

KIC 009533449

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})
009533449-01	OBS	No	555.420302	465.684801	538.8	3.909	10.1	7.4	1.68	7051	4.25	3.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009533449-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

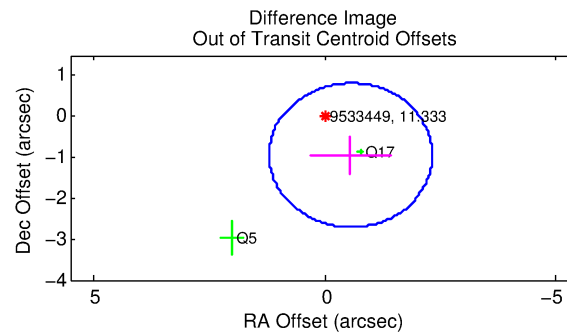
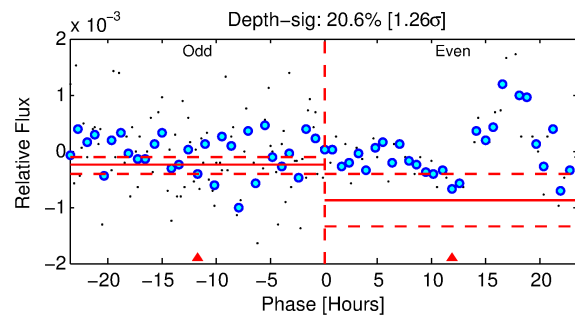
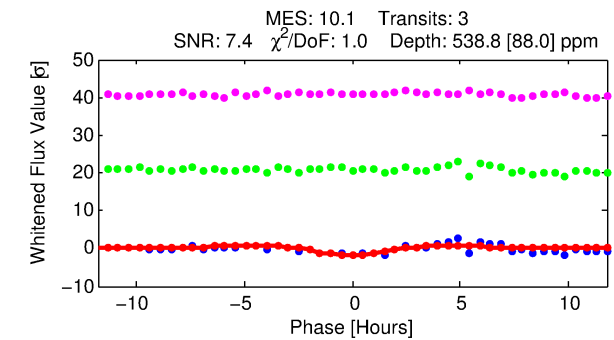
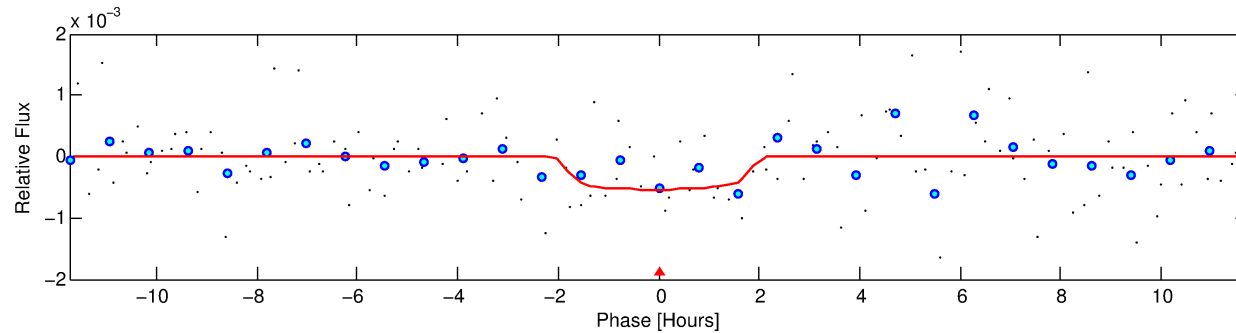
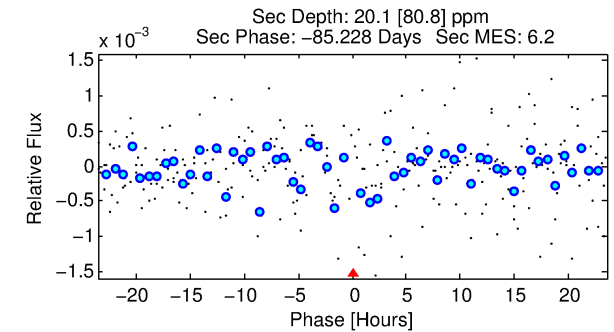
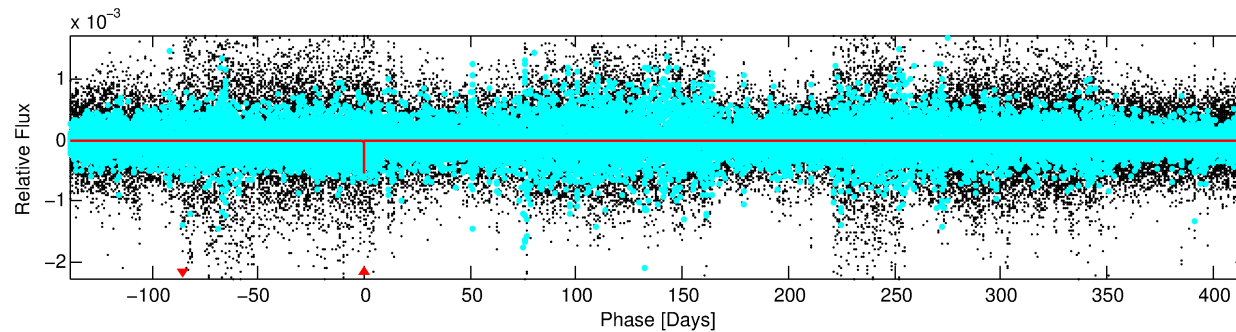
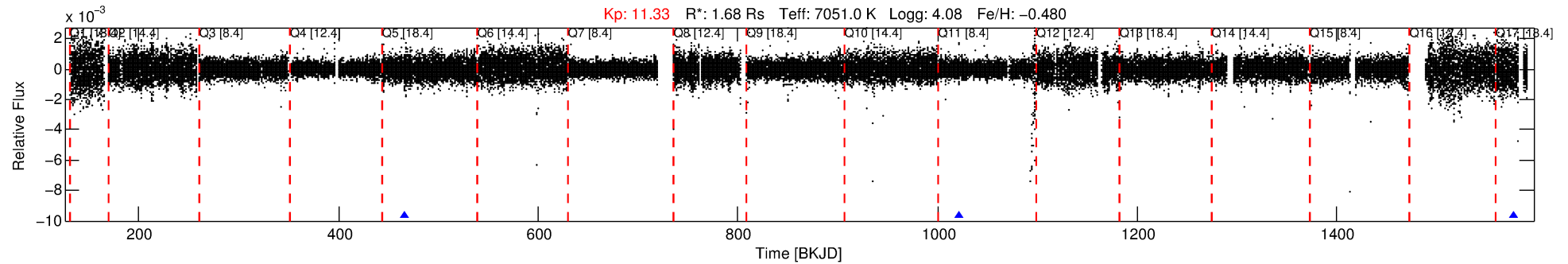
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009533449-01

No Significant Match Found

DV One-Page Summary

KIC: 9533449 Candidate: 1 of 1 Period: 555.420 d



DV Fit Results:

Period = 555.42030 [0.01201] d
Epoch = 465.6848 [0.0142] BKJD
 $R_p/R^* = 0.0232$ [0.0265]
 $a/R^* = 738.12$ [4988.65]
 $b = 0.76$ [3.72]
 $\text{Seff} = 3.11$ [1.42]
 $T_{\text{eq}} = 339$ [39] K
 $R_p = 4.25$ [5.00] R_e
 $a = 1.4174$ [0.3794] AU
 $A_g = 1233.45$ [5714.77] [0.22 σ]
 $T_{\text{eff}} = 3102$ [3581] K [0.77 σ]

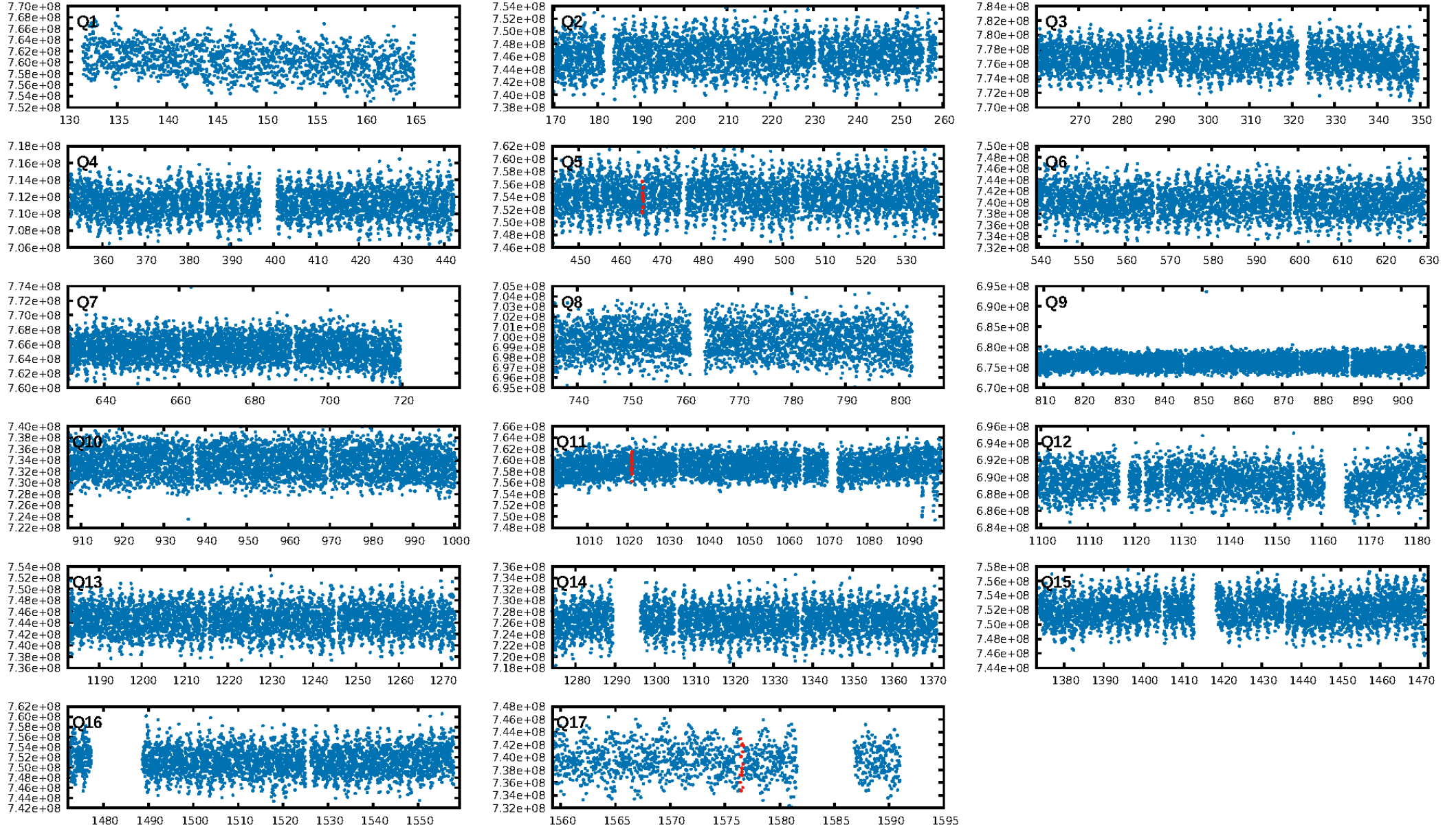
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.8%
ModelChiSquareGof-sig: 94.2%
Bootstrap-pfa: 8.26e-07
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.6674
Centroid-sig: 9.9%
Centroid-so: 0.439 arcsec [0.69 σ]
OotOffset-rm: 1.100 arcsec [1.87 σ]
KicOffset-rm: 1.197 arcsec [1.89 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

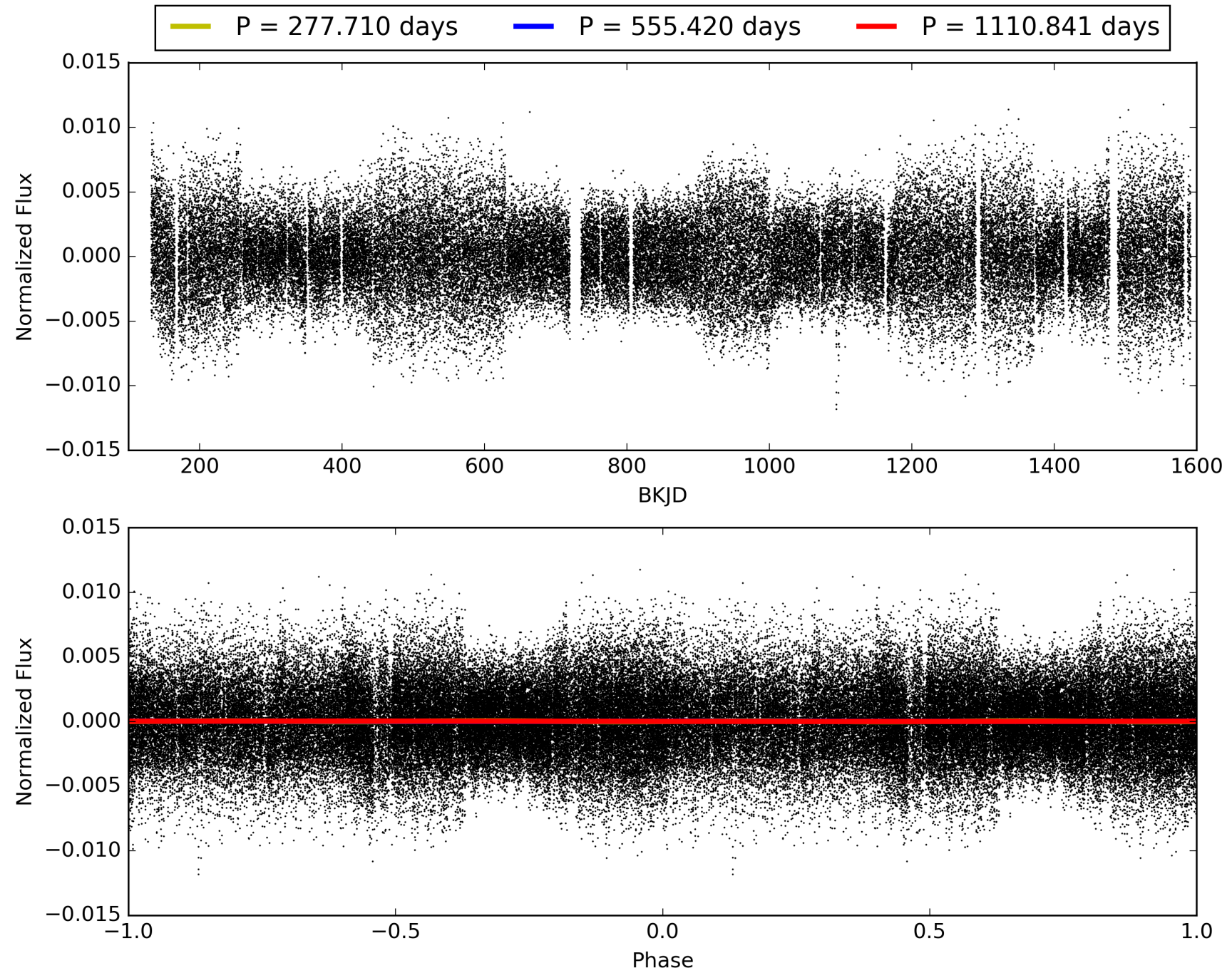
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:08:13 Z

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

TCE 009533449-01, PDC Light Curves

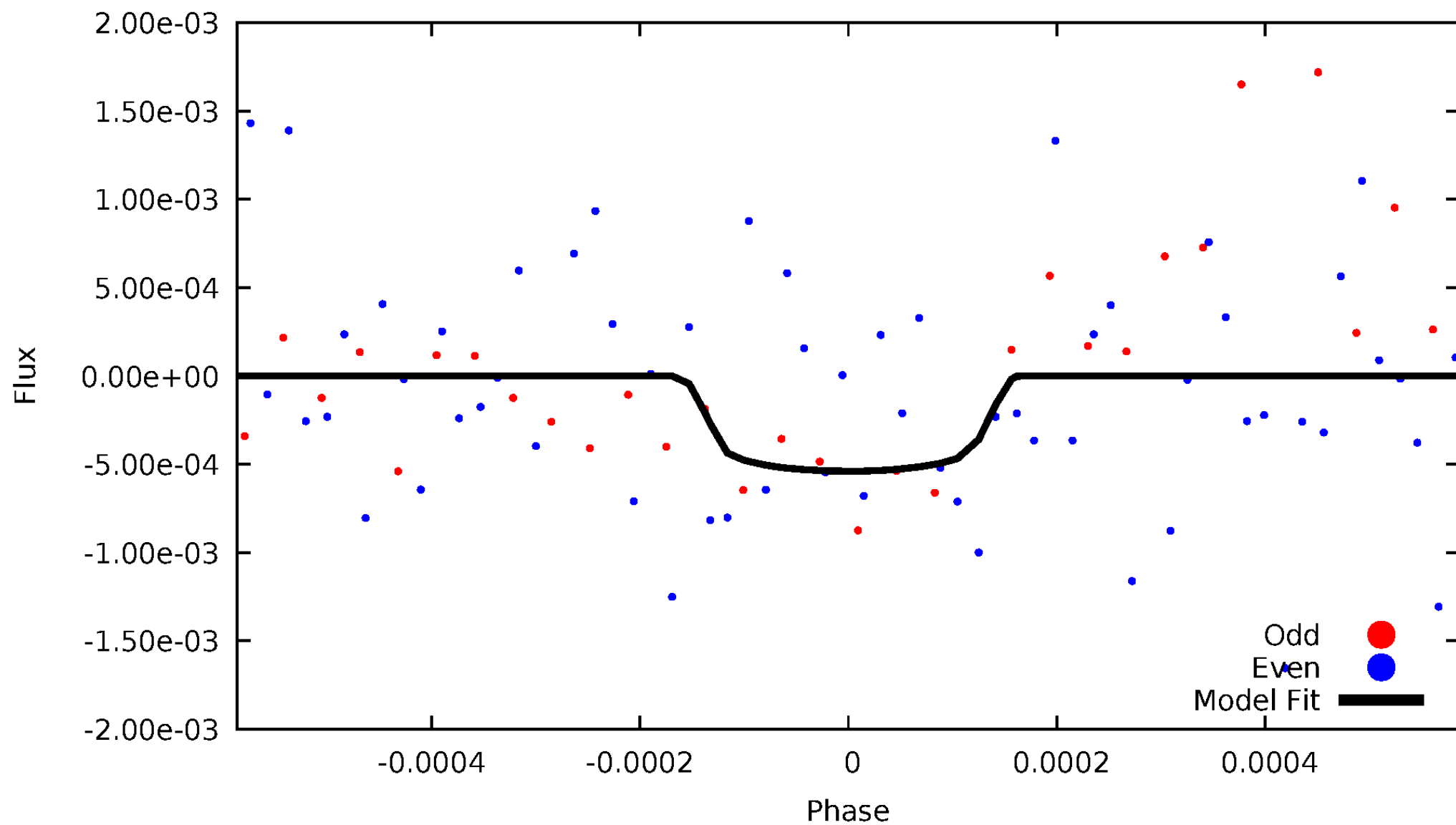


TCE 009533449-01



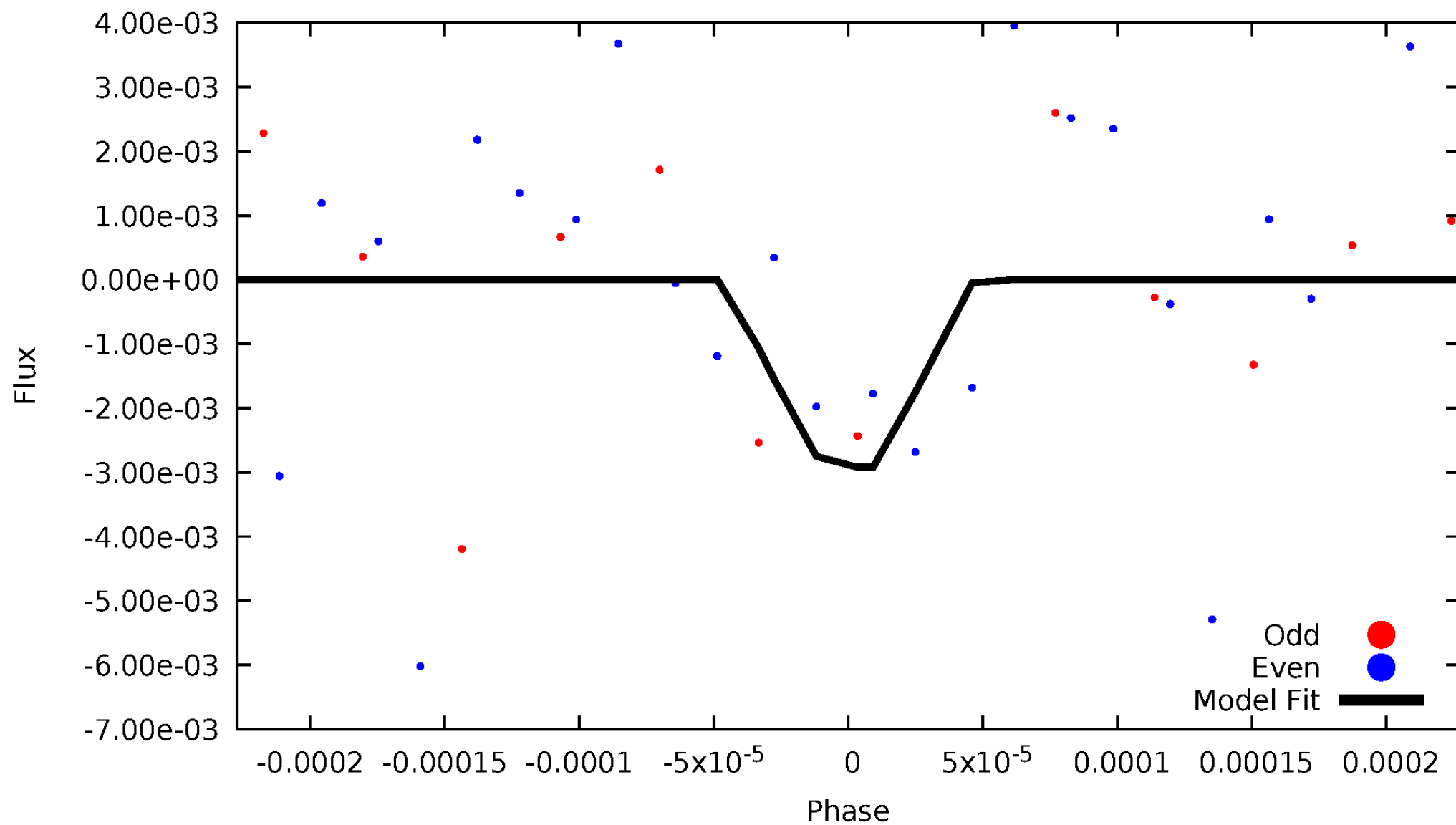
DV Odd/Even

TCE 009533449-01



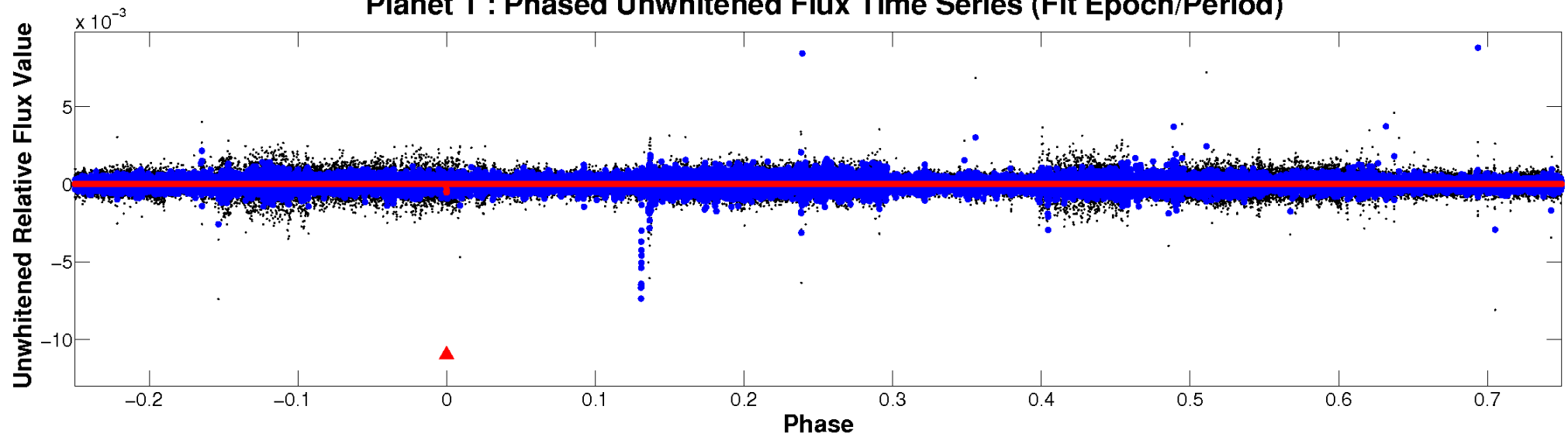
ALT Odd/Even

TCE 009533449-01

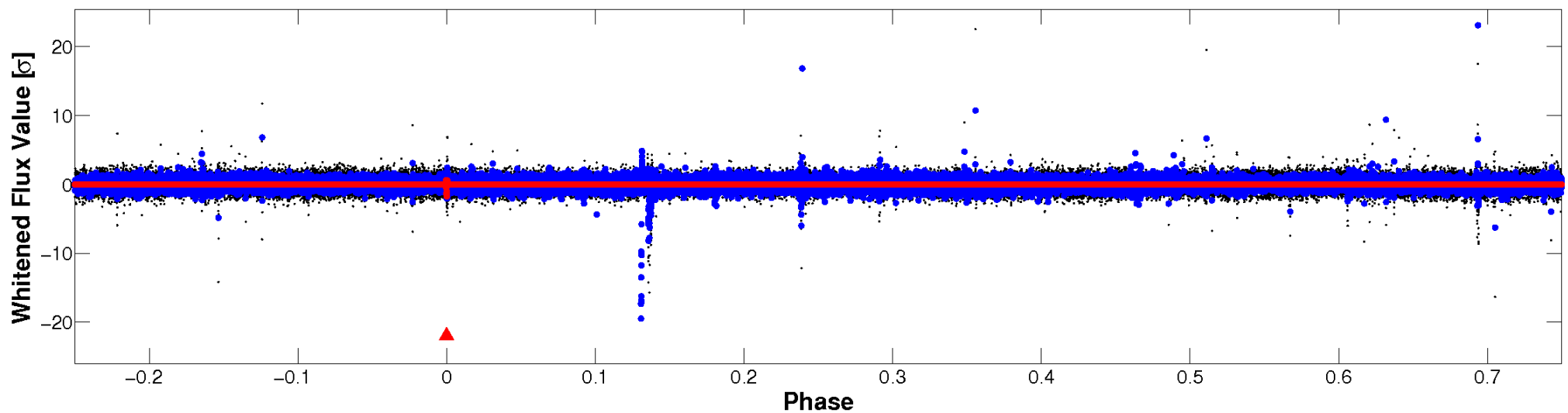


Non-Whitened Vs. Whitened Light Curve

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

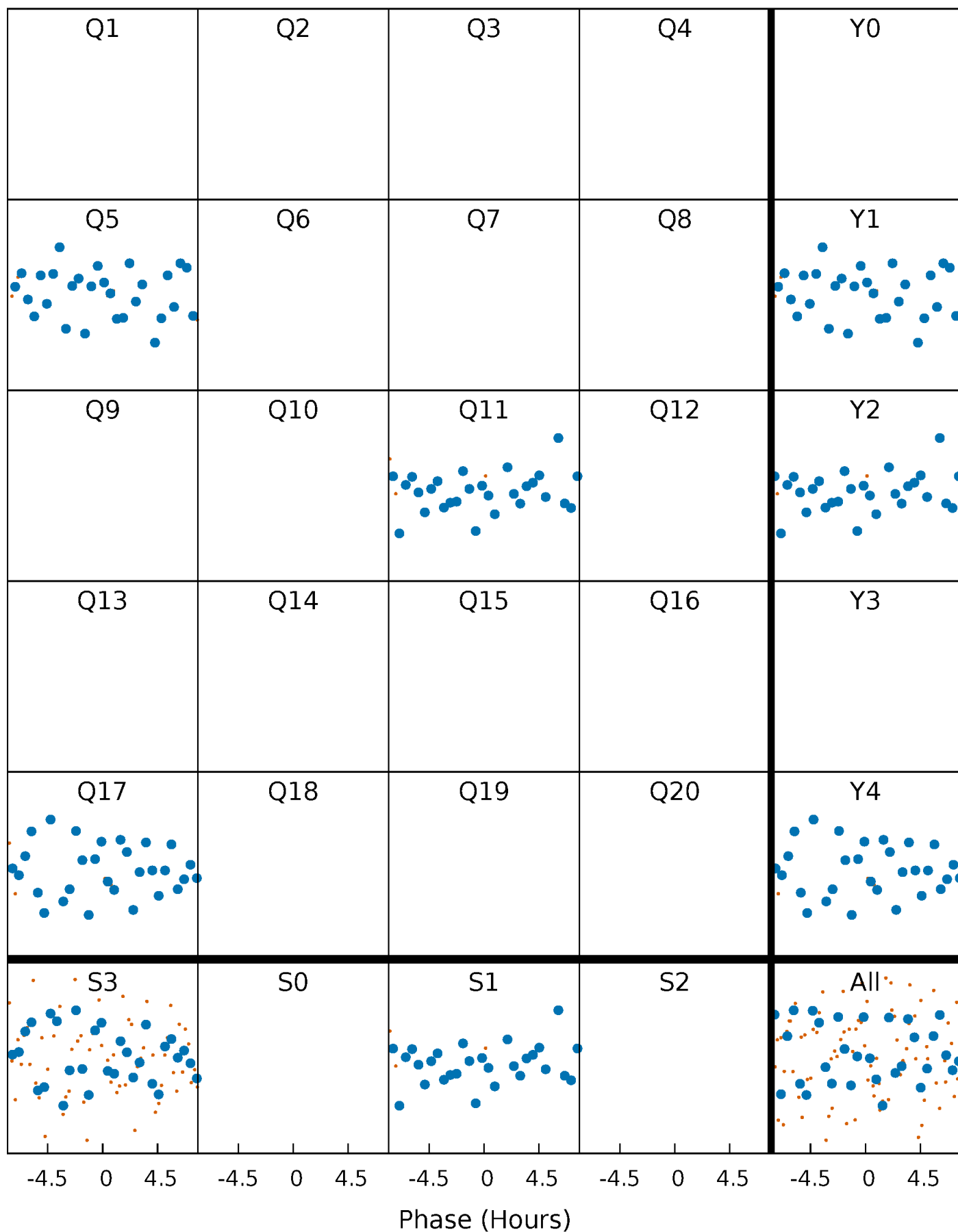


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 009533449-01 P=555.420302 Days $T_0=465.684801$ (BKJD)



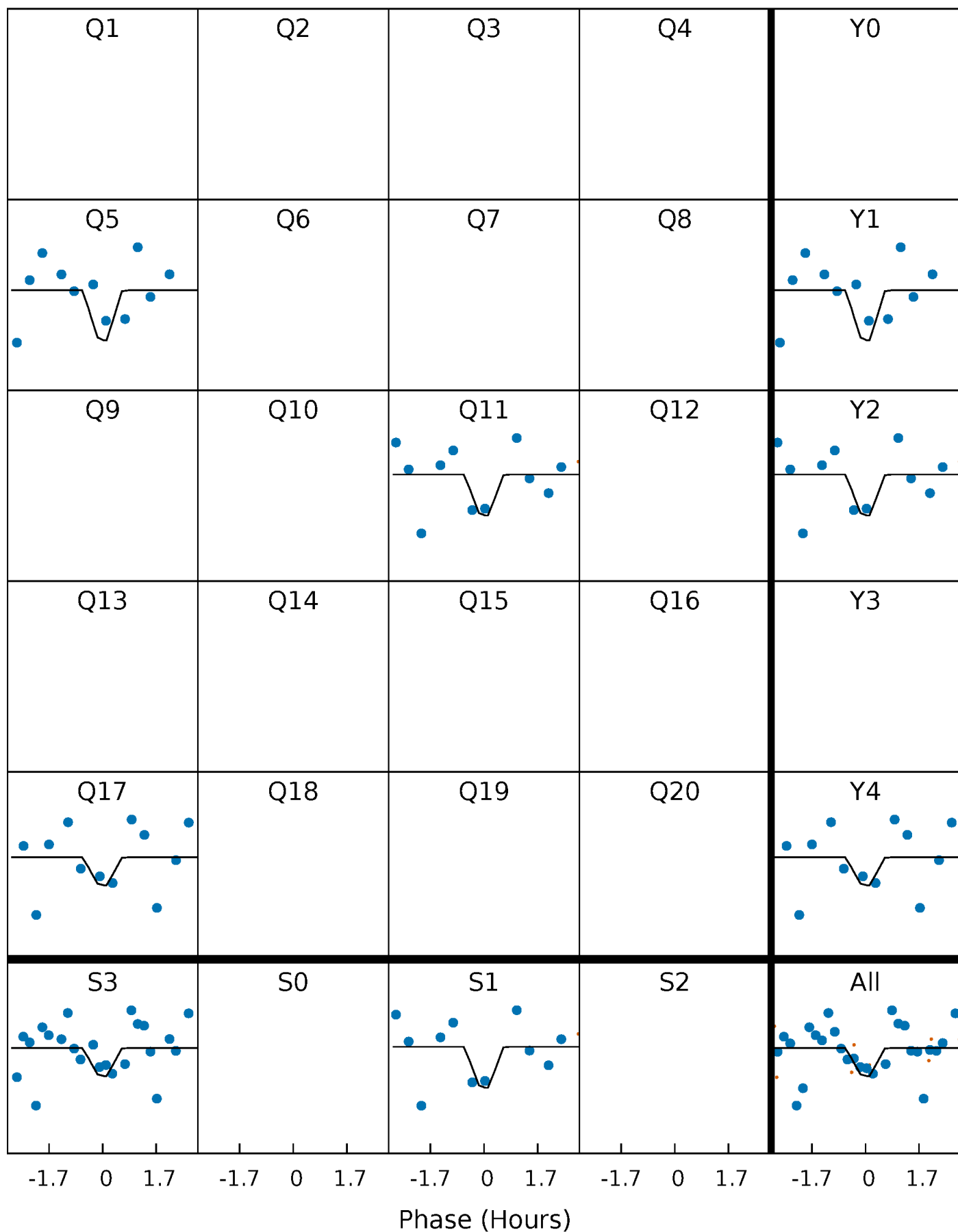
DV Quarter-Phased Transit Curves

TCE 009533449-01 P=555.420302 Days $T_0=465.684801$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

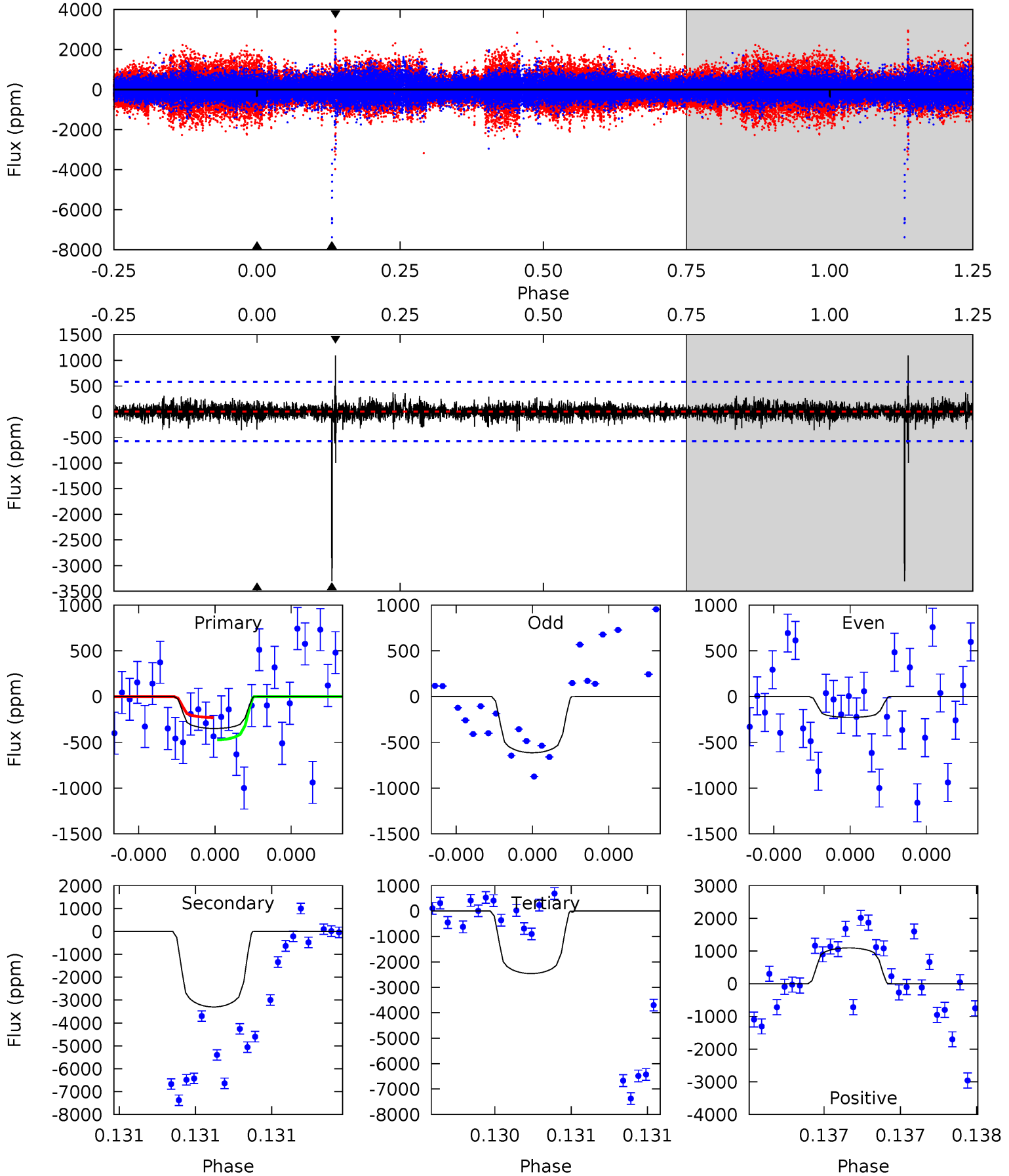
TCE 009533449-01 P=555.411406 Days $T_0=465.737860$ (BKJD)



DV Model-Shift Uniqueness Test

009533449-01, P = 555.420302 Days, E = 465.684801 Days

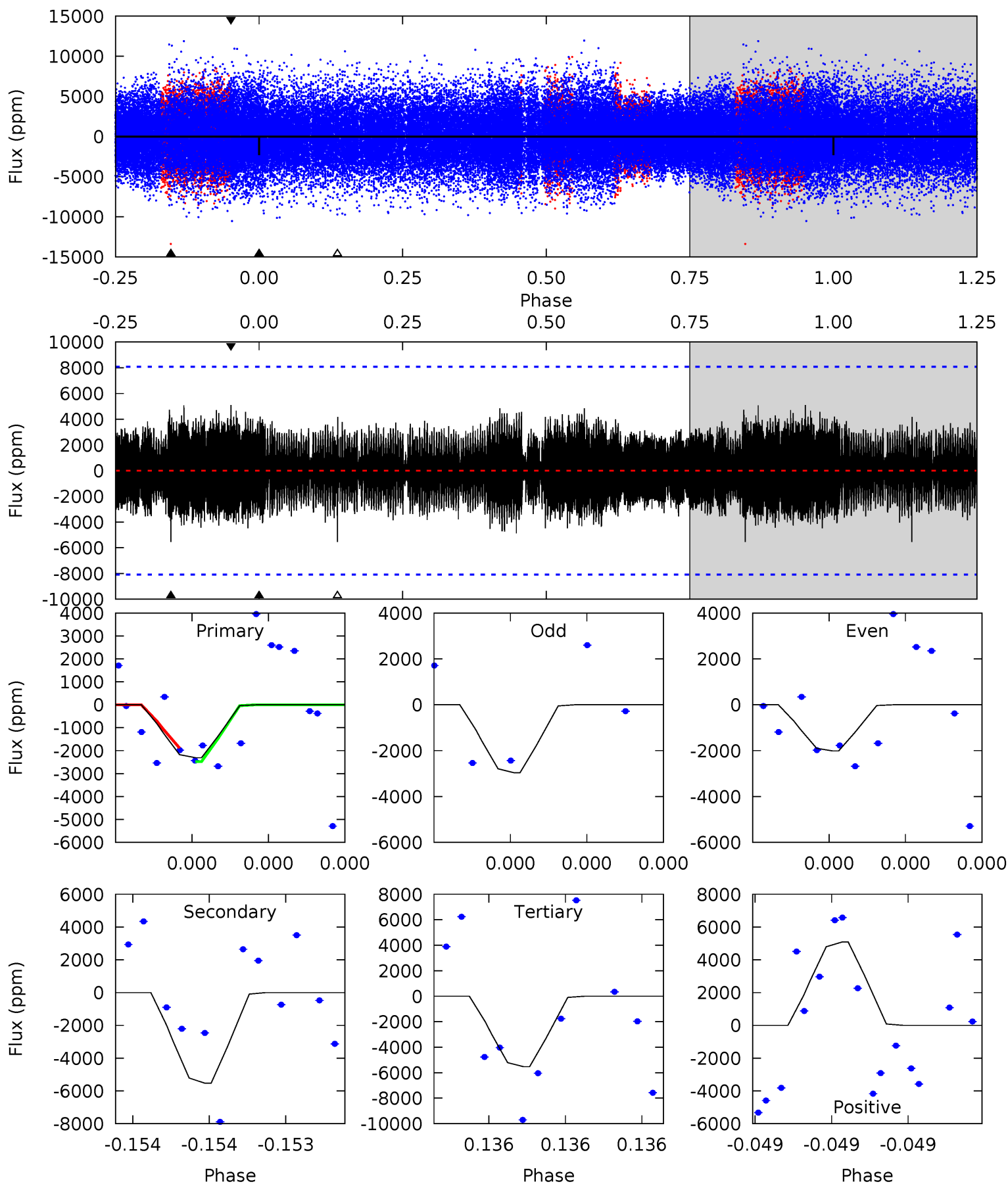
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.41	32.3	24.1	10.7	5.65	3.60	0.81	-20.7	-7.30	8.25	21.6	1.72	1.36	0.25	1.20



Alt Model-Shift Uniqueness Test

009533449-01, P = 555.411406 Days, E = 465.737860 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.69	4.04	4.04	3.72	5.90	3.96	1.06	-2.35	-2.03	0.00	0.32	0.32	0.84	0.48	0.19



Stellar Parameters For KIC 009533449

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7051^{+216}_{-312}	$4.078^{+0.246}_{-0.164}$	$-0.480^{+0.250}_{-0.300}$	$1.679^{+0.430}_{-0.478}$	$1.232^{+0.185}_{-0.166}$	$0.366^{+0.532}_{-0.163}$
	+3%/-4%	+6%/-4%	+52%/-62%	+26%/-28%	+15%/-13%	+145%/-44%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009533449-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3302 ± 102	$5.32^{+4.37}_{-3.47}$	468^{+35}_{-43}	10821^{+19747}_{-3466}	$133478^{+909085}_{-94647}$
Alt.	-5533 ± 1369	$9.50^{+5.54}_{-4.21}$	469^{+37}_{-39}	8546^{+4786}_{-2019}	$66702^{+146193}_{-41237}$

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

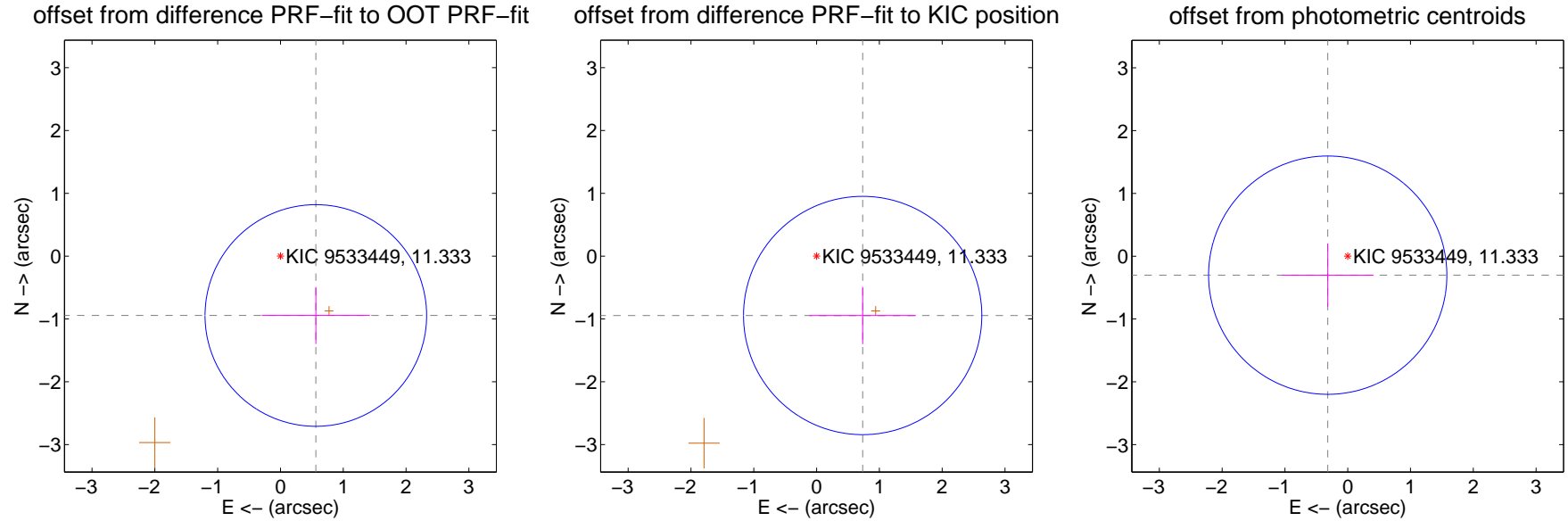
DV Centroid Data

Supplemental centroid analysis for 009533449-01. **Kepler magnitude: 11.33.** Transit SNR 7.43

There are 0 quarters with good PRF difference image offsets

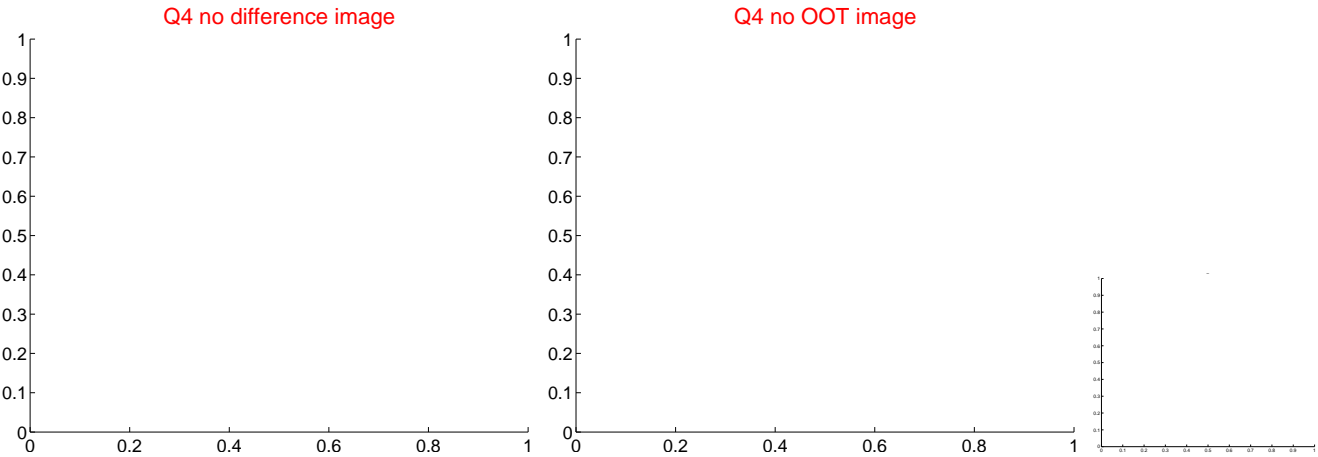
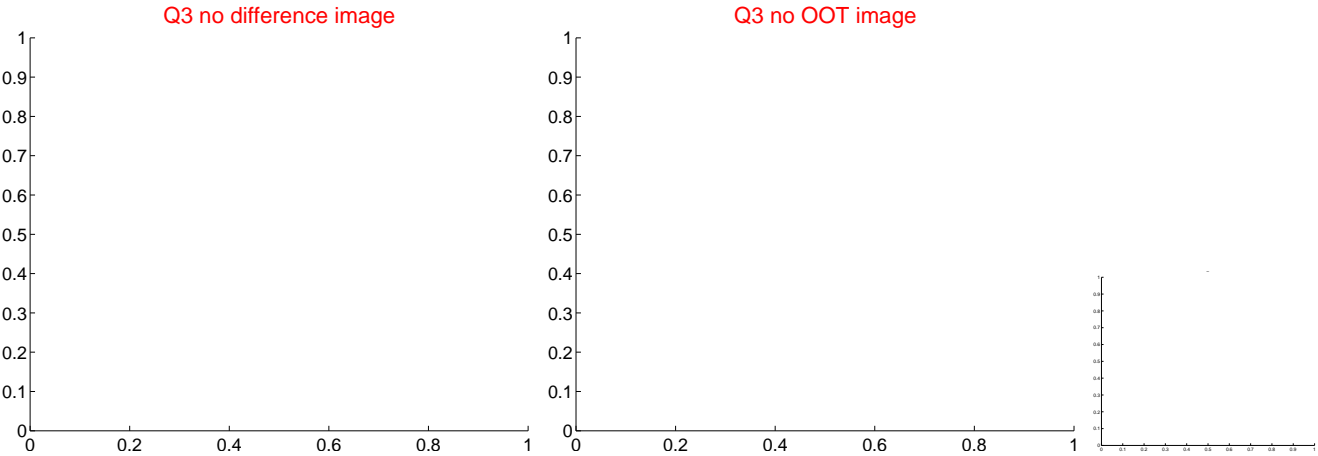
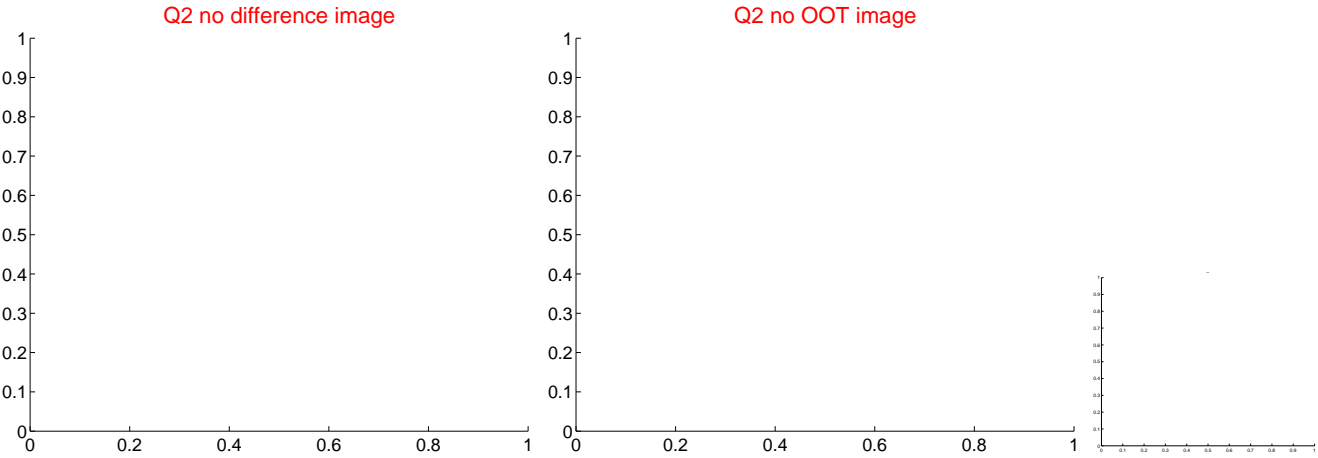
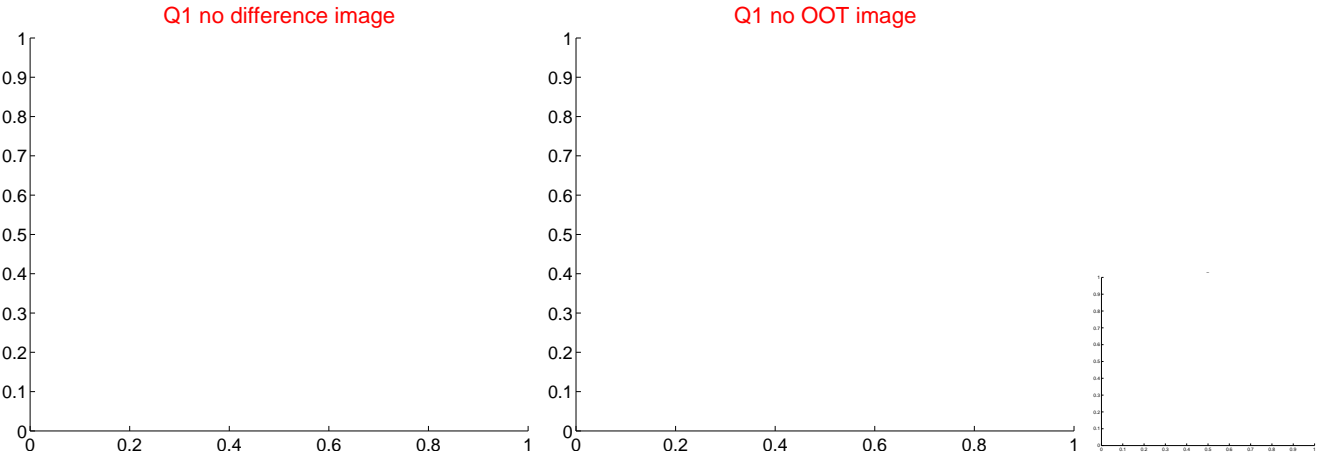
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.100 ± 0.588	1.87	-0.563 ± 0.861	-0.945 ± 0.453
PRF-fit source offset from KIC position	1.197 ± 0.632	1.89	-0.734 ± 0.848	-0.945 ± 0.455
photometric centroid source offset	0.44 ± 0.63	0.69	0.32 ± 0.73	-0.30 ± 0.50

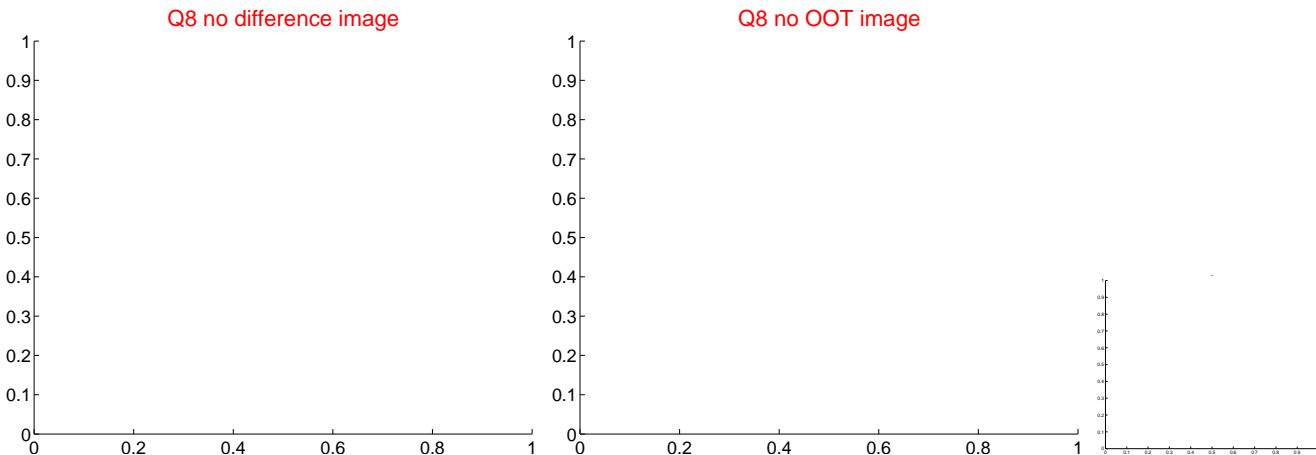
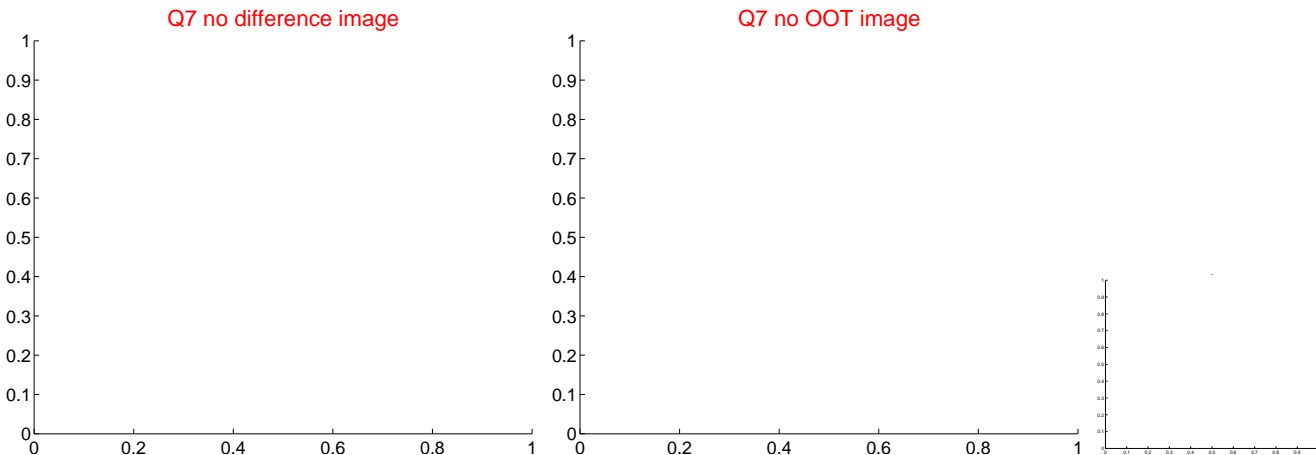
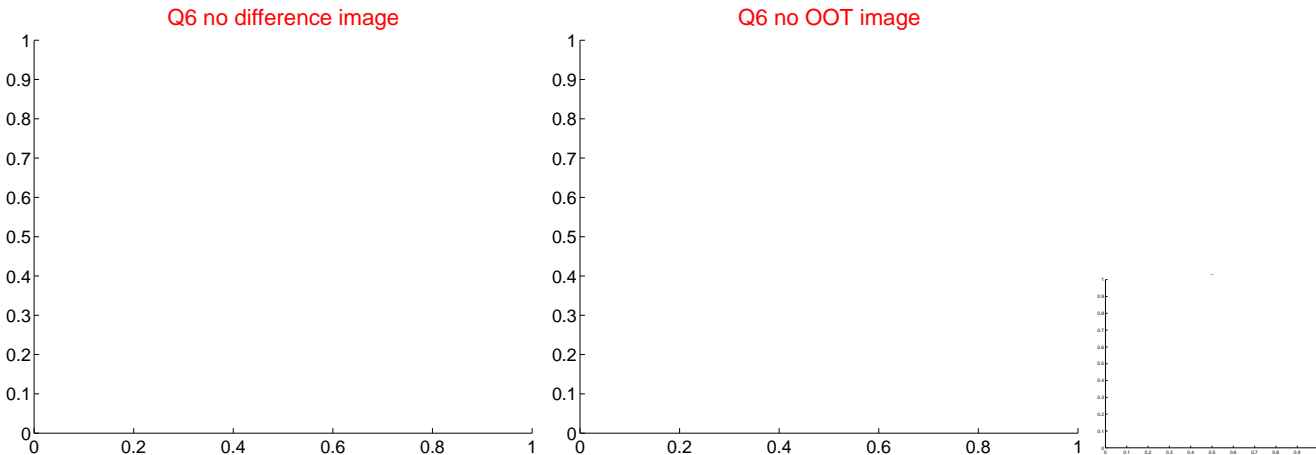
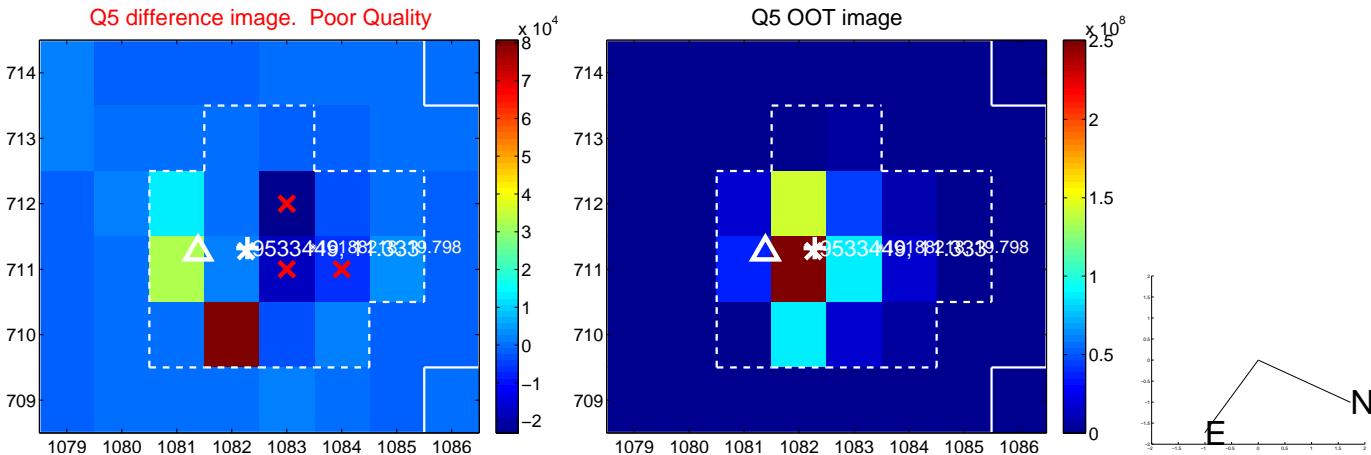


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



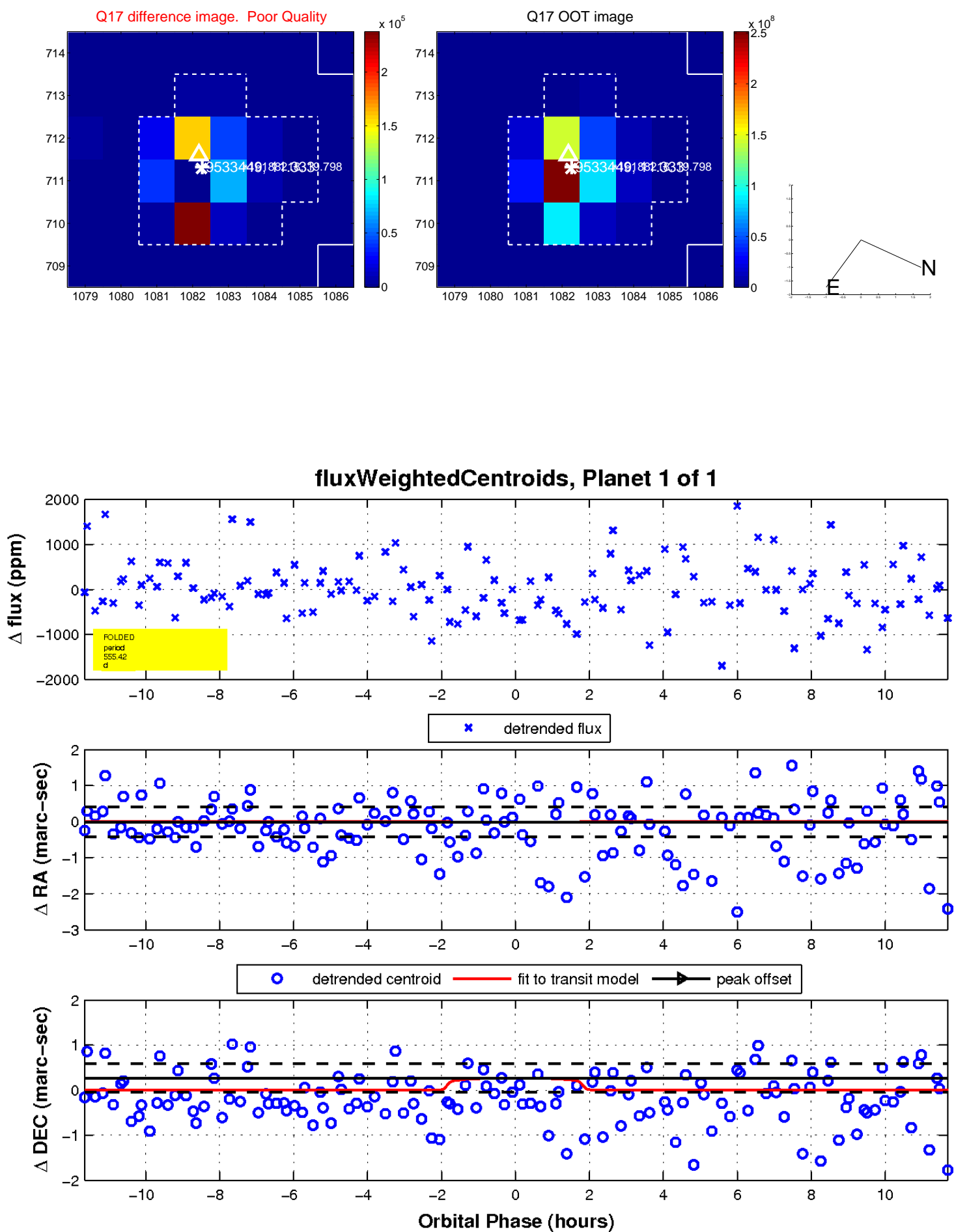
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

