

KIC 009478990

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})
009478990-01	OBS	0423.01	21.087197	139.596749	8924.8	5.950	370.5	411.1	1.52	6266	14.52	137.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009478990-01	OBS	PC	1.00	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.

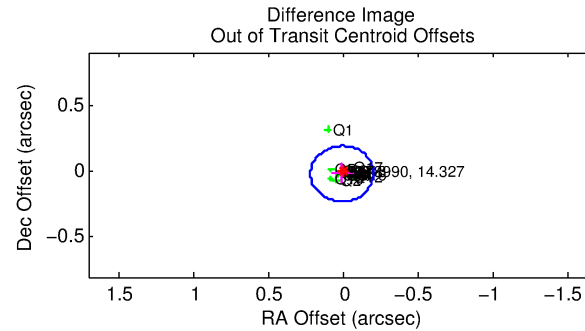
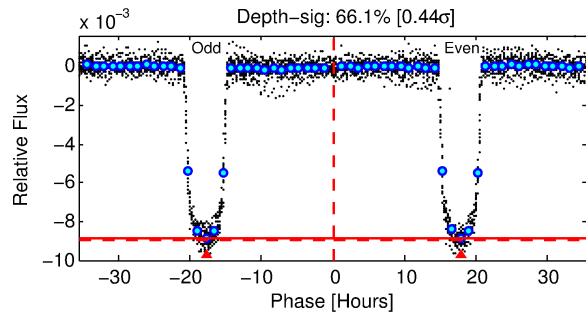
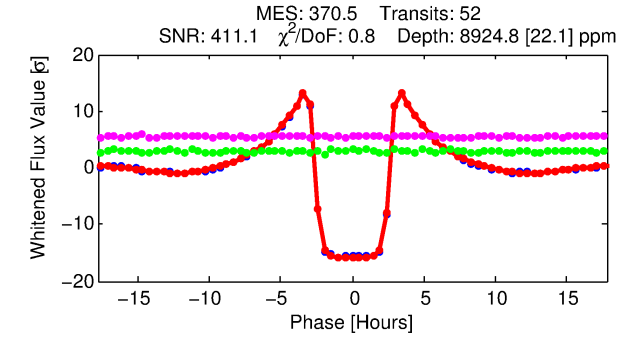
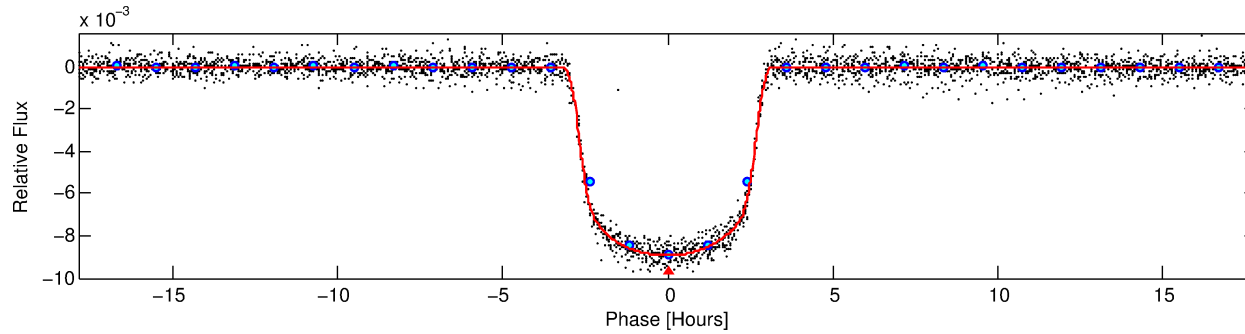
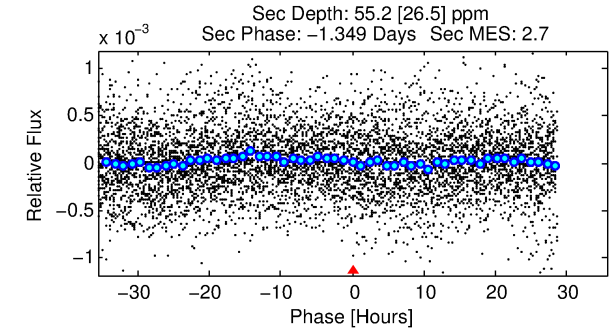
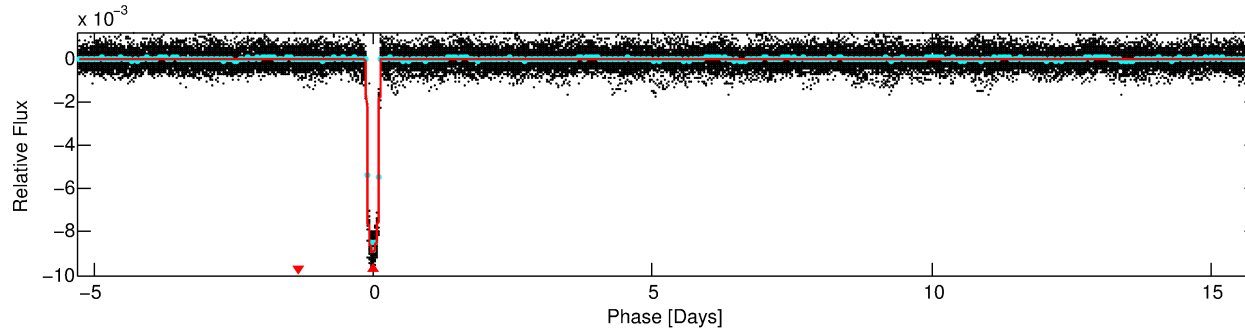
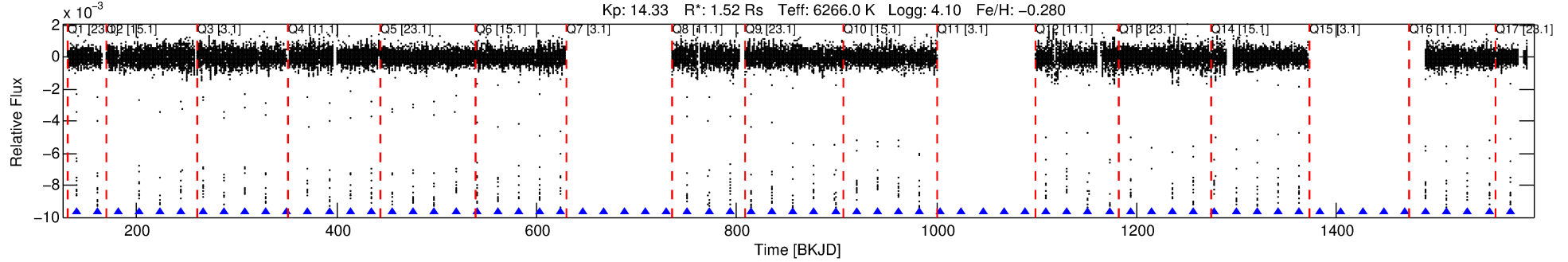
Ephemeris Match Information For 009478990-01

No Significant Match Found

DV One-Page Summary

KIC: 9478990 Candidate: 1 of 1 Period: 21.087 d
KOI: K00423.01 Name: Kepler-39b Corr: 0.999

Kp: 14.33 R*: 1.52 Rs Teff: 6266.0 K Logg: 4.10 Fe/H: -0.280



DV Fit Results:

Period = 21.08720 [0.00000] d
Epoch = 139.5967 [0.0002] BKJD
Rp/R* = 0.0874 [0.0004]
a/R* = 28.57 [0.53]
b = 0.26 [0.07]
Seff = 137.33 [44.30]
Teq = 873 [70] K
Rp = 14.52 [3.05] Re
a = 0.1526 [0.0302] AU
Ag = 3.36 [1.92] [1.23 sigma]
Teffp = 1827 [222] K [4.10 sigma]

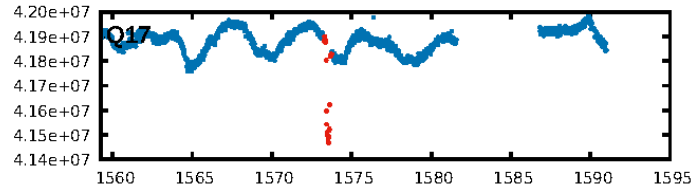
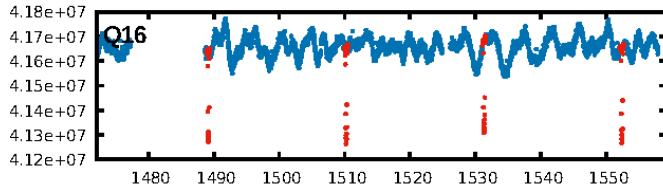
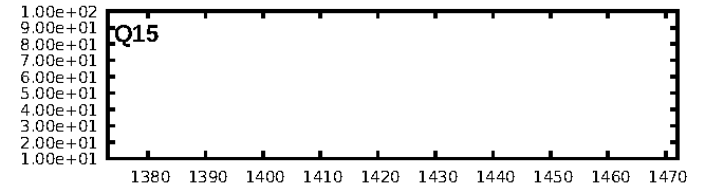
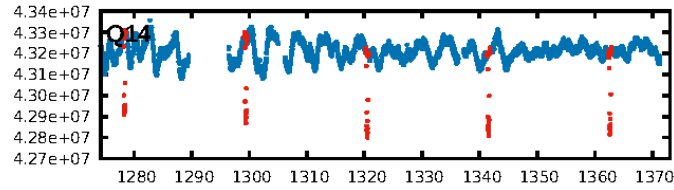
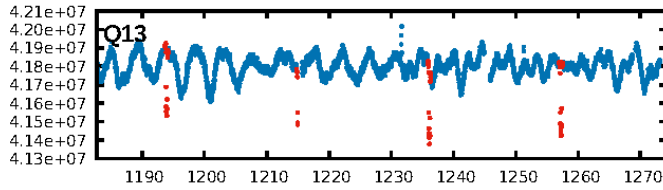
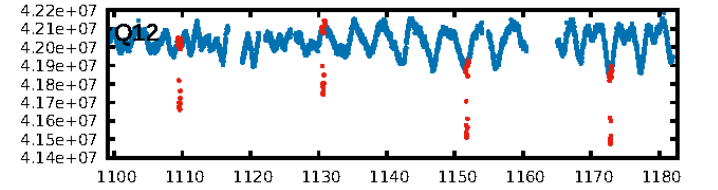
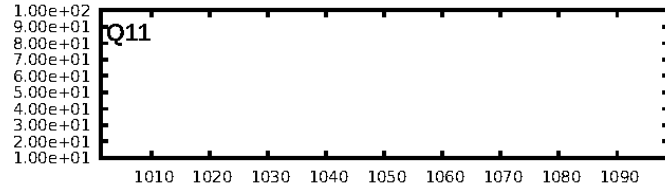
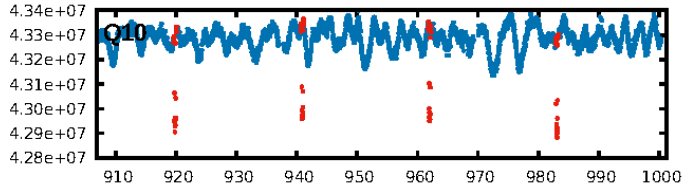
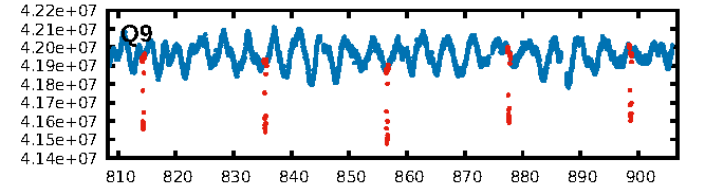
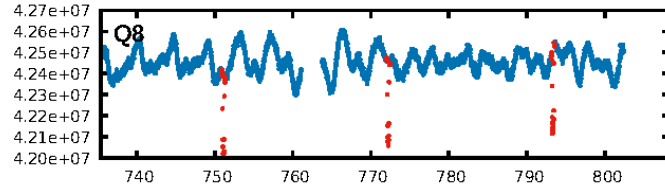
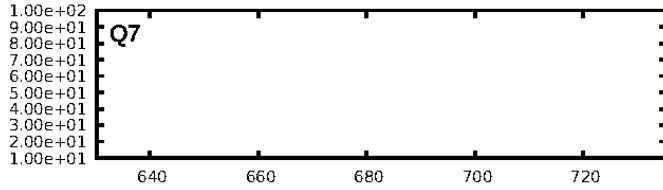
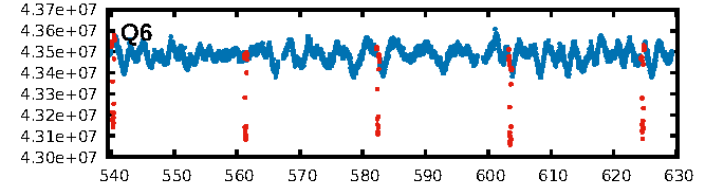
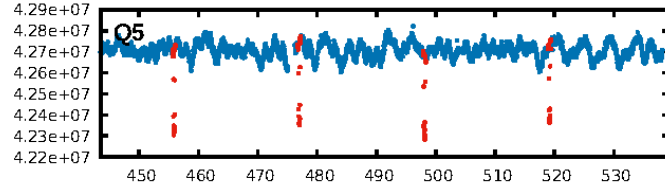
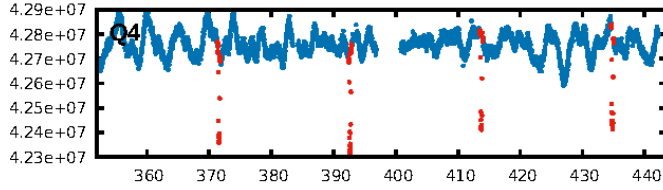
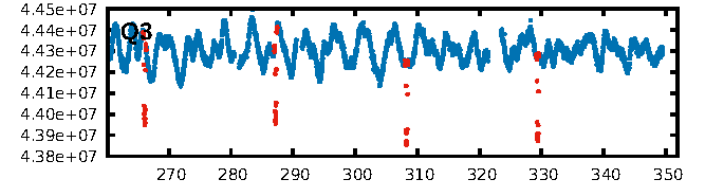
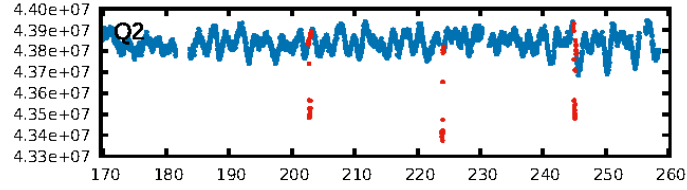
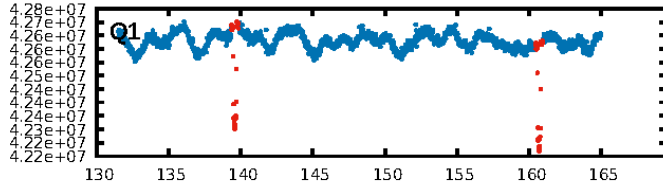
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 73.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [49/49]
GhostDiagnostic-chr: 3.388
Centroid-sig: 0.7%
Centroid-so: 0.242 arcsec [14.52 sigma]
OotOffset-rm: 0.019 arcsec [0.27 sigma]
KicOffset-rm: 0.214 arcsec [2.95 sigma]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

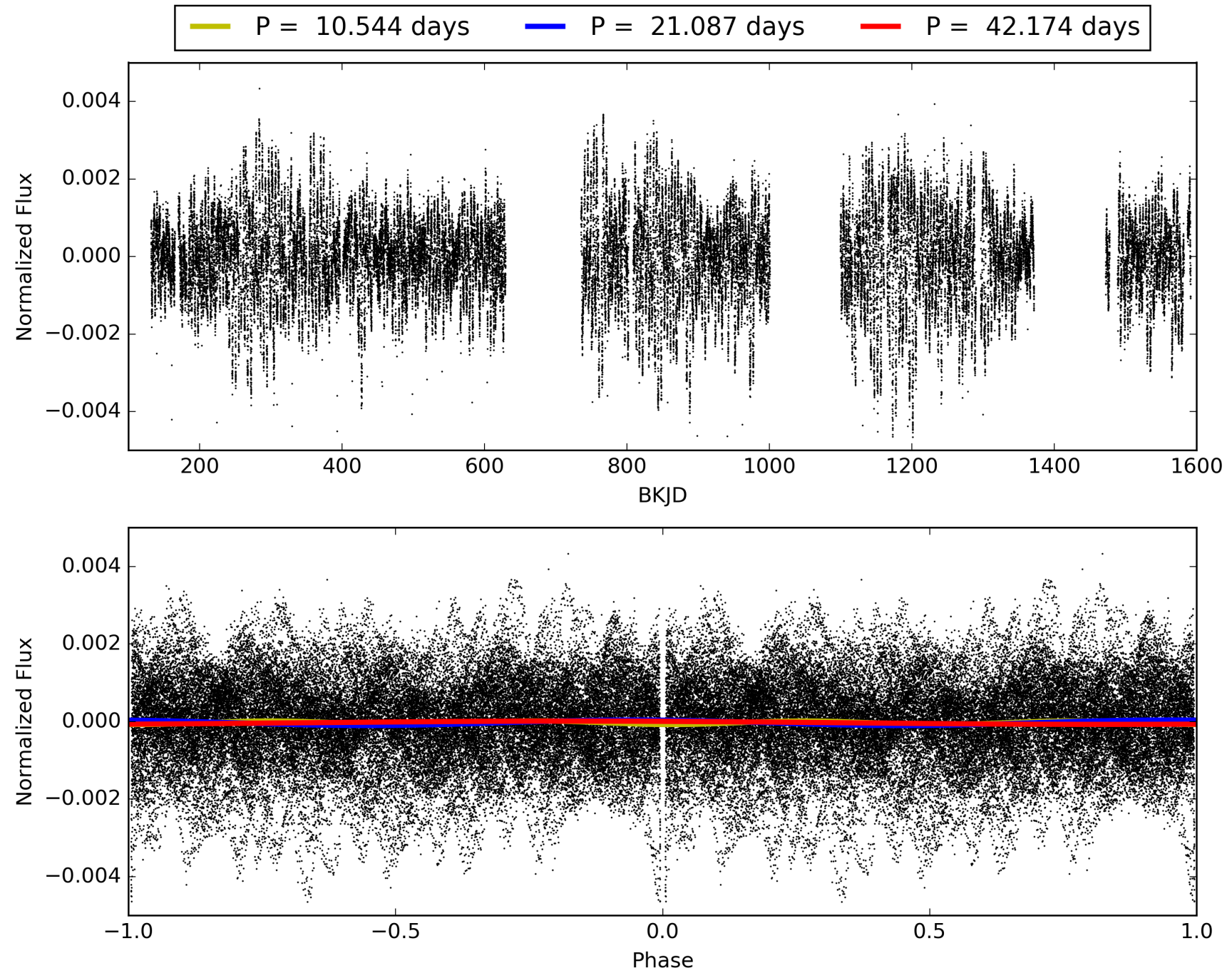
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:53:14 Z

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

TCE 009478990-01, PDC Light Curves

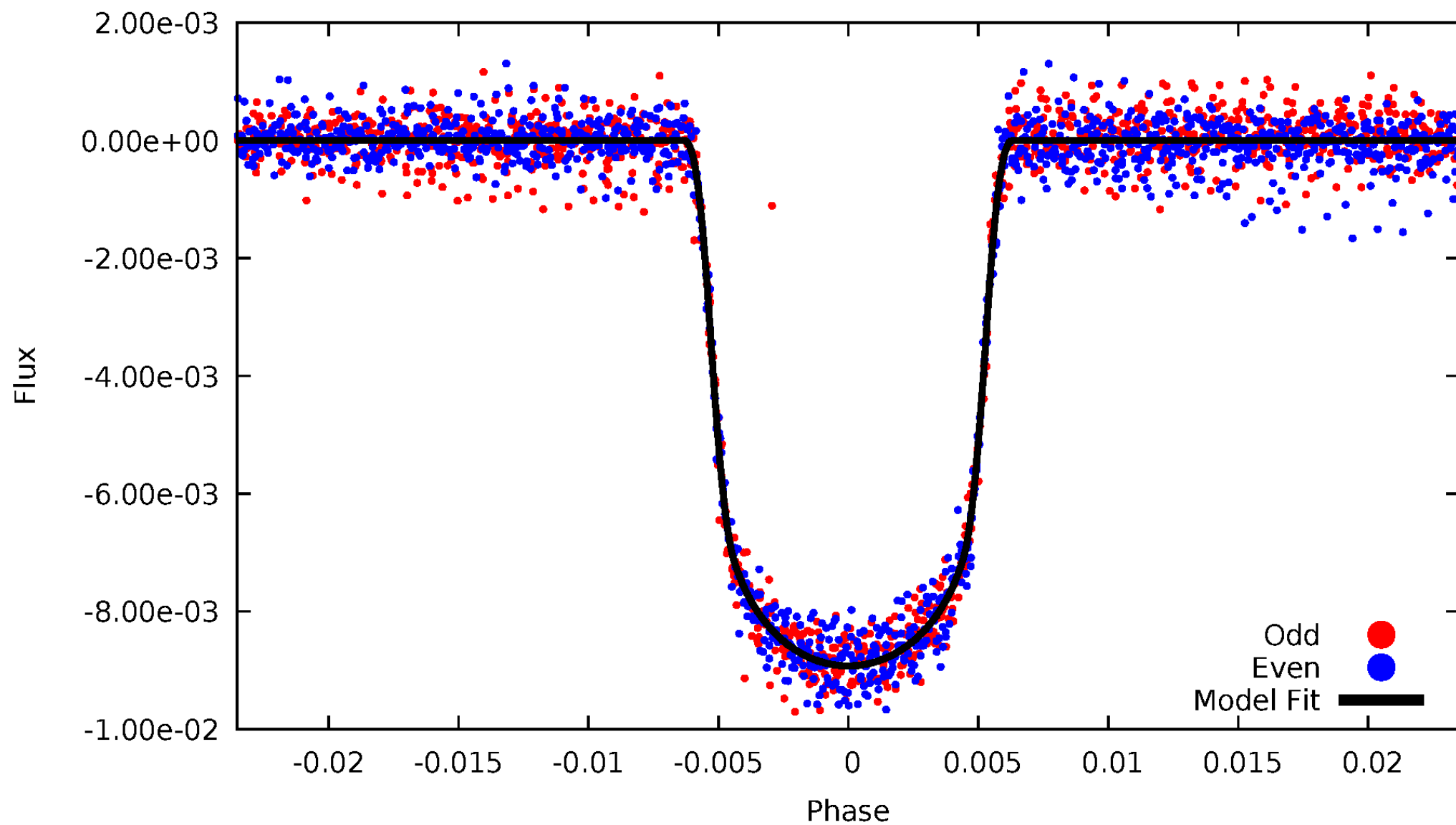


TCE 009478990-01



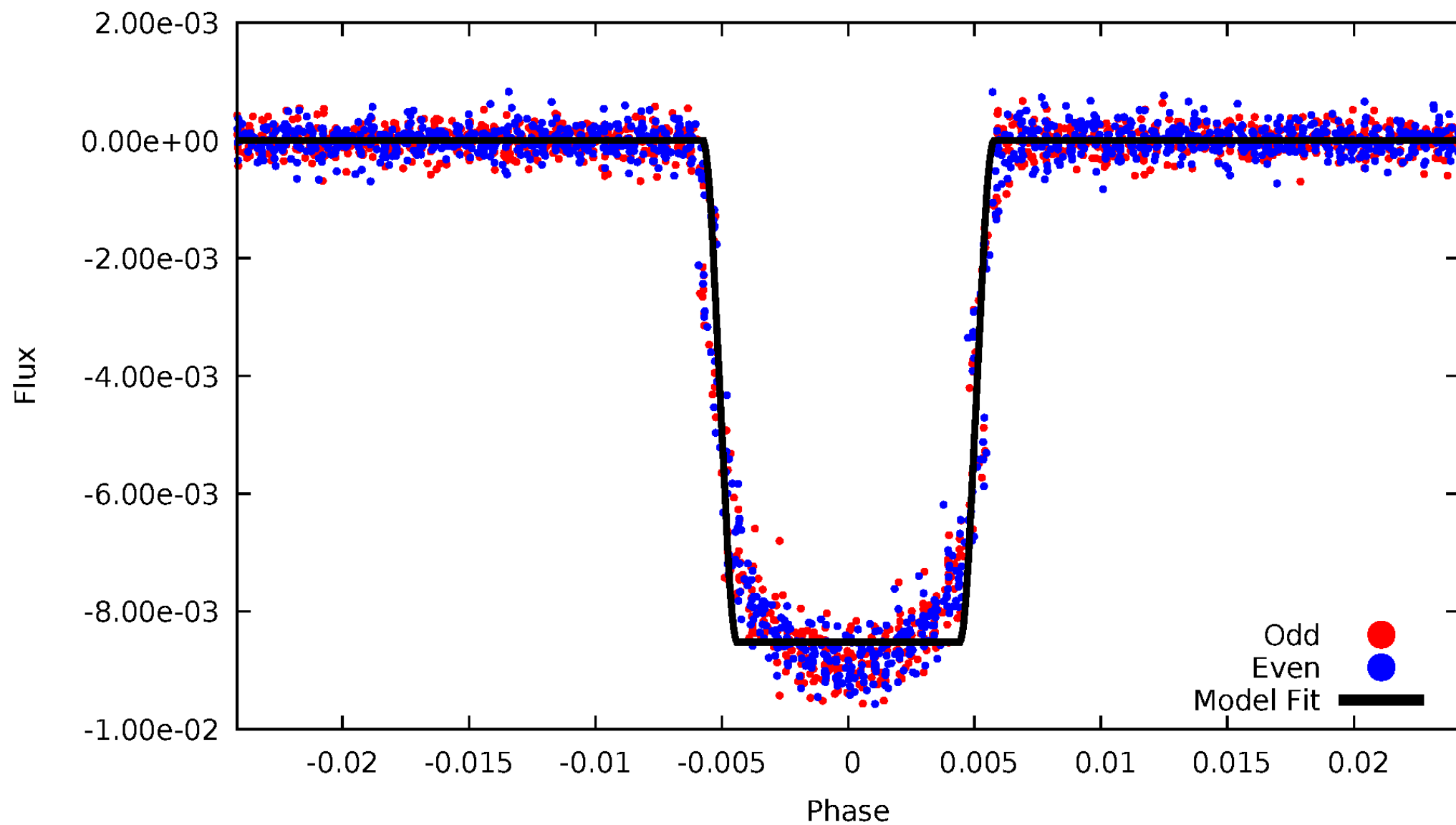
DV Odd/Even

TCE 009478990-01



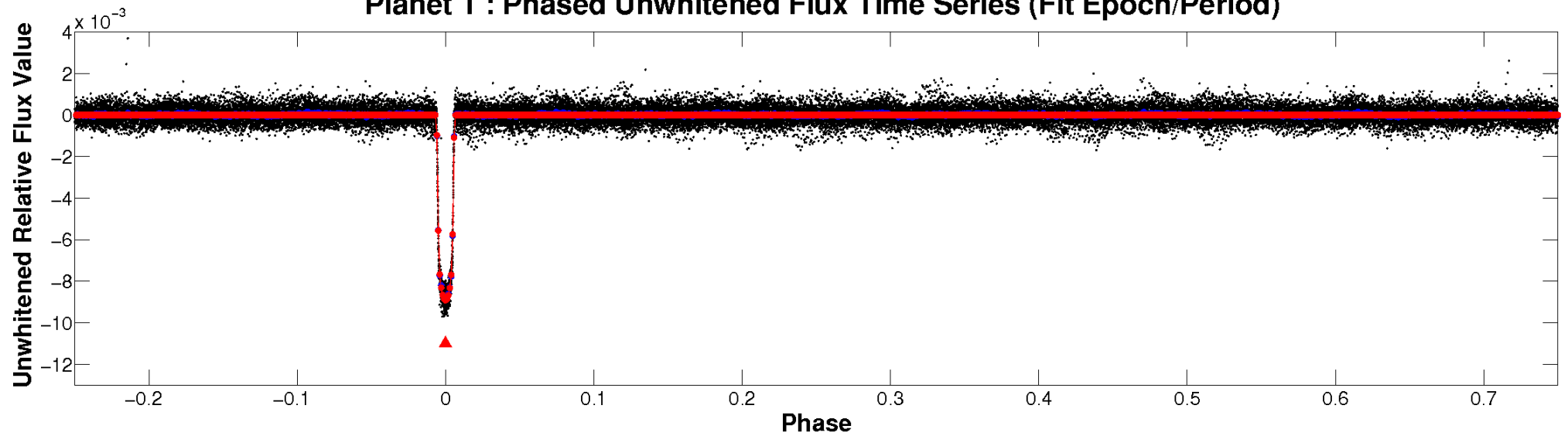
ALT Odd/Even

TCE 009478990-01

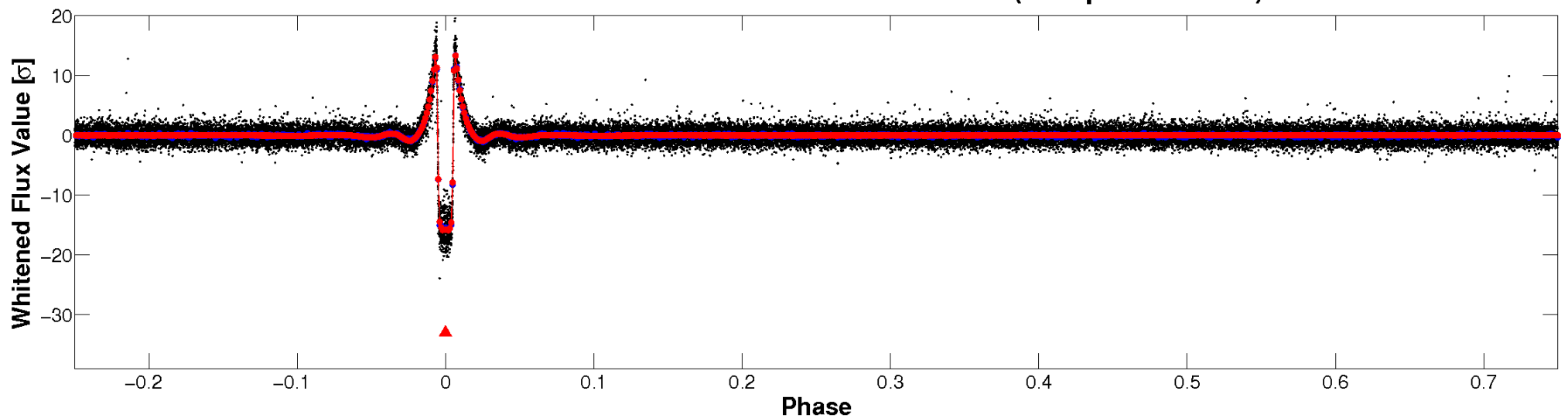


Non-Whitened Vs. Whitened Light Curve

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

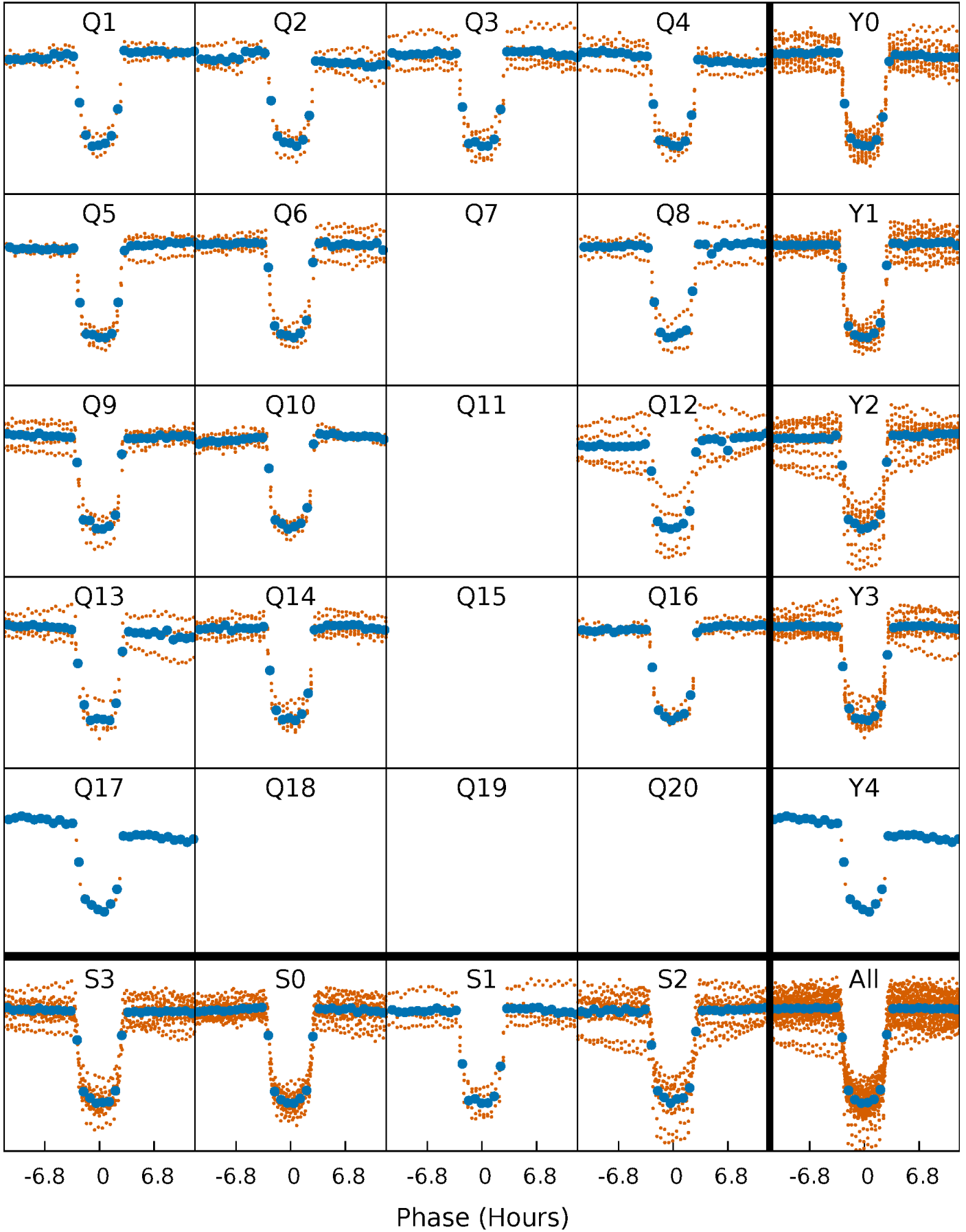


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



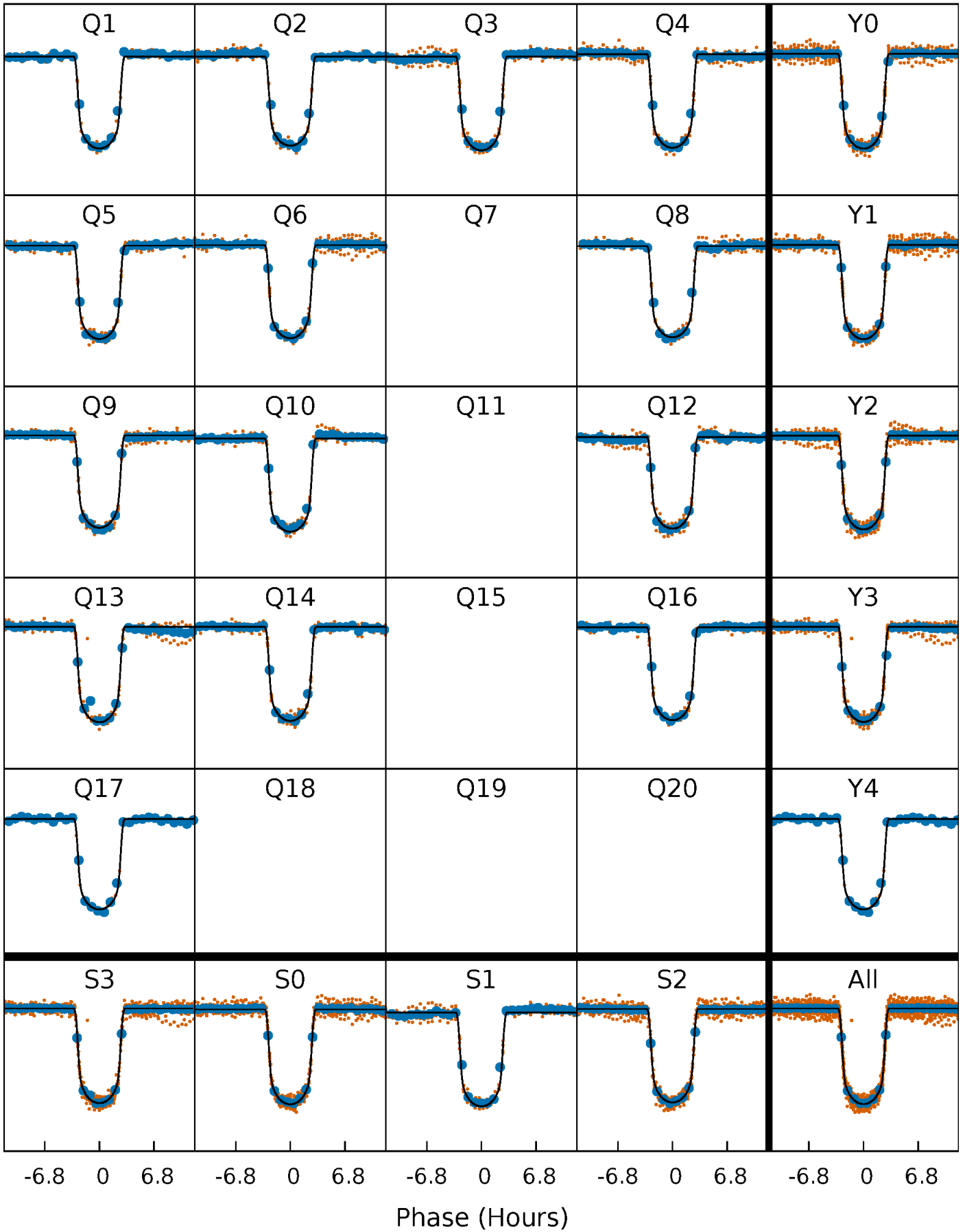
PDC Quarter-Phased Transit Curves

TCE 009478990-01 P= 21.087197 Days $T_0=139.596749$ (BKJD)



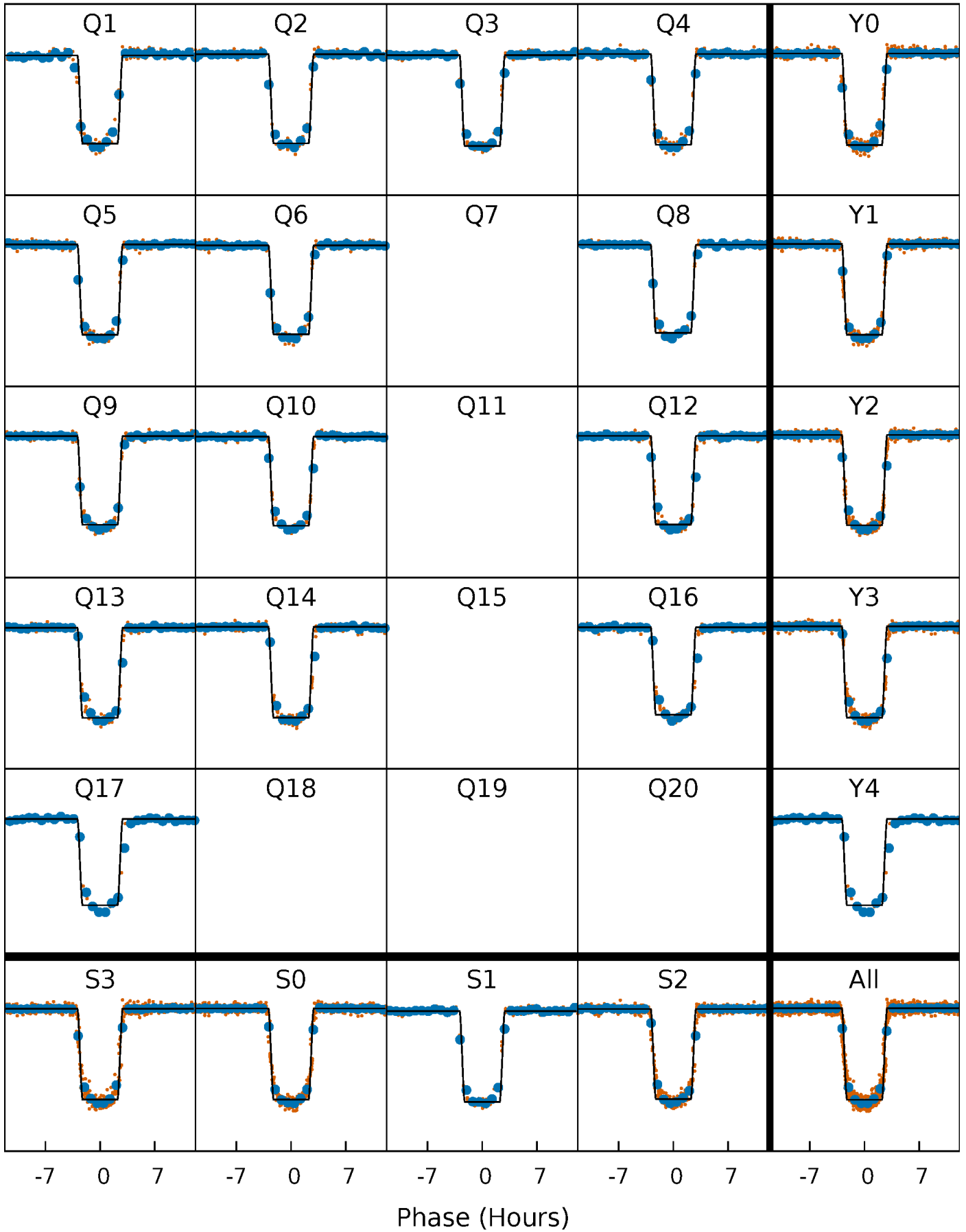
DV Quarter-Phased Transit Curves

TCE 009478990-01 P= 21.087197 Days $T_0=139.596749$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

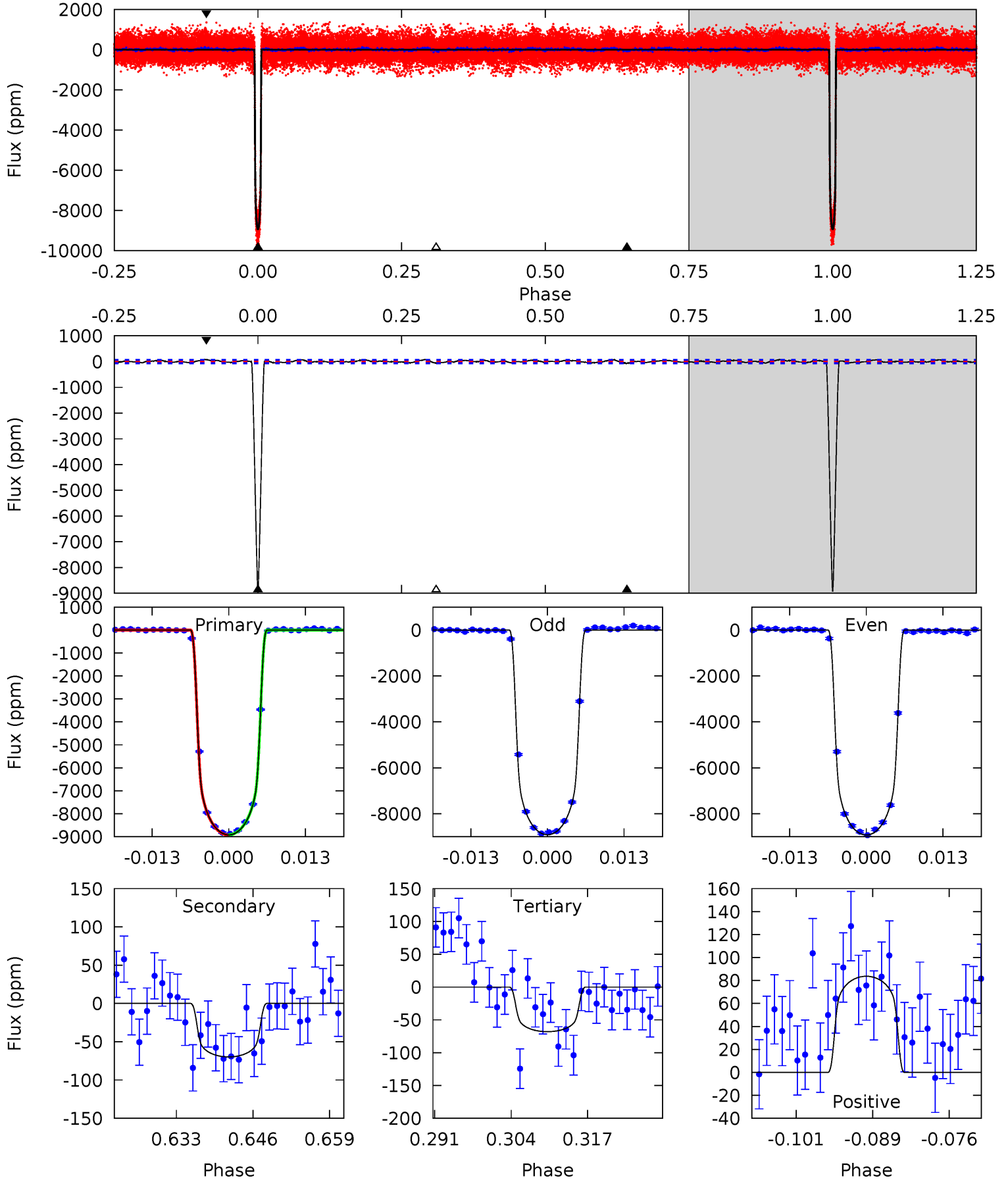
TCE 009478990-01 P= 21.086920 Days $T_0=139.606245$ (BKJD)



DV Model-Shift Uniqueness Test

009478990-01, P = 21.087197 Days, E = 118.509552 Days

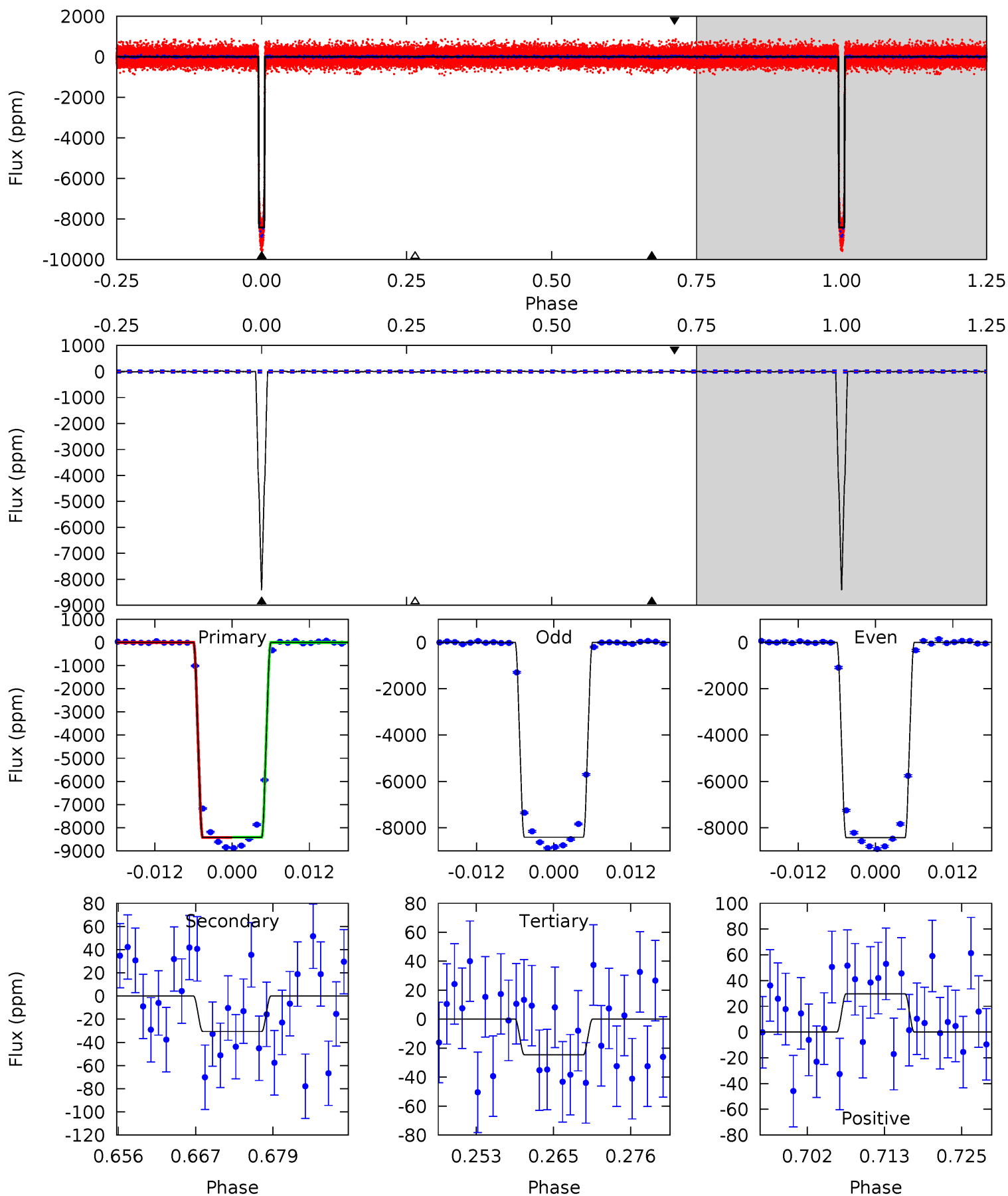
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
663.9	5.20	5.06	6.23	4.98	2.49	2.20	658.8	657.7	0.14	-1.03	0.36	0.99	0.01	0.58



Alt Model-Shift Uniqueness Test

009478990-01, P = 21.086920 Days, E = 118.519325 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
883.0	3.22	2.59	3.11	5.00	2.53	0.96	880.4	879.9	0.63	0.10	0.89	1.00	0.00	0.41



Stellar Parameters For KIC 009478990

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6266^{+125}_{-125}	$4.101^{+0.182}_{-0.098}$	$-0.280^{+0.150}_{-0.150}$	$1.522^{+0.262}_{-0.320}$	$1.066^{+0.118}_{-0.089}$	$0.426^{+0.416}_{-0.132}$
	+2%/-2%	+4%/-2%	+54%/-54%	+17%/-21%	+11%/-8%	+98%/-31%
Source	SPE38	SPE38	SPE38	DSEP		

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

Secondary Eclipse Parameters for KIC 009478990-01 / KOI 0423.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-70 ± 13	$14.41^{+1.46}_{-1.76}$	1210^{+58}_{-67}	2690^{+74}_{-81}	$4.416^{+1.466}_{-1.103}$
Alt.	-31 ± 10	$15.22^{+1.45}_{-1.62}$	1213^{+55}_{-70}	2367^{+88}_{-134}	$1.724^{+0.682}_{-0.607}$

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

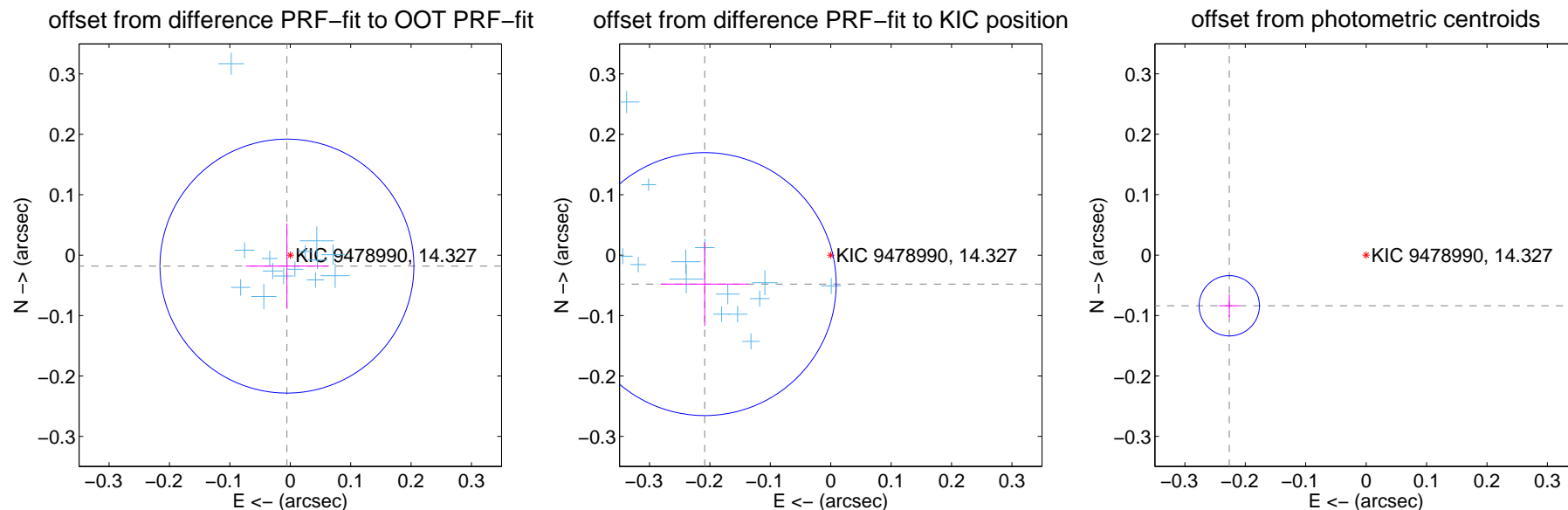
DV Centroid Data

Supplemental centroid analysis for 009478990-01. Kepler magnitude: 14.33. Transit SNR 411.06

There are 14 quarters with good PRF difference image offsets

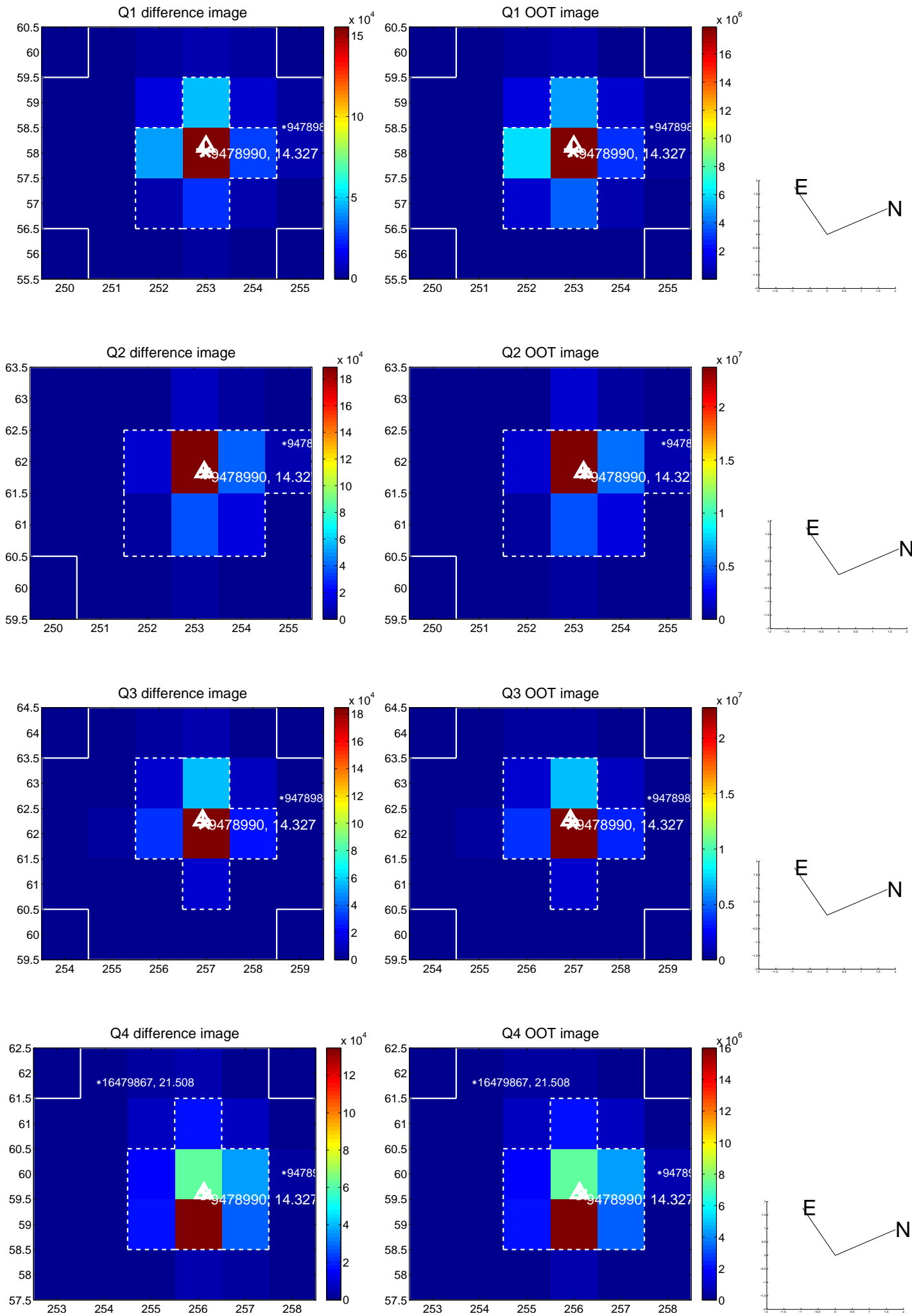
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.070	0.27	0.006 ± 0.068	-0.018 ± 0.071
PRF-fit source offset from KIC position	0.214 ± 0.073	2.95	0.209 ± 0.073	-0.048 ± 0.069
photometric centroid source offset	0.24 ± 0.02	14.52	0.23 ± 0.02	-0.08 ± 0.02

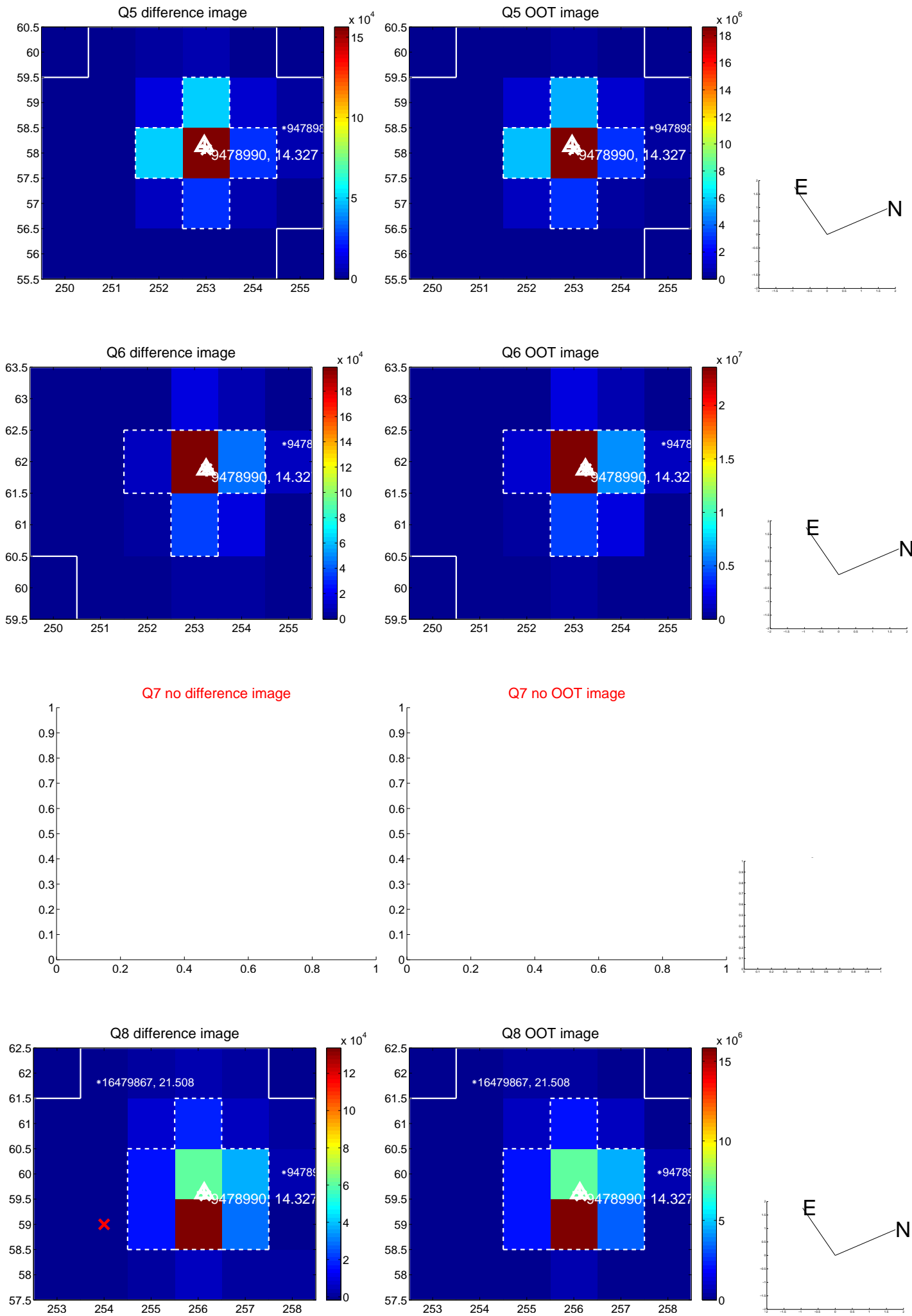


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

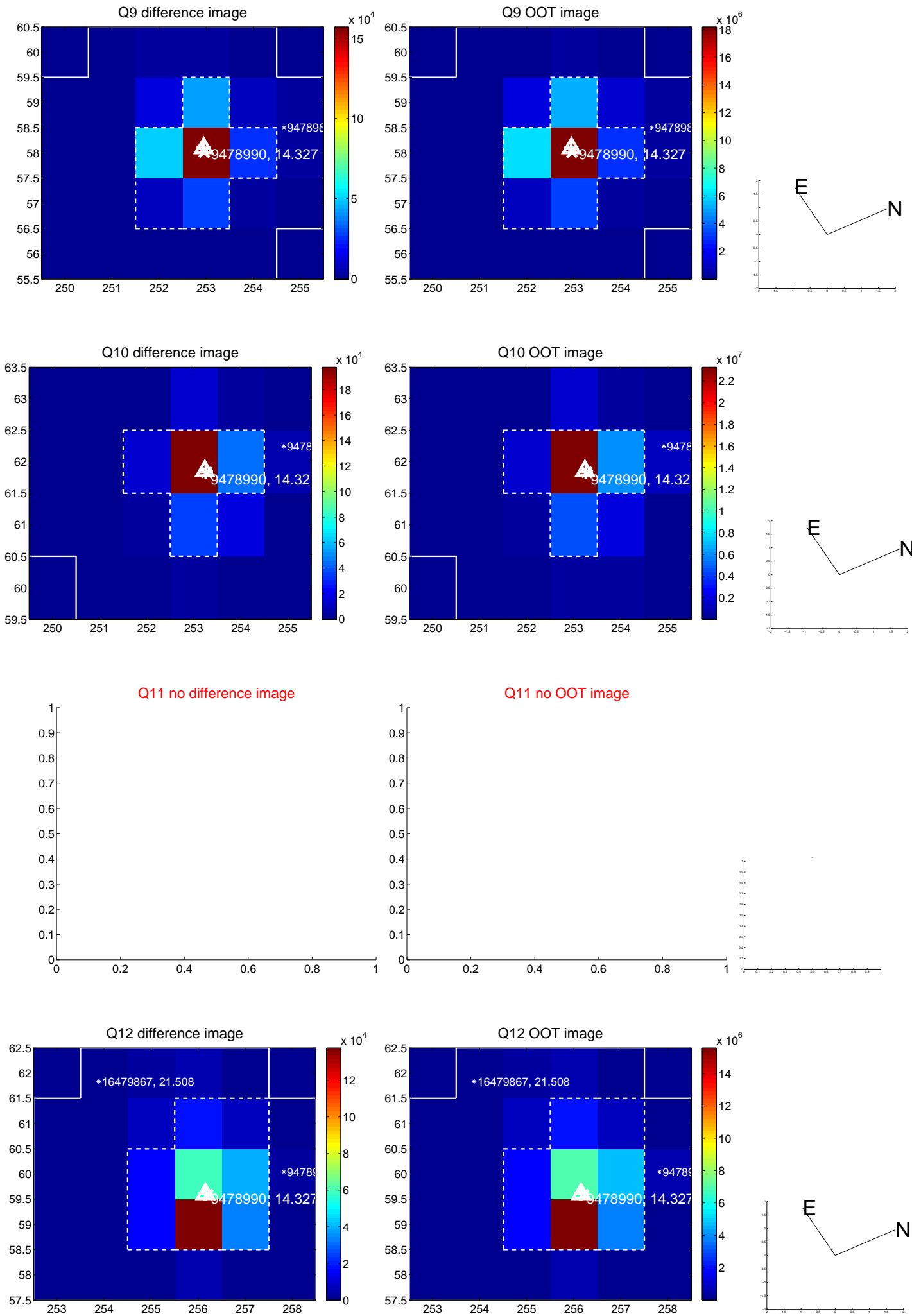
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



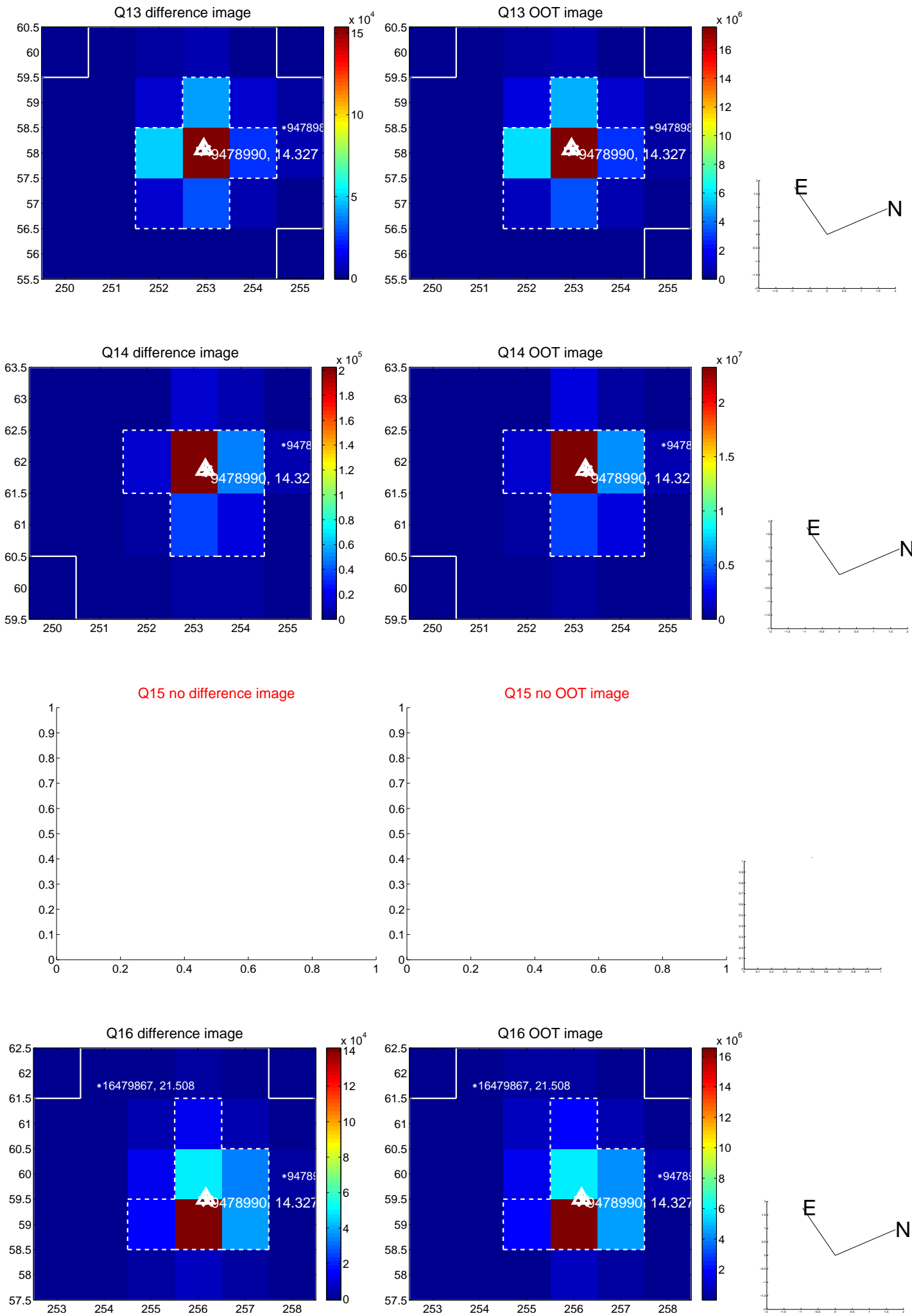
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



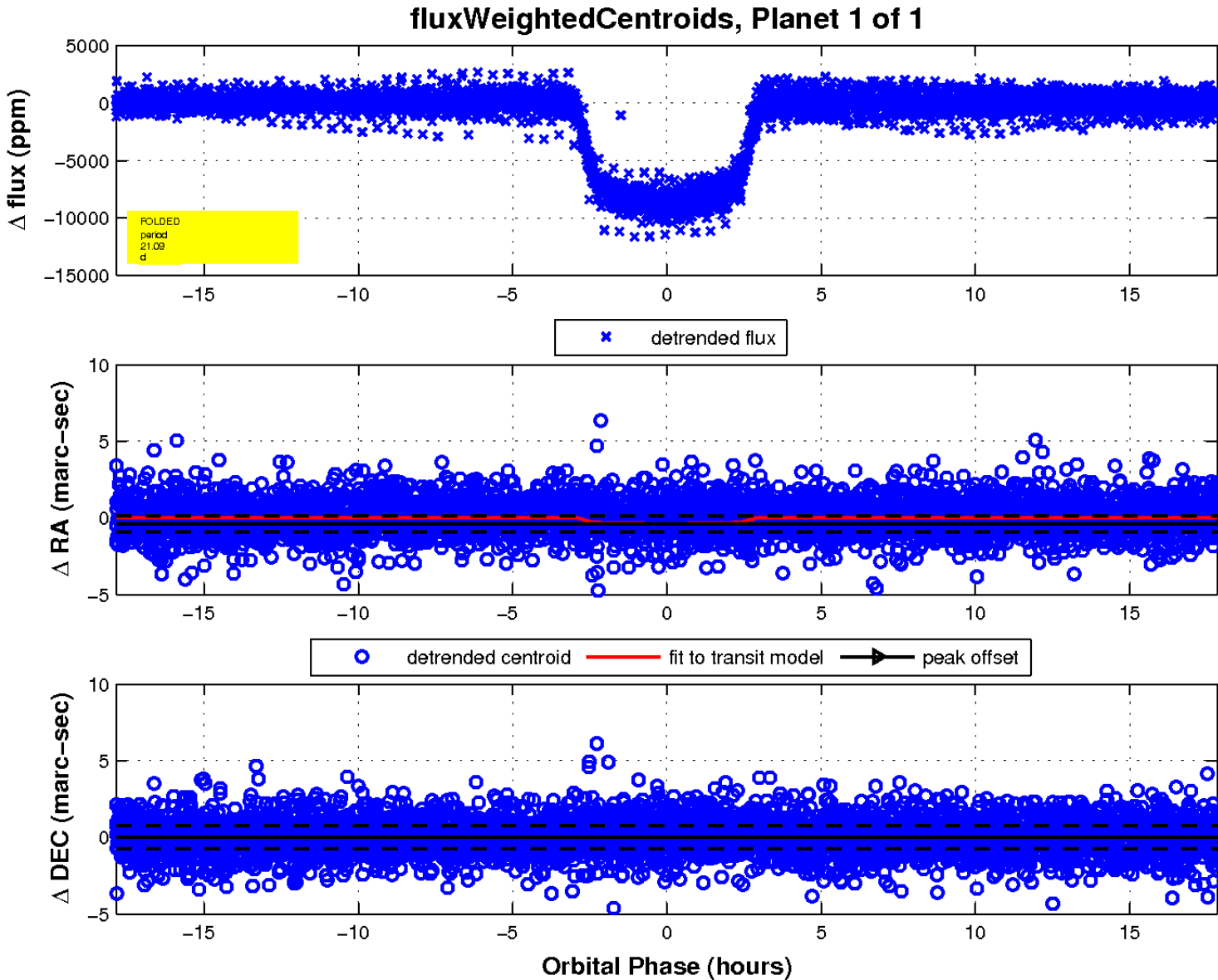
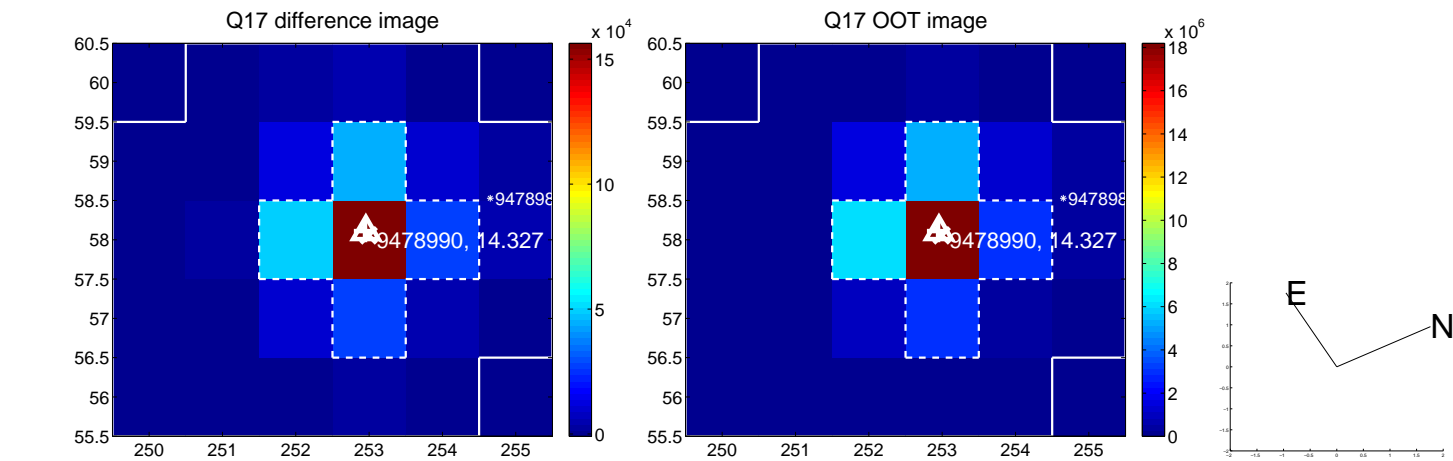
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

