

KIC 004042417

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})
004042417-01	OBS	No	0.622343	132.041998	343.8	7.468	131.8	24.5	0.74	4737	1.95	1425.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004042417-01	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.

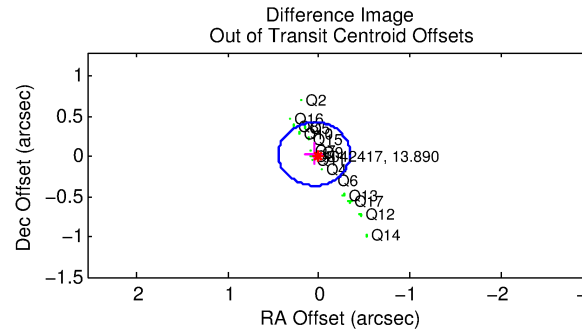
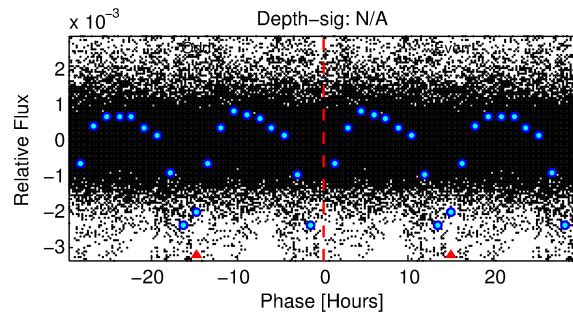
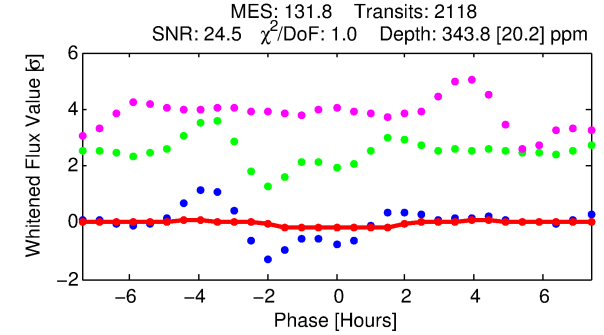
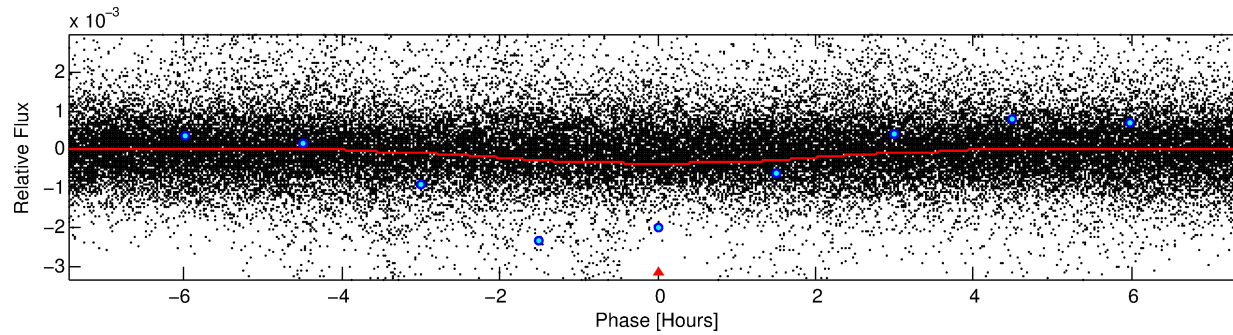
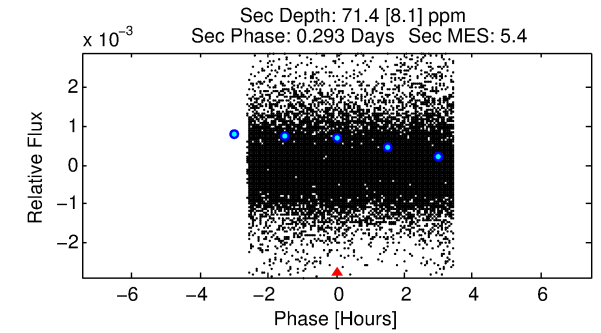
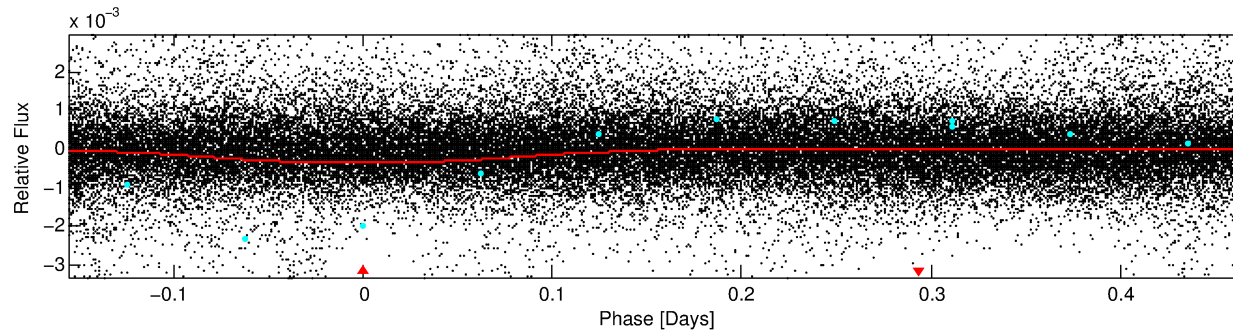
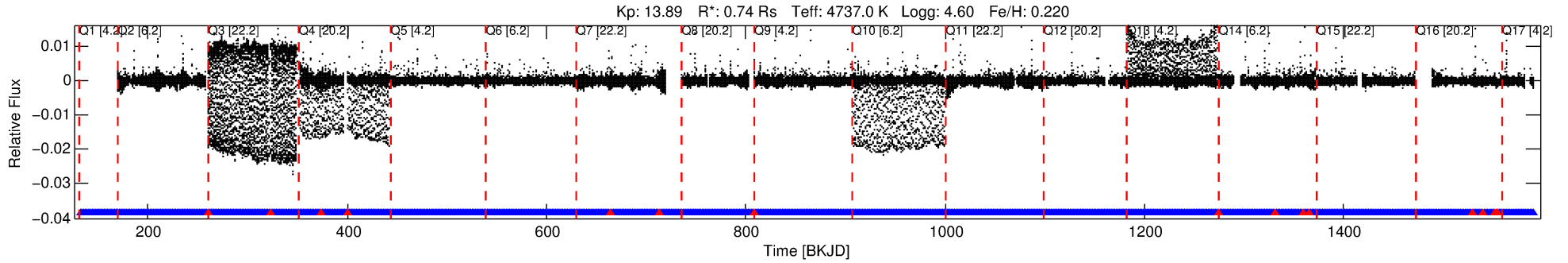
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004042417-01

No Significant Match Found

DV One-Page Summary

KIC: 4042417 Candidate: 1 of 1 Period: 0.622 d



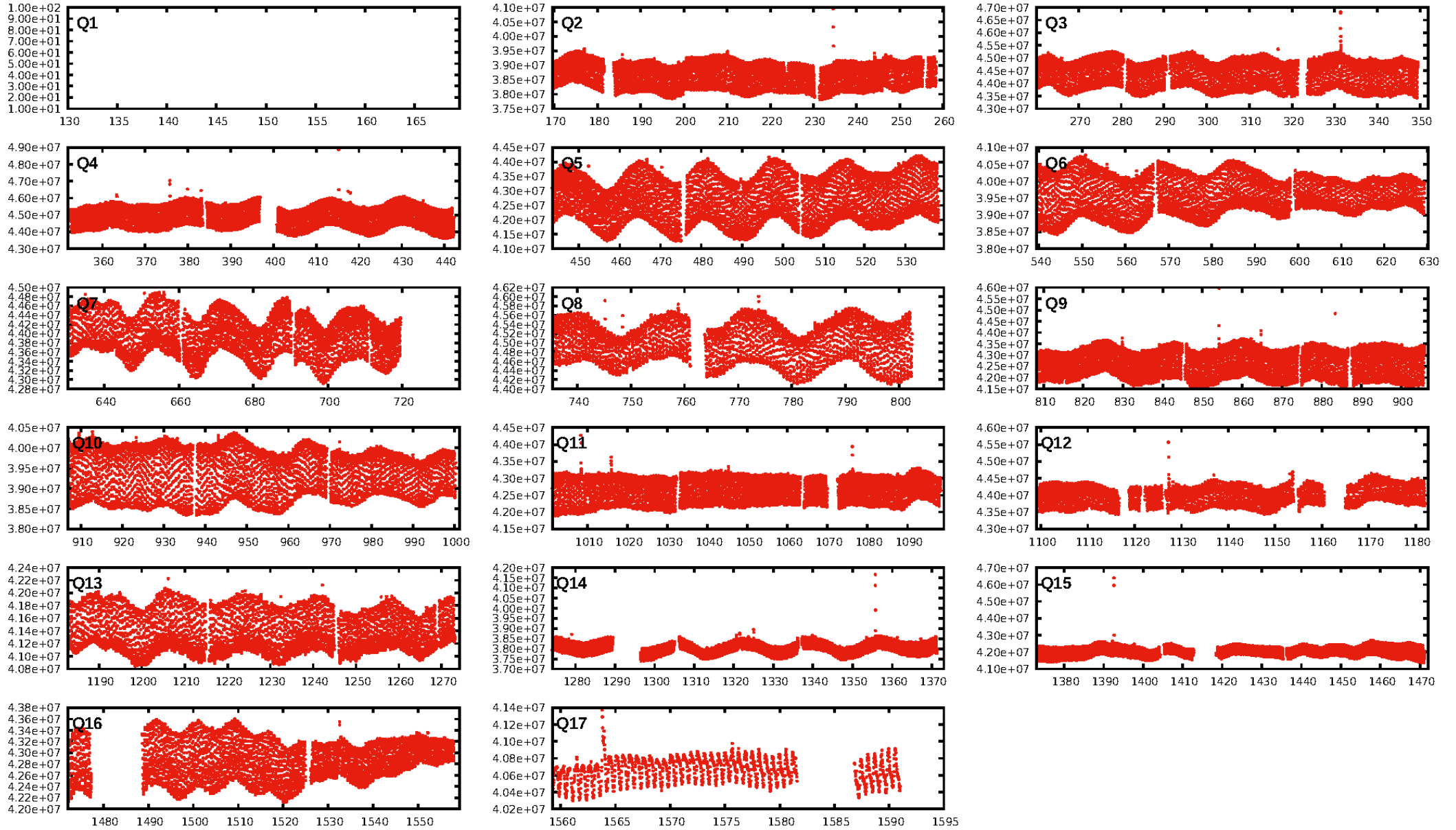
DV Fit Results:

Period = 0.62234 [0.00000] d
Epoch = 132.0420 [0.0019] BKJD
Rp/R* = 0.0240 [0.0007]
a/R* = 1.01 [0.00]
b = 0.97 [0.00]
Seff = 1425.34 [237.86]
Teff = 1567 [65] K
Rp = 1.95 [0.15] Re
a = 0.0132 [0.0008] AU
Ag = 1.82 [0.28] [2.93σ]
Teffp = 2812 [135] K [8.30σ]

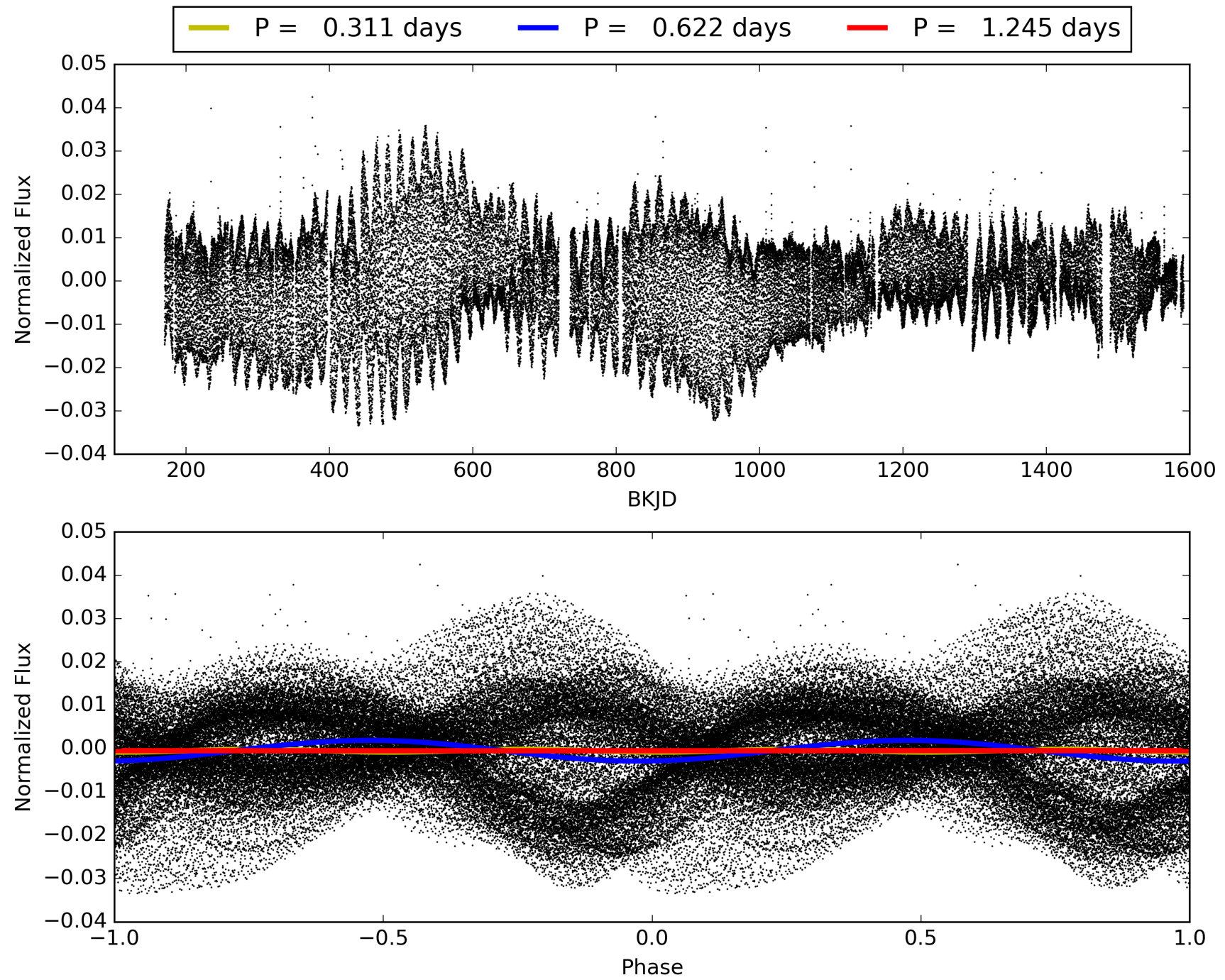
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [2058/2075]
GhostDiagnostic-chr: 1.609
Centroid-sig: 12.8%
Centroid-so: 0.332 arcsec [3.19σ]
OotOffset-rm: 0.062 arcsec [0.47σ]
KicOffset-rm: 0.114 arcsec [0.81σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 004042417-01, PDC Light Curves

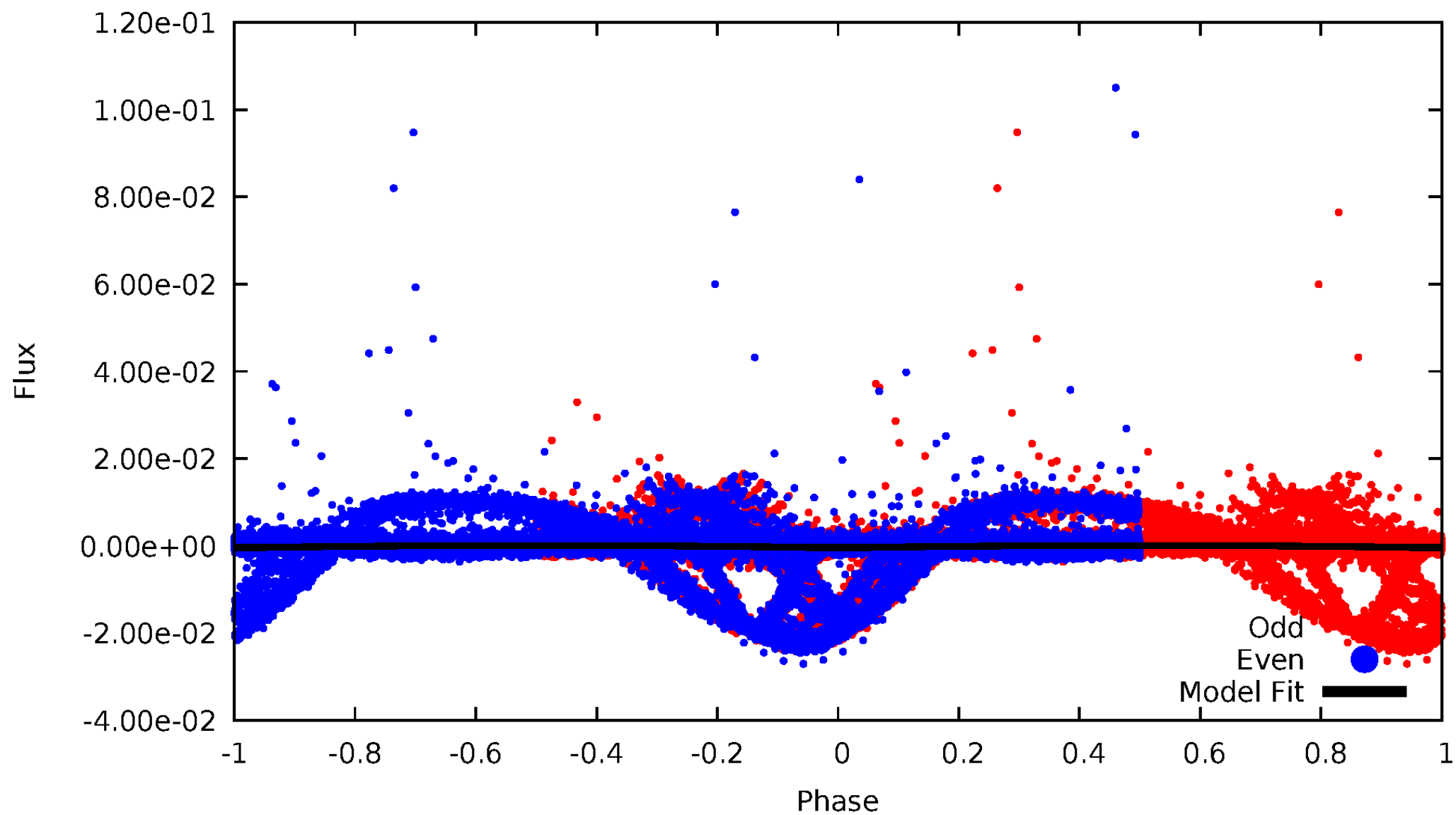


TCE 004042417-01



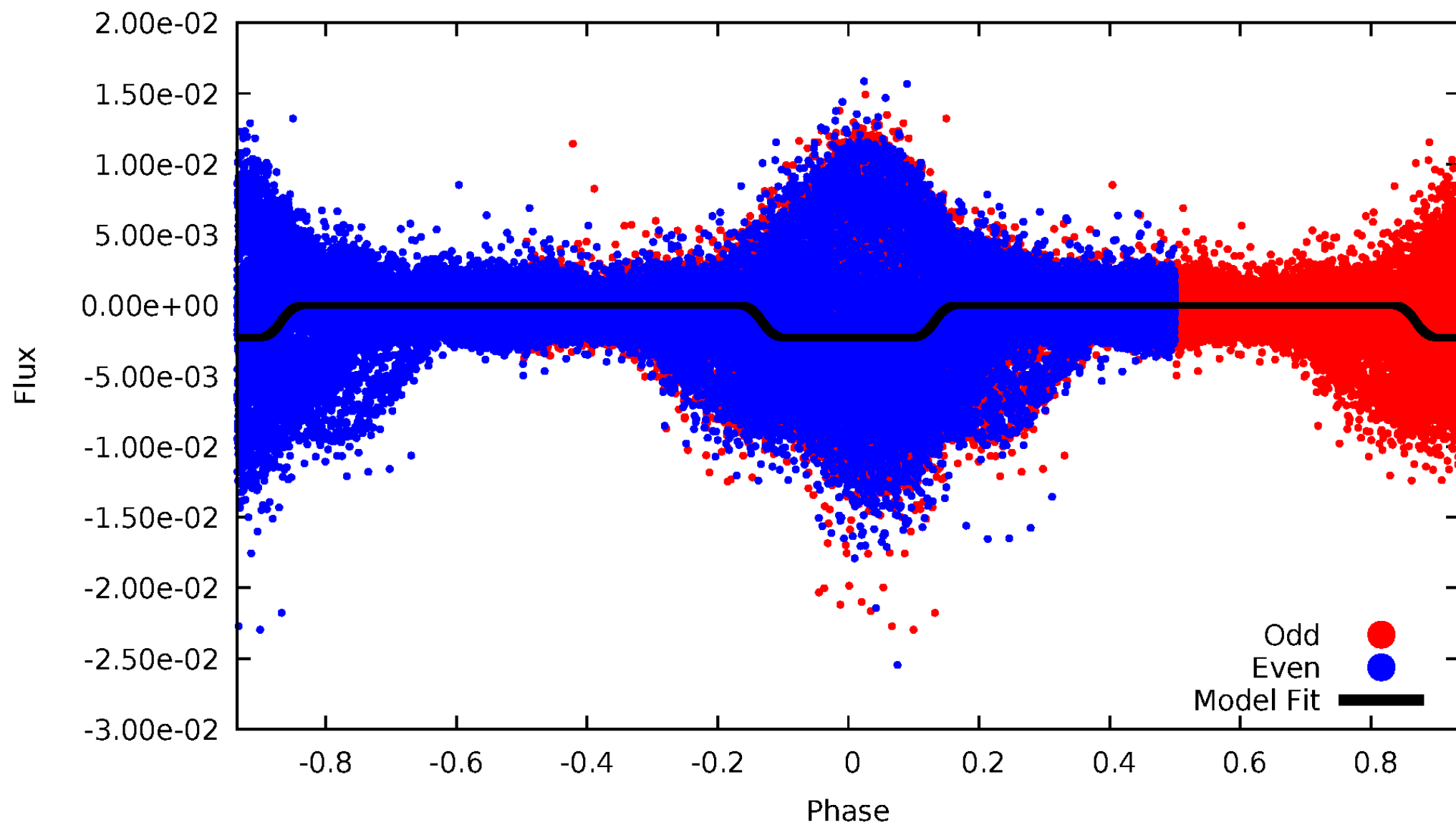
DV Odd/Even

TCE 004042417-01

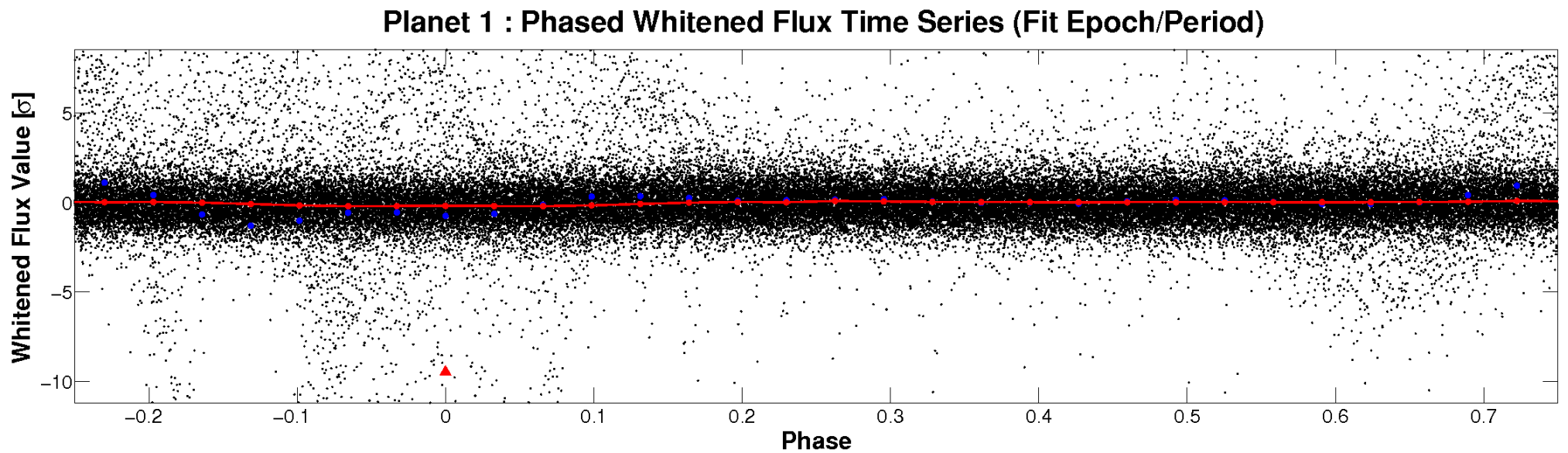
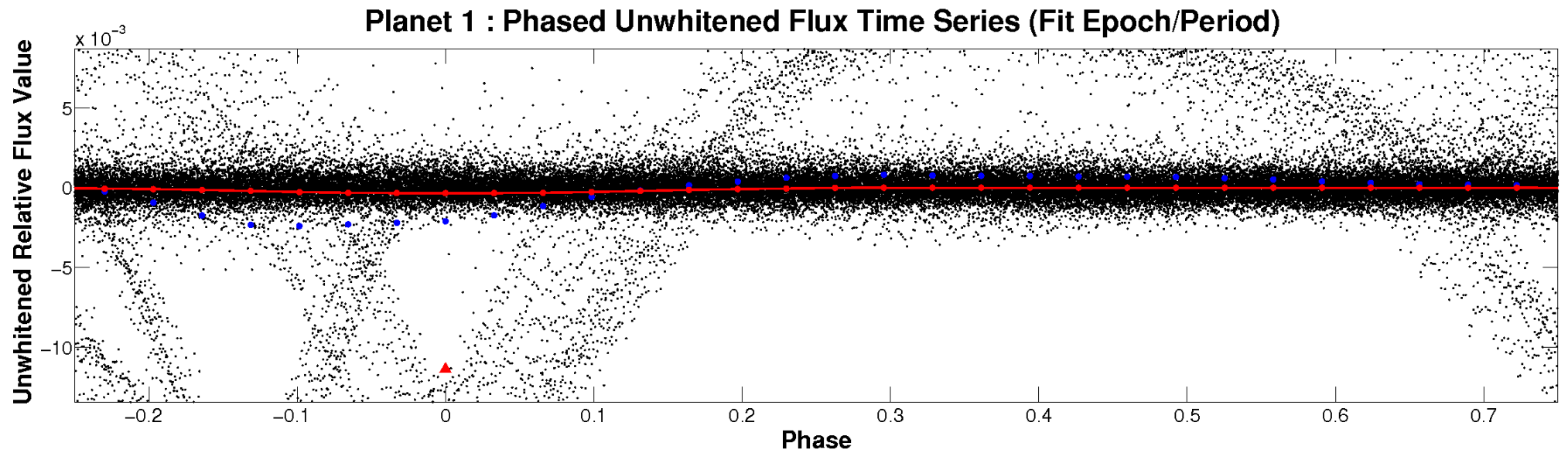


ALT Odd/Even

TCE 004042417-01

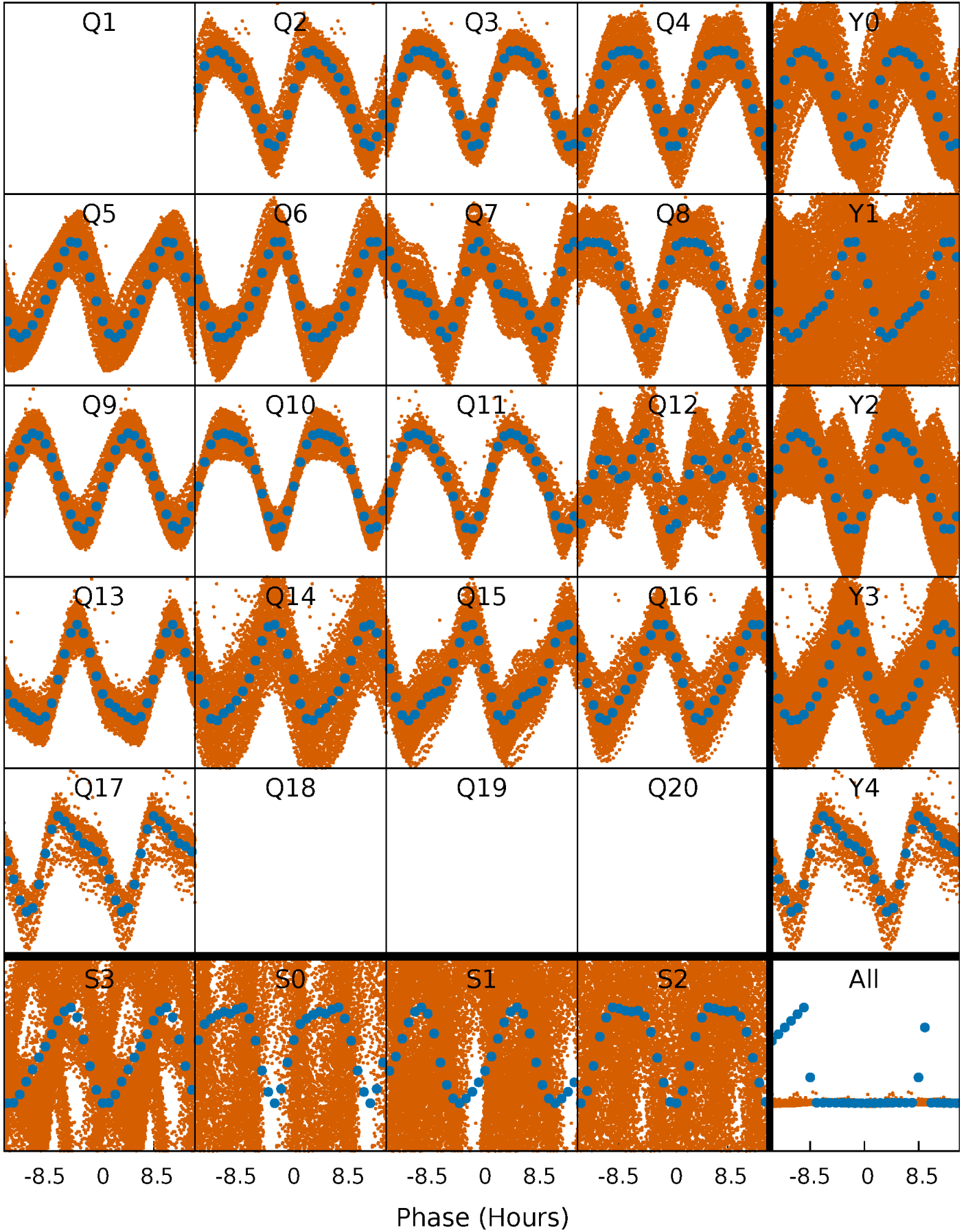


Non-Whitened Vs. Whitened Light Curve



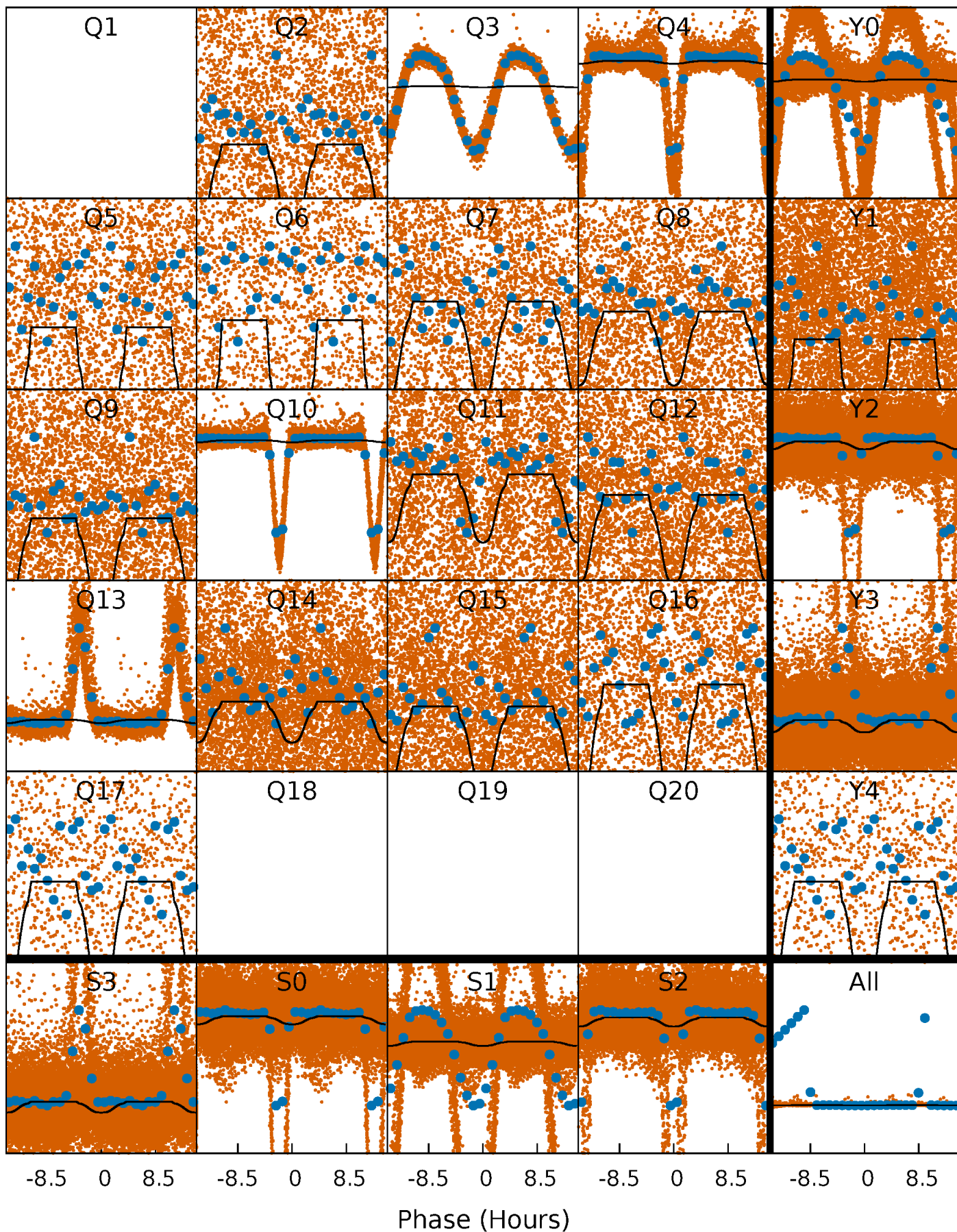
PDC Quarter-Phased Transit Curves

TCE 004042417-01 P= 0.622343 Days $T_0=132.041998$ (BKJD)



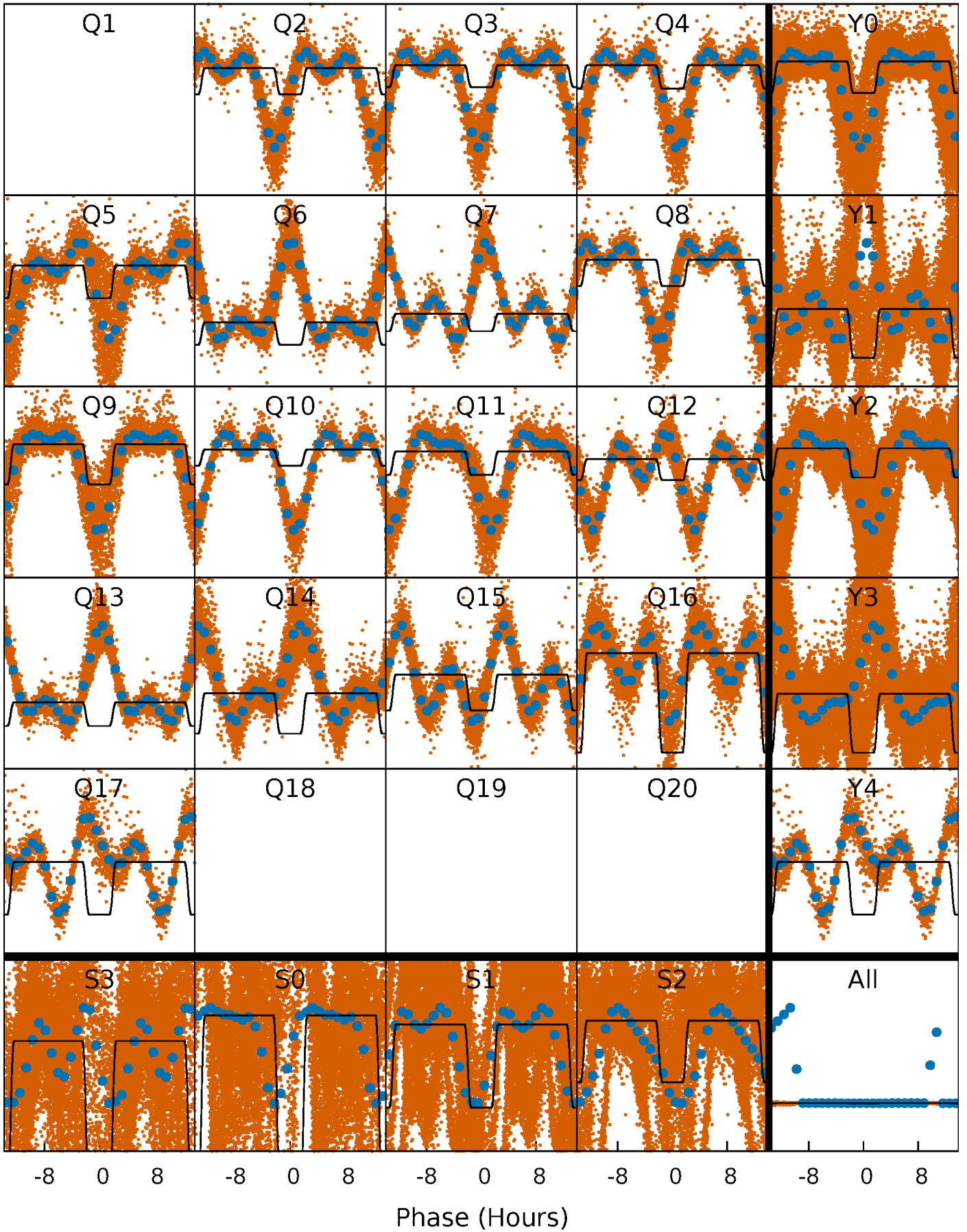
DV Quarter-Phased Transit Curves

TCE 004042417-01 P= 0.622343 Days $T_0=132.041998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

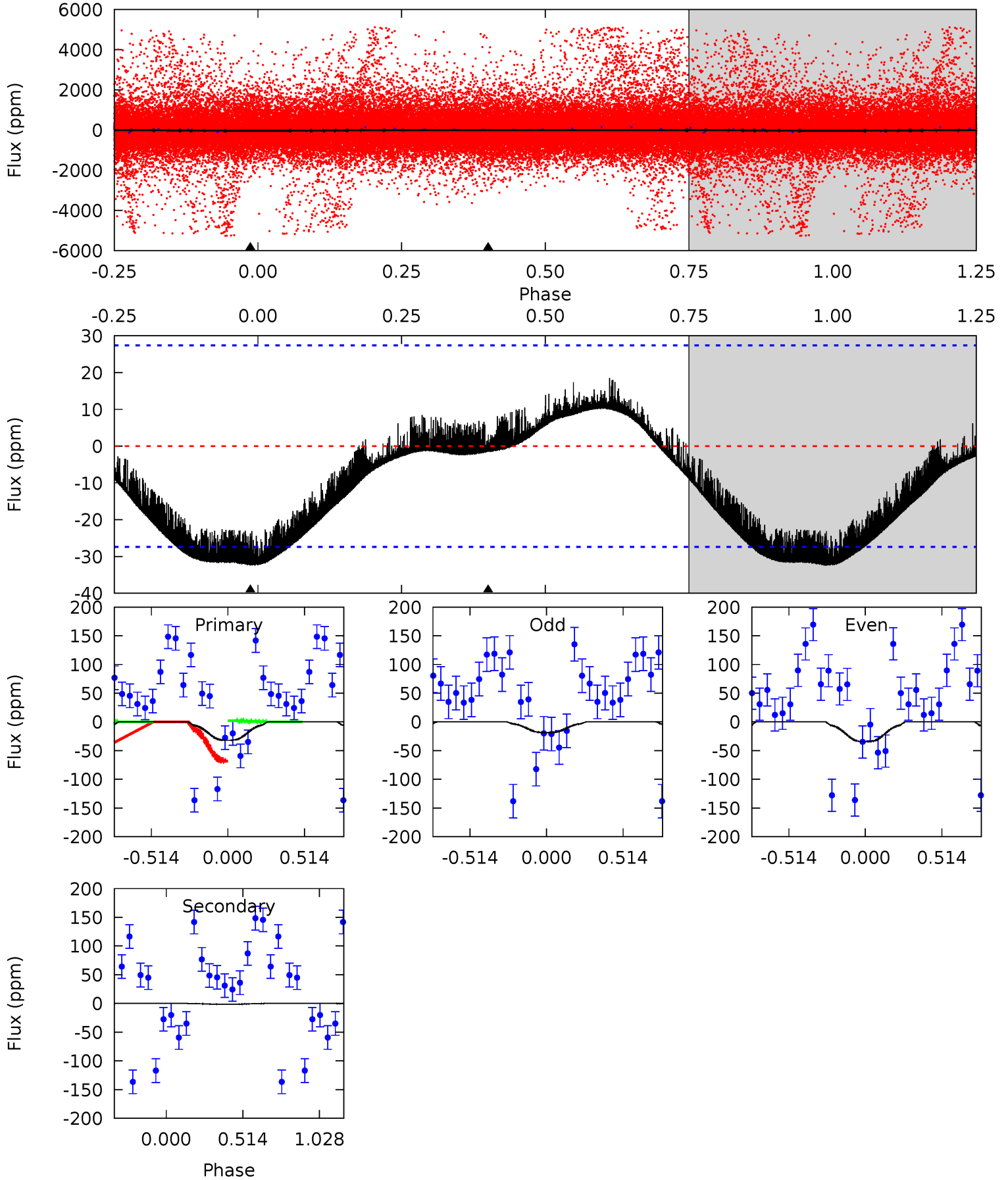
TCE 004042417-01 P= 0.622243 Days $T_0=132.056685$ (BKJD)



DV Model-Shift Uniqueness Test

004042417-01, P = 0.622343 Days, E = 132.041998 Days

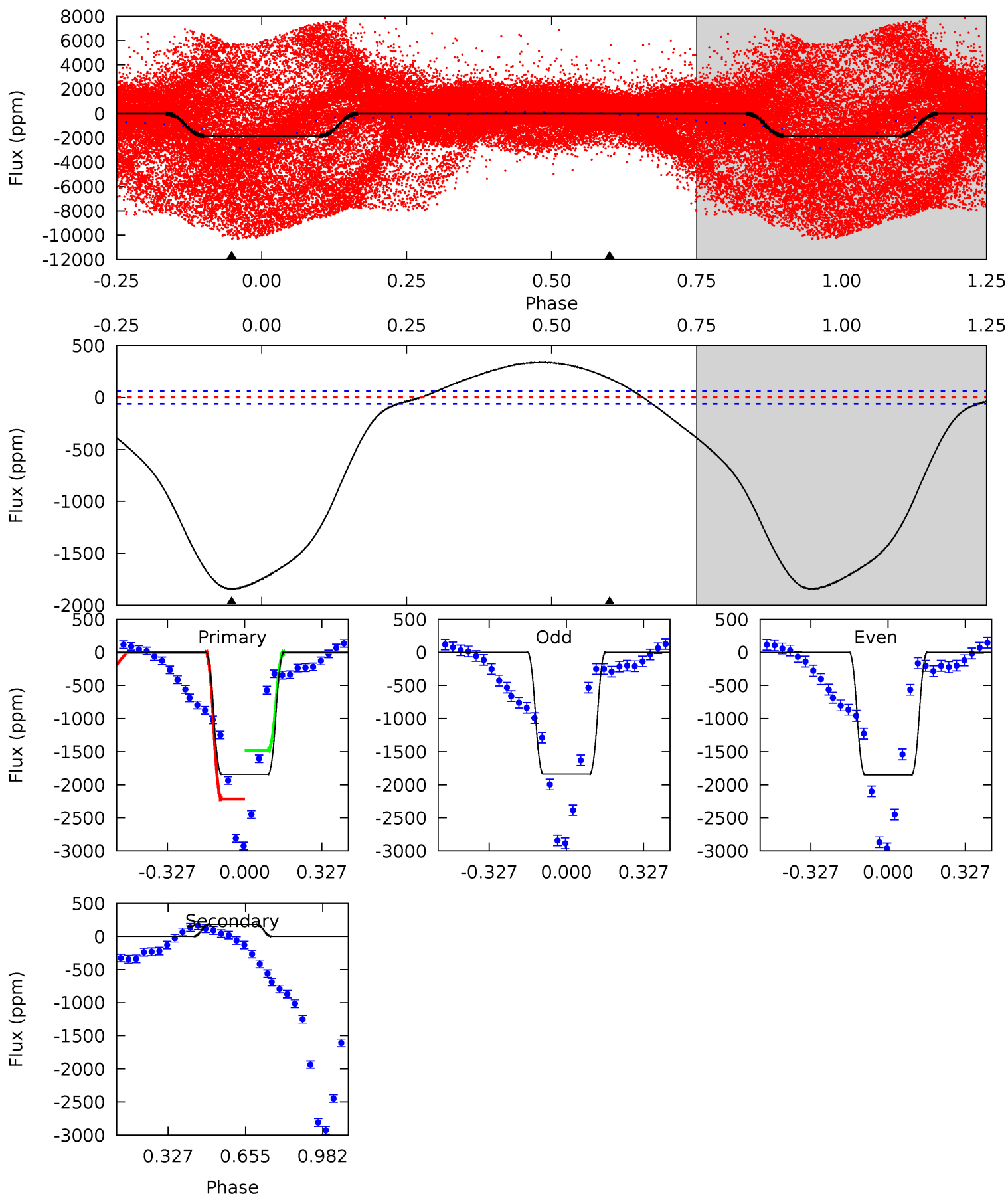
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.95	0.22	0	0	4.21	0.65	0.74	4.95	4.95	0.22	0.22	1.28	15.3	0.36	5.65



Alt Model-Shift Uniqueness Test

004042417-01, P = 0.622243 Days, E = 132.056685 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
126.4	-12.4	0	0	4.31	0.98	3.76	126.4	126.4	-12.4	-12.4	0.47	0.71	0.16	0



Stellar Parameters For KIC 004042417

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4737^{+170}_{-170}	$4.597^{+0.032}_{-0.046}$	$0.220^{+0.200}_{-0.300}$	$0.744^{+0.053}_{-0.053}$	$0.798^{+0.041}_{-0.070}$	$2.731^{+0.423}_{-0.403}$
	+4%/-4%	+1%/-1%	+91%/-136%	+7%/-7%	+5%/-9%	+15%/-15%
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 004042417-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1 ± 7	$1.96^{+0.10}_{-0.10}$	2199^{+78}_{-90}	-2529^{+294}_{-182}	$0.031^{+0.176}_{-0.161}$
Alt.	182 ± 15	$3.91^{+0.17}_{-0.17}$	2195^{+91}_{-89}	-3185^{+93}_{-91}	$-1.141^{+0.116}_{-0.126}$

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

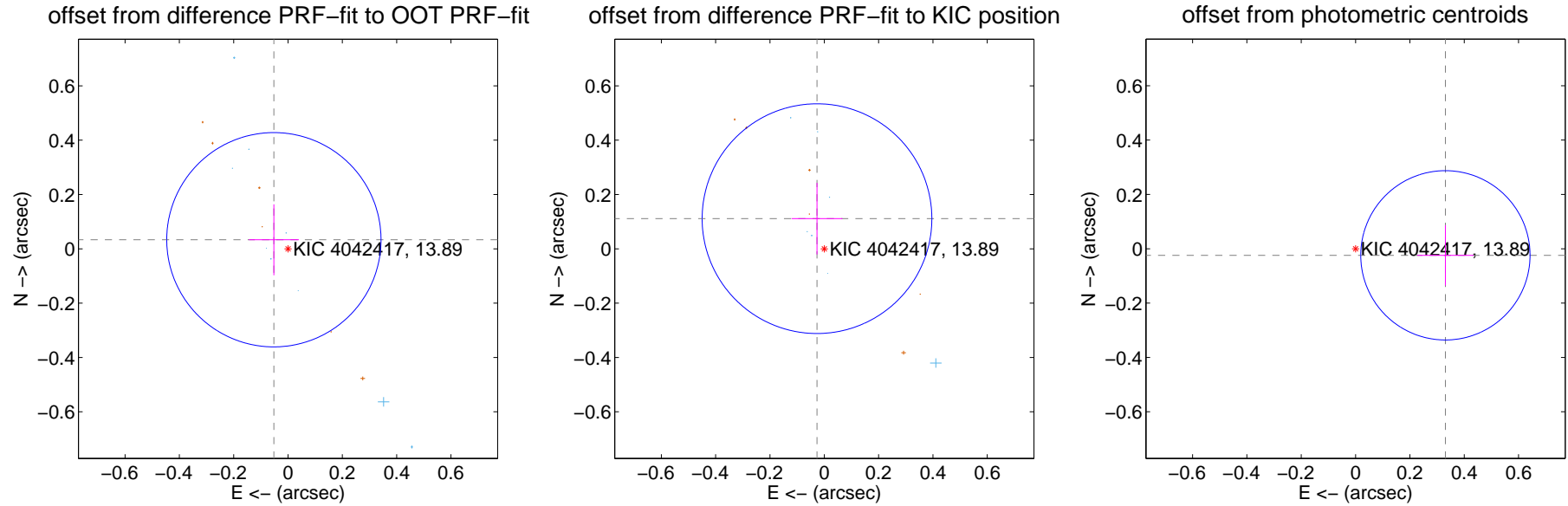
DV Centroid Data

Supplemental centroid analysis for 004042417-01. Kepler magnitude: 13.89. Transit SNR 24.49

There are 9 quarters with good PRF difference image offsets

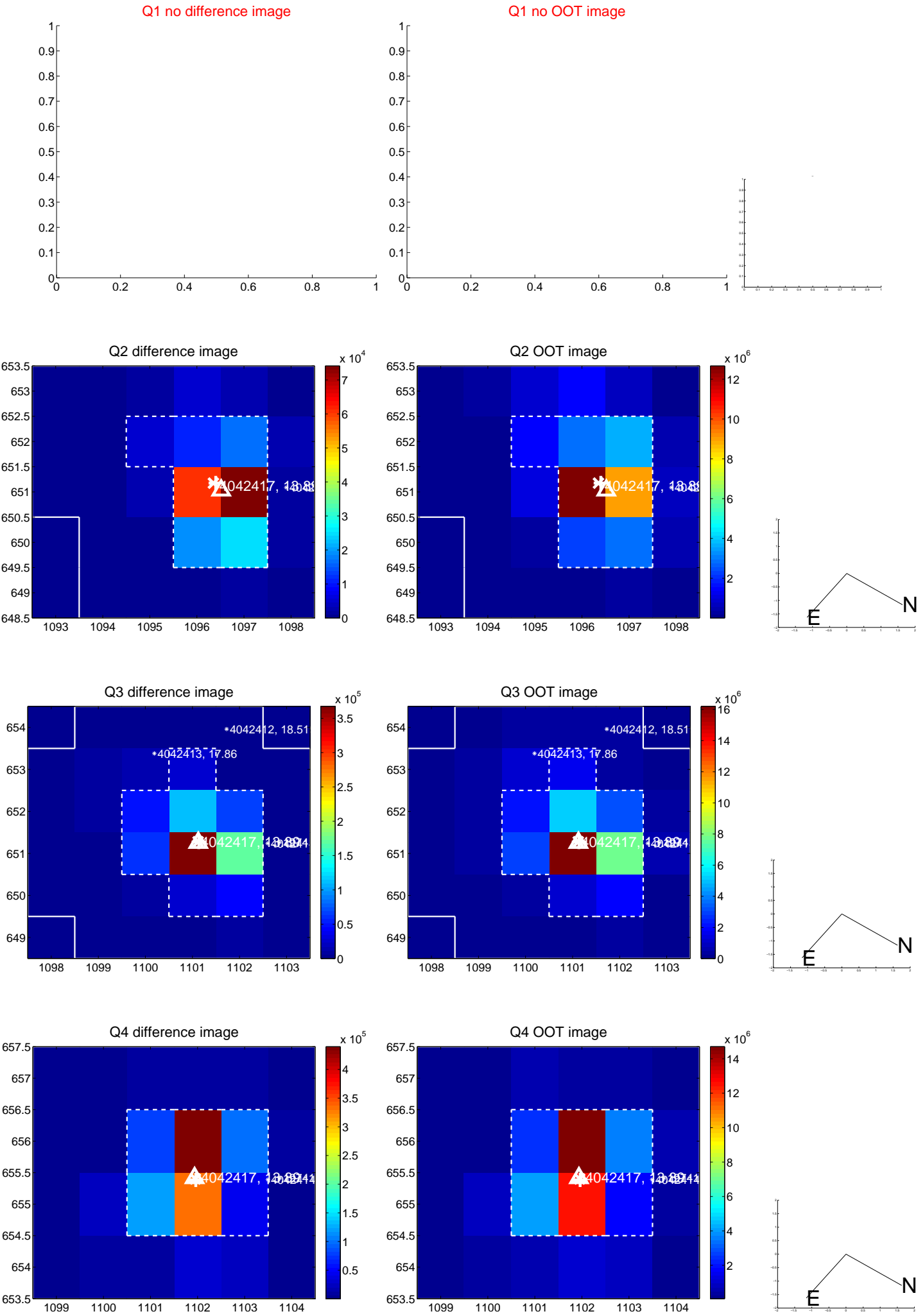
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.062 ± 0.131	0.47	0.052 ± 0.092	0.033 ± 0.131
PRF-fit source offset from KIC position	0.114 ± 0.141	0.81	0.027 ± 0.093	0.111 ± 0.132
photometric centroid source offset	0.33 ± 0.10	3.19	-0.33 ± 0.10	-0.02 ± 0.11

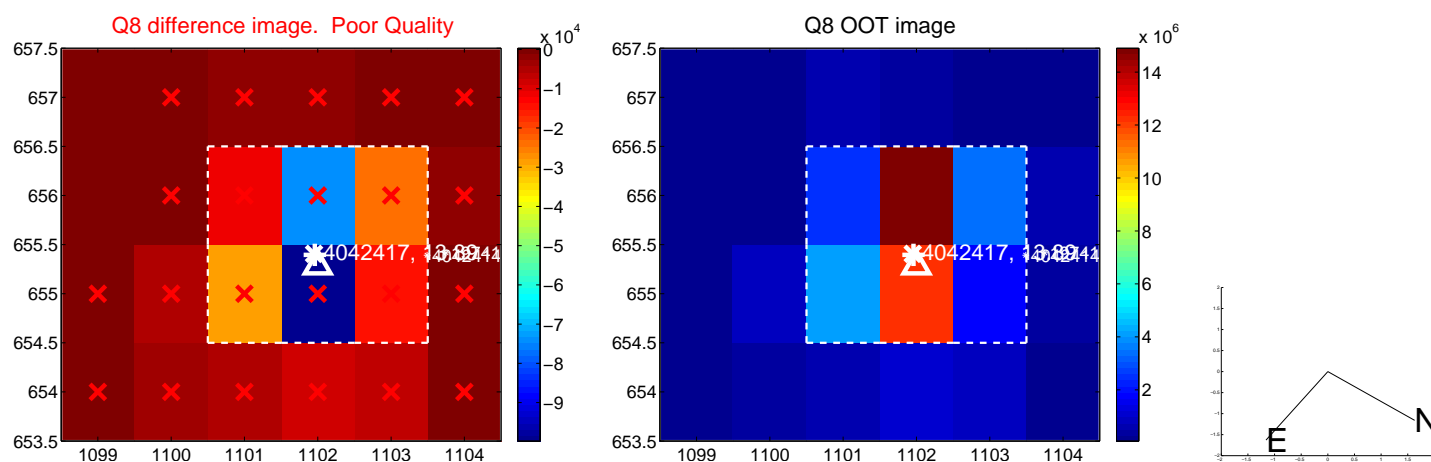
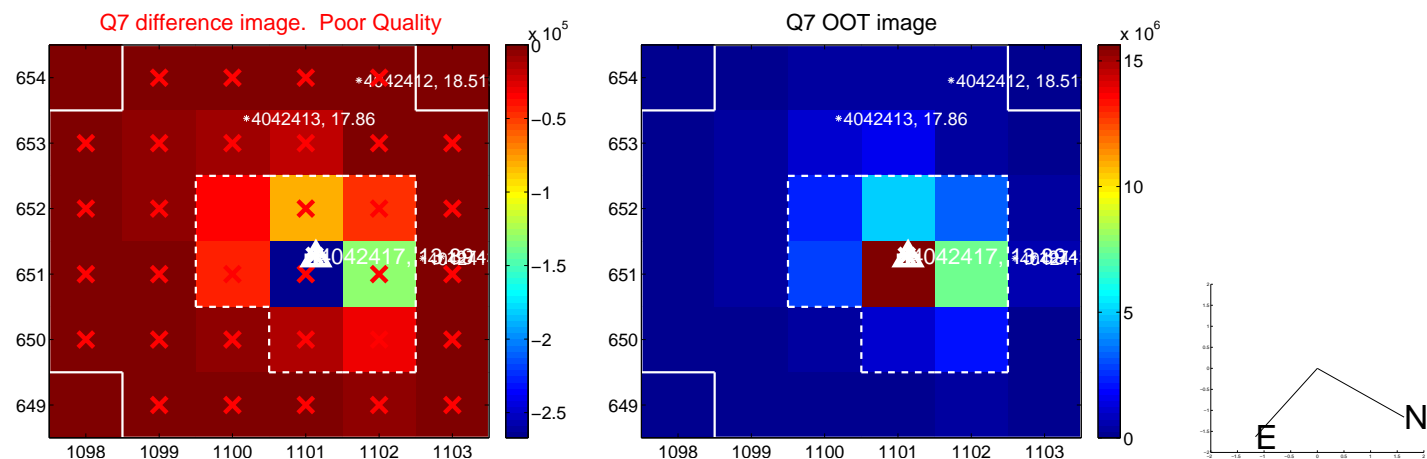
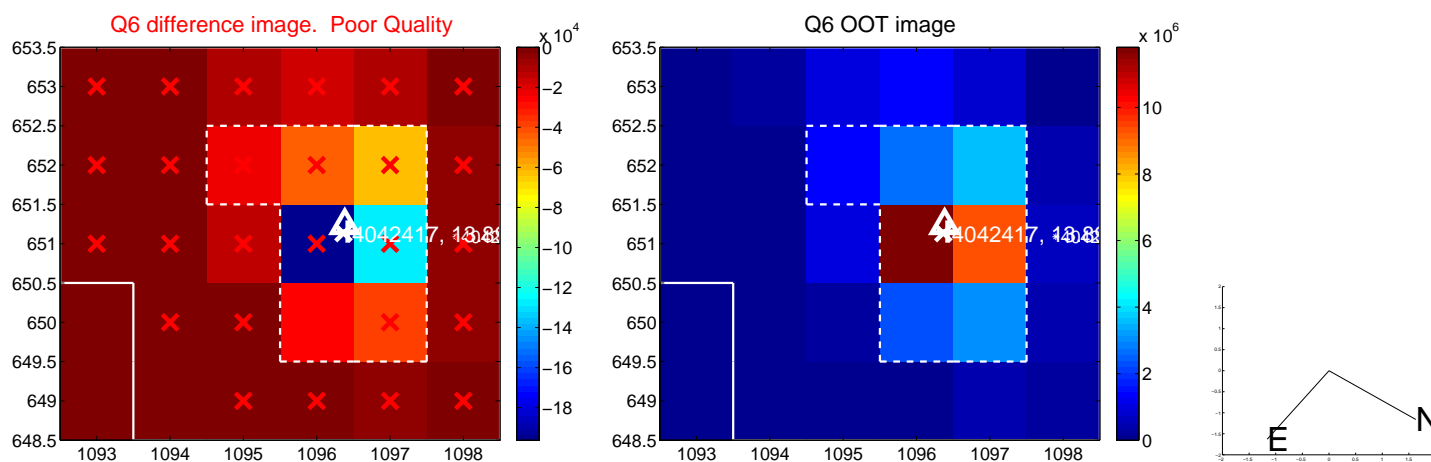
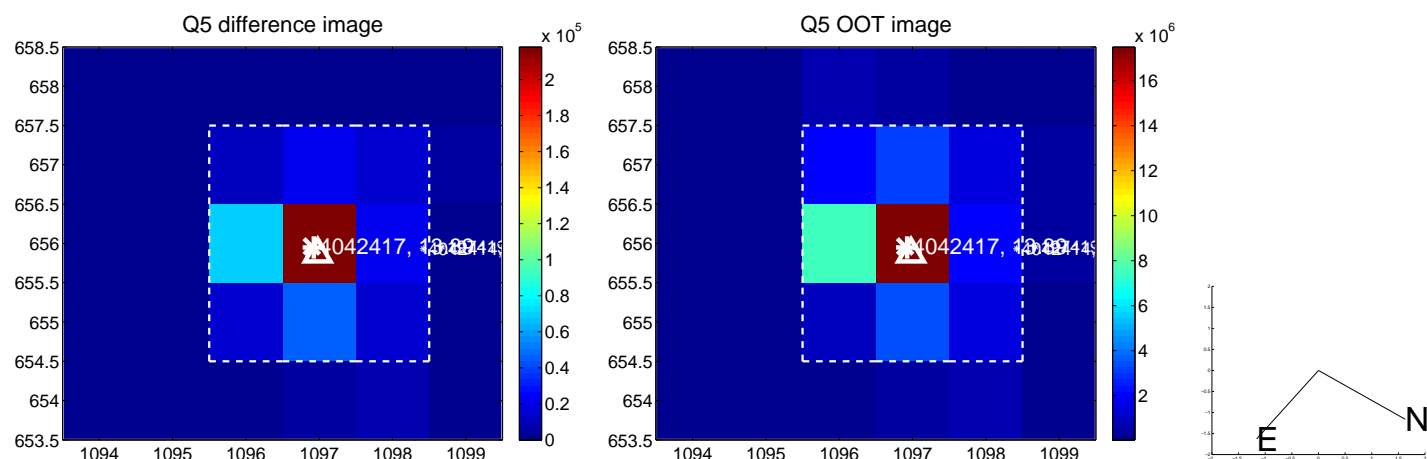


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

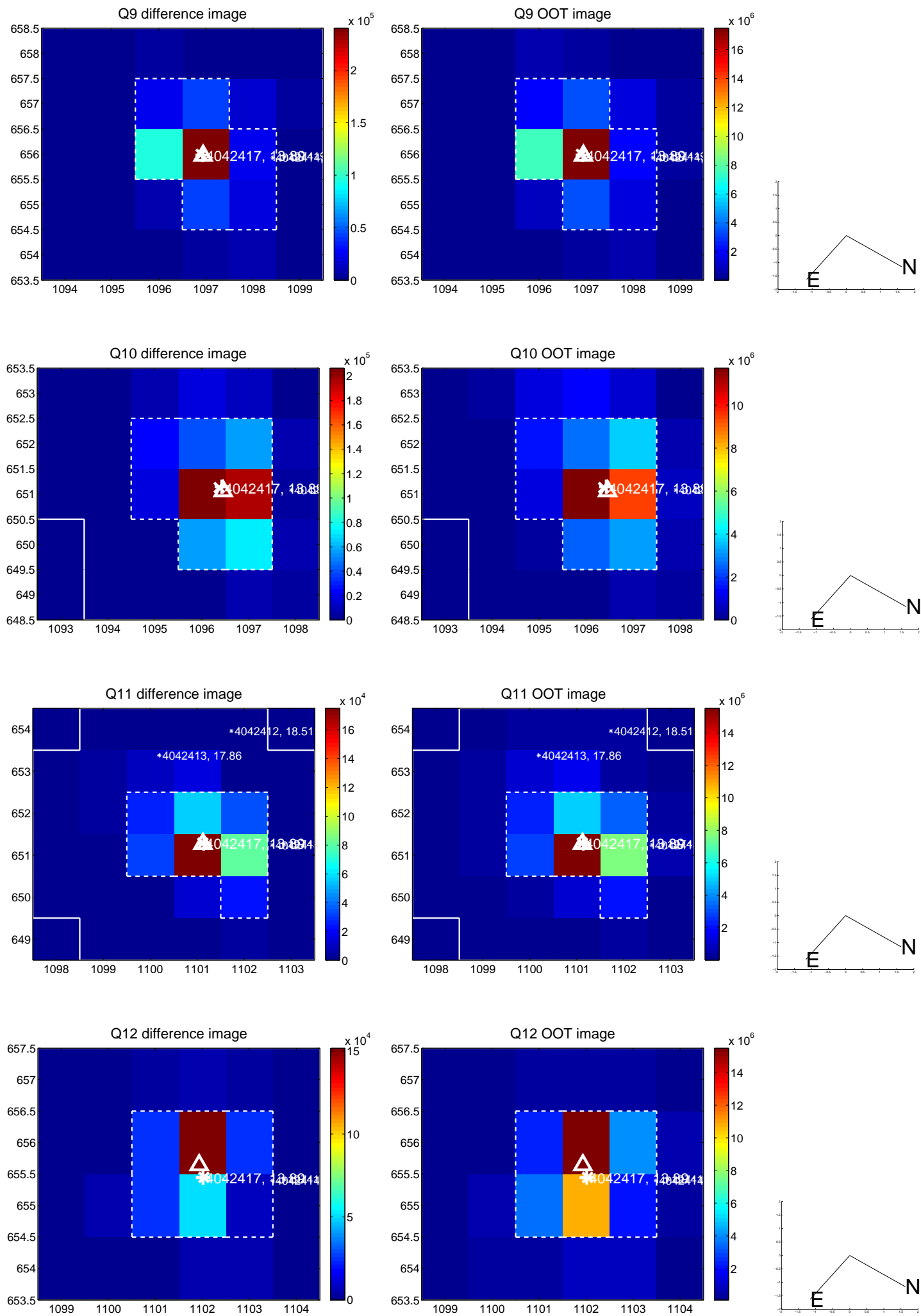
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



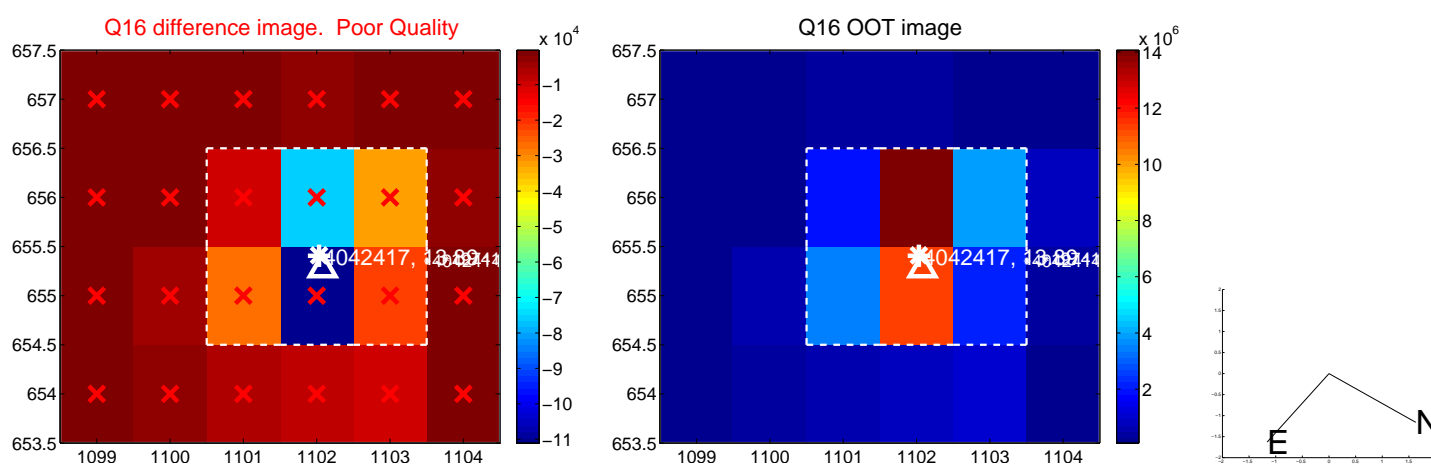
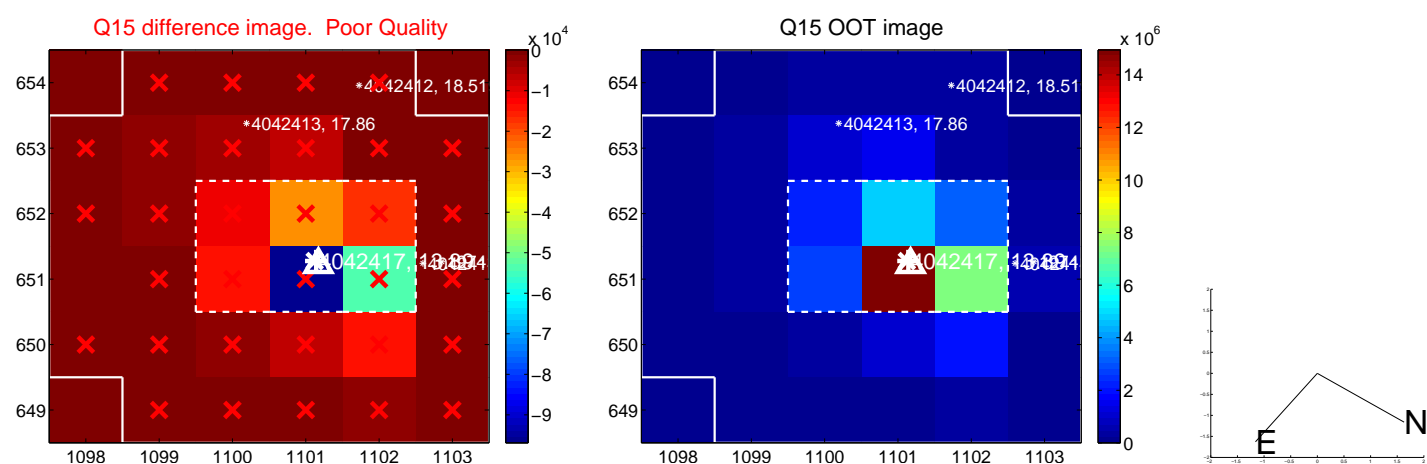
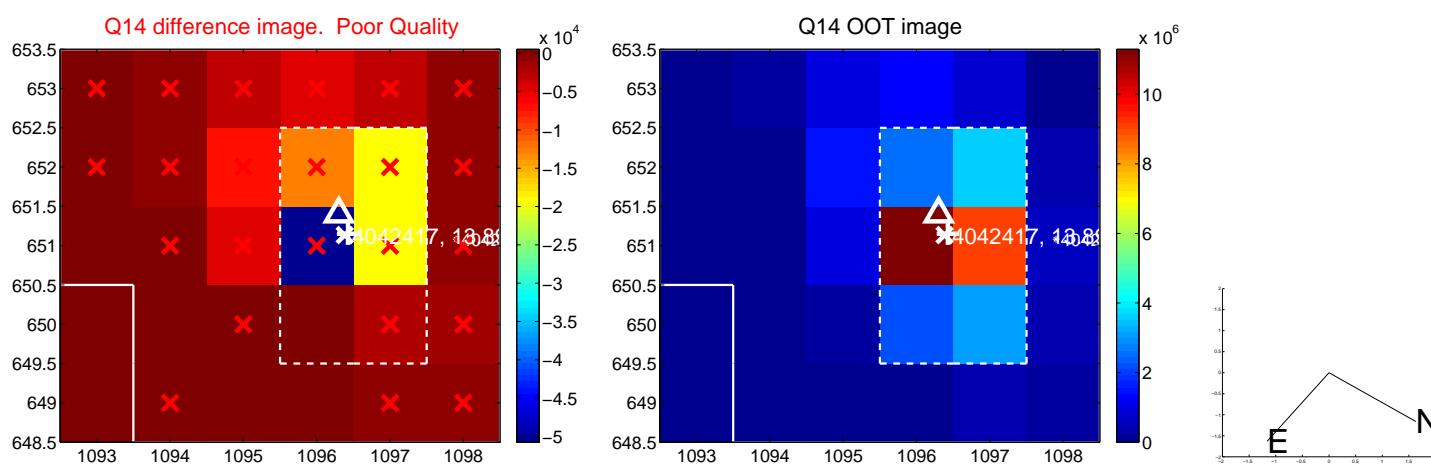
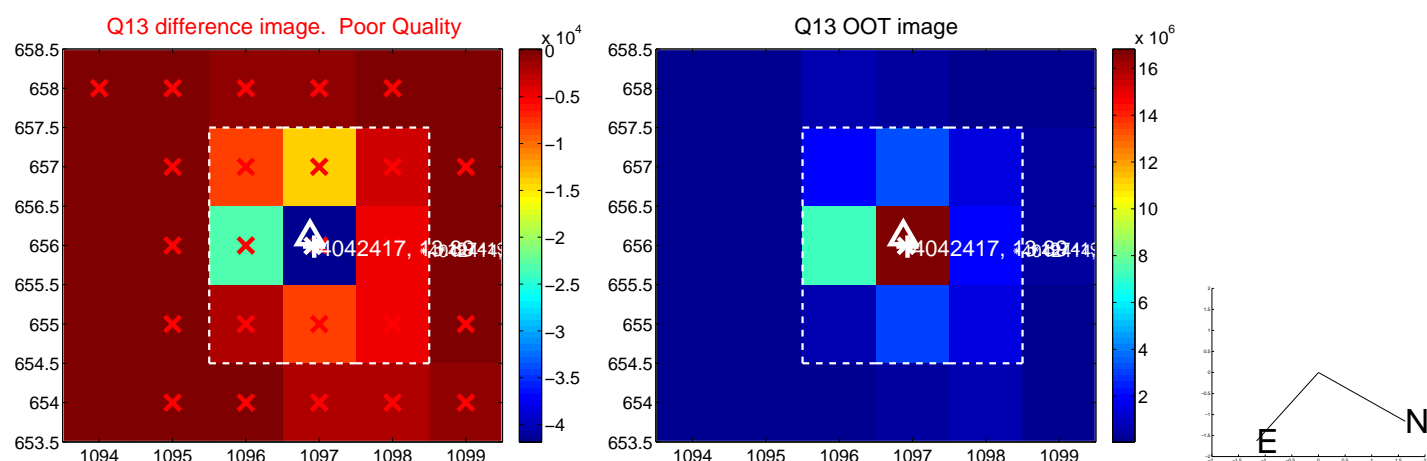
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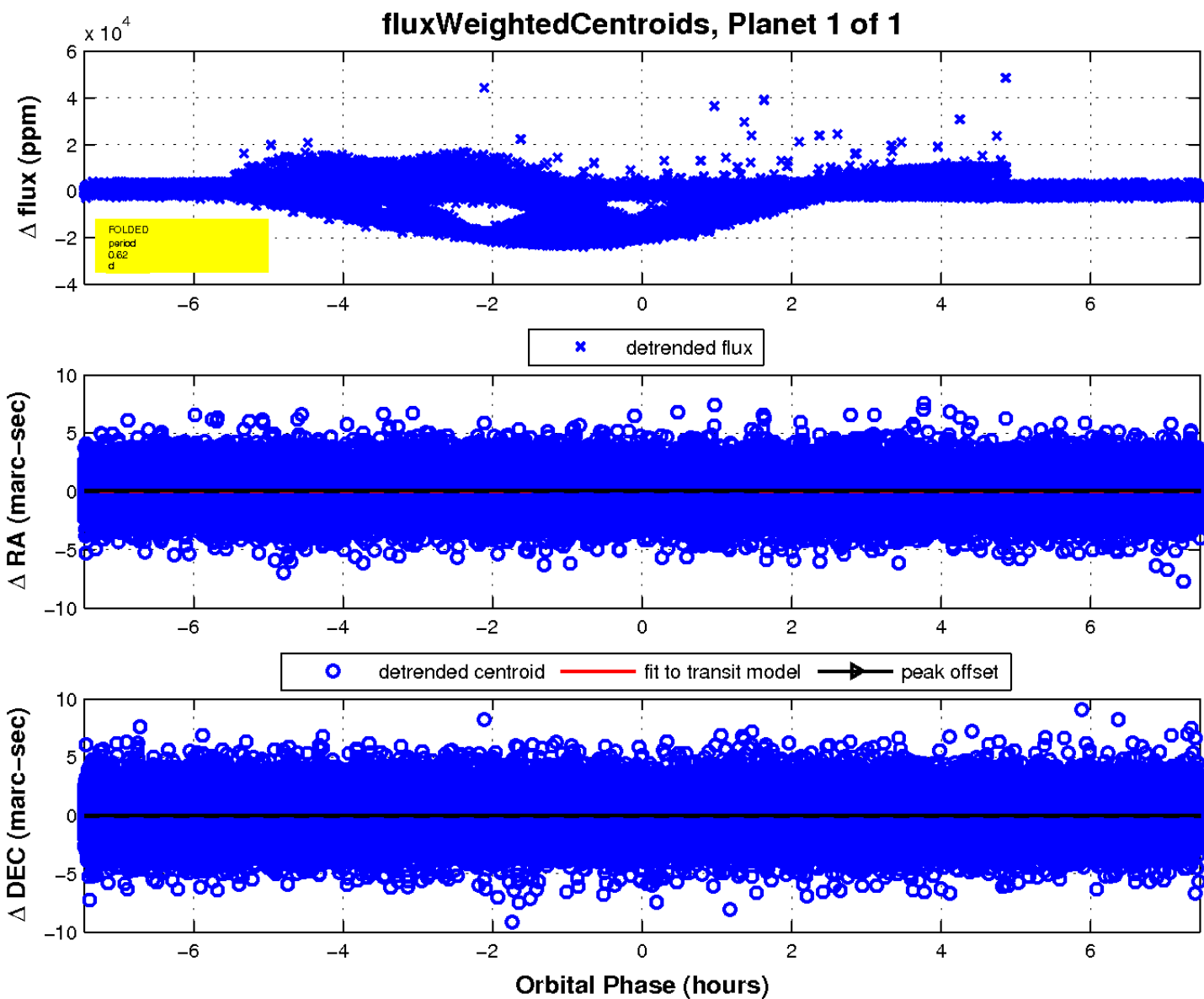
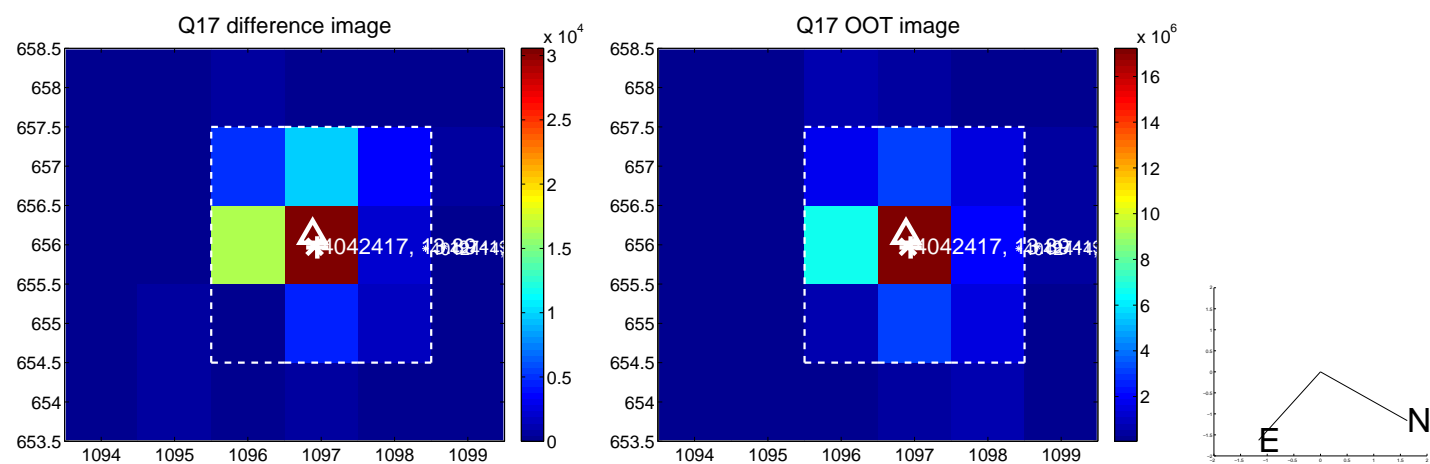
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UKIRT Image

Declination

