

KIC 010000785

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})
010000785-01	OBS	No	497.989002	188.781531	2757.2	8.156	16.5	7.6	0.65	5333	3.39	0.27
010000785-02	OBS	No	385.571050	303.597325	2406.6	3.931	13.6	8.8	0.65	5333	3.17	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010000785-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010000785-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—HALO_GHOST

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

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

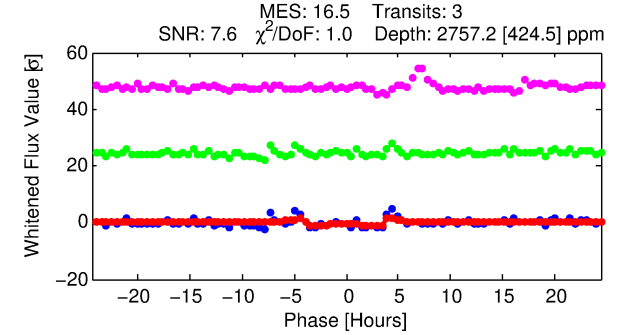
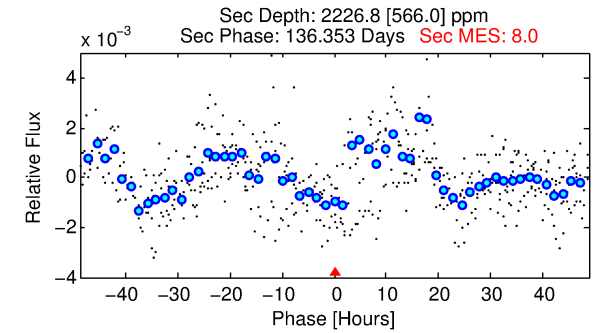
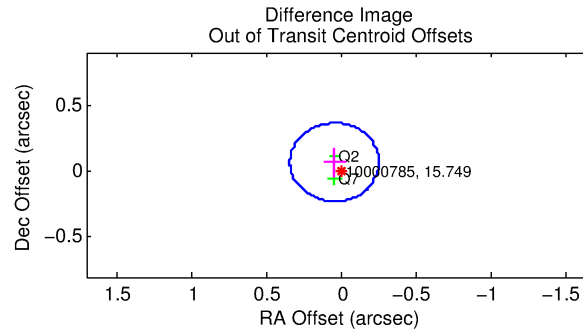
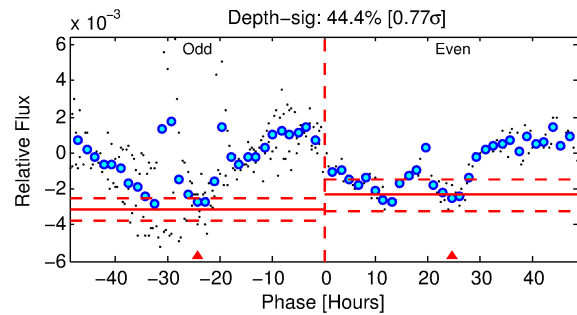
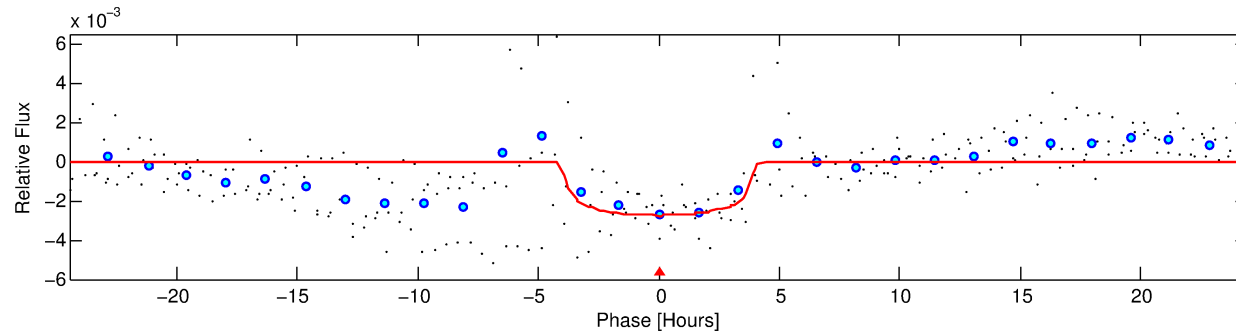
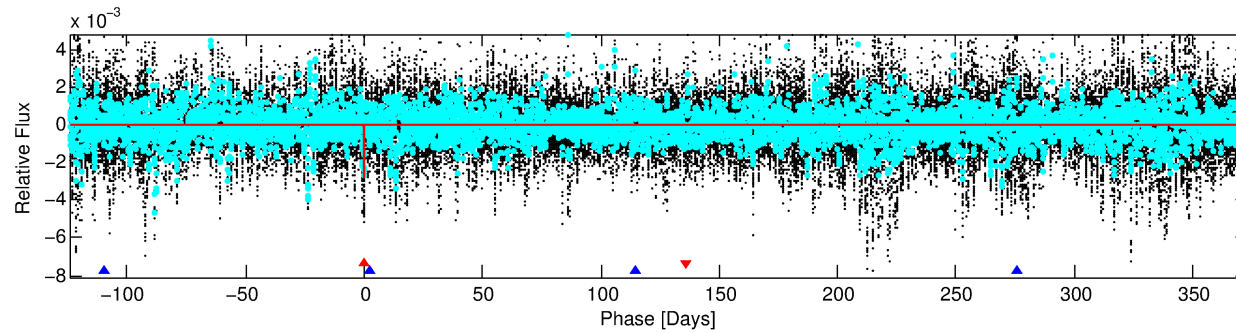
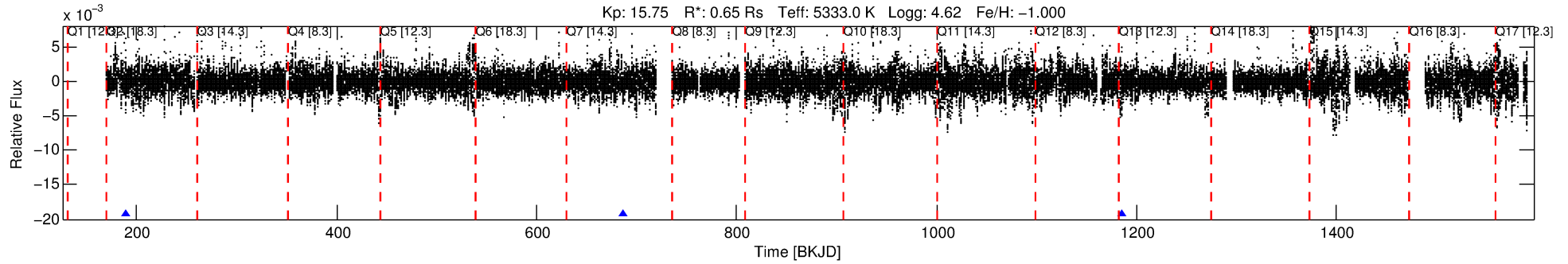
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010000785-01

No Significant Match Found

DV One-Page Summary

KIC: 10000785 Candidate: 1 of 2 Period: 497.989 d



DV Fit Results:

Period = 497.98900 [0.00492] d
Epoch = 188.7815 [0.0067] BKJD
Rp/R* = 0.0477 [0.0196]
a/R* = 488.70 [856.28]
b = 0.01 [191.13]
Seff = 0.27 [0.05]
Teq = 184 [8] K
Rp = 3.39 [1.42] Re
a = 1.0579 [0.0843] AU
Ag = 119534.63 [103844.66] [1.15 σ]
Teffp = 5302 [1153] K [4.44 σ]

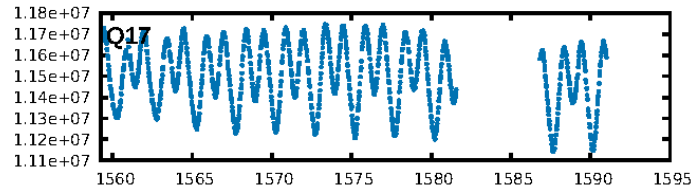
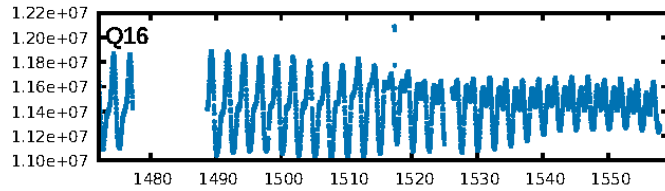
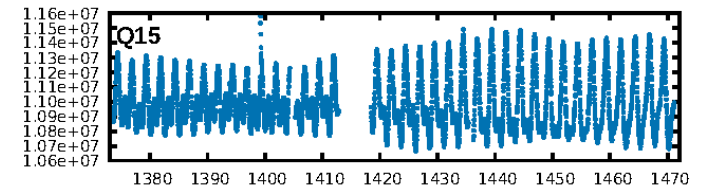
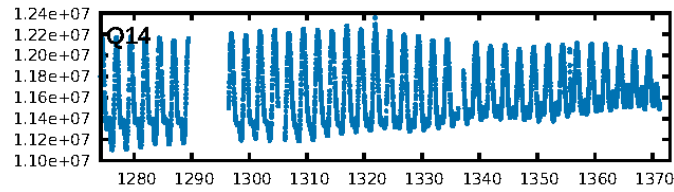
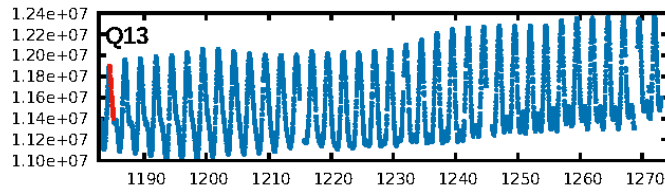
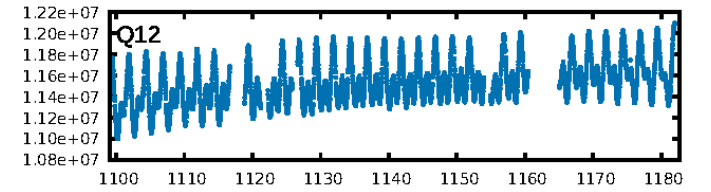
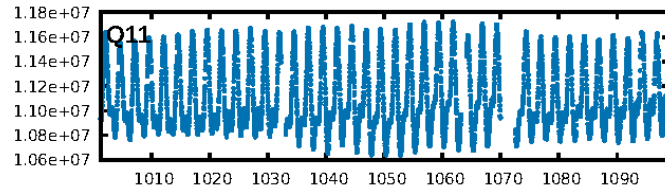
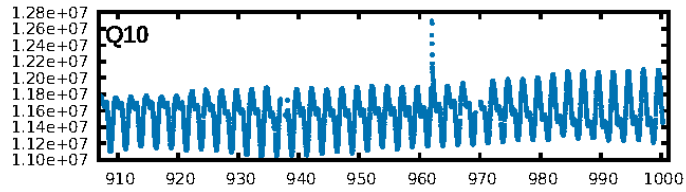
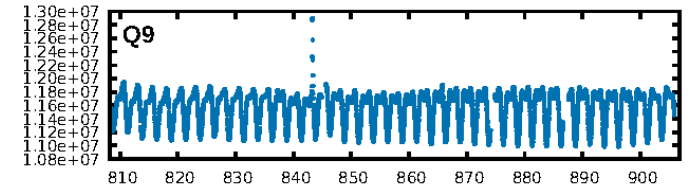
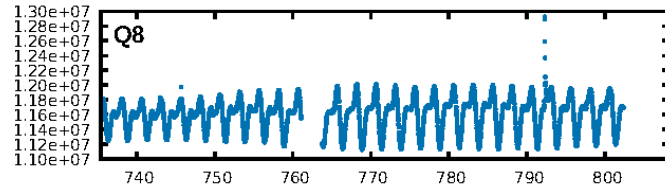
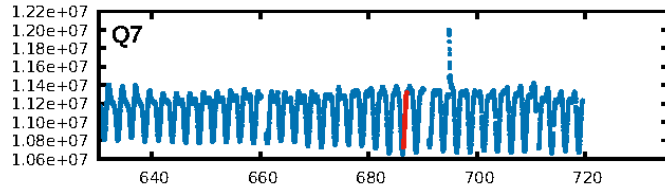
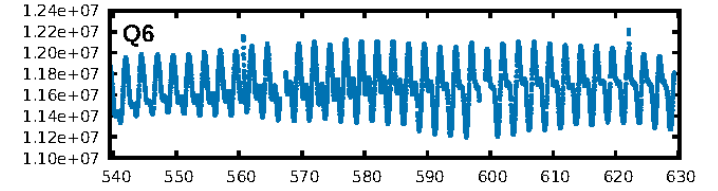
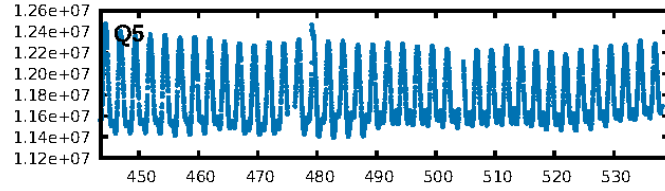
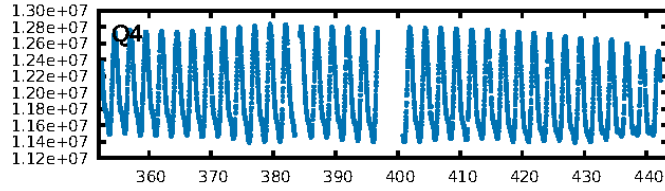
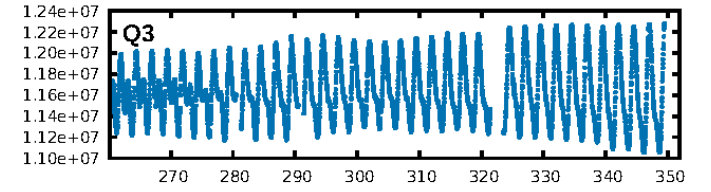
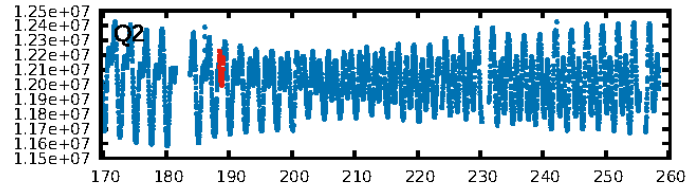
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [297.99 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.3%
ModelChiSquareGof-sig: 81.5%
Bootstrap-pfa: 3.37e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.31
Centroid-sig: 67.6%
Centroid-so: 0.483 arcsec [0.81 σ]
OotOffset-rm: 0.080 arcsec [0.81 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.111 arcsec [0.99 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

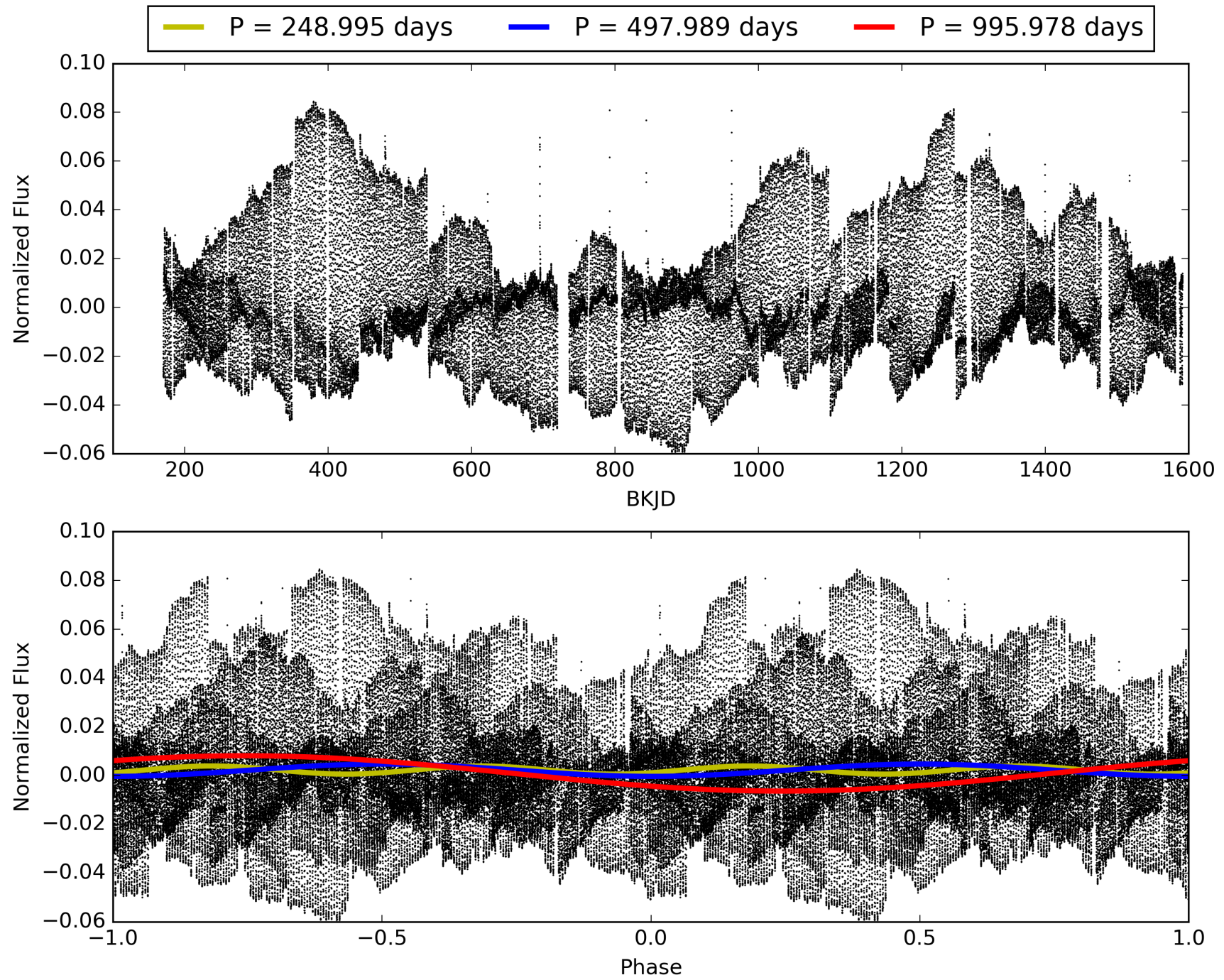
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:03:02 Z

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

TCE 010000785-01, PDC Light Curves

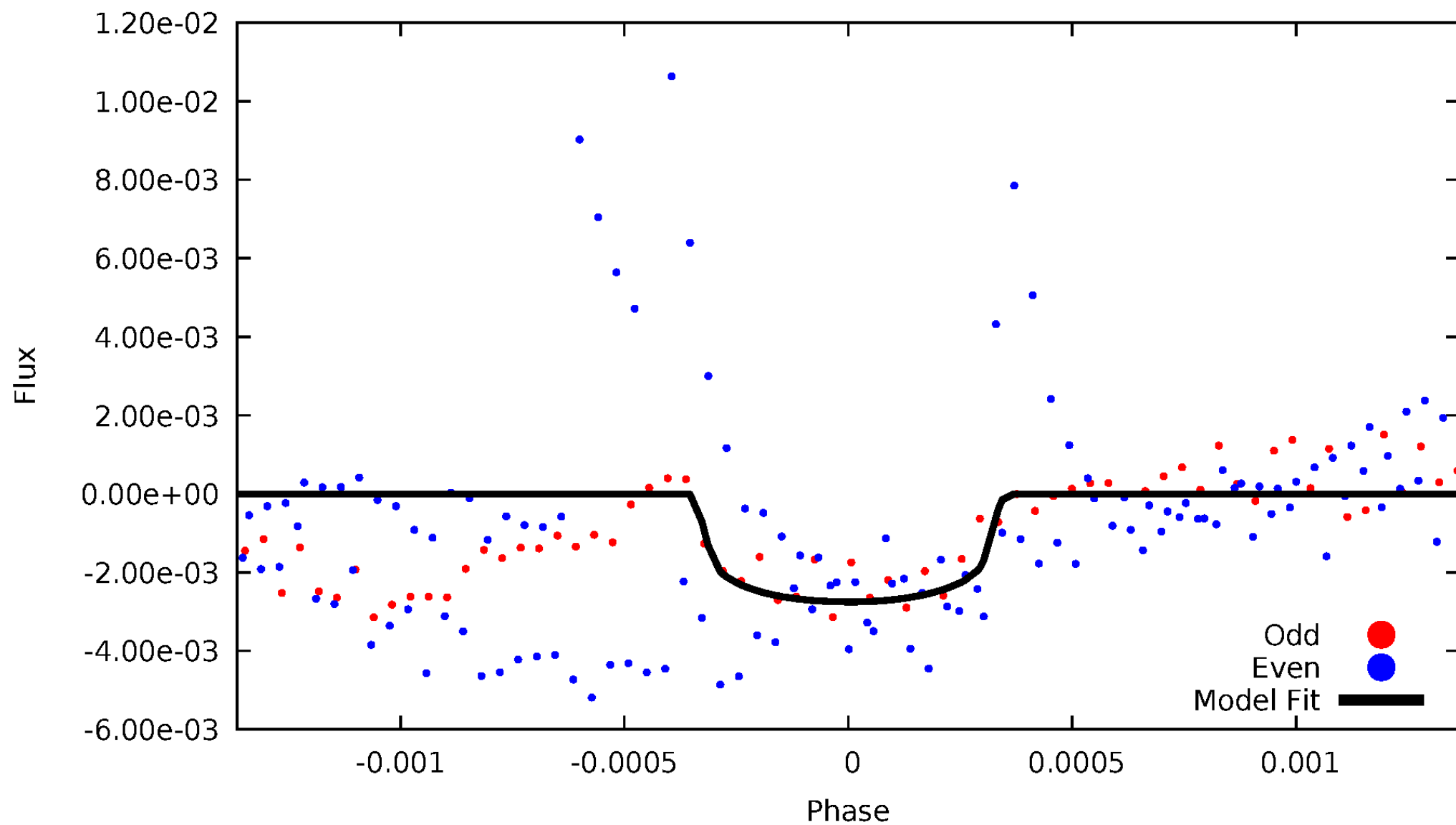


TCE 010000785-01



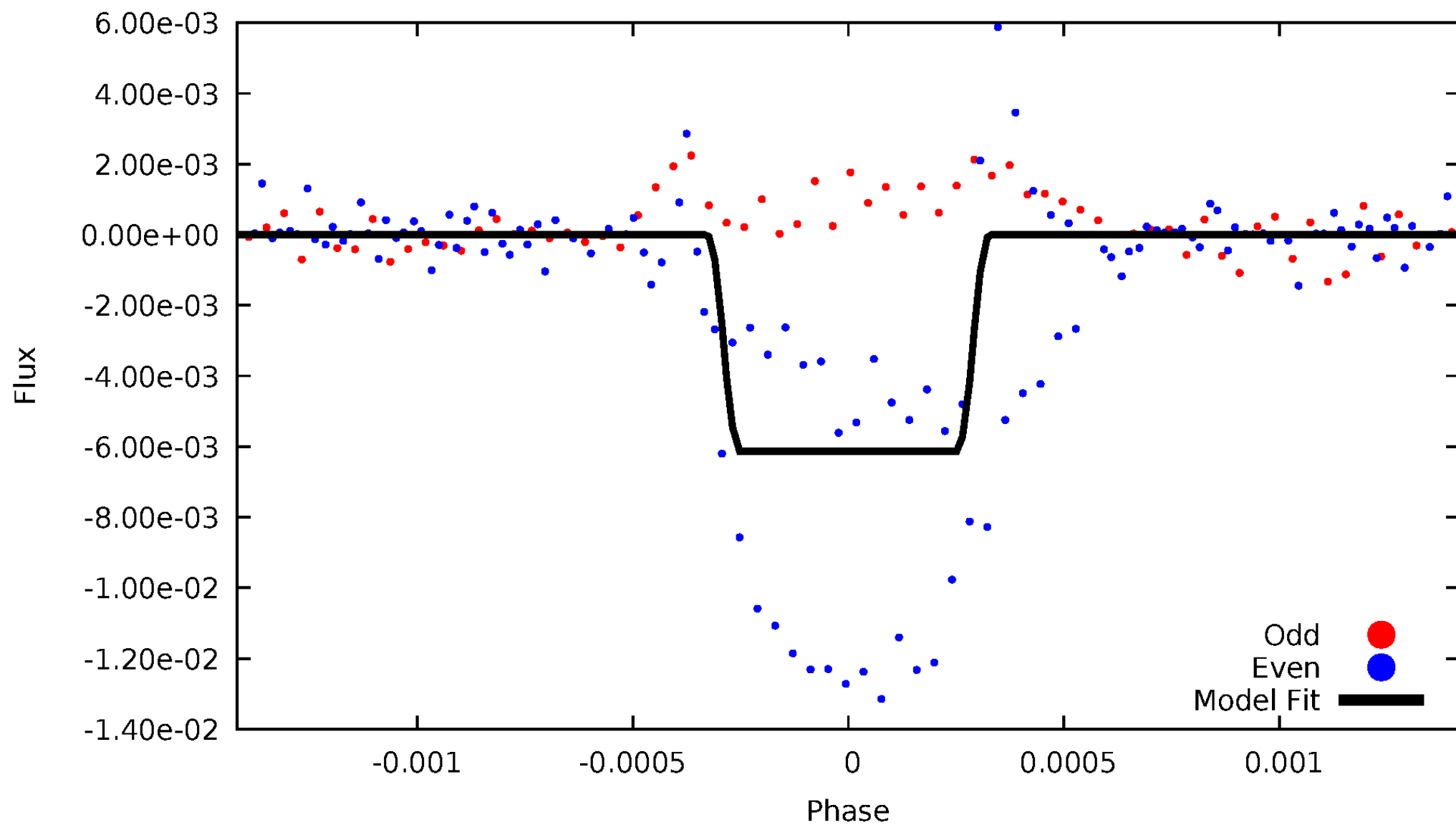
DV Odd/Even

TCE 010000785-01



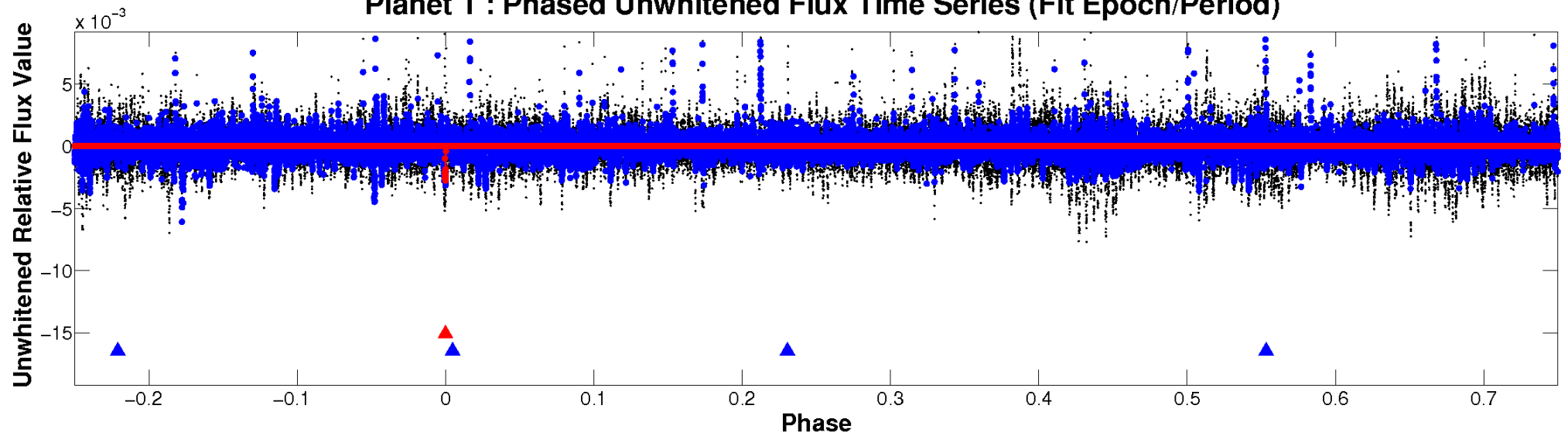
ALT Odd/Even

TCE 010000785-01

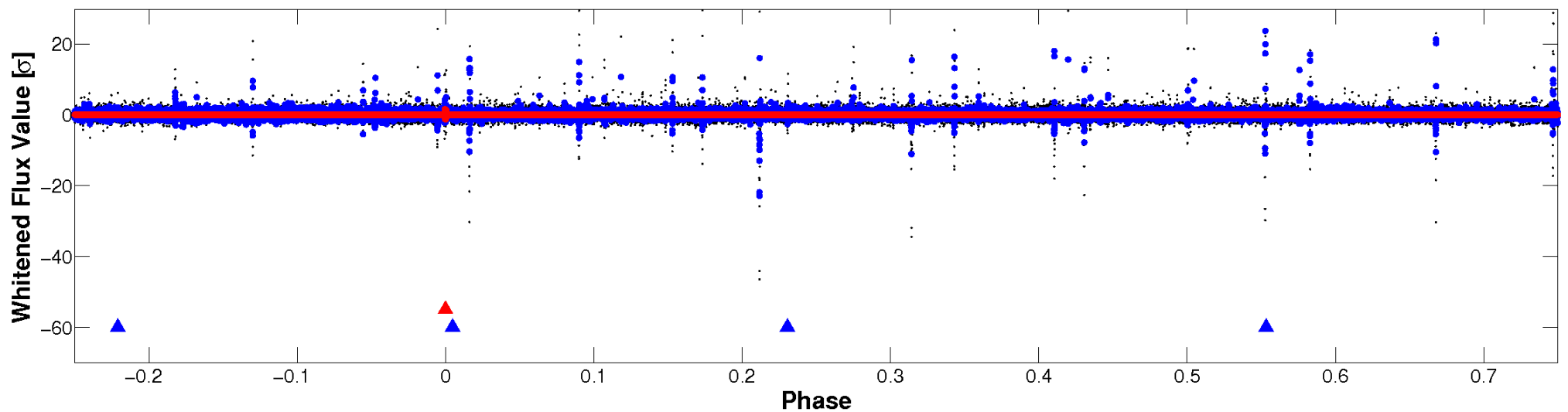


Non-Whitened Vs. Whitened Light Curve

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

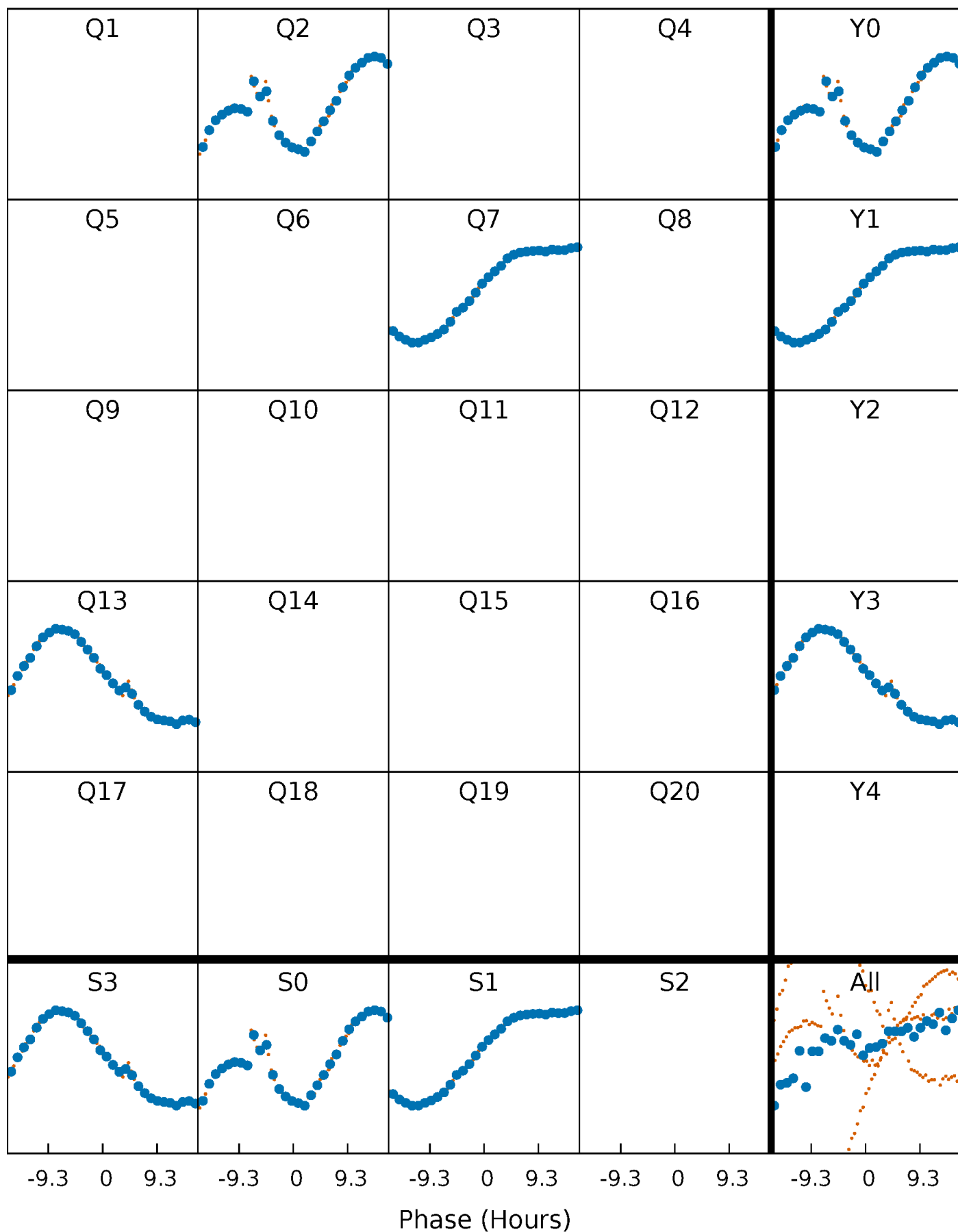


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



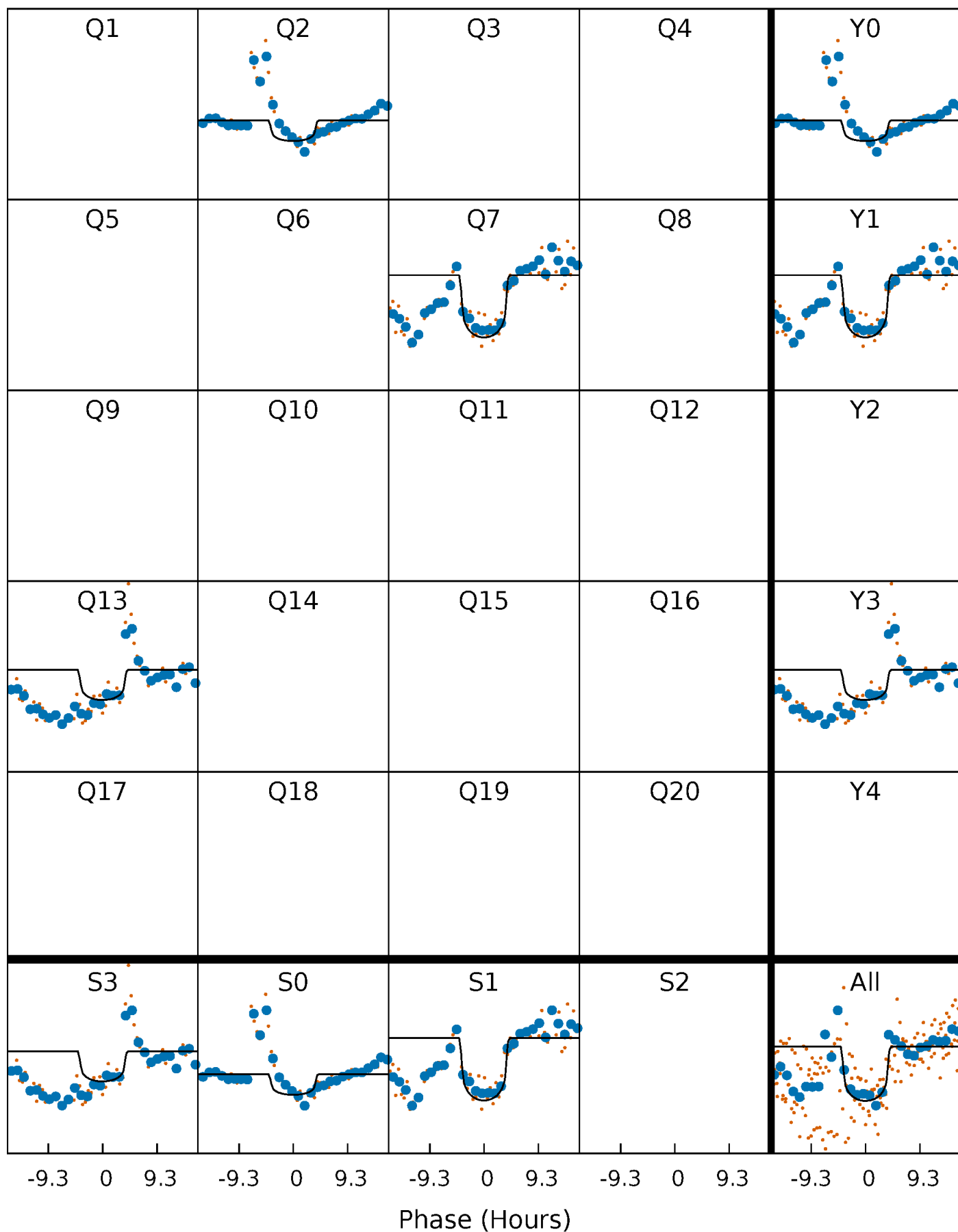
PDC Quarter-Phased Transit Curves

TCE 010000785-01 P=497.989002 Days $T_0=188.781531$ (BKJD)



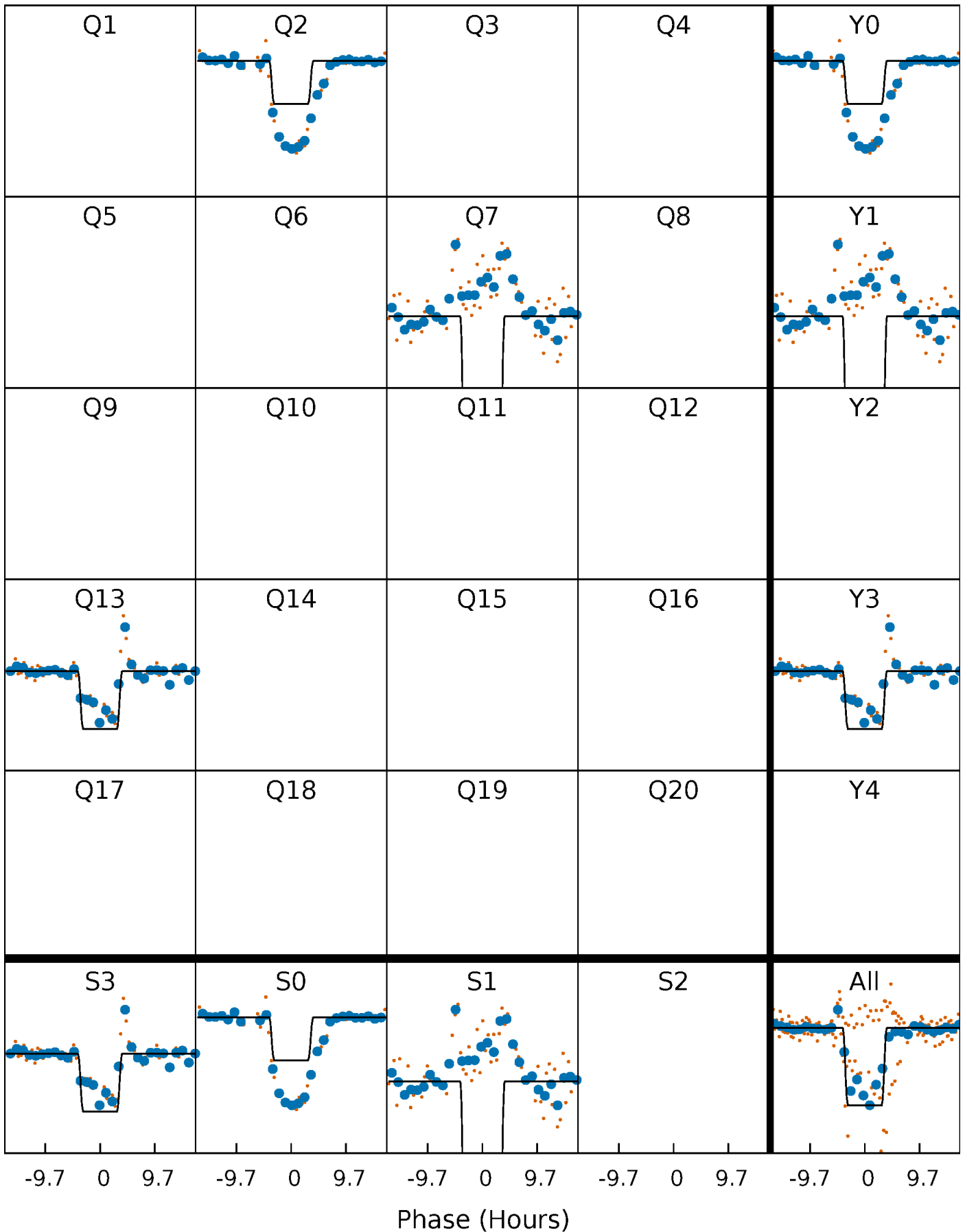
DV Quarter-Phased Transit Curves

TCE 010000785-01 P=497.989002 Days $T_0=188.781531$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

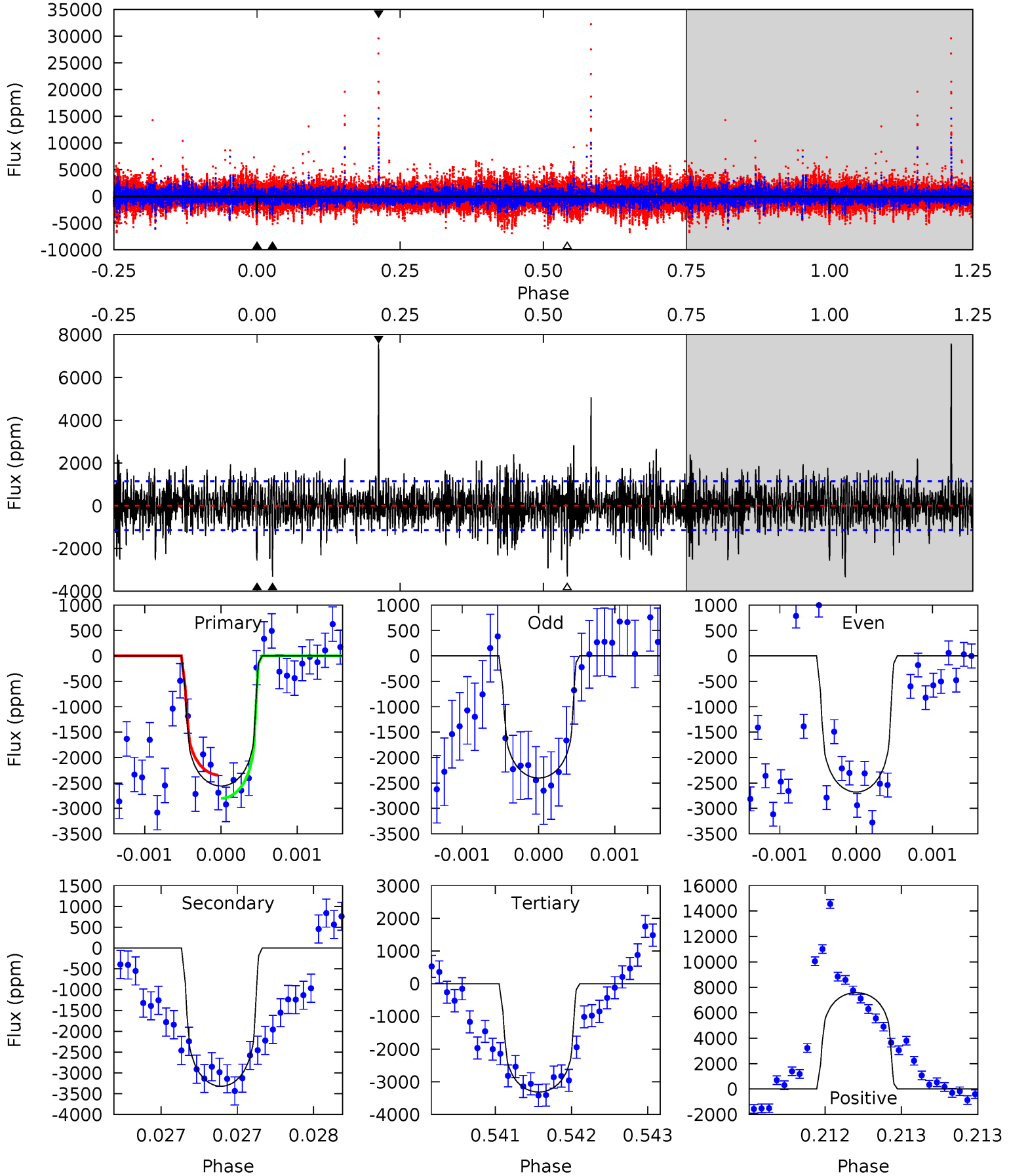
TCE 010000785-01 P=497.999913 Days $T_0=188.771605$ (BKJD)



DV Model-Shift Uniqueness Test

010000785-01, P = 497.989002 Days, E = 188.781531 Days

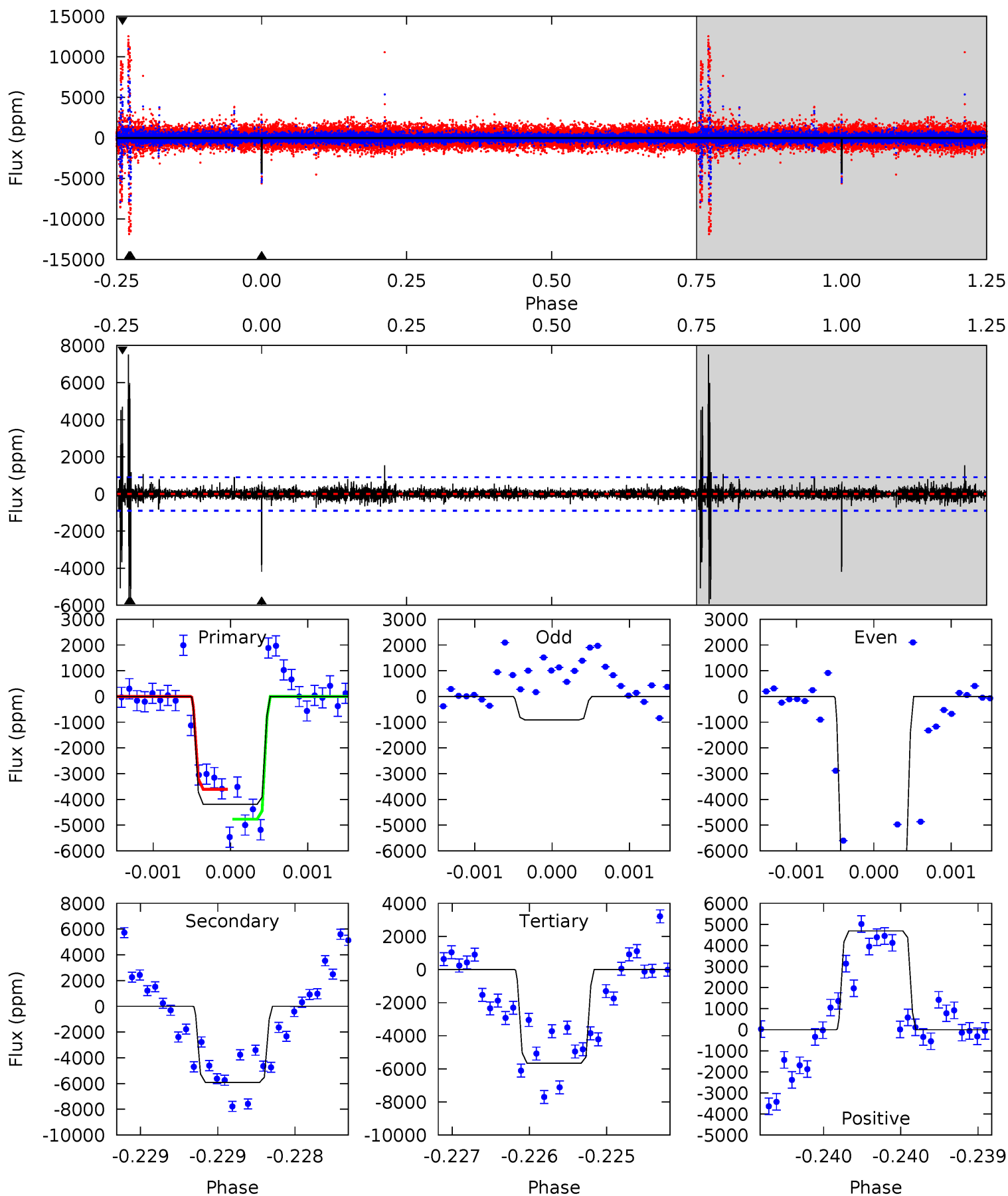
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	16.1	16.0	36.7	5.51	3.39	3.68	-3.65	-24.3	0.04	-20.6	0.43	1.07	0.70	1.09



Alt Model-Shift Uniqueness Test

010000785-01, P = 497.999913 Days, E = 188.771605 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	36.3	34.7	28.7	5.53	3.41	1.84	-9.05	-3.05	1.55	7.54	16.9	1.19	0.56	0



Stellar Parameters For KIC 010000785

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5333^{+177}_{-161}	$4.616^{+0.072}_{-0.048}$	$-1.000^{+0.300}_{-0.300}$	$0.650^{+0.056}_{-0.051}$	$0.635^{+0.061}_{-0.024}$	$3.262^{+0.888}_{-0.584}$
	+3%/-3%	+2%/-1%	+30%/-30%	+9%/-8%	+10%/-4%	+27%/-18%
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 010000785-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3322 ± 207	$3.36^{+1.51}_{-1.35}$	256^{+10}_{-9}	5844^{+1848}_{-899}	$186104^{+331959}_{-98765}$
Alt.	-5921 ± 163	$5.54^{+1.41}_{-1.41}$	256^{+10}_{-10}	5307^{+770}_{-517}	121187^{+99437}_{-44684}

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 $A_{obs} \gg 1.0$

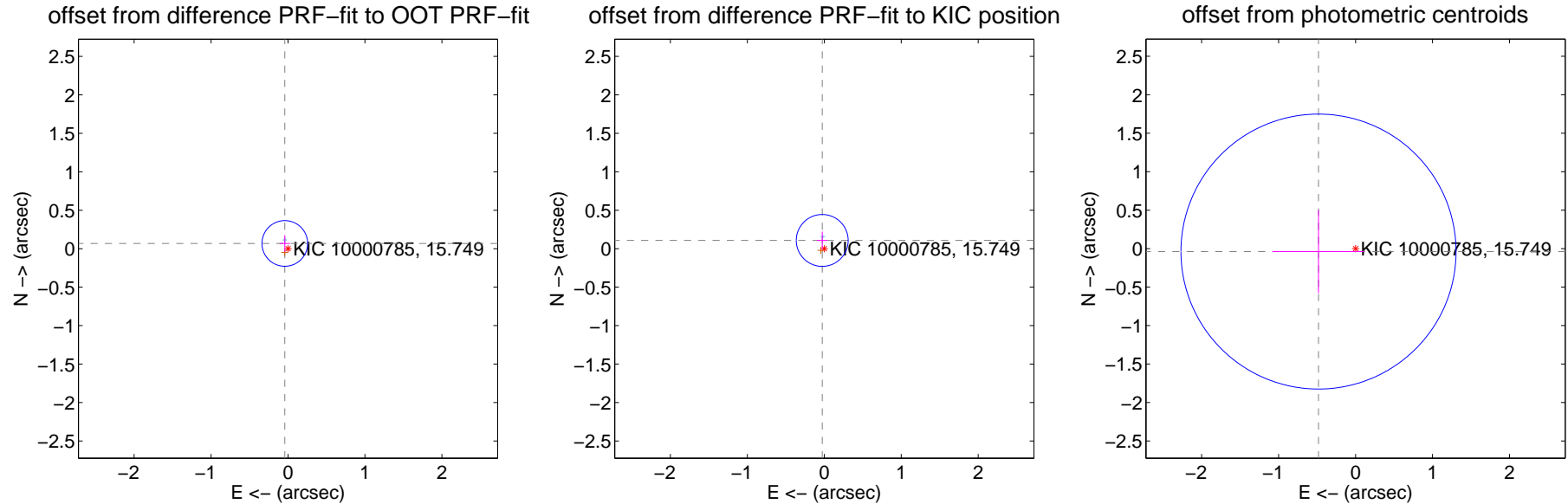
DV Centroid Data

Supplemental centroid analysis for 010000785-01. Kepler magnitude: 15.75. Transit SNR 7.56

There are 1 quarters with good PRF difference image offsets

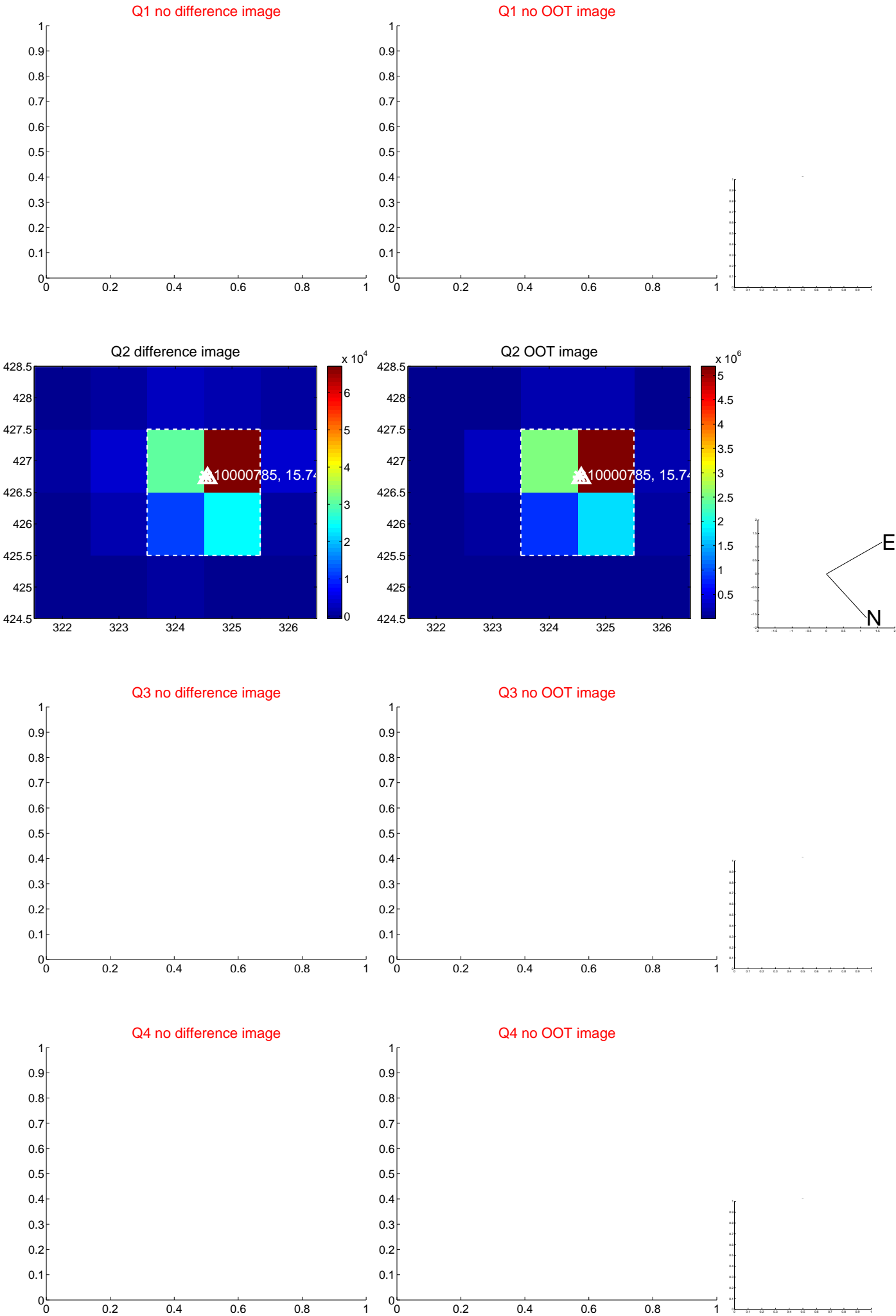
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.080 ± 0.099	0.81	0.042 ± 0.067	0.068 ± 0.109
PRF-fit source offset from KIC position	0.111 ± 0.112	0.99	0.027 ± 0.068	0.107 ± 0.115
photometric centroid source offset	0.48 ± 0.60	0.81	0.48 ± 0.60	-0.04 ± 0.54

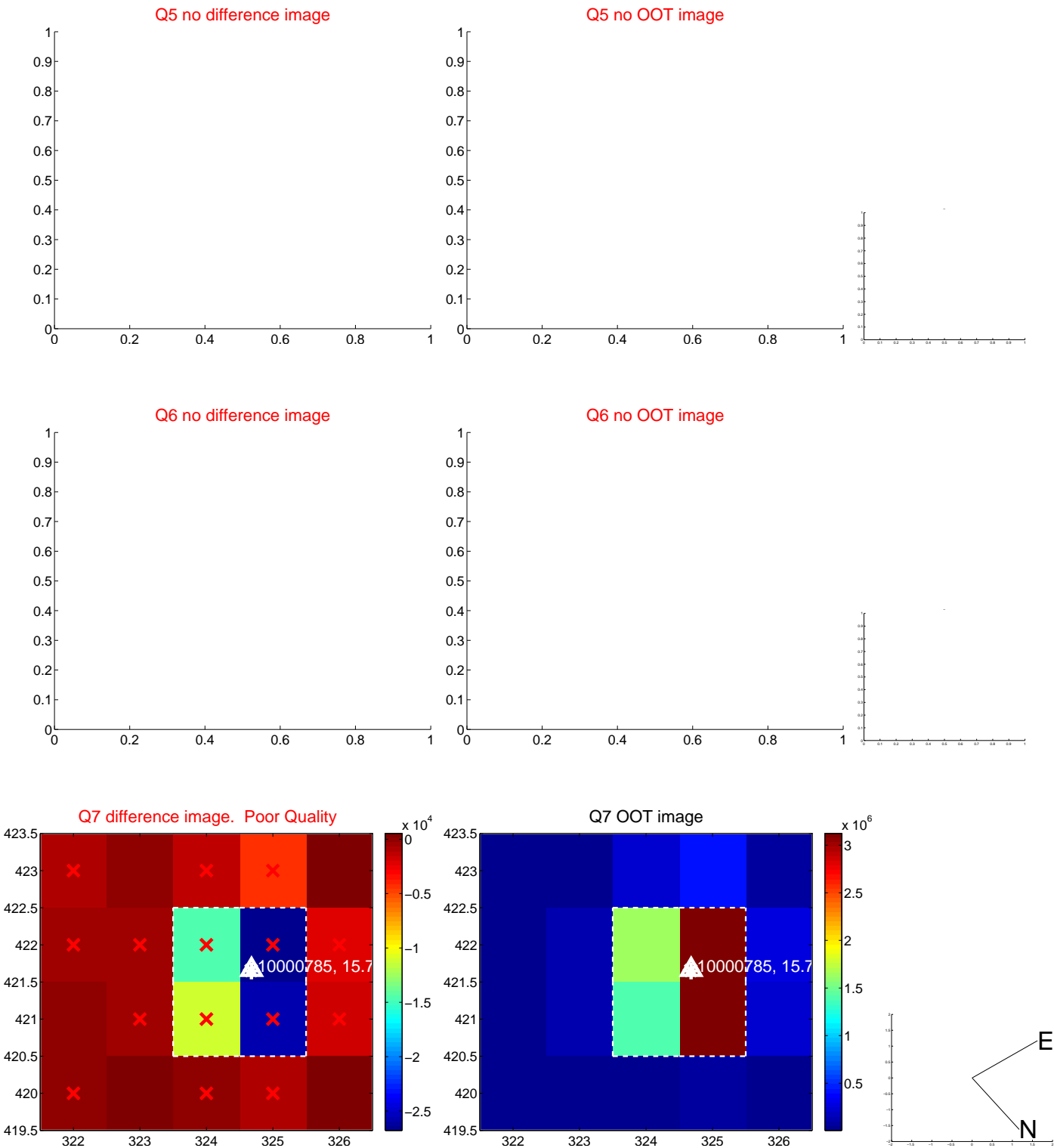


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



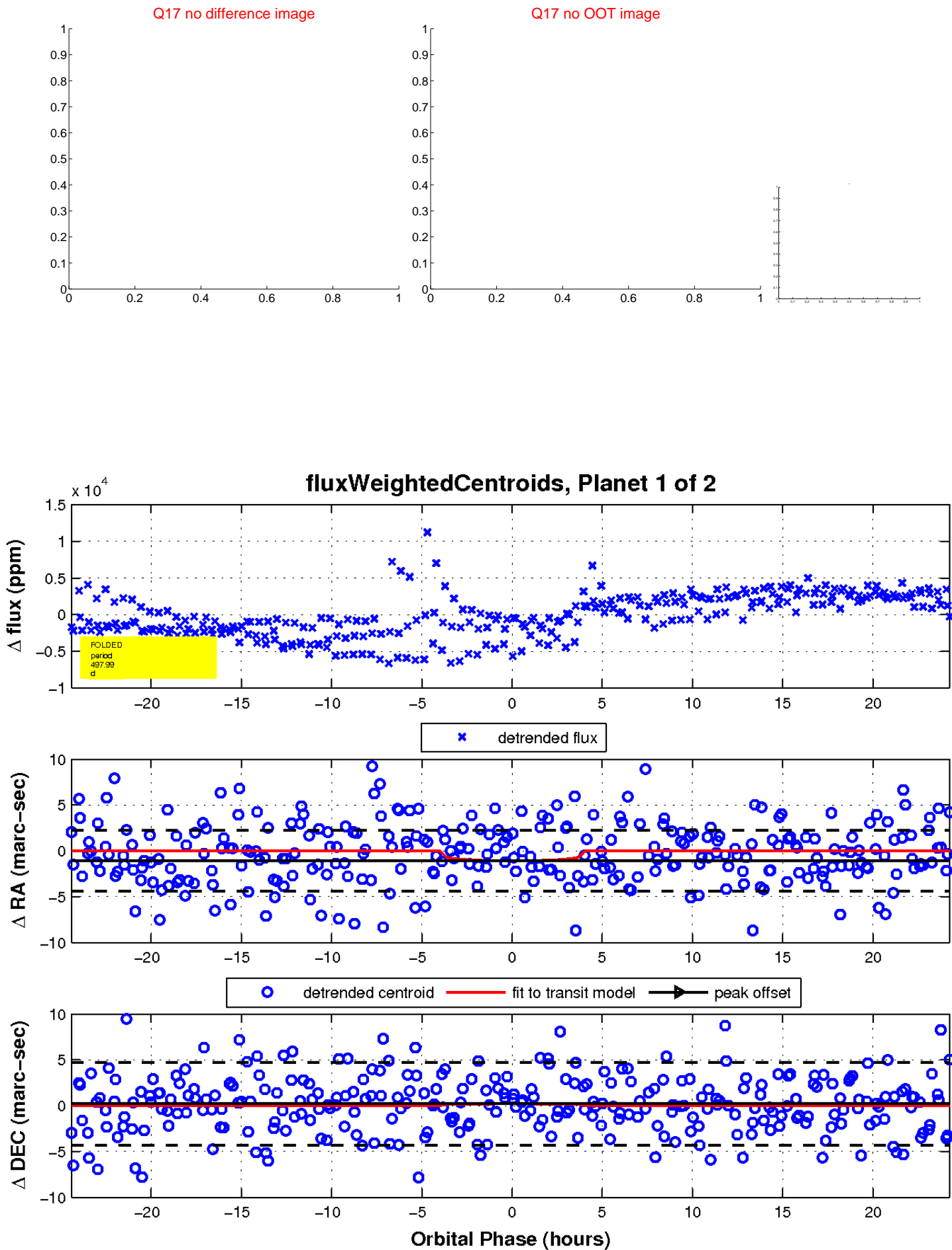
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

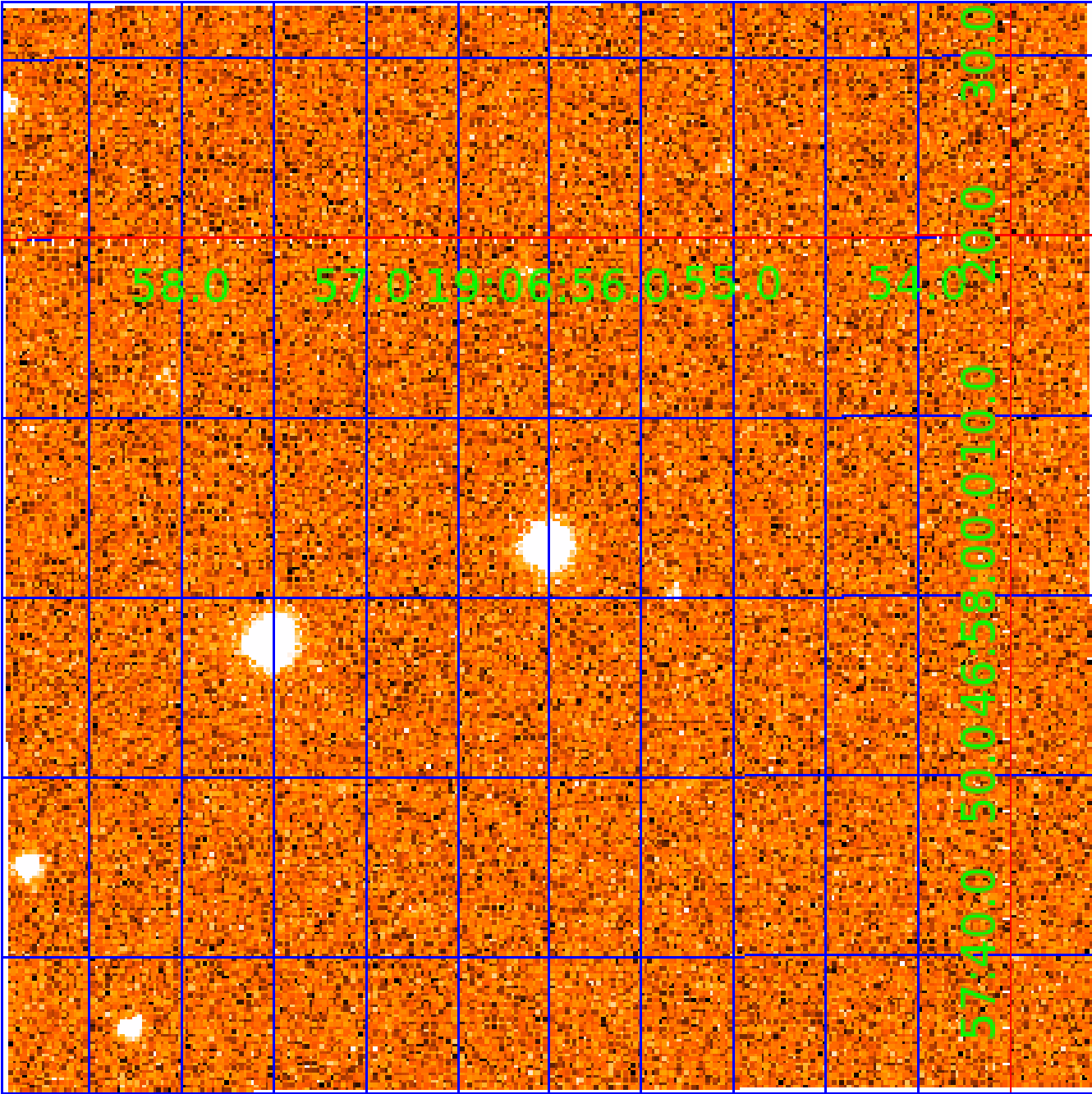


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010000785

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})
010000785-01	OBS	No	497.989002	188.781531	2757.2	8.156	16.5	7.6	0.65	5333	3.39	0.27
010000785-02	OBS	No	385.571050	303.597325	2406.6	3.931	13.6	8.8	0.65	5333	3.17	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010000785-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010000785-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—HALO_GHOST

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

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

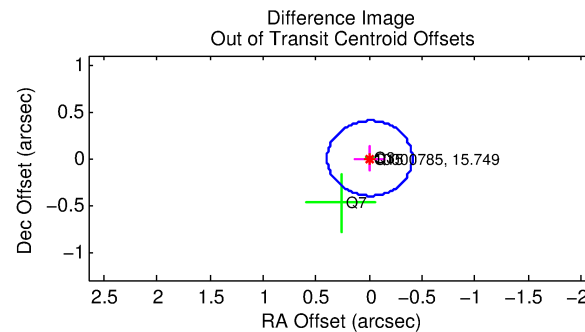
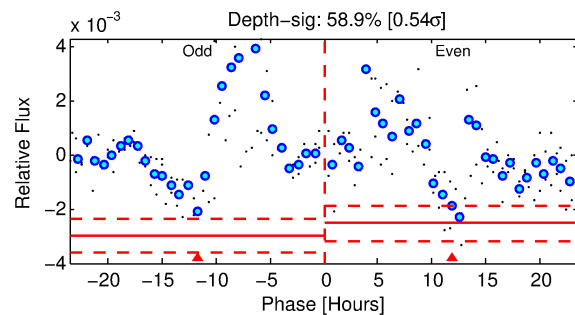
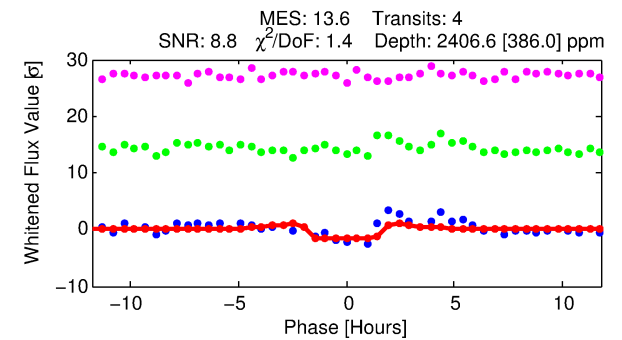
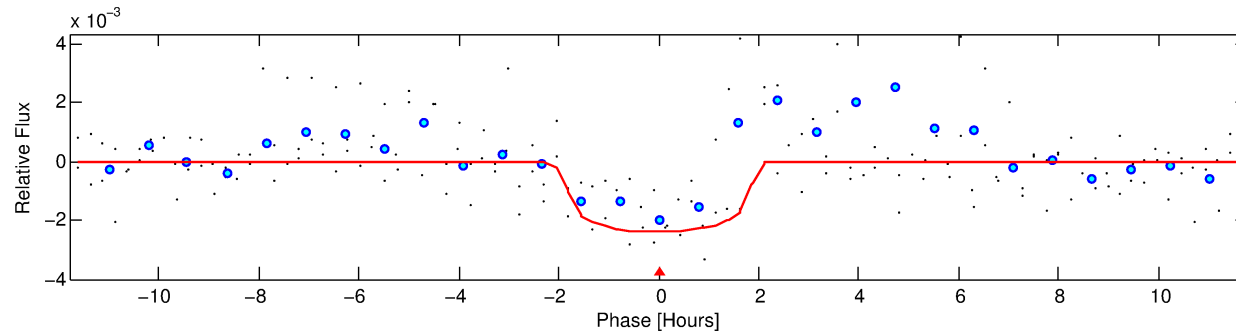
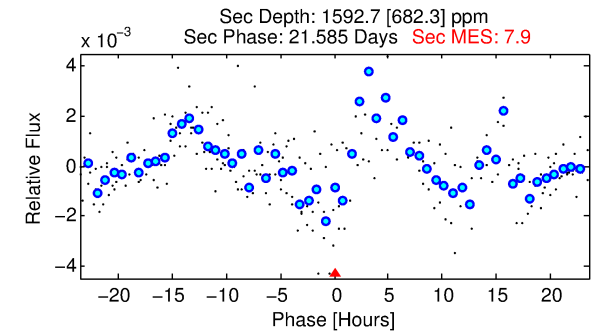
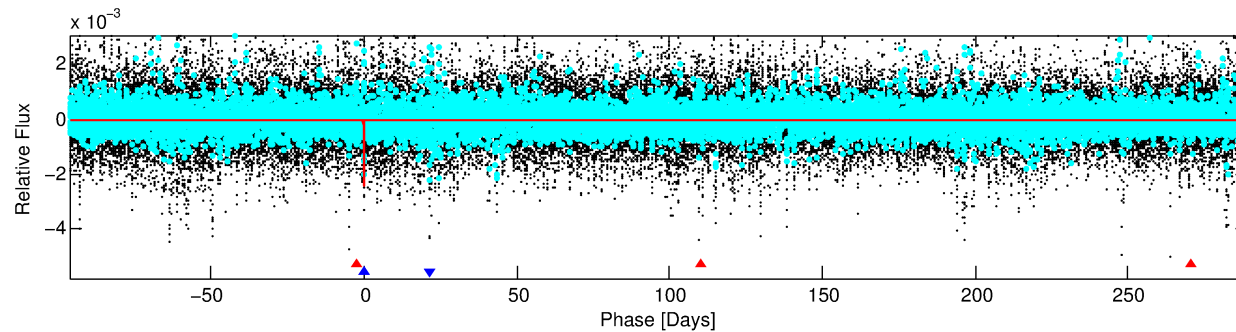
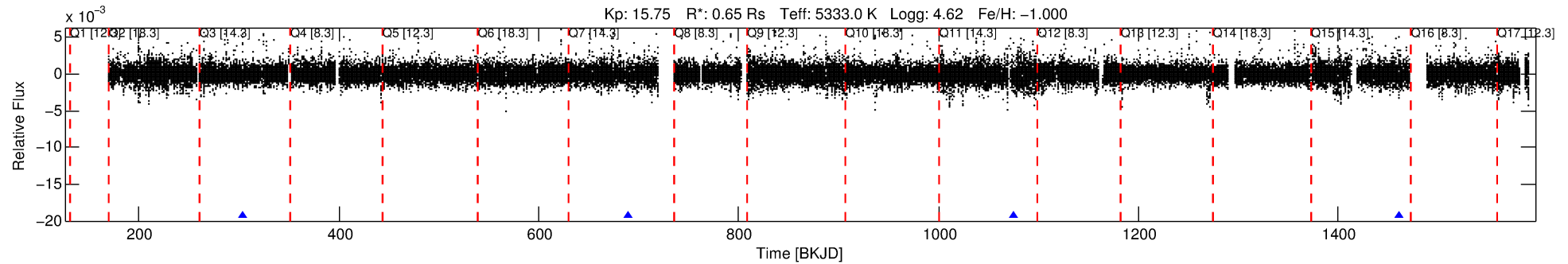
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010000785-02

No Significant Match Found

DV One-Page Summary

KIC: 10000785 Candidate: 2 of 2 Period: 385.571 d



DV Fit Results:

Period = 385.57105 [0.00342] d
Epoch = 303.5973 [0.0064] BKJD
Rp/R* = 0.0447 [0.0412]
a/R* = 779.01 [3205.48]
b = 0.10 [39.89]
Seff = 0.38 [0.07]
Teq = 201 [9] K
Rp = 3.17 [2.93] Re
a = 0.8920 [0.0711] AU
Ag = 69391.68 [131495.08] [0.53 σ]
Teffp = 5040 [2388] K [2.03 σ]

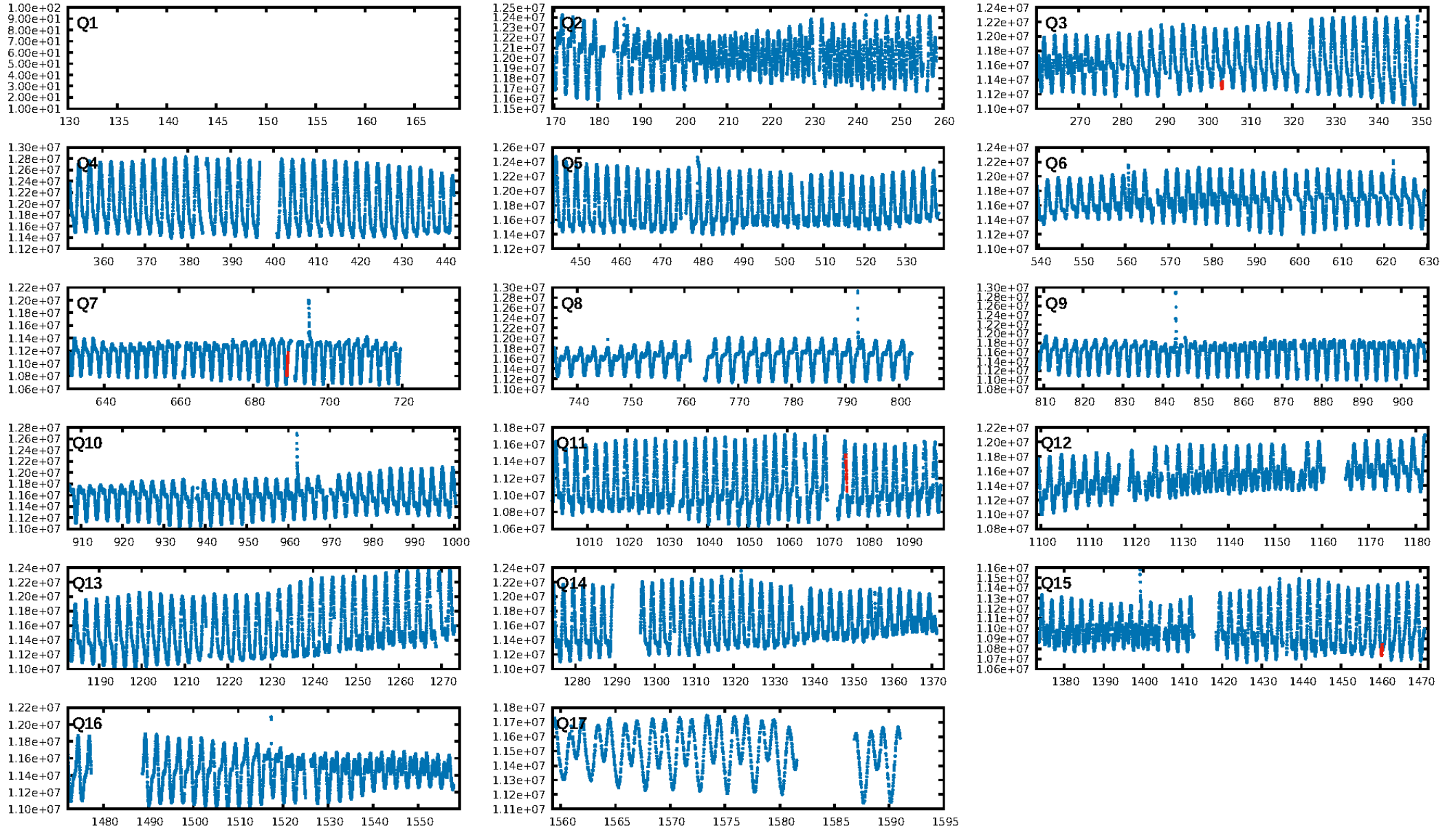
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [297.99 σ]
ModelChiSquare2-sig: 1.9%
ModelChiSquareGof-sig: 63.4%
Bootstrap-pfa: 1.13e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2019
Centroid-sig: 2.4%
Centroid-so: 1.190 arcsec [1.51 σ]
OotOffset-rm: 0.006 arcsec [0.04 σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-rm: 0.015 arcsec [0.11 σ]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

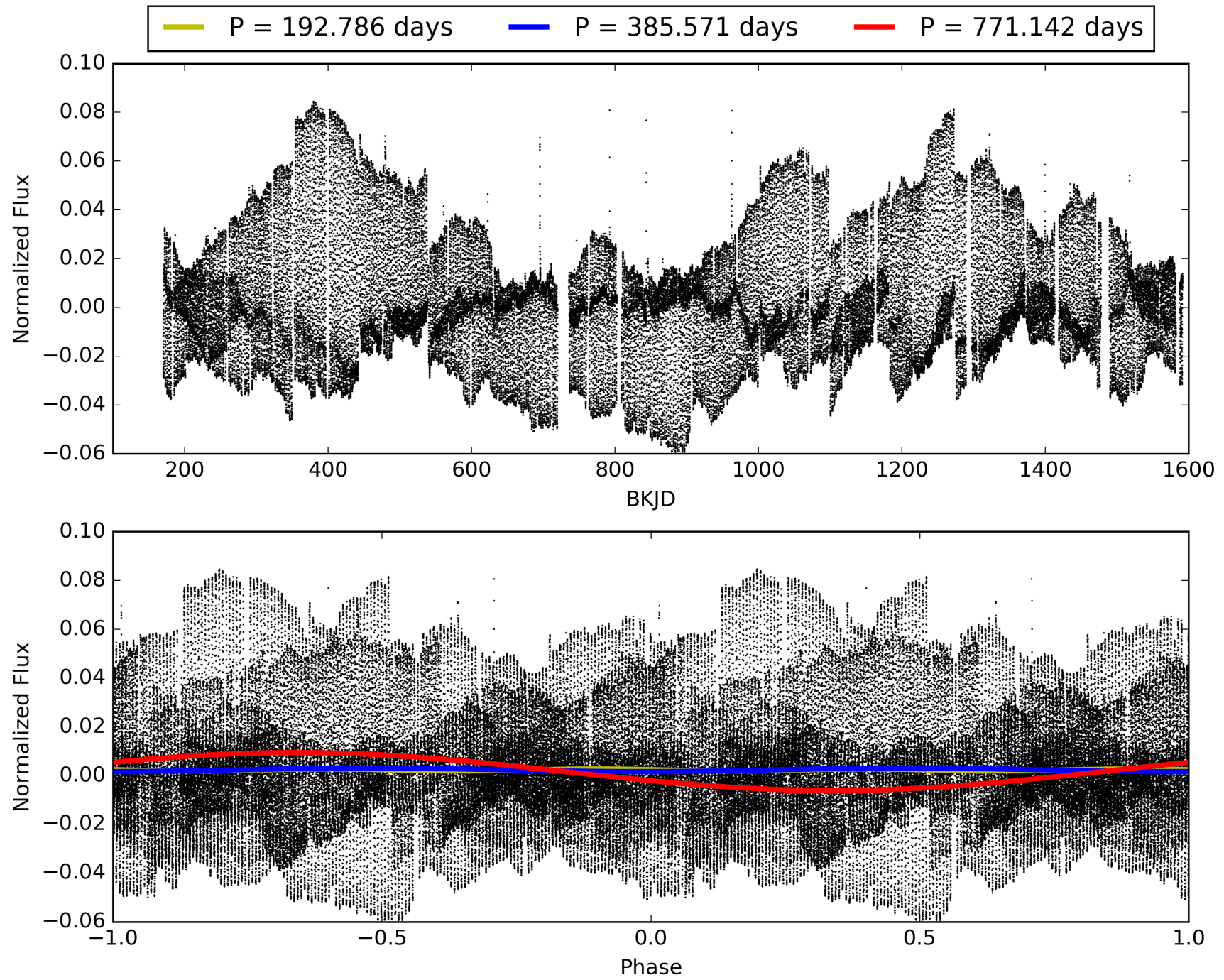
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:03:17 Z

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

TCE 010000785-02, PDC Light Curves

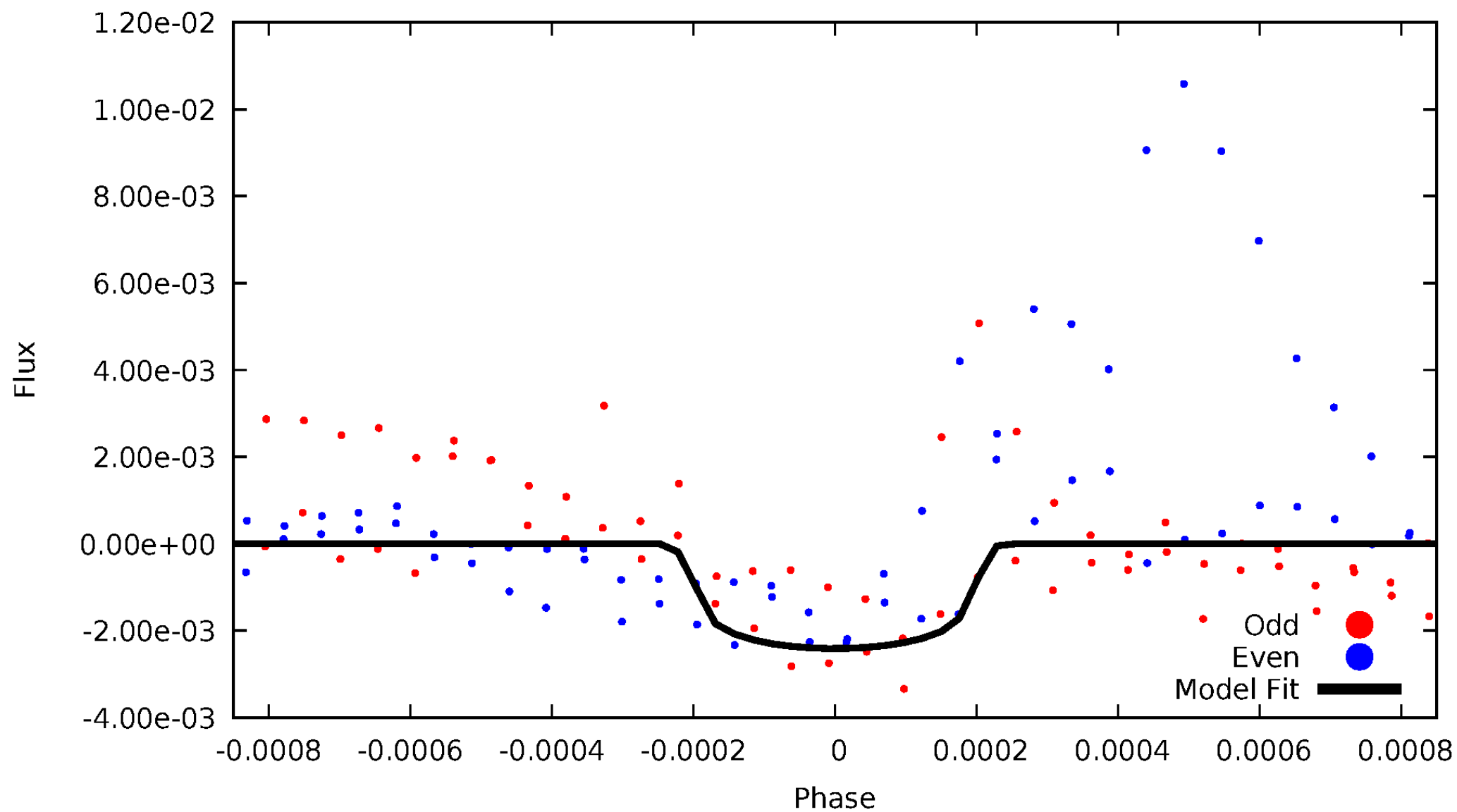


TCE 010000785-02



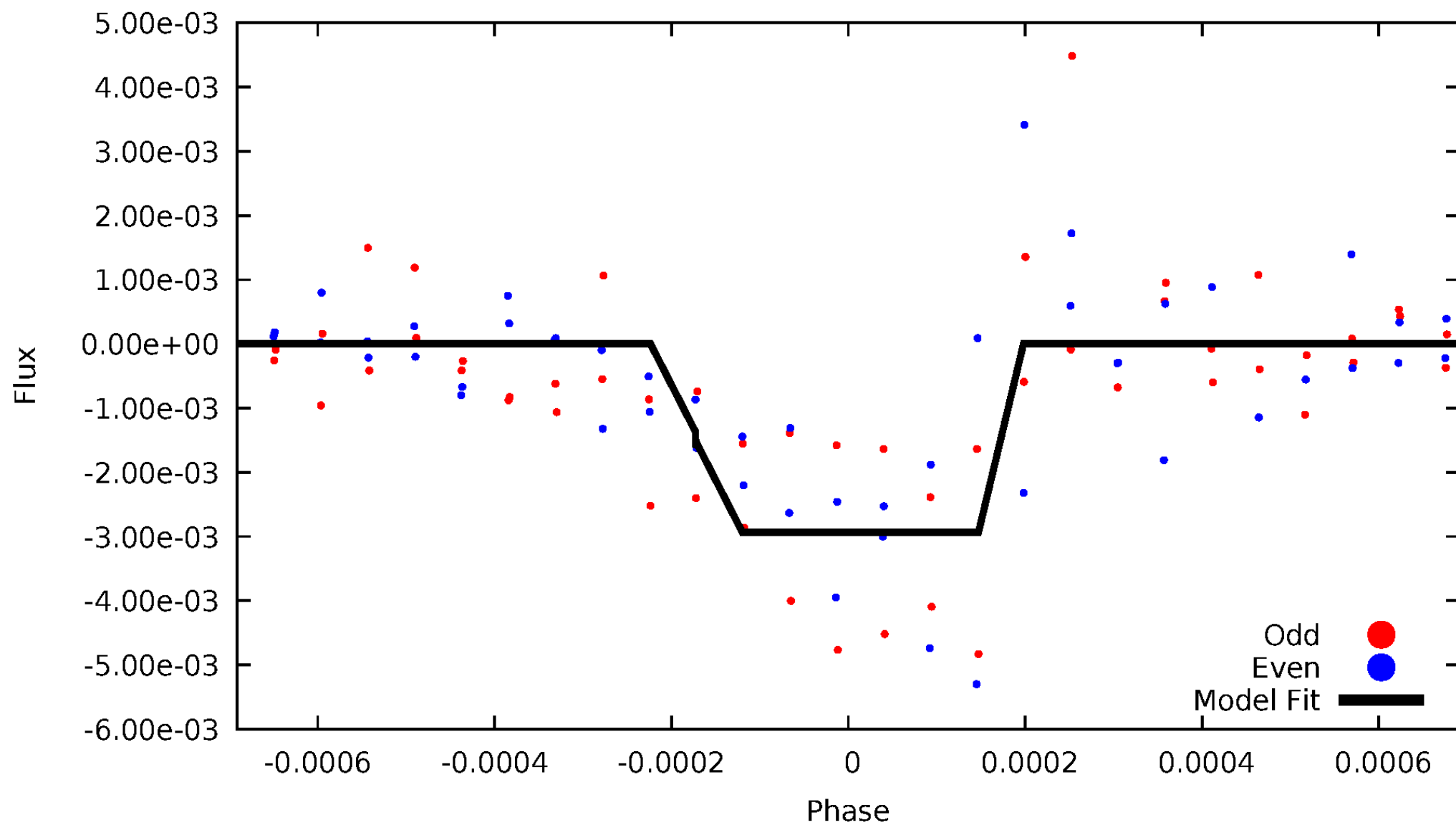
DV Odd/Even

TCE 010000785-02



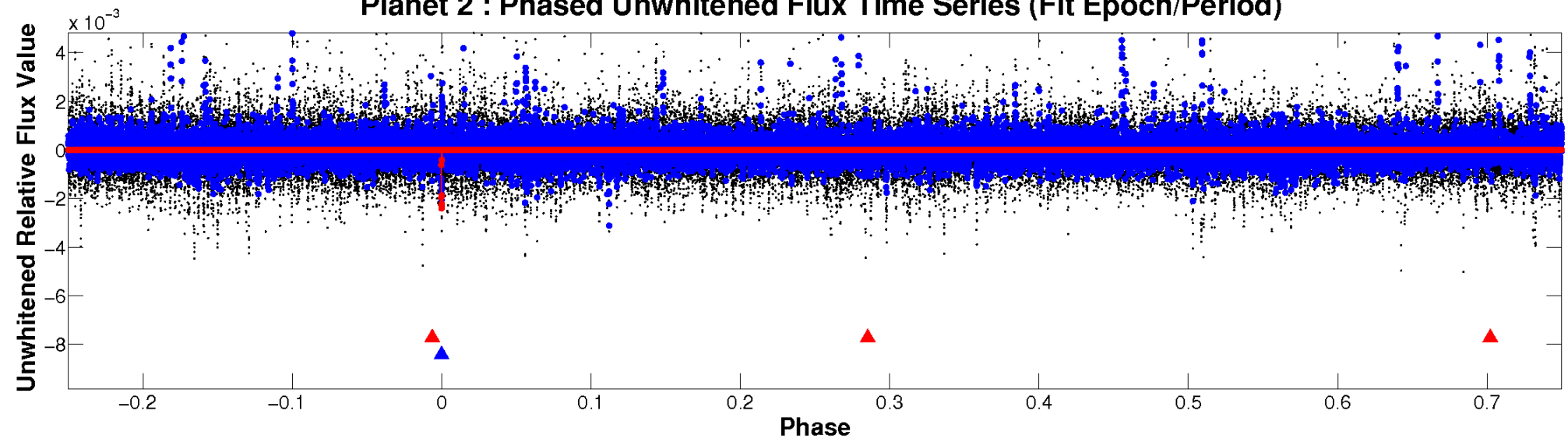
ALT Odd/Even

TCE 010000785-02

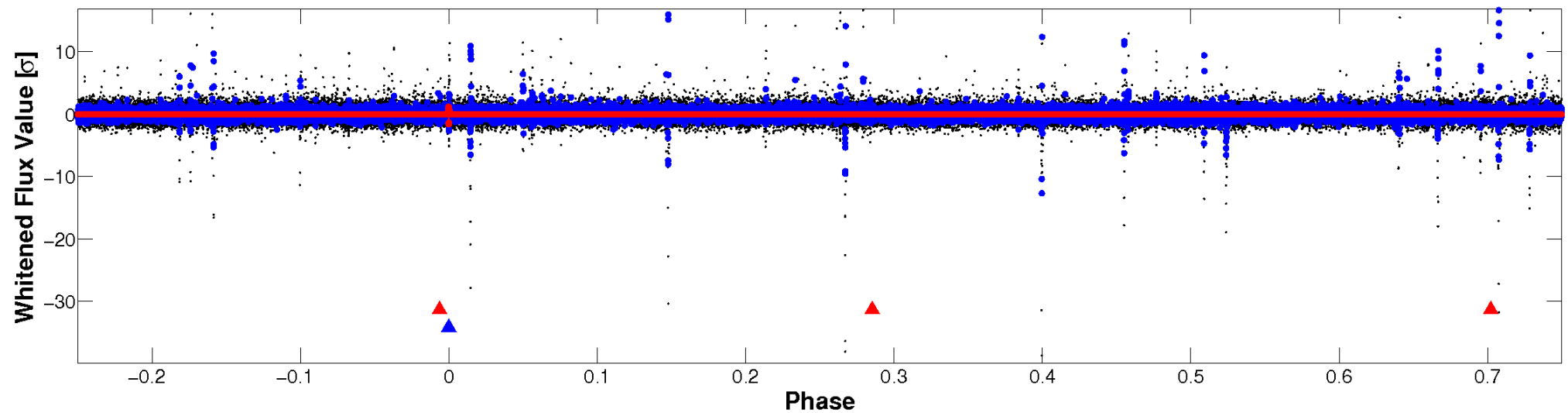


Non-Whitened Vs. Whitened Light Curve

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

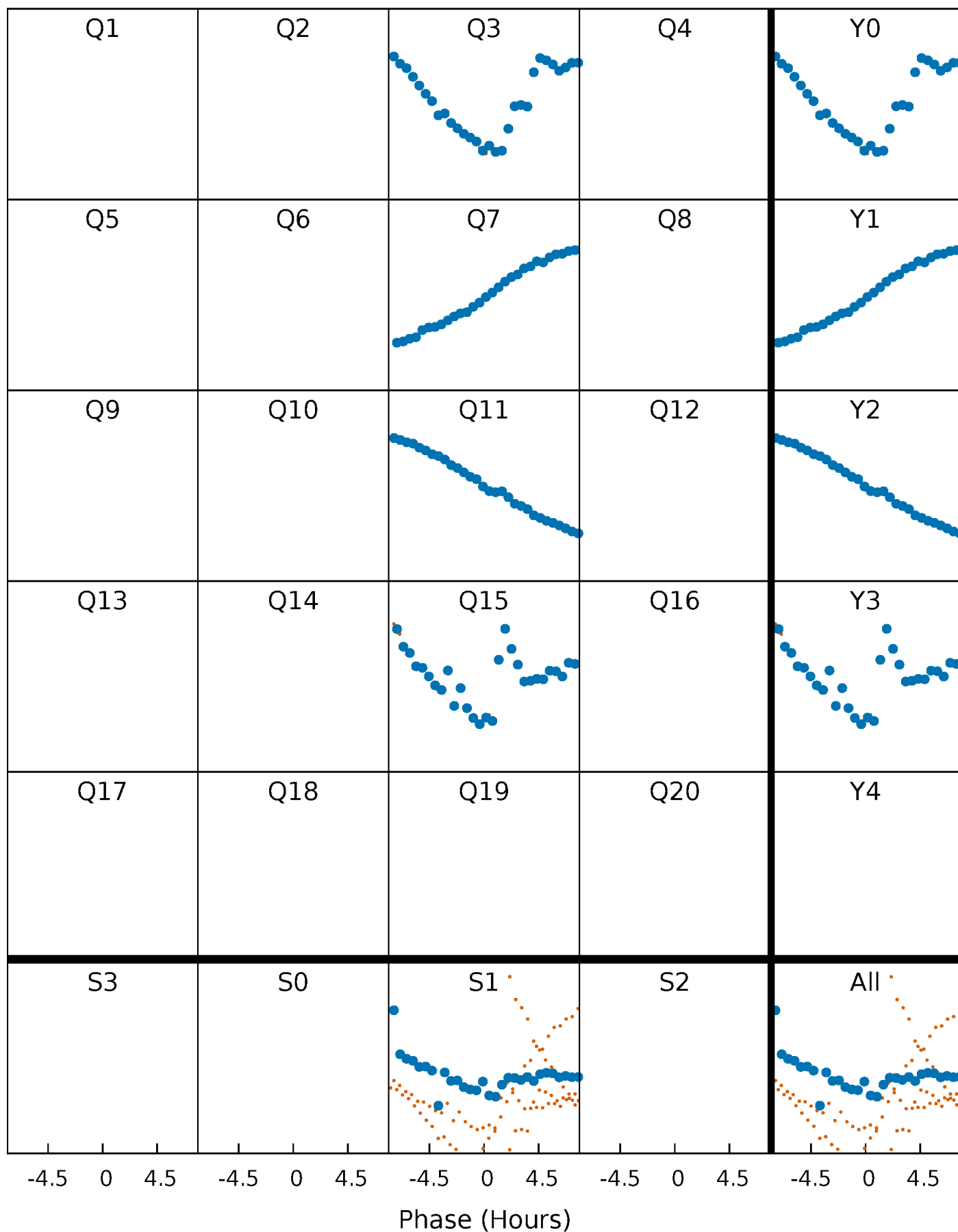


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



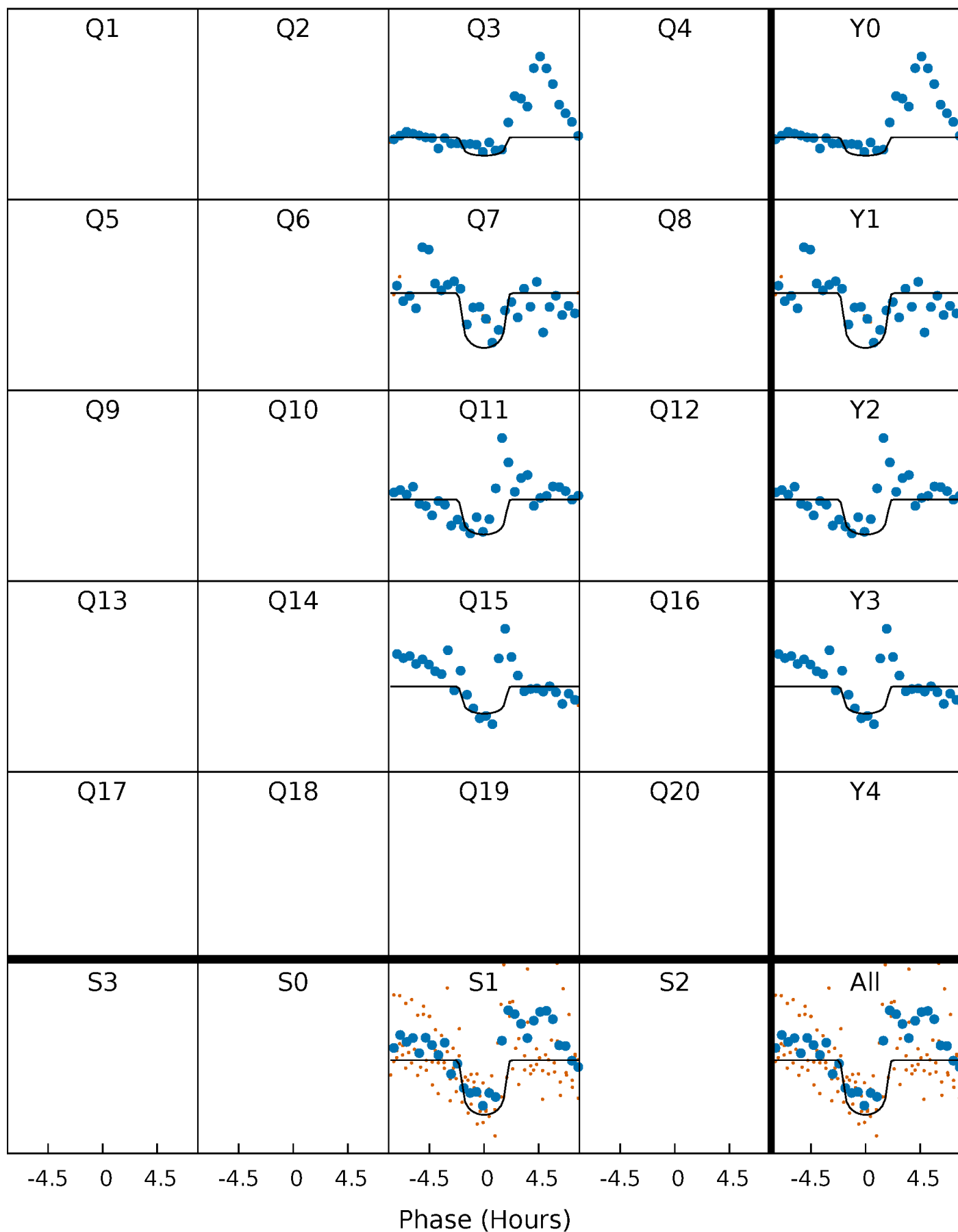
PDC Quarter-Phased Transit Curves

TCE 010000785-02 $P=385.571050$ Days $T_0=303.597325$ (BKJD)



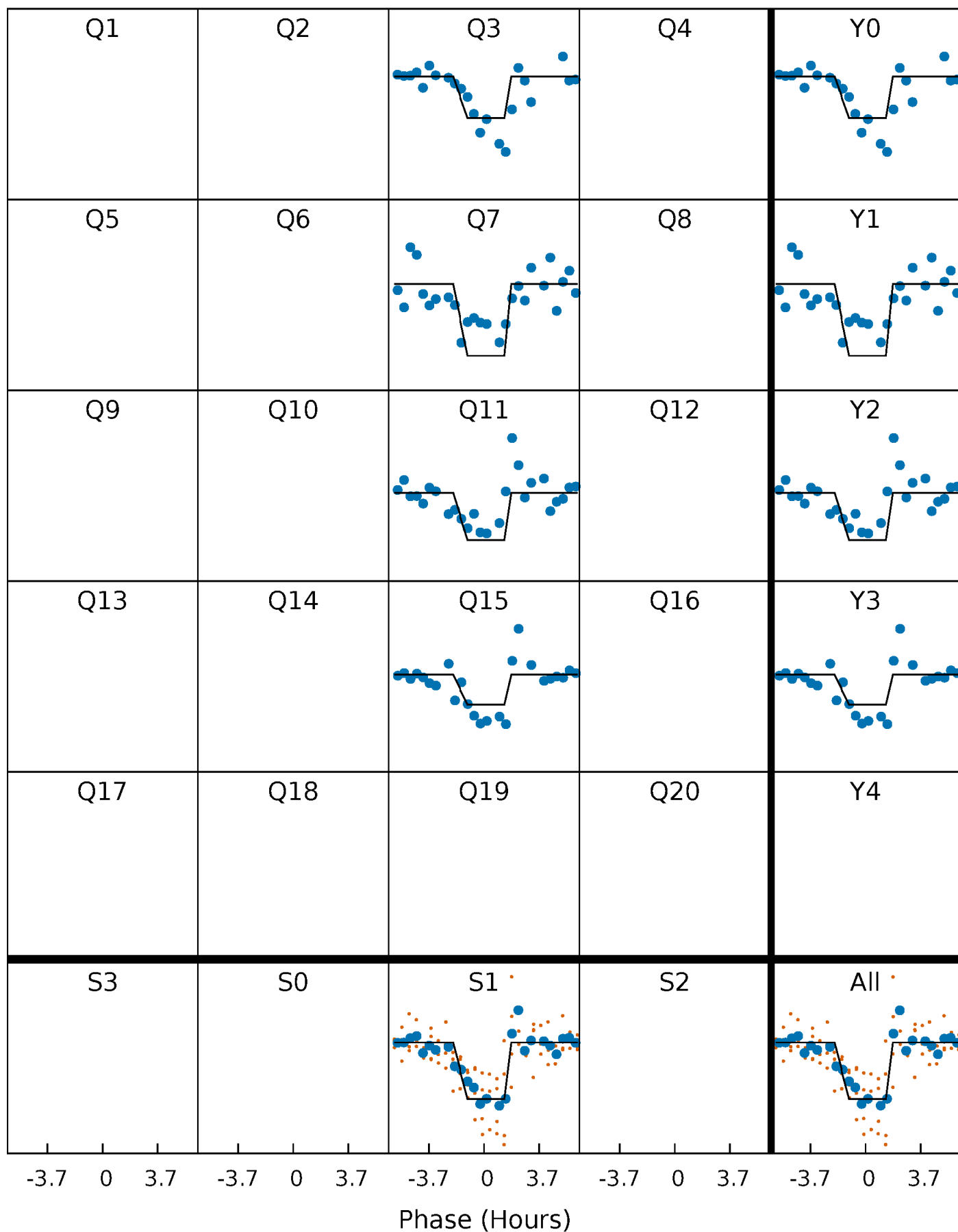
DV Quarter-Phased Transit Curves

TCE 010000785-02 $P=385.571050$ Days $T_0=303.597325$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

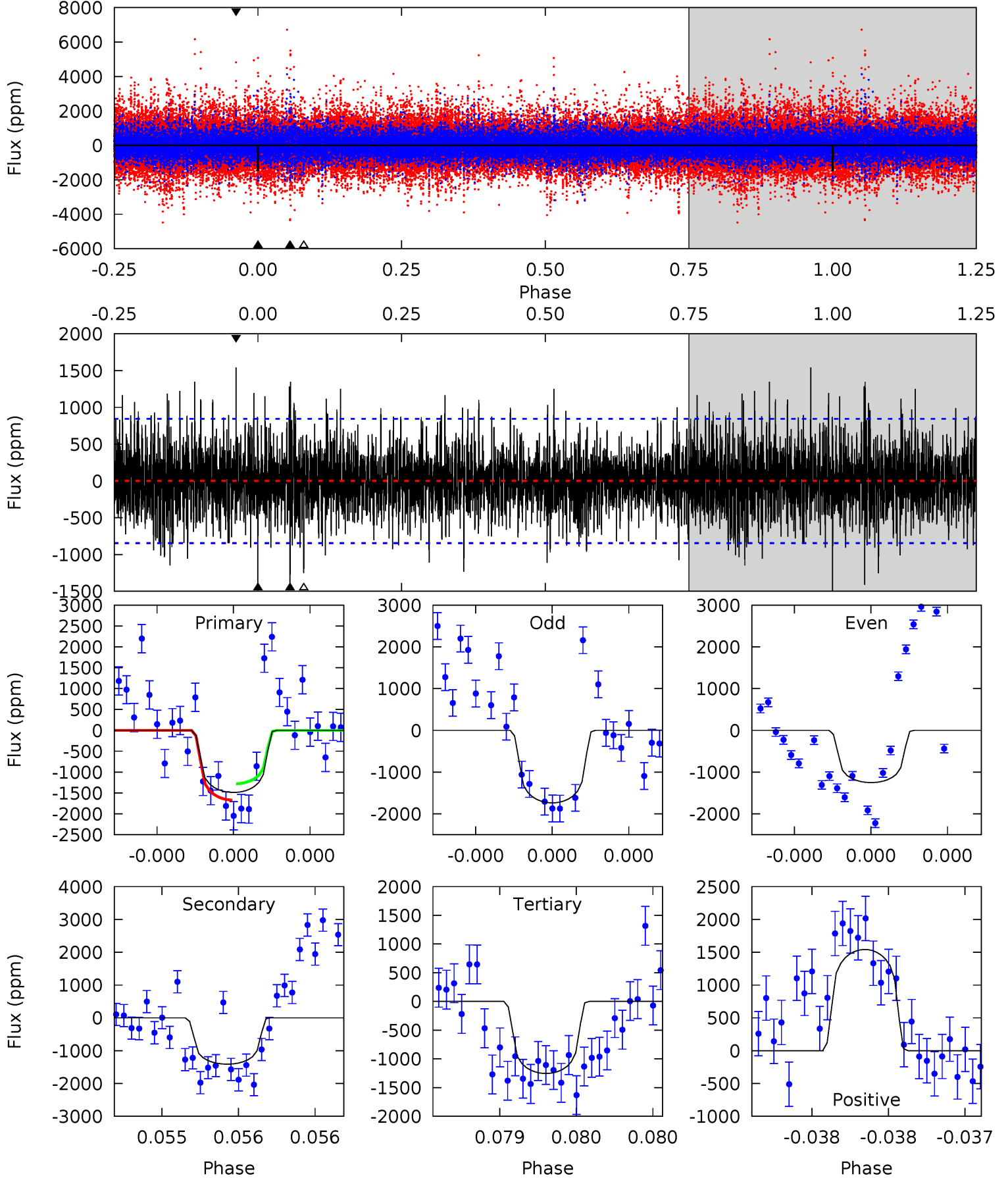
TCE 010000785-02 $P=385.560844$ Days $T_0=303.608838$ (BKJD)



DV Model-Shift Uniqueness Test

010000785-02, P = 385.571050 Days, E = 303.597325 Days

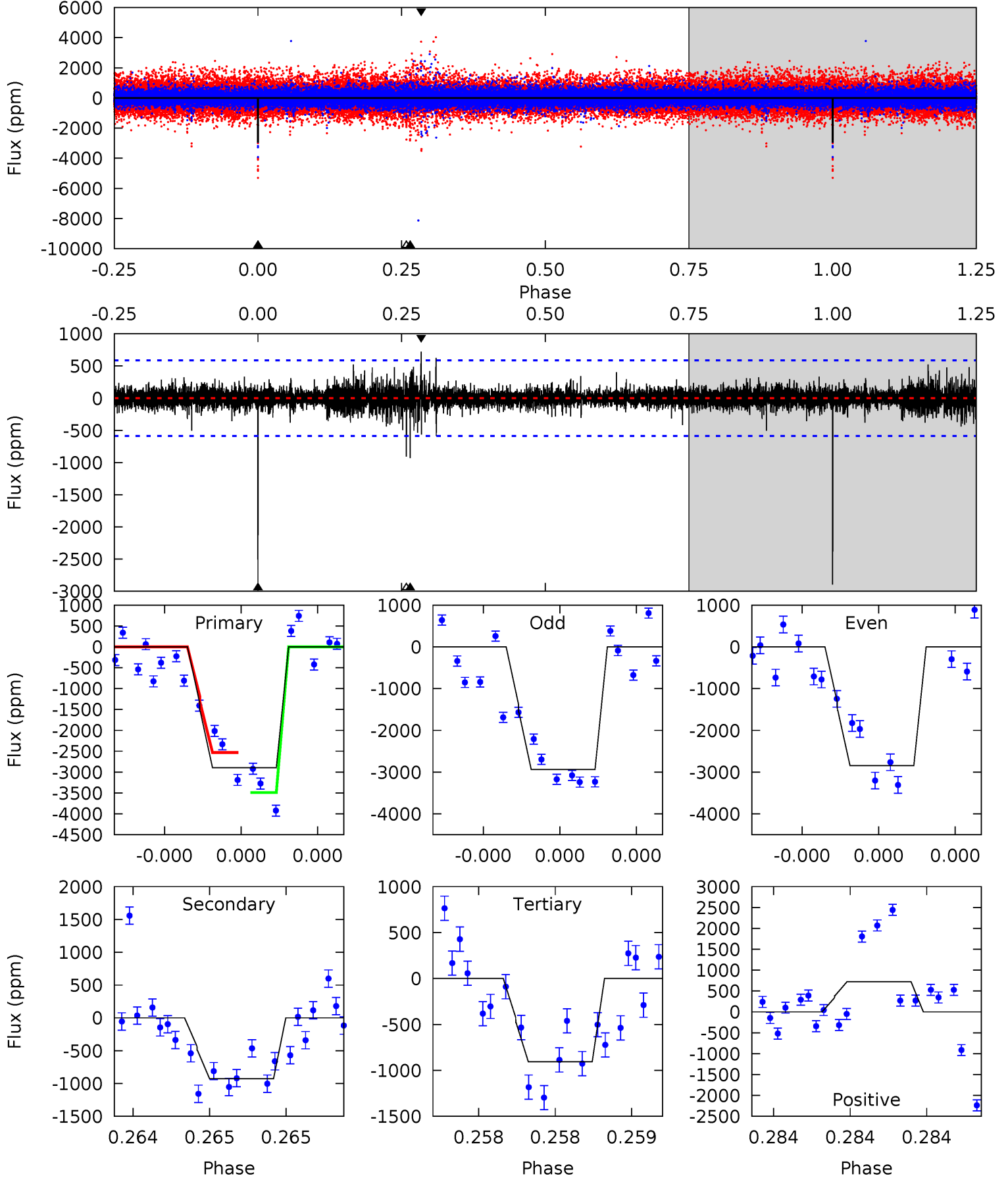
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.85	9.34	8.30	10.2	5.59	3.51	2.22	1.55	-0.36	1.03	-0.87	1.11	0.95	0.51	1.29



Alt Model-Shift Uniqueness Test

010000785-02, P = 385.560844 Days, E = 303.608838 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.8	8.91	8.71	6.96	5.65	3.60	0.91	19.1	20.8	0.21	1.95	0.21	1.05	0.20	4.34



Stellar Parameters For KIC 010000785

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5333^{+177}_{-161}	$4.616^{+0.072}_{-0.048}$	$-1.000^{+0.300}_{-0.300}$	$0.650^{+0.056}_{-0.051}$	$0.635^{+0.061}_{-0.024}$	$3.262^{+0.888}_{-0.584}$
	+3%/-3%	+2%/-1%	+30%/-30%	+9%/-8%	+10%/-4%	+27%/-18%
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 010000785-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1410 ± 151	$3.69^{+2.58}_{-2.25}$	281^{+10}_{-11}	4649^{+2583}_{-845}	$44428^{+254505}_{-28850}$
Alt.	-927 ± 104	$4.25^{+2.75}_{-2.31}$	279^{+10}_{-10}	4036^{+1609}_{-602}	22533^{+88285}_{-14464}

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

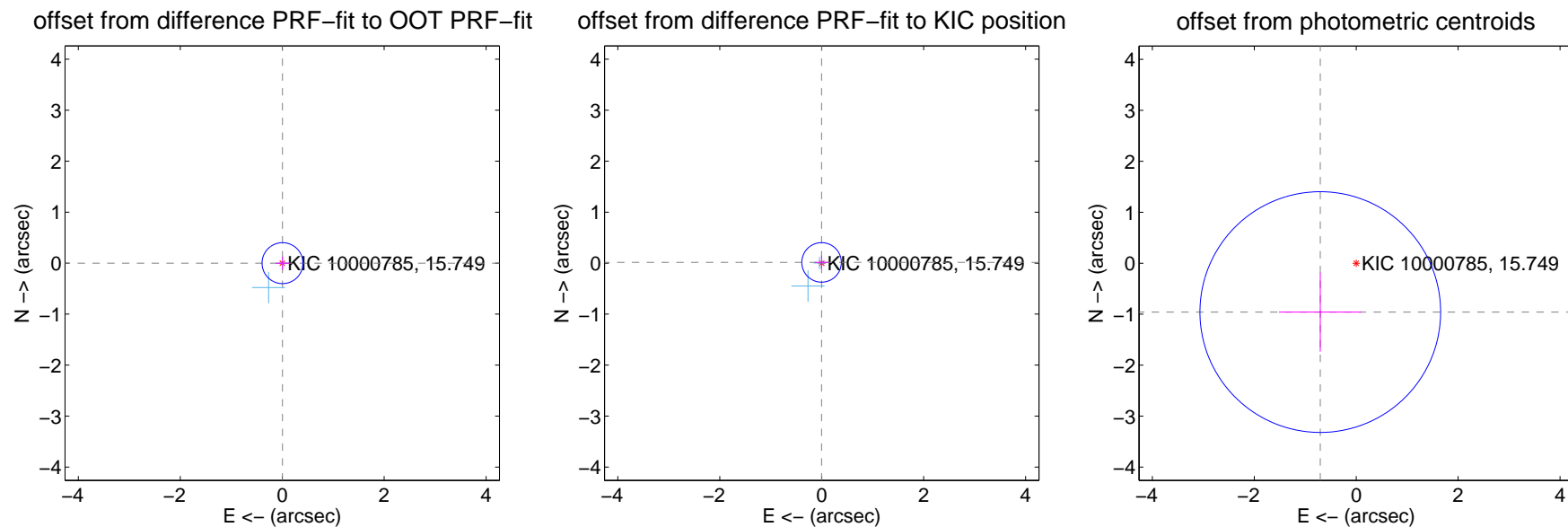
DV Centroid Data

Supplemental centroid analysis for 010000785-02. Kepler magnitude: 15.75. Transit SNR 8.79

There are 3 quarters with good PRF difference image offsets

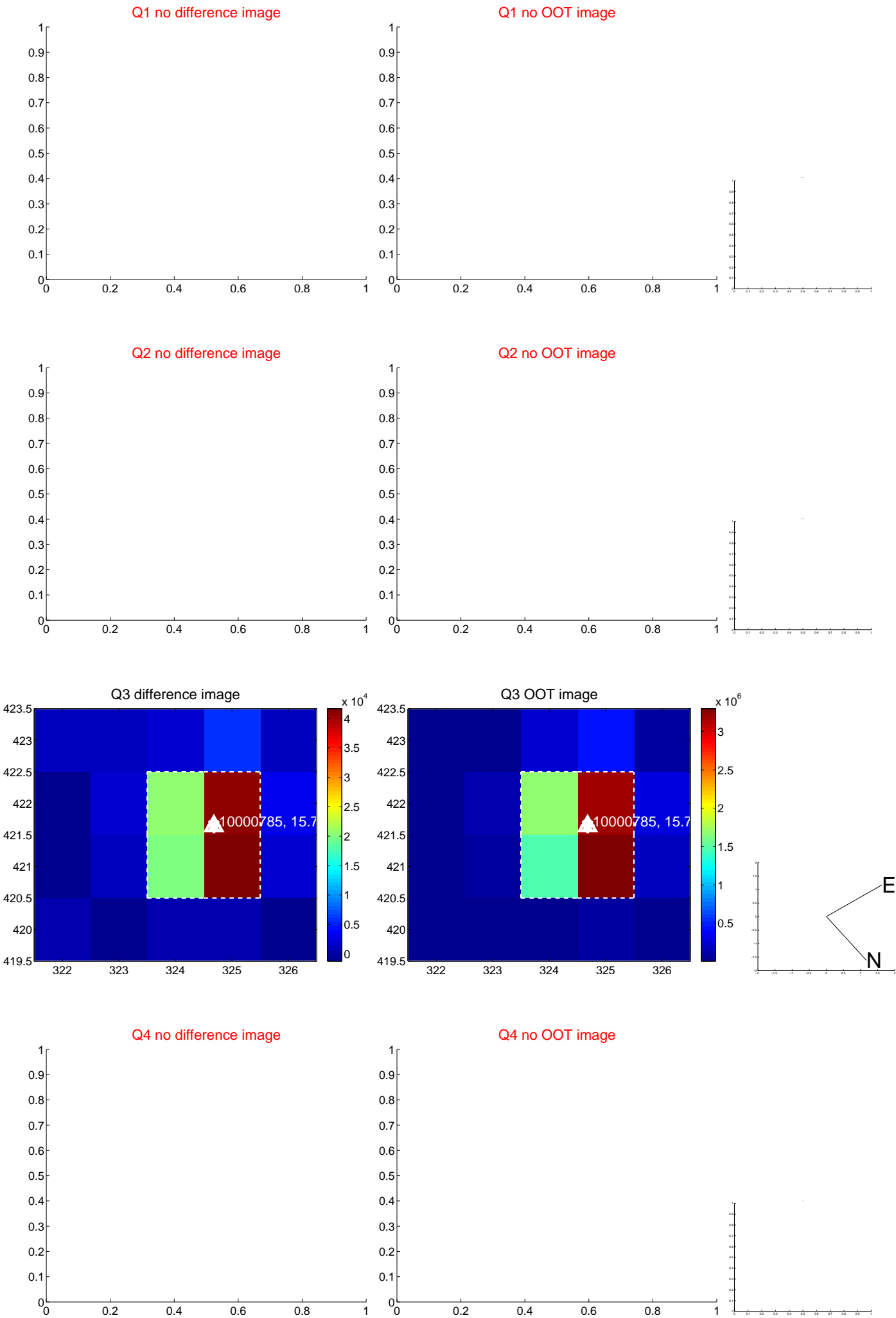
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.006 ± 0.134	0.04	-0.006 ± 0.134	-0.000 ± 0.129
PRF-fit source offset from KIC position	0.015 ± 0.129	0.11	0.003 ± 0.134	0.014 ± 0.129
photometric centroid source offset	1.19 ± 0.79	1.51	0.70 ± 0.81	-0.96 ± 0.77

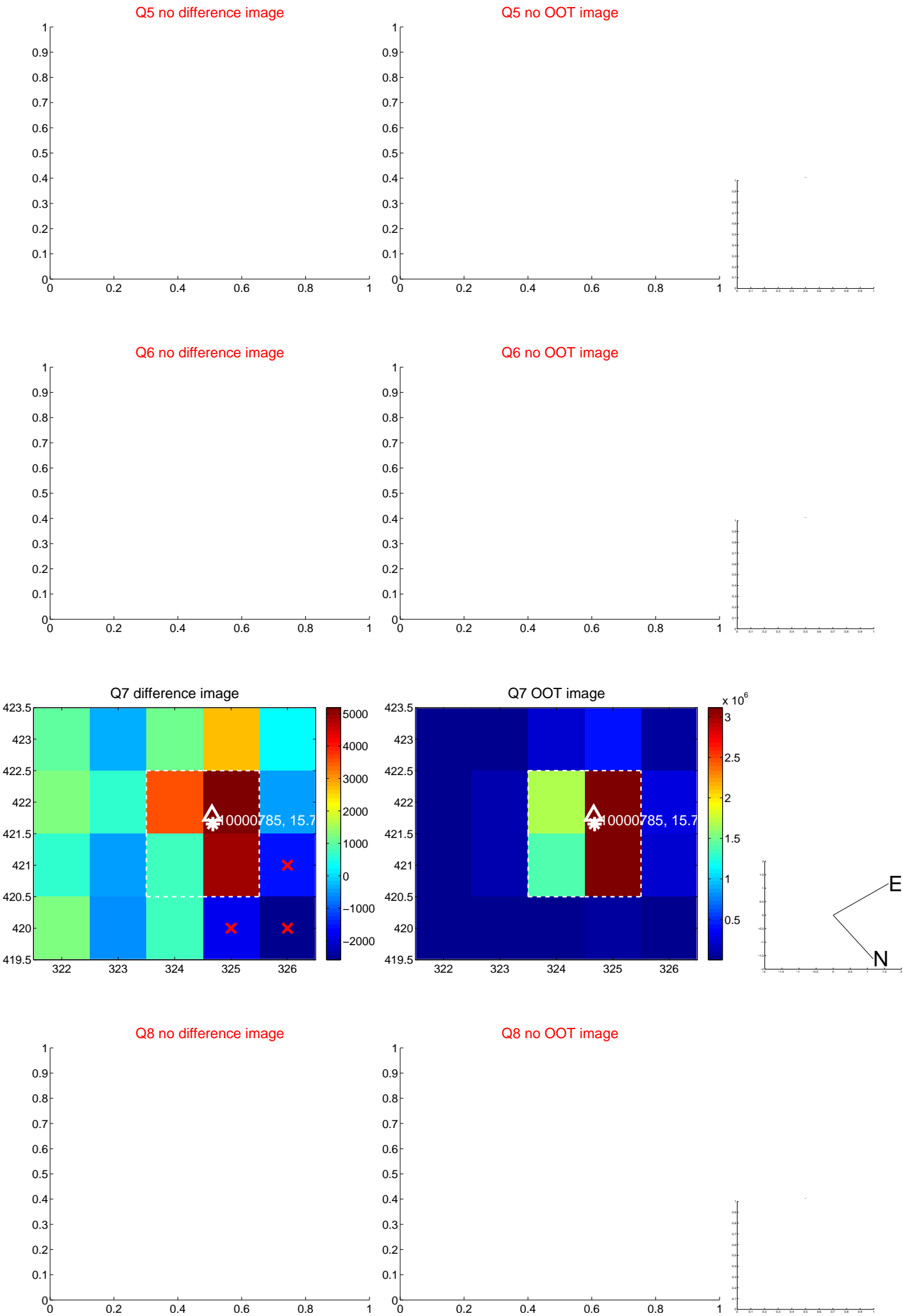


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

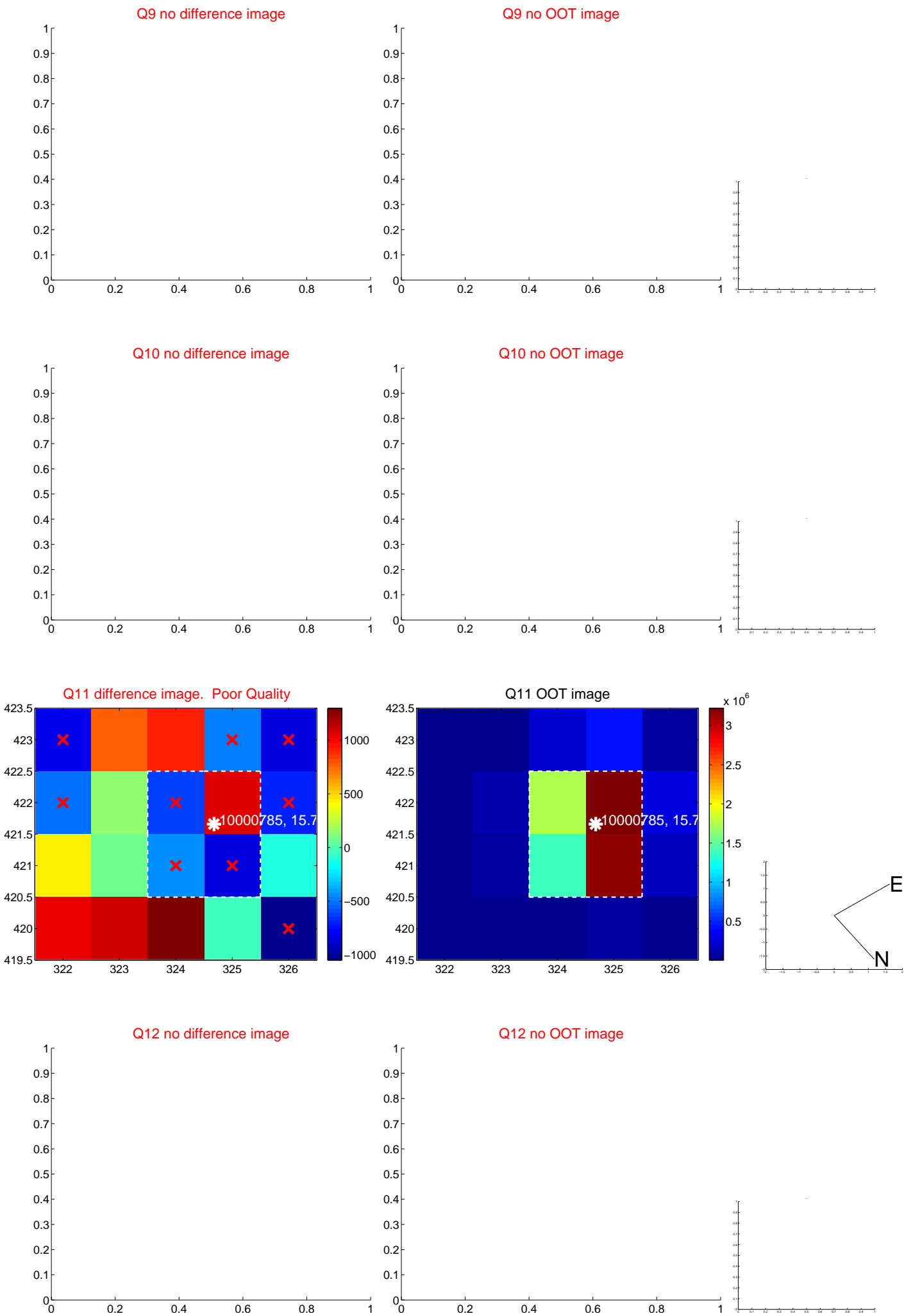
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



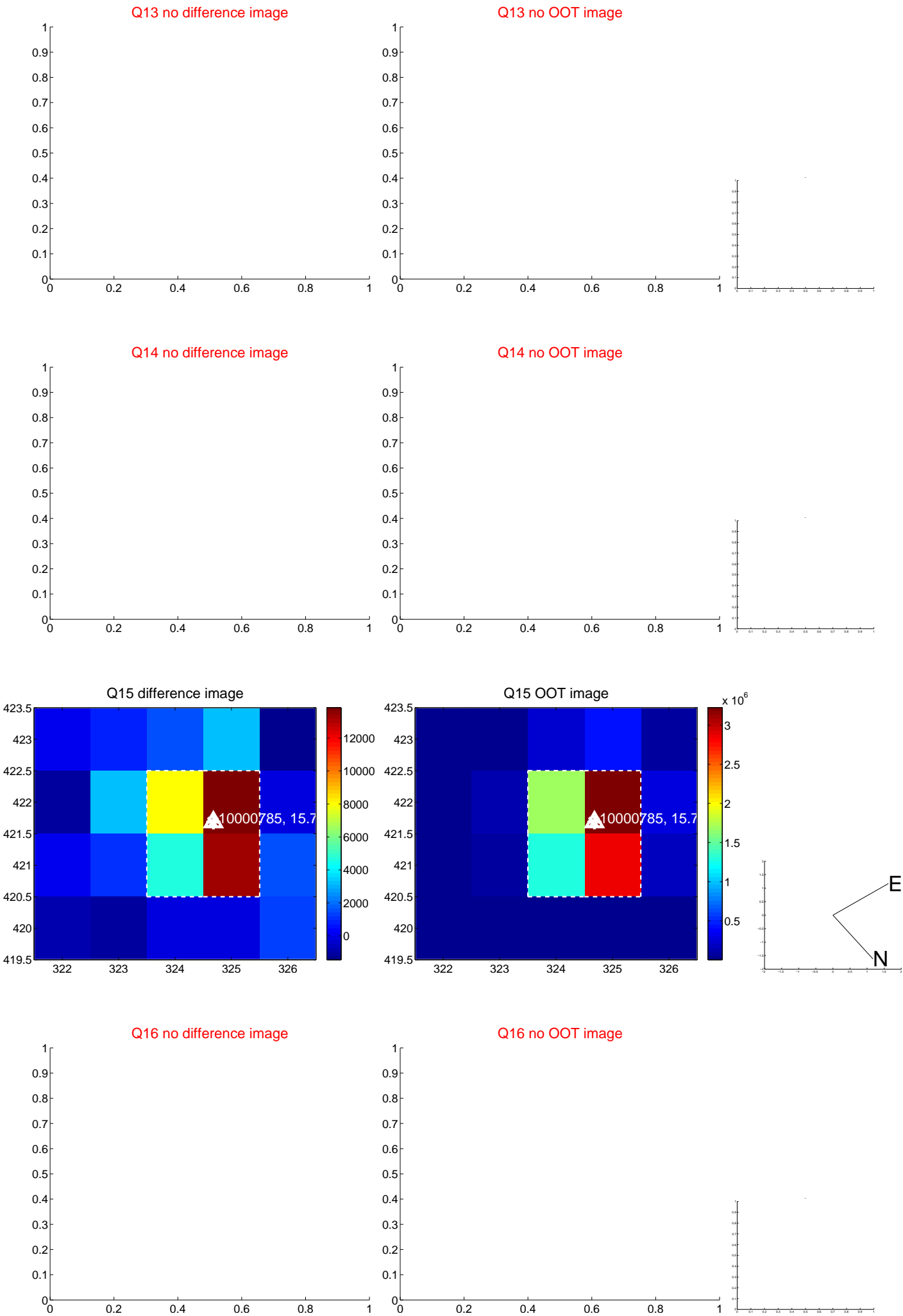
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



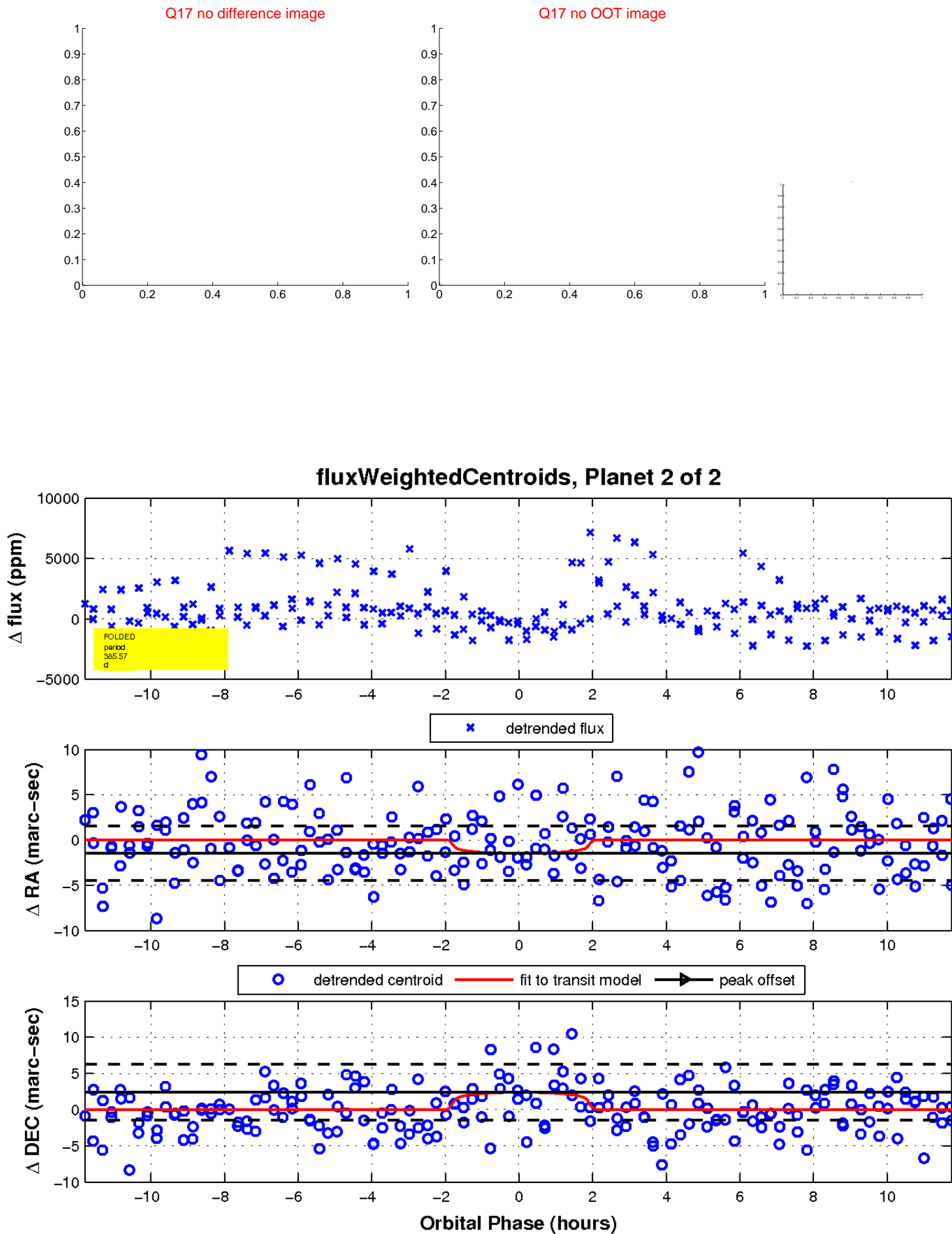
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

