

KIC 004144238

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})
004144238-01	OBS	5041.01	22.913535	140.644142	346.5	3.871	15.2	16.2	1.33	6154	4.90	89.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004144238-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—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 004144238-01

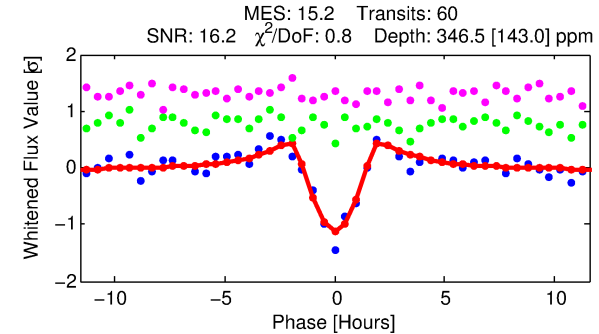
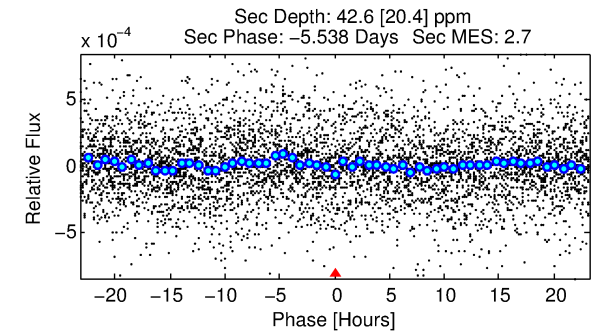
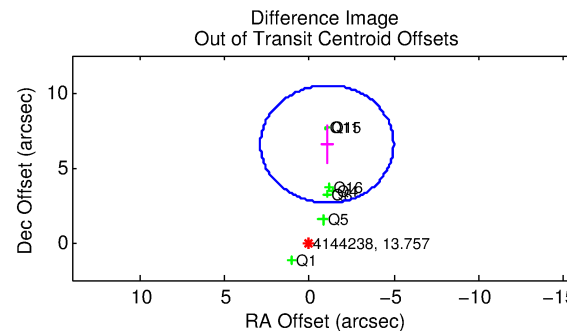
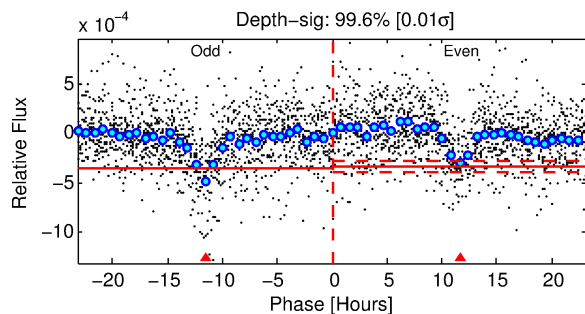
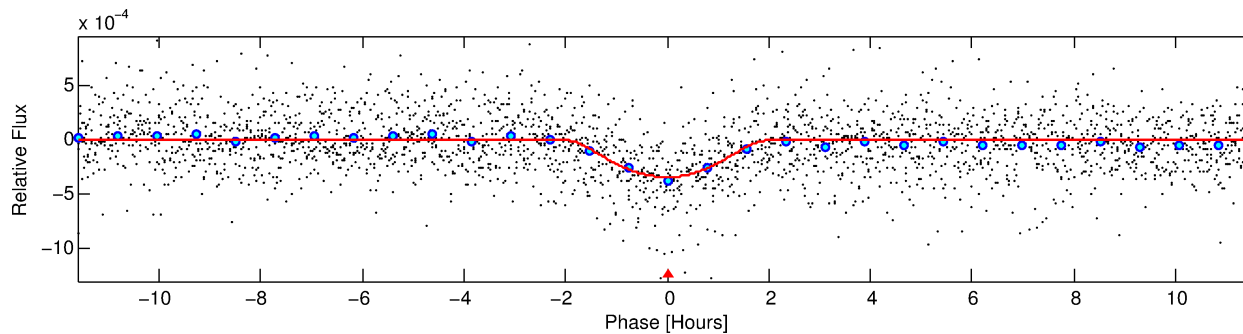
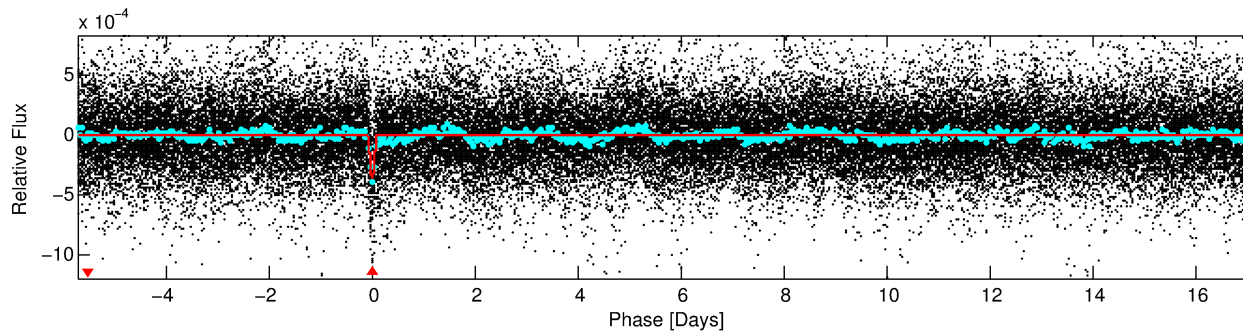
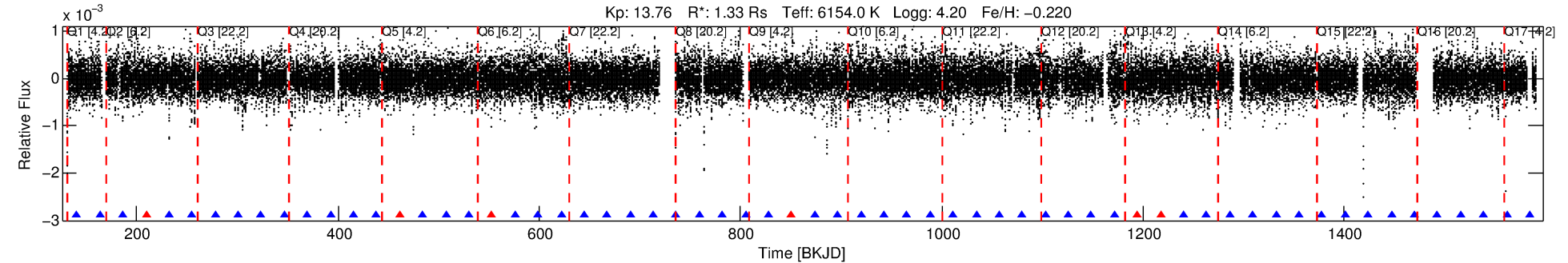
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004144238-01	4144238	6109.01	4144236	1:1	25.2	3	-6	11.86	13.76	728.16	Direct-PRF	0	0.11	0.06

Notes: $P_1:P_2$ 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. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 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: 4144238 Candidate: 1 of 1 Period: 22.914 d
KOI: K05041.01 Corr: 0.965

Kp: 13.76 R*: 1.33 Rs Teff: 6154.0 K Logg: 4.20 Fe/H: -0.220



DV Fit Results:

Period = 22.91353 [0.00011] d
Epoch = 140.6441 [0.0040] BKJD
Rp/R* = 0.0337 [0.0559]
a/R* = 11.89 [5.13]
b = 1.00 [0.09]
Seff = 89.85 [26.44]
Teq = 785 [58] K
Rp = 4.90 [8.20] Re
a = 0.1595 [0.0294] AU
Ag = 24.79 [83.47] [0.29σ]
Teffp = 2708 [2272] K [0.85σ]

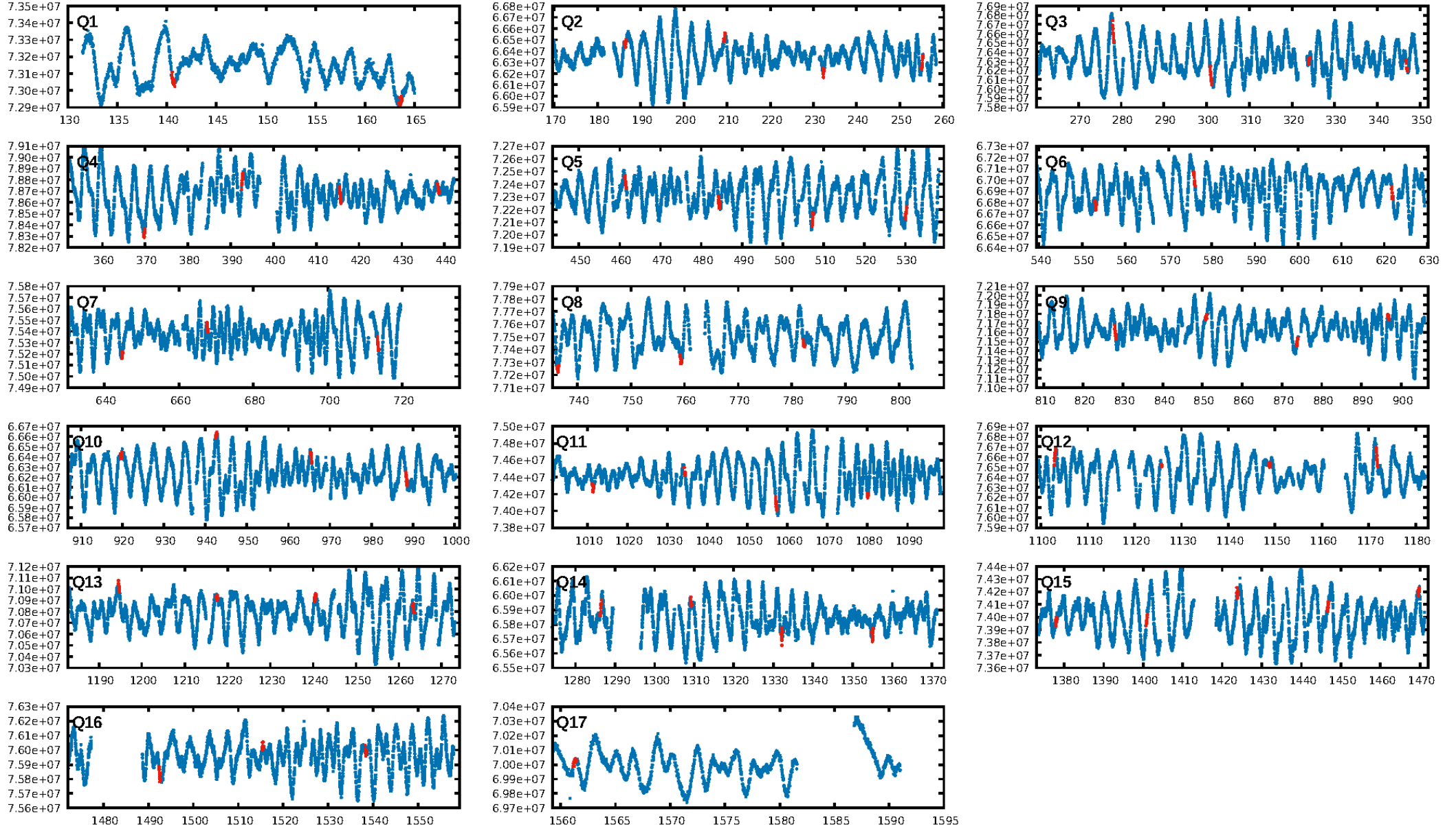
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 15.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.34e-50
RollingBand-fgt: 0.89 [51/57]
GhostDiagnostic-chr: -0.226
Centroid-sig: 0.0%
Centroid-so: 36.170 arcsec [67.37σ]
OotOffset-rm: 6.653 arcsec [5.08σ]
KicOffset-rm: 6.601 arcsec [5.36σ]
OotOffset-st: 0/2/3/2 [7]
KicOffset-st: 0/2/3/2 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 1.00 [17/17]

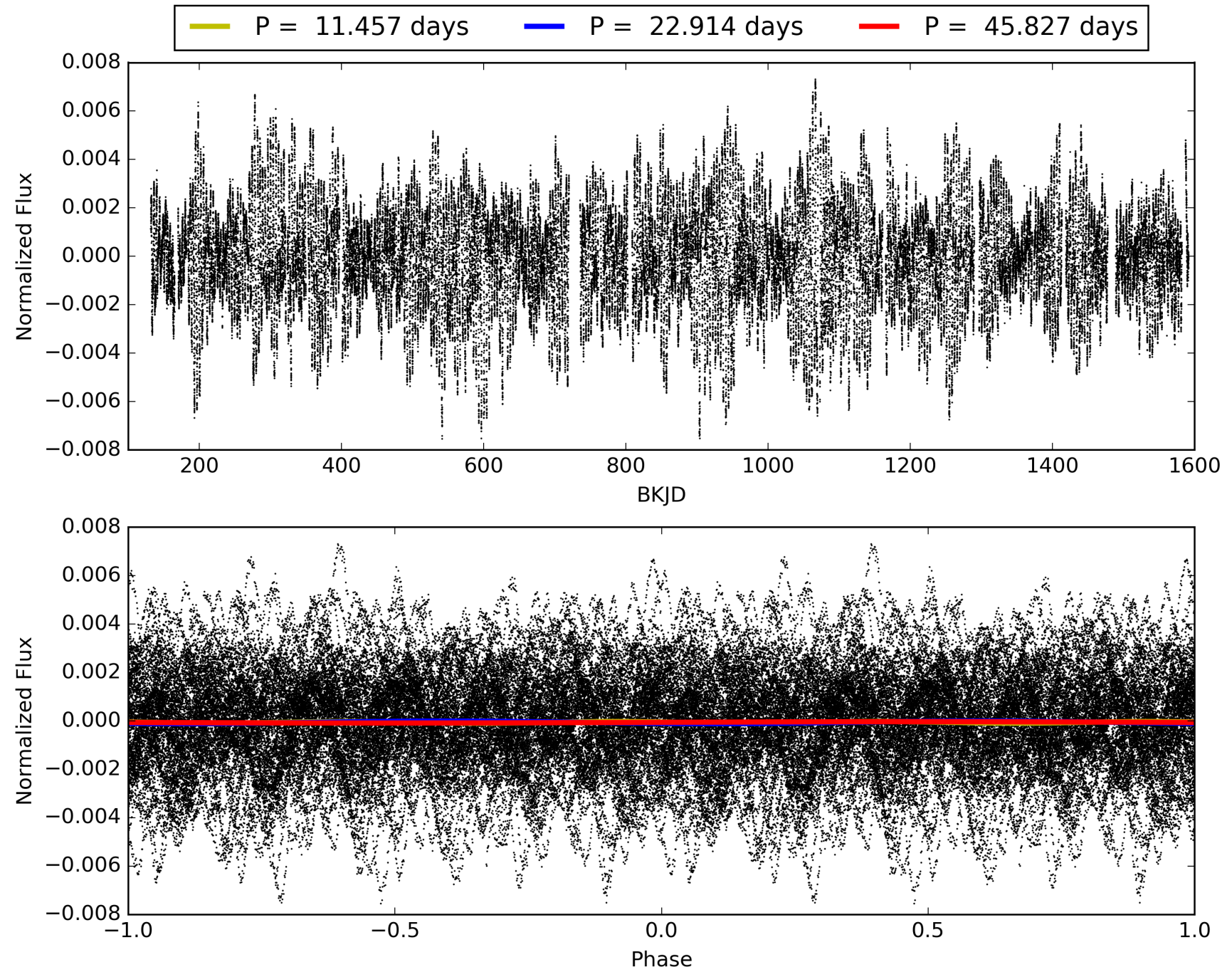
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:12:05 Z

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

TCE 004144238-01, PDC Light Curves

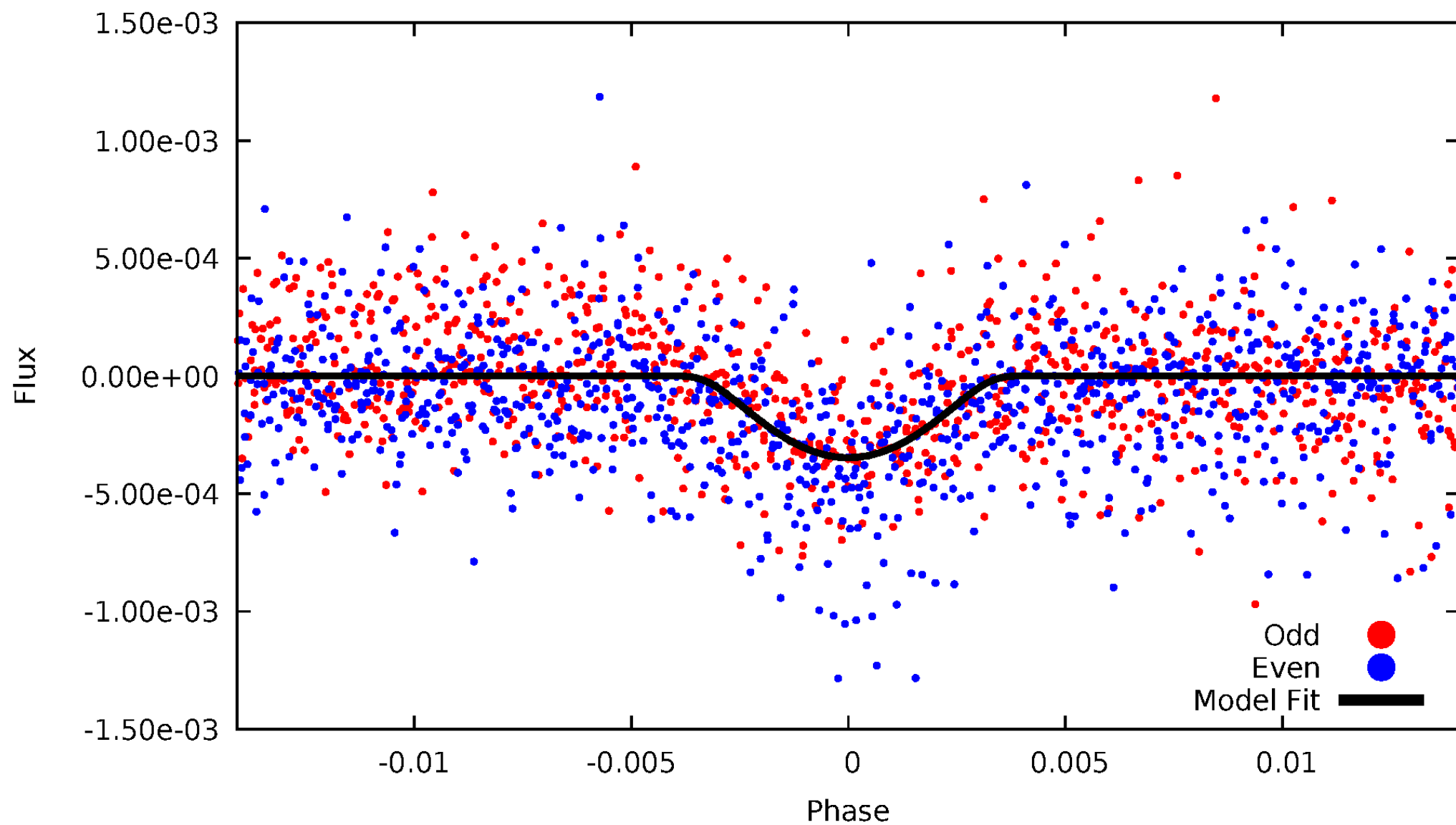


TCE 004144238-01



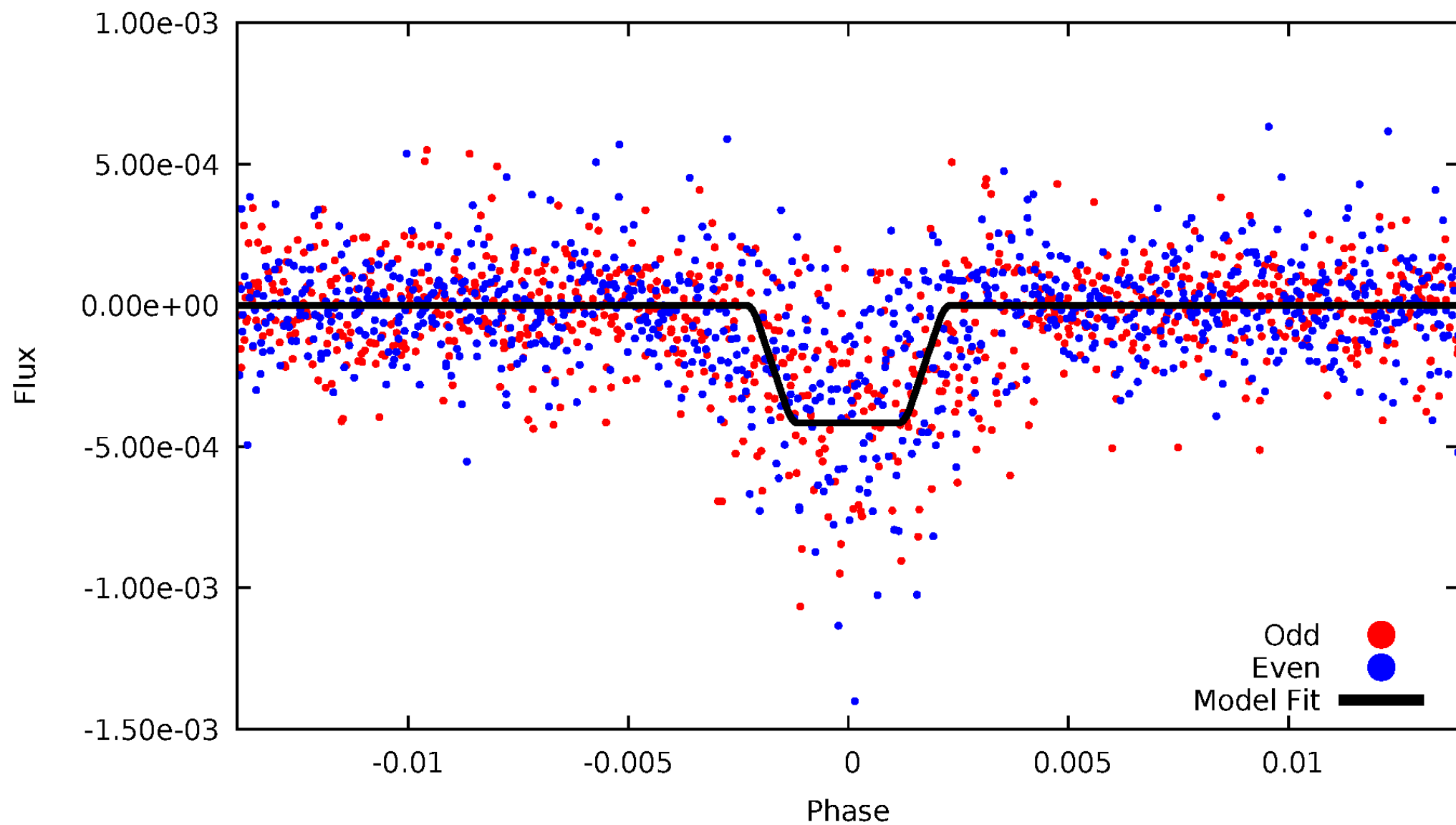
DV Odd/Even

TCE 004144238-01



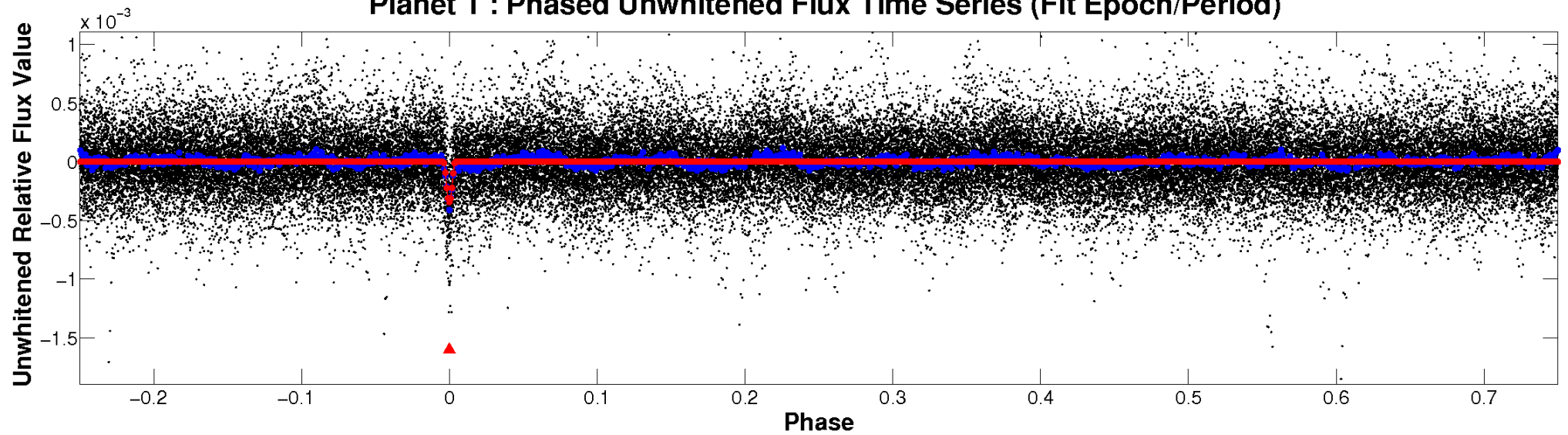
ALT Odd/Even

TCE 004144238-01

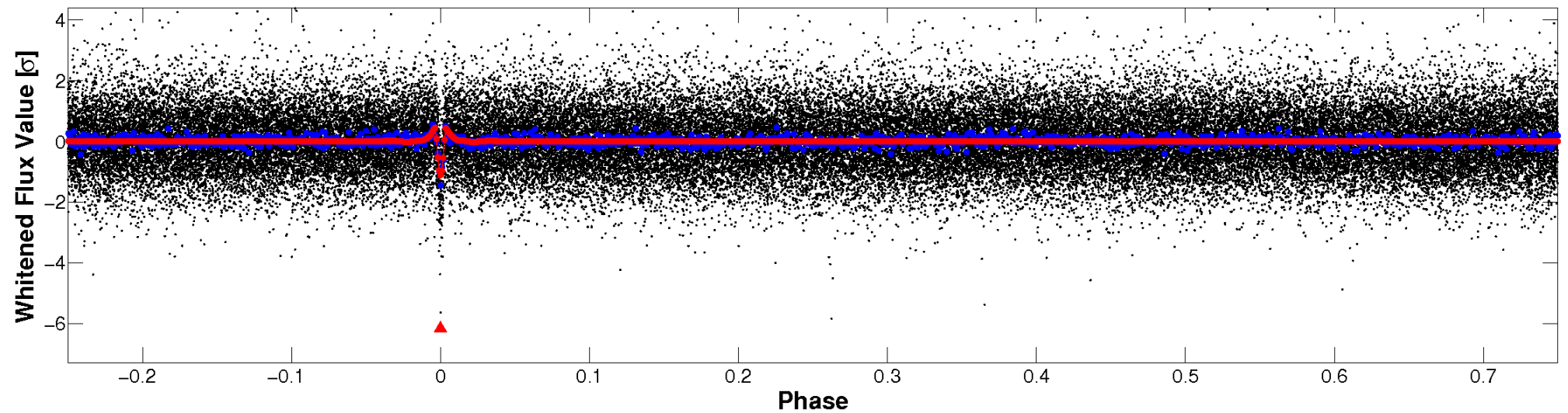


Non-Whitened Vs. Whitened Light Curve

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

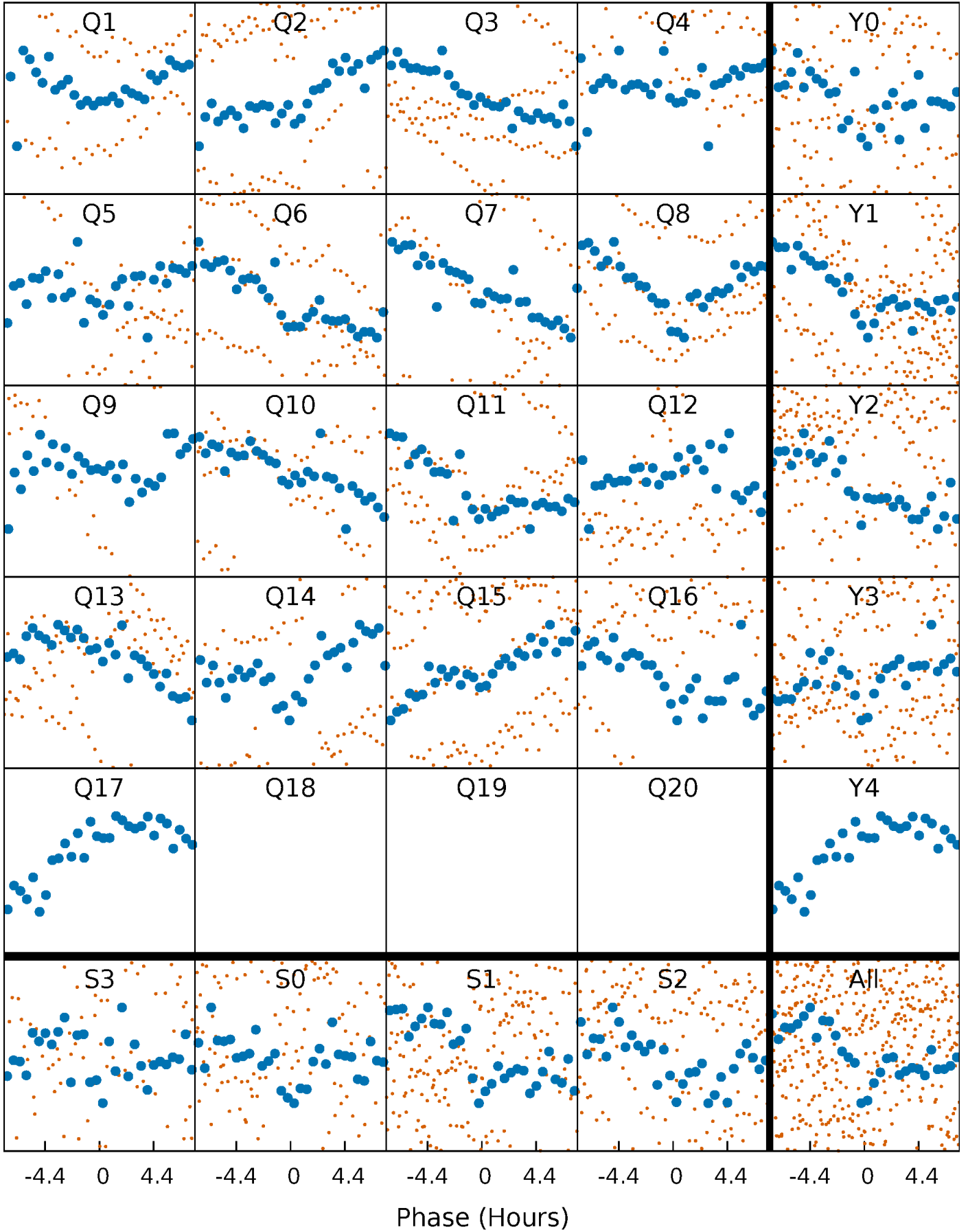


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



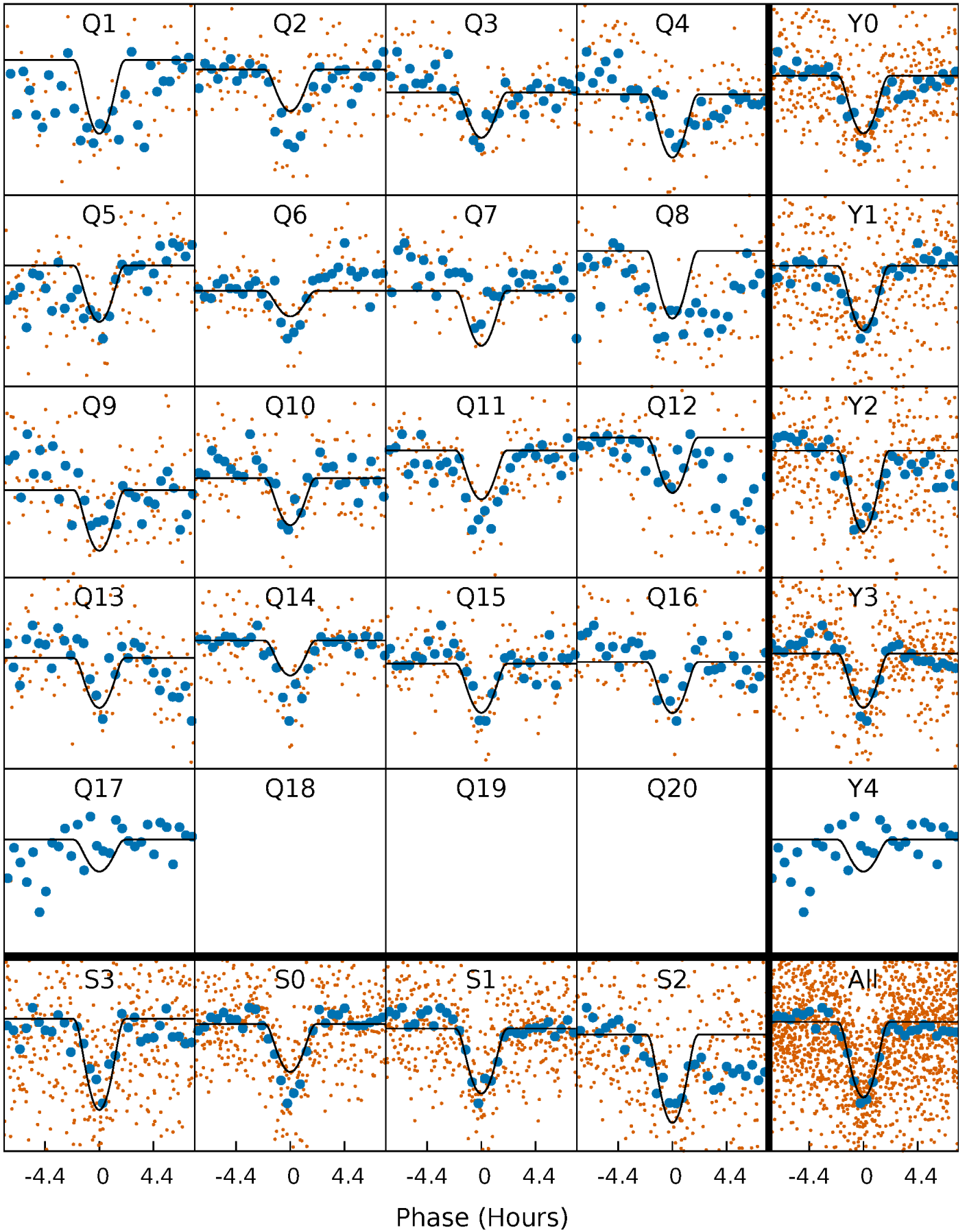
PDC Quarter-Phased Transit Curves

TCE 004144238-01 P= 22.913535 Days $T_0=140.644142$ (BKJD)



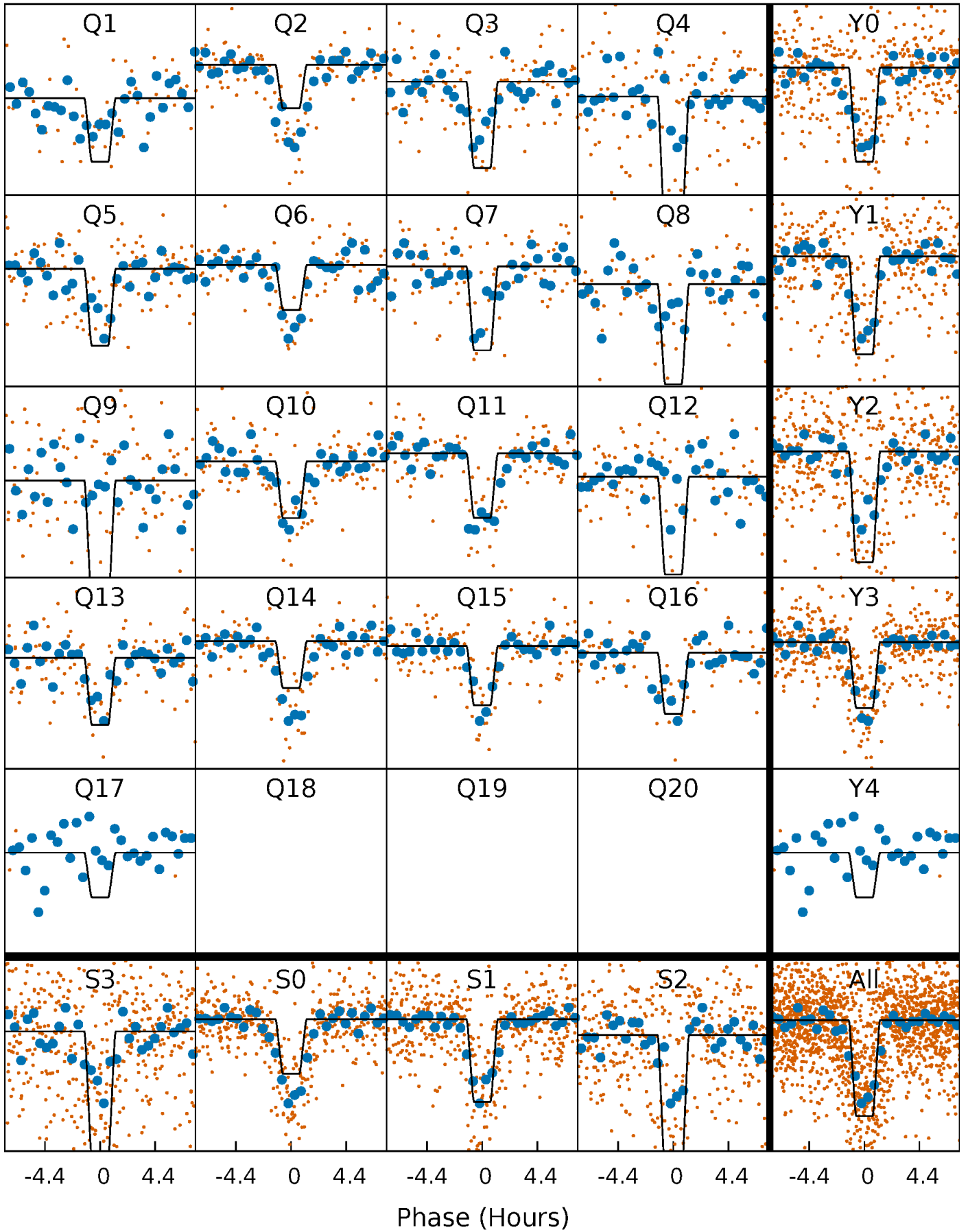
DV Quarter-Phased Transit Curves

TCE 004144238-01 P= 22.913535 Days $T_0=140.644142$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

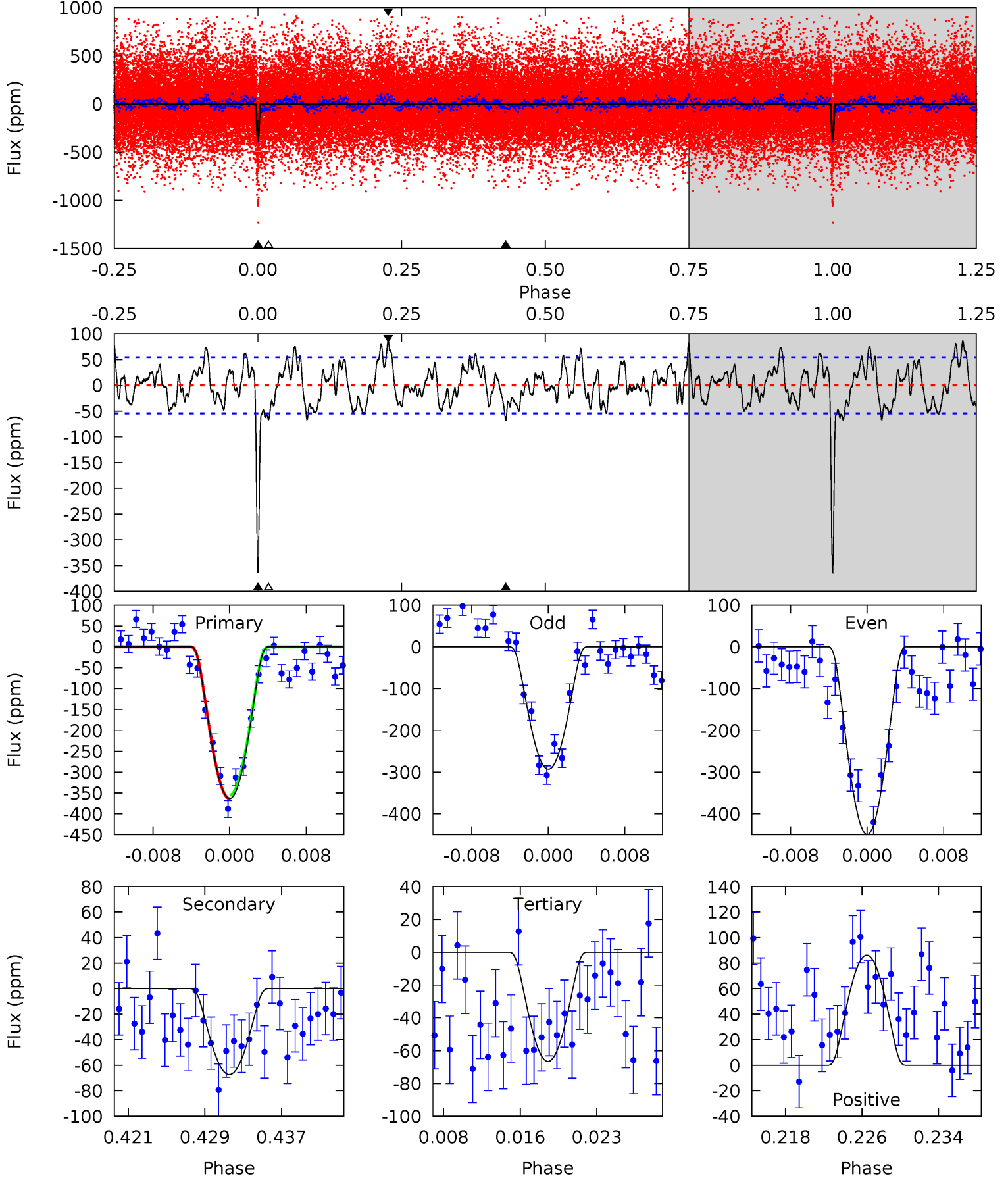
TCE 004144238-01 P= 22.913554 Days $T_0=140.643845$ (BKJD)



DV Model-Shift Uniqueness Test

004144238-01, P = 22.913535 Days, E = 117.730607 Days

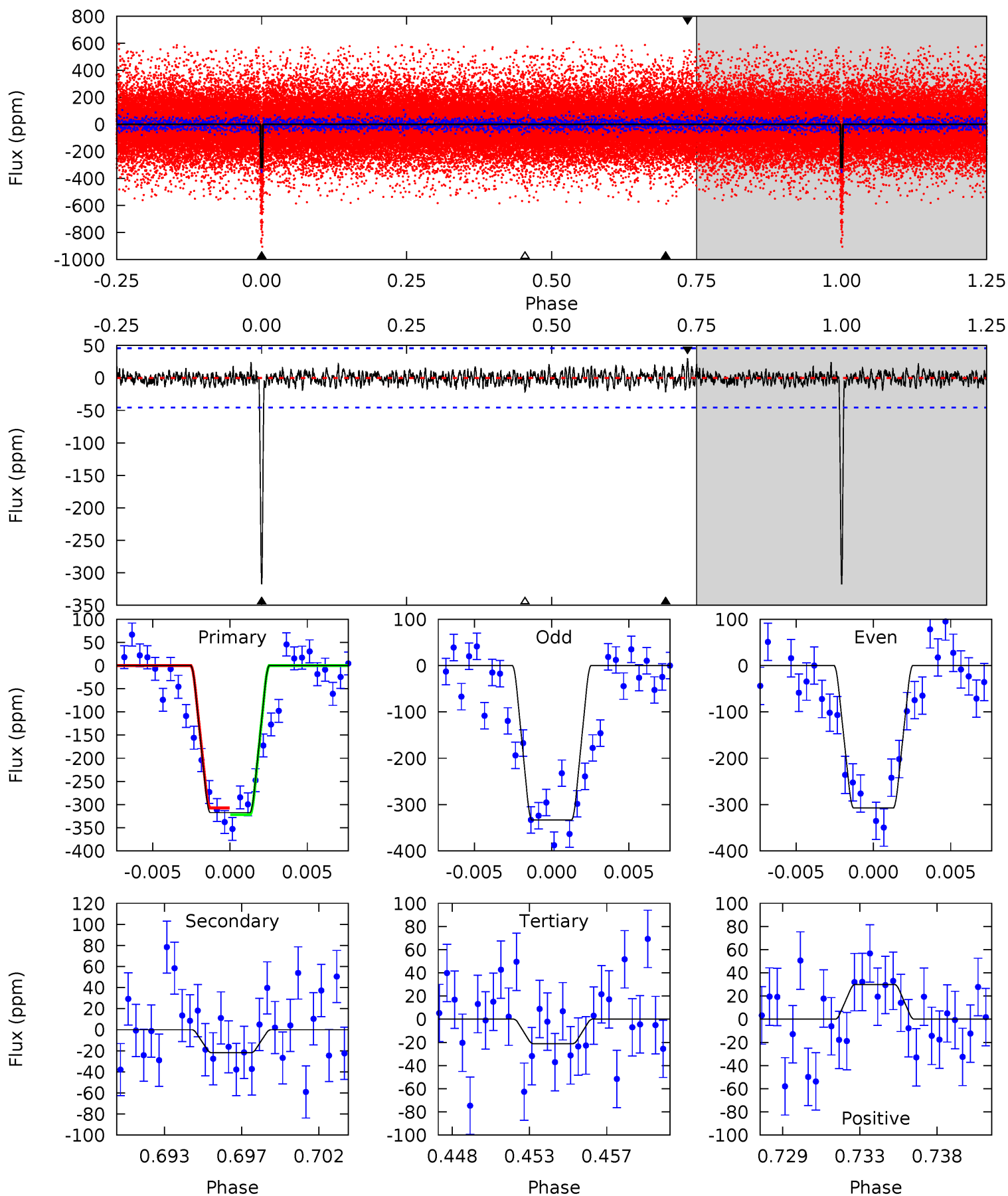
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.8	6.26	6.19	8.03	5.07	2.66	2.89	27.7	25.8	0.07	-1.77	7.30	1.02	0.19	0.39



Alt Model-Shift Uniqueness Test

004144238-01, P = 22.913554 Days, E = 117.730291 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.0	2.49	2.39	3.40	5.18	2.84	0.83	33.6	32.6	0.09	-0.91	1.47	1.12	0.09	0.83



Stellar Parameters For KIC 004144238

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6154^{+82}_{-82}	$4.201^{+0.168}_{-0.112}$	$-0.220^{+0.150}_{-0.150}$	$1.334^{+0.215}_{-0.263}$	$1.032^{+0.088}_{-0.072}$	$0.612^{+0.514}_{-0.205}$
	+1%/-1%	+4%/-3%	+68%/-68%	+16%/-20%	+9%/-7%	+84%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004144238-01 / KOI 5041.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-67 ± 11	$7.79^{+7.02}_{-5.35}$	1099^{+48}_{-55}	3037^{+1342}_{-494}	16^{+134}_{-11}
Alt.	-22 ± 9	$6.58^{+6.61}_{-4.66}$	1097^{+47}_{-59}	2736^{+1209}_{-534}	$7.109^{+70.536}_{-5.693}$

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 $A_{\text{obs}} \gg 1.0$

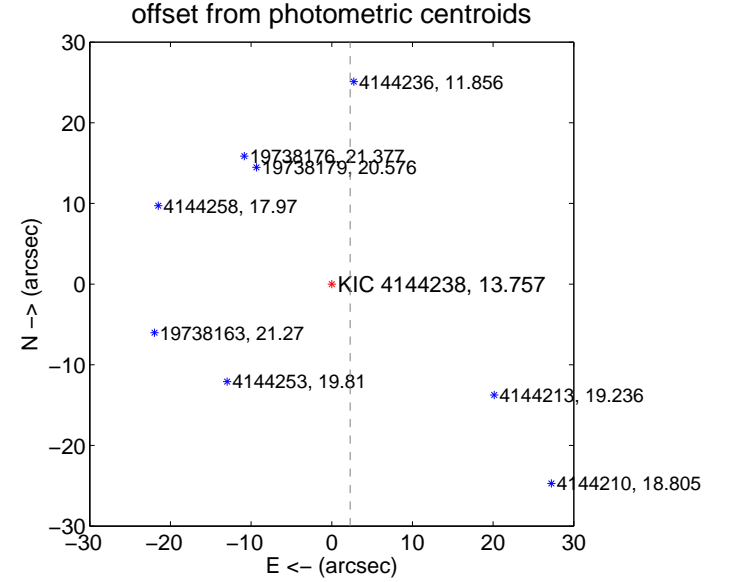
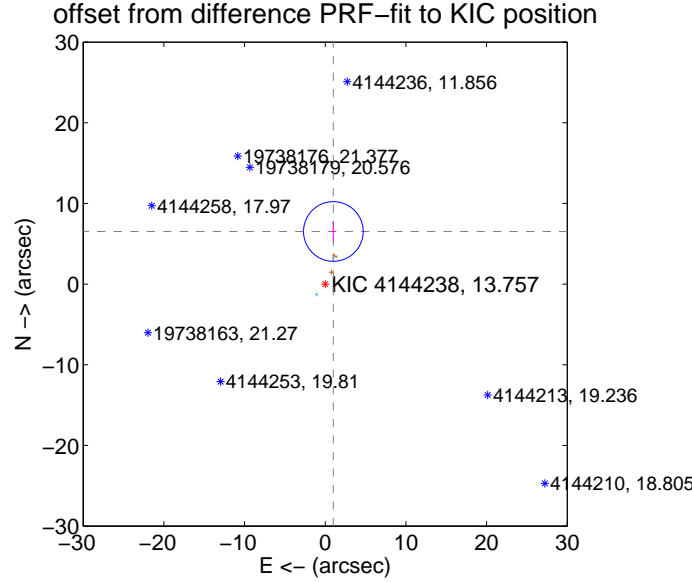
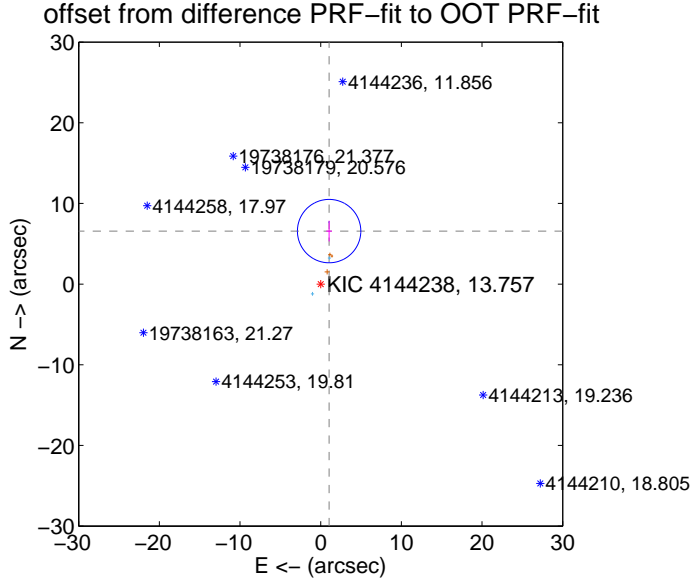
DV Centroid Data

Supplemental centroid analysis for 004144238-01. Kepler magnitude: 13.76. Transit SNR 16.21

There are 4 quarters with good PRF difference image offsets

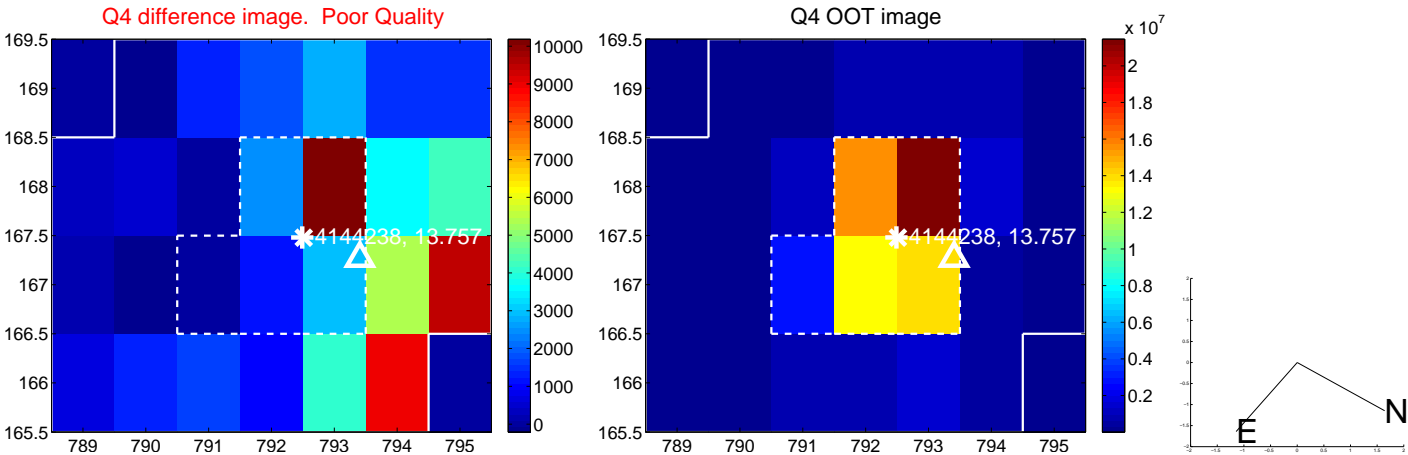
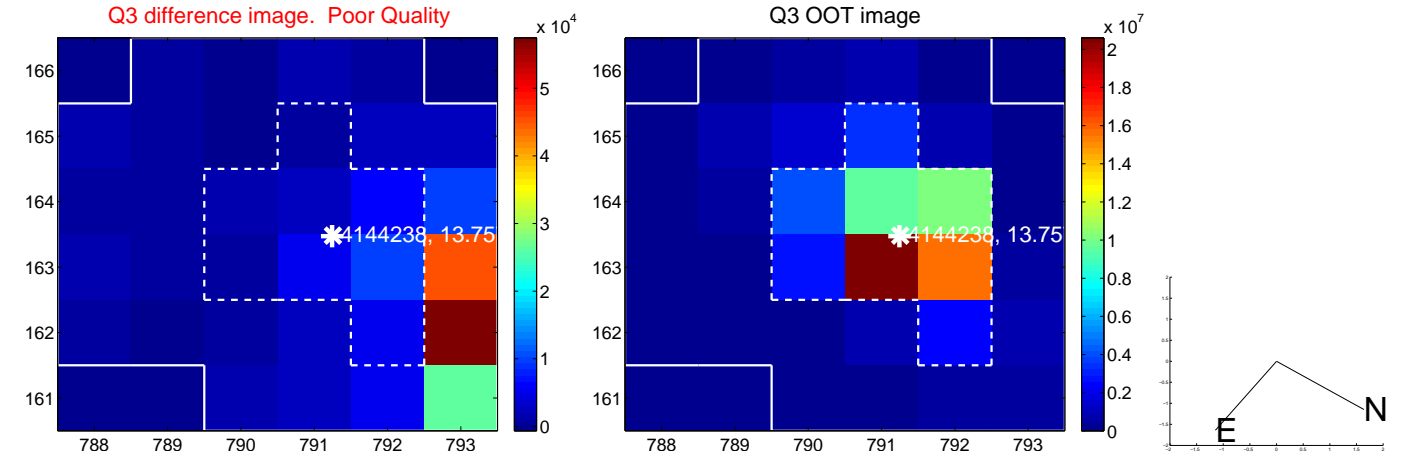
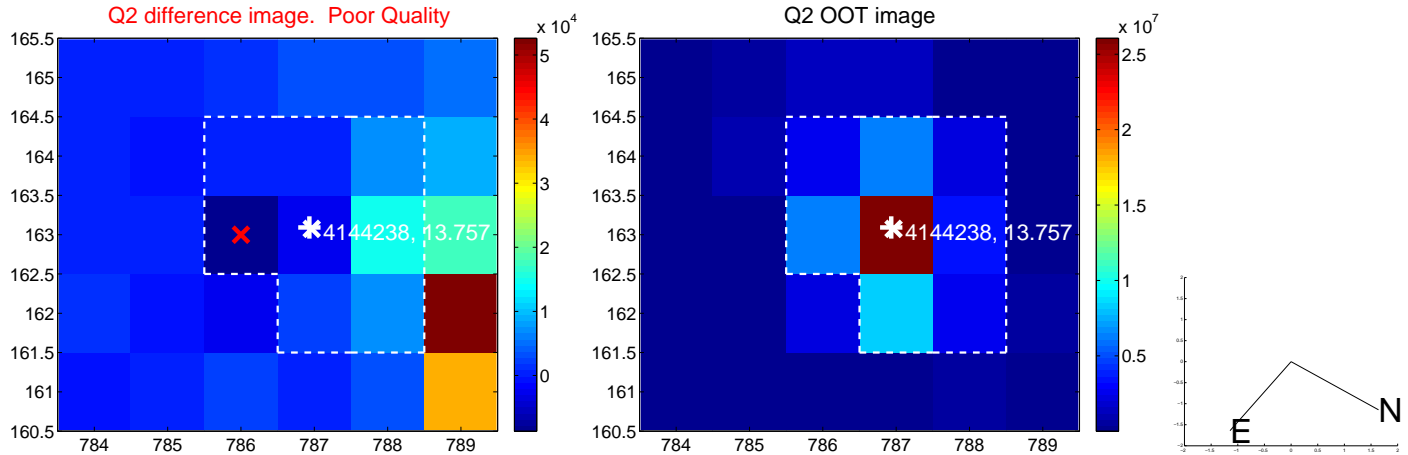
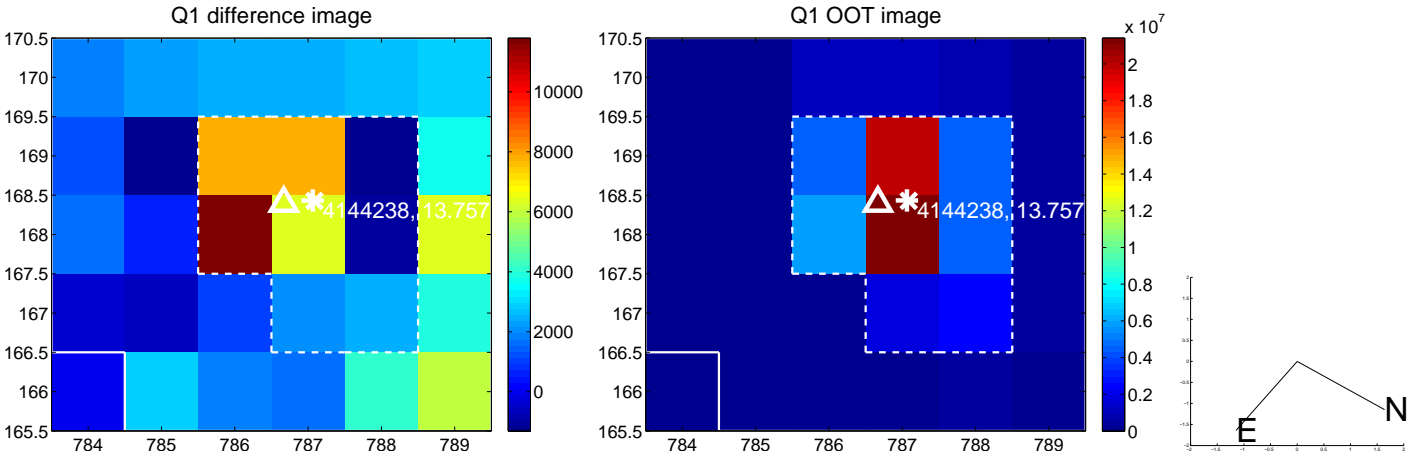
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.653 ± 1.310	5.08	-1.045 ± 0.353	6.570 ± 1.284
PRF-fit source offset from KIC position	6.601 ± 1.232	5.36	-1.008 ± 0.302	6.524 ± 1.218
photometric centroid source offset	36.17 ± 0.54	67.37	-2.28 ± 0.53	36.10 ± 0.54

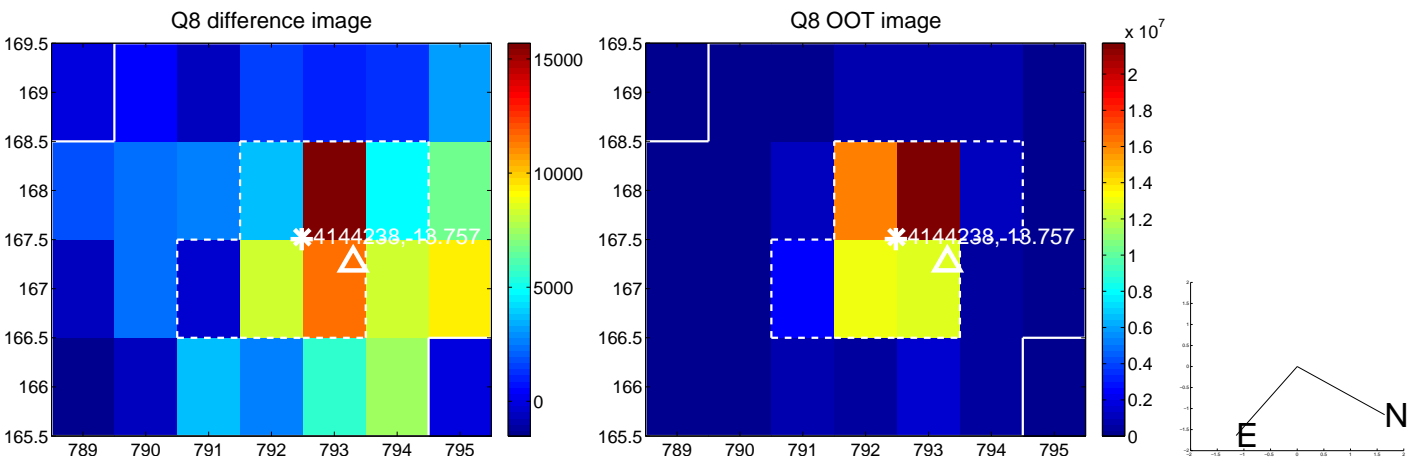
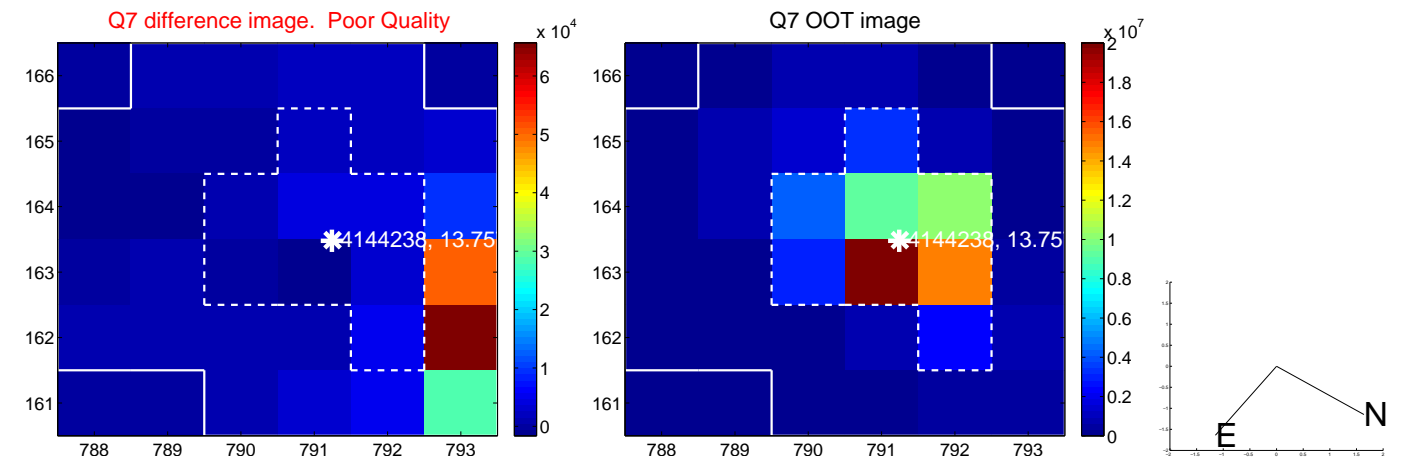
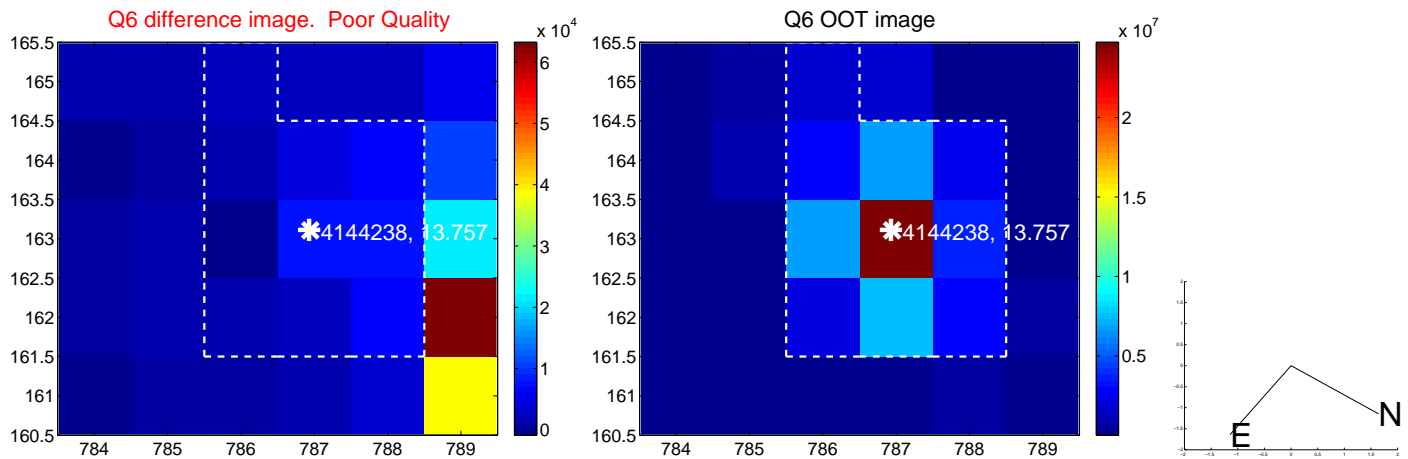
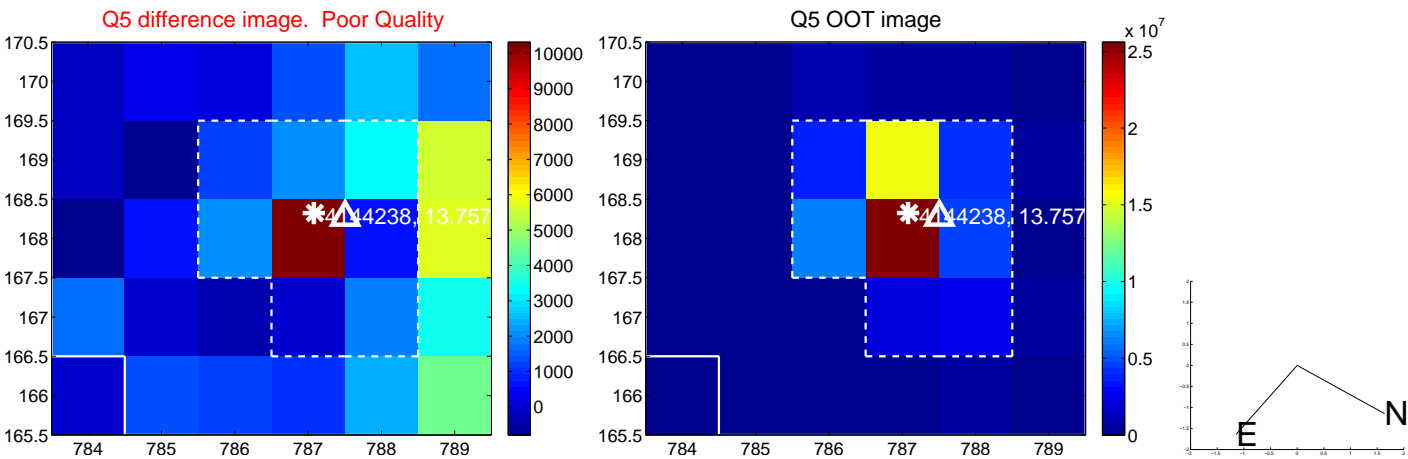


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

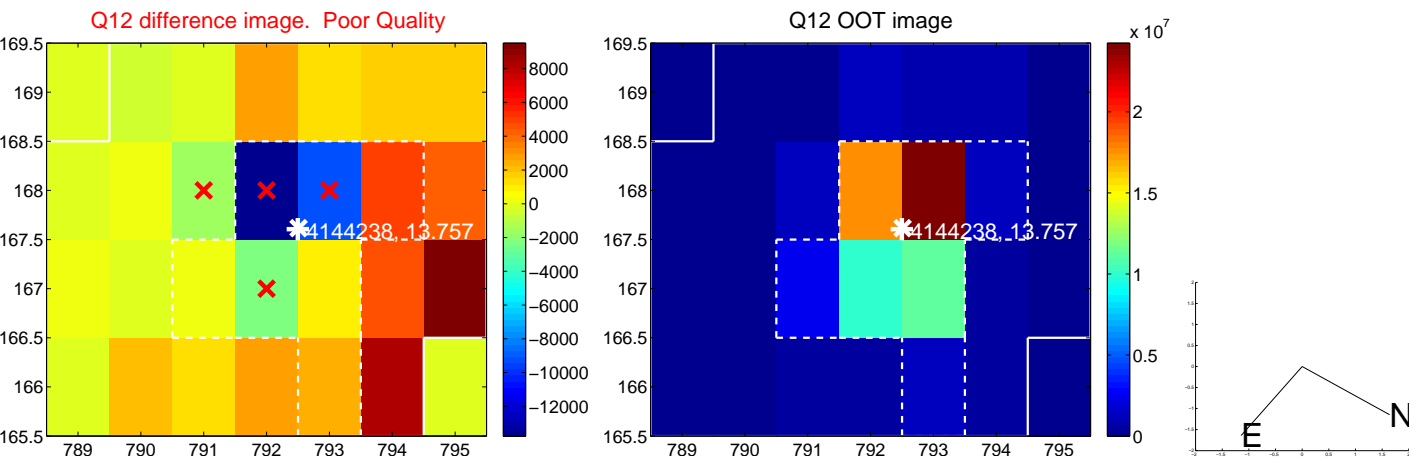
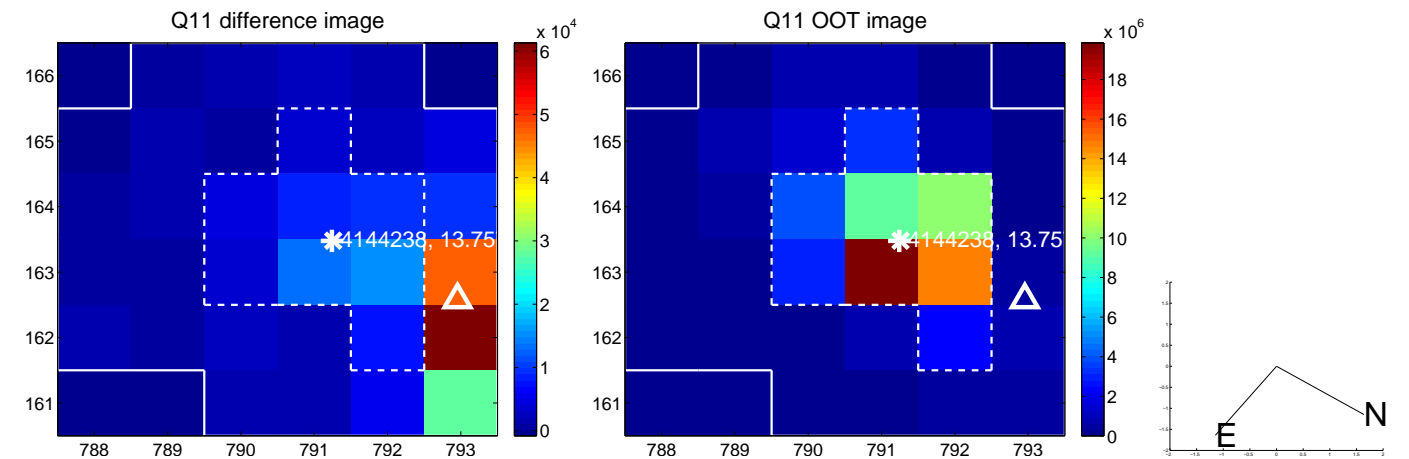
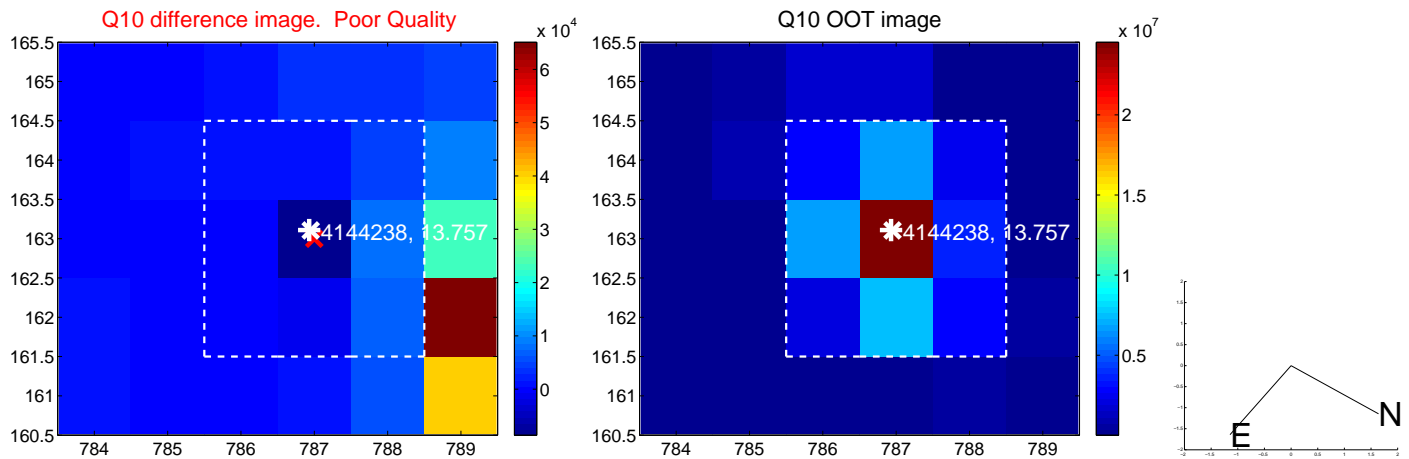
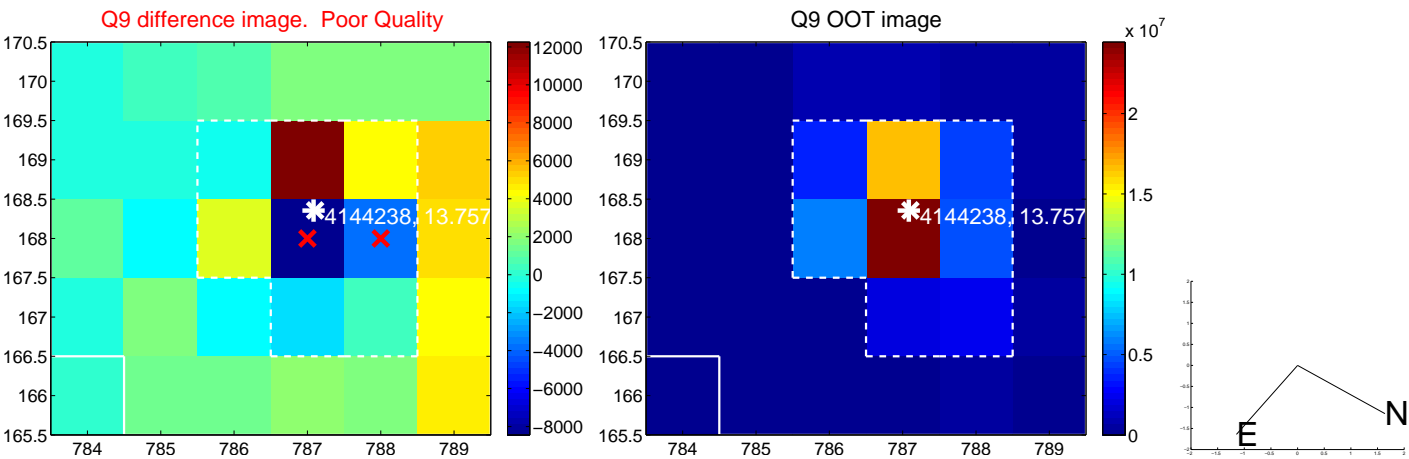
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



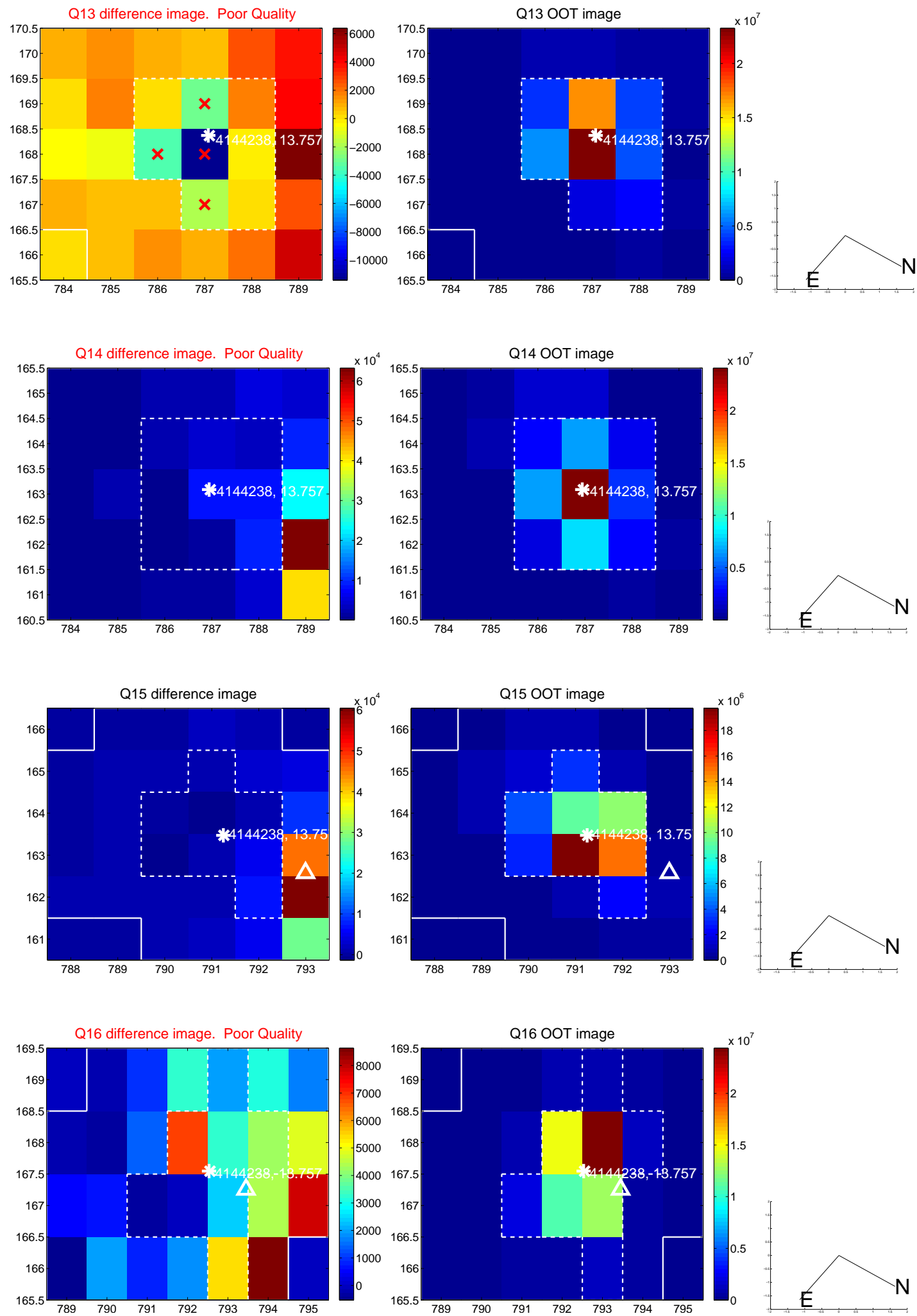
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



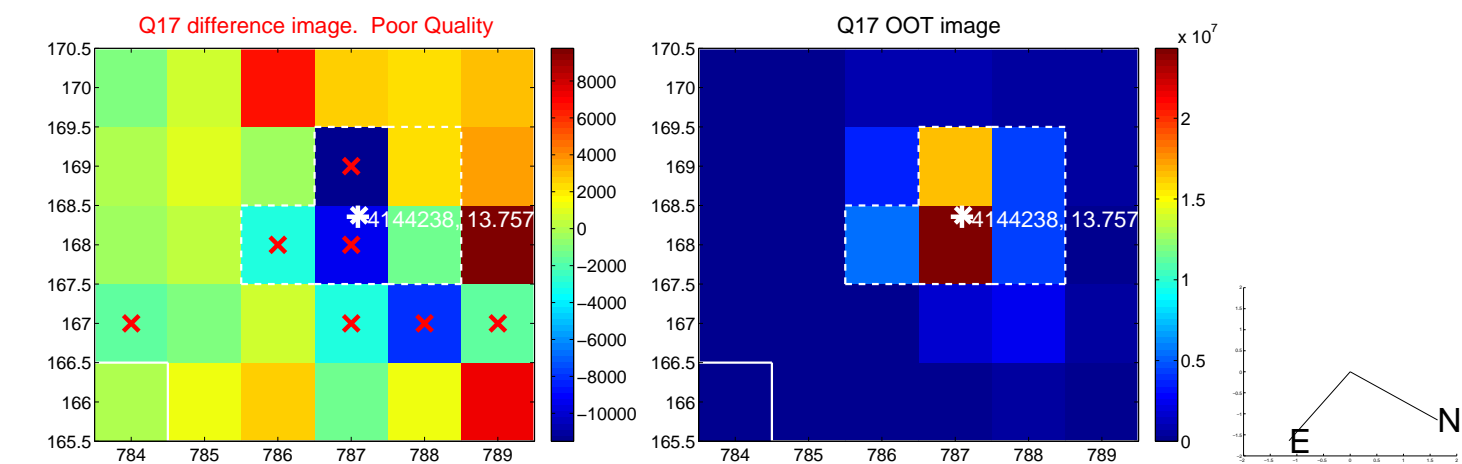
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



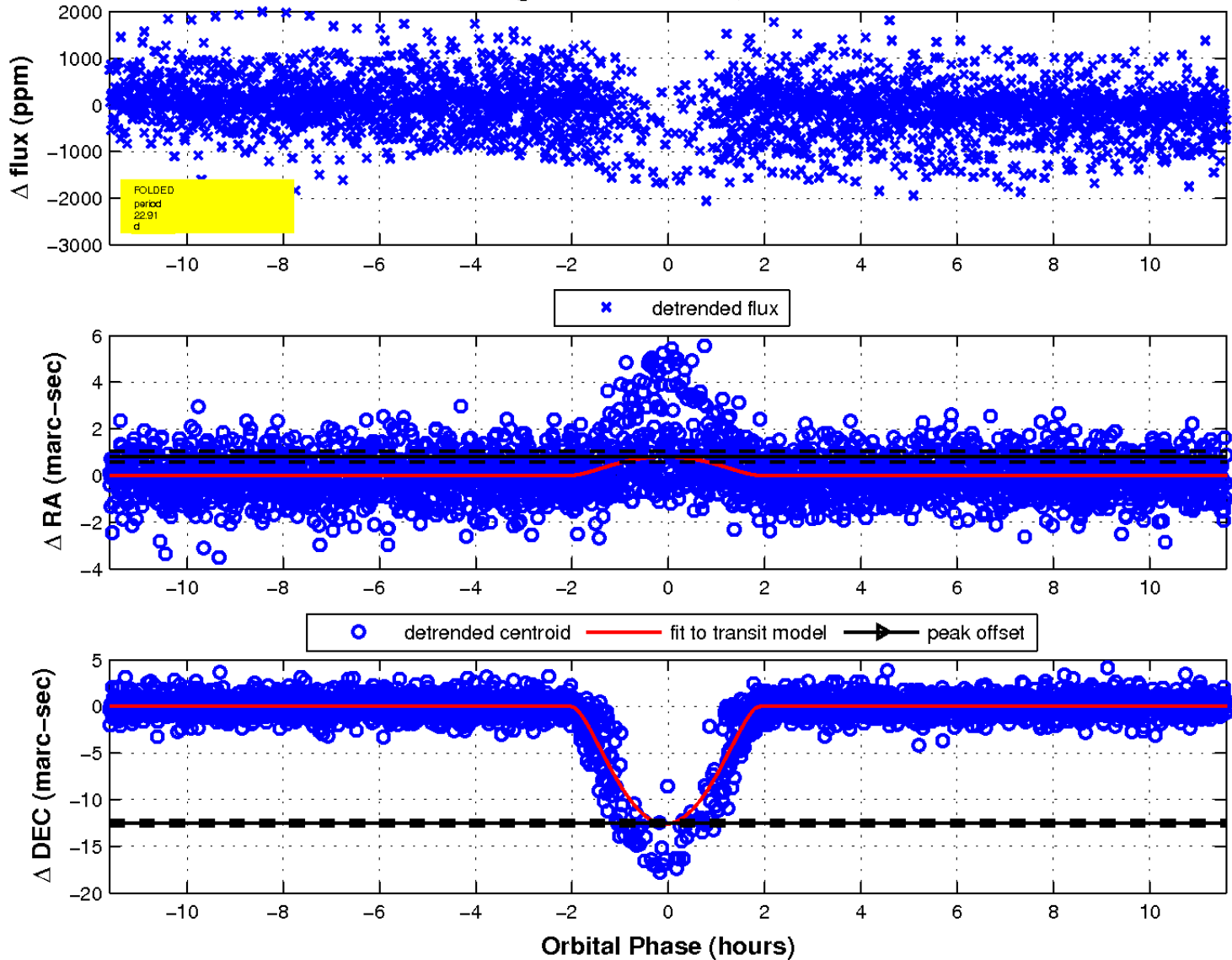
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

