

KIC 007833305

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})
007833305-01	OBS	4528.01	8.312300	139.670026	64.9	1.872	10.0	11.4	0.82	5421	0.76	97.73
007833305-02	OBS	No	570.035654	403.504813	222.4	25.757	7.4	8.6	0.82	5421	1.56	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007833305-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007833305-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST

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

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

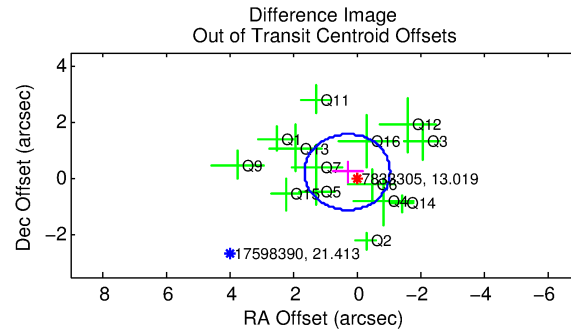
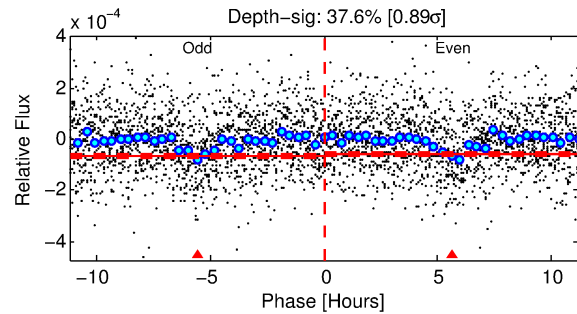
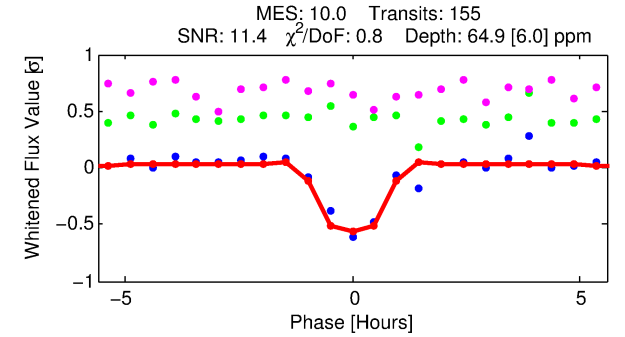
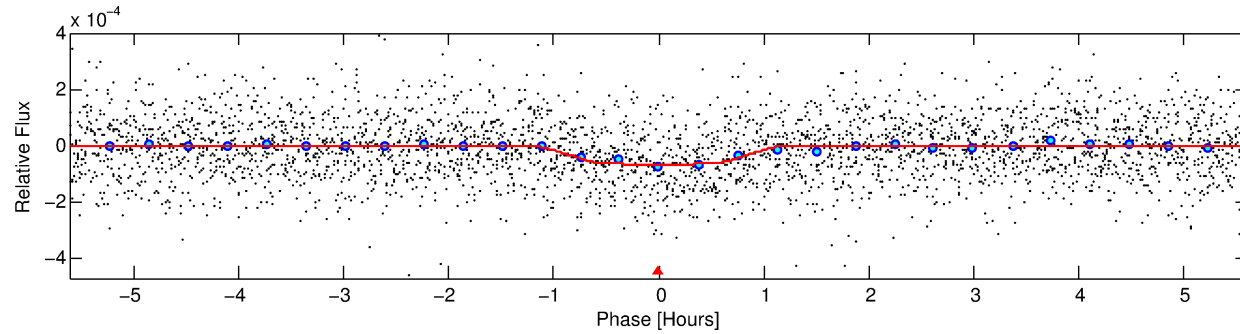
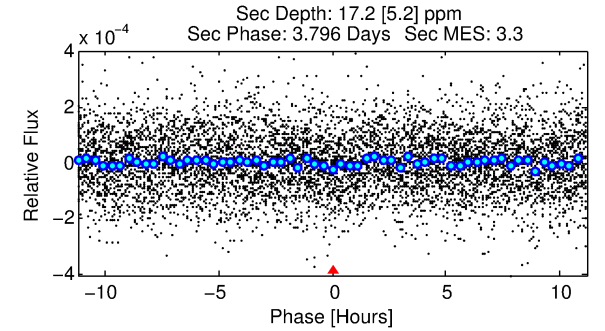
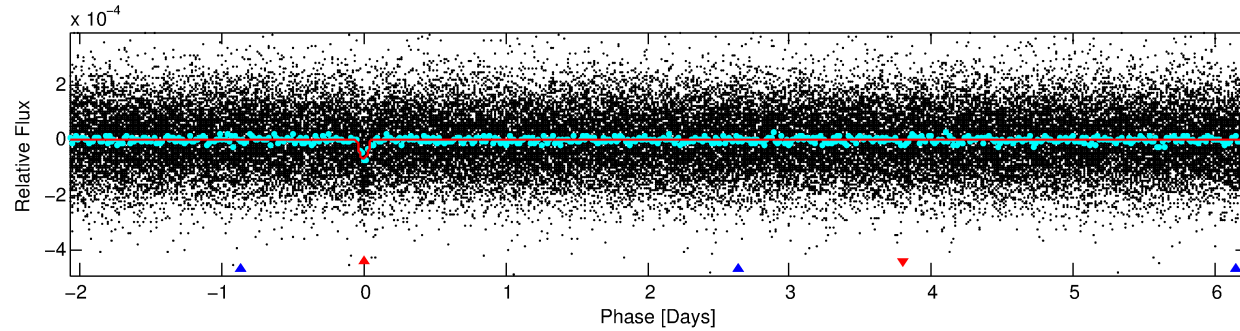
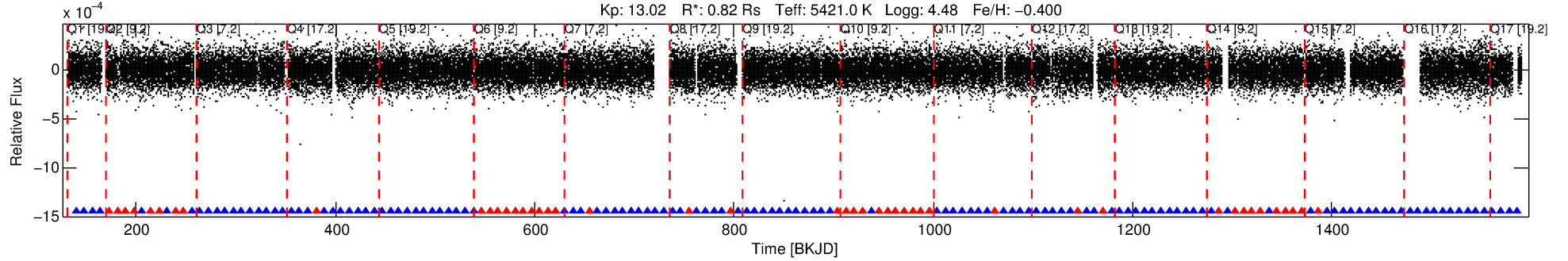
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007833305-01

No Significant Match Found

DV One-Page Summary

KIC: 7833305 Candidate: 1 of 2 Period: 8.312 d
KOI: K04528.01 Corr: 0.854



DV Fit Results:

Period = 8.31230 [0.00004] d
Epoch = 139.6700 [0.0039] BKJD
Rp/R* = 0.0086 [0.0052]
a/R* = 17.52 [47.39]
b = 0.87 [0.80]
Seff = 97.73 [25.40]
Teq = 802 [52] K
Rp = 0.76 [0.49] Re
a = 0.0726 [0.0115] AU
Ag = 85.37 [109.12] [0.77σ]
Teffp = 3768 [1189] K [2.49σ]

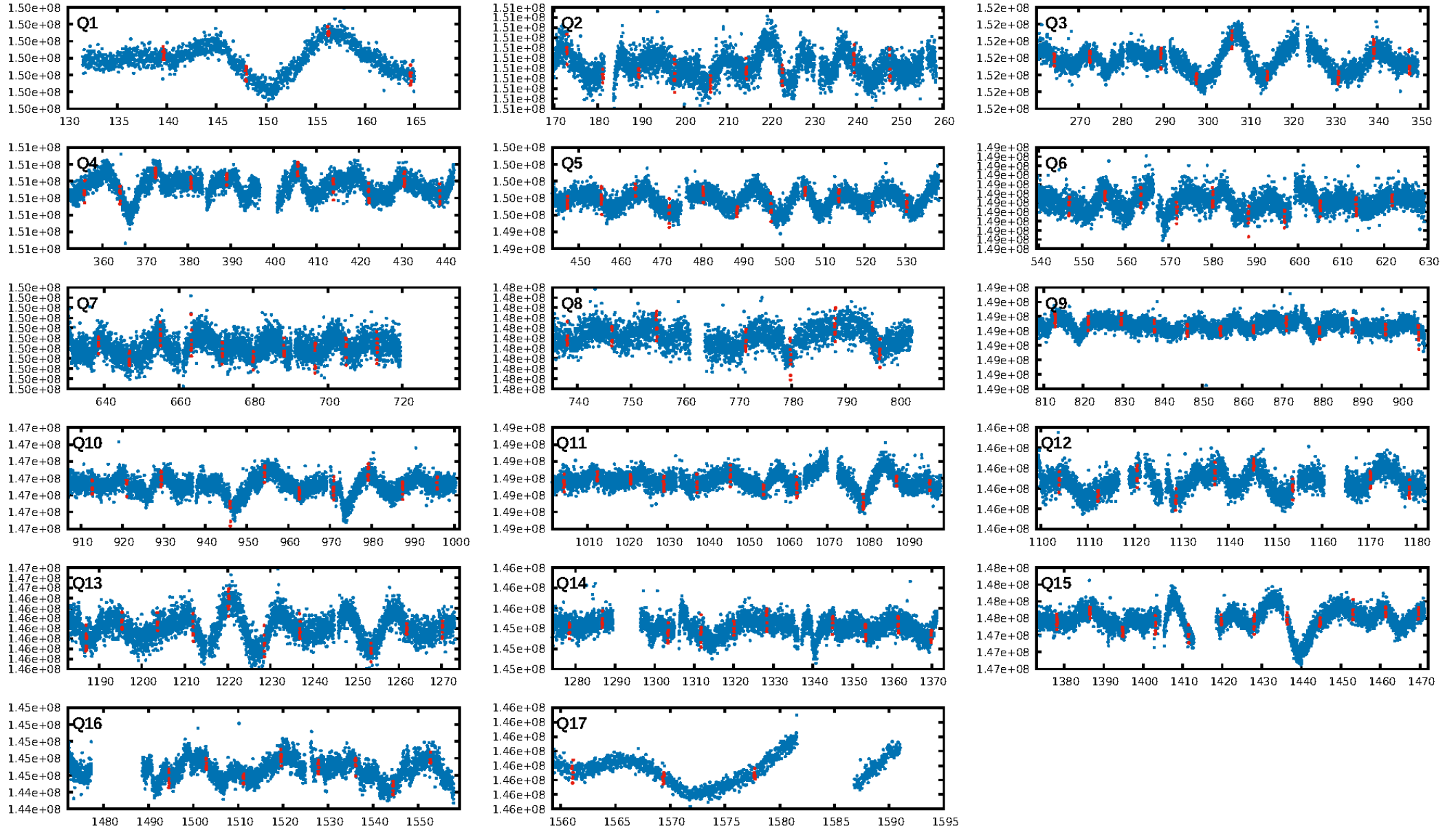
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [522.03σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.32e-23
RollingBand-fgt: 0.69 [102/148]
GhostDiagnostic-chr: 2.958
Centroid-sig: 0.0%
Centroid-so: 2.595 arcsec [2.53σ]
OotOffset-rm: 0.372 arcsec [0.83σ]
KicOffset-rm: 0.553 arcsec [1.19σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

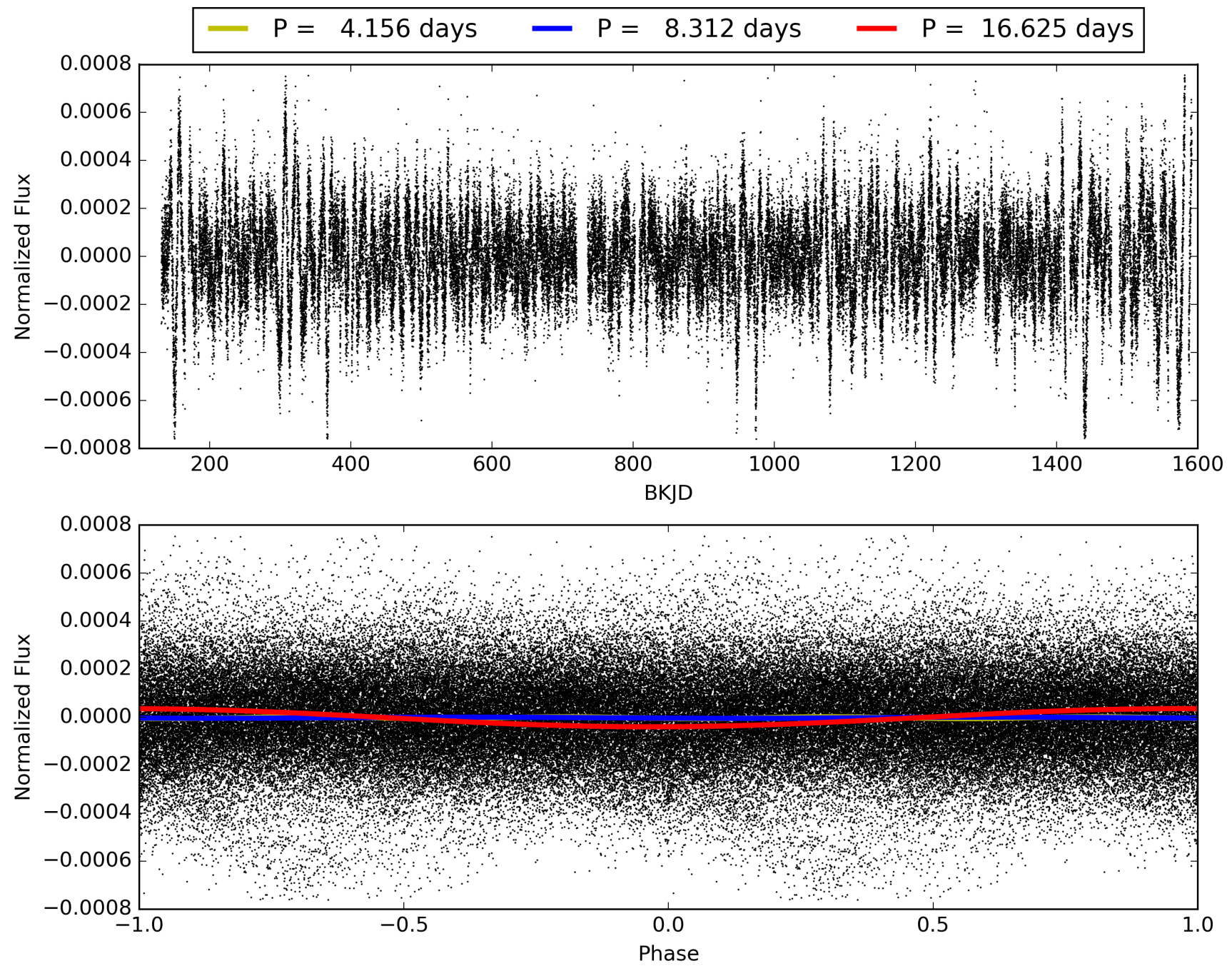
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:52:09 Z

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

TCE 007833305-01, PDC Light Curves

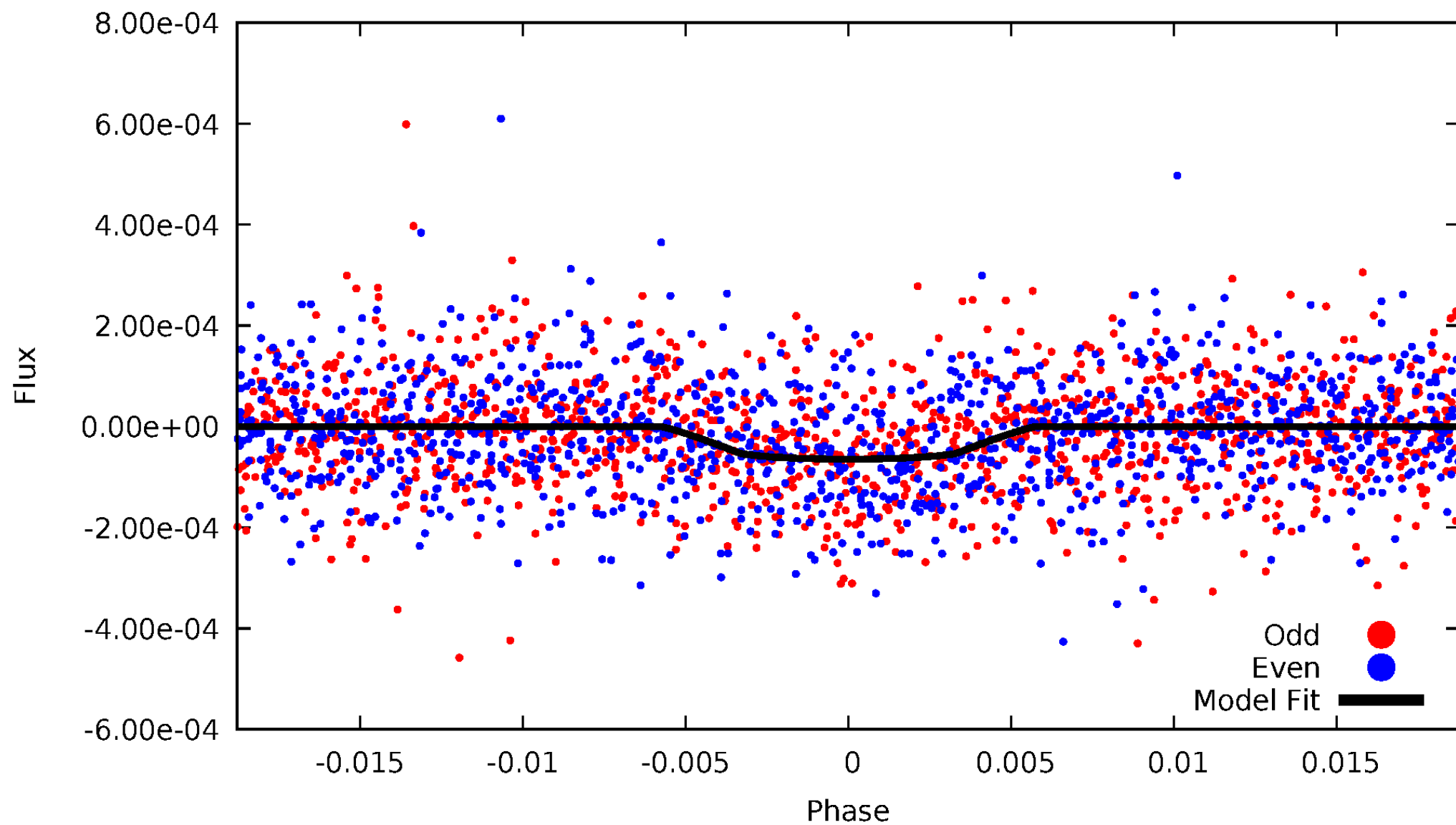


TCE 007833305-01



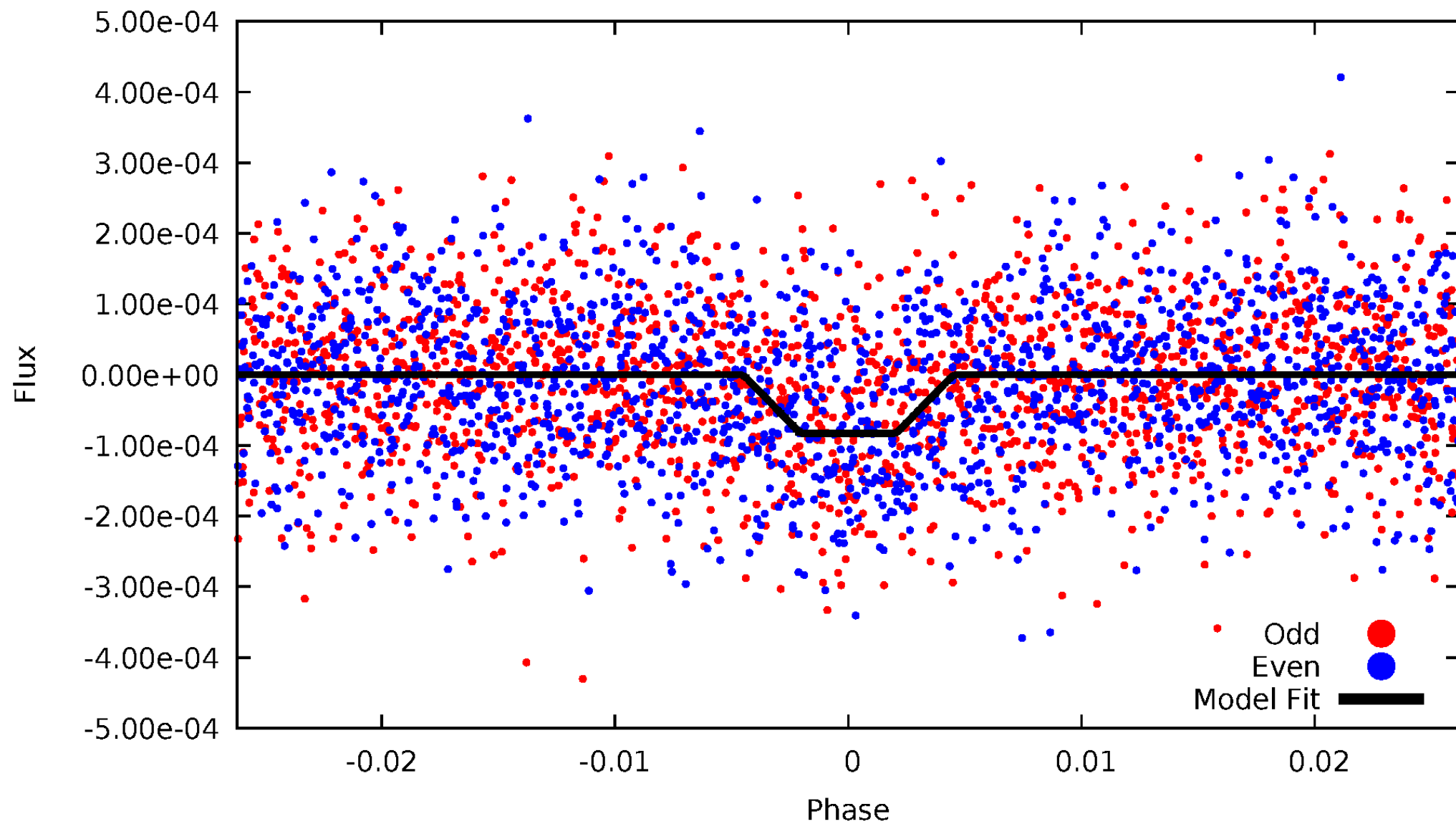
DV Odd/Even

TCE 007833305-01



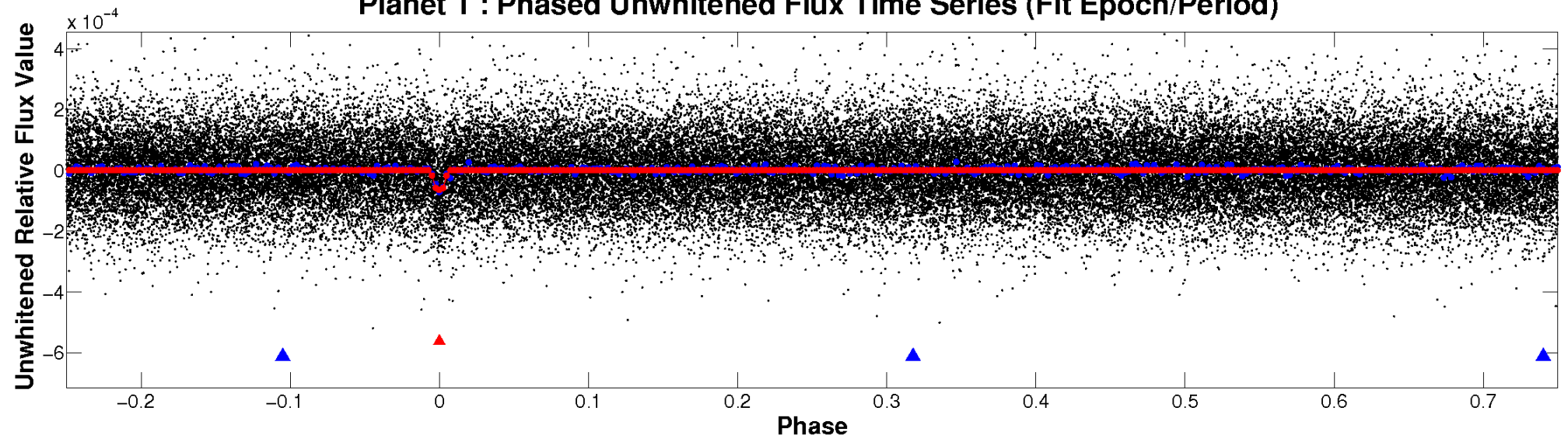
ALT Odd/Even

TCE 007833305-01

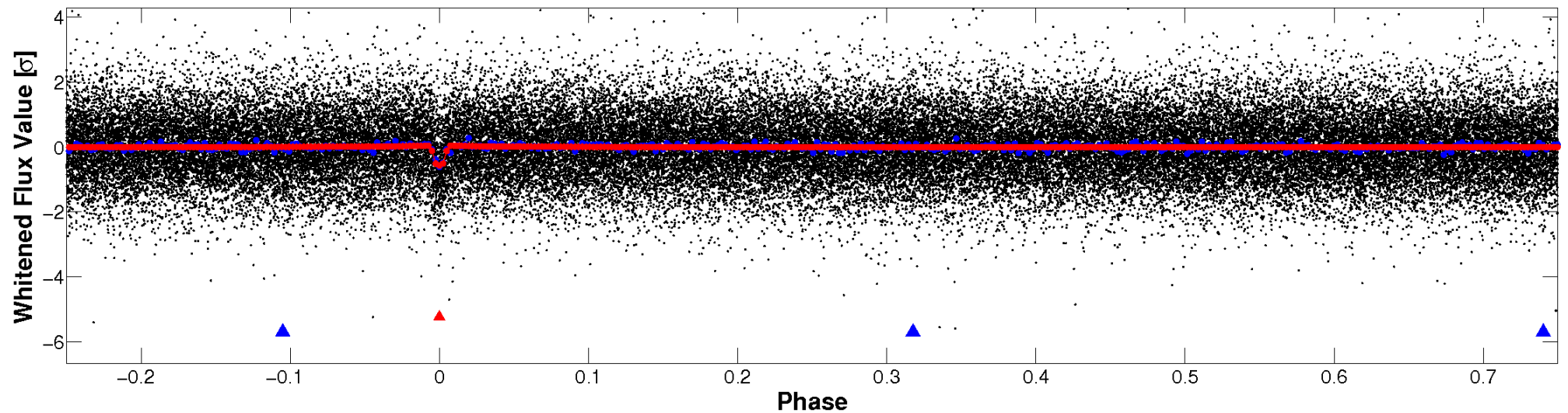


Non-Whitened Vs. Whitened Light Curve

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

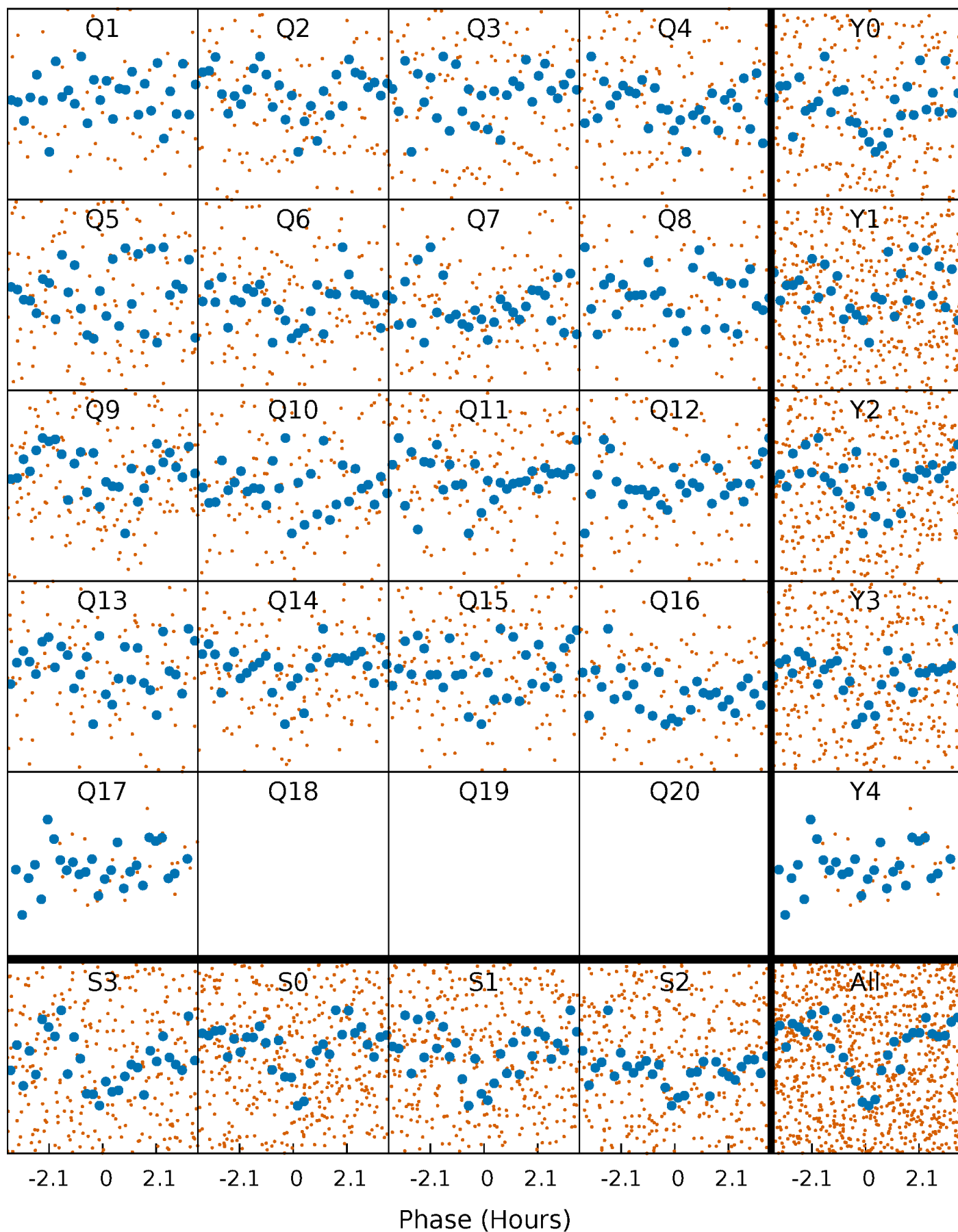


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



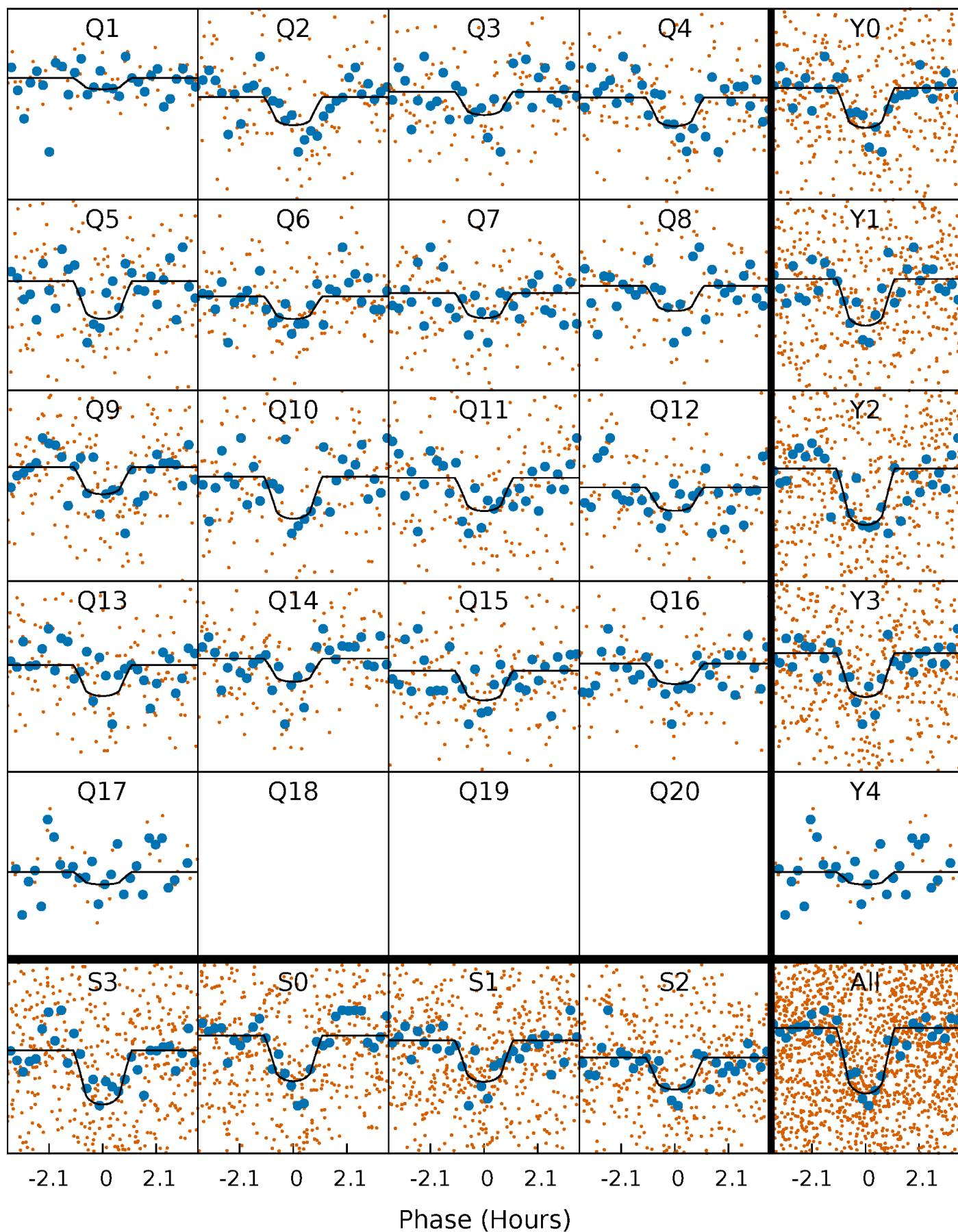
PDC Quarter-Phased Transit Curves

TCE 007833305-01 P= 8.312300 Days $T_0=139.670026$ (BKJD)



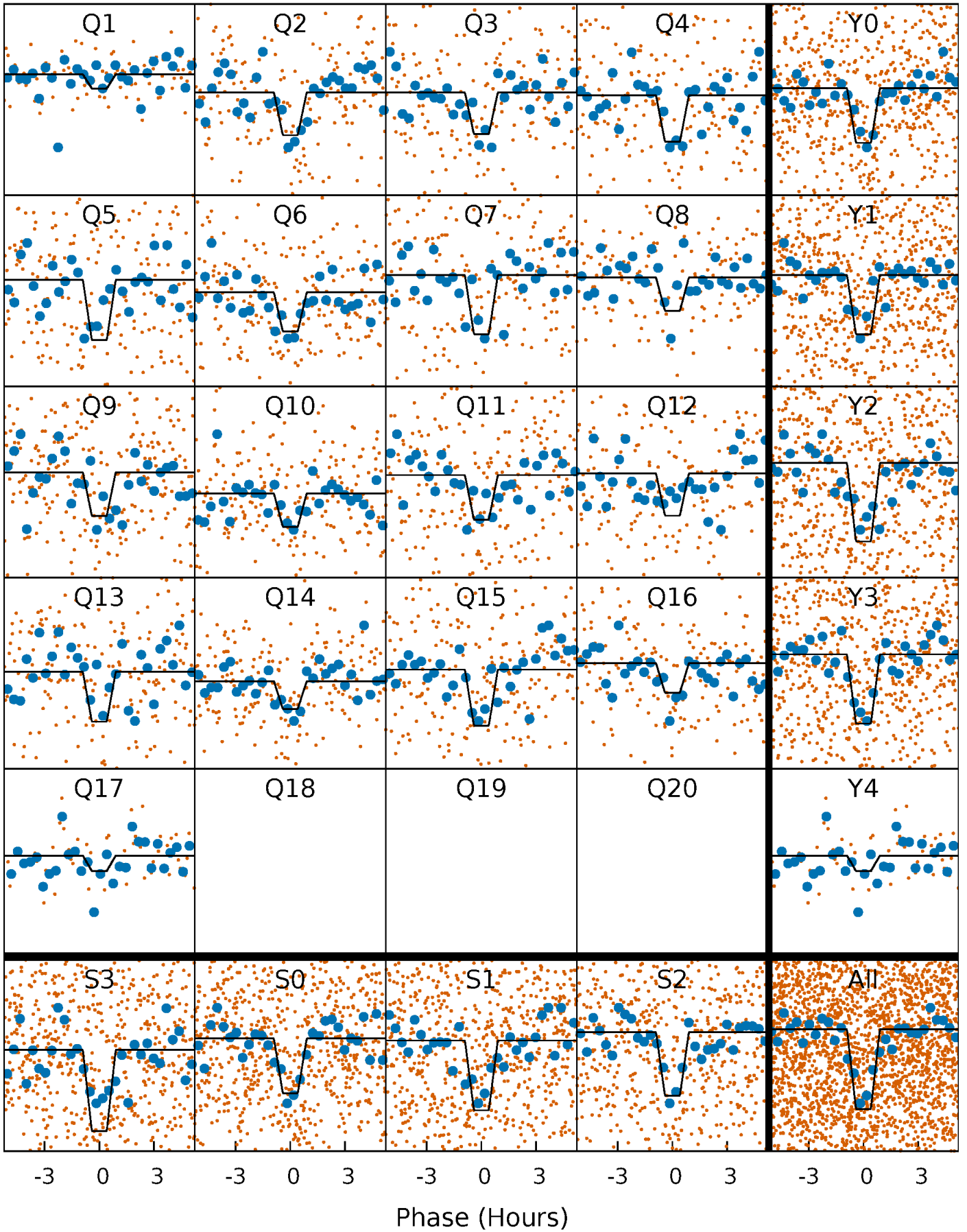
DV Quarter-Phased Transit Curves

TCE 007833305-01 P= 8.312300 Days $T_0=139.670026$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

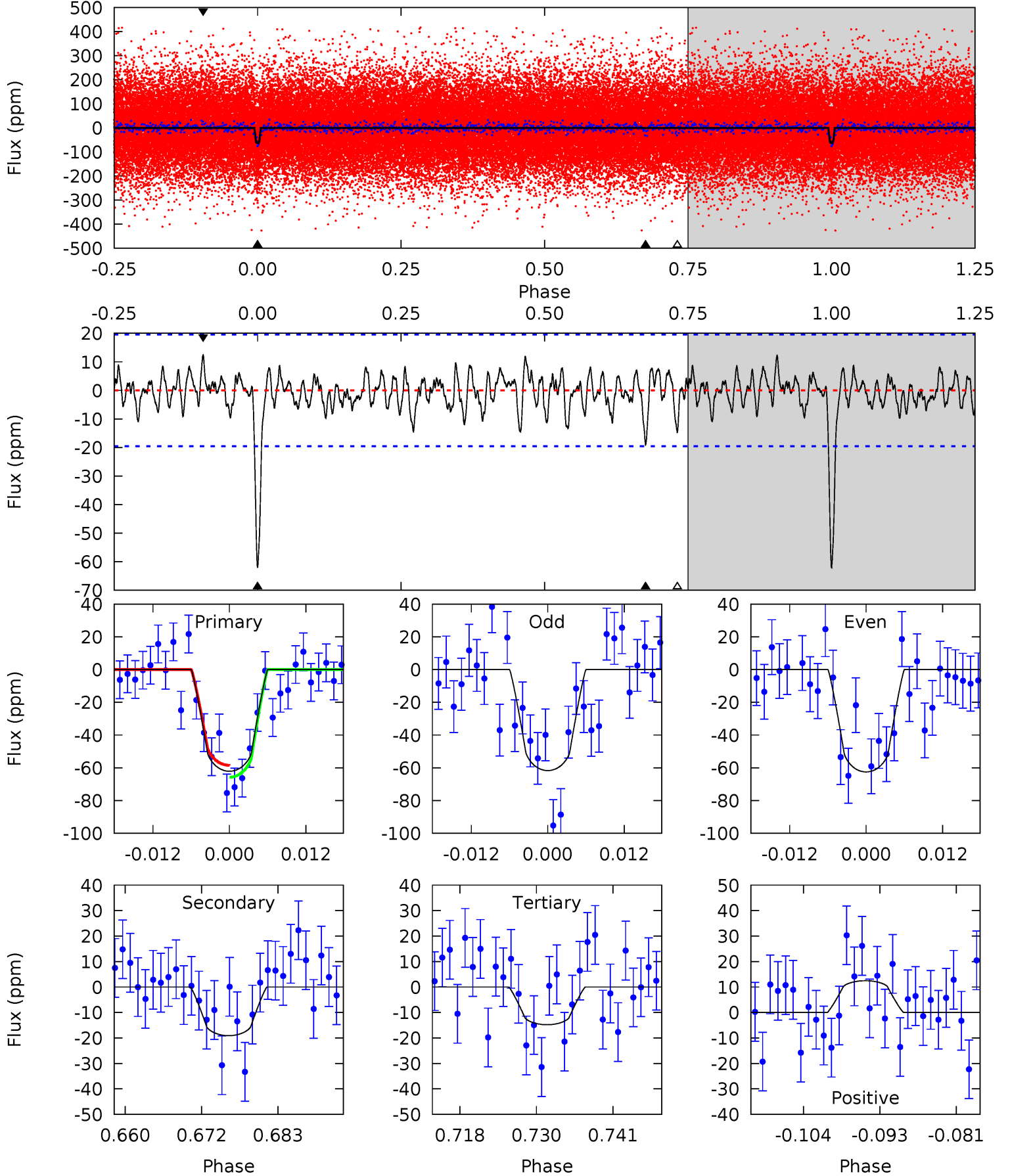
TCE 007833305-01 P= 8.312249 Days $T_0=139.678375$ (BKJD)



DV Model-Shift Uniqueness Test

007833305-01, P = 8.312300 Days, E = 131.357726 Days

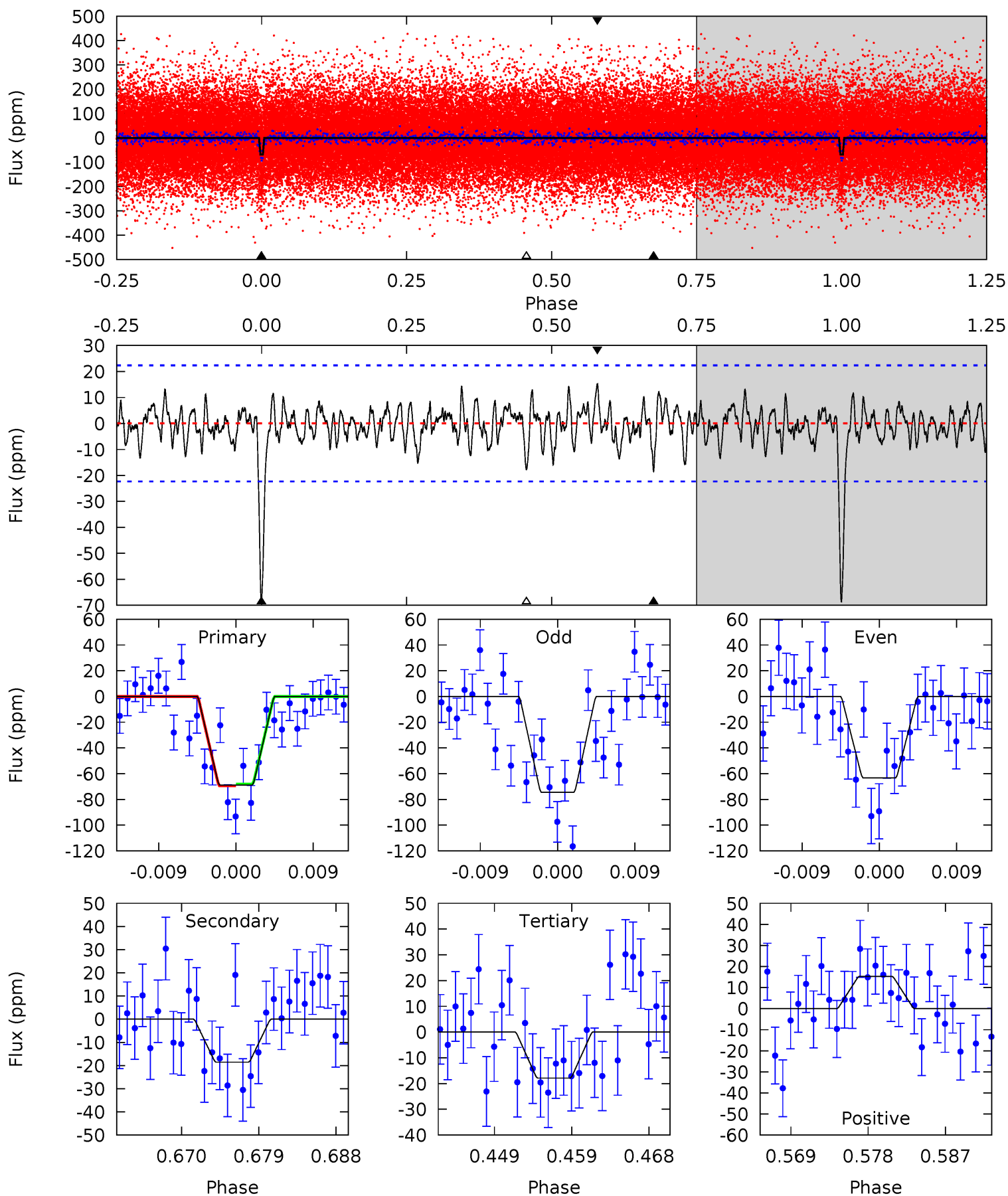
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	4.88	3.78	3.19	5.00	2.52	1.24	12.1	12.7	1.10	1.69	0.11	1.00	0.17	0.93



Alt Model-Shift Uniqueness Test

007833305-01, P = 8.312249 Days, E = 131.366126 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	4.18	4.04	3.46	5.04	2.61	1.26	11.5	12.1	0.14	0.72	1.26	0.97	0.18	0.17



Stellar Parameters For KIC 007833305

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5421^{+161}_{-161}	$4.483^{+0.115}_{-0.127}$	$-0.400^{+0.350}_{-0.250}$	$0.816^{+0.152}_{-0.114}$	$0.739^{+0.104}_{-0.048}$	$1.915^{+0.978}_{-0.698}$
	+3%/-3%	+3%/-3%	+87%/-62%	+19%/-14%	+14%/-6%	+51%/-36%
Source	PHO1	FLK73	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 007833305-01 / KOI 4528.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-19 ± 4	$0.79^{+0.46}_{-0.39}$	1125^{+65}_{-56}	4095^{+1346}_{-624}	89^{+257}_{-56}
Alt.	-19 ± 4	$0.87^{+0.46}_{-0.44}$	1125^{+61}_{-56}	3961^{+1275}_{-556}	72^{+247}_{-43}

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

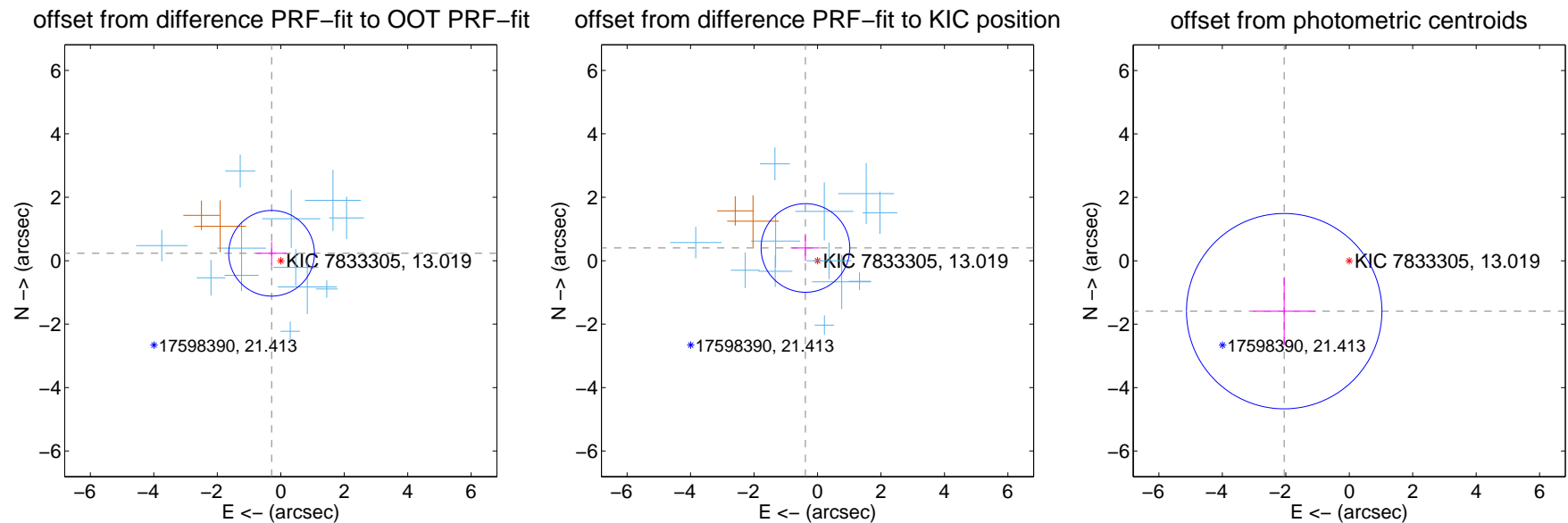
DV Centroid Data

Supplemental centroid analysis for 007833305-01. Kepler magnitude: 13.02. Transit SNR 11.41

There are 12 quarters with good PRF difference image offsets

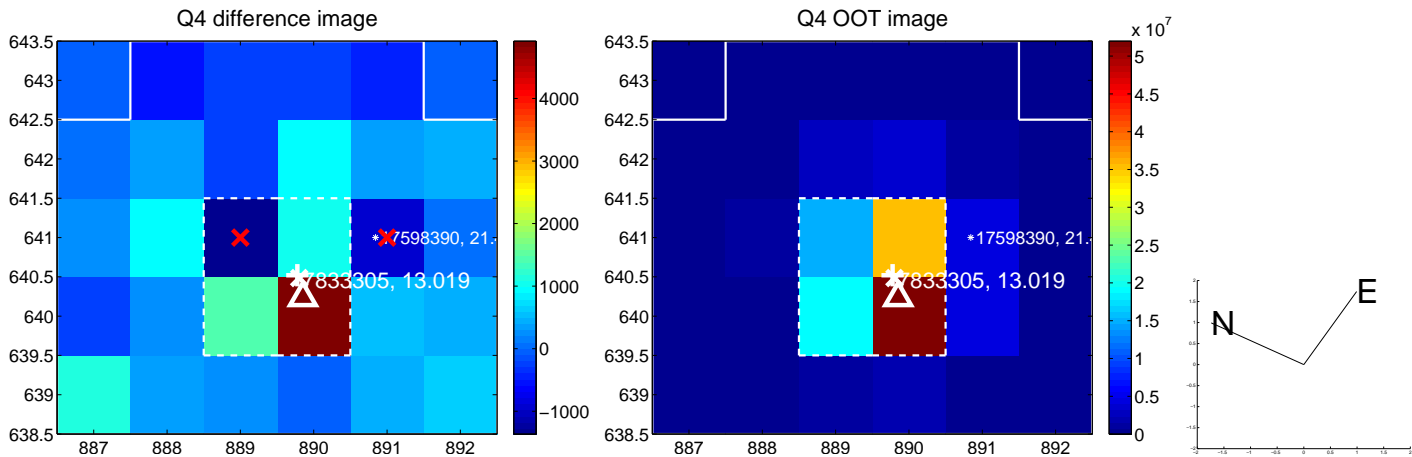
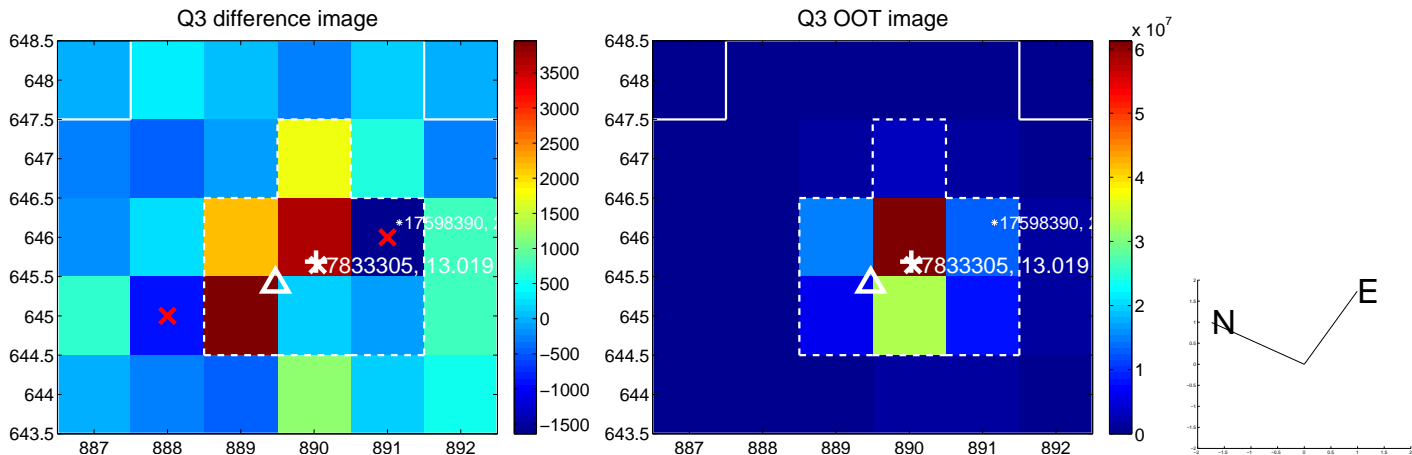
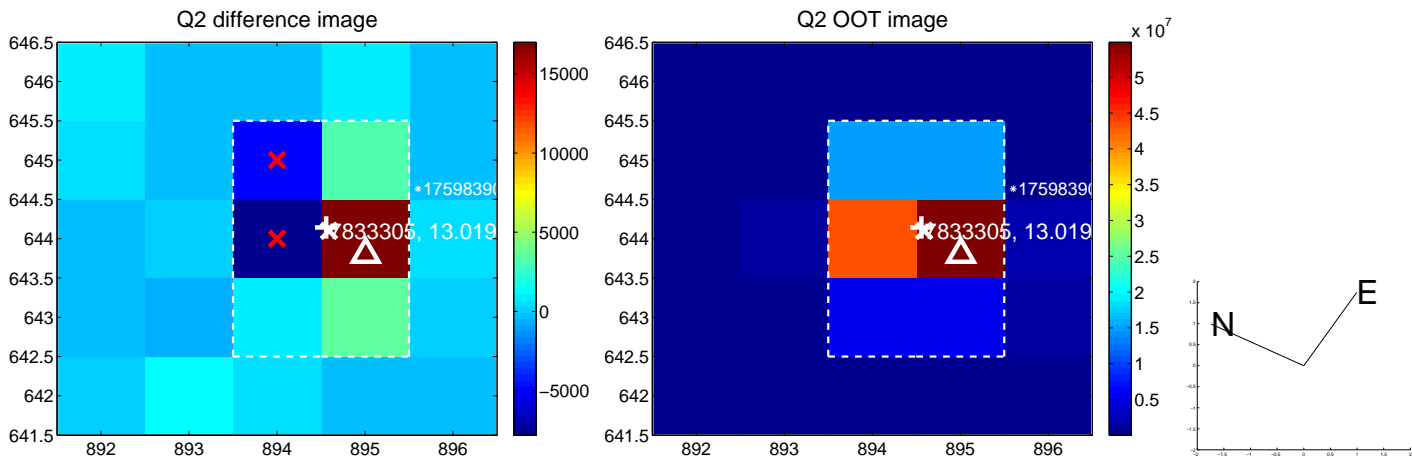
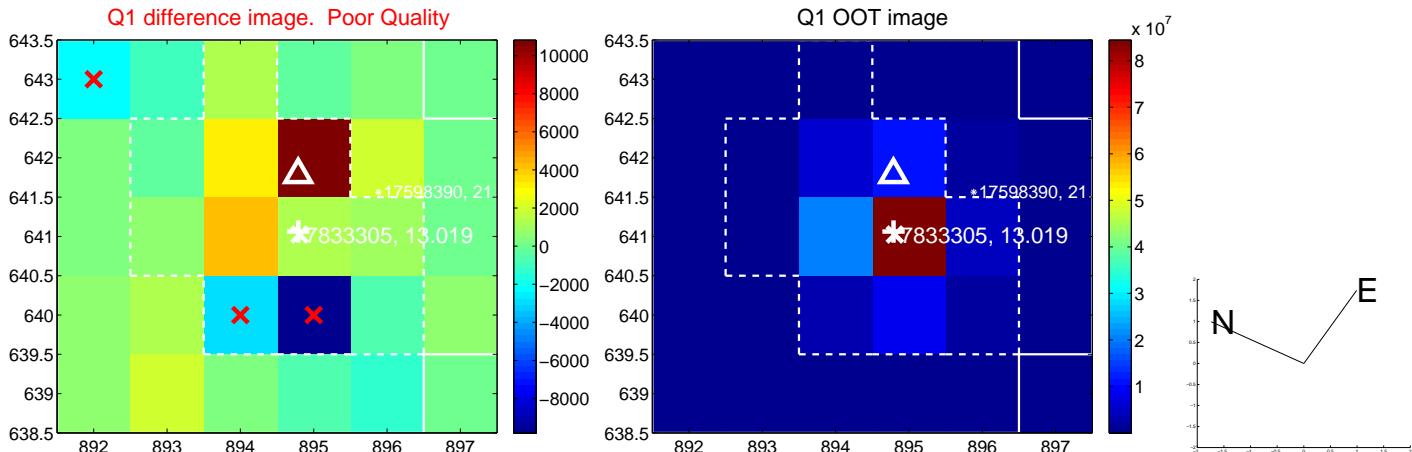
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.372 ± 0.450	0.83	0.290 ± 0.474	0.234 ± 0.354
PRF-fit source offset from KIC position	0.553 ± 0.466	1.19	0.381 ± 0.436	0.401 ± 0.400
photometric centroid source offset	2.59 ± 1.03	2.53	2.05 ± 1.00	-1.59 ± 1.08

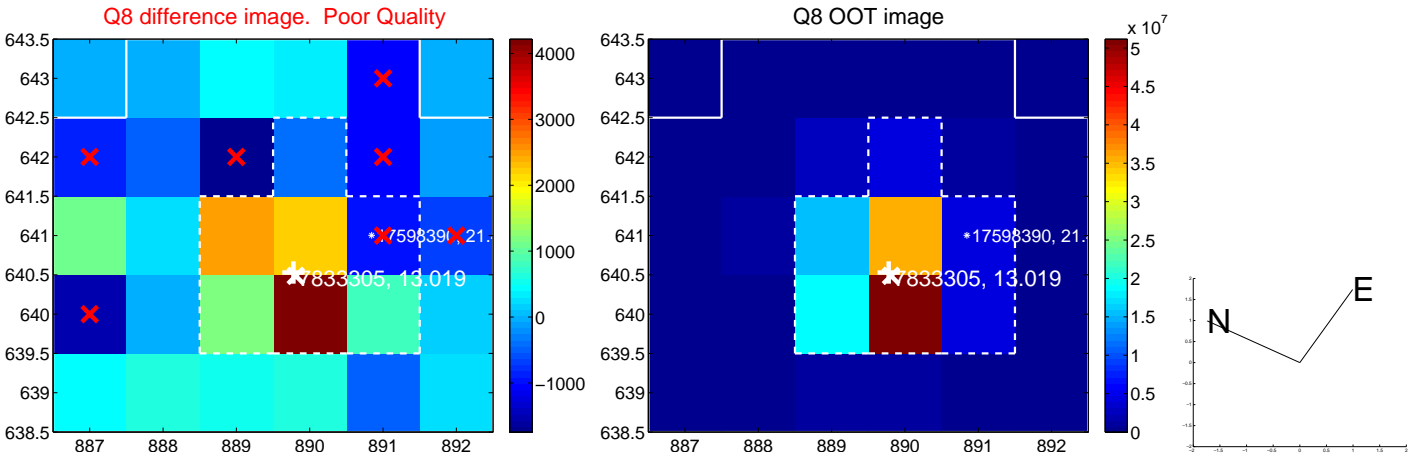
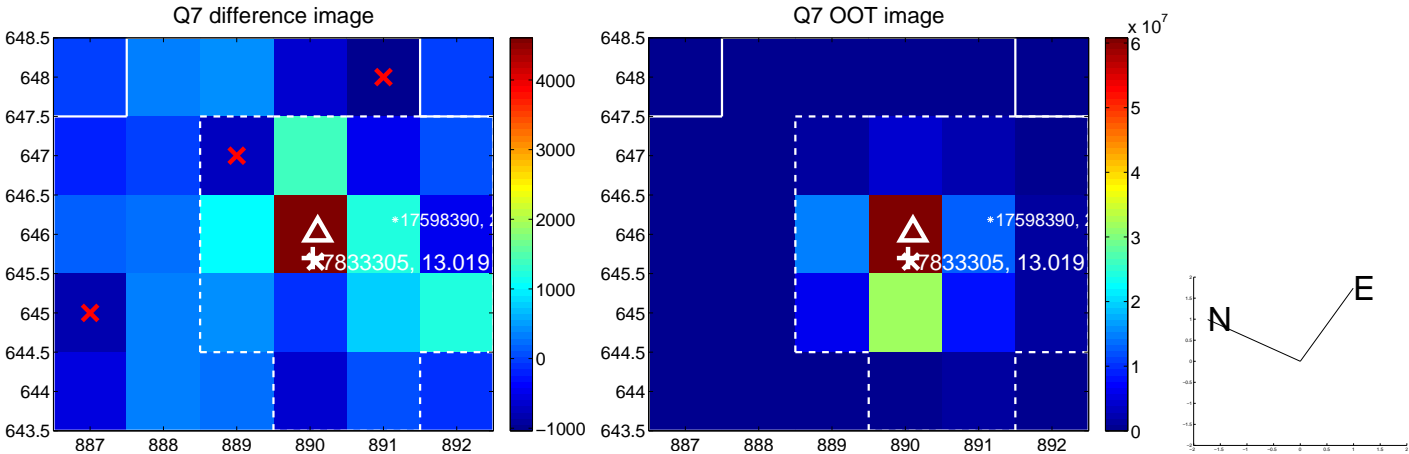
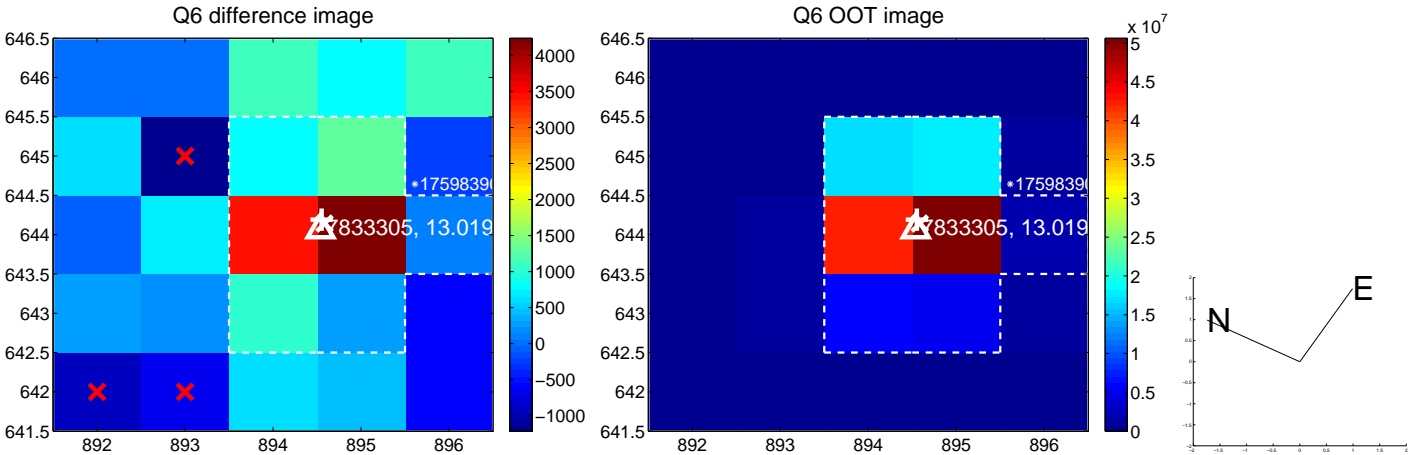
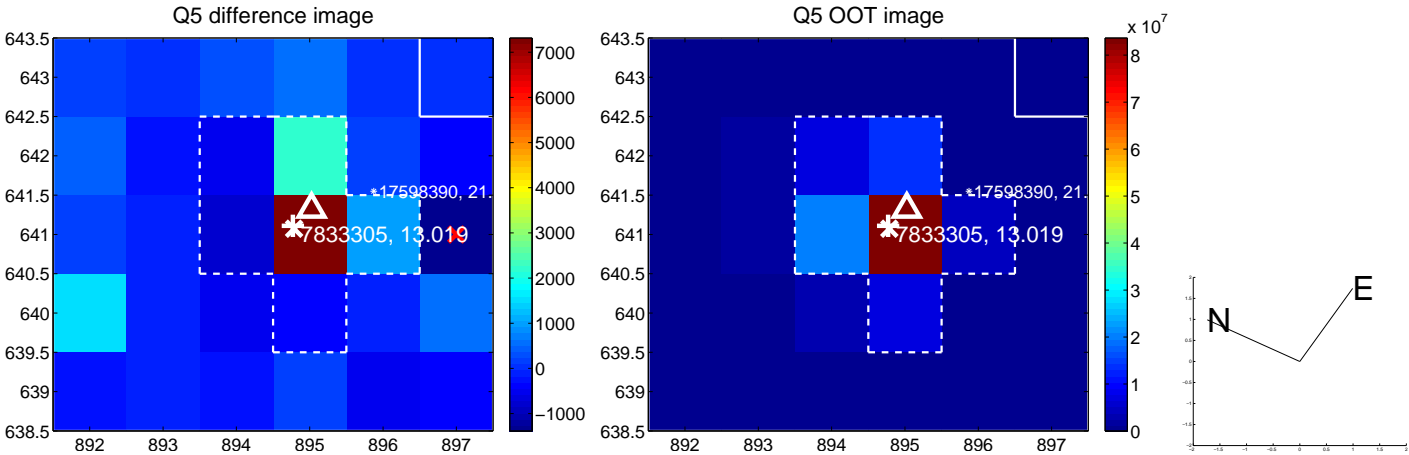


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

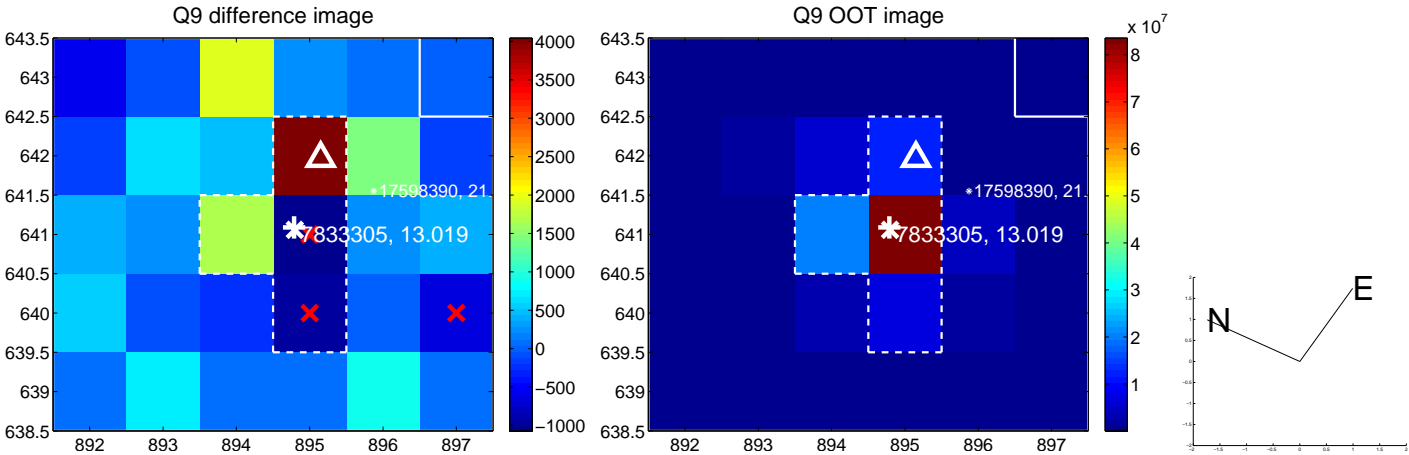
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



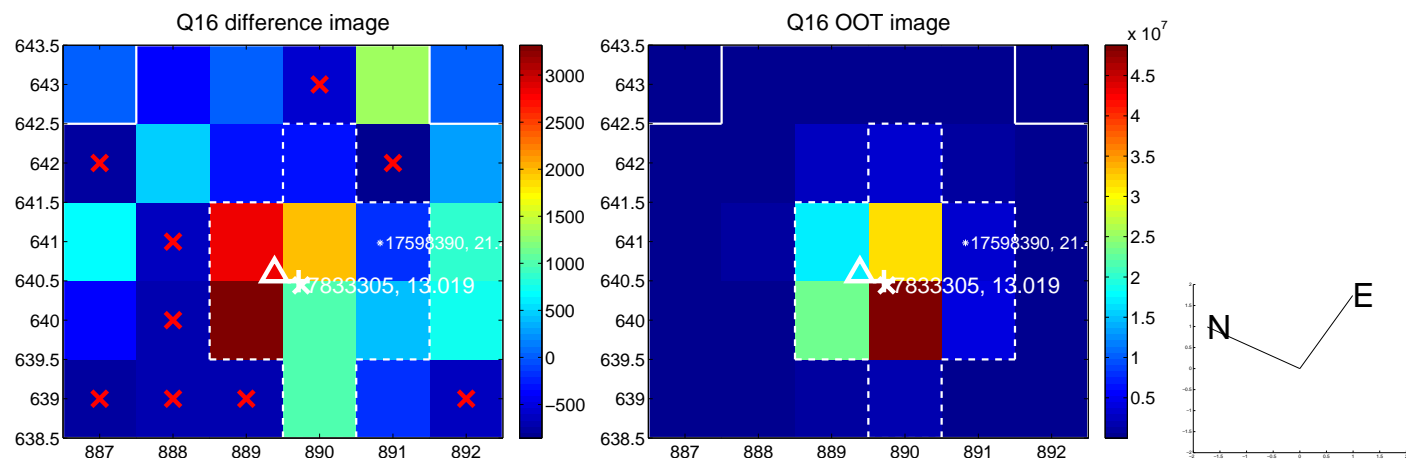
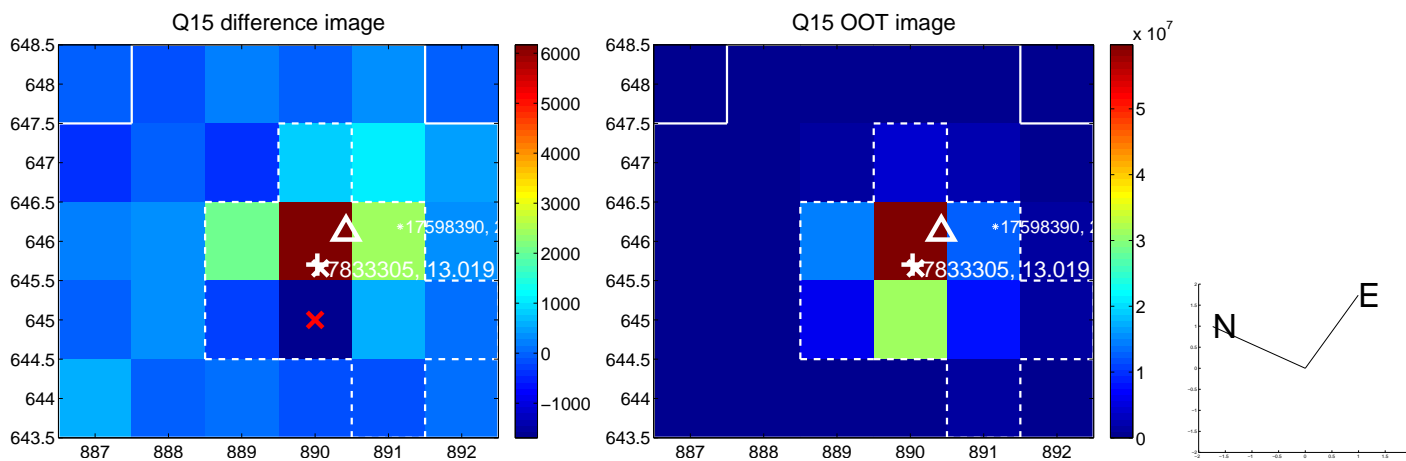
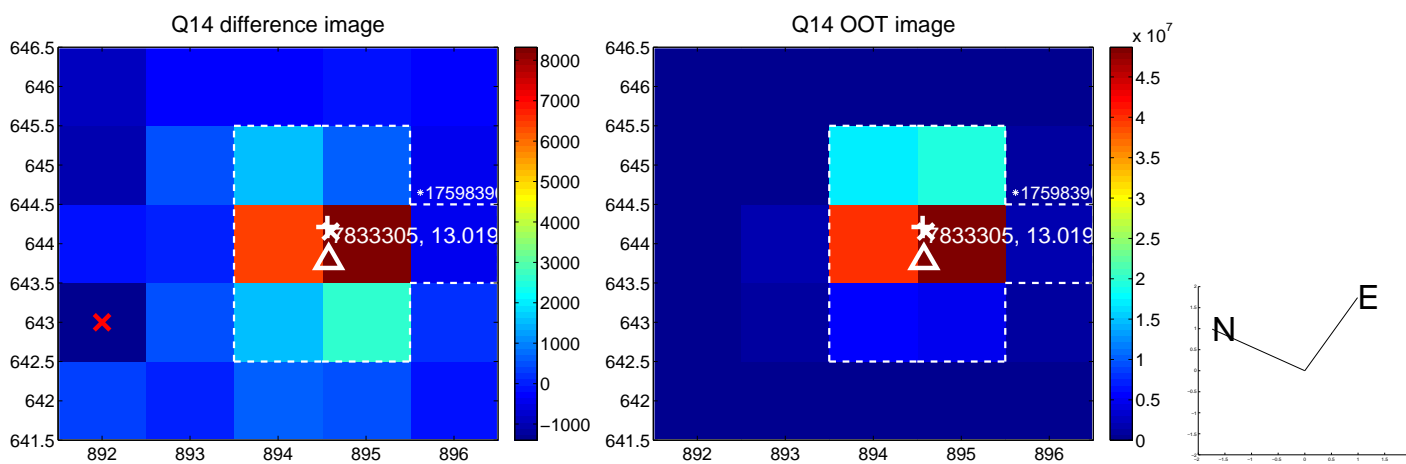
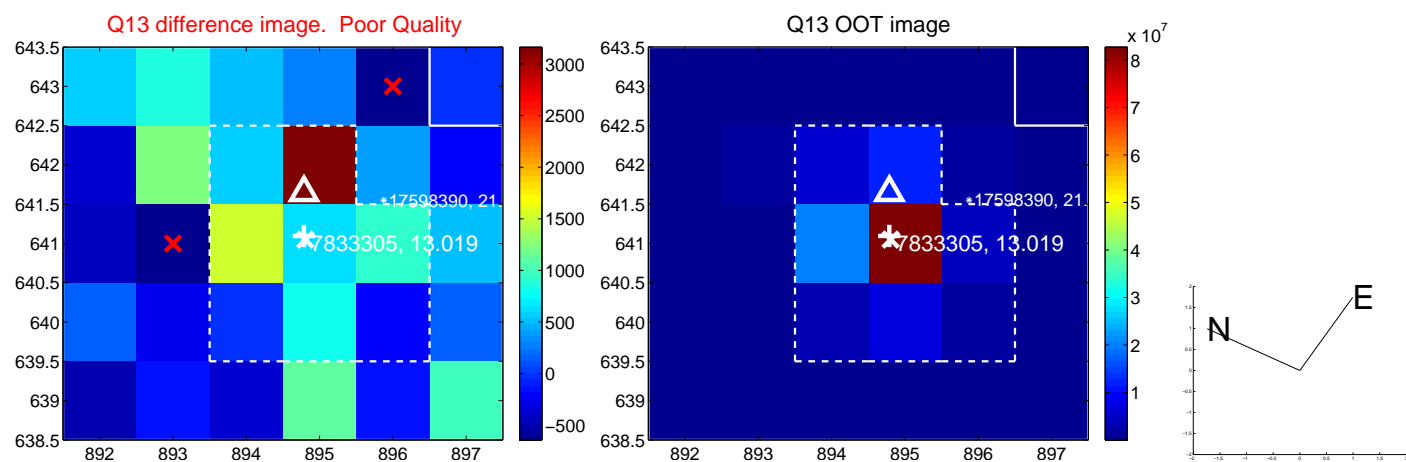
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



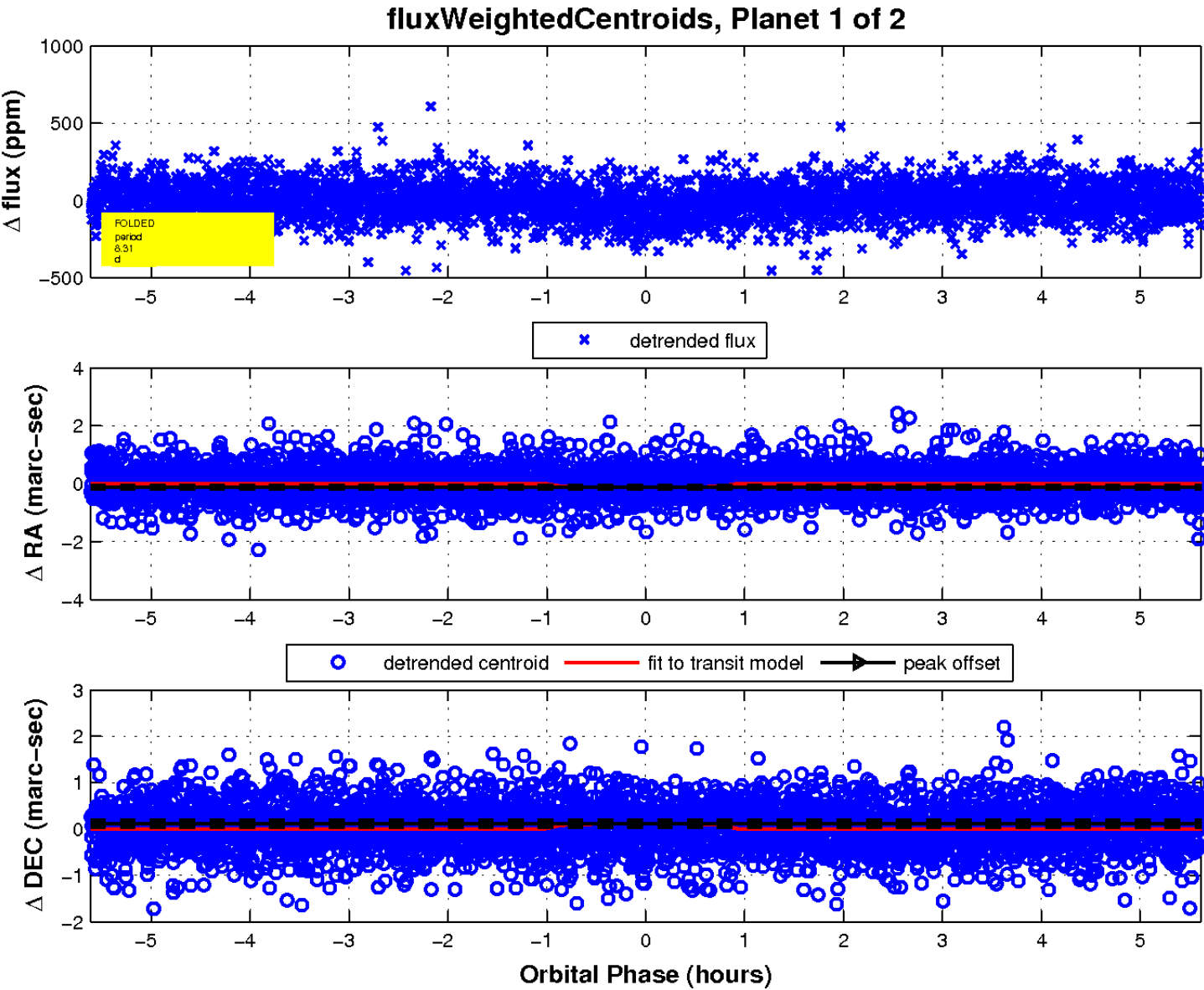
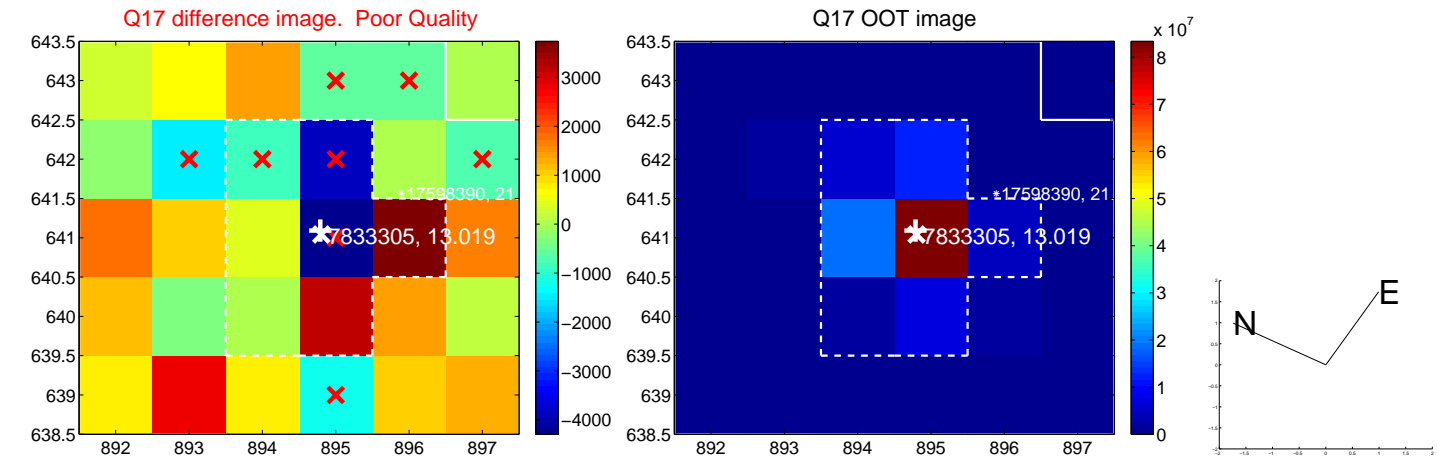
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

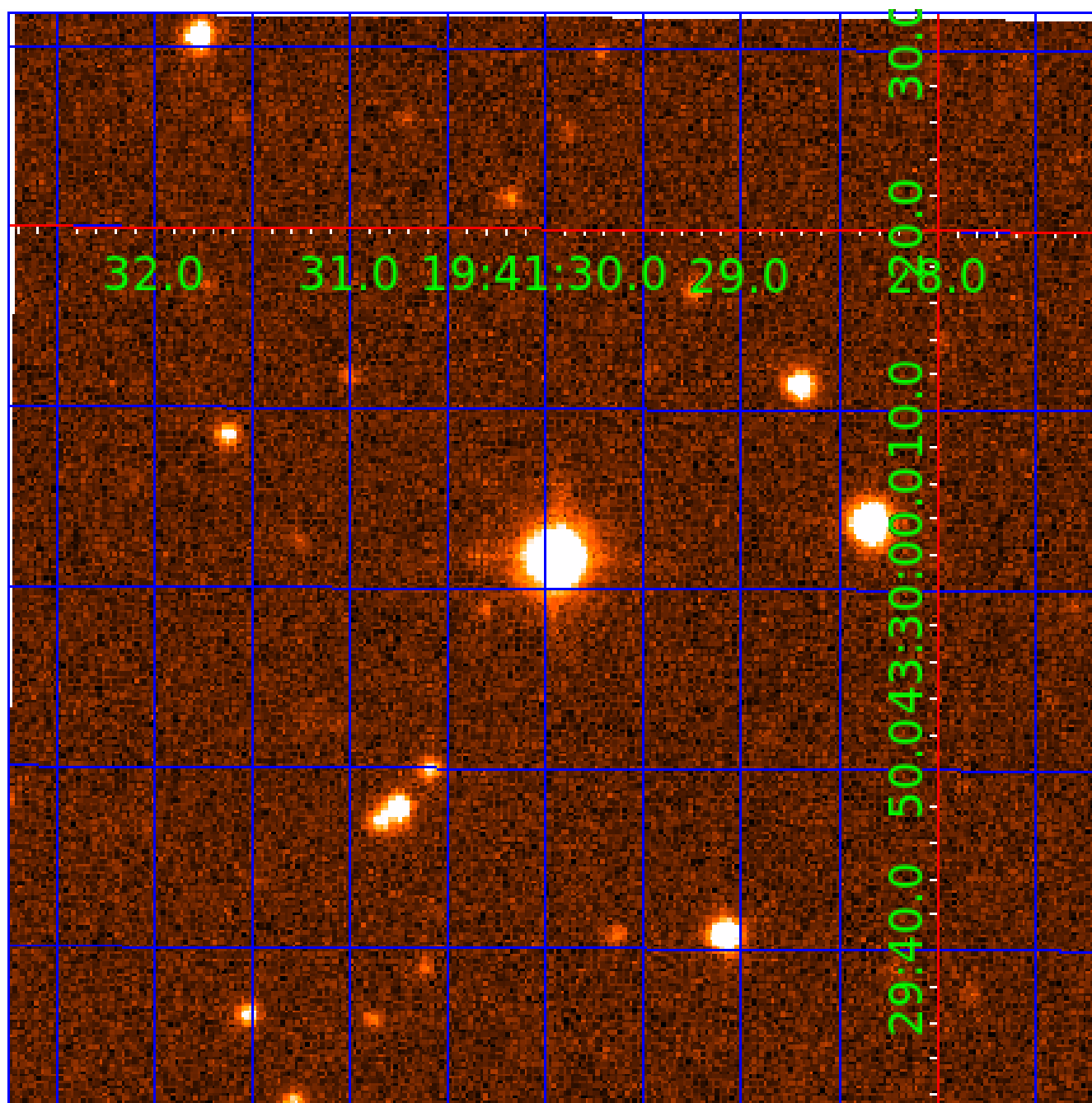


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007833305

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})
007833305-01	OBS	4528.01	8.312300	139.670026	64.9	1.872	10.0	11.4	0.82	5421	0.76	97.73
007833305-02	OBS	No	570.035654	403.504813	222.4	25.757	7.4	8.6	0.82	5421	1.56	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007833305-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007833305-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS—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.

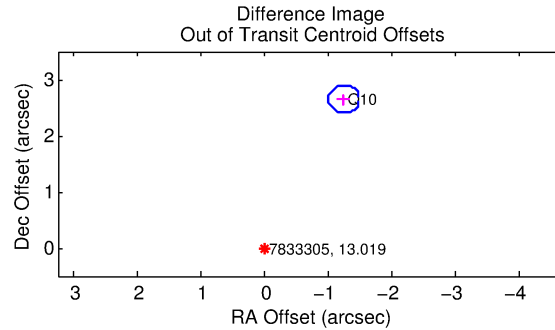
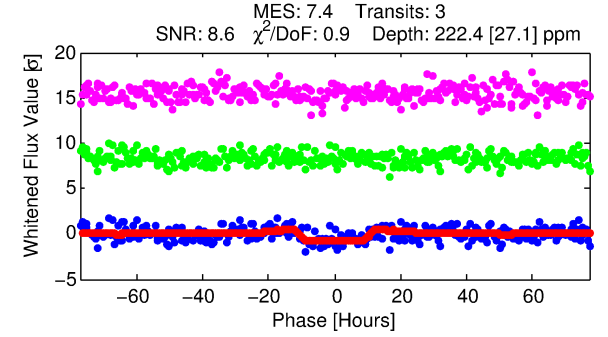
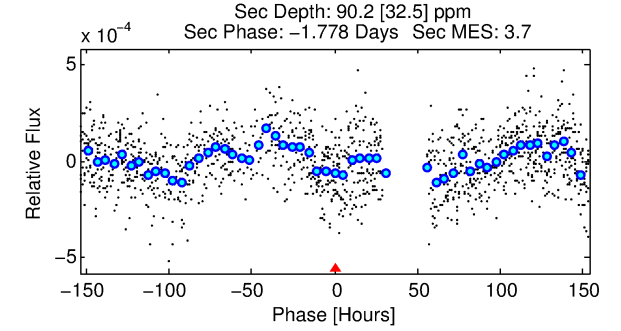
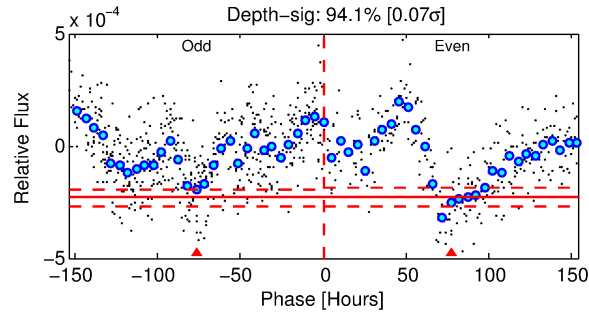
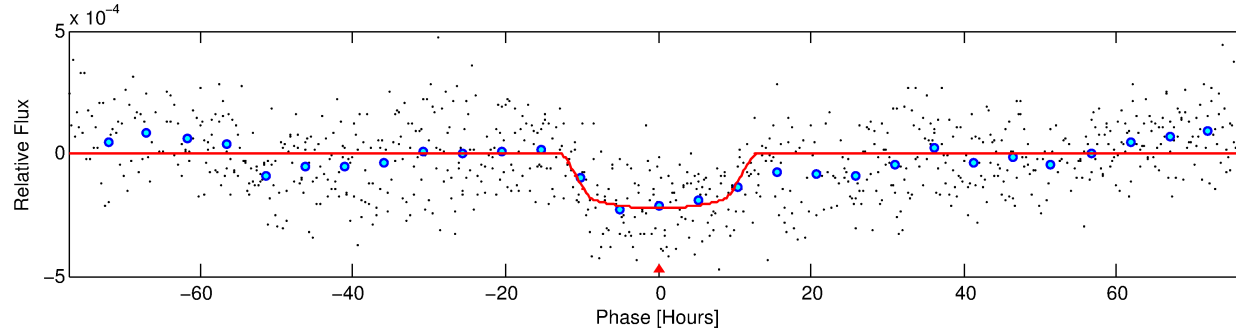
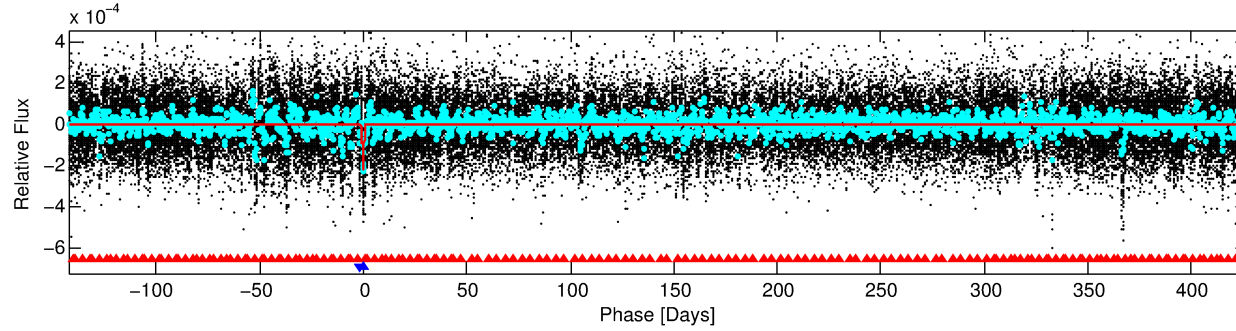
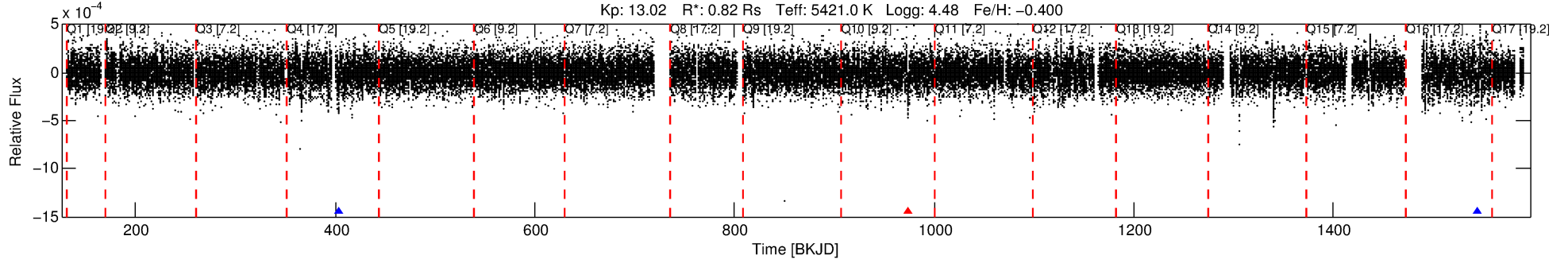
Ephemeris Match Information For 007833305-02

No Significant Match Found

DV One-Page Summary

KIC: 7833305 Candidate: 2 of 2 Period: 570.036 d
KOI: K04528 Corr: No Ephemeris Match

Kp: 13.02 R*: 0.82 Rs Teff: 5421.0 K Logg: 4.48 Fe/H: -0.400



DV Fit Results:

Period = 570.03565 [0.02489] d
Epoch = 403.5048 [0.0286] BKJD
Rp/R* = 0.0175 [0.0014]
a/R* = 61.25 [13.99]
b = 0.95 [0.02]
Seff = 0.35 [0.09]
Teq = 196 [13] K
Rp = 1.56 [0.32] Re
a = 1.2164 [0.1920] AU
Ag = 30234.19 [13862.89] [2.18σ]
Teffp = 3993 [413] K [9.20σ]

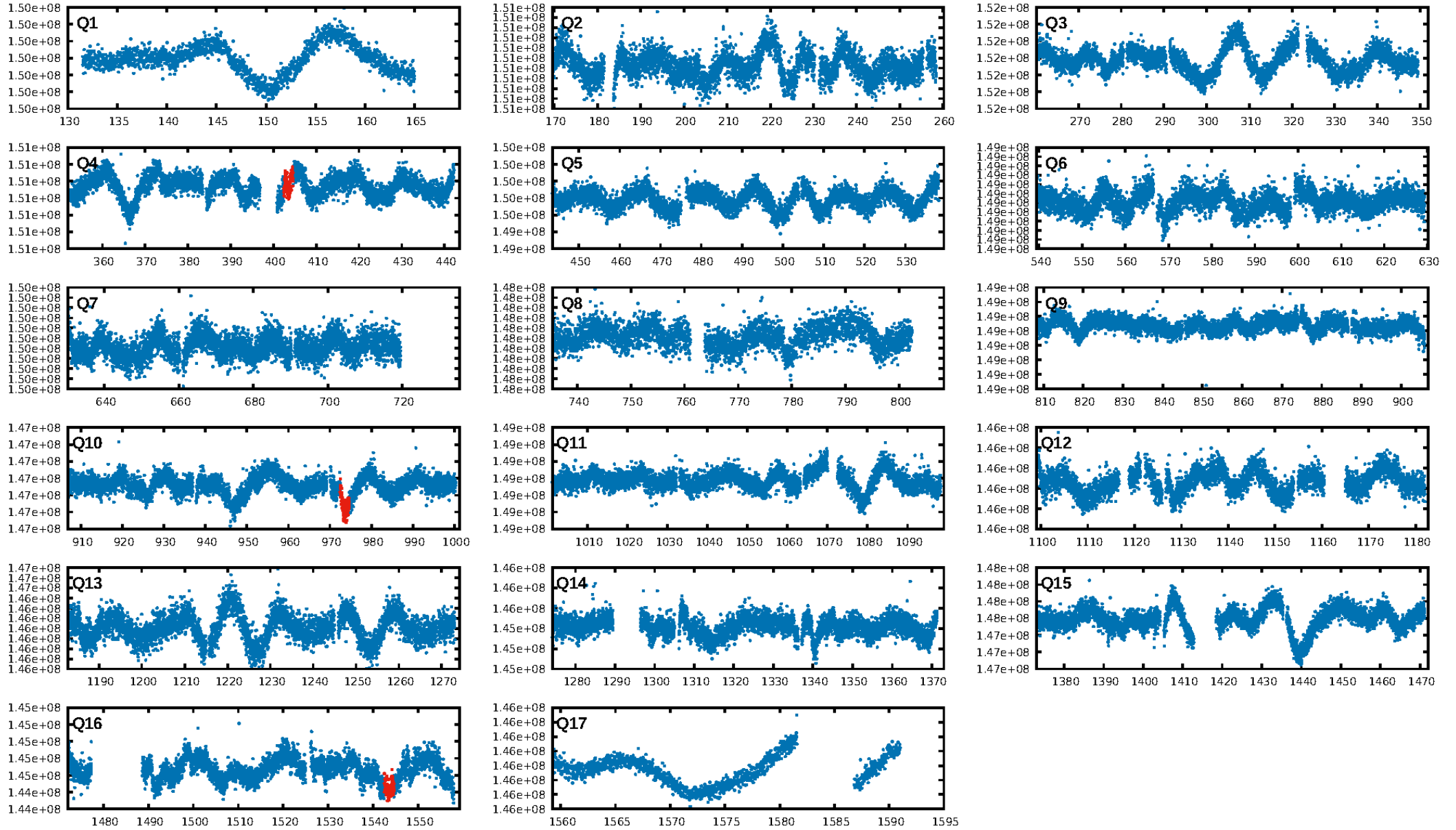
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [522.03σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 37.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.78e-08
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 0.06429
Centroid-sig: 0.7%
Centroid-so: 2.080 arcsec [1.68σ]
OotOffset-rm: 2.925 arcsec [35.64σ]
KicOffset-rm: 3.083 arcsec [37.53σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.67 [2/3]

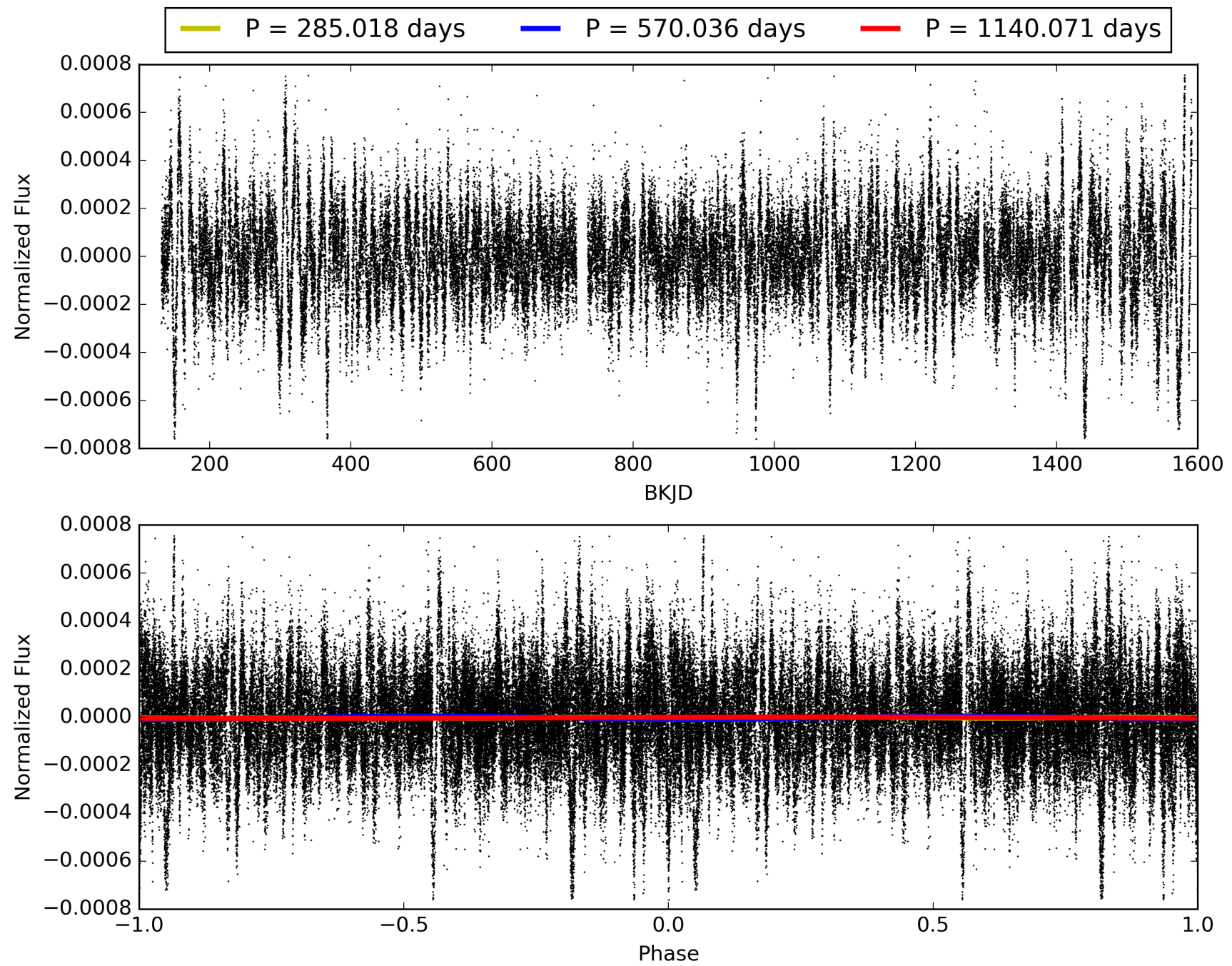
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:52:18 Z

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

TCE 007833305-02, PDC Light Curves

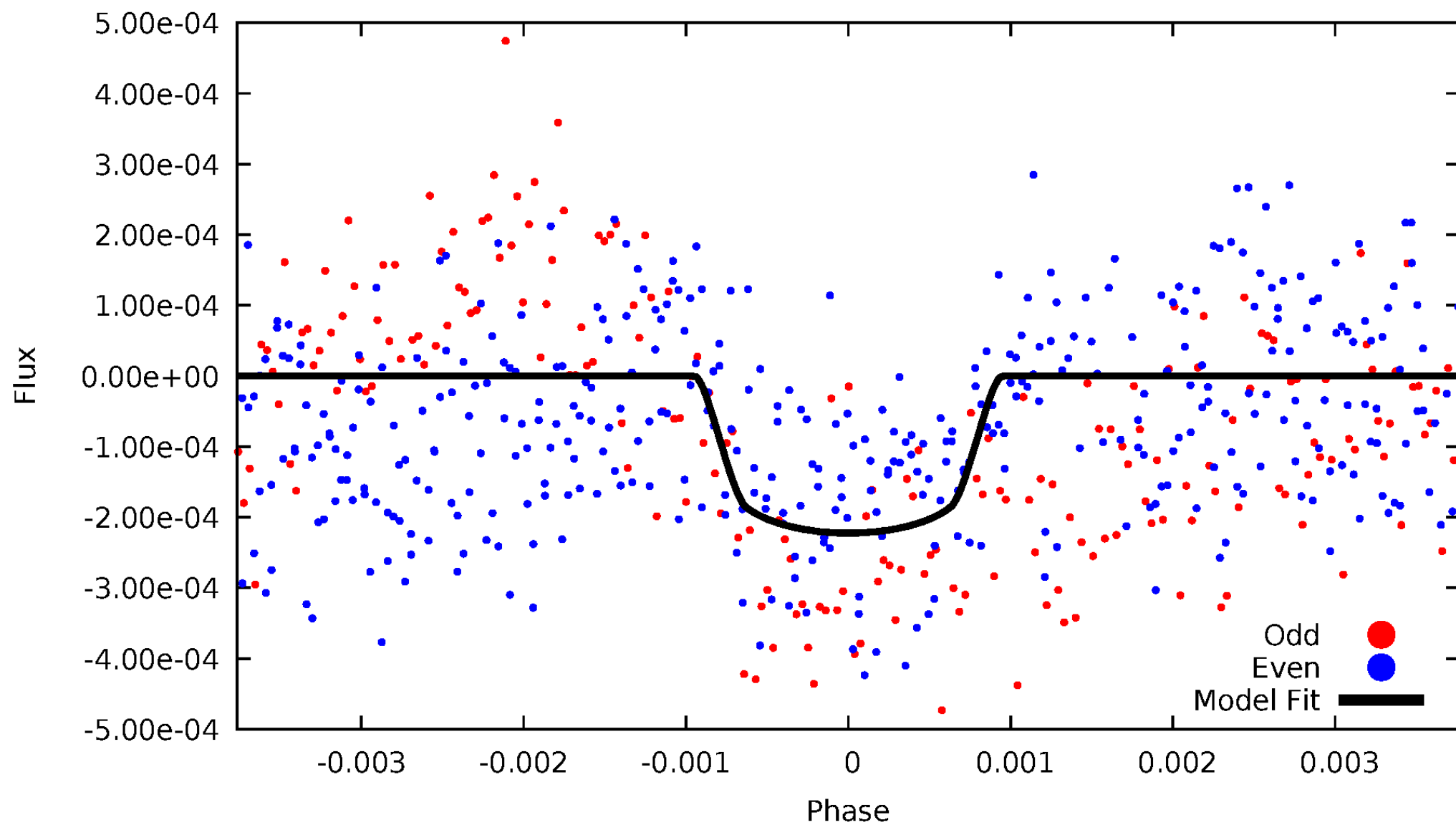


TCE 007833305-02



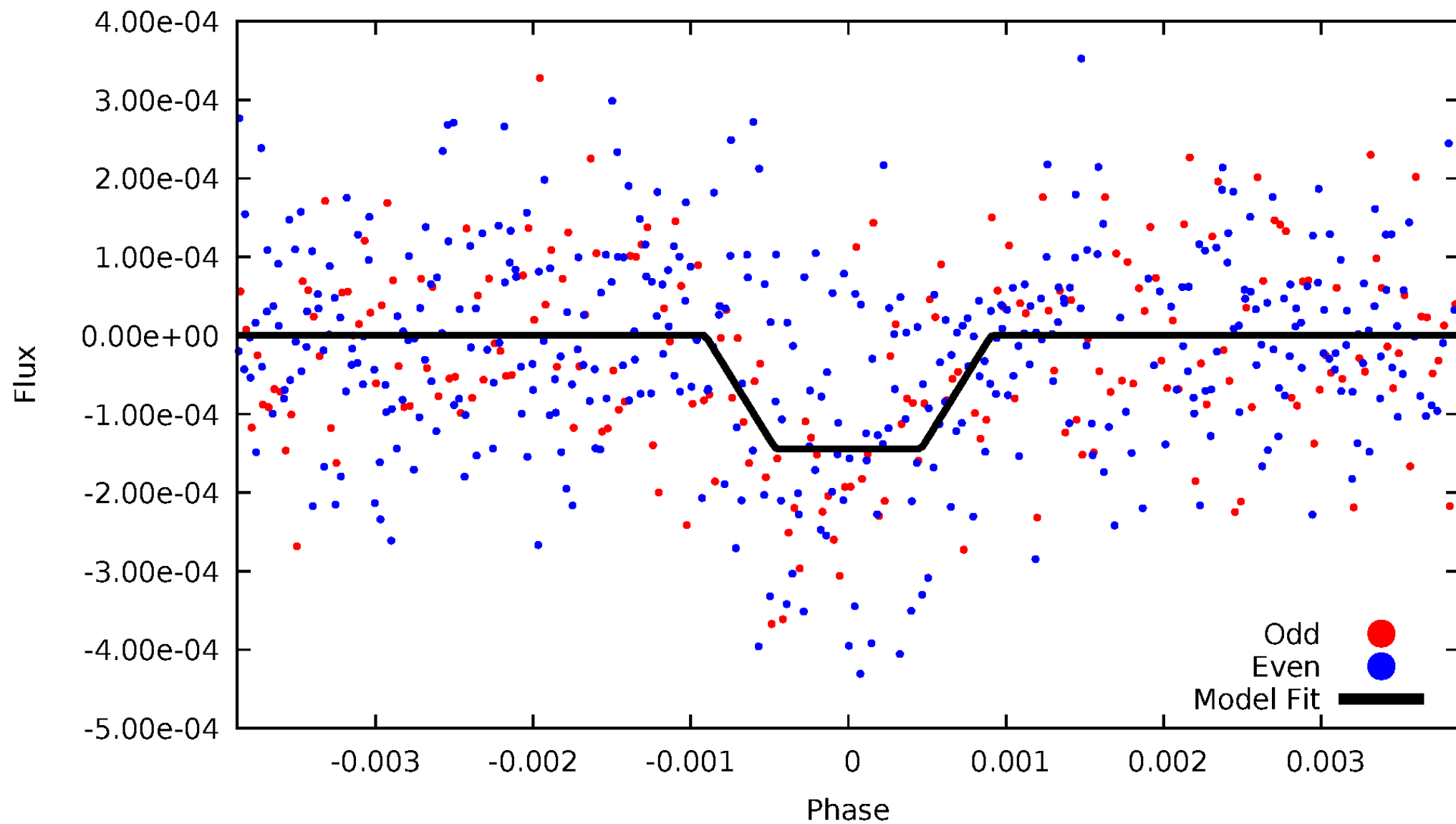
DV Odd/Even

TCE 007833305-02



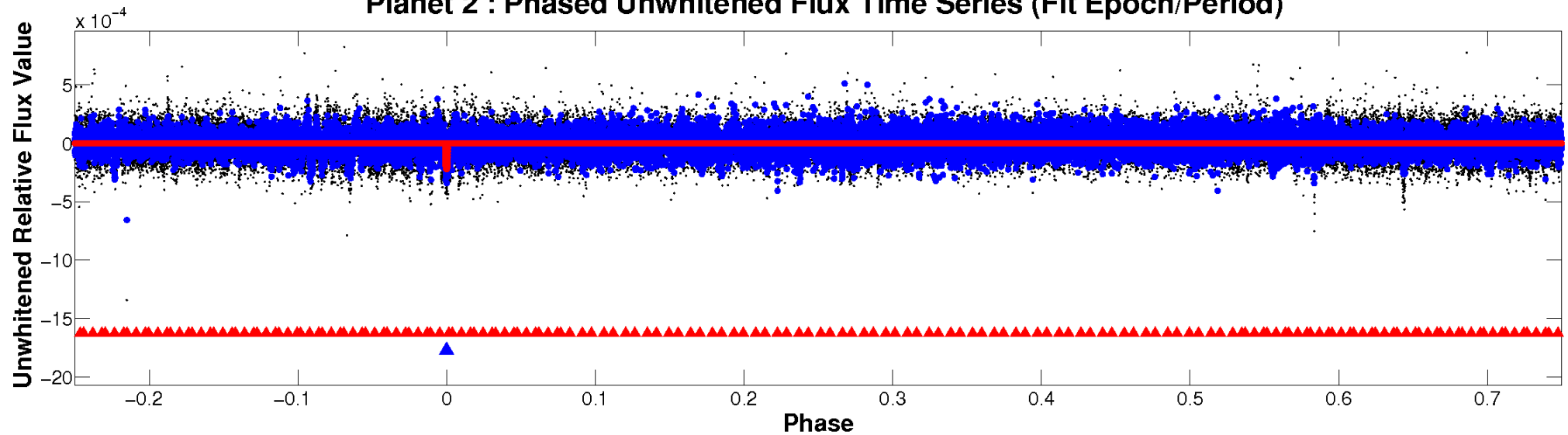
ALT Odd/Even

TCE 007833305-02

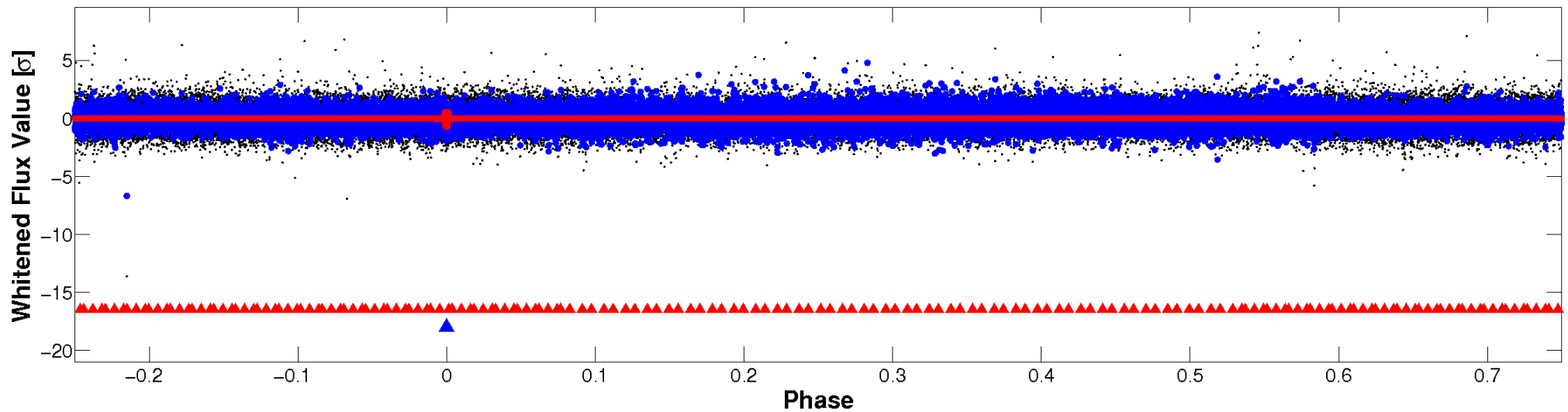


Non-Whitened Vs. Whitened Light Curve

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

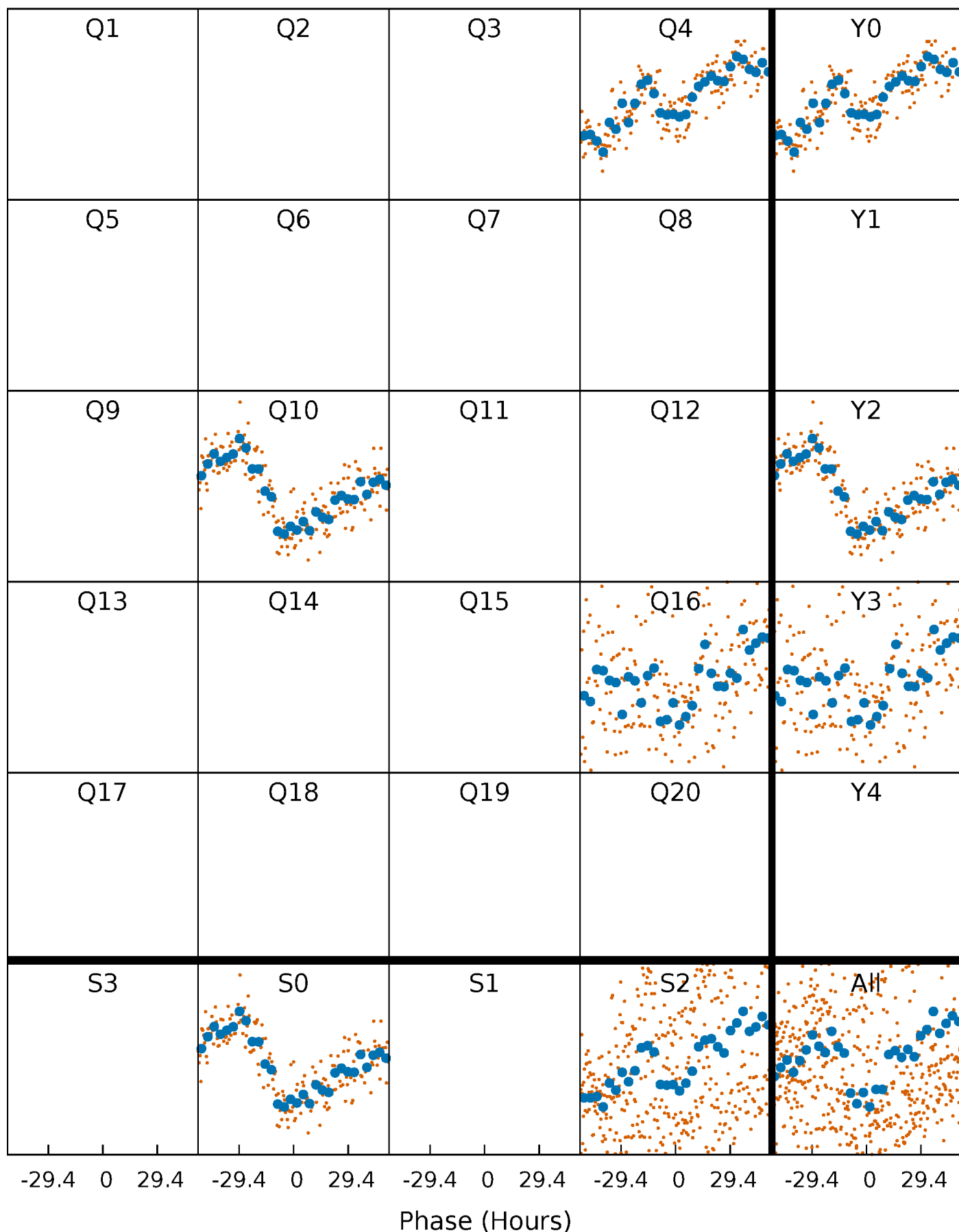


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



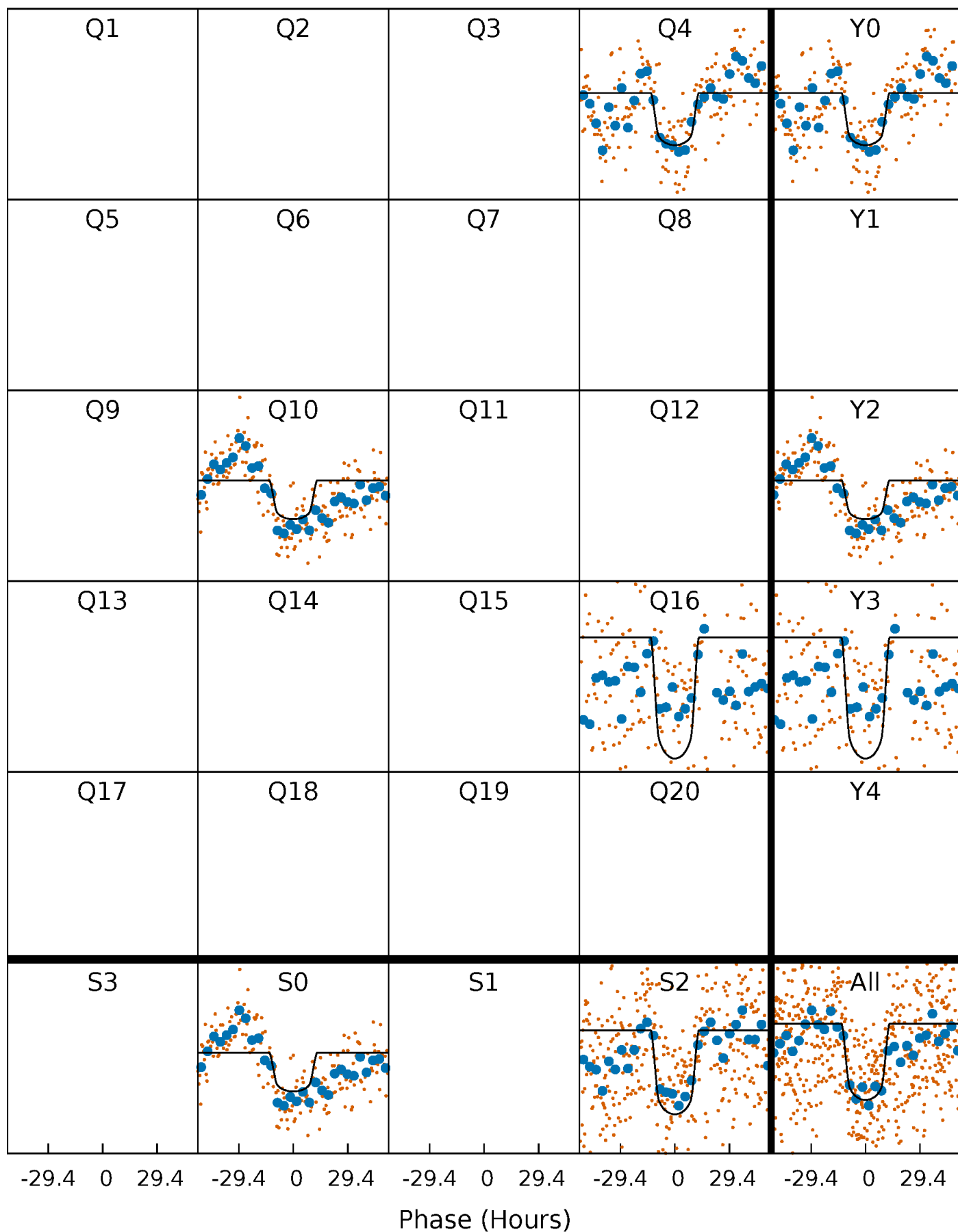
PDC Quarter-Phased Transit Curves

TCE 007833305-02 P=570.035654 Days $T_0=403.504813$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007833305-02 P=570.035654 Days $T_0=403.504813$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

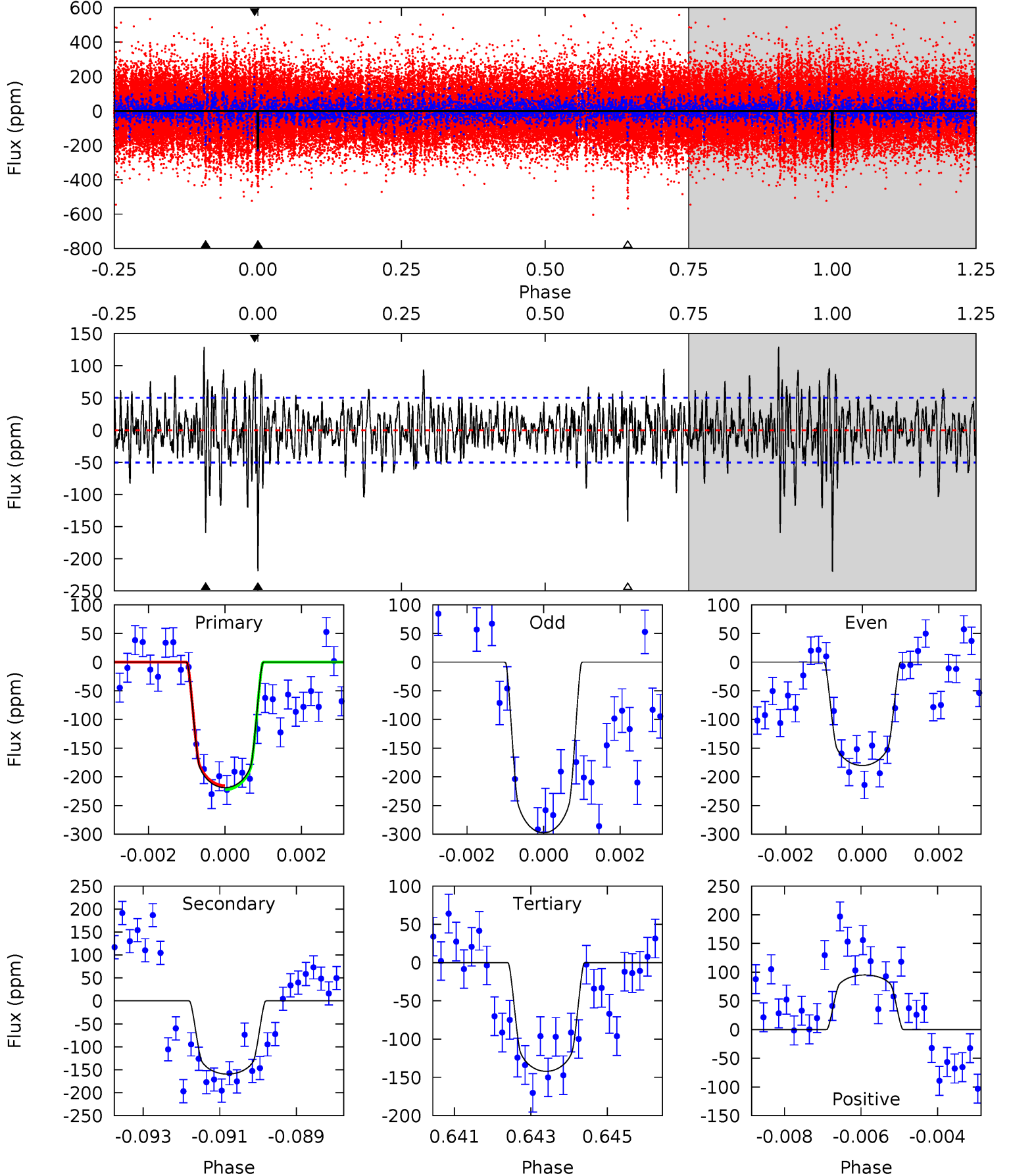
TCE 007833305-02 P=569.932855 Days $T_0=403.518983$ (BKJD)



DV Model-Shift Uniqueness Test

007833305-02, $P = 570.035654$ Days, $E = 403.504813$ Days

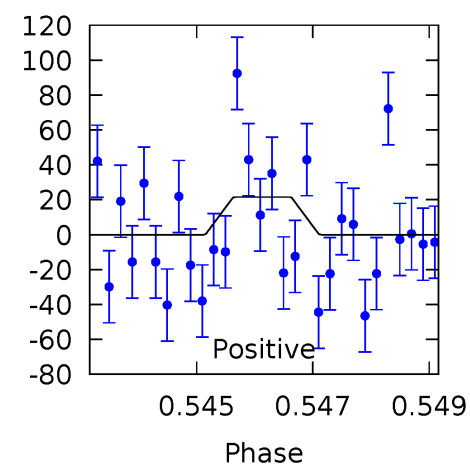
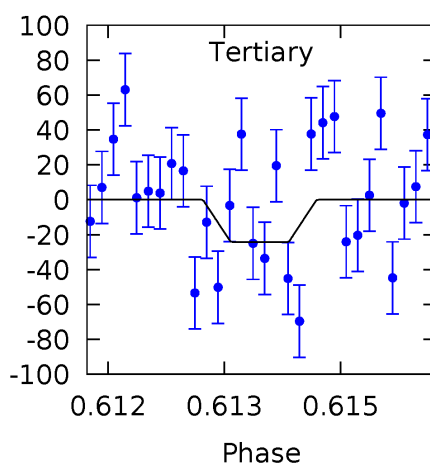
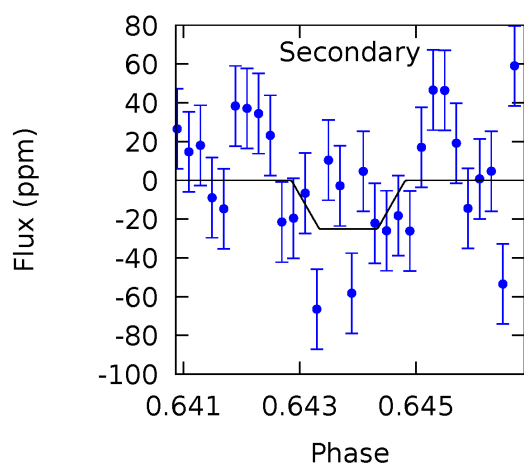
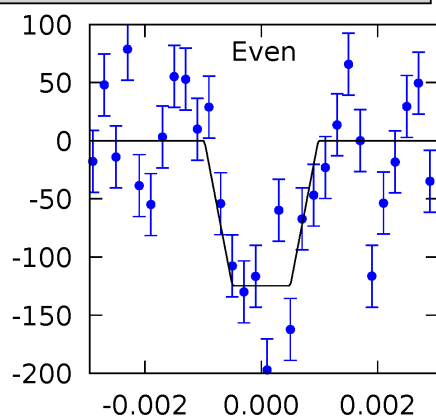
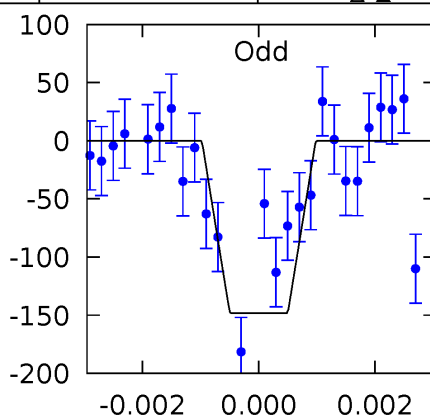
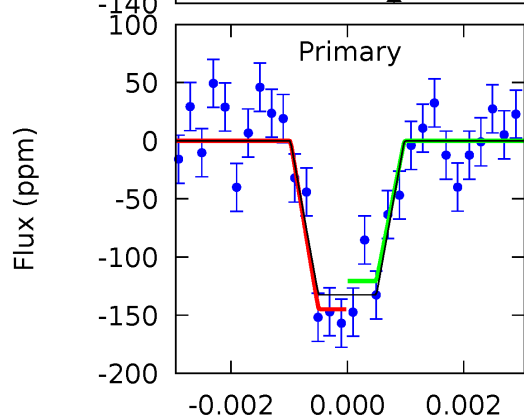
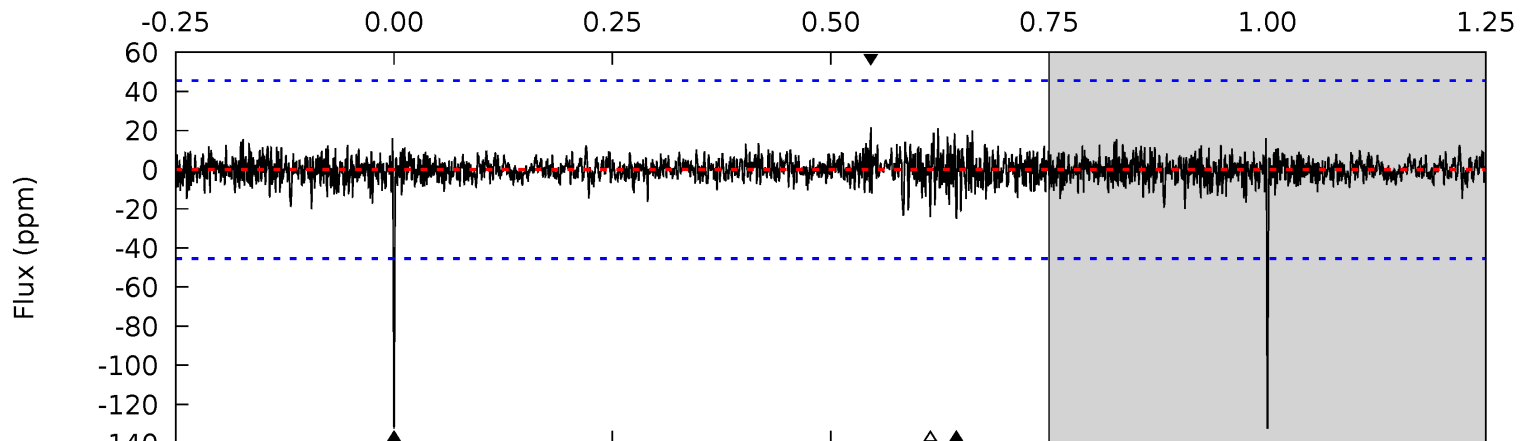
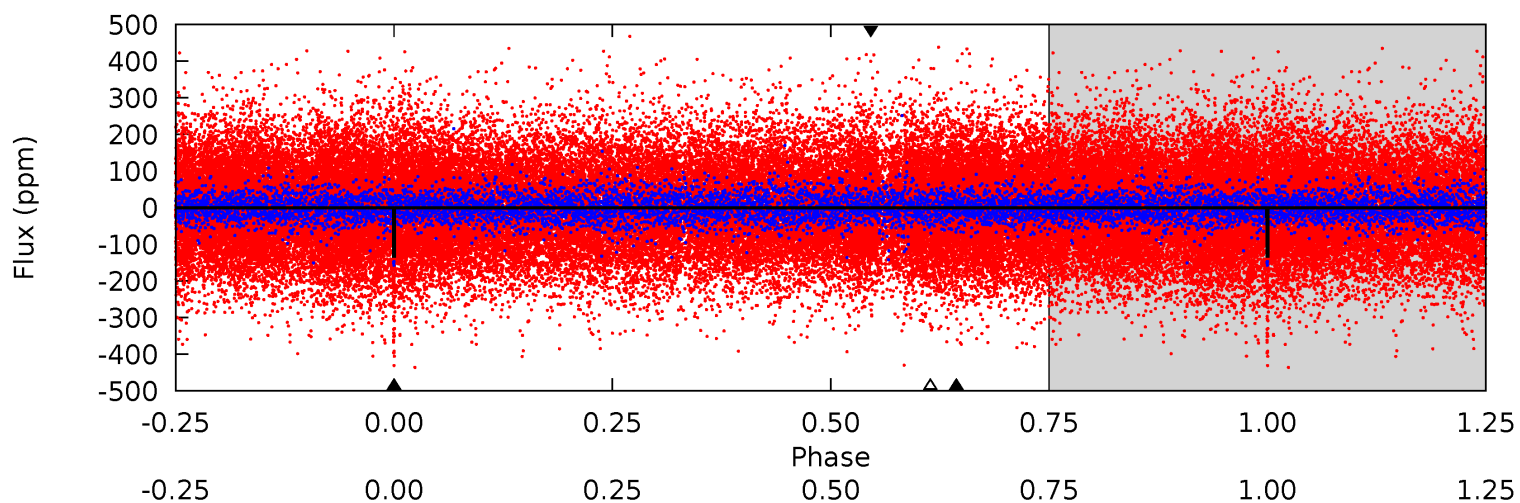
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	16.9	15.1	10.1	5.34	3.11	3.32	8.15	13.1	1.85	6.83	5.92	0.97	0.37	0.38



Alt Model-Shift Uniqueness Test

007833305-02, $P = 569.932855$ Days, $E = 403.518983$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	2.95	2.84	2.52	5.34	3.11	0.61	12.7	13.0	0.11	0.43	1.30	0.89	0.14	1.42



Stellar Parameters For KIC 007833305

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5421^{+161}_{-161}	$4.483^{+0.115}_{-0.127}$	$-0.400^{+0.350}_{-0.250}$	$0.816^{+0.152}_{-0.114}$	$0.739^{+0.104}_{-0.048}$	$1.915^{+0.978}_{-0.698}$
	+3%/-3%	+3%/-3%	+87%/-62%	+19%/-14%	+14%/-6%	+51%/-36%
Source	PHO1	FLK73	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 007833305-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-160 ± 9	$1.57^{+0.20}_{-0.18}$	274^{+13}_{-13}	4724^{+214}_{-194}	53467^{+14626}_{-11745}
Alt.	-25 ± 9	$1.09^{+0.18}_{-0.16}$	274^{+14}_{-14}	3819^{+301}_{-290}	16996^{+9437}_{-7049}

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

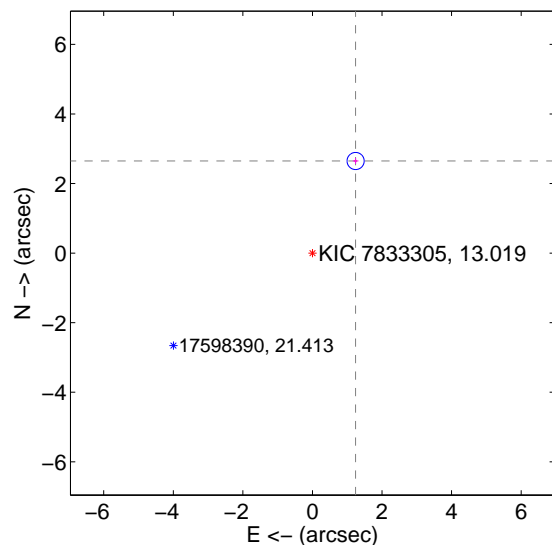
Supplemental centroid analysis for 007833305-02. Kepler magnitude: 13.02. Transit SNR 8.55

There are 0 quarters with good PRF difference image offsets

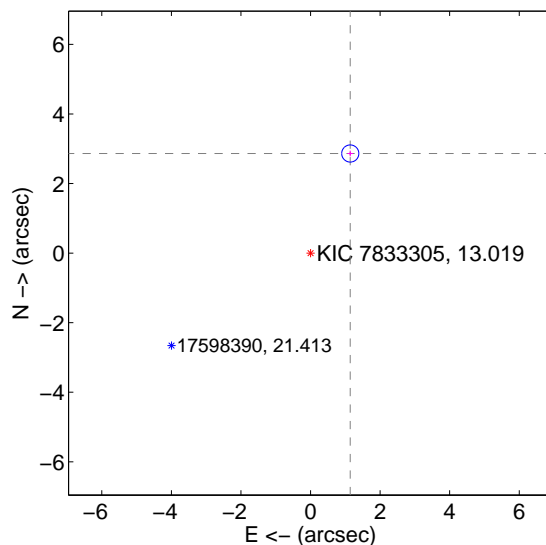
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.925 ± 0.082	35.64	-1.241 ± 0.080	2.648 ± 0.082
PRF-fit source offset from KIC position	3.083 ± 0.082	37.53	-1.143 ± 0.080	2.863 ± 0.082
photometric centroid source offset	2.08 ± 1.24	1.68	1.28 ± 1.15	-1.64 ± 1.29

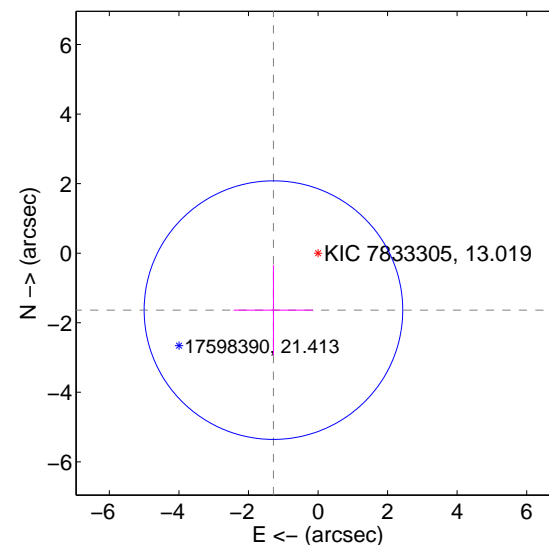
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

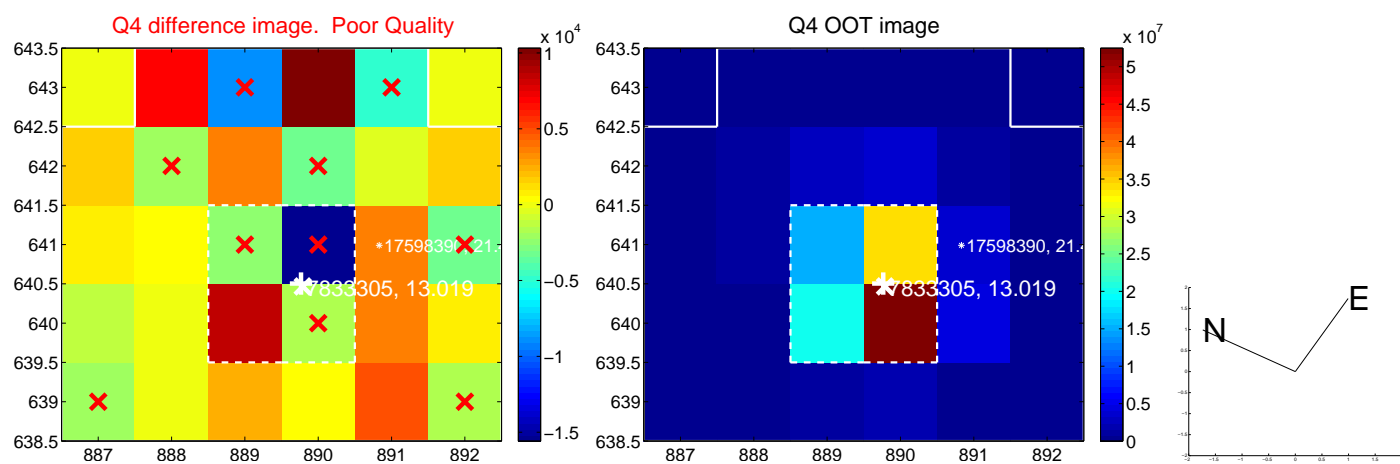


offset from photometric centroids



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.

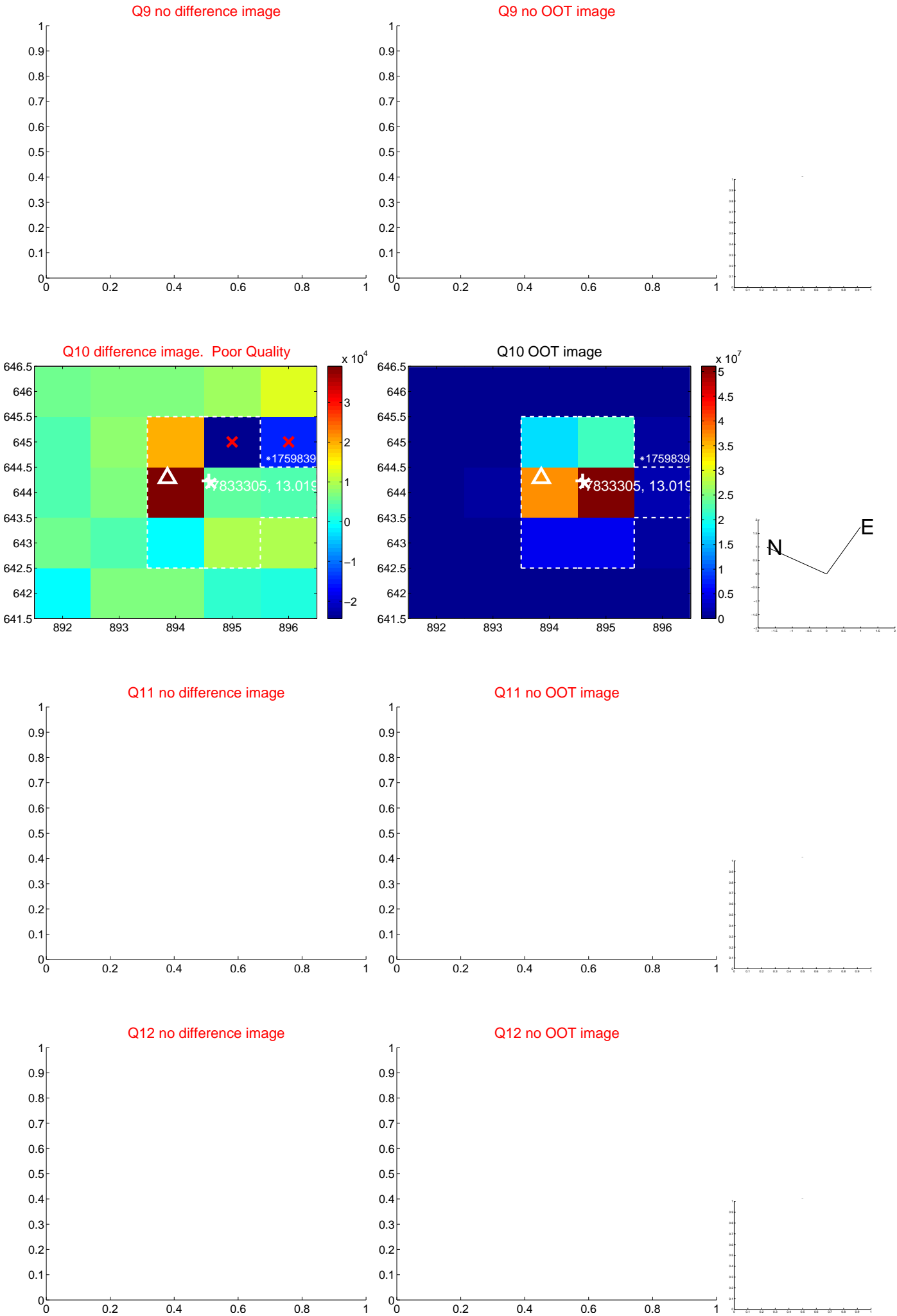
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



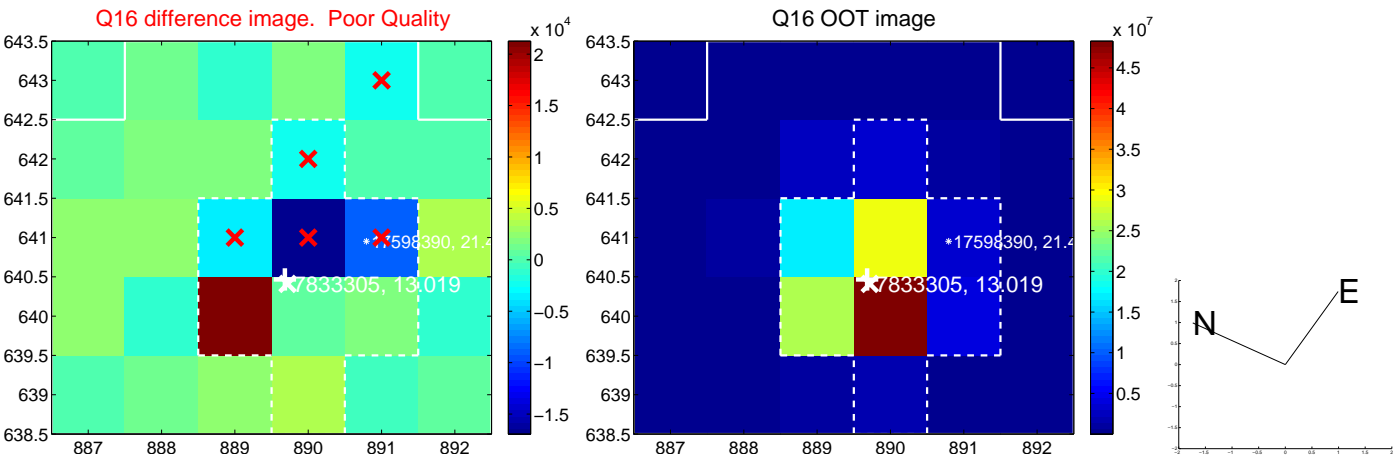
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



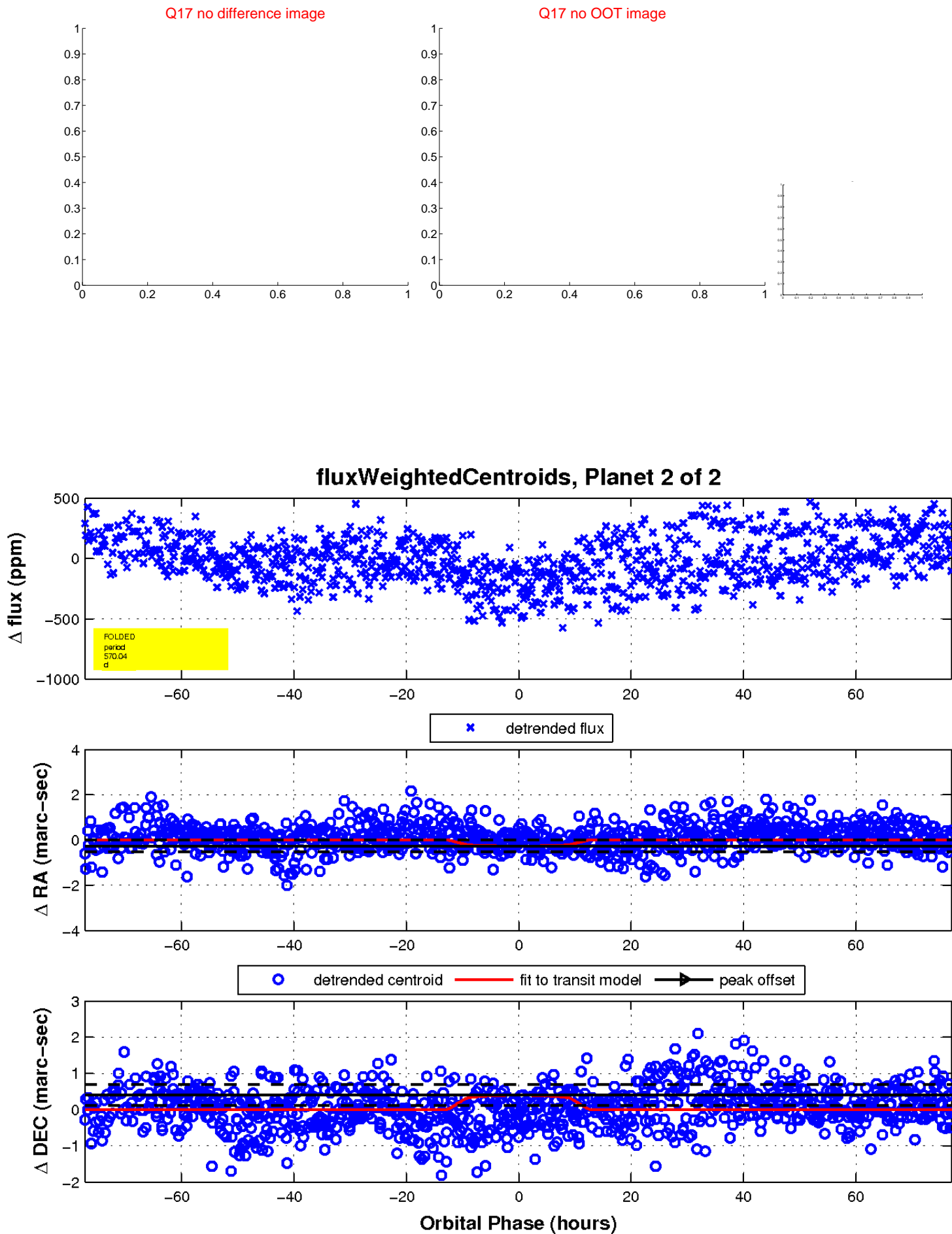
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

