

KIC 012458605

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})
012458605-01	OBS	4605.01	7.785777	137.882884	45.0	8.212	10.0	10.6	0.95	6045	0.68	184.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012458605-01	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

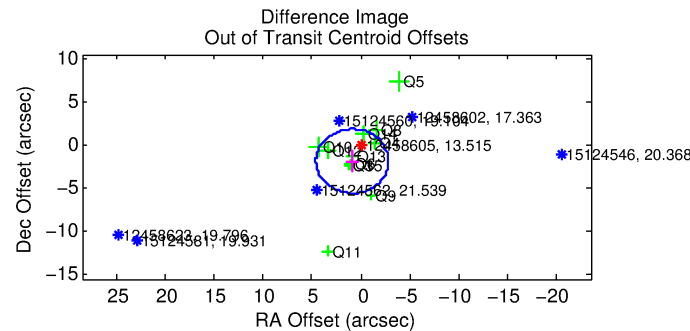
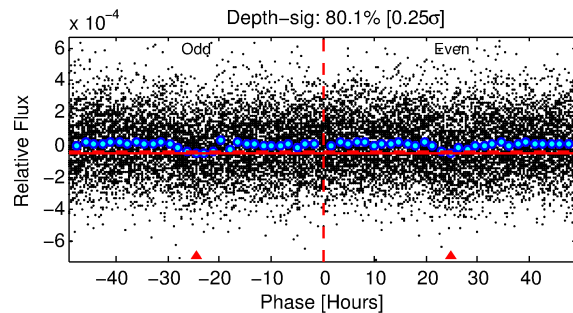
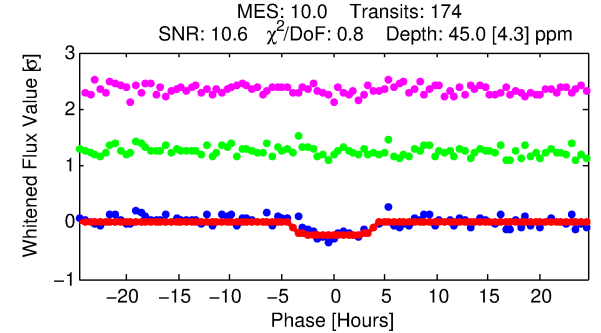
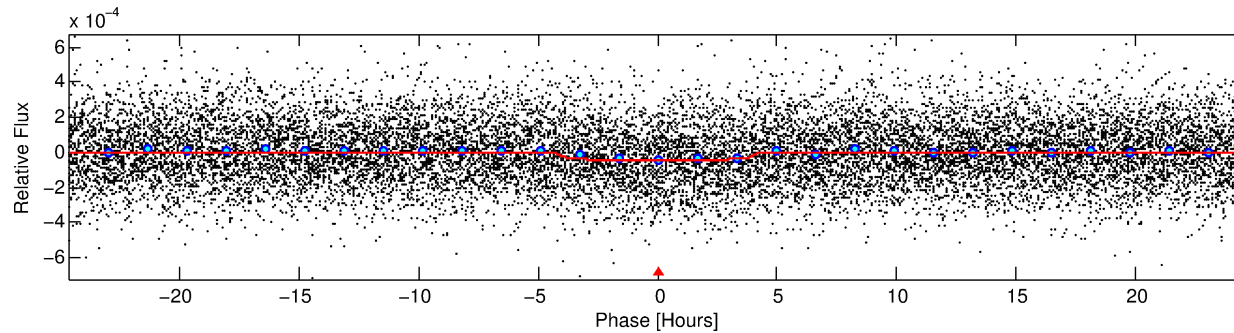
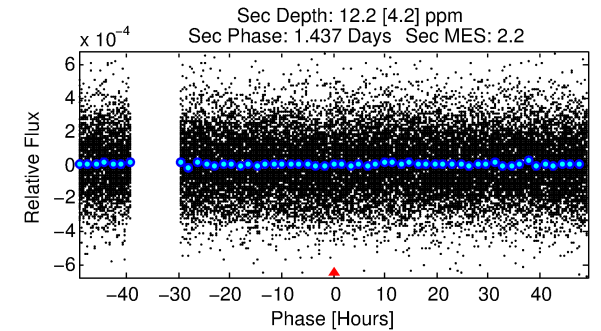
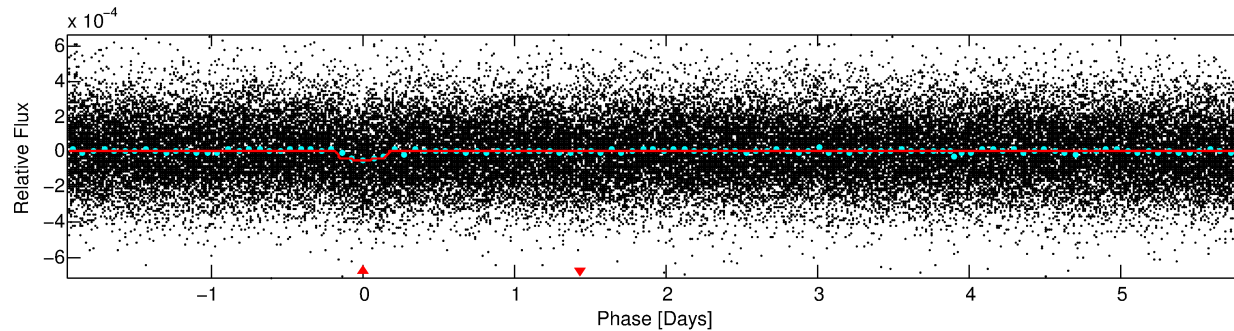
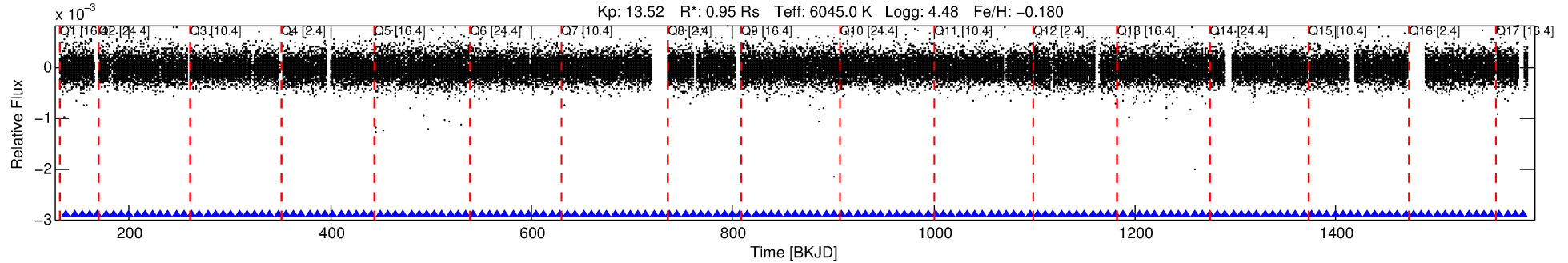
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012458605-01

No Significant Match Found

DV One-Page Summary

KIC: 12458605 Candidate: 1 of 1 Period: 7.786 d
KOI: K04605.01 Corr: 0.919



DV Fit Results:

Period = 7.78578 [0.00011] d
Epoch = 137.8829 [0.0108] BKJD
Rp/R* = 0.0066 [0.0032]
a/R* = 5.32 [12.26]
b = 0.70 [1.77]
Seff = 184.12 [75.82]
Teq = 939 [97] K
Rp = 0.68 [0.40] Re
a = 0.0769 [0.0208] AU
Ag = 85.03 [93.67] [0.90σ]
Teffp = 4410 [1142] K [3.03σ]

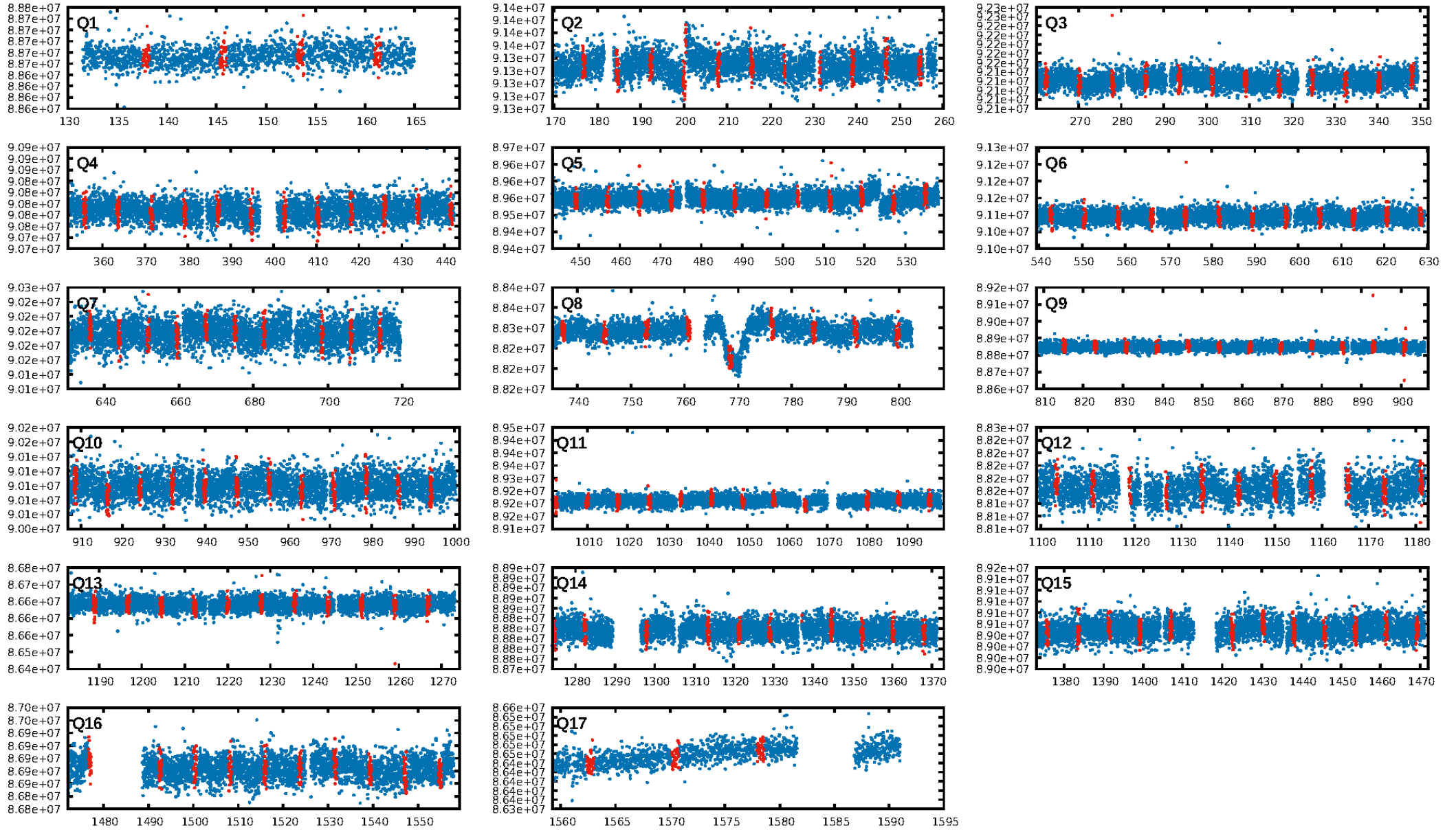
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.74e-22
RollingBand-fgt: 1.00 [167/167]
GhostDiagnostic-chr: 1.355
Centroid-sig: 1.3%
Centroid-so: 1.547 arcsec [1.31σ]
OotOffset-rm: 2.074 arcsec [1.68σ]
KicOffset-rm: 2.136 arcsec [1.58σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 1.00 [17/17]

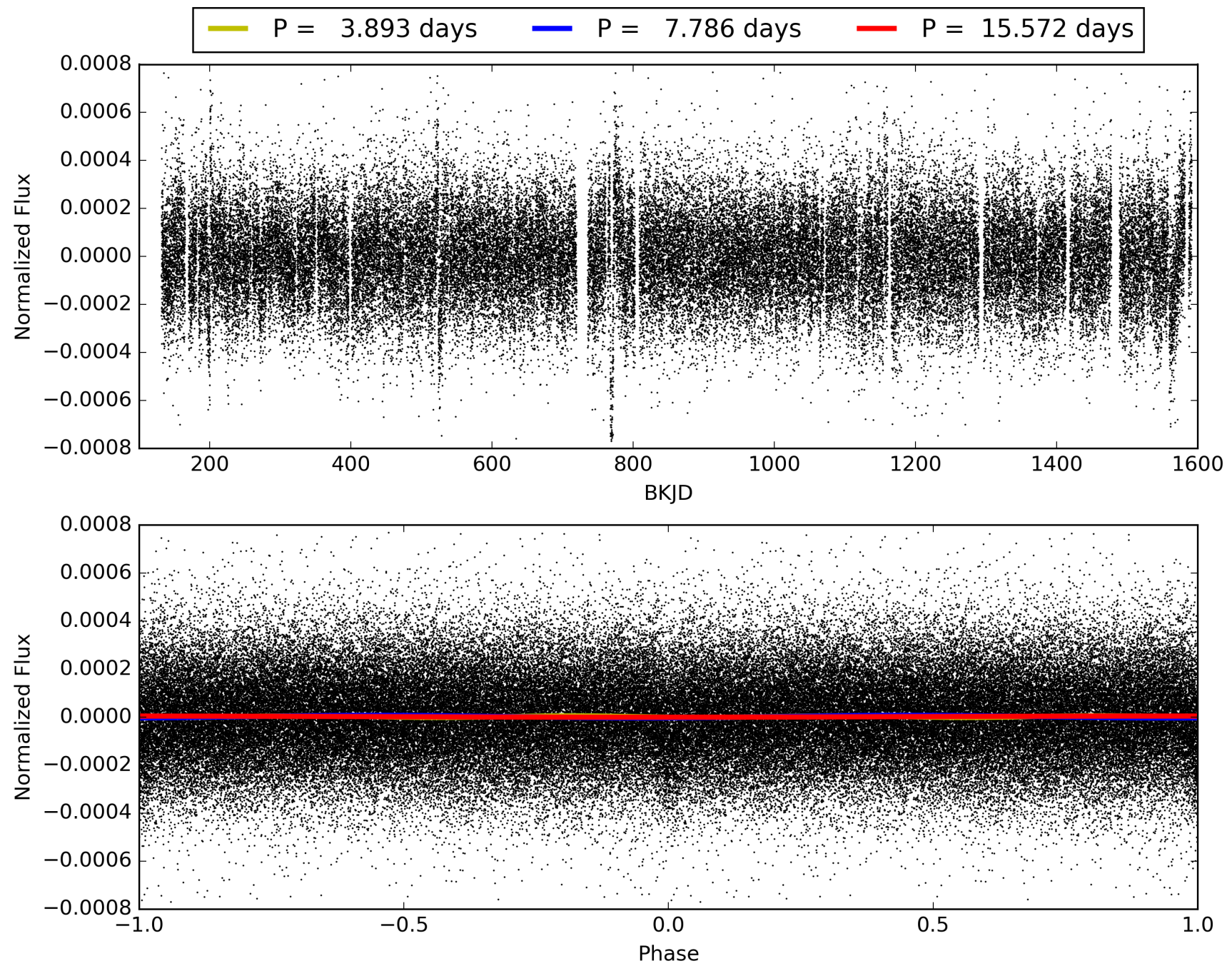
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:59:05 Z

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

TCE 012458605-01, PDC Light Curves

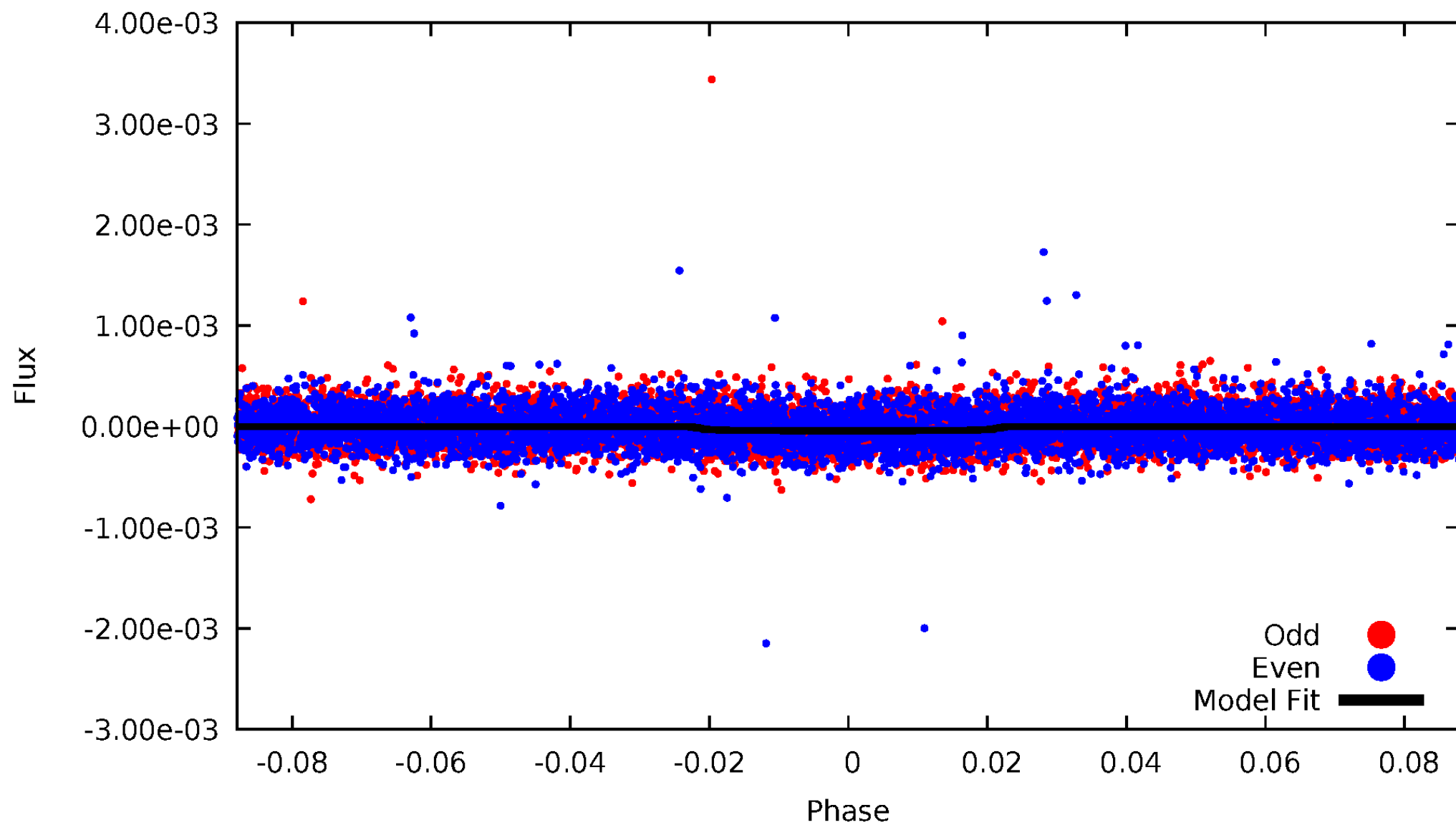


TCE 012458605-01



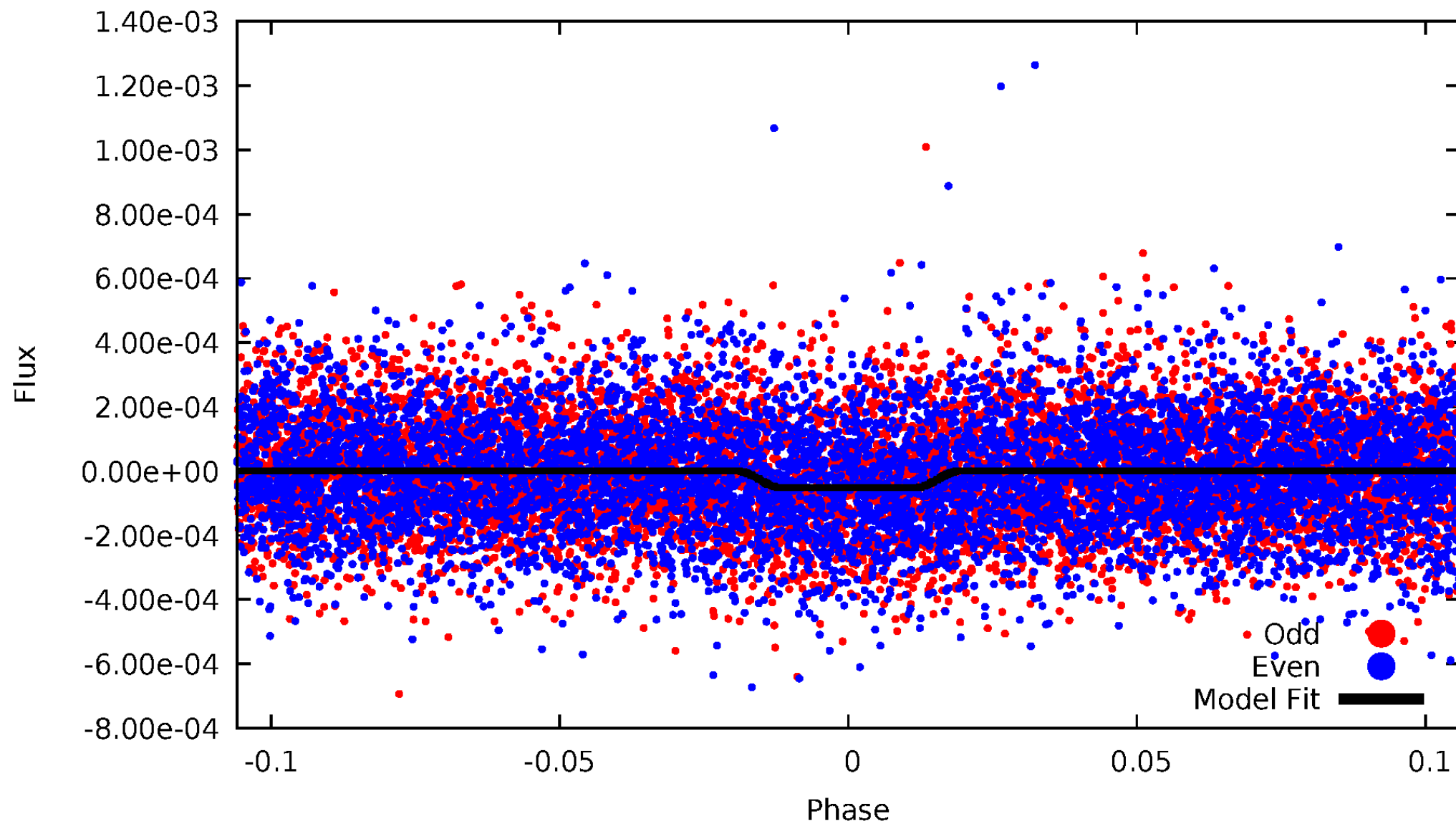
DV Odd/Even

TCE 012458605-01



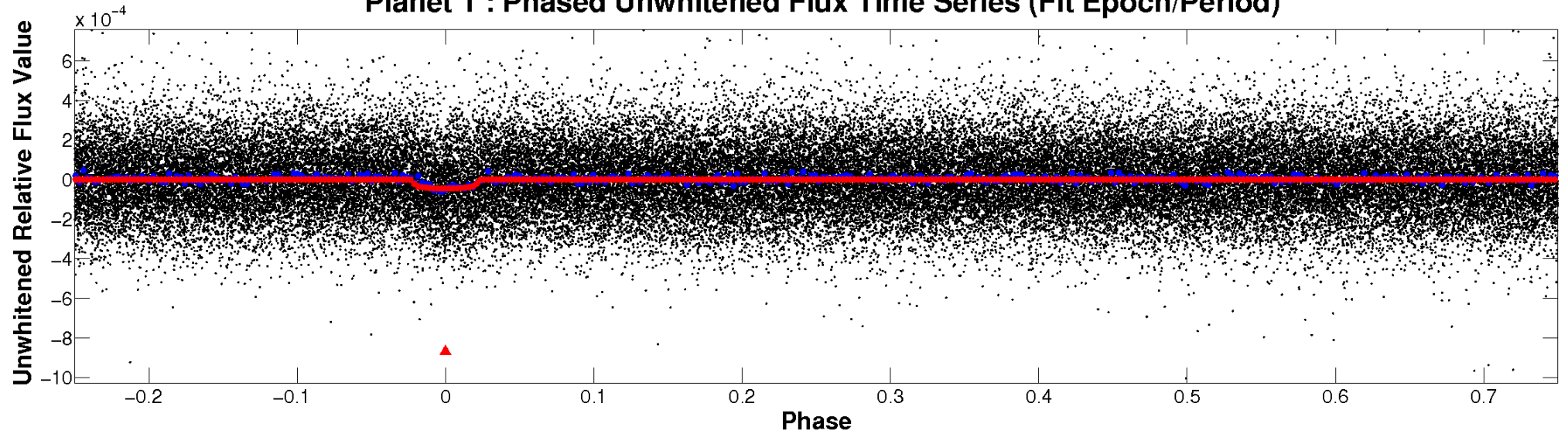
ALT Odd/Even

TCE 012458605-01

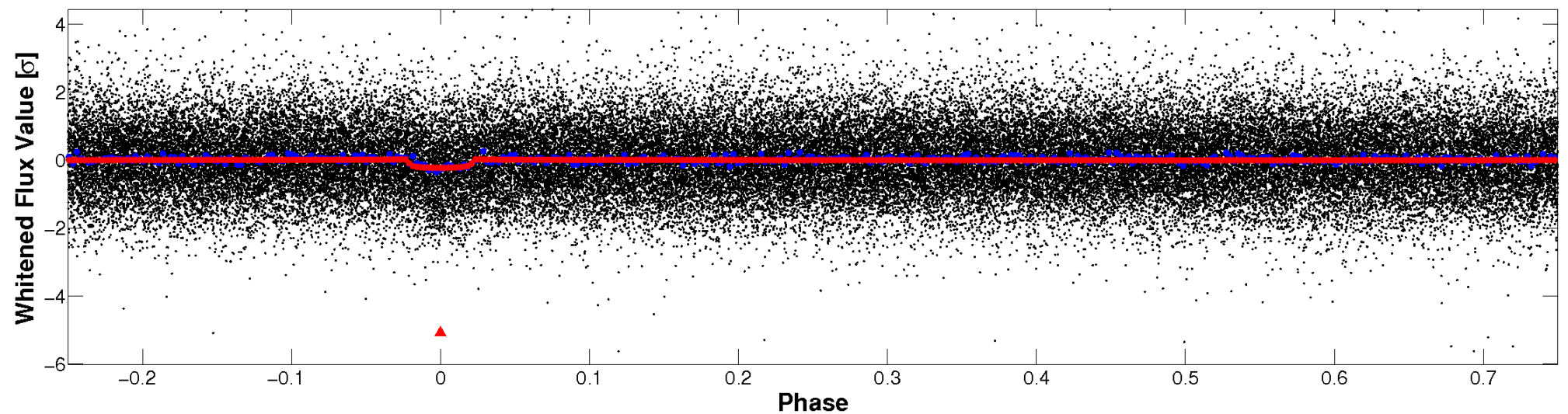


Non-Whitened Vs. Whitened Light Curve

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

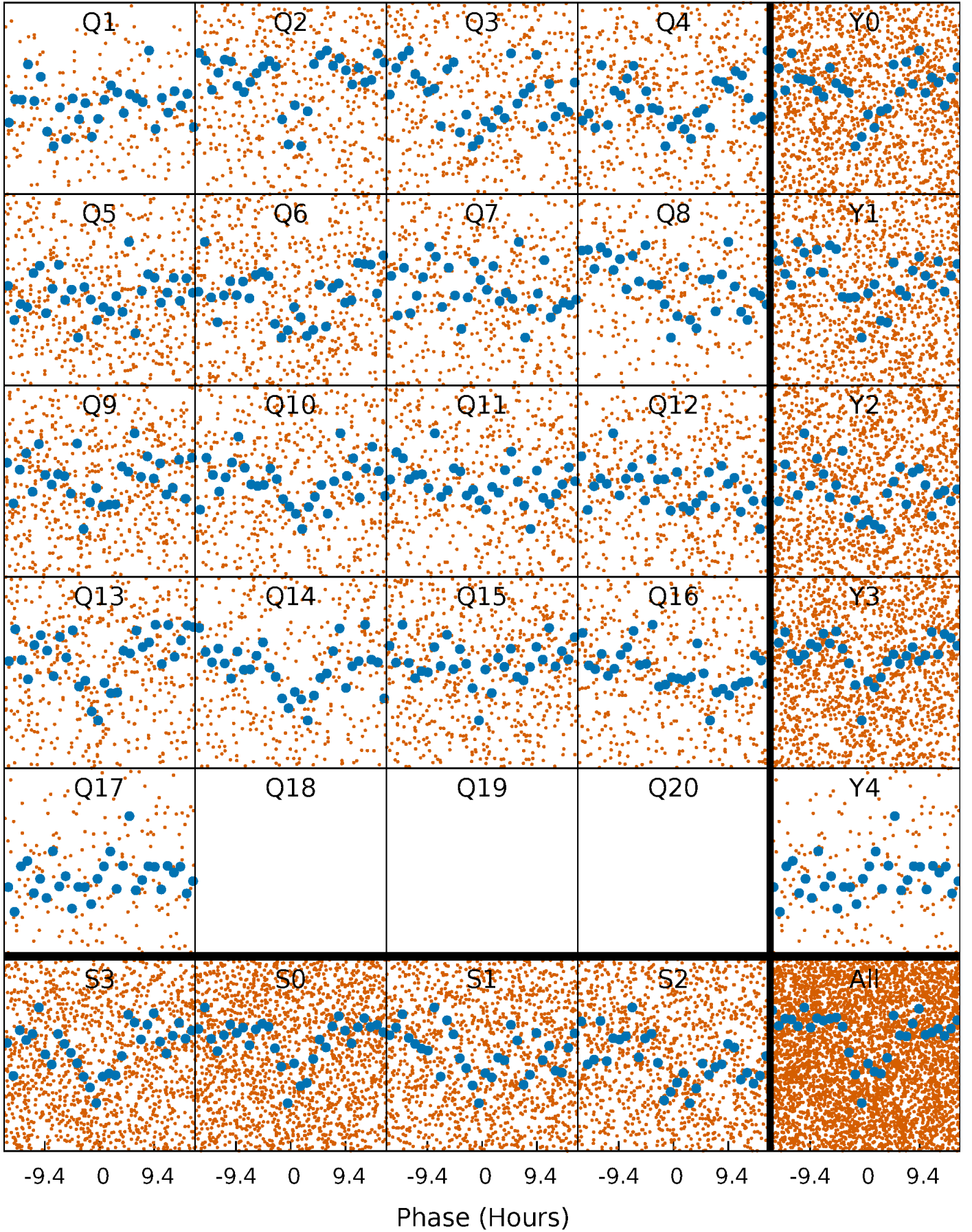


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



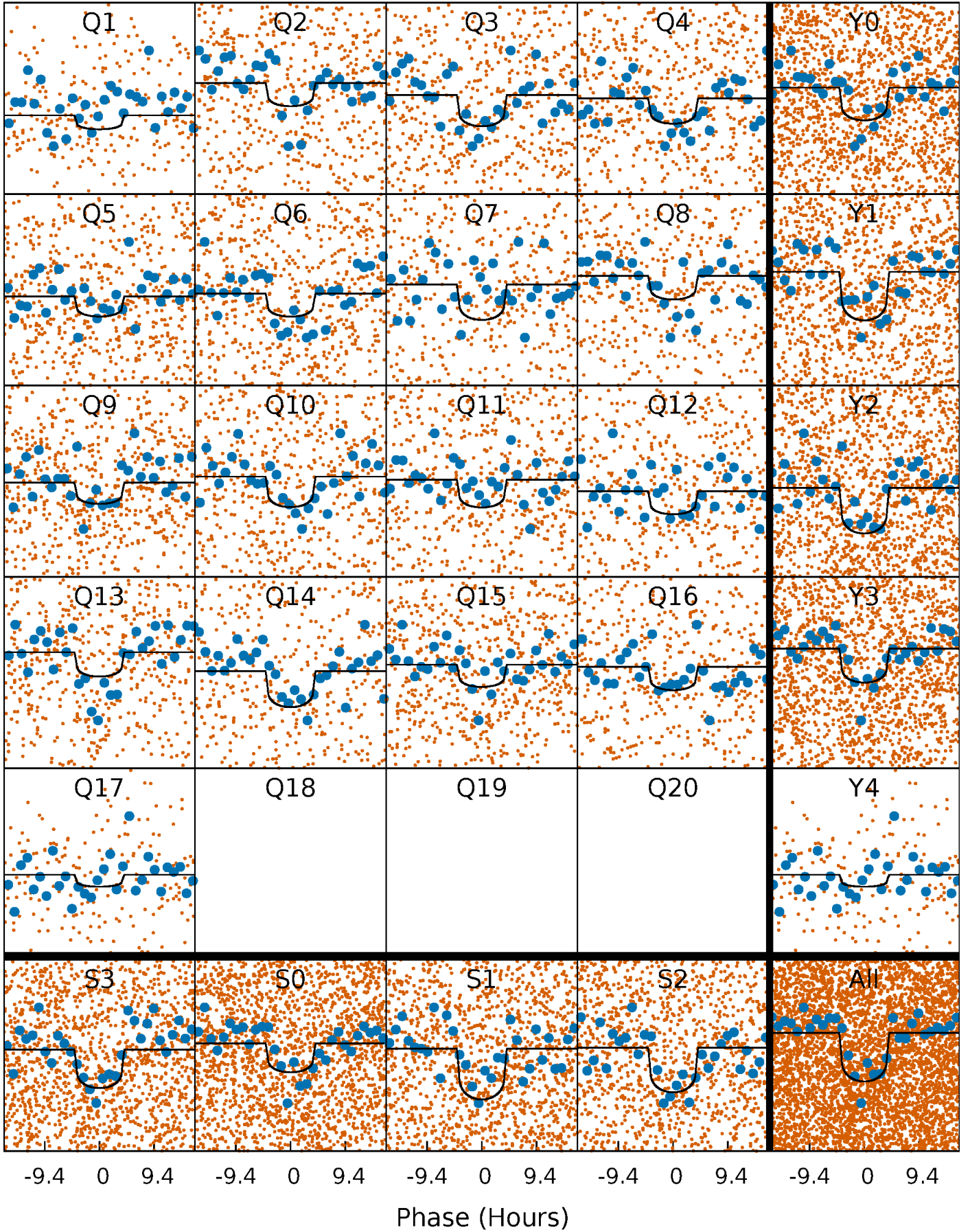
PDC Quarter-Phased Transit Curves

TCE 012458605-01 P= 7.785777 Days $T_0=137.882883$ (BKJD)



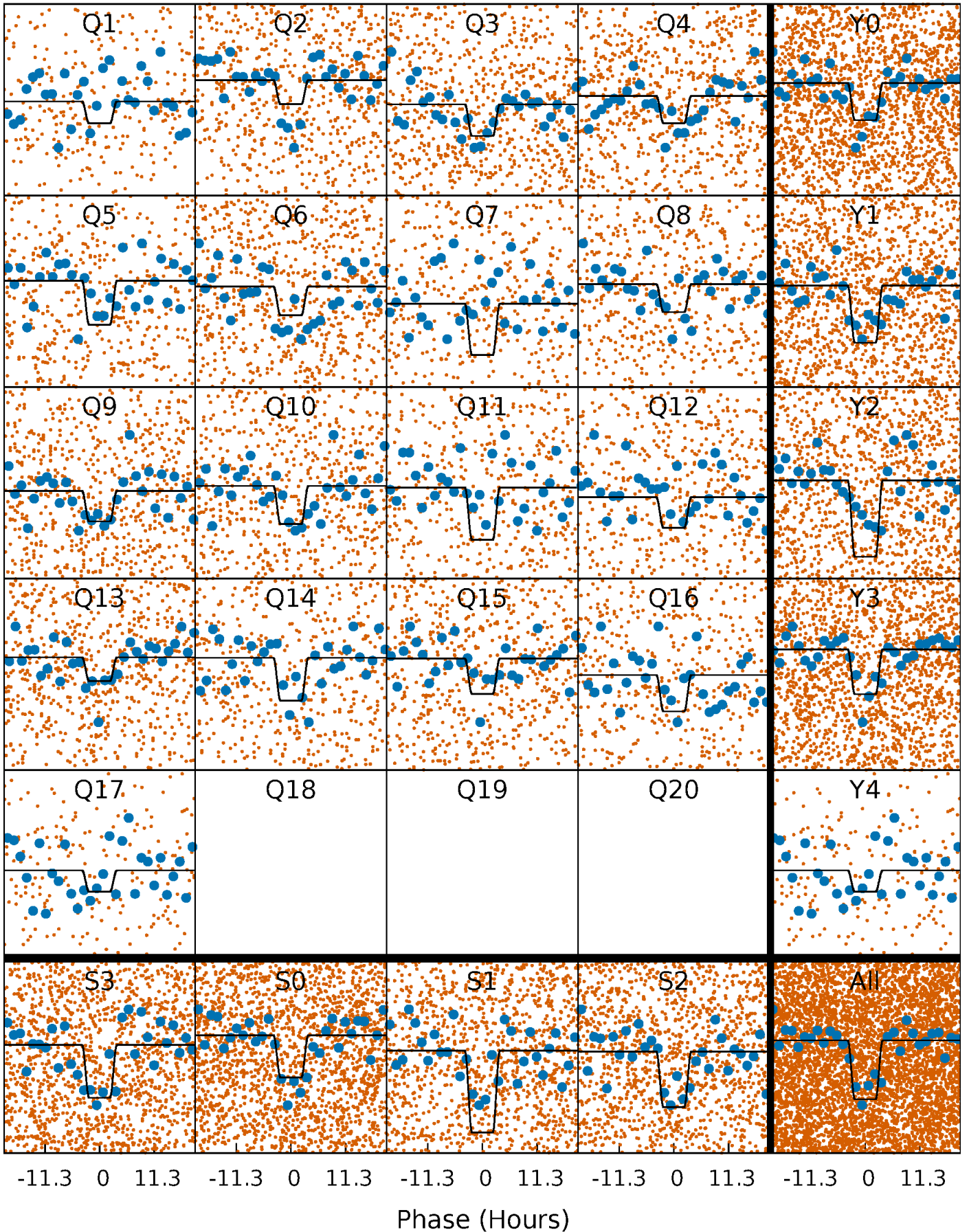
DV Quarter-Phased Transit Curves

TCE 012458605-01 P= 7.785777 Days $T_0=137.882883$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

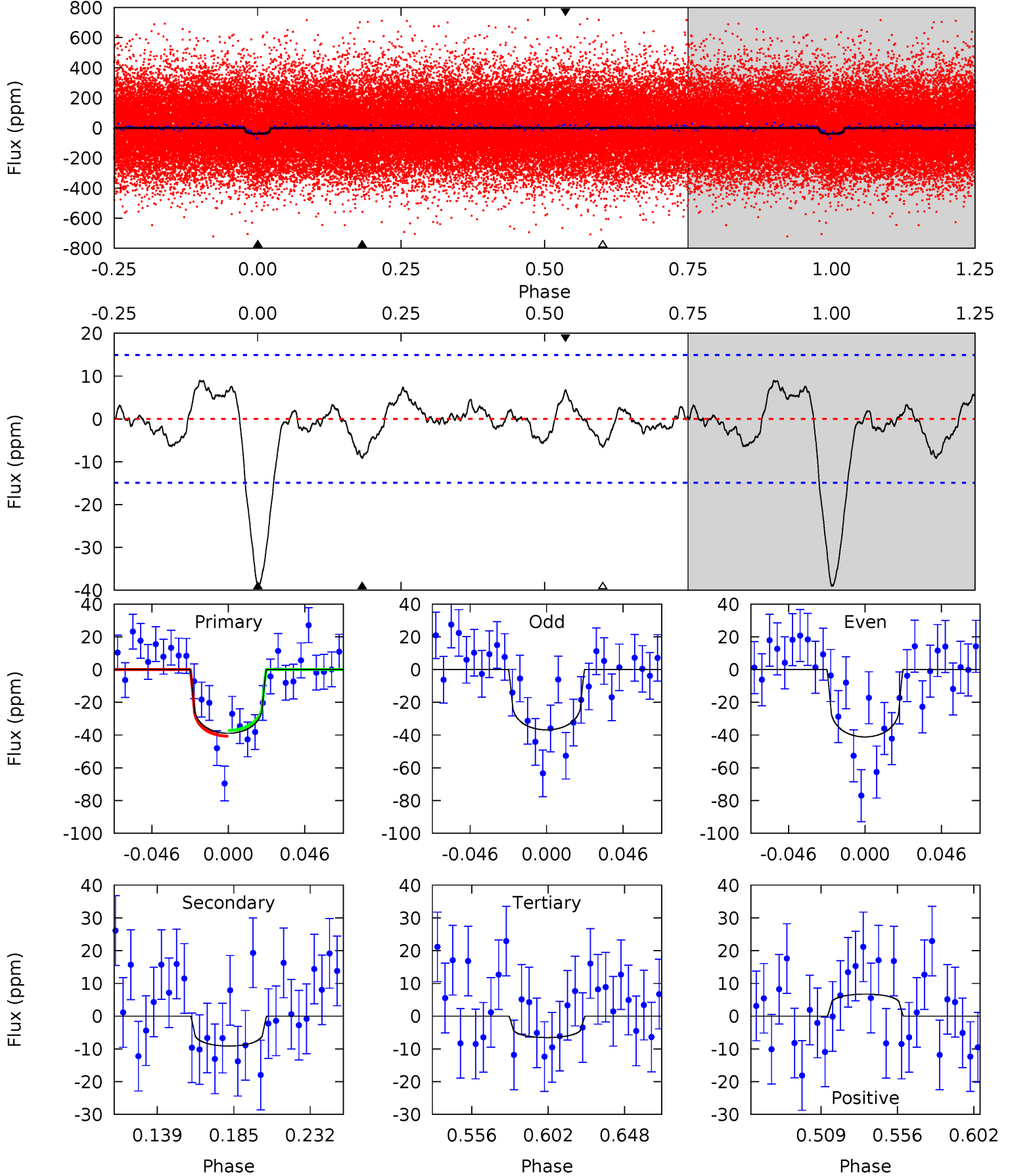
TCE 012458605-01 P= 7.785520 Days $T_0=137.911474$ (BKJD)



DV Model-Shift Uniqueness Test

012458605-01, $P = 7.785777$ Days, $E = 130.097106$ Days

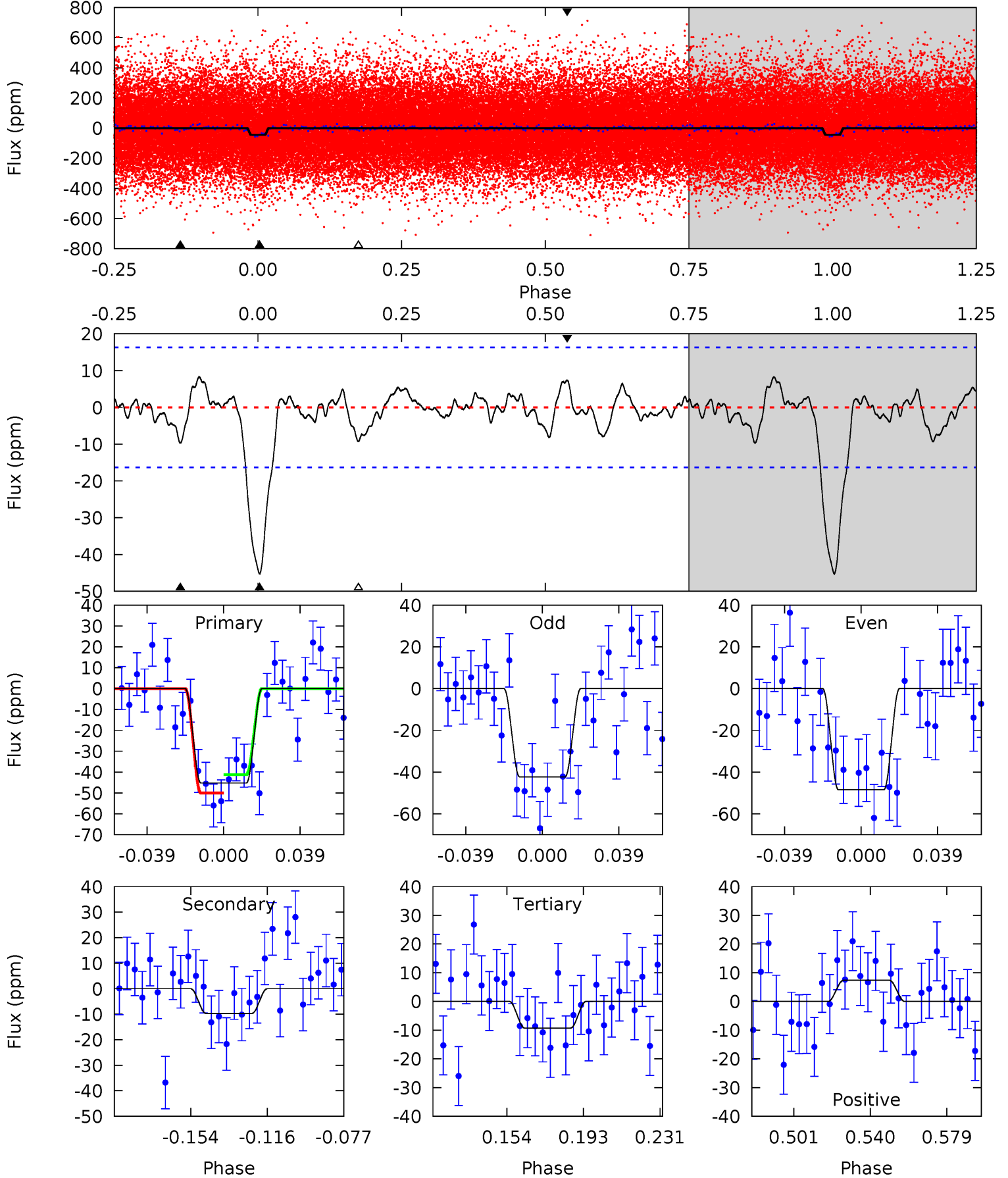
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	2.89	2.07	2.13	4.72	1.99	1.03	10.3	10.2	0.82	0.77	0.68	0.97	0.19	0.55



Alt Model-Shift Uniqueness Test

012458605-01, P = 7.785520 Days, E = 130.125954 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	2.84	2.71	2.16	4.76	2.07	0.93	10.5	11.0	0.12	0.68	0.90	0.96	0.16	1.28



Stellar Parameters For KIC 012458605

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6045^{+162}_{-180}	$4.479^{+0.054}_{-0.216}$	$-0.180^{+0.300}_{-0.300}$	$0.954^{+0.305}_{-0.102}$	$0.994^{+0.143}_{-0.117}$	$1.613^{+0.454}_{-0.837}$
	+3%/-3%	+1%/-5%	+167%/-167%	+32%/-11%	+14%/-12%	+28%/-52%
Source	PHO1	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 012458605-01 / KOI 4605.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 3	$0.73^{+0.37}_{-0.34}$	1337^{+104}_{-62}	4251^{+1329}_{-639}	52^{+148}_{-32}
Alt.	-10 ± 3	$0.76^{+0.37}_{-0.34}$	1339^{+100}_{-62}	4251^{+1208}_{-654}	53^{+122}_{-33}

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

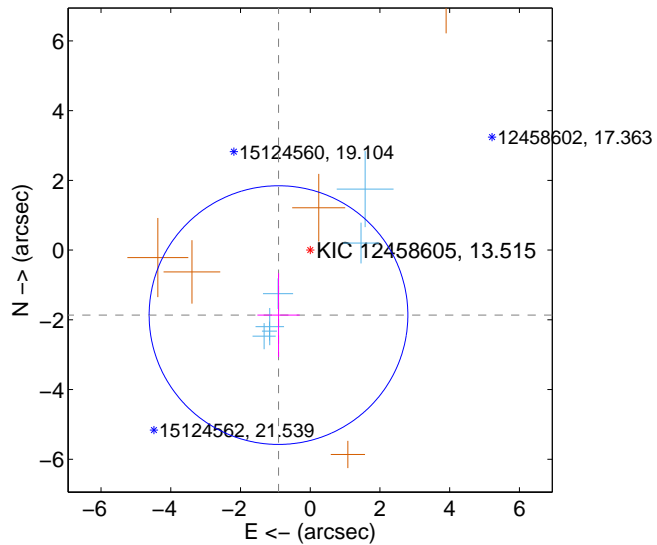
Supplemental centroid analysis for 012458605-01. Kepler magnitude: 13.52. Transit SNR 10.57

There are 6 quarters with good PRF difference image offsets

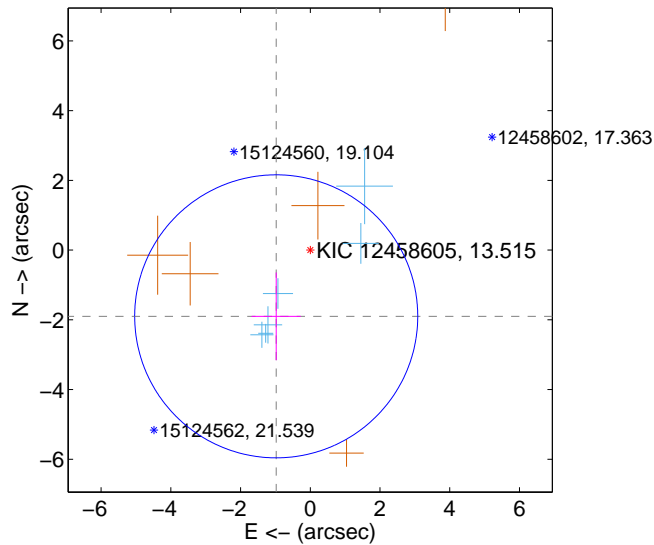
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.074 ± 1.236	1.68	0.910 ± 0.606	-1.864 ± 1.202
PRF-fit source offset from KIC position	2.136 ± 1.353	1.58	0.977 ± 0.706	-1.900 ± 1.259
photometric centroid source offset	1.55 ± 1.18	1.31	-0.89 ± 1.12	-1.26 ± 1.20

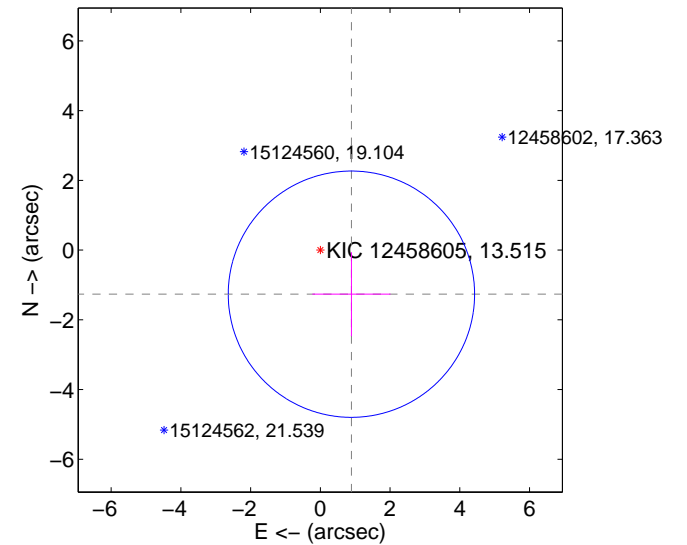
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

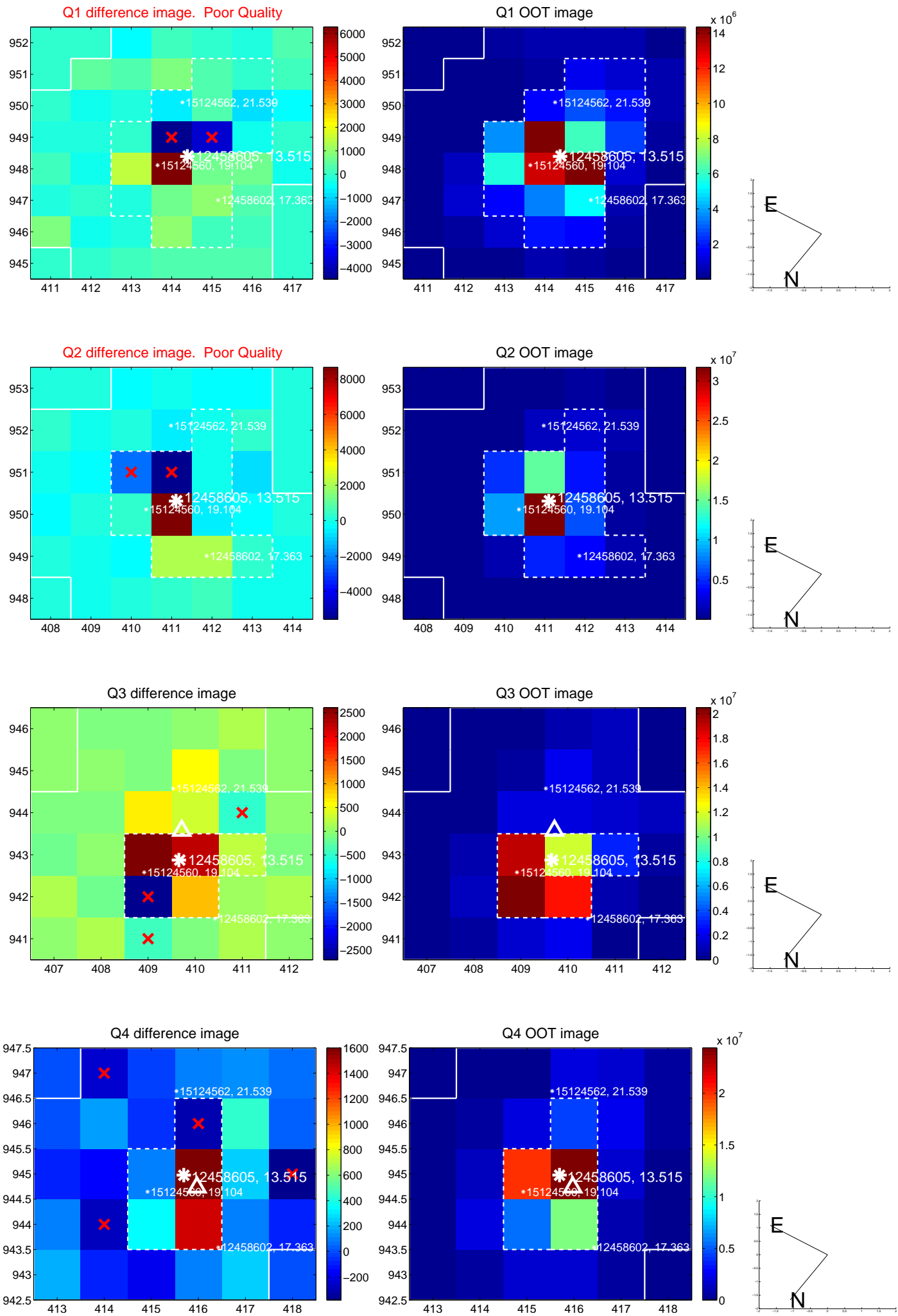


offset from photometric centroids

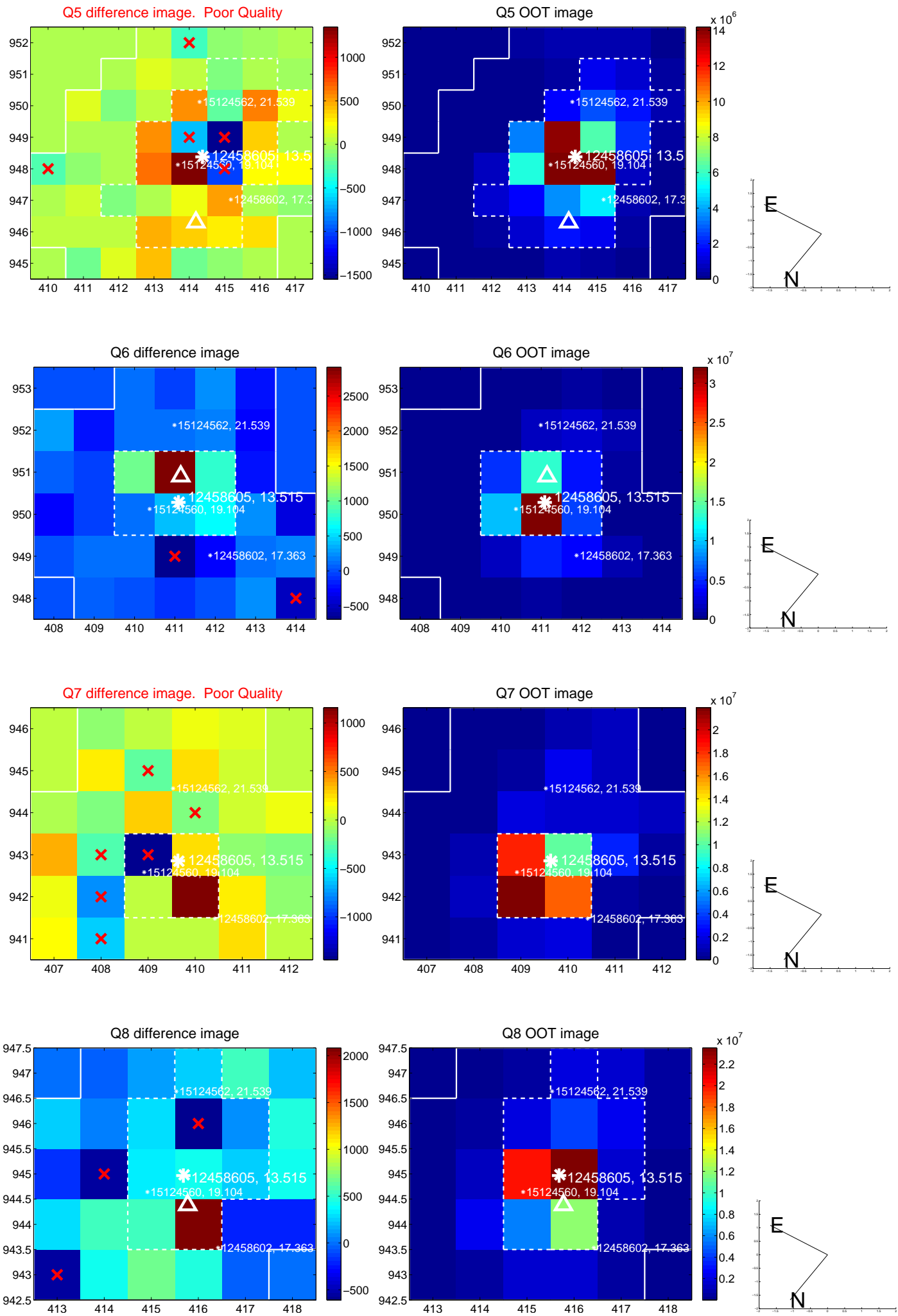


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

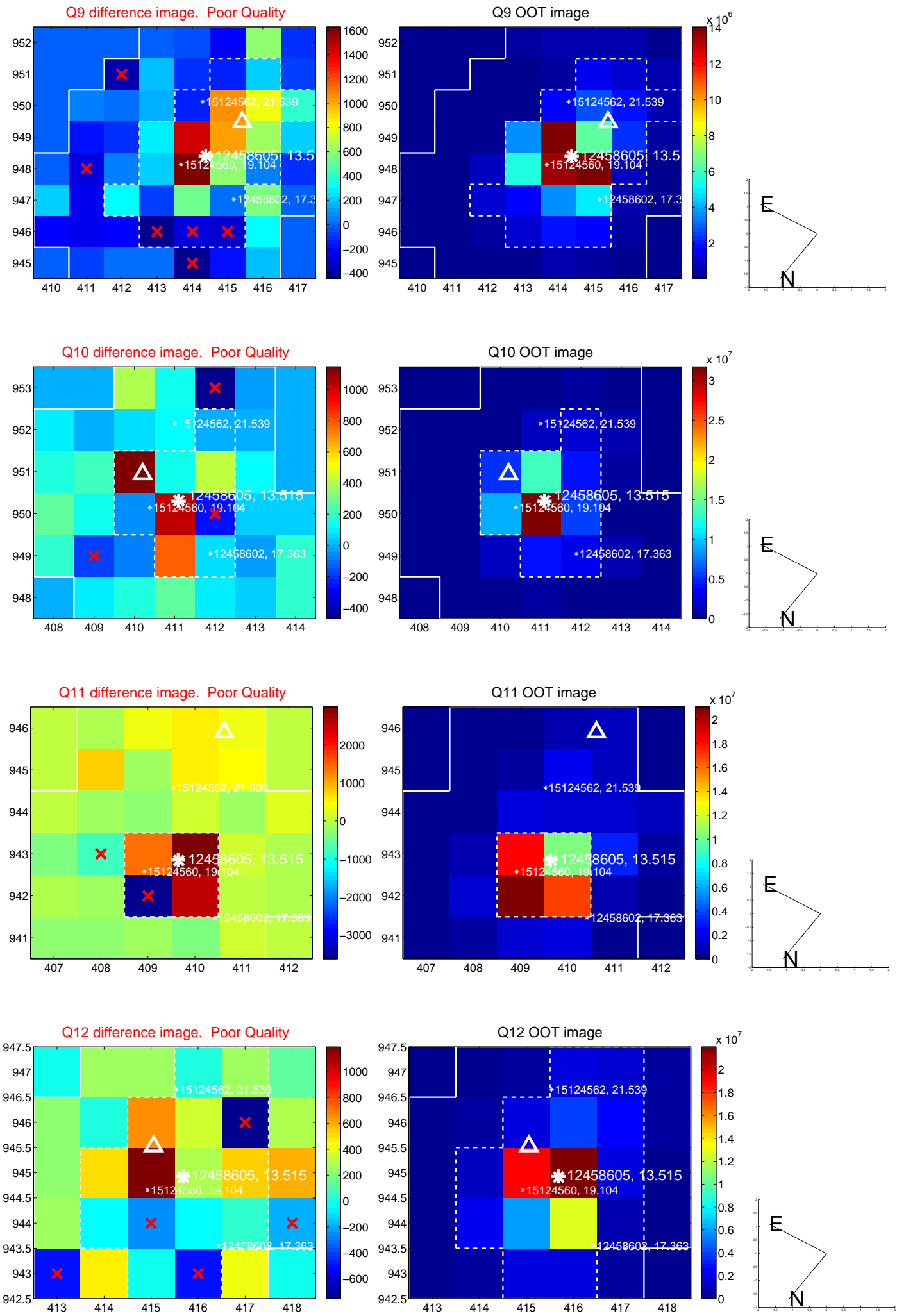
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



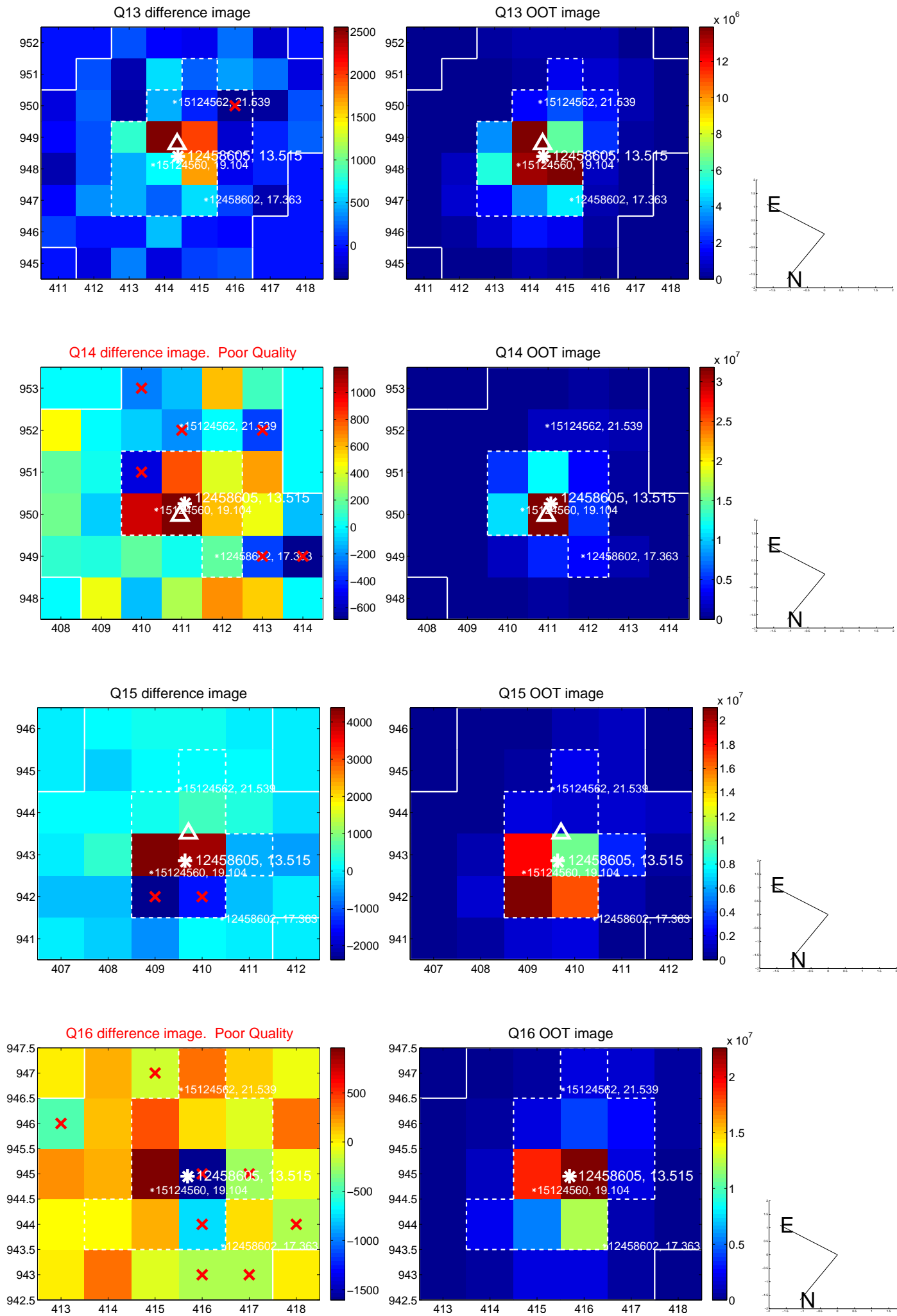
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



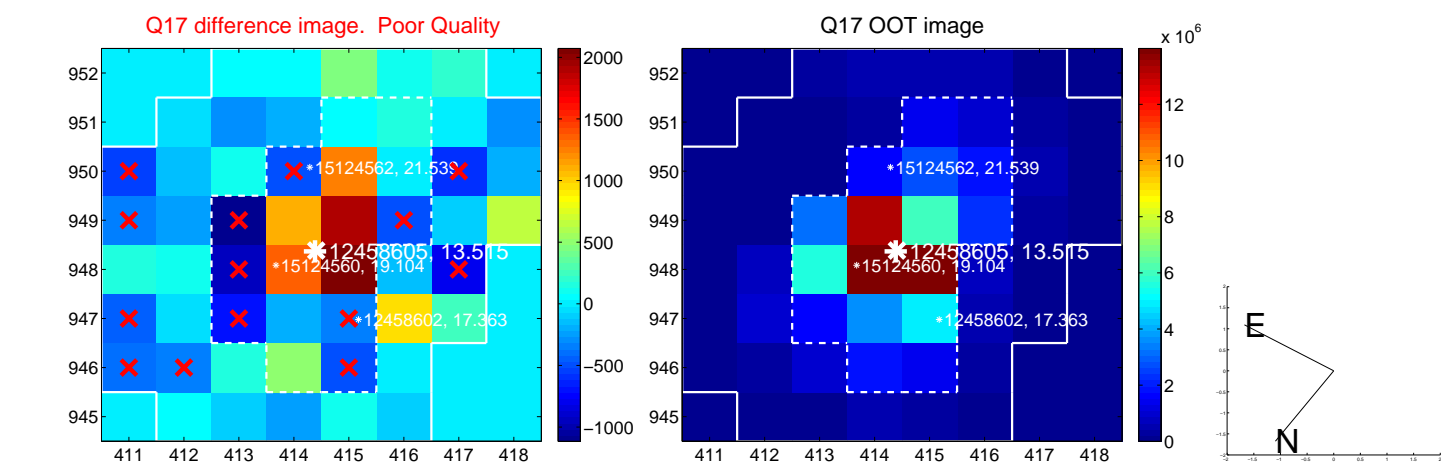
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



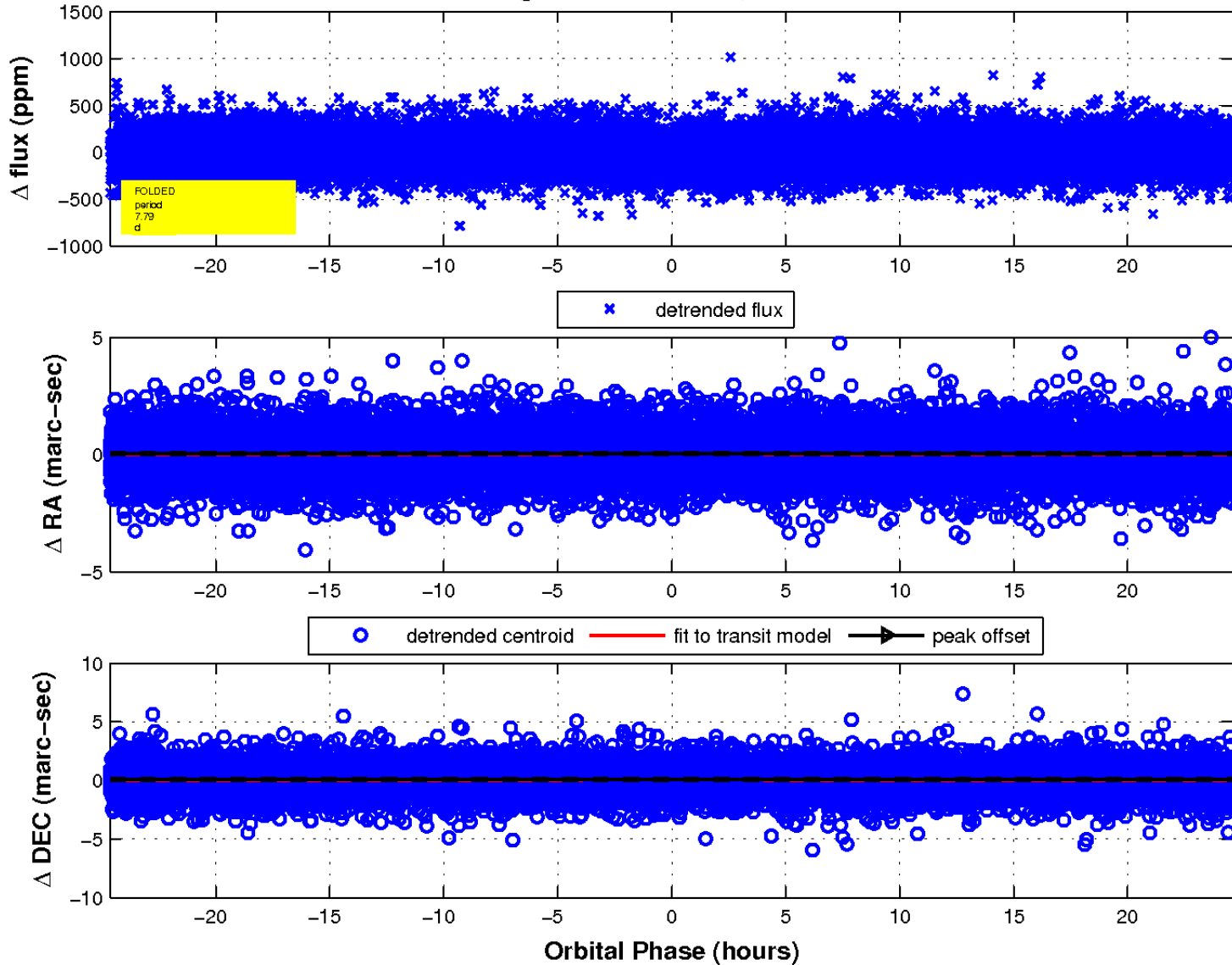
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

