

KIC 009107457

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})
009107457-01	OBS	No	365.711165	183.083808	1007.0	17.311	8.1	7.9	0.76	5221	2.44	0.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009107457-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL—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.

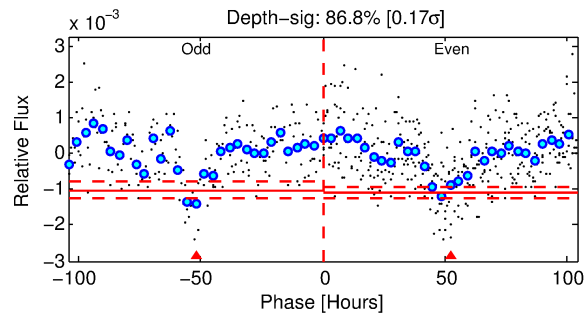
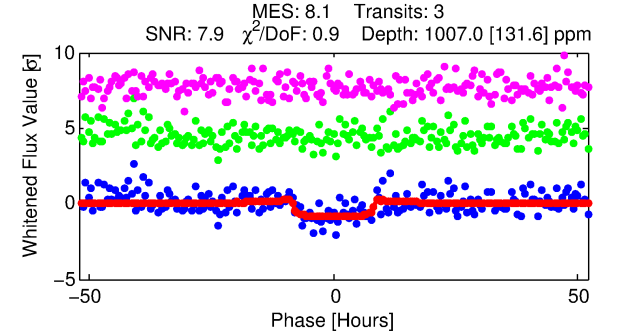
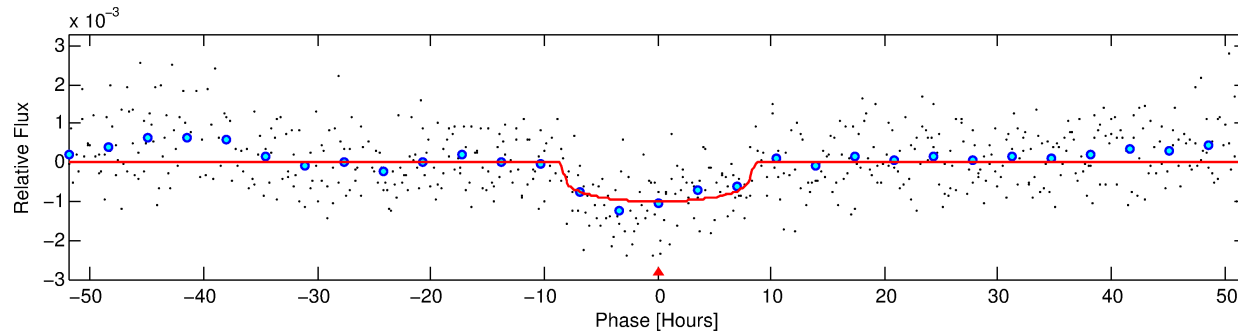
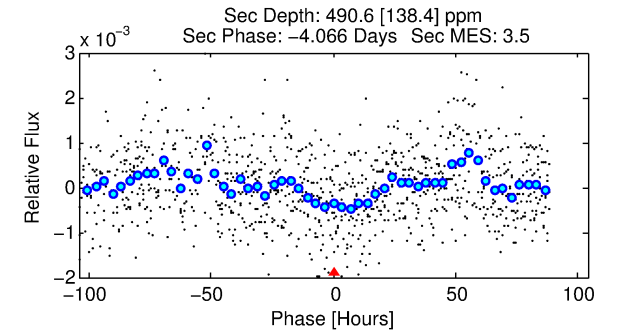
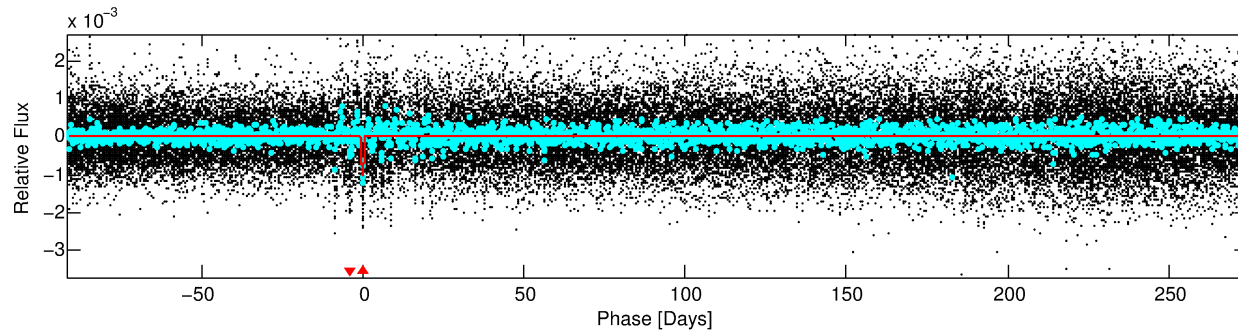
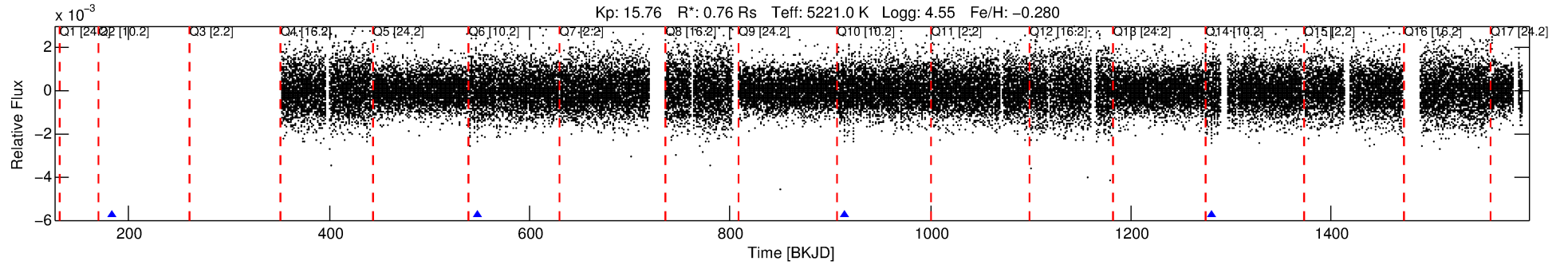
Ephemeris Match Information For 009107457-01

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
009107457-01	9107457	009171234-02	9171234	1:1	48.2	5	11	14.11	15.77	0.43	Direct-PRF	1	4.52	3.67

Notes: $P_1:P_2$ 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. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 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: 9107457 Candidate: 1 of 1 Period: 365.711 d



DV Fit Results:

Period = 365.71117 [0.01801] d
Epoch = 183.0838 [0.0392] BKJD
Rp/R* = 0.0295 [0.0141]
a/R* = 145.44 [261.88]
b = 0.50 [2.74]
Seff = 0.46 [0.09]
Teq = 210 [10] K
Rp = 2.43 [1.20] Re
a = 0.9096 [0.0922] AU
Ag = 37666.41 [37900.89] [0.99σ]
Teffp = 4526 [1138] K [3.79σ]

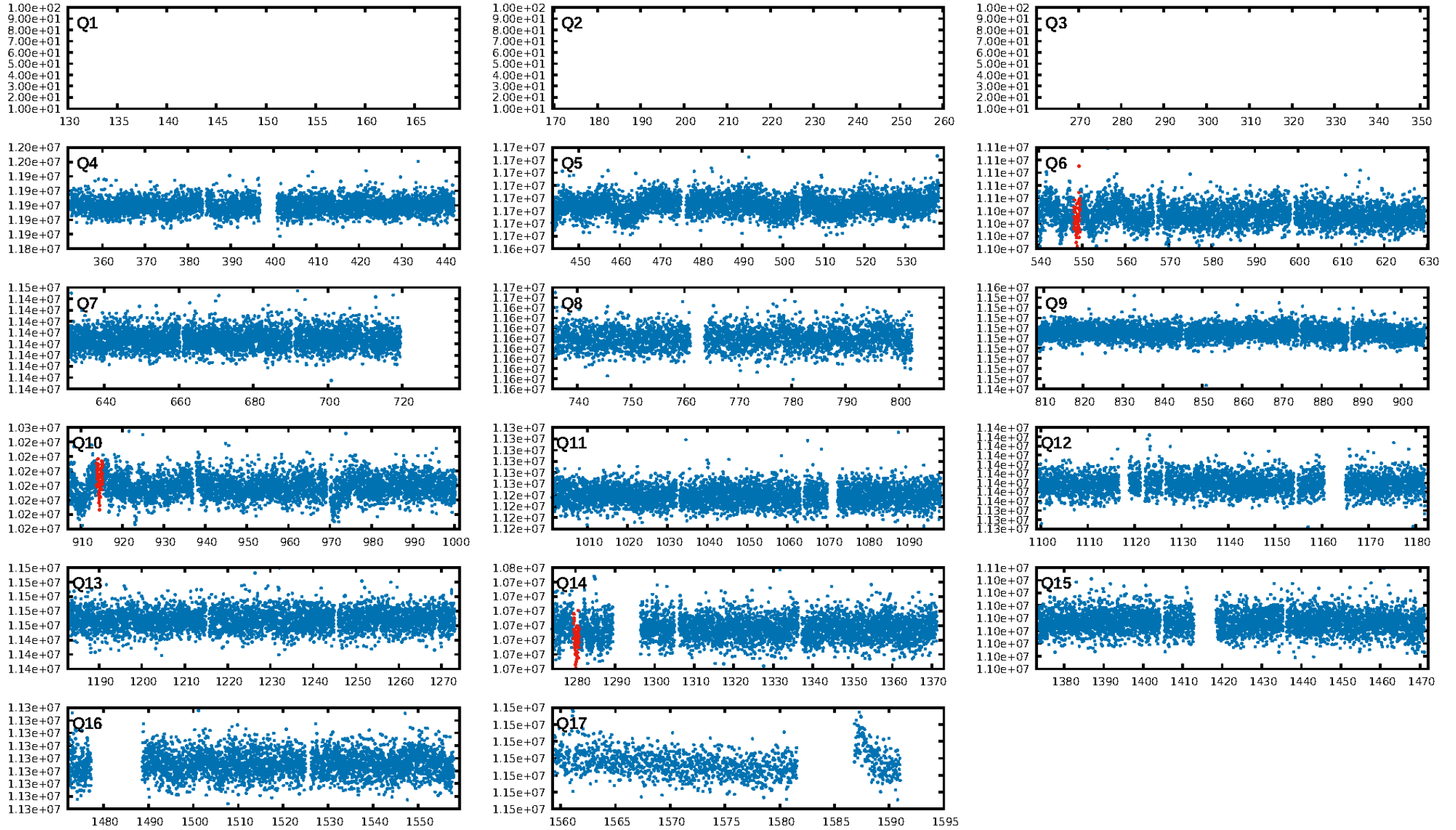
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 50.4%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 3.85e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.428
Centroid-sig: 64.7%
Centroid-so: 1.251 arcsec [0.73σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [2/2]

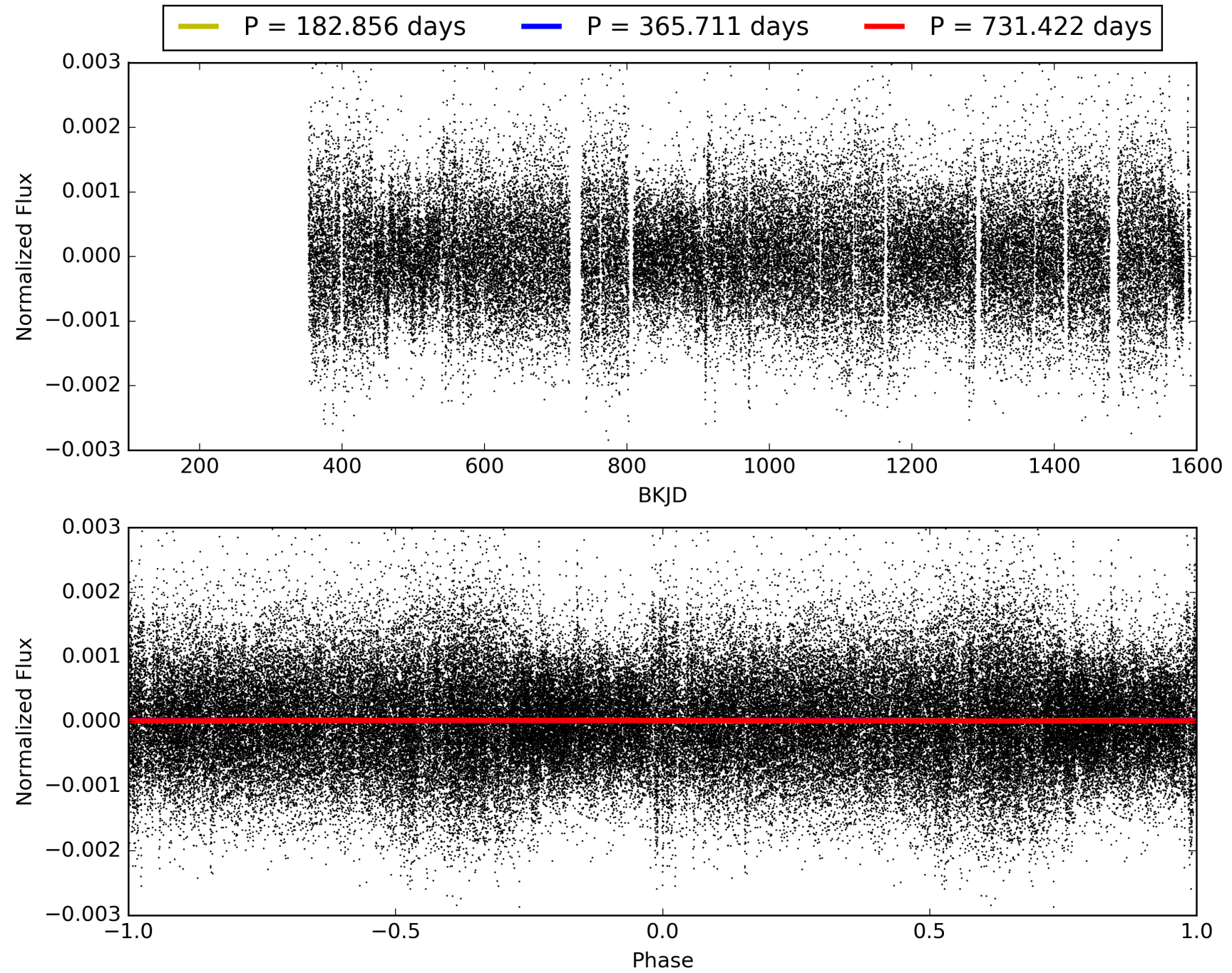
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:37:50 Z

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

TCE 009107457-01, PDC Light Curves

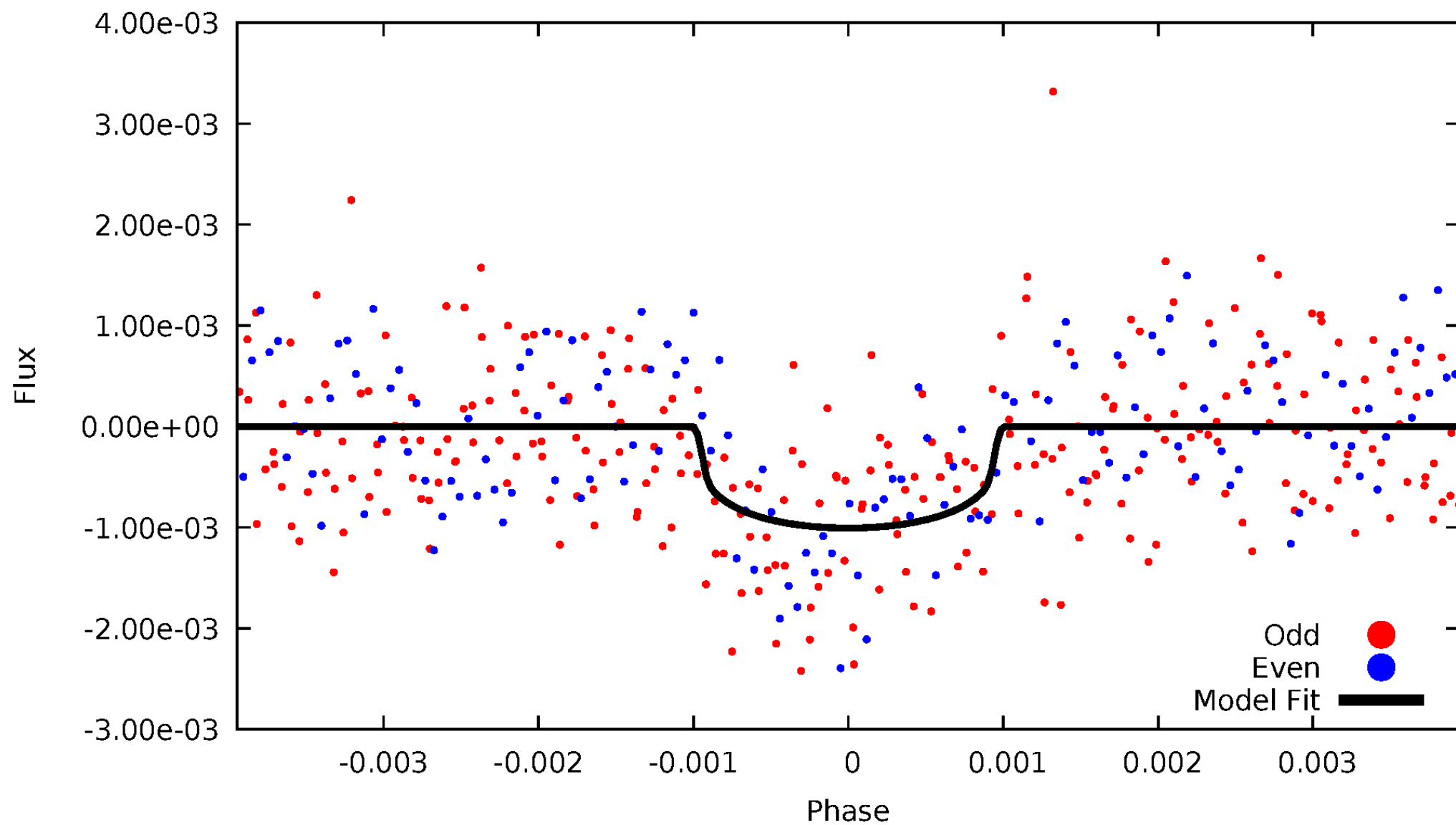


TCE 009107457-01



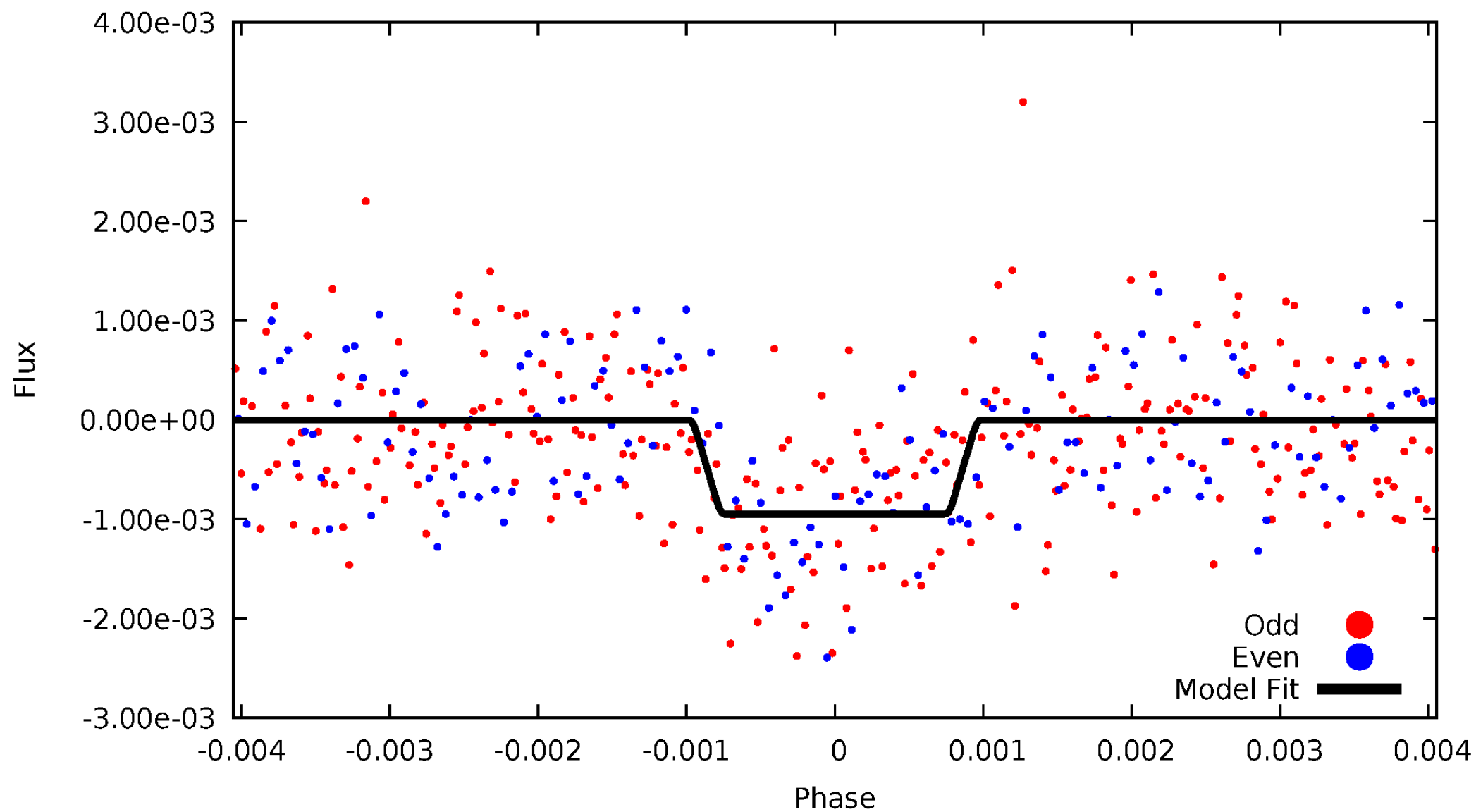
DV Odd/Even

TCE 009107457-01



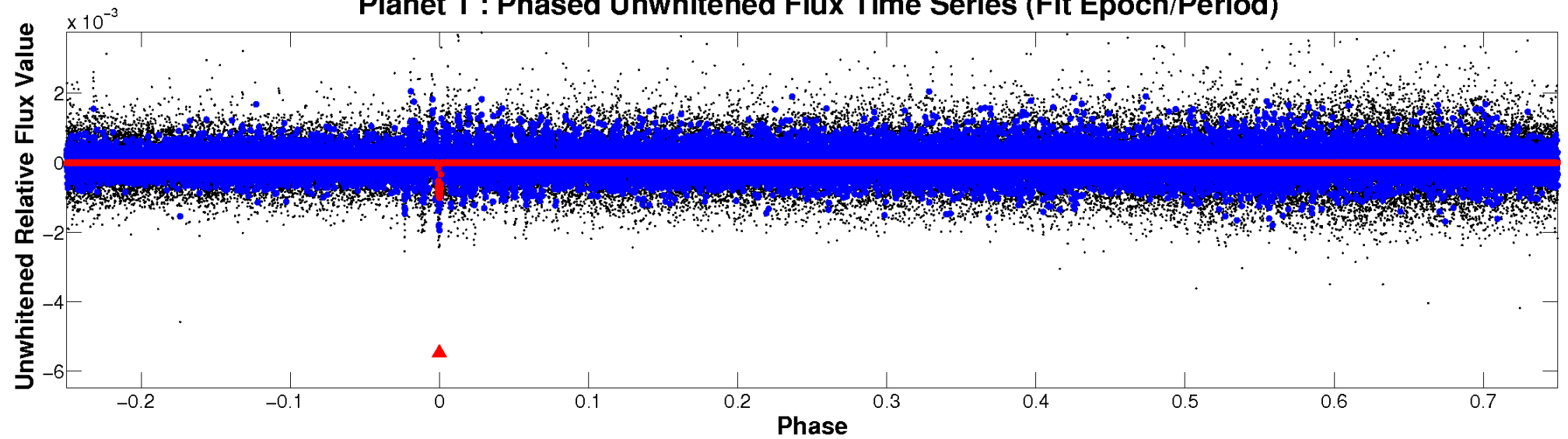
ALT Odd/Even

TCE 009107457-01

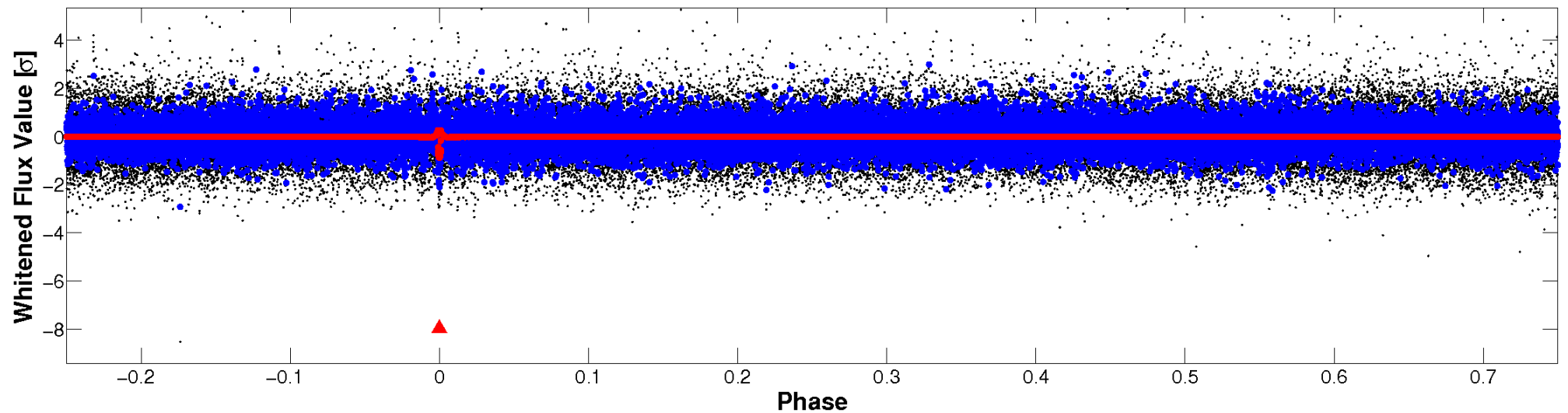


Non-Whitened Vs. Whitened Light Curve

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

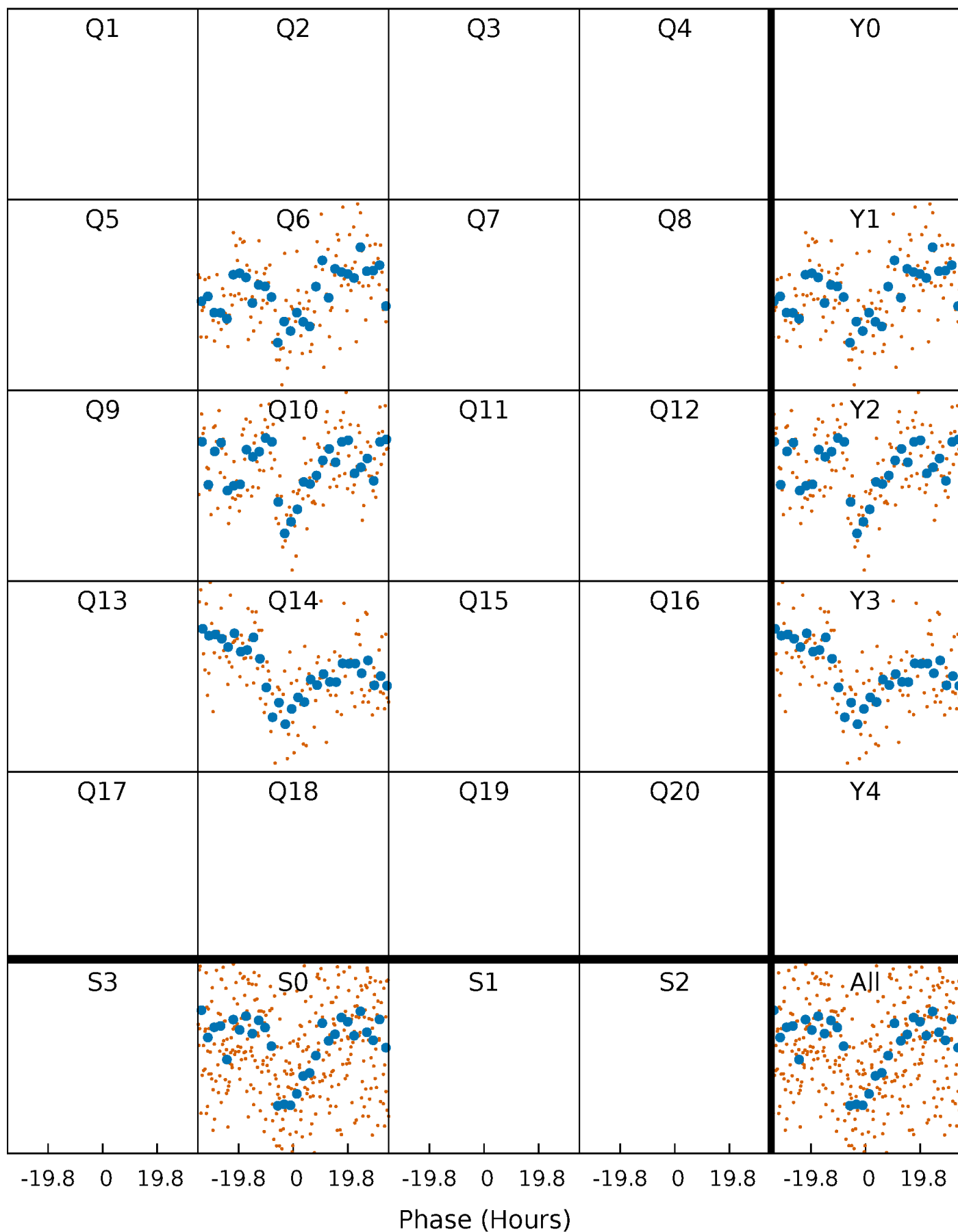


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



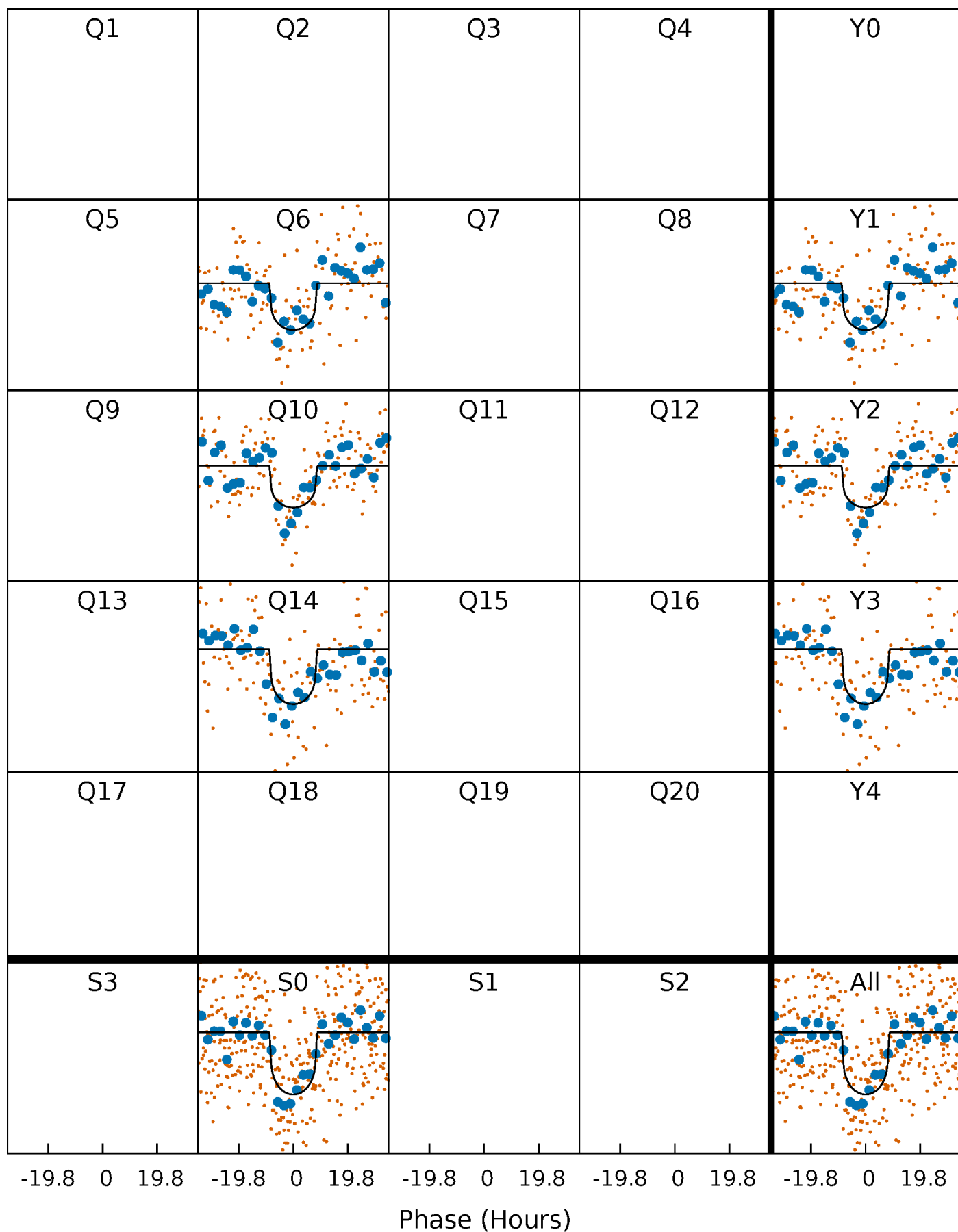
PDC Quarter-Phased Transit Curves

TCE 009107457-01 P=365.711165 Days $T_0=183.083808$ (BKJD)



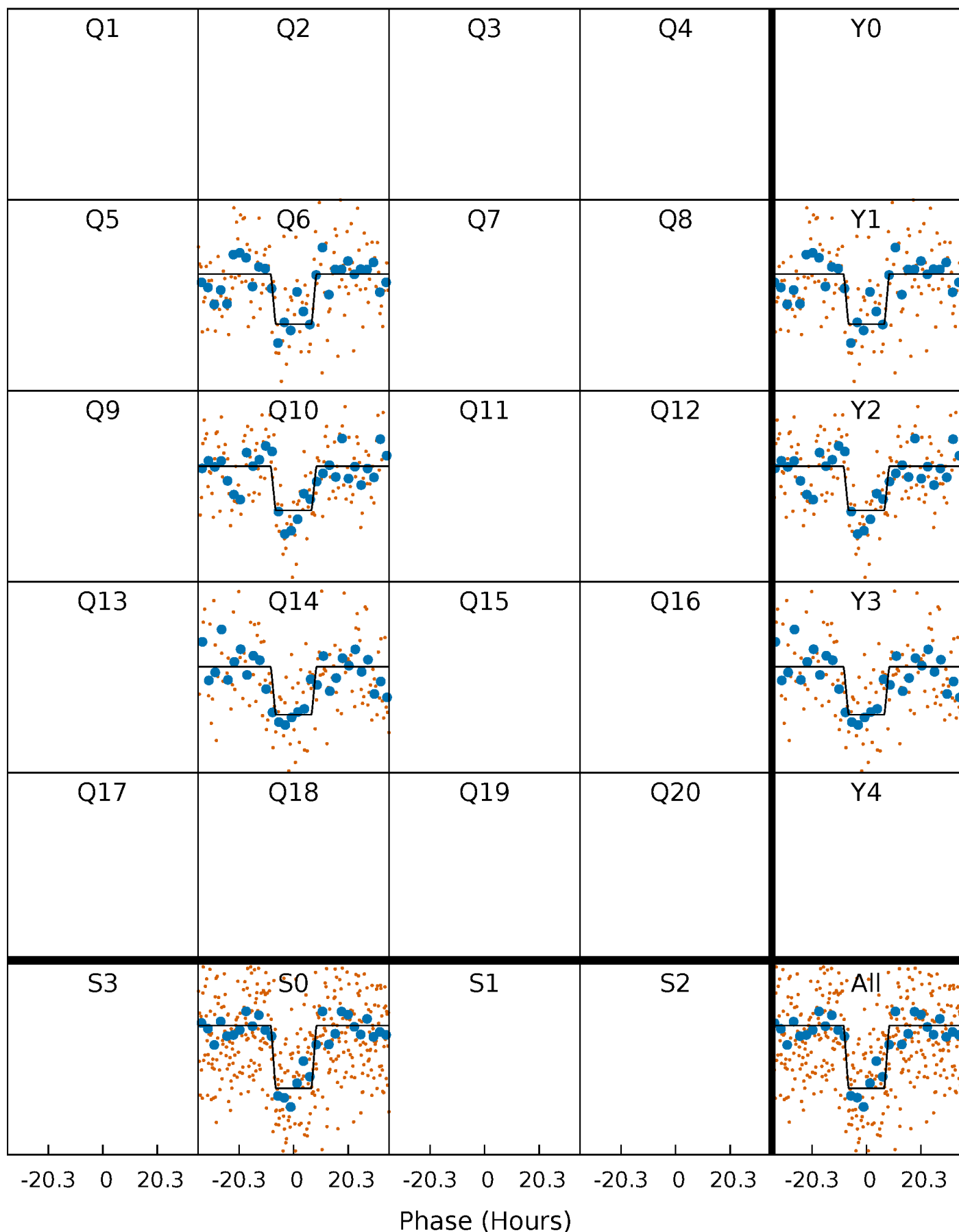
DV Quarter-Phased Transit Curves

TCE 009107457-01 P=365.711165 Days $T_0=183.083808$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

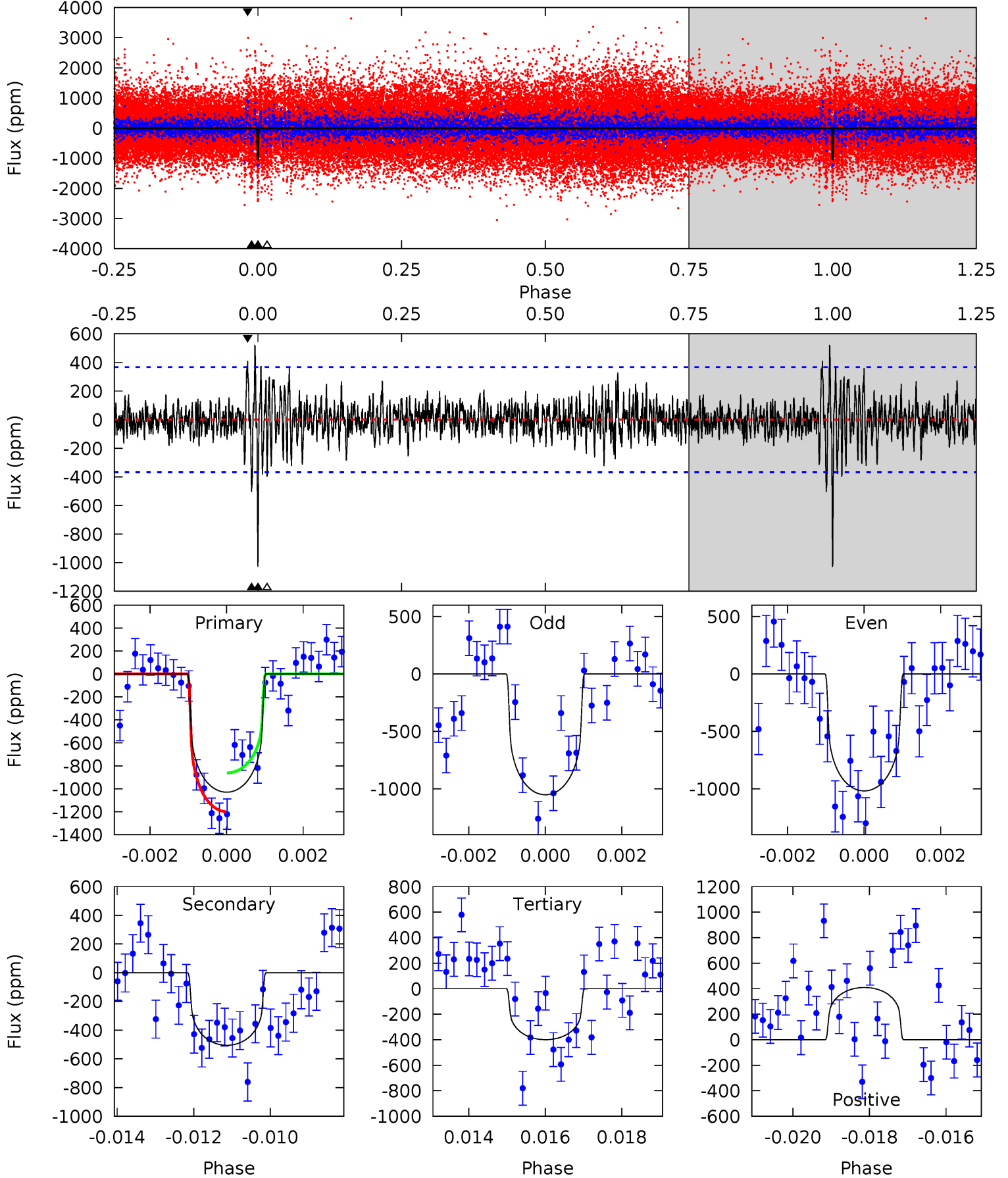
TCE 009107457-01 P=365.692612 Days $T_0=183.122283$ (BKJD)



DV Model-Shift Uniqueness Test

009107457-01, P = 365.711165 Days, E = 183.083808 Days

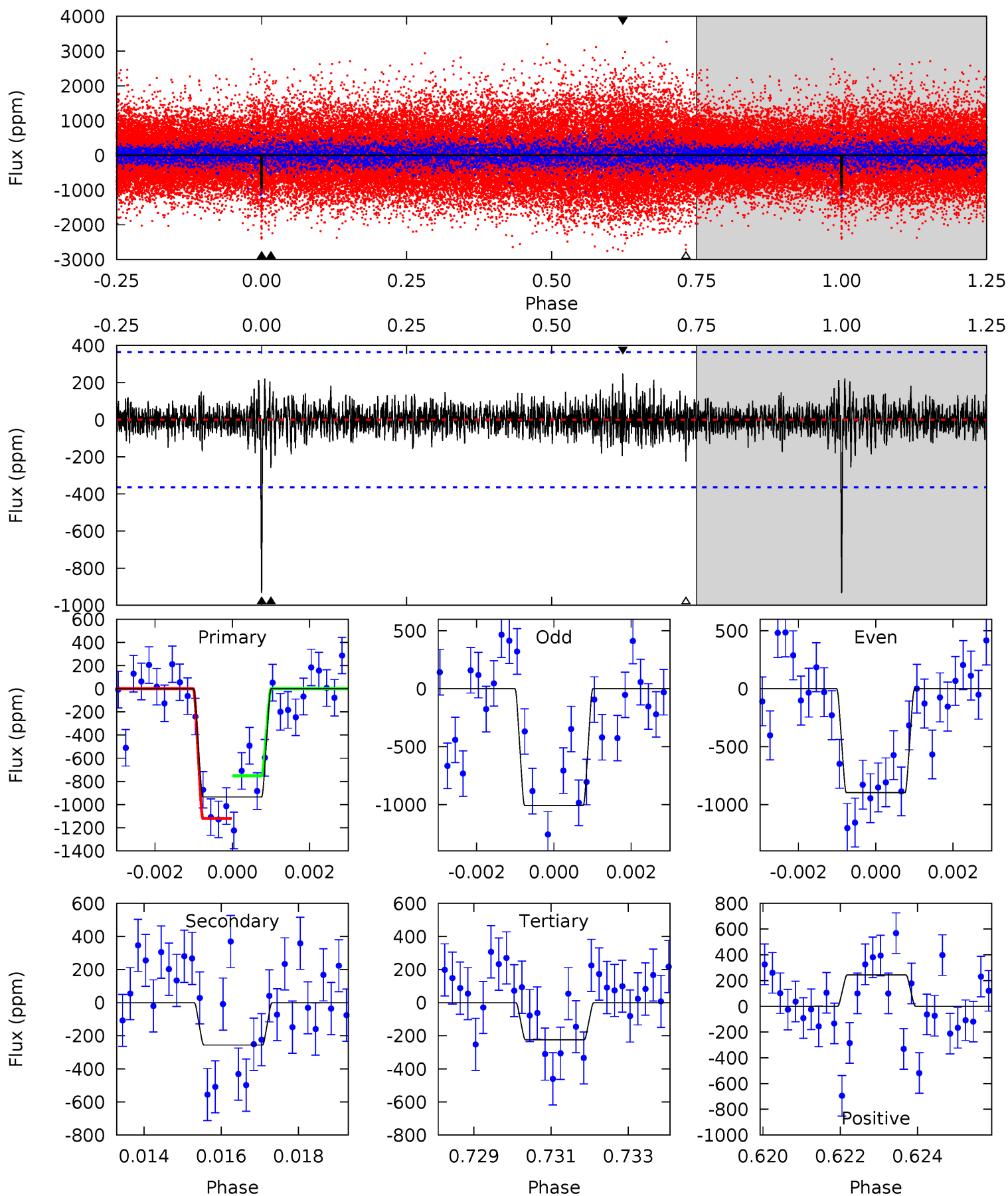
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	7.33	5.79	5.94	5.33	3.09	1.39	9.14	8.99	1.53	1.39	0.23	0.98	0.34	2.45



Alt Model-Shift Uniqueness Test

009107457-01, P = 365.692612 Days, E = 183.122283 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	3.75	3.29	3.57	5.33	3.10	0.82	10.4	10.1	0.46	0.18	0.77	1.00	0.21	2.70



Stellar Parameters For KIC 009107457

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5221^{+179}_{-179}	$4.555^{+0.065}_{-0.071}$	$-0.280^{+0.300}_{-0.300}$	$0.757^{+0.097}_{-0.080}$	$0.752^{+0.098}_{-0.057}$	$2.436^{+0.688}_{-0.588}$
	+3%/-3%	+1%/-2%	+107%/-107%	+13%/-11%	+13%/-8%	+28%/-24%
Source	KIC0	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 009107457-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-505 ± 69	$2.41^{+1.23}_{-1.18}$	294^{+13}_{-12}	4696^{+1714}_{-724}	$39689^{+123837}_{-22907}$
Alt.	-256 ± 68	$2.58^{+1.15}_{-1.18}$	294^{+13}_{-13}	4017^{+1042}_{-505}	17755^{+42190}_{-9885}

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

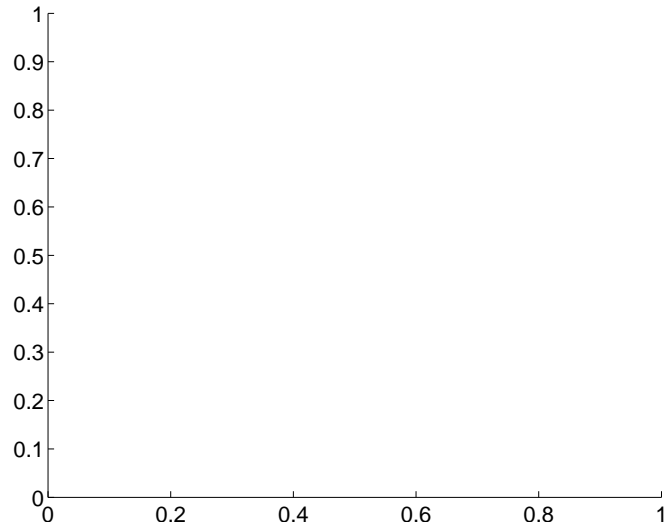
Supplemental centroid analysis for 009107457-01. Kepler magnitude: 15.76. Transit SNR 7.95

There are 0 quarters with good PRF difference image offsets

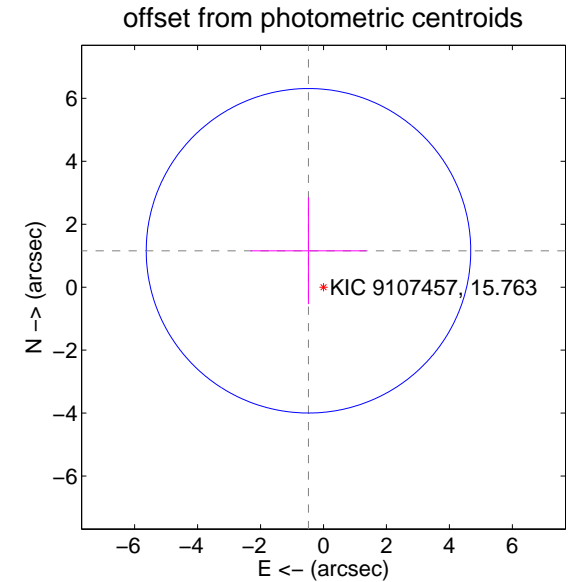
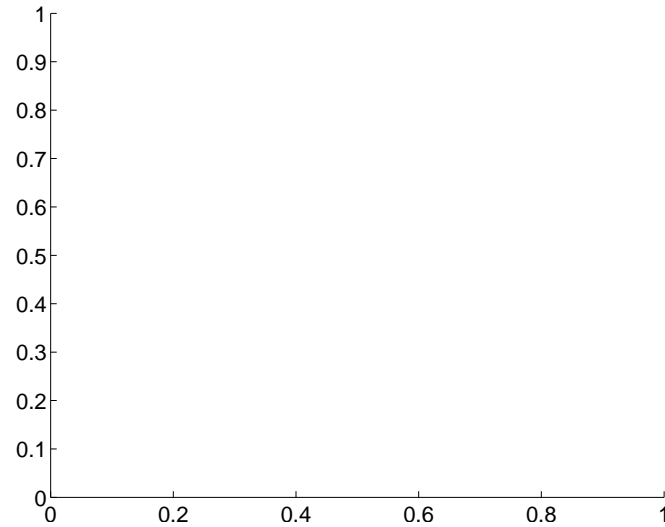
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.25 ± 1.72	0.73	0.48 ± 1.84	1.16 ± 1.70

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

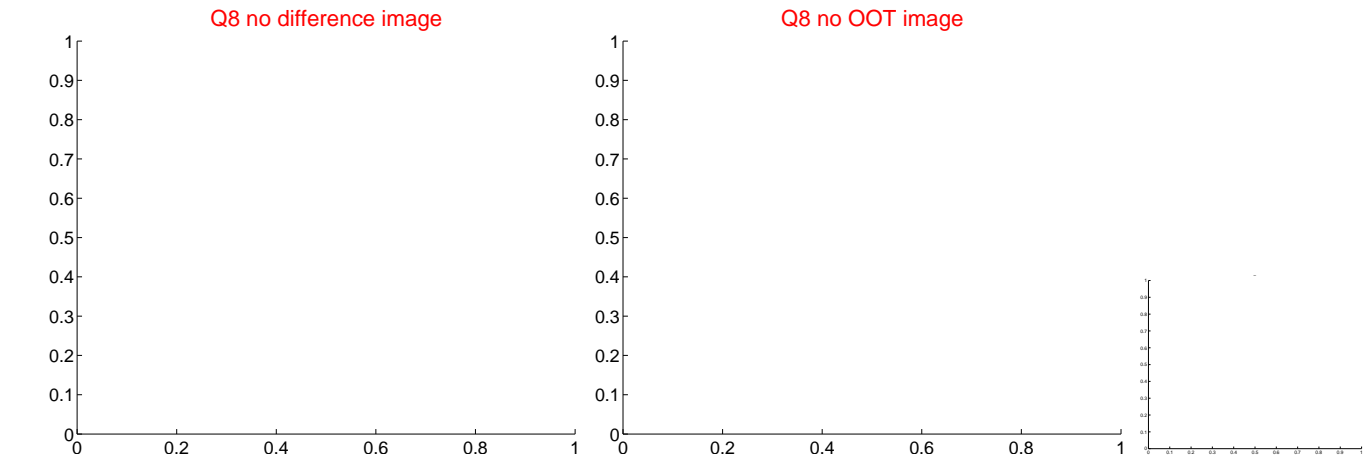
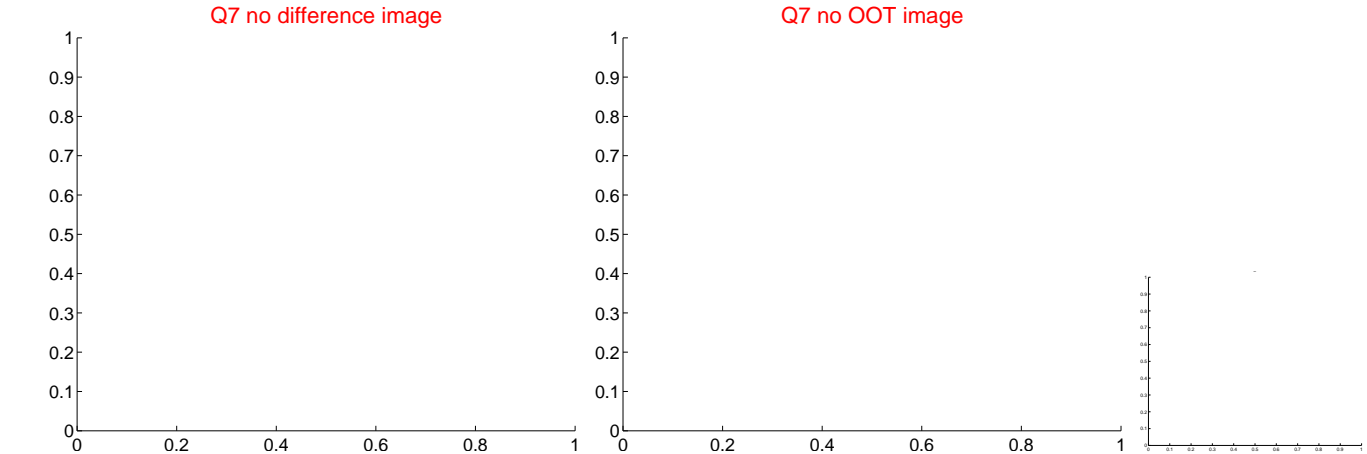
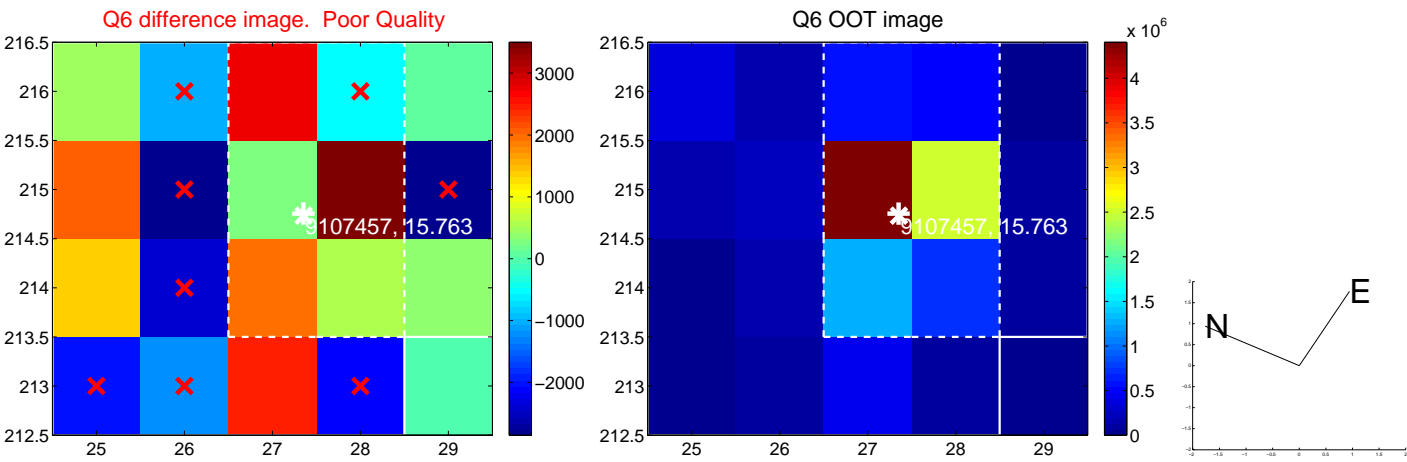
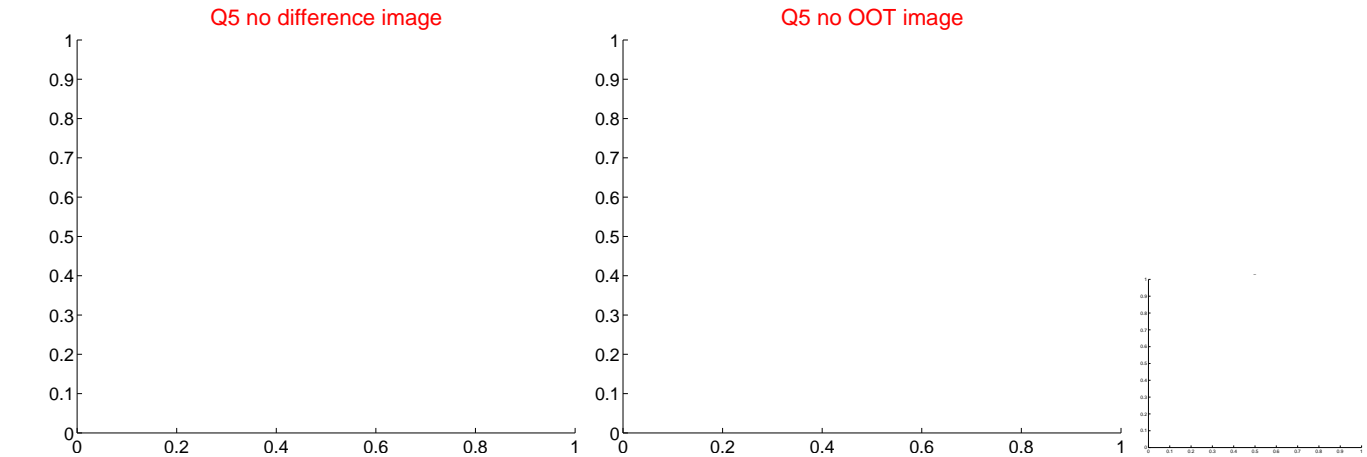


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

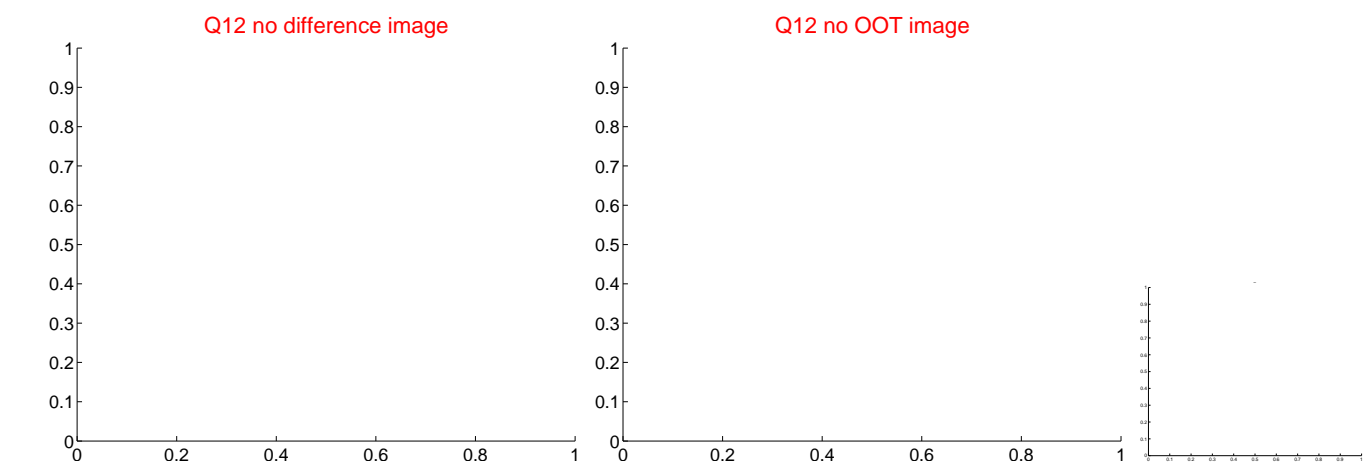
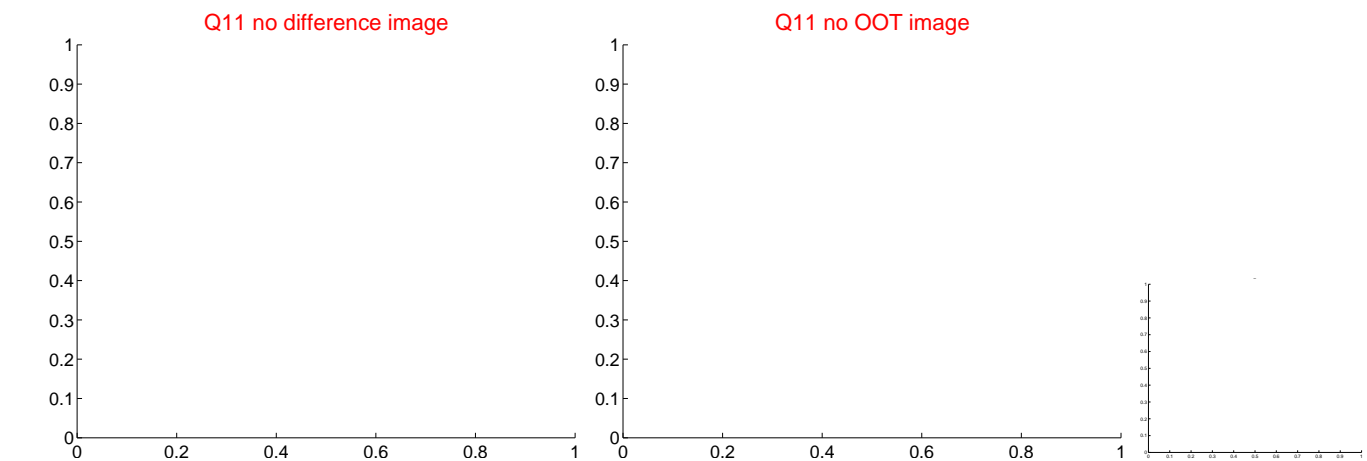
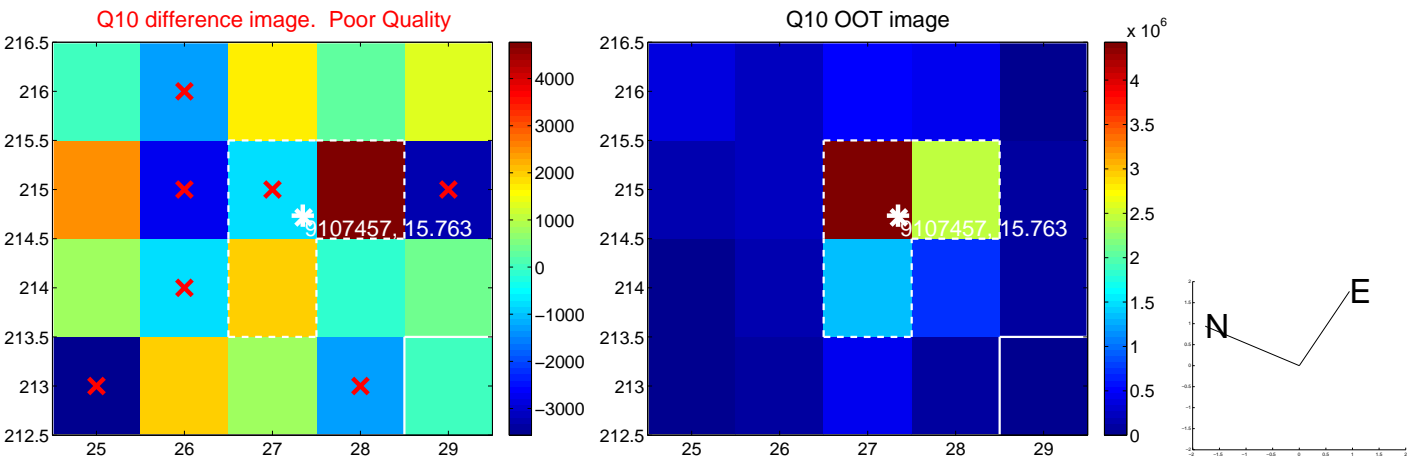
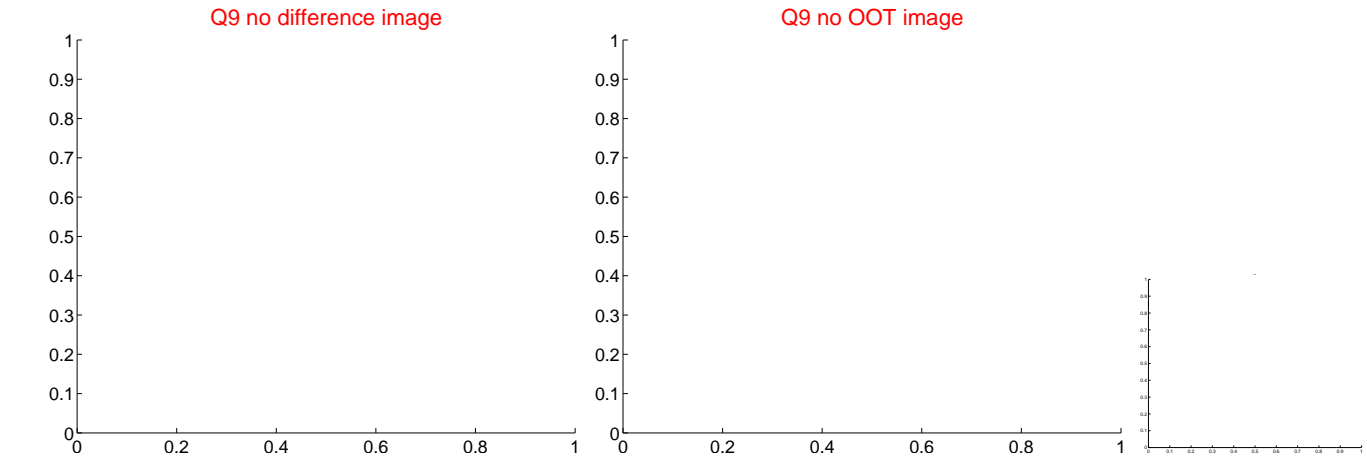
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



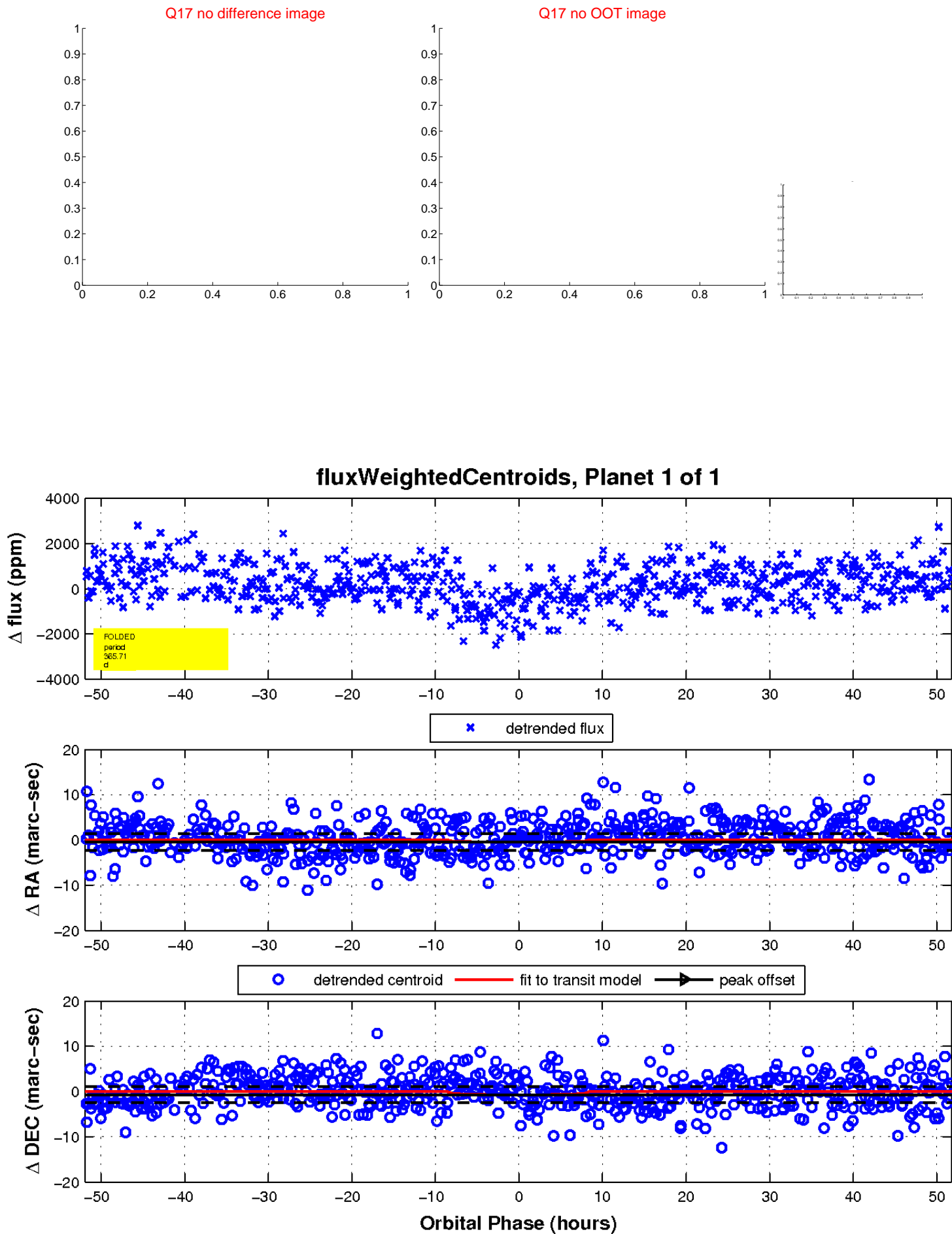
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

