

KIC 004578488

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})
004578488-01	OBS	No	310.360342	305.837516	566.4	3.576	8.8	3.7	12.17	4789	28.22	52.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004578488-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—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.

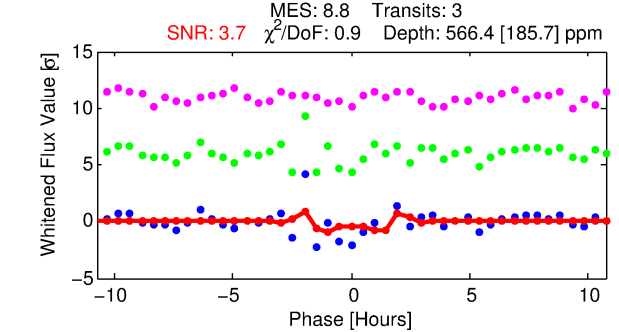
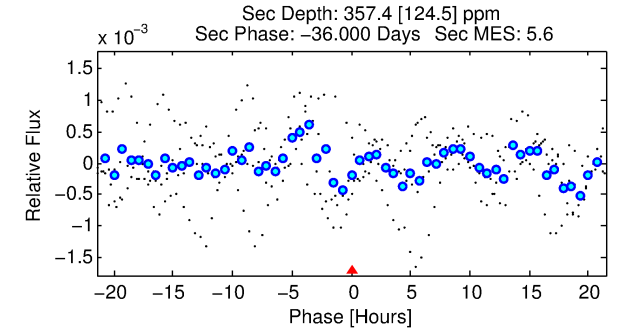
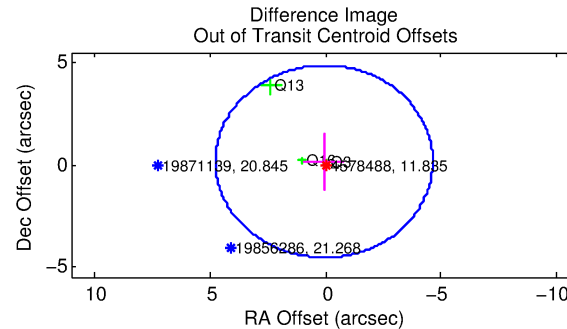
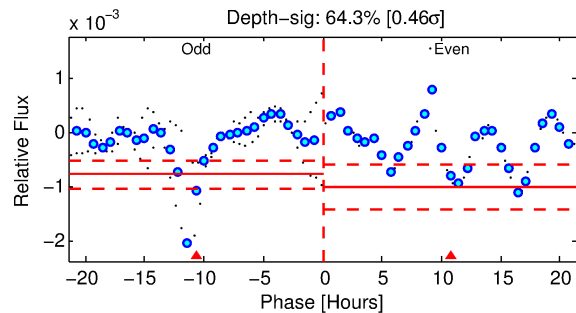
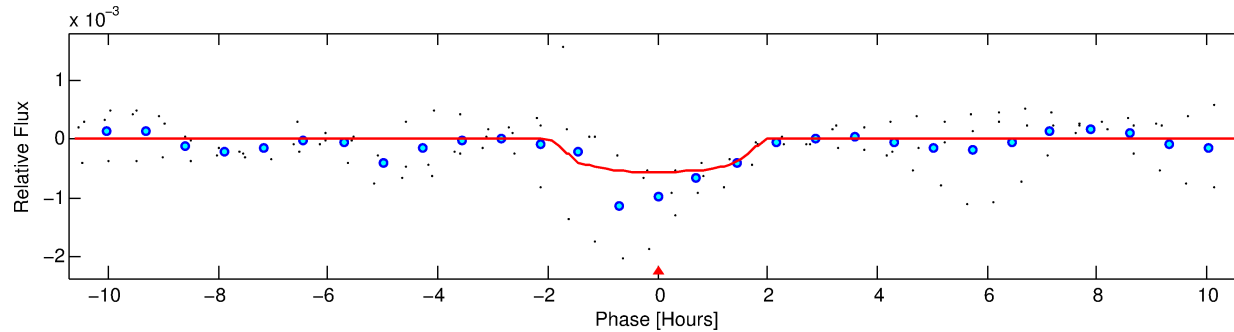
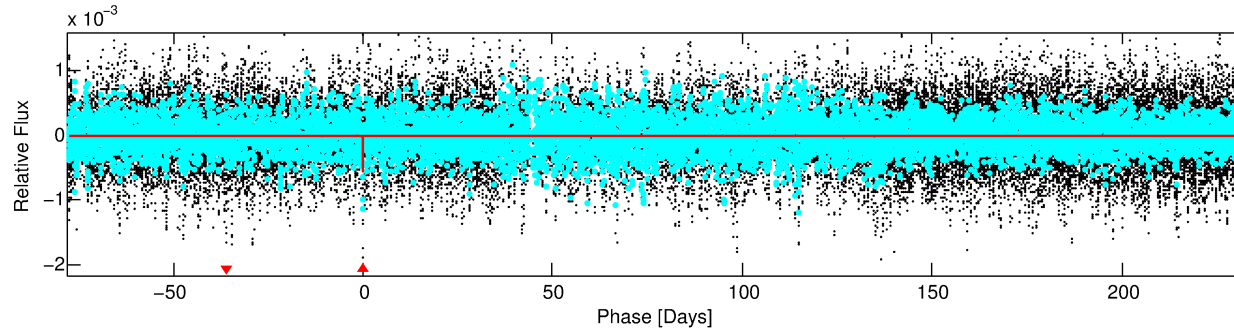
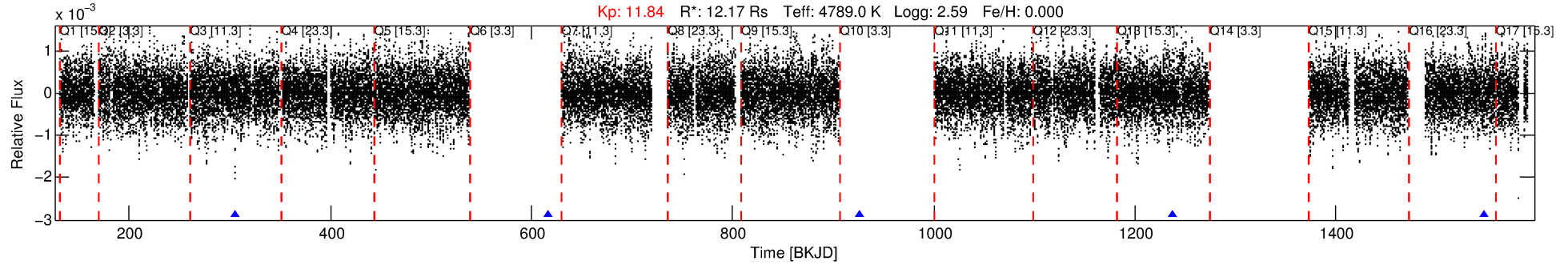
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004578488-01

No Significant Match Found

DV One-Page Summary

KIC: 4578488 Candidate: 1 of 1 Period: 310.360 d



DV Fit Results:

Period = 310.36034 [0.00150] d
Epoch = 305.8375 [0.0042] BKJD
Rp/R* = 0.0213 [0.0337]
a/R* = 651.58 [3439.43]
b = 0.28 [17.77]
Seff = 52.99 [11.52]
Teq = 688 [37] K
Rp = 28.22 [45.34] Re
a = 1.1476 [0.2030] AU
Ag = 325.07 [1038.32] [0.31 σ]
Teff = 4517 [3603] K [1.06 σ]

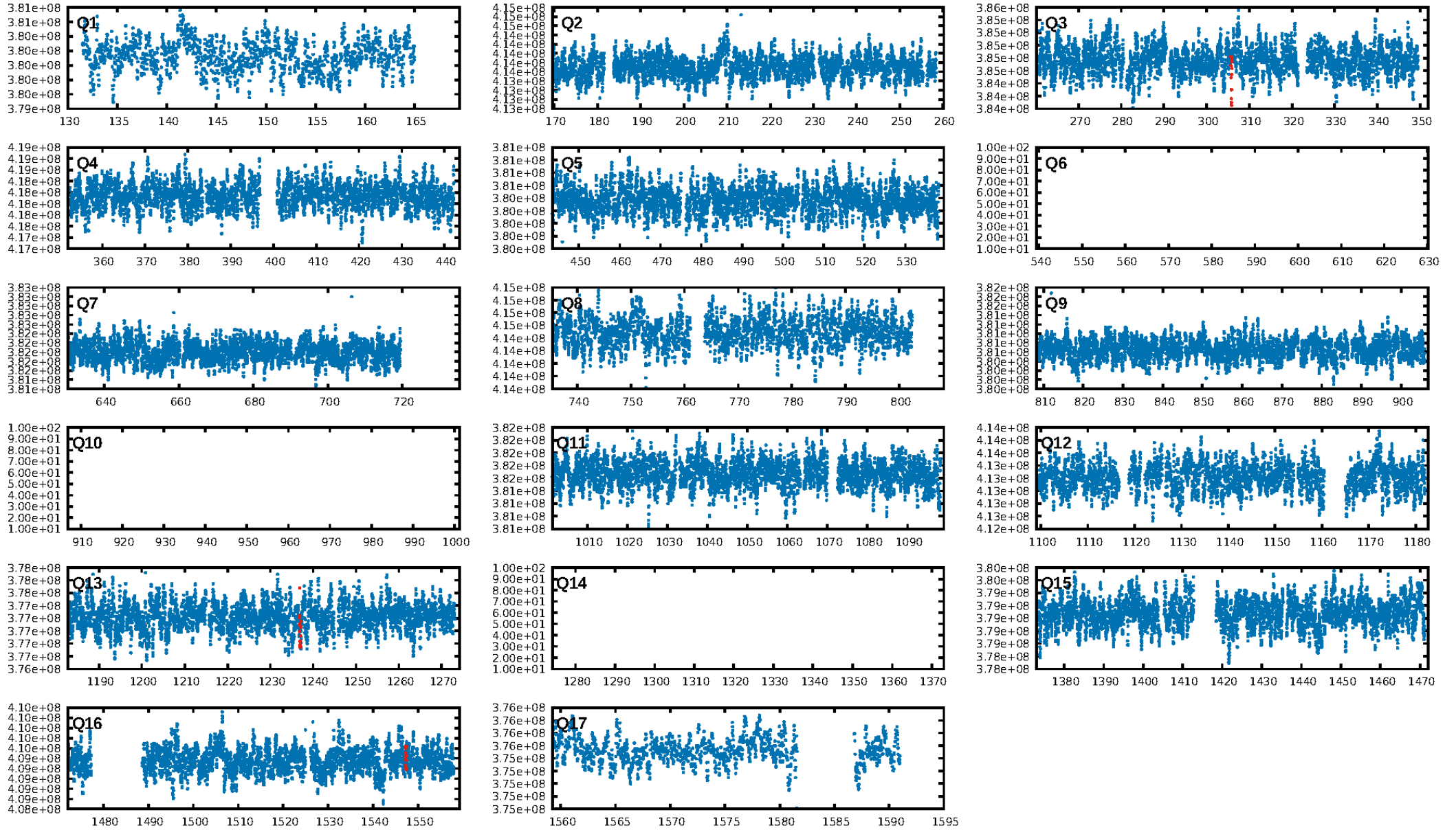
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 70.6%
ModelChiSquareGof-sig: 94.0%
Bootstrap-pfa: 2.09e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4899
Centroid-sig: 15.2%
Centroid-so: 0.921 arcsec [1.74 σ]
OotOffset-rm: 0.166 arcsec [0.11 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.110 arcsec [0.19 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

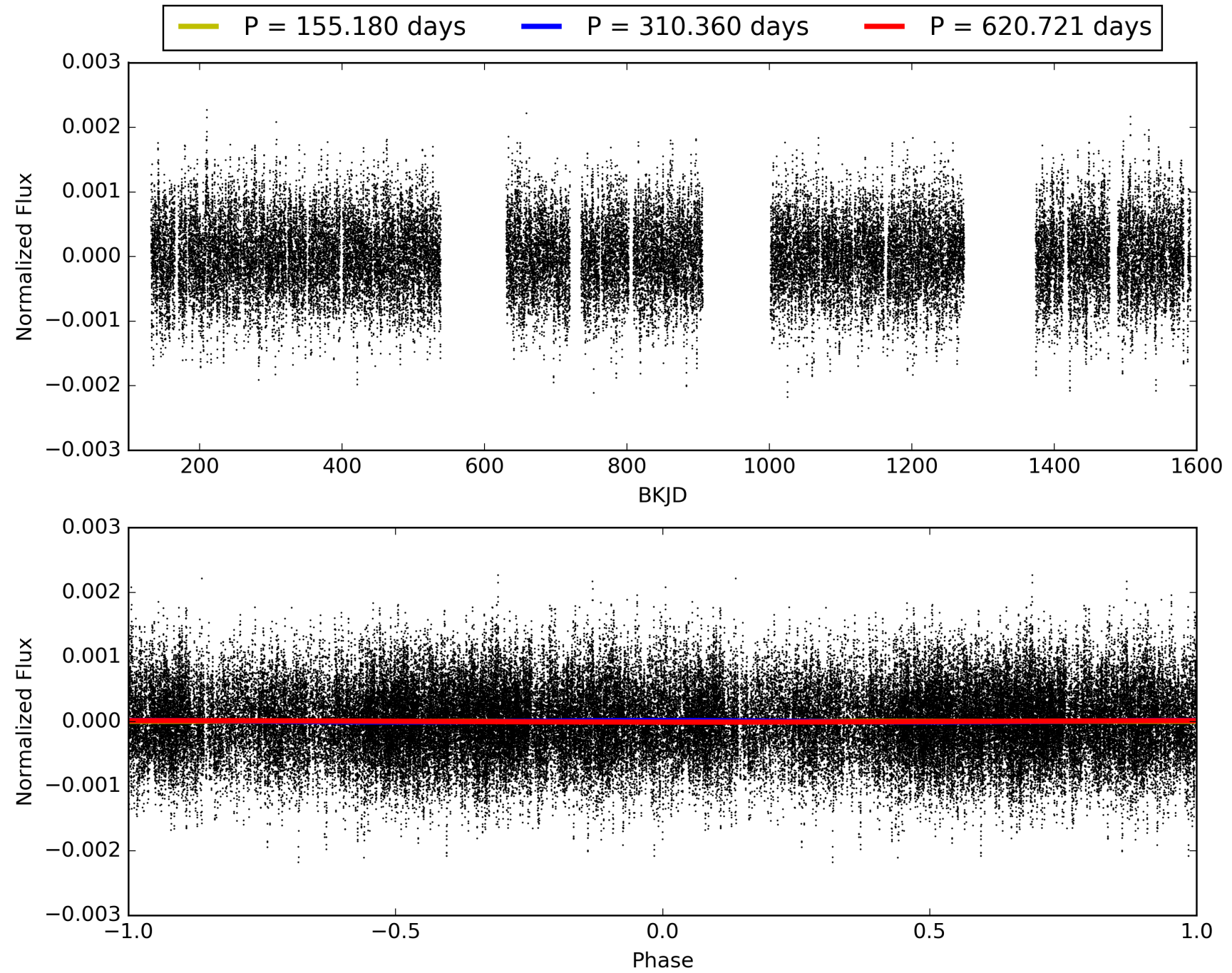
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:00:09 Z

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

TCE 004578488-01, PDC Light Curves

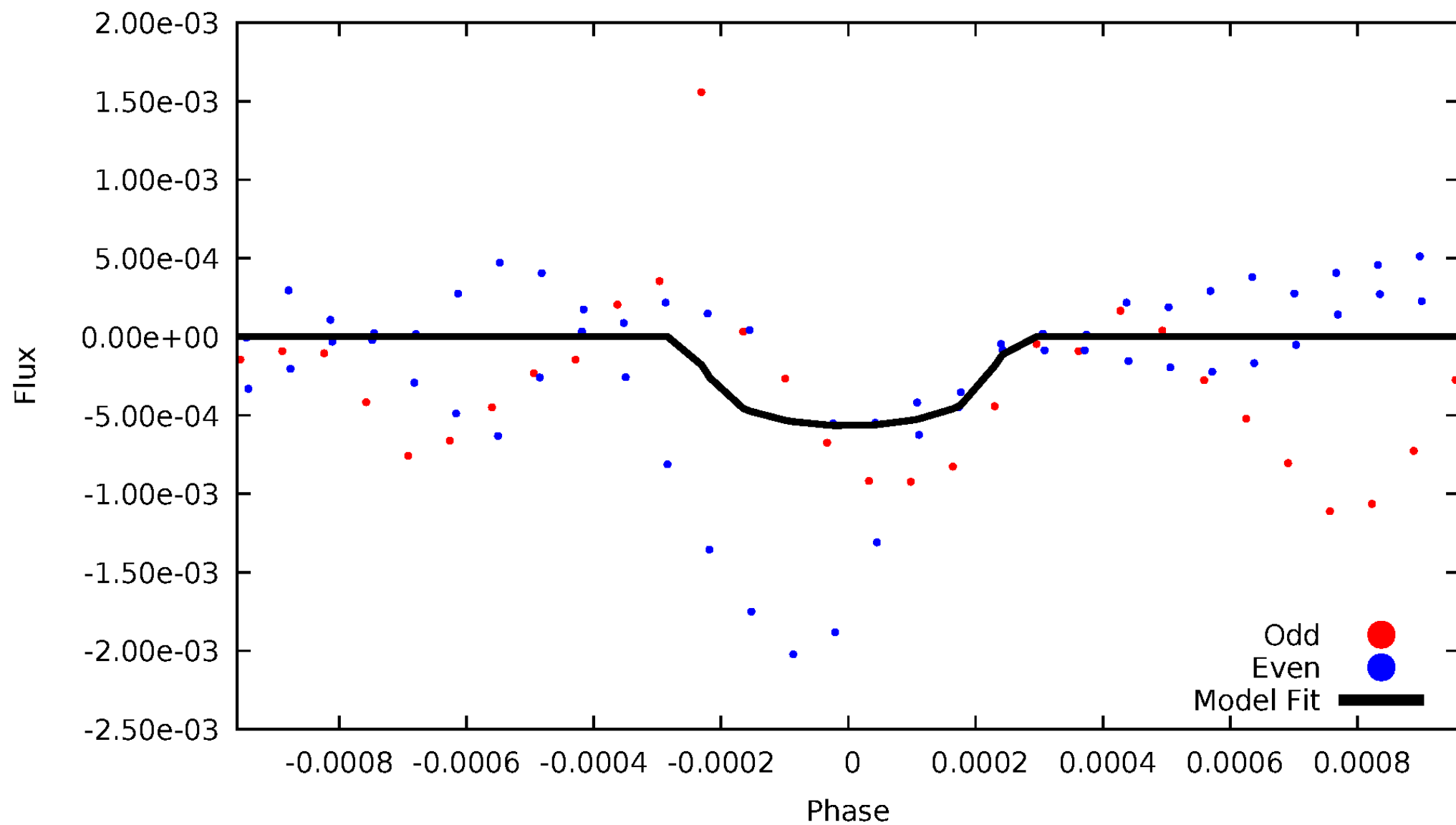


TCE 004578488-01



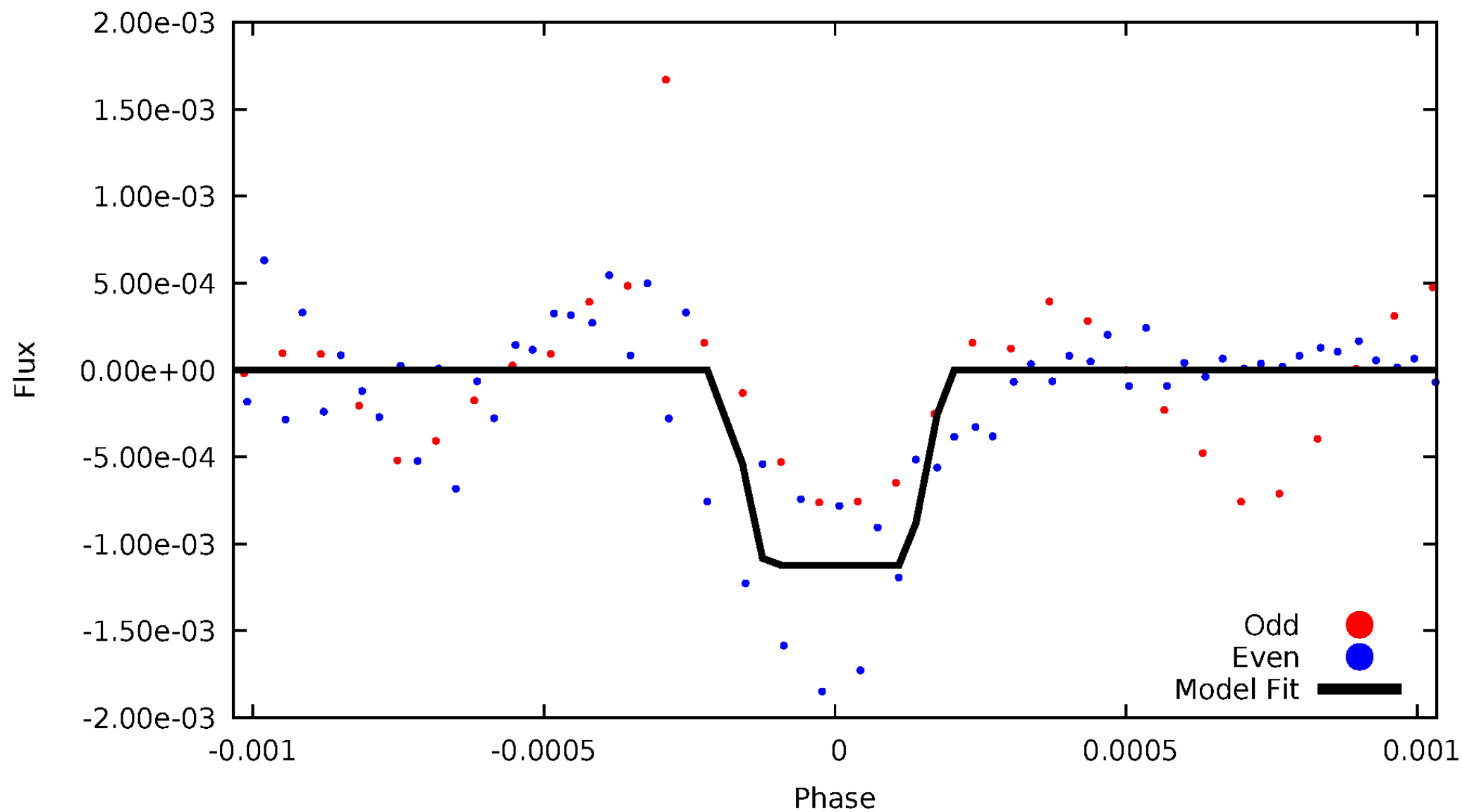
DV Odd/Even

TCE 004578488-01



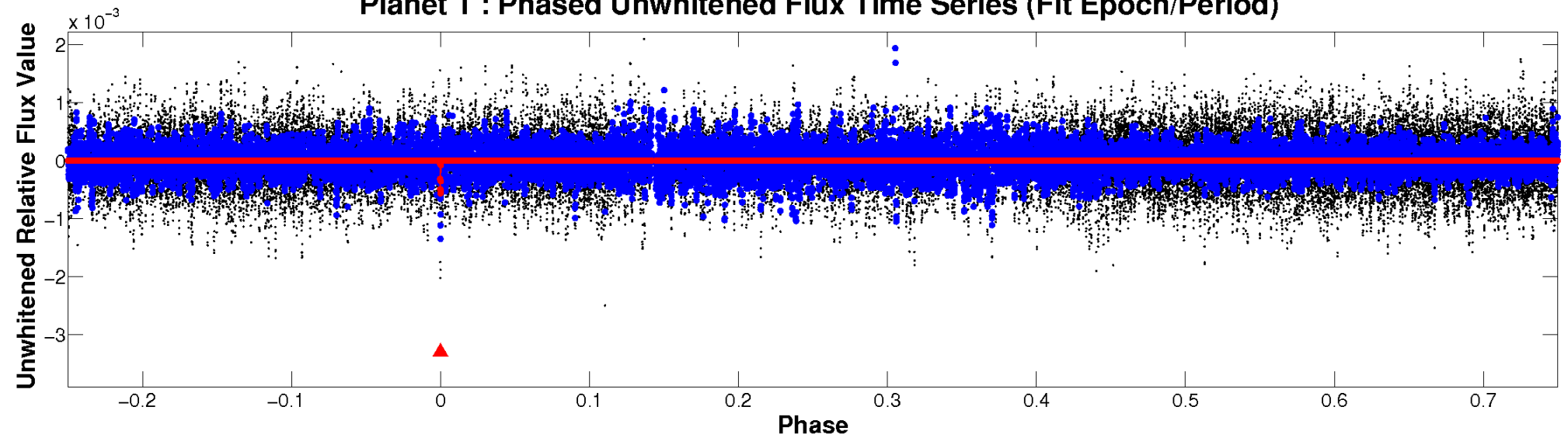
ALT Odd/Even

TCE 004578488-01

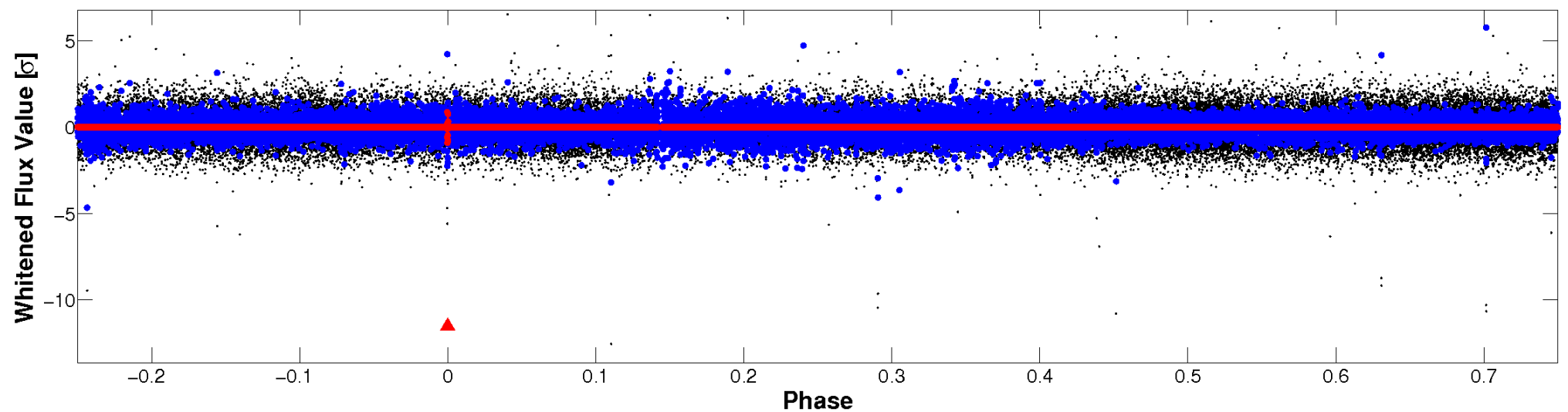


Non-Whitened Vs. Whitened Light Curve

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

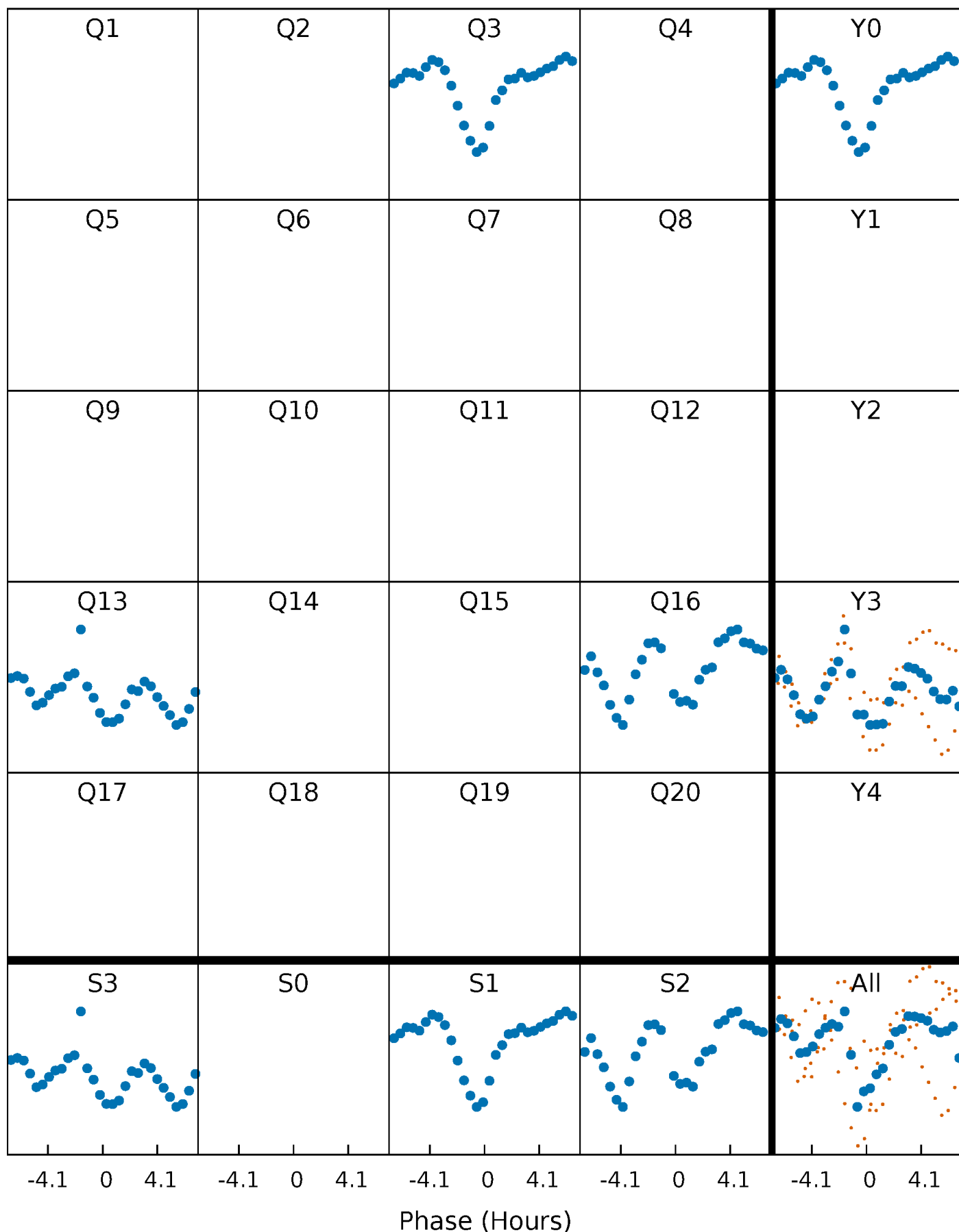


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



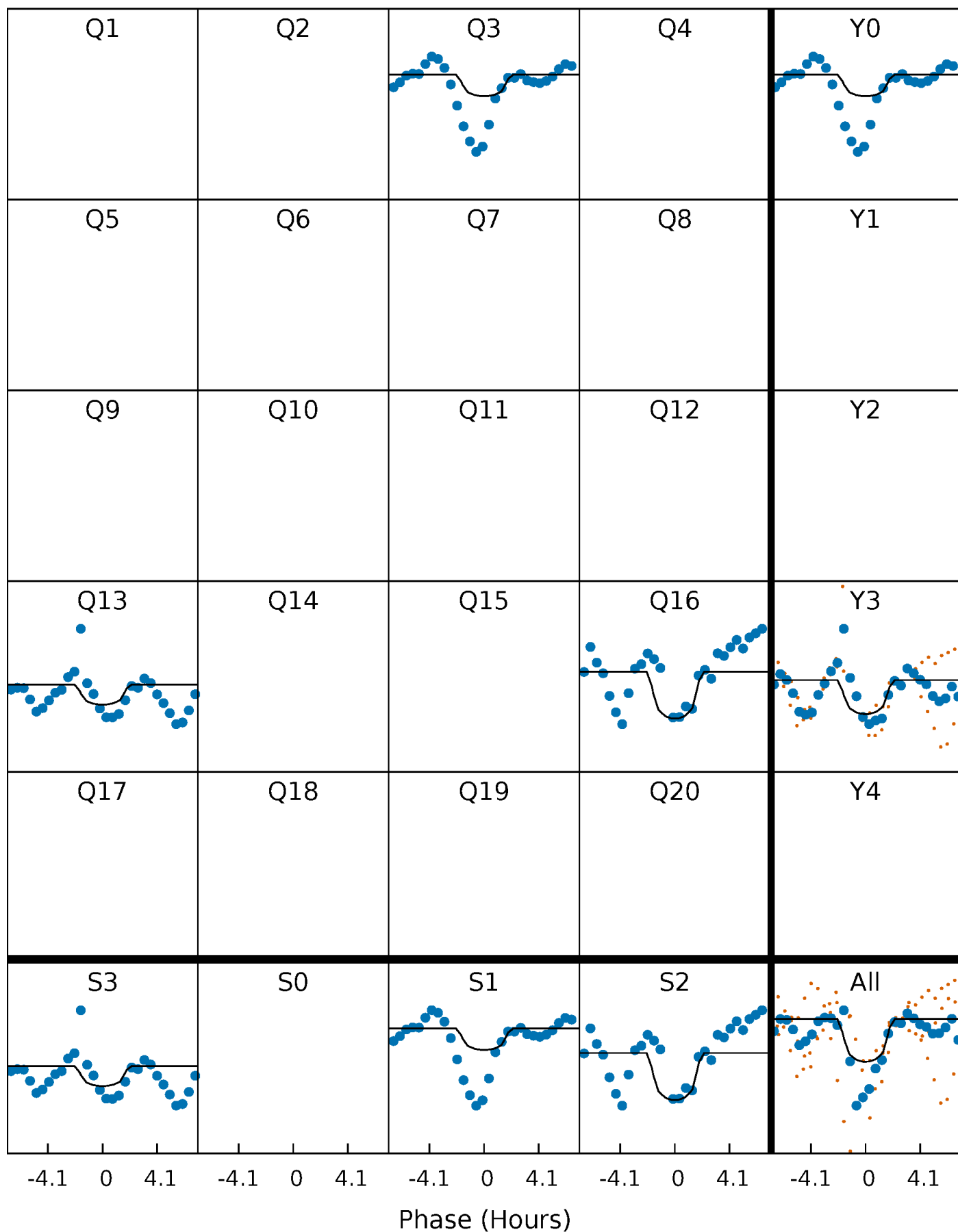
PDC Quarter-Phased Transit Curves

TCE 004578488-01 P=310.360342 Days $T_0=305.837516$ (BKJD)



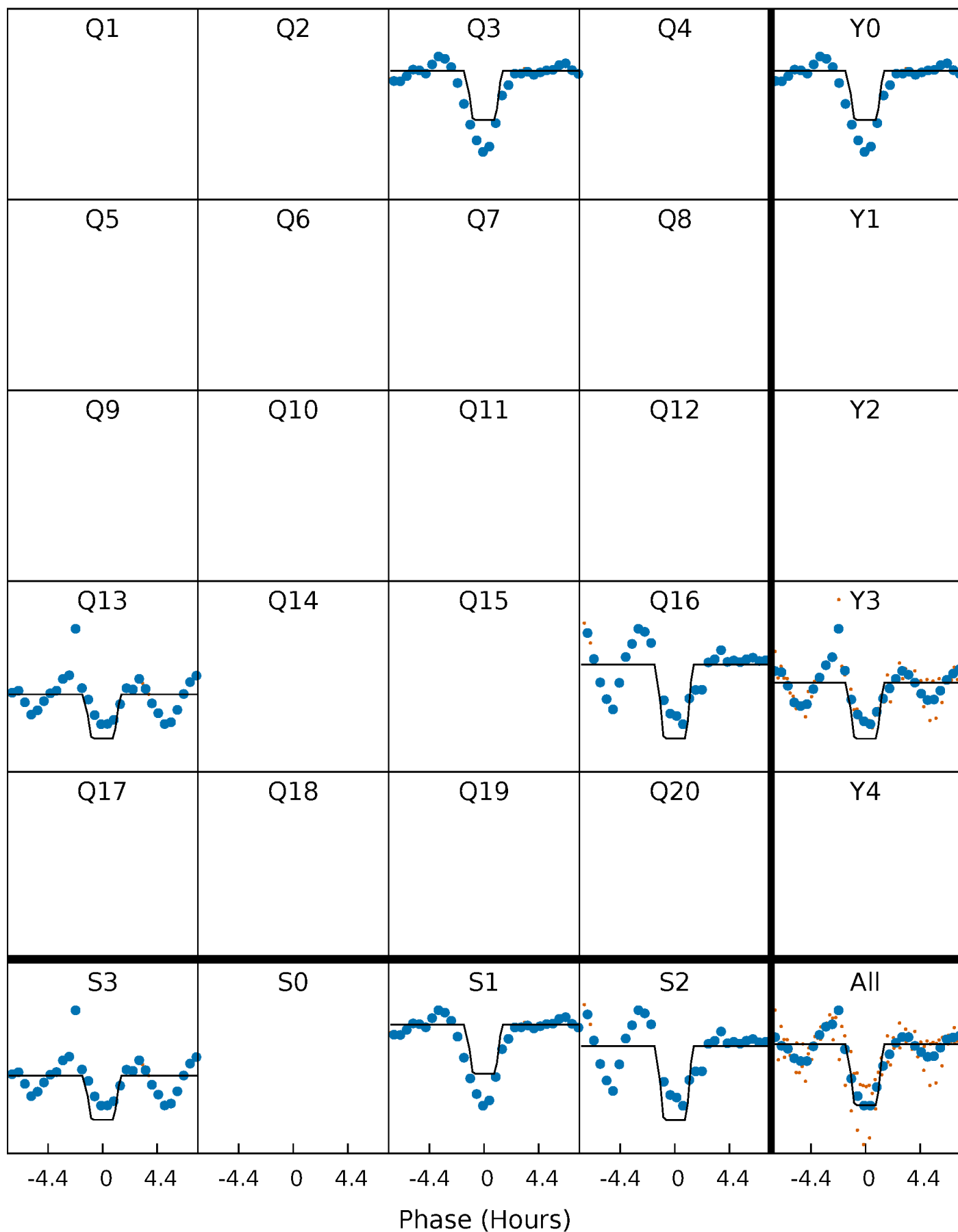
DV Quarter-Phased Transit Curves

TCE 004578488-01 $P=310.360342$ Days $T_0=305.837516$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

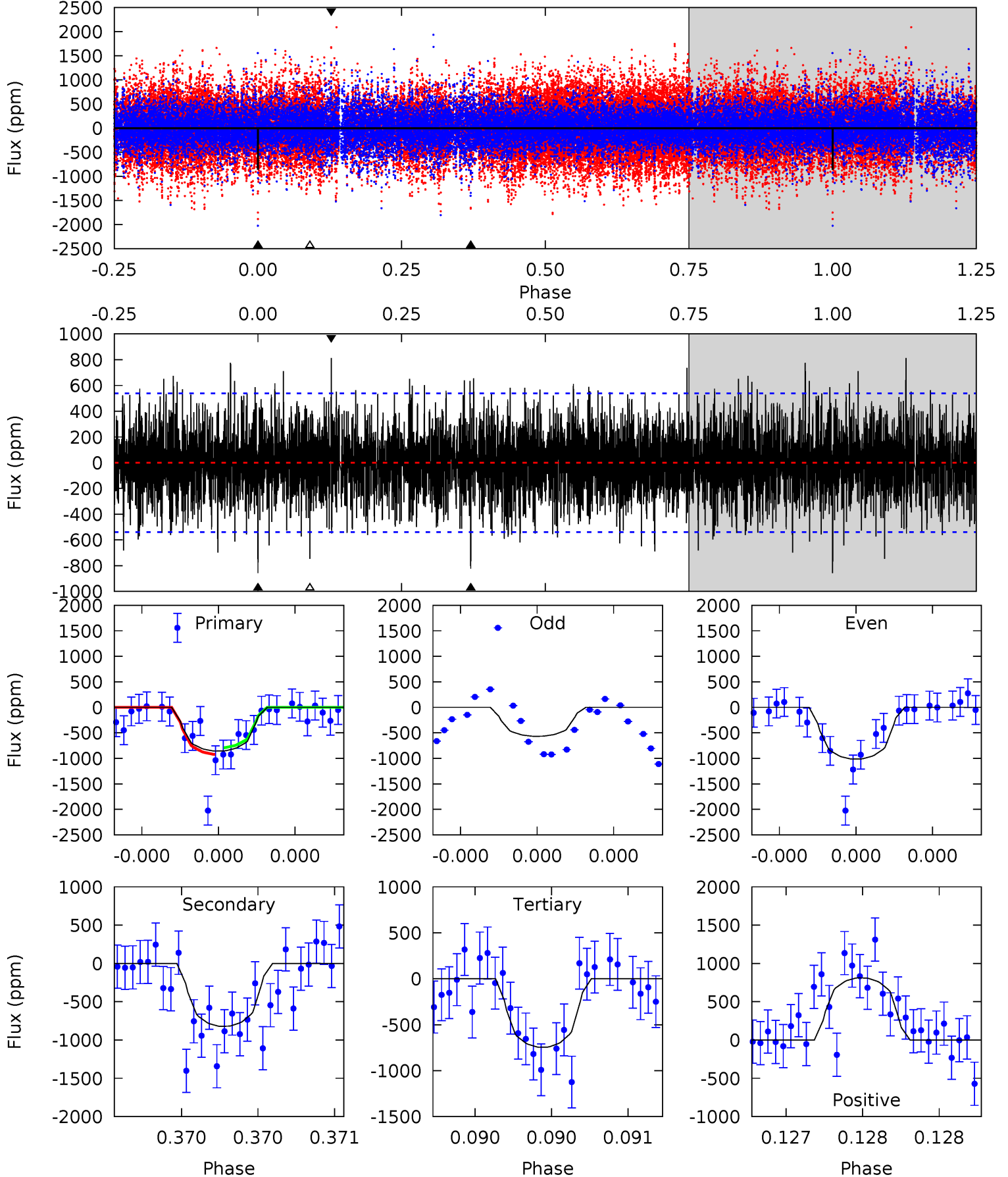
TCE 004578488-01 P=310.373174 Days $T_0=305.817448$ (BKJD)



DV Model-Shift Uniqueness Test

004578488-01, P = 310.360342 Days, E = 305.837516 Days

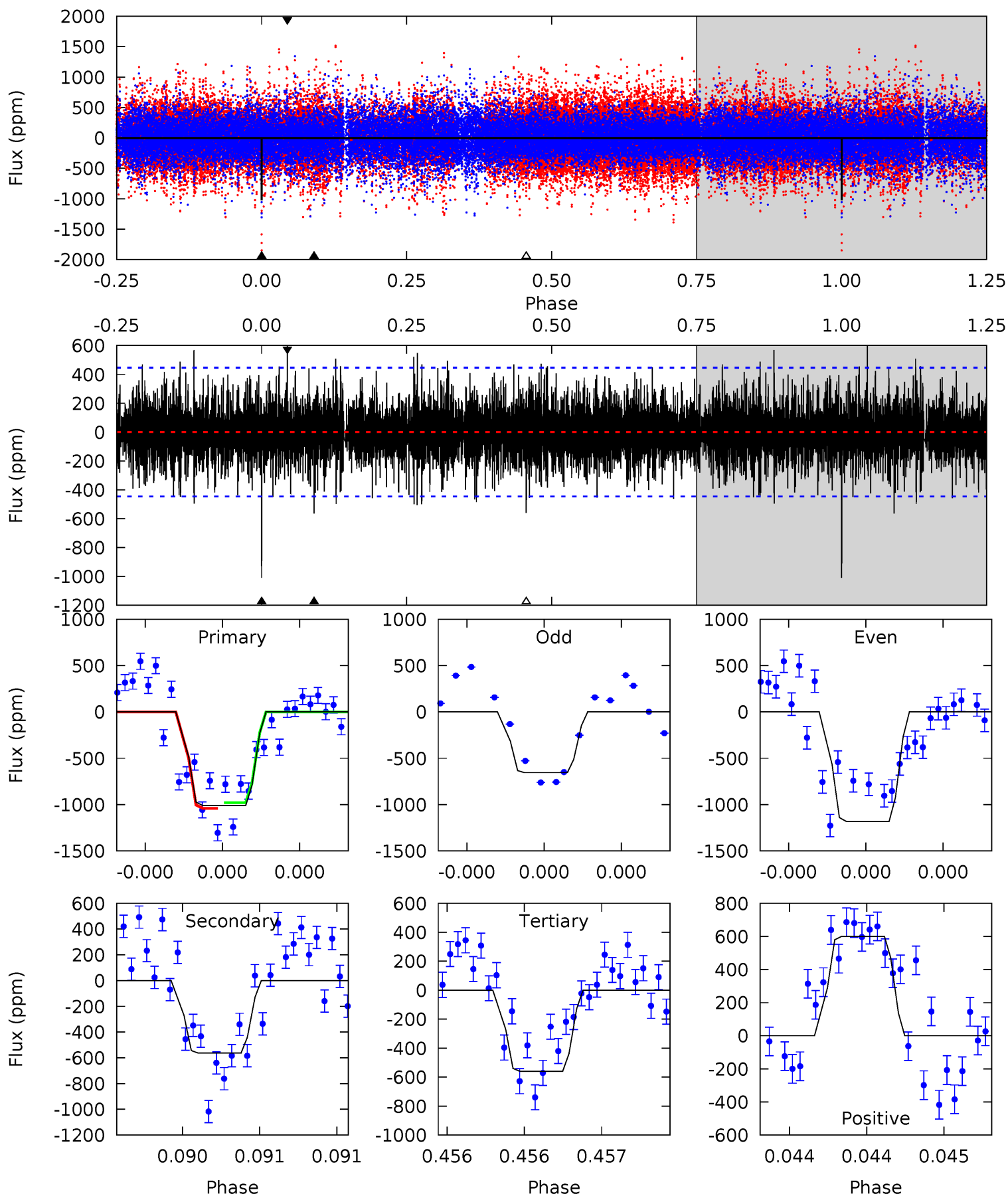
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.89	8.52	7.73	8.42	5.59	3.50	2.11	1.16	0.47	0.79	0.10	2.21	1.46	0.49	0.67



Alt Model-Shift Uniqueness Test

004578488-01, P = 310.373174 Days, E = 305.817448 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	7.11	7.06	7.57	5.63	3.57	1.79	5.68	5.17	0.05	-0.46	3.06	1.37	0.37	0.38



Stellar Parameters For KIC 004578488

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4789^{+66}_{-142}	$2.588^{+0.030}_{-0.033}$	$0.000^{+0.200}_{-0.300}$	$12.169^{+2.614}_{-3.195}$	$2.094^{+0.948}_{-1.042}$	$0.002^{+0.001}_{-0.000}$
	+1%/-3%	+1%/-1%	+inf%/-inf%	+21%/-26%	+45%/-50%	+37%/-13%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 004578488-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-822 ± 96	$45.30^{+41.44}_{-31.05}$	966^{+27}_{-41}	4449^{+3277}_{-832}	301^{+2599}_{-214}
Alt.	-563 ± 79	$55.46^{+42.51}_{-38.44}$	963^{+32}_{-38}	3894^{+2329}_{-662}	135^{+1198}_{-92}

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 $A_{obs} \gg 1.0$

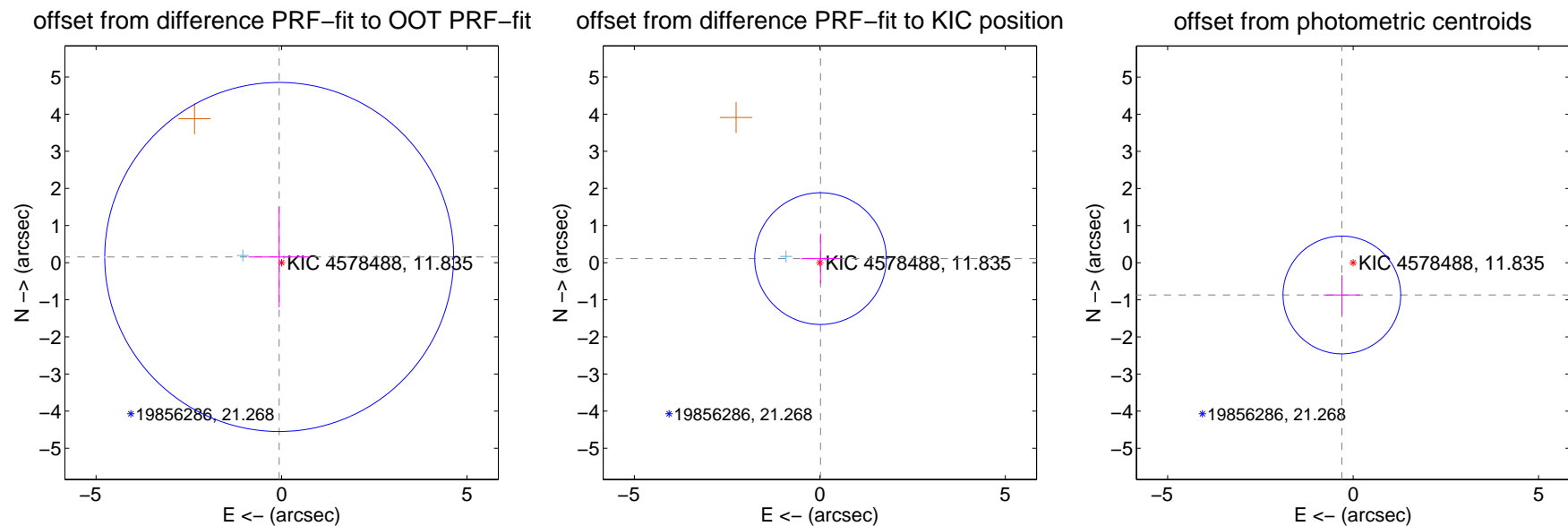
DV Centroid Data

Supplemental centroid analysis for 004578488-01. **Kepler magnitude: 11.84.** Transit SNR 3.67

There are 2 quarters with good PRF difference image offsets

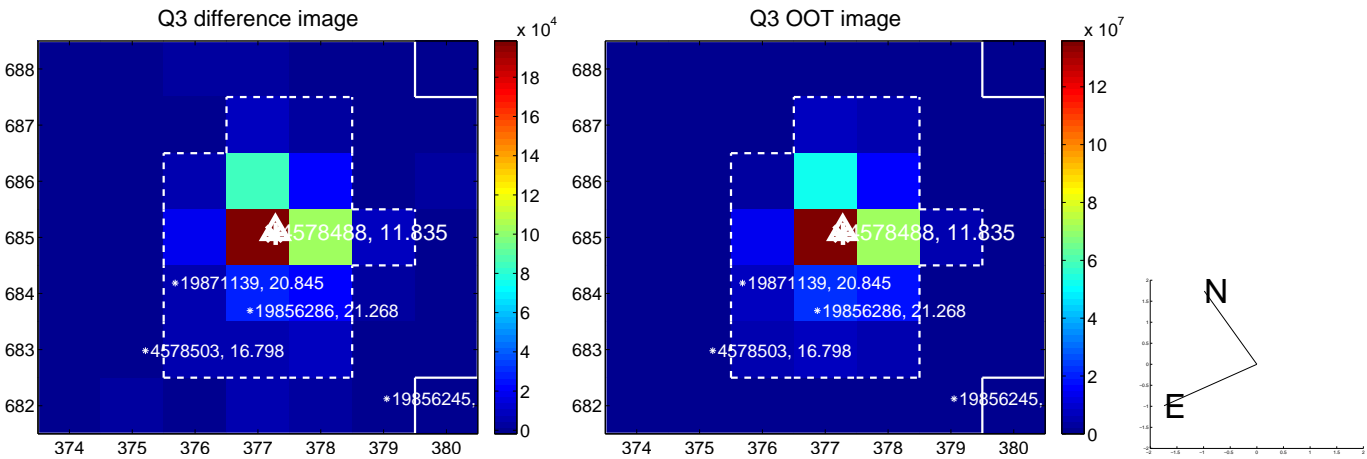
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.166 ± 1.567	0.11	0.065 ± 0.828	0.153 ± 1.357
PRF-fit source offset from KIC position	0.110 ± 0.591	0.19	-0.018 ± 0.514	0.109 ± 0.675
photometric centroid source offset	0.92 ± 0.53	1.74	0.30 ± 0.49	-0.87 ± 0.53



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.



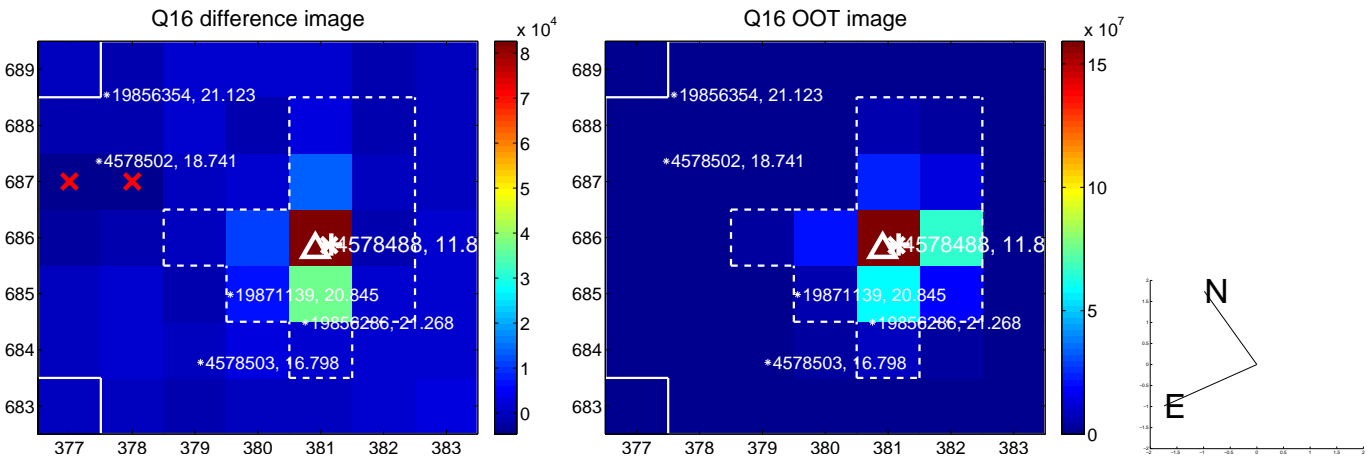
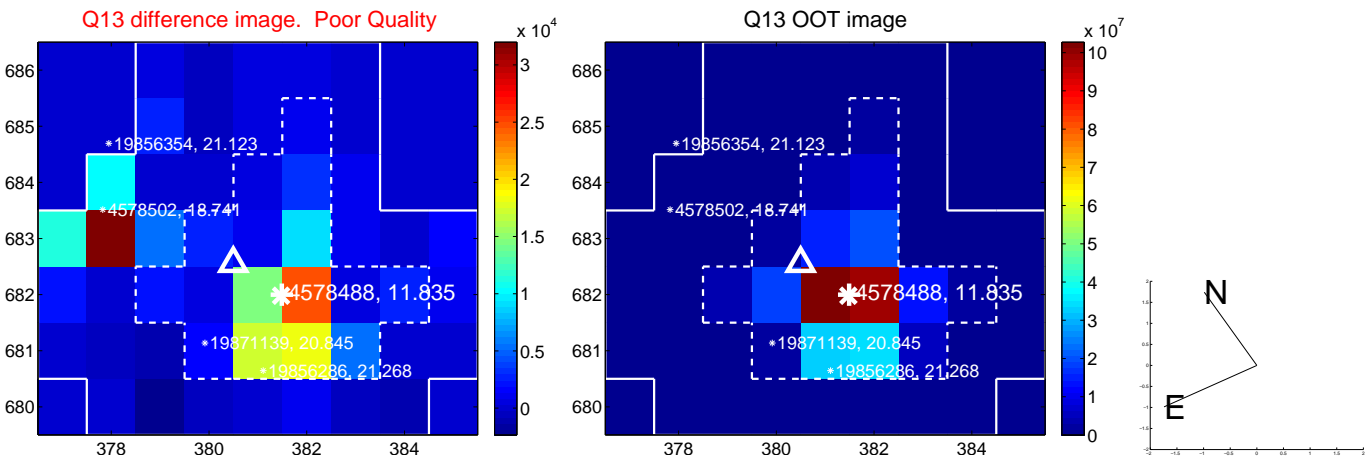
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



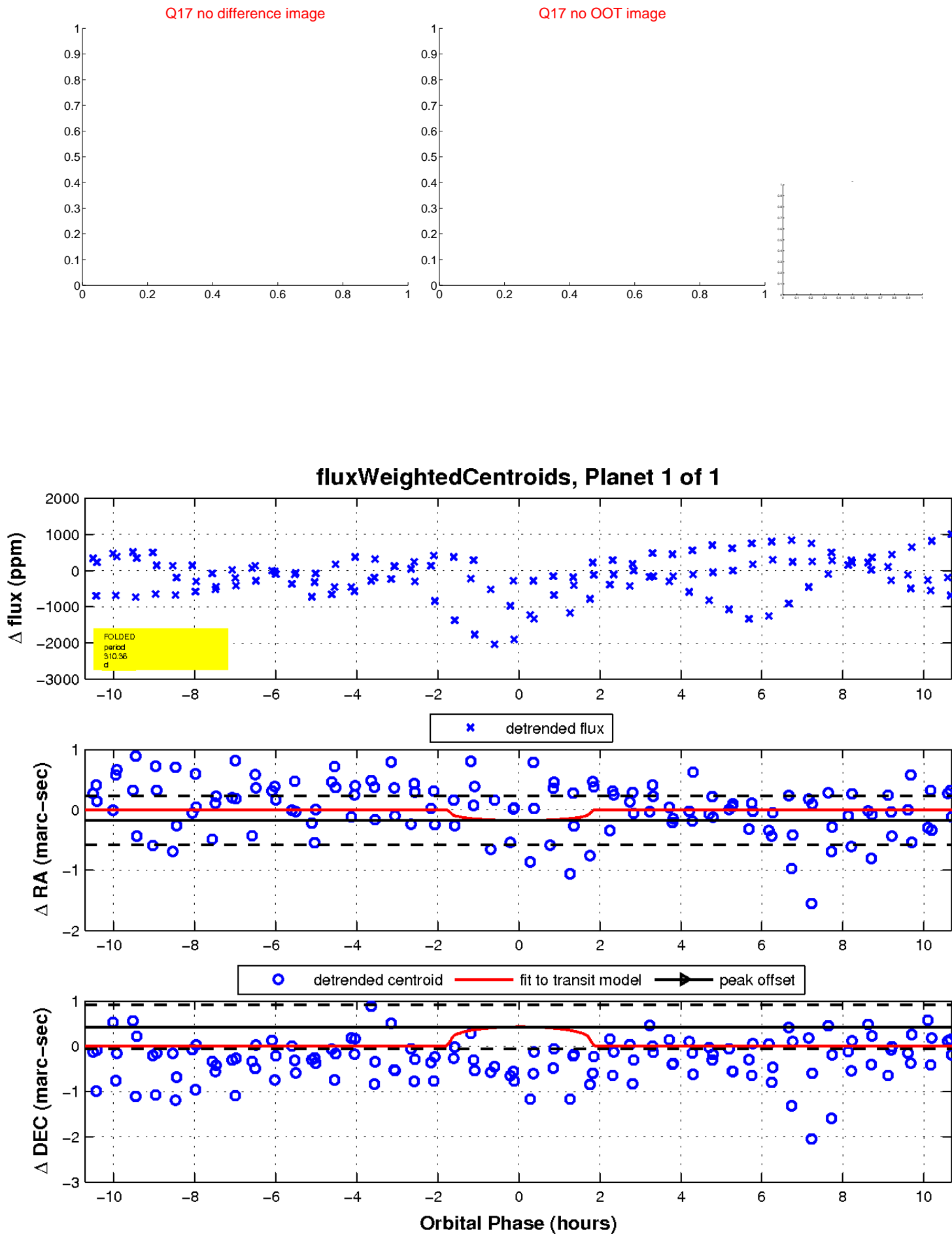
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UKIRT Image

