

KIC 004851089

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})
004851089-01	OBS	No	1.235194	131.957391	66.6	6.205	7.7	7.5	0.92	5541	0.75	1378.54
004851089-02	OBS	No	355.909396	308.886270	1829.6	18.880	15.3	10.3	0.92	5541	4.05	0.72
004851089-03	OBS	No	72.338303	133.577112	970.7	26.263	7.6	8.2	0.92	5541	5.73	6.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004851089-01	OBS	FP	0.00	1	0	0	1	LPP_DV—EPHEM_MATCH
004851089-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004851089-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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.

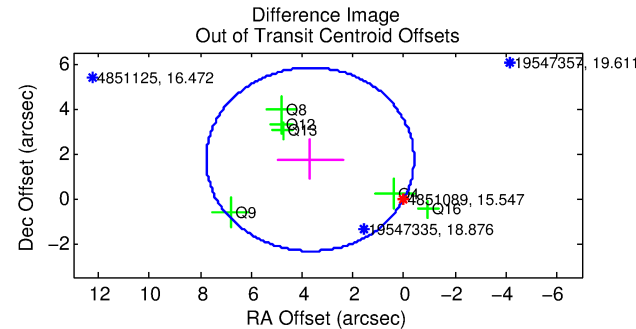
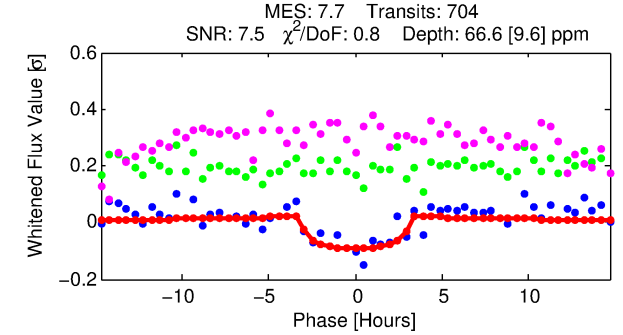
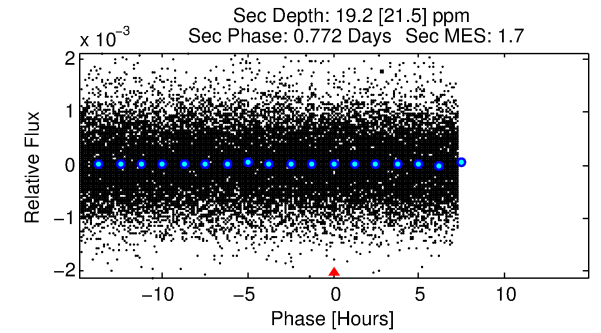
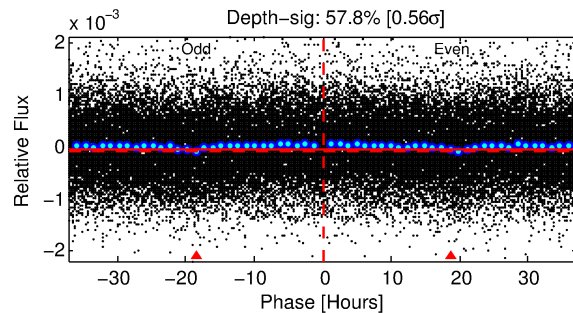
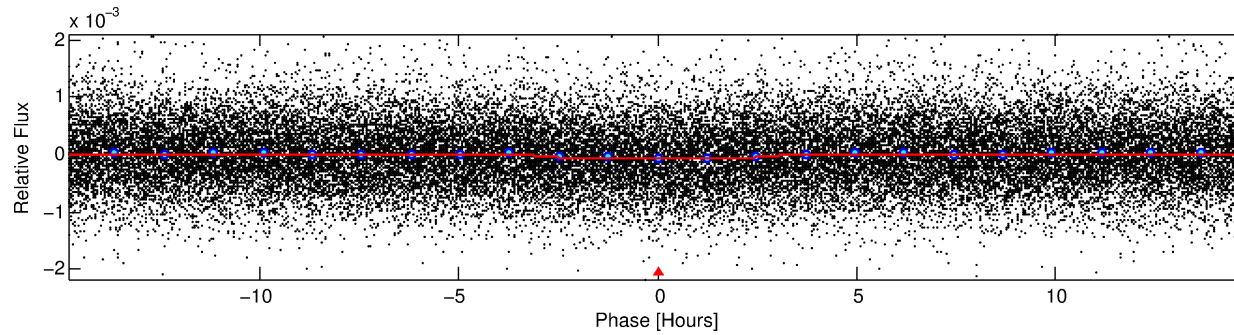
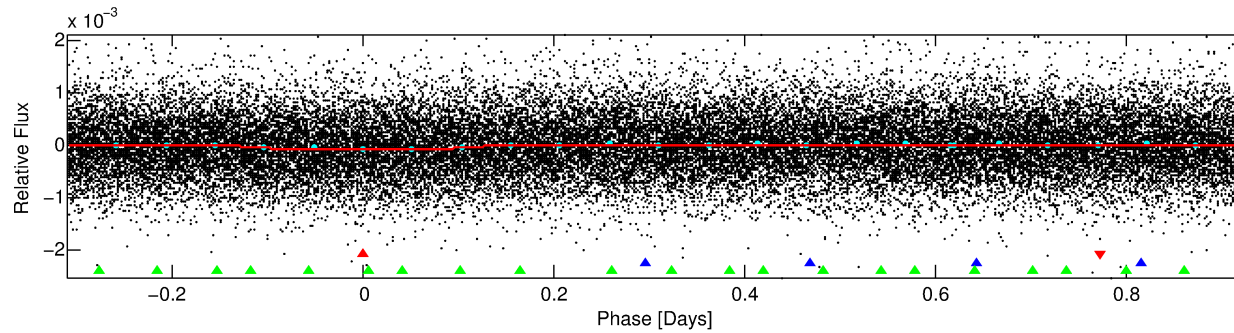
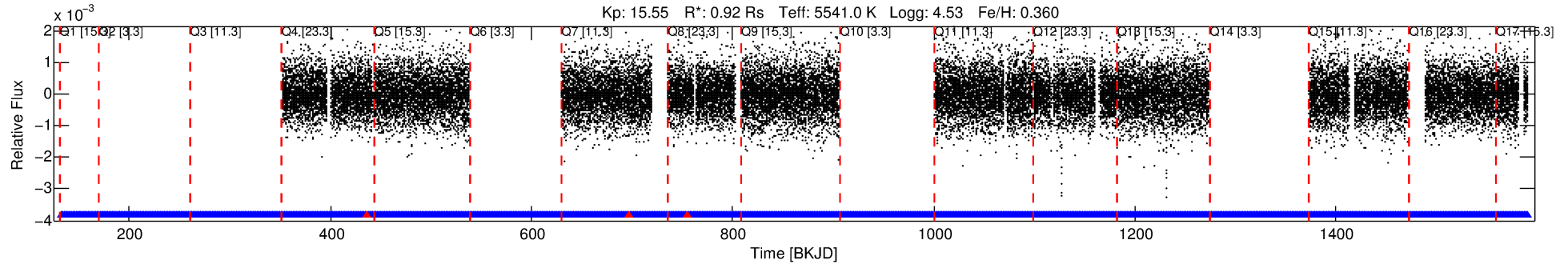
Ephemeris Match Information For 004851089-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004851089-01	4851089	004851217-01	4851217	1:1	110.0	27	1	11.11	15.55	132.19	Direct-PRF	0	4.33	2.97

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4851089 Candidate: 1 of 3 Period: 1.235 d



DV Fit Results:

Period = 1.23519 [0.00002] d
Epoch = 131.9574 [0.0081] BKJD
Rp/R* = 0.0075 [0.0107]
a/R* = 1.56 [5.06]
b = 0.40 [11.62]
Seff = 1378.54 [502.85]
Teq = 1554 [142] K
Rp = 0.75 [1.10] Re
a = 0.0228 [0.0053] AU
Ag = 9.70 [29.99] [0.29 σ]
Teffp = 4240 [3259] K [0.82 σ]

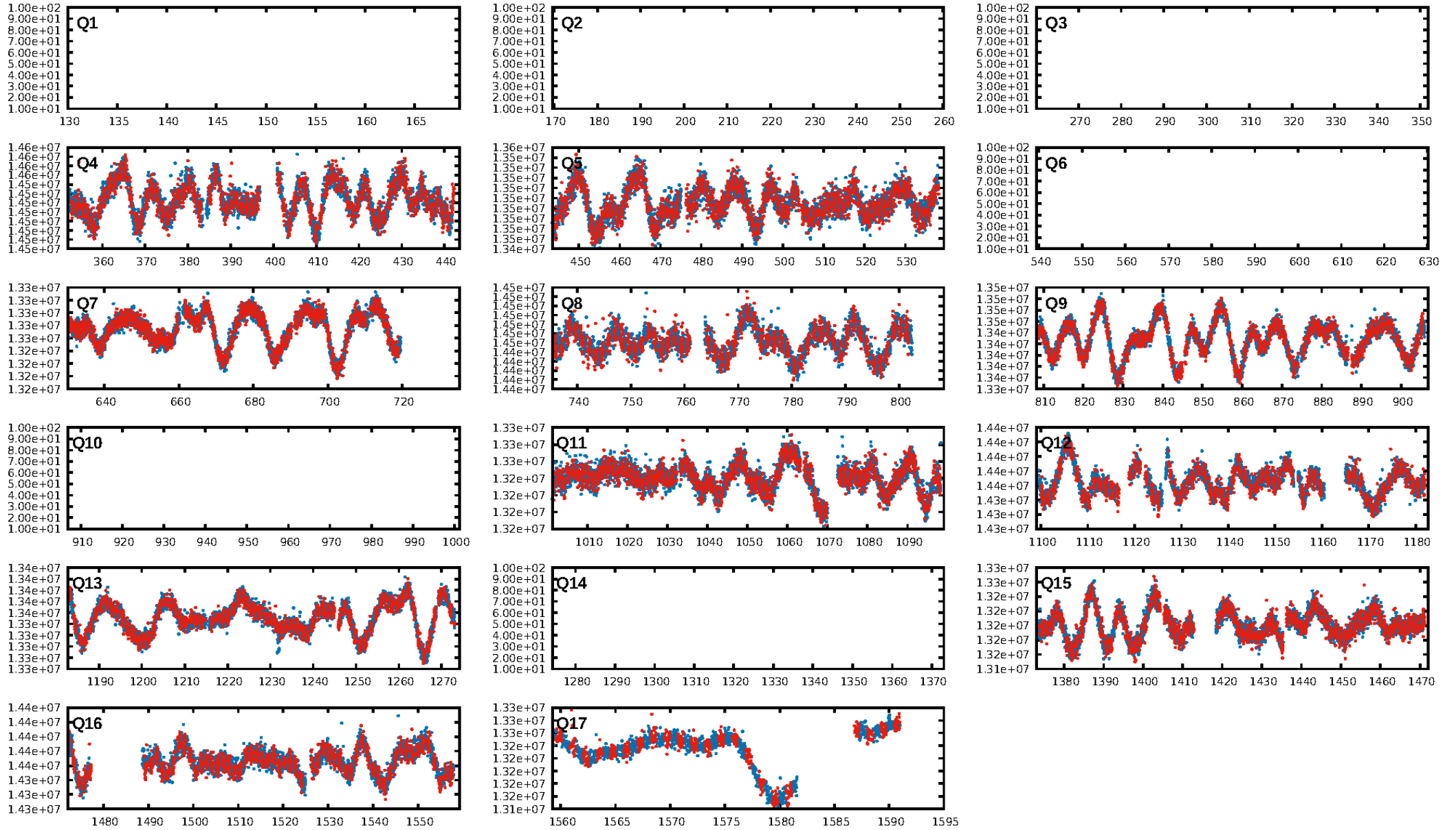
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [63.24 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.73e-10
RollingBand-fgt: 1.00 [679/682]
GhostDiagnostic-chr: -5.13
Centroid-sig: 8.4%
Centroid-so: 1.402 arcsec [0.87 σ]
OotOffset-rm: 4.070 arcsec [2.99 σ]
KicOffset-rm: 4.020 arcsec [3.19 σ]
OotOffset-st: 0/0/4/2 [6]
KicOffset-st: 0/0/4/2 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 1.00 [11/11]

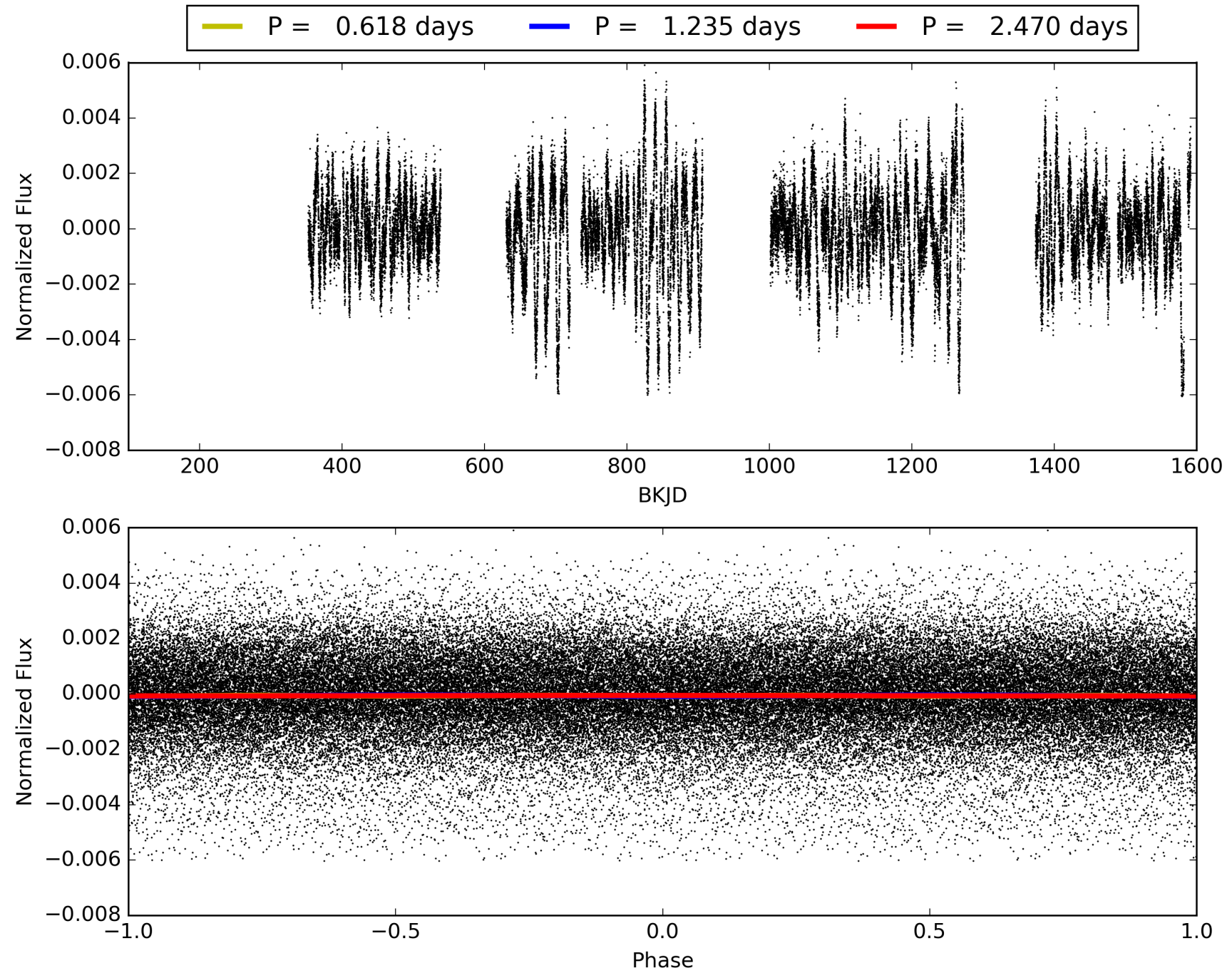
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:06:54 Z

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

TCE 004851089-01, PDC Light Curves

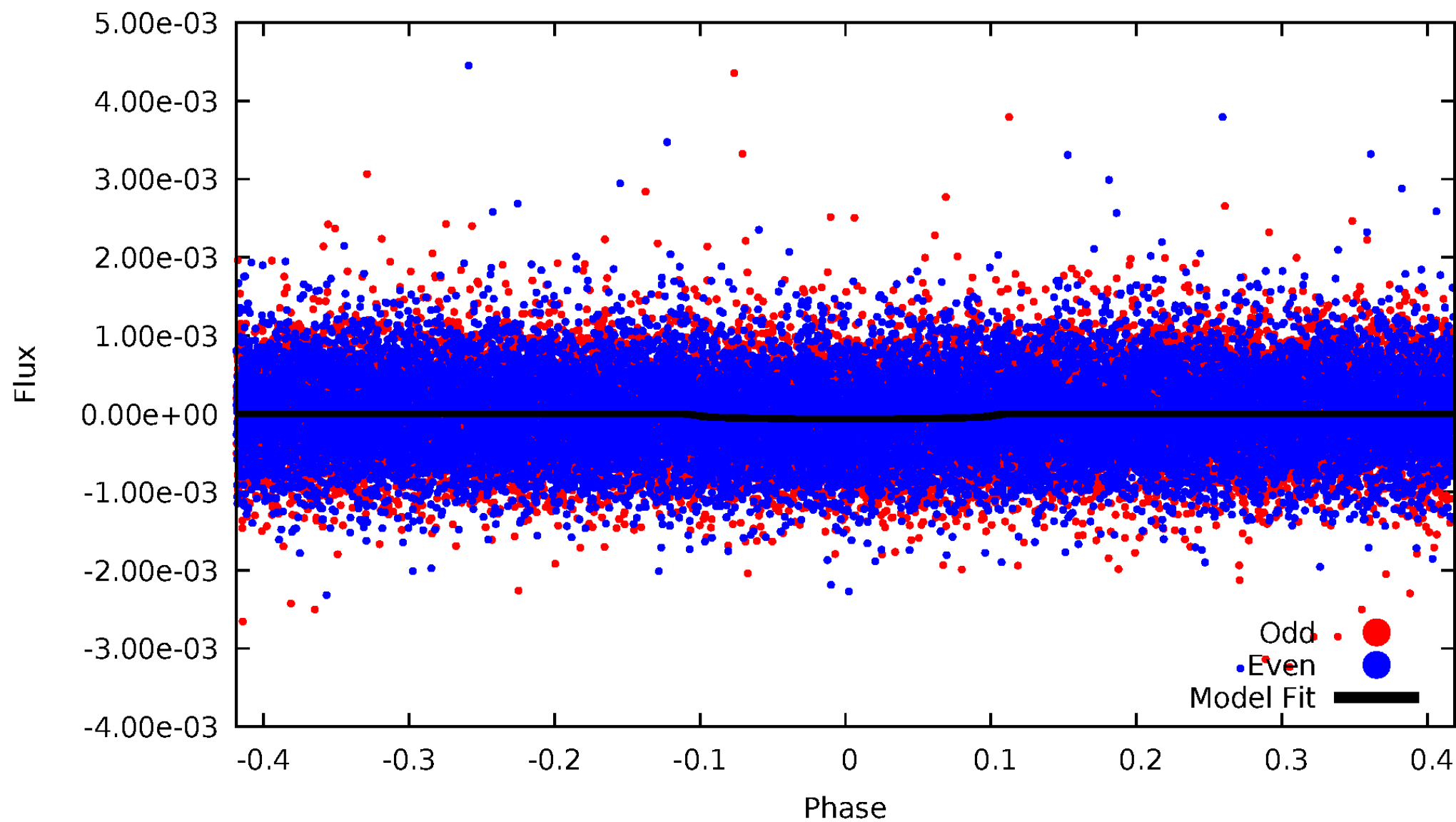


TCE 004851089-01



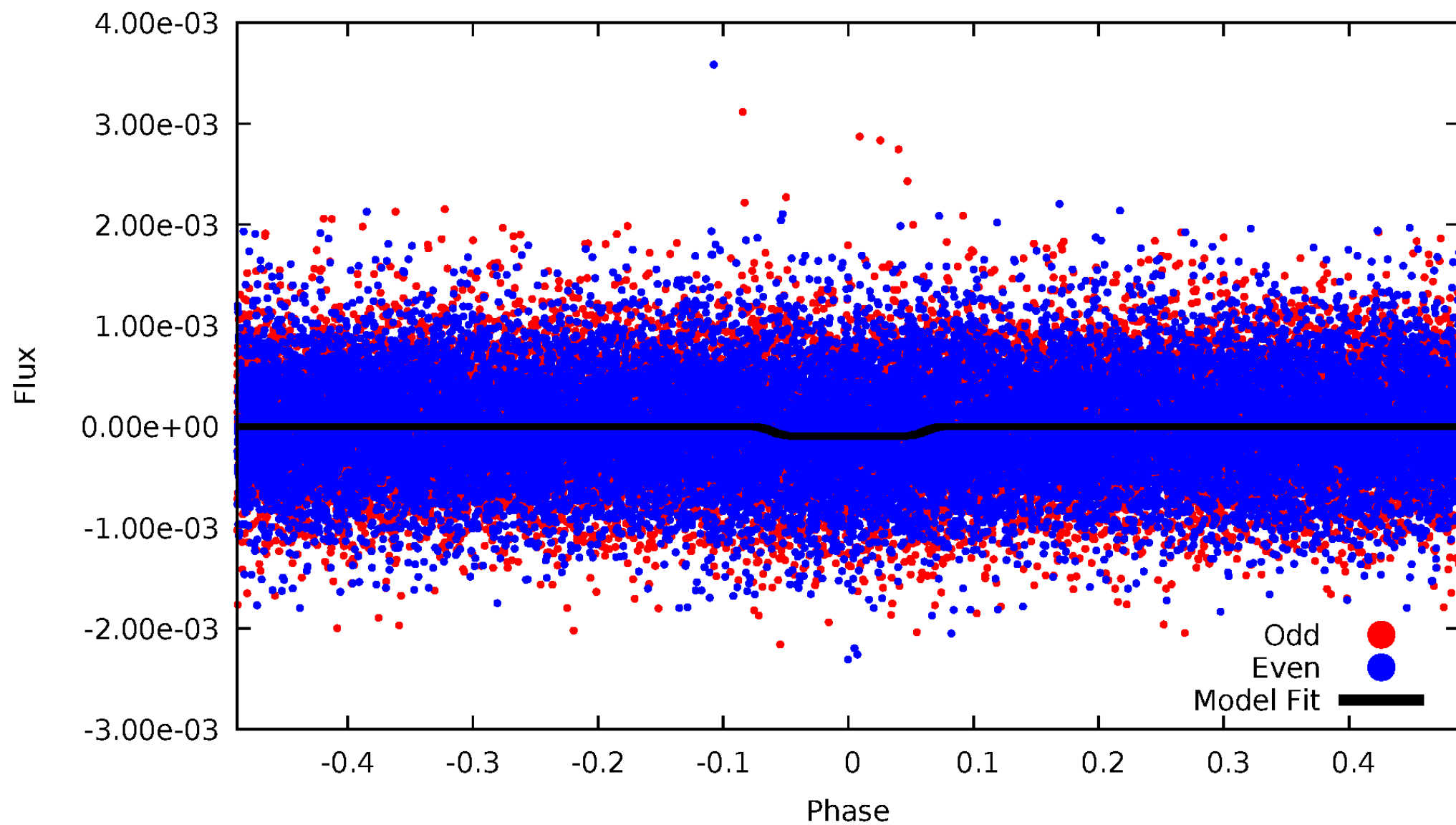
DV Odd/Even

TCE 004851089-01

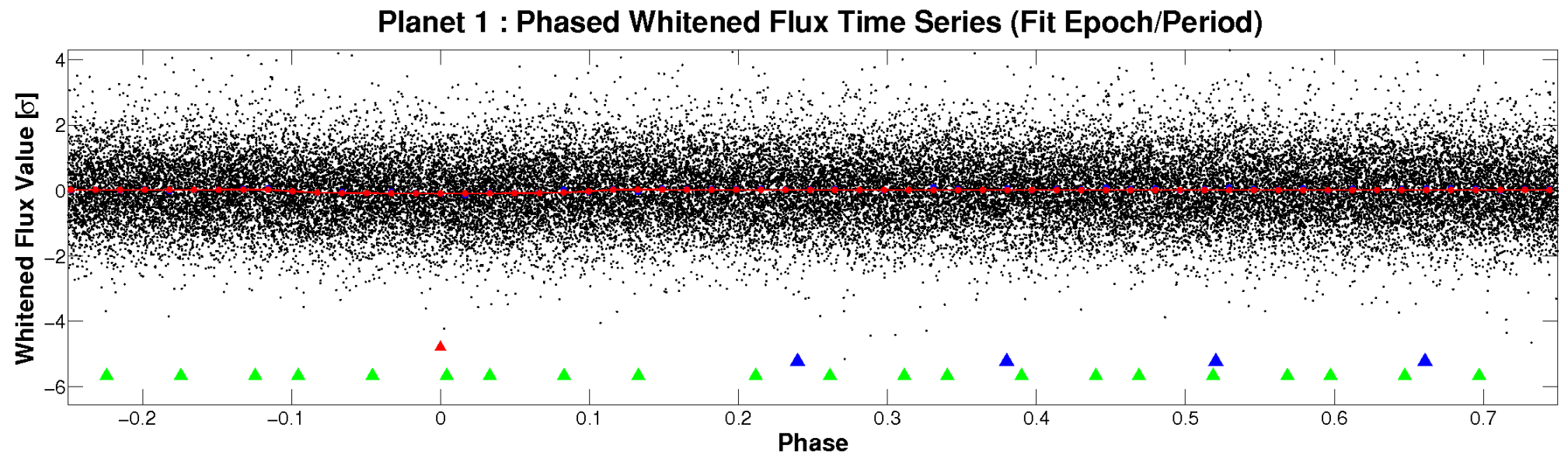
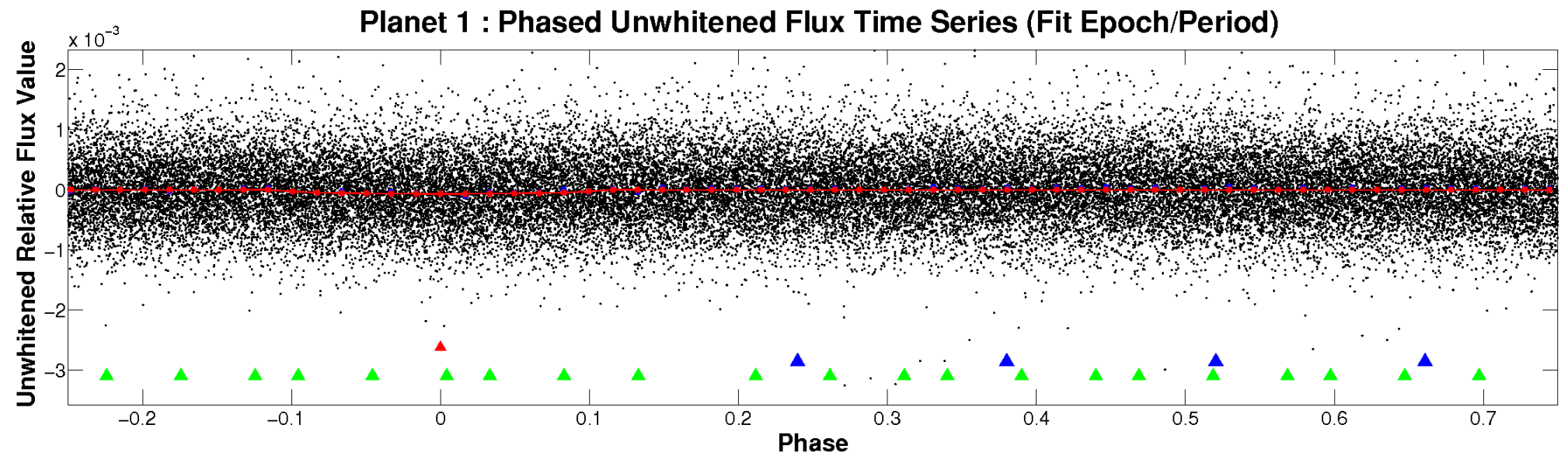


ALT Odd/Even

TCE 004851089-01

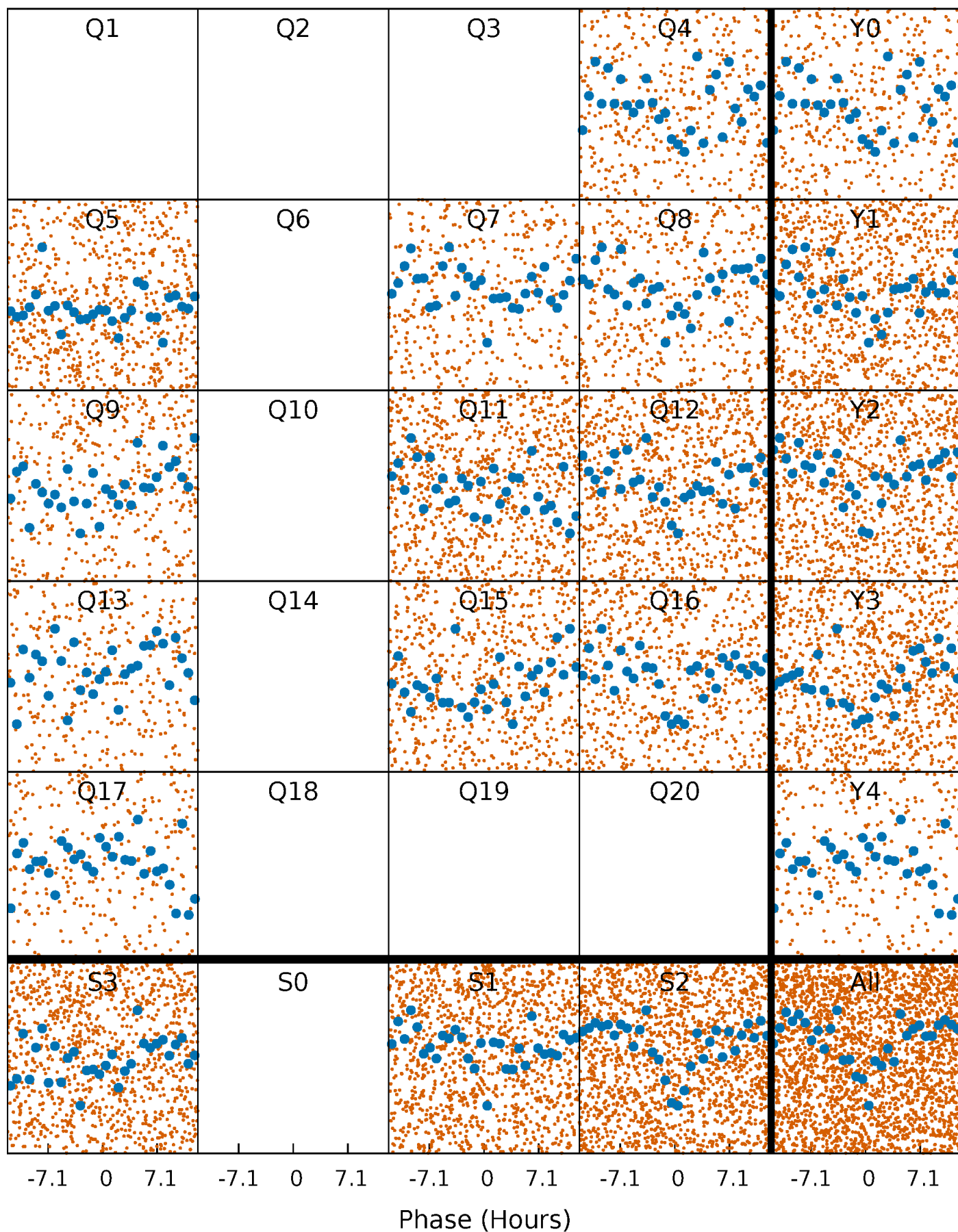


Non-Whitened Vs. Whitened Light Curve



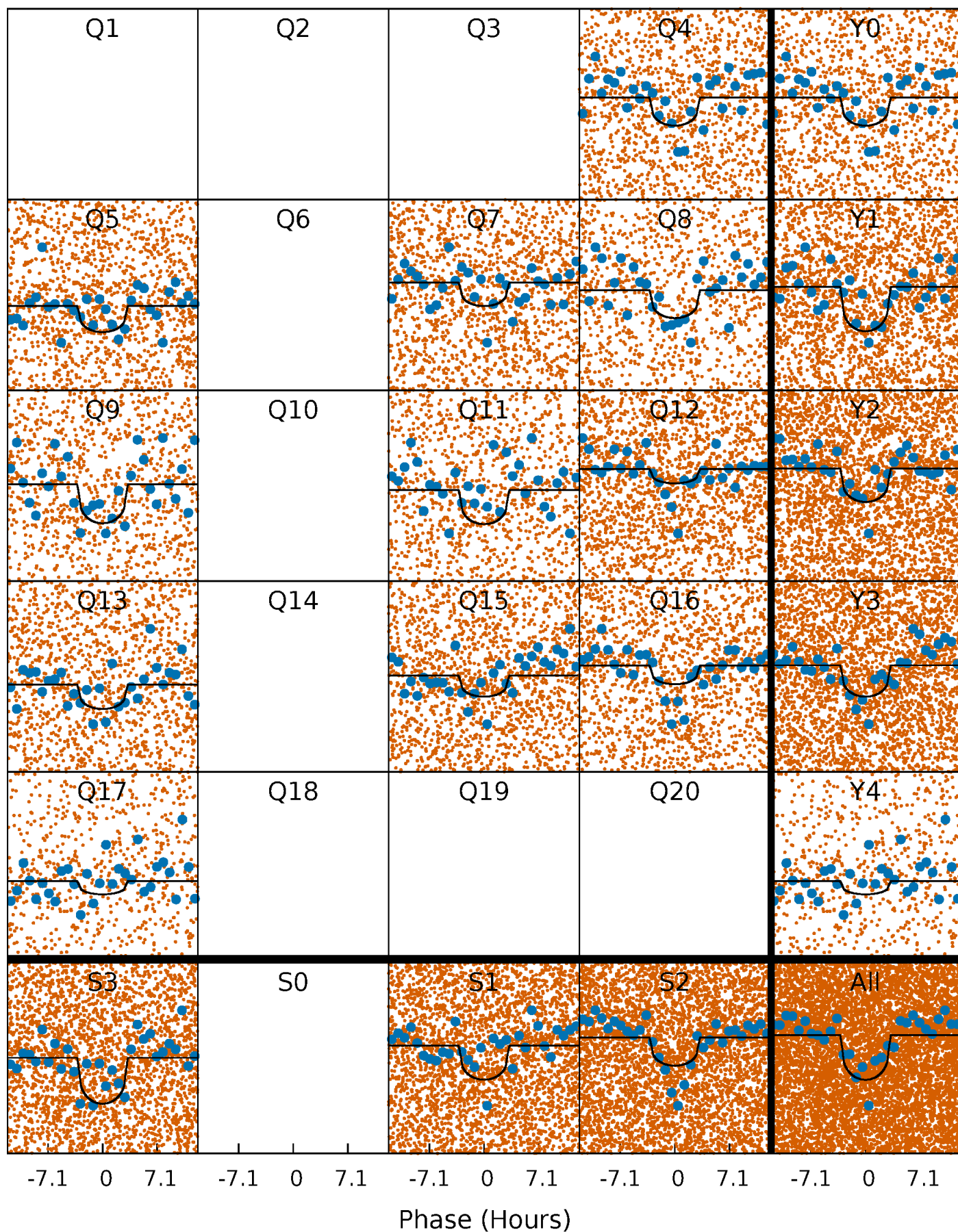
PDC Quarter-Phased Transit Curves

TCE 004851089-01 P= 1.235194 Days $T_0=131.957391$ (BKJD)



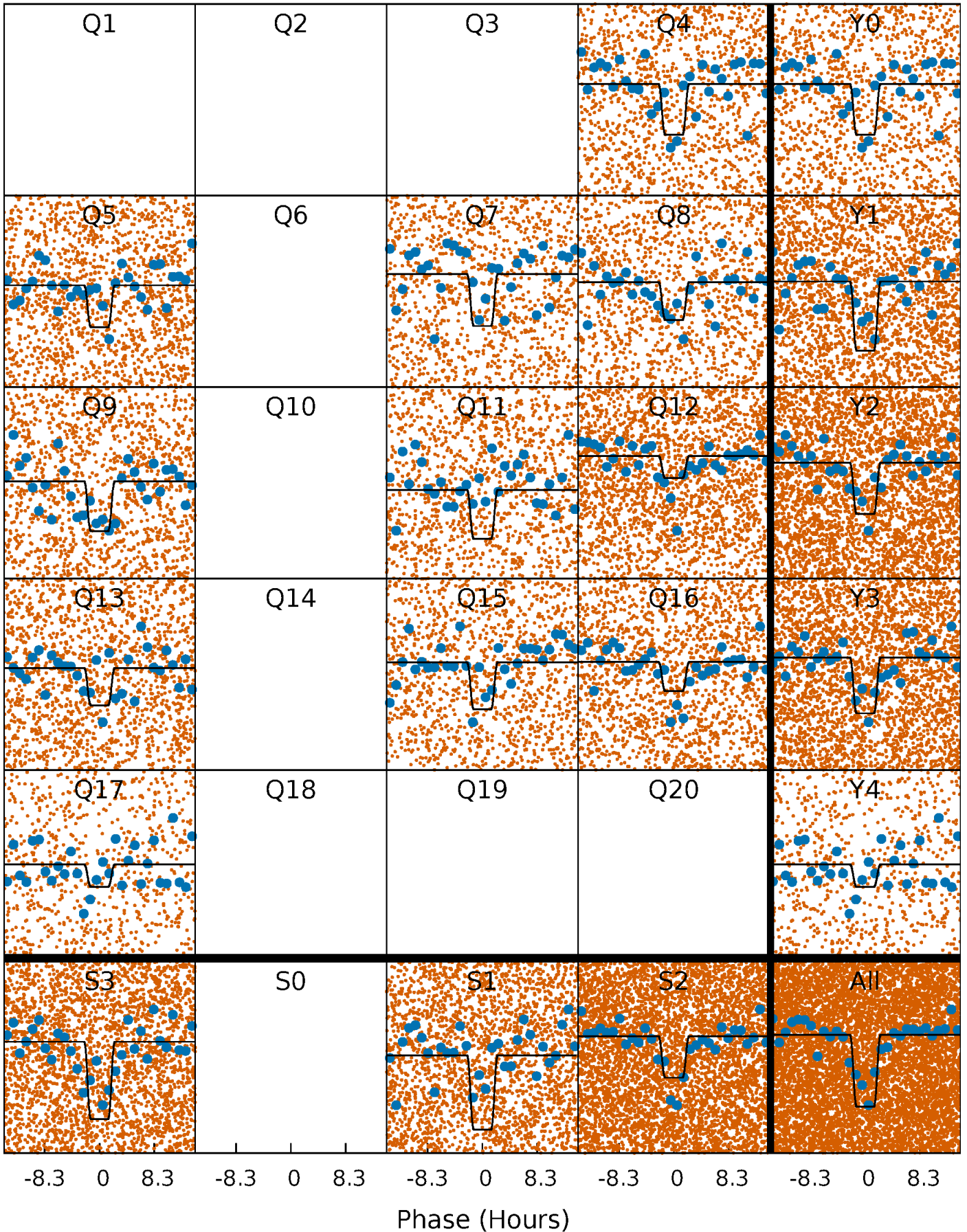
DV Quarter-Phased Transit Curves

TCE 004851089-01 P= 1.235194 Days $T_0=131.957391$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

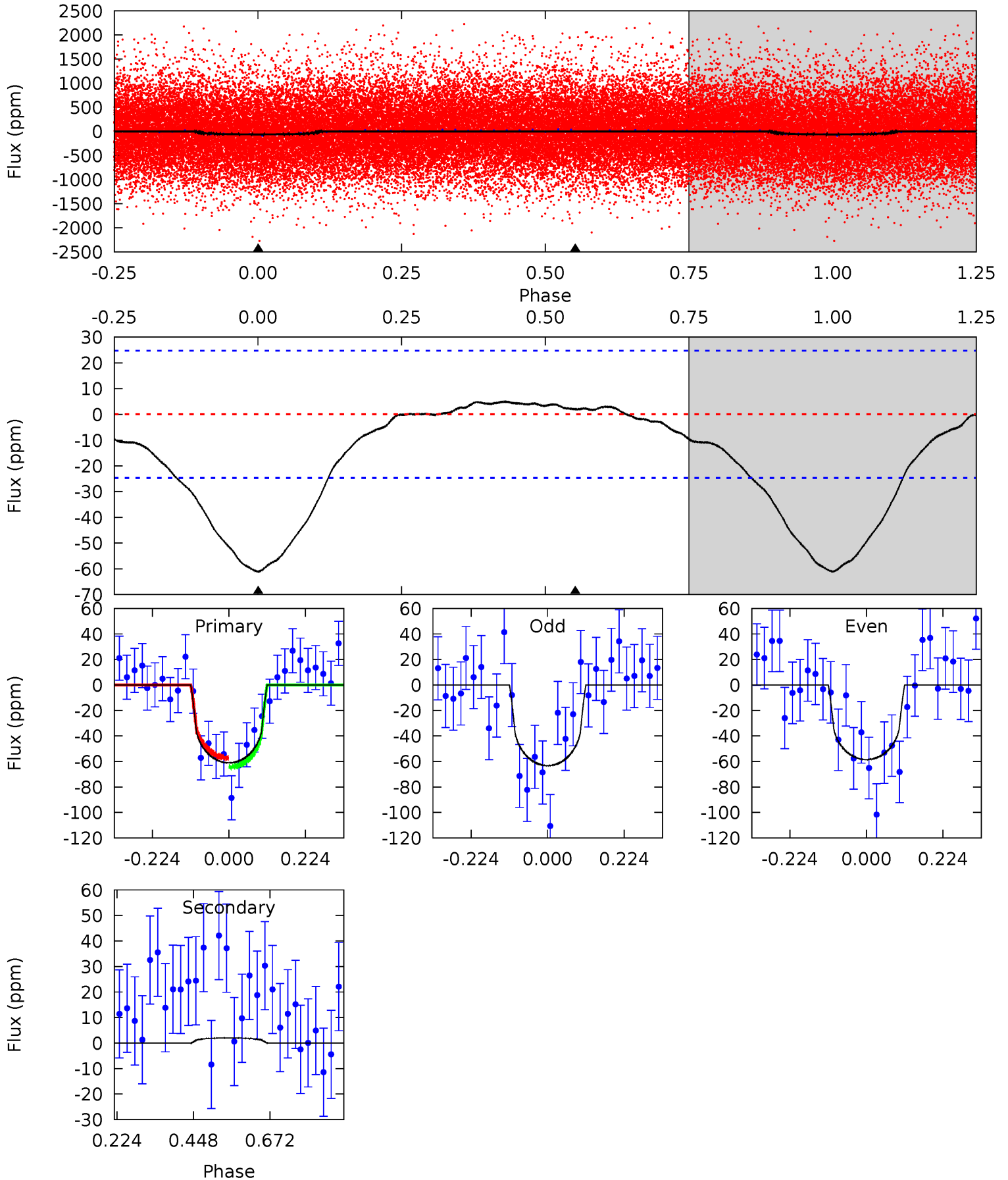
TCE 004851089-01 P= 1.235132 Days $T_0=132.006135$ (BKJD)



DV Model-Shift Uniqueness Test

004851089-01, P = 1.235194 Days, E = 131.957391 Days

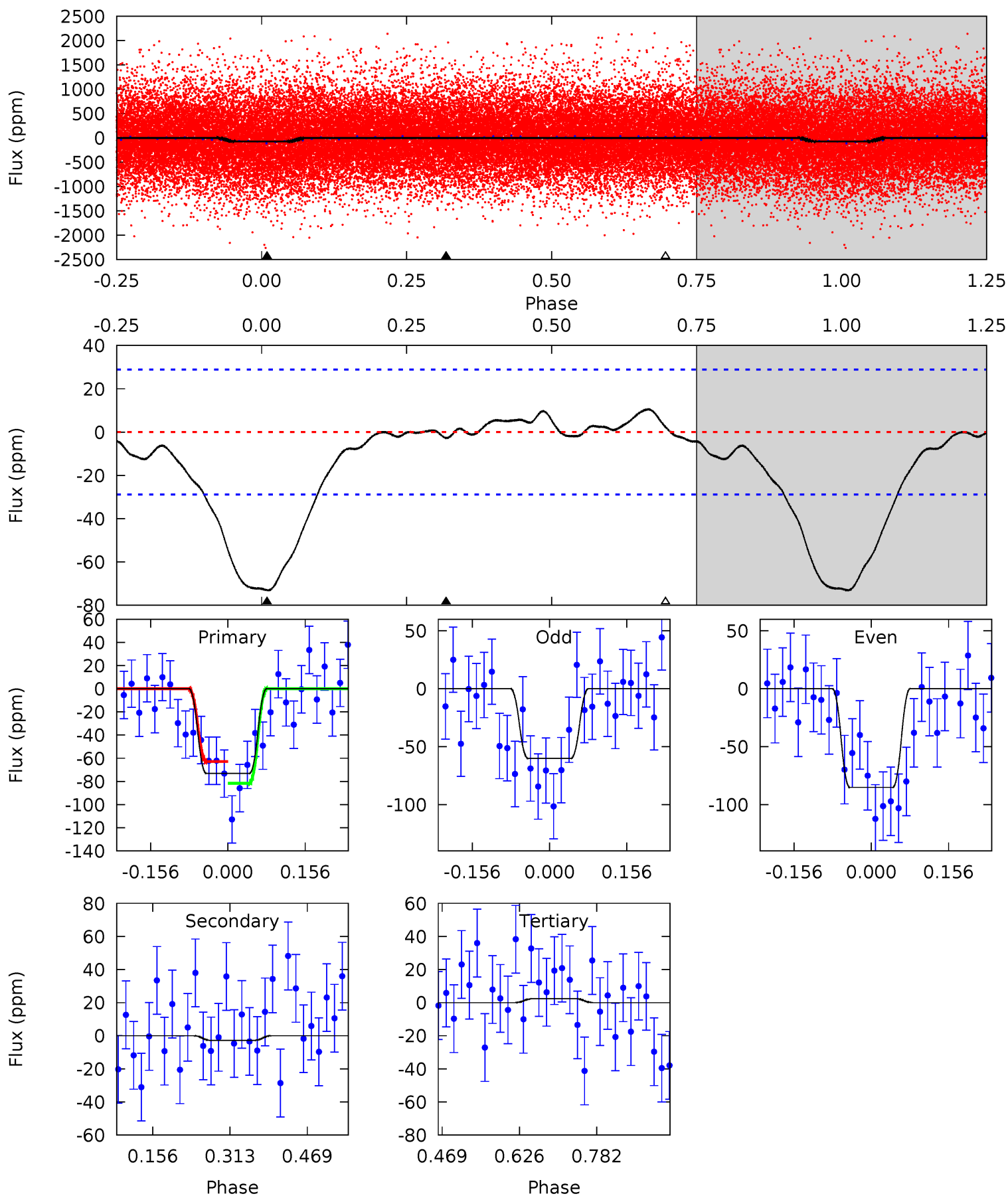
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	-0.36	0	0	4.39	1.22	0.22	10.8	10.8	-0.36	-0.36	0.42	0.91	0.07	0.64



Alt Model-Shift Uniqueness Test

004851089-01, P = 1.235132 Days, E = 132.006135 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	0.43	-0.36	0	4.47	1.42	1.01	11.7	11.3	0.79	0.43	1.94	1.09	0.13	1.46



Stellar Parameters For KIC 004851089

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5541^{+183}_{-183}	$4.525^{+0.033}_{-0.187}$	$0.360^{+0.100}_{-0.300}$	$0.922^{+0.252}_{-0.079}$	$1.040^{+0.084}_{-0.126}$	$1.868^{+0.330}_{-0.887}$
	+3%/-3%	+1%/-4%	+28%/-83%	+27%/-9%	+8%/-12%	+18%/-48%
Source	KIC0	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 004851089-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	2 ± 6	$1.14^{+0.89}_{-0.78}$	2231^{+157}_{-105}	-2879^{+5766}_{-1044}	$-0.279^{+1.168}_{-3.711}$
Alt.	-3 ± 6	$1.31^{+1.01}_{-0.79}$	2216^{+151}_{-91}	-1874^{+5499}_{-1198}	$0.287^{+2.958}_{-0.898}$

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

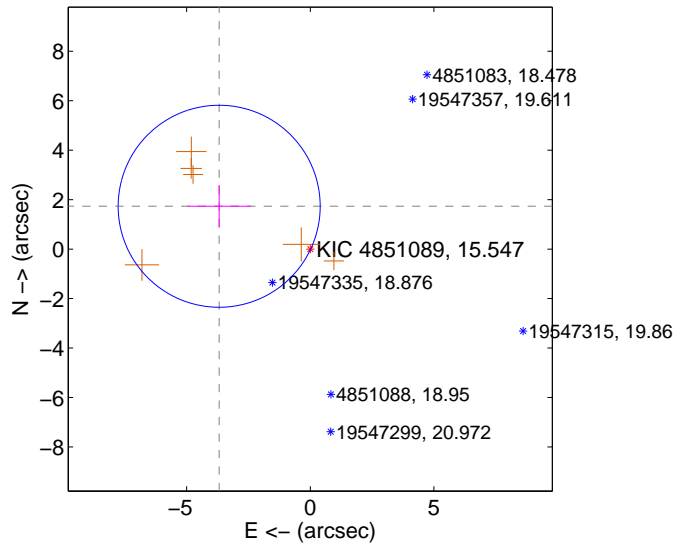
Supplemental centroid analysis for 004851089-01. Kepler magnitude: 15.55. Transit SNR 7.52

There are 0 quarters with good PRF difference image offsets

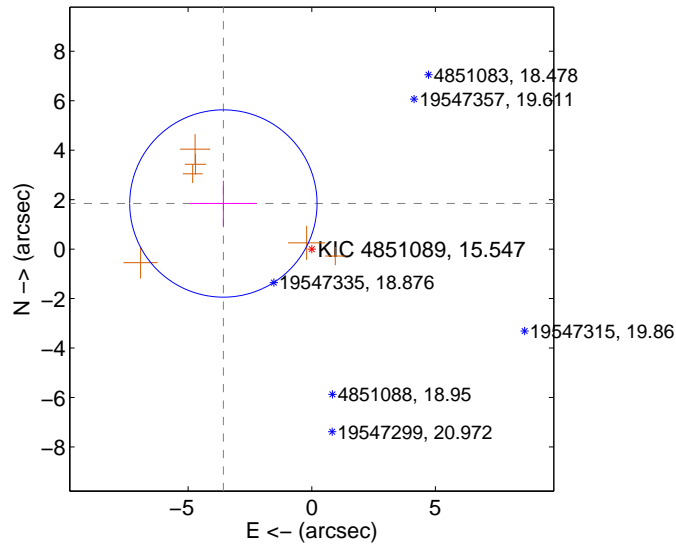
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.070 ± 1.361	2.99	3.683 ± 1.276	1.732 ± 0.858
PRF-fit source offset from KIC position	4.020 ± 1.262	3.19	3.573 ± 1.339	1.843 ± 0.918
photometric centroid source offset	1.40 ± 1.62	0.87	-0.65 ± 1.66	-1.24 ± 1.61

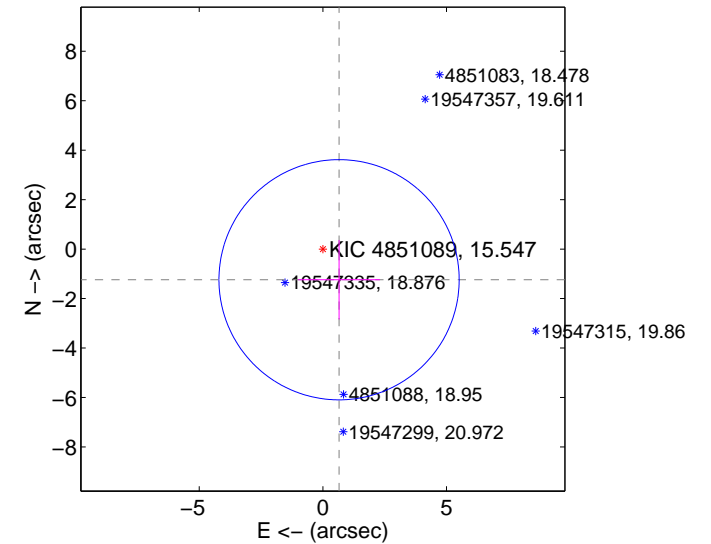
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

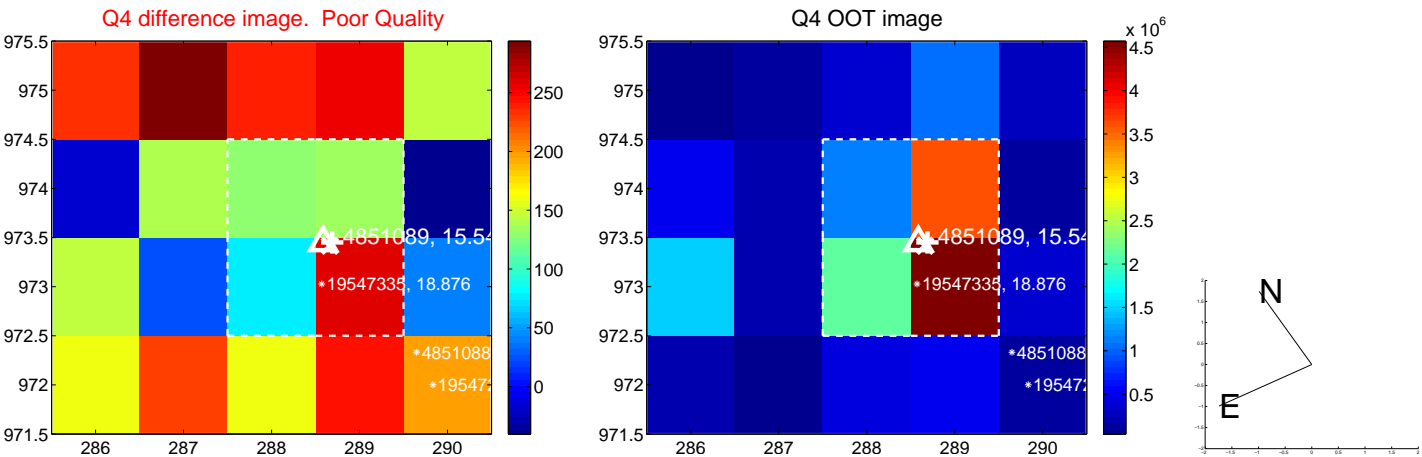


offset from photometric centroids

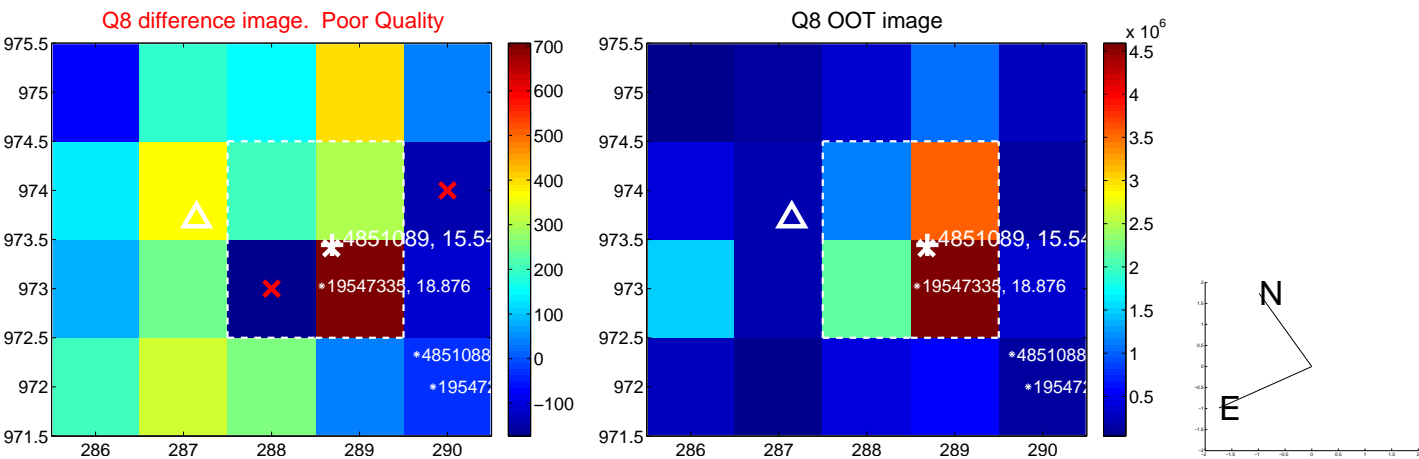
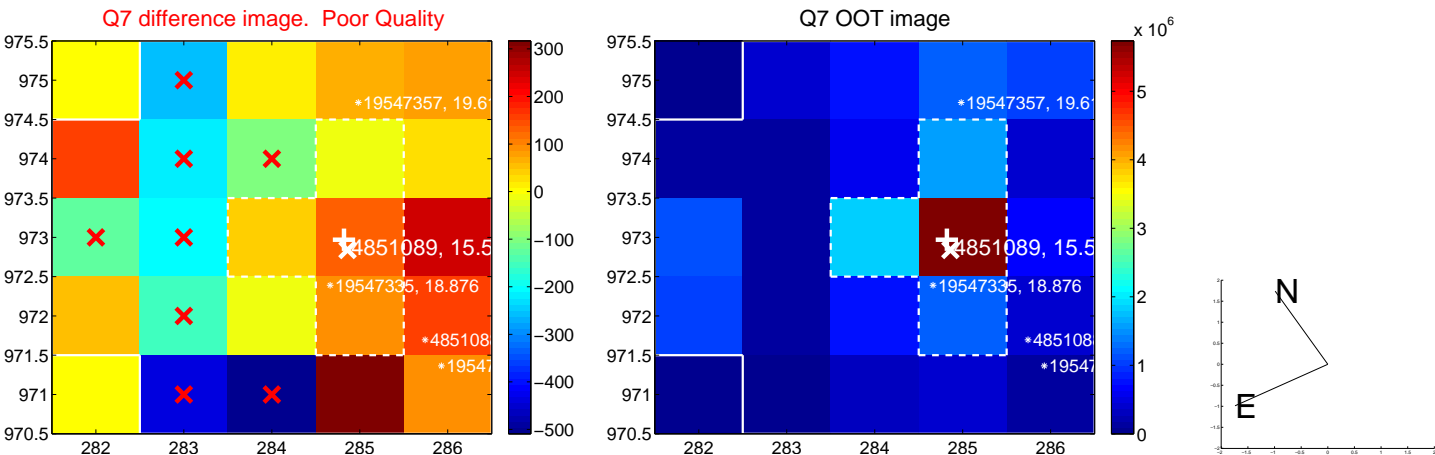
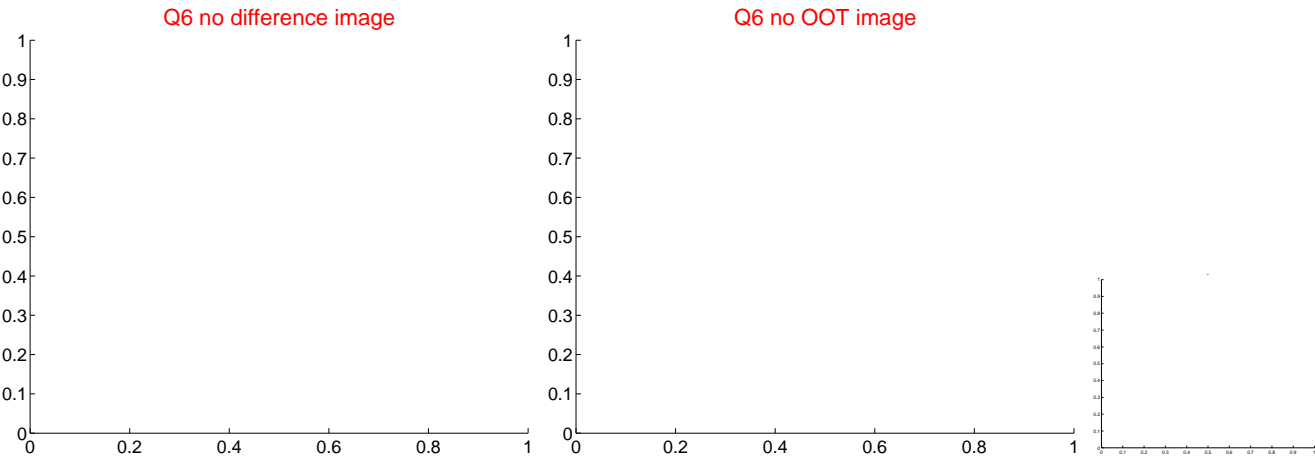
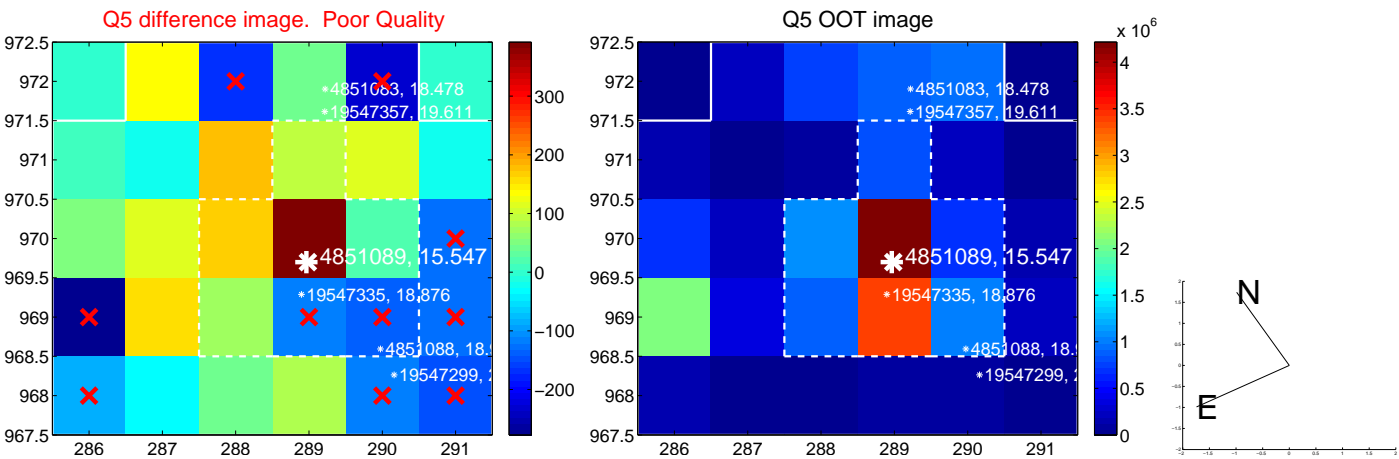


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

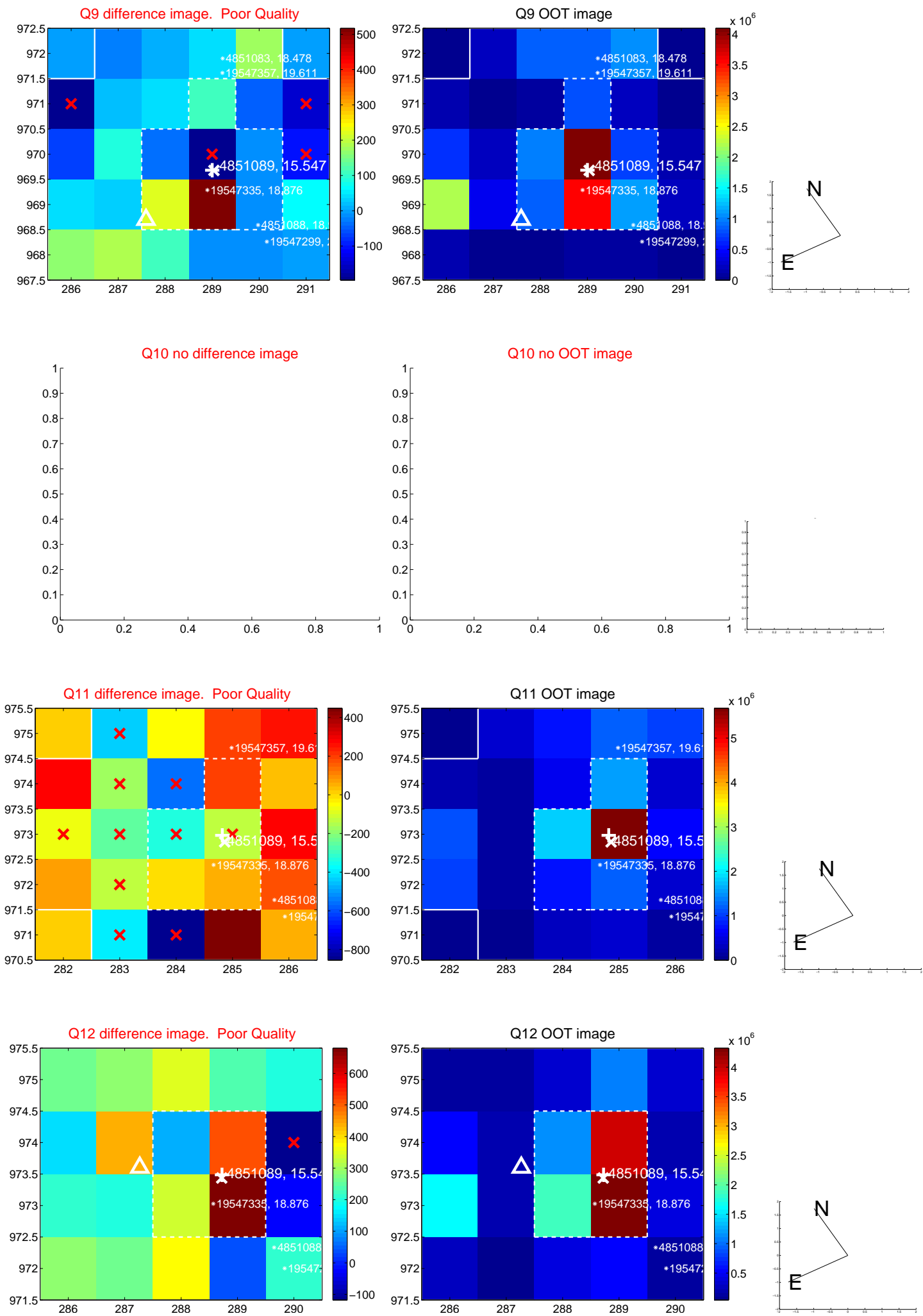
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



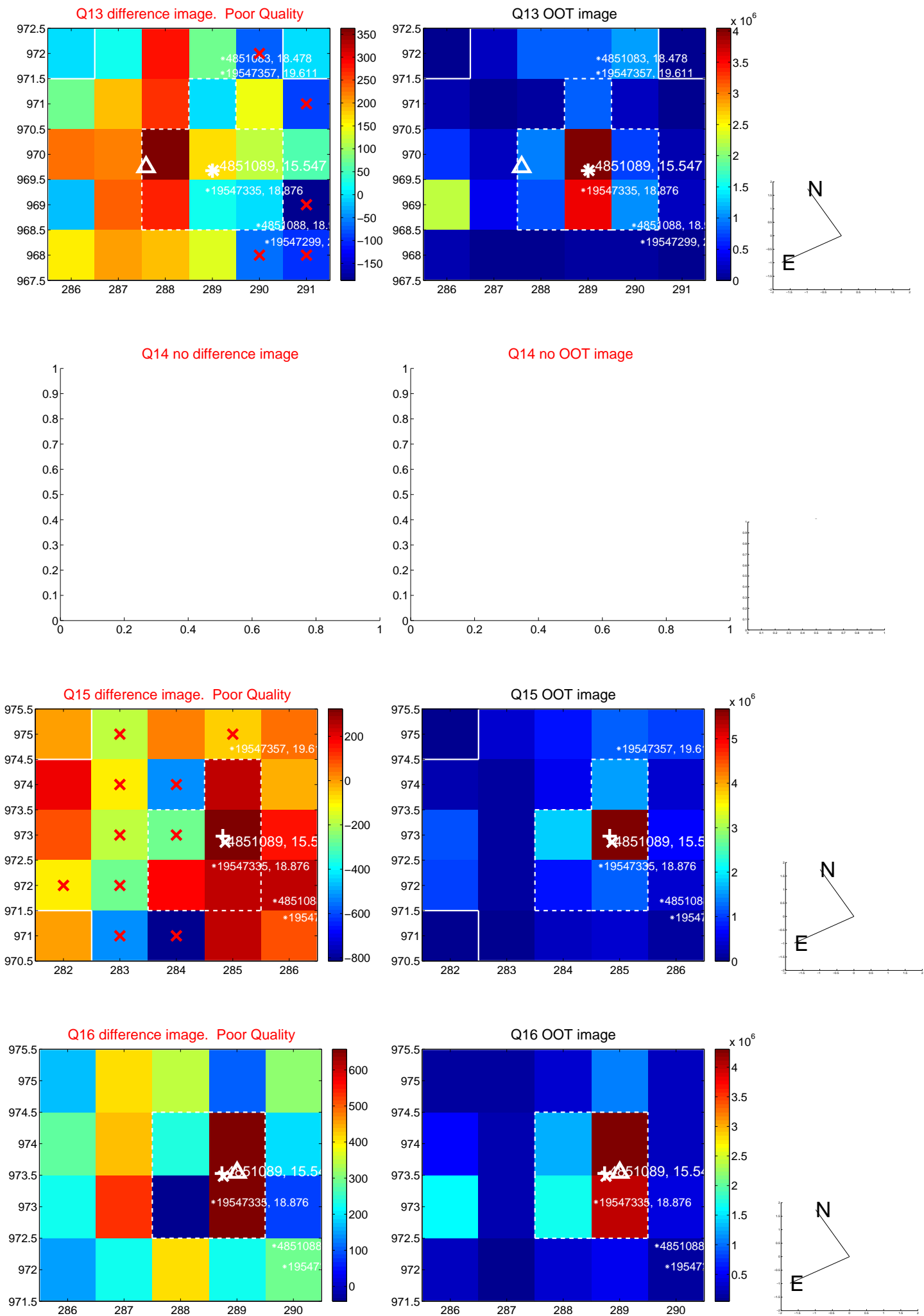
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



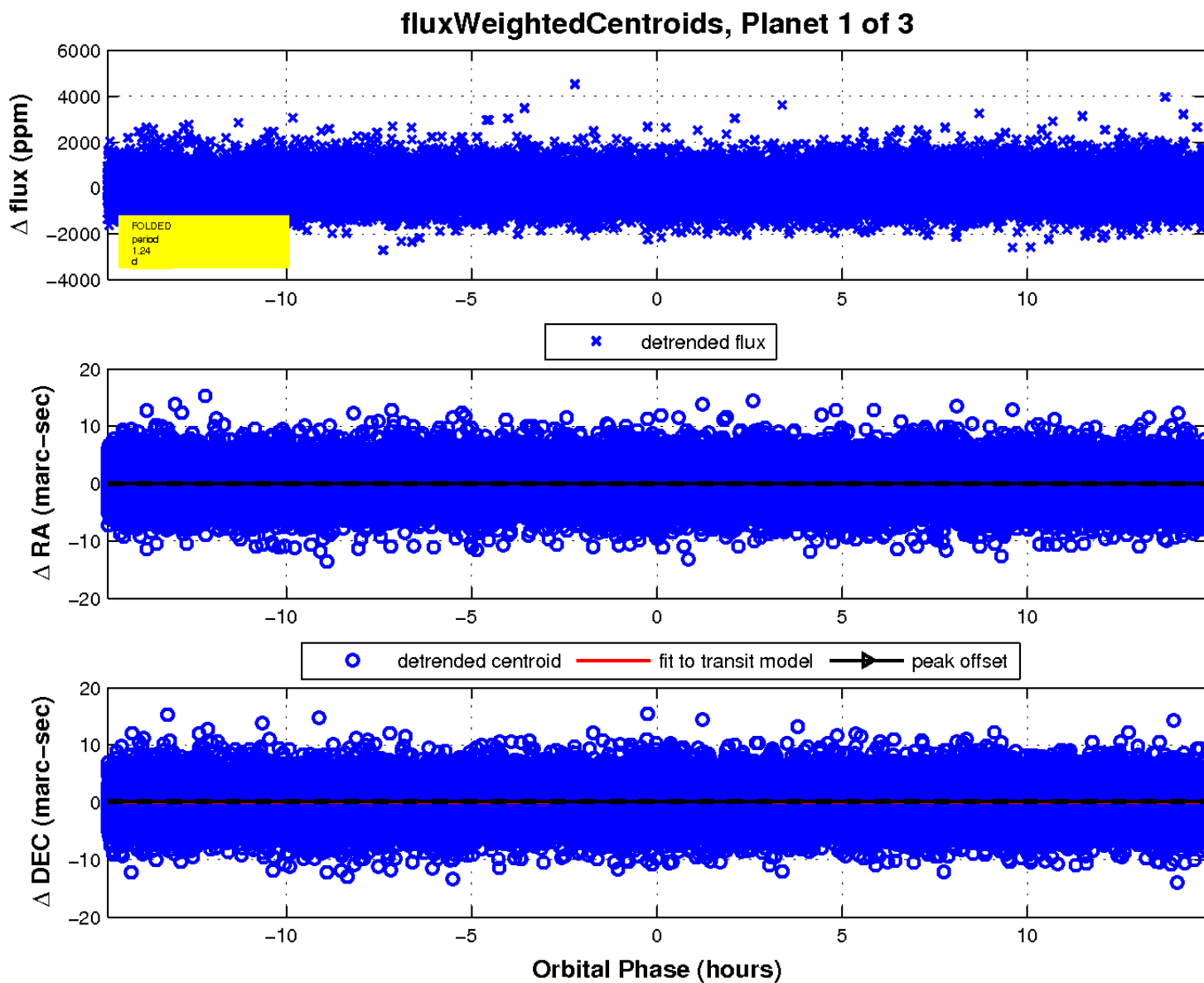
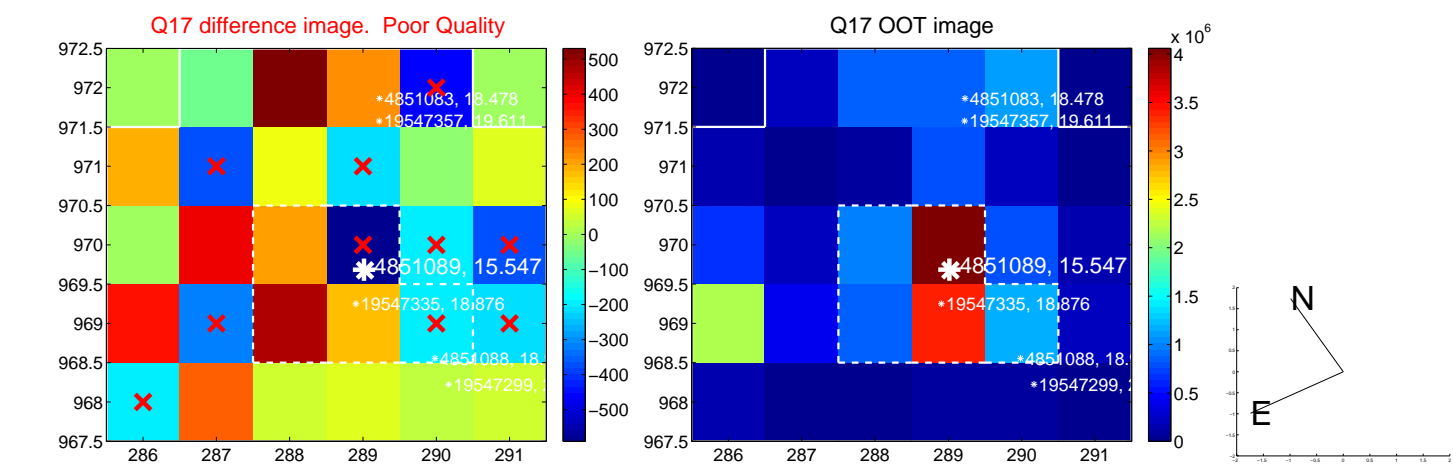
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

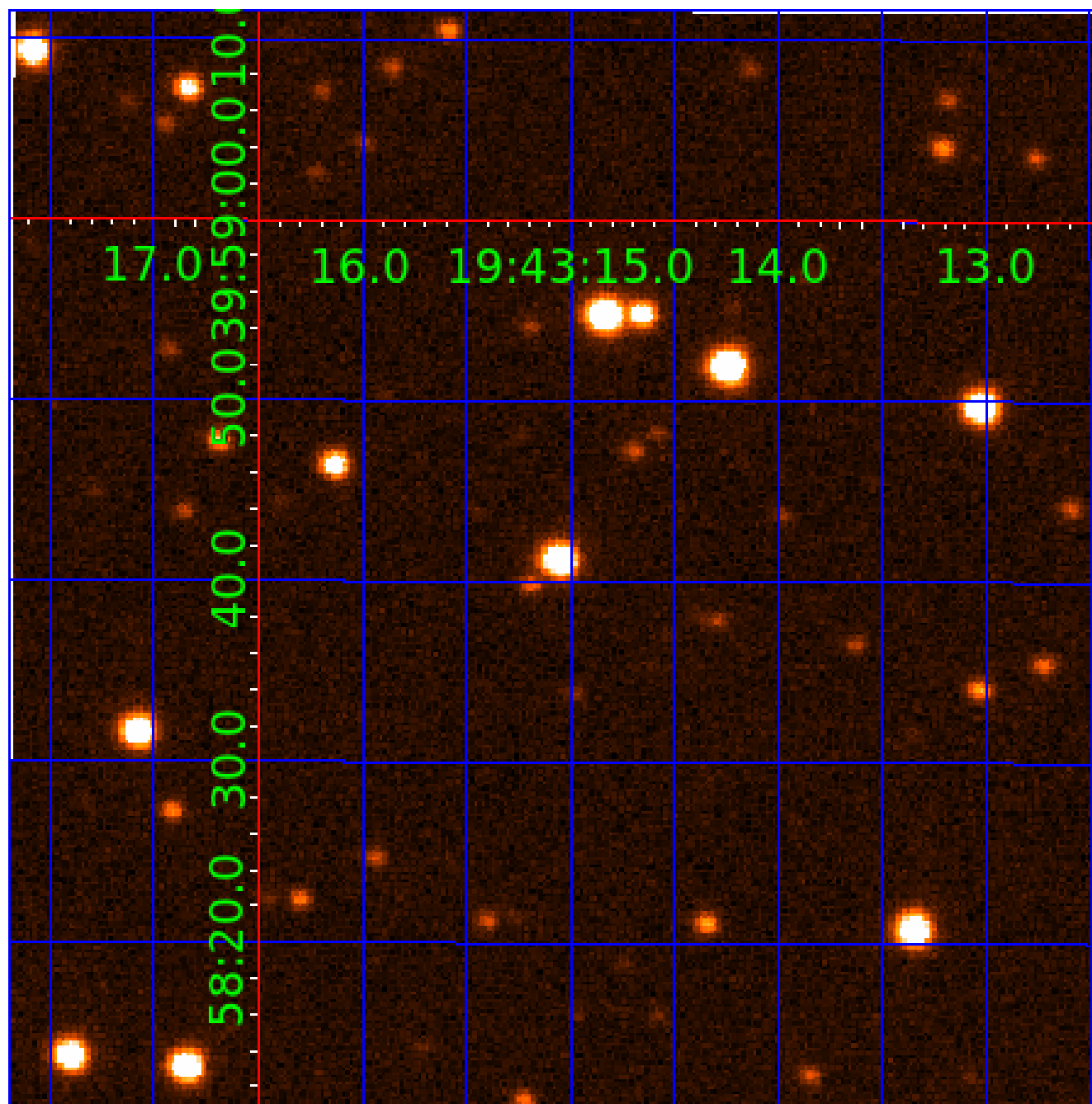


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004851089

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})
004851089-01	OBS	No	1.235194	131.957391	66.6	6.205	7.7	7.5	0.92	5541	0.75	1378.54
004851089-02	OBS	No	355.909396	308.886270	1829.6	18.880	15.3	10.3	0.92	5541	4.05	0.72
004851089-03	OBS	No	72.338303	133.577112	970.7	26.263	7.6	8.2	0.92	5541	5.73	6.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004851089-01	OBS	FP	0.00	1	0	0	1	LPP_DV—EPHEM_MATCH
004851089-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004851089-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

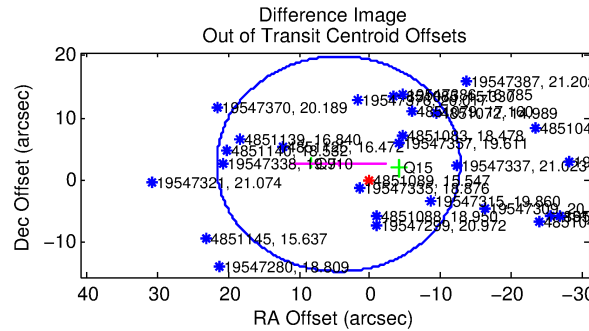
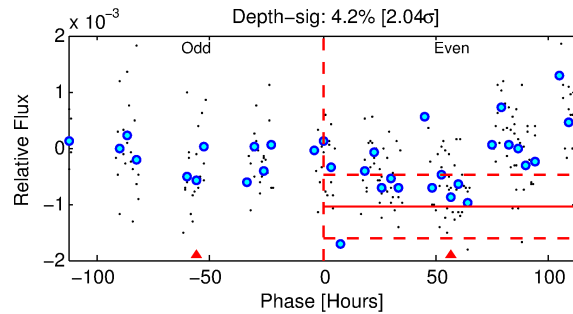
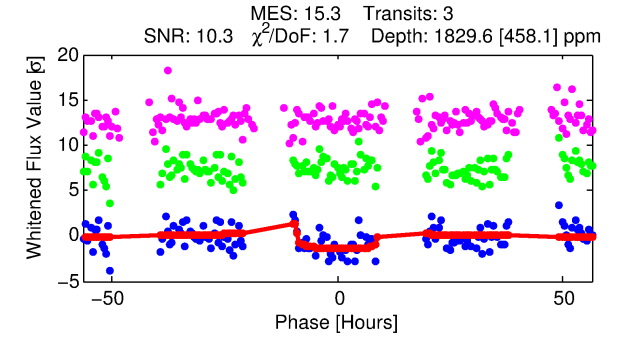
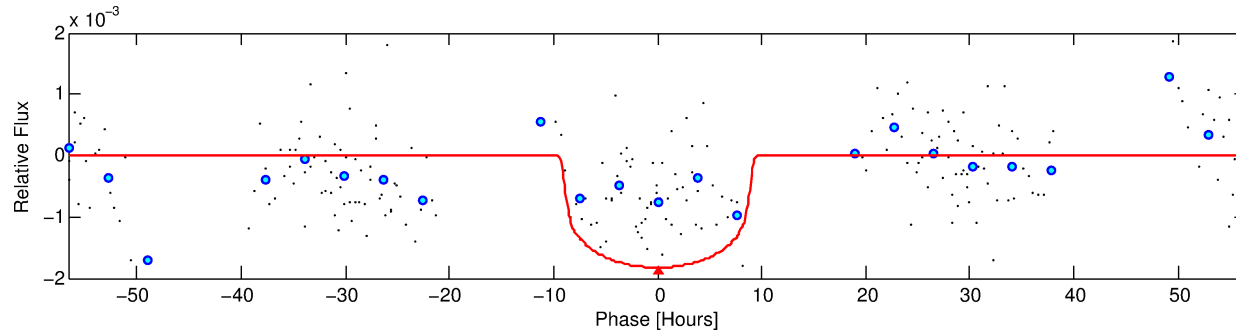
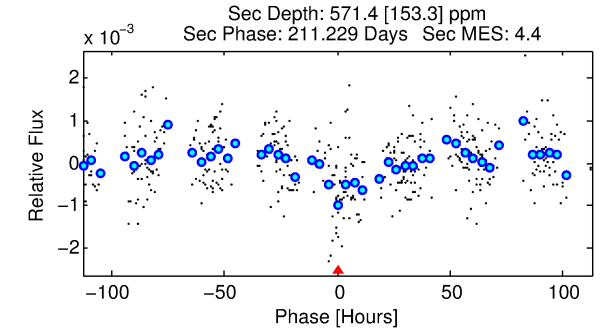
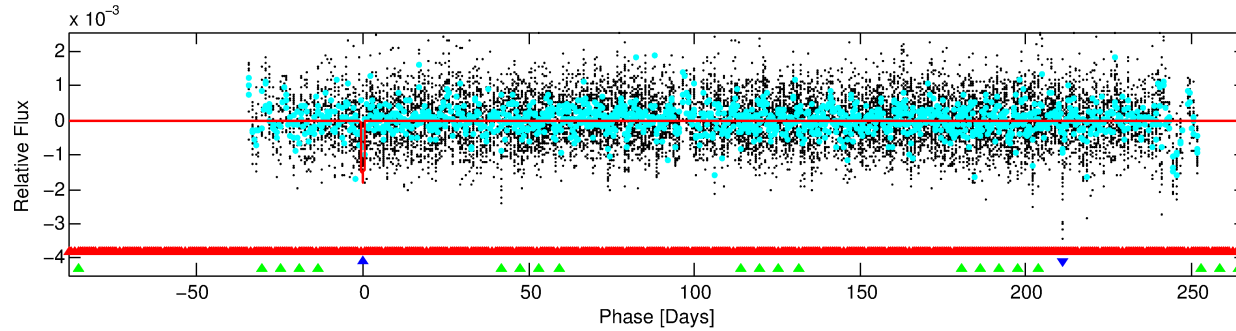
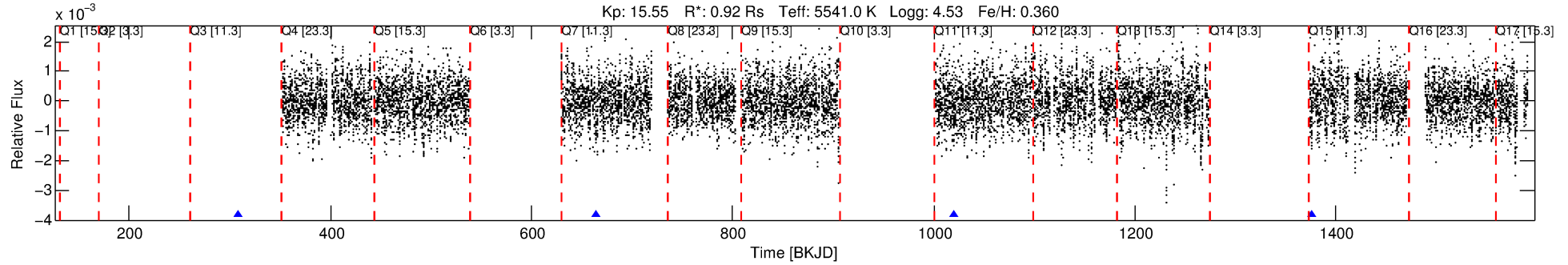
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004851089-02

No Significant Match Found

DV One-Page Summary

KIC: 4851089 Candidate: 2 of 3 Period: 355.909 d



DV Fit Results:

Period = 355.90940 [0.10309] d
Epoch = 308.8863 [0.2074] BKJD
Rp/R* = 0.0402 [0.0204]
a/R* = 126.43 [230.79]
b = 0.56 [2.00]
Seff = 0.72 [0.26]
Teq = 235 [21] K
Rp = 4.05 [2.33] Re
a = 0.9956 [0.2309] AU
Ag = 19027.58 [21013.33] [0.91σ]
Teffp = 4272 [1131] K [3.57σ]

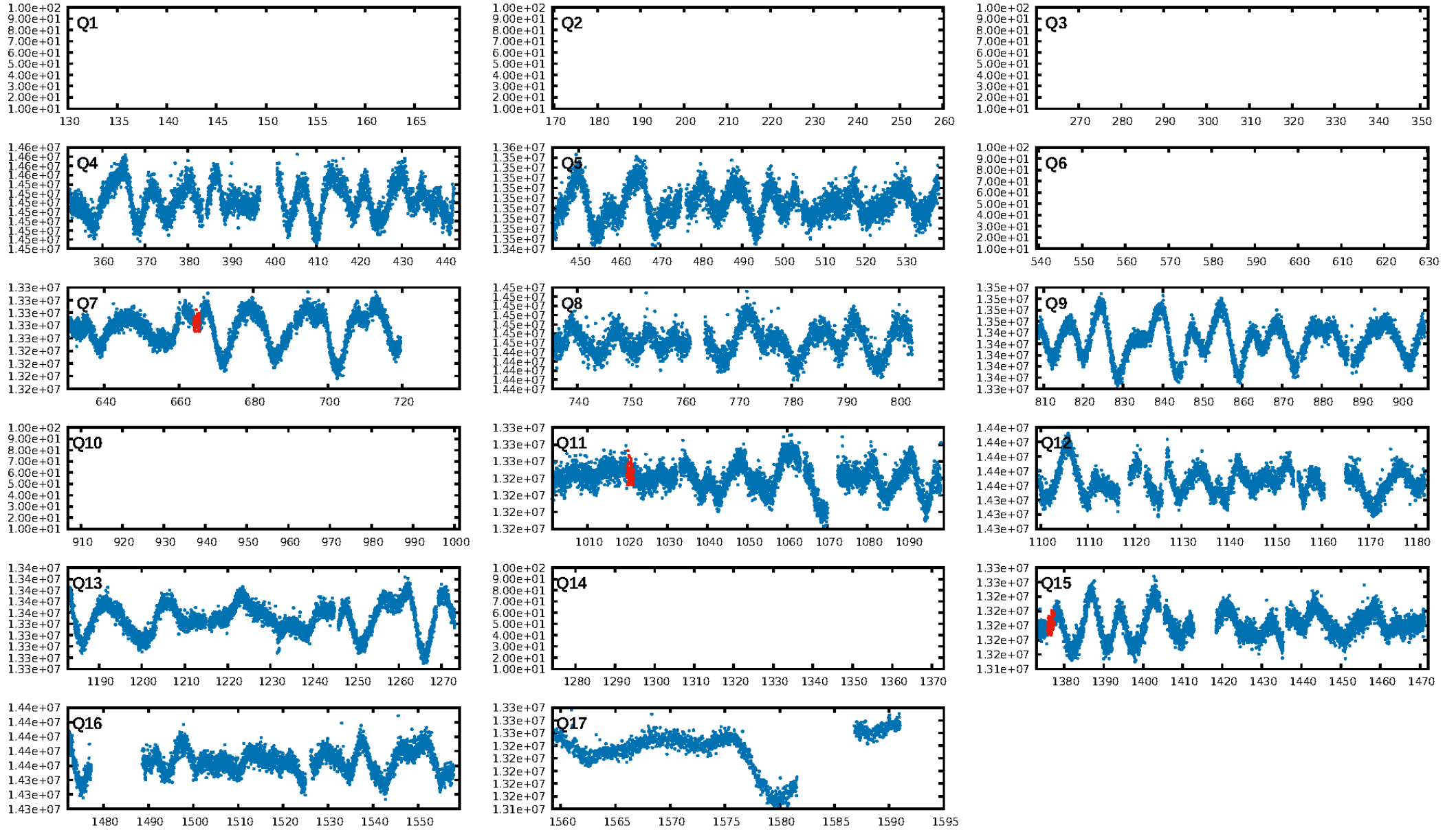
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [210.41σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 6.34e-18
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.7816
Centroid-sig: 0.3%
Centroid-so: 2.038 arcsec [3.27σ]
OotOffset-rm: 5.141 arcsec [0.89σ]
KicOffset-rm: 5.380 arcsec [1.01σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/2]

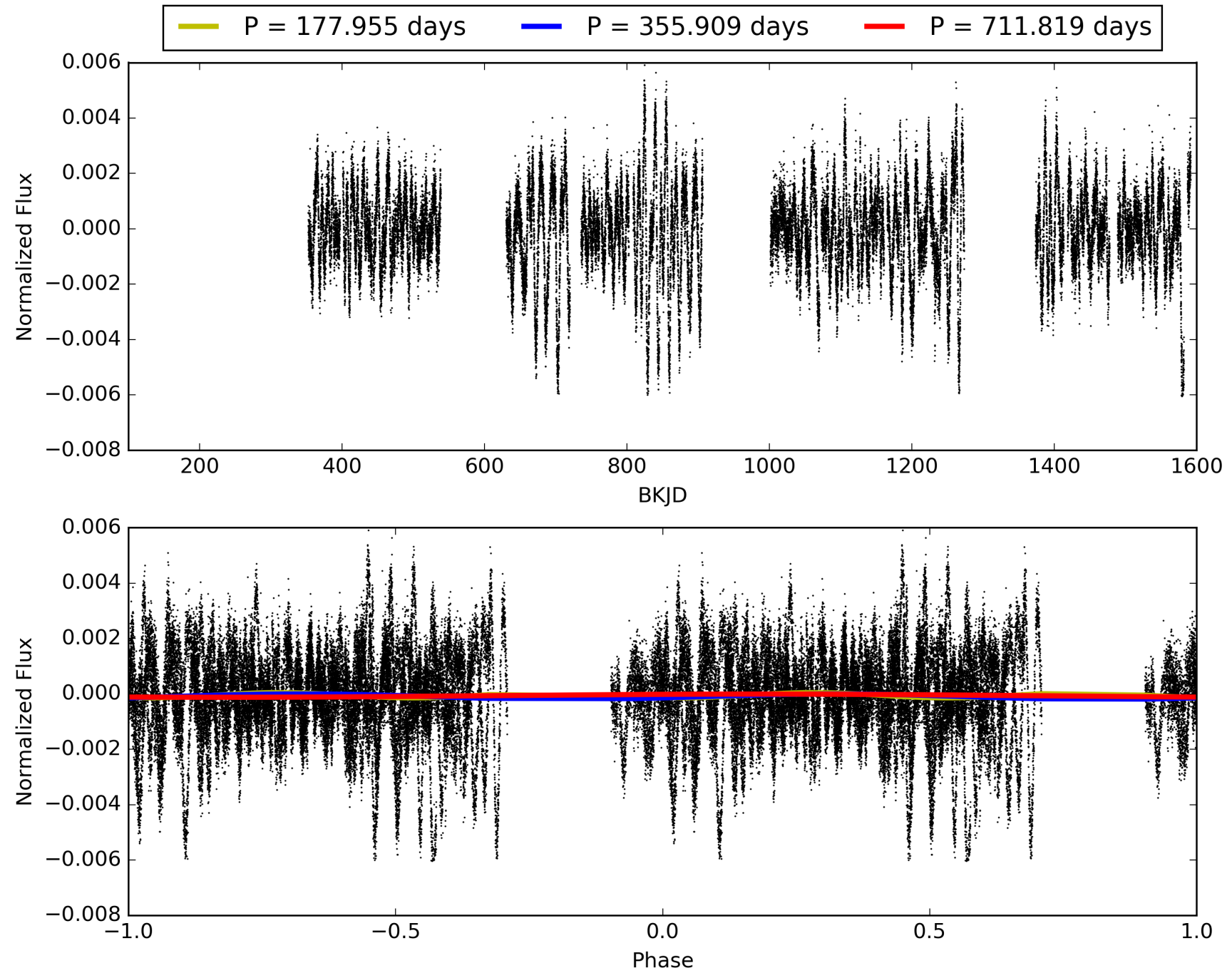
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:07:03 Z

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

TCE 004851089-02, PDC Light Curves

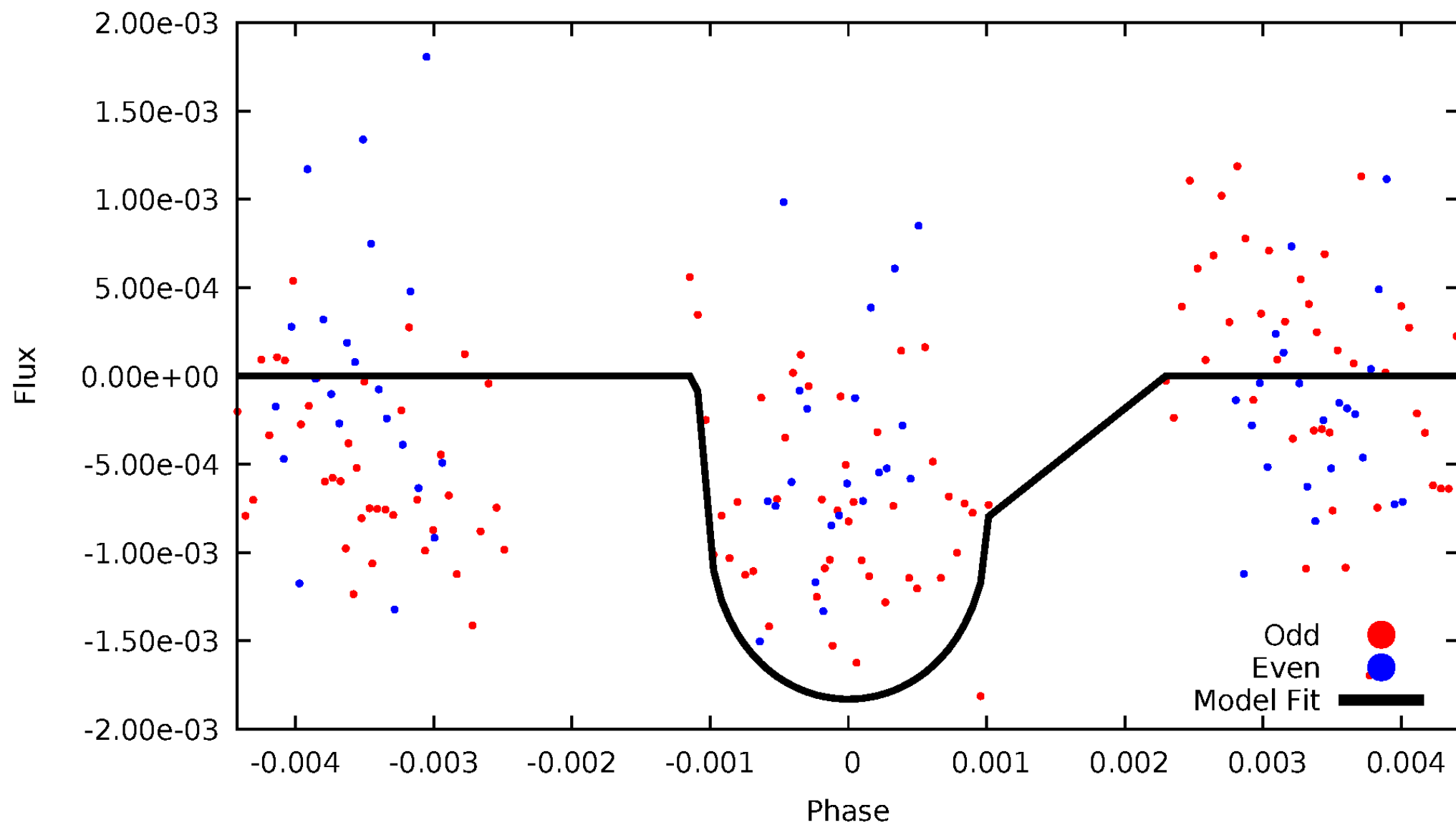


TCE 004851089-02



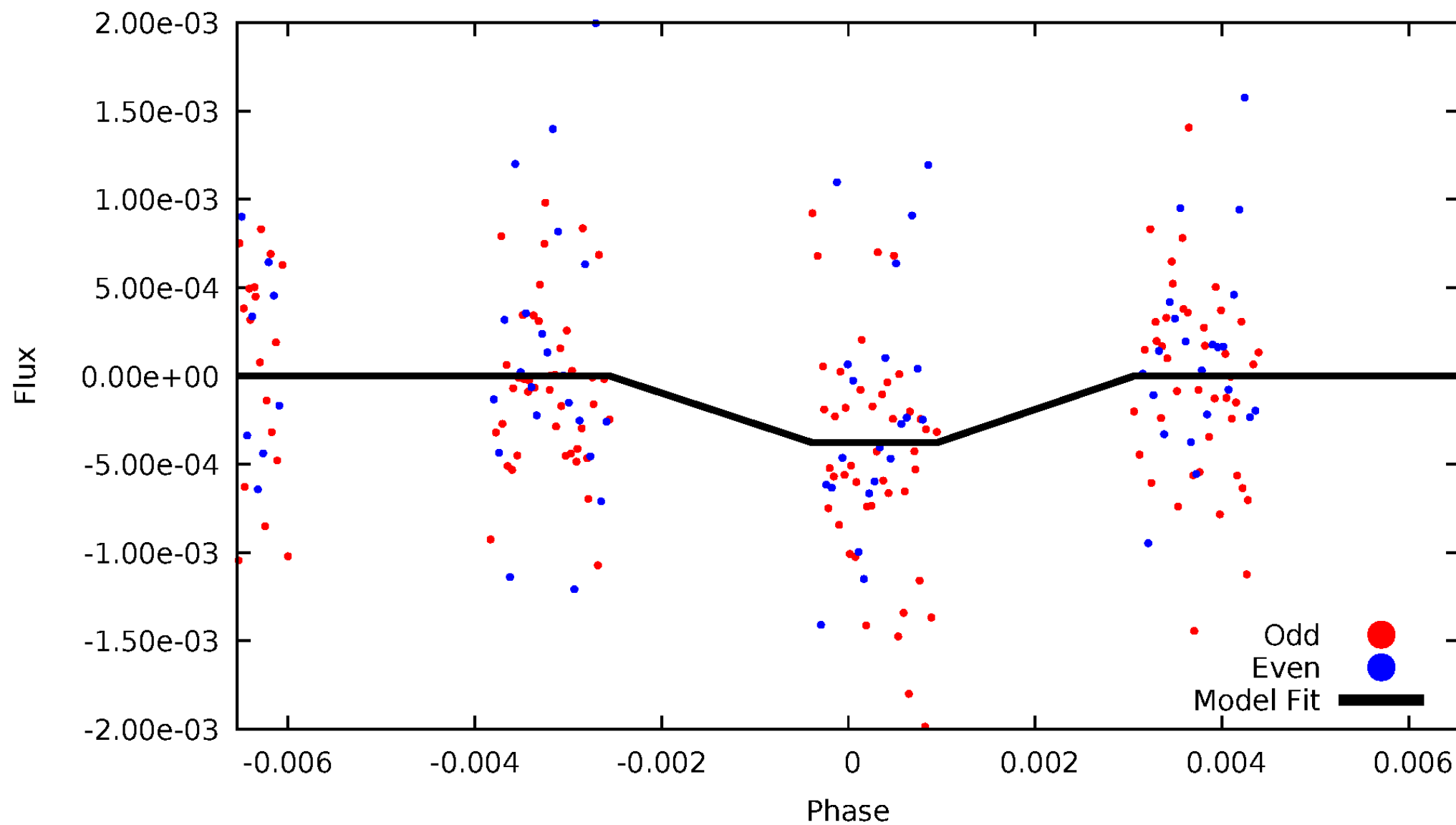
DV Odd/Even

TCE 004851089-02



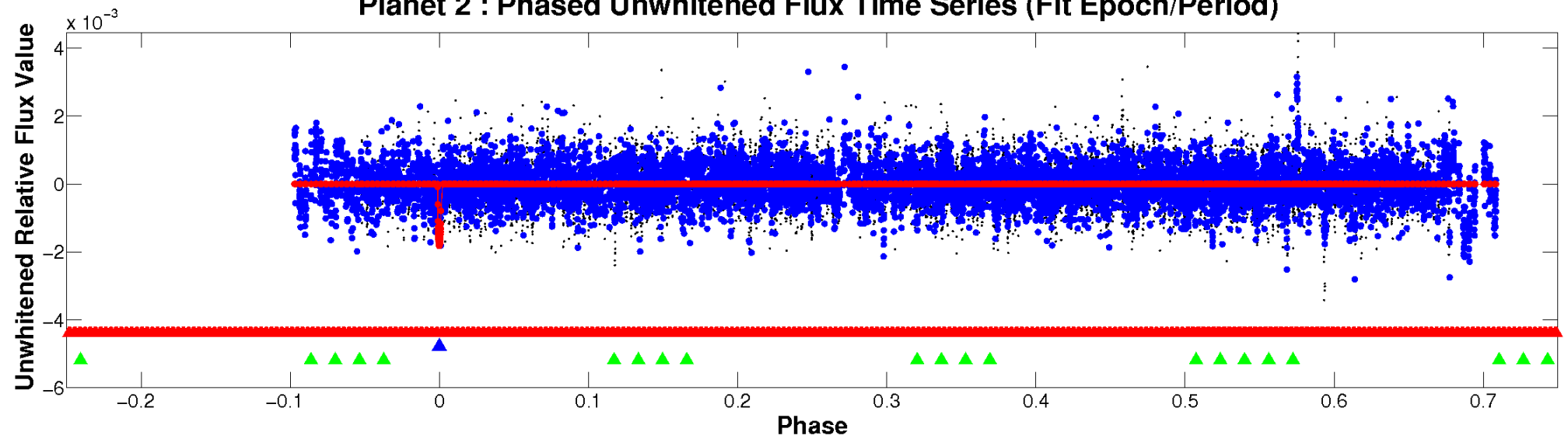
ALT Odd/Even

TCE 004851089-02

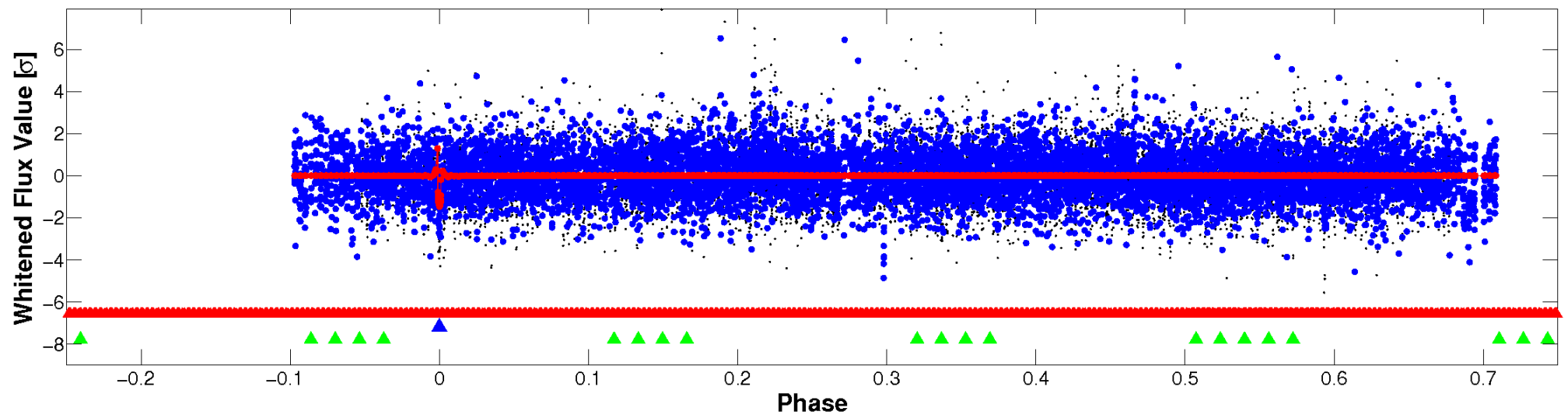


Non-Whitened Vs. Whitened Light Curve

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

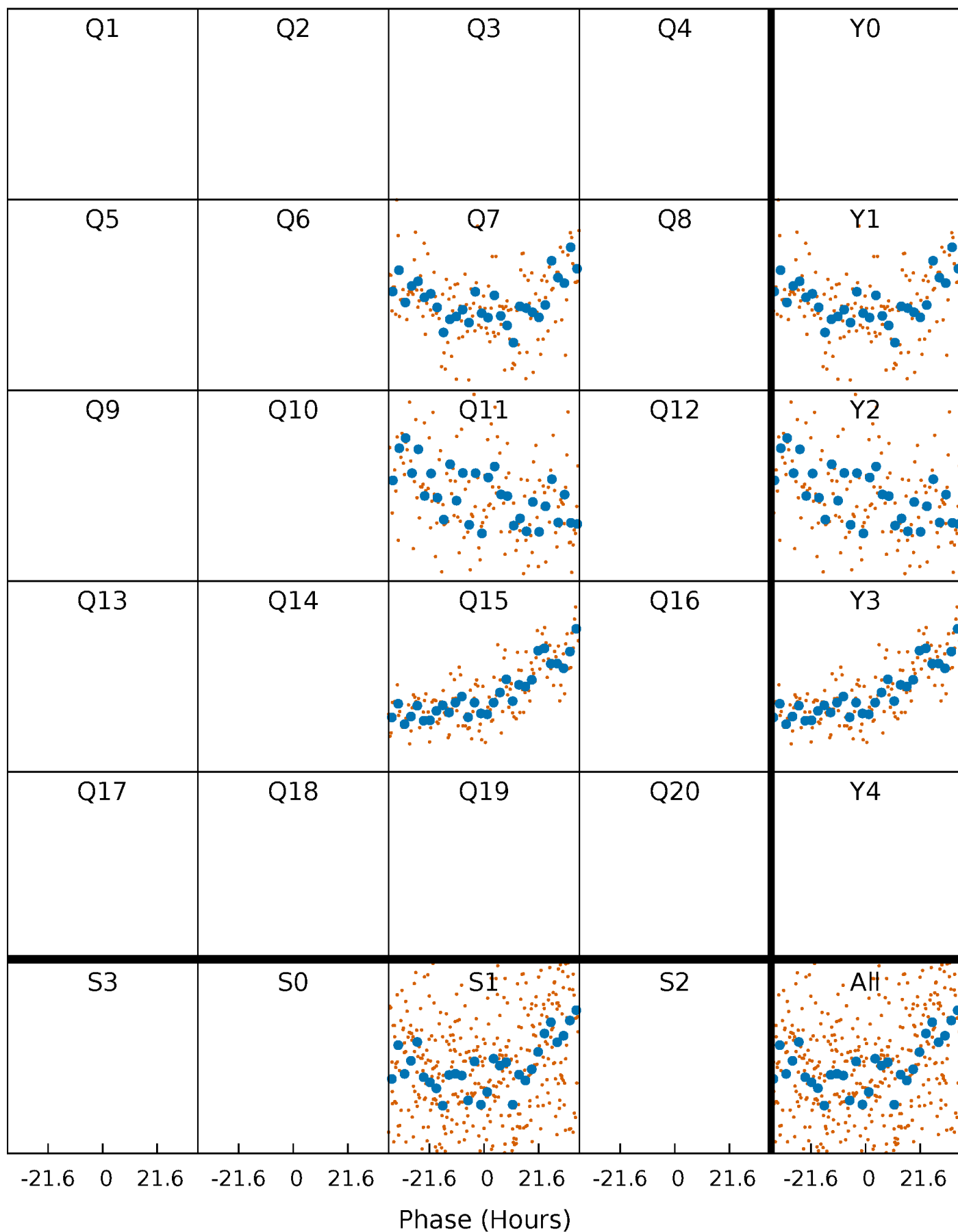


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



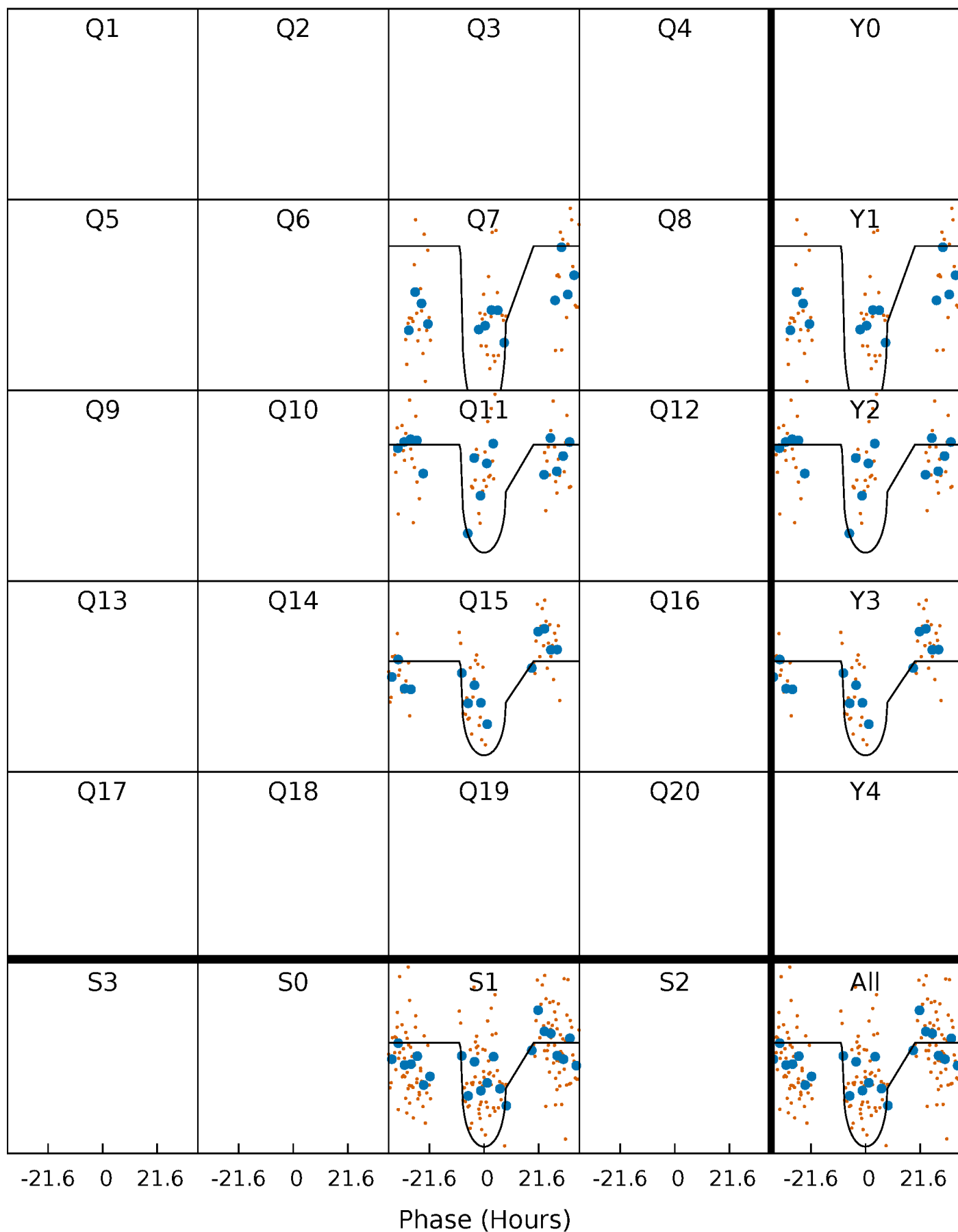
PDC Quarter-Phased Transit Curves

TCE 004851089-02 $P=355.909396$ Days $T_0=308.886270$ (BKJD)



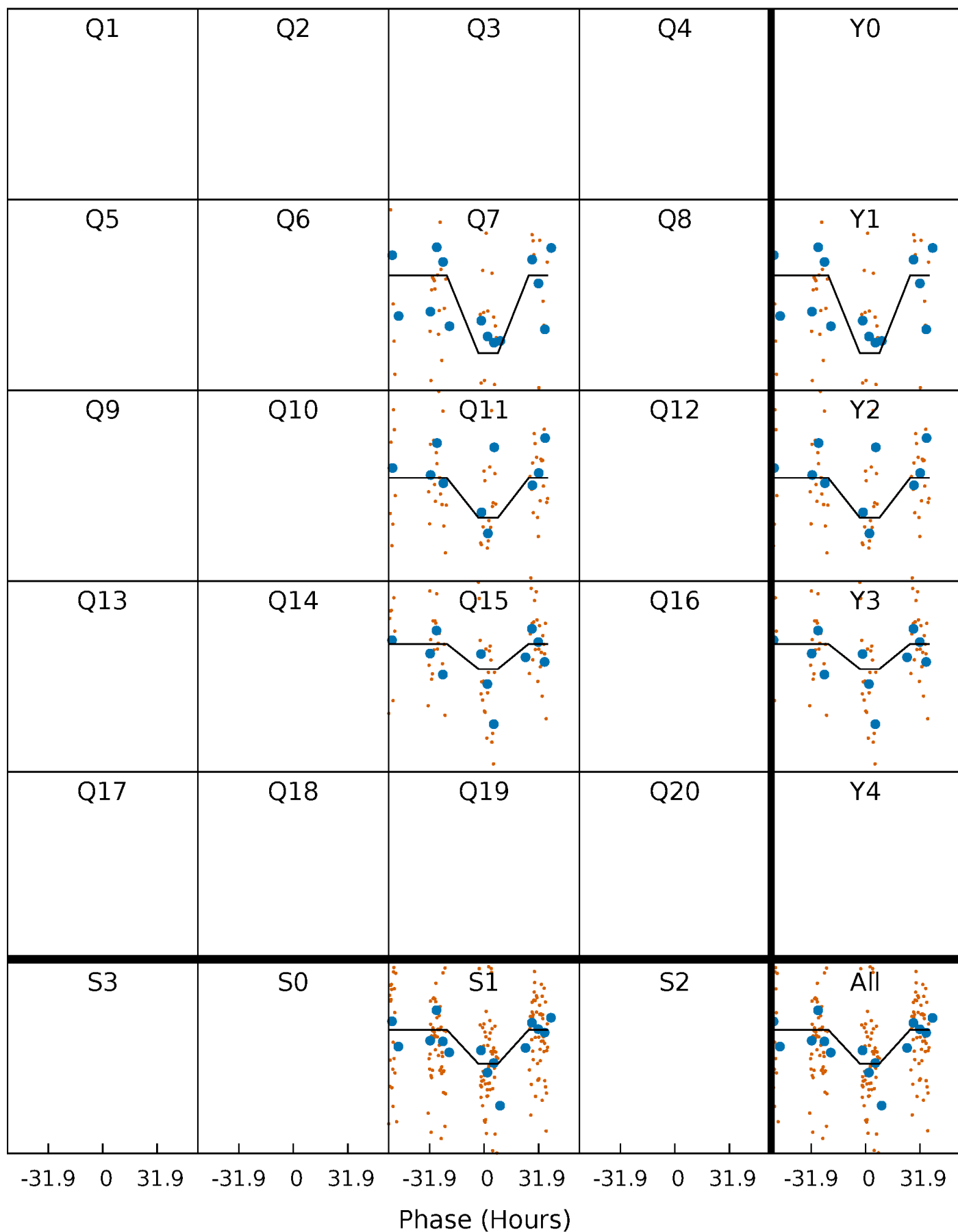
DV Quarter-Phased Transit Curves

TCE 004851089-02 $P=355.909396$ Days $T_0=308.886270$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

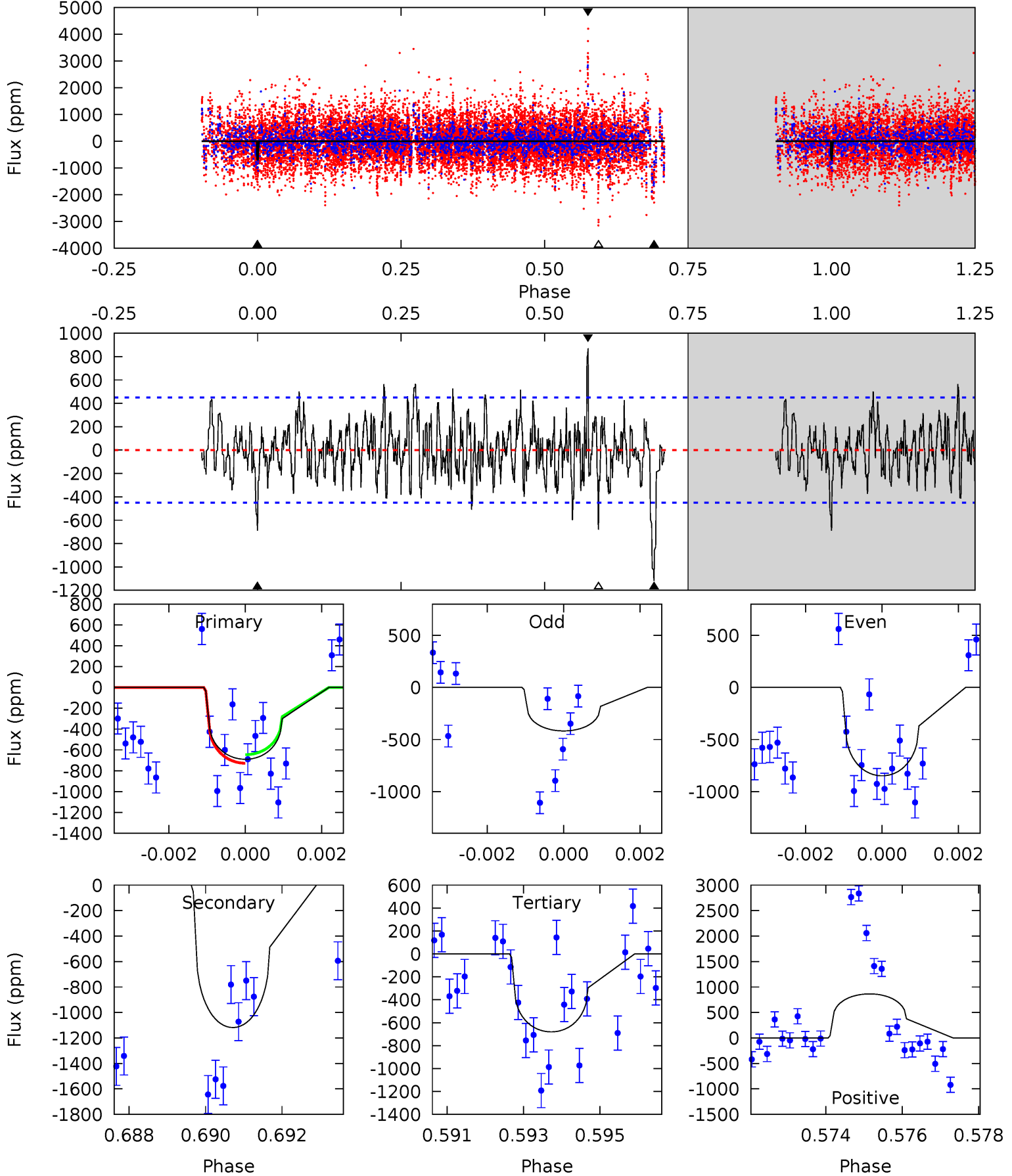
TCE 004851089-02 P=355.761902 Days $T_0=309.057587$ (BKJD)



DV Model-Shift Uniqueness Test

004851089-02, $P = 355.909396$ Days, $E = 308.886270$ Days

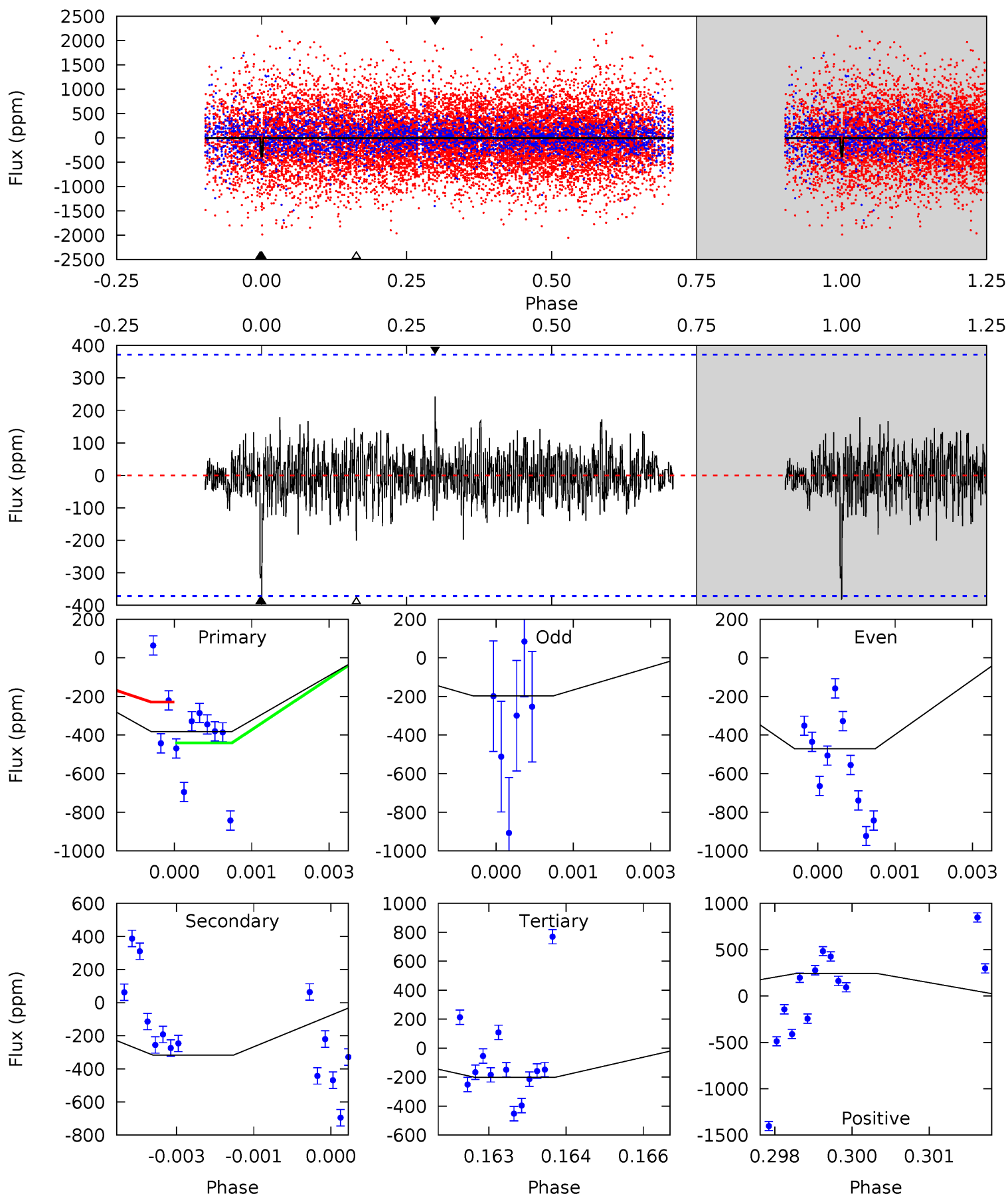
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.16	13.2	8.04	10.2	5.32	3.08	2.35	0.12	-2.07	5.18	2.99	2.37	0.84	0.44	0.48



Alt Model-Shift Uniqueness Test

004851089-02, P = 355.761902 Days, E = 309.057587 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.56	4.61	2.92	3.53	5.41	3.22	0.76	2.64	2.03	1.69	1.08	1.89	1.31	0.39	1.36



Stellar Parameters For KIC 004851089

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5541^{+183}_{-183}	$4.525^{+0.033}_{-0.187}$	$0.360^{+0.100}_{-0.300}$	$0.922^{+0.252}_{-0.079}$	$1.040^{+0.084}_{-0.126}$	$1.868^{+0.330}_{-0.887}$
	+3%/-3%	+1%/-4%	+28%/-83%	+27%/-9%	+8%/-12%	+18%/-48%
Source	KIC0	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 004851089-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1118 ± 85	$4.34^{+2.18}_{-2.20}$	338^{+22}_{-17}	5072^{+2013}_{-774}	31783^{+93828}_{-17649}
Alt.	-317 ± 69	$2.57^{+1.96}_{-1.72}$	337^{+21}_{-17}	4825^{+3497}_{-945}	$25657^{+210305}_{-17639}$

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 $A_{obs} \gg 1.0$

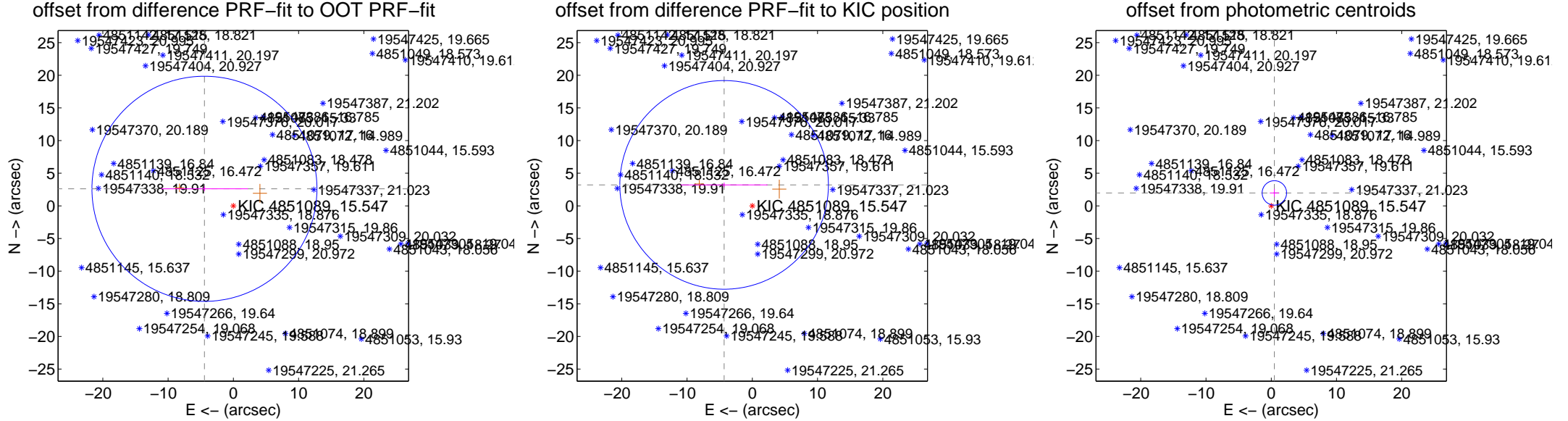
DV Centroid Data

Supplemental centroid analysis for 004851089-02. Kepler magnitude: 15.55. Transit SNR 10.25

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.64 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.141 ± 5.746	0.89	4.427 ± 6.670	2.614 ± 0.368
PRF-fit source offset from KIC position	5.380 ± 5.326	1.01	4.316 ± 6.635	3.213 ± 0.346
photometric centroid source offset	2.04 ± 0.62	3.27	-0.48 ± 0.70	1.98 ± 0.62



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.

Q5 no difference image



Q5 no OOT image



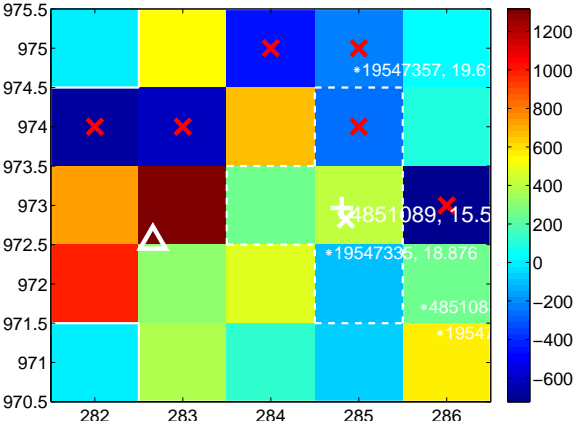
Q6 no difference image



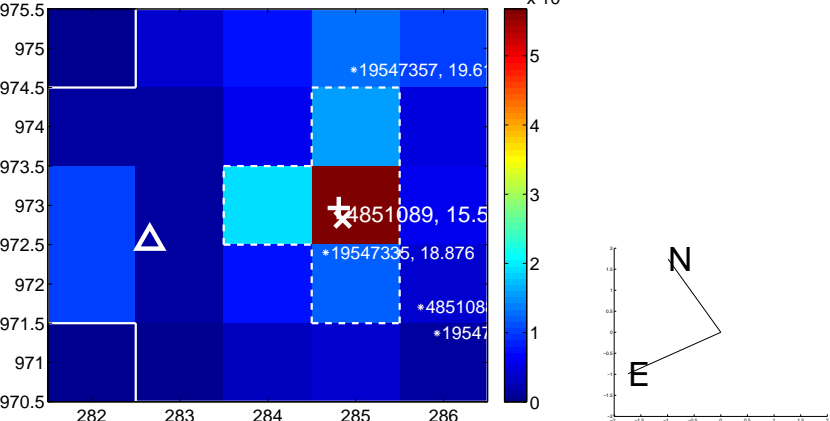
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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.

Q13 no difference image



Q13 no OOT image



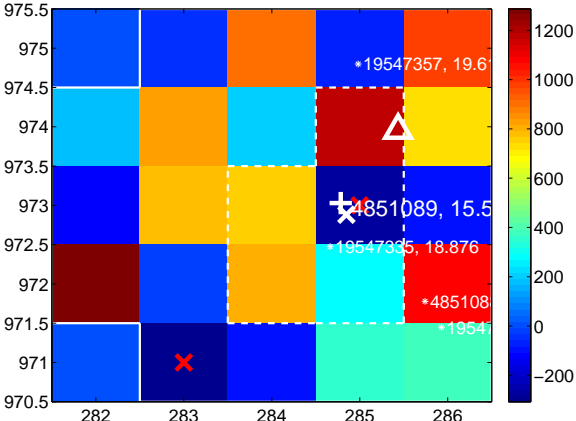
Q14 no difference image



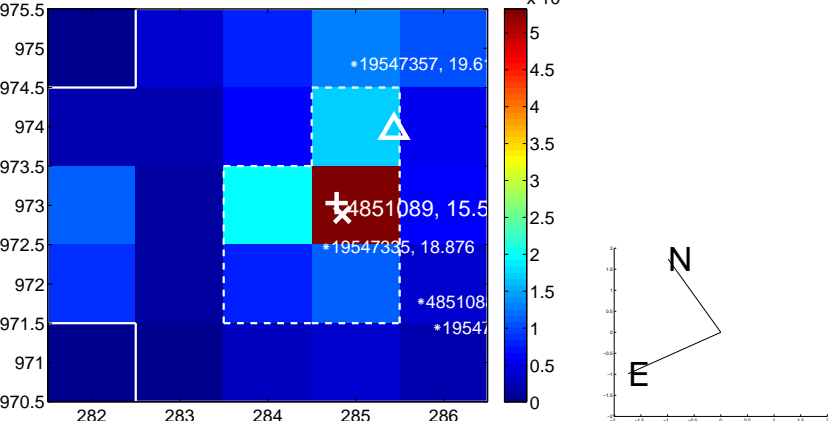
Q14 no OOT image



Q15 difference image. Poor Quality



Q15 OOT image



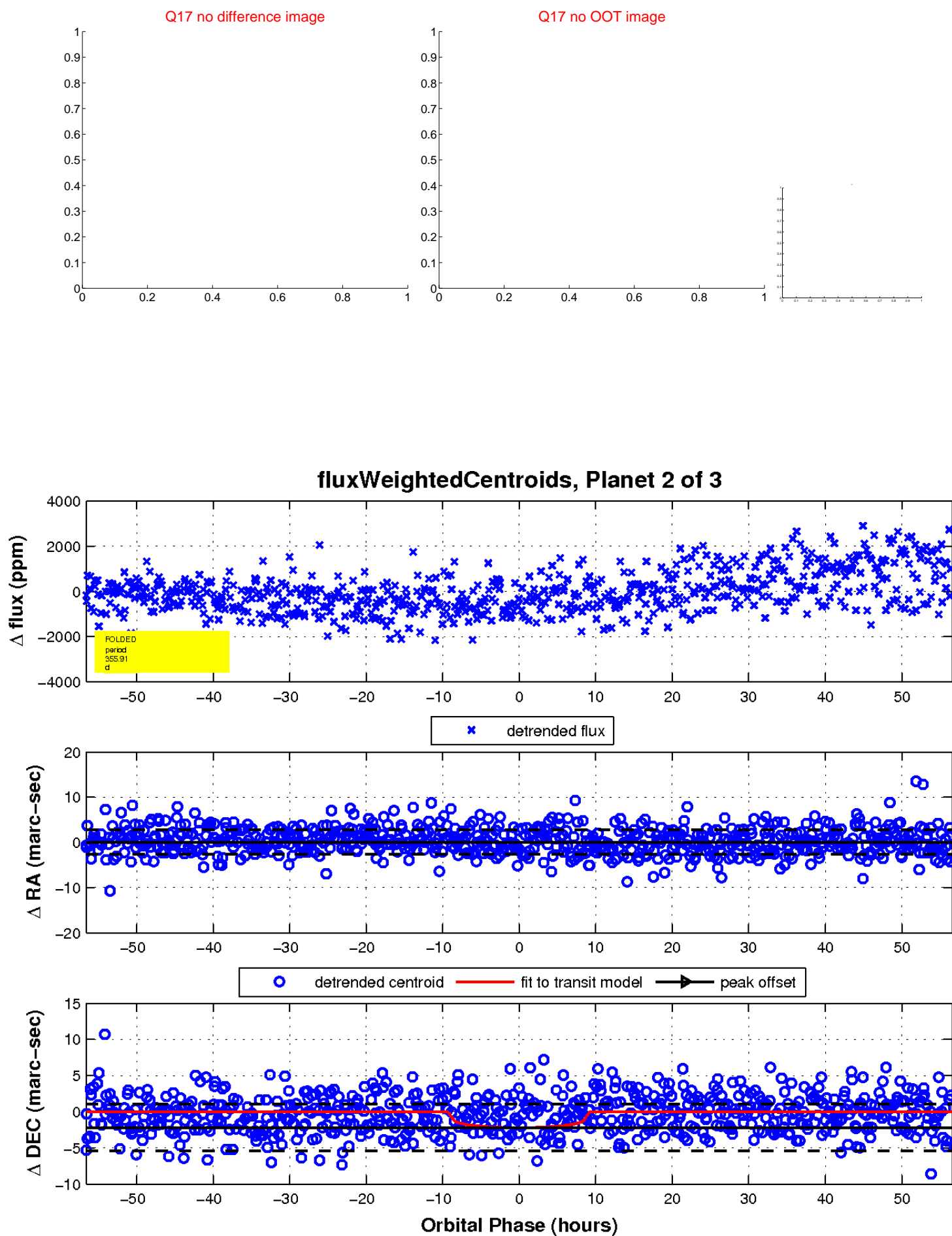
Q16 no difference image



Q16 no OOT image

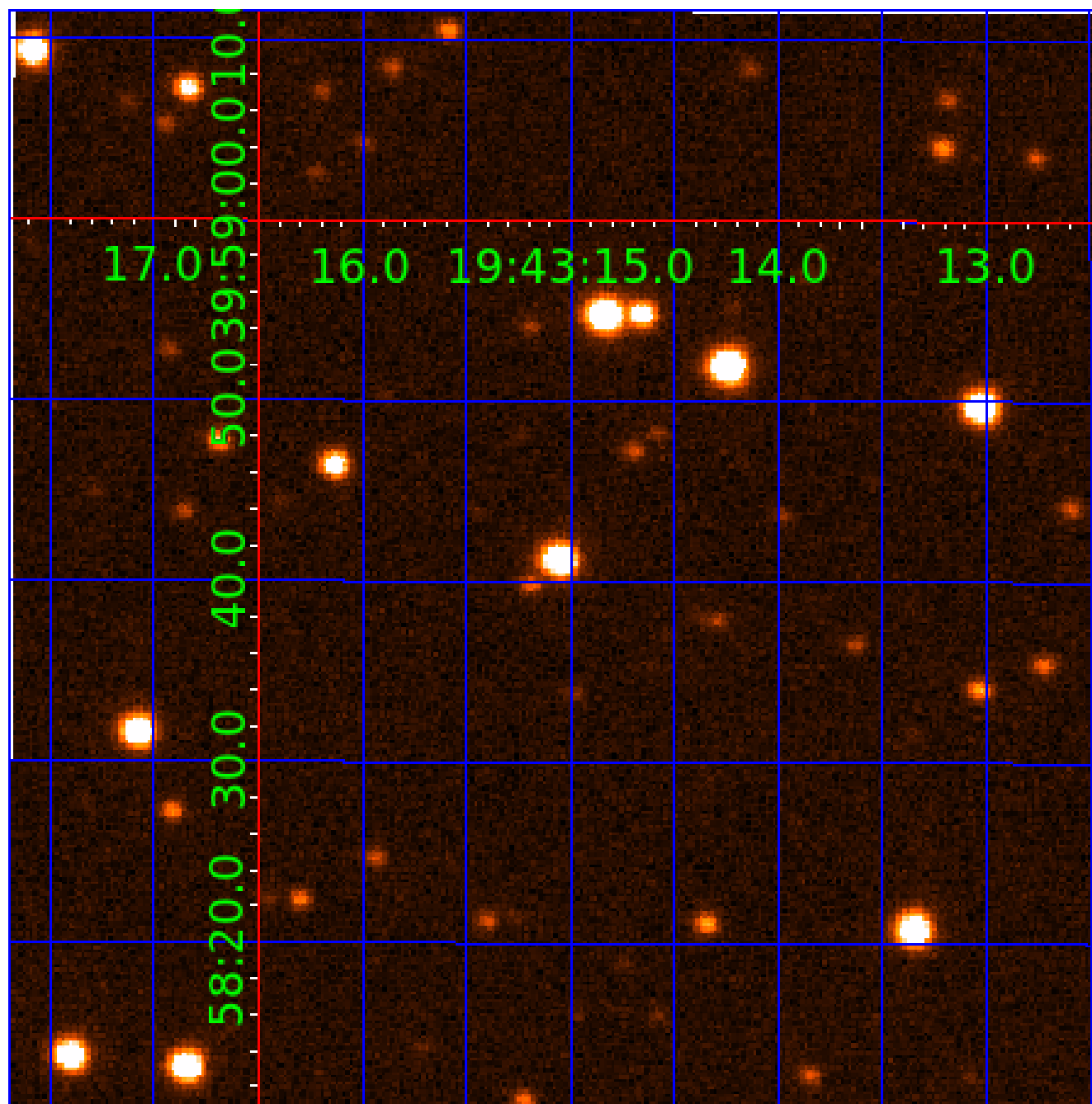


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004851089

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})
004851089-01	OBS	No	1.235194	131.957391	66.6	6.205	7.7	7.5	0.92	5541	0.75	1378.54
004851089-02	OBS	No	355.909396	308.886270	1829.6	18.880	15.3	10.3	0.92	5541	4.05	0.72
004851089-03	OBS	No	72.338303	133.577112	970.7	26.263	7.6	8.2	0.92	5541	5.73	6.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004851089-01	OBS	FP	0.00	1	0	0	1	LPP_DV—EPHEM_MATCH
004851089-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004851089-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

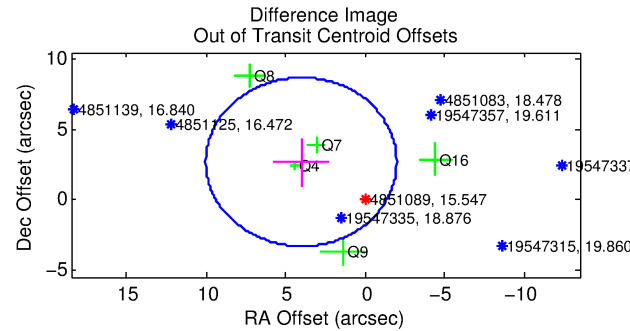
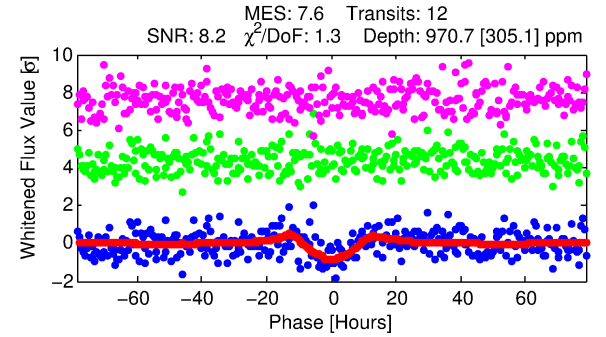
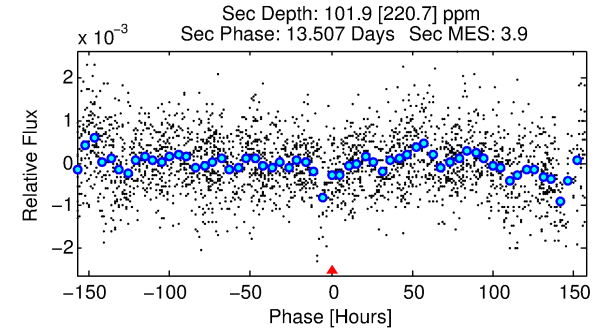
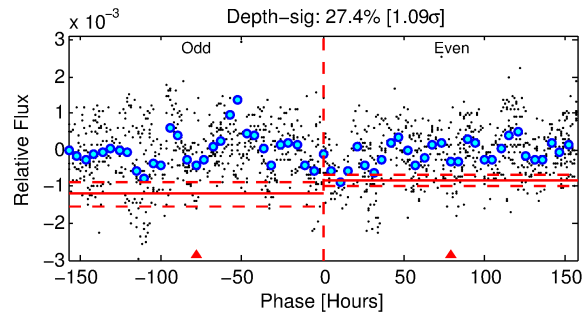
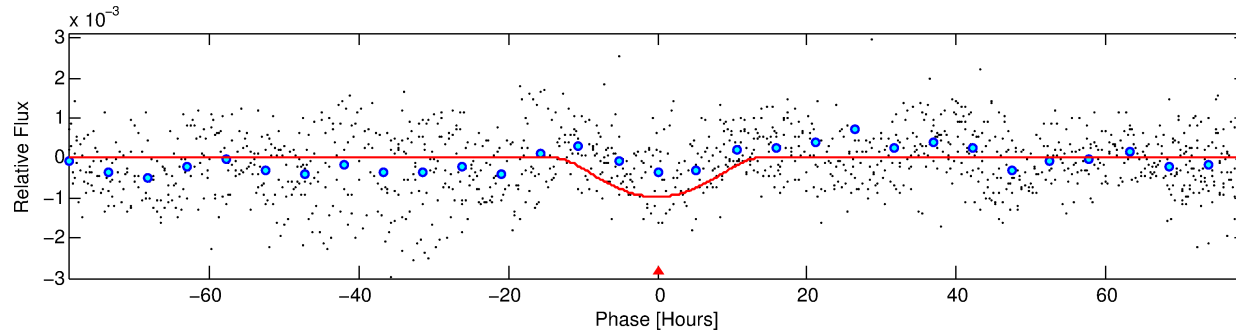
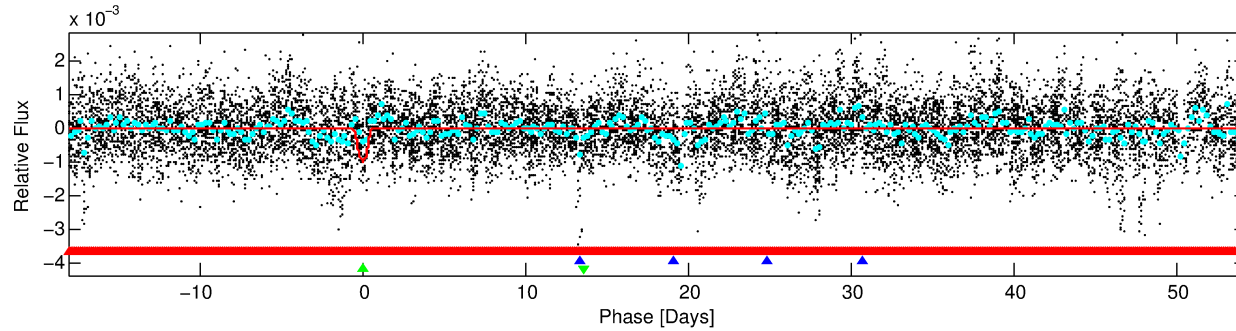
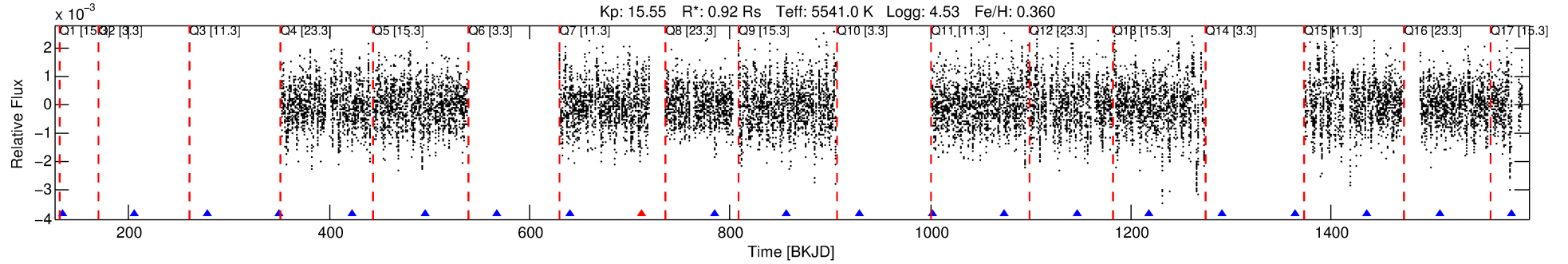
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004851089-03

No Significant Match Found

DV One-Page Summary

KIC: 4851089 Candidate: 3 of 3 Period: 72.338 d



DV Fit Results:

Period = 72.33830 [0.00726] d
Epoch = 133.5771 [0.0824] BKJD
Rp/R* = 0.0569 [0.1738]
a/R* = 7.28 [5.00]
b = 1.00 [0.24]
Seff = 6.06 [2.21]
Teq = 400 [36] K
Rp = 5.73 [17.55] Re
a = 0.3442 [0.0798] AU
Ag = 202.58 [1314.42] [0.15σ]
Teffp = 2334 [3781] K [0.51σ]

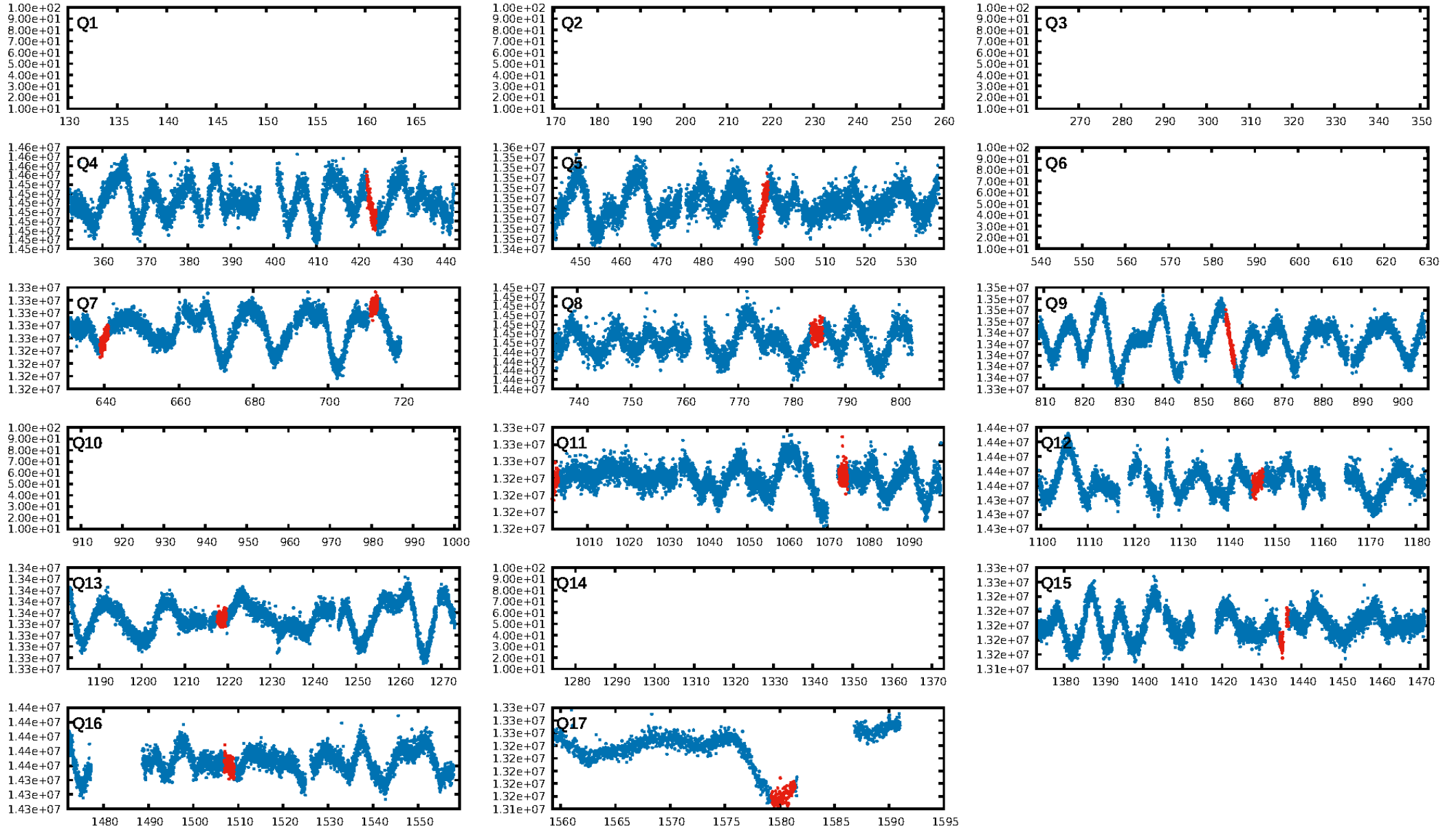
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [63.24σ]
LongPeriod-sig: 100.0% [210.41σ]
ModelChiSquare2-sig: 33.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.10e-10
RollingBand-fgm: 0.91 [10/11]
GhostDiagnostic-chr: -3.141
Centroid-sig: 3.5%
Centroid-so: 1.875 arcsec [2.79σ]
OotOffset-rm: 4.845 arcsec [2.42σ]
OotOffset-st: 0/1/3/1 [5]
KicOffset-rm: 4.825 arcsec [2.20σ]
KicOffset-st: 0/1/3/1 [5]
DiffImageQuality-fgm: 0.20 [1/5]
DiffImageOverlap-fno: 0.00 [0/7]

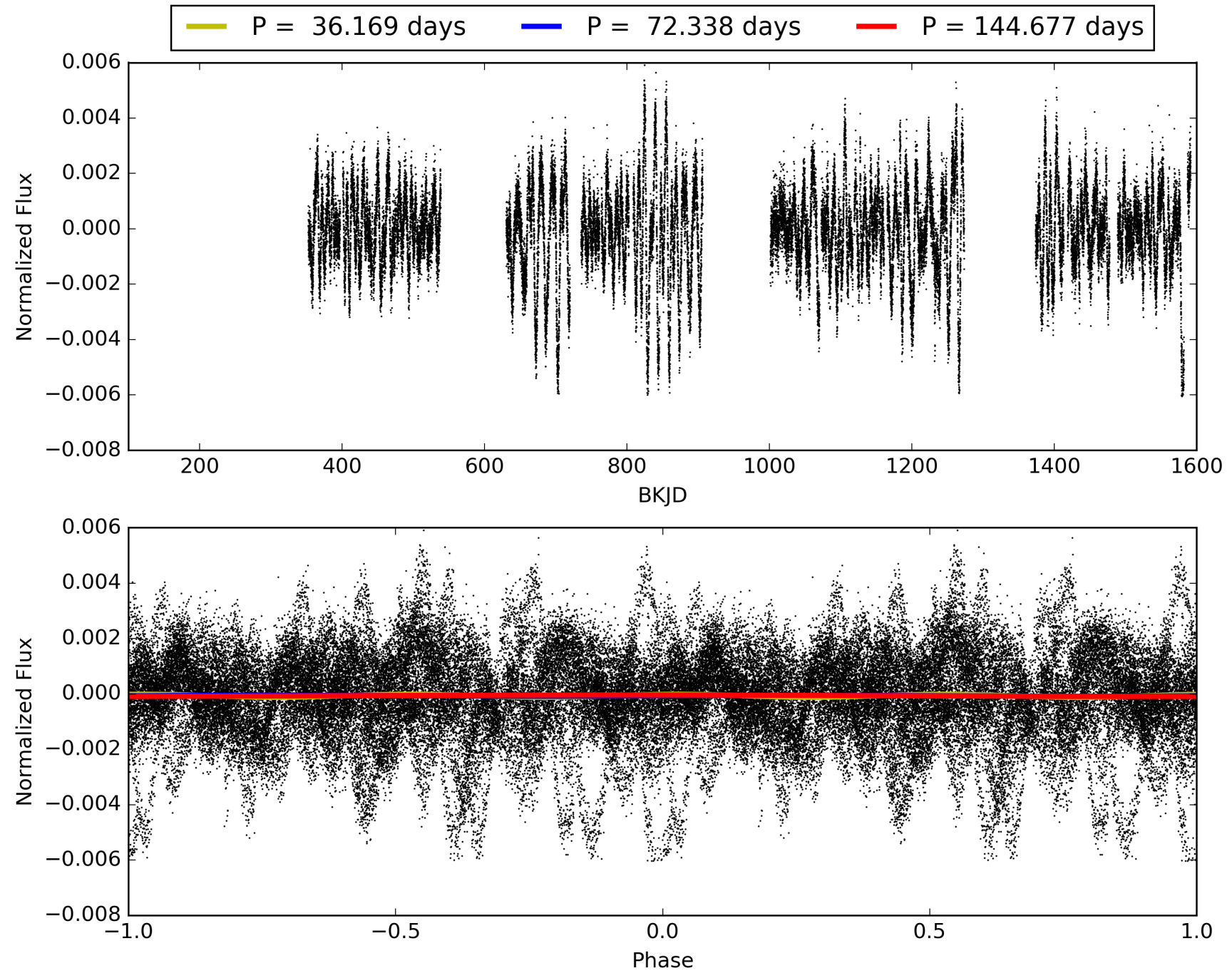
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:07:08 Z

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

TCE 004851089-03, PDC Light Curves

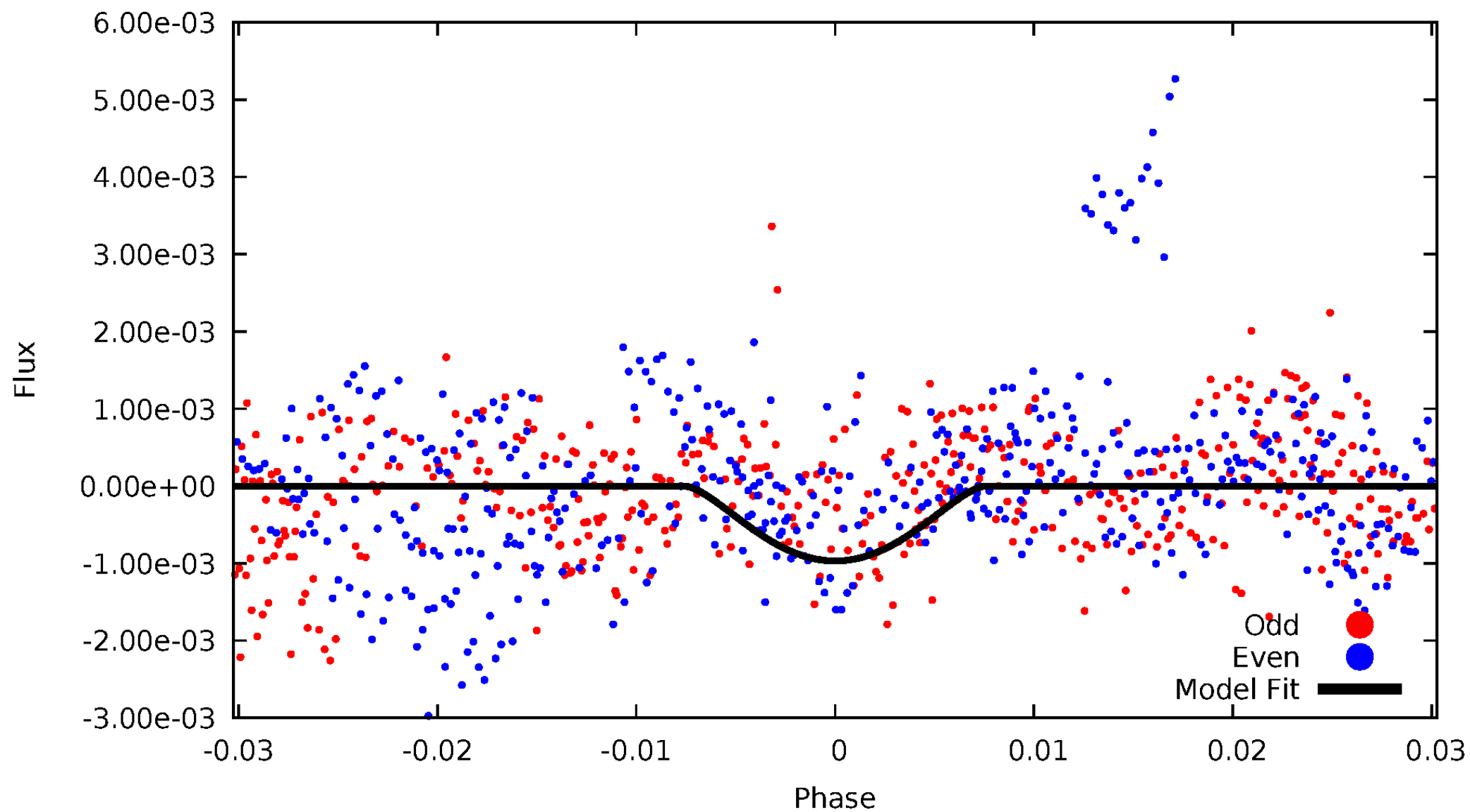


TCE 004851089-03



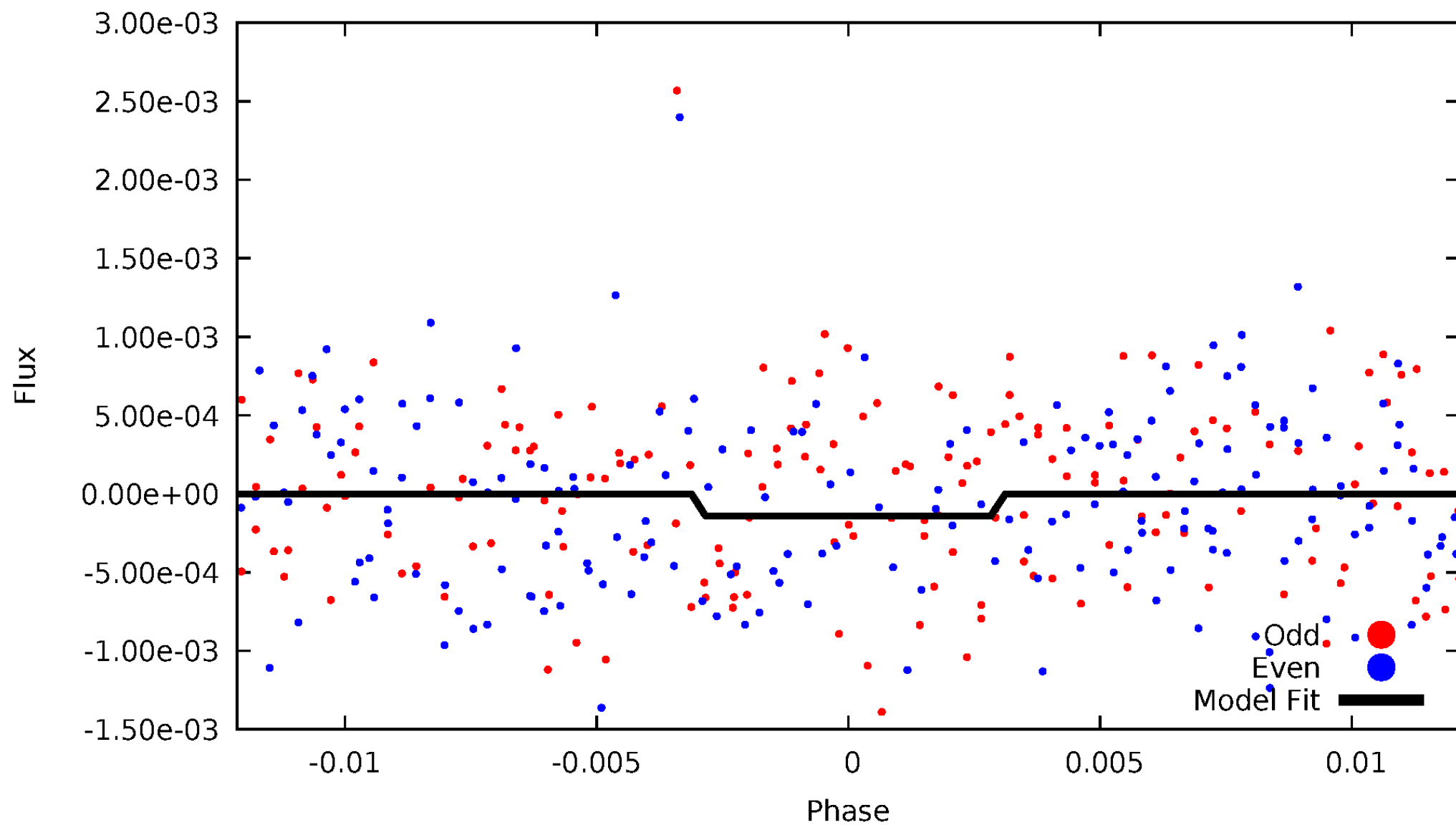
DV Odd/Even

TCE 004851089-03



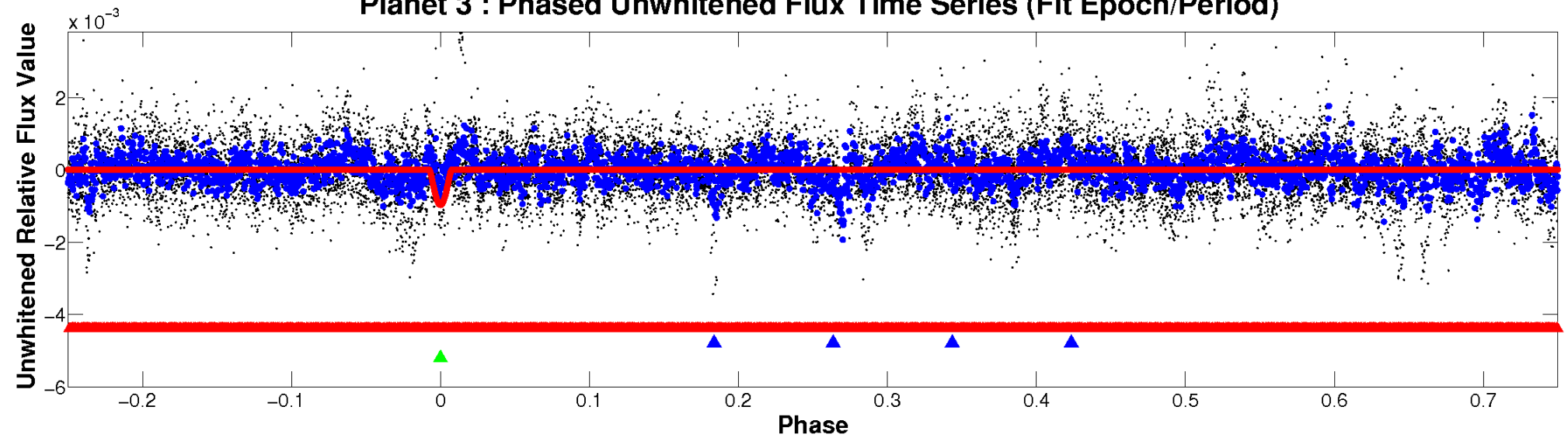
ALT Odd/Even

TCE 004851089-03

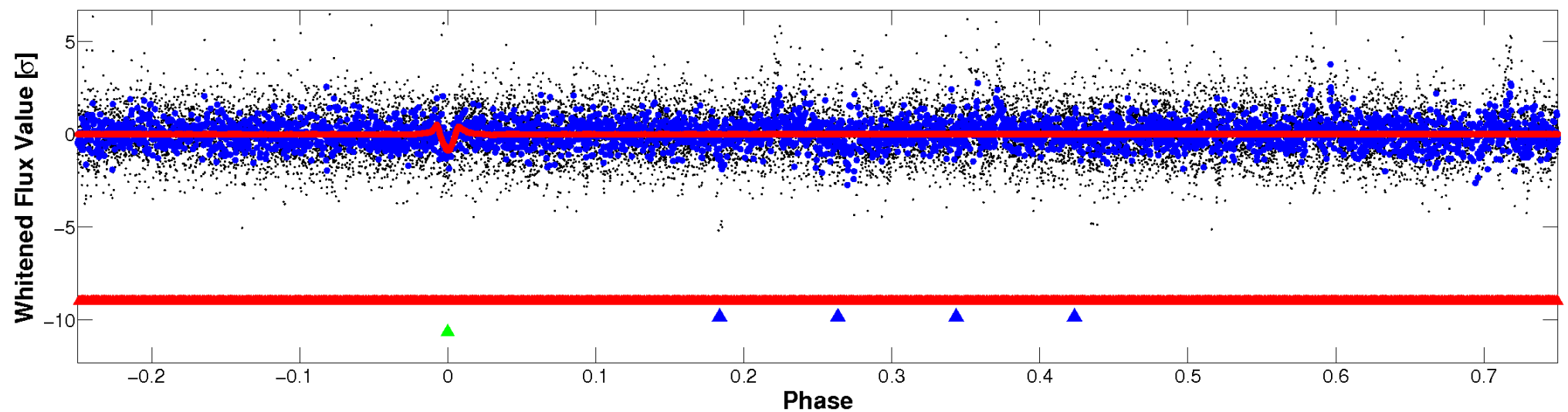


Non-Whitened Vs. Whitened Light Curve

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

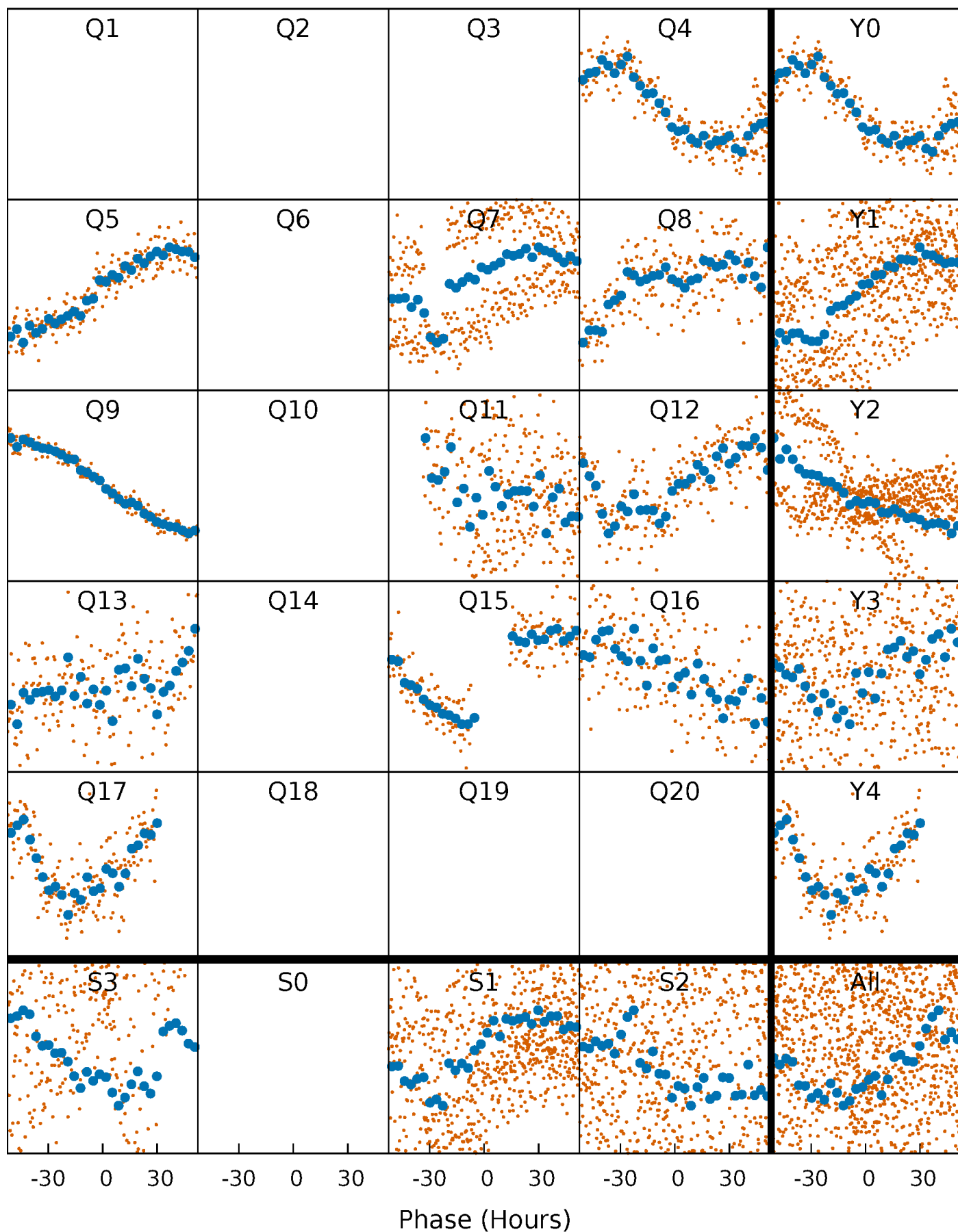


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



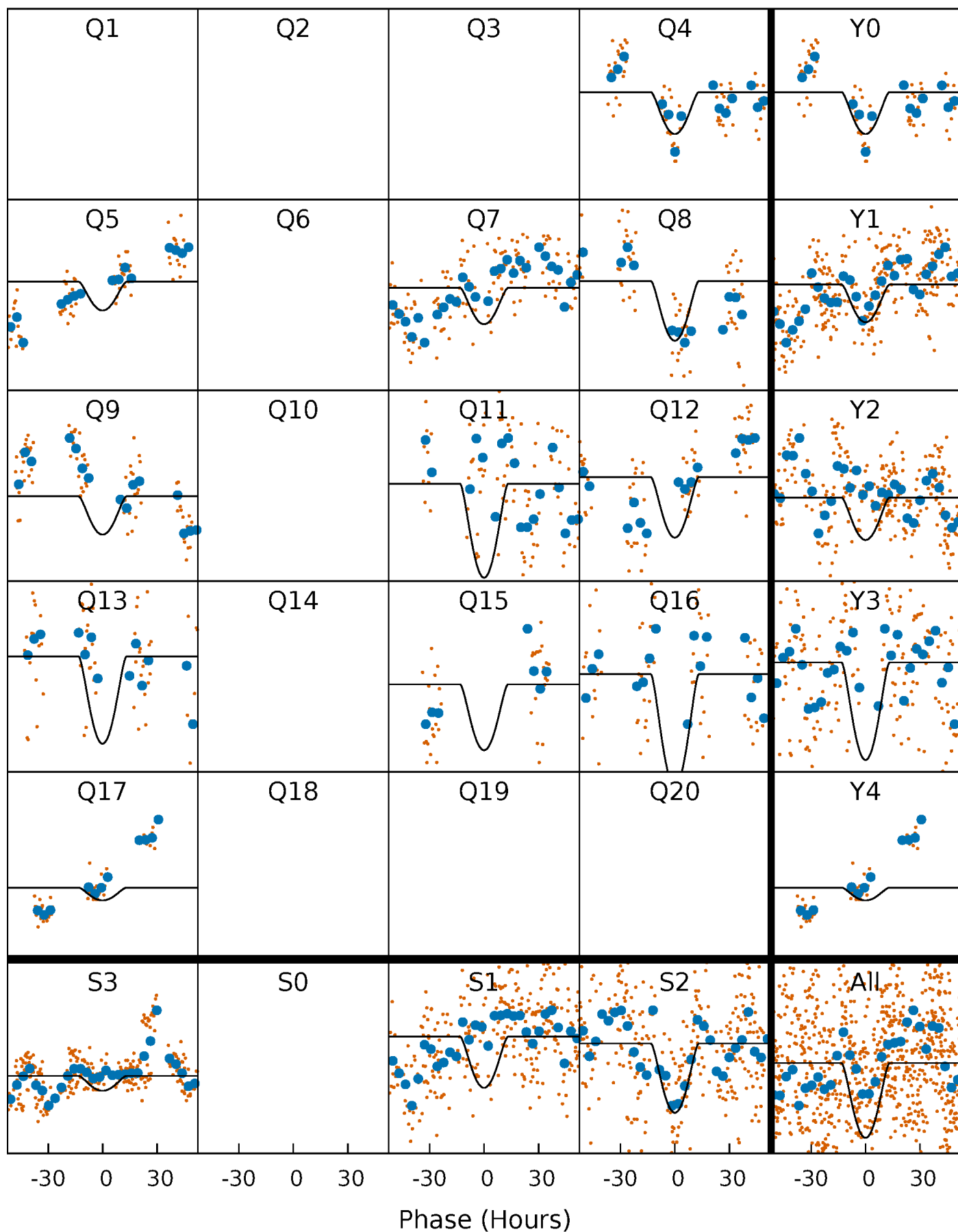
PDC Quarter-Phased Transit Curves

TCE 004851089-03 P= 72.338303 Days $T_0=133.577112$ (BKJD)



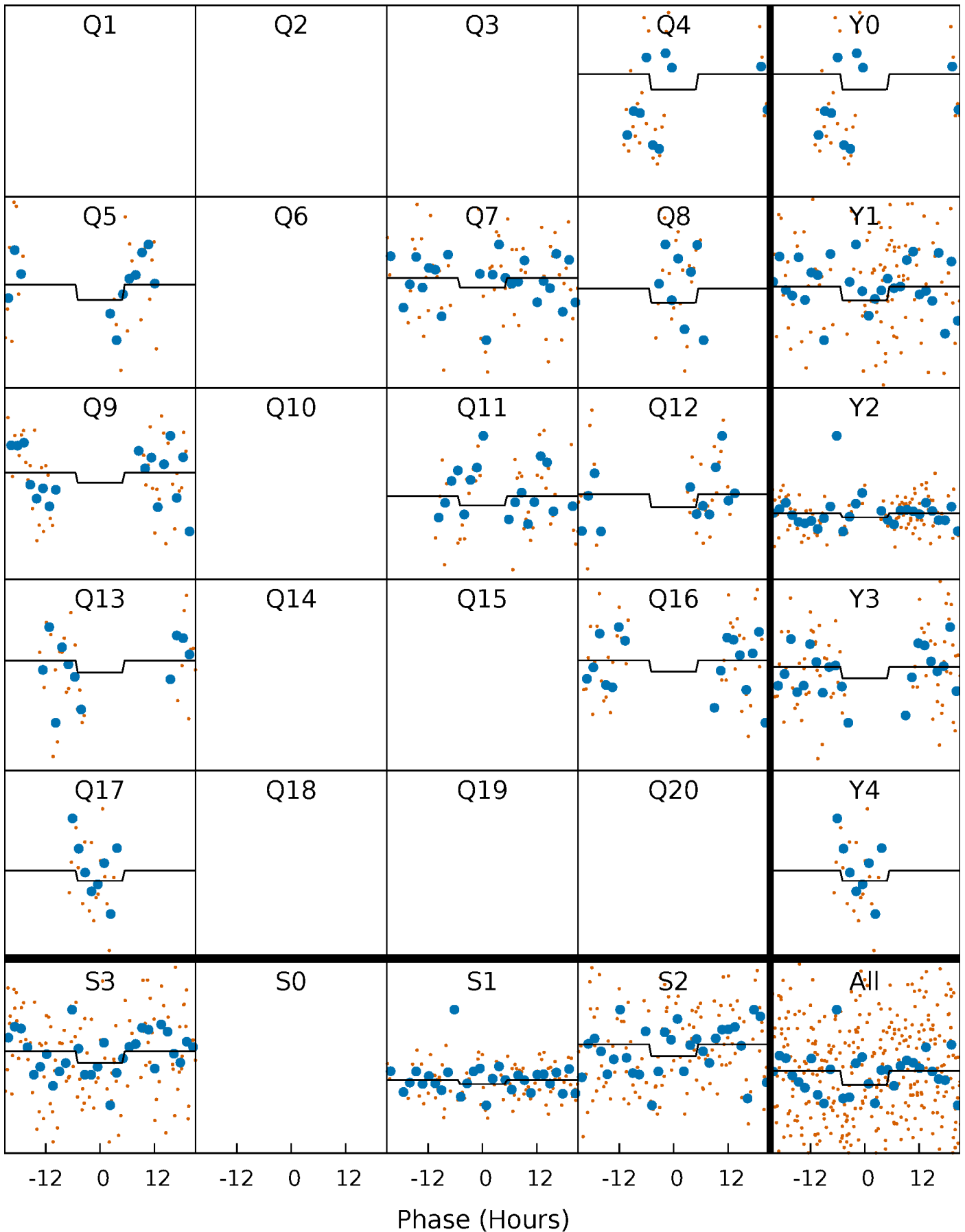
DV Quarter-Phased Transit Curves

TCE 004851089-03 P= 72.338303 Days $T_0=133.577112$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

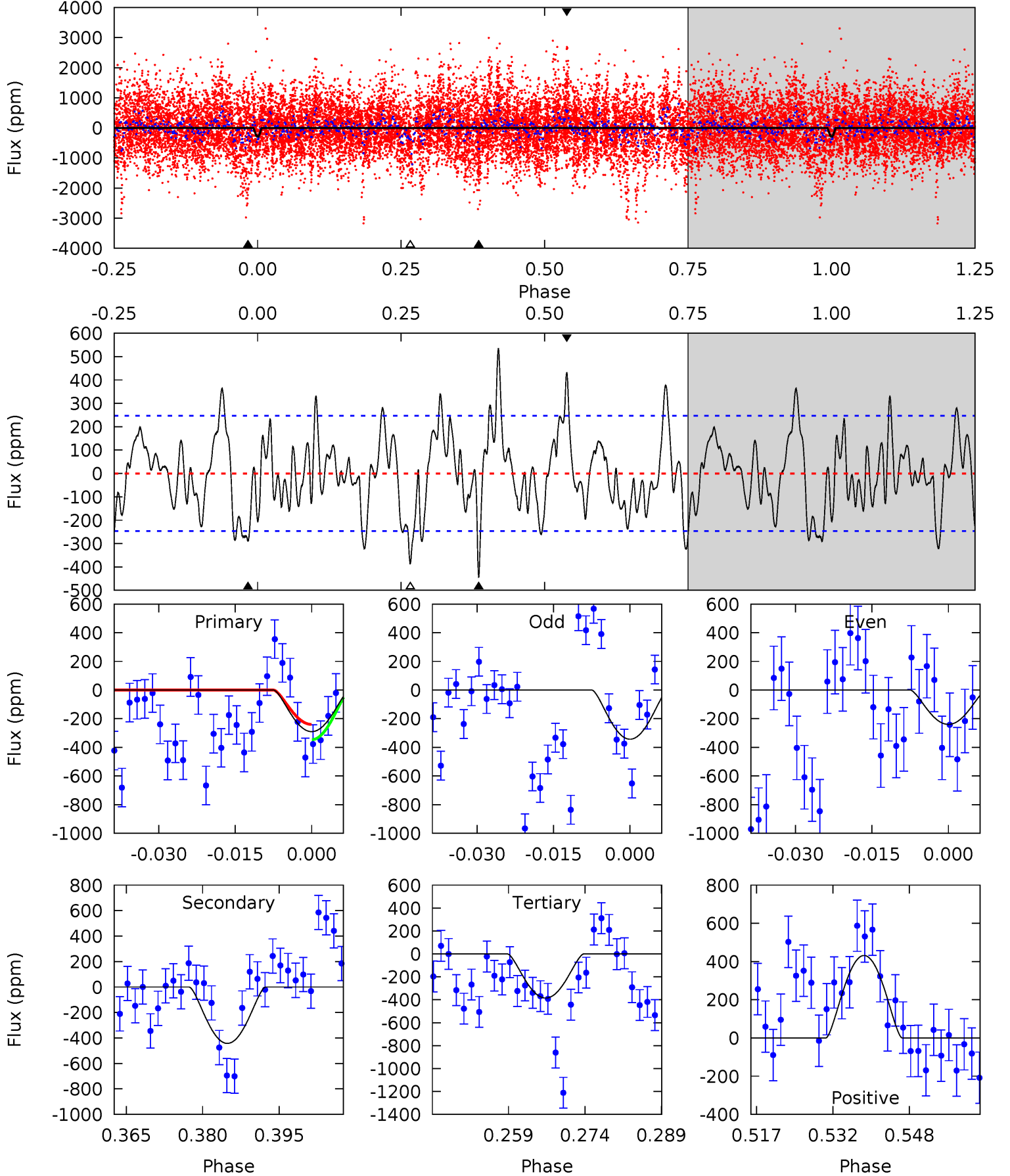
TCE 004851089-03 $P = 72.325562$ Days $T_0 = 133.779091$ (BKJD)



DV Model-Shift Uniqueness Test

004851089-03, P = 72.338303 Days, E = 133.577112 Days

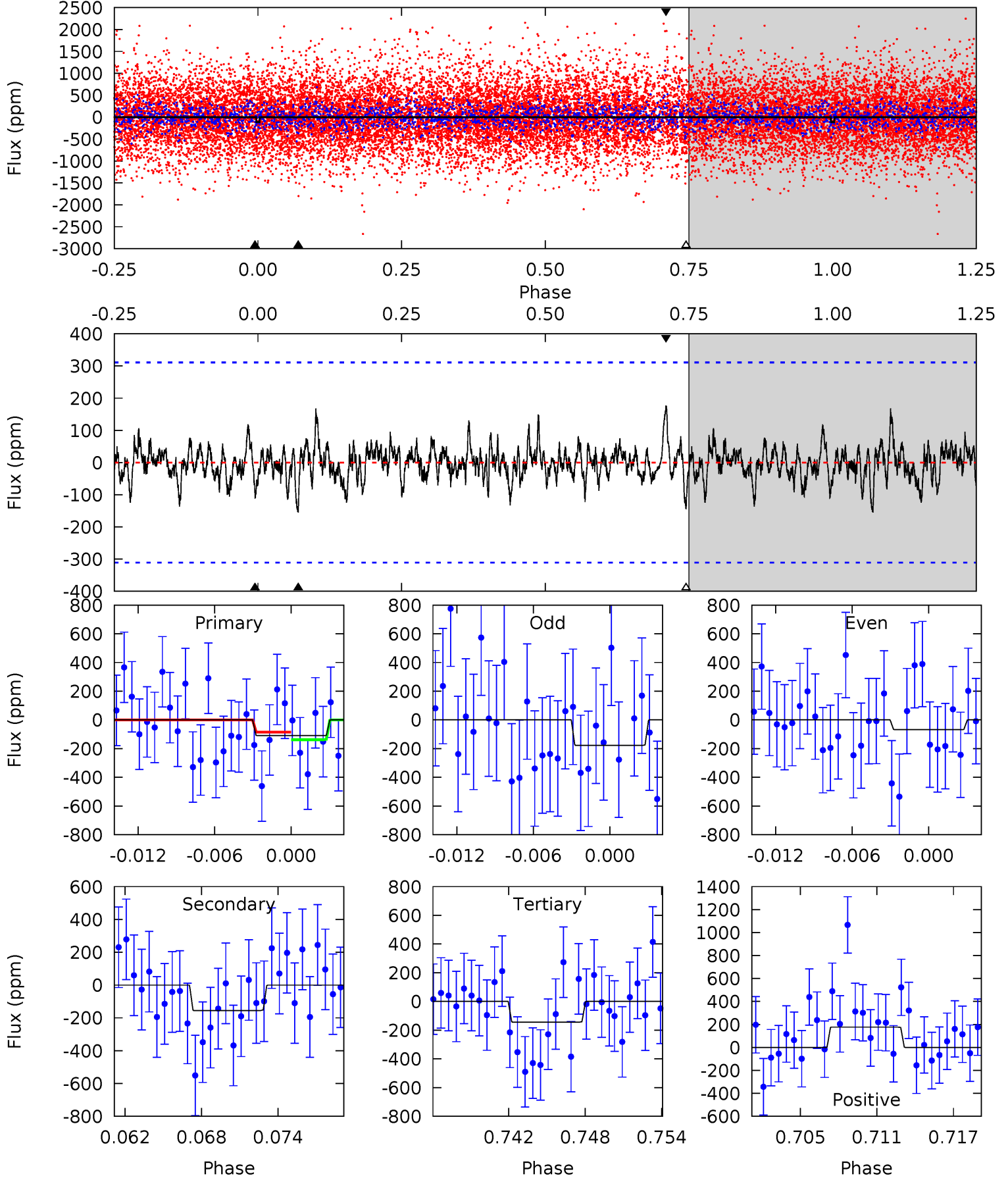
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.82	8.88	7.72	8.66	4.95	2.43	3.06	-1.90	-2.83	1.15	0.22	1.03	1.93	0.55	1.06



Alt Model-Shift Uniqueness Test

004851089-03, $P = 72.325562$ Days, $E = 133.779091$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.81	2.55	2.37	2.91	5.12	2.74	0.74	-0.56	-1.10	0.17	-0.36	0.89	1.37	0.53	0.44



Stellar Parameters For KIC 004851089

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5541^{+183}_{-183}	$4.525^{+0.033}_{-0.187}$	$0.360^{+0.100}_{-0.300}$	$0.922^{+0.252}_{-0.079}$	$1.040^{+0.084}_{-0.126}$	$1.868^{+0.330}_{-0.887}$
	+3%/-3%	+1%/-4%	+28%/-83%	+27%/-9%	+8%/-12%	+18%/-48%
Source	KIC0	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 004851089-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-443 ± 50	$14.89^{+15.28}_{-9.87}$	572^{+37}_{-26}	2853^{+1091}_{-455}	125^{+964}_{-94}
Alt.	-155 ± 61	$12.87^{+14.42}_{-9.17}$	572^{+34}_{-28}	2588^{+1030}_{-448}	61^{+573}_{-49}

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 $A_{obs} \gg 1.0$

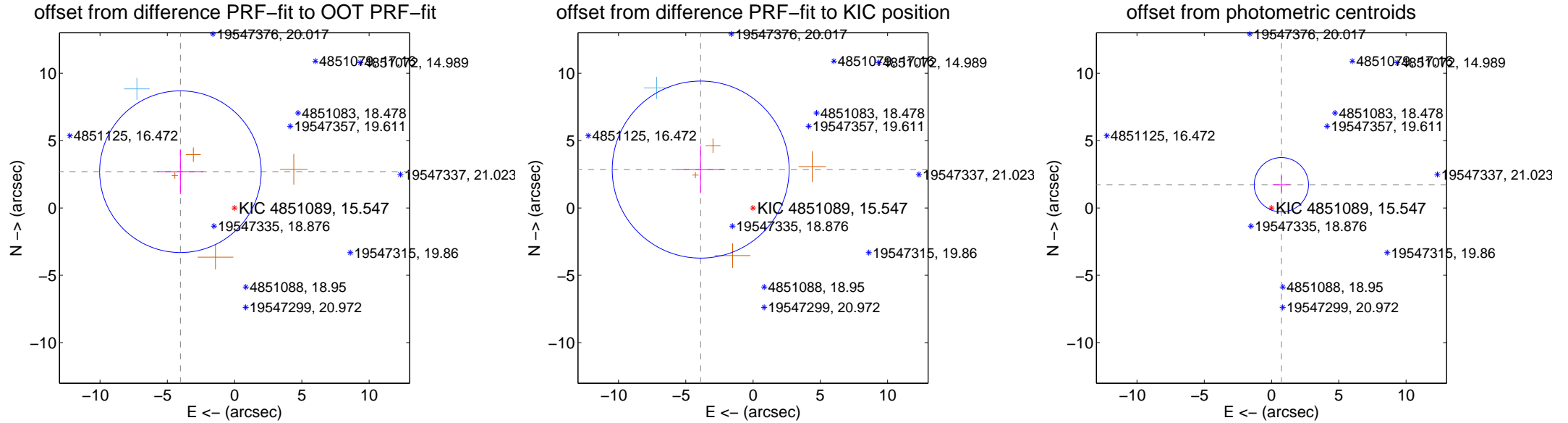
DV Centroid Data

Supplemental centroid analysis for 004851089-03. Kepler magnitude: 15.55. Transit SNR 8.24

There are 1 quarters with good PRF difference image offsets

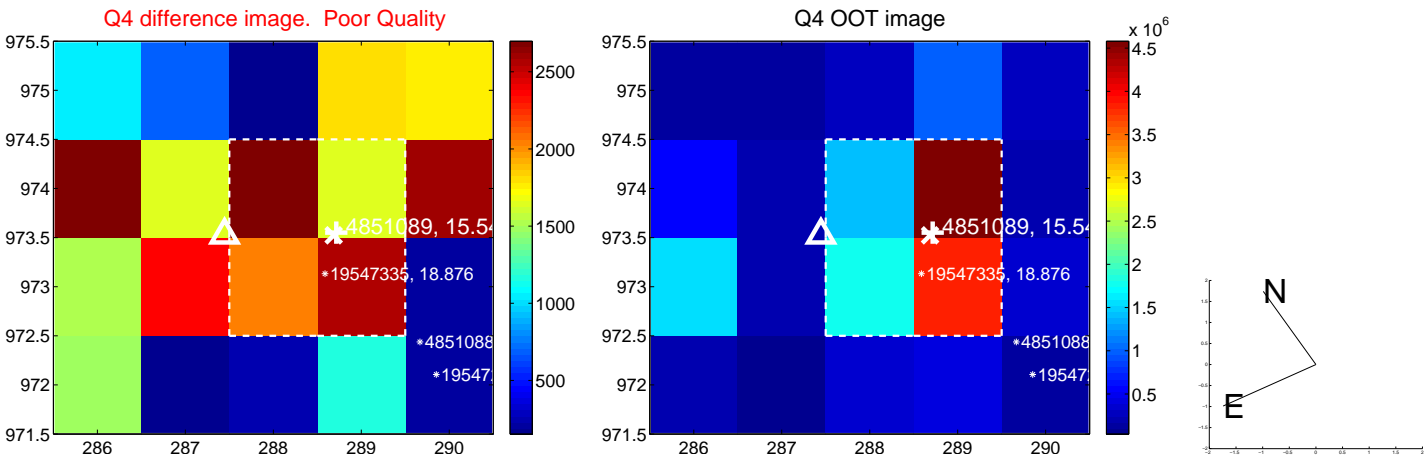
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.845 ± 2.001	2.42	4.027 ± 1.721	2.693 ± 1.662
PRF-fit source offset from KIC position	4.825 ± 2.192	2.20	3.894 ± 1.755	2.849 ± 1.761
photometric centroid source offset	1.87 ± 0.67	2.79	-0.73 ± 0.65	1.73 ± 0.68

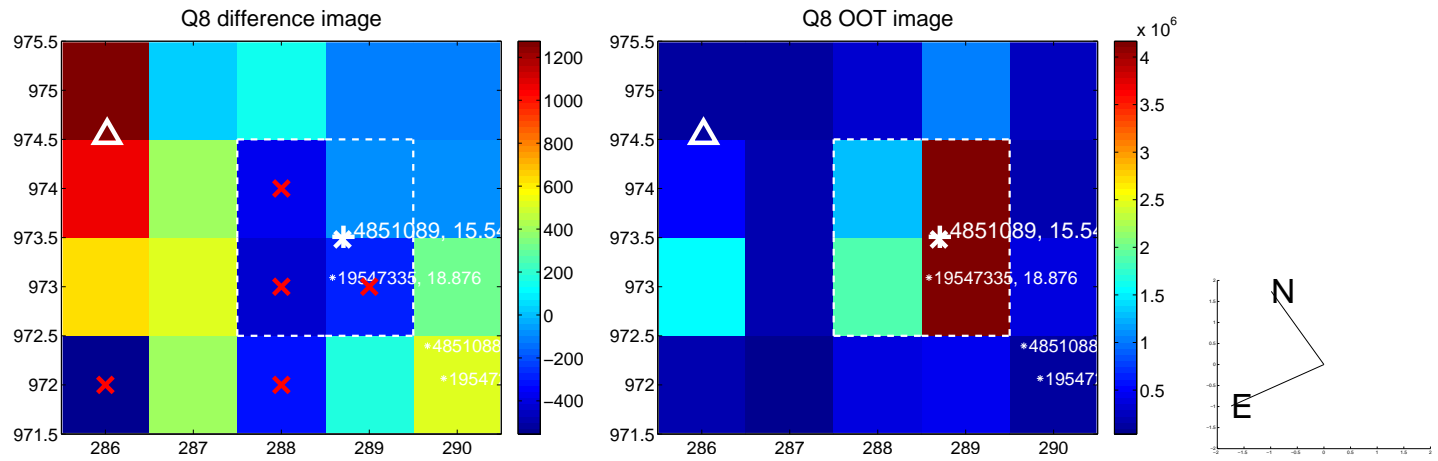
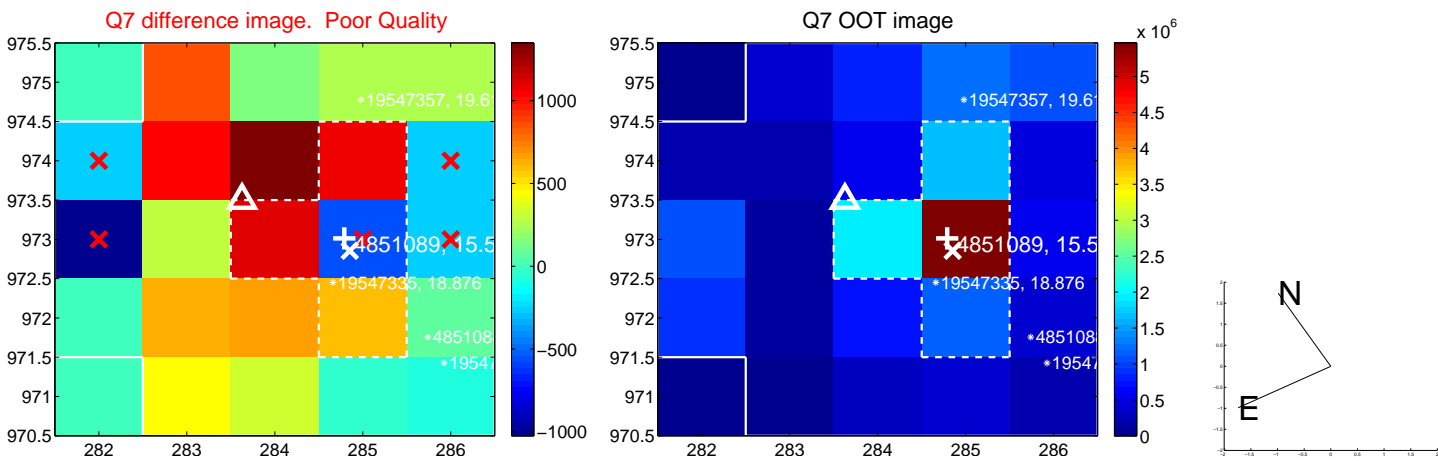
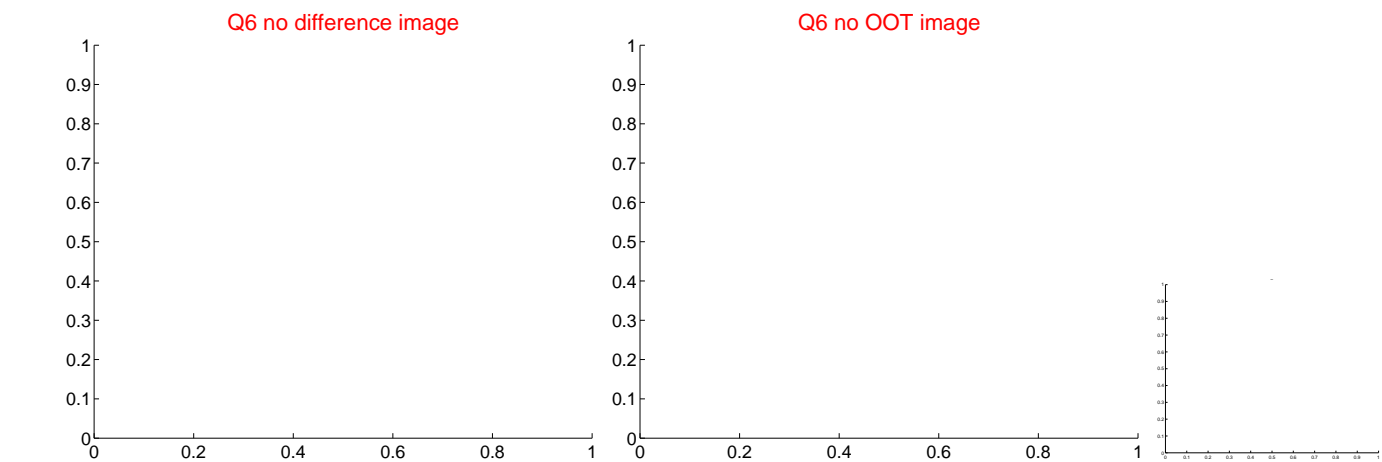
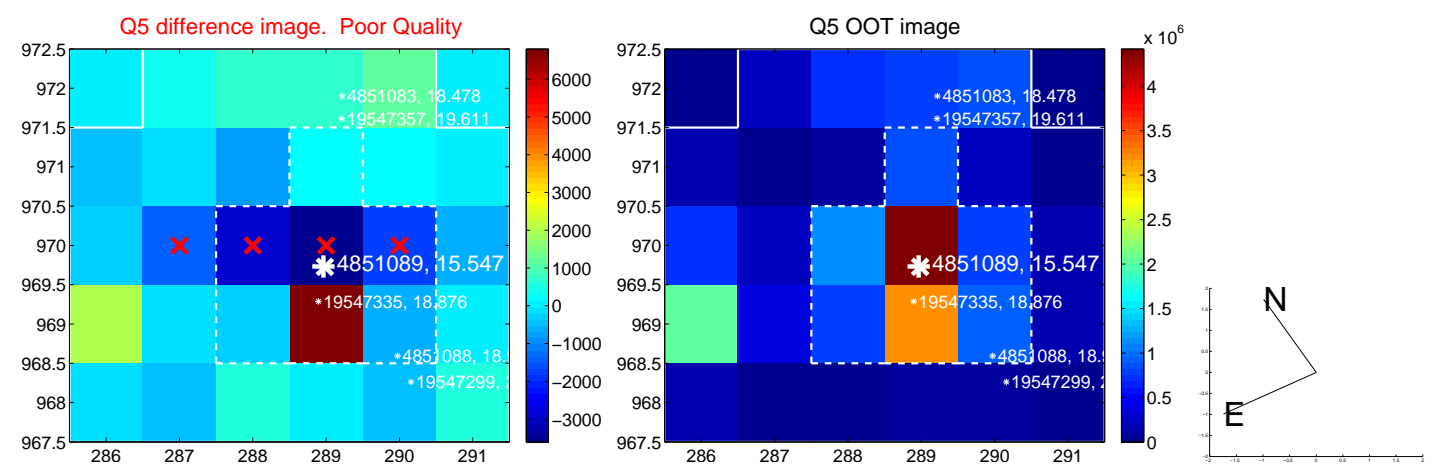


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

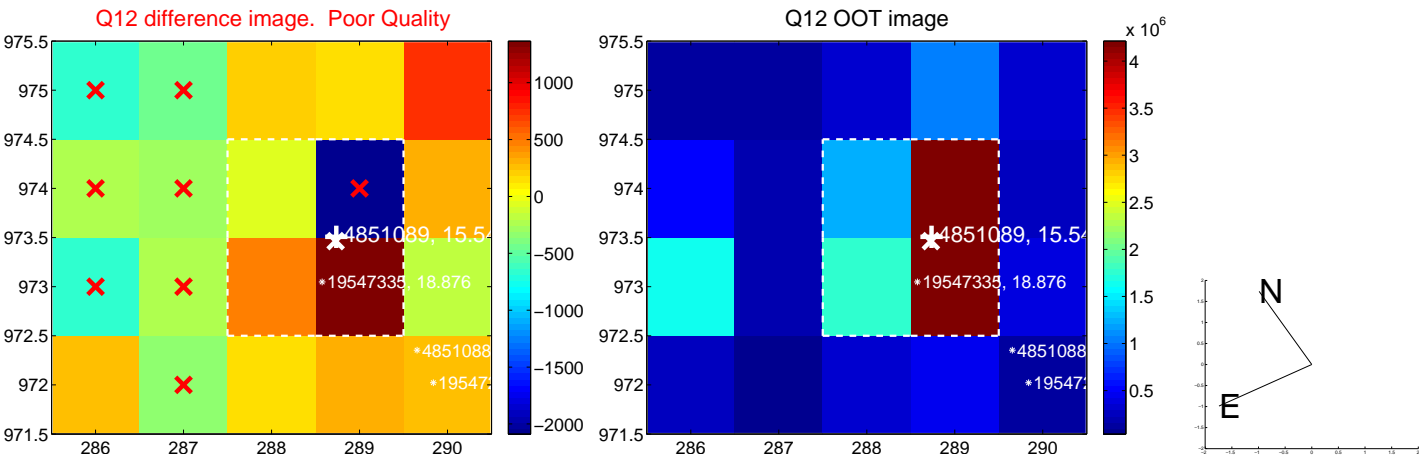
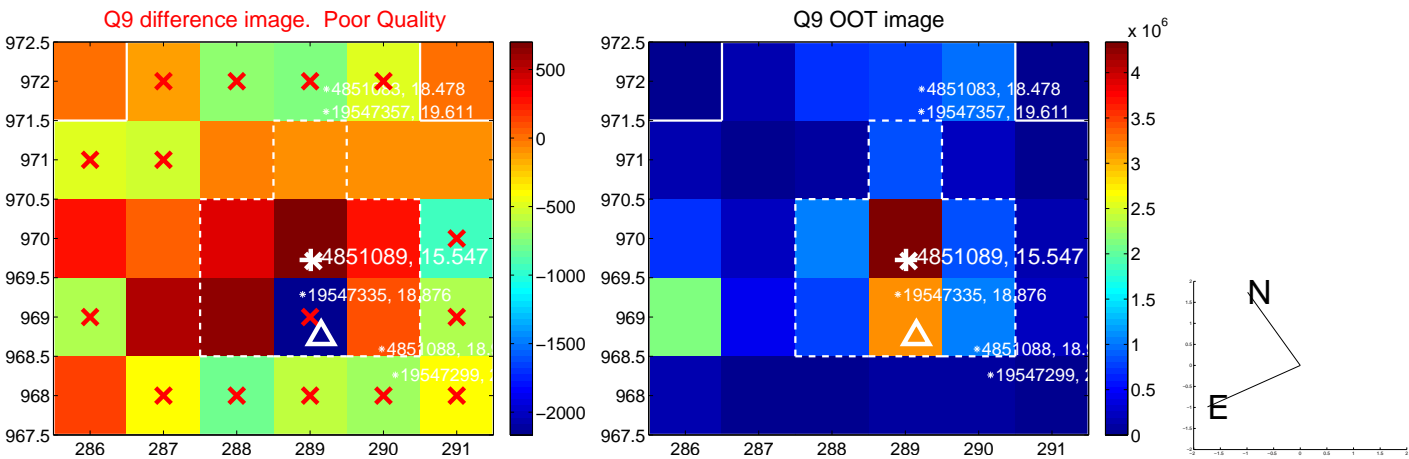
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



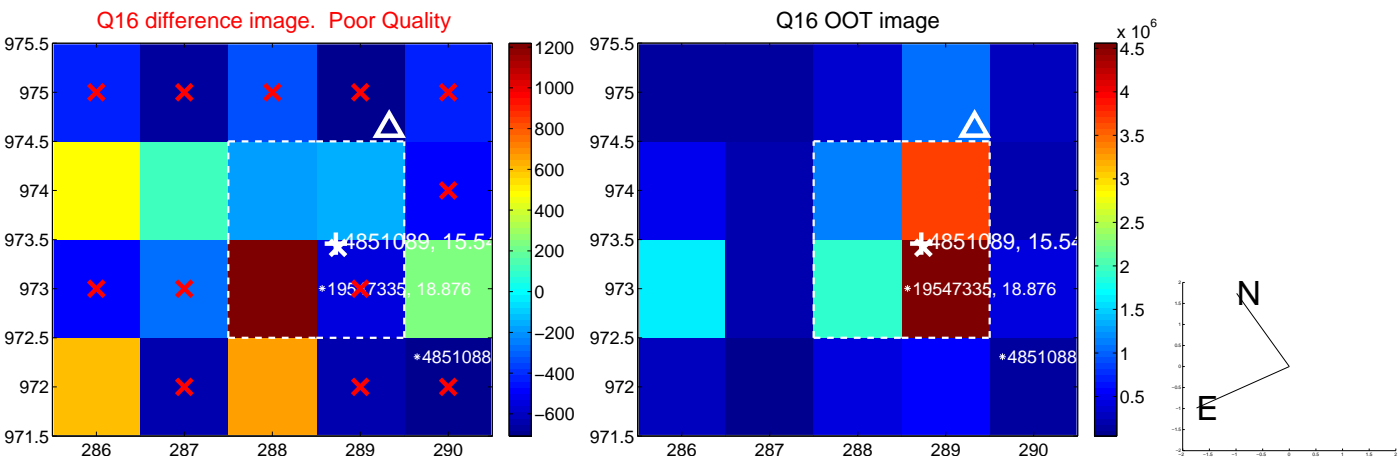
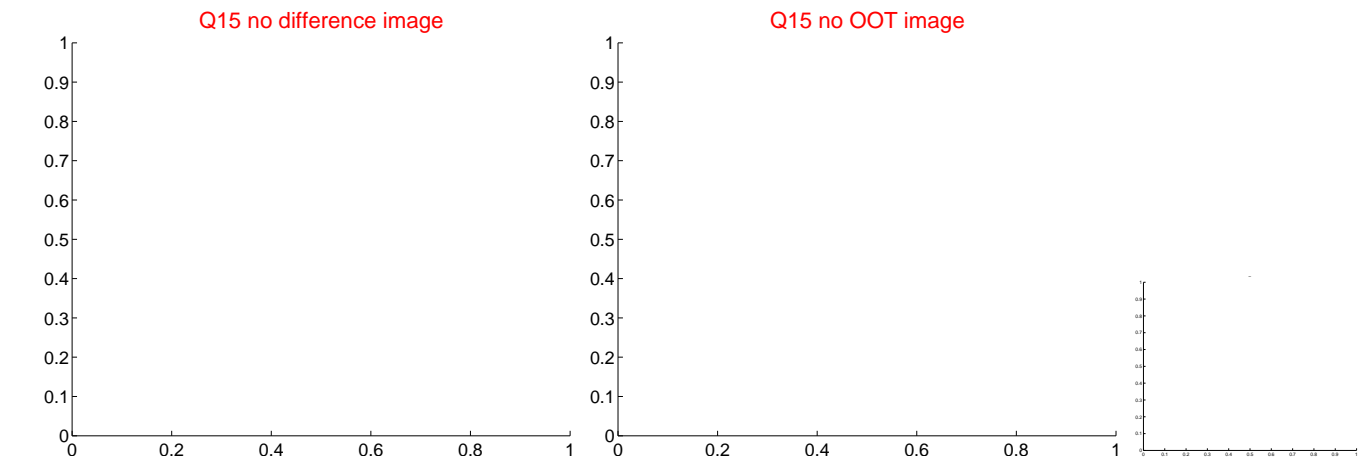
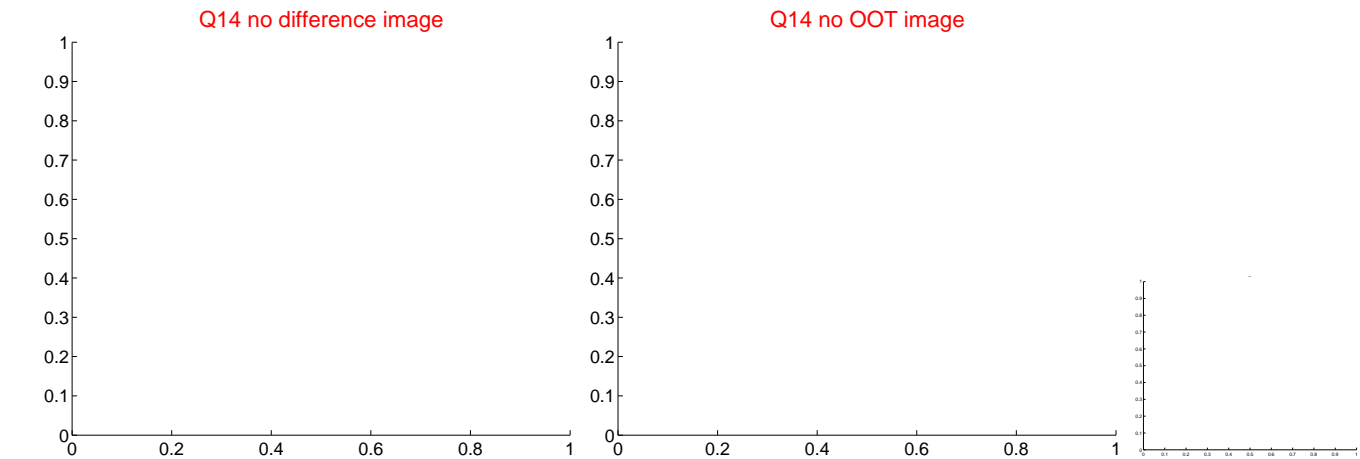
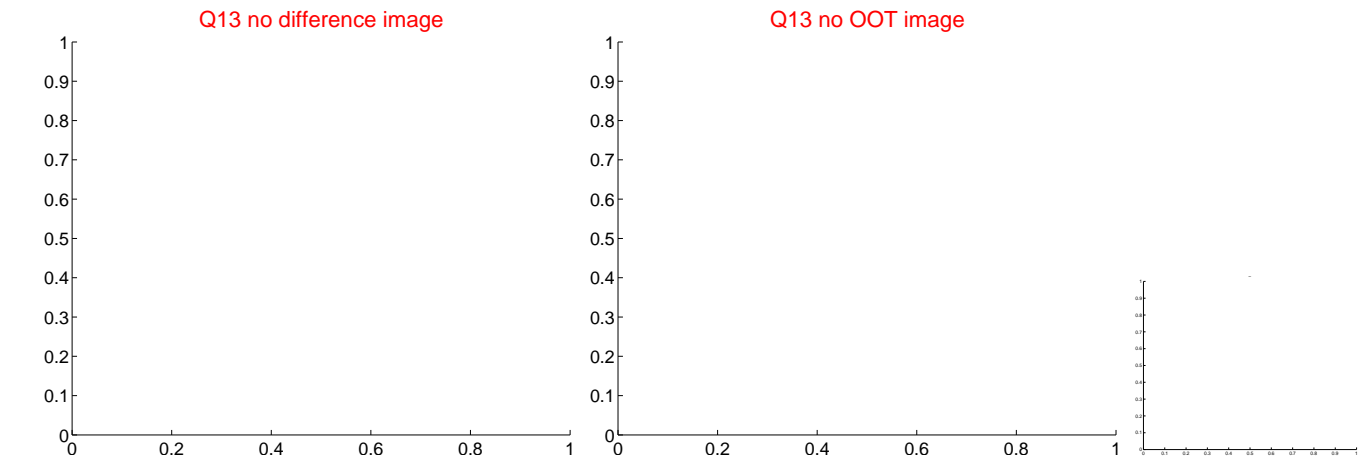
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



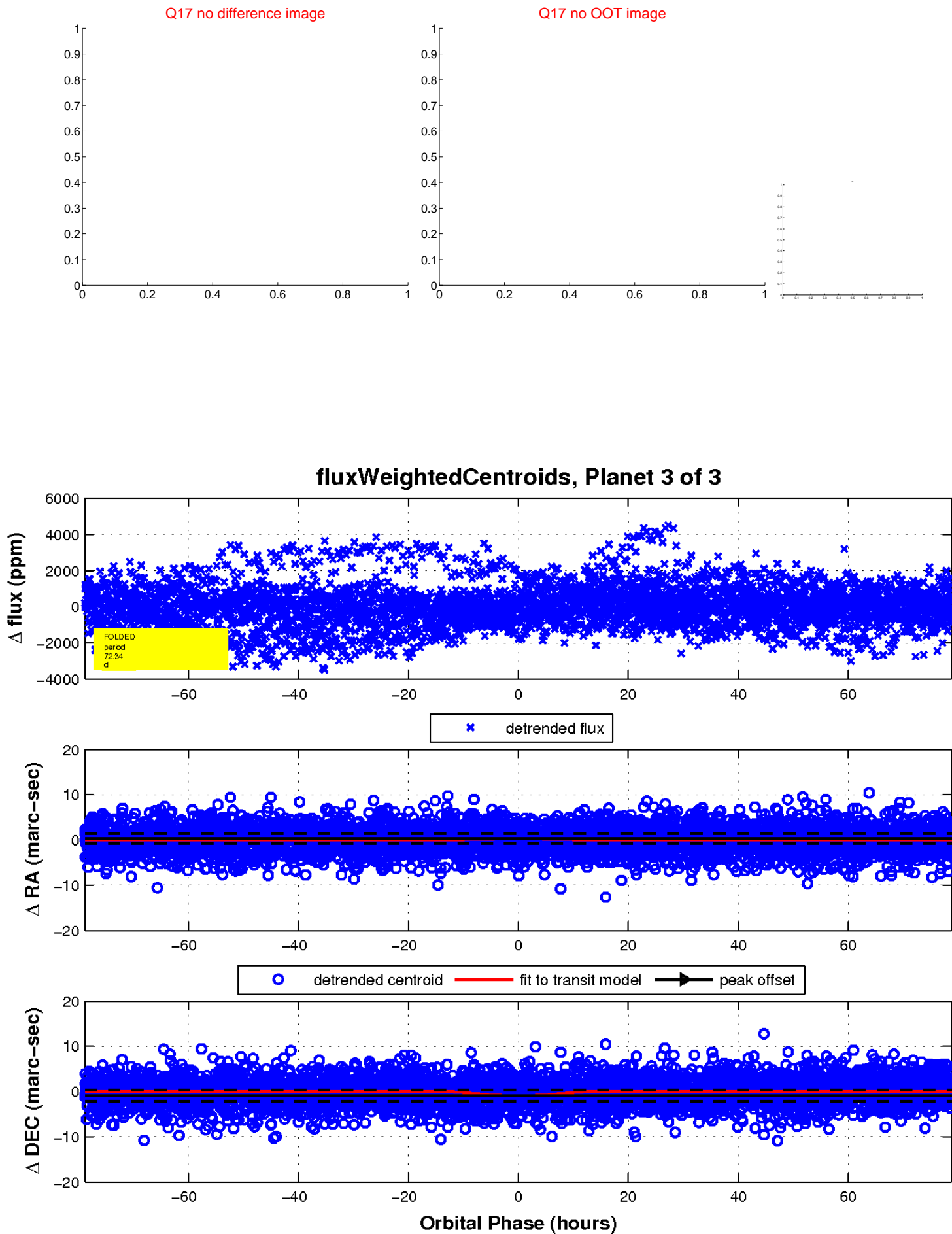
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white ×: 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.



UKIRT Image

Declination

