

KIC 012121101

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})
012121101-01	OBS	No	455.251096	487.374720	115.8	14.835	7.8	7.8	2.05	6553	2.48	4.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012121101-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQU_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.

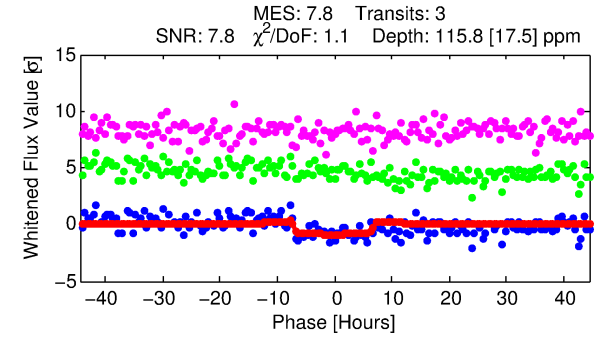
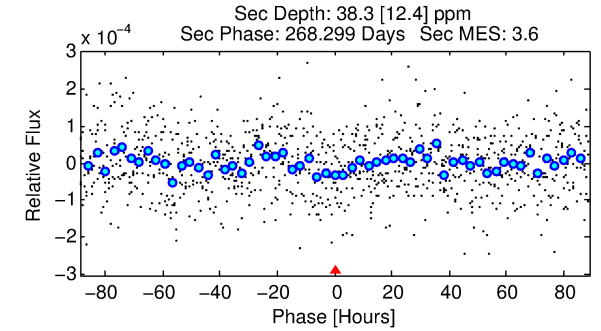
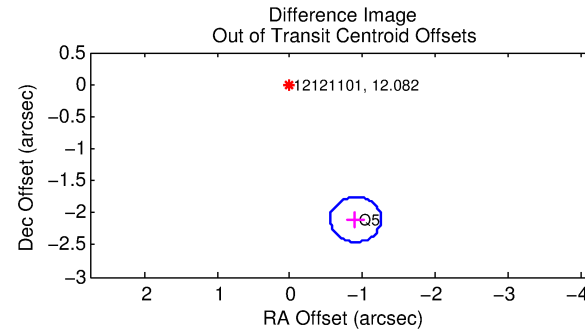
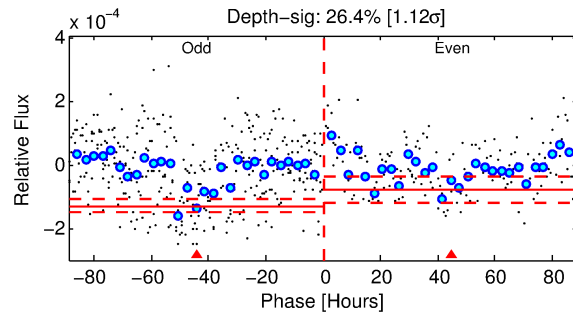
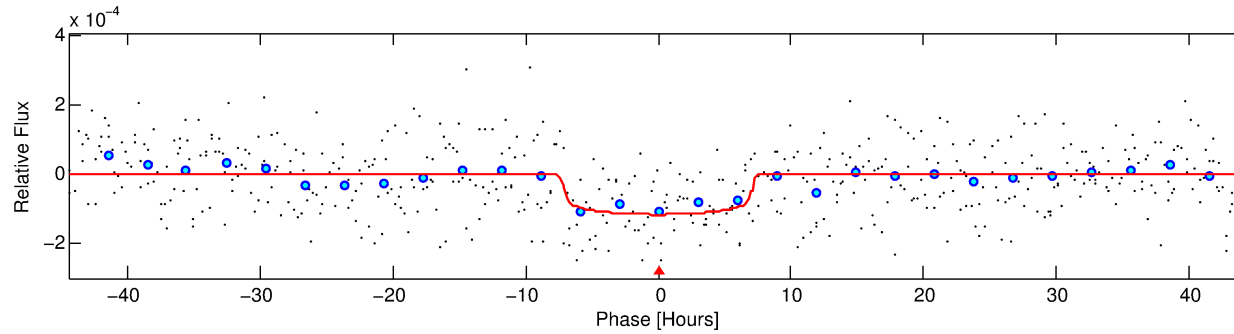
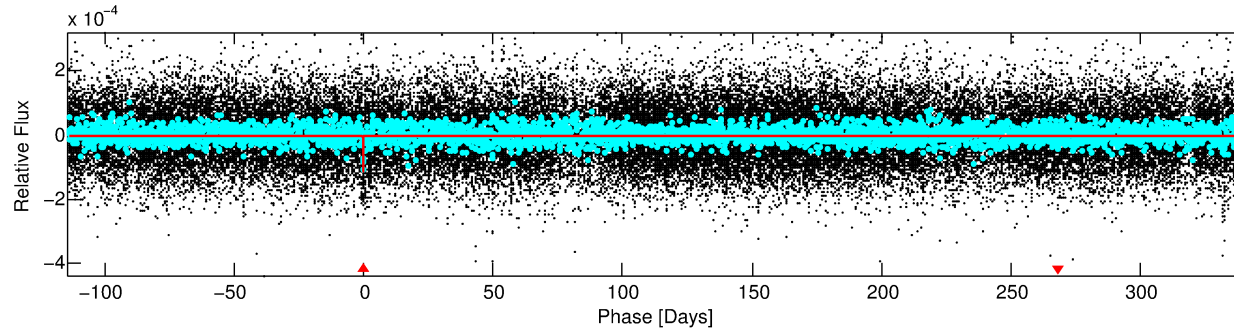
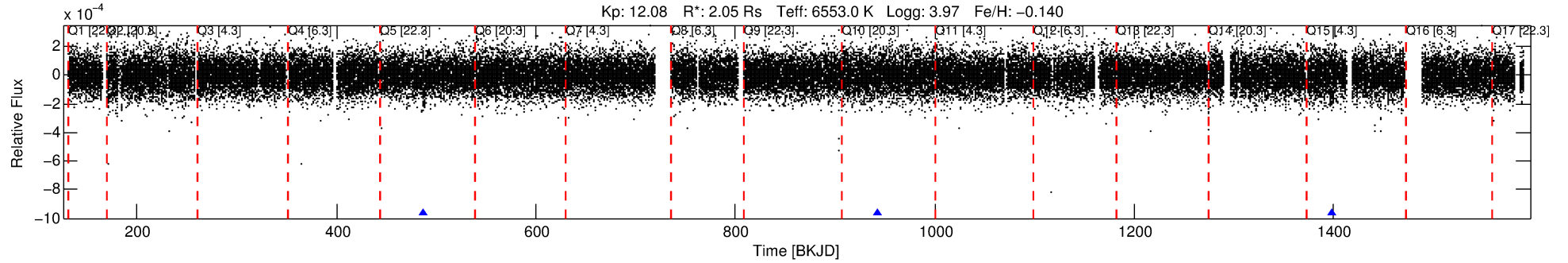
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012121101-01

No Significant Match Found

DV One-Page Summary

KIC: 12121101 Candidate: 1 of 1 Period: 455.251 d



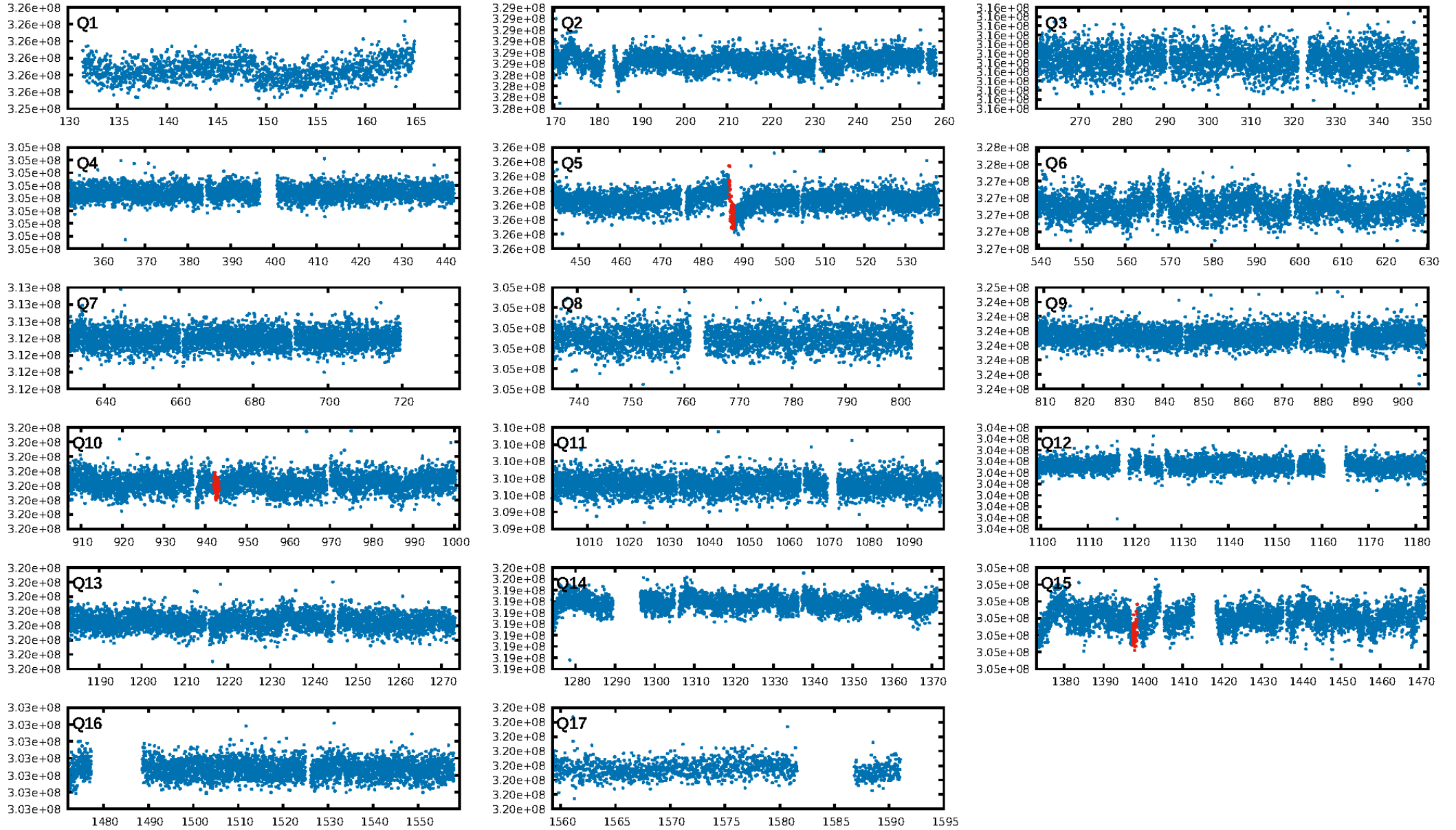
DV Fit Results:

Period = 455.25110 [0.01388] d
Epoch = 487.3747 [0.0186] BKJD
Rp/R* = 0.0111 [0.0026]
a/R* = 130.77 [159.49]
b = 0.84 [0.42]
Seff = 4.10 [1.85]
Teq = 363 [41] K
Rp = 2.48 [0.98] Re
a = 1.3004 [0.3717] AU
Ag = 5789.18 [4119.26] [1.41σ]
Teffp = 4893 [704] K [6.43σ]

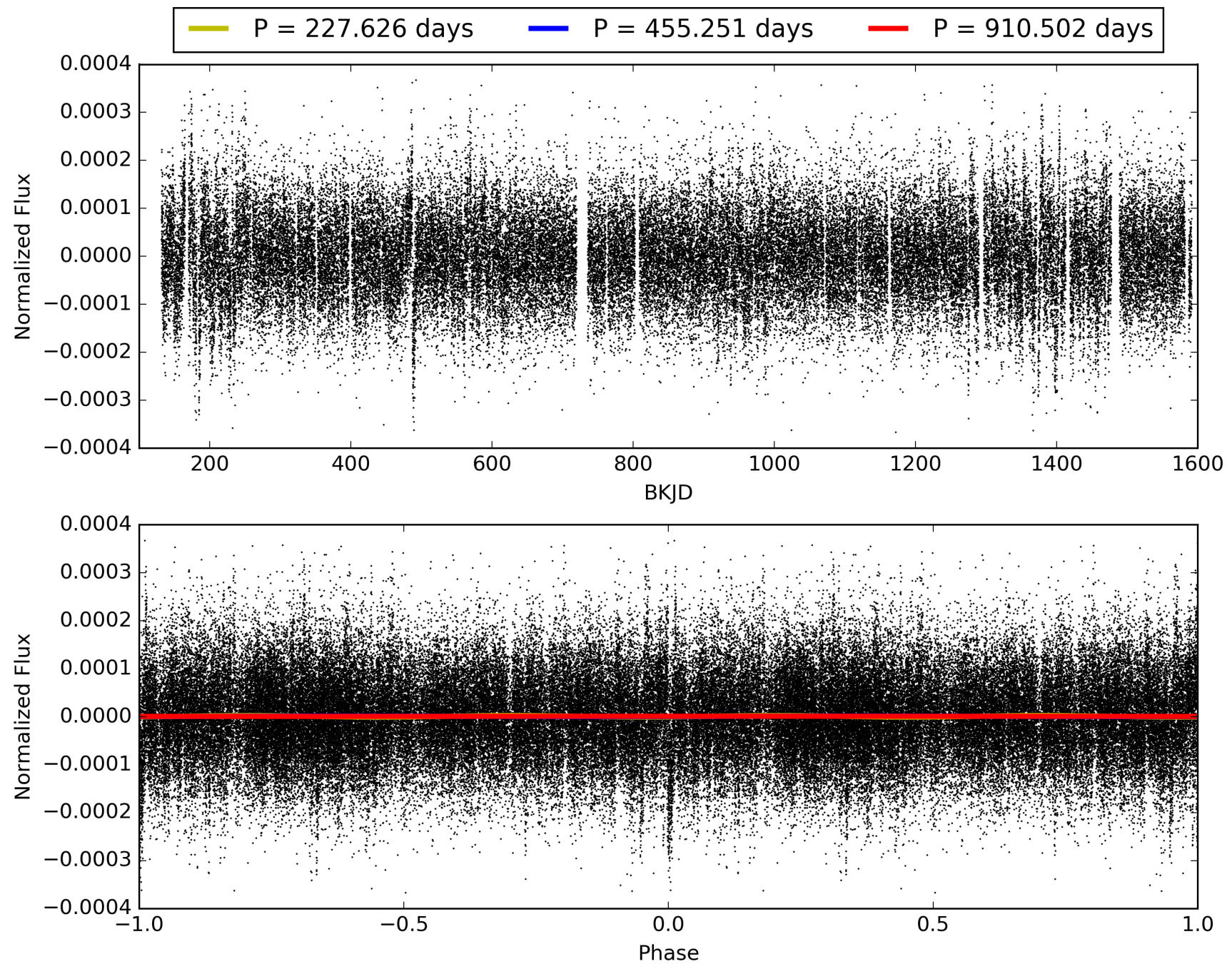
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 29.0%
ModelChiSquareGof-sig: 98.3%
Bootstrap-pfa: 1.23e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.495
Centroid-sig: 14.8%
Centroid-so: 2.680 arcsec [1.37σ]
OotOffset-rm: 2.290 arcsec [19.63σ]
KicOffset-rm: 2.369 arcsec [20.32σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 012121101-01, PDC Light Curves

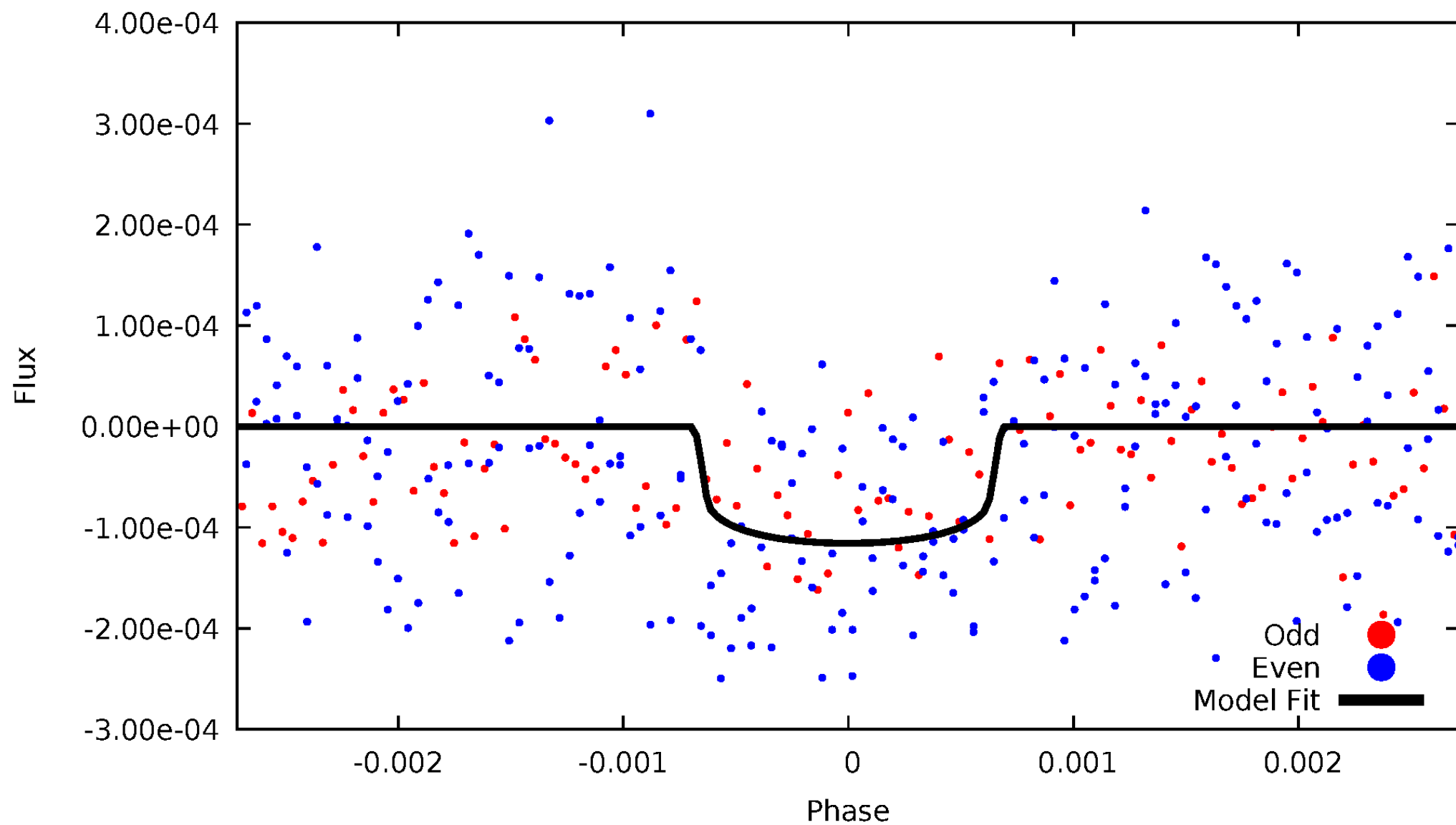


TCE 012121101-01



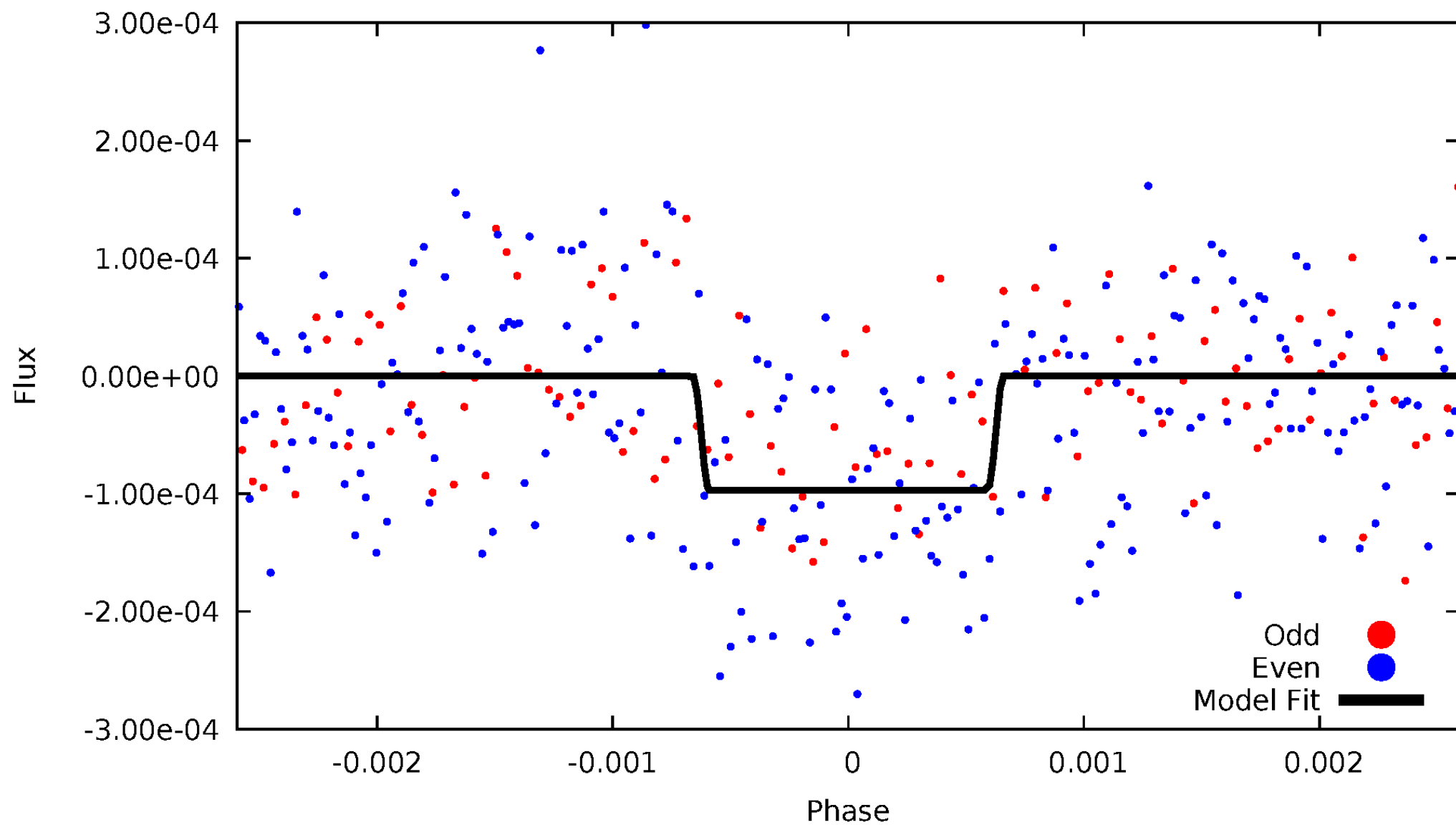
DV Odd/Even

TCE 012121101-01



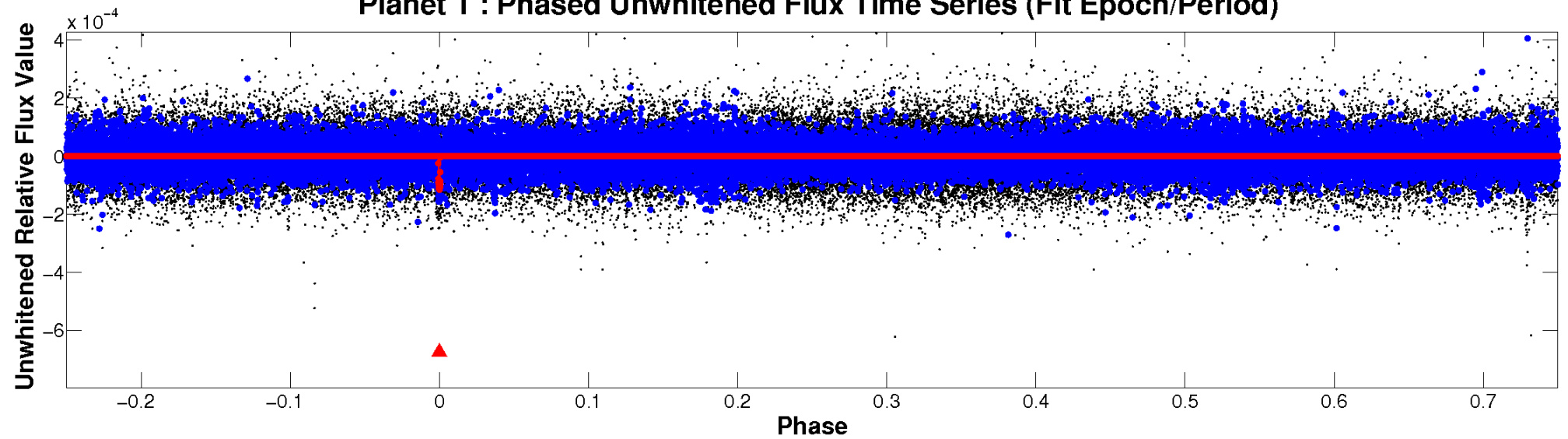
ALT Odd/Even

TCE 012121101-01

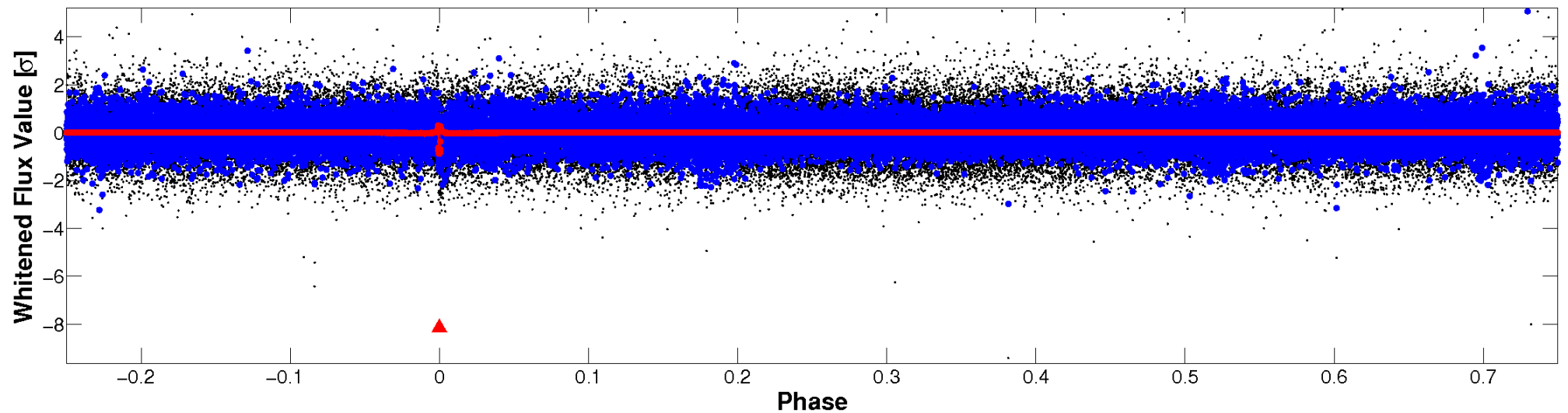


Non-Whitened Vs. Whitened Light Curve

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

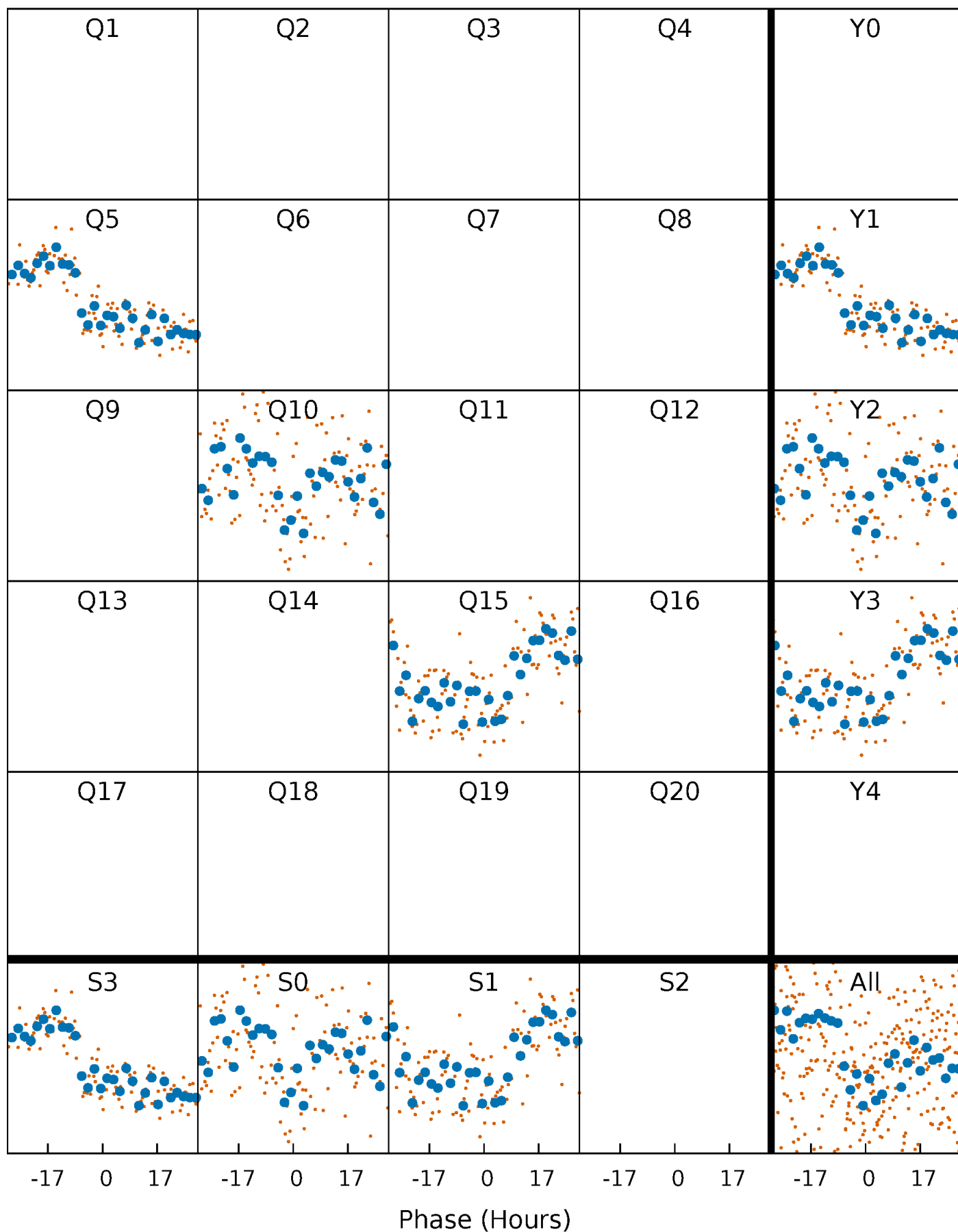


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



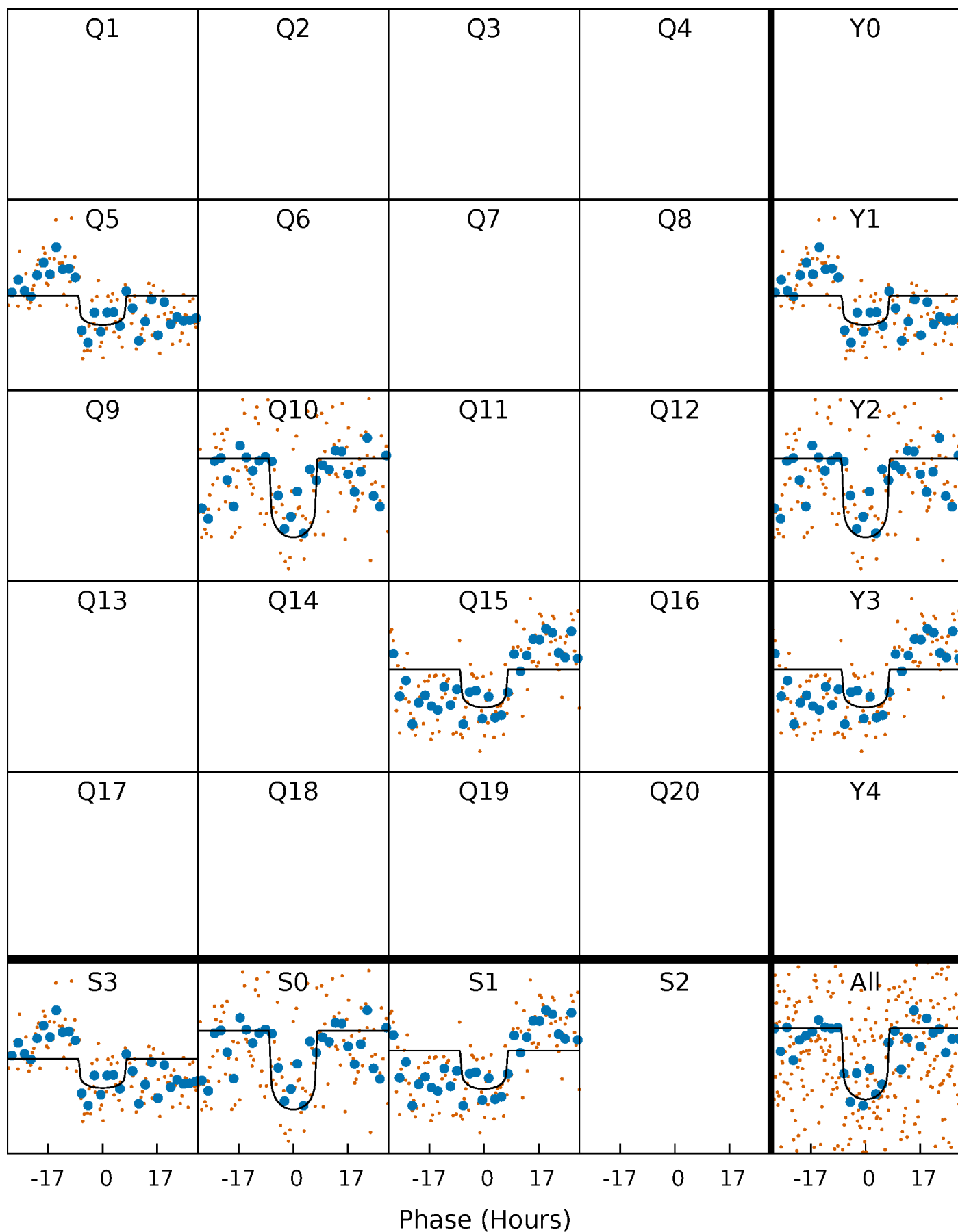
PDC Quarter-Phased Transit Curves

TCE 012121101-01 P=455.251096 Days $T_0=487.374720$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 012121101-01 P=455.251096 Days $T_0=487.374720$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

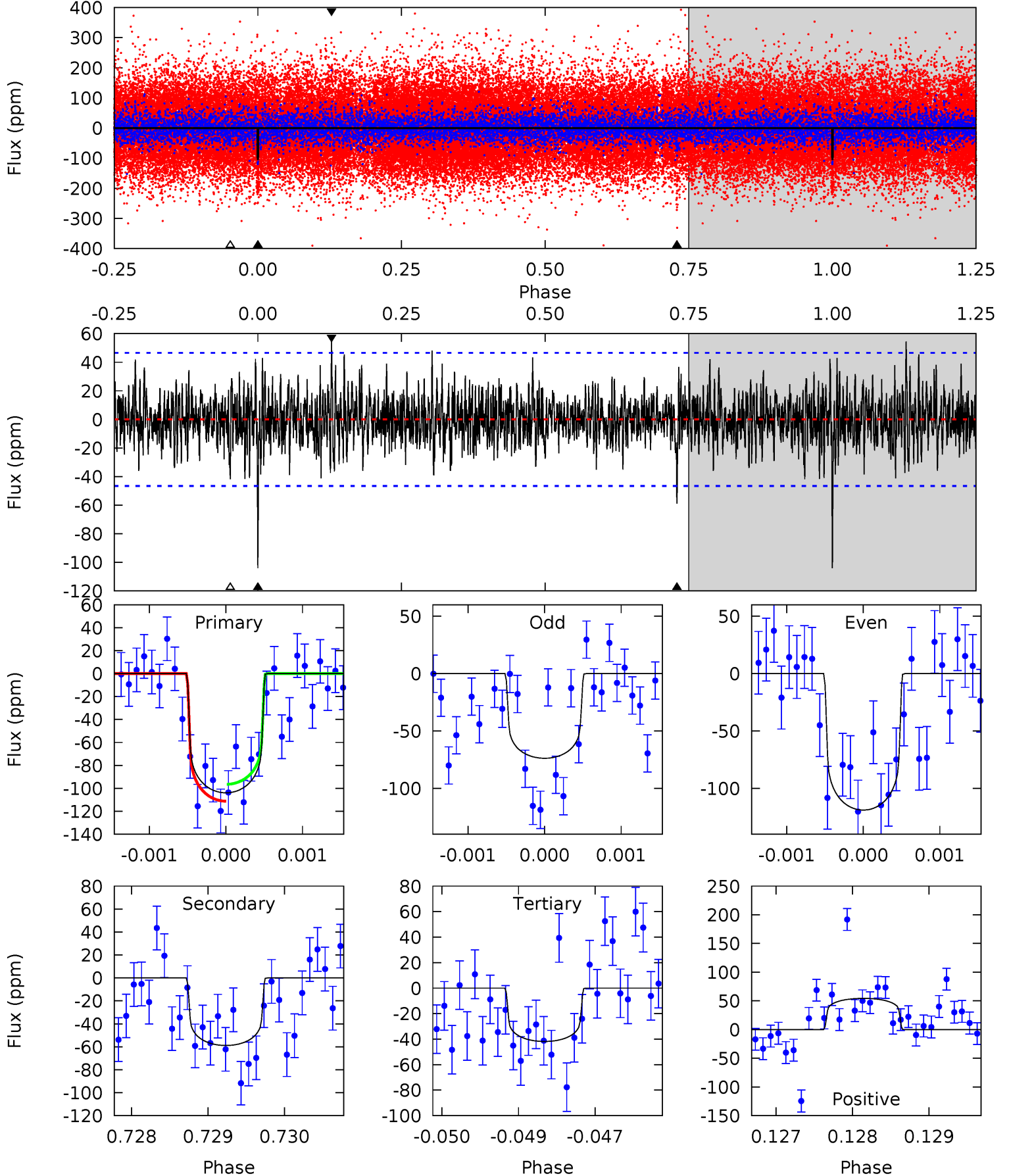
TCE 012121101-01 P=455.266528 Days $T_0=487.365254$ (BKJD)



DV Model-Shift Uniqueness Test

012121101-01, $P = 455.251096$ Days, $E = 32.123624$ Days

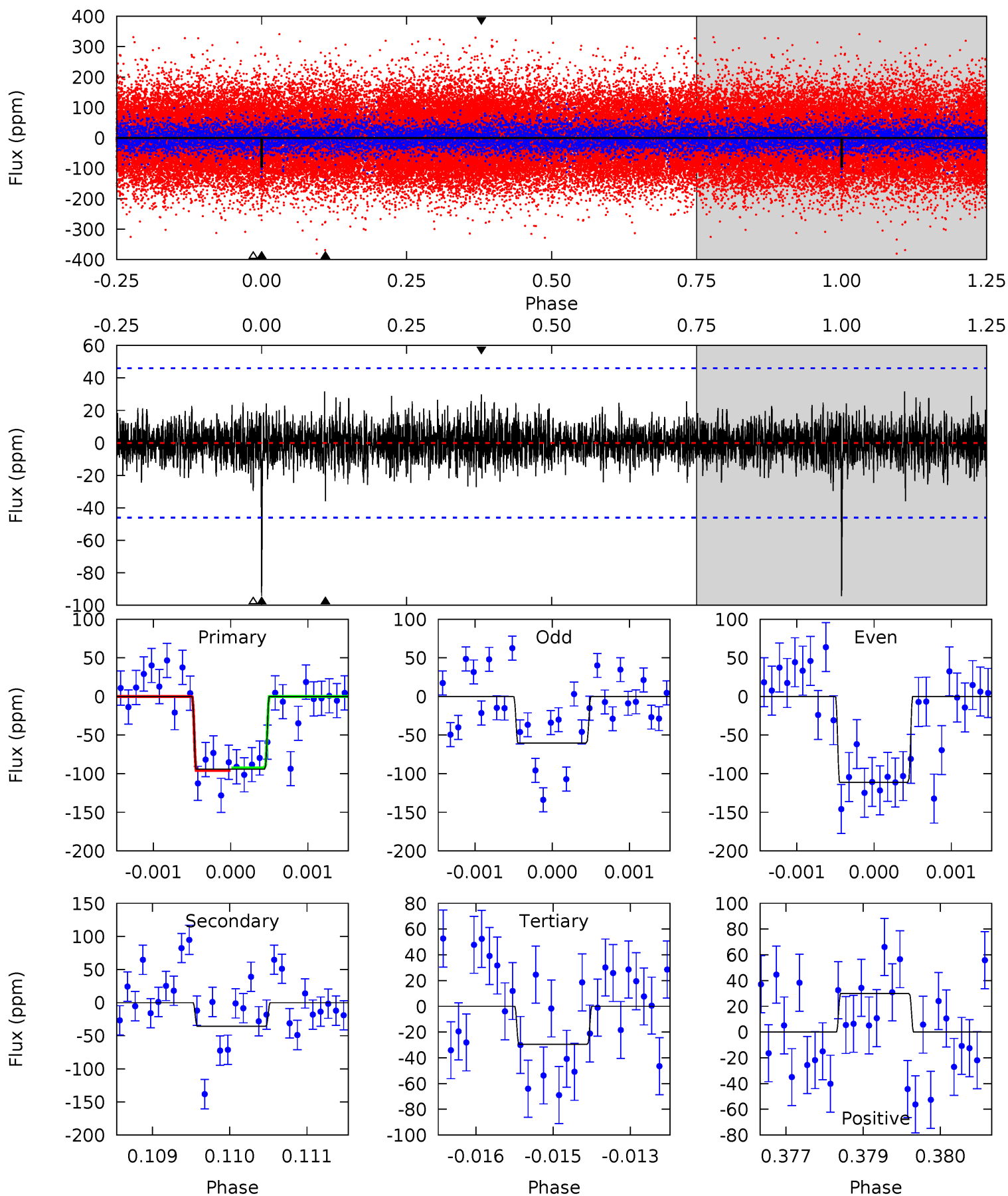
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	6.82	4.85	6.30	5.40	3.21	1.51	7.19	5.74	1.97	0.52	2.45	0.89	0.34	0.85



Alt Model-Shift Uniqueness Test

012121101-01, $P = 455.266528$ Days, $E = 32.098726$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	4.20	3.47	3.51	5.40	3.21	0.97	7.59	7.55	0.73	0.69	2.83	0.97	0.25	0.21



Stellar Parameters For KIC 012121101

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6553^{+146}_{-195}	$3.966^{+0.247}_{-0.133}$	$-0.140^{+0.300}_{-0.250}$	$2.048^{+0.438}_{-0.657}$	$1.420^{+0.176}_{-0.286}$	$0.233^{+0.402}_{-0.092}$
	+2%/-3%	+6%/-3%	+214%/-179%	+21%/-32%	+12%/-20%	+173%/-40%
Source	PHO1	FLK73	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 012121101-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-59 ± 9	$2.39^{+0.77}_{-0.64}$	503^{+32}_{-42}	5447^{+724}_{-529}	9257^{+8630}_{-3677}
Alt.	-36 ± 9	$2.10^{+0.64}_{-0.66}$	501^{+33}_{-40}	5192^{+792}_{-542}	7564^{+7836}_{-3496}

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

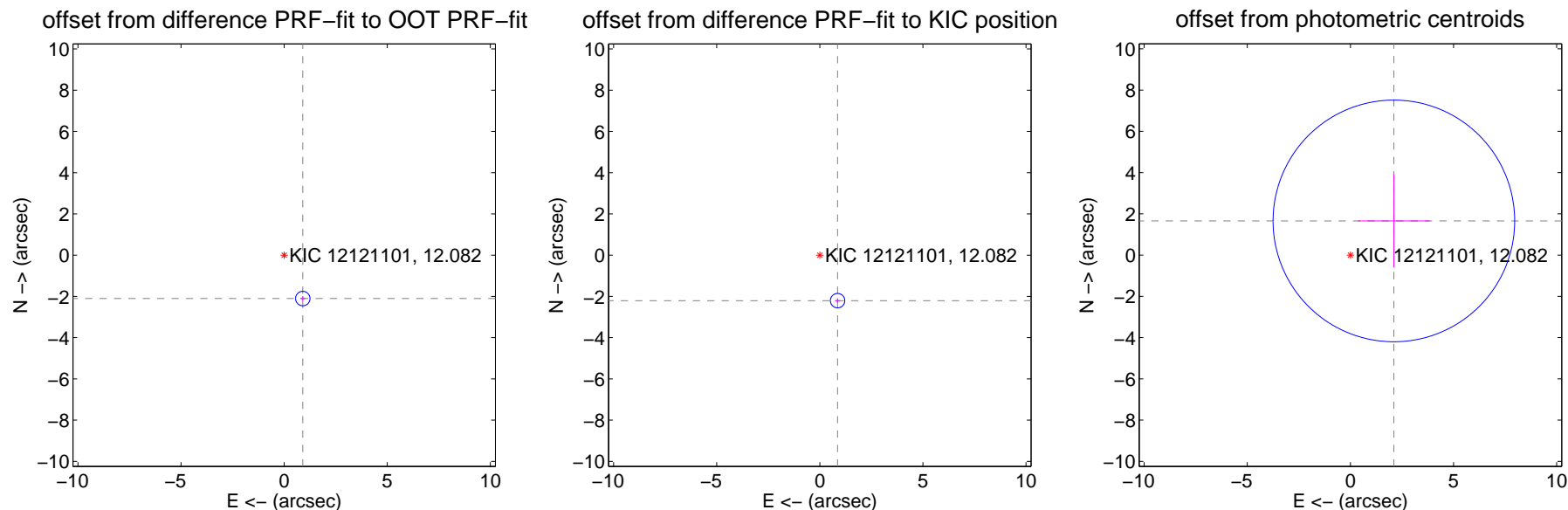
DV Centroid Data

Supplemental centroid analysis for 012121101-01. Kepler magnitude: 12.08. Transit SNR 7.83

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.290 ± 0.117	19.63	-0.904 ± 0.121	-2.104 ± 0.116
PRF-fit source offset from KIC position	2.369 ± 0.117	20.32	-0.862 ± 0.121	-2.207 ± 0.116
photometric centroid source offset	2.68 ± 1.95	1.37	-2.11 ± 1.74	1.66 ± 2.25

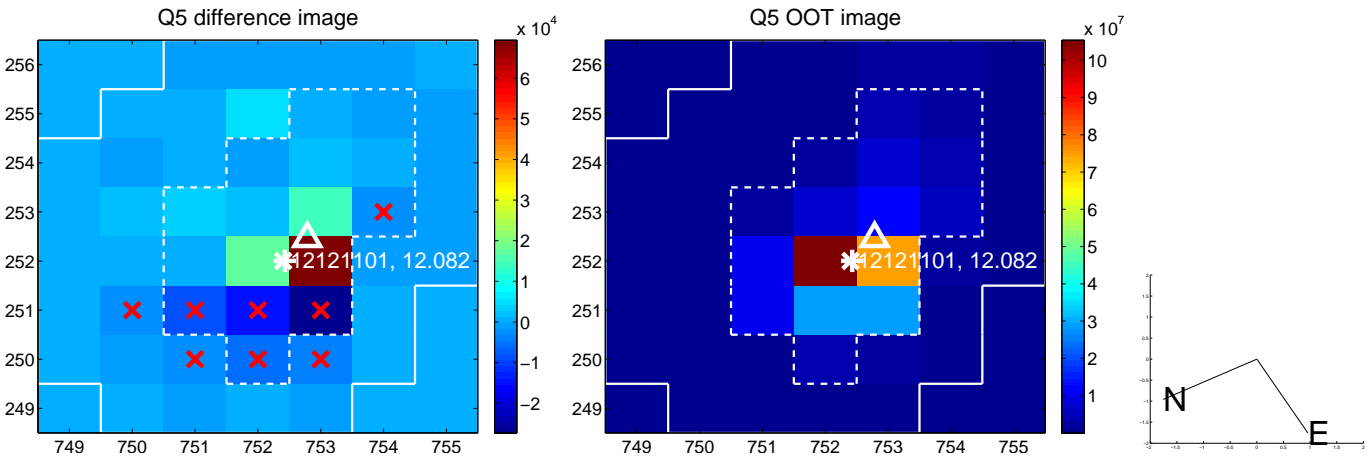


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

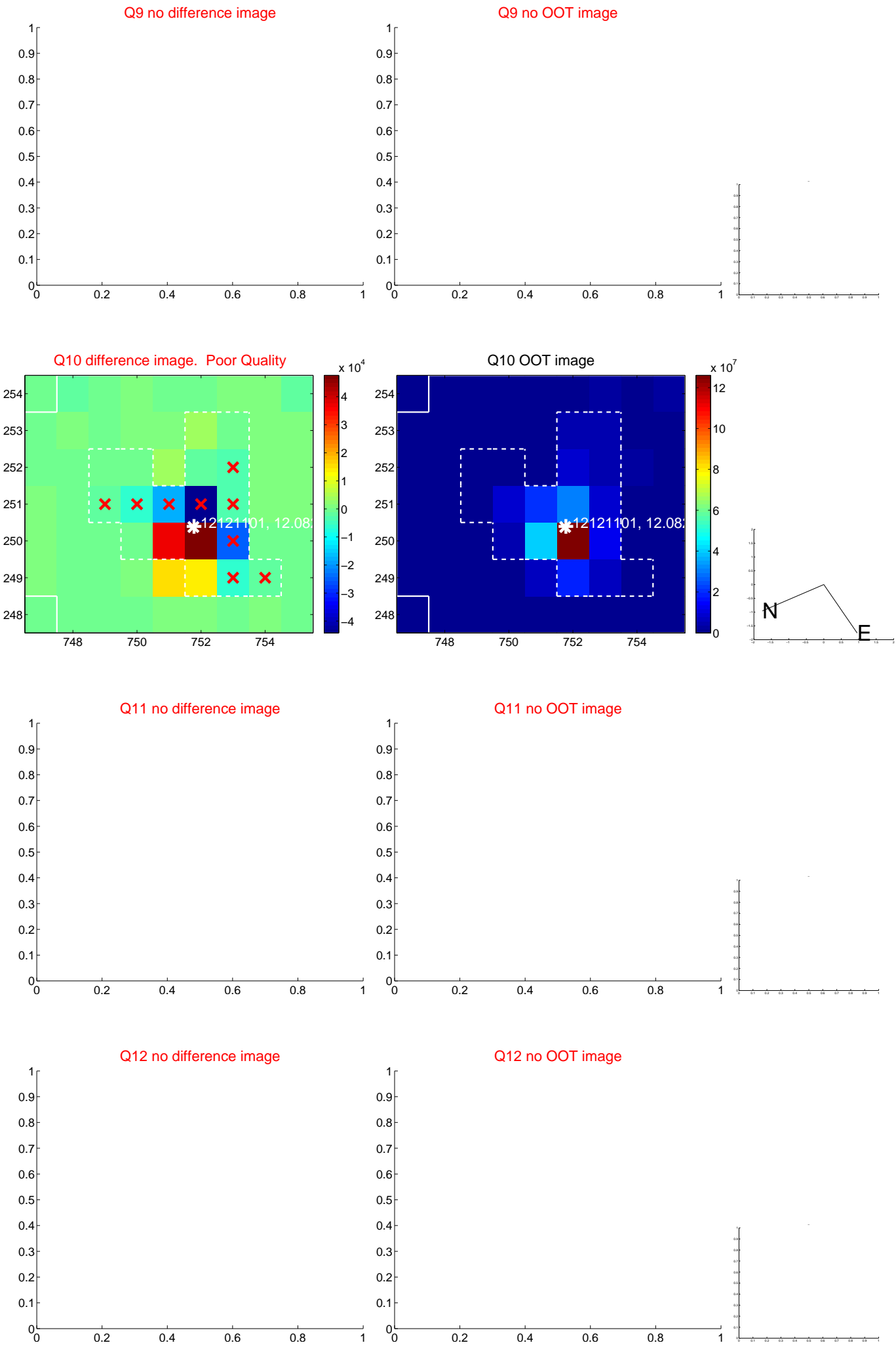
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



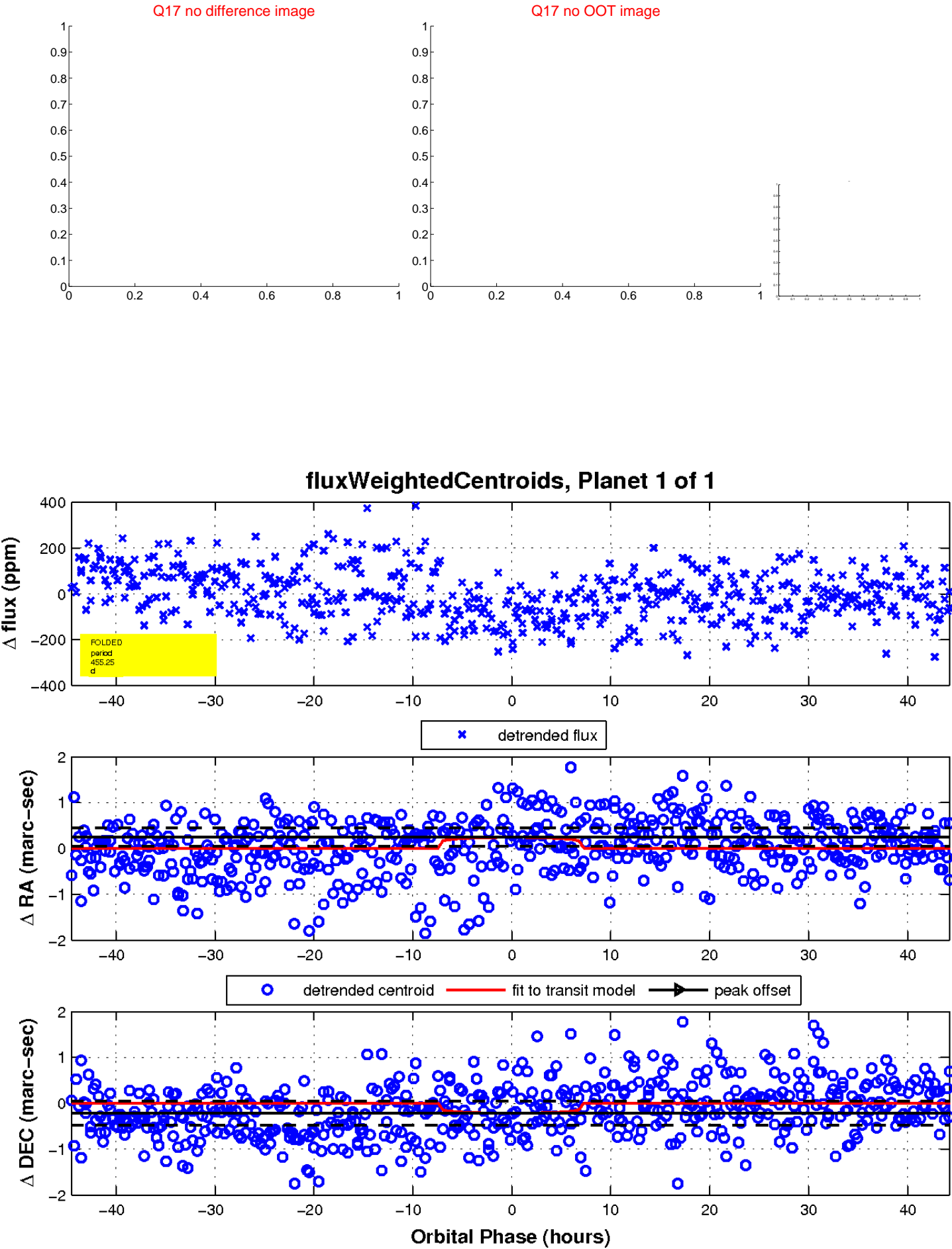
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UKIRT Image

