

KIC 004138557

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})
004138557-01	OBS	4033.01	0.991538	131.863021	1.6	0.896	8.7	0.6	1.86	5908	0.27	10144.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004138557-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET

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.

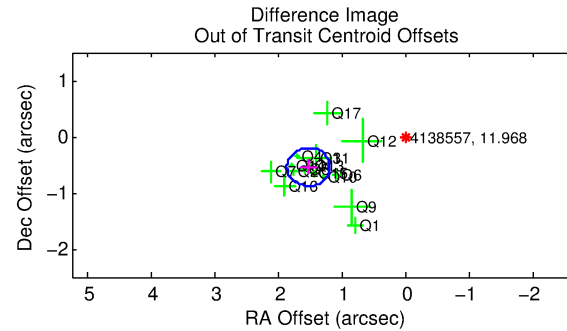
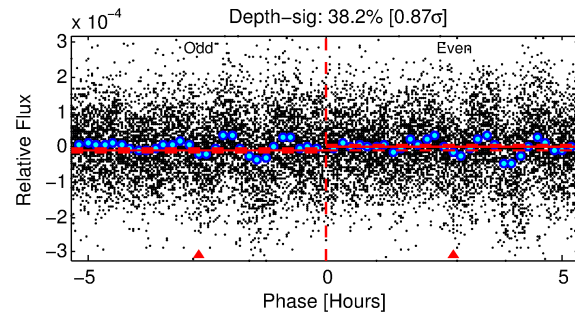
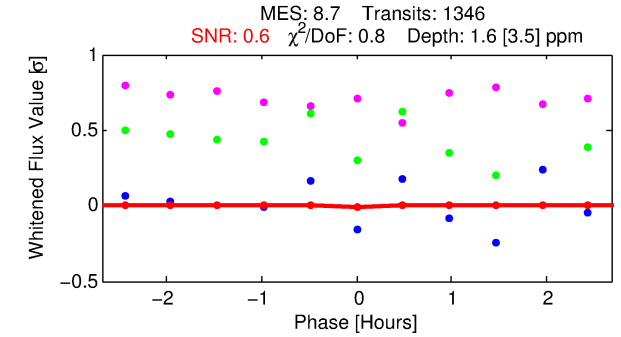
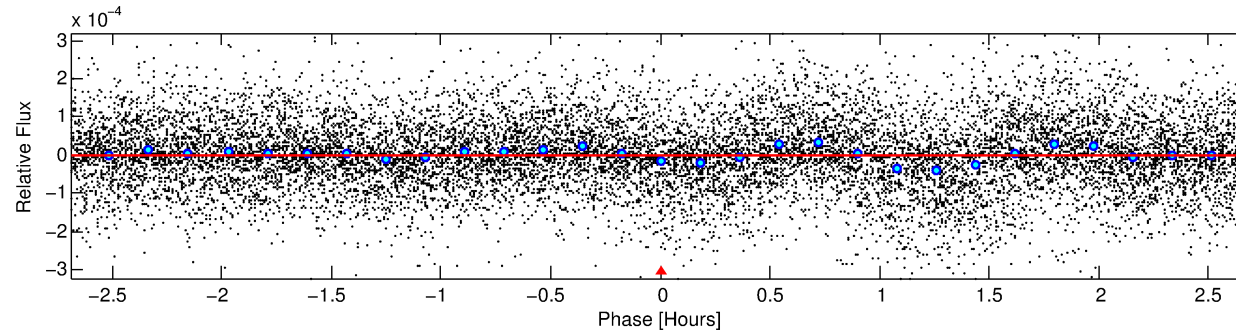
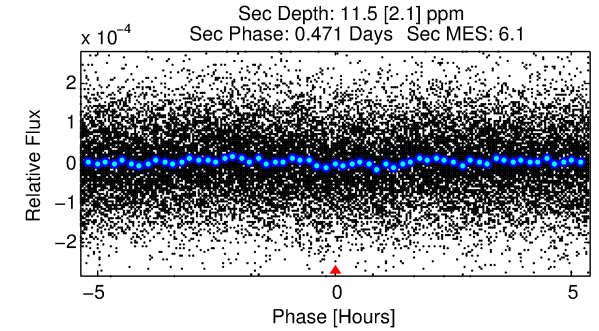
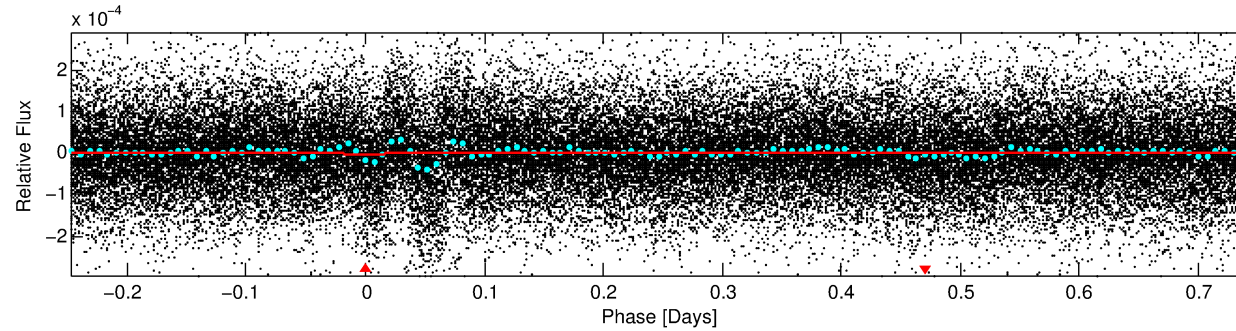
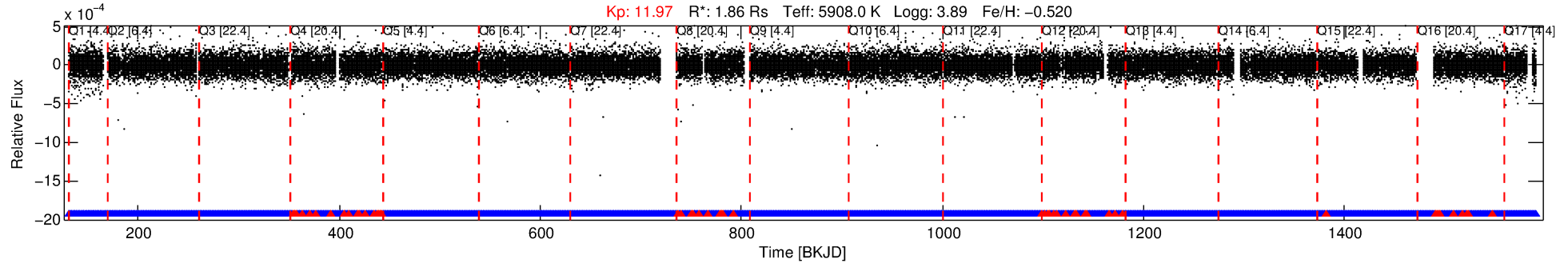
Ephemeris Match Information For 004138557-01

No Significant Match Found

DV One-Page Summary

KIC: 4138557 Candidate: 1 of 1 Period: 0.992 d
KOI: K04033 Corr: No Ephemeris Match

Kp: 11.97 R*: 1.86 Rs Teff: 5908.0 K Logg: 3.89 Fe/H: -0.520



DV Fit Results:

Period = 0.99154 [0.00015] d
Epoch = 131.8630 [0.0223] BKJD
Rp/R* = 0.0013 [0.0016]
a/R* = 5.22 [12.36]
b = 0.80 [1.15]
Seff = 10144.49 [5200.25]
Teq = 2559 [328] K
Rp = 0.26 [0.33] Re
a = 0.0193 [0.0060] AU
Ag = 33.80 [83.13] [0.39σ]
Teffp = 9540 [5750] K [1.21σ]

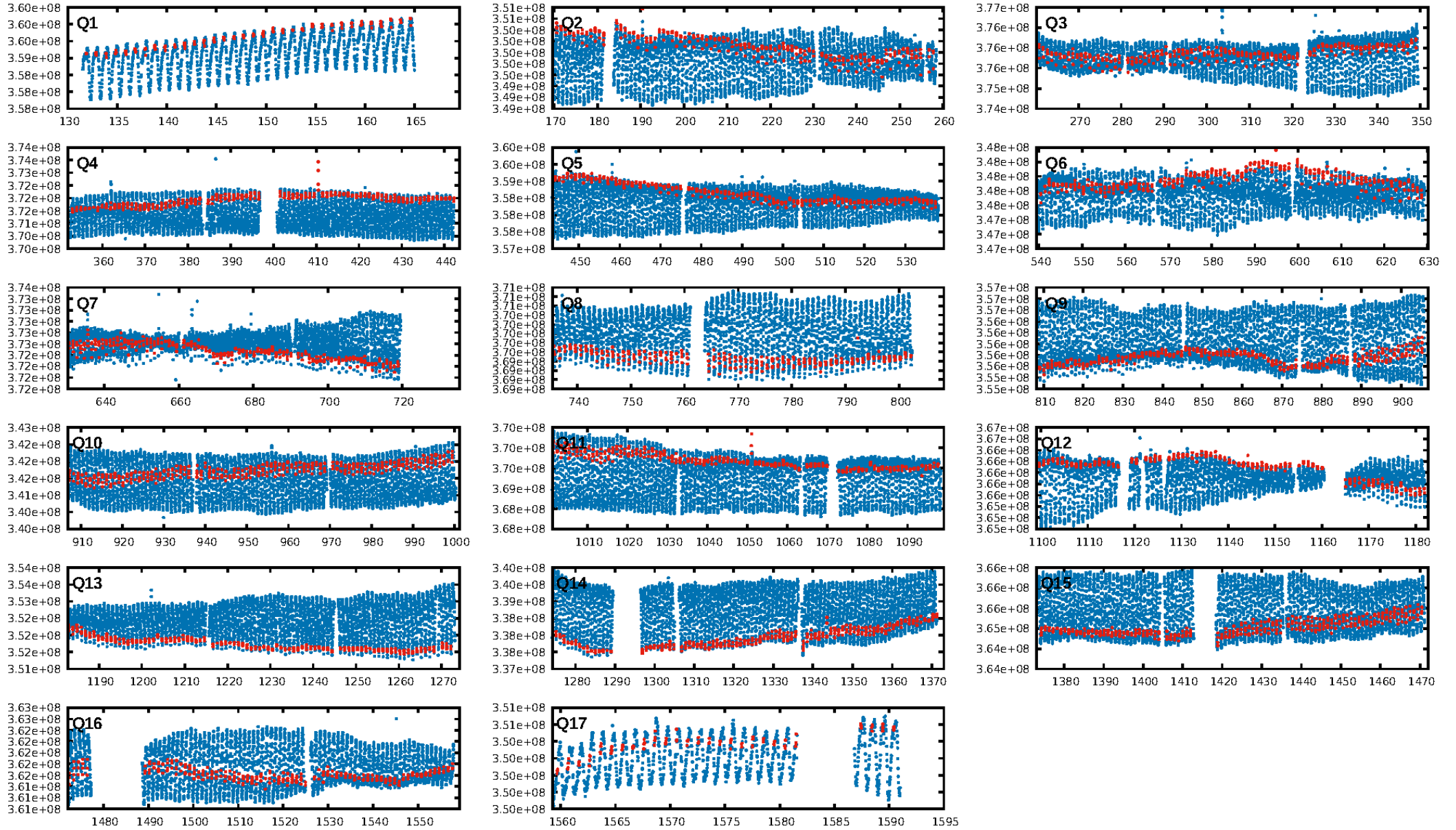
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.97e-17
RollingBand-fgt: 0.96 [1232/1285]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.624 arcsec [14.36σ]
KicOffset-rm: 1.658 arcsec [13.85σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 1.00 [17/17]

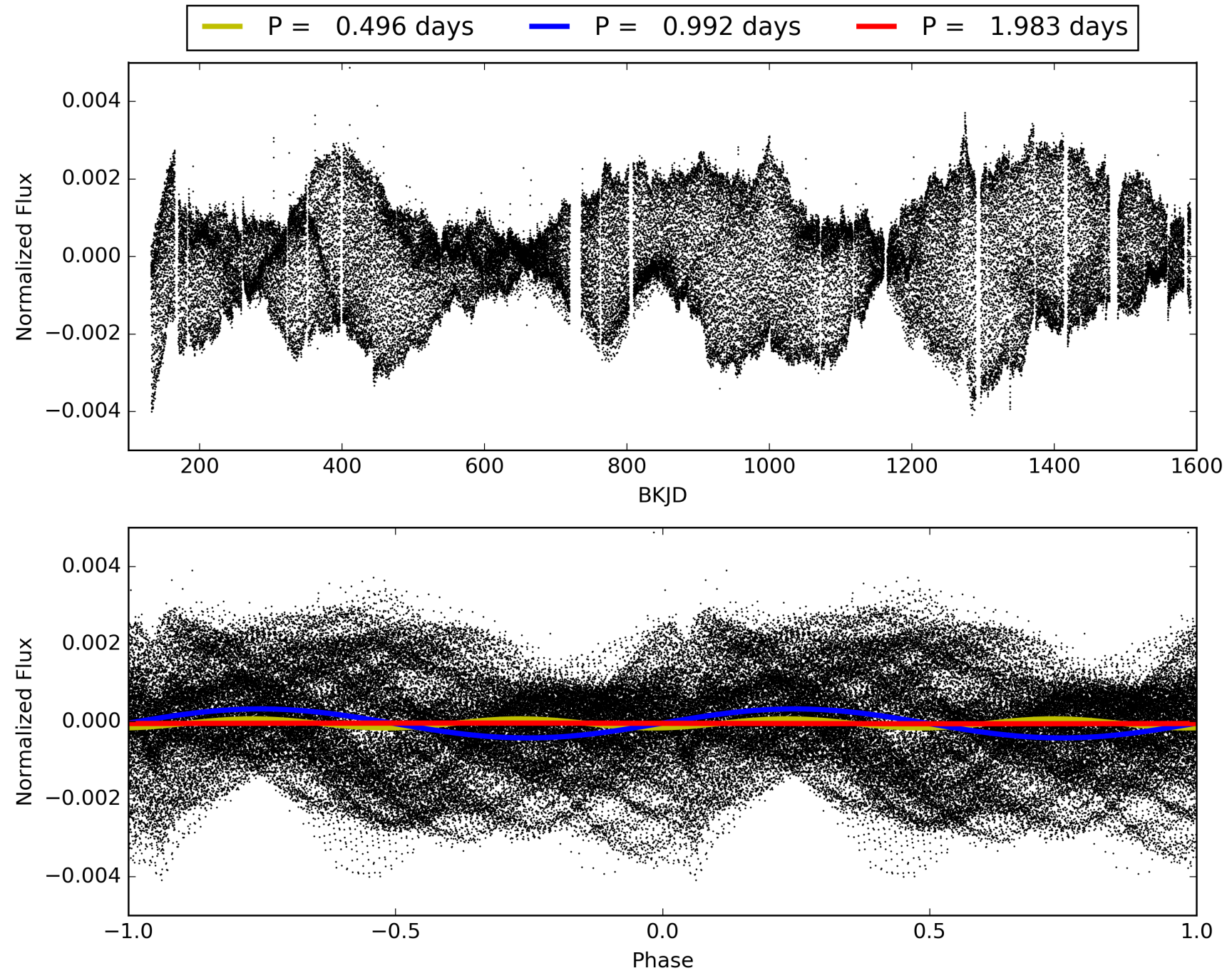
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:30:17 Z

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

TCE 004138557-01, PDC Light Curves

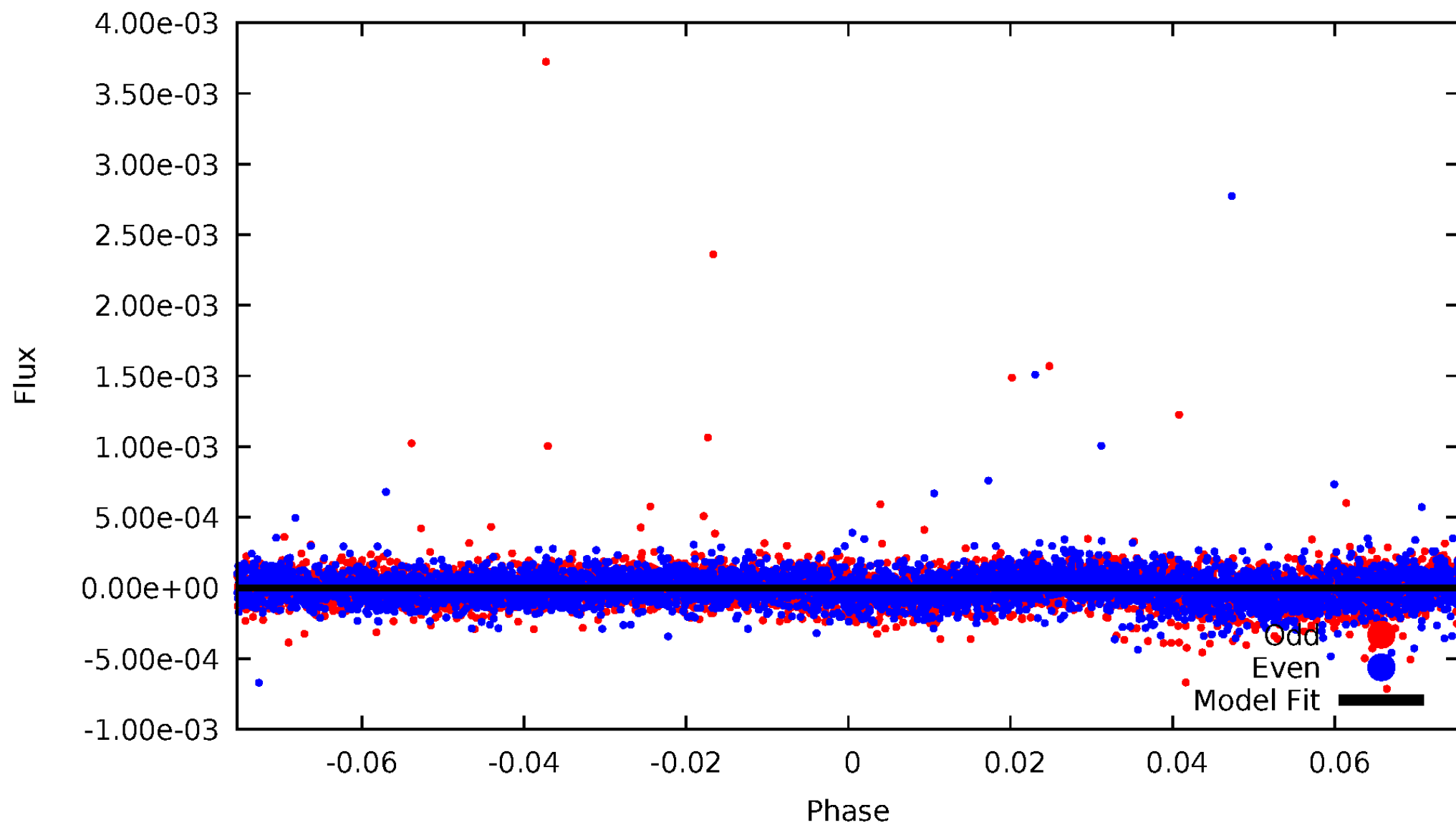


TCE 004138557-01



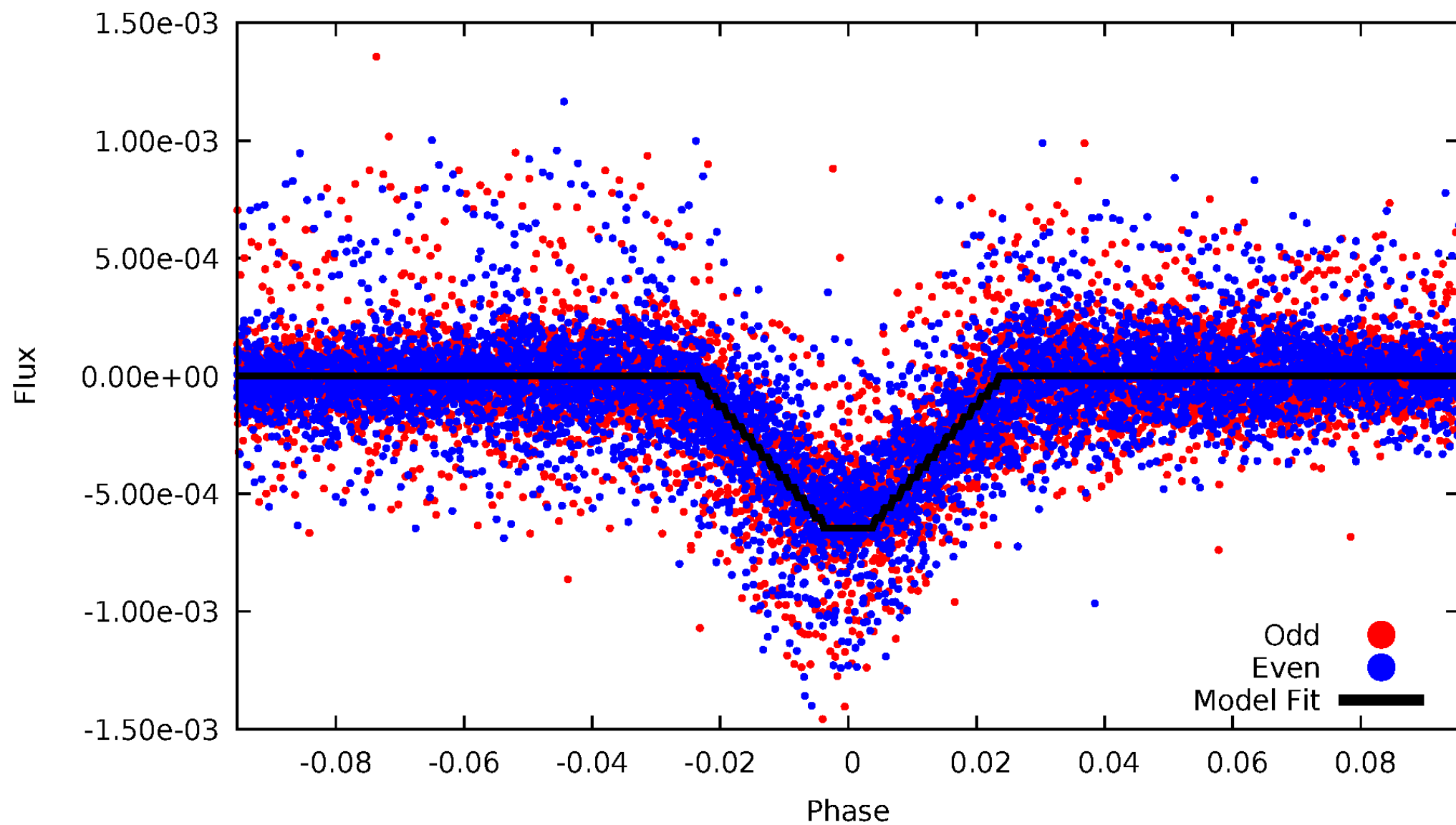
DV Odd/Even

TCE 004138557-01



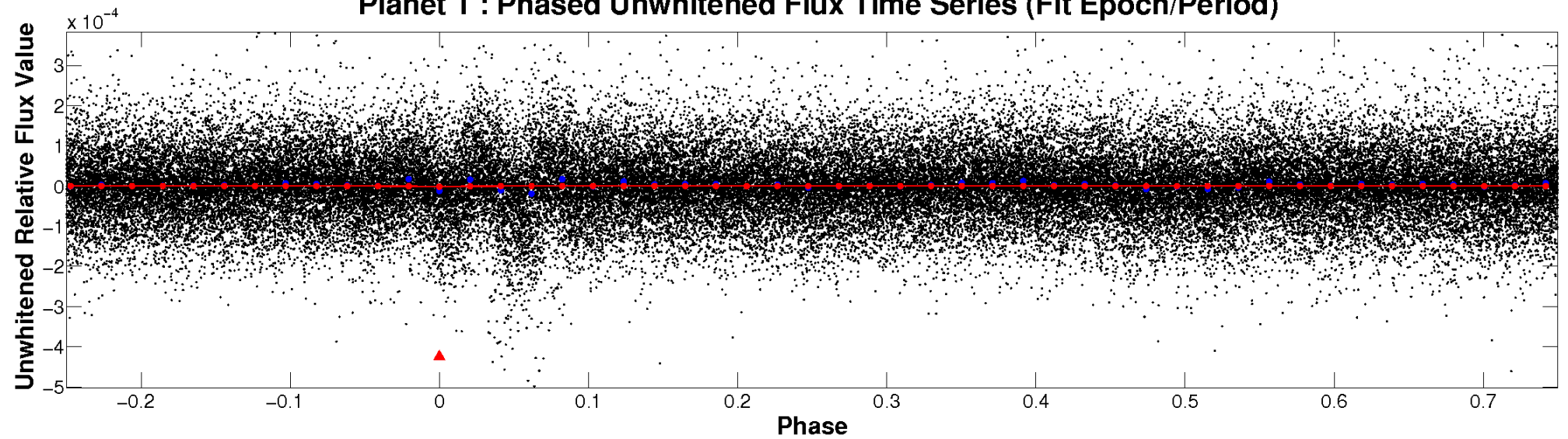
ALT Odd/Even

TCE 004138557-01

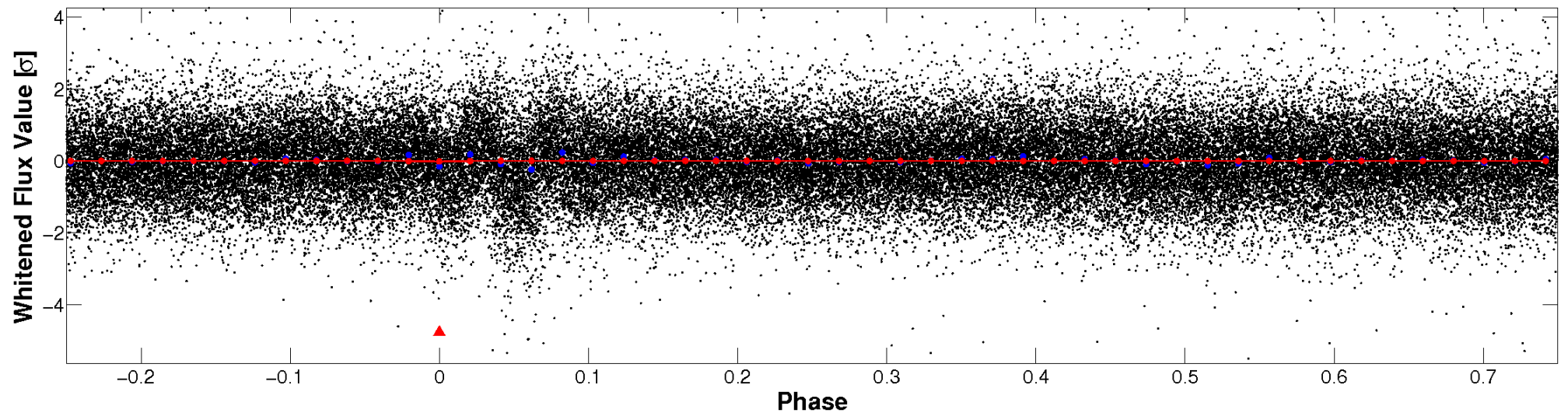


Non-Whitened Vs. Whitened Light Curve

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

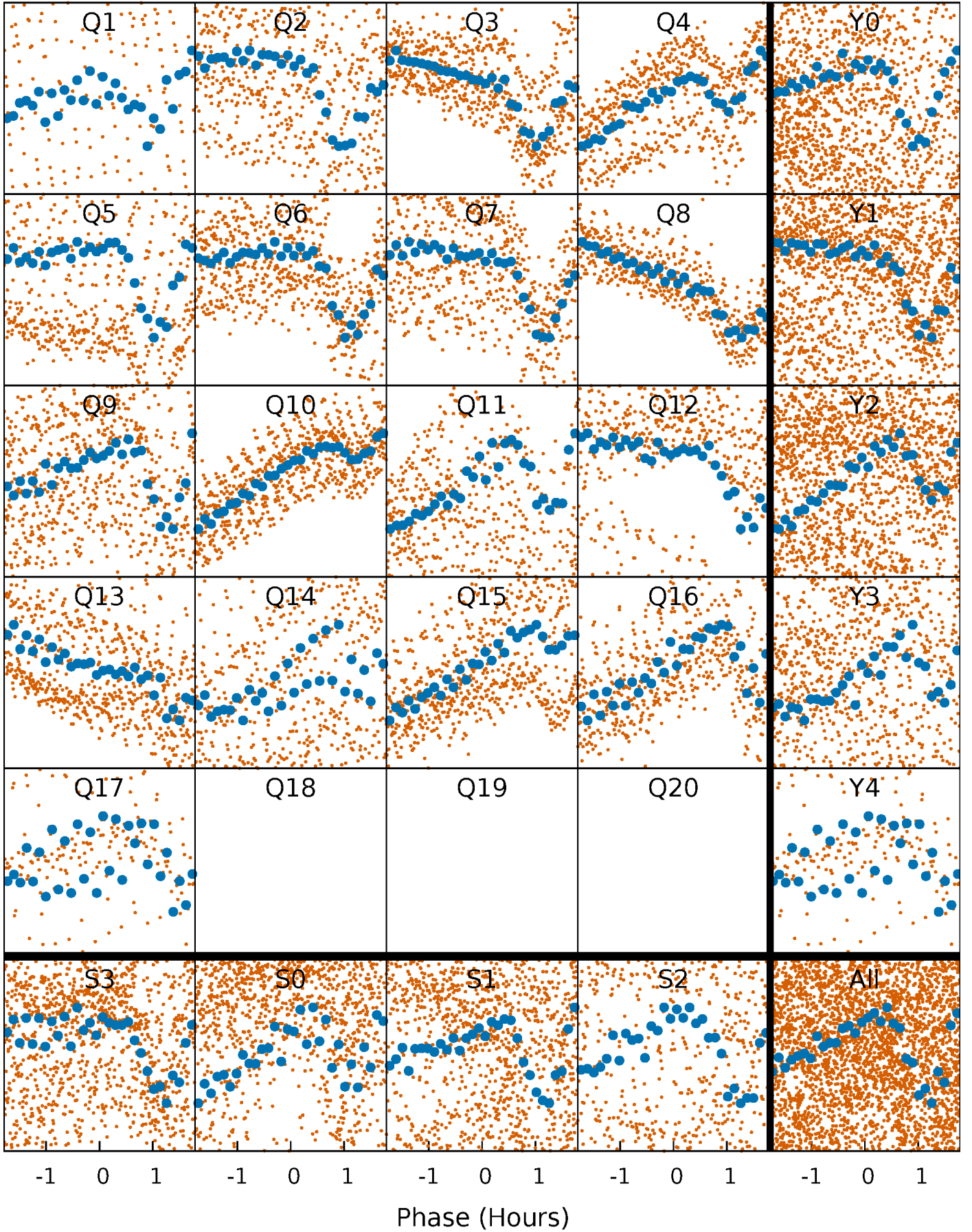


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



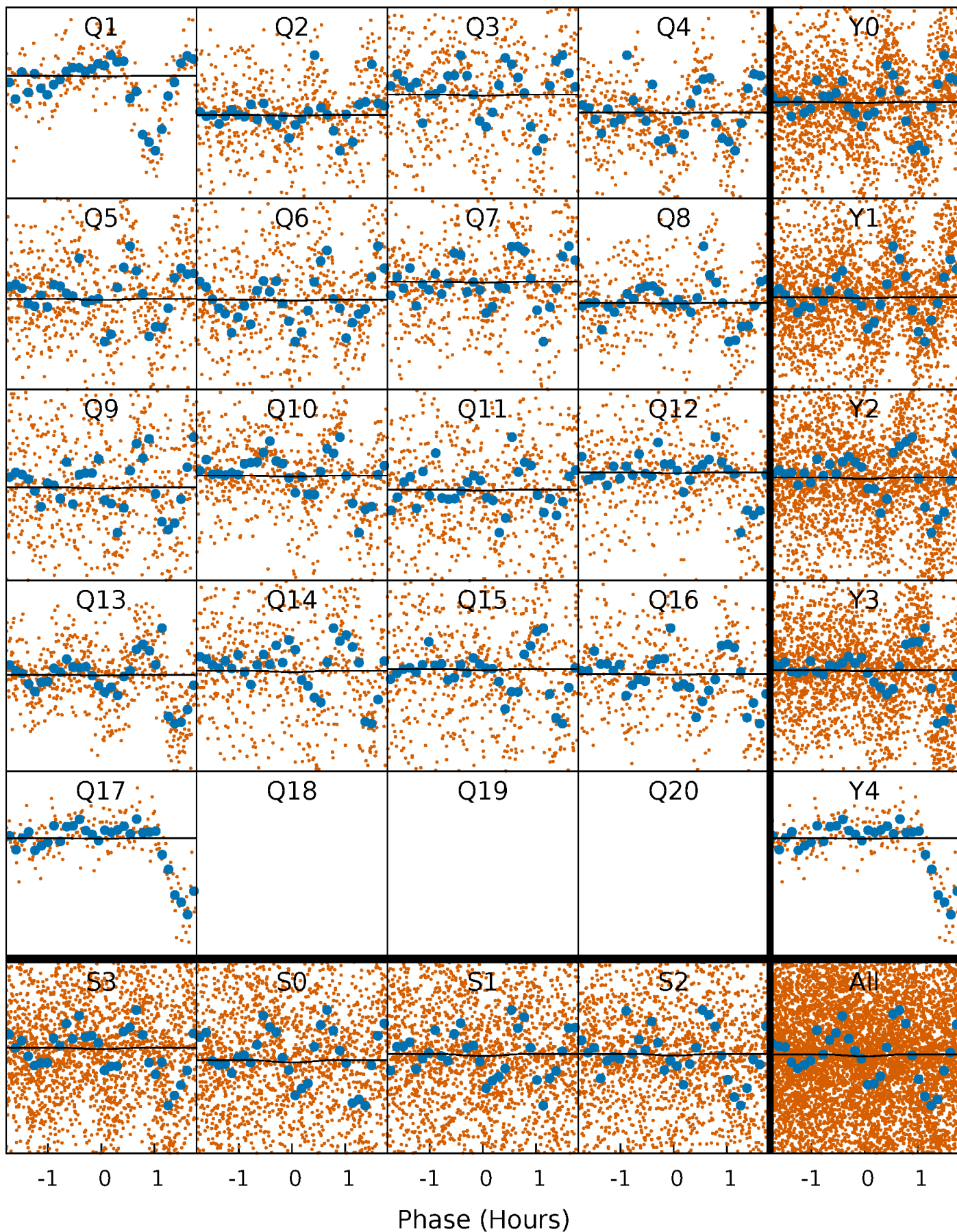
PDC Quarter-Phased Transit Curves

TCE 004138557-01 P= 0.991538 Days $T_0=131.863021$ (BKJD)



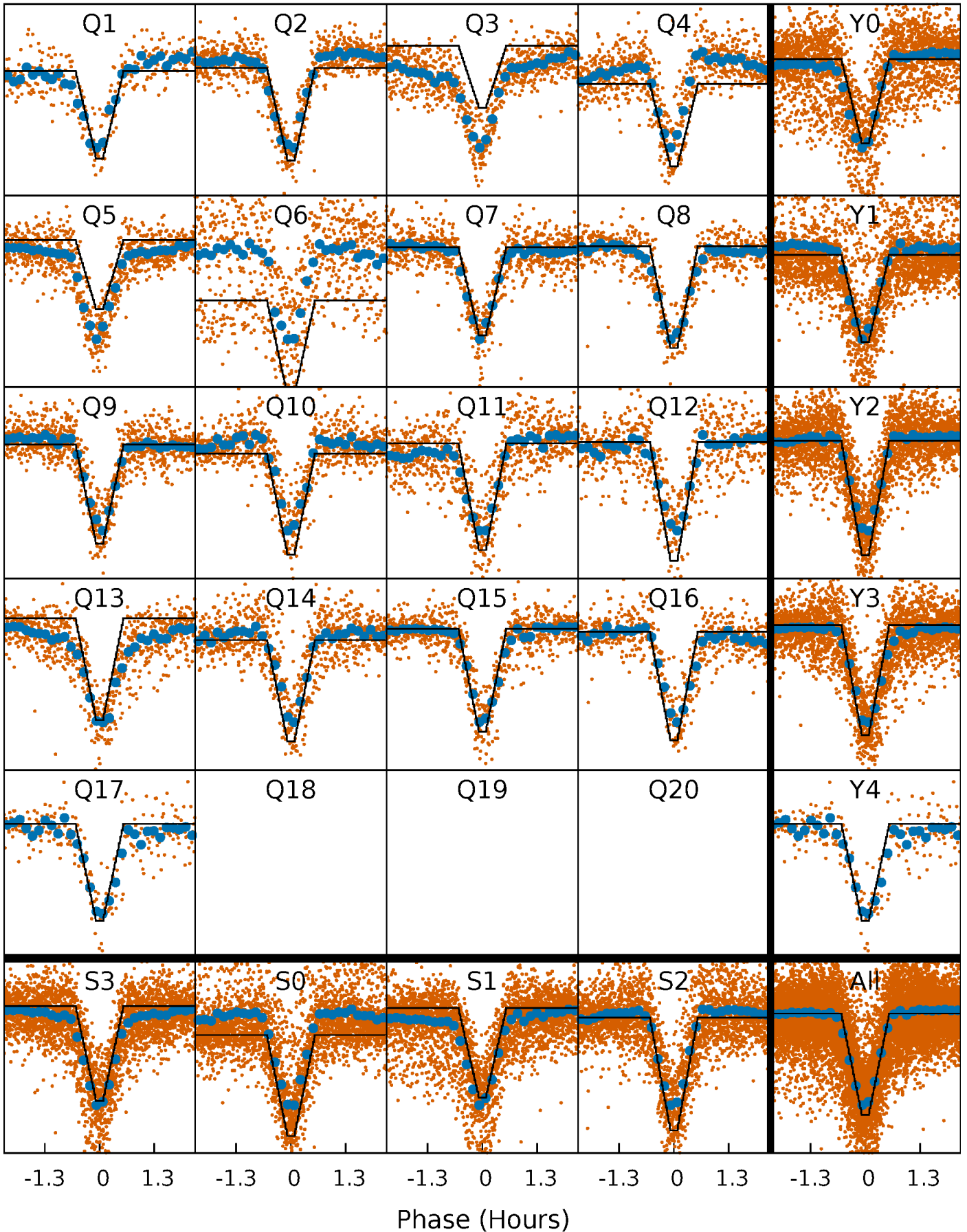
DV Quarter-Phased Transit Curves

TCE 004138557-01 P= 0.991538 Days $T_0=131.863021$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

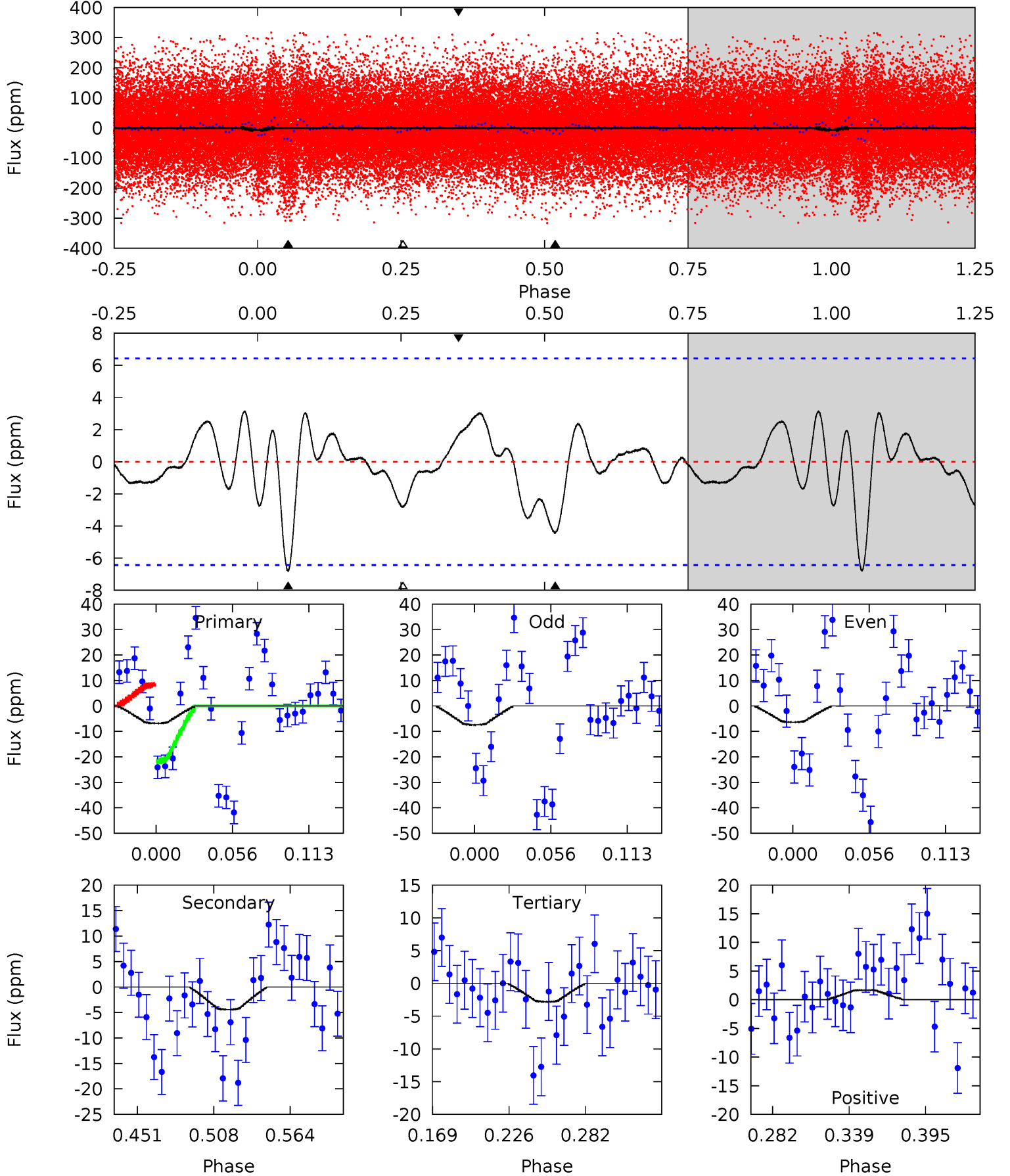
TCE 004138557-01 P= 0.991553 Days $T_0=131.904972$ (BKJD)



DV Model-Shift Uniqueness Test

004138557-01, P = 0.991538 Days, E = 130.871483 Days

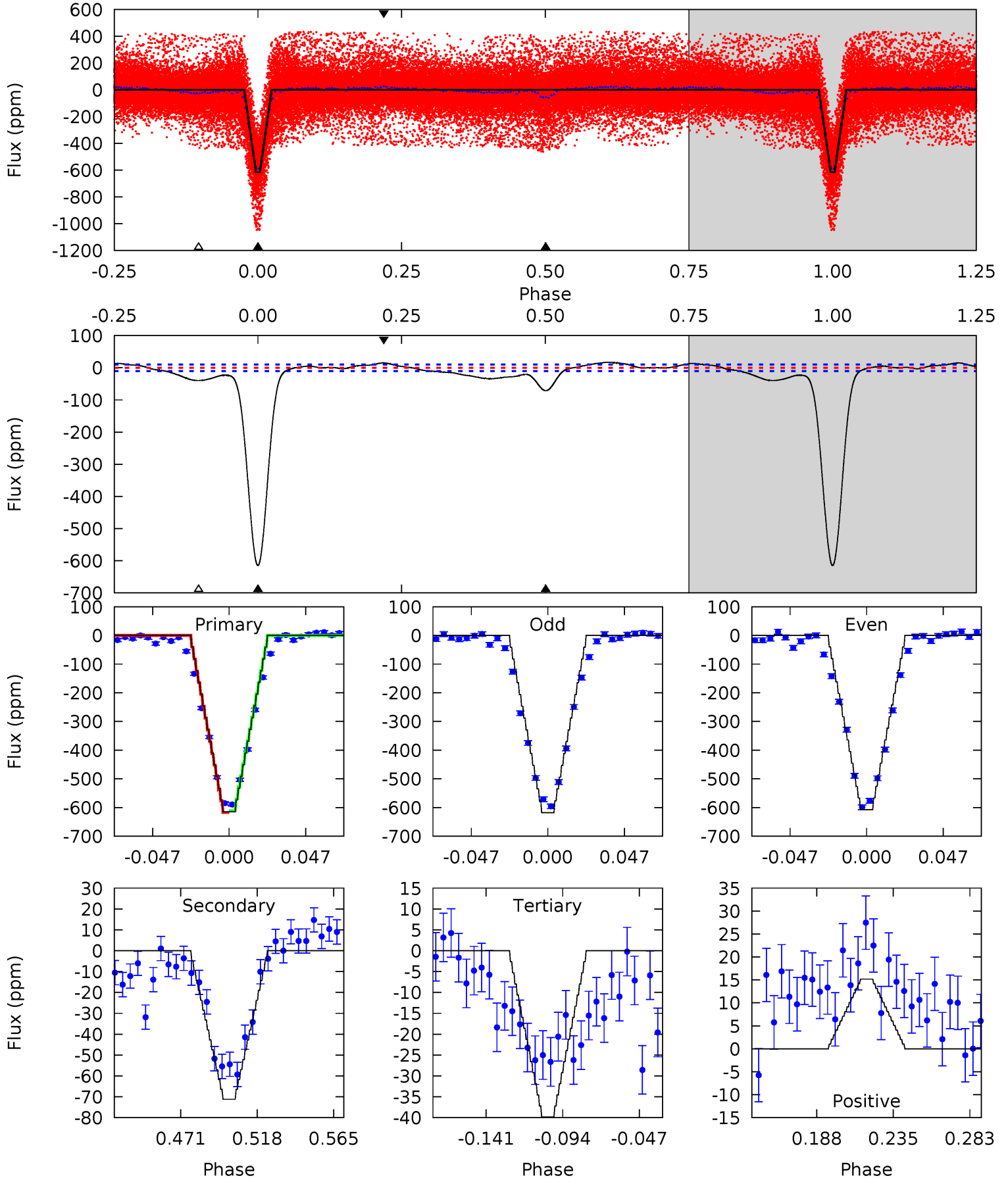
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.97	3.23	2.05	1.24	4.68	1.91	0.93	2.92	3.73	1.17	1.99	0.39	0.50	0.32	4.93



Alt Model-Shift Uniqueness Test

004138557-01, P = 0.991553 Days, E = 130.913419 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
287.0	33.2	18.6	7.09	4.72	1.99	7.46	268.4	279.9	14.6	26.2	2.46	1.02	0.03	1.57



Stellar Parameters For KIC 004138557

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5908^{+163}_{-133}	$3.888^{+0.294}_{-0.126}$	$-0.520^{+0.350}_{-0.200}$	$1.862^{+0.403}_{-0.605}$	$0.977^{+0.154}_{-0.126}$	$0.213^{+0.418}_{-0.079}$
	+3%/-2%	+8%/-3%	+67%/-38%	+22%/-32%	+16%/-13%	+196%/-37%
Source	PHO1	FLK73	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 004138557-01 / KOI 4033.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4 ± 1	$0.33^{+0.28}_{-0.21}$	3558^{+227}_{-318}	6667^{+6560}_{-1818}	$8.366^{+58.434}_{-6.006}$
Alt.	-71 ± 2	$5.01^{+0.79}_{-0.76}$	3538^{+218}_{-303}	3387^{+177}_{-239}	$0.589^{+0.228}_{-0.144}$

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 $A_{obs} \gg 1.0$

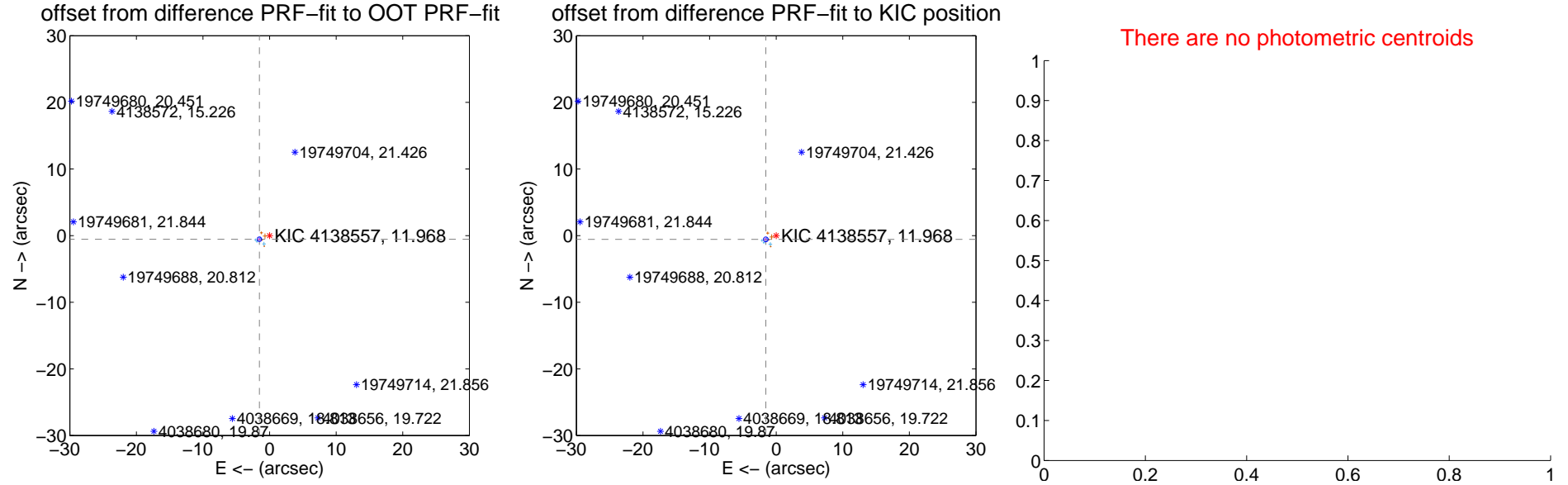
DV Centroid Data

Supplemental centroid analysis for 004138557-01. **Kepler magnitude: 11.97.** Transit SNR 0.64

There are 9 quarters with good PRF difference image offsets

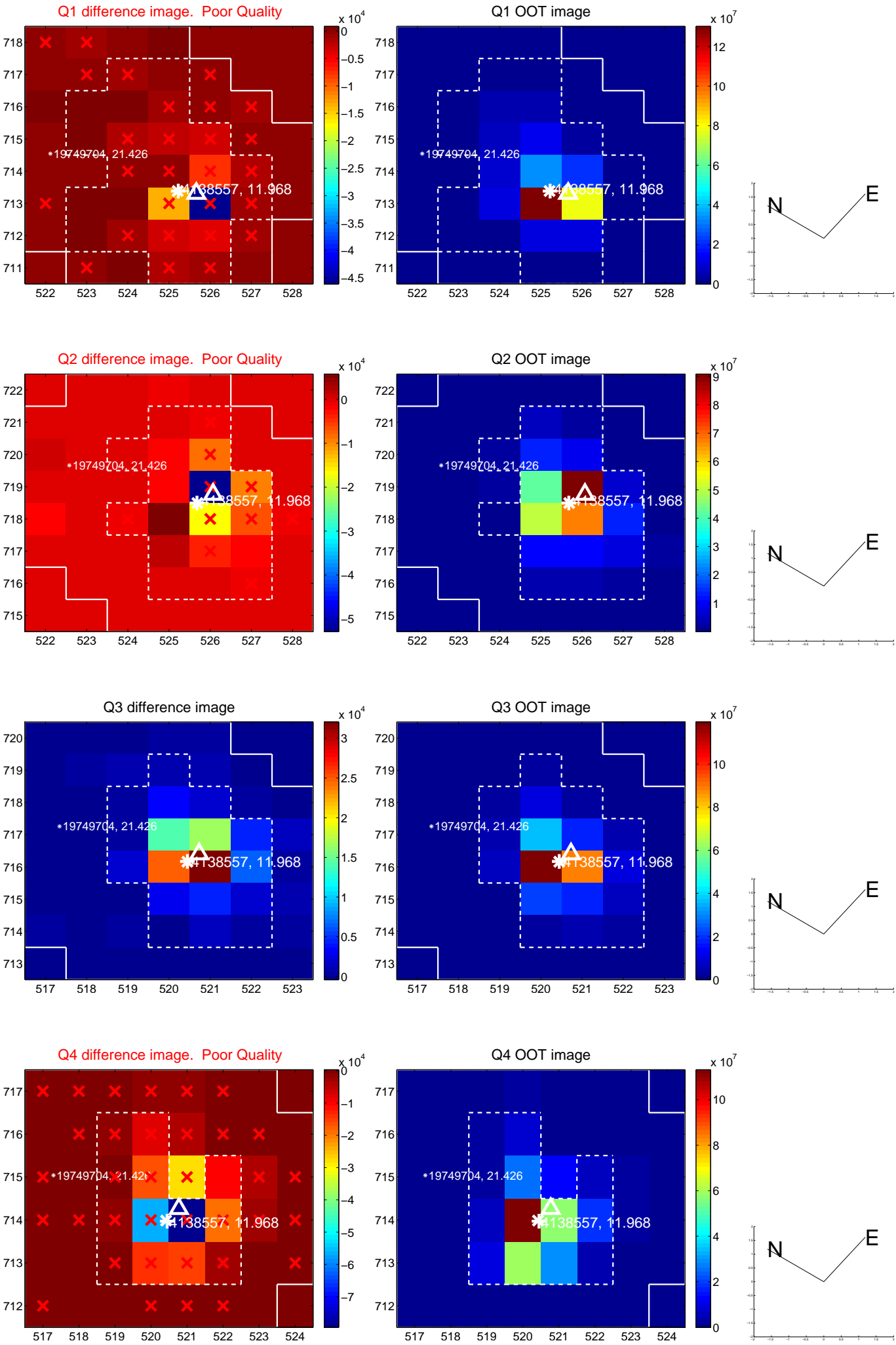
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.624 \pm 0.113	14.36	1.532 \pm 0.114	-0.540 \pm 0.124
PRF-fit source offset from KIC position	1.658 \pm 0.120	13.85	1.559 \pm 0.121	-0.564 \pm 0.130
photometric centroid source offset	—	—	—	—

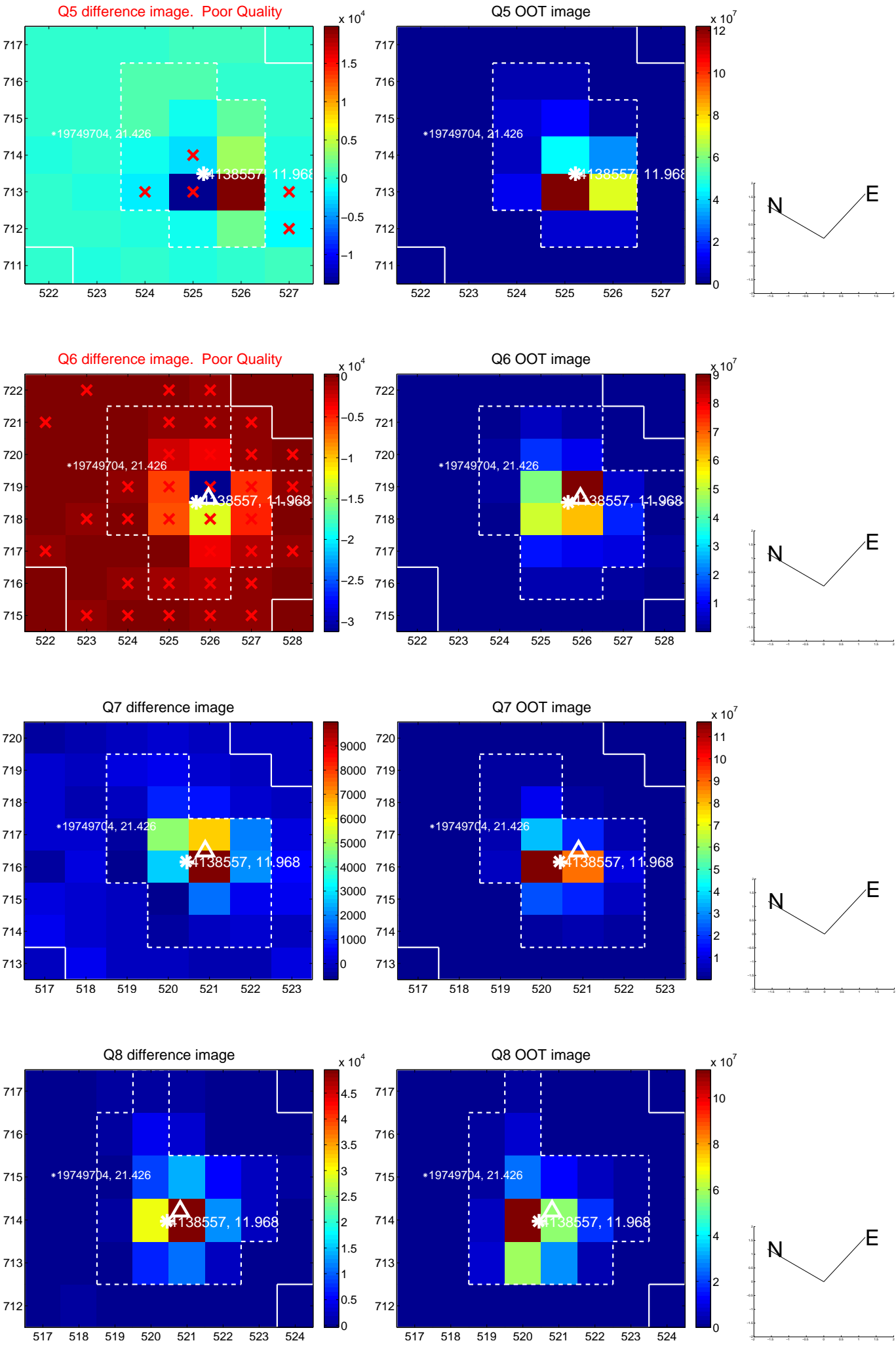


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

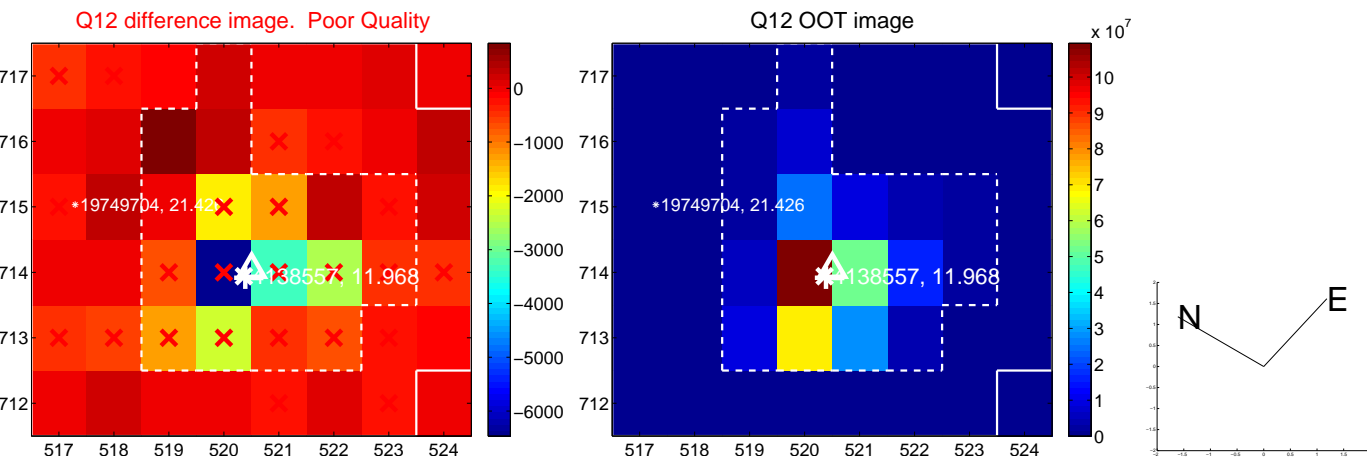
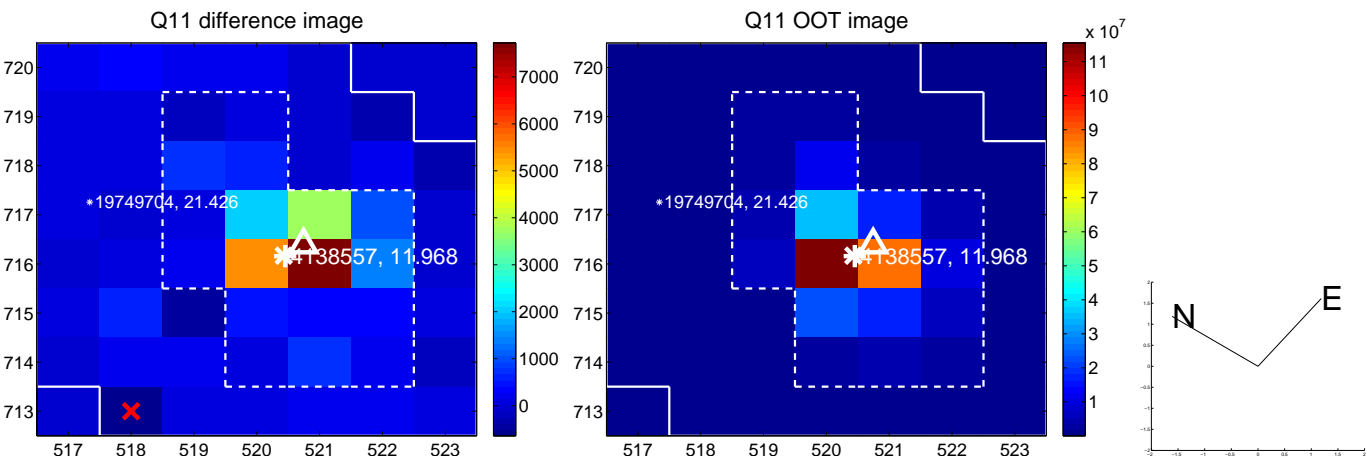
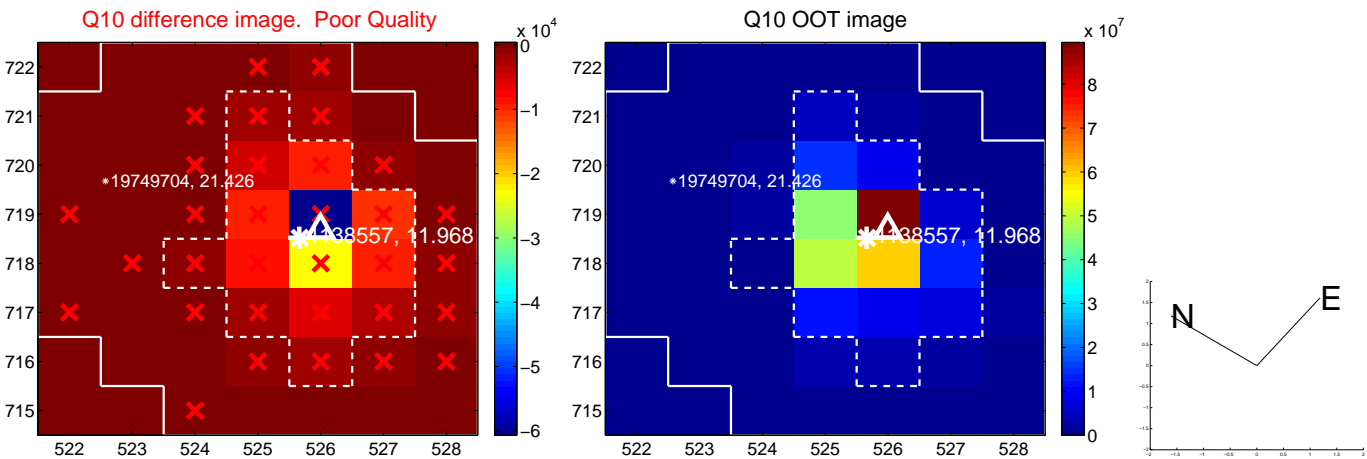
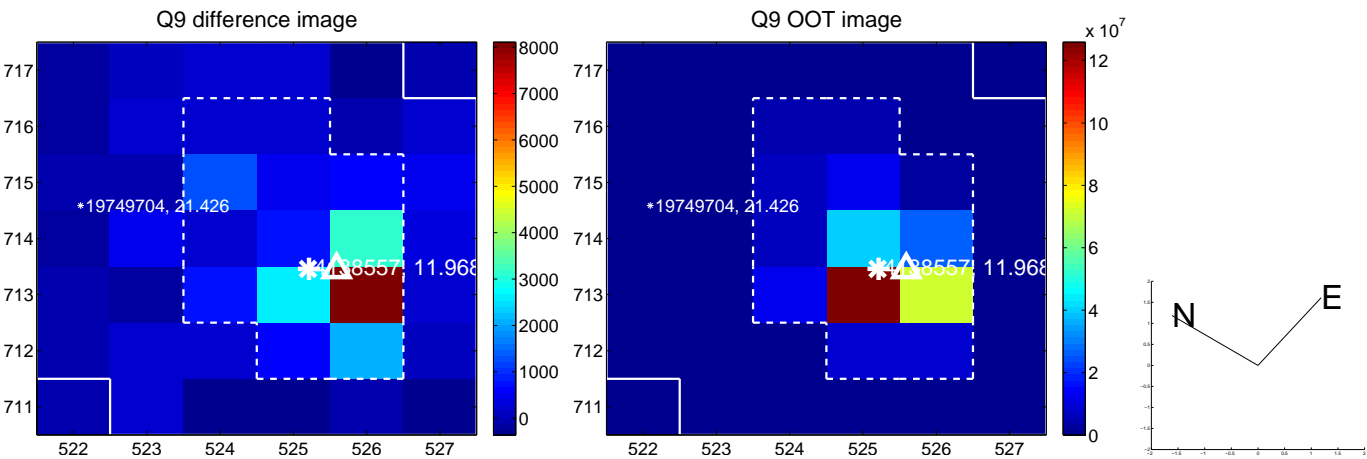
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



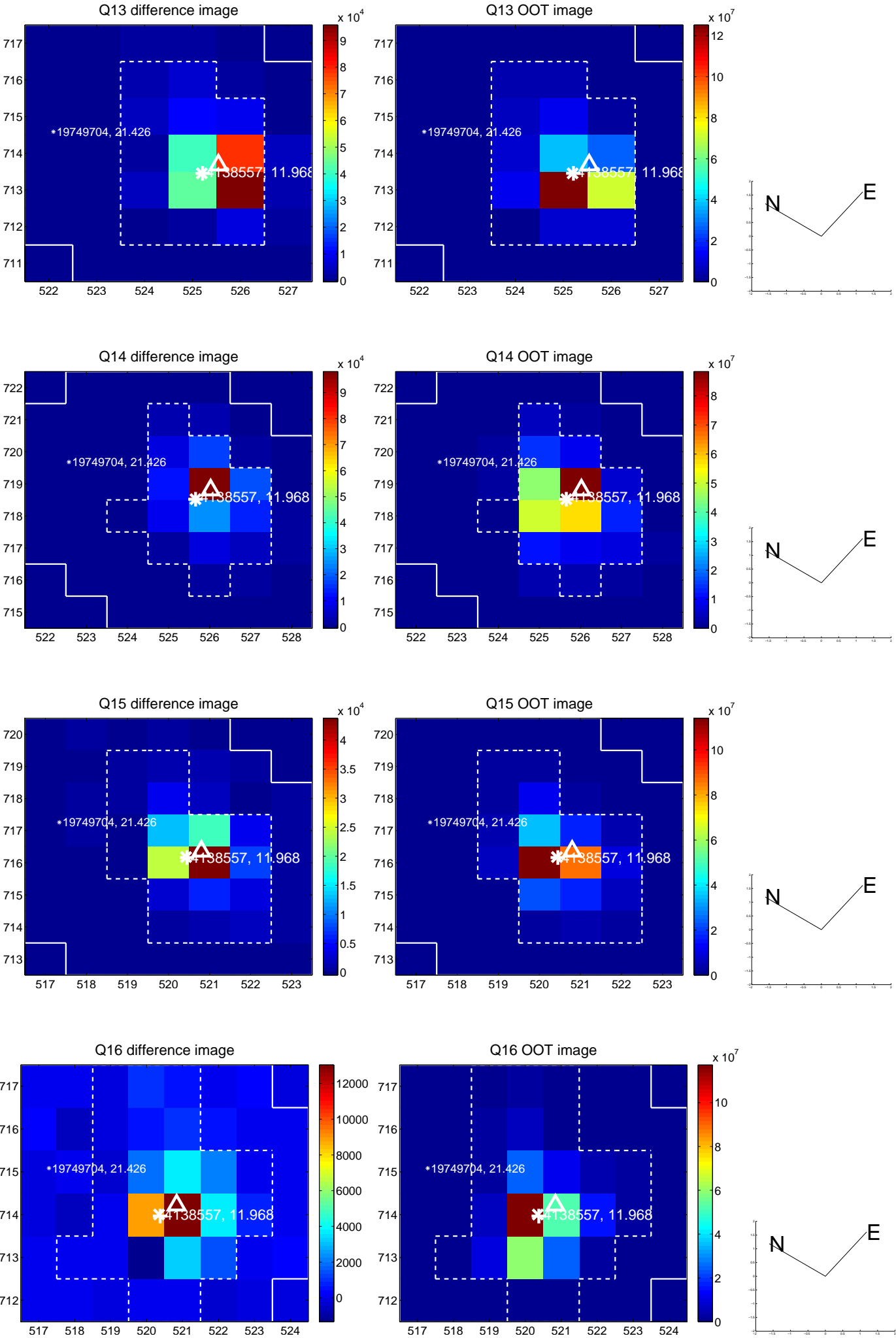
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



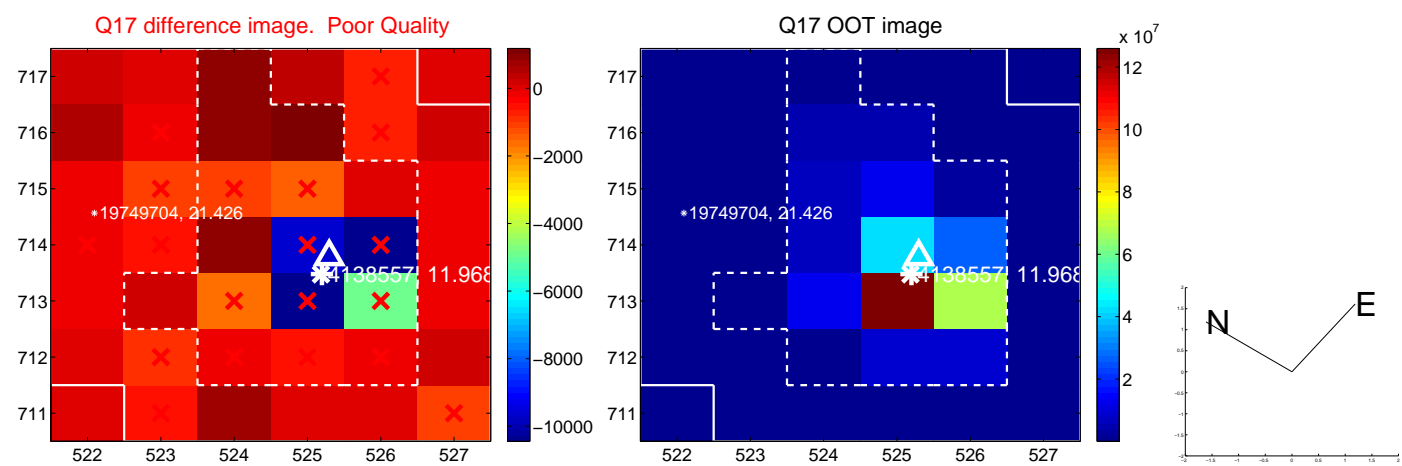
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination

