

KIC 007842386

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})
007842386-01	OBS	No	455.243444	199.632629	17.3	21.108	33.6	1.8	151.74	3298	58.62	1676.14
007842386-02	OBS	No	188.139685	161.590827	78.5	16.473	51.5	8.6	151.74	3298	163.02	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007842386-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007842386-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

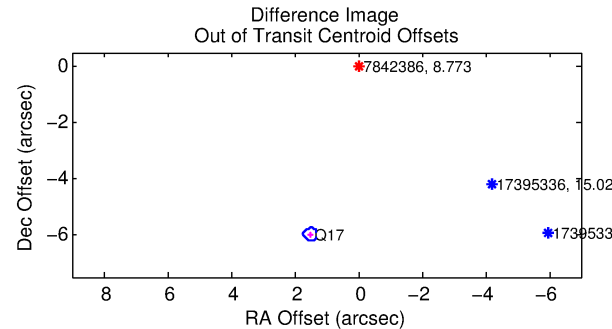
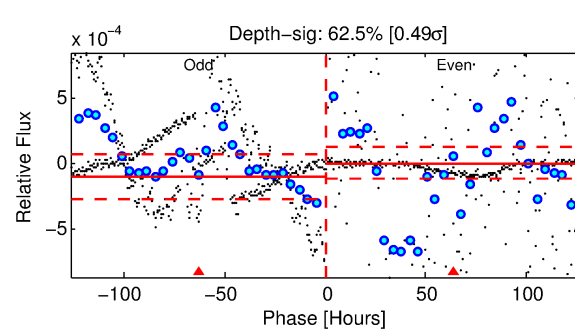
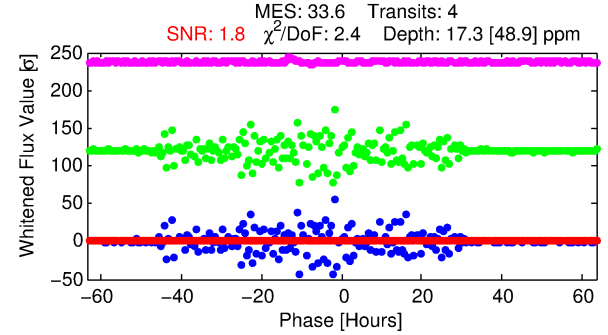
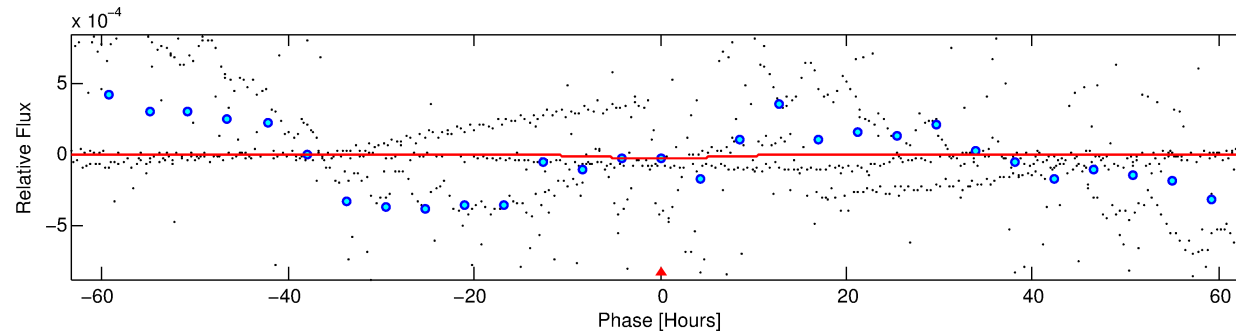
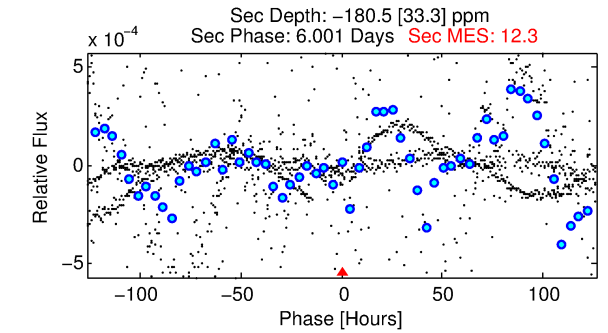
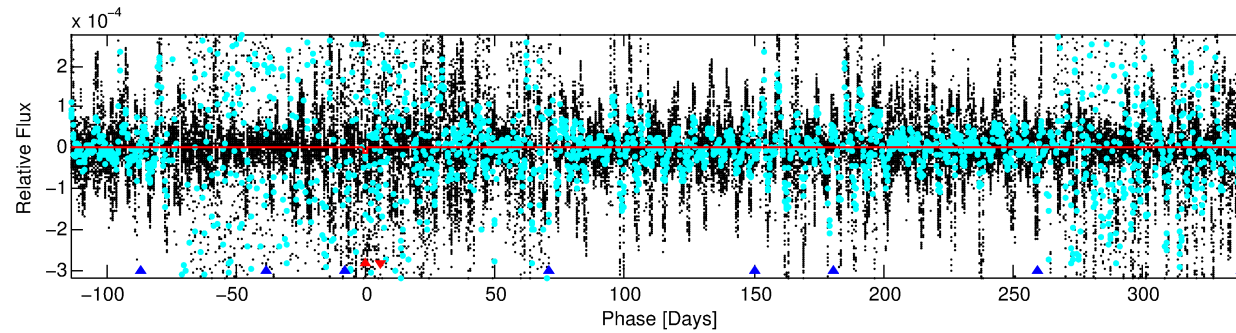
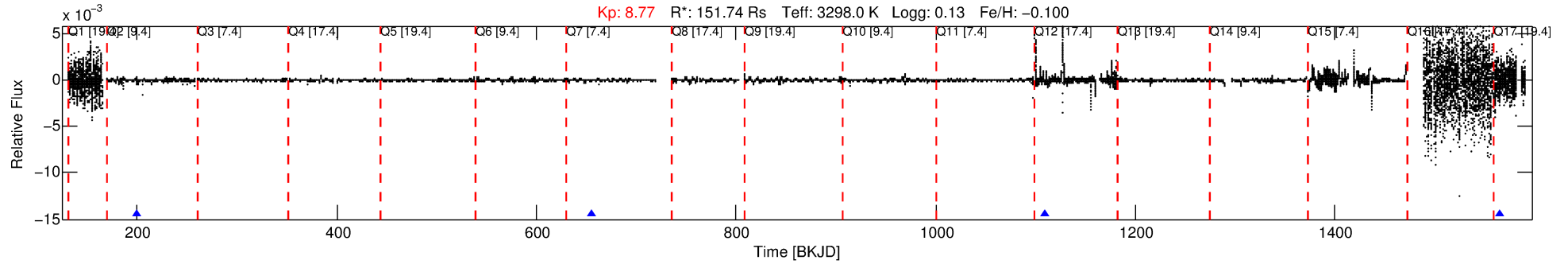
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007842386-01

No Significant Match Found

DV One-Page Summary

KIC: 7842386 Candidate: 1 of 2 Period: 455.243 d



DV Fit Results:

Period = 455.24344 [0.10698] d
Epoch = 199.6326 [0.1927] BKJD
Rp/R* = 0.0035 [0.0142]
a/R* = 160.11 [1424.66]
b = 0.25 [33.69]
Seff = 1676.14 [615.63]
Teq = 1632 [150] K
Rp = 58.62 [236.04] Re
a = 1.2067 [0.2450] AU
Ag = N/A
Teffp = N/A

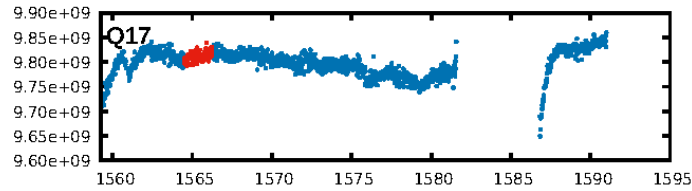
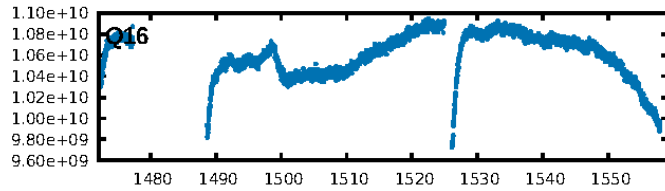
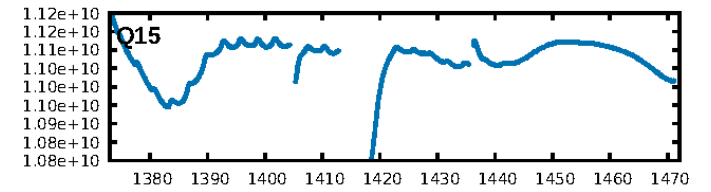
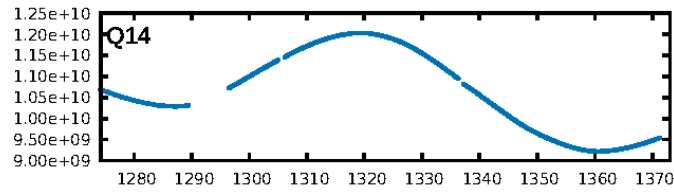
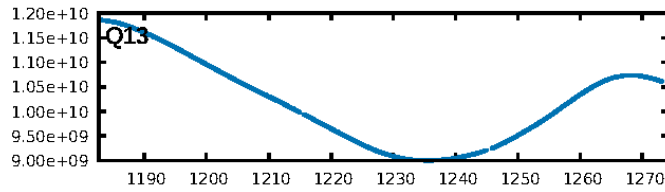
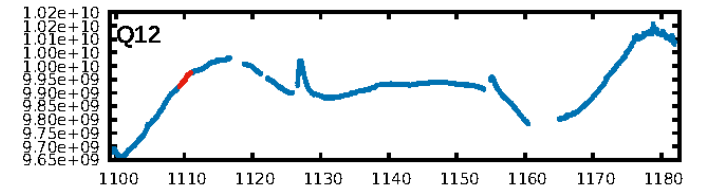
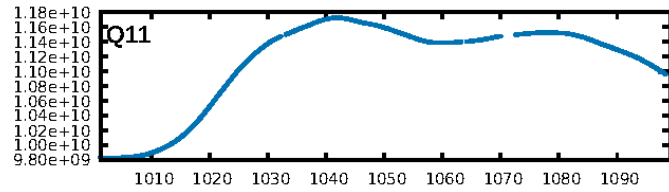
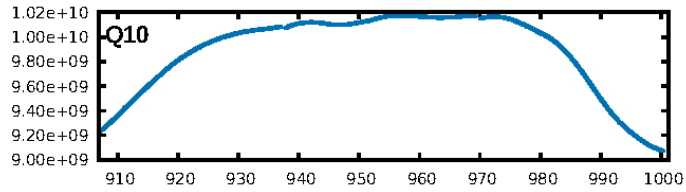
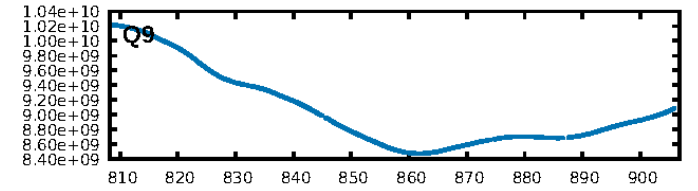
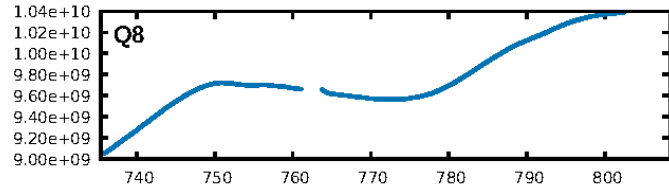
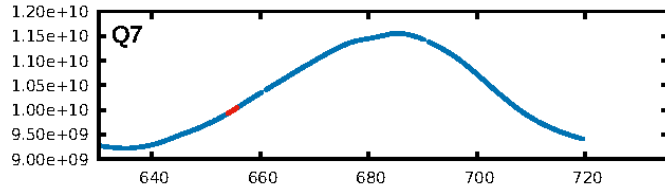
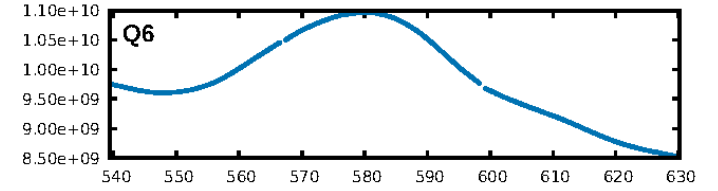
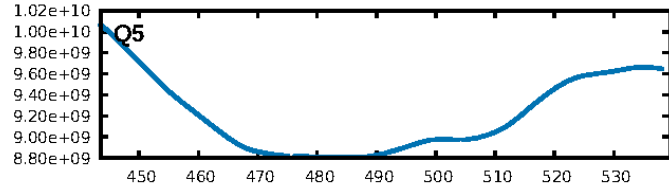
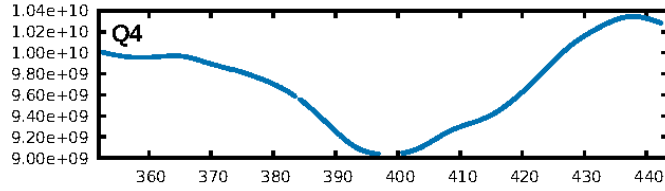
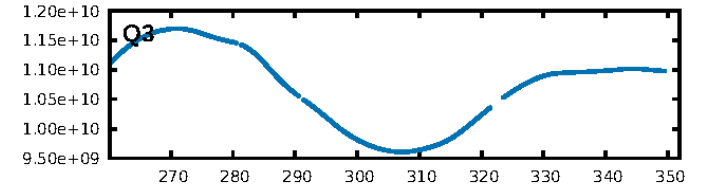
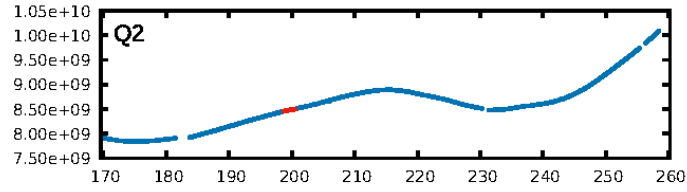
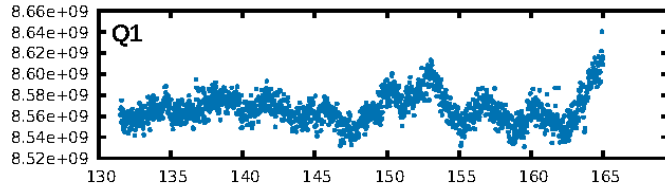
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [239.42σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 12.2%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 2.81e-06
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 8.0%
Centroid-so: 67.681 arcsec [1.15σ]
OotOffset-rm: 6.173 arcsec [82.82σ]
KicOffset-rm: 5.196 arcsec [69.63σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

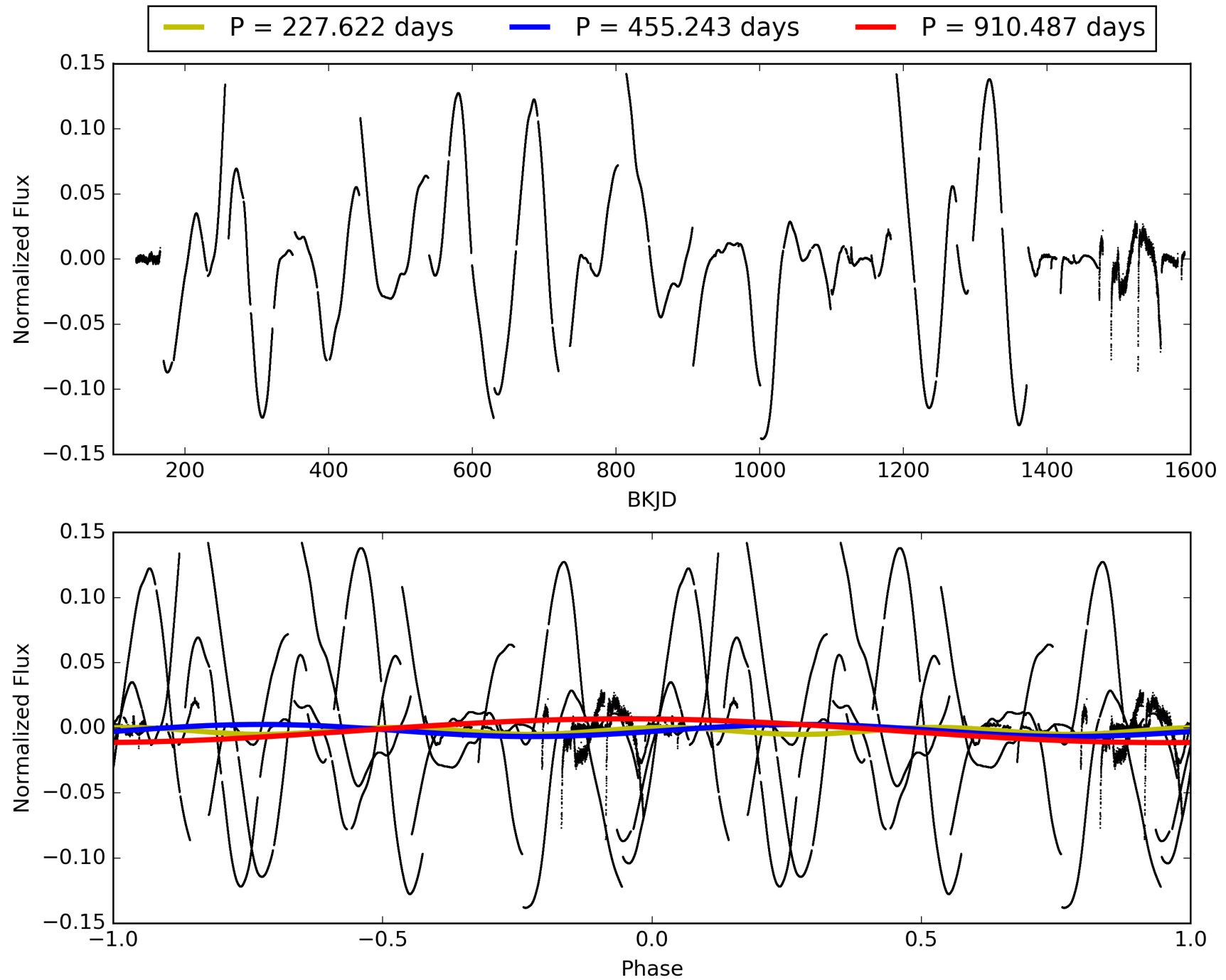
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:24:04 Z

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

TCE 007842386-01, PDC Light Curves

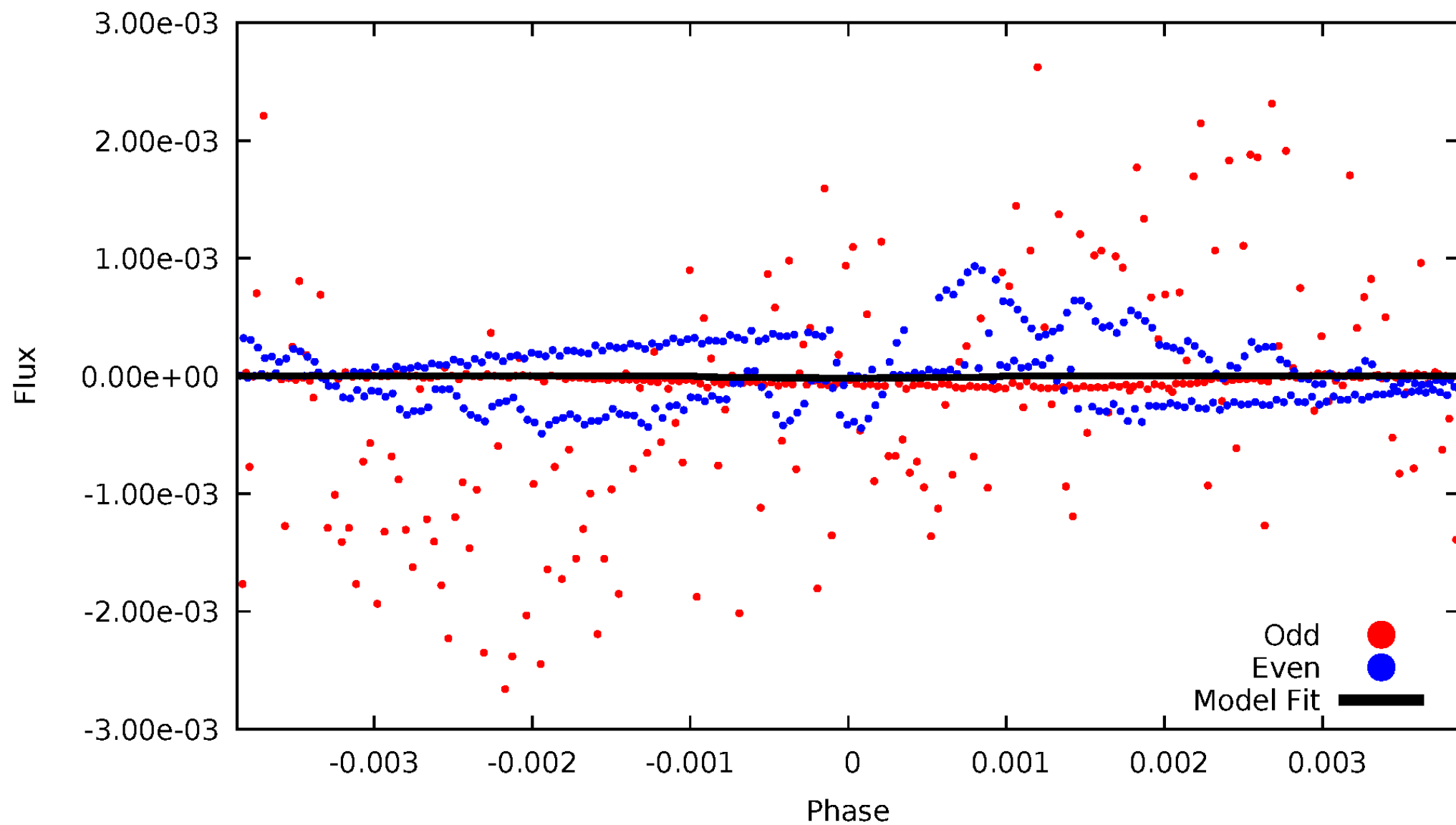


TCE 007842386-01



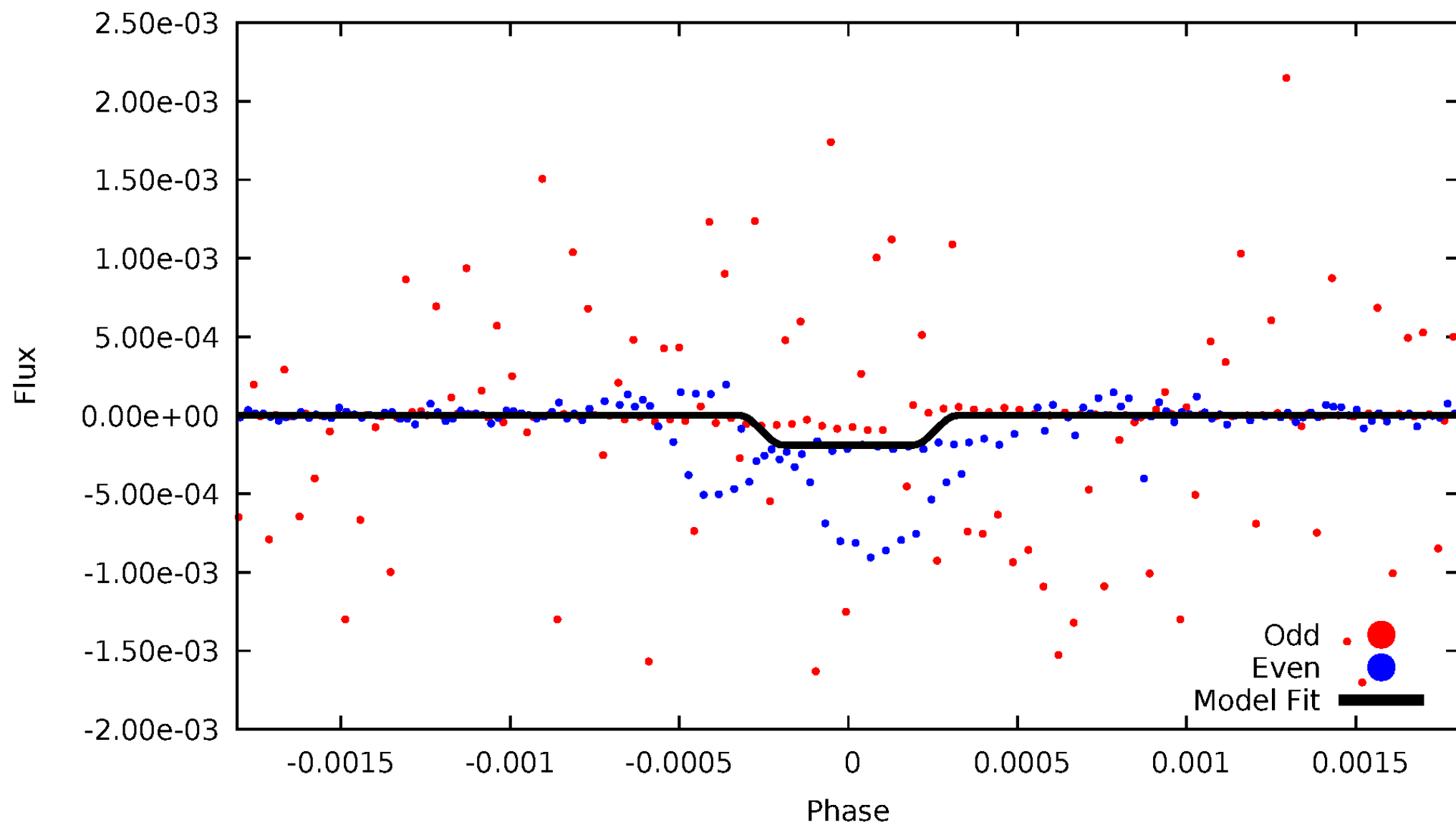
DV Odd/Even

TCE 007842386-01



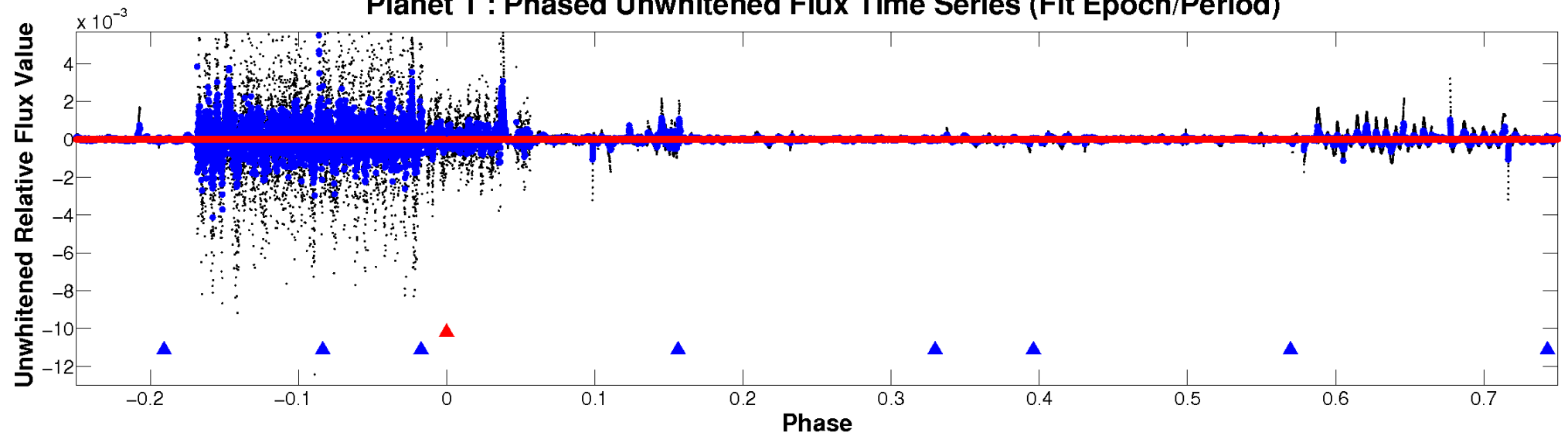
ALT Odd/Even

TCE 007842386-01

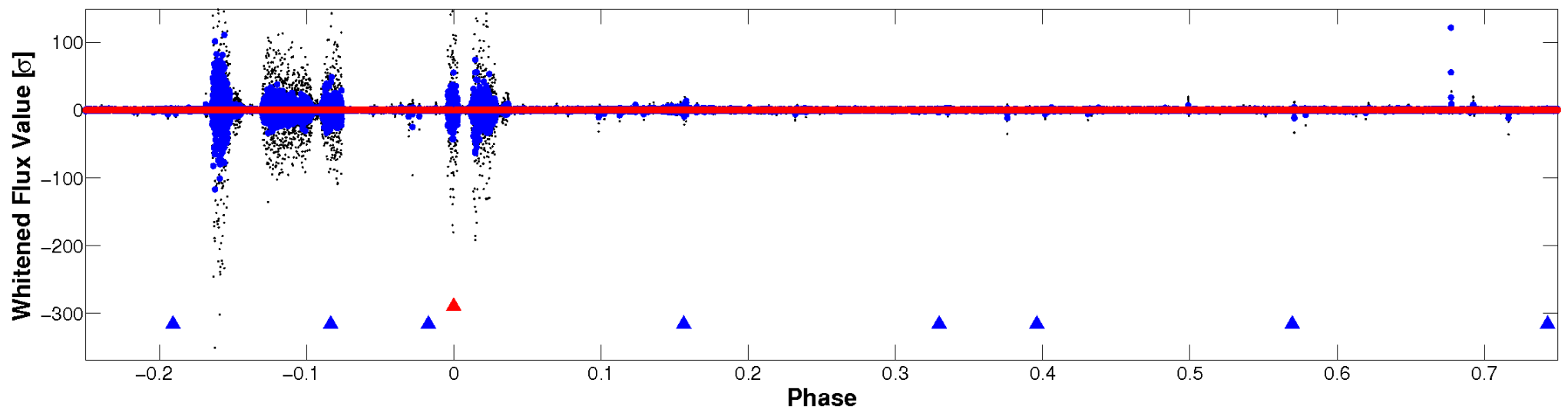


Non-Whitened Vs. Whitened Light Curve

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

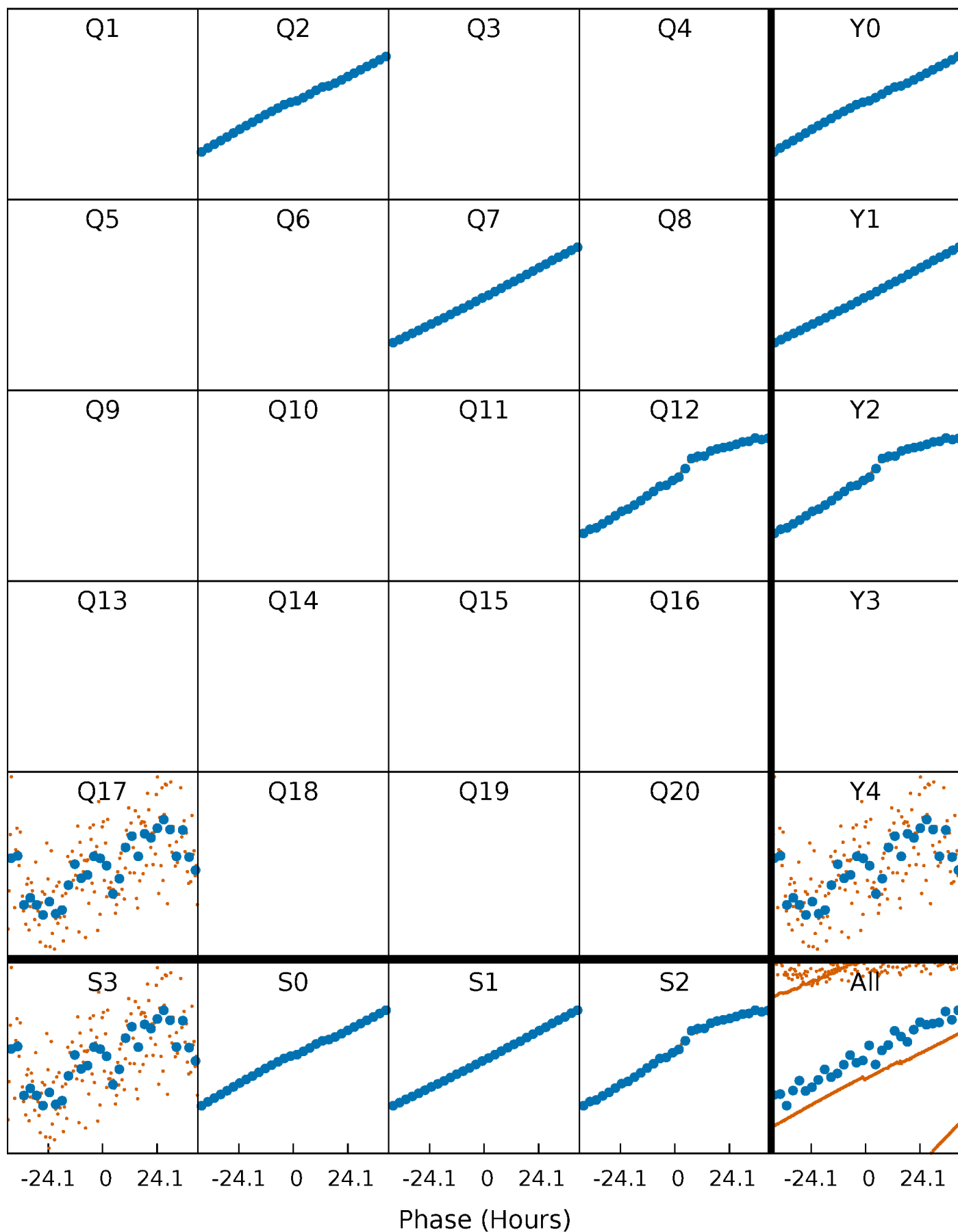


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



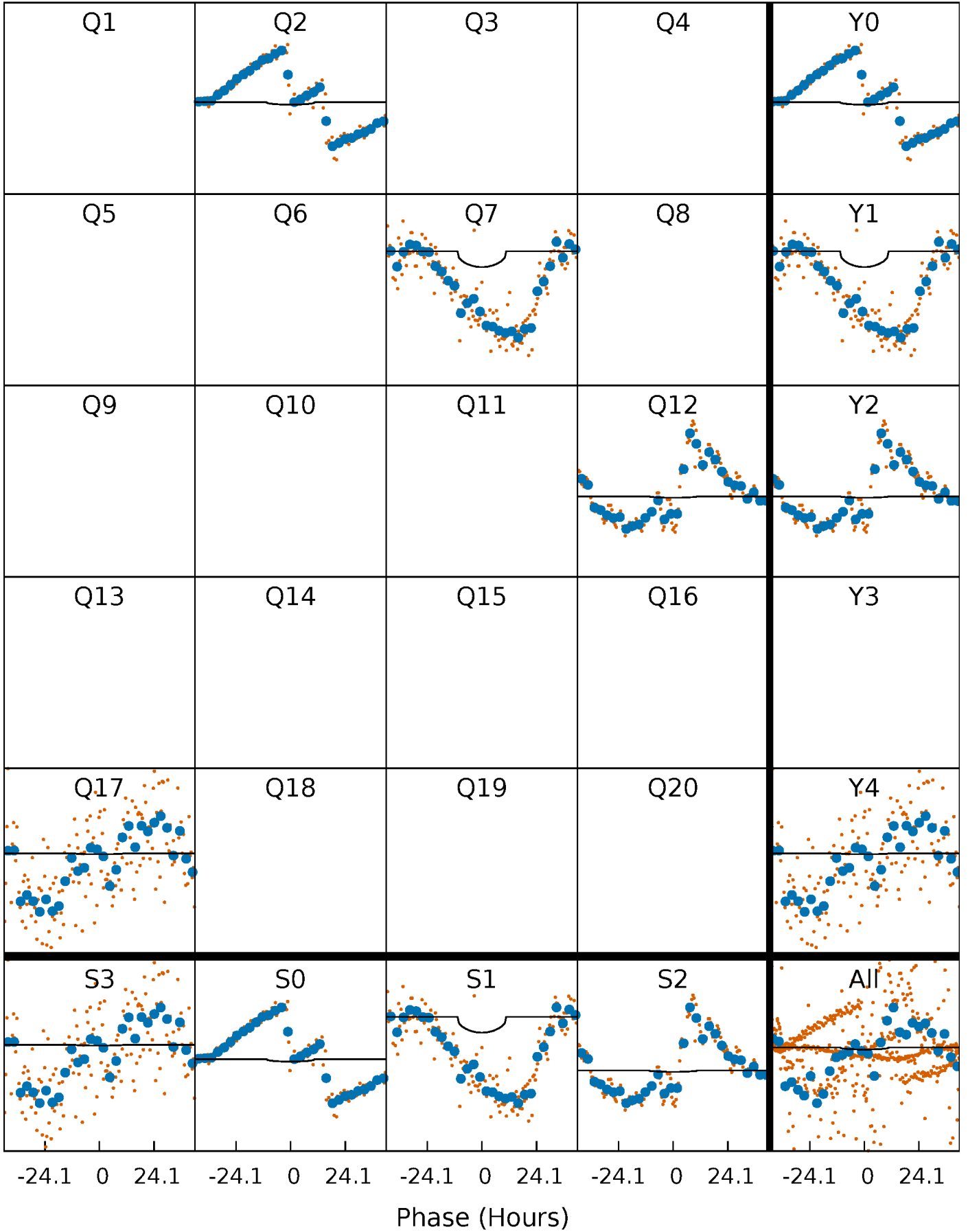
PDC Quarter-Phased Transit Curves

TCE 007842386-01 P=455.243444 Days $T_0=199.632629$ (BKJD)



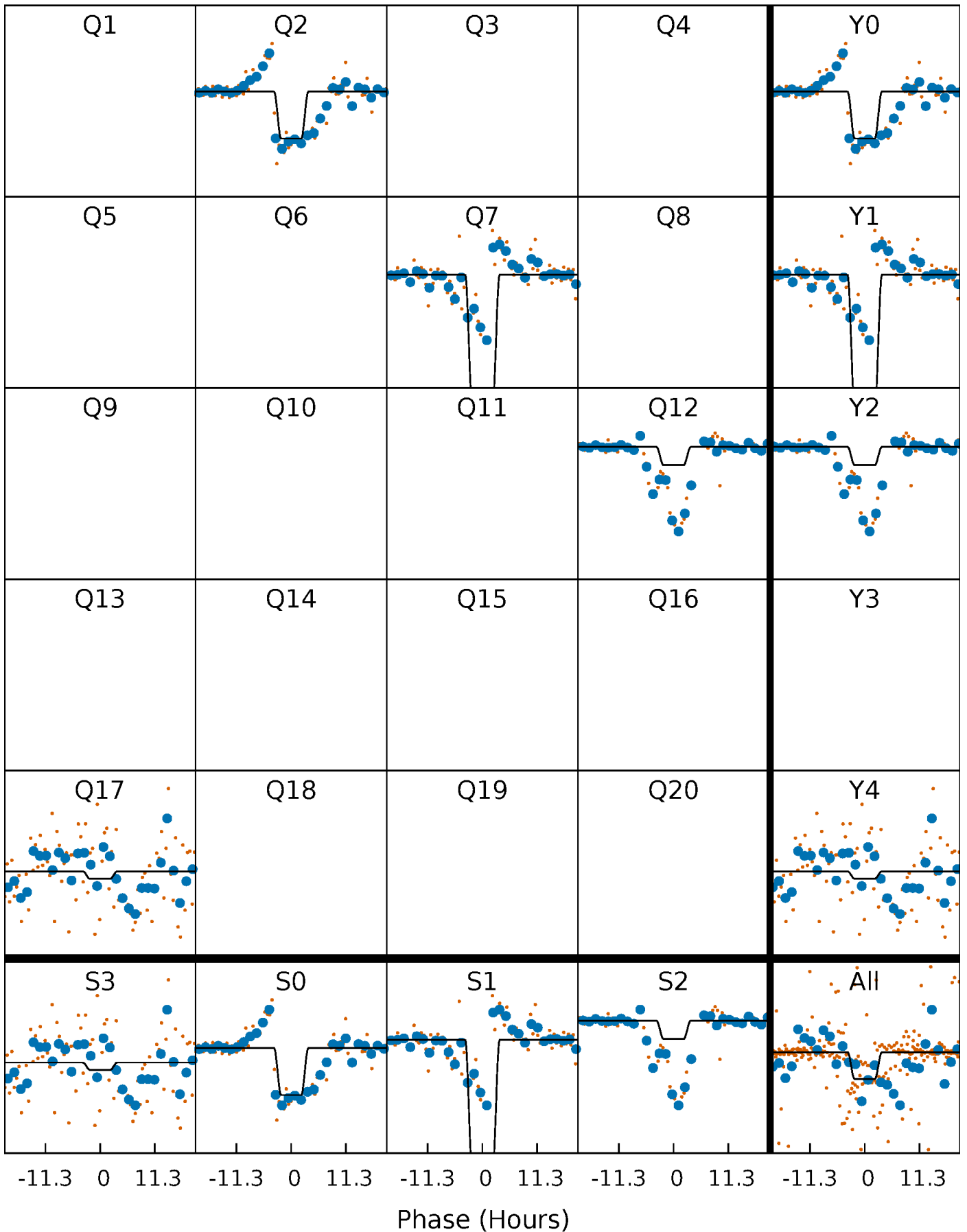
DV Quarter-Phased Transit Curves

TCE 007842386-01 P=455.243444 Days $T_0=199.632629$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

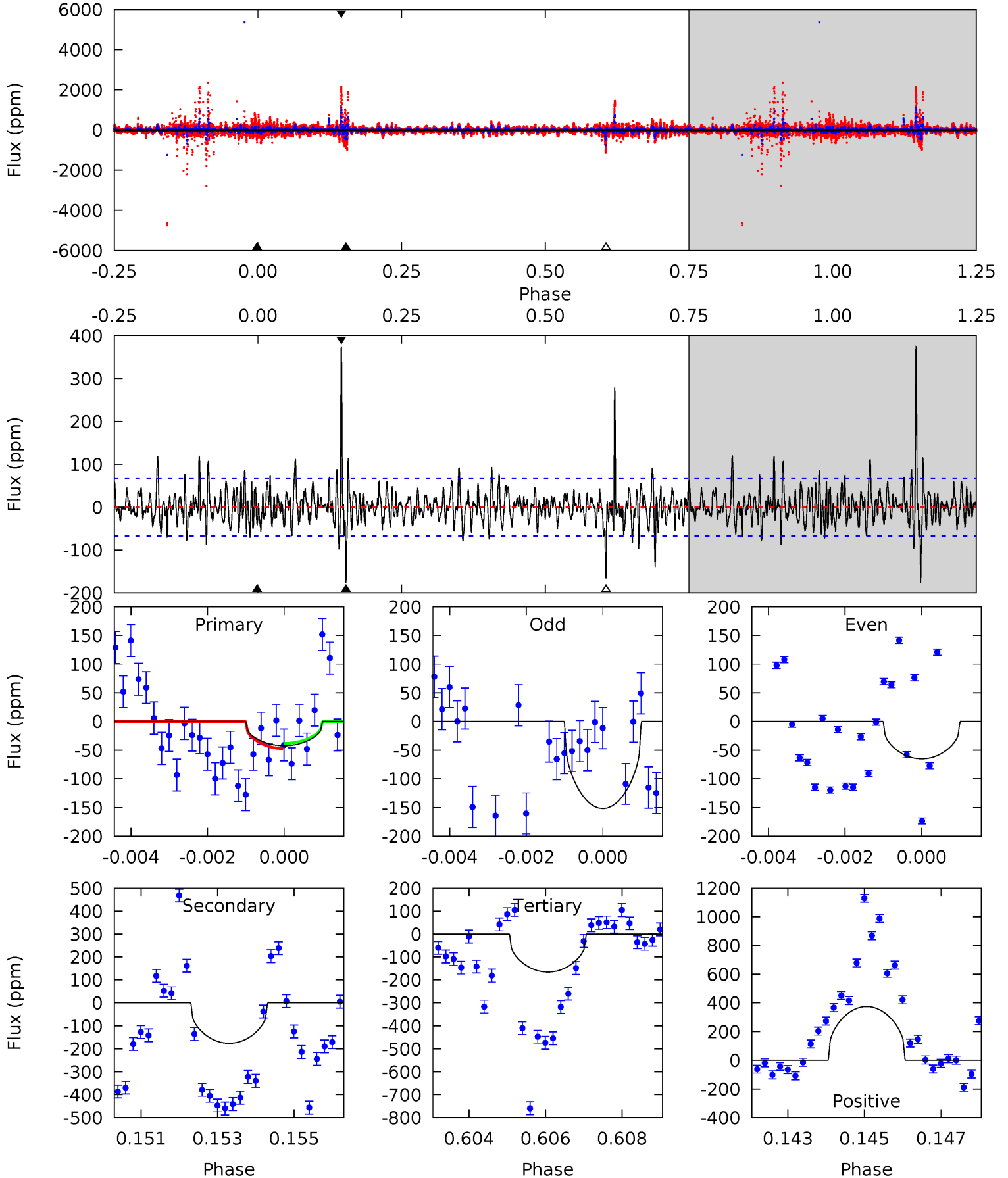
TCE 007842386-01 P=455.191605 Days $T_0=199.743158$ (BKJD)



DV Model-Shift Uniqueness Test

007842386-01, P = 455.243444 Days, E = 199.632629 Days

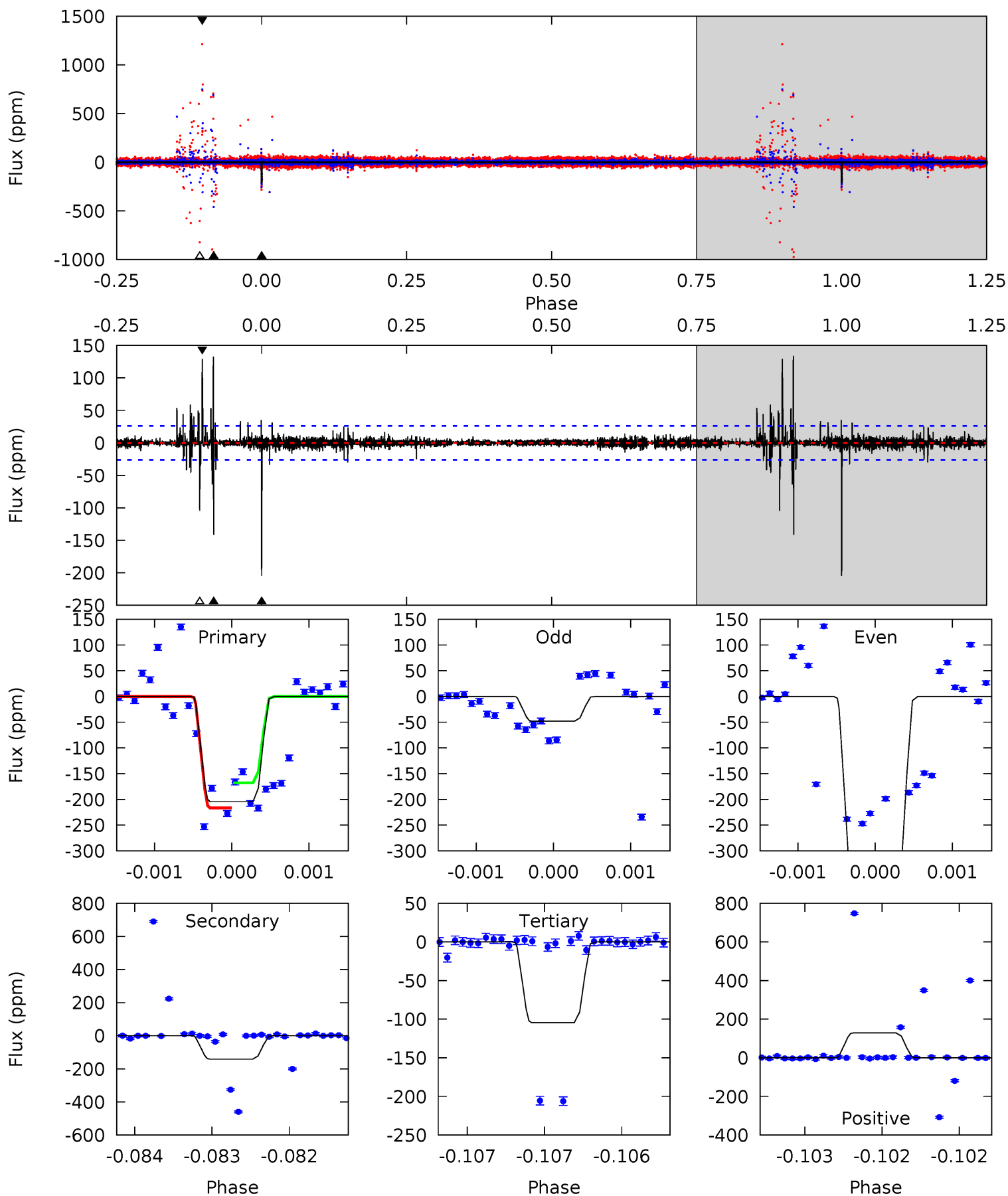
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.37	14.0	13.2	29.9	5.33	3.10	2.73	-9.85	-26.5	0.82	-15.8	1.56	1.04	0.68	0



Alt Model-Shift Uniqueness Test

007842386-01, P = 455.191605 Days, E = 199.743158 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.3	29.9	22.1	27.3	5.53	3.41	1.11	21.2	16.0	7.77	2.59	10.5	1.39	0.39	5.00



Stellar Parameters For KIC 007842386

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	3298^{+117}_{-88}	$0.129^{+0.204}_{-0.048}$	$-0.100^{+0.250}_{-0.150}$	$151.742^{+9.192}_{-29.414}$	$1.130^{+0.206}_{-0.137}$	$0.000^{+0.000}_{-0.000}$
	+4%/-3%	+158%/-37%	+250%/-150%	+6%/-19%	+18%/-12%	+95%/-11%
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 007842386-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-176 ± 13	$177.70^{+185.99}_{-124.66}$	2241^{+108}_{-128}	3470^{+2104}_{-746}	$4.624^{+47.570}_{-3.535}$
Alt.	-141 ± 5	$254.54^{+209.59}_{-162.99}$	2233^{+114}_{-119}	2944^{+1254}_{-615}	$1.783^{+12.186}_{-1.263}$

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 $A_{obs} \gg 1.0$

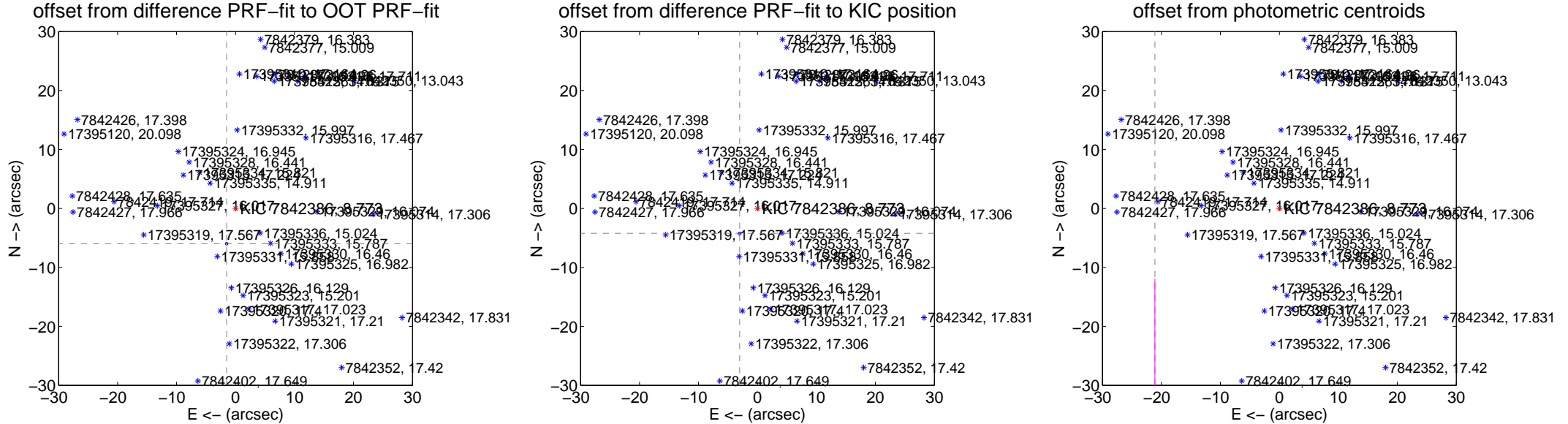
DV Centroid Data

Supplemental centroid analysis for 007842386-01. **Kepler magnitude: 8.77.** Transit SNR 1.81

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.32 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.173 \pm 0.075	82.82	1.512 \pm 0.075	-5.984 \pm 0.075
PRF-fit source offset from KIC position	5.196 \pm 0.075	69.63	3.020 \pm 0.075	-4.228 \pm 0.075
photometric centroid source offset	67.68 \pm 58.71	1.15	21.11 \pm 99.89	-64.31 \pm 52.37



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.

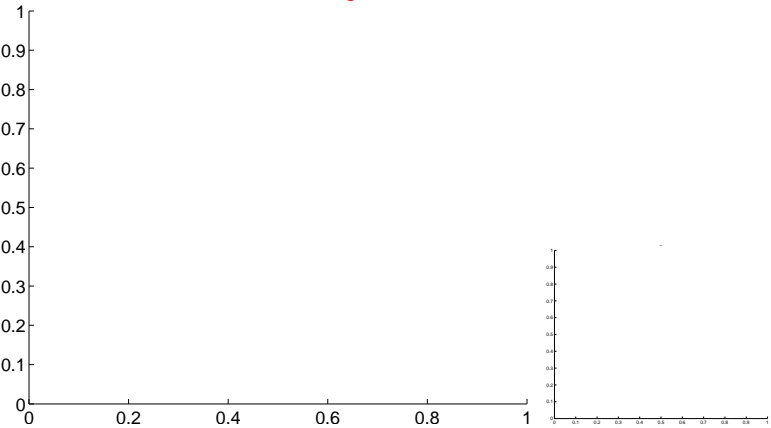


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q5 no difference image



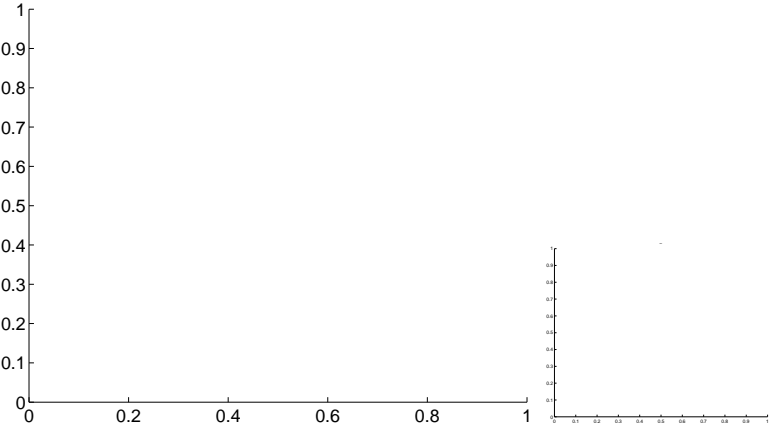
Q5 no OOT image



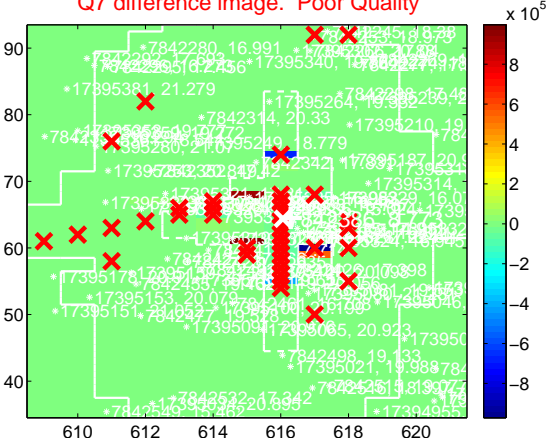
Q6 no difference image



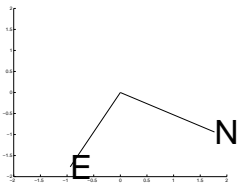
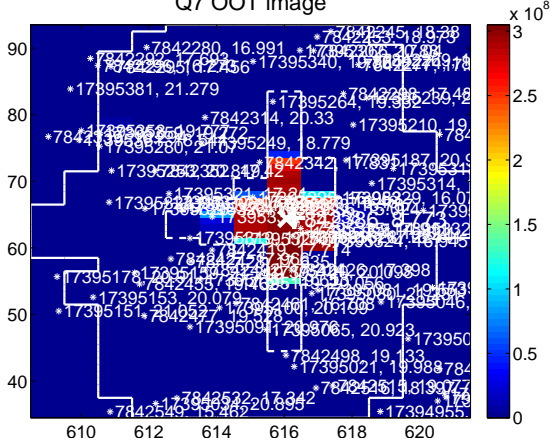
Q6 no OOT image



Q7 difference image. Poor Quality



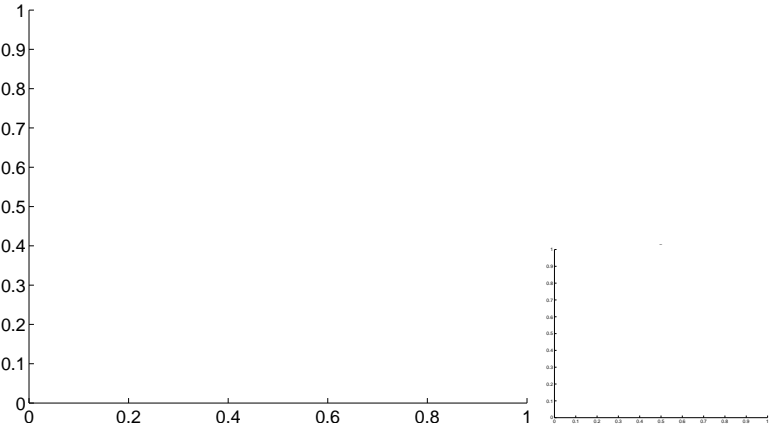
Q7 OOT image



Q8 no difference image



Q8 no OOT image



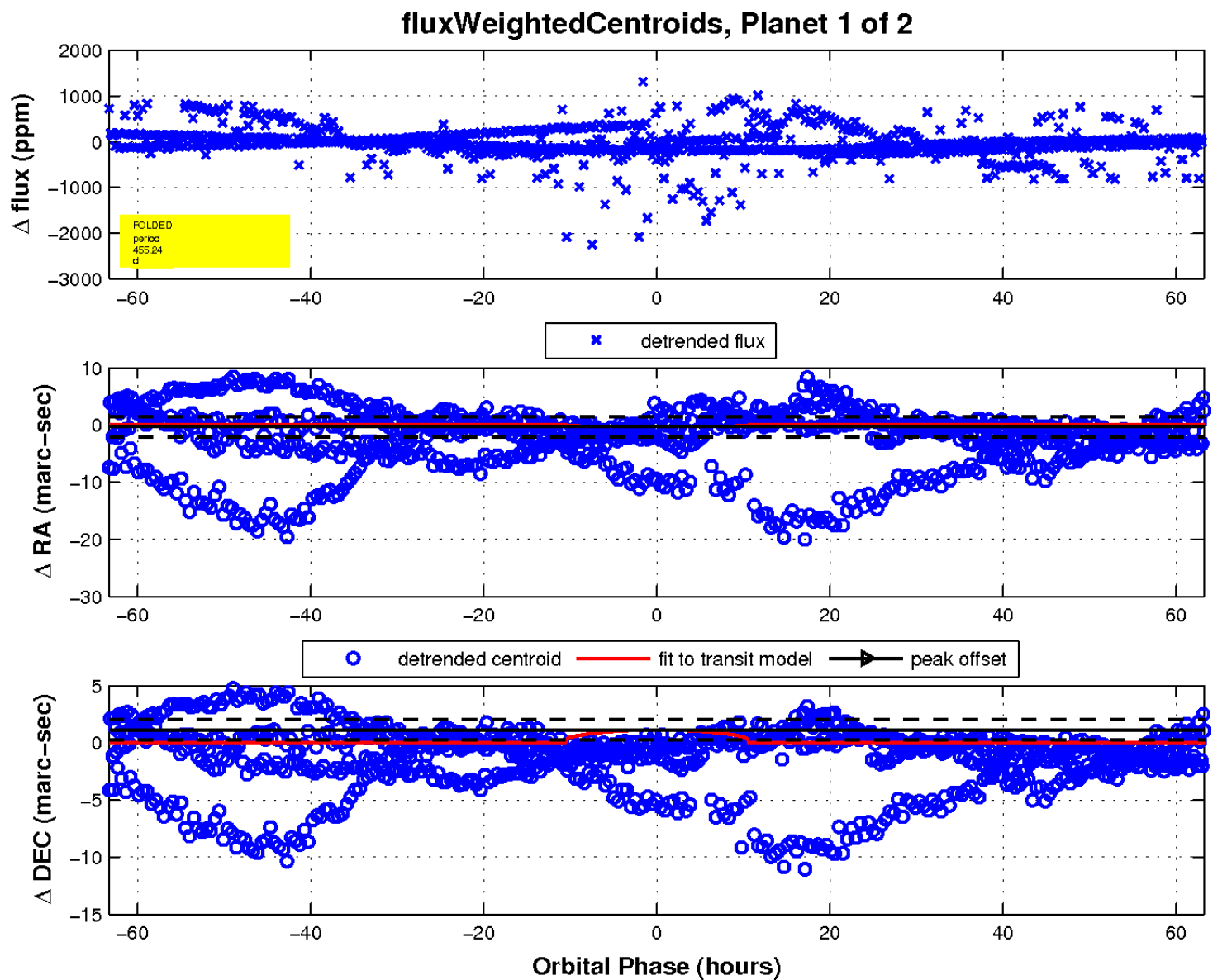
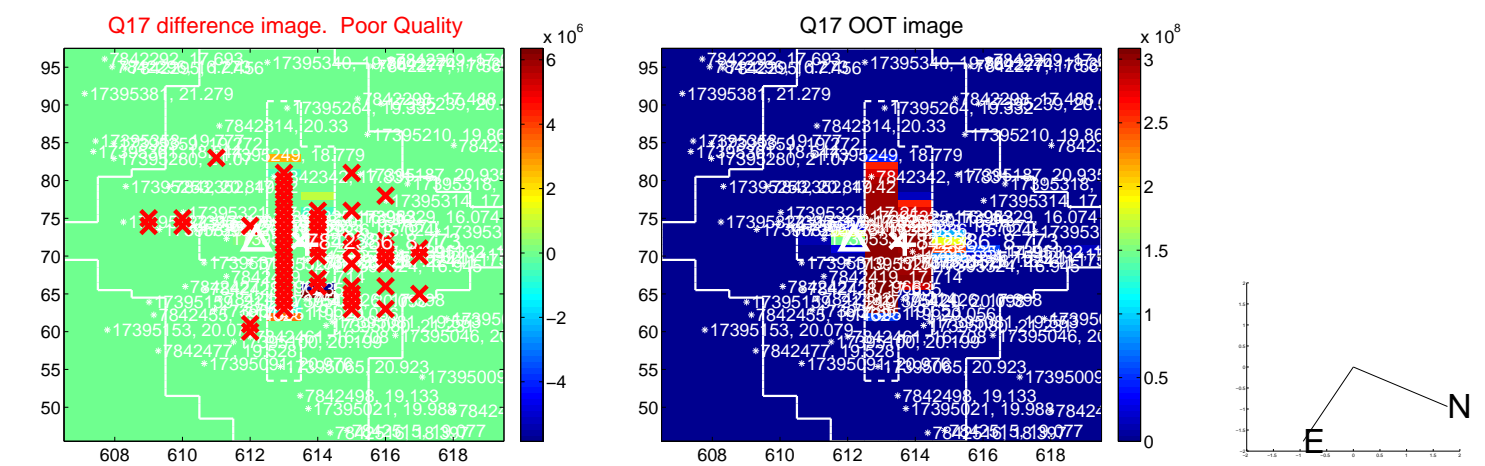
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

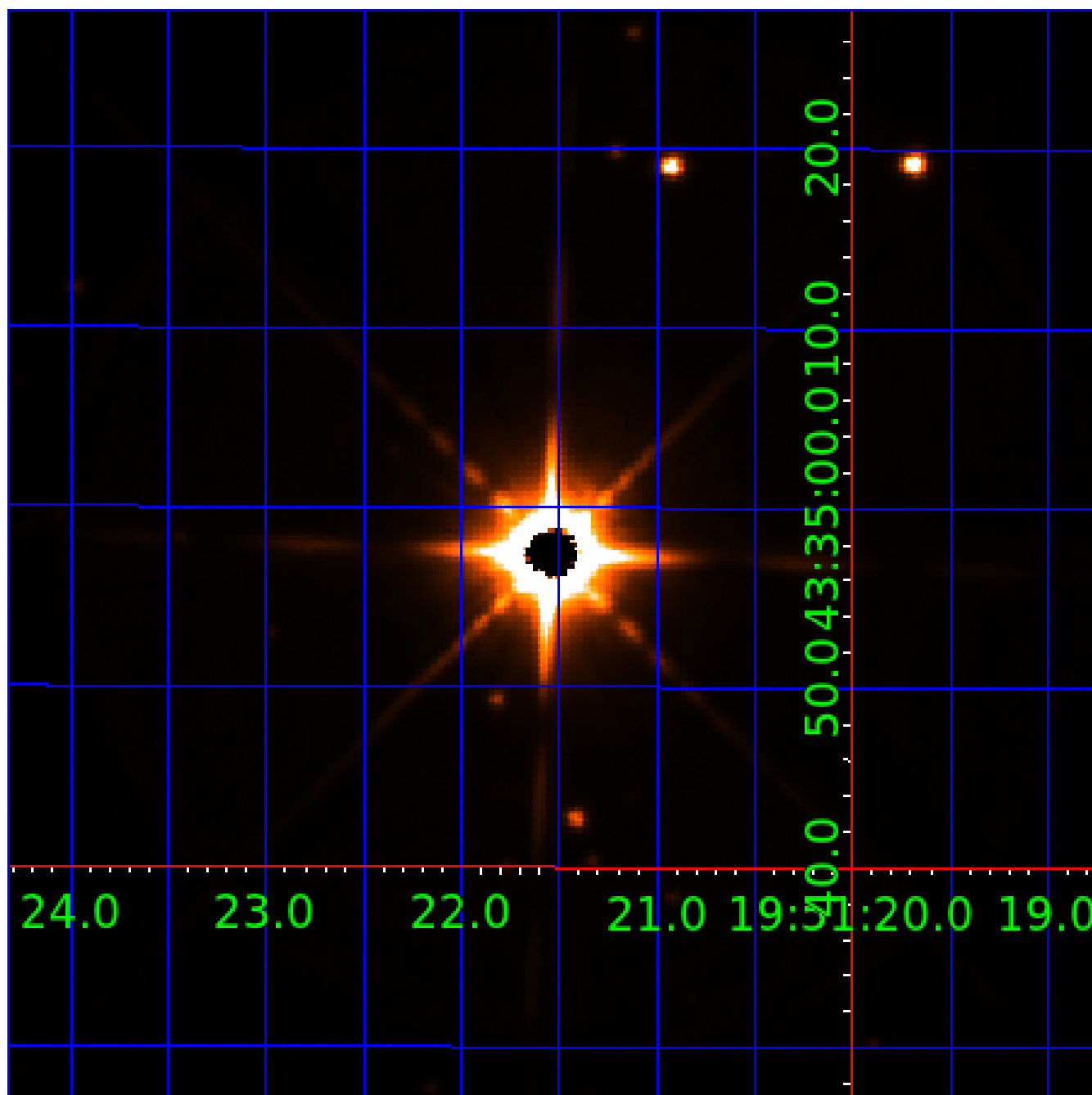


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007842386

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})
007842386-01	OBS	No	455.243444	199.632629	17.3	21.108	33.6	1.8	151.74	3298	58.62	1676.14
007842386-02	OBS	No	188.139685	161.590827	78.5	16.473	51.5	8.6	151.74	3298	163.02	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007842386-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
007842386-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

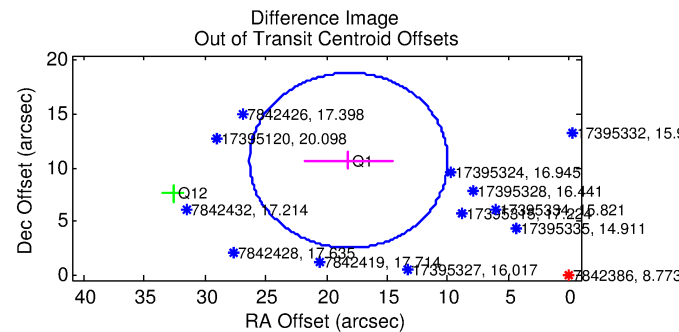
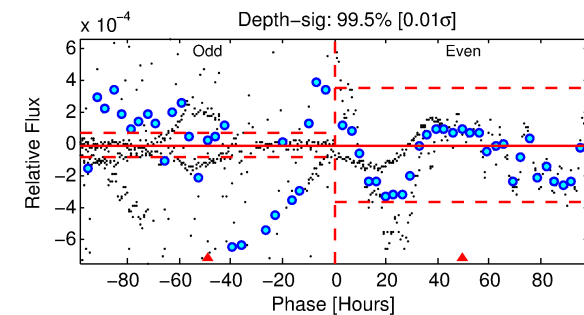
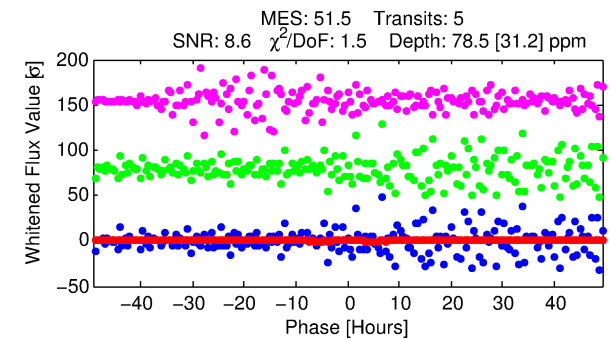
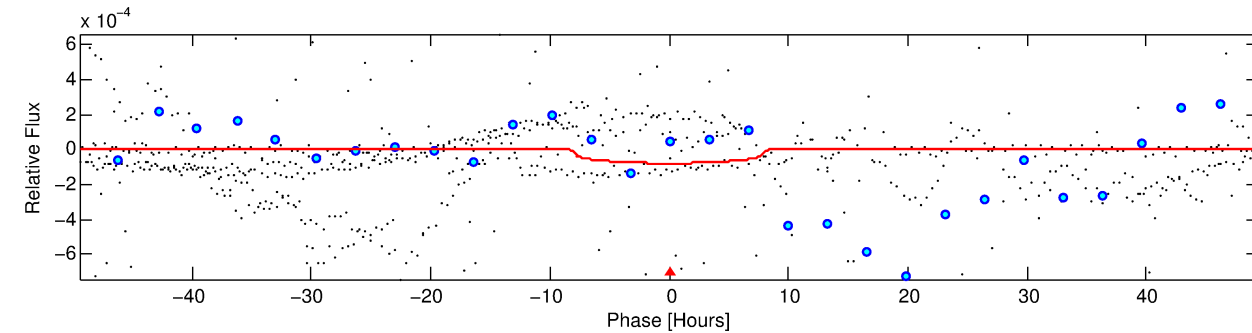
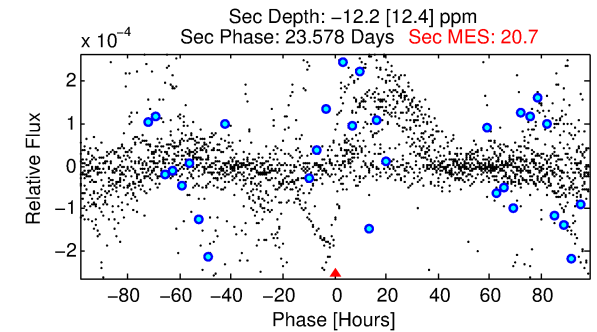
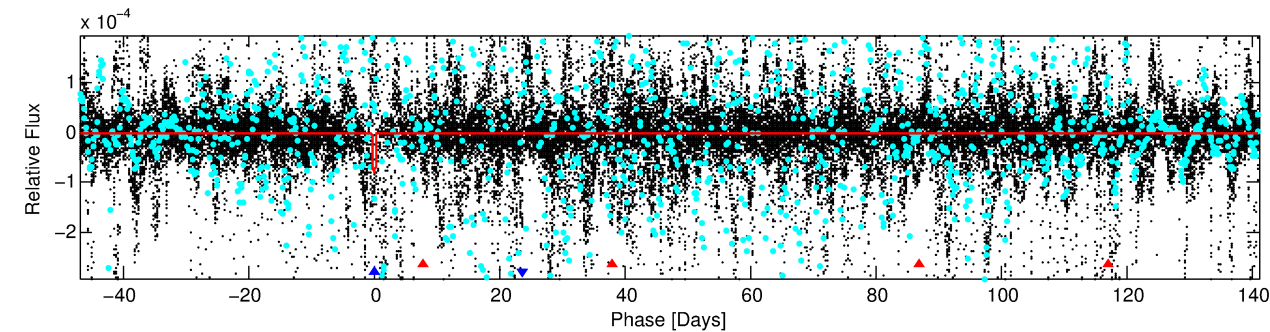
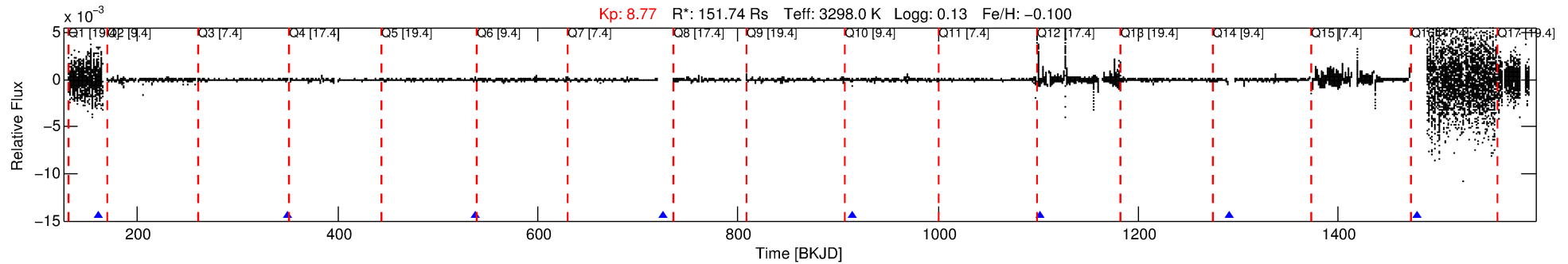
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007842386-02

No Significant Match Found

DV One-Page Summary

KIC: 7842386 Candidate: 2 of 2 Period: 188.140 d



DV Fit Results:

Period = 188.13969 [0.01240] d
Epoch = 161.5908 [0.0356] BKJD
Rp/R* = 0.0098 [0.0047]
b = 0.86 [0.41]
Seff = N/A
Teq = N/A
Rp = 163.02 [84.25] Re
a = N/A
Ag = N/A
Teffp = N/A

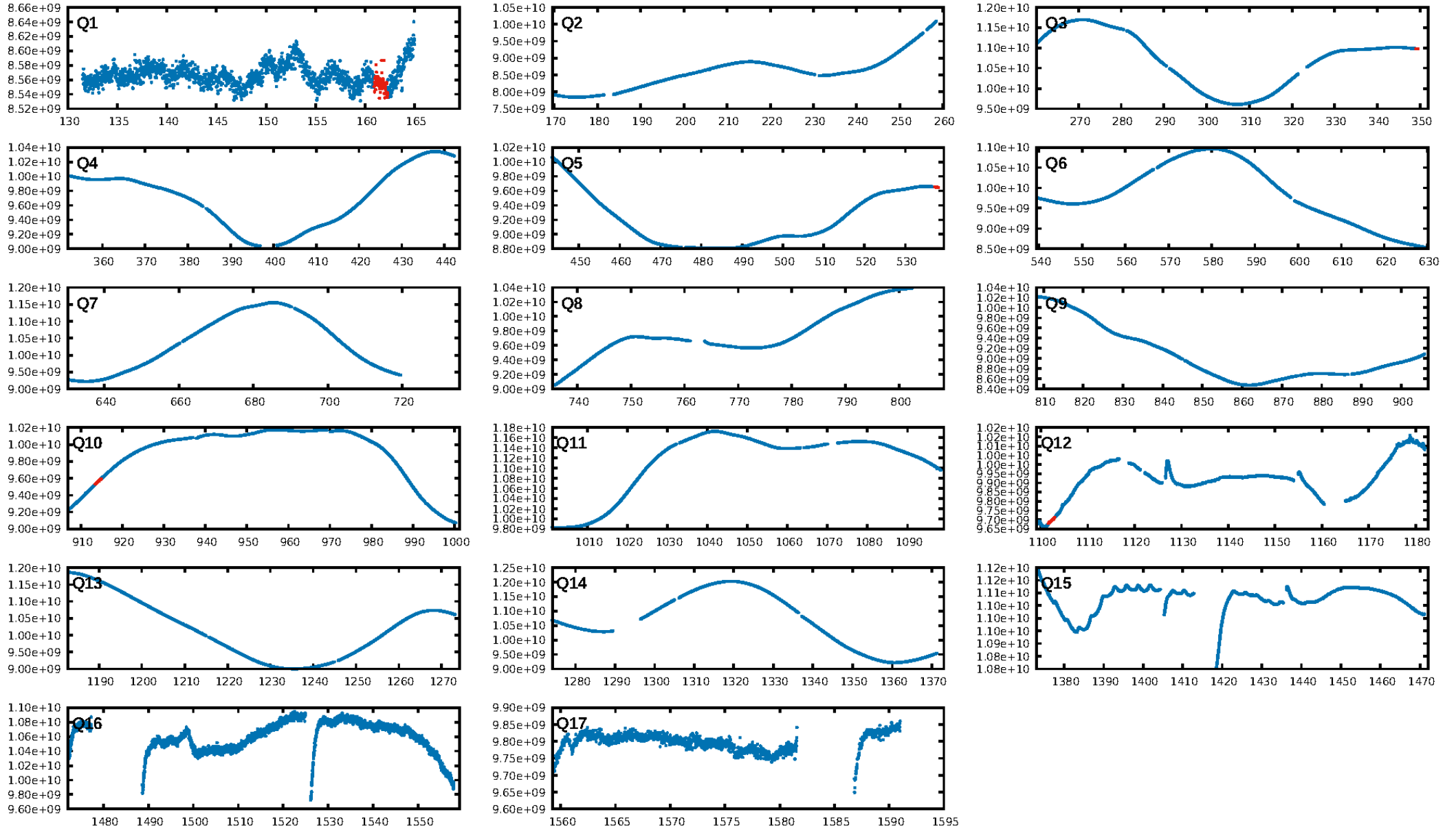
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [239.42σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.52e-04
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: N/A
Centroid-sig: 16.9%
Centroid-so: 6.588 arcsec [1.26σ]
OotOffset-rm: 21.069 arcsec [7.72σ]
KicOffset-rm: 19.409 arcsec [4.40σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

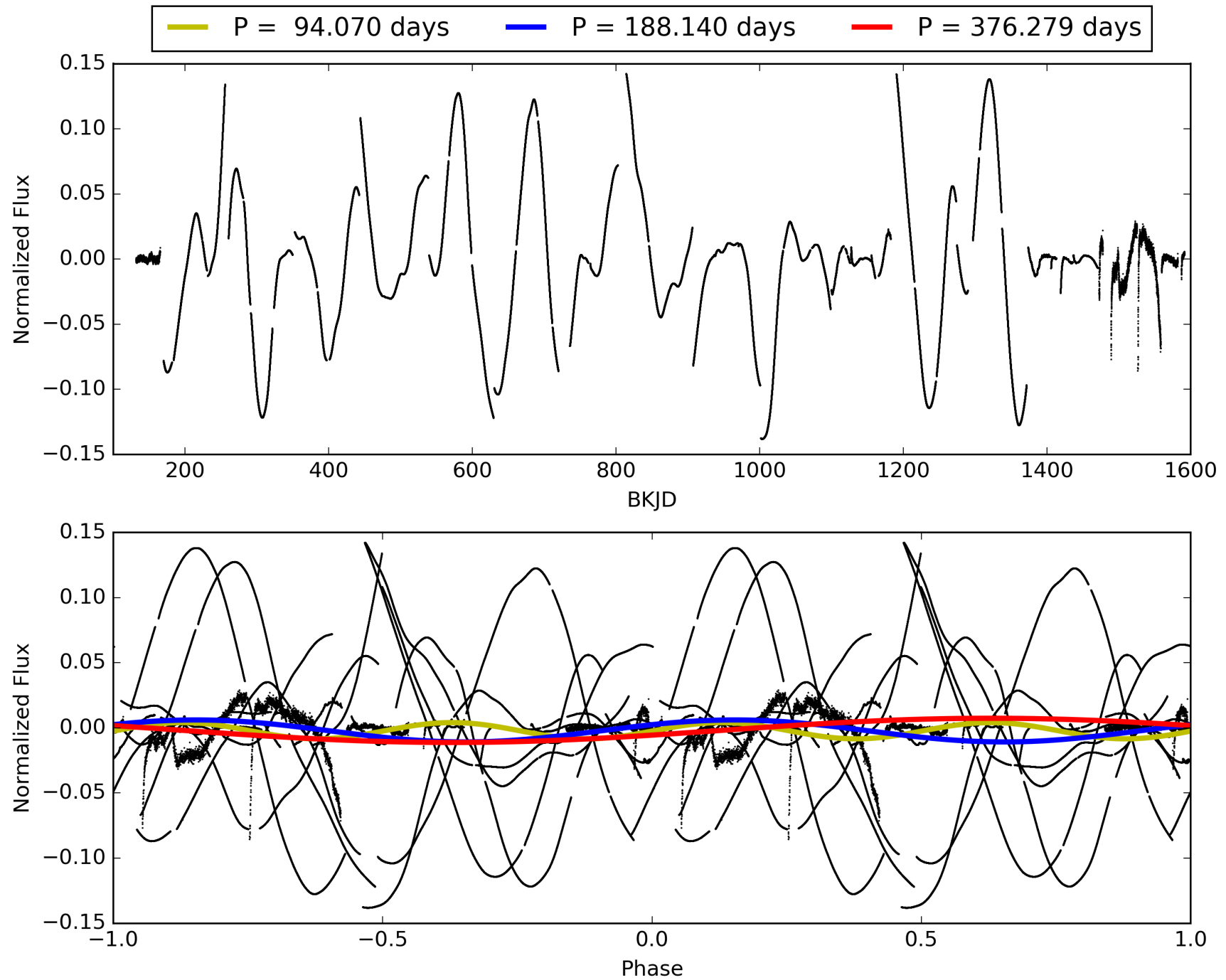
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:24:10 Z

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

TCE 007842386-02, PDC Light Curves

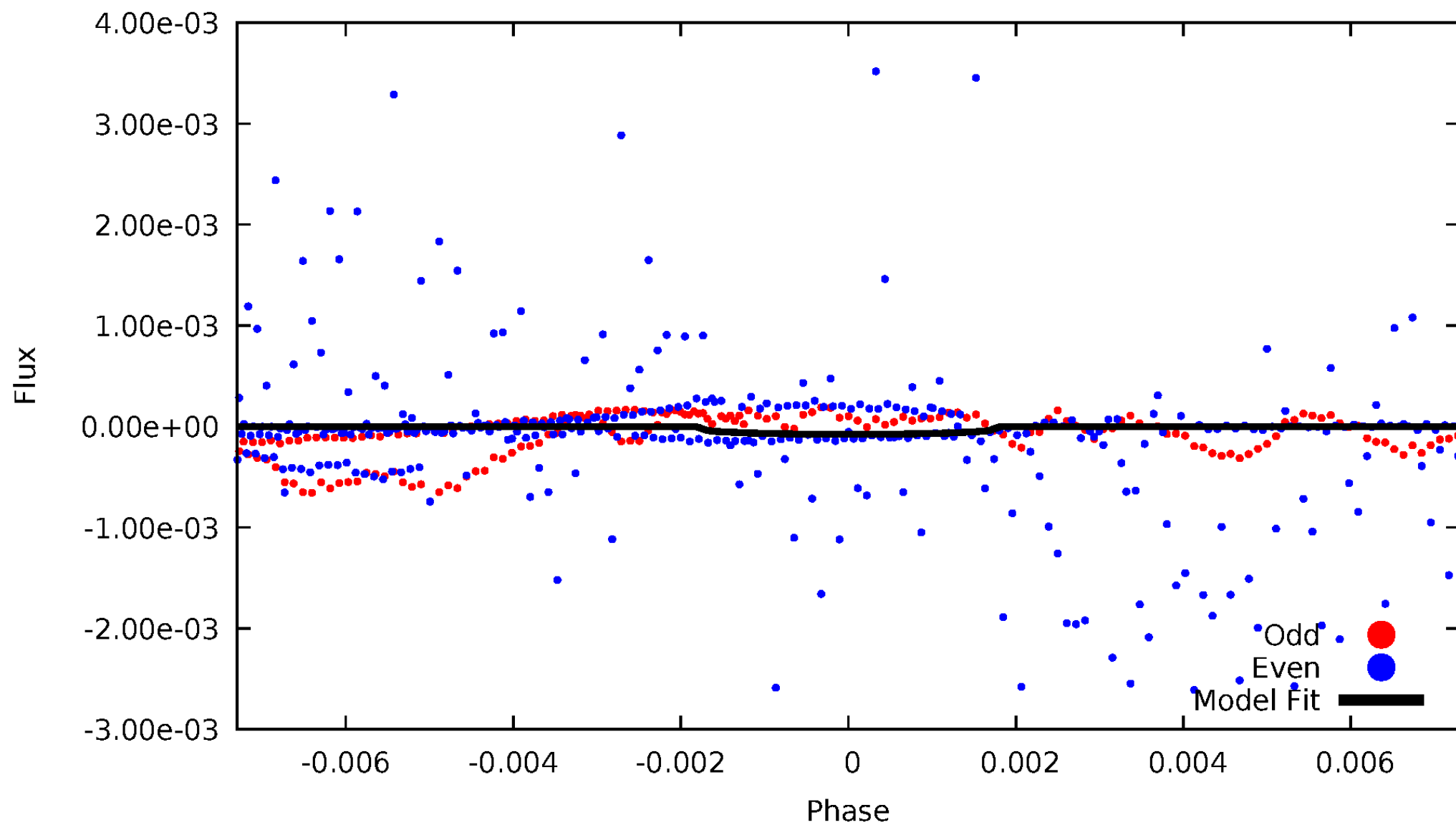


TCE 007842386-02



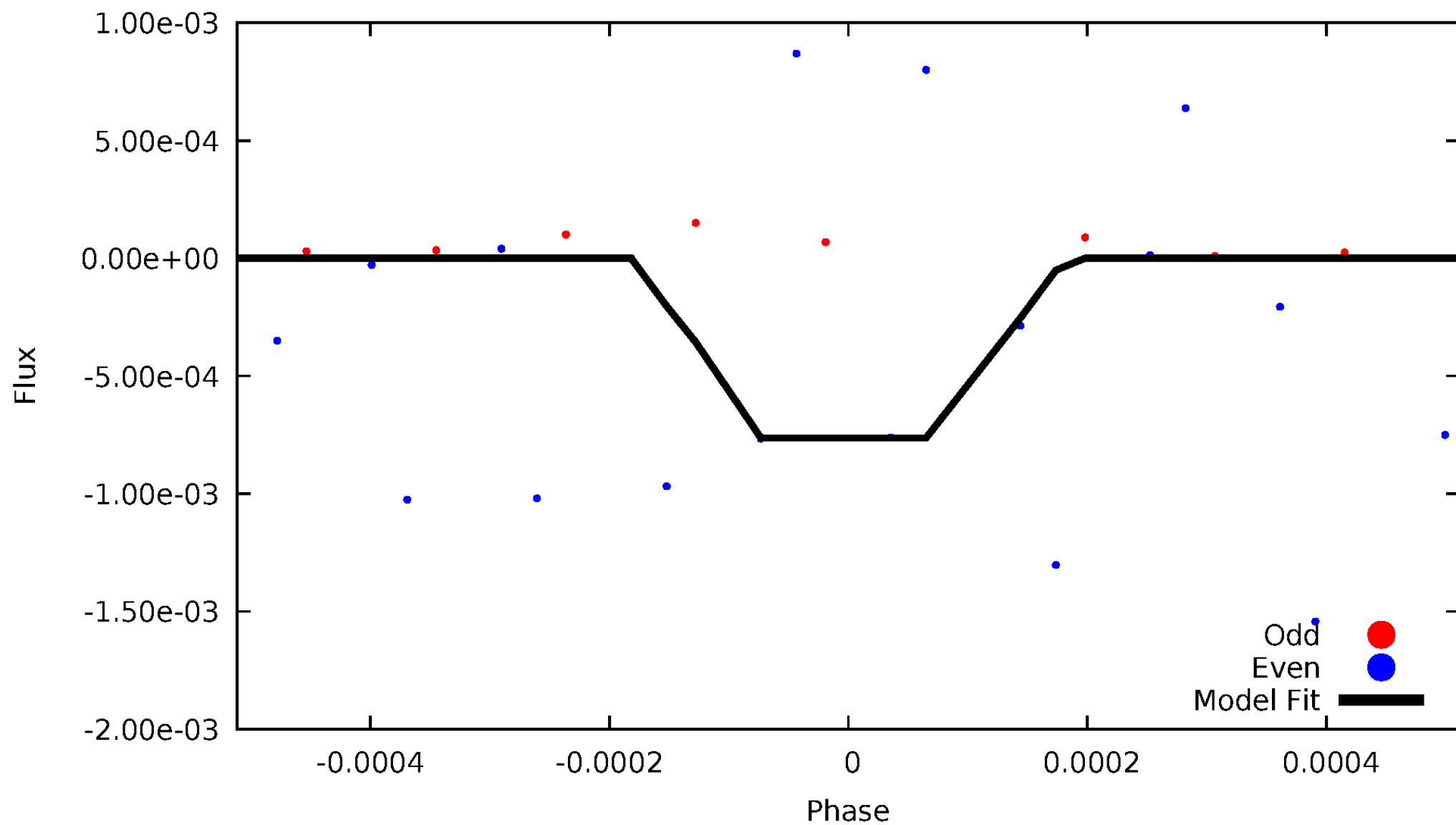
DV Odd/Even

TCE 007842386-02



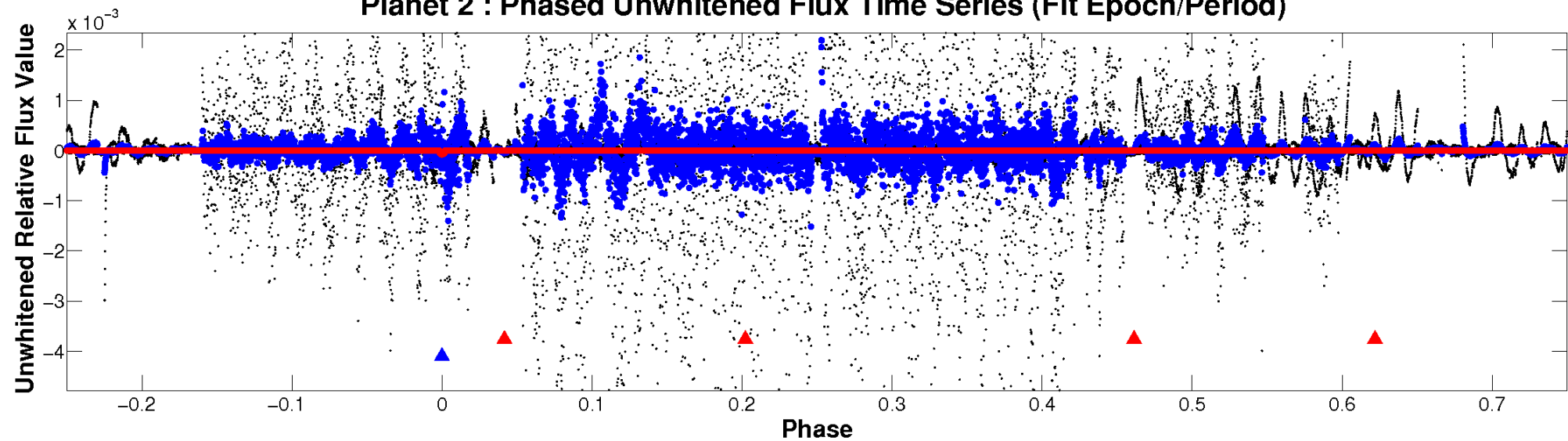
ALT Odd/Even

TCE 007842386-02

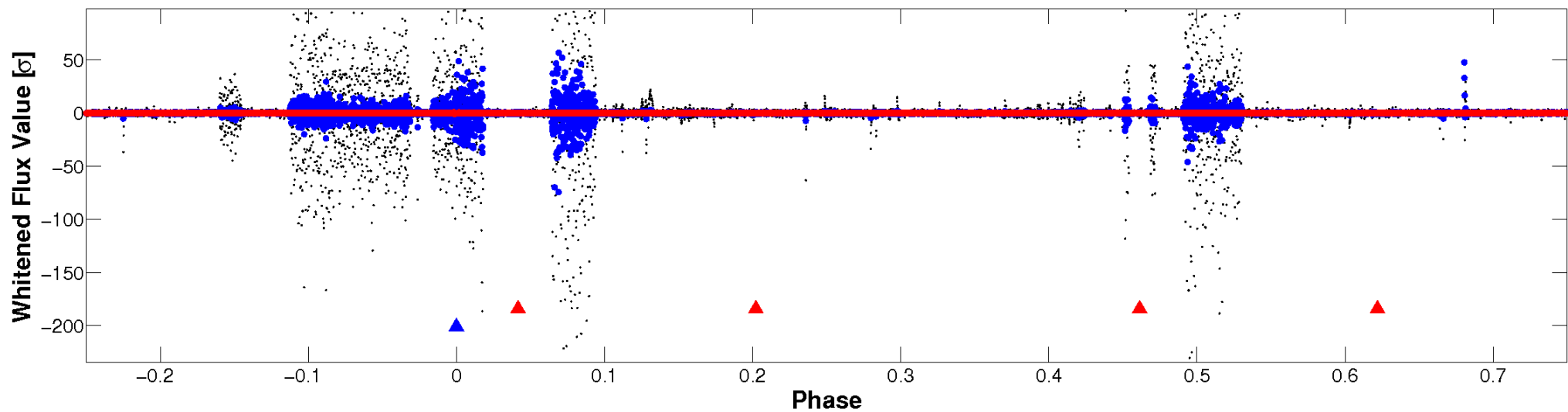


Non-Whitened Vs. Whitened Light Curve

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

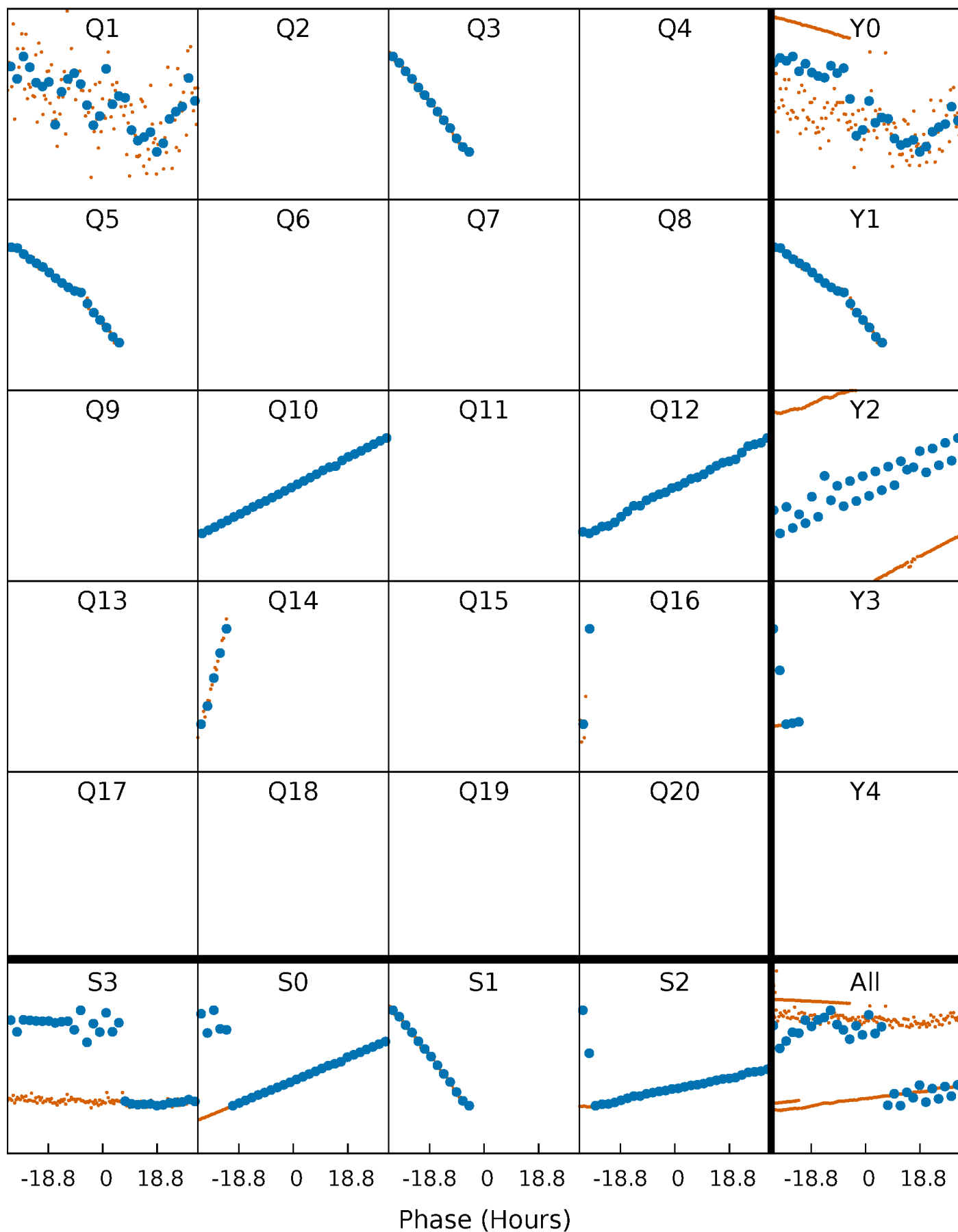


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



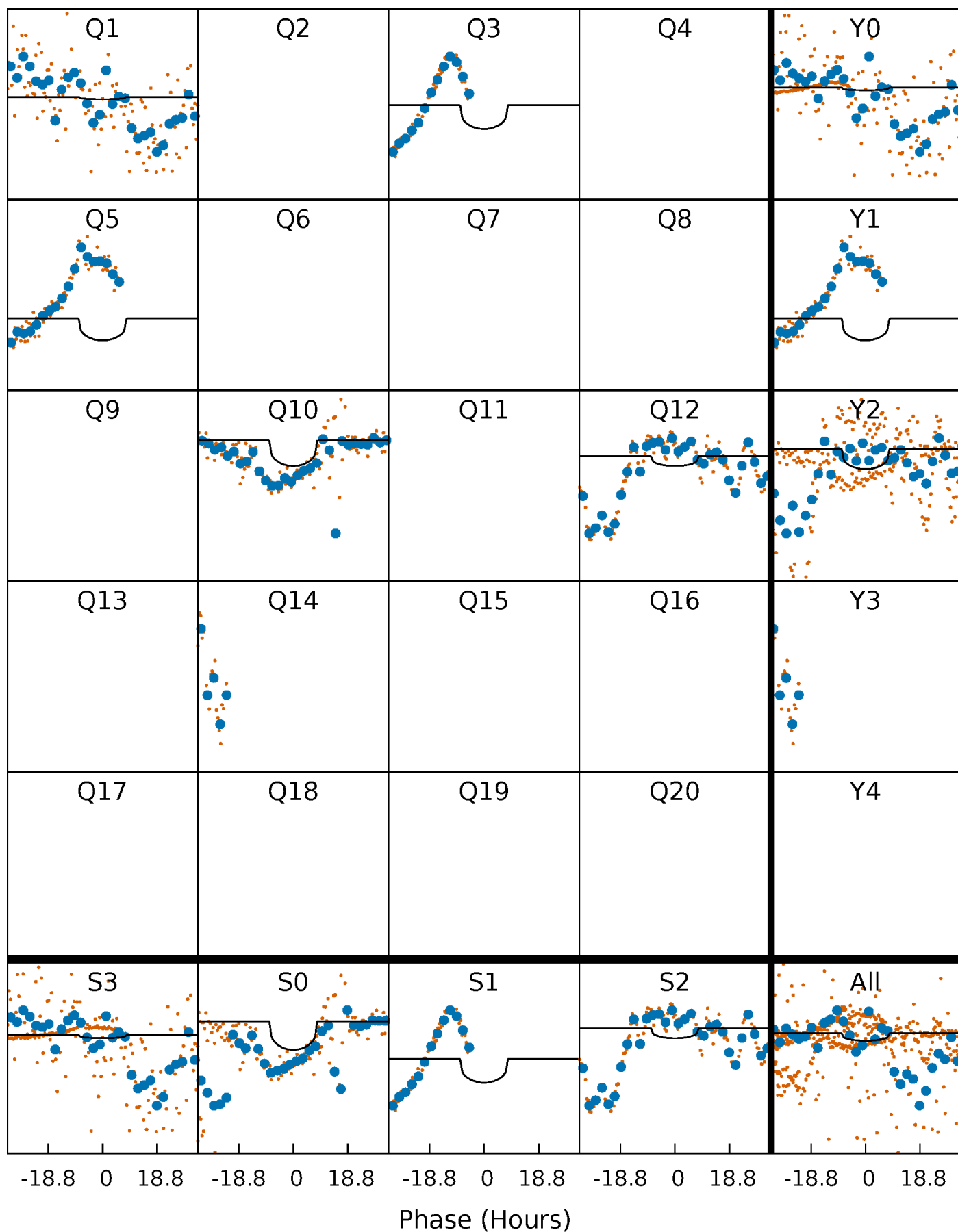
PDC Quarter-Phased Transit Curves

TCE 007842386-02 P=188.139685 Days $T_0=161.590827$ (BKJD)



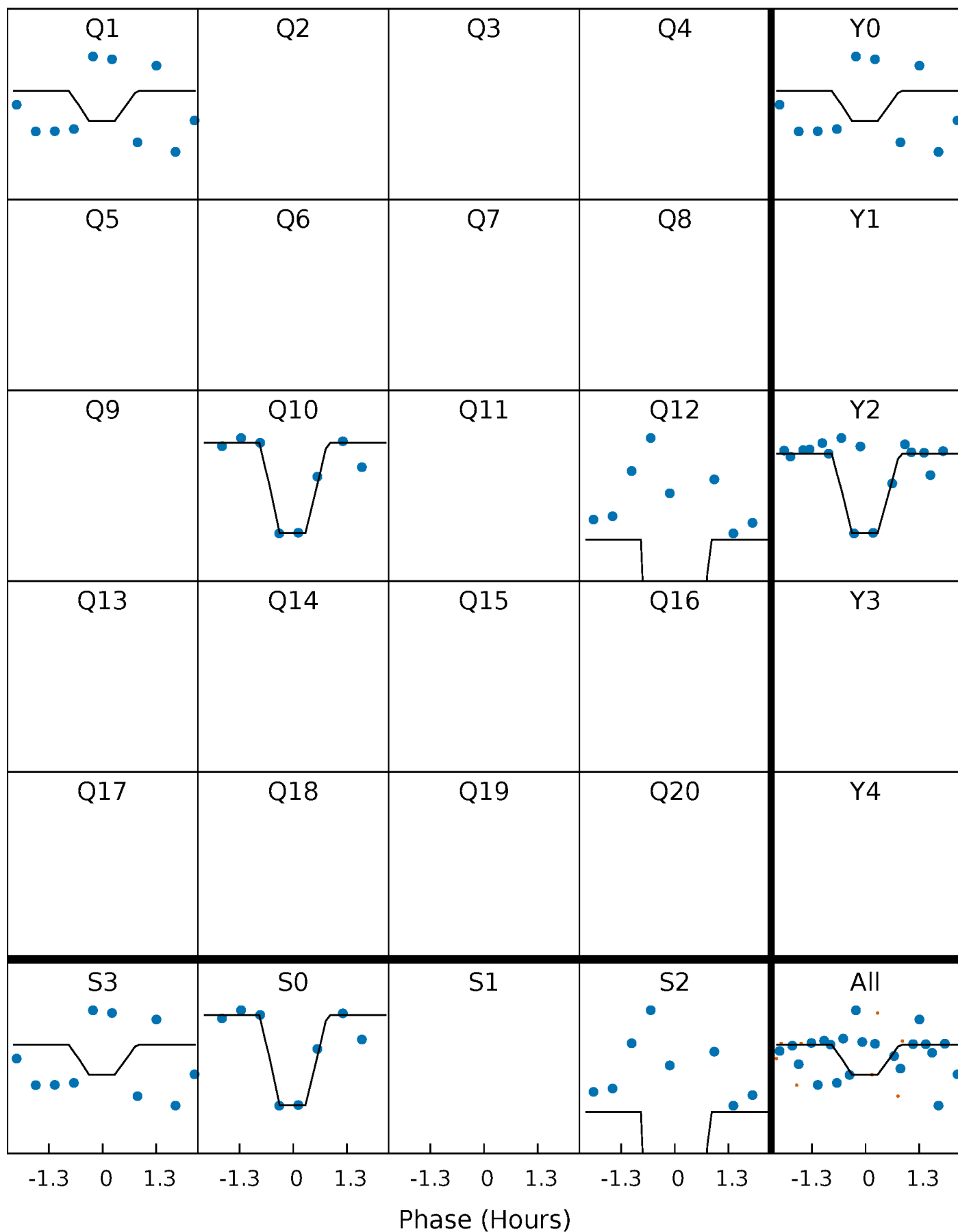
DV Quarter-Phased Transit Curves

TCE 007842386-02 $P=188.139685$ Days $T_0=161.590827$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

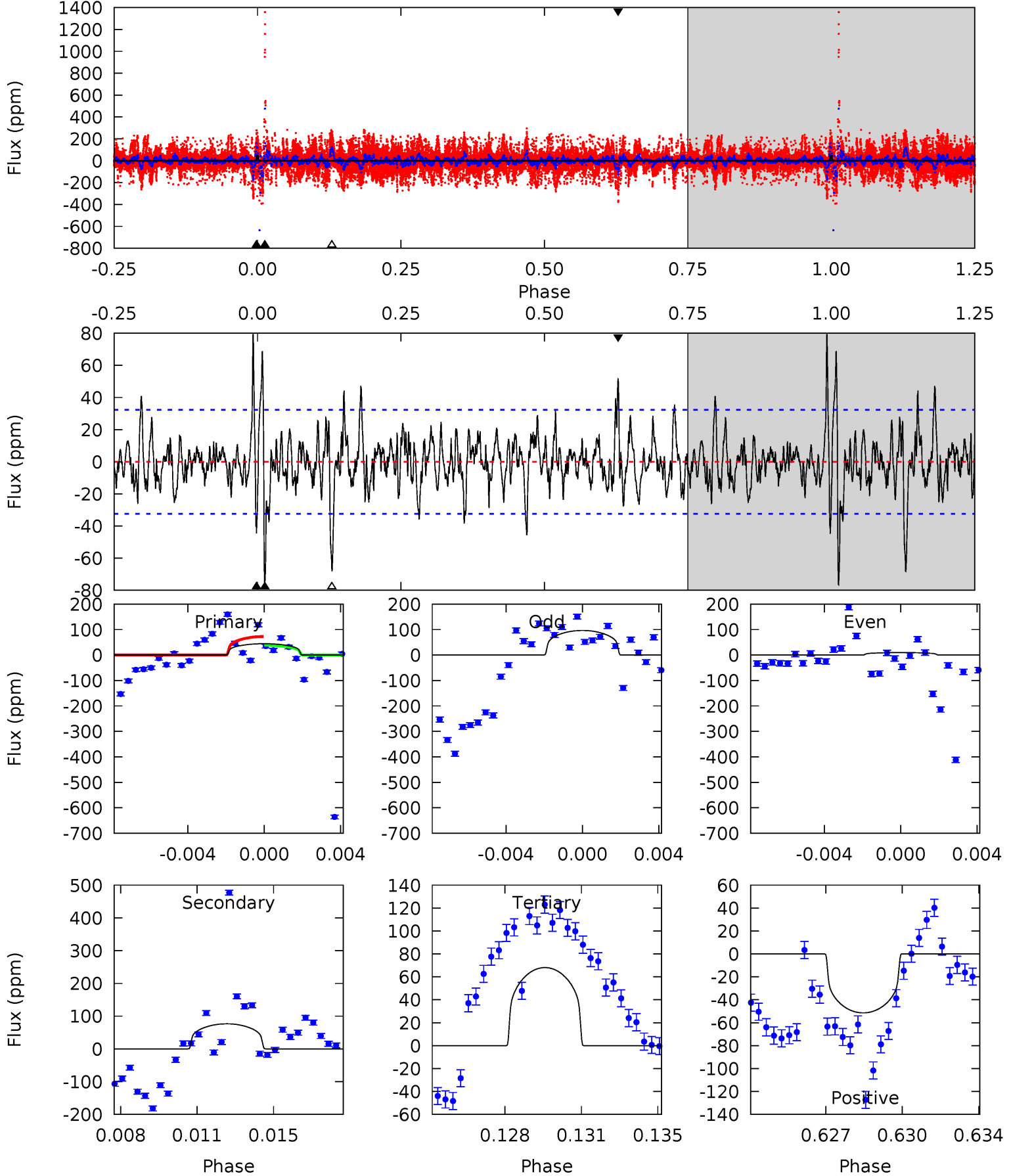
TCE 007842386-02 P=188.159176 Days $T_0=162.151334$ (BKJD)



DV Model-Shift Uniqueness Test

007842386-02, P = 188.139685 Days, E = 161.590827 Days

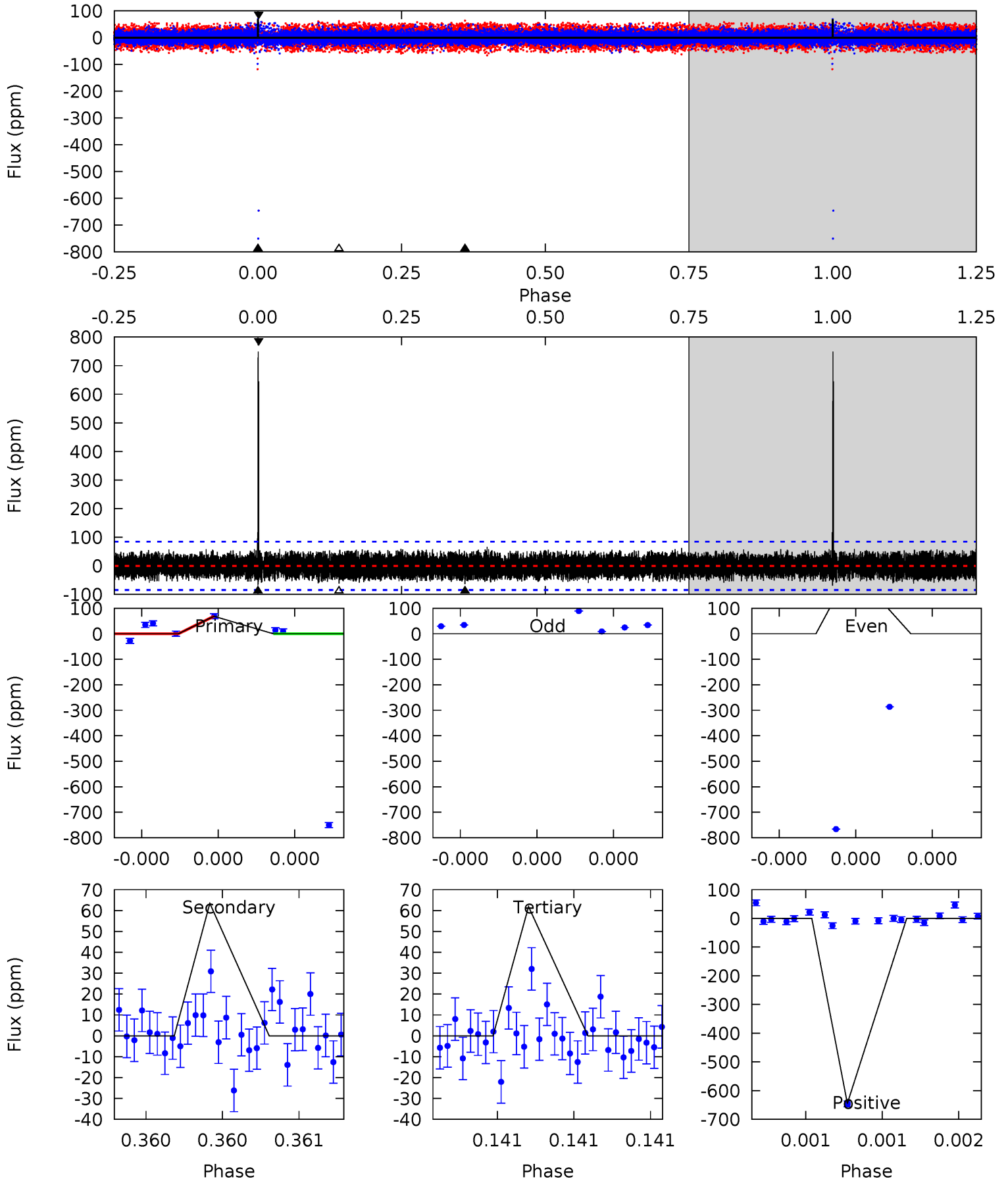
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.16	12.3	11.0	8.29	5.21	2.90	2.21	-3.80	-1.13	1.37	4.05	4.48	0.40	0.51	2.76



Alt Model-Shift Uniqueness Test

007842386-02, P = 188.159176 Days, E = 162.151334 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.58	4.24	4.14	43.1	5.63	3.58	1.00	0.44	-38.5	0.11	-38.9	0	-0.05	0.92	0



Stellar Parameters For KIC 007842386

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3298^{+117}_{-88}	$0.129^{+0.204}_{-0.048}$	$-0.100^{+0.250}_{-0.150}$	$151.742^{+9.192}_{-29.414}$	$1.130^{+0.206}_{-0.137}$	$0.000^{+0.000}_{-0.000}$
	+4%/-3%	+158%/-37%	+250%/-150%	+6%/-19%	+18%/-12%	+95%/-11%
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 007842386-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-77 ± 6	$158.08^{+85.38}_{-73.33}$	3005^{+136}_{-139}	2973^{+868}_{-813}	$0.781^{+2.008}_{-0.448}$
Alt.	-63 ± 15	$437.63^{+84.53}_{-87.64}$	3010^{+120}_{-160}	-2670^{+142}_{-108}	$0.083^{+0.052}_{-0.030}$

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 $A_{obs} \gg 1.0$

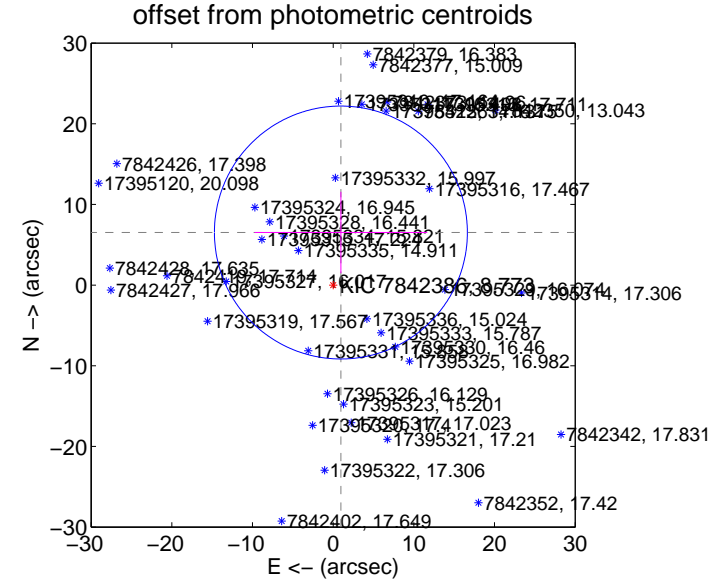
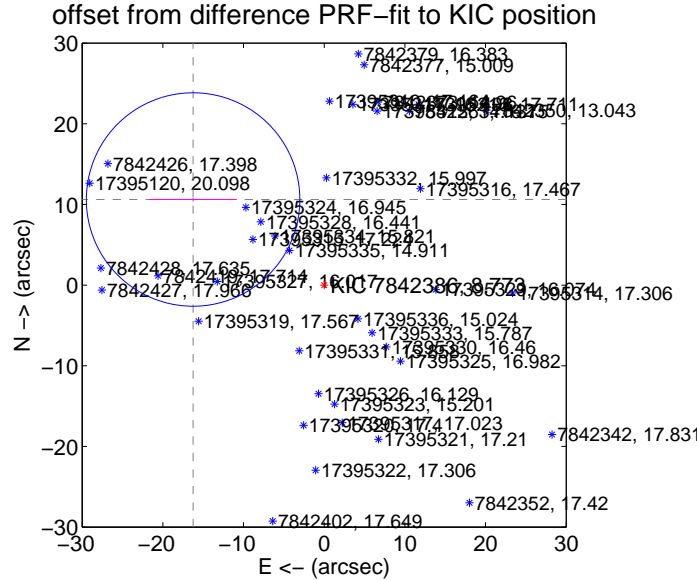
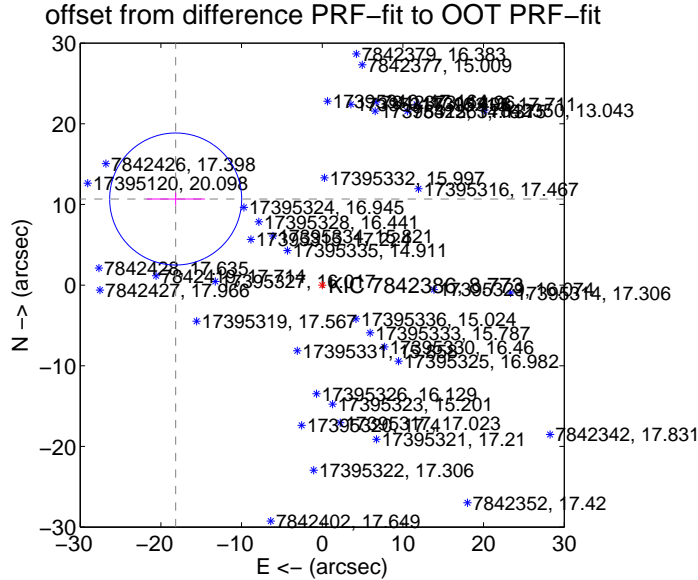
DV Centroid Data

Supplemental centroid analysis for 007842386-02. **Kepler magnitude: 8.77.** Transit SNR 8.62

There are 1 quarters with good PRF difference image offsets

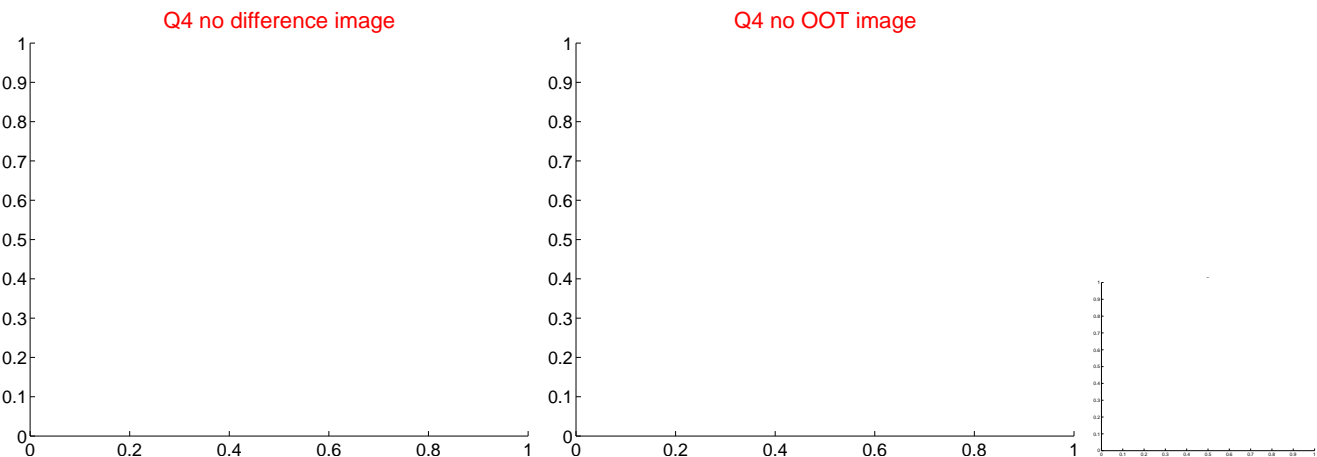
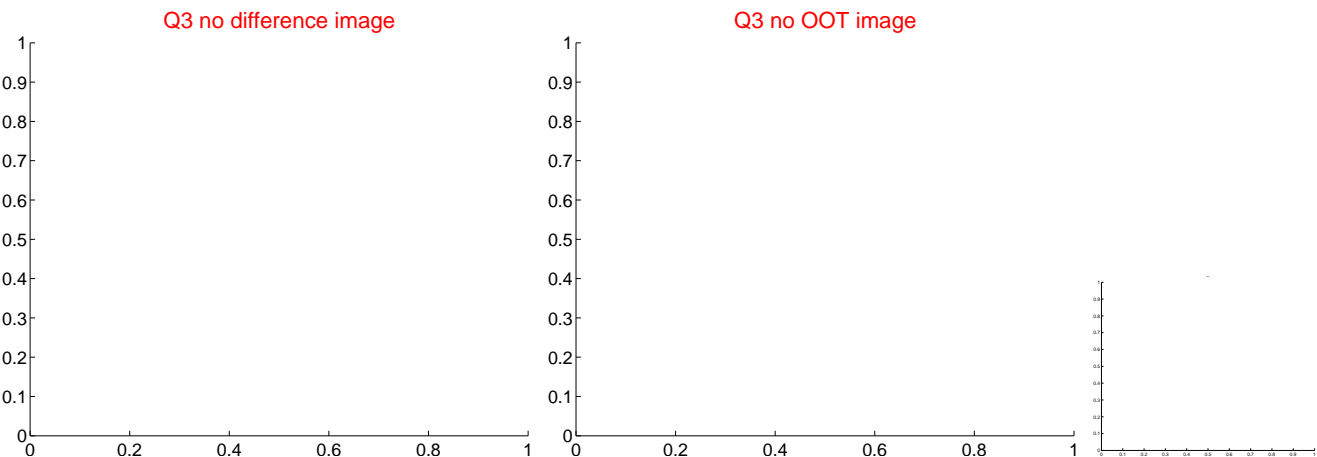
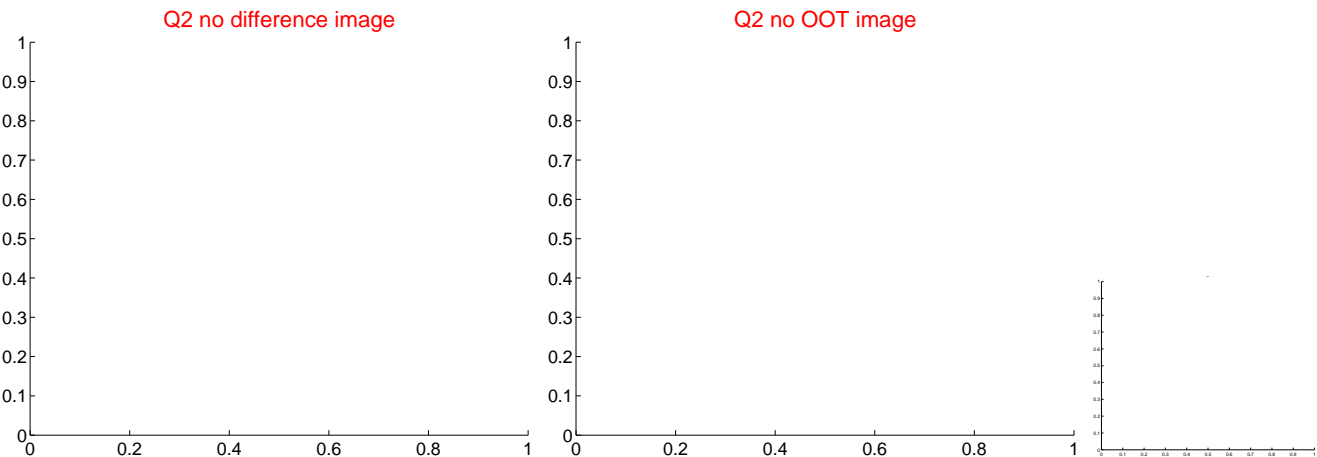
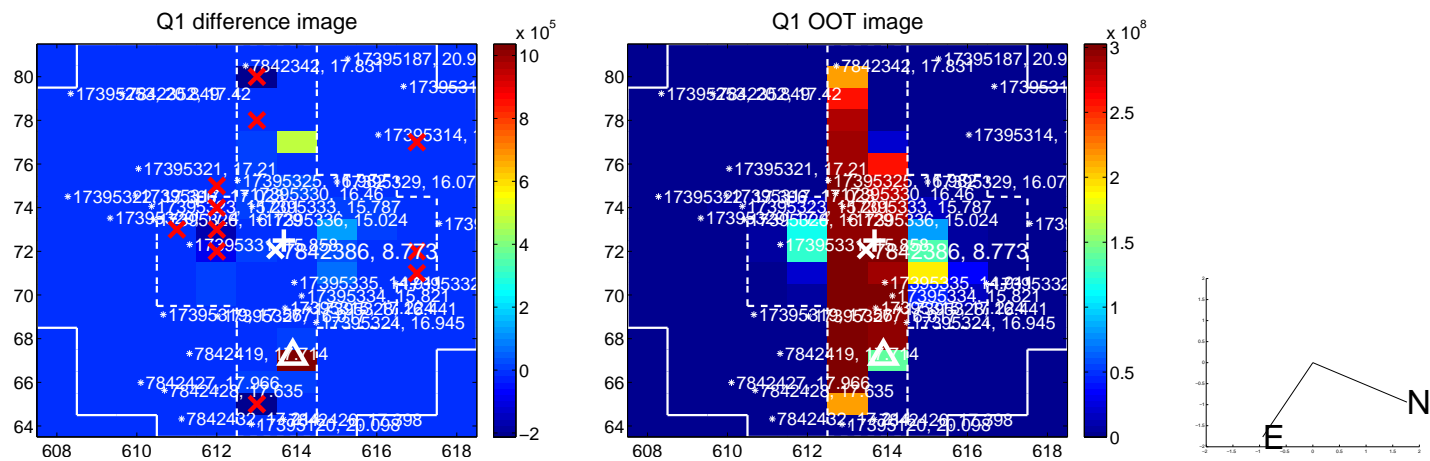
The OOT PRF centroid is offset from the target star catalog position by about 5.68 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	21.069 ± 2.728	7.72	18.167 ± 3.622	10.672 ± 0.783
PRF-fit source offset from KIC position	19.409 ± 4.410	4.40	16.252 ± 5.415	10.611 ± 0.236
photometric centroid source offset	6.59 ± 5.23	1.26	-0.96 ± 10.71	6.52 ± 5.04



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.

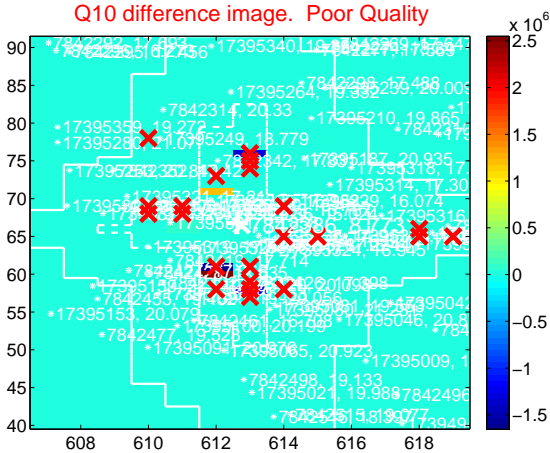
Q9 no difference image



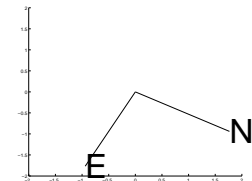
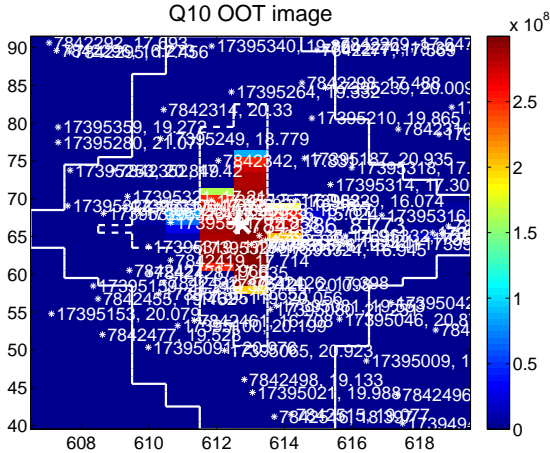
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



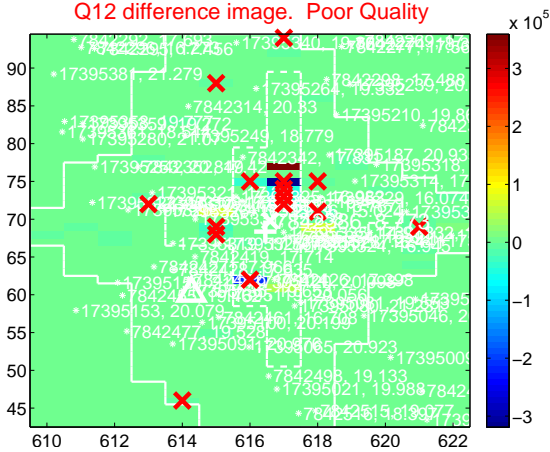
Q11 no difference image



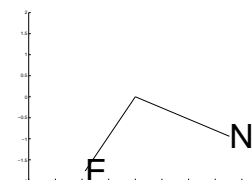
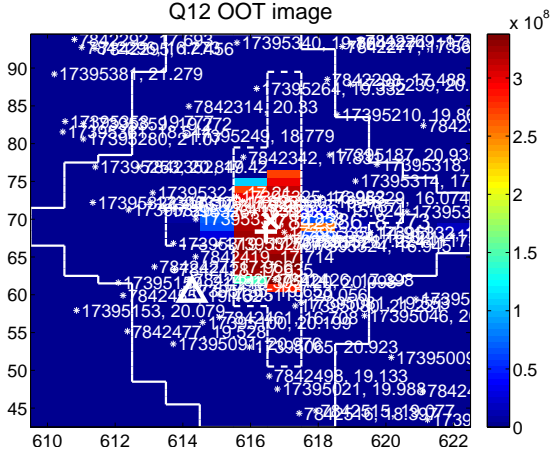
Q11 no OOT image



Q12 difference image. Poor Quality



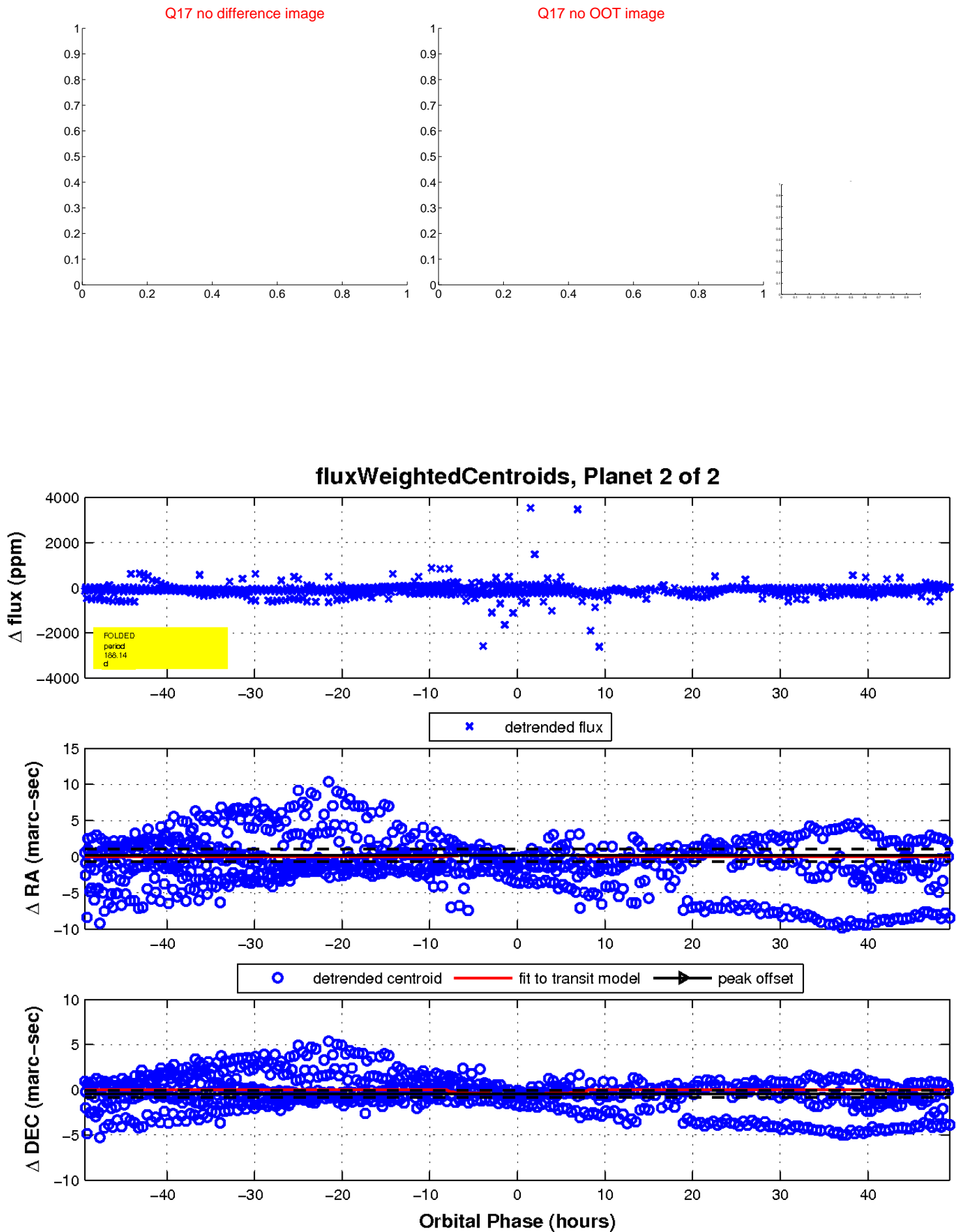
Q12 OOT image



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

