

KIC 012783990

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})
012783990-01	OBS	No	602.339417	337.540527	408.8	6.386	7.8	7.3	5.92	5233	13.41	7.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012783990-01	OBS	FP	0.08	1	0	0	0	MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

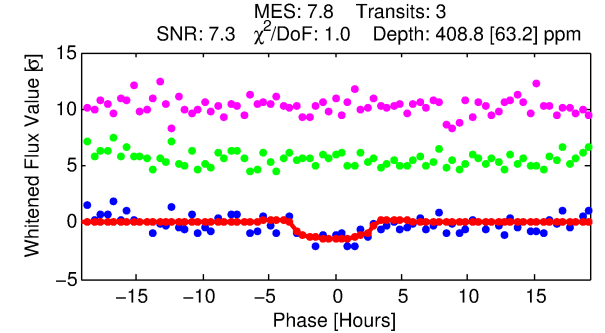
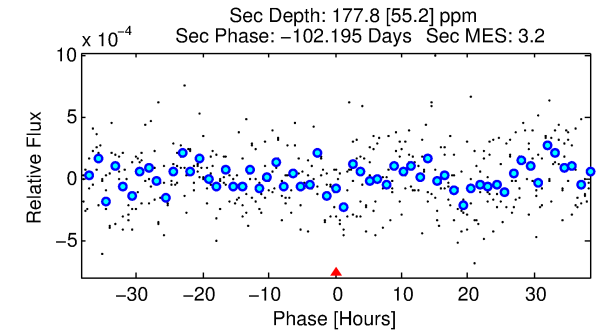
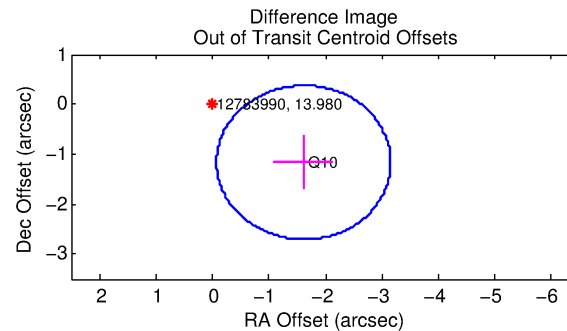
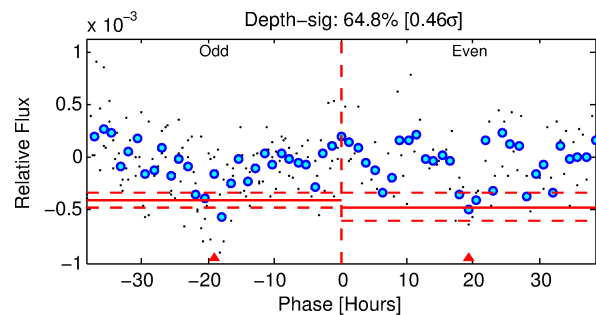
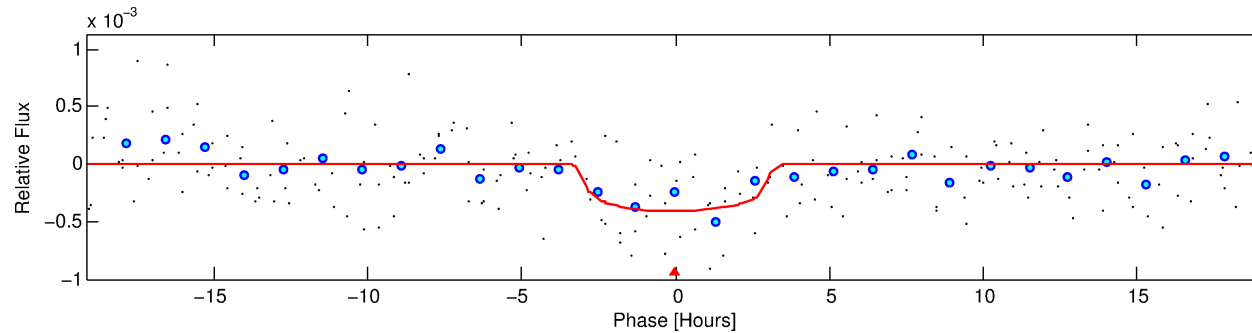
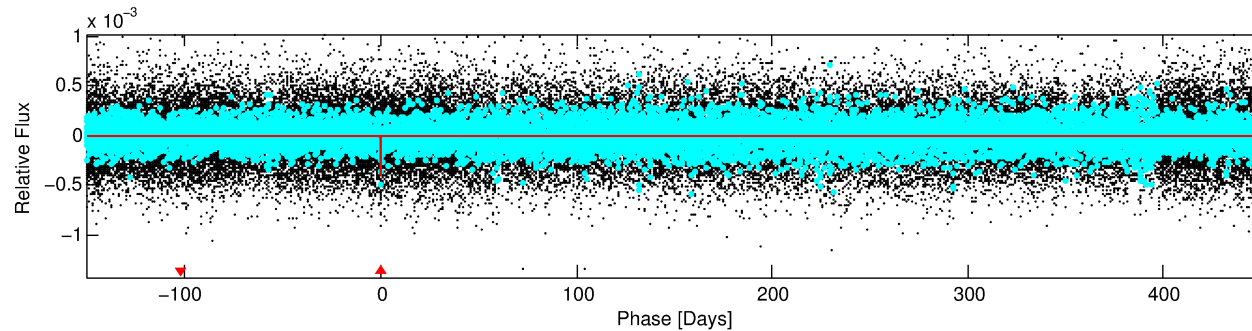
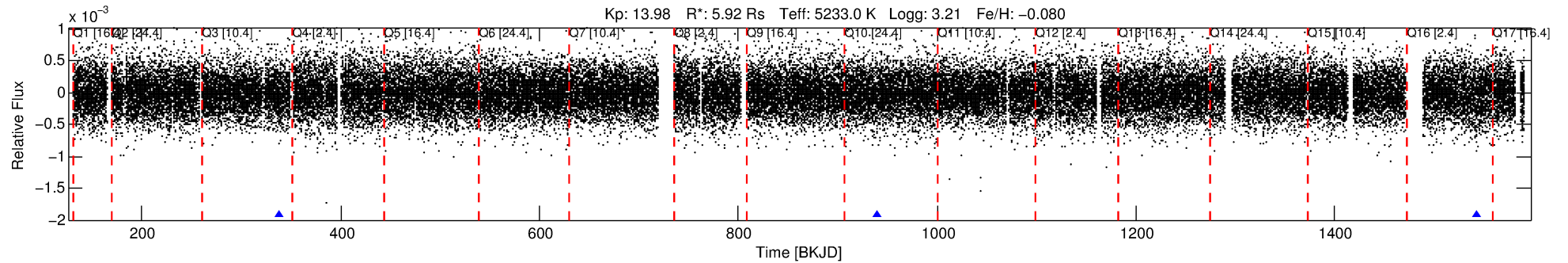
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012783990-01

No Significant Match Found

DV One-Page Summary

KIC: 12783990 Candidate: 1 of 1 Period: 602.339 d



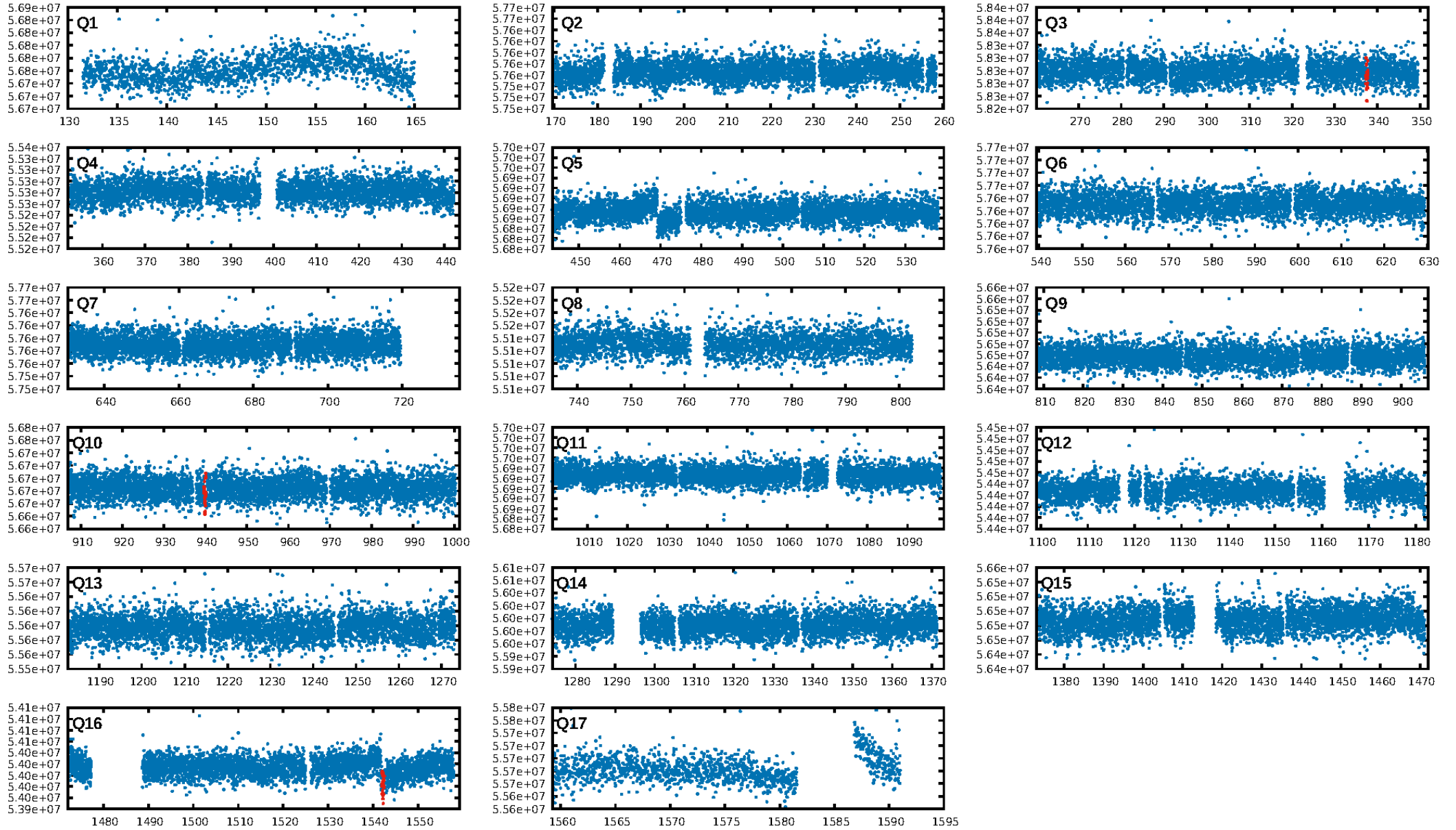
DV Fit Results:

Period = 602.33942 [0.01153] d
Epoch = 337.5405 [0.0136] BKJD
Rp/R* = 0.0208 [0.0261]
a/R* = 448.60 [2268.32]
b = 0.81 [2.19]
Seff = 7.45 [6.47]
Teq = 421 [92] K
Rp = 13.41 [18.57] Re
a = 1.7771 [0.9646] AU
Ag = 1717.14 [4593.34] [0.37 σ]
Teffp = 4193 [2662] K [1.42 σ]

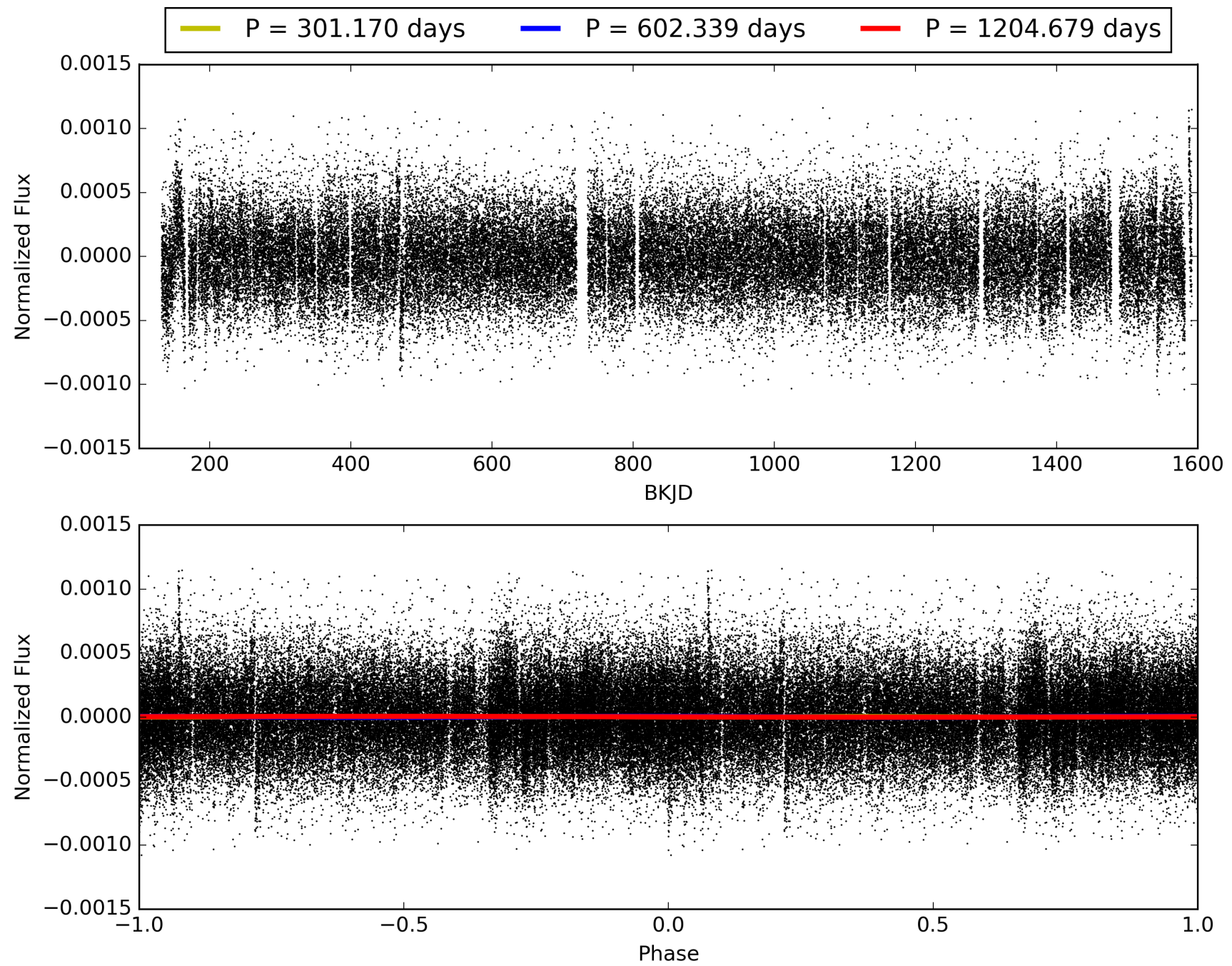
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 17.9%
ModelChiSquareGof-sig: 86.9%
Bootstrap-pfa: 3.67e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 10.76
Centroid-sig: 7.8%
Centroid-so: 1.010 arcsec [0.59 σ]
OotOffset-rm: 1.992 arcsec [3.88 σ]
KicOffset-rm: 2.036 arcsec [3.97 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 012783990-01, PDC Light Curves

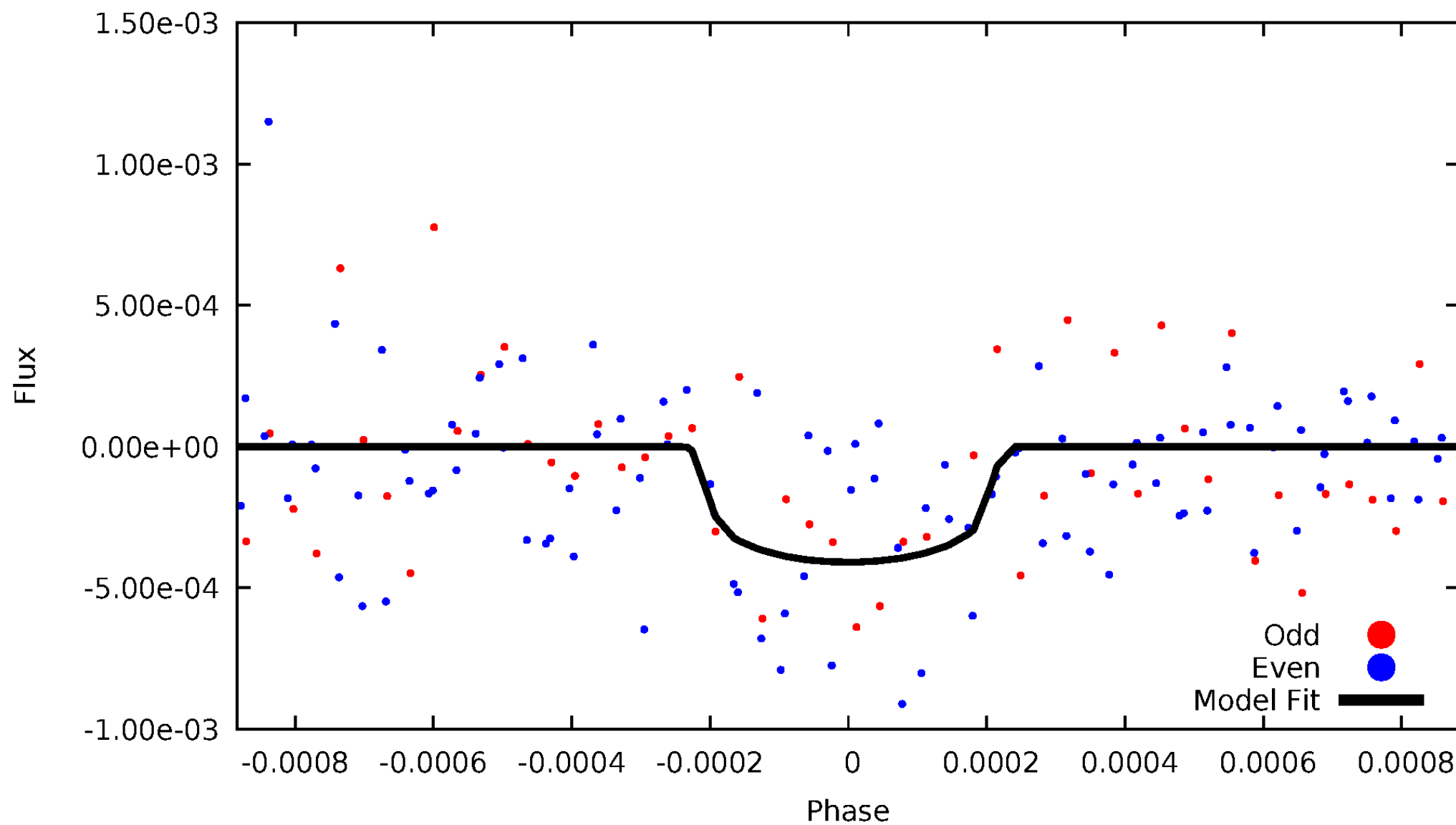


TCE 012783990-01



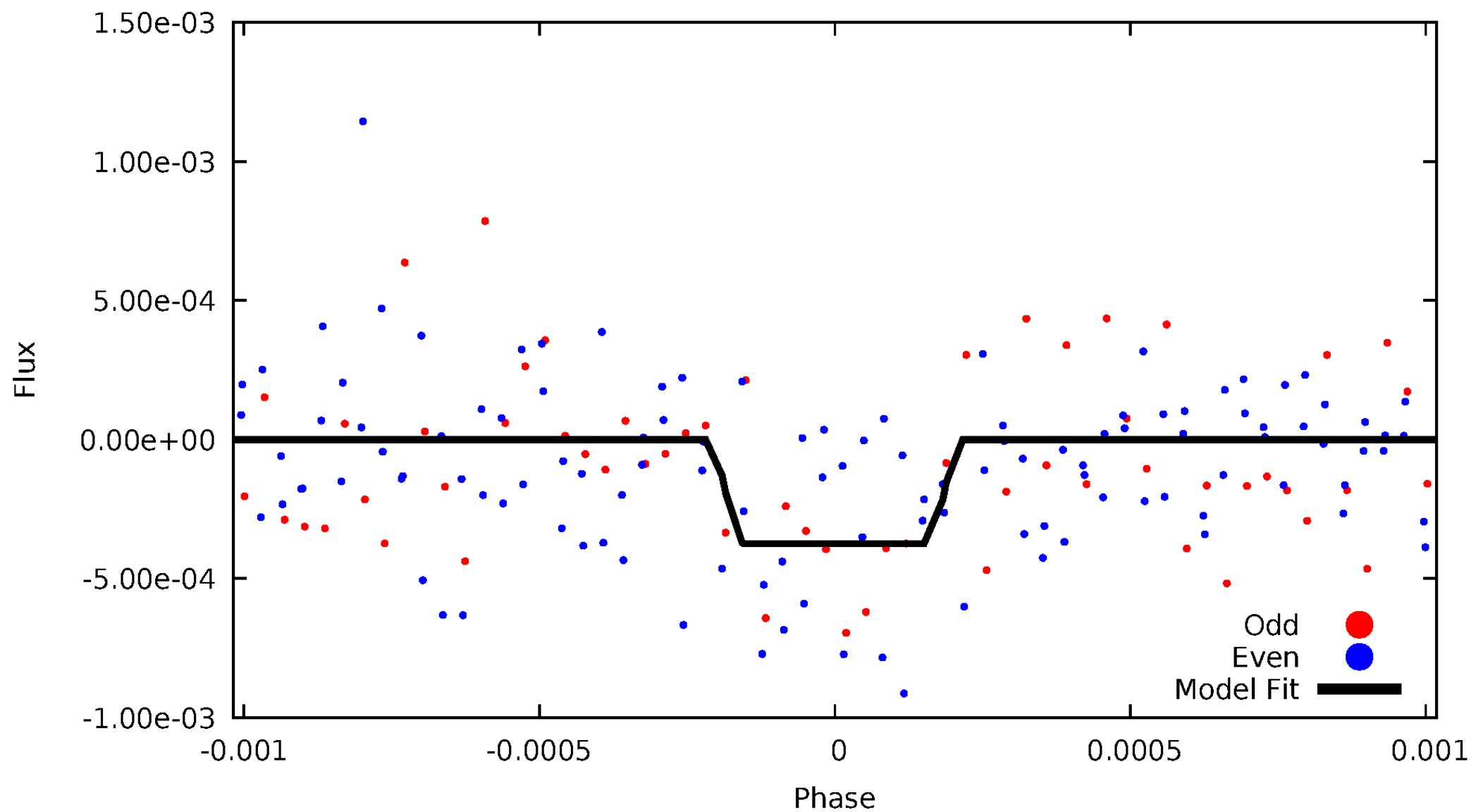
DV Odd/Even

TCE 012783990-01

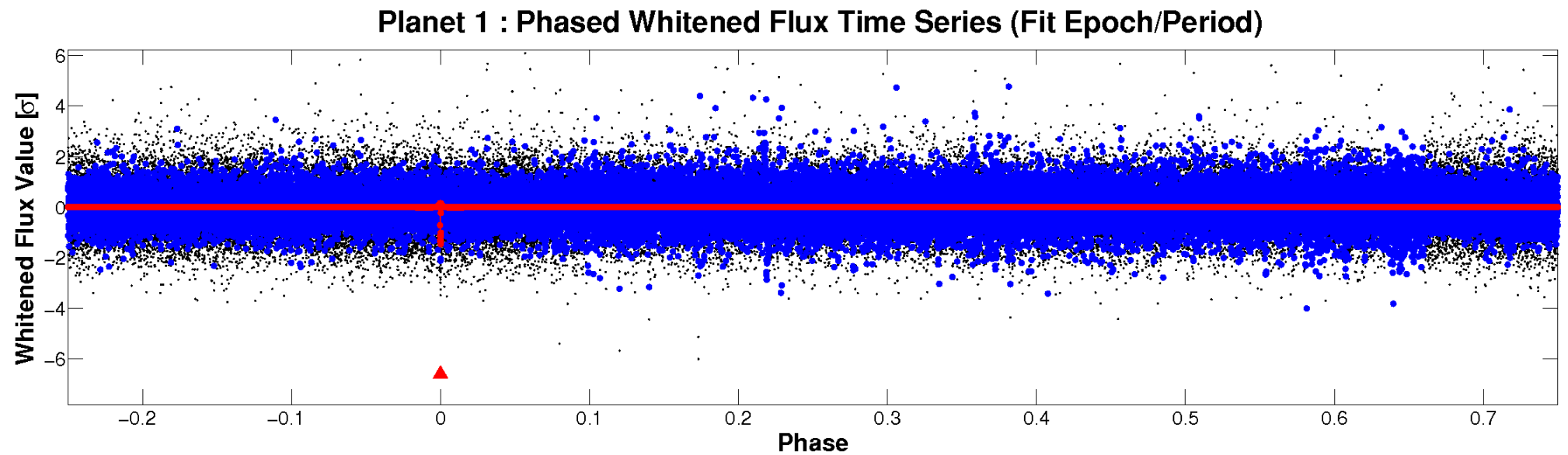
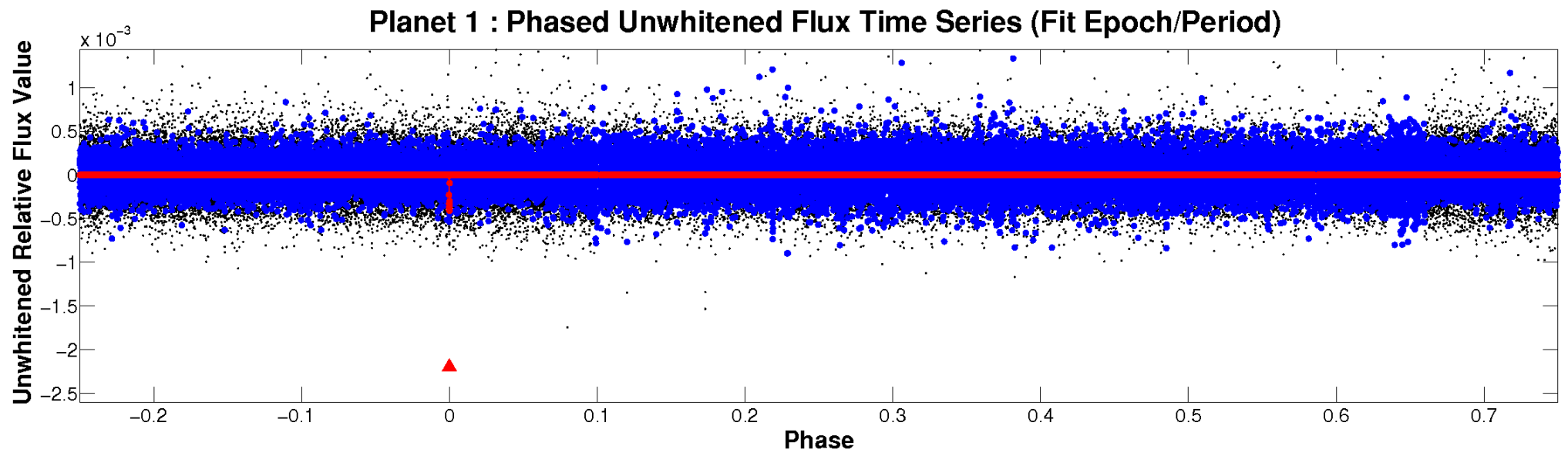


ALT Odd/Even

TCE 012783990-01

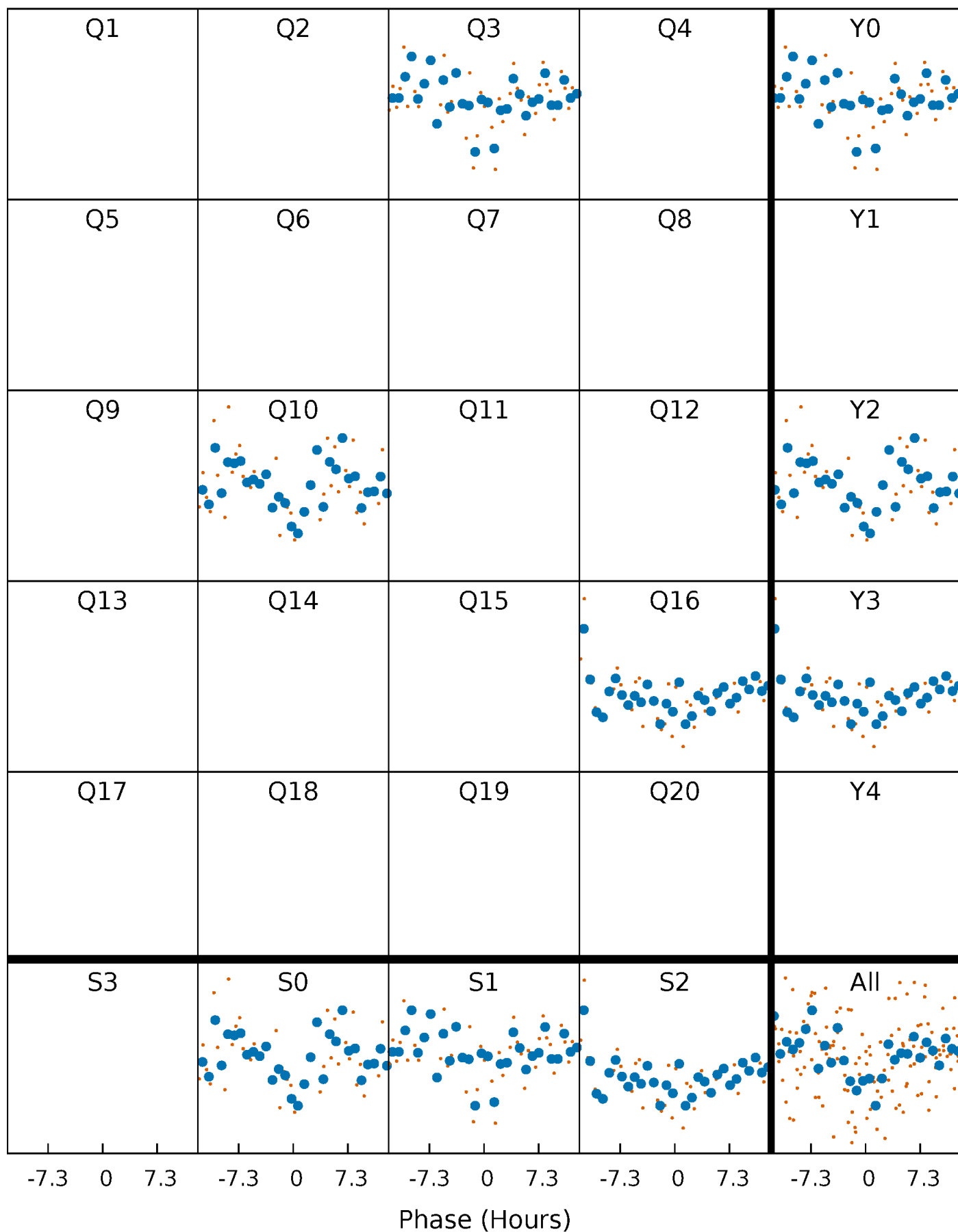


Non-Whitened Vs. Whitened Light Curve



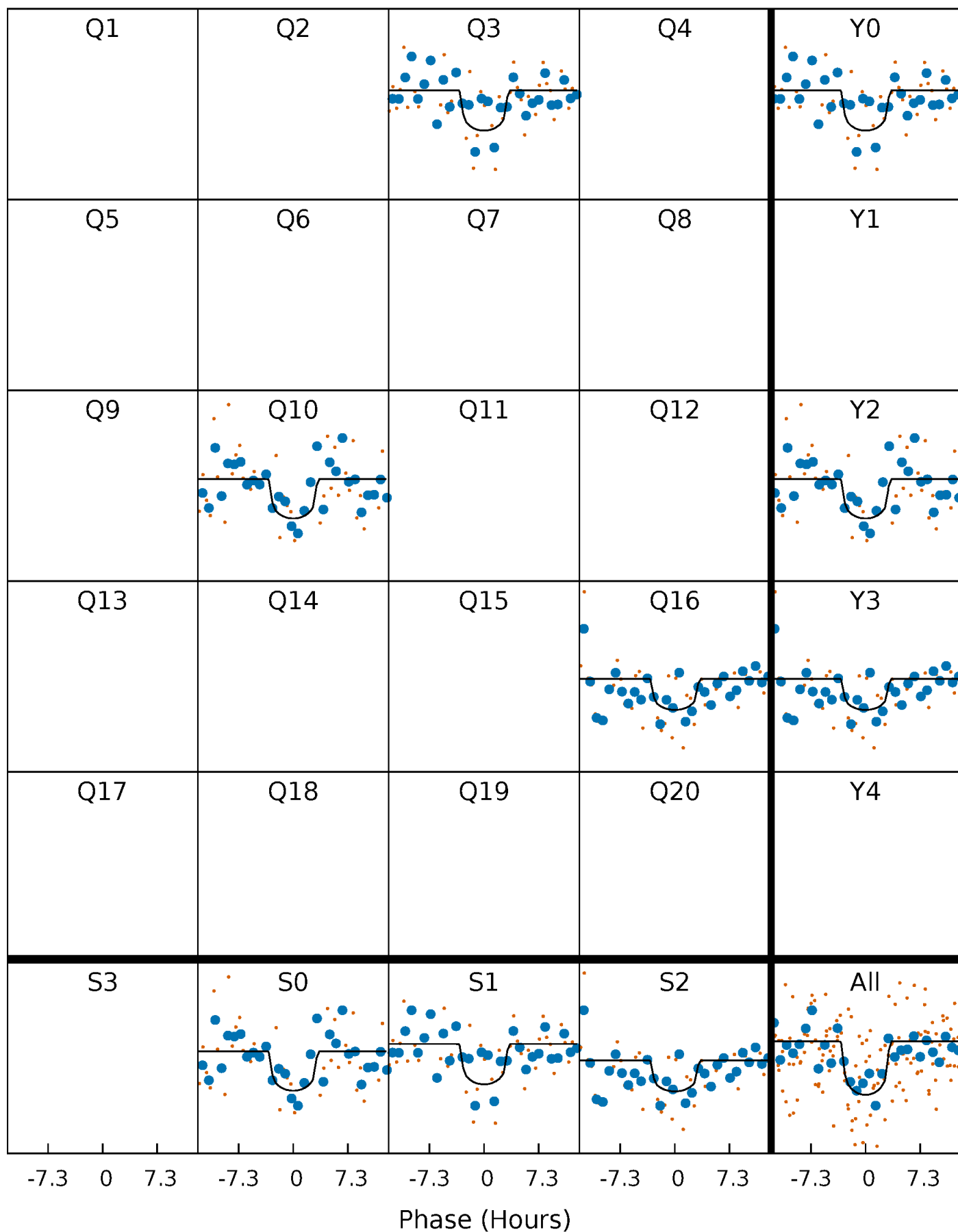
PDC Quarter-Phased Transit Curves

TCE 012783990-01 P=602.339417 Days $T_0=337.540527$ (BKJD)



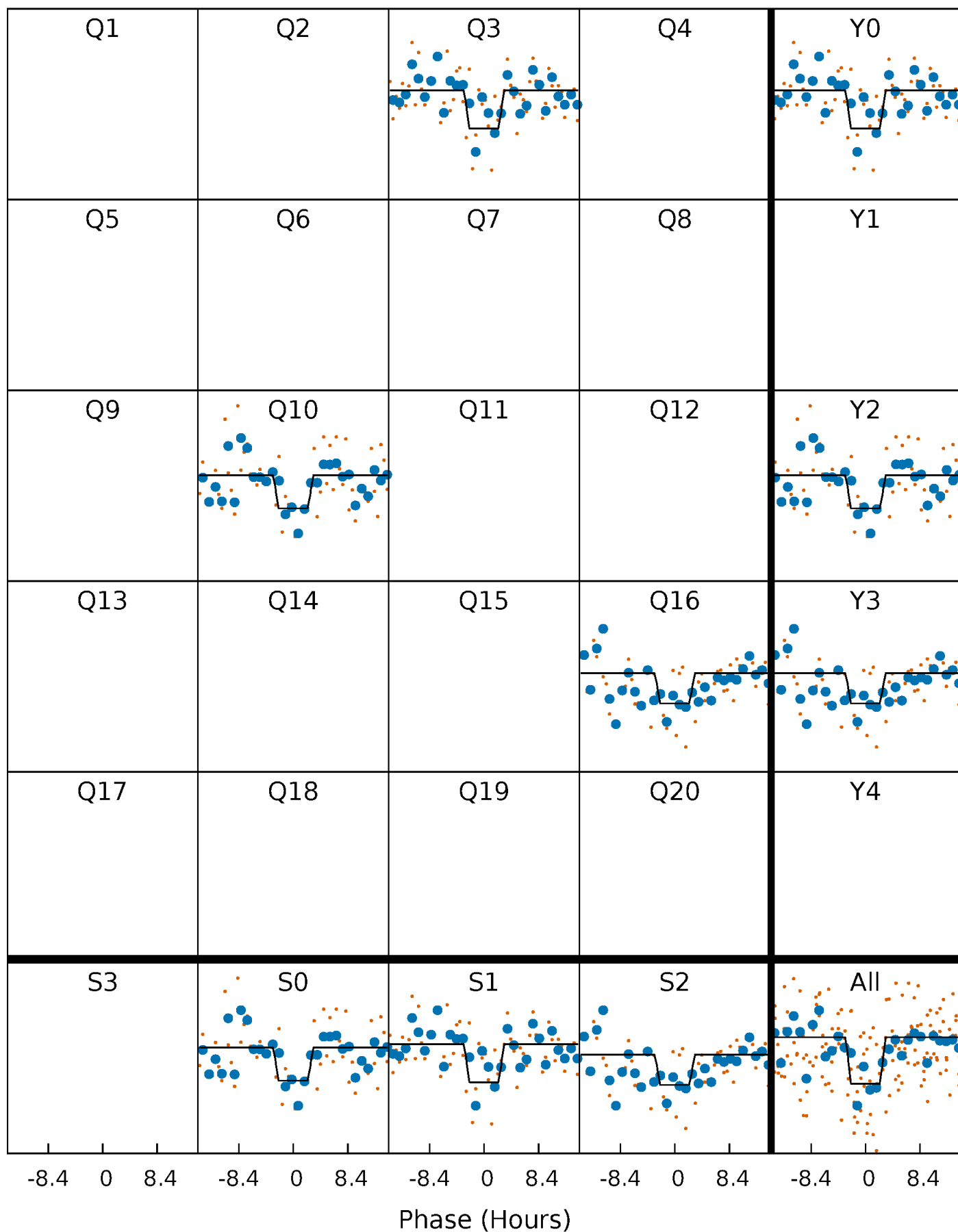
DV Quarter-Phased Transit Curves

TCE 012783990-01 P=602.339417 Days $T_0=337.540527$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

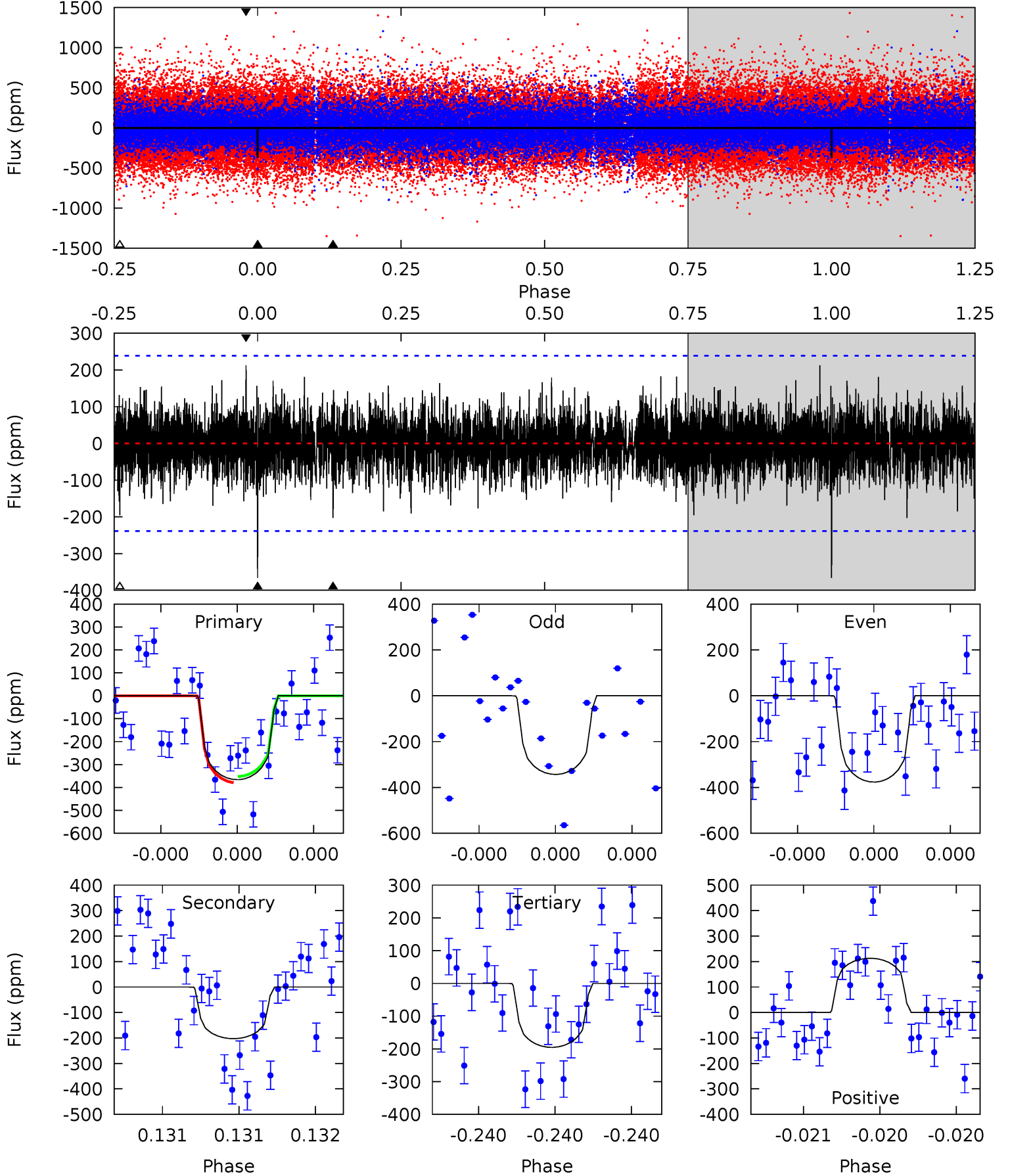
TCE 012783990-01 P=602.320048 Days $T_0=337.555668$ (BKJD)



DV Model-Shift Uniqueness Test

012783990-01, P = 602.339417 Days, E = 337.540527 Days

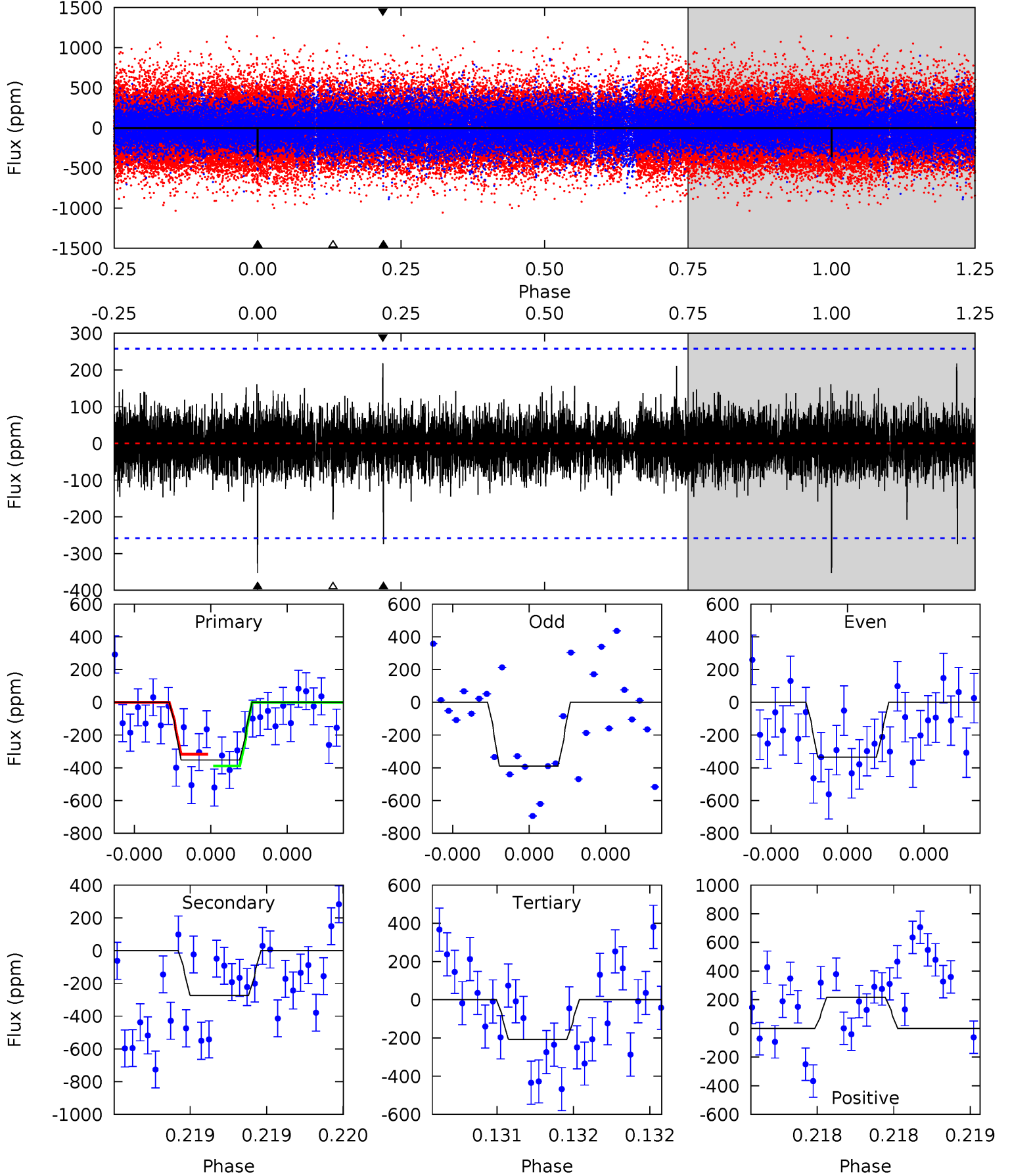
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.58	4.75	4.58	4.99	5.59	3.51	1.21	4.00	3.59	0.17	-0.24	0.37	1.06	0.37	0.31



Alt Model-Shift Uniqueness Test

012783990-01, P = 602.320048 Days, E = 337.555668 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.67	5.96	4.51	4.74	5.61	3.54	0.98	3.16	2.93	1.45	1.22	0.55	0.91	0.38	0.78



Stellar Parameters For KIC 012783990

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5233^{+146}_{-201}	$3.208^{+0.497}_{-0.213}$	$-0.080^{+0.250}_{-0.350}$	$5.918^{+1.469}_{-3.428}$	$2.062^{+0.557}_{-1.035}$	$0.014^{+0.091}_{-0.007}$
	+3%/-4%	+15%/-7%	+312%/-438%	+25%/-58%	+27%/-50%	+647%/-48%
Source	PHO1	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 012783990-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-203 ± 43	$16.44^{+16.67}_{-11.16}$	580^{+50}_{-72}	3994^{+2333}_{-737}	1321^{+10478}_{-983}
Alt.	-274 ± 46	$15.95^{+16.01}_{-10.90}$	580^{+57}_{-79}	4252^{+2911}_{-796}	1788^{+17261}_{-1335}

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

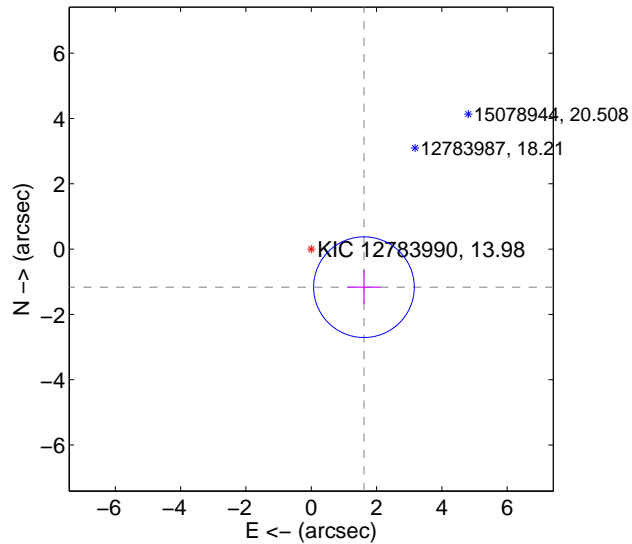
Supplemental centroid analysis for 012783990-01. Kepler magnitude: 13.98. Transit SNR 7.34

There are 1 quarters with good PRF difference image offsets

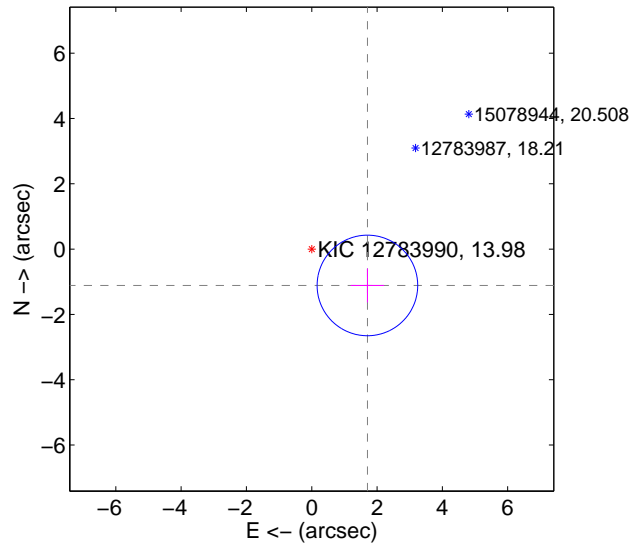
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.992 ± 0.514	3.88	-1.614 ± 0.511	-1.166 ± 0.519
PRF-fit source offset from KIC position	2.036 ± 0.513	3.97	-1.705 ± 0.511	-1.113 ± 0.519
photometric centroid source offset	1.01 ± 1.72	0.59	-0.91 ± 1.75	0.44 ± 1.62

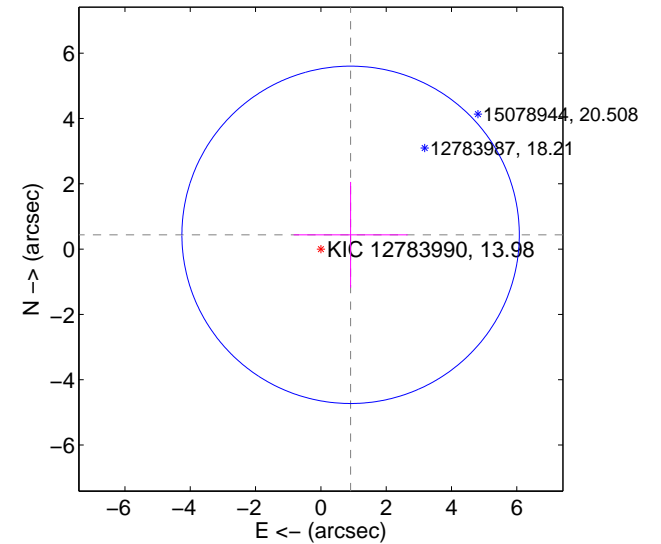
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

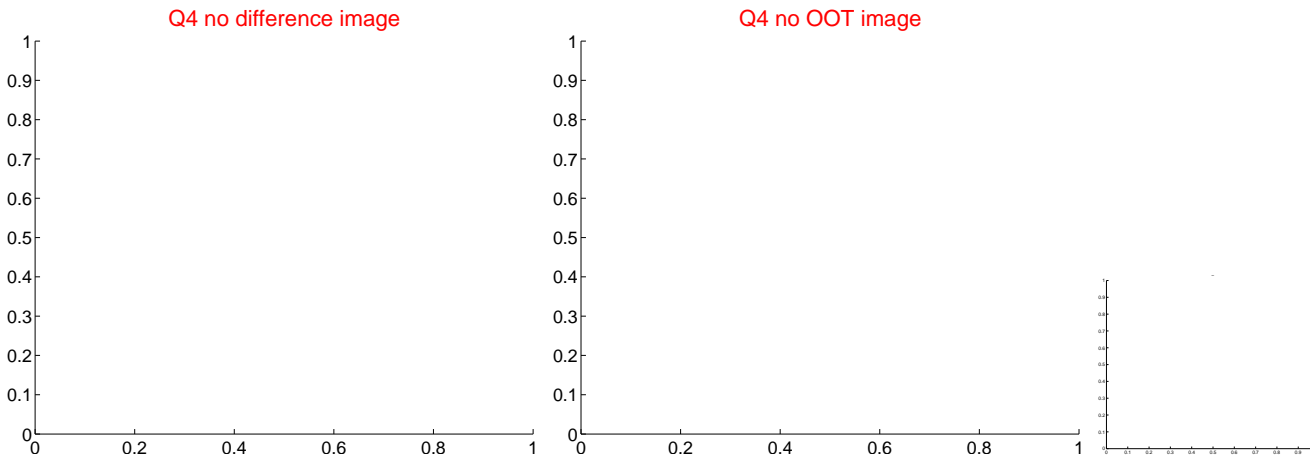
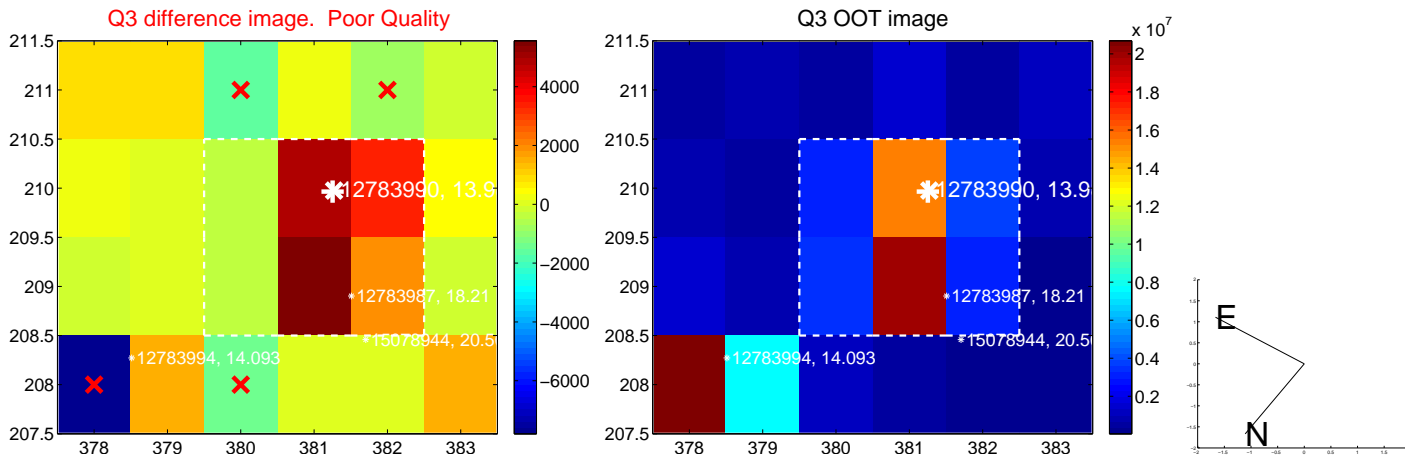
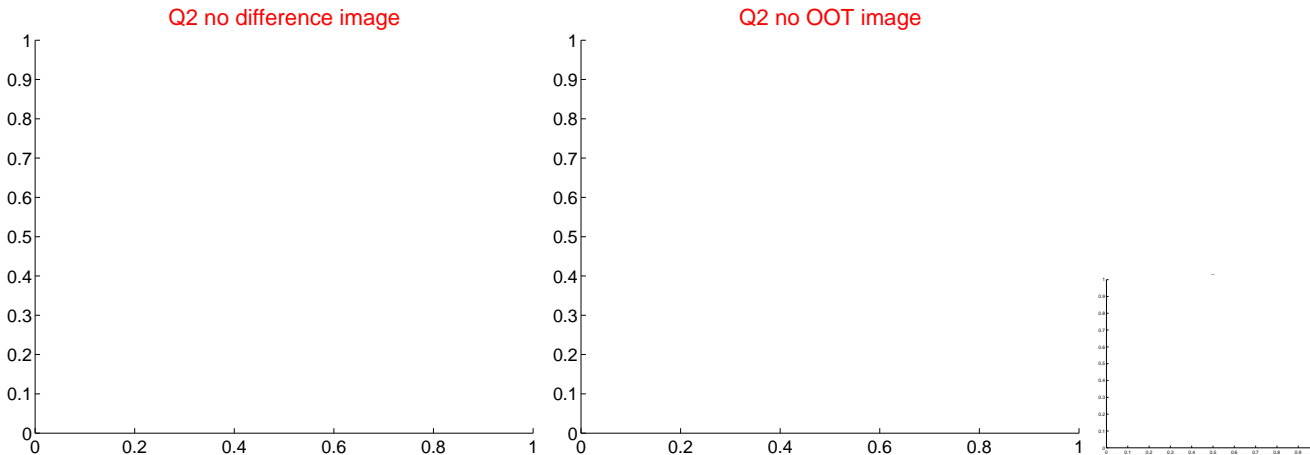
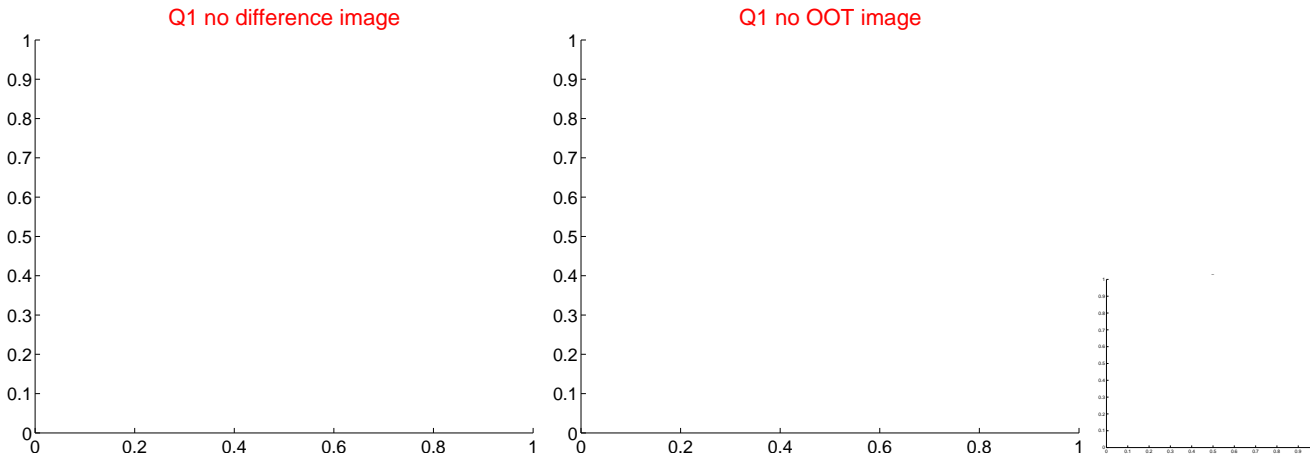


offset from photometric centroids



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.

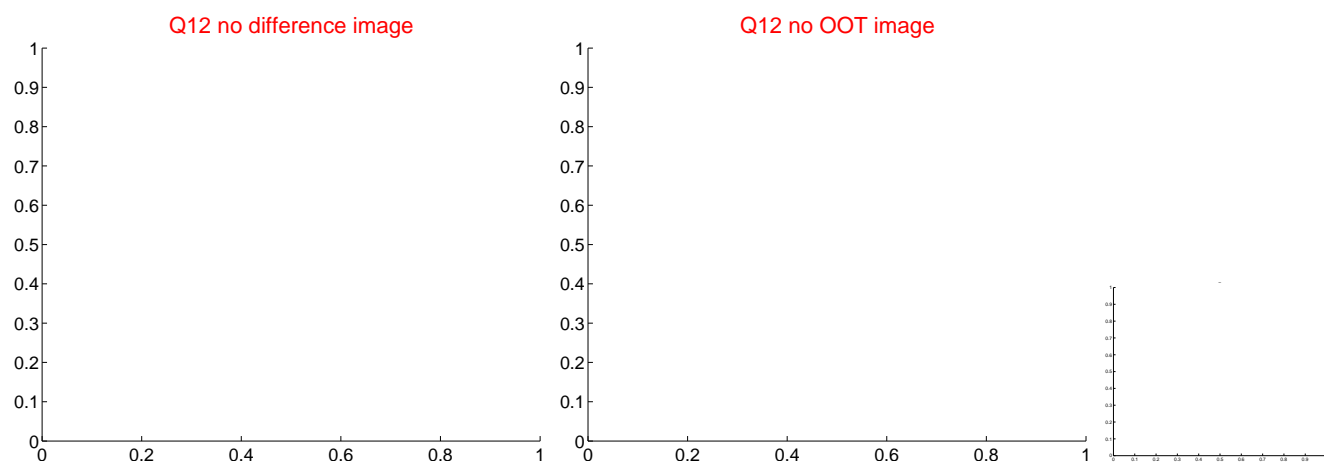
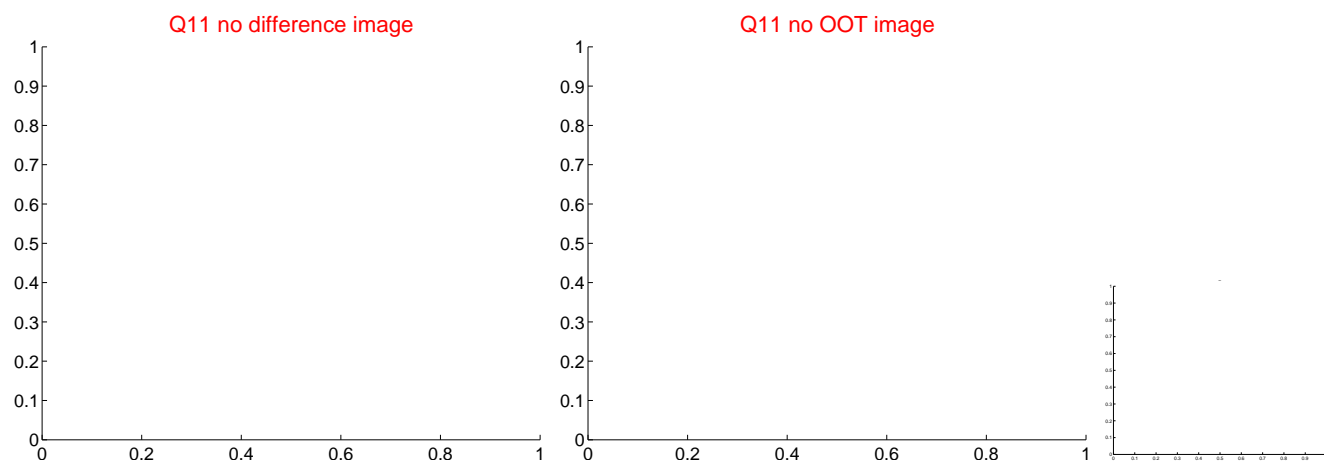
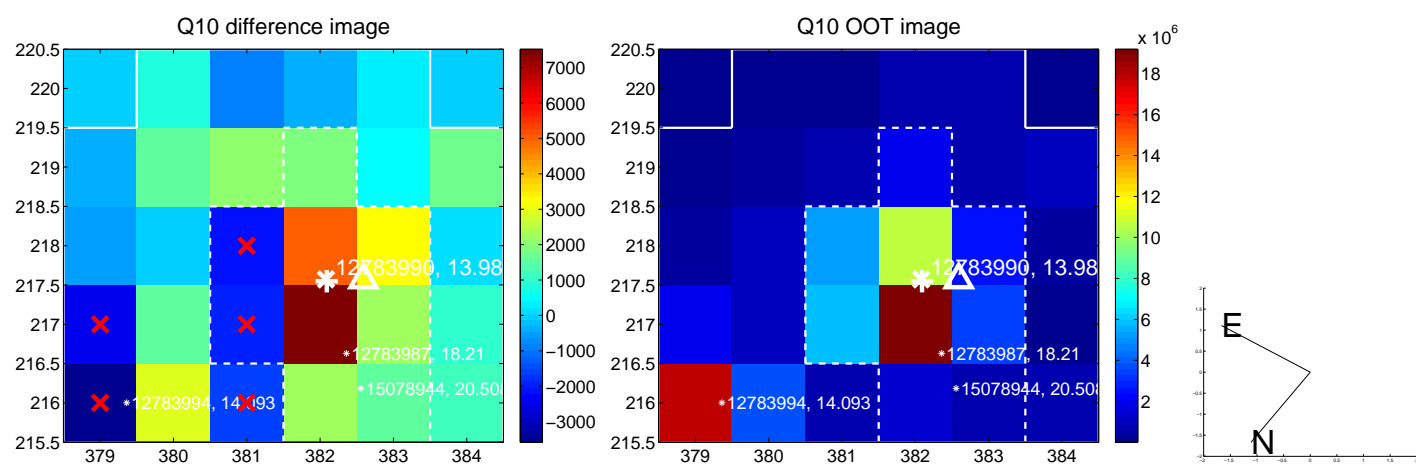
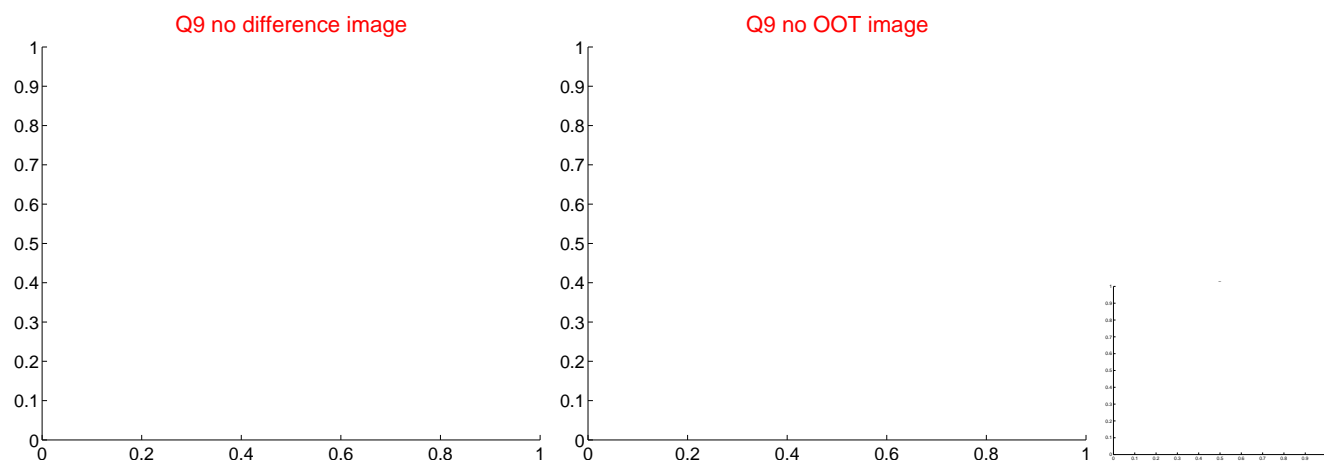
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



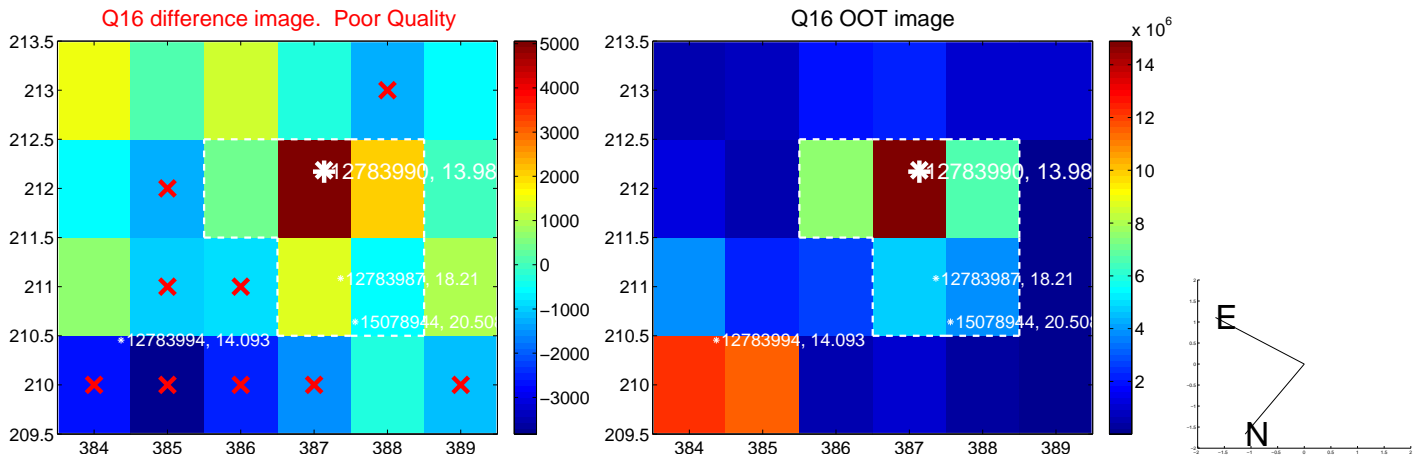
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



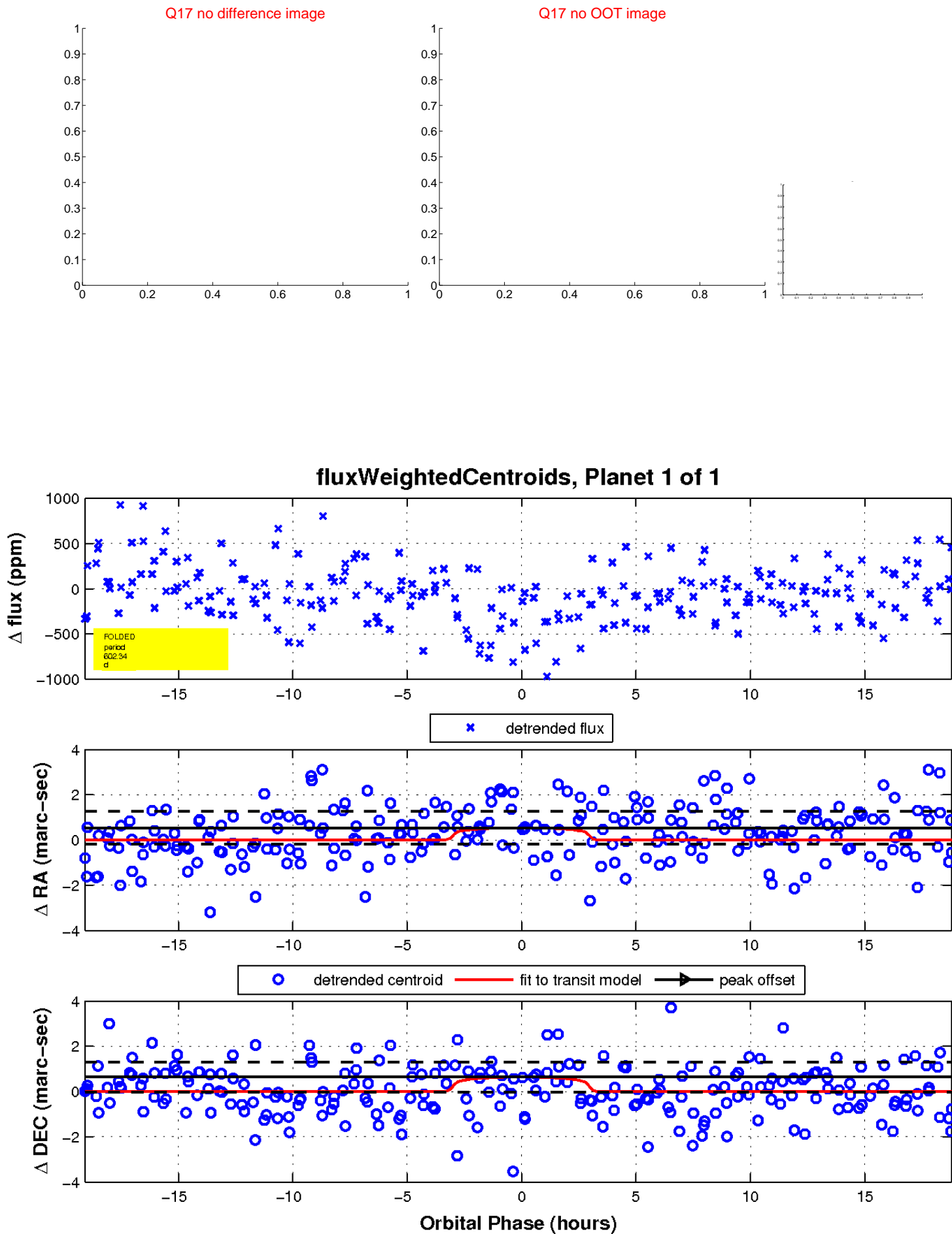
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image

Declination

