

KIC 008517303

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})
008517303-01	OBS	6181.01	24.073325	141.136396	1209.6	17.850	16.2	27.4	6.05	4647	26.26	602.95
008517303-02	OBS	No	471.188245	150.887448	1357.9	12.664	14.0	9.3	6.05	4647	21.56	11.43
008517303-03	OBS	No	620.949898	208.249781	784.5	10.821	17.3	5.7	6.05	4647	19.90	7.91
008517303-04	OBS	No	401.840825	327.983776	992.0	6.716	9.3	7.8	6.05	4647	25.86	14.13
008517303-05	OBS	No	291.641391	229.806634	246.8	5.000	15.1	-1.0	6.05	4647	9.11	21.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008517303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
008517303-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
008517303-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
008517303-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
008517303-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST

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

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

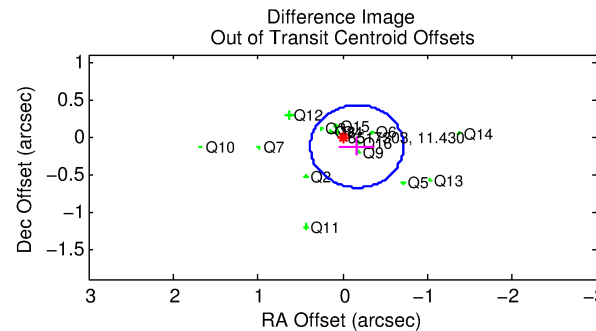
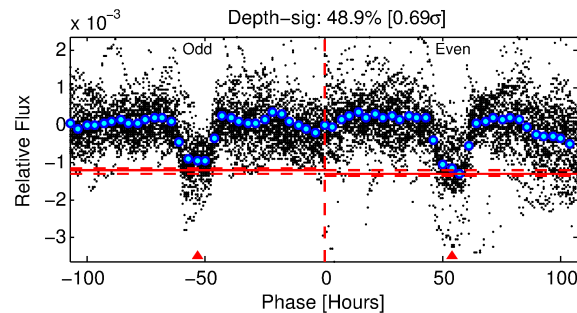
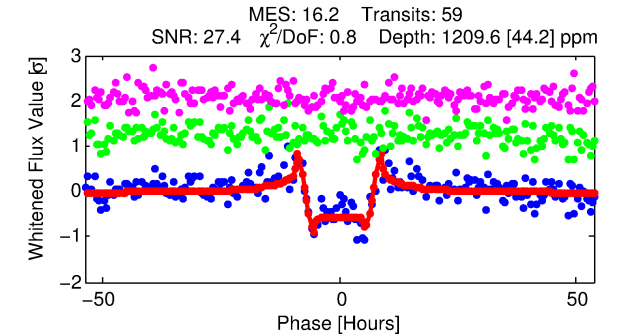
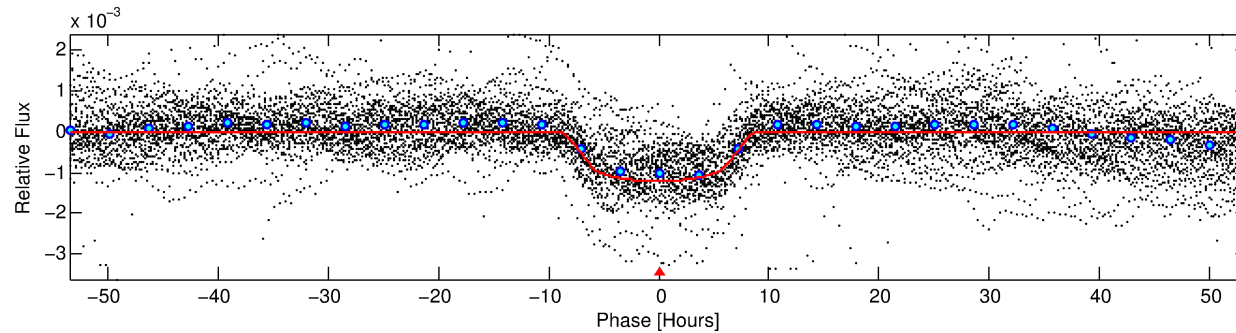
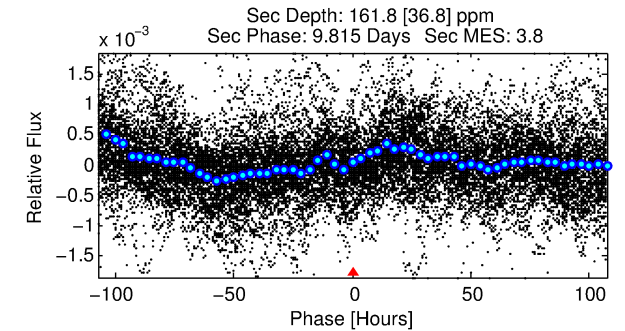
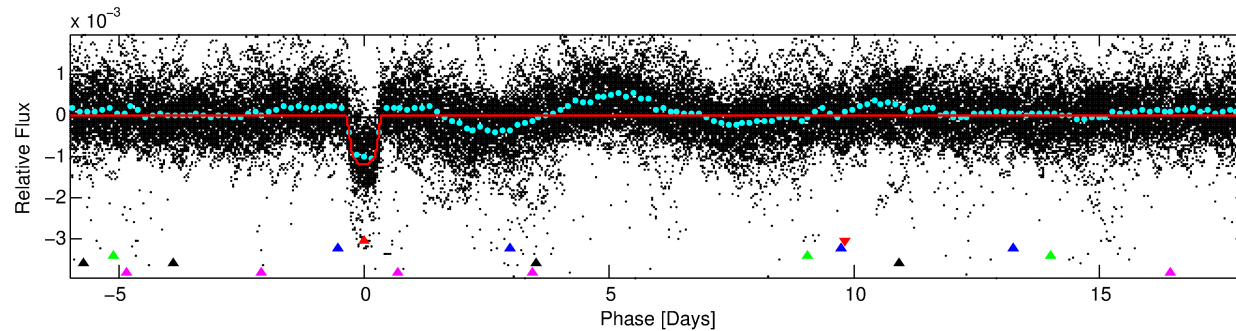
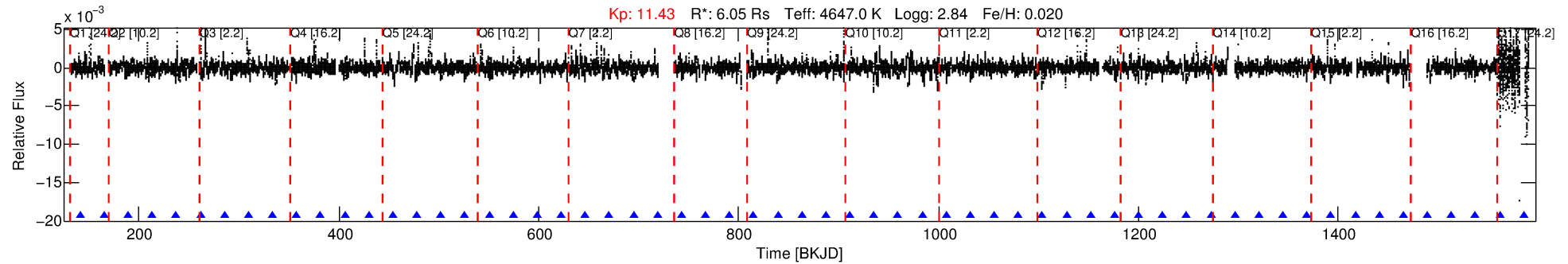
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008517303-01

No Significant Match Found

DV One-Page Summary

KIC: 8517303 Candidate: 1 of 5 Period: 24.073 d
KOI: K06181.01 Corr: 0.905



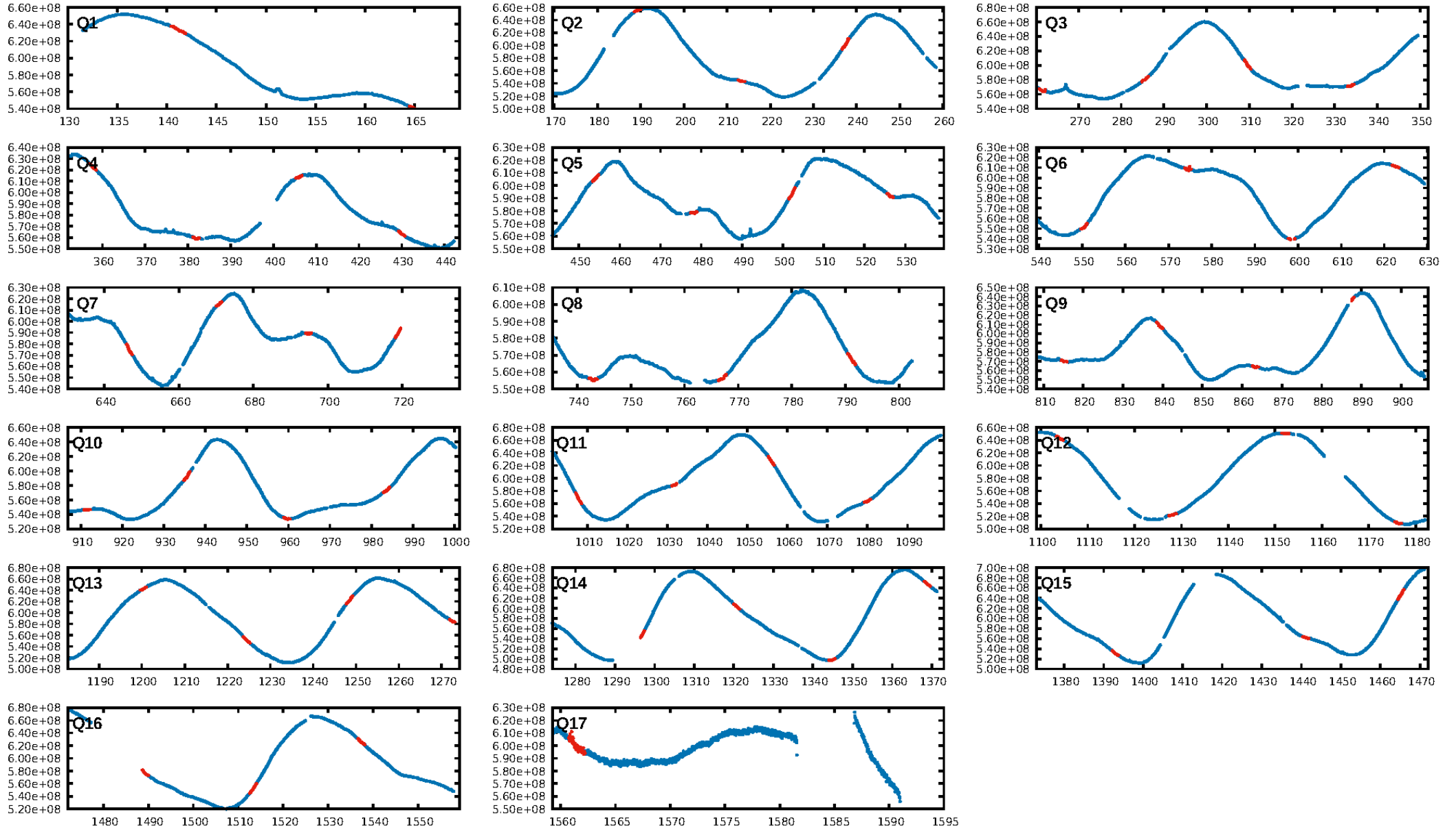
DV Fit Results:

Period = 24.07332 [0.00014] d
Epoch = 141.1364 [0.0047] BKJD
Rp/R* = 0.0397 [0.0007]
a/R* = 5.29 [0.09]
b = 0.91 [0.00]
Seff = 602.95 [207.75]
Teq = 1264 [109] K
Rp = 26.26 [8.49] Re
a = 0.1594 [0.0402] AU
Ag = 3.28 [1.35] [1.69σ]
Teffp = 2629 [157] K [7.16σ]

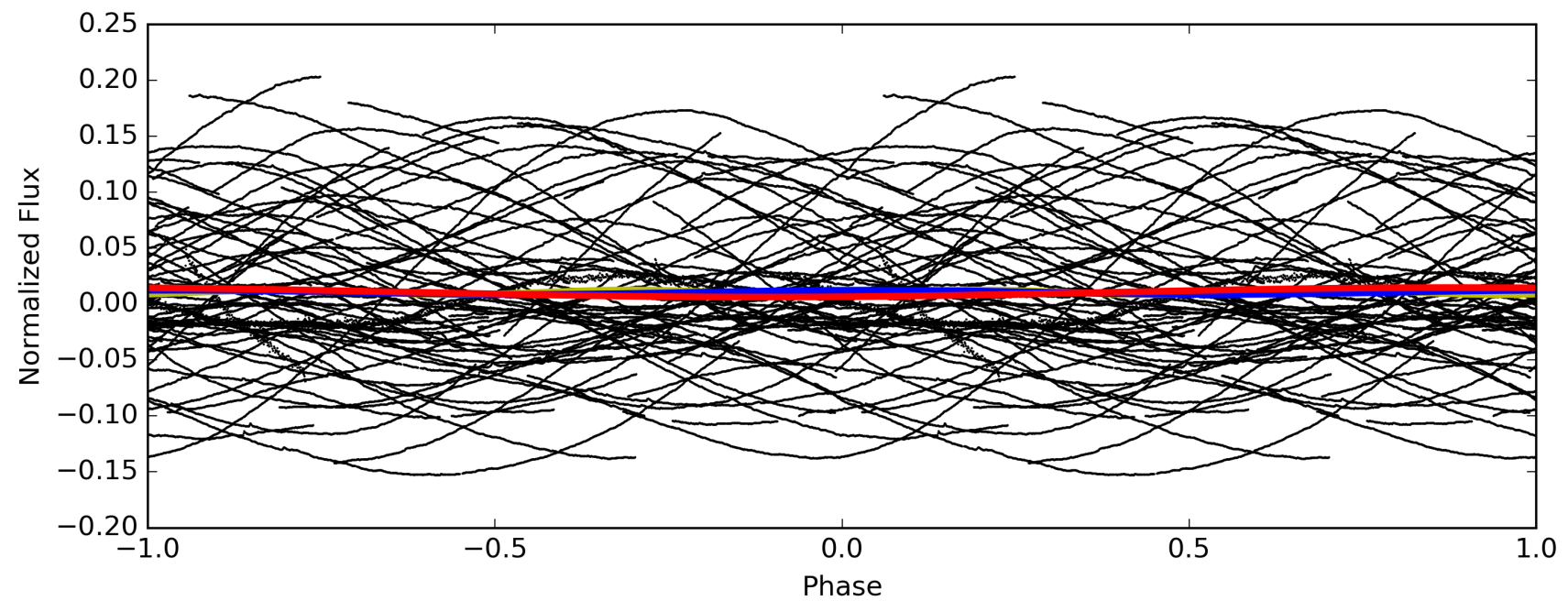
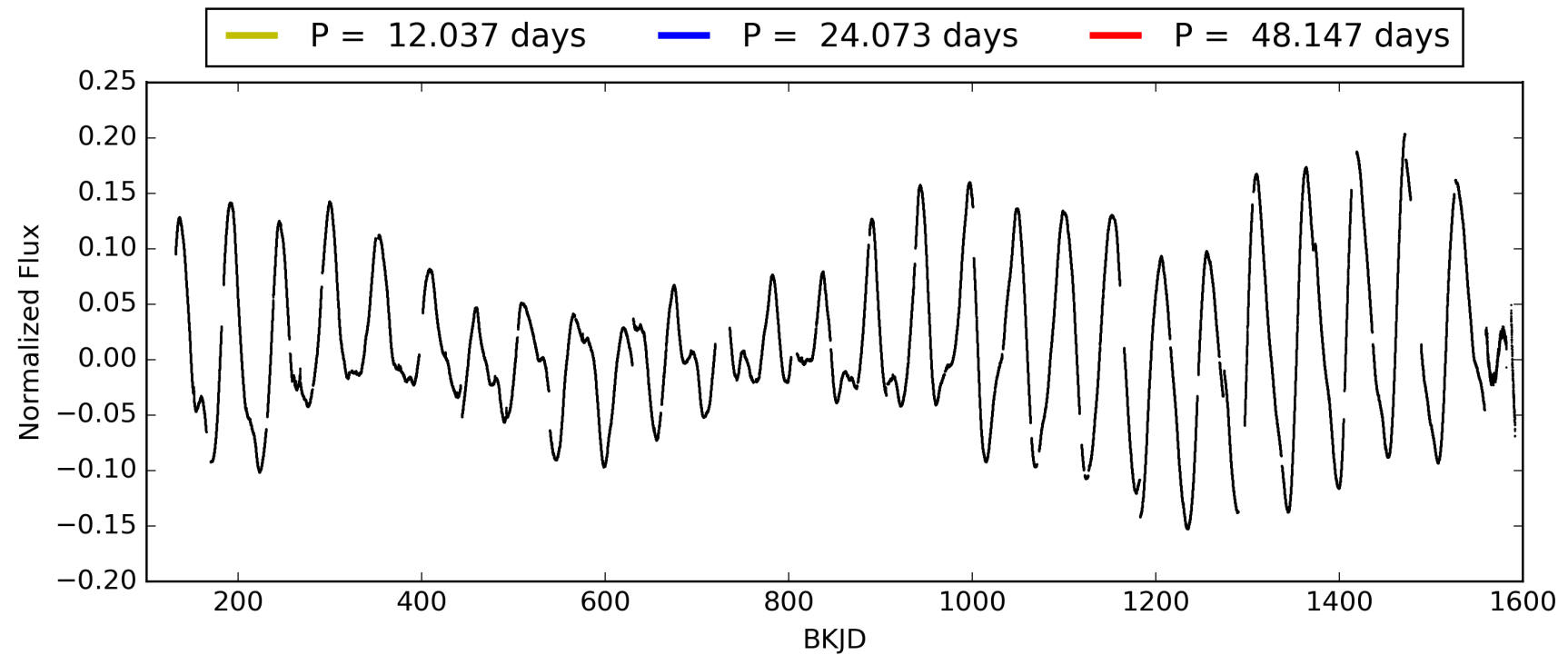
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [346.41σ]
ModelChiSquare2-sig: 0.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [56/56]
GhostDiagnostic-chr: 2.104
Centroid-sig: 0.5%
Centroid-so: 0.123 arcsec [4.40σ]
OotOffset-rm: 0.211 arcsec [1.15σ]
KicOffset-rm: 0.436 arcsec [2.46σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 008517303-01, PDC Light Curves

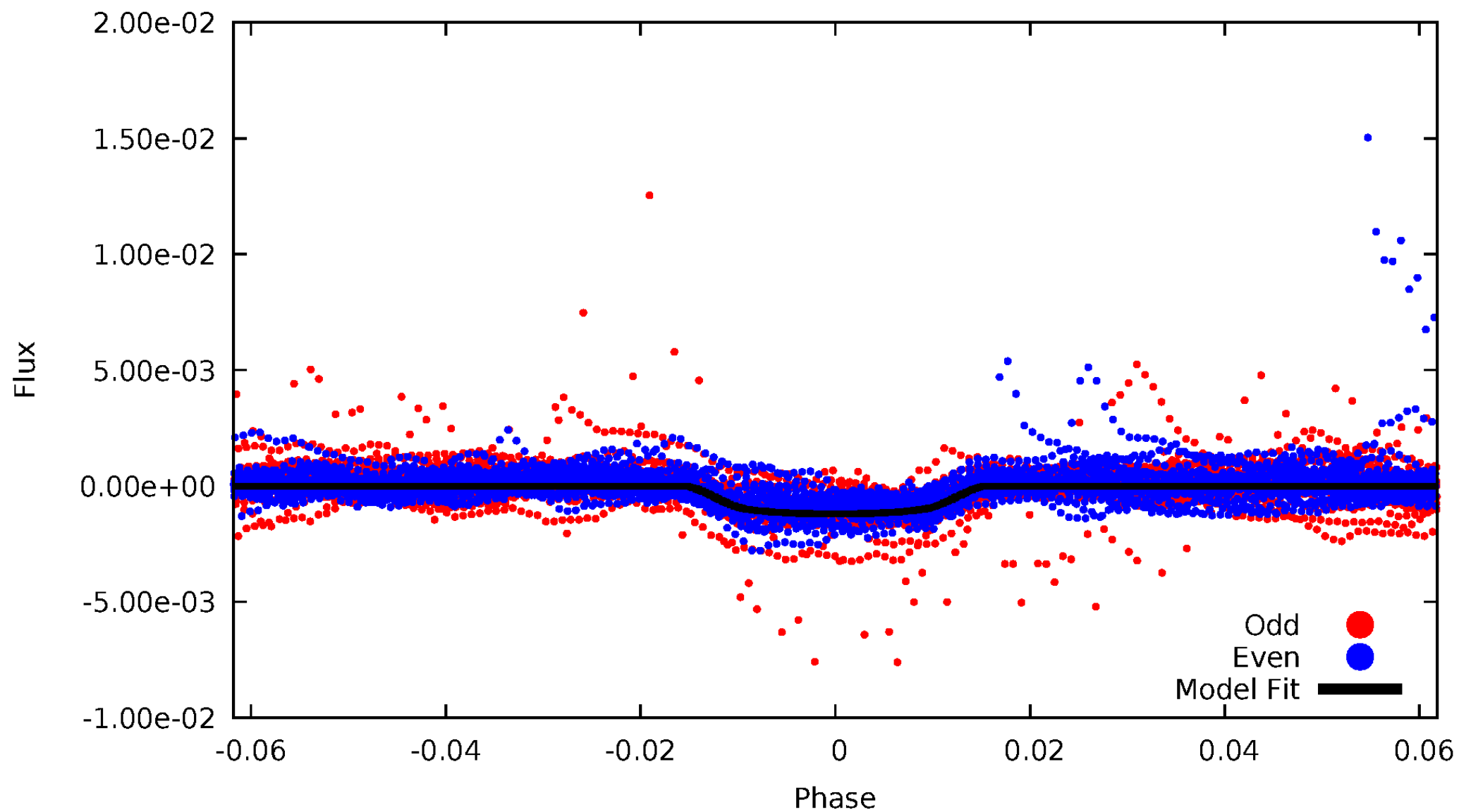


TCE 008517303-01



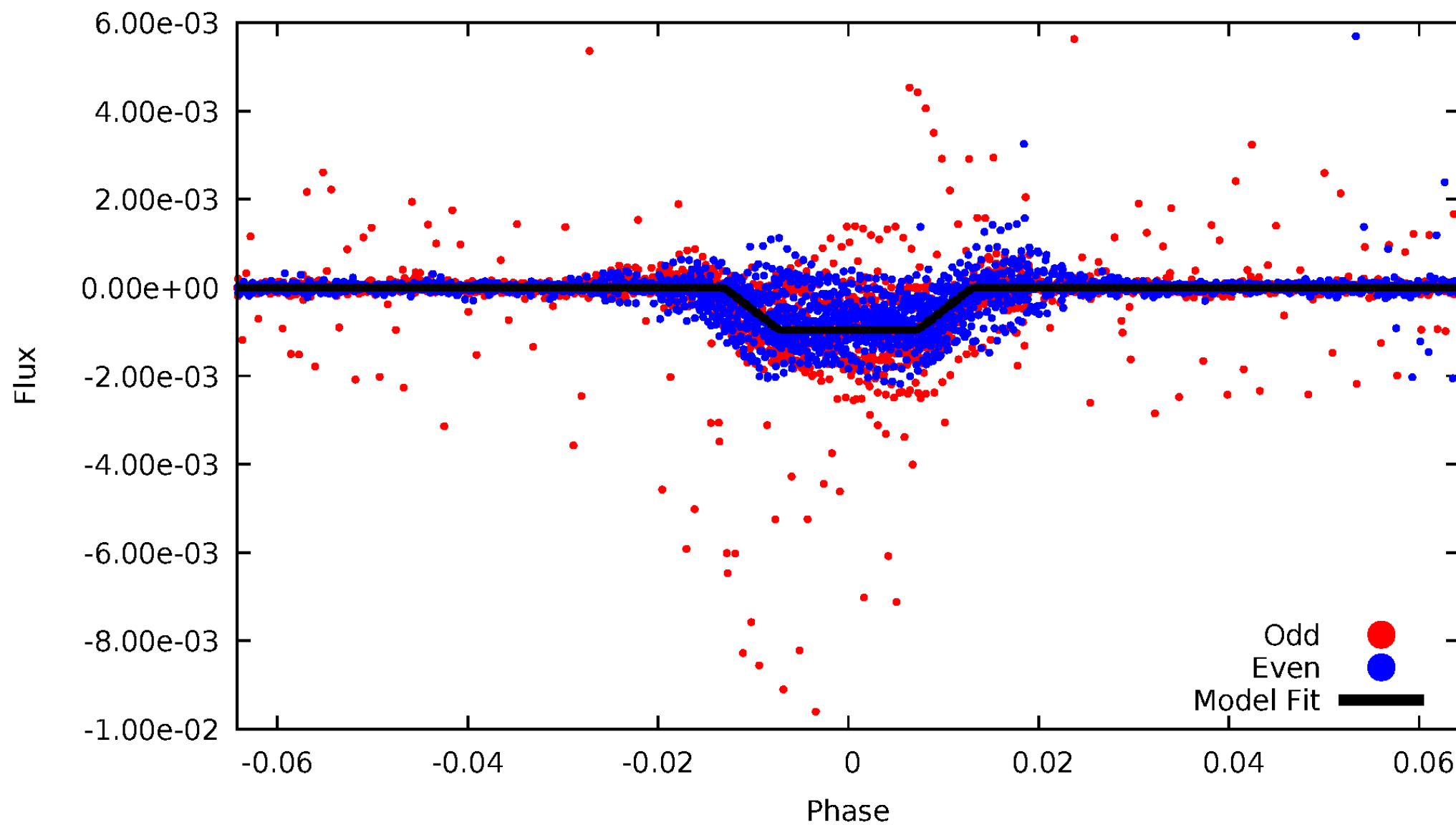
DV Odd/Even

TCE 008517303-01



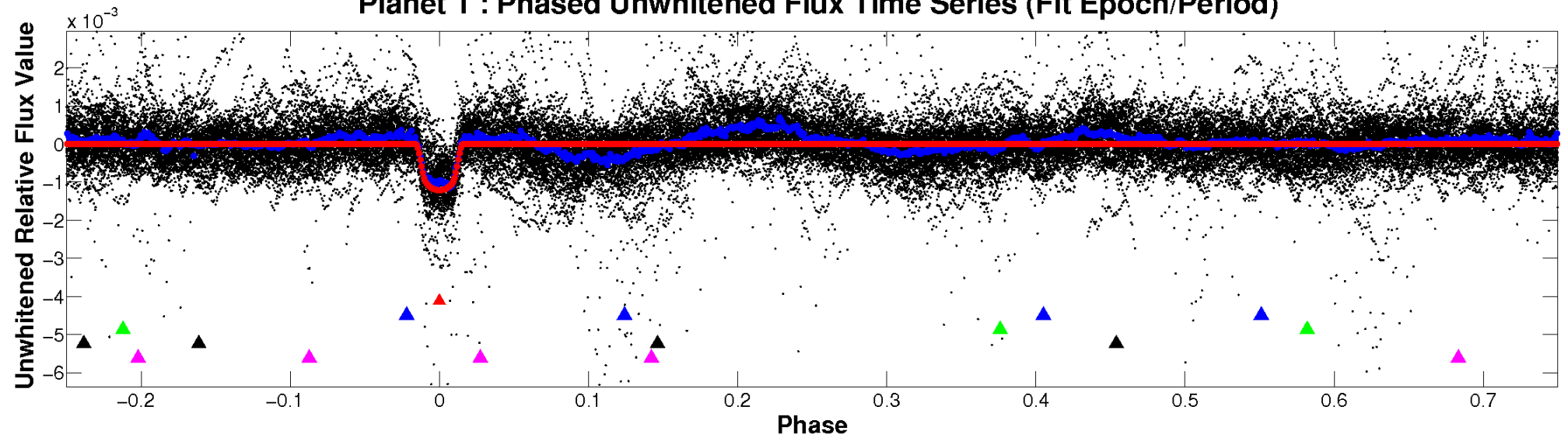
ALT Odd/Even

TCE 008517303-01

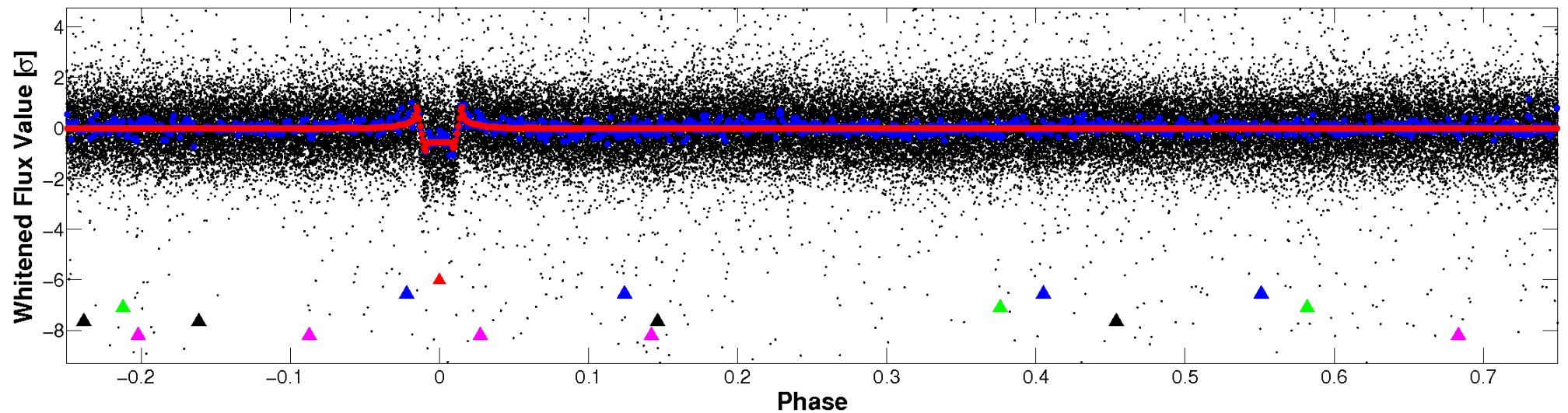


Non-Whitened Vs. Whitened Light Curve

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

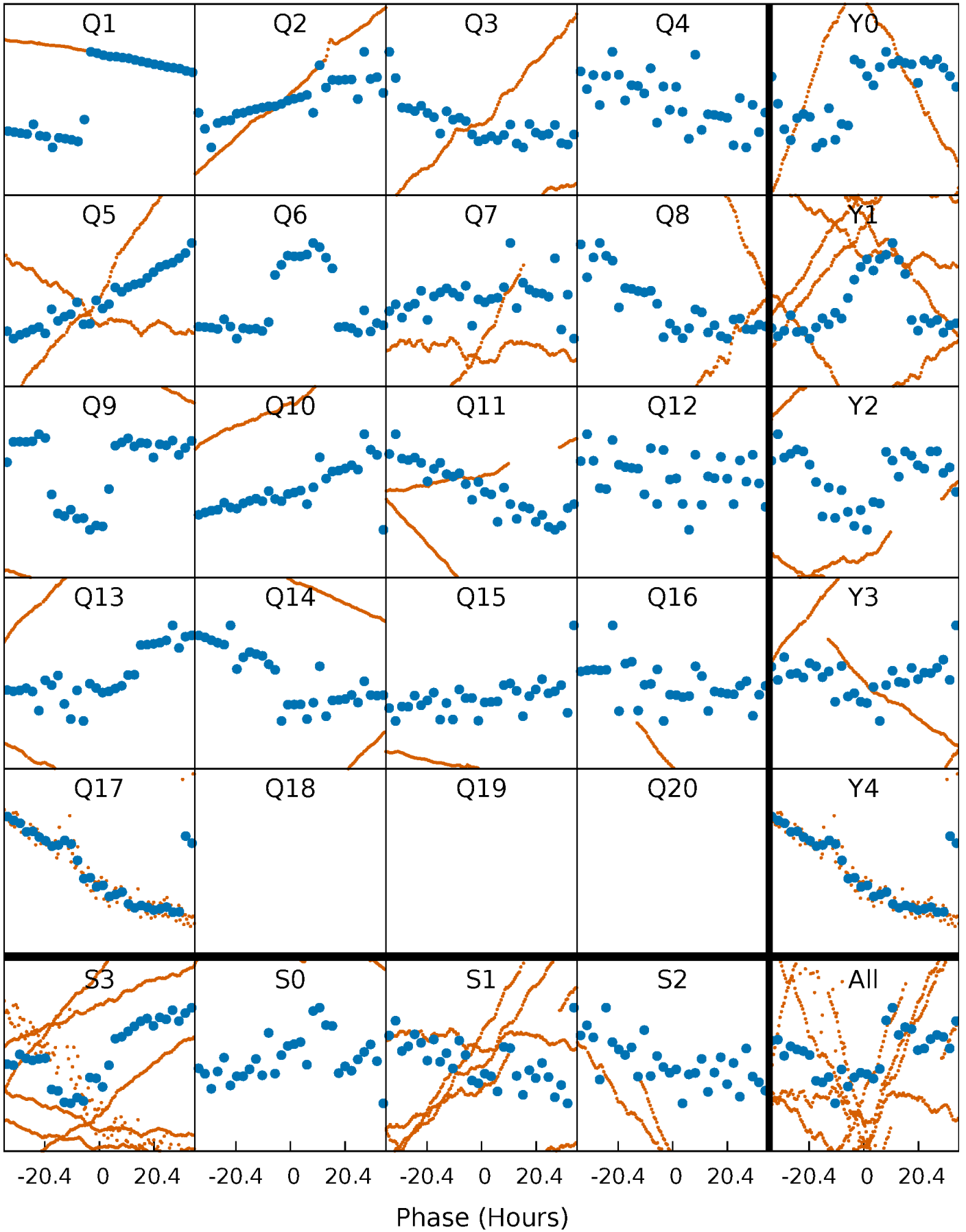


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



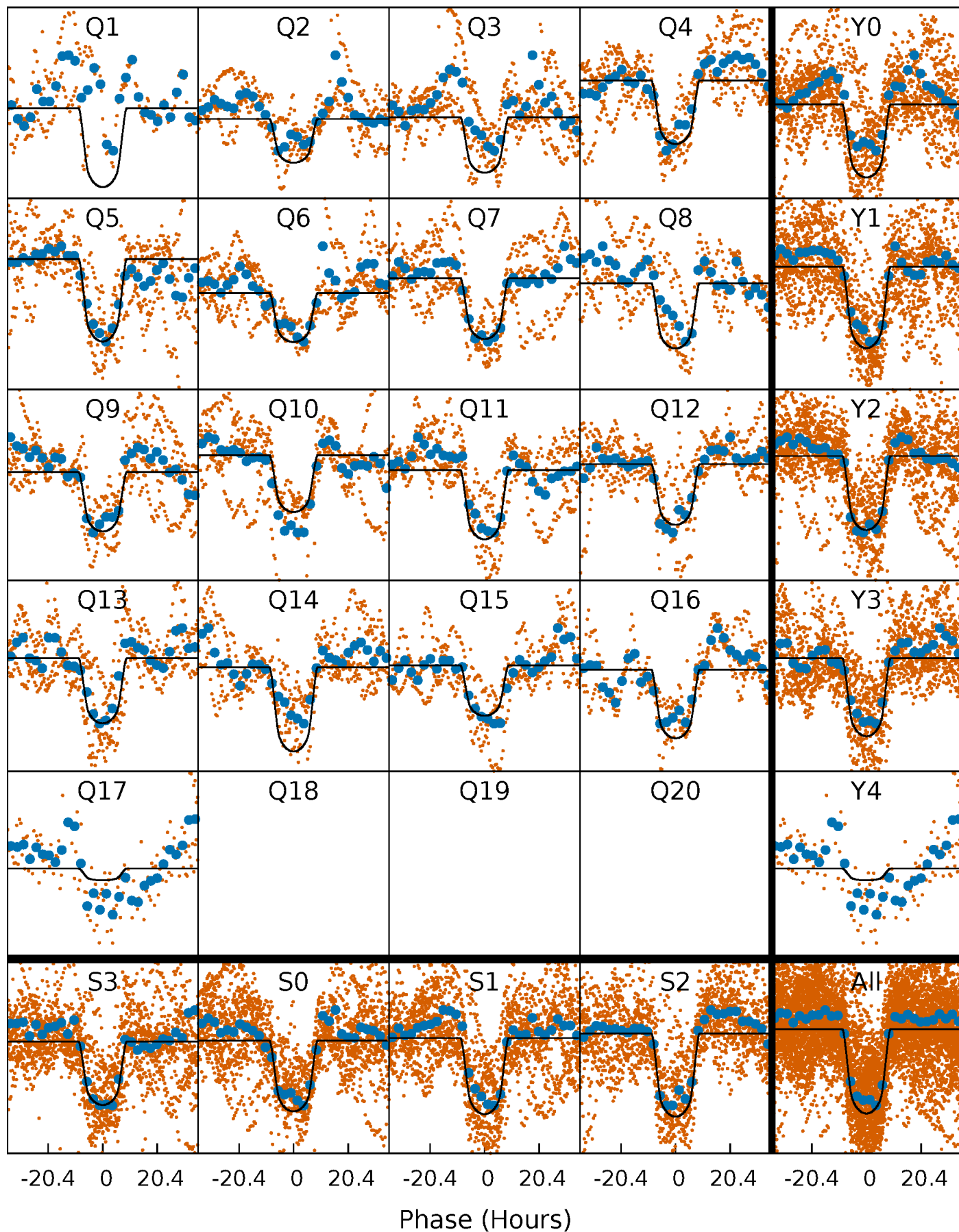
PDC Quarter-Phased Transit Curves

TCE 008517303-01 P= 24.073325 Days $T_0=141.136396$ (BKJD)



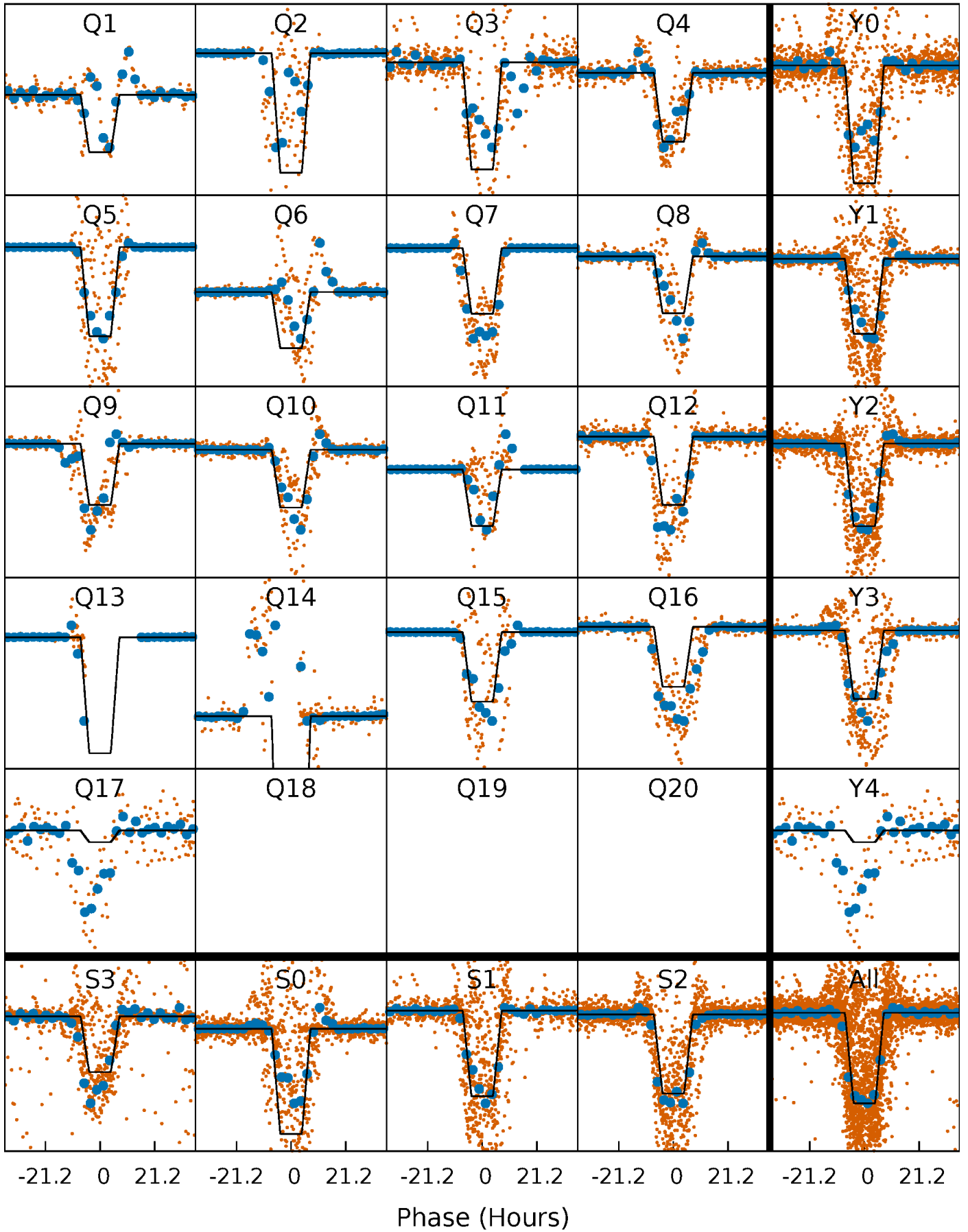
DV Quarter-Phased Transit Curves

TCE 008517303-01 P= 24.073325 Days $T_0=141.136396$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

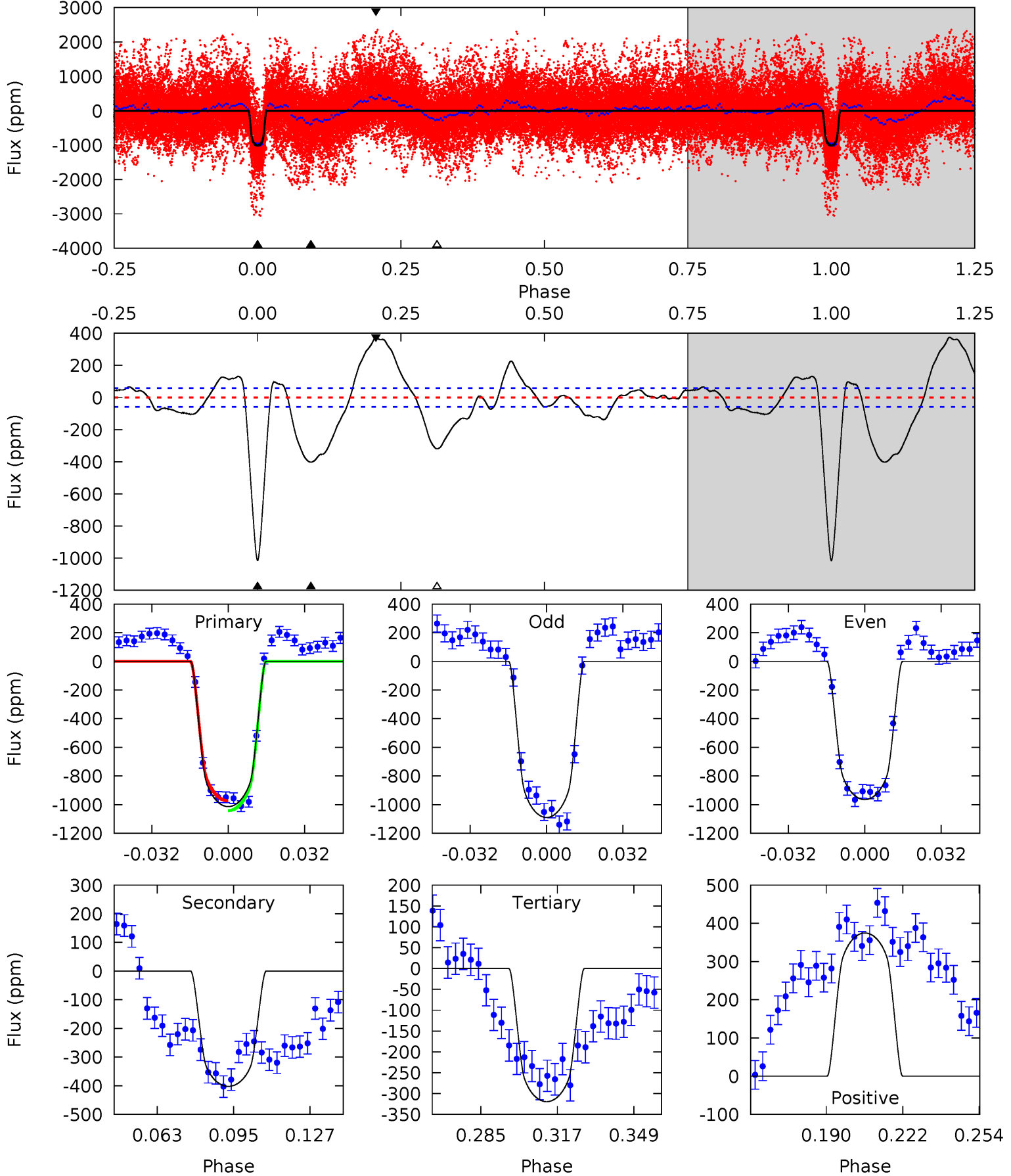
TCE 008517303-01 P= 24.074052 Days $T_0=141.125481$ (BKJD)



DV Model-Shift Uniqueness Test

008517303-01, P = 24.073325 Days, E = 117.063071 Days

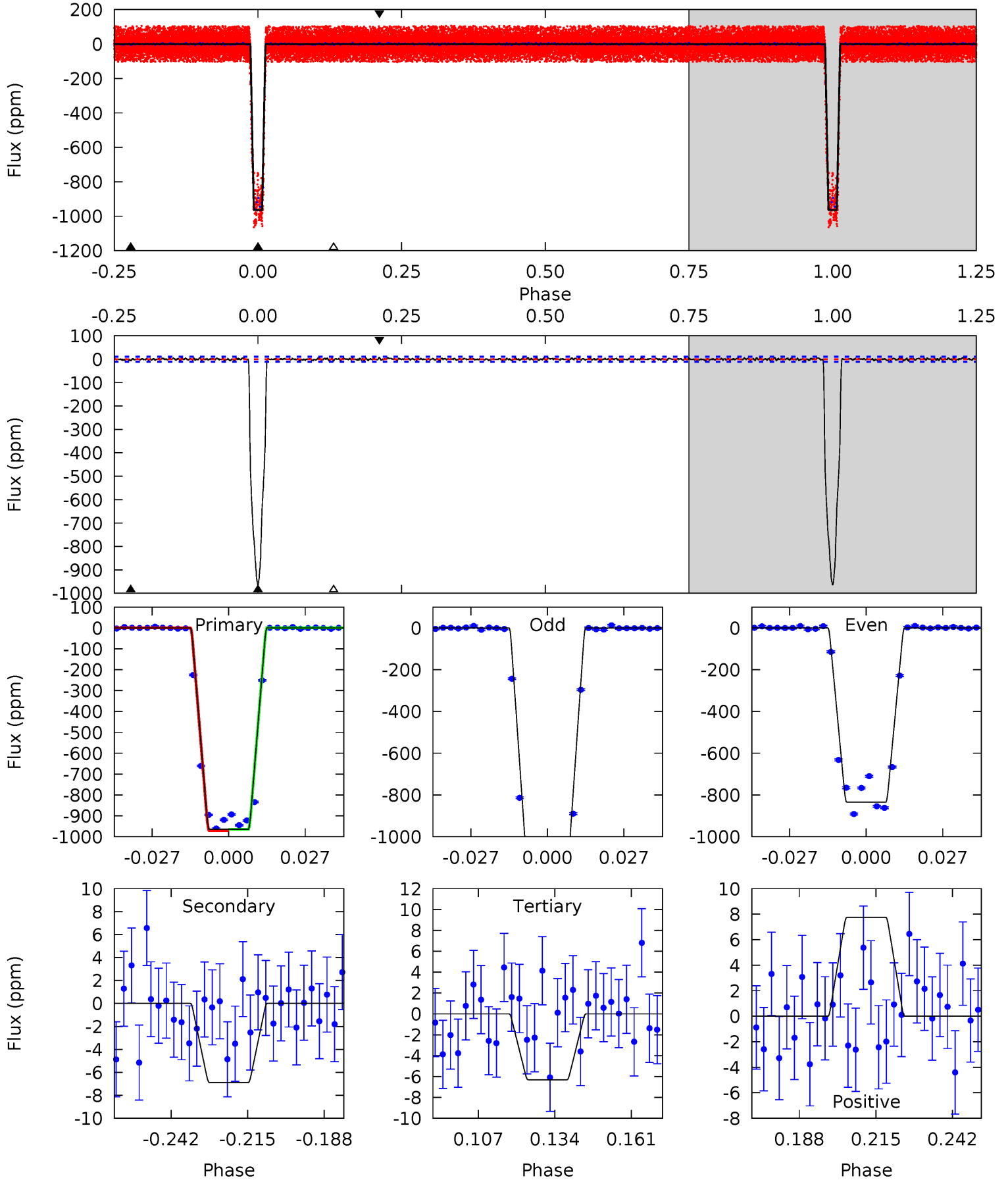
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
83.8	33.2	26.4	31.0	4.80	2.15	11.4	57.4	52.8	6.83	2.26	5.17	0.94	0.27	2.79



Alt Model-Shift Uniqueness Test

008517303-01, $P = 24.074052$ Days, $E = 117.051429$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
442.2	3.15	2.89	3.55	4.83	2.21	1.03	439.3	438.6	0.26	-0.40	73.9	0.94	0.01	0



Stellar Parameters For KIC 008517303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4647^{+69}_{-62}	$2.843^{+0.140}_{-0.171}$	$0.020^{+0.150}_{-0.100}$	$6.055^{+1.954}_{-0.837}$	$0.932^{+0.254}_{-0.014}$	$0.006^{+0.003}_{-0.003}$
	+1%/-1%	+5%/-6%	+750%/-500%	+32%/-14%	+27%/-2%	+56%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008517303-01 / KOI 6181.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-402 ± 12	$26.54^{+4.45}_{-2.50}$	1758^{+122}_{-84}	3609^{+53}_{-54}	$8.301^{+1.759}_{-1.981}$
Alt.	-7 ± 2	$20.79^{+3.49}_{-1.97}$	1766^{+127}_{-86}	-2005^{+3717}_{-202}	$0.221^{+0.098}_{-0.079}$

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 $A_{obs} \gg 1.0$

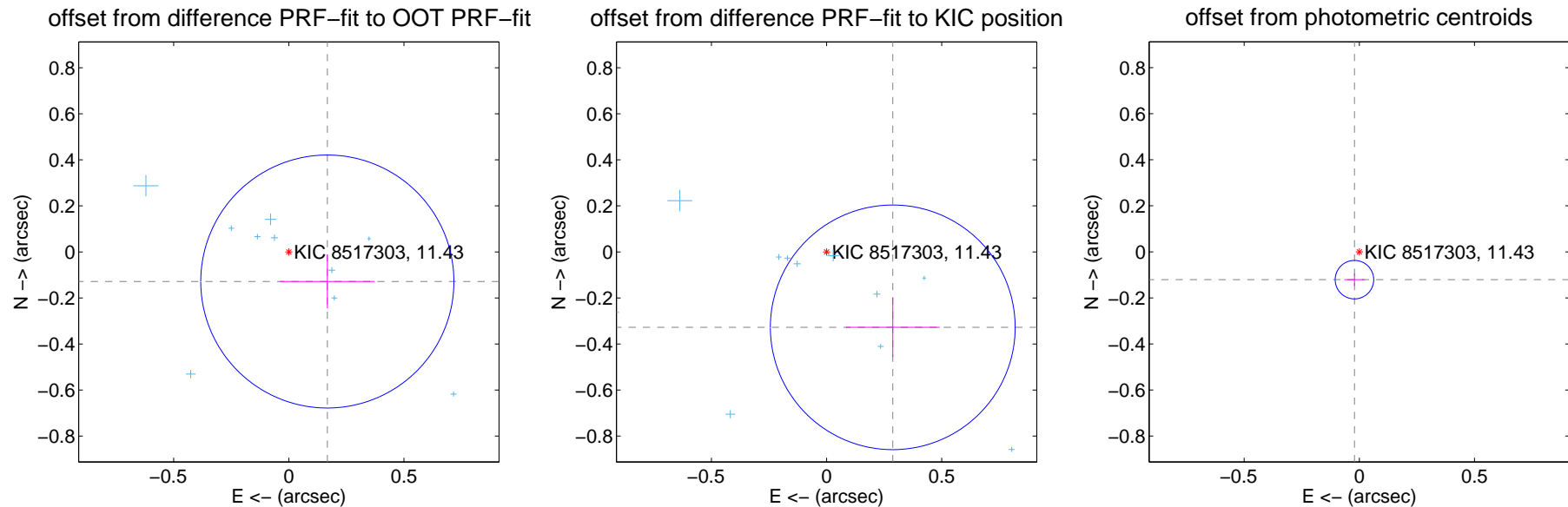
DV Centroid Data

Supplemental centroid analysis for 008517303-01. **Kepler magnitude: 11.43.** Transit SNR 27.42

There are 15 quarters with good PRF difference image offsets

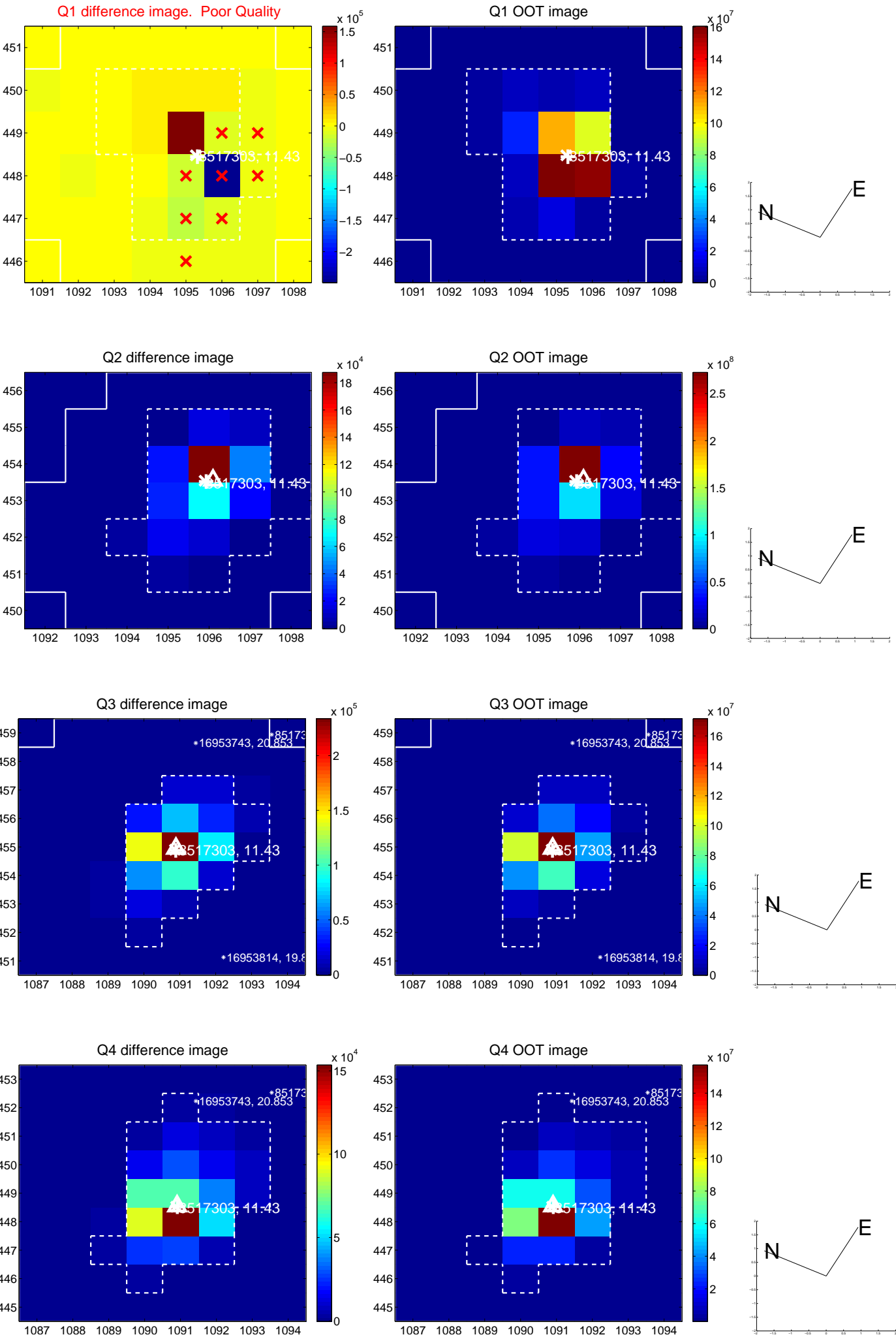
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.211 ± 0.183	1.15	-0.167 ± 0.205	-0.129 ± 0.117
PRF-fit source offset from KIC position	0.436 ± 0.177	2.46	-0.287 ± 0.203	-0.328 ± 0.129
photometric centroid source offset	0.12 ± 0.03	4.40	0.02 ± 0.04	-0.12 ± 0.03

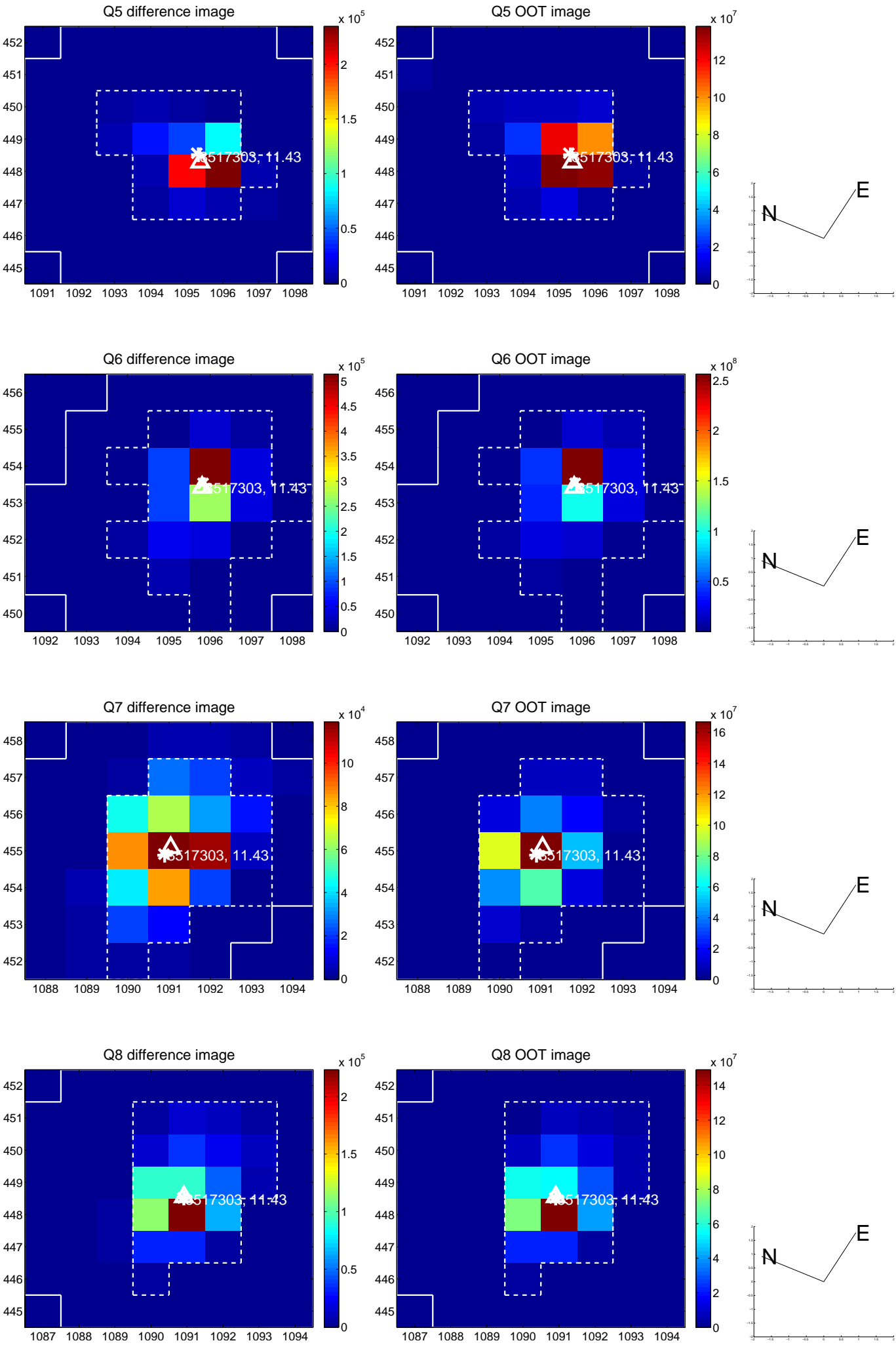


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

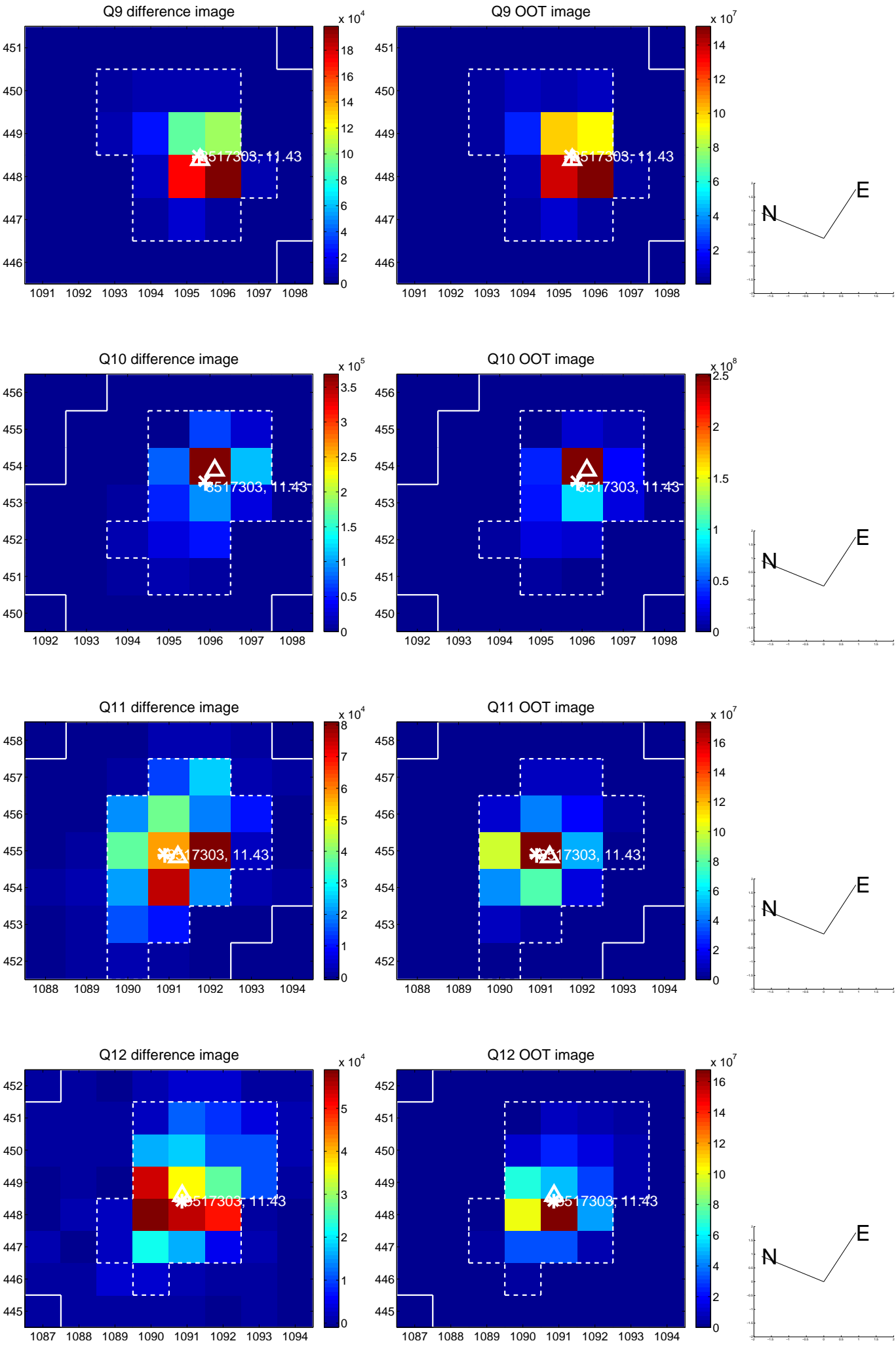
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



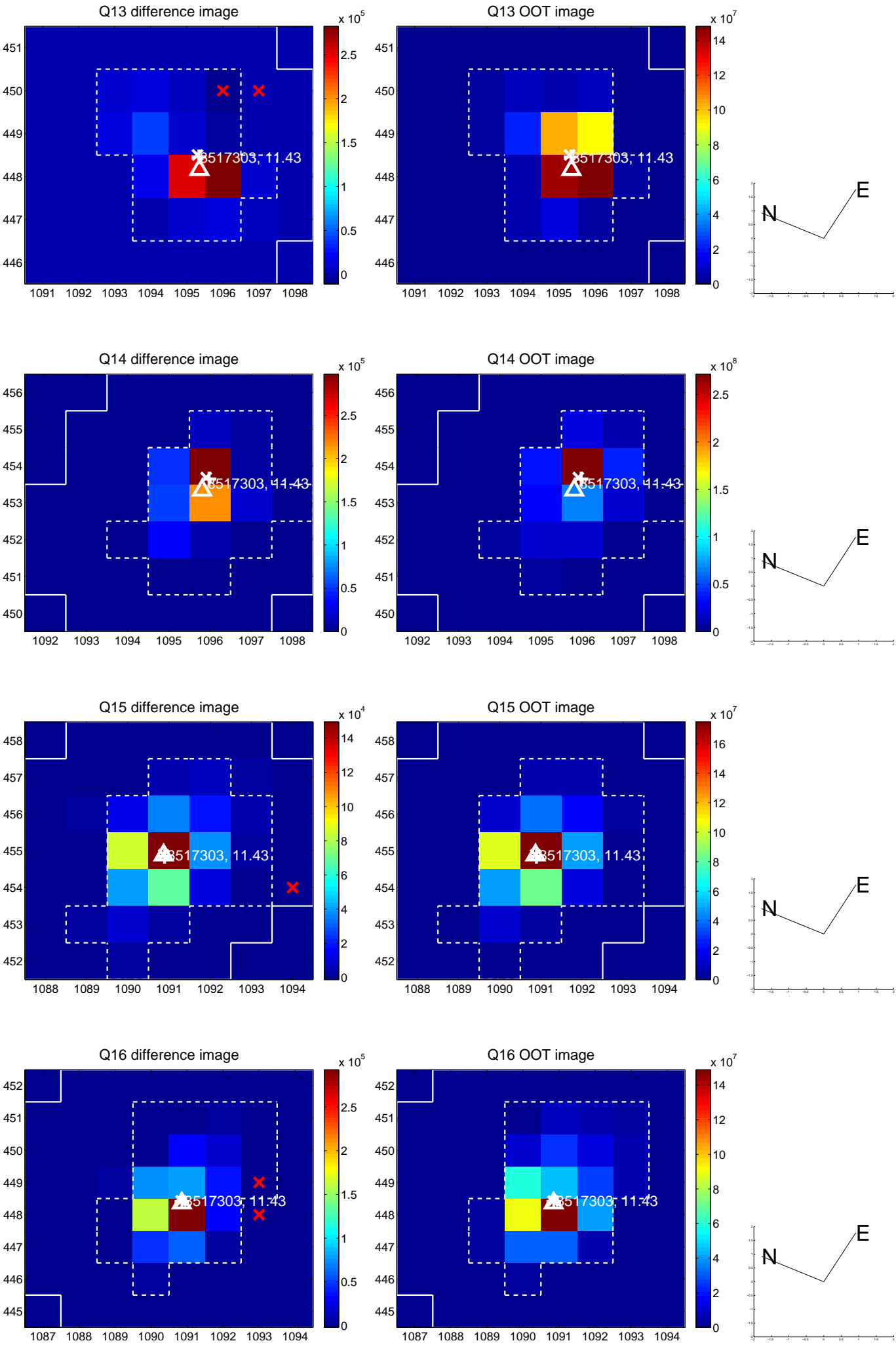
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



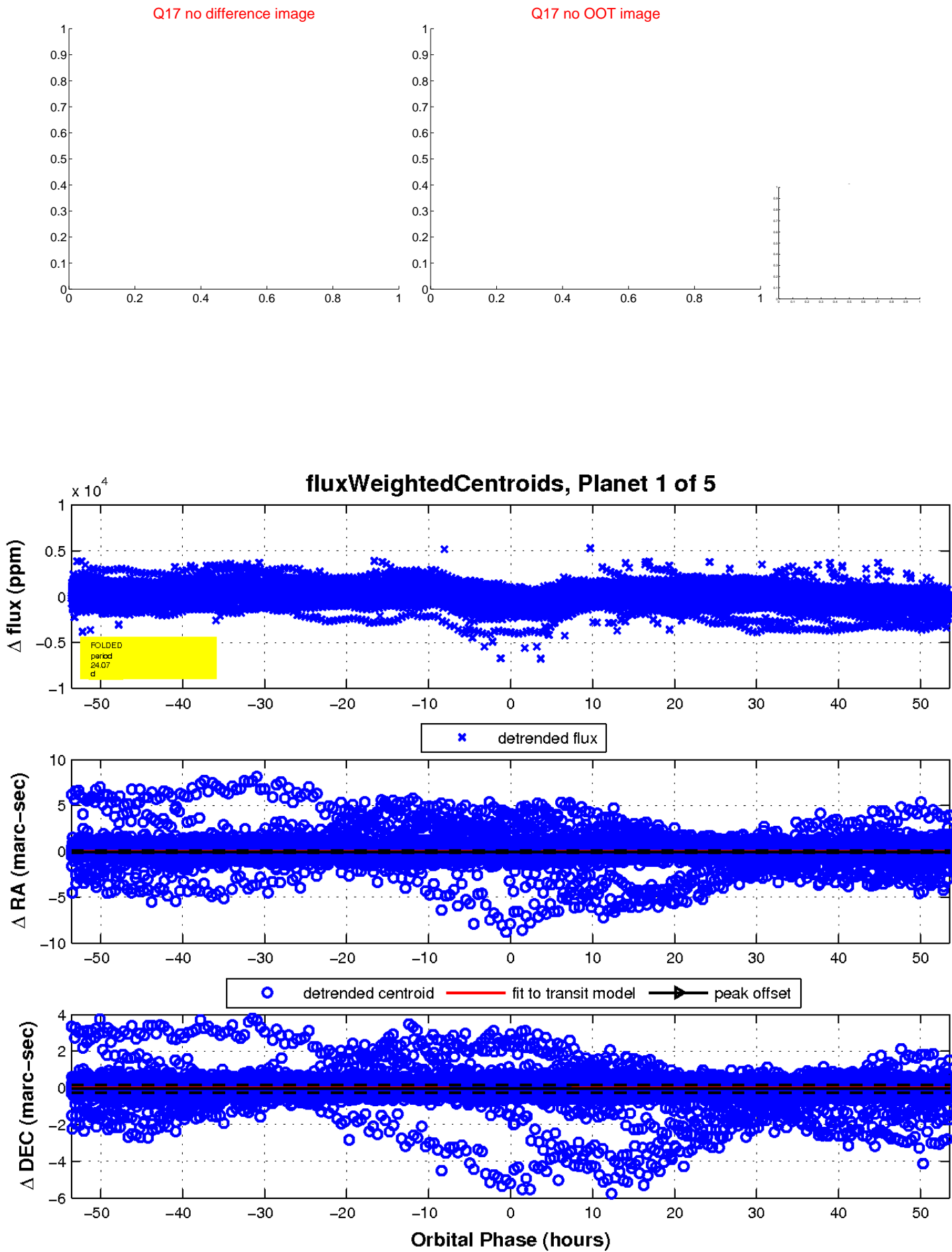
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

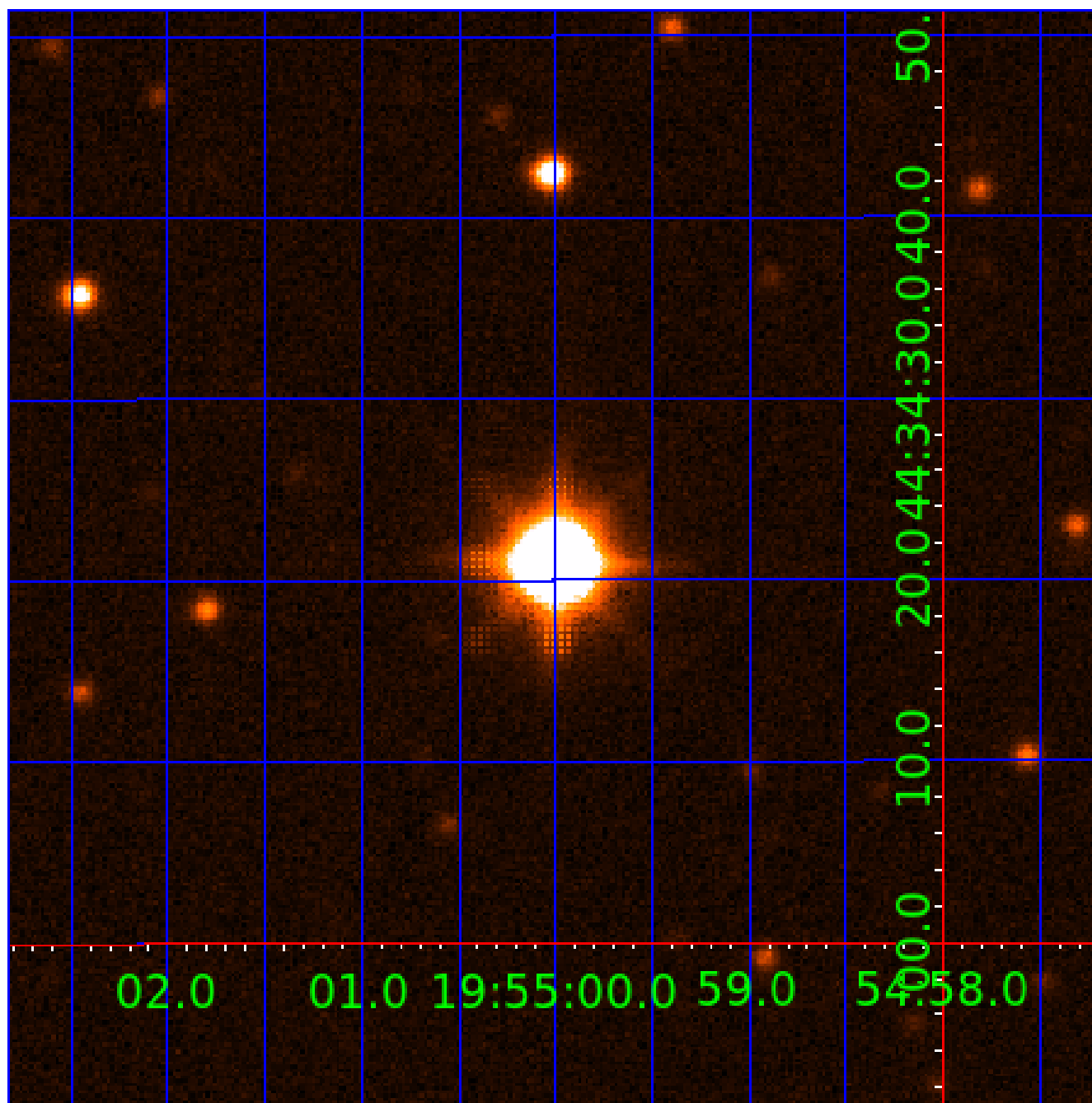


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008517303

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})
008517303-01	OBS	6181.01	24.073325	141.136396	1209.6	17.850	16.2	27.4	6.05	4647	26.26	602.95
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008517303-04	OBS	No	401.840825	327.983776	992.0	6.716	9.3	7.8	6.05	4647	25.86	14.13
008517303-05	OBS	No	291.641391	229.806634	246.8	5.000	15.1	-1.0	6.05	4647	9.11	21.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008517303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
008517303-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
008517303-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
008517303-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
008517303-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED—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.

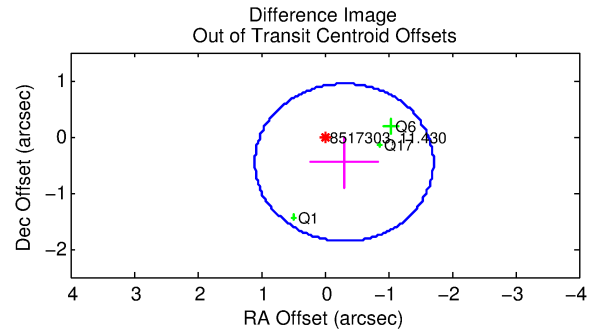
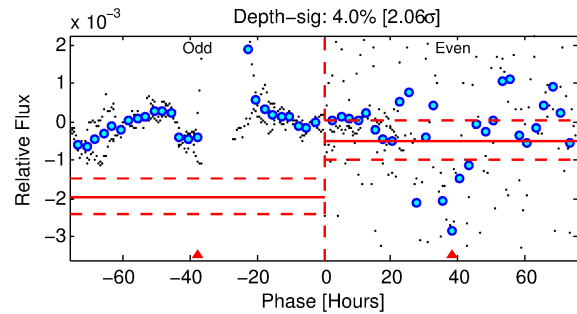
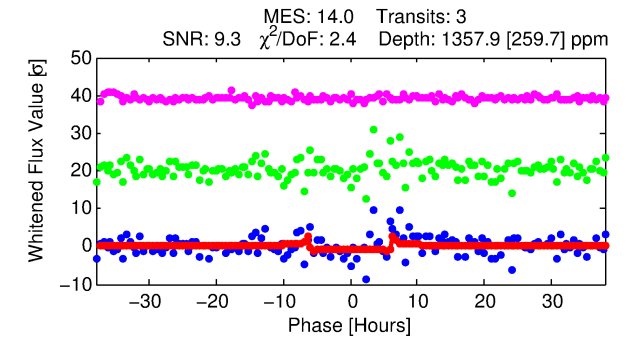
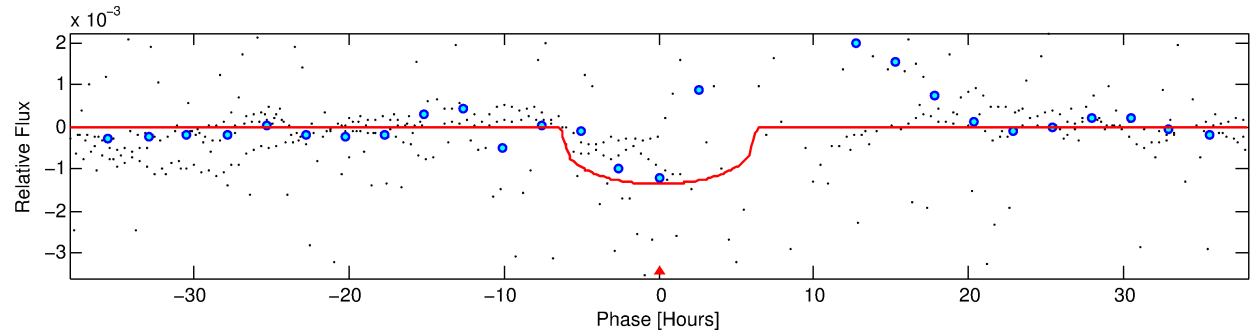
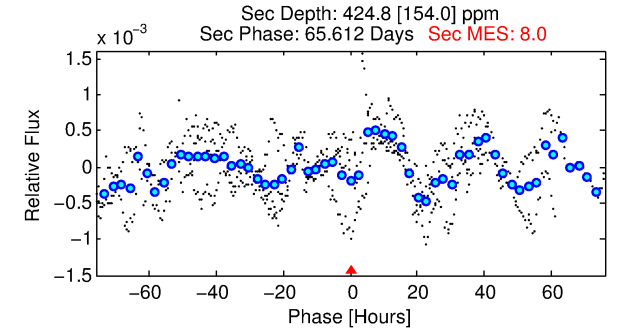
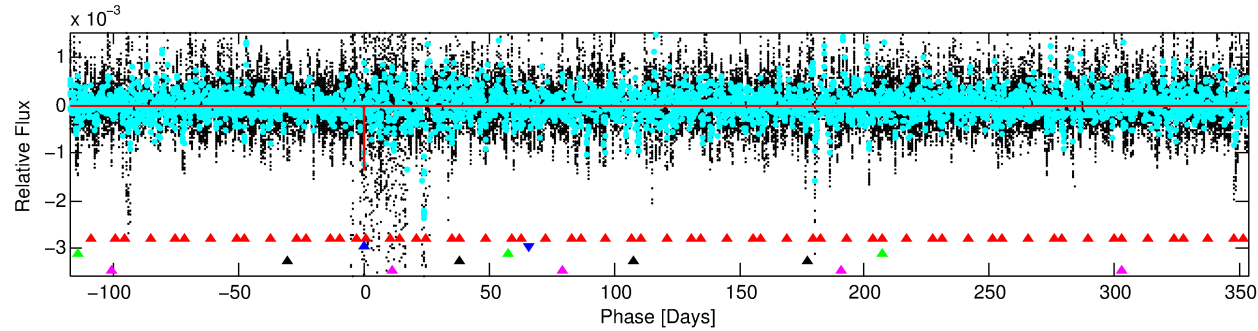
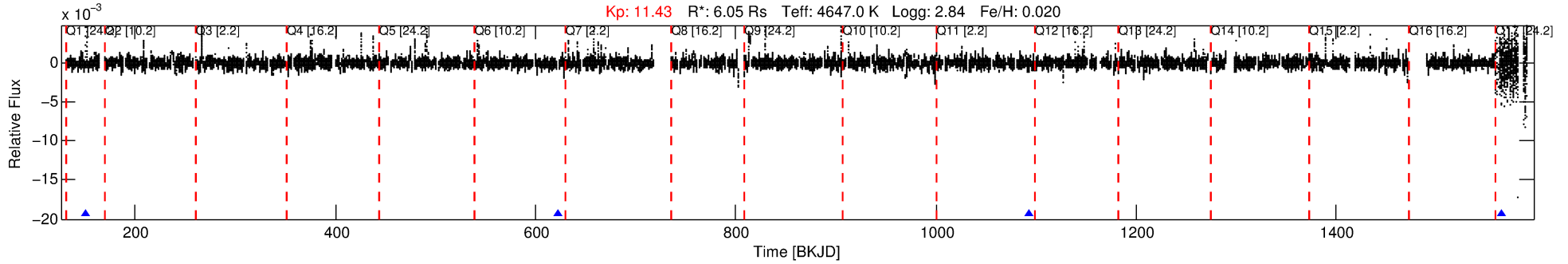
Ephemeris Match Information For 008517303-02

No Significant Match Found

DV One-Page Summary

KIC: 8517303 Candidate: 2 of 5 Period: 471.188 d

KOI: K06181 Corr: No Ephemeris Match



DV Fit Results:

Period = 471.18825 [0.00365] d
Epoch = 150.8874 [0.0058] BKJD
Rp/R* = 0.0326 [0.0135]
a/R* = 285.03 [340.61]
b = 0.25 [4.59]
Seff = 11.43 [3.94]
Teff = 469 [40] K
Rp = 21.56 [11.30] Re
a = 1.1576 [0.2917] AU
Ag = 673.96 [649.66] [1.04 σ]
Teffp = 3694 [835] K [3.86 σ]

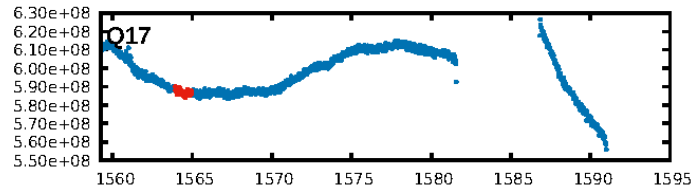
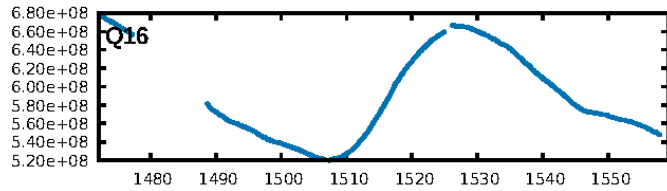
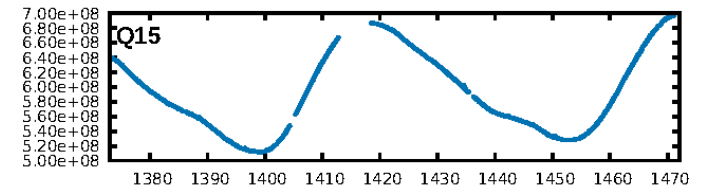
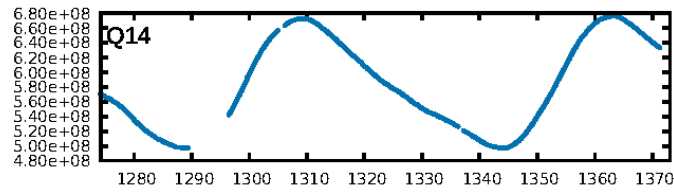
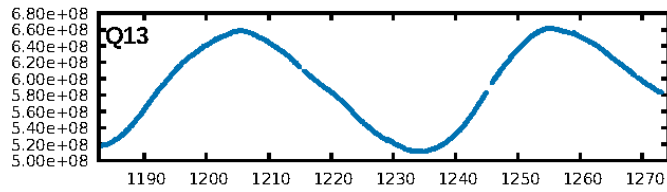
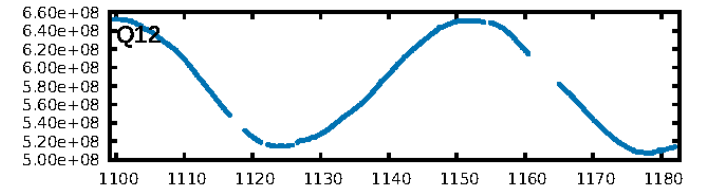
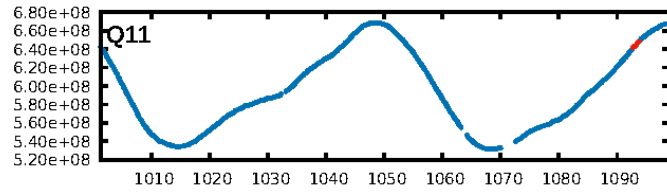
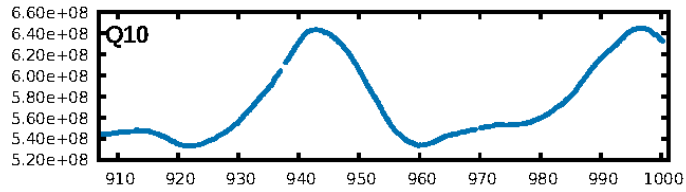
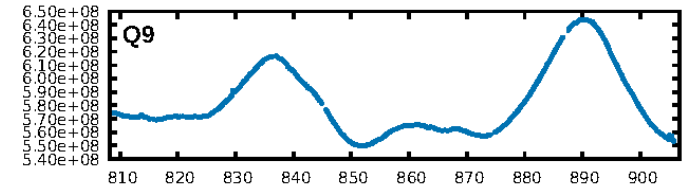
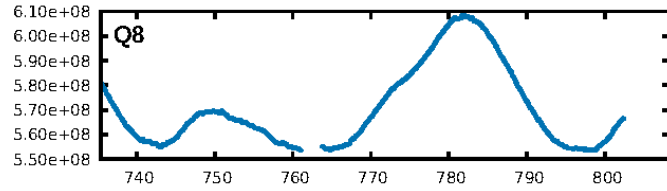
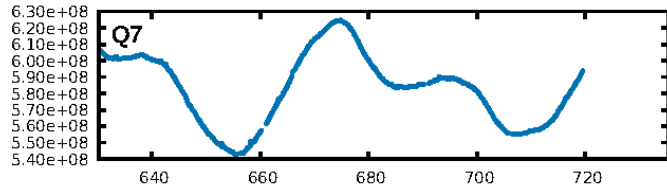
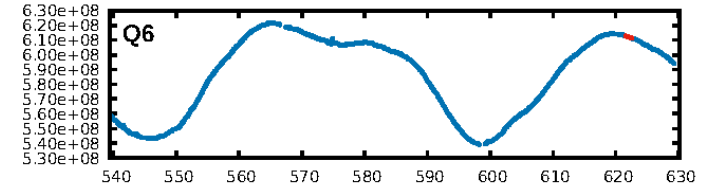
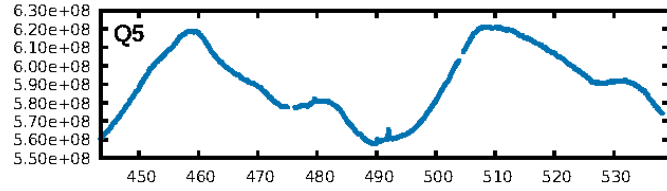
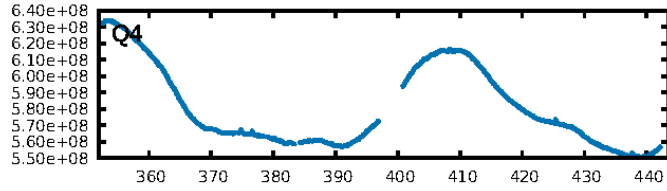
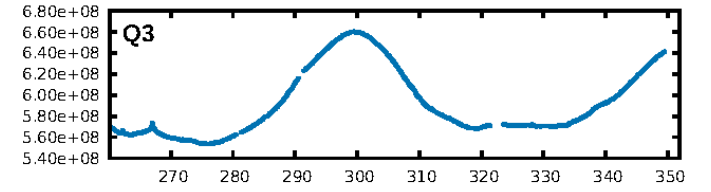
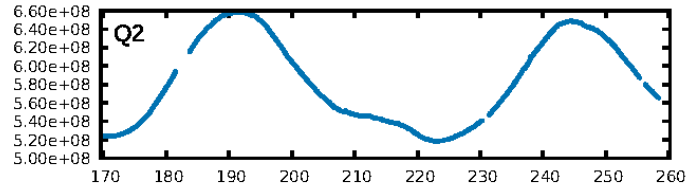
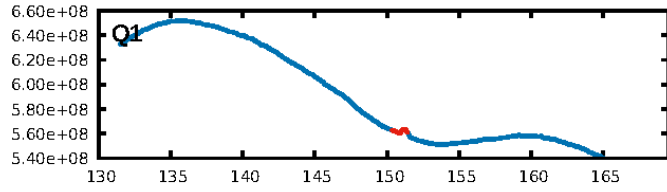
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [116.11 σ]
LongPeriod-sig: 100.0% [215.78 σ]
ModelChiSquare2-sig: 12.1%
ModelChiSquareGof-sig: 2.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1/1]
GhostDiagnostic-chr: -0.1697
Centroid-sig: 0.2%
Centroid-so: 0.018 arcsec [0.22 σ]
OotOffset-rm: 0.554 arcsec [1.19 σ]
KicOffset-rm: 0.789 arcsec [1.75 σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

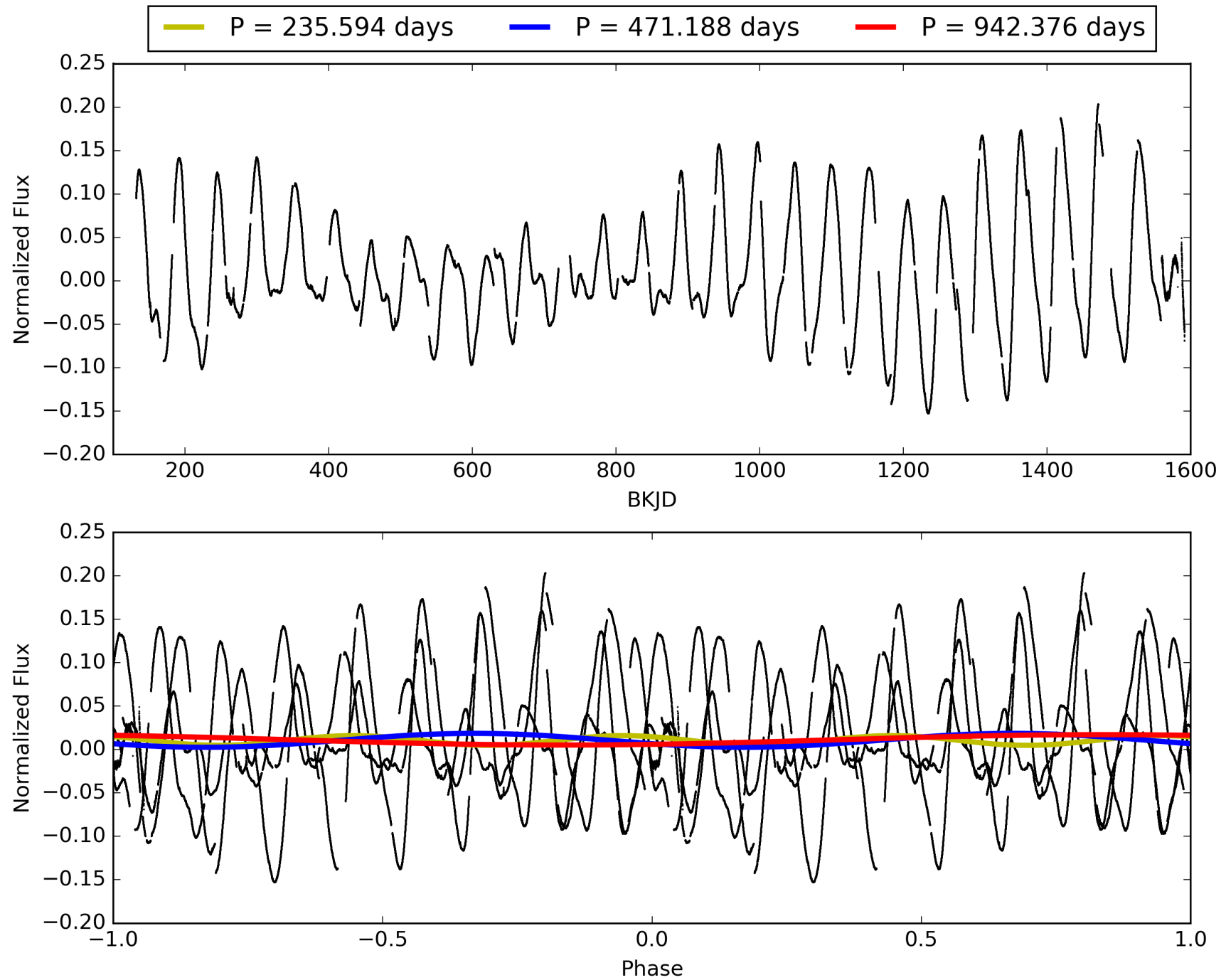
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:34:01 Z

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

TCE 008517303-02, PDC Light Curves

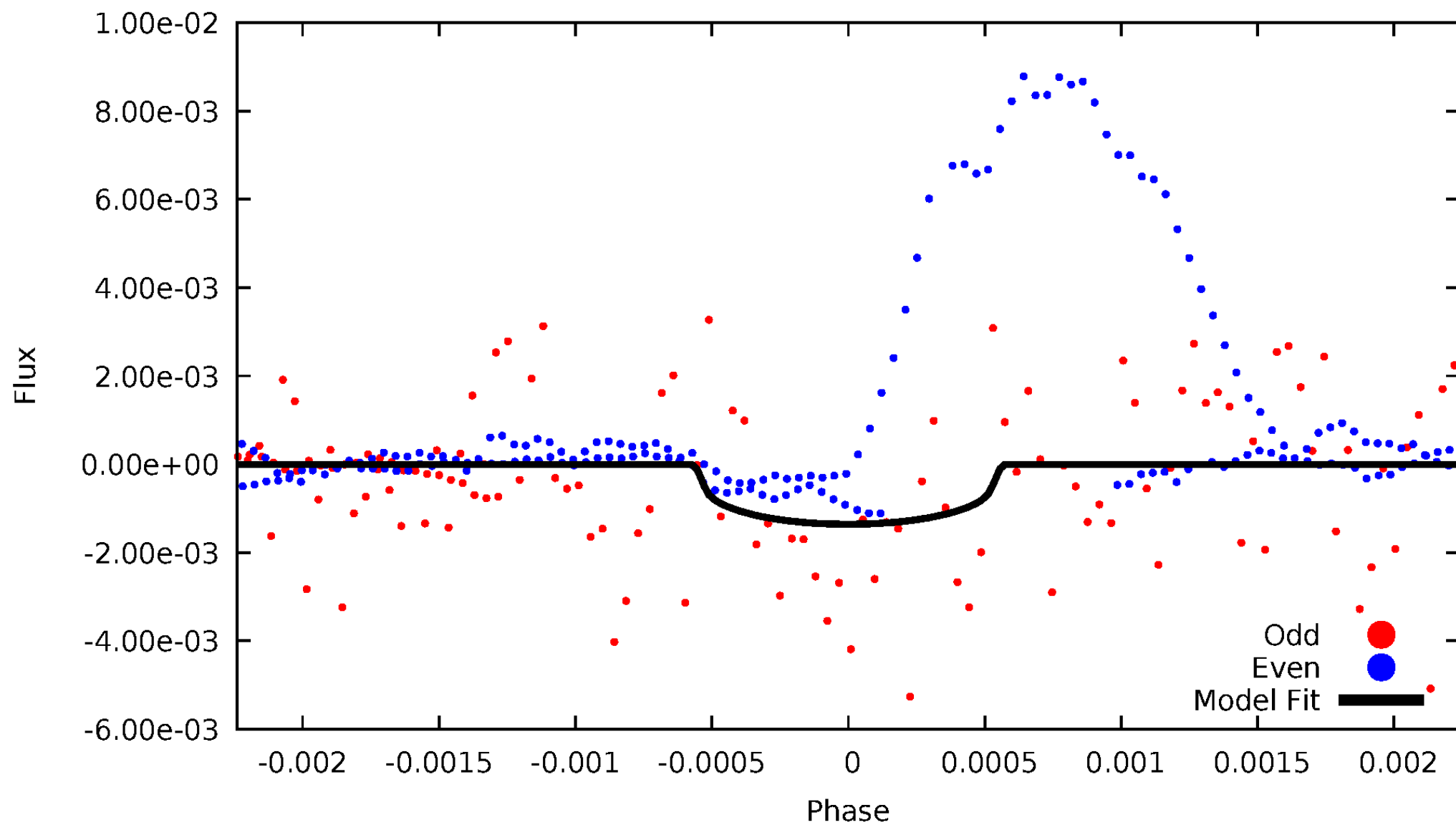


TCE 008517303-02



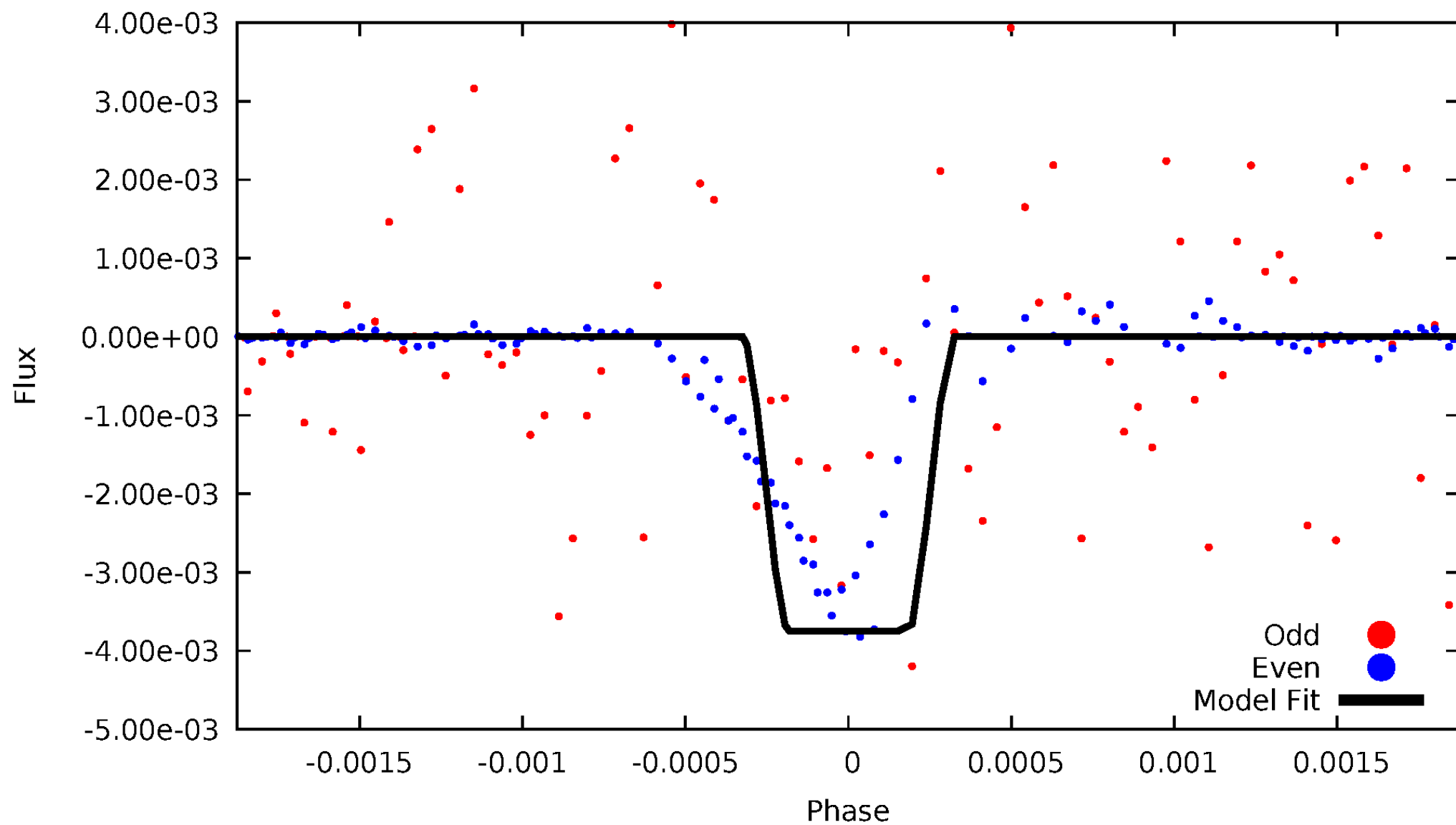
DV Odd/Even

TCE 008517303-02



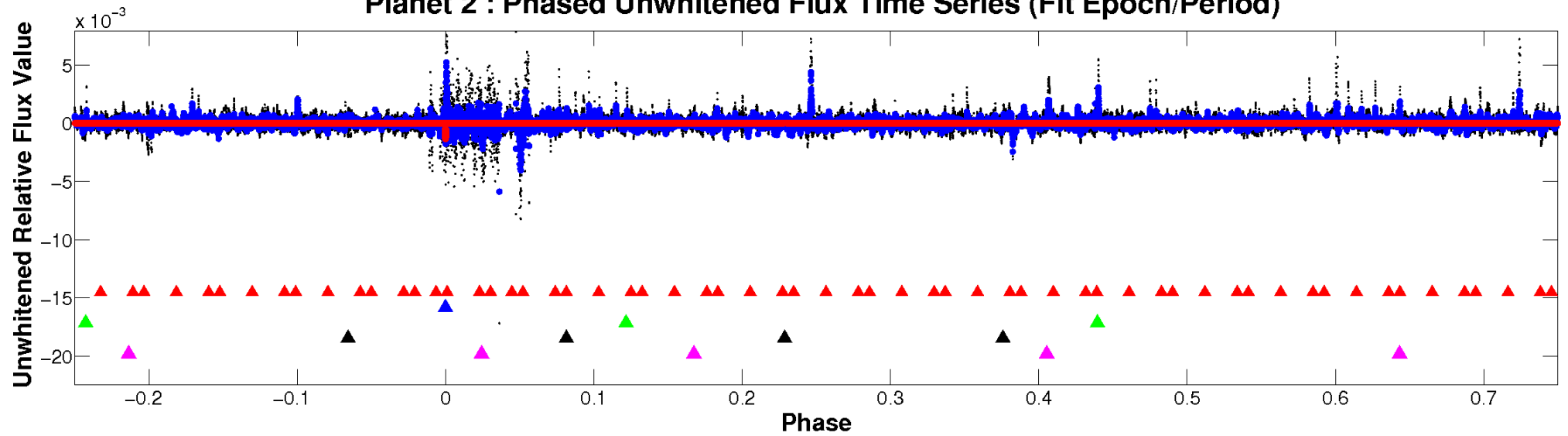
ALT Odd/Even

TCE 008517303-02

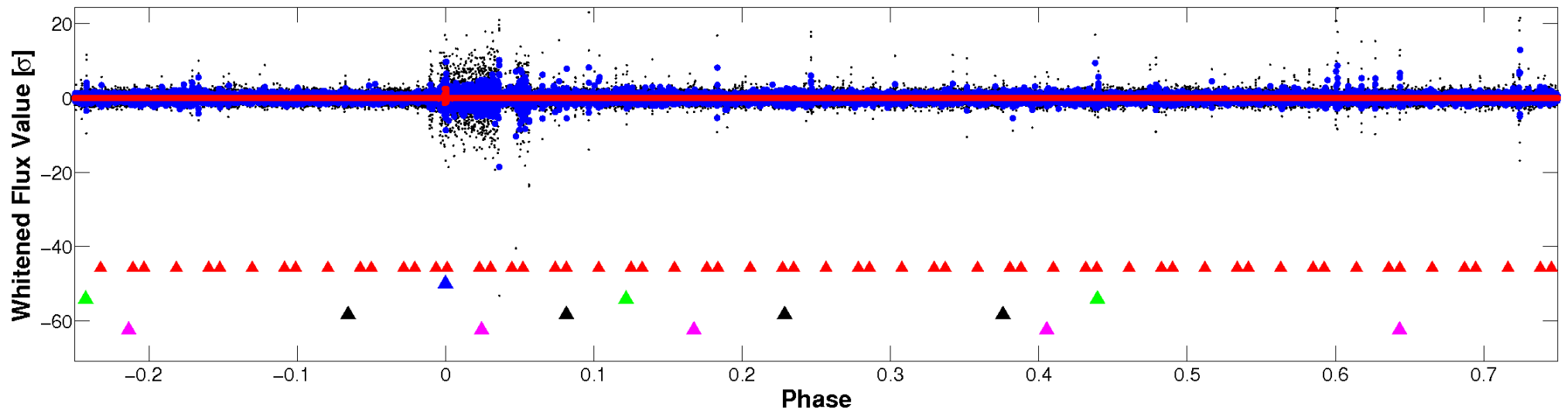


Non-Whitened Vs. Whitened Light Curve

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

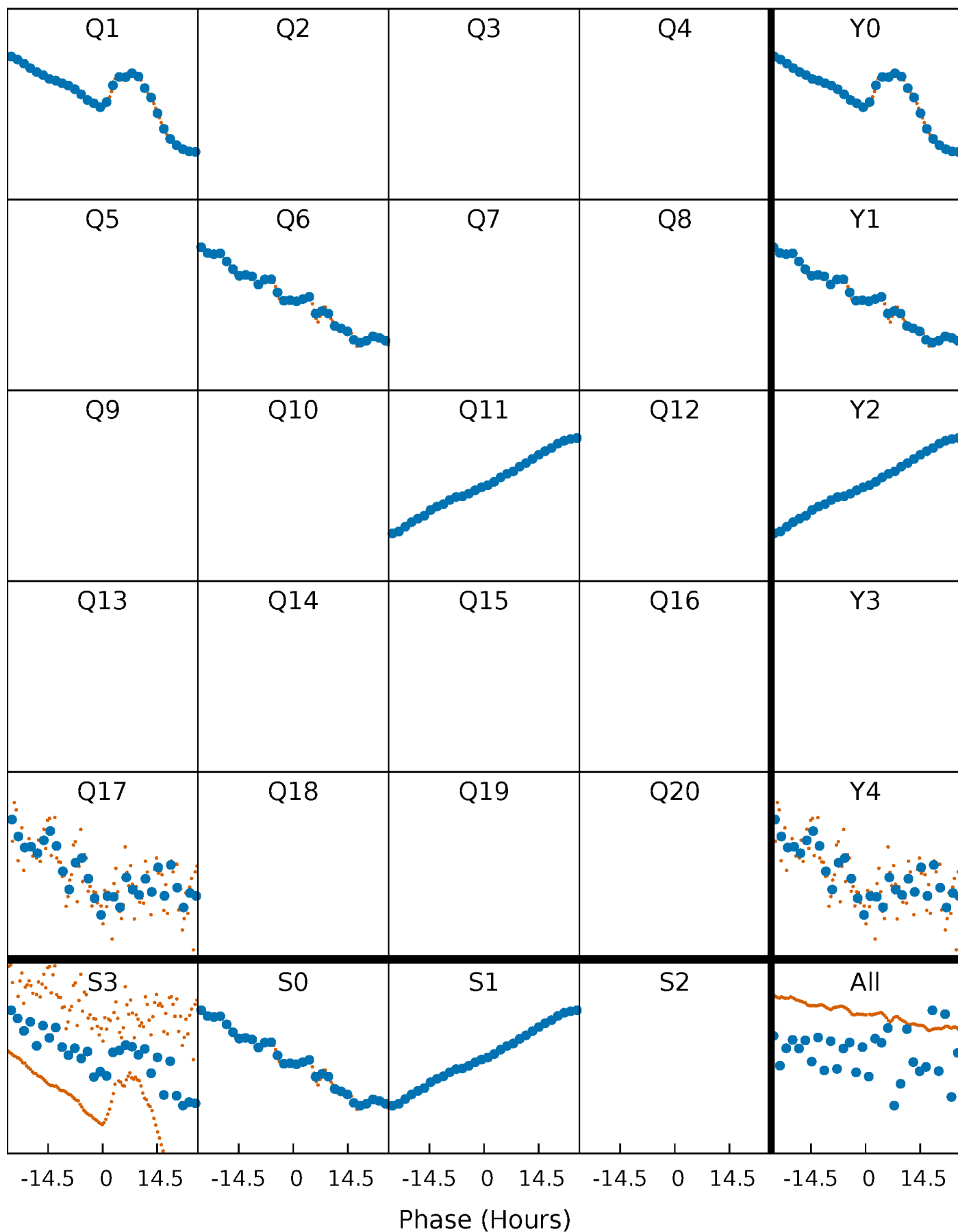


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



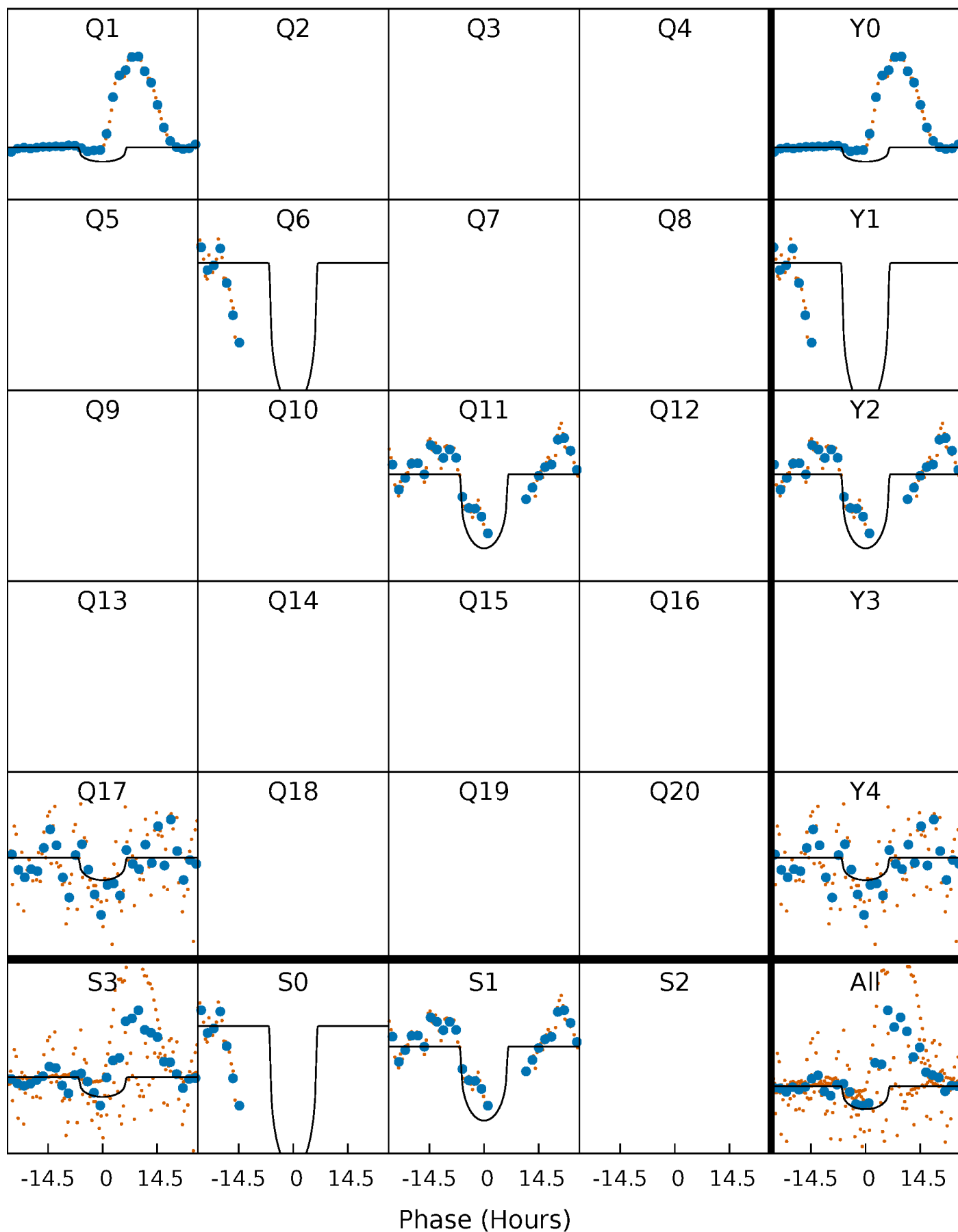
PDC Quarter-Phased Transit Curves

TCE 008517303-02 P=471.188245 Days $T_0=150.887448$ (BKJD)



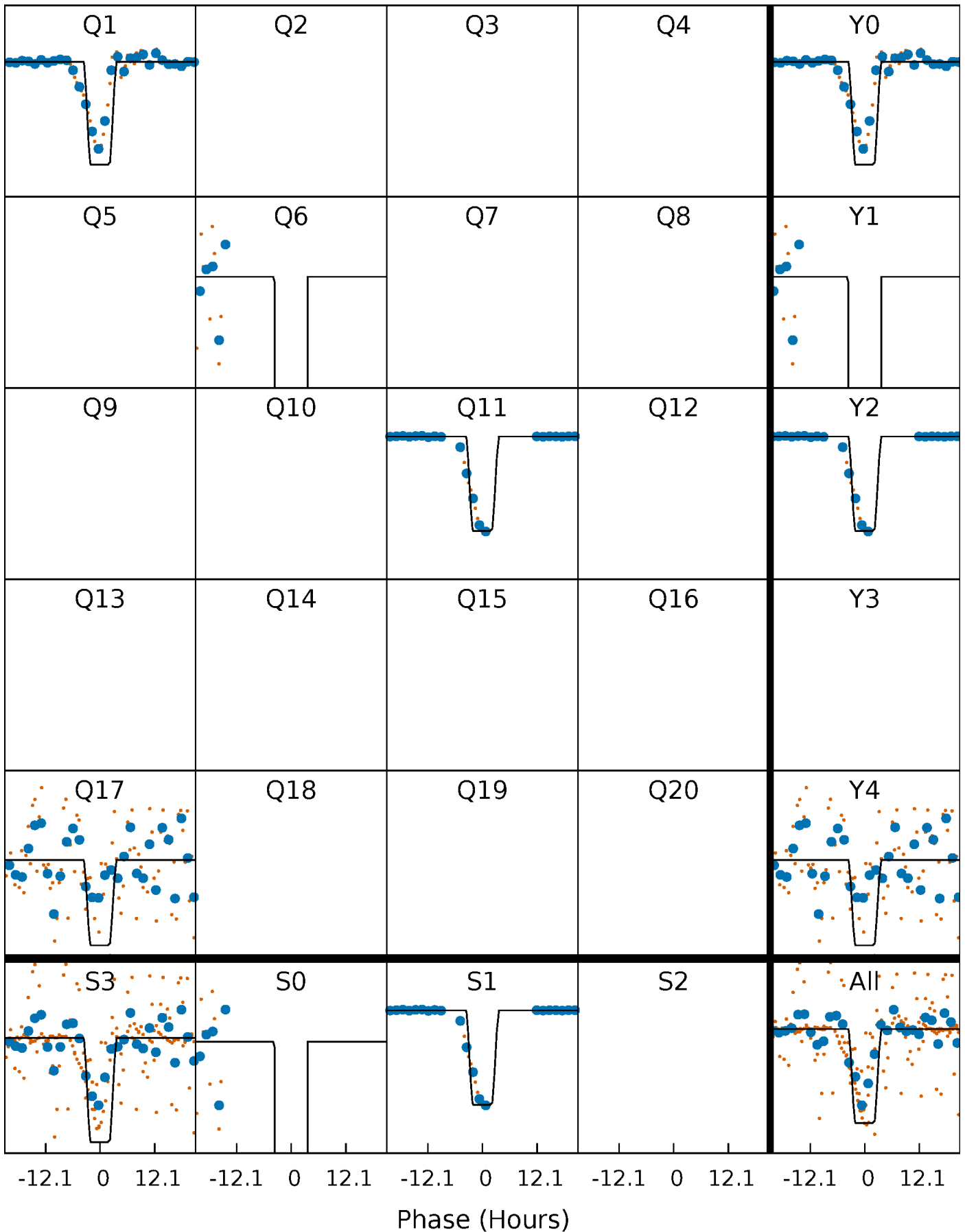
DV Quarter-Phased Transit Curves

TCE 008517303-02 P=471.188245 Days $T_0=150.887448$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

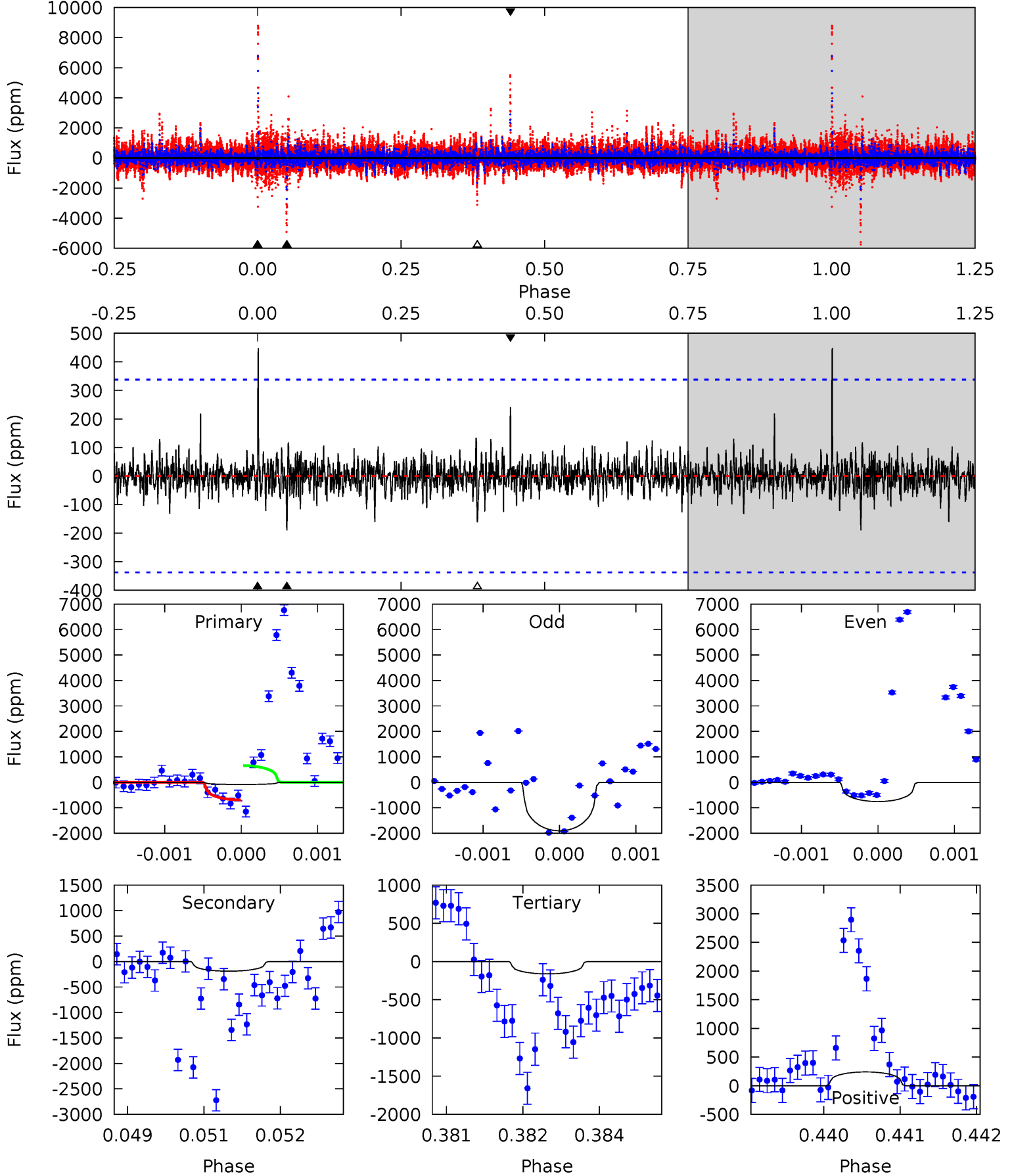
TCE 008517303-02 $P=471.184271$ Days $T_0=150.913996$ (BKJD)



DV Model-Shift Uniqueness Test

008517303-02, P = 471.188245 Days, E = 150.887448 Days

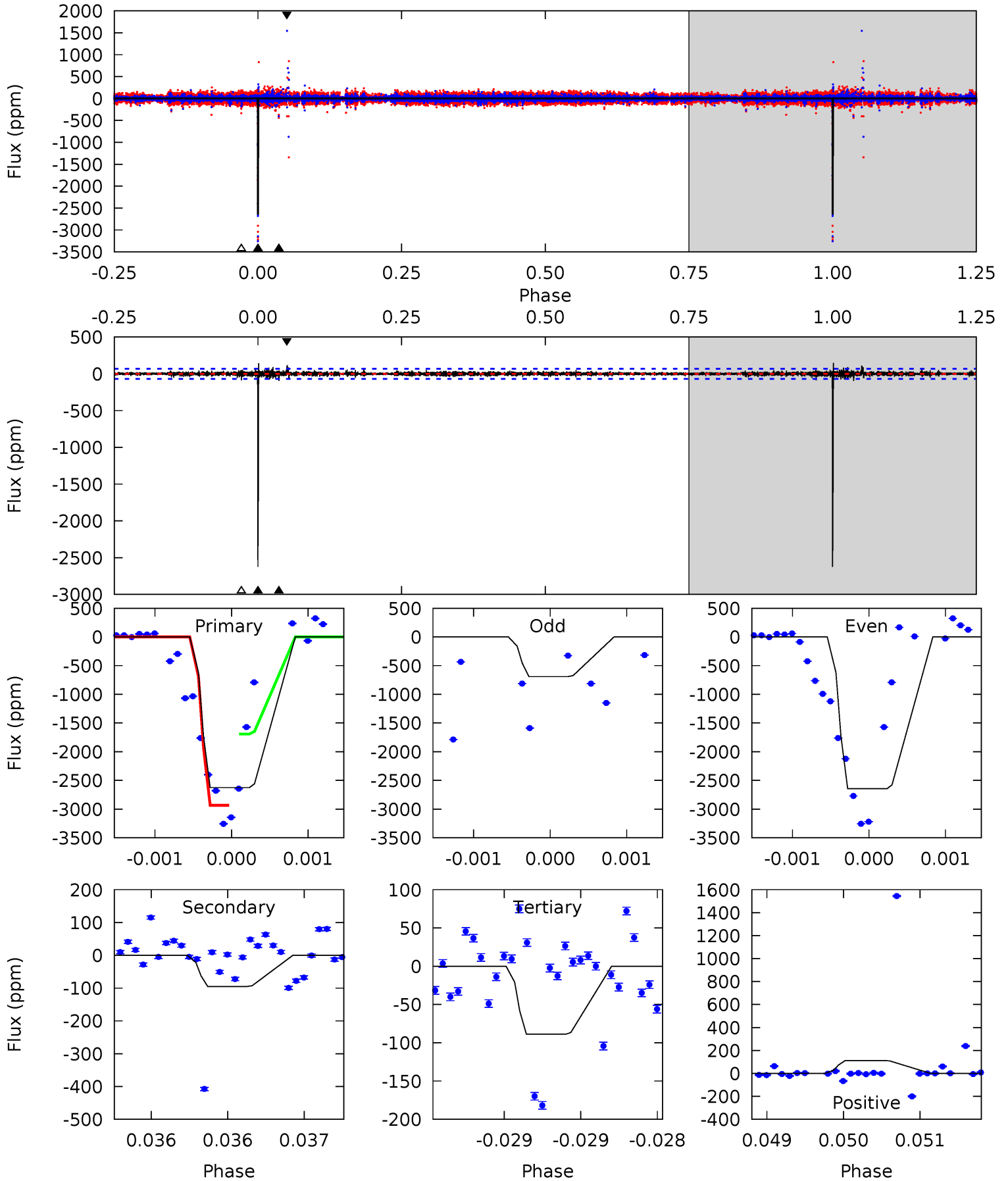
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.37	3.05	2.60	3.88	5.43	3.25	0.64	-1.23	-2.51	0.45	-0.83	8.57	0.35	0.70	0.24



Alt Model-Shift Uniqueness Test

008517303-02, P = 471.184271 Days, E = 150.913996 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
211.0	7.65	7.14	8.96	5.53	3.41	1.23	203.9	202.0	0.51	-1.31	42.3	1.00	0.05	0



Stellar Parameters For KIC 008517303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4647^{+69}_{-62}	$2.843^{+0.140}_{-0.171}$	$0.020^{+0.150}_{-0.100}$	$6.055^{+1.954}_{-0.837}$	$0.932^{+0.254}_{-0.014}$	$0.006^{+0.003}_{-0.003}$
	+1%/-1%	+5%/-6%	+750%/-500%	+32%/-14%	+27%/-2%	+56%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008517303-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-190 ± 62	$22.35^{+11.14}_{-8.76}$	656^{+45}_{-32}	3405^{+679}_{-348}	282^{+578}_{-152}
Alt.	-95 ± 12	$41.86^{+11.22}_{-10.27}$	655^{+45}_{-32}	2601^{+184}_{-120}	41^{+33}_{-16}

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 $A_{obs} \gg 1.0$

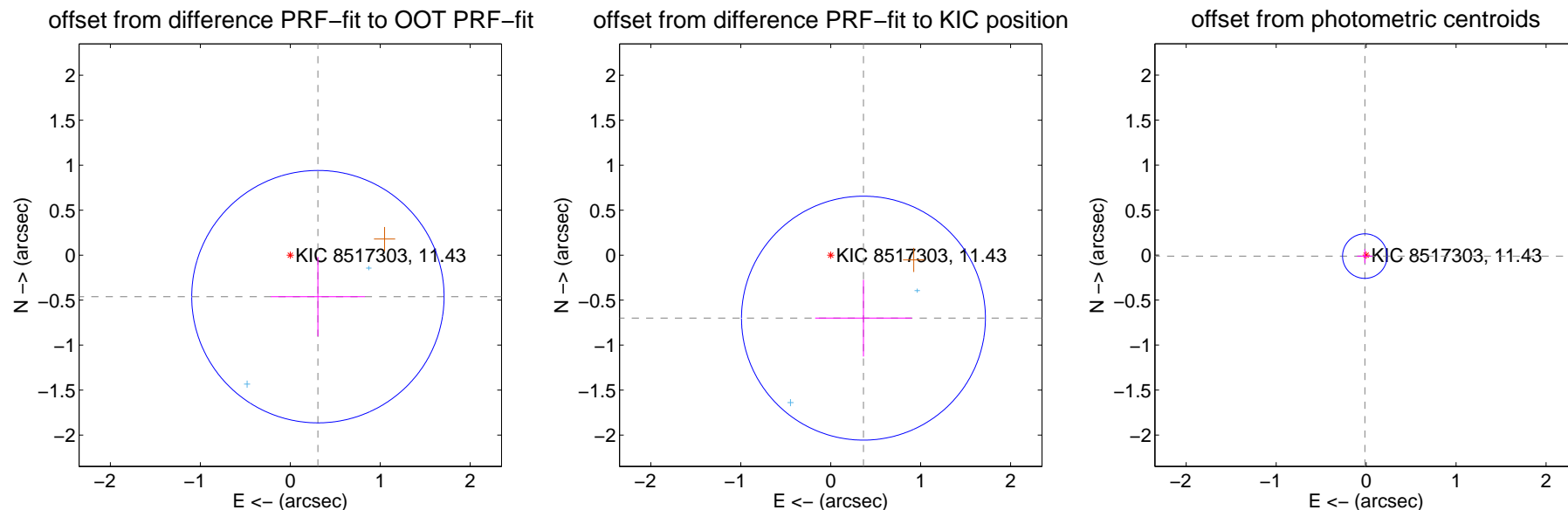
DV Centroid Data

Supplemental centroid analysis for 008517303-02. **Kepler magnitude: 11.43.** Transit SNR 9.30

There are 2 quarters with good PRF difference image offsets

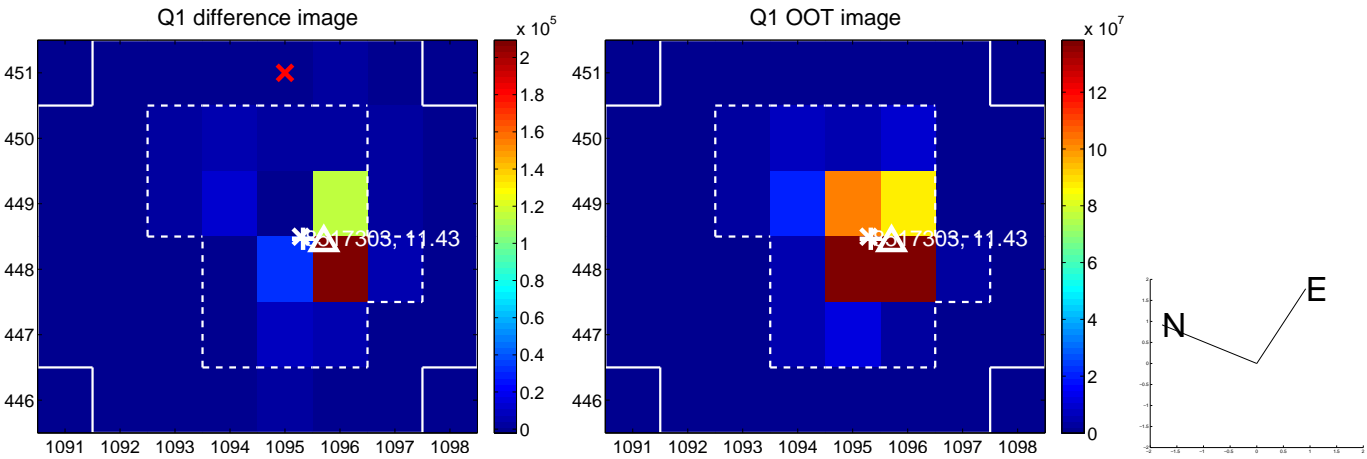
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.554 ± 0.468	1.19	-0.307 ± 0.524	-0.461 ± 0.440
PRF-fit source offset from KIC position	0.789 ± 0.452	1.75	-0.364 ± 0.537	-0.700 ± 0.426
photometric centroid source offset	0.02 ± 0.08	0.22	0.01 ± 0.08	-0.01 ± 0.08

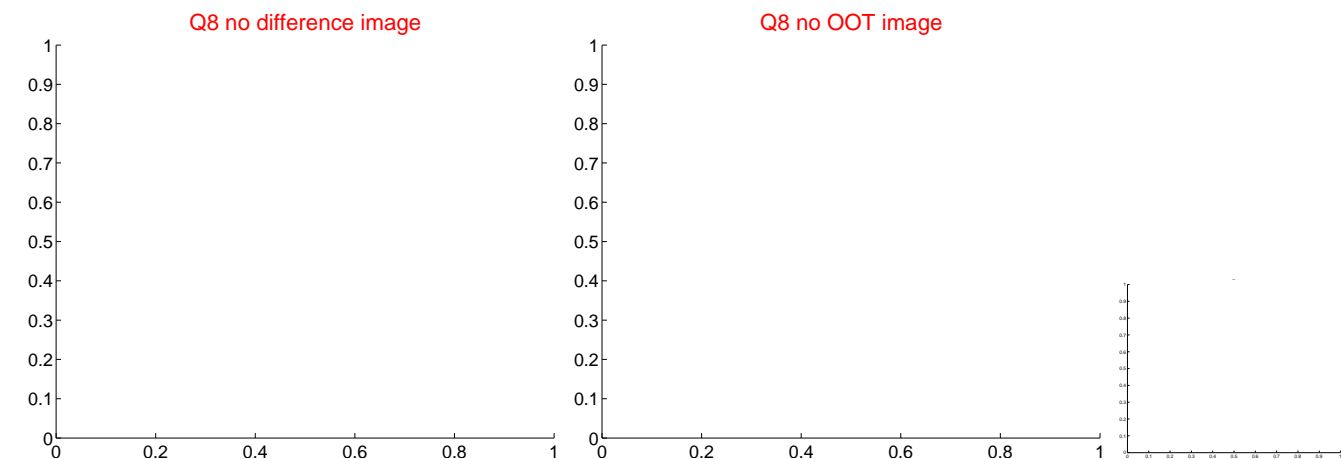
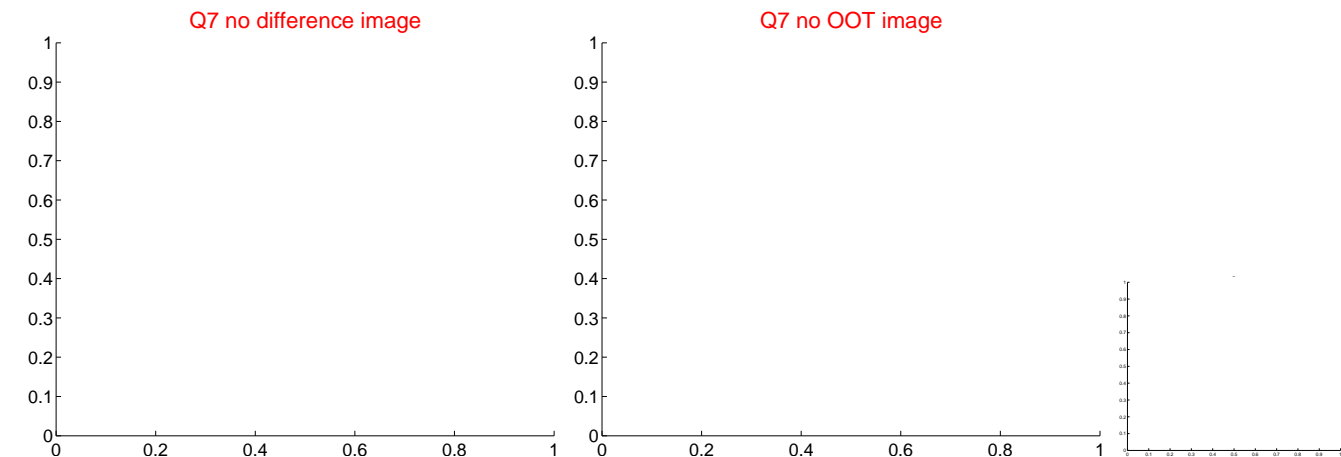
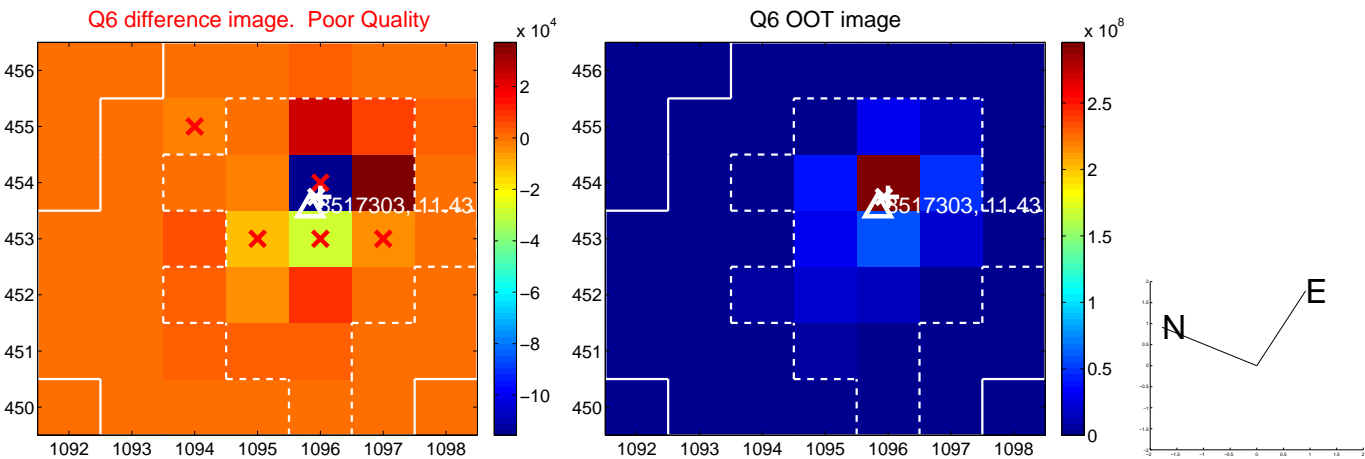


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



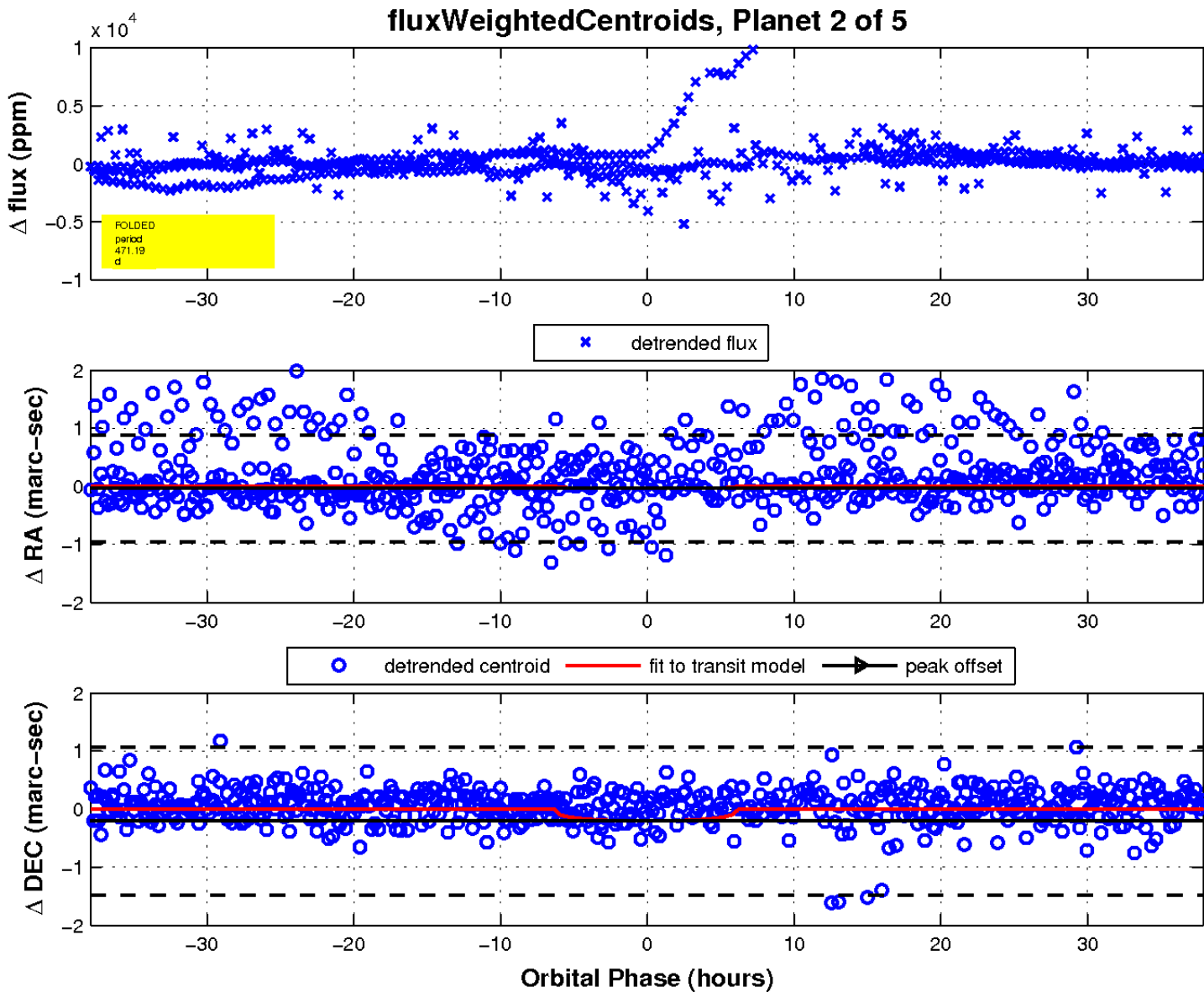
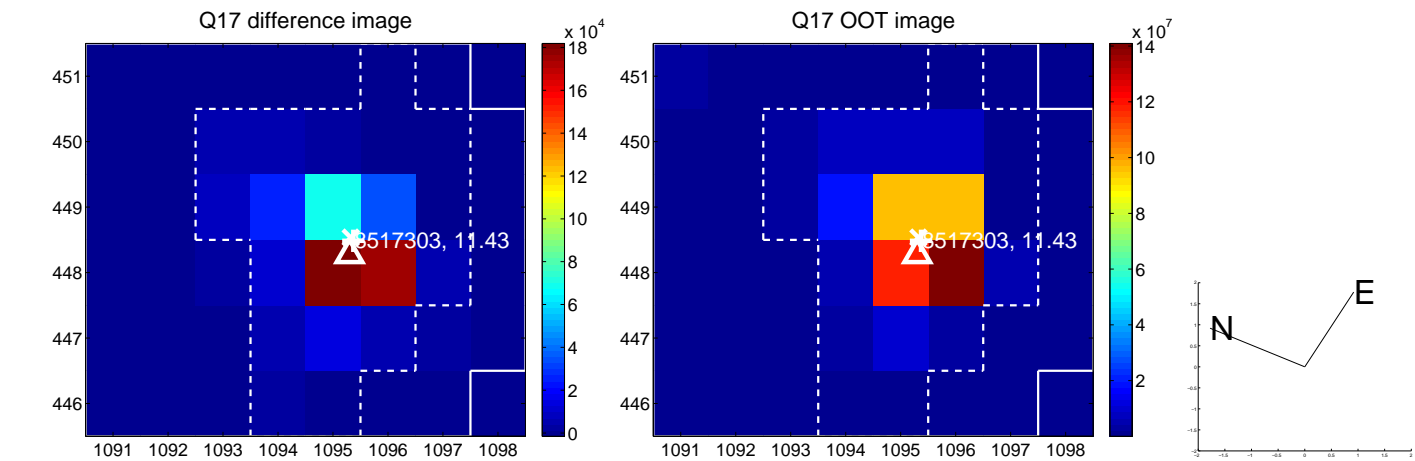
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

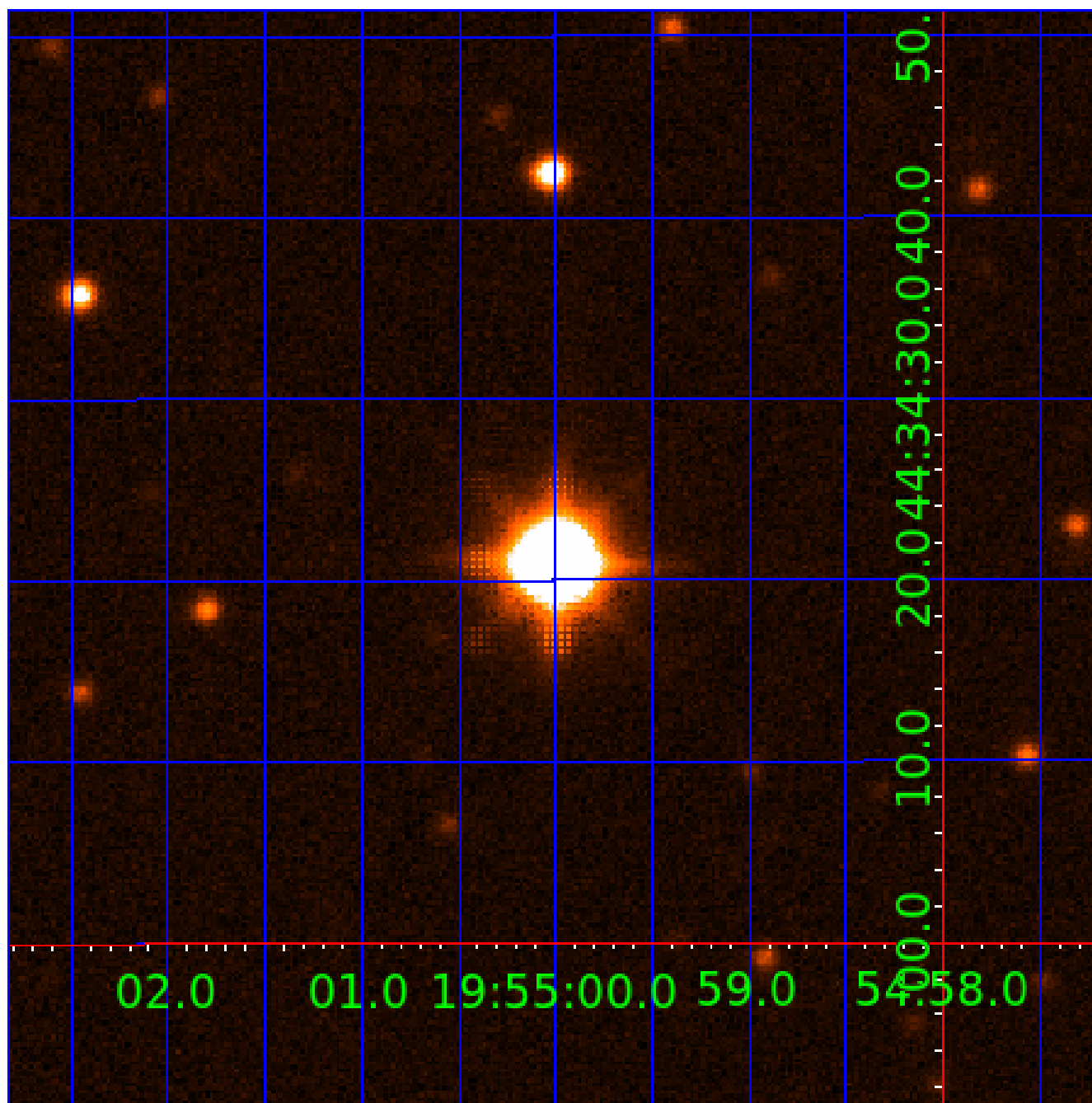


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008517303

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})
008517303-01	OBS	6181.01	24.073325	141.136396	1209.6	17.850	16.2	27.4	6.05	4647	26.26	602.95
008517303-02	OBS	No	471.188245	150.887448	1357.9	12.664	14.0	9.3	6.05	4647	21.56	11.43
008517303-03	OBS	No	620.949898	208.249781	784.5	10.821	17.3	5.7	6.05	4647	19.90	7.91
008517303-04	OBS	No	401.840825	327.983776	992.0	6.716	9.3	7.8	6.05	4647	25.86	14.13
008517303-05	OBS	No	291.641391	229.806634	246.8	5.000	15.1	-1.0	6.05	4647	9.11	21.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008517303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
008517303-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
008517303-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
008517303-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
008517303-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED—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 008517303-03

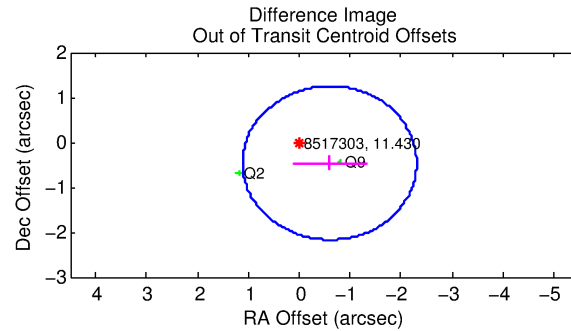
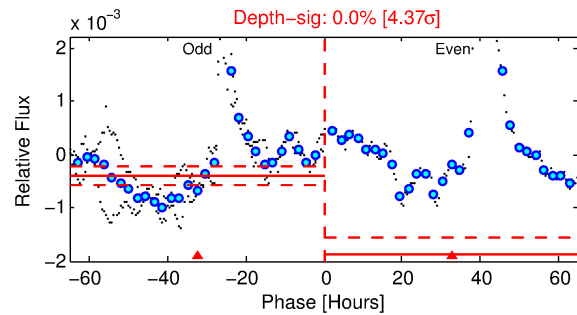
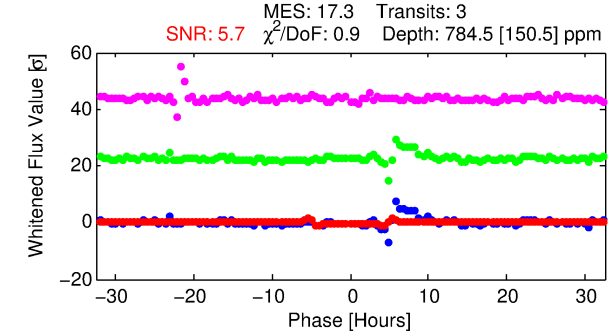
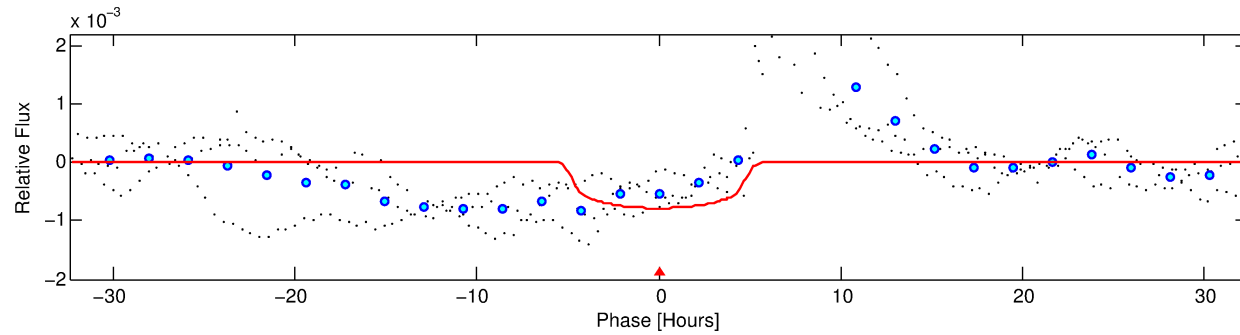
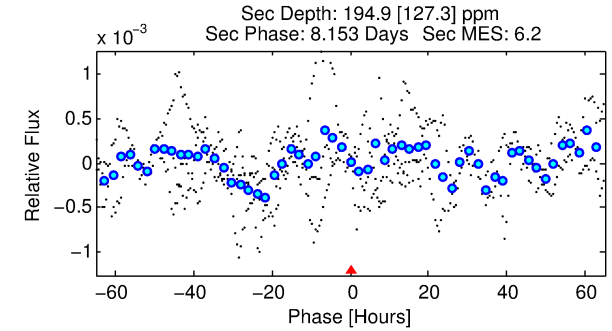
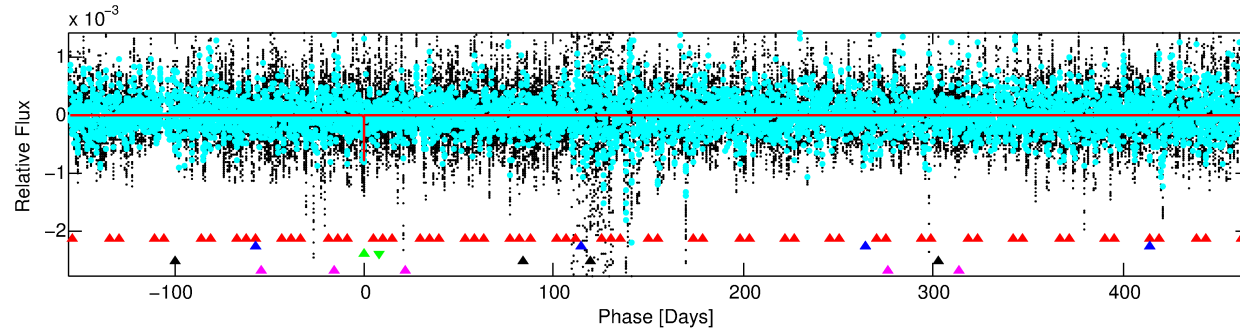
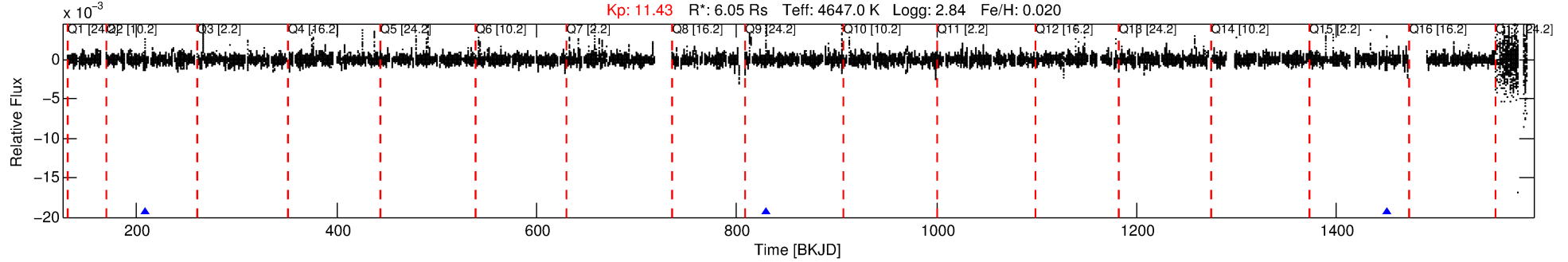
No Significant Match Found

DV One-Page Summary

KIC: 8517303 Candidate: 3 of 5 Period: 620.950 d

KOI: K06181 Corr: No Ephemeris Match

Kp: 11.43 R*: 6.05 Rs Teff: 4647.0 K Logg: 2.84 Fe/H: 0.020



DV Fit Results:

Period = 620.94990 [0.00474] d
Epoch = 208.2498 [0.0059] BKJD
Rp/R* = 0.0301 [0.0032]
a/R* = 251.80 [32.79]
b = 0.86 [0.04]
Seff = 7.91 [2.73]
Teq = 428 [37] K
Rp = 19.90 [6.77] Re
a = 1.3915 [0.3507] AU
Ag = 524.07 [401.86] [1.30σ]
Teffp = 3164 [546] K [5.00σ]

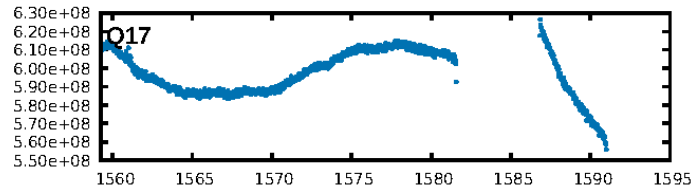
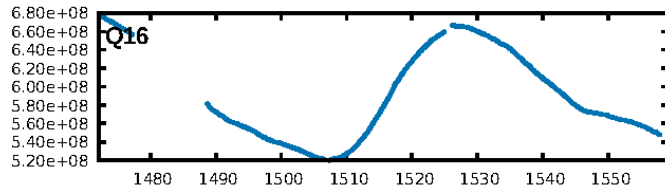
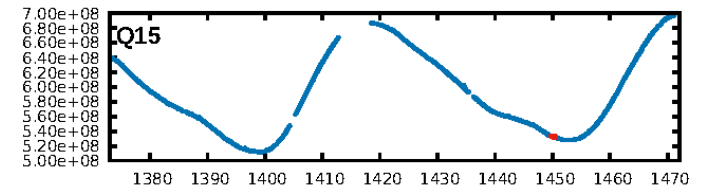
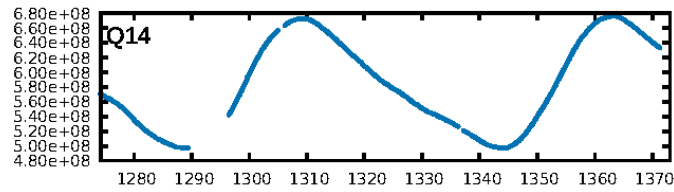
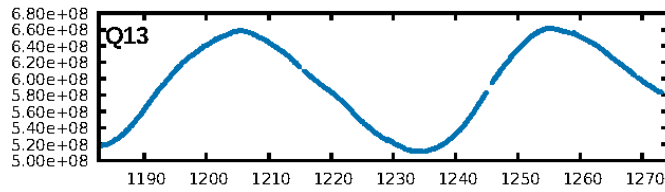
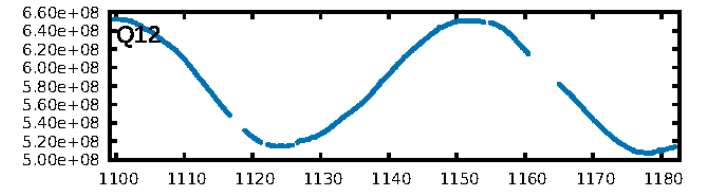
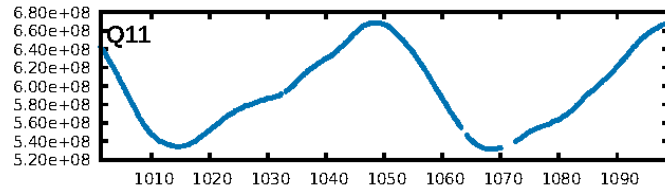
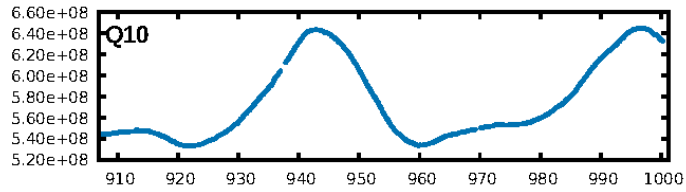
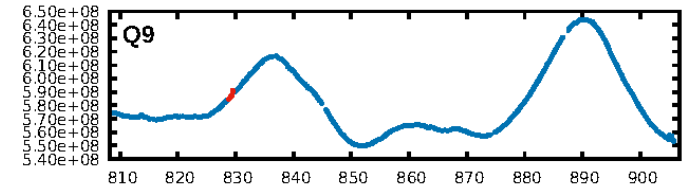
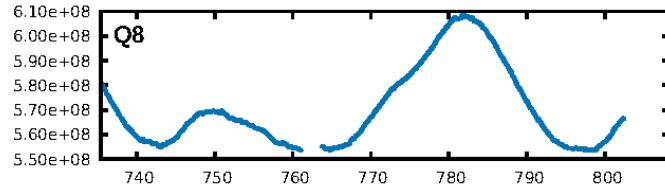
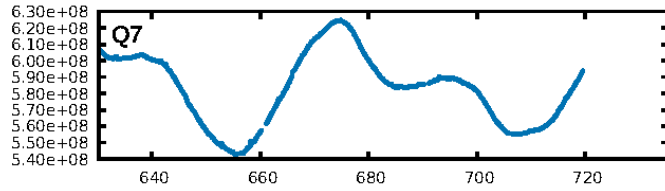
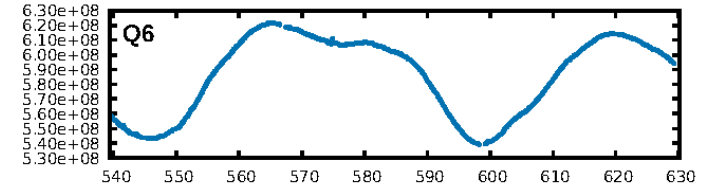
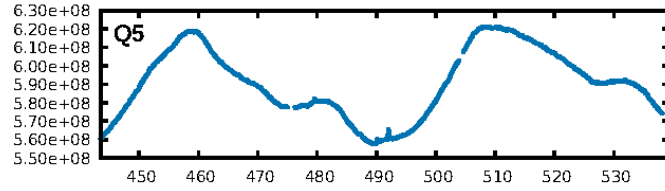
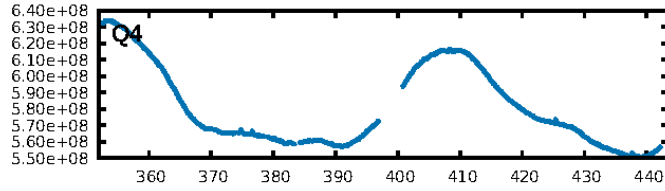
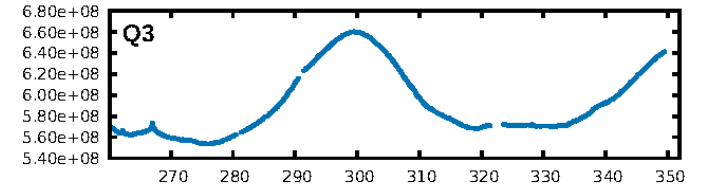
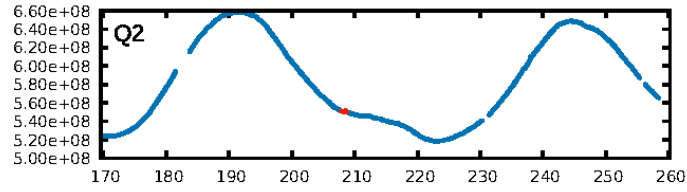
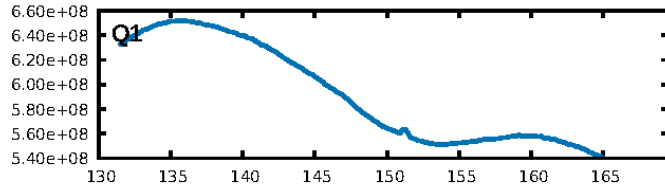
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [215.78σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.6%
ModelChiSquareGof-sig: 98.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1477
Centroid-sig: 56.0%
Centroid-so: 0.189 arcsec [0.65σ]
OotOffset-rm: 0.756 arcsec [1.33σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-rm: 0.915 arcsec [1.52σ]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

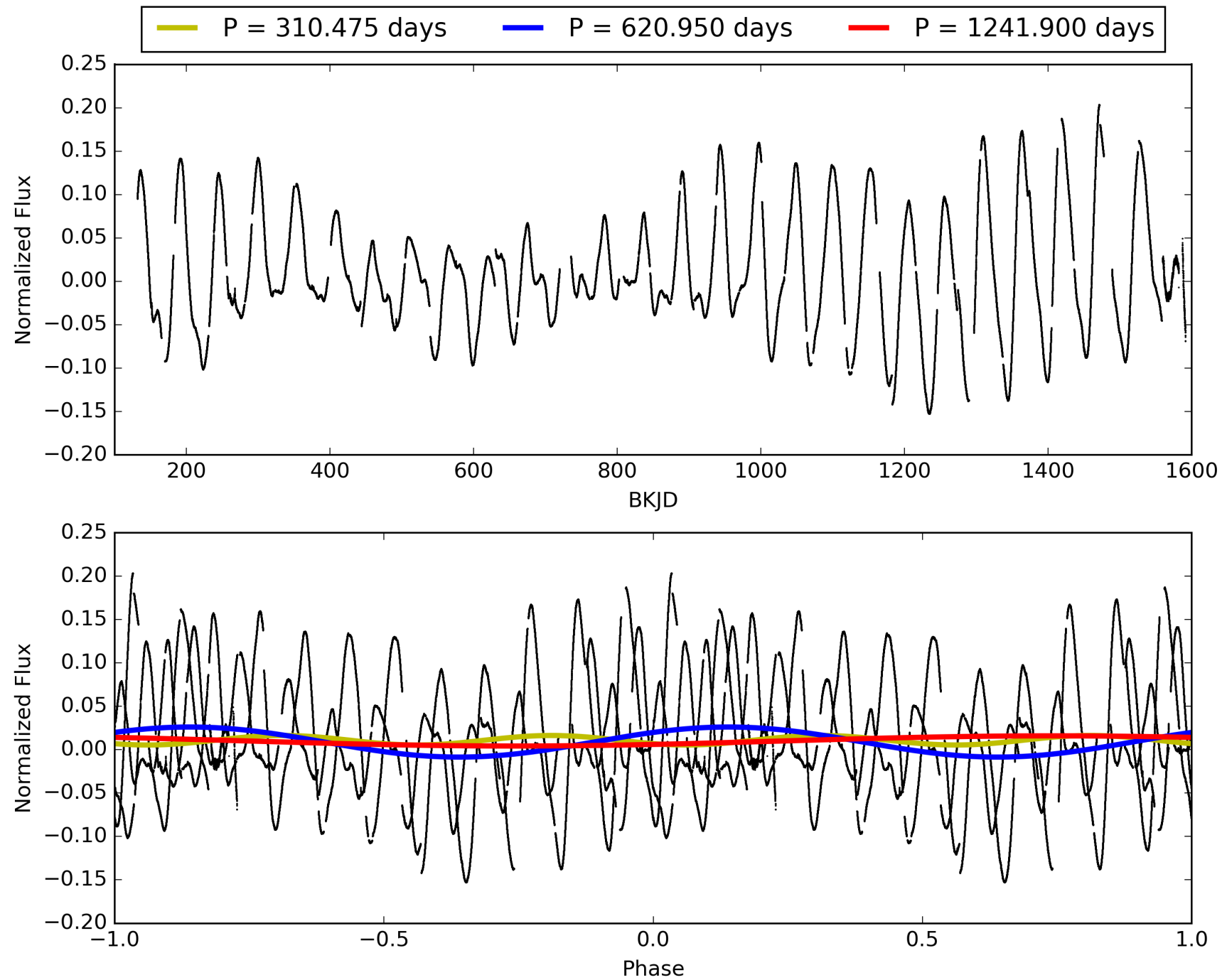
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:34:11 Z

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

TCE 008517303-03, PDC Light Curves

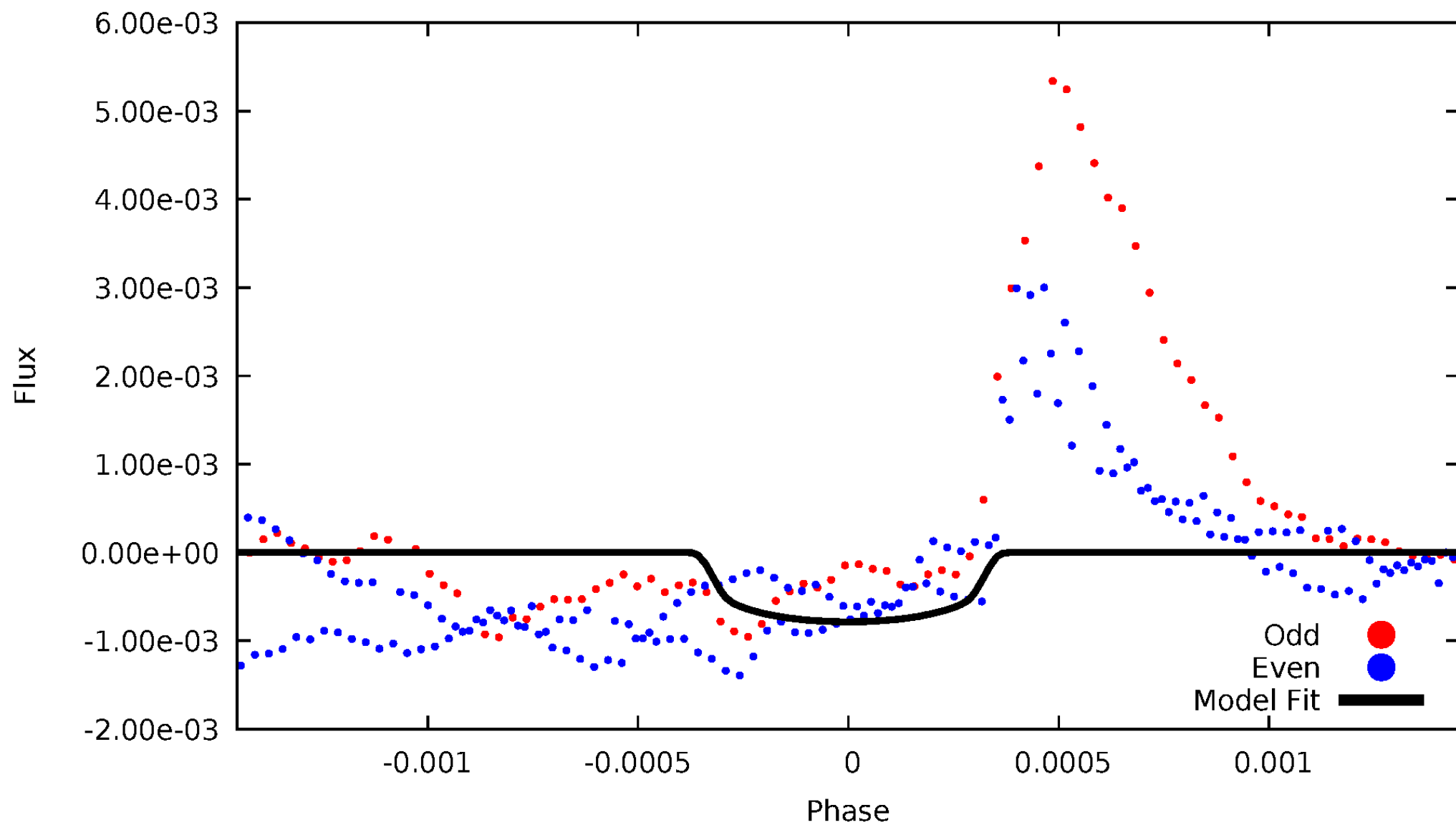


TCE 008517303-03



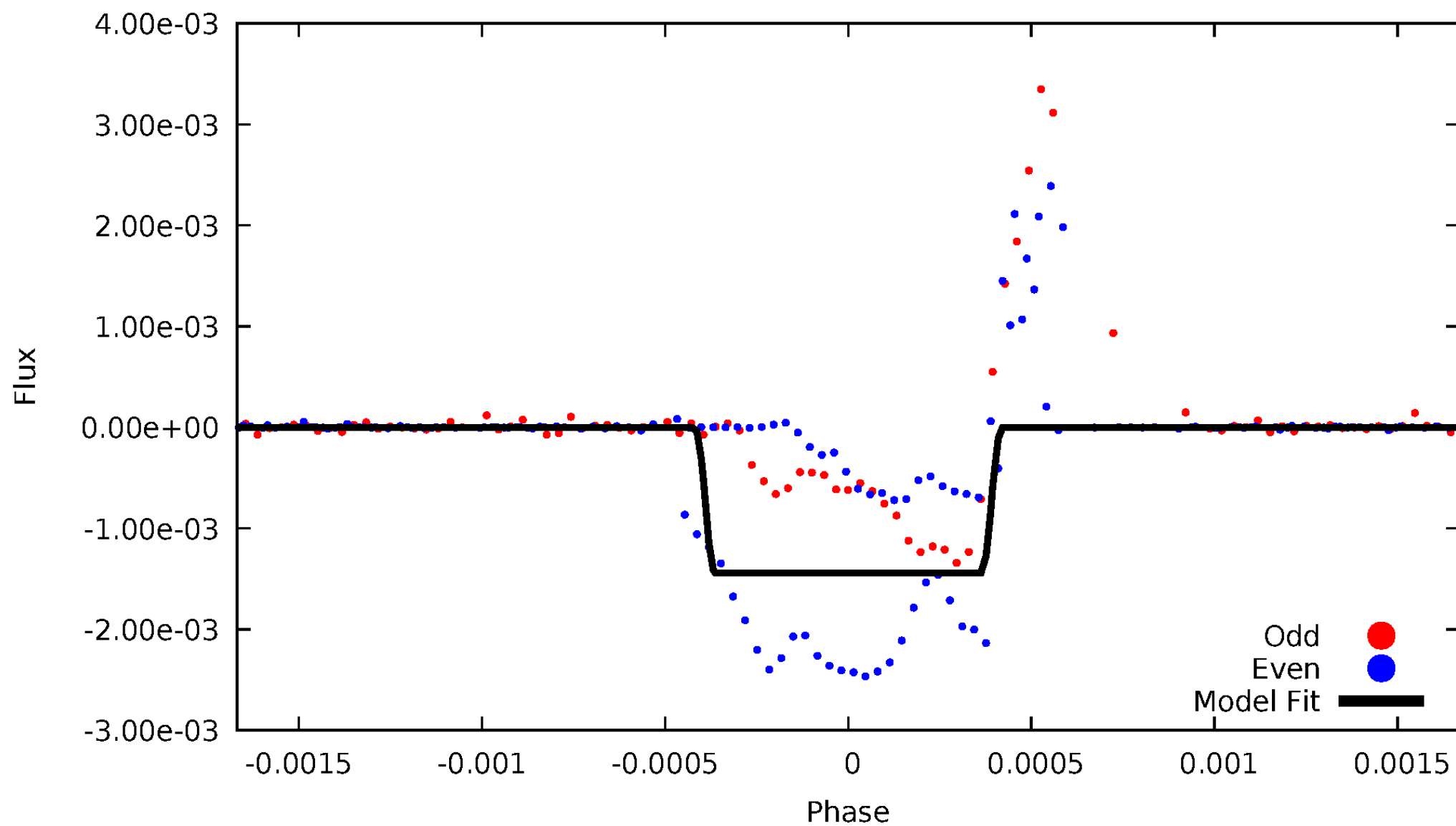
DV Odd/Even

TCE 008517303-03



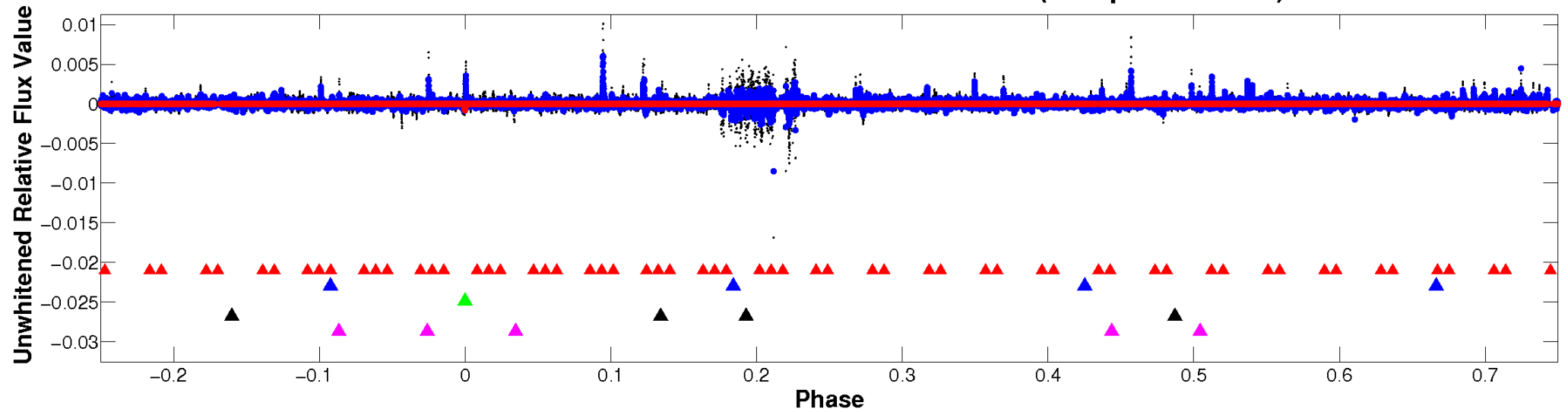
ALT Odd/Even

TCE 008517303-03

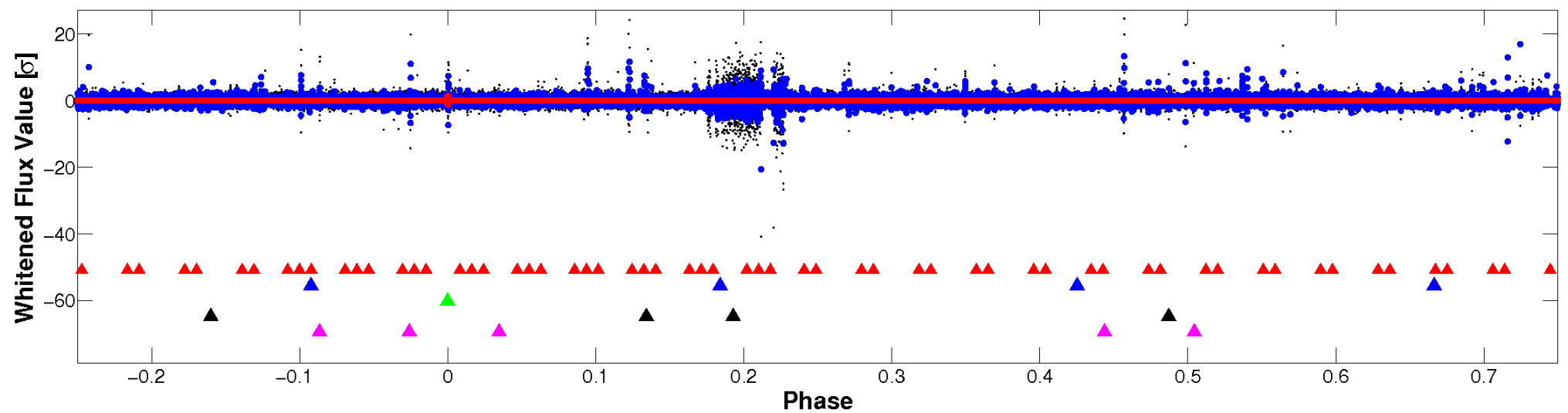


Non-Whitened Vs. Whitened Light Curve

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

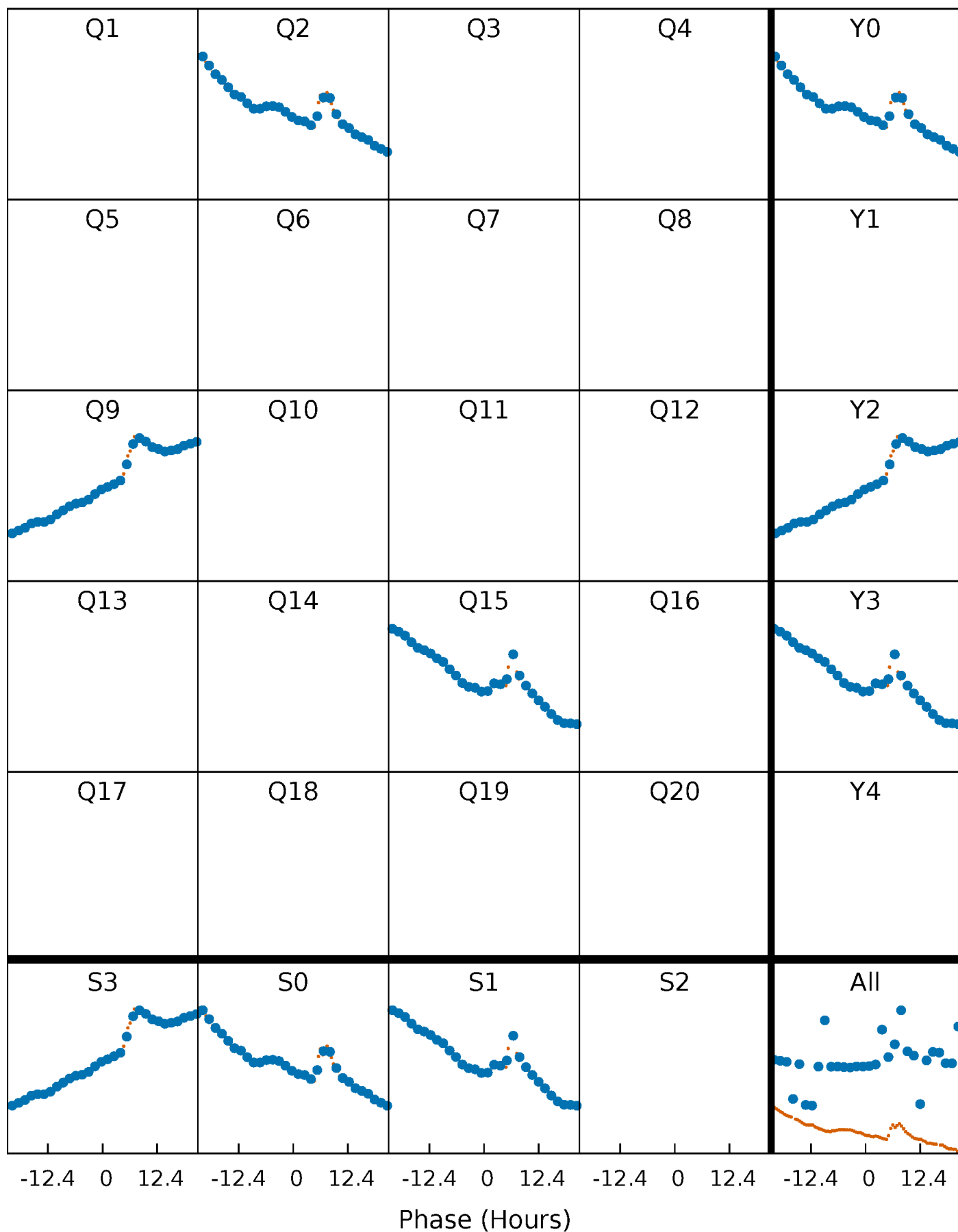


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



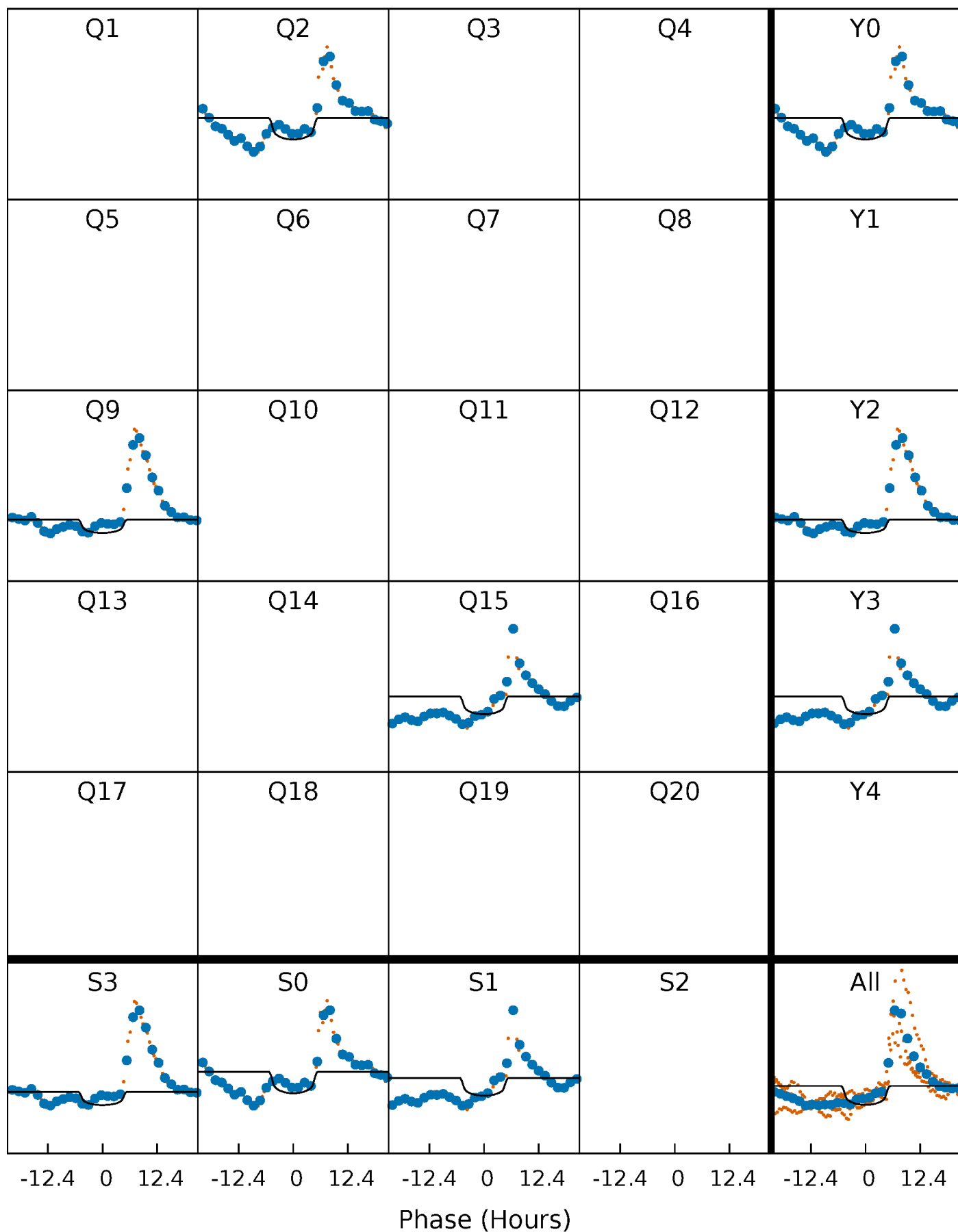
PDC Quarter-Phased Transit Curves

TCE 008517303-03 $P=620.949898$ Days $T_0=208.249781$ (BKJD)



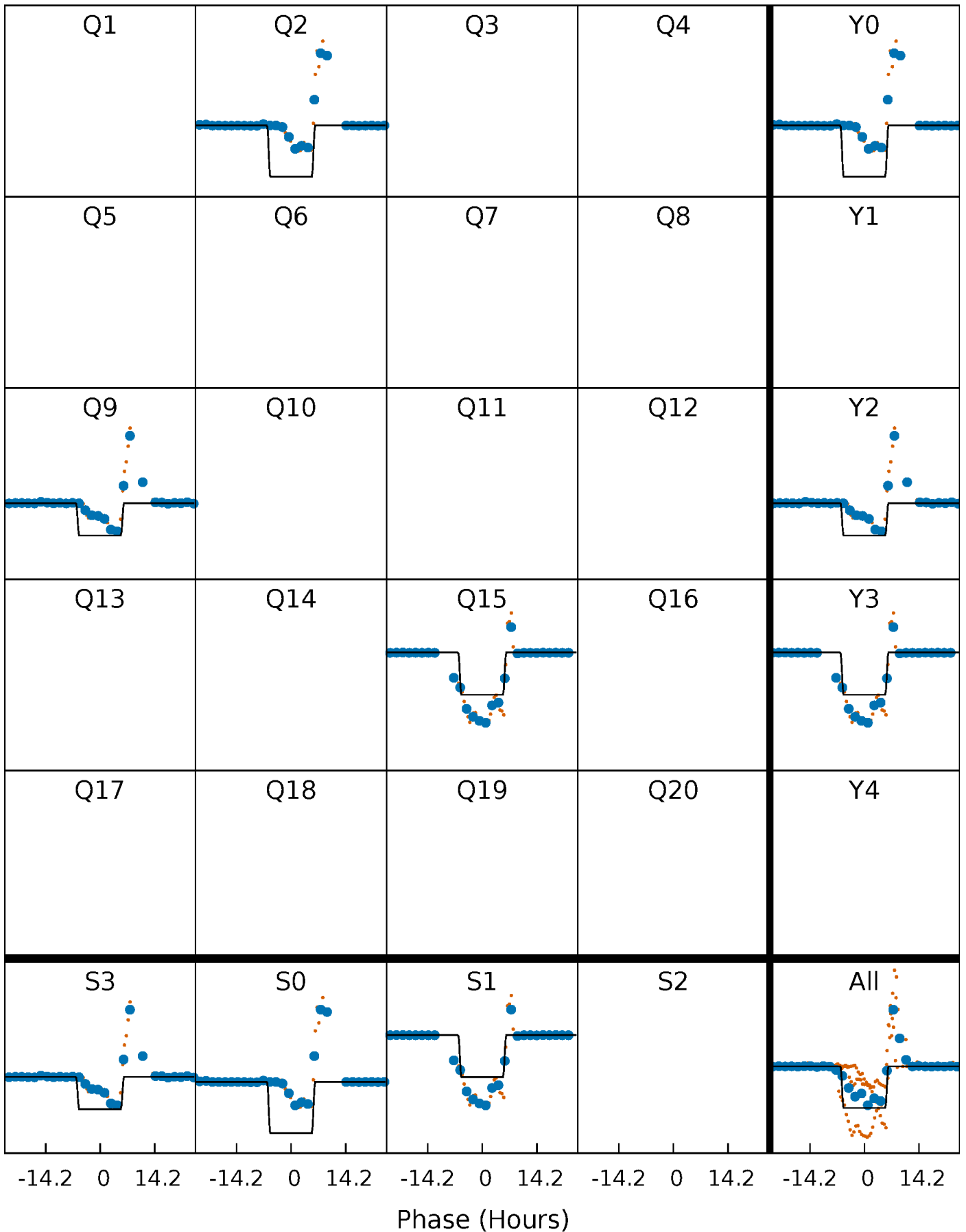
DV Quarter-Phased Transit Curves

TCE 008517303-03 P=620.949898 Days $T_0=208.249781$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

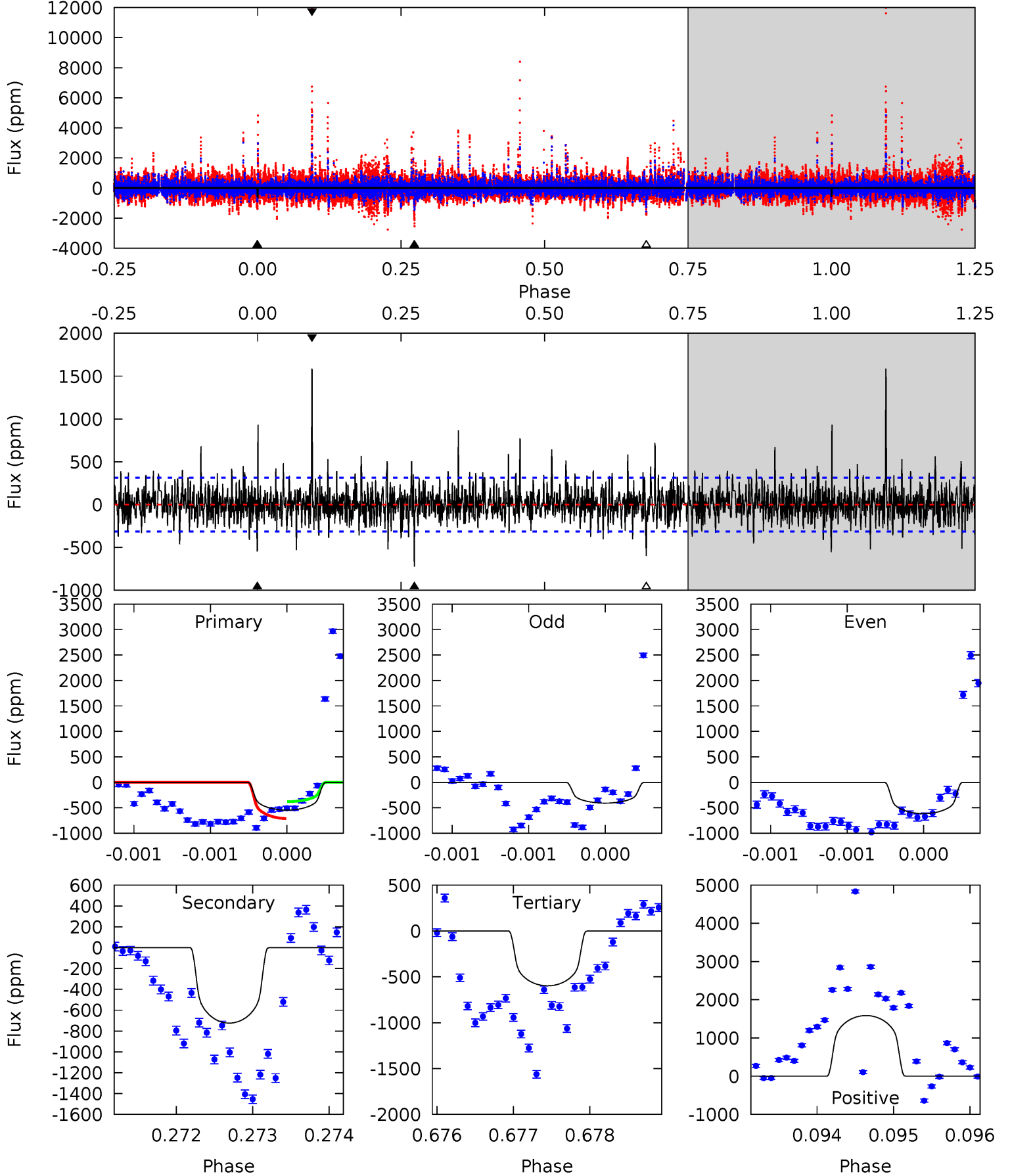
TCE 008517303-03 $P=620.948644$ Days $T_0=208.225937$ (BKJD)



DV Model-Shift Uniqueness Test

008517303-03, P = 620.949898 Days, E = 208.249781 Days

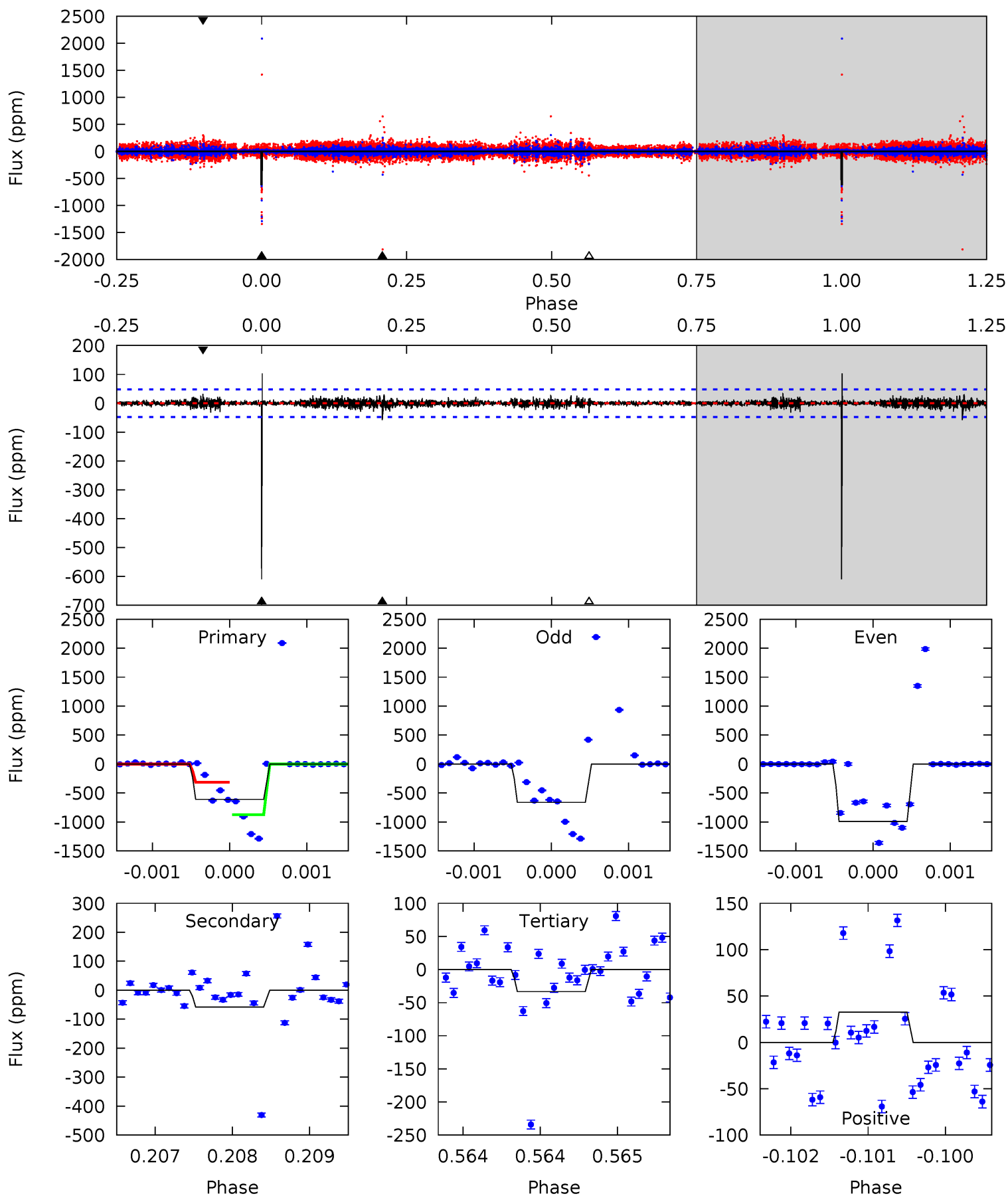
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.58	12.7	10.5	27.9	5.51	3.38	2.74	-0.92	-18.3	2.22	-15.2	1.68	1.09	0.69	2.96



Alt Model-Shift Uniqueness Test

008517303-03, P = 620.948644 Days, E = 208.225937 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.6	6.67	3.80	3.73	5.49	3.35	0.64	65.8	65.8	2.87	2.94	21.0	1.54	0.14	32.3



Stellar Parameters For KIC 008517303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4647^{+69}_{-62}	$2.843^{+0.140}_{-0.171}$	$0.020^{+0.150}_{-0.100}$	$6.055^{+1.954}_{-0.837}$	$0.932^{+0.254}_{-0.014}$	$0.006^{+0.003}_{-0.003}$
	+1%/-1%	+5%/-6%	+750%/-500%	+32%/-14%	+27%/-2%	+56%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008517303-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-724 ± 57	$20.22^{+4.02}_{-2.87}$	597^{+46}_{-29}	4457^{+231}_{-194}	1976^{+701}_{-571}
Alt.	-58 ± 9	$25.80^{+4.36}_{-3.59}$	597^{+41}_{-29}	2764^{+93}_{-83}	95^{+39}_{-26}

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

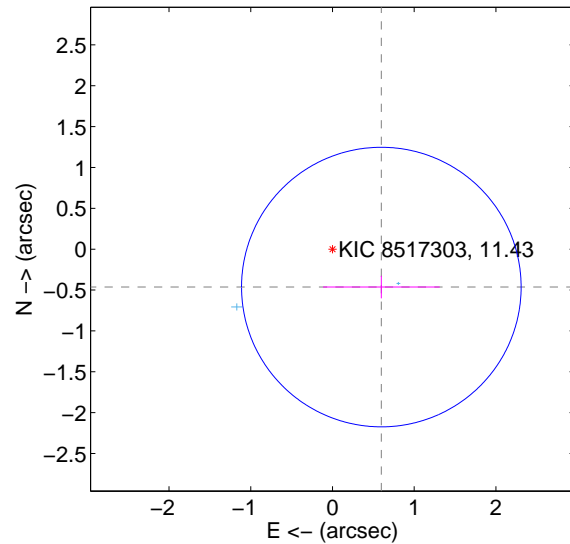
Supplemental centroid analysis for 008517303-03. **Kepler magnitude: 11.43.** Transit SNR 5.71

There are 2 quarters with good PRF difference image offsets

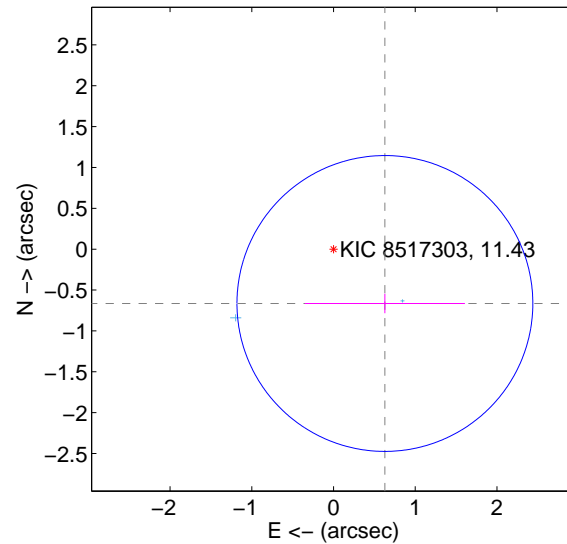
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.756 ± 0.570	1.33	-0.598 ± 0.713	-0.464 ± 0.138
PRF-fit source offset from KIC position	0.915 ± 0.603	1.52	-0.629 ± 0.979	-0.664 ± 0.119
photometric centroid source offset	0.19 ± 0.29	0.65	-0.17 ± 0.30	-0.08 ± 0.21

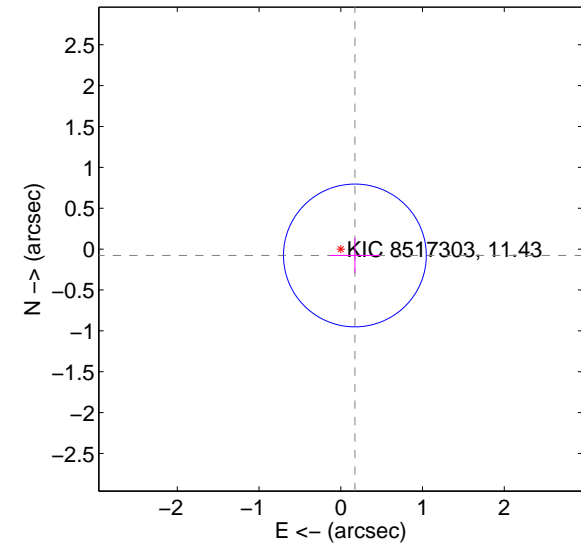
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

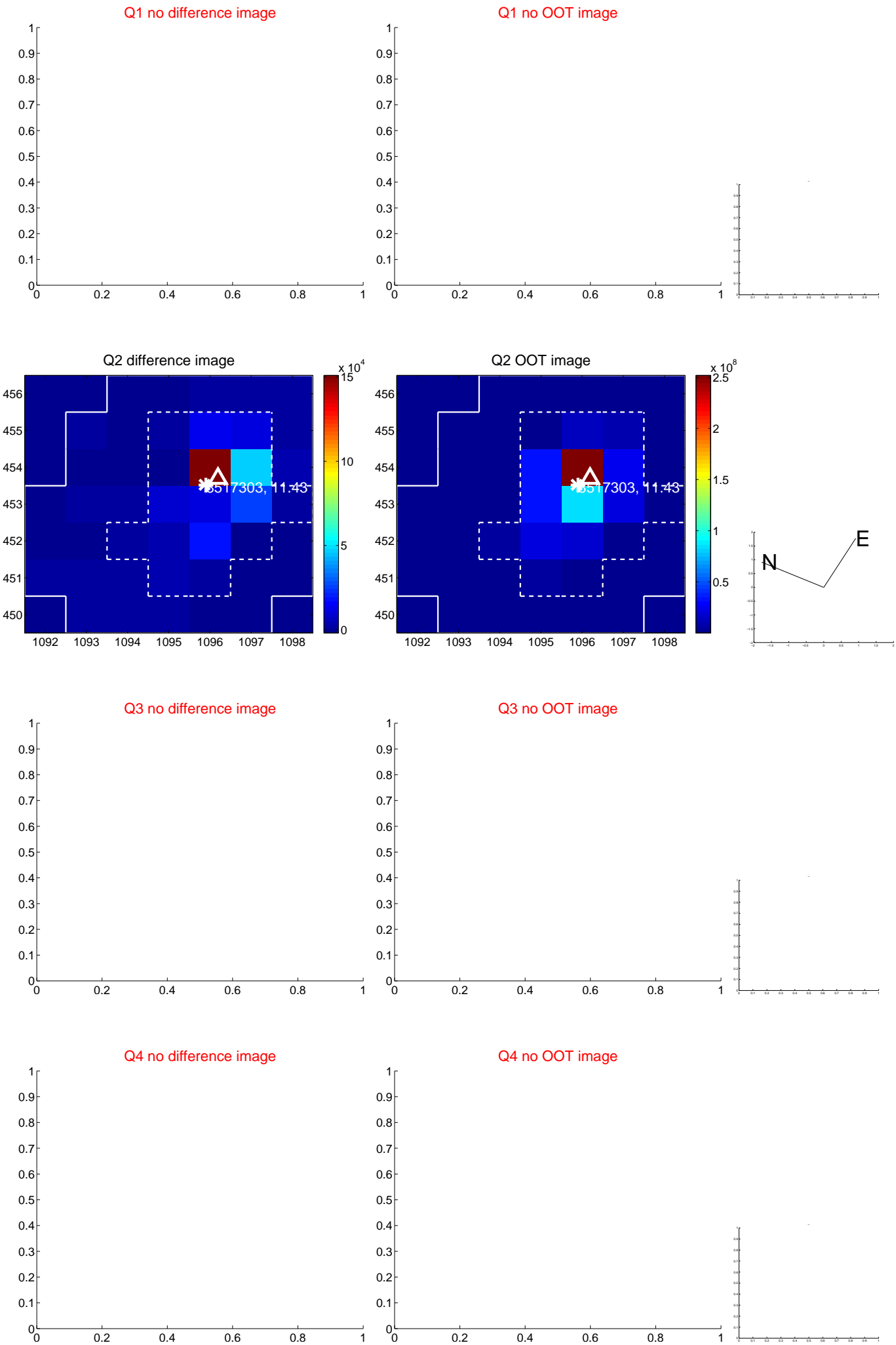


offset from photometric centroids



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.

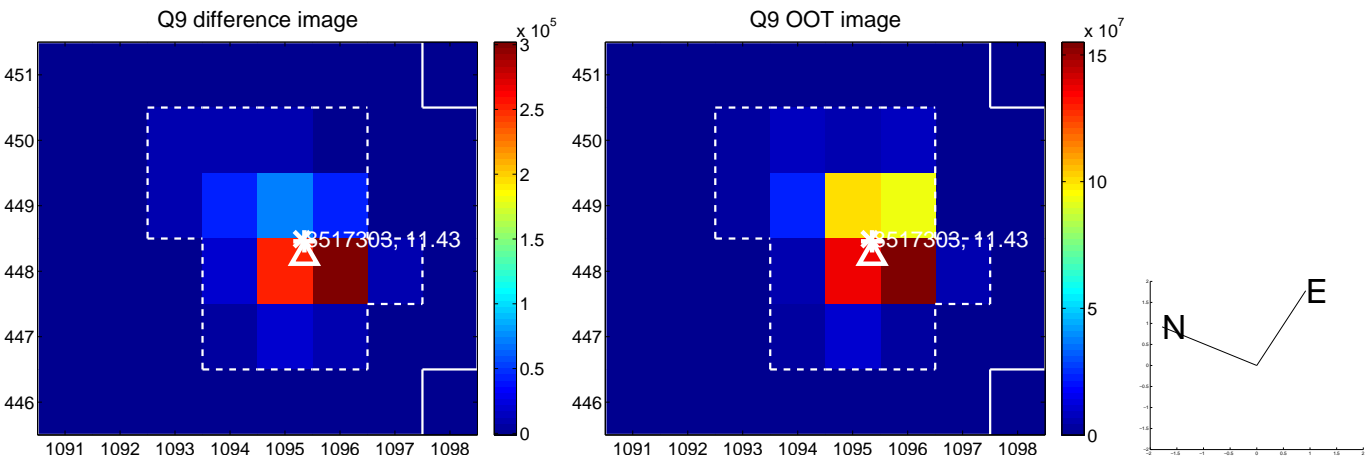
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



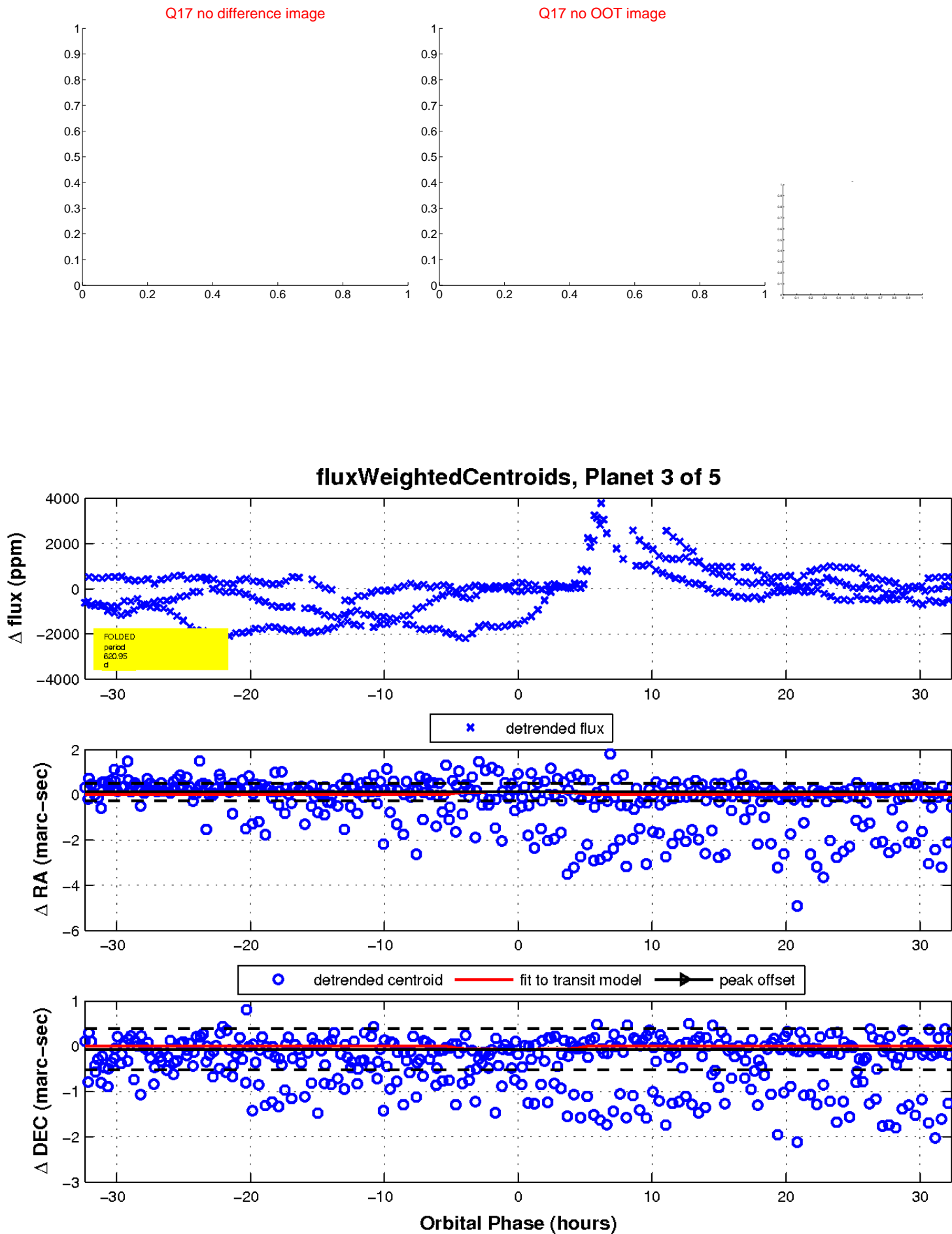
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

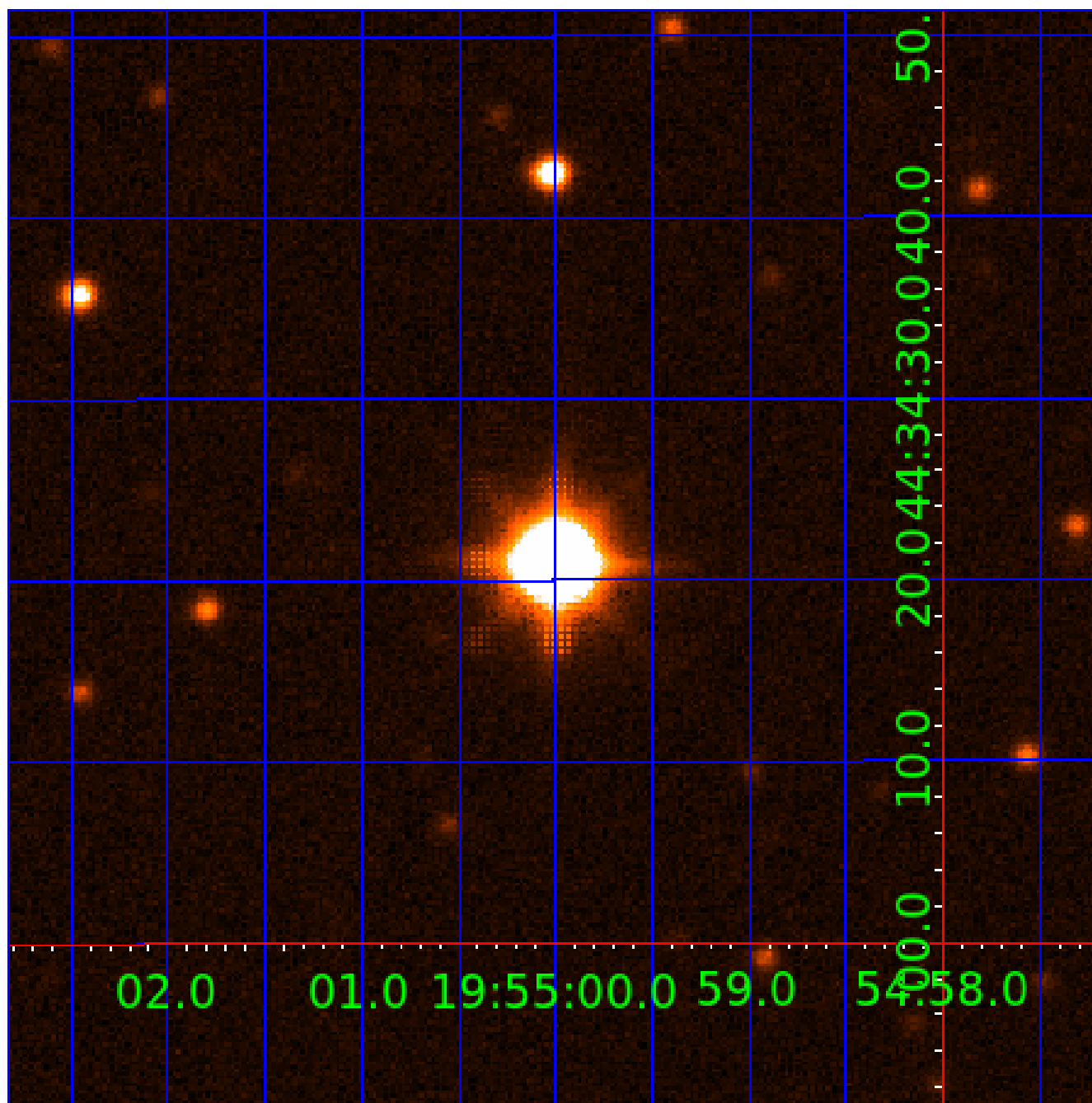


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008517303

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})
008517303-01	OBS	6181.01	24.073325	141.136396	1209.6	17.850	16.2	27.4	6.05	4647	26.26	602.95
008517303-02	OBS	No	471.188245	150.887448	1357.9	12.664	14.0	9.3	6.05	4647	21.56	11.43
008517303-03	OBS	No	620.949898	208.249781	784.5	10.821	17.3	5.7	6.05	4647	19.90	7.91
008517303-04	OBS	No	401.840825	327.983776	992.0	6.716	9.3	7.8	6.05	4647	25.86	14.13
008517303-05	OBS	No	291.641391	229.806634	246.8	5.000	15.1	-1.0	6.05	4647	9.11	21.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008517303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
008517303-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
008517303-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
008517303-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
008517303-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED—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.

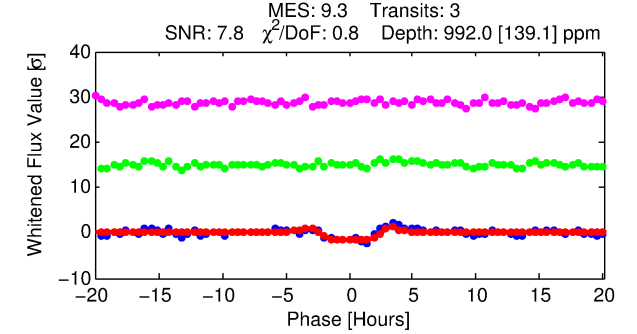
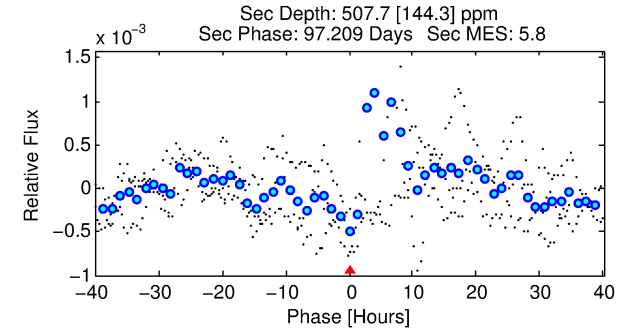
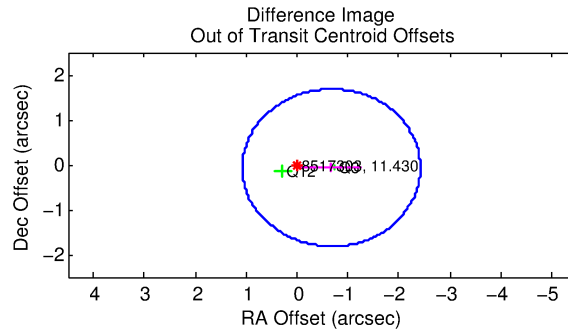
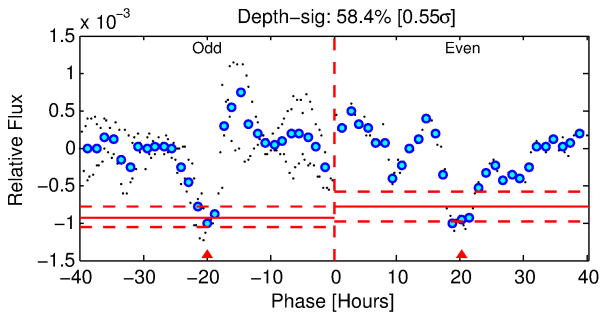
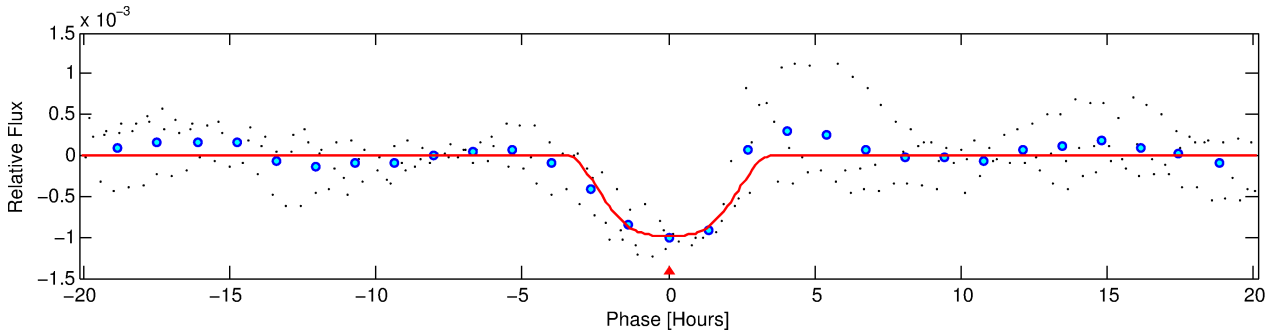
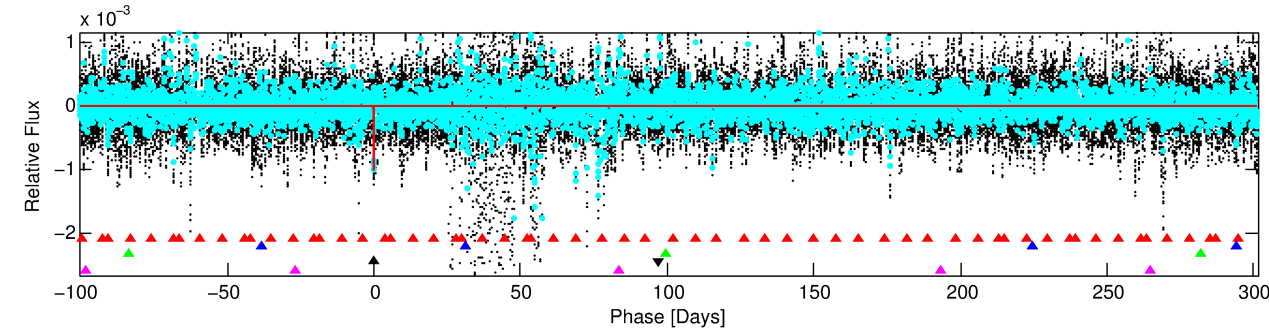
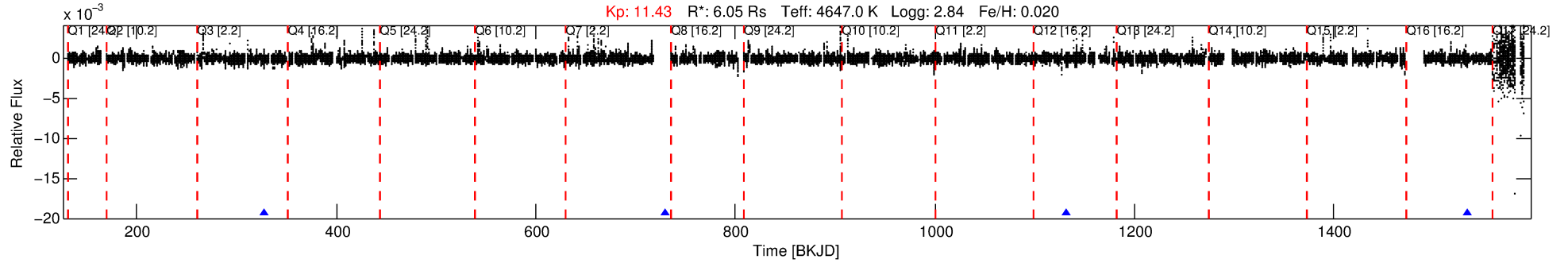
Ephemeris Match Information For 008517303-04

No Significant Match Found

DV One-Page Summary

KIC: 8517303 Candidate: 4 of 5 Period: 401.841 d

KOI: K06181 Corr: No Ephemeris Match



DV Fit Results:

Period = 401.84082 [0.00385] d
Epoch = 327.9838 [0.0071] BKJD
 R_p/R^* = 0.0391 [0.0031]
 a/R^* = 188.78 [14.26]
 b = 0.95 [0.01]
 S_{eff} = 14.13 [4.87]
 T_{eq} = 494 [43] K
 R_p = 25.86 [8.59] R_e
 a = 1.0411 [0.2624] AU
 A_g = 452.81 [212.77] [2.12 σ]
 T_{eff} = 3526 [291] K [10.30 σ]

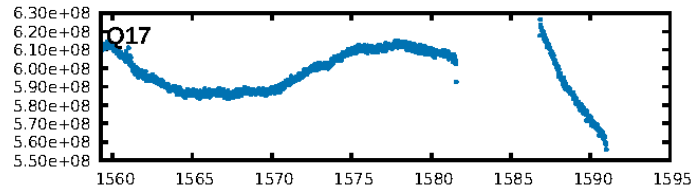
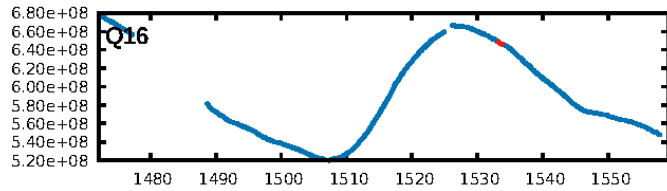
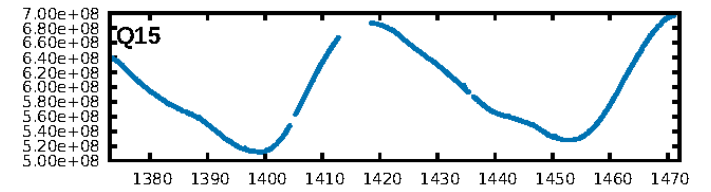
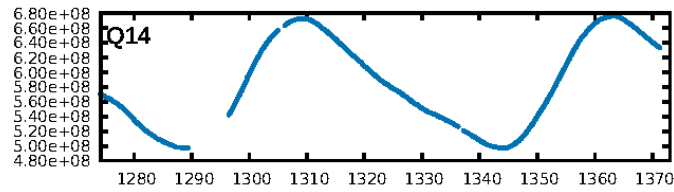
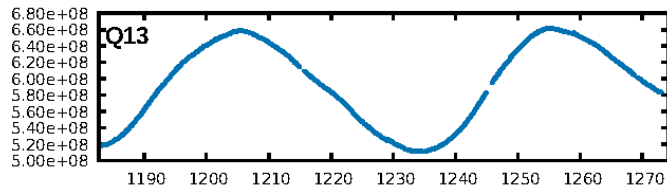
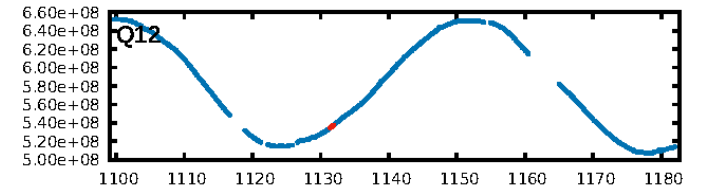
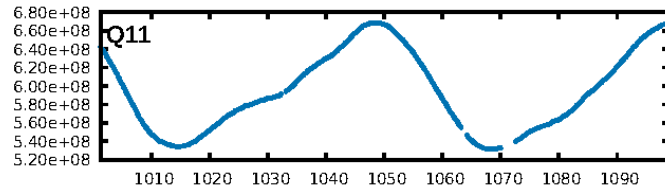
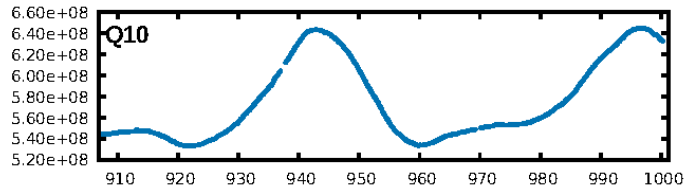
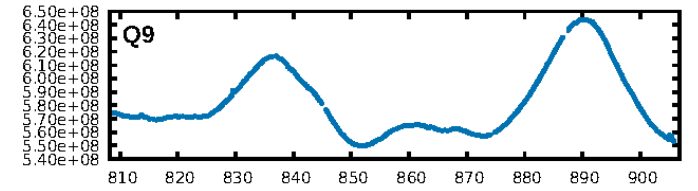
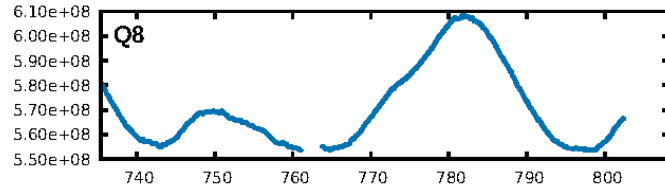
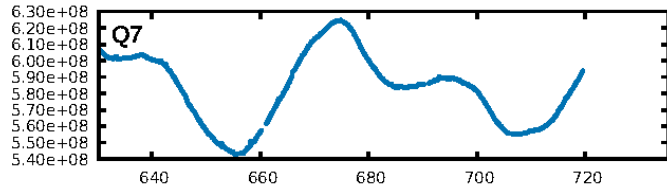
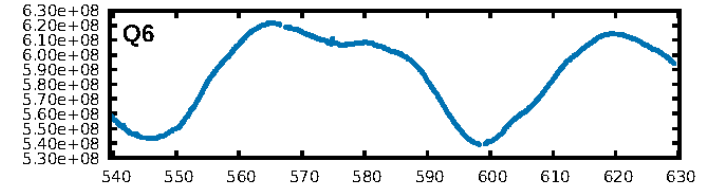
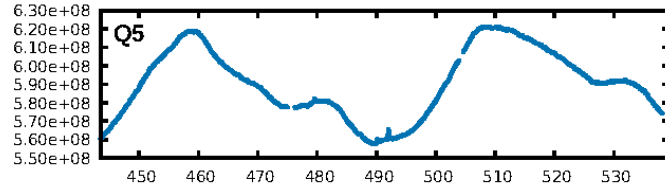
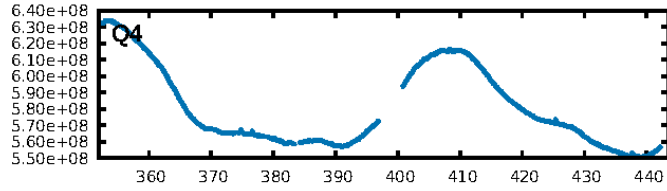
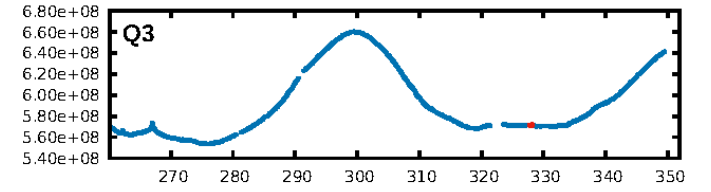
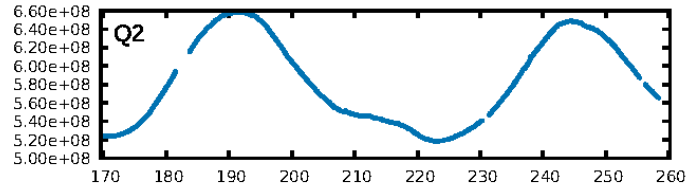
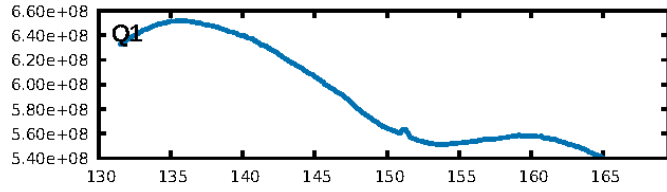
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [315.88 σ]
LongPeriod-sig: 100.0% [116.11 σ]
ModelChiSquare2-sig: 77.1%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.373
Centroid-sig: 15.1%
Centroid-so: 0.347 arcsec [1.63 σ]
OotOffset-rm: 0.679 arcsec [1.16 σ]
KicOffset-rm: 0.728 arcsec [2.28 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

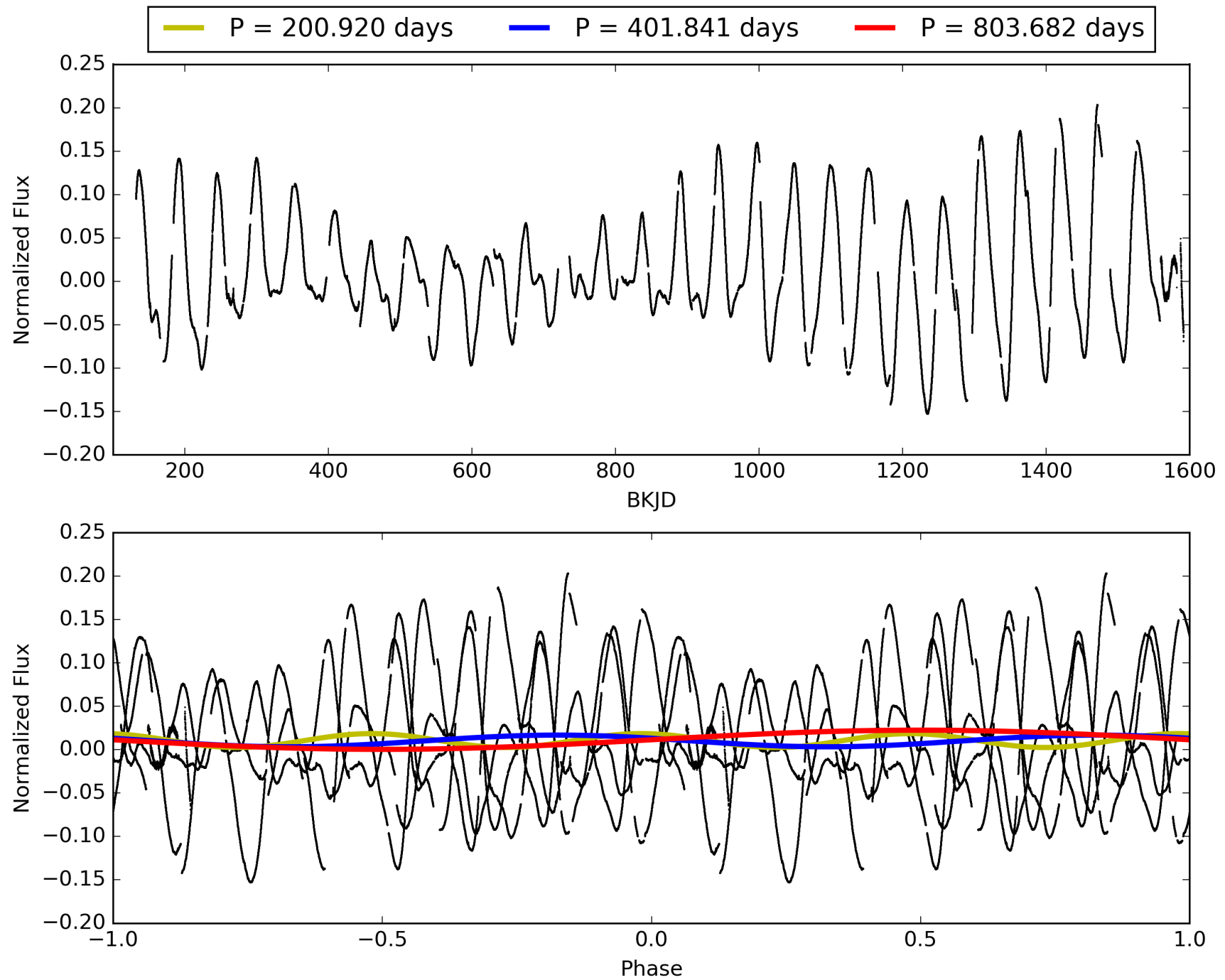
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:34:21 Z

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

TCE 008517303-04, PDC Light Curves

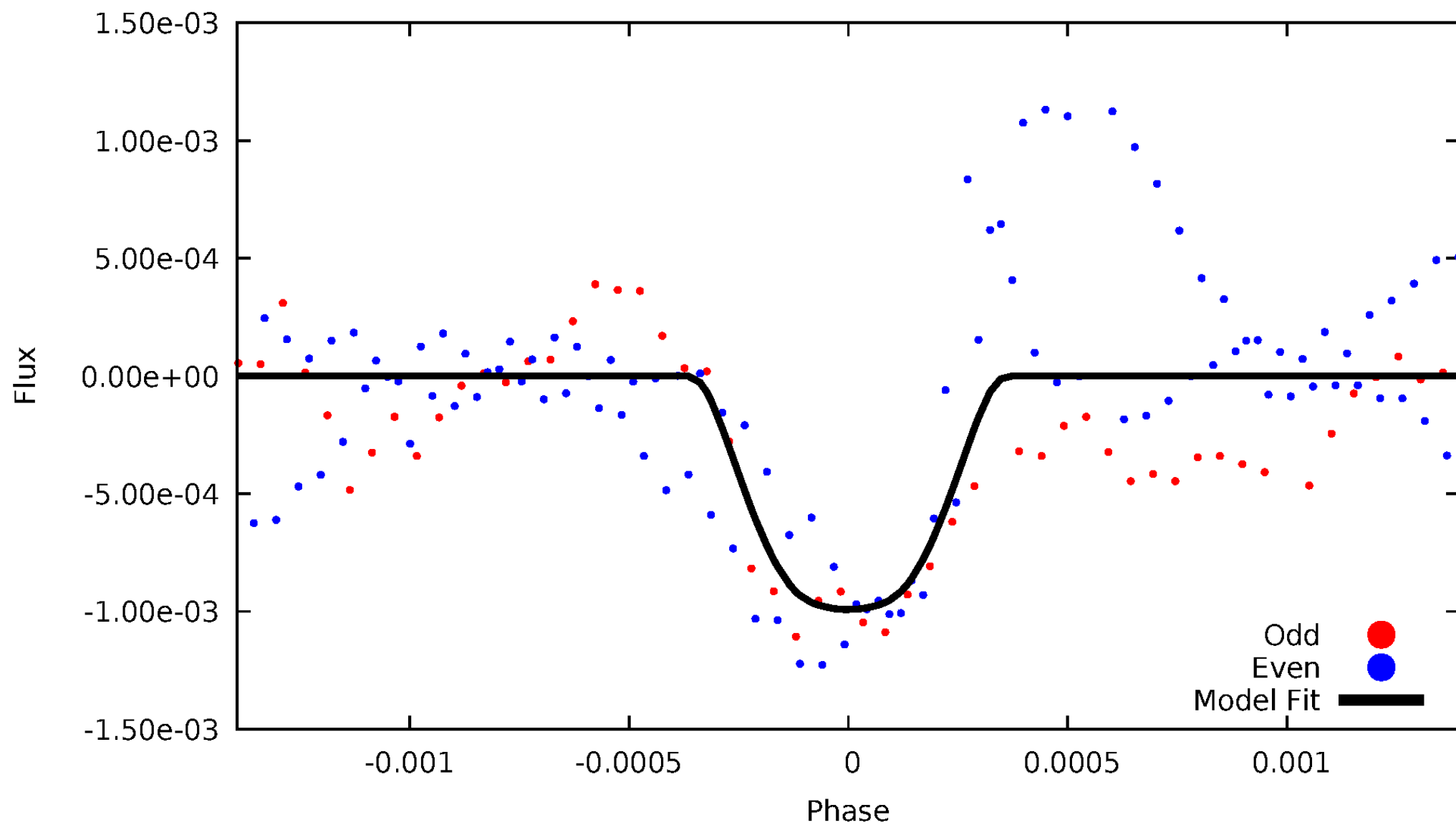


TCE 008517303-04



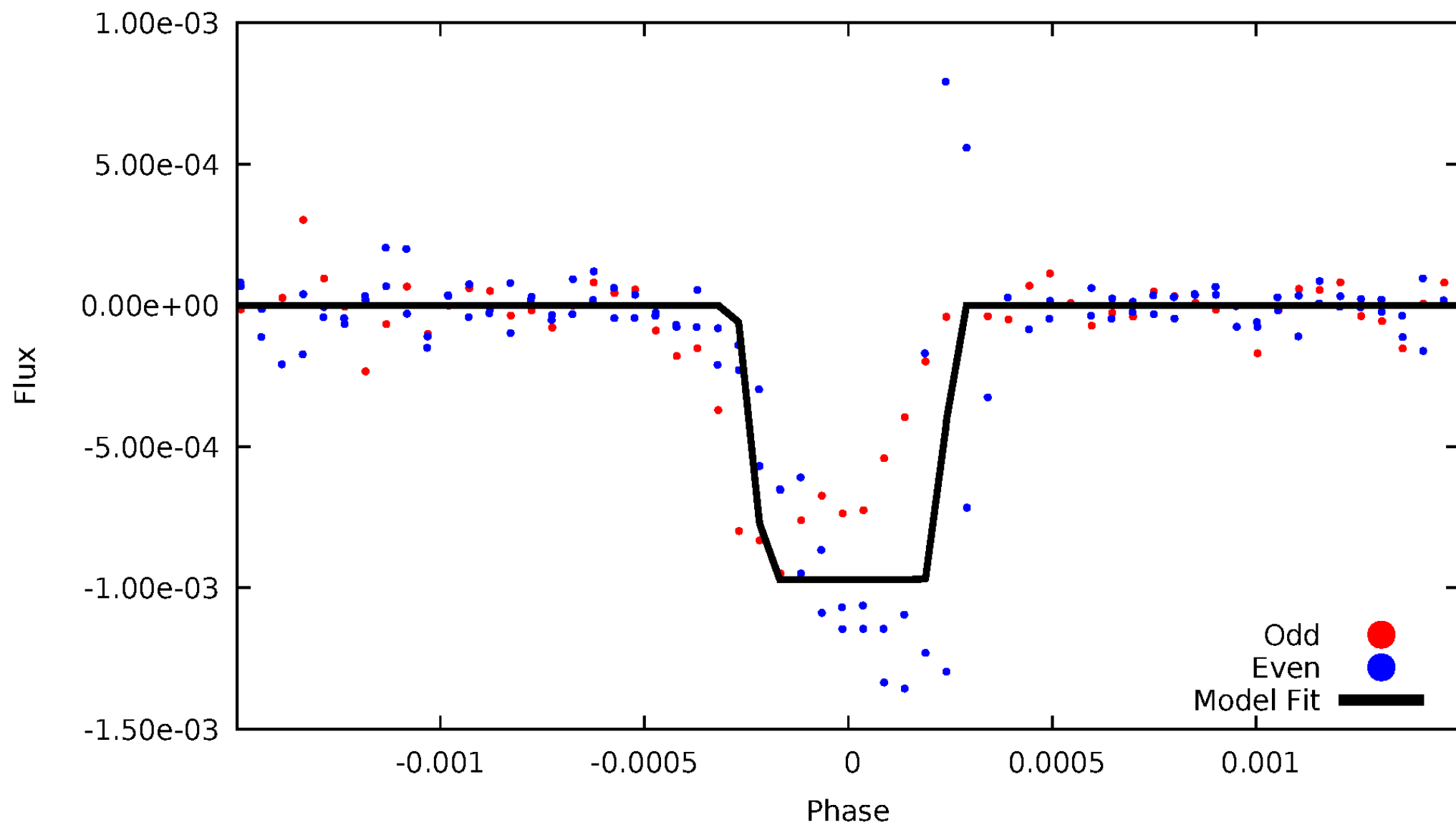
DV Odd/Even

TCE 008517303-04



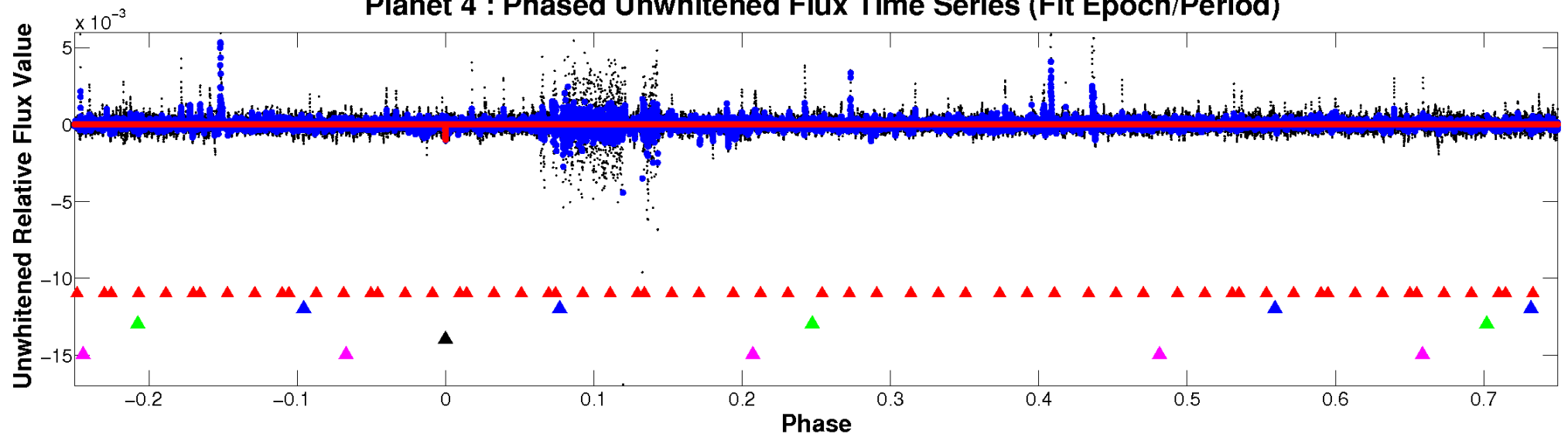
ALT Odd/Even

TCE 008517303-04

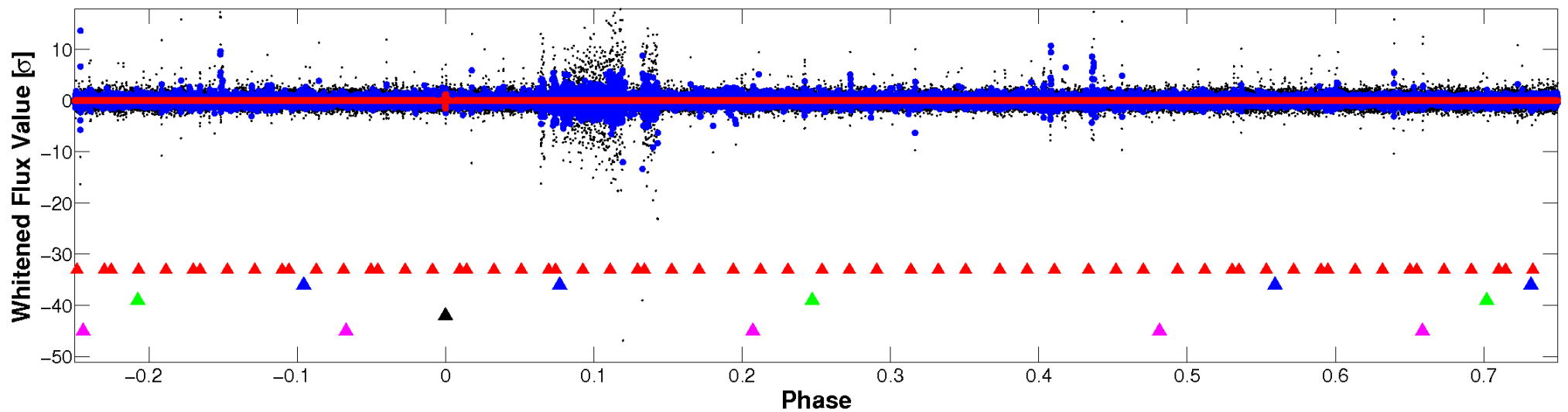


Non-Whitened Vs. Whitened Light Curve

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

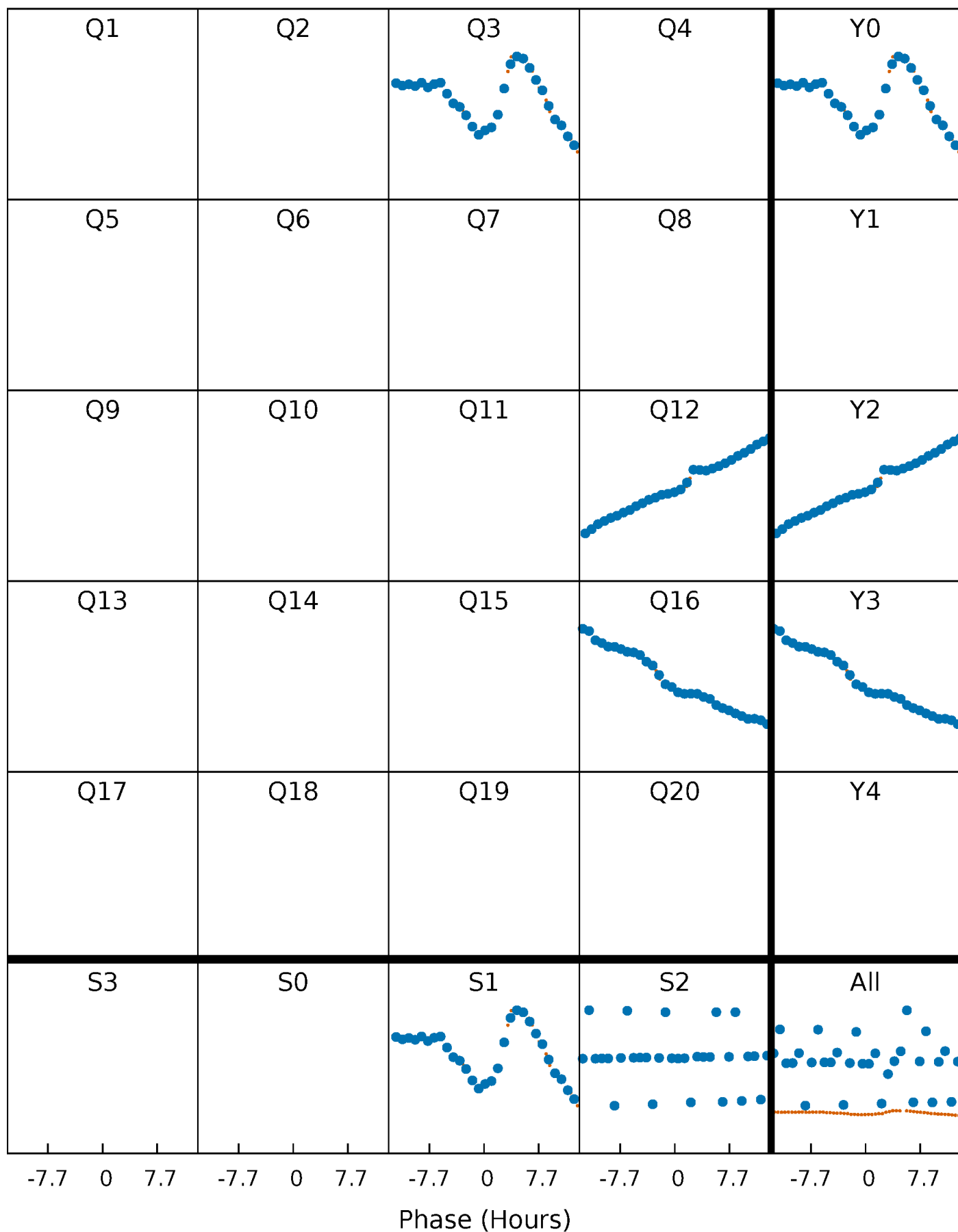


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



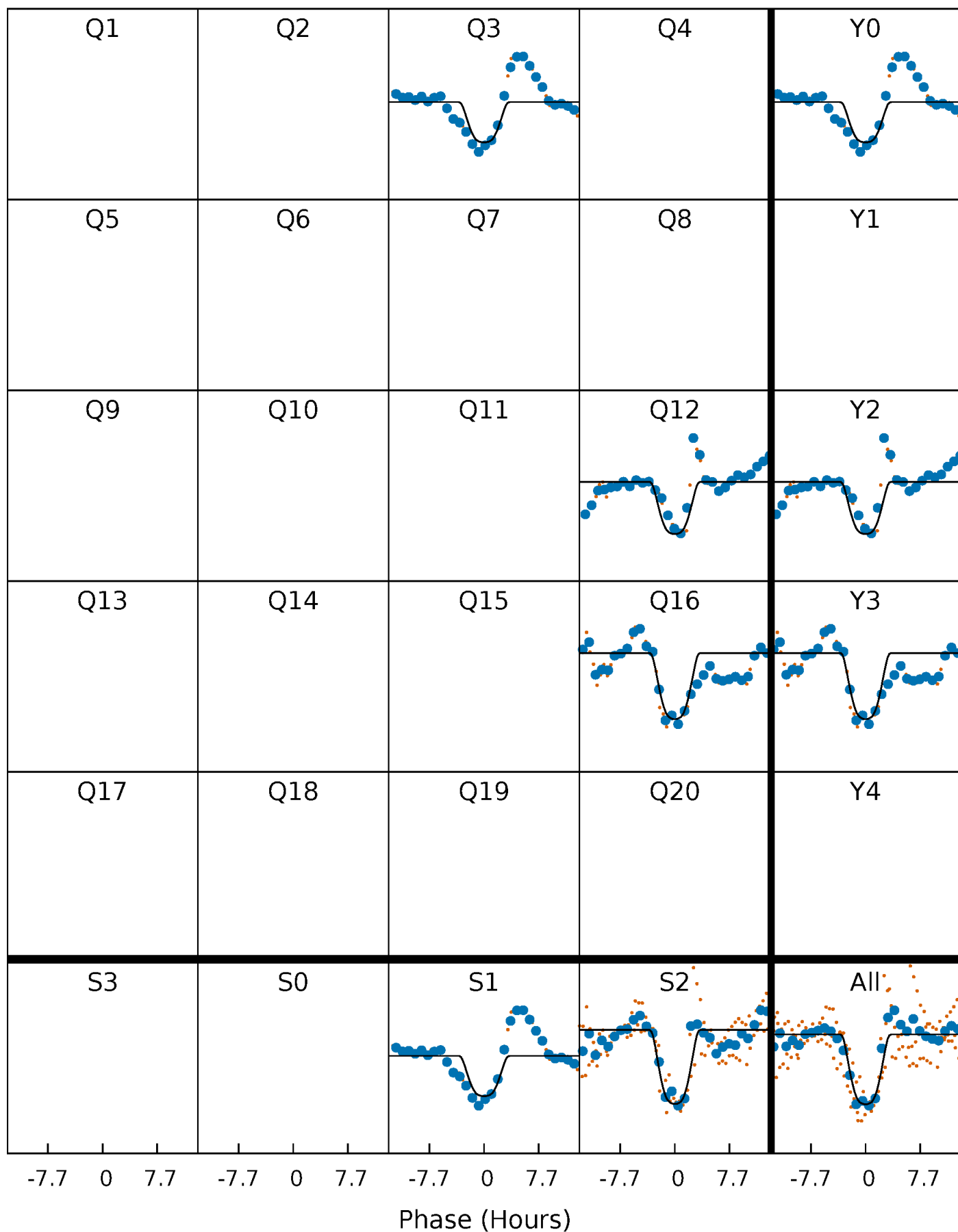
PDC Quarter-Phased Transit Curves

TCE 008517303-04 $P=401.840825$ Days $T_0=327.983776$ (BKJD)



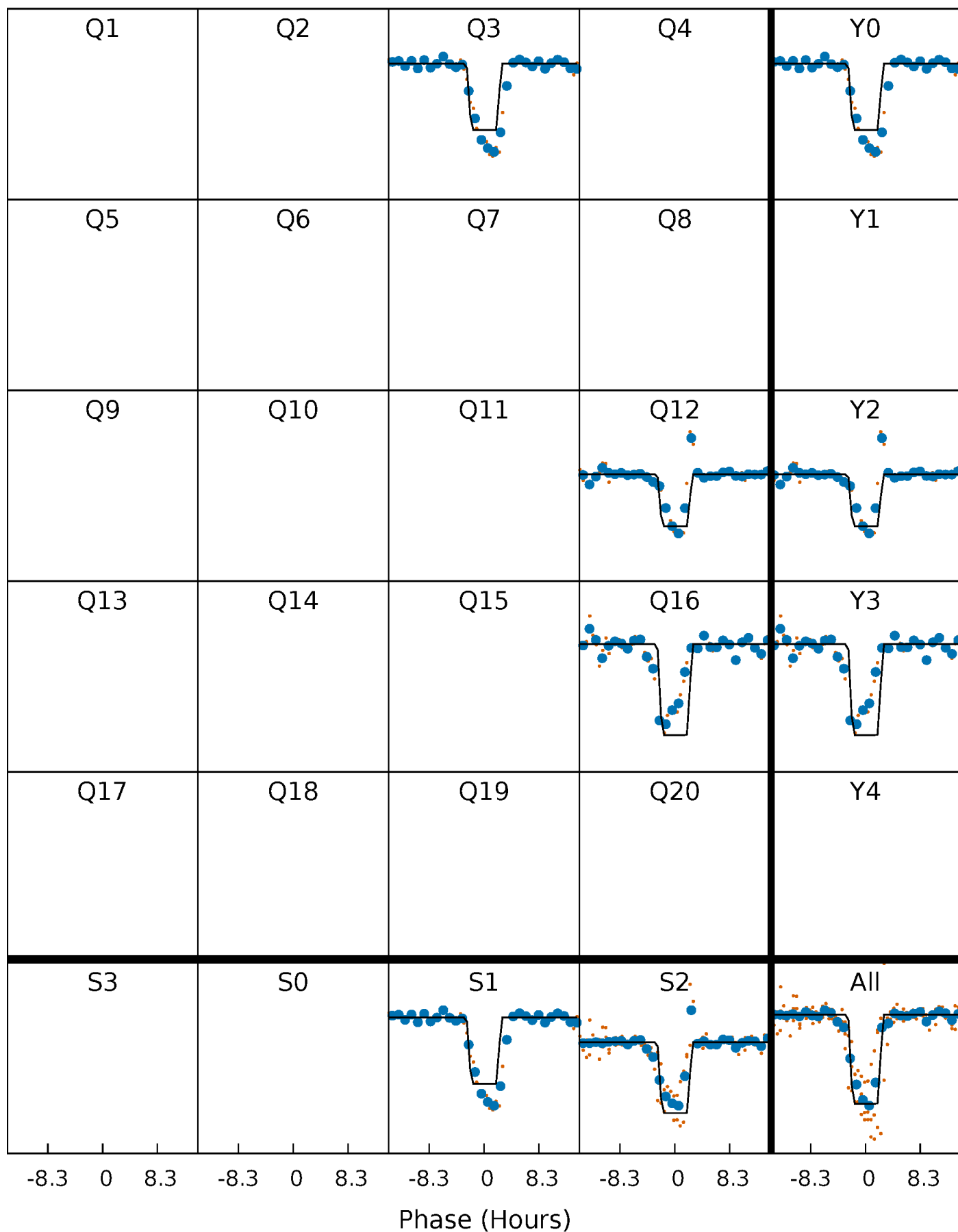
DV Quarter-Phased Transit Curves

TCE 008517303-04 $P=401.840825$ Days $T_0=327.983776$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

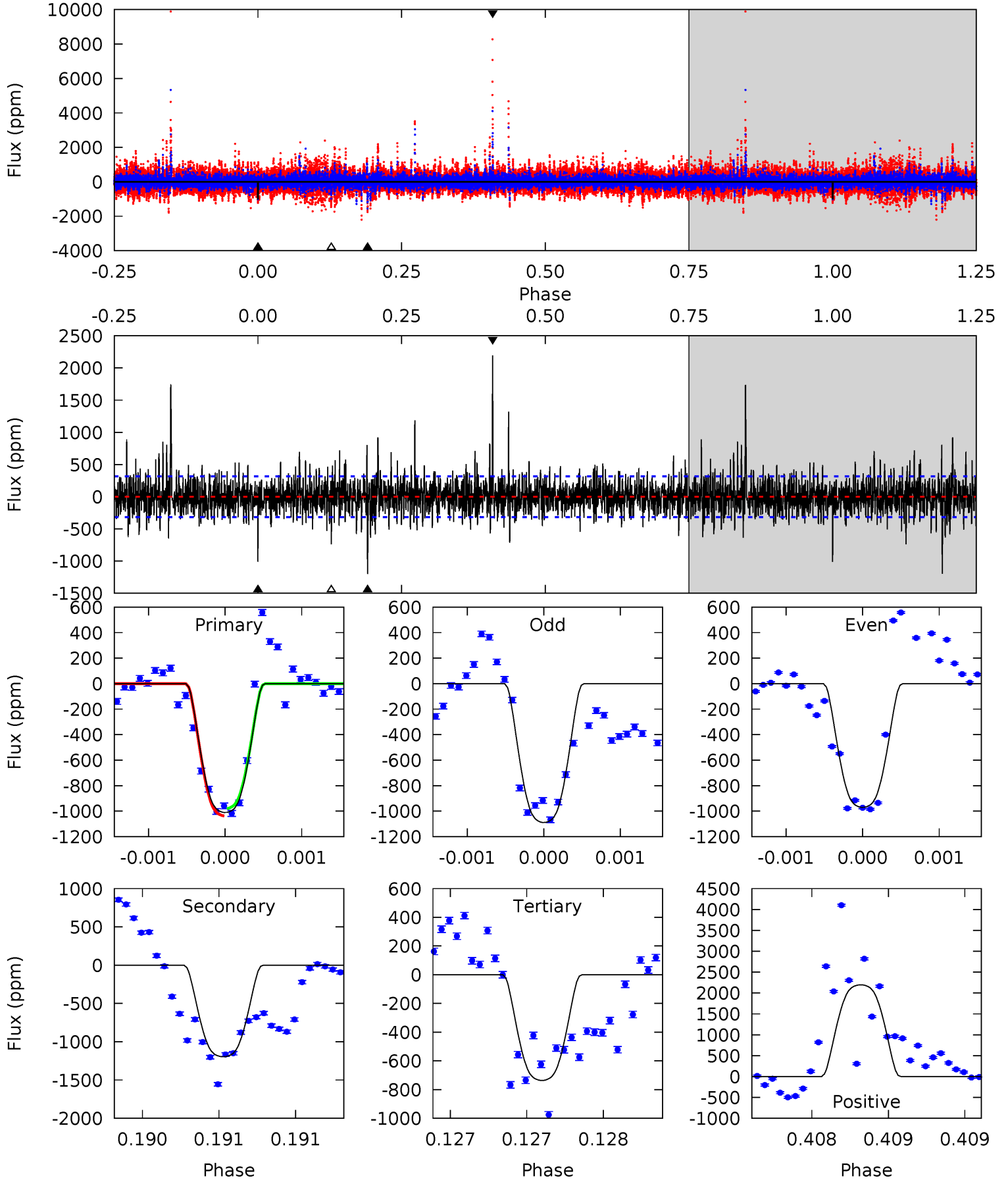
TCE 008517303-04 P=401.846391 Days $T_0=327.986116$ (BKJD)



DV Model-Shift Uniqueness Test

008517303-04, P = 401.840825 Days, E = 327.983776 Days

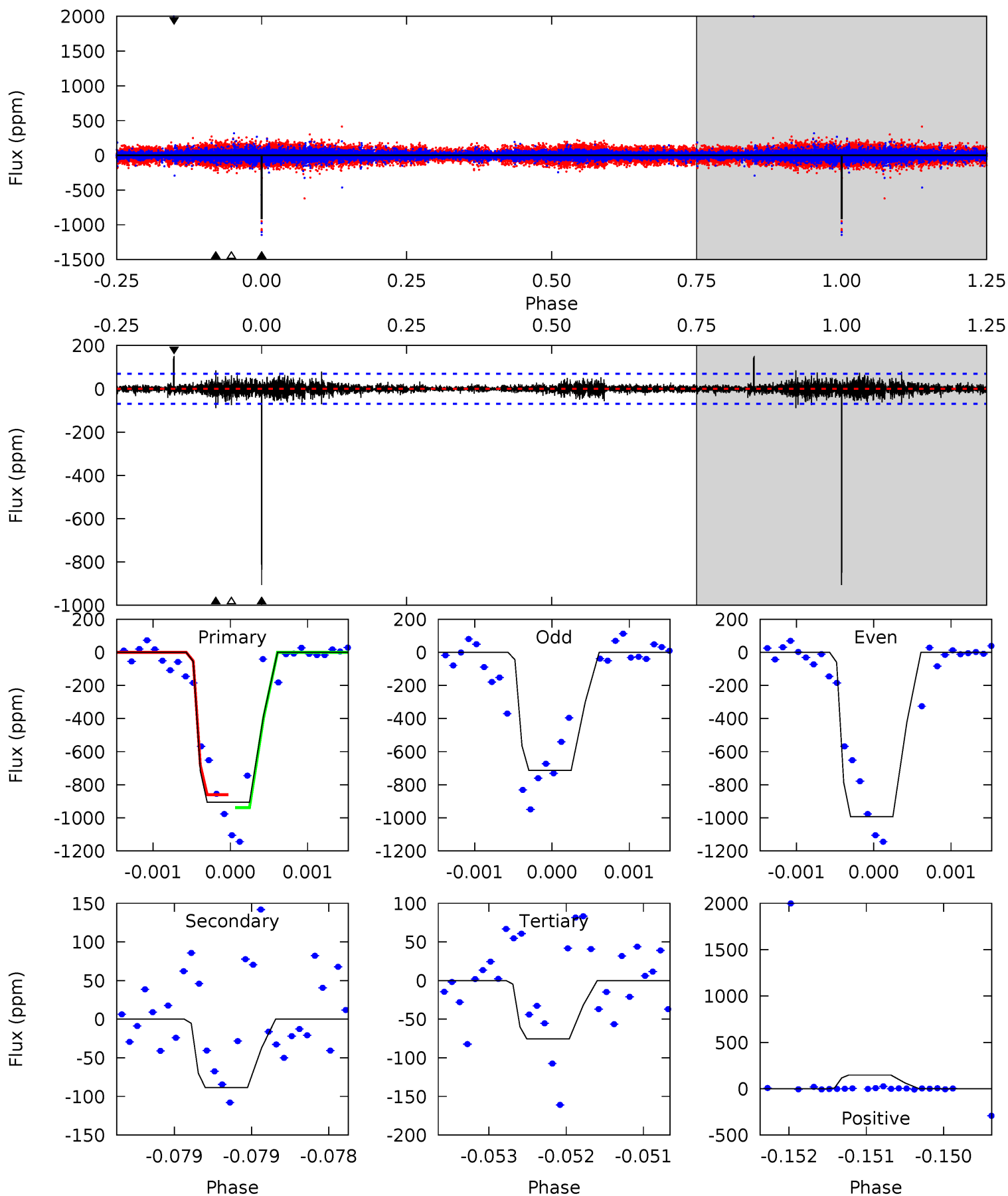
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	20.8	12.8	38.1	5.51	3.38	3.50	4.76	-20.6	7.99	-17.4	0.87	0.93	0.65	0.49



Alt Model-Shift Uniqueness Test

008517303-04, P = 401.846391 Days, E = 327.986116 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
72.7	7.08	6.06	11.8	5.55	3.45	0.97	66.6	60.9	1.02	-4.74	8.99	1.13	0.14	0



Stellar Parameters For KIC 008517303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4647^{+69}_{-62}	$2.843^{+0.140}_{-0.171}$	$0.020^{+0.150}_{-0.100}$	$6.055^{+1.954}_{-0.837}$	$0.932^{+0.254}_{-0.014}$	$0.006^{+0.003}_{-0.003}$
	+1%/-1%	+5%/-6%	+750%/-500%	+32%/-14%	+27%/-2%	+56%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008517303-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1196 ± 58	$26.46^{+4.87}_{-3.69}$	690^{+51}_{-39}	4434^{+164}_{-150}	1063^{+365}_{-281}
Alt.	-88 ± 12	$21.10^{+4.08}_{-3.07}$	692^{+46}_{-36}	3100^{+124}_{-106}	125^{+45}_{-39}

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 $A_{obs} \gg 1.0$

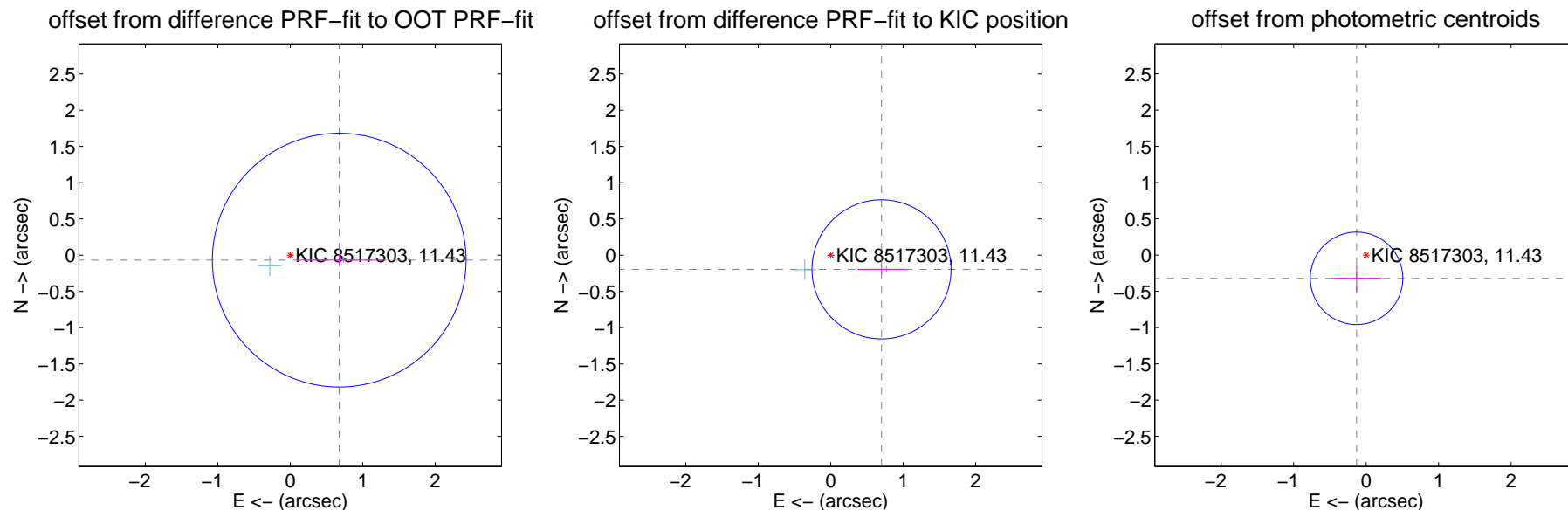
DV Centroid Data

Supplemental centroid analysis for 008517303-04. **Kepler magnitude: 11.43.** Transit SNR 7.79

There are 2 quarters with good PRF difference image offsets

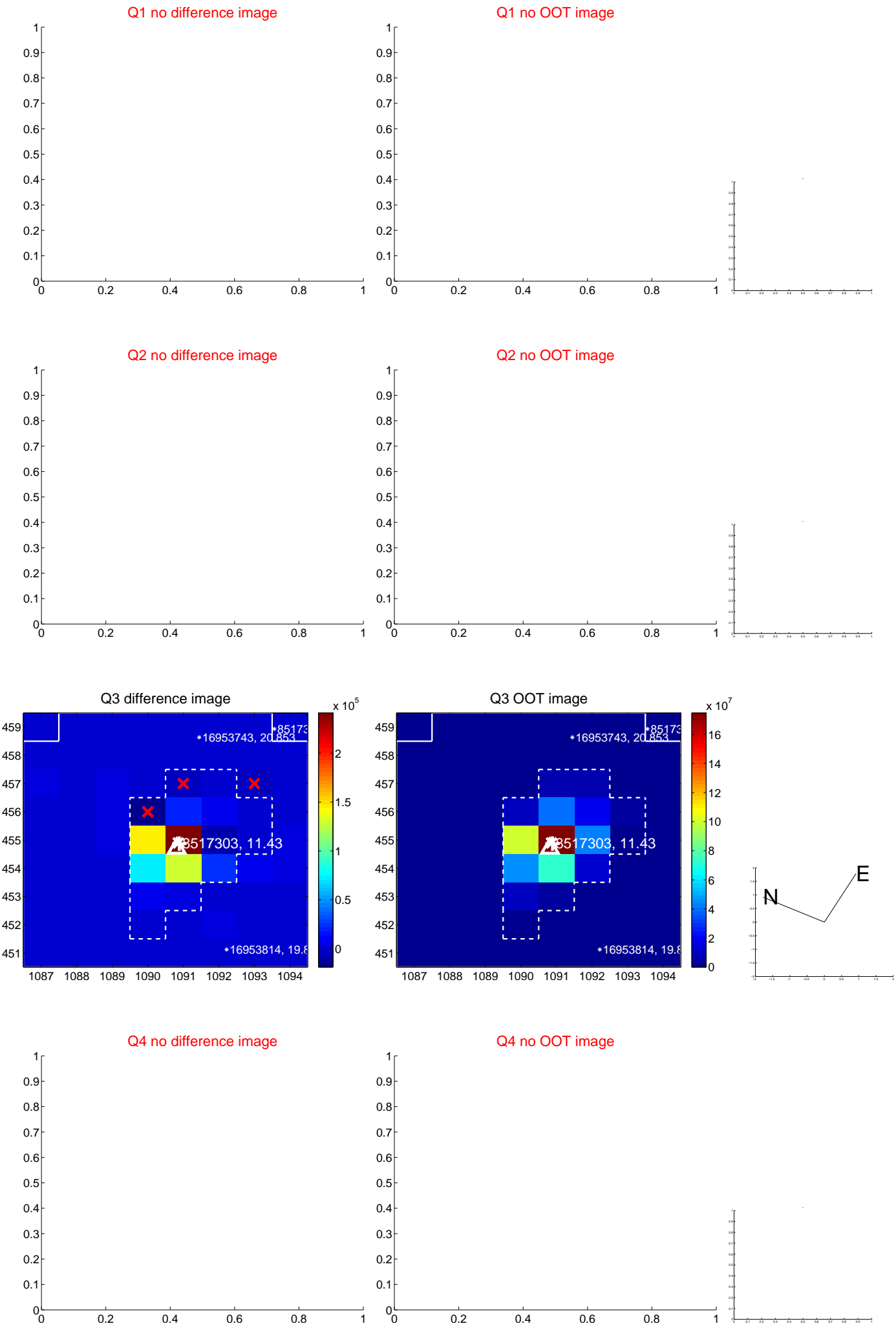
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.679 ± 0.584	1.16	-0.675 ± 0.591	-0.069 ± 0.083
PRF-fit source offset from KIC position	0.728 ± 0.320	2.28	-0.701 ± 0.332	-0.196 ± 0.067
photometric centroid source offset	0.35 ± 0.21	1.63	0.13 ± 0.34	-0.32 ± 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.

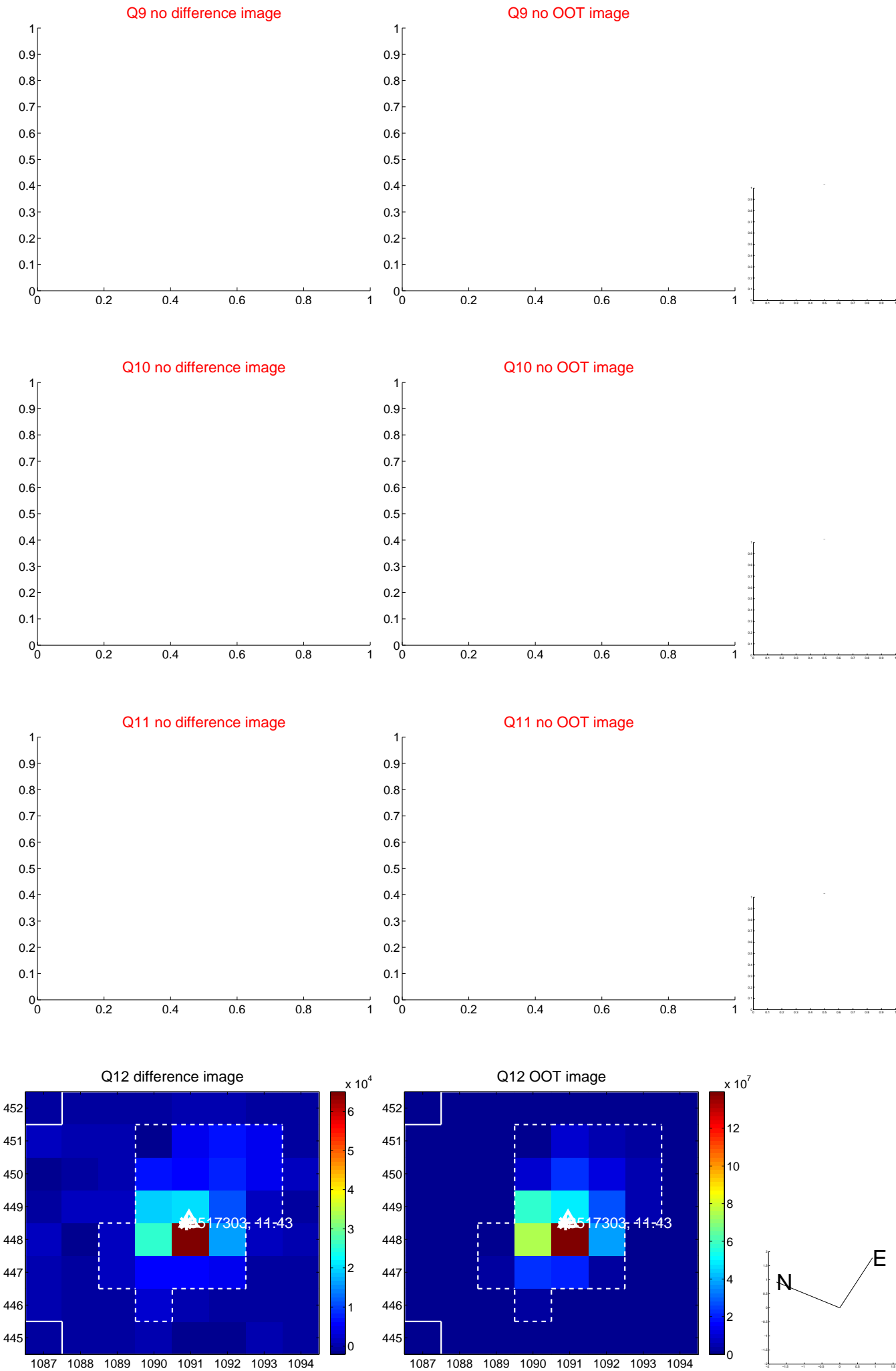
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



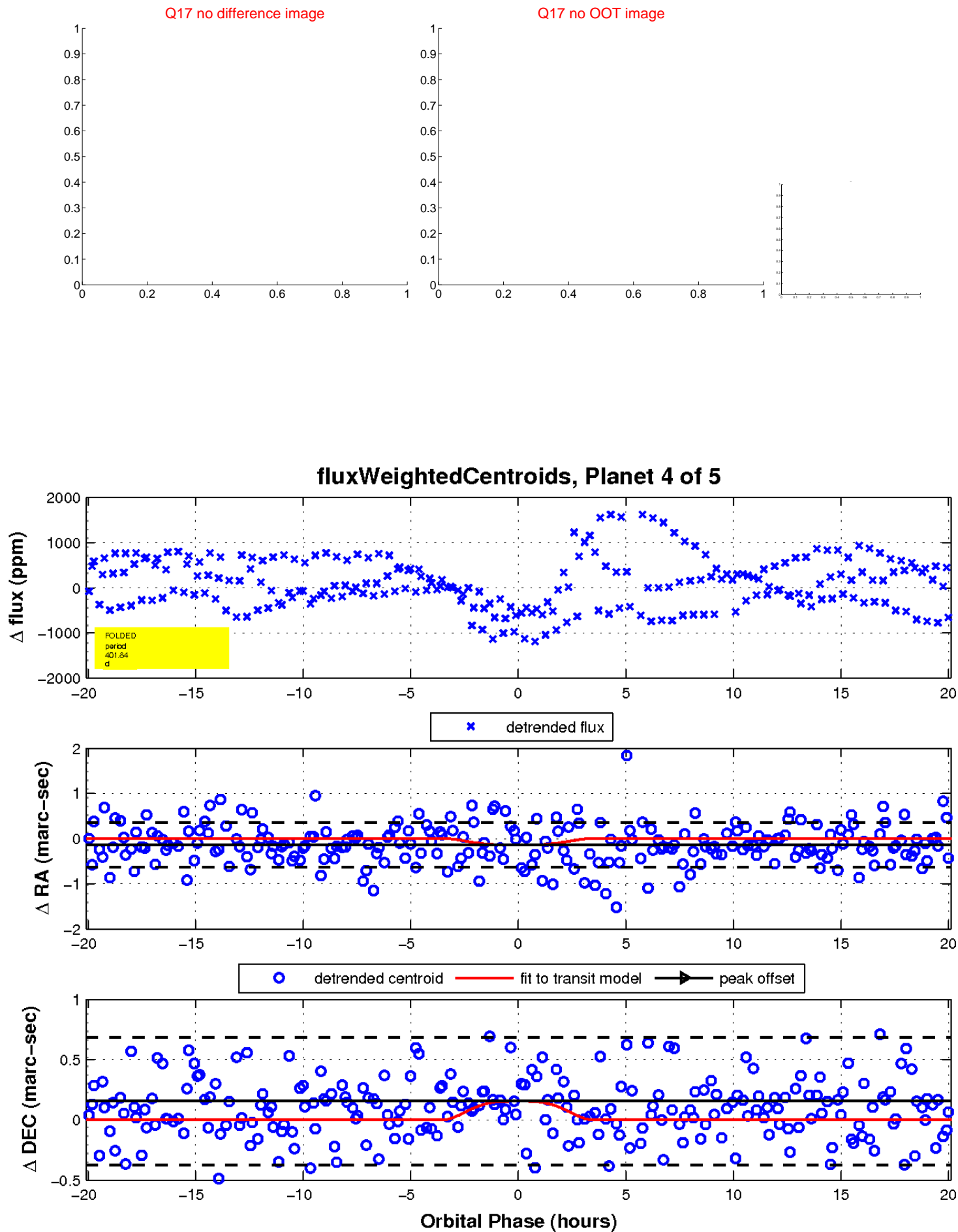
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

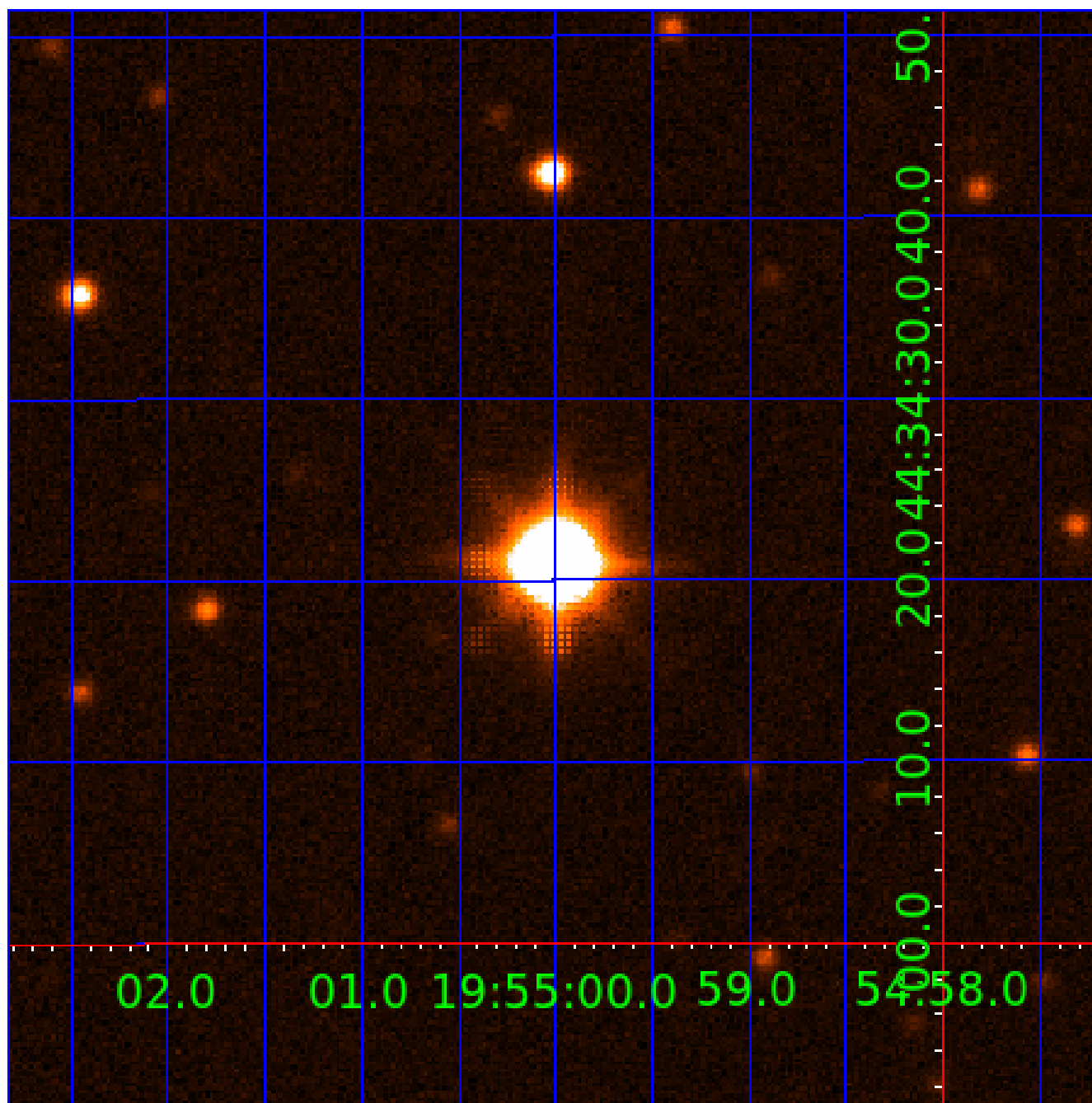


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008517303

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})
008517303-01	OBS	6181.01	24.073325	141.136396	1209.6	17.850	16.2	27.4	6.05	4647	26.26	602.95
008517303-02	OBS	No	471.188245	150.887448	1357.9	12.664	14.0	9.3	6.05	4647	21.56	11.43
008517303-03	OBS	No	620.949898	208.249781	784.5	10.821	17.3	5.7	6.05	4647	19.90	7.91
008517303-04	OBS	No	401.840825	327.983776	992.0	6.716	9.3	7.8	6.05	4647	25.86	14.13
008517303-05	OBS	No	291.641391	229.806634	246.8	5.000	15.1	-1.0	6.05	4647	9.11	21.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008517303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
008517303-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
008517303-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
008517303-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
008517303-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED—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 008517303-05

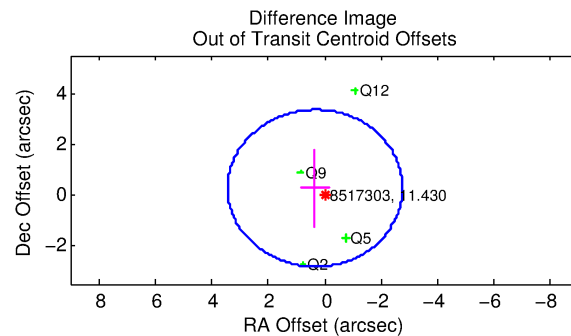
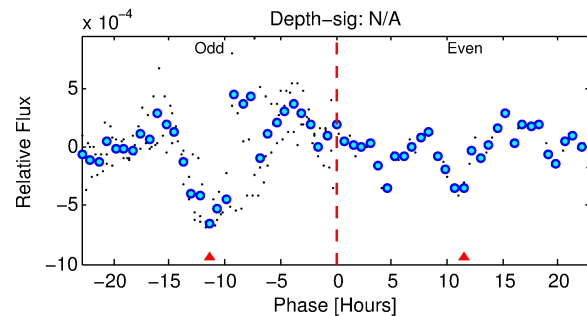
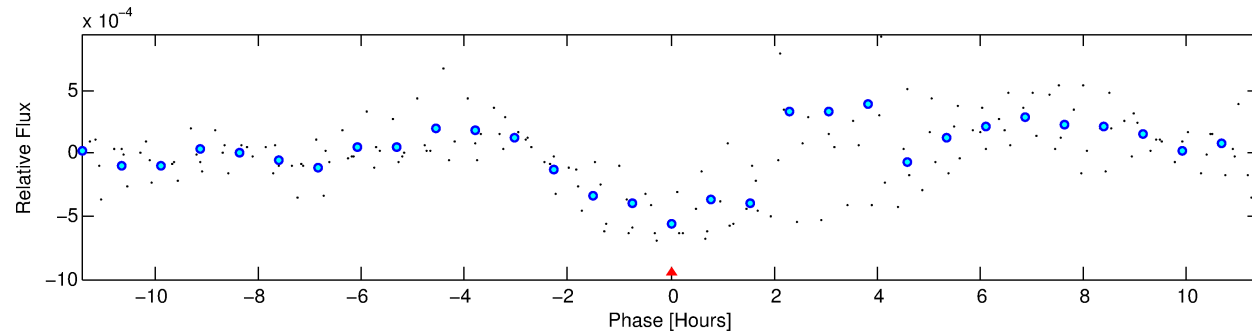
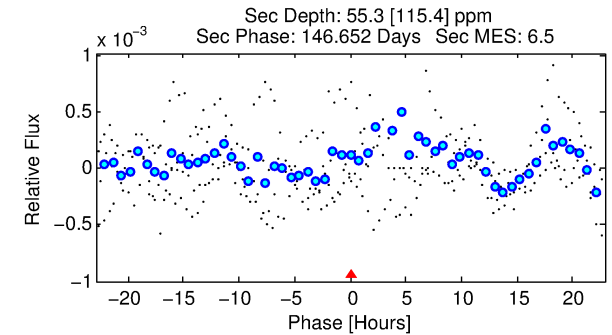
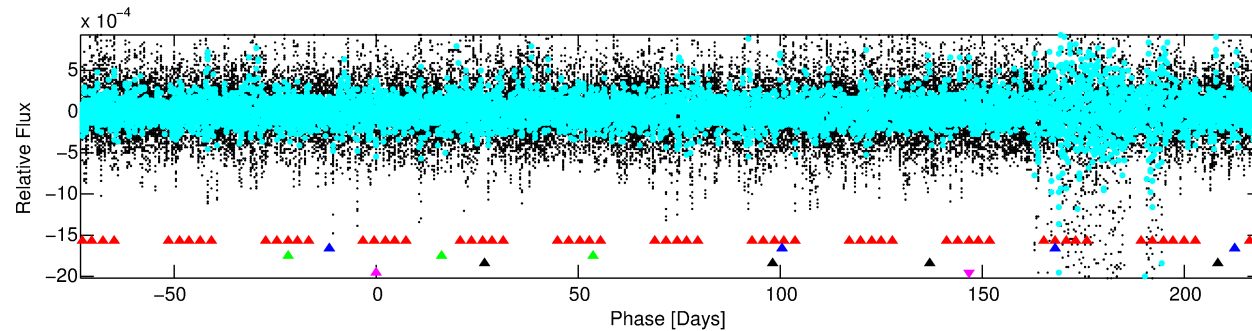
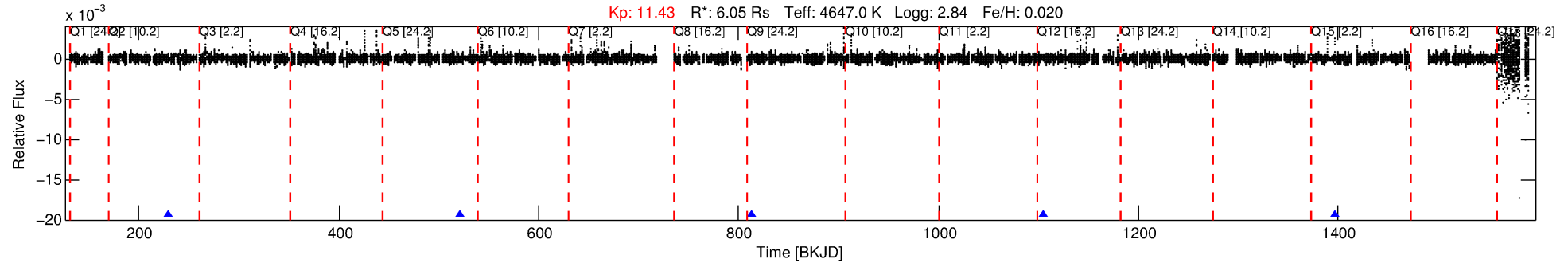
No Significant Match Found

DV One-Page Summary

KIC: 8517303 Candidate: 5 of 5 Period: 291.641 d

KOI: K06181 Corr: No Ephemeris Match

Kp: 11.43 R*: 6.05 Rs Teff: 4647.0 K Logg: 2.84 Fe/H: 0.020



TPS TCE Results:

Period = 291.64139 d
Epoch = 229.8066 BKJD

DV fit results are unavailable

DV Diagnostic Results:

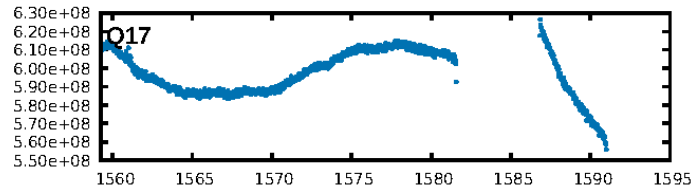
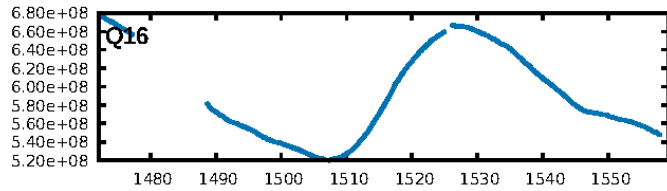
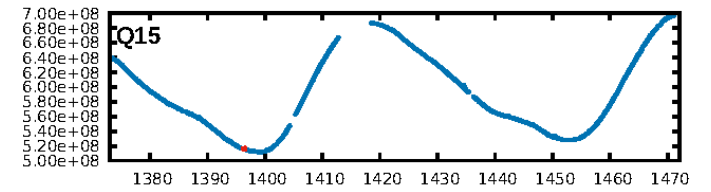
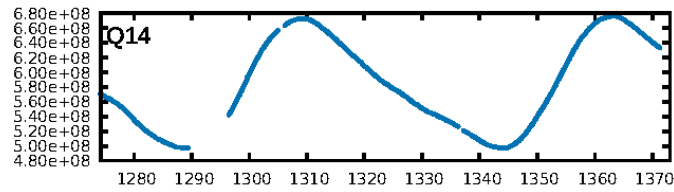
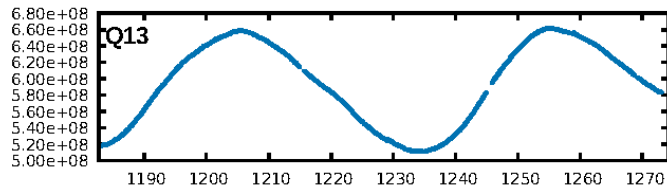
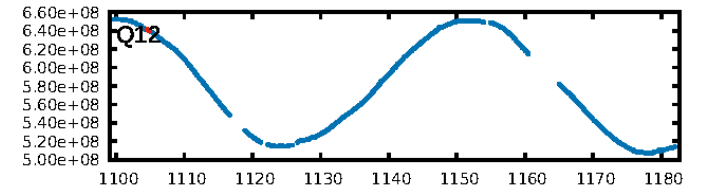
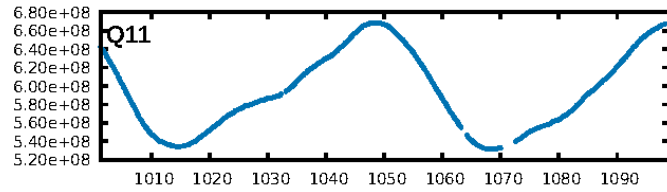
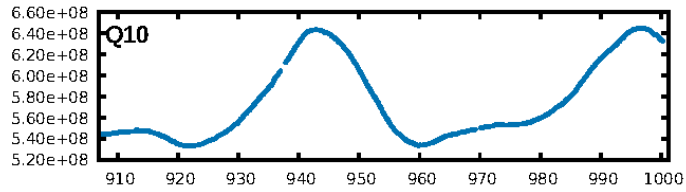
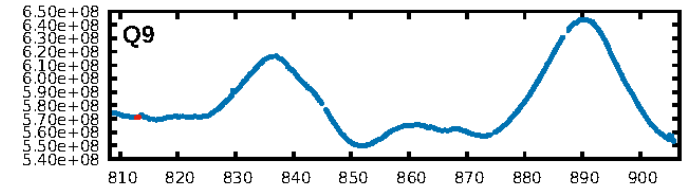
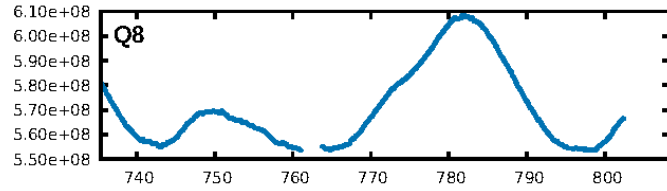
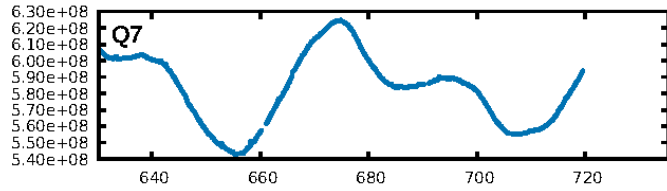
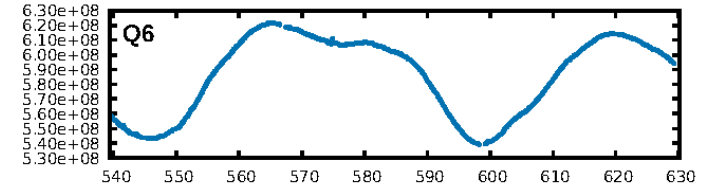
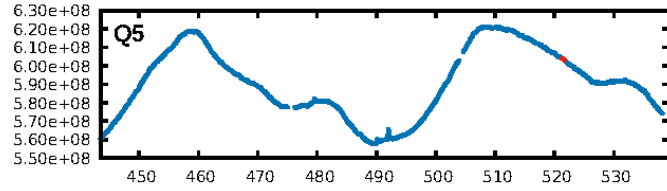
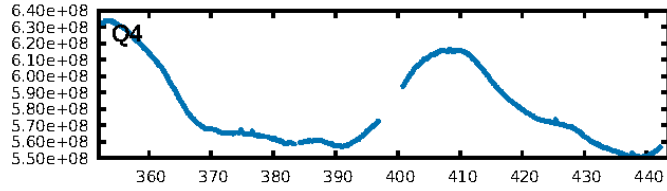
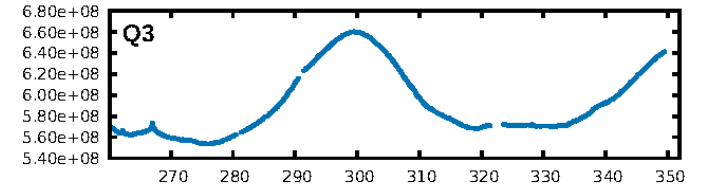
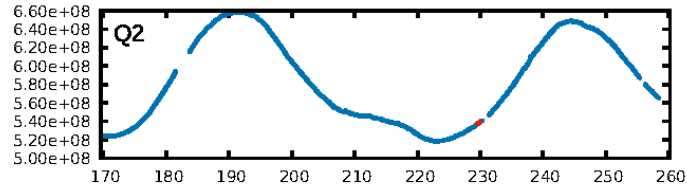
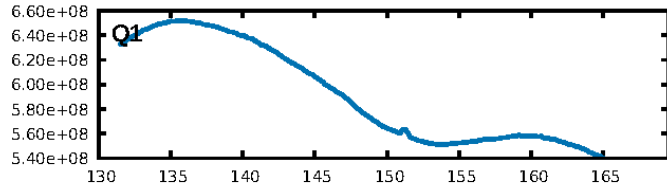
ShortPeriod-sig: 100.0% [346.41σ]
LongPeriod-sig: 100.0% [315.88σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.03427

Centroid-sig: 50.9%
Centroid-so: 0.307 arcsec [1.31σ]
OotOffset-rm: 0.436 arcsec [0.42σ]
KicOffset-rm: 0.374 arcsec [0.62σ]
OotOffset-st: 1/0/1/2 [4]
KicOffset-st: 1/0/1/2 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.75 [3/4]

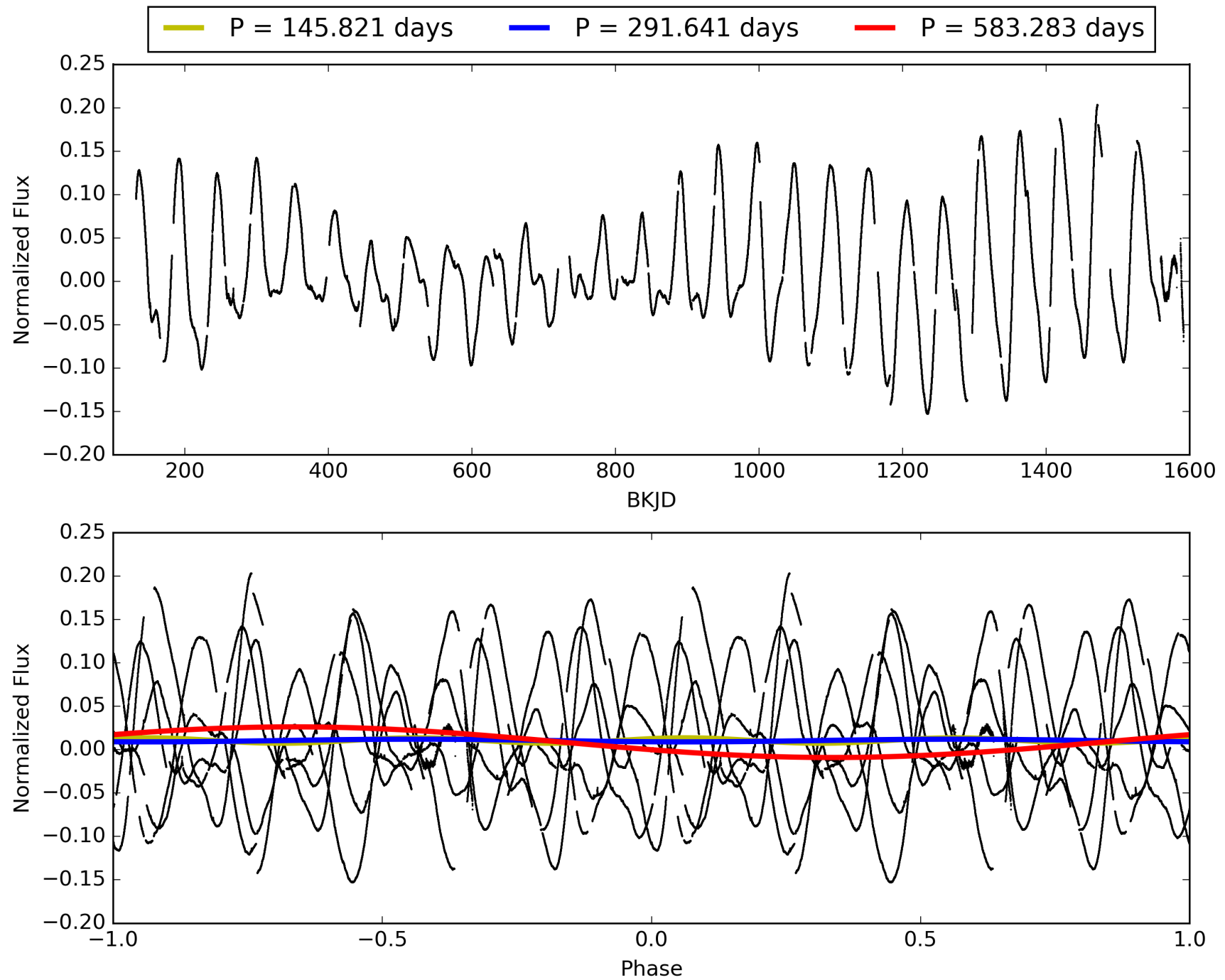
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:34:33 Z

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

TCE 008517303-05, PDC Light Curves

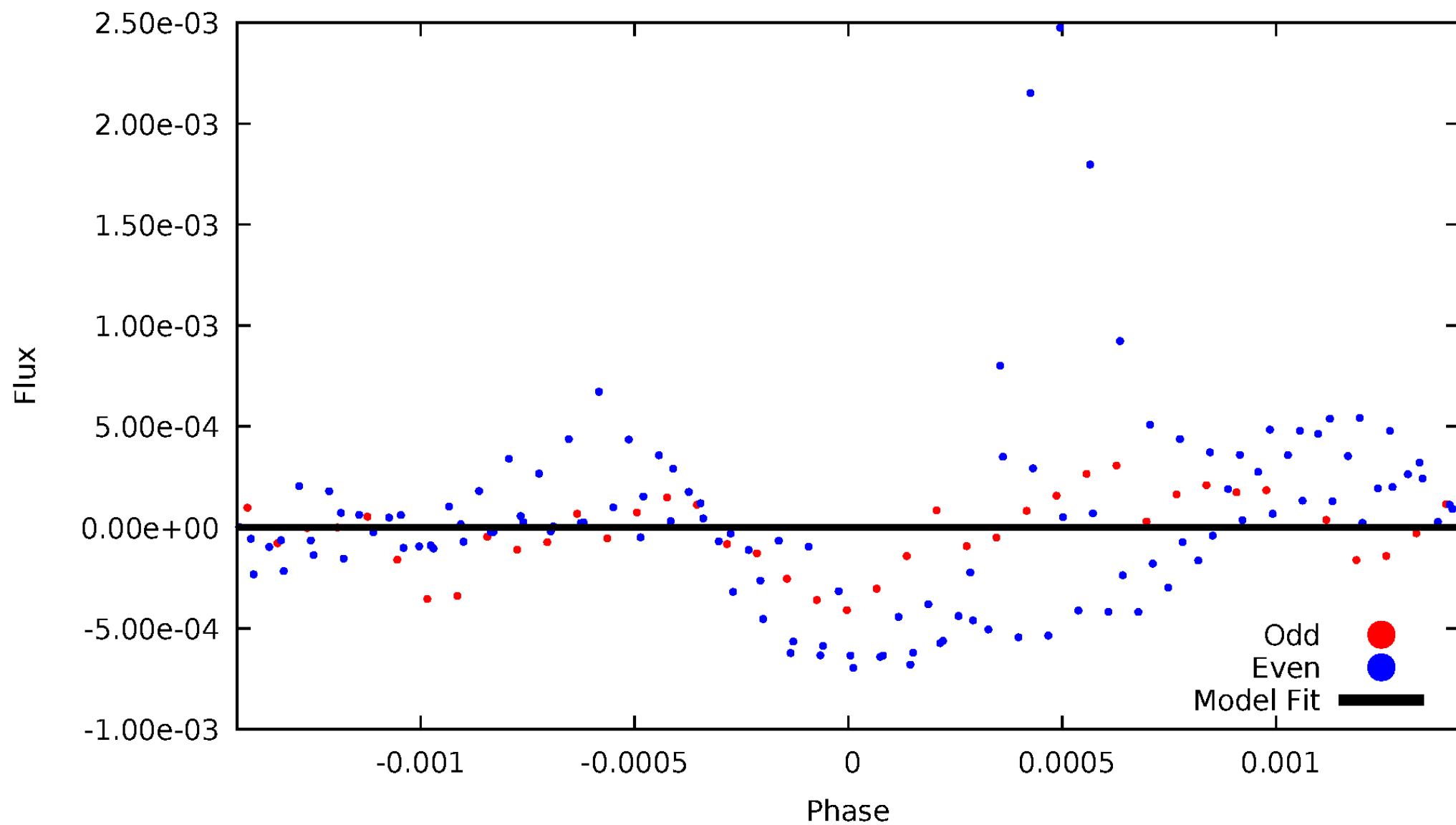


TCE 008517303-05



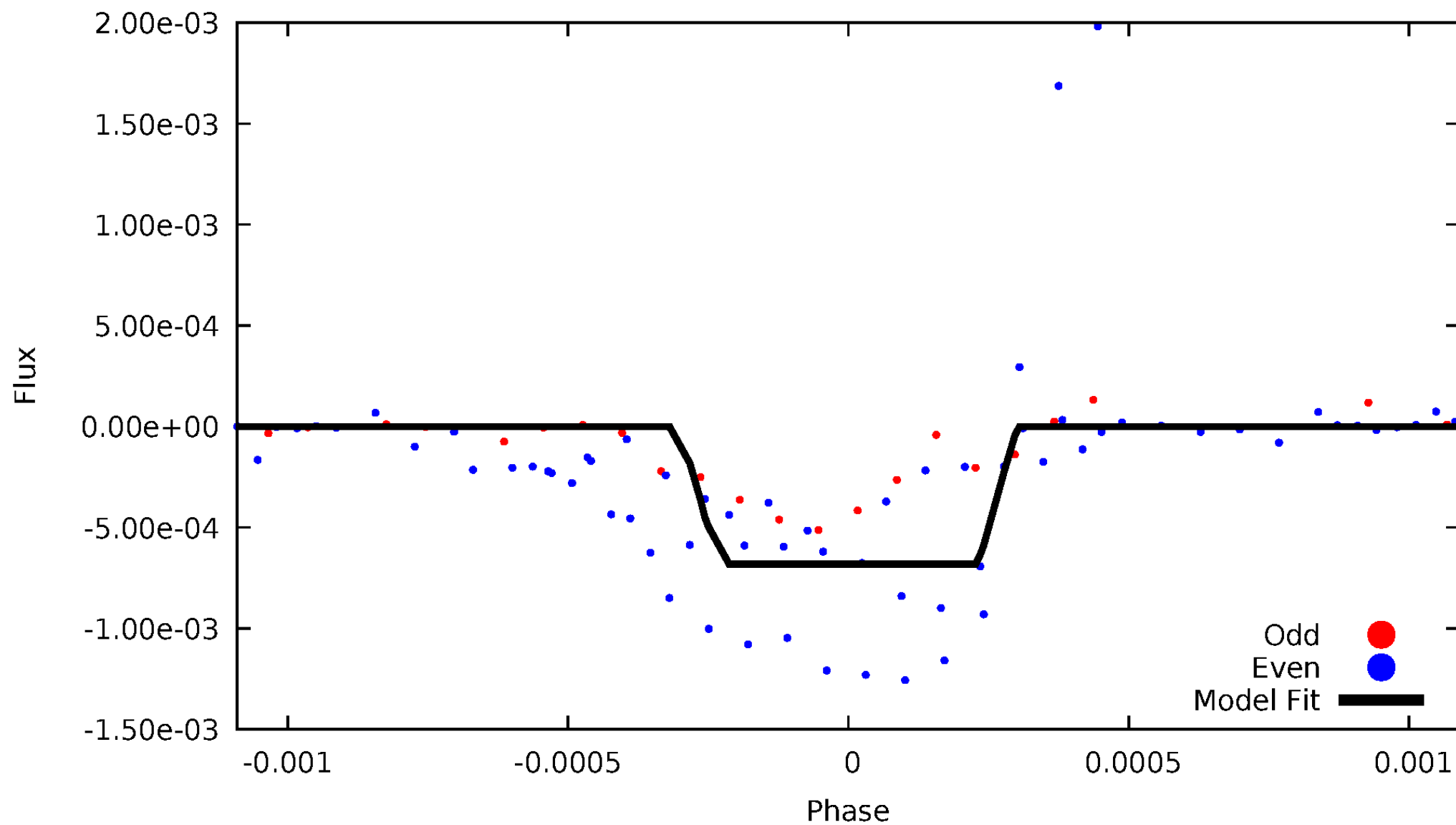
DV Odd/Even

TCE 008517303-05

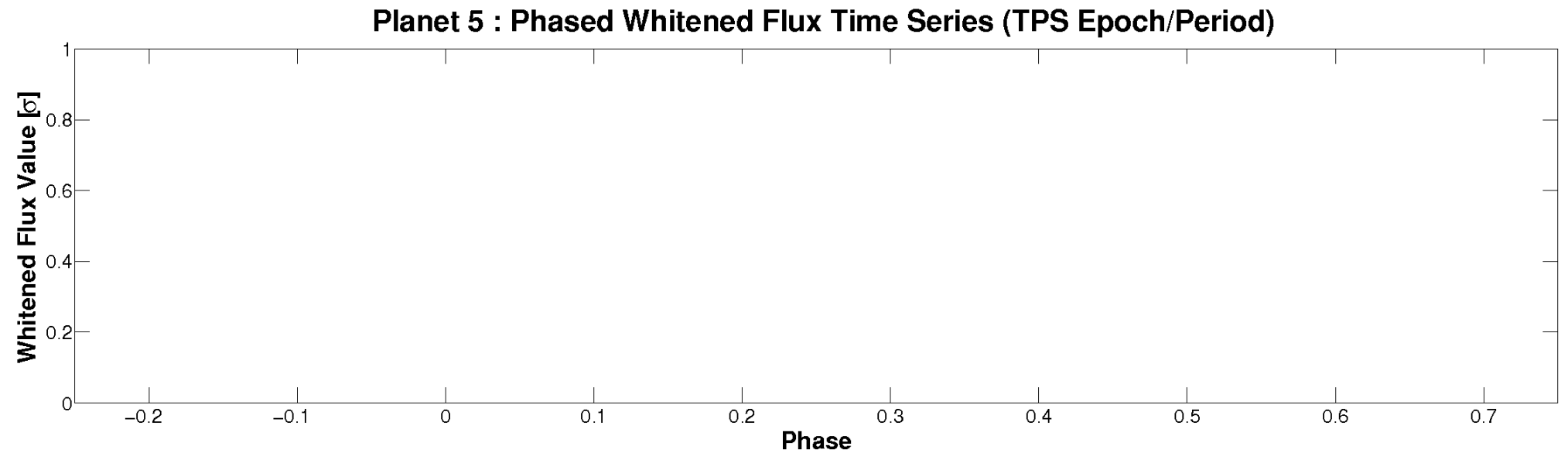
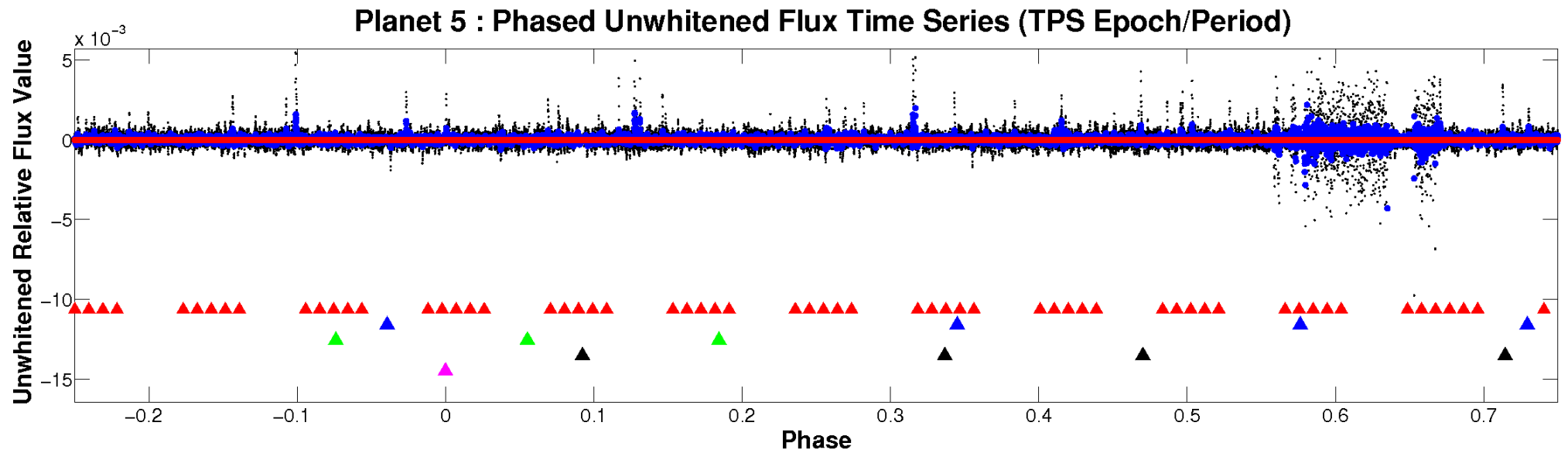


ALT Odd/Even

TCE 008517303-05

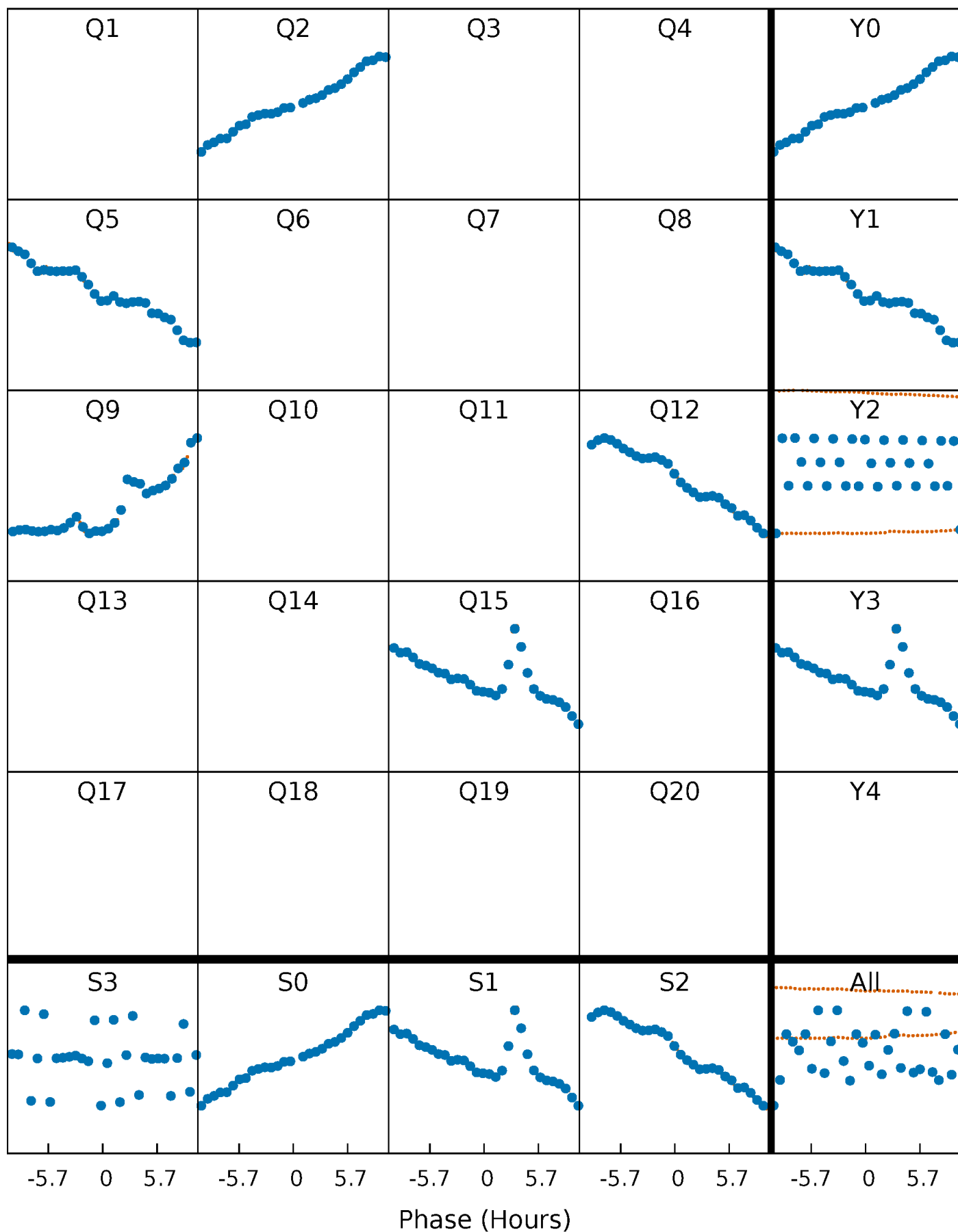


Non-Whitened Vs. Whitened Light Curve



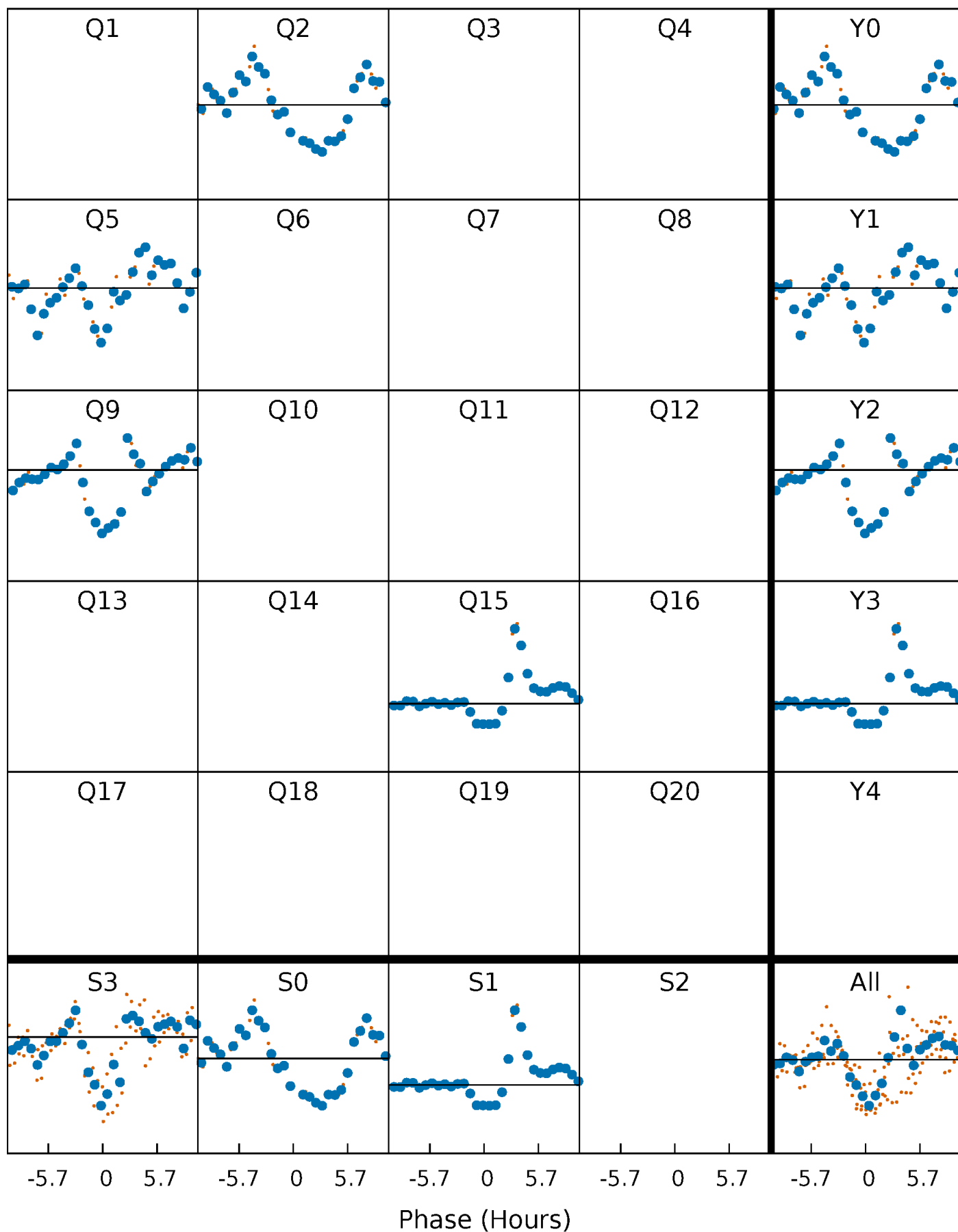
PDC Quarter-Phased Transit Curves

TCE 008517303-05 $P=291.641391$ Days $T_0=229.806634$ (BKJD)



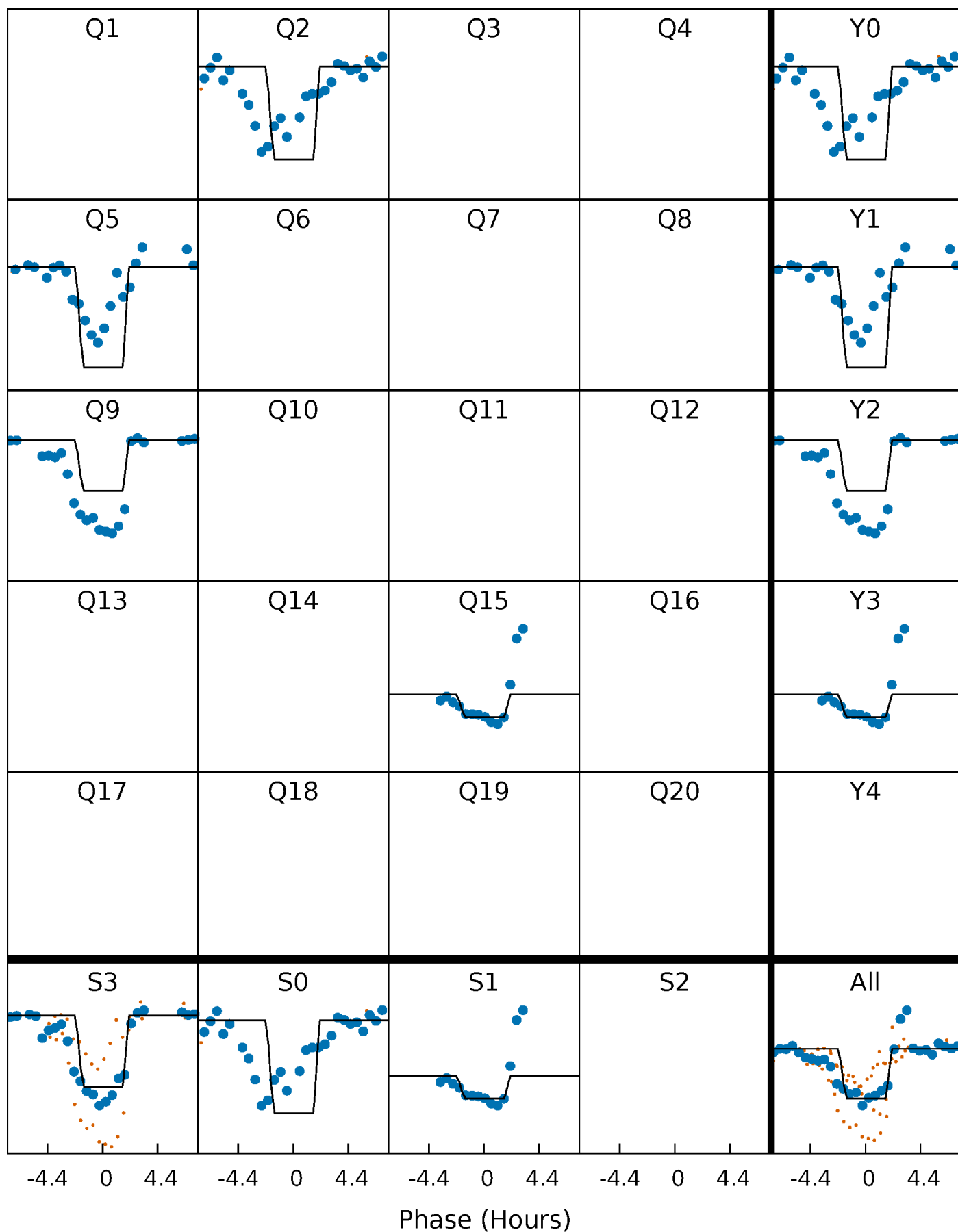
DV Quarter-Phased Transit Curves

TCE 008517303-05 $P=291.641391$ Days $T_0=229.806634$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

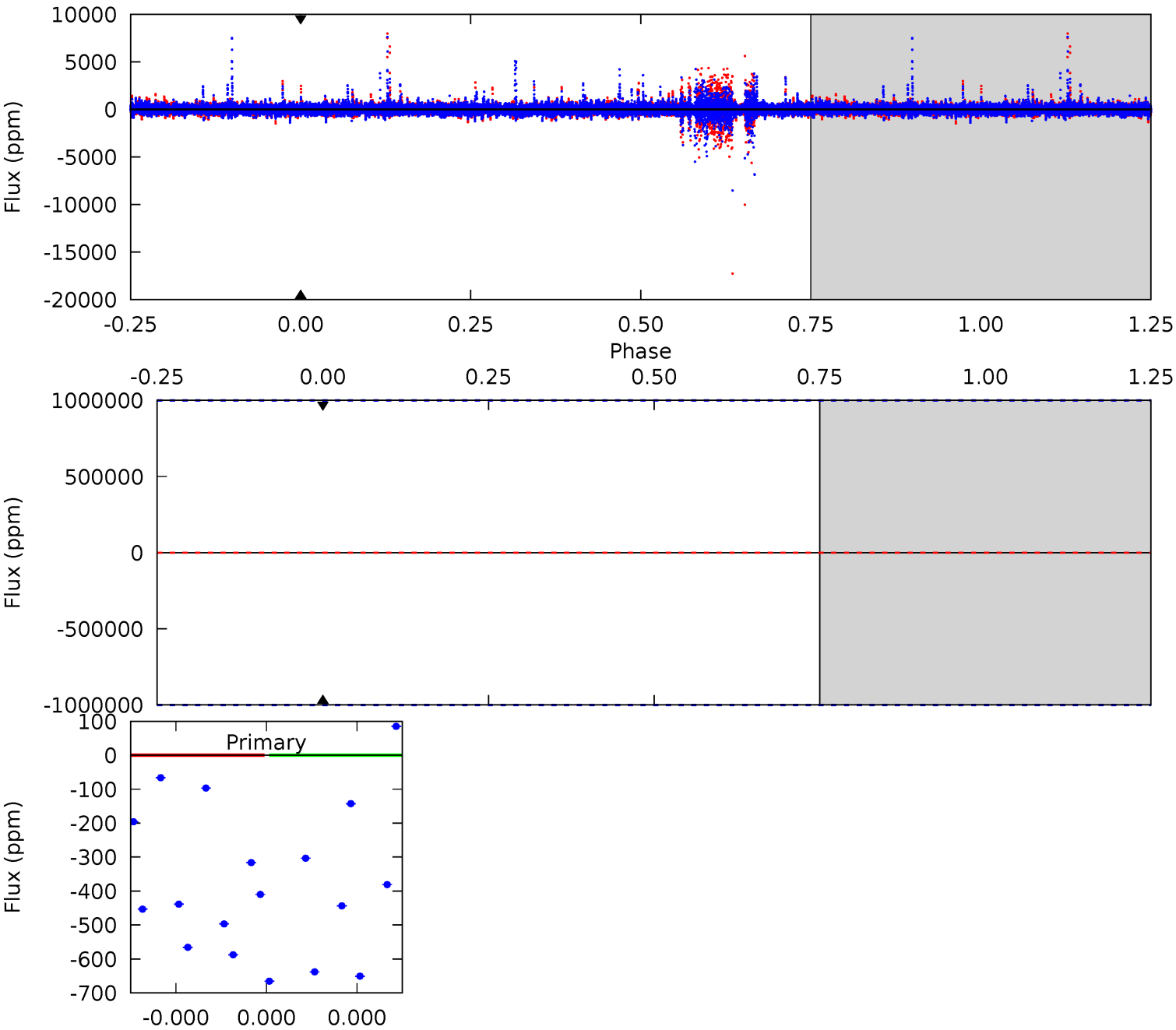
TCE 008517303-05 $P=291.641391$ Days $T_0=229.821173$ (BKJD)



DV Model-Shift Uniqueness Test

008517303-05, P = 291.641391 Days, E = 229.806634 Days

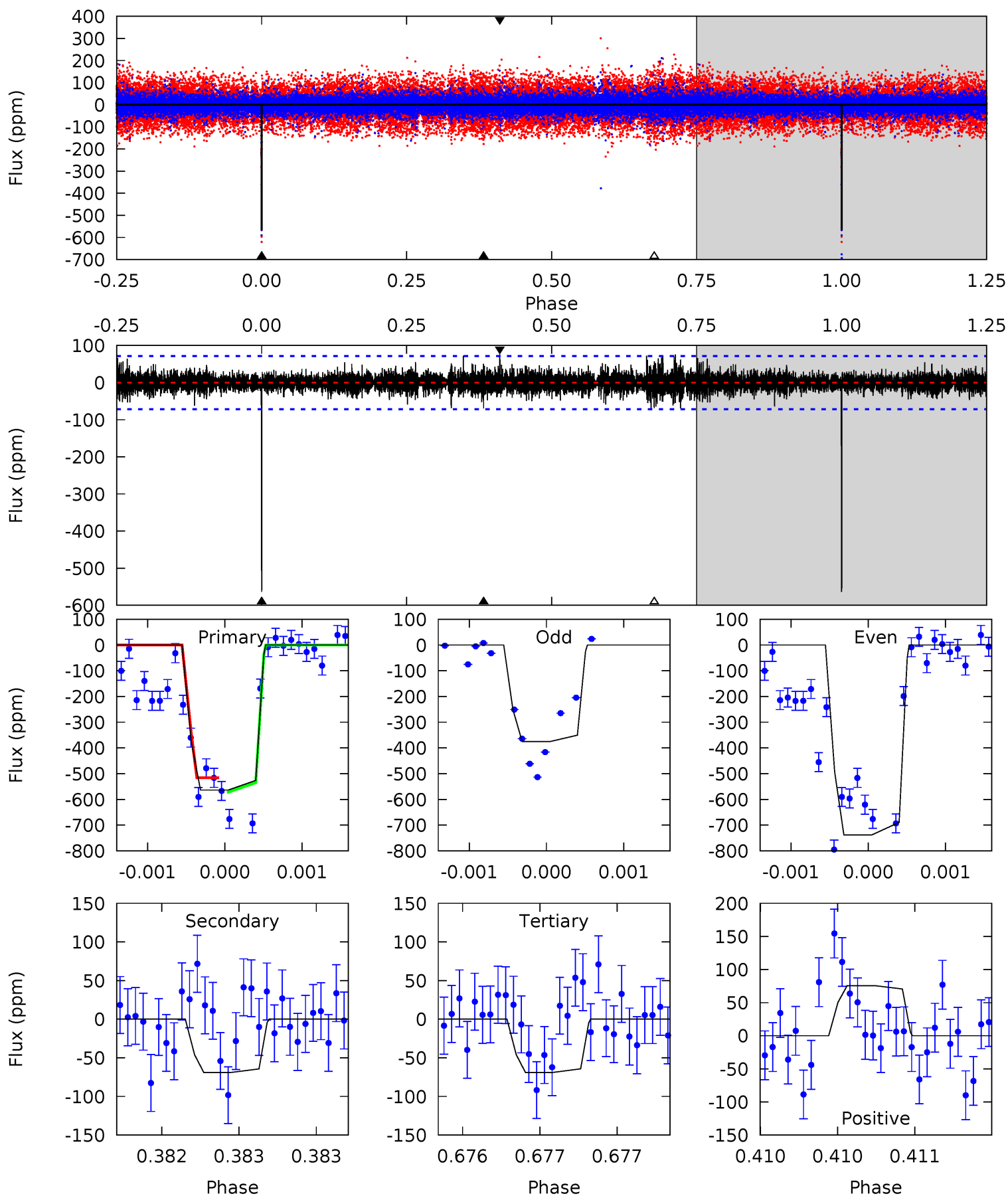
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008517303-05, $P = 291.641391$ Days, $E = 229.821173$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.6	5.33	5.32	5.85	5.54	3.44	1.11	38.2	37.7	0.01	-0.52	14.9	1.20	0.12	0



Stellar Parameters For KIC 008517303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4647^{+69}_{-62}	$2.843^{+0.140}_{-0.171}$	$0.020^{+0.150}_{-0.100}$	$6.055^{+1.954}_{-0.837}$	$0.932^{+0.254}_{-0.014}$	$0.006^{+0.003}_{-0.003}$
	+1%/-1%	+5%/-6%	+750%/-500%	+32%/-14%	+27%/-2%	+56%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008517303-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$49.33^{+53.49}_{-35.35}$	765^{+48}_{-33}	3625^{+9341}_{-16241}	209^{+28975}_{-29755}
Alt.	-69 ± 13	$51.05^{+55.83}_{-35.47}$	768^{+57}_{-37}	2382^{+870}_{-377}	11^{+107}_{-8}

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 $A_{obs} \gg 1.0$

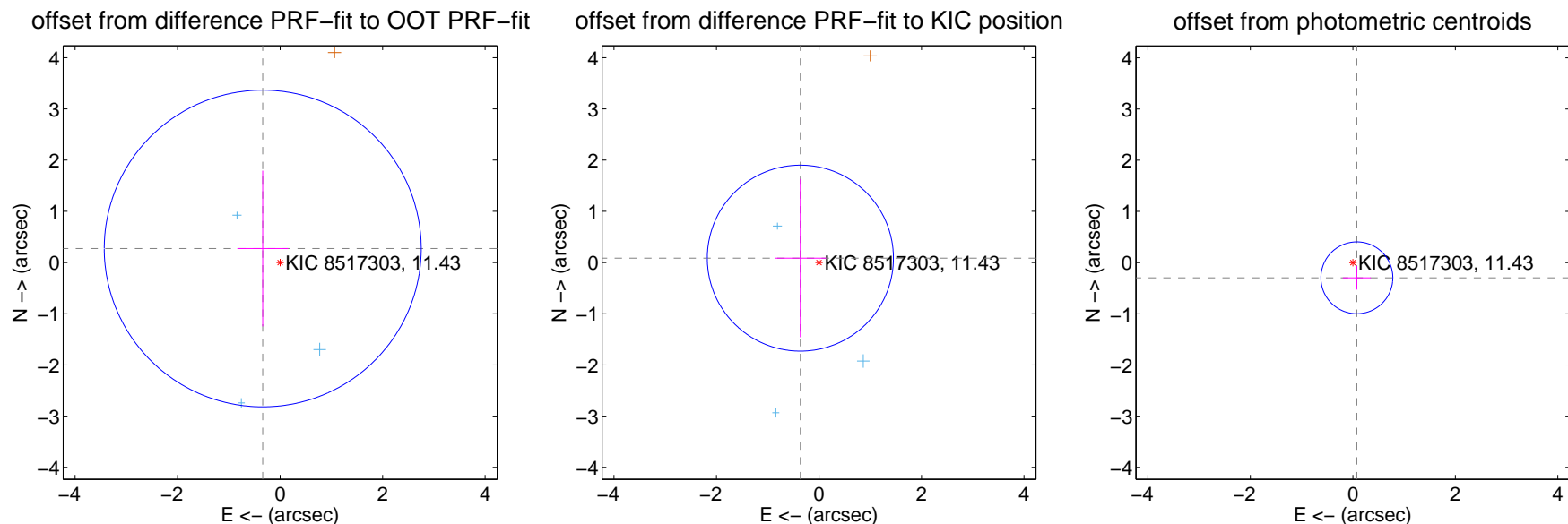
DV Centroid Data

Supplemental centroid analysis for 008517303-05. **Kepler magnitude: 11.43.** Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

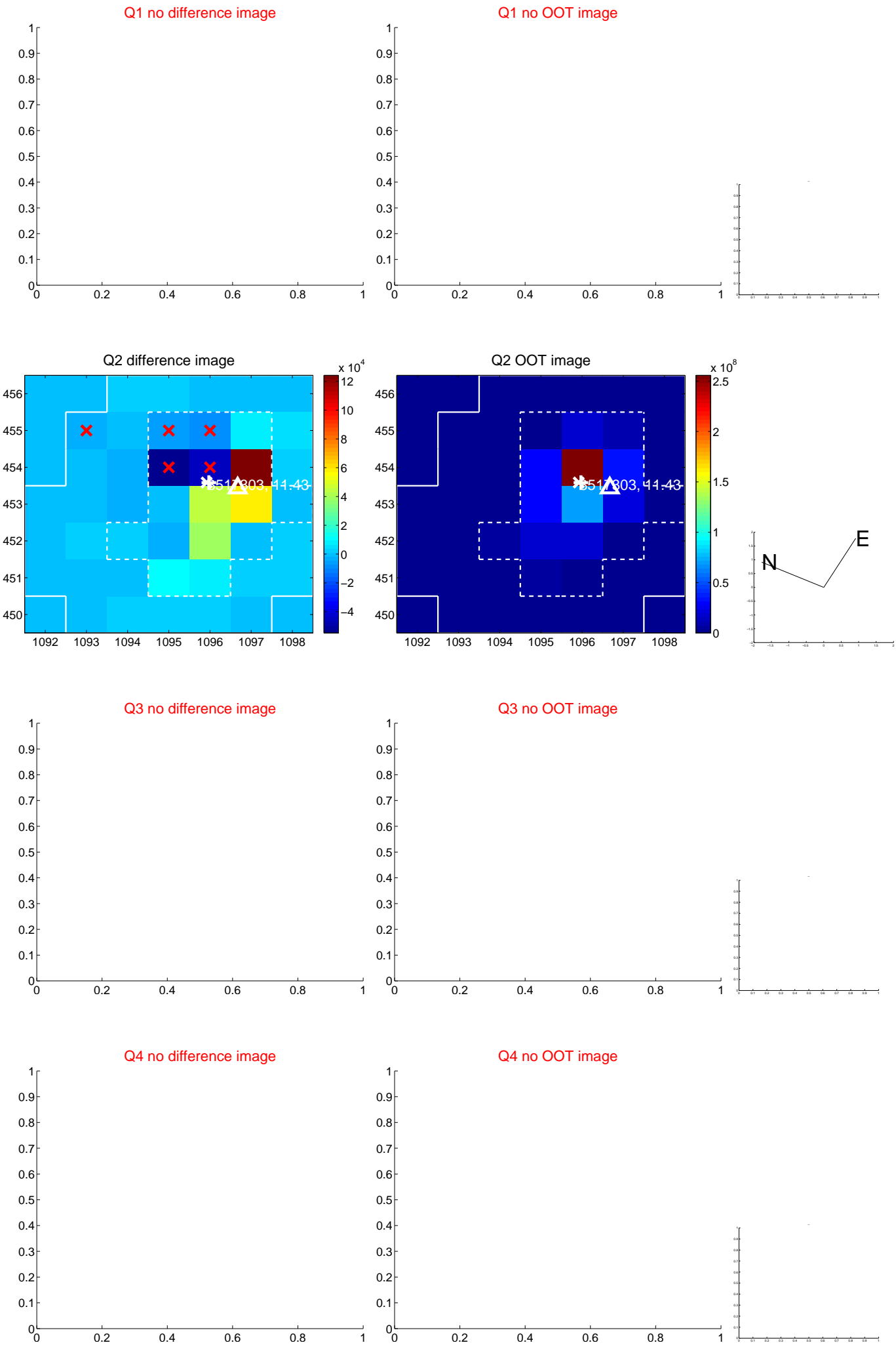
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.436 ± 1.031	0.42	0.339 ± 0.497	0.274 ± 1.520
PRF-fit source offset from KIC position	0.374 ± 0.605	0.62	0.364 ± 0.504	0.086 ± 1.546
photometric centroid source offset	0.31 ± 0.23	1.31	-0.08 ± 0.27	-0.30 ± 0.23

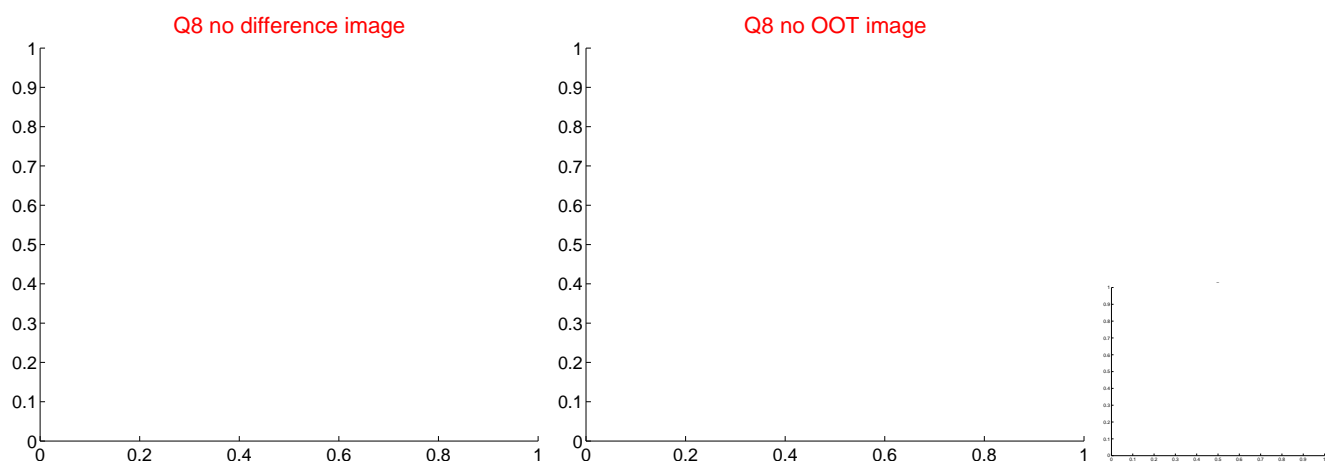
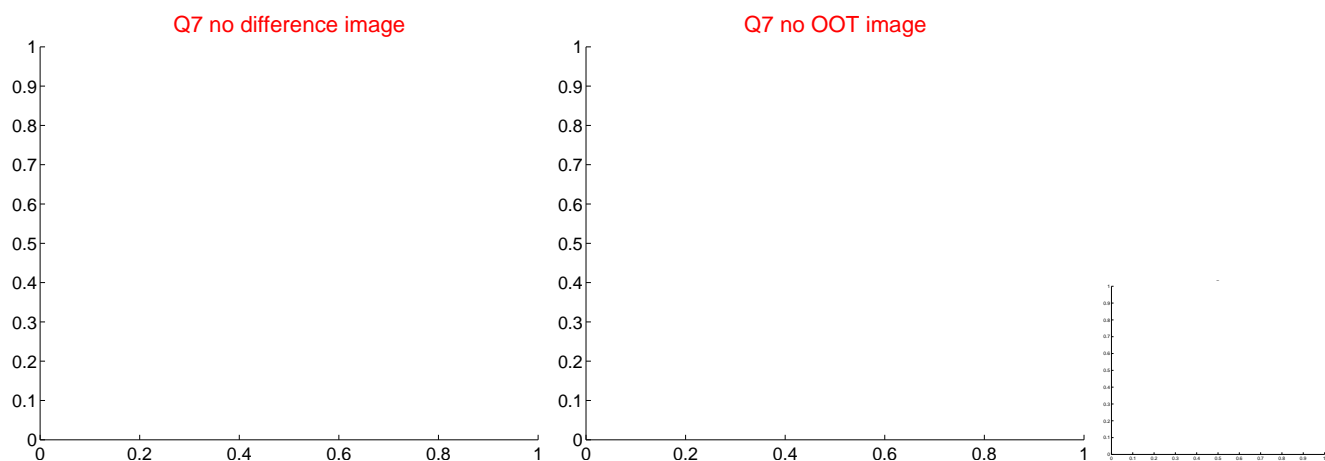
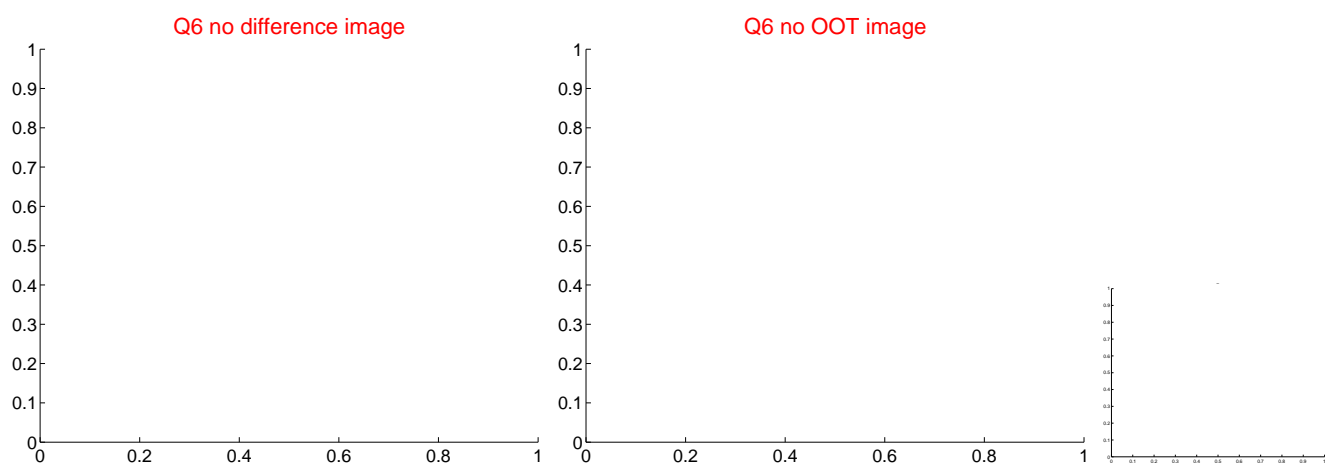
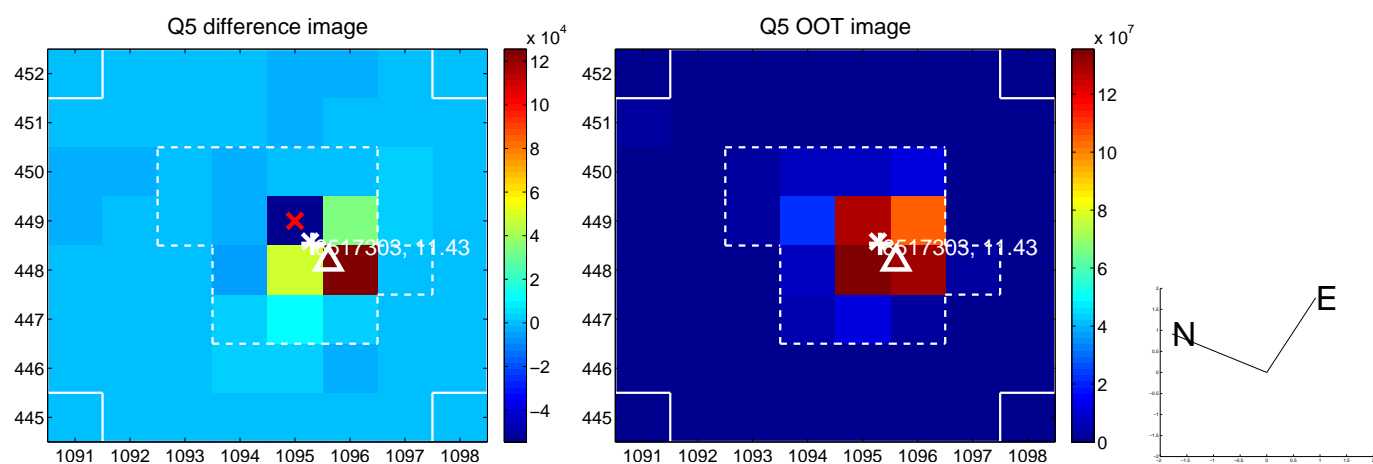


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

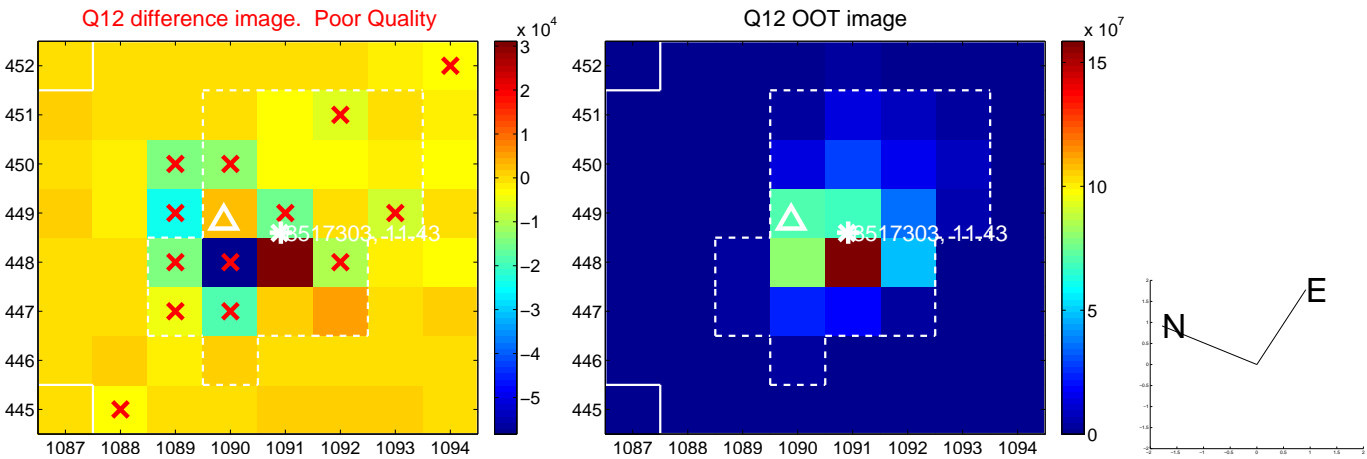
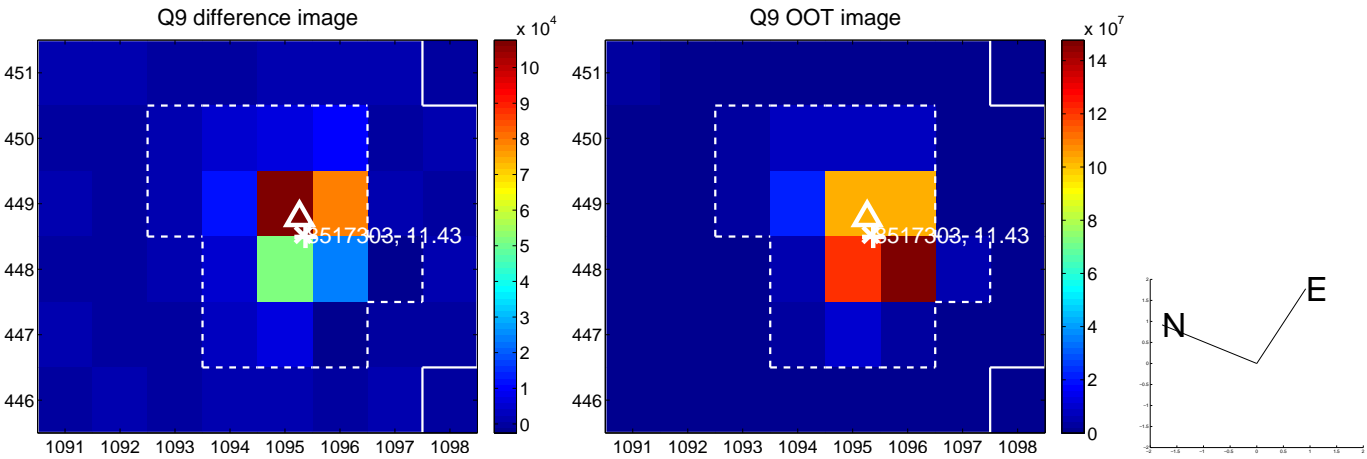
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



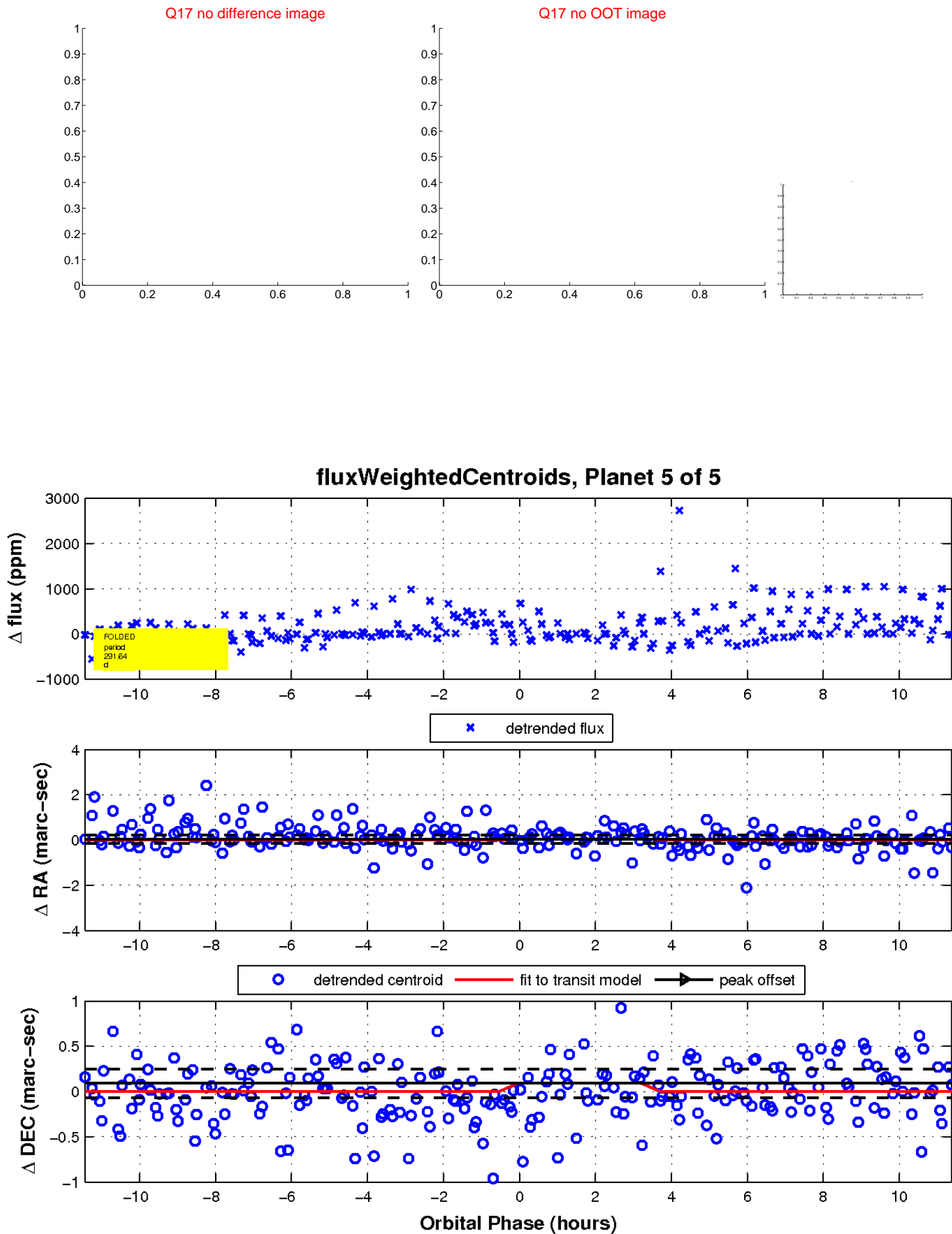
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

