

KIC 005009743

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})
005009743-01	OBS	1609.01	41.697921	169.576367	445.0	6.008	36.3	38.7	0.97	5997	2.37	19.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005009743-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

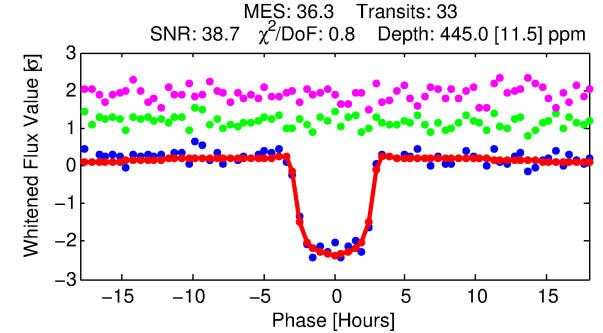
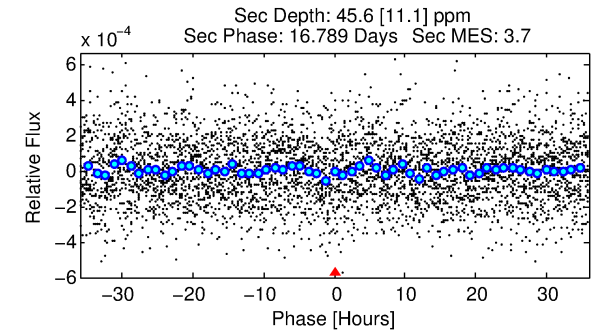
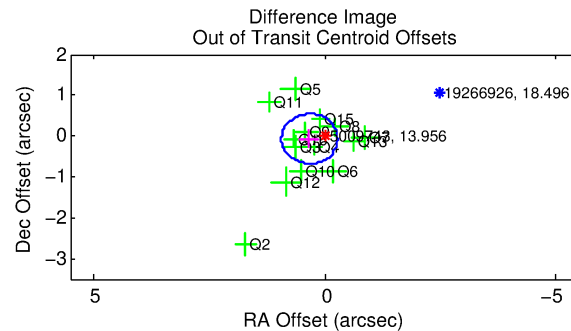
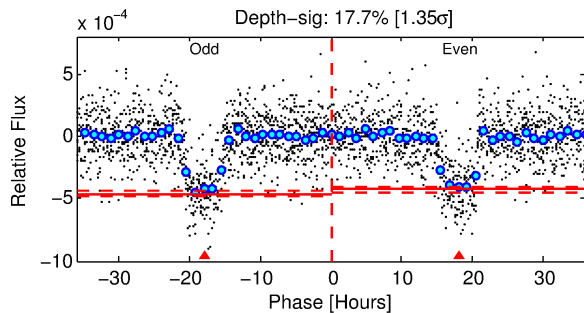
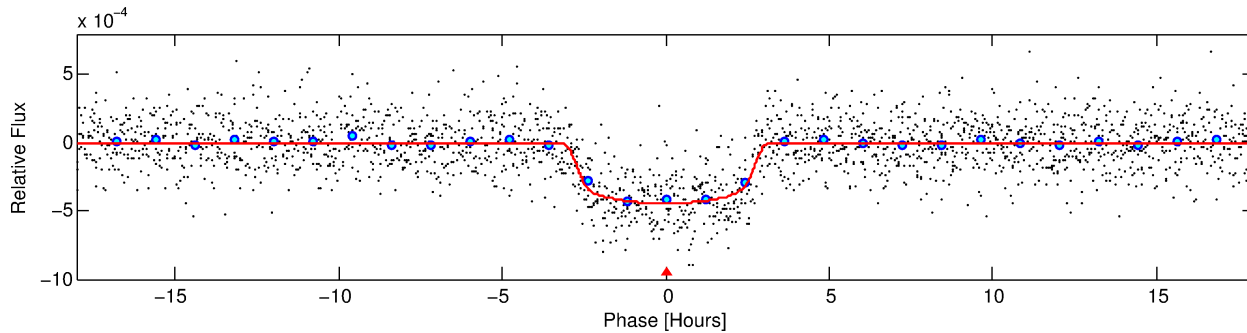
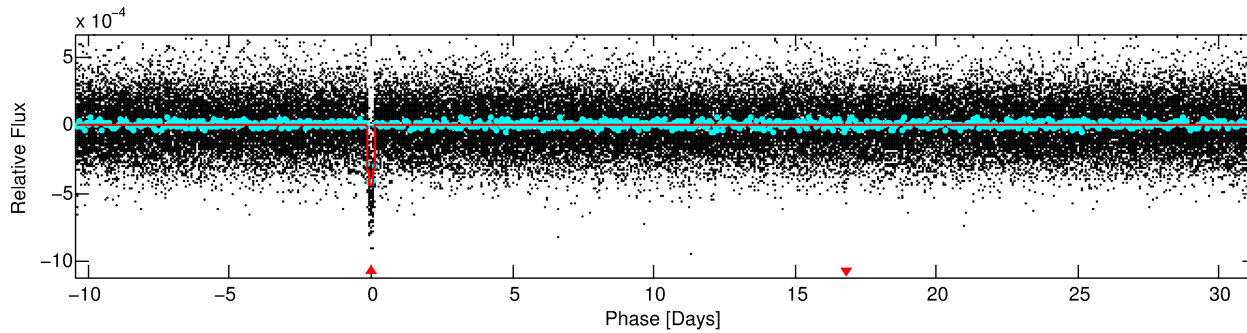
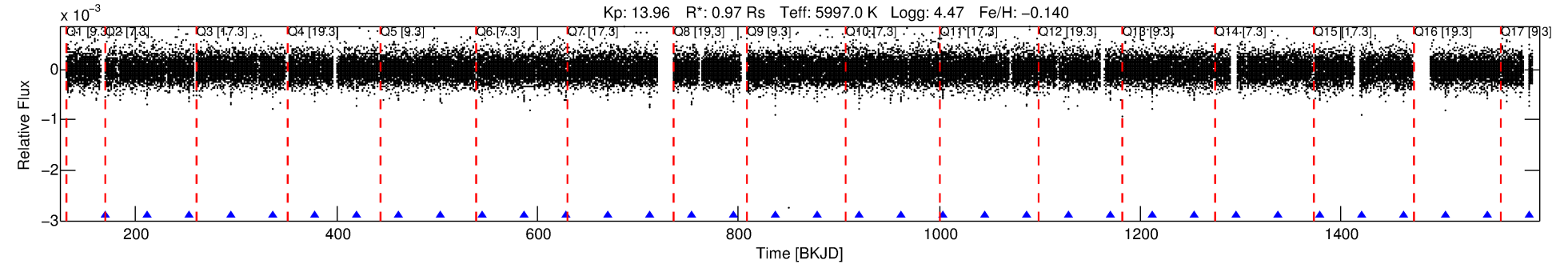
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005009743-01

No Significant Match Found

DV One-Page Summary

KIC: 5009743 Candidate: 1 of 1 Period: 41.698 d
KOI: K01609.01 Corr: 0.972



DV Fit Results:

Period = 41.69792 [0.00015] d
Epoch = 169.5764 [0.0030] BKJD
Rp/R* = 0.0224 [0.0013]
a/R* = 27.89 [7.46]
b = 0.88 [0.07]
Seff = 19.65 [4.26]
Teq = 537 [29] K
Rp = 2.37 [0.38] Re
a = 0.2358 [0.0310] AU
Ag = 248.29 [82.86] [2.98 σ]
Teffp = 3295 [232] K [11.78 σ]

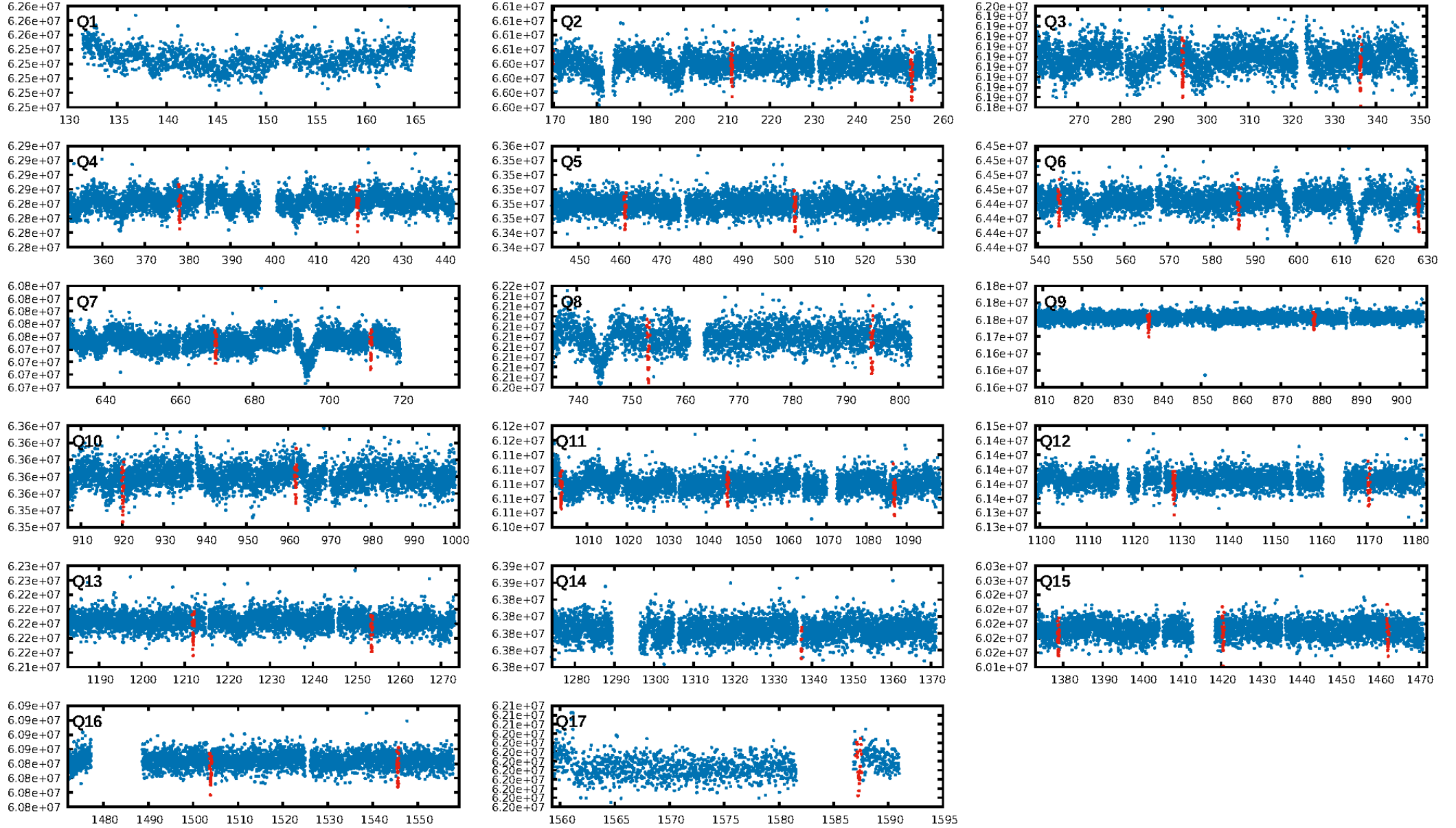
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.28e-264
RollingBand-fgt: 1.00 [32/32]
GhostDiagnostic-chr: 4.476
Centroid-sig: 12.3%
Centroid-so: 0.420 arcsec [1.40 σ]
OotOffset-rm: 0.332 arcsec [1.63 σ]
KicOffset-rm: 0.364 arcsec [1.80 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

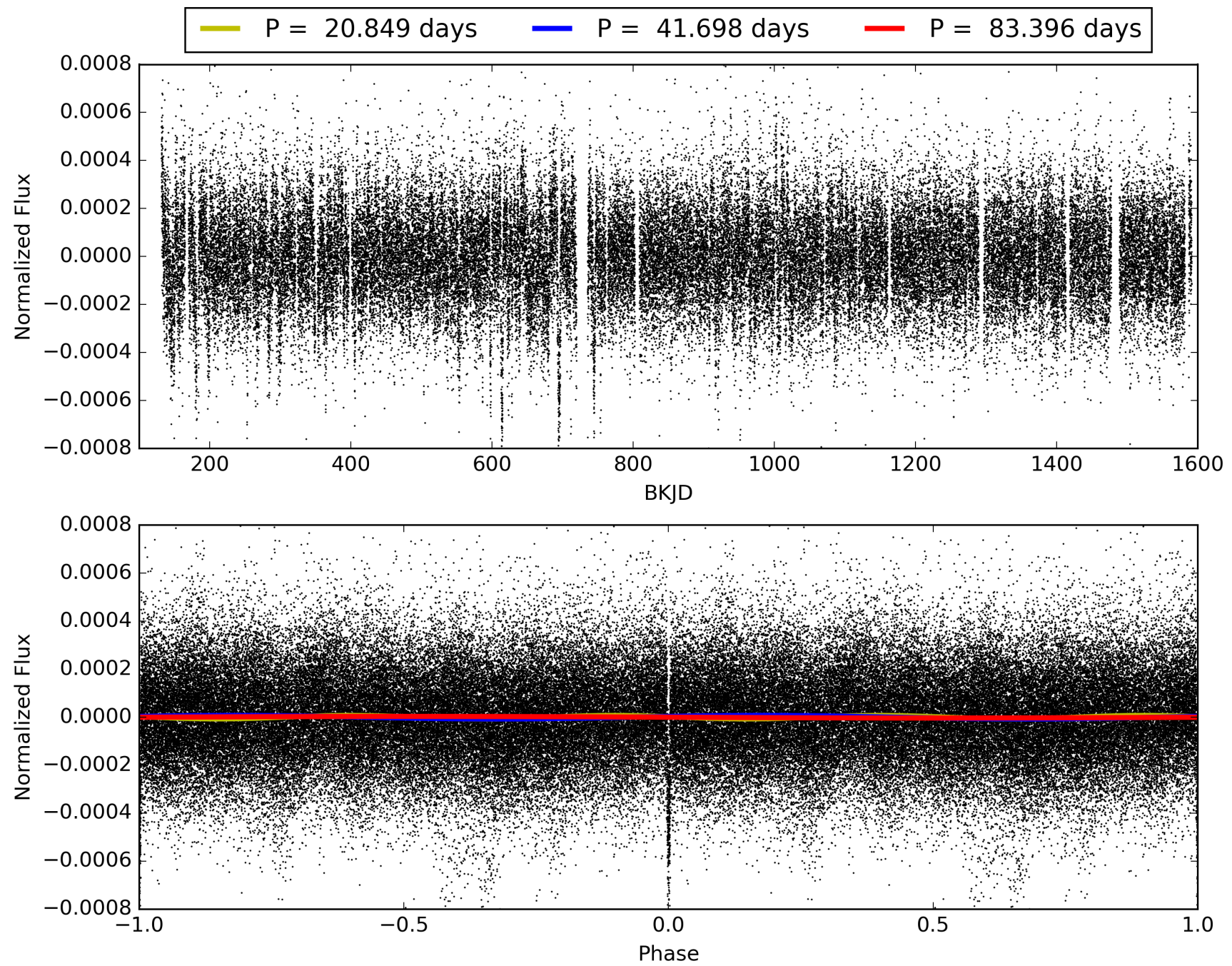
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:53:23 Z

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

TCE 005009743-01, PDC Light Curves

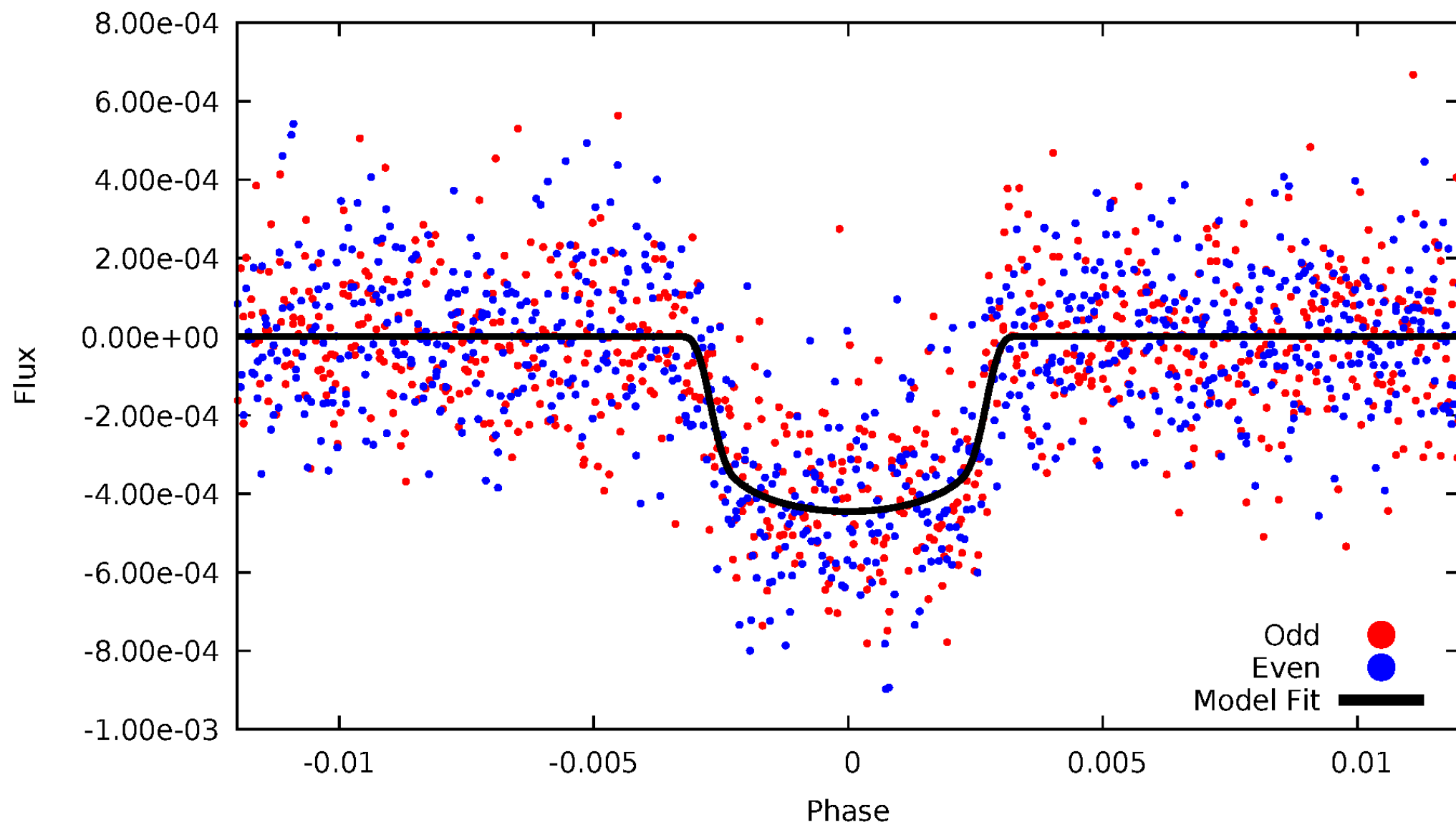


TCE 005009743-01



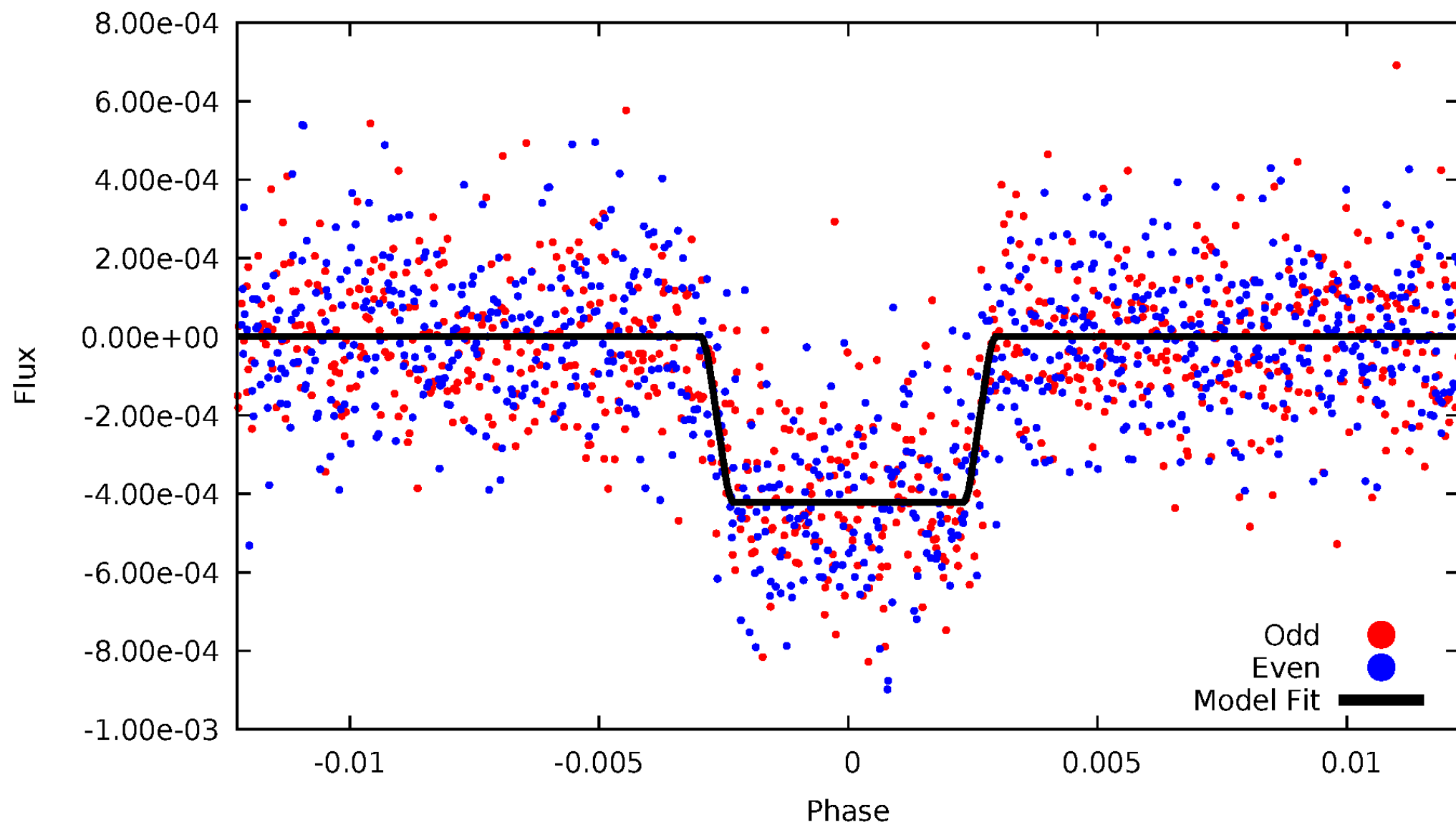
DV Odd/Even

TCE 005009743-01



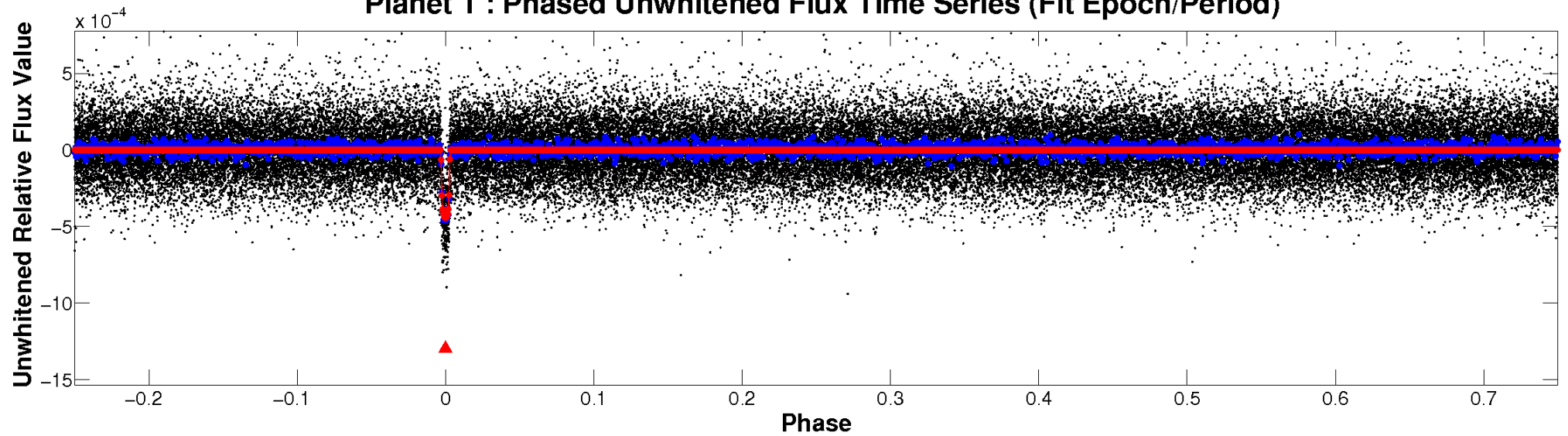
ALT Odd/Even

TCE 005009743-01

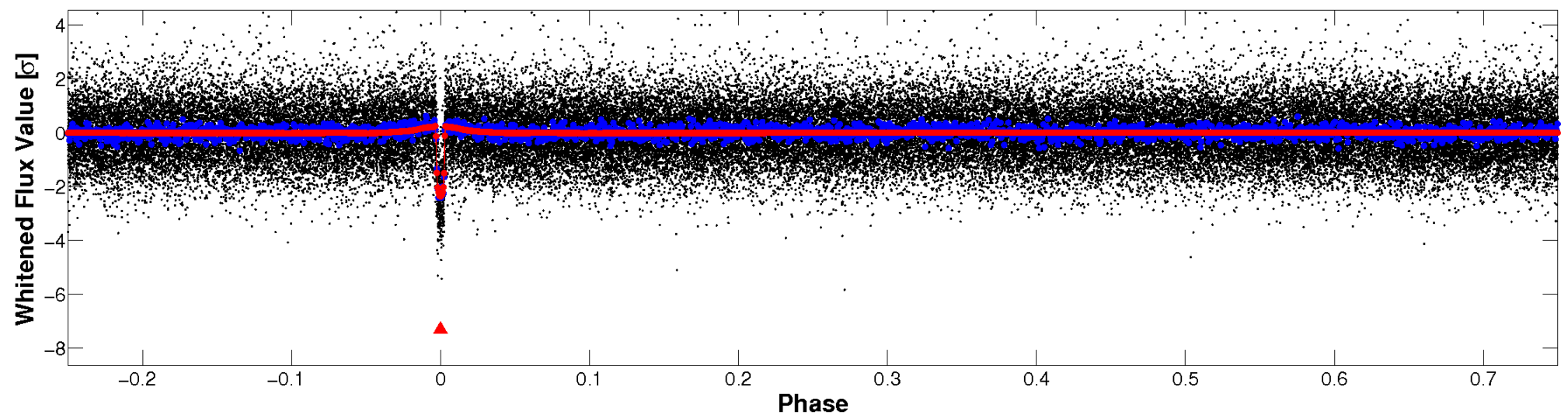


Non-Whitened Vs. Whitened Light Curve

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

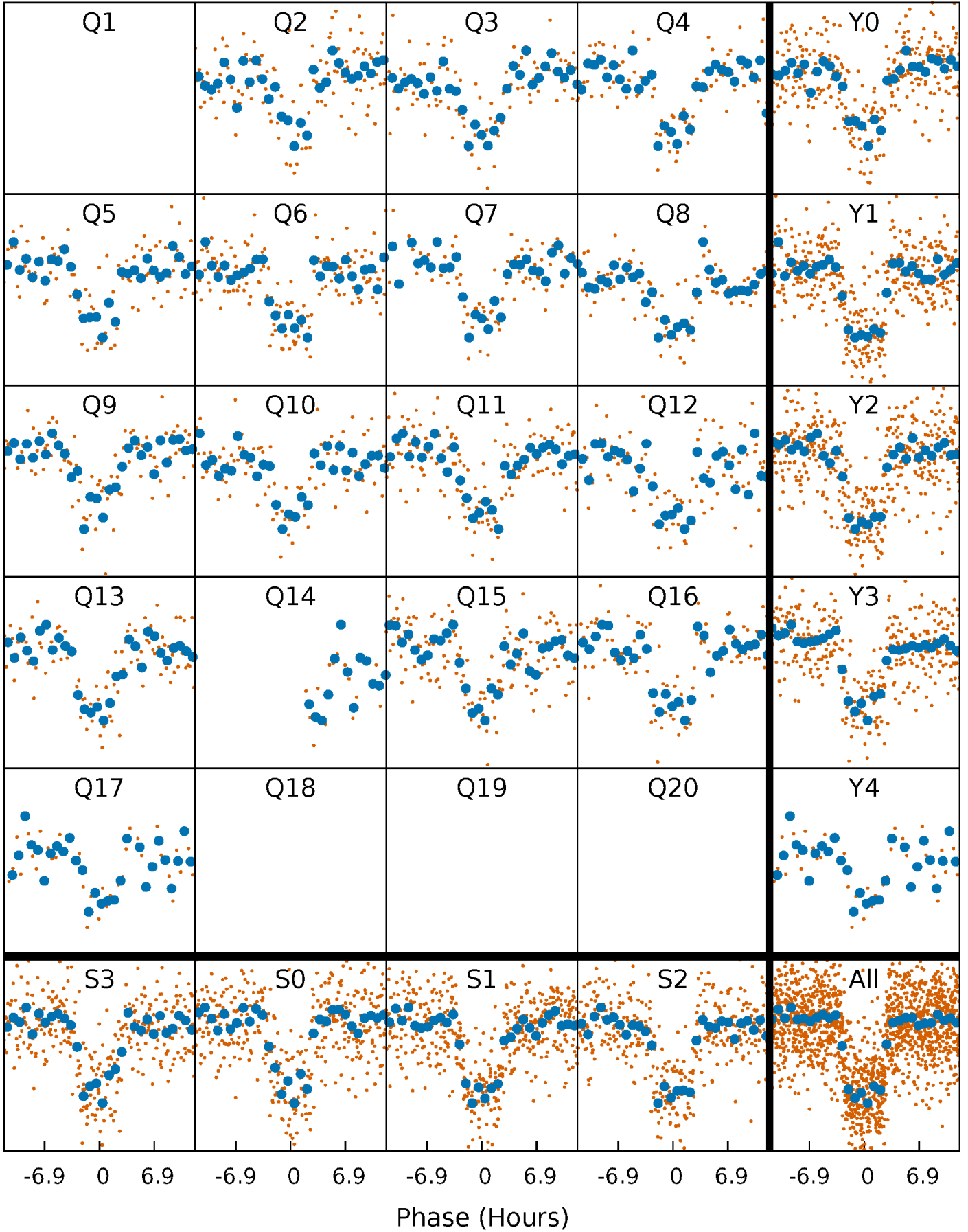


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



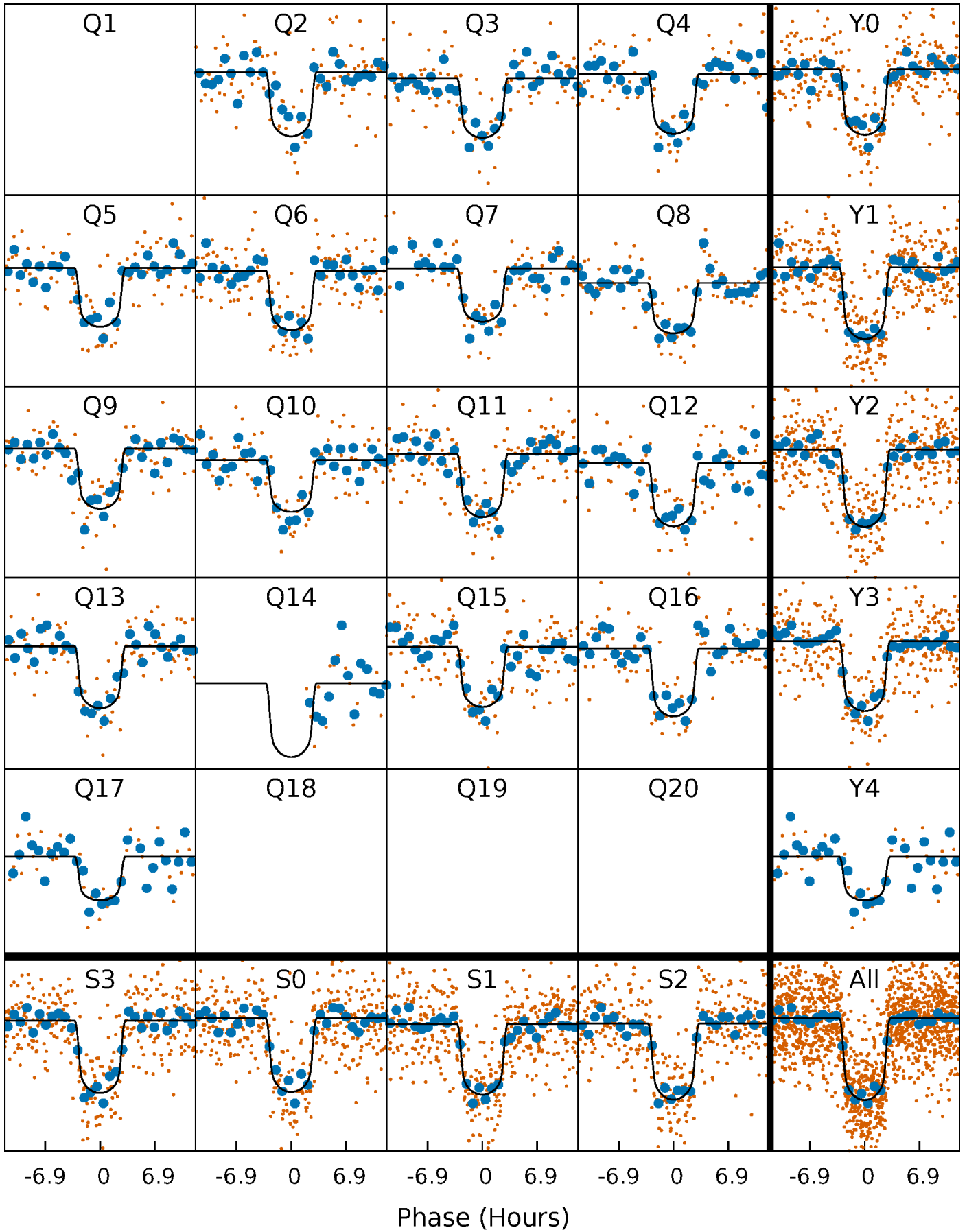
PDC Quarter-Phased Transit Curves

TCE 005009743-01 P= 41.697921 Days $T_0=169.576367$ (BKJD)



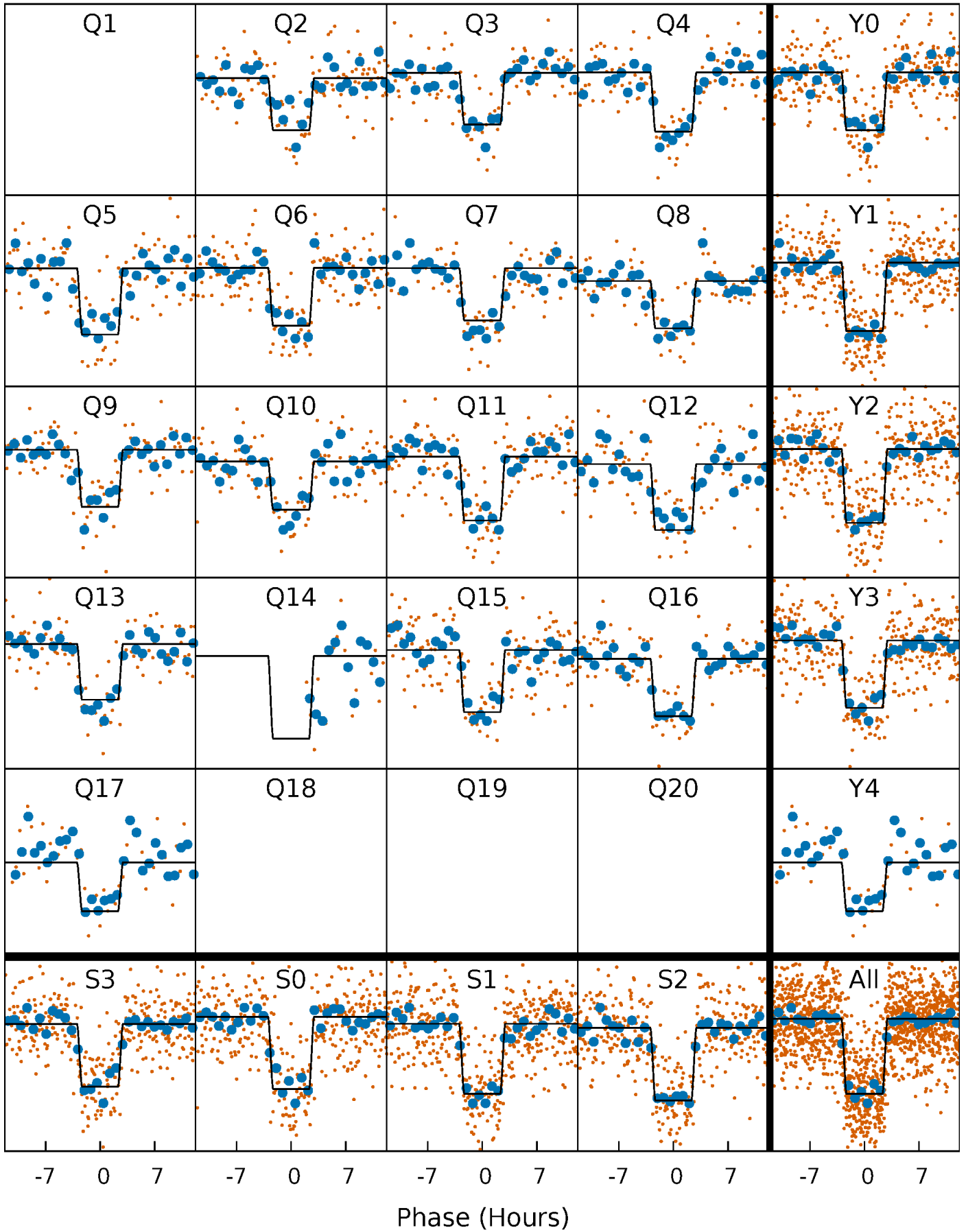
DV Quarter-Phased Transit Curves

TCE 005009743-01 P= 41.697921 Days $T_0=169.576367$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

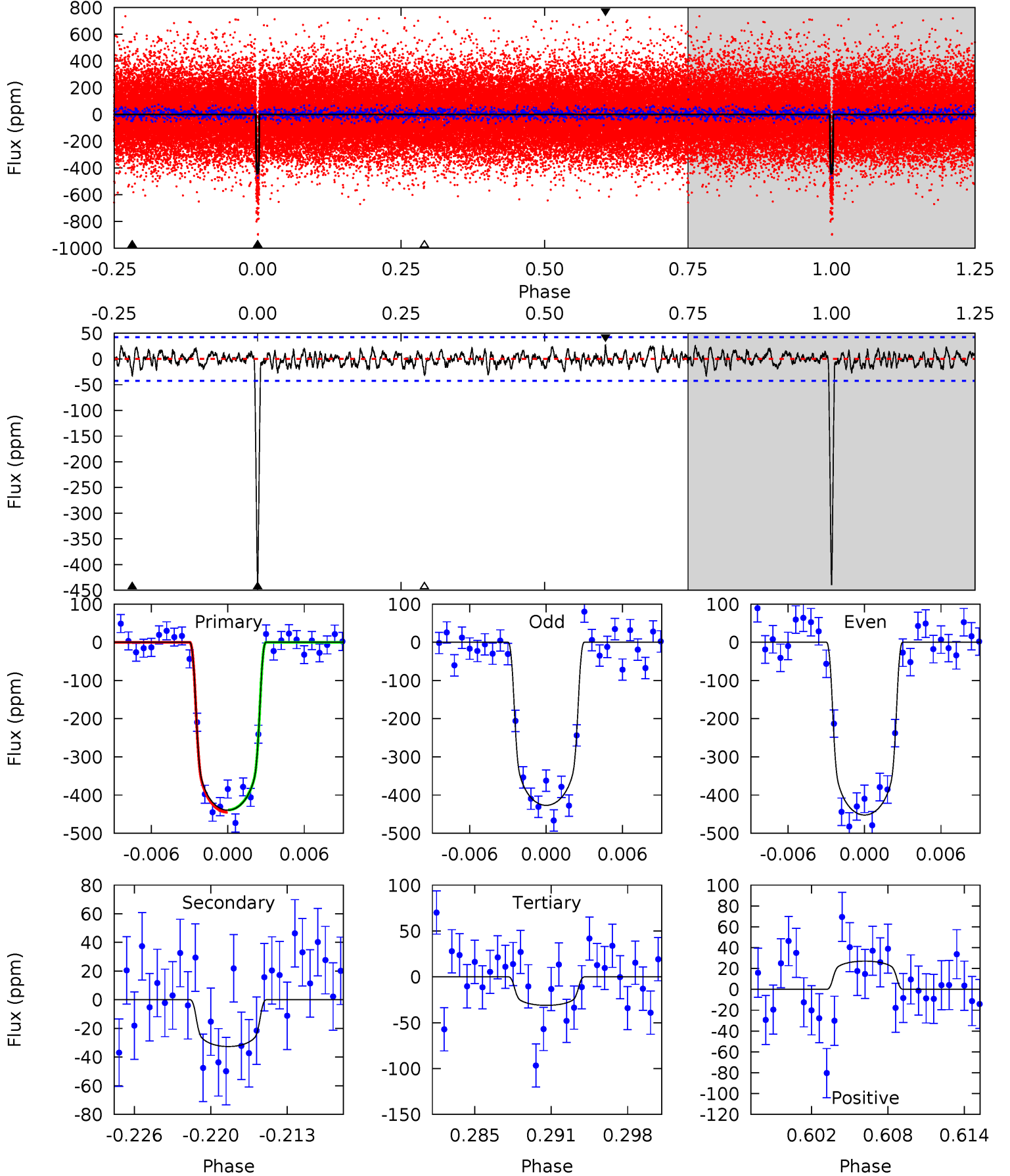
TCE 005009743-01 P= 41.697689 Days $T_0=169.580770$ (BKJD)



DV Model-Shift Uniqueness Test

005009743-01, P = 41.697921 Days, E = 127.878446 Days

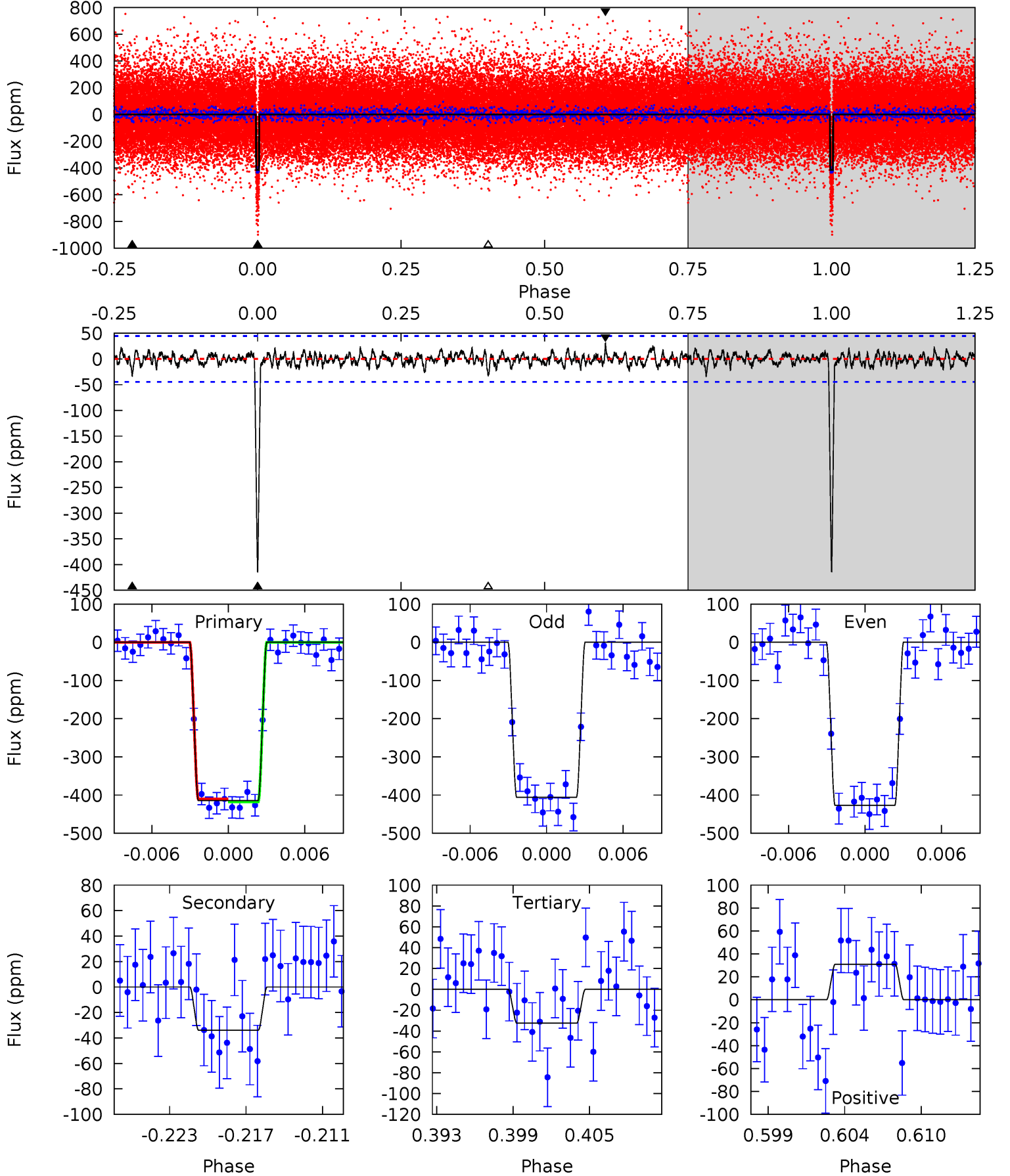
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.8	3.92	3.74	3.25	5.11	2.72	1.18	49.1	49.5	0.18	0.67	1.53	0.97	0.06	0.37



Alt Model-Shift Uniqueness Test

005009743-01, $P = 41.697689$ Days, $E = 127.883081$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.7	3.89	3.74	3.57	5.13	2.76	1.01	44.0	44.1	0.16	0.32	1.22	0.99	0.07	0.43



Stellar Parameters For KIC 005009743

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5997^{+107}_{-131}	$4.466^{+0.048}_{-0.112}$	$-0.140^{+0.150}_{-0.150}$	$0.971^{+0.145}_{-0.067}$	$1.004^{+0.057}_{-0.078}$	$1.545^{+0.291}_{-0.512}$
	+2%/-2%	+1%/-3%	+107%/-107%	+15%/-7%	+6%/-8%	+19%/-33%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 005009743-01 / KOI 1609.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-33 ± 8	$2.39^{+0.23}_{-0.17}$	755^{+30}_{-23}	3496^{+163}_{-175}	168^{+54}_{-47}
Alt.	-34 ± 9	$2.21^{+0.21}_{-0.18}$	756^{+32}_{-23}	3623^{+161}_{-180}	205^{+71}_{-56}

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 $A_{obs} \gg 1.0$

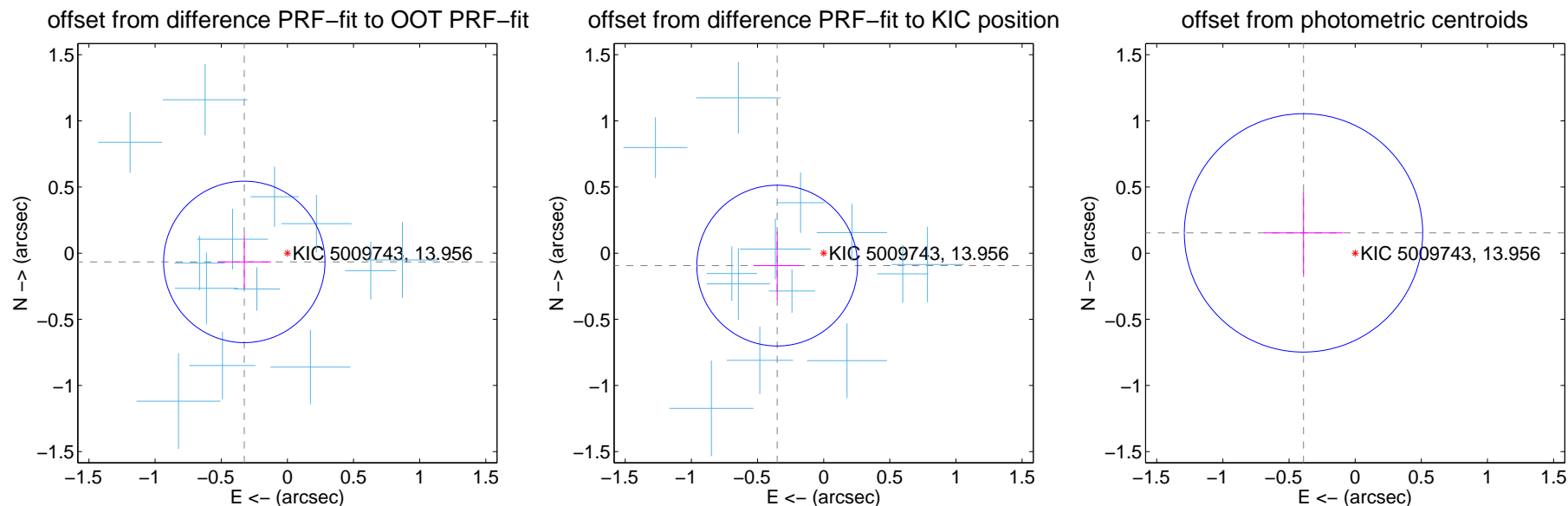
DV Centroid Data

Supplemental centroid analysis for 005009743-01. Kepler magnitude: 13.96. Transit SNR 38.70

There are 14 quarters with good PRF difference image offsets

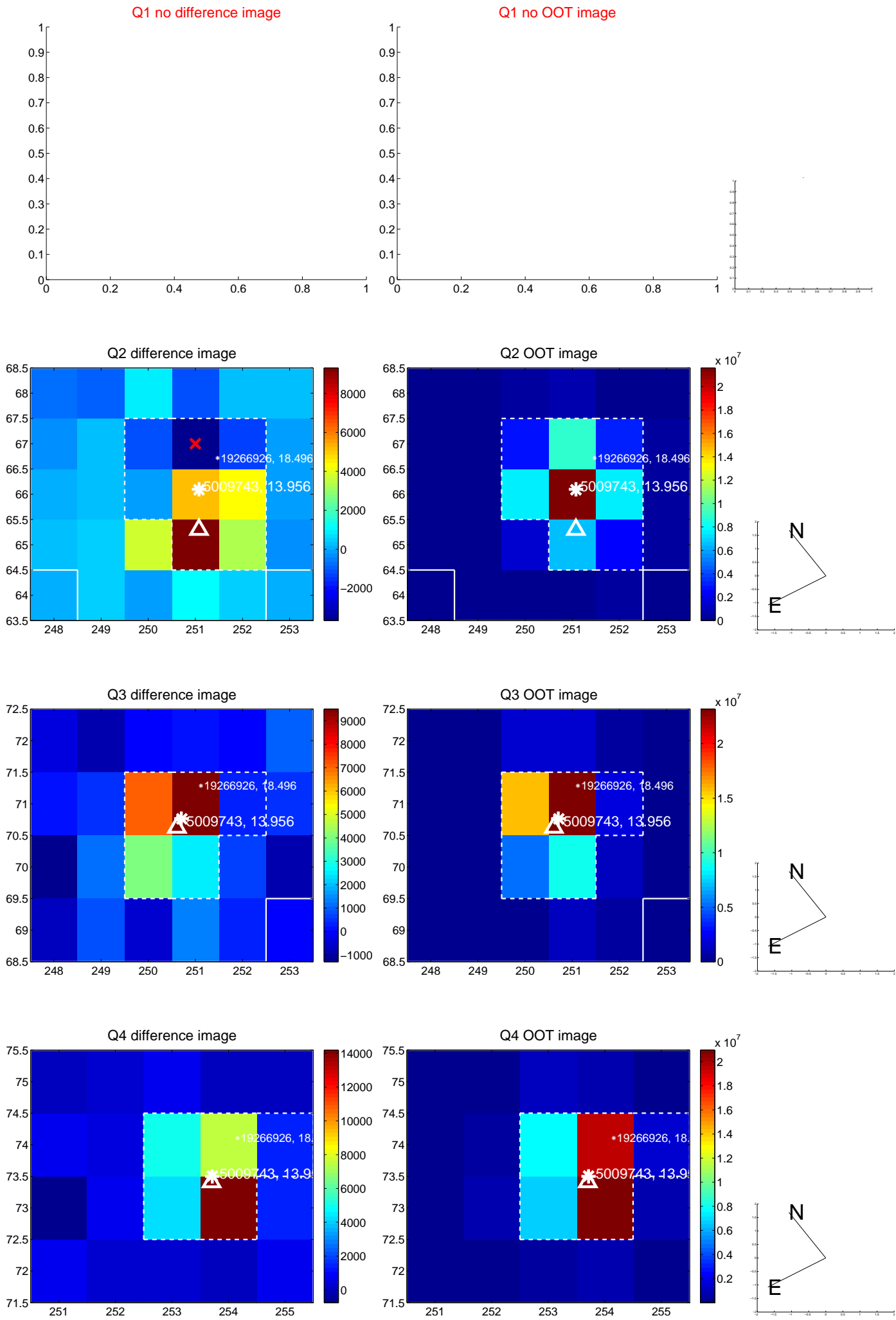
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.332 ± 0.203	1.63	0.326 ± 0.203	-0.066 ± 0.207
PRF-fit source offset from KIC position	0.364 ± 0.203	1.80	0.351 ± 0.179	-0.094 ± 0.254
photometric centroid source offset	0.42 ± 0.30	1.40	0.39 ± 0.30	0.15 ± 0.31

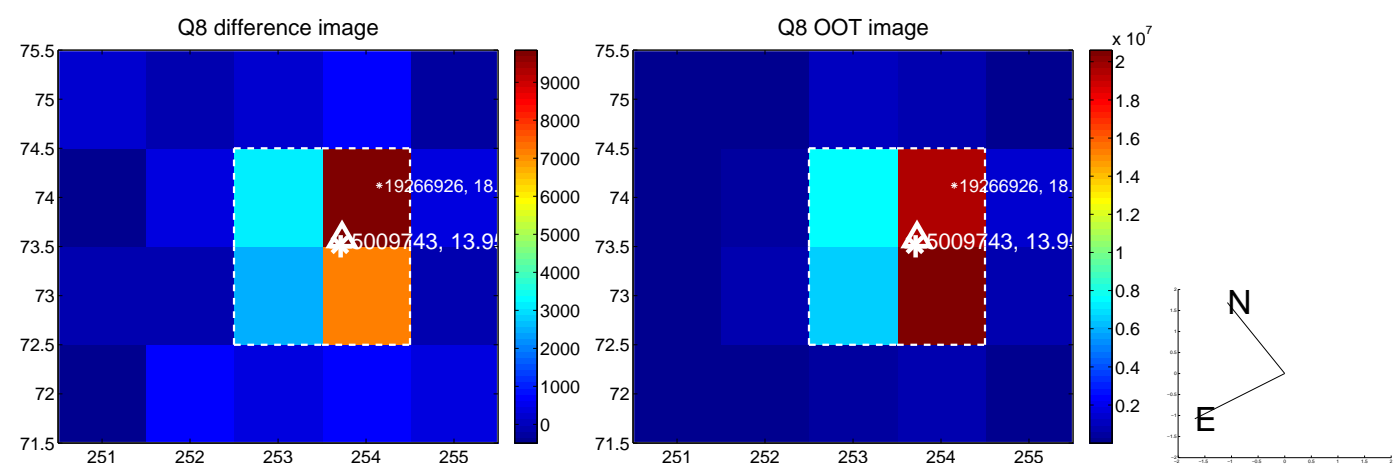
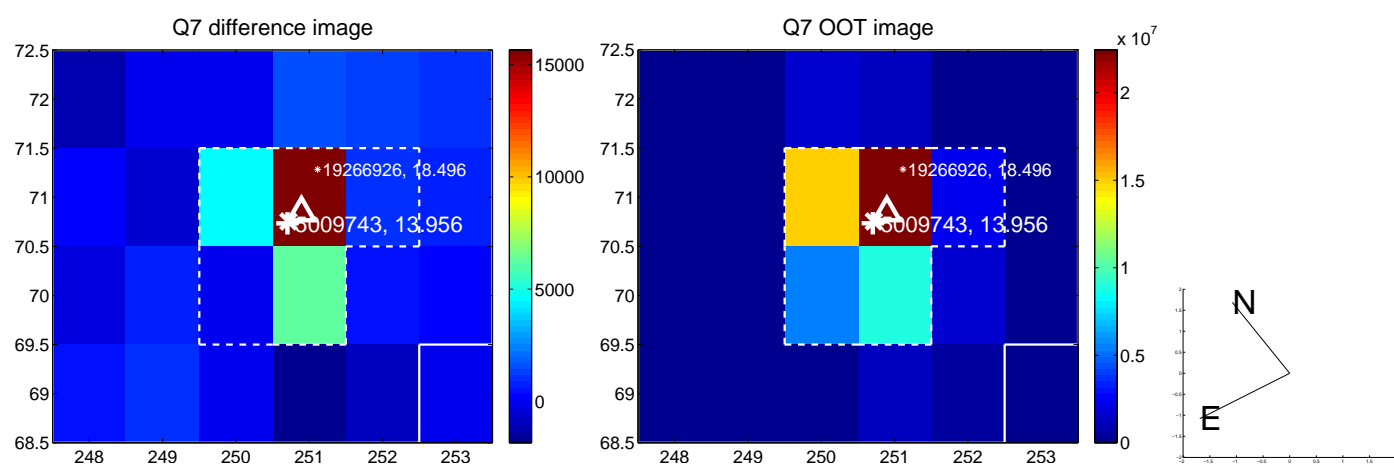
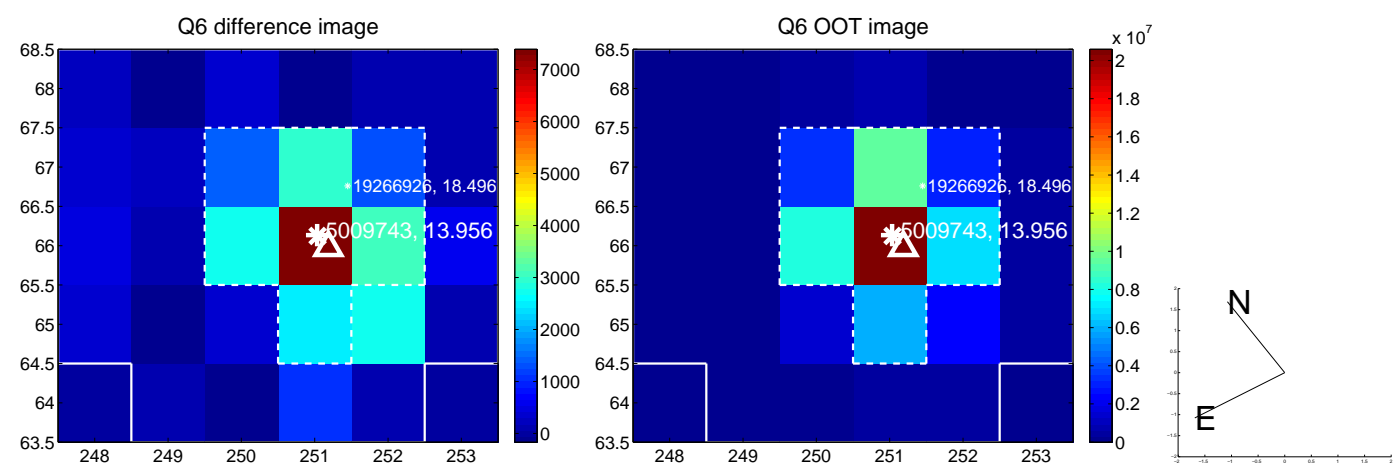
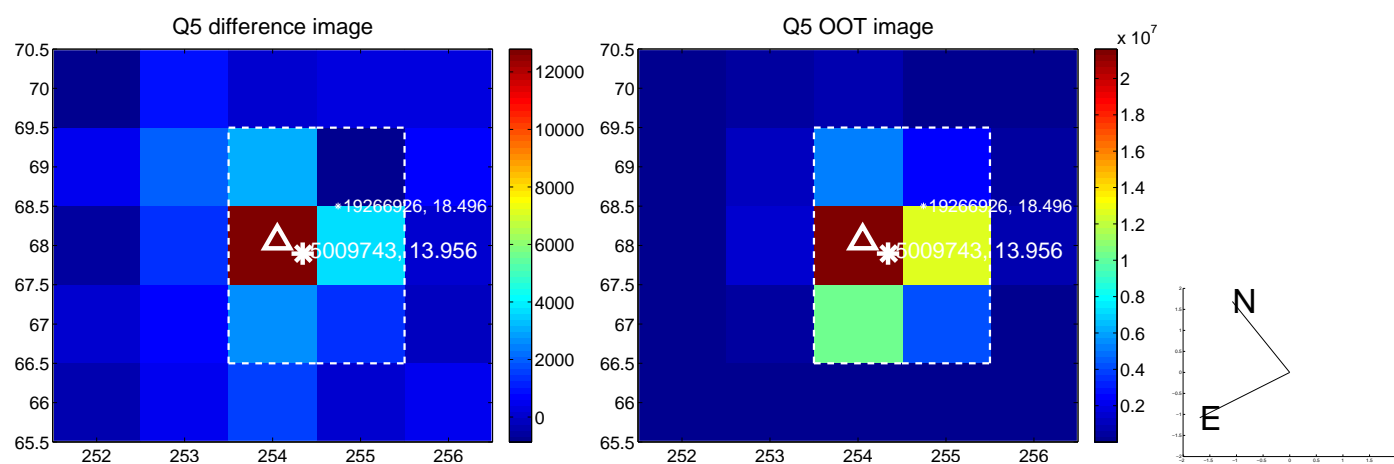


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

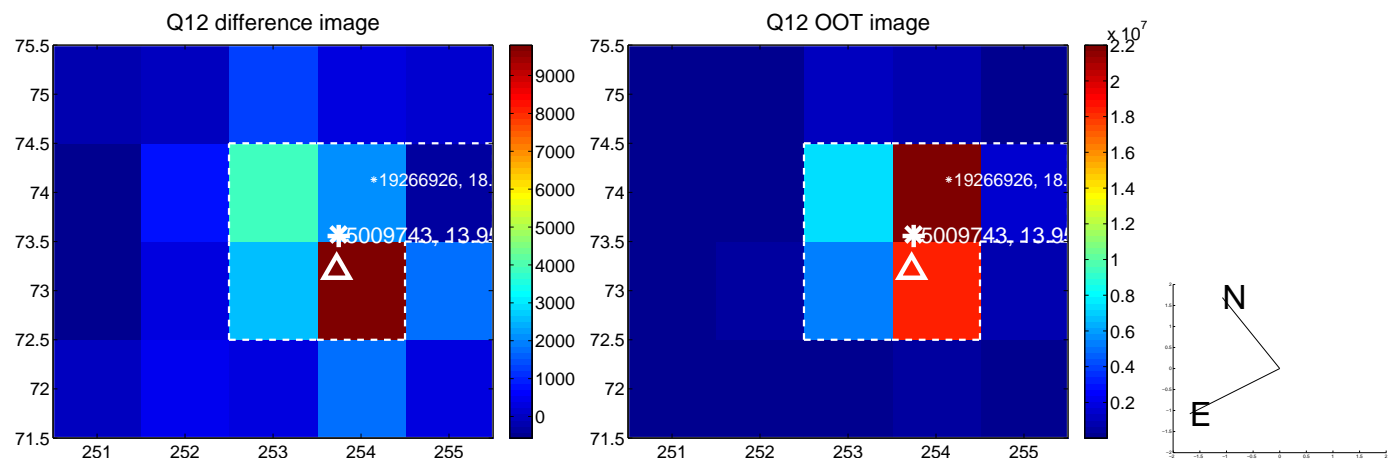
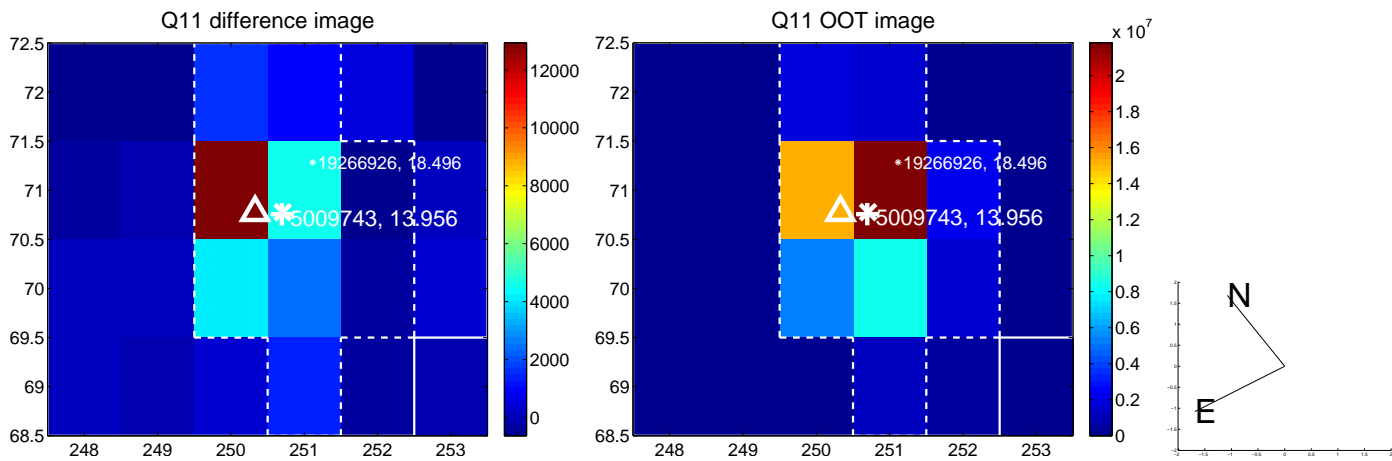
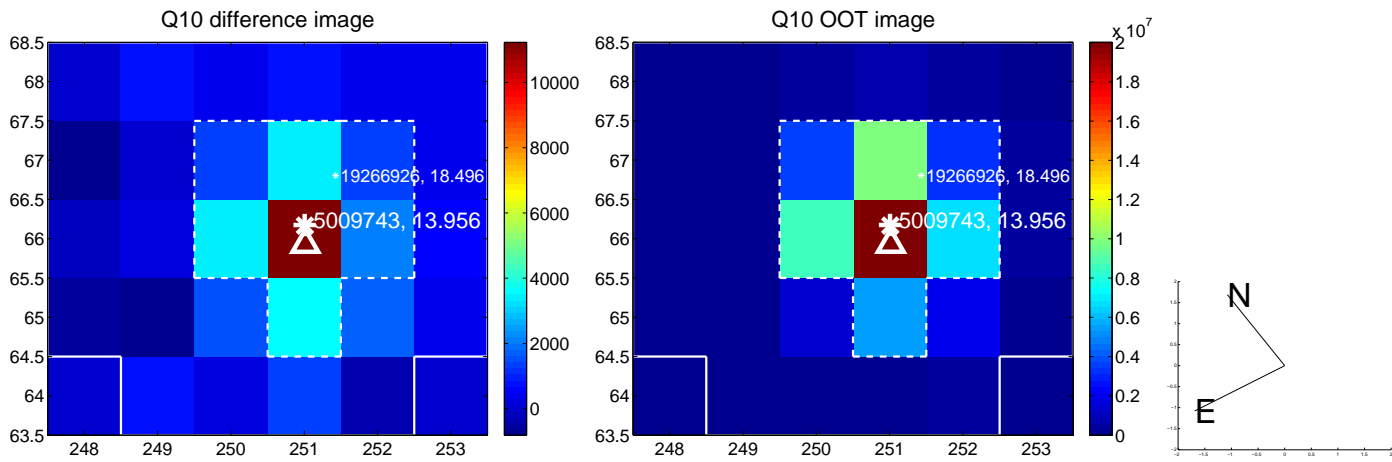
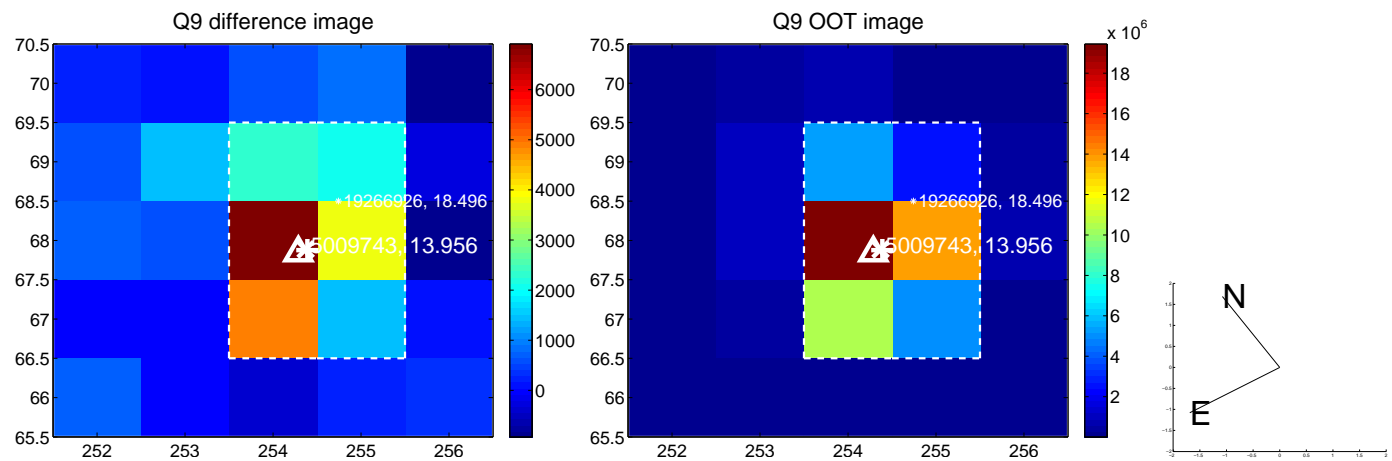
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



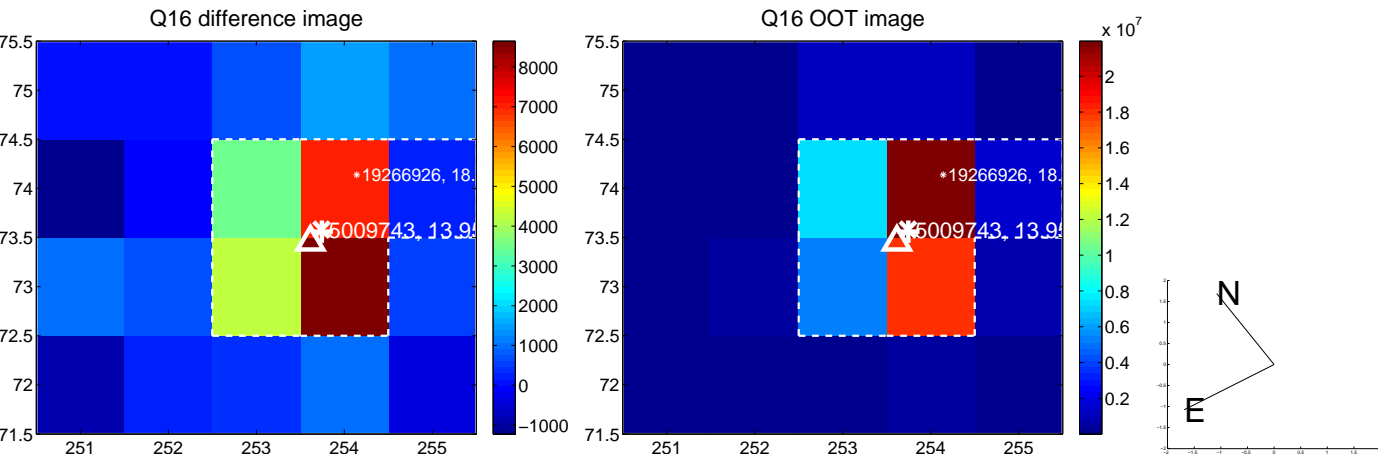
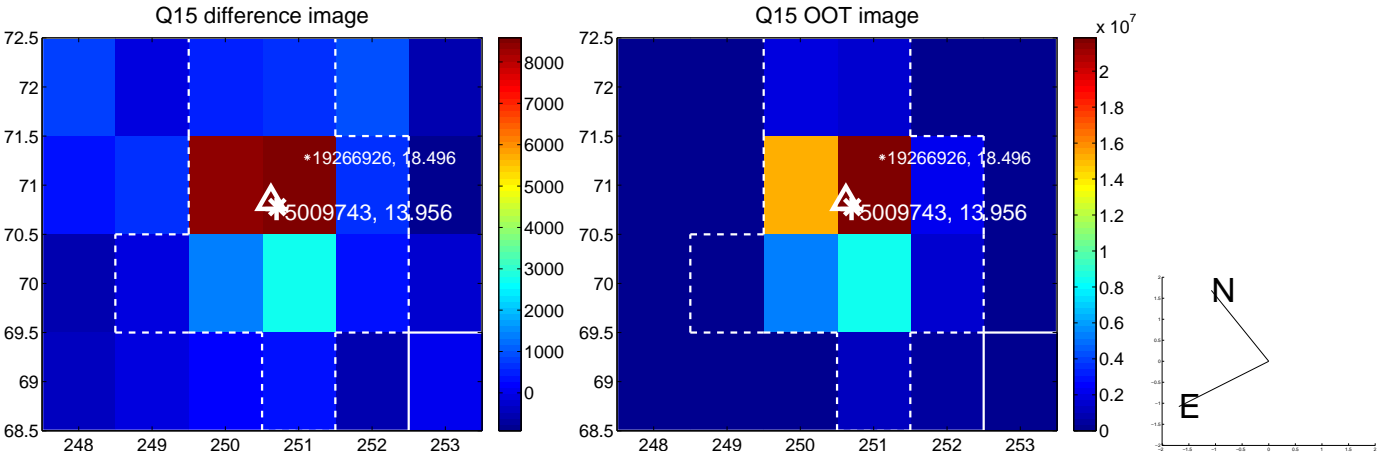
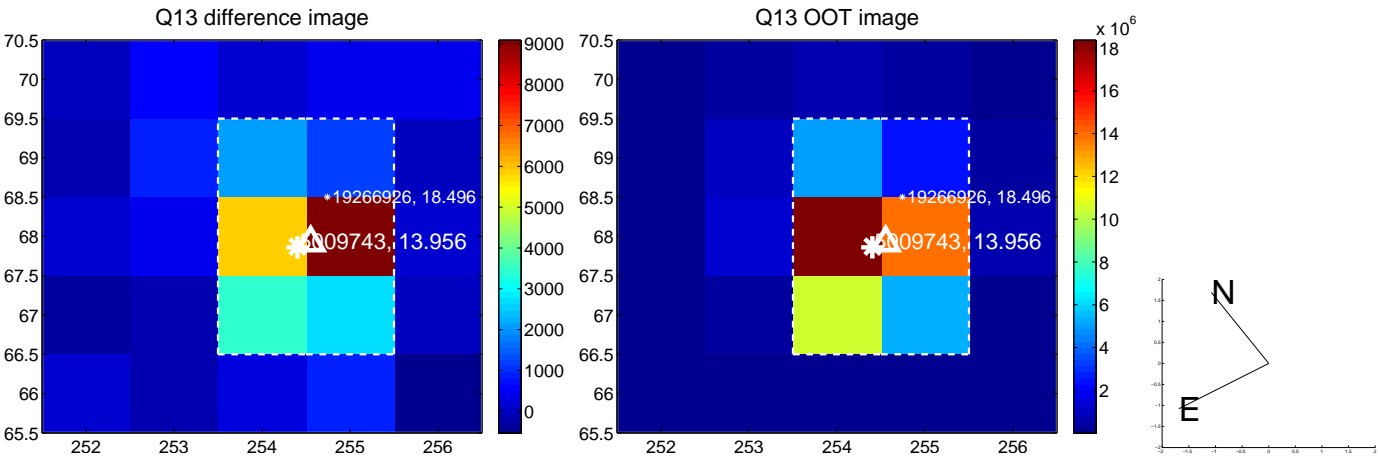
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



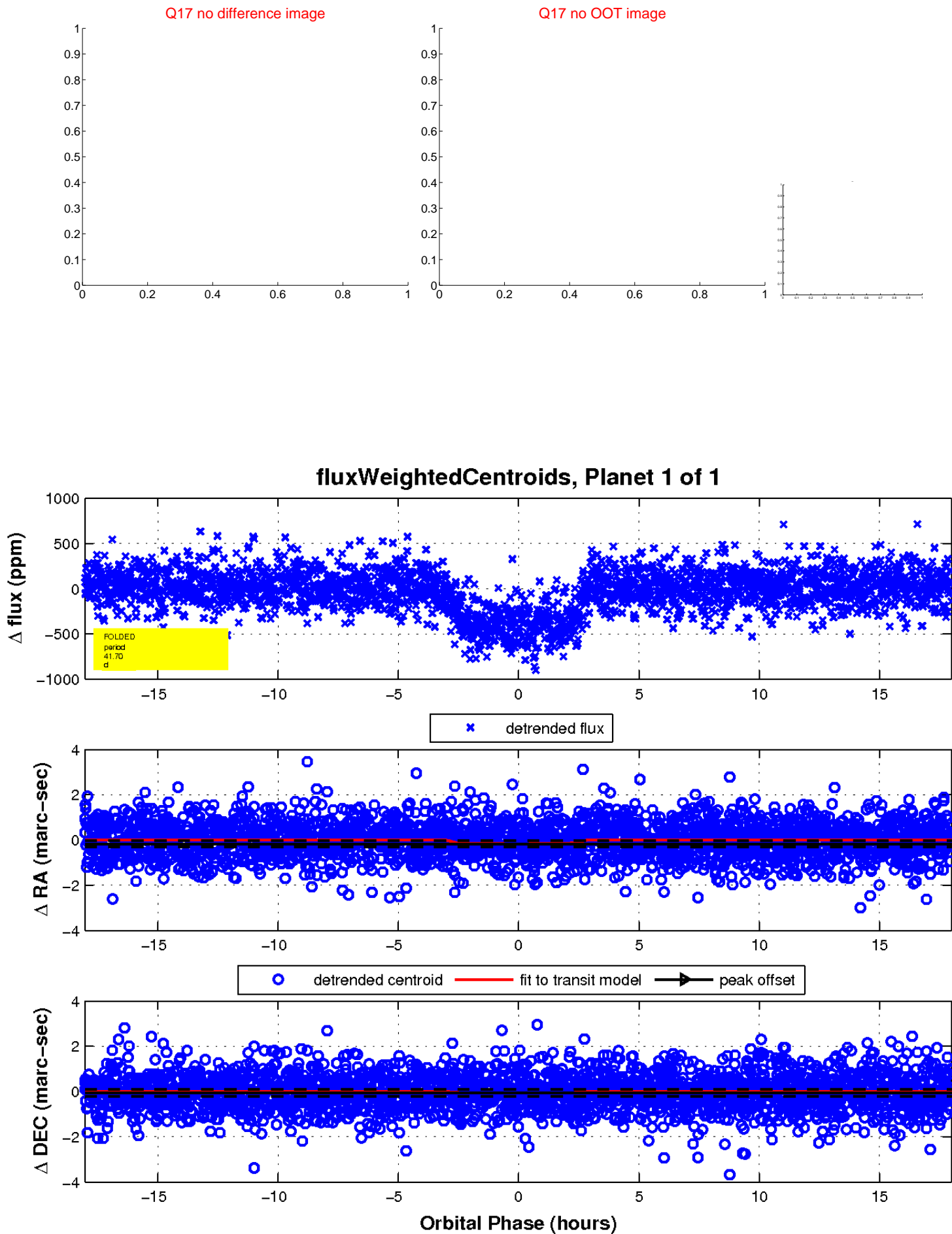
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UKIRT Image

Declination

