

KIC 012024065

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})
012024065-01	OBS	No	432.169447	252.326682	156.0	5.012	12.0	4.8	43.11	3912	79.94	321.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012024065-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED— HALO_GHOST

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

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

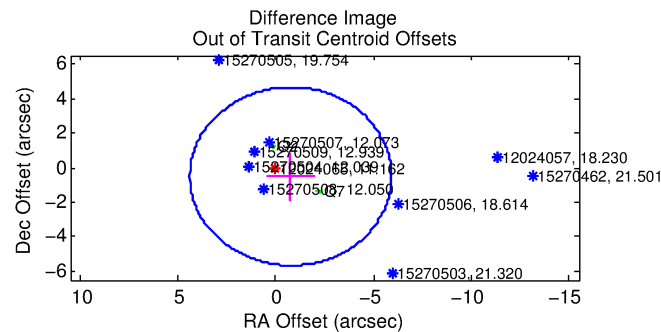
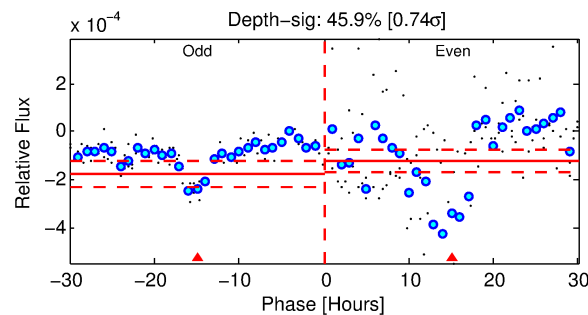
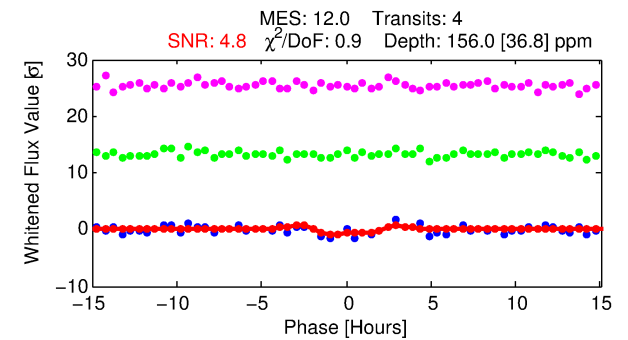
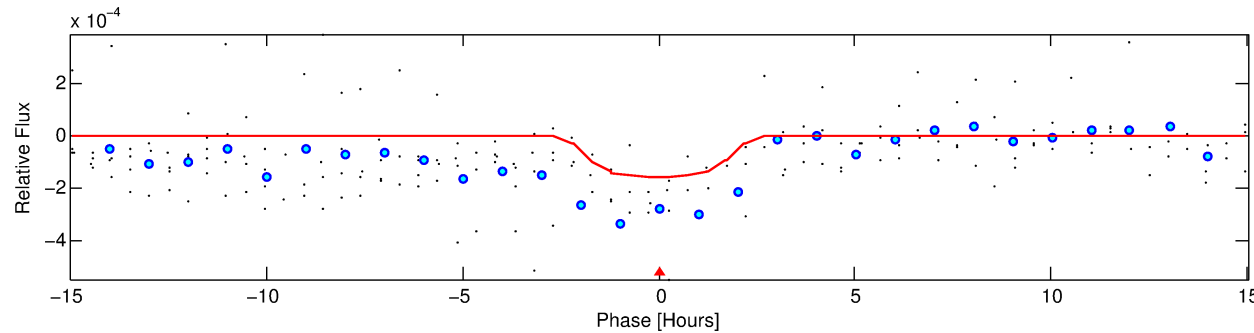
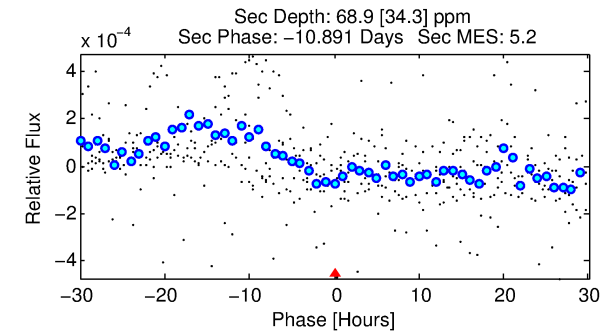
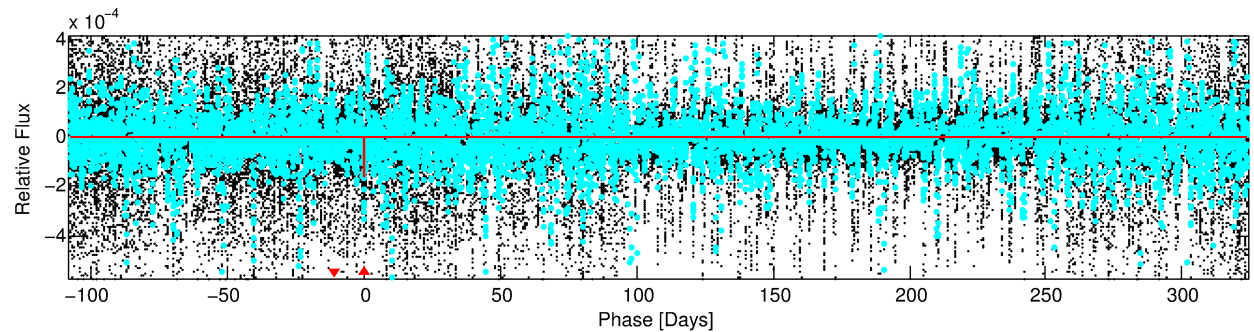
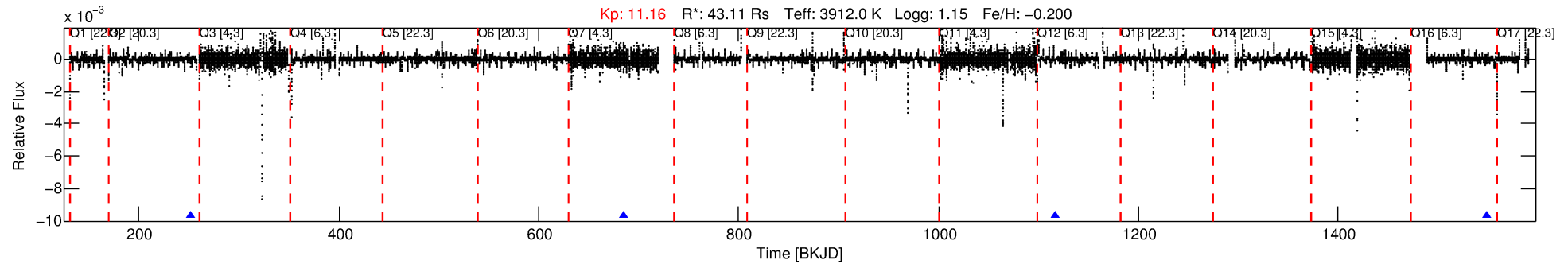
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012024065-01

No Significant Match Found

DV One-Page Summary

KIC: 12024065 Candidate: 1 of 1 Period: 432.169 d



DV Fit Results:

Period = 432.16945 [0.00670] d
Epoch = 252.3267 [0.0162] BKJD
Rp/R* = 0.0170 [0.0026]
a/R* = 198.84 [60.75]
b = 0.97 [0.02]
Seff = 321.11 [59.40]
Teff = 1079 [50] K
Rp = 79.94 [23.45] Re
a = 1.1020 [0.1851] AU
Ag = 7.21 [4.40] [1.41 σ]
Teffp = 2734 [403] K [4.08 σ]

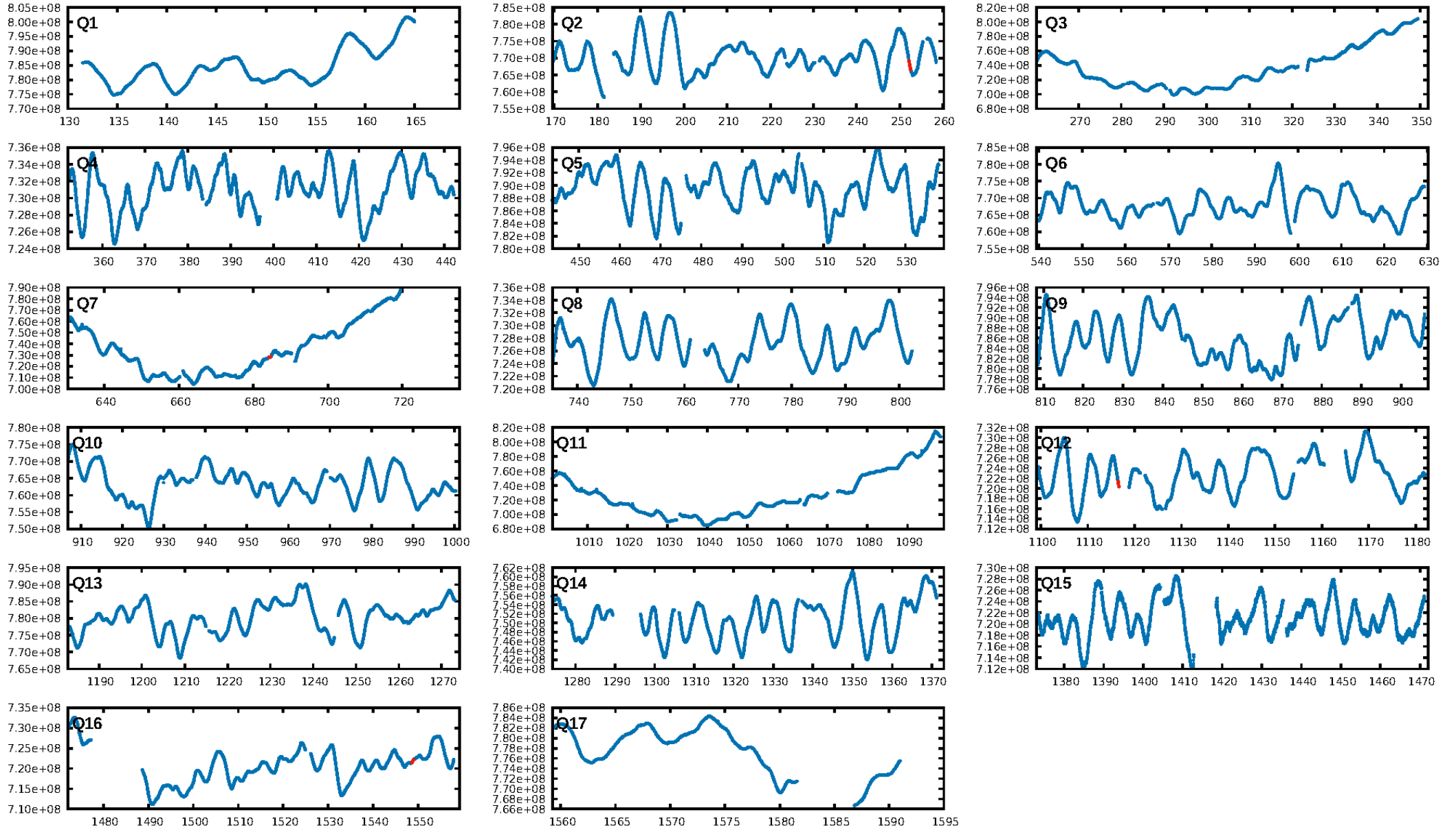
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.9%
ModelChiSquareGof-sig: 98.7%
Bootstrap-pfa: 4.54e-06
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.03461
Centroid-sig: 18.4%
Centroid-so: 2.459 arcsec [1.36 σ]
OotOffset-rm: 0.916 arcsec [0.53 σ]
KicOffset-rm: 0.862 arcsec [0.61 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

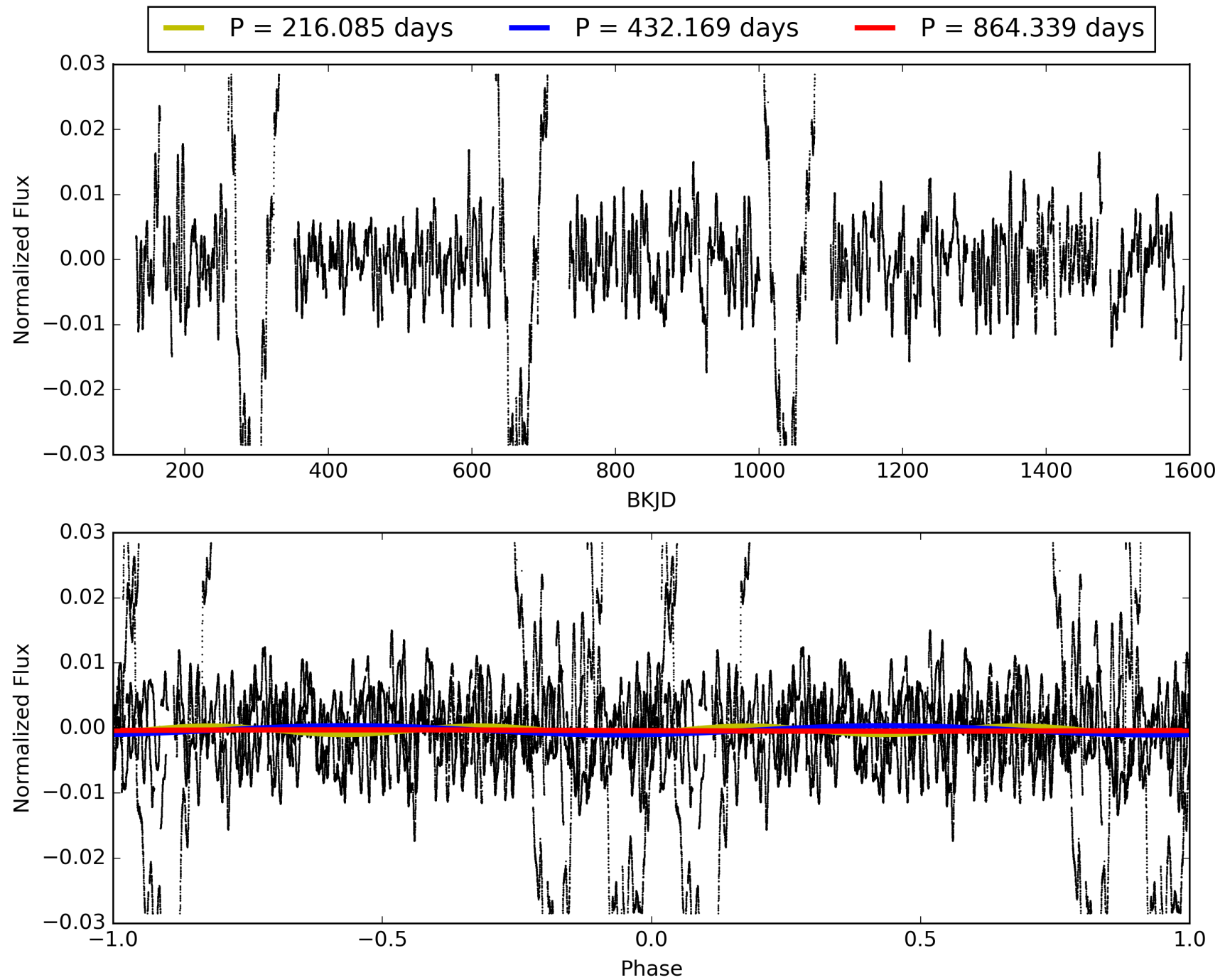
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:27:15 Z

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

TCE 012024065-01, PDC Light Curves

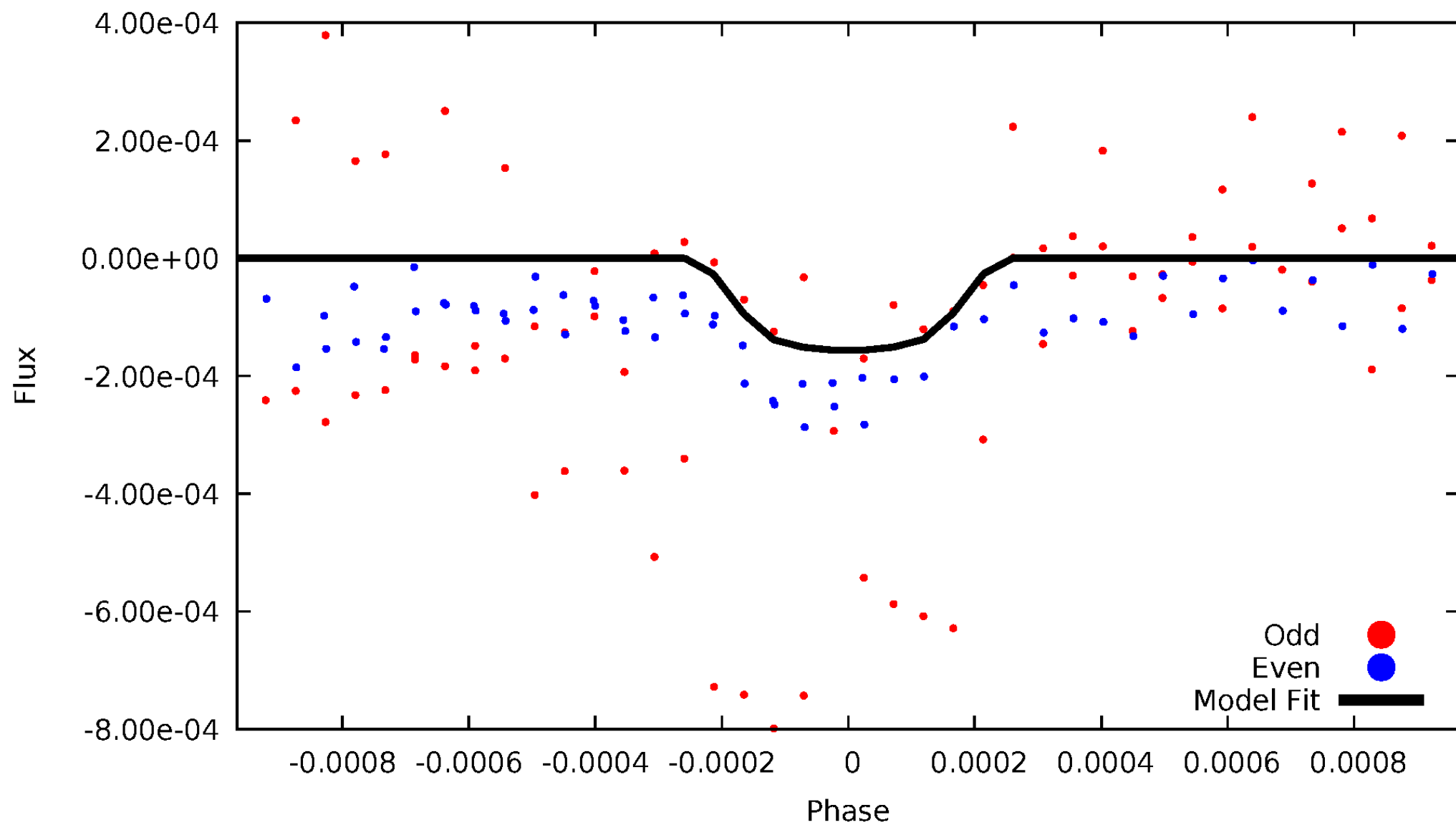


TCE 012024065-01



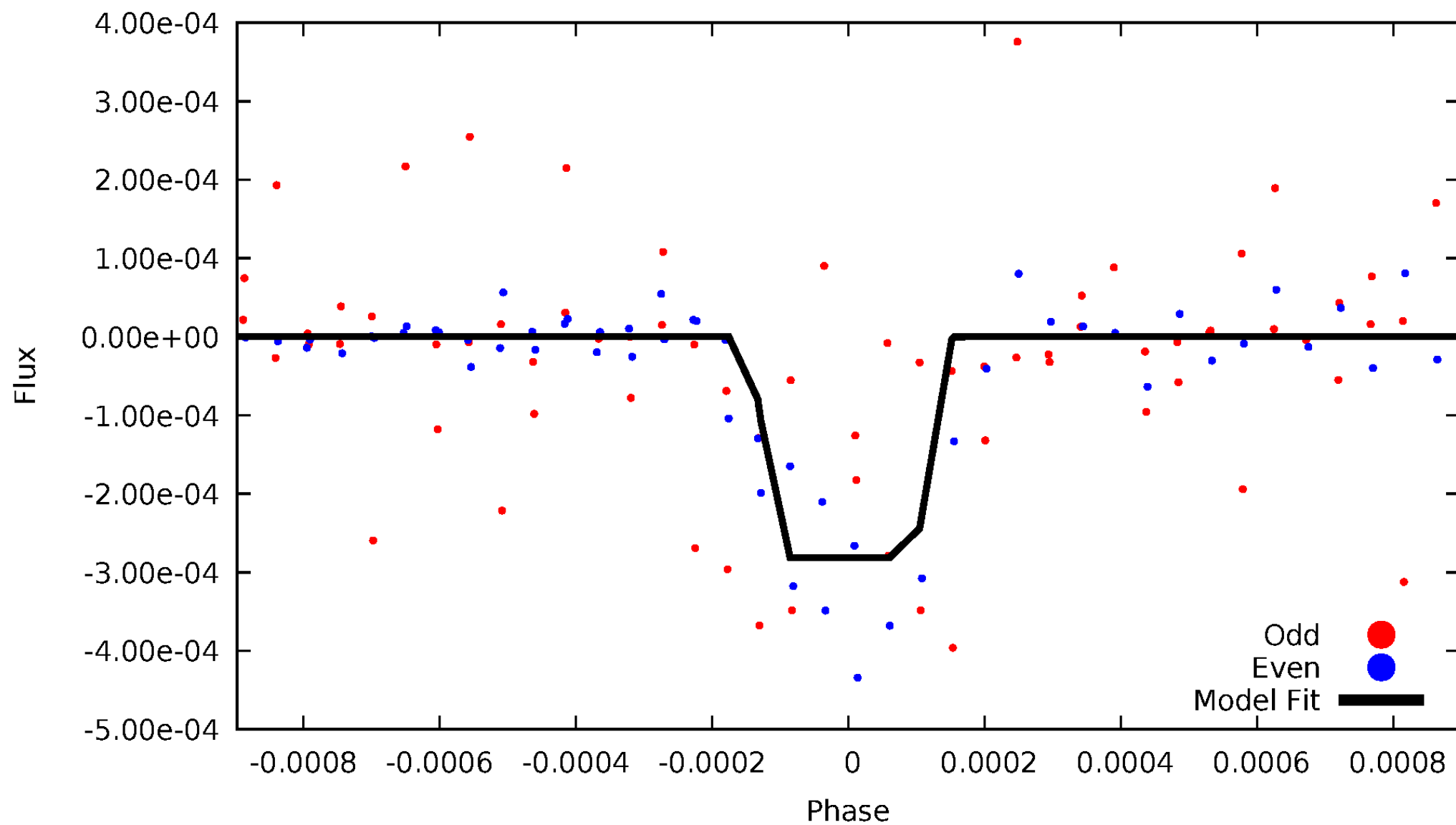
DV Odd/Even

TCE 012024065-01

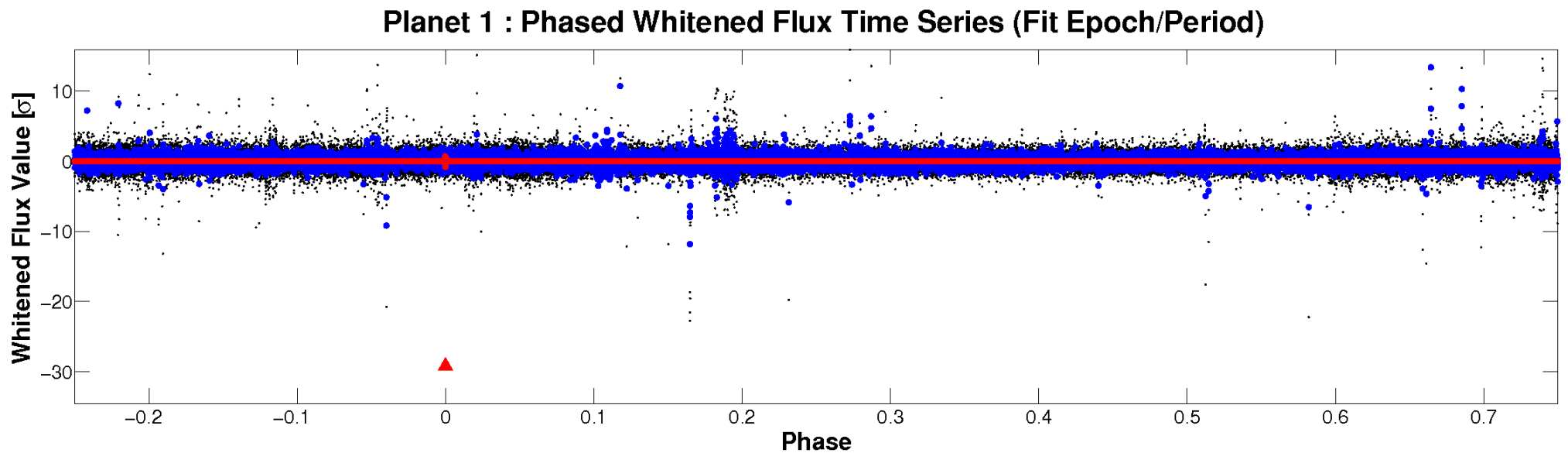
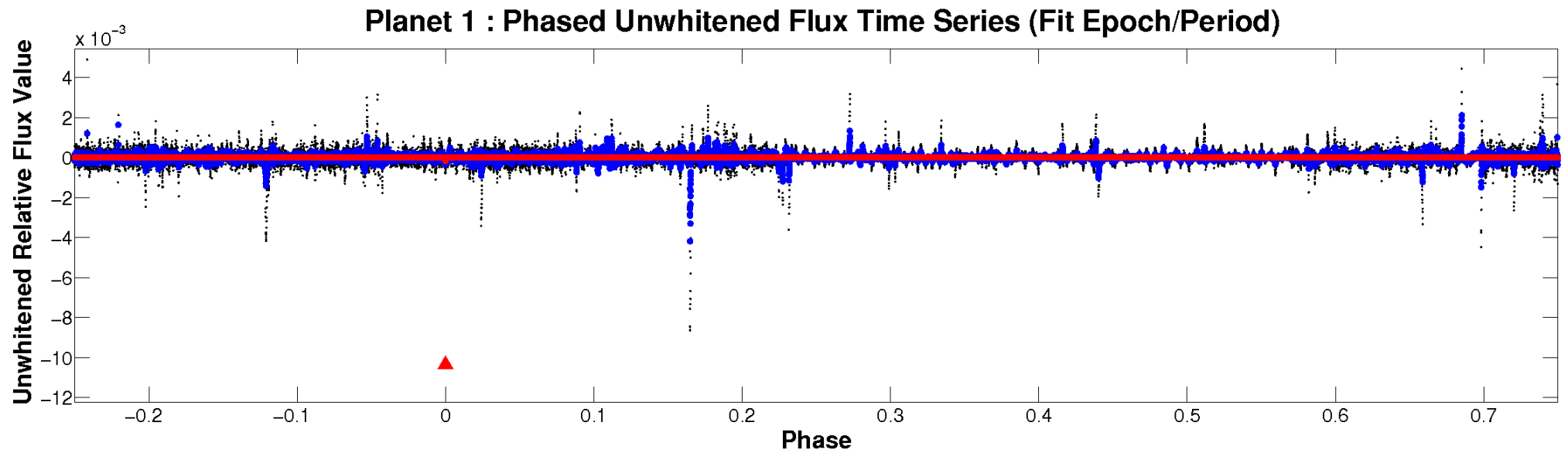


ALT Odd/Even

TCE 012024065-01

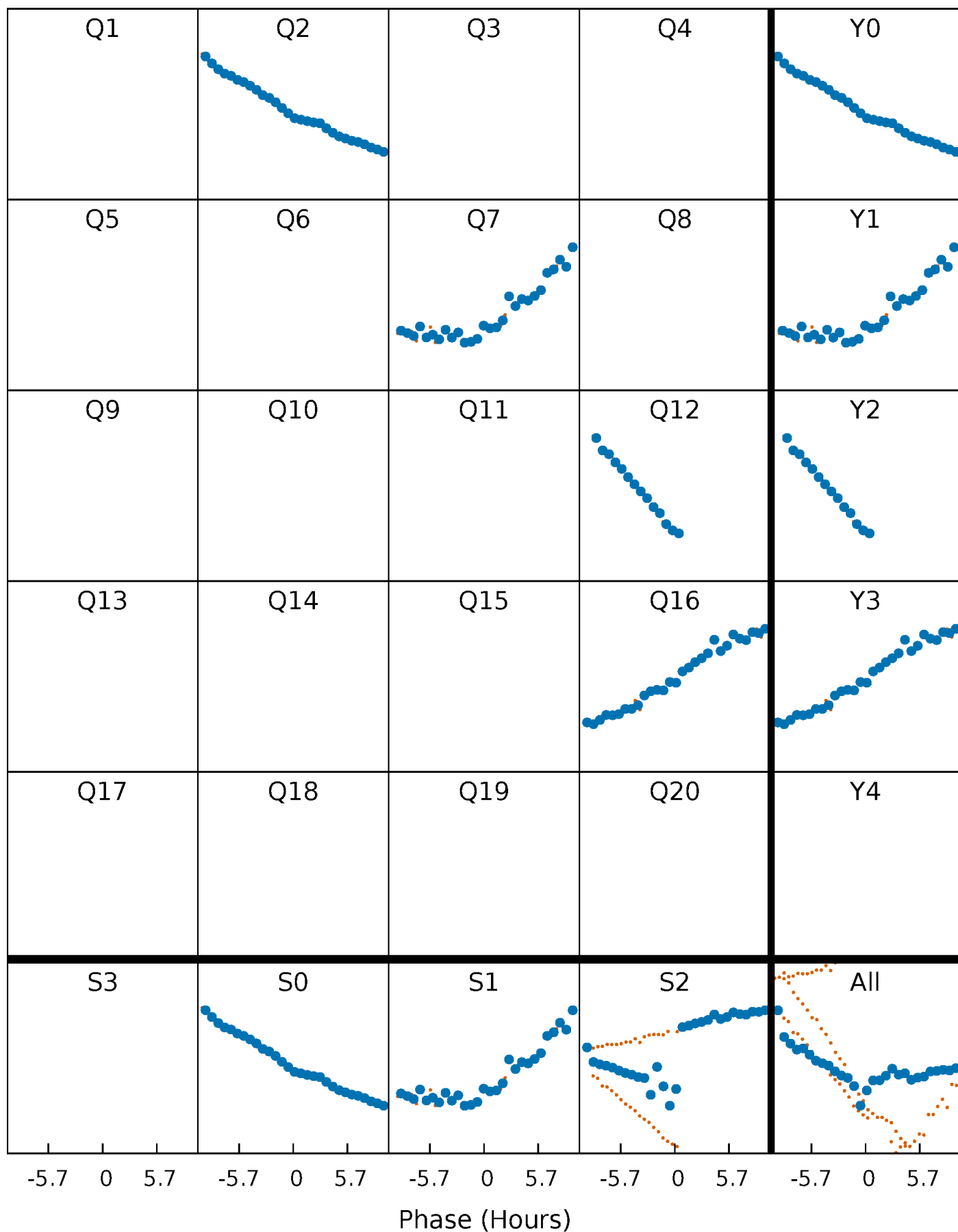


Non-Whitened Vs. Whitened Light Curve



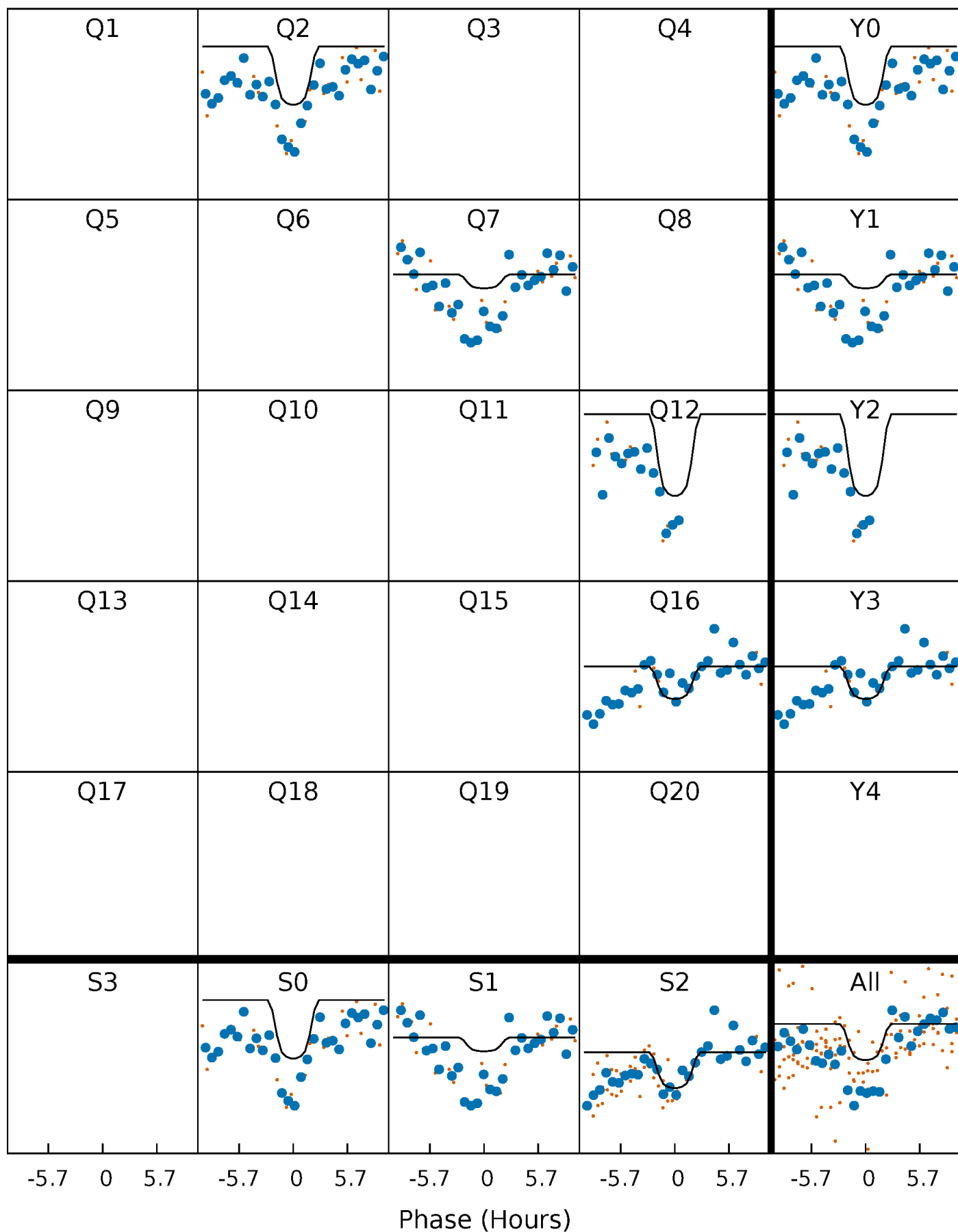
PDC Quarter-Phased Transit Curves

TCE 012024065-01 P=432.169447 Days $T_0=252.326682$ (BKJD)



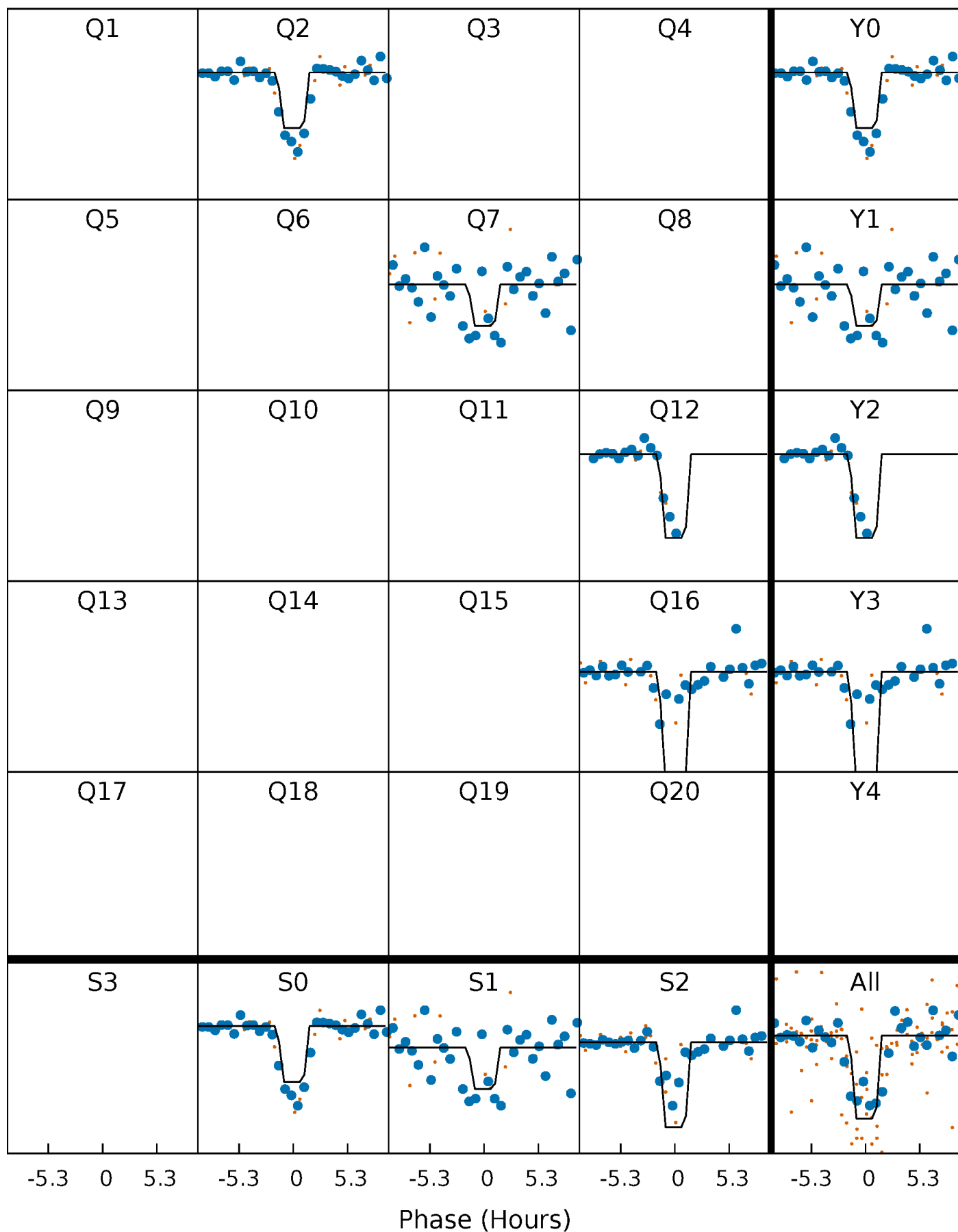
DV Quarter-Phased Transit Curves

TCE 012024065-01 P=432.169447 Days $T_0=252.326682$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

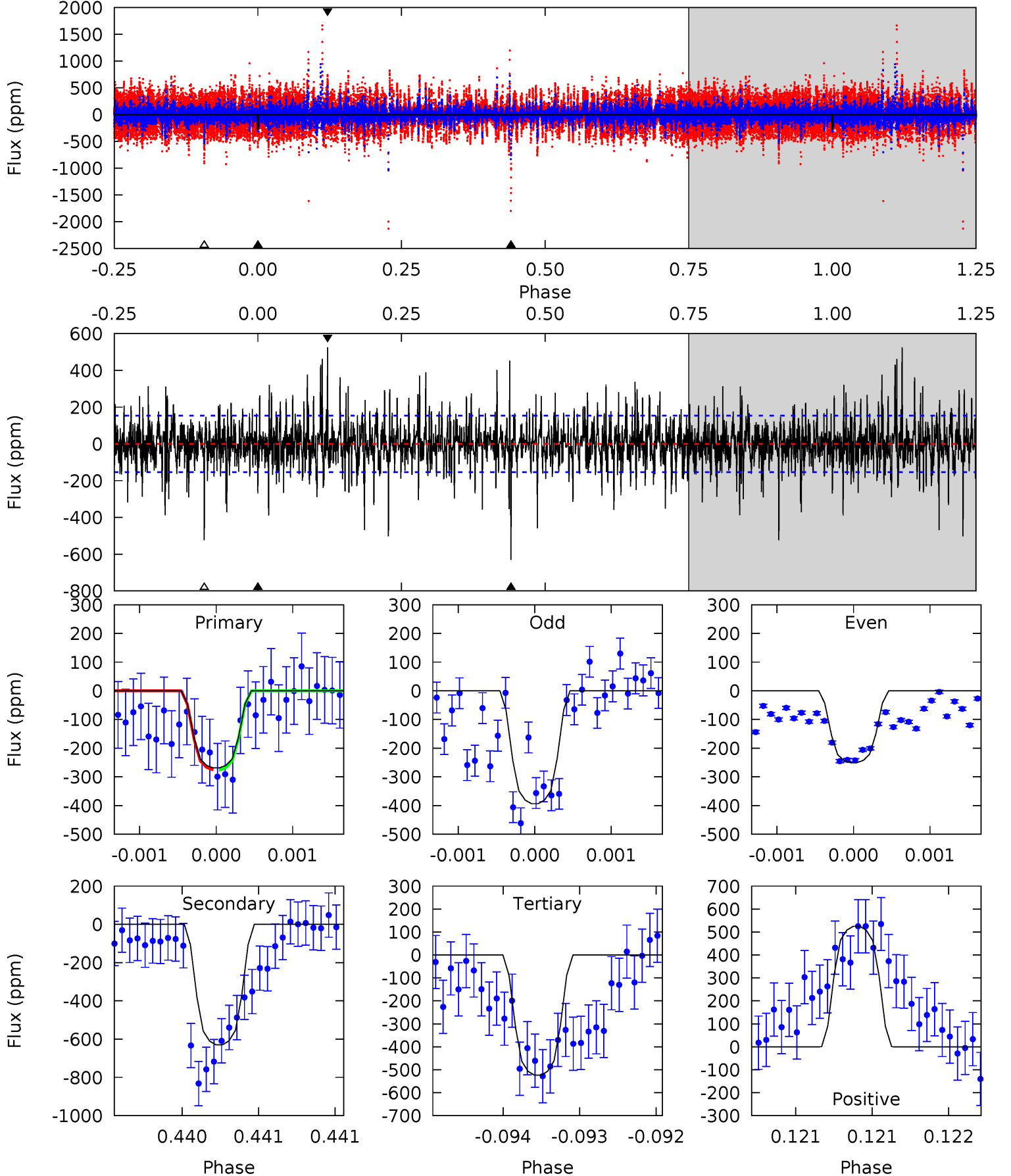
TCE 012024065-01 P=432.169794 Days $T_0=252.331726$ (BKJD)



DV Model-Shift Uniqueness Test

012024065-01, P = 432.169447 Days, E = 252.326682 Days

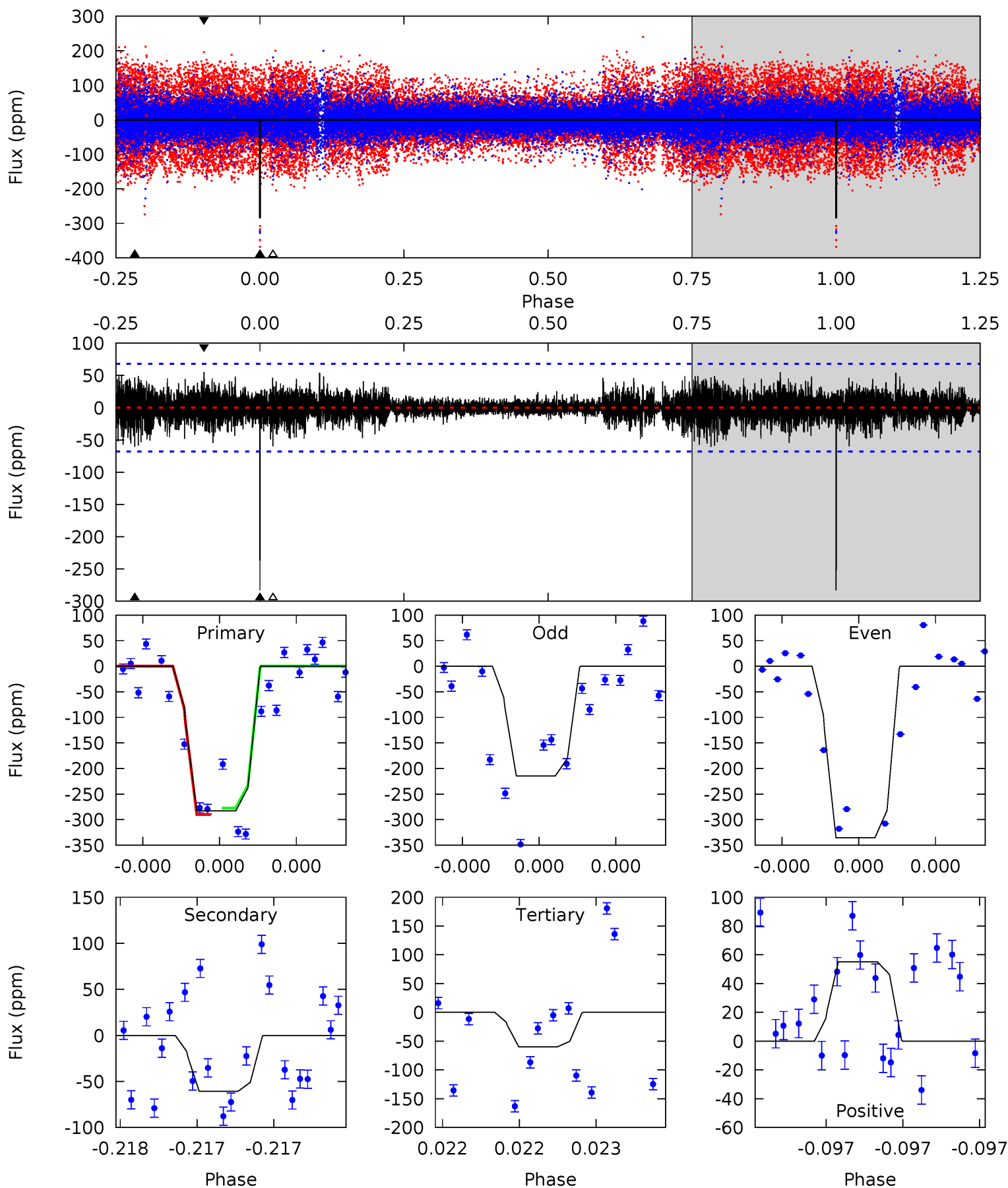
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.72	22.8	19.0	19.0	5.55	3.45	3.27	-9.23	-9.28	3.83	3.79	2.10	1.33	0.45	0.01



Alt Model-Shift Uniqueness Test

012024065-01, P = 432.169794 Days, E = 252.331726 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.6	5.07	5.00	4.61	5.67	3.63	0.96	18.7	19.0	0.08	0.46	5.63	0.98	0.16	0.51



Stellar Parameters For KIC 012024065

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3912^{+65}_{-41}	$1.149^{+0.030}_{-0.030}$	$-0.200^{+0.150}_{-0.100}$	$43.108^{+10.757}_{-1.793}$	$0.955^{+0.520}_{-0.058}$	$0.000^{+0.000}_{-0.000}$
	+2%/-1%	+3%/-3%	+75%/-50%	+25%/-4%	+54%/-6%	+10%/-21%
Source	SPE74	AST71	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 012024065-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-630 ± 28	$79.56^{+14.73}_{-13.08}$	1510^{+33}_{-25}	4534^{+324}_{-256}	67^{+28}_{-18}
Alt.	-61 ± 12	$78.77^{+14.64}_{-13.01}$	1511^{+31}_{-28}	3049^{+186}_{-160}	$6.342^{+3.029}_{-1.930}$

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

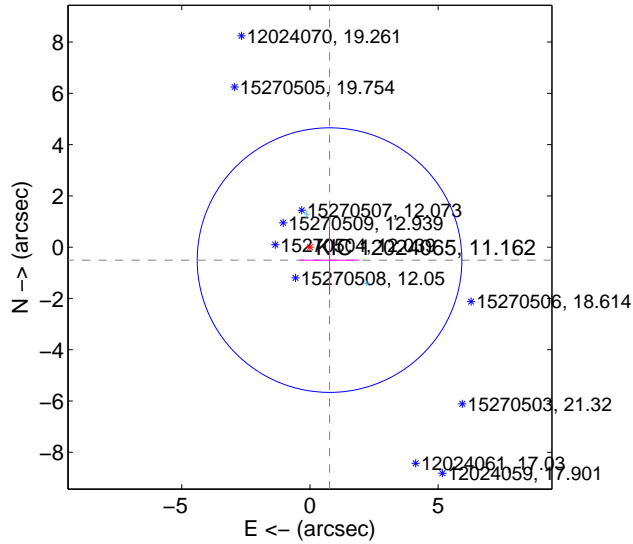
Supplemental centroid analysis for 012024065-01. **Kepler magnitude: 11.16.** Transit SNR 4.79

There are 2 quarters with good PRF difference image offsets

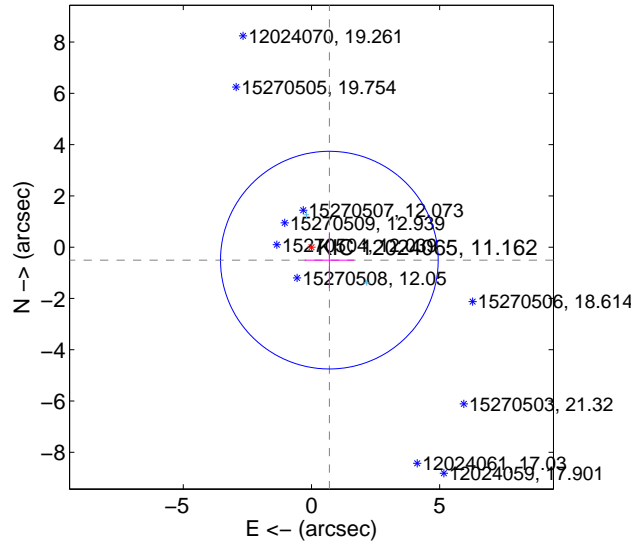
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.916 ± 1.720	0.53	-0.765 ± 1.171	-0.505 ± 1.350
PRF-fit source offset from KIC position	0.862 ± 1.415	0.61	-0.698 ± 0.961	-0.506 ± 1.087
photometric centroid source offset	2.46 ± 1.80	1.36	-2.29 ± 1.77	-0.90 ± 1.98

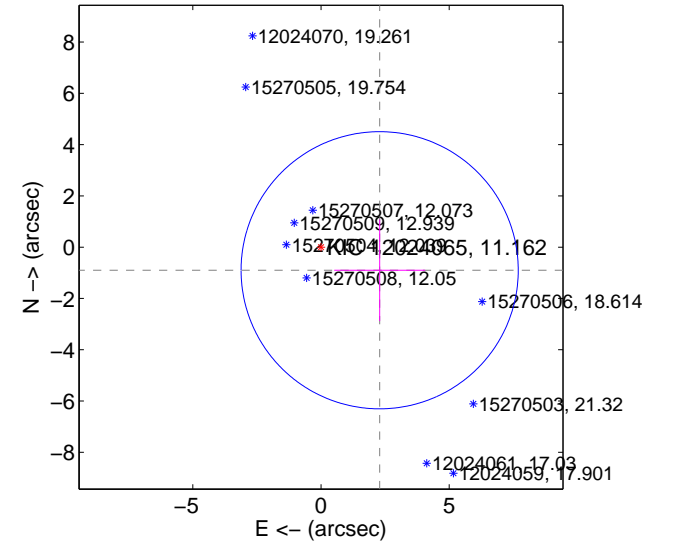
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

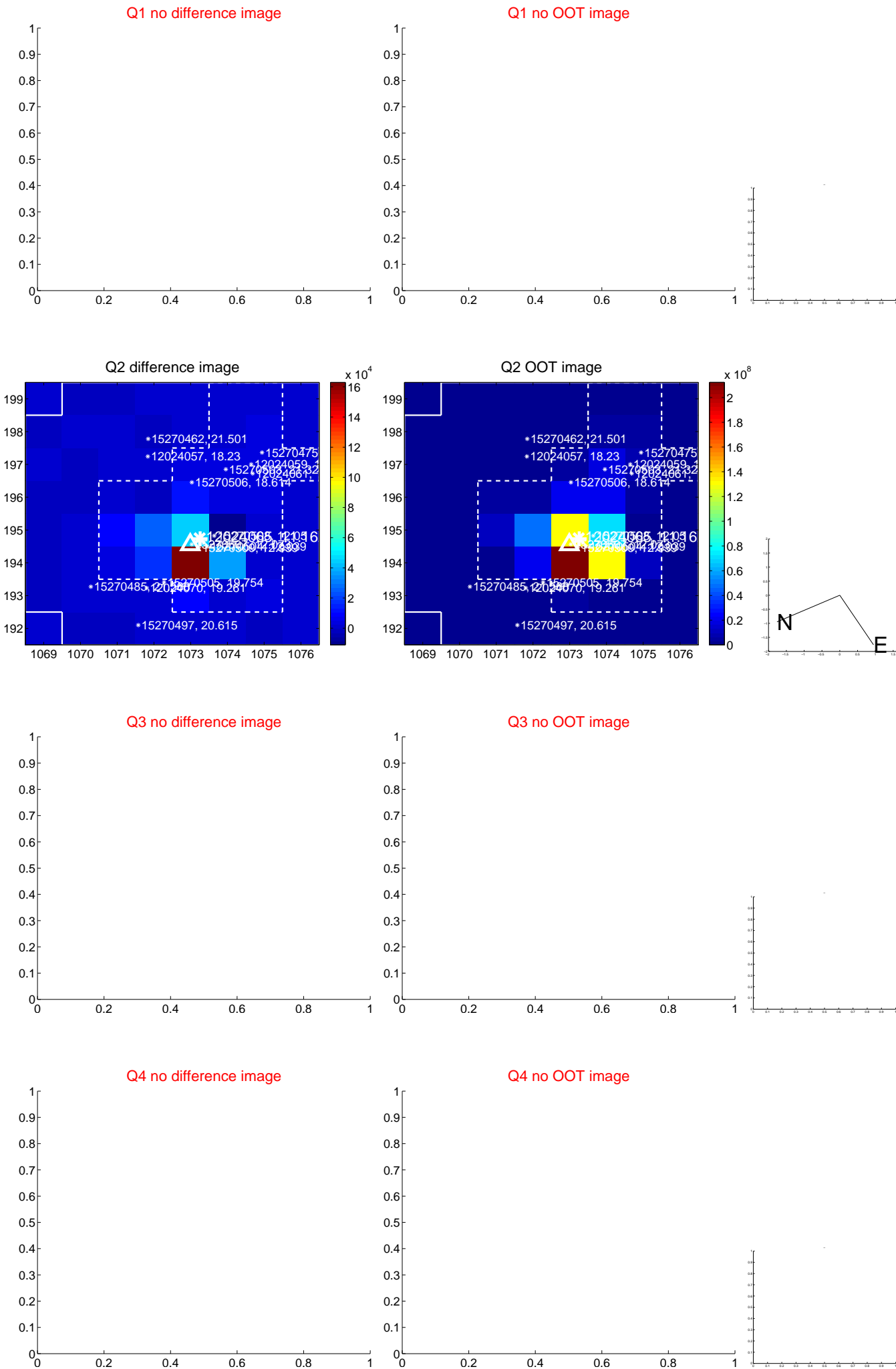


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



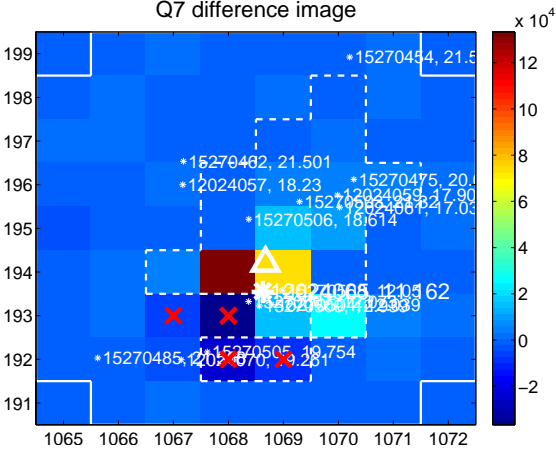
Q6 no difference image



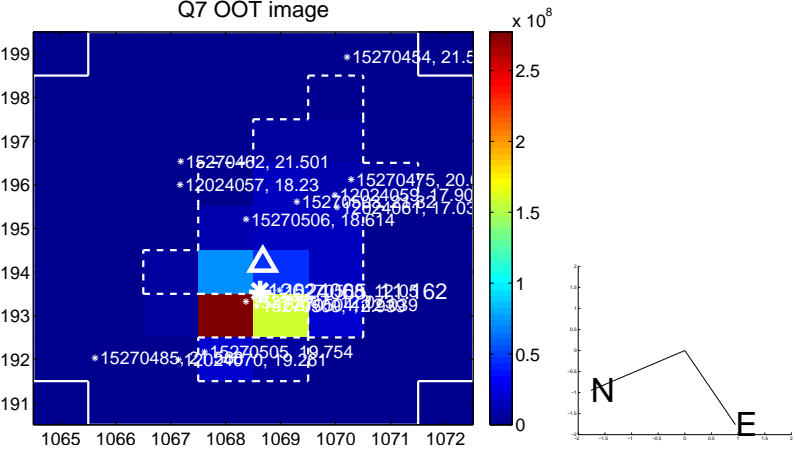
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



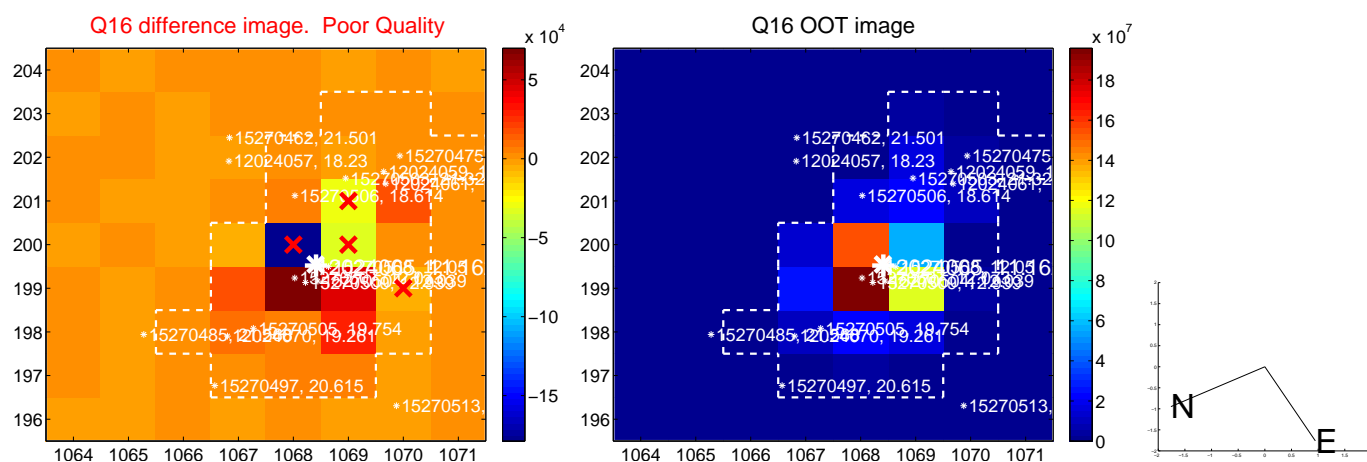
Q8 no OOT image



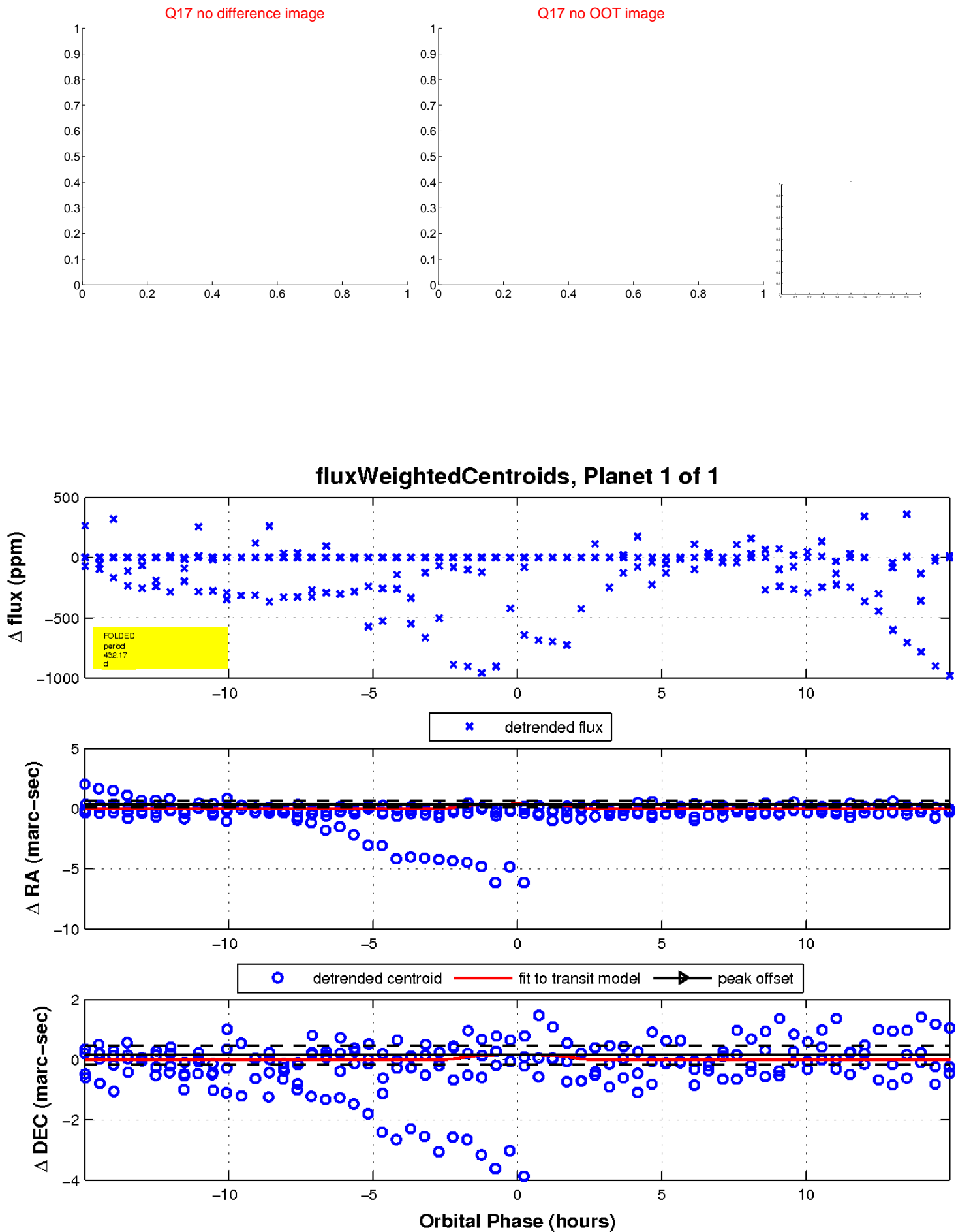
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

