

KIC 008037693

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})
008037693-01	OBS	No	535.881674	388.449698	372.1	15.092	9.7	9.4	1.07	6230	2.58	0.87
008037693-02	OBS	No	525.824880	403.168032	369.4	17.042	9.2	8.7	1.07	6230	3.80	0.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008037693-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008037693-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—INCONSISTENT_TRANS—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.

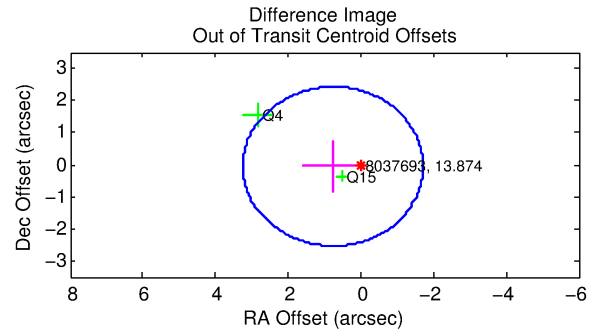
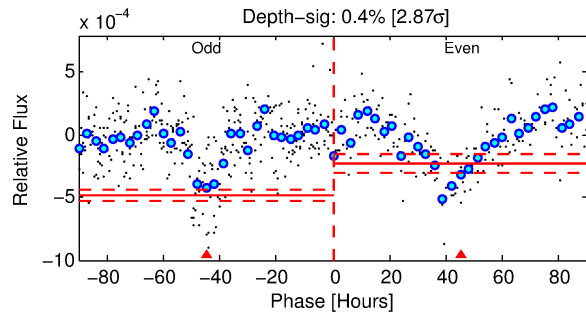
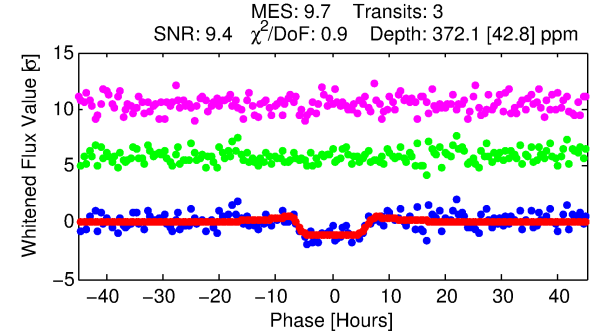
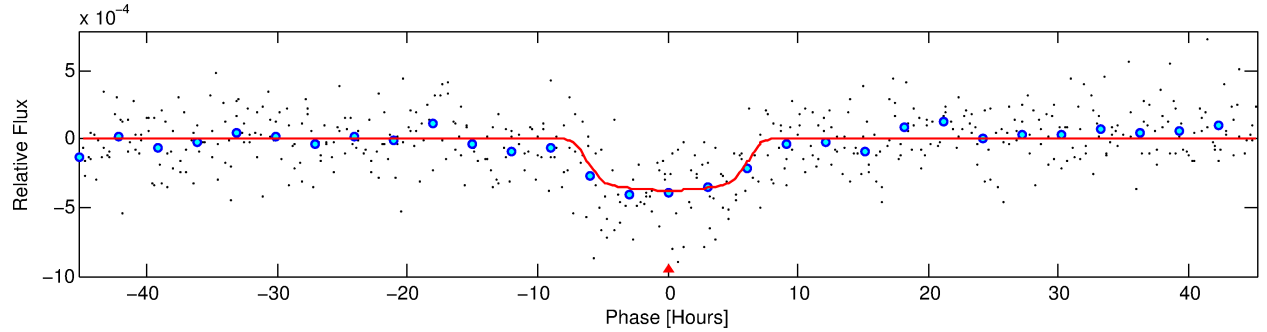
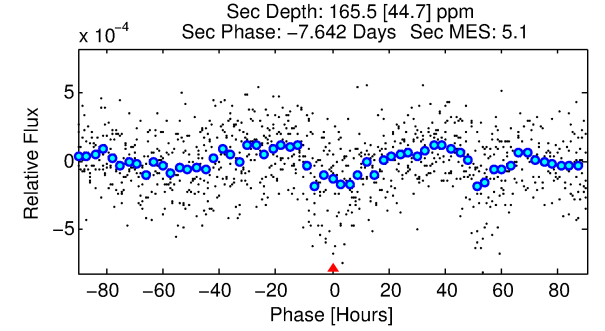
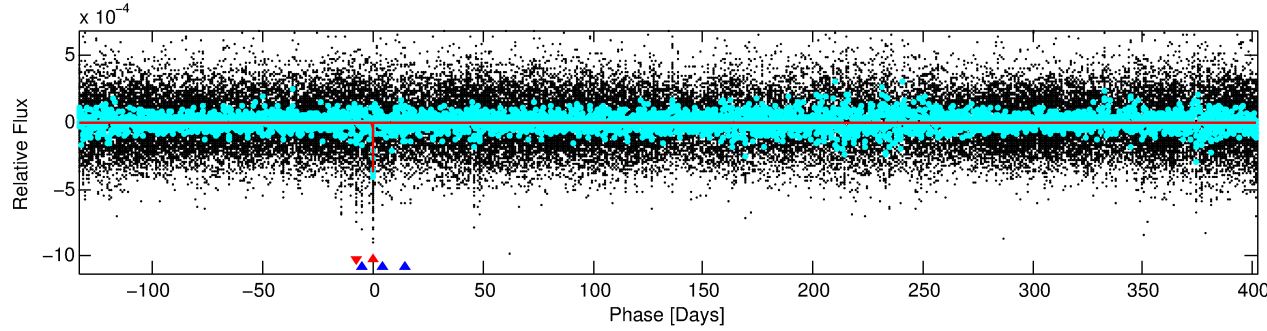
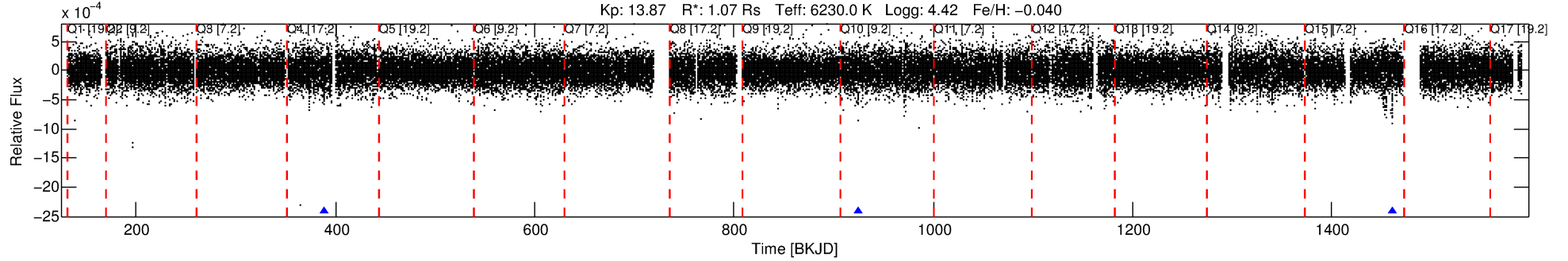
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008037693-01

No Significant Match Found

DV One-Page Summary

KIC: 8037693 Candidate: 1 of 2 Period: 535.882 d



DV Fit Results:

Period = 535.88167 [0.01533] d
Epoch = 388.4497 [0.0202] BKJD
Rp/R* = 0.0220 [0.0018]
a/R* = 103.84 [26.47]
b = 0.95 [0.03]
Seff = 0.87 [0.37]
Teq = 246 [27] K
Rp = 2.58 [0.91] Re
a = 1.3418 [0.3847] AU
Ag = 24700.63 [12830.20] [1.93σ]
Teffp = 4768 [404] K [11.17σ]

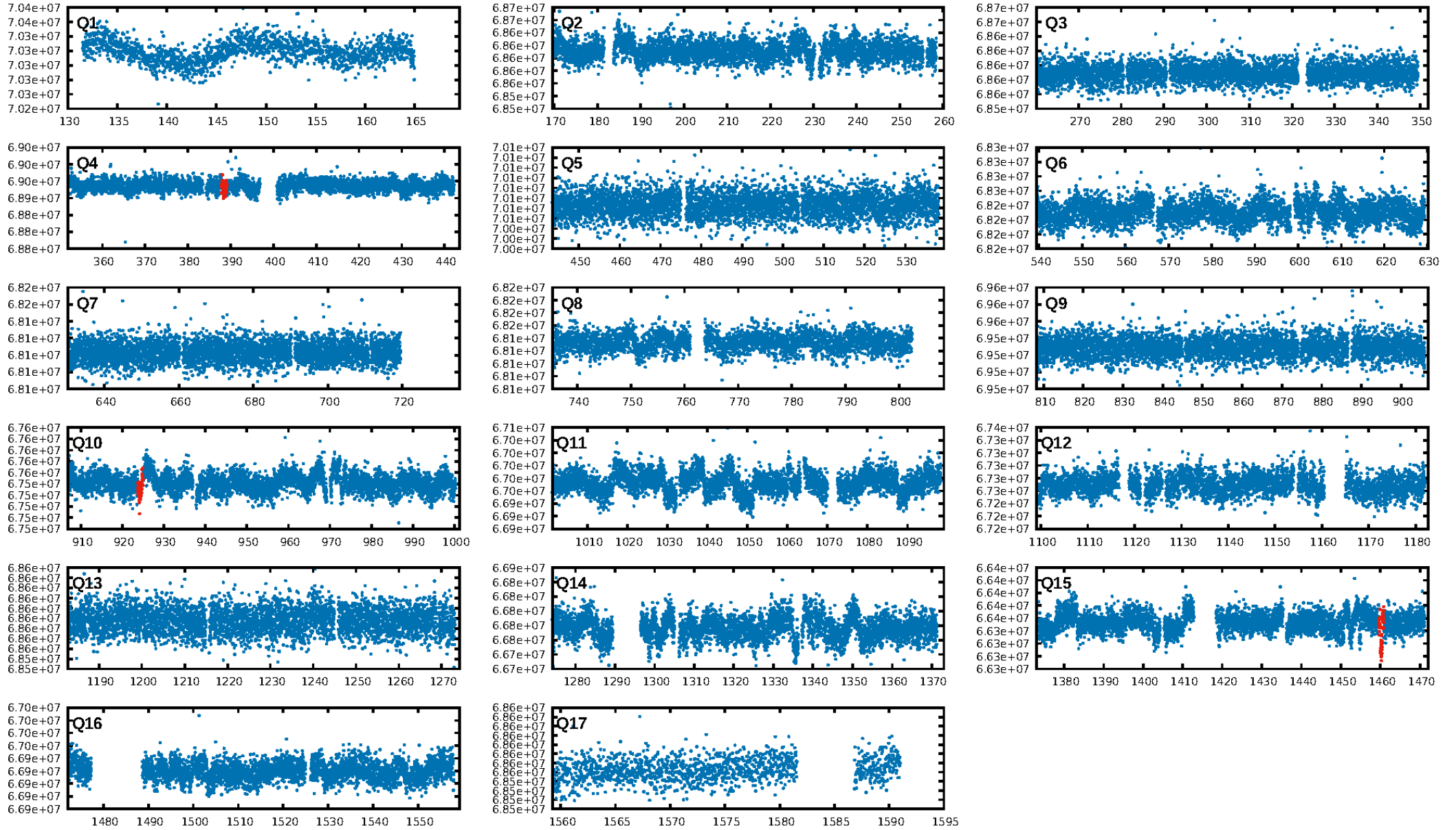
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.60σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 97.4%
Bootstrap-pfa: 1.30e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.951
Centroid-sig: 7.4%
Centroid-so: 1.580 arcsec [1.44σ]
OotOffset-rm: 0.773 arcsec [0.94σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 0.731 arcsec [0.89σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

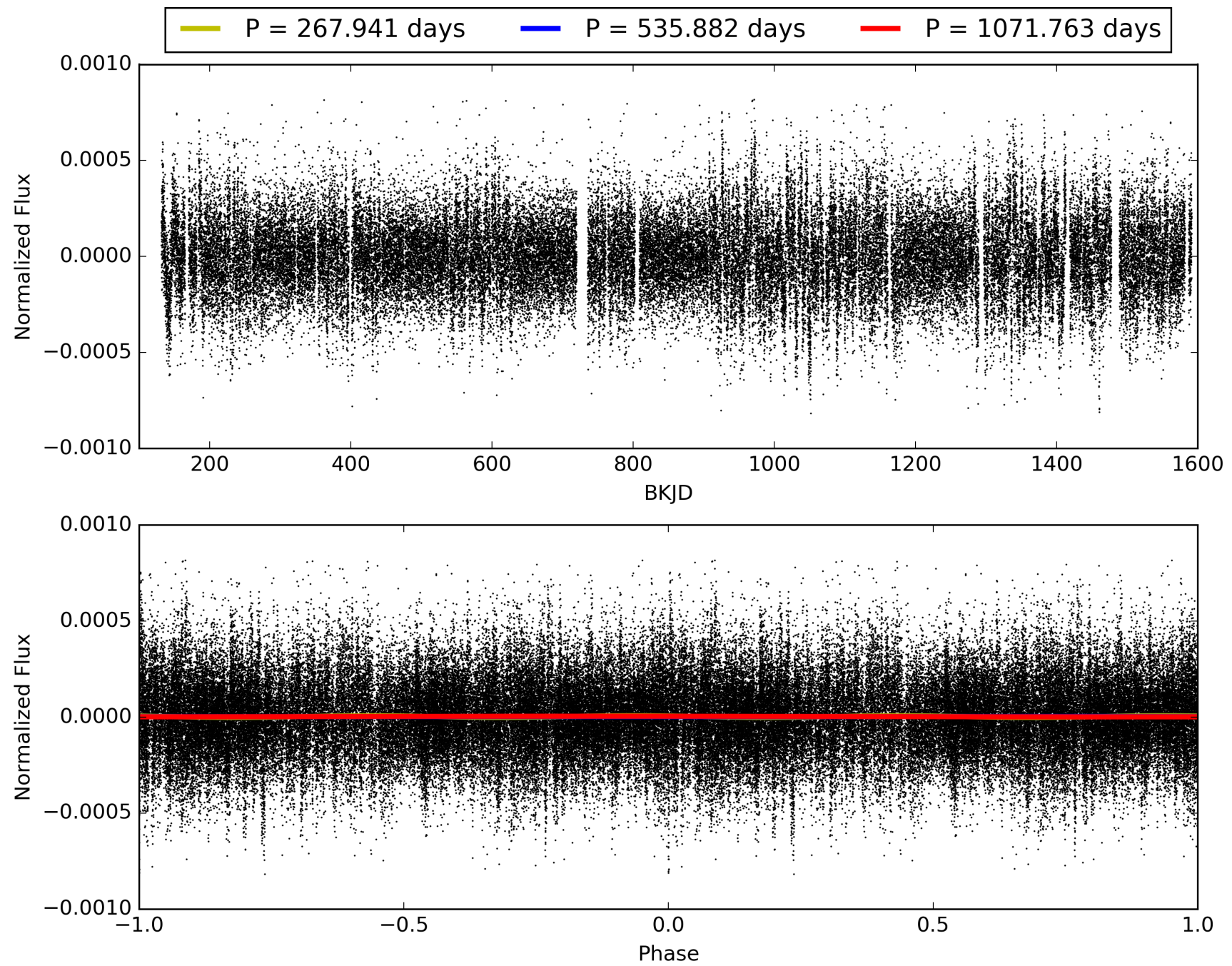
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:44:58 Z

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

TCE 008037693-01, PDC Light Curves

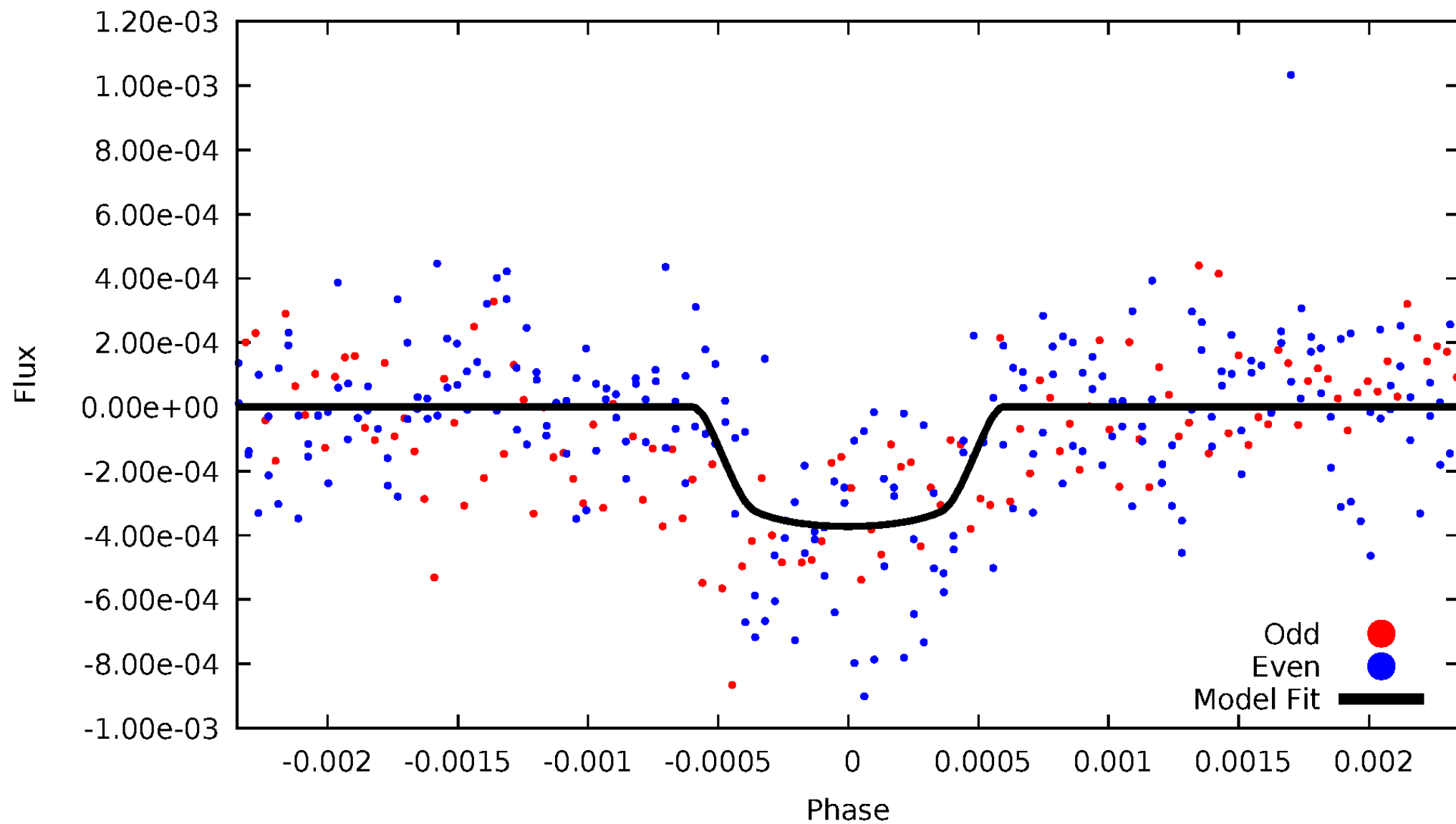


TCE 008037693-01



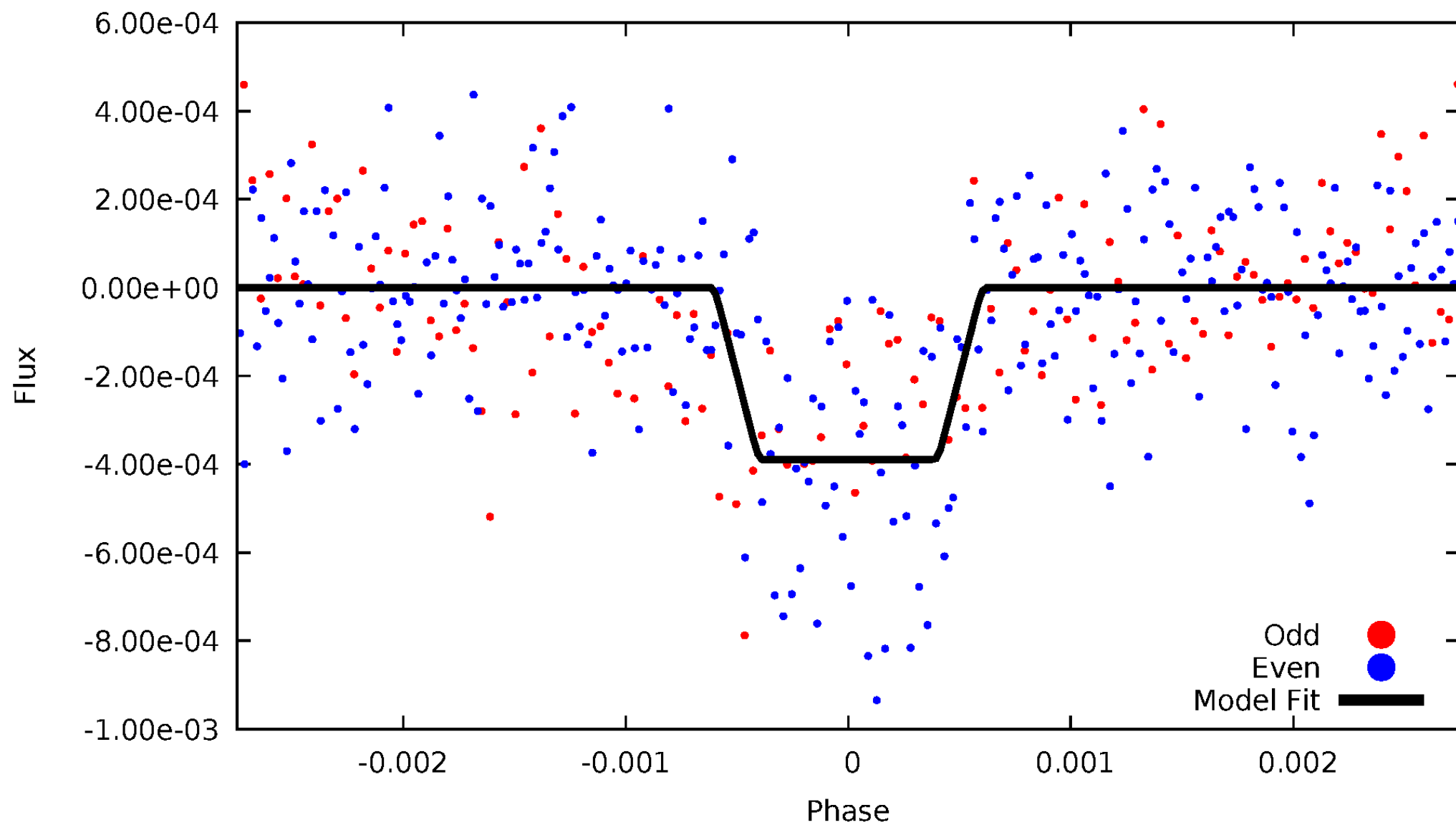
DV Odd/Even

TCE 008037693-01

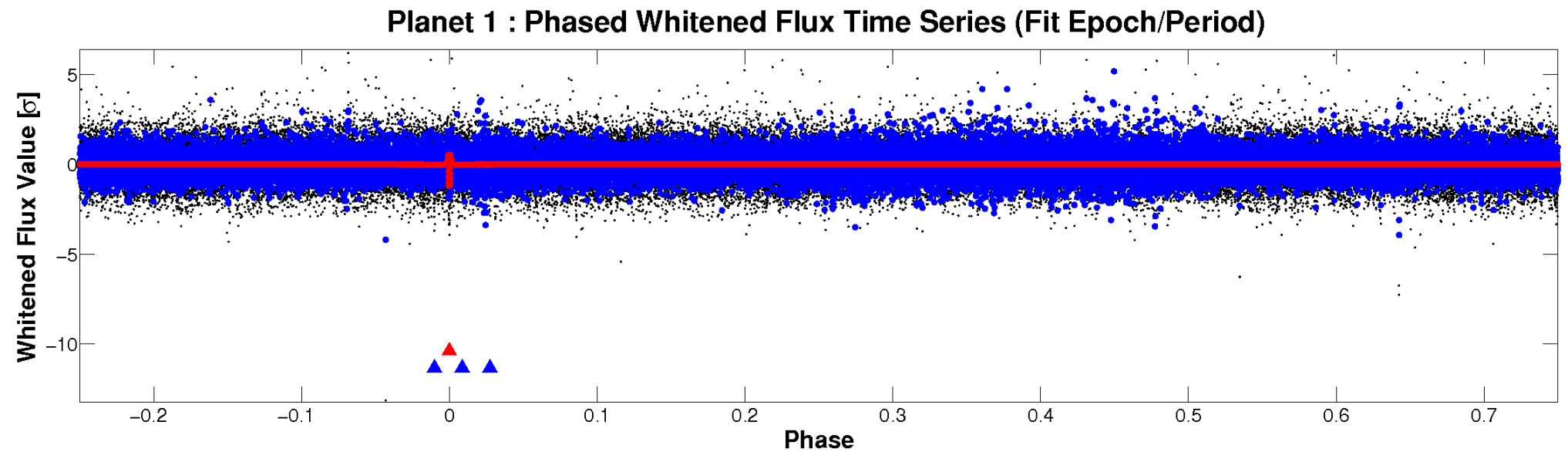
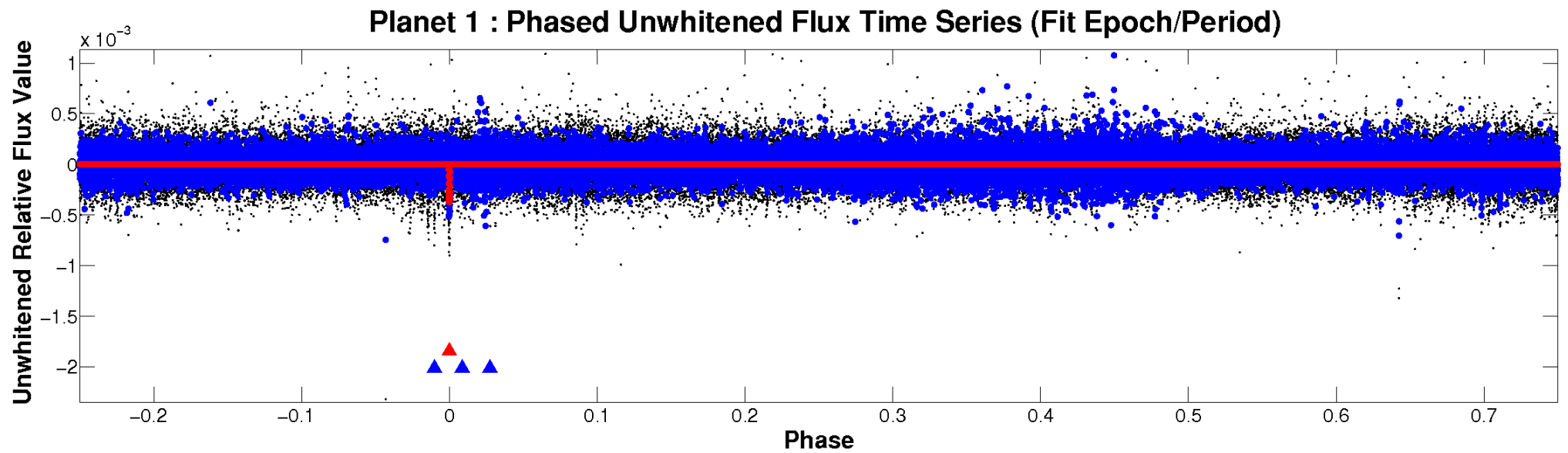


ALT Odd/Even

TCE 008037693-01

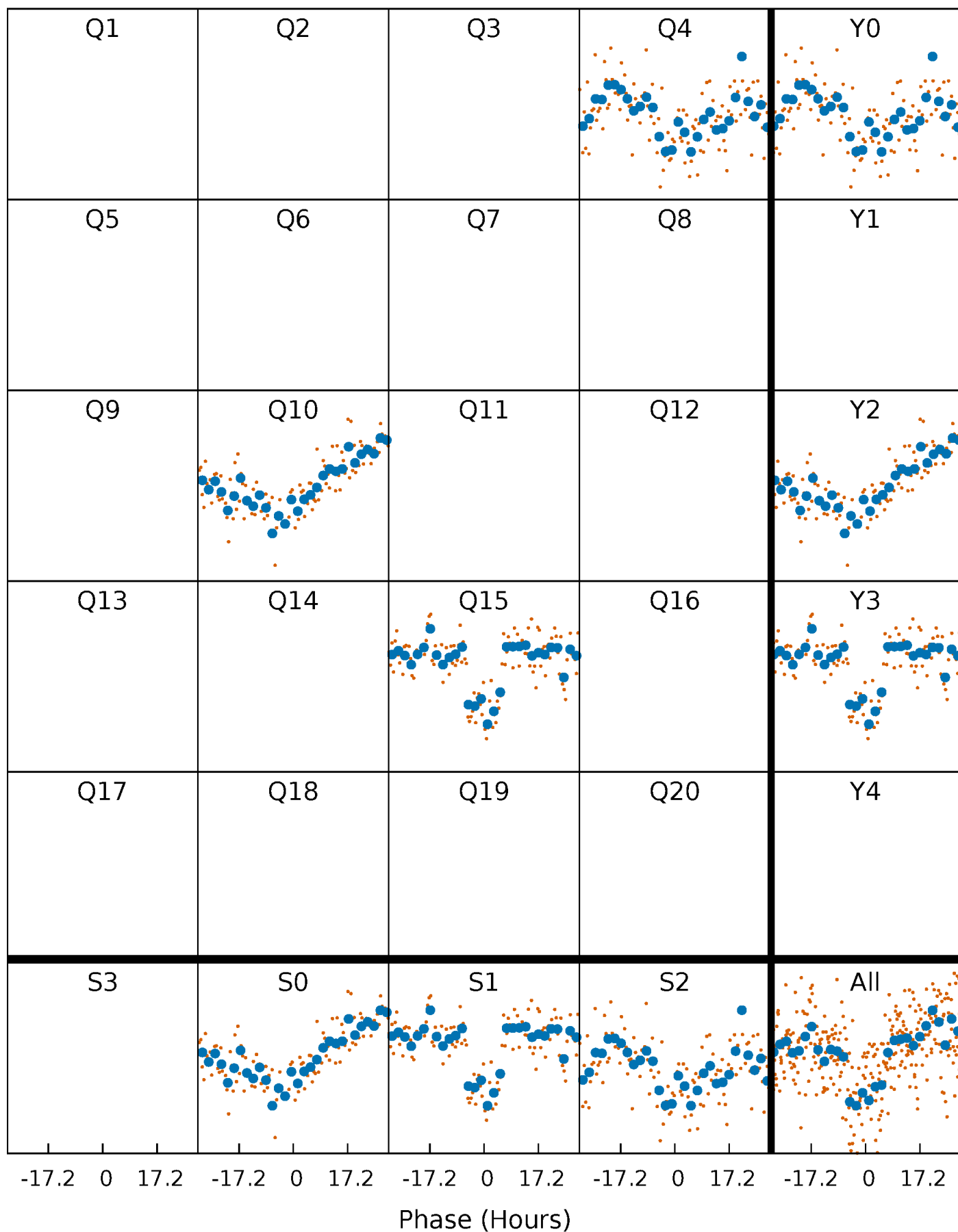


Non-Whitened Vs. Whitened Light Curve



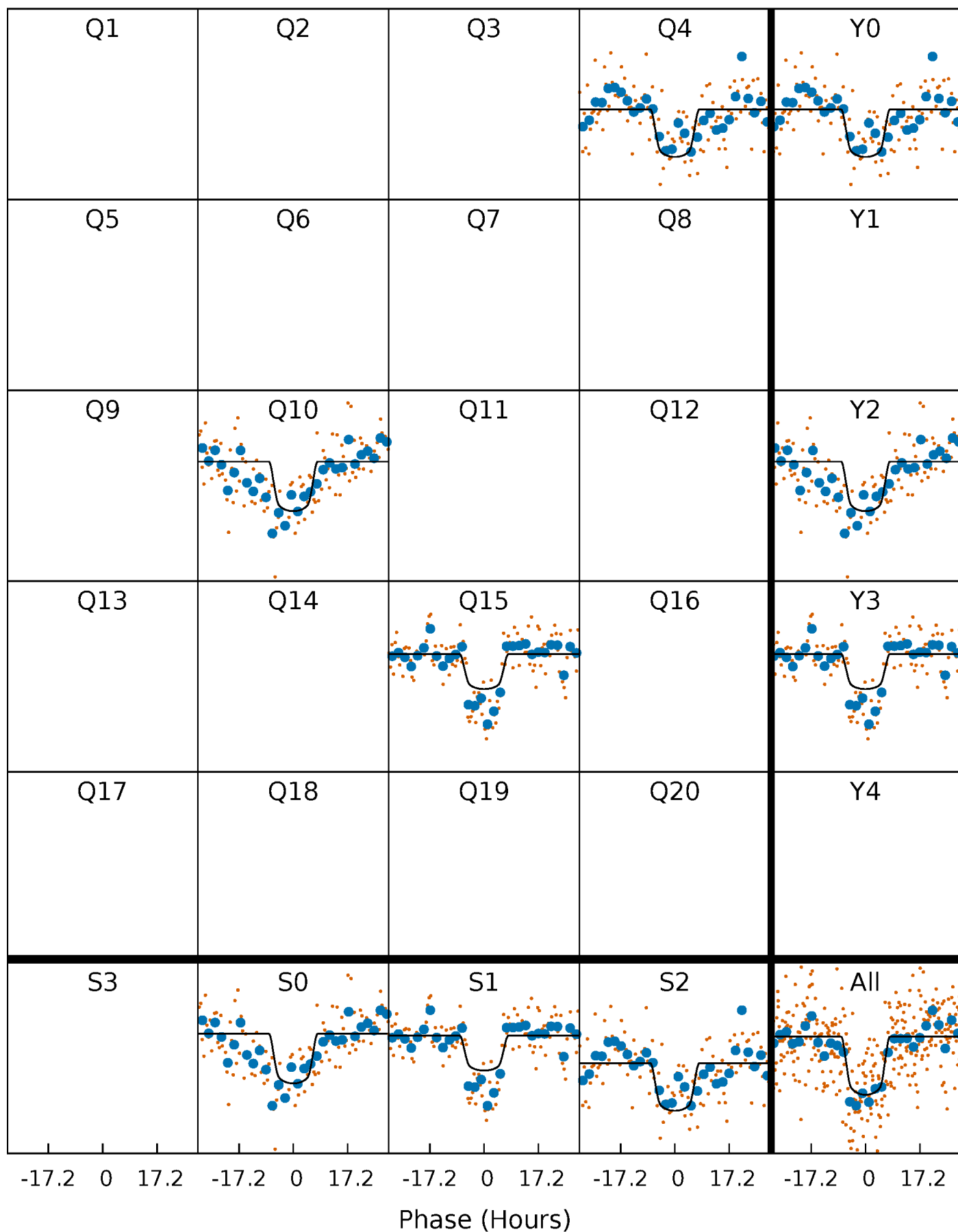
PDC Quarter-Phased Transit Curves

TCE 008037693-01 P=535.881674 Days $T_0=388.449698$ (BKJD)



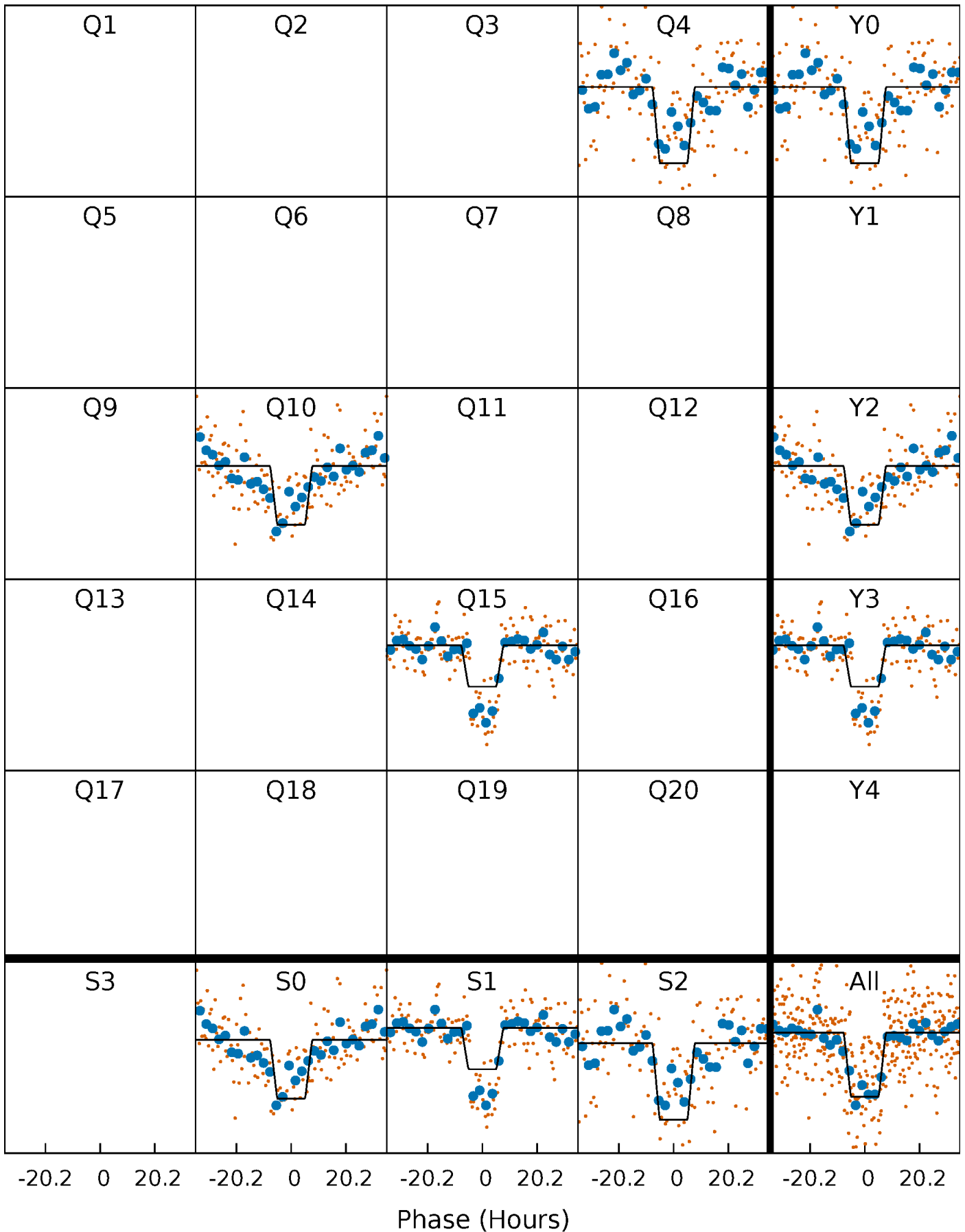
DV Quarter-Phased Transit Curves

TCE 008037693-01 P=535.881674 Days $T_0=388.449698$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

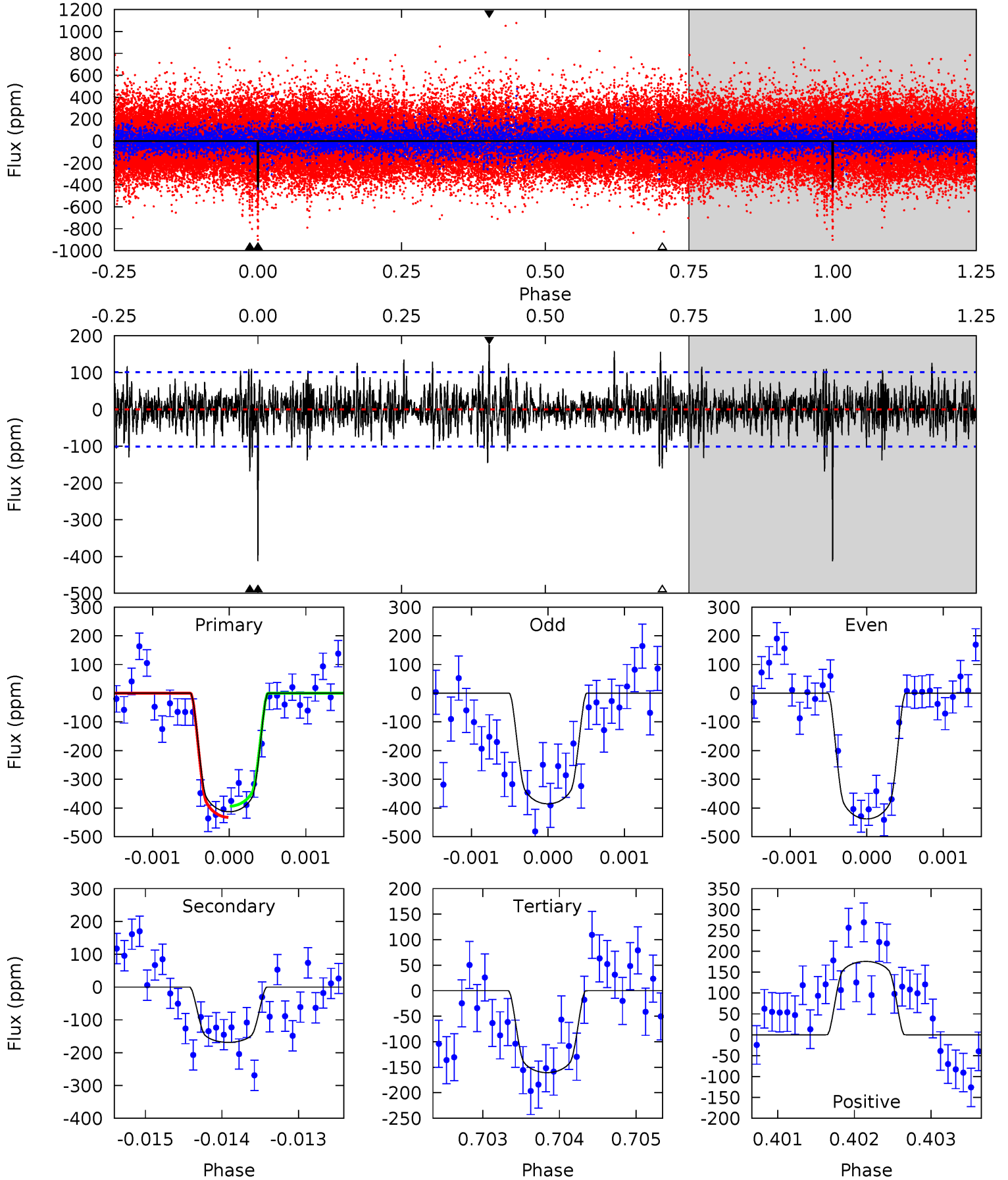
TCE 008037693-01 P=535.836055 Days $T_0=388.505796$ (BKJD)



DV Model-Shift Uniqueness Test

008037693-01, $P = 535.881674$ Days, $E = 388.449698$ Days

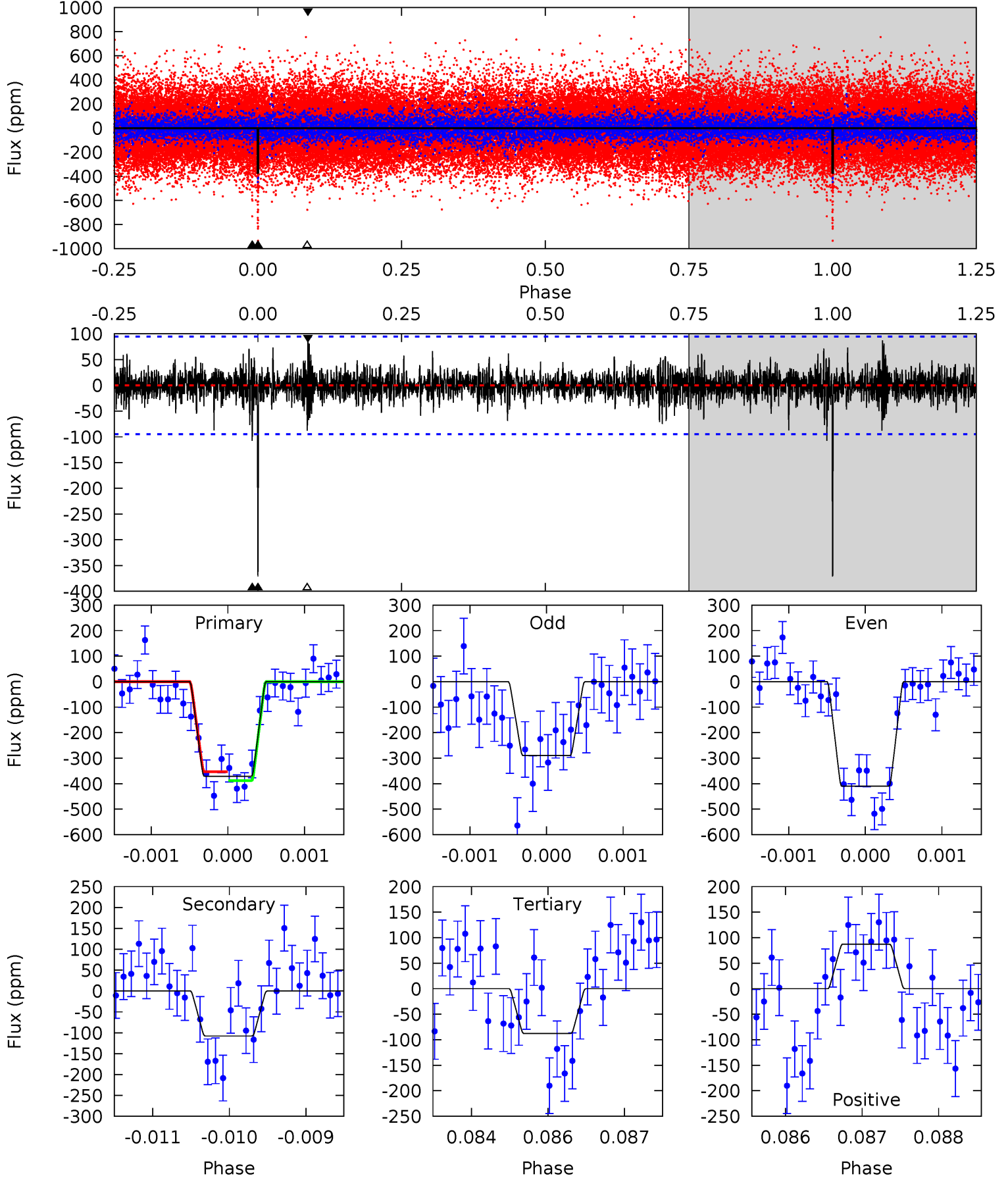
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	9.03	8.60	9.41	5.42	3.24	1.98	13.5	12.7	0.43	-0.38	1.31	1.07	0.30	1.05



Alt Model-Shift Uniqueness Test

008037693-01, P = 535.836055 Days, E = 388.505796 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	6.15	5.01	4.97	5.41	3.23	1.09	16.2	16.2	1.14	1.18	3.22	1.28	0.19	1.00



Stellar Parameters For KIC 008037693

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6230^{+174}_{-196}	$4.425^{+0.056}_{-0.224}$	$-0.040^{+0.250}_{-0.300}$	$1.075^{+0.370}_{-0.123}$	$1.121^{+0.157}_{-0.157}$	$1.271^{+0.381}_{-0.689}$
	+3%/-3%	+1%/-5%	+625%/-750%	+34%/-11%	+14%/-14%	+30%/-54%
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 008037693-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-169 ± 19	$2.69^{+0.52}_{-0.33}$	354^{+25}_{-18}	4895^{+260}_{-219}	22455^{+7651}_{-6482}
Alt.	-108 ± 18	$2.42^{+0.45}_{-0.32}$	352^{+26}_{-18}	4651^{+265}_{-252}	17595^{+5675}_{-5283}

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

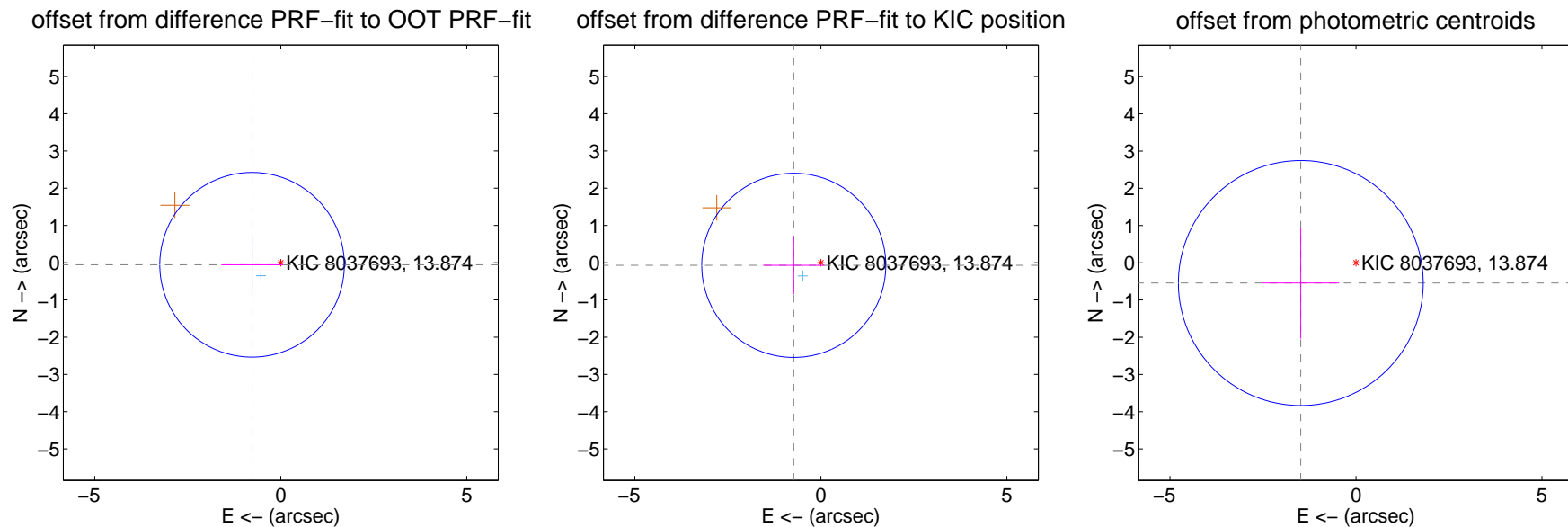
DV Centroid Data

Supplemental centroid analysis for 008037693-01. Kepler magnitude: 13.87. Transit SNR 9.35

There are 1 quarters with good PRF difference image offsets

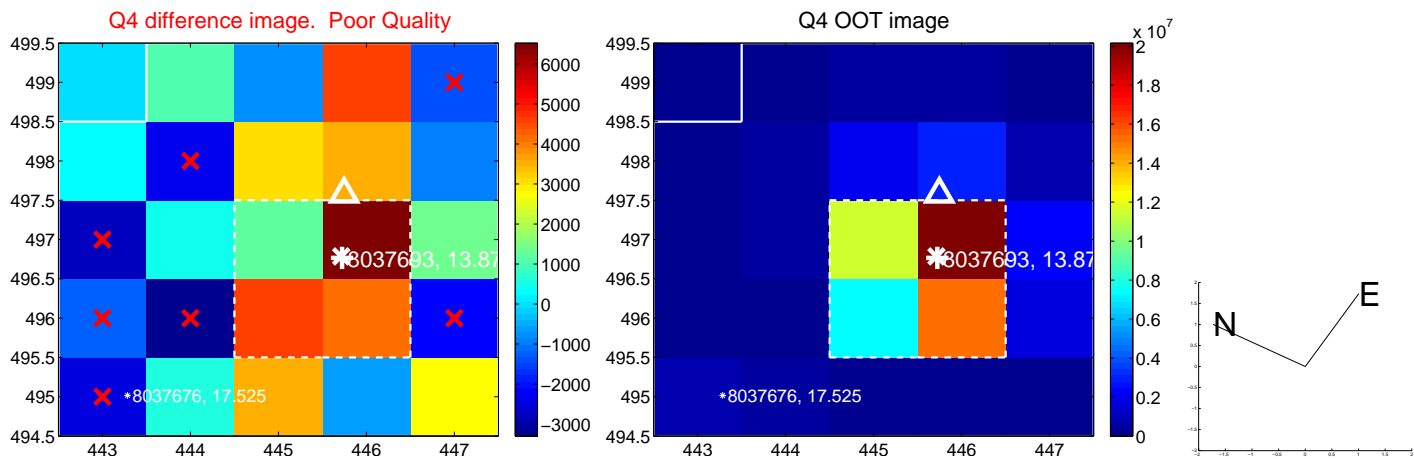
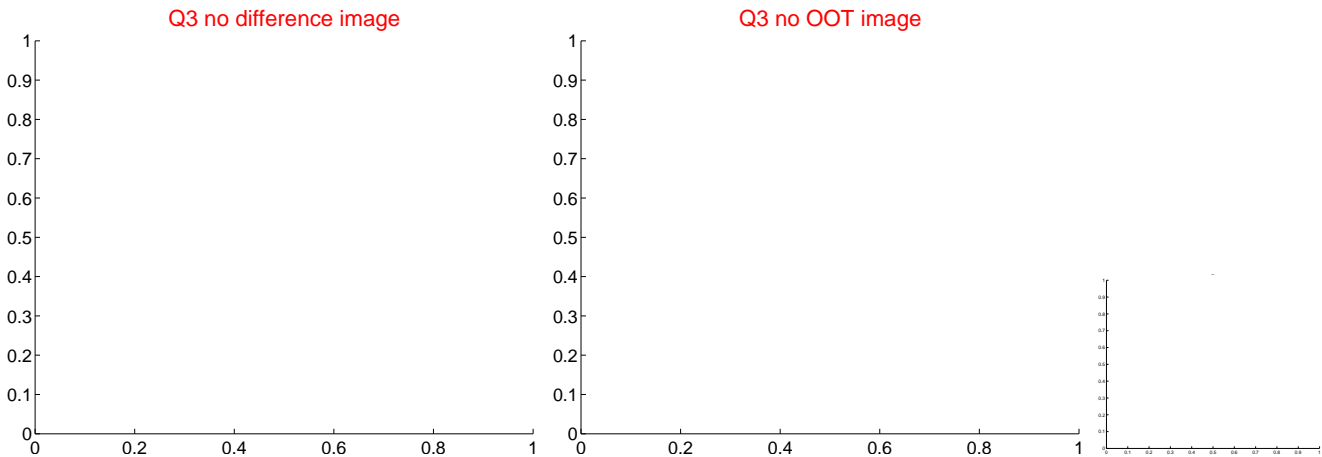
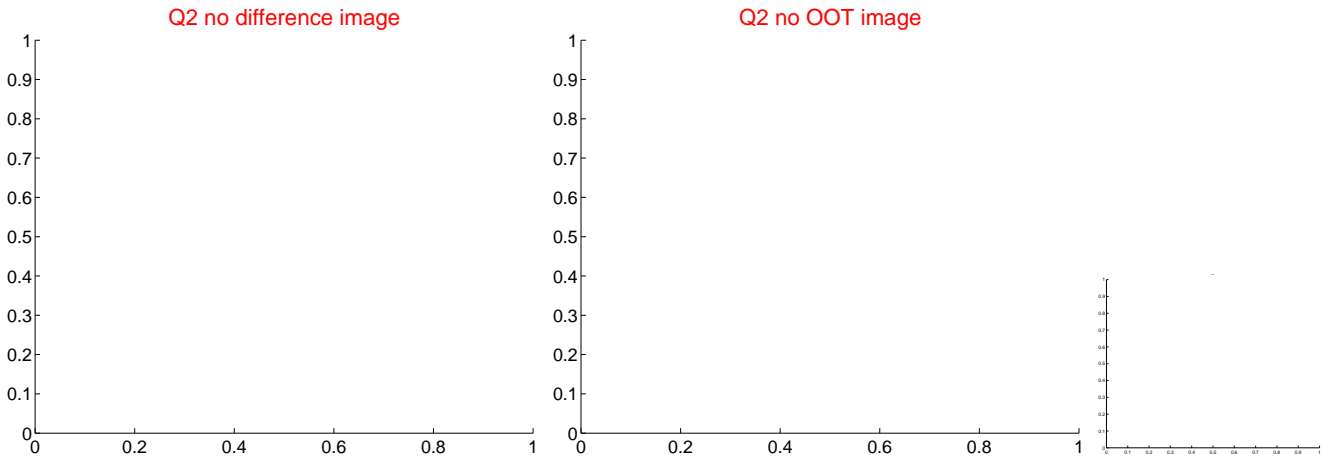
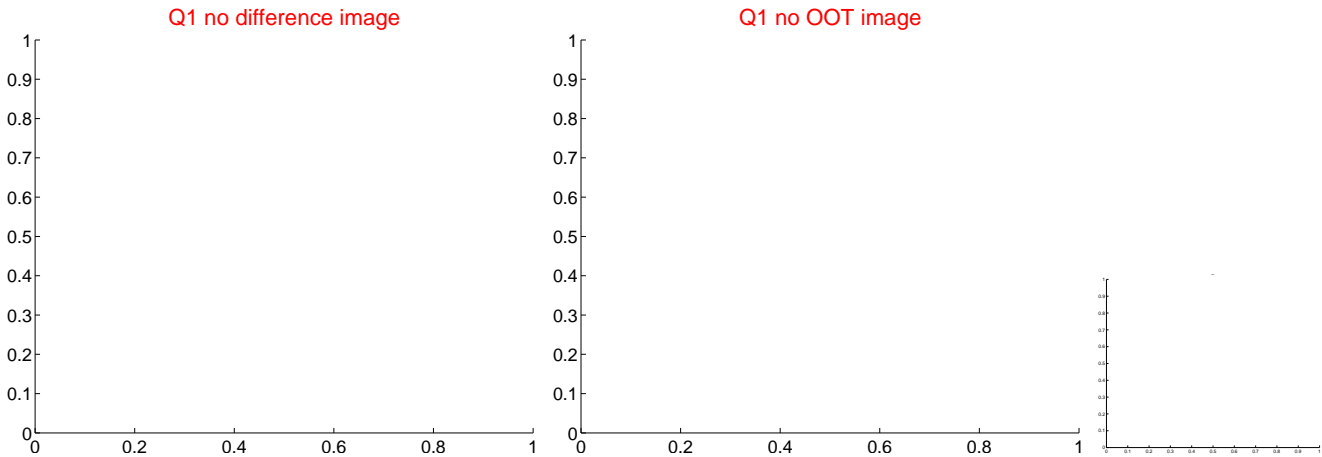
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.773 ± 0.826	0.94	0.771 ± 0.827	-0.056 ± 0.805
PRF-fit source offset from KIC position	0.731 ± 0.824	0.89	0.728 ± 0.825	-0.071 ± 0.778
photometric centroid source offset	1.58 ± 1.10	1.44	1.48 ± 1.03	-0.54 ± 1.49

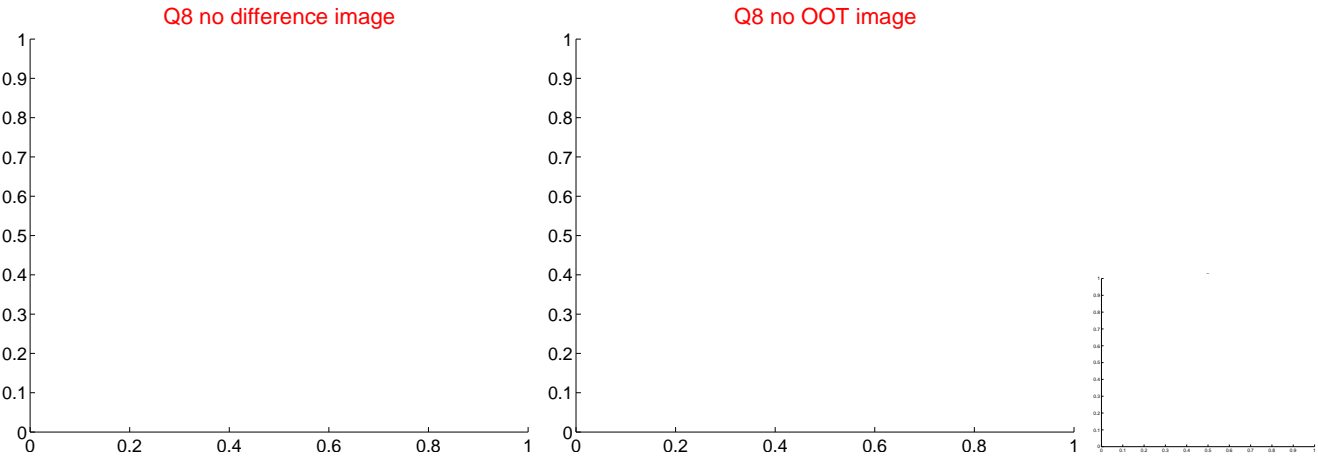
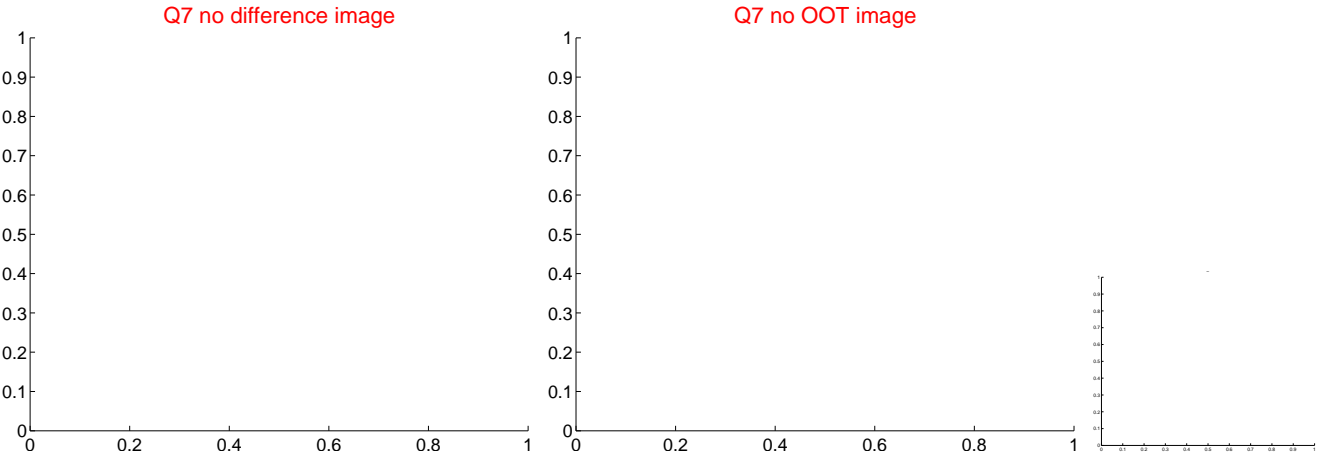
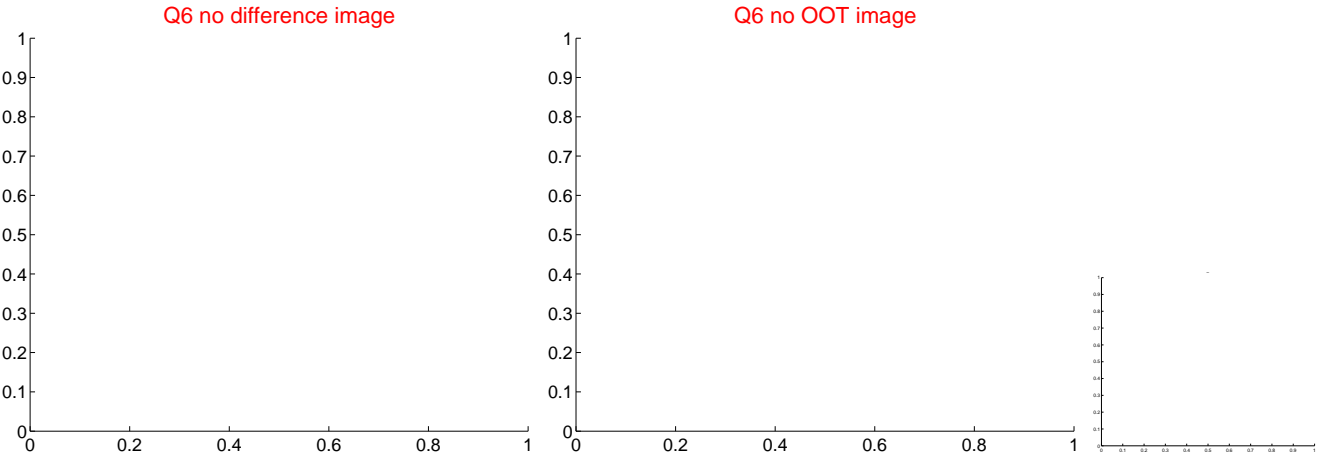
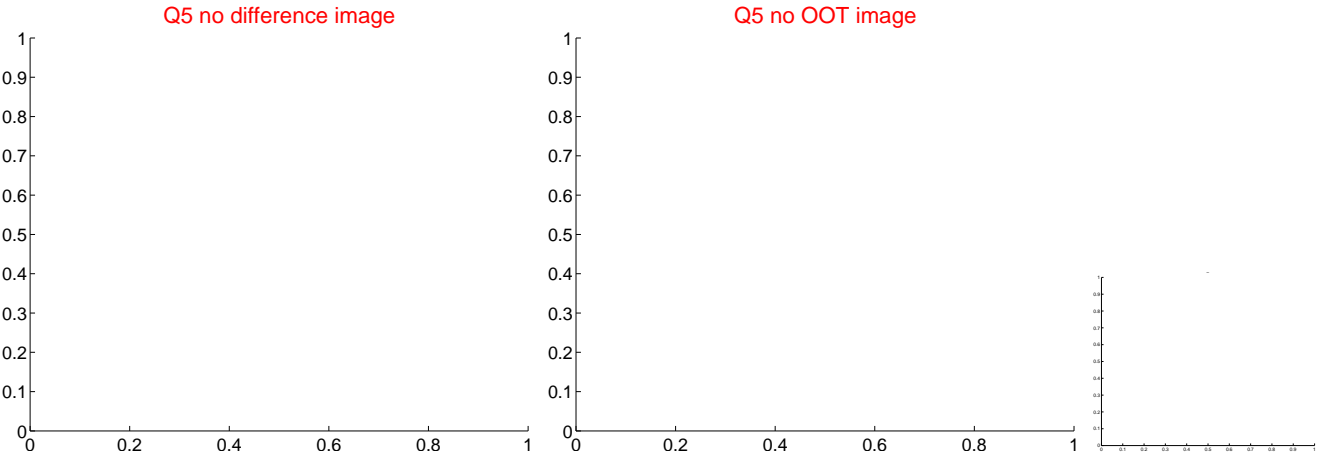


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

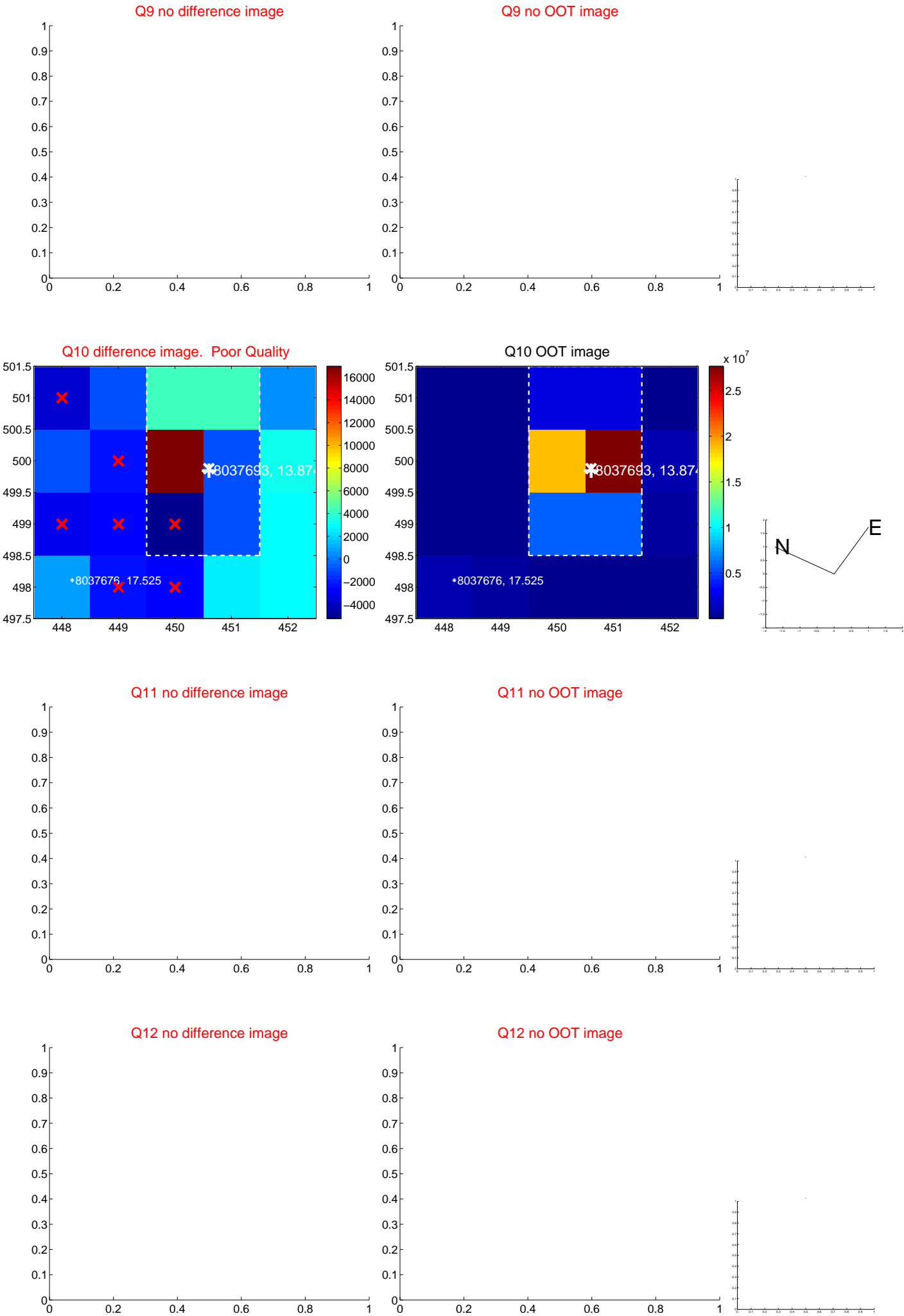
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

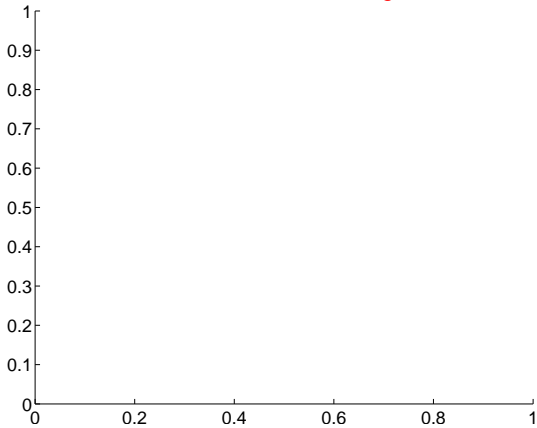


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

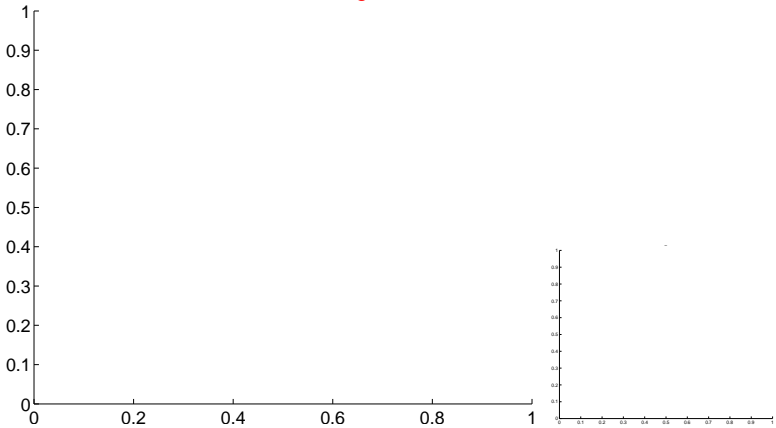


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

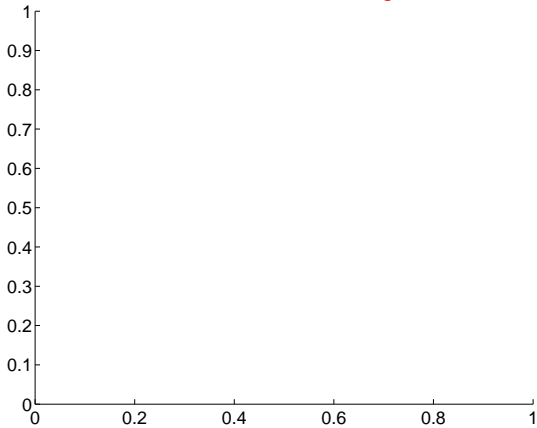
Q13 no difference image



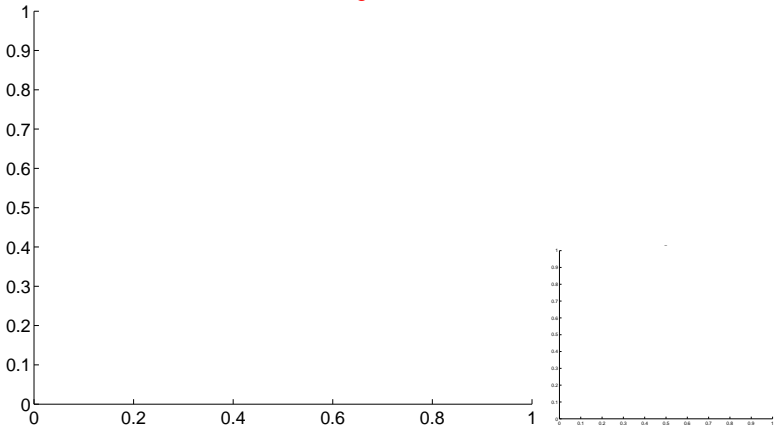
Q13 no OOT image



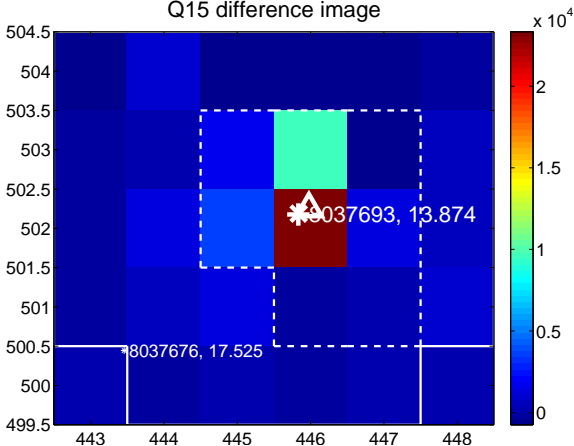
Q14 no difference image



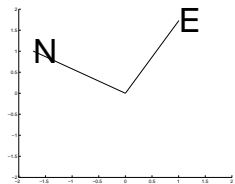
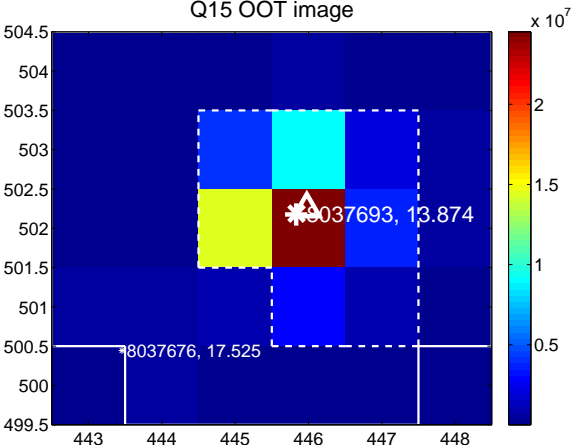
Q14 no OOT image



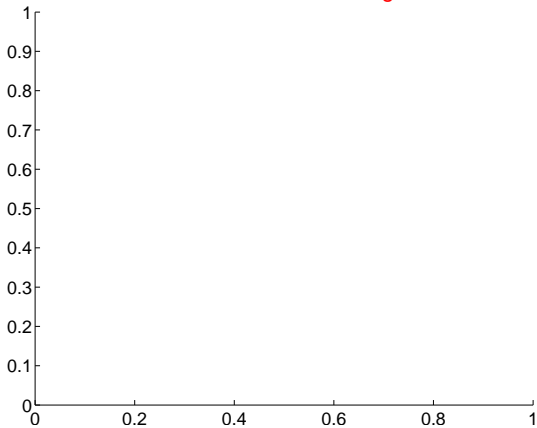
Q15 difference image



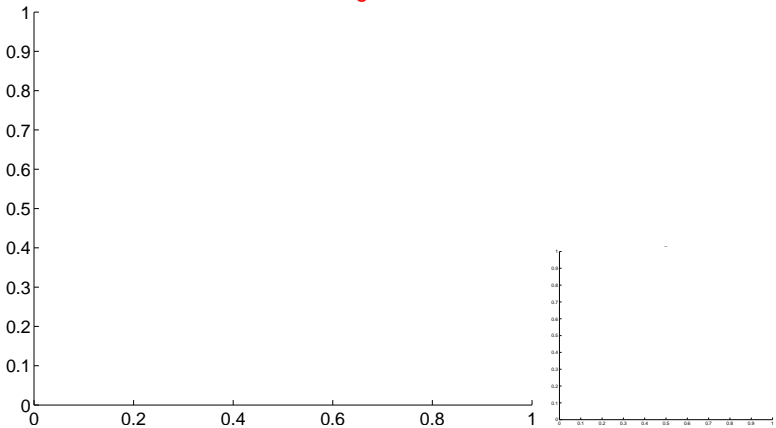
Q15 OOT image



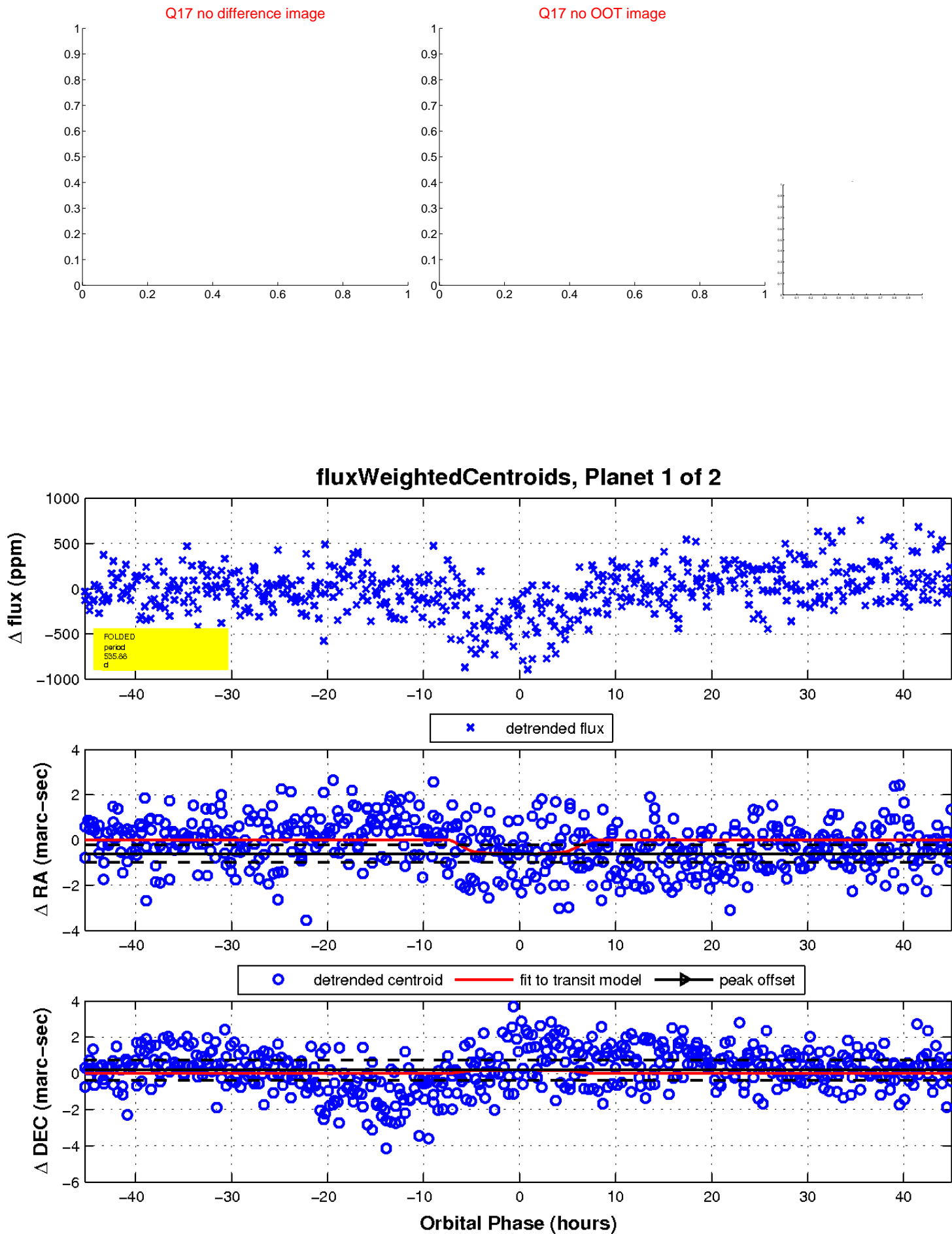
Q16 no difference image



Q16 no OOT image

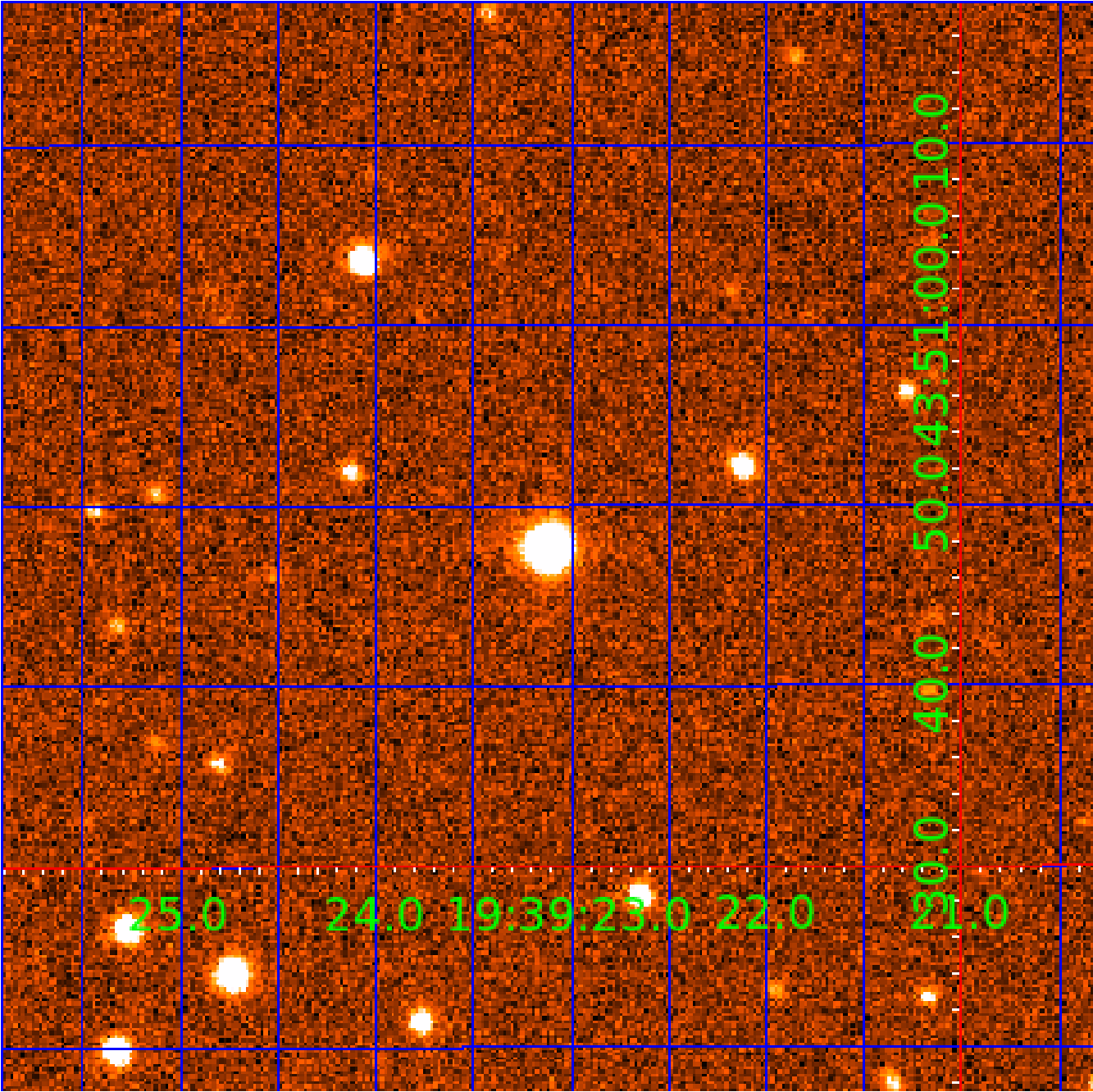


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008037693

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})
008037693-01	OBS	No	535.881674	388.449698	372.1	15.092	9.7	9.4	1.07	6230	2.58	0.87
008037693-02	OBS	No	525.824880	403.168032	369.4	17.042	9.2	8.7	1.07	6230	3.80	0.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008037693-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008037693-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—INCONSISTENT_TRANS—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.

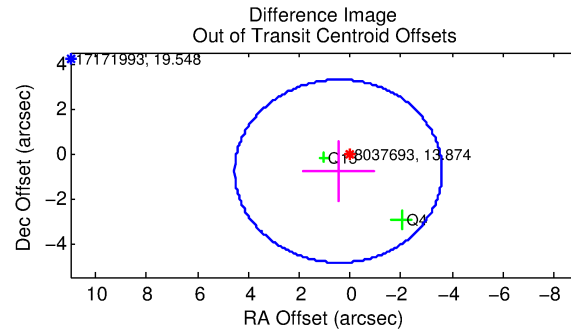
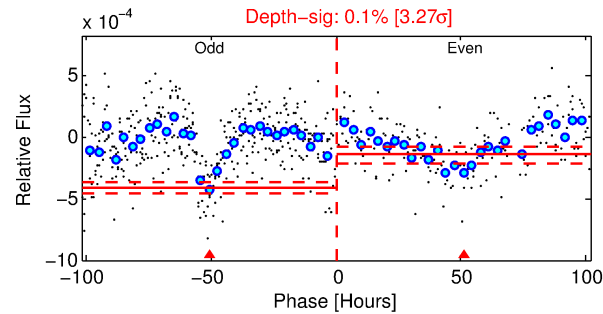
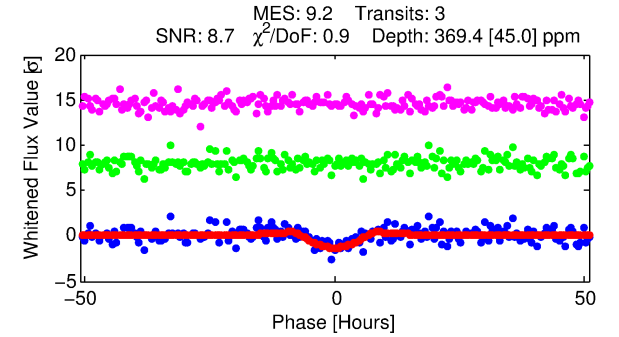
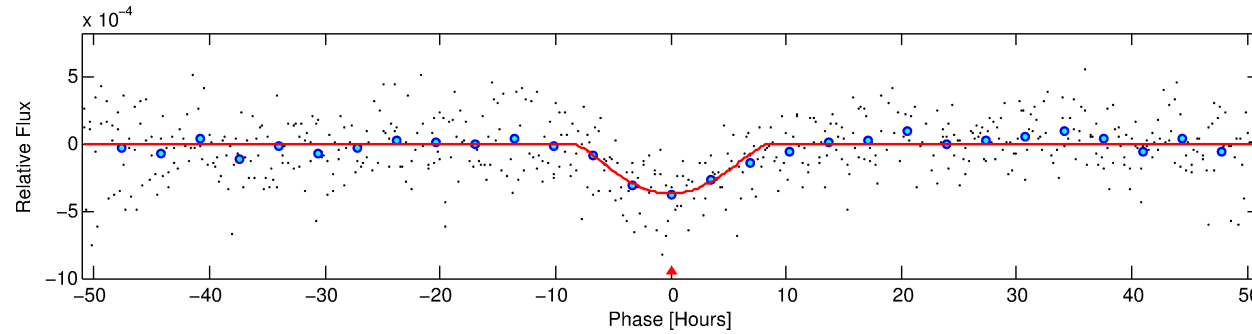
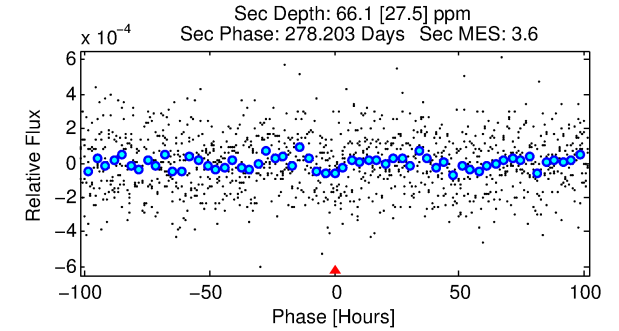
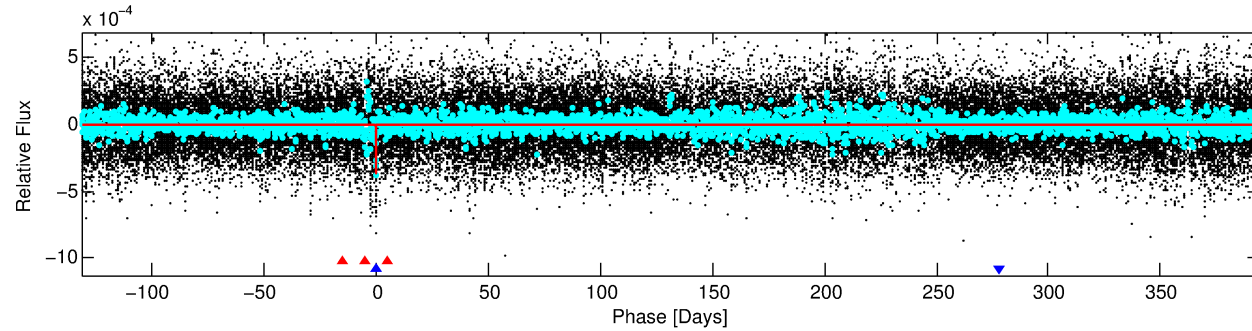
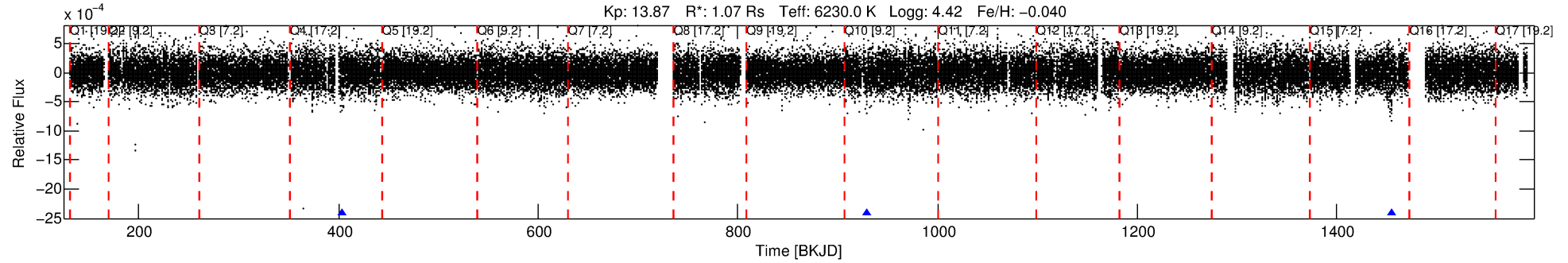
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008037693-02

No Significant Match Found

DV One-Page Summary

KIC: 8037693 Candidate: 2 of 2 Period: 525.825 d



DV Fit Results:

Period = 525.82488 [0.02345] d
Epoch = 403.1680 [0.0327] BKJD
Rp/R* = 0.0324 [0.0785]
a/R* = 63.58 [43.84]
b = 1.00 [0.12]
Seff = 0.89 [0.38]
Teq = 248 [27] K
Rp = 3.80 [9.30] Re
a = 1.3249 [0.3799] AU
Ag = 4415.51 [21539.19] [0.20σ]
Teffp = 3120 [3793] K [0.76σ]

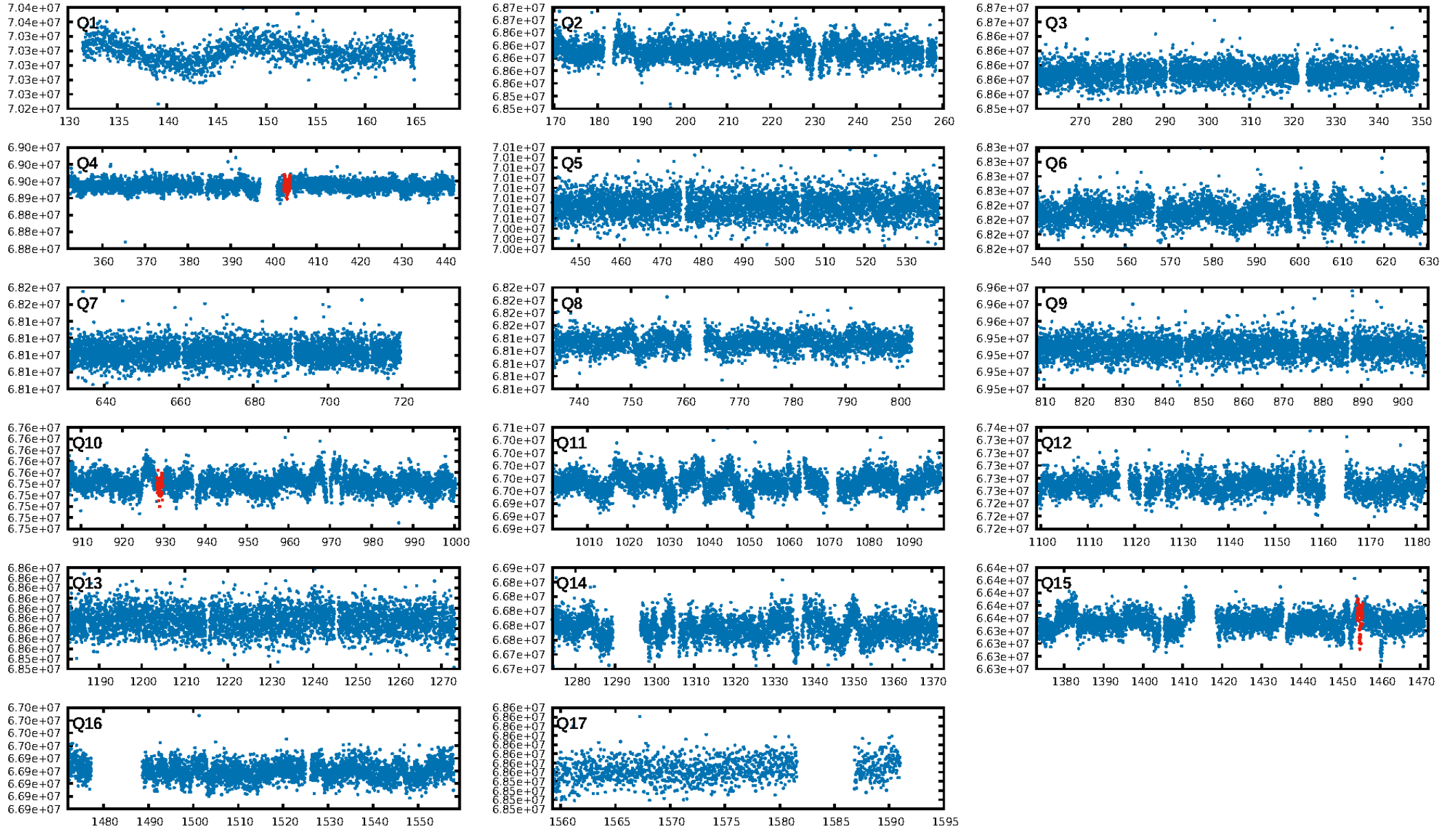
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [10.60σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.13e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.057
Centroid-sig: 6.0%
Centroid-so: 2.161 arcsec [1.40σ]
OotOffset-rm: 0.912 arcsec [0.67σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 0.908 arcsec [0.66σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

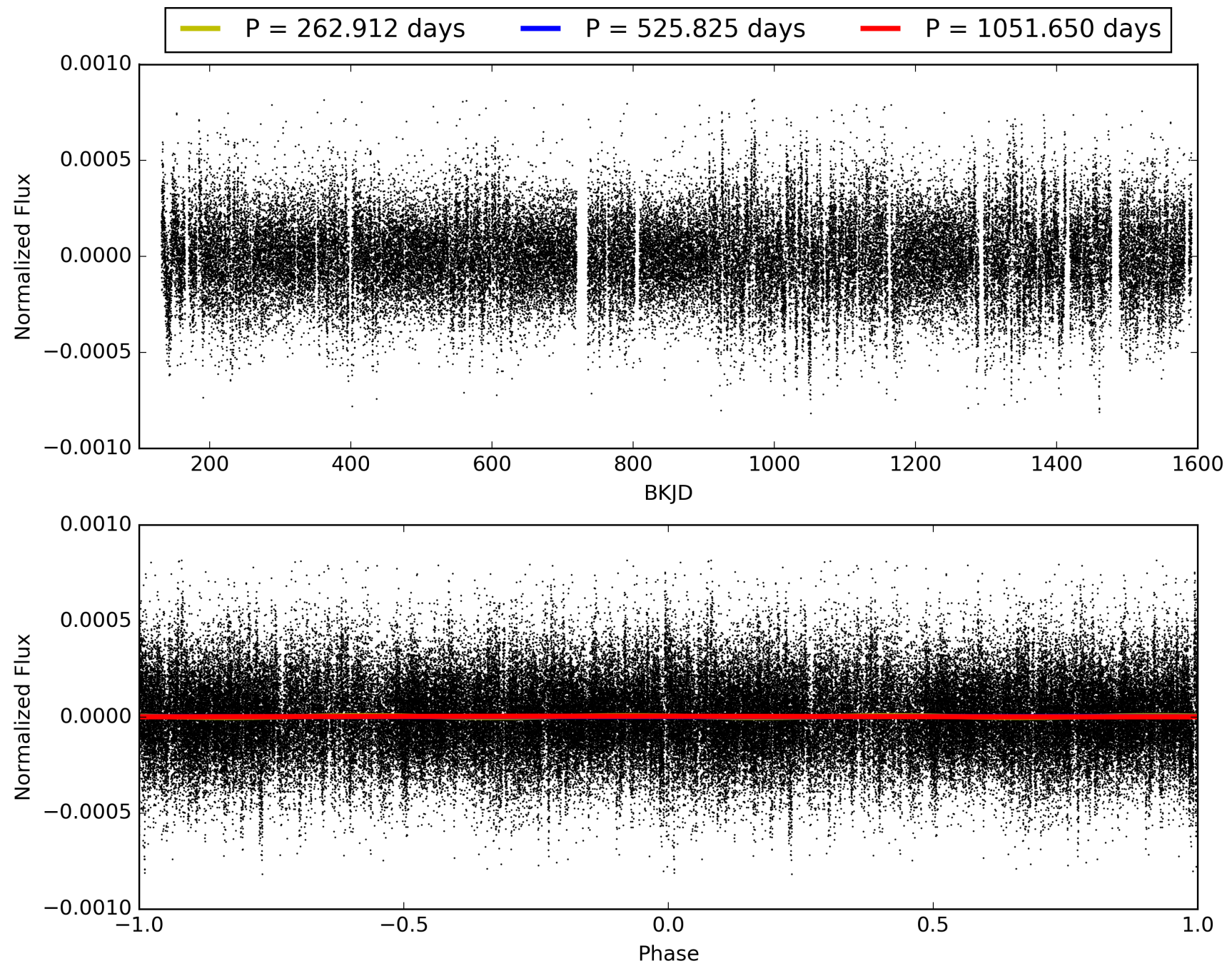
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:45:07 Z

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

TCE 008037693-02, PDC Light Curves

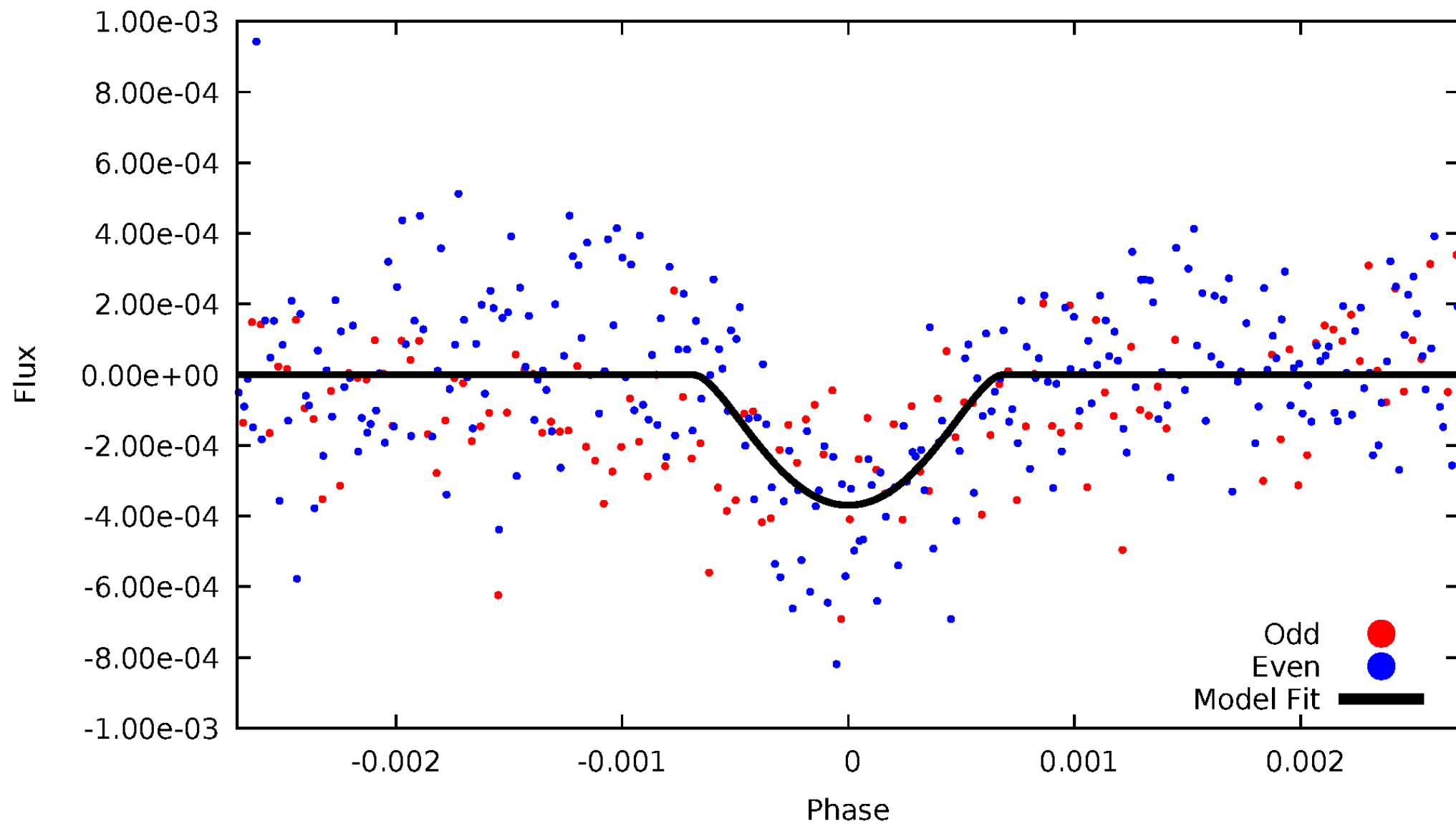


TCE 008037693-02



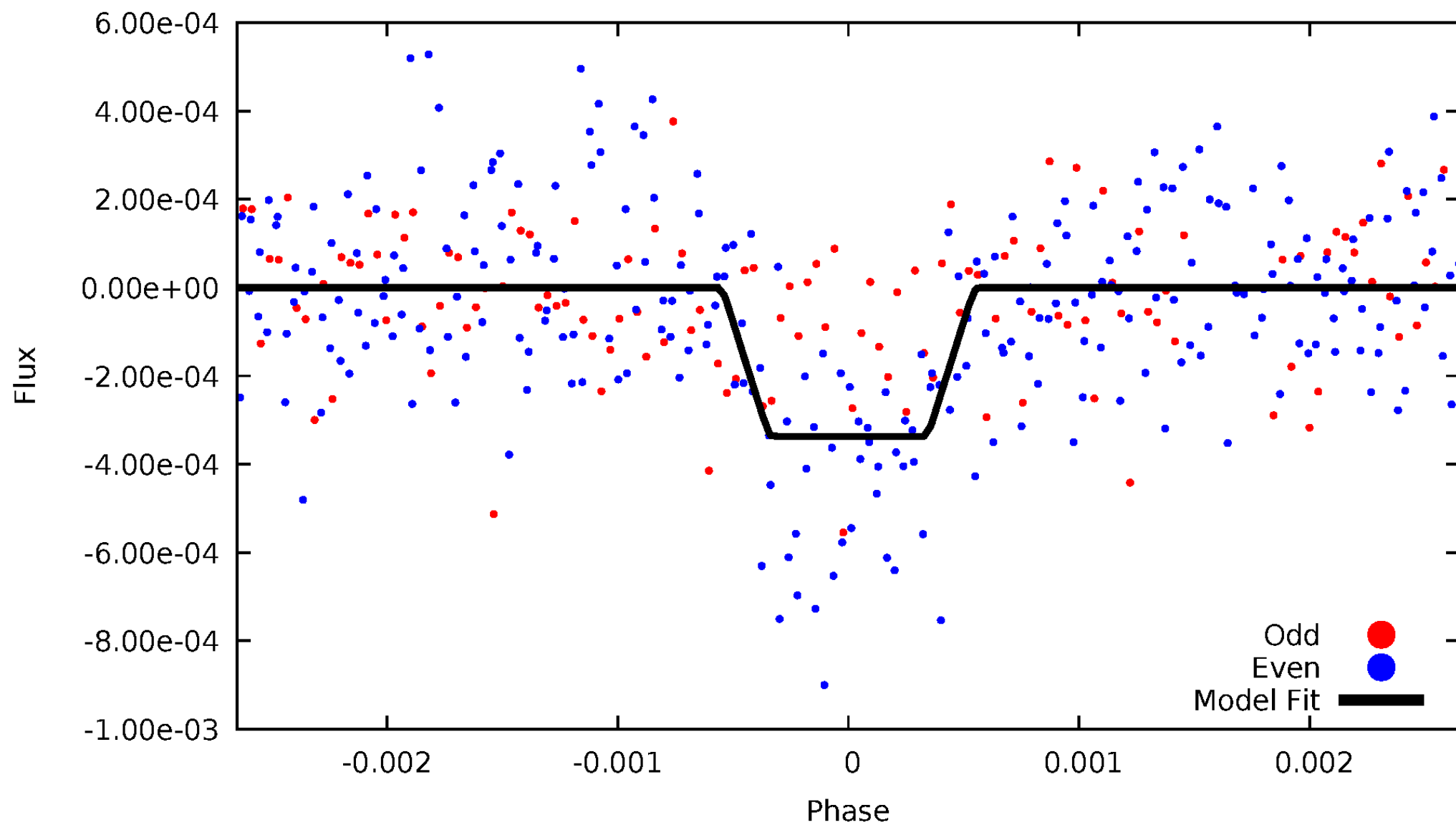
DV Odd/Even

TCE 008037693-02



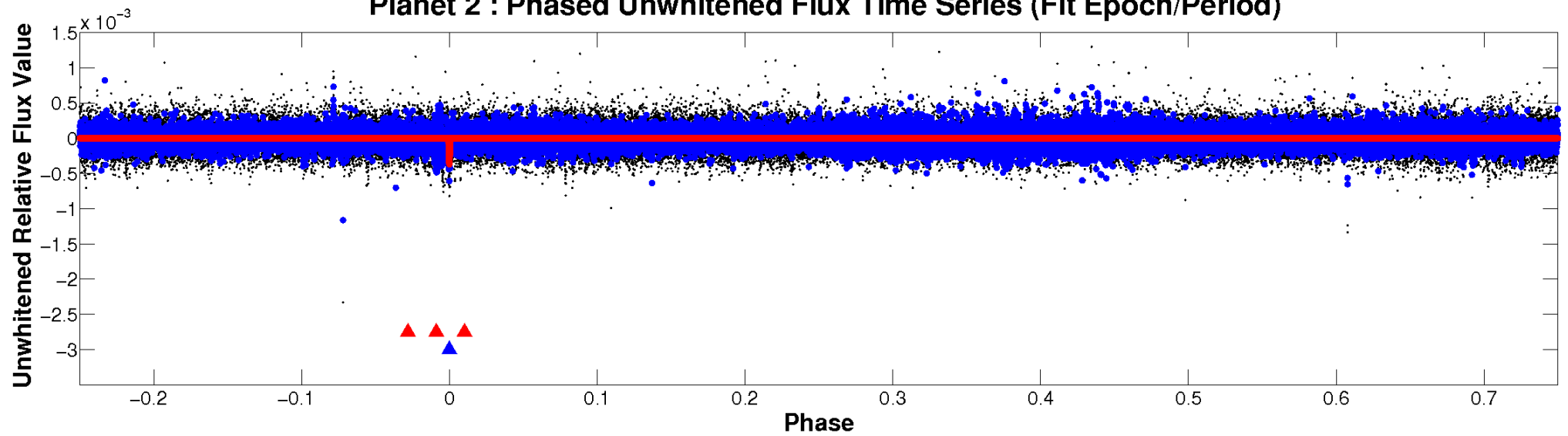
ALT Odd/Even

TCE 008037693-02

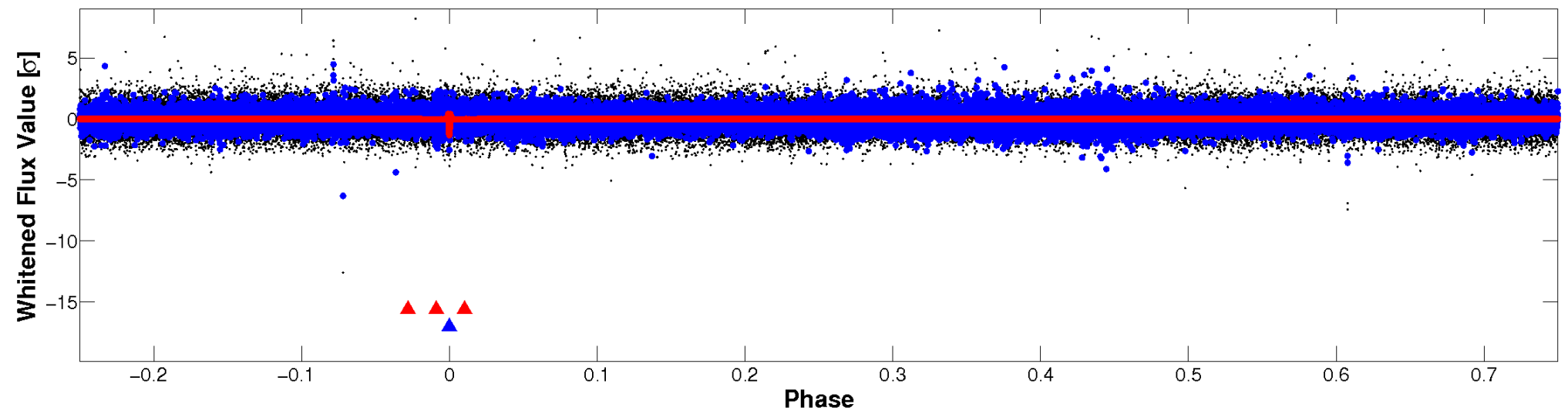


Non-Whitened Vs. Whitened Light Curve

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



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



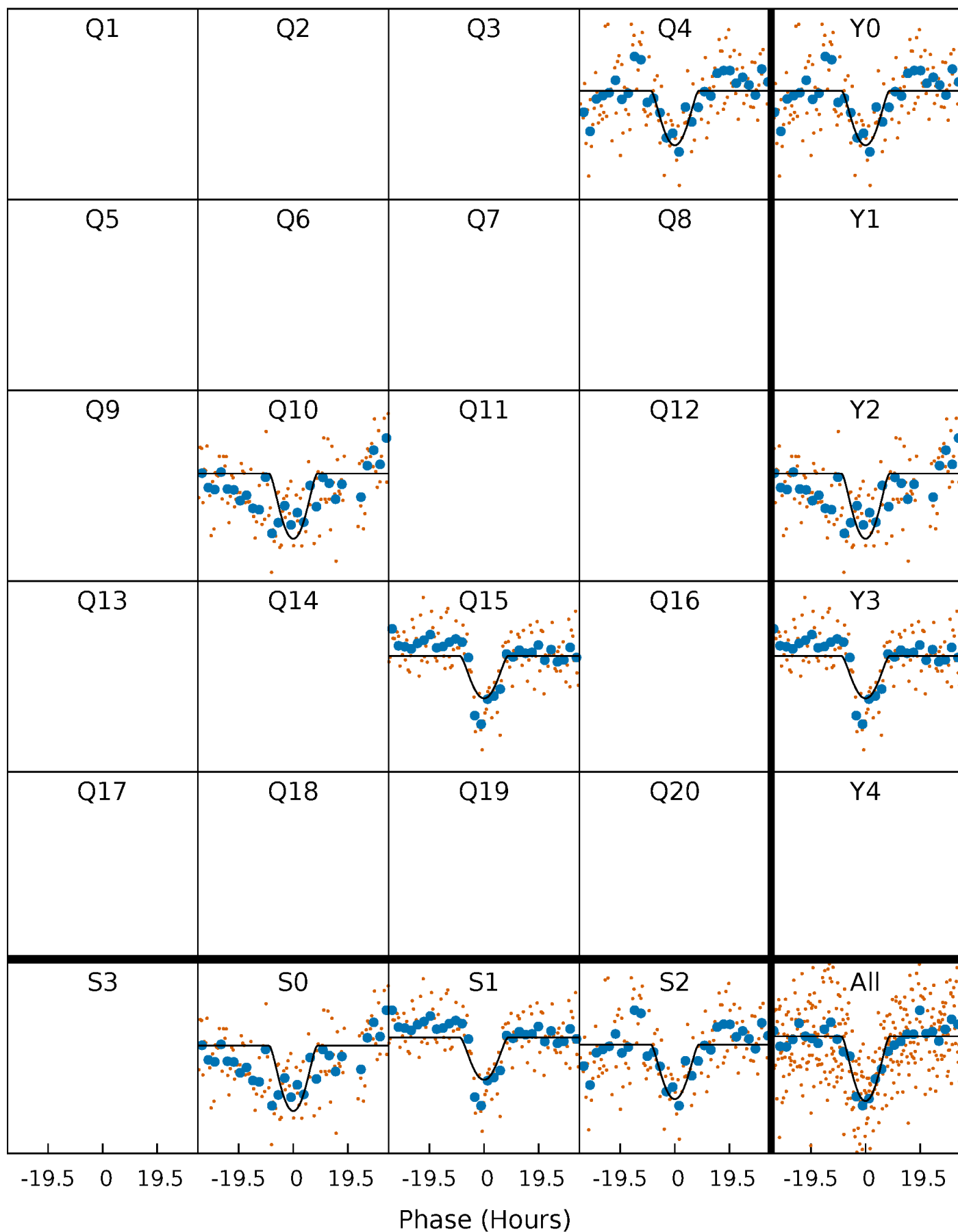
PDC Quarter-Phased Transit Curves

TCE 008037693-02 $P=525.824880$ Days $T_0=403.168032$ (BKJD)



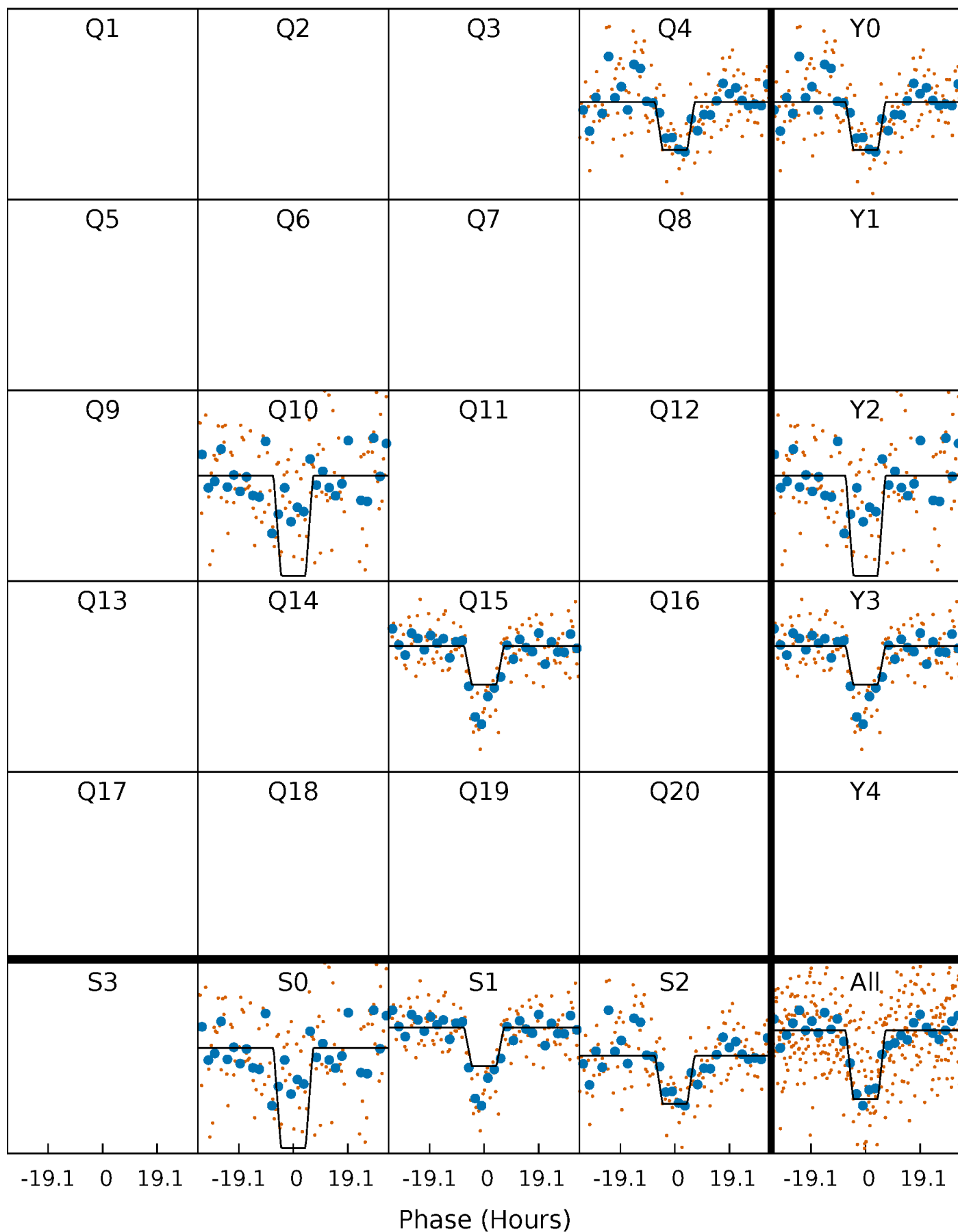
DV Quarter-Phased Transit Curves

TCE 008037693-02 $P=525.824880$ Days $T_0=403.168032$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

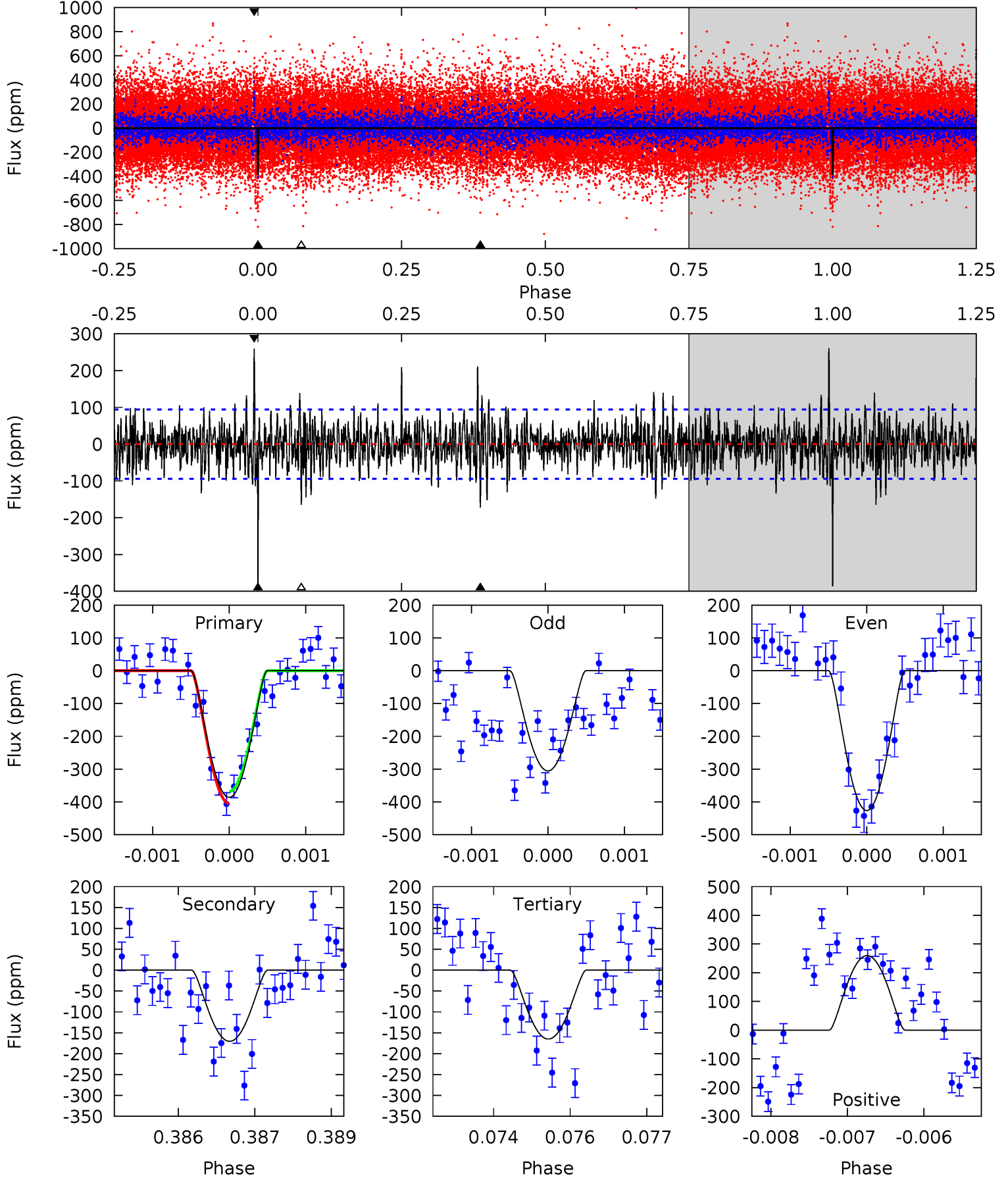
TCE 008037693-02 P=525.857667 Days $T_0=403.129752$ (BKJD)



DV Model-Shift Uniqueness Test

008037693-02, P = 525.824880 Days, E = 403.168032 Days

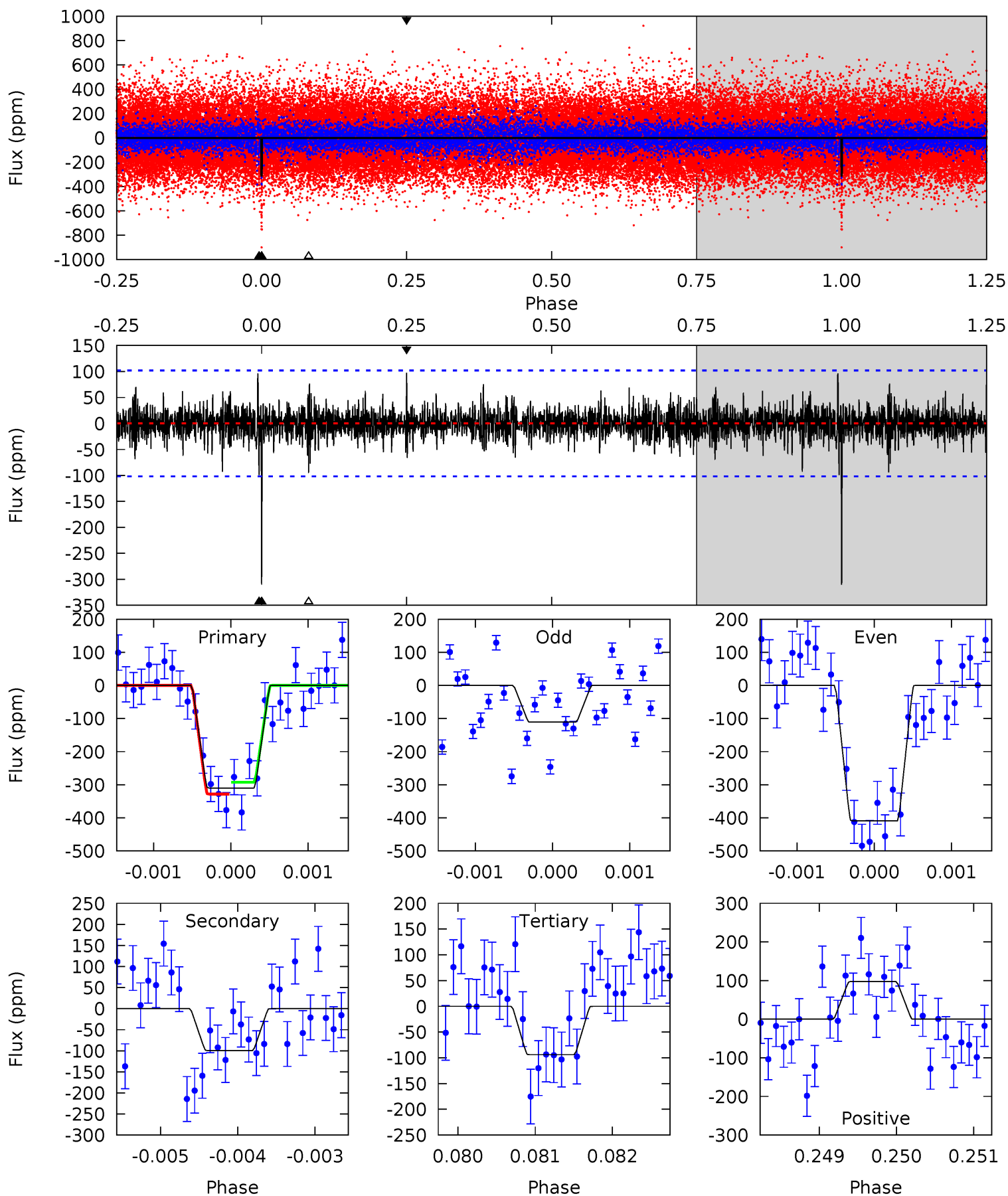
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	9.75	9.44	14.9	5.39	3.20	2.50	12.7	7.23	0.32	-5.11	3.24	1.12	0.40	1.04



Alt Model-Shift Uniqueness Test

008037693-02, P = 525.857667 Days, E = 403.129752 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	5.31	5.01	5.20	5.44	3.27	1.08	11.5	11.4	0.30	0.11	7.53	1.11	0.24	0.97



Stellar Parameters For KIC 008037693

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6230^{+174}_{-196}	$4.425^{+0.056}_{-0.224}$	$-0.040^{+0.250}_{-0.300}$	$1.075^{+0.370}_{-0.123}$	$1.121^{+0.157}_{-0.157}$	$1.271^{+0.381}_{-0.689}$
	+3%/-3%	+1%/-5%	+625%/-750%	+34%/-11%	+14%/-14%	+30%/-54%
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 008037693-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-170 ± 17	$8.22^{+7.83}_{-5.47}$	354^{+25}_{-19}	3315^{+1584}_{-574}	2449^{+18855}_{-1807}
Alt.	-99 ± 19	$7.38^{+7.60}_{-5.09}$	353^{+27}_{-17}	3146^{+1511}_{-551}	1619^{+16333}_{-1211}

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 $A_{obs} \gg 1.0$

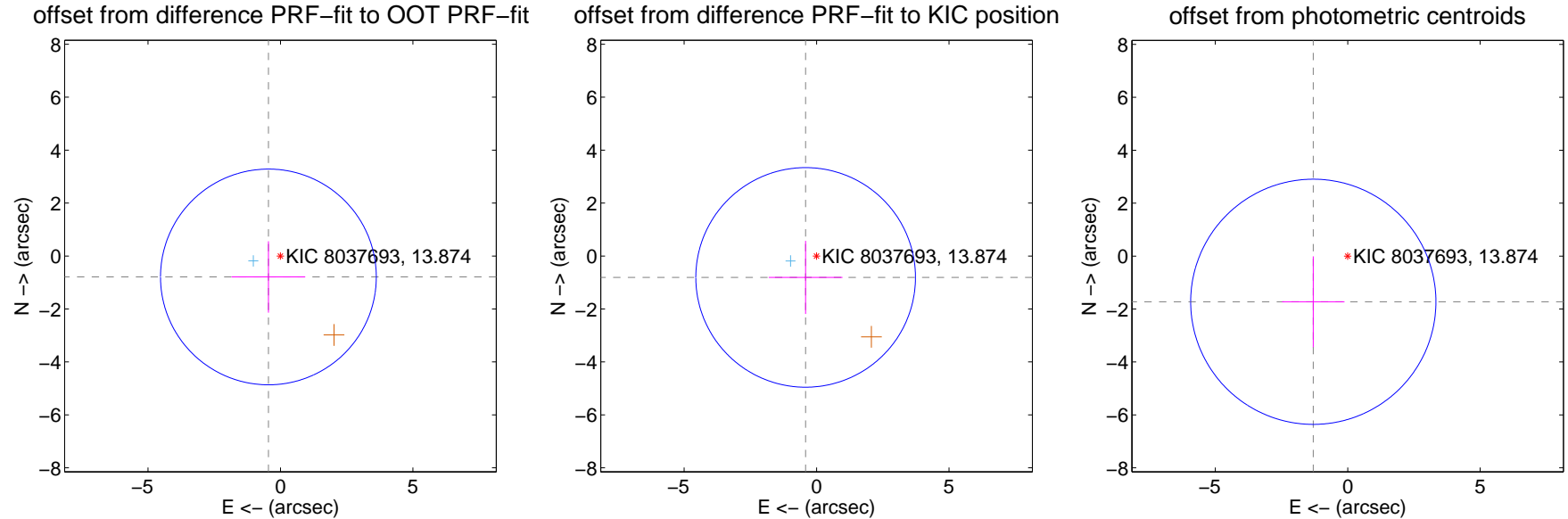
DV Centroid Data

Supplemental centroid analysis for 008037693-02. Kepler magnitude: 13.87. Transit SNR 8.66

There are 1 quarters with good PRF difference image offsets

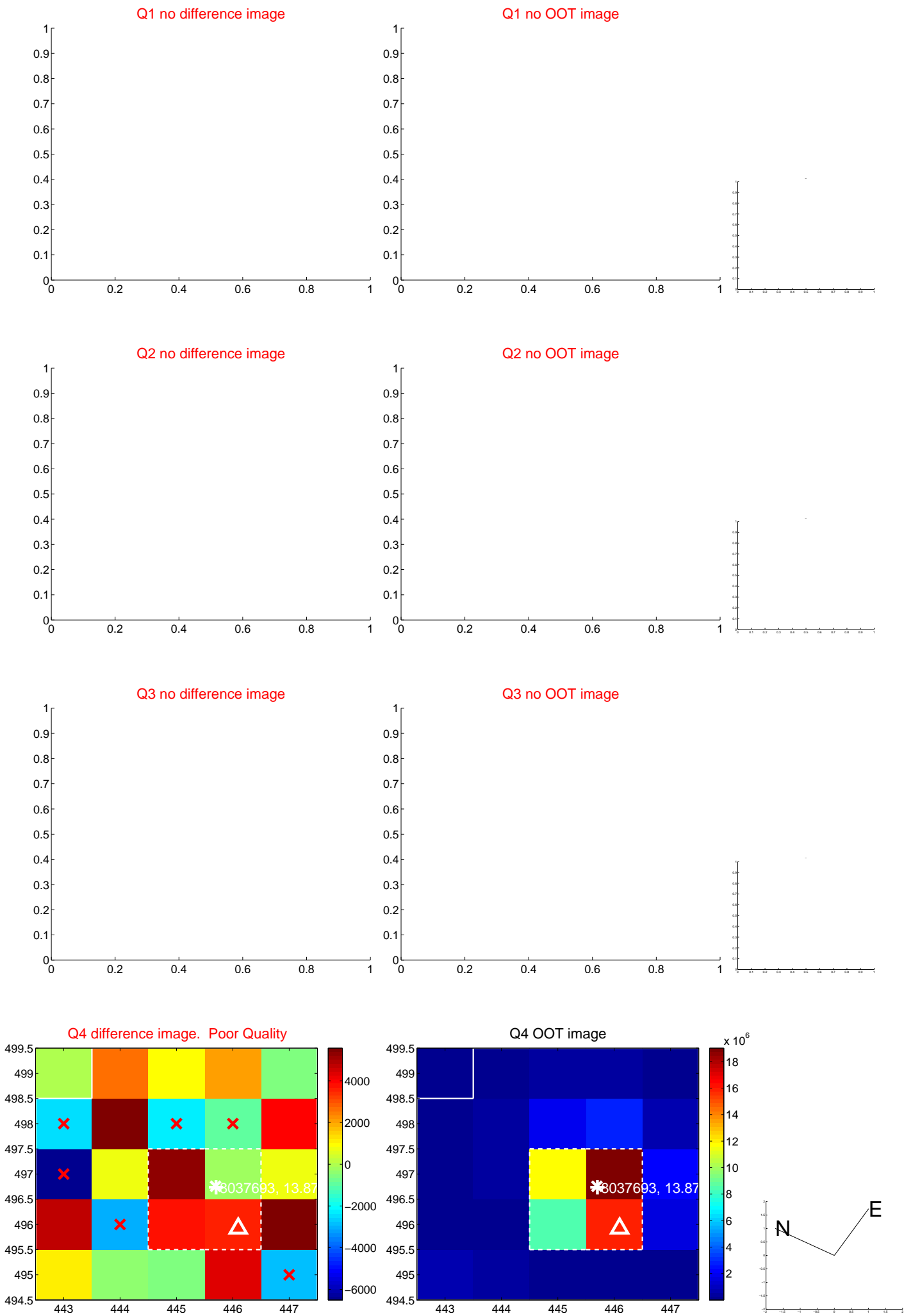
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.912 ± 1.358	0.67	0.455 ± 1.389	-0.790 ± 1.348
PRF-fit source offset from KIC position	0.908 ± 1.382	0.66	0.413 ± 1.393	-0.808 ± 1.380
photometric centroid source offset	2.16 ± 1.54	1.40	1.30 ± 1.18	-1.73 ± 1.72

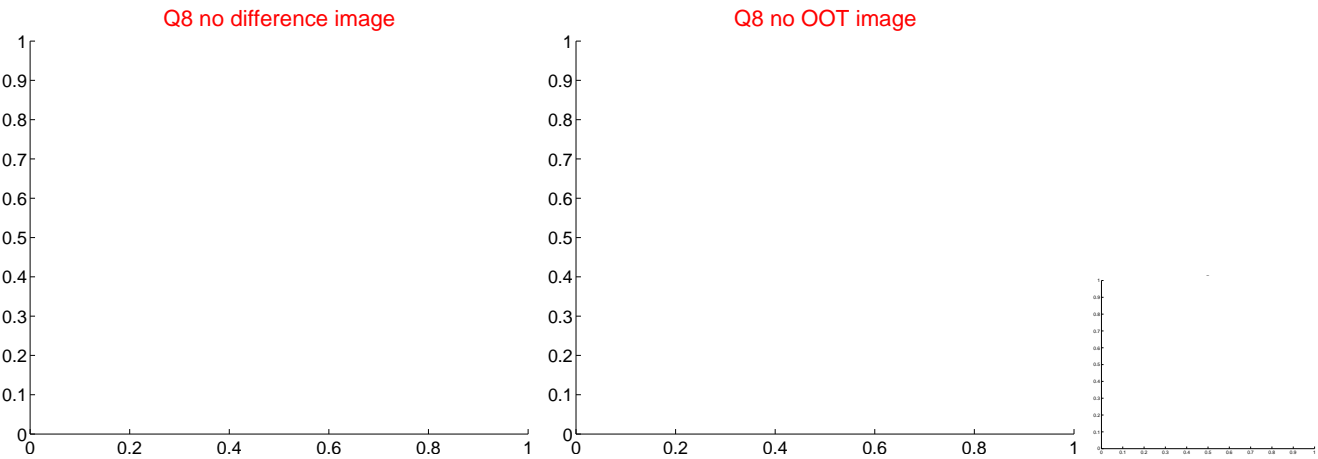
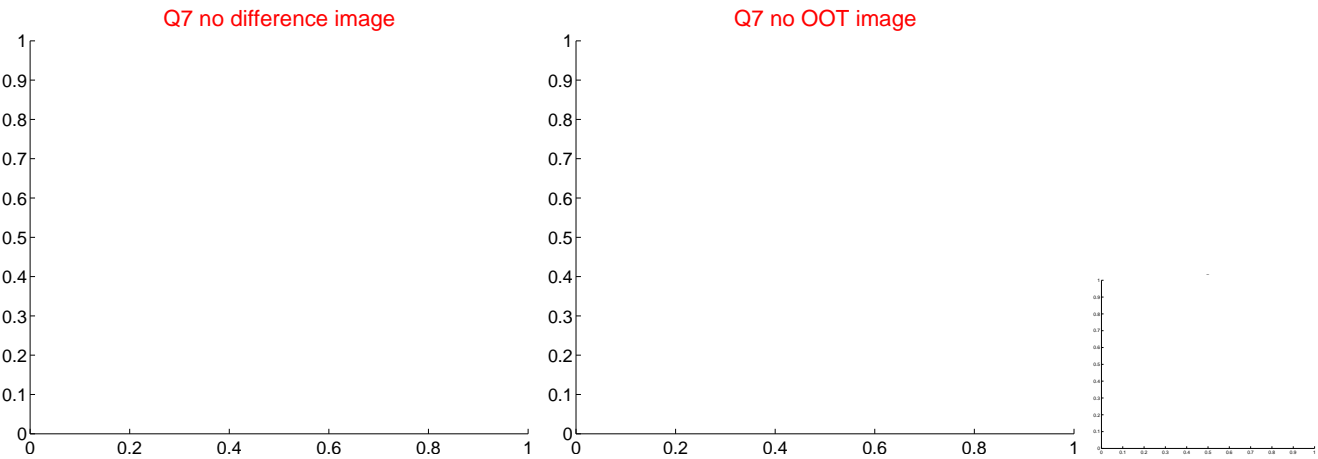
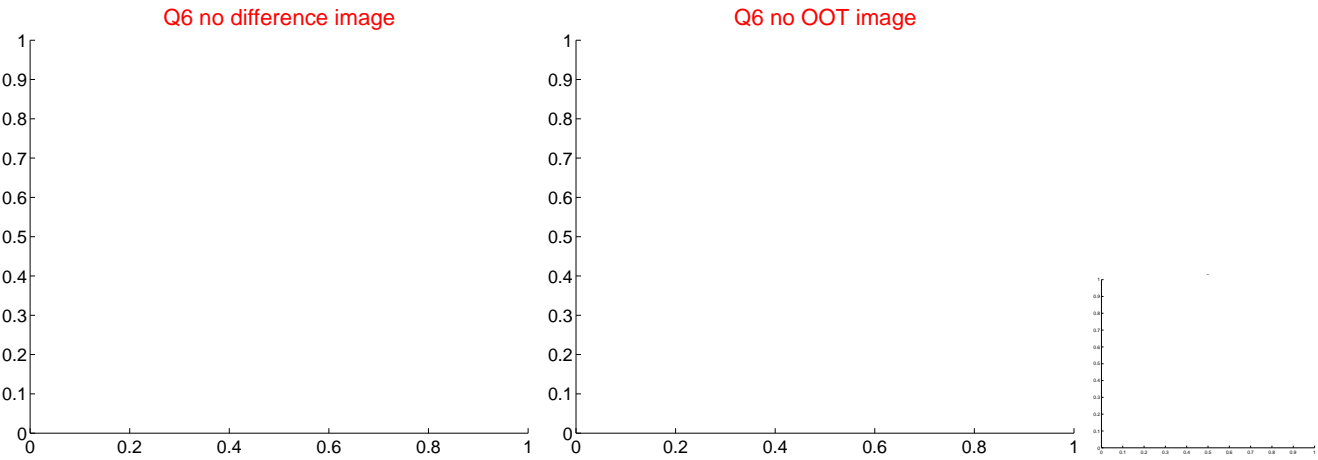
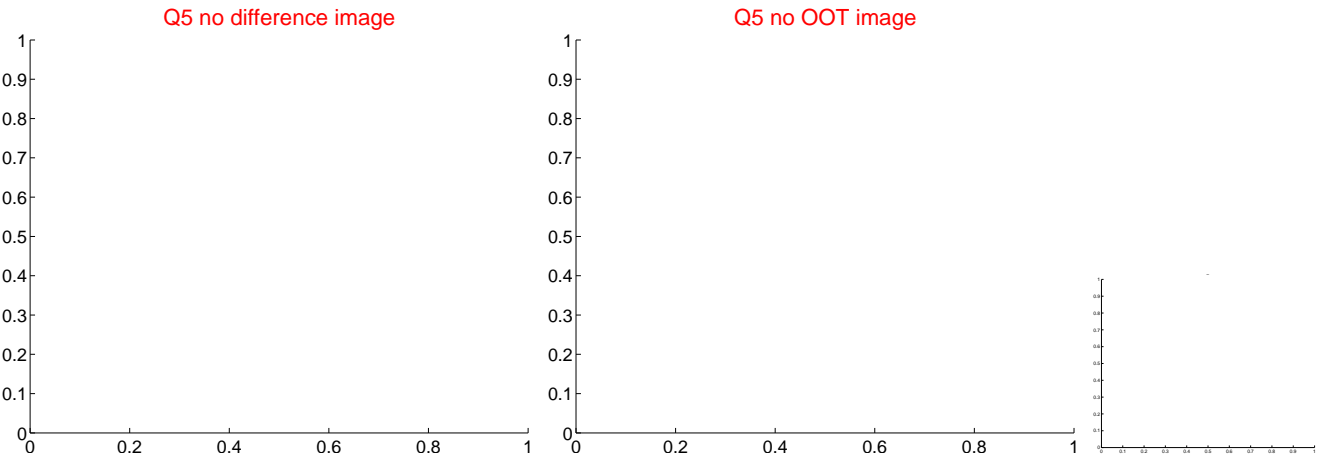


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

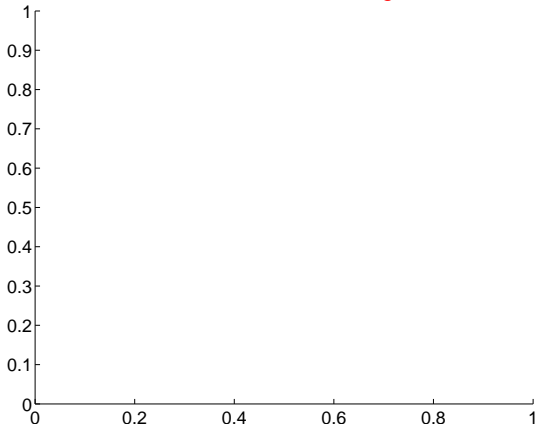


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

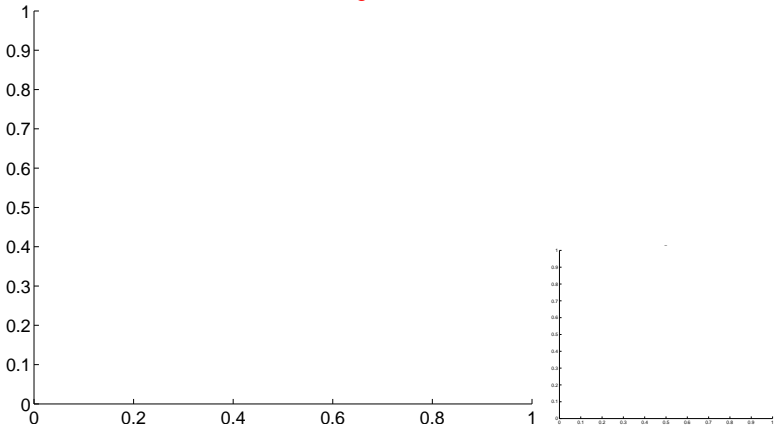


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

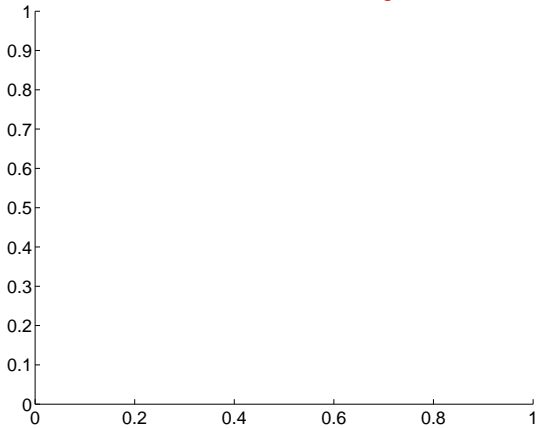
Q13 no difference image



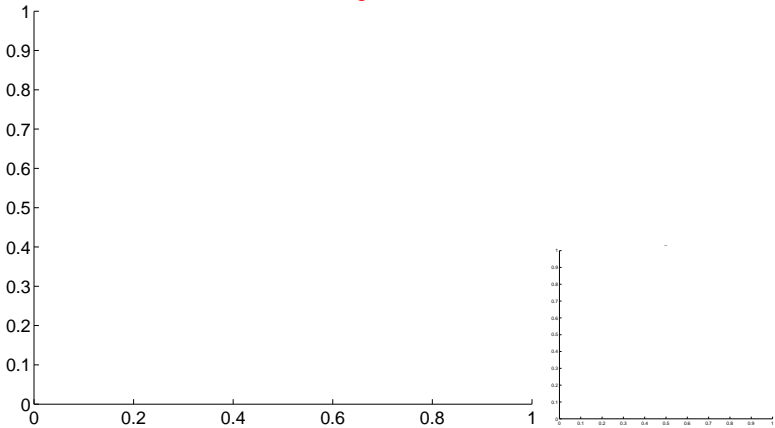
Q13 no OOT image



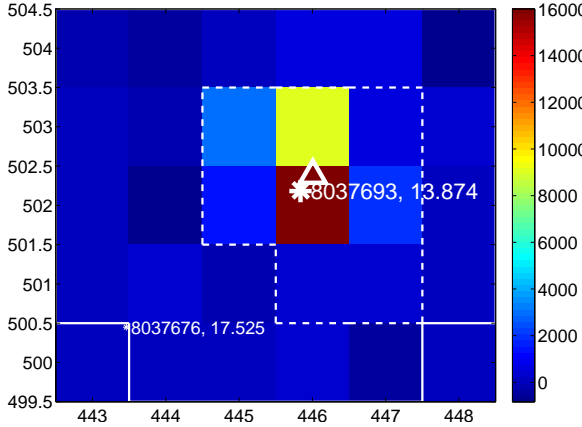
Q14 no difference image



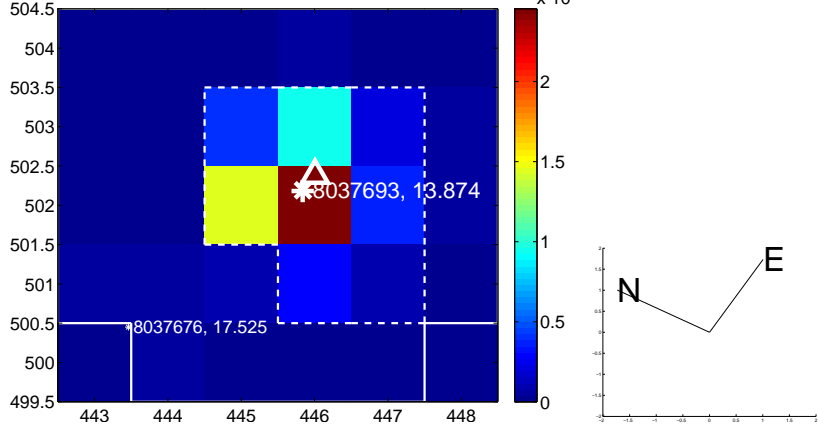
Q14 no OOT image



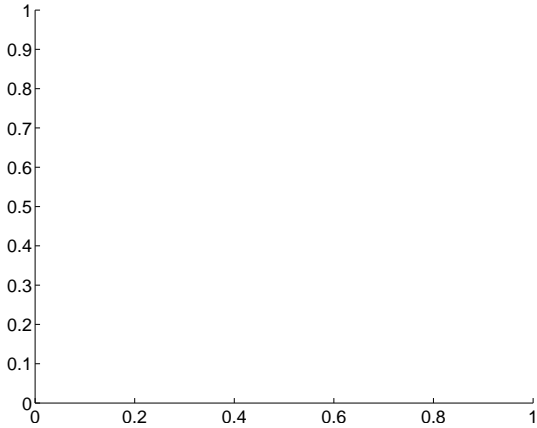
Q15 difference image



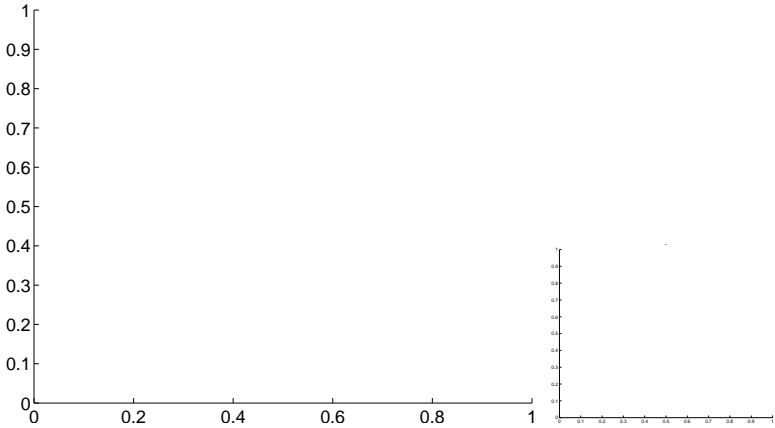
Q15 OOT image



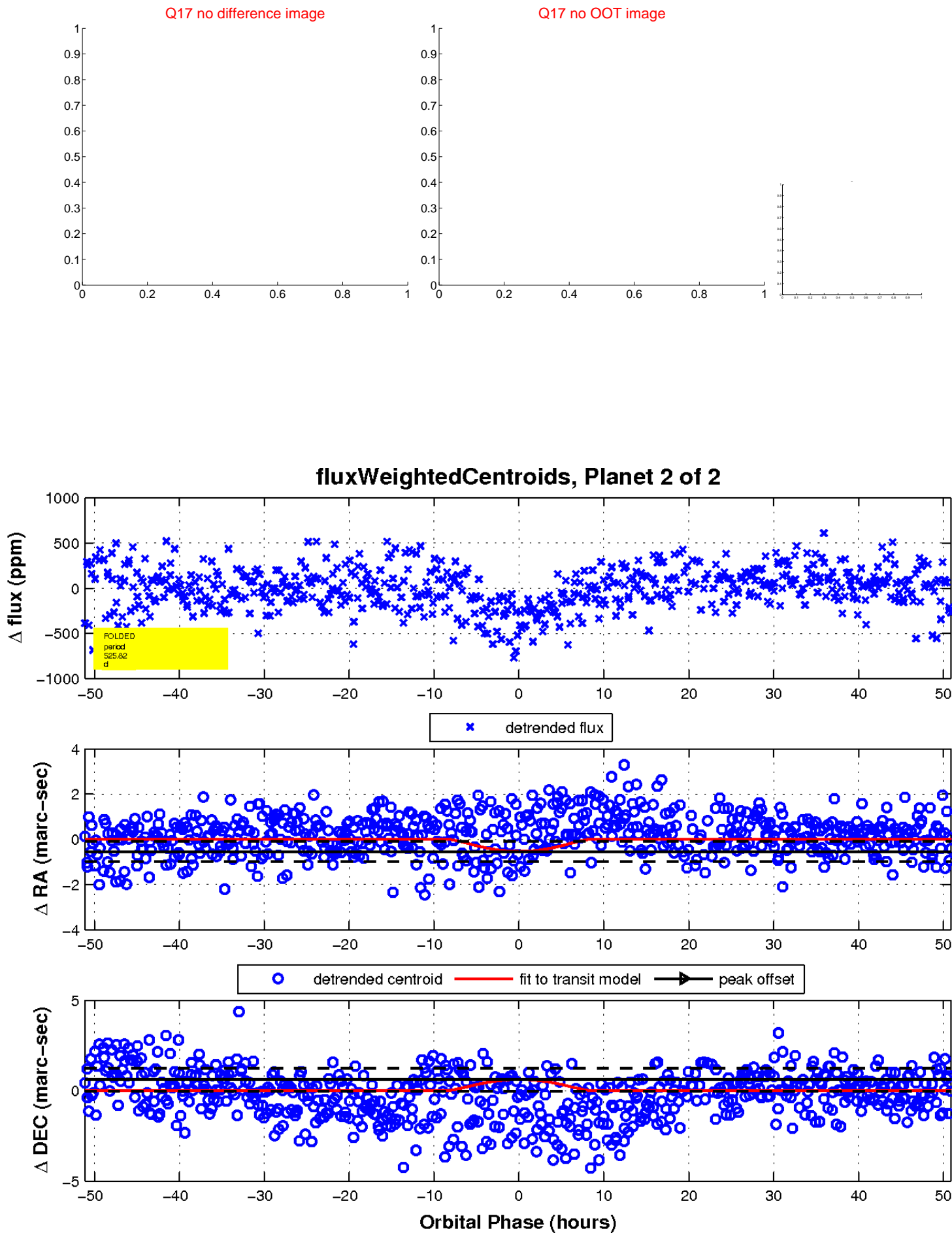
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

