

KIC 006020898

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})
006020898-01	OBS	No	4.015761	133.145439	325.1	16.530	10.2	11.6	1.00	5780	2.00	408.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006020898-01	OBS	FP	0.00	1	0	1	0	SWEET_NTL —LPP_DV —CENT_RESOLVED_OFFSET

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

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

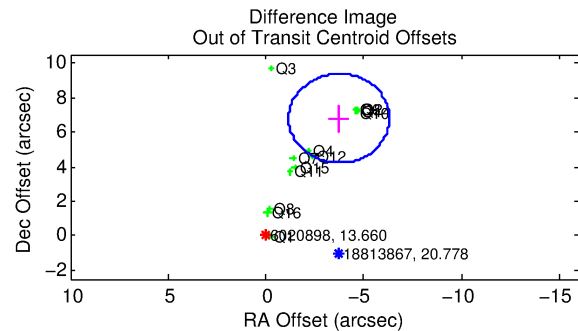
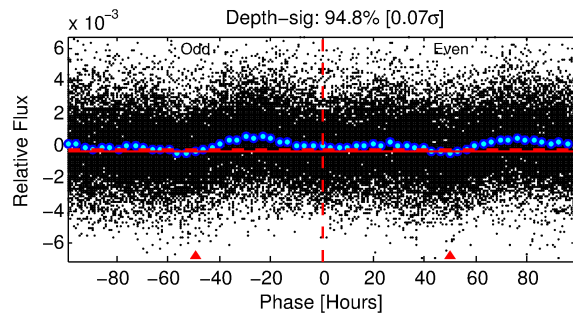
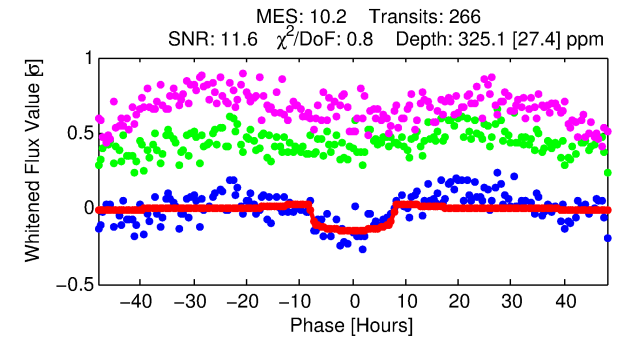
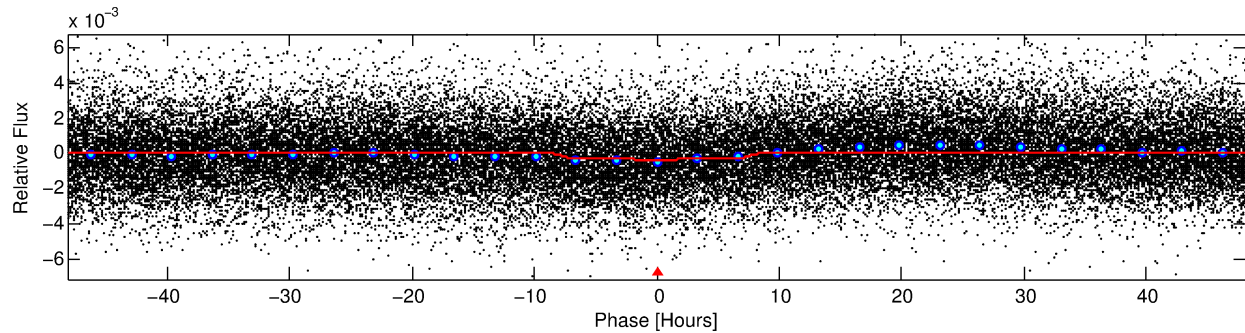
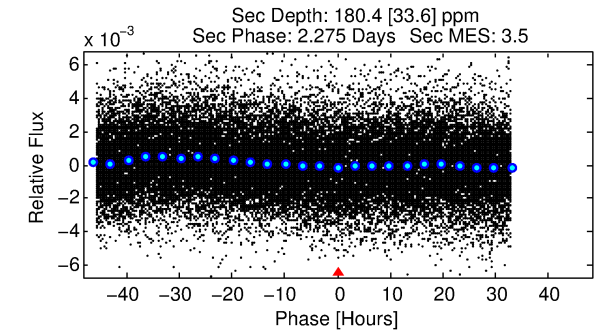
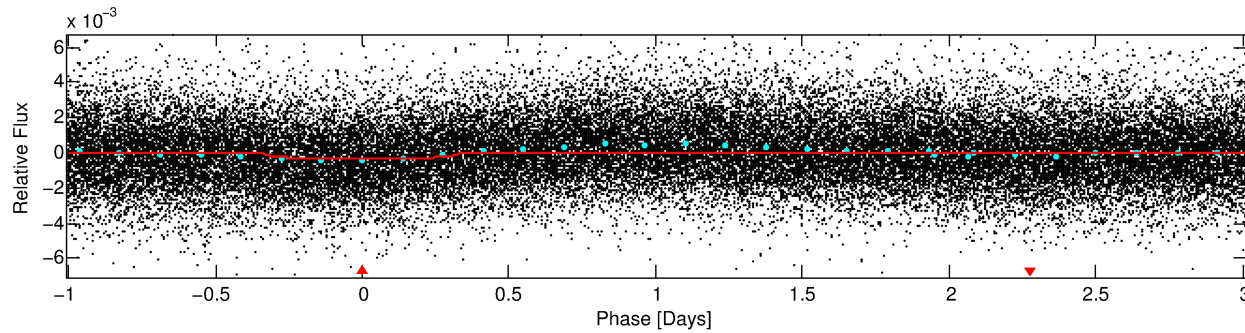
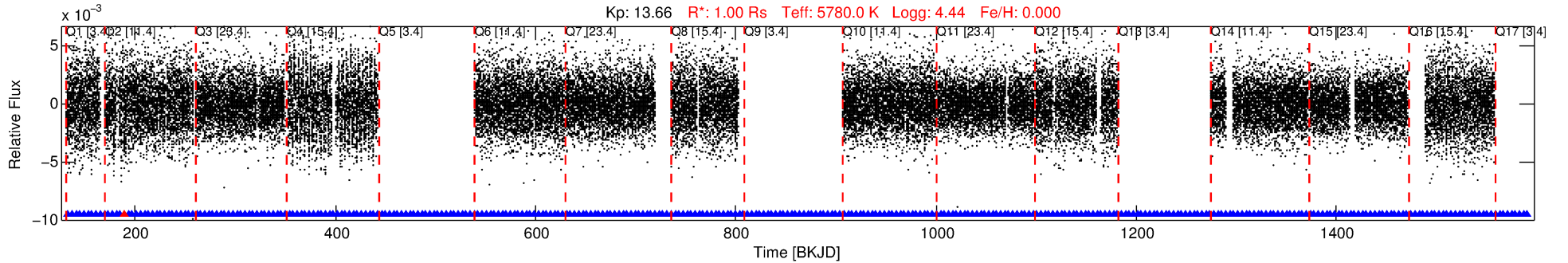
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006020898-01

No Significant Match Found

DV One-Page Summary

KIC: 6020898 Candidate: 1 of 1 Period: 4.016 d



DV Fit Results:

Period = 4.01576 [0.00008] d
Epoch = 133.1454 [0.0161] BKJD
 R_p/R^* = 0.0184 [0.0033]
 a/R^* = 1.46 [0.61]
 b = 0.80 [0.35]
 Seff = 408.87 [0.01]
 T_{eq} = 1147 [0] K
 R_p = 2.00 [0.36] R_e
 a = 0.0495 [0.0000] AU
 A_g = 60.41 [24.45] [2.43σ]
 T_{eff} = 4942 [500] K [7.59σ]

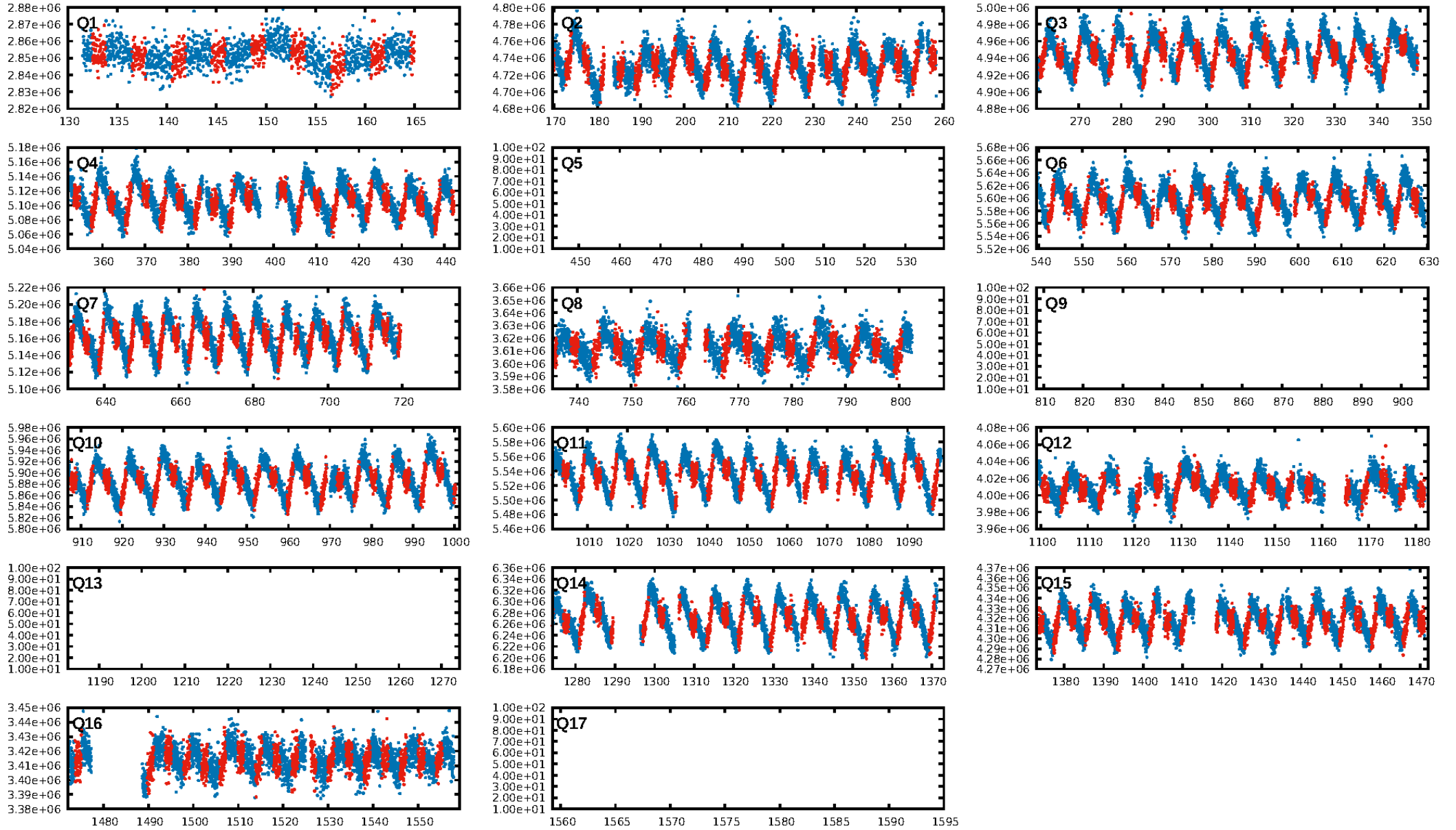
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.89e-16
RollingBand-fgt: 1.00 [256/257]
GhostDiagnostic-chr: -0.3869
Centroid-sig: 0.0%
Centroid-so: 3.369 arcsec [3.59σ]
OotOffset-rm: 7.751 arcsec [9.03σ]
KicOffset-rm: 10.179 arcsec [11.59σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.38 [5/13]
DiffImageOverlap-fno: 1.00 [13/13]

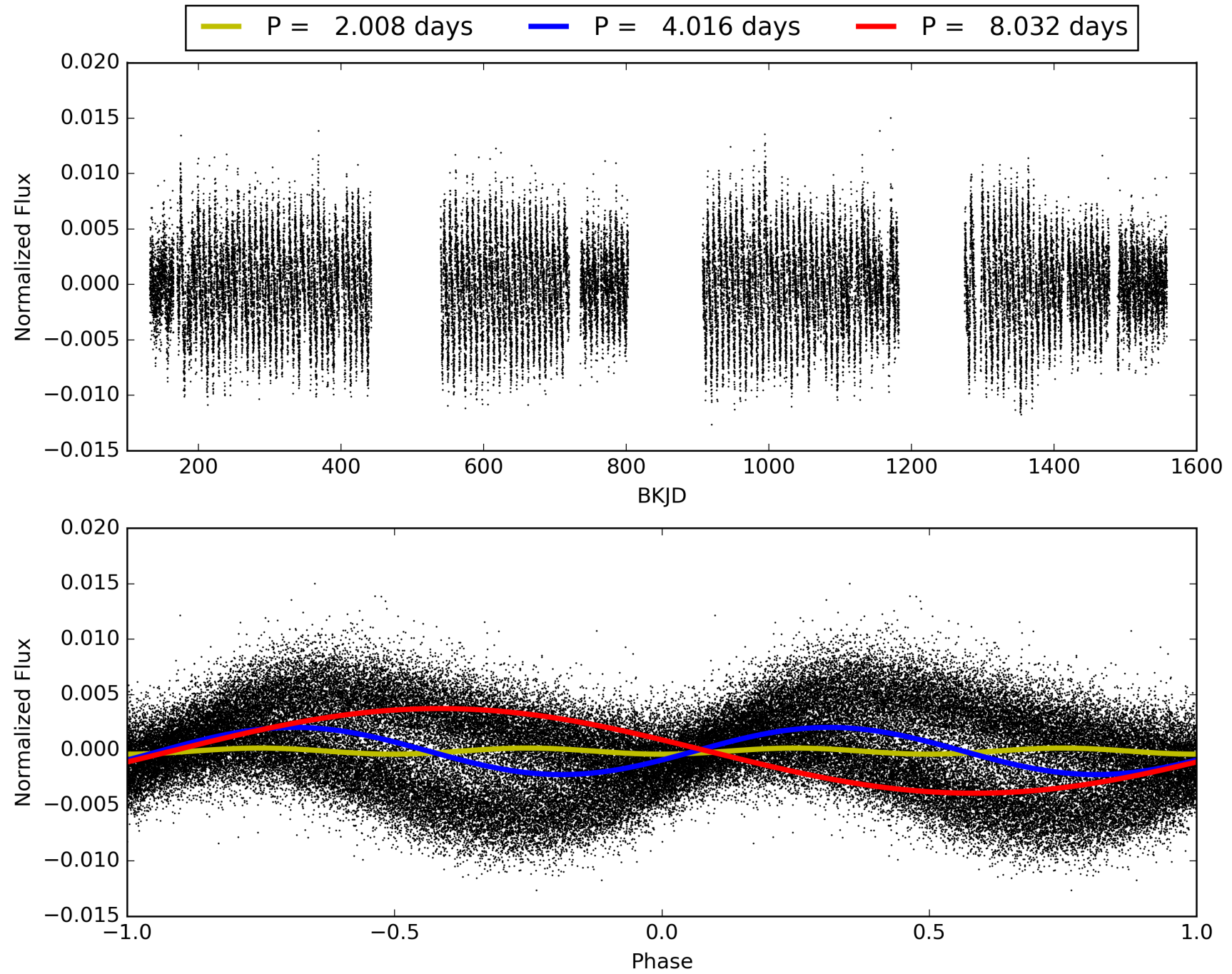
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:21:15 Z

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

TCE 006020898-01, PDC Light Curves

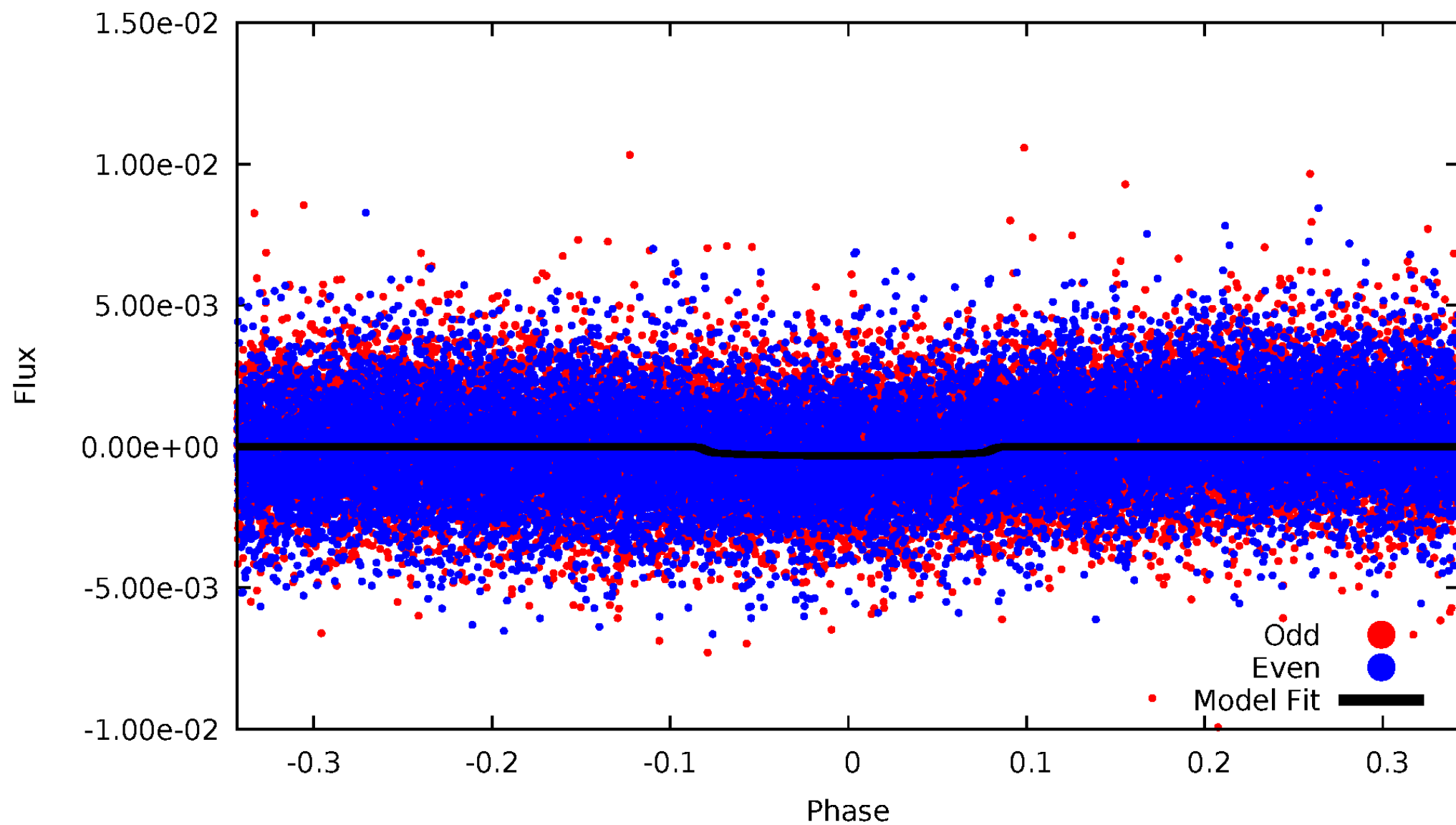


TCE 006020898-01



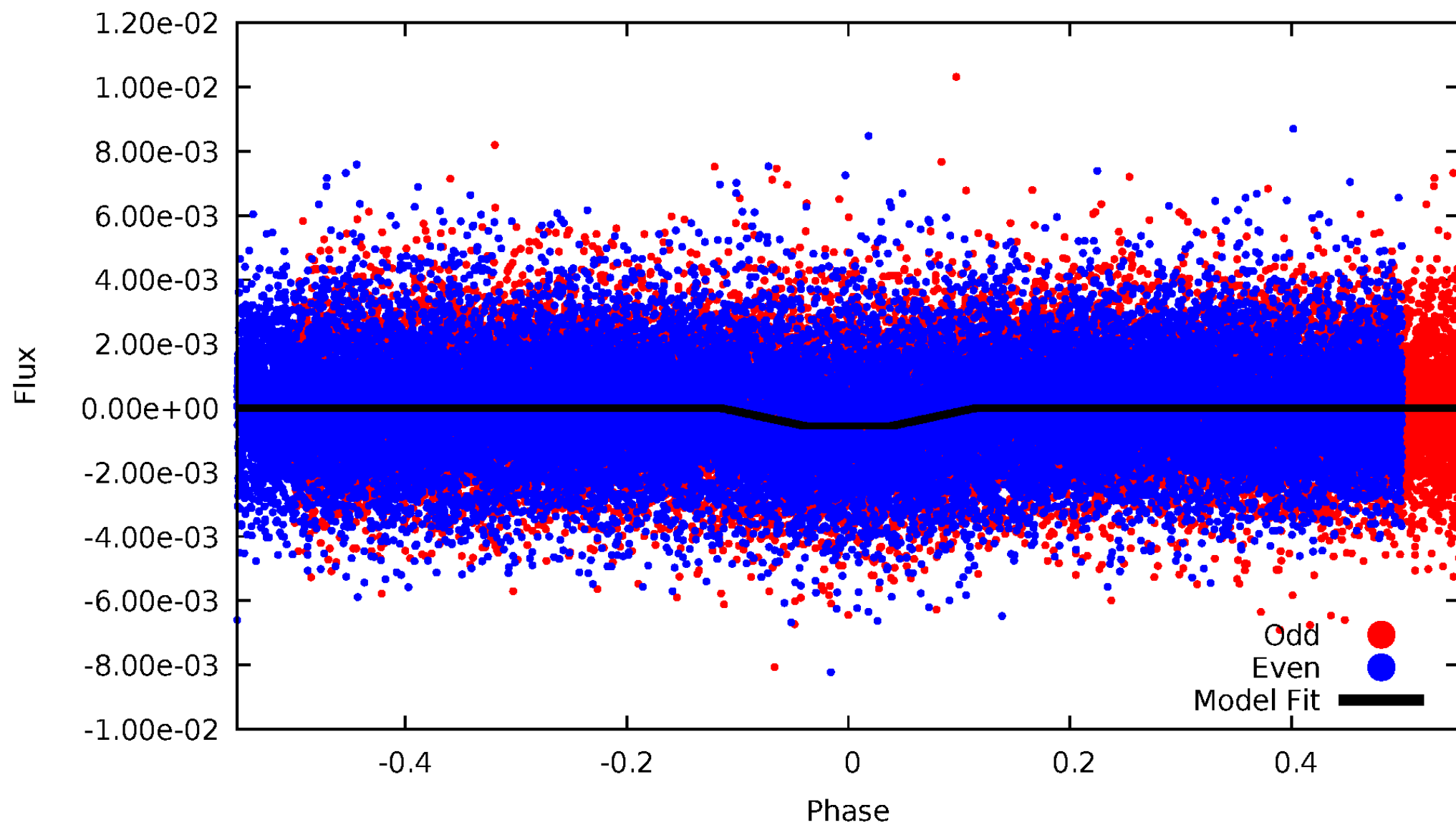
DV Odd/Even

TCE 006020898-01



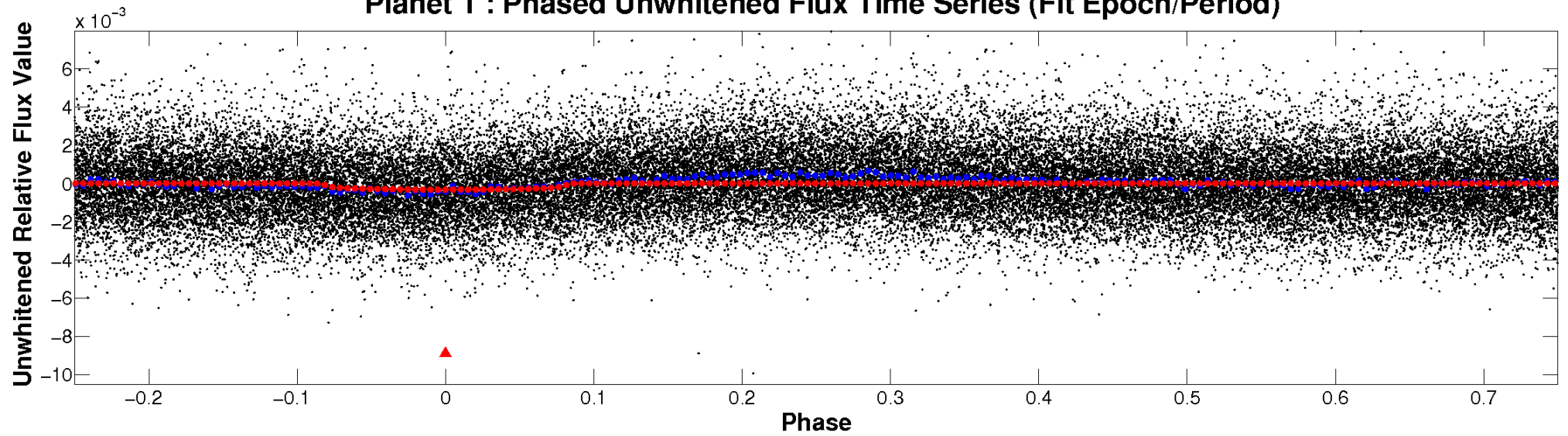
ALT Odd/Even

TCE 006020898-01

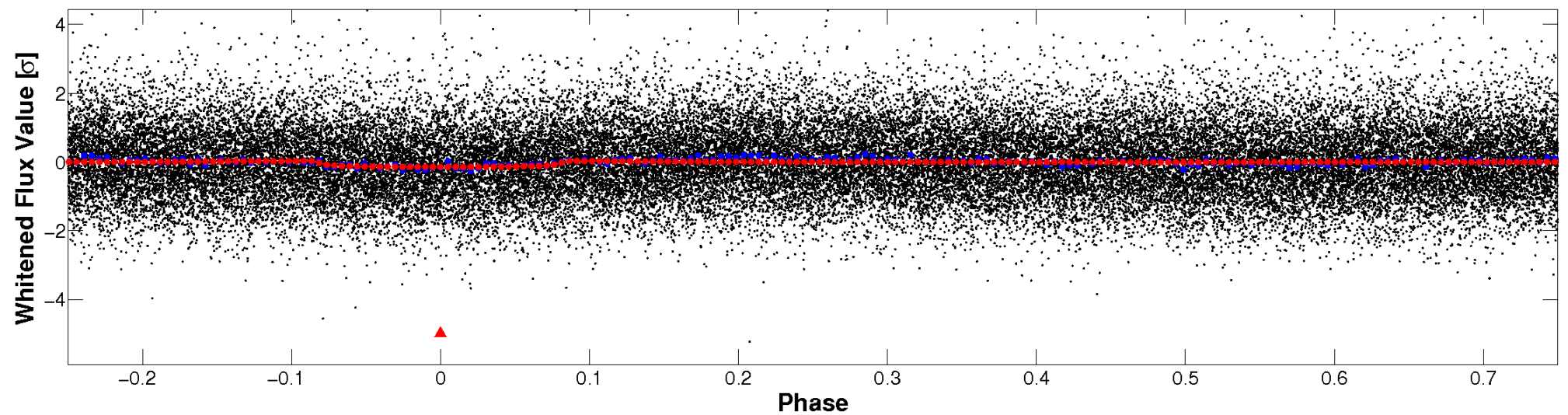


Non-Whitened Vs. Whitened Light Curve

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

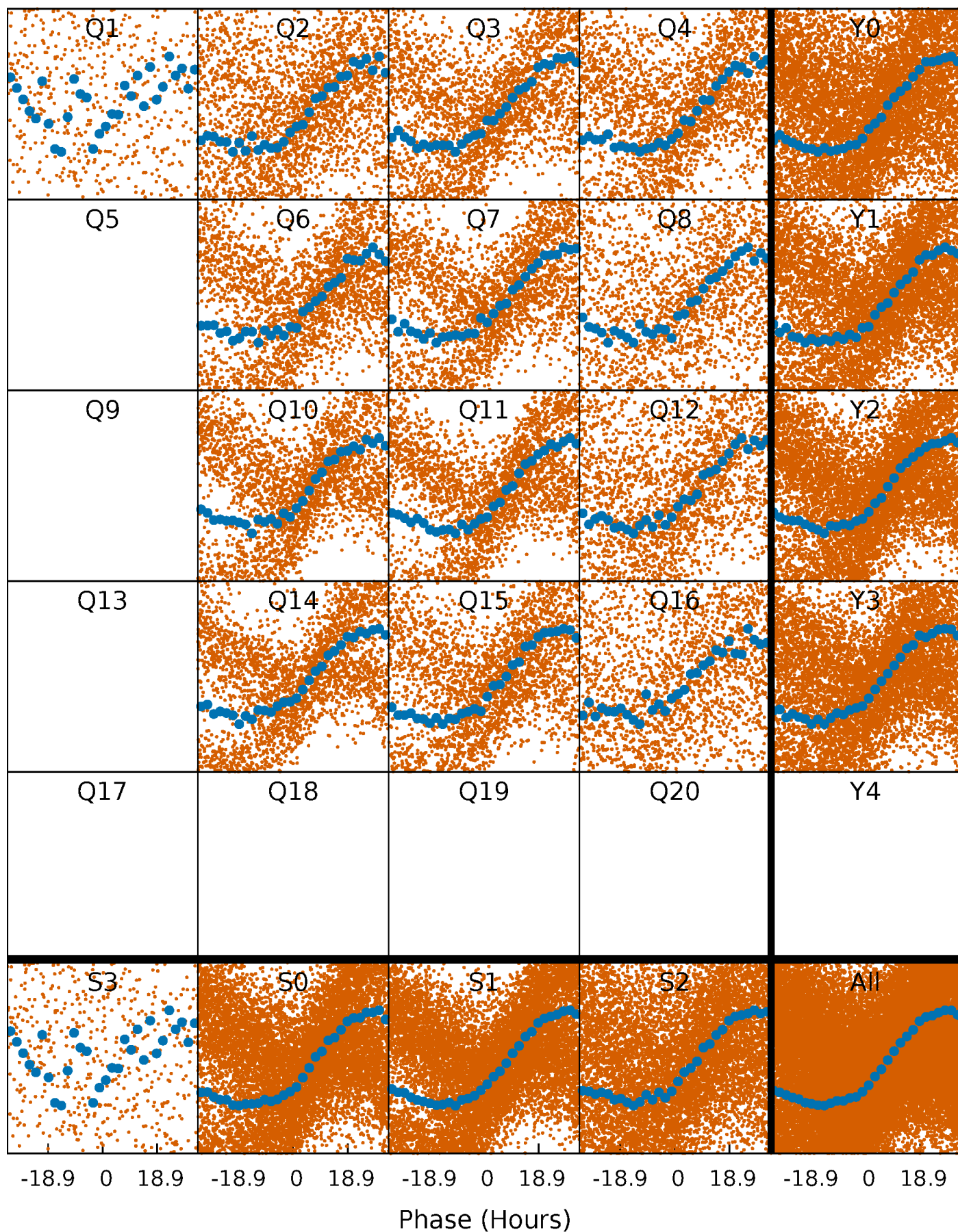


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



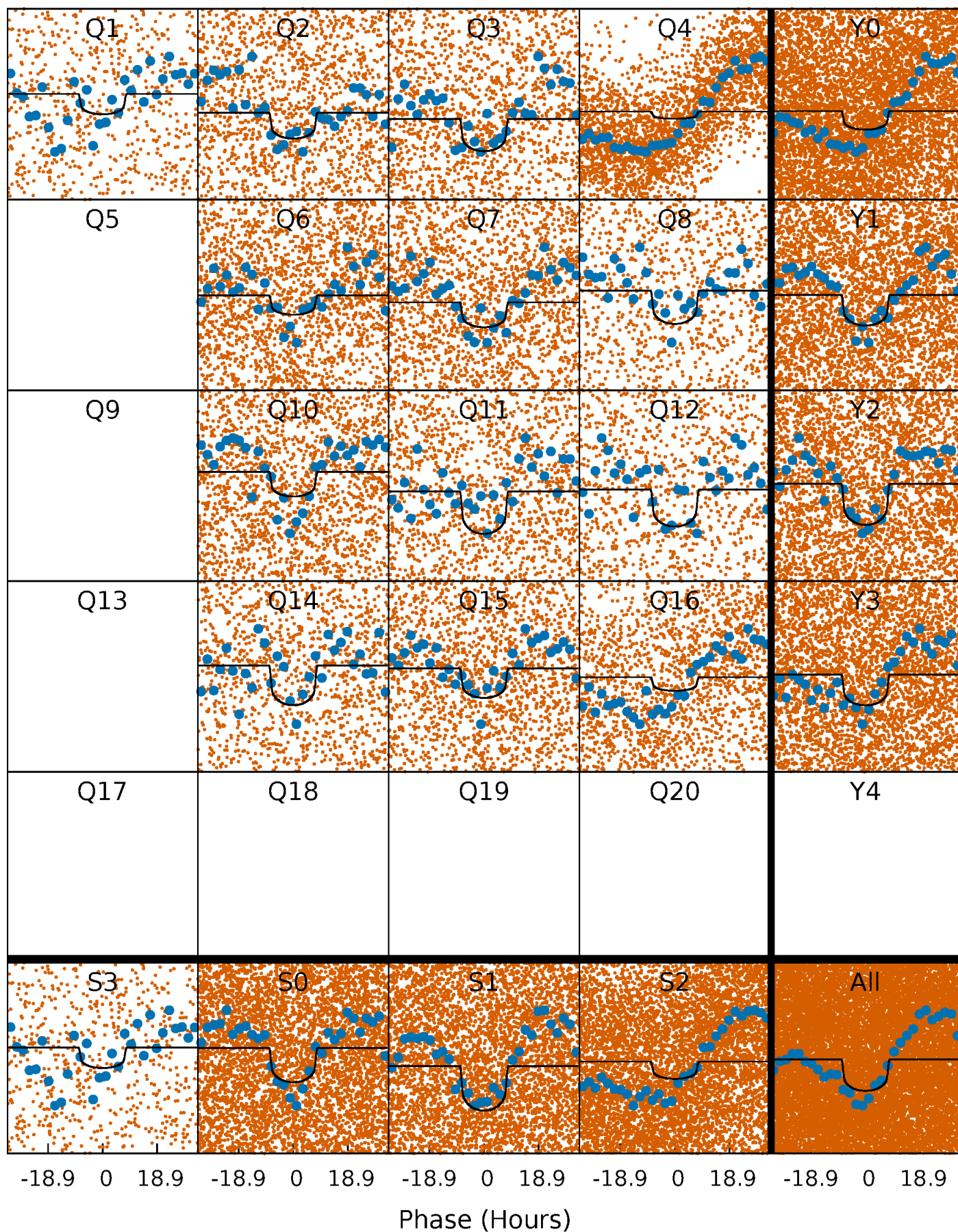
PDC Quarter-Phased Transit Curves

TCE 006020898-01 P= 4.015761 Days $T_0=133.145439$ (BKJD)



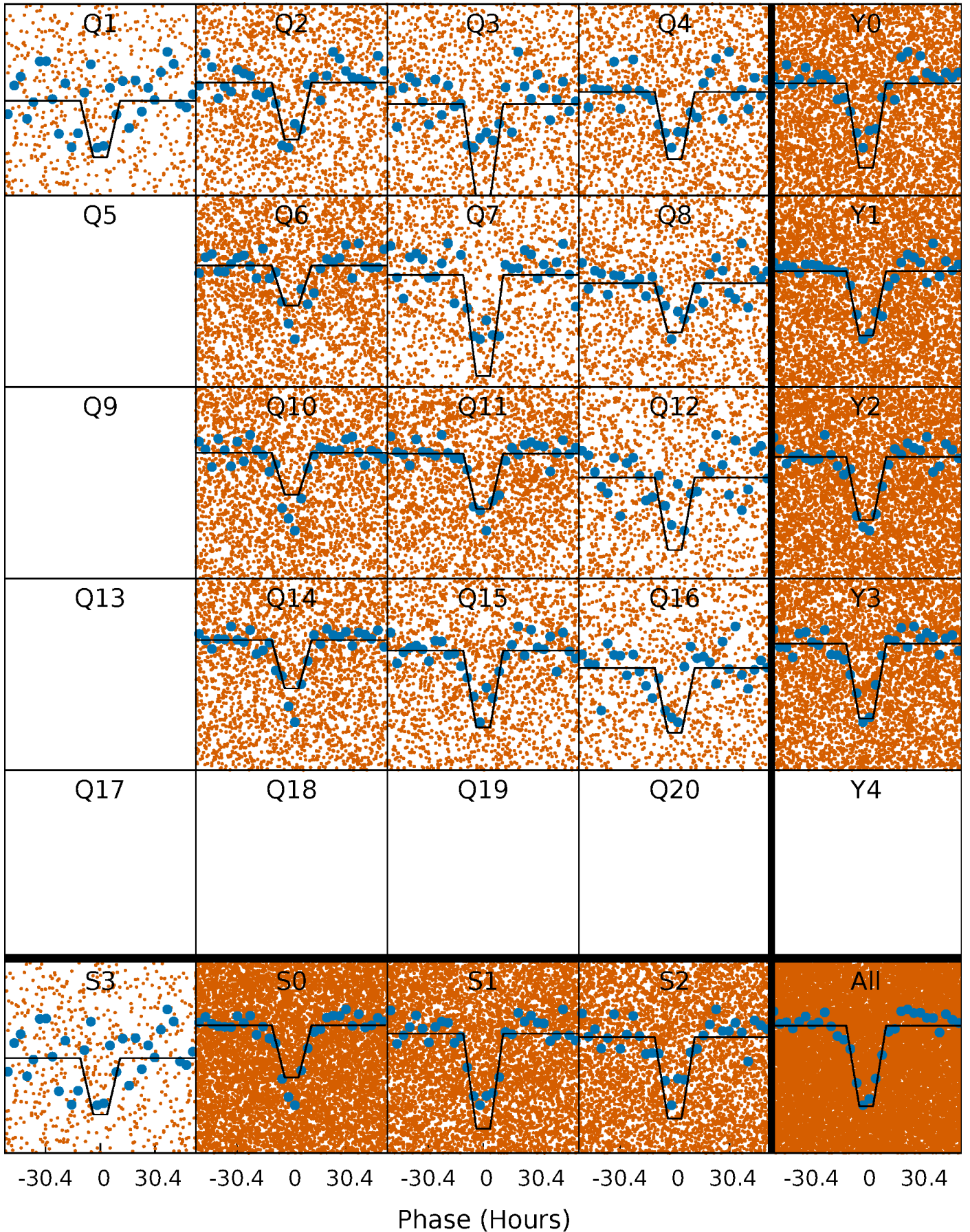
DV Quarter-Phased Transit Curves

TCE 006020898-01 P= 4.015761 Days $T_0=133.145439$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

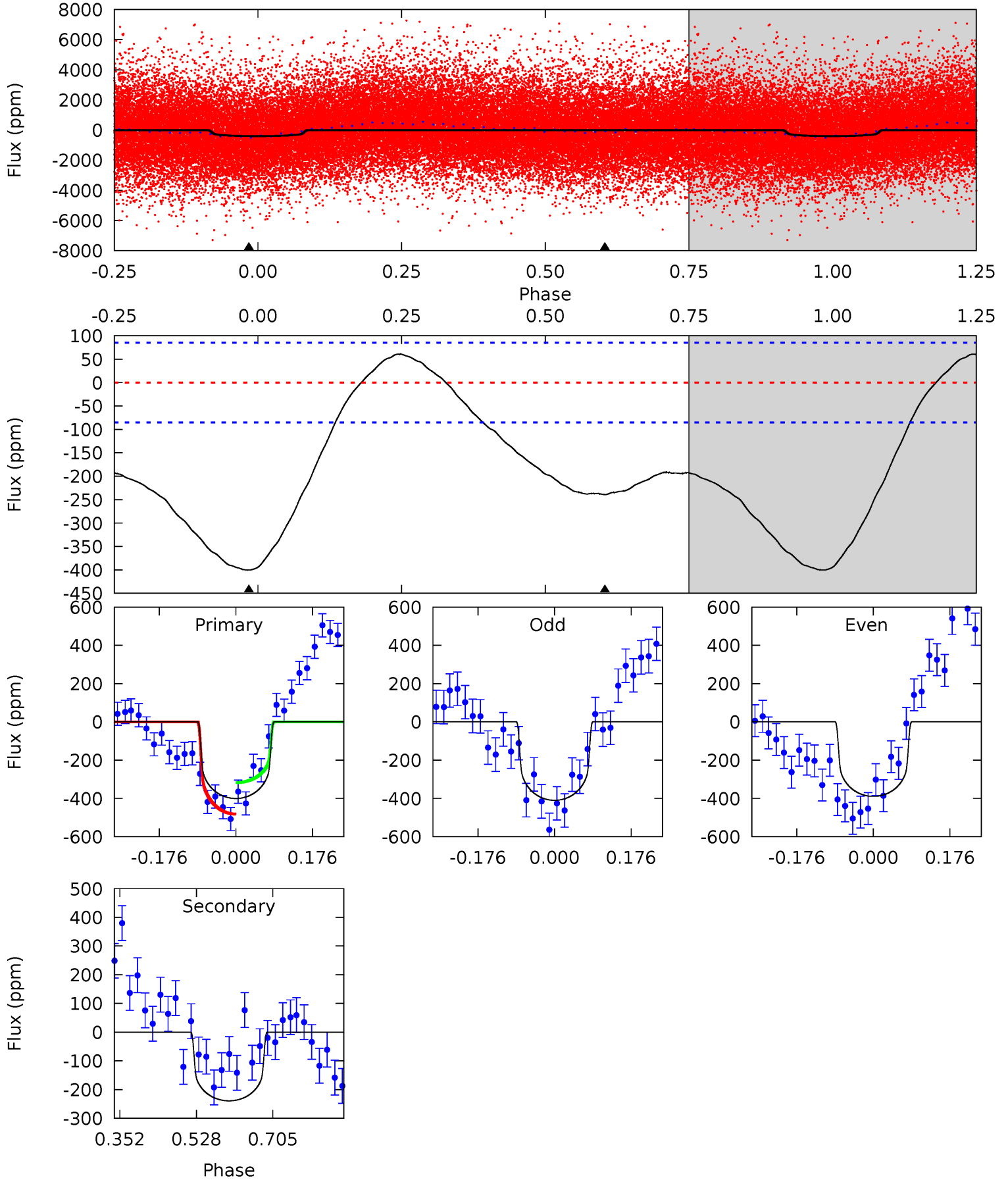
TCE 006020898-01 P= 4.016008 Days $T_0=133.086263$ (BKJD)



DV Model-Shift Uniqueness Test

006020898-01, P = 4.015761 Days, E = 129.129678 Days

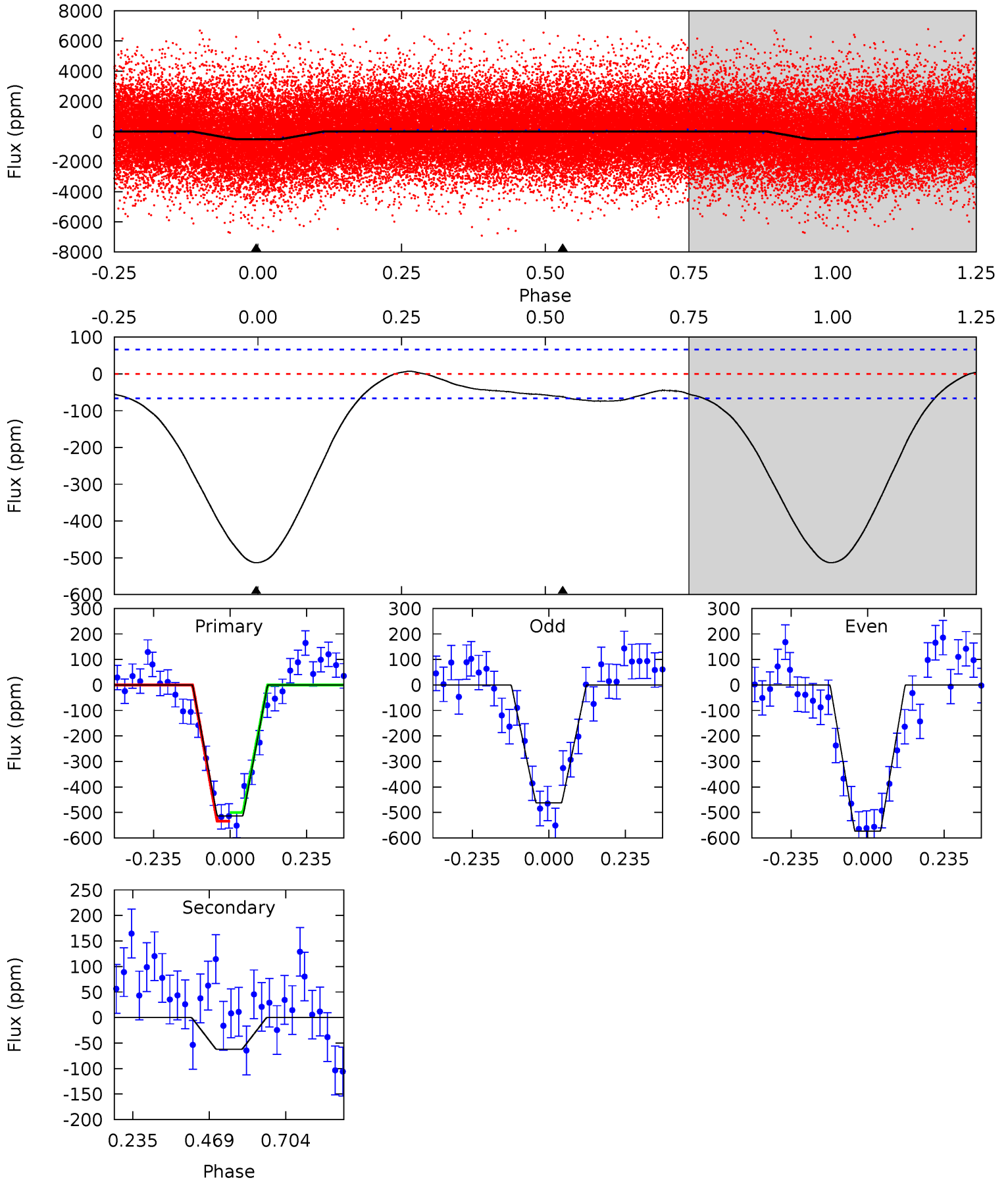
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	12.5	0	0	4.44	1.35	4.24	20.9	20.9	12.5	12.5	0.54	1.05	0.13	4.30



Alt Model-Shift Uniqueness Test

006020898-01, P = 4.016008 Days, E = 129.070255 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.9	4.12	0	0	4.38	1.19	1.58	33.9	33.9	4.12	4.12	3.65	1.25	0.01	1.12



Stellar Parameters For KIC 006020898

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 006020898-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-239 ± 19	$2.02^{+0.40}_{-0.42}$	1603^{+83}_{-75}	5354^{+577}_{-426}	80^{+45}_{-26}
Alt.	-62 ± 15	$2.58^{+0.42}_{-0.39}$	1604^{+81}_{-77}	3726^{+268}_{-258}	13^{+6}_{-4}

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

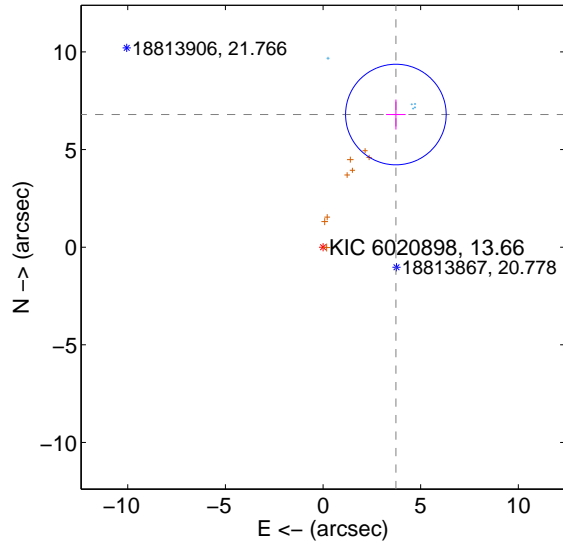
Supplemental centroid analysis for 006020898-01. Kepler magnitude: 13.66. Transit SNR 11.63

There are 5 quarters with good PRF difference image offsets

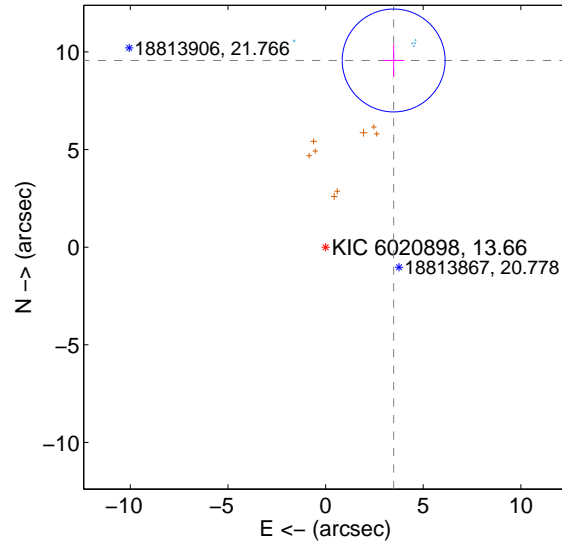
The direct PRF centroid is offset from the target star catalog position by about 1.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.751 ± 0.859	9.03	-3.730 ± 0.499	6.794 ± 0.770
PRF-fit source offset from KIC position	10.179 ± 0.878	11.59	-3.487 ± 0.541	9.563 ± 0.824
photometric centroid source offset	3.37 ± 0.94	3.59	1.33 ± 0.79	3.09 ± 0.96

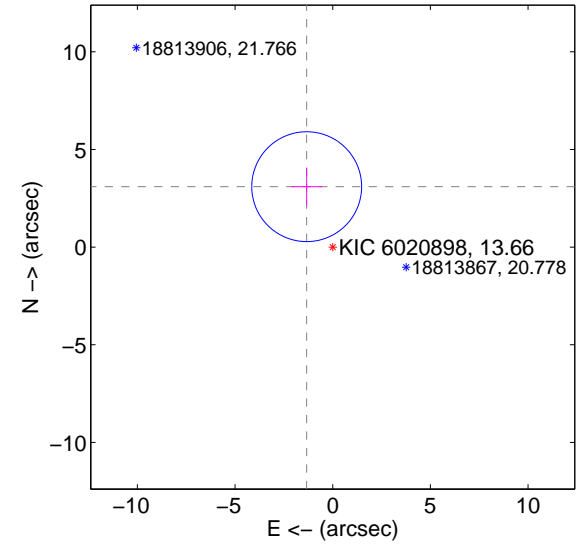
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

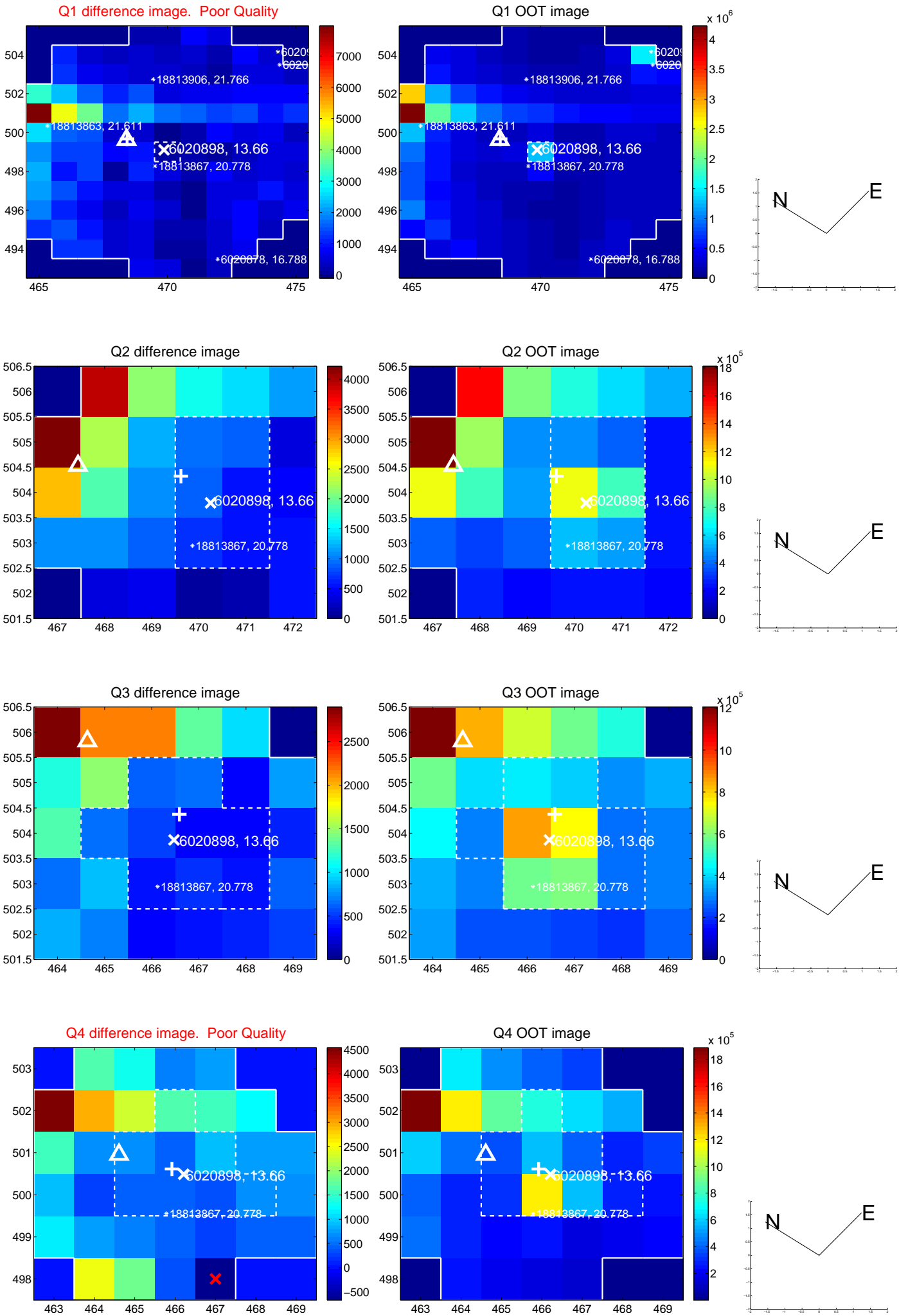


offset from photometric centroids

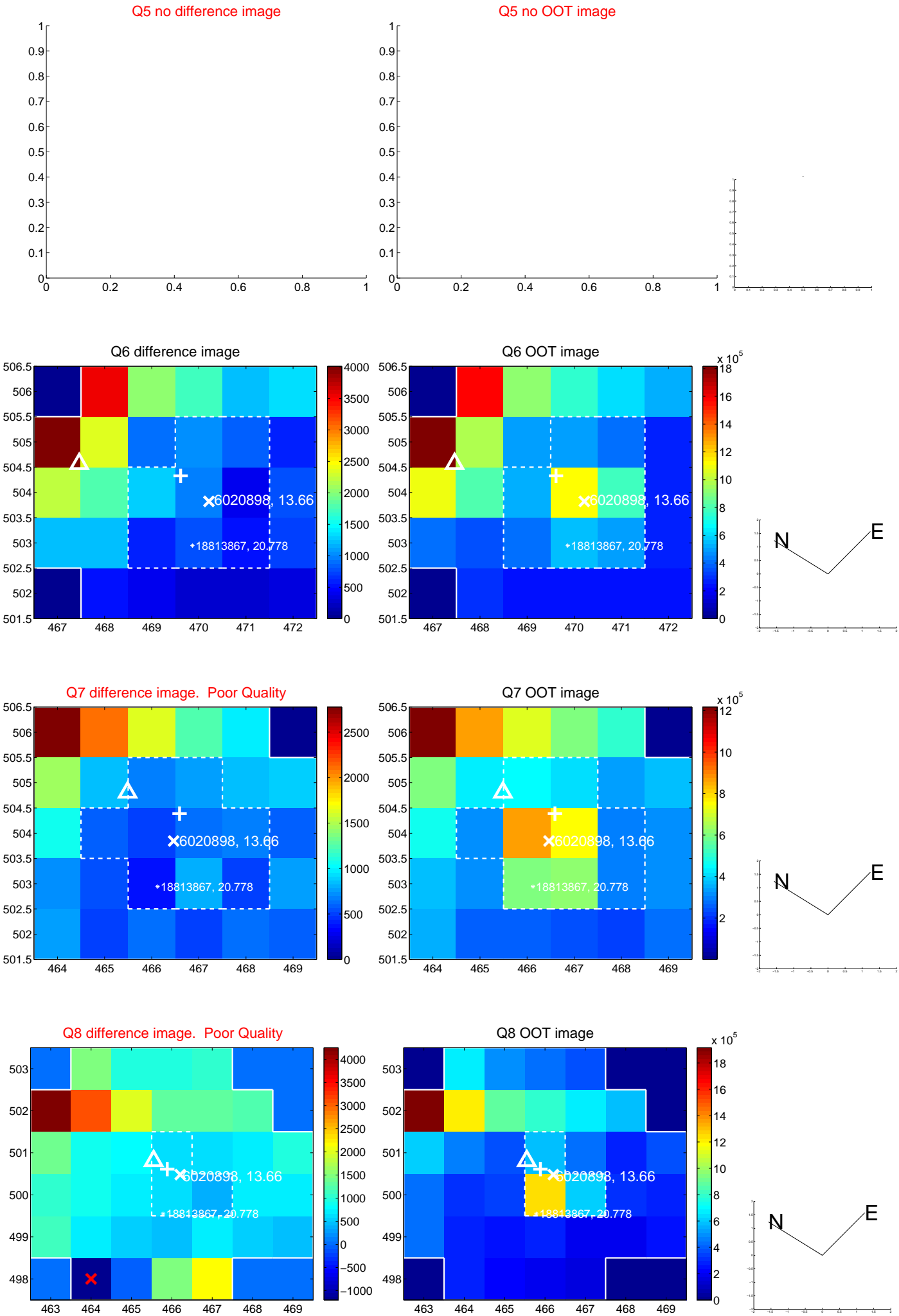


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

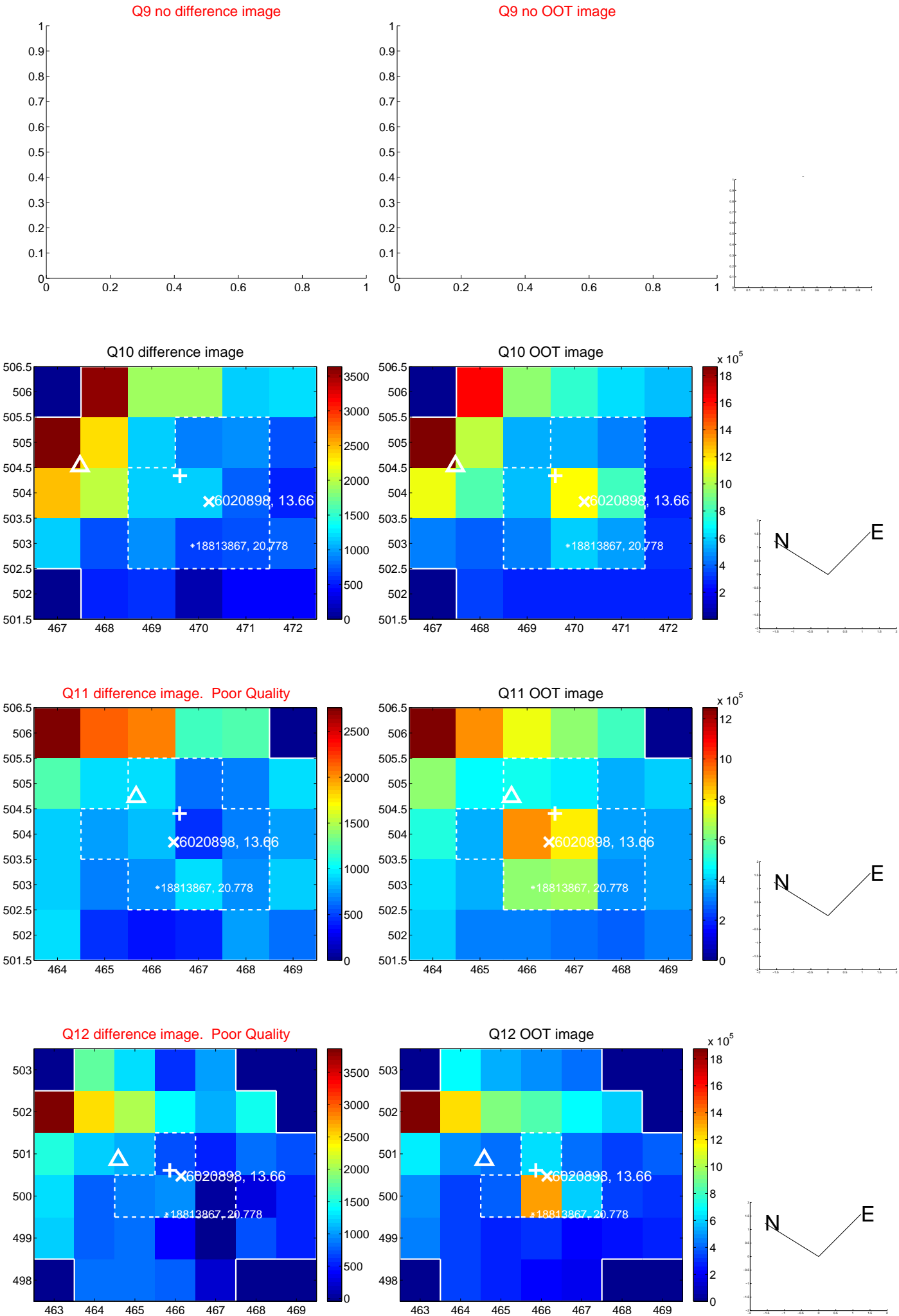
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



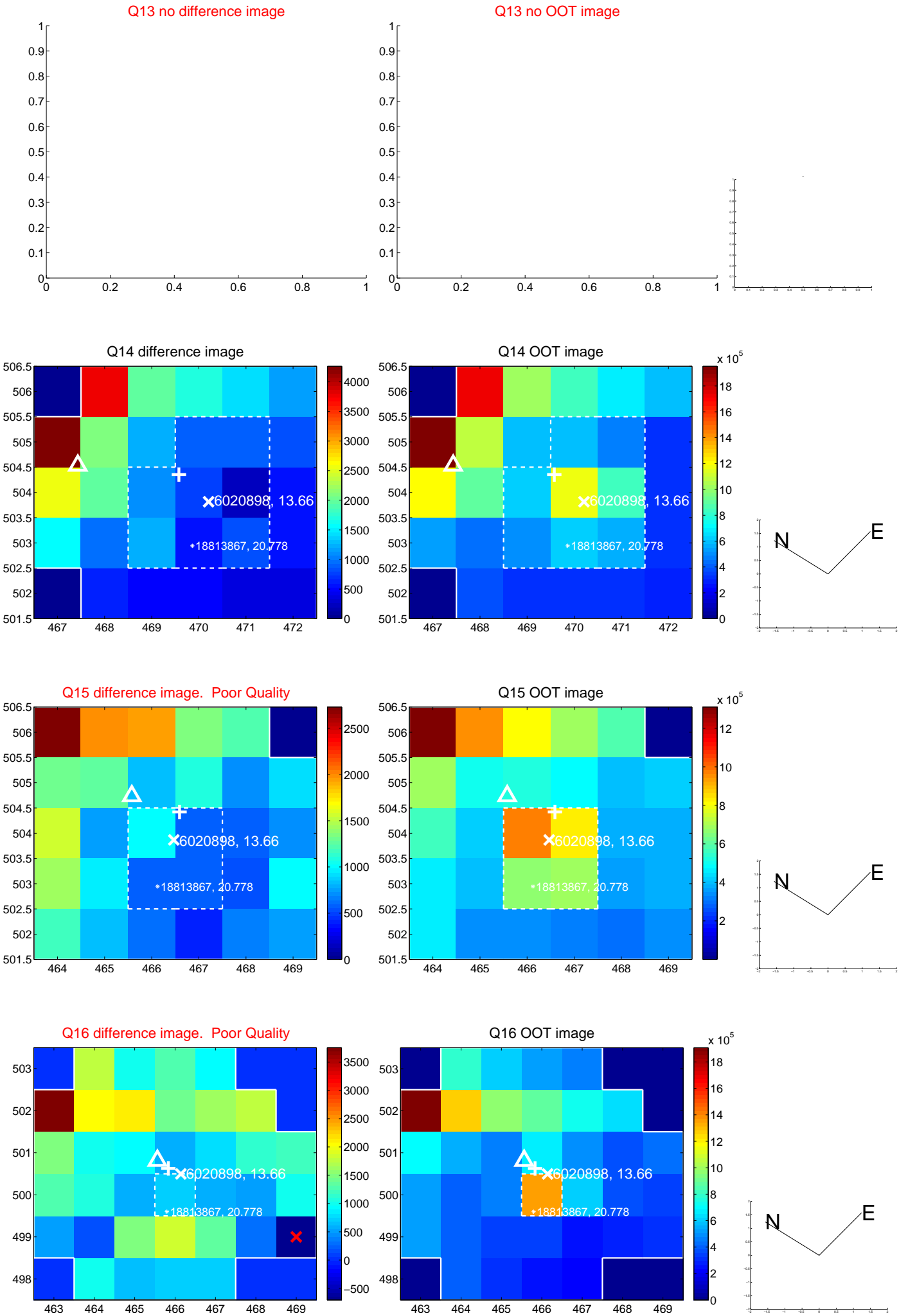
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



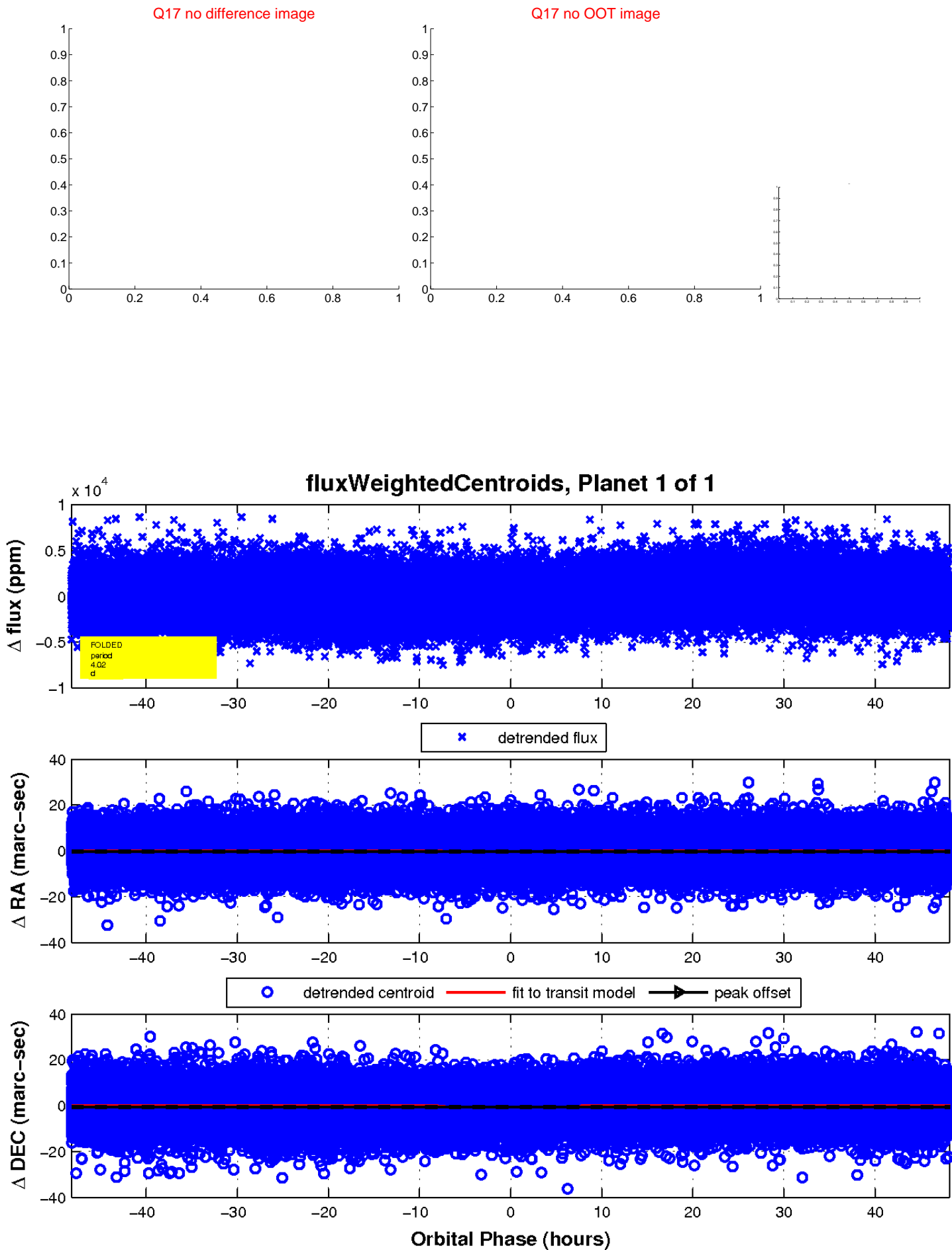
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

