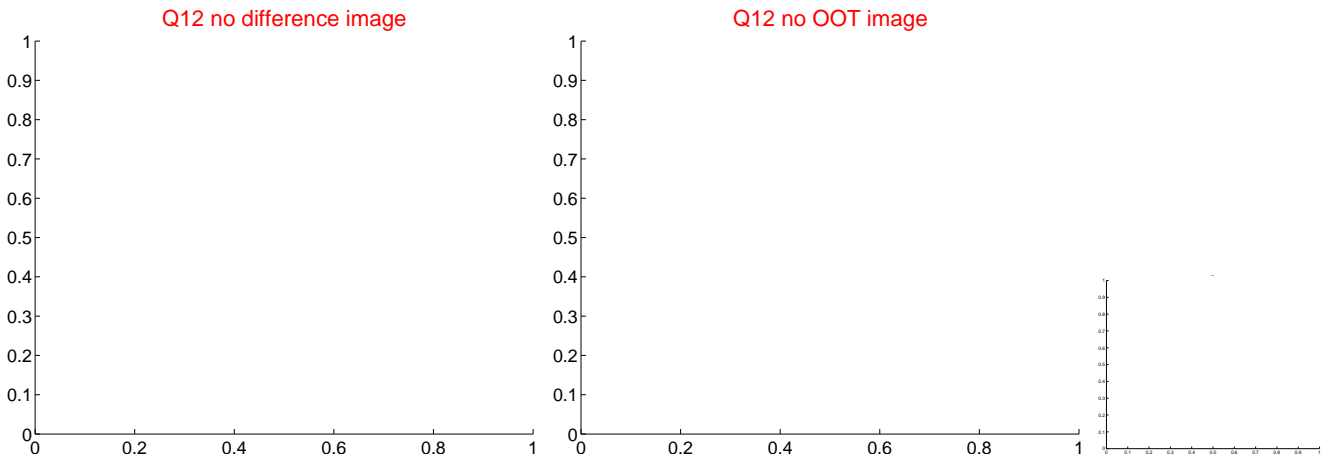
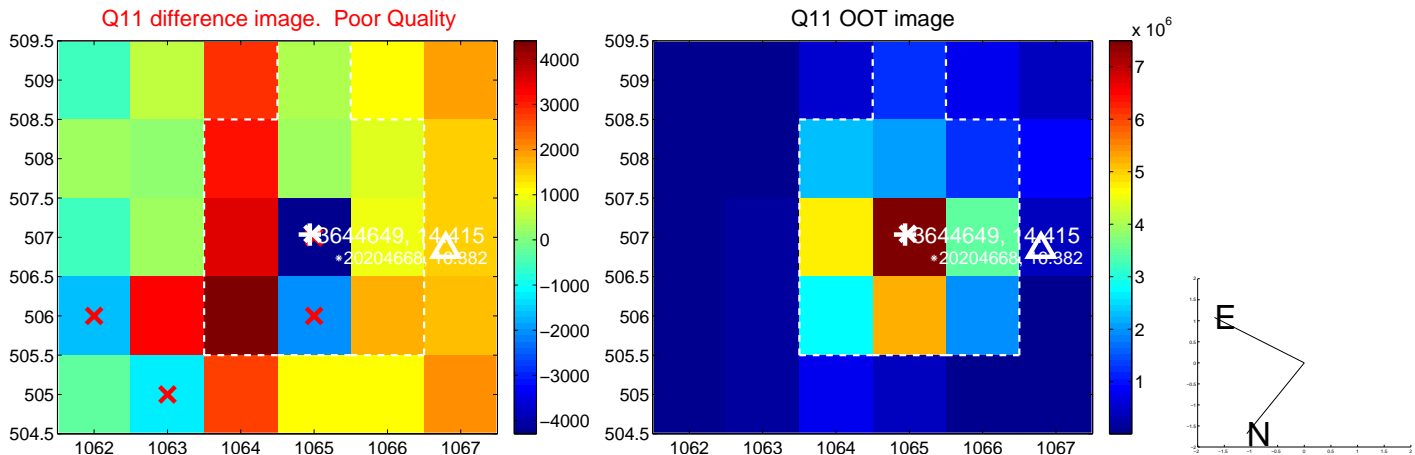
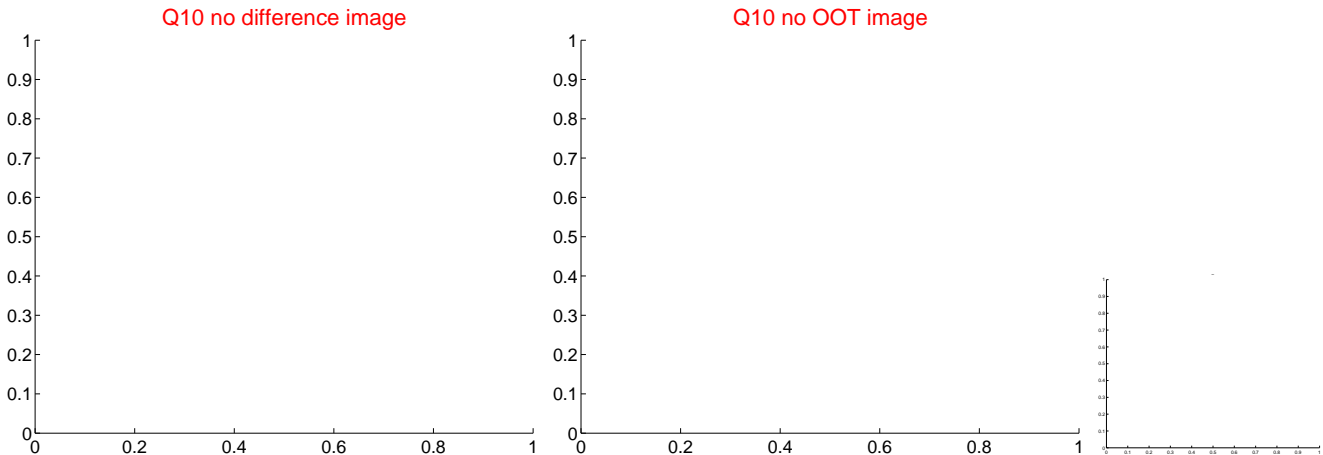
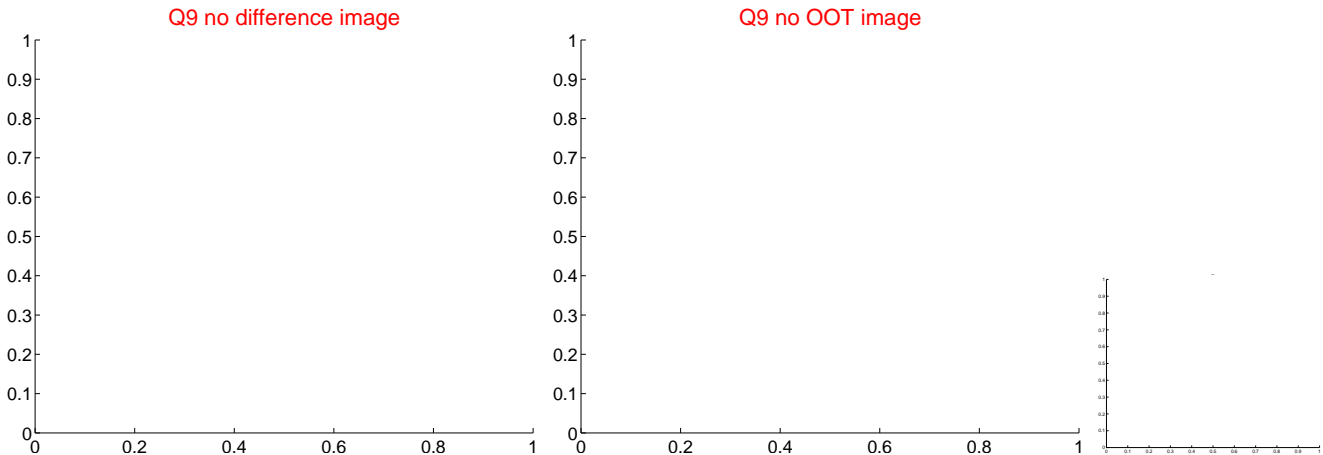
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



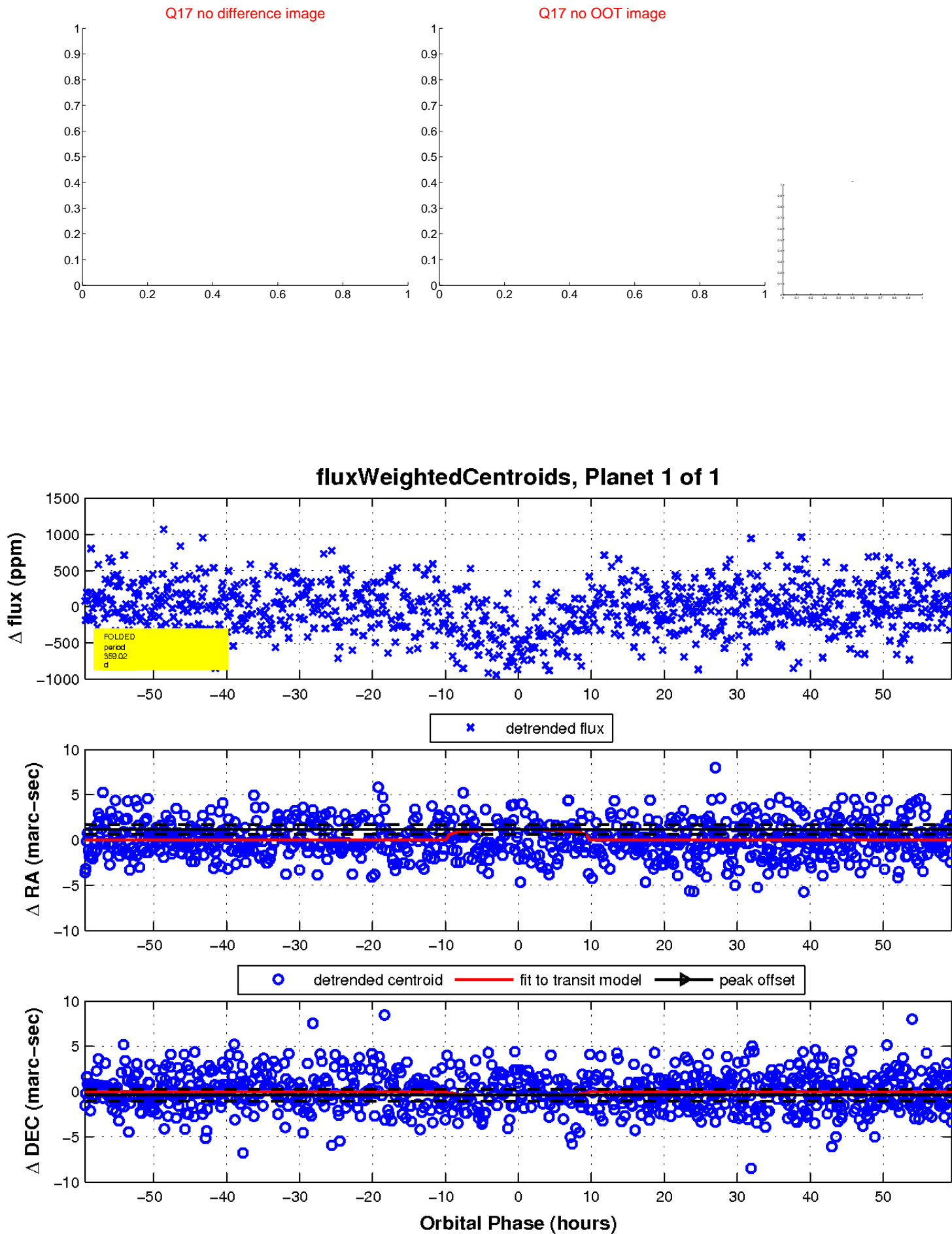
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image

Declination

