

KIC 006600515

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})
006600515-01	OBS	No	371.546431	308.744195	866.0	19.209	8.8	8.6	1.04	6173	5.89	1.29
006600515-02	OBS	No	367.083468	306.600815	509.1	26.199	7.5	5.9	1.04	6173	2.78	1.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006600515-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006600515-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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 006600515-01

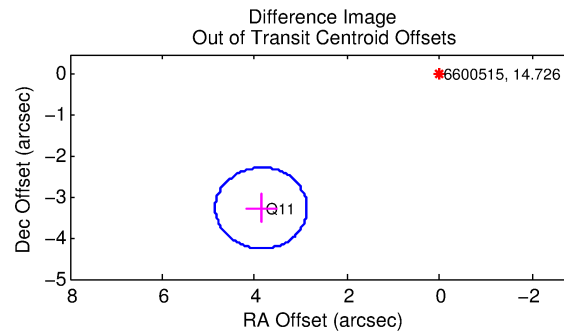
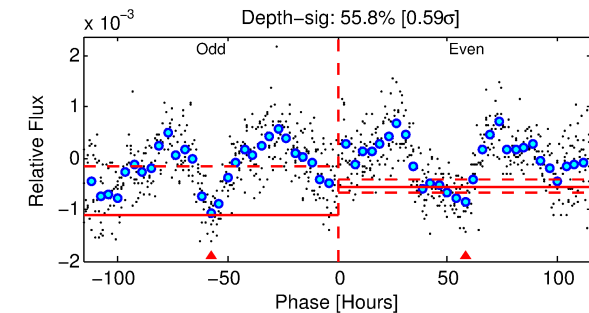
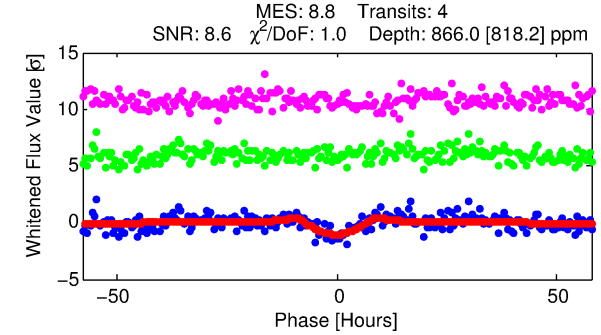
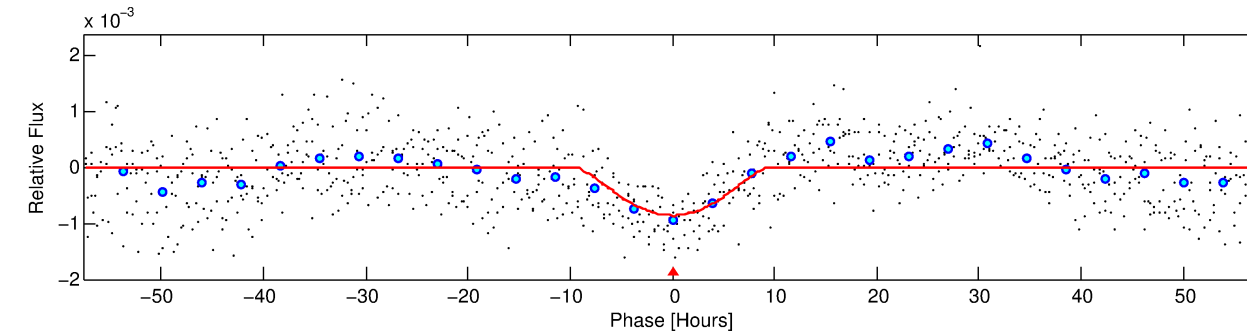
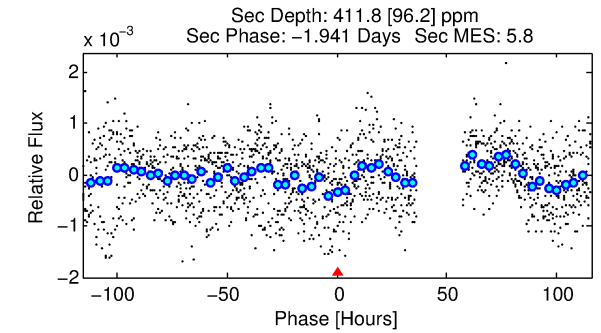
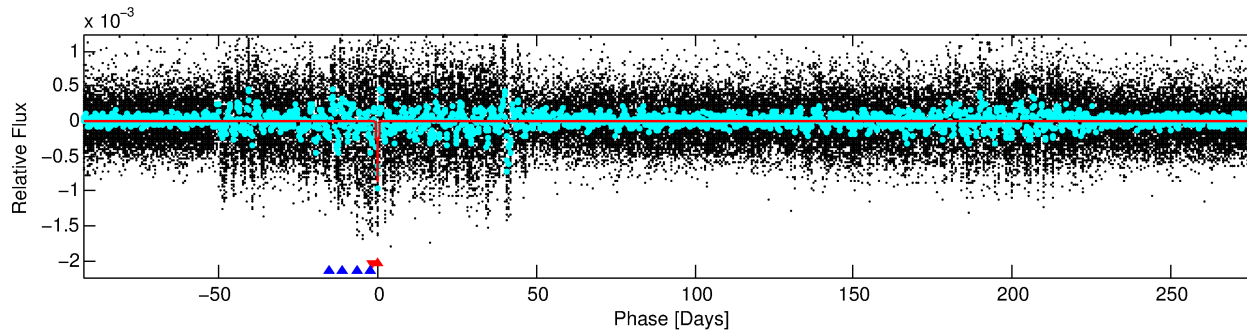
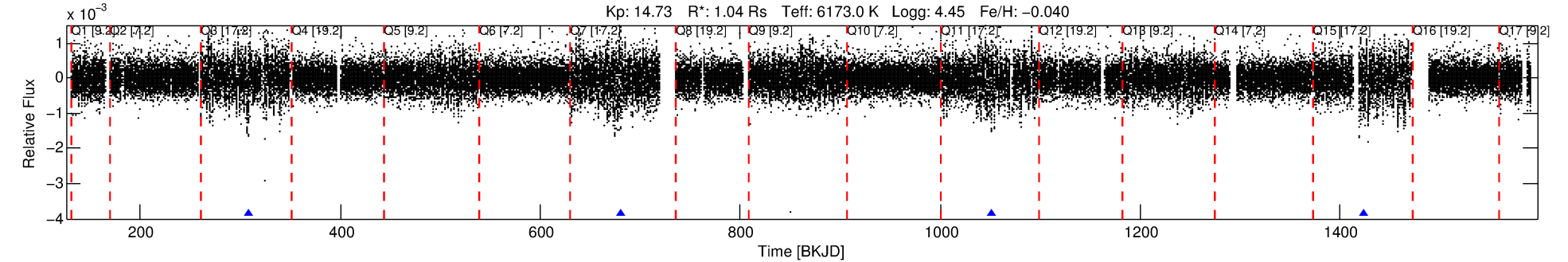
No Significant Match Found

DV One-Page Summary

KIC: 6600515 Candidate: 1 of 2 Period: 371.546 d

KOI: K05302 Corr: No Ephemeris Match

Kp: 14.73 R*: 1.04 Rs Teff: 6173.0 K Logg: 4.45 Fe/H: -0.040



DV Fit Results:

Period = 371.54643 [0.01831] d
Epoch = 308.7442 [0.0340] BKJD
Rp/R* = 0.0518 [0.1289]
a/R* = 48.20 [28.88]
b = 1.00 [0.15]
Seff = 1.29 [0.50]
Teq = 272 [26] K
Rp = 5.89 [14.76] Re
a = 1.0463 [0.2677] AU
Ag = 7151.92 [35703.08] [0.20σ]
Teffp = 3862 [4809] K [0.75σ]

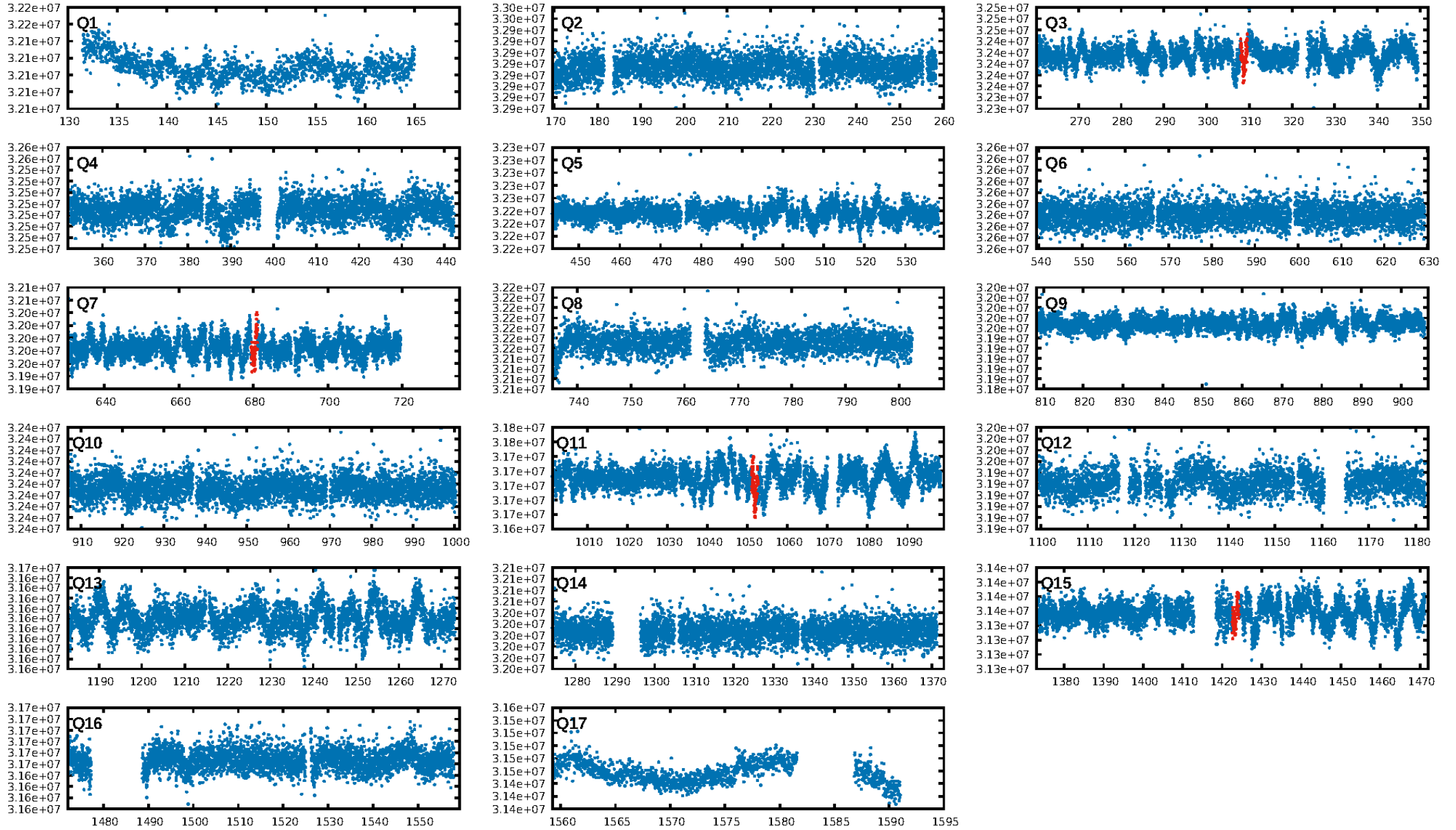
DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.30σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 4.59e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.799
Centroid-sig: 10.9%
Centroid-so: 2.732 arcsec [1.21σ]
OotOffset-rm: 5.059 arcsec [15.32σ]
KicOffset-rm: 5.001 arcsec [15.13σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [4/4]

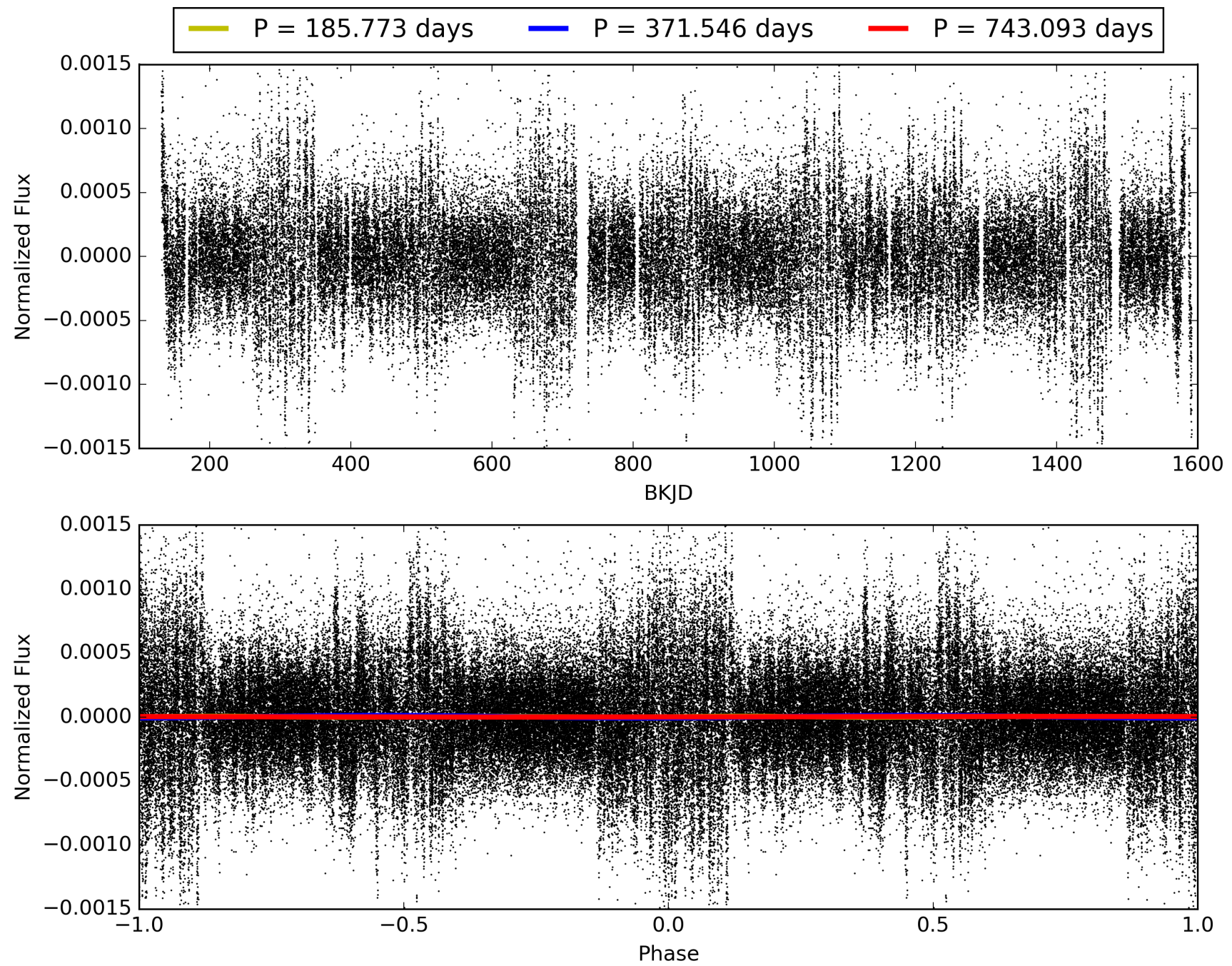
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:28:01 Z

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

TCE 006600515-01, PDC Light Curves

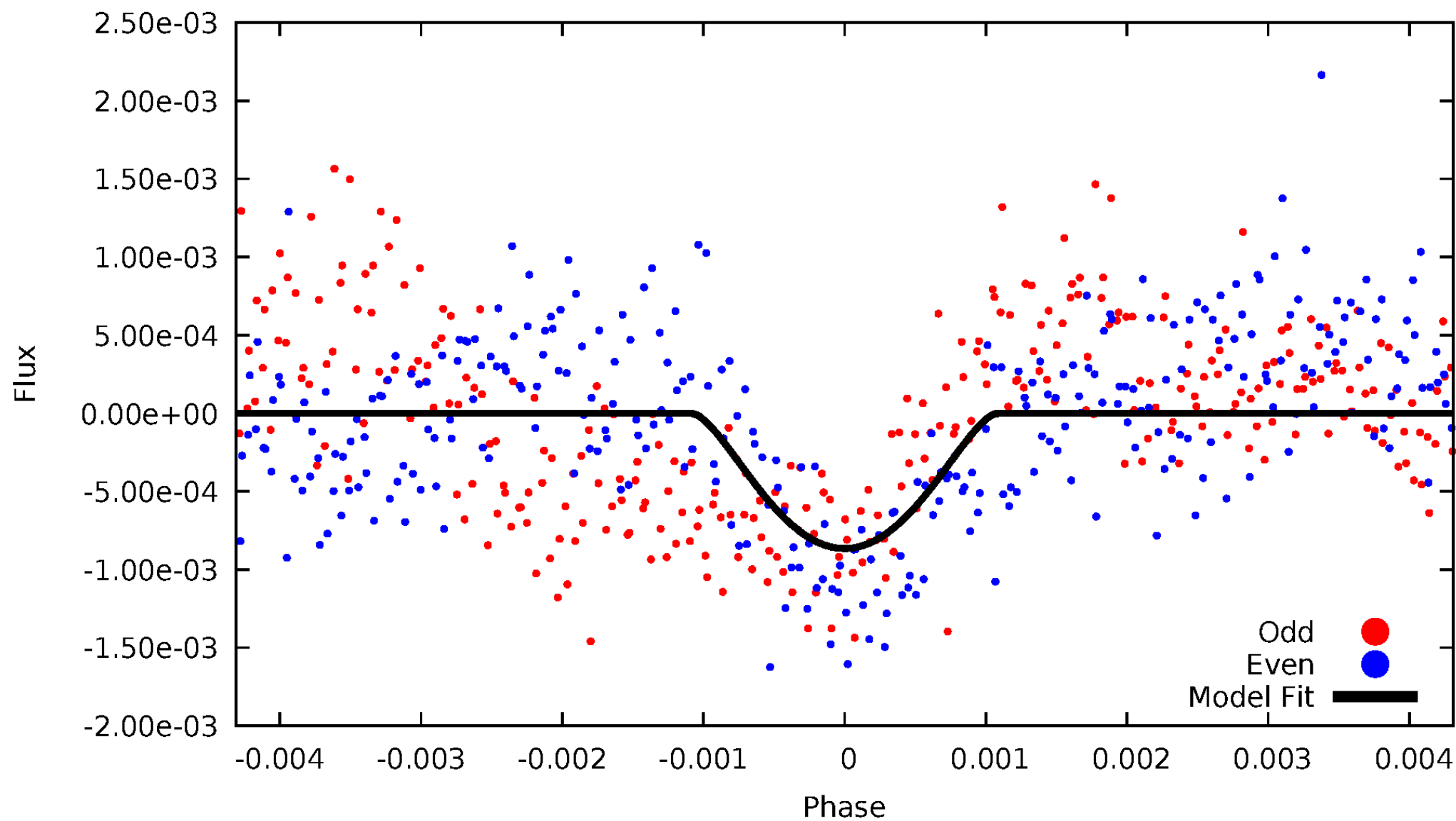


TCE 006600515-01



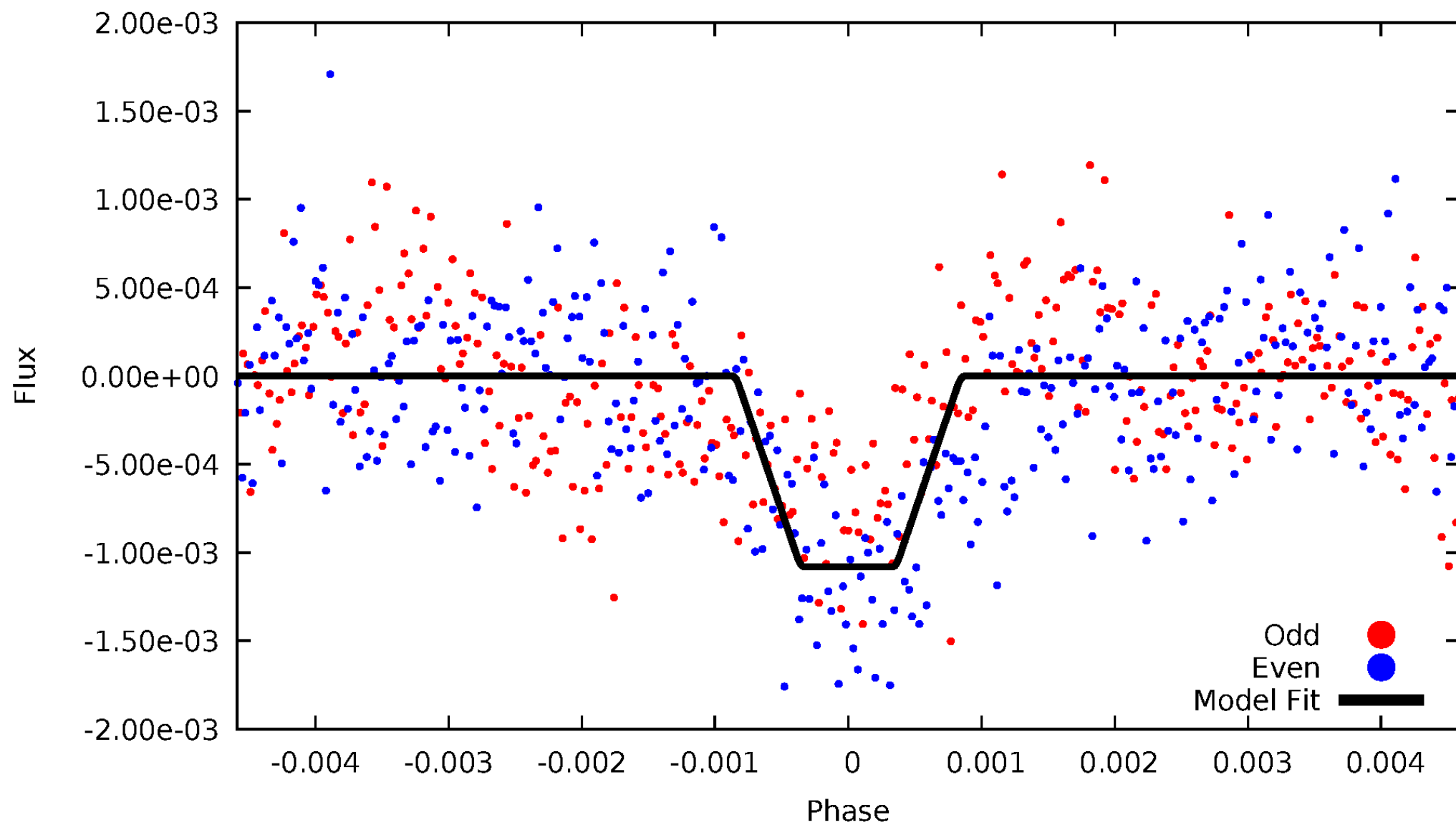
DV Odd/Even

TCE 006600515-01



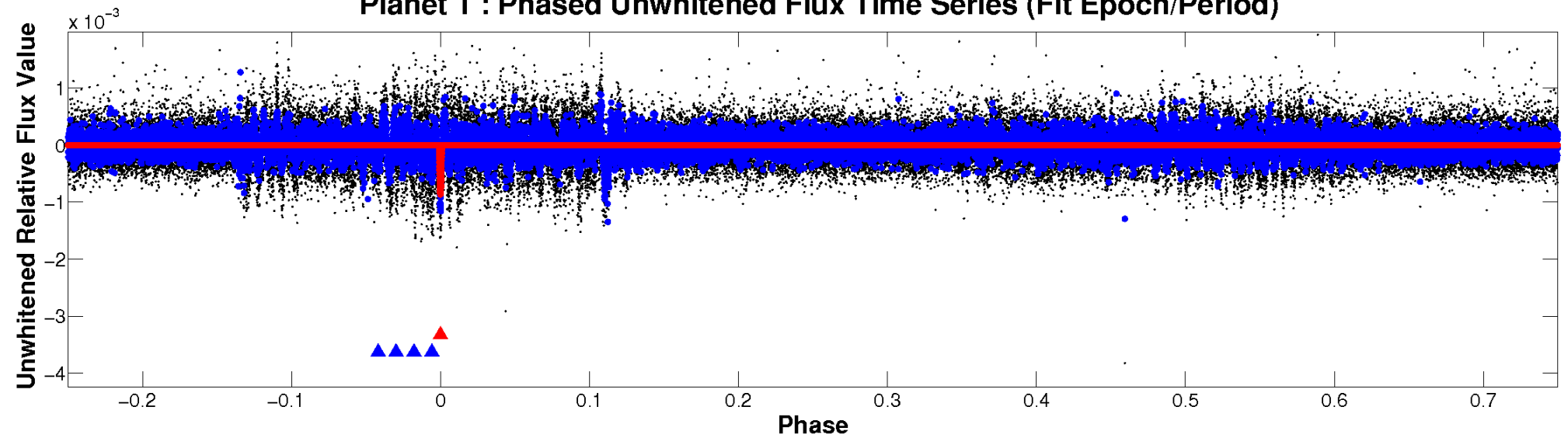
ALT Odd/Even

TCE 006600515-01

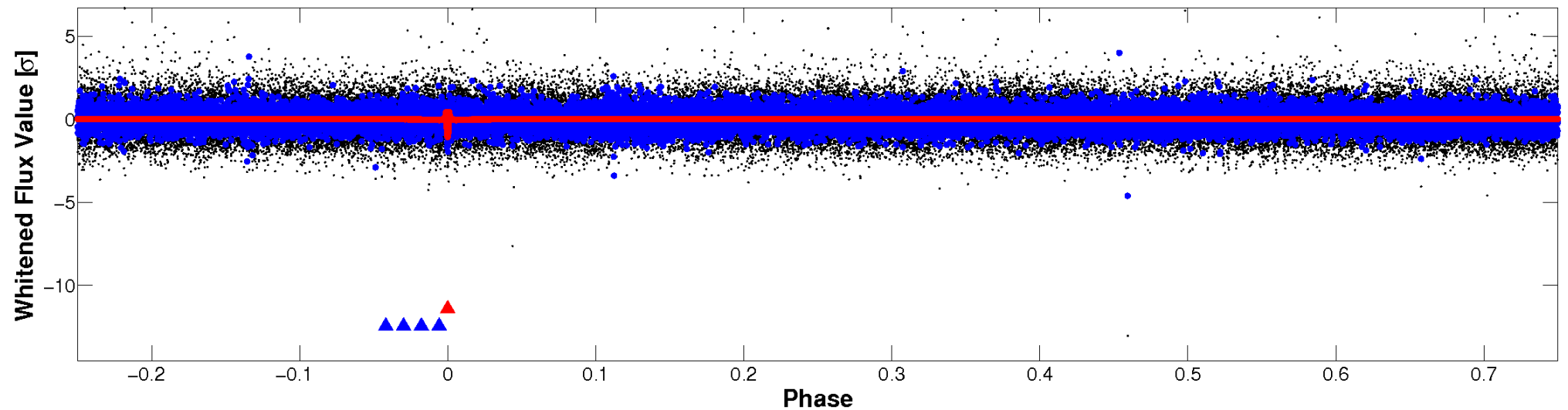


Non-Whitened Vs. Whitened Light Curve

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

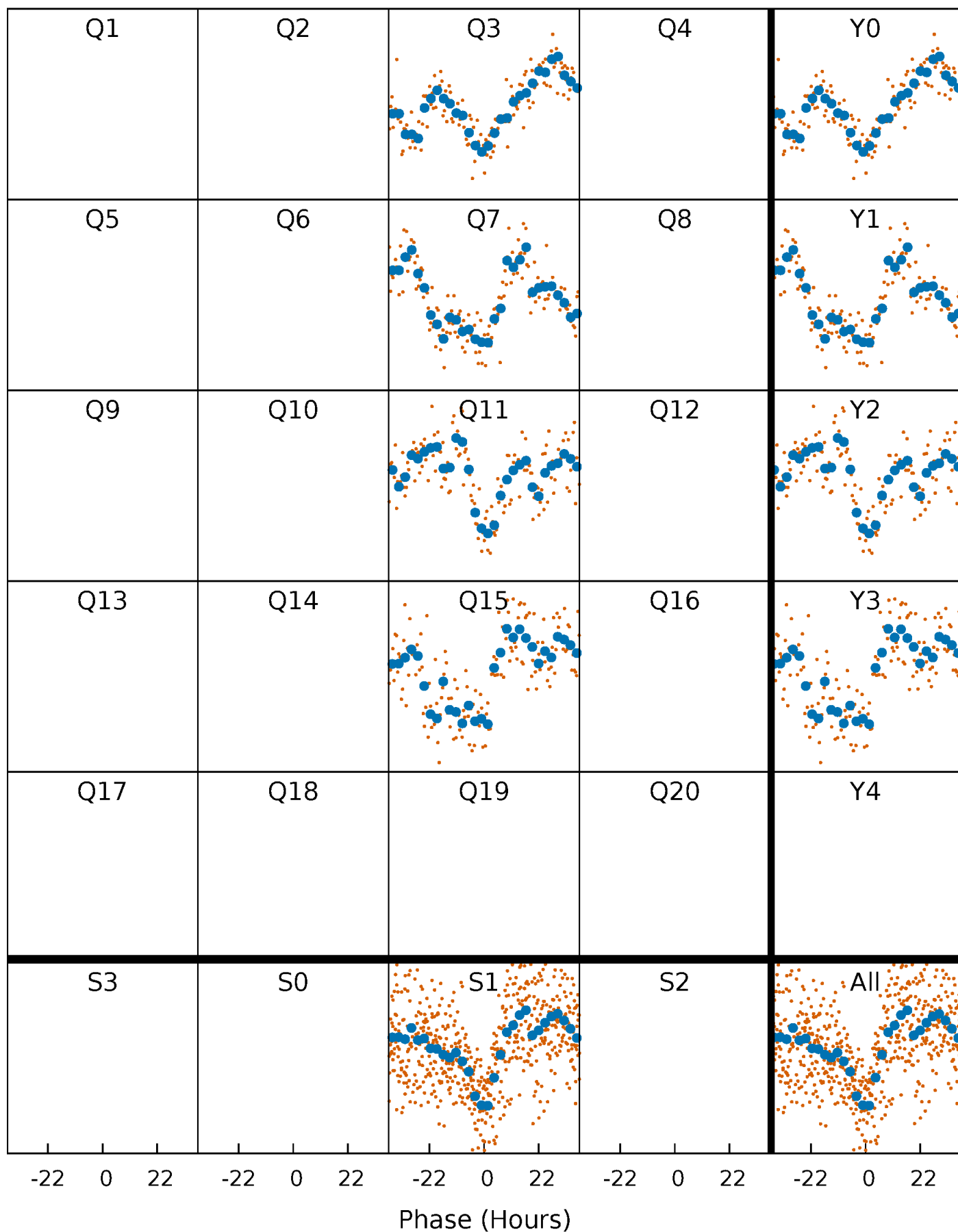


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



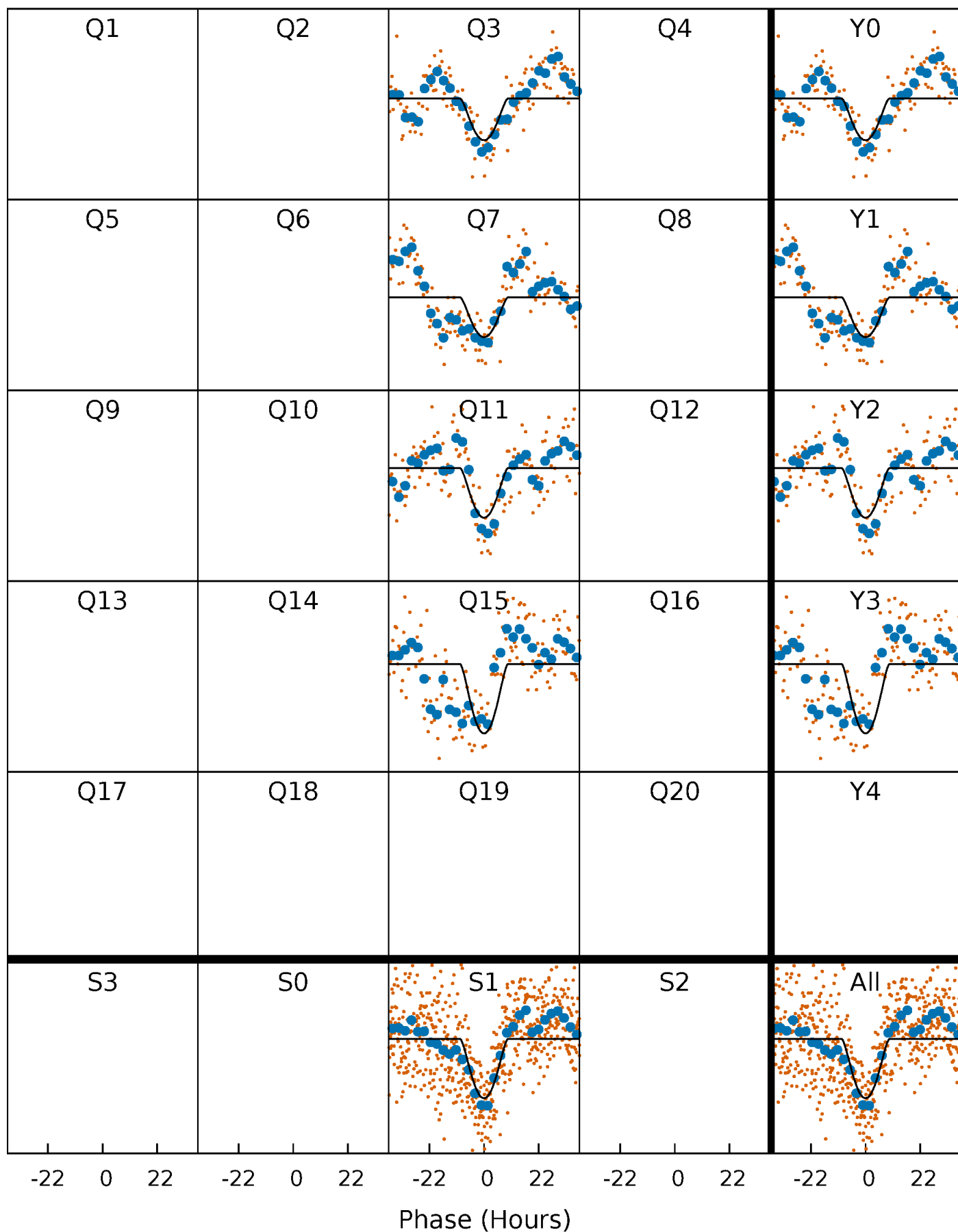
PDC Quarter-Phased Transit Curves

TCE 006600515-01 P=371.546431 Days $T_0=308.744194$ (BKJD)



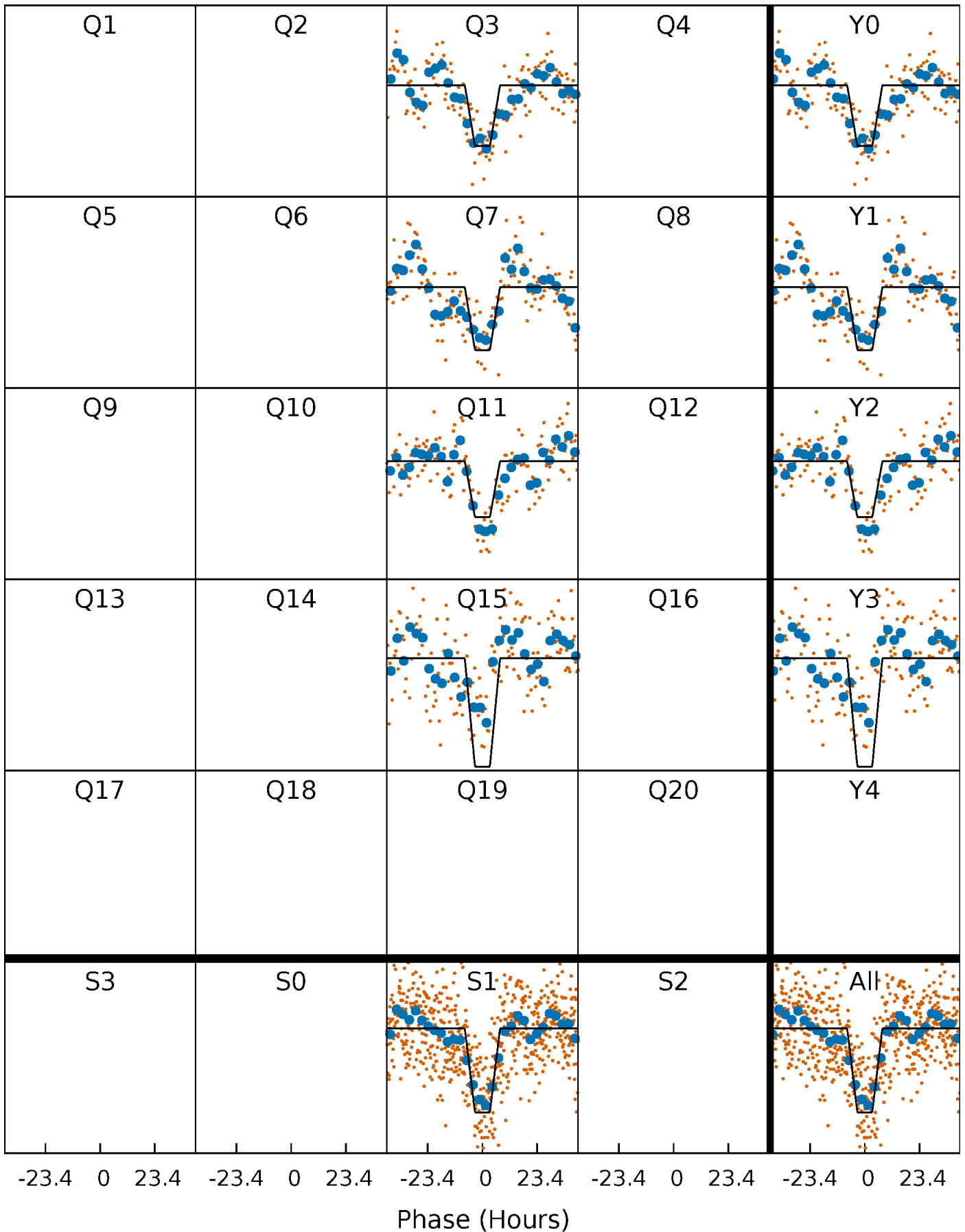
DV Quarter-Phased Transit Curves

TCE 006600515-01 P=371.546431 Days $T_0=308.744194$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

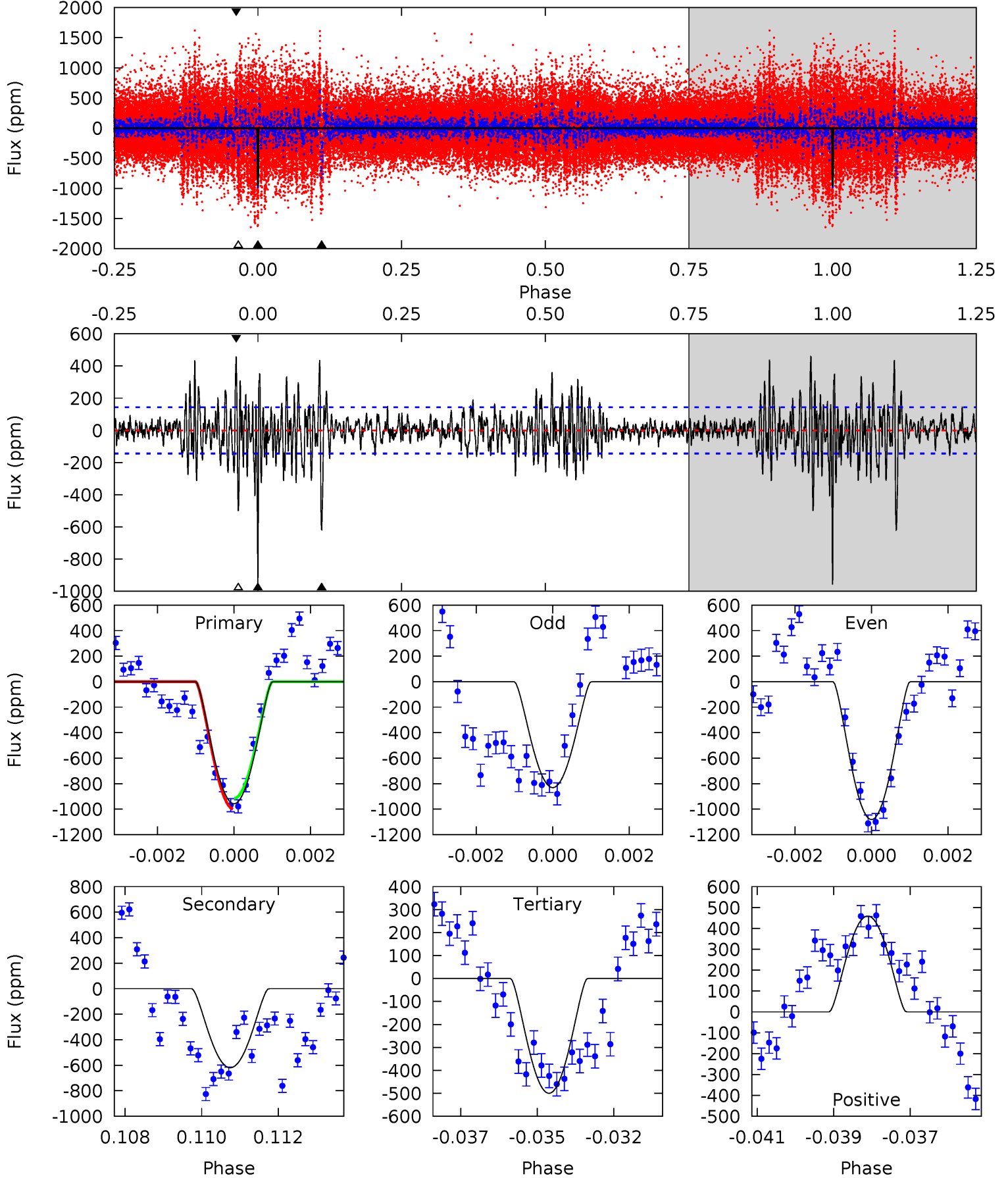
TCE 006600515-01 P=371.550233 Days $T_0=308.726319$ (BKJD)



DV Model-Shift Uniqueness Test

006600515-01, P = 371.546431 Days, E = 308.744194 Days

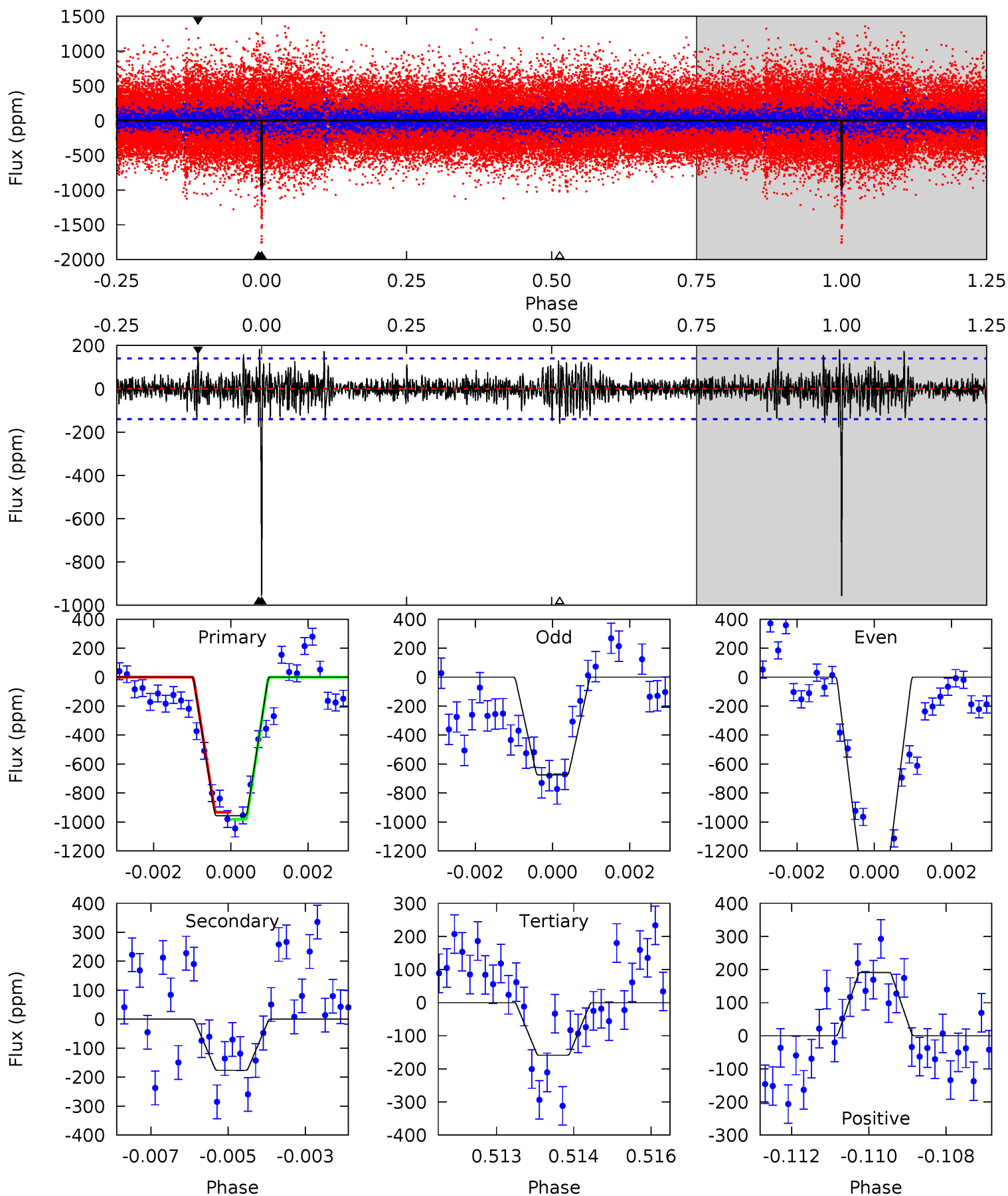
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.4	22.9	18.5	17.0	5.31	3.07	3.83	16.9	18.4	4.41	5.91	4.65	0.92	0.32	1.56



Alt Model-Shift Uniqueness Test

006600515-01, P = 371.550233 Days, E = 308.726319 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.5	6.73	6.06	7.29	5.35	3.13	1.47	30.5	29.2	0.67	-0.56	10.3	0.94	0.17	0.91



Stellar Parameters For KIC 006600515

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6173^{+171}_{-214}	$4.447^{+0.052}_{-0.195}$	$-0.040^{+0.250}_{-0.350}$	$1.041^{+0.324}_{-0.108}$	$1.104^{+0.139}_{-0.153}$	$1.379^{+0.380}_{-0.717}$
	+3%/-3%	+1%/-4%	+625%/-875%	+31%/-10%	+13%/-14%	+28%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006600515-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-619 ± 27	$12.11^{+12.60}_{-7.95}$	386^{+26}_{-18}	3517^{+1732}_{-658}	2472^{+19446}_{-1883}
Alt.	-176 ± 26	$12.05^{+12.35}_{-8.39}$	387^{+25}_{-19}	2920^{+1361}_{-491}	709^{+6862}_{-536}

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 $A_{obs} \gg 1.0$

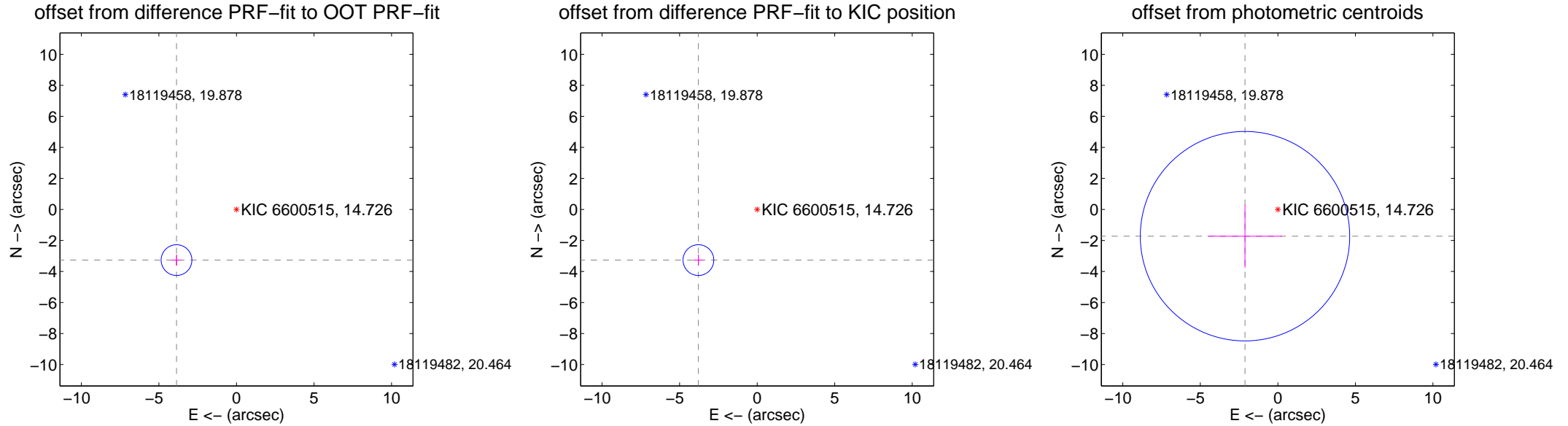
DV Centroid Data

Supplemental centroid analysis for 006600515-01. Kepler magnitude: 14.73. Transit SNR 8.57

There are 0 quarters with good PRF difference image offsets

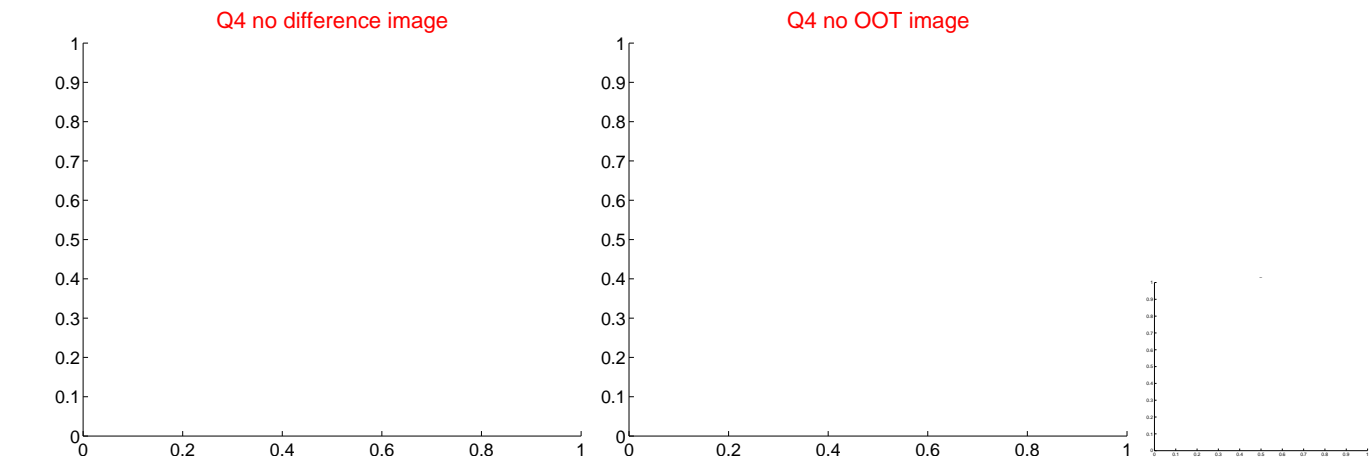
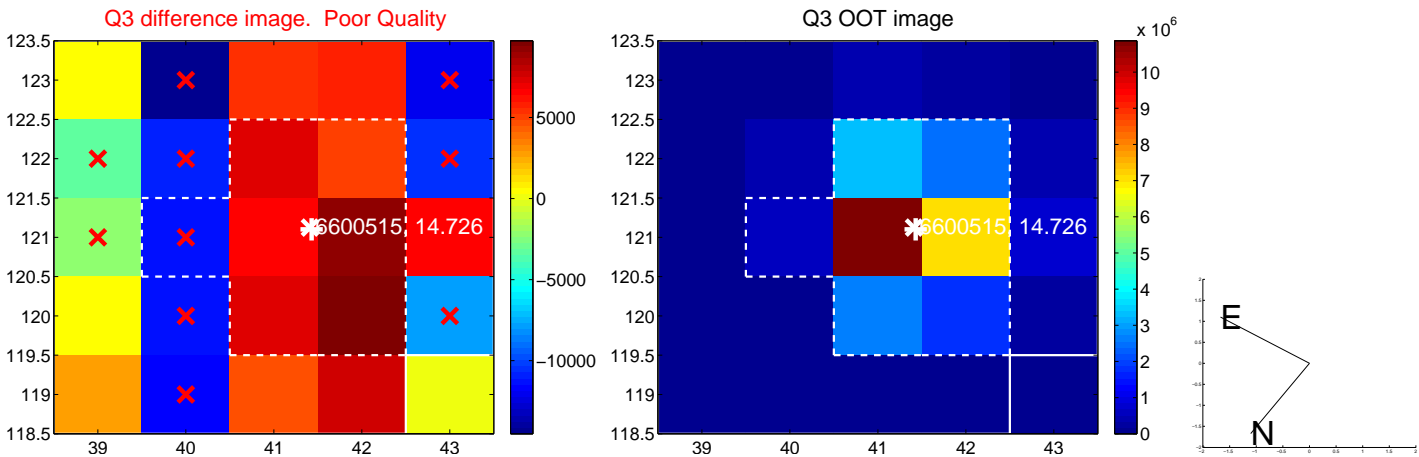
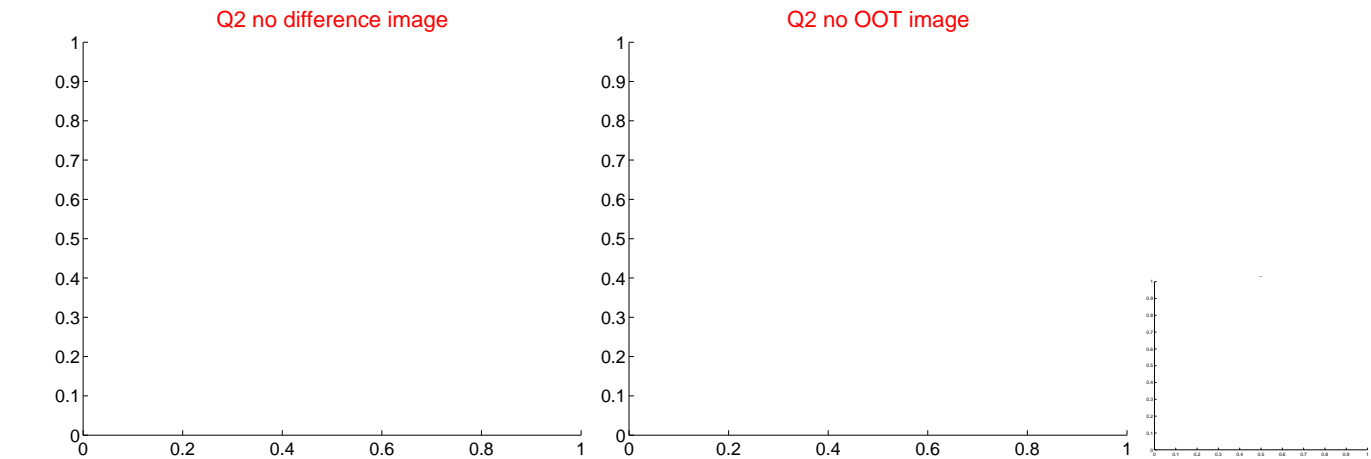
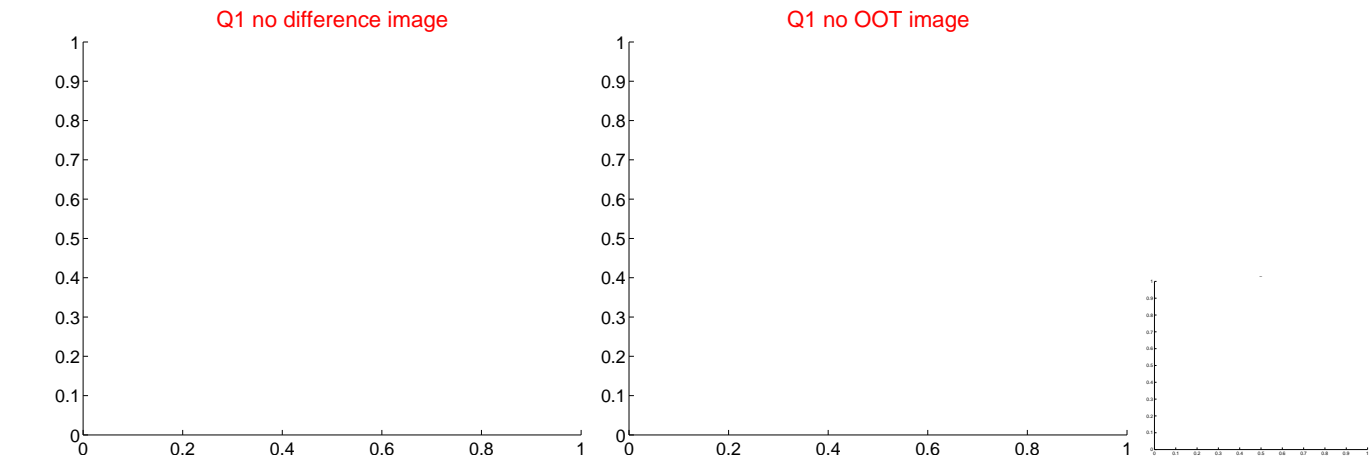
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.059 ± 0.330	15.32	3.864 ± 0.321	-3.266 ± 0.342
PRF-fit source offset from KIC position	5.001 ± 0.330	15.13	3.787 ± 0.321	-3.266 ± 0.342
photometric centroid source offset	2.73 ± 2.25	1.21	2.12 ± 2.38	-1.72 ± 2.03

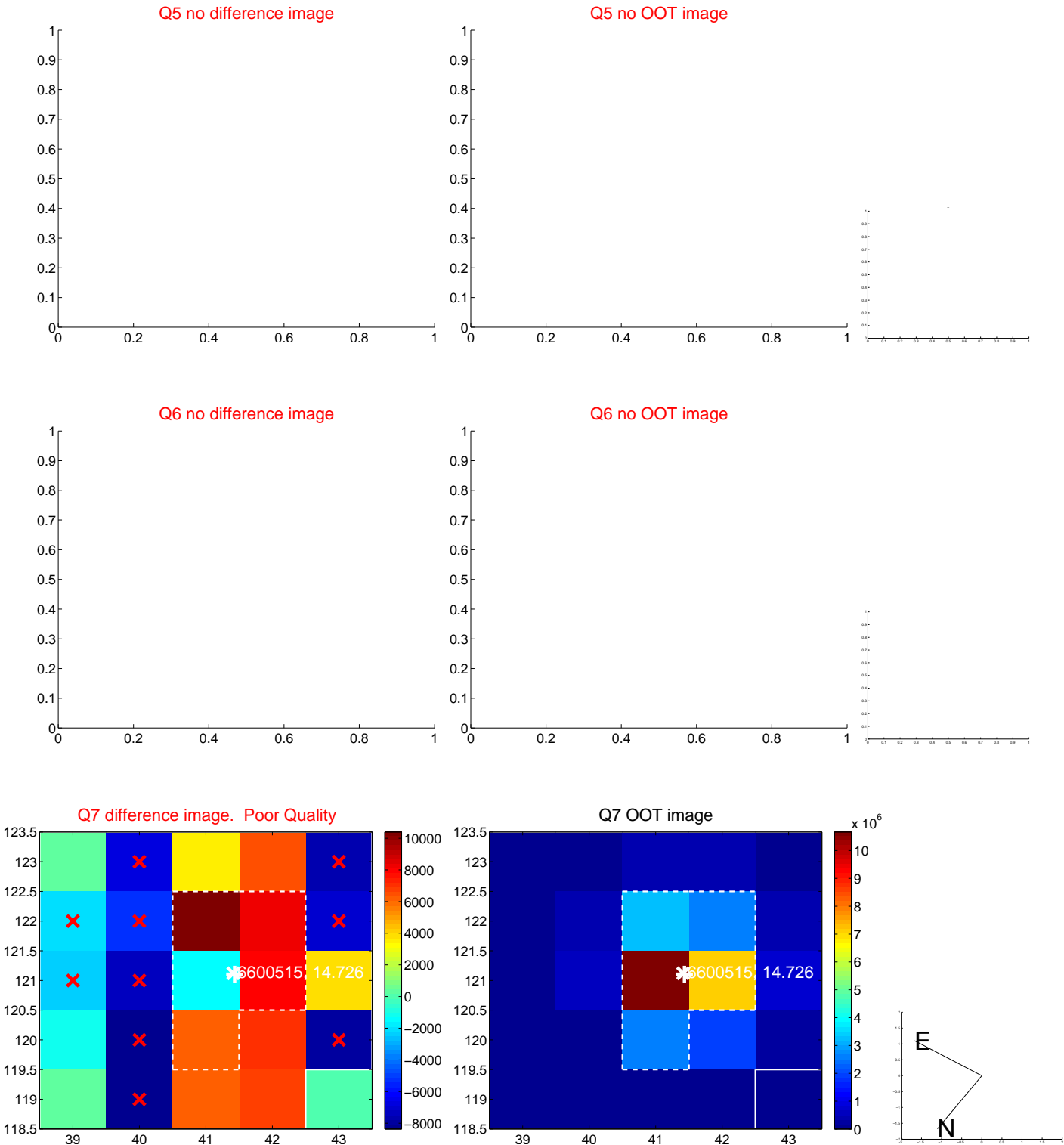


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

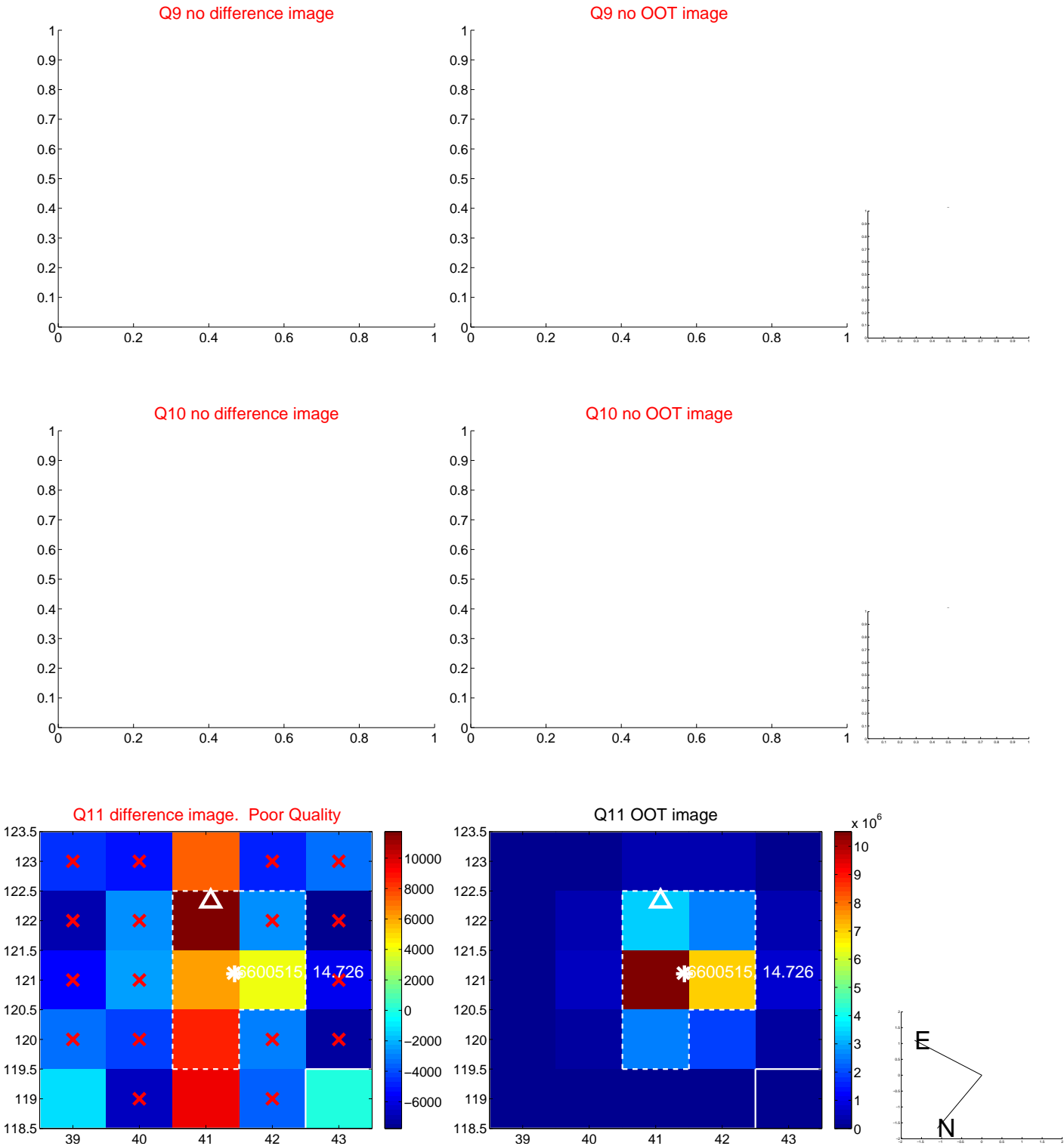
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



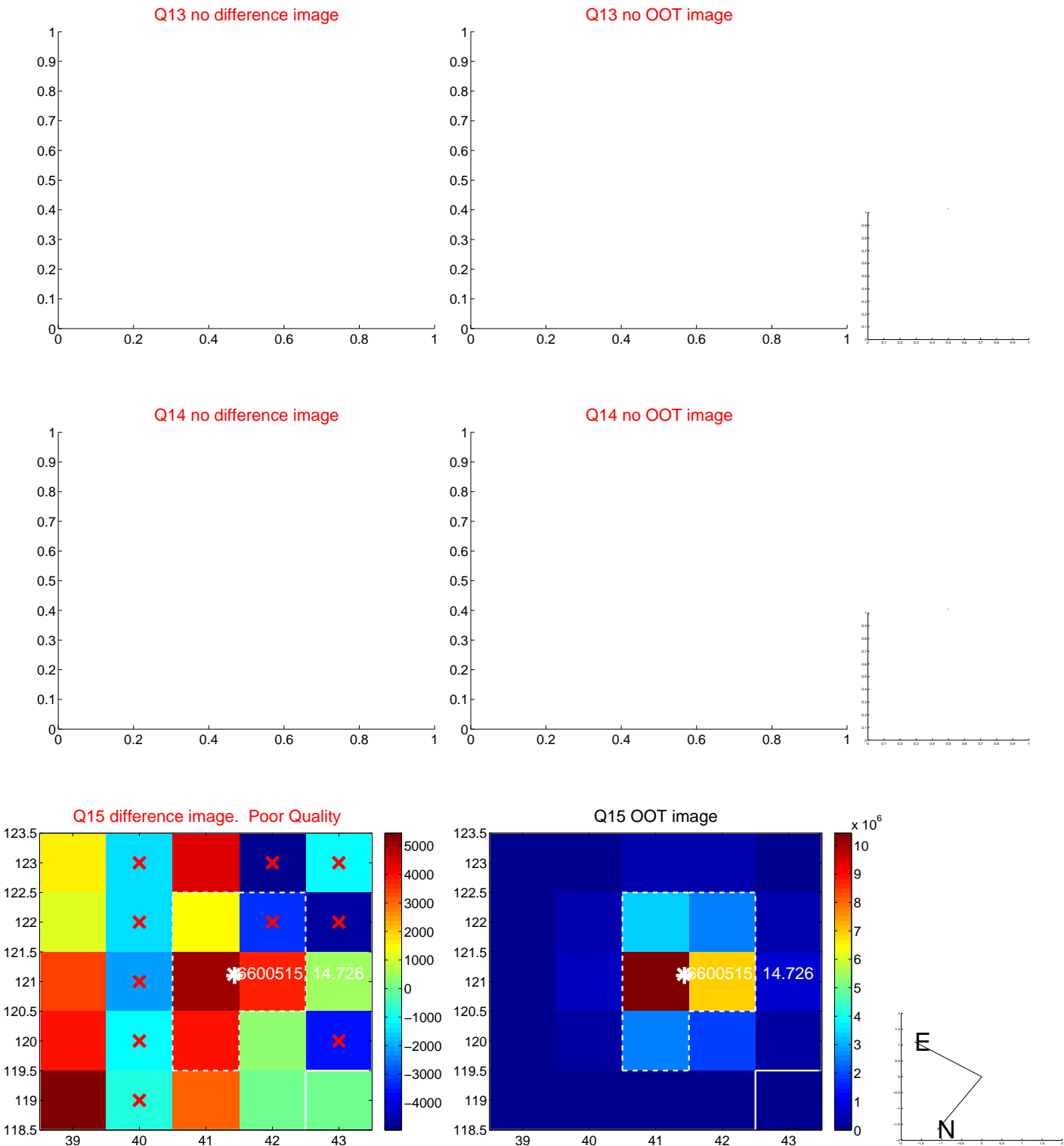
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



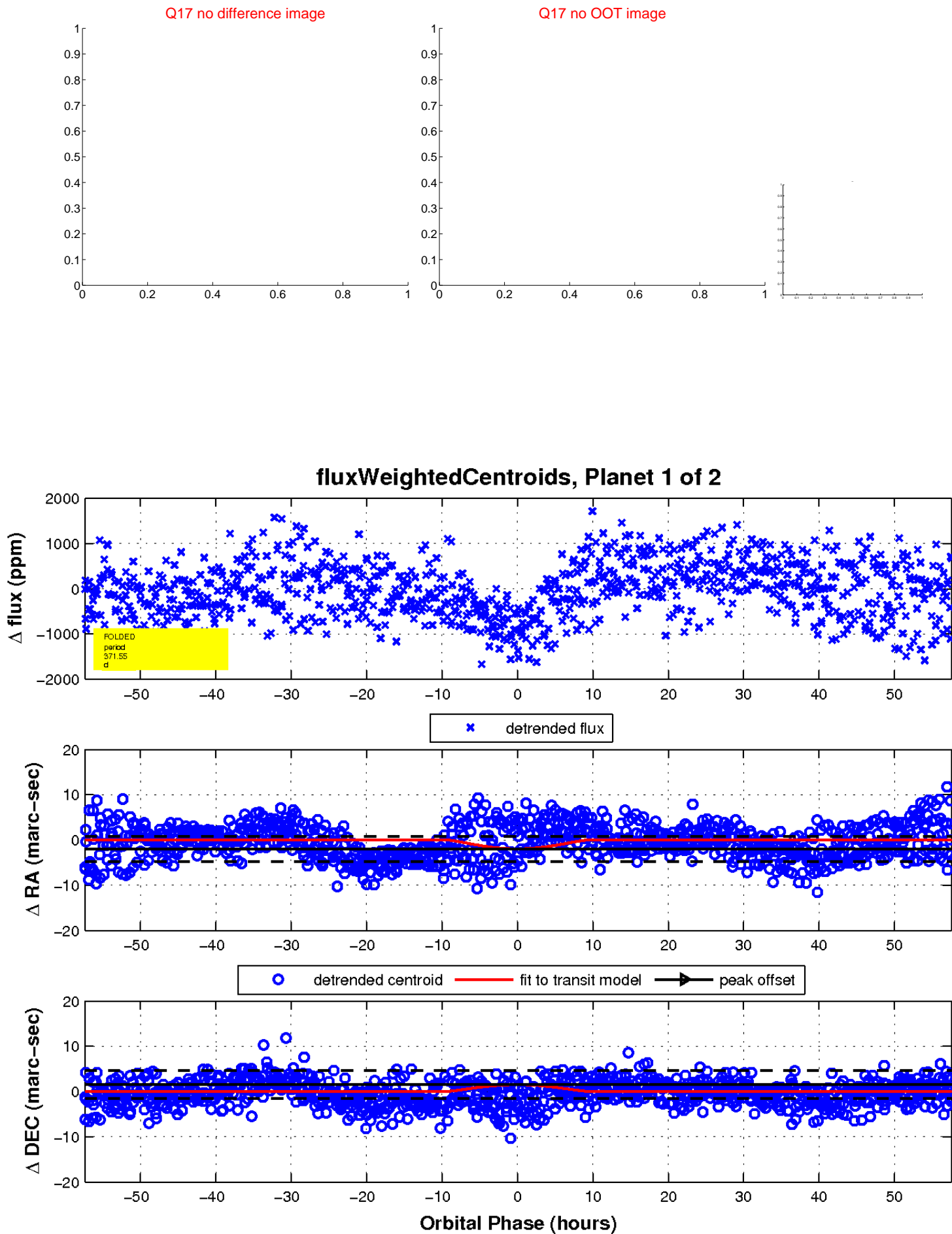
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

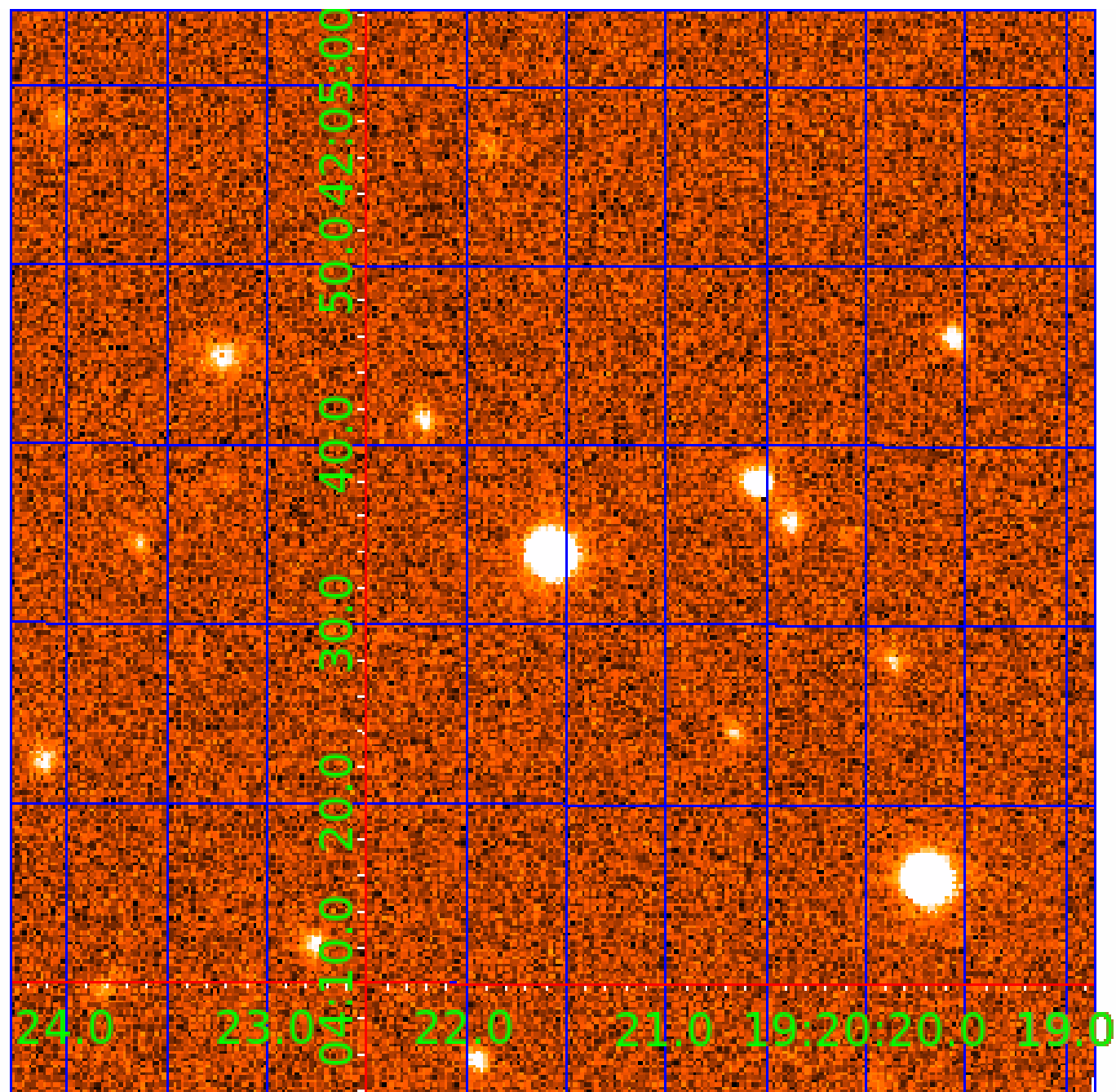


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006600515

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})
006600515-01	OBS	No	371.546431	308.744195	866.0	19.209	8.8	8.6	1.04	6173	5.89	1.29
006600515-02	OBS	No	367.083468	306.600815	509.1	26.199	7.5	5.9	1.04	6173	2.78	1.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006600515-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006600515-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

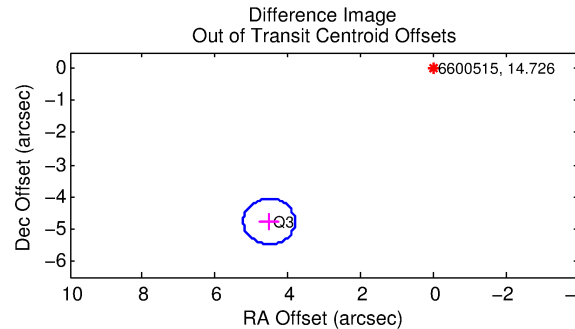
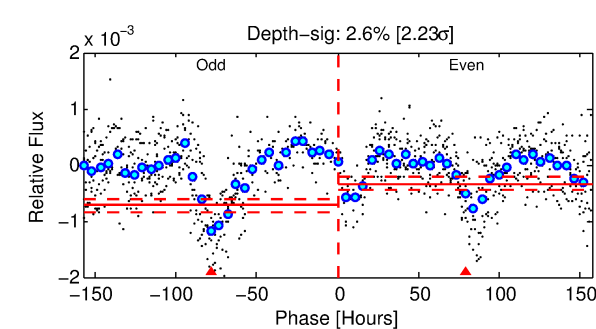
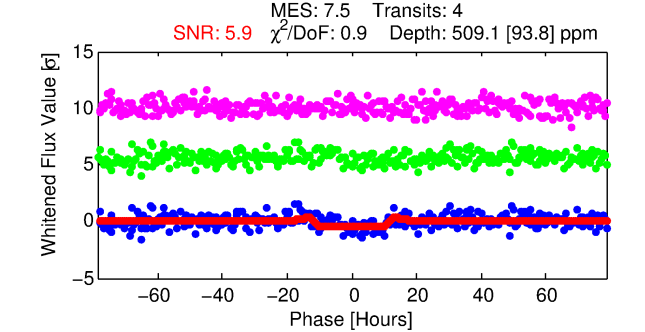
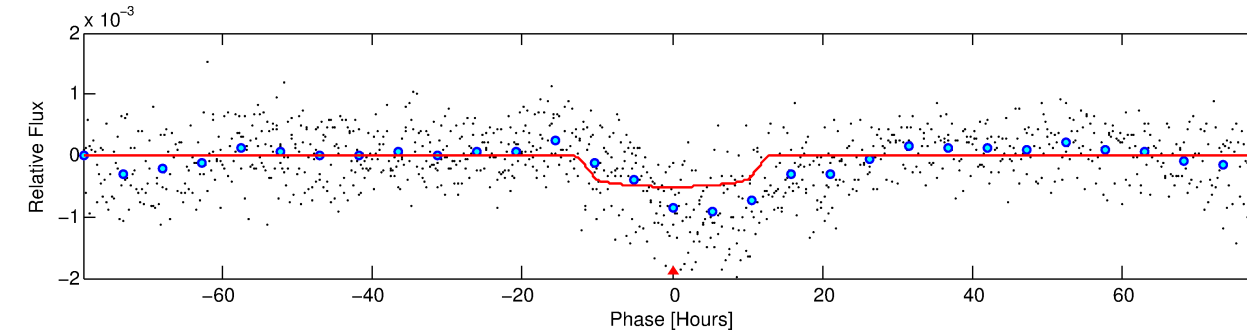
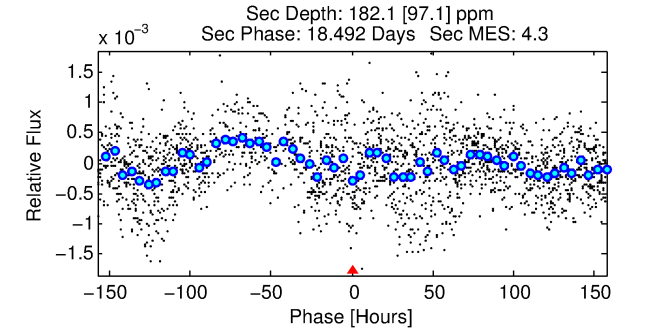
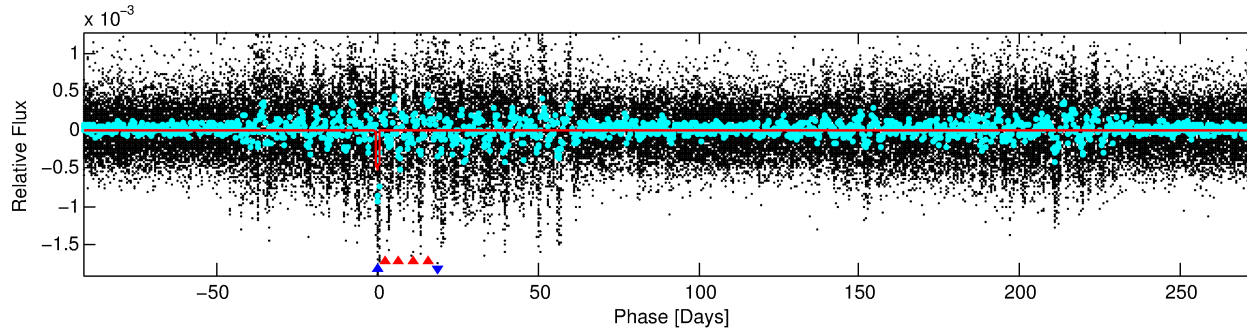
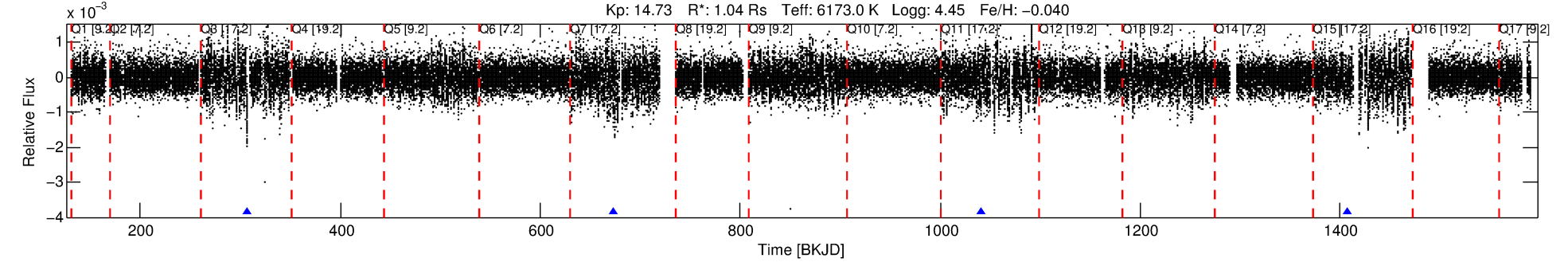
Ephemeris Match Information For 006600515-02

No Significant Match Found

DV One-Page Summary

KIC: 6600515 Candidate: 2 of 2 Period: 367.083 d
KOI: K05302 Corr: No Ephemeris Match

Kp: 14.73 R*: 1.04 Rs Teff: 6173.0 K Logg: 4.45 Fe/H: -0.040



DV Fit Results:

Period = 367.08347 [0.01925] d
Epoch = 306.6008 [0.0356] BKJD
Rp/R* = 0.0245 [0.0028]
a/R* = 51.19 [15.09]
b = 0.91 [0.06]
Seff = 1.31 [0.51]
Teff = 273 [27] K
Rp = 2.78 [0.92] Re
a = 1.0379 [0.2655] AU
Ag = 13979.50 [9583.22] [1.46σ]
Teffp = 4585 [684] K [6.30σ]

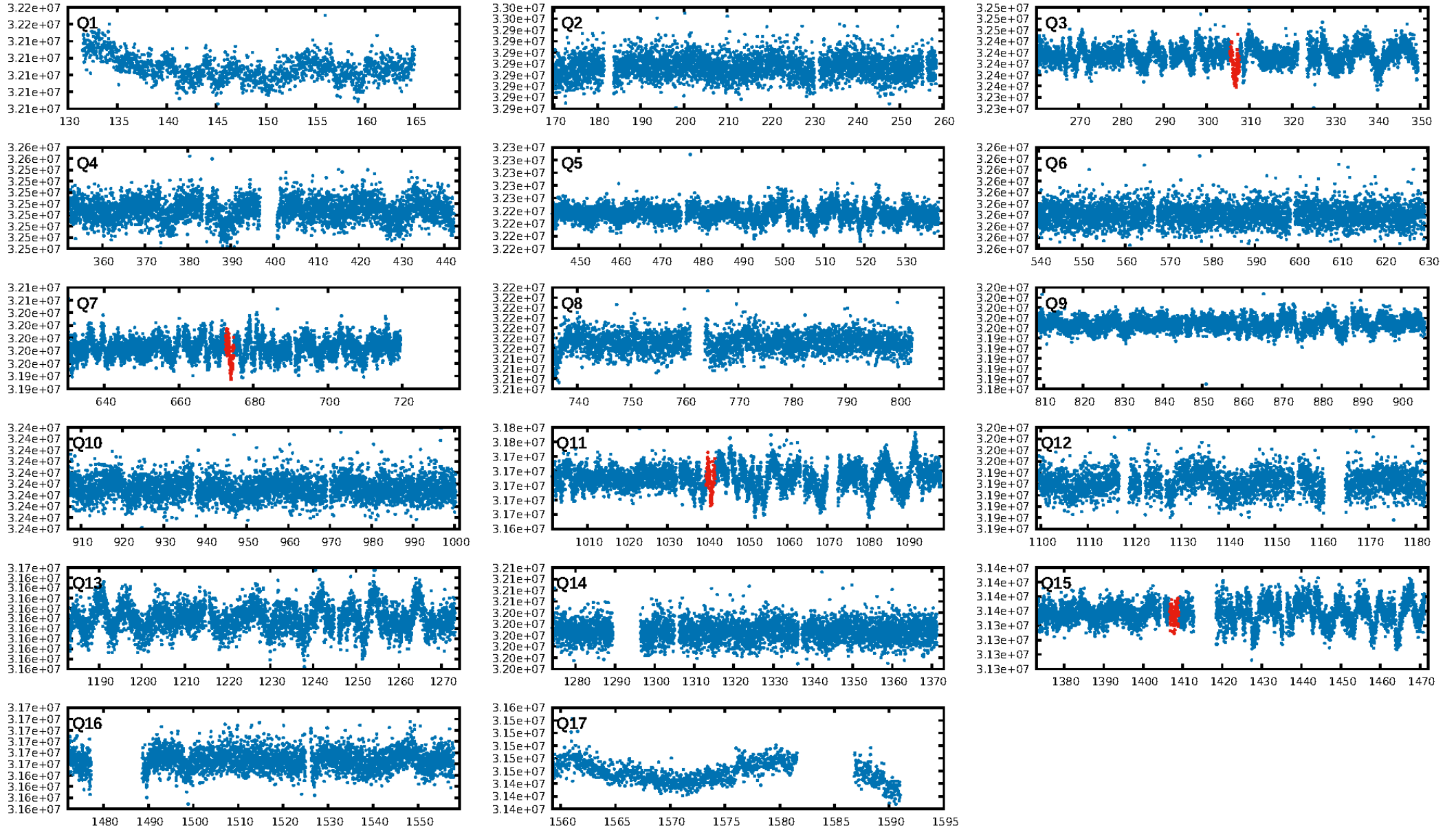
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.9% [3.30σ]
ModelChiSquare2-sig: 41.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.42e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.9473
Centroid-sig: 6.3%
Centroid-so: 4.899 arcsec [1.62σ]
OotOffset-rm: 6.569 arcsec [27.67σ]
KicOffset-rm: 6.472 arcsec [27.27σ]
OotOffset-st: 0/1/0/0 [1]
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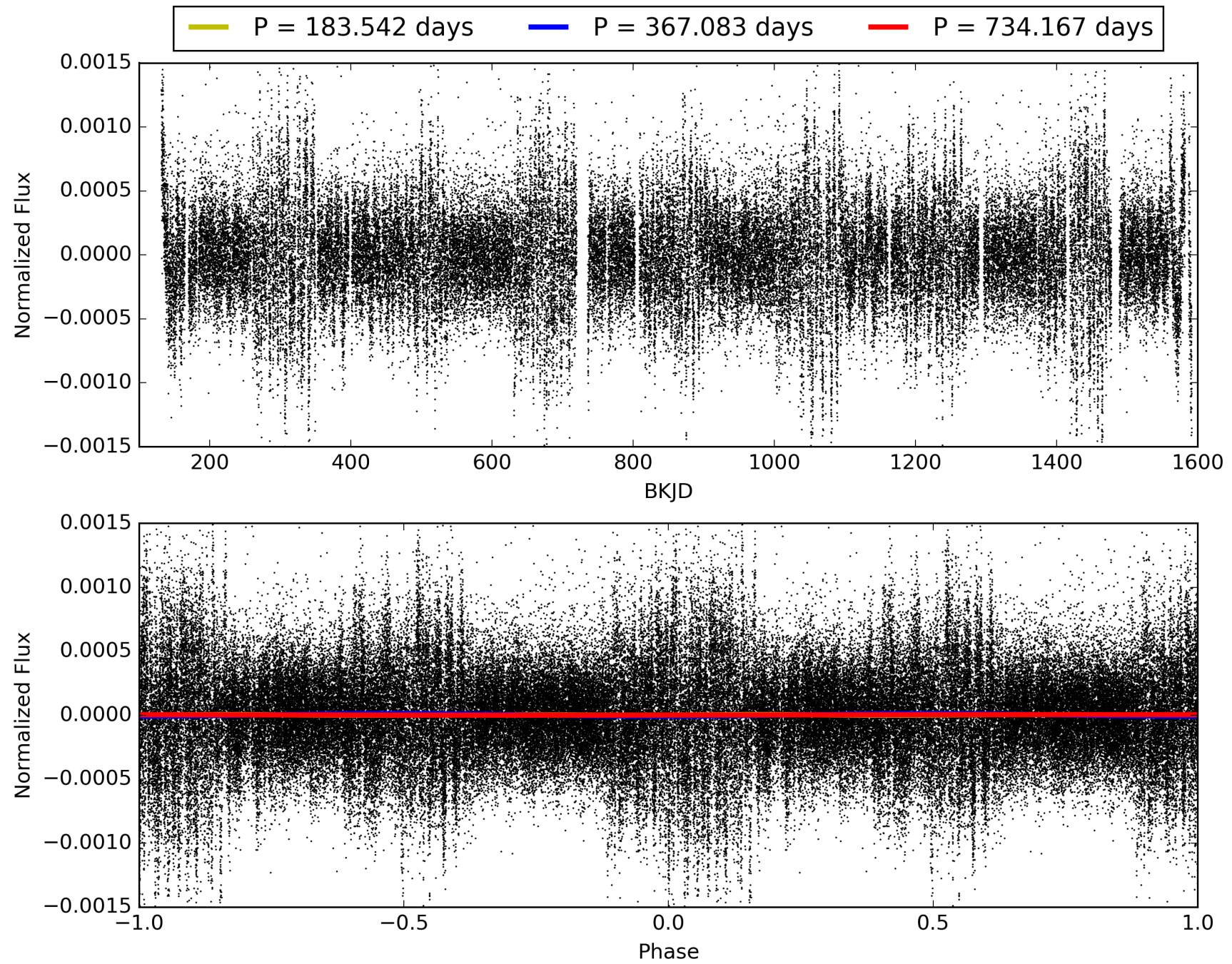
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:28:09 Z

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

TCE 006600515-02, PDC Light Curves

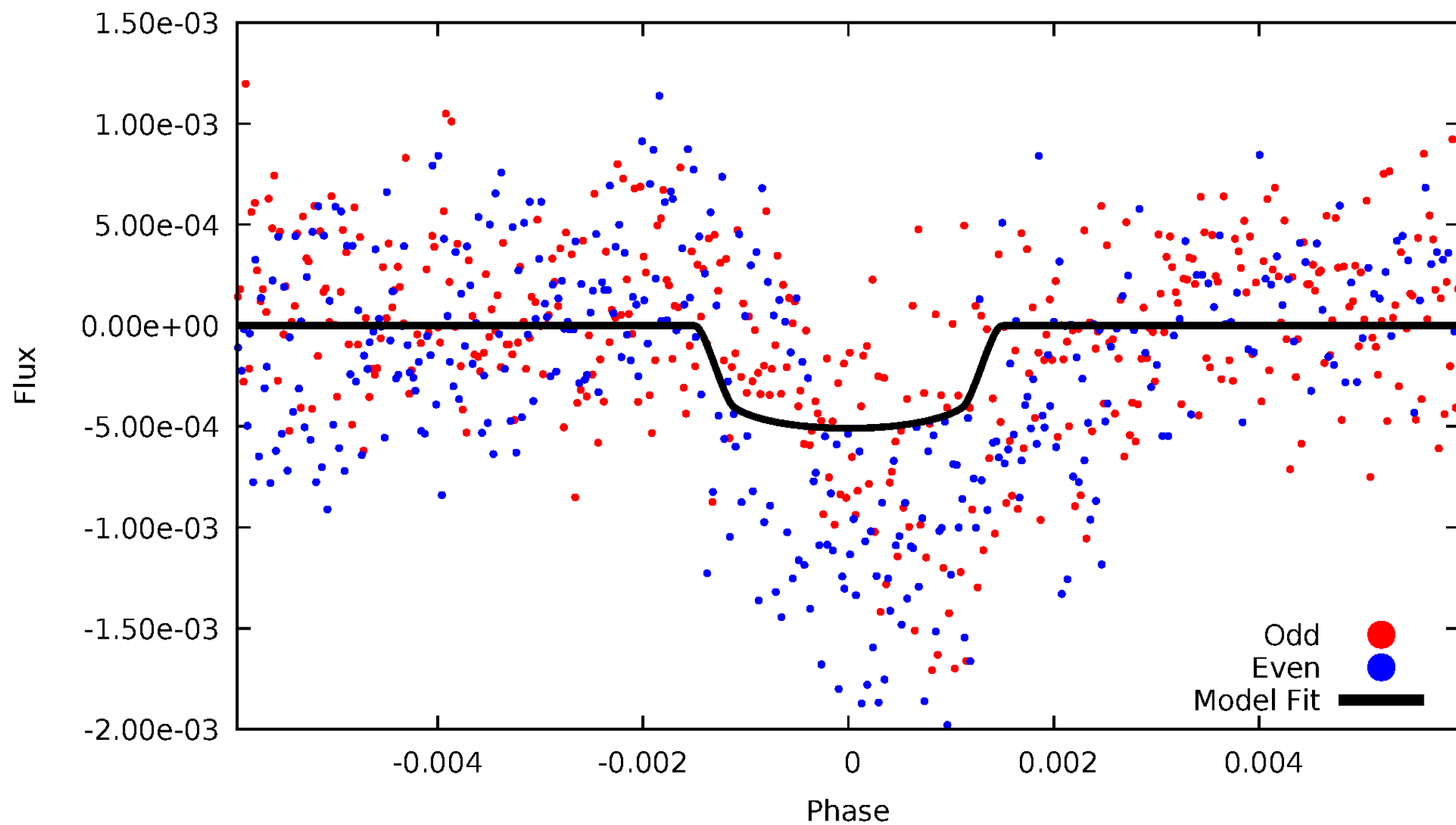


TCE 006600515-02



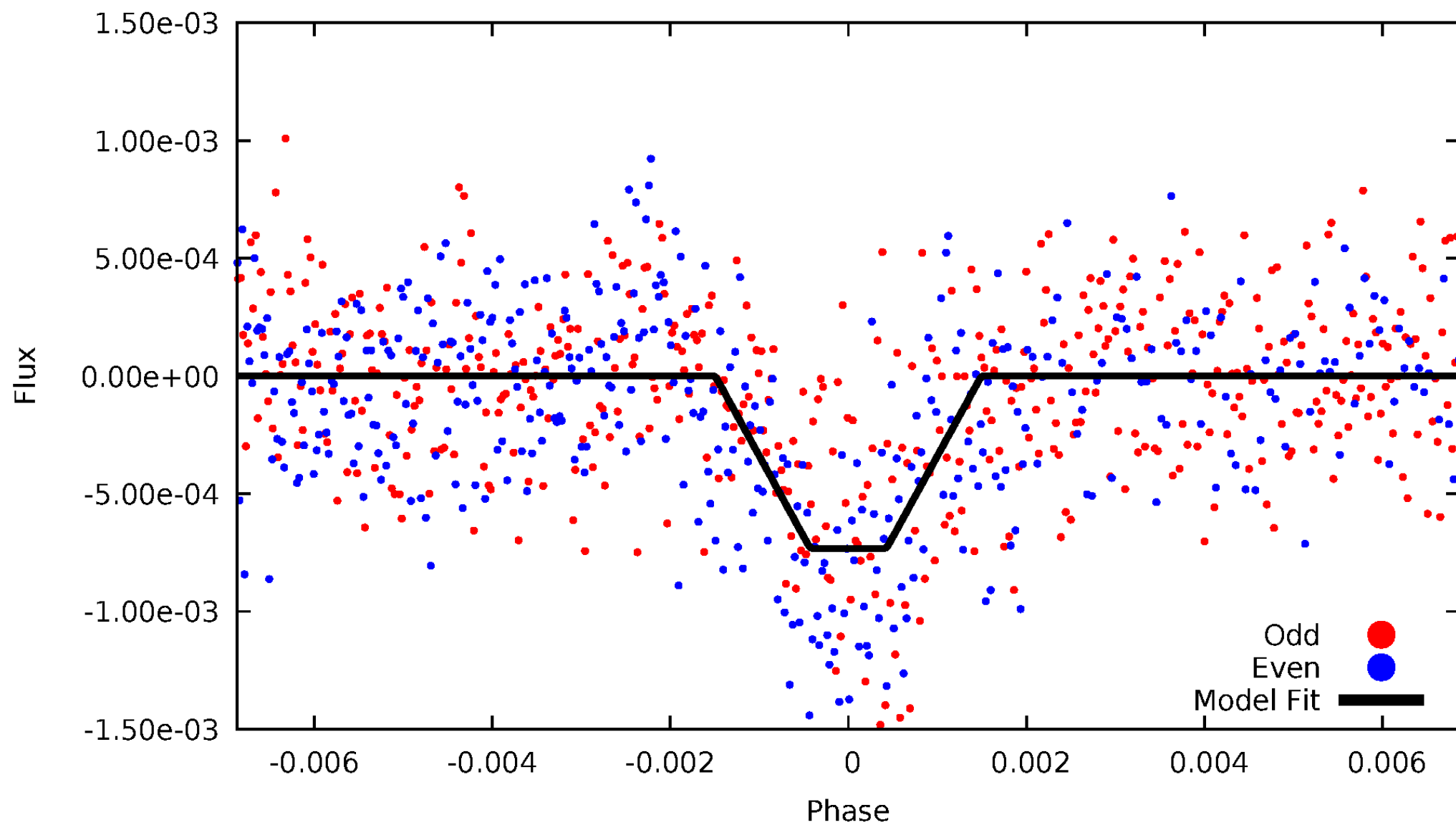
DV Odd/Even

TCE 006600515-02



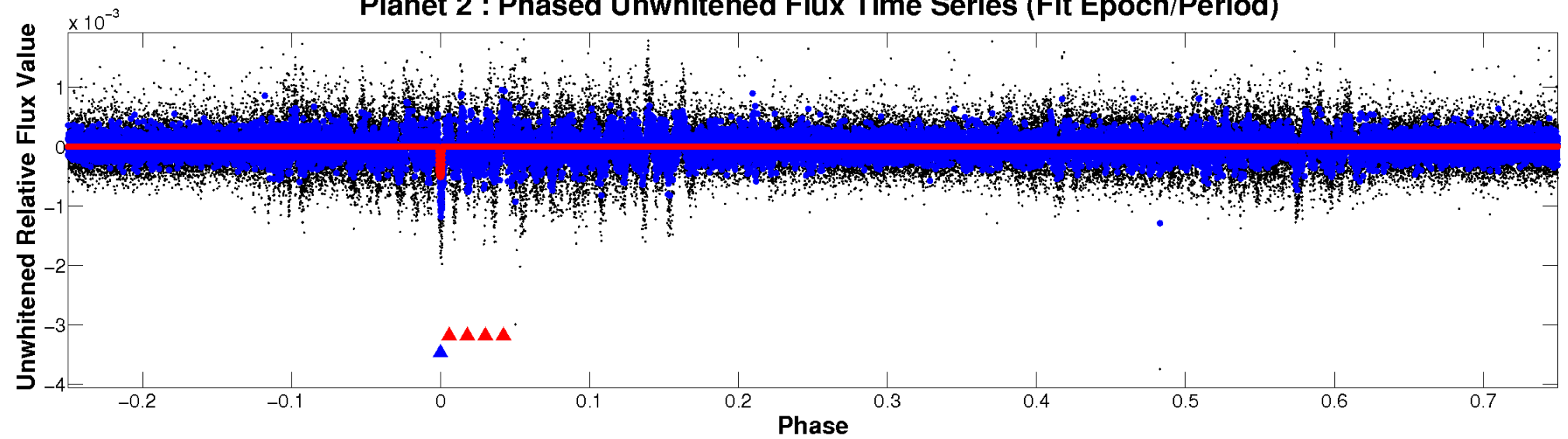
ALT Odd/Even

TCE 006600515-02

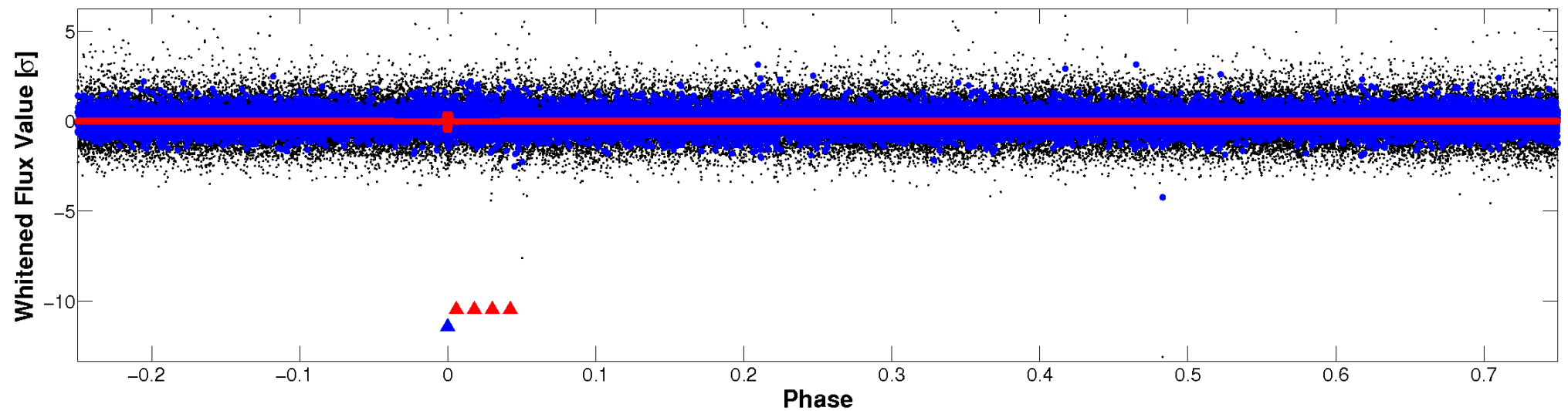


Non-Whitened Vs. Whitened Light Curve

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

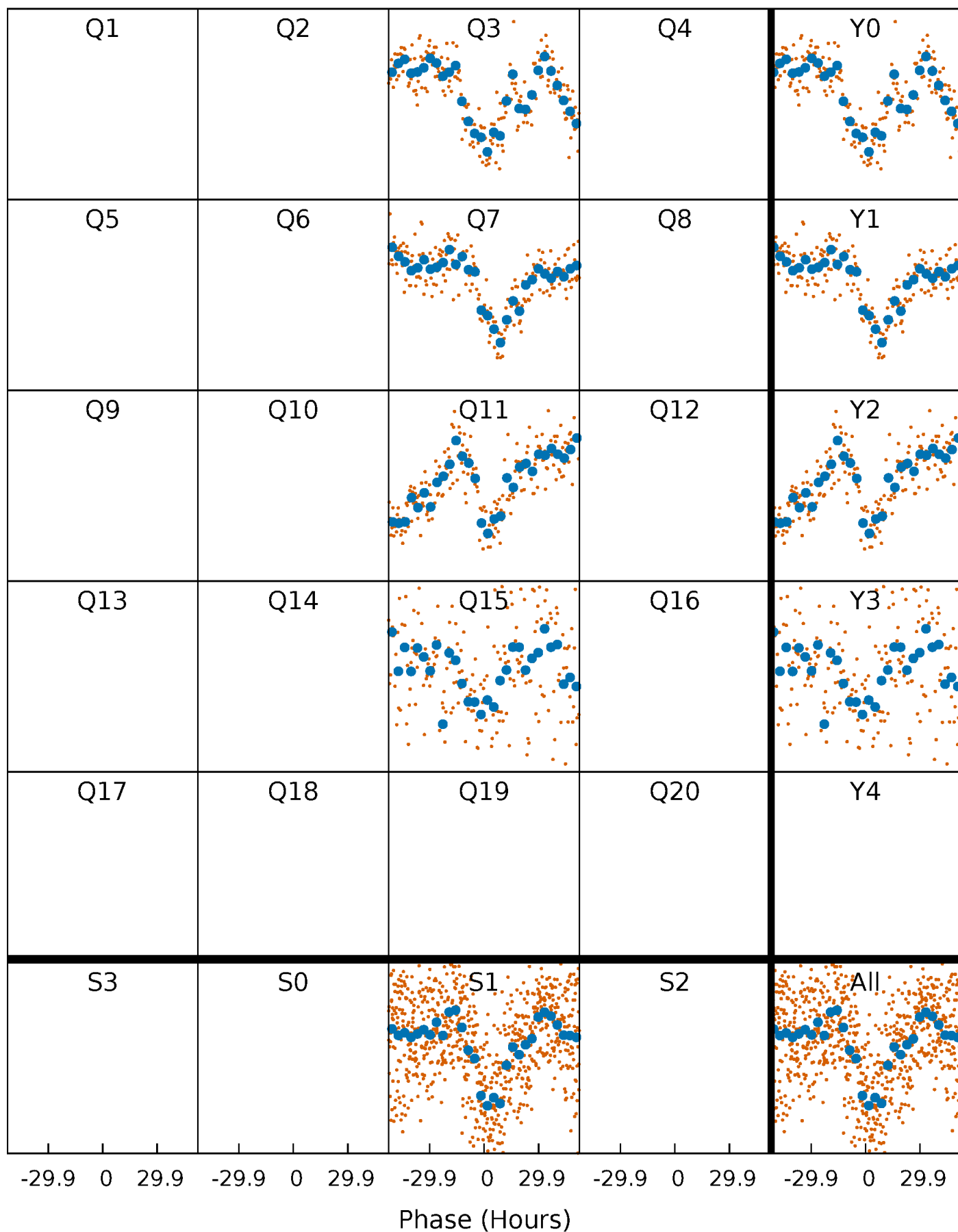


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



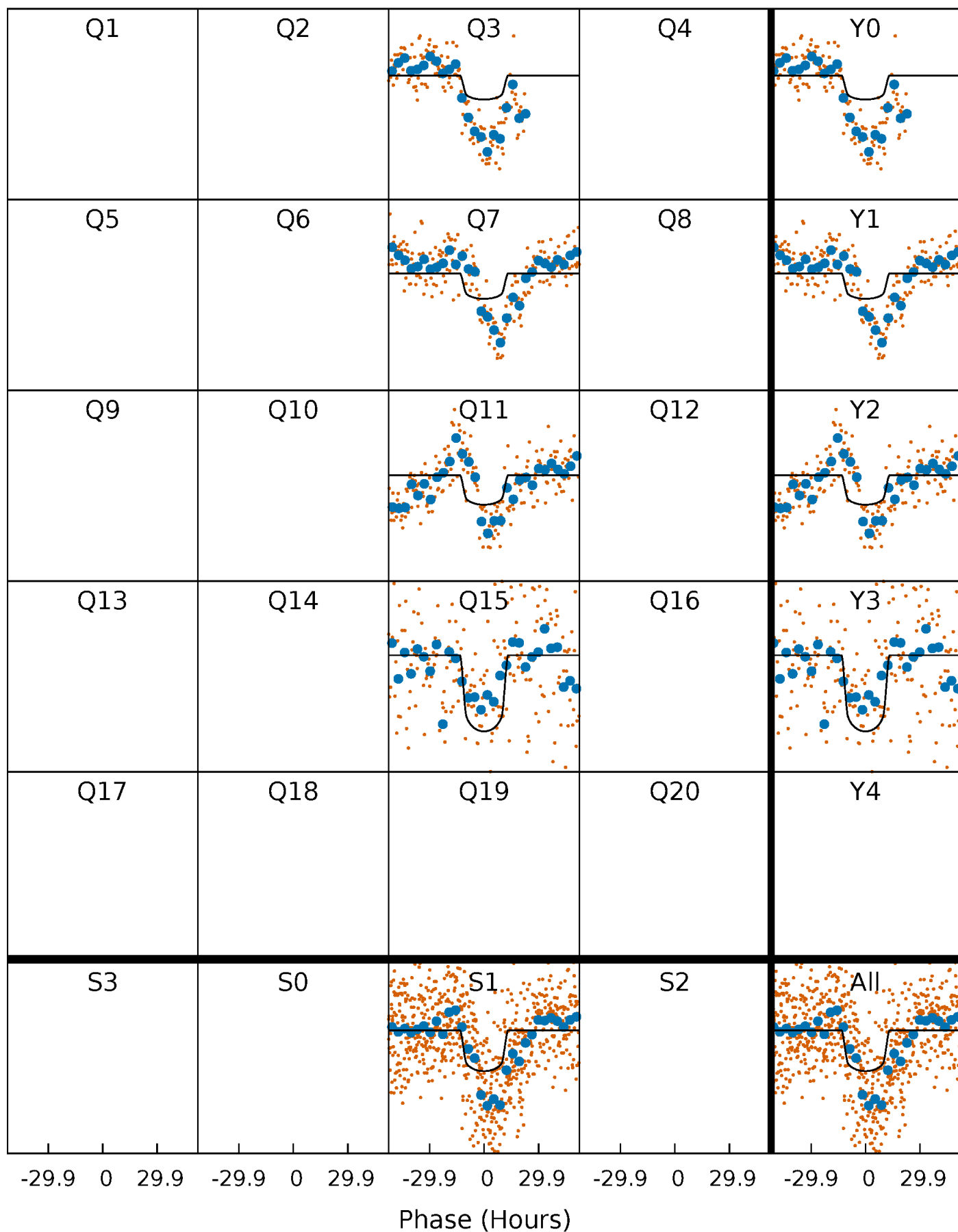
PDC Quarter-Phased Transit Curves

TCE 006600515-02 P=367.083468 Days $T_0=306.600815$ (BKJD)



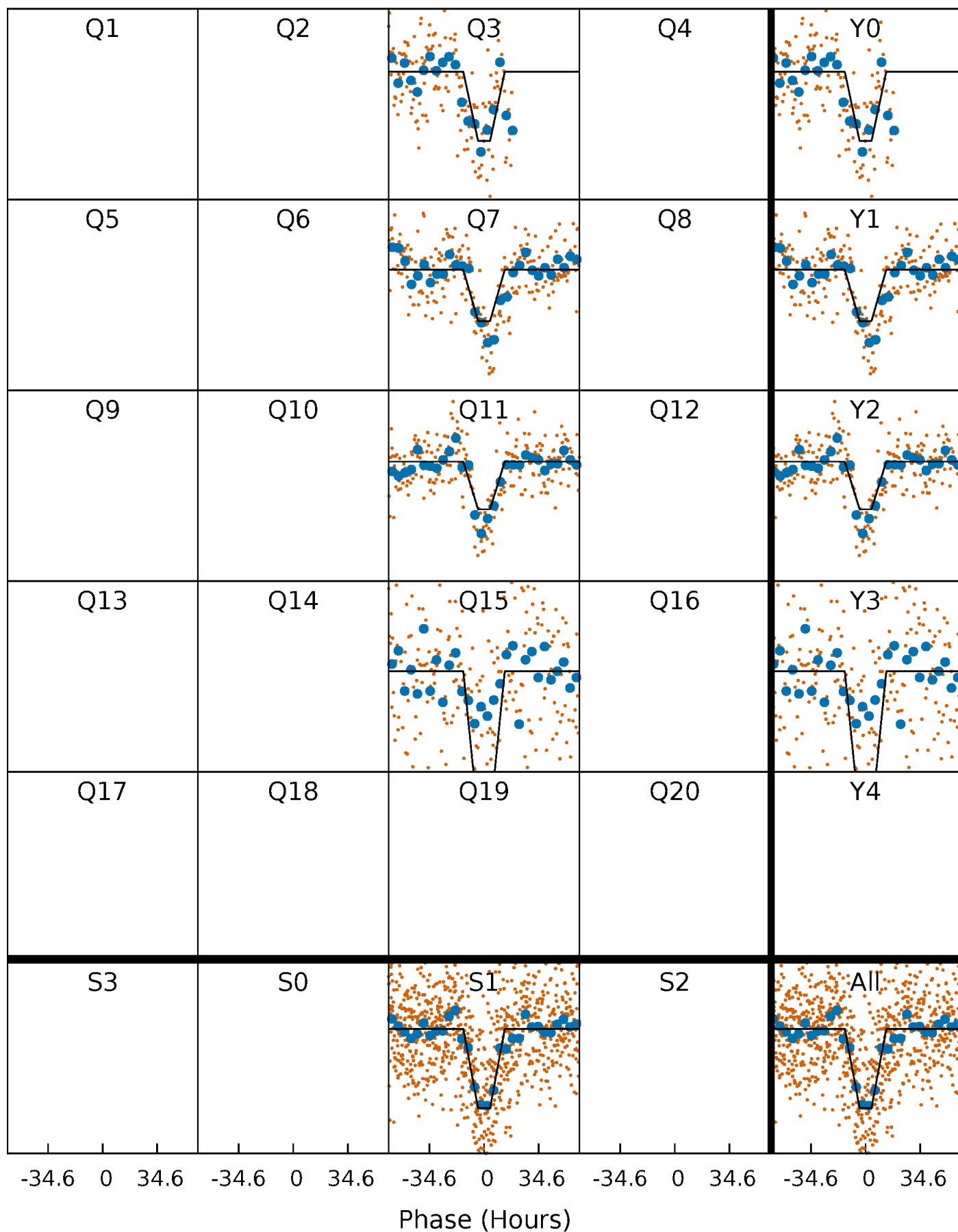
DV Quarter-Phased Transit Curves

TCE 006600515-02 P=367.083468 Days $T_0=306.600815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

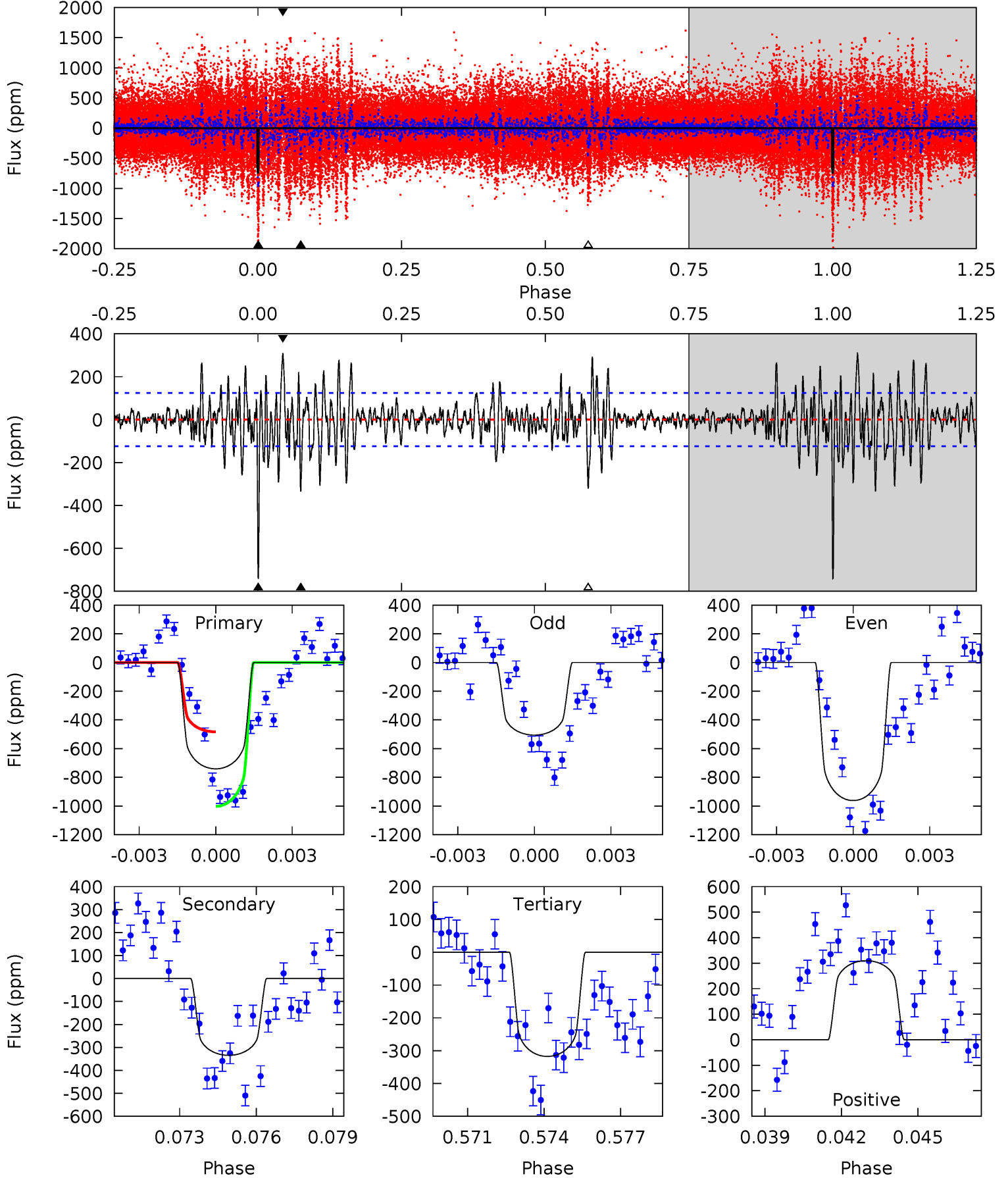
TCE 006600515-02 P=367.054849 Days $T_0=306.796307$ (BKJD)



DV Model-Shift Uniqueness Test

006600515-02, P = 367.083468 Days, E = 306.600815 Days

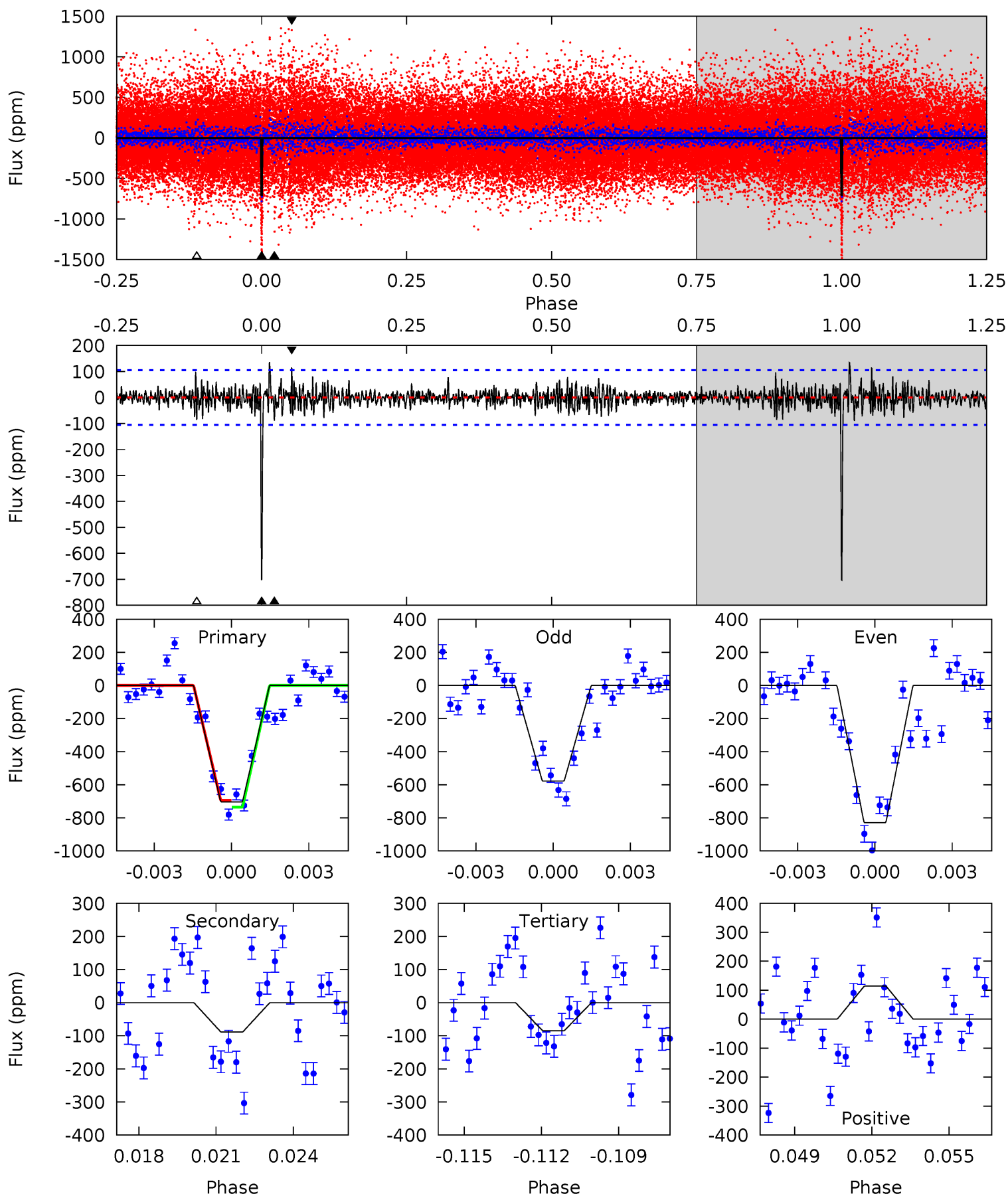
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.3	14.1	13.4	13.1	5.25	2.97	3.38	17.9	18.2	0.71	1.05	9.68	1.16	0.29	11.0



Alt Model-Shift Uniqueness Test

006600515-02, P = 367.054849 Days, E = 306.796307 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.1	4.43	4.22	5.69	5.25	2.96	1.20	30.9	29.4	0.21	-1.26	6.27	0.87	0.16	1.04



Stellar Parameters For KIC 006600515

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6173^{+171}_{-214}	$4.447^{+0.052}_{-0.195}$	$-0.040^{+0.250}_{-0.350}$	$1.041^{+0.324}_{-0.108}$	$1.104^{+0.139}_{-0.153}$	$1.379^{+0.380}_{-0.717}$
	+3%/-3%	+1%/-4%	+625%/-875%	+31%/-10%	+13%/-14%	+28%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006600515-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-334 ± 24	$2.86^{+0.56}_{-0.40}$	389^{+26}_{-19}	5362^{+377}_{-295}	23584^{+8128}_{-6676}
Alt.	-89 ± 20	$3.17^{+0.60}_{-0.43}$	386^{+29}_{-18}	3967^{+237}_{-224}	5077^{+2116}_{-1648}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

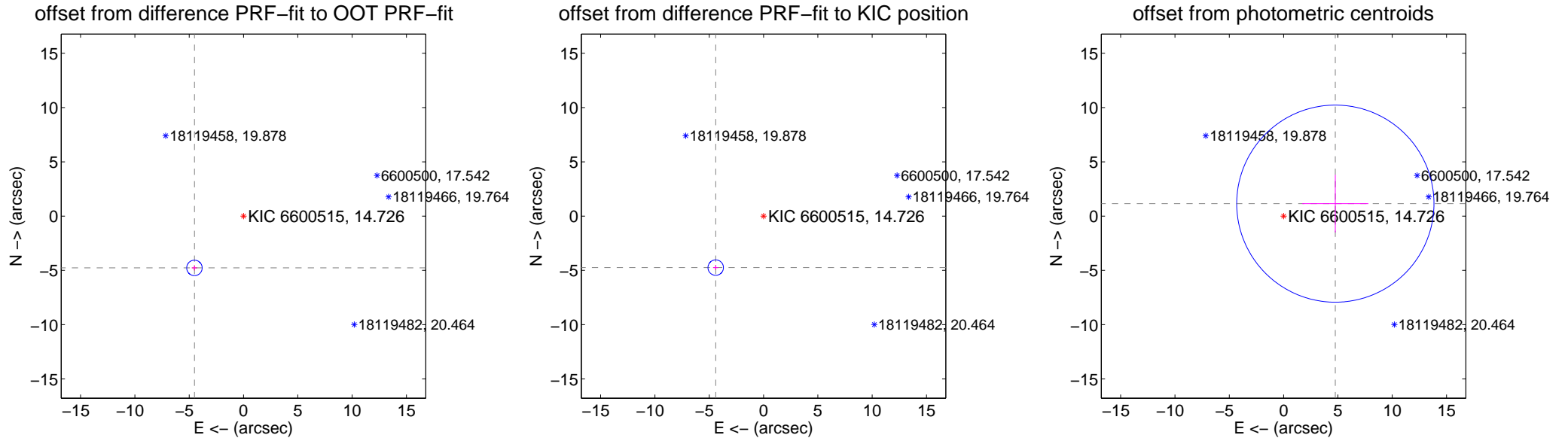
DV Centroid Data

Supplemental centroid analysis for 006600515-02. Kepler magnitude: 14.73. Transit SNR 5.92

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.569 ± 0.237	27.67	4.516 ± 0.241	-4.771 ± 0.234
PRF-fit source offset from KIC position	6.472 ± 0.237	27.27	4.404 ± 0.241	-4.743 ± 0.234
photometric centroid source offset	4.90 ± 3.03	1.62	-4.76 ± 3.05	1.15 ± 2.66



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.

Q1 no difference image



Q1 no OOT image



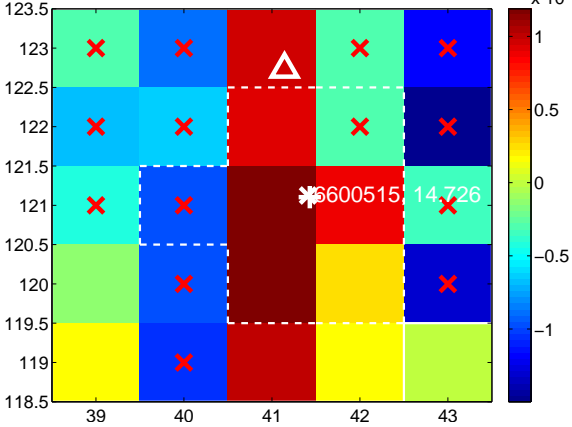
Q2 no difference image



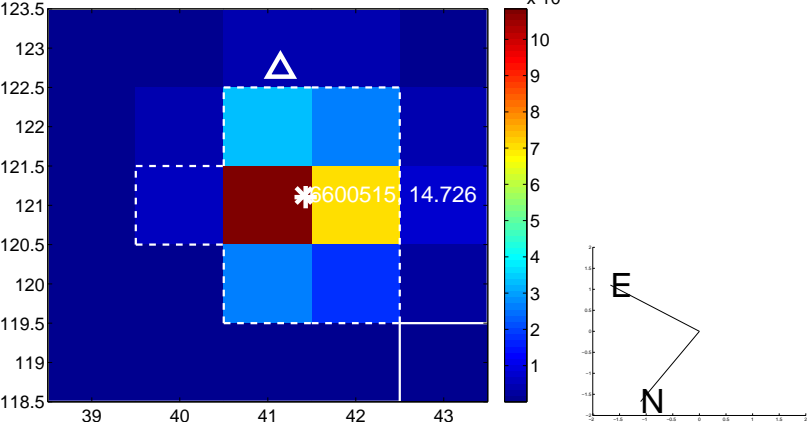
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



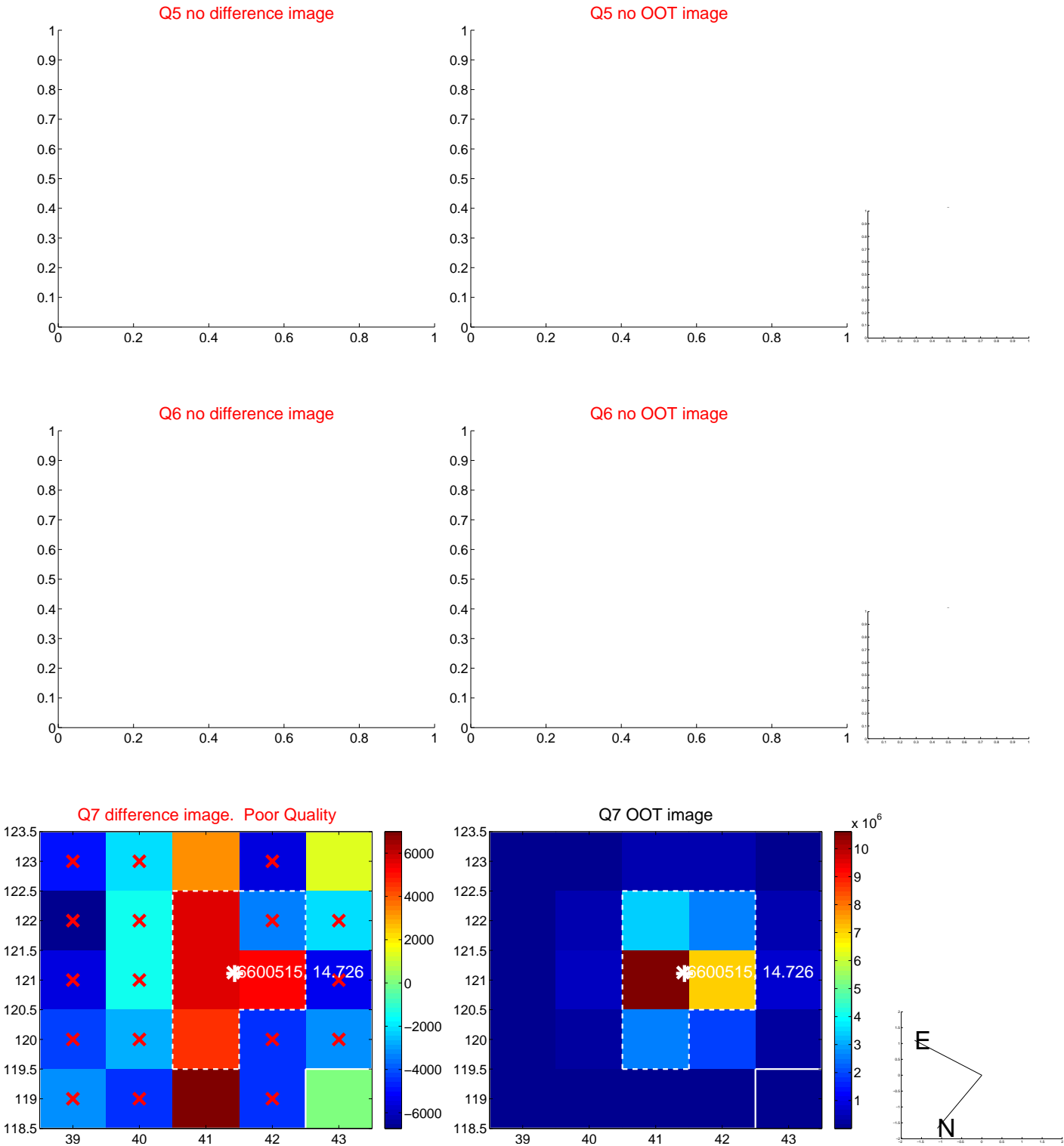
Q4 no difference image



Q4 no OOT image



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



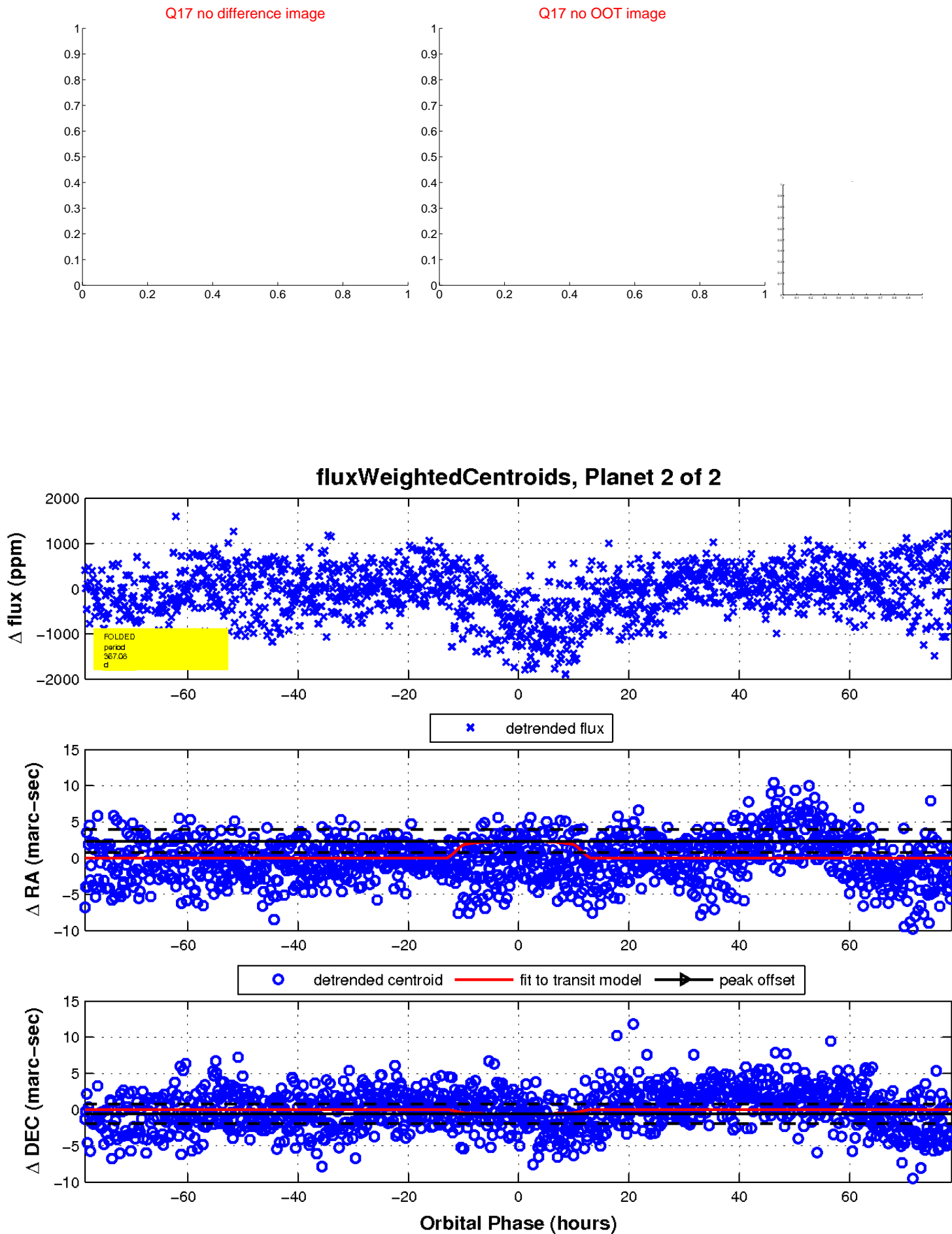
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

