

KIC 011808734

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})
011808734-01	OBS	No	630.424920	240.829536	2179.3	3.289	13.7	7.6	0.43	3620	1.99	0.02
011808734-02	OBS	No	422.806570	541.534399	1376.1	8.357	12.5	5.8	0.43	3620	1.79	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011808734-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011808734-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—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.

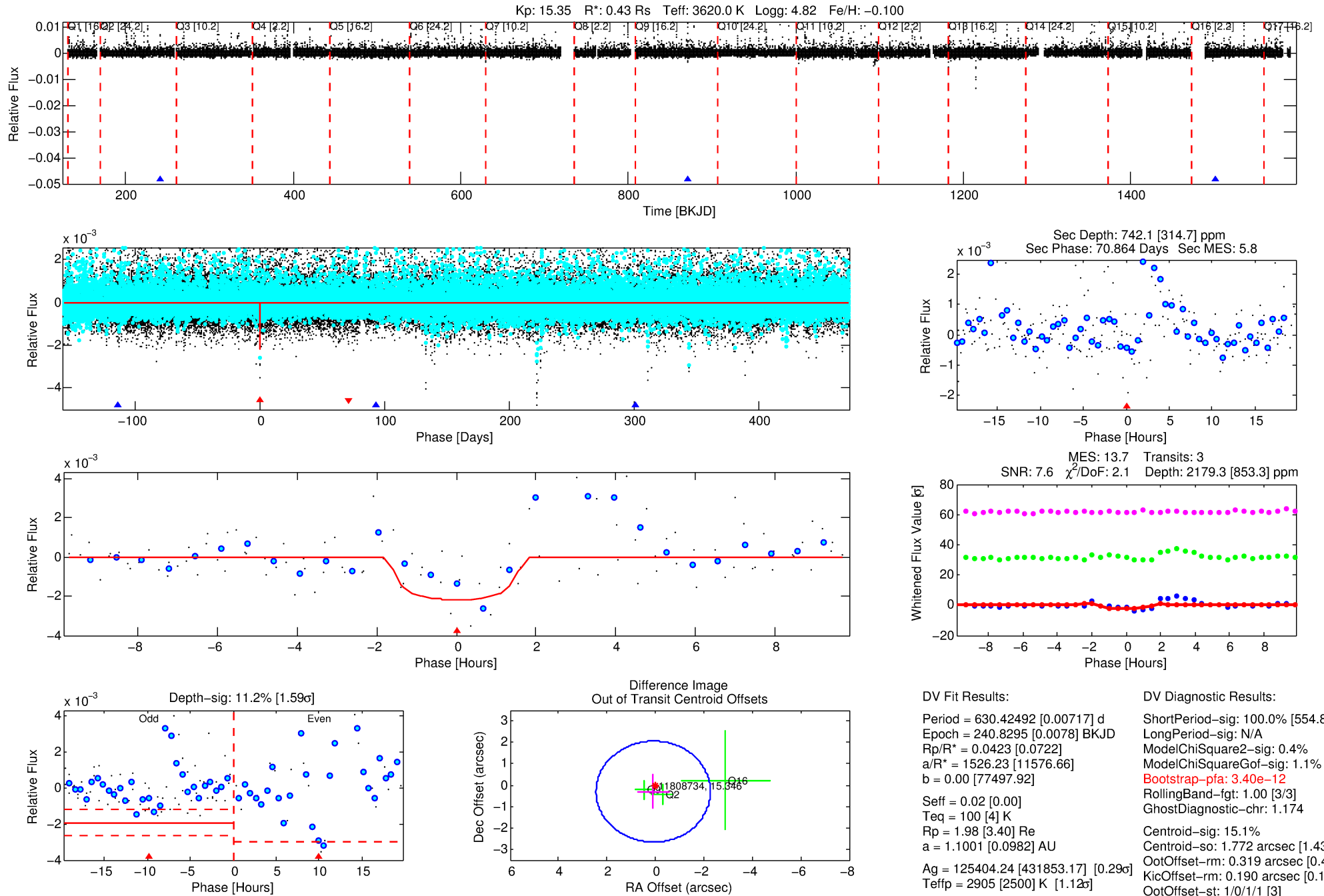
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011808734-01

No Significant Match Found

DV One-Page Summary

KIC: 11808734 Candidate: 1 of 2 Period: 630.425 d



DV Fit Results:

Period = 630.42492 [0.00717] d
Epoch = 240.8295 [0.0078] BKJD
Rp/R* = 0.0423 [0.0722]
a/R* = 1526.23 [11576.66]
b = 0.00 [77497.92]
Seff = 0.02 [0.00]
Teq = 100 [4] K
Rp = 1.98 [3.40] Re
a = 1.1001 [0.0982] AU
Ag = 125404.24 [431853.17] [0.29σ]
Teffp = 2905 [2500] K [1.12σ]

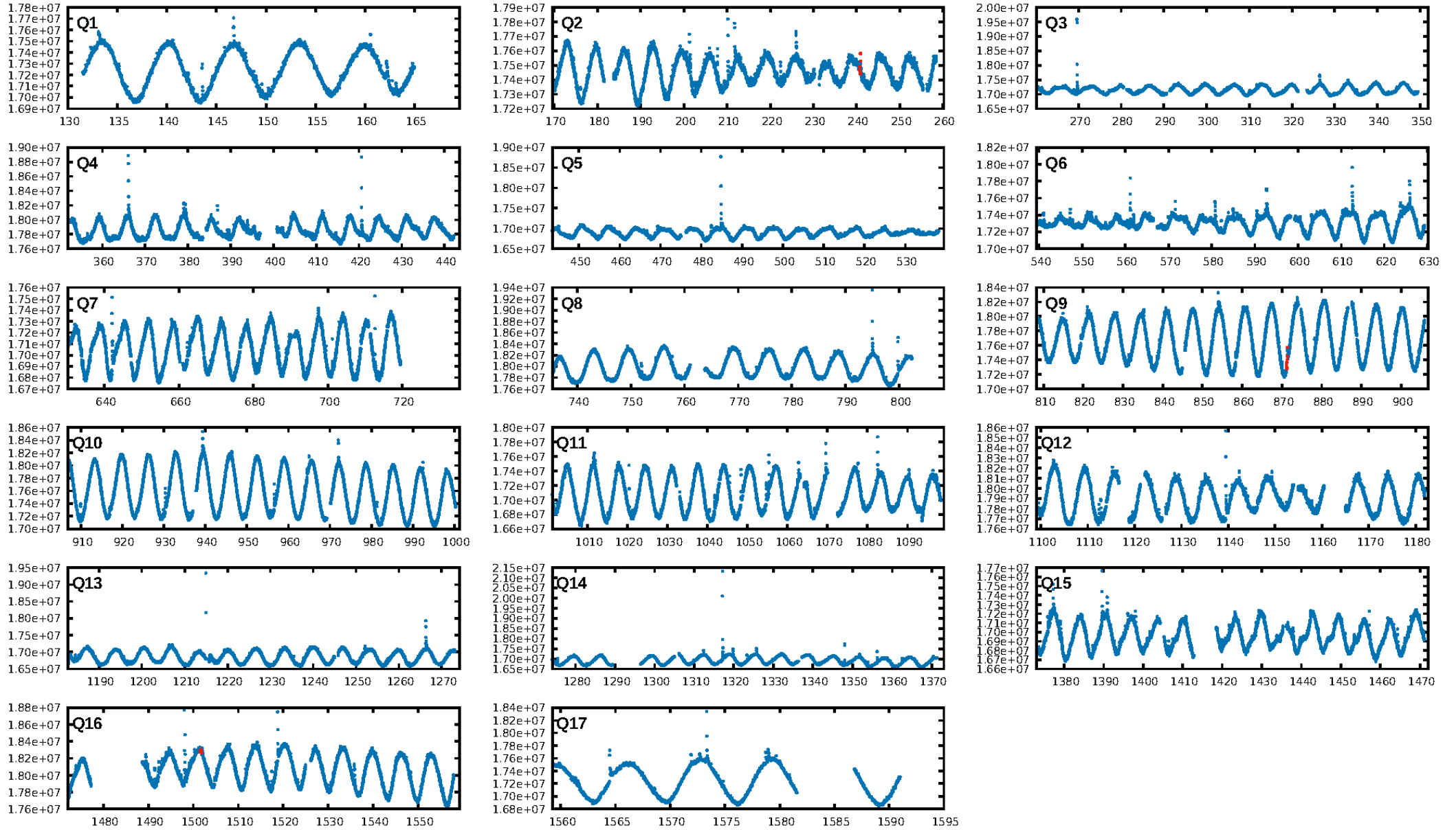
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [554.80σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 1.1%
Bootstrap-pfa: 3.40e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.174
Centroid-sig: 15.1%
Centroid-so: 1.772 arcsec [1.43σ]
OotOffset-rm: 0.319 arcsec [0.41σ]
KicOffset-rm: 0.190 arcsec [0.19σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

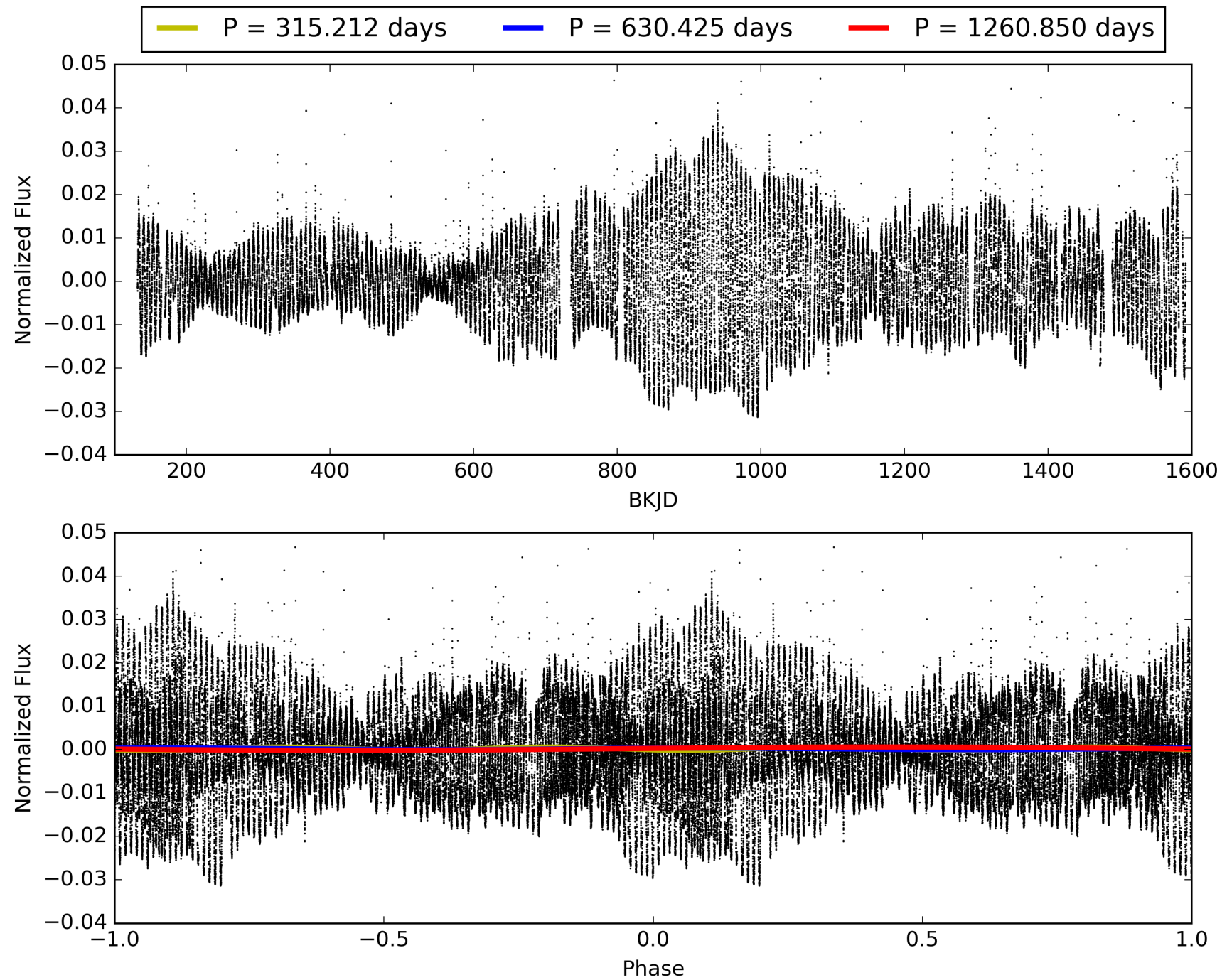
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:22:48 Z

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

TCE 011808734-01, PDC Light Curves

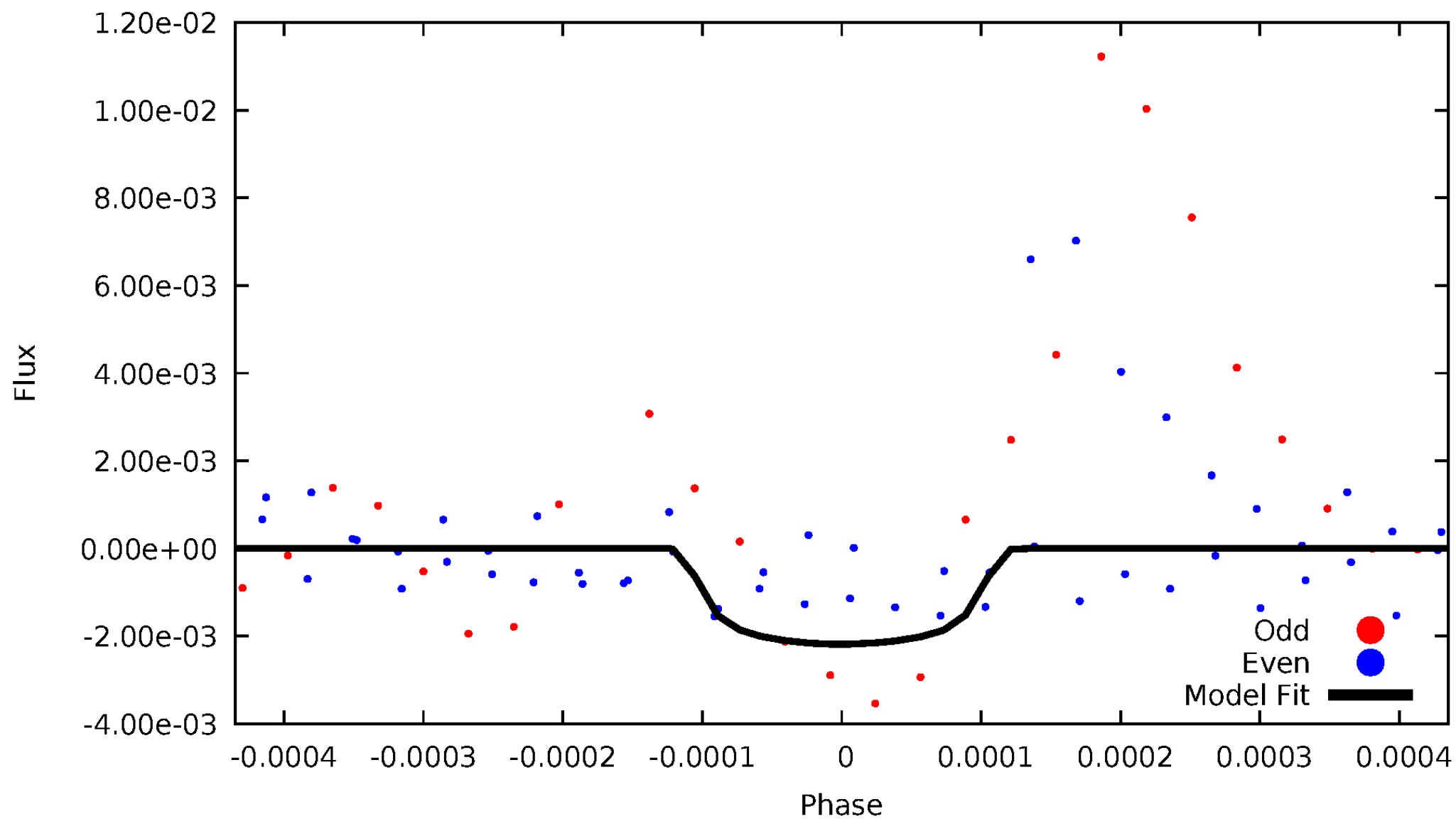


TCE 011808734-01



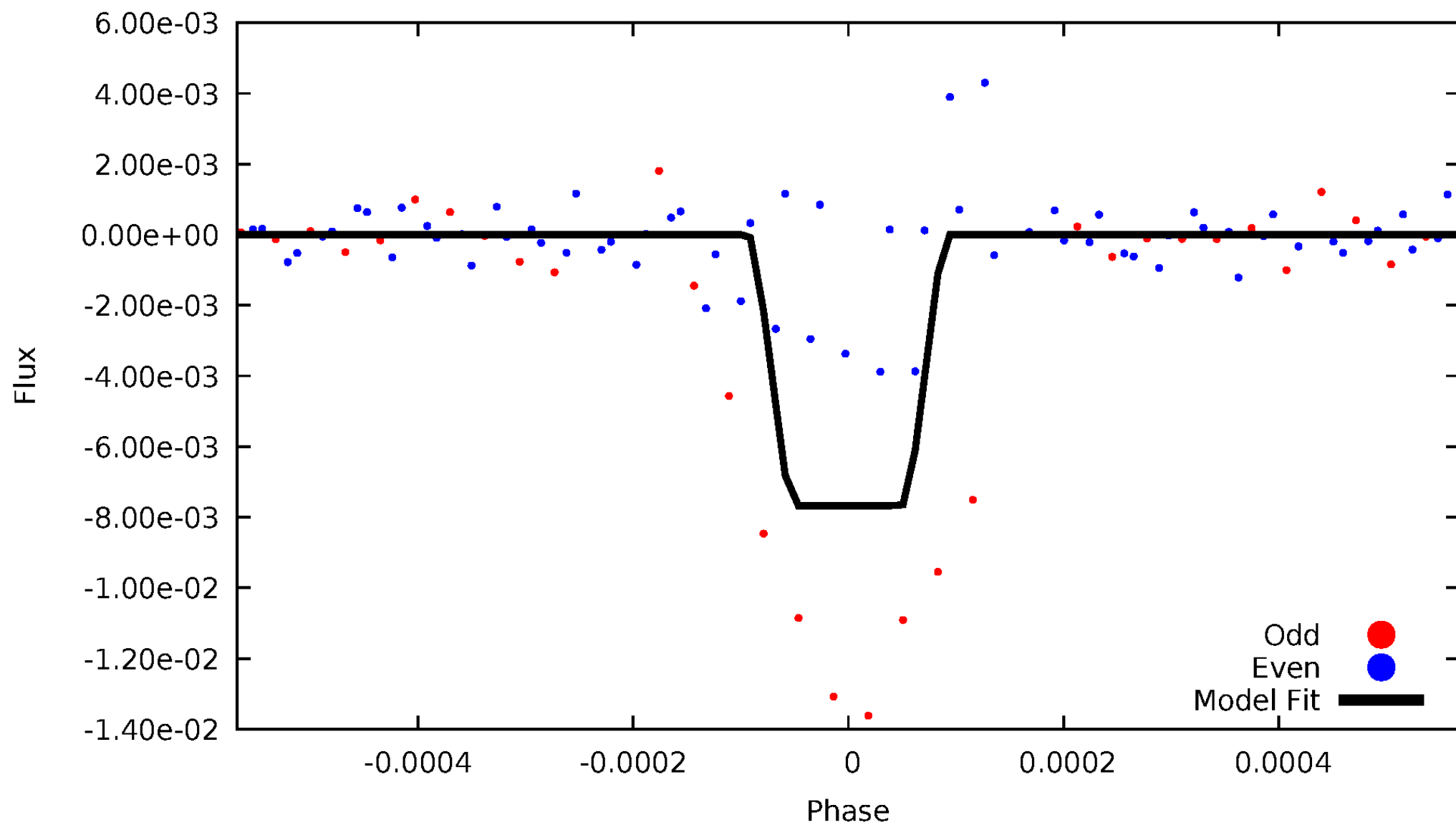
DV Odd/Even

TCE 011808734-01

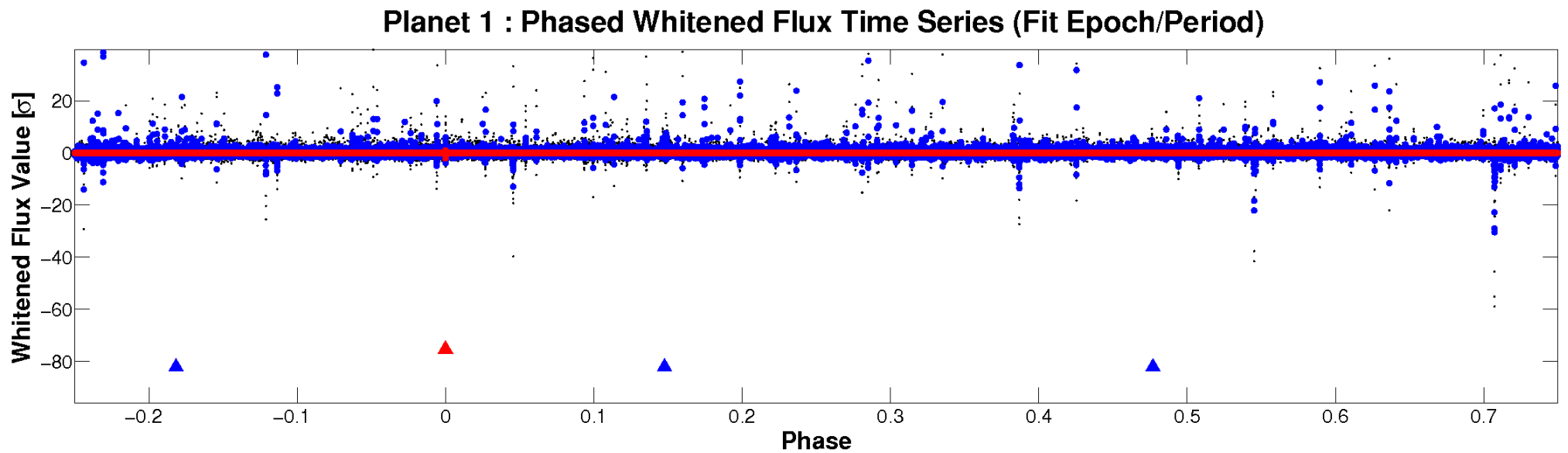
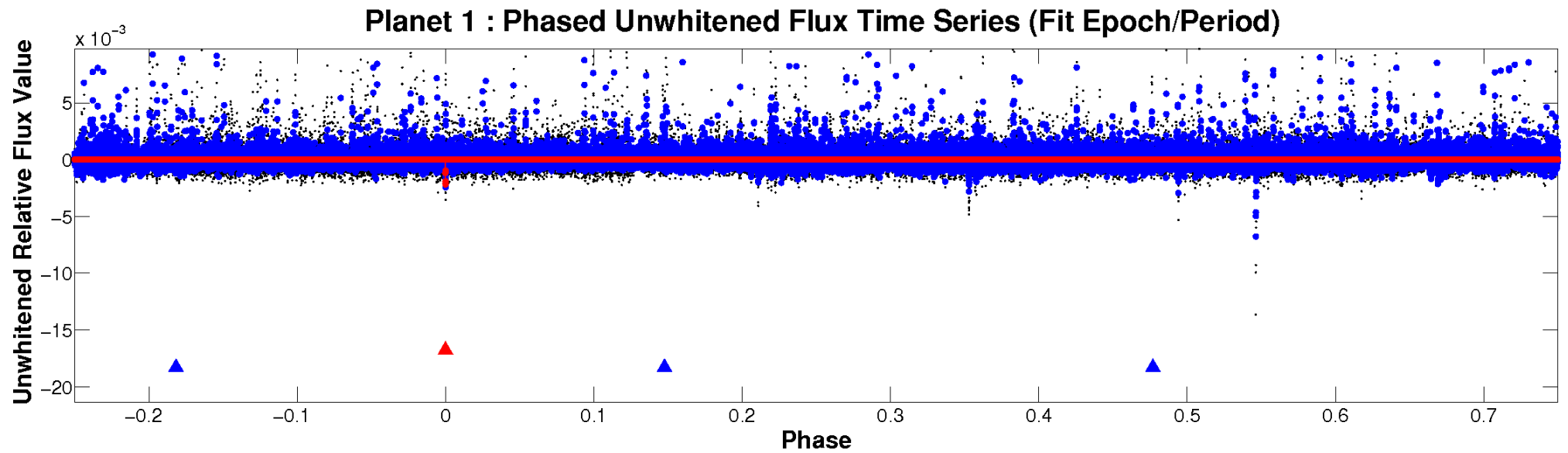


ALT Odd/Even

TCE 011808734-01

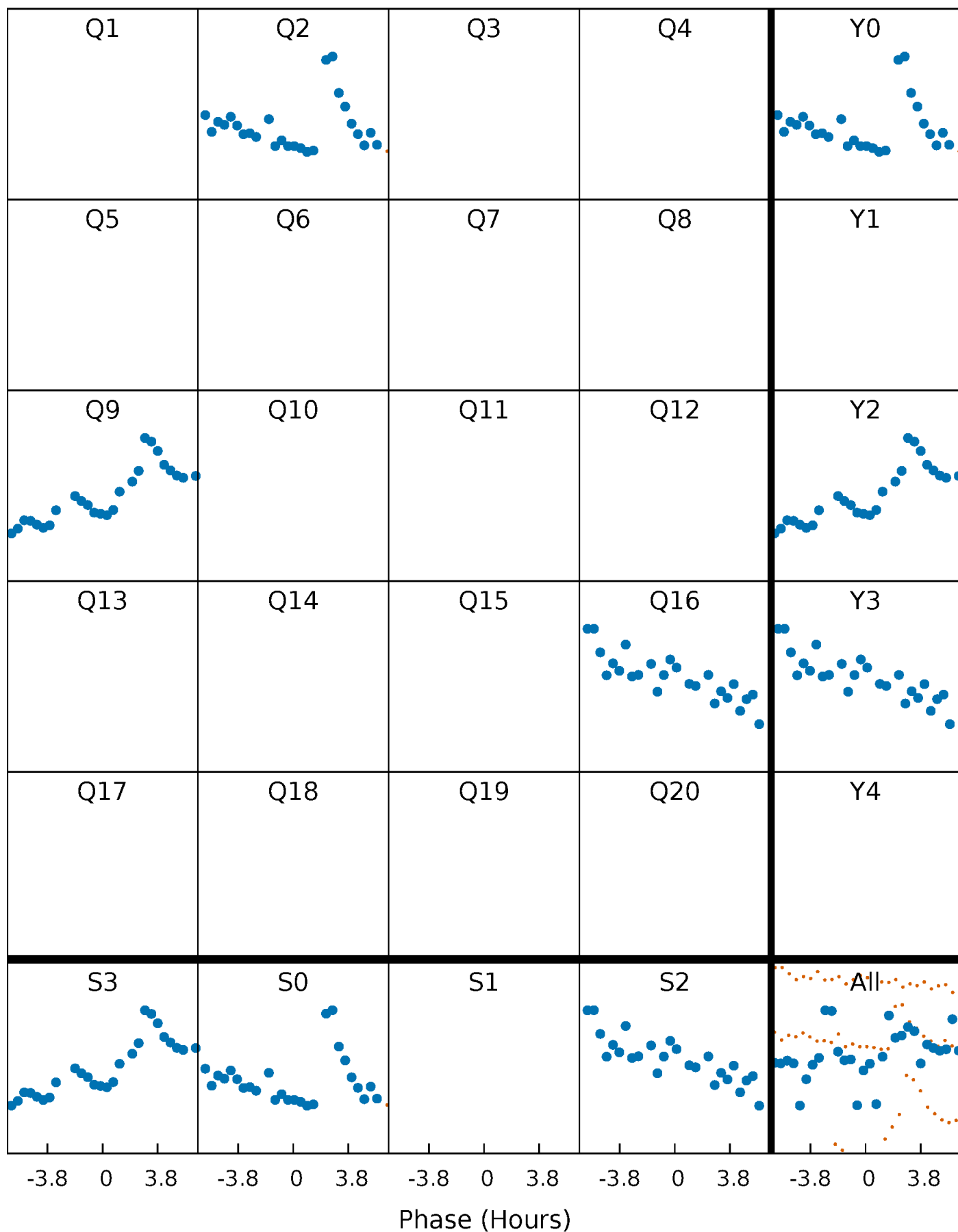


Non-Whitened Vs. Whitened Light Curve



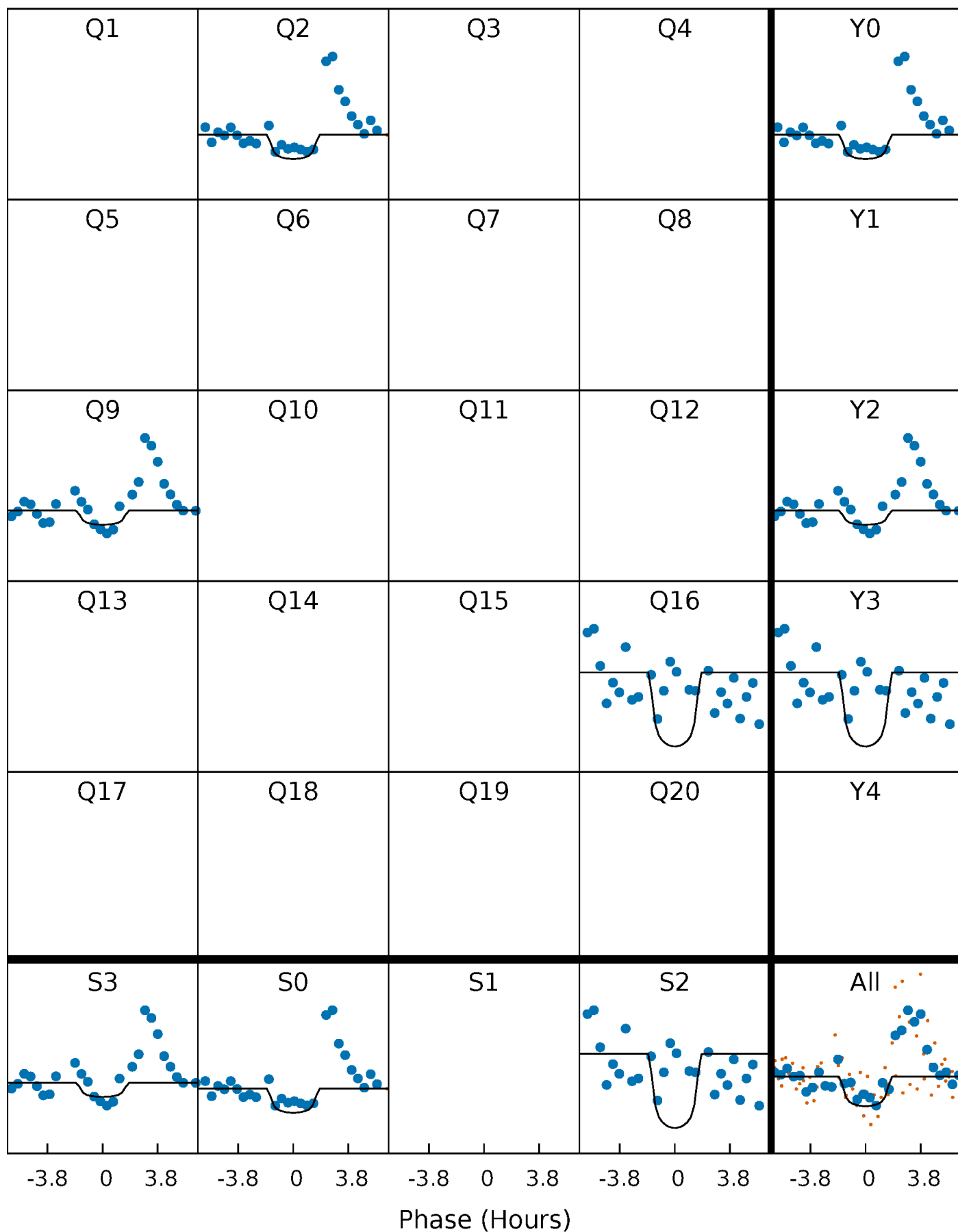
PDC Quarter-Phased Transit Curves

TCE 011808734-01 P=630.424920 Days $T_0=240.829536$ (BKJD)



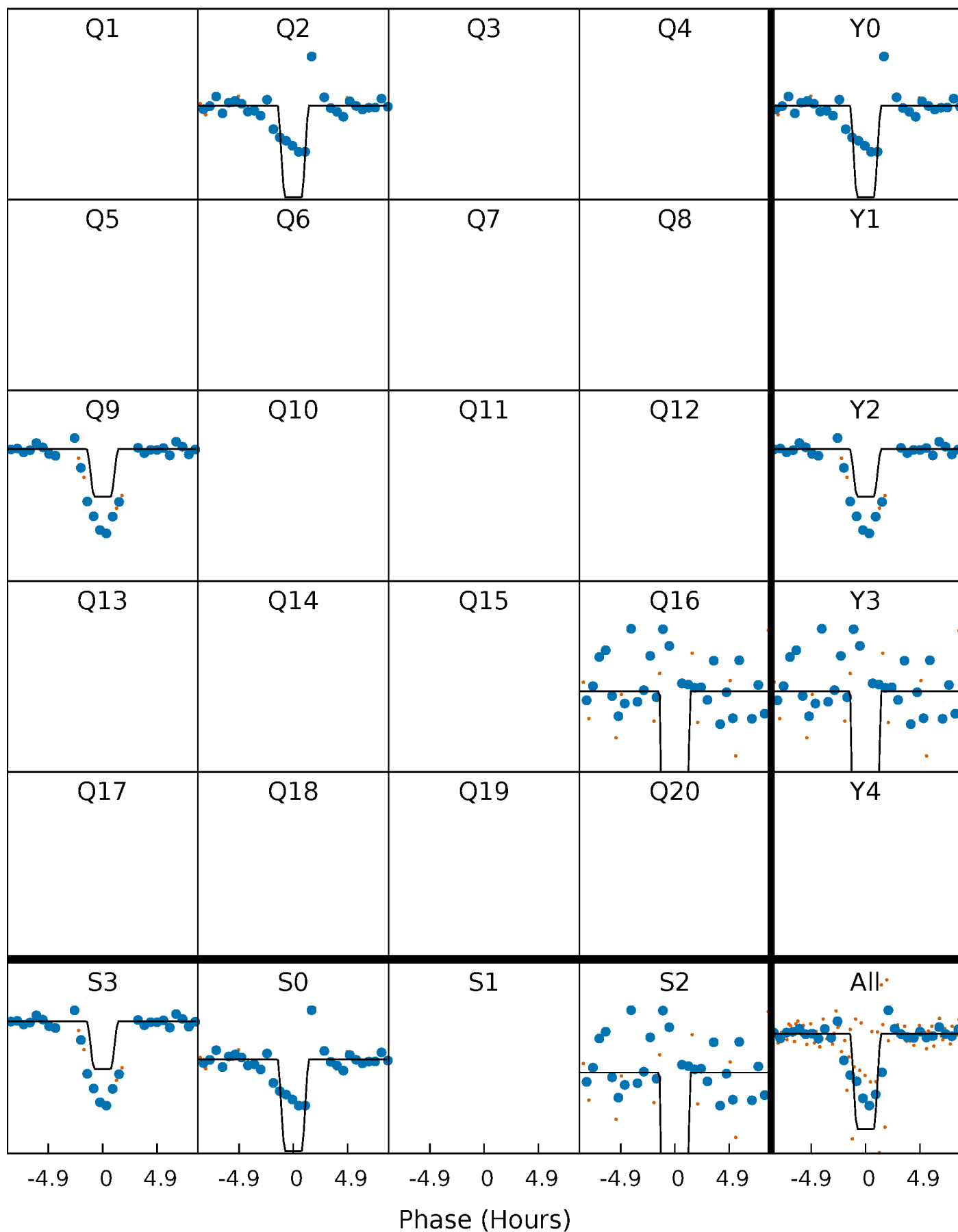
DV Quarter-Phased Transit Curves

TCE 011808734-01 P=630.424920 Days $T_0=240.829536$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

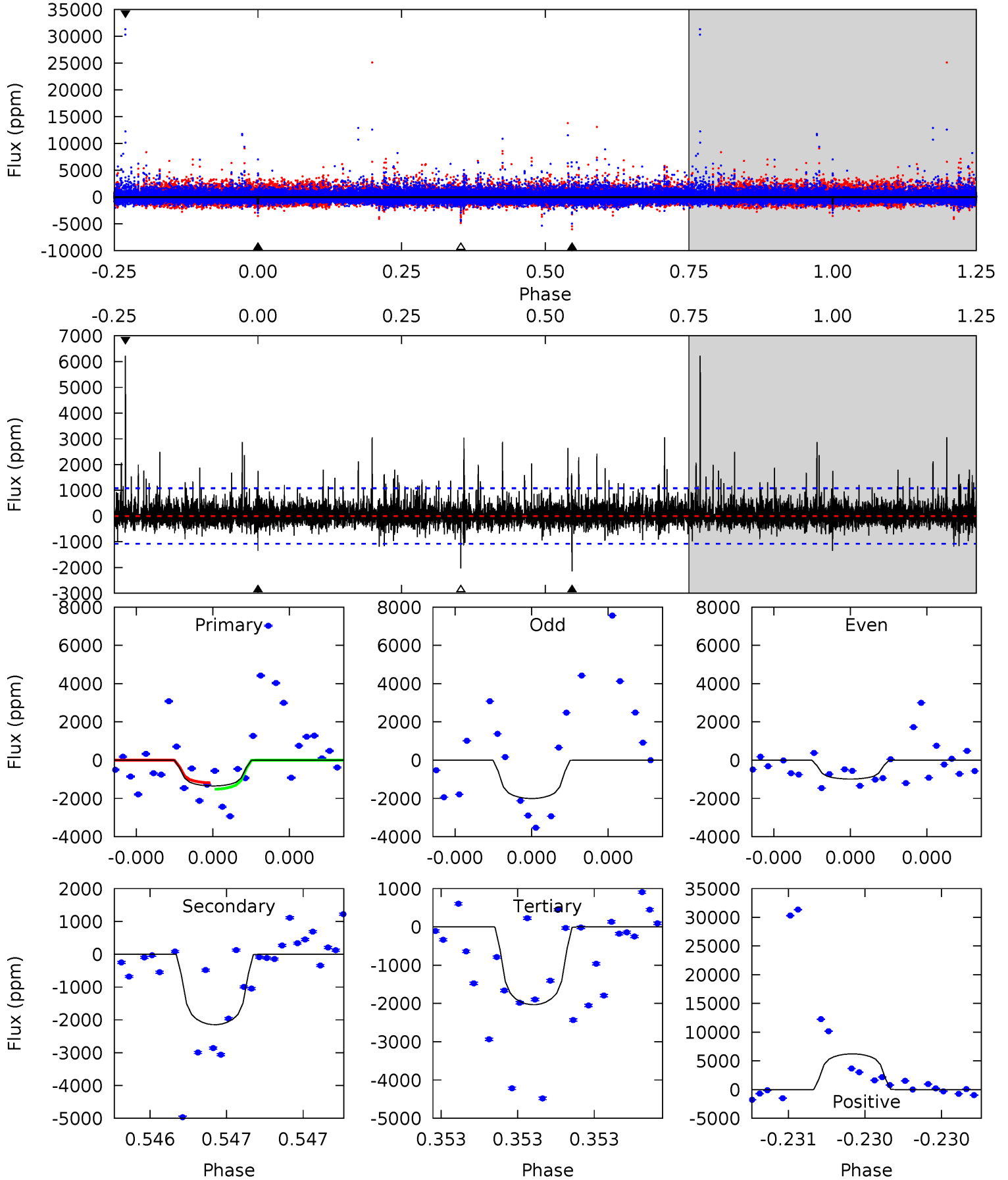
TCE 011808734-01 P=630.423004 Days $T_0=240.855413$ (BKJD)



DV Model-Shift Uniqueness Test

011808734-01, P = 630.424920 Days, E = 240.829536 Days

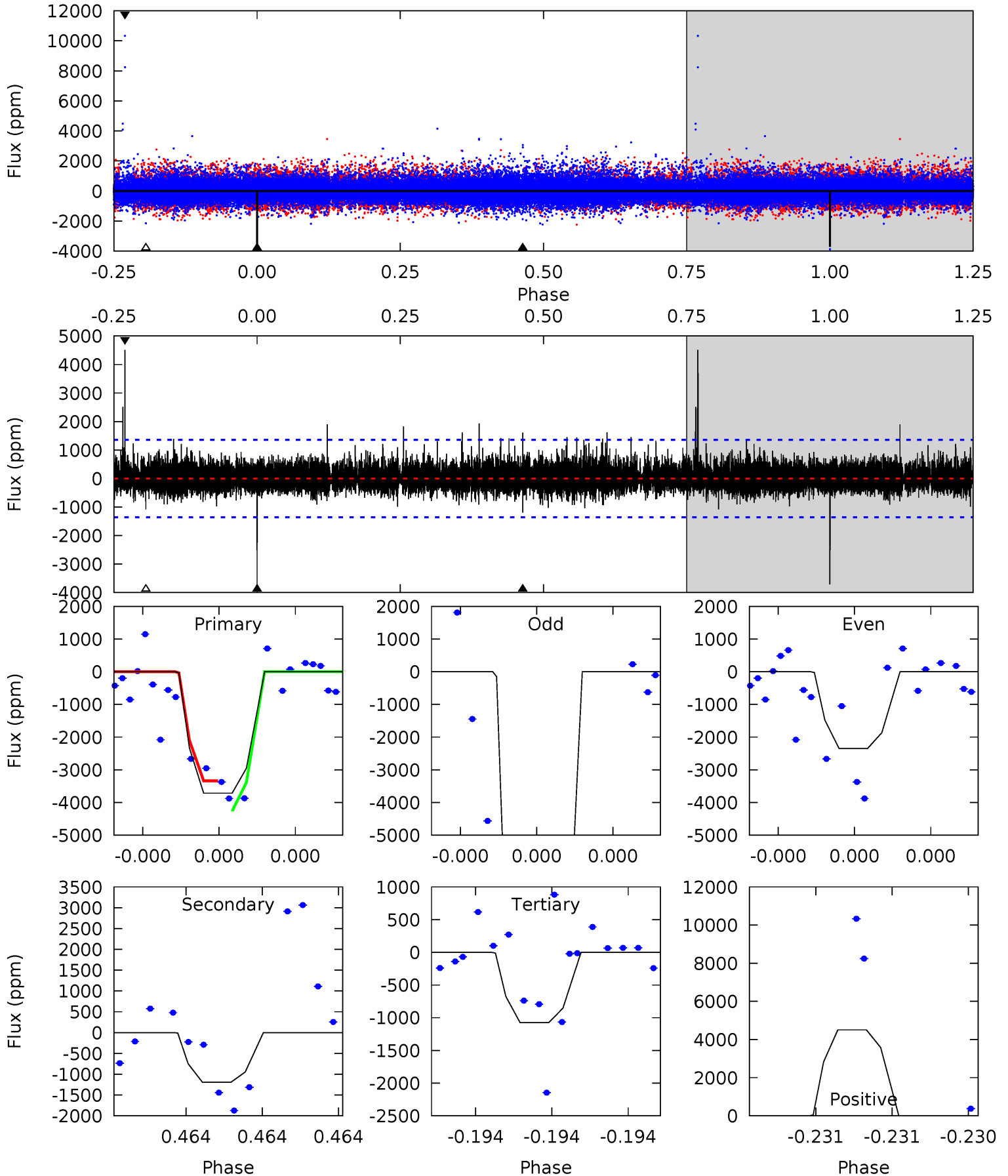
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.11	11.3	10.7	32.8	5.70	3.67	1.78	-3.60	-25.7	0.60	-21.5	1.62	0.89	0.74	0.88



Alt Model-Shift Uniqueness Test

011808734-01, P = 630.423004 Days, E = 240.855413 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	5.05	4.56	19.1	5.76	3.76	1.08	11.2	-3.35	0.50	-14.0	32.9	1.42	0.55	1.94



Stellar Parameters For KIC 011808734

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3620^{+72}_{-79}	$4.821^{+0.054}_{-0.036}$	$-0.100^{+0.100}_{-0.100}$	$0.430^{+0.038}_{-0.051}$	$0.446^{+0.036}_{-0.054}$	$7.920^{+2.216}_{-1.199}$
	+2%/-2%	+1%/-1%	+100%/-100%	+9%/-12%	+8%/-12%	+28%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 011808734-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2147 ± 190	$3.25^{+2.62}_{-2.14}$	139^{+4}_{-4}	3180^{+1388}_{-480}	$133629^{+988723}_{-91070}$
Alt.	-1193 ± 236	$4.45^{+3.12}_{-2.66}$	139^{+4}_{-4}	2686^{+817}_{-325}	$39715^{+208388}_{-26027}$

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

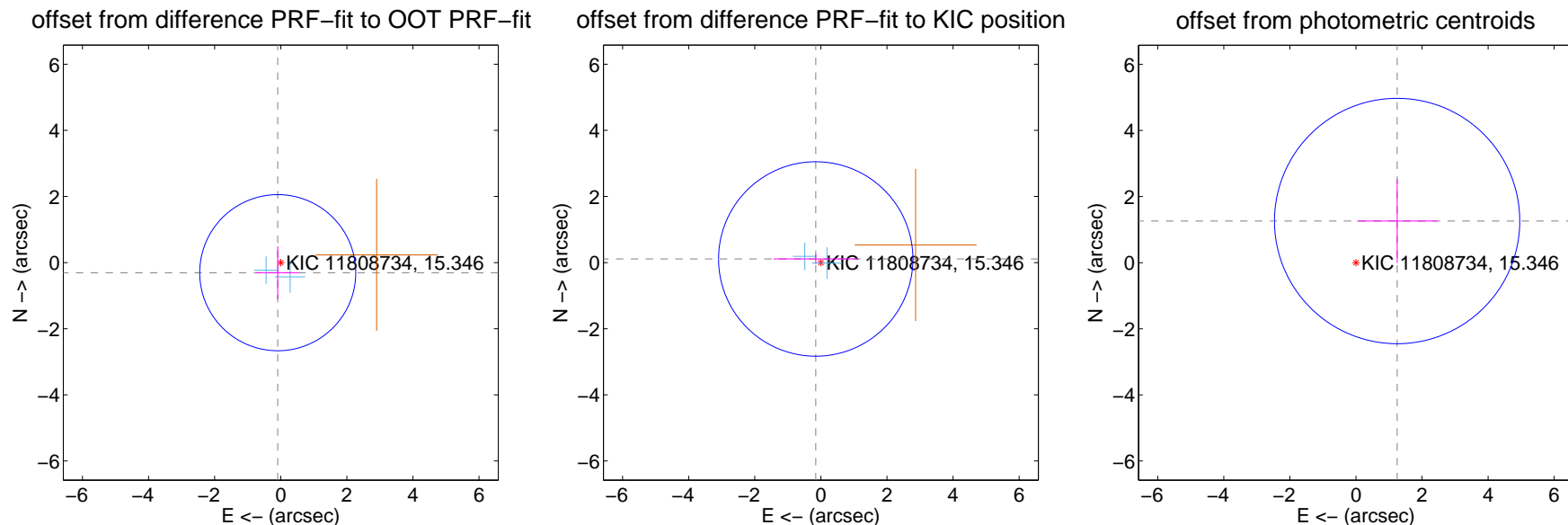
DV Centroid Data

Supplemental centroid analysis for 011808734-01. Kepler magnitude: 15.35. Transit SNR 7.63

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.319 ± 0.787	0.41	0.091 ± 0.648	-0.306 ± 0.798
PRF-fit source offset from KIC position	0.190 ± 0.980	0.19	0.155 ± 1.280	0.109 ± 0.142
photometric centroid source offset	1.77 ± 1.24	1.43	-1.25 ± 1.21	1.26 ± 1.26



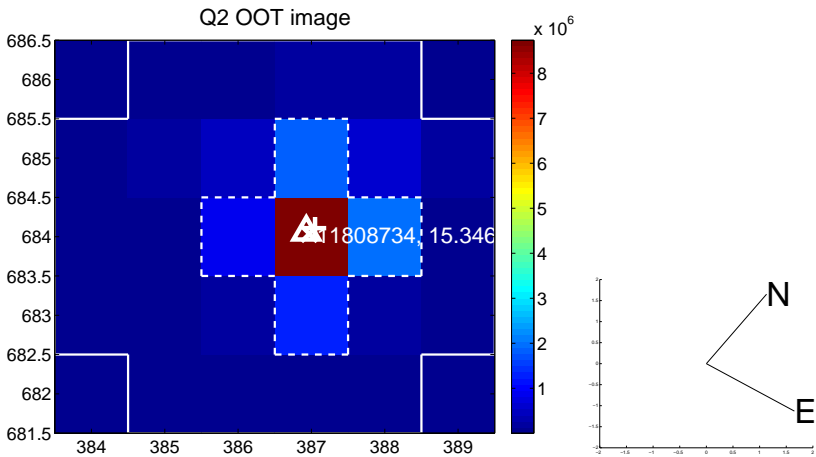
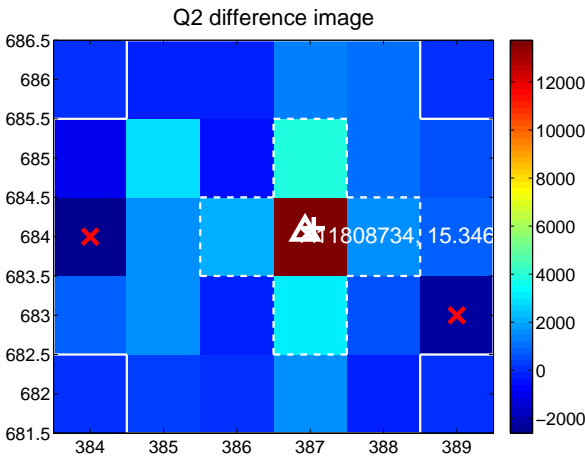
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

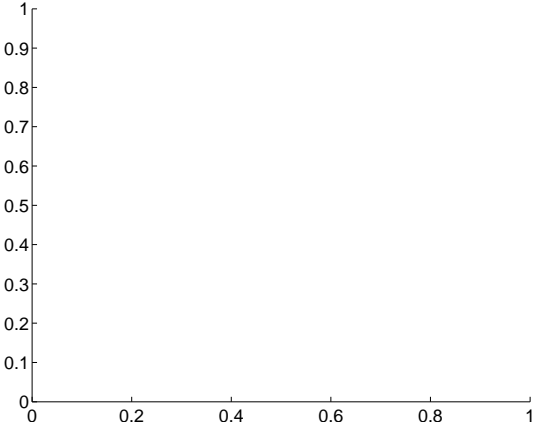
Q1 no difference image



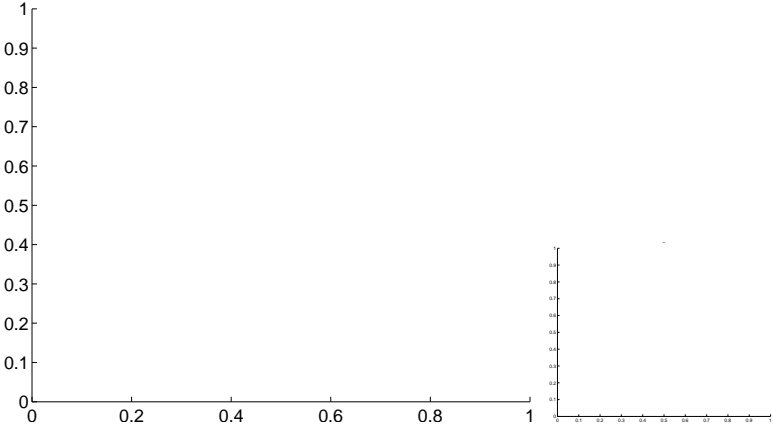
Q1 no OOT image



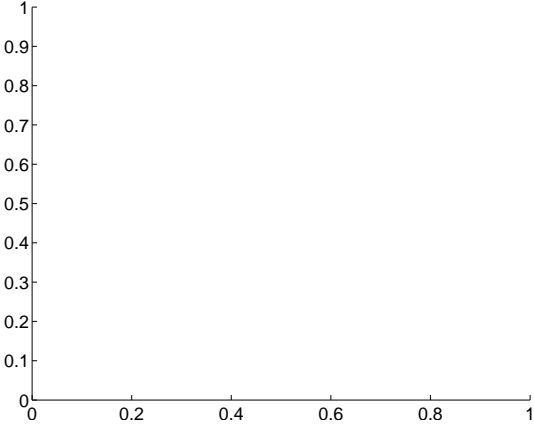
Q3 no difference image



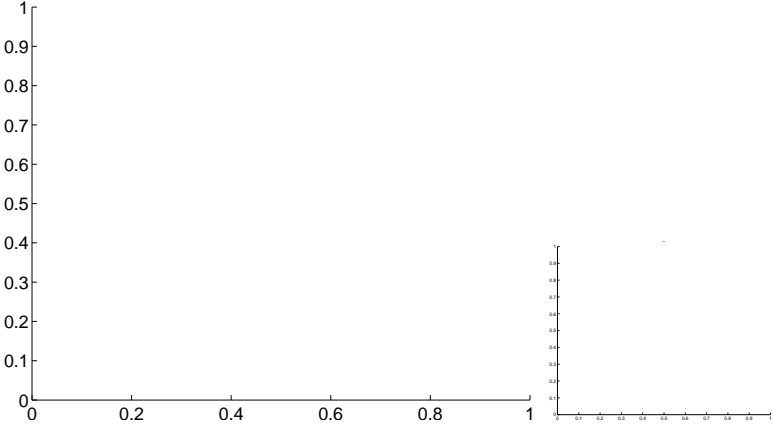
Q3 no OOT image



Q4 no difference image



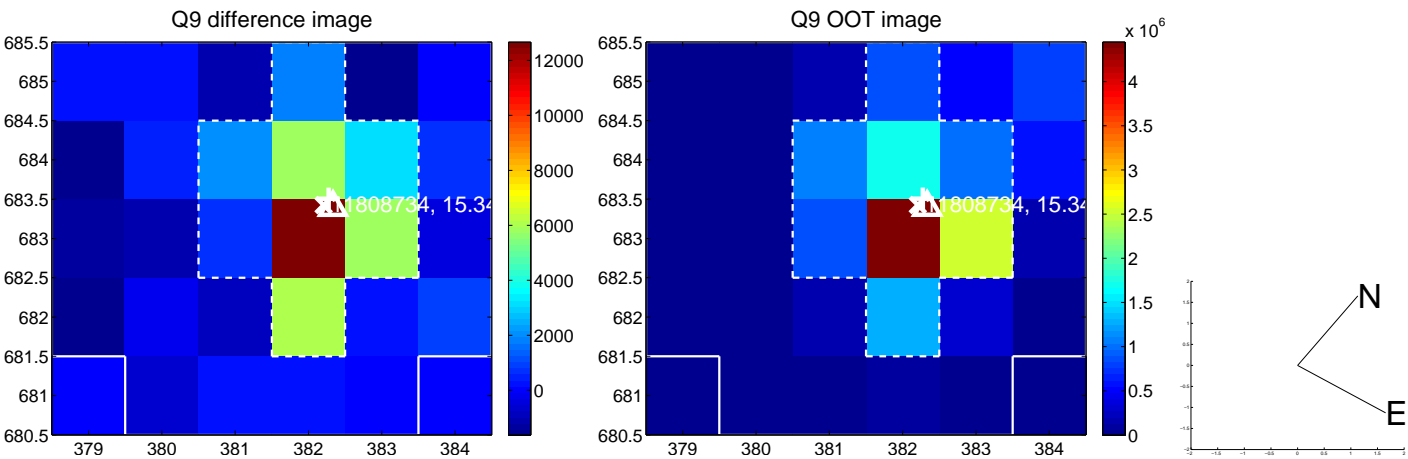
Q4 no OOT image



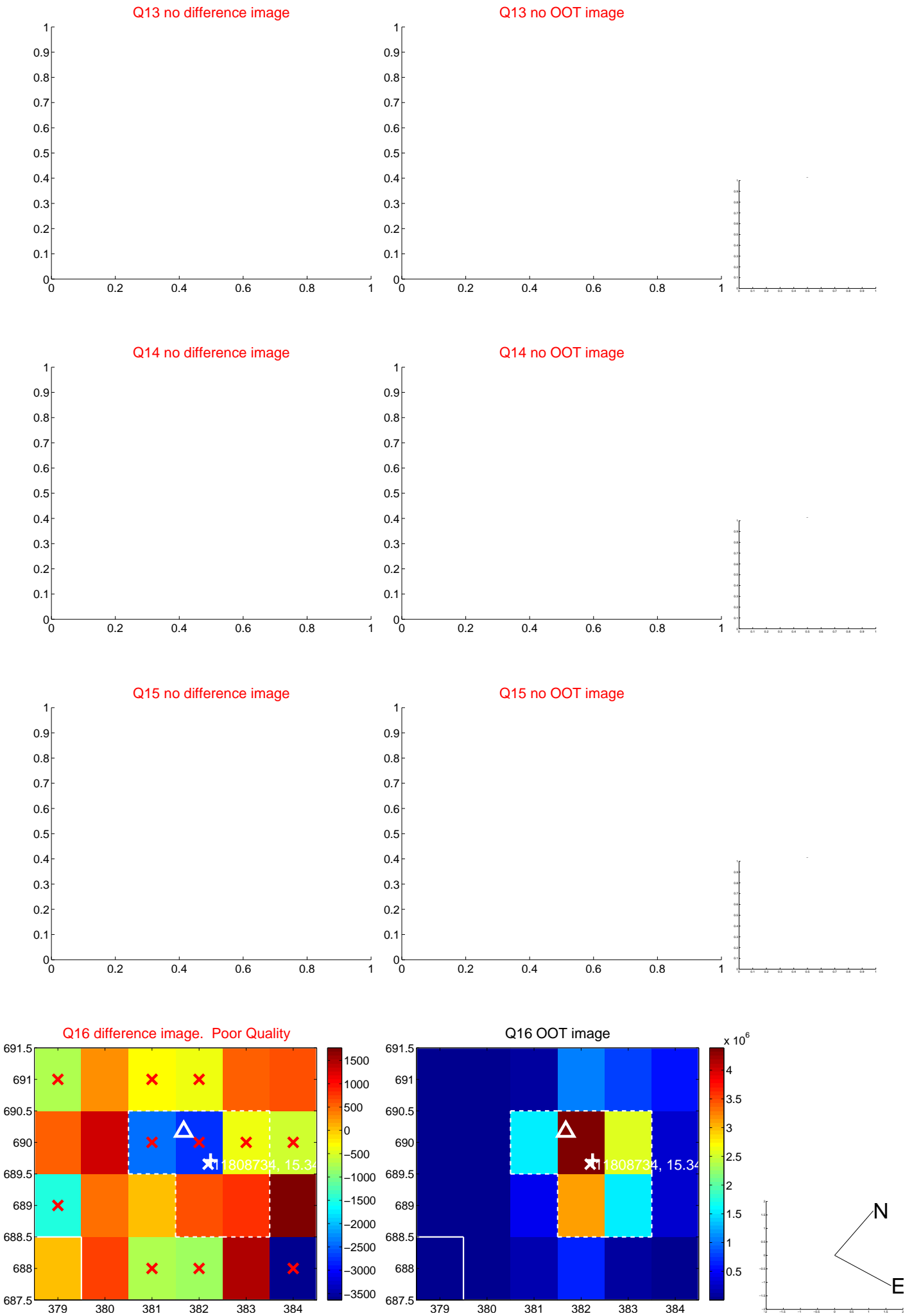
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



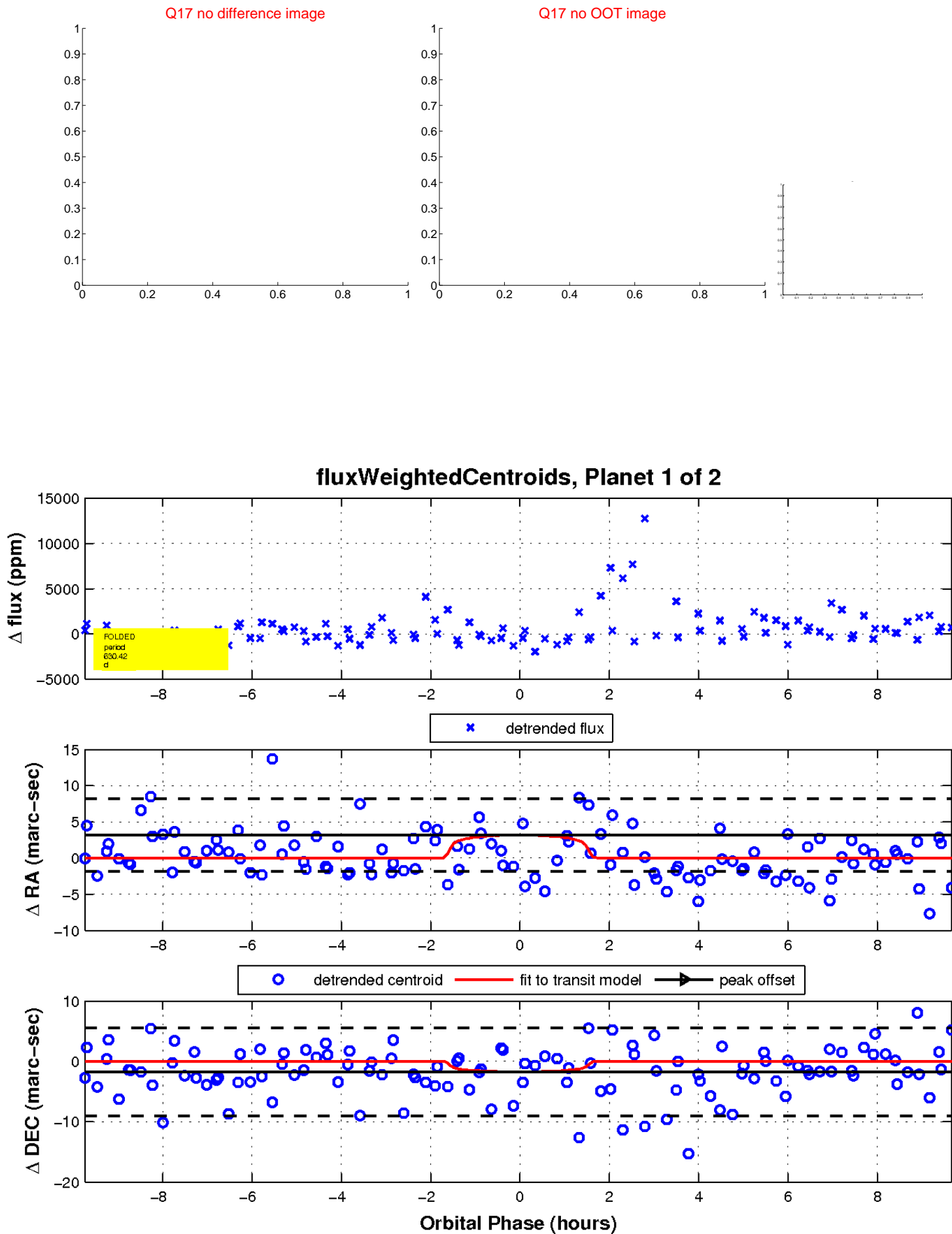
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

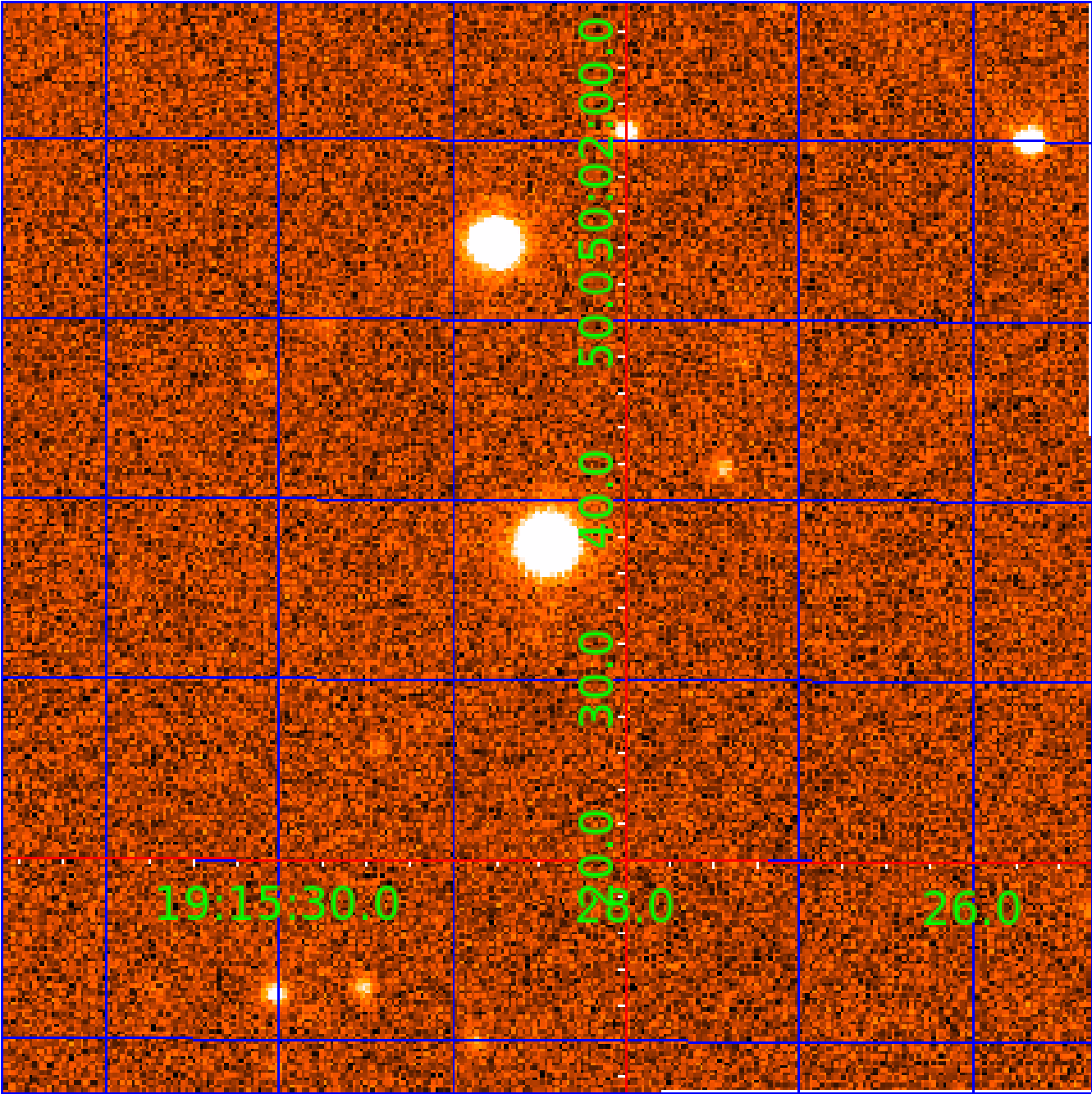


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011808734

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})
011808734-01	OBS	No	630.424920	240.829536	2179.3	3.289	13.7	7.6	0.43	3620	1.99	0.02
011808734-02	OBS	No	422.806570	541.534399	1376.1	8.357	12.5	5.8	0.43	3620	1.79	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011808734-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011808734-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—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.

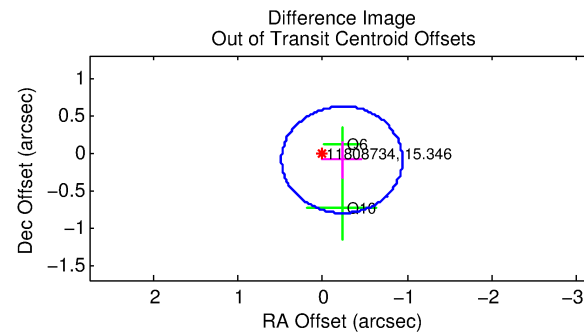
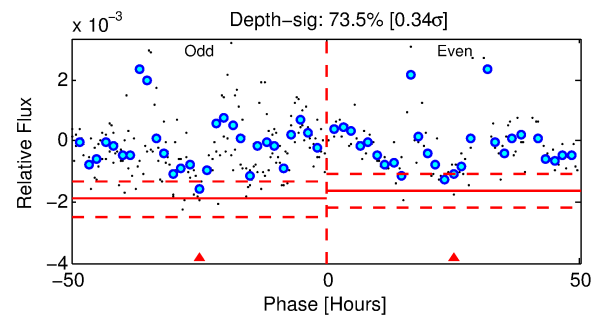
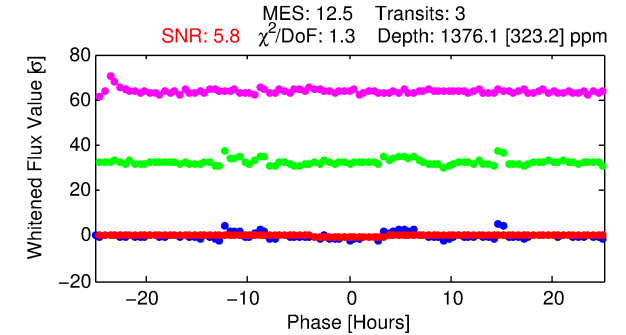
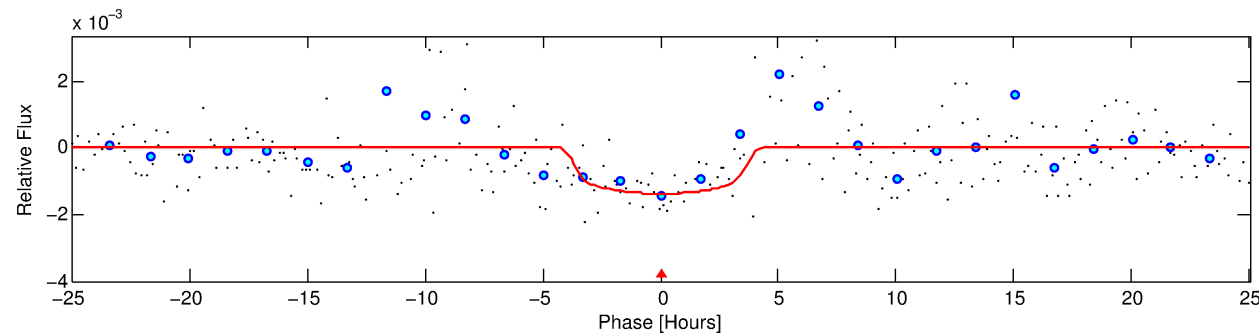
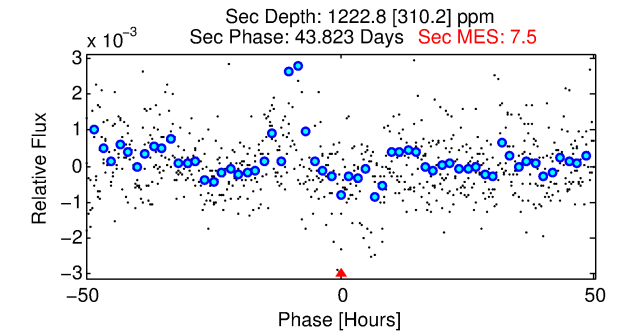
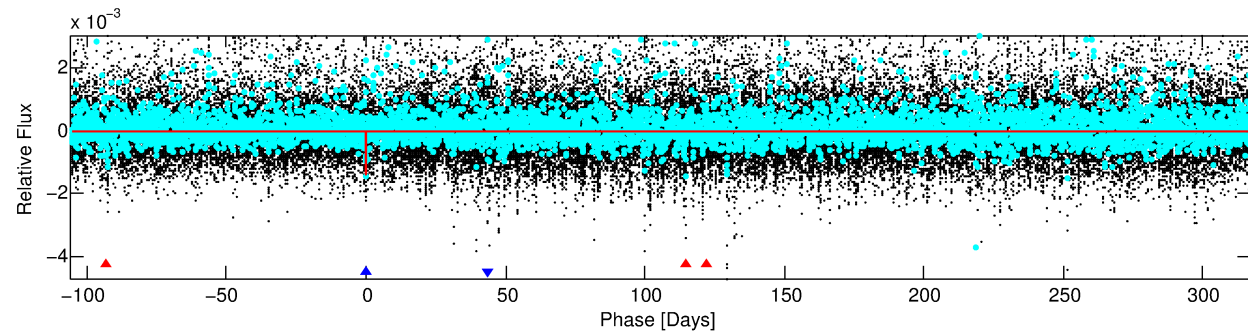
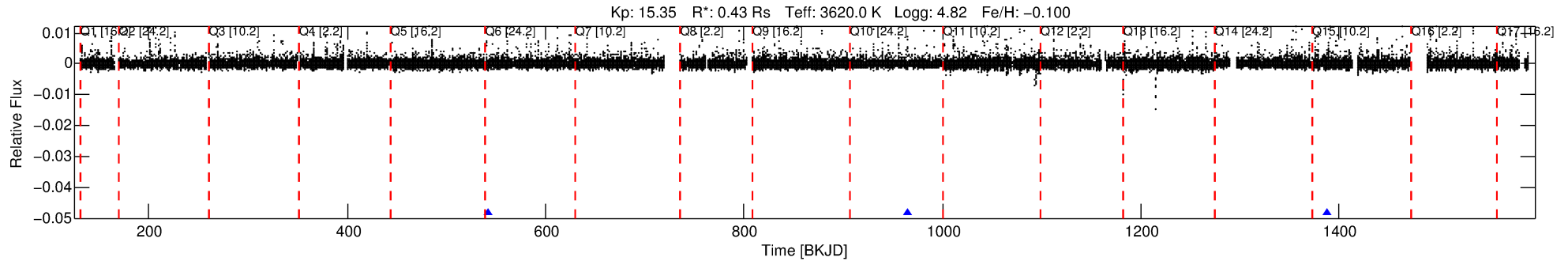
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011808734-02

No Significant Match Found

DV One-Page Summary

KIC: 11808734 Candidate: 2 of 2 Period: 422.807 d



DV Fit Results:

Period = 422.80657 [0.01424] d
Epoch = 541.5344 [0.0171] BKJD
Rp/R* = 0.0382 [0.0079]
a/R* = 242.16 [159.84]
b = 0.83 [0.25]
Seff = 0.04 [0.01]
Teq = 114 [4] K
Rp = 1.79 [0.43] Re
a = 0.8429 [0.0752] AU
Ag = 148416.71 [73848.80] [2.01σ]
Teffp = 3462 [426] K [7.86σ]

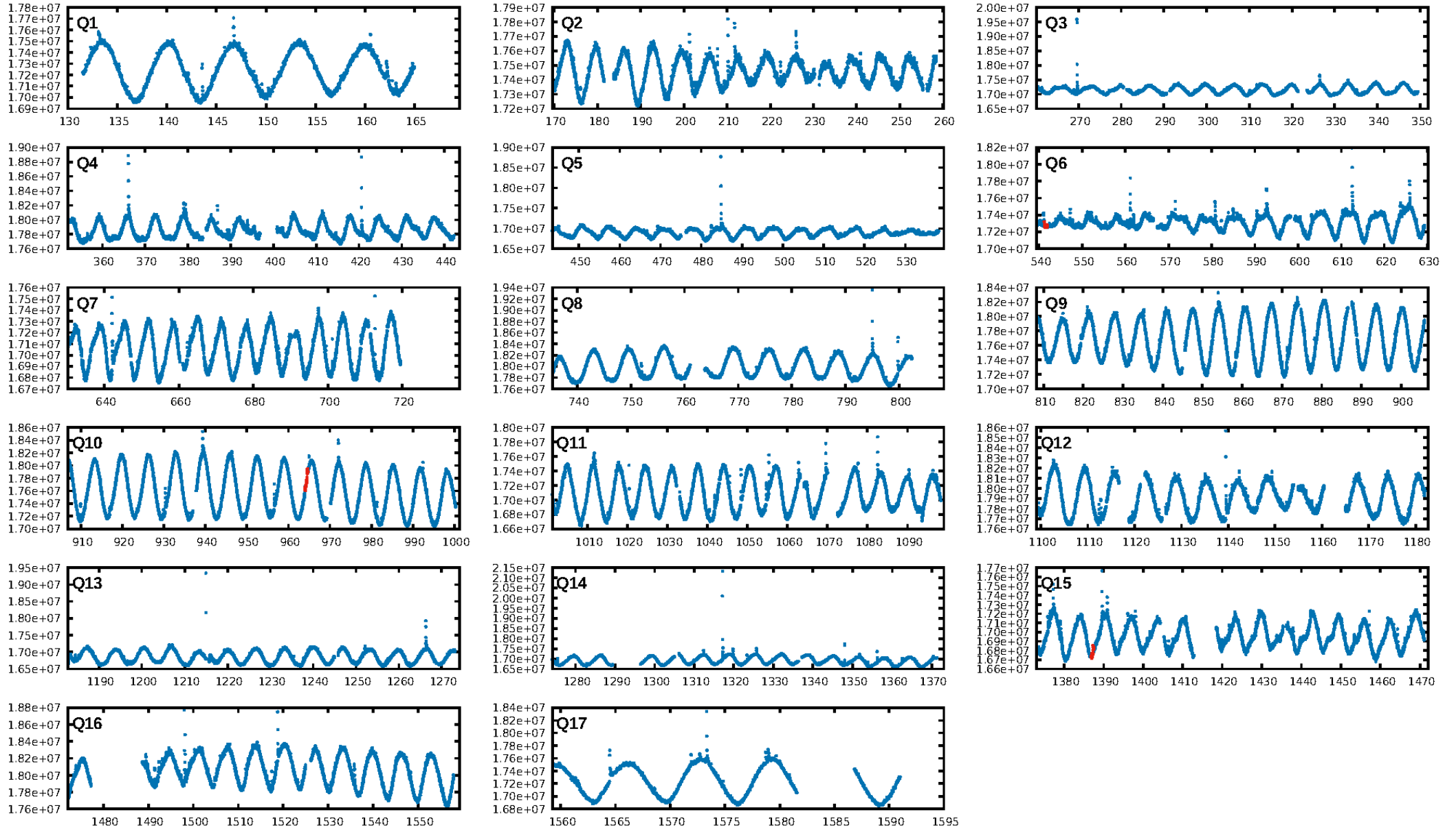
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [554.80σ]
ModelChiSquare2-sig: 1.2%
ModelChiSquareGof-sig: 89.5%
Bootstrap-pfa: 5.85e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.409
Centroid-sig: 76.5%
Centroid-so: 0.313 arcsec [0.26σ]
OotOffset-rm: 0.250 arcsec [1.05σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-rm: 0.332 arcsec [0.86σ]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

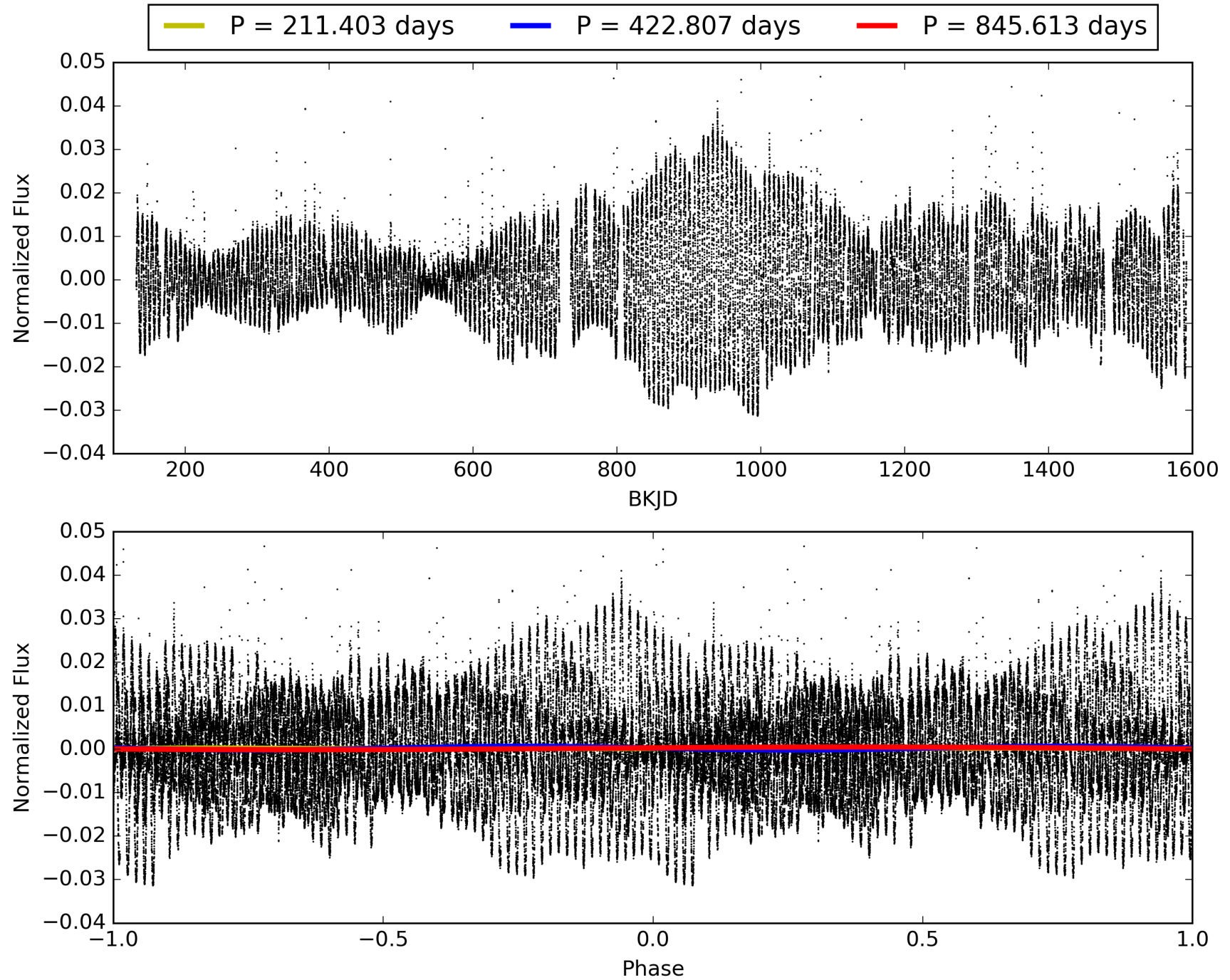
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:22:59 Z

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TCE 011808734-02, PDC Light Curves

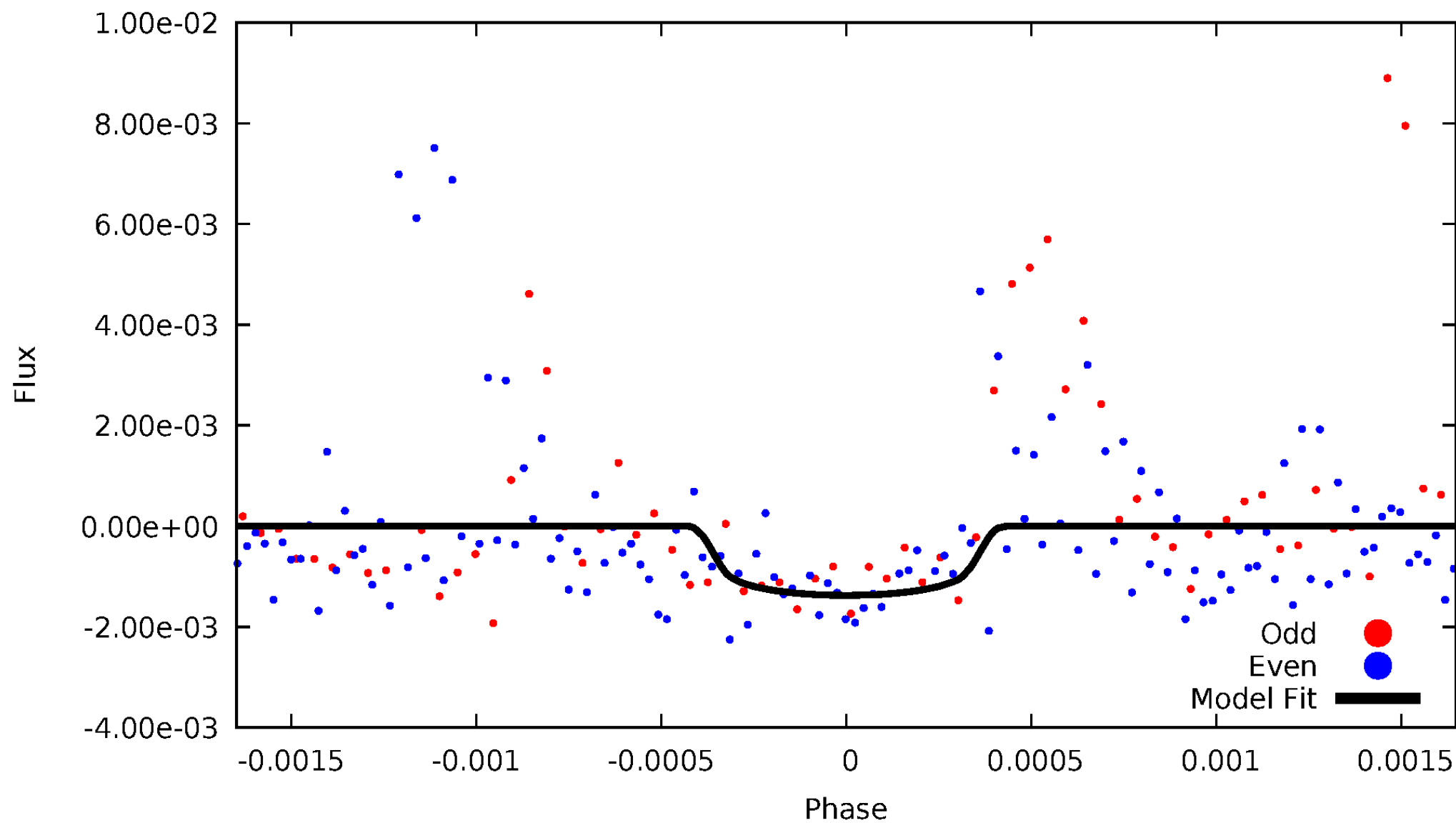


TCE 011808734-02



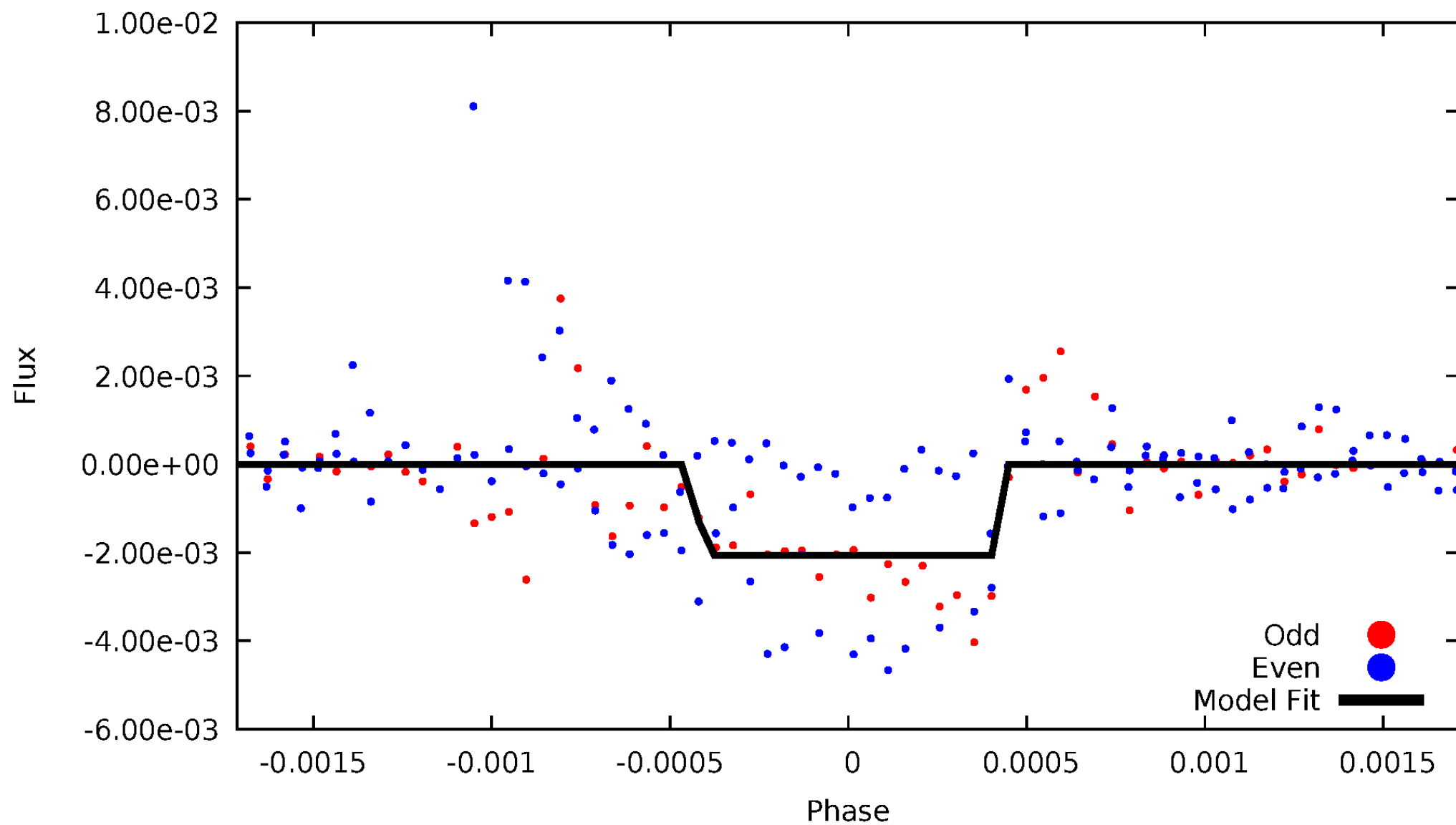
DV Odd/Even

TCE 011808734-02



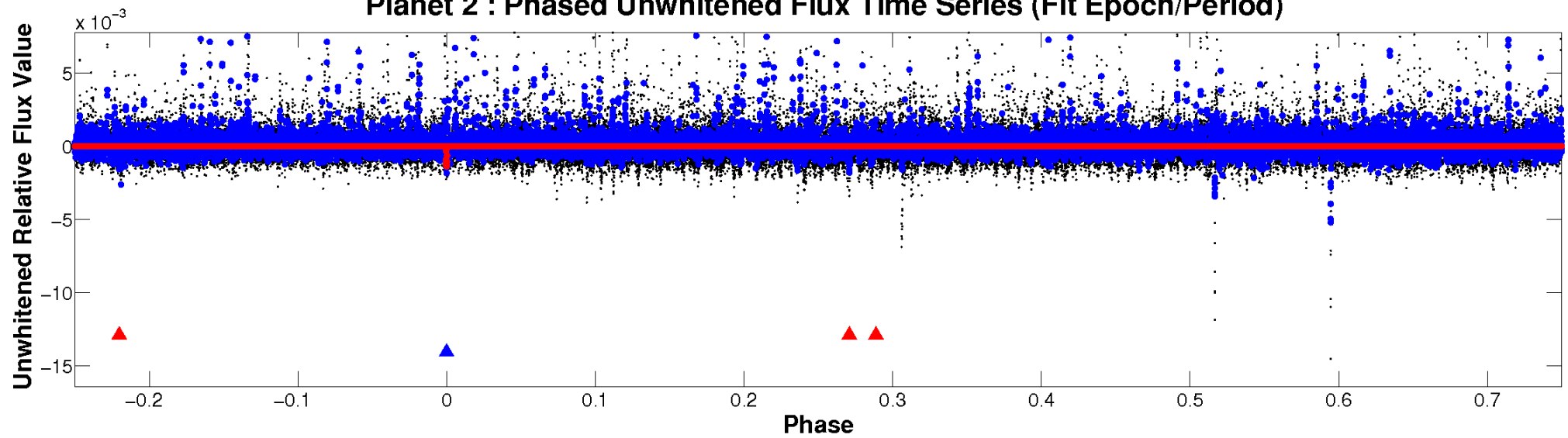
ALT Odd/Even

TCE 011808734-02

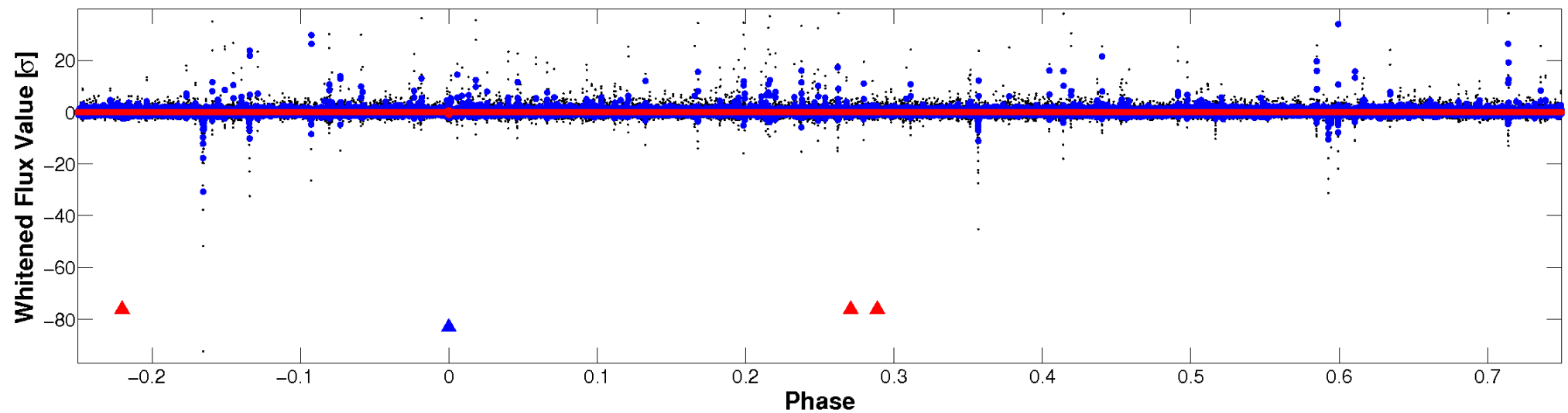


Non-Whitened Vs. Whitened Light Curve

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

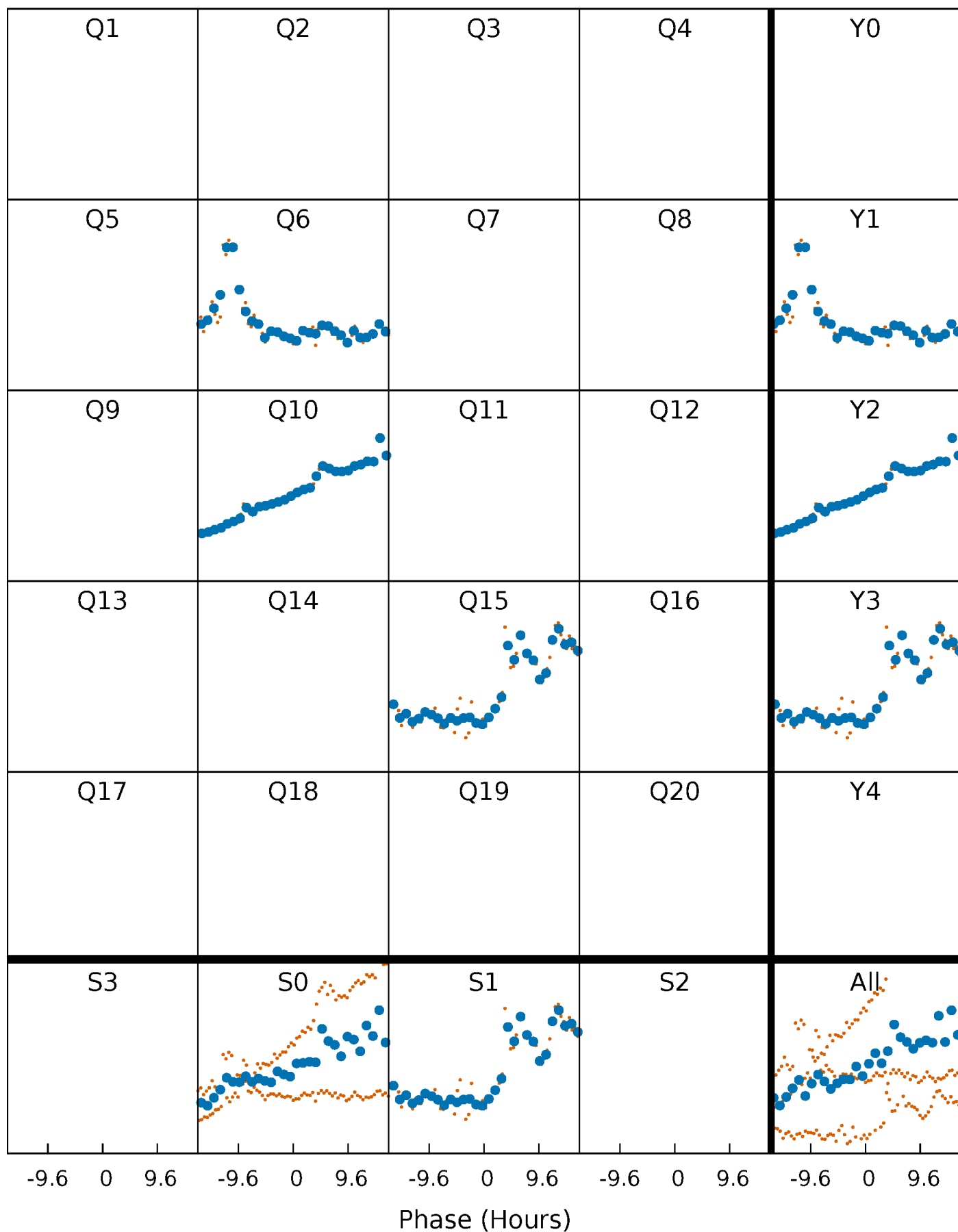


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



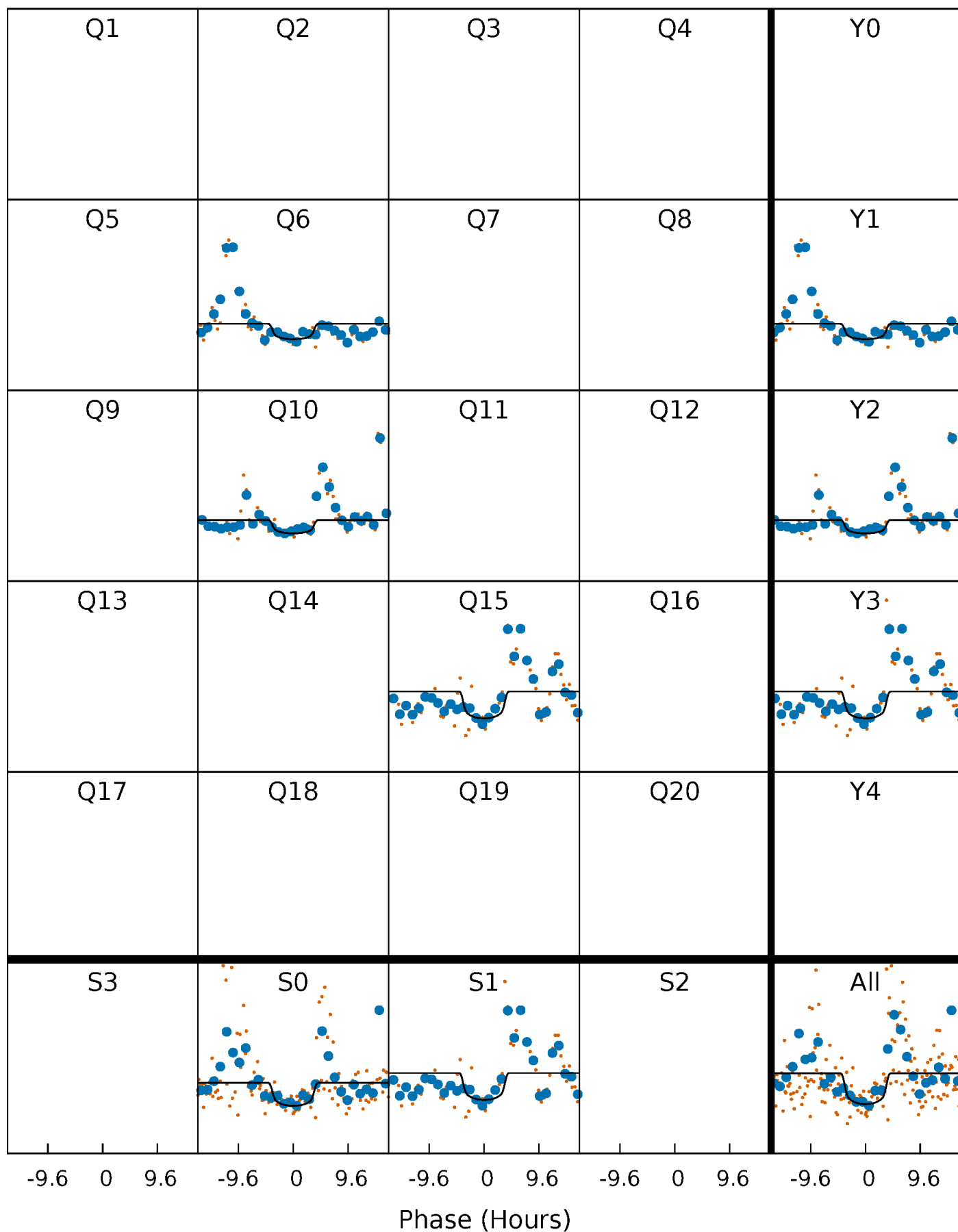
PDC Quarter-Phased Transit Curves

TCE 011808734-02 P=422.806570 Days $T_0=541.534399$ (BKJD)



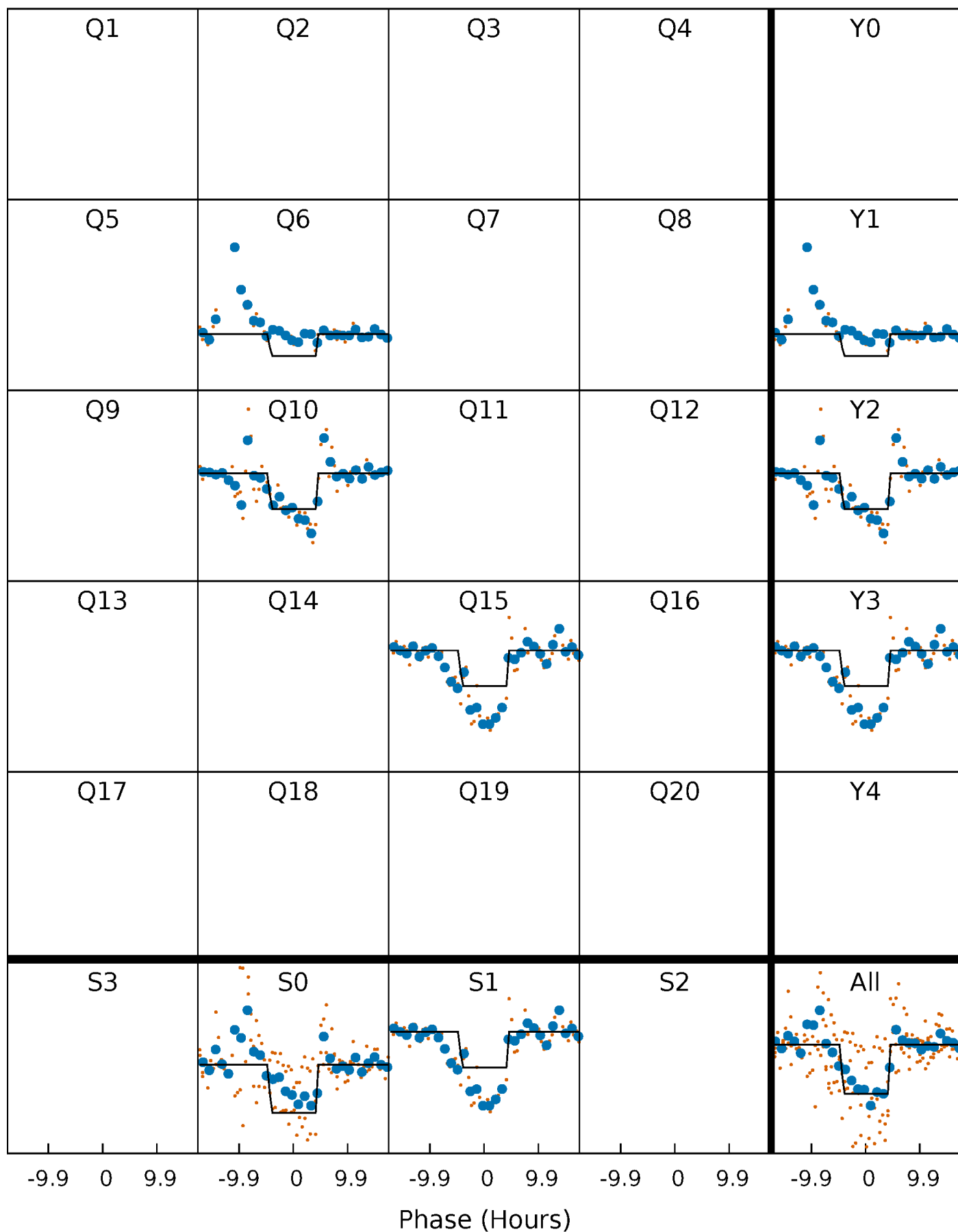
DV Quarter-Phased Transit Curves

TCE 011808734-02 P=422.806570 Days $T_0=541.534399$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

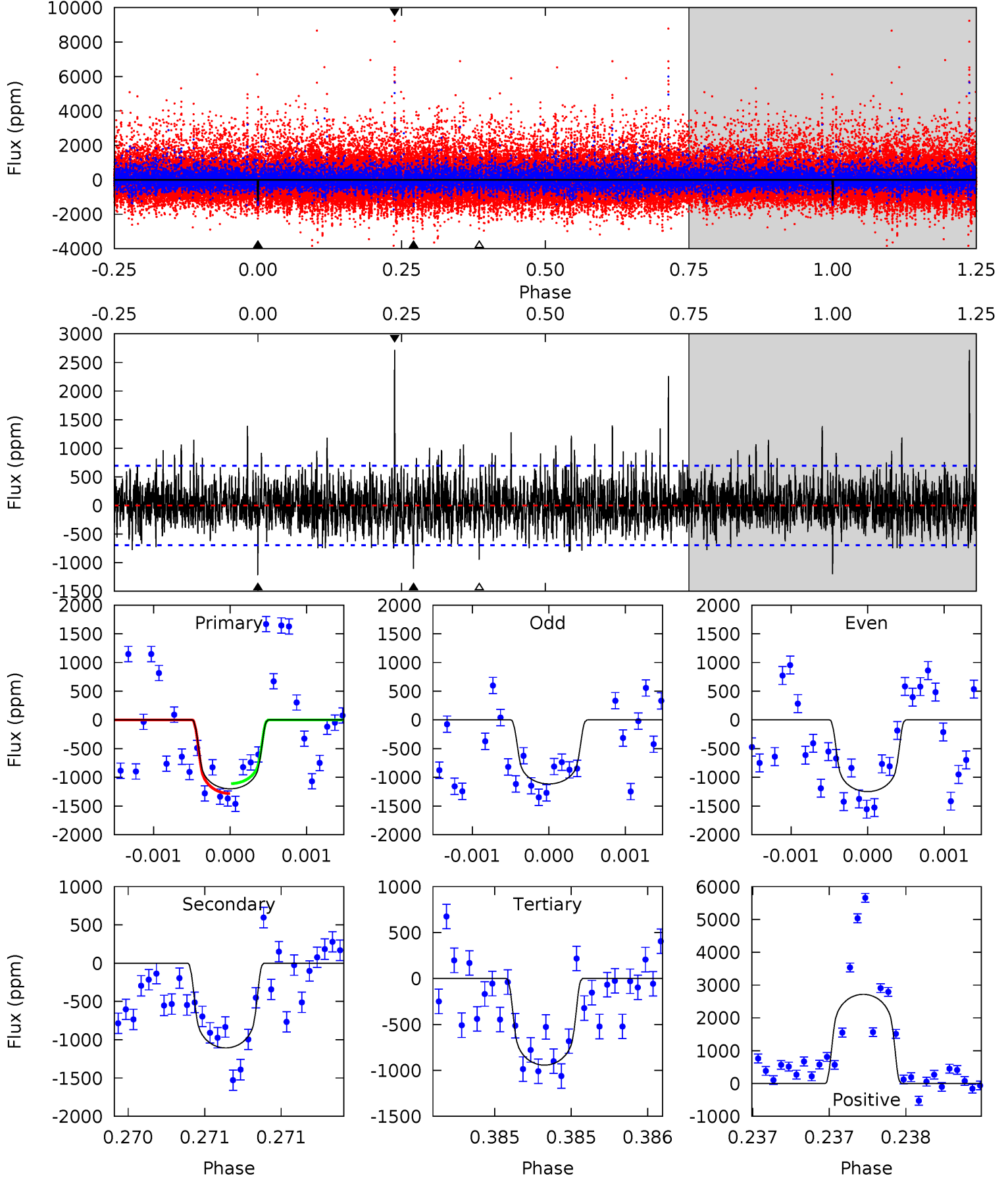
TCE 011808734-02 P=422.790790 Days $T_0=541.528759$ (BKJD)



DV Model-Shift Uniqueness Test

011808734-02, P = 422.806570 Days, E = 118.727829 Days

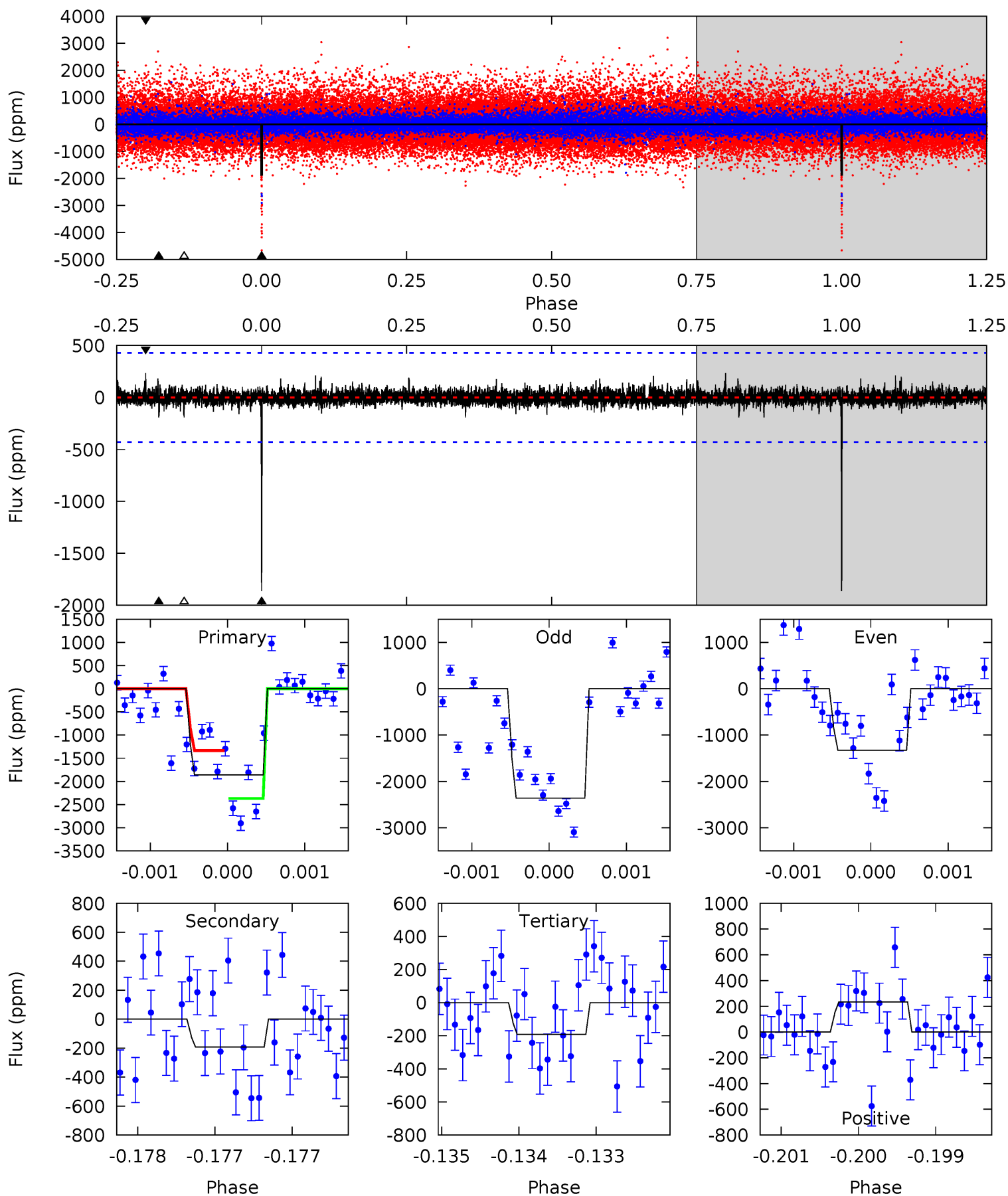
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.49	8.74	7.45	21.5	5.48	3.33	2.44	2.03	-12.0	1.29	-12.7	0.41	1.02	0.69	0.69



Alt Model-Shift Uniqueness Test

011808734-02, P = 422.790790 Days, E = 118.737969 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.7	2.45	2.45	2.99	5.48	3.33	0.52	21.3	20.8	0.01	-0.54	6.69	0.83	0.11	6.59



Stellar Parameters For KIC 011808734

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3620^{+72}_{-79}	$4.821^{+0.054}_{-0.036}$	$-0.100^{+0.100}_{-0.100}$	$0.430^{+0.038}_{-0.051}$	$0.446^{+0.036}_{-0.054}$	$7.920^{+2.216}_{-1.199}$
	+2%/-2%	+1%/-1%	+100%/-100%	+9%/-12%	+8%/-12%	+28%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 011808734-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1107 ± 127	$1.79^{+0.37}_{-0.38}$	159^{+4}_{-5}	3451^{+284}_{-204}	134942^{+82953}_{-43063}
Alt.	-192 ± 78	$2.08^{+0.38}_{-0.34}$	159^{+4}_{-4}	2583^{+175}_{-182}	17325^{+10558}_{-8080}

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

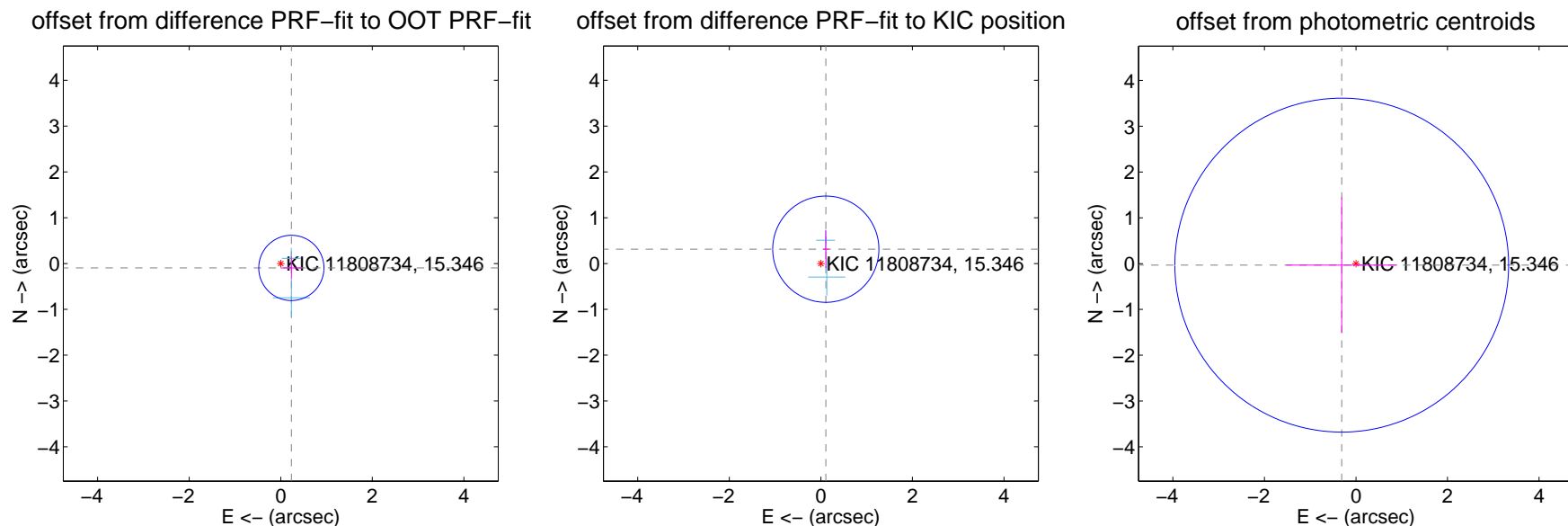
DV Centroid Data

Supplemental centroid analysis for 011808734-02. Kepler magnitude: 15.35. Transit SNR 5.78

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.250 ± 0.237	1.05	-0.231 ± 0.236	-0.095 ± 0.243
PRF-fit source offset from KIC position	0.332 ± 0.386	0.86	-0.108 ± 0.068	0.314 ± 0.408
photometric centroid source offset	0.31 ± 1.21	0.26	0.31 ± 1.21	-0.03 ± 1.48



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.

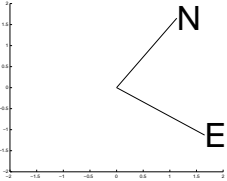
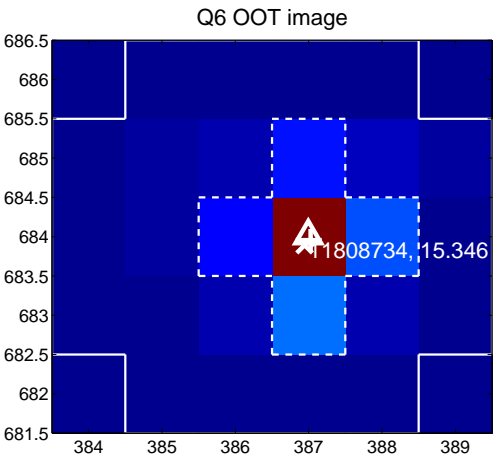
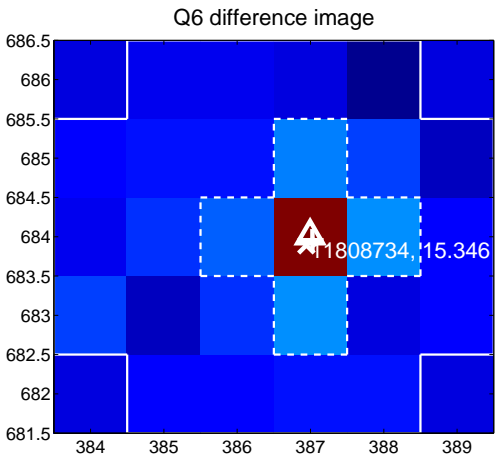


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

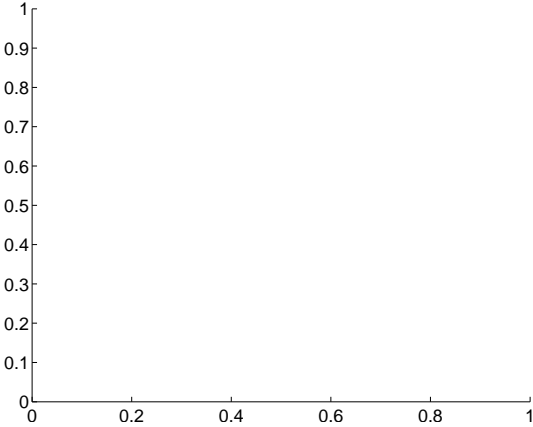
Q5 no difference image



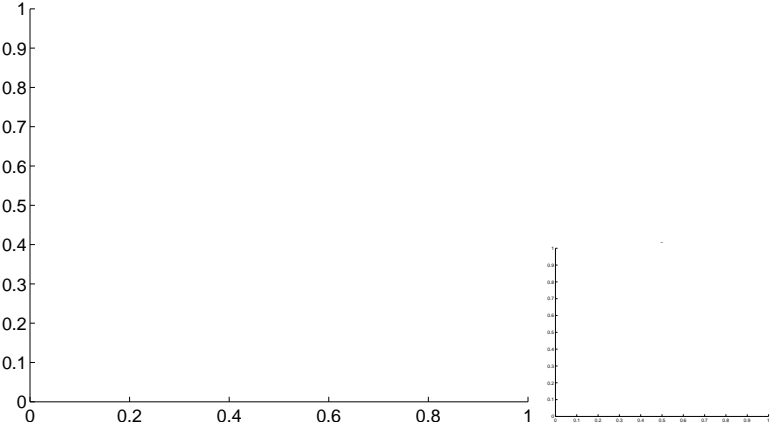
Q5 no OOT image



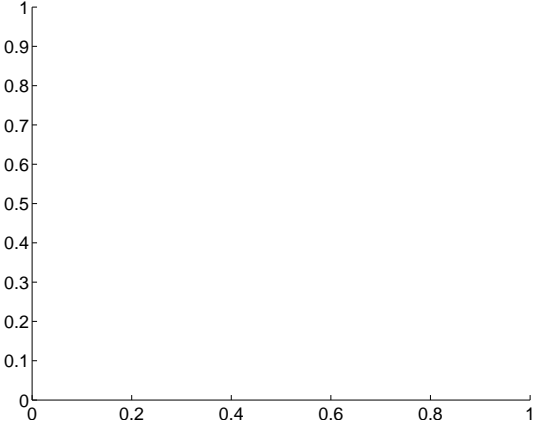
Q7 no difference image



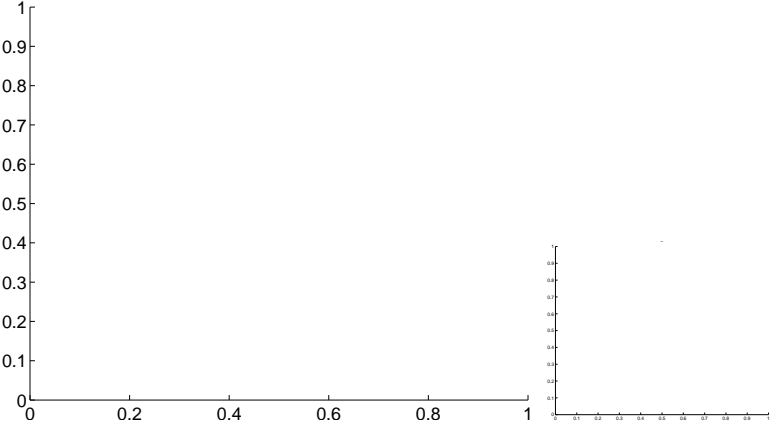
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

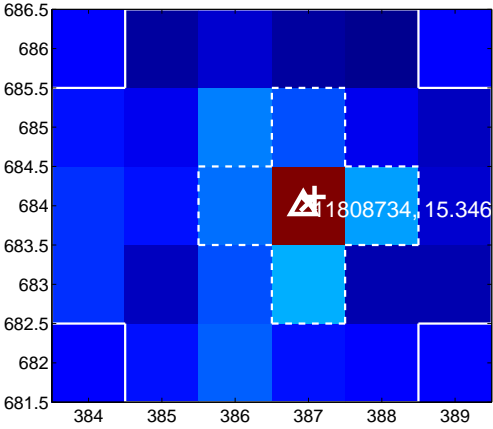
Q9 no difference image



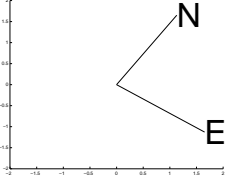
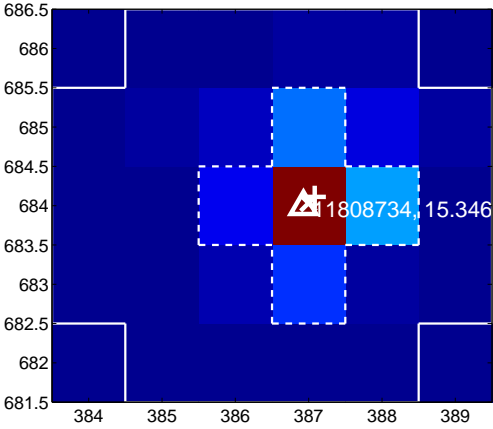
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



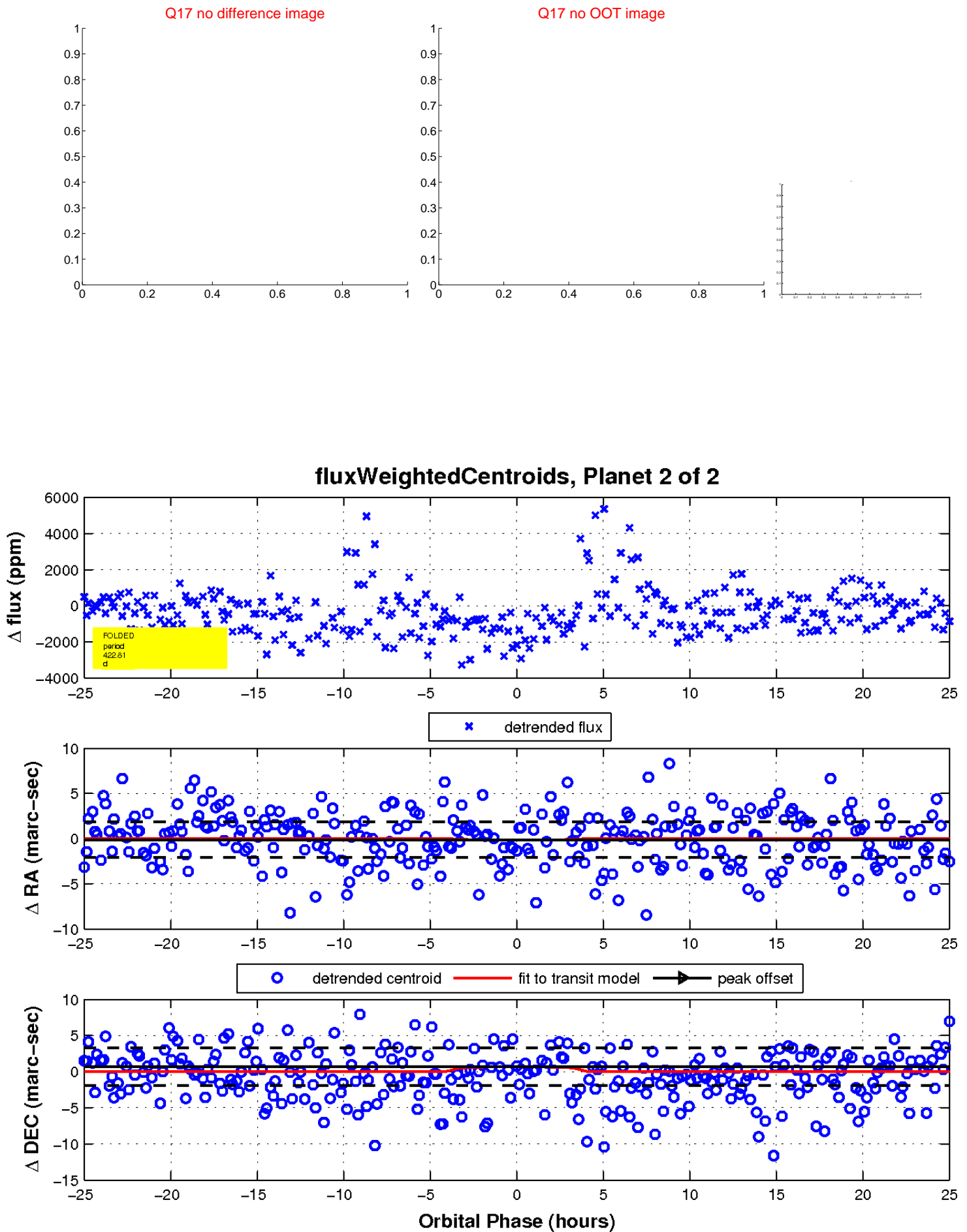
Q12 no OOT image



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.



UKIRT Image

Declination

