

KIC 009509207

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})
009509207-01	OBS	7181.01	14.199843	135.747495	210040.3	6.176	19375.9	8229.2	1.41	5864	84.99	160.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009509207-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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.

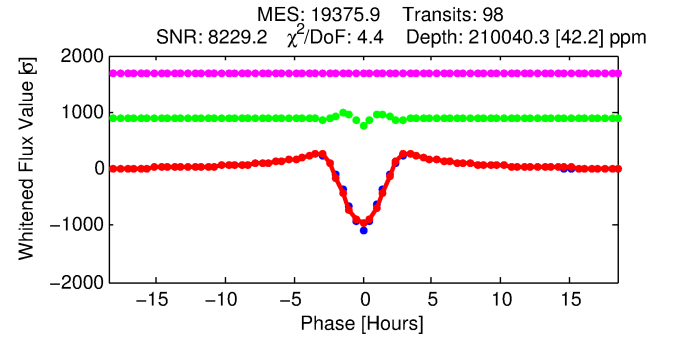
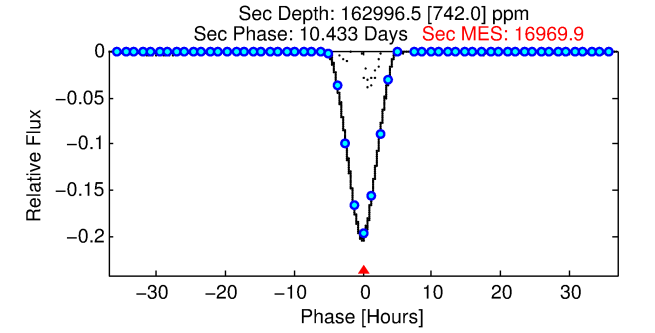
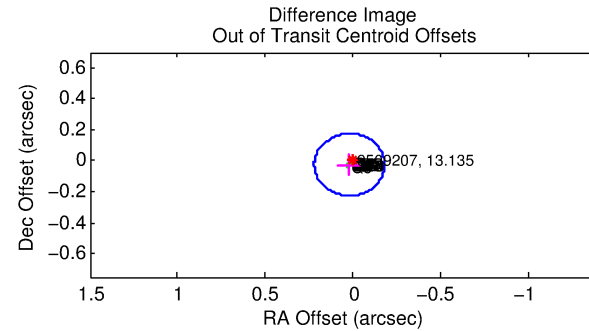
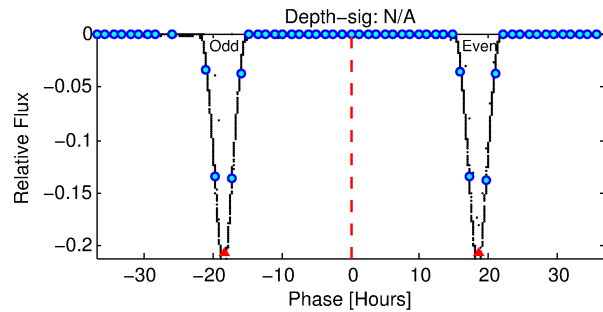
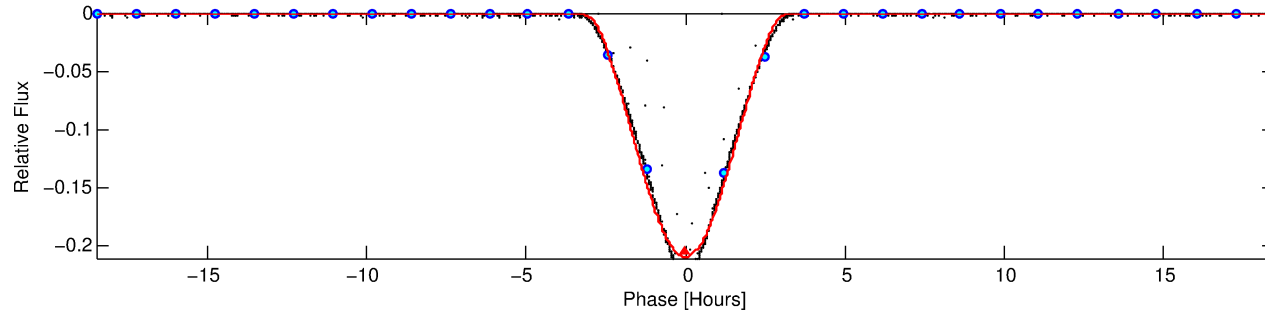
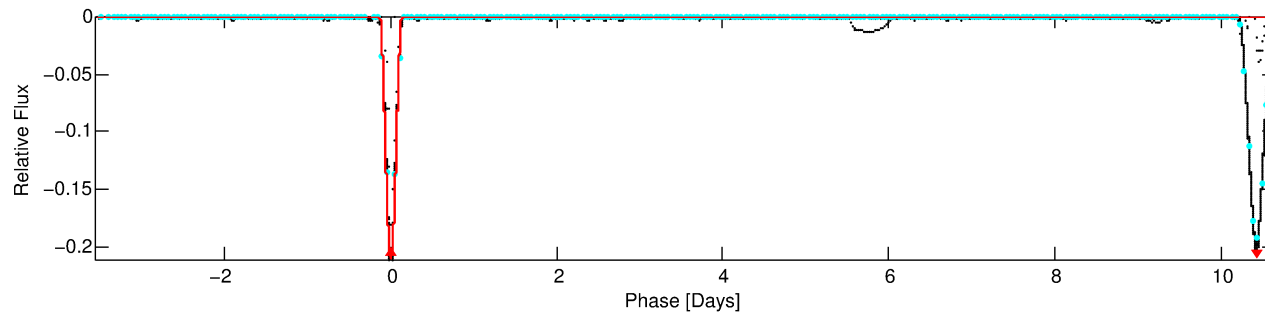
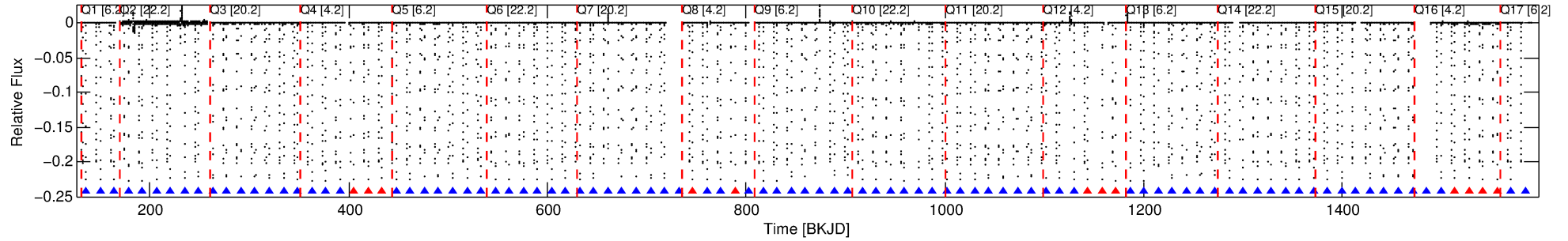
Ephemeris Match Information For 009509207-01

No Significant Match Found

DV One-Page Summary

KIC: 9509207 Candidate: 1 of 1 Period: 14.200 d
KOI: K07181.01 Corr: 0.984

Kp: 13.14 R*: 1.41 Rs Teff: 5864.0 K Logg: 4.14 Fe/H: -0.060



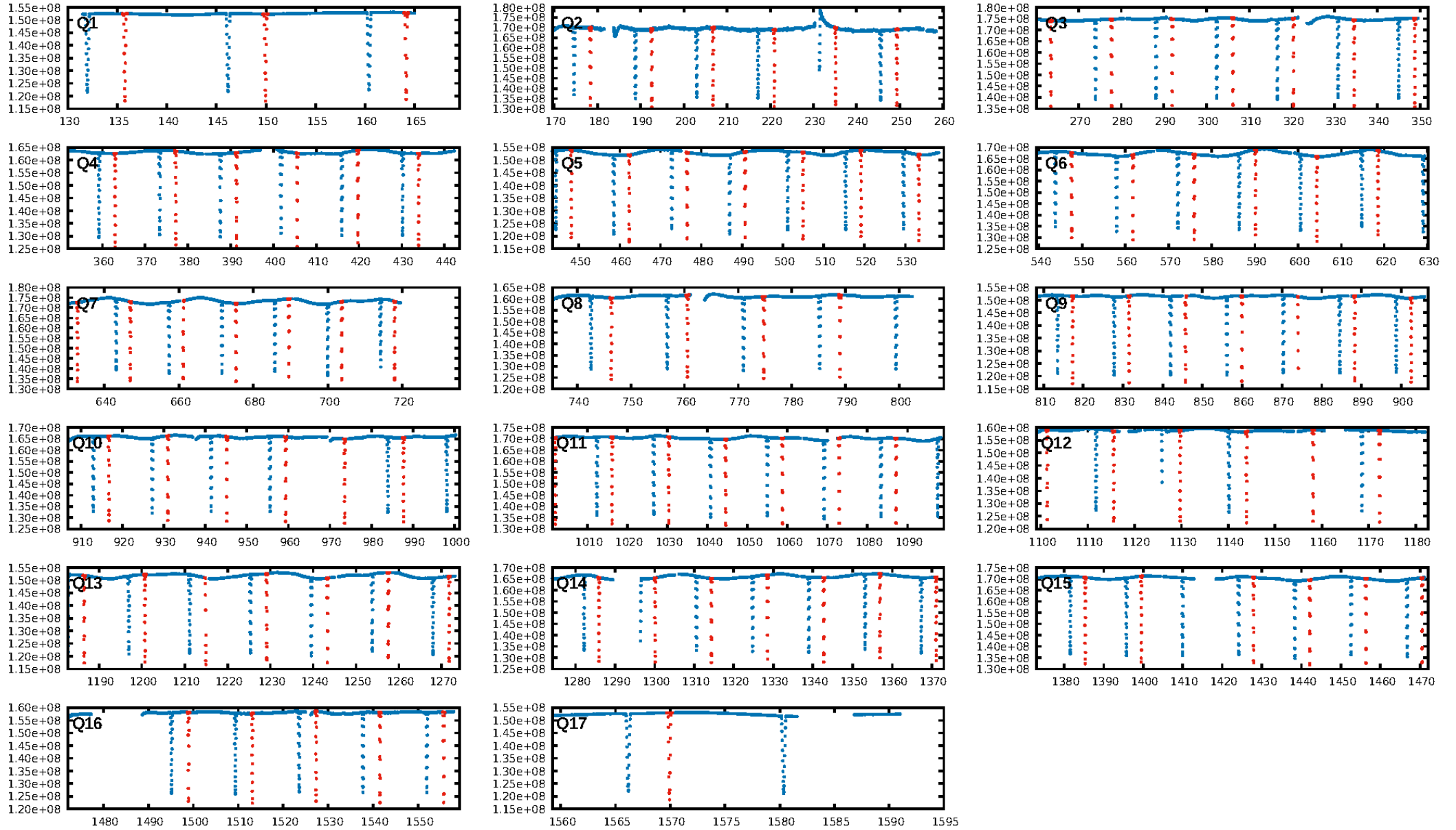
DV Fit Results:

Period = 14.19984 [0.00000] d
Epoch = 135.7475 [0.0000] BKJD
Rp/R* = 0.5508 [0.0185]
a/R* = 23.61 [0.09]
b = 0.78 [0.03]
Seff = 160.30 [83.66]
Teq = 907 [118] K
Rp = 84.99 [27.02] Re
a = 0.1150 [0.0358] AU
Ag = 164.06 [83.59] [1.95σ]
Teffp = 5020 [186] K [18.68σ]

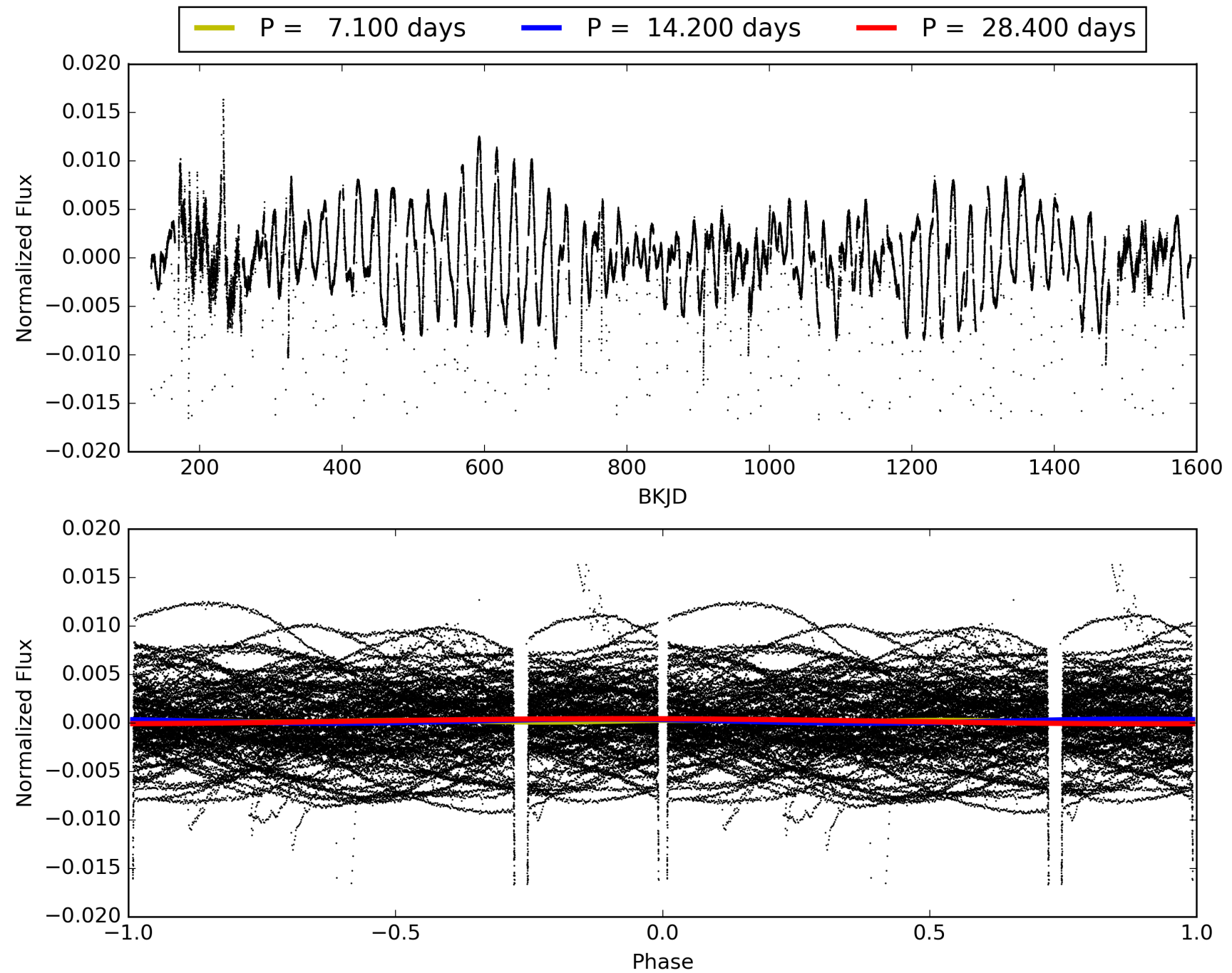
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.87 [82/94]
GhostDiagnostic-chr: 2.176
Centroid-sig: 0.0%
Centroid-so: 0.050 arcsec [110.57σ]
OotOffset-rm: 0.033 arcsec [0.50σ]
KicOffset-rm: 0.143 arcsec [2.09σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009509207-01, PDC Light Curves

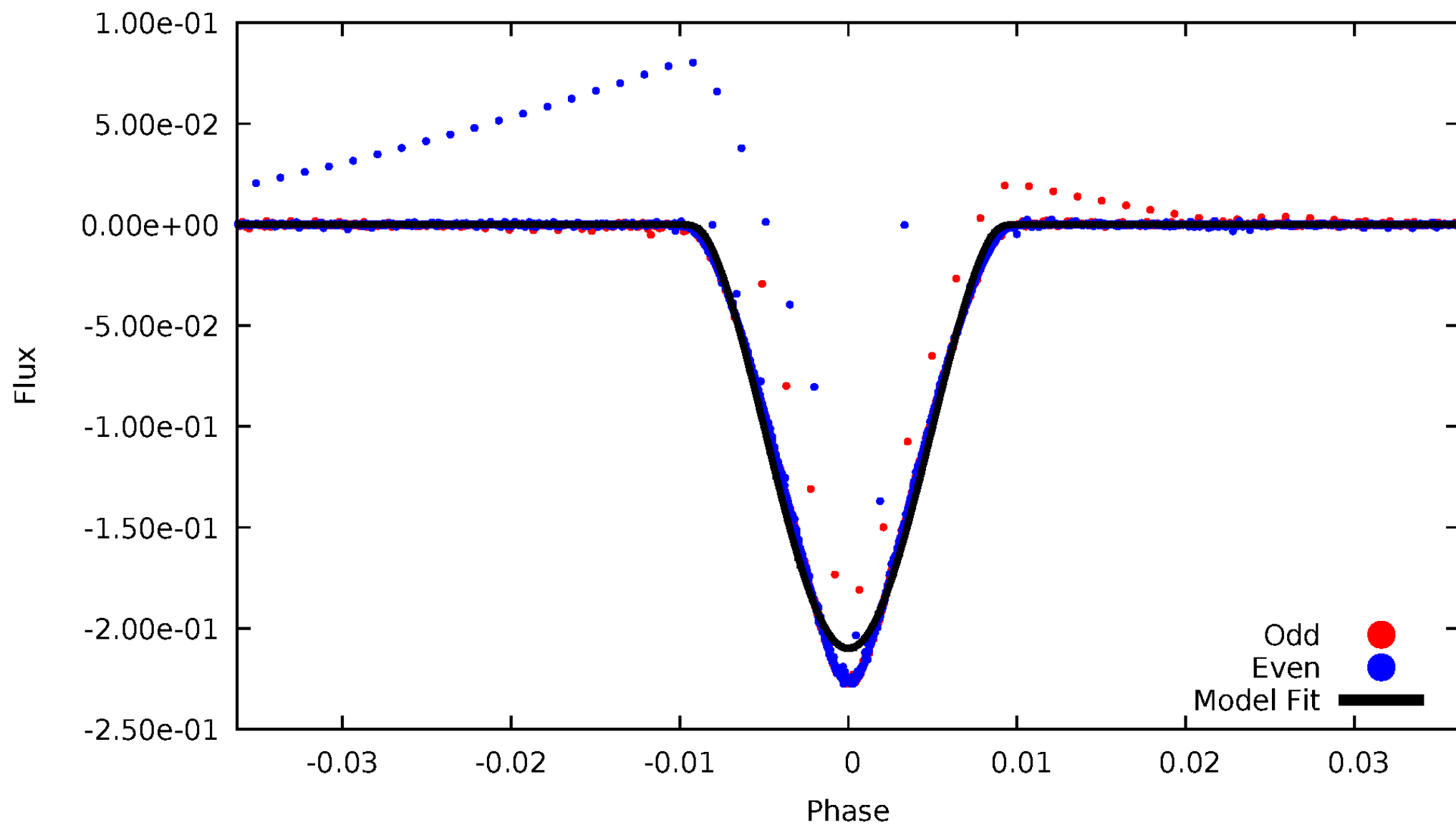


TCE 009509207-01



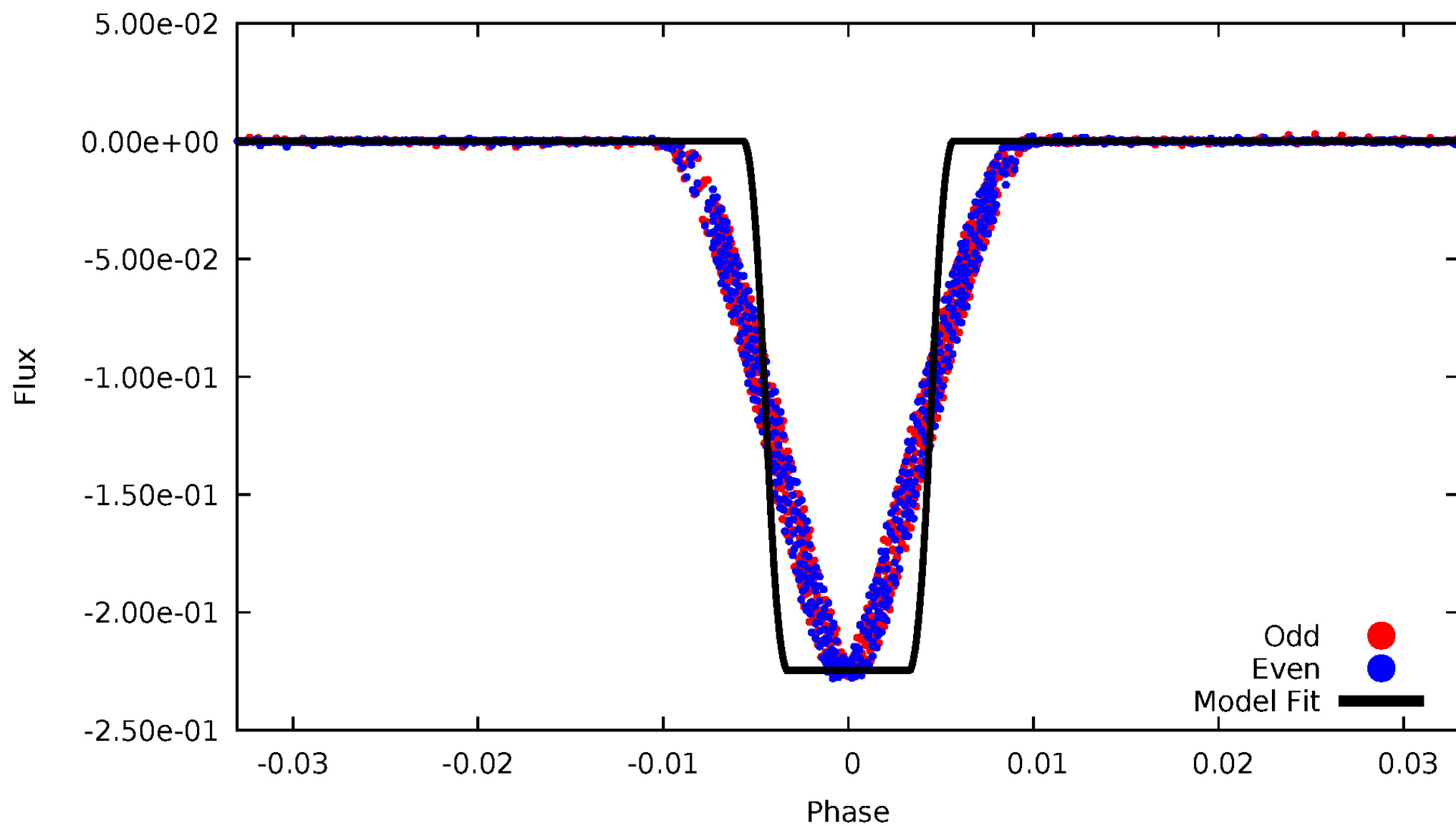
DV Odd/Even

TCE 009509207-01



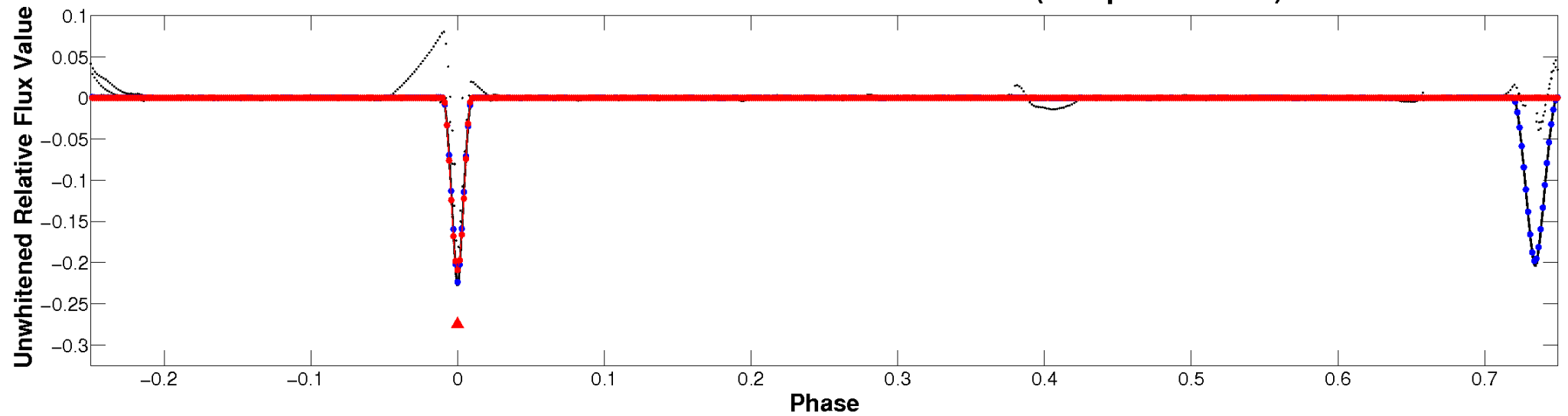
ALT Odd/Even

TCE 009509207-01

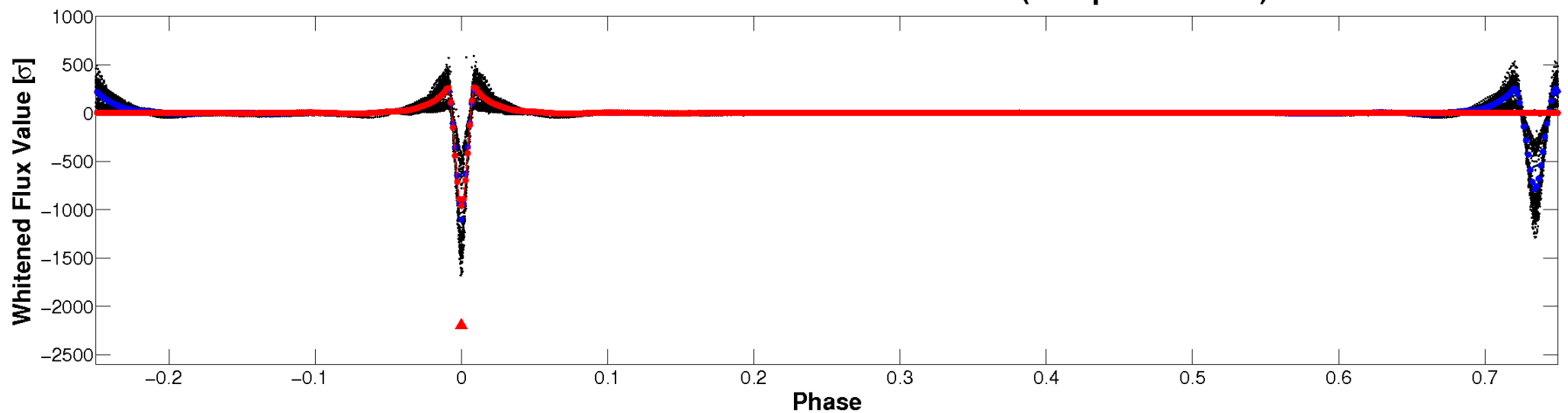


Non-Whitened Vs. Whitened Light Curve

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

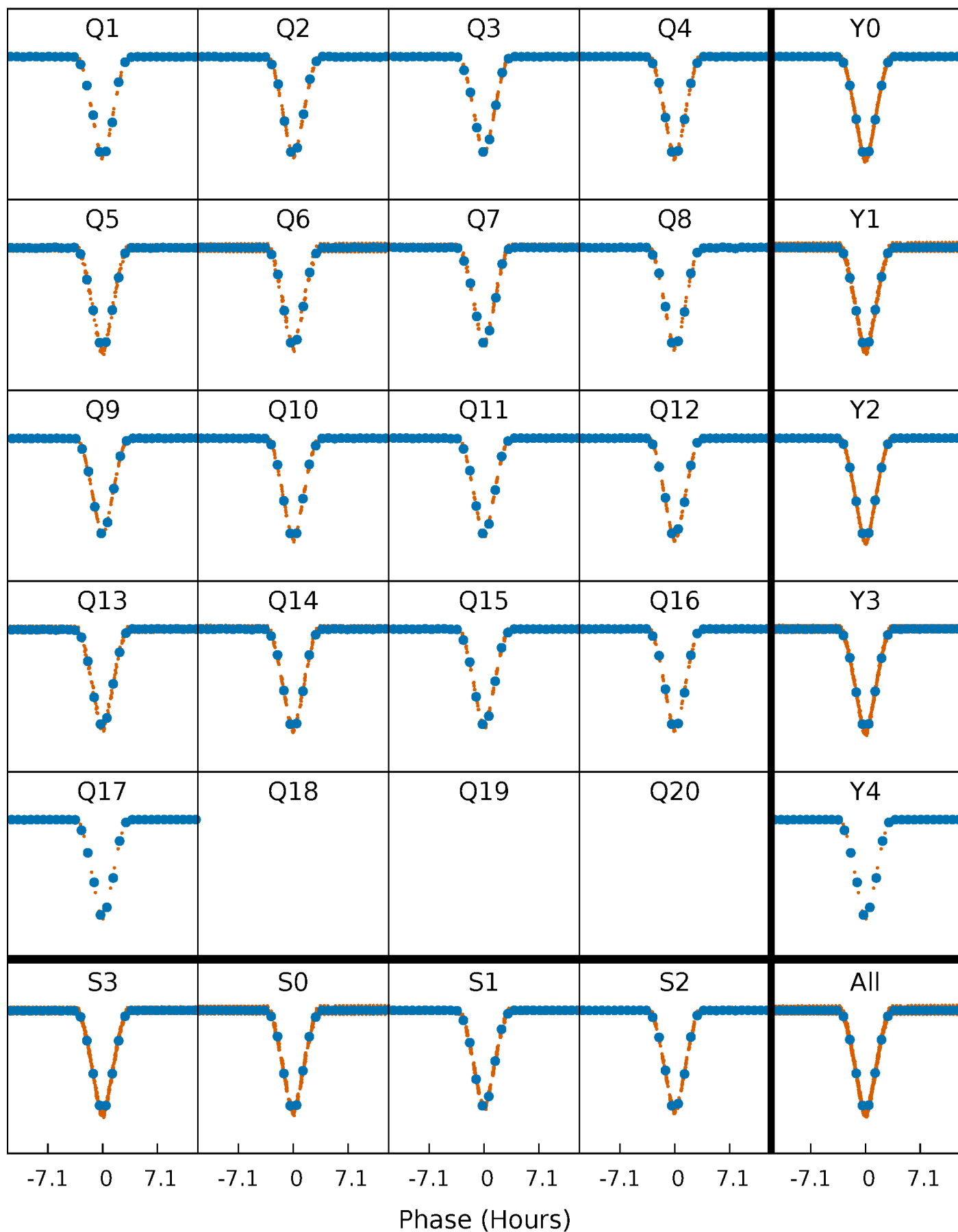


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



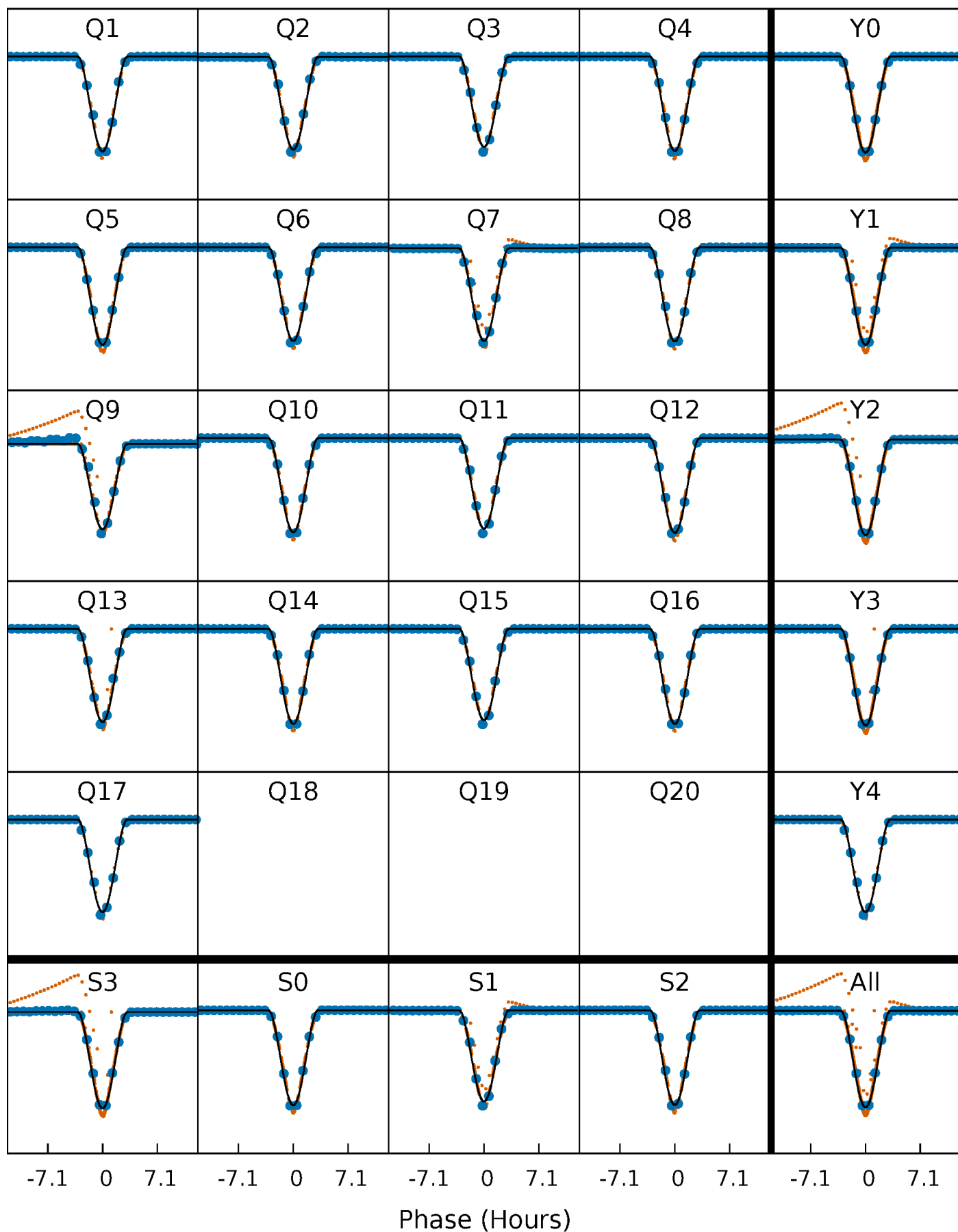
PDC Quarter-Phased Transit Curves

TCE 009509207-01 P= 14.199843 Days $T_0=135.747495$ (BKJD)



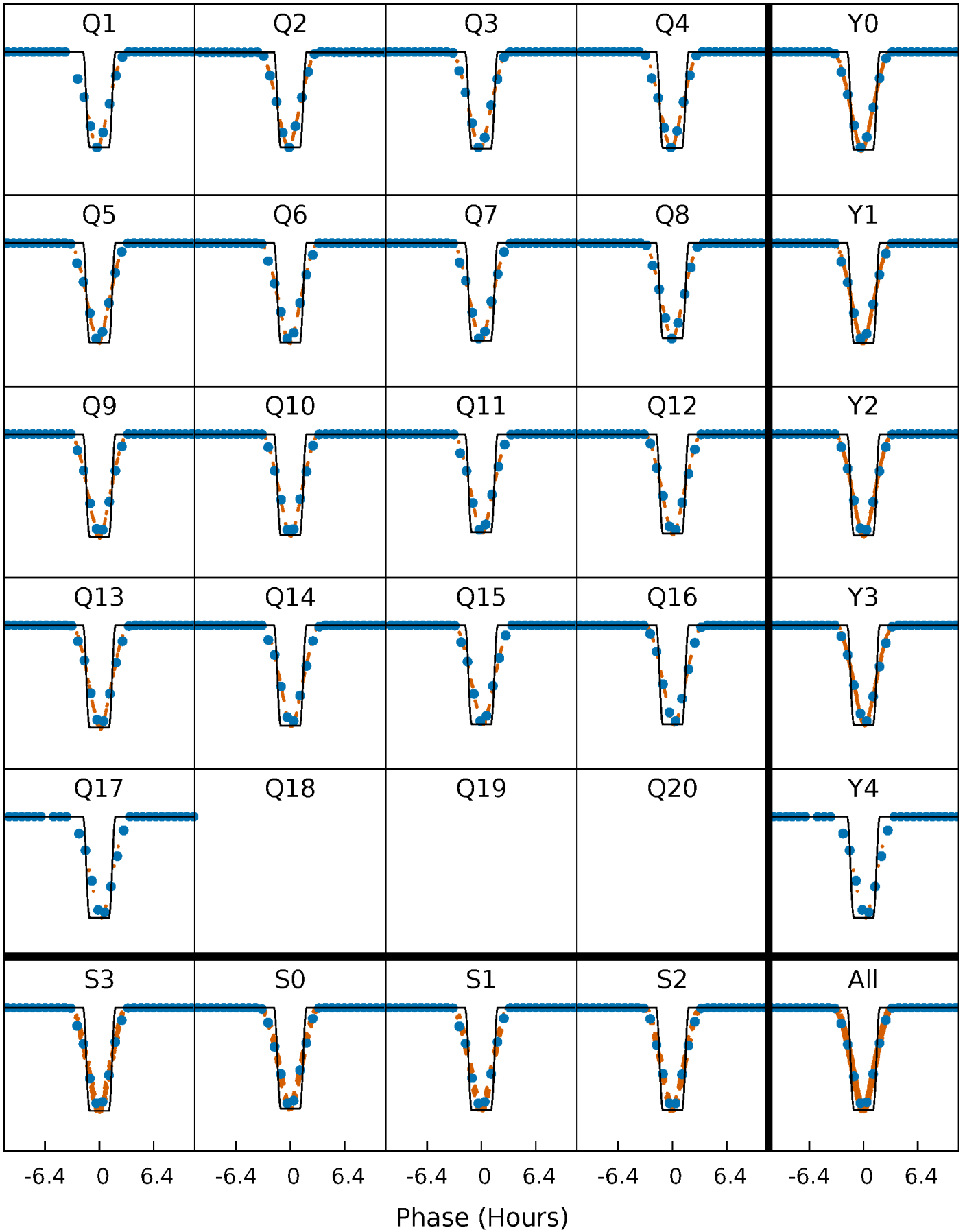
DV Quarter-Phased Transit Curves

TCE 009509207-01 P= 14.199843 Days $T_0=135.747495$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

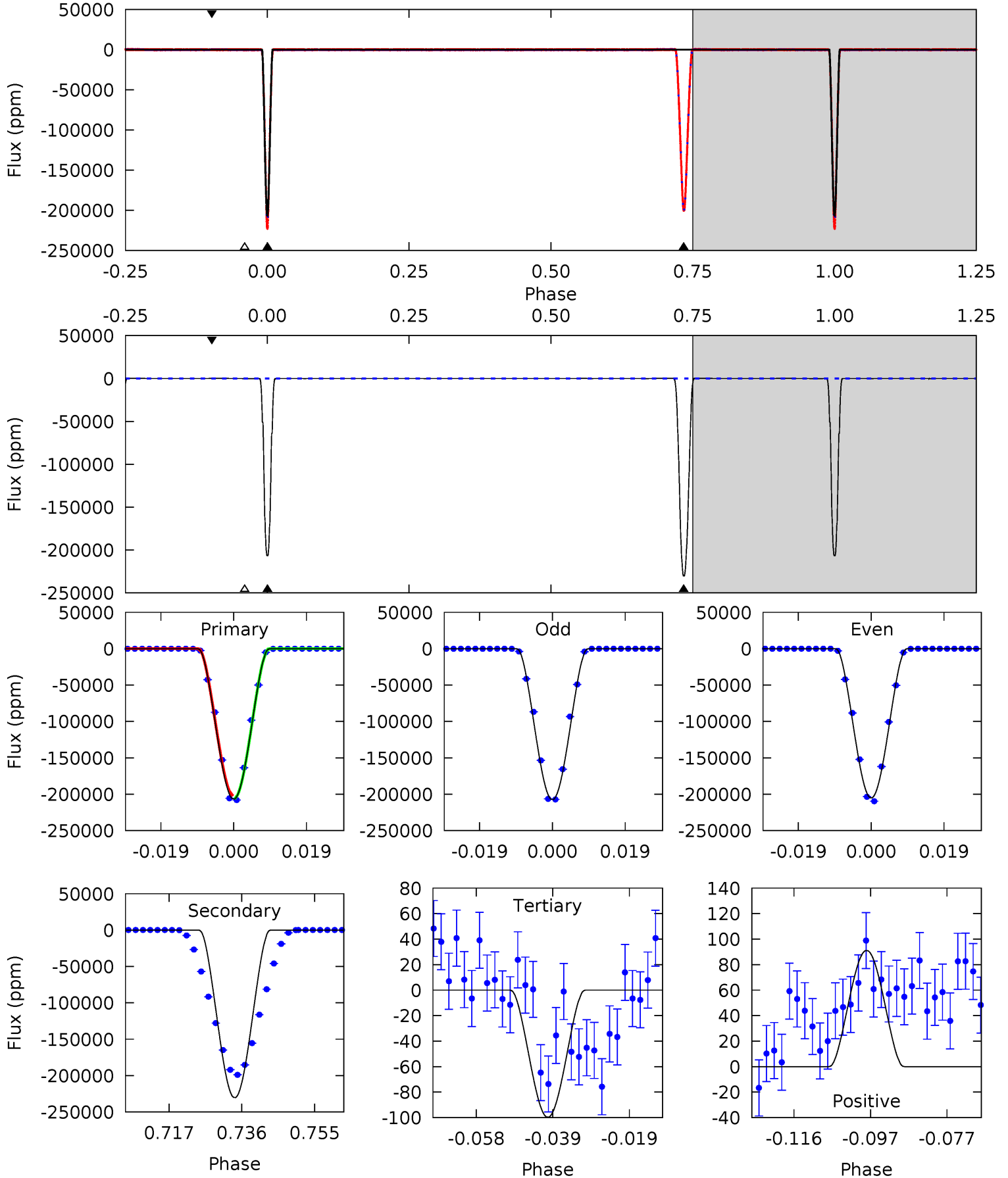
TCE 009509207-01 P= 14.199649 Days $T_0=135.758311$ (BKJD)



DV Model-Shift Uniqueness Test

009509207-01, P = 14.199843 Days, E = 121.547652 Days

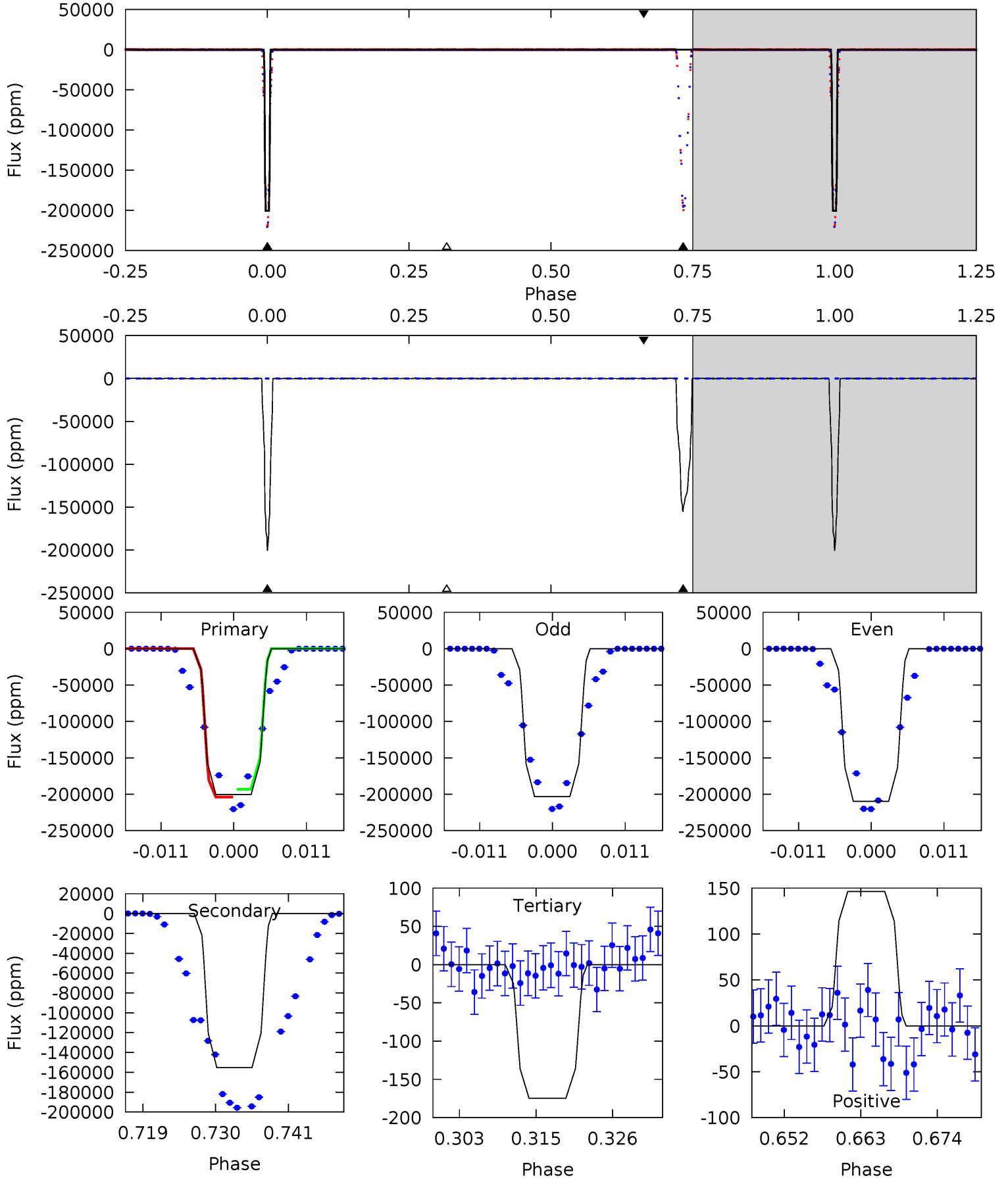
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27498	30649	13.3	12.1	4.90	2.34	6.74	27485	27486	30635	30636	154.1	0.99	0.00	0



Alt Model-Shift Uniqueness Test

009509207-01, P = 14.199649 Days, E = 121.558662 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4640	3592	4.04	3.39	5.00	2.54	17.8	4636	4637	3588	3589	30.8	1.00	0.00	0



Stellar Parameters For KIC 009509207

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5864^{+176}_{-193}	$4.139^{+0.299}_{-0.161}$	$-0.060^{+0.300}_{-0.300}$	$1.414^{+0.366}_{-0.447}$	$1.005^{+0.152}_{-0.124}$	$0.501^{+0.883}_{-0.228}$
	+3%/-3%	+7%/-4%	+500%/-500%	+26%/-32%	+15%/-12%	+176%/-46%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009509207-01 / KOI 7181.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-230115 ± 8	$84.93^{+13.35}_{-15.73}$	1258^{+99}_{-116}	5842^{+188}_{-197}	310^{+139}_{-78}
Alt.	-155289 ± 43	$72.87^{+10.97}_{-13.45}$	1256^{+92}_{-113}	5583^{+189}_{-206}	256^{+119}_{-60}

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 $A_{obs} \gg 1.0$

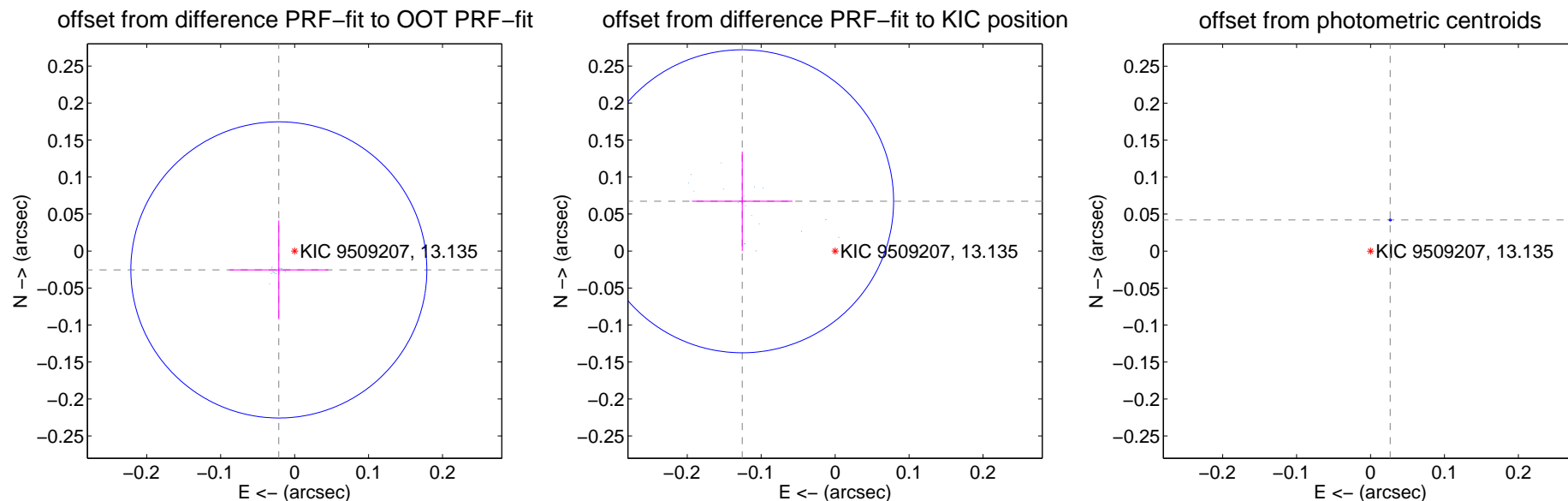
DV Centroid Data

Supplemental centroid analysis for 009509207-01. Kepler magnitude: 13.13. Transit SNR 8229.19

There are 17 quarters with good PRF difference image offsets

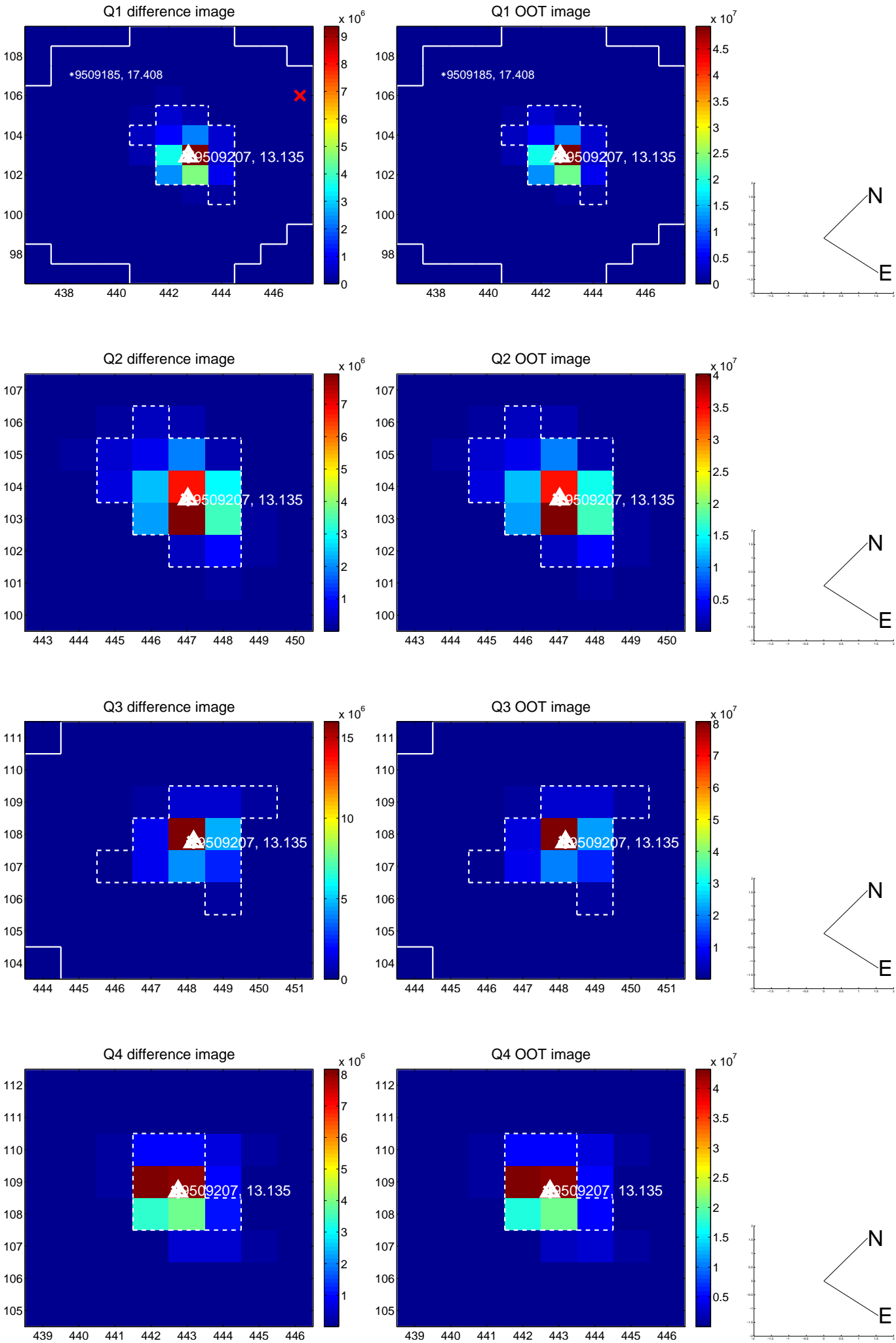
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.033 ± 0.067	0.50	0.021 ± 0.067	-0.026 ± 0.067
PRF-fit source offset from KIC position	0.143 ± 0.068	2.09	0.126 ± 0.068	0.067 ± 0.067
photometric centroid source offset	0.05 ± 0.00	110.57	-0.03 ± 0.00	0.04 ± 0.00

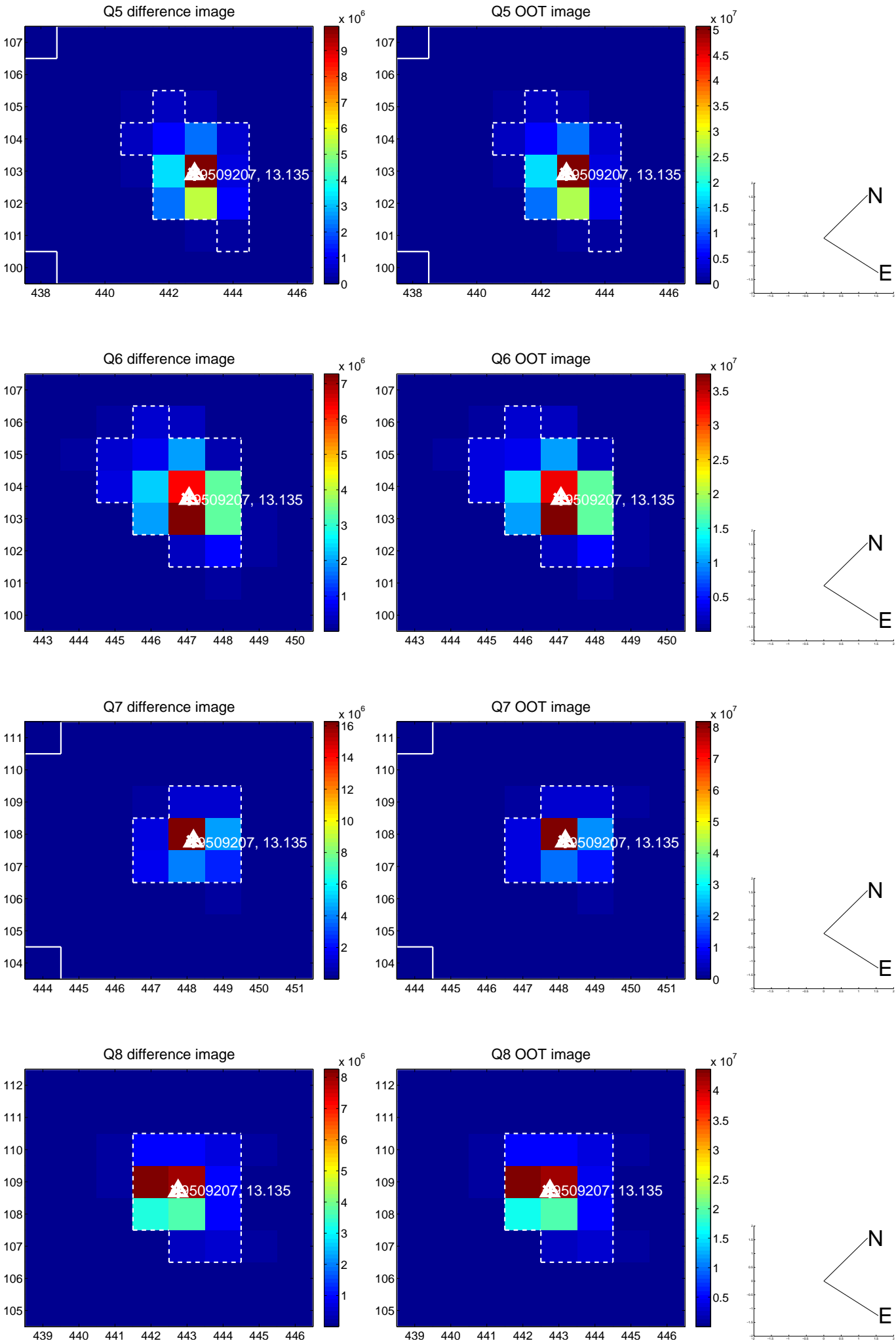


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

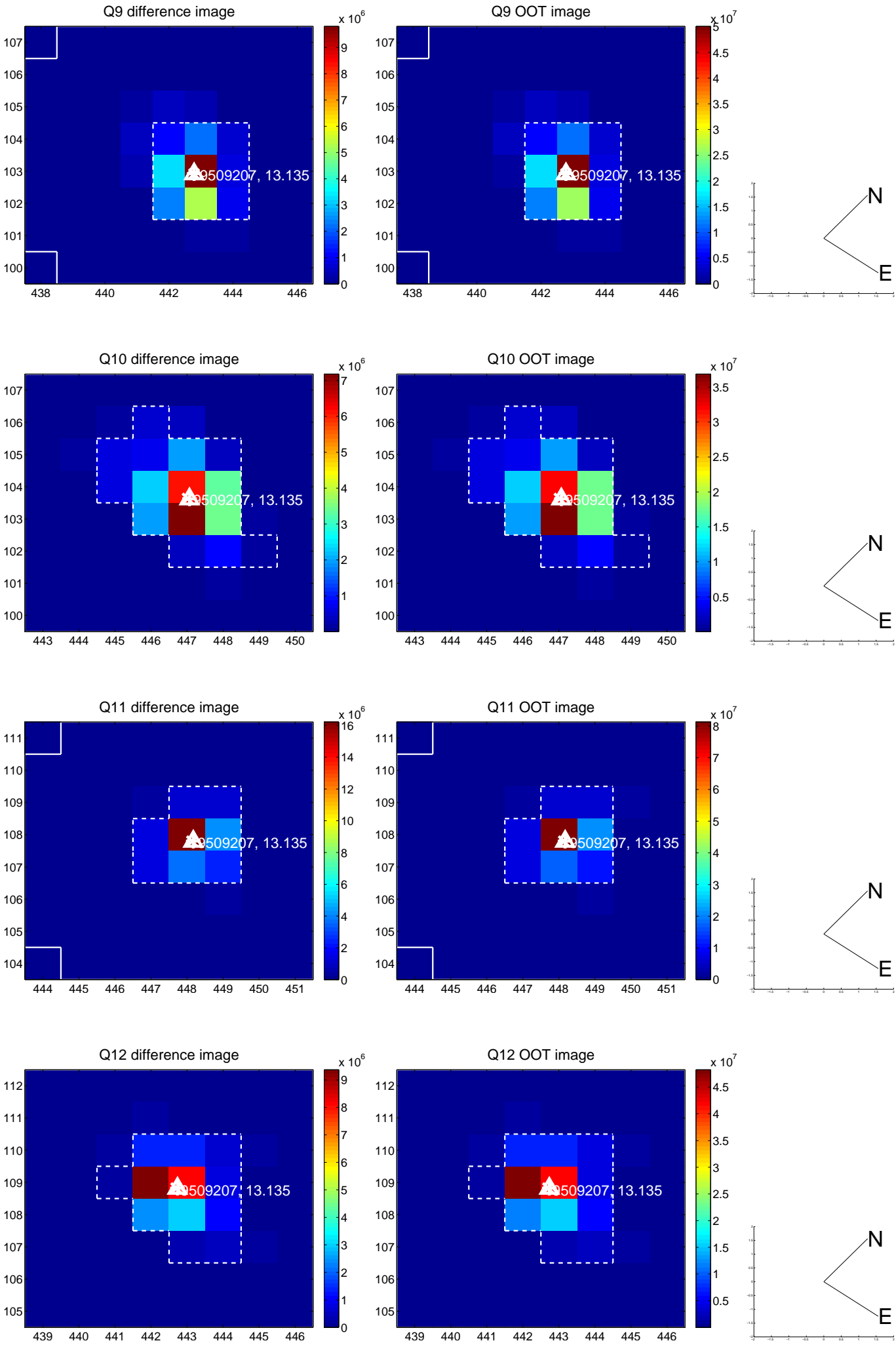
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



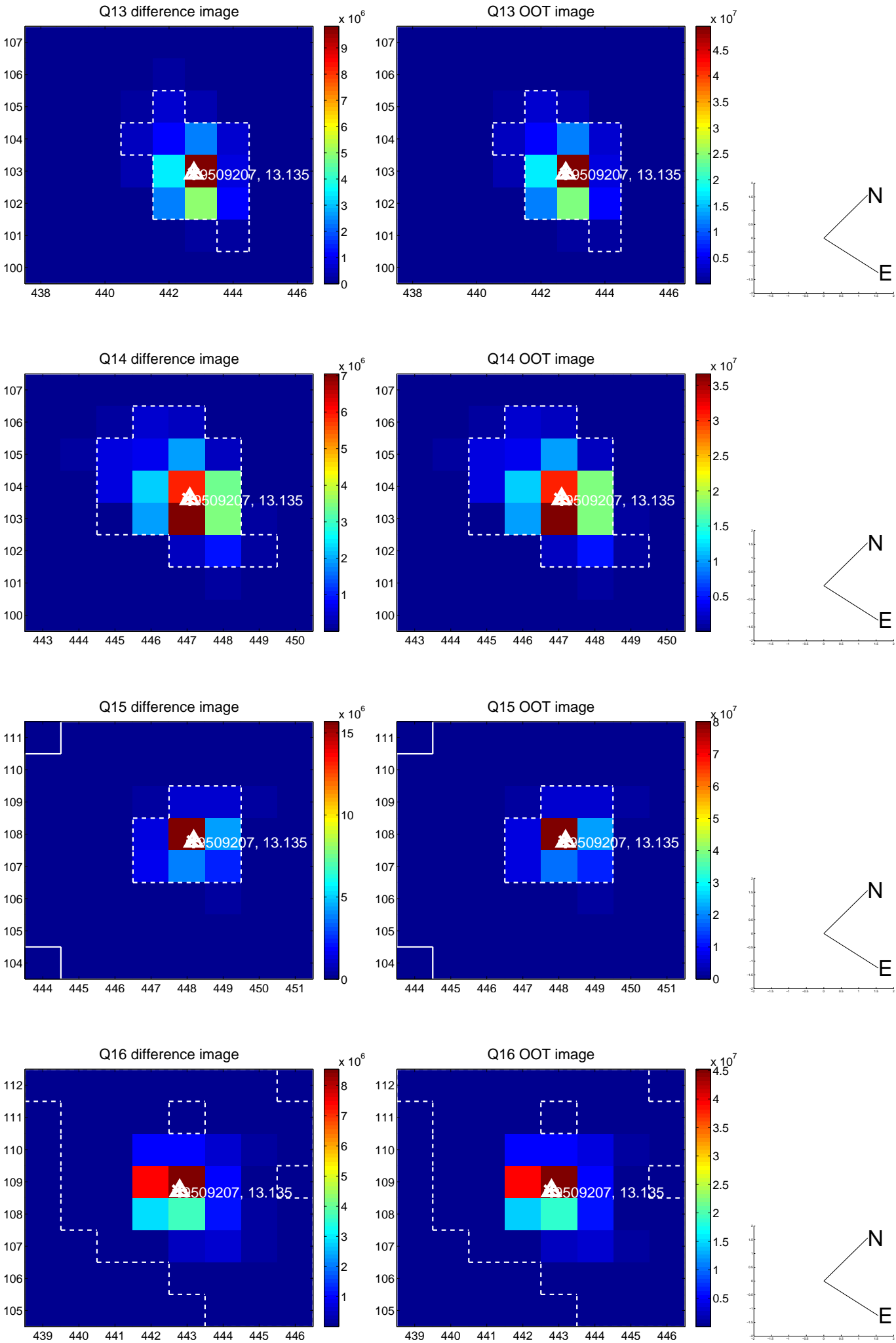
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



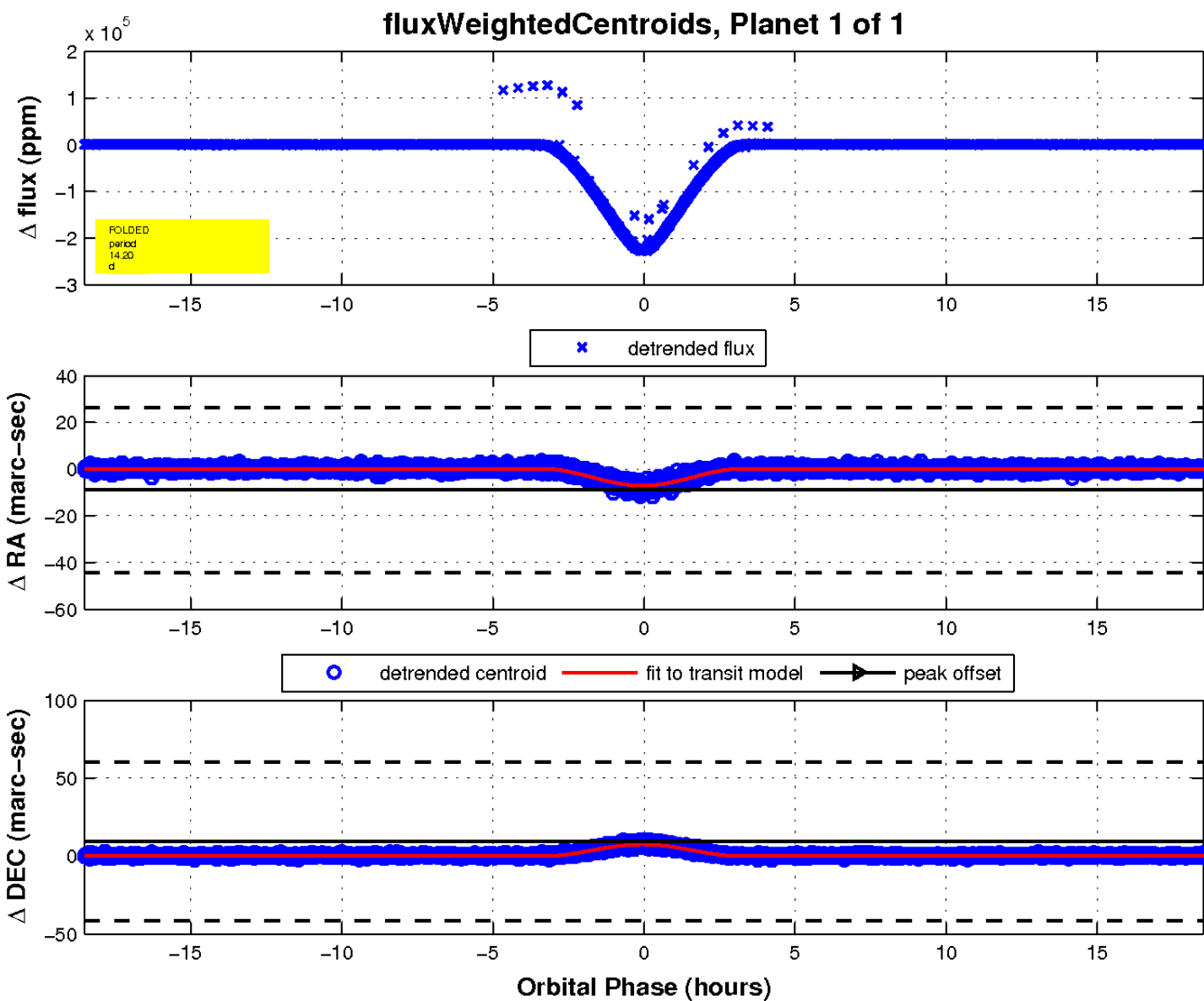
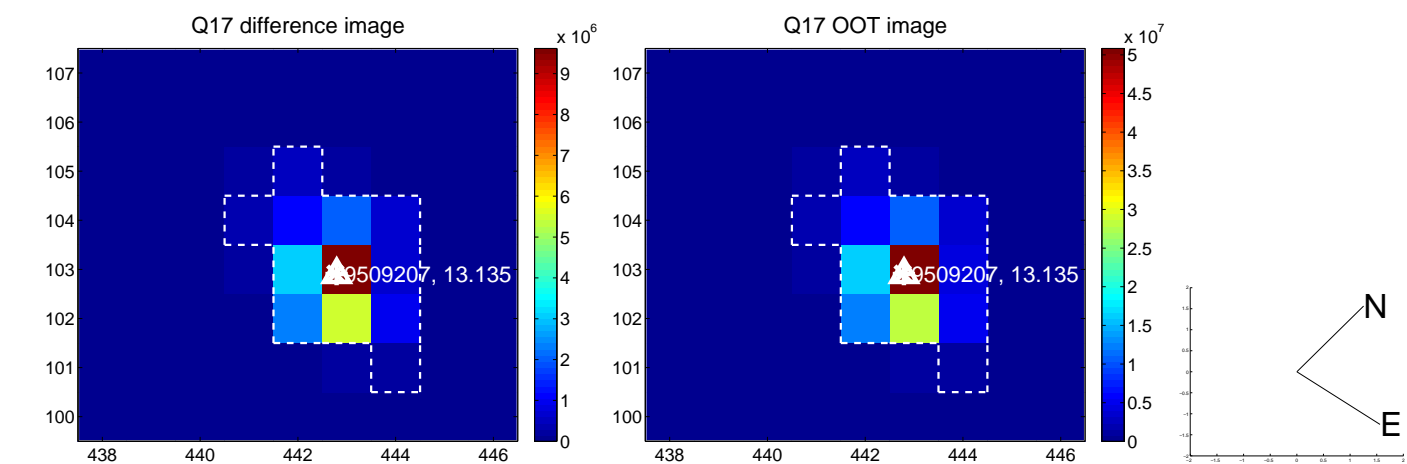
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UKIRT Image

Declination

