

KIC 009027909

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})
009027909-01	OBS	3428.01	64.659435	170.176688	234.1	7.948	13.3	13.4	1.40	5821	2.31	19.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009027909-01	OBS	PC	0.99	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.

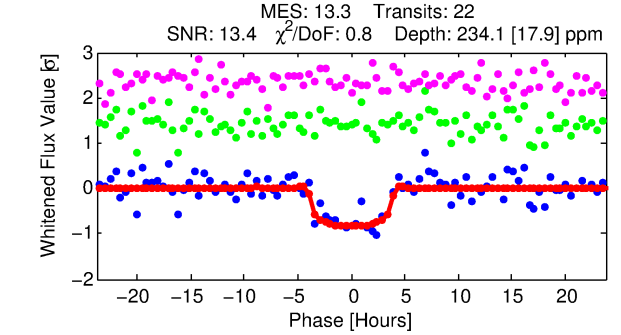
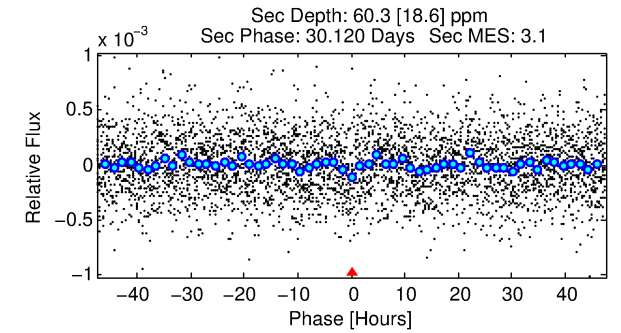
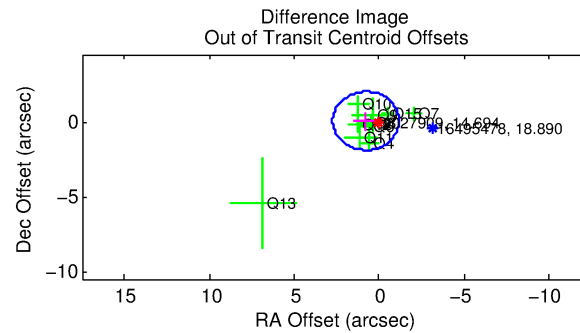
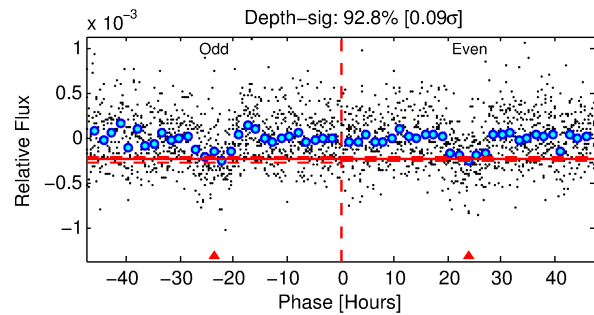
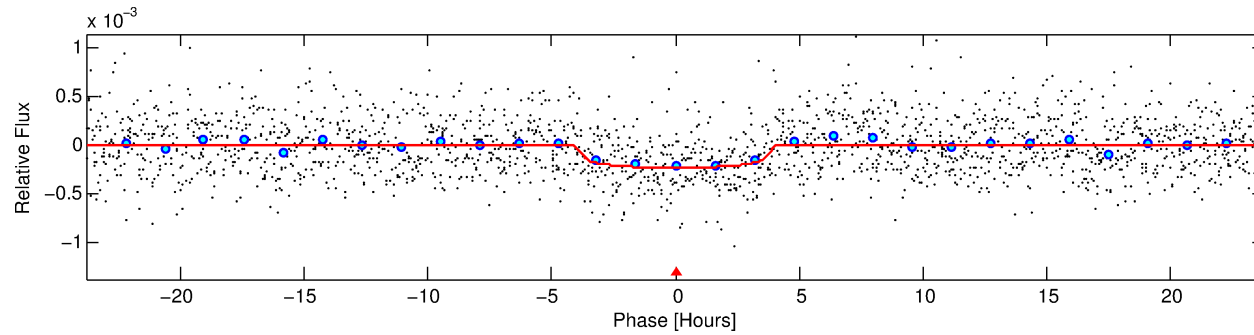
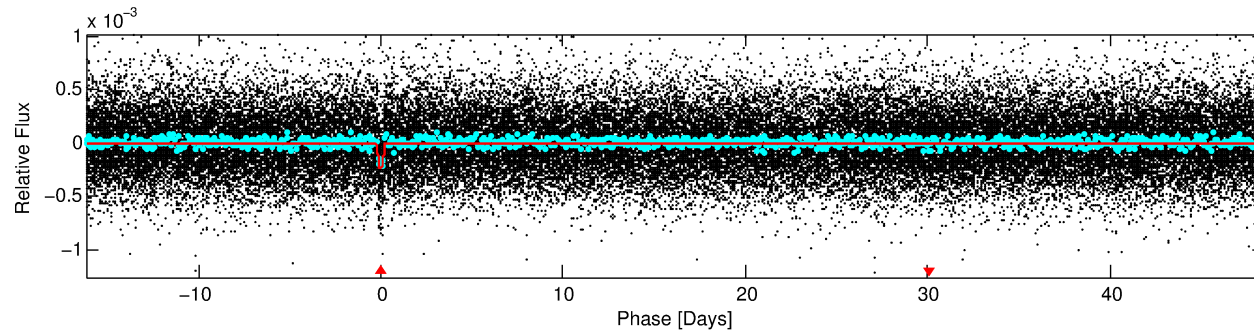
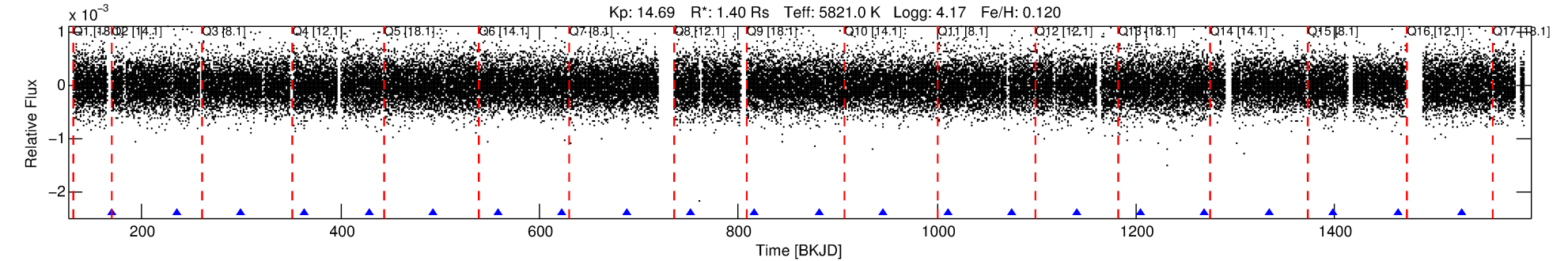
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009027909-01

No Significant Match Found

DV One-Page Summary

KIC: 9027909 Candidate: 1 of 1 Period: 64.659 d
KOI: K03428.01 Corr: 0.973



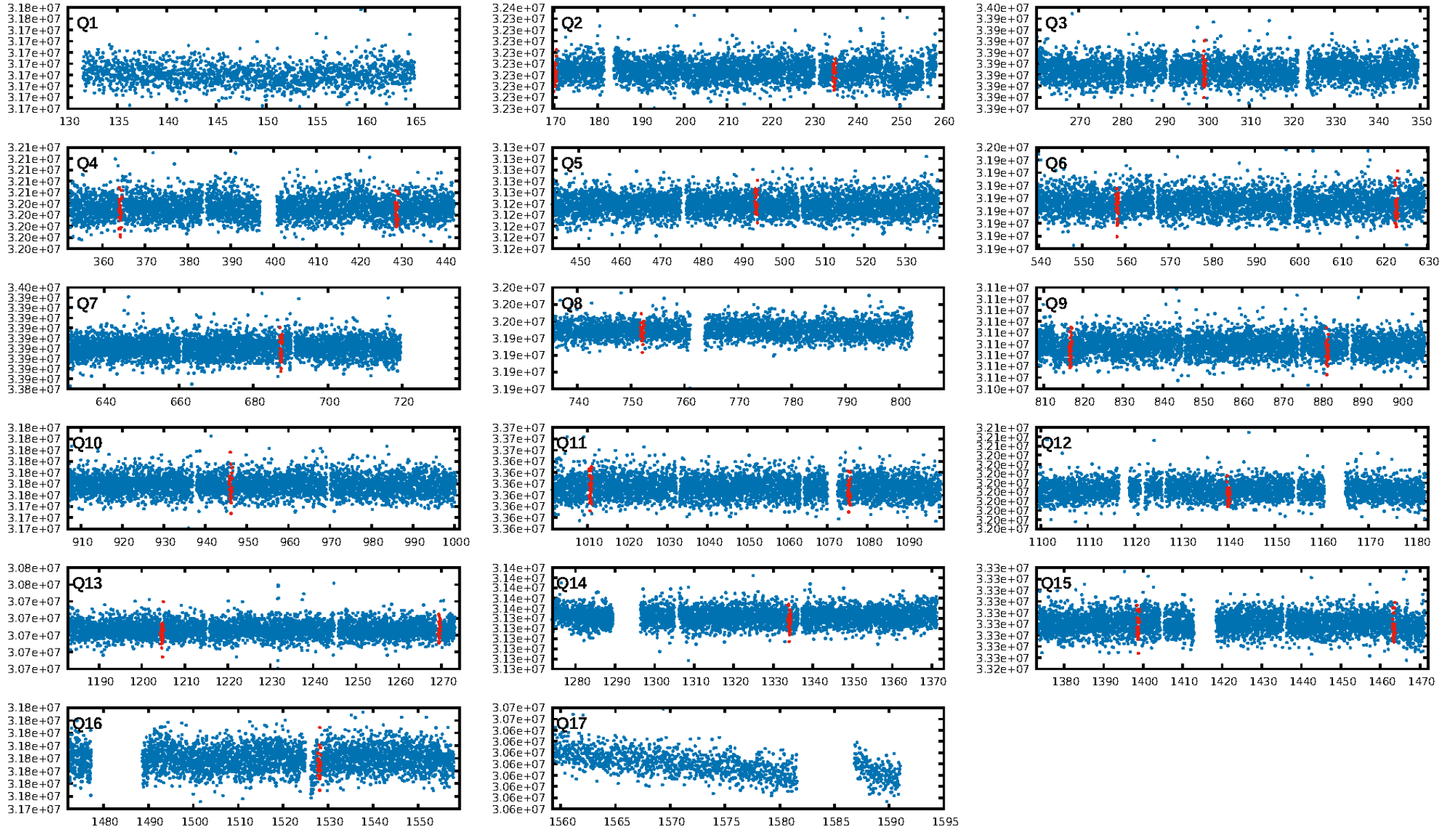
DV Fit Results:

Period = 64.65943 [0.00087] d
Epoch = 170.1767 [0.0107] BKJD
Rp/R* = 0.0152 [0.0081]
a/R* = 42.82 [102.43]
b = 0.75 [1.44]
Seff = 19.43 [5.60]
Teff = 535 [39] K
Rp = 2.31 [1.32] Re
a = 0.3210 [0.0585] AU
Ag = 638.53 [731.35] [0.87 σ]
Teffp = 4161 [1156] K [3.13 σ]

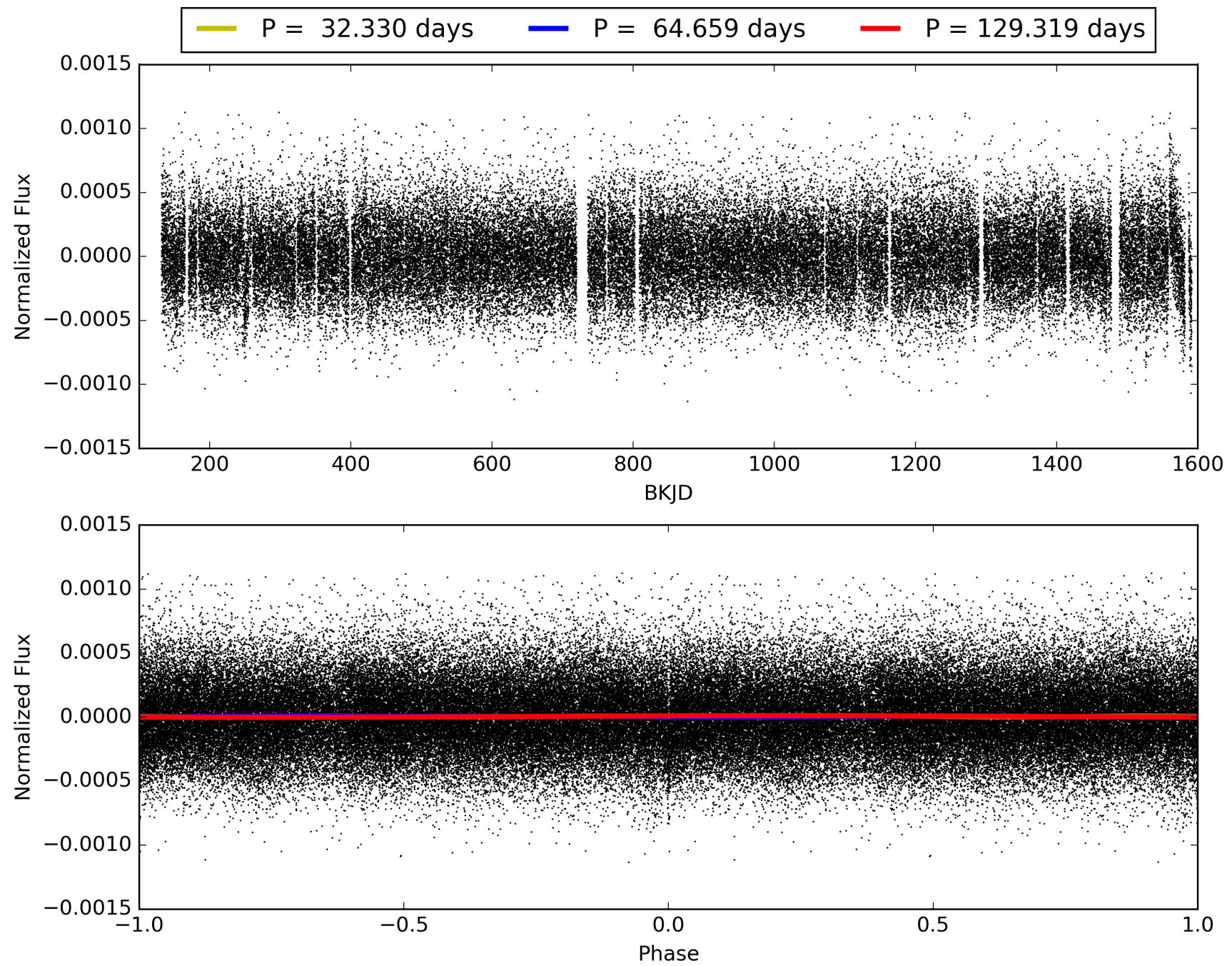
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 49.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.41e-33
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 1.236
Centroid-sig: 87.5%
Centroid-so: 0.450 arcsec [0.46 σ]
OotOffset-rm: 0.775 arcsec [1.19 σ]
KicOffset-rm: 0.779 arcsec [1.47 σ]
OotOffset-st: 2/3/3/2 [10]
KicOffset-st: 2/3/3/2 [10]
DiffImageQuality-fgm: 0.90 [9/10]
DiffImageOverlap-fno: 1.00 [15/15]

TCE 009027909-01, PDC Light Curves

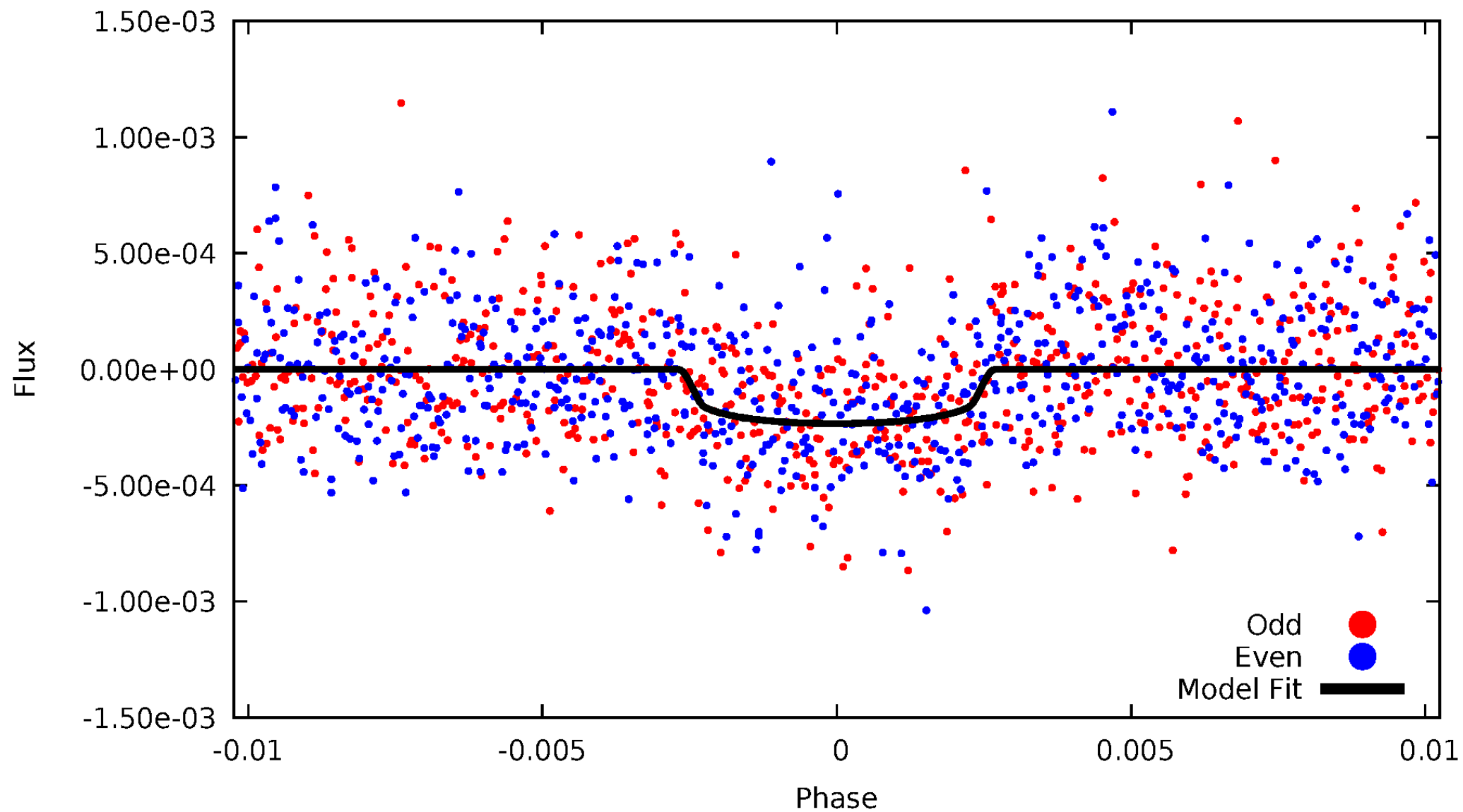


TCE 009027909-01



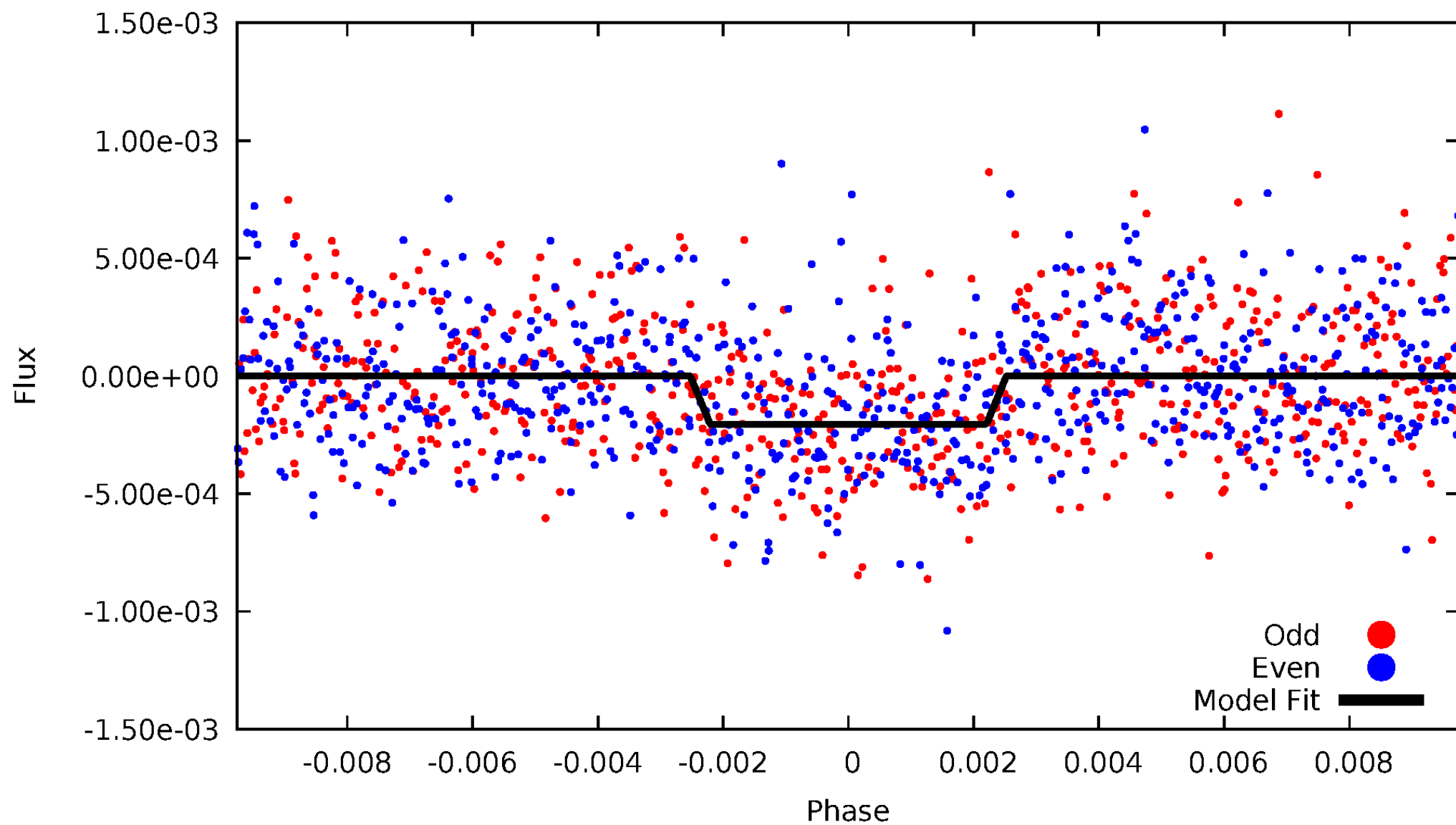
DV Odd/Even

TCE 009027909-01



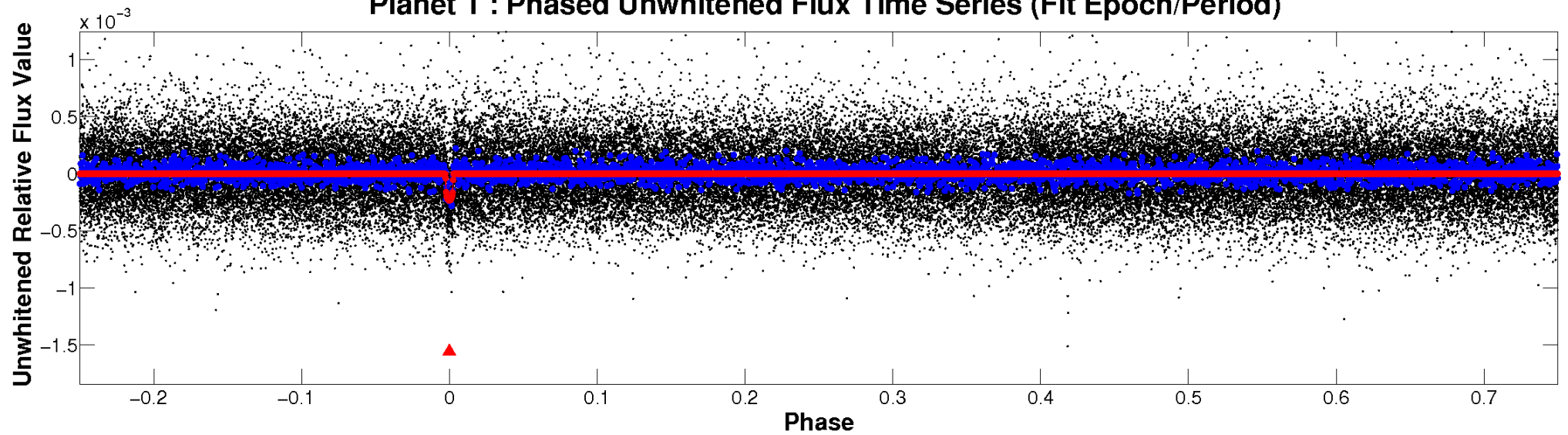
ALT Odd/Even

TCE 009027909-01

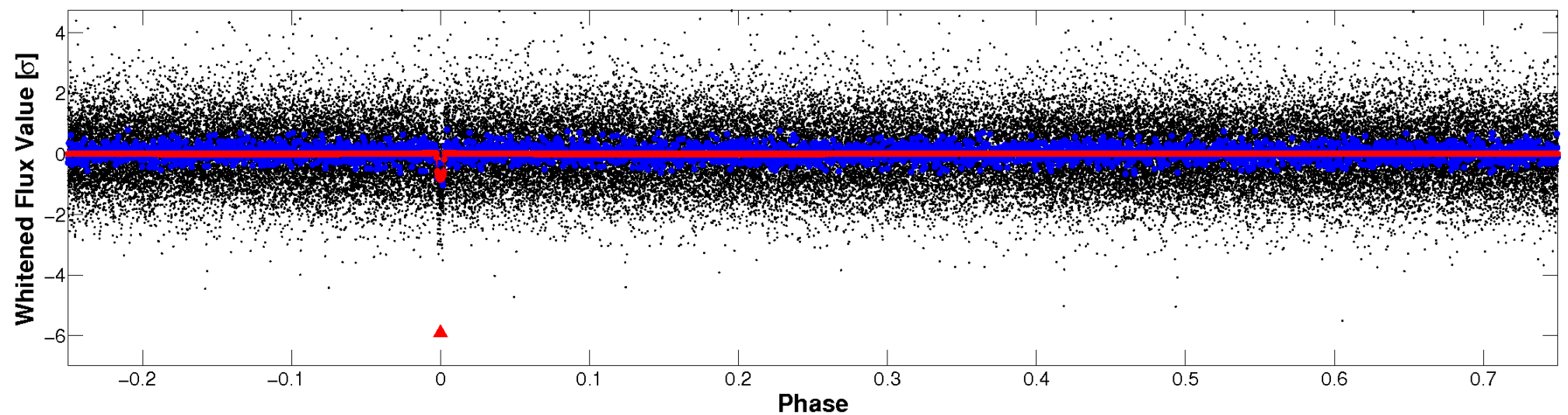


Non-Whitened Vs. Whitened Light Curve

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

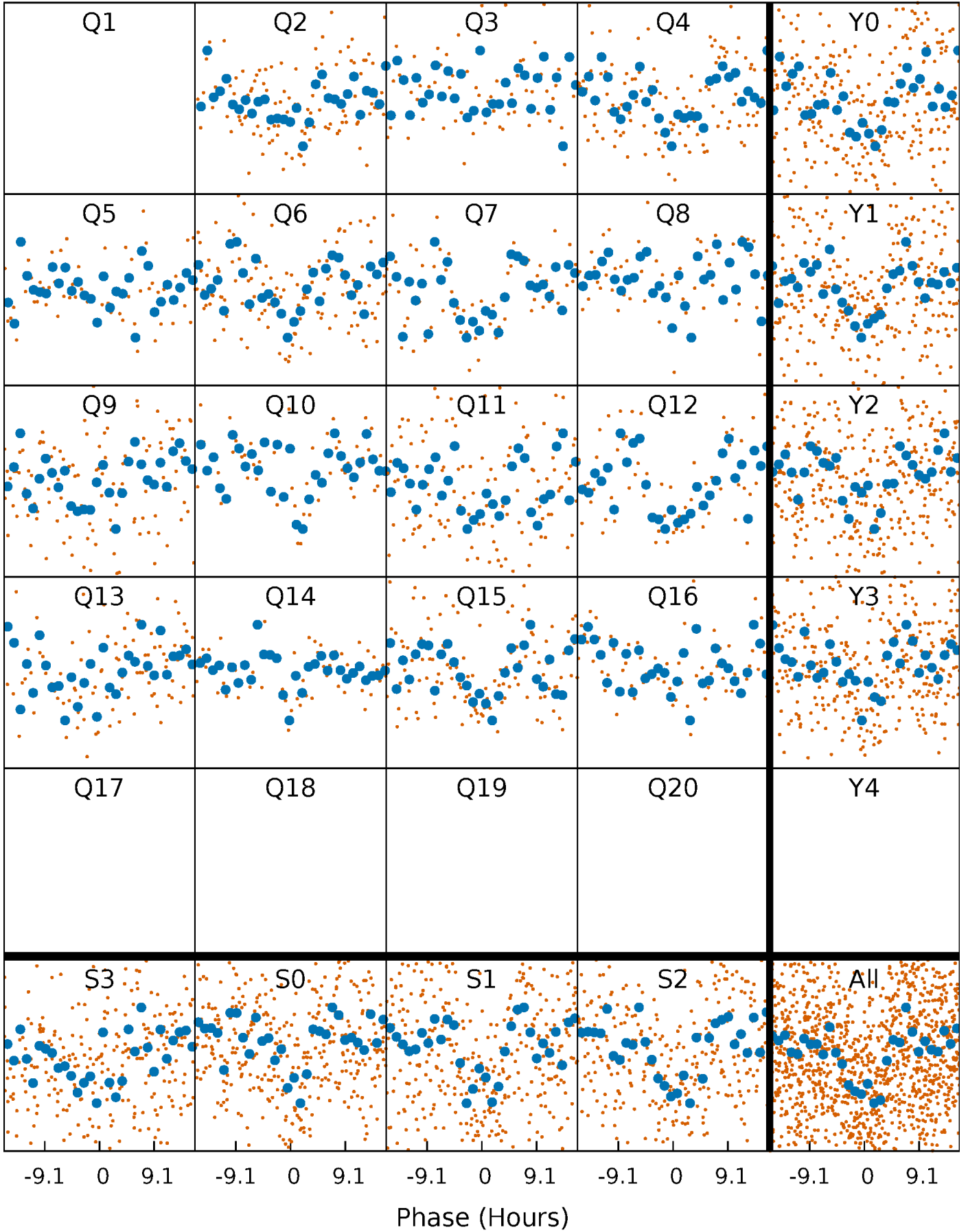


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



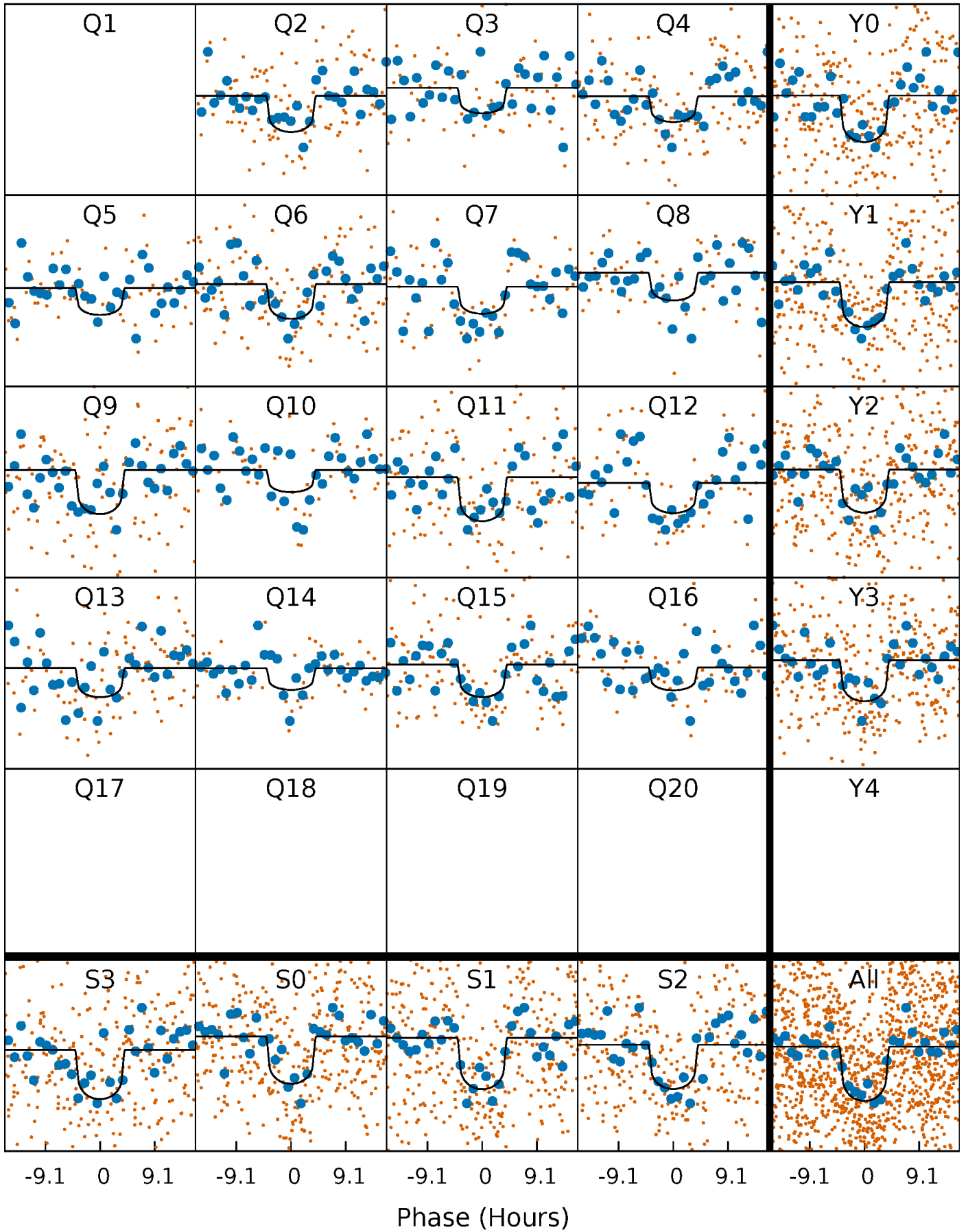
PDC Quarter-Phased Transit Curves

TCE 009027909-01 P= 64.659435 Days $T_0=170.176688$ (BKJD)



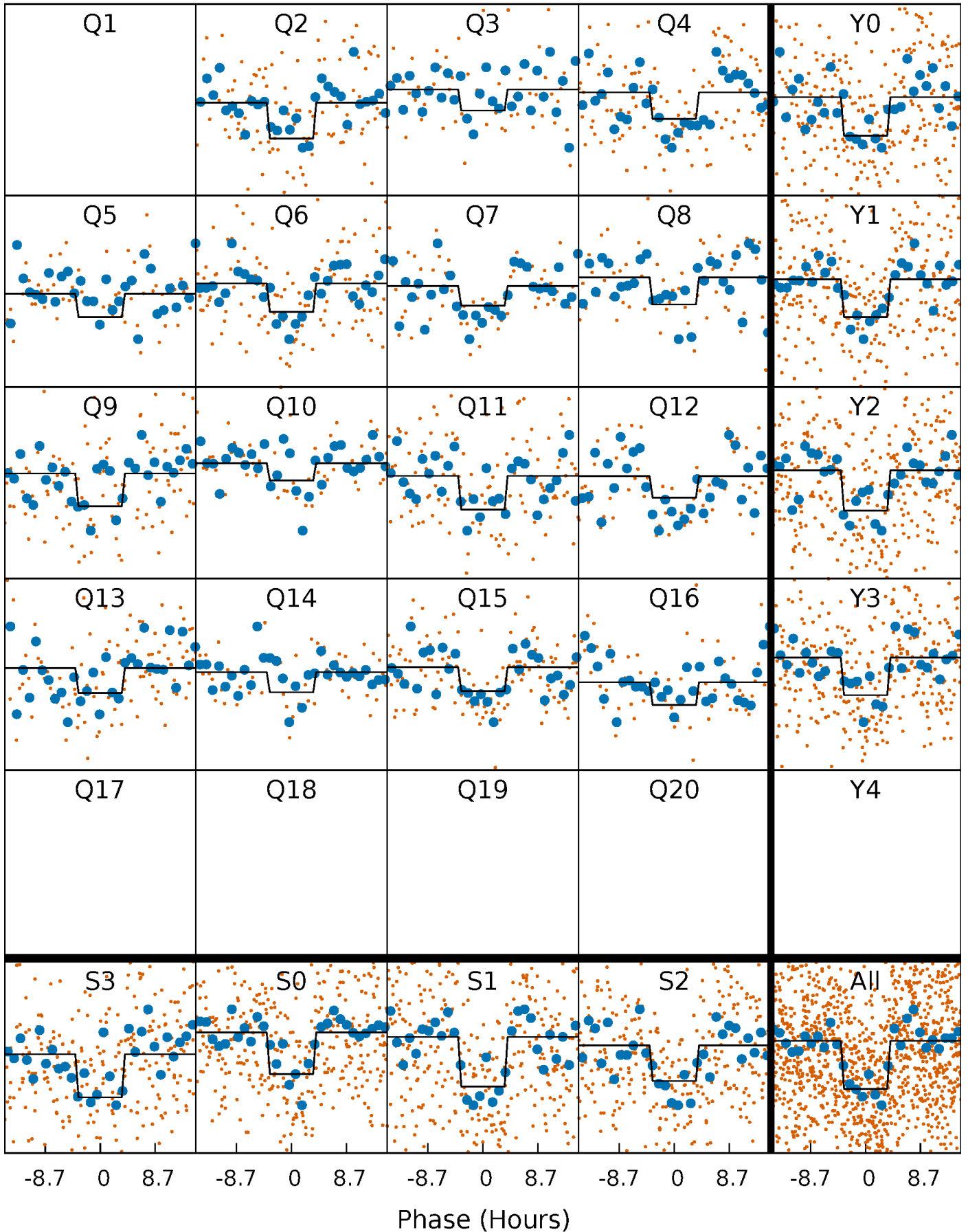
DV Quarter-Phased Transit Curves

TCE 009027909-01 P= 64.659435 Days $T_0=170.176688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

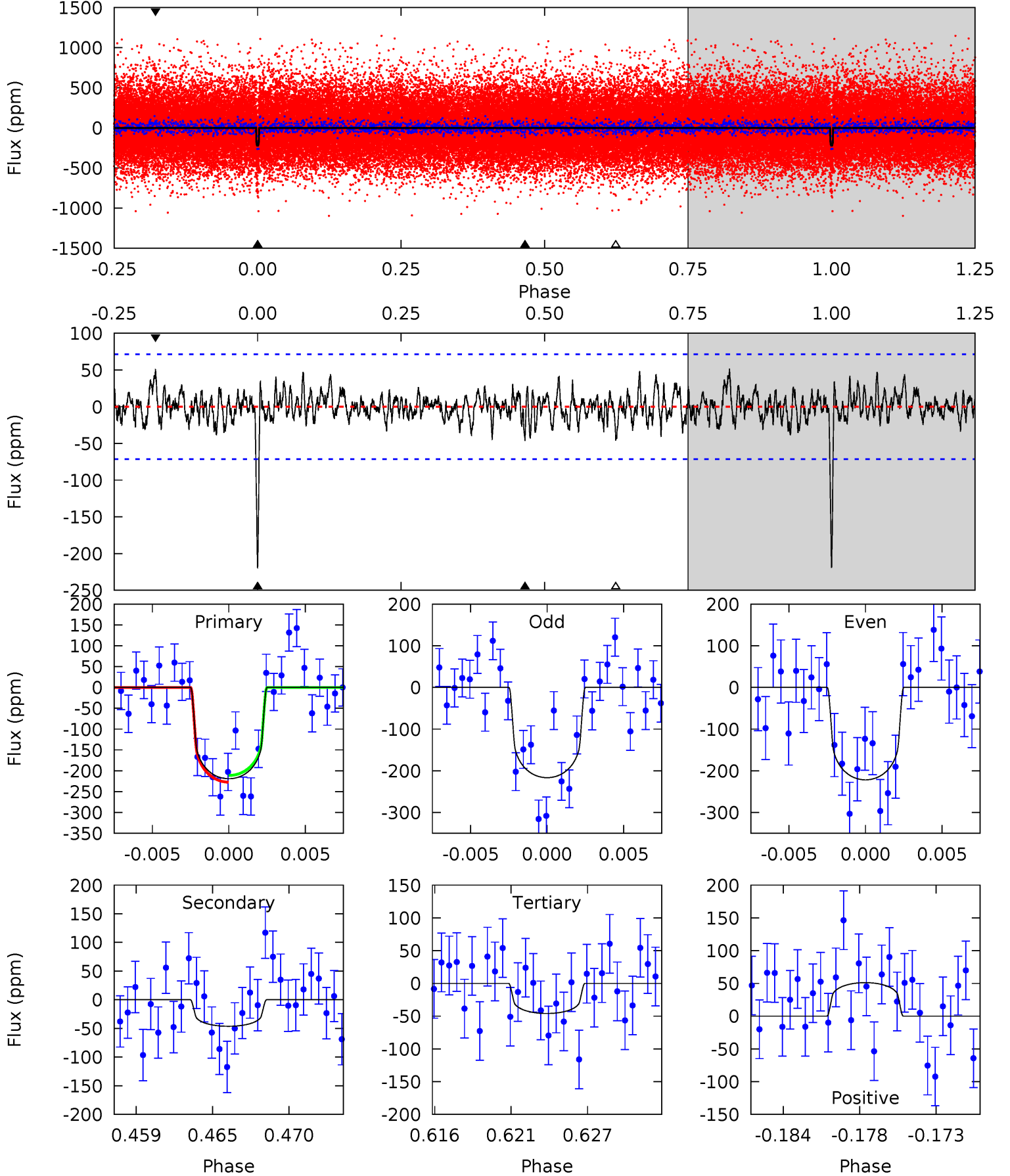
TCE 009027909-01 P= 64.659366 Days $T_0=170.174419$ (BKJD)



DV Model-Shift Uniqueness Test

009027909-01, P = 64.659435 Days, E = 105.517253 Days

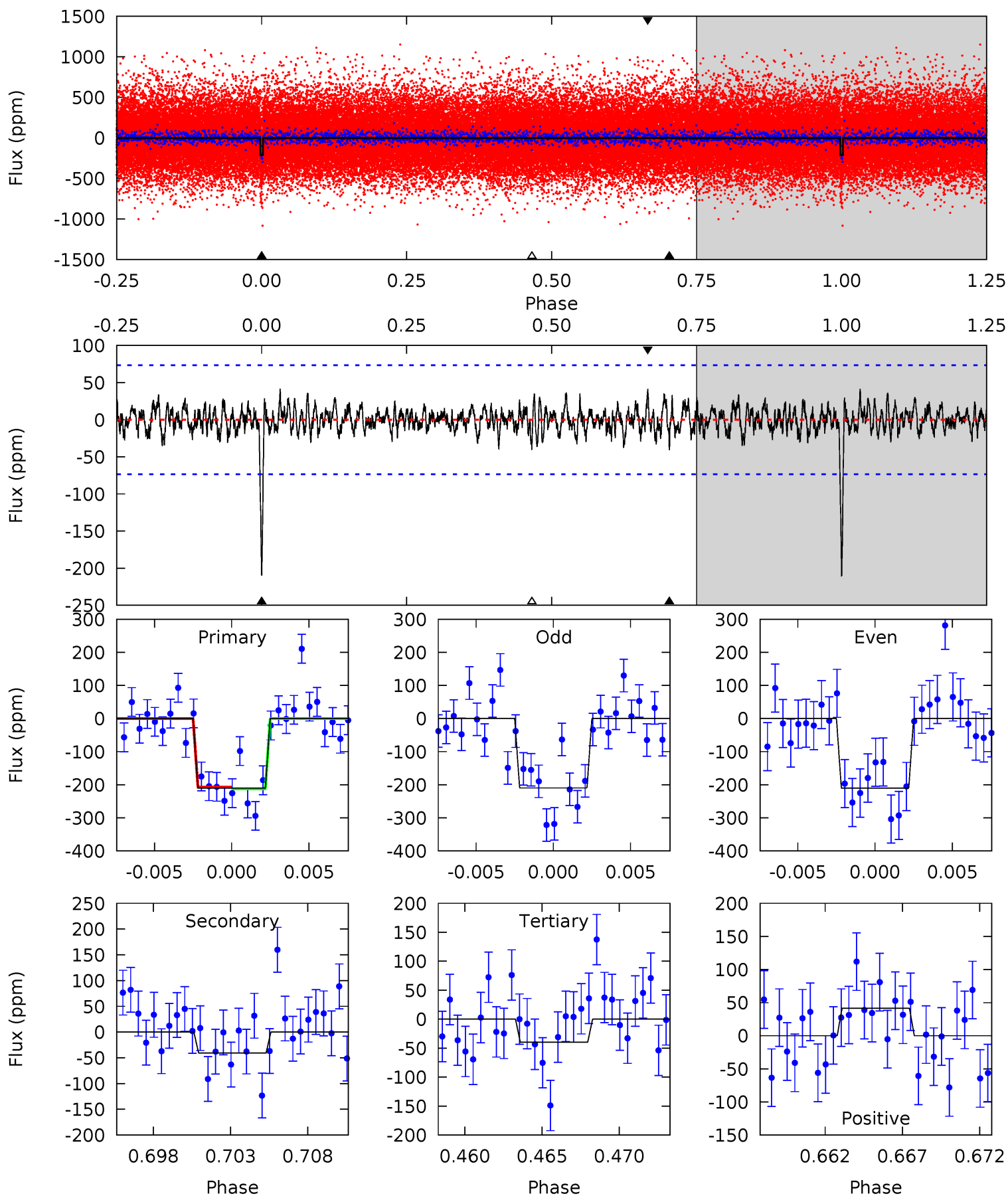
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	3.33	3.31	3.68	5.14	2.78	1.11	12.5	12.1	0.02	-0.35	0.19	0.99	0.19	0.58



Alt Model-Shift Uniqueness Test

009027909-01, P = 64.659366 Days, E = 105.515053 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	2.86	2.79	2.91	5.16	2.80	0.92	12.0	11.8	0.08	-0.04	0.02	0.95	0.16	0.18



Stellar Parameters For KIC 009027909

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5821^{+69}_{-87}	$4.172^{+0.162}_{-0.108}$	$0.120^{+0.150}_{-0.150}$	$1.395^{+0.228}_{-0.279}$	$1.054^{+0.097}_{-0.081}$	$0.547^{+0.461}_{-0.184}$
	+1%/-1%	+4%/-3%	+125%/-125%	+16%/-20%	+9%/-8%	+84%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 009027909-01 / KOI 3428.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-46 ± 14	$2.32^{+1.24}_{-1.14}$	744^{+34}_{-41}	4124^{+1215}_{-601}	488^{+1433}_{-303}
Alt.	-41 ± 14	$2.22^{+1.45}_{-1.09}$	745^{+33}_{-41}	4103^{+1220}_{-661}	461^{+1273}_{-303}

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

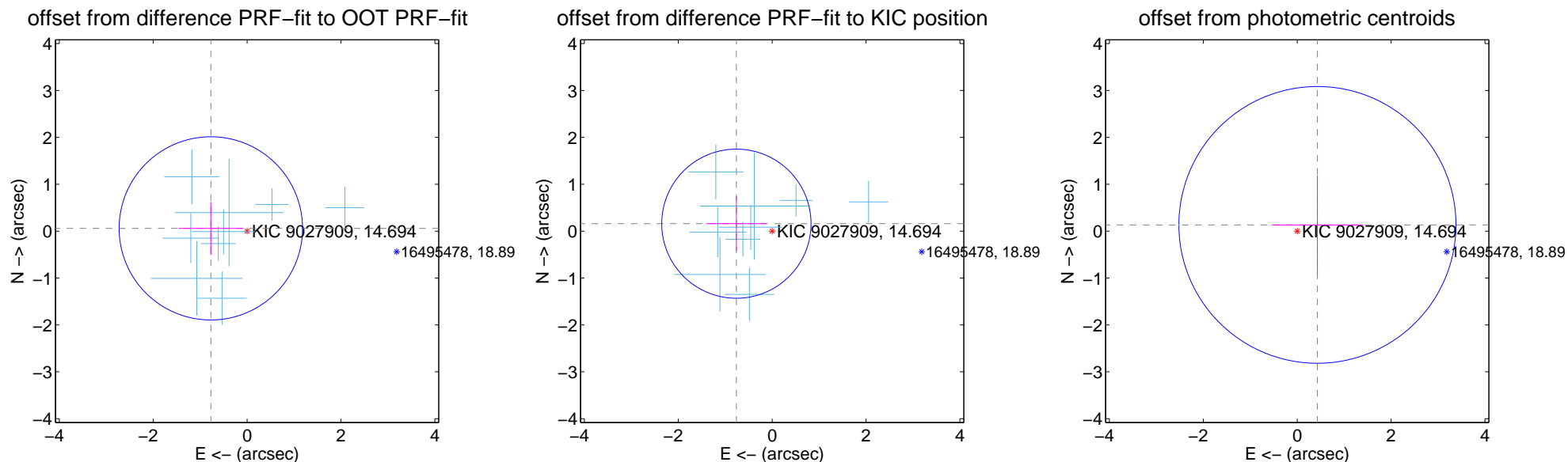
DV Centroid Data

Supplemental centroid analysis for 009027909-01. Kepler magnitude: 14.69. Transit SNR 13.35

There are 9 quarters with good PRF difference image offsets

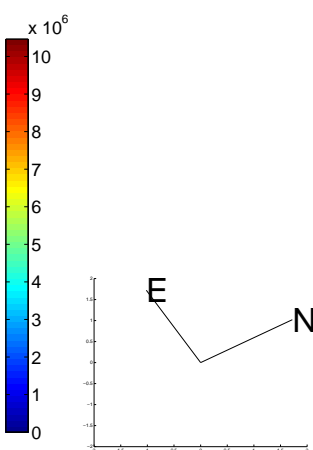
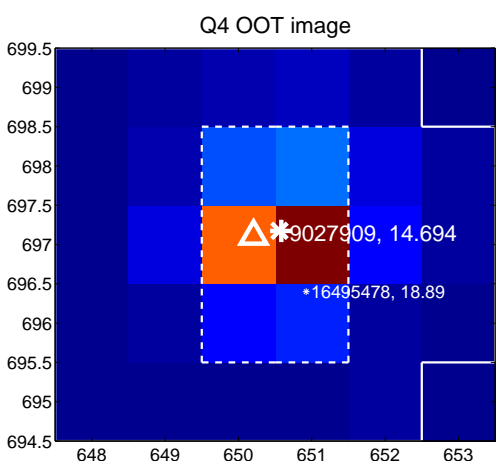
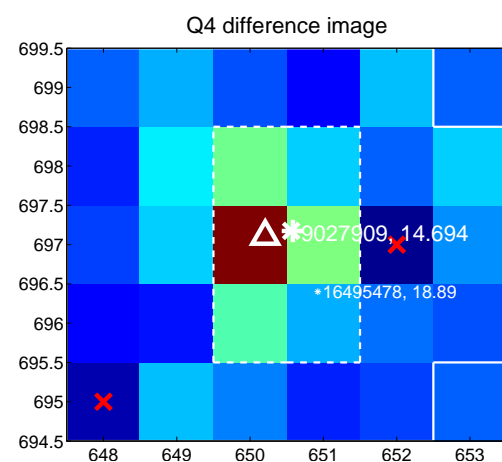
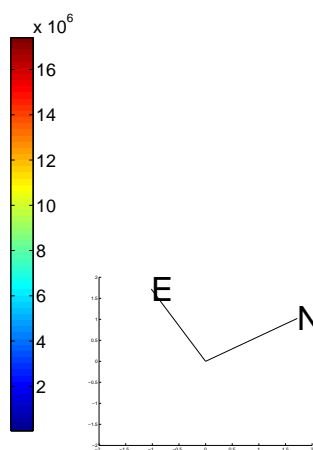
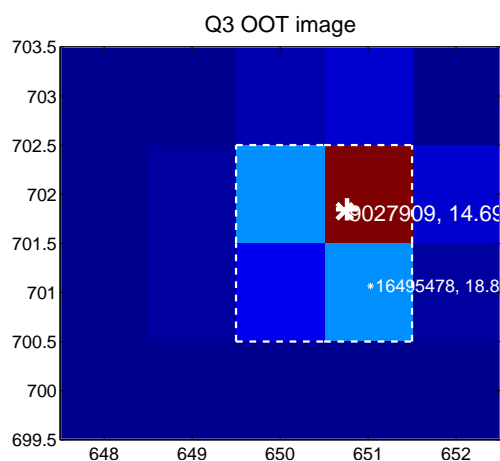
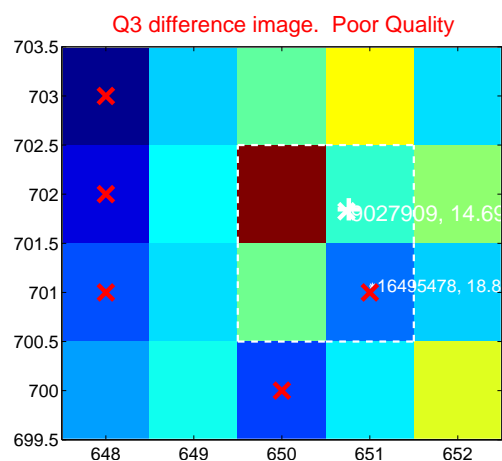
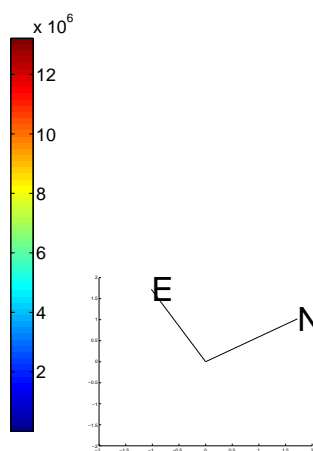
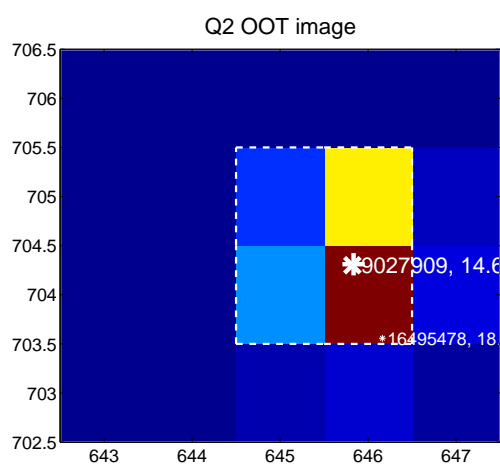
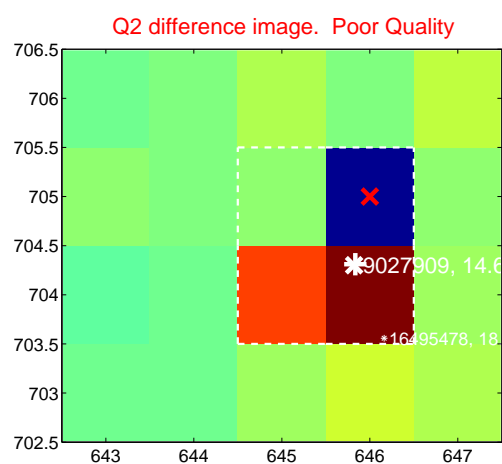
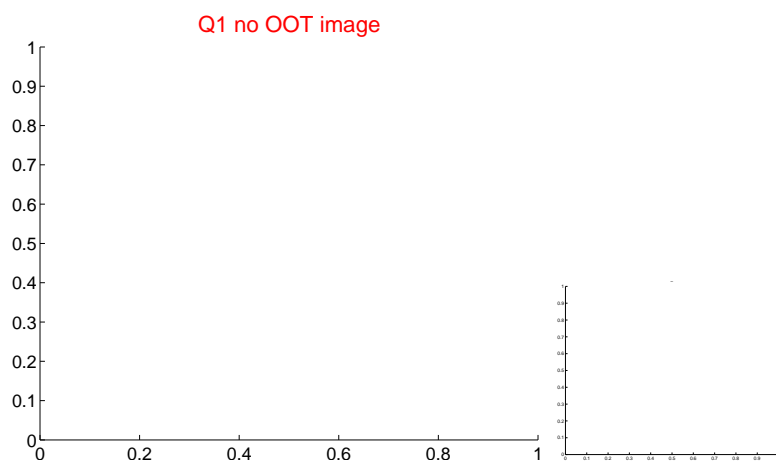
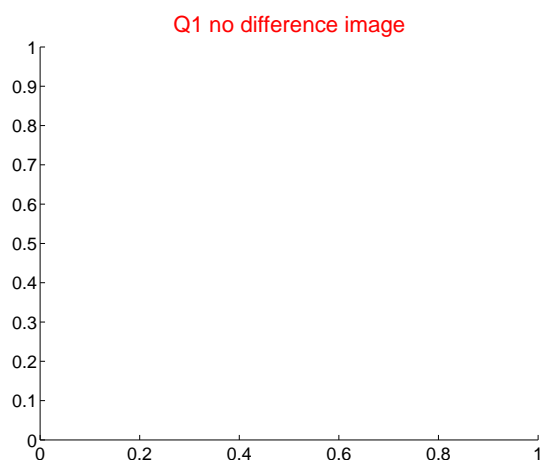
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.775 ± 0.651	1.19	0.773 ± 0.690	0.059 ± 0.564
PRF-fit source offset from KIC position	0.779 ± 0.530	1.47	0.762 ± 0.644	0.159 ± 0.581
photometric centroid source offset	0.45 ± 0.98	0.46	-0.43 ± 0.98	0.13 ± 1.05

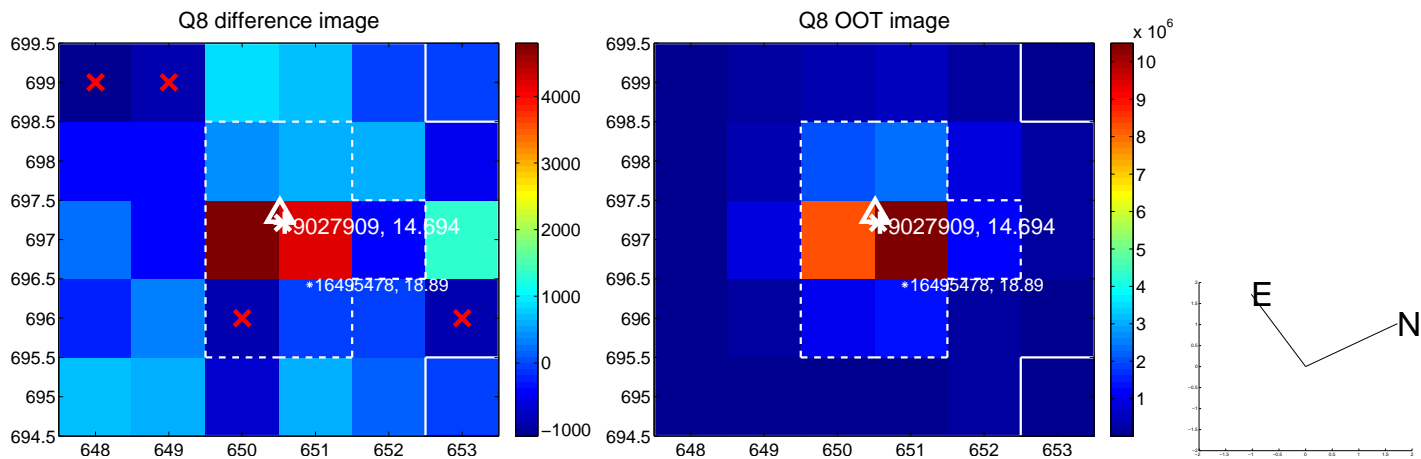
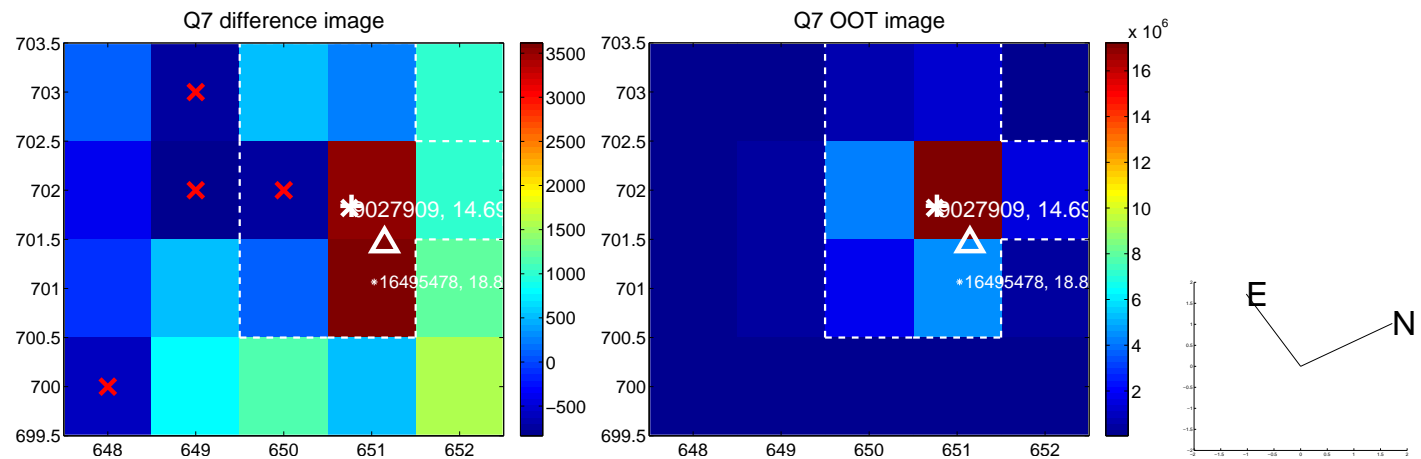
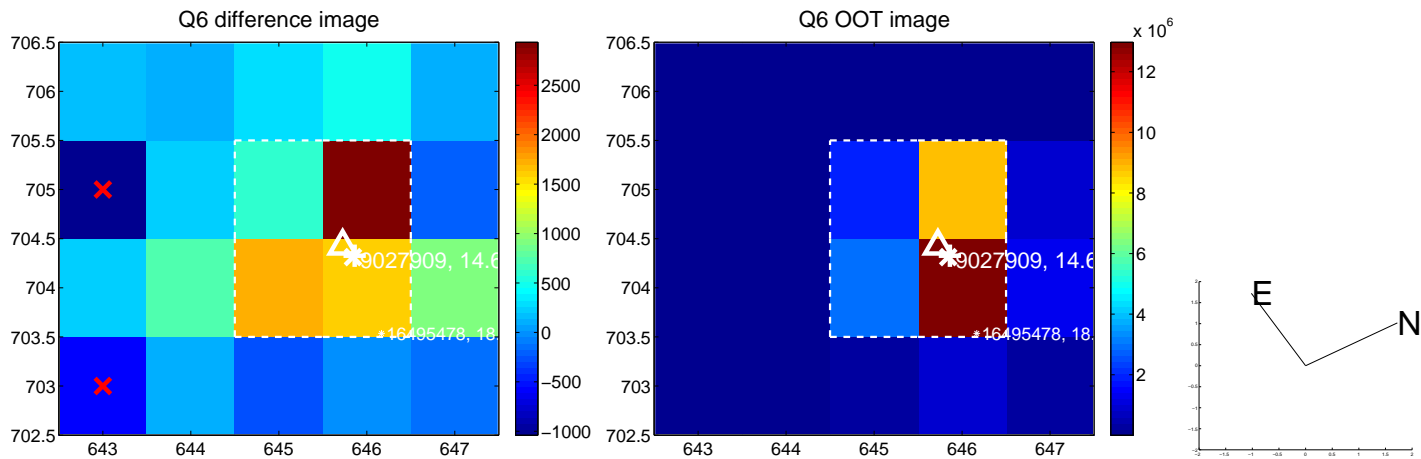
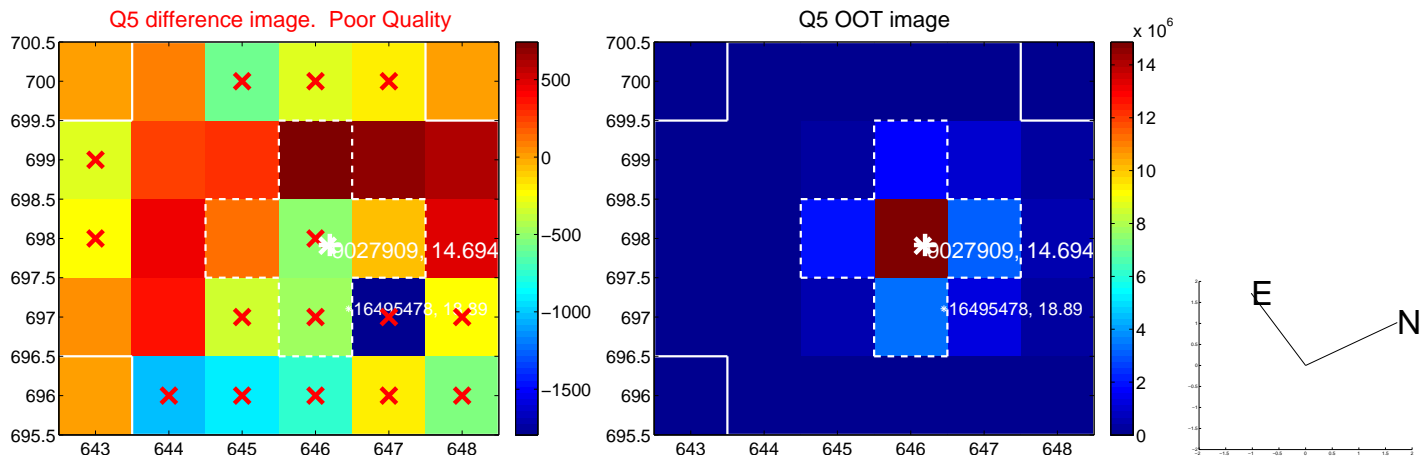


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

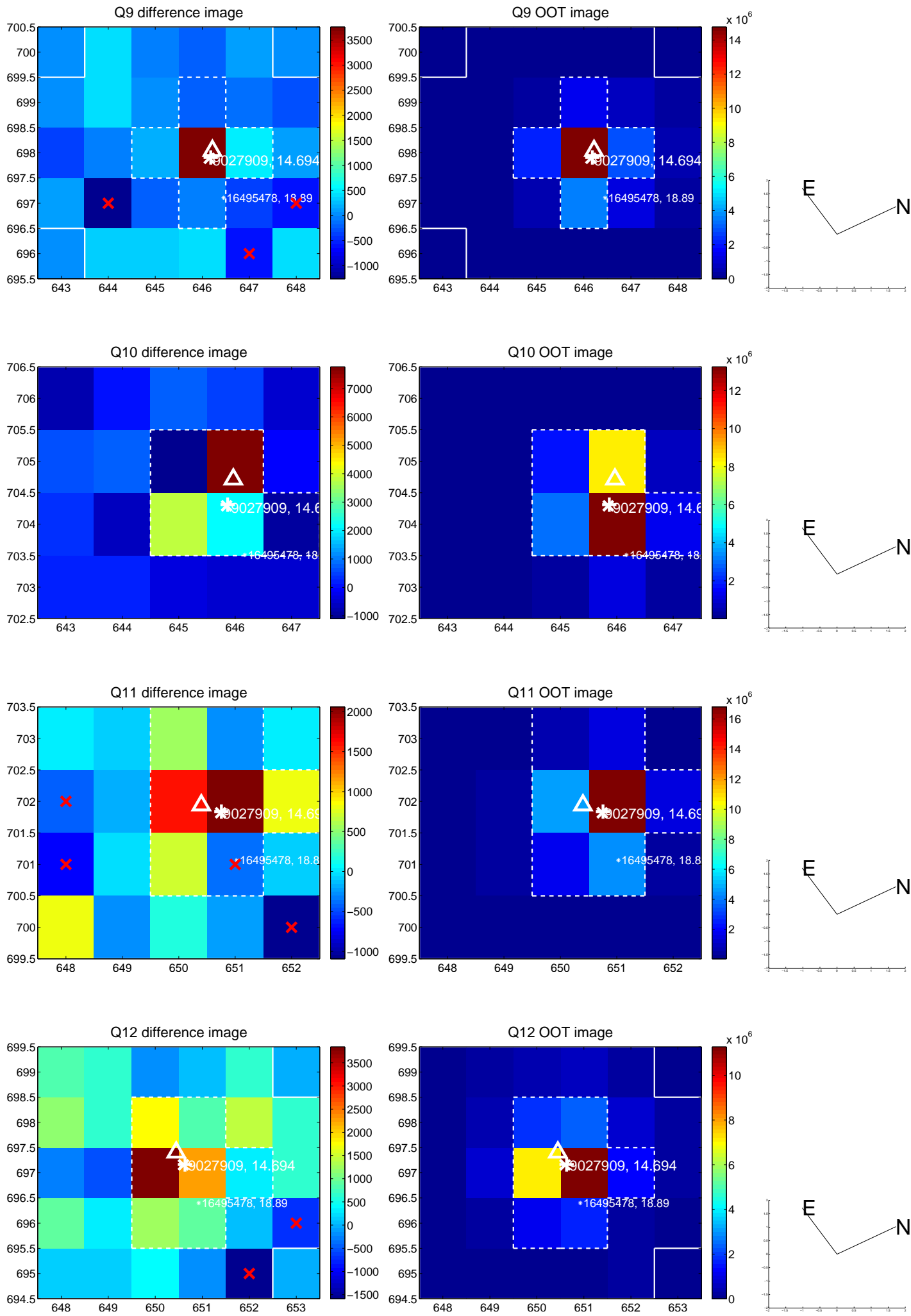
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



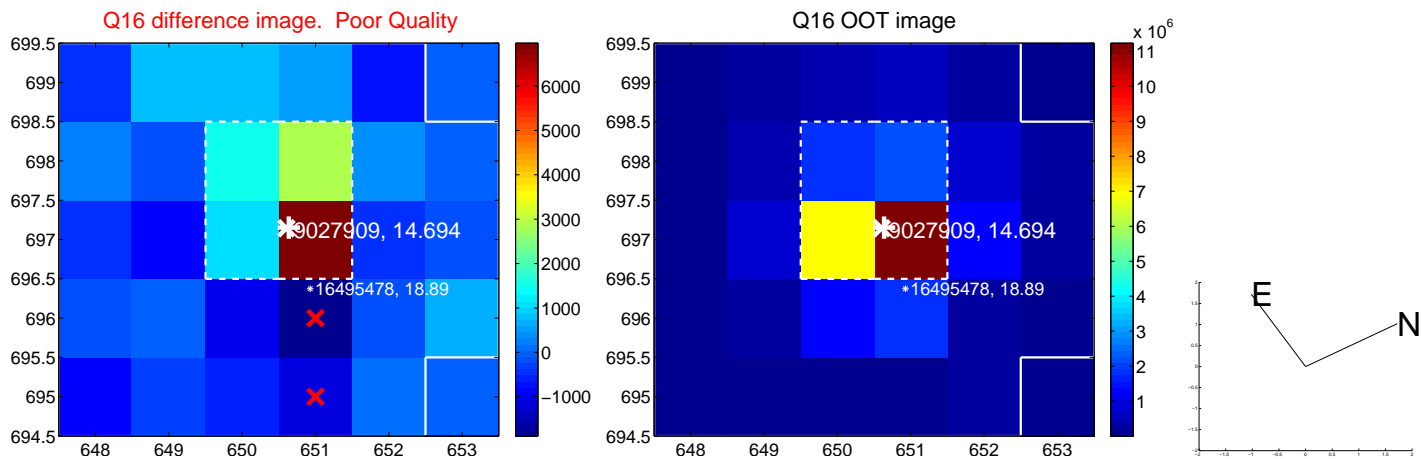
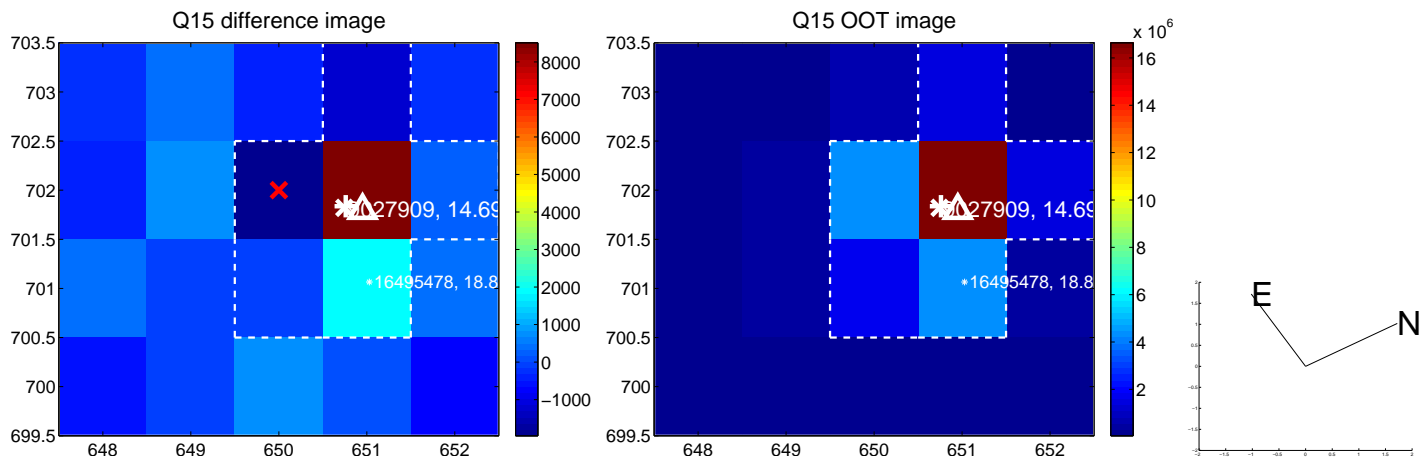
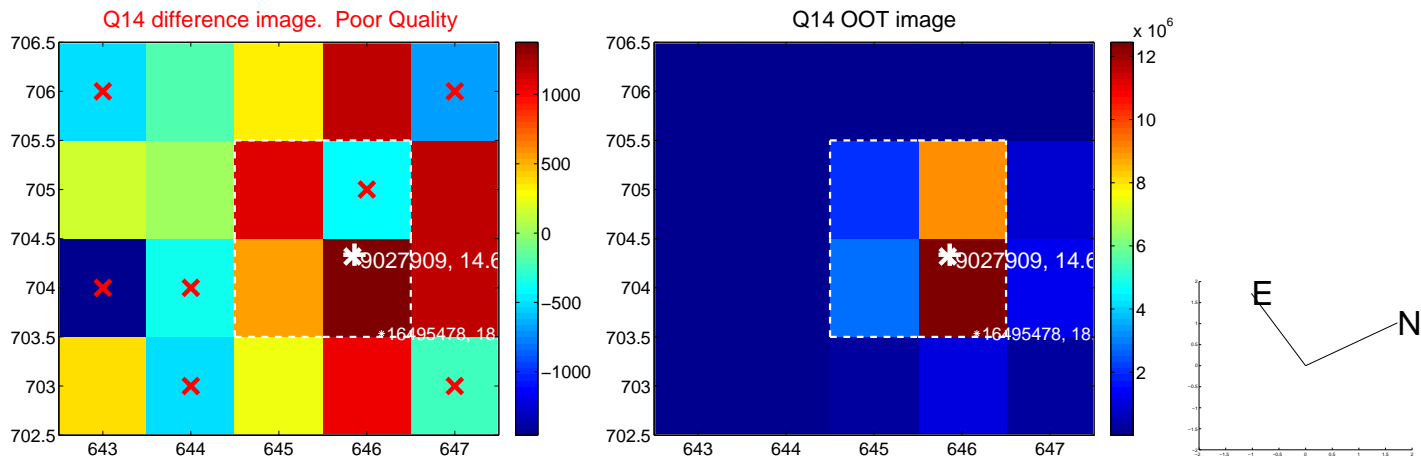
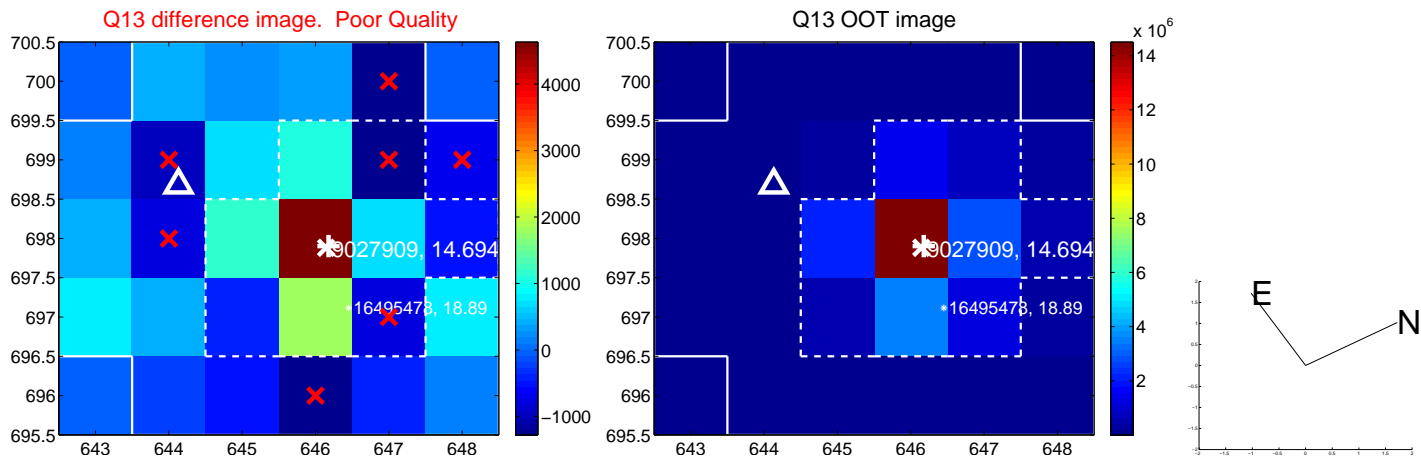
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



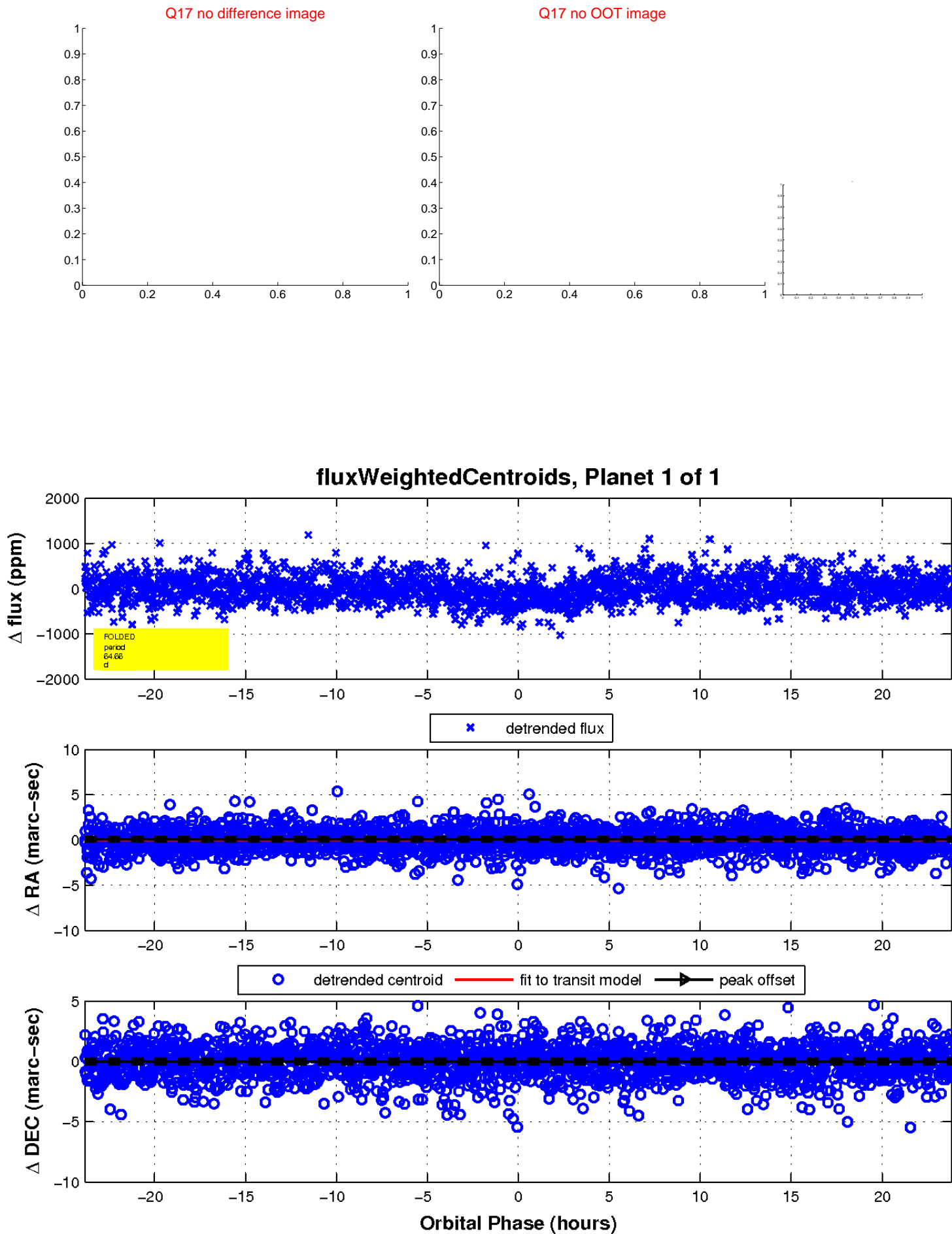
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UKIRT Image

Declination

