

KIC 007031430

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})
007031430-01	OBS	4472.01	0.566818	131.808356	62.2	4.646	10.4	11.5	0.36	3453	0.28	177.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007031430-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH

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 007031430-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007031430-01	7031430	RR-Lyr-pri	7198959	1:1	1011.0	48	-250	7.86	15.51	10053.00	Direct-PRF	0	1.99	23.93

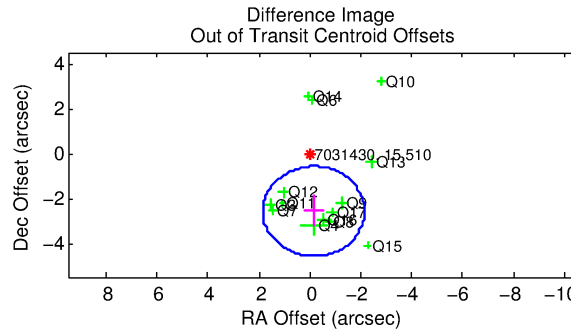
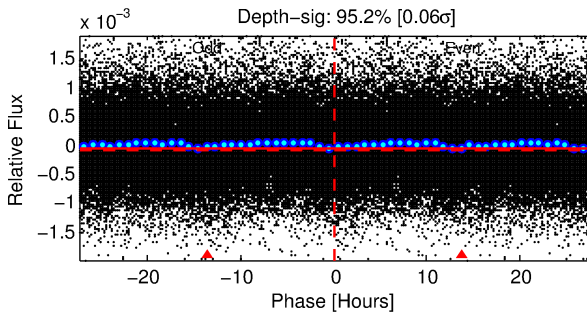
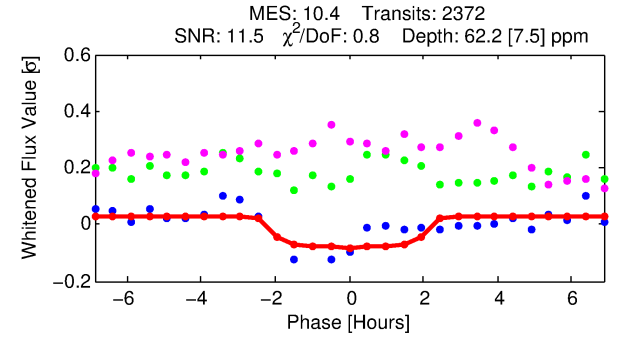
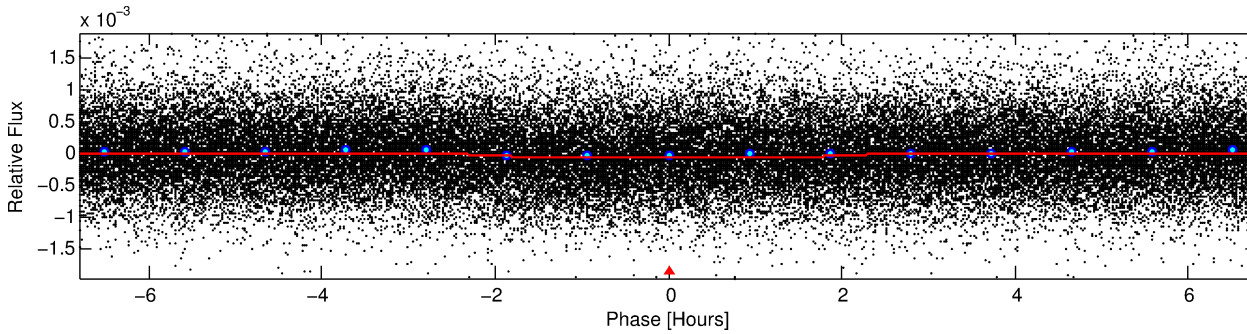
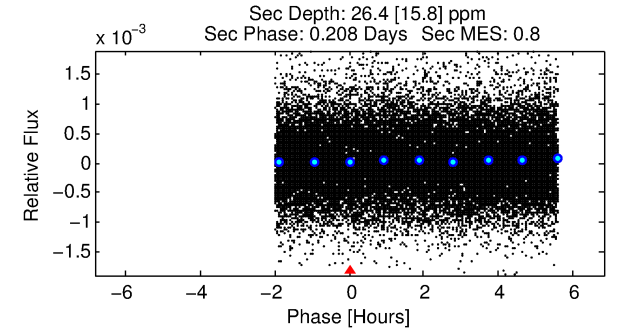
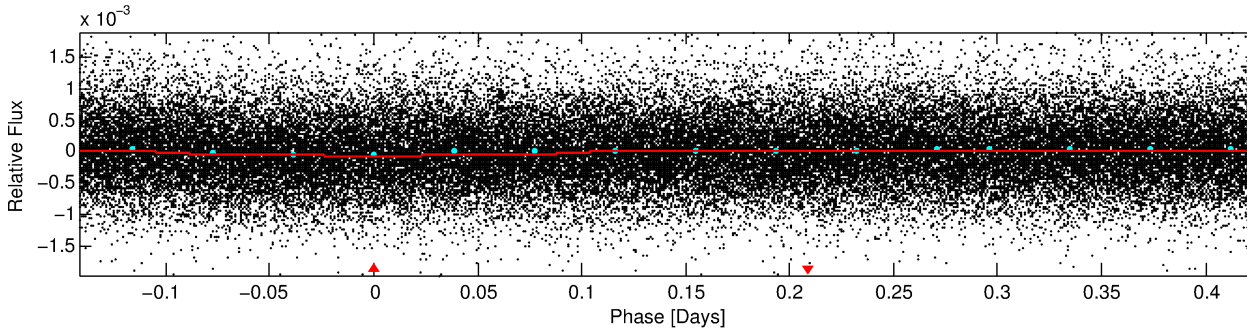
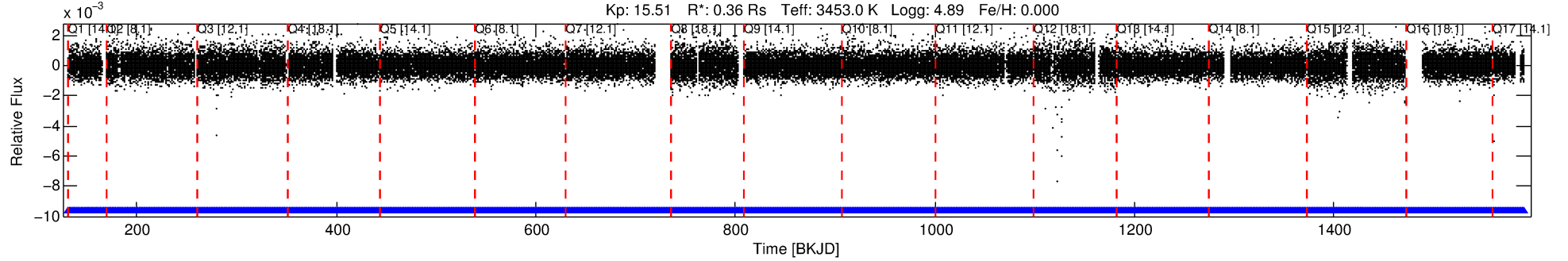
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7031430 Candidate: 1 of 1 Period: 0.567 d

KOI: K04472 Corr: No Ephemeris Match

Kp: 15.51 R*: 0.36 Rs Teff: 3453.0 K Logg: 4.89 Fe/H: 0.000



DV Fit Results:

Period = 0.56682 [0.00001] d
Epoch = 131.8084 [0.0038] BKJD
Rp/R* = 0.0071 [0.0143]
a/R* = 1.15 [2.33]
b = 0.06 [155.49]
Seff = 177.97 [17.49]
Teff = 931 [23] K
Rp = 0.28 [0.56] Re
a = 0.0096 [0.0007] AU
Ag = 17.22 [69.78] [0.23σ]
Teffp = 2933 [2972] K [0.67σ]

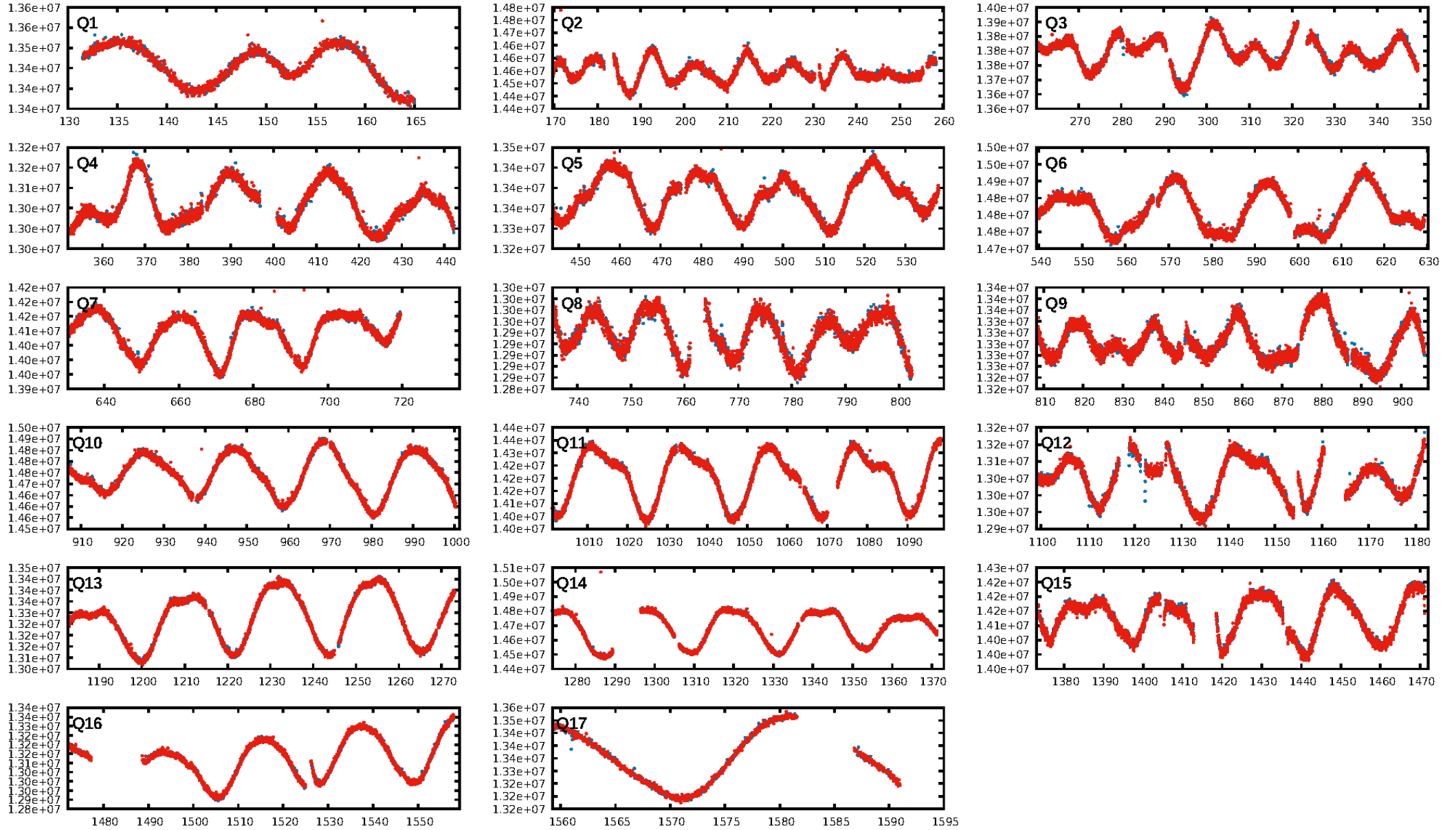
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2266/2266]
GhostDiagnostic-chr: 0.4819
Centroid-sig: 38.3%
Centroid-so: 0.840 arcsec [1.07σ]
OotOffset-rm: 2.580 arcsec [3.87σ]
KicOffset-rm: 2.546 arcsec [3.96σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 1.00 [17/17]

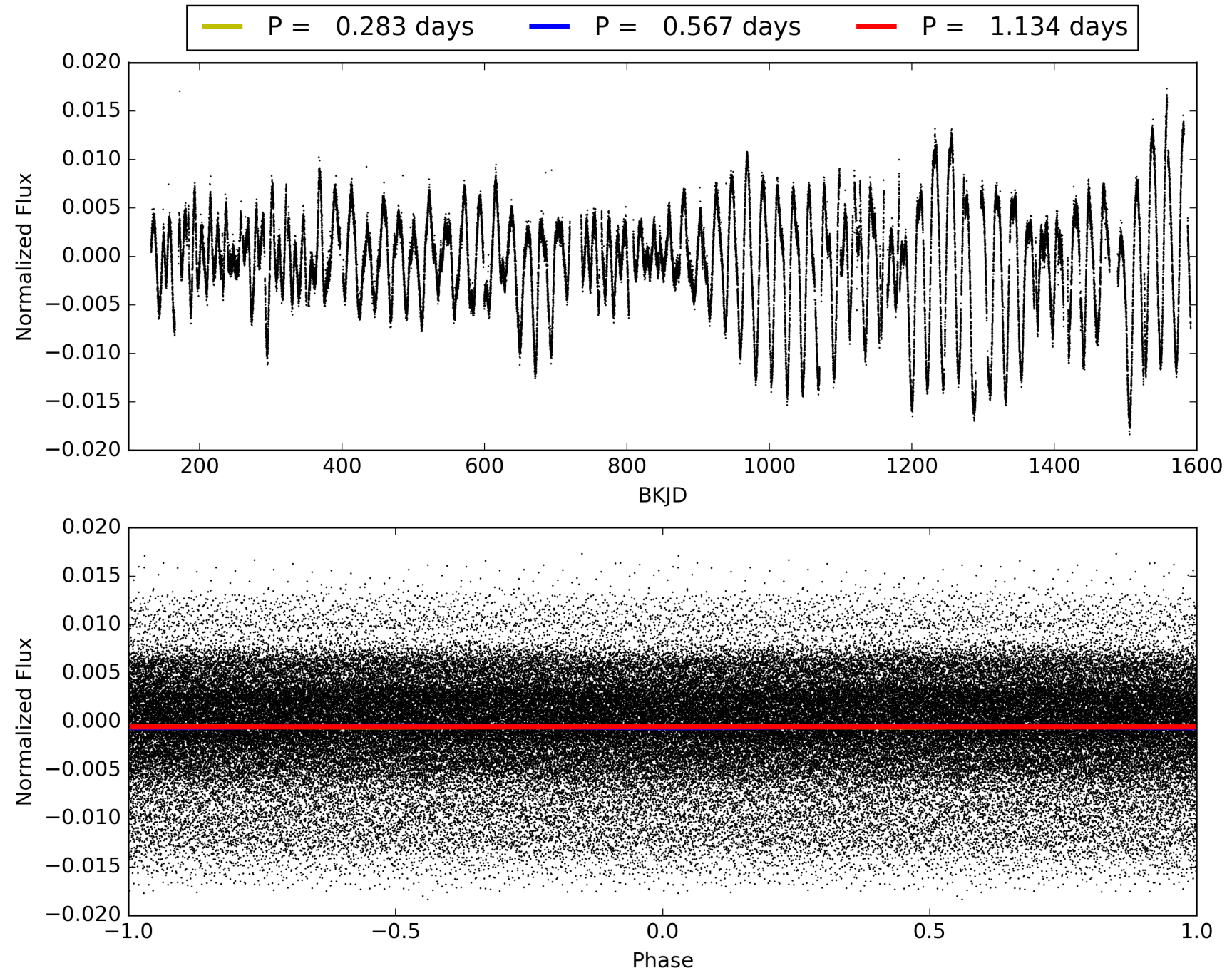
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:12:20 Z

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

TCE 007031430-01, PDC Light Curves

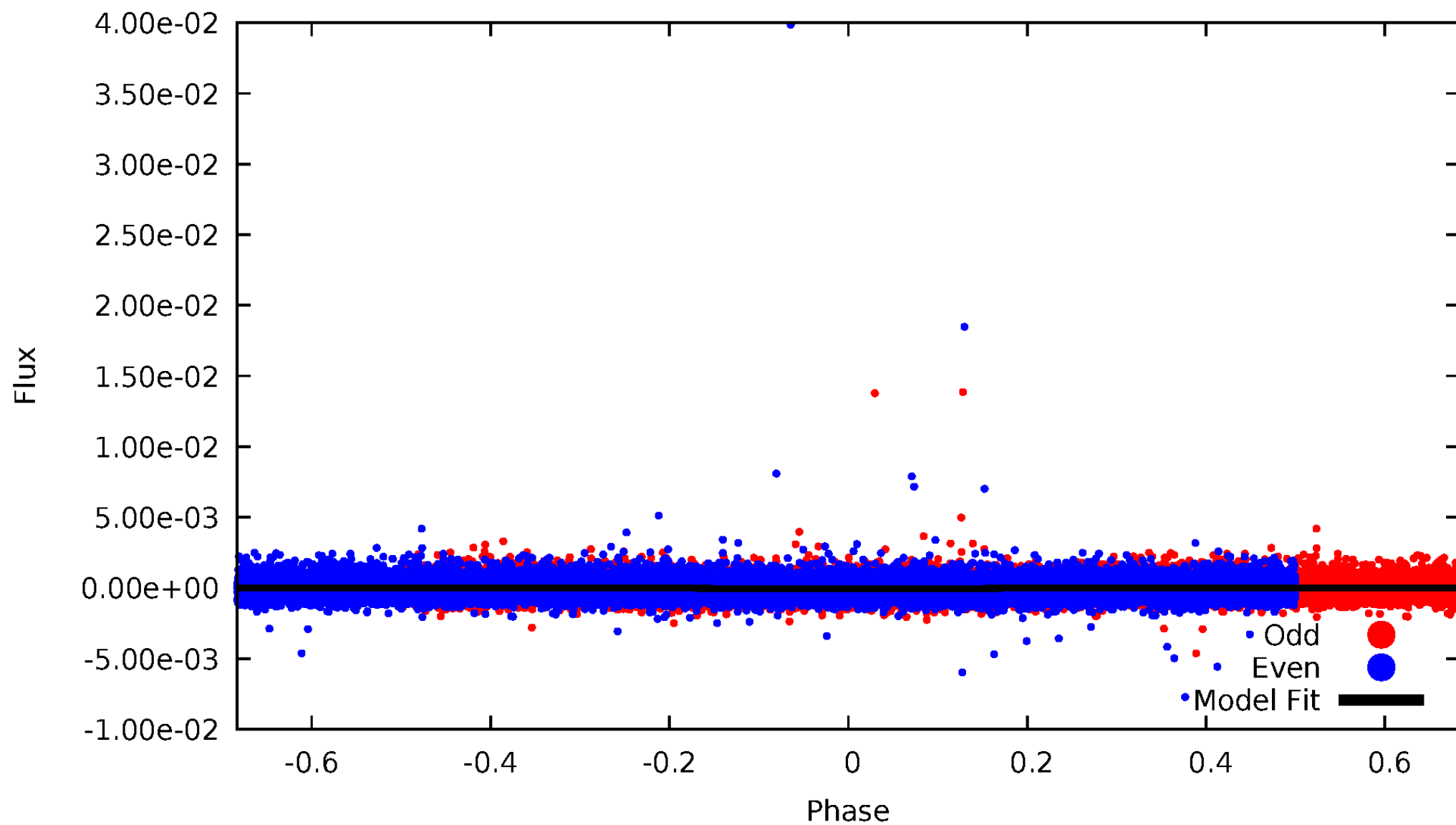


TCE 007031430-01



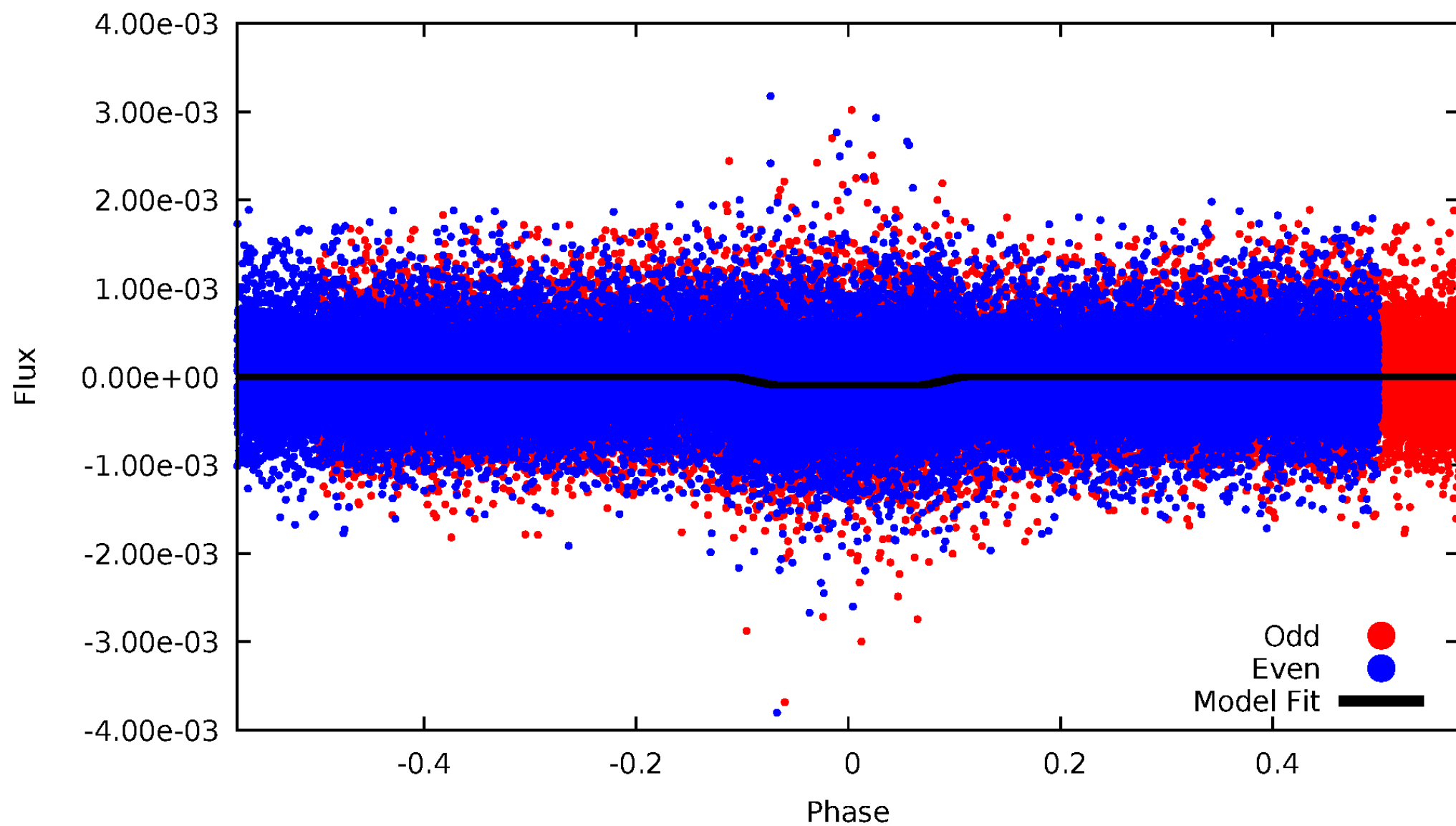
DV Odd/Even

TCE 007031430-01



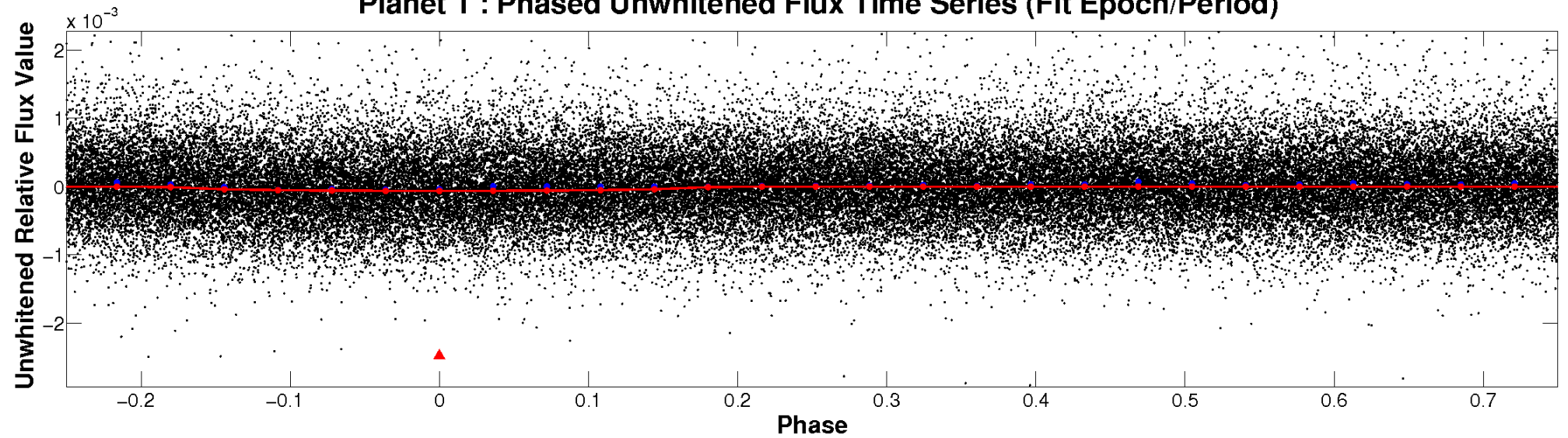
ALT Odd/Even

TCE 007031430-01

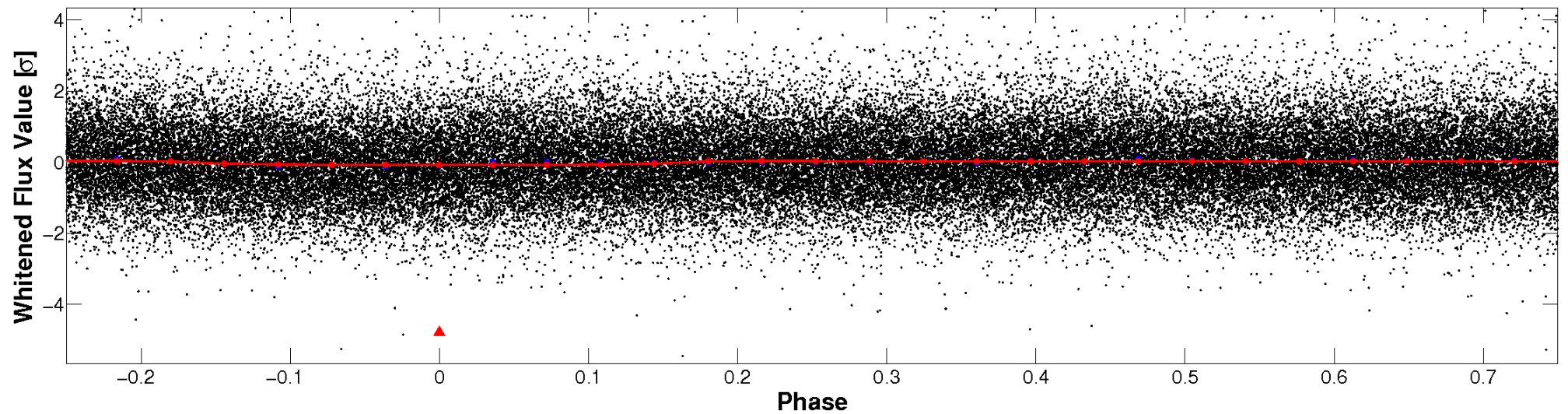


Non-Whitened Vs. Whitened Light Curve

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

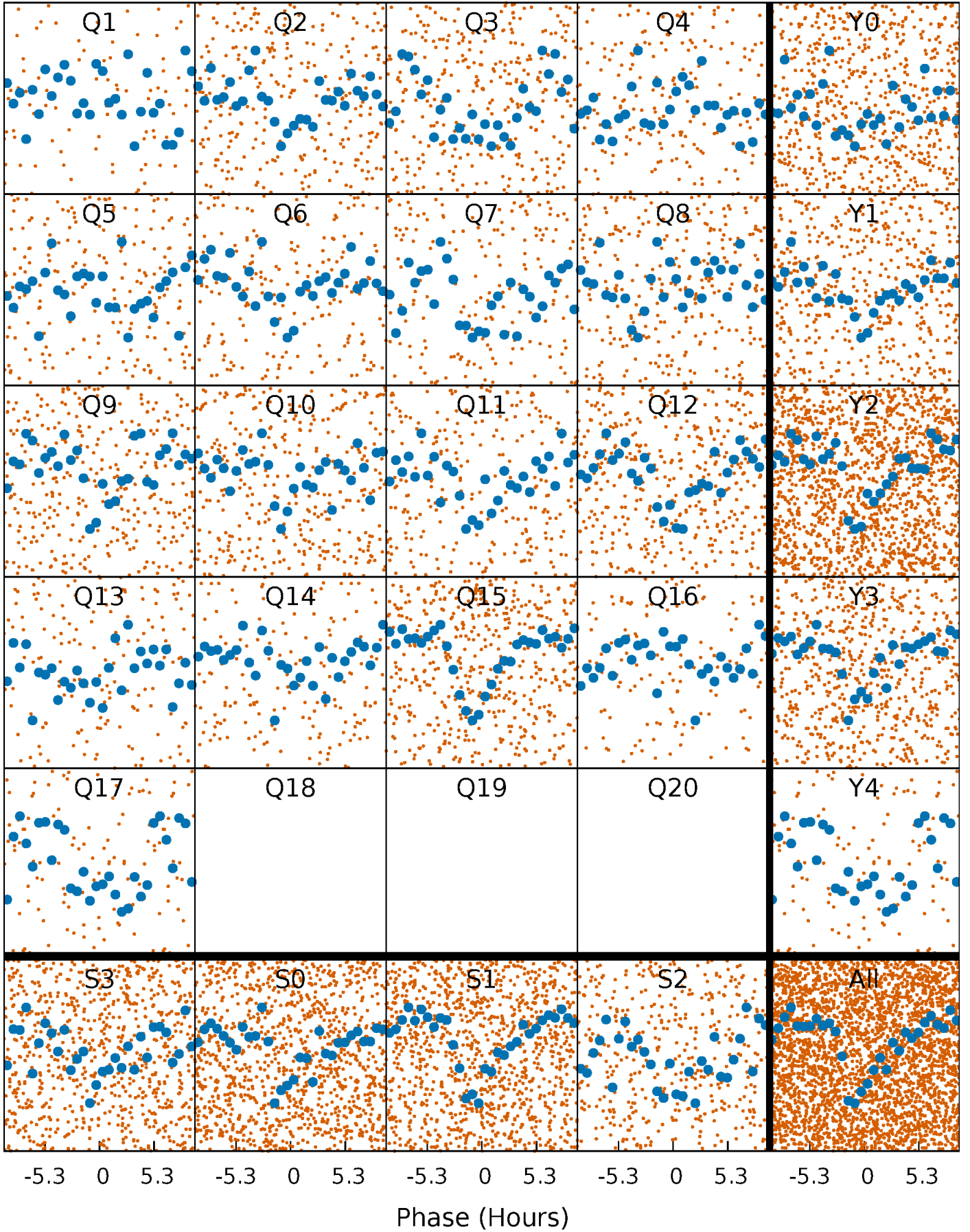


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



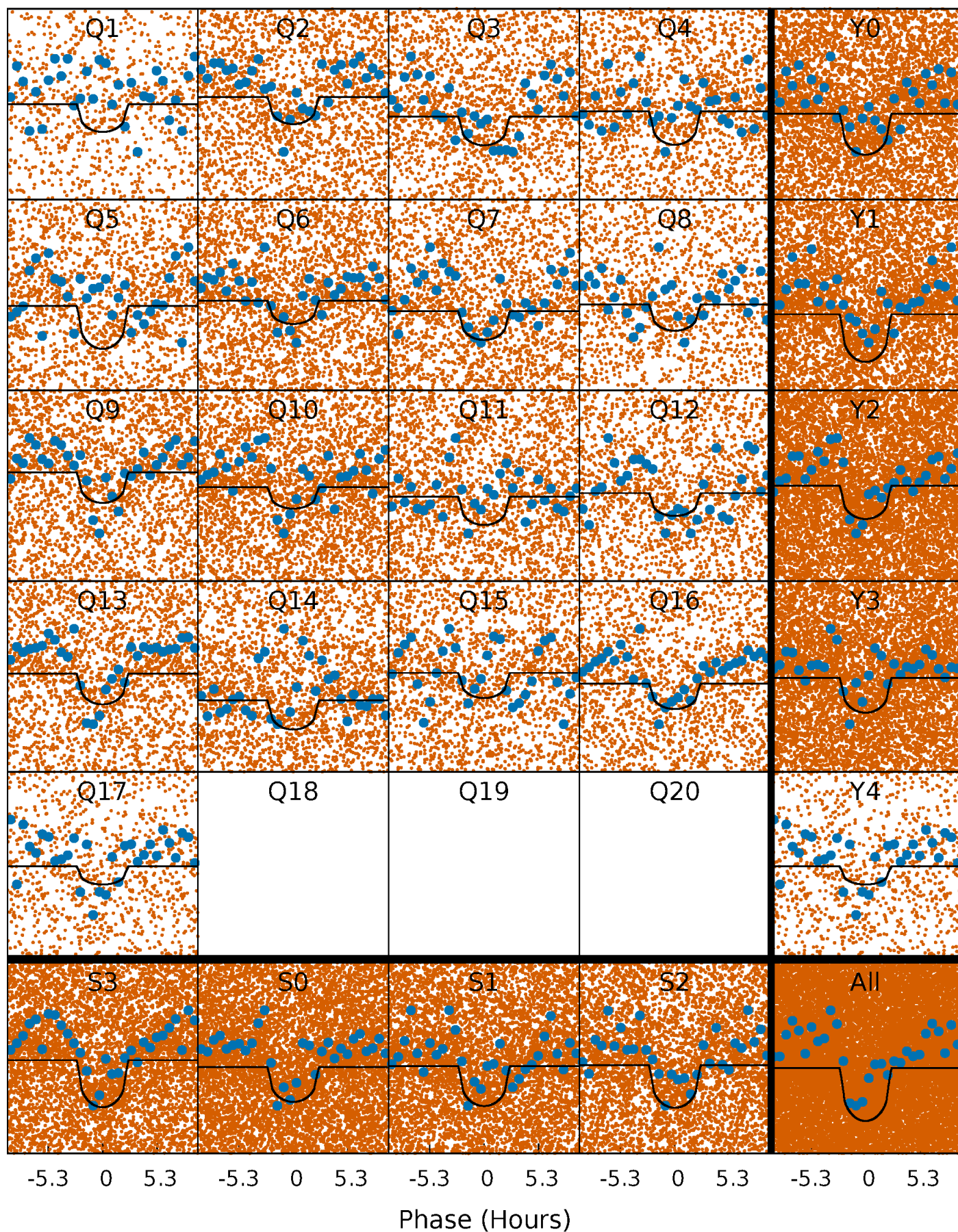
PDC Quarter-Phased Transit Curves

TCE 007031430-01 $P = 0.566818$ Days $T_0 = 131.808356$ (BKJD)



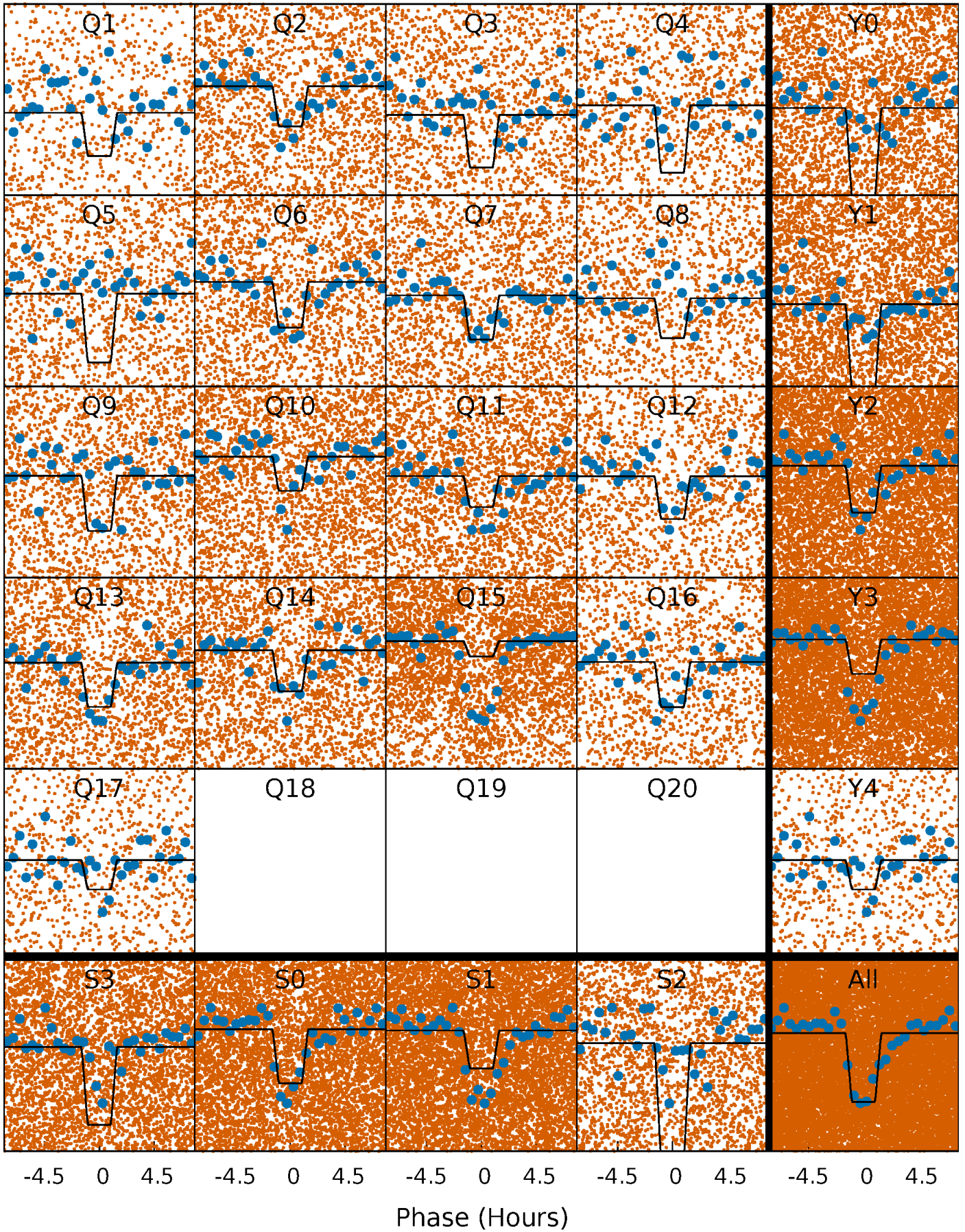
DV Quarter-Phased Transit Curves

TCE 007031430-01 P= 0.566818 Days $T_0=131.808356$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

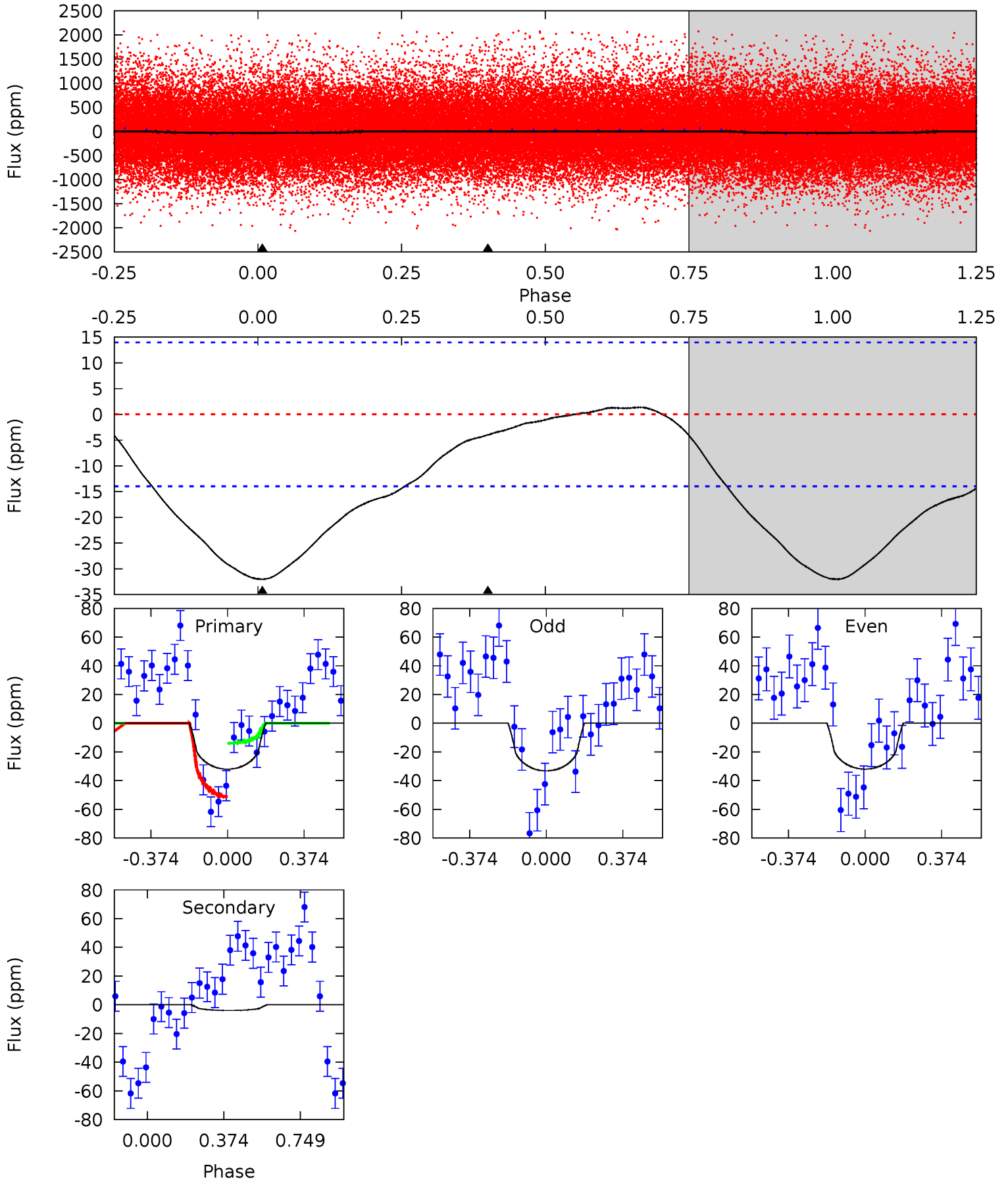
TCE 007031430-01 P= 0.566801 Days $T_0=131.802876$ (BKJD)



DV Model-Shift Uniqueness Test

007031430-01, P = 0.566818 Days, E = 131.241538 Days

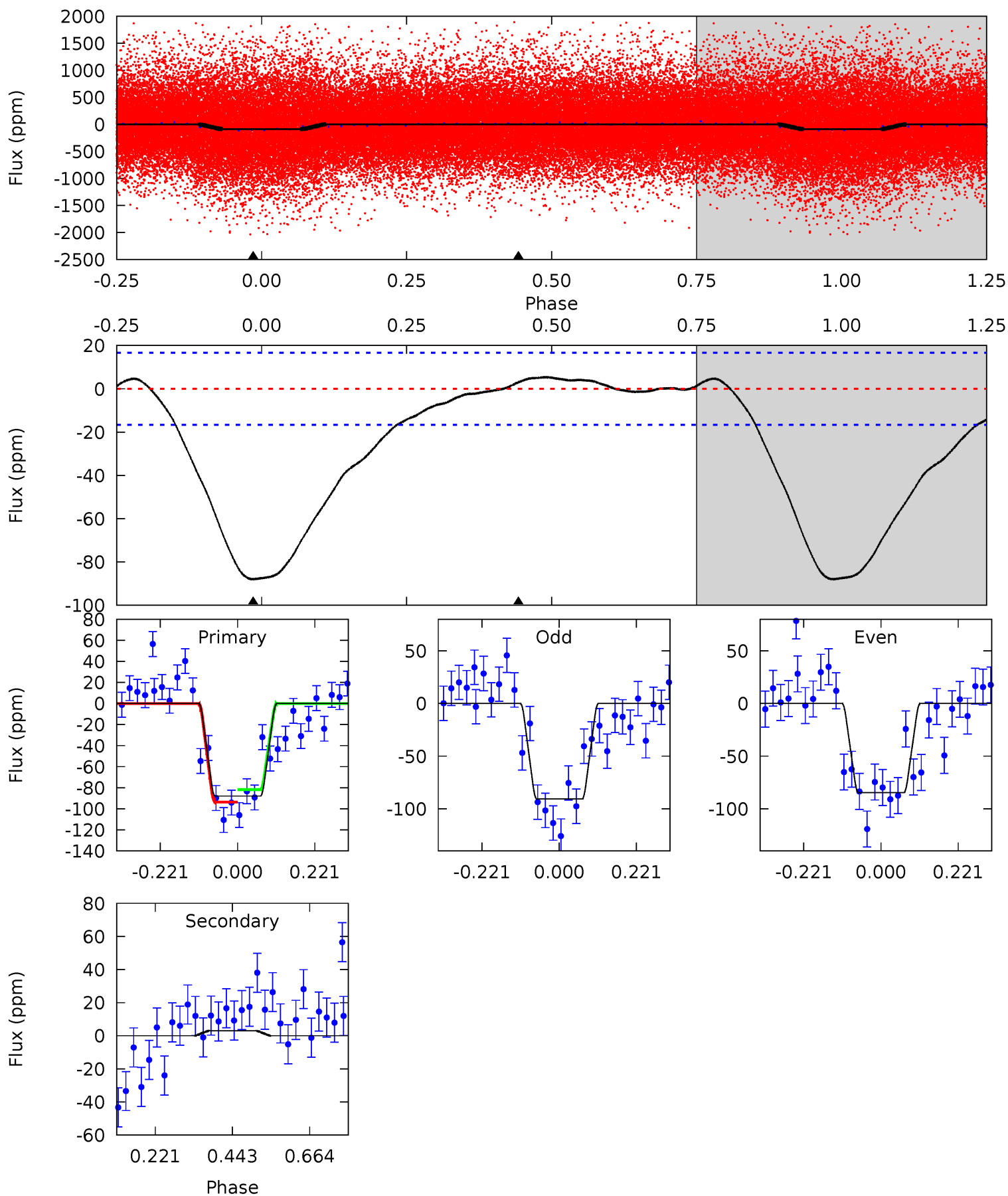
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.80	1.22	0	0	4.28	0.89	0.55	9.80	9.80	1.22	1.22	0.19	0.75	0.04	5.69



Alt Model-Shift Uniqueness Test

007031430-01, P = 0.566801 Days, E = 131.236075 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	-0.78	0	0	4.40	1.22	1.93	23.2	23.2	-0.78	-0.78	0.79	1.07	0.06	1.57



Stellar Parameters For KIC 007031430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3453^{+44}_{-44}	$4.892^{+0.036}_{-0.030}$	$0.000^{+0.100}_{-0.100}$	$0.358^{+0.031}_{-0.034}$	$0.364^{+0.038}_{-0.042}$	$11.210^{+2.179}_{-1.517}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+9%/-9%	+10%/-12%	+19%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 007031430-01 / KOI 4472.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 3	$0.50^{+0.46}_{-0.35}$	1301^{+26}_{-25}	1948^{+798}_{-3839}	$0.624^{+6.099}_{-0.569}$
Alt.	3 ± 4	$0.56^{+0.53}_{-0.36}$	1300^{+24}_{-27}	-2073^{+231}_{-434}	$-0.297^{+0.407}_{-2.915}$

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 $A_{obs} \gg 1.0$

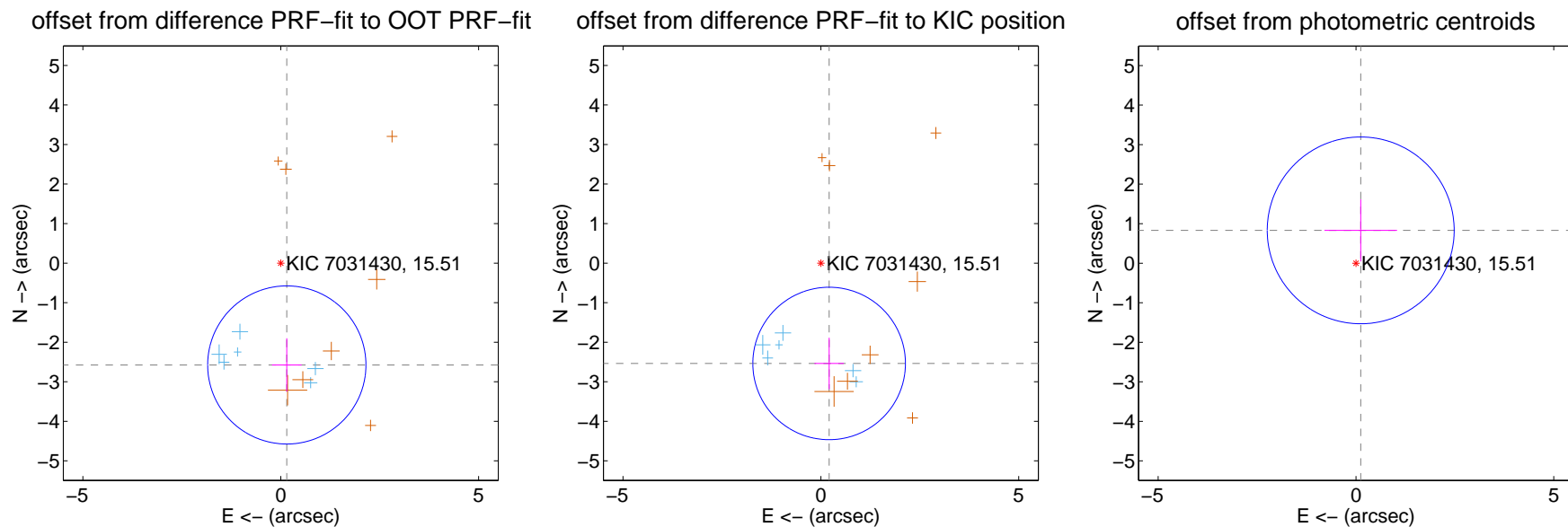
DV Centroid Data

Supplemental centroid analysis for 007031430-01. Kepler magnitude: 15.51. Transit SNR 11.47

There are 6 quarters with good PRF difference image offsets

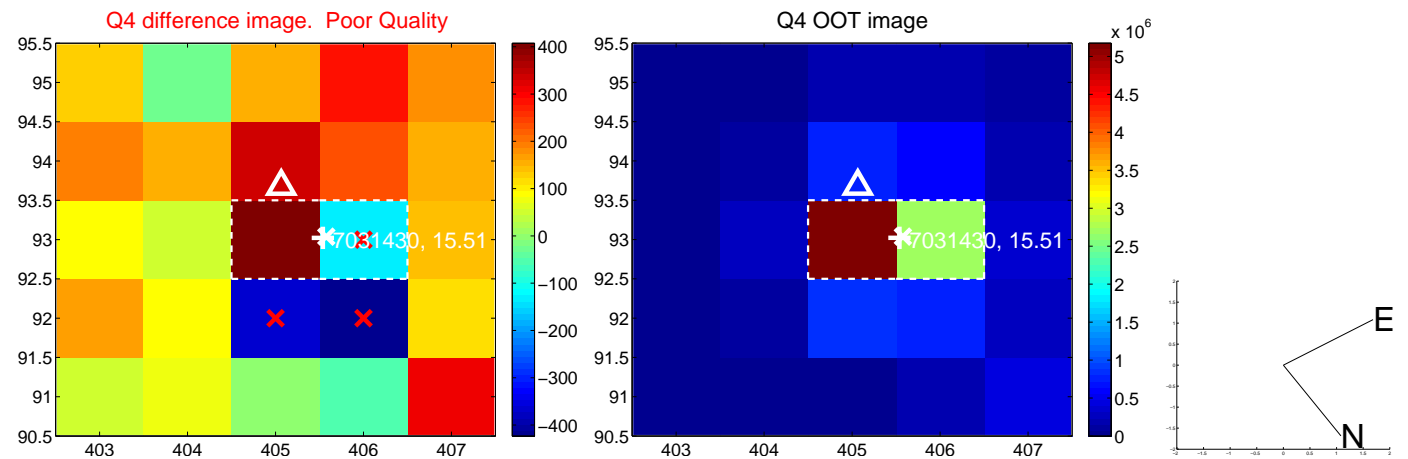
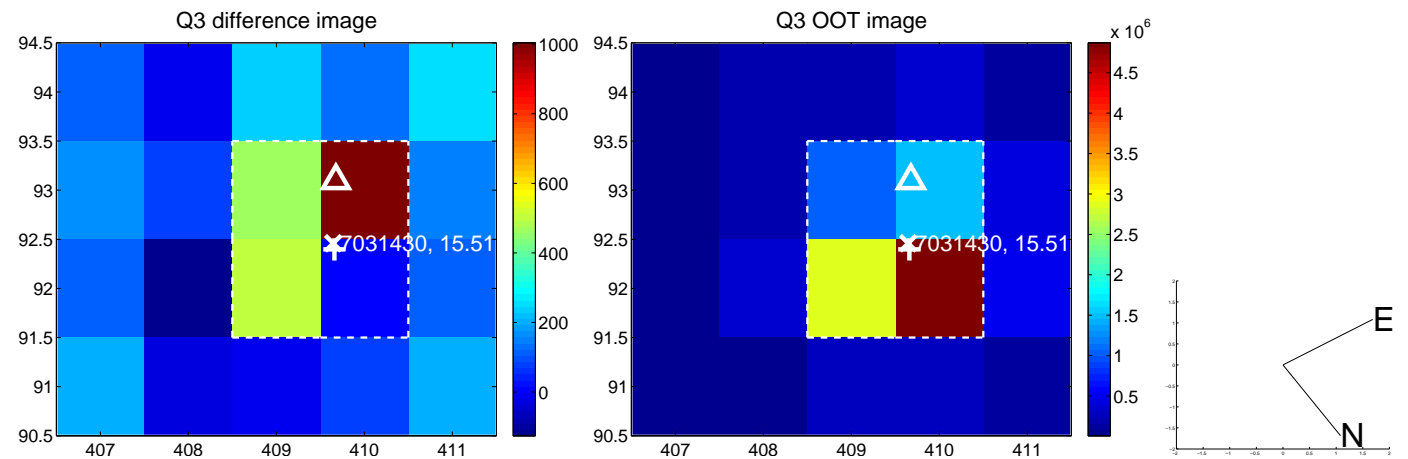
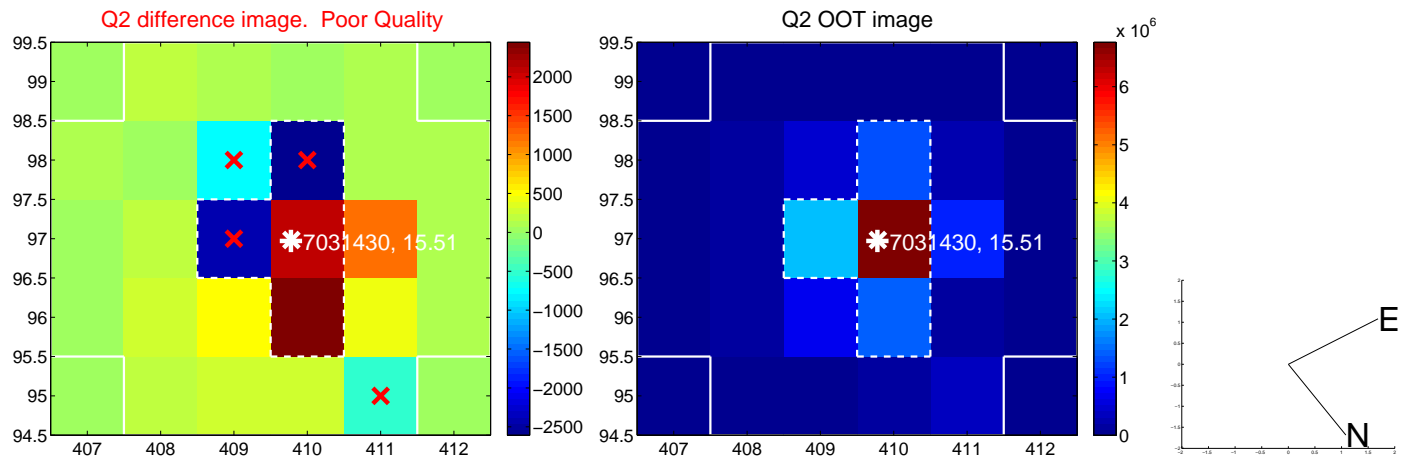
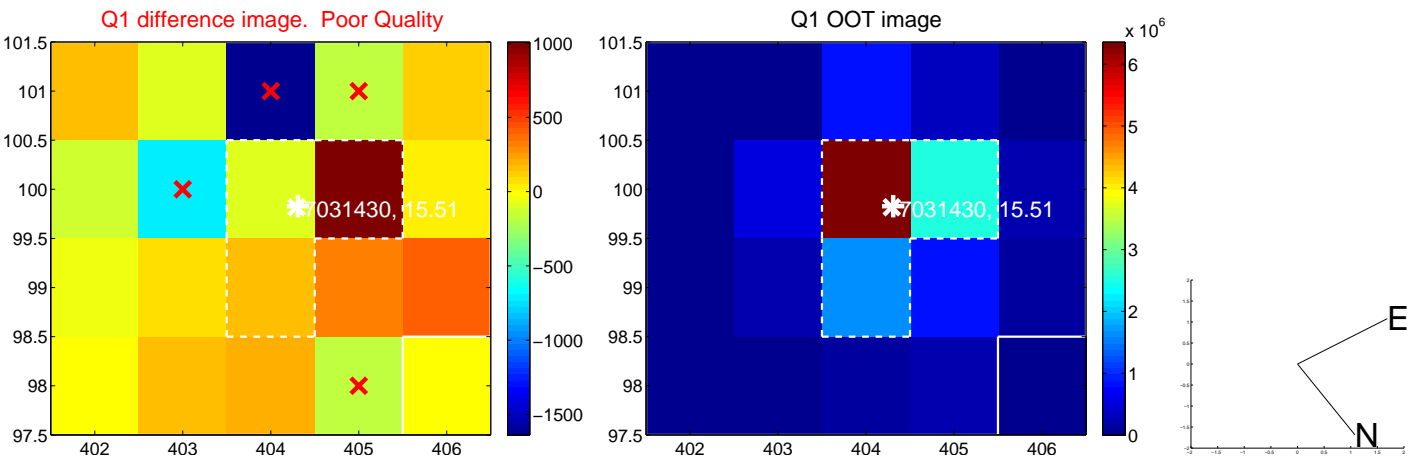
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.580 ± 0.667	3.87	-0.153 ± 0.374	-2.575 ± 0.674
PRF-fit source offset from KIC position	2.546 ± 0.643	3.96	-0.209 ± 0.370	-2.537 ± 0.651
photometric centroid source offset	0.84 ± 0.79	1.07	-0.12 ± 0.92	0.83 ± 0.78

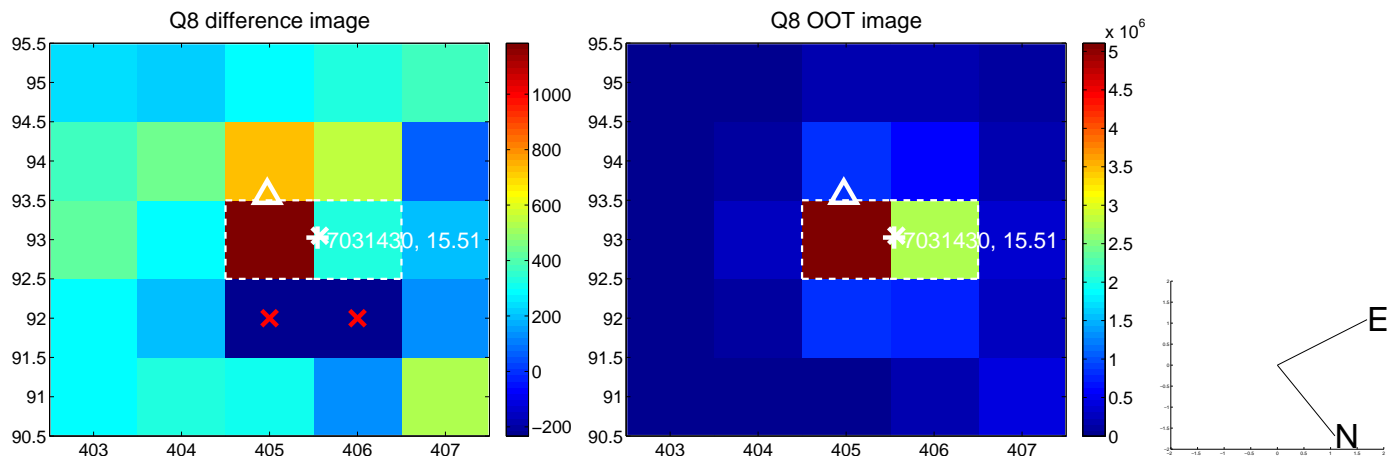
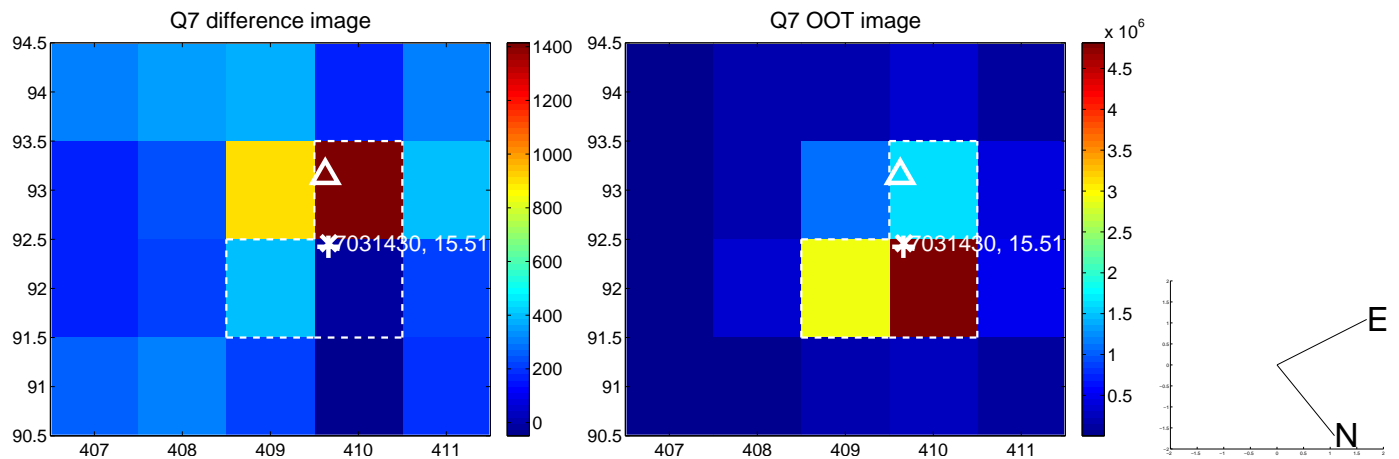
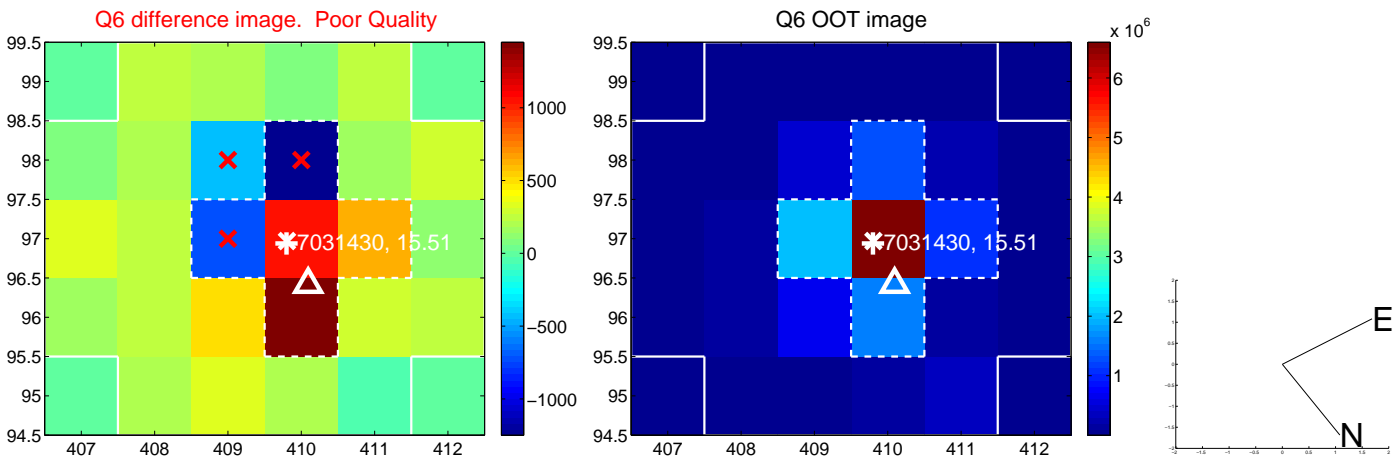
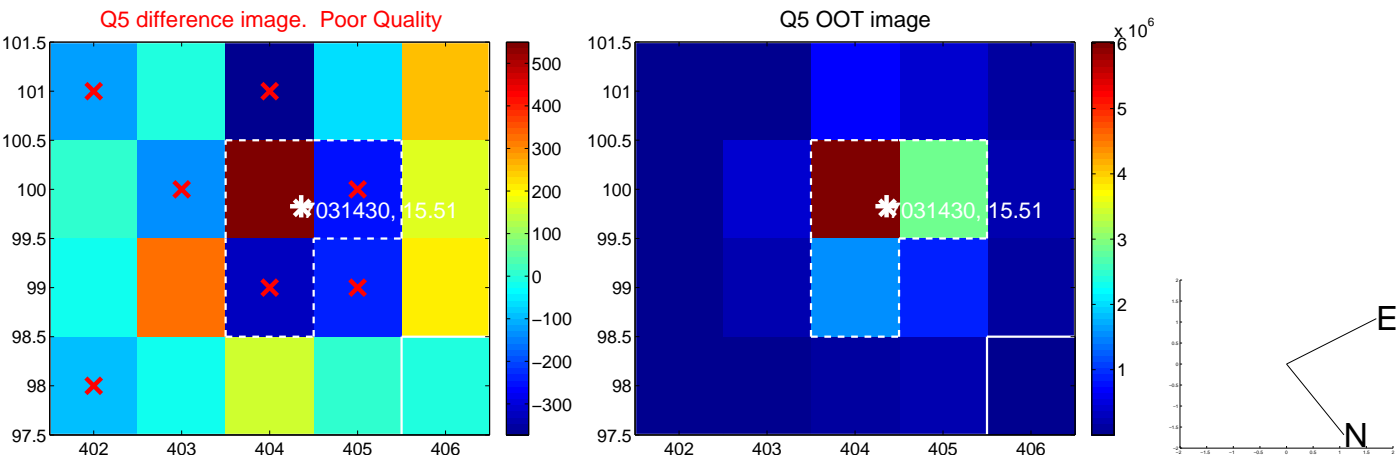


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

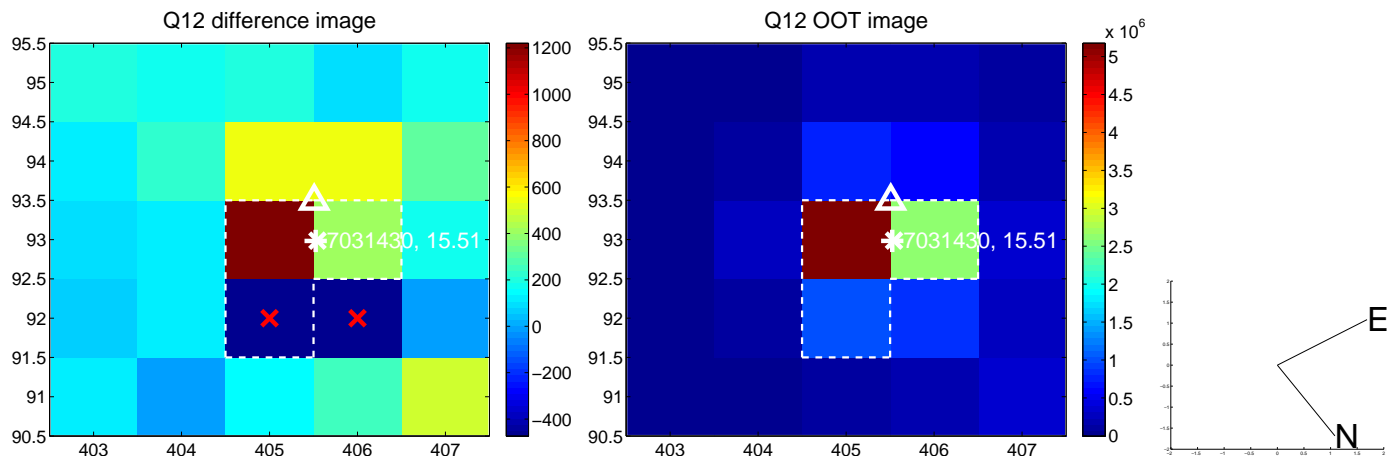
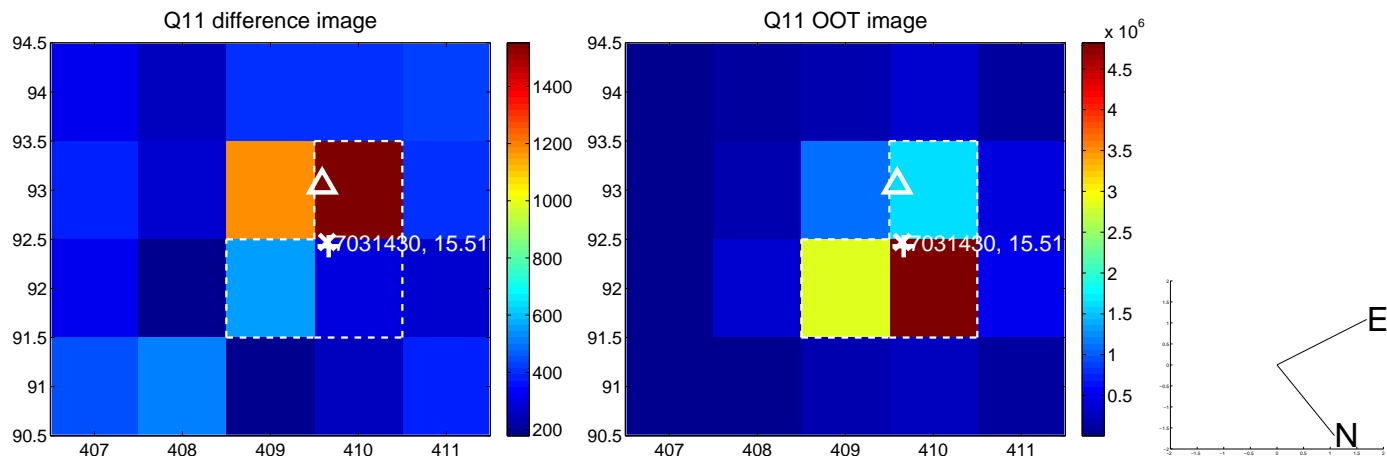
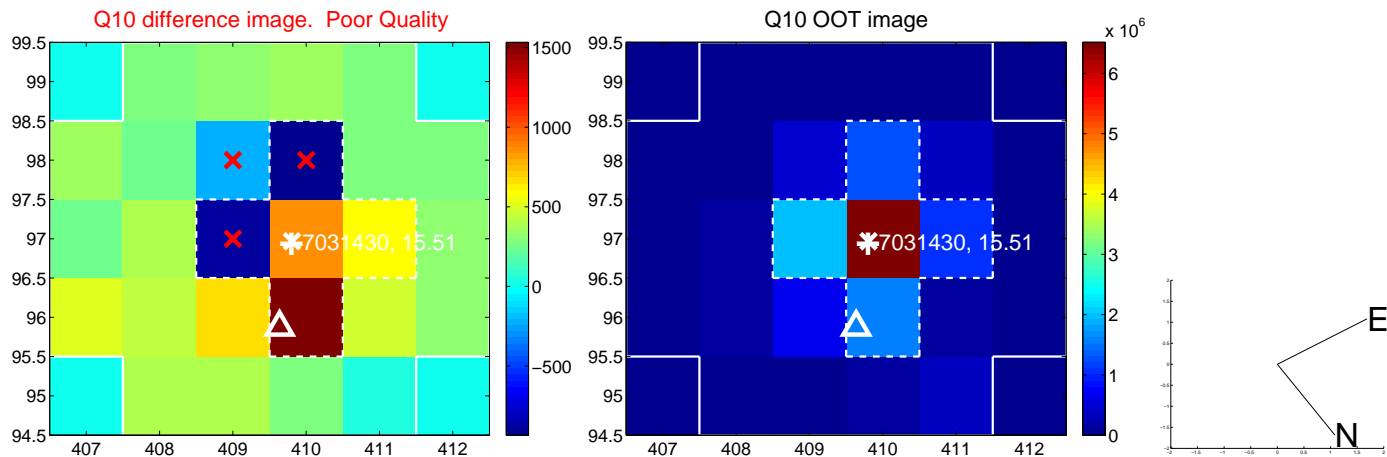
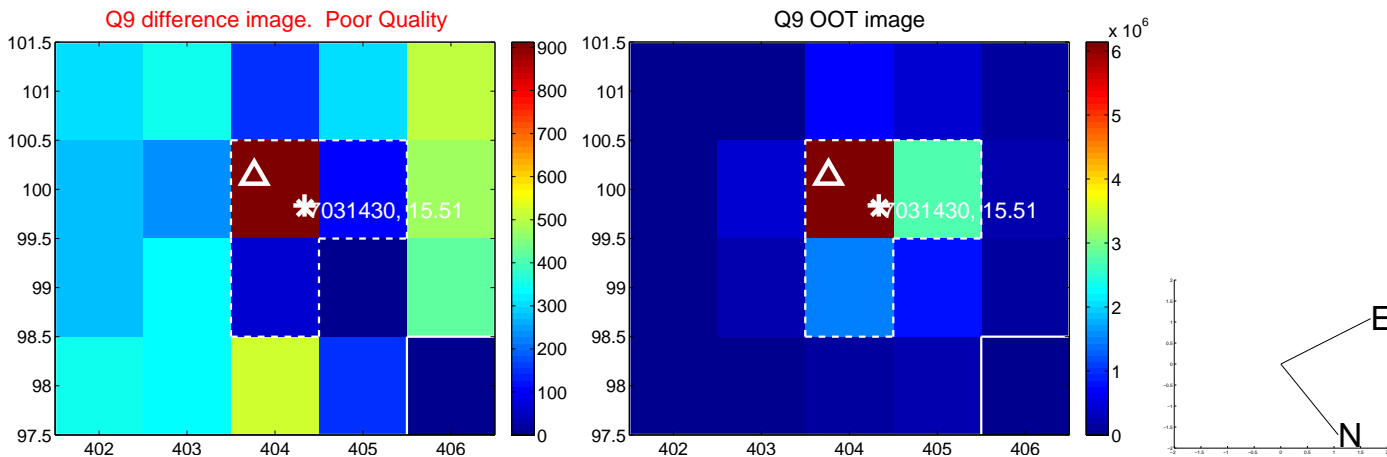
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



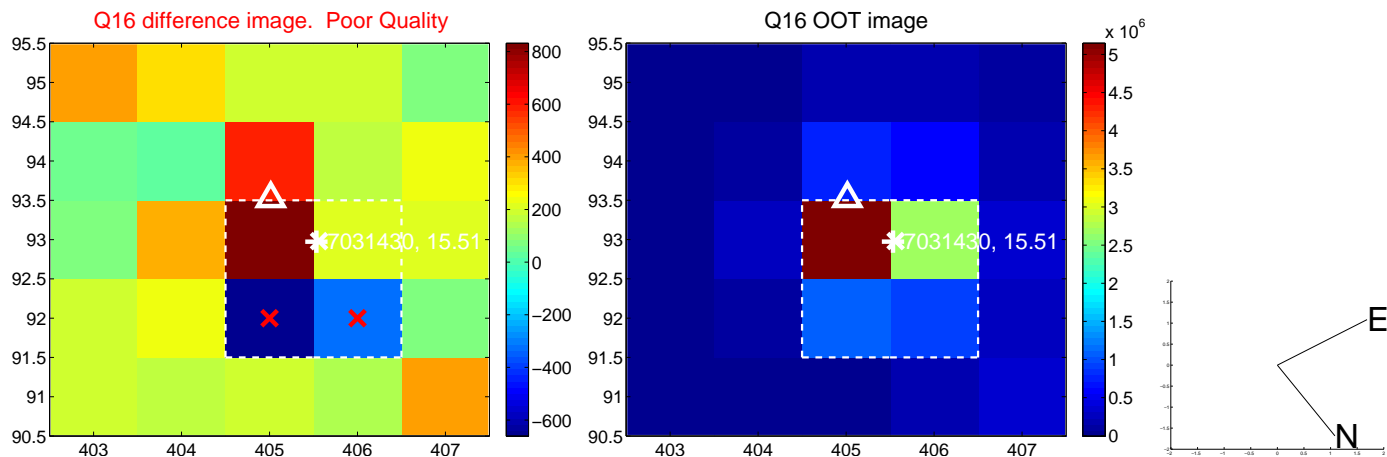
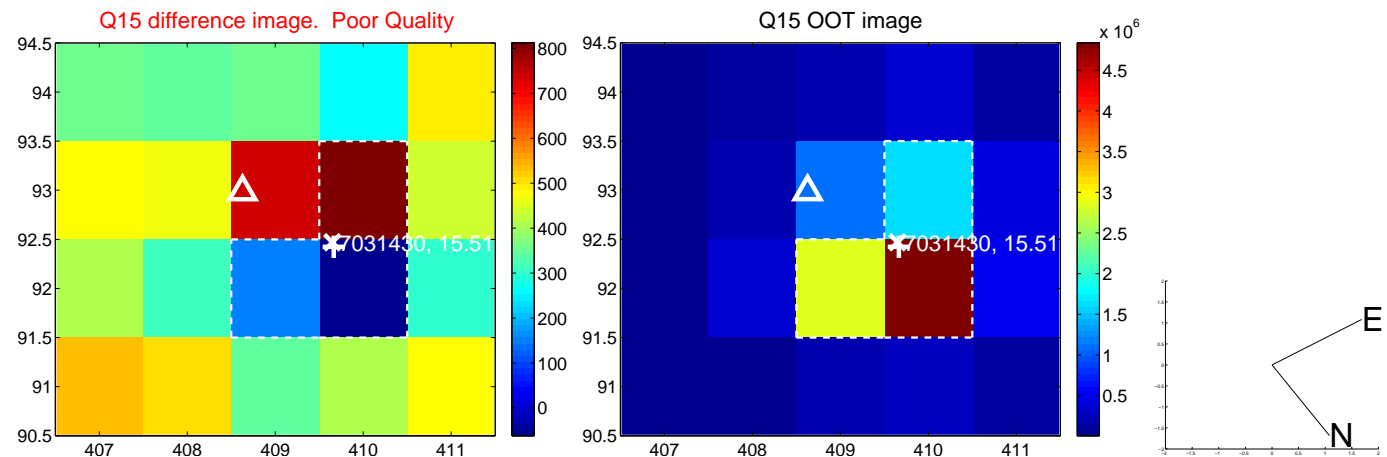
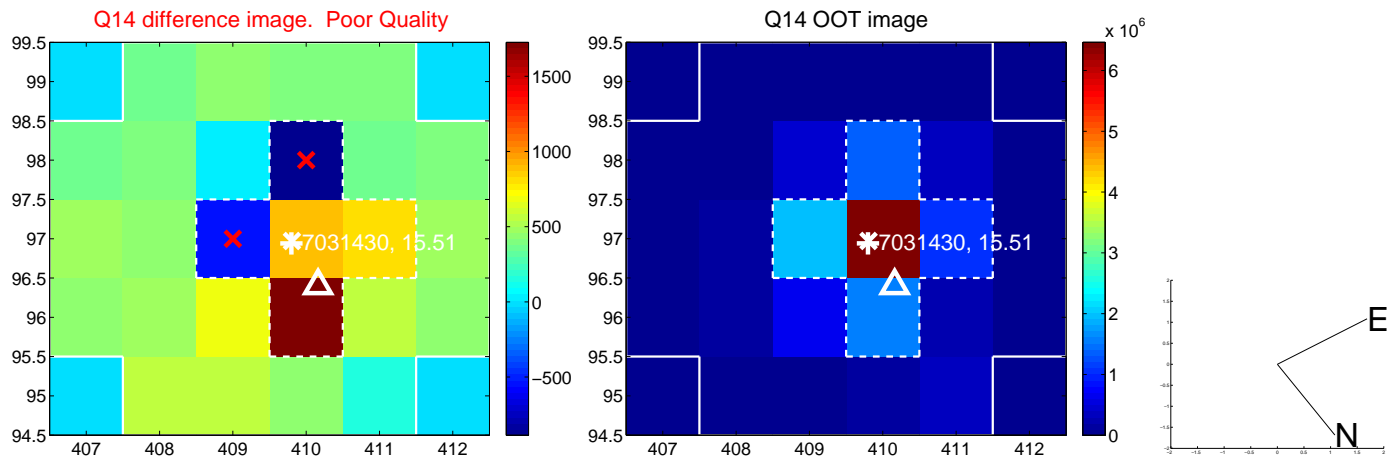
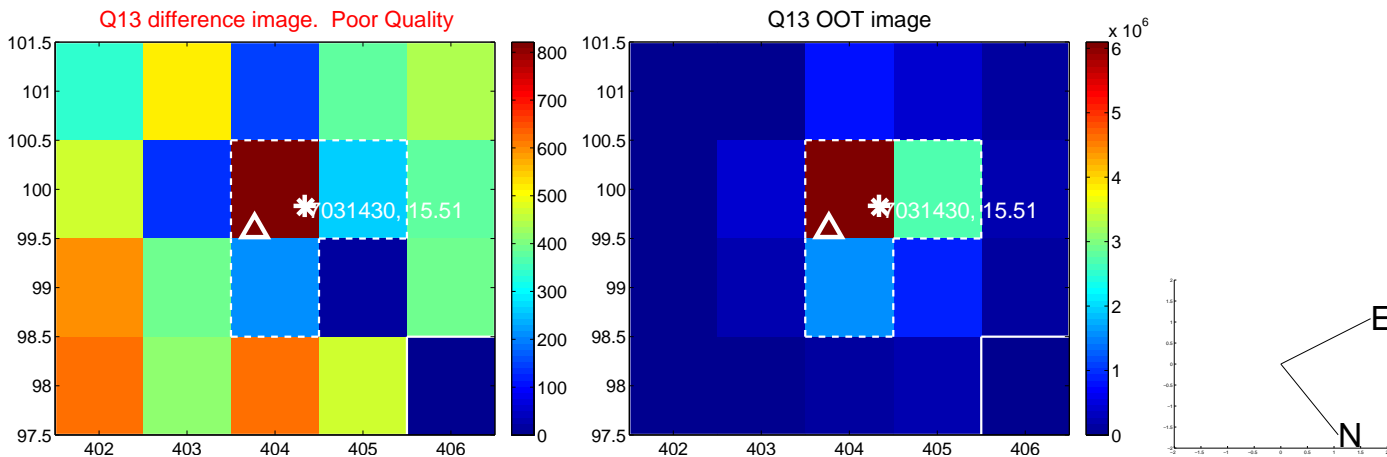
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

