

KIC 009649358

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})
009649358-01	OBS	No	411.282609	487.643190	549.4	14.853	10.2	9.5	0.88	5955	2.13	0.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009649358-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

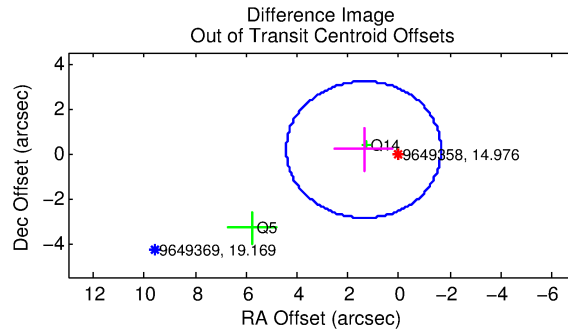
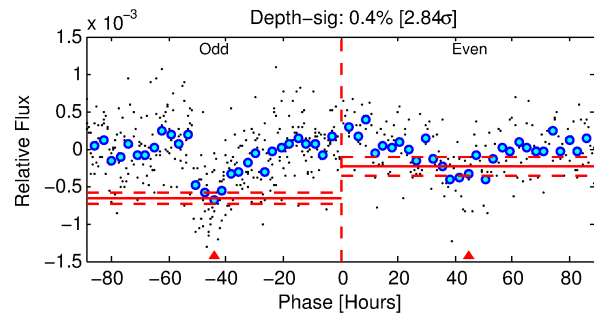
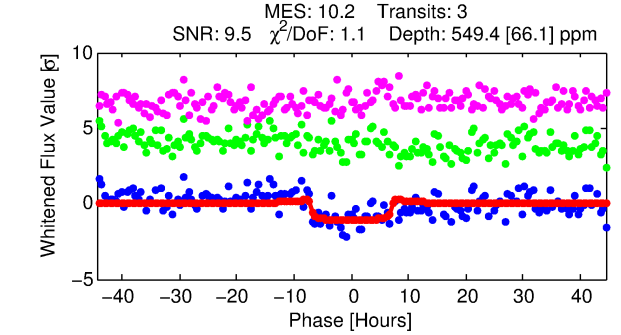
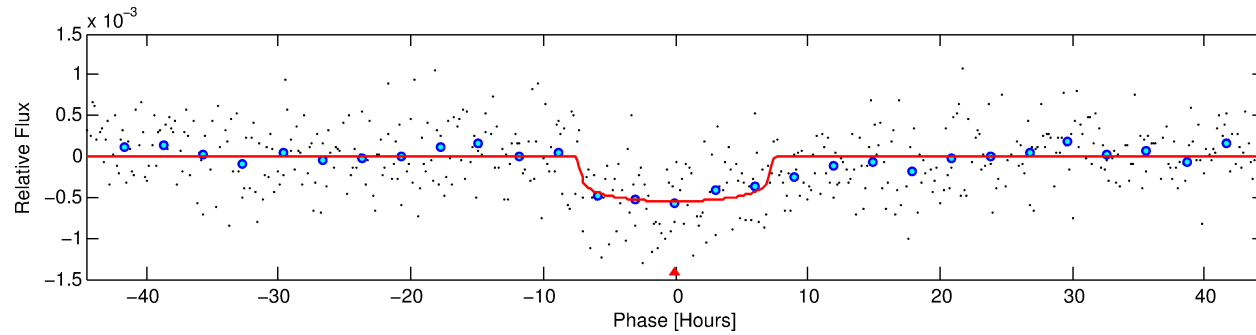
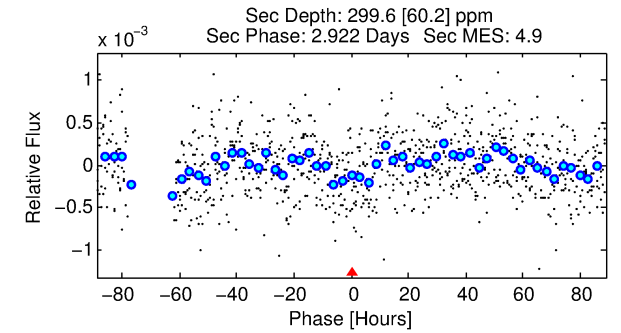
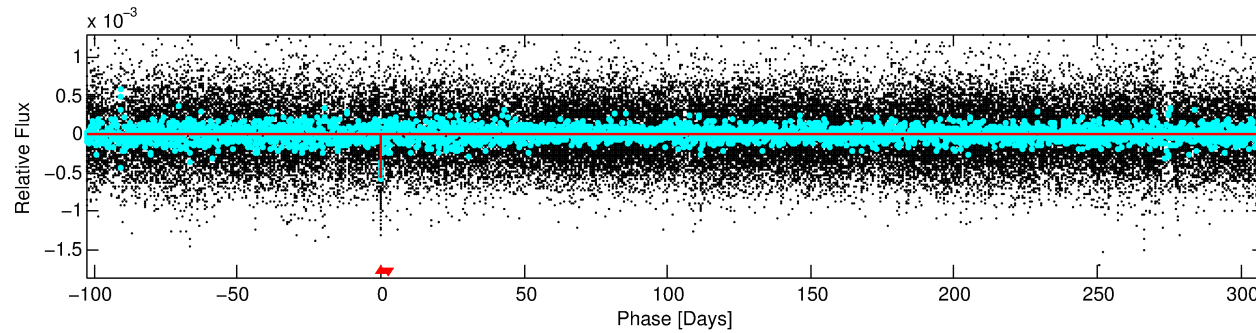
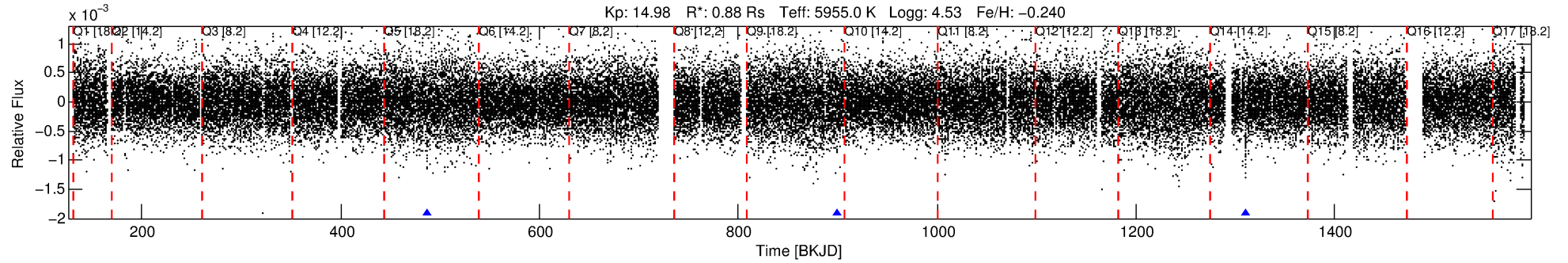
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009649358-01

No Significant Match Found

DV One-Page Summary

KIC: 9649358 Candidate: 1 of 1 Period: 411.283 d



DV Fit Results:

Period = 411.28261 [0.01423] d
Epoch = 487.6432 [0.0187] BKJD
Rp/R* = 0.0221 [0.0123]
a/R* = 187.02 [495.94]
b = 0.51 [3.83]
Seff = 0.76 [0.28]
Teq = 238 [22] K
Rp = 2.13 [1.32] Re
a = 1.0726 [0.2511] AU
Ag = 41862.02 [49641.01] [0.84 σ]
Teffp = 5272 [1503] K [3.35 σ]

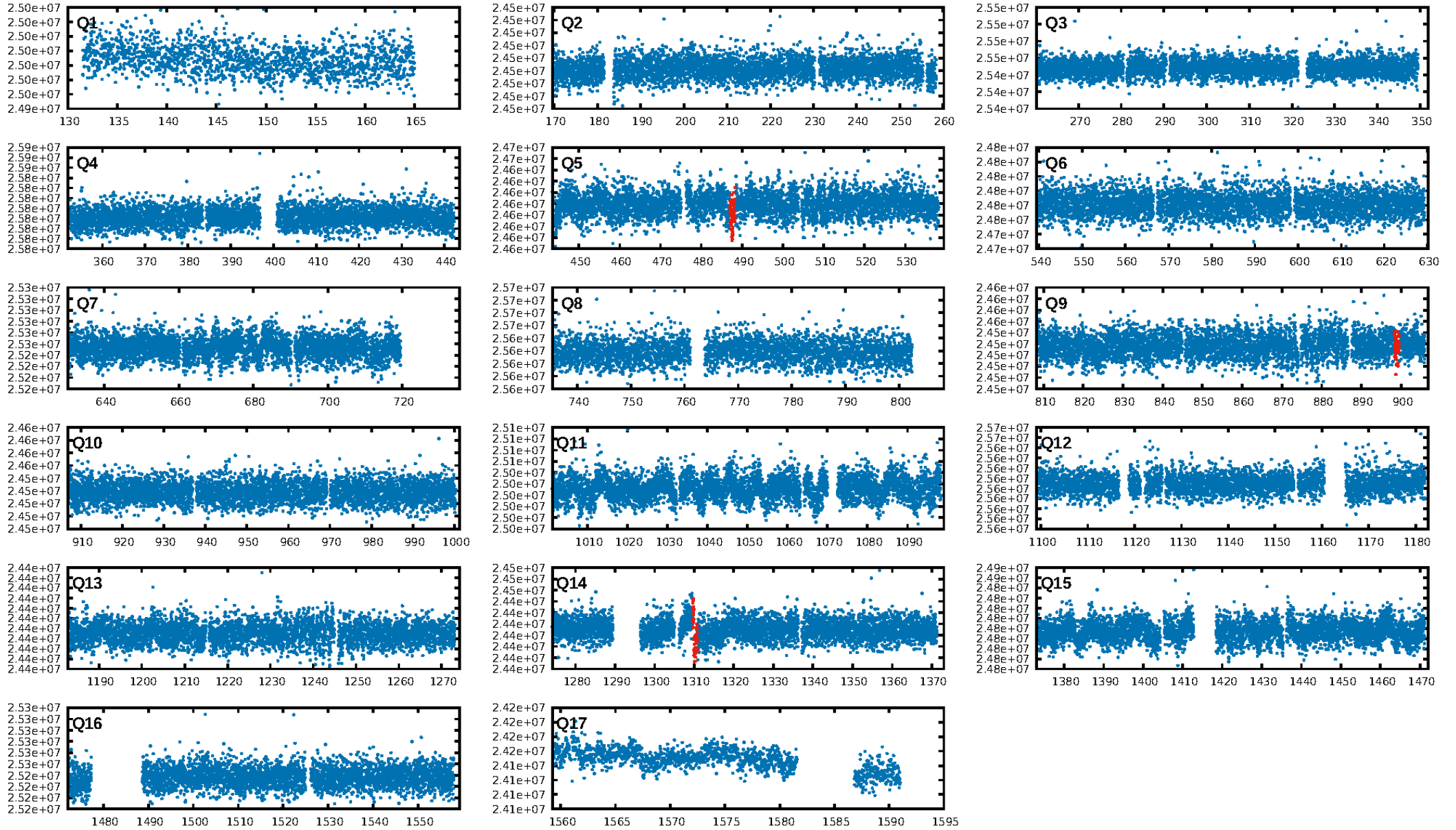
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 84.5%
Bootstrap-pfa: 1.04e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 4.723
Centroid-sig: 27.7%
Centroid-so: 1.533 arcsec [0.97 σ]
OotOffset-rm: 1.388 arcsec [1.37 σ]
KicOffset-rm: 1.278 arcsec [0.98 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

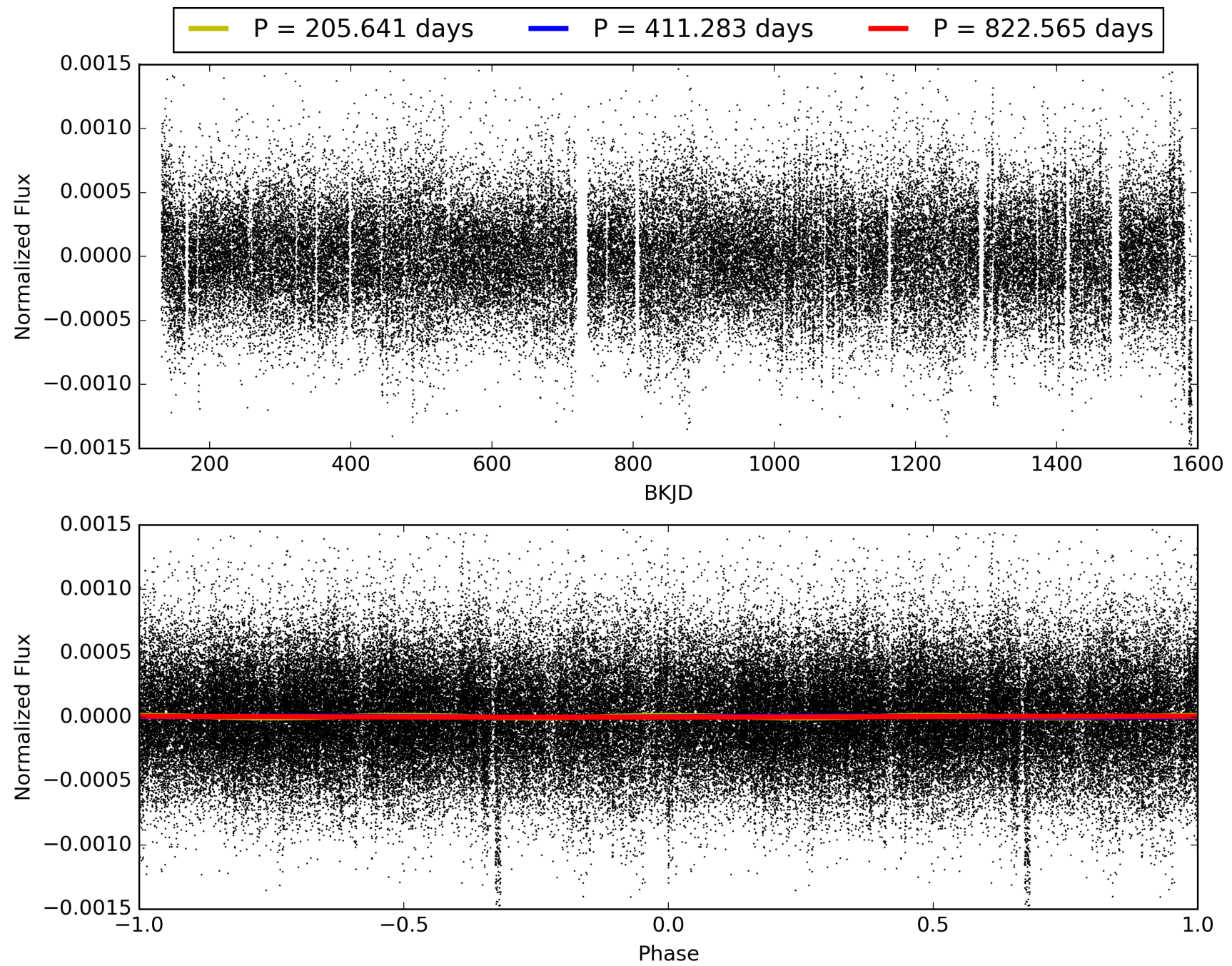
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:09:59 Z

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

TCE 009649358-01, PDC Light Curves

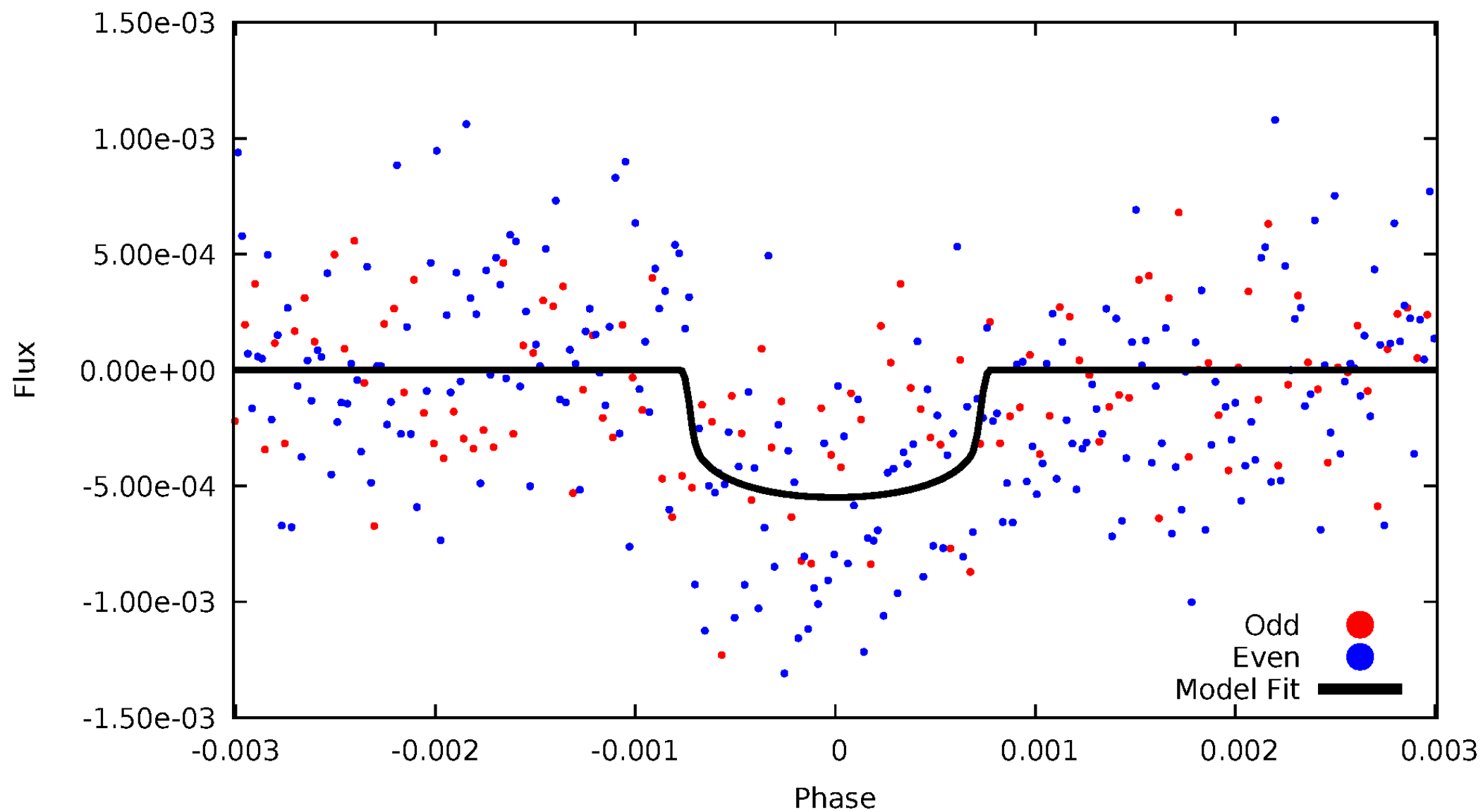


TCE 009649358-01



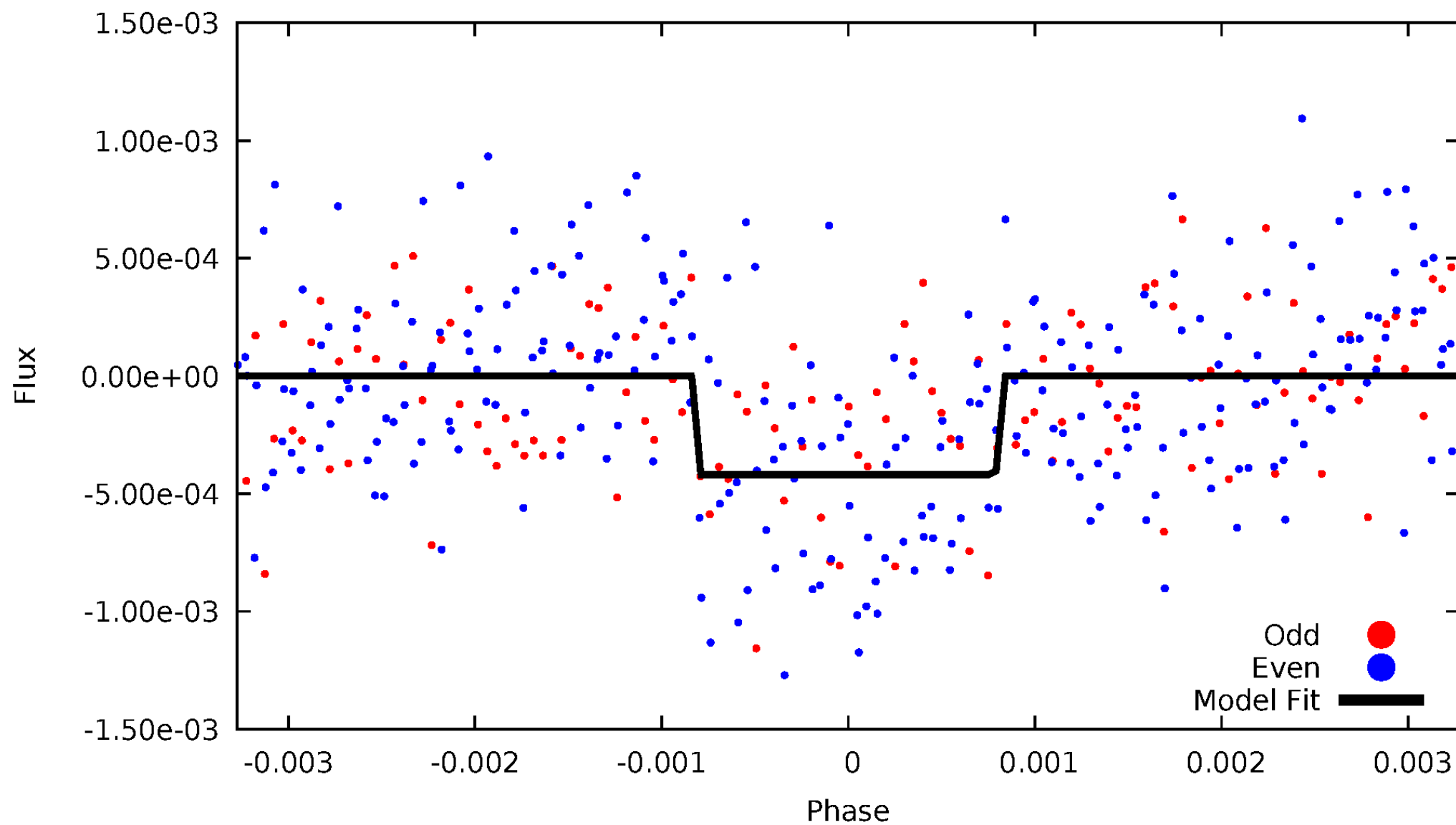
DV Odd/Even

TCE 009649358-01

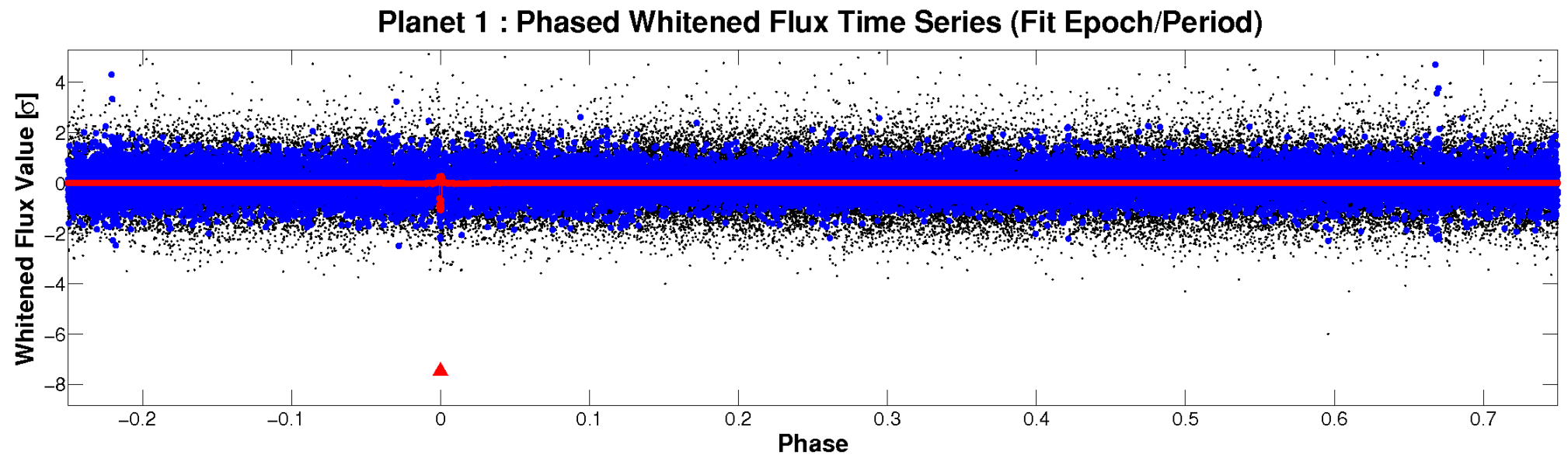
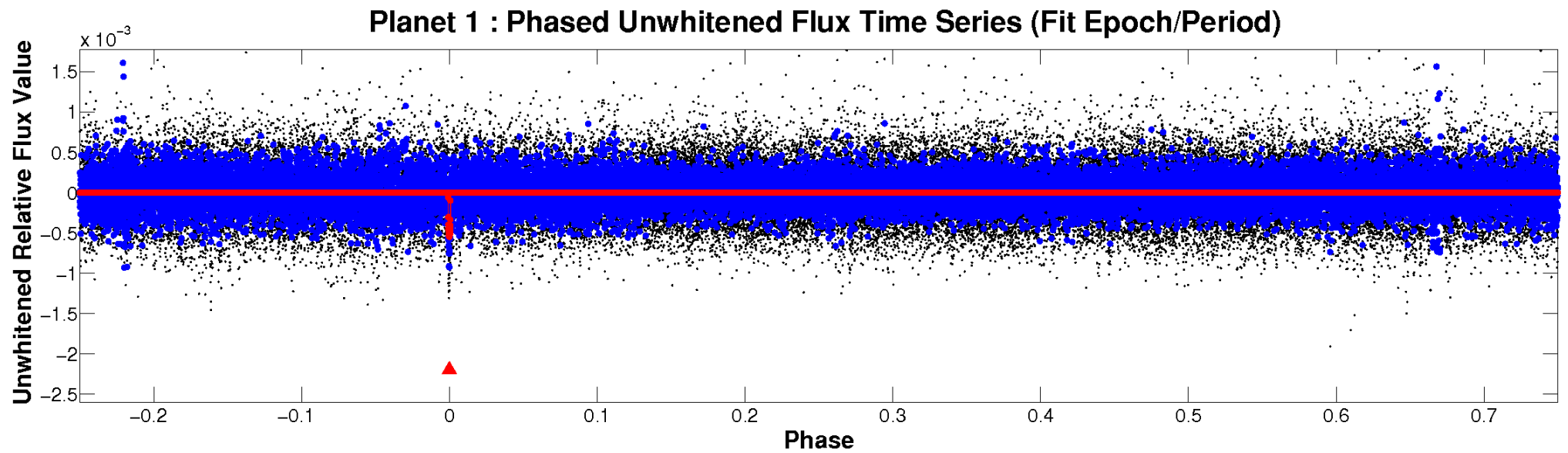


ALT Odd/Even

TCE 009649358-01

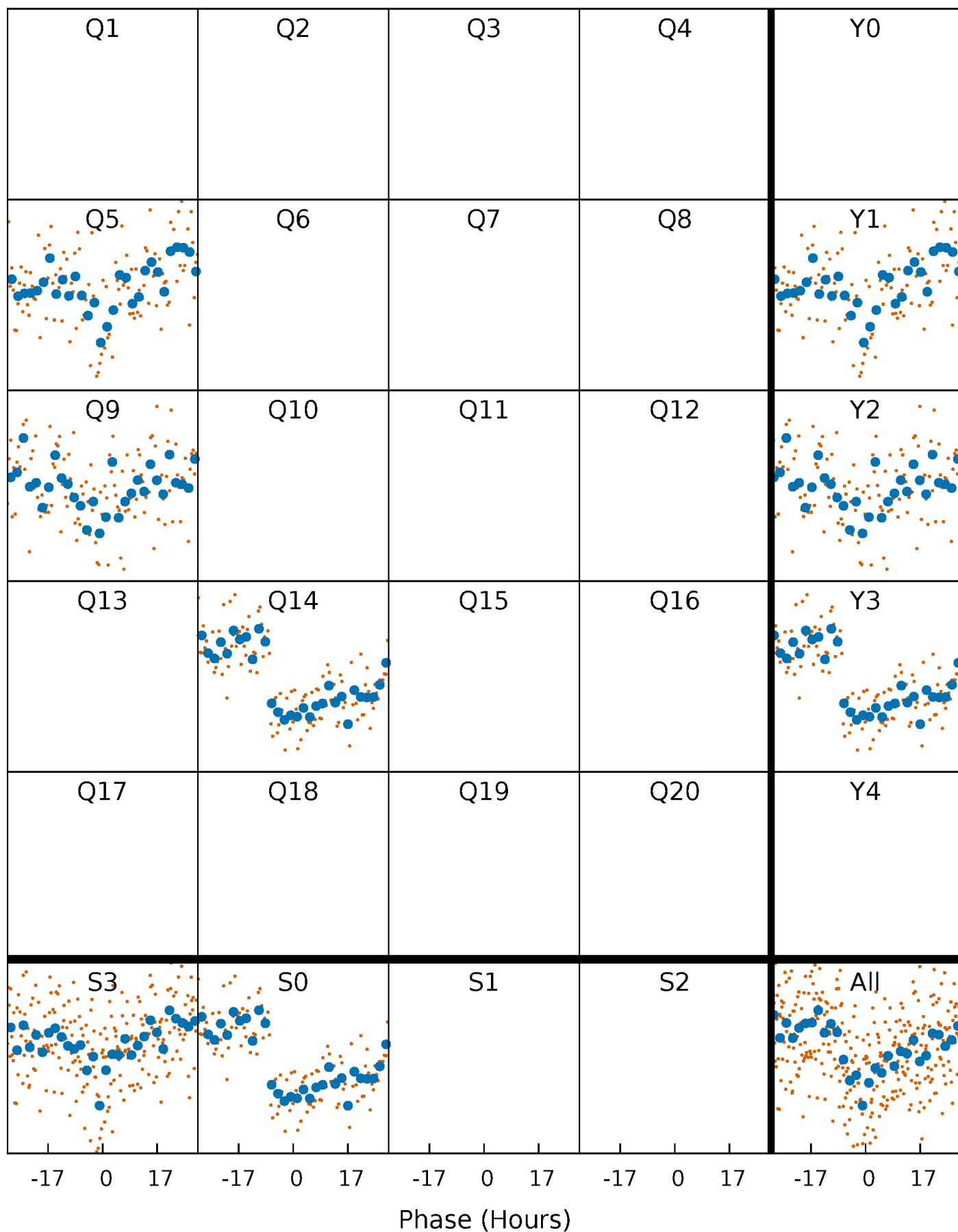


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 009649358-01 P=411.282609 Days $T_0=487.643190$ (BKJD)



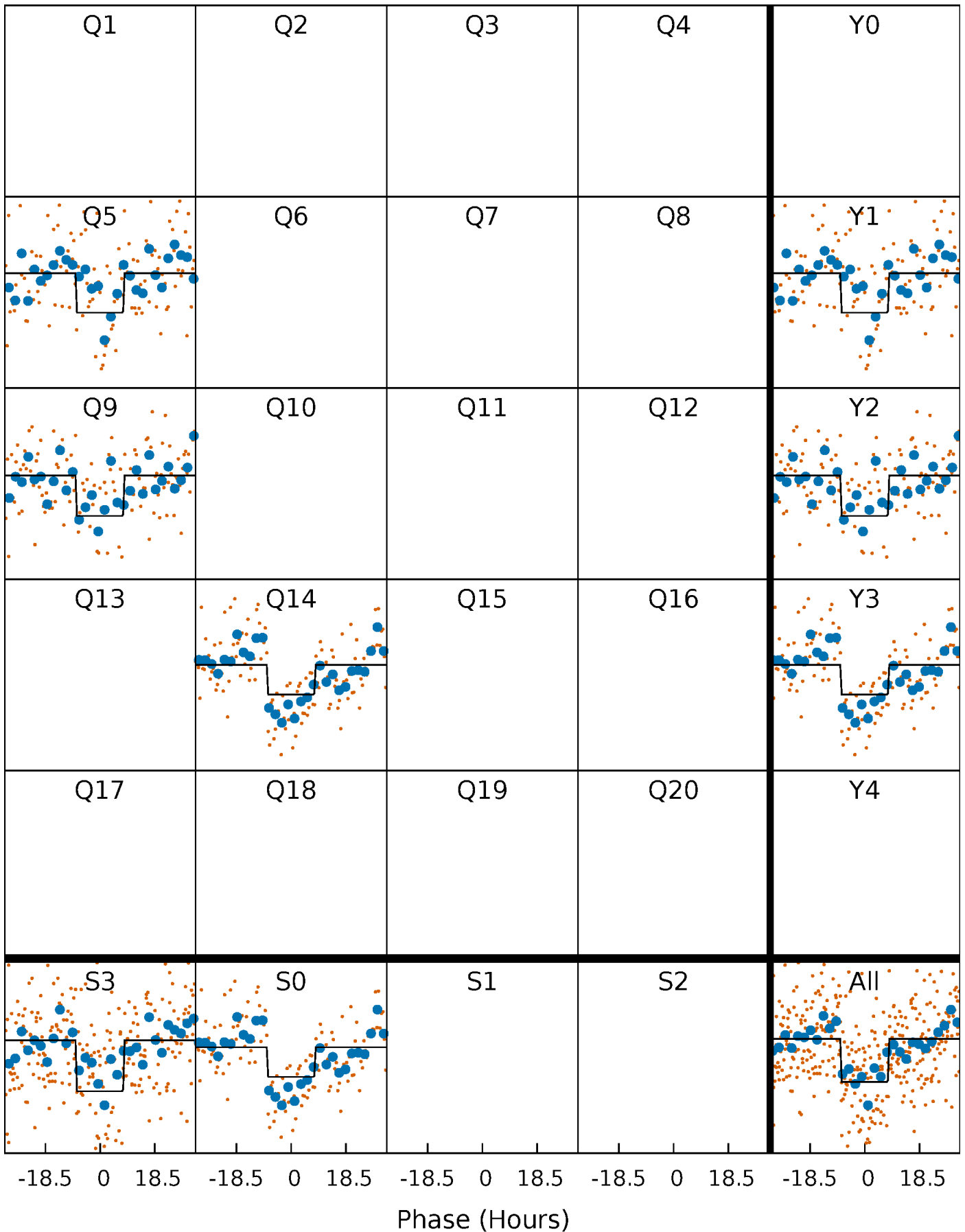
DV Quarter-Phased Transit Curves

TCE 009649358-01 P=411.282609 Days $T_0=487.643190$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

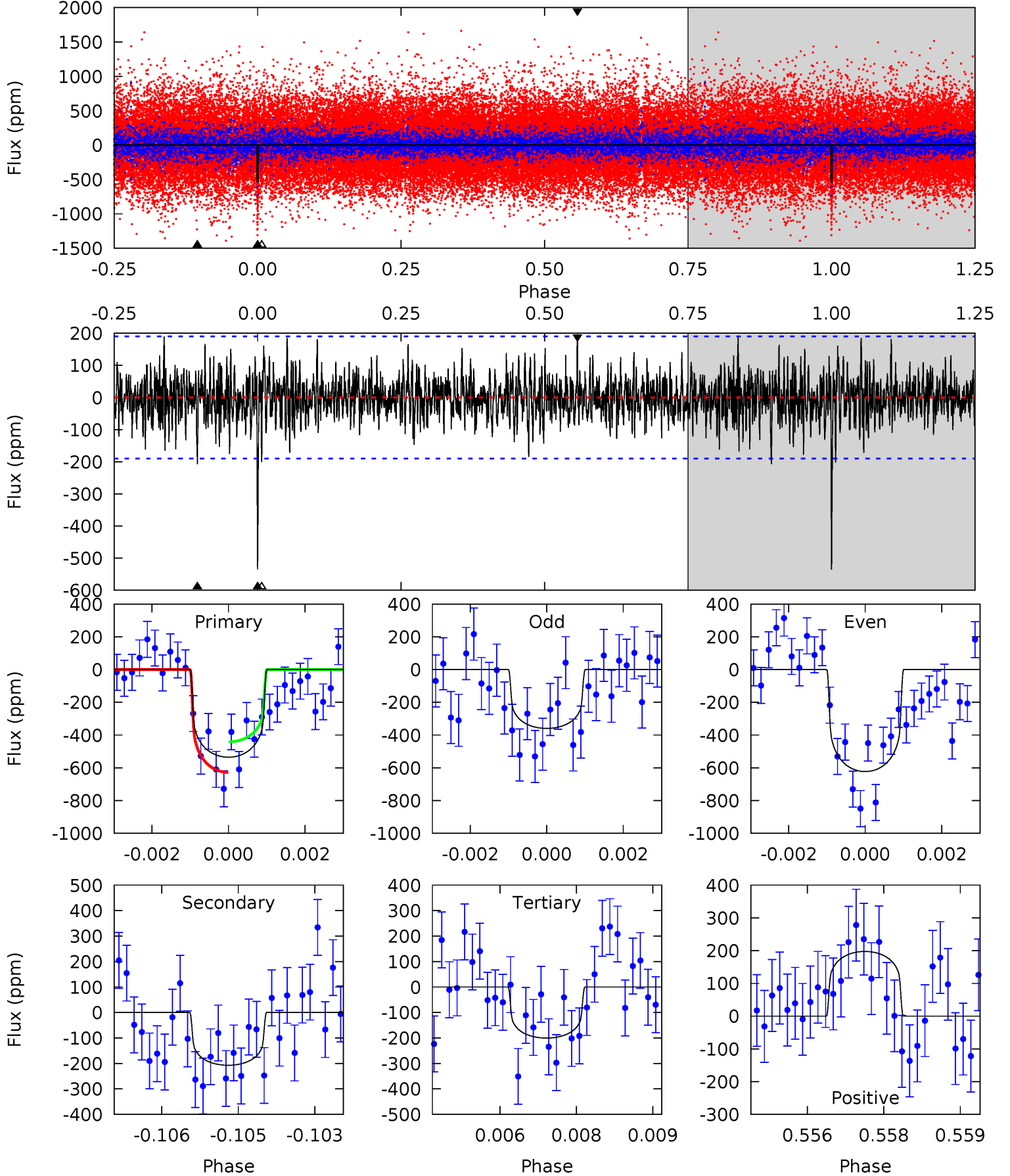
TCE 009649358-01 P=411.347996 Days $T_0=487.547754$ (BKJD)



DV Model-Shift Uniqueness Test

009649358-01, $P = 411.282609$ Days, $E = 76.360581$ Days

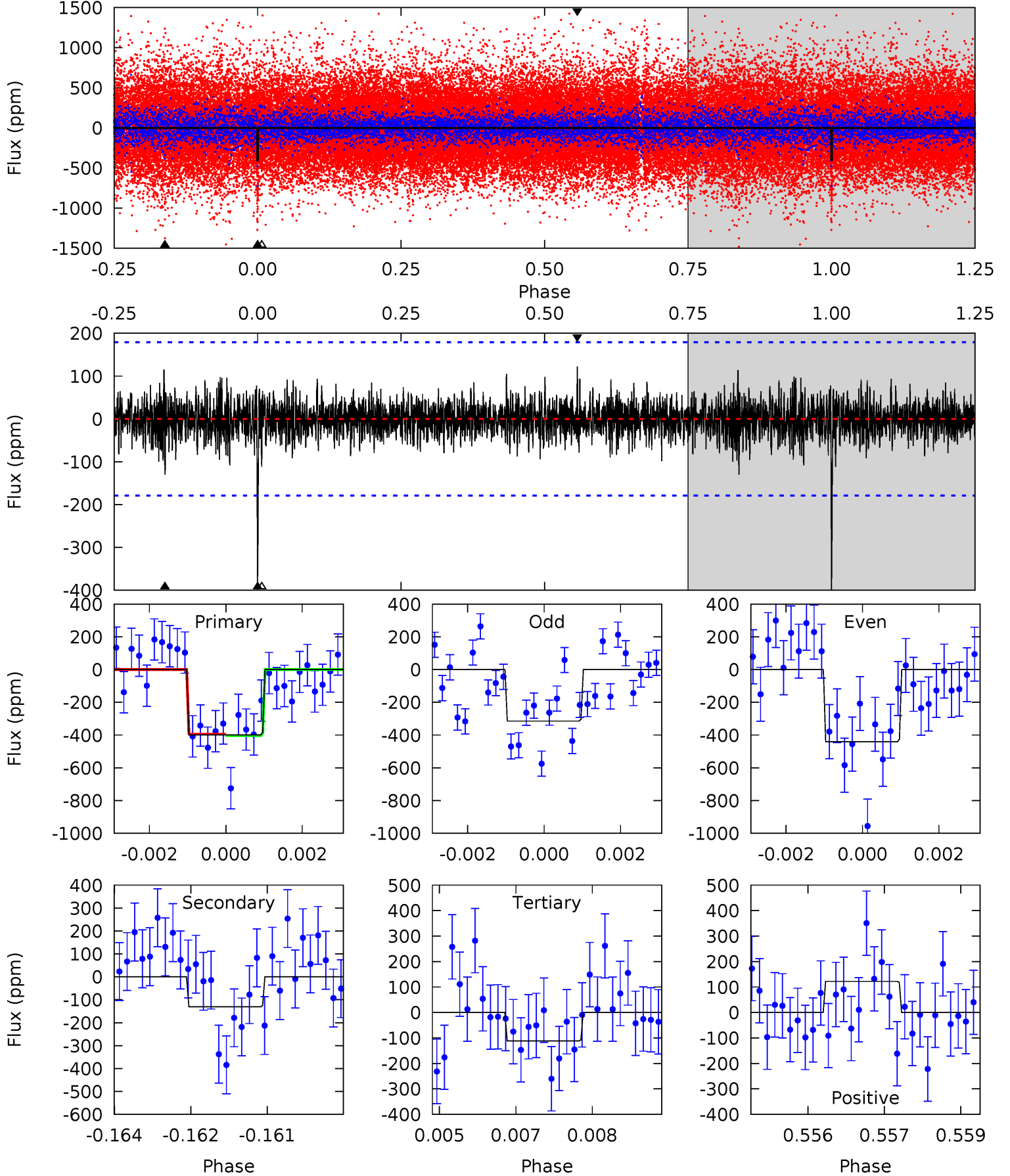
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	5.86	5.67	5.59	5.37	3.17	1.48	9.47	9.56	0.19	0.27	3.51	1.15	0.27	2.64



Alt Model-Shift Uniqueness Test

009649358-01, $P = 411.347996$ Days, $E = 76.199758$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	3.91	3.34	3.66	5.36	3.15	0.88	8.60	8.28	0.57	0.25	1.79	1.27	0.23	0.14



Stellar Parameters For KIC 009649358

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5955^{+161}_{-178}	$4.534^{+0.048}_{-0.192}$	$-0.240^{+0.300}_{-0.300}$	$0.883^{+0.241}_{-0.086}$	$0.972^{+0.107}_{-0.130}$	$1.987^{+0.493}_{-0.961}$
	+3%/-3%	+1%/-4%	+125%/-125%	+27%/-10%	+11%/-13%	+25%/-48%
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 009649358-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-207 ± 35	$2.35^{+1.22}_{-1.27}$	341^{+22}_{-17}	4800^{+2019}_{-744}	23289^{+83387}_{-13538}
Alt.	-131 ± 33	$2.13^{+1.23}_{-1.10}$	341^{+21}_{-15}	4583^{+1606}_{-754}	18078^{+52654}_{-11414}

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 $A_{obs} \gg 1.0$

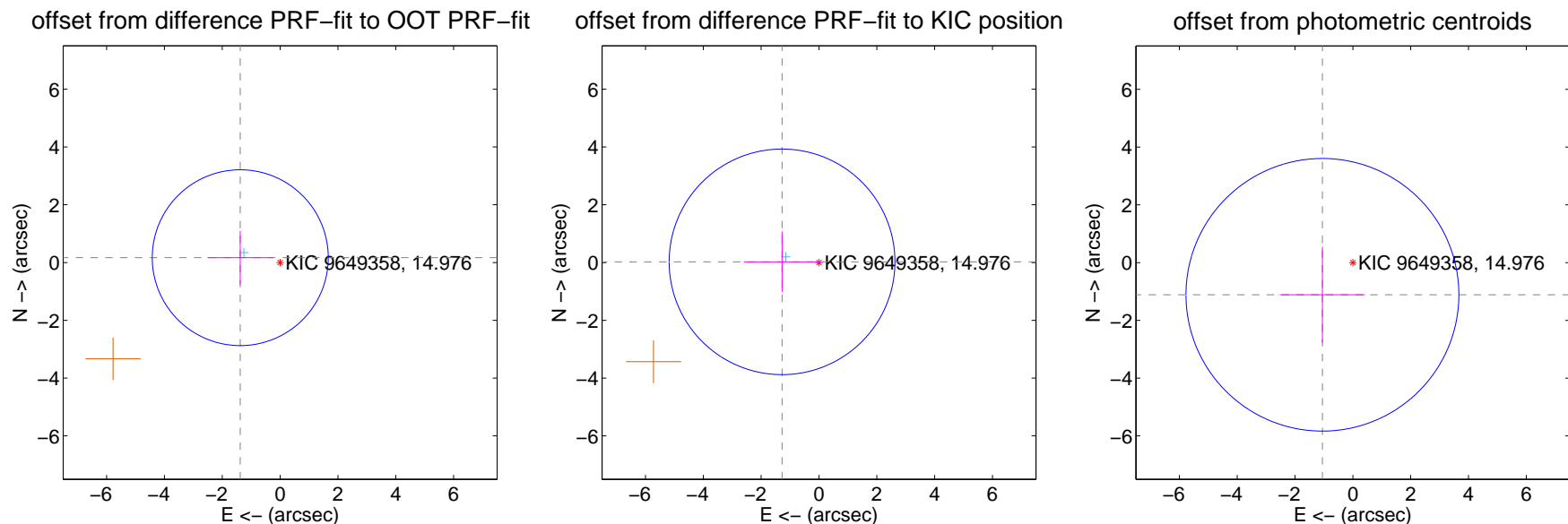
DV Centroid Data

Supplemental centroid analysis for 009649358-01. Kepler magnitude: 14.98. Transit SNR 9.47

There are 1 quarters with good PRF difference image offsets

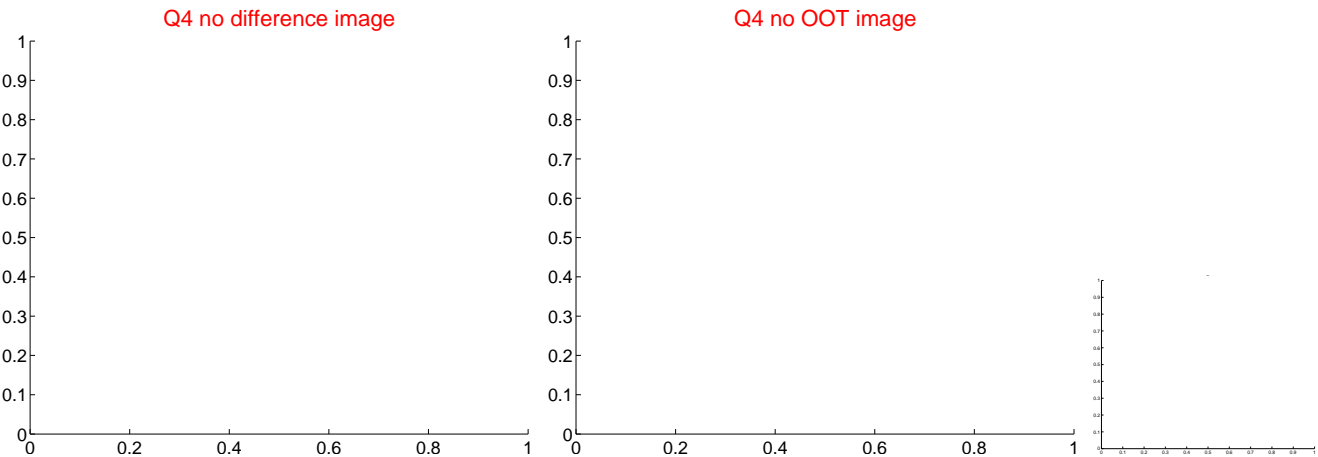
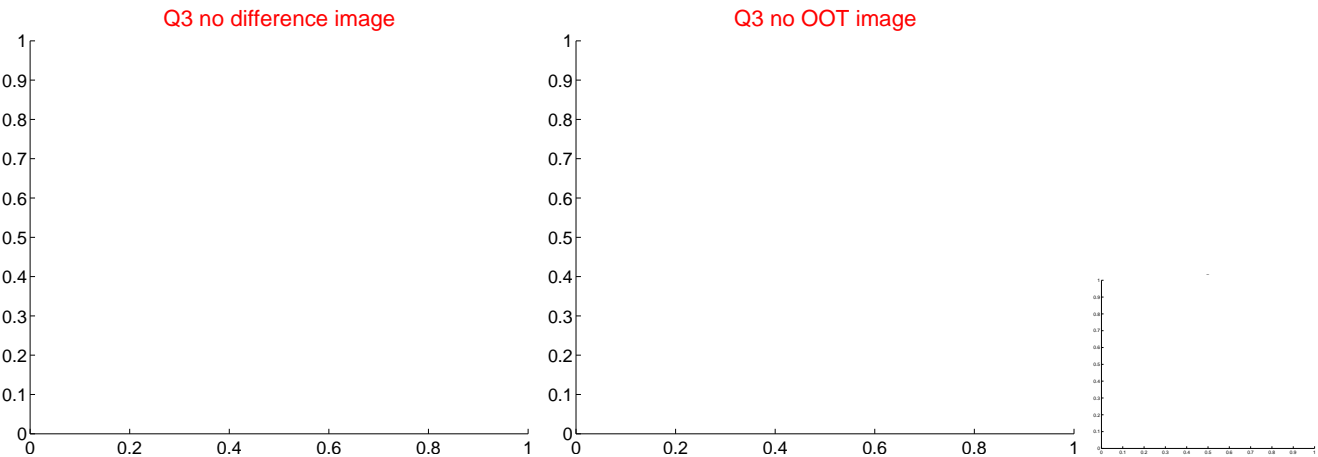
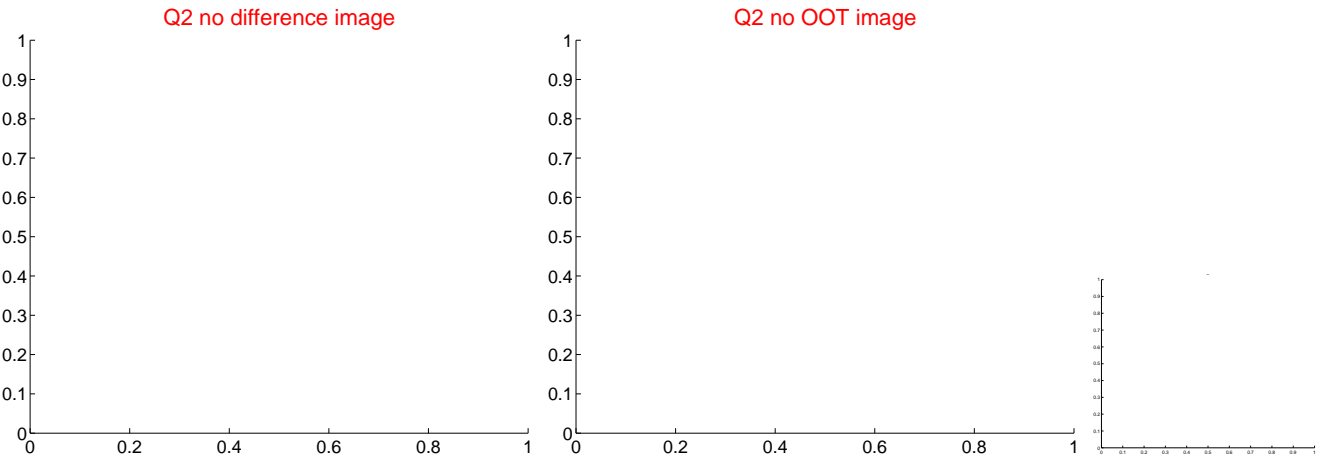
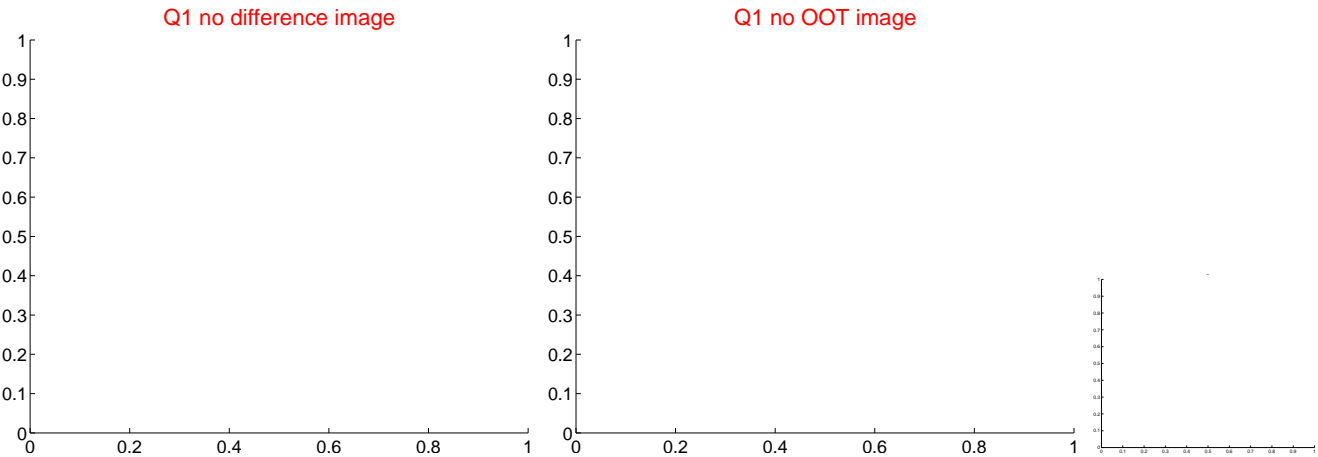
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.388 ± 1.014	1.37	1.378 ± 1.133	0.167 ± 0.921
PRF-fit source offset from KIC position	1.278 ± 1.301	0.98	1.277 ± 1.321	0.024 ± 1.050
photometric centroid source offset	1.53 ± 1.57	0.97	1.05 ± 1.47	-1.11 ± 1.66

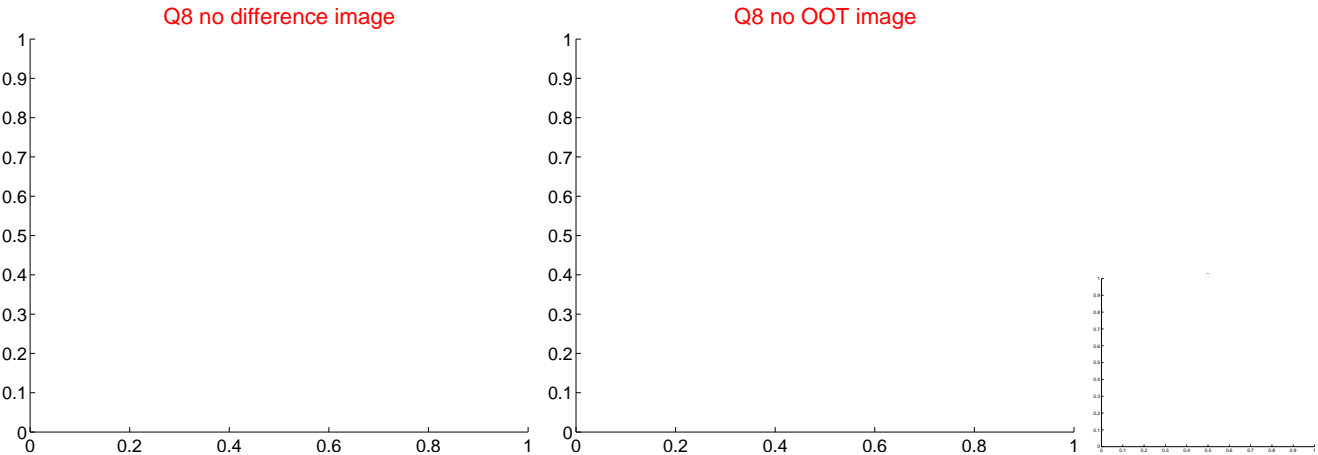
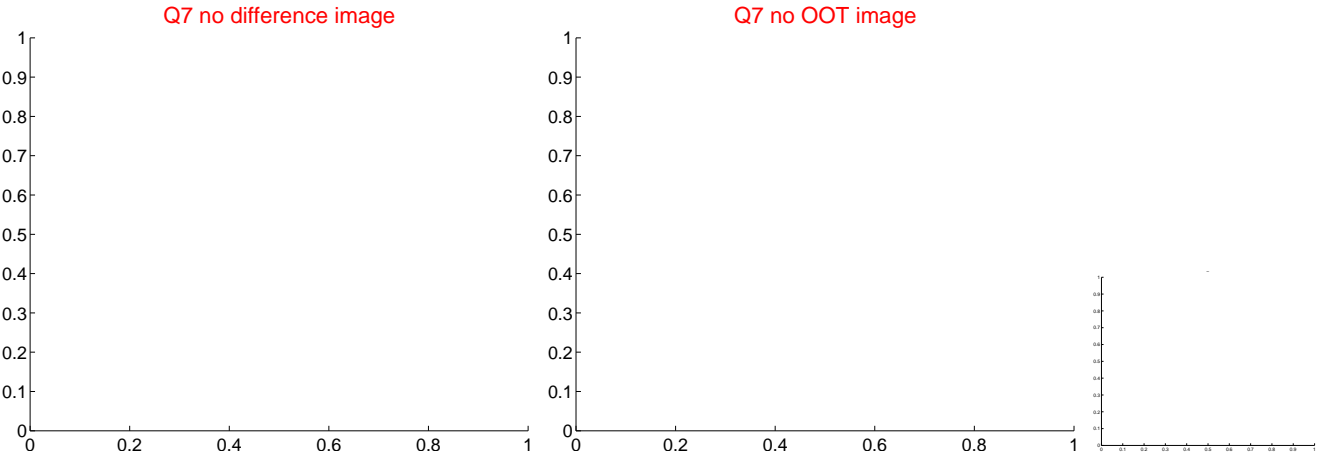
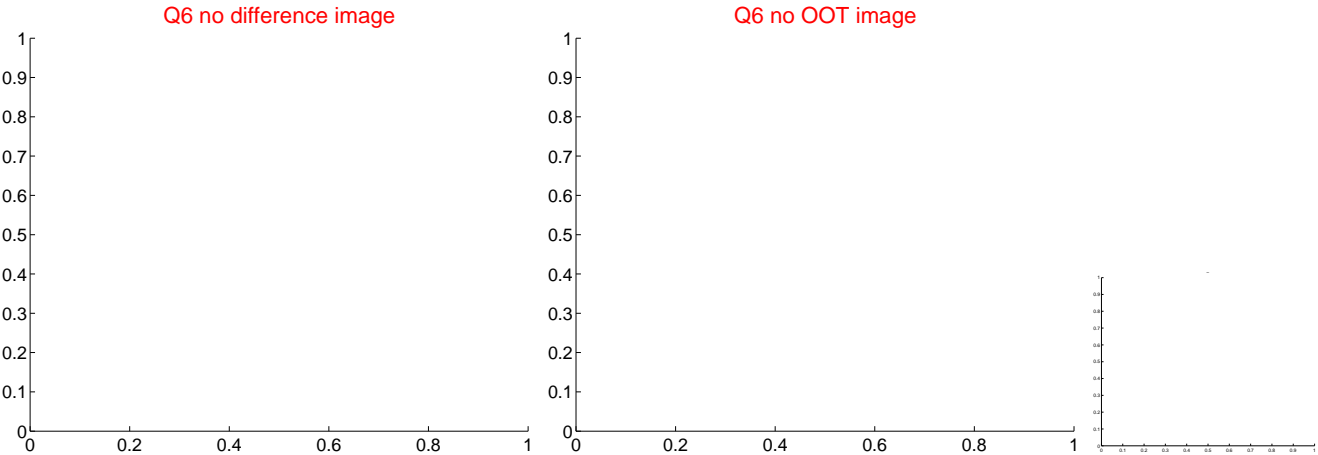
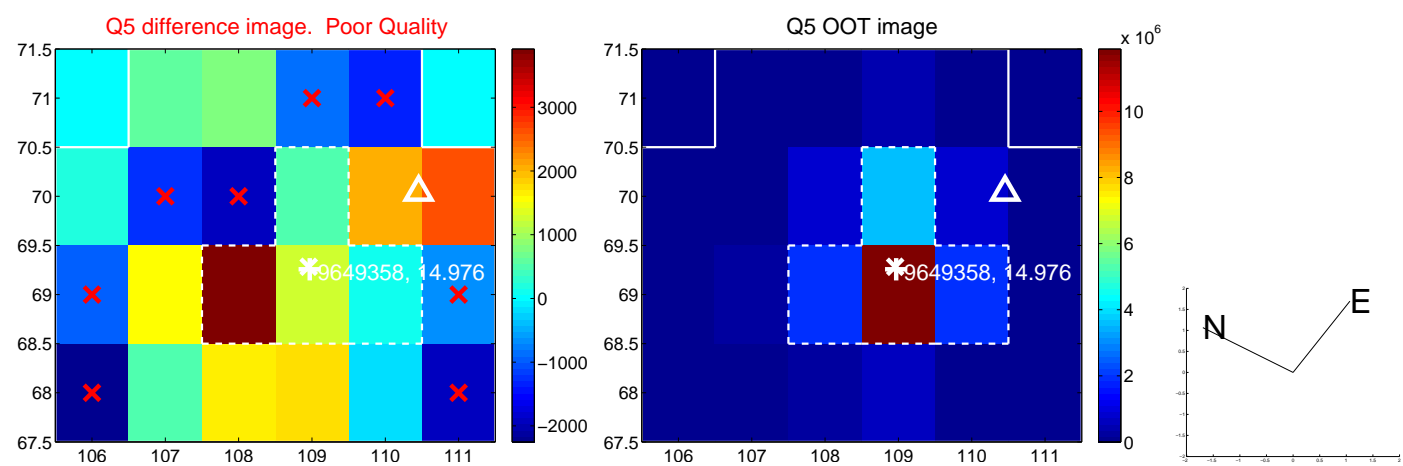


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

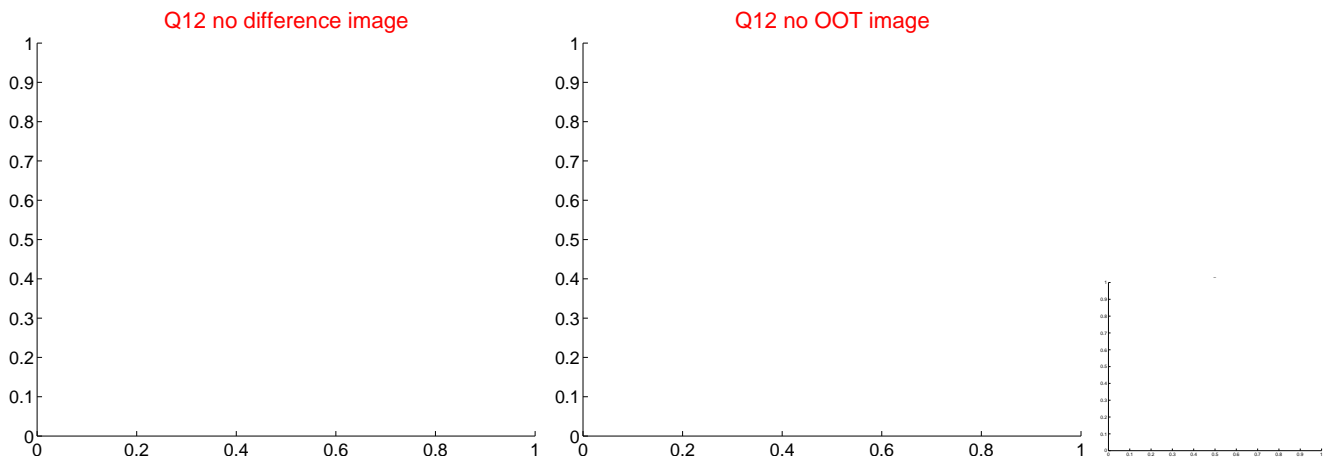
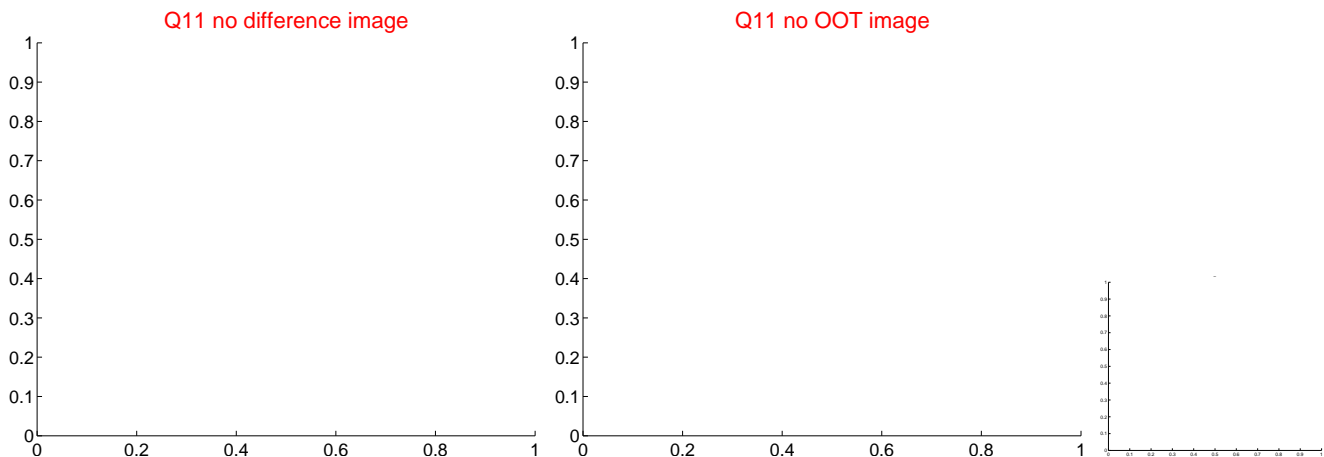
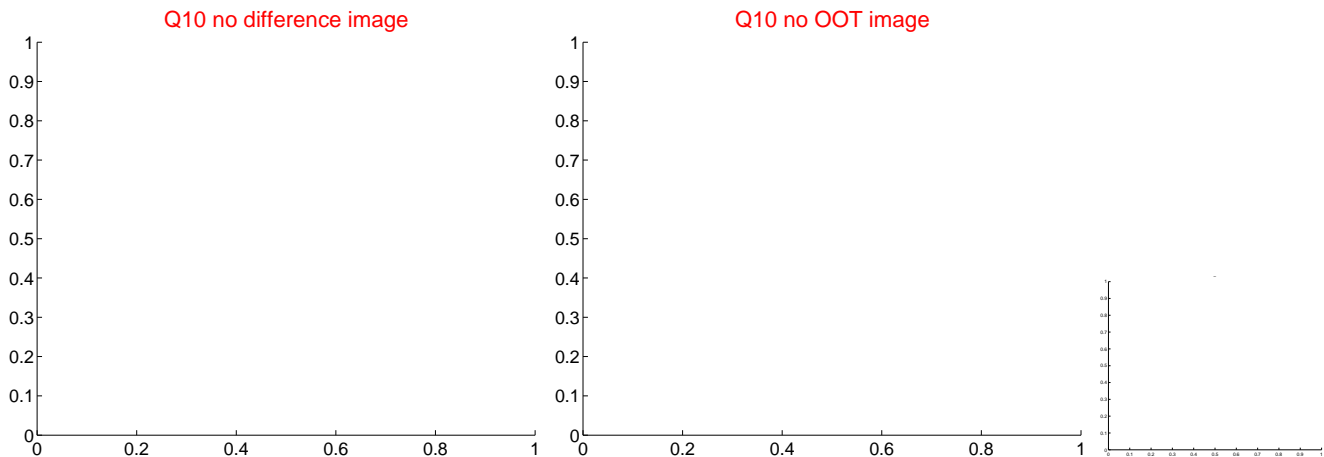
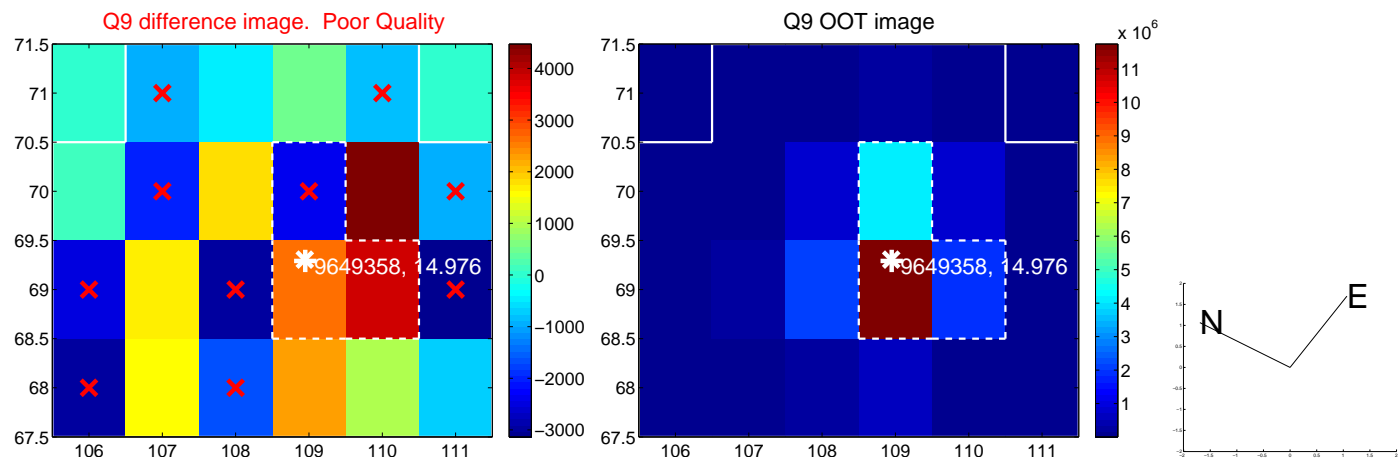
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



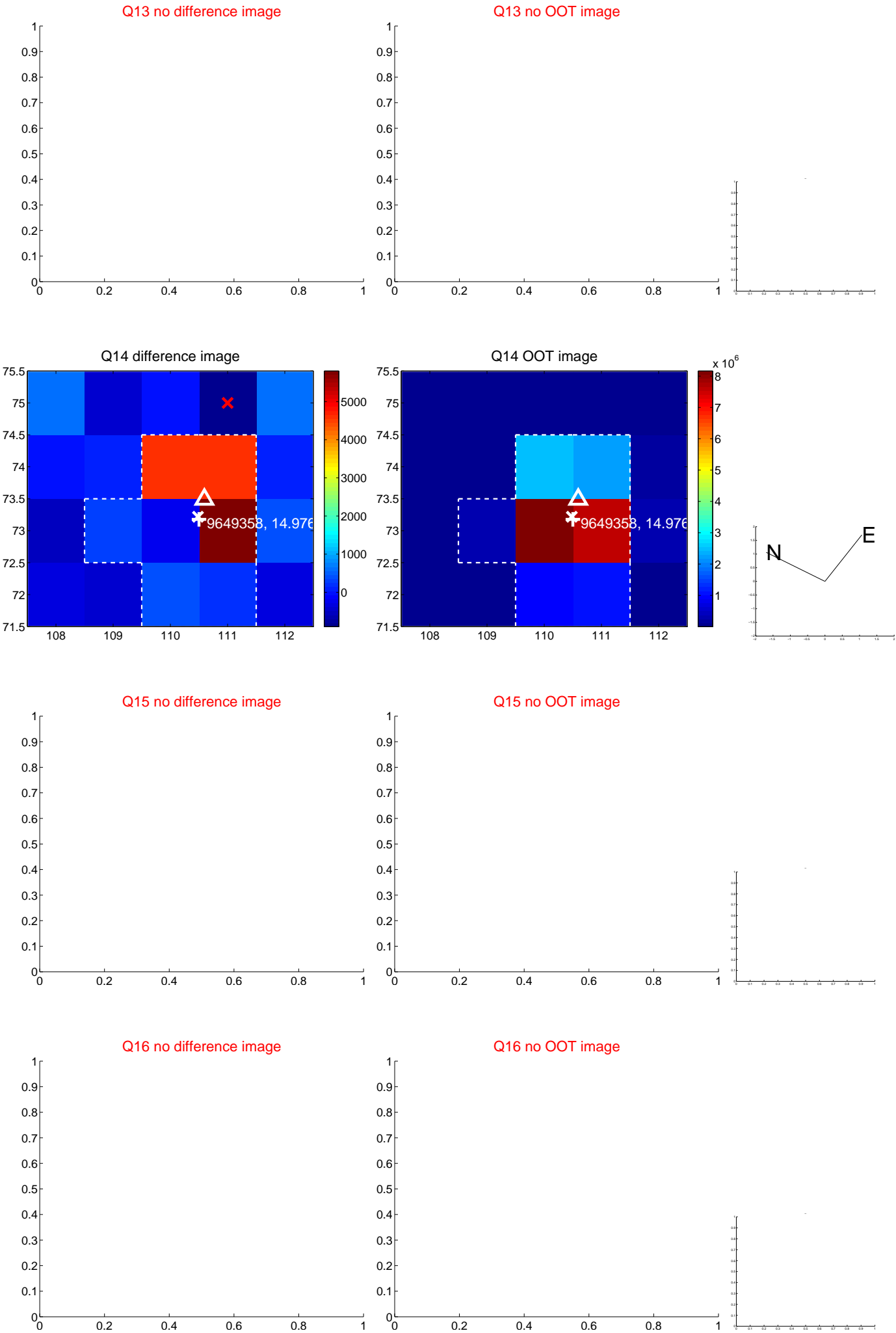
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



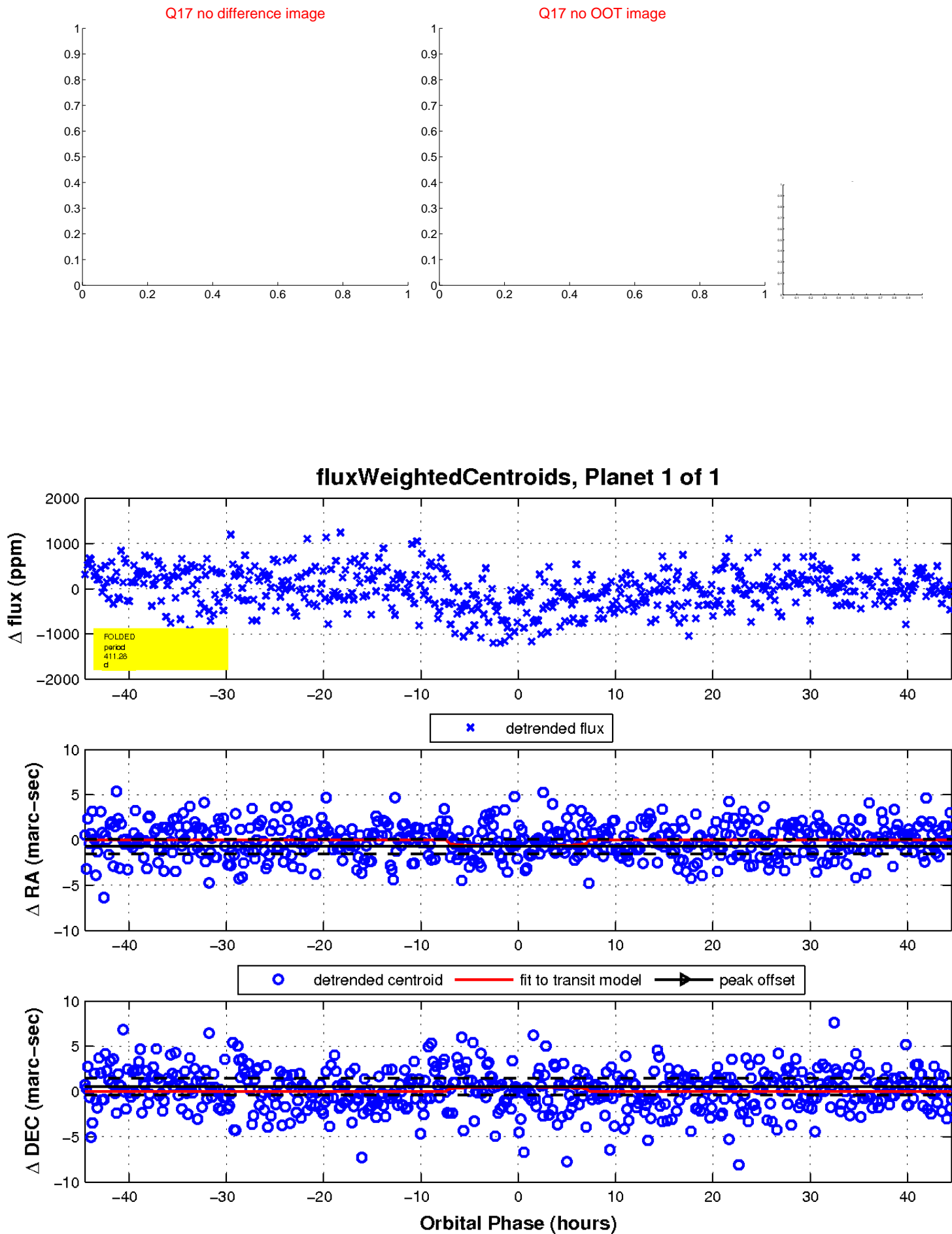
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

