

KIC 004178389

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})
004178389-01	OBS	0185.01	23.210510	134.386361	28558.2	3.100	1094.0	1015.5	0.81	5875	20.77	29.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004178389-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

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.

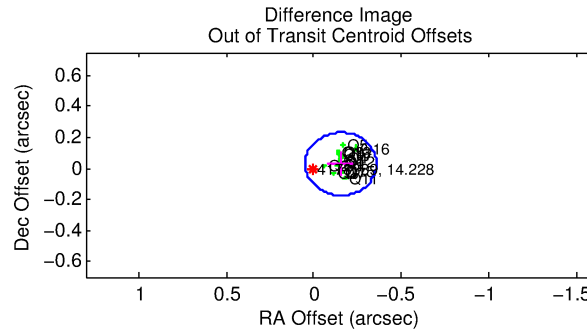
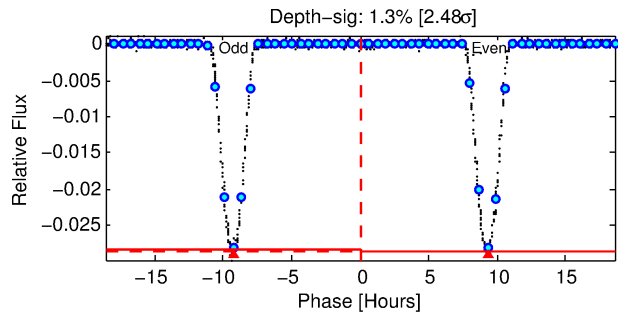
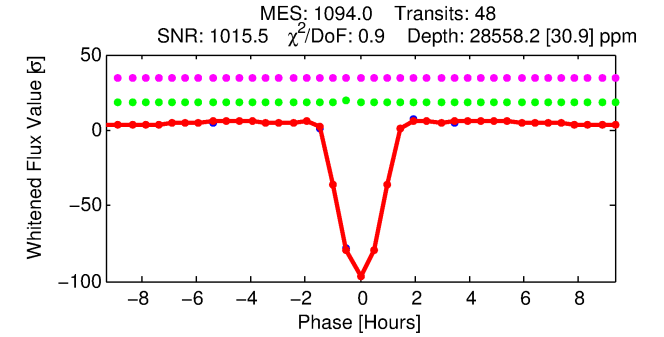
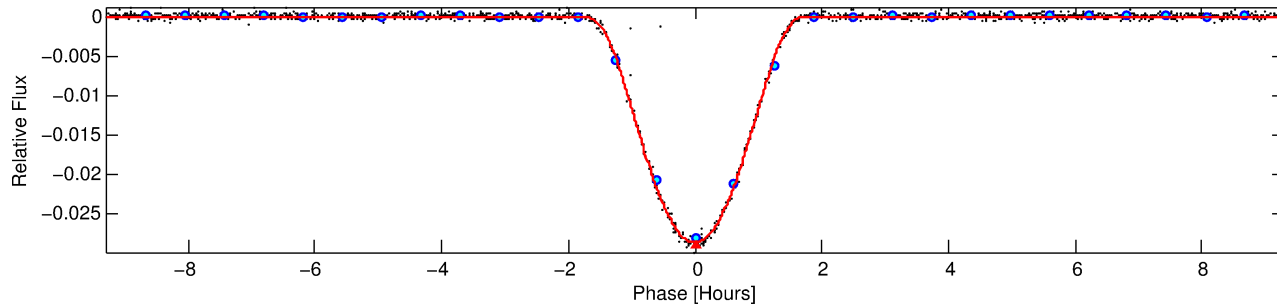
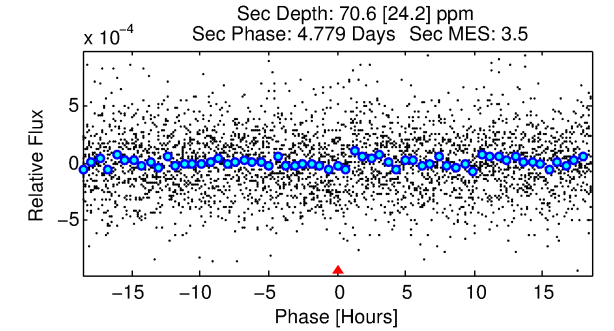
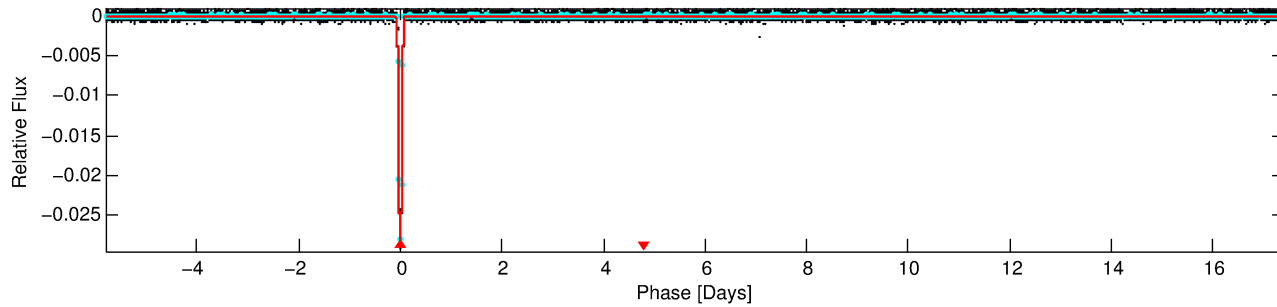
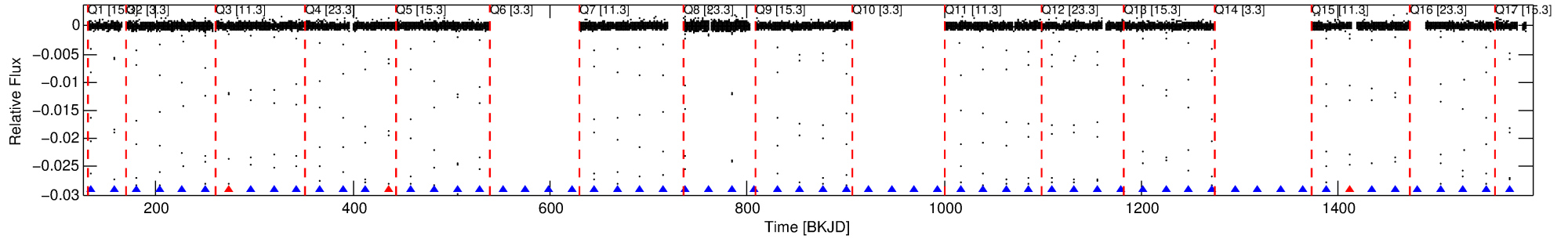
Ephemeris Match Information For 004178389-01

No Significant Match Found

DV One-Page Summary

KIC: 4178389 Candidate: 1 of 1 Period: 23.211 d
KOI: K00185.01 Corr: 0.999

Kp: 14.23 R*: 0.81 Rs Teff: 5875.0 K Logg: 4.57 Fe/H: -0.420



DV Fit Results:

Period = 23.21051 [0.00000] d
Epoch = 134.3864 [0.0001] BKJD
Rp/R* = 0.2353 [0.0091]
a/R* = 45.25 [0.23]
b = 0.95 [0.01]
Seff = 29.74 [10.50]
Teq = 595 [53] K
Rp = 20.77 [5.48] Re
a = 0.1533 [0.0346] AU
Ag = 2.11 [1.03] [1.08σ]
Teff = 1110 [102] K [4.48σ]

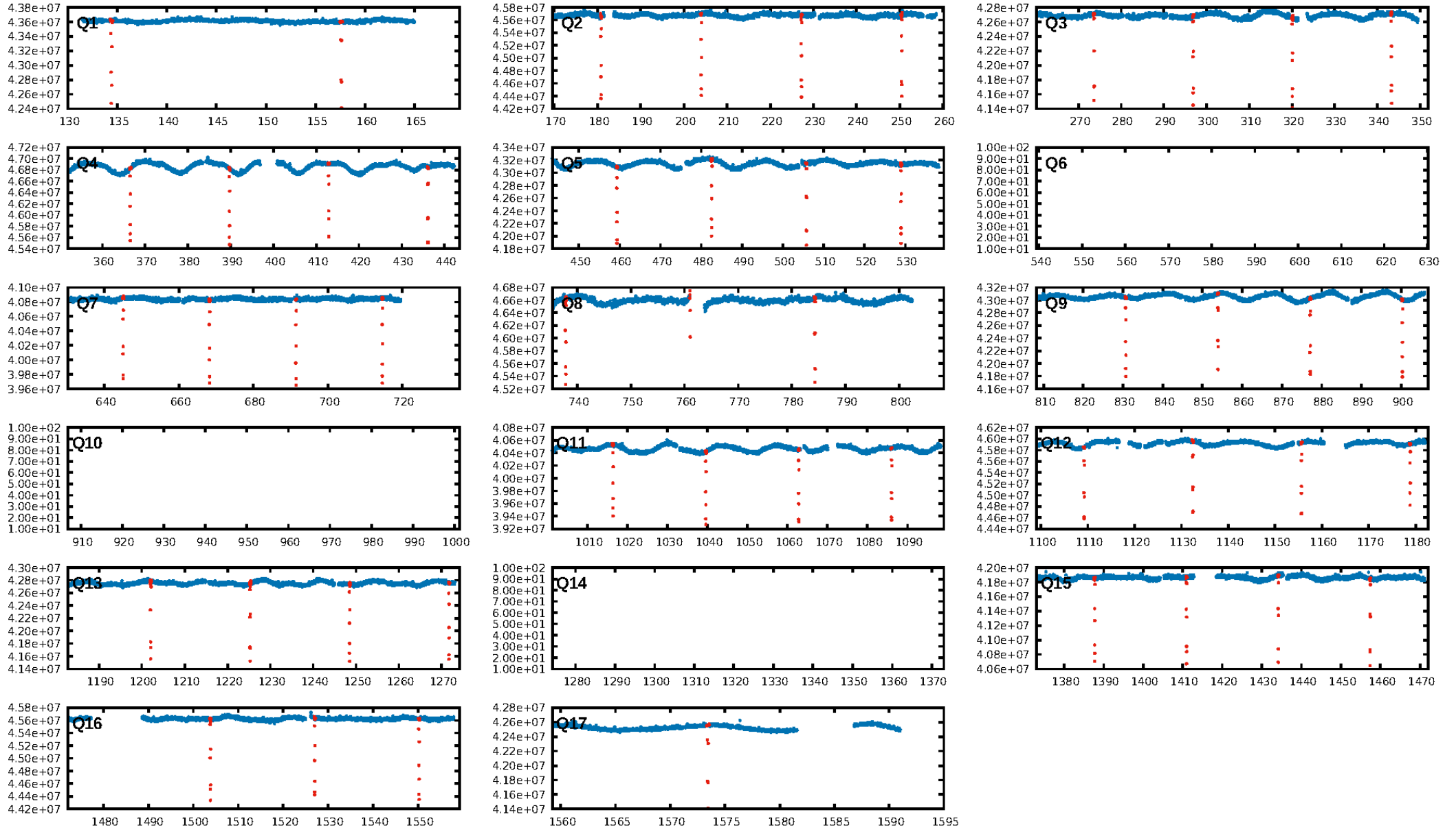
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.93 [42/45]
GhostDiagnostic-chr: 6.973
Centroid-sig: 0.0%
Centroid-so: 0.101 arcsec [7.94σ]
OotOffset-rm: 0.156 arcsec [2.30σ]
KicOffset-rm: 0.060 arcsec [0.88σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

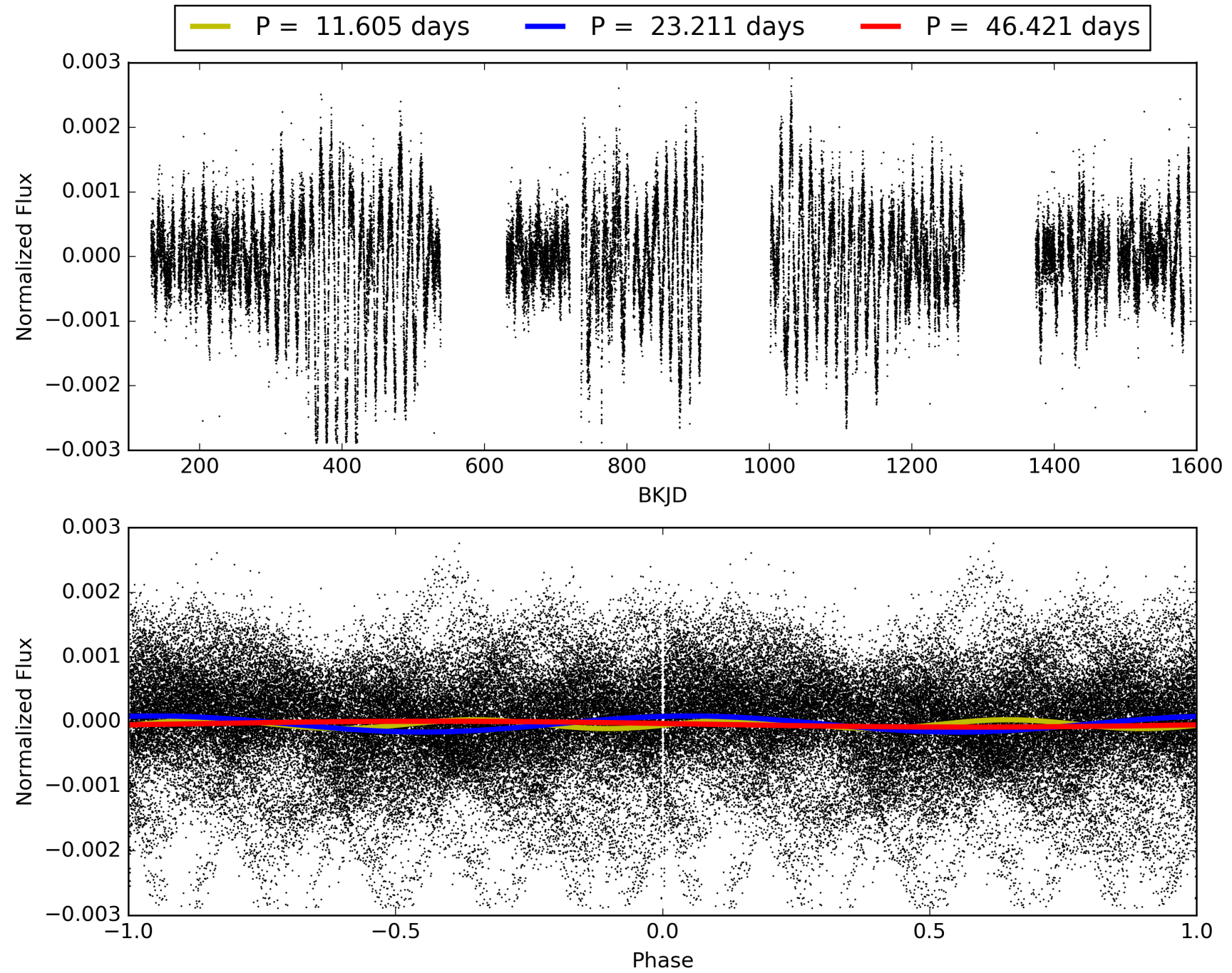
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:33:54 Z

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

TCE 004178389-01, PDC Light Curves

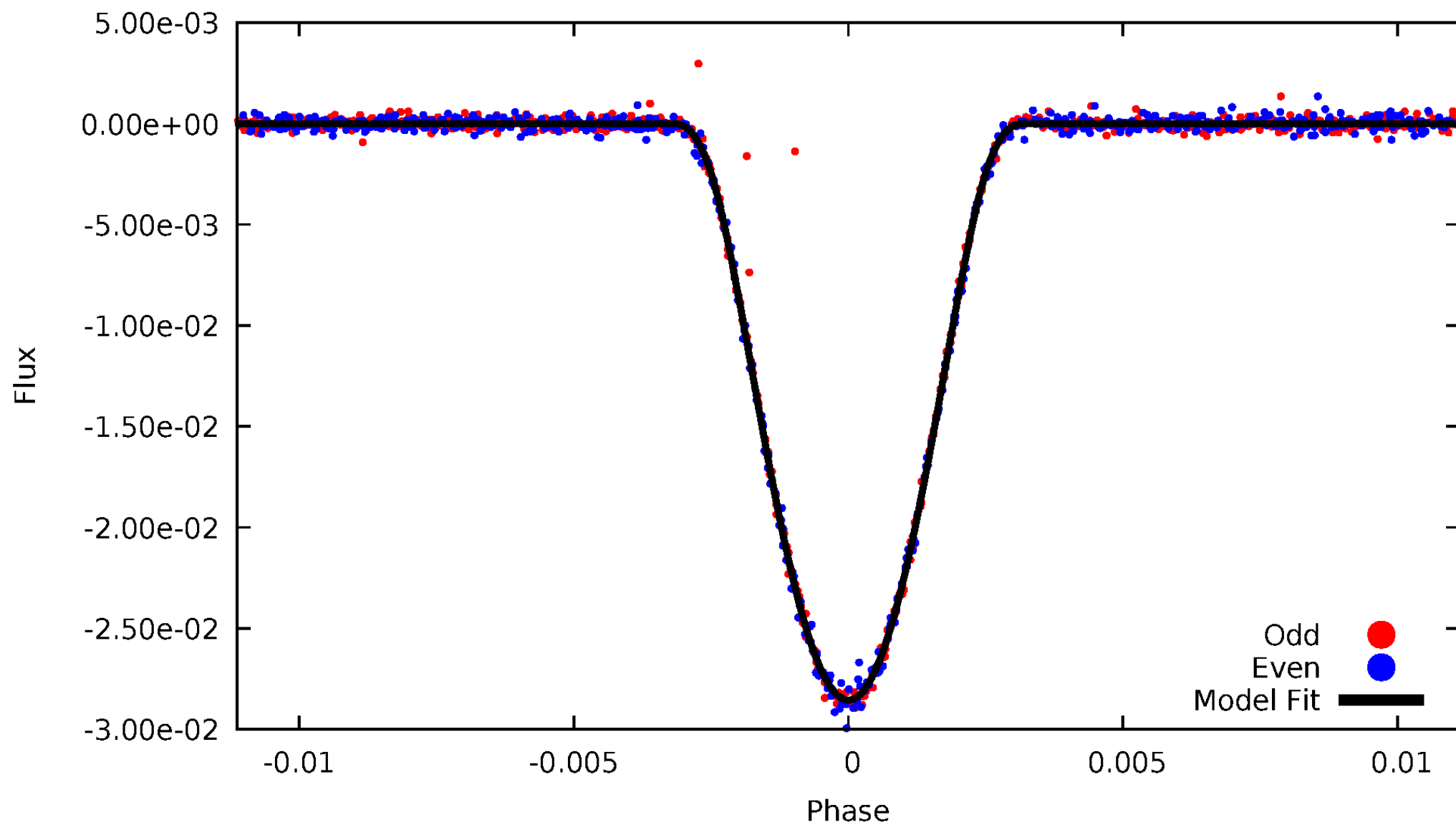


TCE 004178389-01



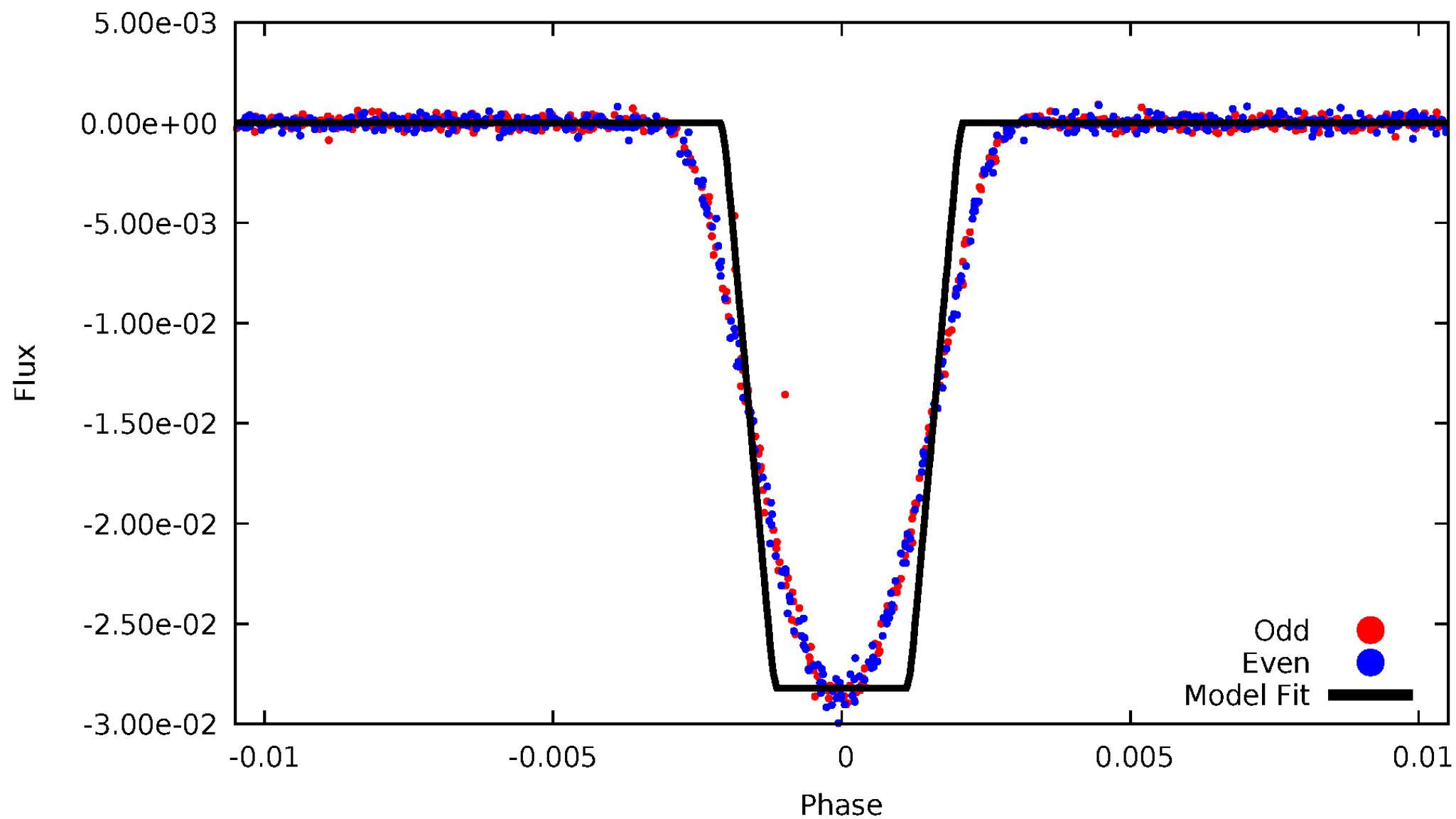
DV Odd/Even

TCE 004178389-01



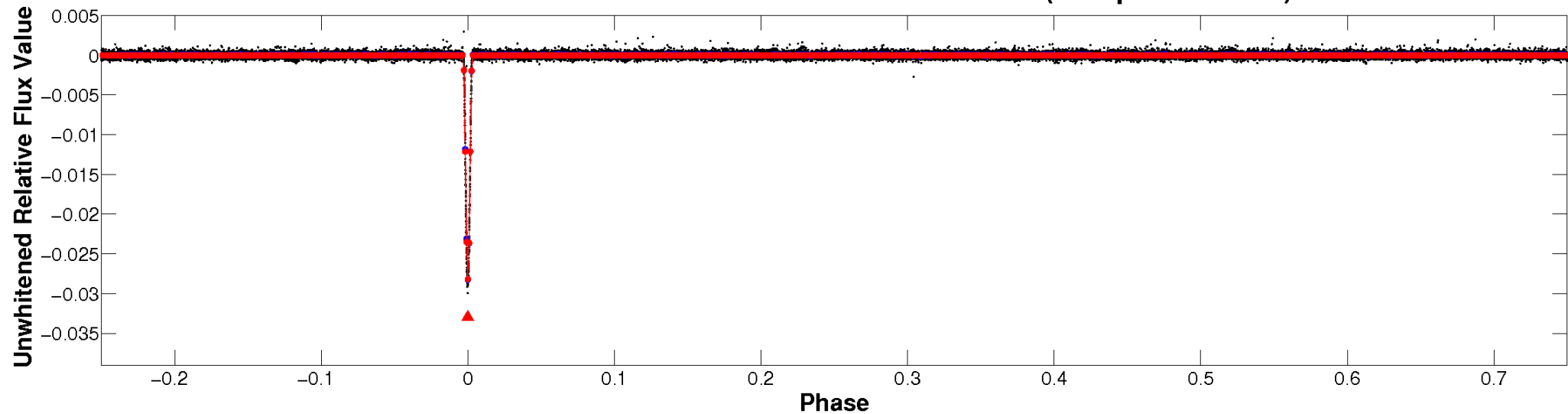
ALT Odd/Even

TCE 004178389-01

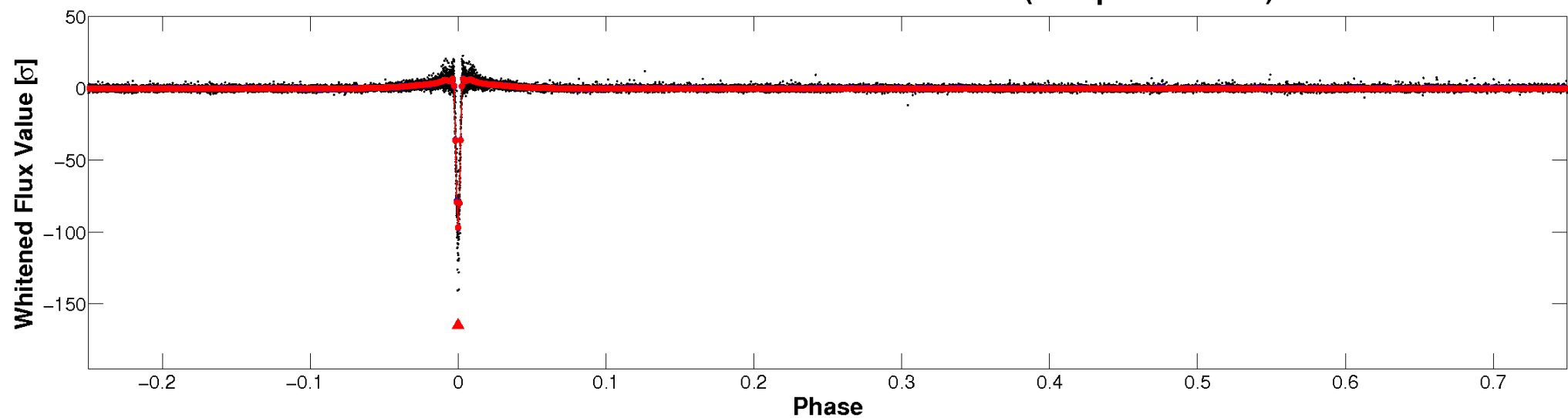


Non-Whitened Vs. Whitened Light Curve

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

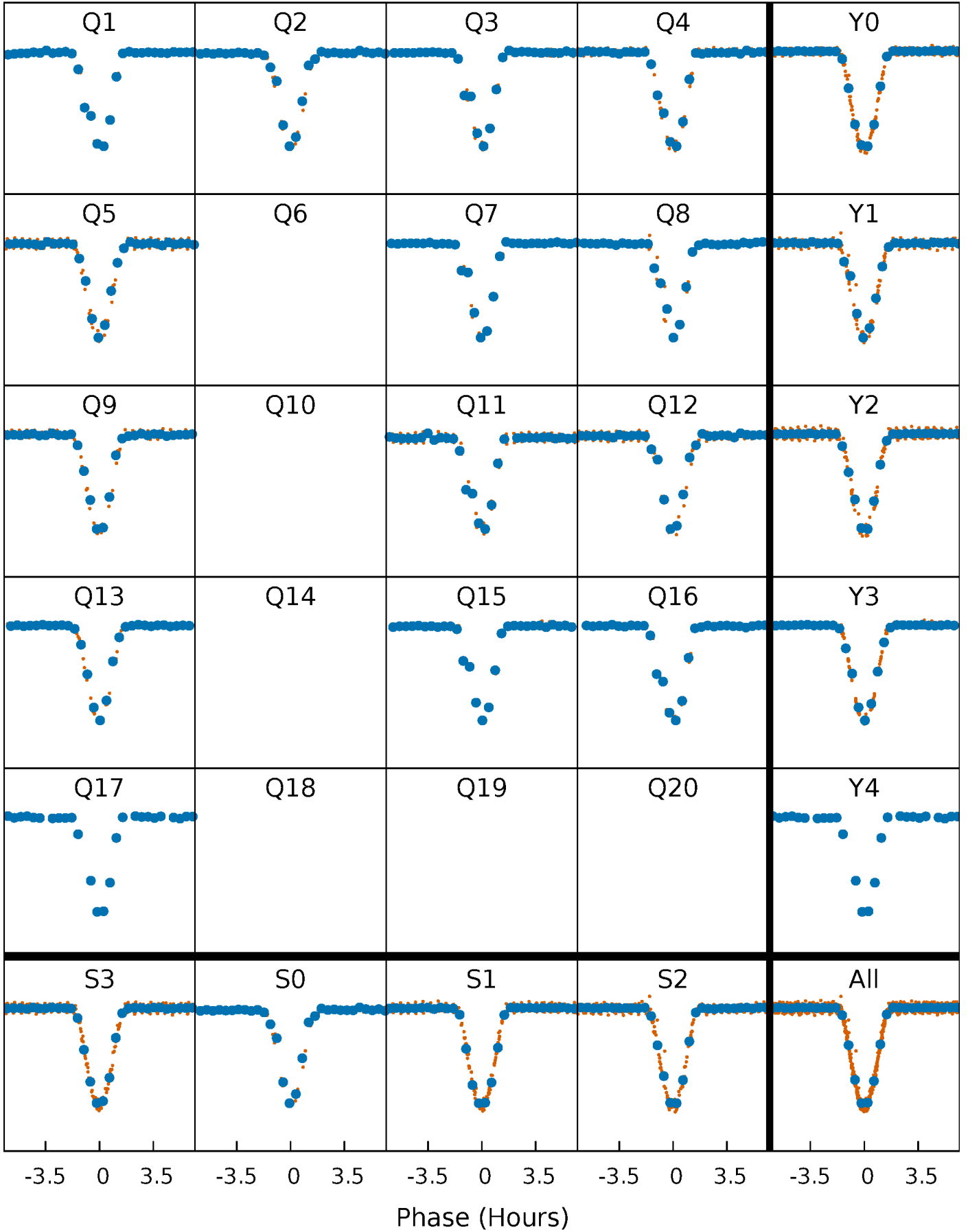


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



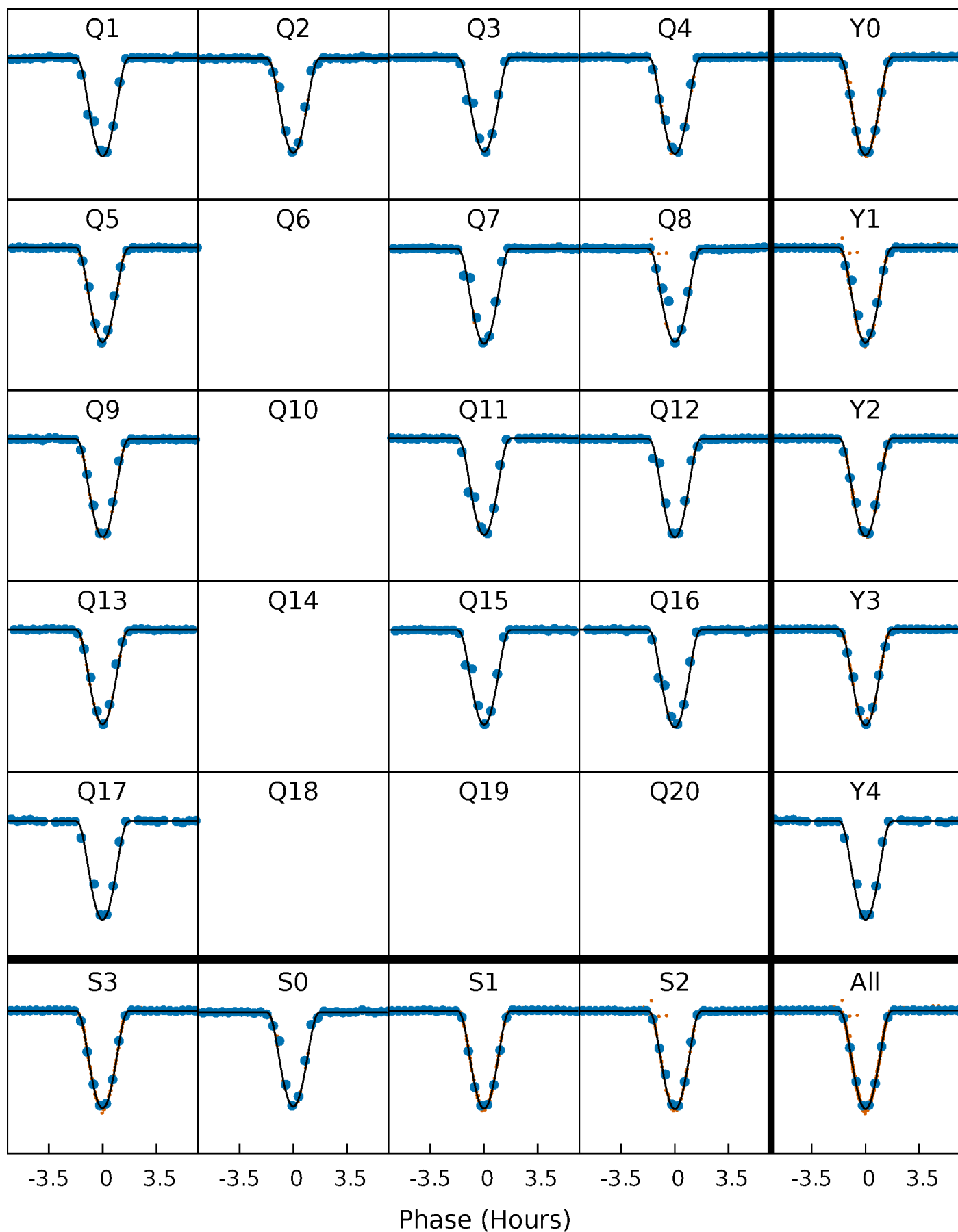
PDC Quarter-Phased Transit Curves

TCE 004178389-01 P= 23.210510 Days $T_0=134.386361$ (BKJD)



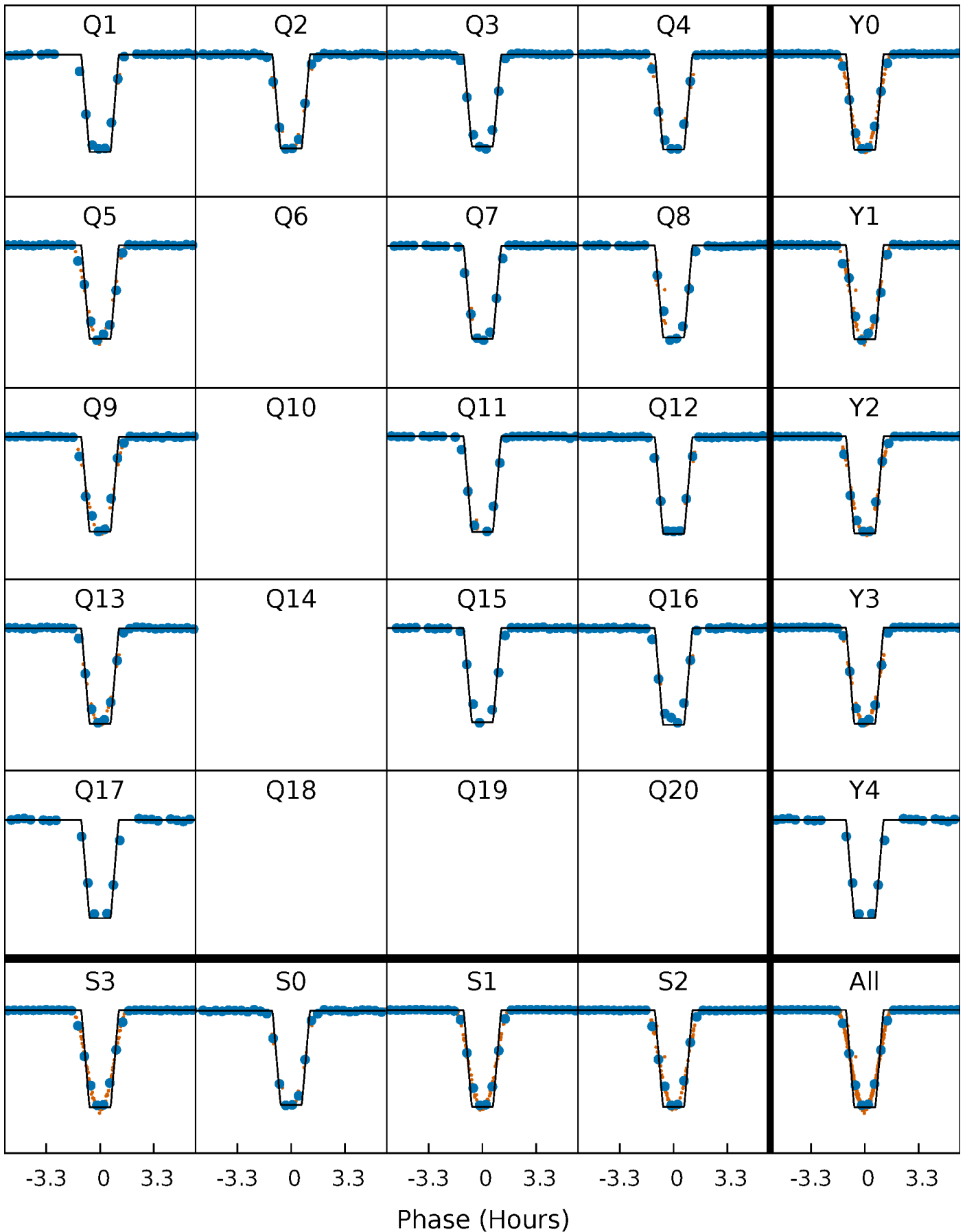
DV Quarter-Phased Transit Curves

TCE 004178389-01 P= 23.210510 Days $T_0=134.386361$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

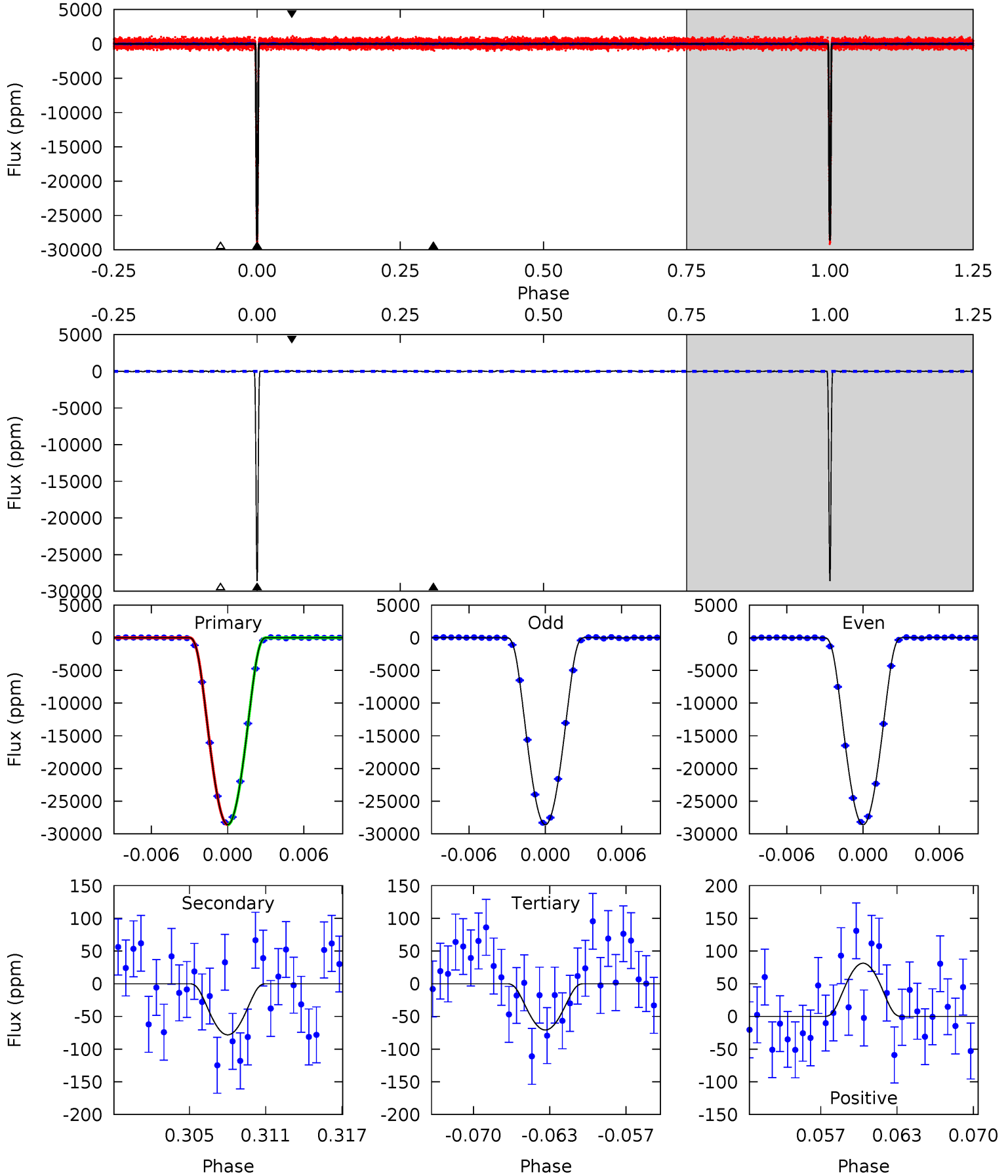
TCE 004178389-01 P= 23.210474 Days $T_0=134.387521$ (BKJD)



DV Model-Shift Uniqueness Test

004178389-01, P = 23.210510 Days, E = 111.175851 Days

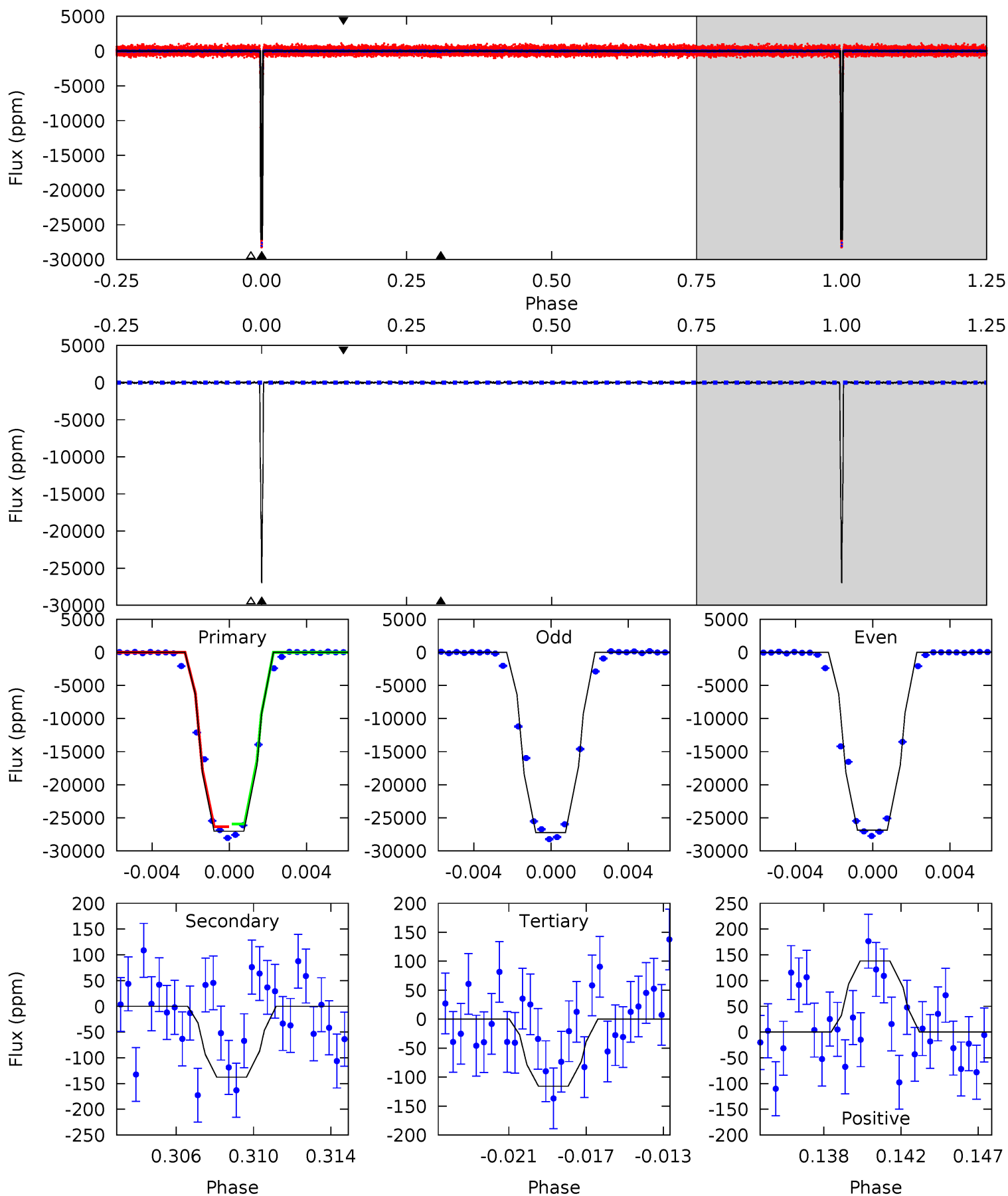
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1976	5.40	4.89	5.62	5.11	2.73	1.79	1971	1970	0.51	-0.22	0.35	0.98	0.00	0.46



Alt Model-Shift Uniqueness Test

004178389-01, P = 23.210474 Days, E = 111.177047 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
947.4	4.82	4.06	4.84	5.19	2.86	1.20	943.3	942.6	0.76	-0.02	6.16	0.99	0.01	0



Stellar Parameters For KIC 004178389

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5875^{+161}_{-161}	$4.572^{+0.033}_{-0.187}$	$-0.420^{+0.300}_{-0.300}$	$0.809^{+0.211}_{-0.070}$	$0.895^{+0.090}_{-0.099}$	$2.376^{+0.427}_{-1.148}$
	+3%/-3%	+1%/-4%	+71%/-71%	+26%/-9%	+10%/-11%	+18%/-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 004178389-01 / KOI 0185.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-78 ± 14	$21.44^{+3.03}_{-1.75}$	852^{+54}_{-36}	2080^{+57}_{-63}	$2.101^{+0.580}_{-0.556}$
Alt.	-138 ± 29	$15.55^{+2.47}_{-1.52}$	855^{+57}_{-38}	2417^{+81}_{-87}	$6.997^{+2.427}_{-2.068}$

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 $A_{obs} \gg 1.0$

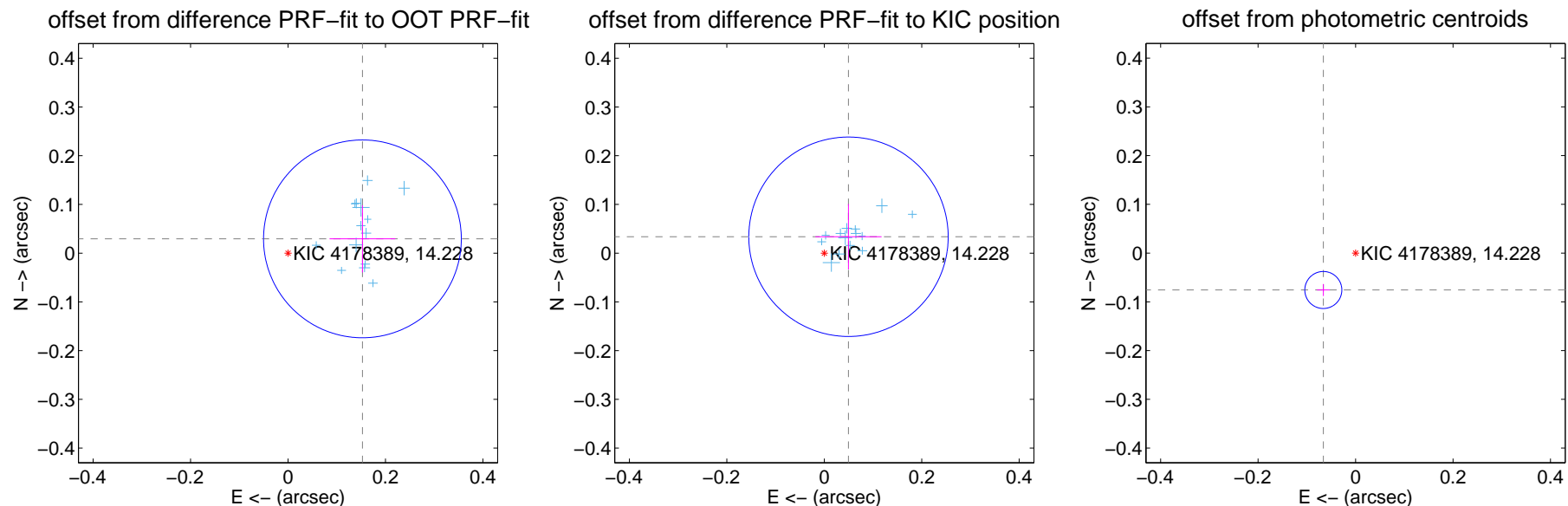
DV Centroid Data

Supplemental centroid analysis for 004178389-01. Kepler magnitude: 14.23. Transit SNR 1015.46

There are 14 quarters with good PRF difference image offsets

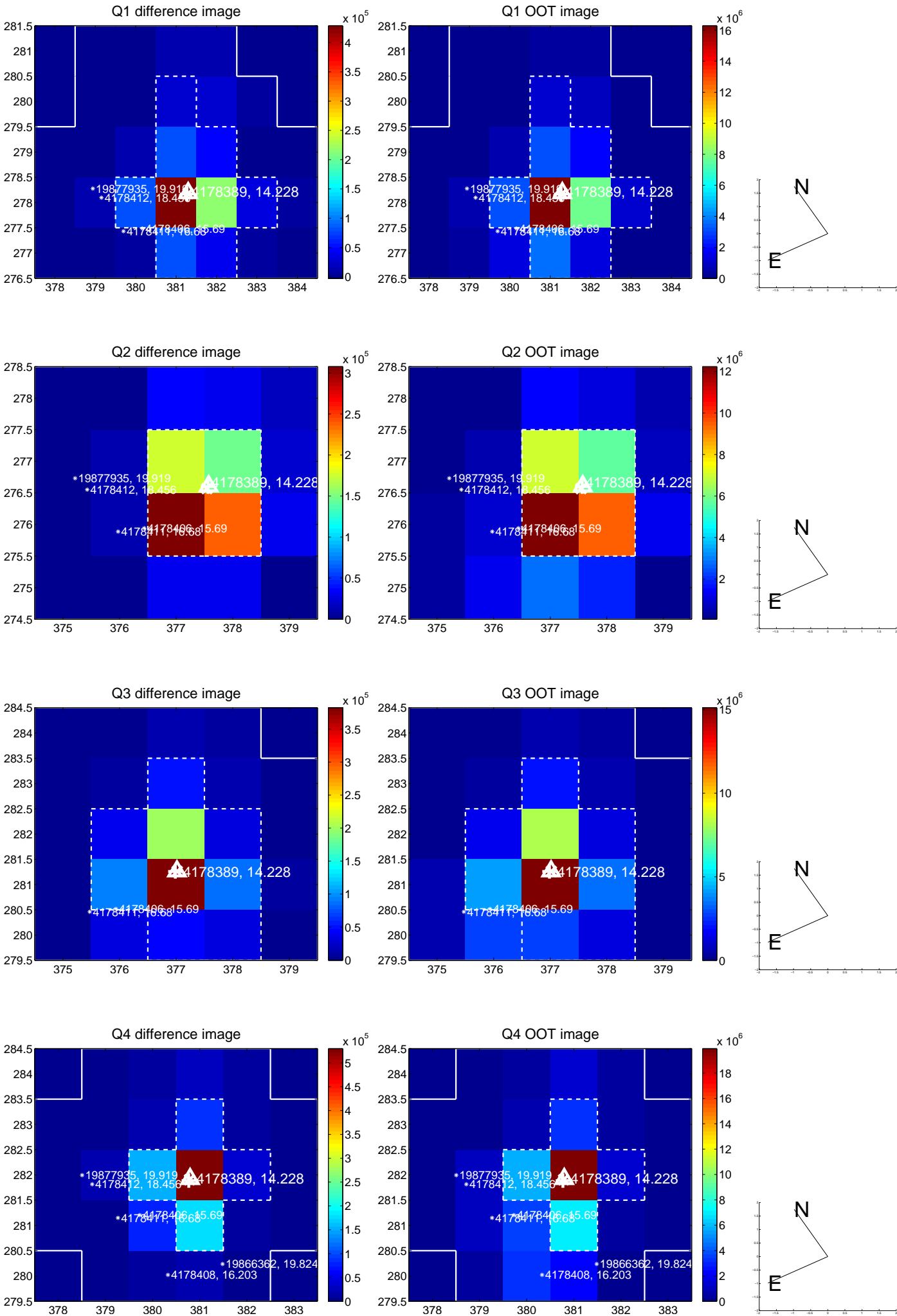
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.156 ± 0.068	2.30	-0.153 ± 0.067	0.029 ± 0.069
PRF-fit source offset from KIC position	0.060 ± 0.068	0.88	-0.050 ± 0.068	0.034 ± 0.067
photometric centroid source offset	0.10 ± 0.01	7.94	0.07 ± 0.01	-0.08 ± 0.01

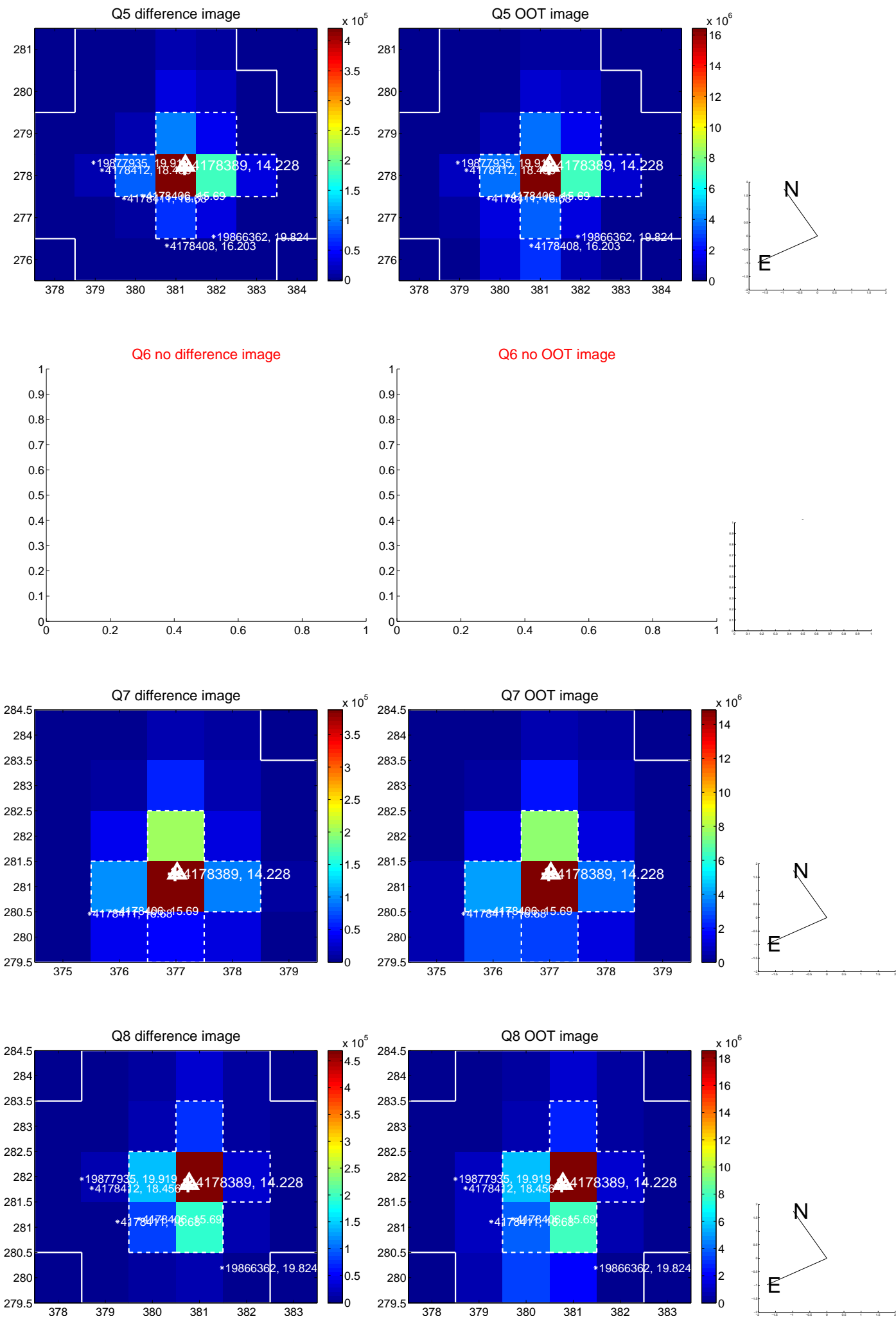


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

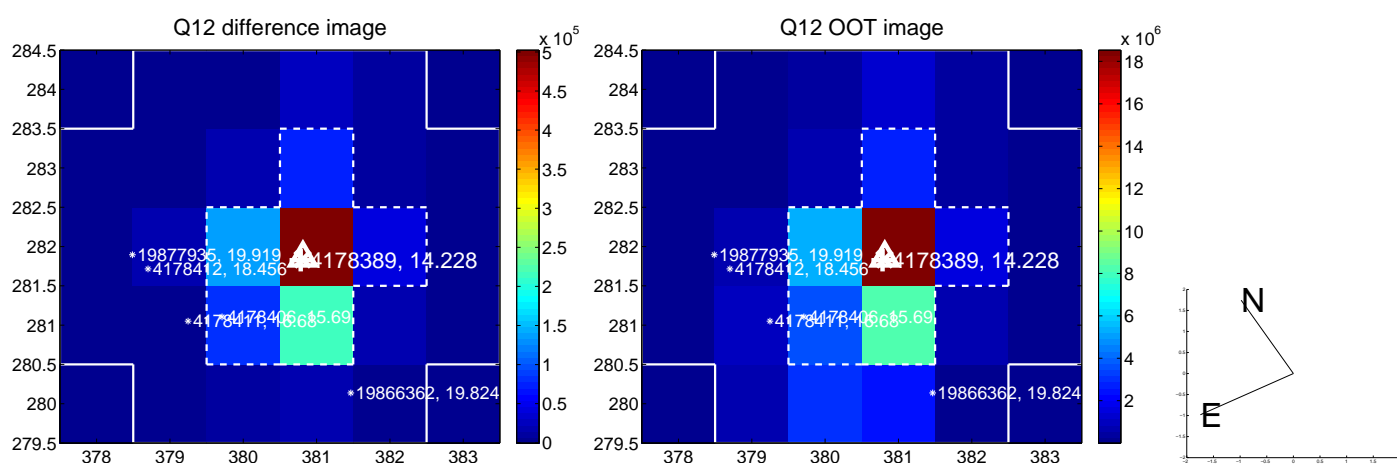
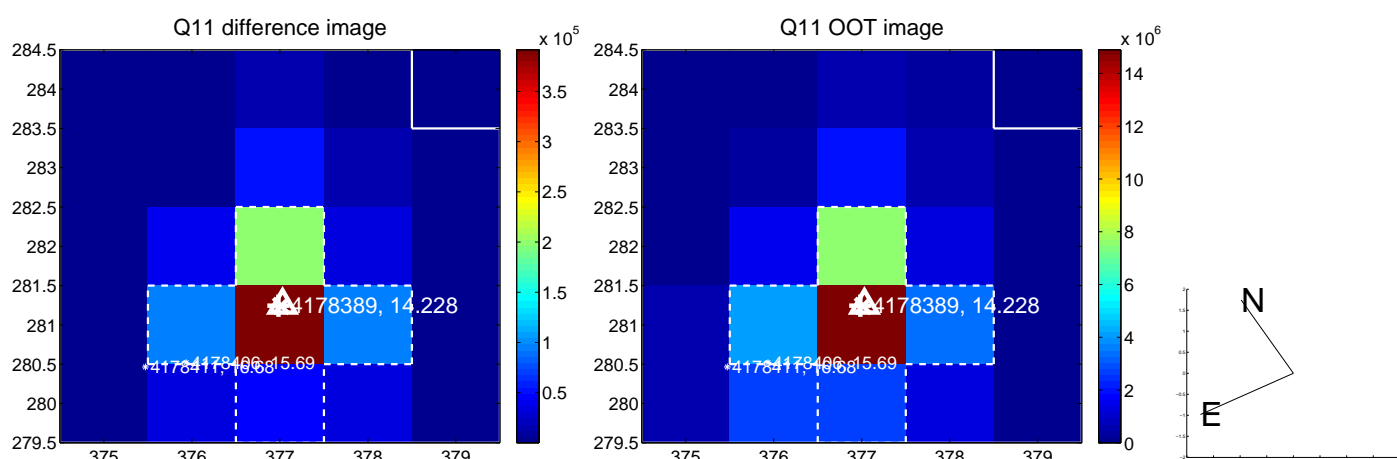
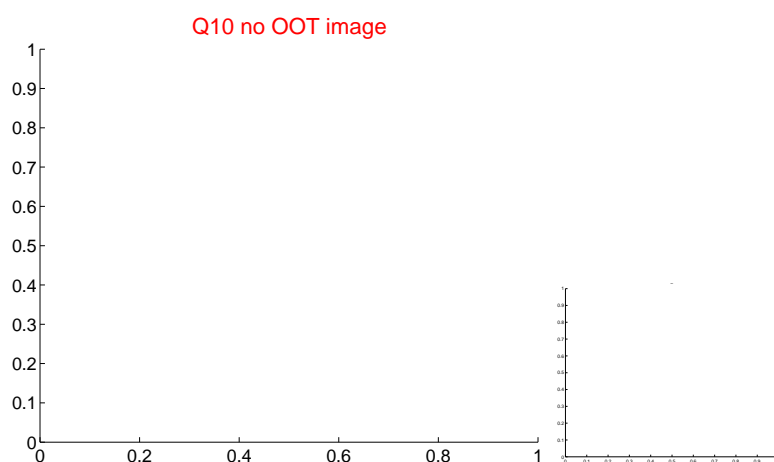
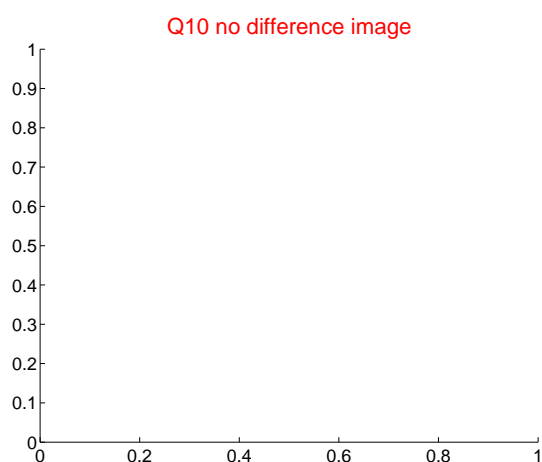
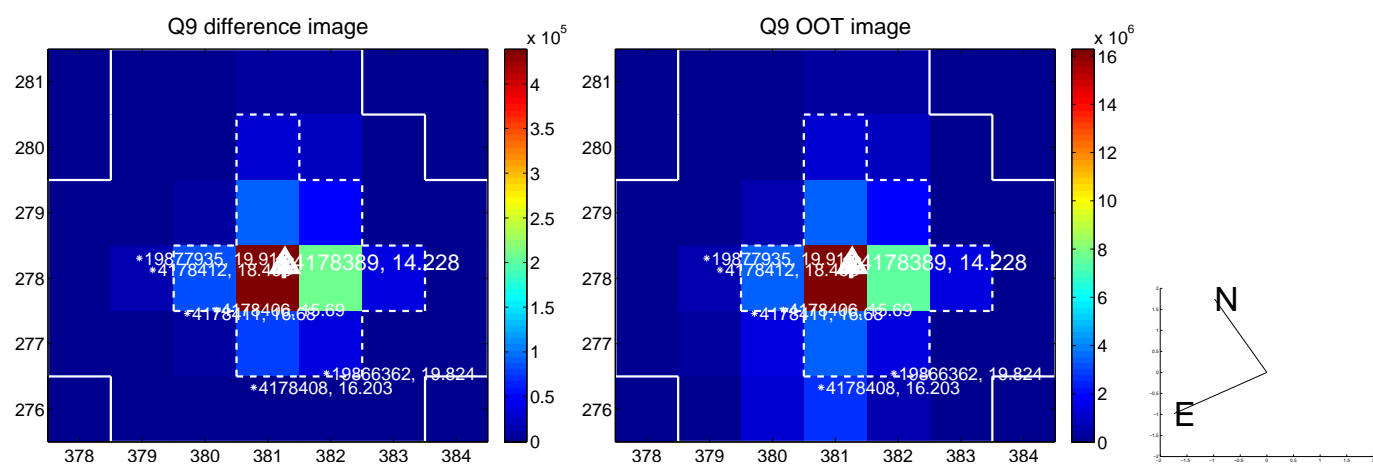
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



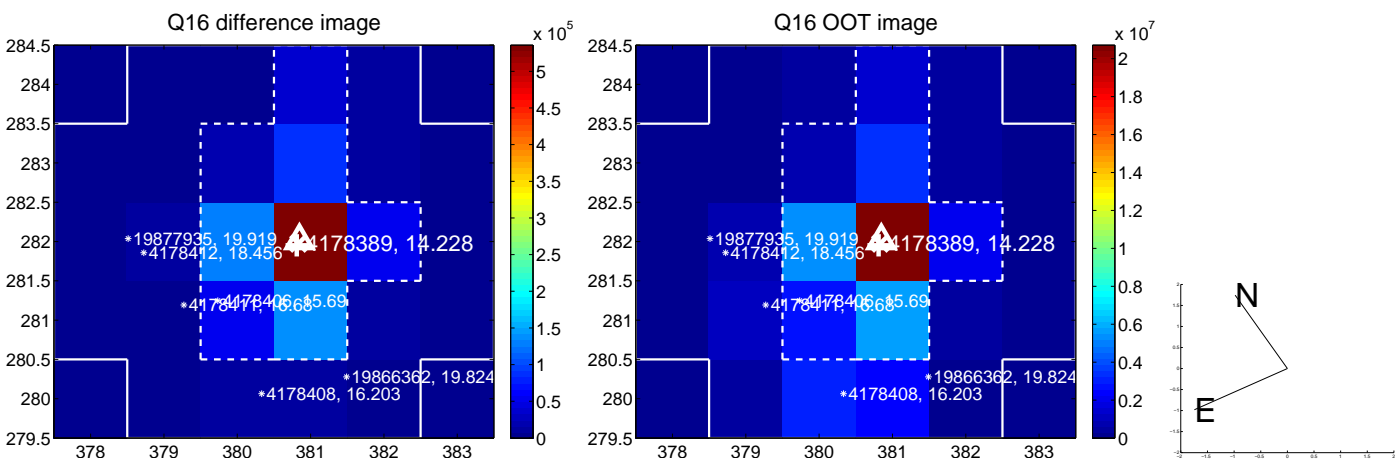
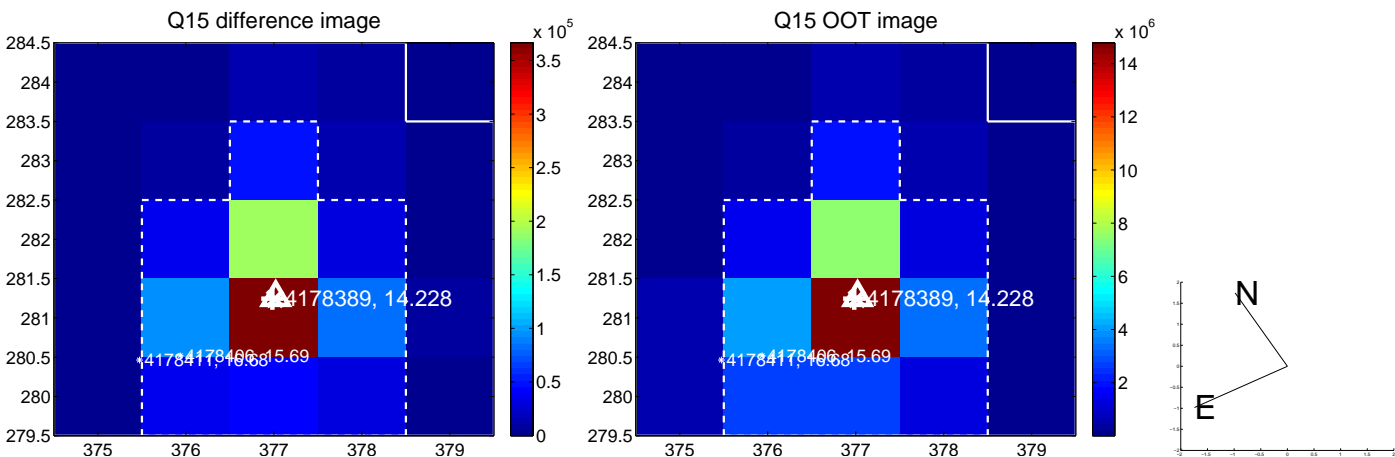
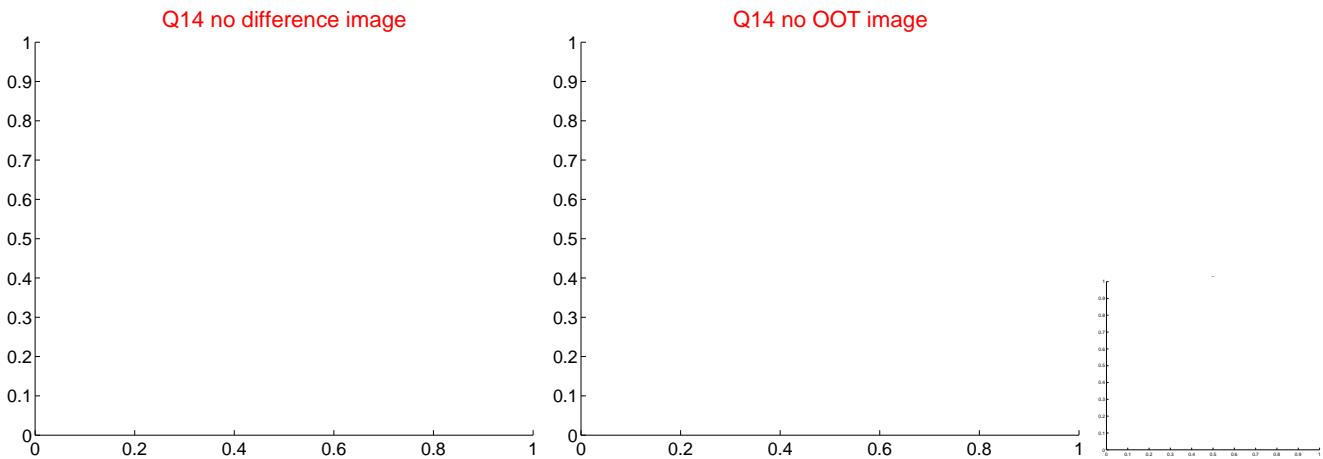
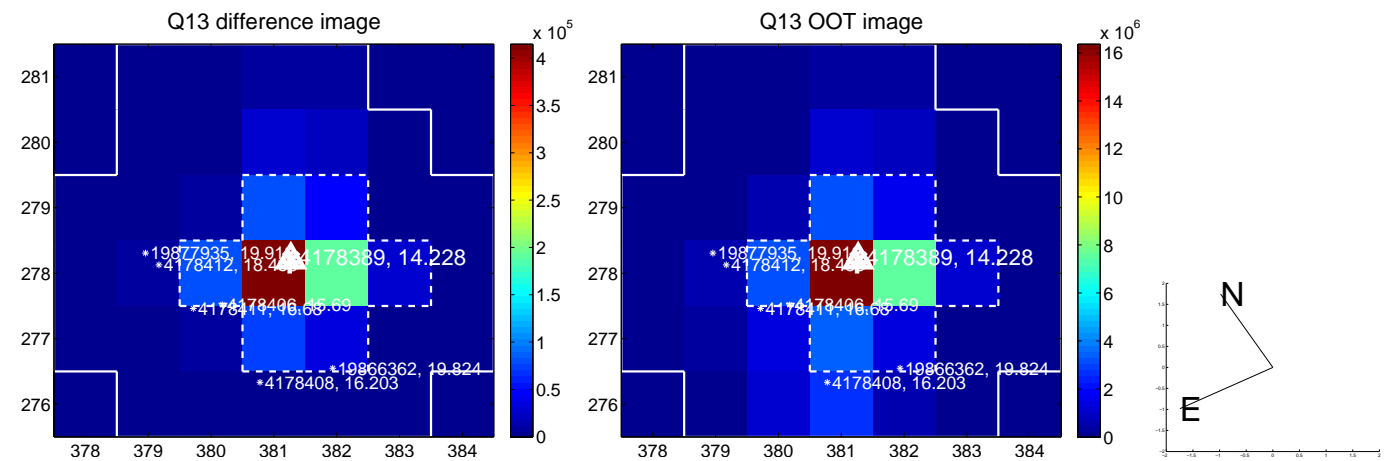
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



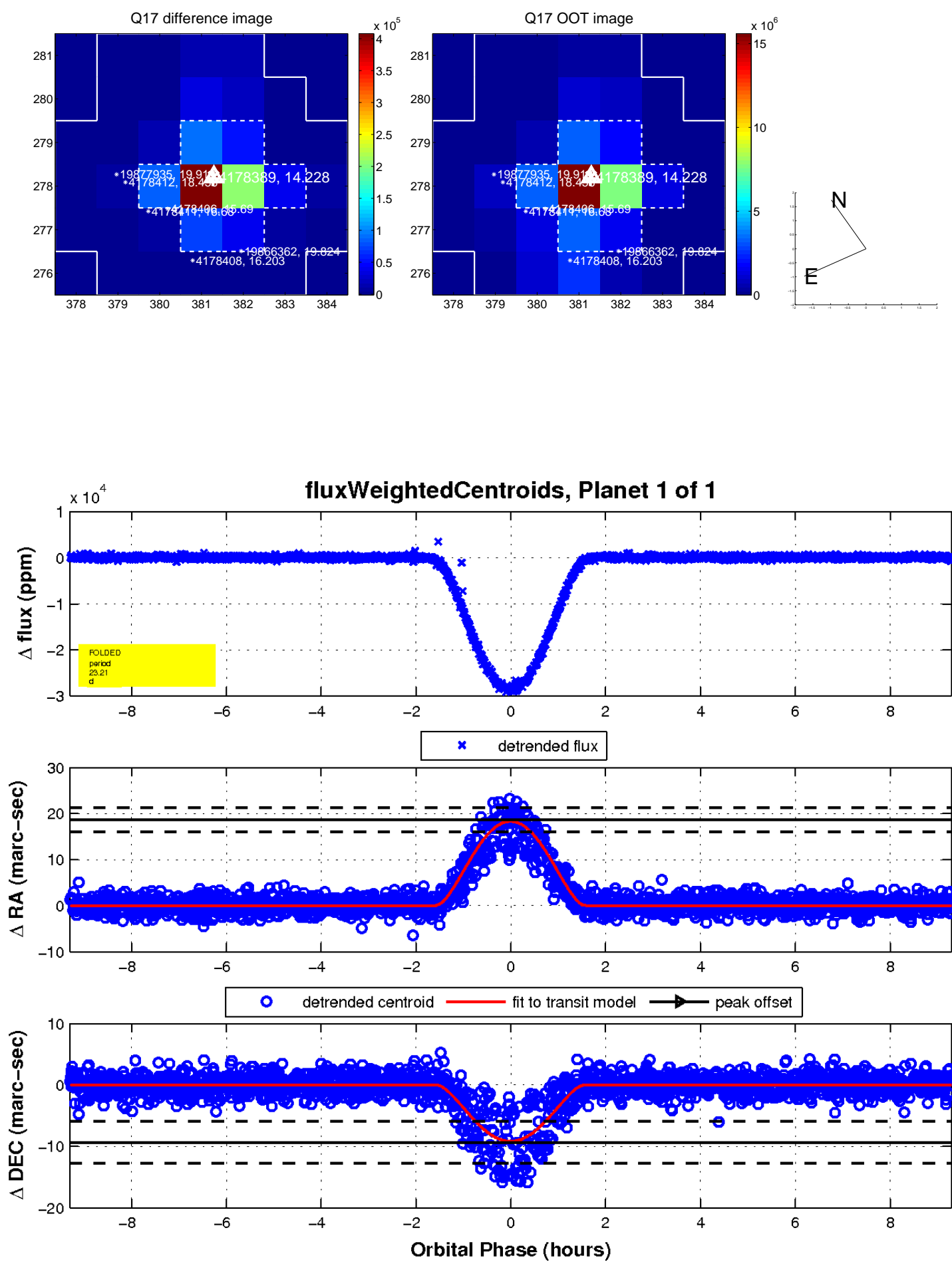
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UKIRT Image

Declination

