

KIC 002570432

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})
002570432-01	OBS	4946.01	1.891448	132.591166	430.2	5.984	11.0	10.6	0.95	5504	2.02	850.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002570432-01	OBS	FP	0.06	0	0	1	0	CENT_KIC_POS—HALO_GHOST

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

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

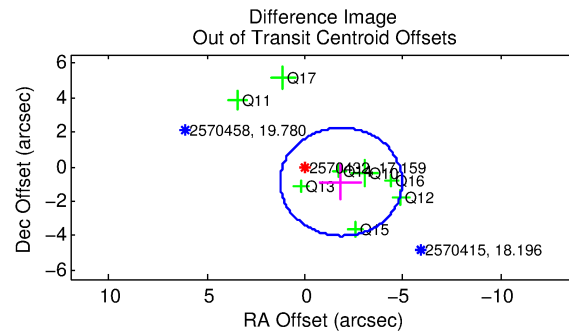
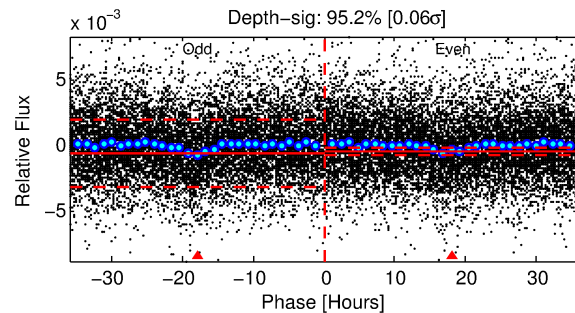
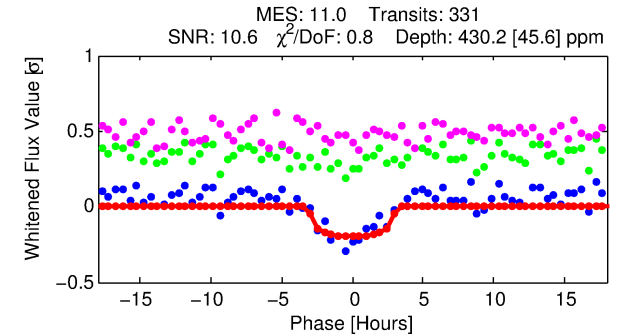
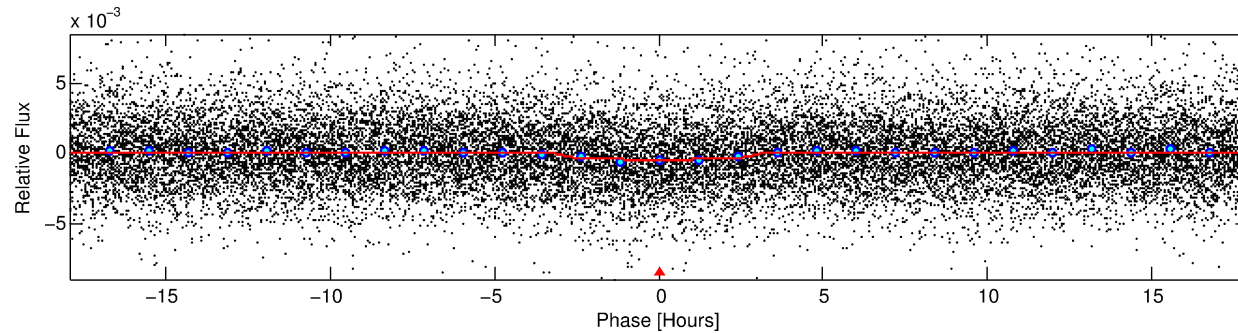
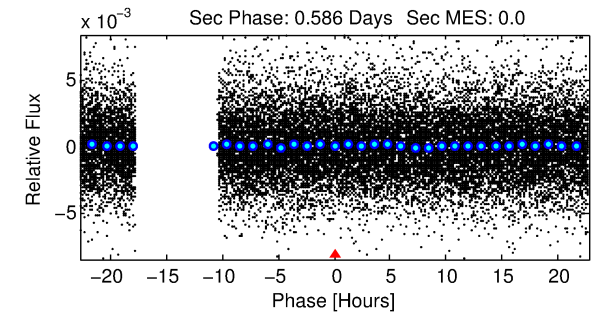
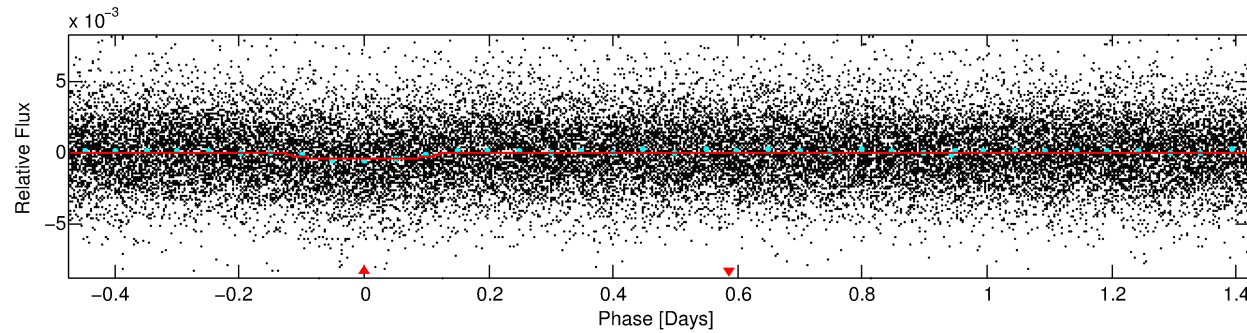
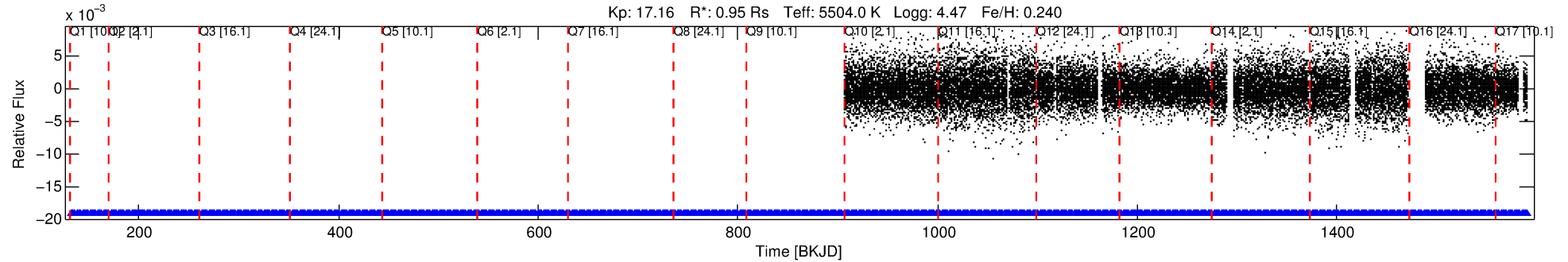
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002570432-01

No Significant Match Found

DV One-Page Summary

KIC: 2570432 Candidate: 1 of 1 Period: 1.891 d
KOI: K04946.01 Corr: 0.801



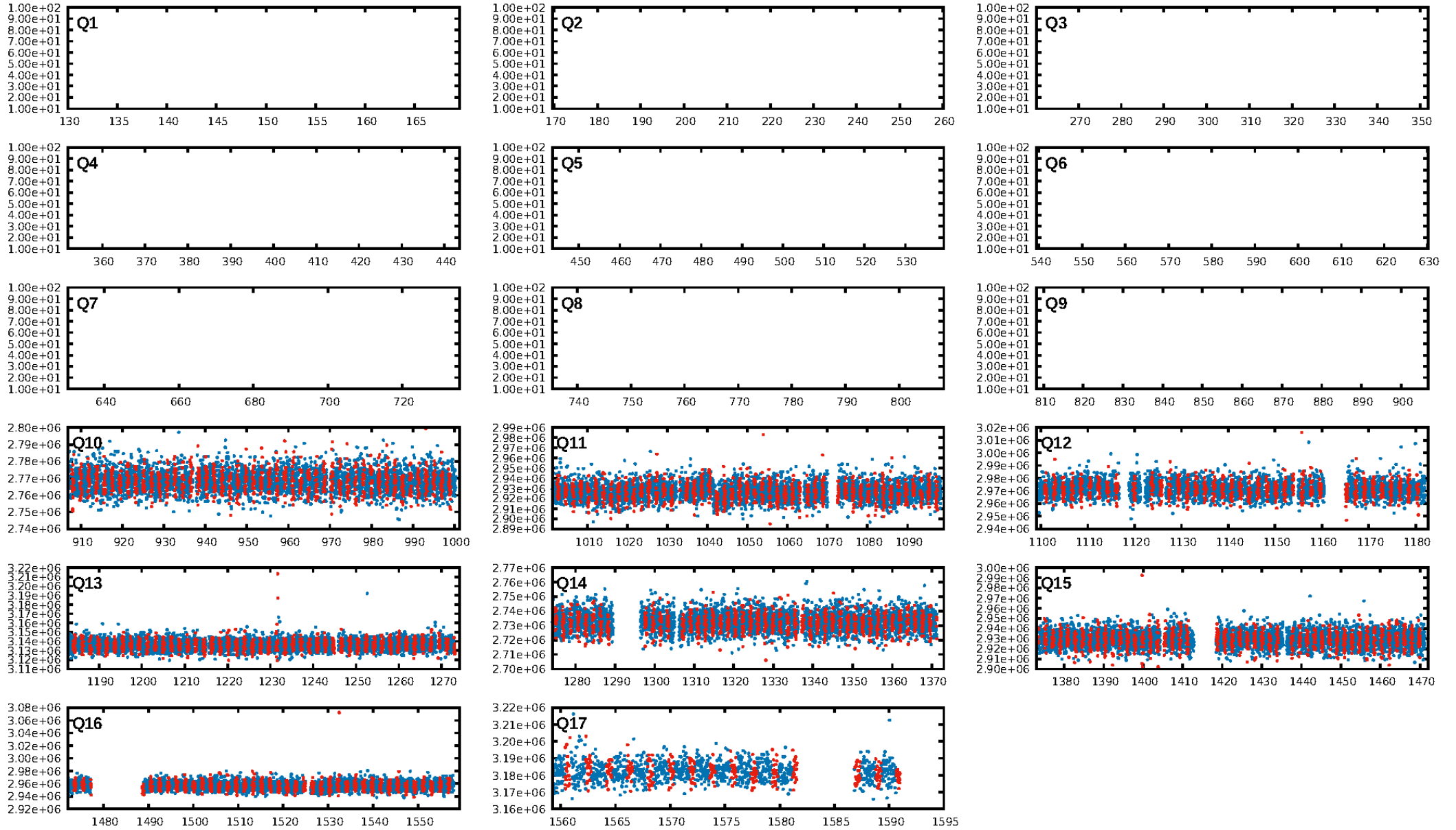
DV Fit Results:

Period = 1.89145 [0.00002] d
Epoch = 132.5912 [0.0075] BKJD
Rp/R* = 0.0194 [0.0310]
a/R* = 2.22 [10.94]
b = 0.54 [8.36]
Seff = 850.43 [296.64]
Teq = 1377 [120] K
Rp = 2.02 [3.27] Re
a = 0.0296 [0.0066] AU
Ag = N/A
Teffp = N/A

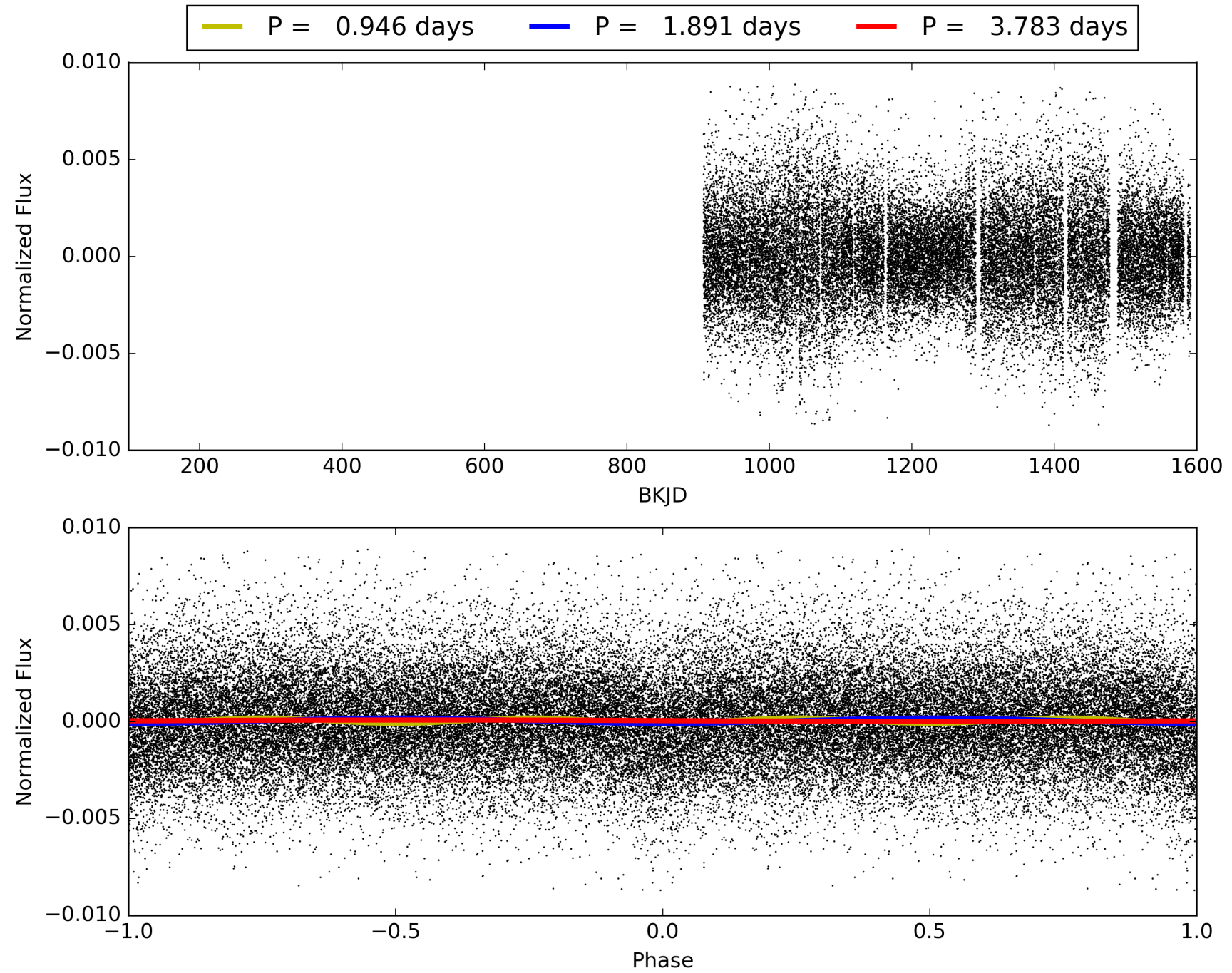
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.89e-29
RollingBand-fgt: 1.00 [316/316]
GhostDiagnostic-chr: 0.2304
Centroid-sig: 0.0%
Centroid-so: 1.811 arcsec [1.63σ]
OotOffset-rm: 2.042 arcsec [1.96σ]
KicOffset-rm: 3.492 arcsec [2.96σ]
OotOffset-st: 2/2/2/2 [8]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 0.00 [0/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 002570432-01, PDC Light Curves

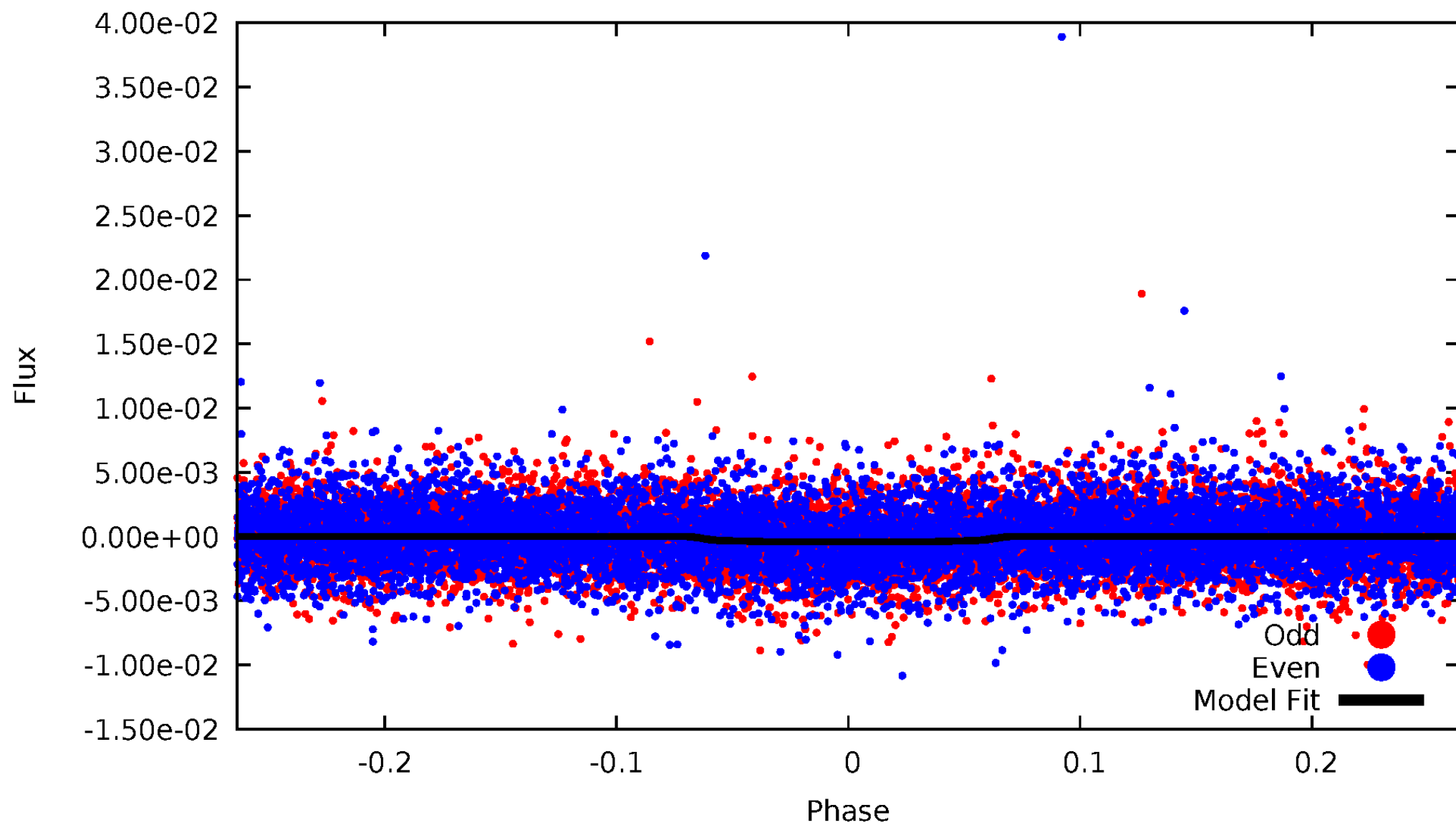


TCE 002570432-01



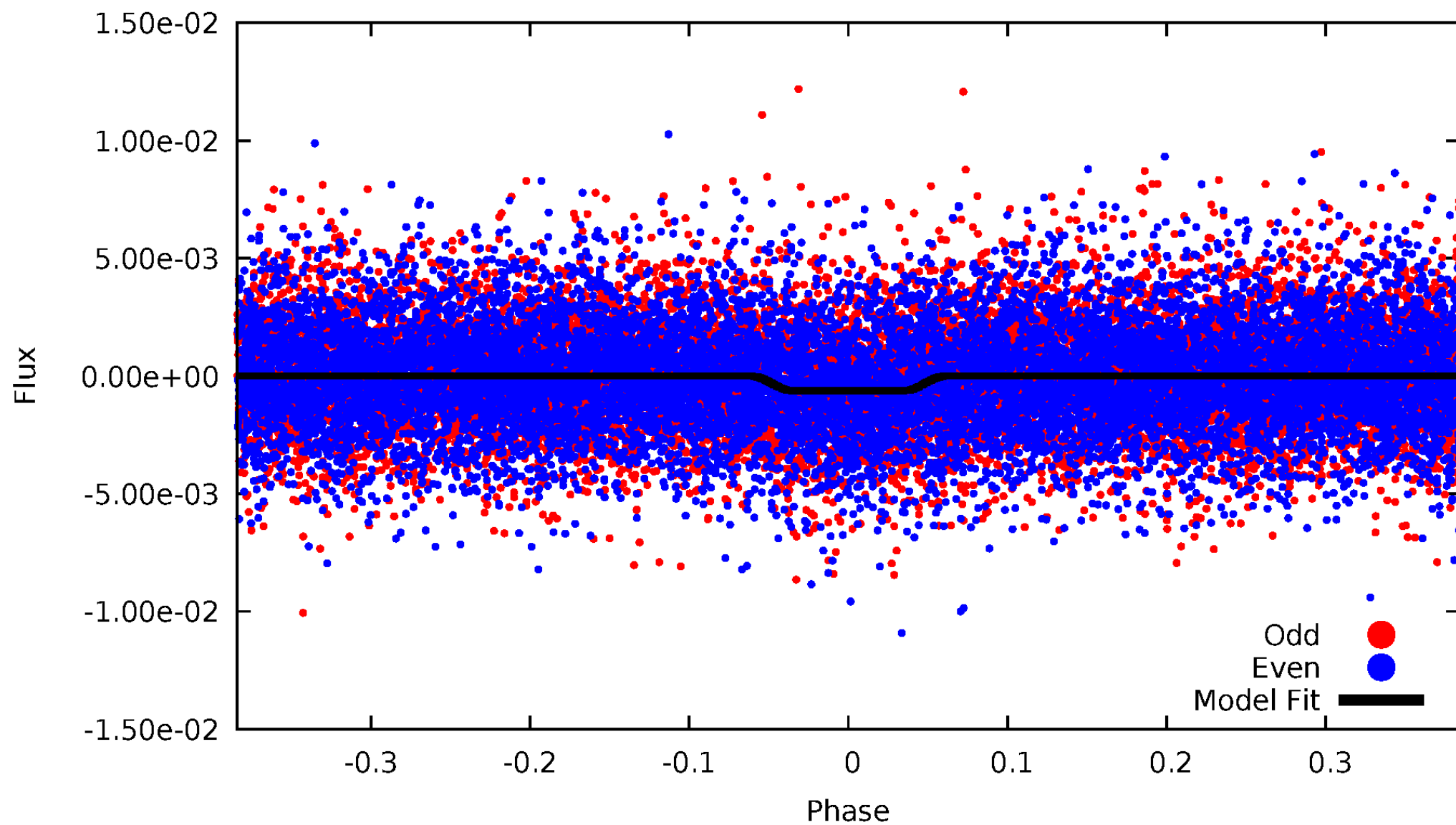
DV Odd/Even

TCE 002570432-01



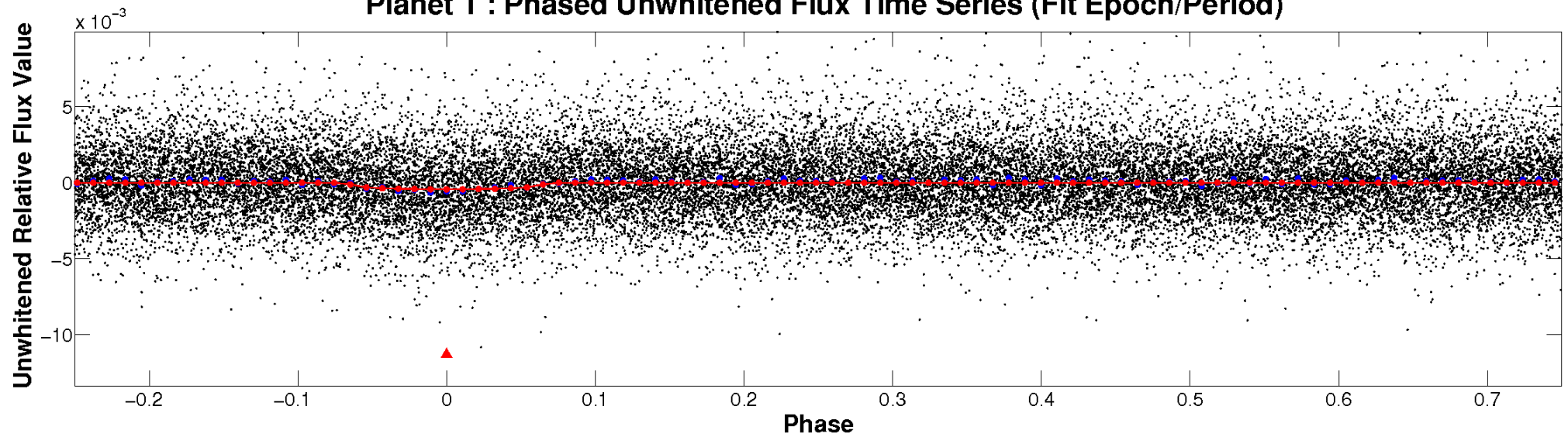
ALT Odd/Even

TCE 002570432-01

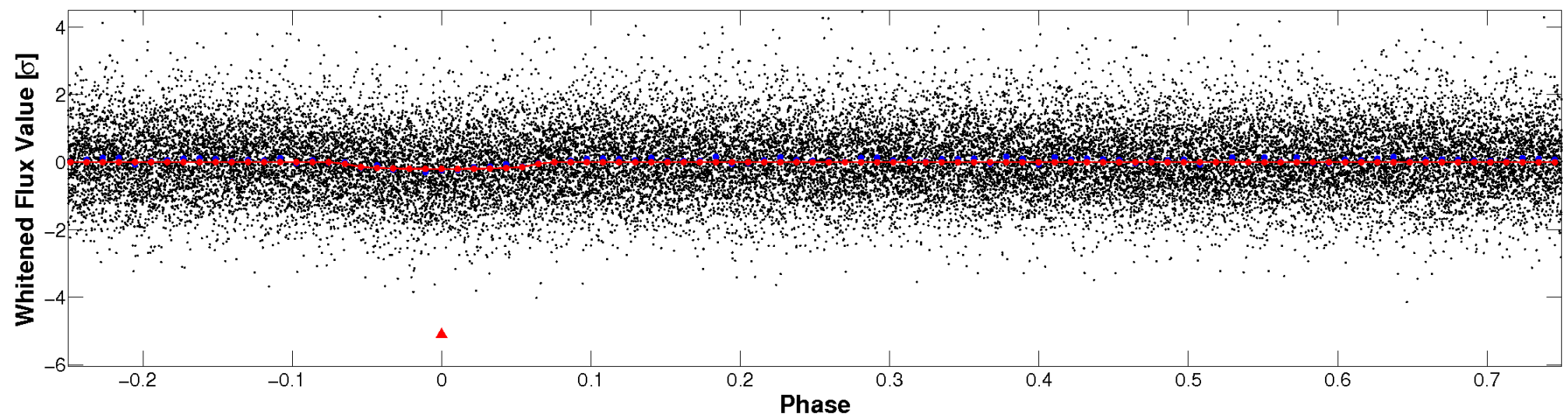


Non-Whitened Vs. Whitened Light Curve

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

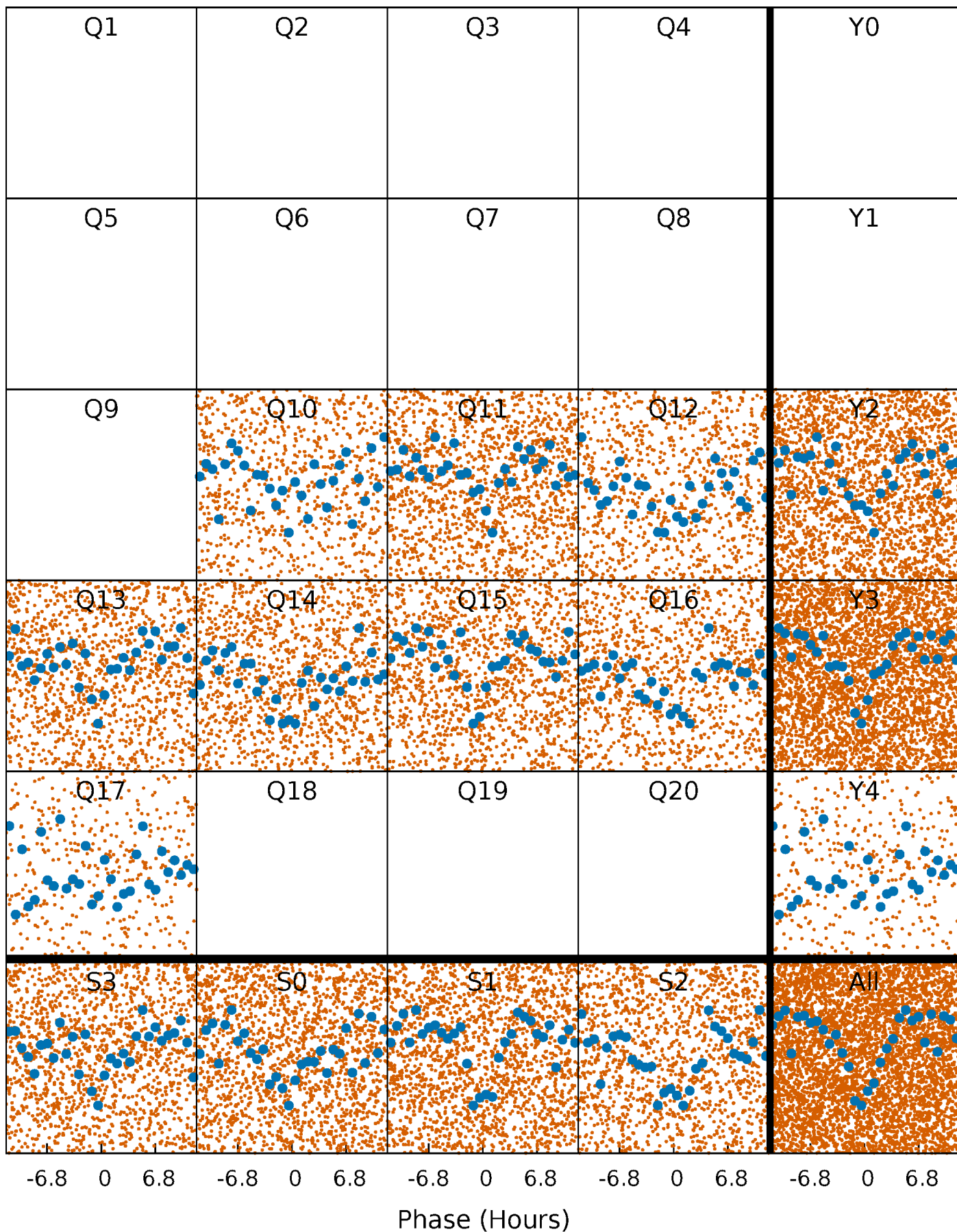


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



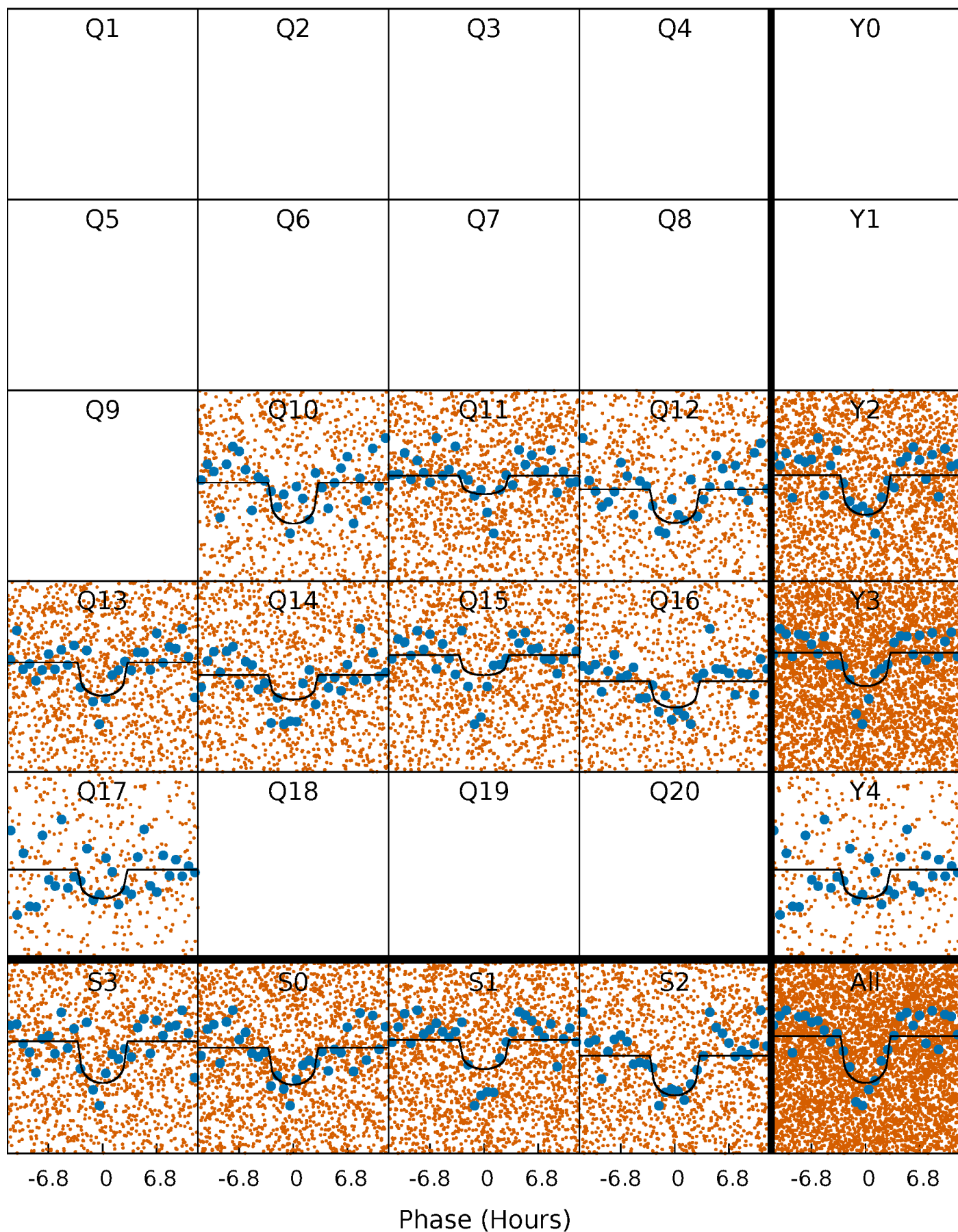
PDC Quarter-Phased Transit Curves

TCE 002570432-01 P= 1.891448 Days $T_0=132.591166$ (BKJD)



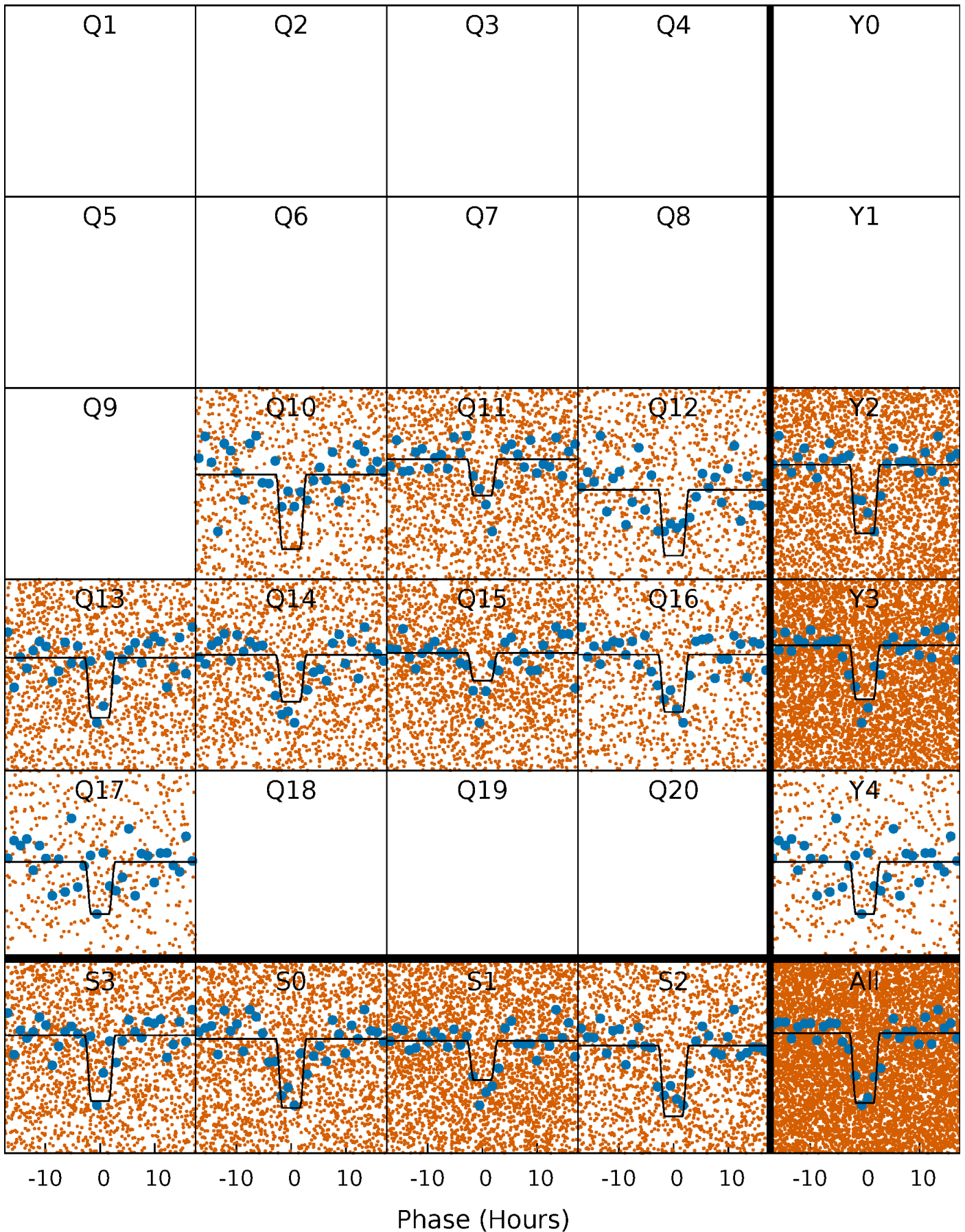
DV Quarter-Phased Transit Curves

TCE 002570432-01 P= 1.891448 Days $T_0=132.591166$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

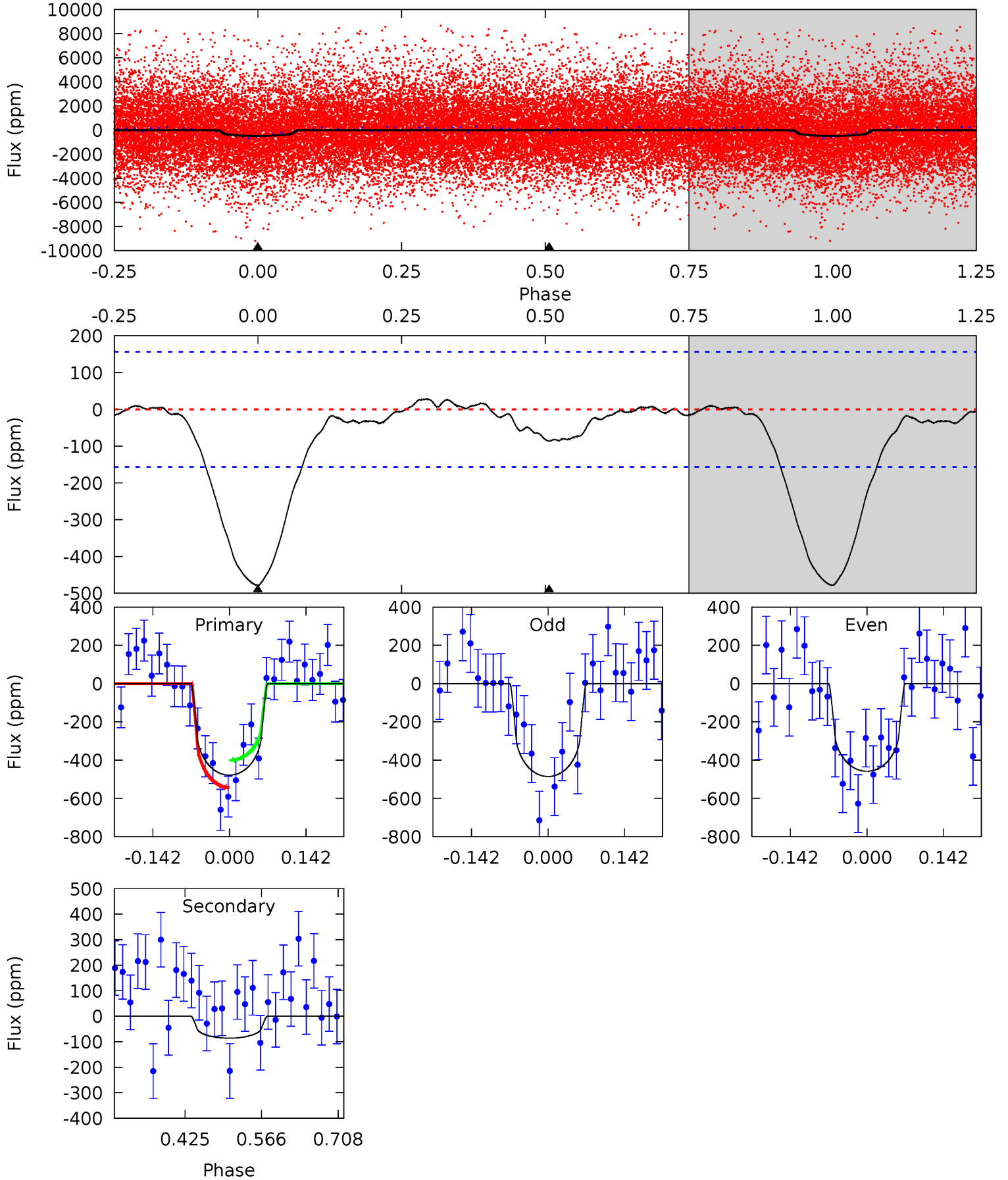
TCE 002570432-01 P= 1.891492 Days $T_0=132.550067$ (BKJD)



DV Model-Shift Uniqueness Test

002570432-01, P = 1.891448 Days, E = 132.591166 Days

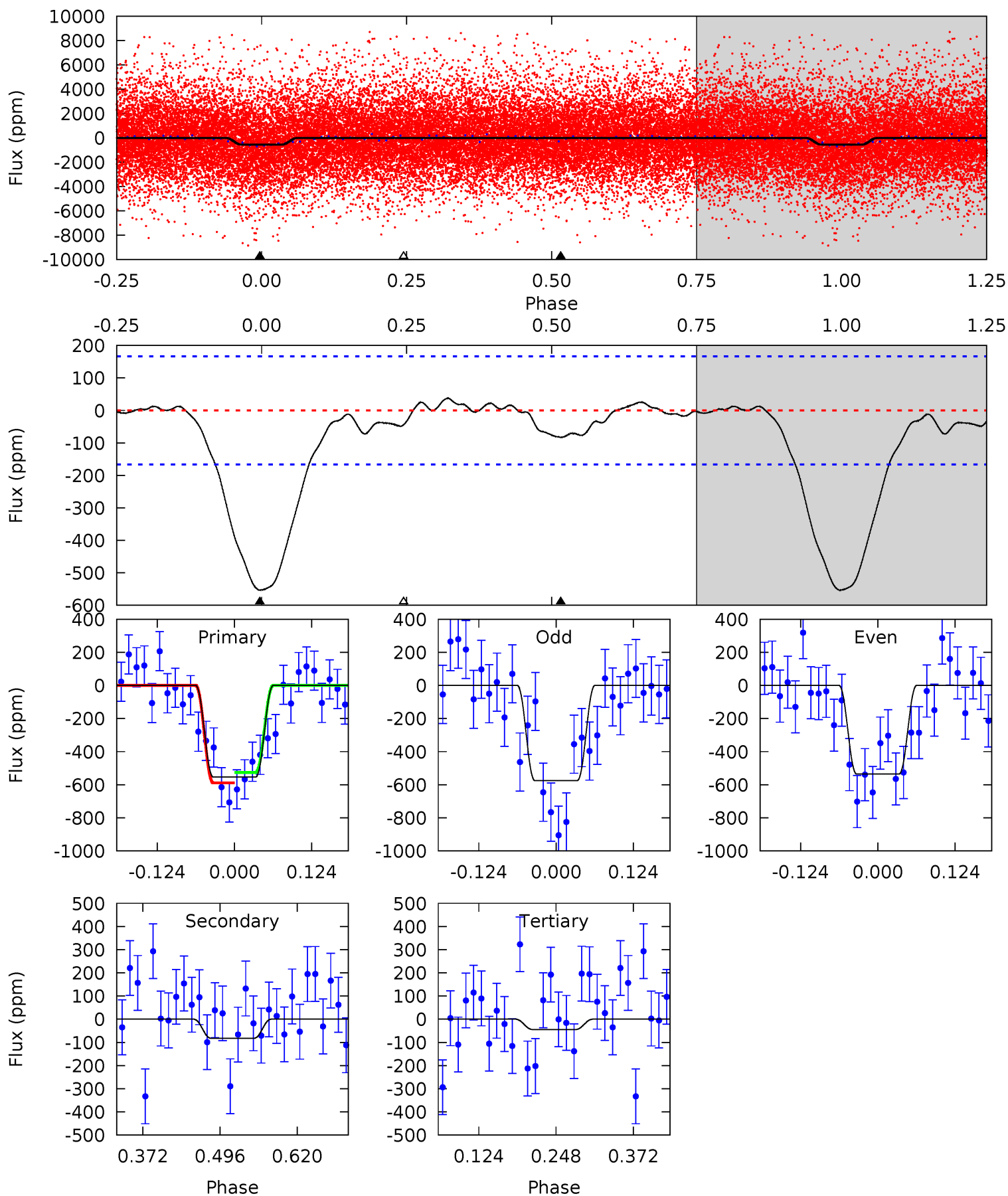
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	2.47	0	0	4.49	1.47	0.51	13.7	13.7	2.47	2.47	0.39	1.09	0.05	2.05



Alt Model-Shift Uniqueness Test

002570432-01, P = 1.891492 Days, E = 132.550067 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	2.25	1.22	0	4.52	1.54	0.66	13.8	15.0	1.03	2.25	0.54	1.14	0.06	0.85



Stellar Parameters For KIC 002570432

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5504^{+180}_{-180}	$4.466^{+0.062}_{-0.175}$	$0.240^{+0.200}_{-0.300}$	$0.952^{+0.257}_{-0.103}$	$0.968^{+0.083}_{-0.092}$	$1.578^{+0.511}_{-0.762}$
	+3%/-3%	+1%/-4%	+83%/-125%	+27%/-11%	+9%/-10%	+32%/-48%
Source	KIC0	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 002570432-01 / KOI 4946.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-86 ± 35	$3.30^{+2.82}_{-2.20}$	1956^{+125}_{-97}	3431^{+1885}_{-755}	$3.681^{+29.515}_{-2.793}$
Alt.	-83 ± 37	$3.37^{+3.27}_{-2.23}$	1955^{+128}_{-100}	3335^{+1737}_{-745}	$3.120^{+25.827}_{-2.375}$

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

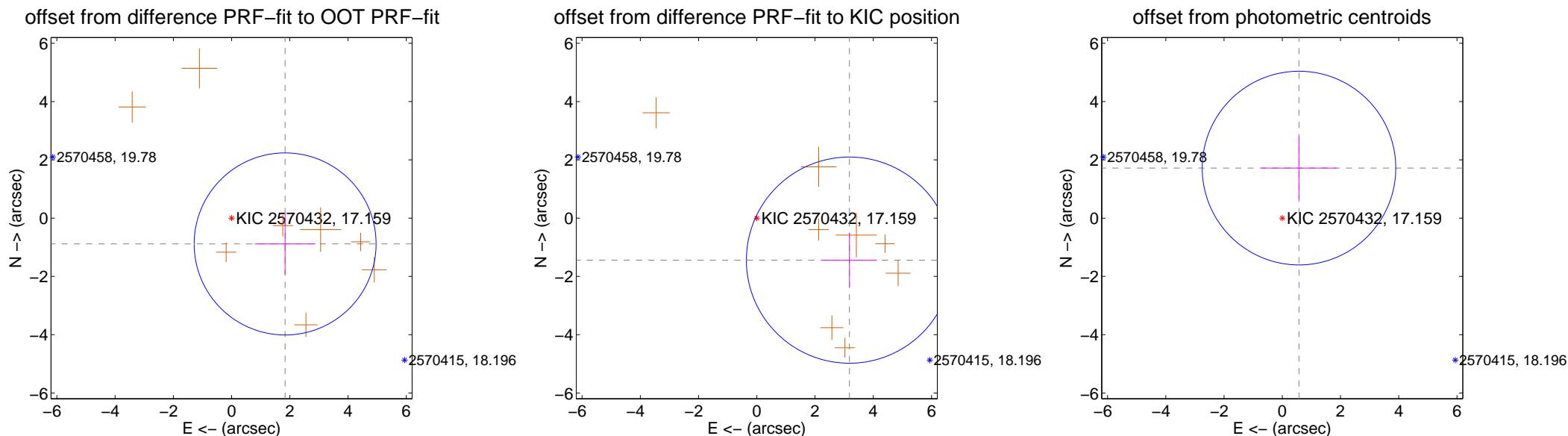
DV Centroid Data

Supplemental centroid analysis for 002570432-01. Kepler magnitude: 17.16. Transit SNR 10.63

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.68 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.042 ± 1.042	1.96	-1.839 ± 1.042	-0.886 ± 1.039
PRF-fit source offset from KIC position	3.492 ± 1.179	2.96	-3.181 ± 0.942	-1.442 ± 0.935
photometric centroid source offset	1.81 ± 1.11	1.63	-0.57 ± 1.30	1.72 ± 1.09



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.

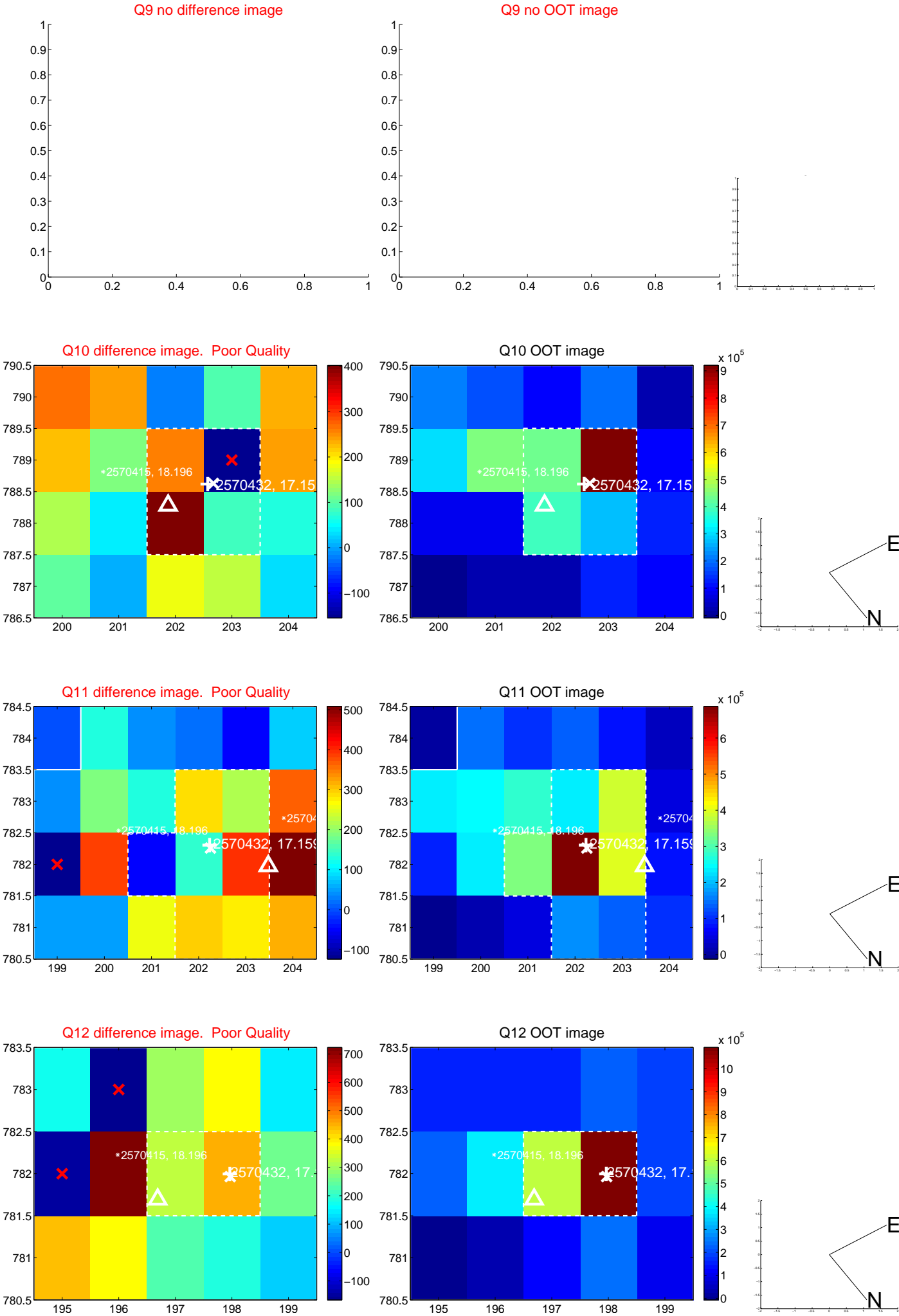
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



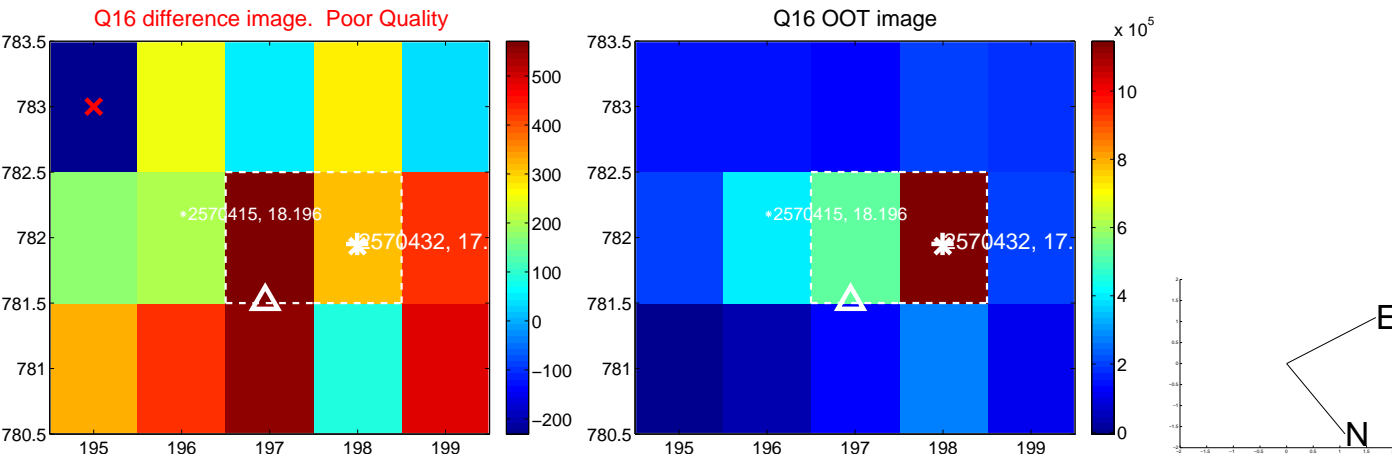
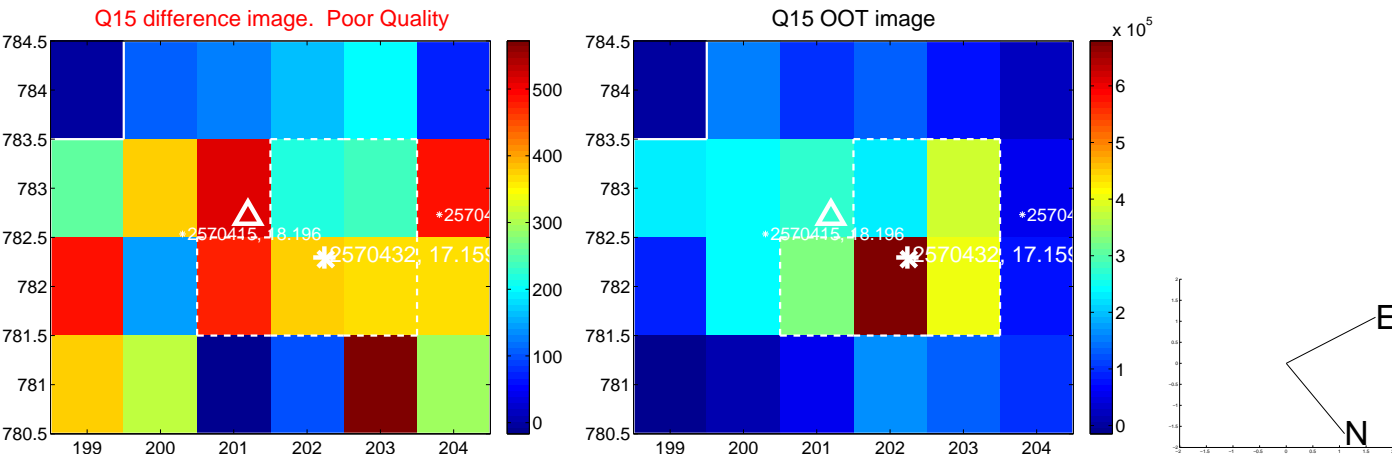
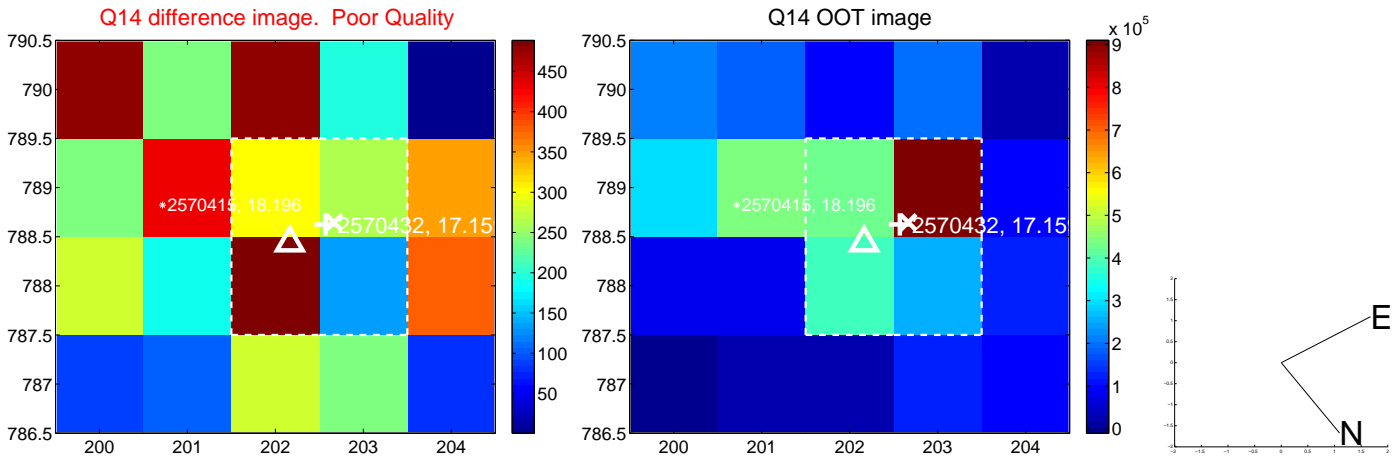
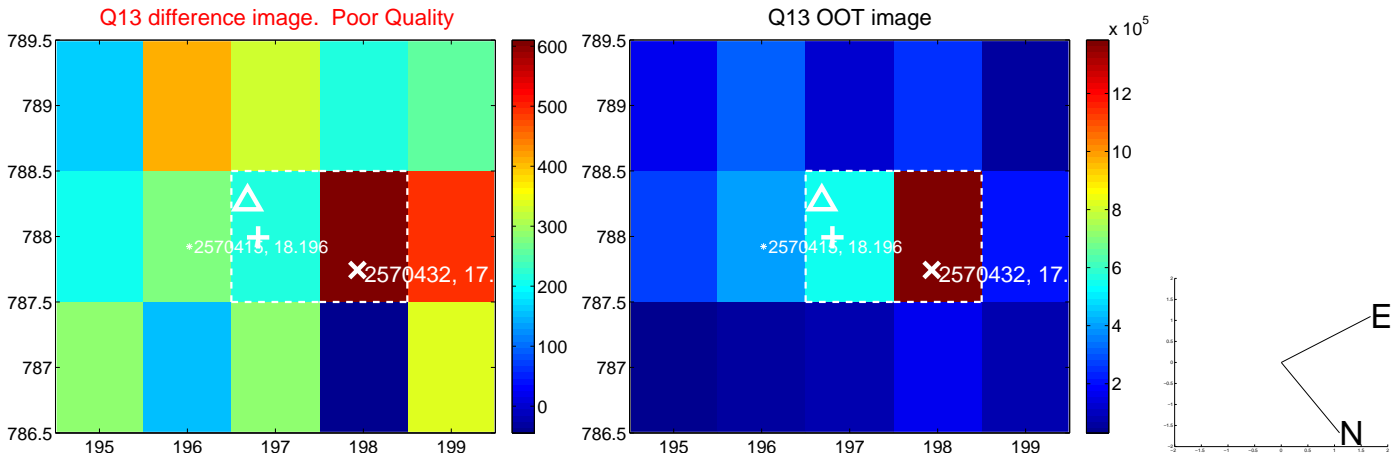
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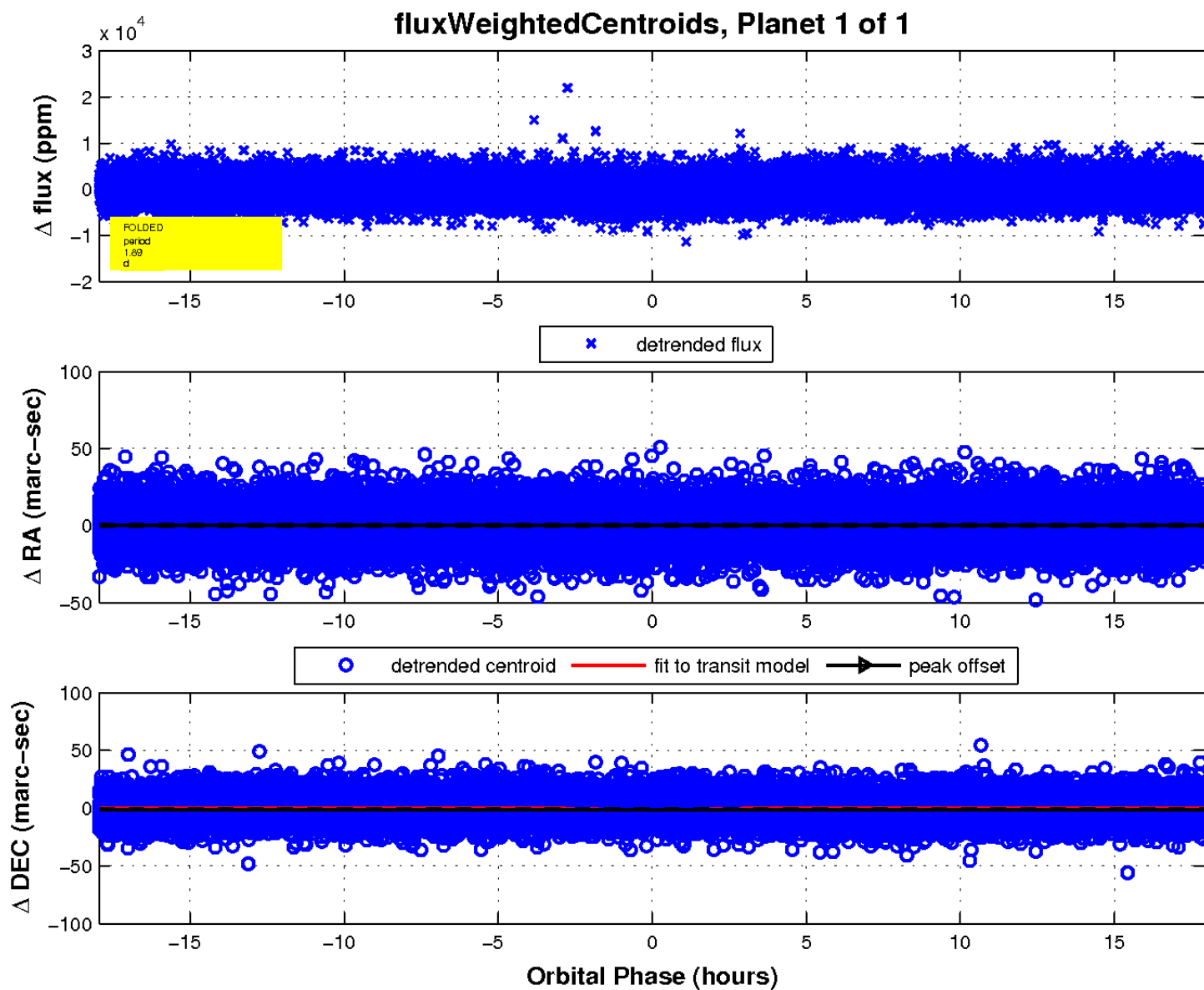
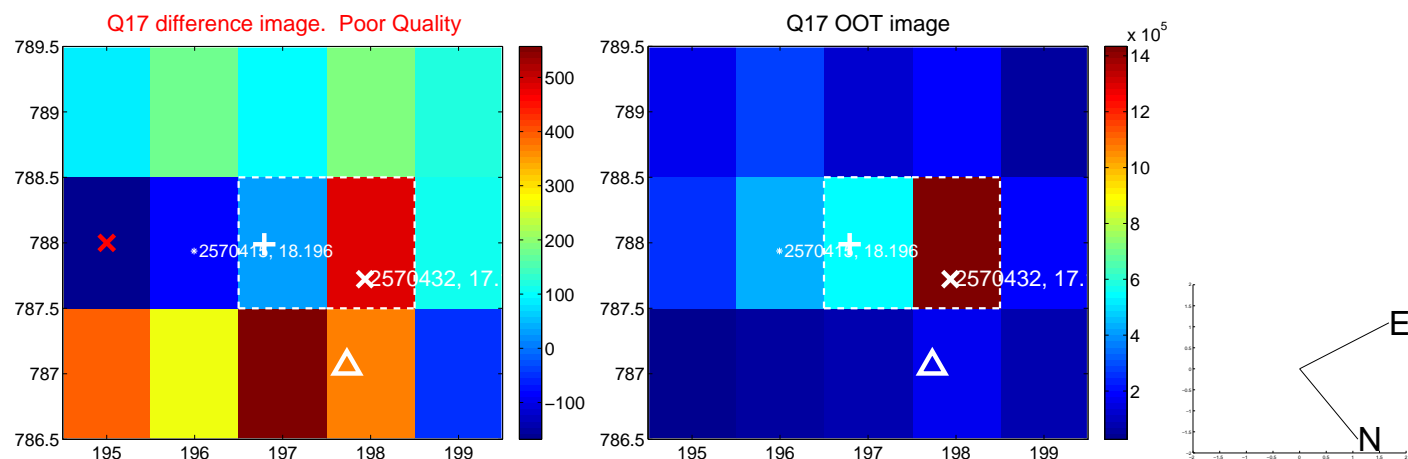
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white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

