

KIC 005131180

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})
005131180-01	OBS	0641.01	14.851838	133.443849	1324.7	3.517	81.1	81.8	0.65	4129	2.71	10.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005131180-01	OBS	PC	1.00	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.

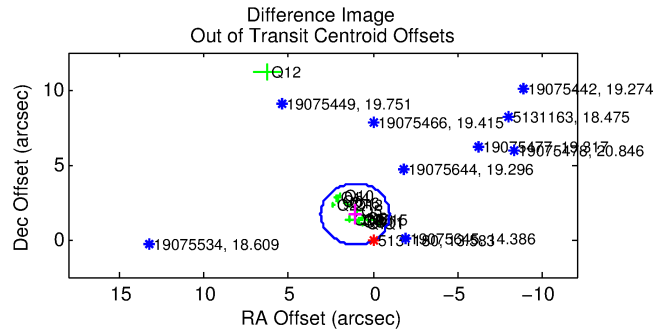
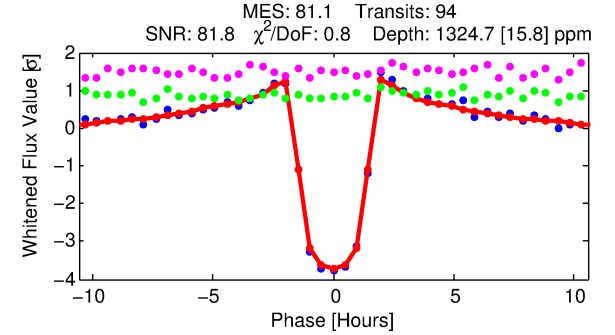
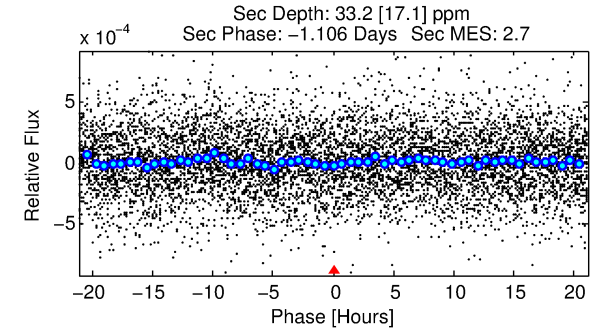
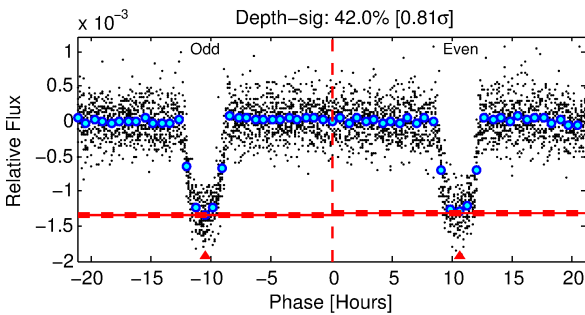
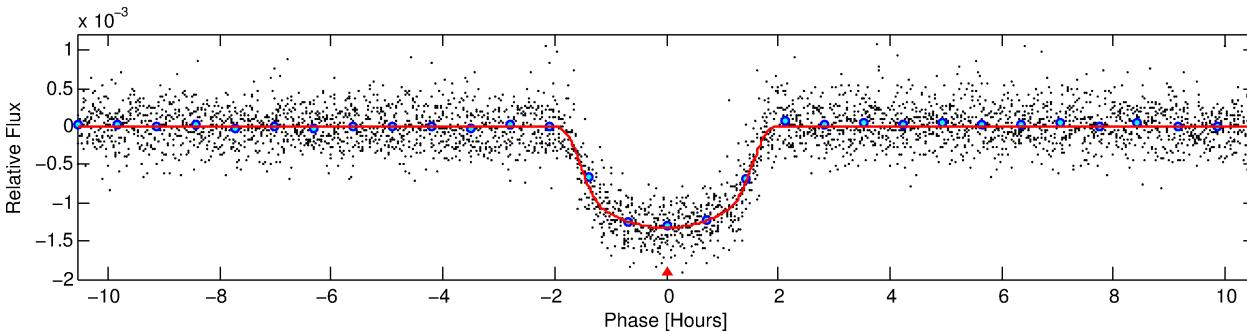
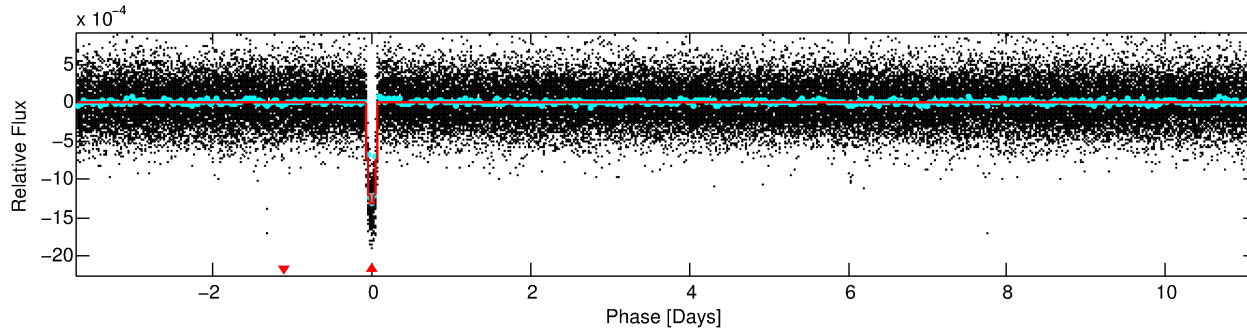
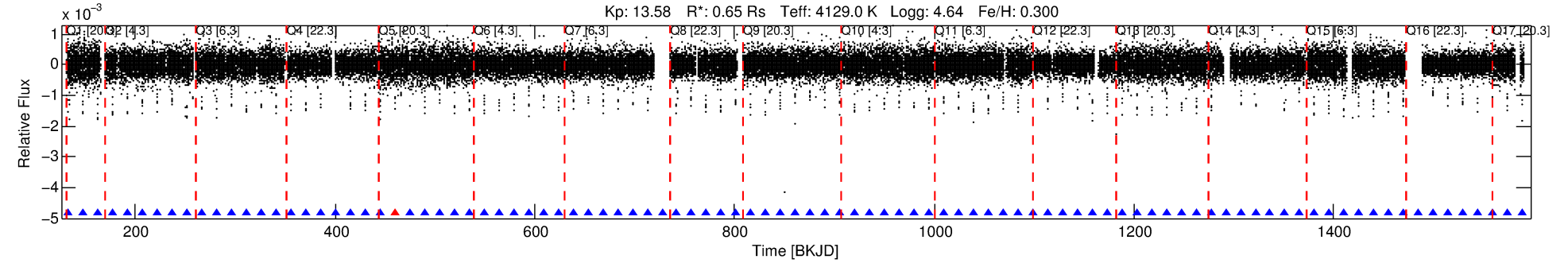
Ephemeris Match Information For 005131180-01

No Significant Match Found

DV One-Page Summary

KIC: 5131180 Candidate: 1 of 1 Period: 14.852 d

KOI: K00641.01 Corr: 0.983



DV Fit Results:

Period = 14.85184 [0.00001] d
Epoch = 133.4438 [0.0008] BKJD
Rp/R* = 0.0381 [0.0020]
a/R* = 20.61 [3.45]
b = 0.82 [0.07]
Seff = 10.33 [0.98]
Teff = 457 [11] K
Rp = 2.71 [0.18] Re
a = 0.1035 [0.0037] AU
Ag = 26.61 [14.09] [1.82 σ]
Teffp = 1605 [214] K [5.36 σ]

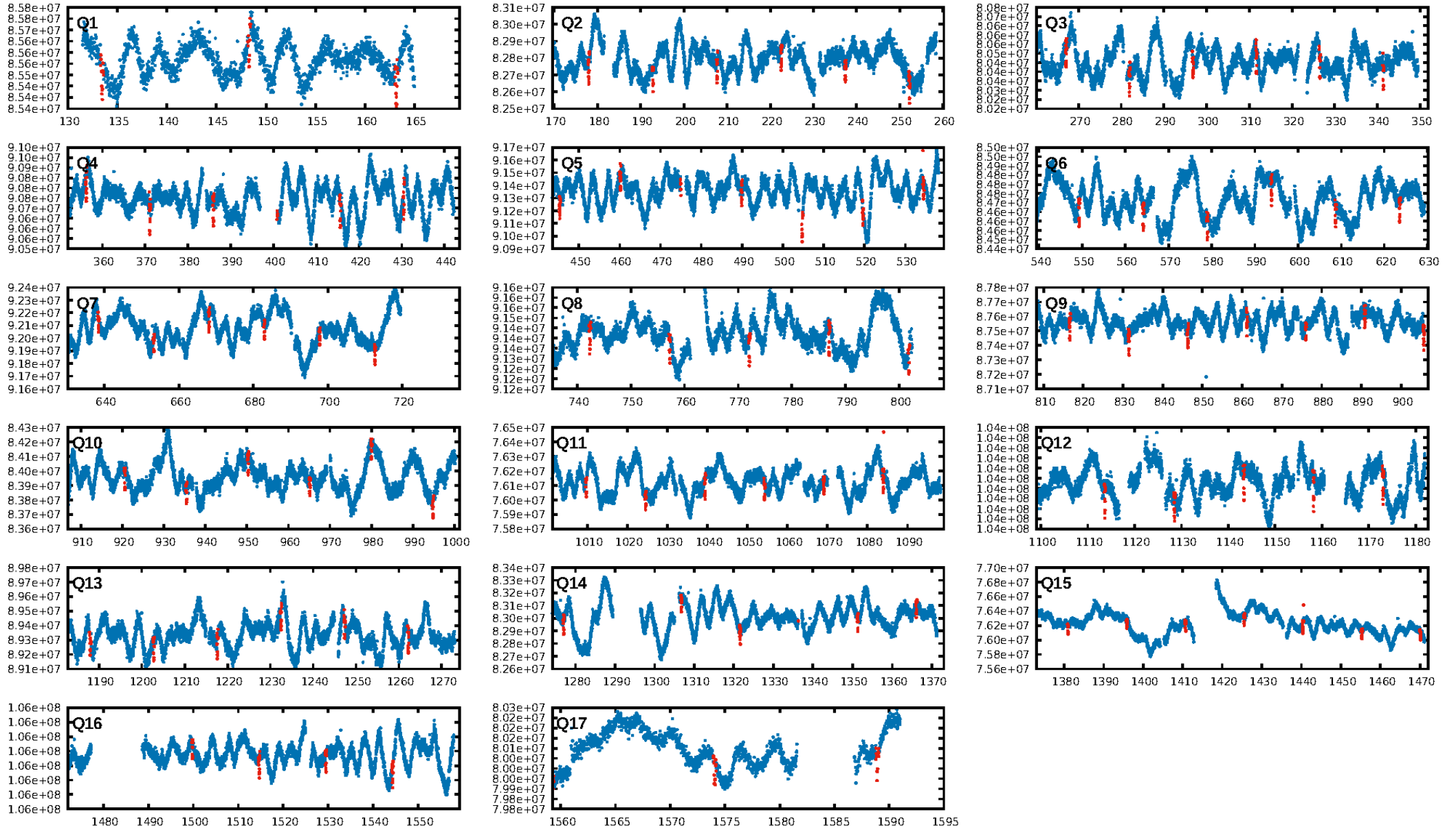
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 88.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [87/88]
GhostDiagnostic-chr: 3.643
Centroid-sig: 0.0%
Centroid-so: 1.676 arcsec [17.32 σ]
OotOffset-rm: 1.998 arcsec [2.93 σ]
KicOffset-rm: 0.554 arcsec [1.11 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

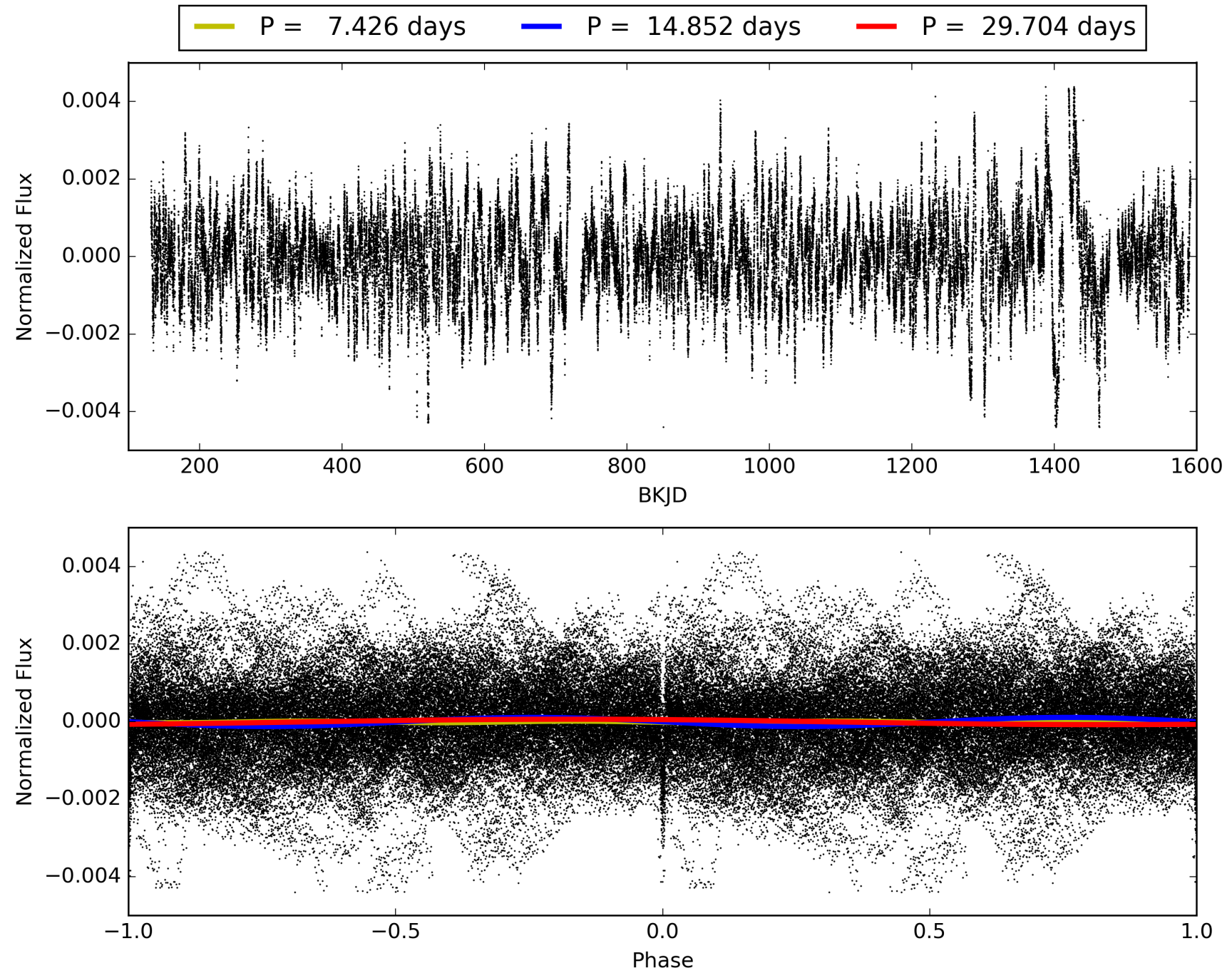
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:29:50 Z

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

TCE 005131180-01, PDC Light Curves

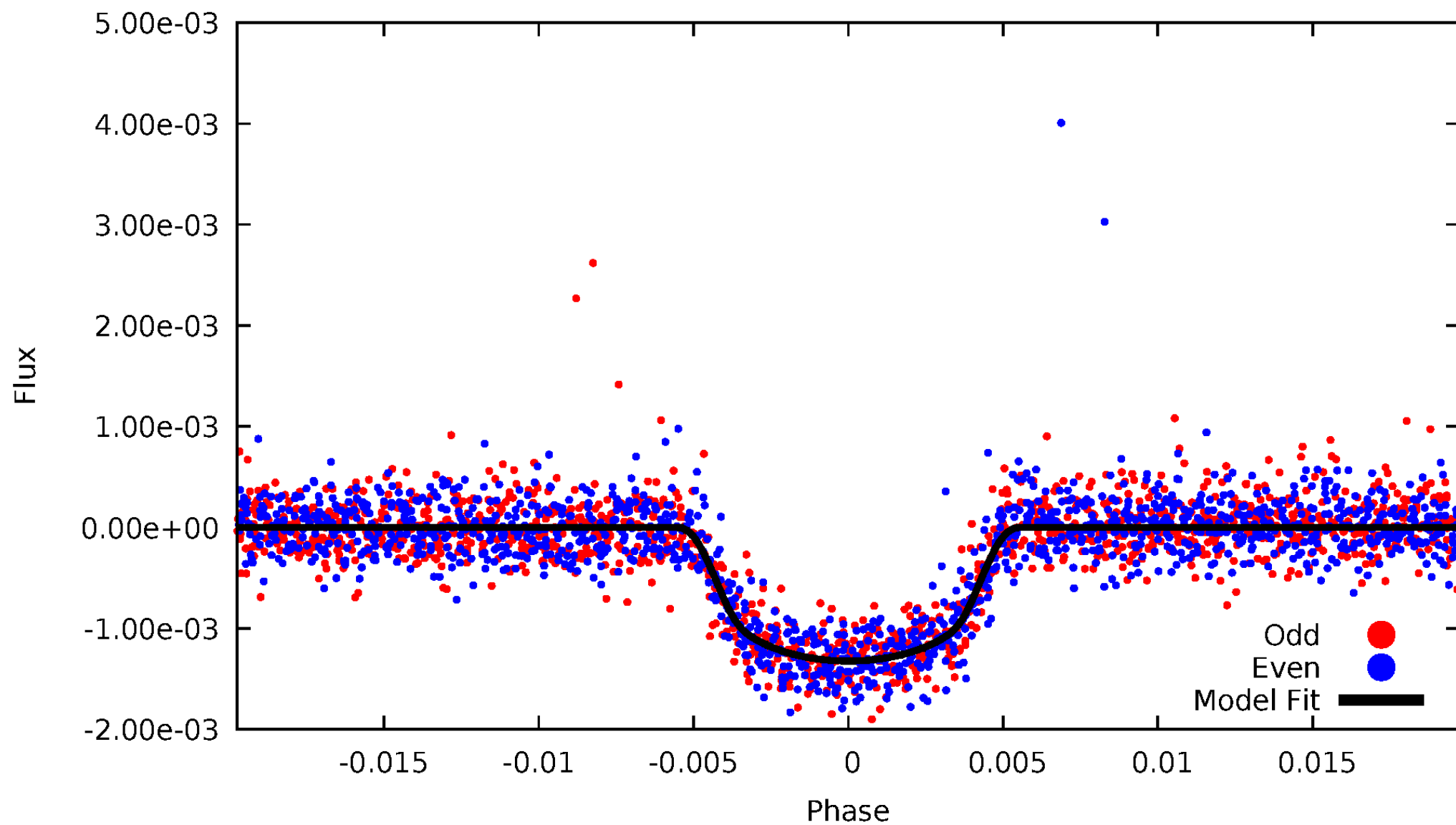


TCE 005131180-01



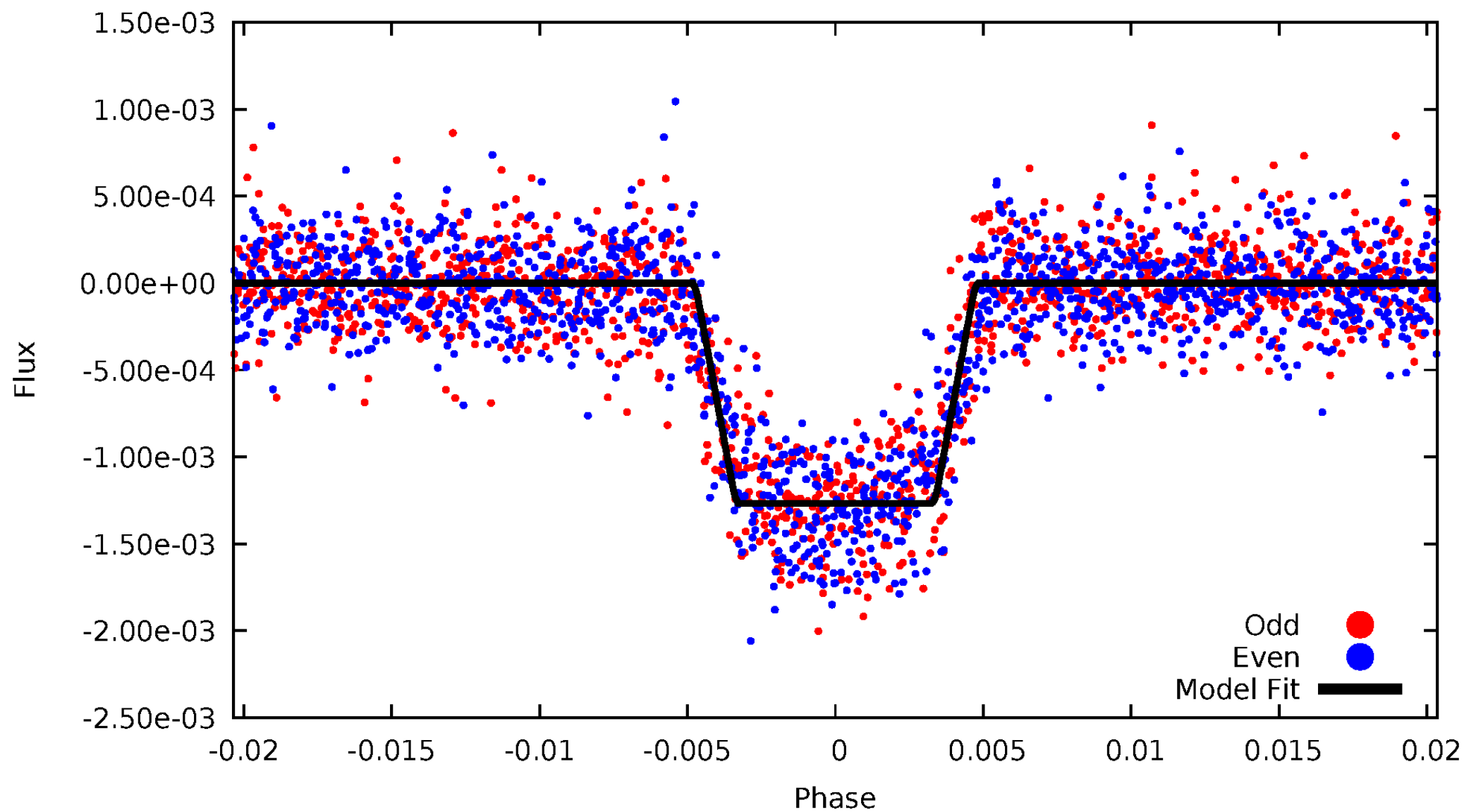
DV Odd/Even

TCE 005131180-01



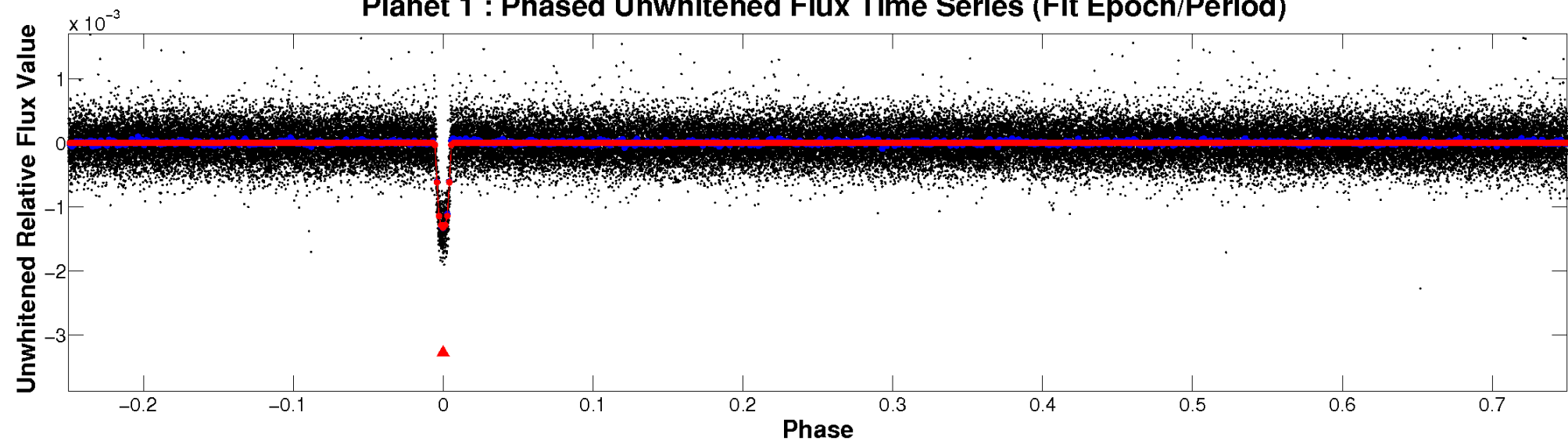
ALT Odd/Even

TCE 005131180-01

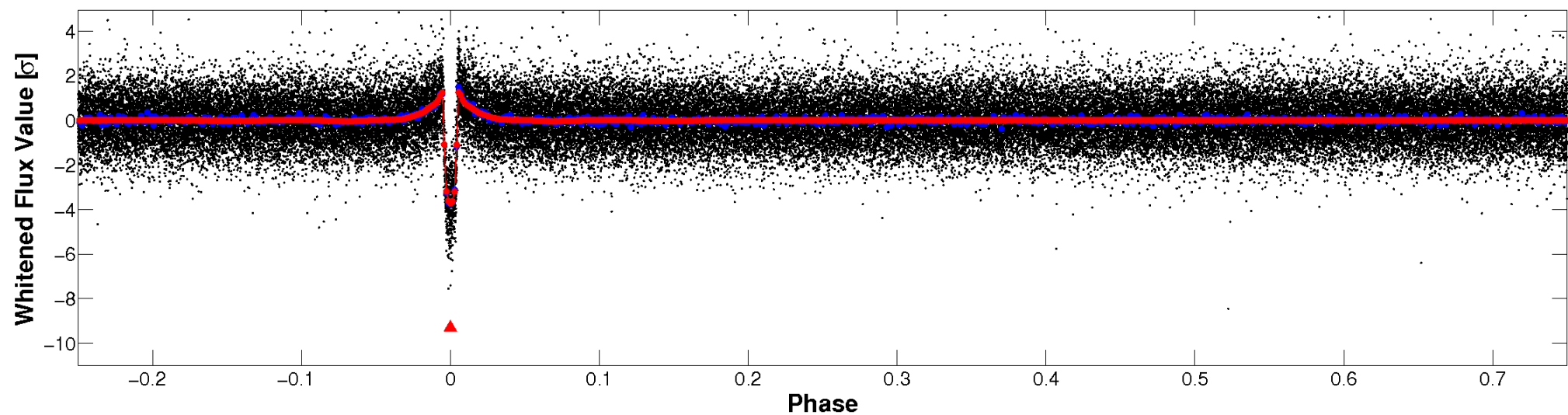


Non-Whitened Vs. Whitened Light Curve

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

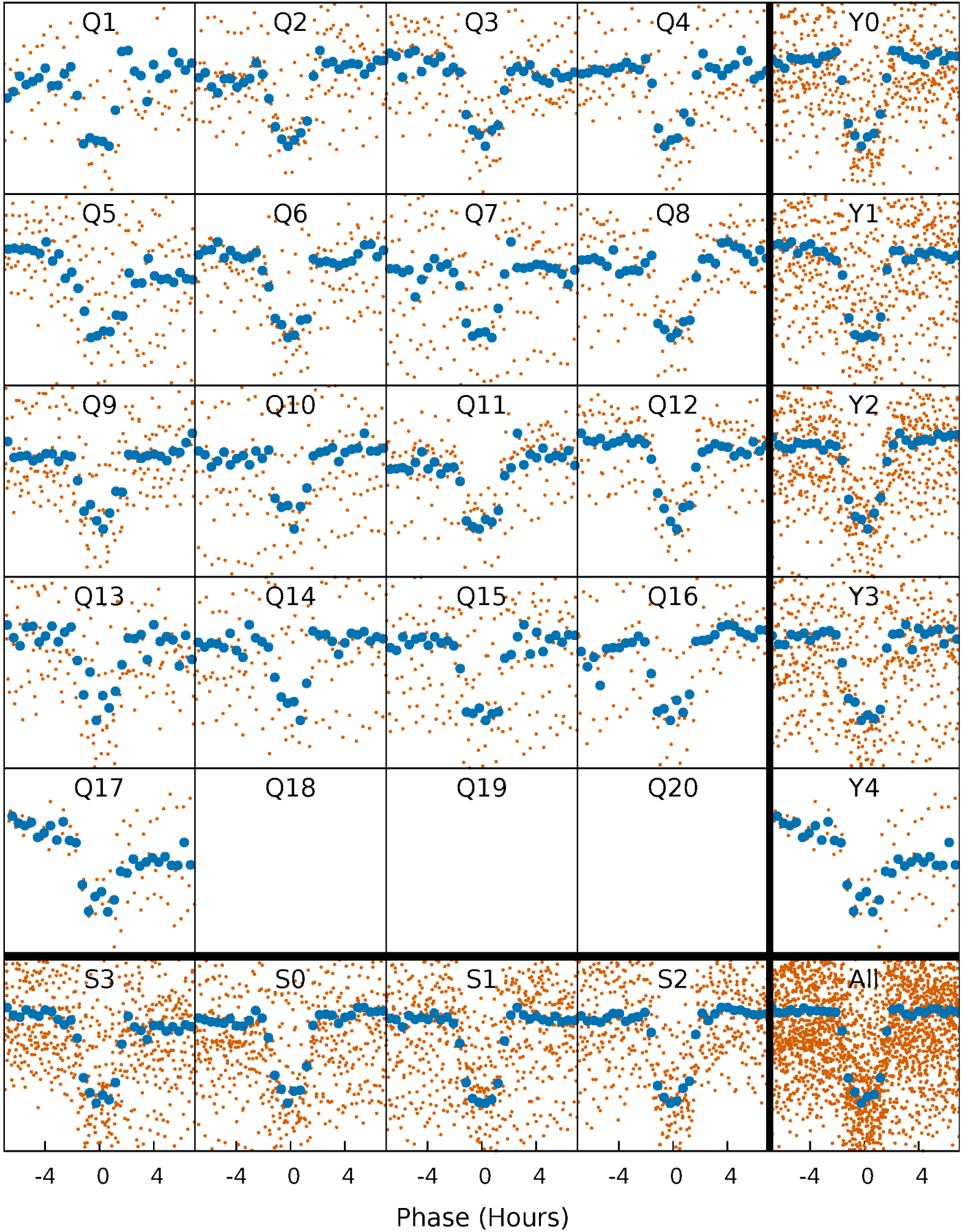


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



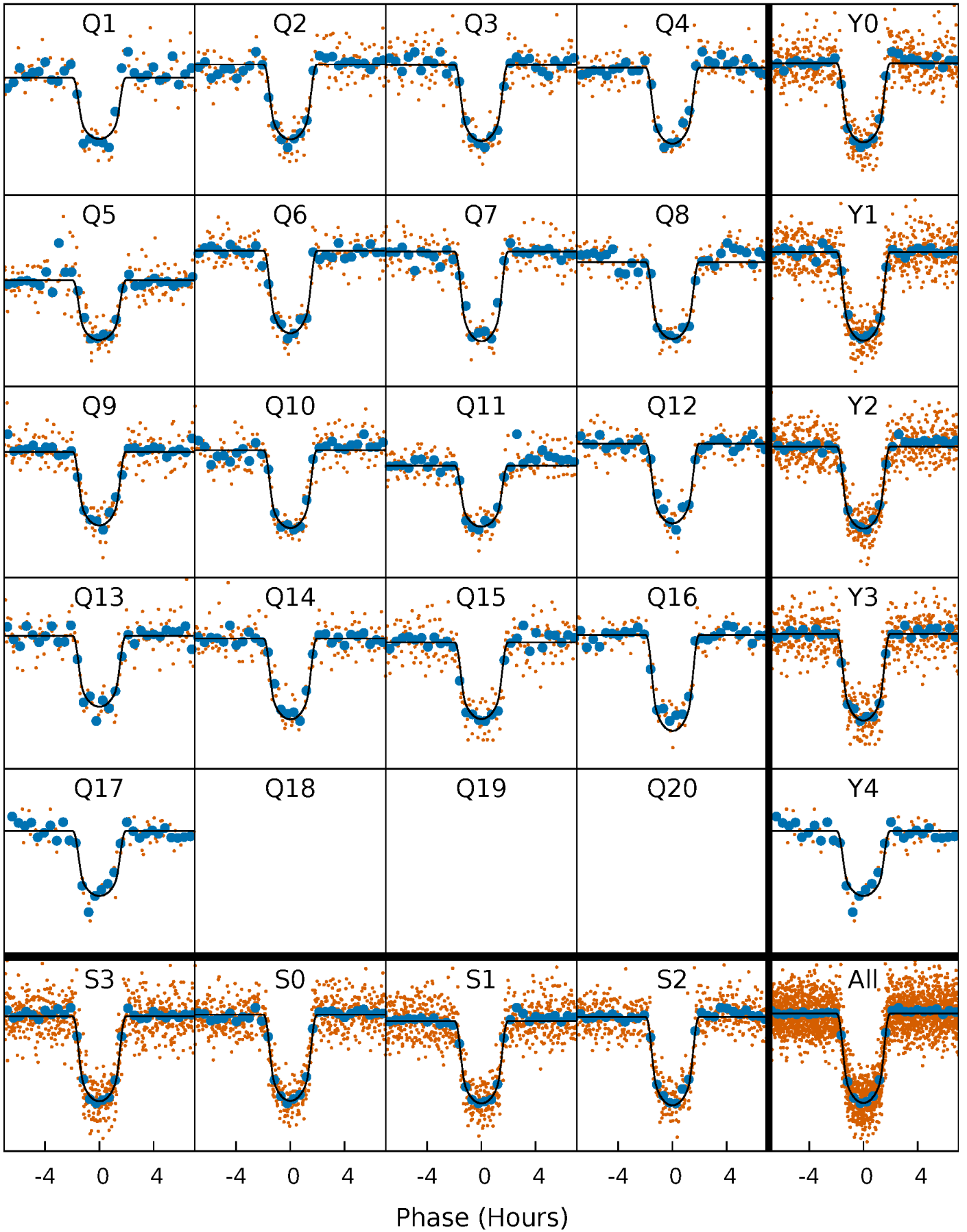
PDC Quarter-Phased Transit Curves

TCE 005131180-01 P= 14.851838 Days $T_0=133.443849$ (BKJD)



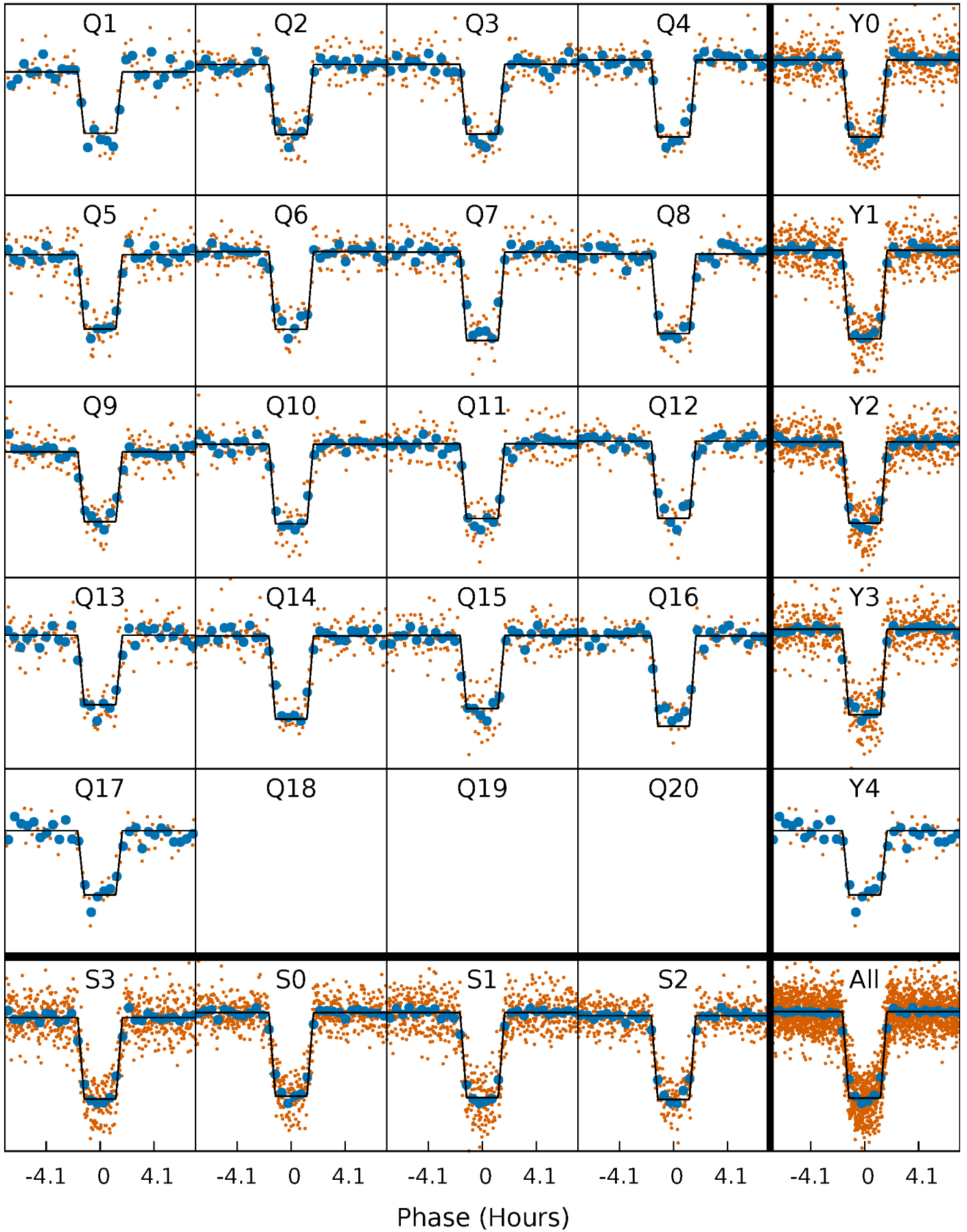
DV Quarter-Phased Transit Curves

TCE 005131180-01 P= 14.851838 Days $T_0=133.443849$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

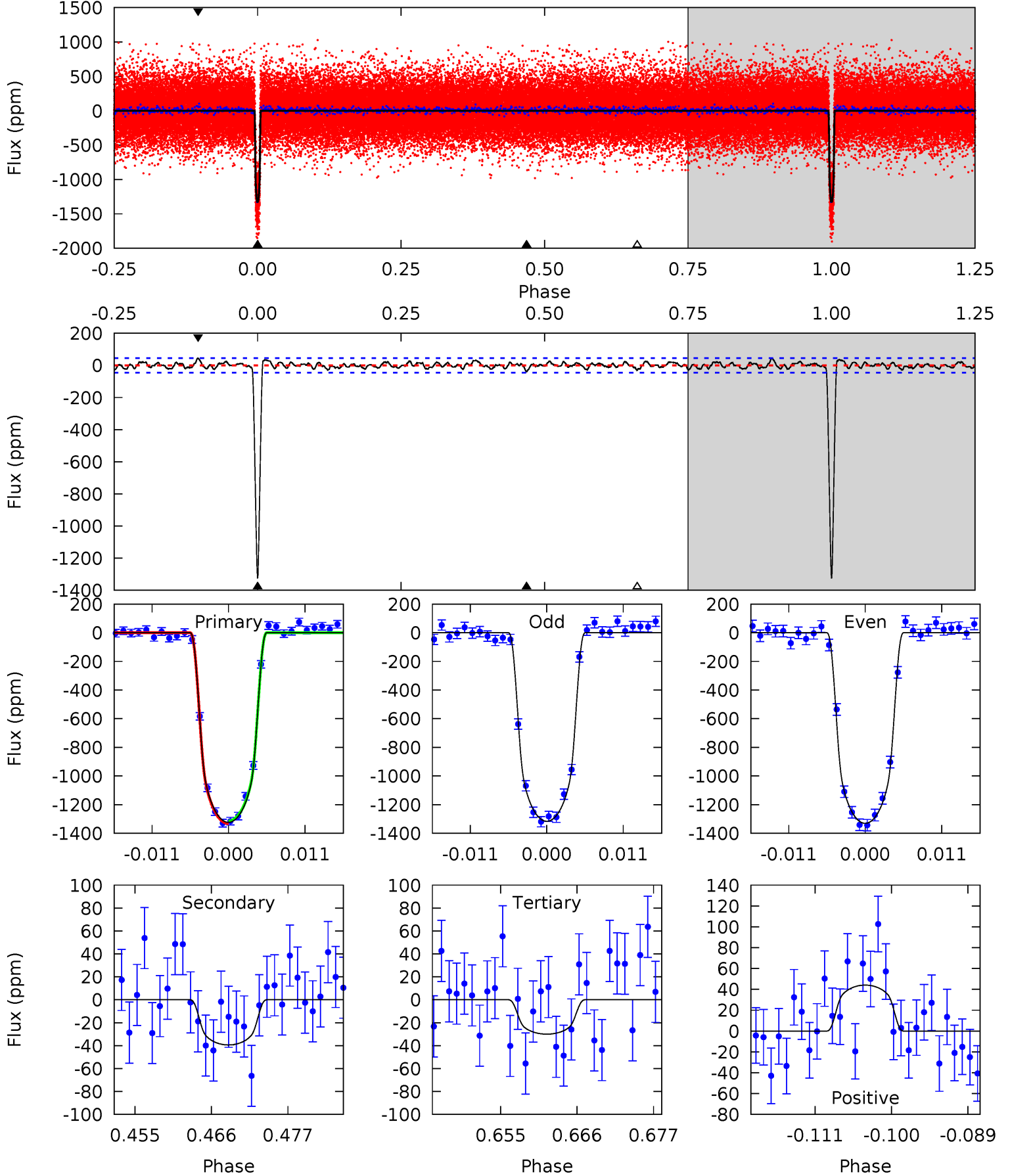
TCE 005131180-01 P= 14.851887 Days $T_0=133.441486$ (BKJD)



DV Model-Shift Uniqueness Test

005131180-01, $P = 14.851838$ Days, $E = 118.592011$ Days

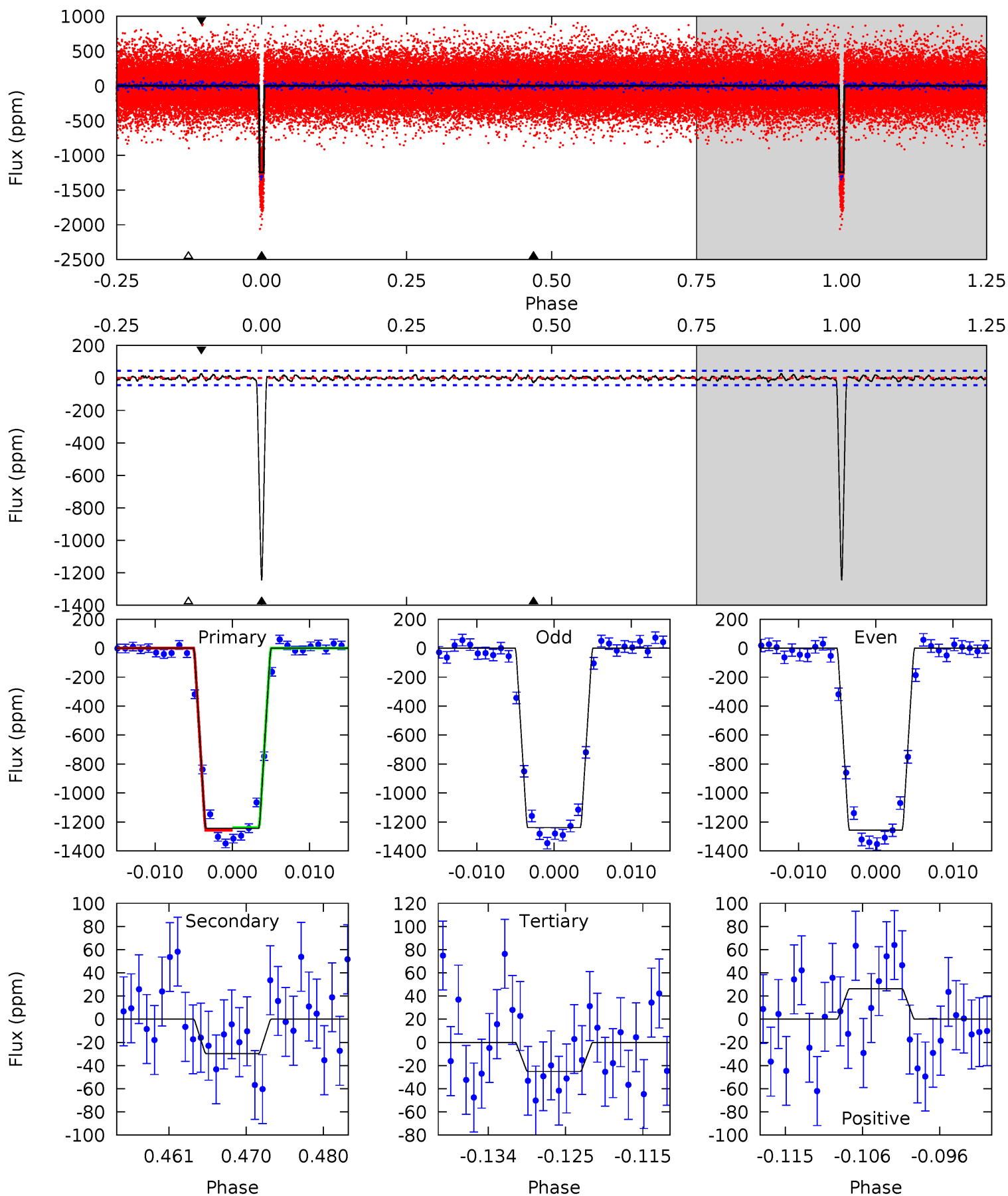
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
146.0	4.35	3.31	4.86	5.01	2.54	1.44	142.7	141.2	1.04	-0.51	0.79	0.98	0.03	0.95



Alt Model-Shift Uniqueness Test

005131180-01, $P = 14.851887$ Days, $E = 118.589599$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
141.1	3.37	2.85	2.98	5.03	2.59	0.93	138.3	138.2	0.52	0.39	0.98	1.02	0.02	1.05



Stellar Parameters For KIC 005131180

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4129^{+82}_{-82}	$4.636^{+0.028}_{-0.018}$	$0.300^{+0.150}_{-0.150}$	$0.652^{+0.020}_{-0.028}$	$0.671^{+0.022}_{-0.031}$	$3.410^{+0.406}_{-0.238}$
	+2%/-2%	+1%/-0%	+50%/-50%	+3%/-4%	+3%/-5%	+12%/-7%
Source	SPE60	SPE60	SPE60	DSEP		

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

Secondary Eclipse Parameters for KIC 005131180-01 / KOI 0641.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-39 ± 9	$2.71^{+0.15}_{-0.16}$	638^{+13}_{-15}	2436^{+76}_{-86}	32^{+9}_{-8}
Alt.	-30 ± 9	$2.52^{+0.16}_{-0.15}$	638^{+14}_{-15}	2400^{+88}_{-105}	28^{+9}_{-8}

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

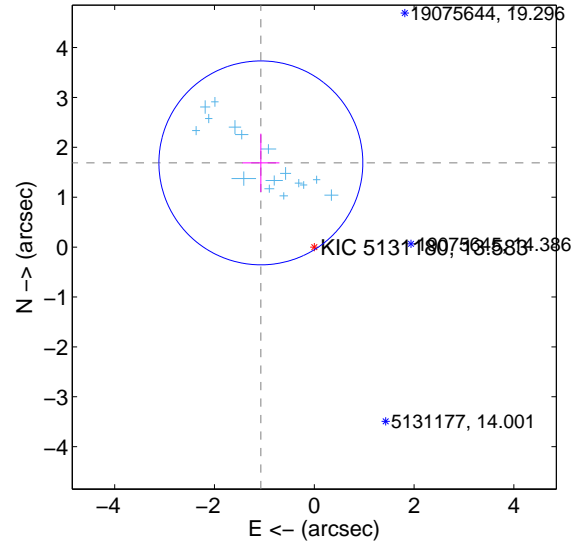
Supplemental centroid analysis for 005131180-01. Kepler magnitude: 13.58. Transit SNR 81.76

There are 16 quarters with good PRF difference image offsets

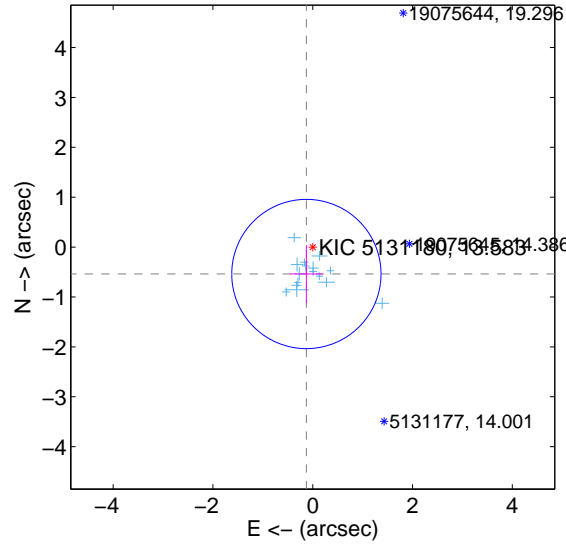
The OOT PRF centroid is offset from the target star catalog position by about 2.48 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.998 ± 0.681	2.93	1.070 ± 0.371	1.688 ± 0.585
PRF-fit source offset from KIC position	0.554 ± 0.499	1.11	0.127 ± 0.326	-0.539 ± 0.583
photometric centroid source offset	1.68 ± 0.10	17.32	0.10 ± 0.06	-1.67 ± 0.10

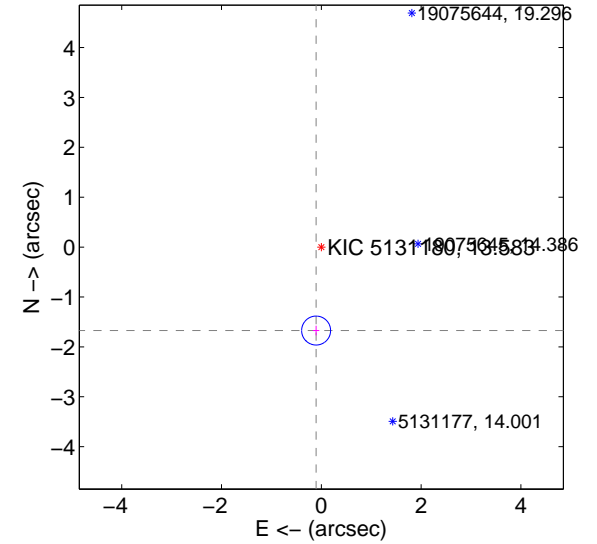
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

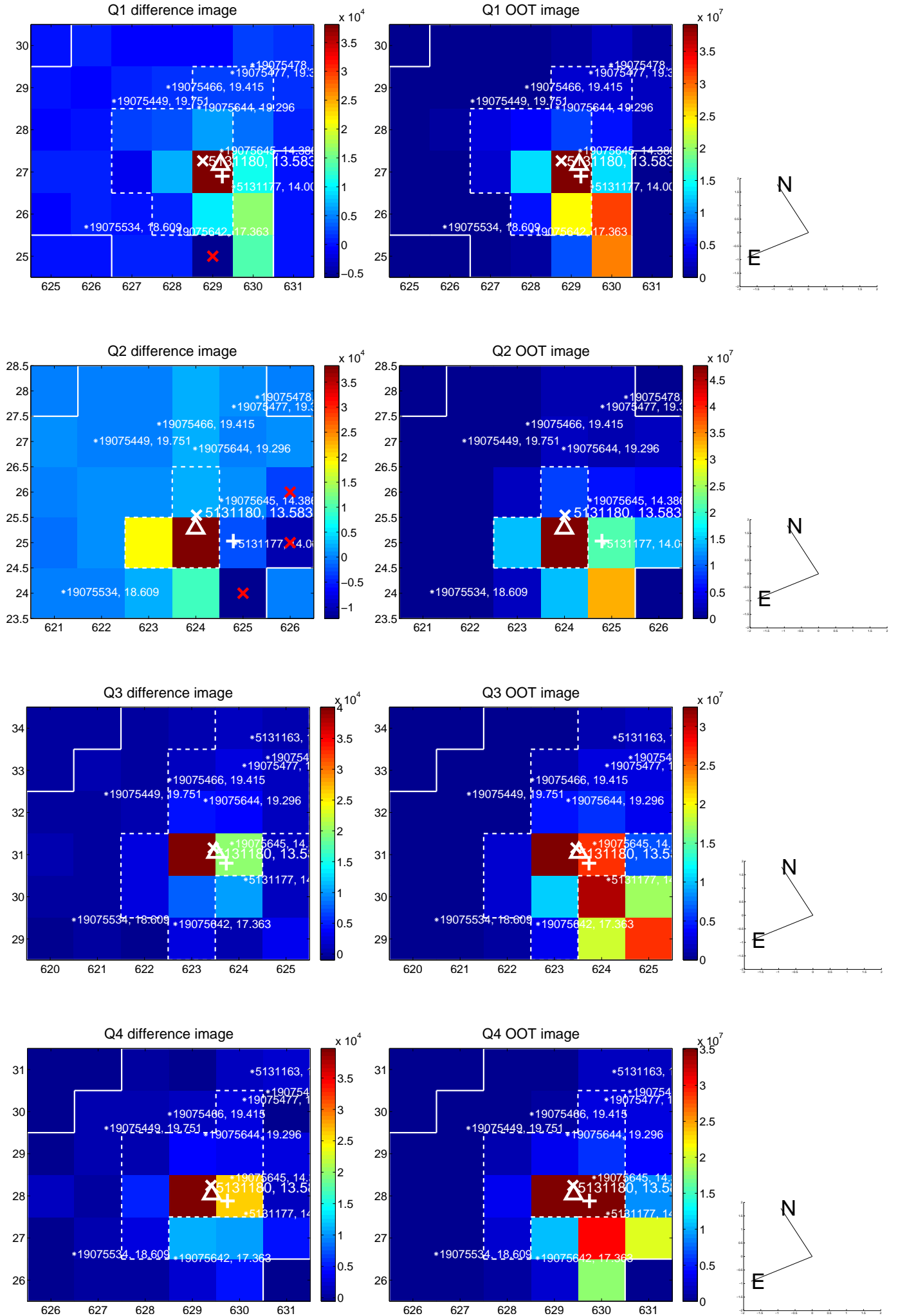


offset from photometric centroids

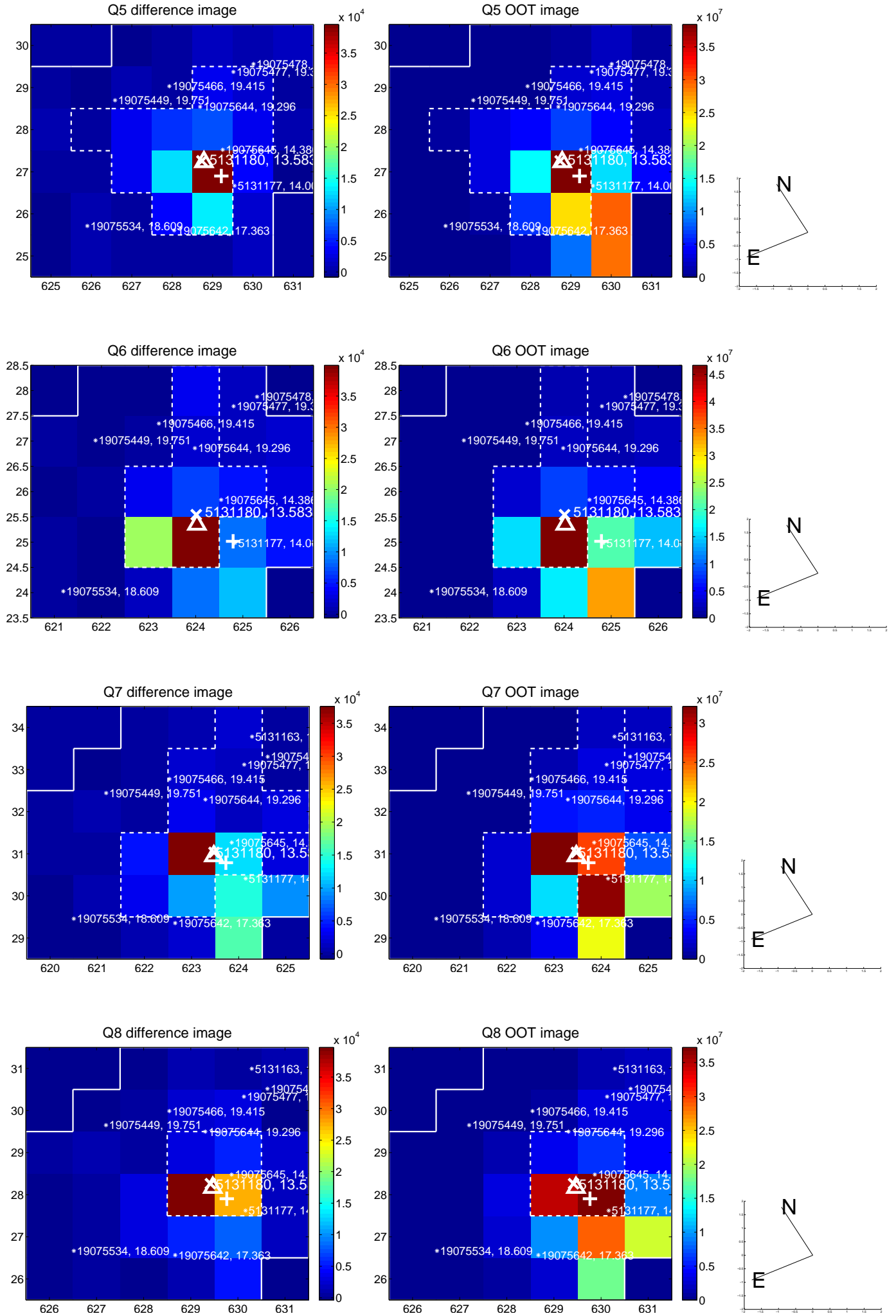


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

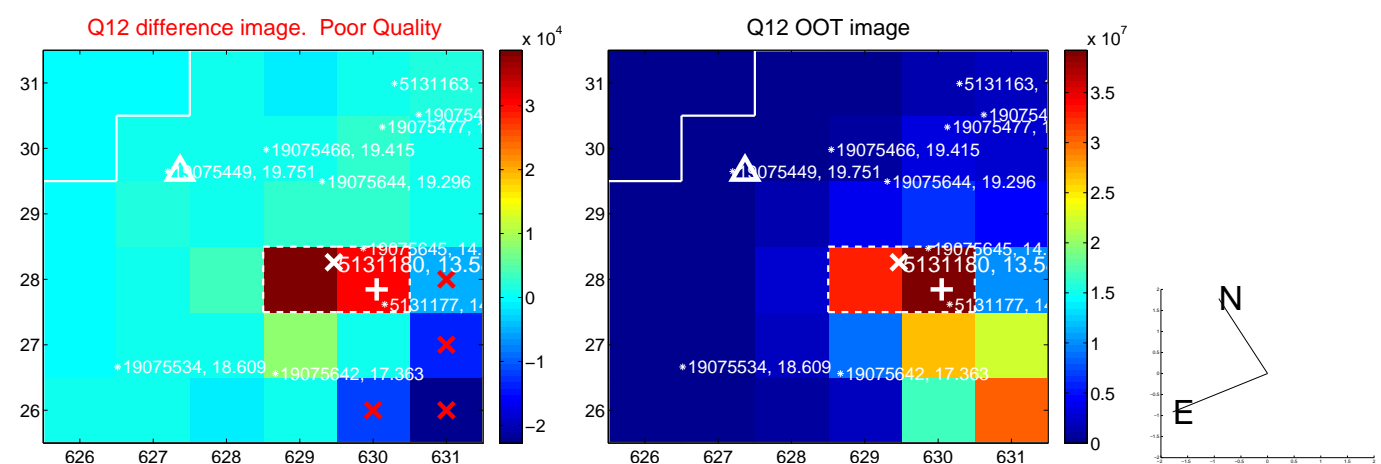
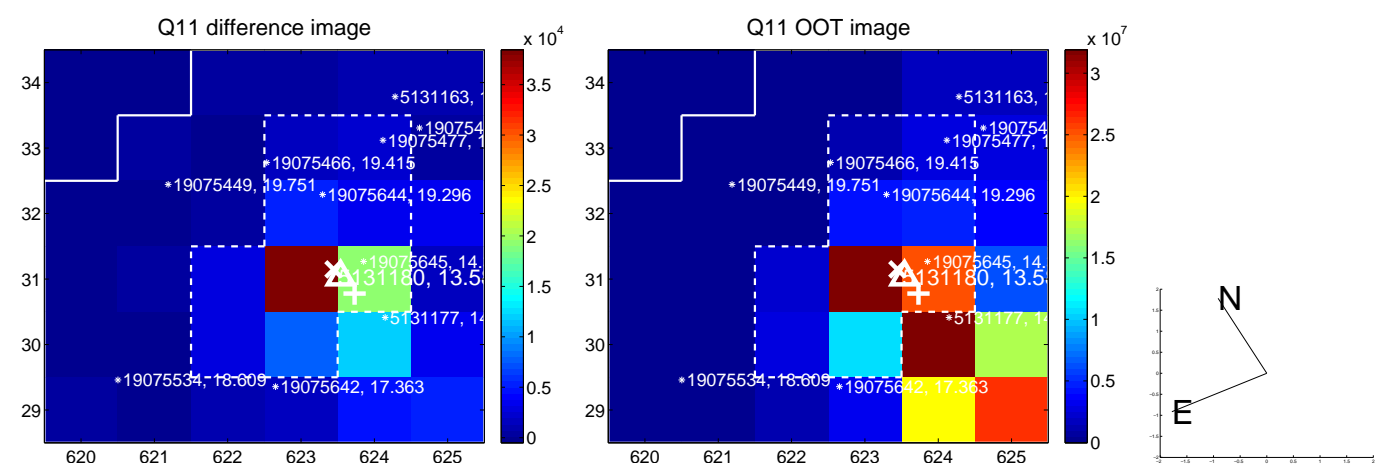
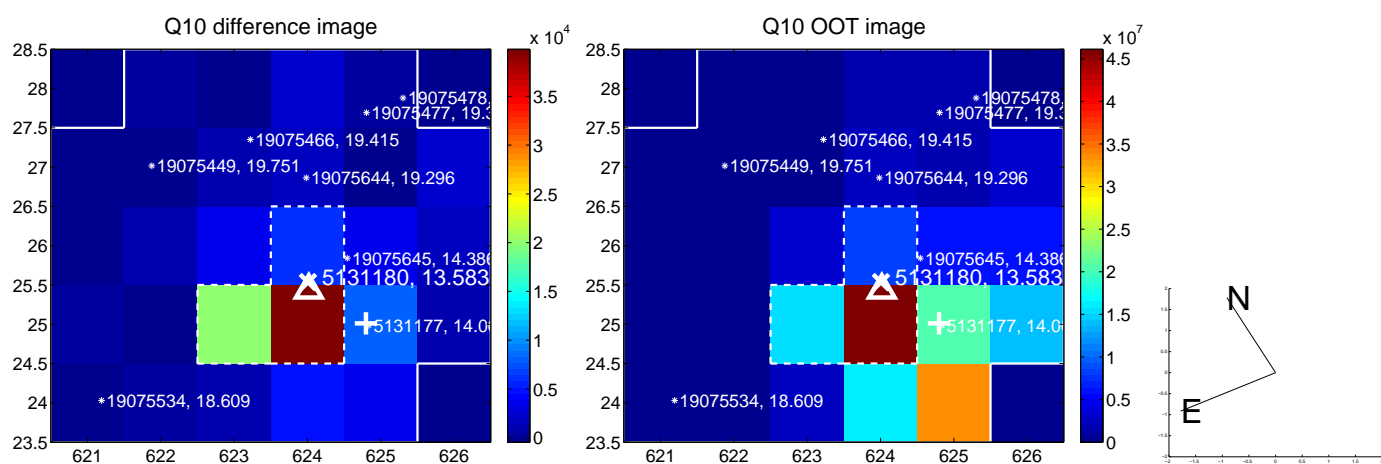
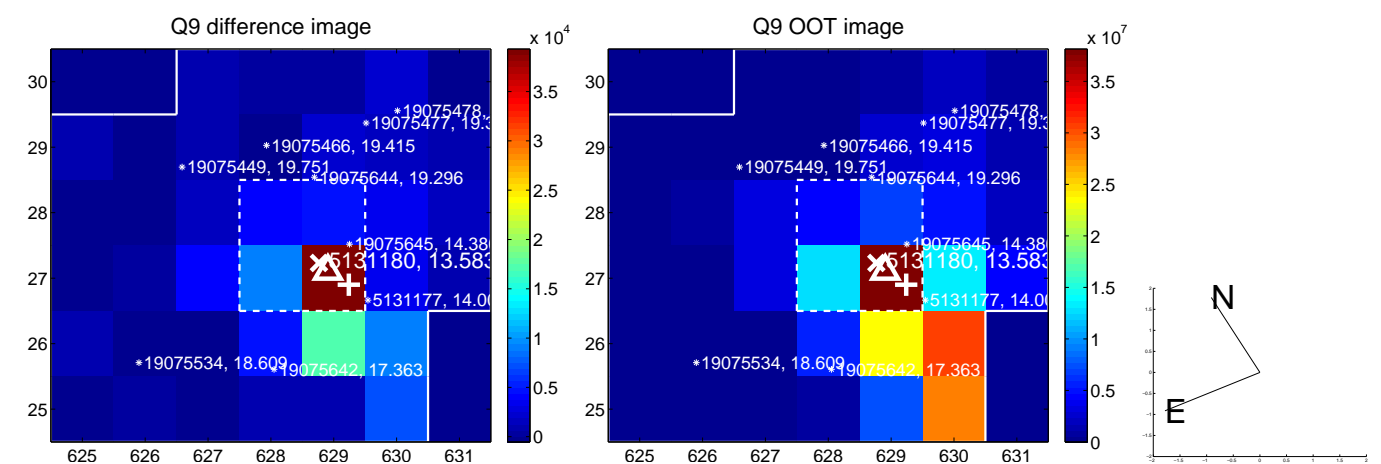
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



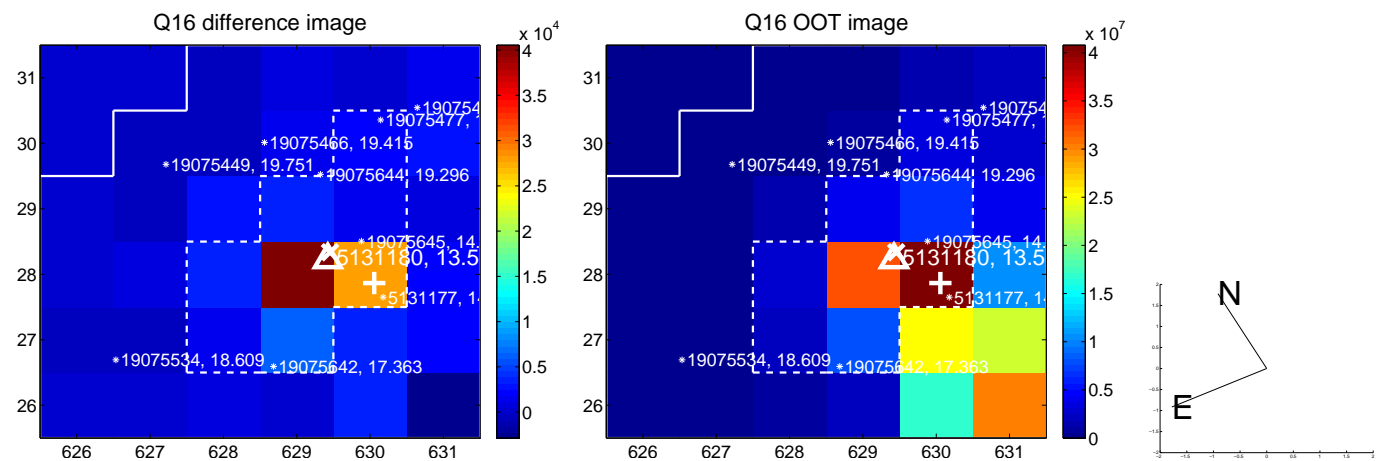
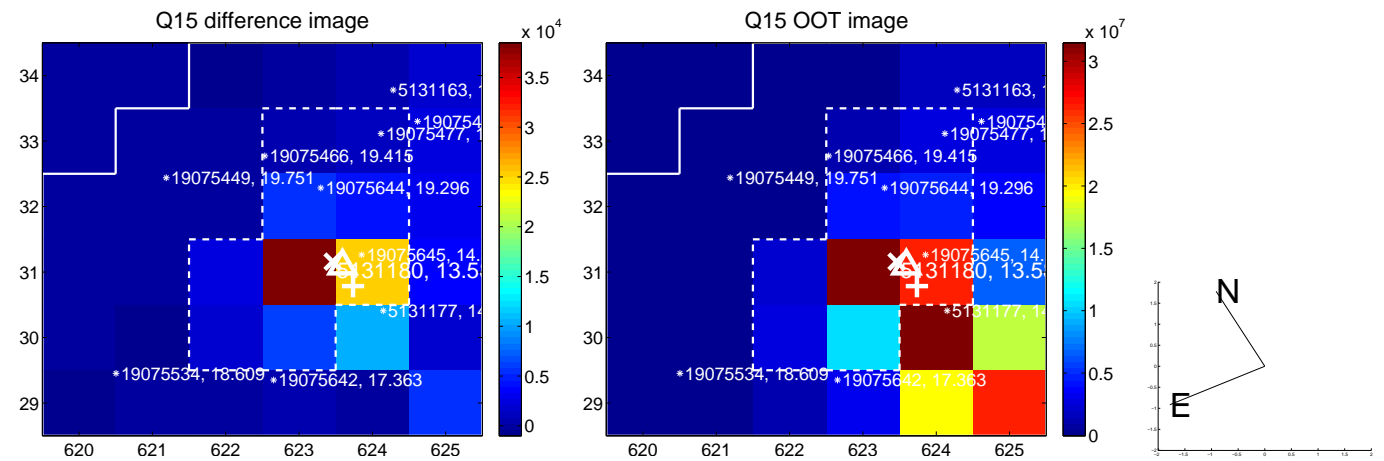
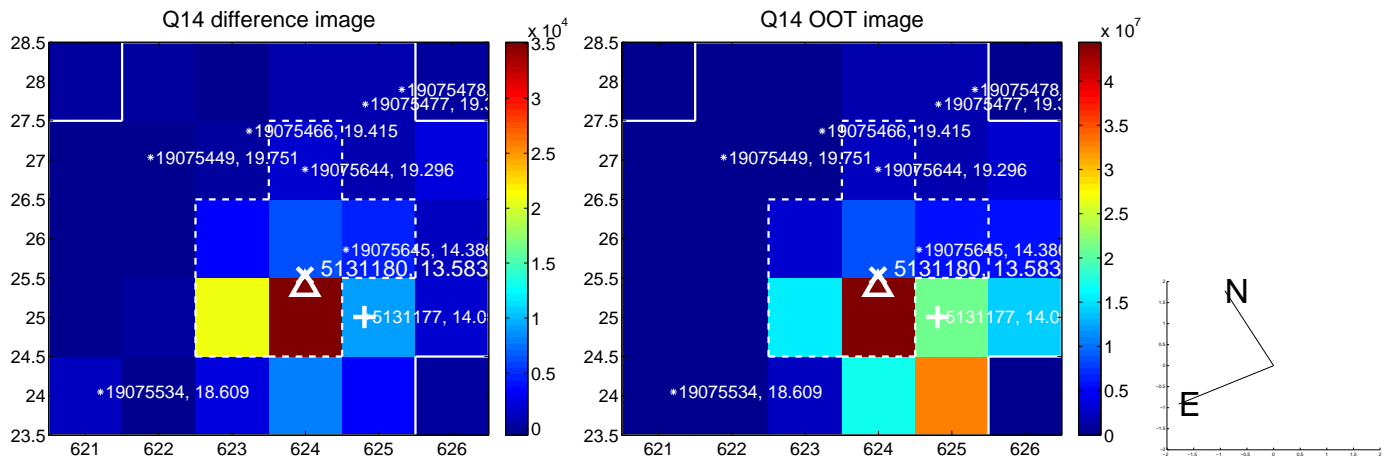
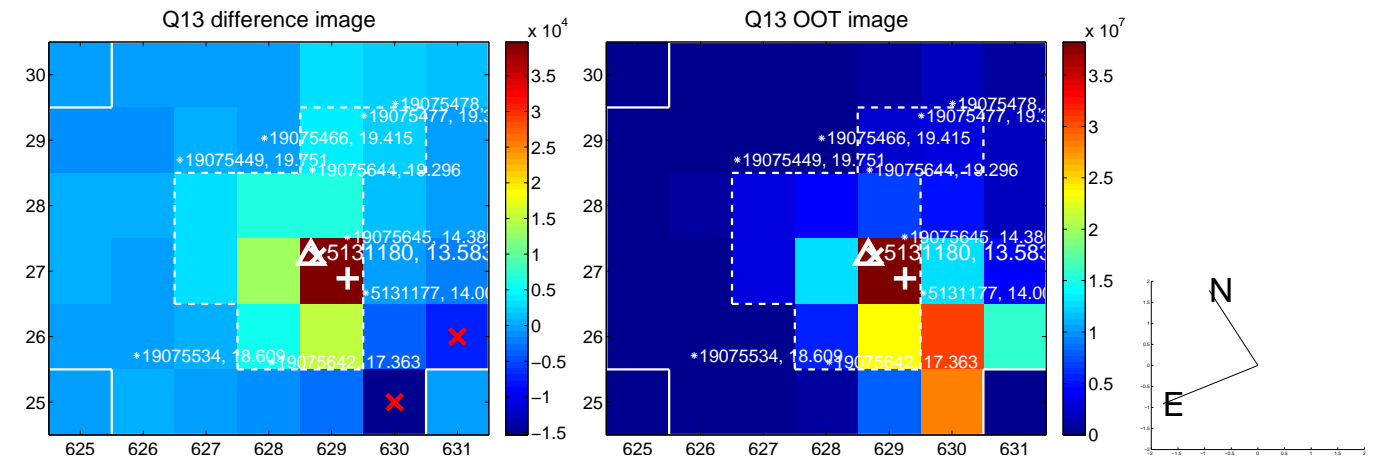
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

