

KIC 009009509

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})
009009509-01	OBS	No	369.648776	175.129380	617.1	22.128	7.9	8.0	0.79	5717	1.97	0.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009009509-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

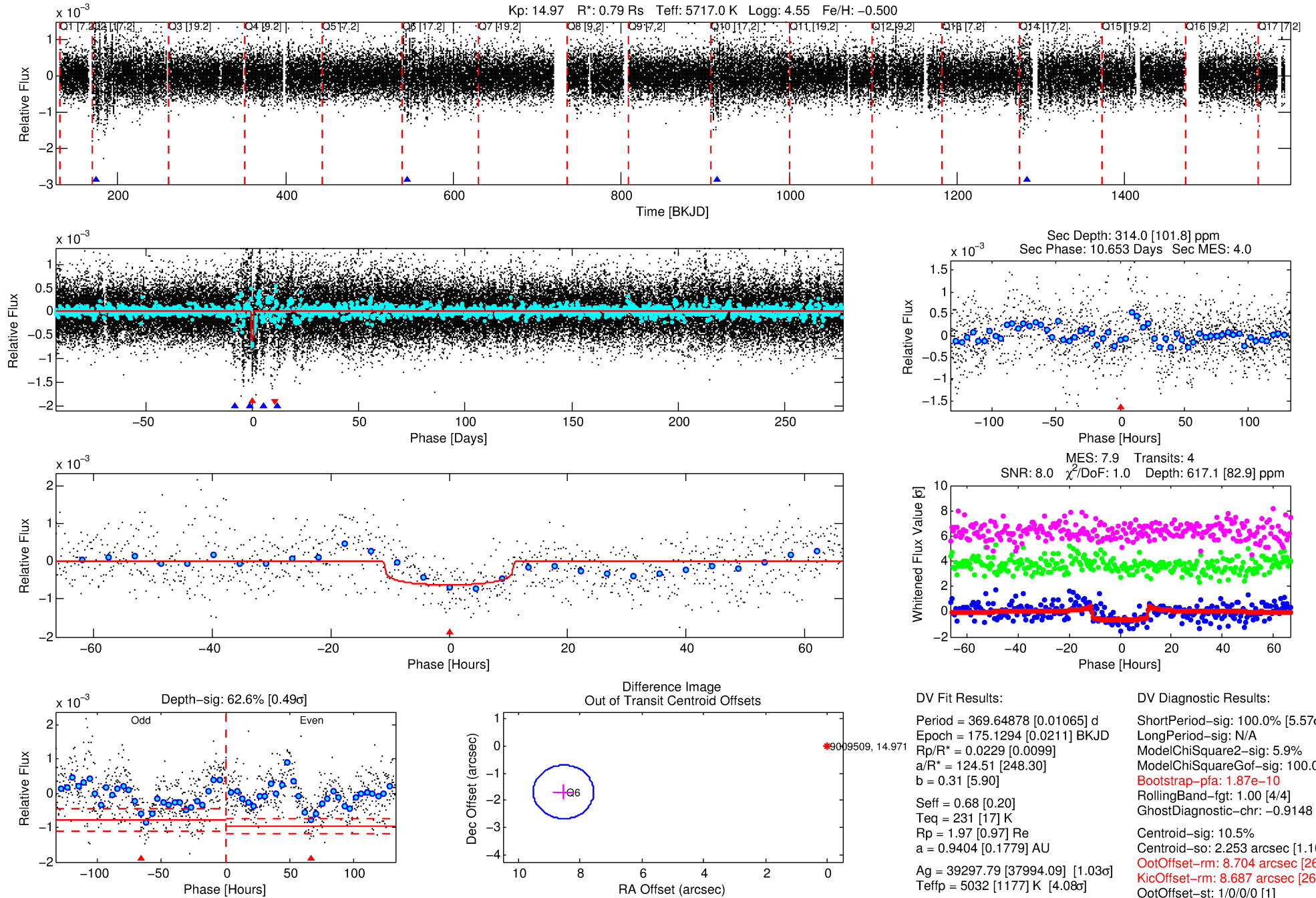
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009009509-01

No Significant Match Found

DV One-Page Summary

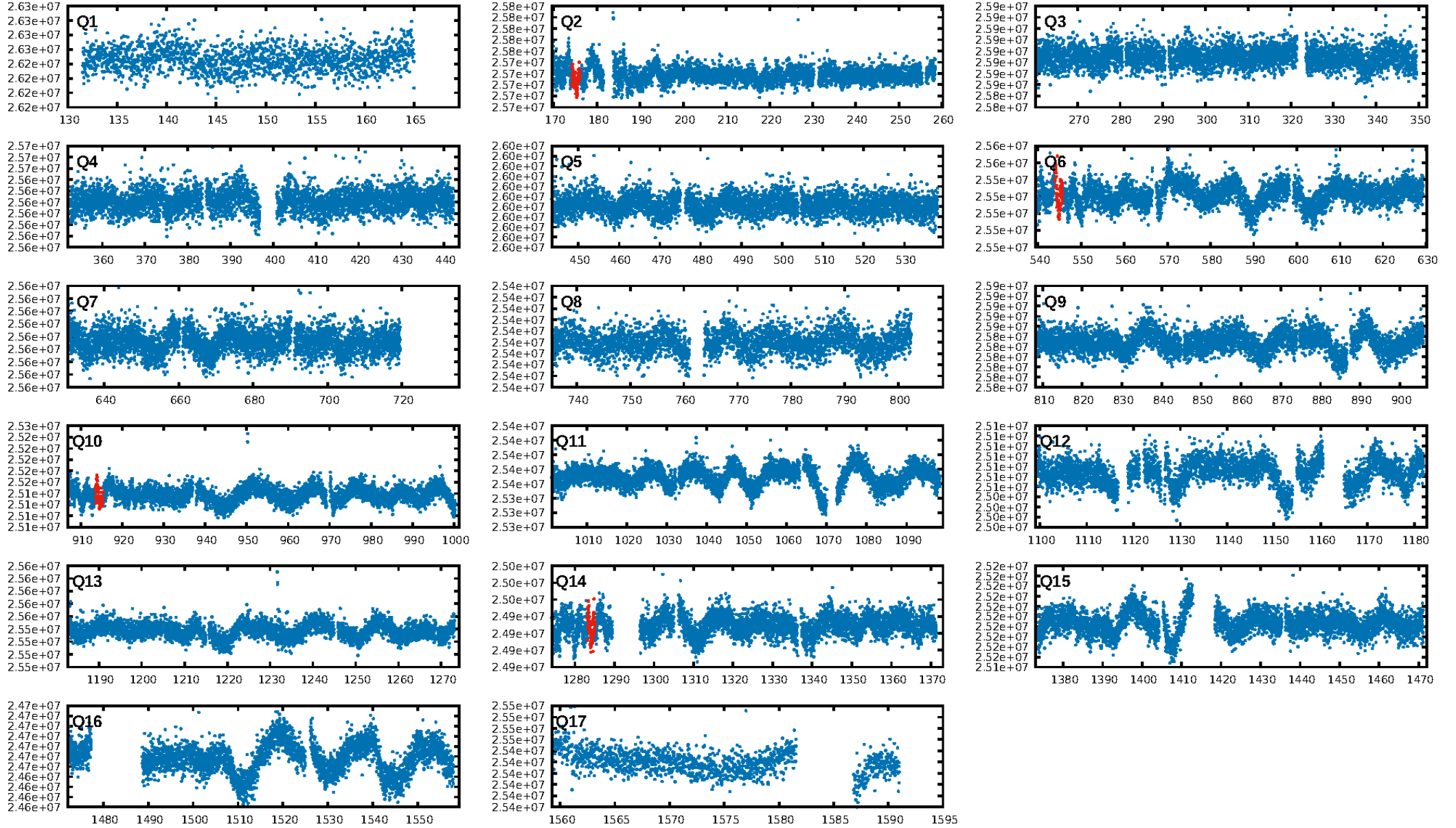
KIC: 9009509 Candidate: 1 of 2 Period: 369.649 d



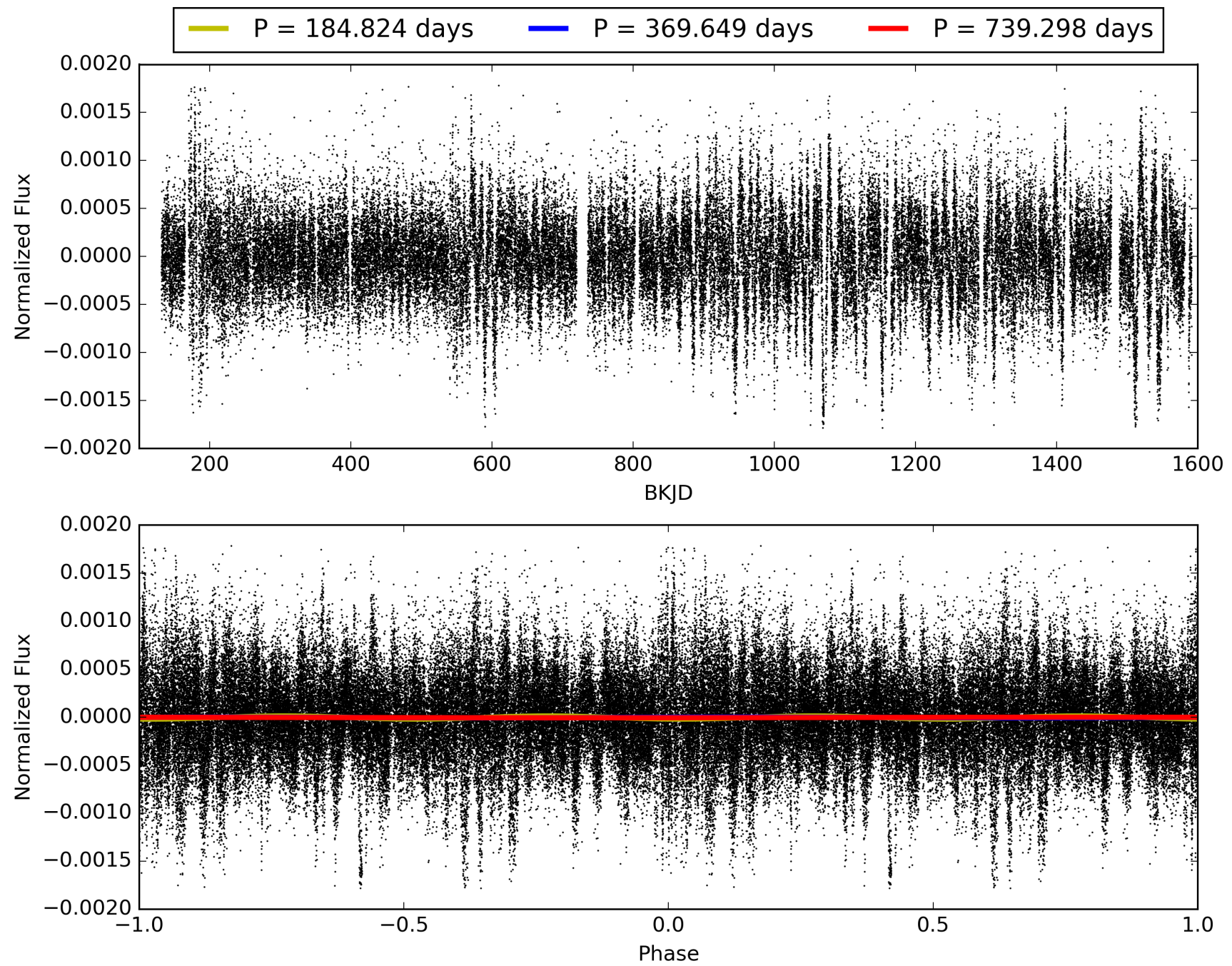
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:01:12 Z

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

TCE 009009509-01, PDC Light Curves

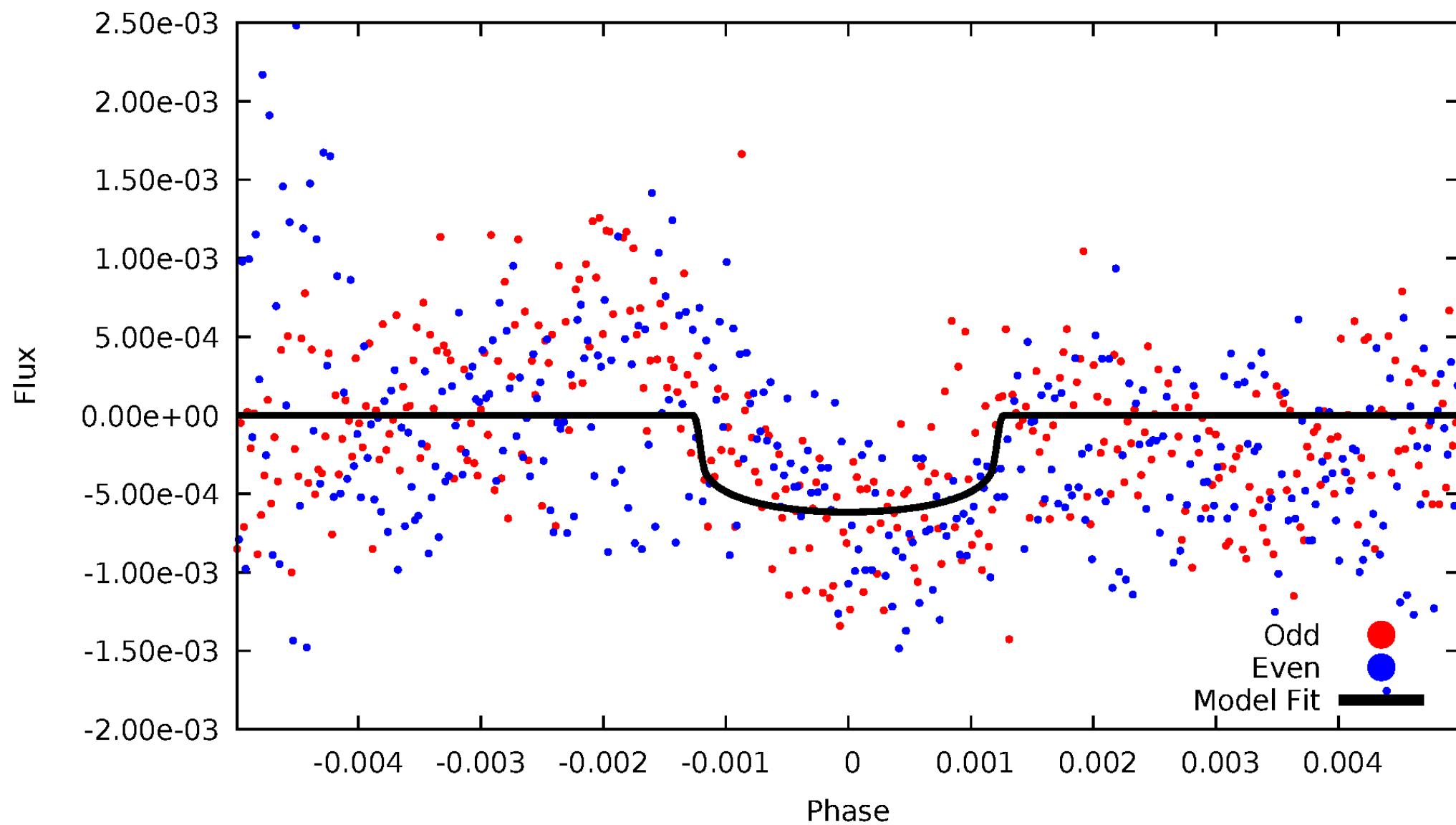


TCE 009009509-01



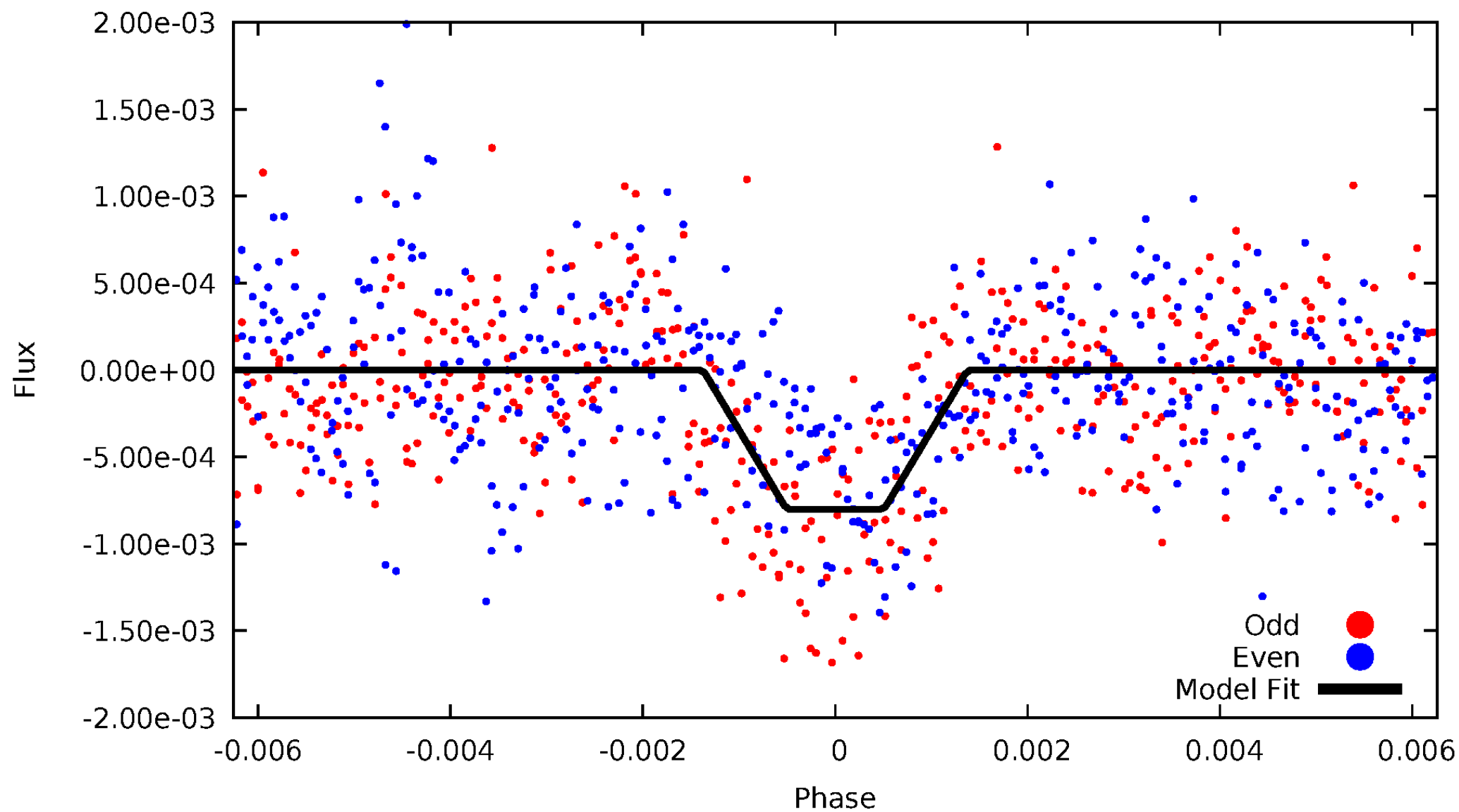
DV Odd/Even

TCE 009009509-01



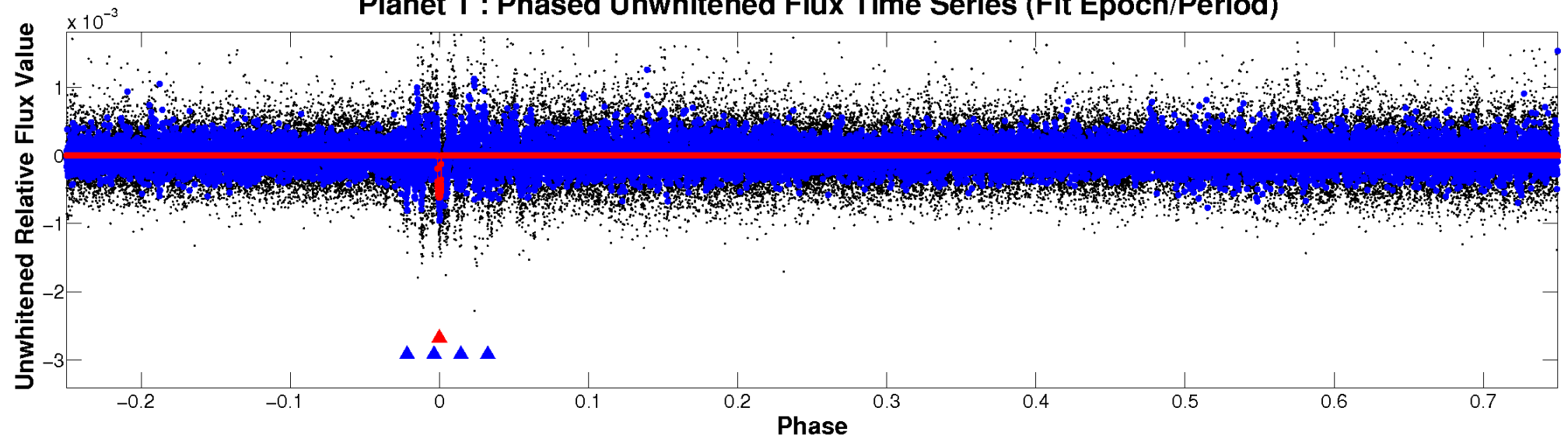
ALT Odd/Even

TCE 009009509-01

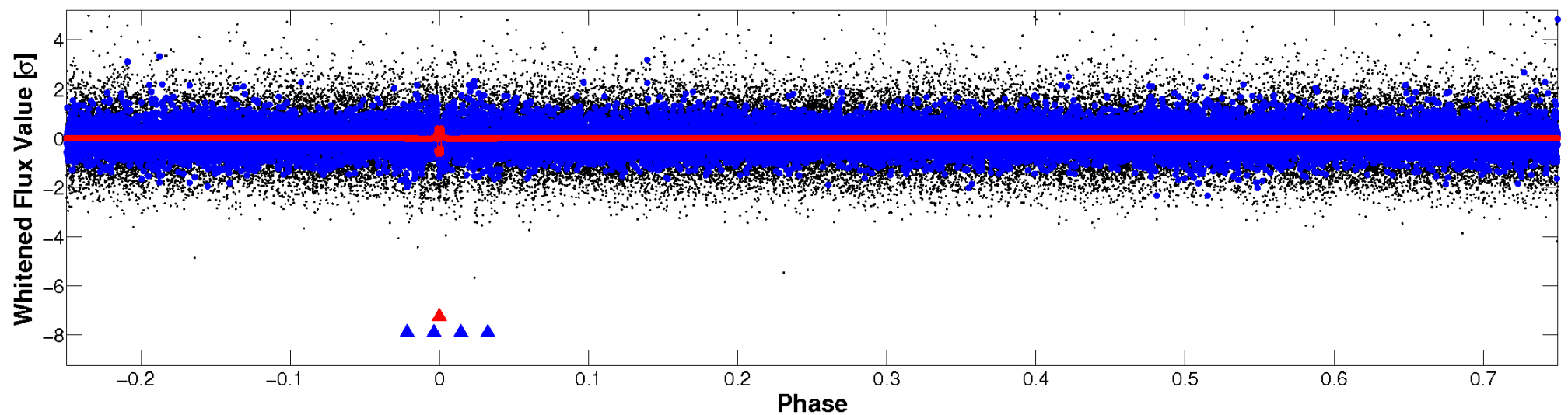


Non-Whitened Vs. Whitened Light Curve

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

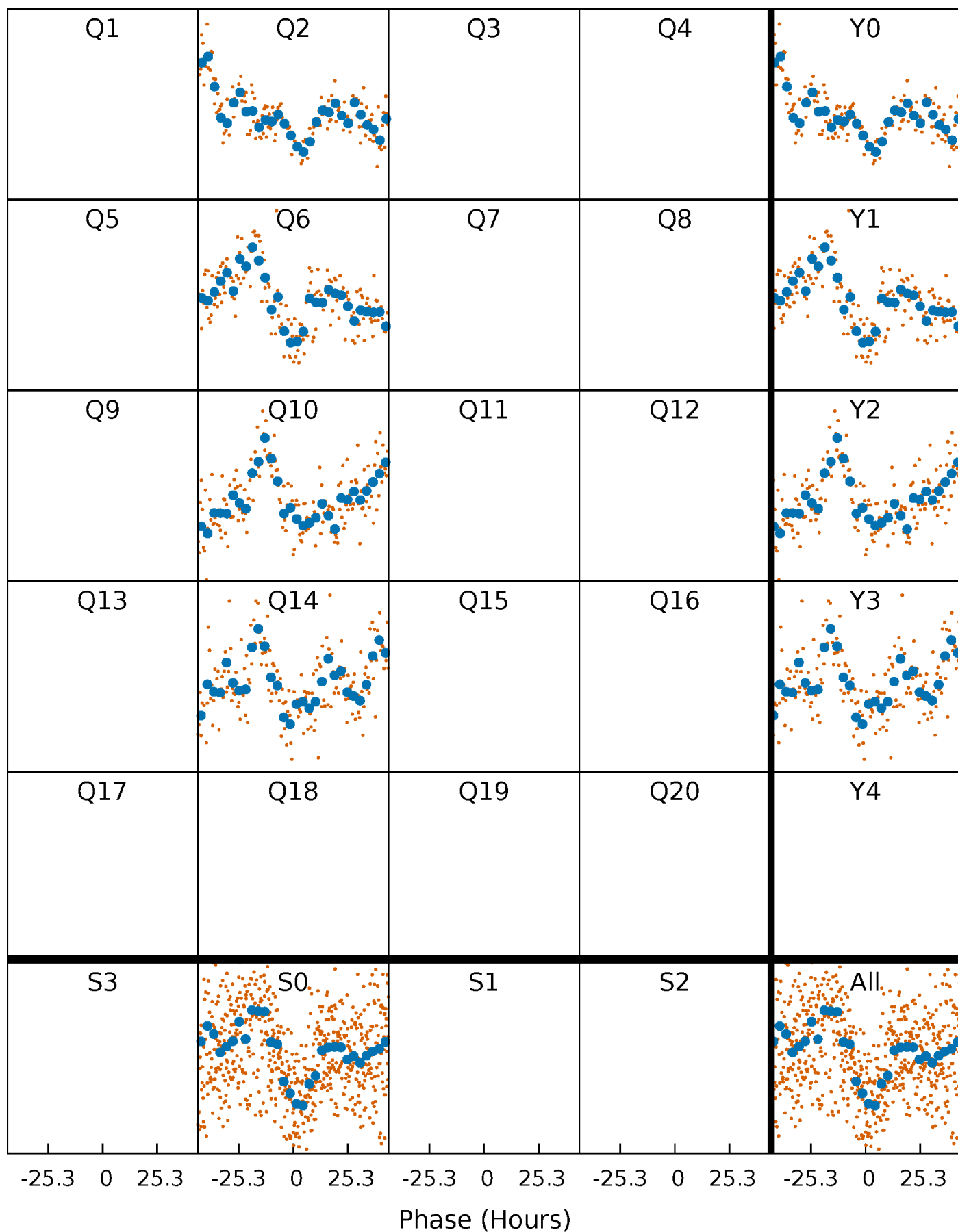


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



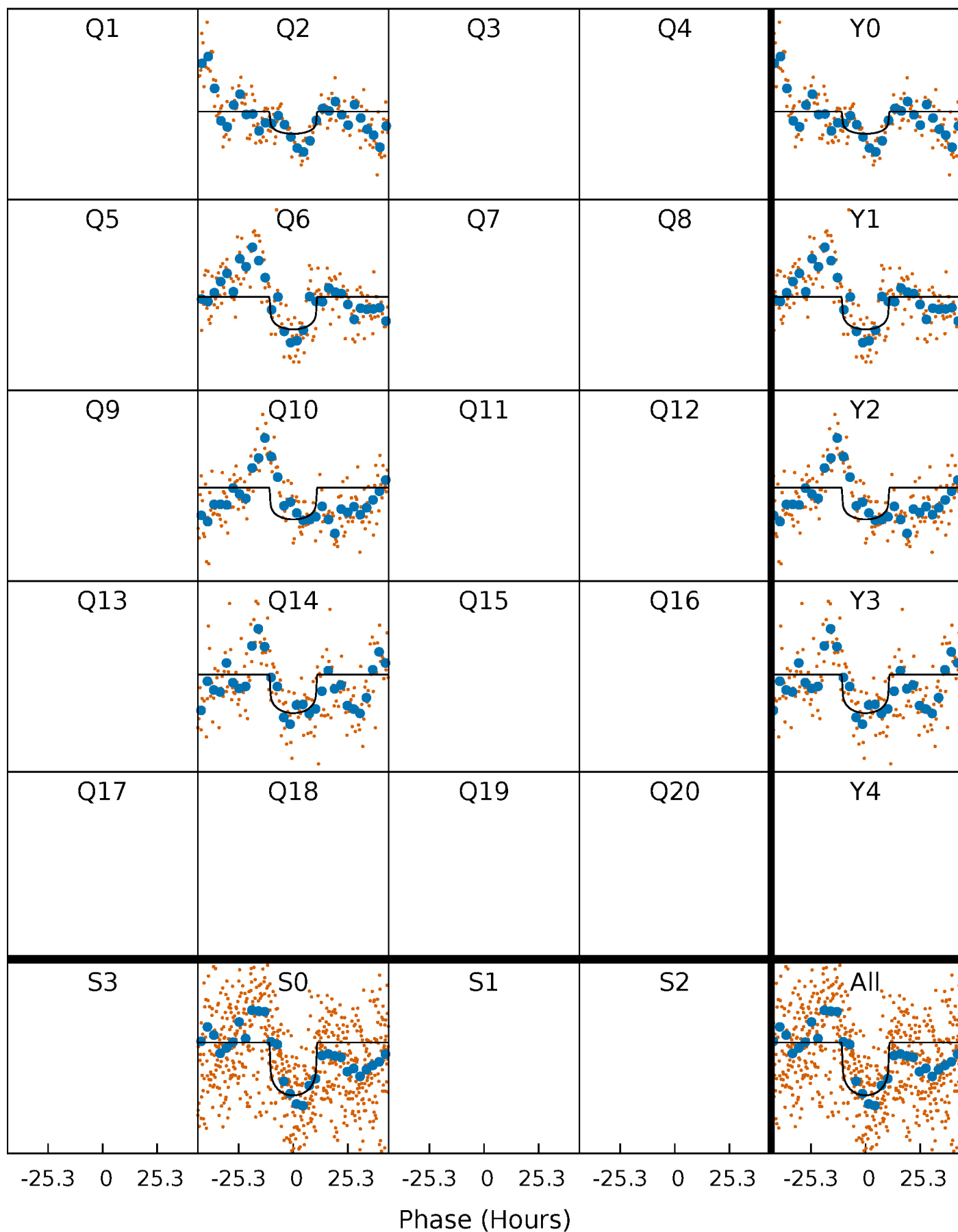
PDC Quarter-Phased Transit Curves

TCE 009009509-01 P=369.648776 Days $T_0=175.129379$ (BKJD)



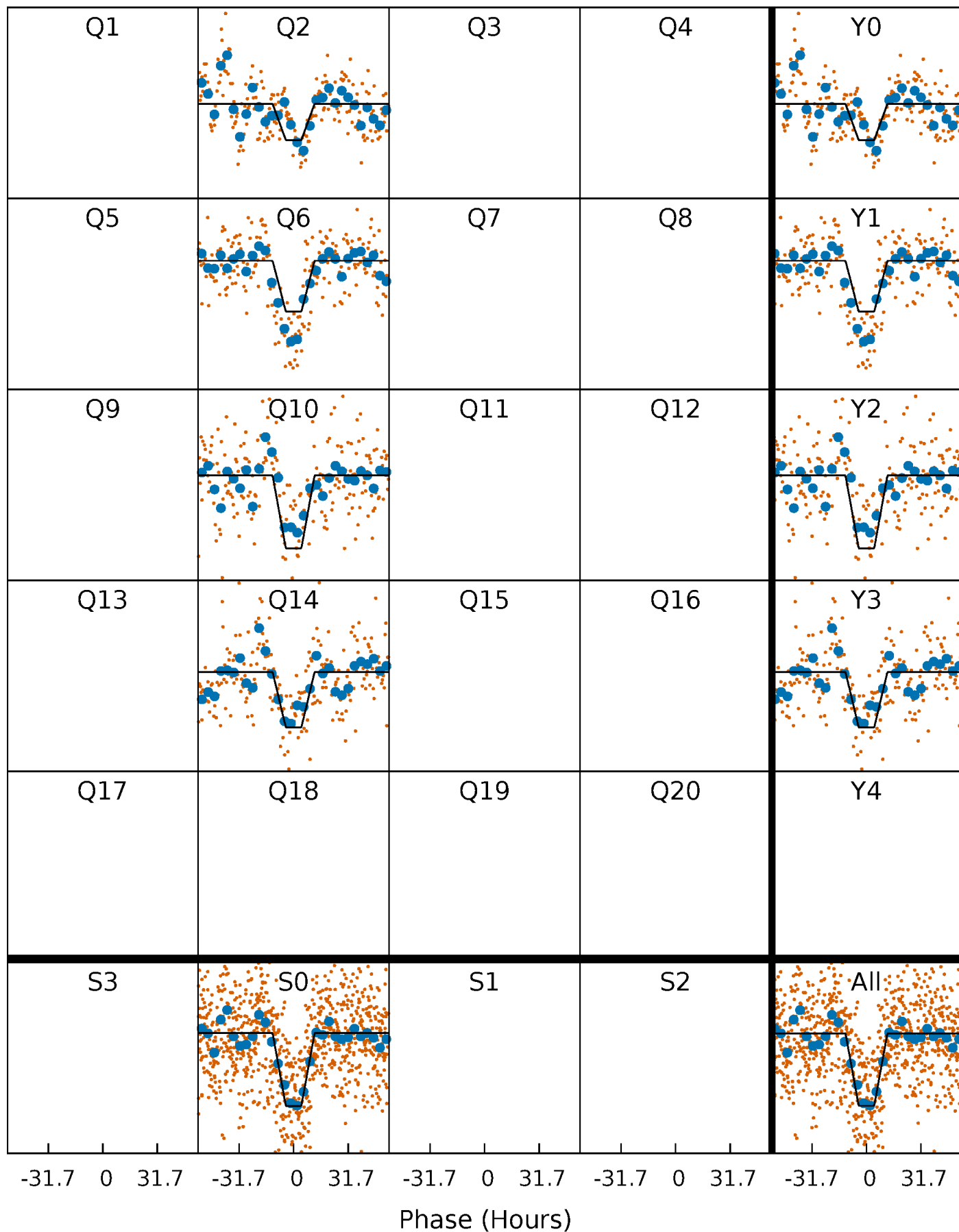
DV Quarter-Phased Transit Curves

TCE 009009509-01 P=369.648776 Days $T_0=175.129379$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

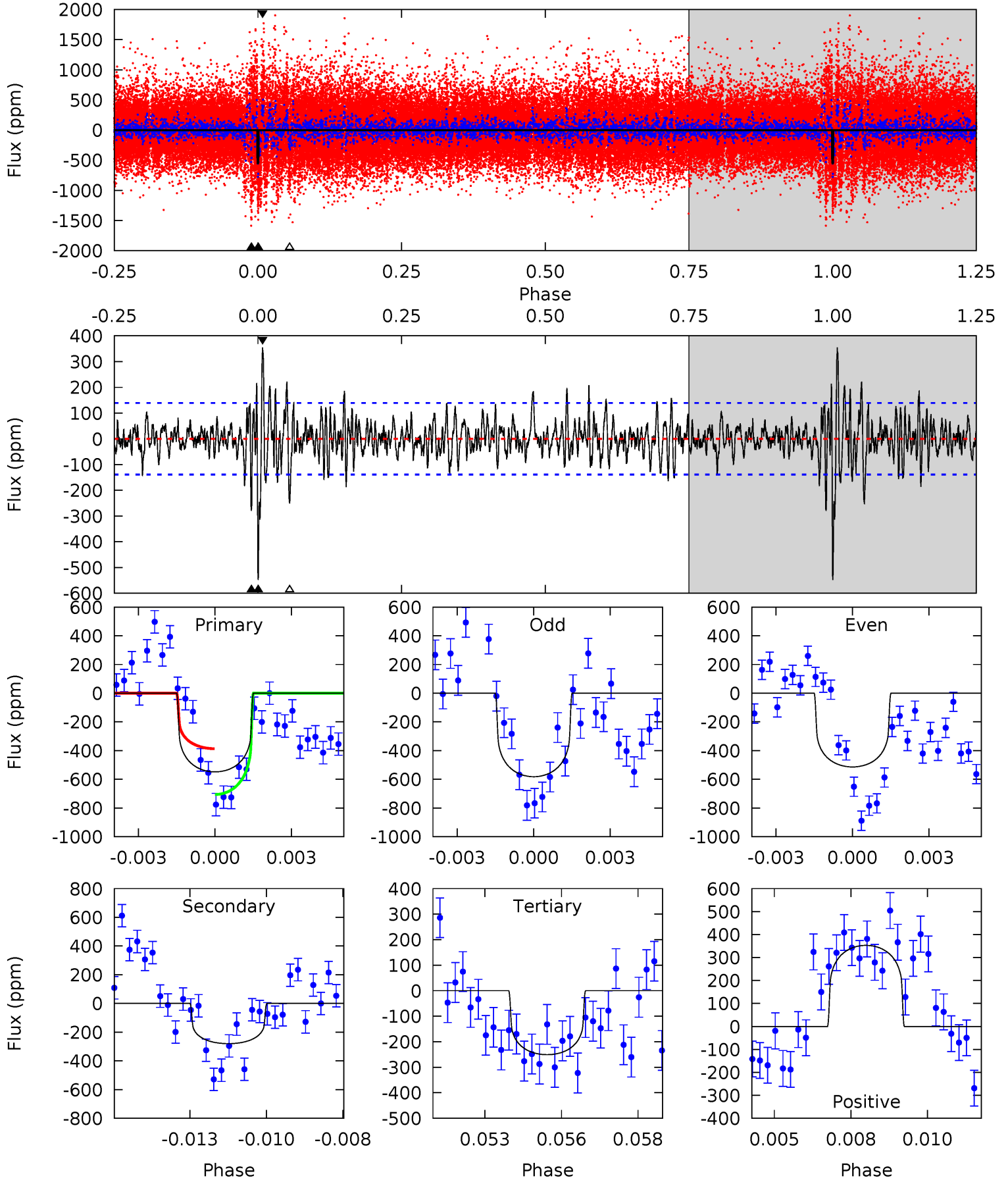
TCE 009009509-01 P=369.683967 Days $T_0=175.112041$ (BKJD)



DV Model-Shift Uniqueness Test

009009509-01, P = 369.648776 Days, E = 175.129379 Days

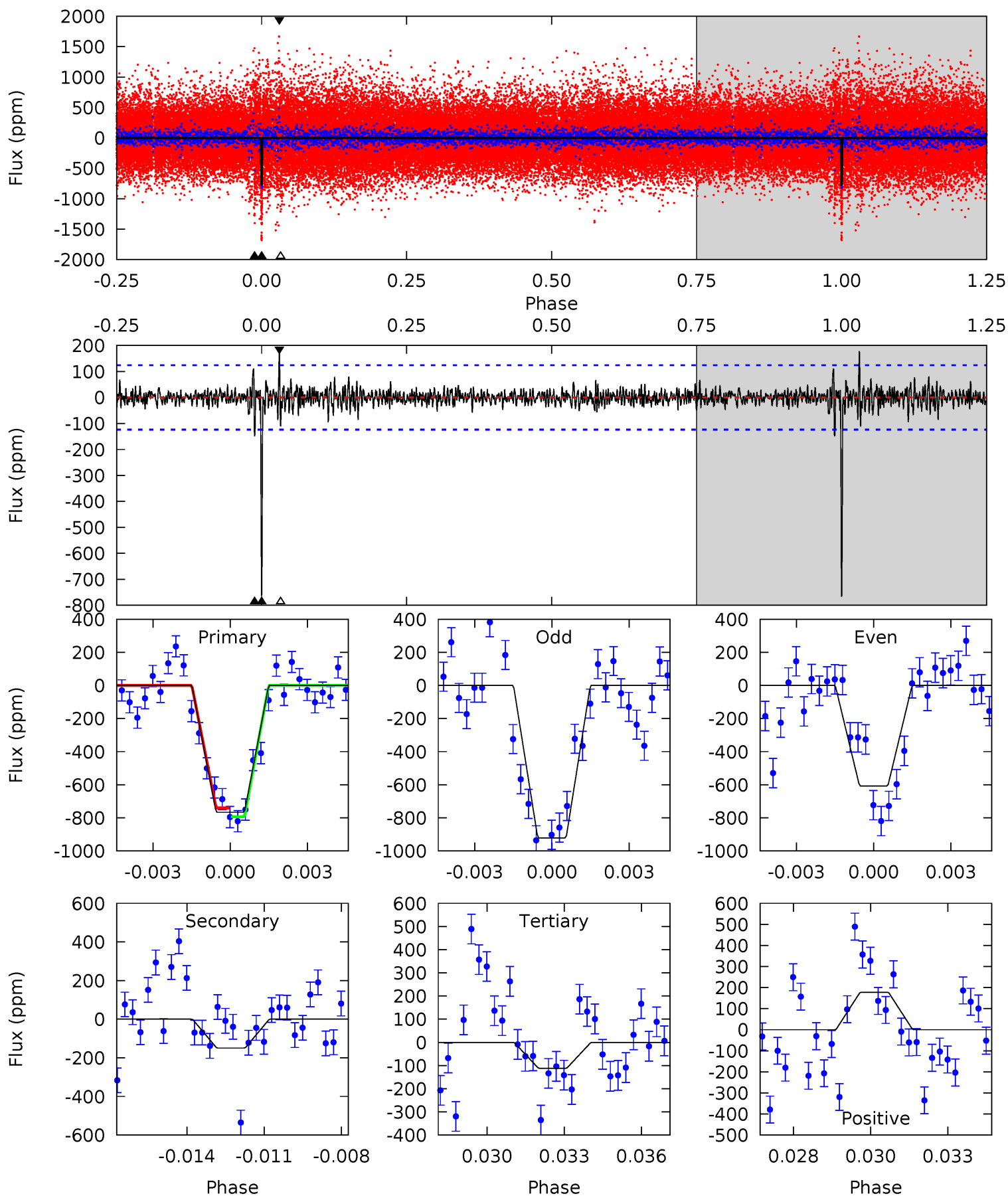
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	10.7	9.54	13.4	5.28	3.02	2.38	11.3	7.43	1.11	-2.77	1.29	0.97	0.39	6.08



Alt Model-Shift Uniqueness Test

009009509-01, P = 369.683967 Days, E = 175.112041 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.6	6.35	4.74	7.56	5.27	2.99	0.95	27.8	25.0	1.61	-1.21	6.70	1.15	0.19	1.12



Stellar Parameters For KIC 009009509

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5717^{+173}_{-155}	$4.552^{+0.063}_{-0.147}$	$-0.500^{+0.300}_{-0.300}$	$0.790^{+0.180}_{-0.077}$	$0.812^{+0.096}_{-0.070}$	$2.317^{+0.618}_{-0.985}$
	+3%/-3%	+1%/-3%	+60%/-60%	+23%/-10%	+12%/-9%	+27%/-43%
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 009009509-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-280 ± 26	$2.01^{+0.92}_{-0.86}$	327^{+17}_{-14}	4980^{+1496}_{-692}	33799^{+67356}_{-18091}
Alt.	-149 ± 24	$2.52^{+0.99}_{-0.88}$	327^{+18}_{-15}	4041^{+766}_{-436}	11421^{+15928}_{-5513}

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

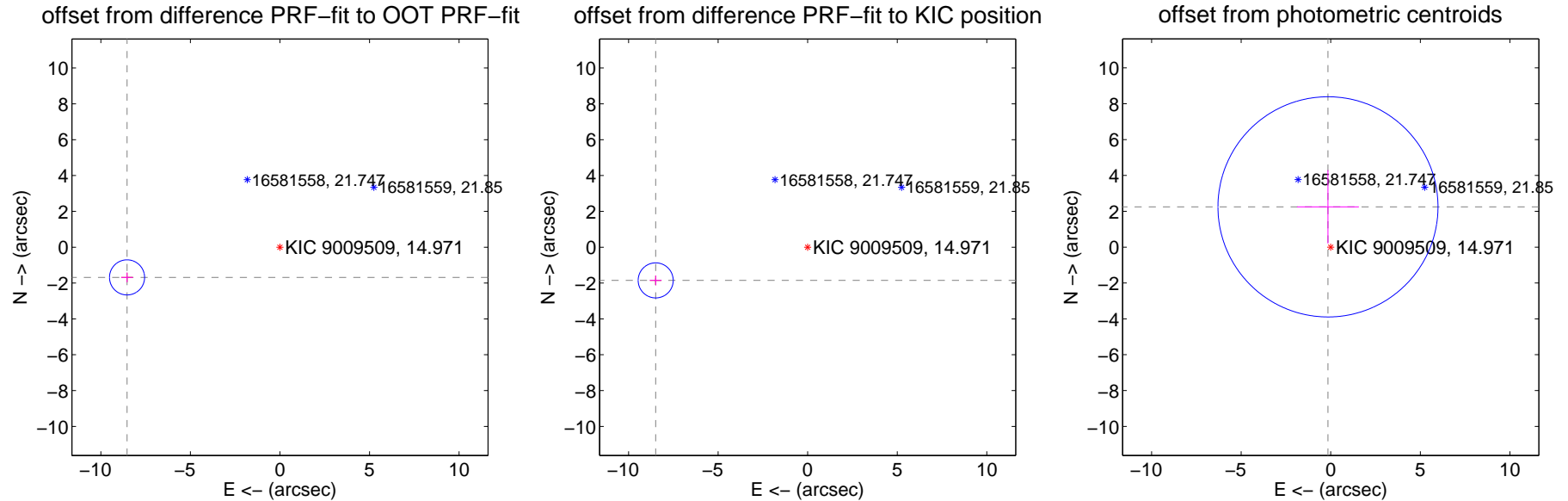
DV Centroid Data

Supplemental centroid analysis for 009009509-01. Kepler magnitude: 14.97. Transit SNR 8.01

There are 0 quarters with good PRF difference image offsets

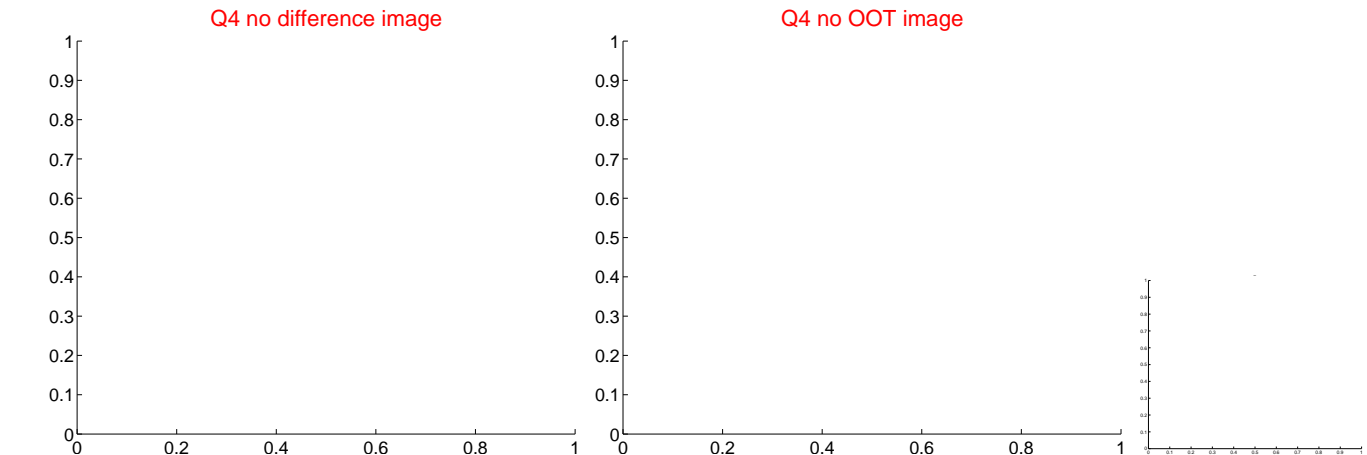
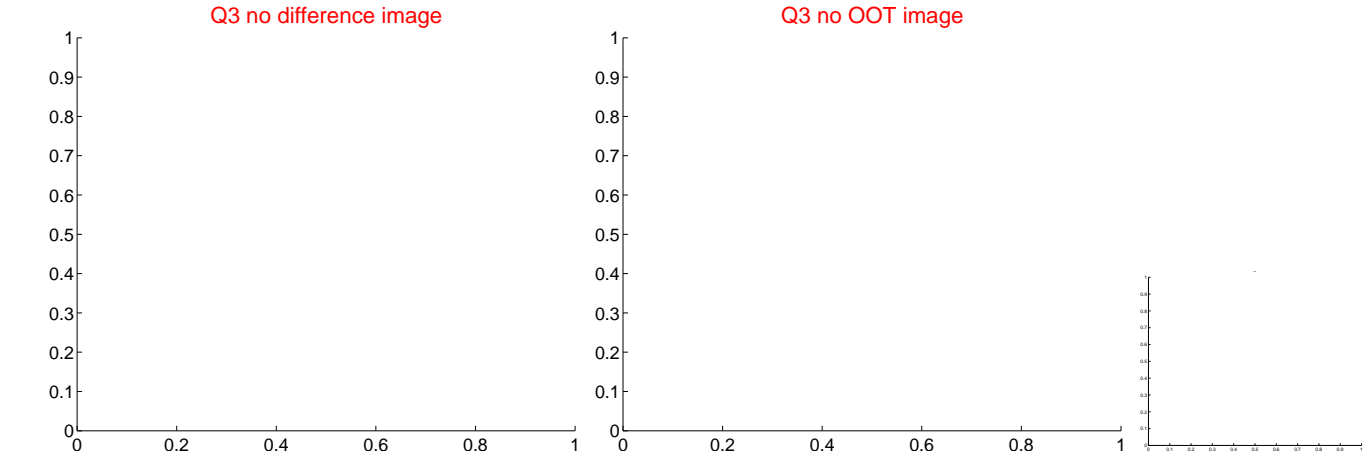
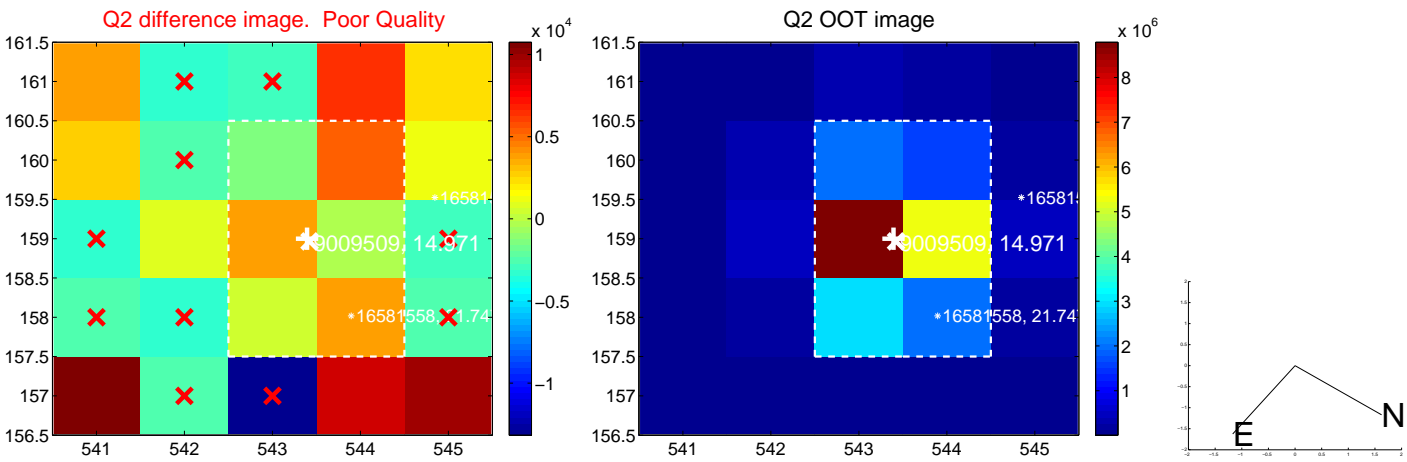
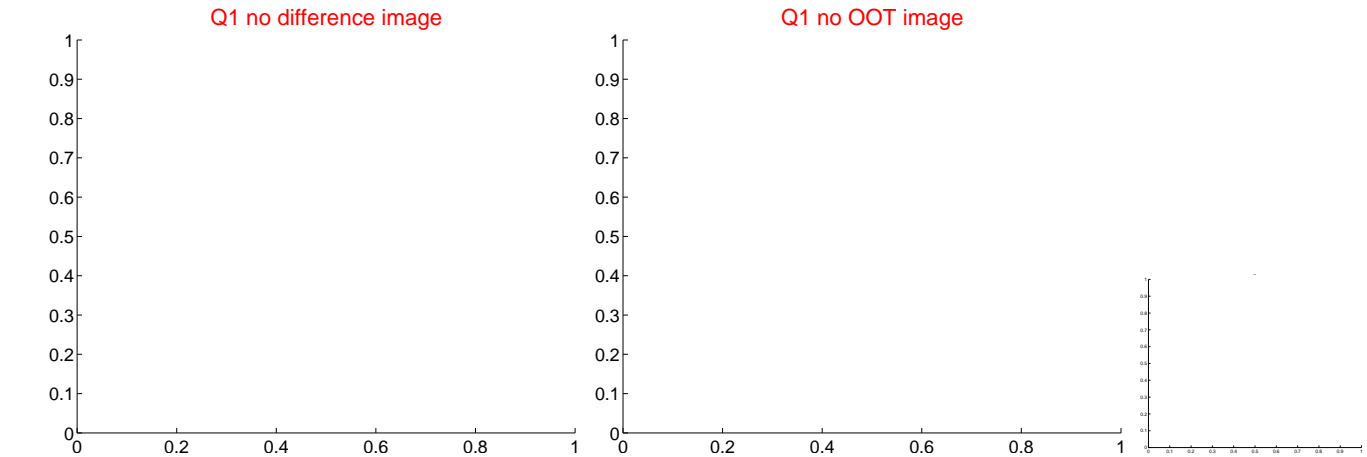
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.704 ± 0.327	26.66	8.540 ± 0.329	-1.684 ± 0.270
PRF-fit source offset from KIC position	8.687 ± 0.326	26.64	8.488 ± 0.329	-1.851 ± 0.270
photometric centroid source offset	2.25 ± 2.05	1.10	0.16 ± 1.73	2.25 ± 2.05

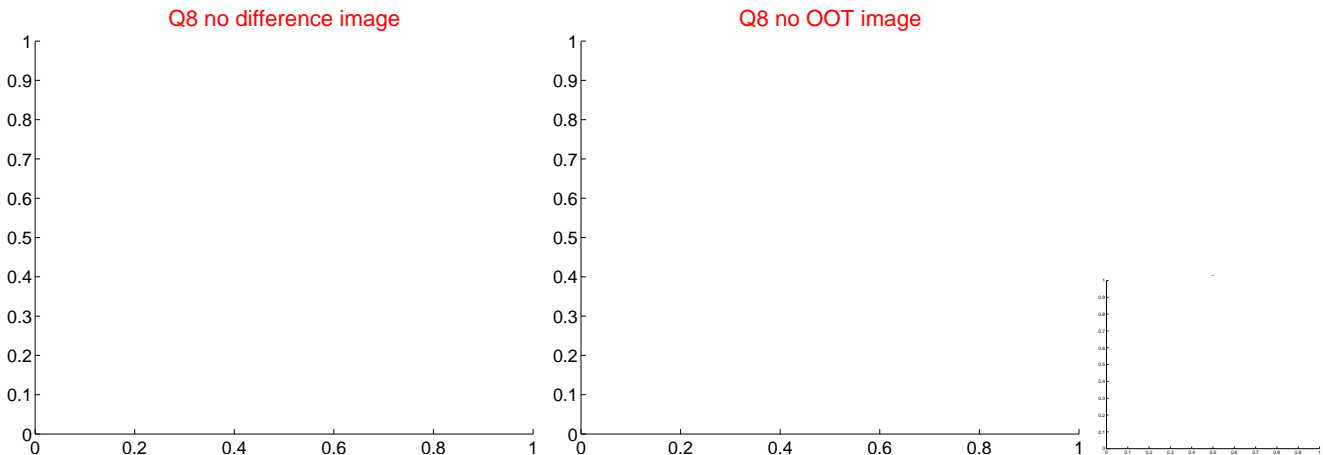
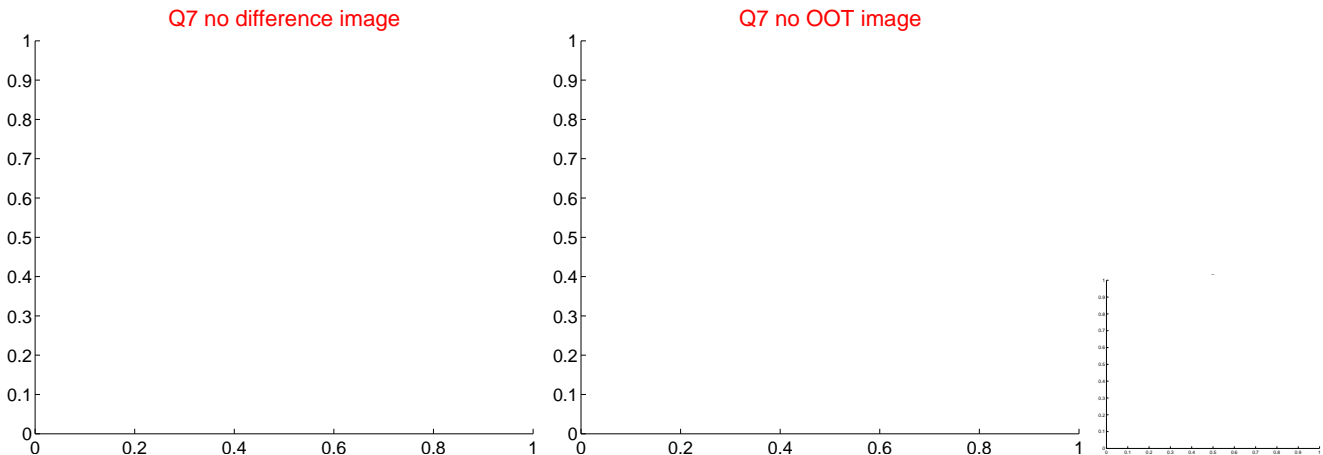
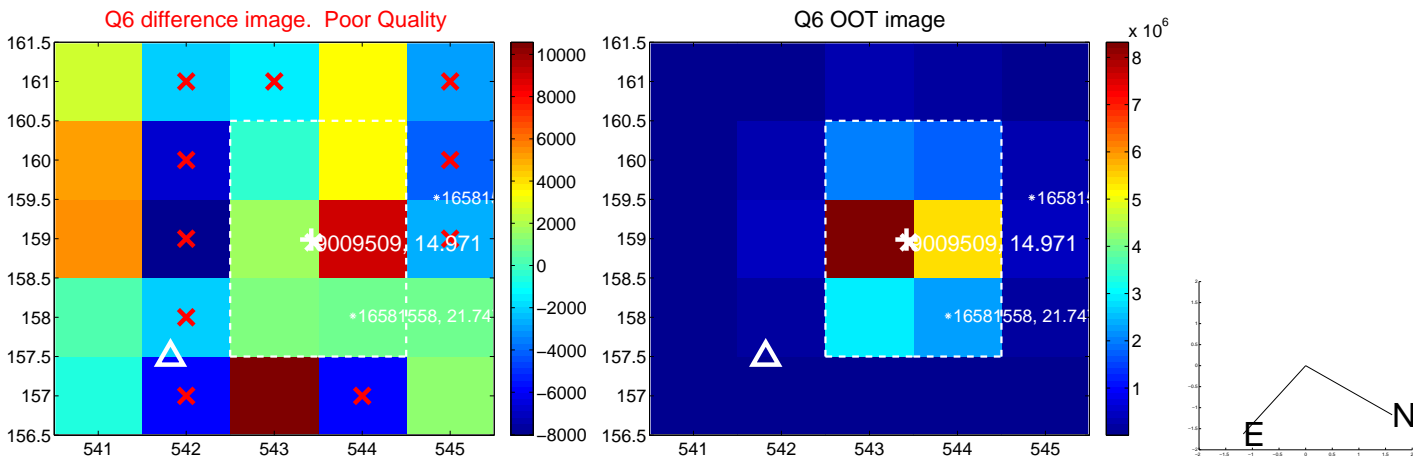
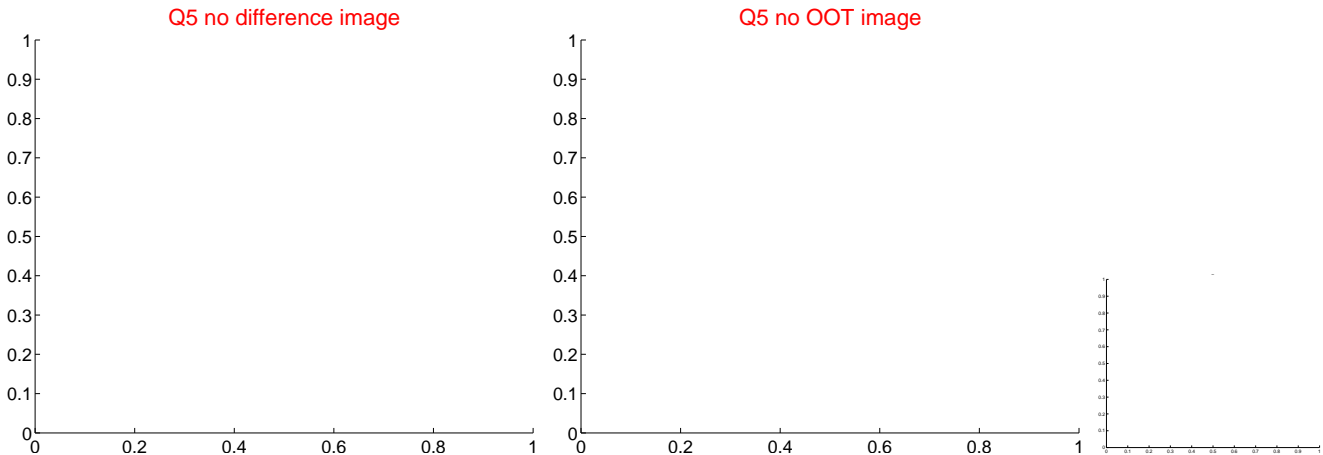


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

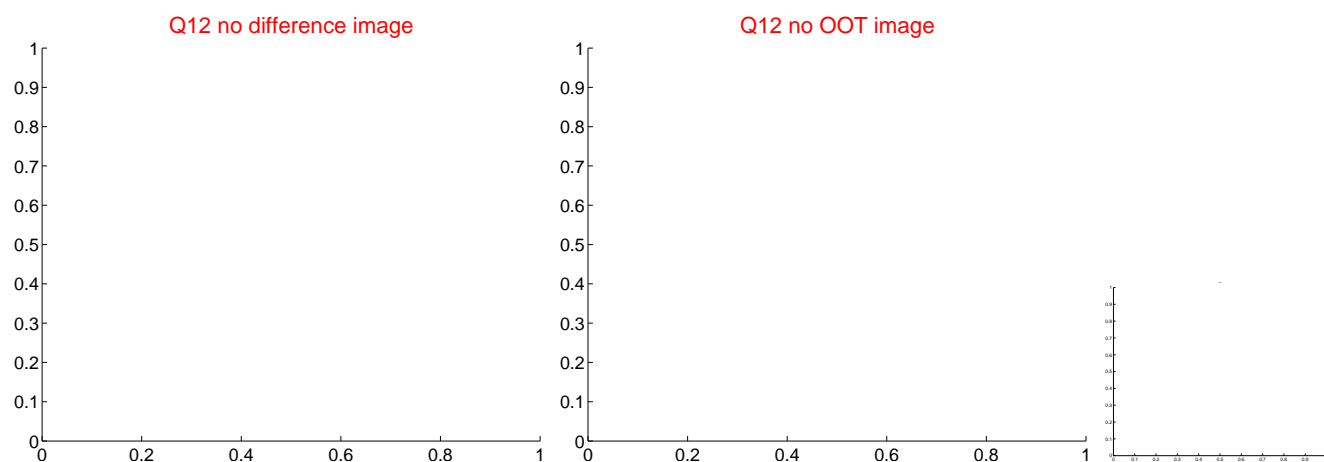
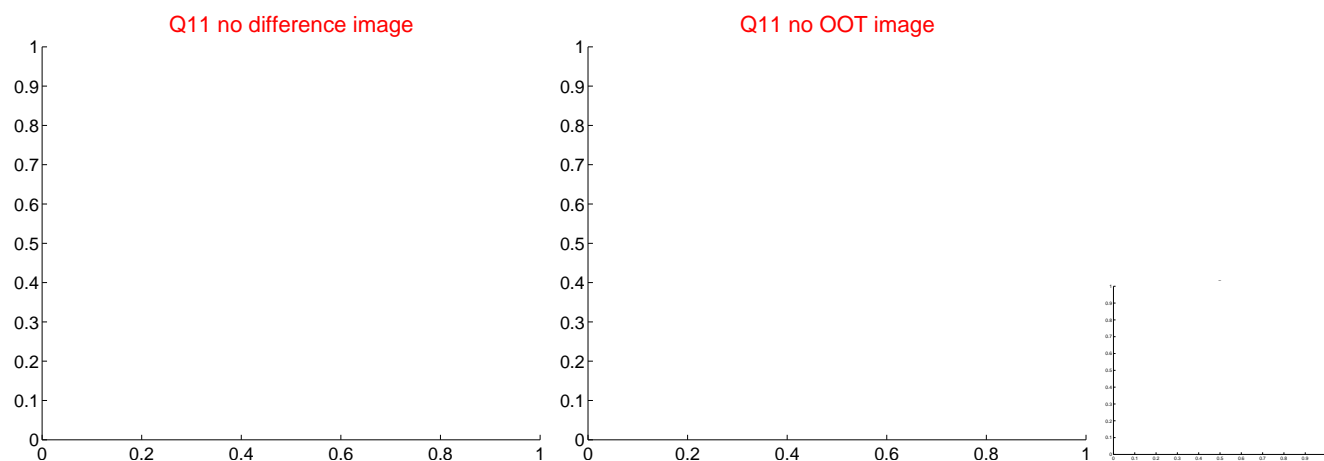
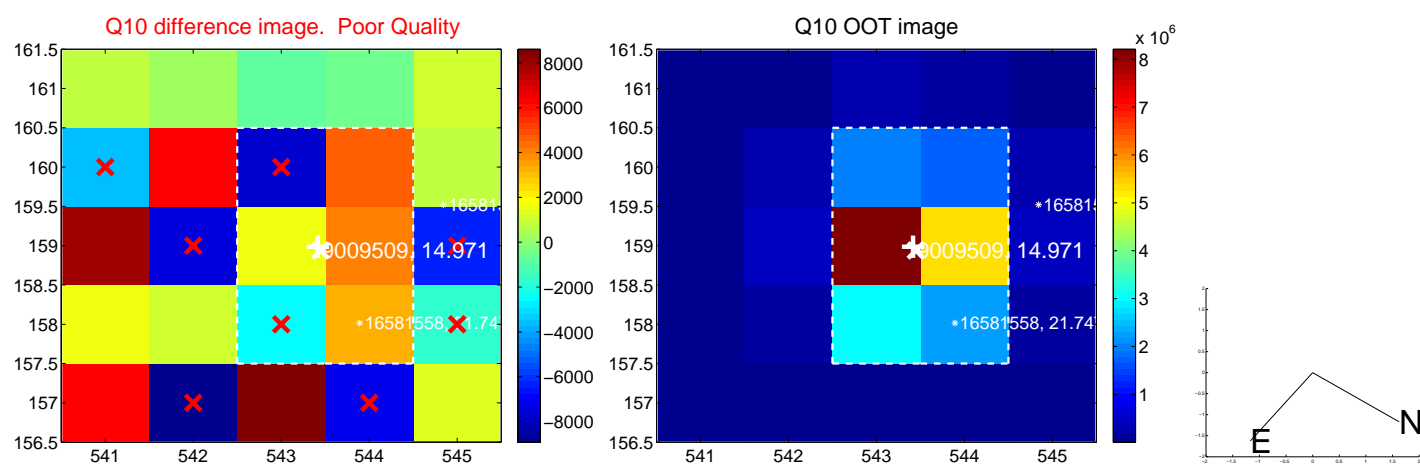
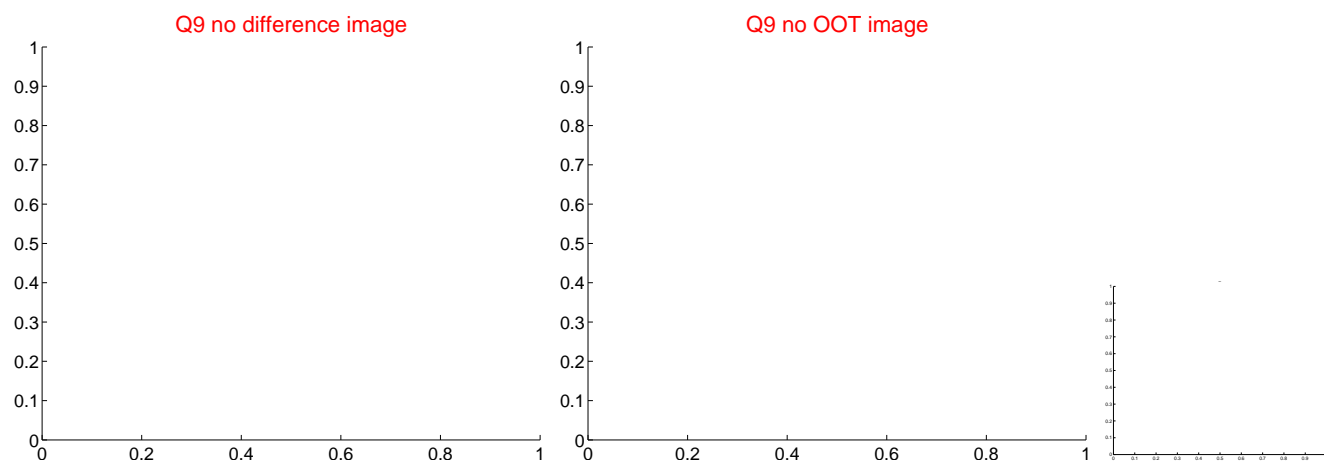
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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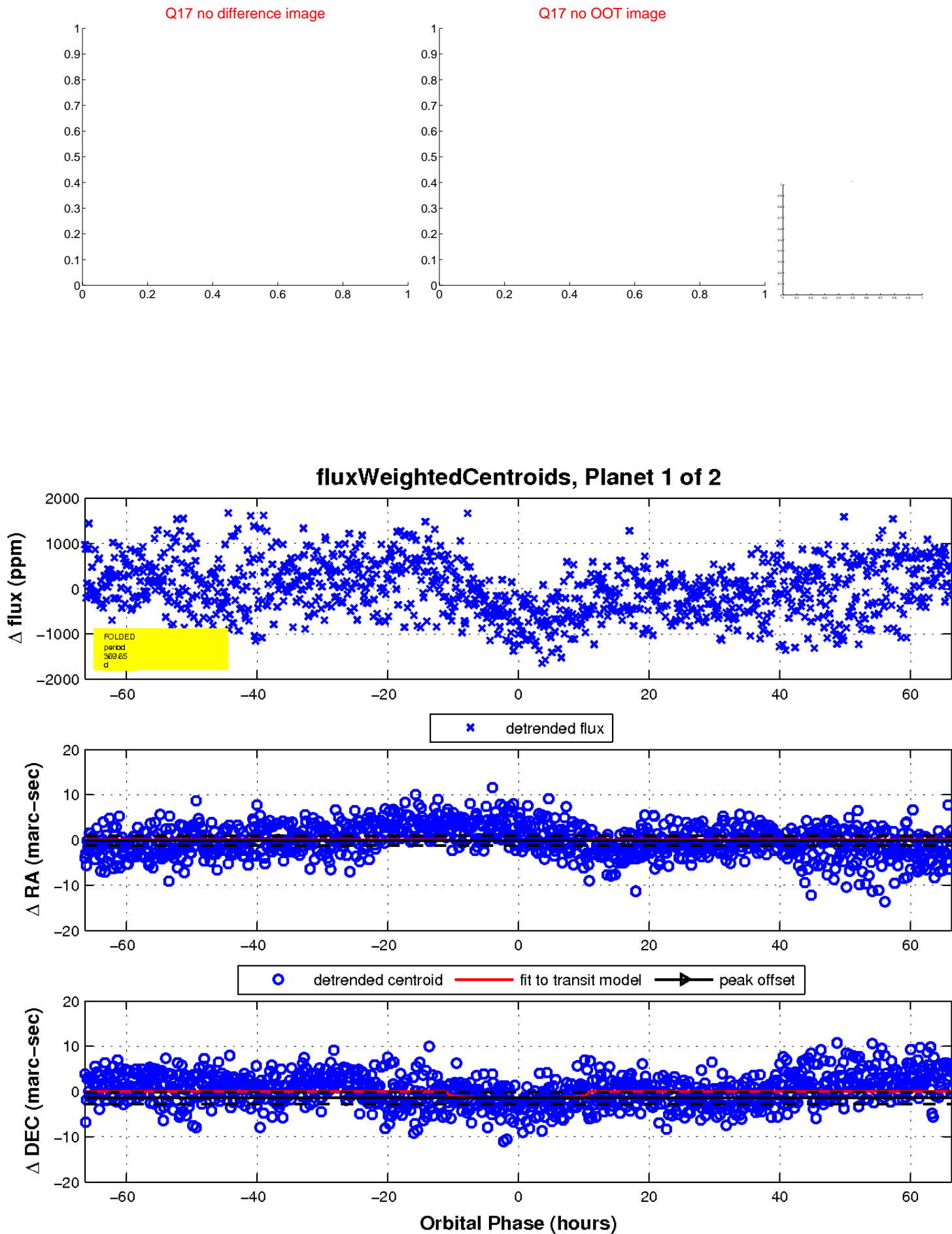
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UKIRT Image

Declination

