

KIC 004176455

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})
004176455-01	OBS	No	7.415447	136.878265	24.6	19.823	7.5	7.2	2.66	9191	1.52	4597.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004176455-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

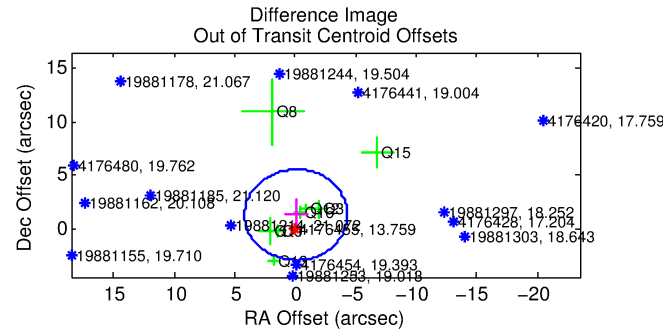
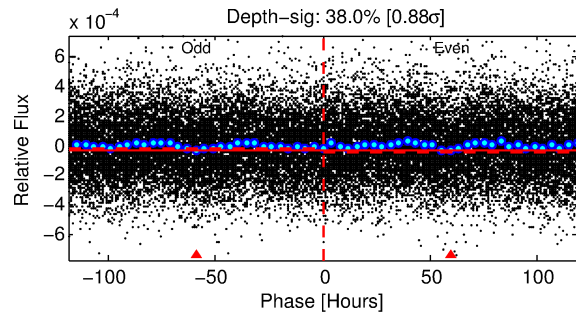
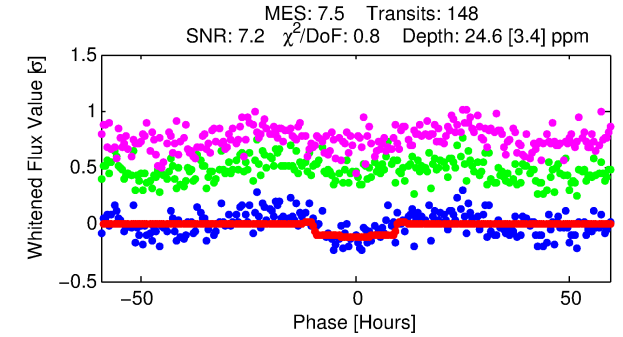
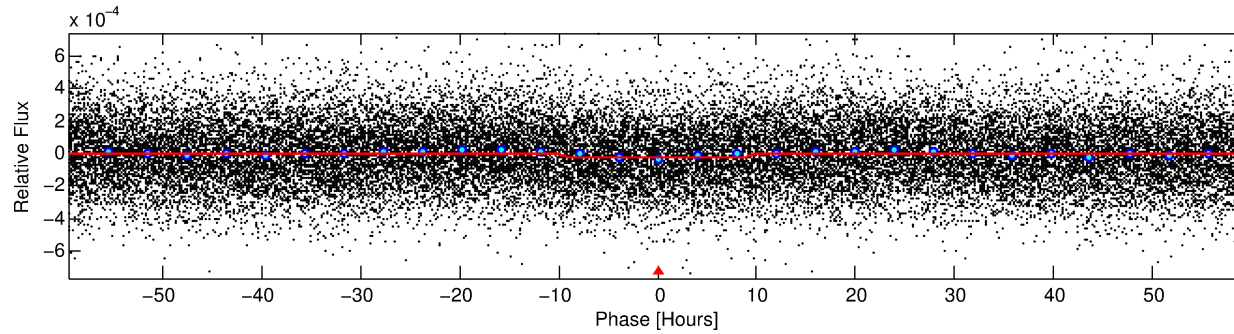
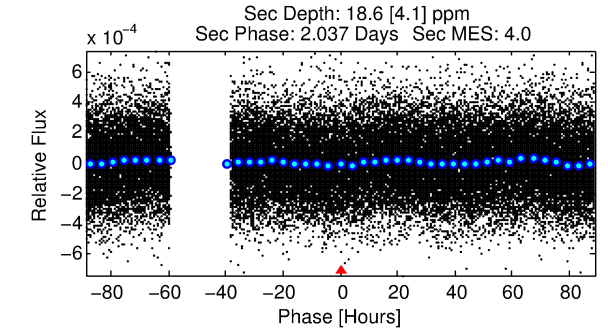
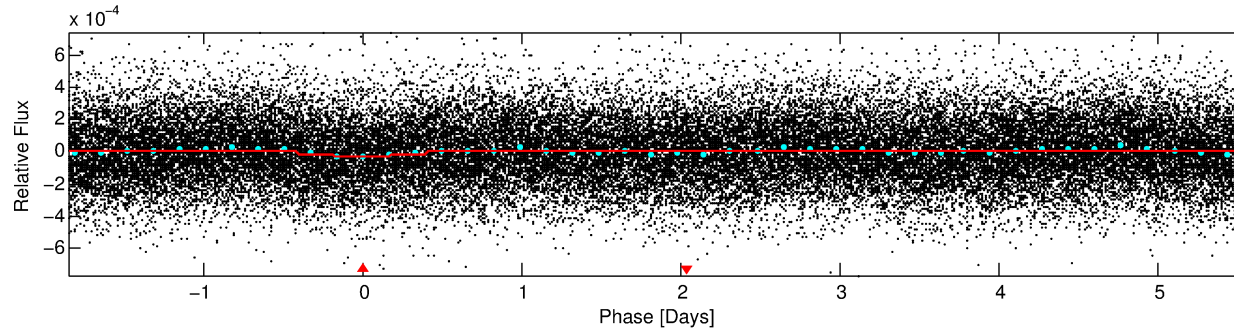
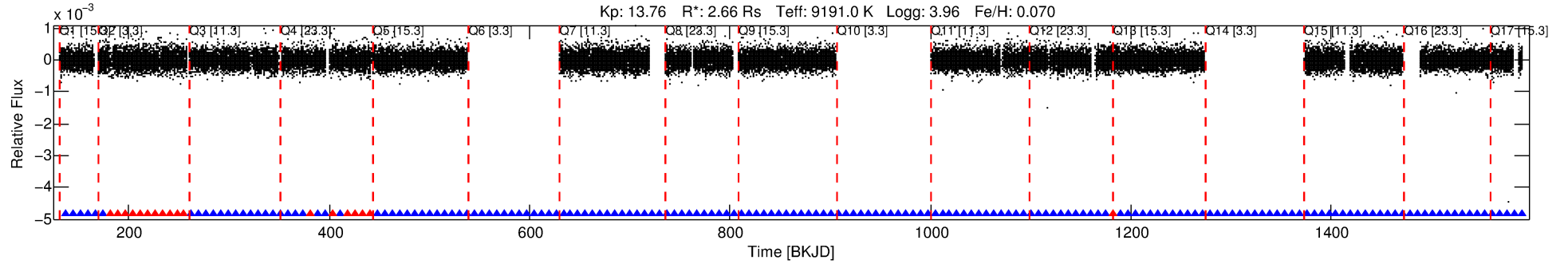
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004176455-01

No Significant Match Found

DV One-Page Summary

KIC: 4176455 Candidate: 1 of 1 Period: 7.415 d



DV Fit Results:

Period = 7.41545 [0.00026] d
Epoch = 136.8783 [0.0263] BKJD
Rp/R* = 0.0053 [0.0008]
a/R* = 1.57 [0.87]
b = 0.90 [0.19]
Seff = 4597.61 [2323.12]
Teq = 2100 [265] K
Rp = 1.52 [0.61] Re
a = 0.0991 [0.0317] AU
Ag = 43.32 [25.86] [1.64σ]
Teffp = 8329 [833] K [7.13σ]

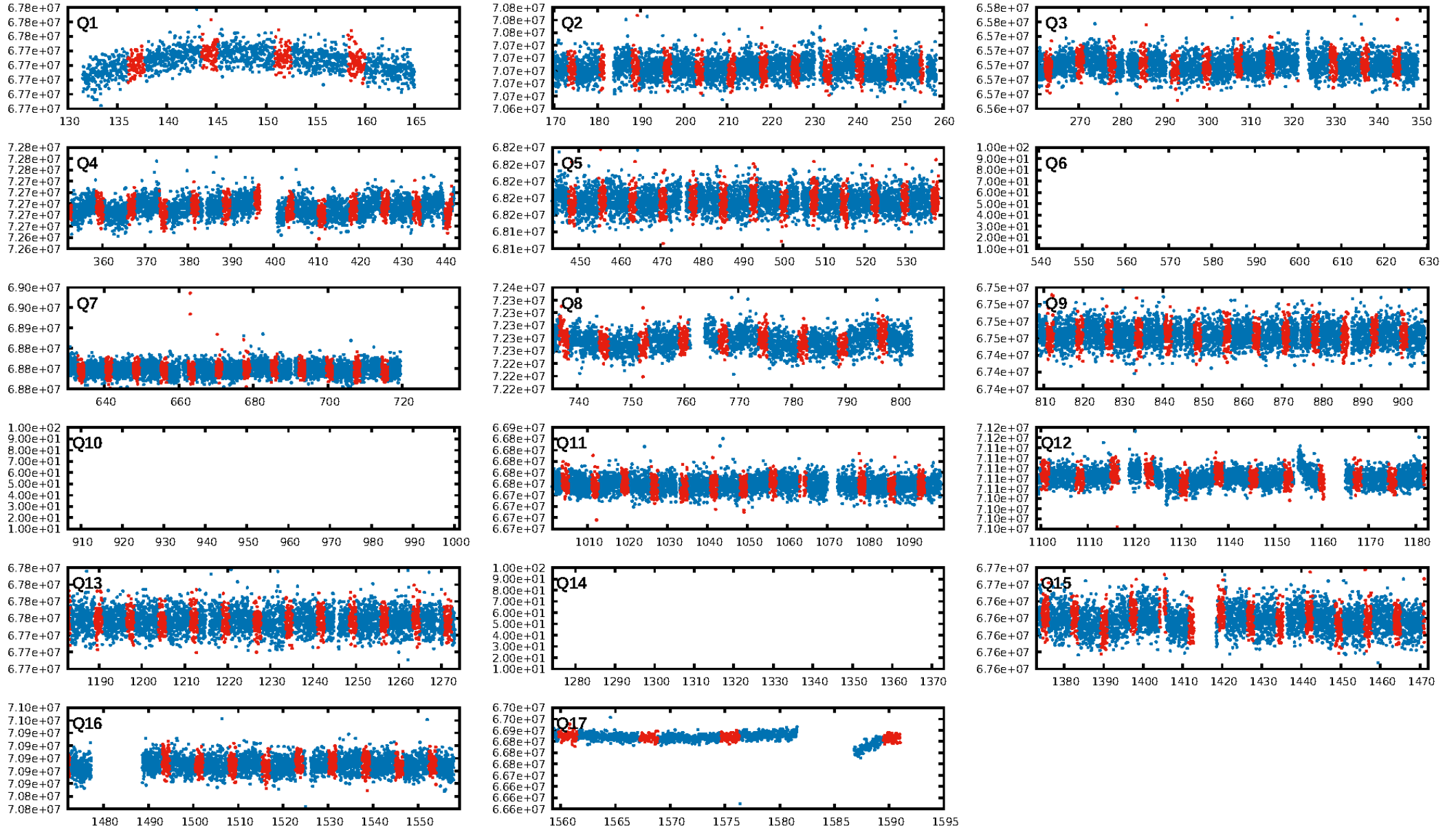
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.16e-13
RollingBand-fgt: 0.87 [122/140]
GhostDiagnostic-chr: 0.6205
Centroid-sig: 0.7%
Centroid-so: 3.334 arcsec [1.55σ]
OotOffset-rm: 1.306 arcsec [0.92σ]
KicOffset-rm: 1.084 arcsec [0.72σ]
OotOffset-st: 0/3/3/2 [8]
KicOffset-st: 0/3/3/2 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 1.00 [14/14]

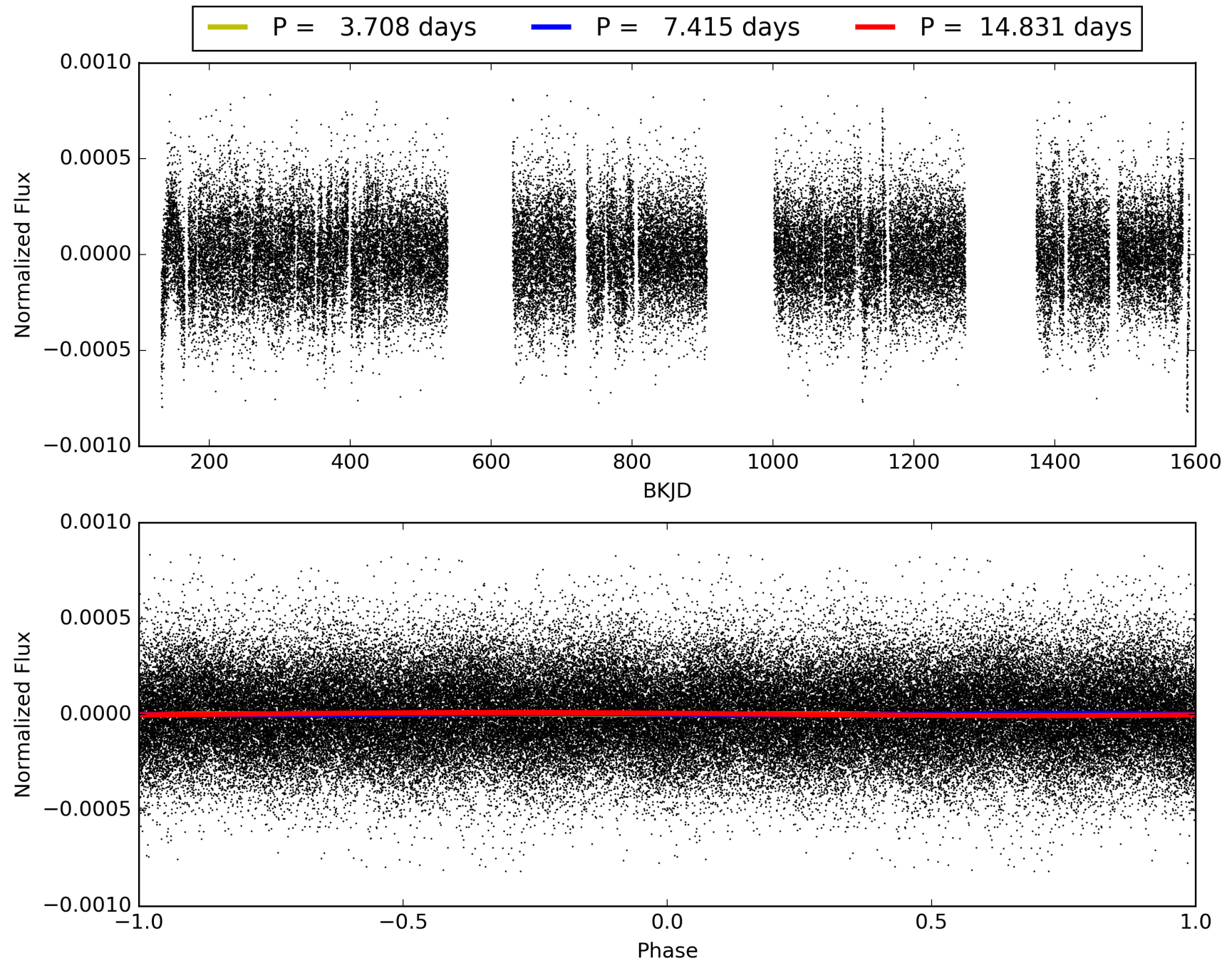
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:38:25 Z

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

TCE 004176455-01, PDC Light Curves

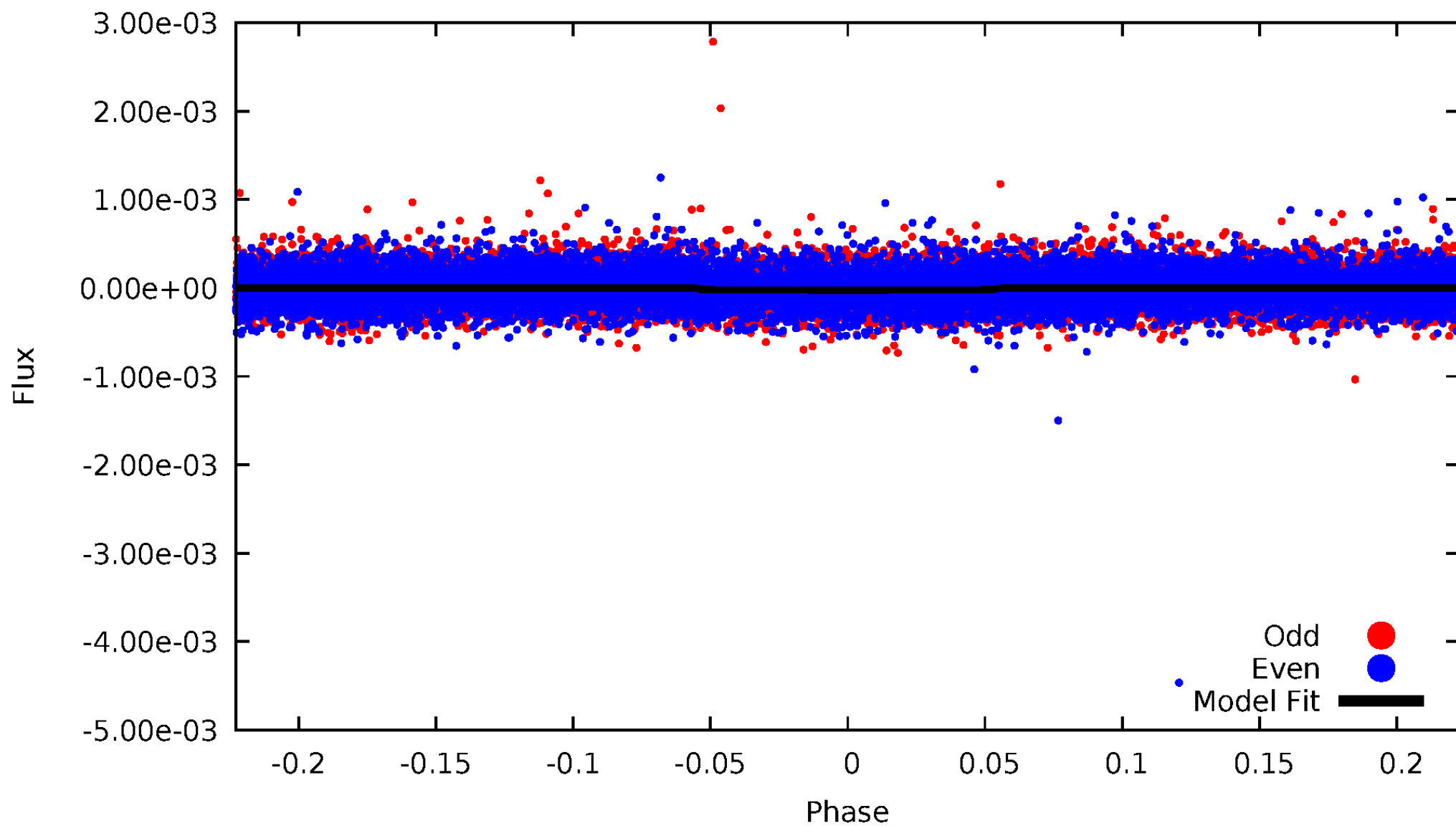


TCE 004176455-01



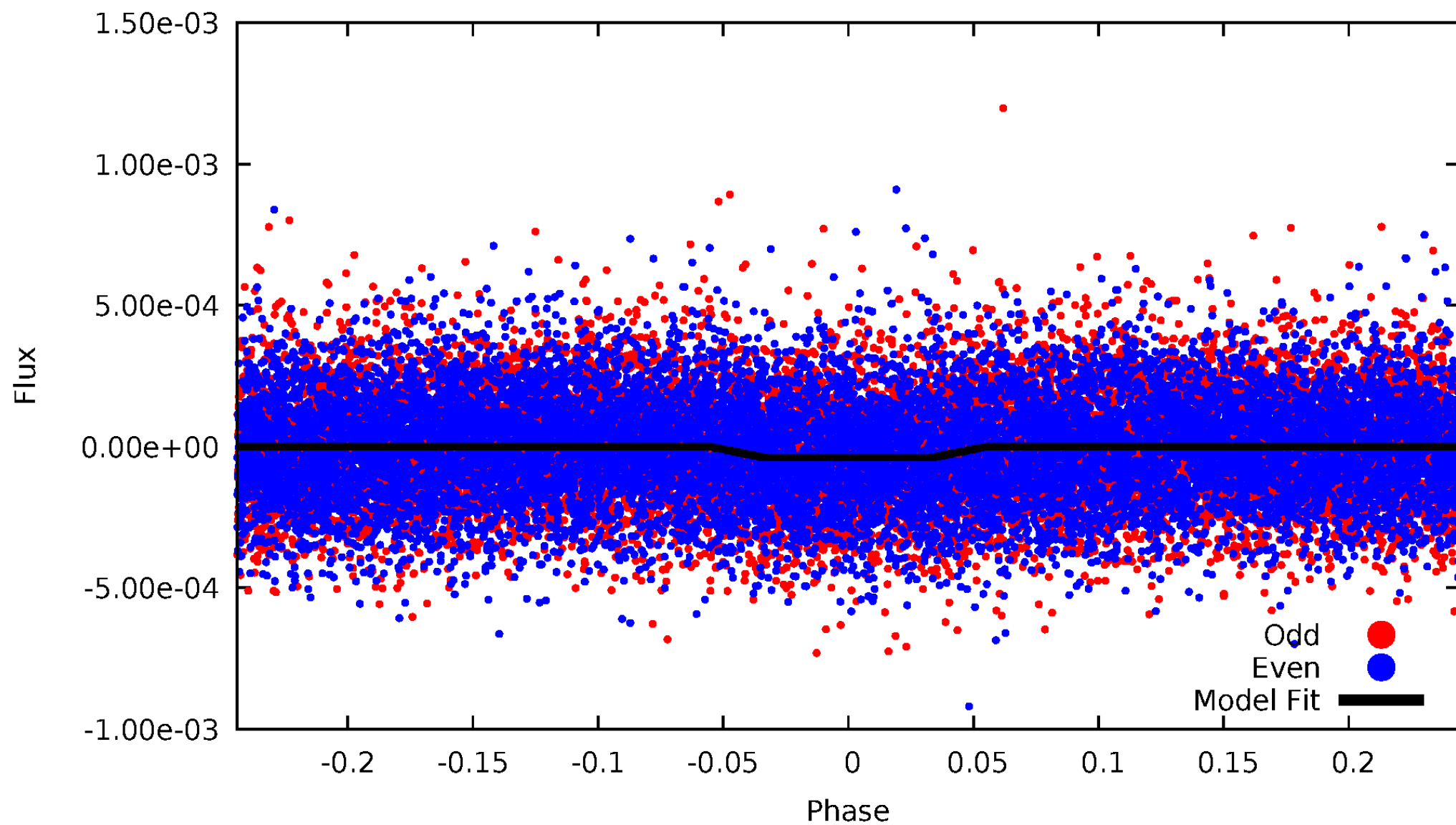
DV Odd/Even

TCE 004176455-01

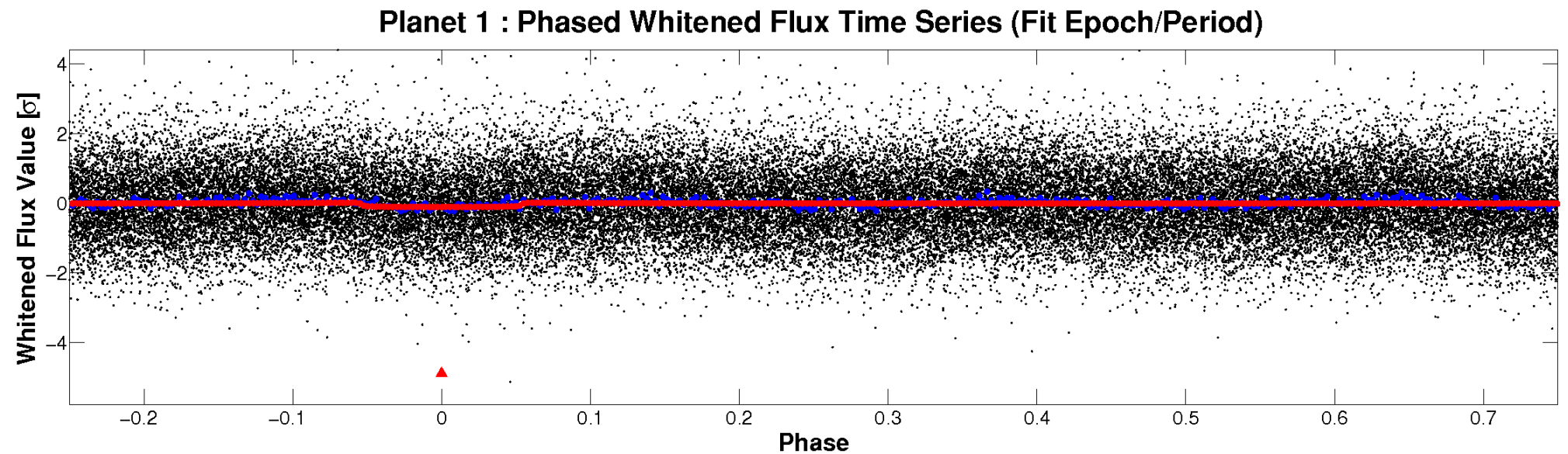
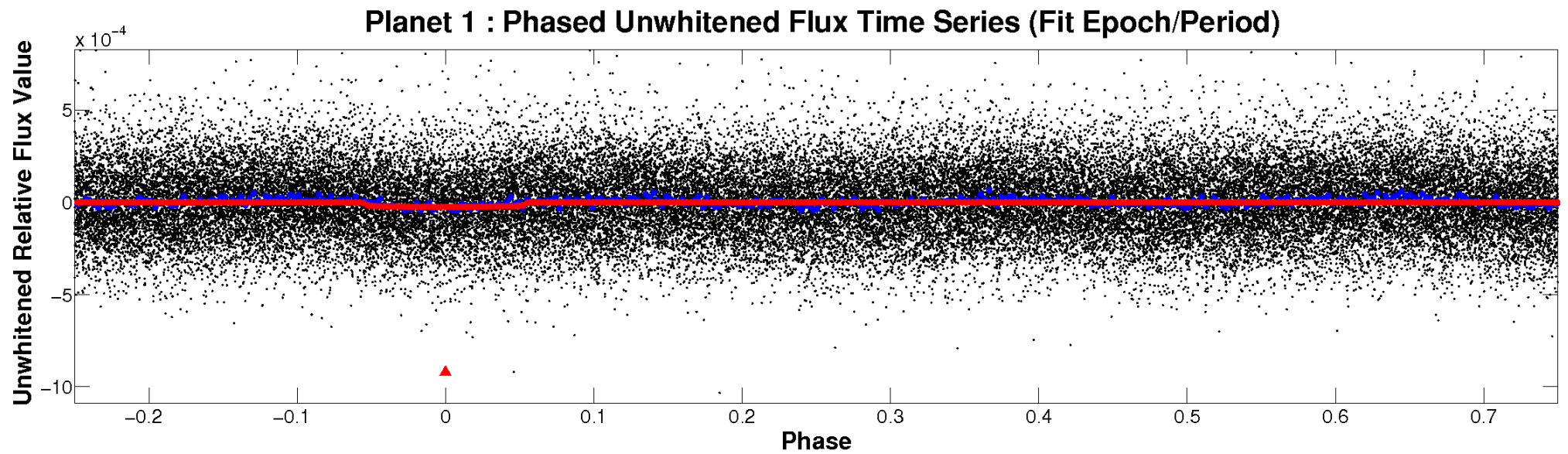


ALT Odd/Even

TCE 004176455-01

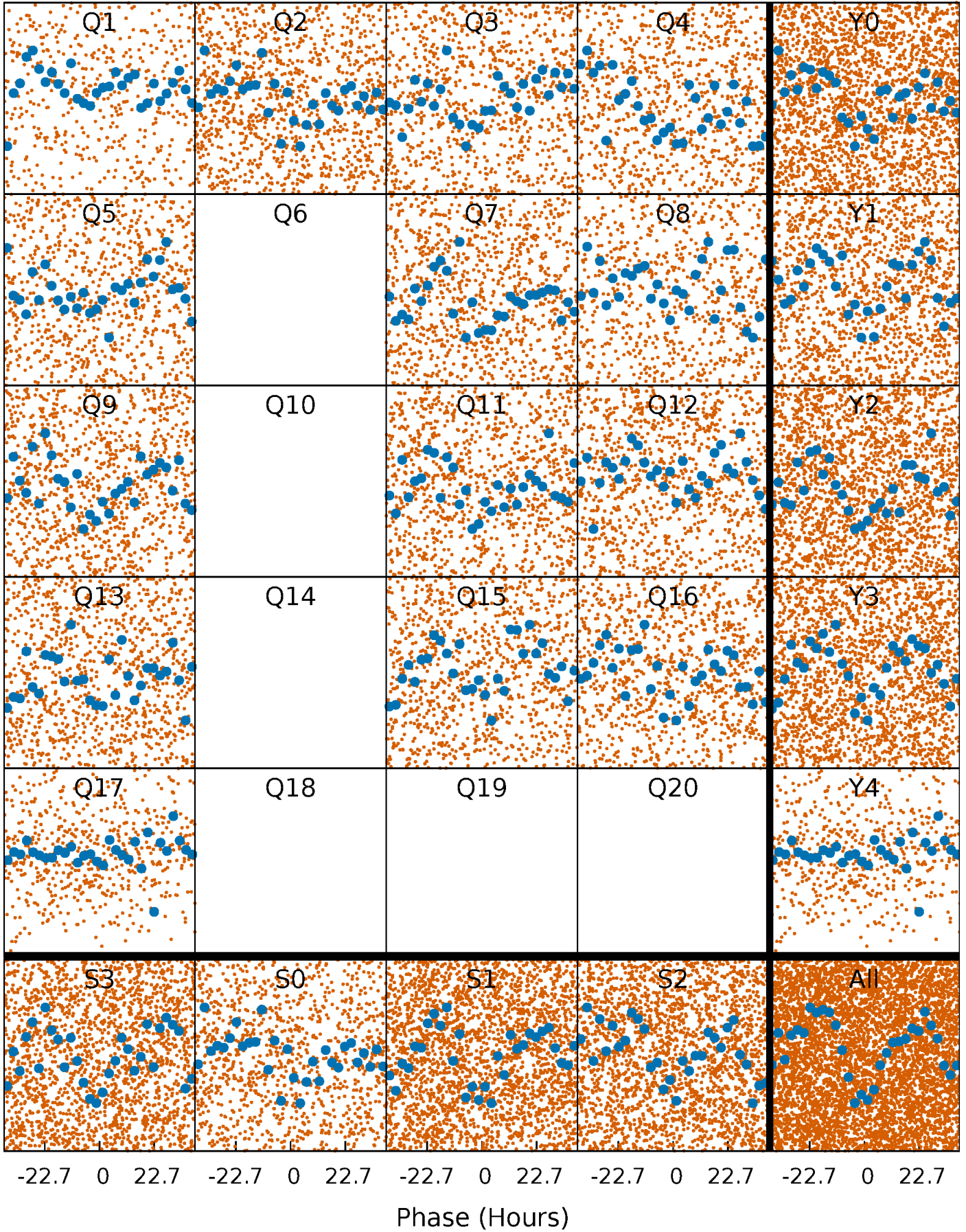


Non-Whitened Vs. Whitened Light Curve



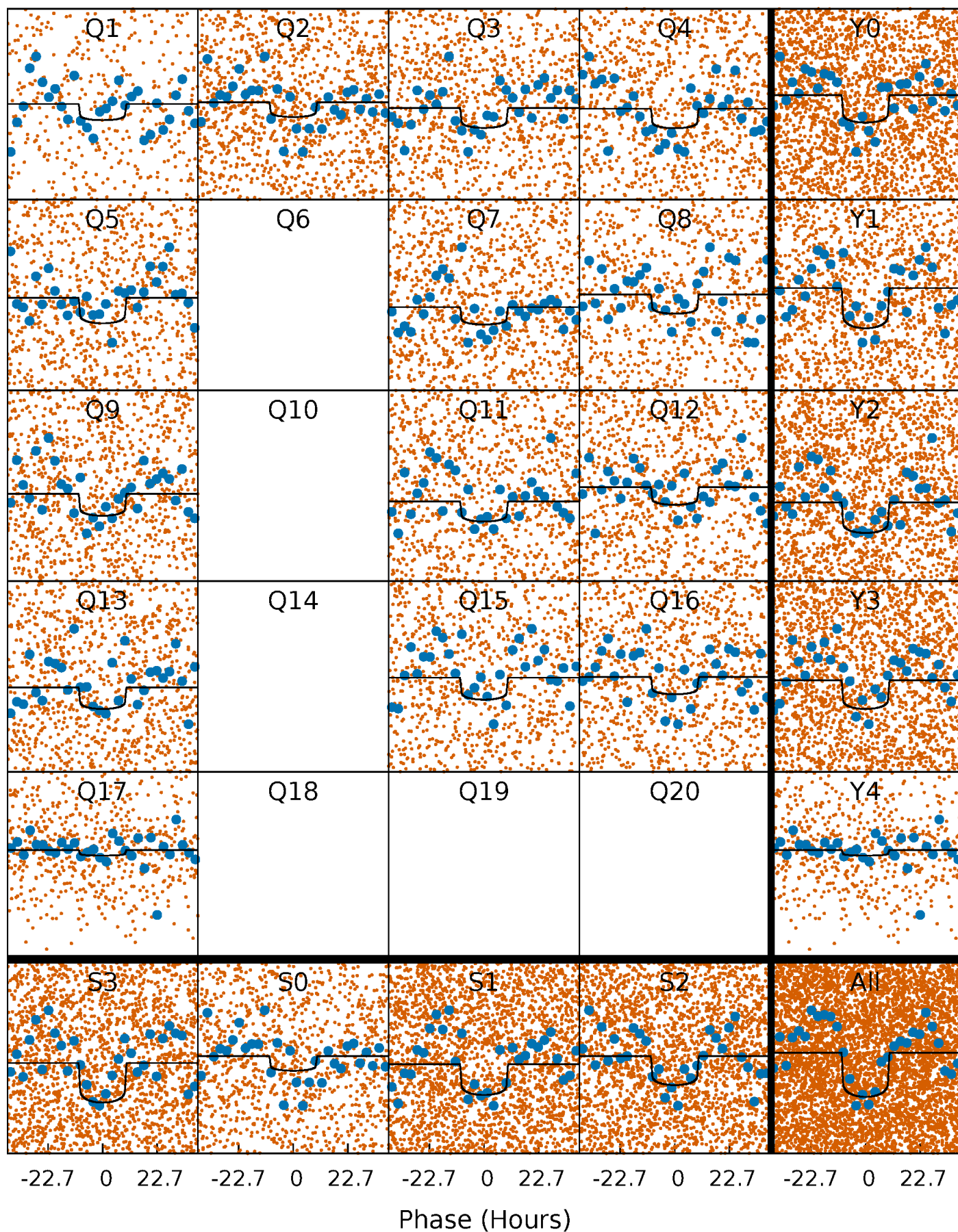
PDC Quarter-Phased Transit Curves

TCE 004176455-01 P= 7.415447 Days $T_0=136.878265$ (BKJD)



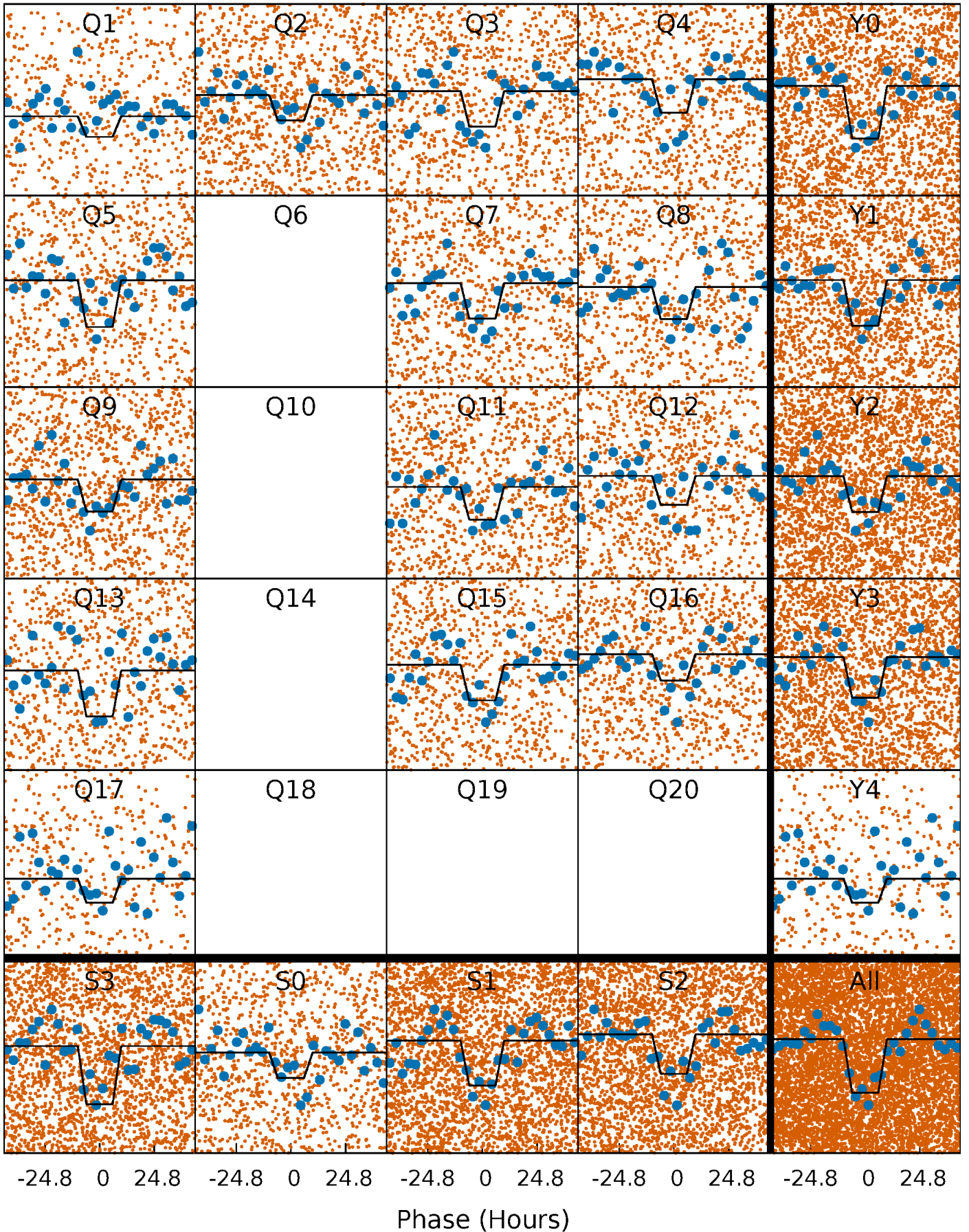
DV Quarter-Phased Transit Curves

TCE 004176455-01 P= 7.415447 Days $T_0=136.878265$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

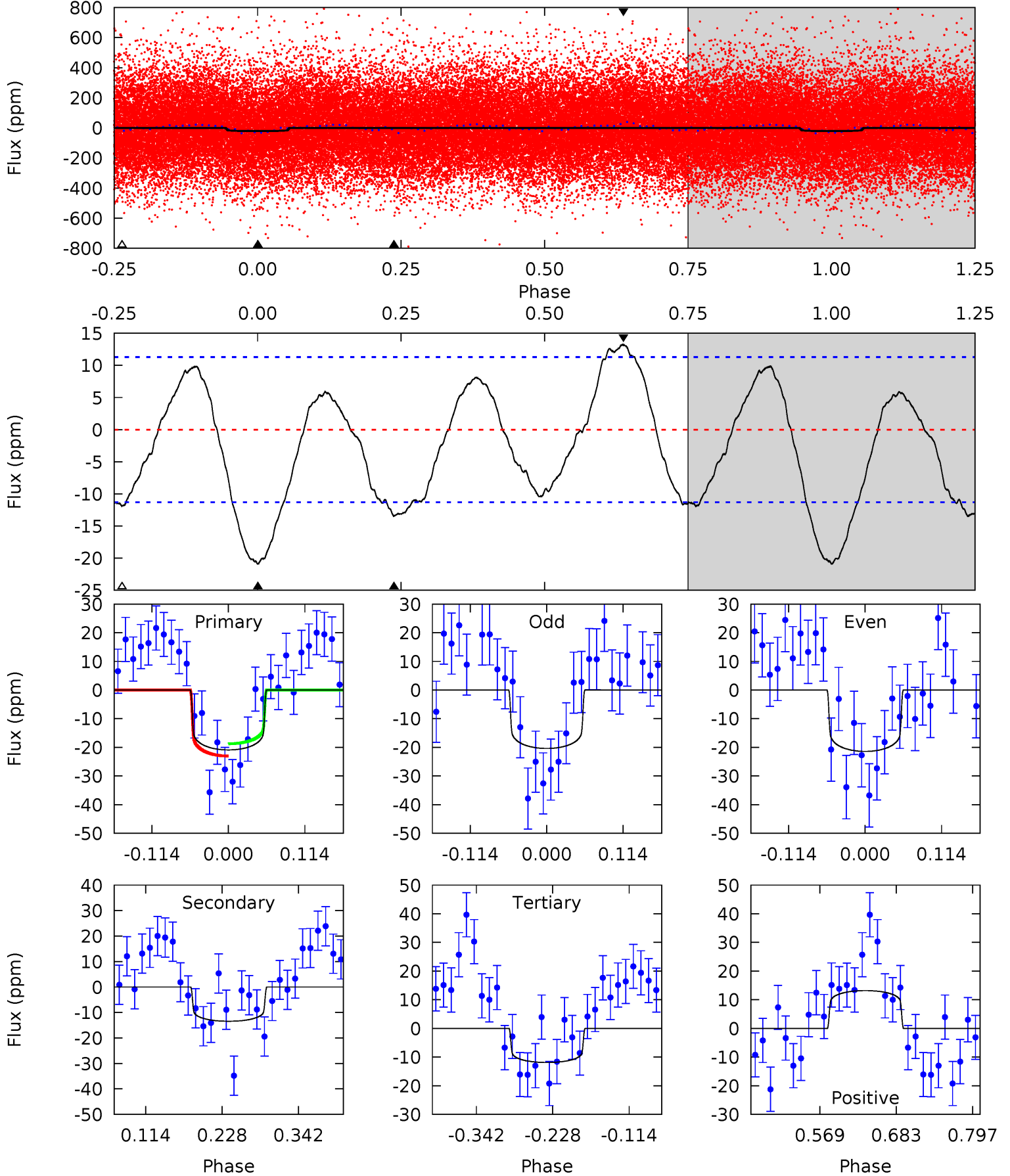
TCE 004176455-01 P= 7.415725 Days $T_0=136.829516$ (BKJD)



DV Model-Shift Uniqueness Test

004176455-01, P = 7.415447 Days, E = 129.462818 Days

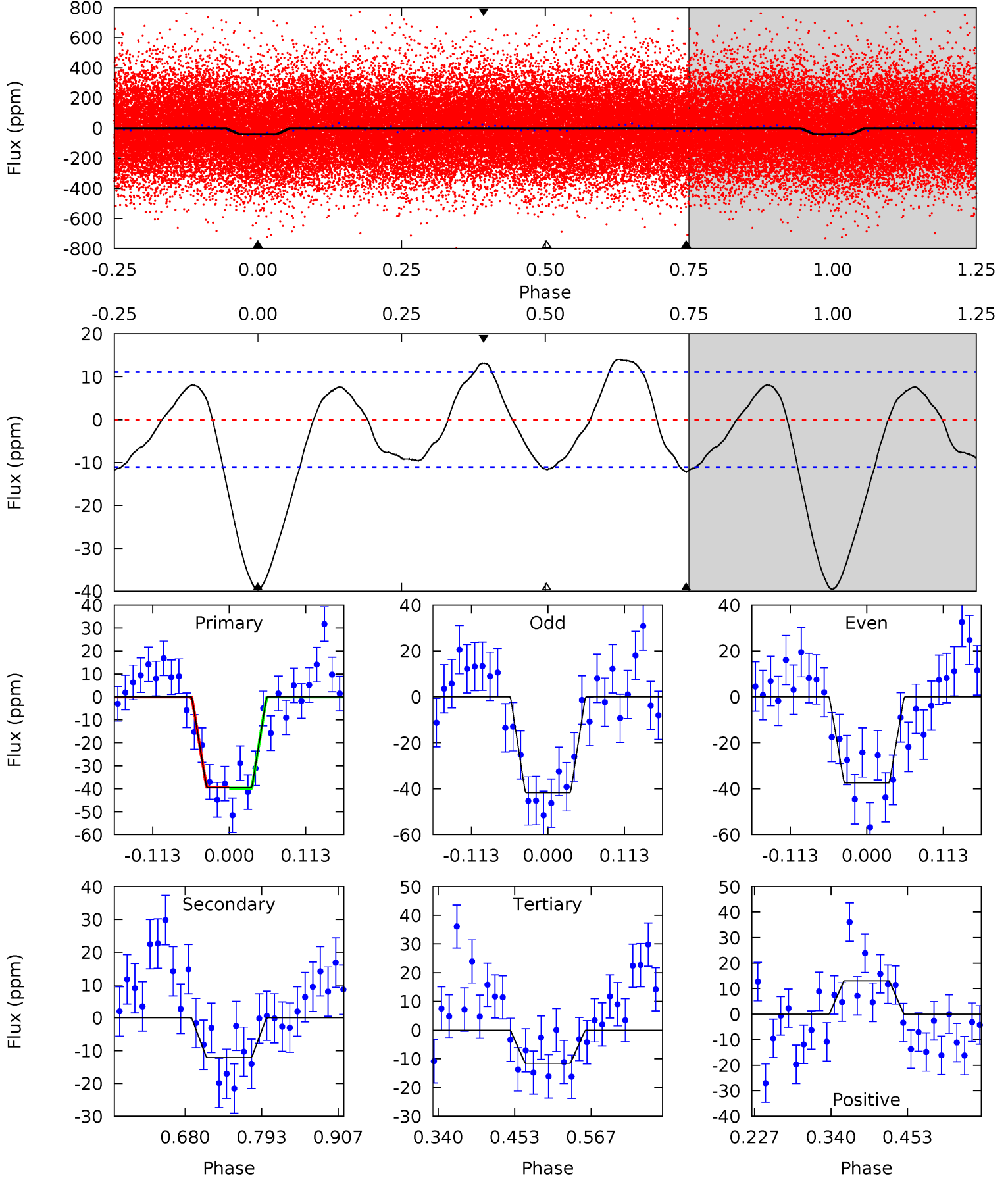
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.40	5.40	4.77	5.30	4.54	1.58	3.10	3.62	3.10	0.63	0.10	0.21	1.16	0.39	0.87



Alt Model-Shift Uniqueness Test

004176455-01, P = 7.415725 Days, E = 129.413791 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	4.95	4.74	5.39	4.54	1.58	3.19	11.5	10.8	0.21	-0.44	0.87	1.13	0.26	0.08



Stellar Parameters For KIC 004176455

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	9191^{+296}_{-395}	$3.962^{+0.264}_{-0.176}$	$0.070^{+0.150}_{-0.650}$	$2.658^{+0.899}_{-0.989}$	$2.363^{+0.377}_{-0.700}$	$0.177^{+0.315}_{-0.086}$
	+3%/-4%	+7%/-4%	+214%/-929%	+34%/-37%	+16%/-30%	+178%/-49%
Source	KIC0	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 004176455-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13 ± 2	$1.48^{+0.39}_{-0.34}$	2910^{+256}_{-271}	7290^{+831}_{-677}	32^{+21}_{-12}
Alt.	-12 ± 2	$1.75^{+0.39}_{-0.35}$	2914^{+233}_{-267}	6458^{+637}_{-540}	21^{+13}_{-7}

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

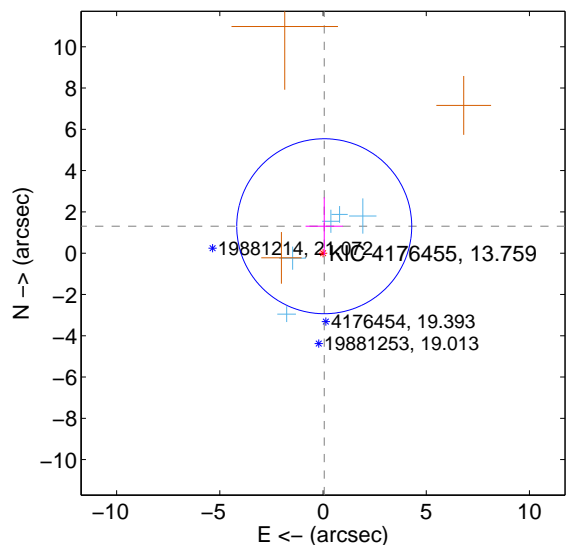
Supplemental centroid analysis for 004176455-01. Kepler magnitude: 13.76. Transit SNR 7.17

There are 5 quarters with good PRF difference image offsets

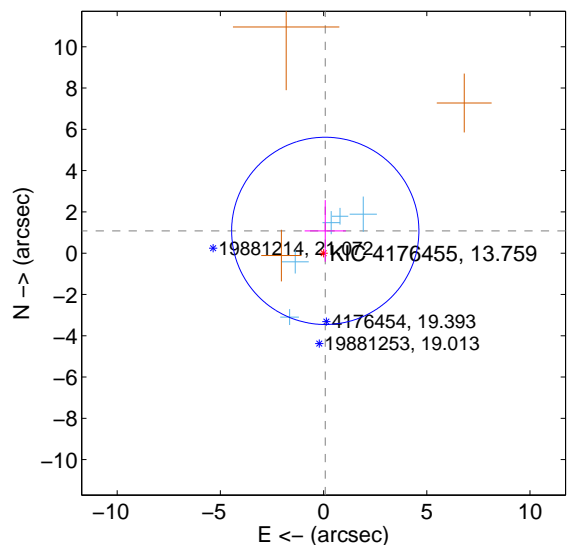
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.306 ± 1.413	0.92	-0.058 ± 0.904	1.305 ± 1.397
PRF-fit source offset from KIC position	1.084 ± 1.512	0.72	-0.081 ± 0.998	1.081 ± 1.492
photometric centroid source offset	3.33 ± 2.14	1.55	-2.38 ± 2.02	2.34 ± 2.26

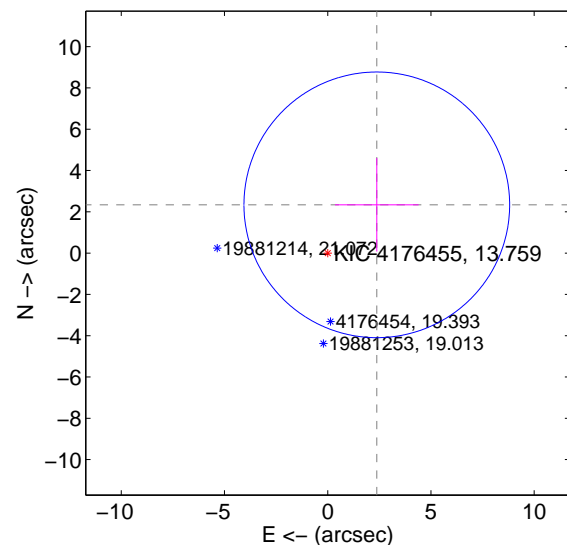
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

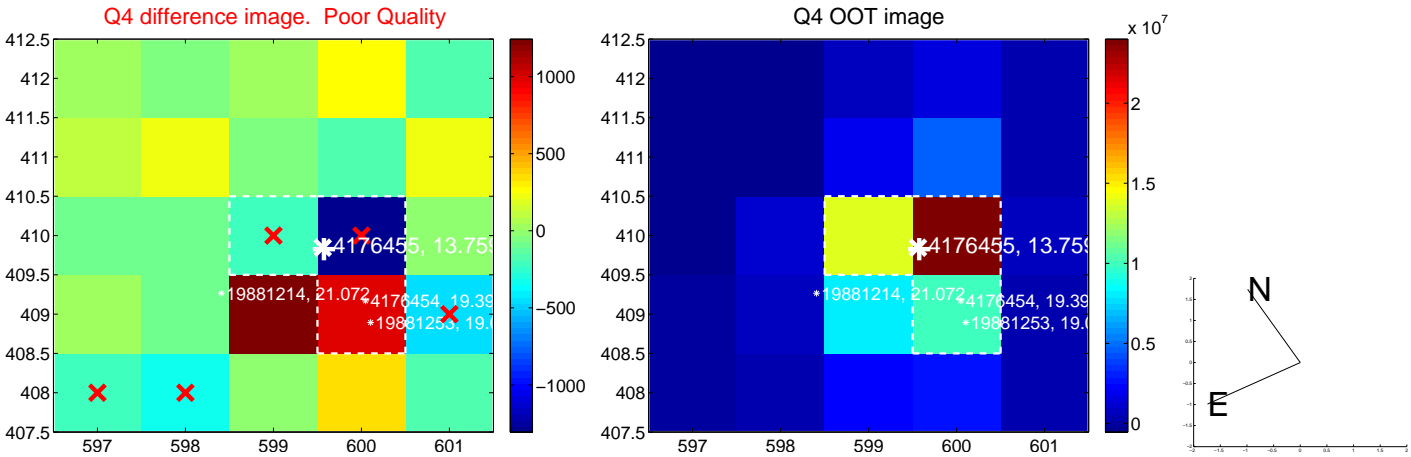
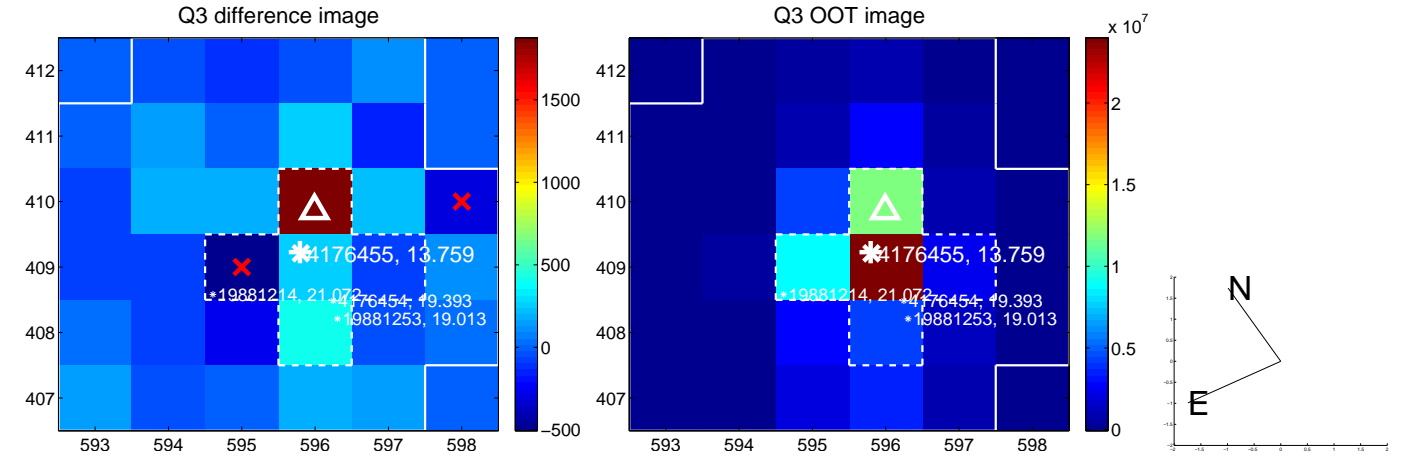
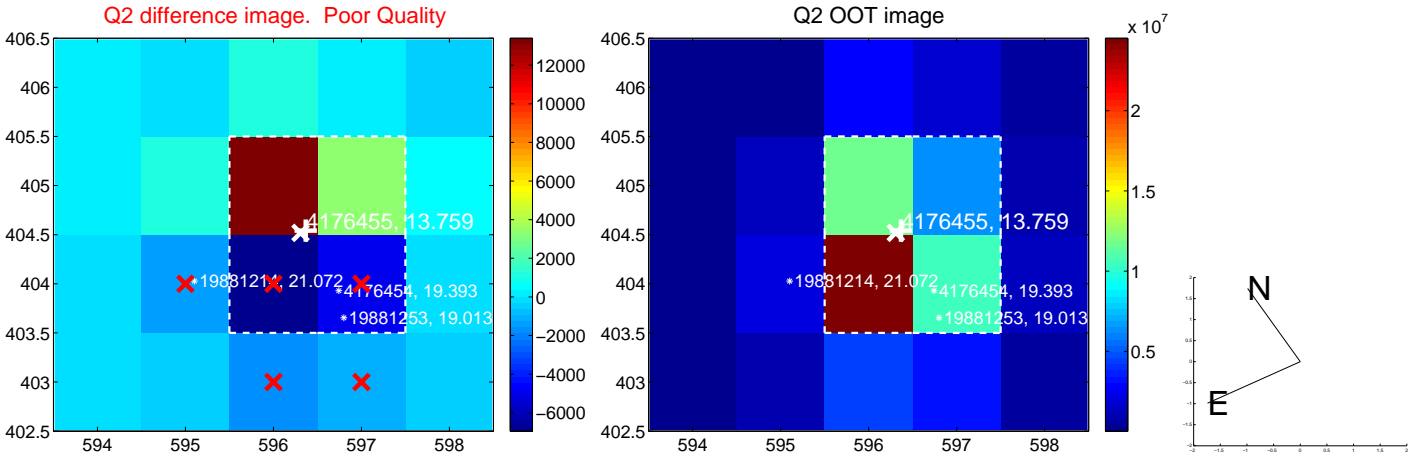
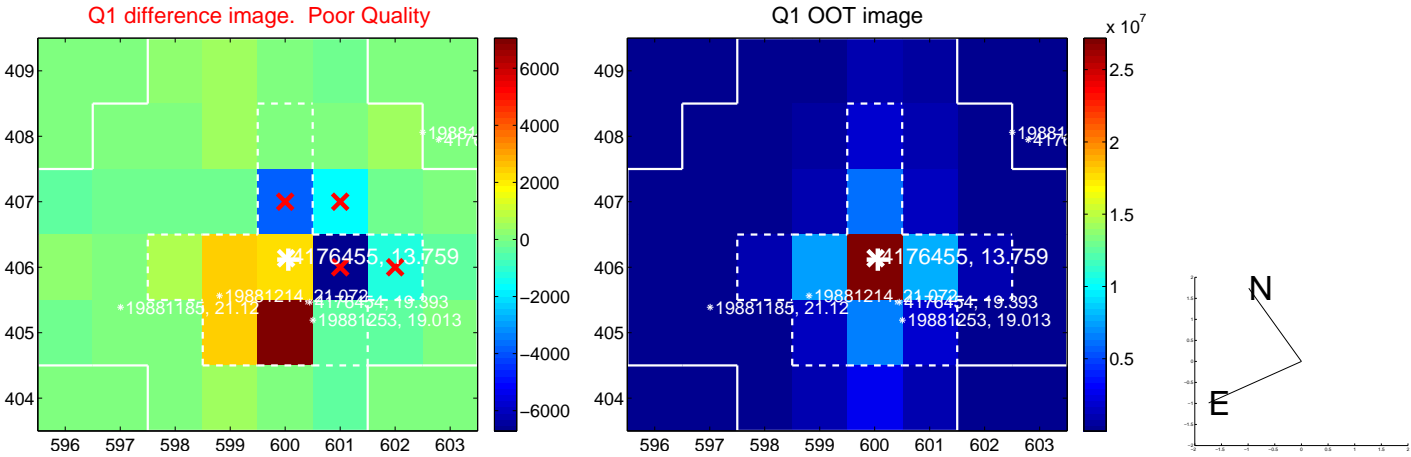


offset from photometric centroids

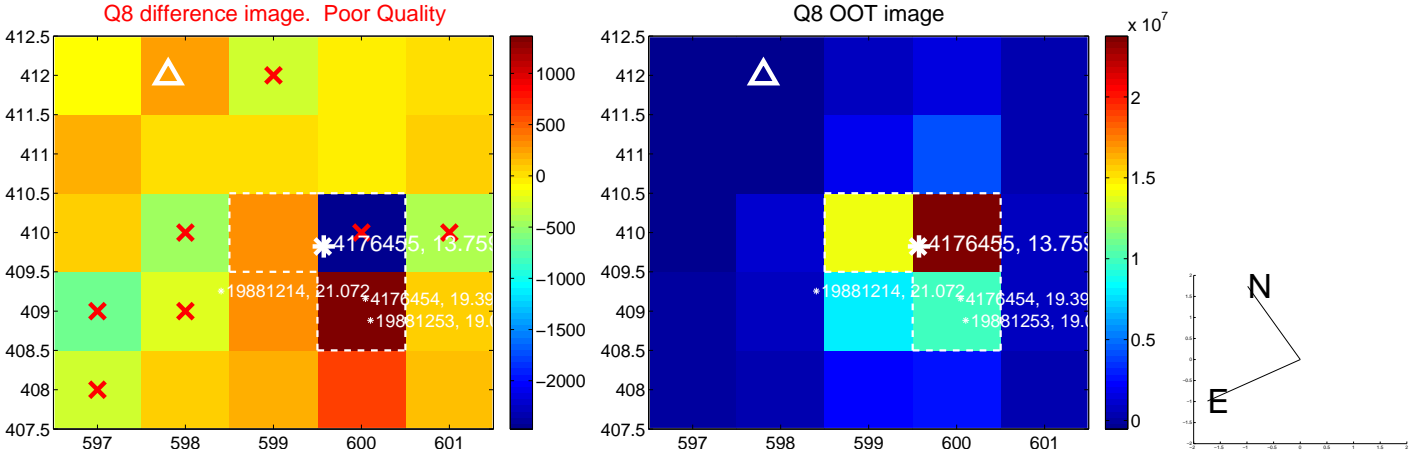
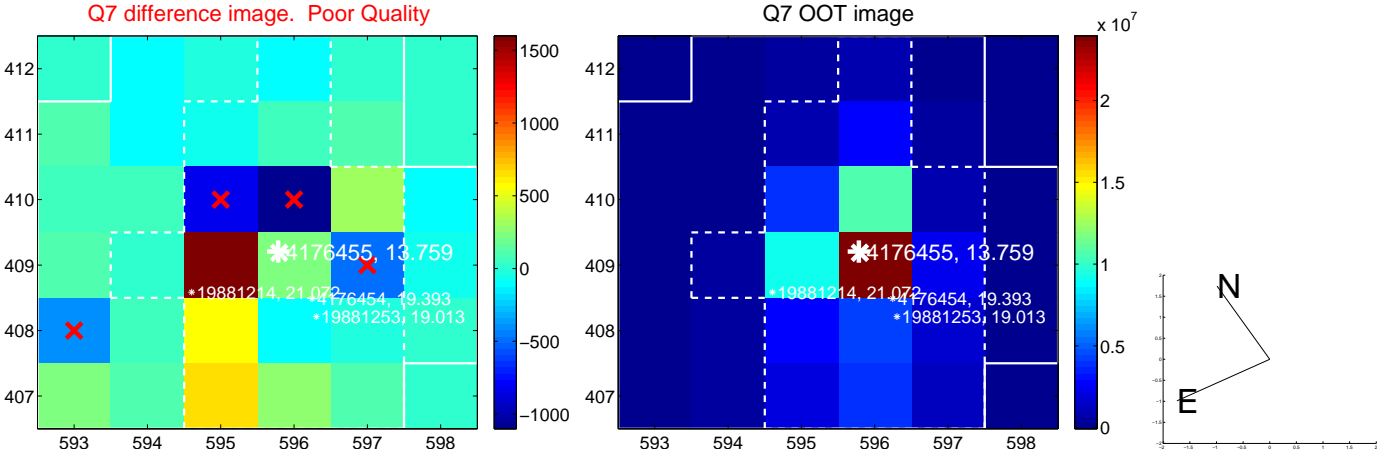
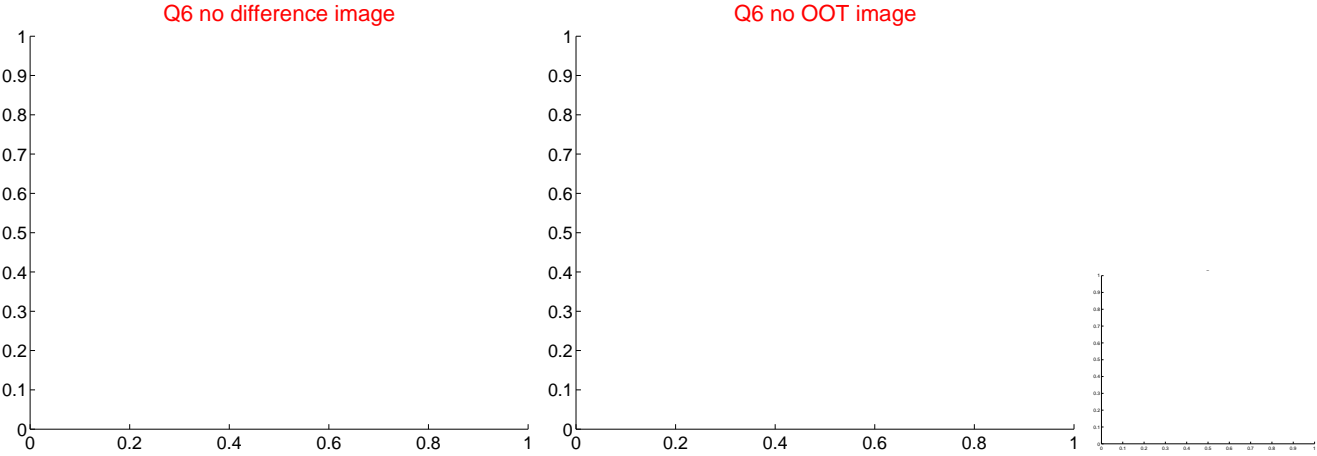
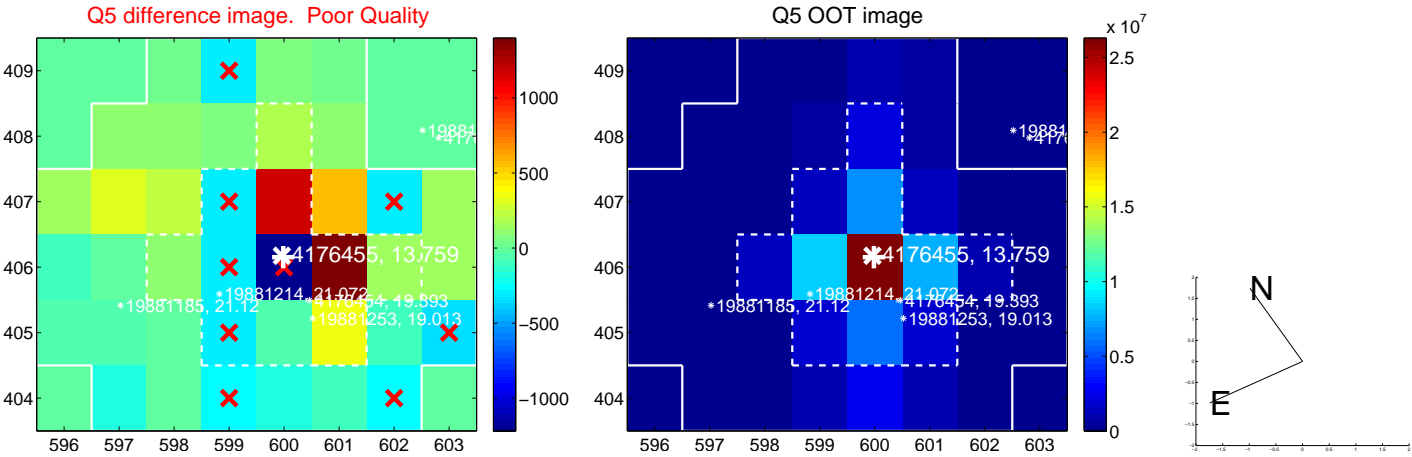


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

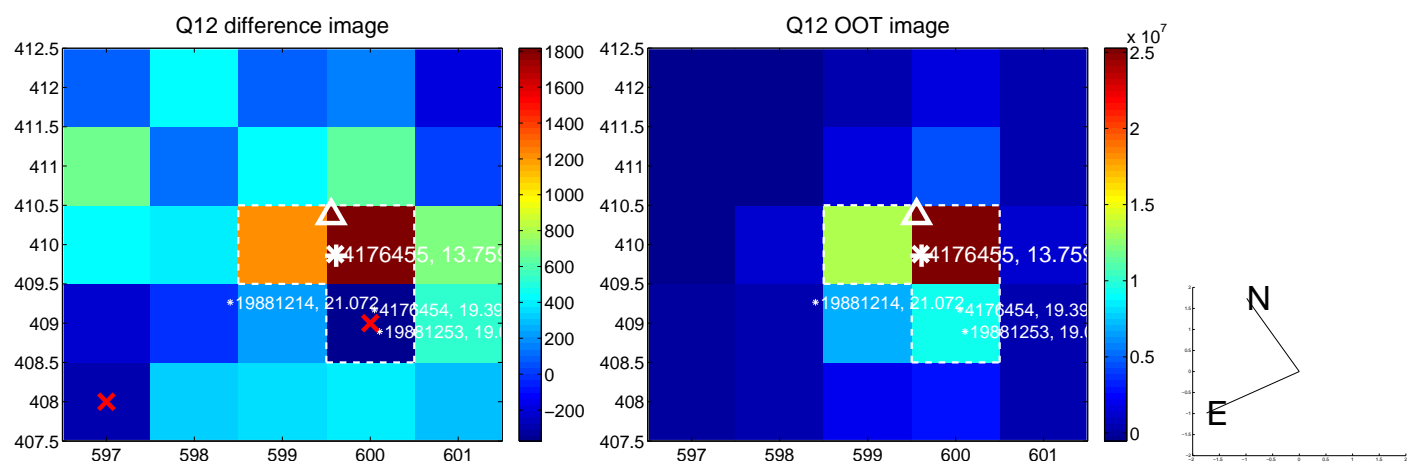
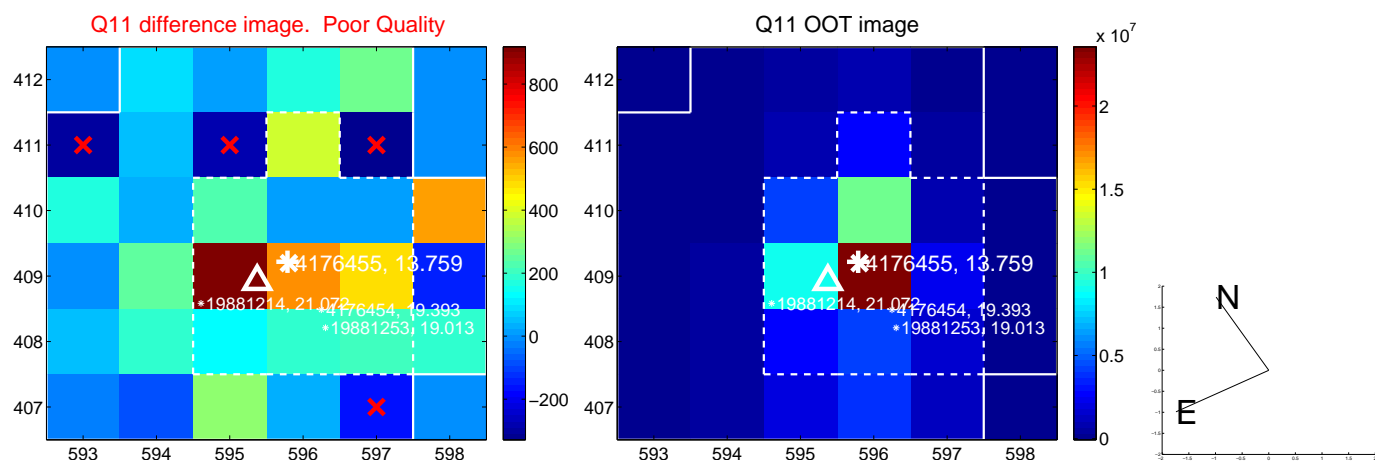
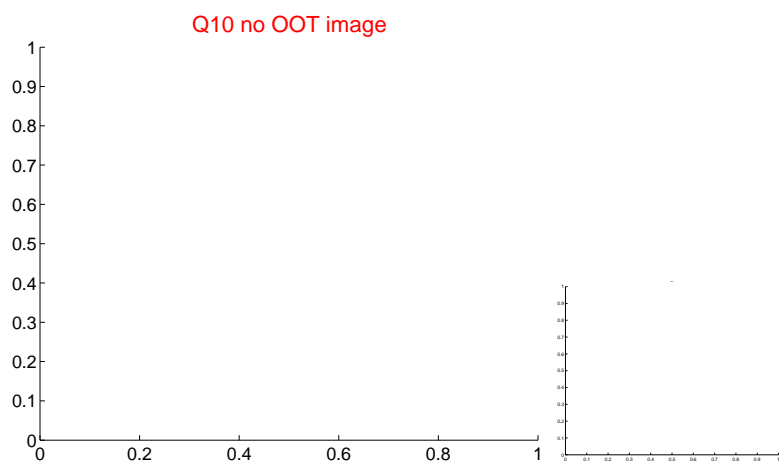
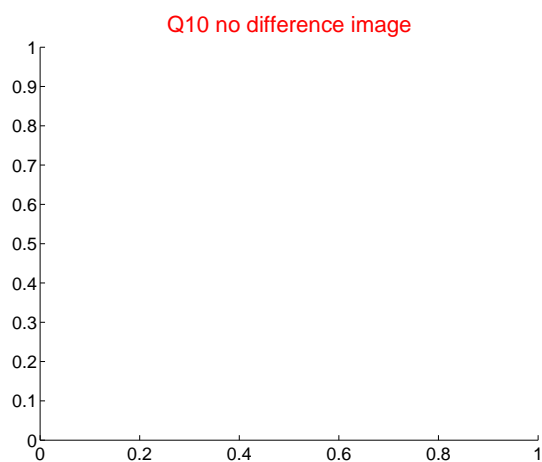
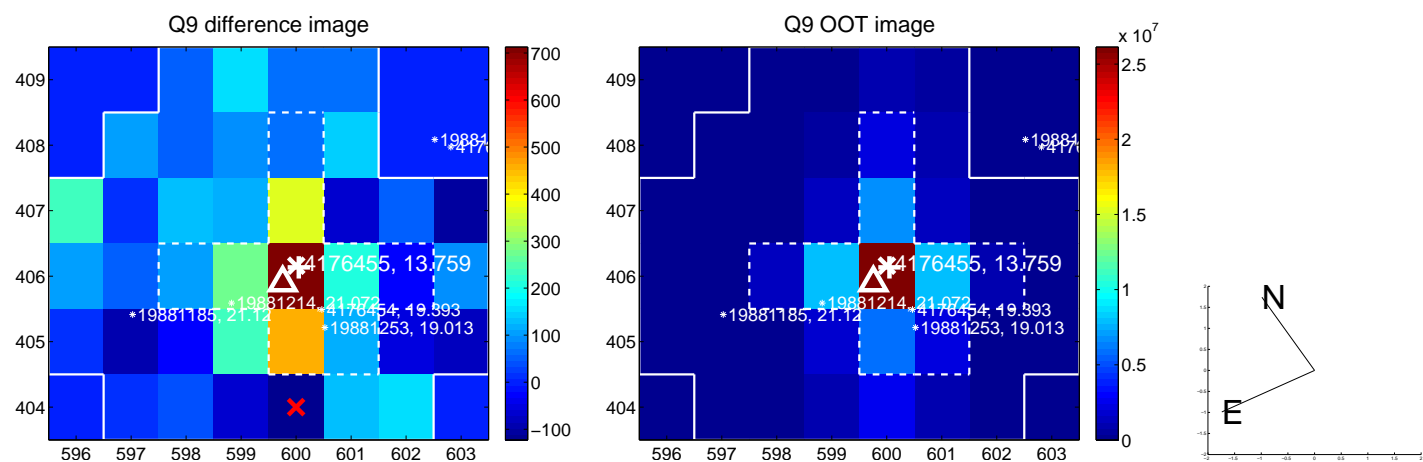
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



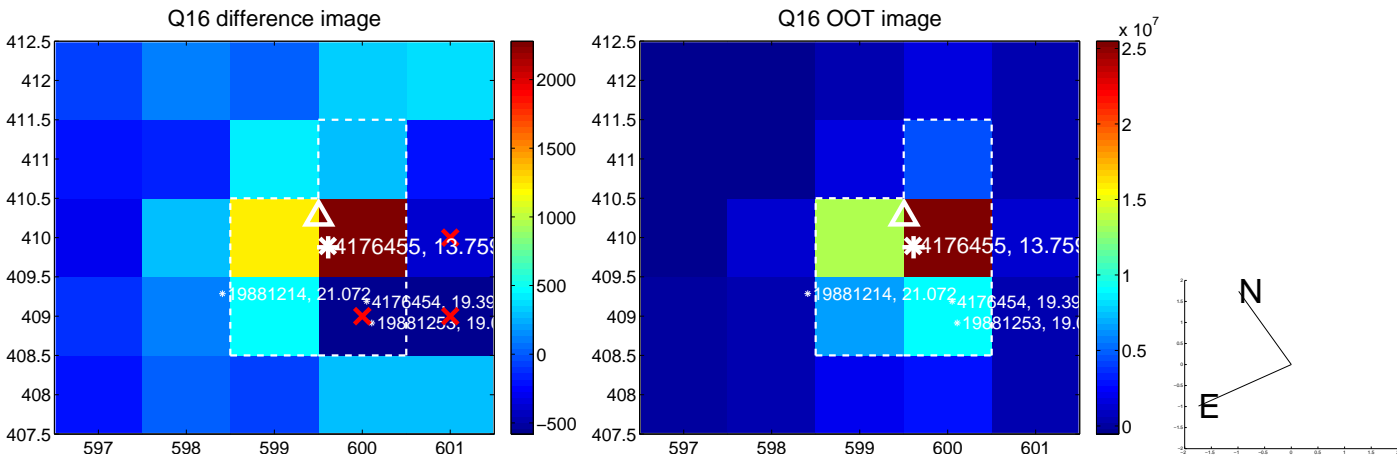
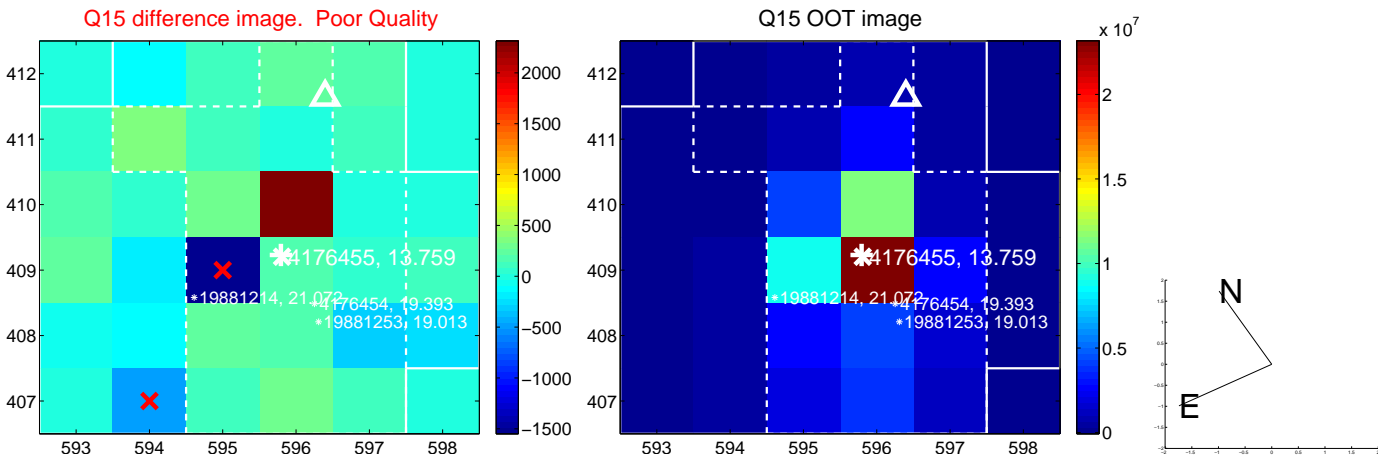
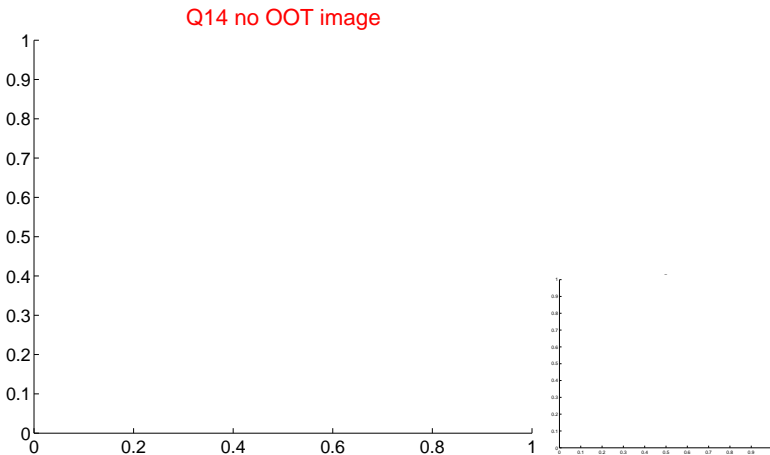
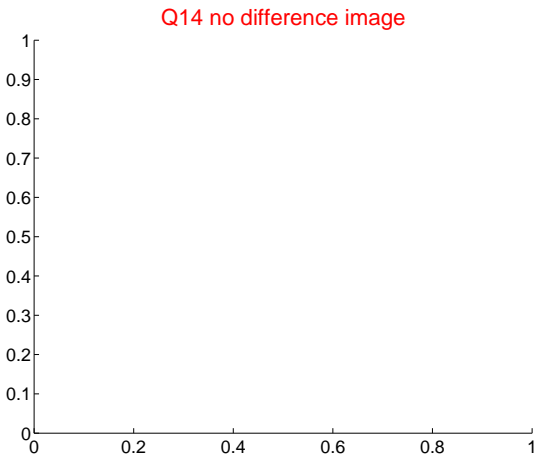
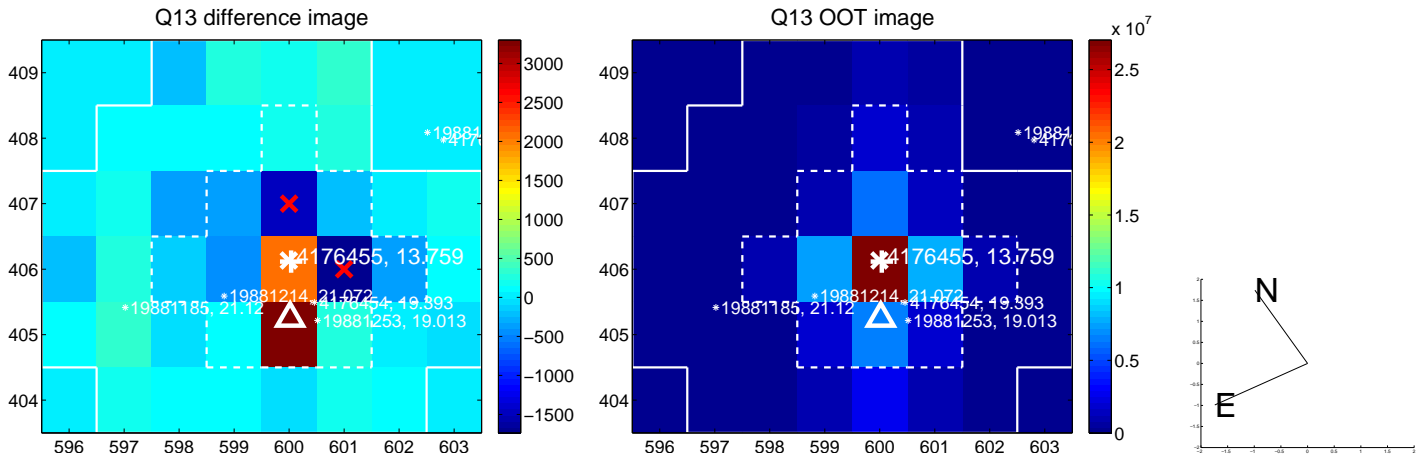
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



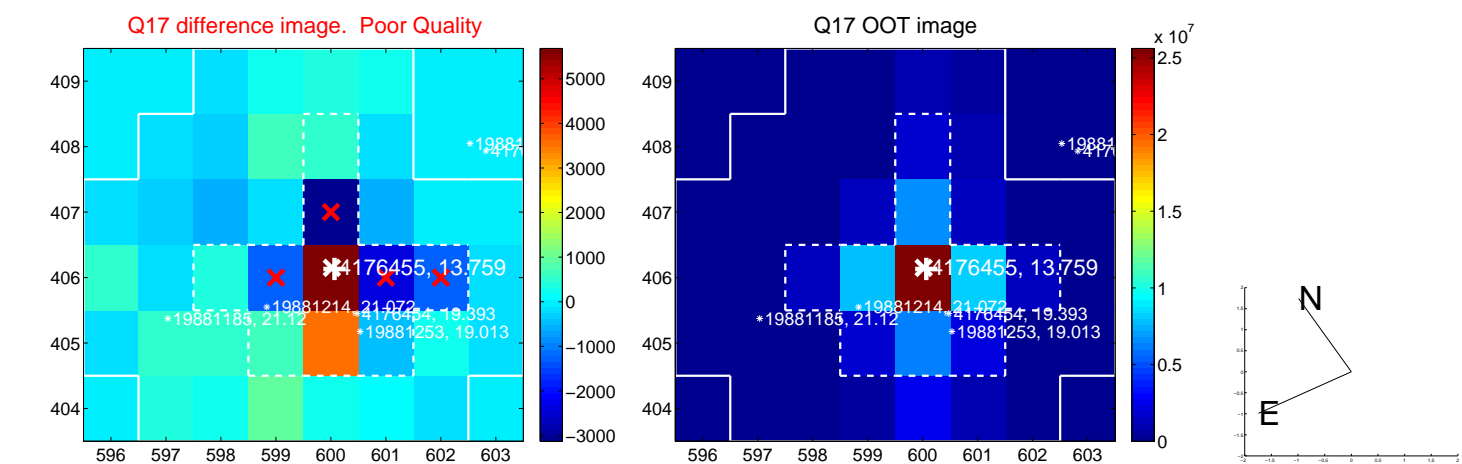
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

