

KIC 008677034

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})
008677034-01	OBS	No	1.254945	131.917306	33.6	5.531	9.8	8.0	2.37	7289	1.47	19512.87
008677034-02	OBS	No	602.424976	136.044638	1167.7	8.618	8.9	9.1	2.37	7289	15.08	5.19
008677034-03	OBS	No	518.354116	221.507583	916.6	11.376	8.2	8.7	2.37	7289	8.95	6.34
008677034-04	OBS	No	167.044955	212.517567	637.6	5.814	9.4	7.8	2.37	7289	7.63	28.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008677034-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
008677034-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_SATURATED
008677034-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_SATURATED
008677034-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—CENT_SATURATED

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

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

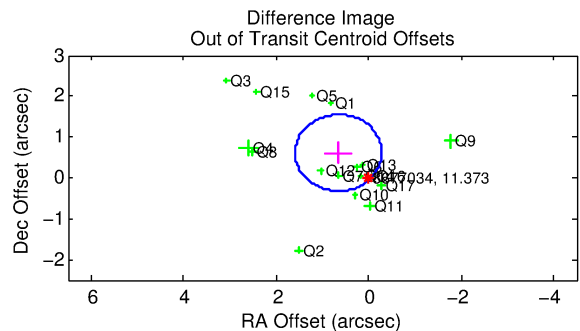
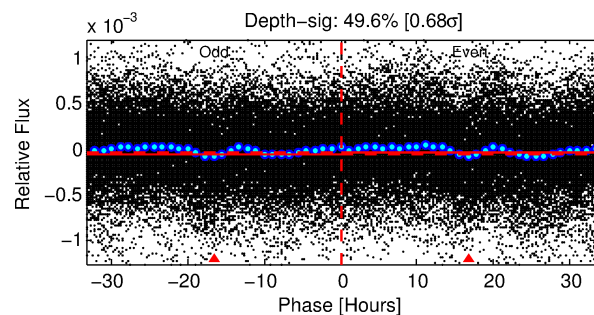
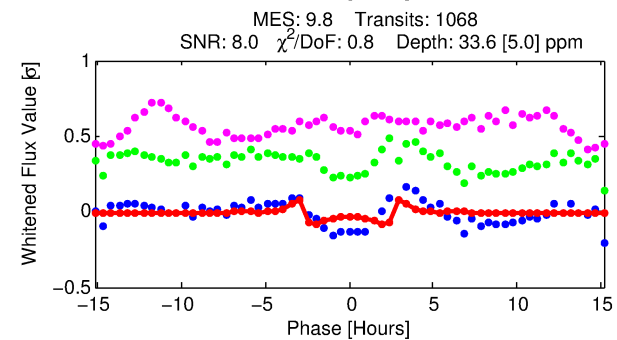
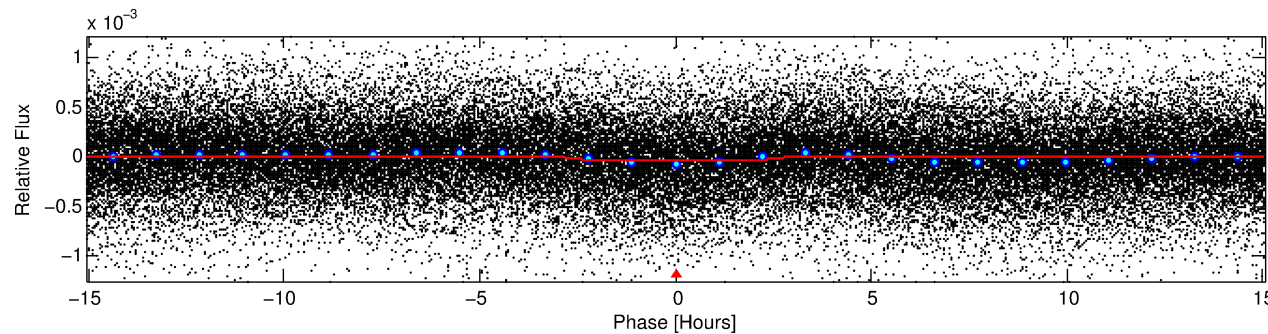
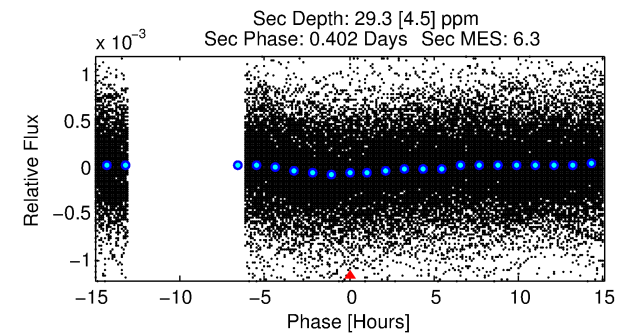
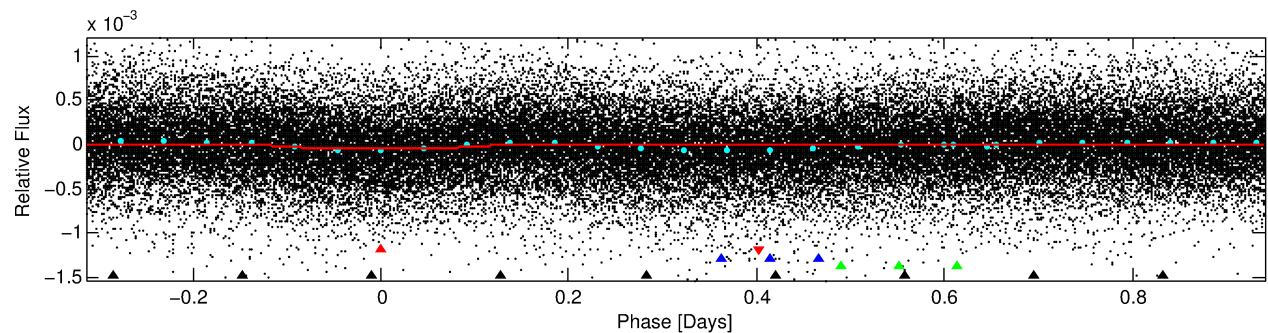
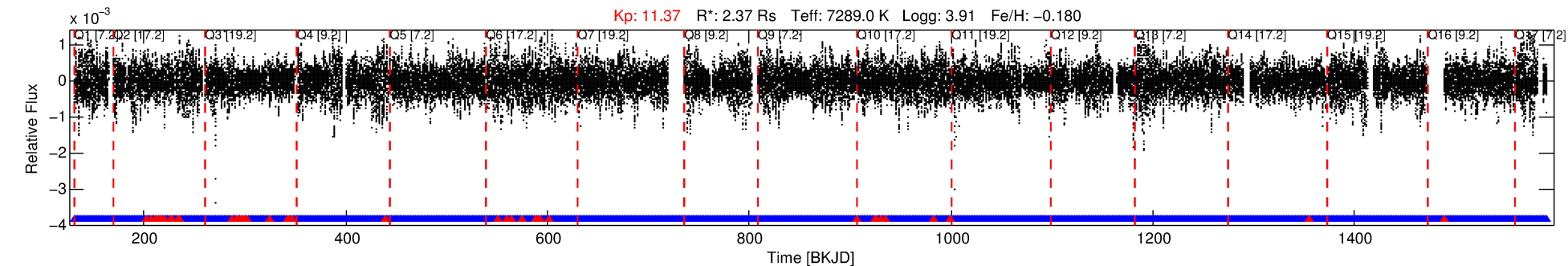
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008677034-01

No Significant Match Found

DV One-Page Summary

KIC: 8677034 Candidate: 1 of 4 Period: 1.255 d



DV Fit Results:

Period = 1.25494 [0.00001] d
Epoch = 131.9173 [0.0020] BKJD
Rp/R* = 0.0057 [0.0010]
a/R* = 1.50 [0.78]
b = 0.70 [0.69]
Seff = 19512.87 [10540.56]
Teq = 3014 [407] K
Rp = 1.47 [0.58] Re
a = 0.0270 [0.0089] AU
Ag = 5.42 [3.51] [1.26σ]
Teffp = 7110 [743] K [4.84σ]

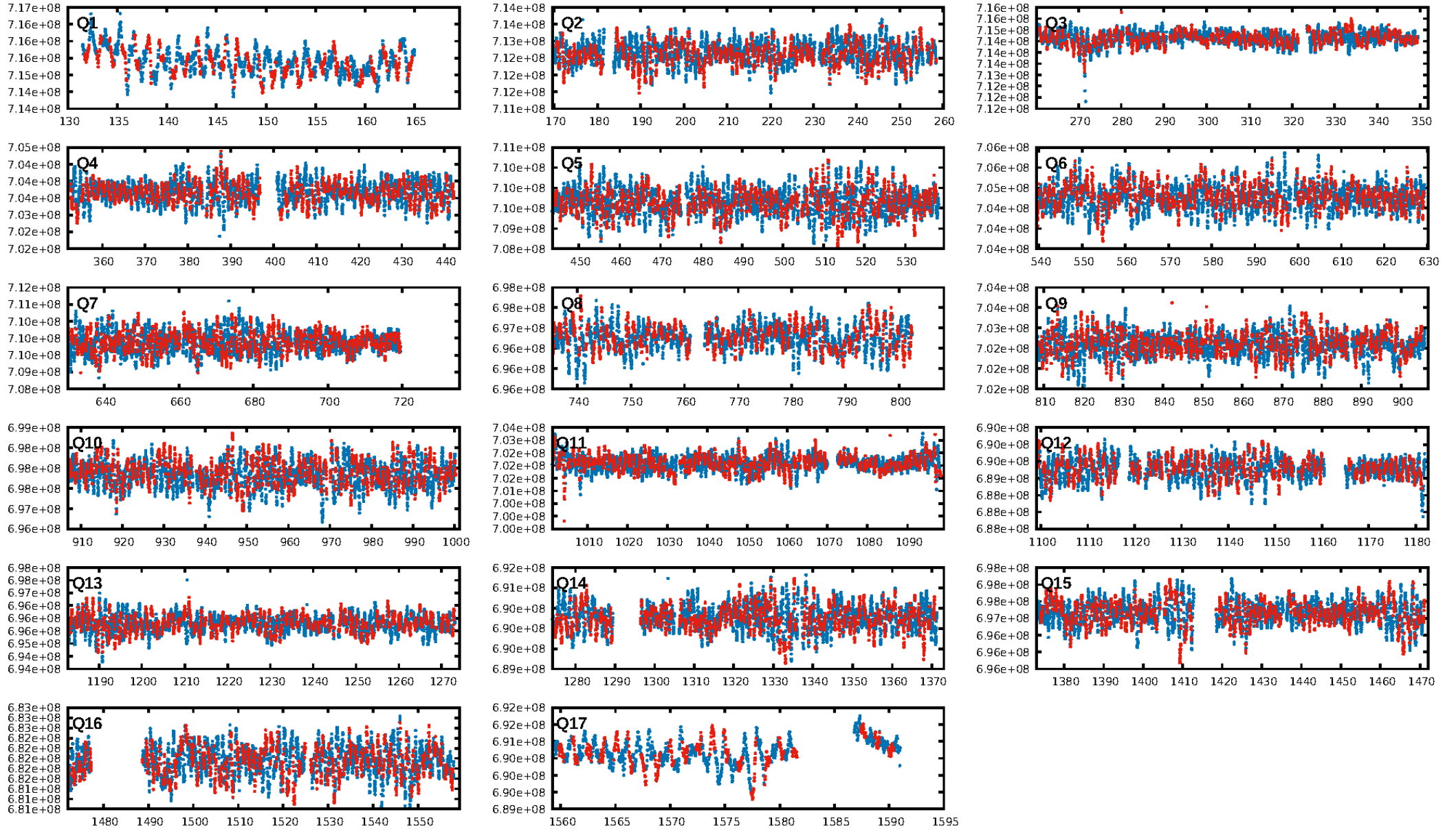
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [495.85σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.02e-14
RollingBand-fgt: 0.96 [978/1020]
GhostDiagnostic-chr: 2.342
Centroid-sig: 36.2%
Centroid-so: 0.235 arcsec [0.93σ]
OotOffset-rm: 0.899 arcsec [2.88σ]
KicOffset-rm: 0.964 arcsec [2.88σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 1.00 [17/17]

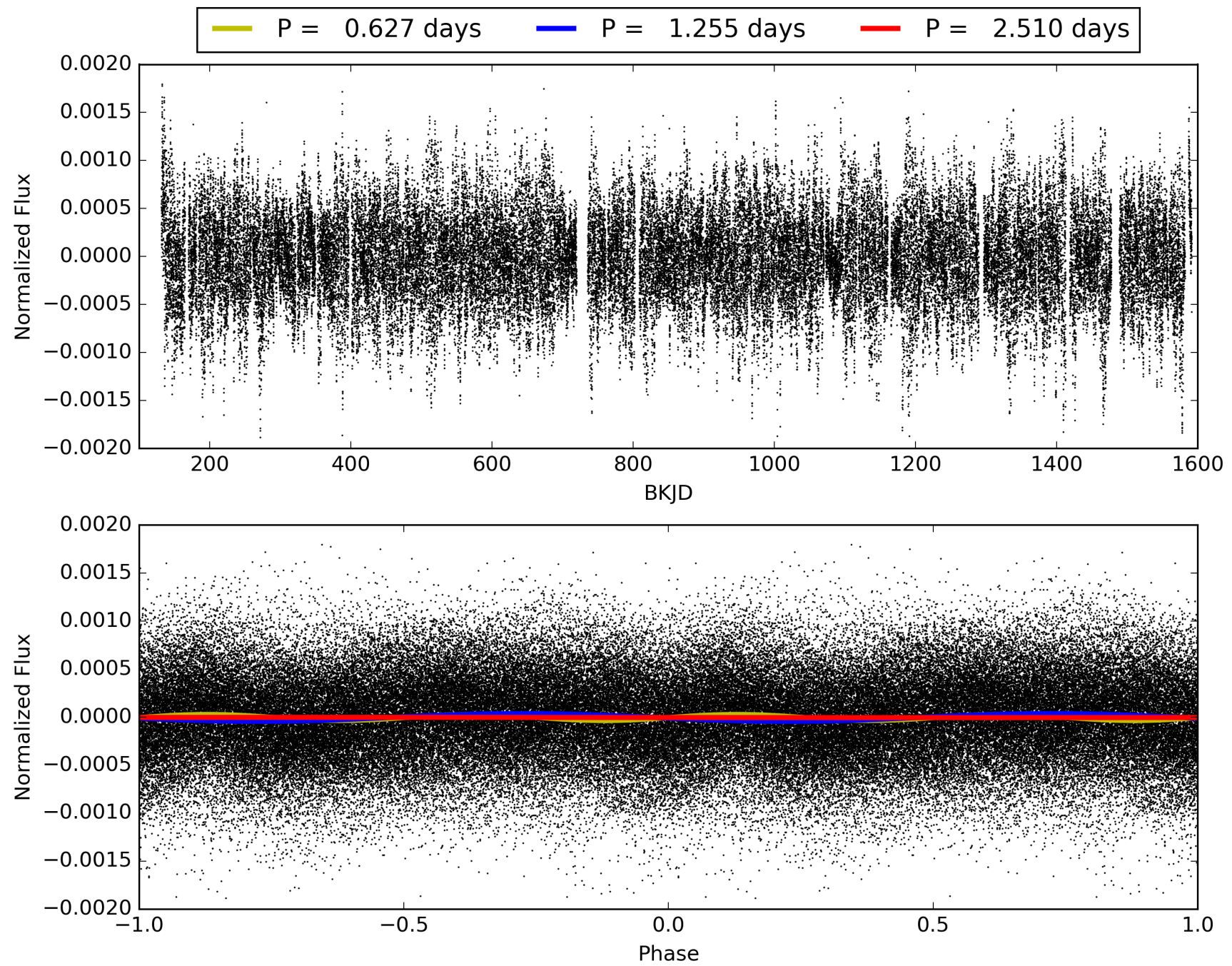
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008677034-01, PDC Light Curves

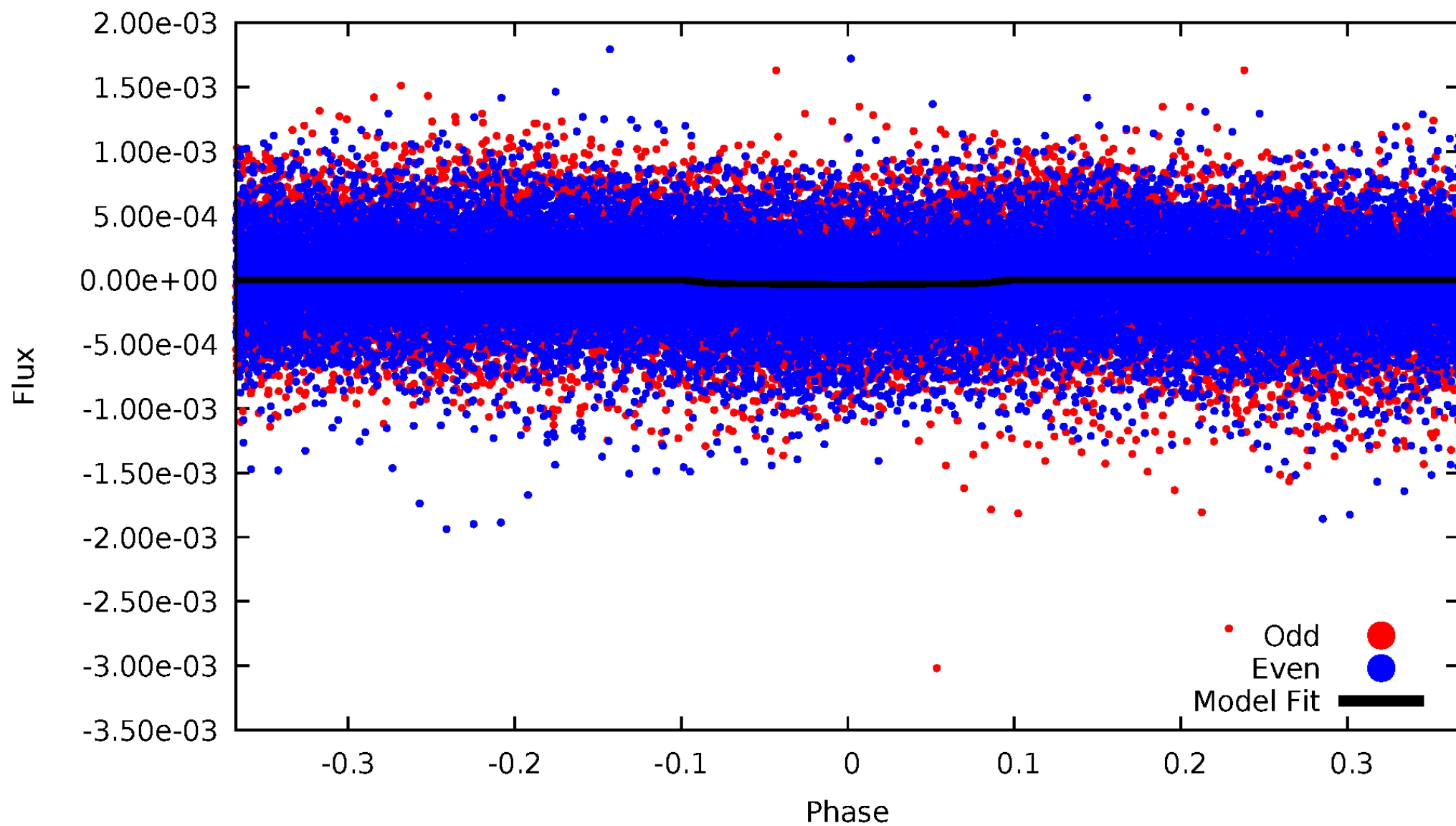


TCE 008677034-01



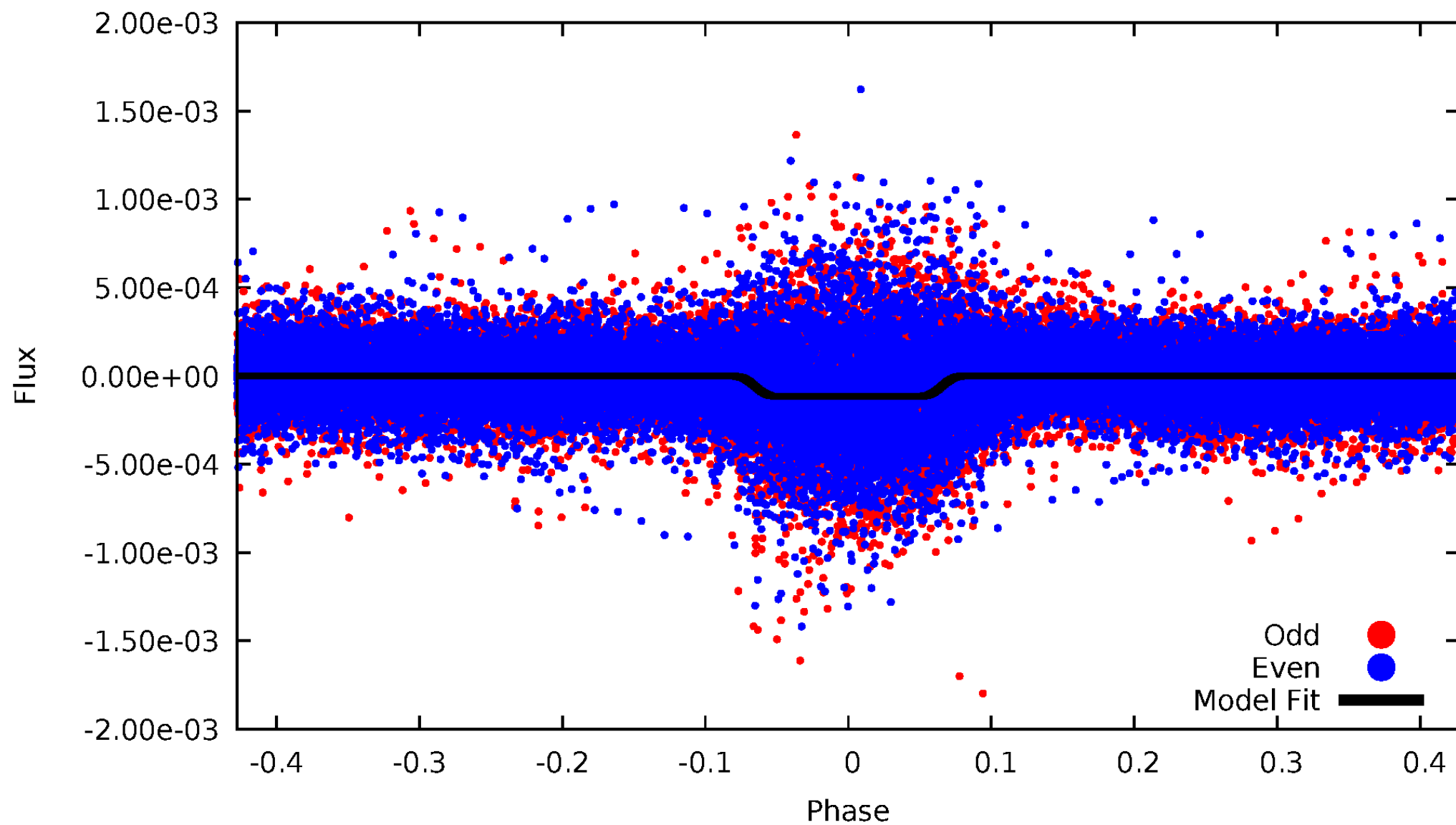
DV Odd/Even

TCE 008677034-01

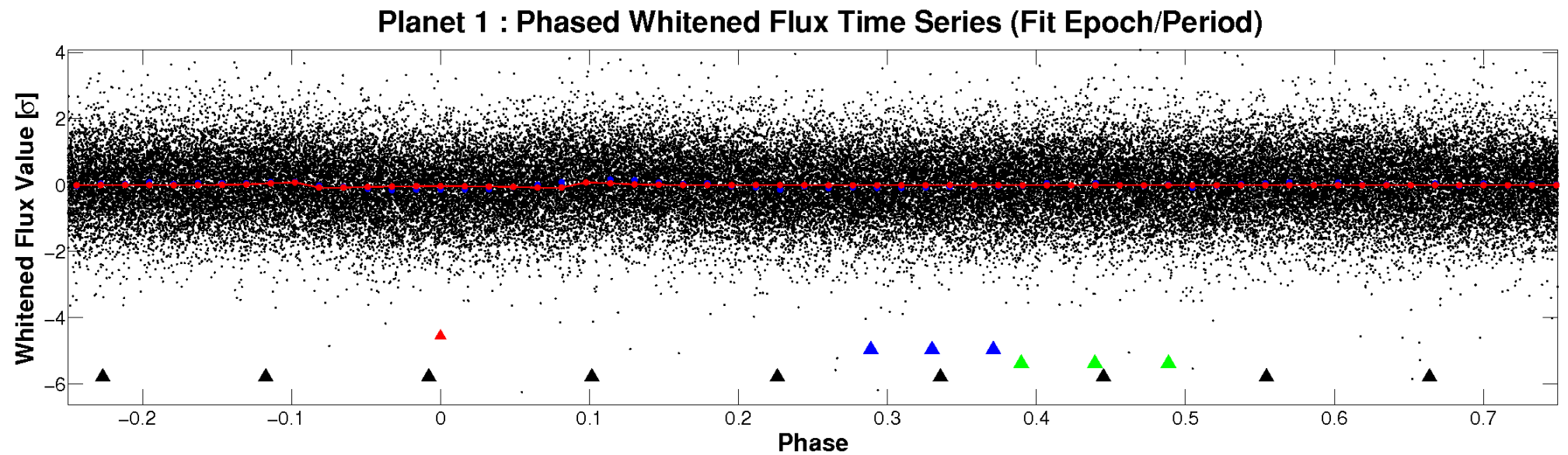
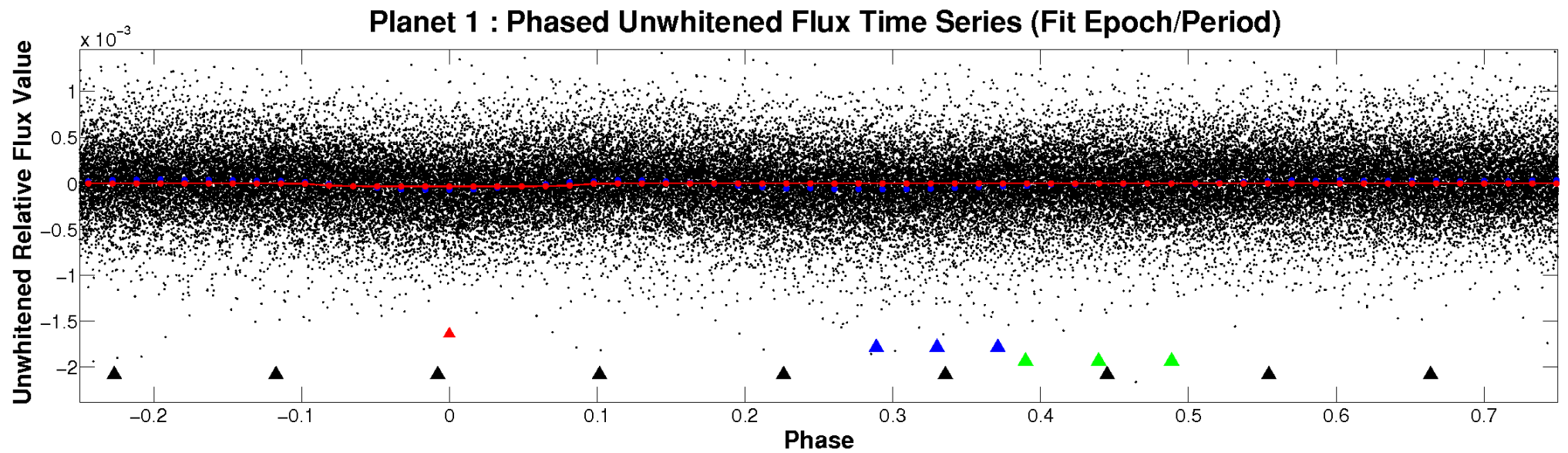


ALT Odd/Even

TCE 008677034-01

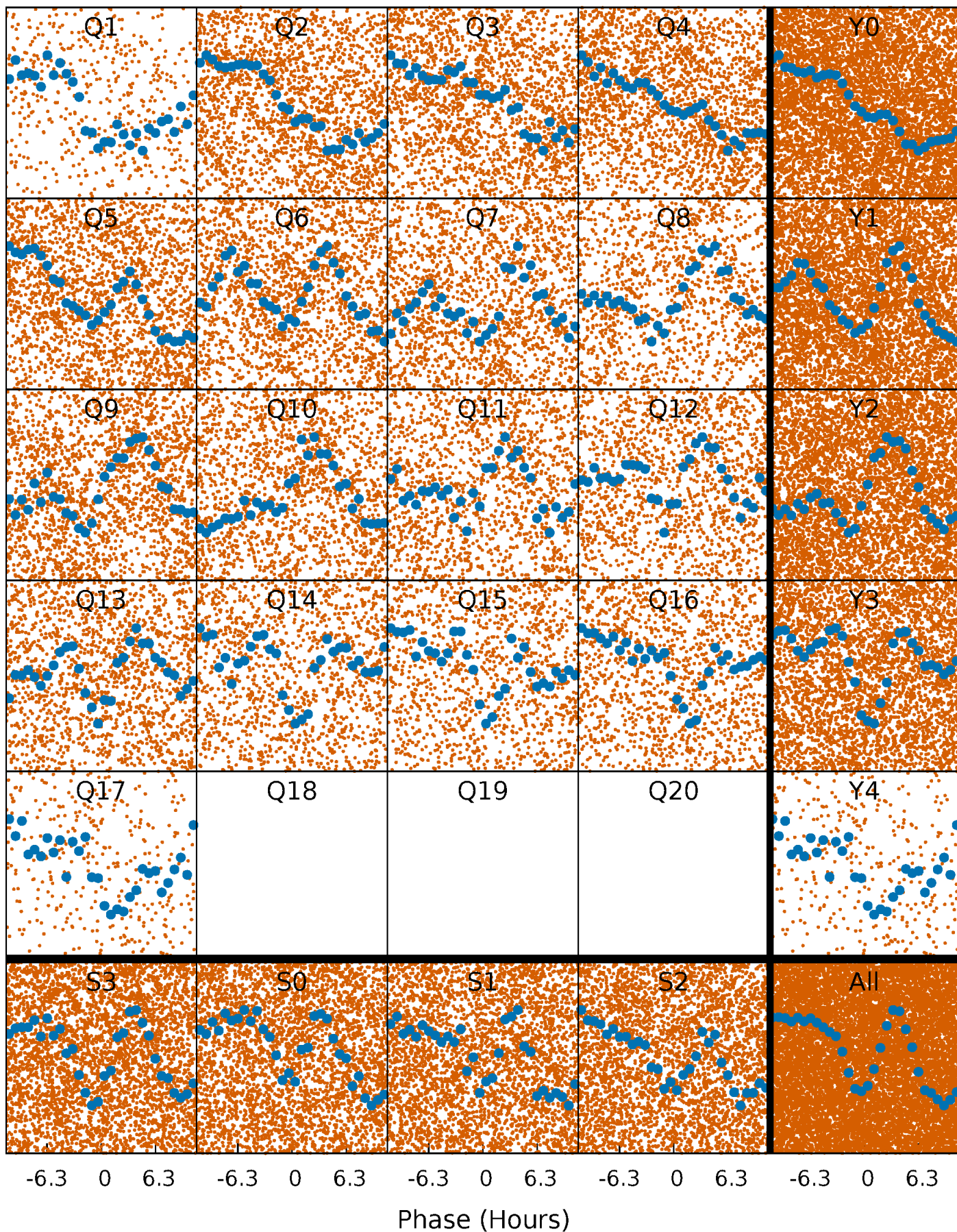


Non-Whitened Vs. Whitened Light Curve



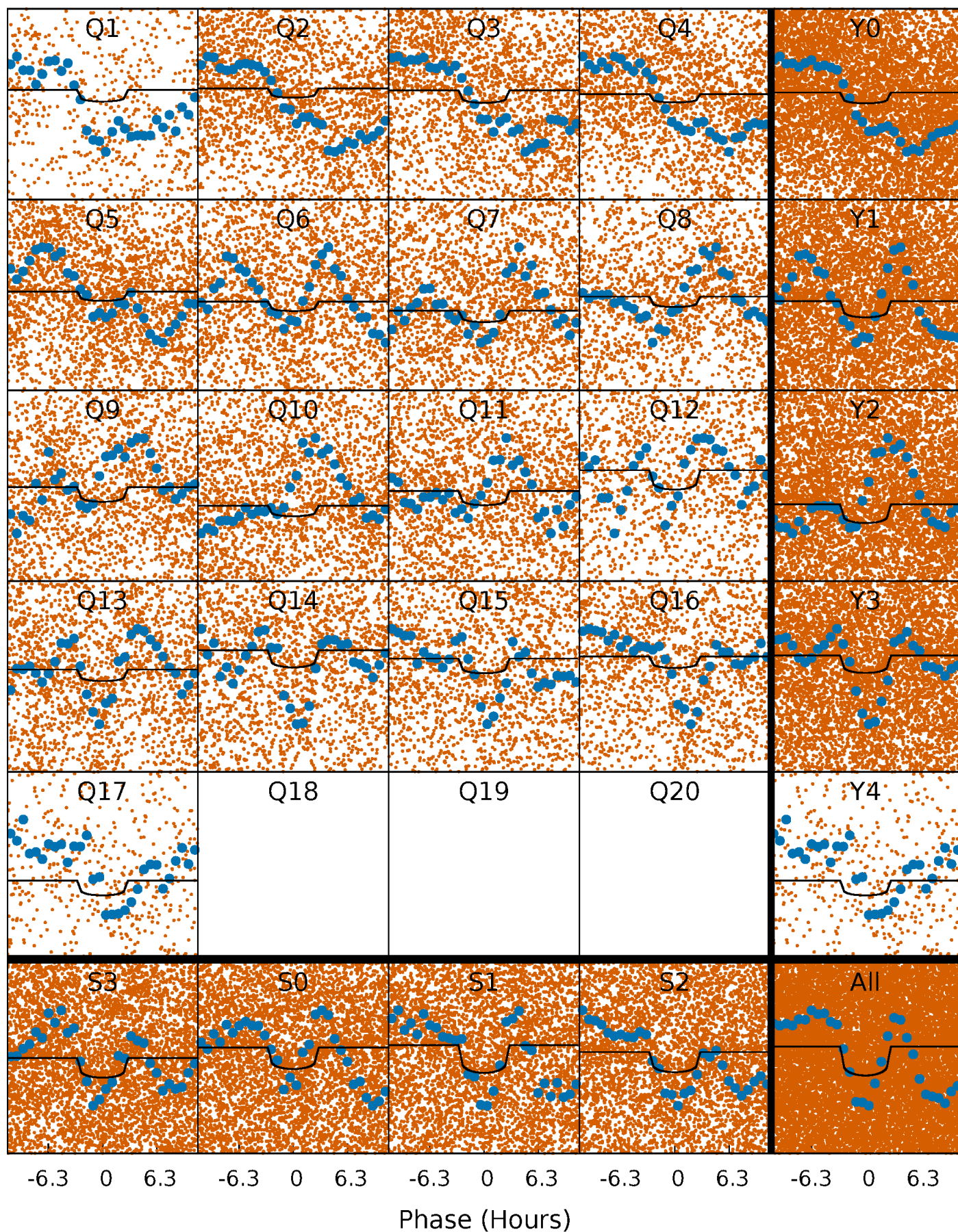
PDC Quarter-Phased Transit Curves

TCE 008677034-01 P= 1.254945 Days $T_0=131.917306$ (BKJD)



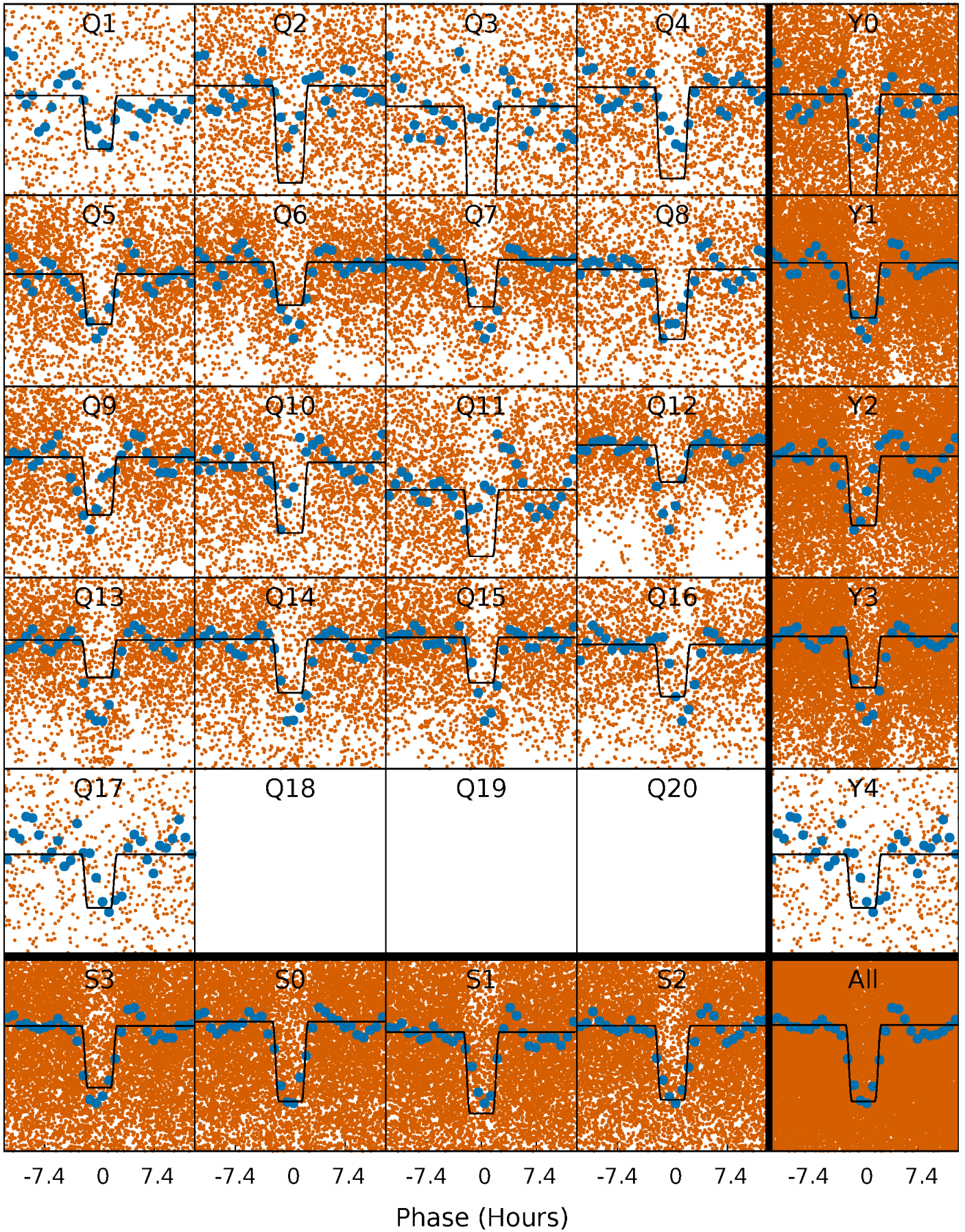
DV Quarter-Phased Transit Curves

TCE 008677034-01 P= 1.254945 Days $T_0=131.917306$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

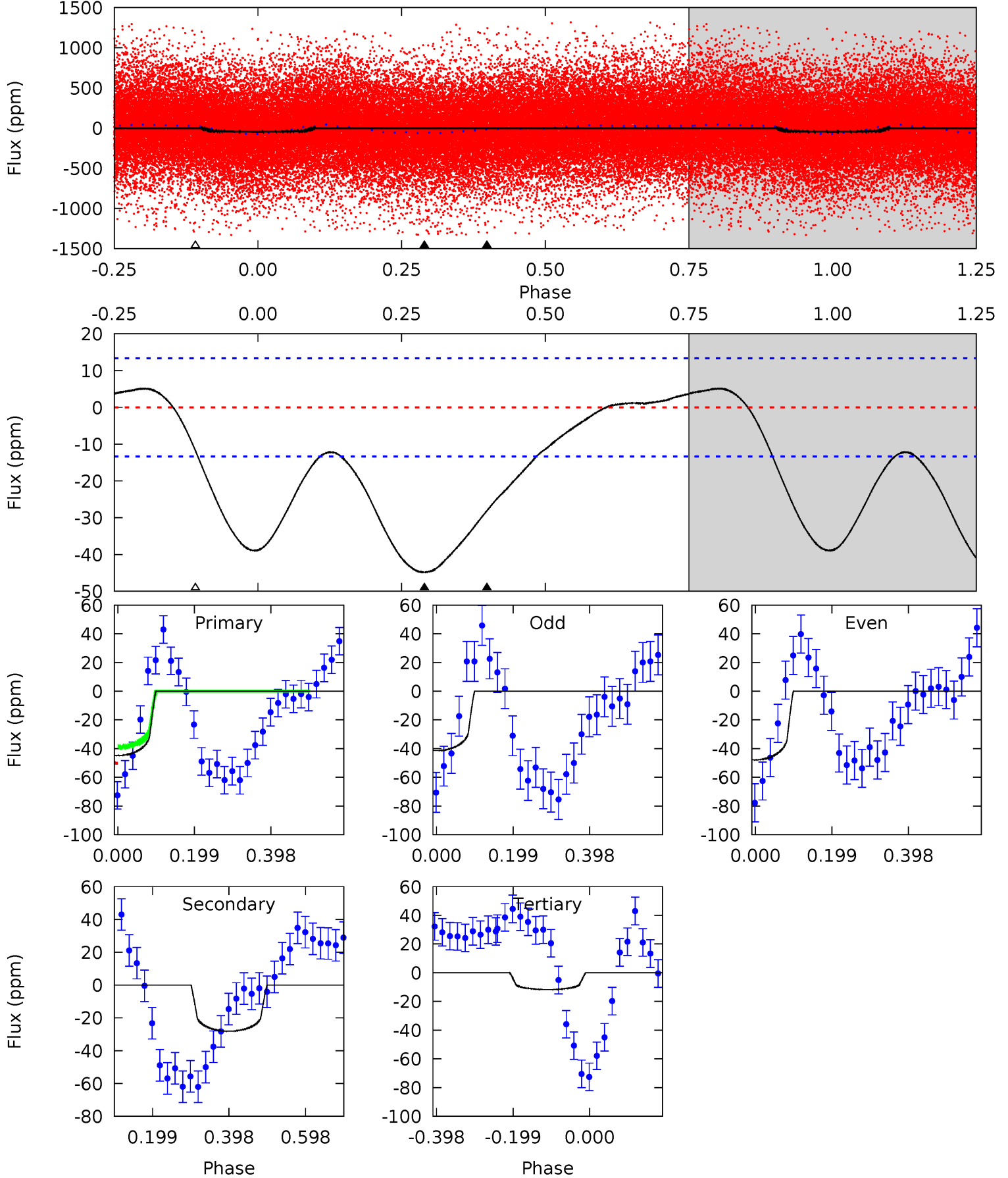
TCE 008677034-01 P= 1.254970 Days $T_0=131.889090$ (BKJD)



DV Model-Shift Uniqueness Test

008677034-01, P = 1.254945 Days, E = 130.662361 Days

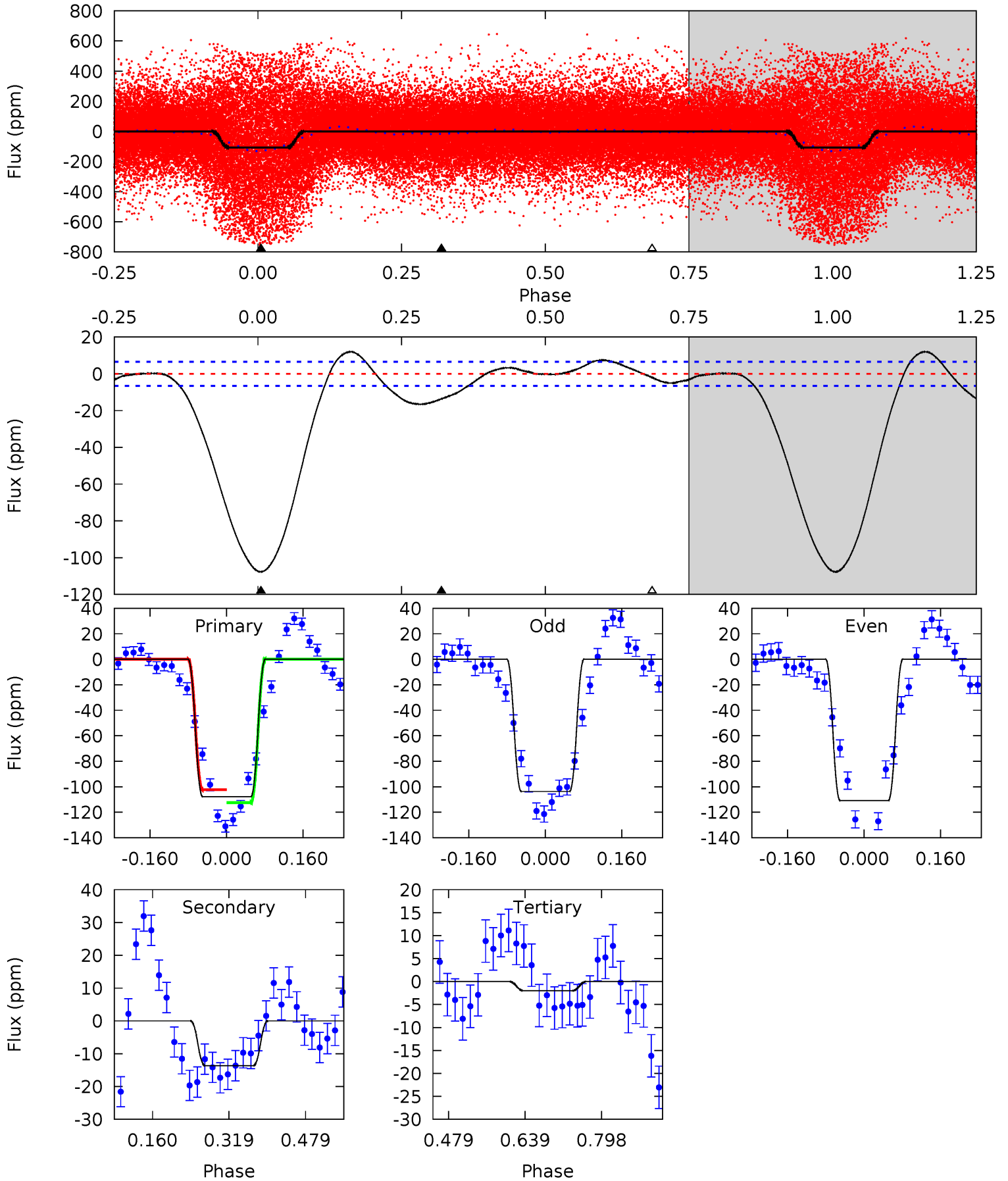
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	9.30	3.88	0	4.42	1.28	5.30	11.0	14.8	5.42	9.30	1.07	1.05	0.10	1.88



Alt Model-Shift Uniqueness Test

008677034-01, P = 1.254970 Days, E = 130.634120 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.4	9.28	1.37	0	4.47	1.41	2.33	72.0	73.4	7.91	9.28	2.42	0.97	0.10	3.50



Stellar Parameters For KIC 008677034

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7289^{+203}_{-279}	$3.909^{+0.301}_{-0.129}$	$-0.180^{+0.250}_{-0.350}$	$2.368^{+0.555}_{-0.832}$	$1.657^{+0.184}_{-0.342}$	$0.176^{+0.348}_{-0.070}$
	+3%/-4%	+8%/-3%	+139%/-194%	+23%/-35%	+11%/-21%	+198%/-40%
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 008677034-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-28 ± 3	$1.38^{+0.36}_{-0.33}$	4115^{+308}_{-415}	6868^{+869}_{-698}	$5.784^{+4.141}_{-2.151}$
Alt.	-14 ± 1	$2.66^{+0.48}_{-0.54}$	4128^{+334}_{-355}	4033^{+292}_{-335}	$0.767^{+0.382}_{-0.237}$

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

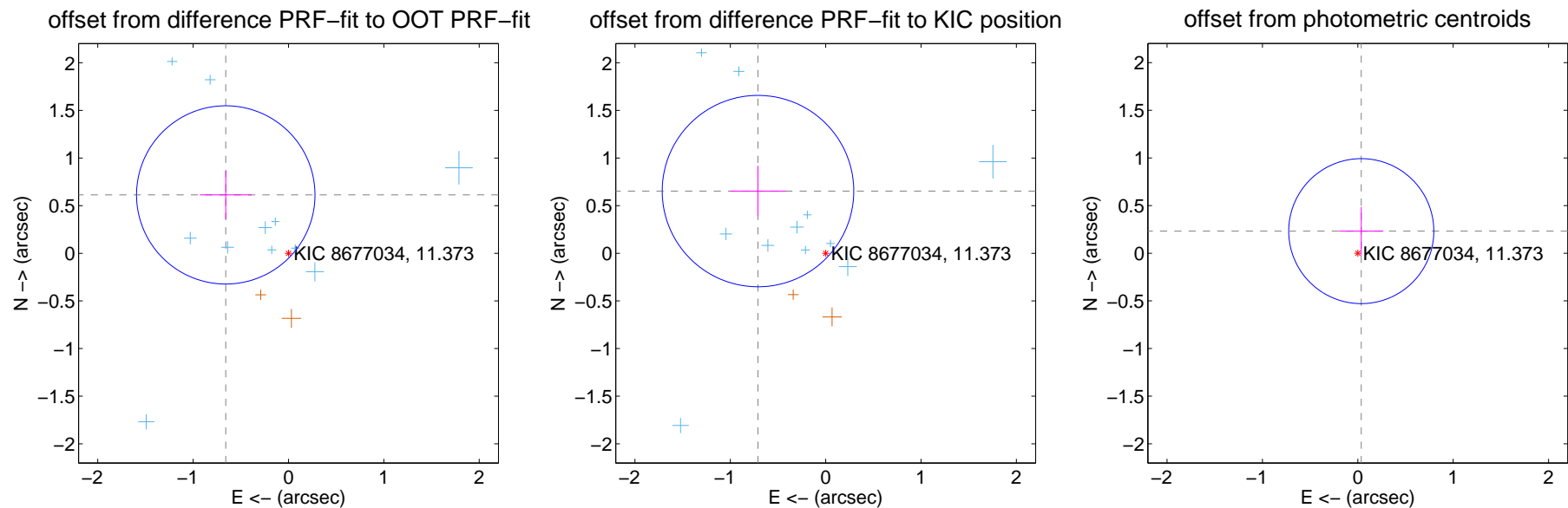
DV Centroid Data

Supplemental centroid analysis for 008677034-01. **Kepler magnitude: 11.37.** Transit SNR 7.98

There are 13 quarters with good PRF difference image offsets

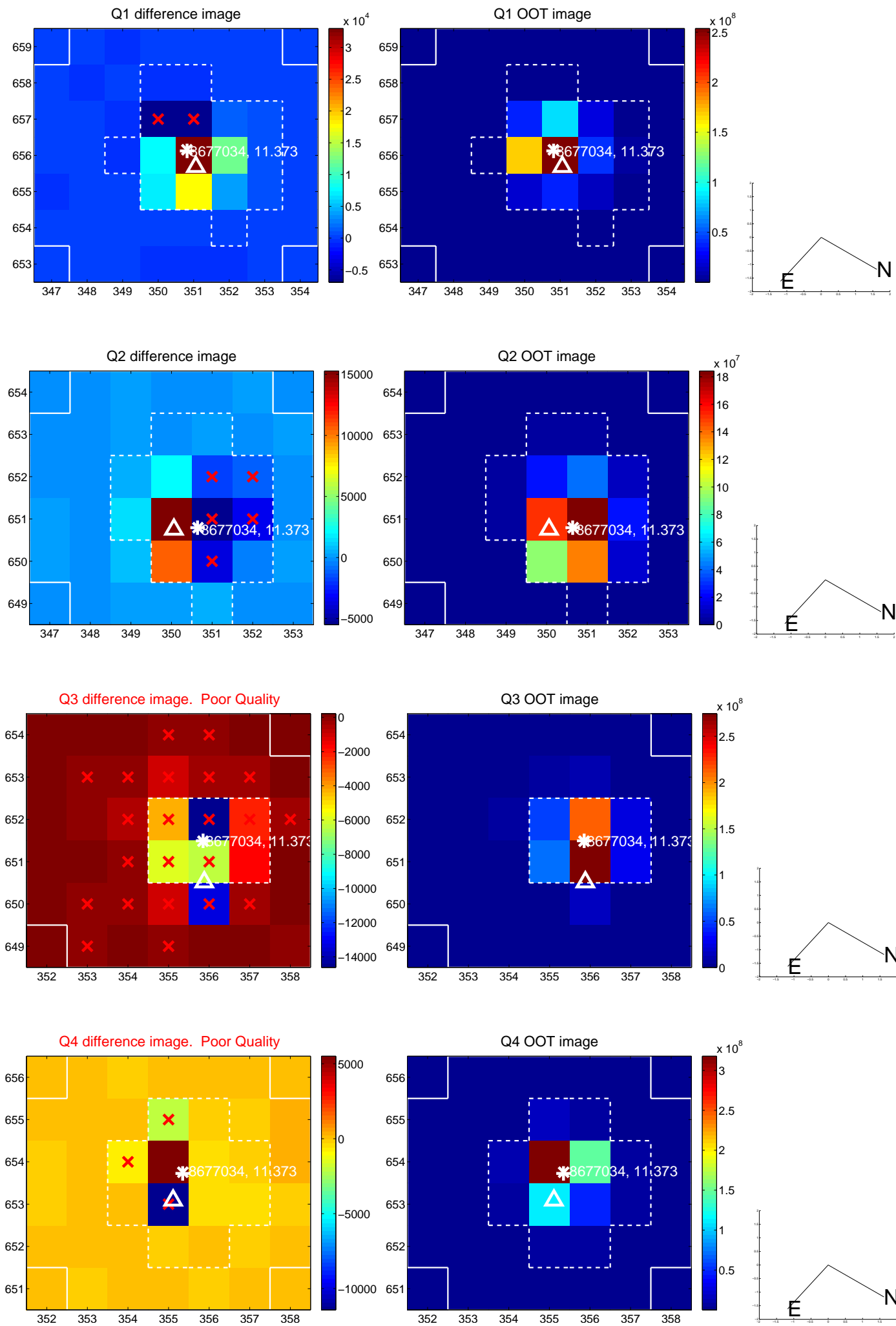
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.899 ± 0.312	2.88	0.658 ± 0.272	0.613 ± 0.256
PRF-fit source offset from KIC position	0.964 ± 0.335	2.88	0.710 ± 0.290	0.653 ± 0.265
photometric centroid source offset	0.23 ± 0.25	0.93	-0.04 ± 0.23	0.23 ± 0.25

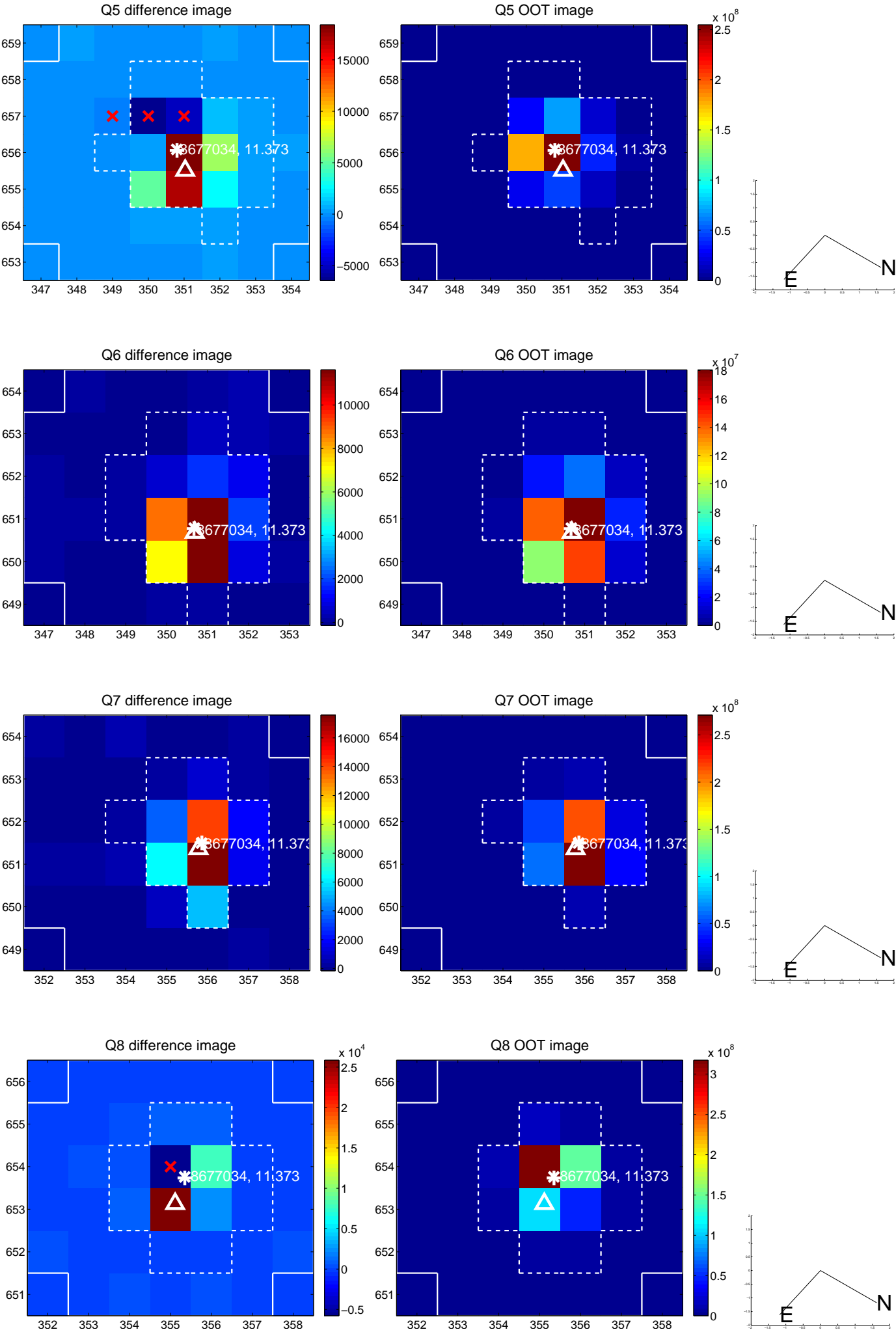


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

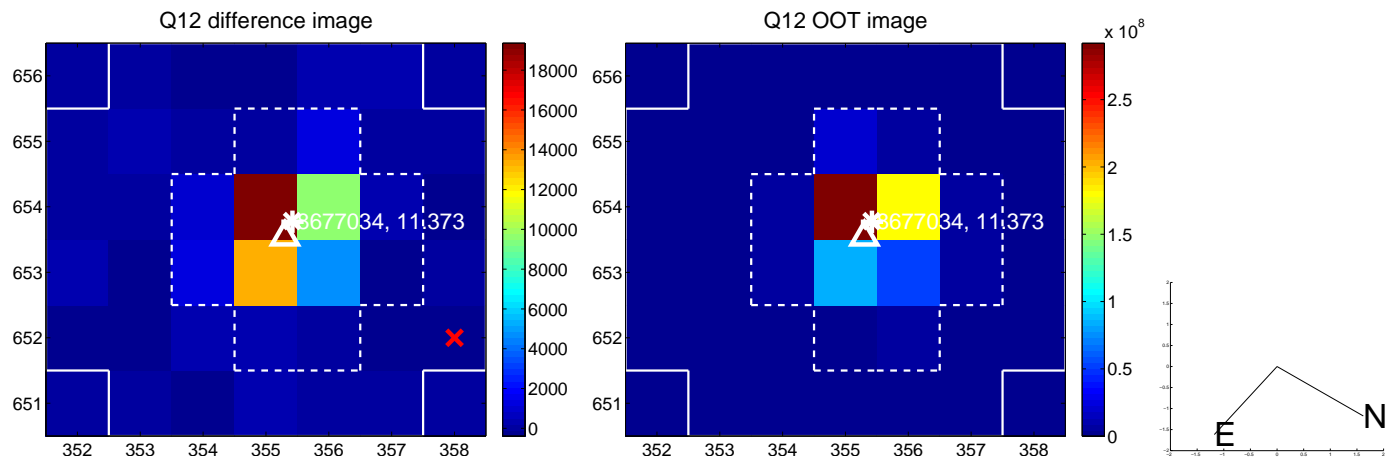
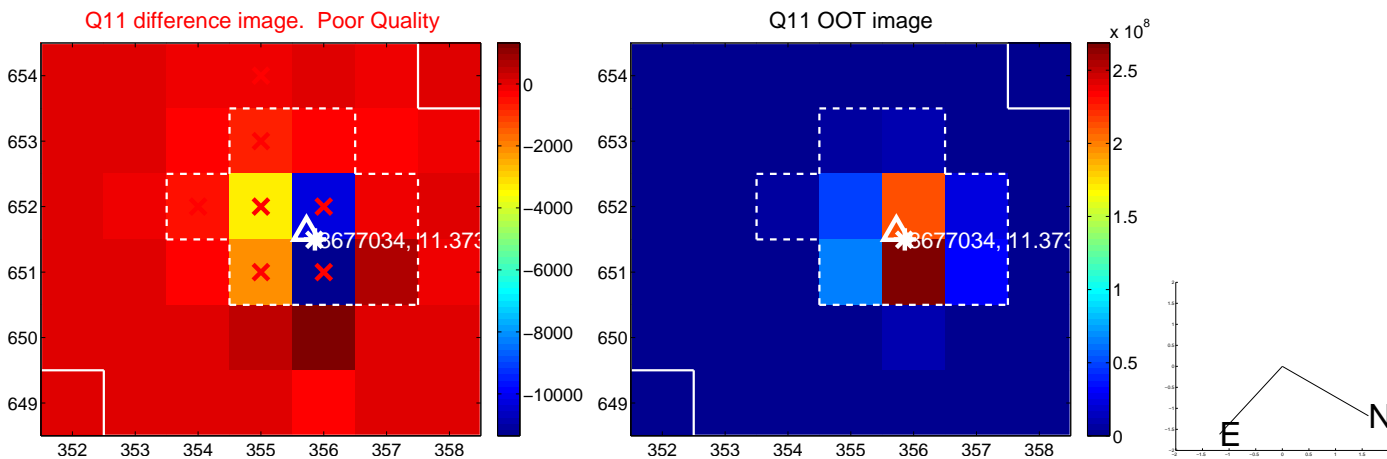
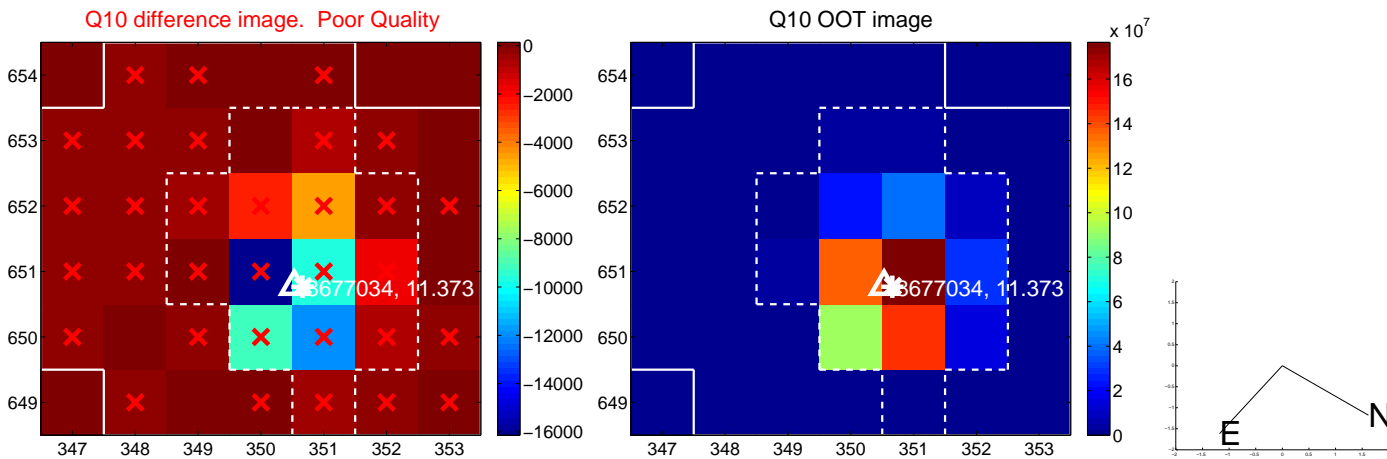
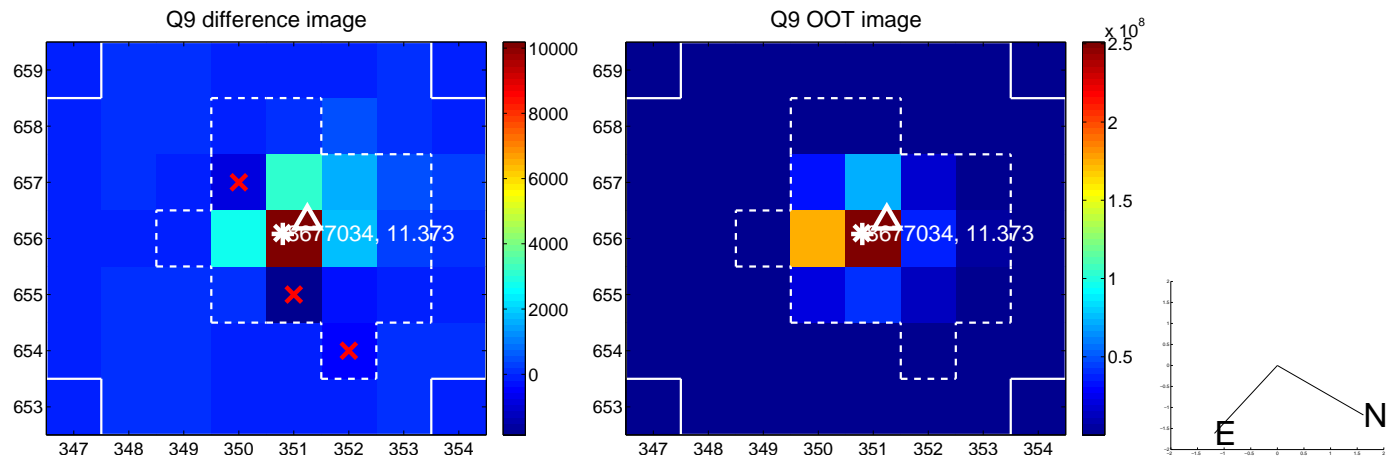
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



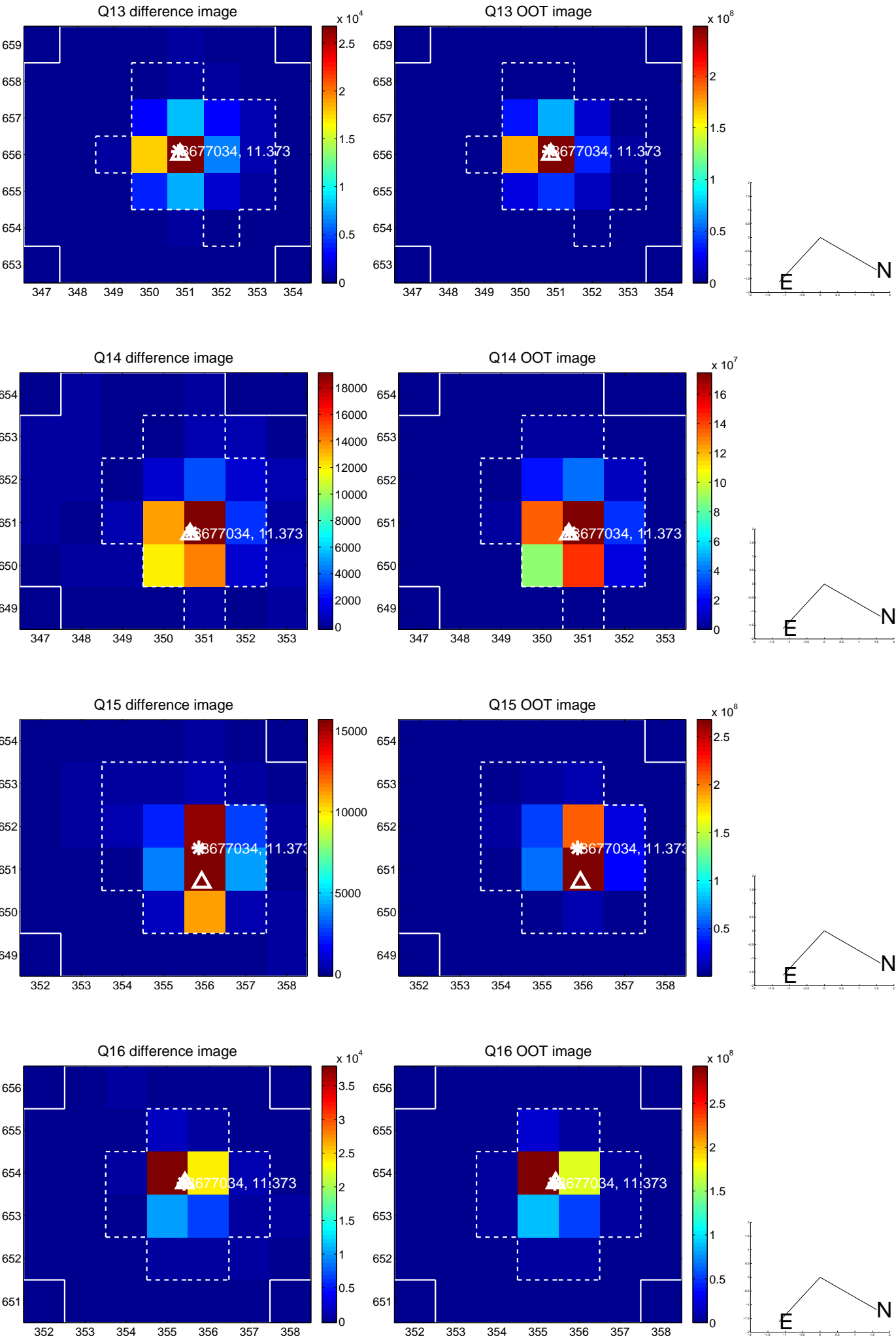
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



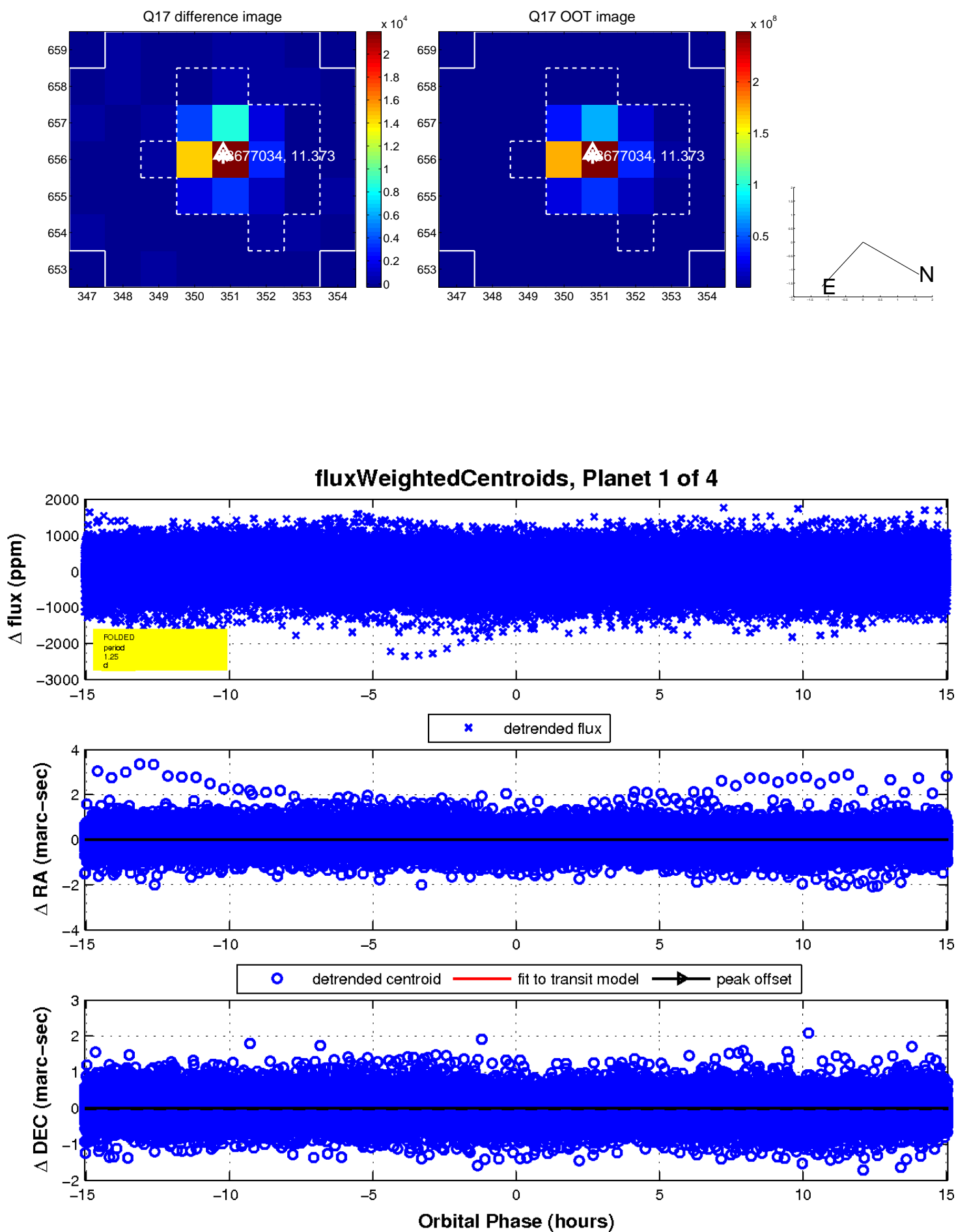
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



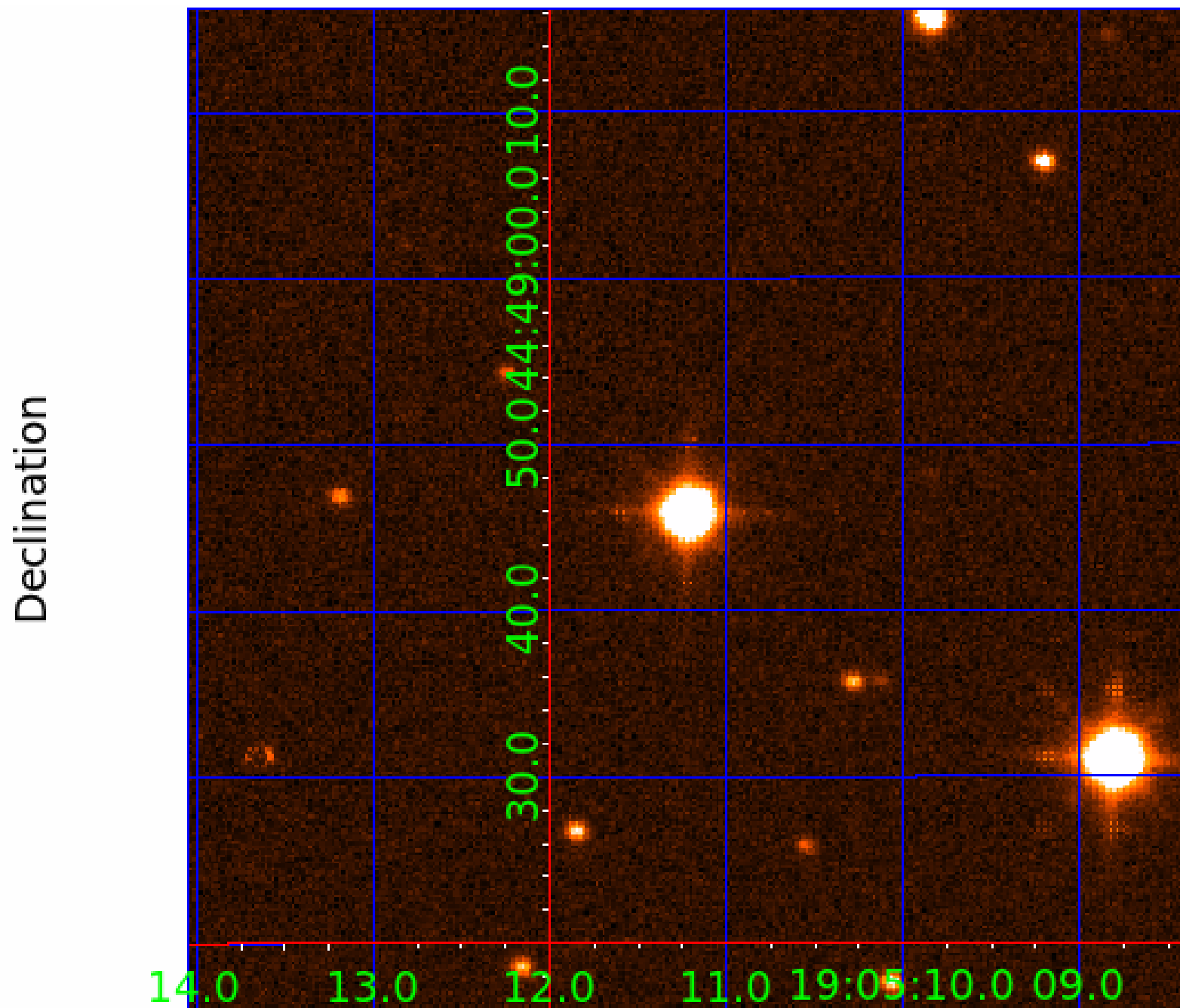
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008677034

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})
008677034-01	OBS	No	1.254945	131.917306	33.6	5.531	9.8	8.0	2.37	7289	1.47	19512.87
008677034-02	OBS	No	602.424976	136.044638	1167.7	8.618	8.9	9.1	2.37	7289	15.08	5.19
008677034-03	OBS	No	518.354116	221.507583	916.6	11.376	8.2	8.7	2.37	7289	8.95	6.34
008677034-04	OBS	No	167.044955	212.517567	637.6	5.814	9.4	7.8	2.37	7289	7.63	28.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008677034-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
008677034-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_SATURATED
008677034-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_SATURATED
008677034-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—CENT_SATURATED

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

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

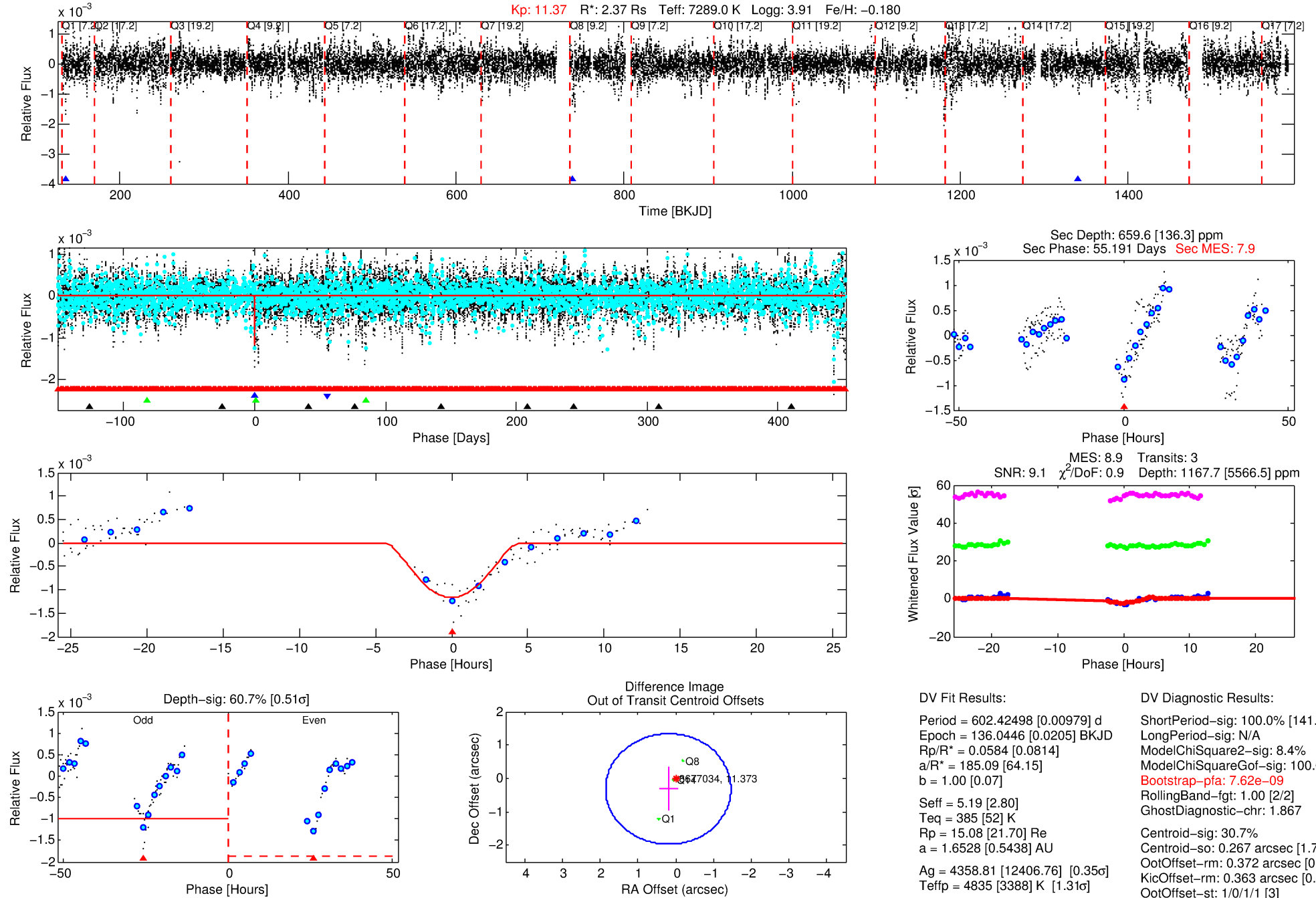
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008677034-02

No Significant Match Found

DV One-Page Summary

KIC: 8677034 Candidate: 2 of 4 Period: 602.425 d



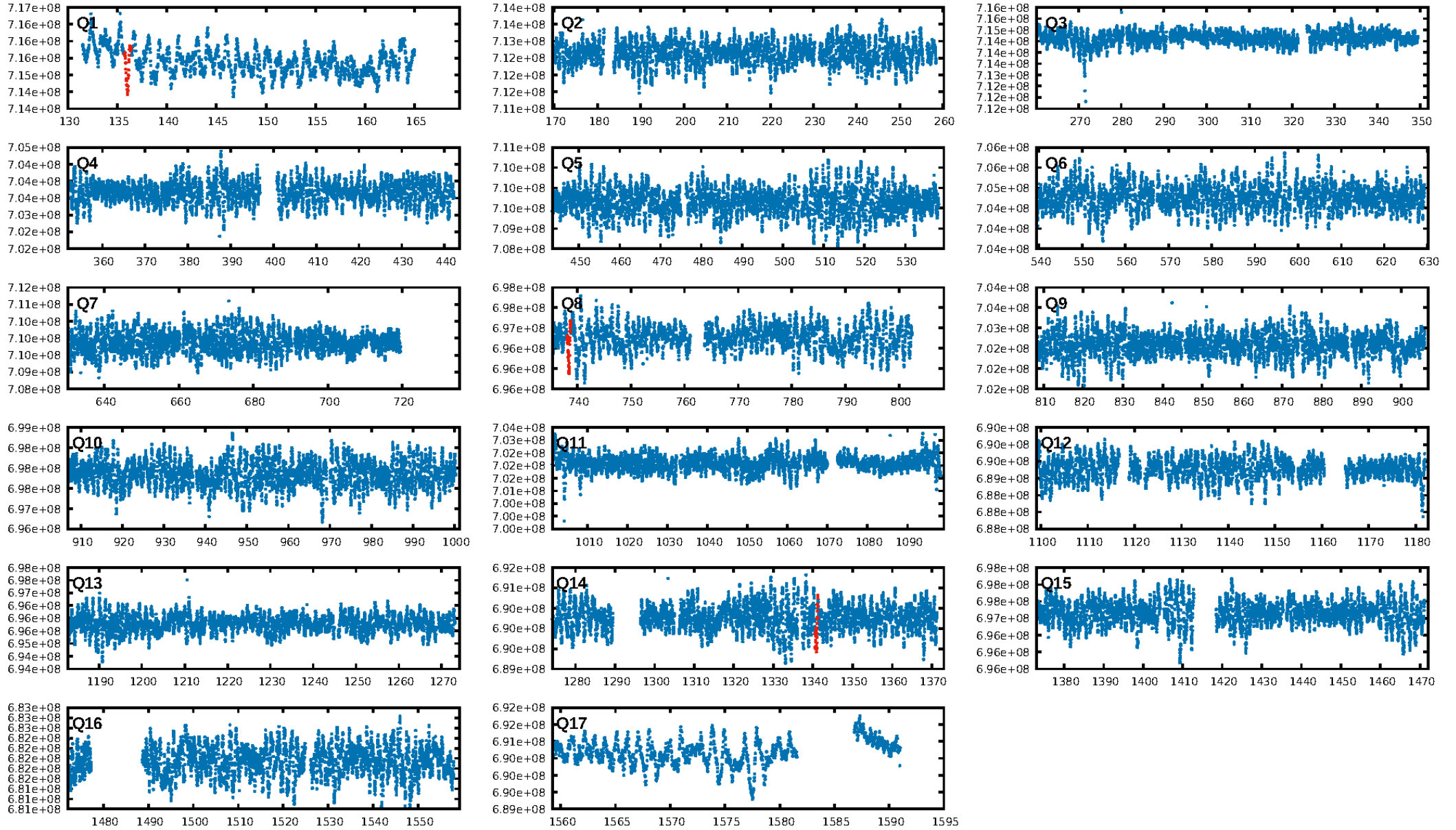
DV Fit Results:

Period = 602.42498 [0.00979] d
Epoch = 136.0446 [0.0205] BKJD
Rp/R* = 0.0584 [0.0814]
a/R* = 185.09 [64.15]
b = 1.00 [0.07]
Seff = 5.19 [2.80]
Teq = 385 [52] K
Rp = 15.08 [21.70] Re
a = 1.6528 [0.5438] AU
Ag = 4358.81 [12406.76] [0.35 σ]
Teffp = 4835 [3388] K [1.31 σ]

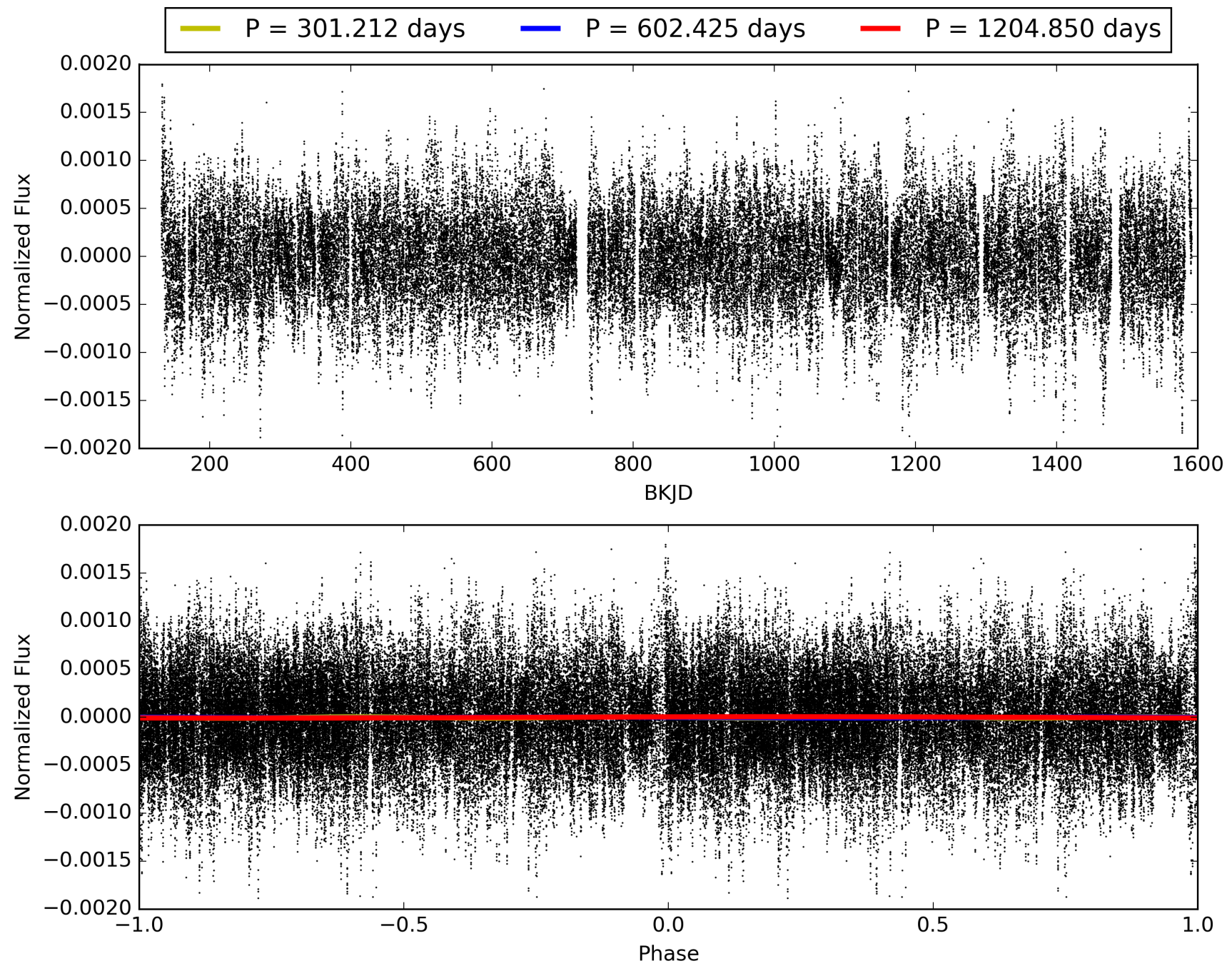
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [141.38 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.62e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.867
Centroid-sig: 30.7%
Centroid-so: 0.267 arcsec [1.75 σ]
OotOffset-rm: 0.372 arcsec [0.67 σ]
KicOffset-rm: 0.363 arcsec [0.77 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

TCE 008677034-02, PDC Light Curves

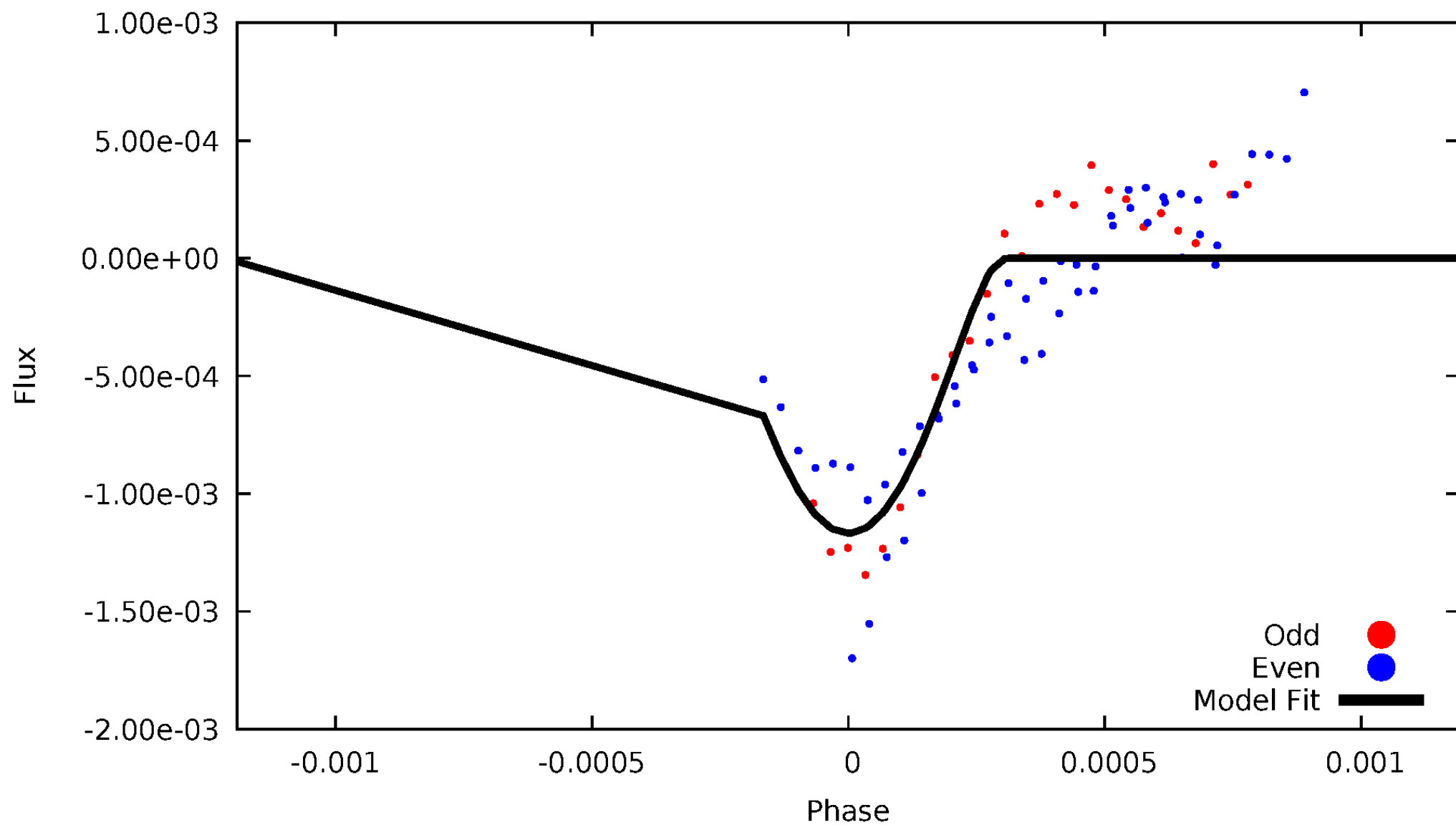


TCE 008677034-02



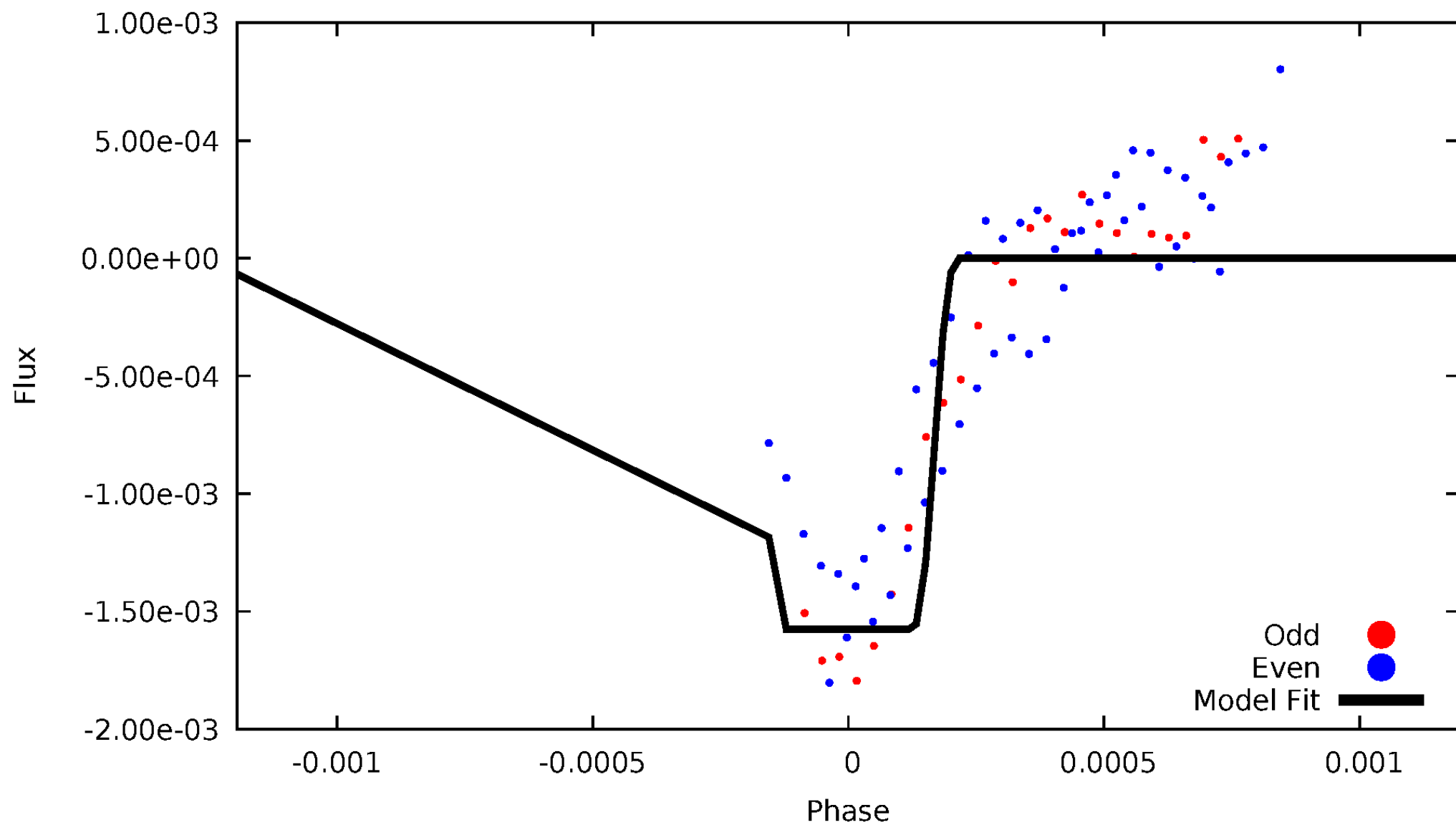
DV Odd/Even

TCE 008677034-02



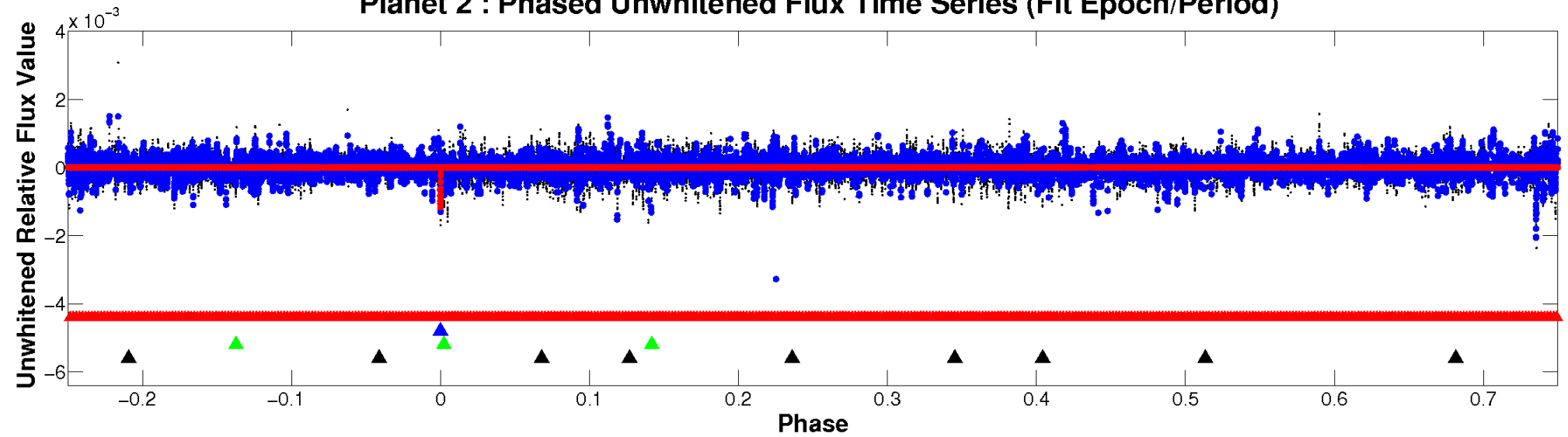
ALT Odd/Even

TCE 008677034-02

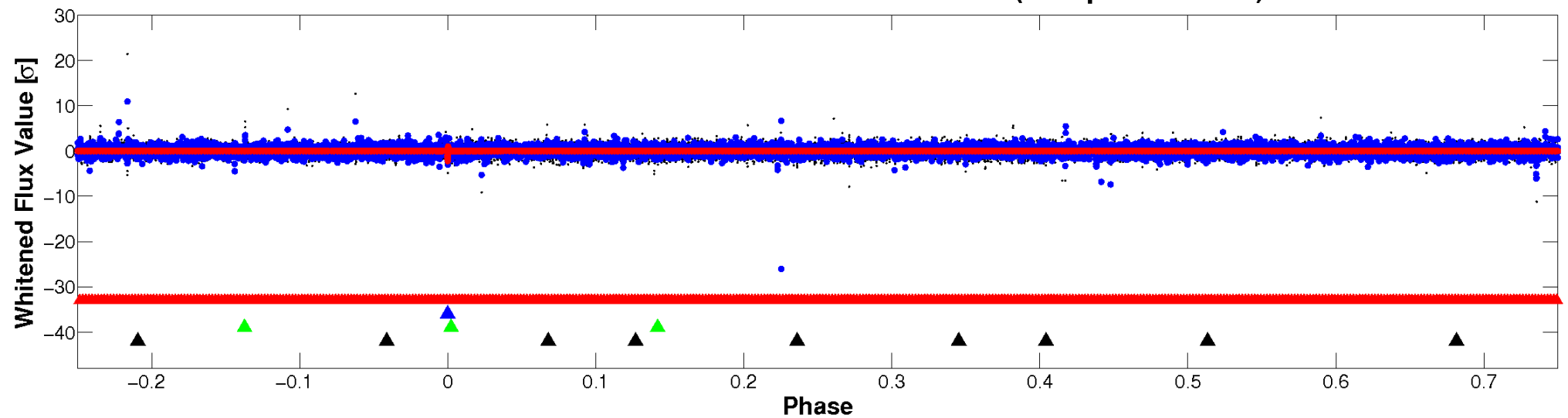


Non-Whitened Vs. Whitened Light Curve

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

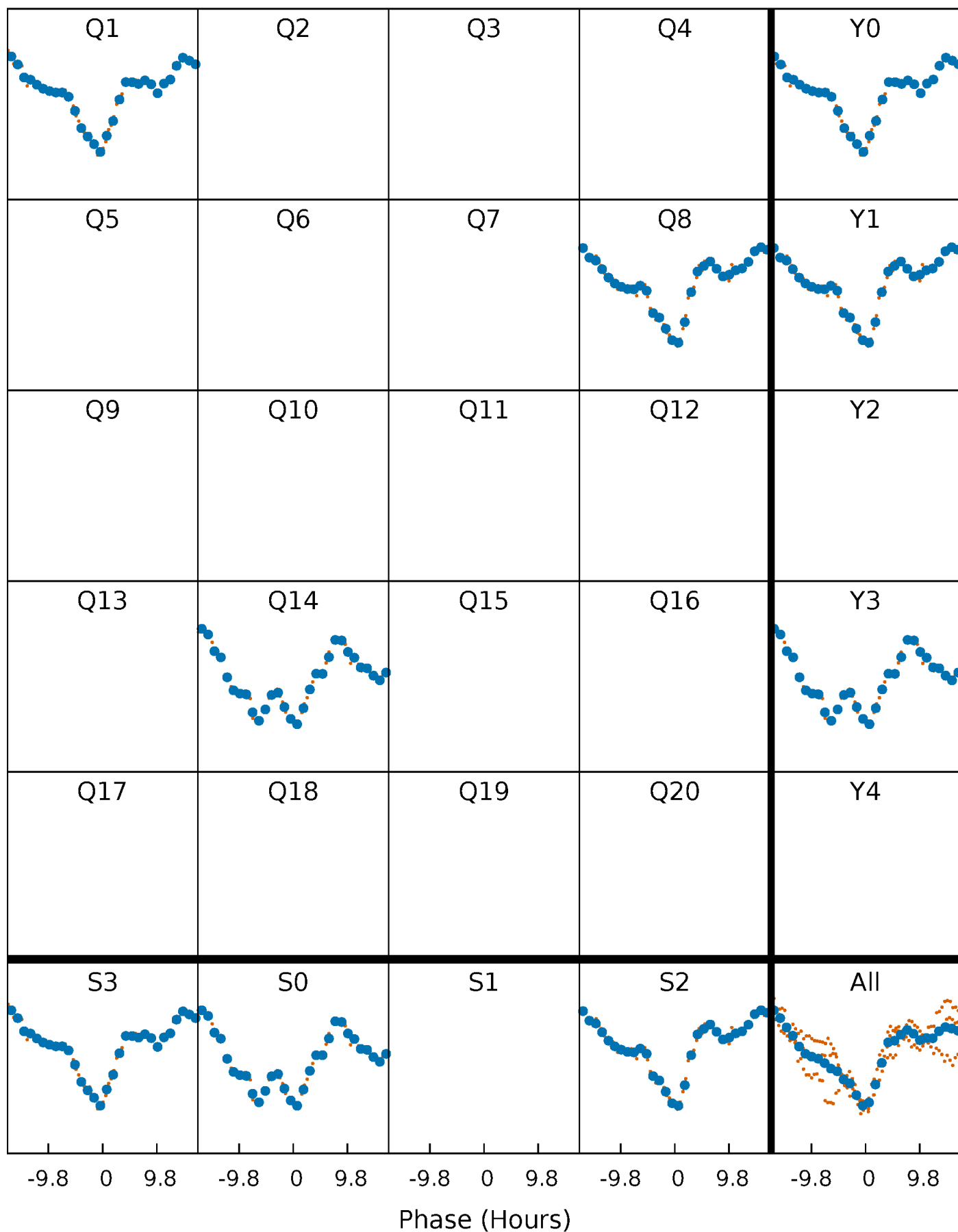


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



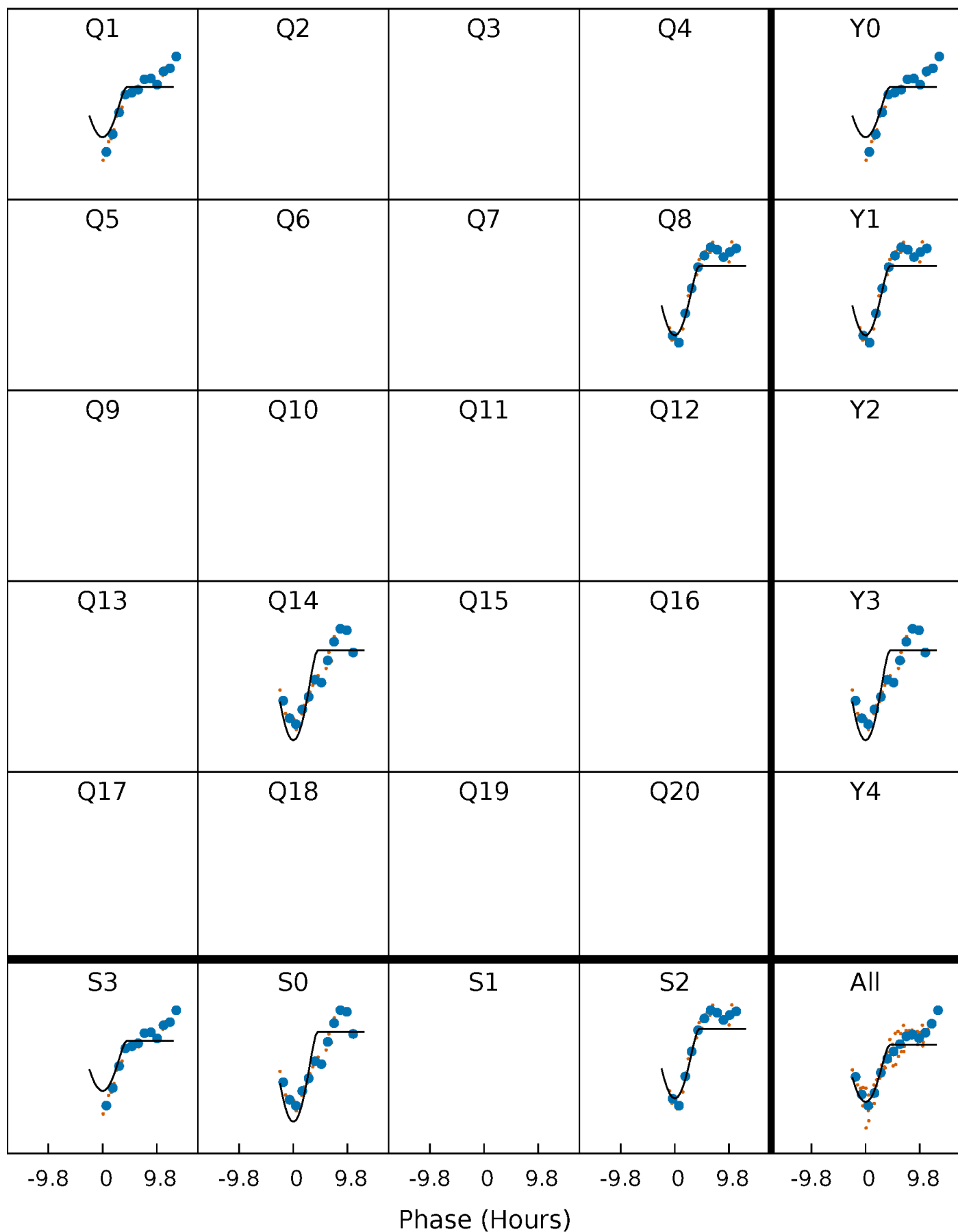
PDC Quarter-Phased Transit Curves

TCE 008677034-02 $P=602.424976$ Days $T_0=136.044638$ (BKJD)



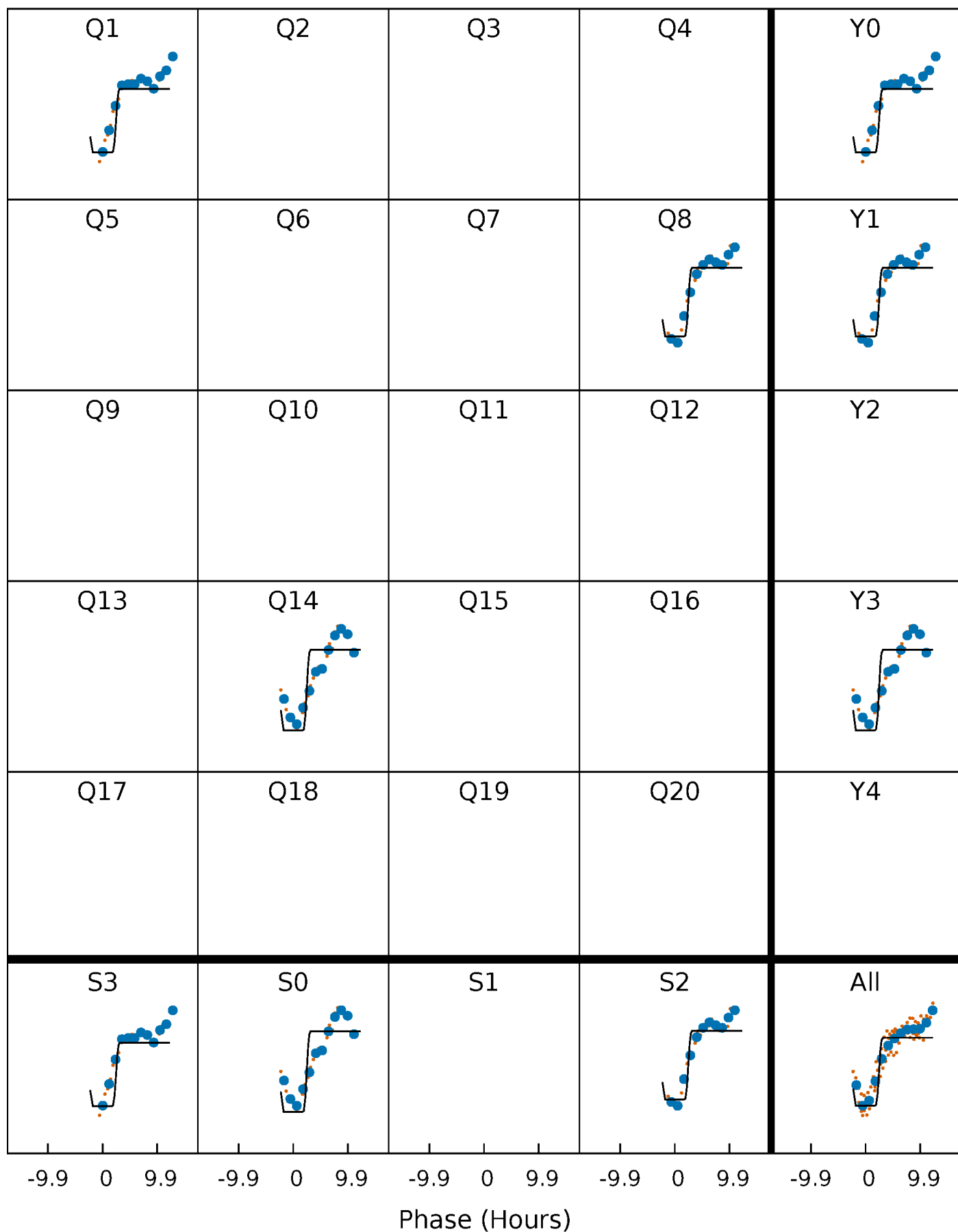
DV Quarter-Phased Transit Curves

TCE 008677034-02 $P=602.424976$ Days $T_0=136.044638$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

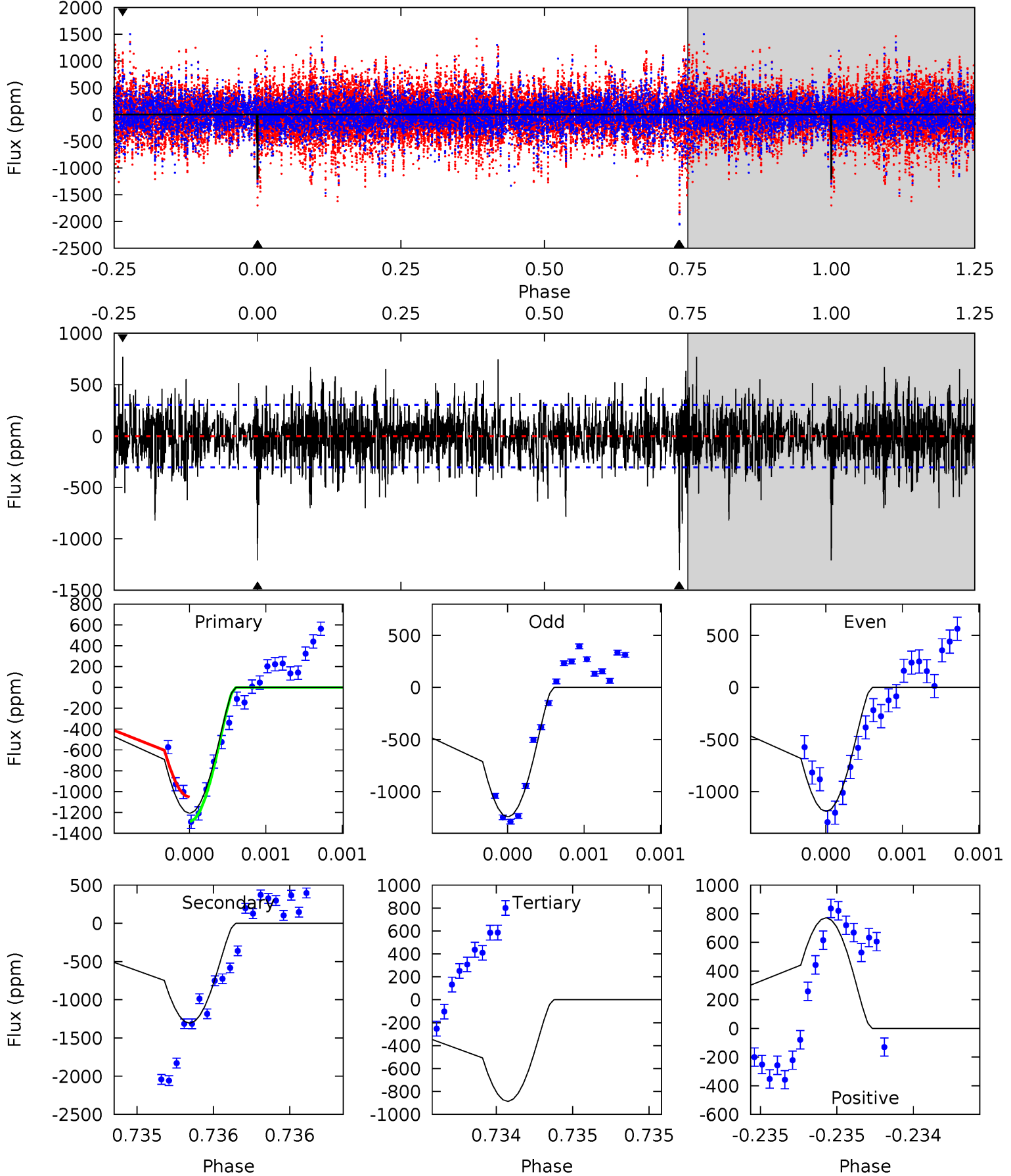
TCE 008677034-02 P=602.408594 Days $T_0=136.071242$ (BKJD)



DV Model-Shift Uniqueness Test

008677034-02, P = 602.424976 Days, E = 136.044638 Days

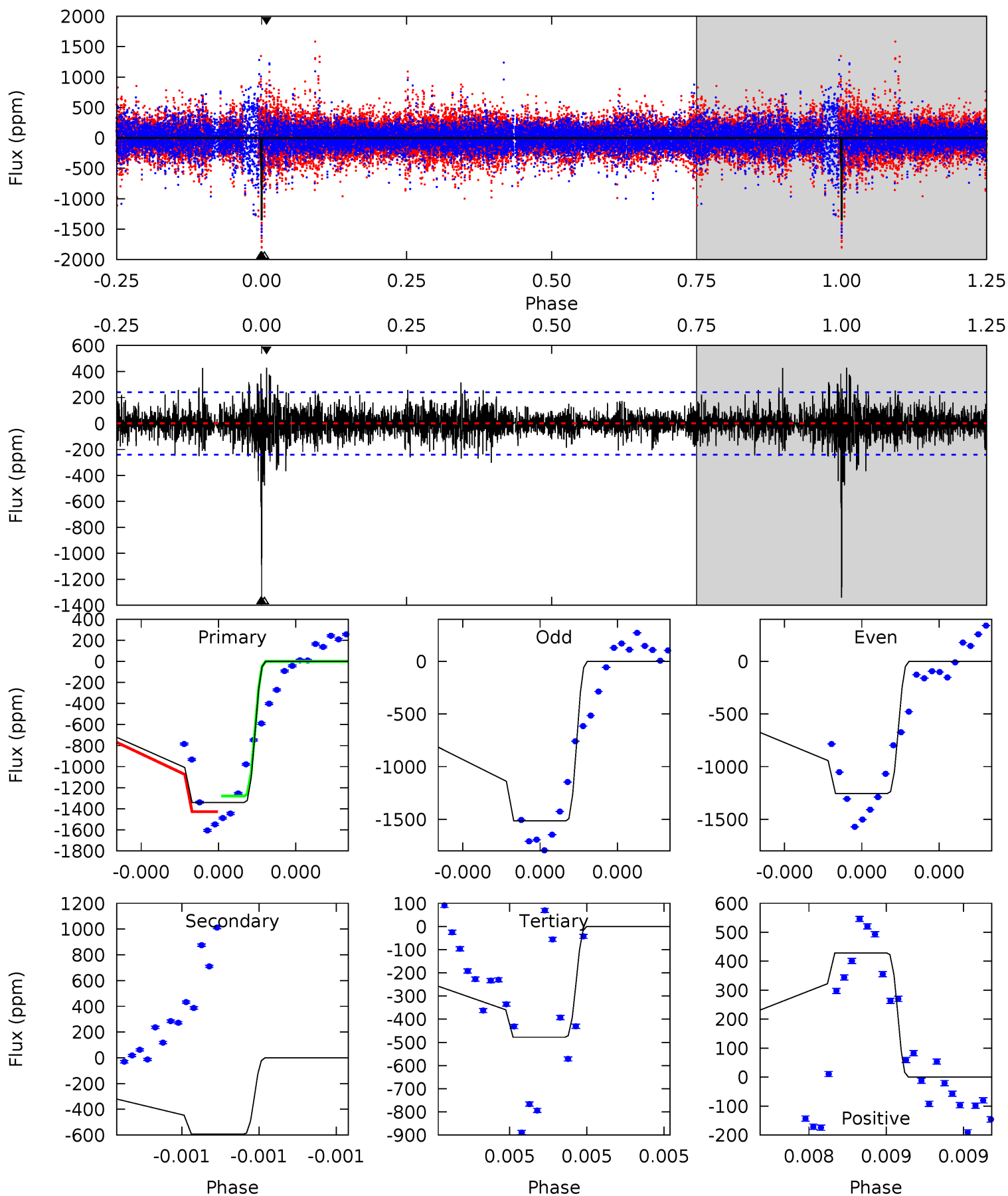
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	24.0	16.3	14.2	5.57	3.48	3.52	5.92	8.01	7.71	9.80	0.46	1.02	0.37	1.70



Alt Model-Shift Uniqueness Test

008677034-02, P = 602.408594 Days, E = 136.071242 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	13.9	11.2	10.0	5.63	3.57	1.93	20.2	21.4	2.69	3.84	2.97	1.04	0.24	1.64



Stellar Parameters For KIC 008677034

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7289^{+203}_{-279}	$3.909^{+0.301}_{-0.129}$	$-0.180^{+0.250}_{-0.350}$	$2.368^{+0.555}_{-0.832}$	$1.657^{+0.184}_{-0.342}$	$0.176^{+0.348}_{-0.070}$
	+3%/-4%	+8%/-3%	+139%/-194%	+23%/-35%	+11%/-21%	+198%/-40%
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 008677034-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1305 ± 54	$19.82^{+17.71}_{-12.55}$	527^{+40}_{-47}	4892^{+3310}_{-1039}	4941^{+32273}_{-3581}
Alt.	-593 ± 43	$17.48^{+18.93}_{-11.77}$	529^{+37}_{-49}	4346^{+3106}_{-889}	2833^{+23880}_{-2171}

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 $A_{obs} \gg 1.0$

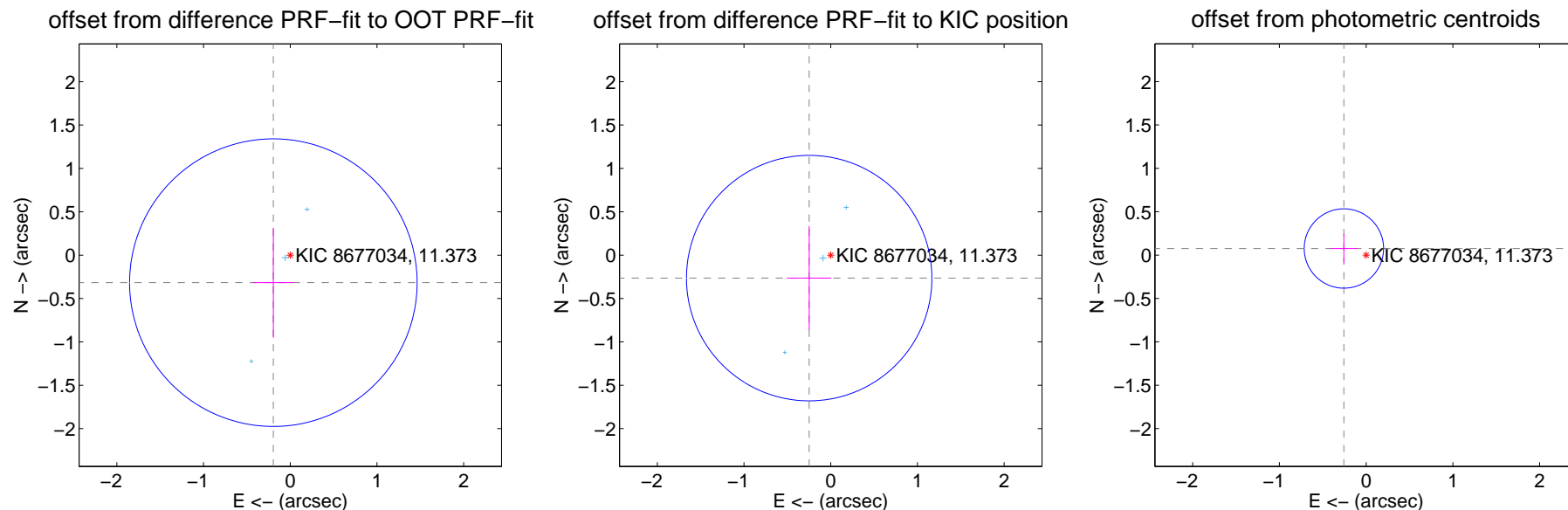
DV Centroid Data

Supplemental centroid analysis for 008677034-02. **Kepler magnitude: 11.37.** Transit SNR 9.09

There are 3 quarters with good PRF difference image offsets

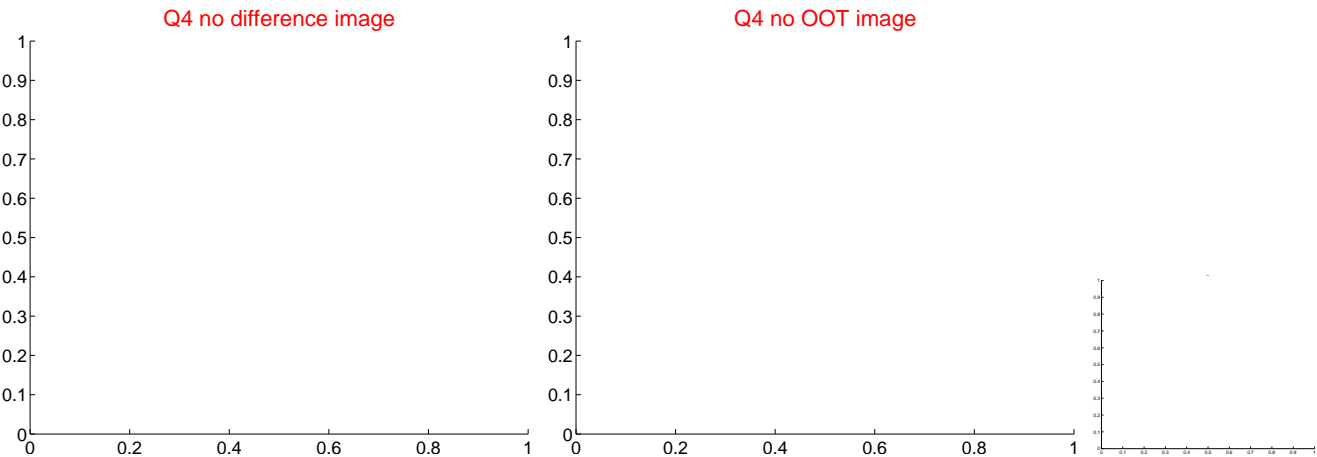
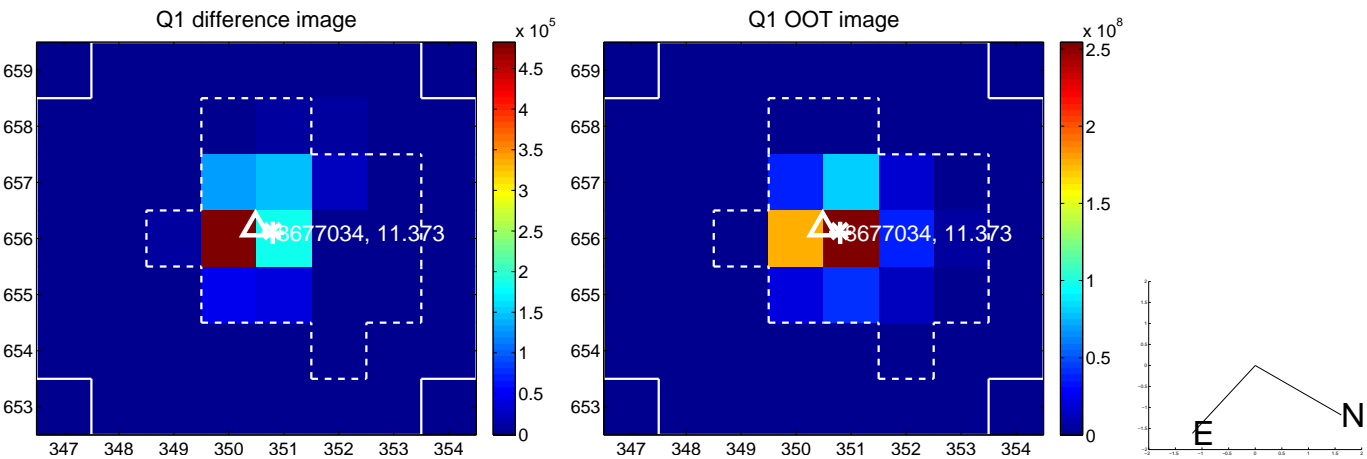
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.372 ± 0.553	0.67	0.195 ± 0.233	-0.317 ± 0.633
PRF-fit source offset from KIC position	0.363 ± 0.472	0.77	0.248 ± 0.256	-0.265 ± 0.601
photometric centroid source offset	0.27 ± 0.15	1.75	0.26 ± 0.15	0.08 ± 0.17

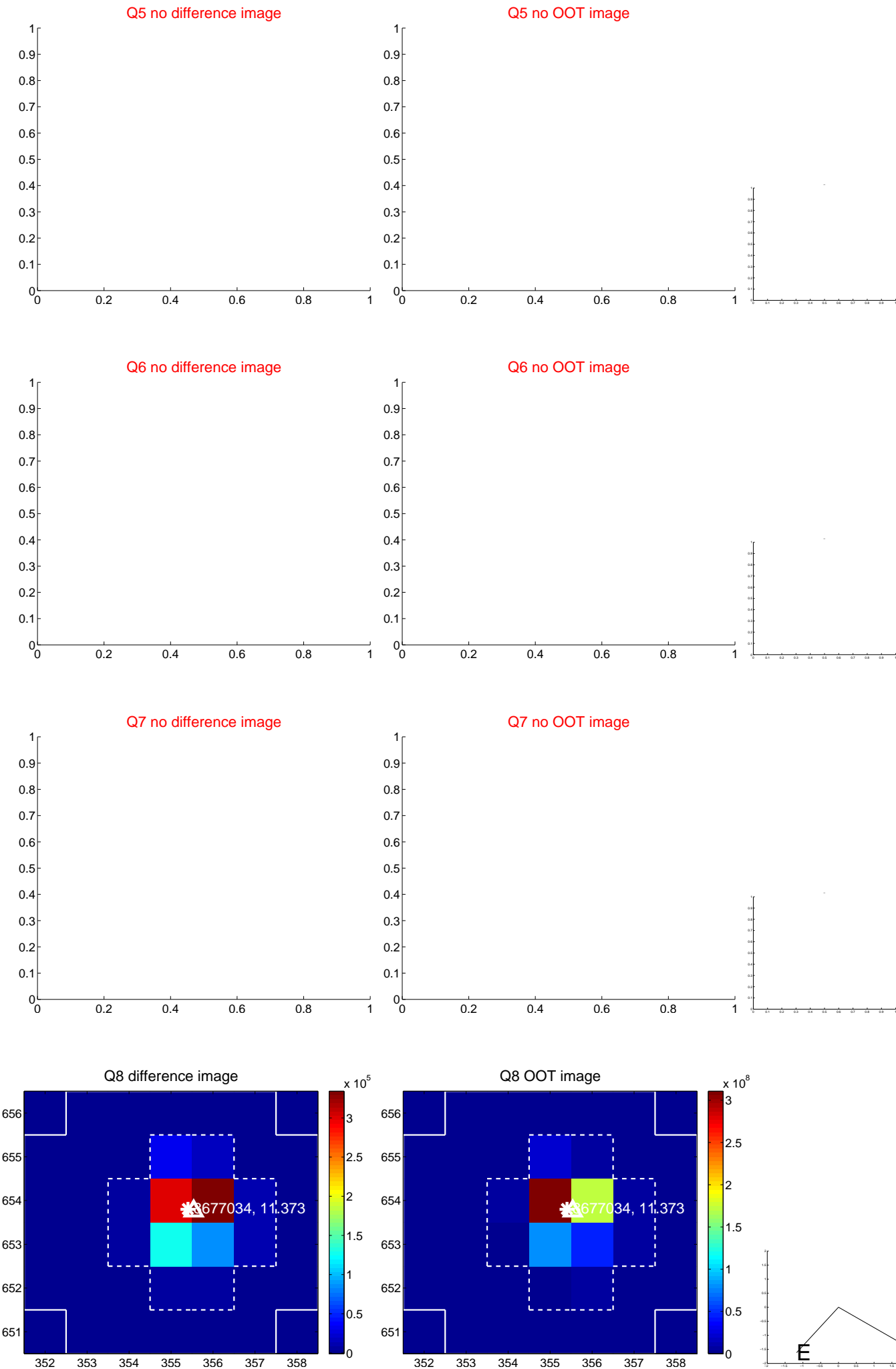


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

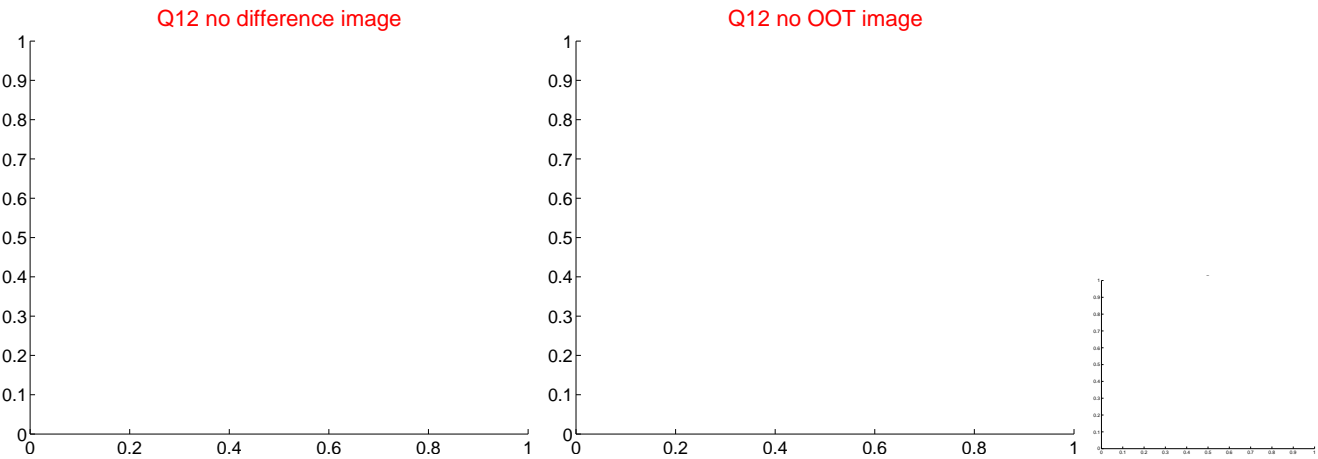
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



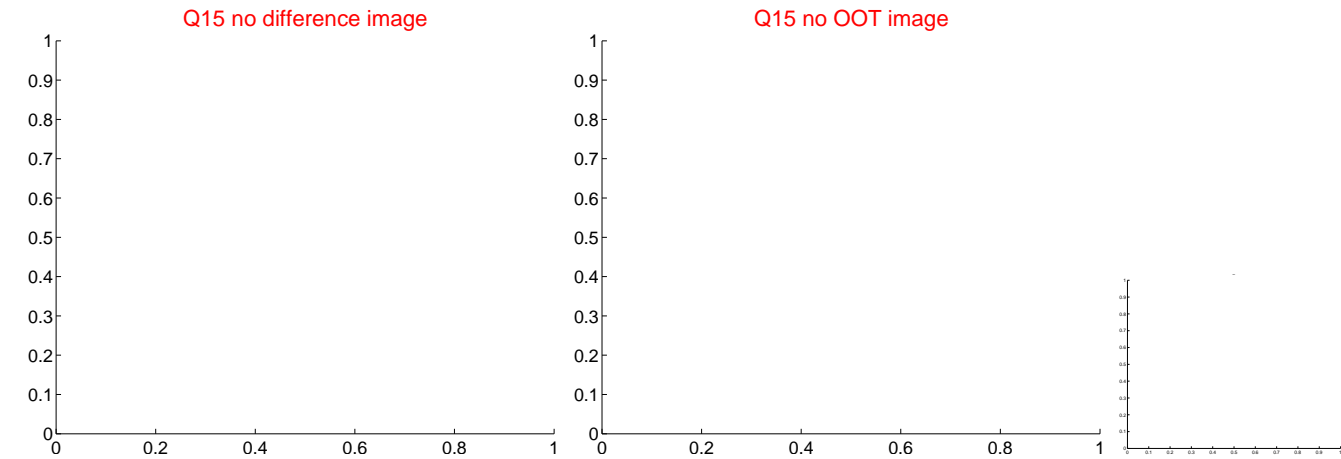
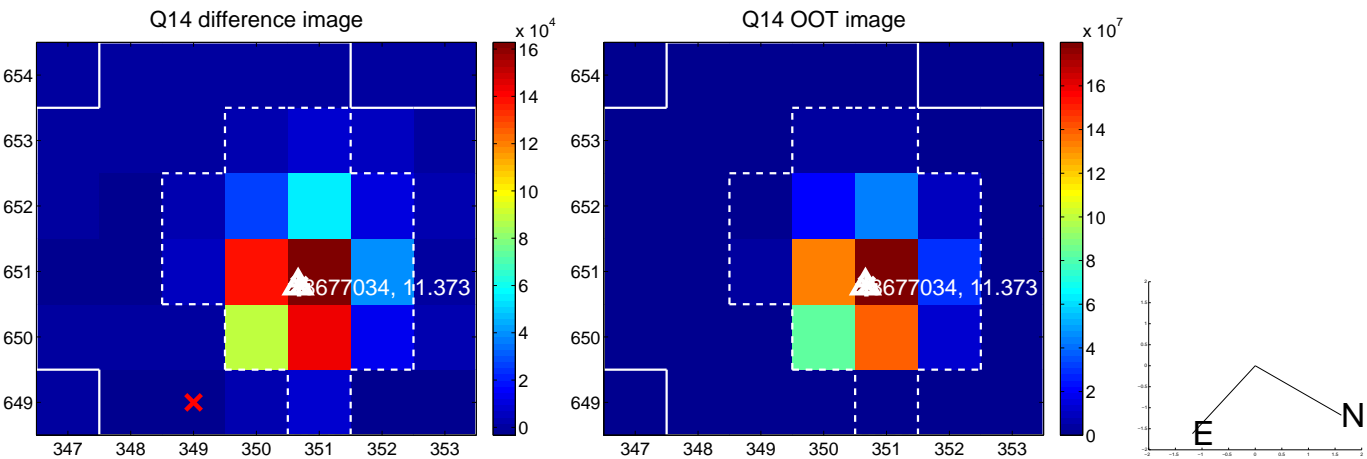
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



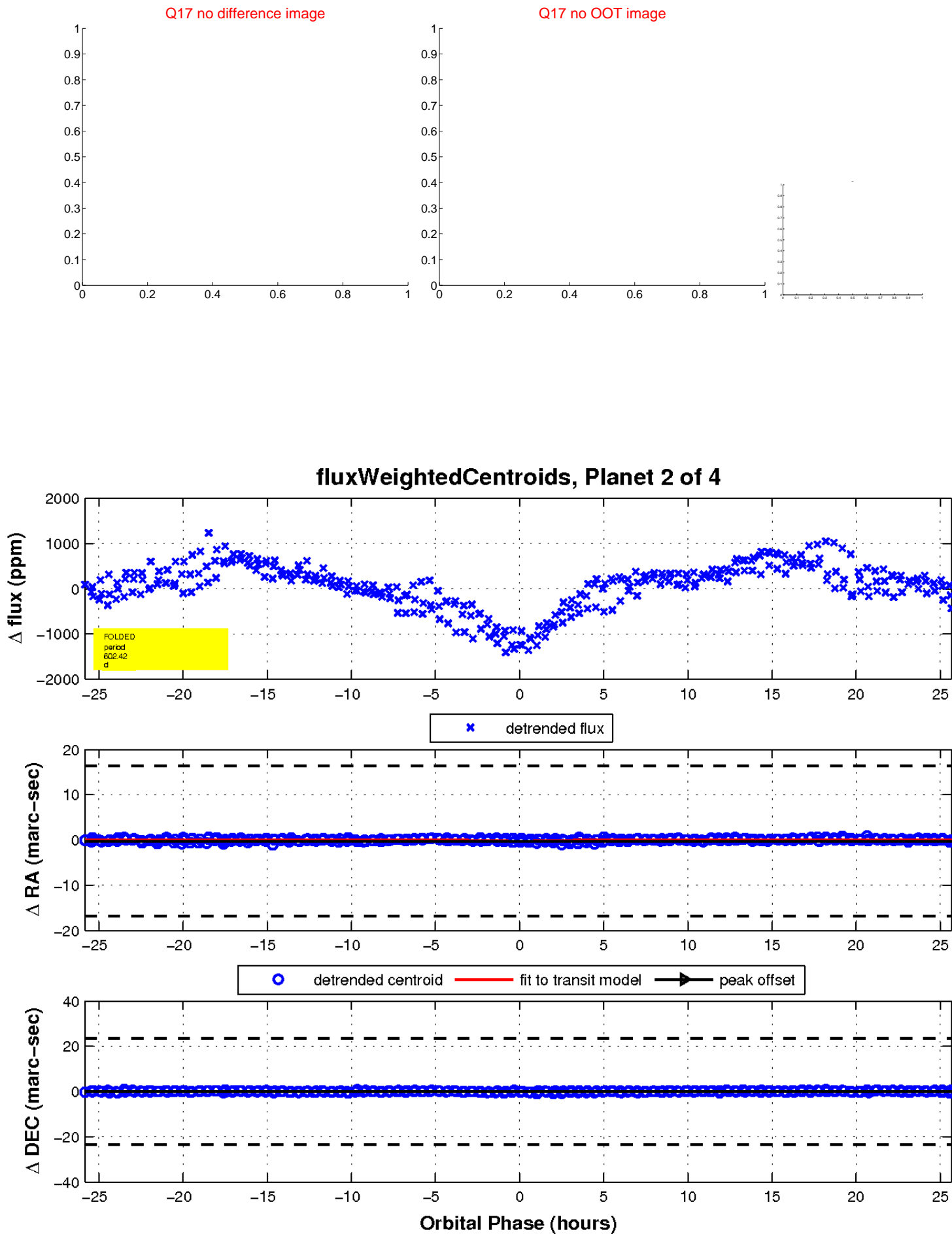
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



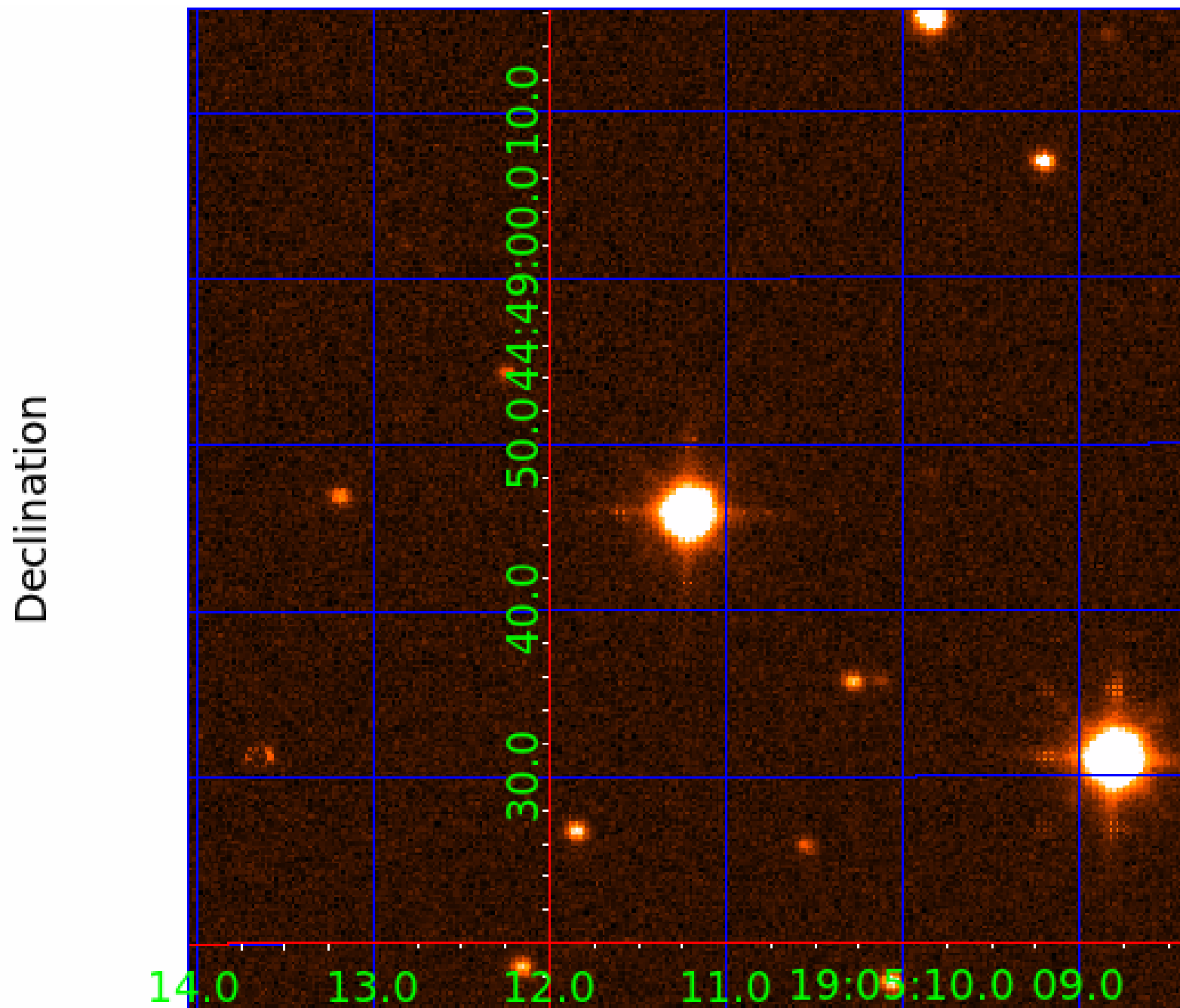
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008677034

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})
008677034-01	OBS	No	1.254945	131.917306	33.6	5.531	9.8	8.0	2.37	7289	1.47	19512.87
008677034-02	OBS	No	602.424976	136.044638	1167.7	8.618	8.9	9.1	2.37	7289	15.08	5.19
008677034-03	OBS	No	518.354116	221.507583	916.6	11.376	8.2	8.7	2.37	7289	8.95	6.34
008677034-04	OBS	No	167.044955	212.517567	637.6	5.814	9.4	7.8	2.37	7289	7.63	28.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008677034-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
008677034-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_SATURATED
008677034-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_SATURATED
008677034-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—CENT_SATURATED

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

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

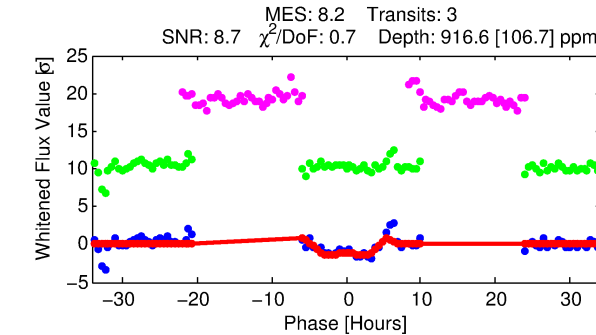
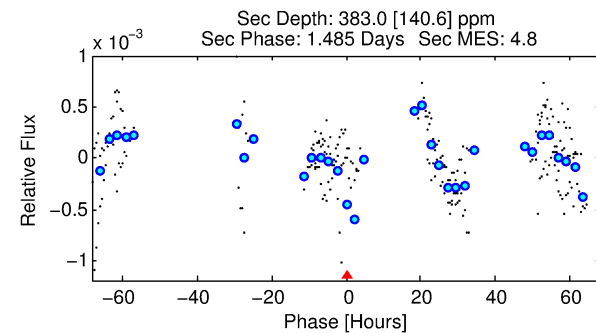
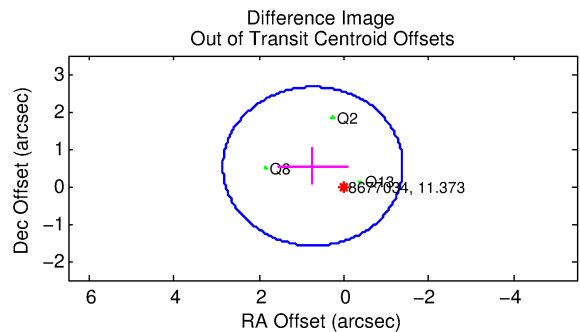
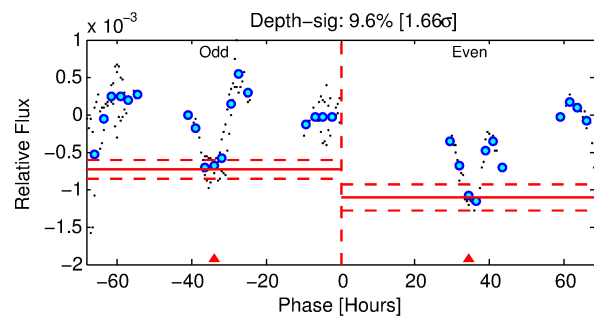
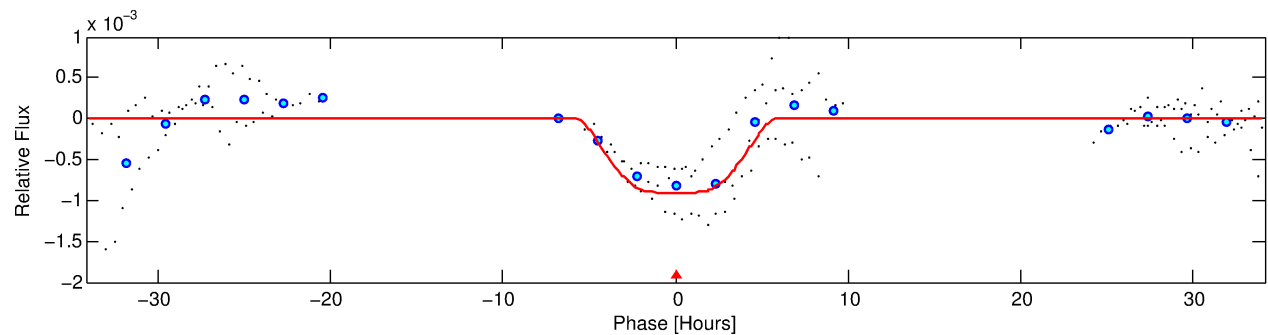
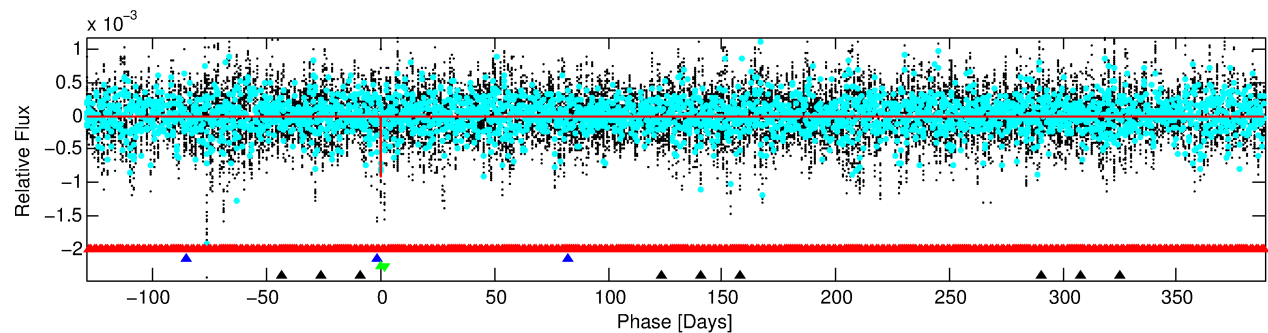
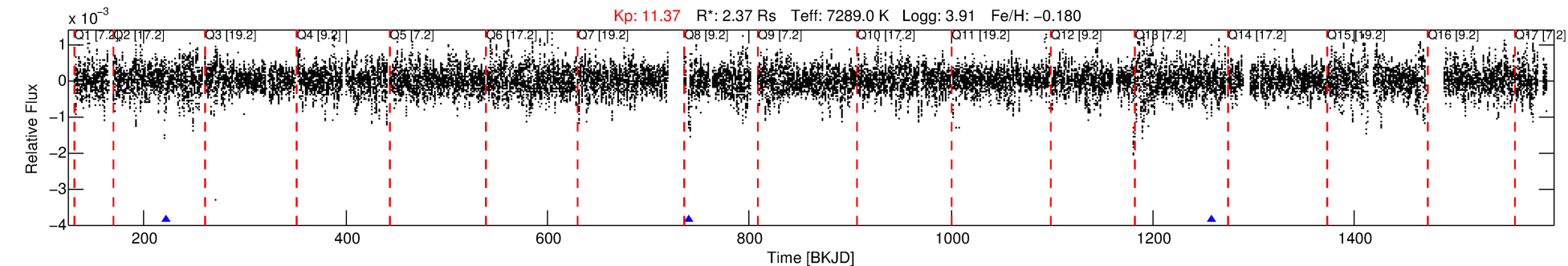
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008677034-03

No Significant Match Found

DV One-Page Summary

KIC: 8677034 Candidate: 3 of 4 Period: 518.354 d



DV Fit Results:

Period = 518.35412 [0.01074] d
Epoch = 221.5076 [0.0158] BKJD
Rp/R* = 0.0346 [0.0022]
a/R* = 136.80 [10.12]
b = 0.96 [0.01]
Seff = 6.34 [3.43]
Teff = 405 [55] K
Rp = 8.95 [3.19] Re
a = 1.4952 [0.4919] AU
Ag = 5879.84 [3805.79] [1.54 σ]
Teffp = 5479 [571] K [8.84 σ]

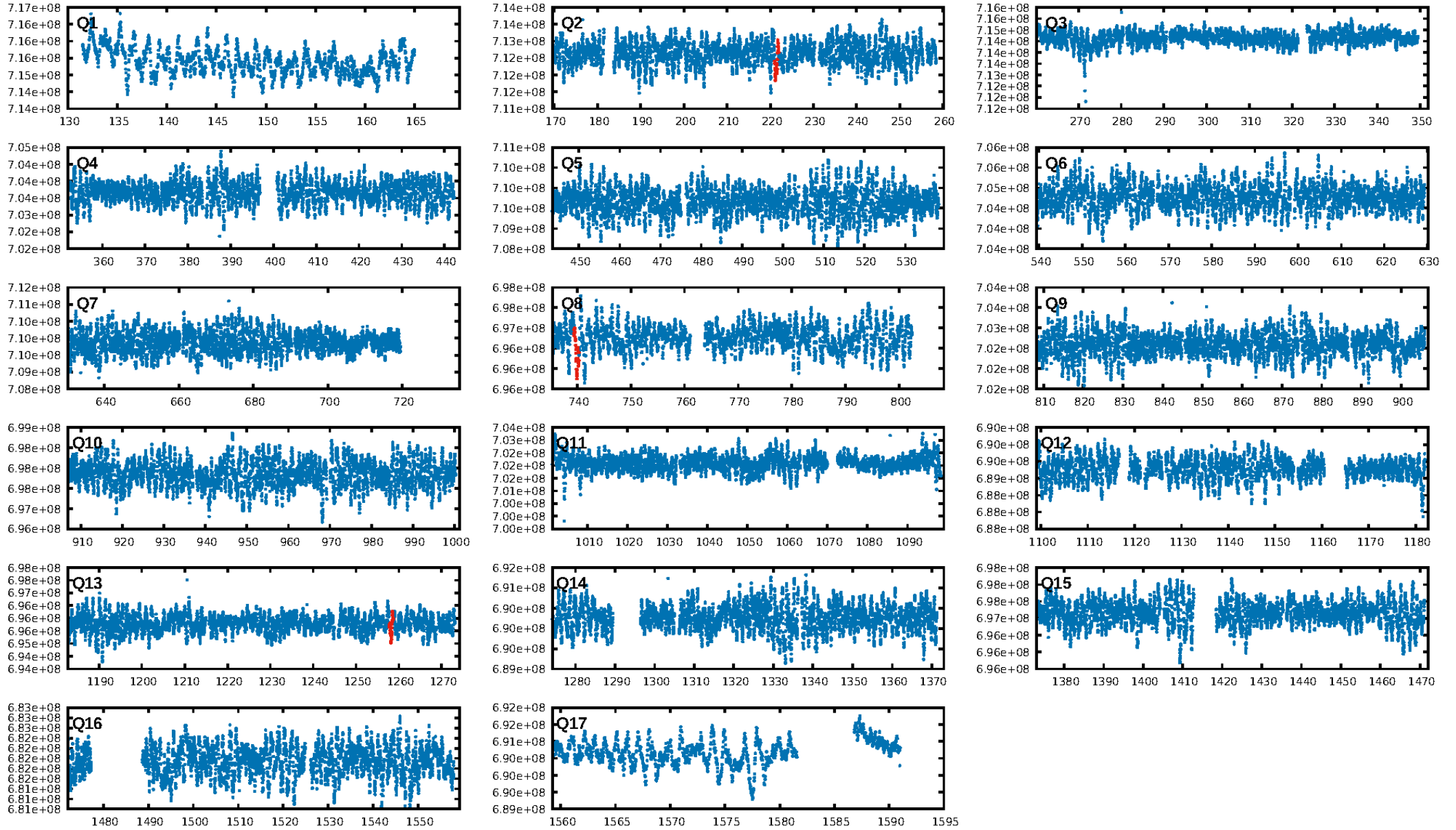
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [659.99 σ]
LongPeriod-sig: 100.0% [141.38 σ]
ModelChiSquare2-sig: 36.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.98e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.3885
Centroid-sig: 66.2%
Centroid-so: 0.105 arcsec [0.53 σ]
OotOffset-rm: 0.902 arcsec [1.27 σ]
KicOffset-rm: 0.944 arcsec [1.36 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

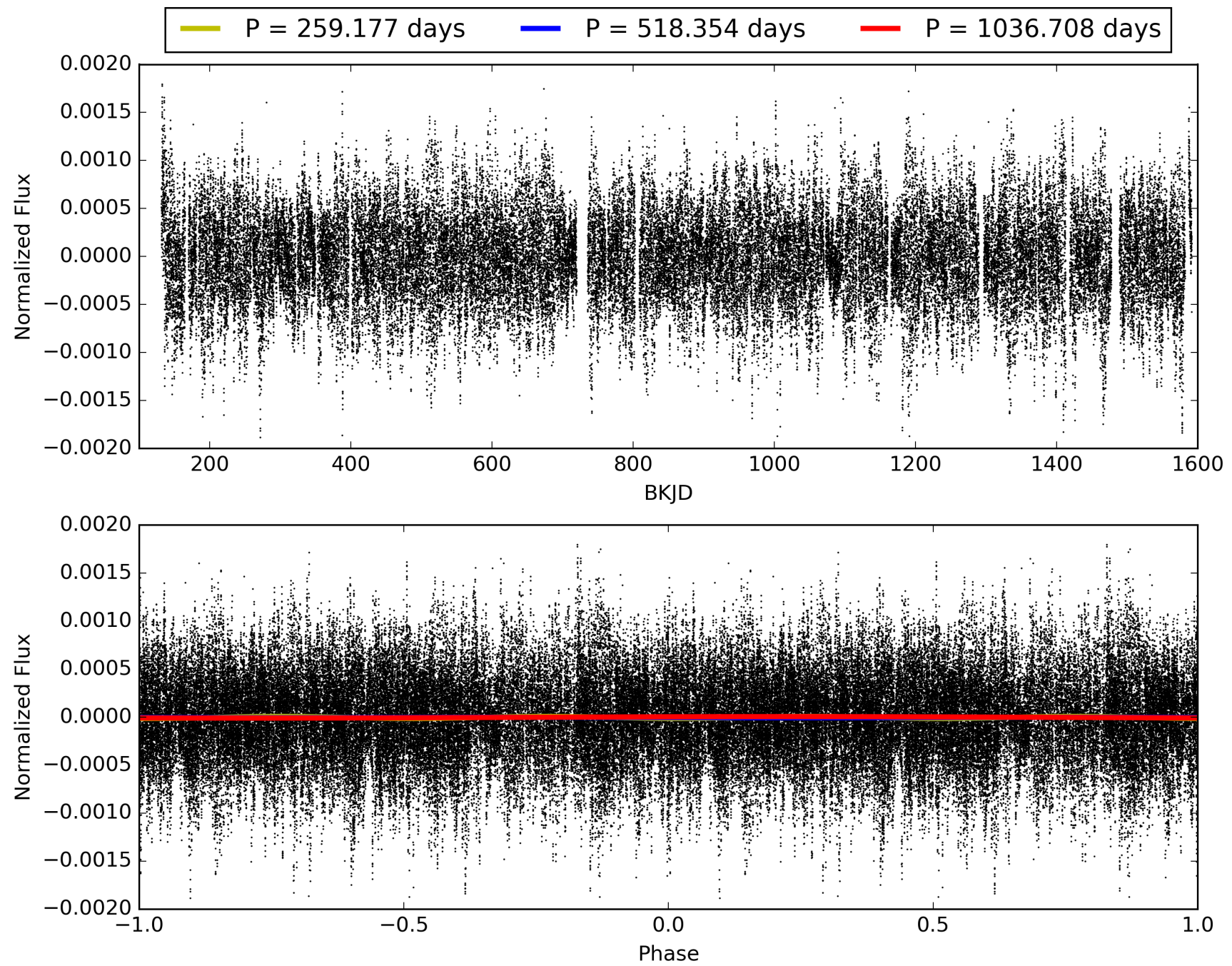
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:48:45 Z

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

TCE 008677034-03, PDC Light Curves

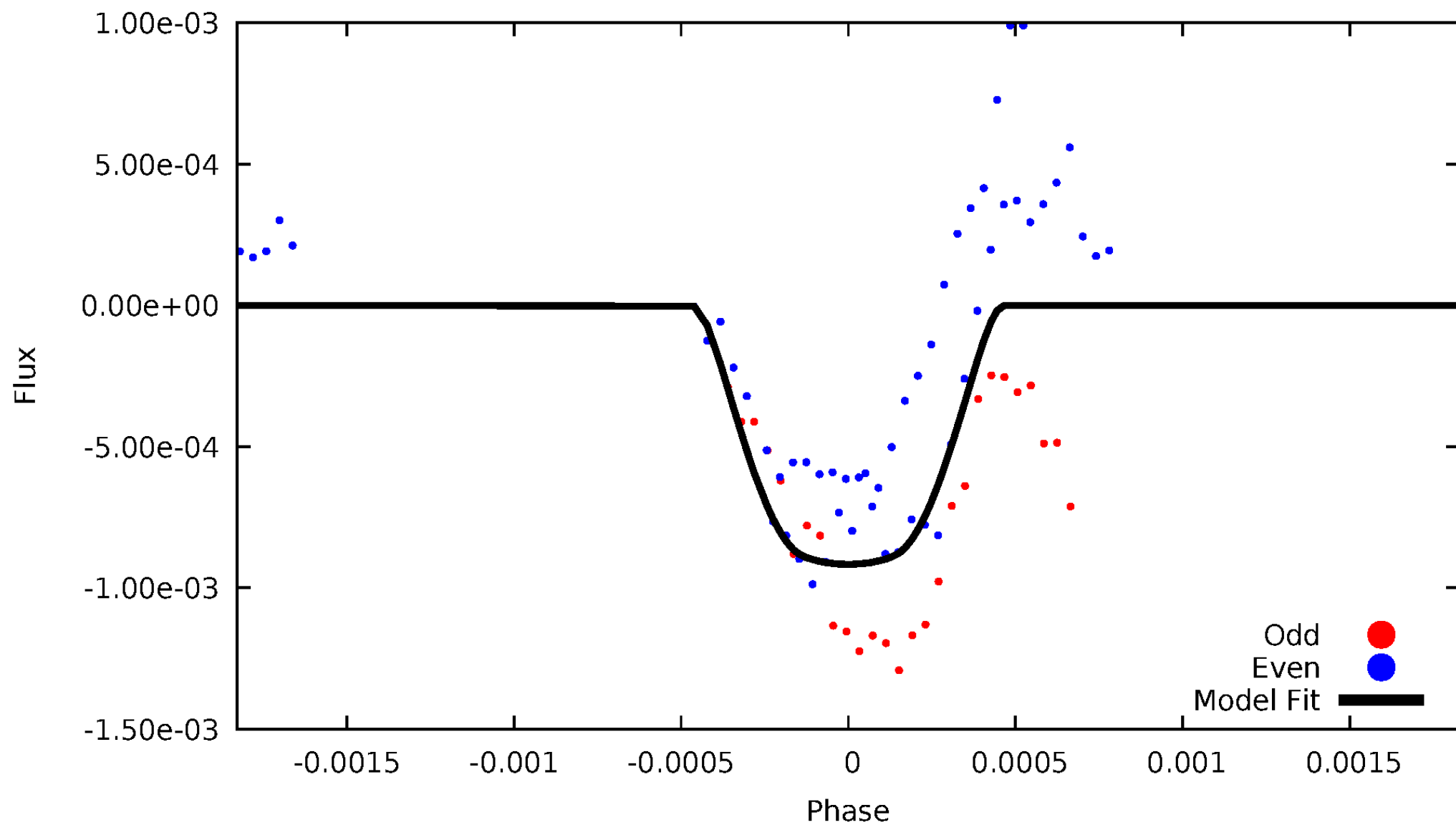


TCE 008677034-03



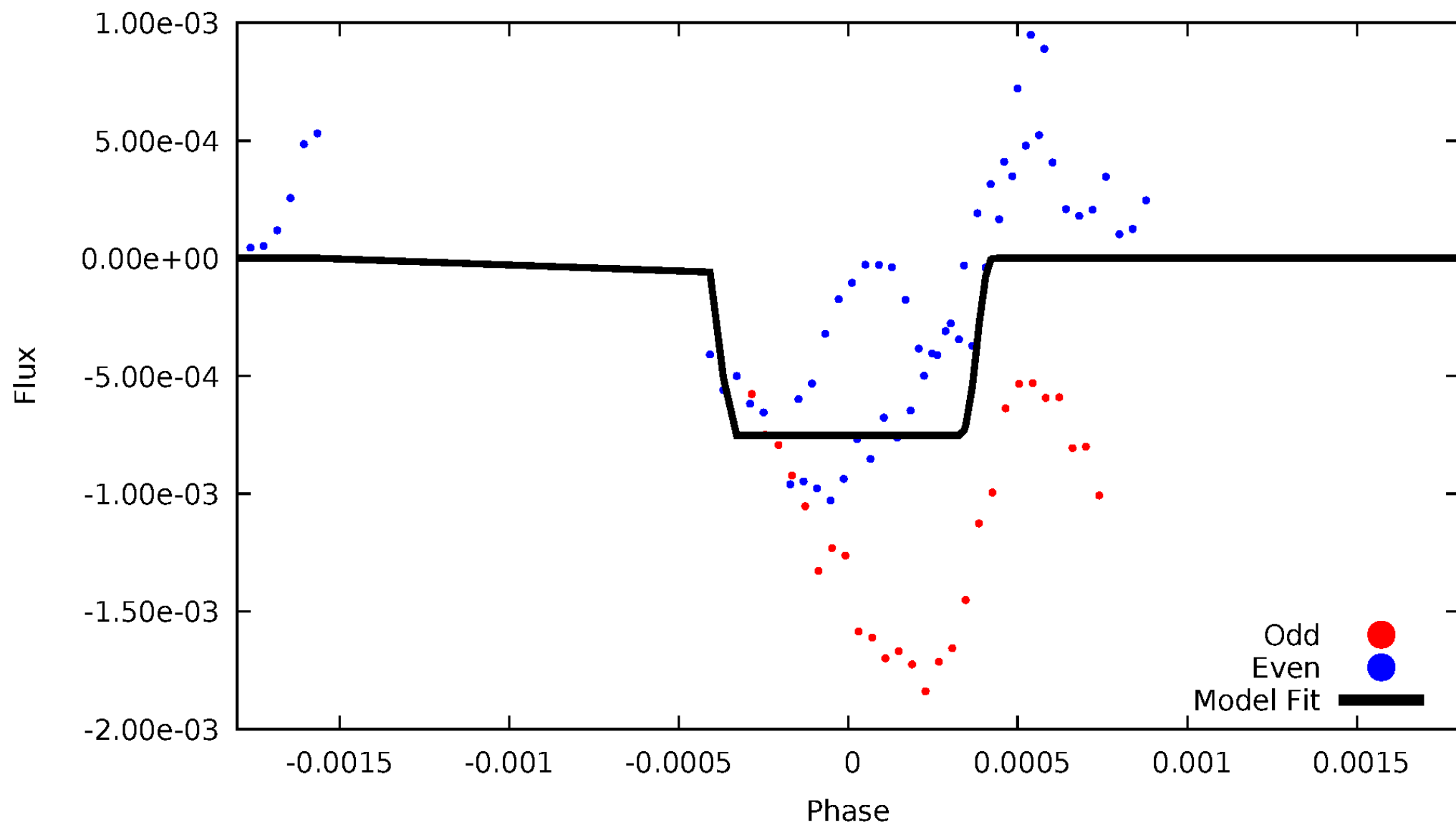
DV Odd/Even

TCE 008677034-03



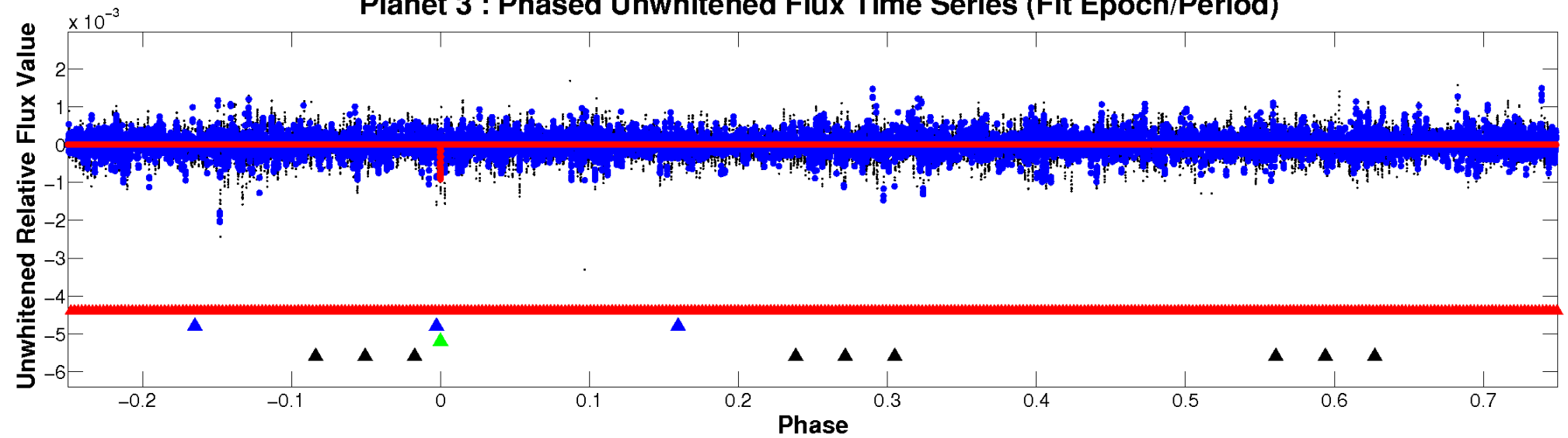
ALT Odd/Even

TCE 008677034-03

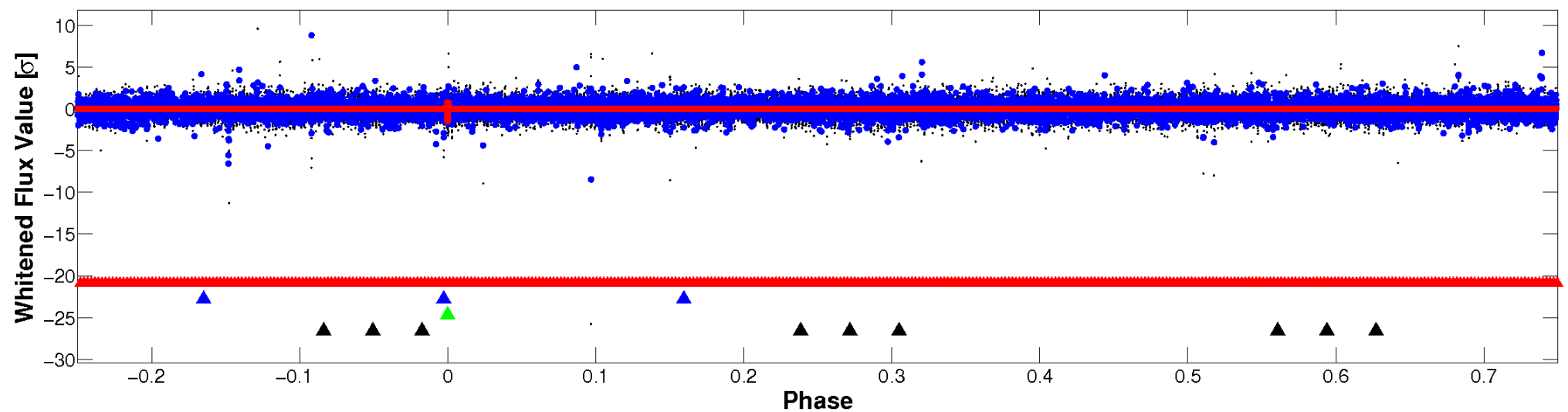


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

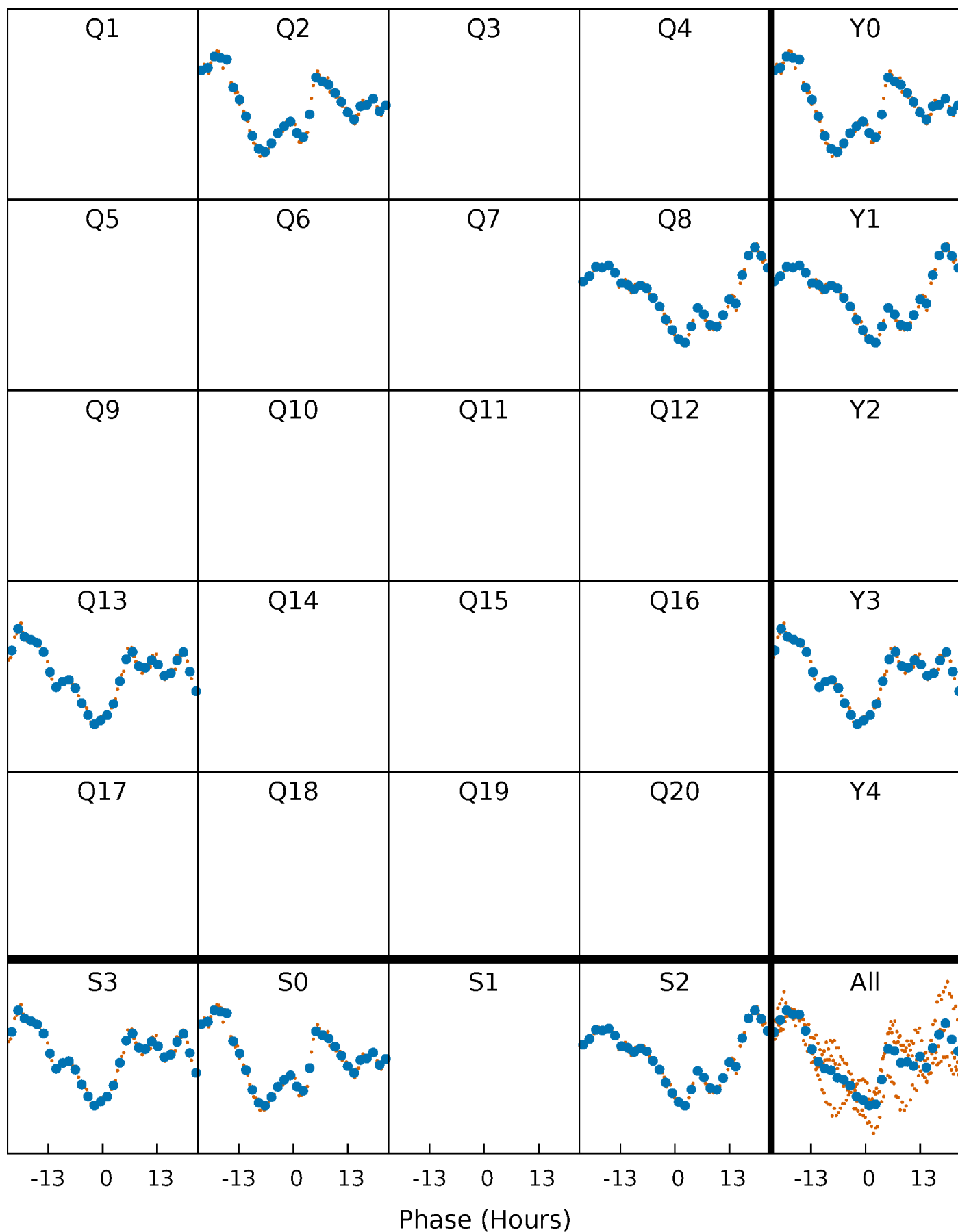


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



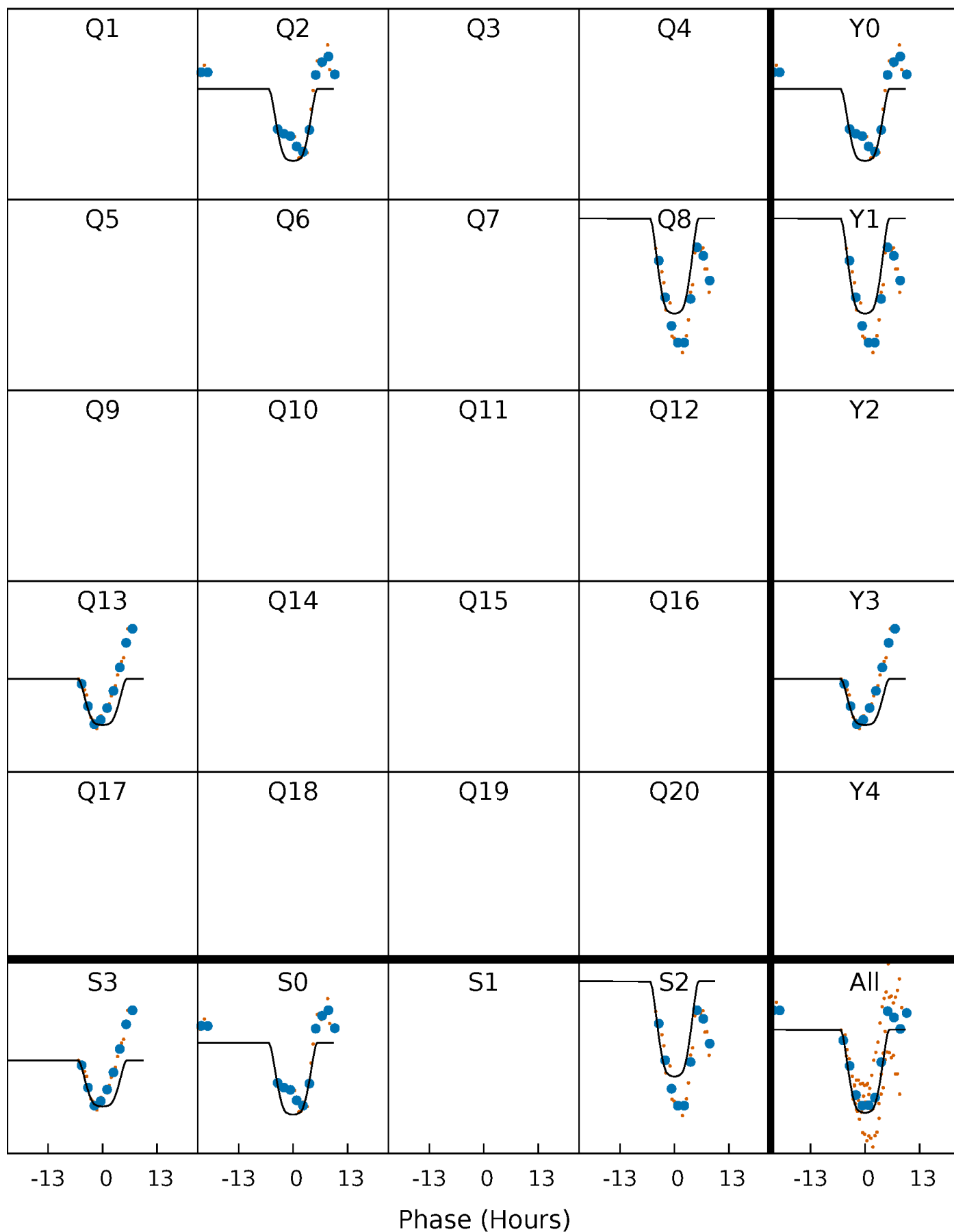
PDC Quarter-Phased Transit Curves

TCE 008677034-03 P=518.354116 Days $T_0=221.507583$ (BKJD)



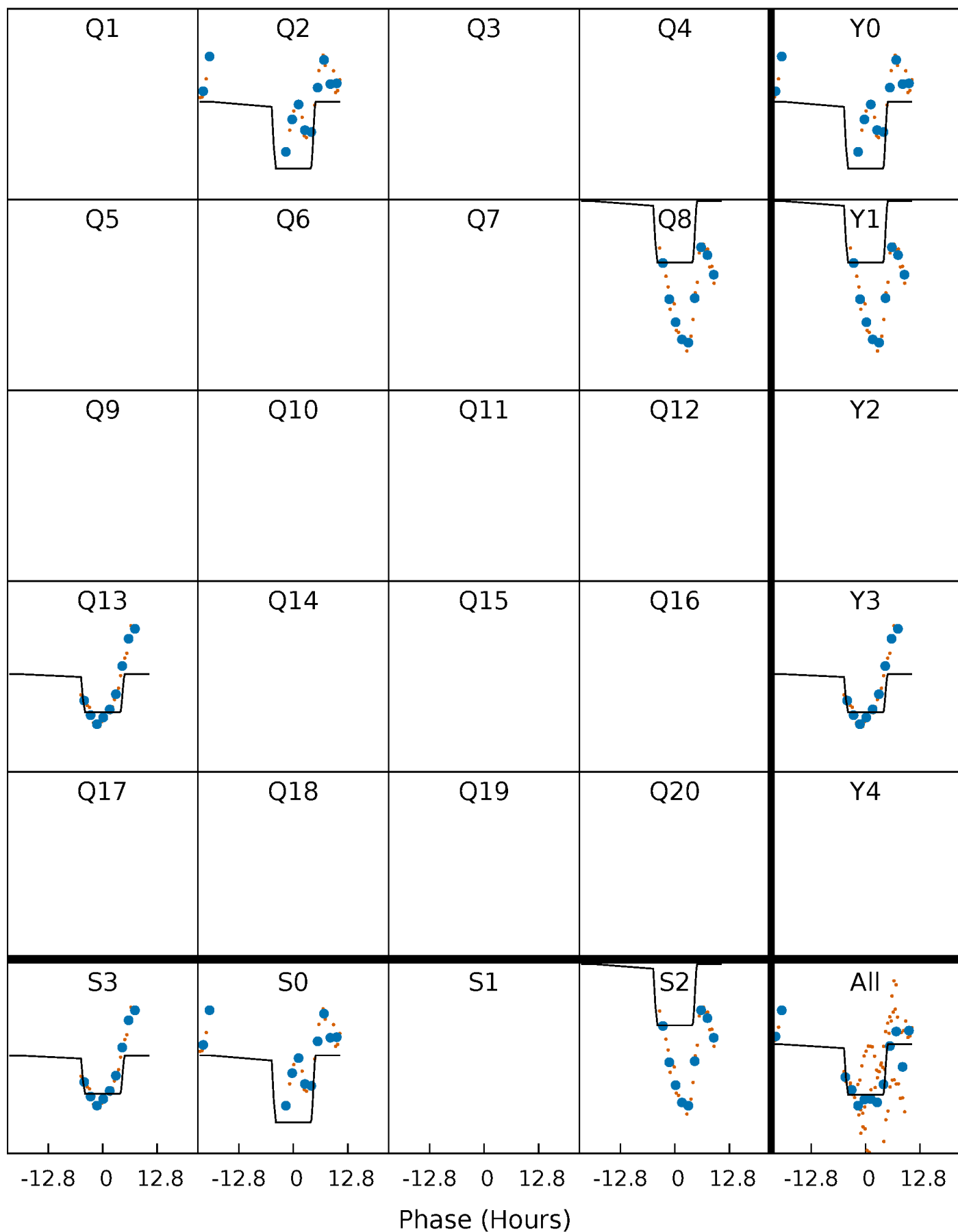
DV Quarter-Phased Transit Curves

TCE 008677034-03 P=518.354116 Days $T_0=221.507583$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

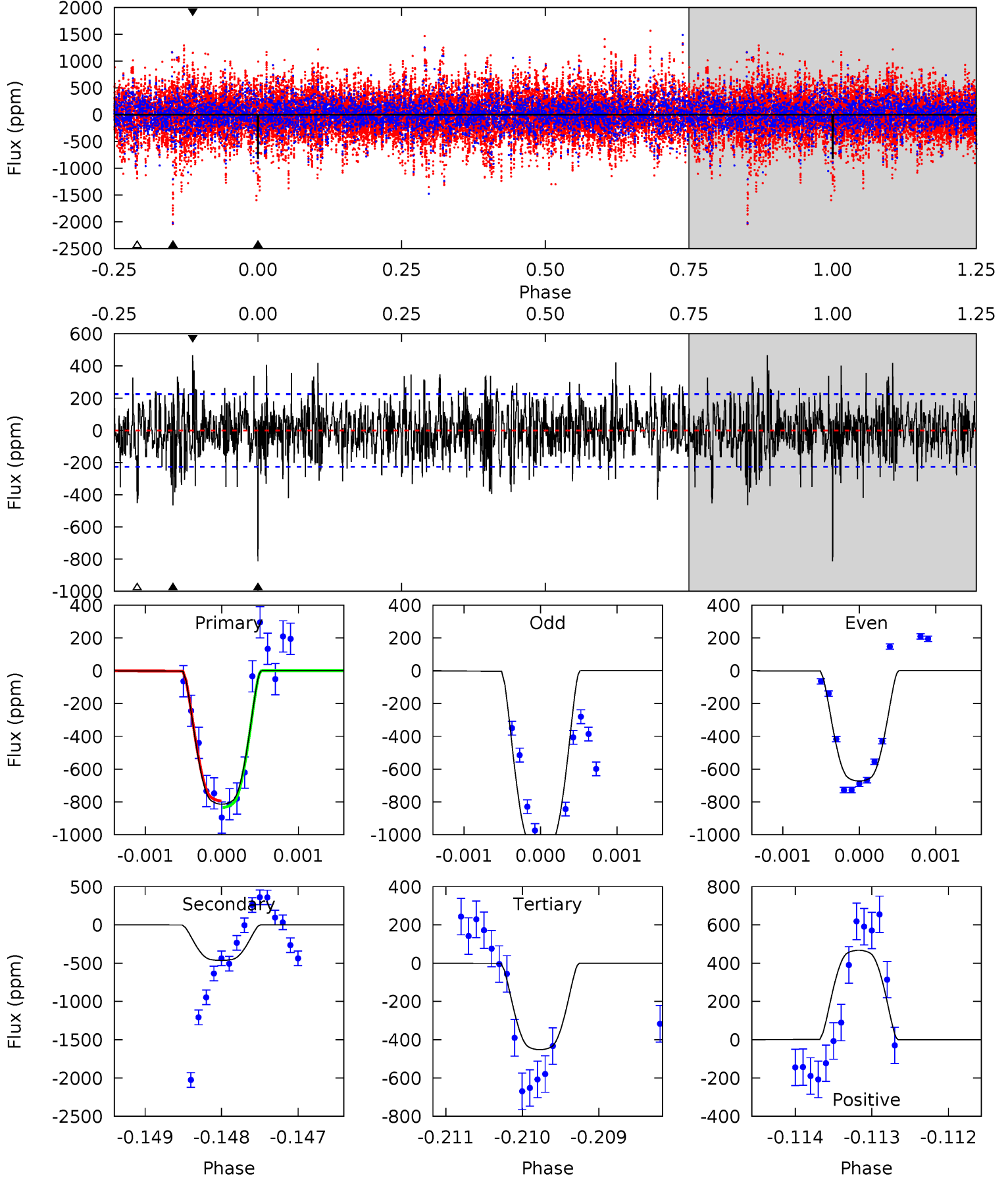
TCE 008677034-03 P=518.365361 Days $T_0=221.457126$ (BKJD)



DV Model-Shift Uniqueness Test

008677034-03, P = 518.354116 Days, E = 221.507583 Days

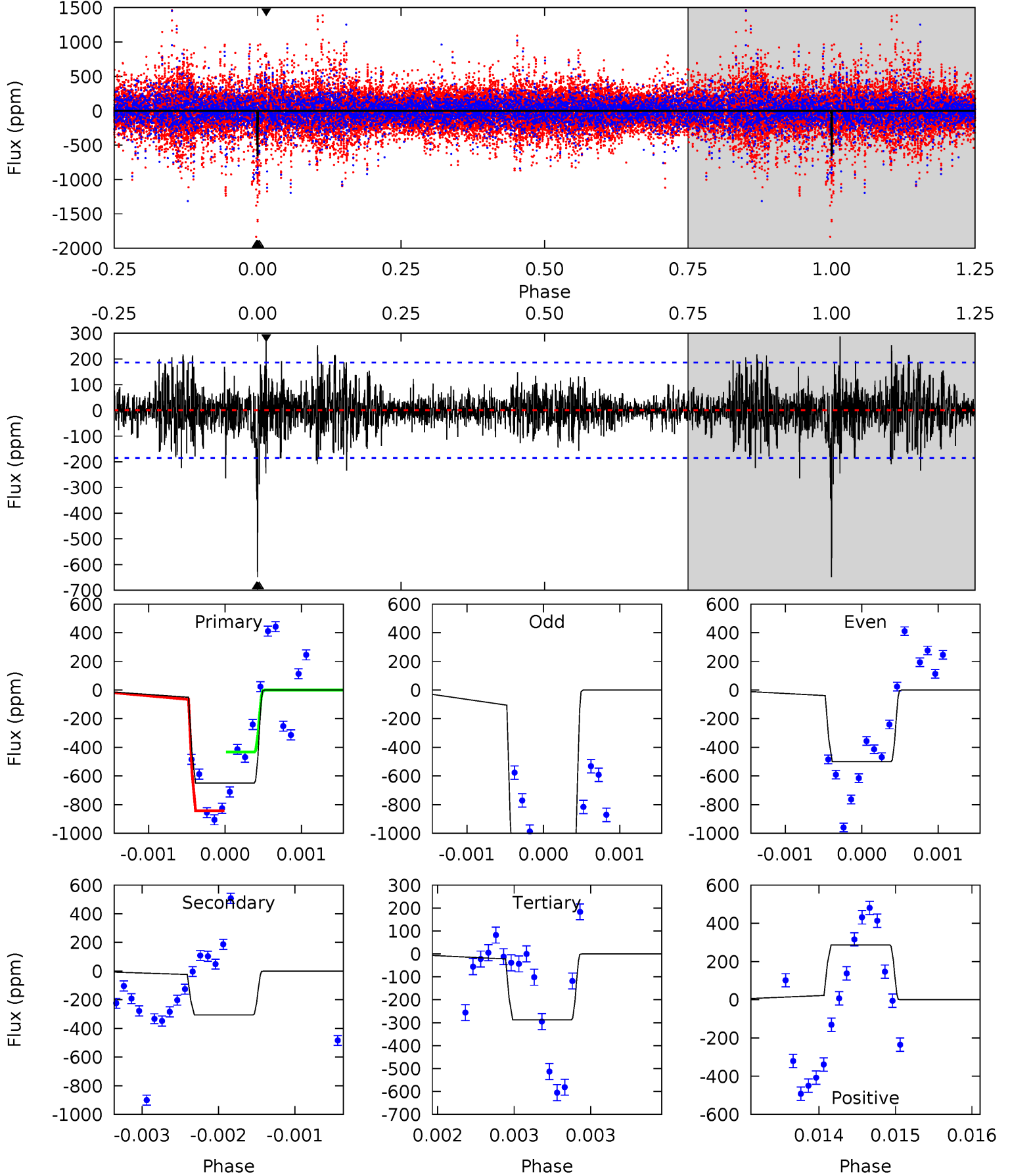
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	11.2	10.9	11.3	5.47	3.32	3.07	8.77	8.39	0.30	-0.07	4.75	1.12	0.36	0.48



Alt Model-Shift Uniqueness Test

008677034-03, P = 518.365361 Days, E = 221.457126 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	9.02	8.47	8.46	5.48	3.34	1.67	10.7	10.7	0.55	0.56	13.6	1.14	0.31	5.90



Stellar Parameters For KIC 008677034

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7289^{+203}_{-279}	$3.909^{+0.301}_{-0.129}$	$-0.180^{+0.250}_{-0.350}$	$2.368^{+0.555}_{-0.832}$	$1.657^{+0.184}_{-0.342}$	$0.176^{+0.348}_{-0.070}$
	+3%/-4%	+8%/-3%	+139%/-194%	+23%/-35%	+11%/-21%	+198%/-40%
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 008677034-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-464 ± 41	$8.55^{+1.46}_{-1.73}$	552^{+42}_{-55}	5676^{+274}_{-238}	7750^{+4096}_{-2001}
Alt.	-306 ± 34	$6.84^{+1.06}_{-1.32}$	556^{+40}_{-51}	5738^{+340}_{-299}	7913^{+3856}_{-2080}

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

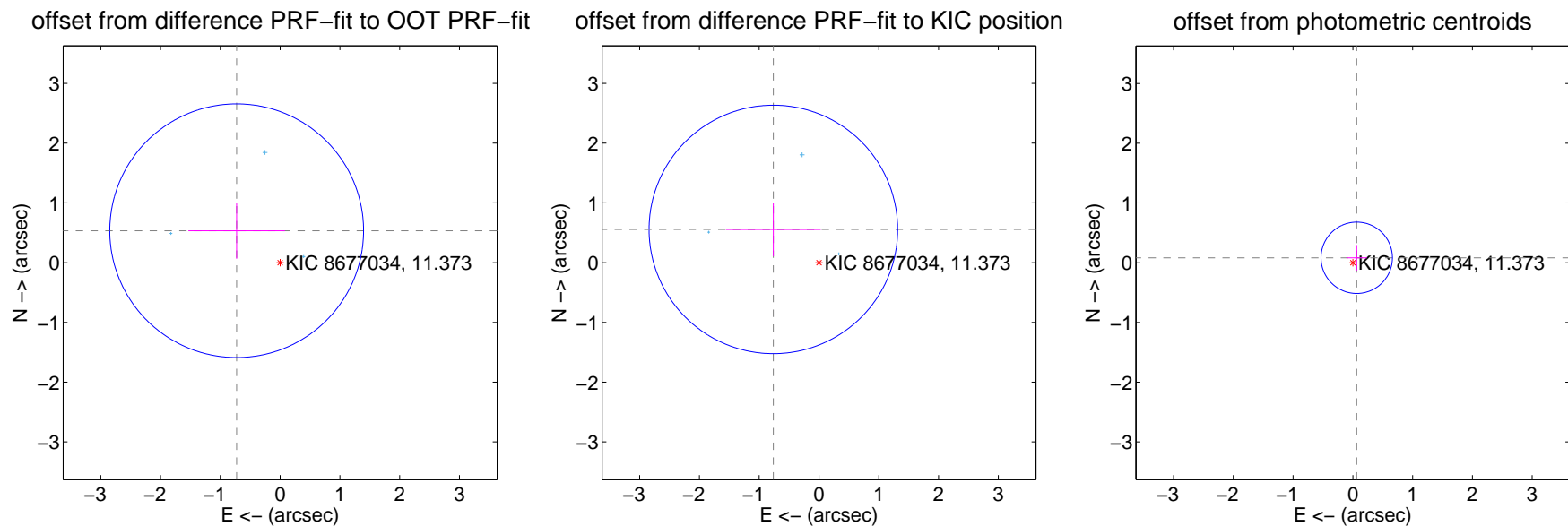
DV Centroid Data

Supplemental centroid analysis for 008677034-03. **Kepler magnitude: 11.37.** Transit SNR 8.68

There are 3 quarters with good PRF difference image offsets

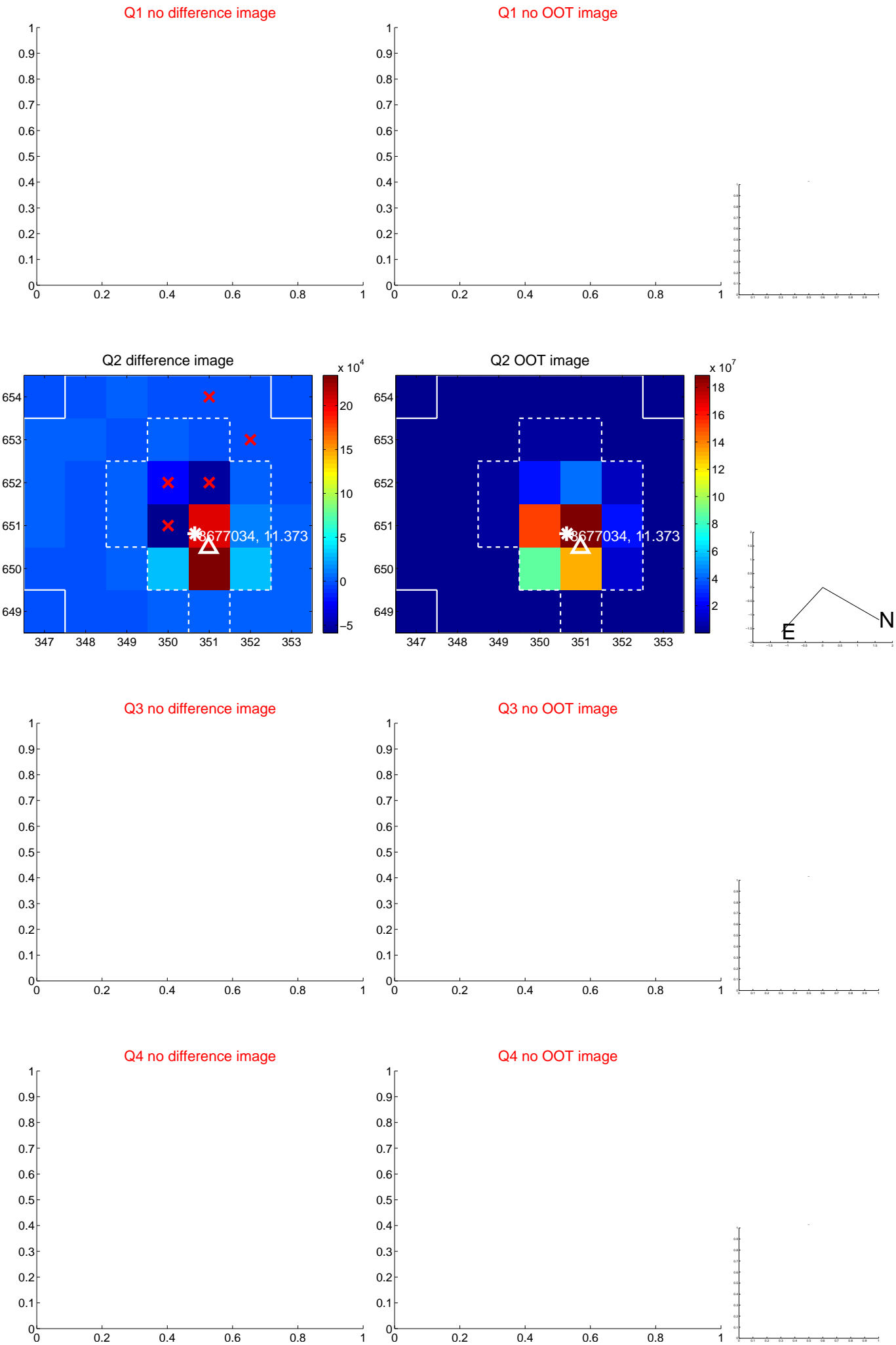
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.902 ± 0.708	1.27	0.727 ± 0.807	0.534 ± 0.470
PRF-fit source offset from KIC position	0.944 ± 0.693	1.36	0.763 ± 0.793	0.556 ± 0.449
photometric centroid source offset	0.10 ± 0.20	0.53	-0.06 ± 0.17	0.08 ± 0.21

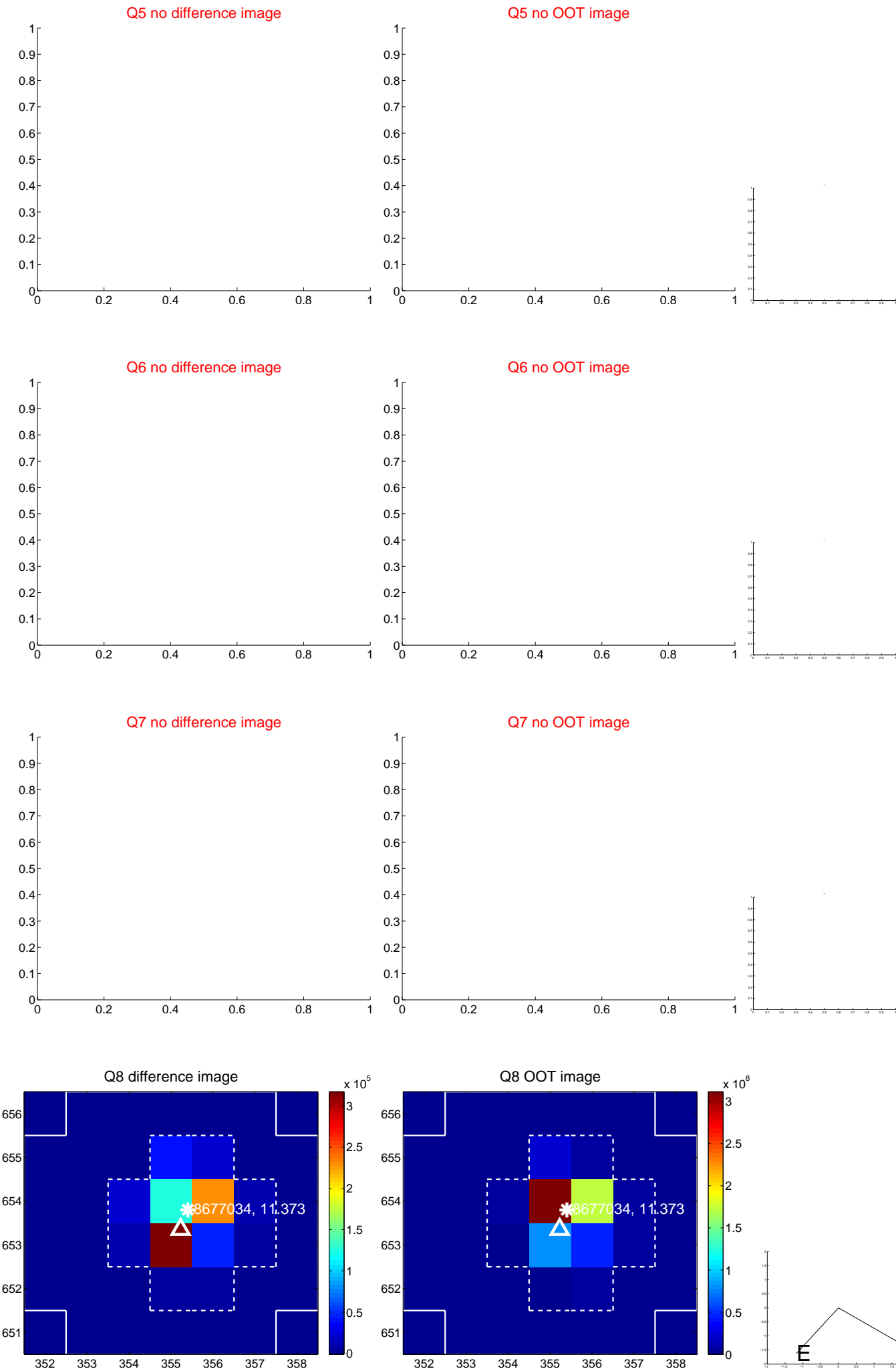


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



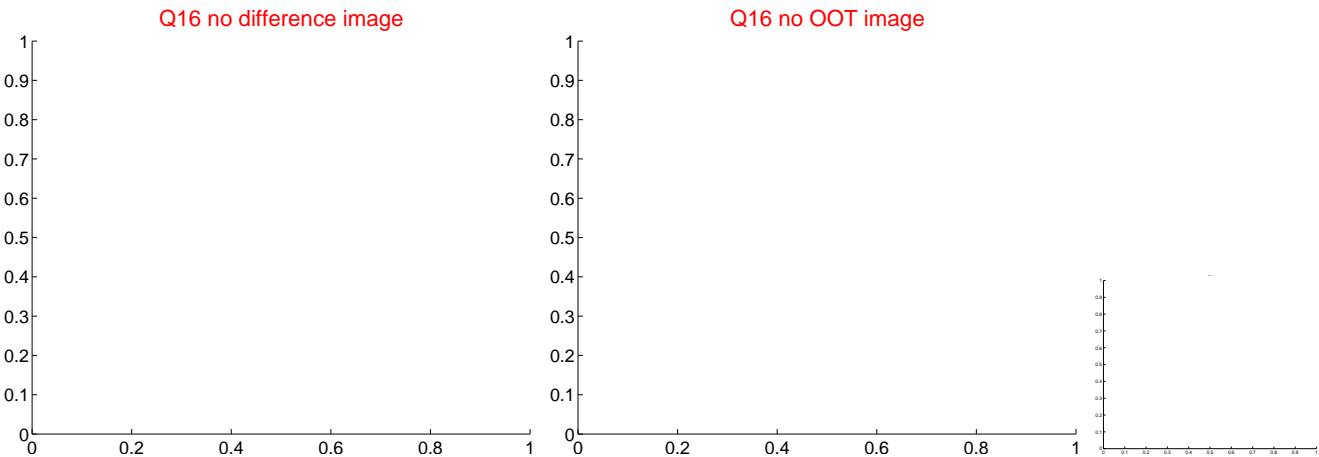
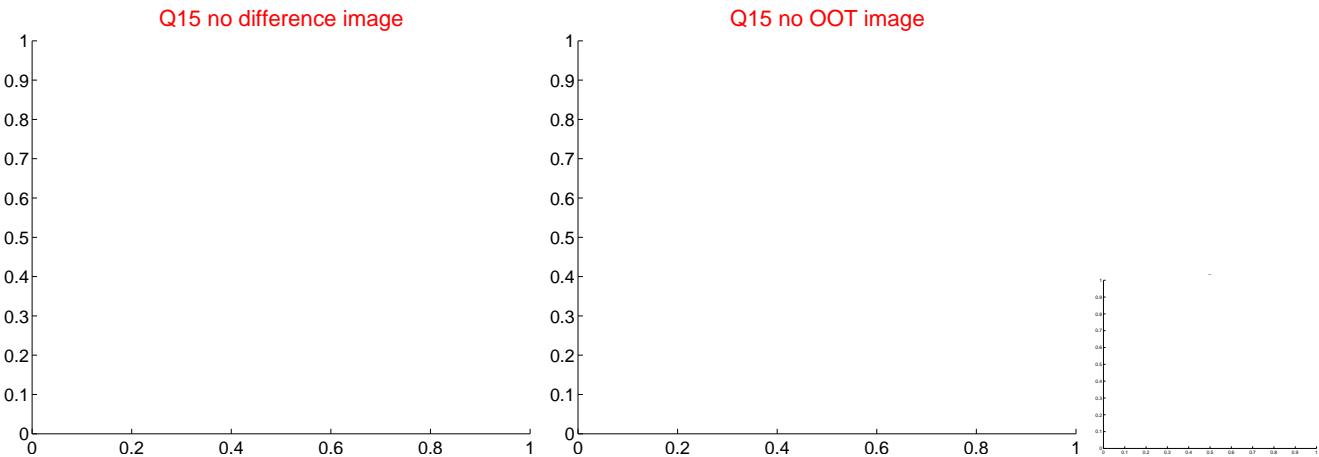
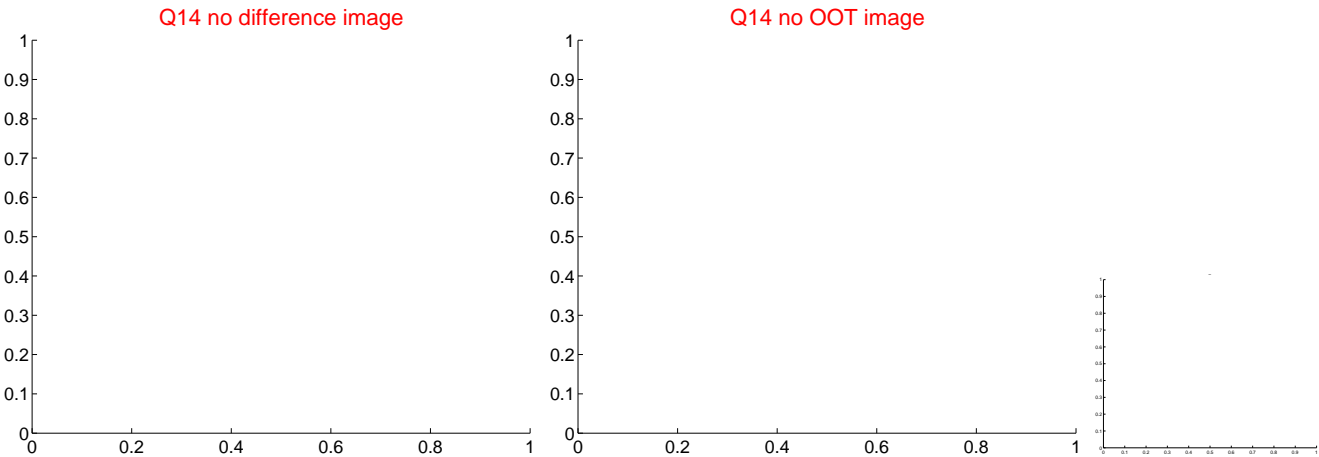
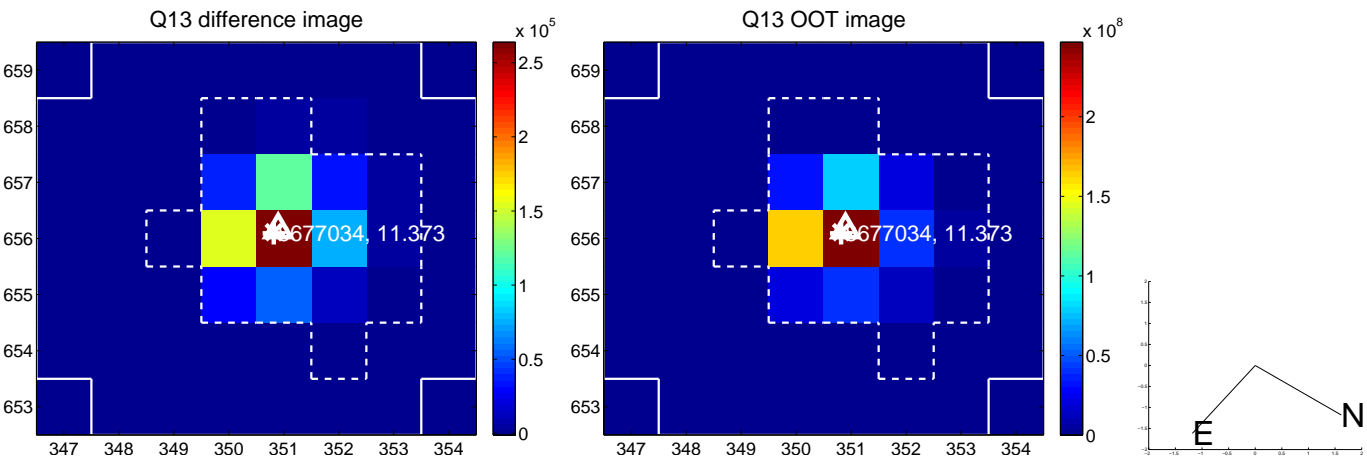
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



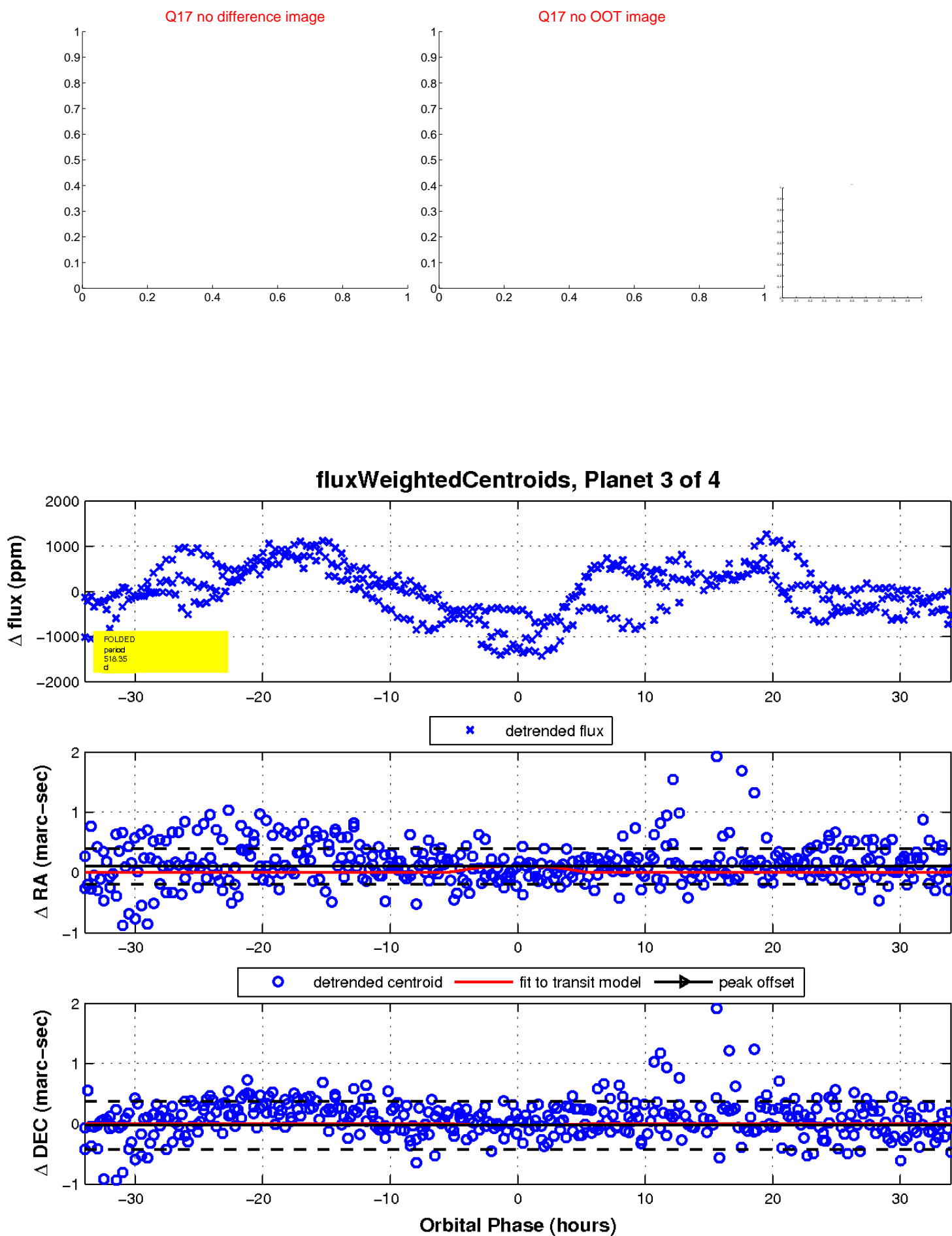
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



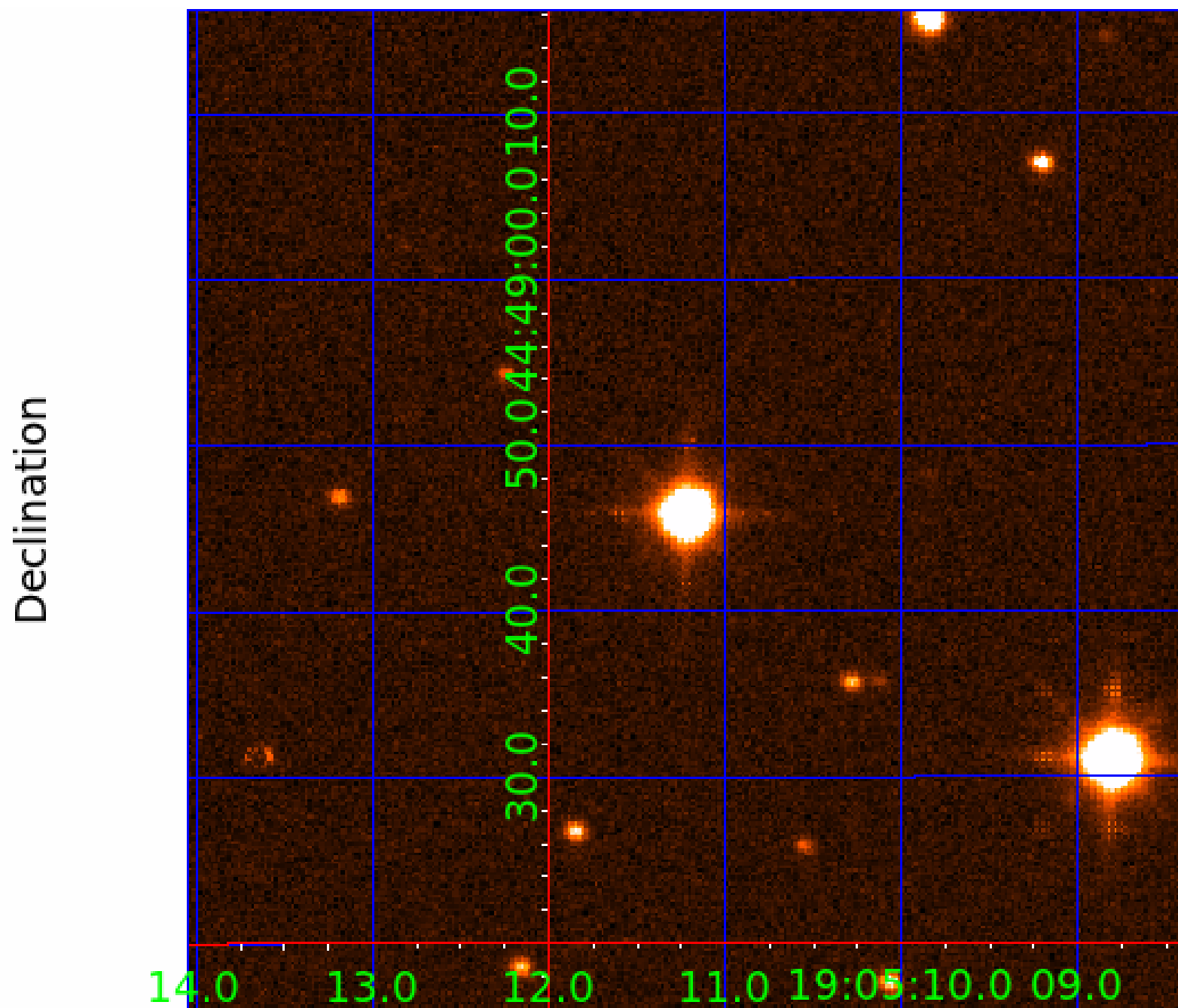
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008677034

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})
008677034-01	OBS	No	1.254945	131.917306	33.6	5.531	9.8	8.0	2.37	7289	1.47	19512.87
008677034-02	OBS	No	602.424976	136.044638	1167.7	8.618	8.9	9.1	2.37	7289	15.08	5.19
008677034-03	OBS	No	518.354116	221.507583	916.6	11.376	8.2	8.7	2.37	7289	8.95	6.34
008677034-04	OBS	No	167.044955	212.517567	637.6	5.814	9.4	7.8	2.37	7289	7.63	28.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008677034-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
008677034-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_SATURATED
008677034-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_SATURATED
008677034-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—CENT_SATURATED

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

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

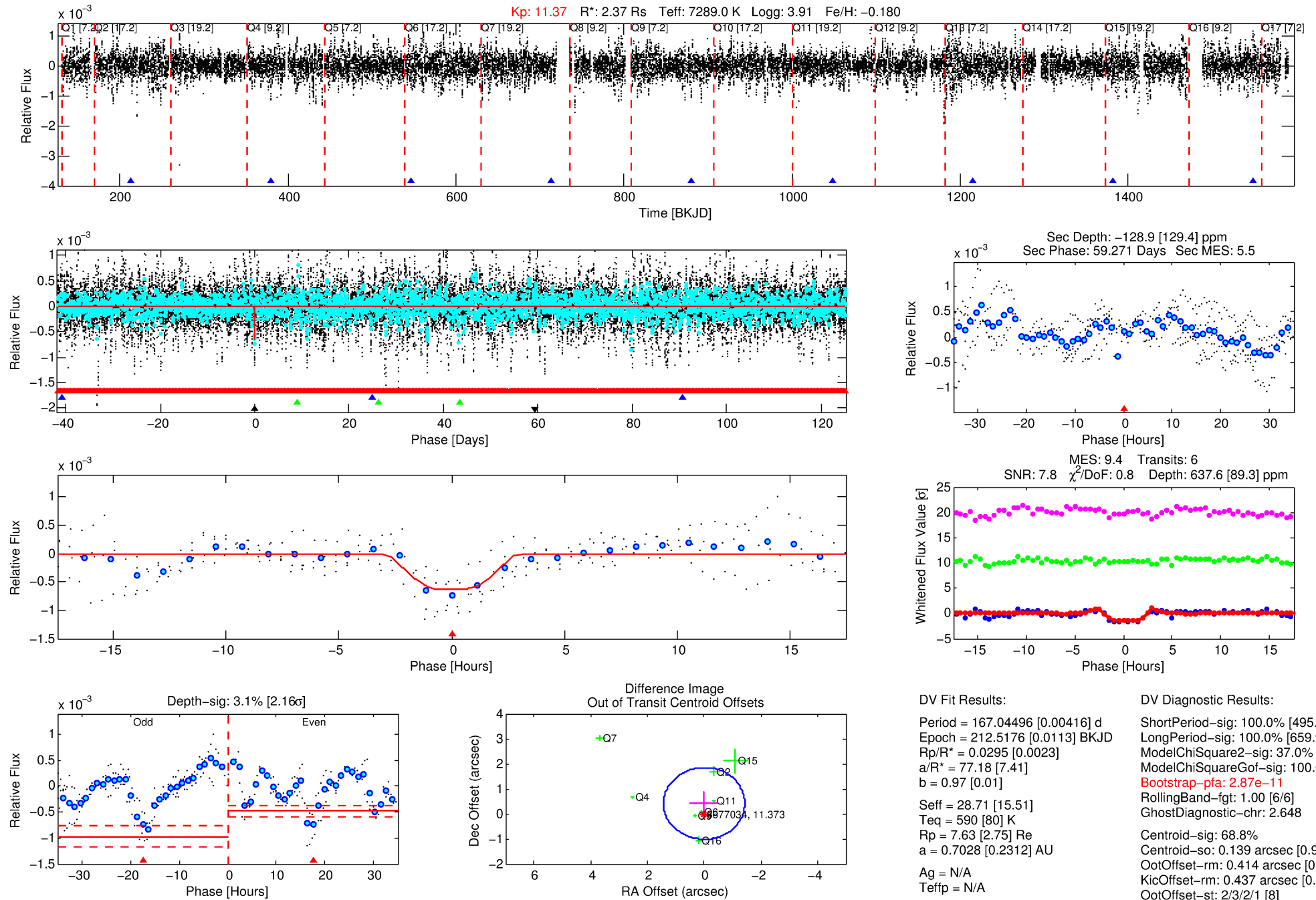
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008677034-04

No Significant Match Found

DV One-Page Summary

KIC: 8677034 Candidate: 4 of 4 Period: 167.045 d



DV Fit Results:

Period = 167.04496 [0.00416] d
 Epoch = 212.5176 [0.0113] BKJD
 Rp/R* = 0.0295 [0.0023]
 a/R* = 77.18 [7.41]
 b = 0.97 [0.01]
 Seff = 28.71 [15.51]
 Teq = 590 [80] K
 Rp = 7.63 [2.75] Re
 a = 0.7028 [0.2312] AU
 Ag = N/A
 Tefp = N/A

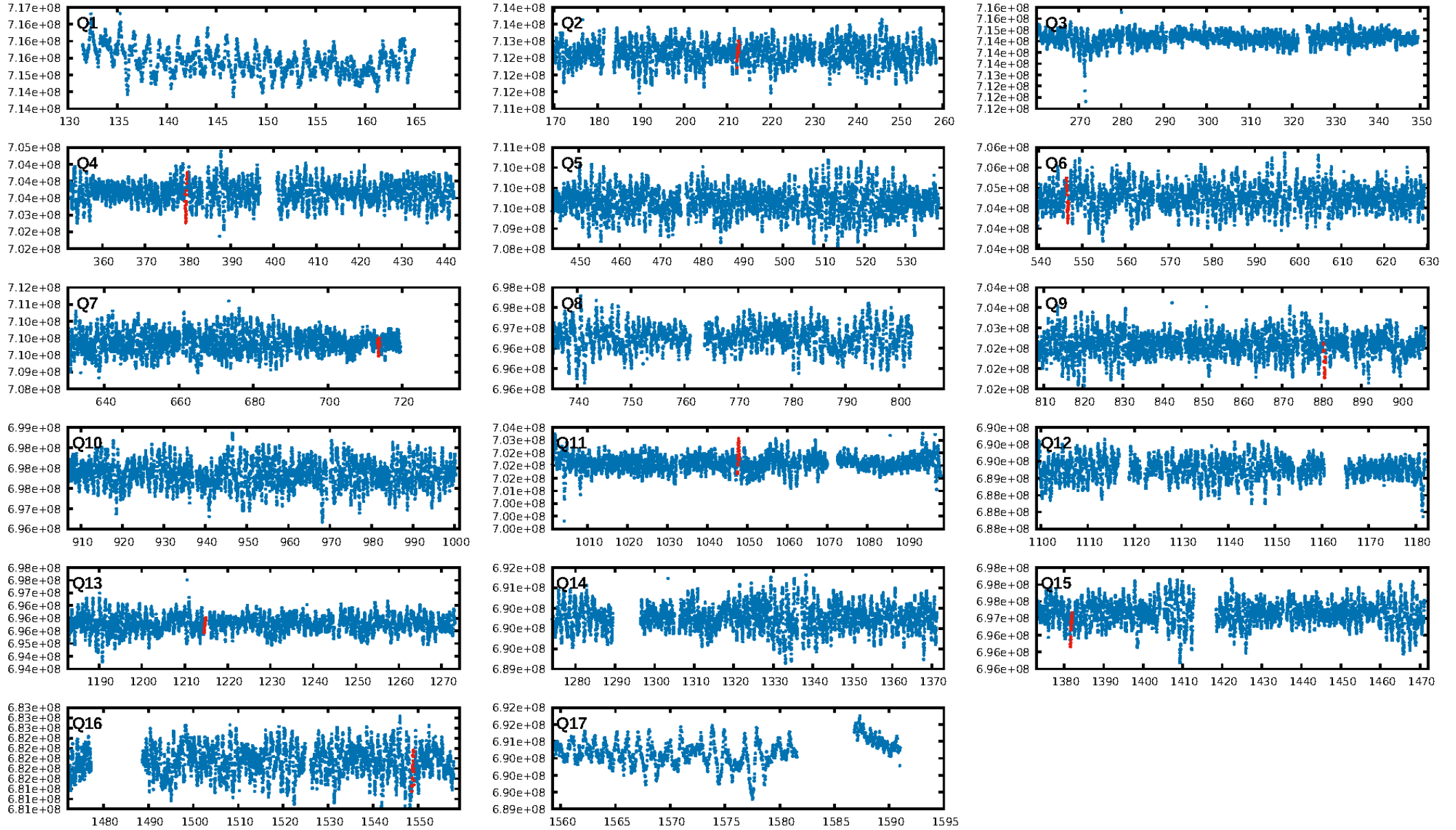
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [495.85σ]
 LongPeriod-sig: 100.0% [659.99σ]
 ModelChiSquare2-sig: 37.0%
 ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.87e-11
 RollingBand-fgt: 1.00 [6/6]
 GhostDiagnostic-chr: 2.648
 Centroid-sig: 68.8%
 Centroid-so: 0.139 arcsec [0.93σ]
 OotOffset-rm: 0.414 arcsec [0.87σ]
 KicOffset-rm: 0.437 arcsec [0.91σ]
 OotOffset-st: 2/3/2/1 [8]
 KicOffset-st: 2/3/2/1 [8]
 DiffImageQuality-fgm: 0.62 [5/8]
 DiffImageOverlap-fno: 0.00 [0/8]

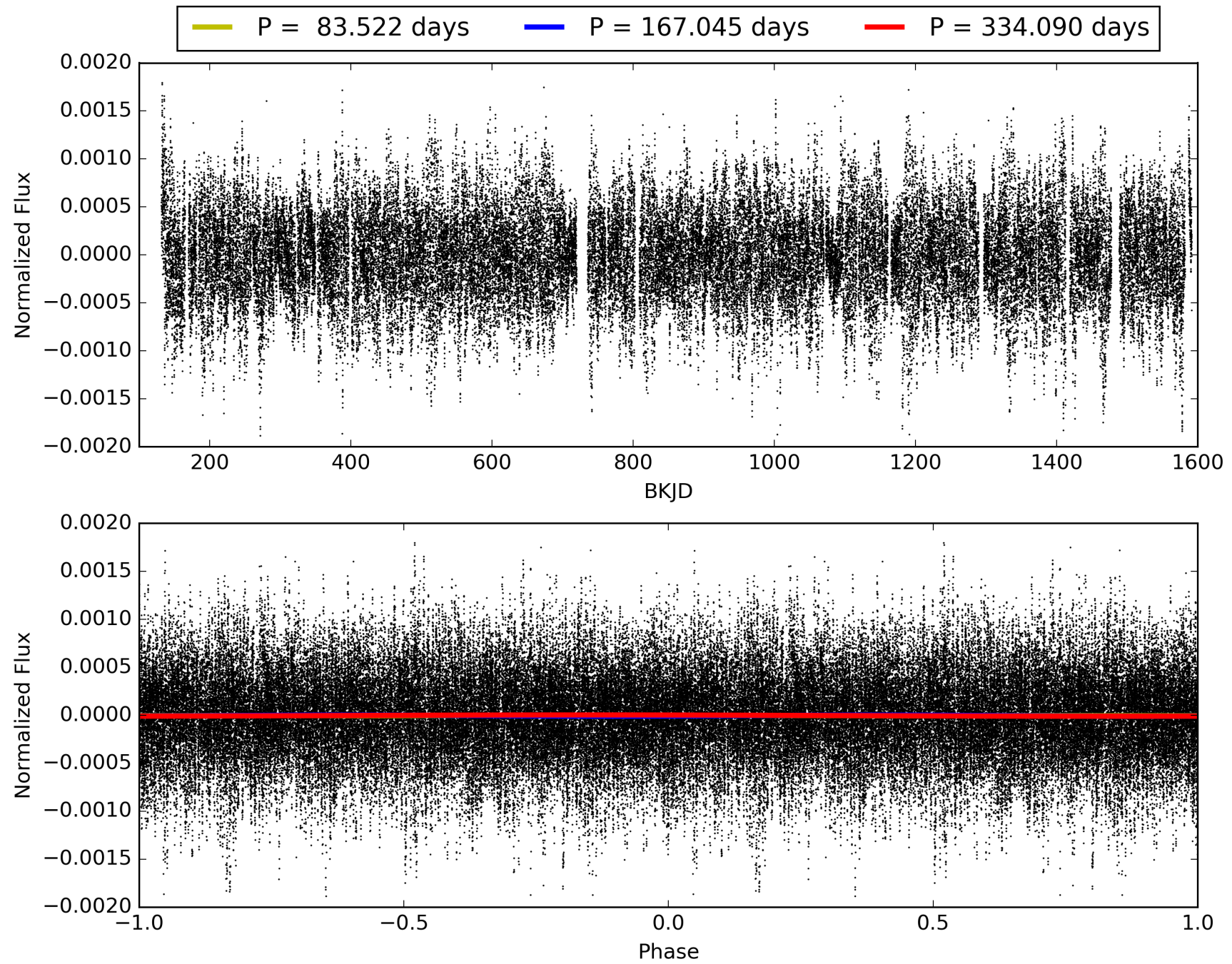
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:48:50 Z

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

TCE 008677034-04, PDC Light Curves

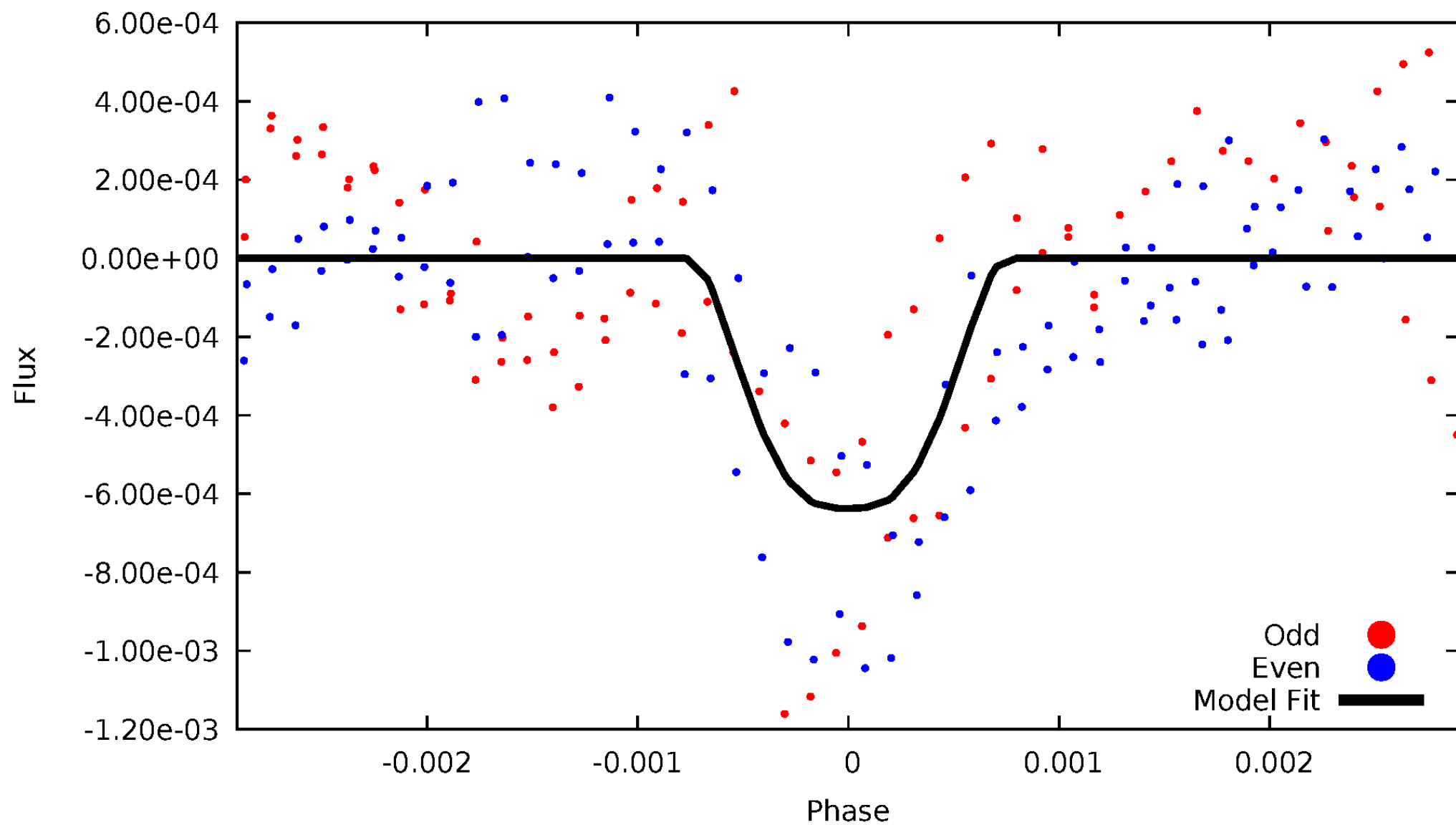


TCE 008677034-04



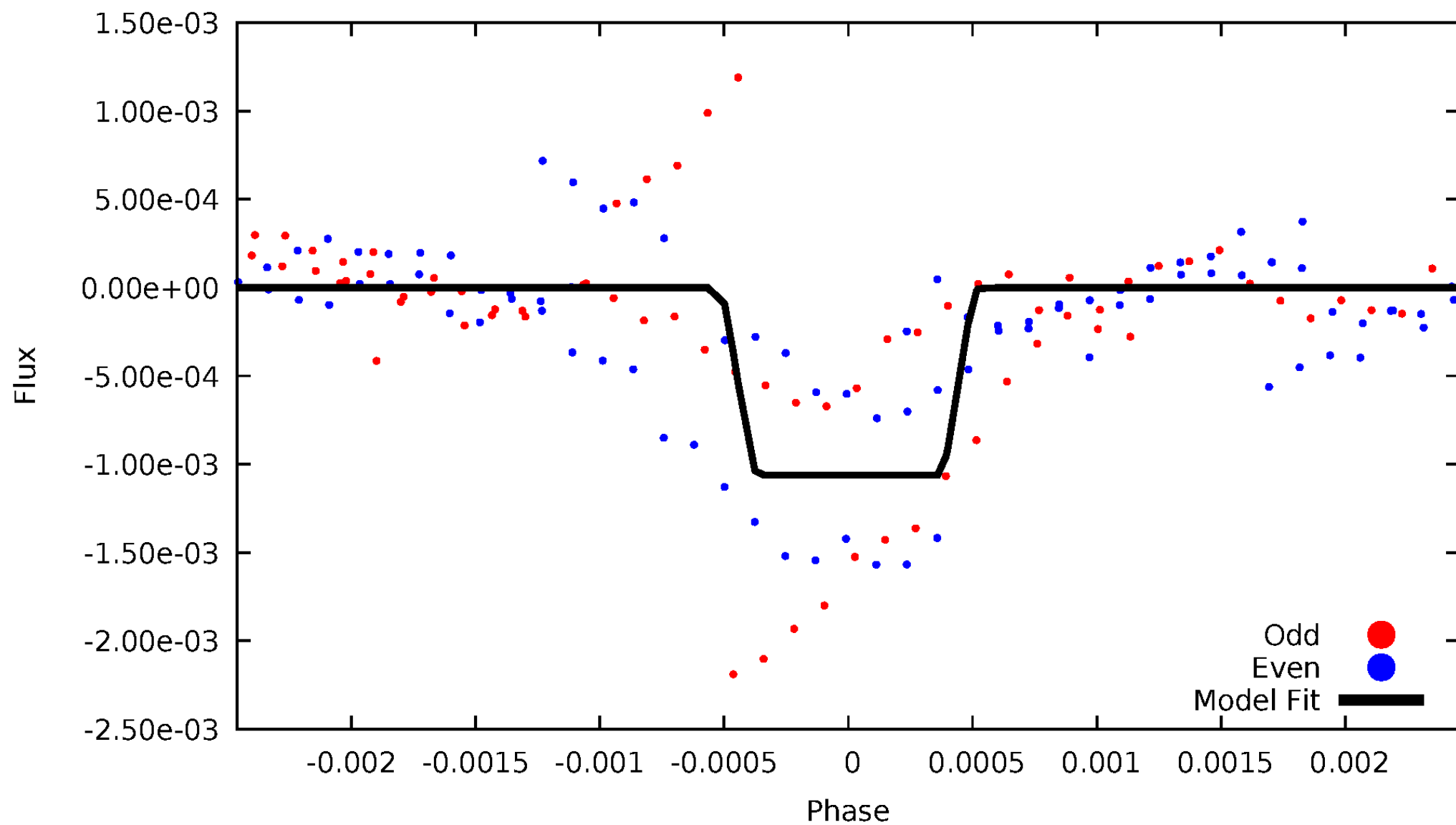
DV Odd/Even

TCE 008677034-04



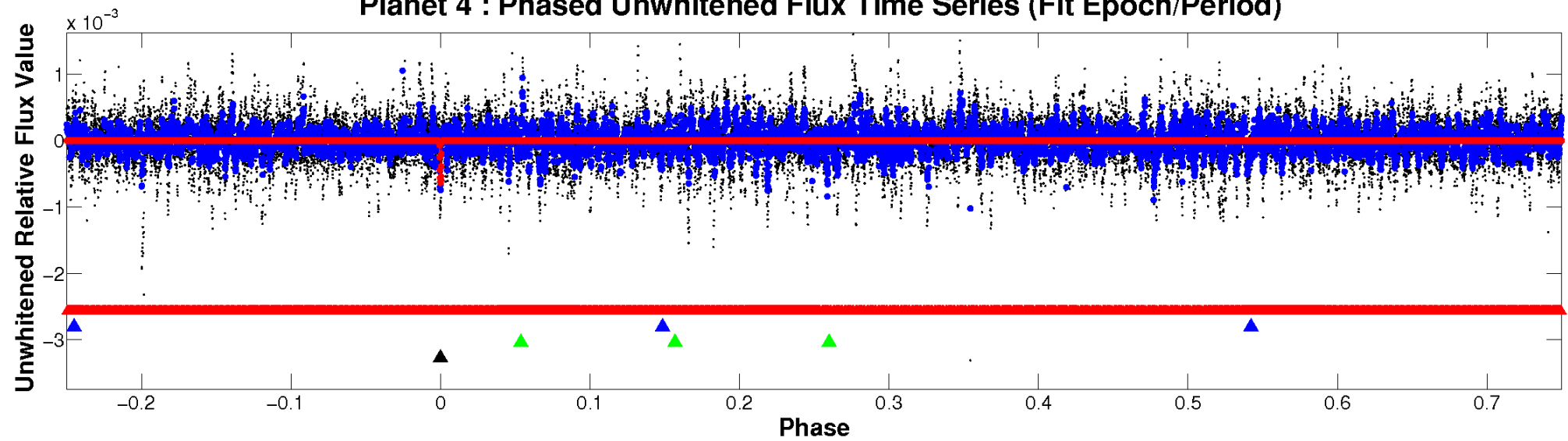
ALT Odd/Even

TCE 008677034-04

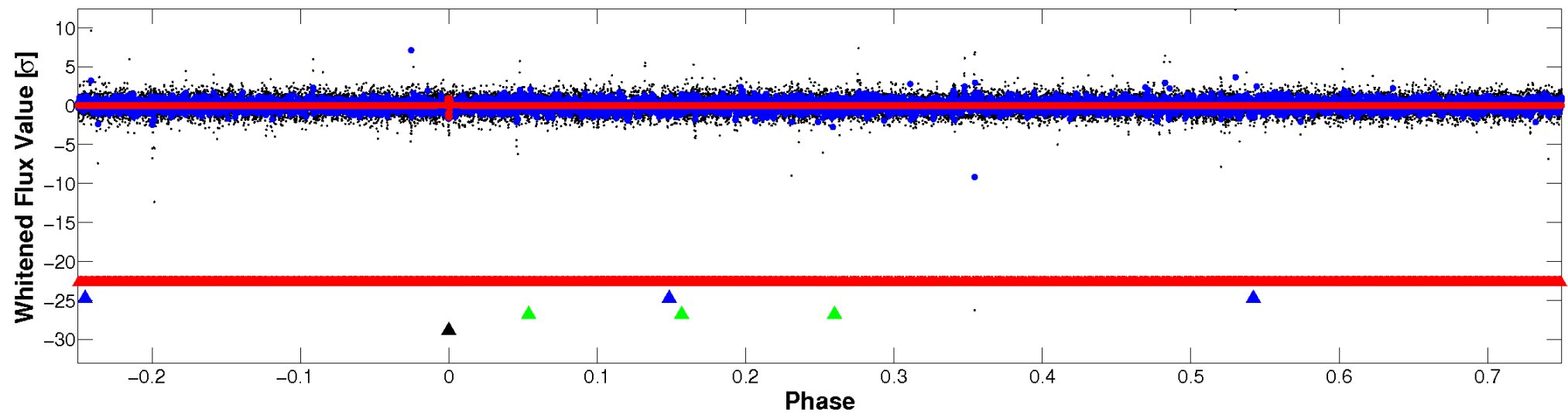


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

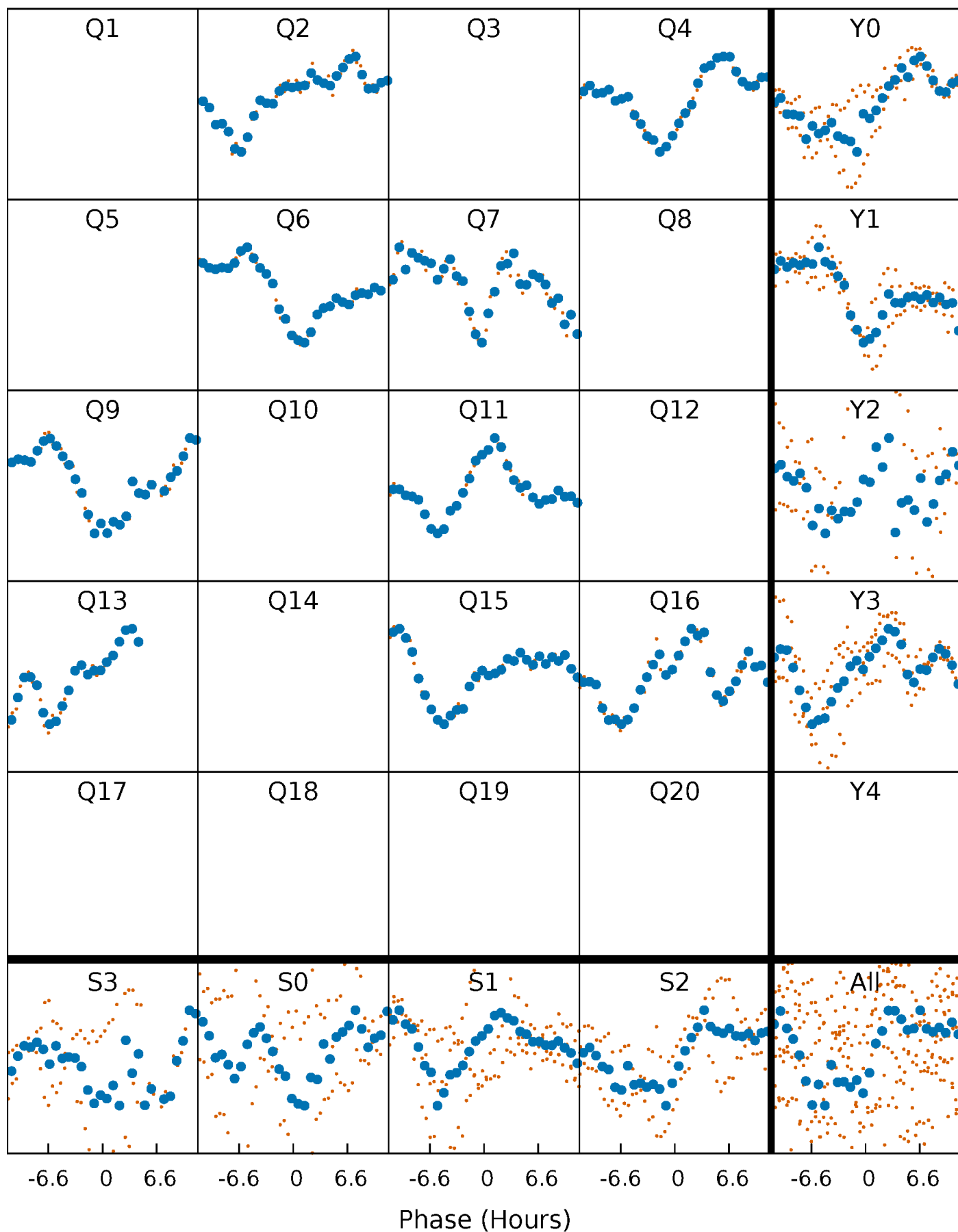


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



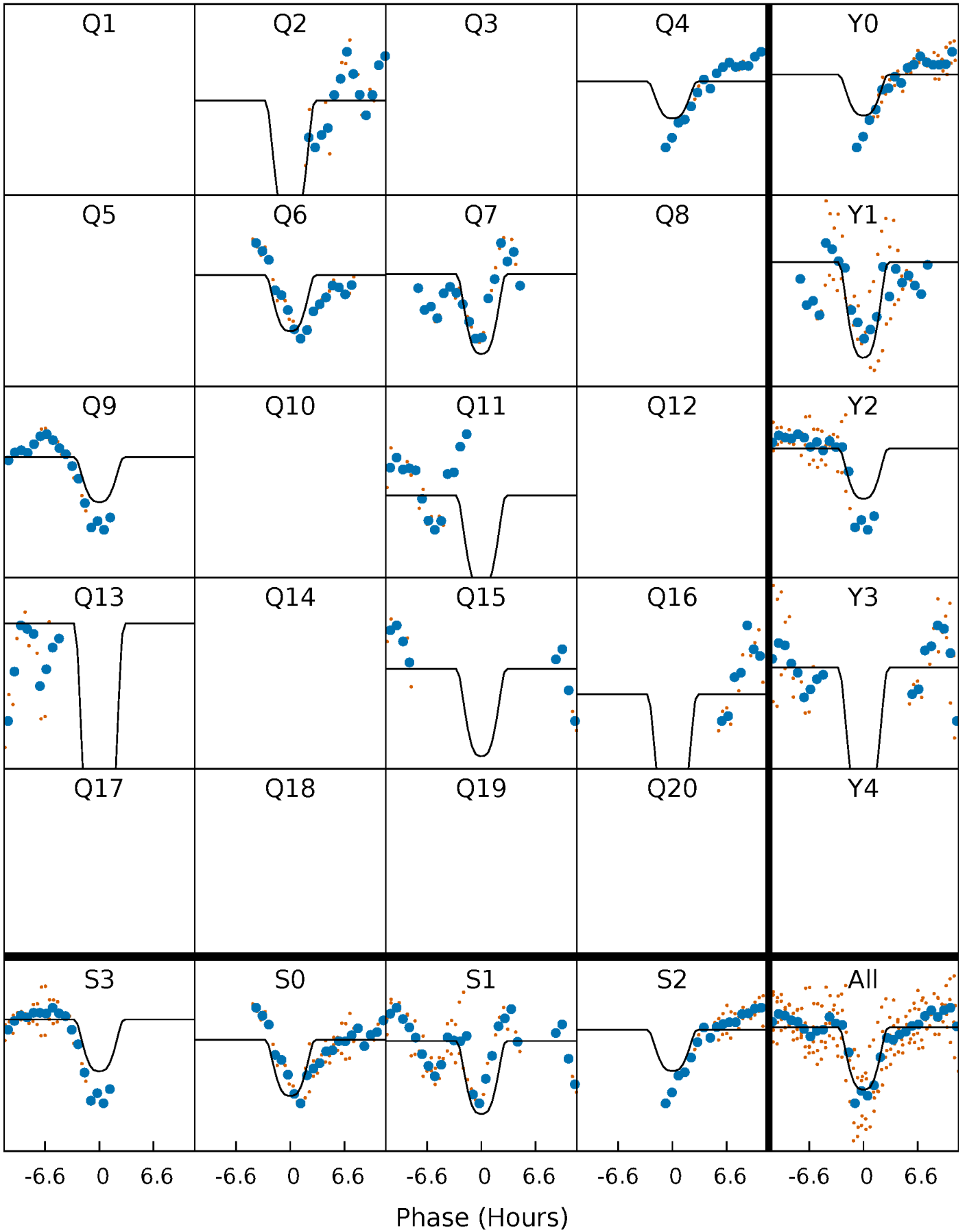
PDC Quarter-Phased Transit Curves

TCE 008677034-04 P=167.044955 Days $T_0=212.517567$ (BKJD)



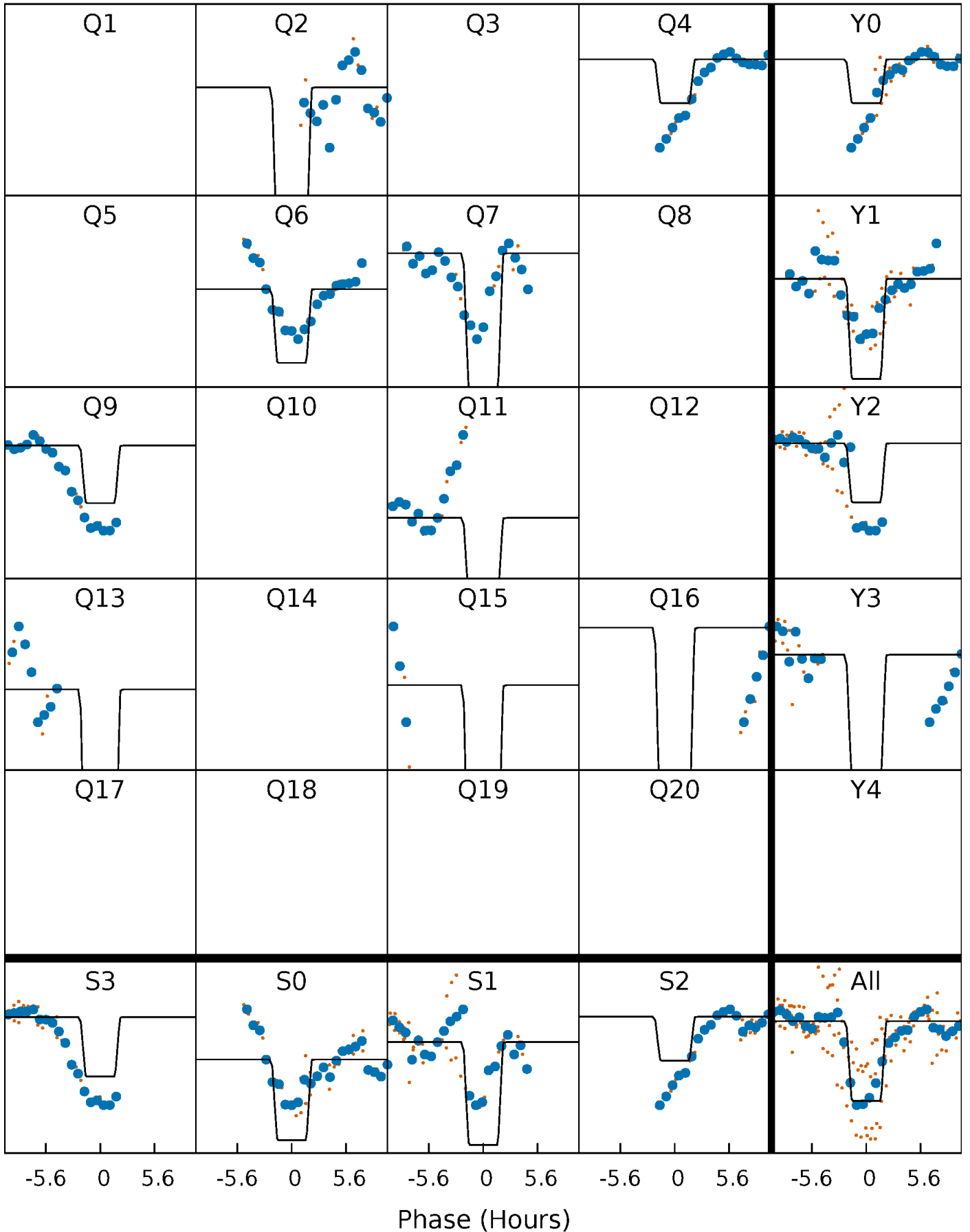
DV Quarter-Phased Transit Curves

TCE 008677034-04 P=167.044955 Days $T_0=212.517567$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

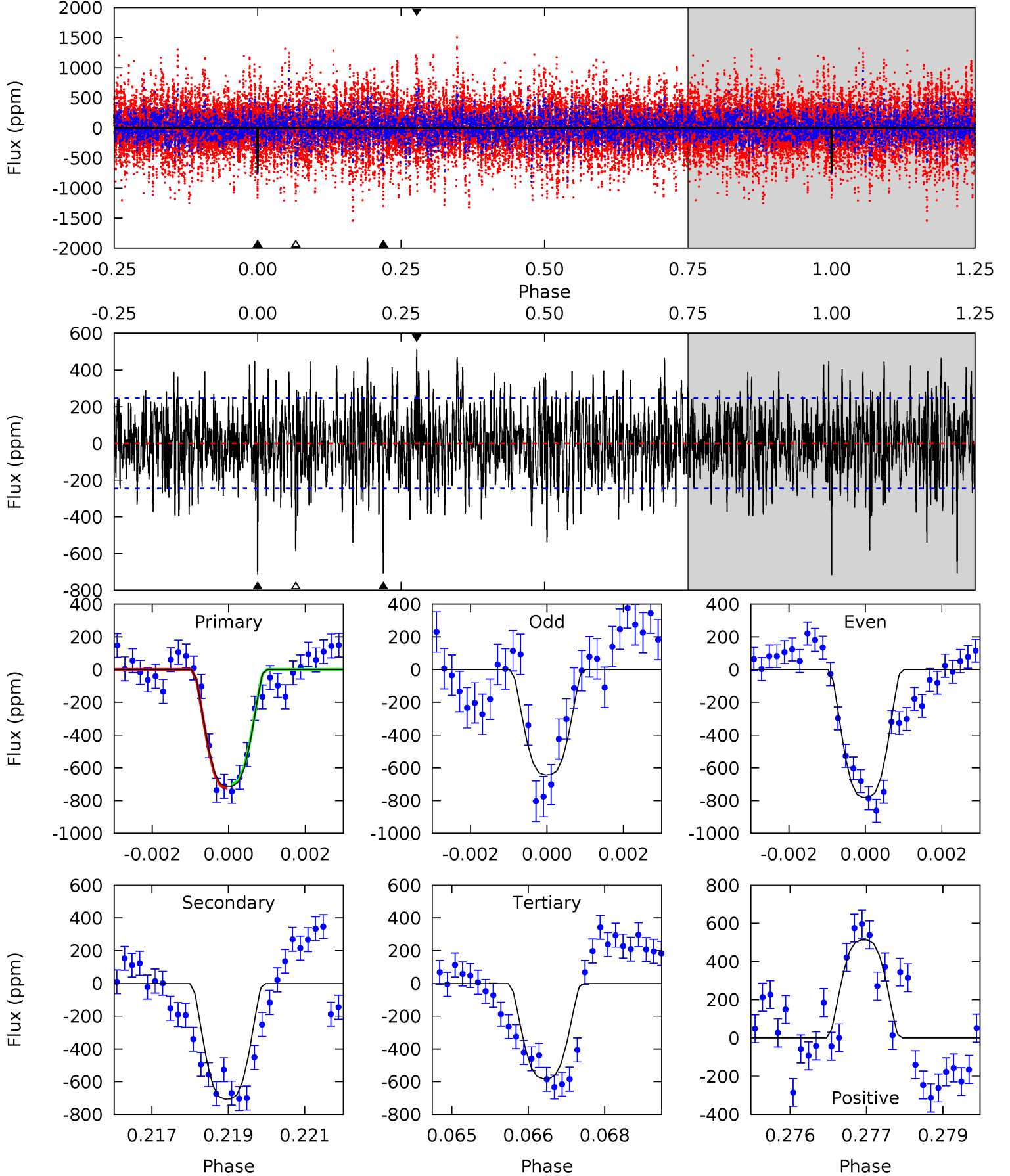
TCE 008677034-04 P=167.034154 Days $T_0=212.555282$ (BKJD)



DV Model-Shift Uniqueness Test

008677034-04, $P = 167.044955$ Days, $E = 45.472612$ Days

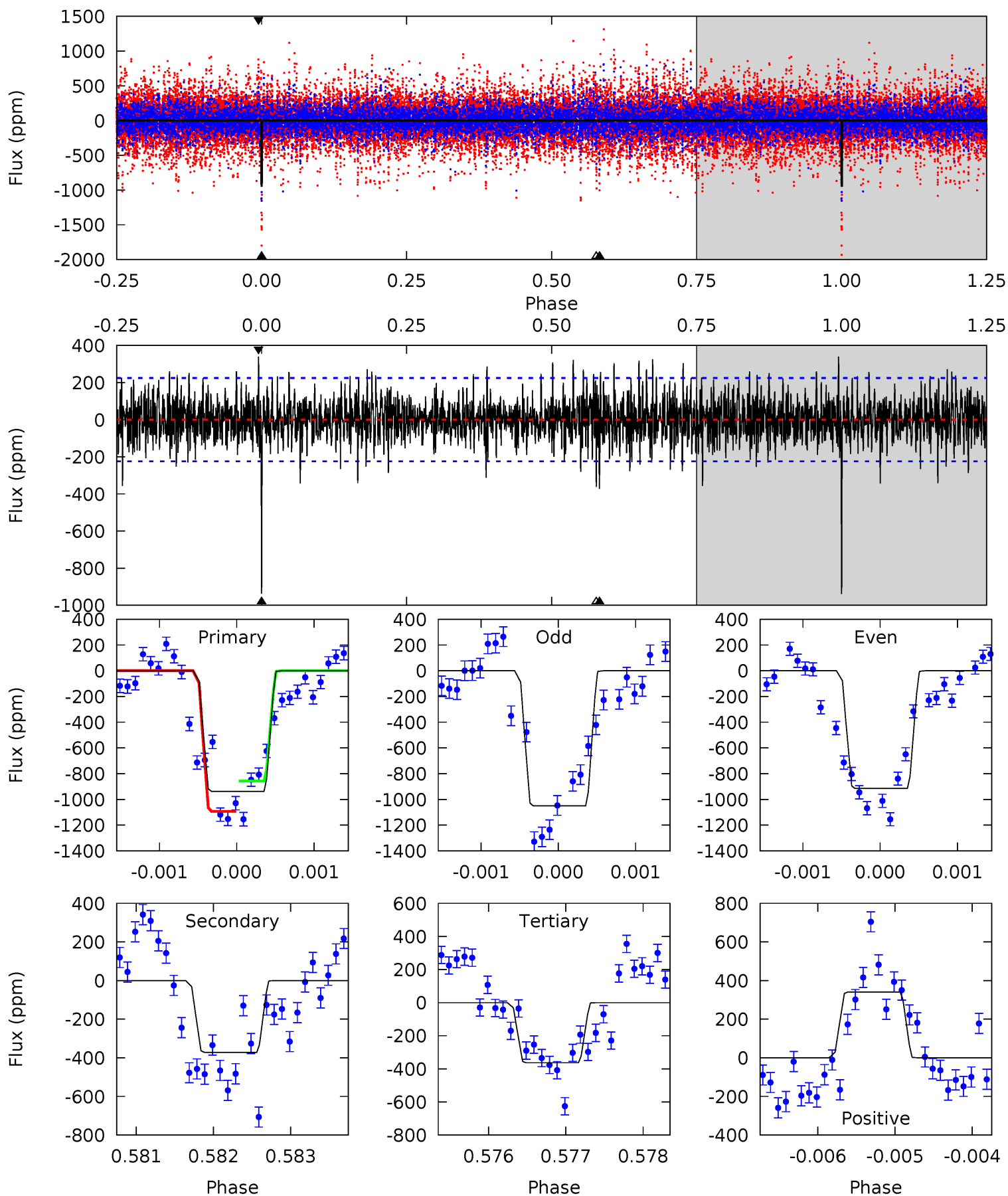
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	15.4	12.7	11.2	5.37	3.16	3.49	2.88	4.38	2.72	4.23	1.50	0.70	0.42	0.24



Alt Model-Shift Uniqueness Test

008677034-04, P = 167.034154 Days, E = 45.521128 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	9.02	8.81	8.26	5.45	3.29	2.22	14.0	14.5	0.21	0.75	1.64	1.54	0.27	2.76



Stellar Parameters For KIC 008677034

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7289^{+203}_{-279}	$3.909^{+0.301}_{-0.129}$	$-0.180^{+0.250}_{-0.350}$	$2.368^{+0.555}_{-0.832}$	$1.657^{+0.184}_{-0.342}$	$0.176^{+0.348}_{-0.070}$
	+3%/-4%	+8%/-3%	+139%/-194%	+23%/-35%	+11%/-21%	+198%/-40%
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 008677034-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-707 ± 46	$7.41^{+1.22}_{-1.37}$	807^{+61}_{-65}	6844^{+425}_{-383}	3503^{+1654}_{-875}
Alt.	-371 ± 41	$8.11^{+1.34}_{-1.45}$	810^{+59}_{-75}	5540^{+284}_{-254}	1541^{+747}_{-442}

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 $A_{obs} \gg 1.0$

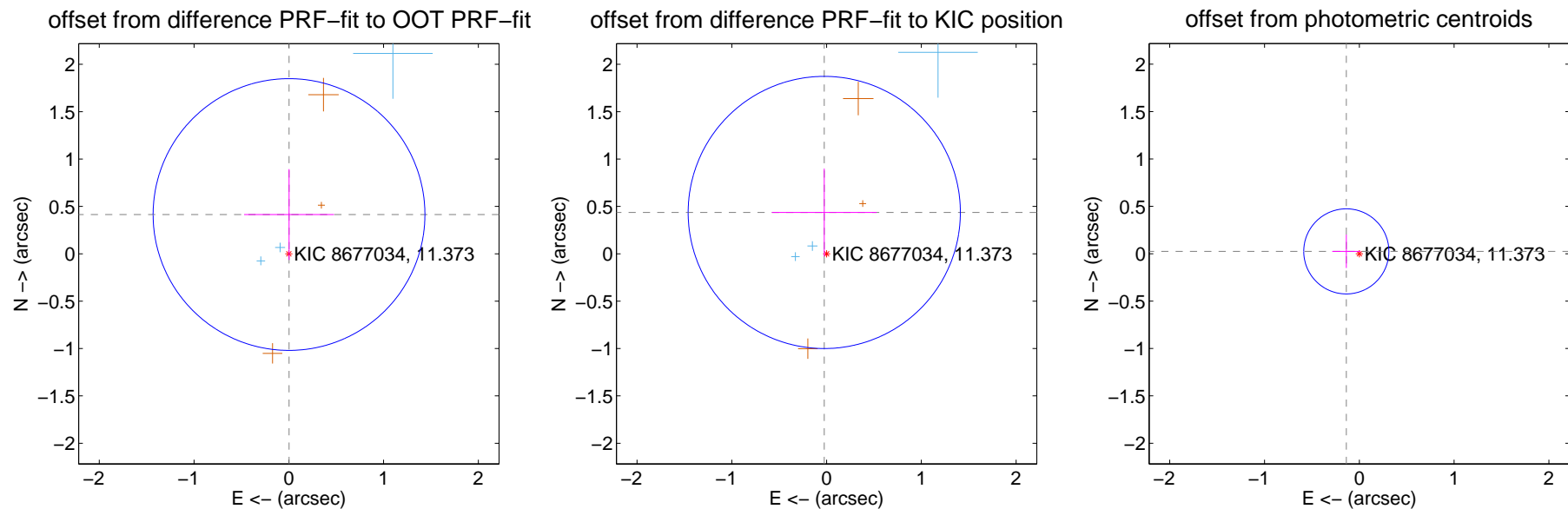
DV Centroid Data

Supplemental centroid analysis for 008677034-04. **Kepler magnitude: 11.37.** Transit SNR 7.81

There are 5 quarters with good PRF difference image offsets

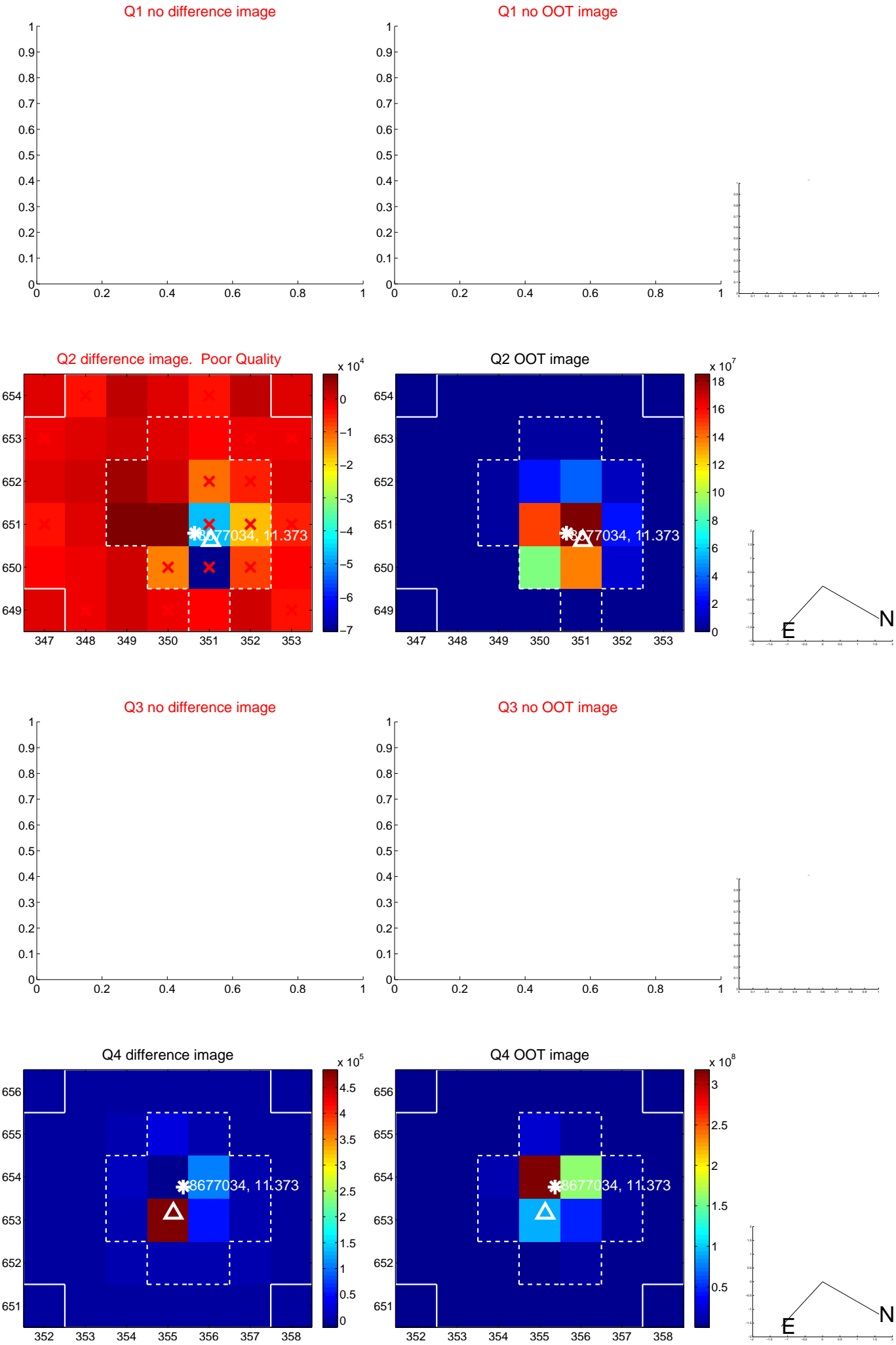
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.414 ± 0.478	0.87	-0.002 ± 0.474	0.414 ± 0.479
PRF-fit source offset from KIC position	0.437 ± 0.479	0.91	0.024 ± 0.552	0.436 ± 0.463
photometric centroid source offset	0.14 ± 0.15	0.93	0.14 ± 0.15	0.02 ± 0.18

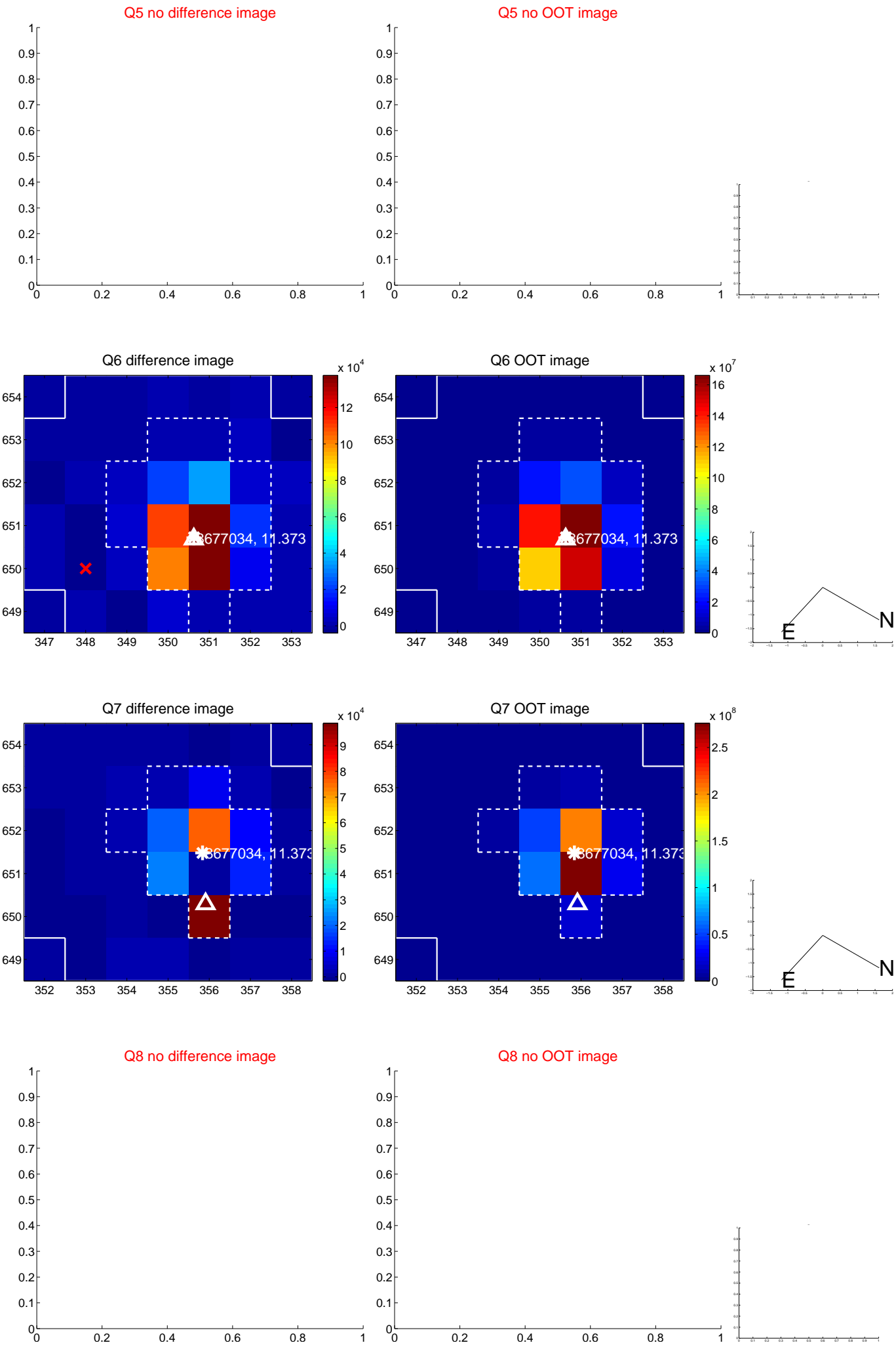


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

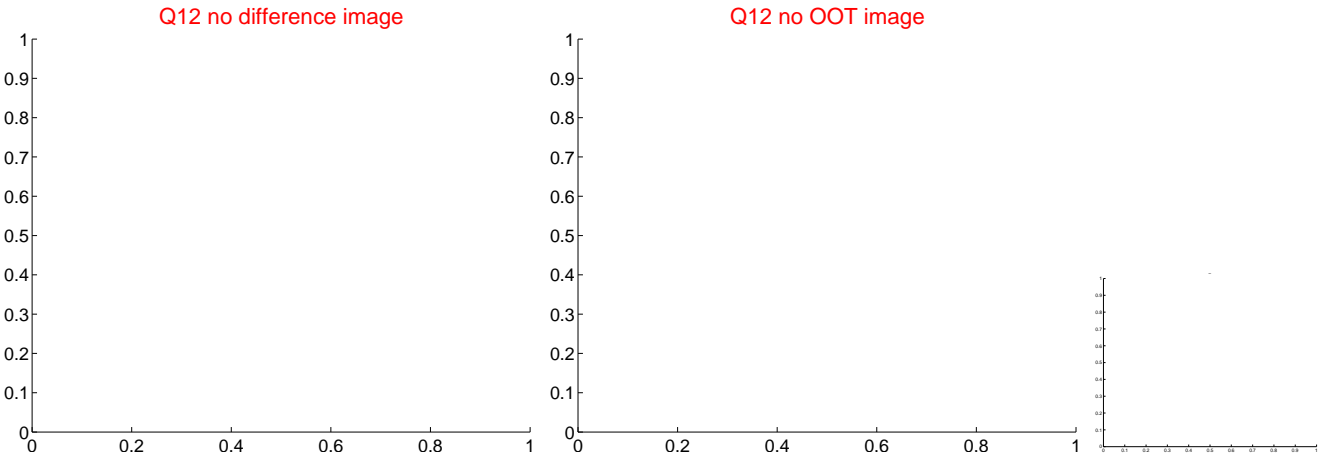
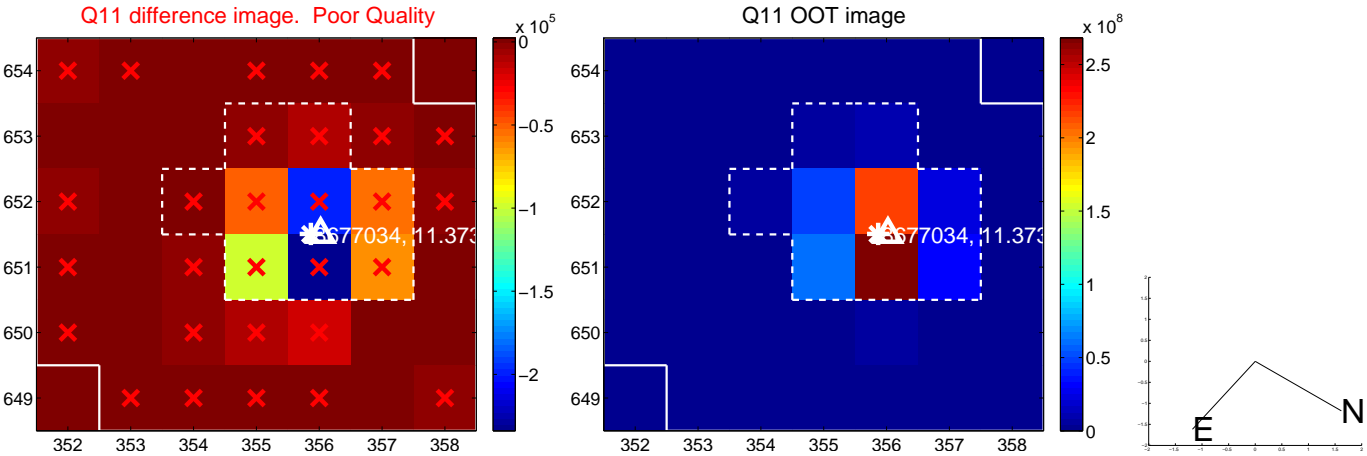
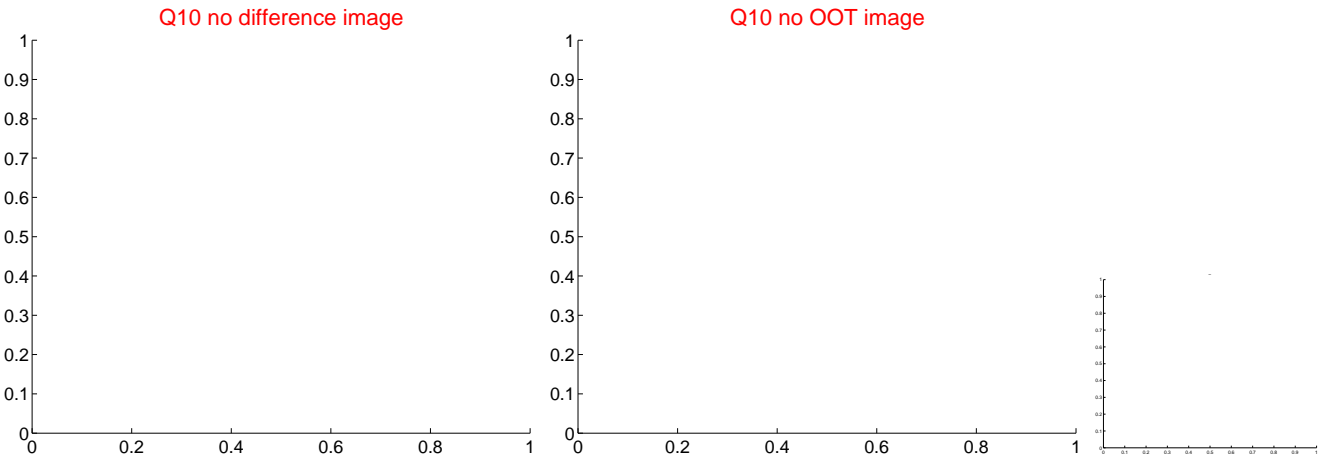
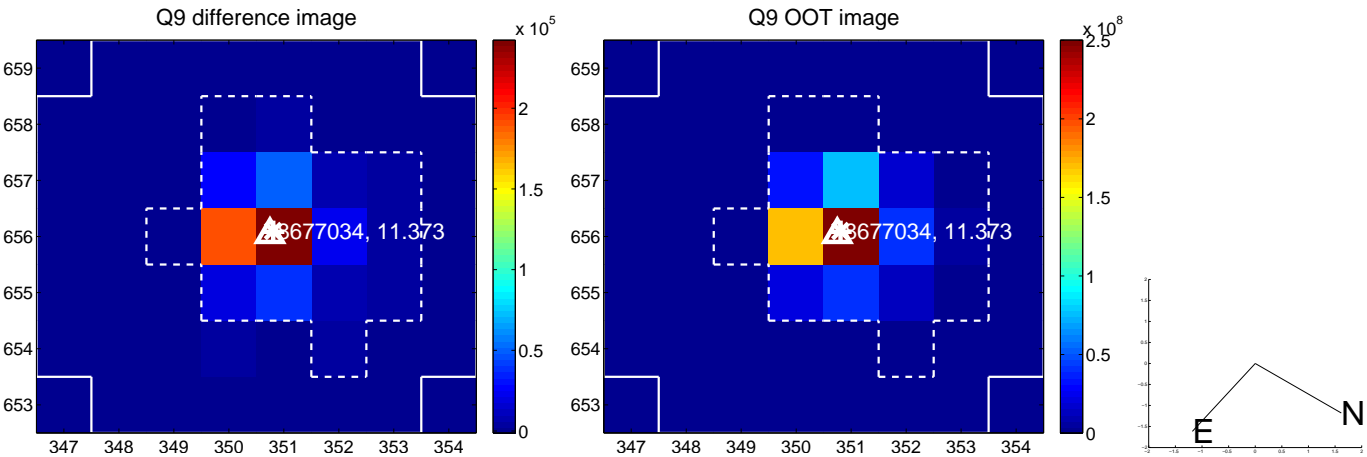
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



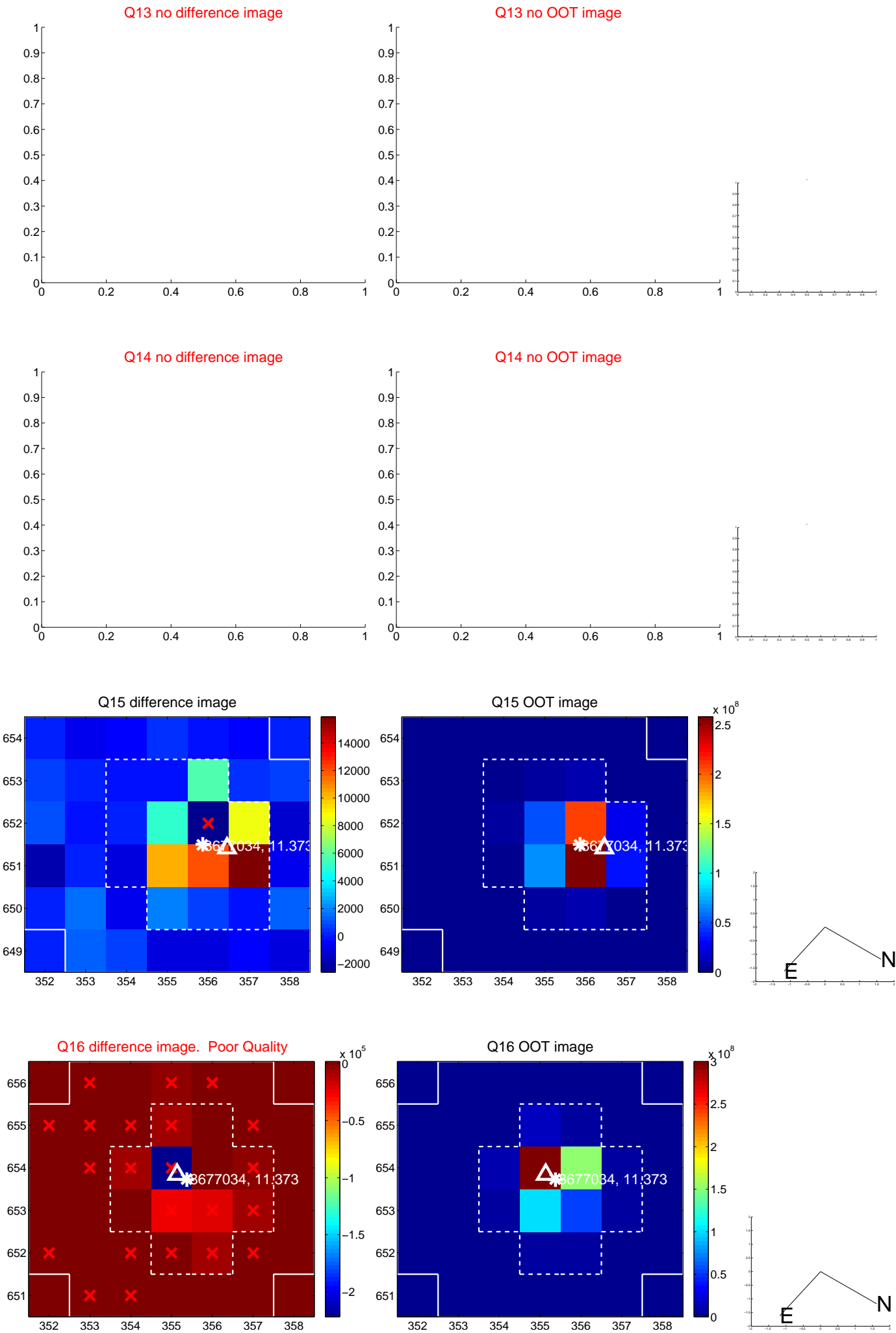
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



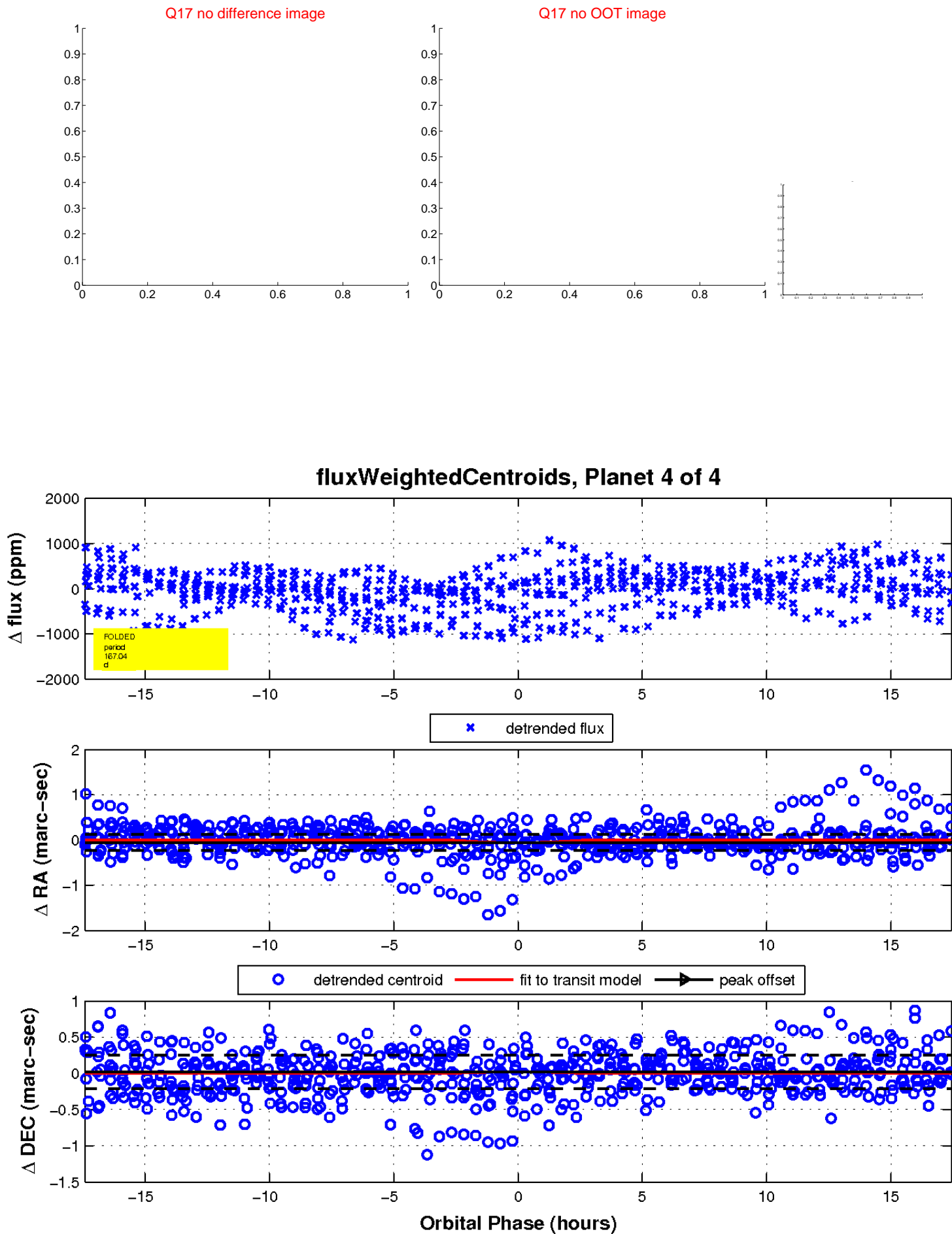
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

