

KIC 009221517

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})
009221517-01	OBS	2281.01	0.769854	131.750465	107.0	1.073	17.0	28.4	0.82	5173	1.04	1753.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009221517-01	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

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

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

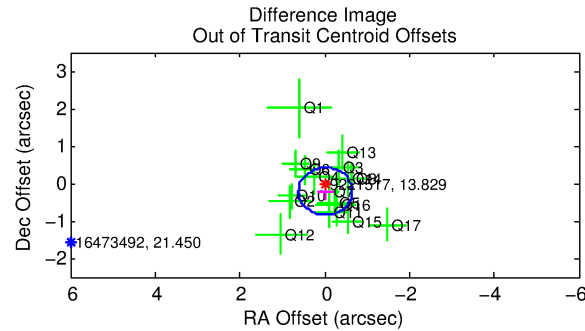
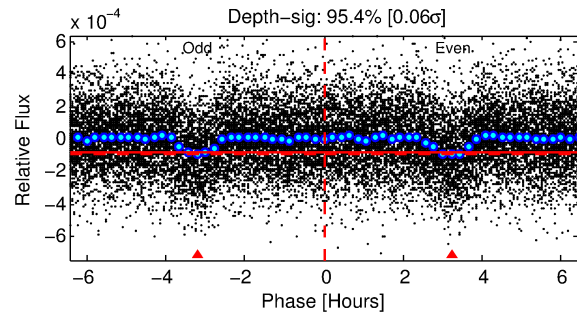
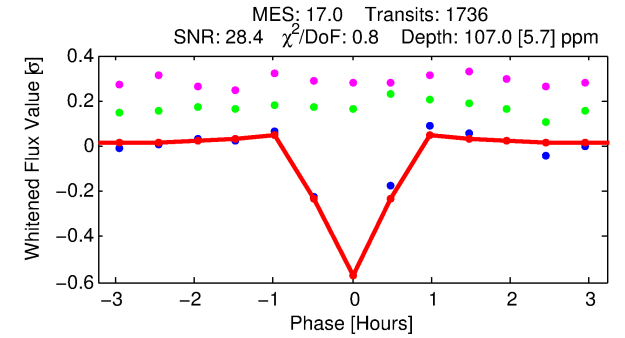
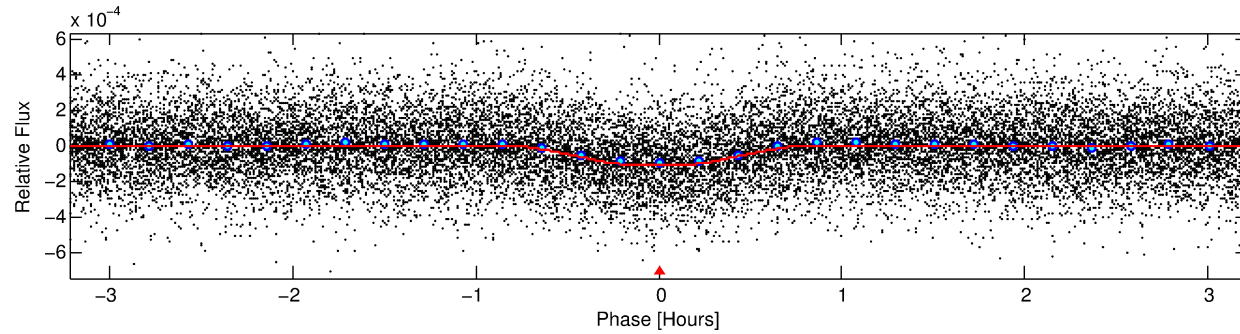
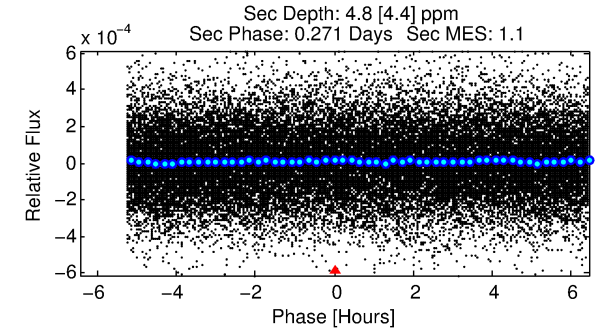
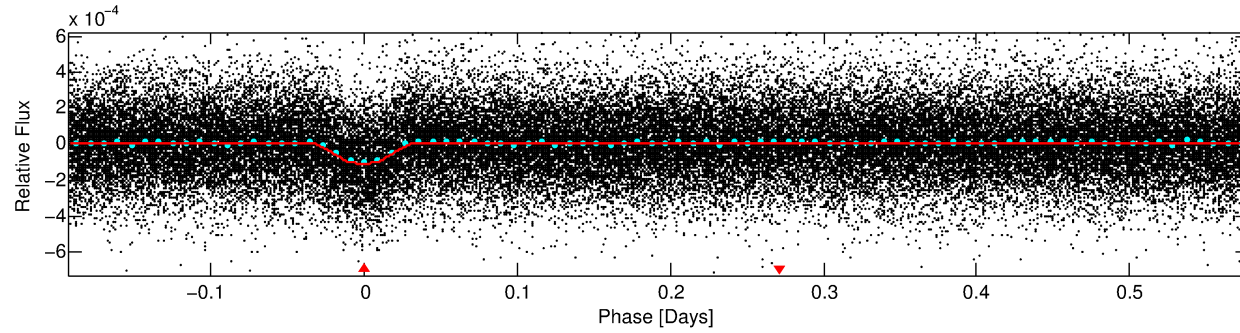
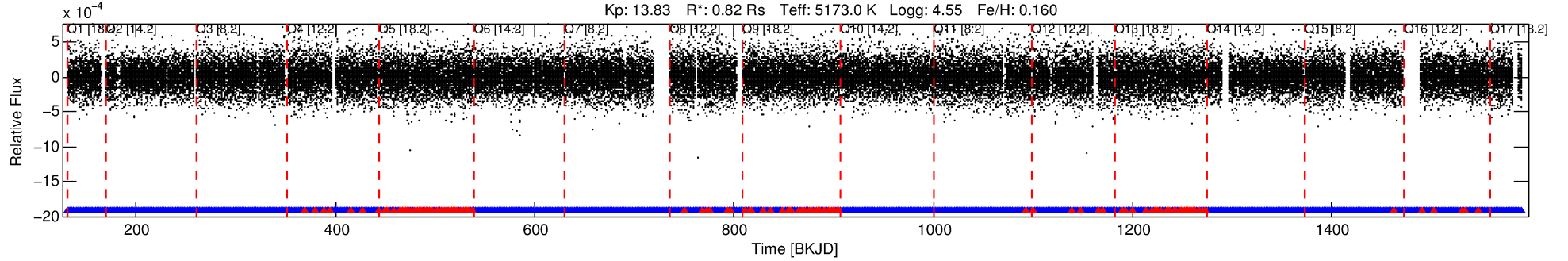
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009221517-01

No Significant Match Found

DV One-Page Summary

KIC: 9221517 Candidate: 1 of 1 Period: 0.770 d
KOI: K02281.01 Corr: 0.979



DV Fit Results:

Period = 0.76985 [0.00000] d
Epoch = 131.7505 [0.0006] BKJD
Rp/R* = 0.0116 [0.0040]
a/R* = 2.73 [3.33]
b = 0.90 [0.32]
Seff = 1753.48 [356.82]
Teq = 1650 [84] K
Rp = 1.04 [0.38] Re
a = 0.0157 [0.0018] AU
Ag = 0.60 [0.70] [-0.57σ]
Teffp = 2247 [650] K [0.91σ]

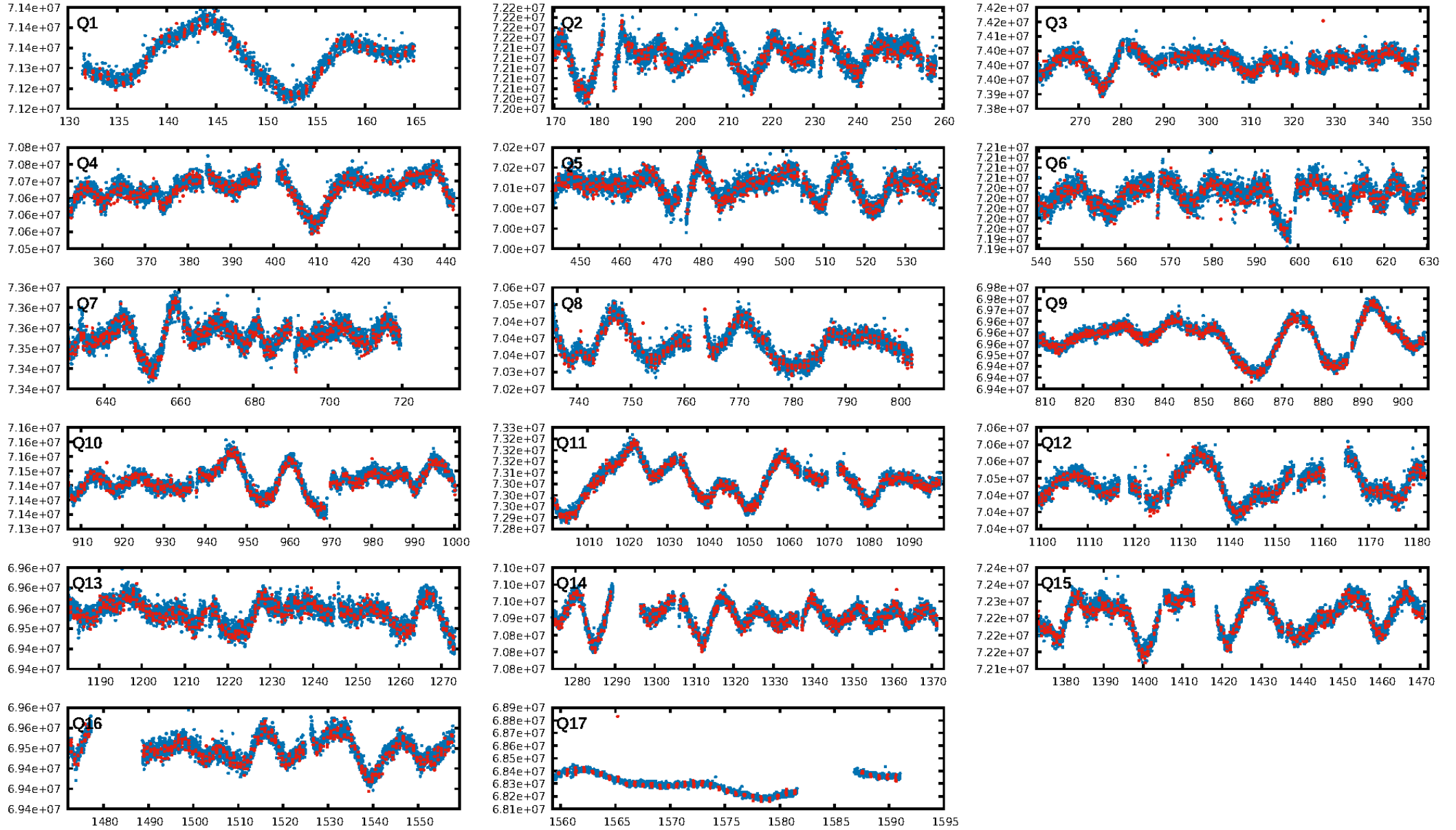
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.85e-61
RollingBand-fgt: 0.91 [1510/1658]
GhostDiagnostic-chr: -7.019
Centroid-sig: 1.3%
Centroid-so: 0.889 arcsec [2.22σ]
OotOffset-rm: 0.216 arcsec [1.02σ]
KicOffset-rm: 0.520 arcsec [2.67σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

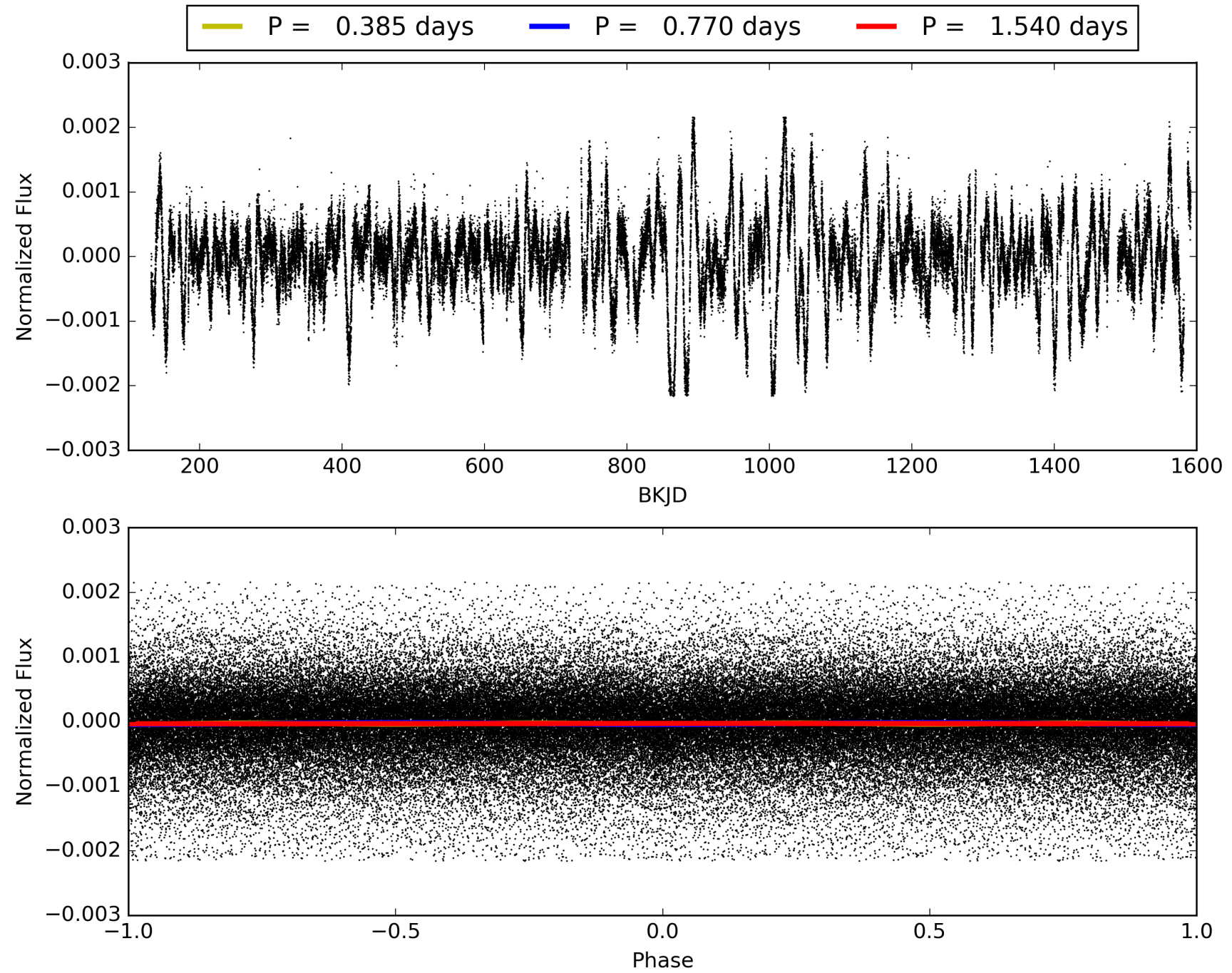
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:37:10 Z

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

TCE 009221517-01, PDC Light Curves

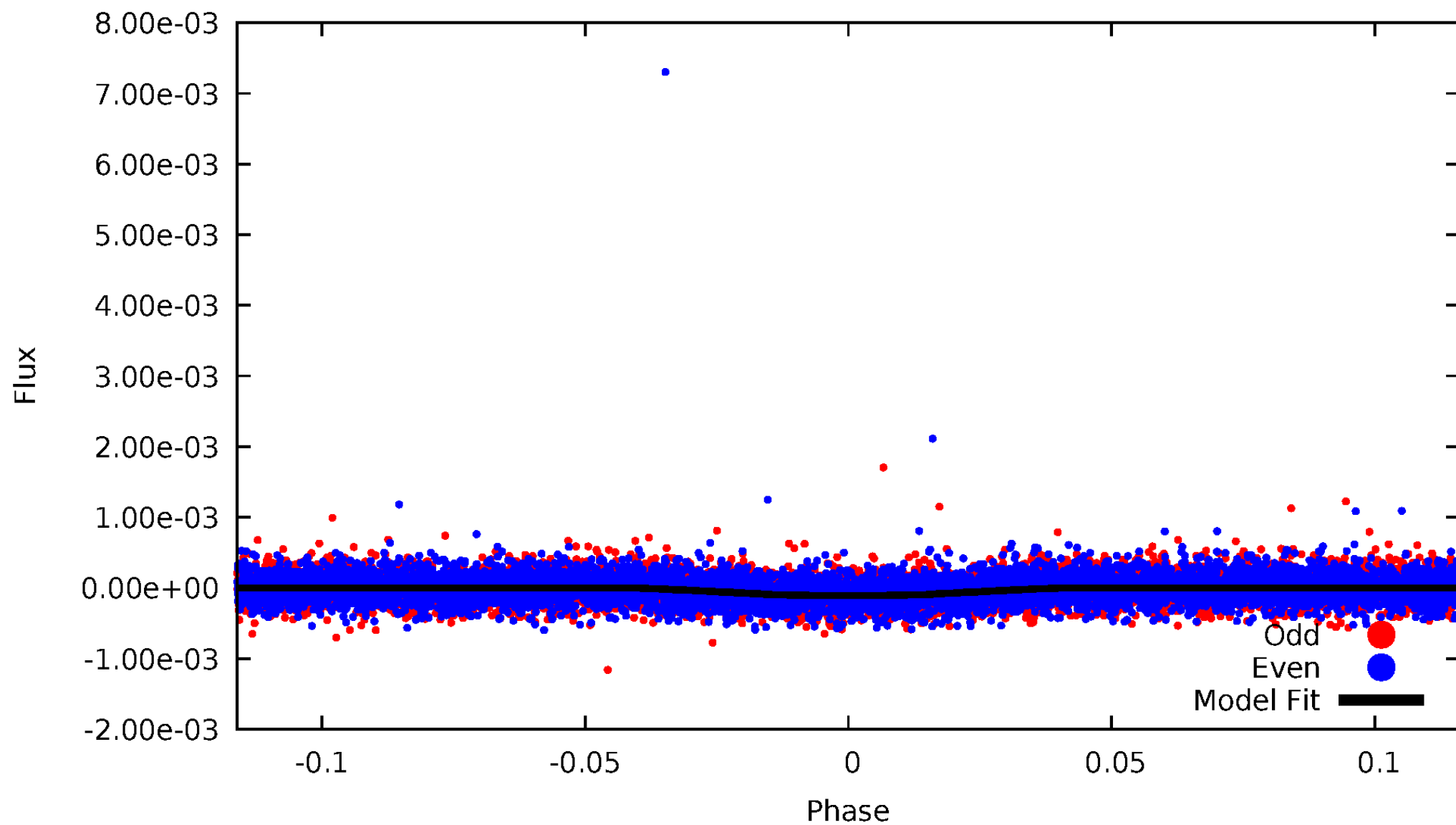


TCE 009221517-01



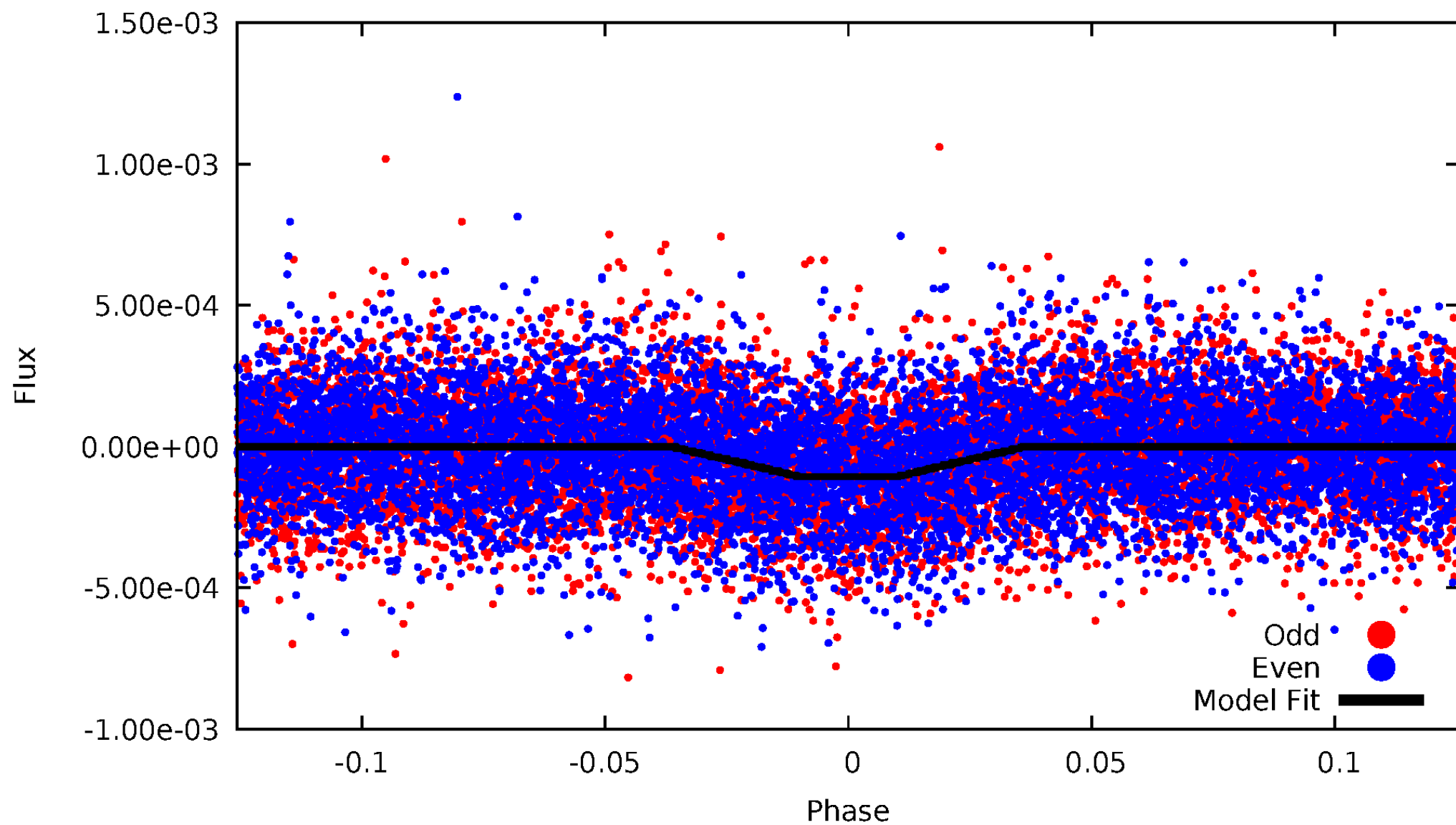
DV Odd/Even

TCE 009221517-01

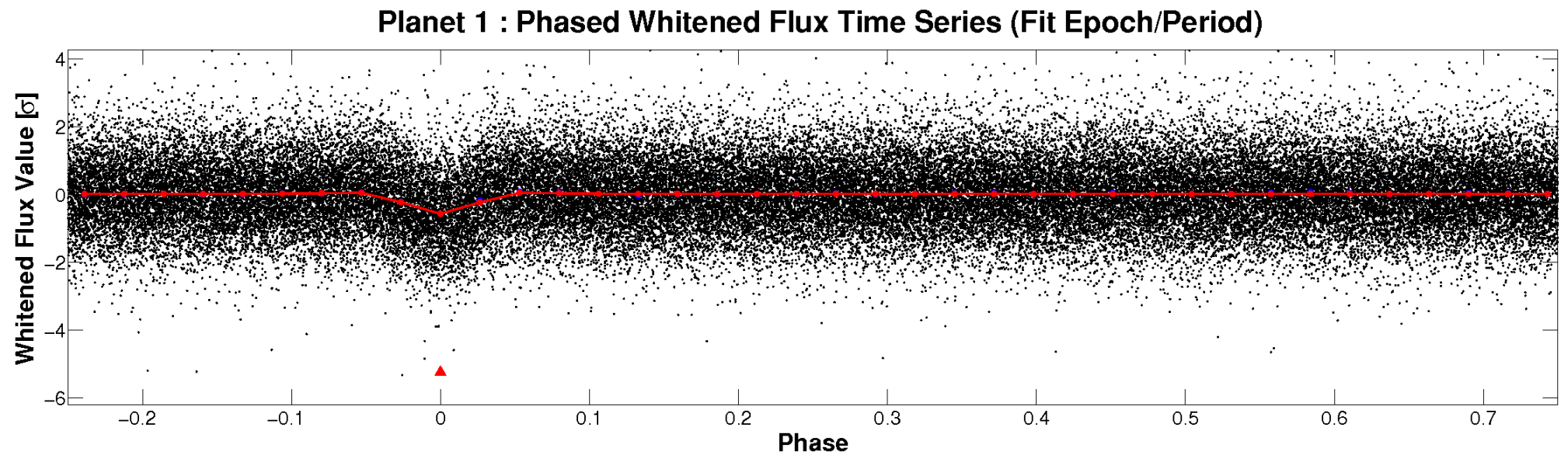
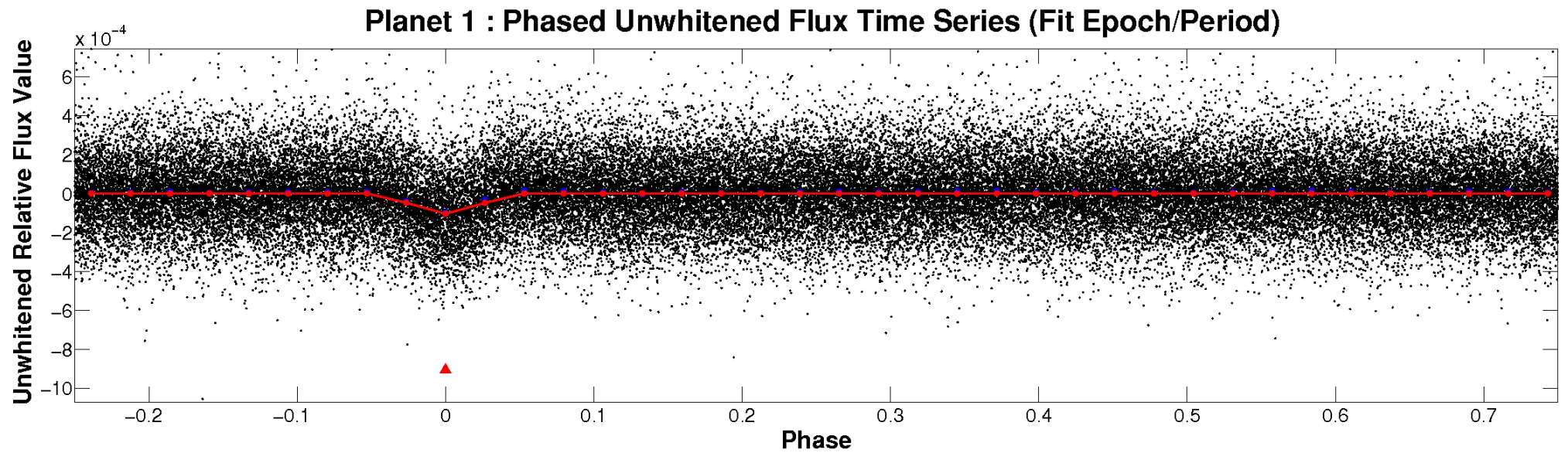


ALT Odd/Even

TCE 009221517-01

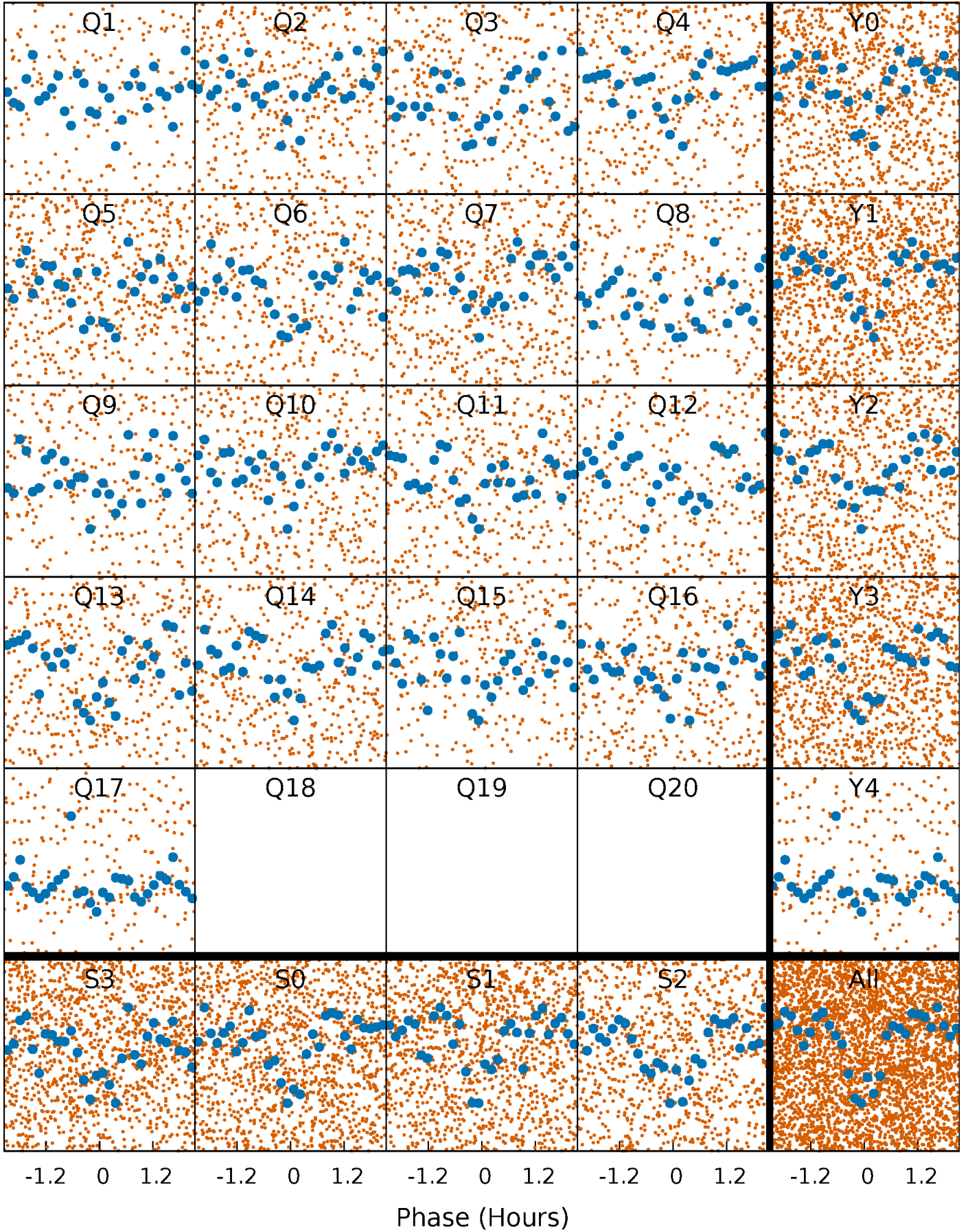


Non-Whitened Vs. Whitened Light Curve



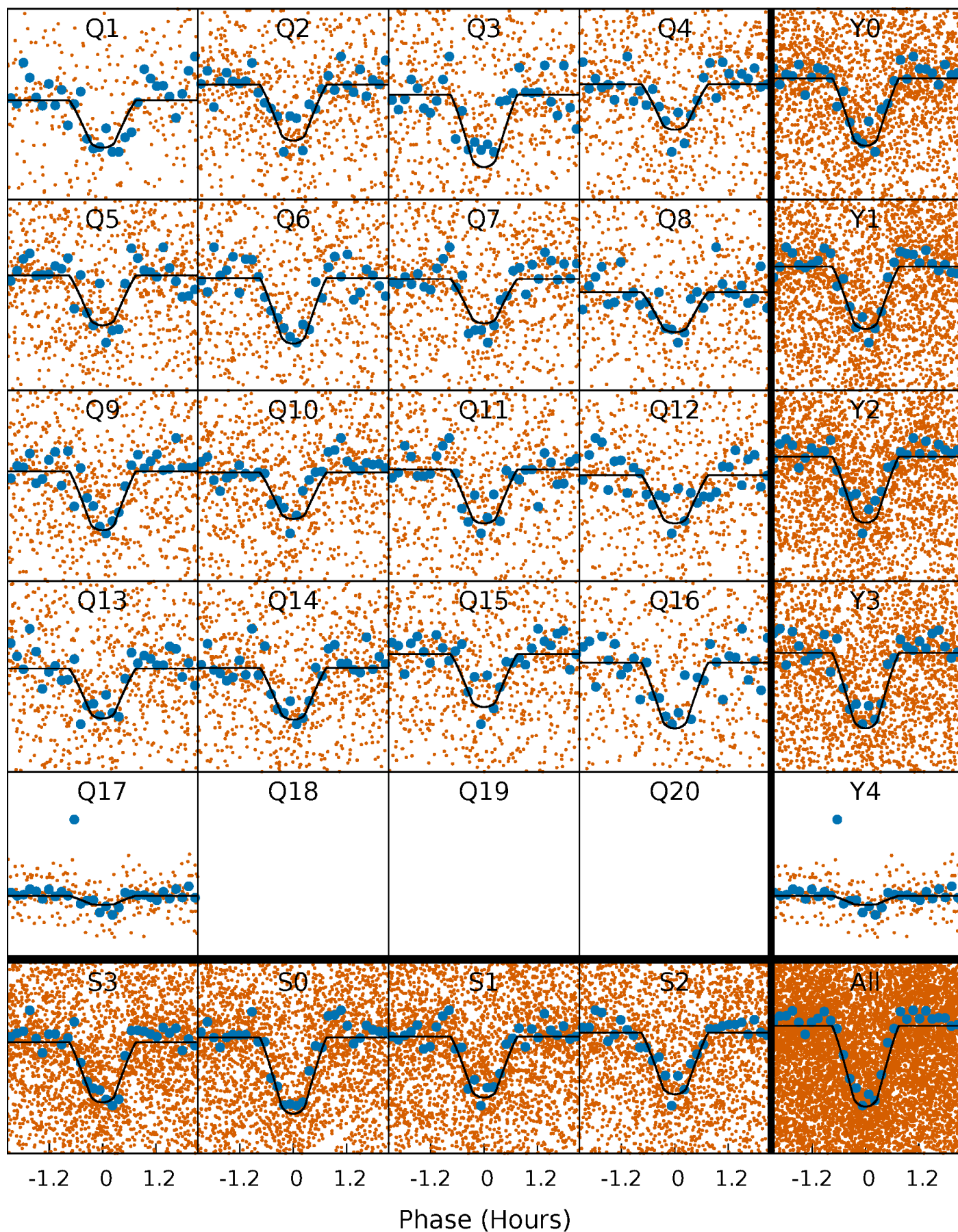
PDC Quarter-Phased Transit Curves

TCE 009221517-01 P= 0.769854 Days $T_0=131.750465$ (BKJD)



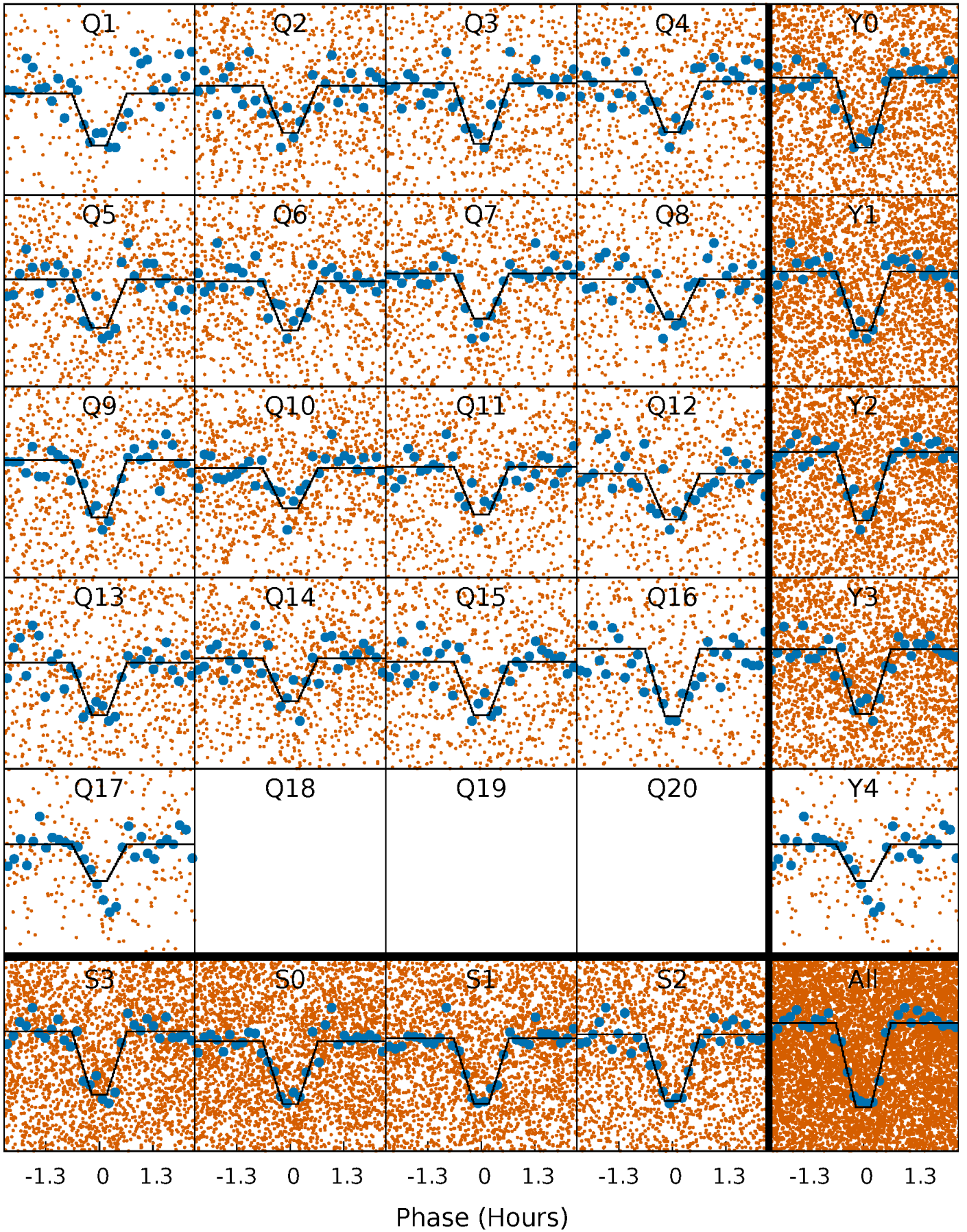
DV Quarter-Phased Transit Curves

TCE 009221517-01 P= 0.769854 Days $T_0=131.750465$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

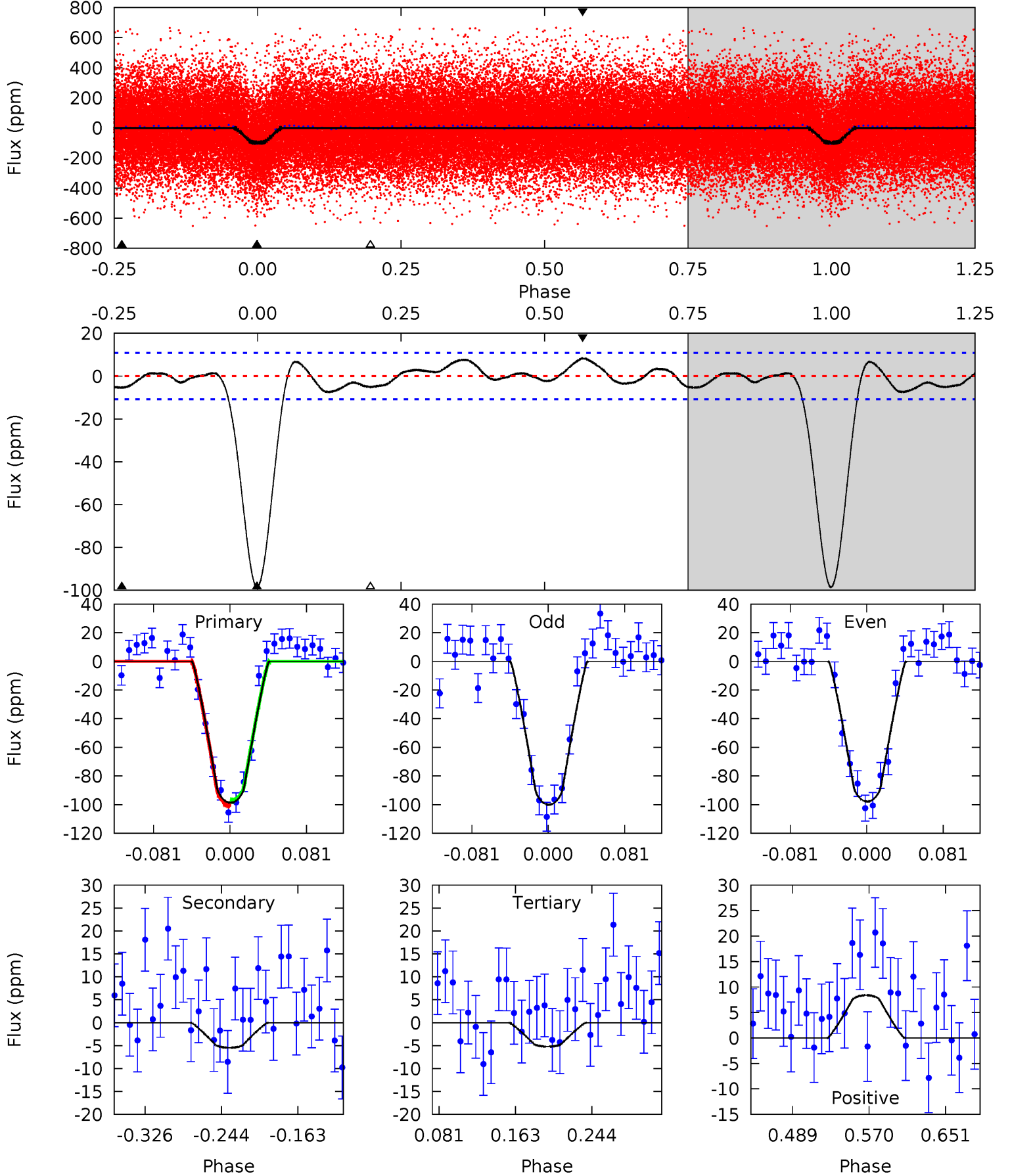
TCE 009221517-01 P= 0.769851 Days $T_0=131.753037$ (BKJD)



DV Model-Shift Uniqueness Test

009221517-01, P = 0.769854 Days, E = 130.980611 Days

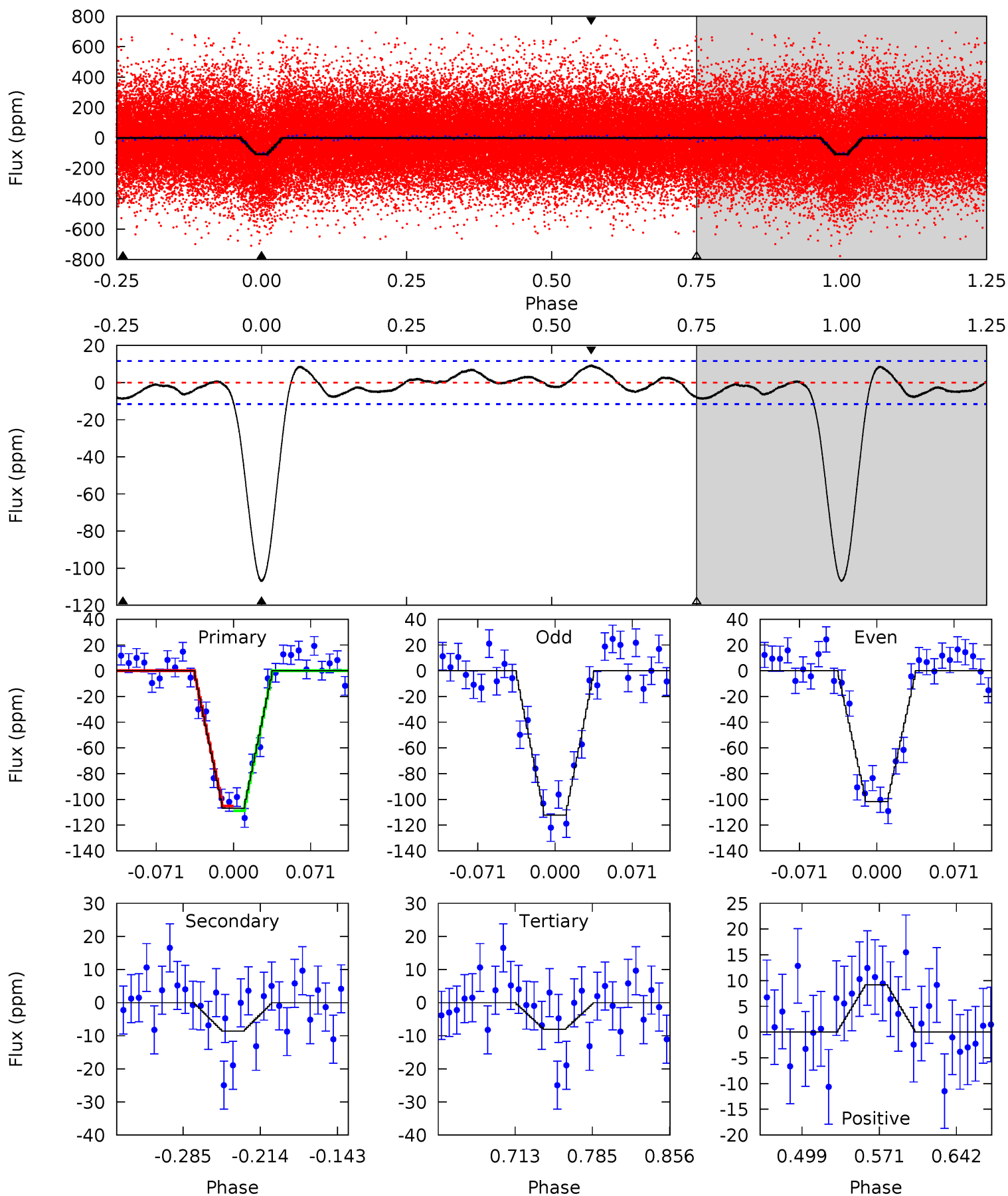
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.0	2.33	2.23	3.58	4.61	1.74	1.59	39.8	38.5	0.10	-1.25	0.47	0.96	0.08	0.69



Alt Model-Shift Uniqueness Test

009221517-01, P = 0.769851 Days, E = 130.983186 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.6	3.43	3.22	3.66	4.64	1.80	1.57	39.4	39.0	0.21	-0.23	2.09	0.98	0.08	0.74



Stellar Parameters For KIC 009221517

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5173^{+155}_{-139}	$4.550^{+0.039}_{-0.091}$	$0.160^{+0.250}_{-0.300}$	$0.822^{+0.107}_{-0.063}$	$0.874^{+0.057}_{-0.077}$	$2.219^{+0.429}_{-0.620}$
	+3%/-3%	+1%/-2%	+156%/-188%	+13%/-8%	+7%/-9%	+19%/-28%
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 009221517-01 / KOI 2281.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5 ± 2	$1.05^{+0.38}_{-0.36}$	2332^{+96}_{-86}	2709^{+584}_{-4666}	$0.626^{+1.018}_{-0.345}$
Alt.	-9 ± 3	$0.91^{+0.40}_{-0.34}$	2330^{+92}_{-81}	3177^{+679}_{-484}	$1.346^{+2.414}_{-0.736}$

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 $A_{obs} \gg 1.0$

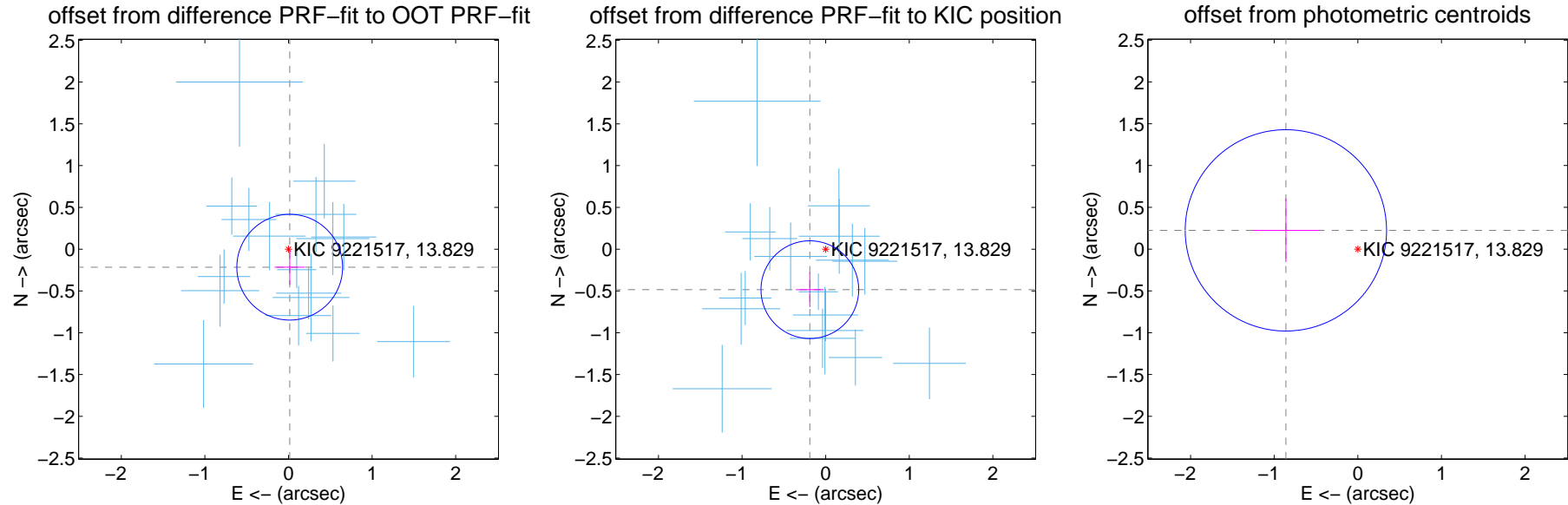
DV Centroid Data

Supplemental centroid analysis for 009221517-01. Kepler magnitude: 13.83. Transit SNR 28.42

There are 17 quarters with good PRF difference image offsets

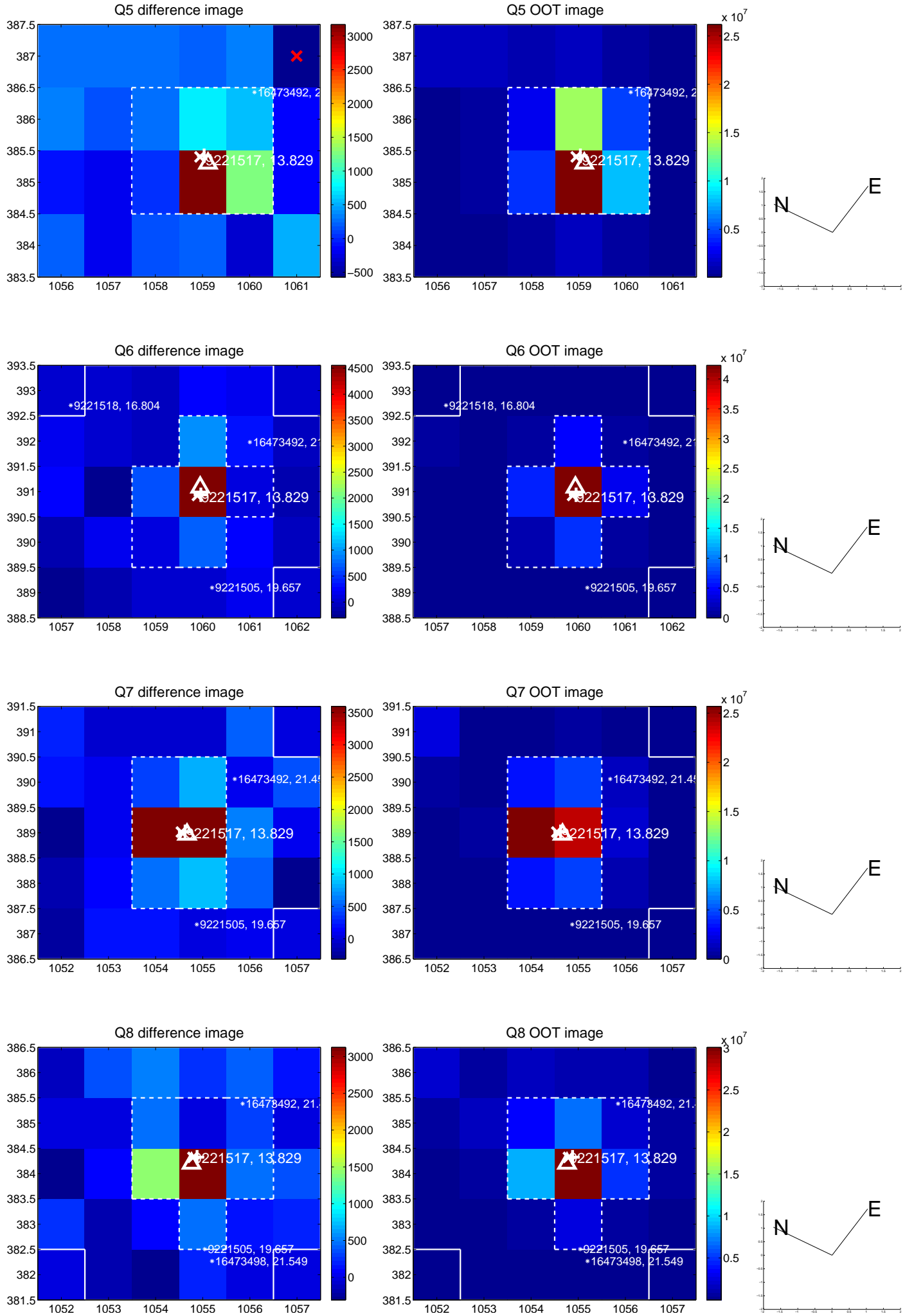
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.216 ± 0.211	1.02	-0.015 ± 0.181	-0.215 ± 0.209
PRF-fit source offset from KIC position	0.520 ± 0.195	2.67	0.189 ± 0.168	-0.484 ± 0.208
photometric centroid source offset	0.89 ± 0.40	2.22	0.86 ± 0.40	0.22 ± 0.38

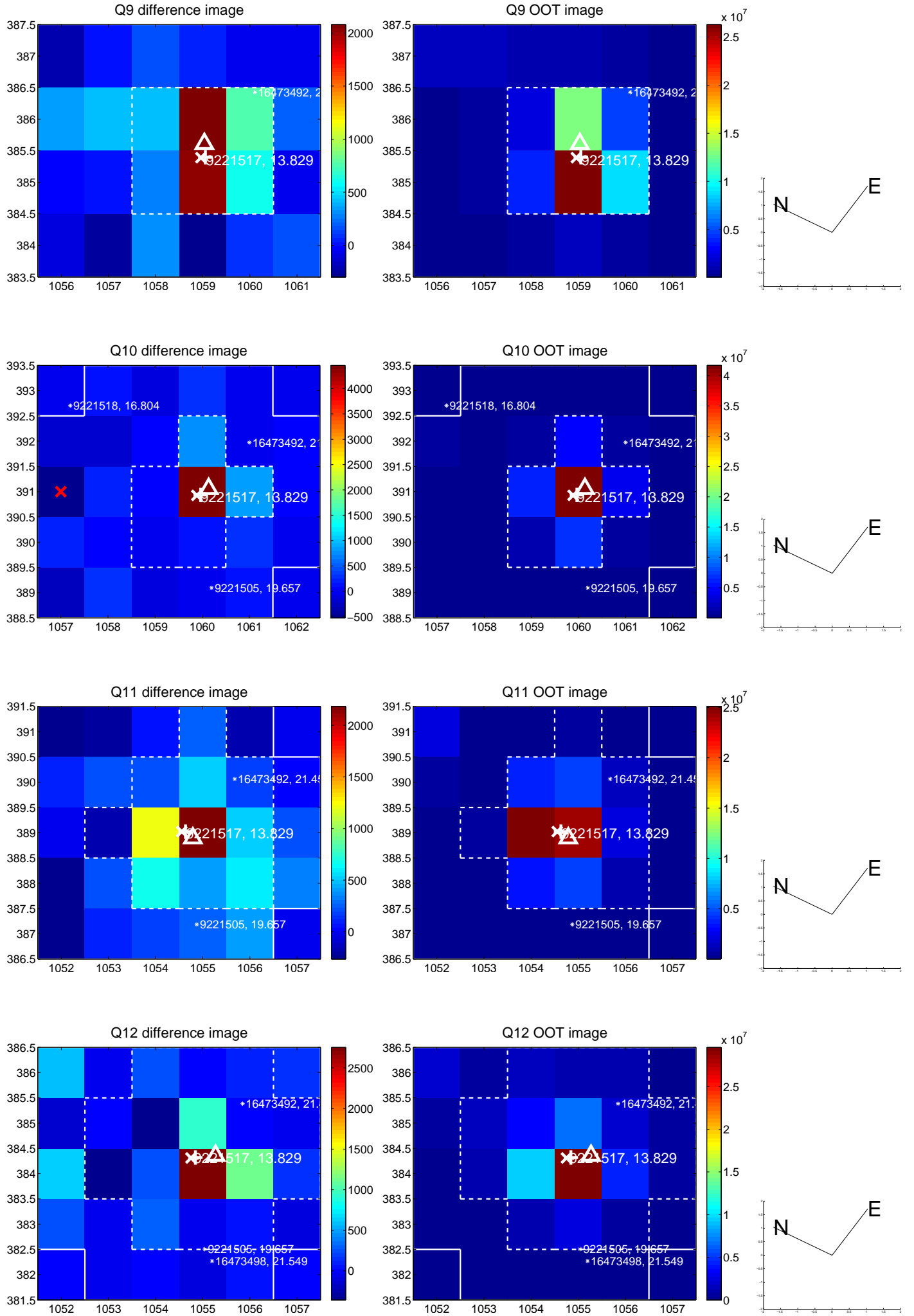


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

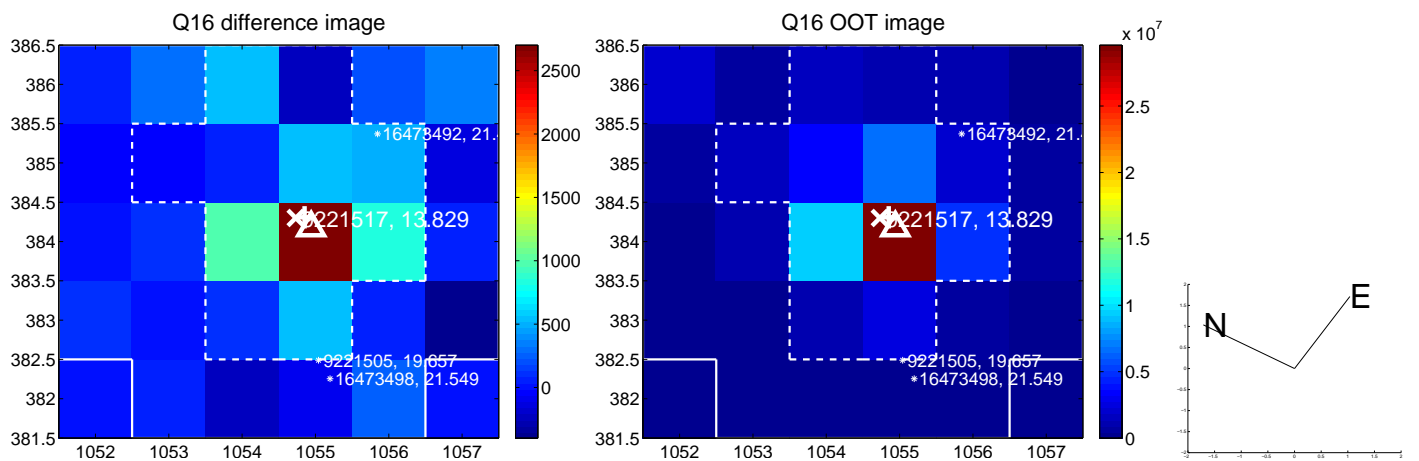
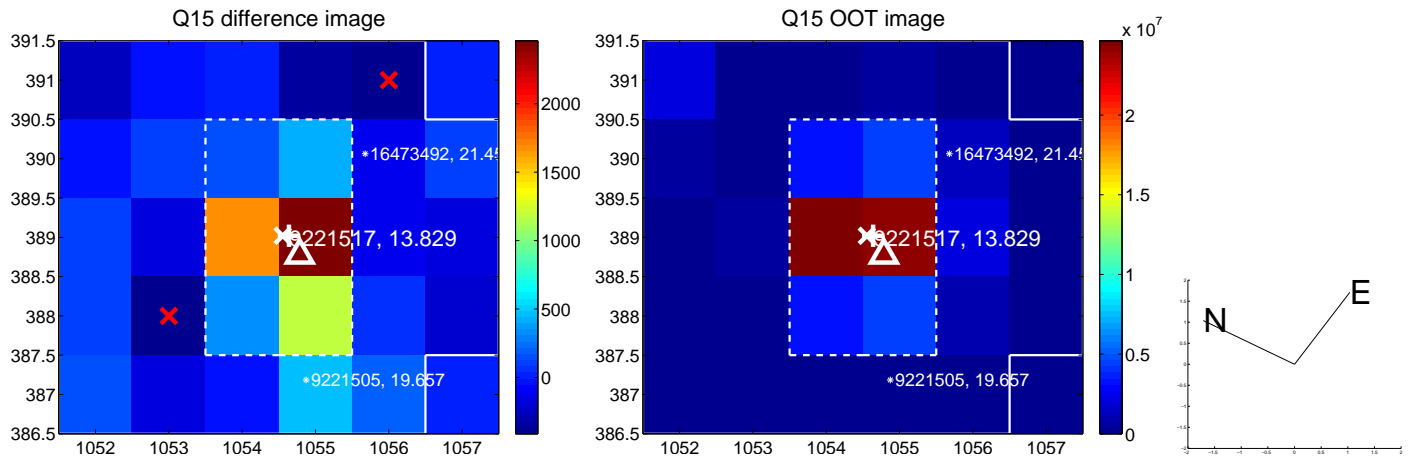
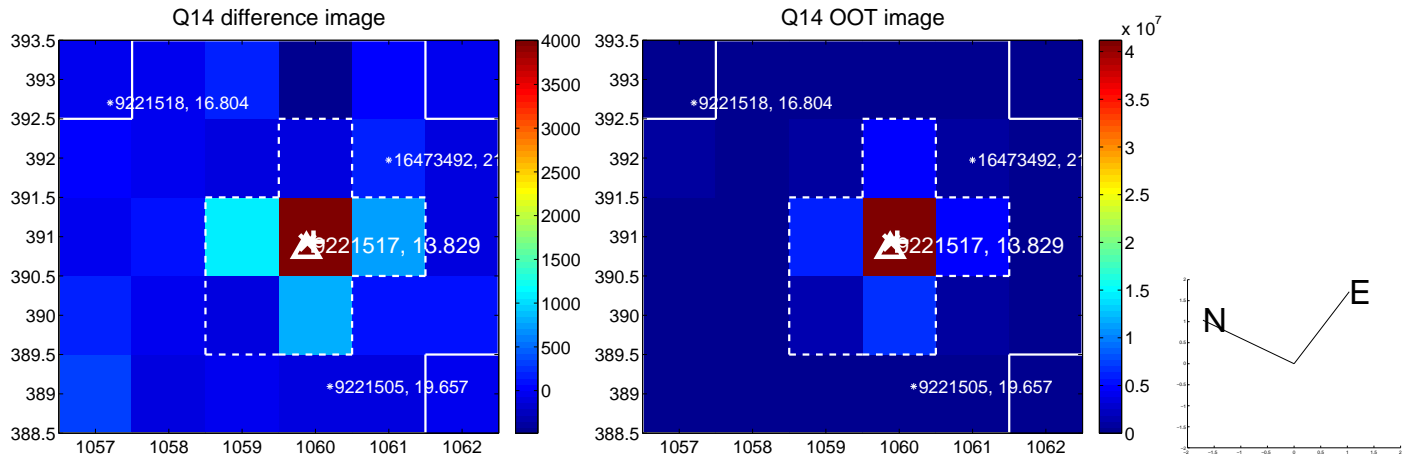
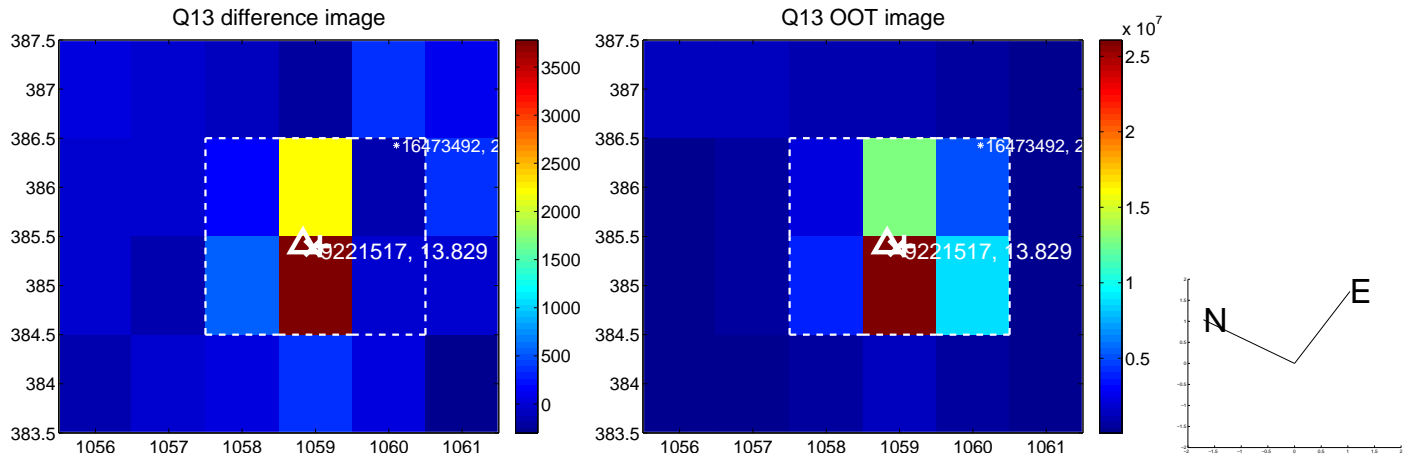
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



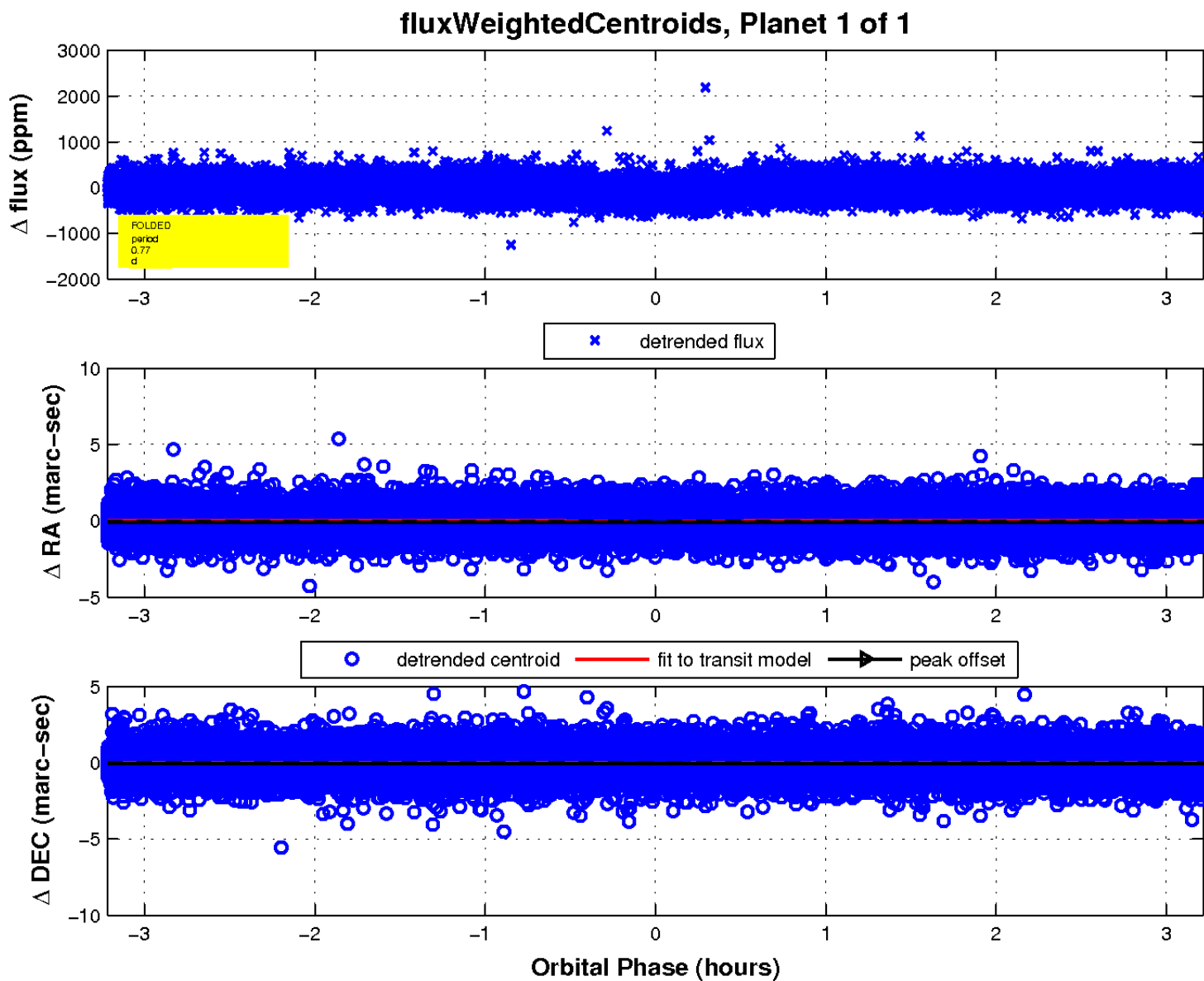
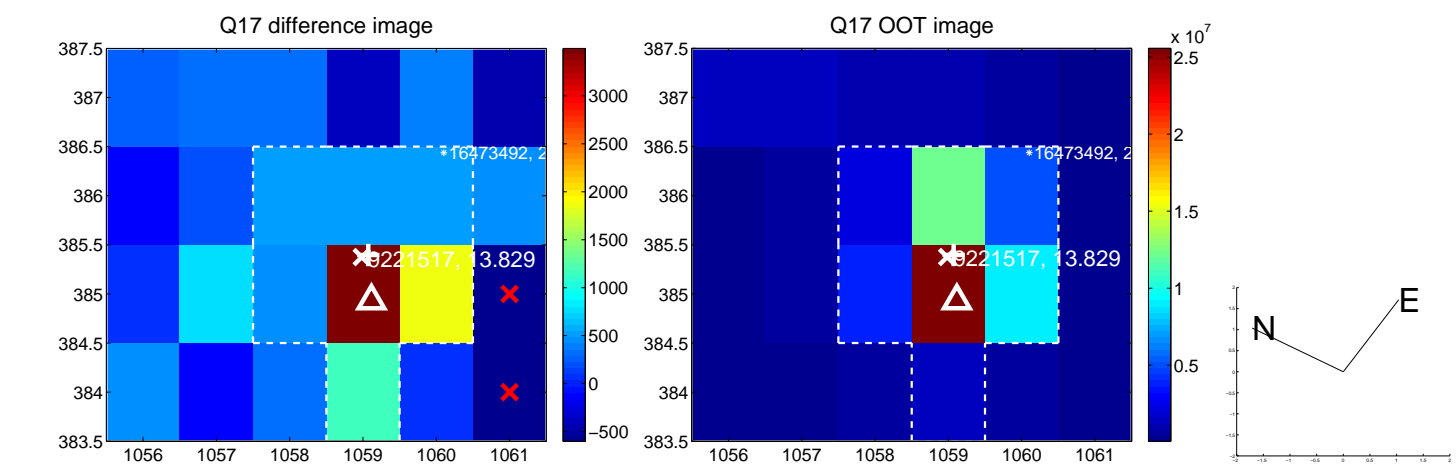
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

