

KIC 010881855

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})
010881855-01	OBS	No	0.740729	131.932467	23.0	4.403	10.2	6.2	1.68	7123	0.86	18925.42
010881855-02	OBS	No	100.277059	139.914859	600.7	2.228	7.2	8.4	1.68	7123	4.42	27.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010881855-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
010881855-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

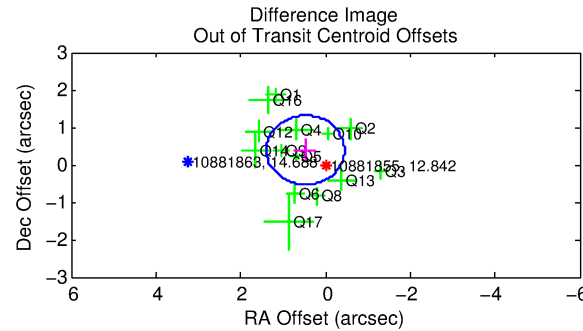
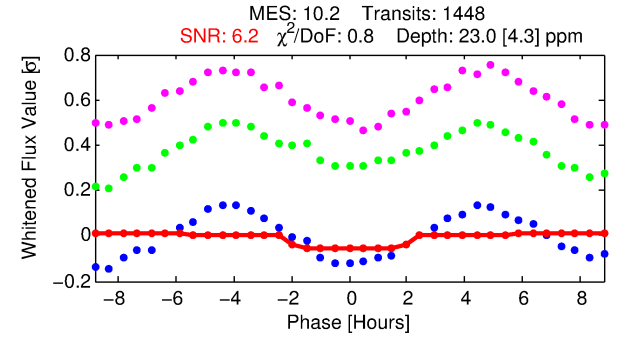
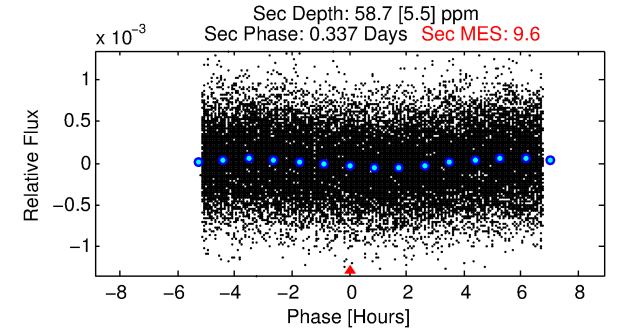
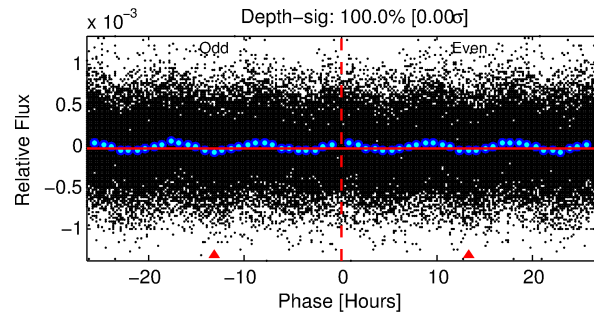
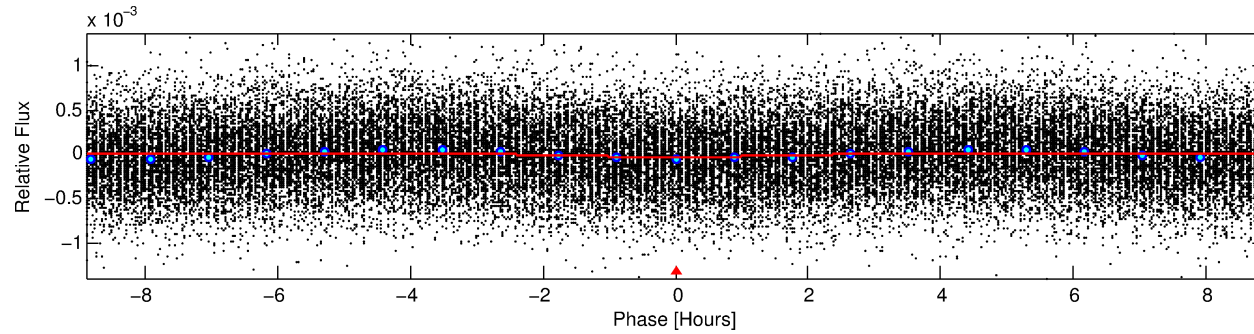
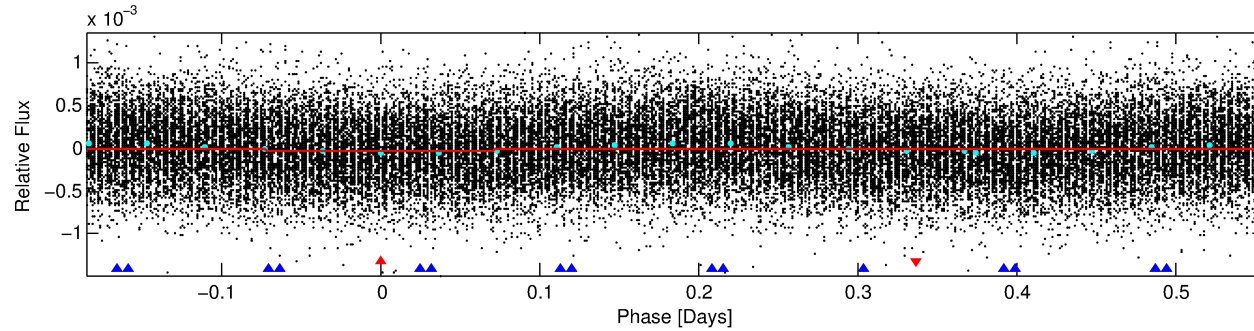
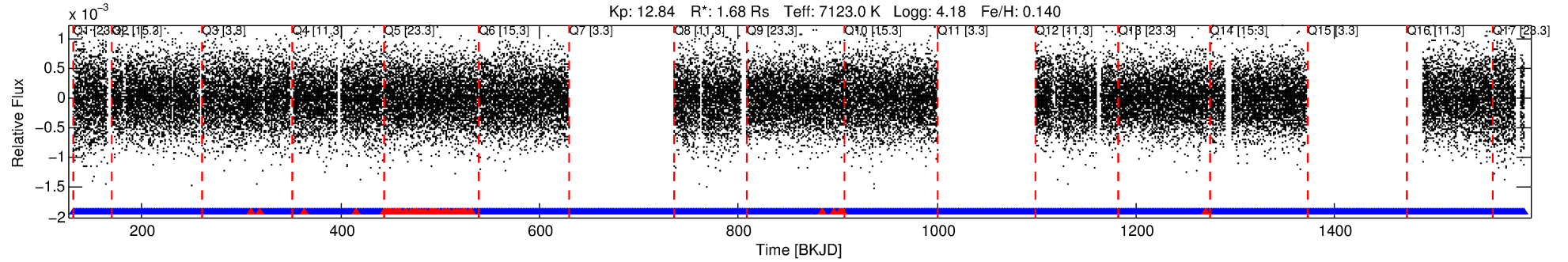
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010881855-01

No Significant Match Found

DV One-Page Summary

KIC: 10881855 Candidate: 1 of 2 Period: 0.741 d



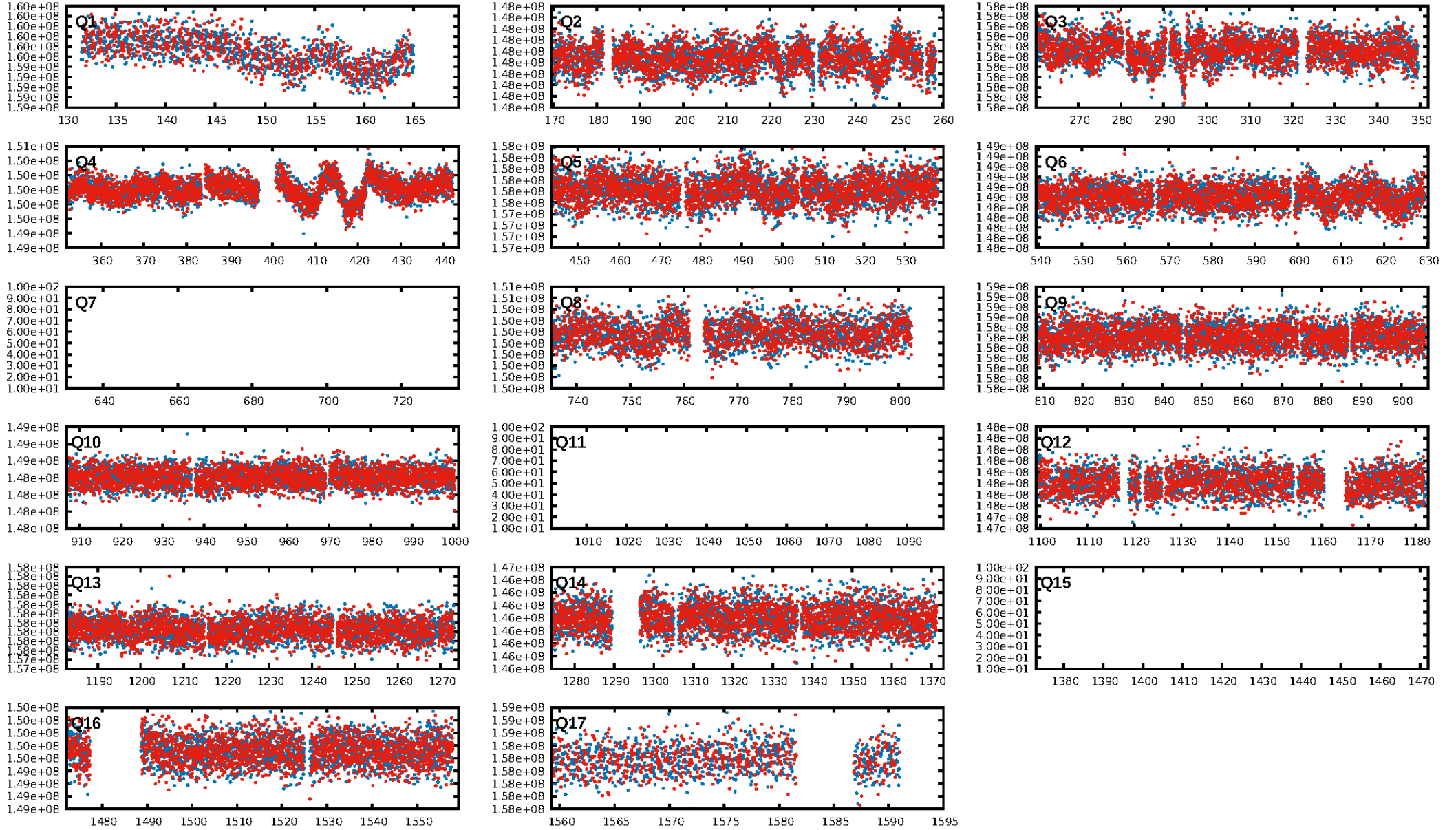
DV Fit Results:

Period = 0.74073 [0.00002] d
Epoch = 131.9325 [0.0077] BKJD
Rp/R* = 0.0047 [0.0043]
a/R* = 1.24 [2.41]
b = 0.70 [4.05]
Seff = 18925.43 [8213.67]
Teq = 2991 [325] K
Rp = 0.86 [0.85] Re
a = 0.0186 [0.0053] AU
Ag = 14.89 [28.09] [0.49σ]
Teffp = 9083 [4204] K [1.44σ]

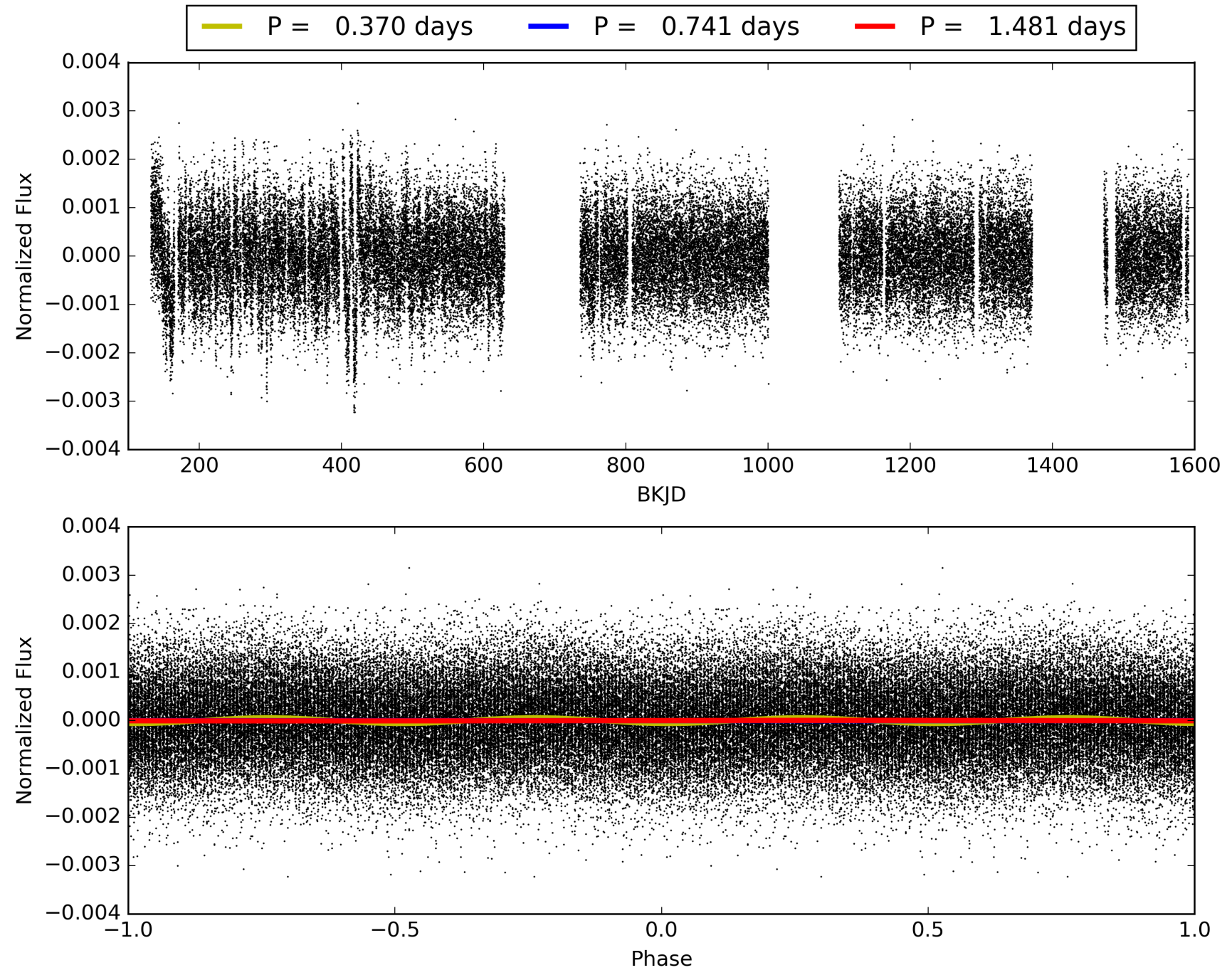
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [484.08σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.79e-15
RollingBand-fgt: 0.96 [1309/1367]
GhostDiagnostic-chr: 1.792
Centroid-sig: N/A
Centroid-so: 0.786 arcsec [0.99σ]
OotOffset-rm: 0.616 arcsec [2.00σ]
KicOffset-rm: 0.630 arcsec [2.35σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010881855-01, PDC Light Curves

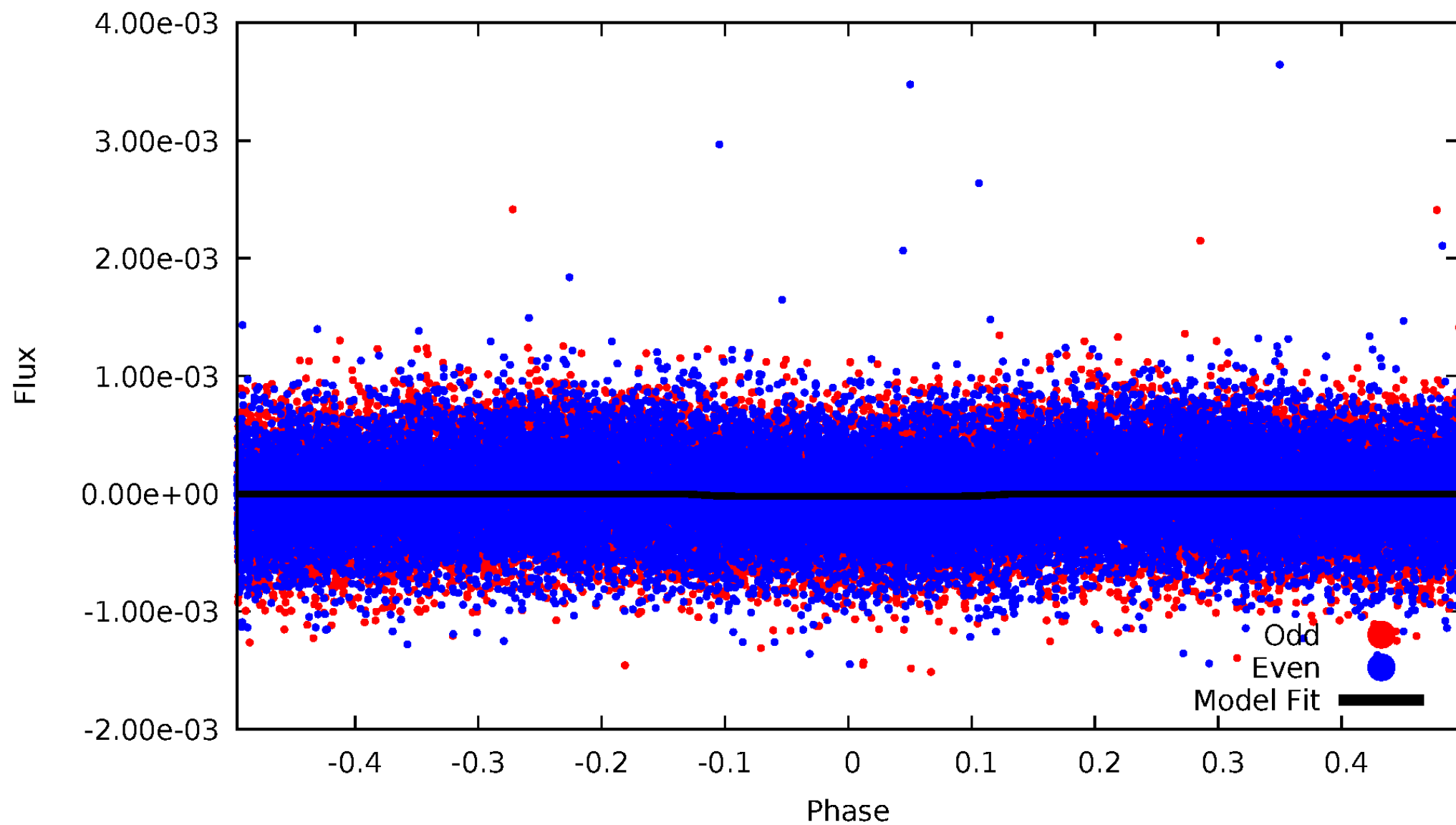


TCE 010881855-01



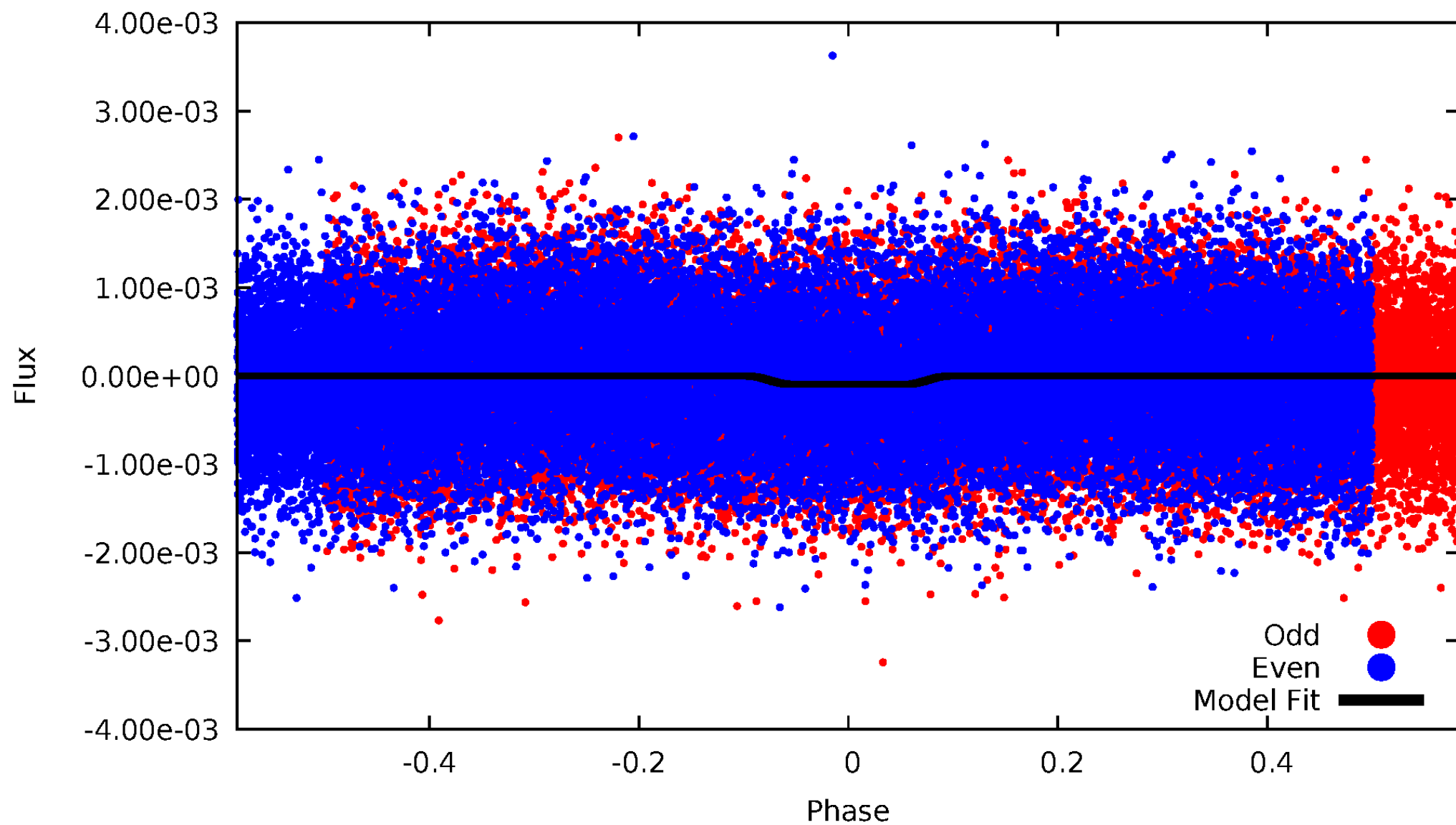
DV Odd/Even

TCE 010881855-01



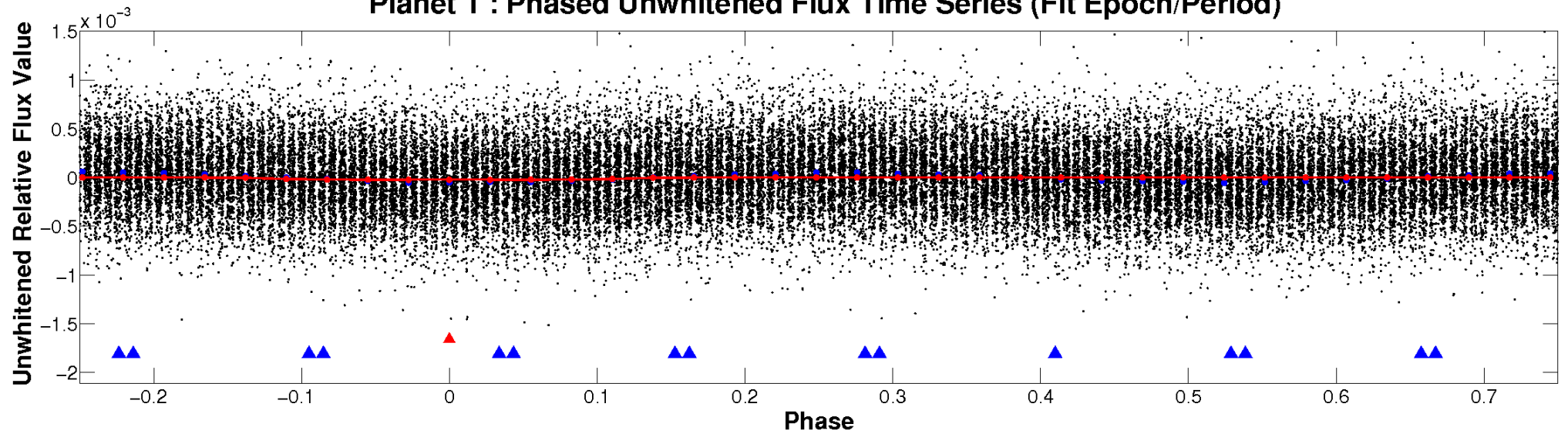
ALT Odd/Even

TCE 010881855-01

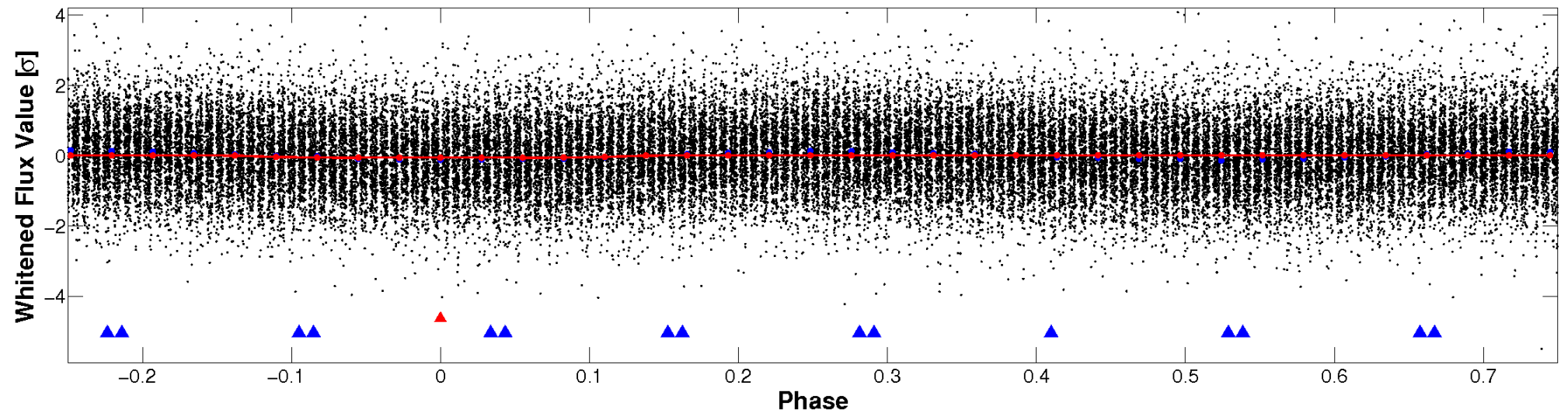


Non-Whitened Vs. Whitened Light Curve

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

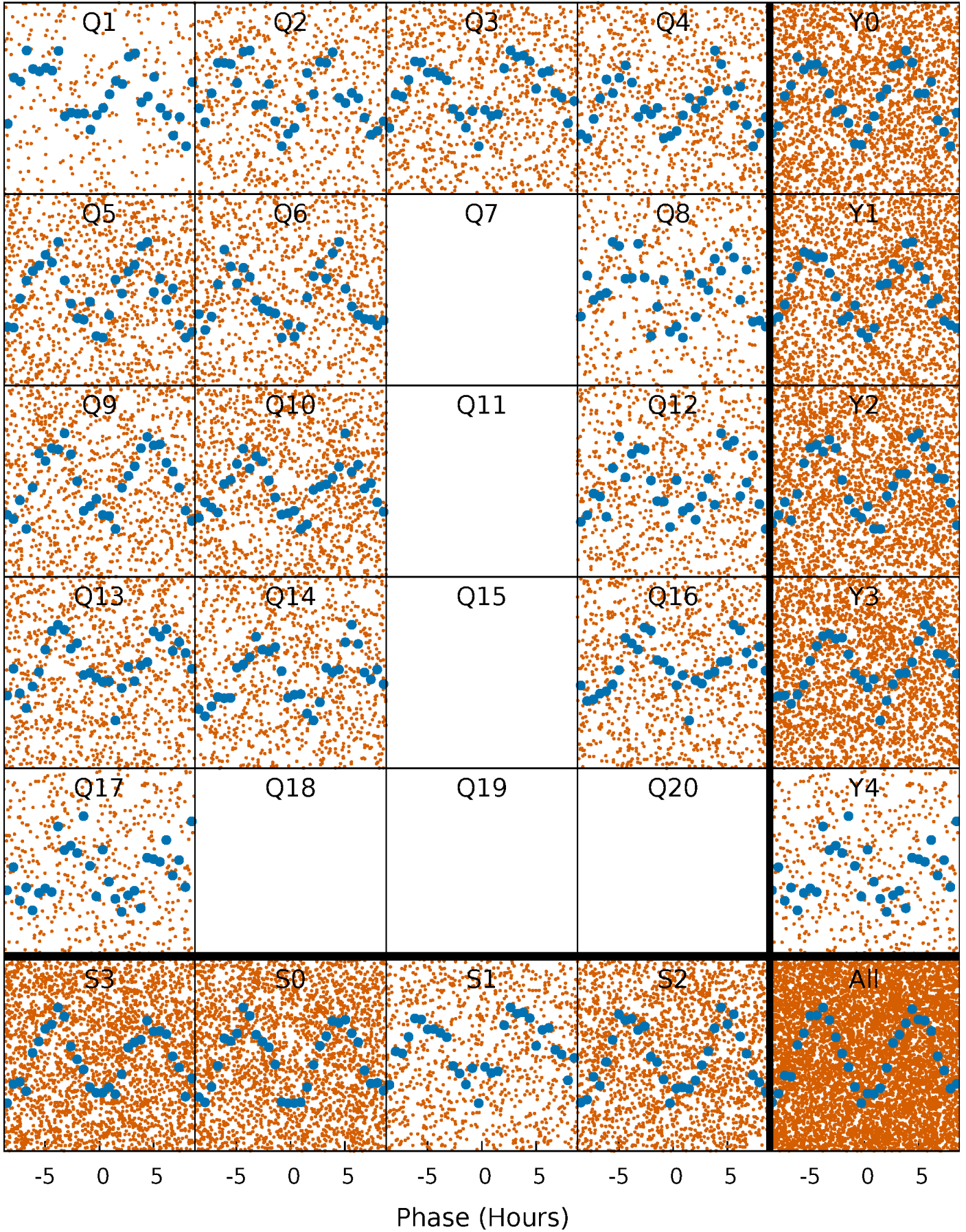


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



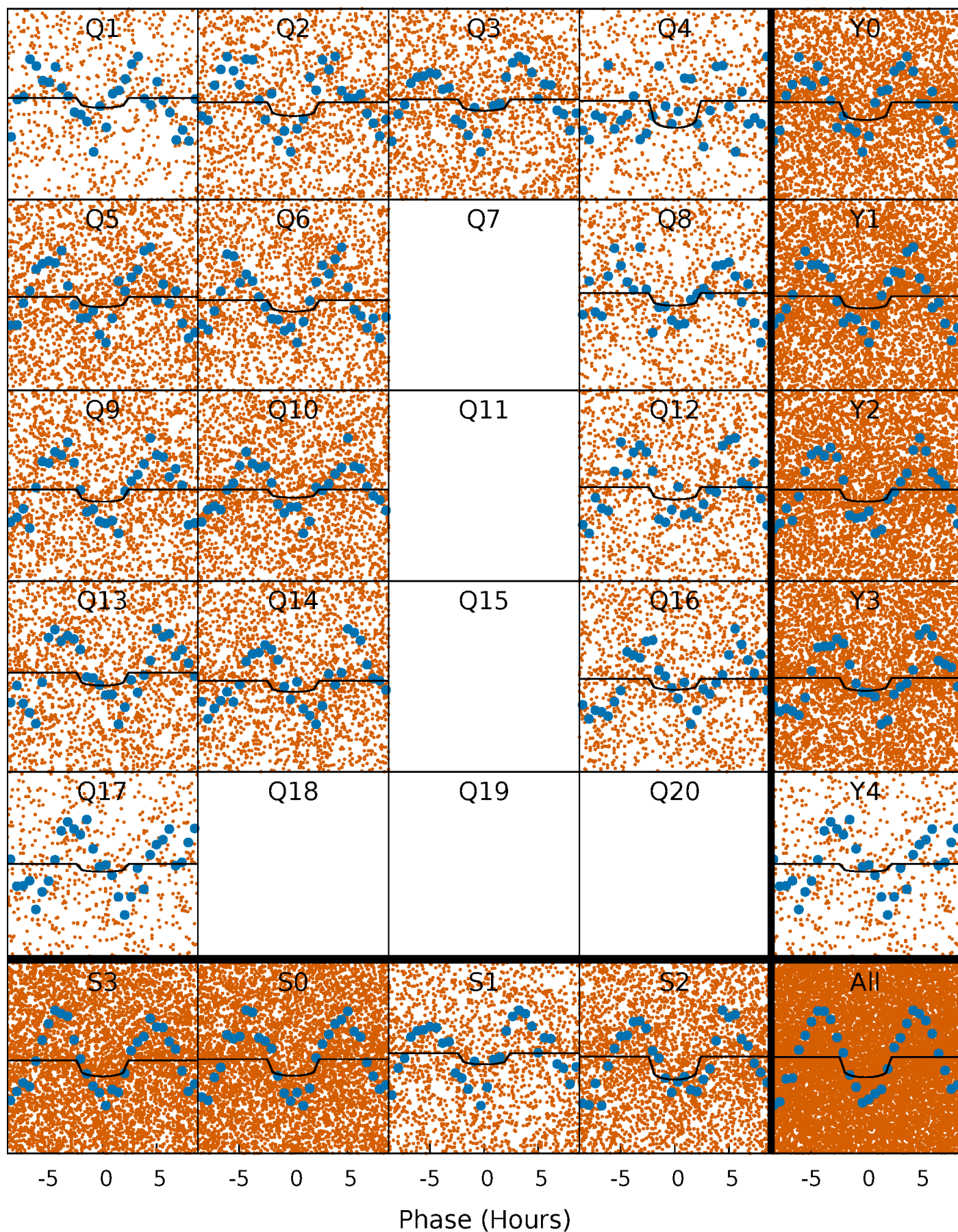
PDC Quarter-Phased Transit Curves

TCE 010881855-01 P= 0.740729 Days $T_0=131.932467$ (BKJD)



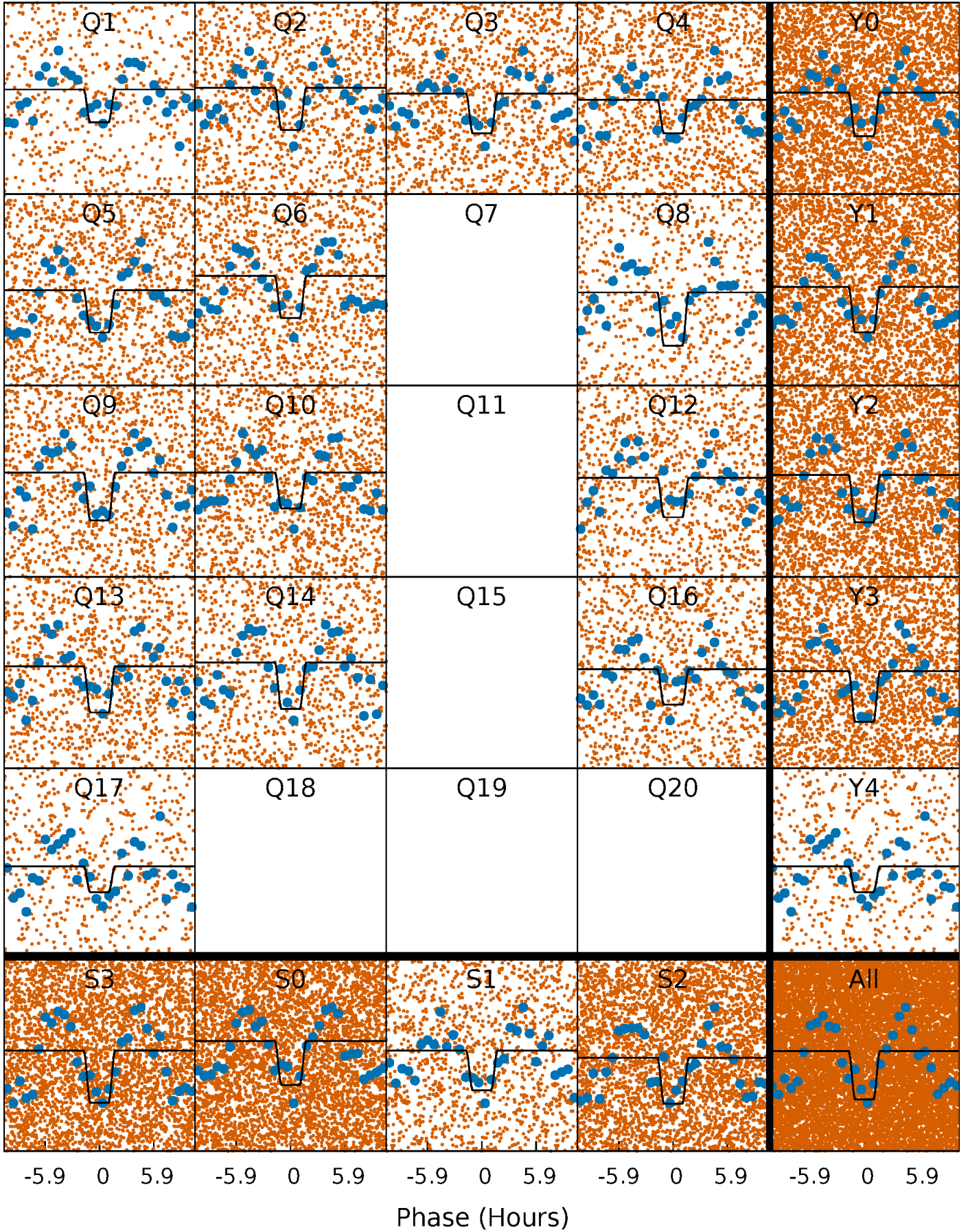
DV Quarter-Phased Transit Curves

TCE 010881855-01 P= 0.740729 Days $T_0=131.932467$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

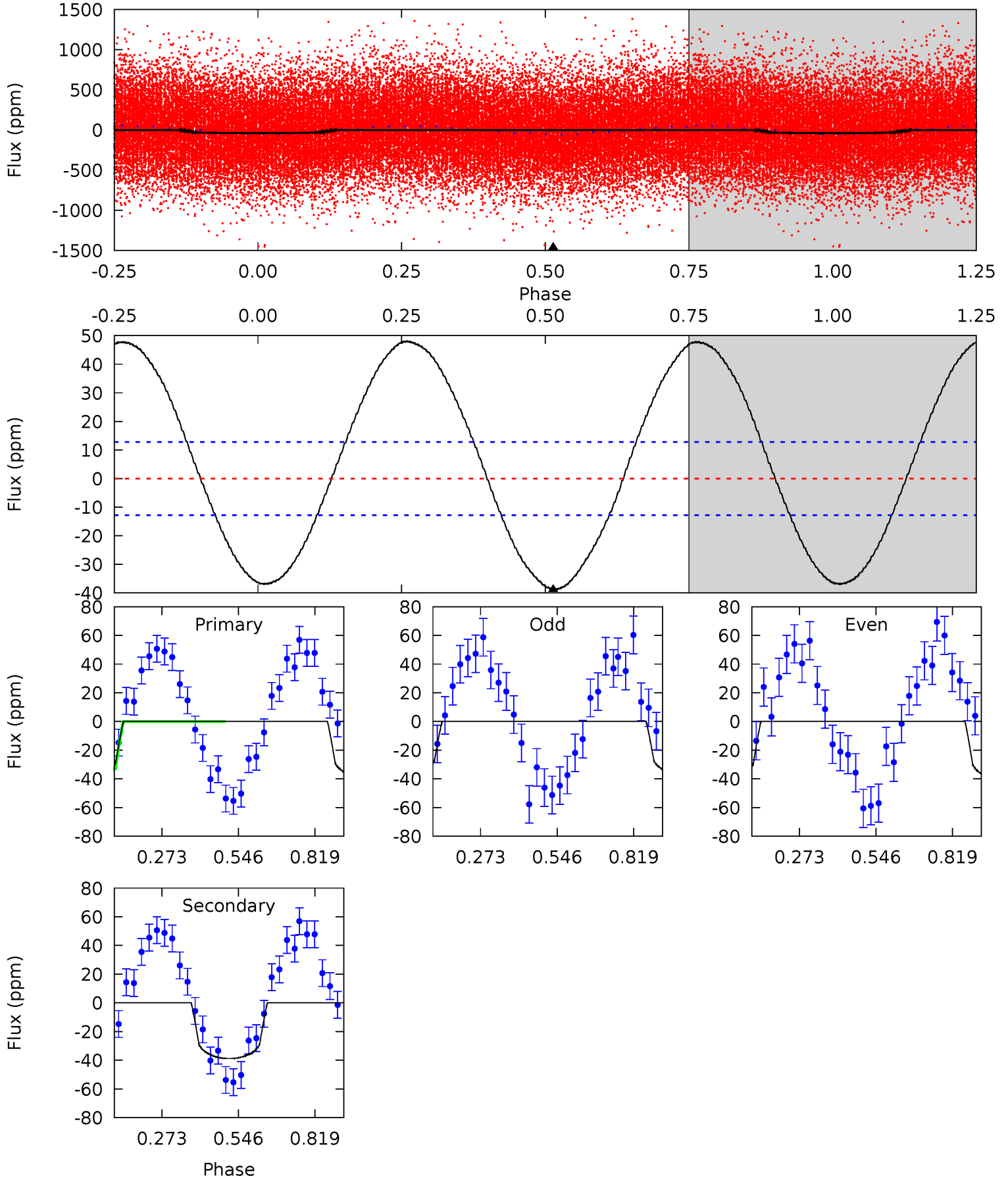
TCE 010881855-01 P= 0.740792 Days $T_0=131.888458$ (BKJD)



DV Model-Shift Uniqueness Test

010881855-01, P = 0.740729 Days, E = 131.191738 Days

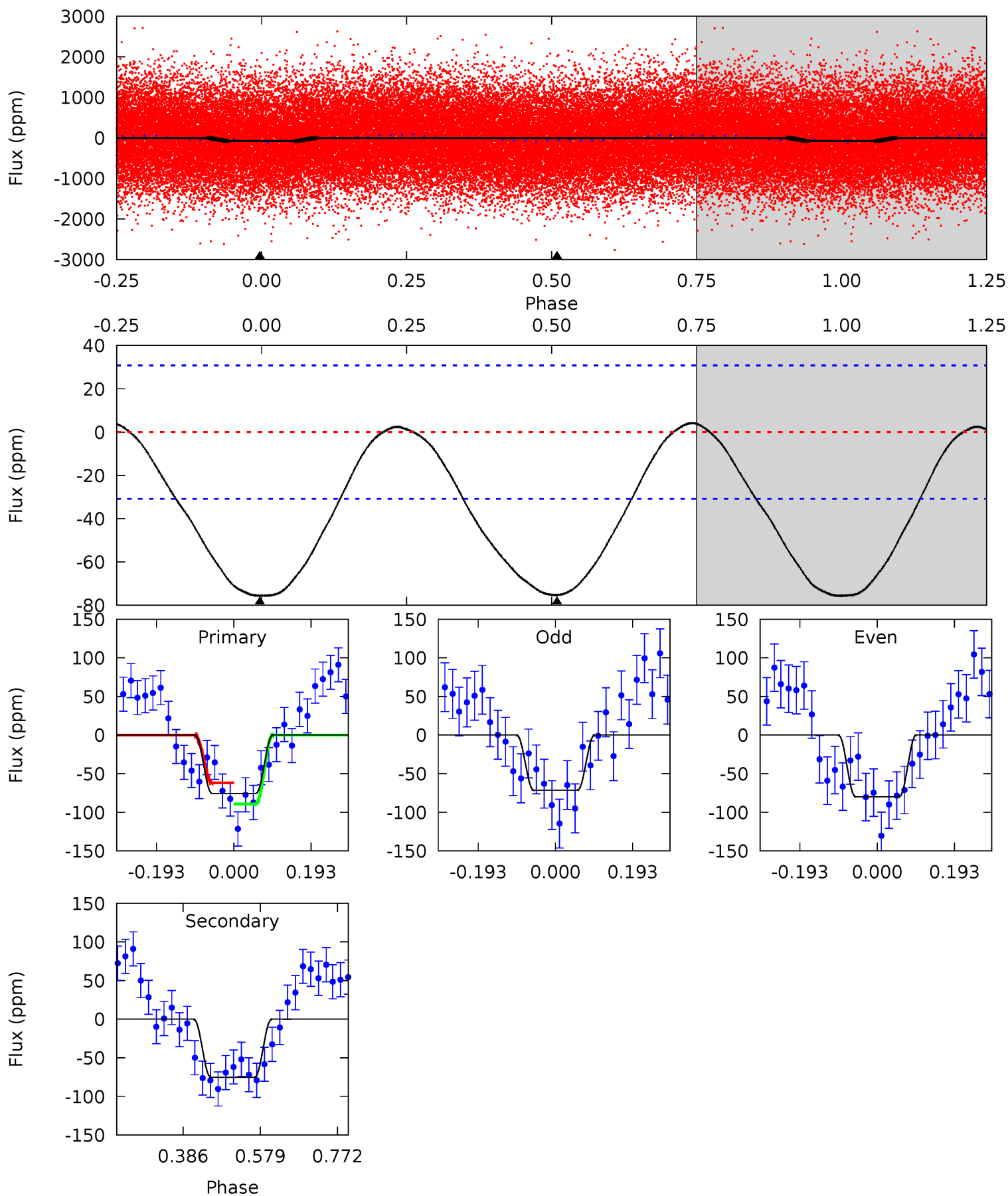
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	13.2	0	0	4.35	1.10	9.65	13.2	13.2	13.2	13.2	0.58	1.08	0.55	1.39



Alt Model-Shift Uniqueness Test

010881855-01, P = 0.740792 Days, E = 131.147666 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	10.8	0	0	4.42	1.30	0.65	10.9	10.9	10.8	10.8	0.60	1.00	0.05	1.98



Stellar Parameters For KIC 010881855

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7123^{+169}_{-296}	$4.178^{+0.090}_{-0.210}$	$0.140^{+0.200}_{-0.350}$	$1.681^{+0.601}_{-0.257}$	$1.552^{+0.214}_{-0.214}$	$0.461^{+0.192}_{-0.245}$
	+2%/-4%	+2%/-5%	+143%/-250%	+36%/-15%	+14%/-14%	+42%/-53%
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 010881855-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-39 ± 3	$1.05^{+0.73}_{-0.66}$	4221^{+330}_{-250}	7488^{+8365}_{-1921}	$6.405^{+40.812}_{-4.081}$
Alt.	-75 ± 7	$1.88^{+0.77}_{-0.82}$	4223^{+356}_{-243}	6528^{+2520}_{-1186}	$4.154^{+8.025}_{-2.158}$

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

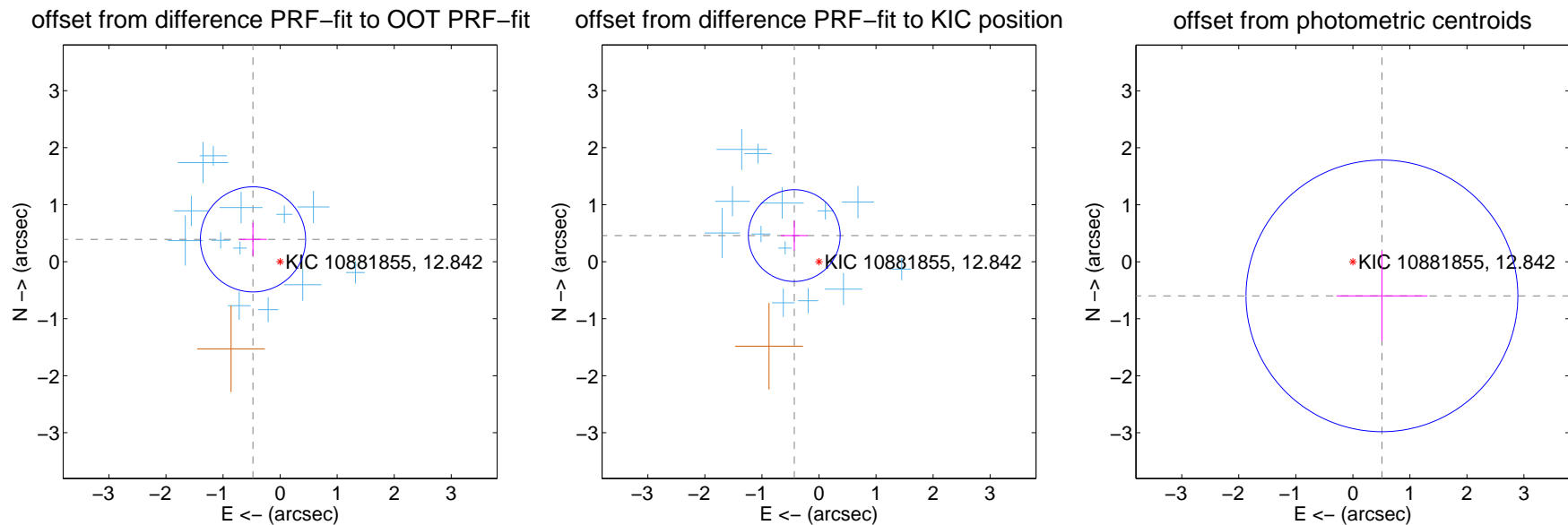
DV Centroid Data

Supplemental centroid analysis for 010881855-01. Kepler magnitude: 12.84. Transit SNR 6.17

There are 13 quarters with good PRF difference image offsets

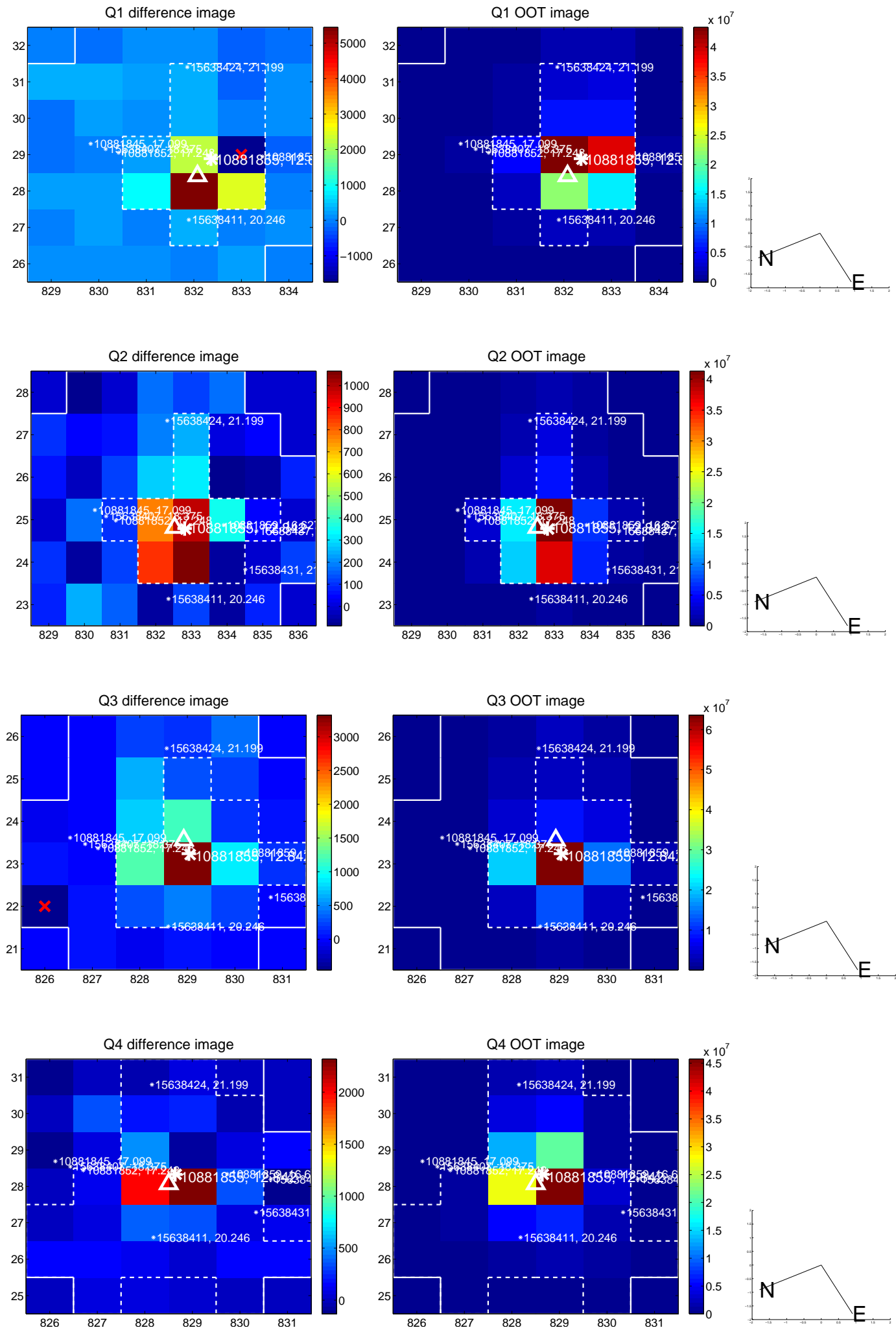
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.616 ± 0.307	2.00	0.475 ± 0.242	0.392 ± 0.289
PRF-fit source offset from KIC position	0.630 ± 0.268	2.35	0.433 ± 0.233	0.458 ± 0.258
photometric centroid source offset	0.79 ± 0.79	0.99	-0.51 ± 0.80	-0.60 ± 0.79

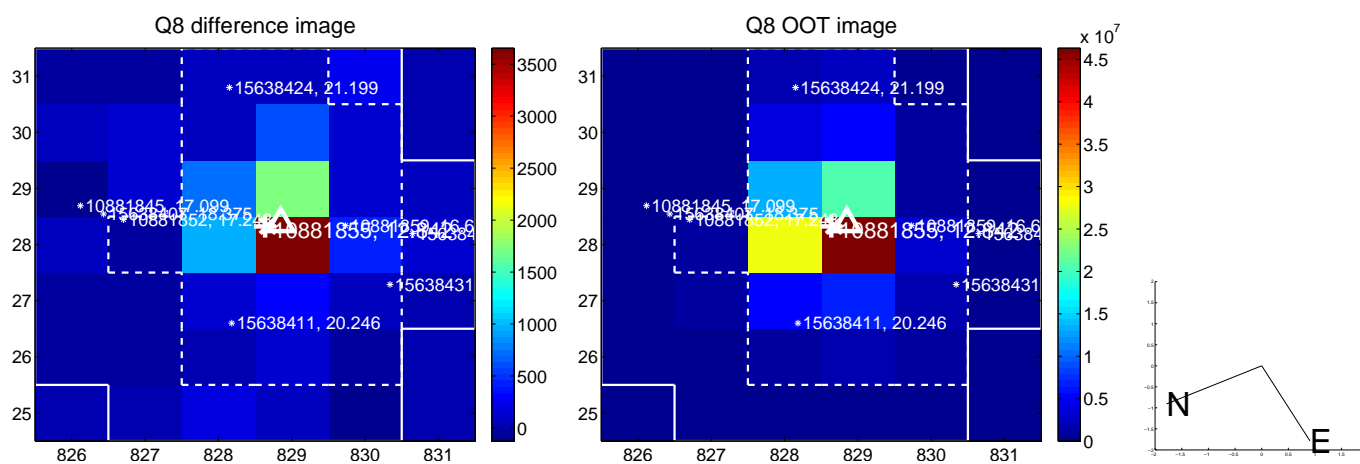
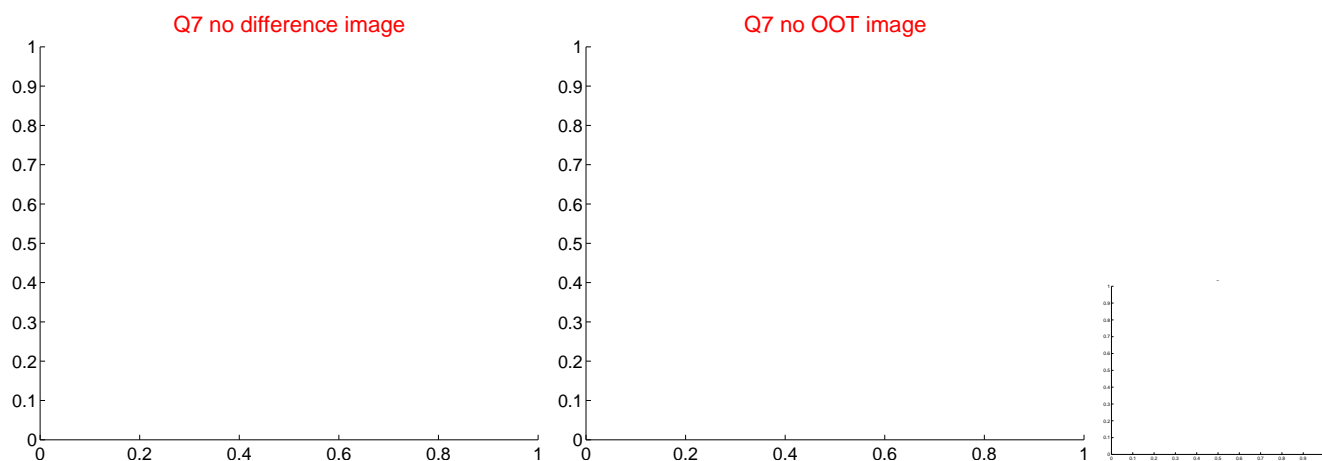
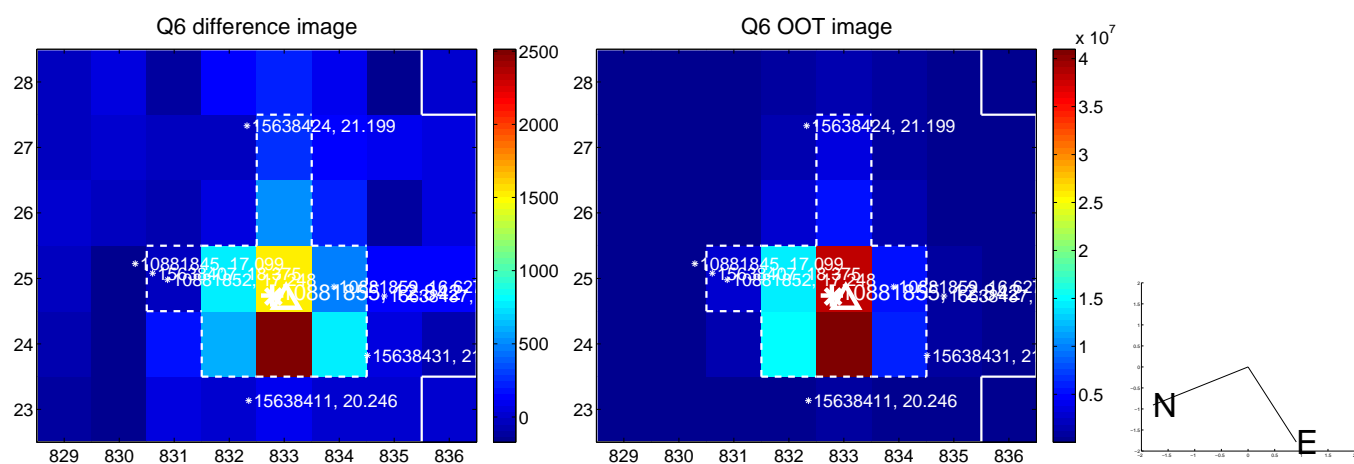
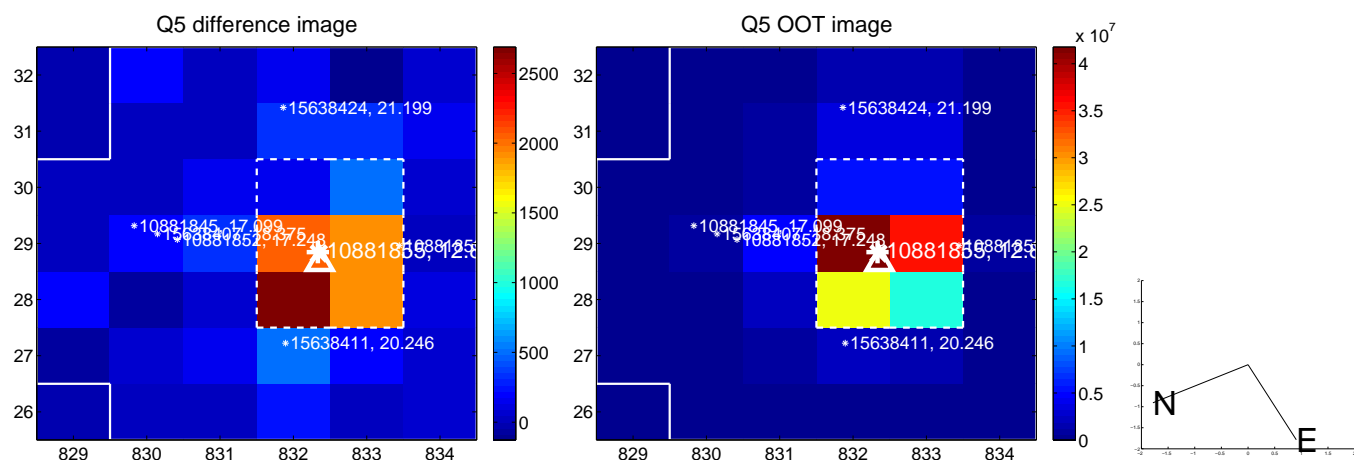


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

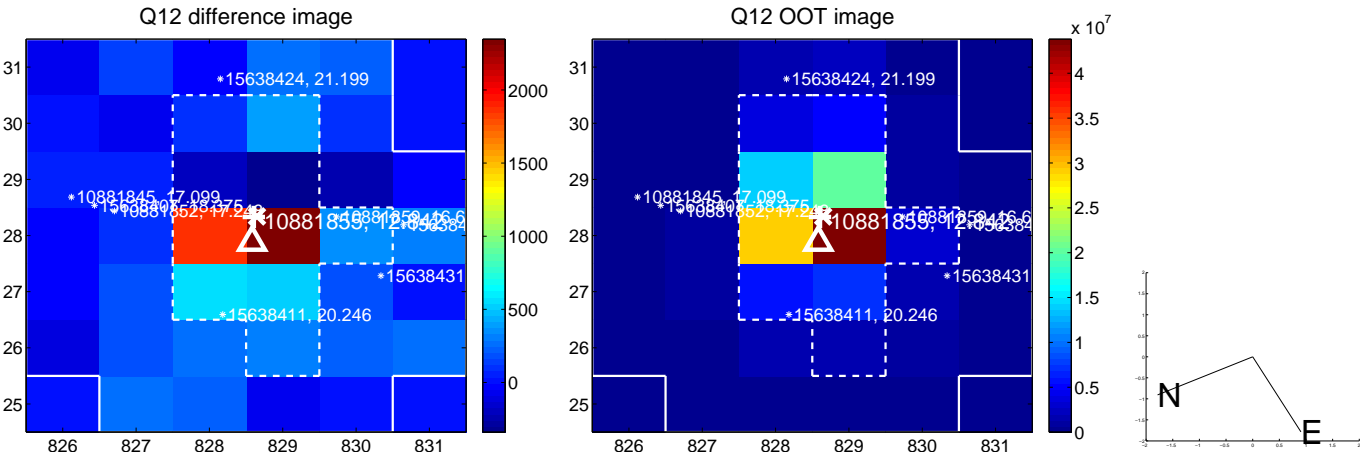
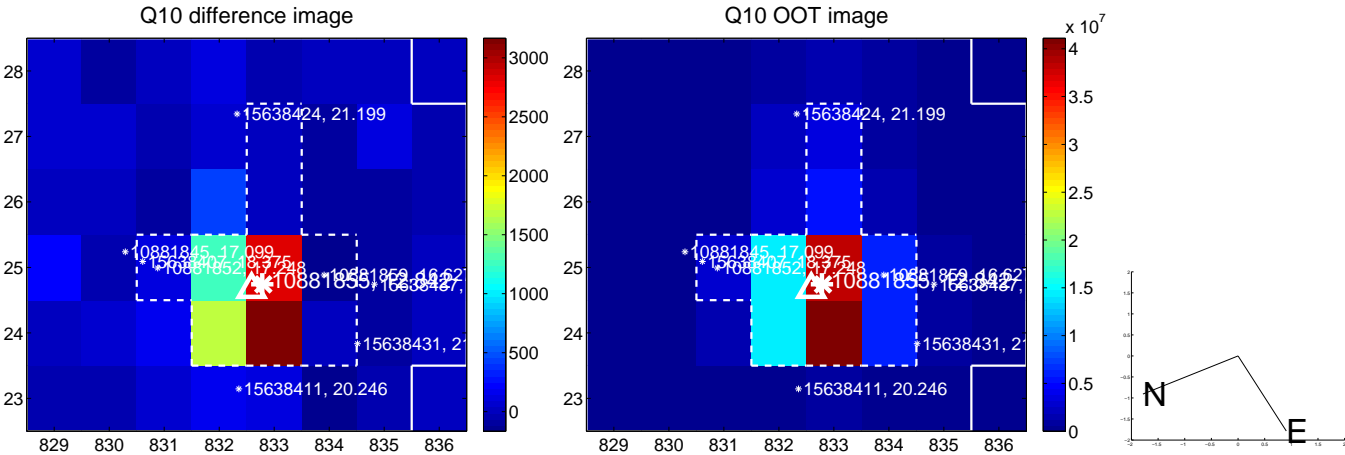
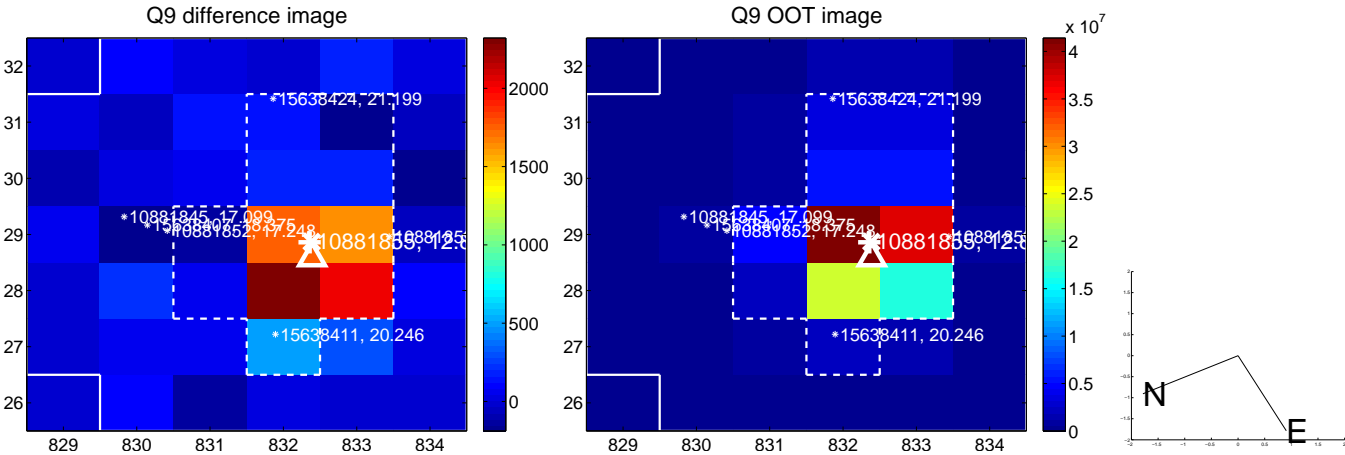
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



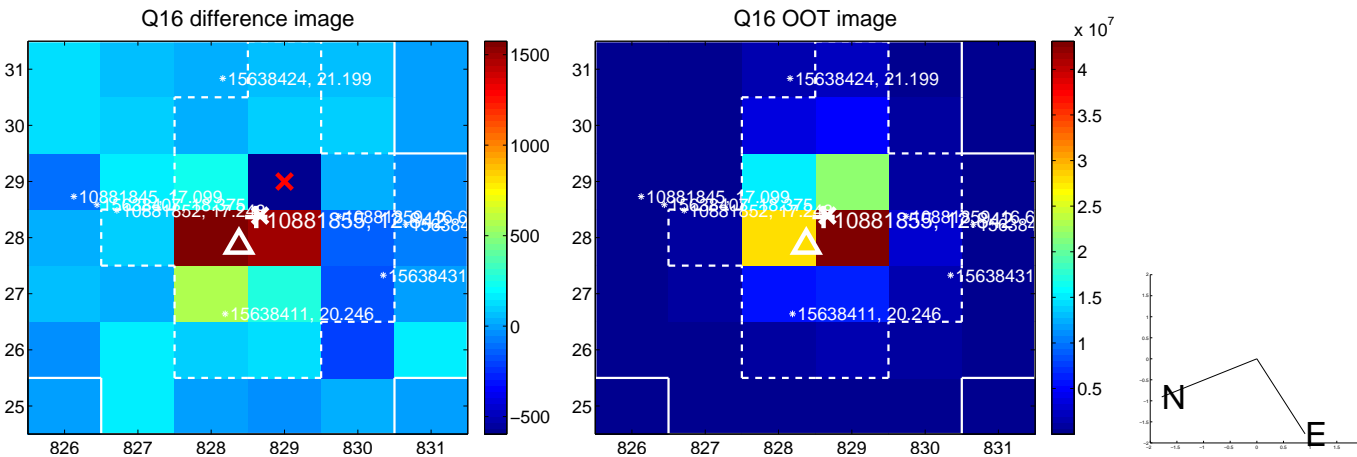
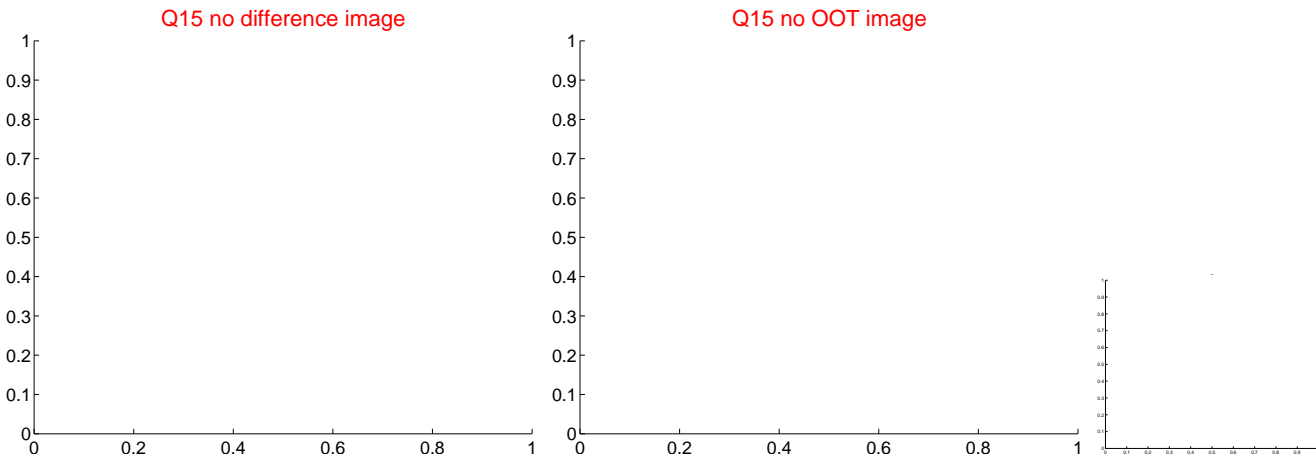
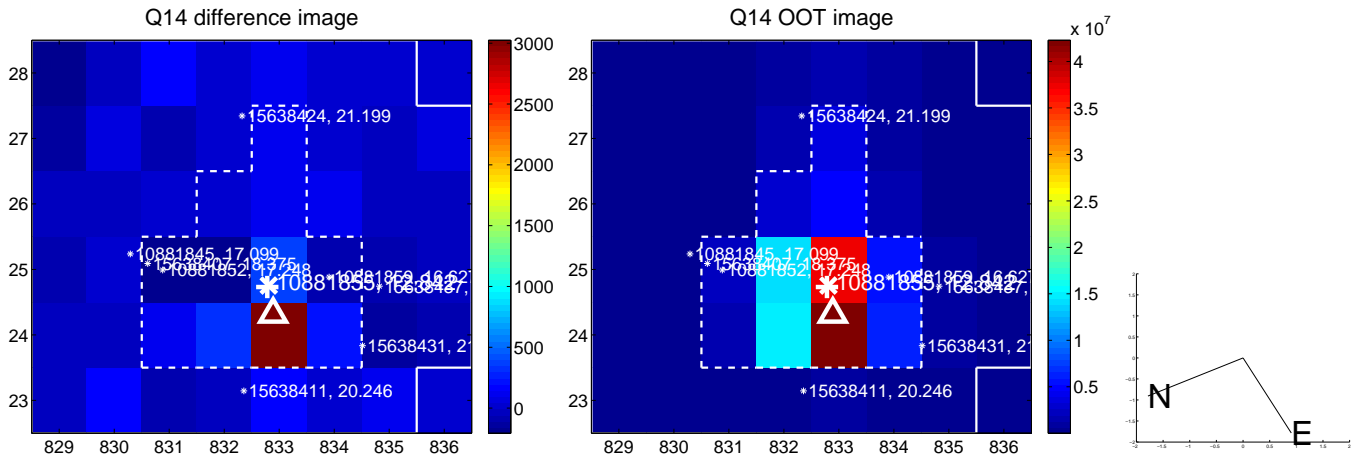
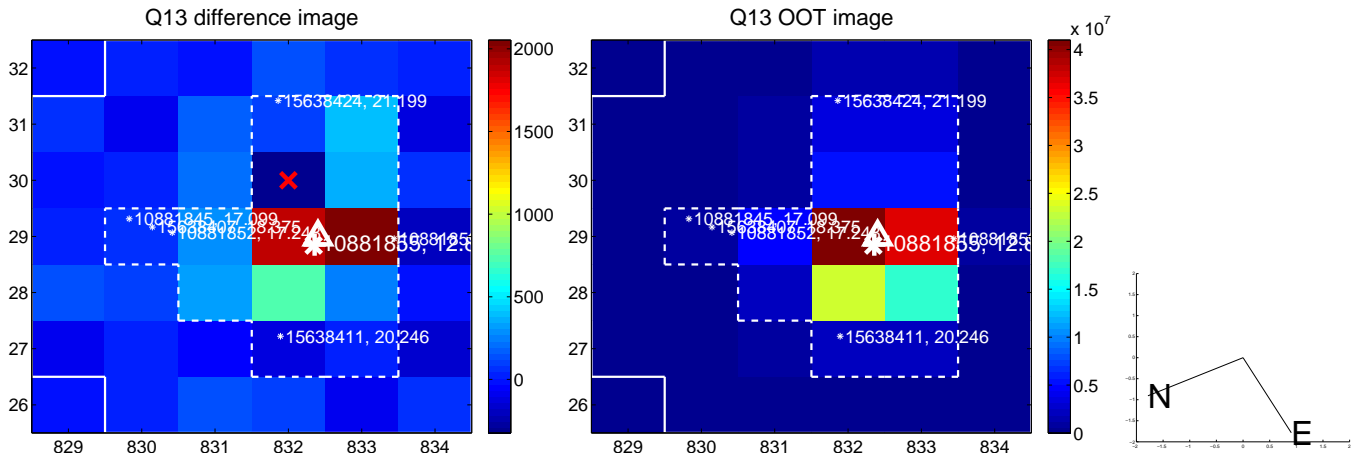
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

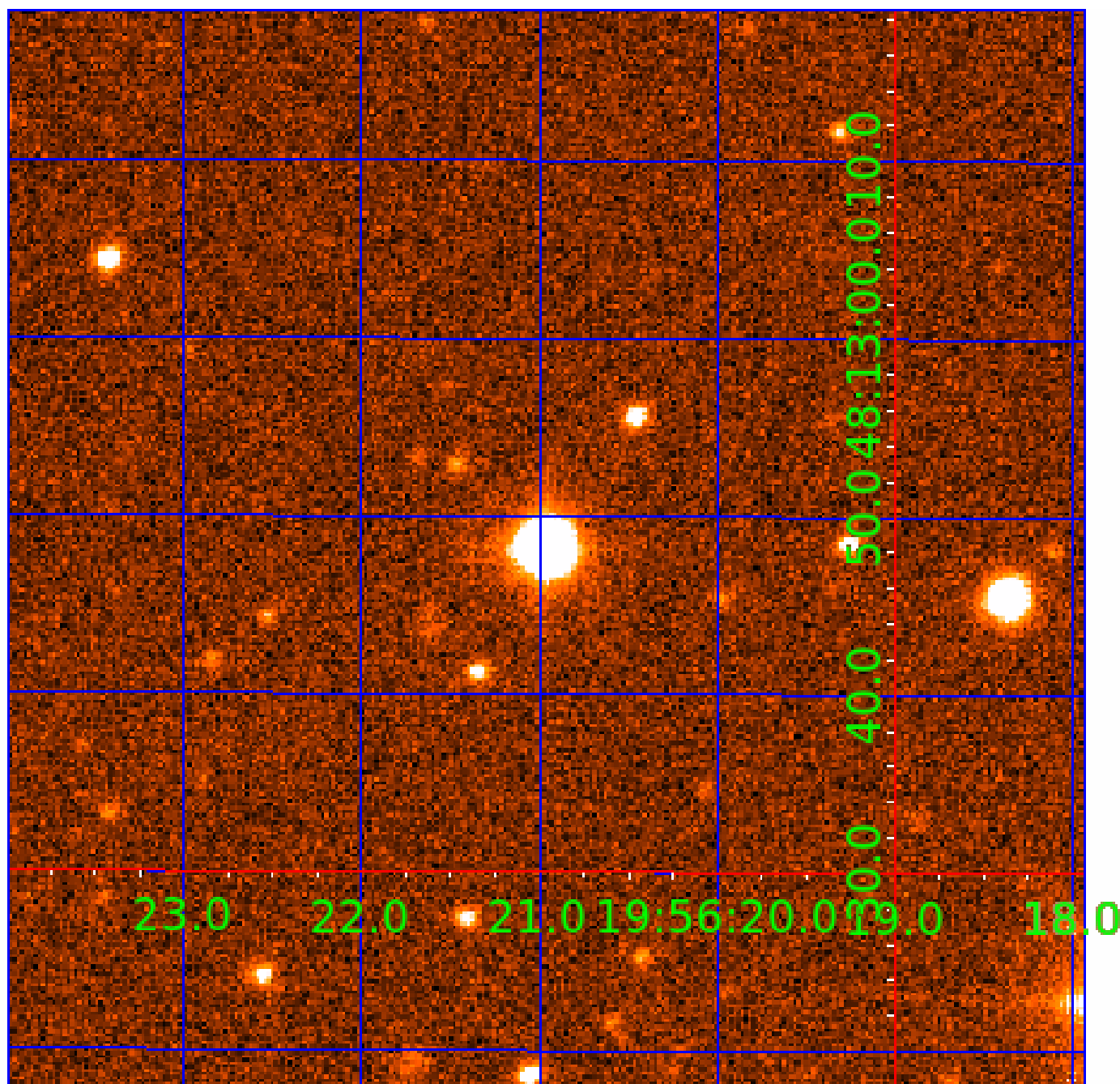


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010881855

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010881855-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
010881855-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

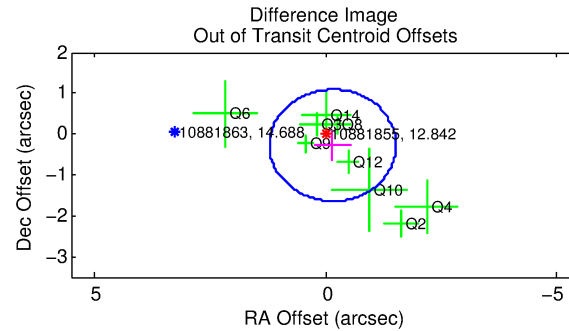
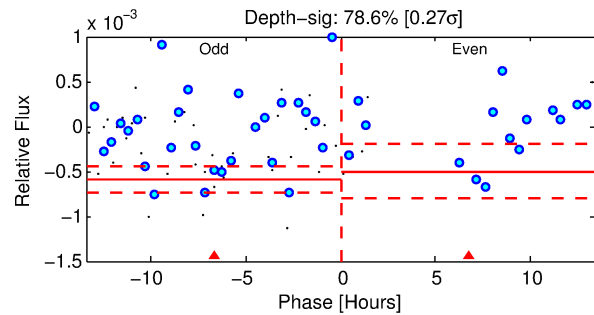
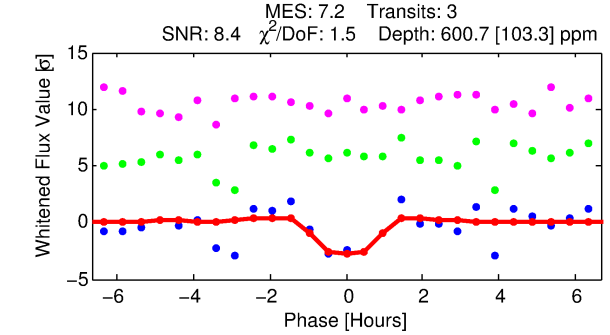
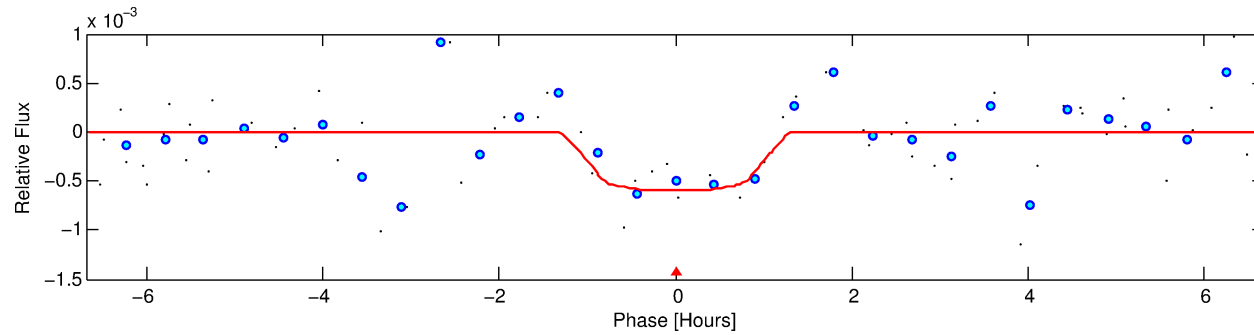
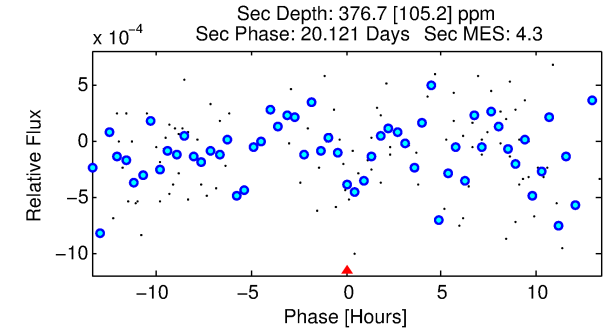
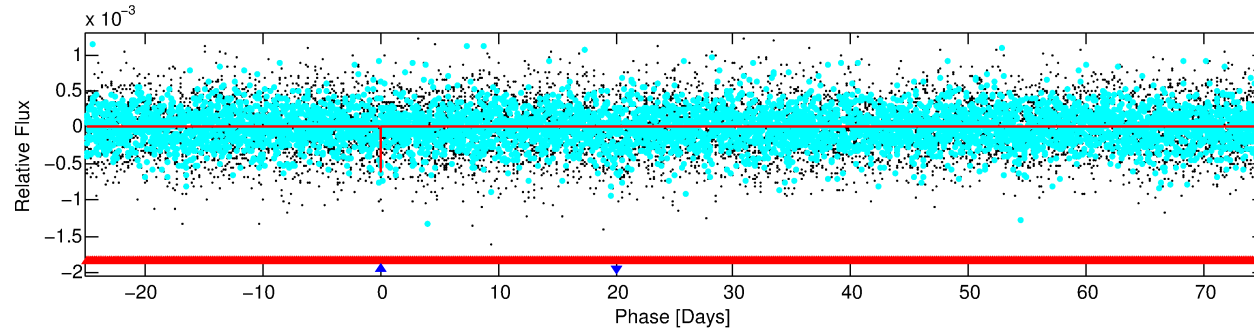
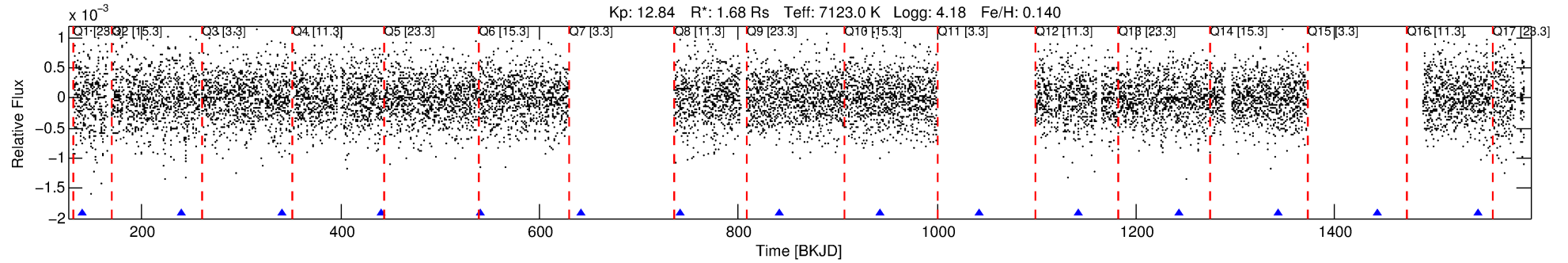
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010881855-02

No Significant Match Found

DV One-Page Summary

KIC: 10881855 Candidate: 2 of 2 Period: 100.277 d



DV Fit Results:

Period = 100.27706 [0.00151] d
Epoch = 139.9149 [0.0123] BKJD
Rp/R* = 0.0241 [0.0716]
a/R* = 257.18 [4561.36]
b = 0.70 [13.06]
Seff = 27.23 [11.82]
Teq = 582 [63] K
Rp = 4.42 [13.24] Re
a = 0.4893 [0.1408] AU
Ag = 2541.06 [15168.13] [0.17 σ]
Teffp = 6394 [9524] K [0.61 σ]

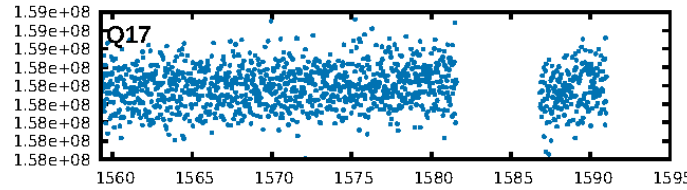
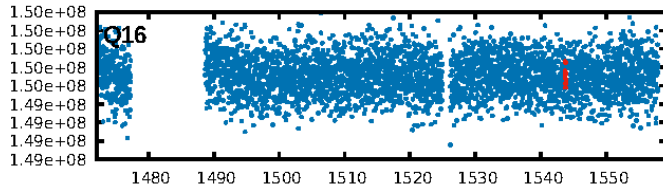
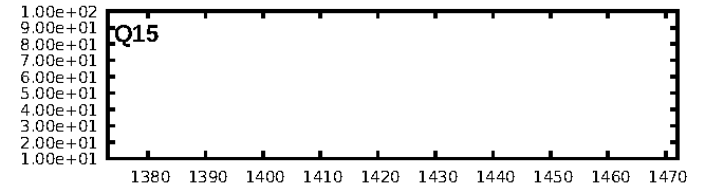
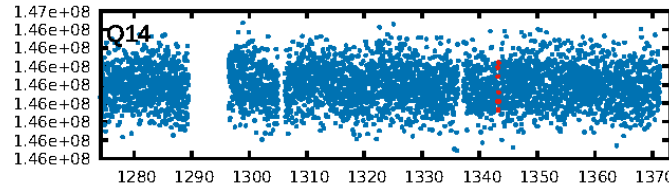
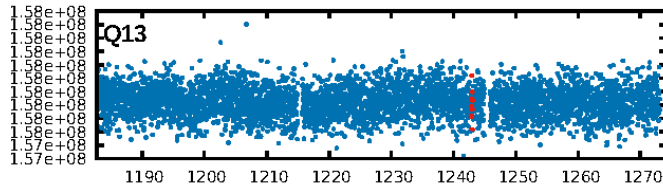
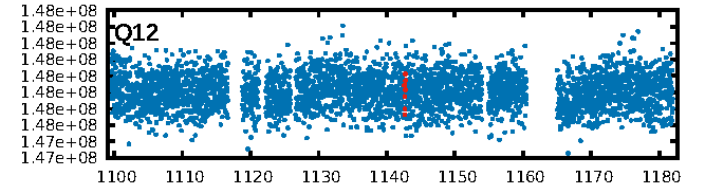
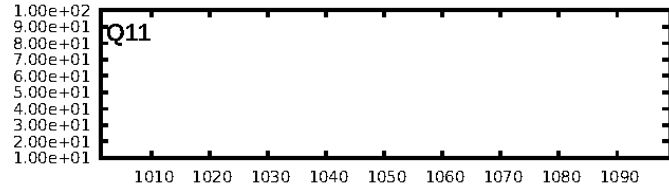
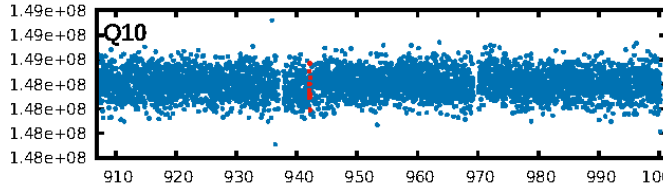
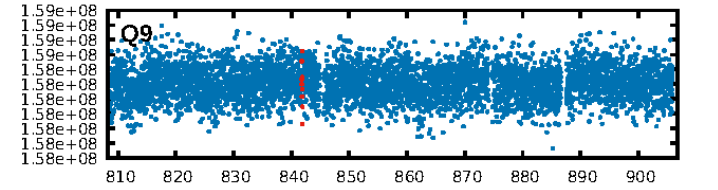
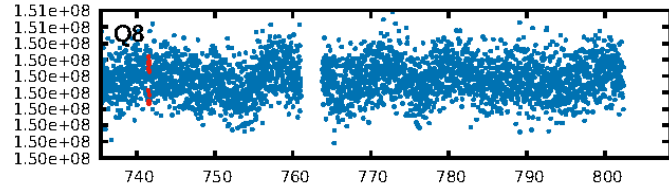
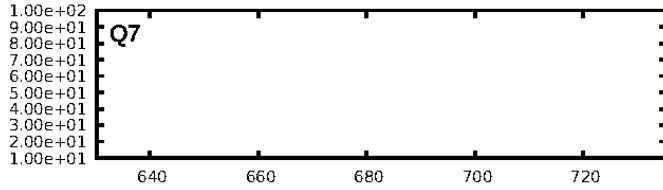
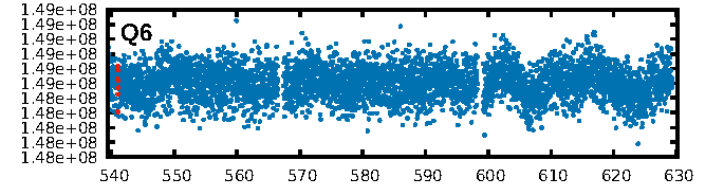
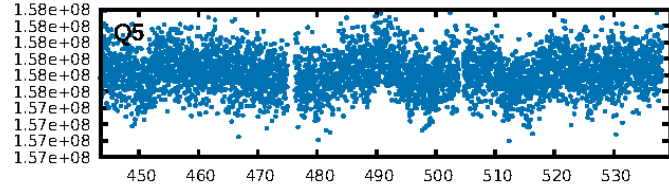
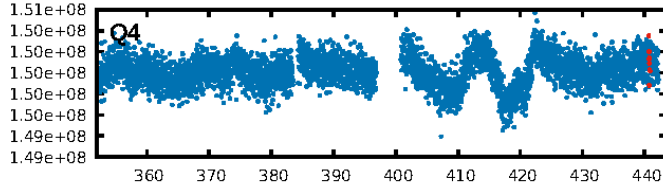
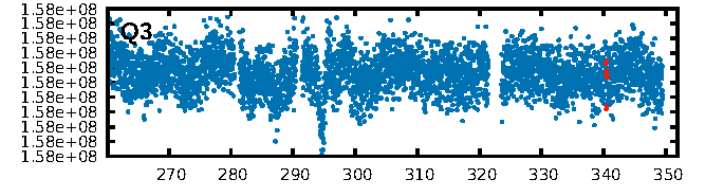
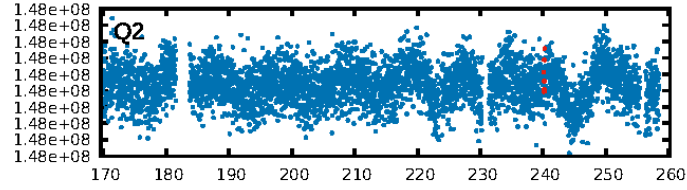
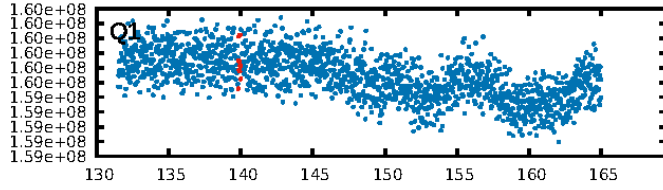
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [484.08 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.3%
ModelChiSquareGof-sig: 97.5%
Bootstrap-pfa: 1.24e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.024
Centroid-sig: N/A
Centroid-so: 0.466 arcsec [0.93 σ]
OotOffset-rm: 0.319 arcsec [0.70 σ]
KicOffset-rm: 0.183 arcsec [0.44 σ]
OotOffset-st: 4/1/3/1 [9]
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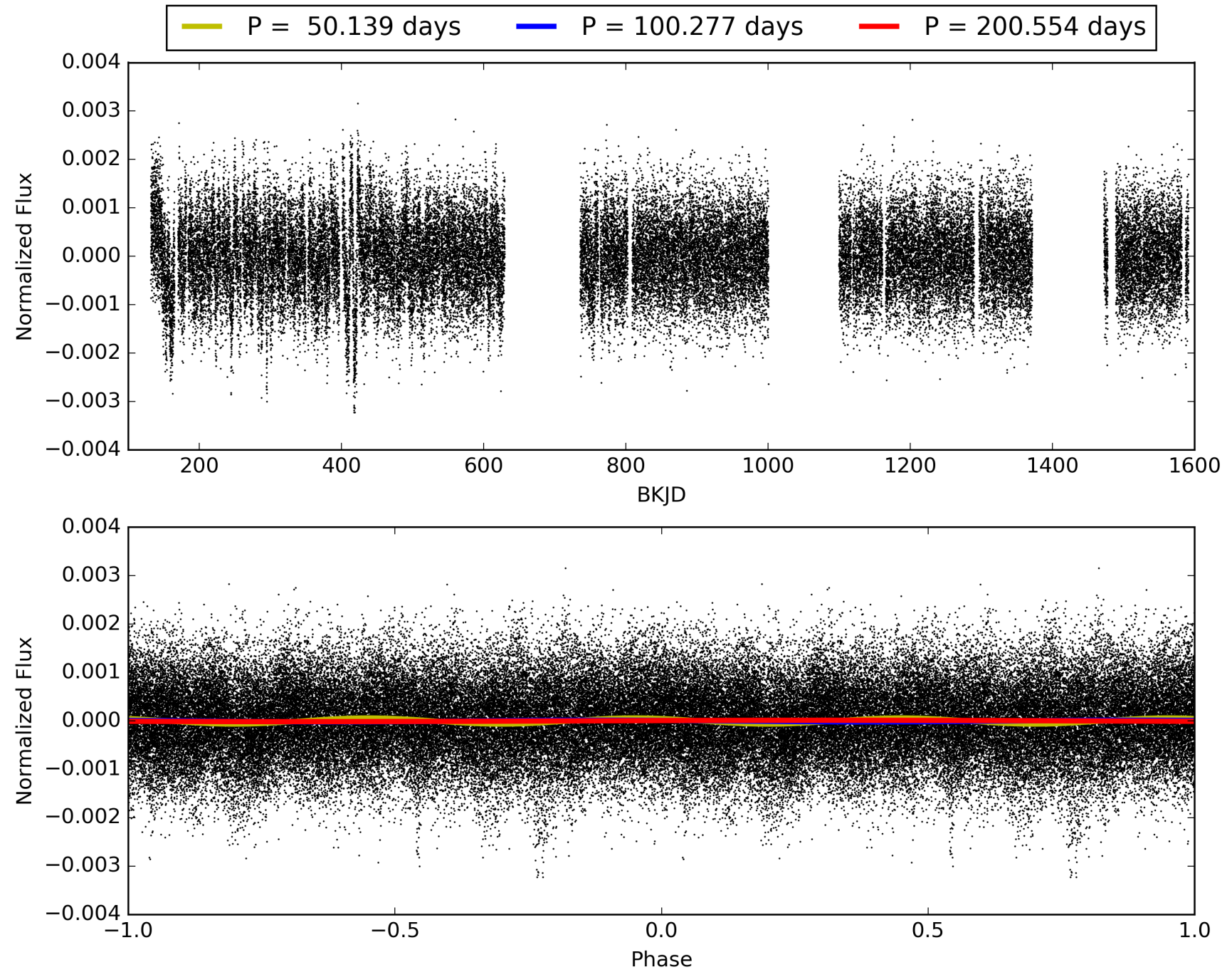
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010881855-02, PDC Light Curves

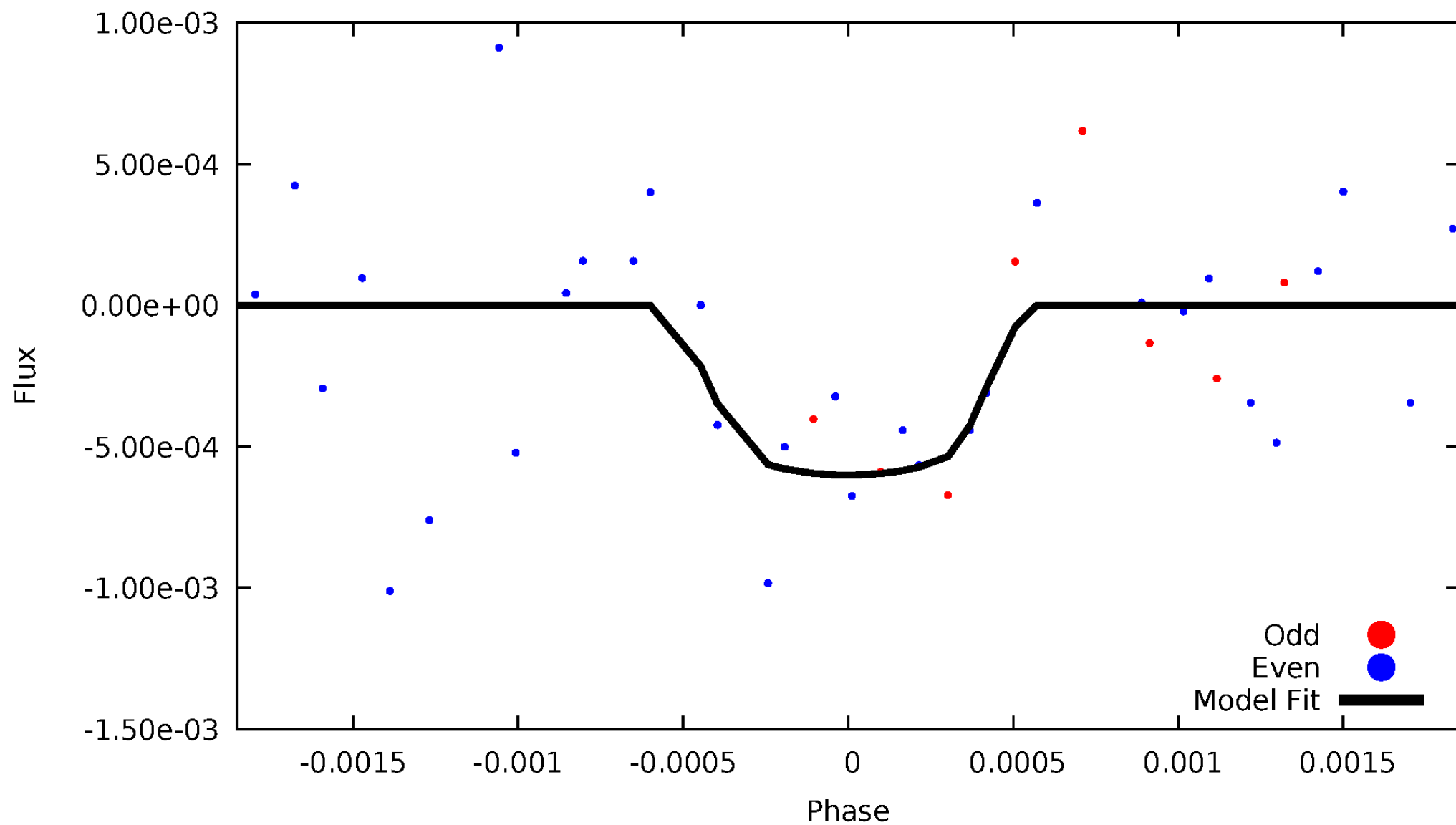


TCE 010881855-02



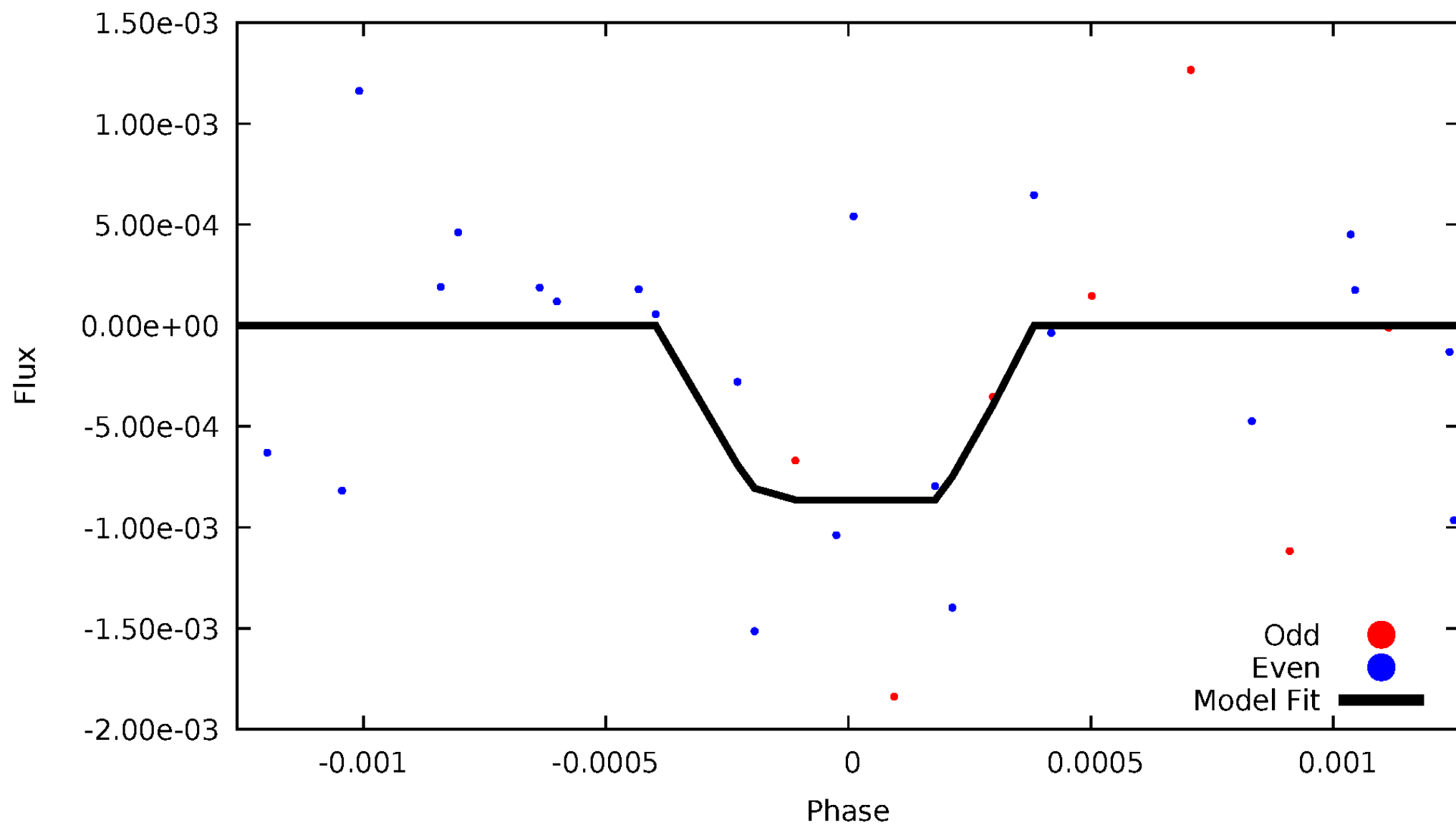
DV Odd/Even

TCE 010881855-02



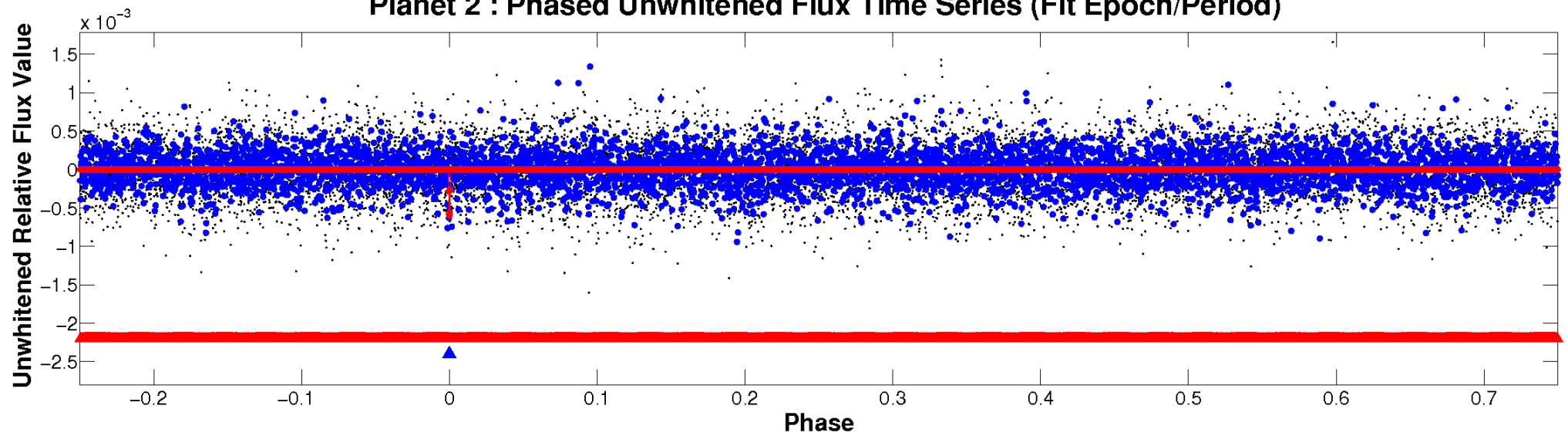
ALT Odd/Even

TCE 010881855-02

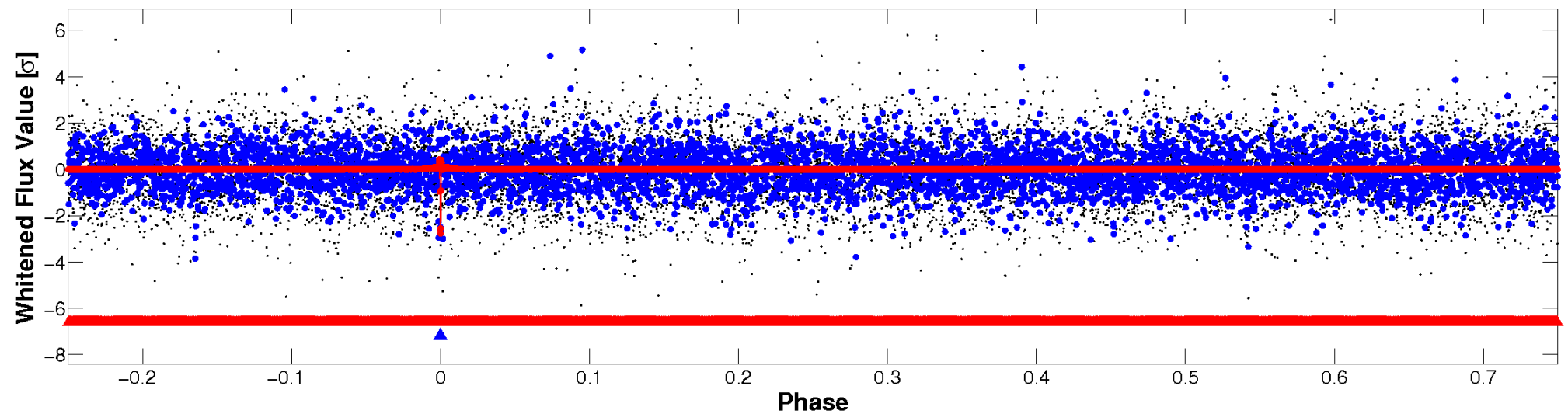


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

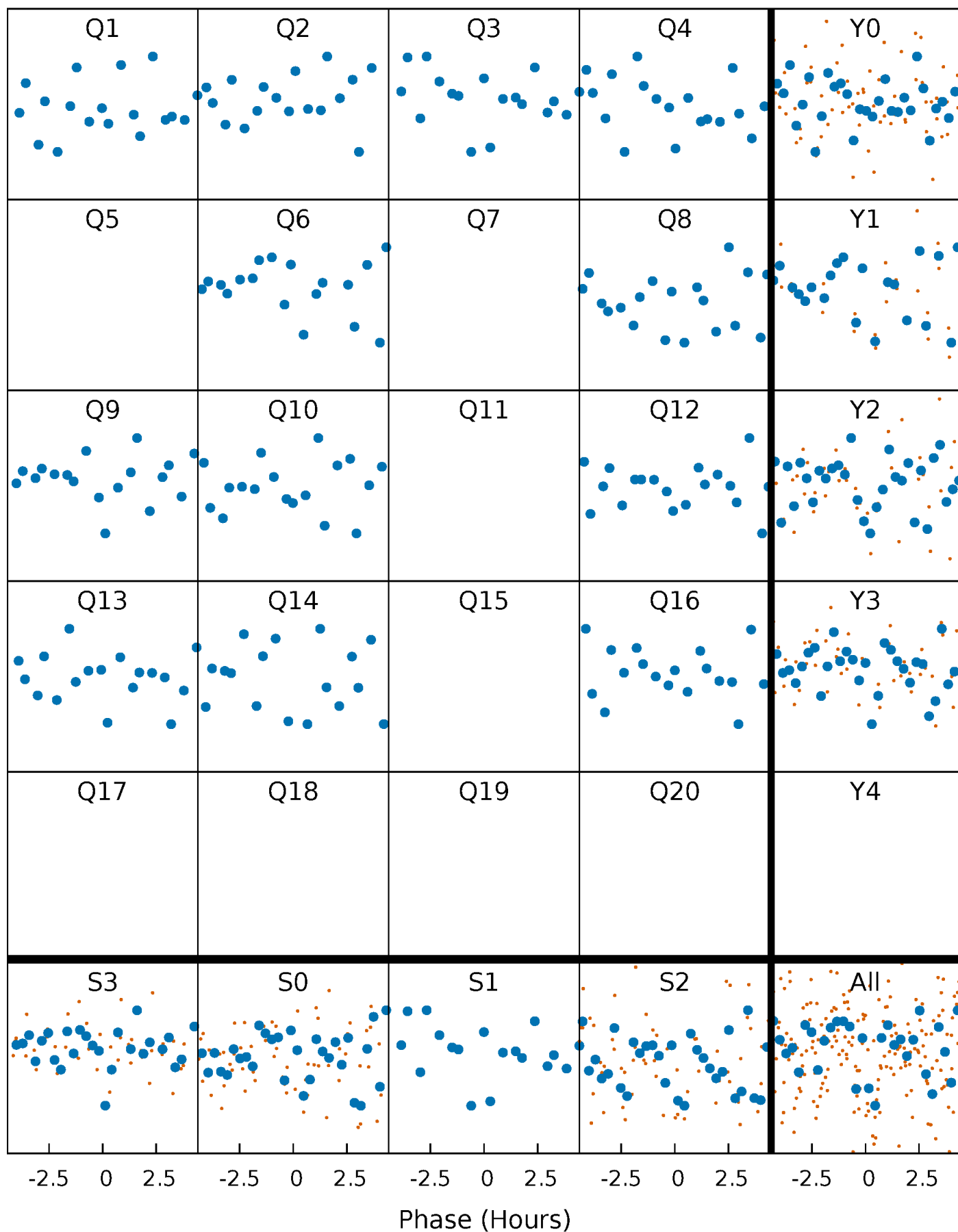


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



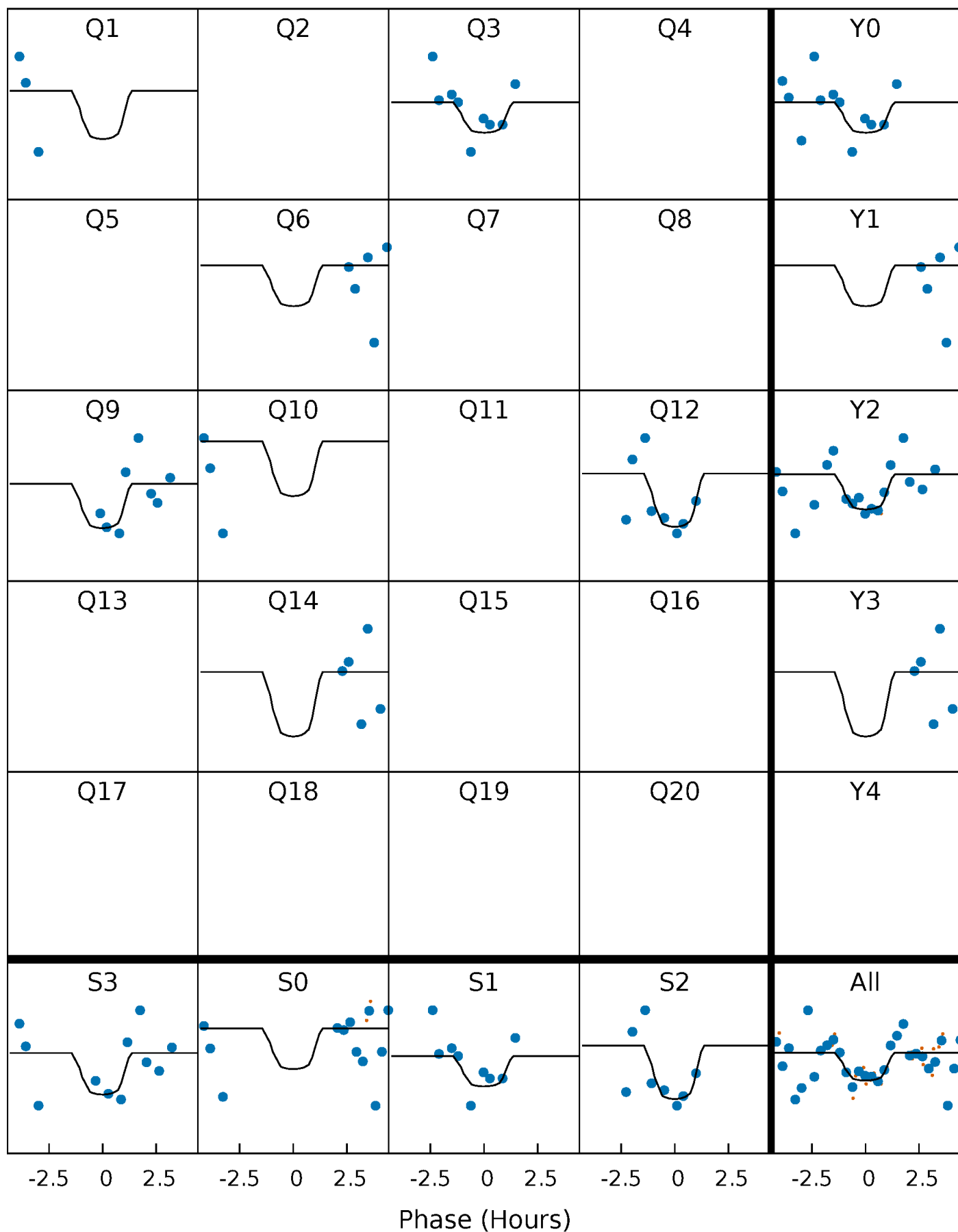
PDC Quarter-Phased Transit Curves

TCE 010881855-02 P=100.277059 Days $T_0=139.914859$ (BKJD)



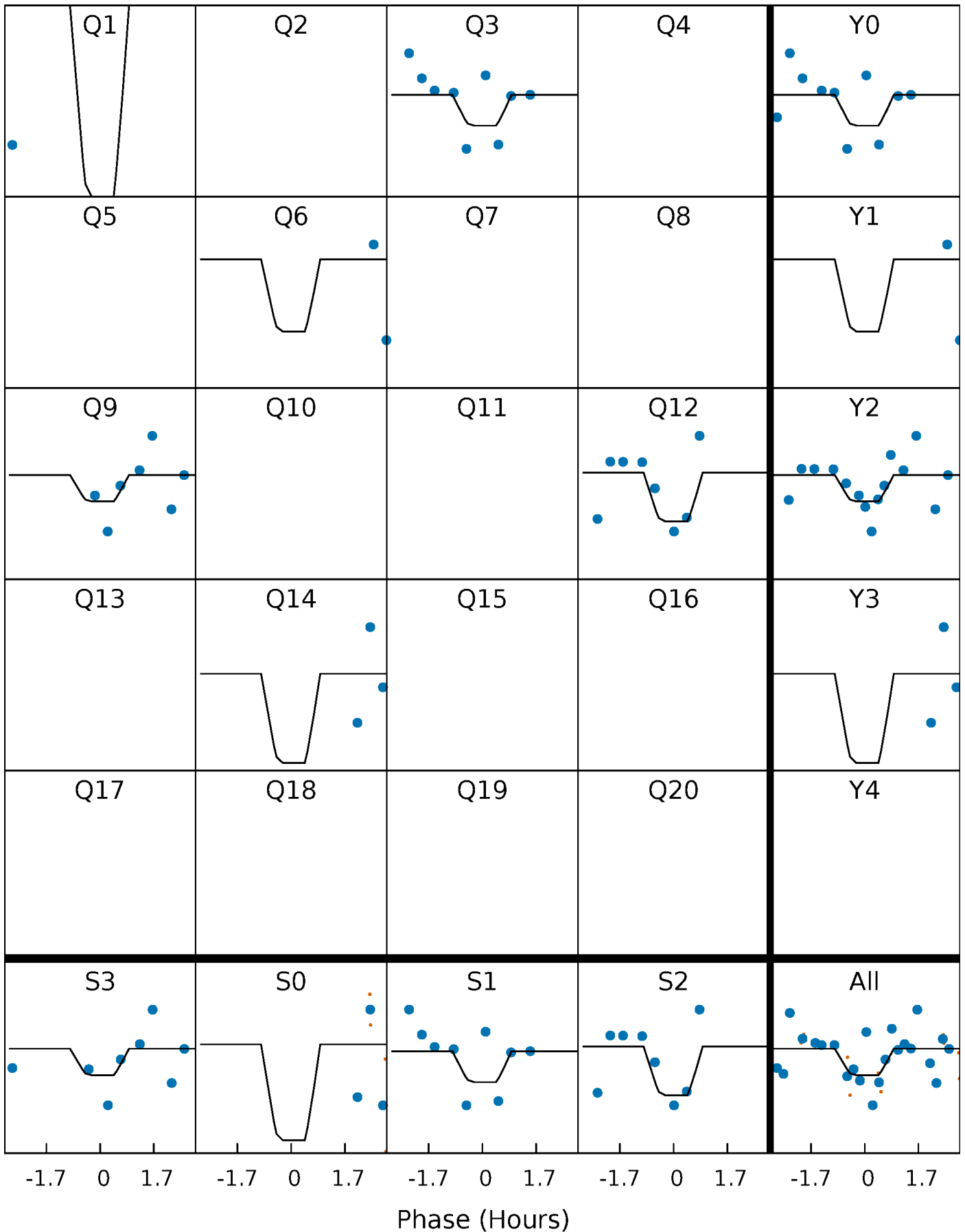
DV Quarter-Phased Transit Curves

TCE 010881855-02 P=100.277059 Days $T_0=139.914859$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

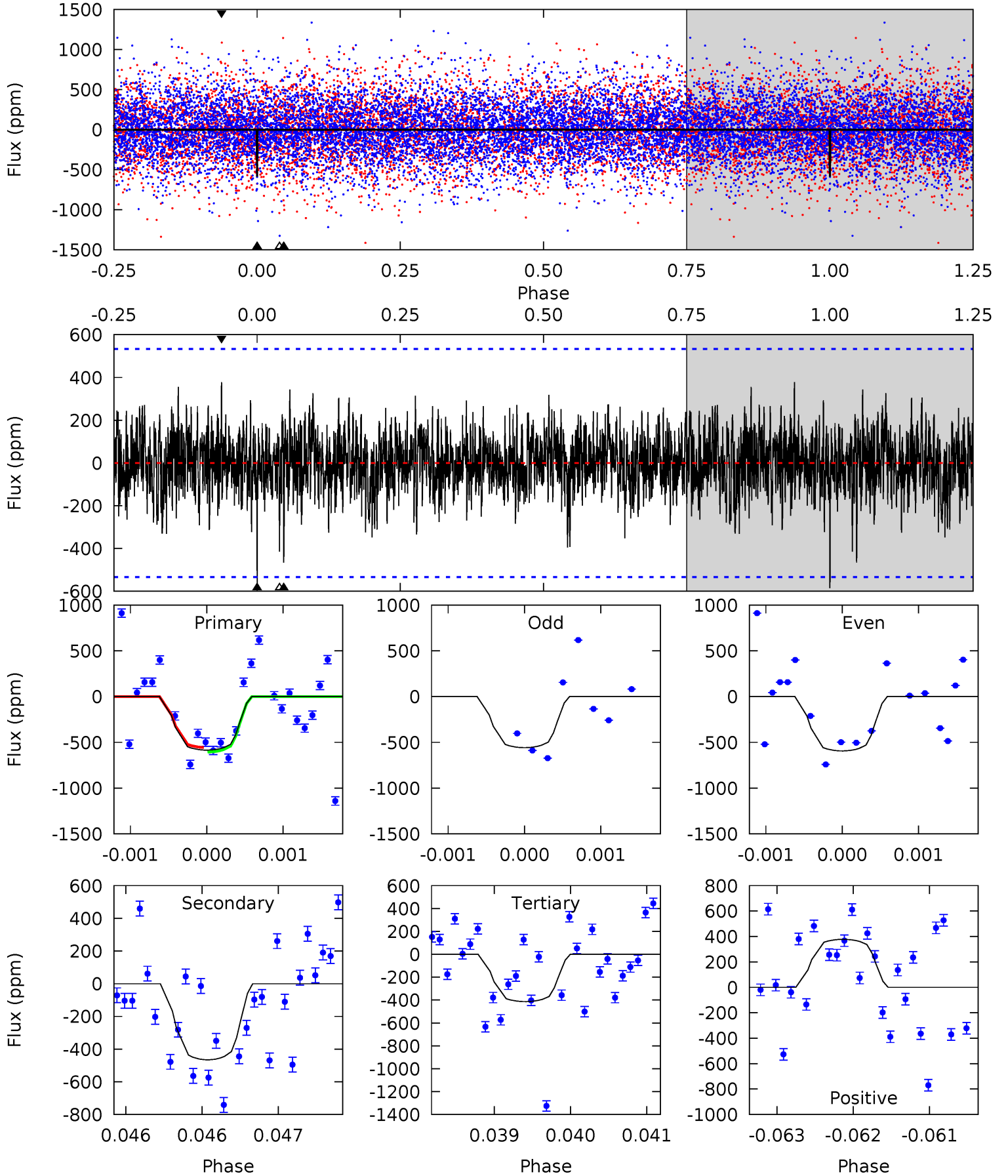
TCE 010881855-02 P=100.278137 Days $T_0=139.907653$ (BKJD)



DV Model-Shift Uniqueness Test

010881855-02, $P = 100.277059$ Days, $E = 39.637800$ Days

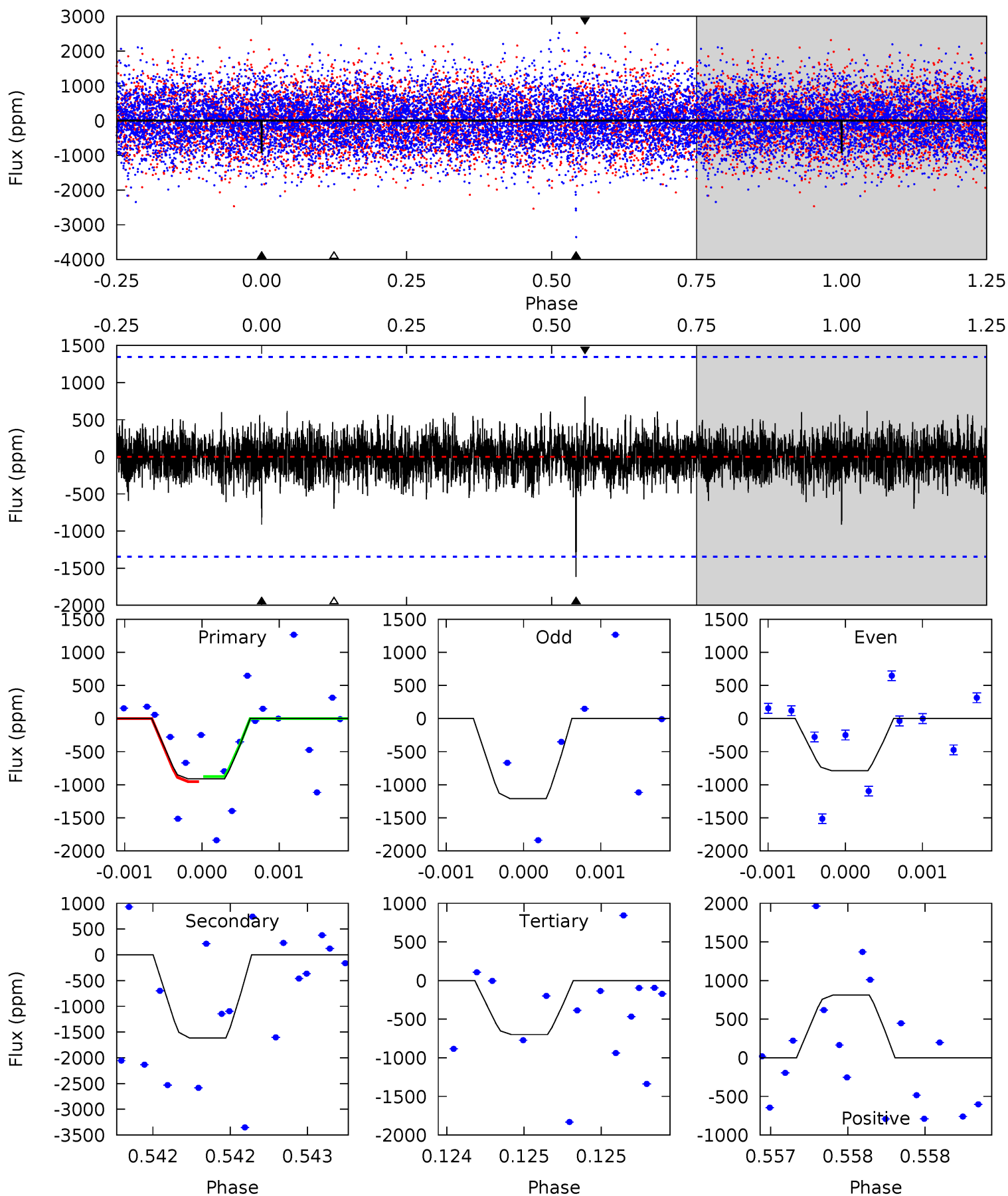
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.99	4.76	4.23	3.86	5.46	3.30	1.13	1.76	2.12	0.53	0.90	0.17	1.02	0.39	0.24



Alt Model-Shift Uniqueness Test

010881855-02, P = 100.278137 Days, E = 39.629516 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.75	6.65	2.88	3.35	5.54	3.43	0.76	0.88	0.41	3.77	3.30	0.85	1.17	0.33	0.15



Stellar Parameters For KIC 010881855

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7123^{+169}_{-296}	$4.178^{+0.090}_{-0.210}$	$0.140^{+0.200}_{-0.350}$	$1.681^{+0.601}_{-0.257}$	$1.552^{+0.214}_{-0.214}$	$0.461^{+0.192}_{-0.245}$
	+2%/-4%	+2%/-5%	+143%/-250%	+36%/-15%	+14%/-14%	+42%/-53%
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 010881855-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-466 ± 98	$11.56^{+11.47}_{-7.67}$	822^{+70}_{-47}	4373^{+3021}_{-901}	424^{+3674}_{-316}
Alt.	-1614 ± 243	$11.62^{+12.56}_{-7.97}$	821^{+67}_{-44}	5755^{+5375}_{-1491}	1593^{+13211}_{-1225}

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 $A_{obs} \gg 1.0$

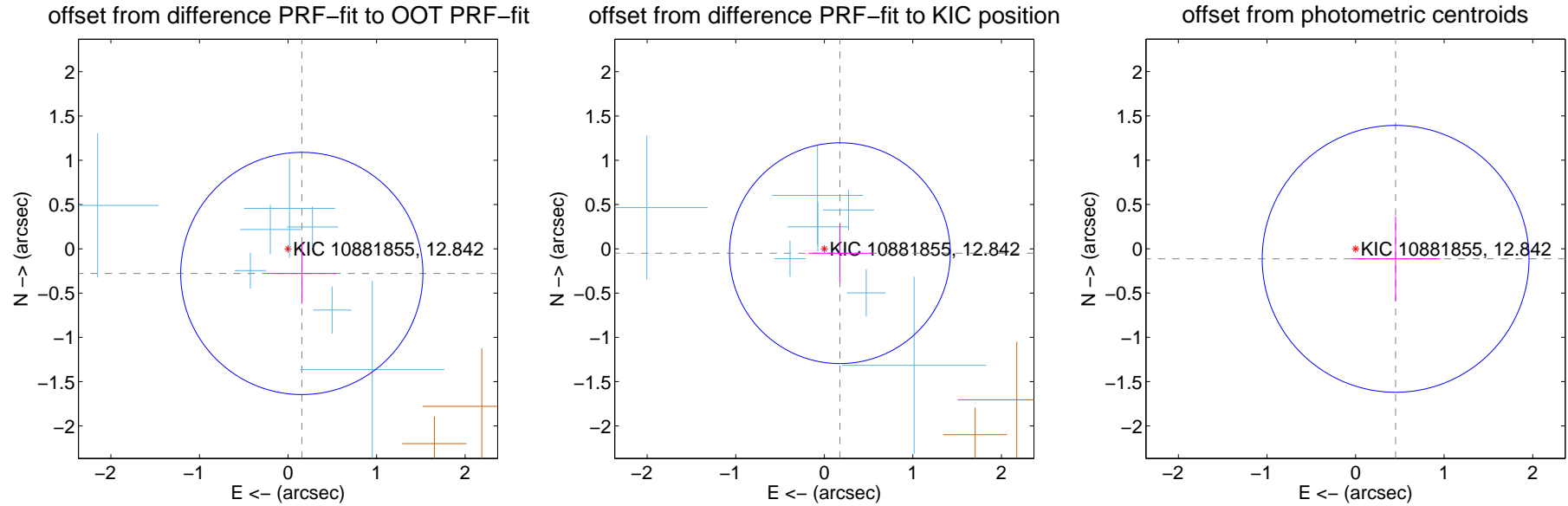
DV Centroid Data

Supplemental centroid analysis for 010881855-02. Kepler magnitude: 12.84. Transit SNR 8.37

There are 7 quarters with good PRF difference image offsets

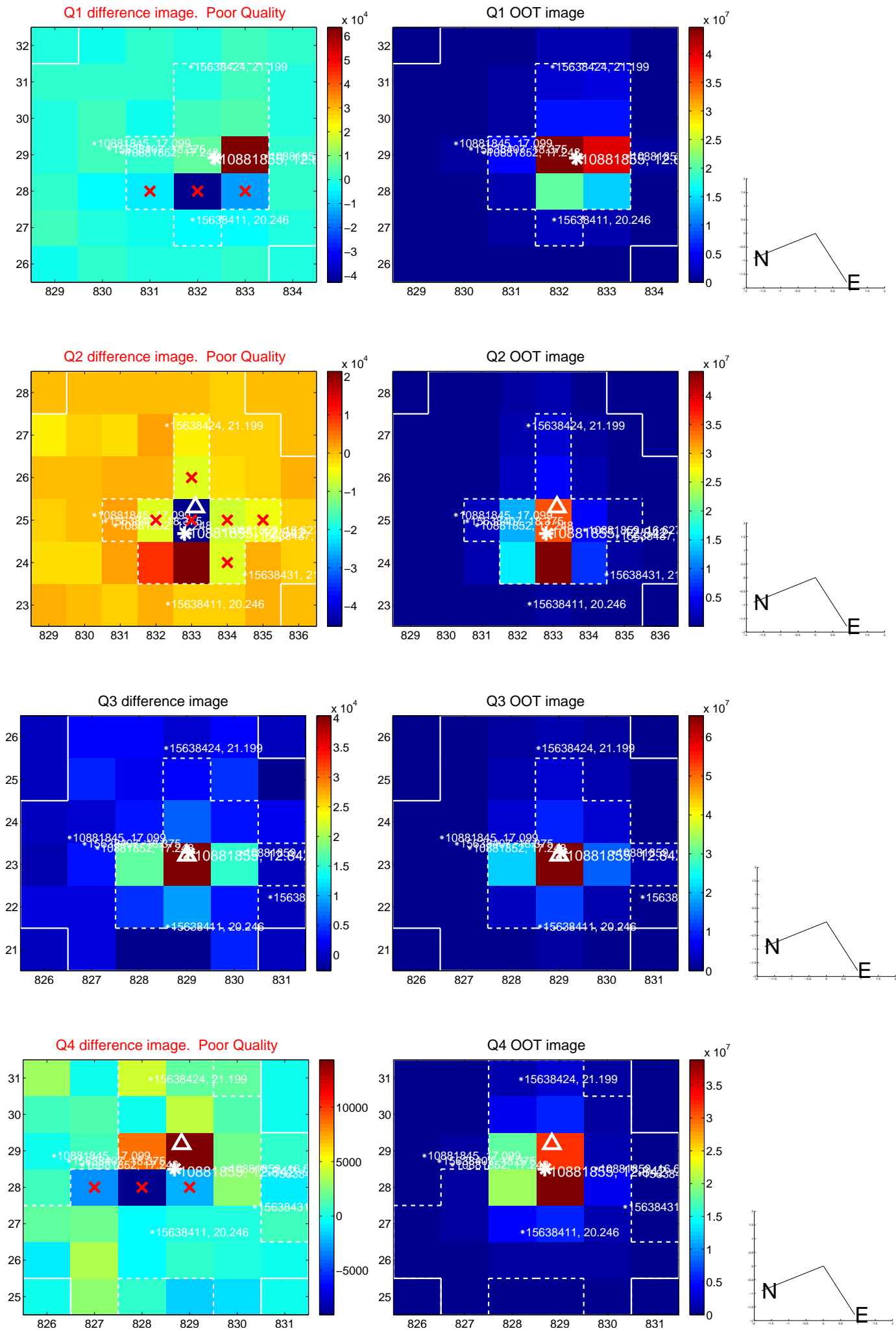
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.319 ± 0.456	0.70	-0.156 ± 0.385	-0.278 ± 0.344
PRF-fit source offset from KIC position	0.183 ± 0.416	0.44	-0.176 ± 0.357	-0.050 ± 0.332
photometric centroid source offset	0.47 ± 0.50	0.93	-0.45 ± 0.50	-0.11 ± 0.48

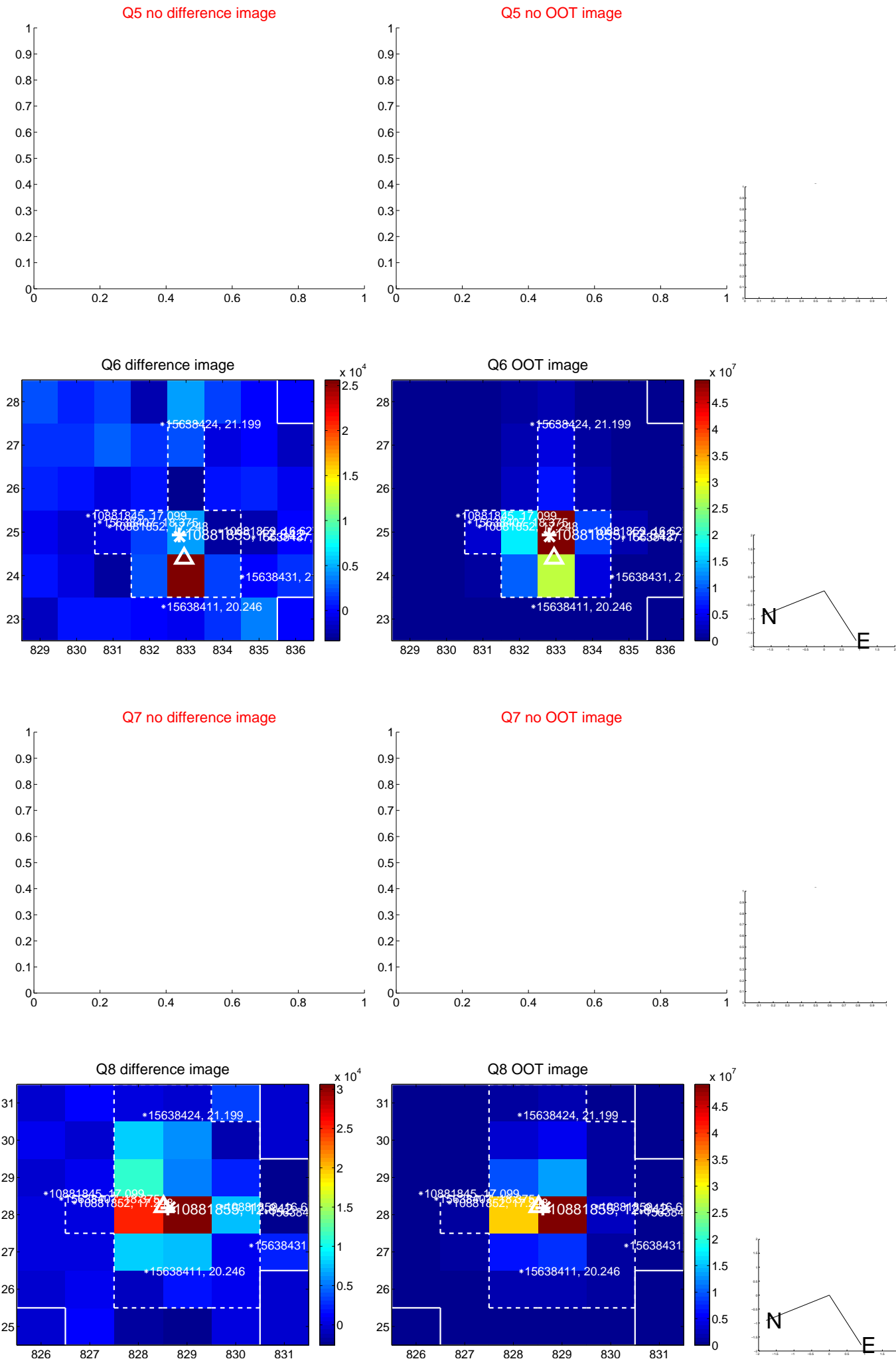


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

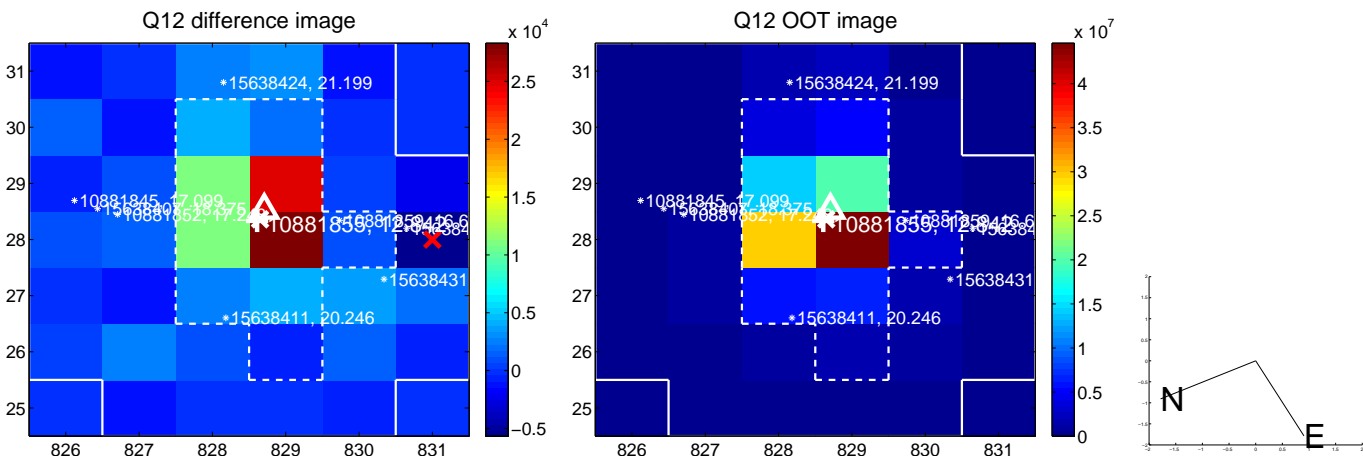
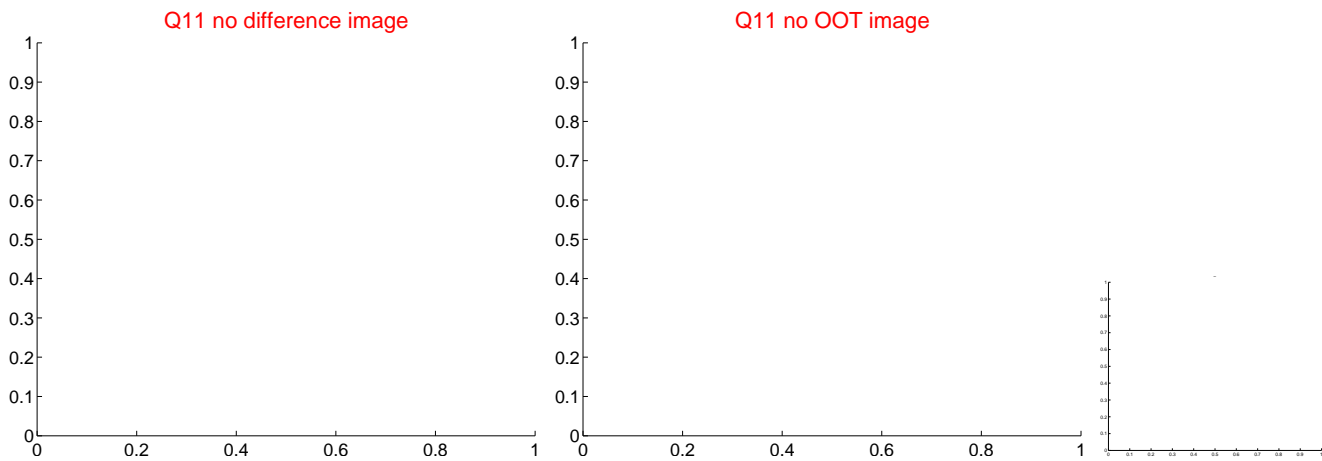
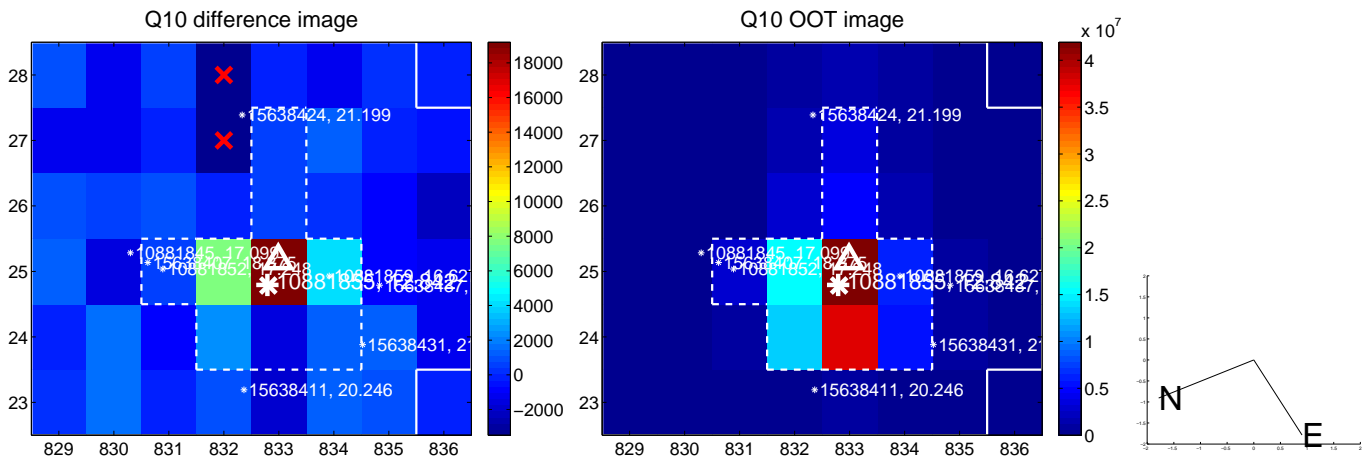
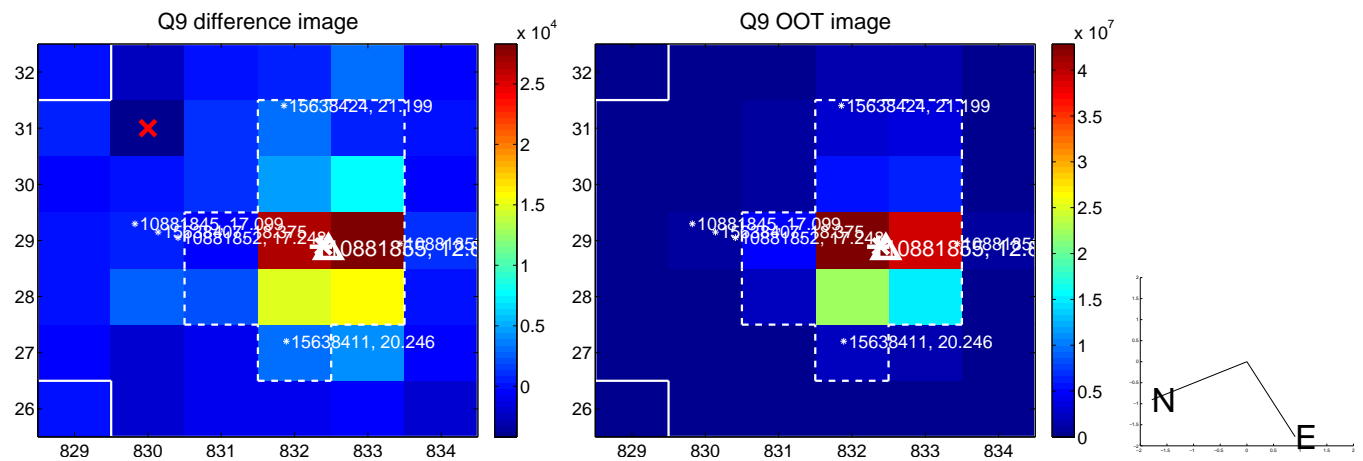
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



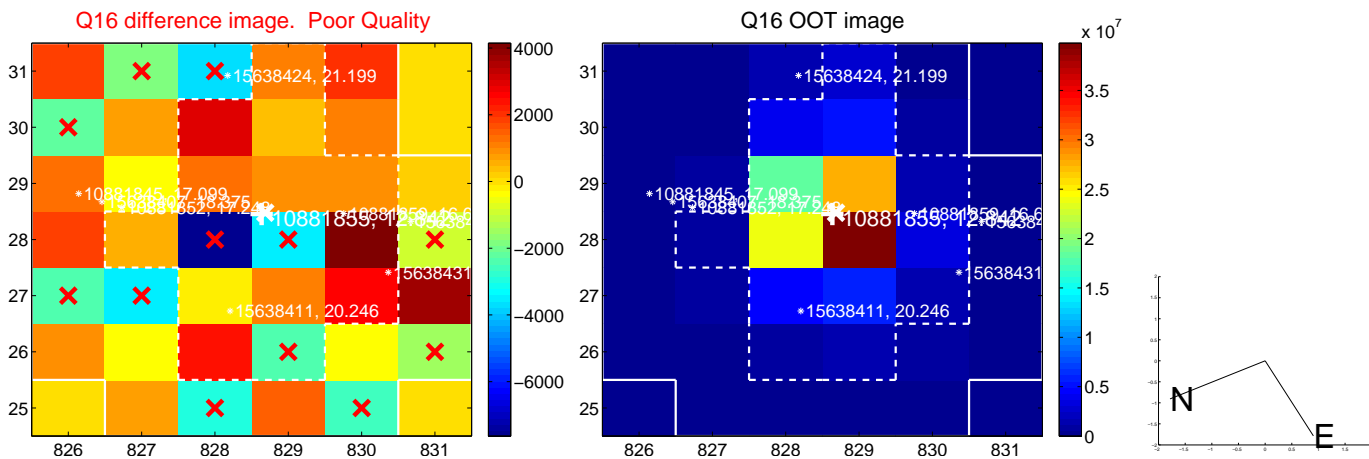
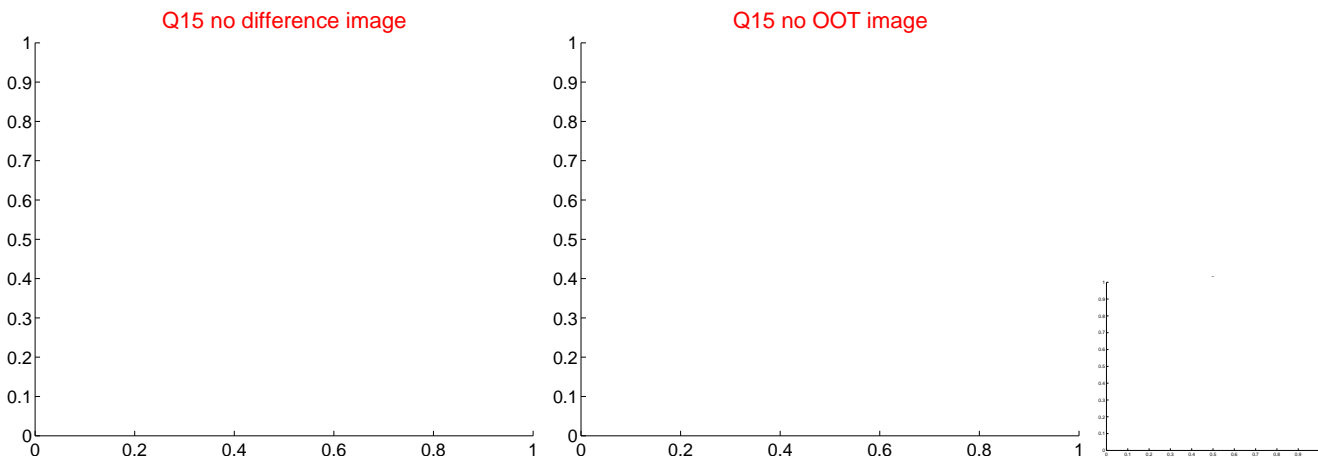
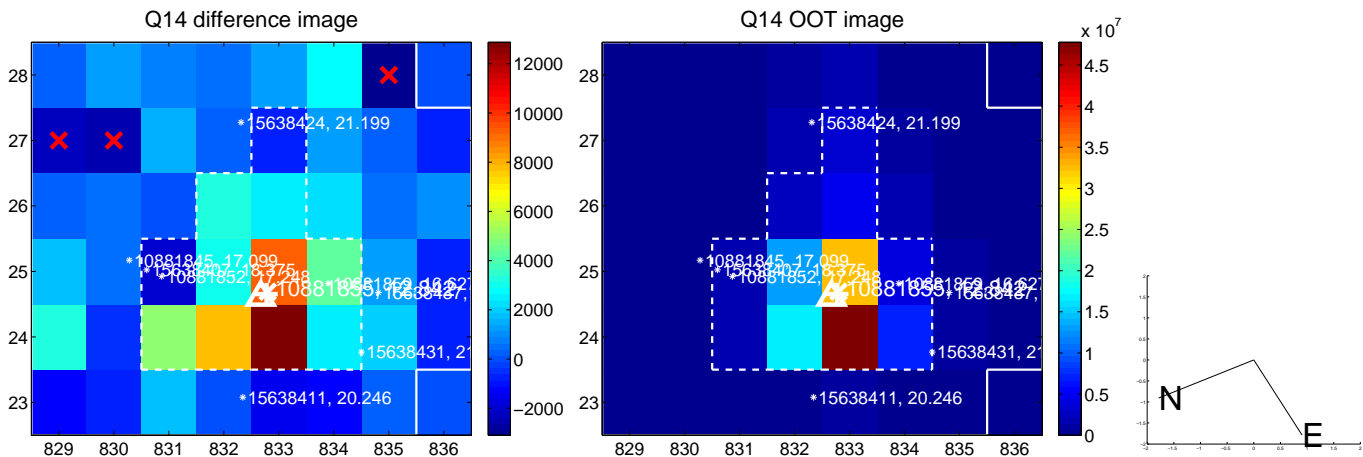
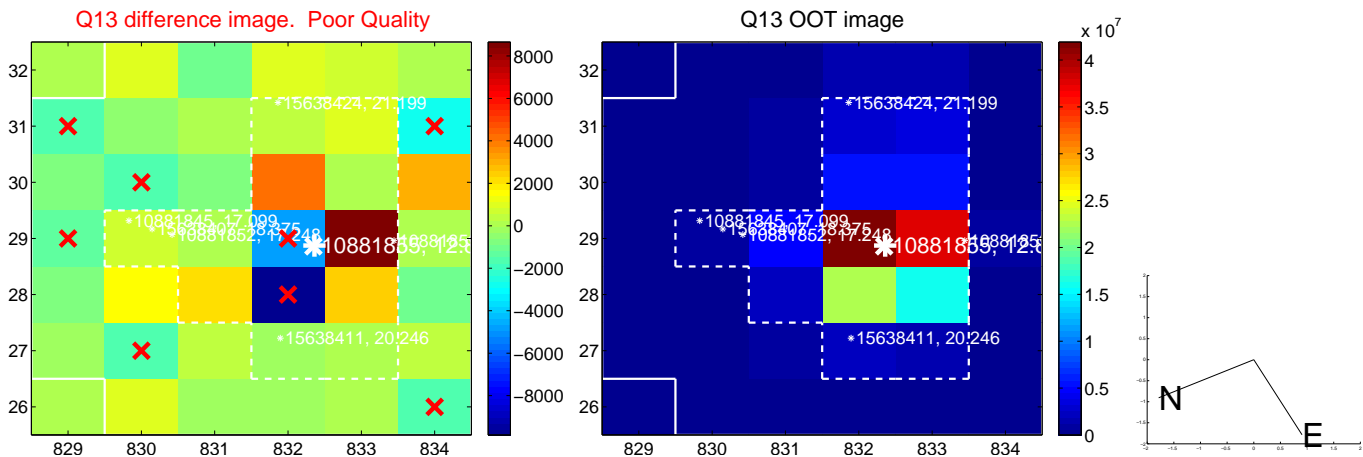
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



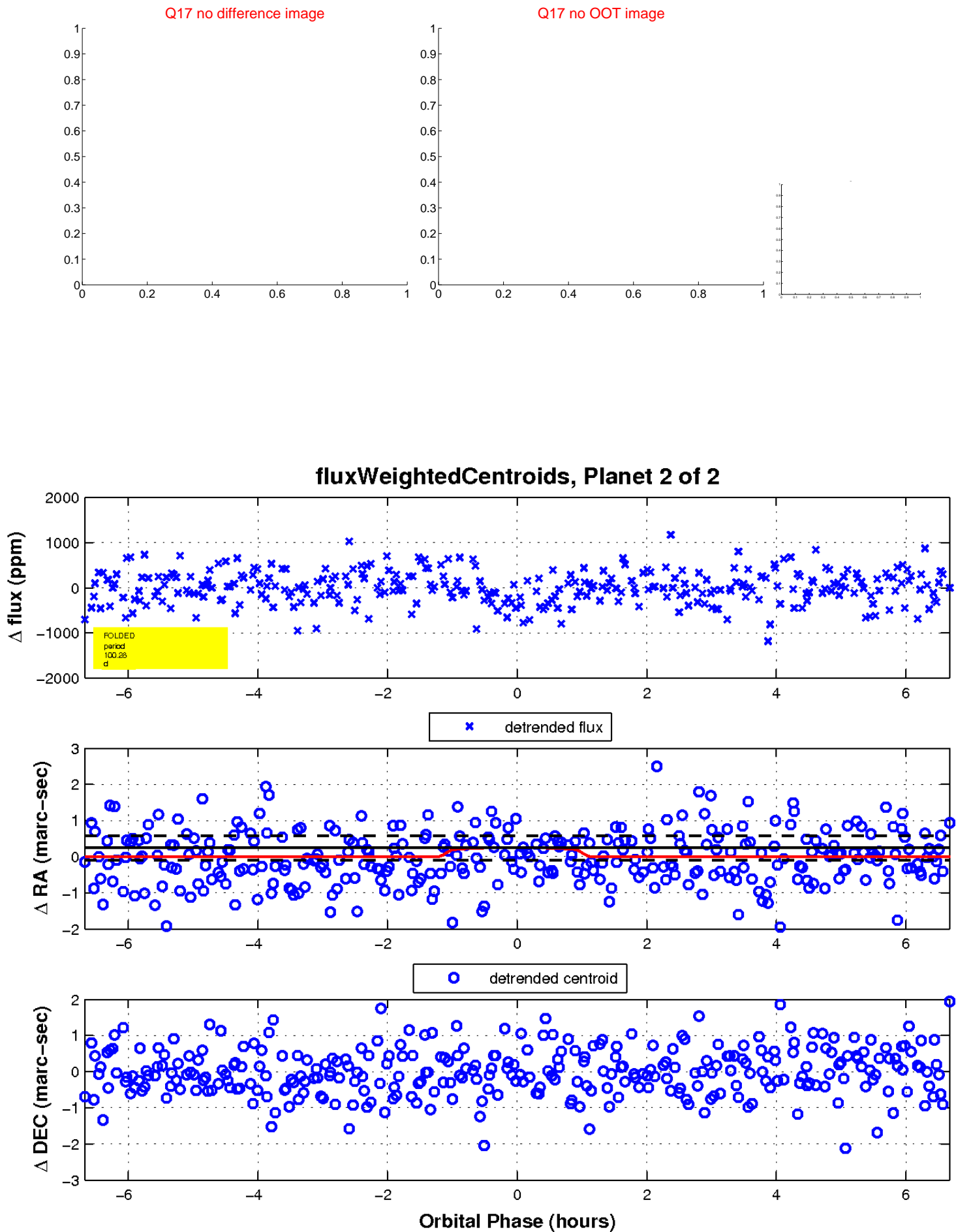
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

