

KIC 006941084

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})
006941084-01	OBS	2348.01	85.735400	170.981543	712.1	7.729	16.8	20.2	1.08	6096	3.10	9.56
006941084-02	OBS	No	419.699884	167.119146	765.8	23.990	10.6	11.3	1.08	6096	3.04	1.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006941084-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
006941084-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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 006941084-01

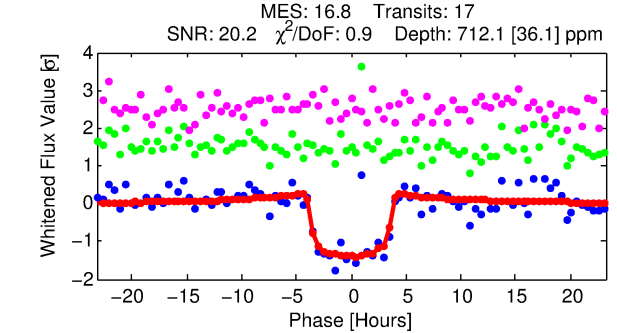
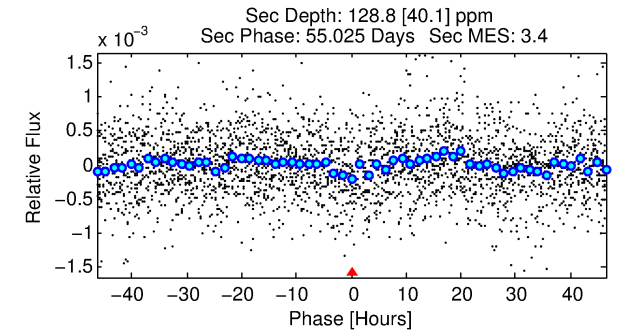
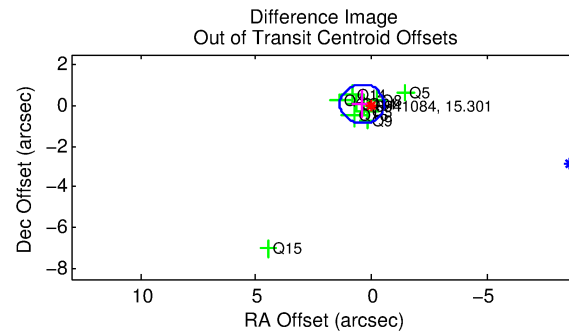
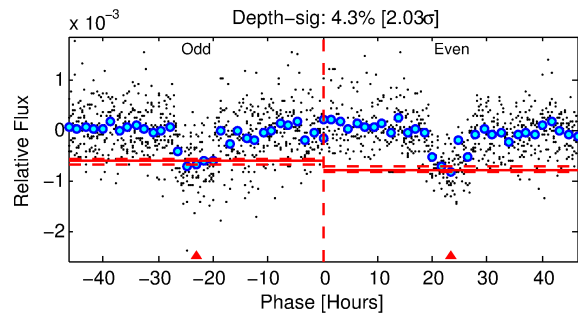
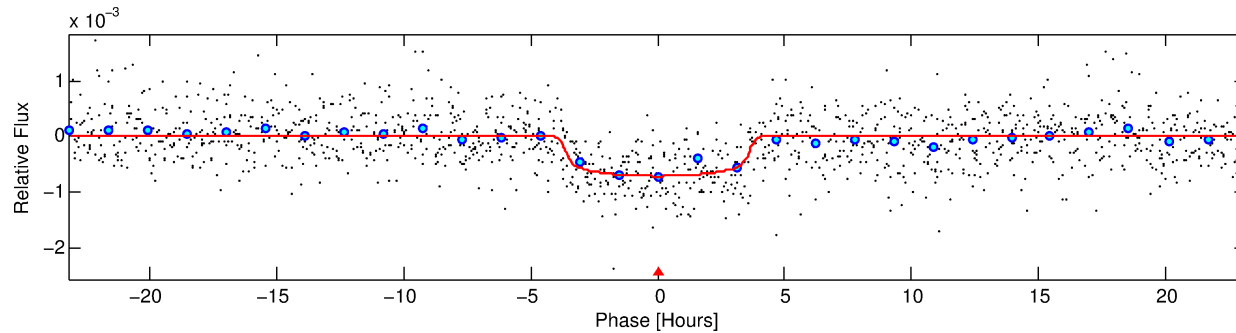
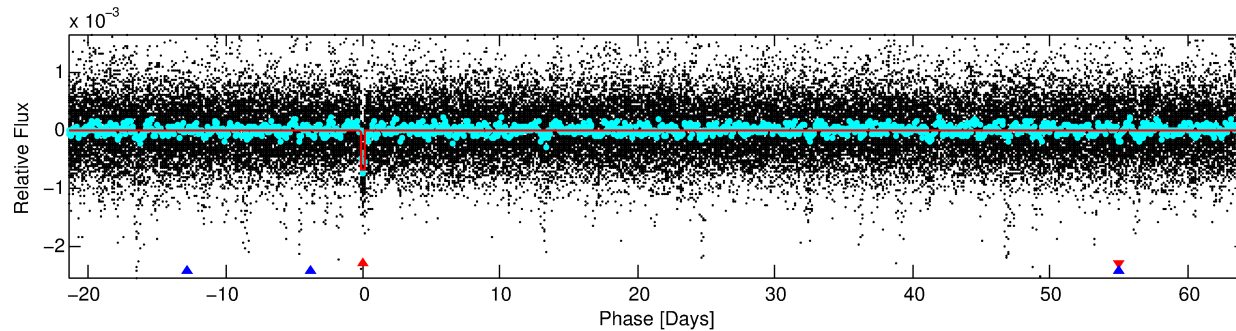
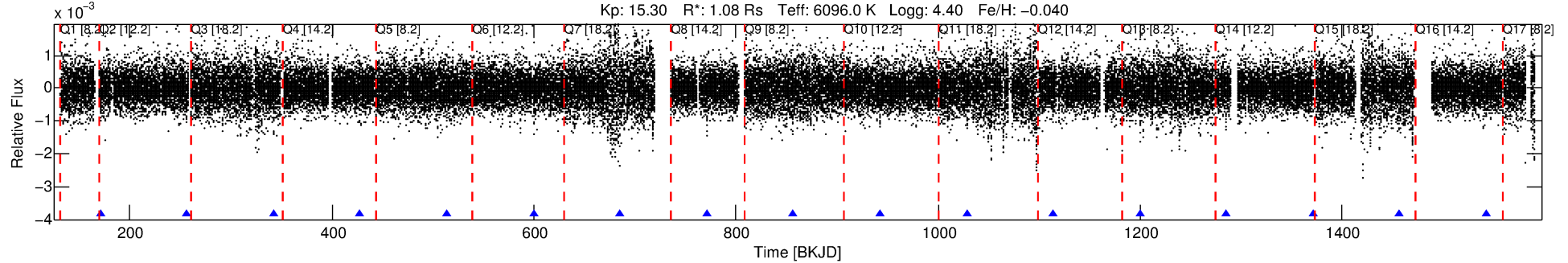
No Significant Match Found

DV One-Page Summary

KIC: 6941084 Candidate: 1 of 2 Period: 85.735 d

KOI: K02348.01 Corr: 0.982

Kp: 15.30 R*: 1.08 Rs Teff: 6096.0 K Logg: 4.40 Fe/H: -0.040



DV Fit Results:

Period = 85.73540 [0.00068] d
Epoch = 170.9815 [0.0061] BKJD
Rp/R* = 0.0264 [0.0057]
a/R* = 60.92 [63.80]
b = 0.73 [0.67]
Seff = 9.56 [3.97]
Teq = 448 [47] K
Rp = 3.10 [1.23] Re
a = 0.3875 [0.1062] AU
Ag = 1105.87 [732.97] [1.51σ]
Teffp = 3997 [553] K [6.40σ]

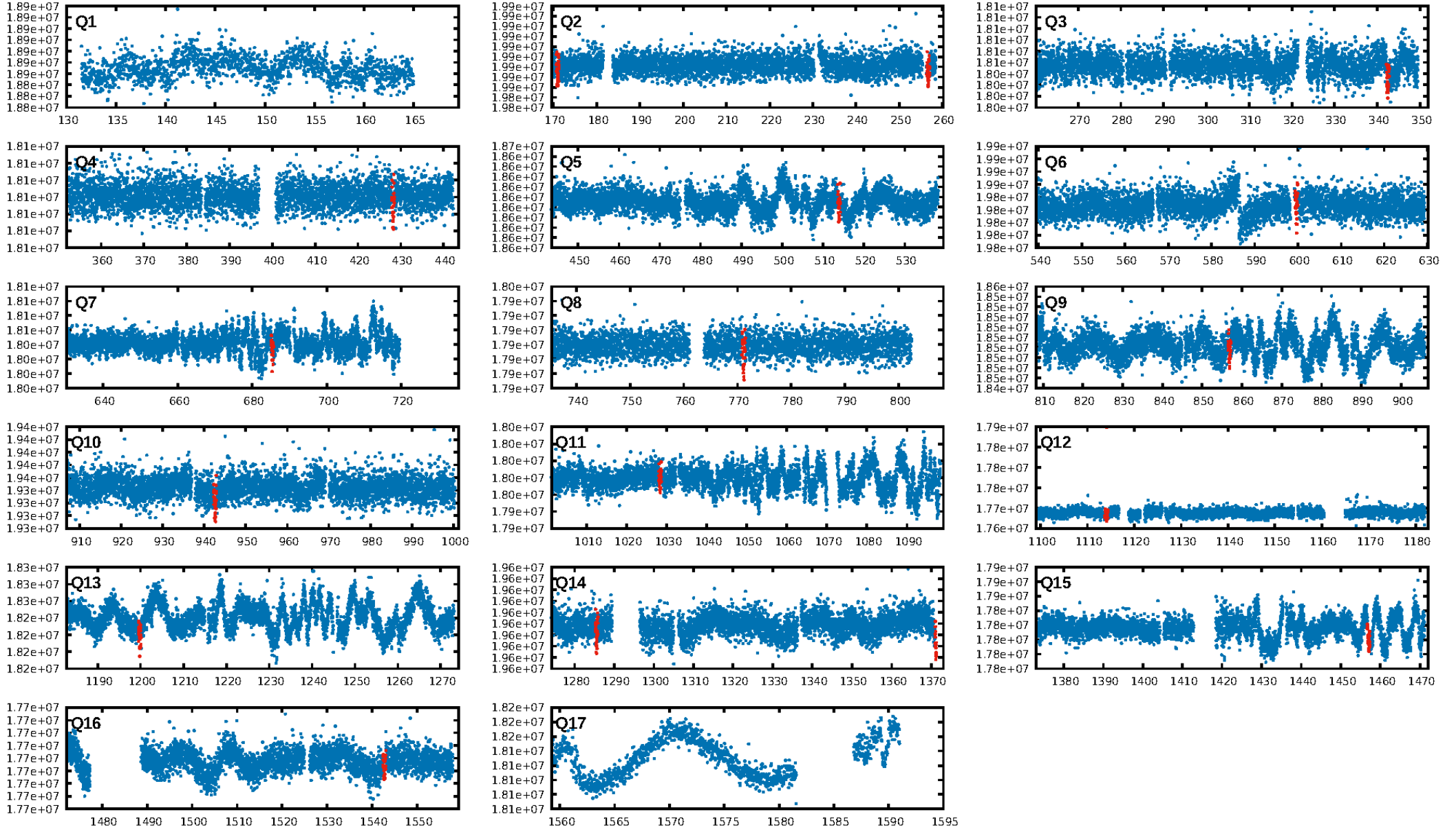
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [318.01σ]
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.23e-53
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: 3.7
Centroid-sig: 69.5%
Centroid-so: 0.365 arcsec [0.51σ]
OotOffset-rm: 0.434 arcsec [1.37σ]
KicOffset-rm: 0.475 arcsec [0.99σ]
OotOffset-st: 2/3/3/2 [10]
KicOffset-st: 2/3/3/2 [10]
DiffImageQuality-fgm: 0.80 [8/10]
DiffImageOverlap-fno: 1.00 [12/12]

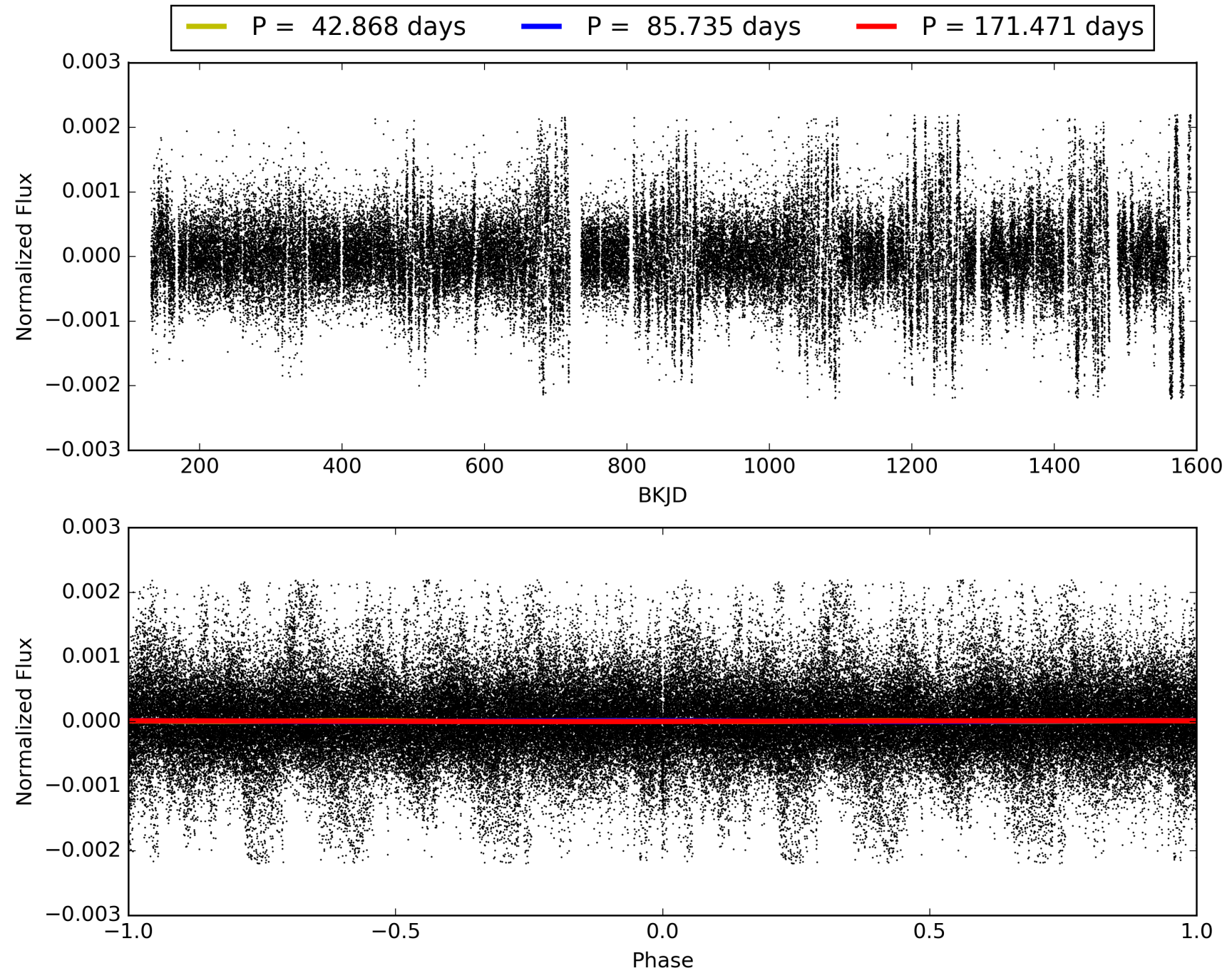
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:05:48 Z

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

TCE 006941084-01, PDC Light Curves

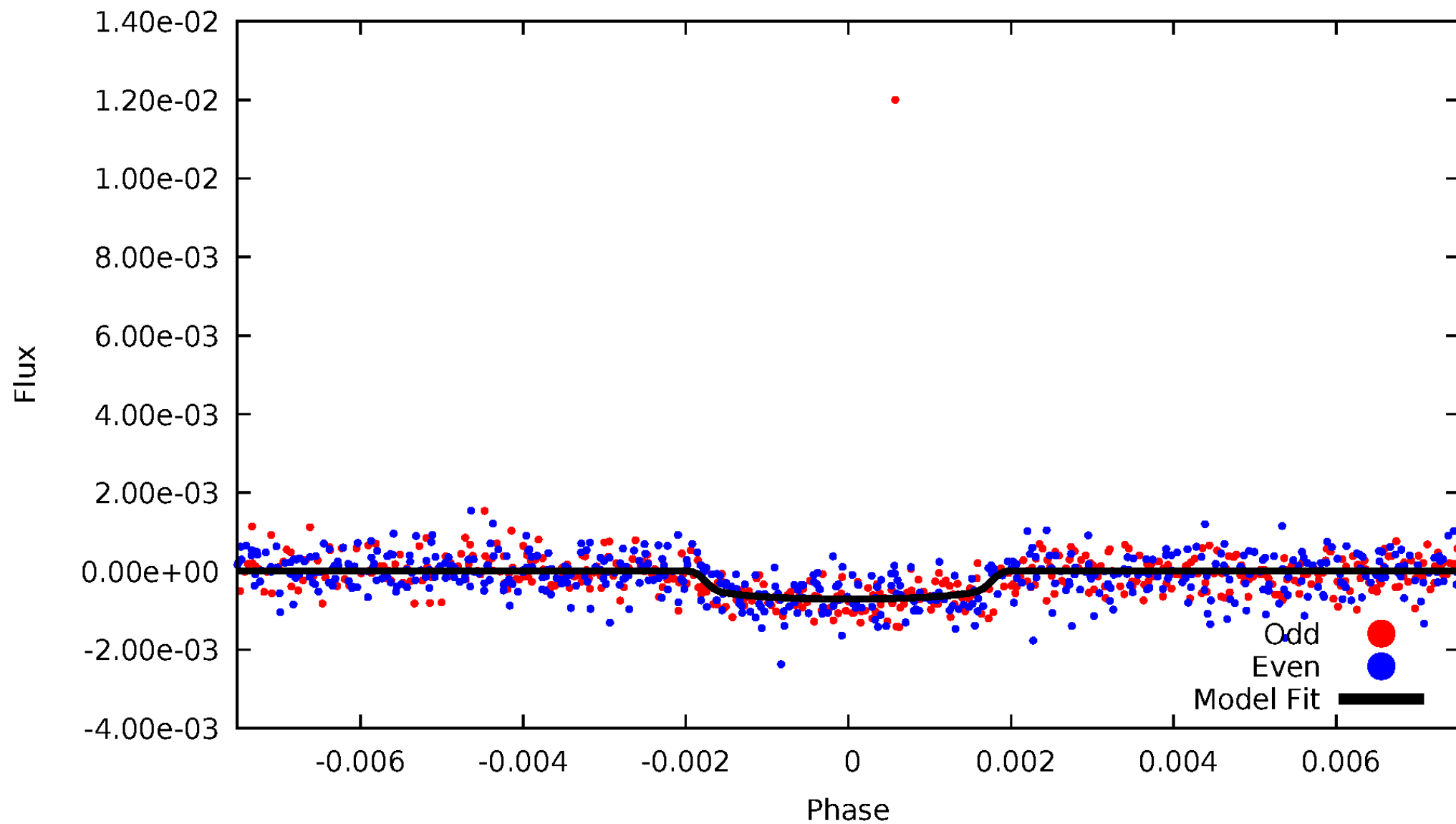


TCE 006941084-01



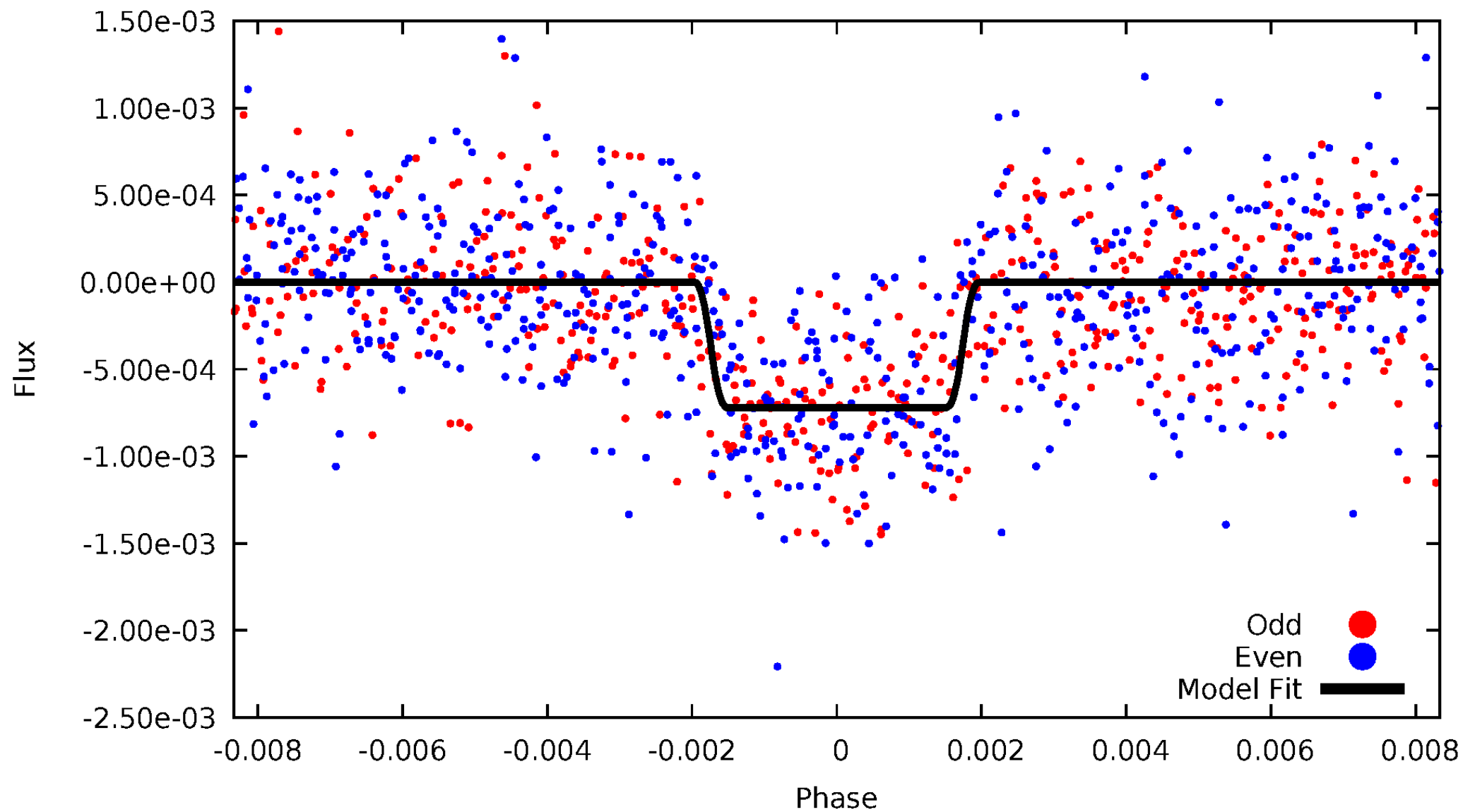
DV Odd/Even

TCE 006941084-01



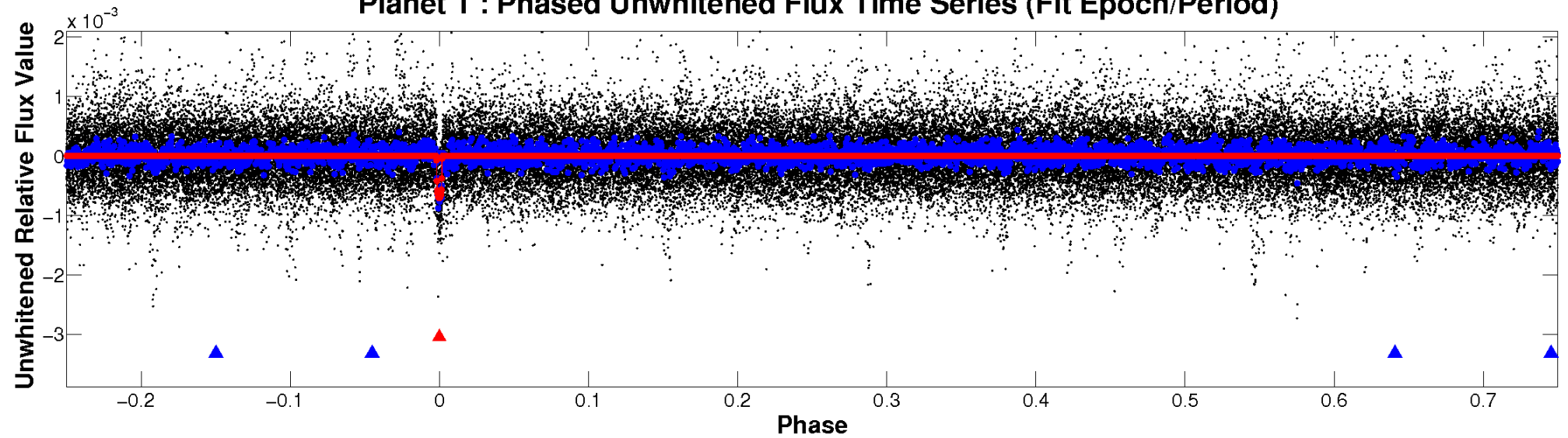
ALT Odd/Even

TCE 006941084-01

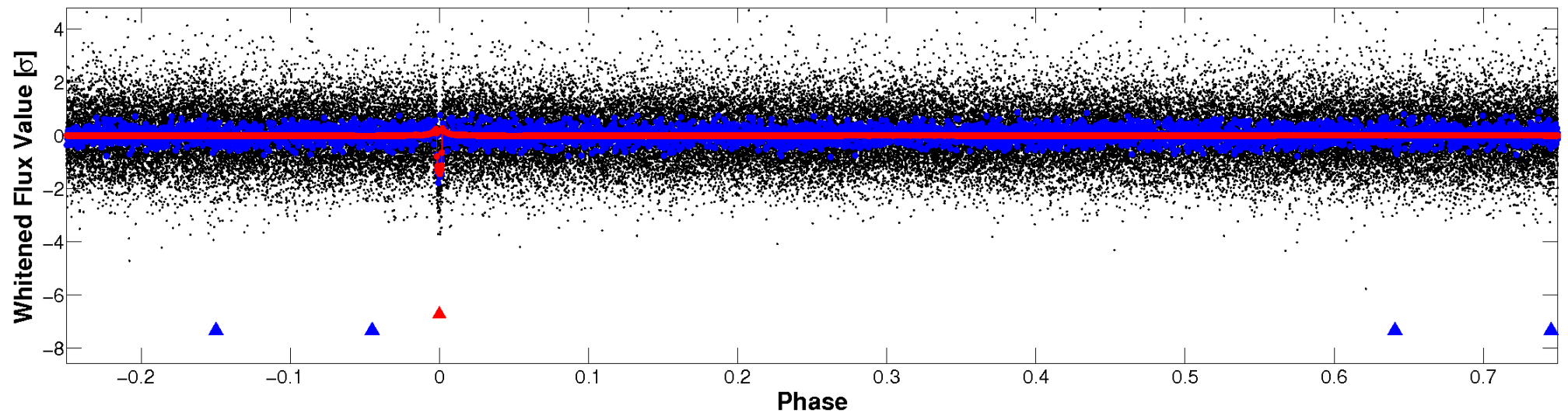


Non-Whitened Vs. Whitened Light Curve

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

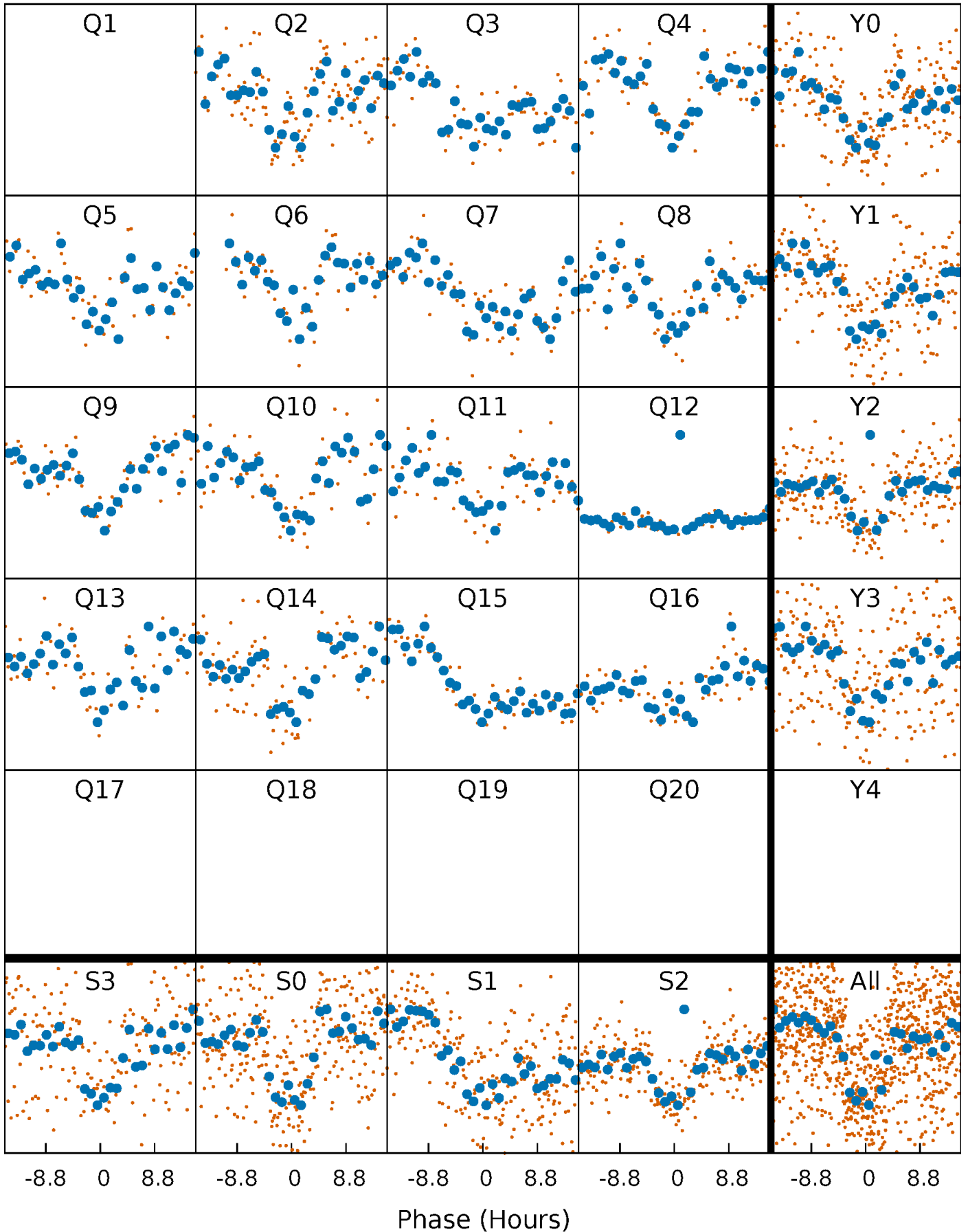


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



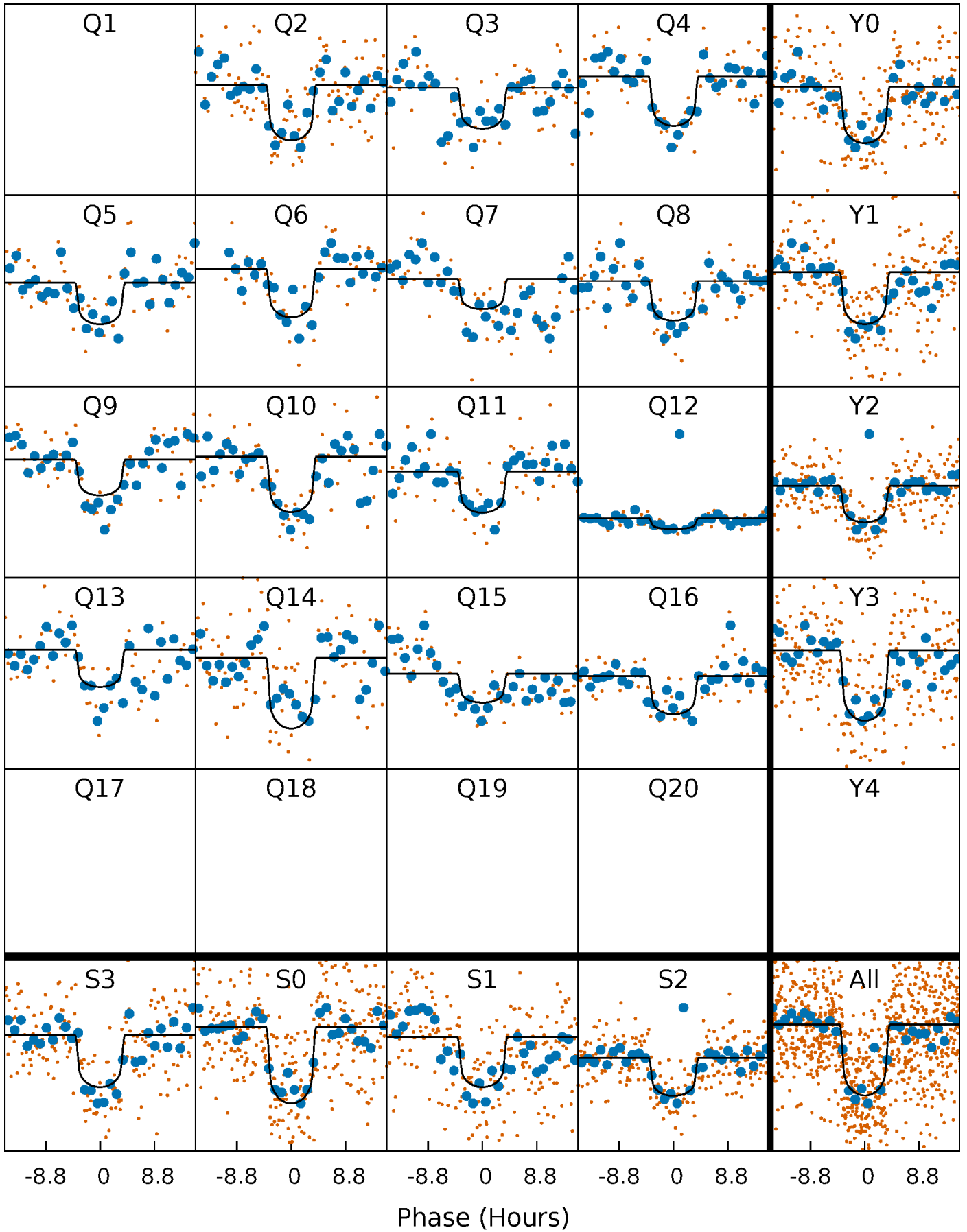
PDC Quarter-Phased Transit Curves

TCE 006941084-01 P= 85.735400 Days $T_0=170.981543$ (BKJD)



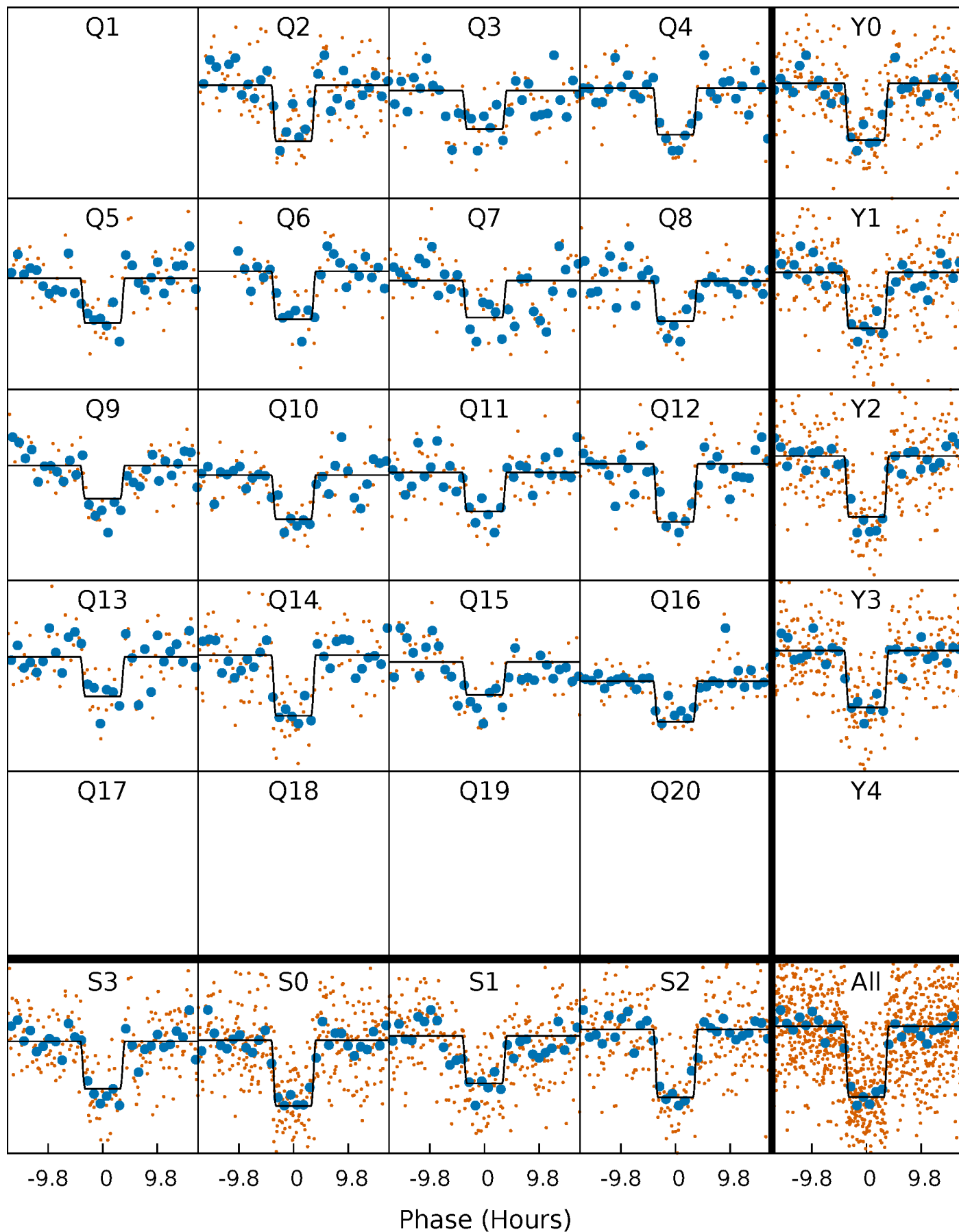
DV Quarter-Phased Transit Curves

TCE 006941084-01 P= 85.735400 Days $T_0=170.981543$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

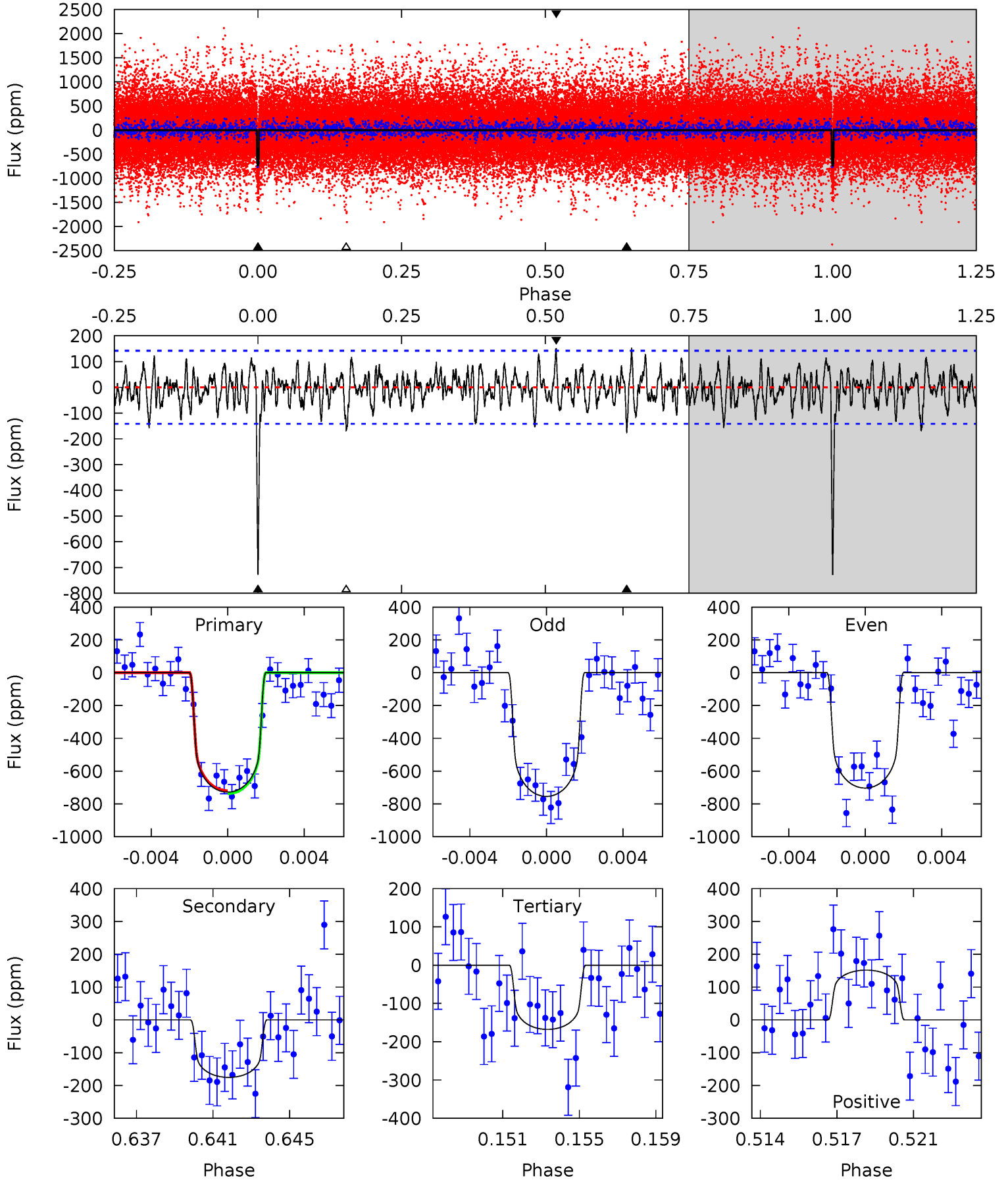
TCE 006941084-01 P= 85.736568 Days $T_0=170.974012$ (BKJD)



DV Model-Shift Uniqueness Test

006941084-01, P = 85.735400 Days, E = 85.246143 Days

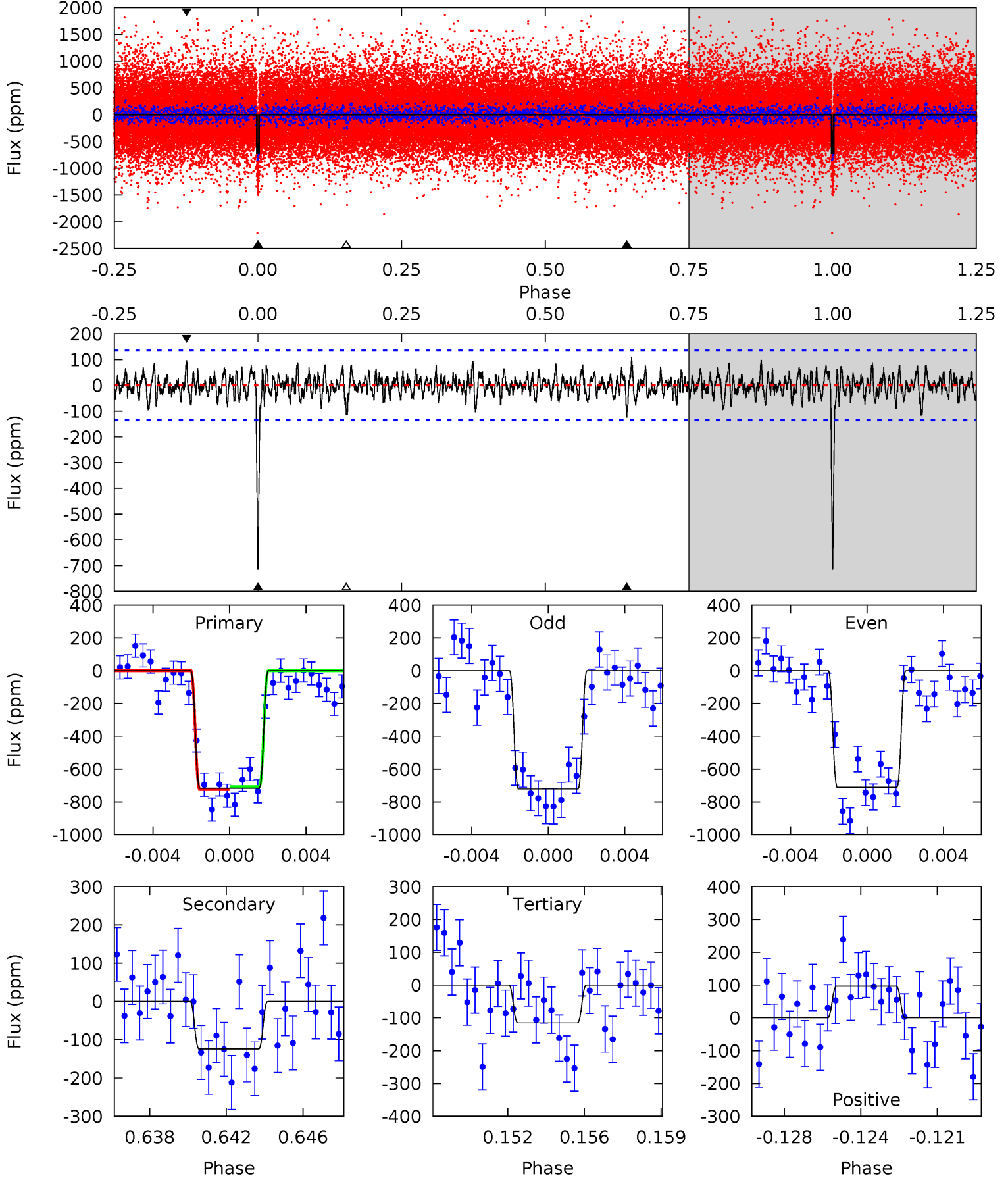
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.7	6.42	6.15	5.55	5.20	2.88	1.85	20.5	21.1	0.27	0.87	0.94	0.94	0.17	0.33



Alt Model-Shift Uniqueness Test

006941084-01, P = 85.736568 Days, E = 85.237444 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.6	4.78	4.45	3.72	5.20	2.89	1.28	23.1	23.9	0.34	1.07	0.19	1.00	0.13	0.35



Stellar Parameters For KIC 006941084

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6096^{+193}_{-214}	$4.397^{+0.090}_{-0.210}$	$-0.040^{+0.250}_{-0.300}$	$1.077^{+0.358}_{-0.143}$	$1.054^{+0.166}_{-0.135}$	$1.188^{+0.460}_{-0.631}$
	+3%/-4%	+2%/-5%	+625%/-750%	+33%/-13%	+16%/-13%	+39%/-53%
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 006941084-01 / KOI 2348.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-175 ± 27	$3.21^{+0.96}_{-0.77}$	636^{+54}_{-37}	4502^{+471}_{-367}	1373^{+1026}_{-570}
Alt.	-124 ± 26	$3.28^{+0.90}_{-0.77}$	634^{+51}_{-36}	4159^{+469}_{-313}	927^{+735}_{-365}

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 $A_{obs} \gg 1.0$

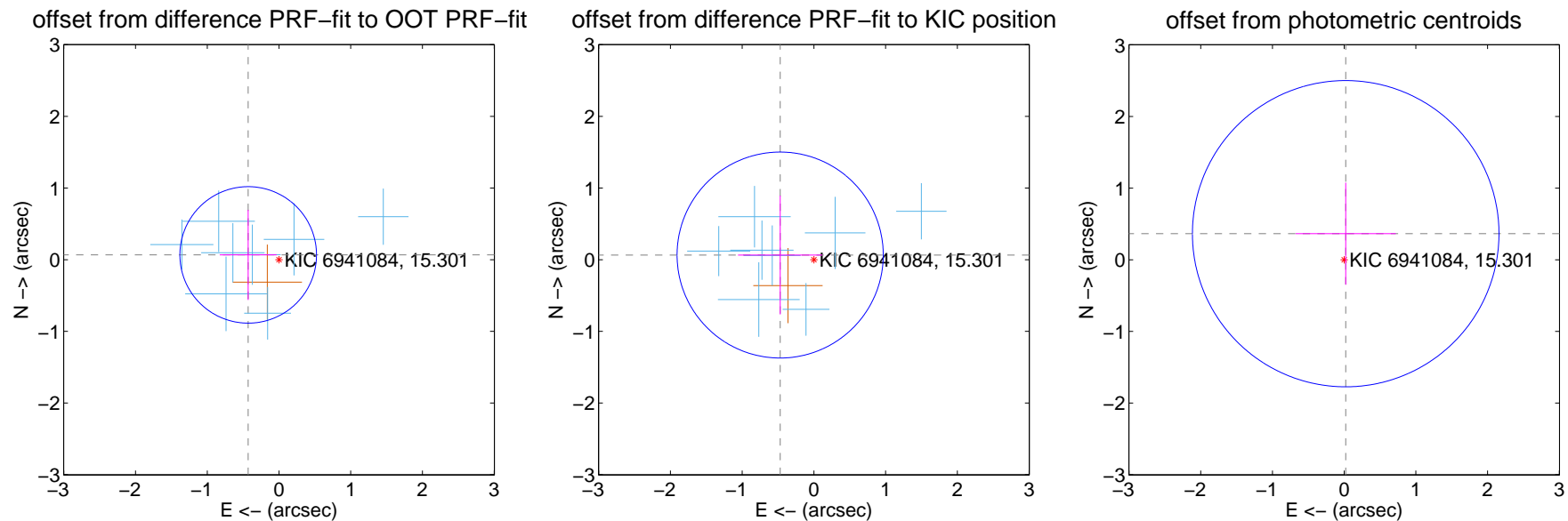
DV Centroid Data

Supplemental centroid analysis for 006941084-01. Kepler magnitude: 15.30. Transit SNR 20.24

There are 8 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	0.434 ± 0.317	1.37	0.429 ± 0.396	0.067 ± 0.629
PRF-fit source offset from KIC position	0.475 ± 0.479	0.99	0.470 ± 0.587	0.065 ± 0.829
photometric centroid source offset	0.36 ± 0.71	0.51	-0.02 ± 0.70	0.36 ± 0.71



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



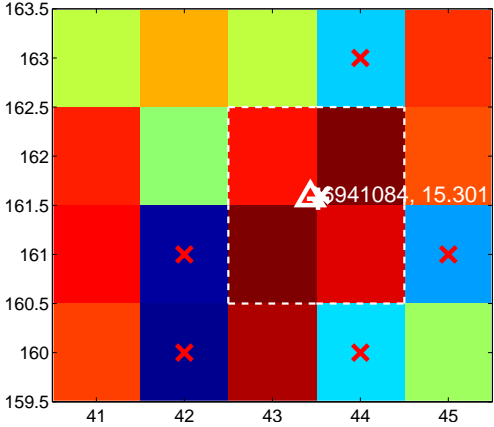
Q2 no difference image



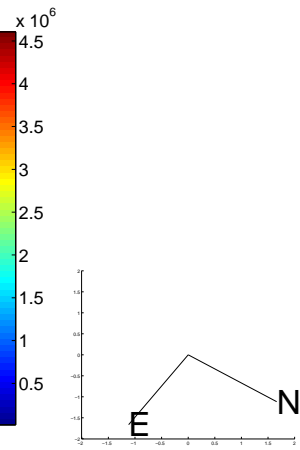
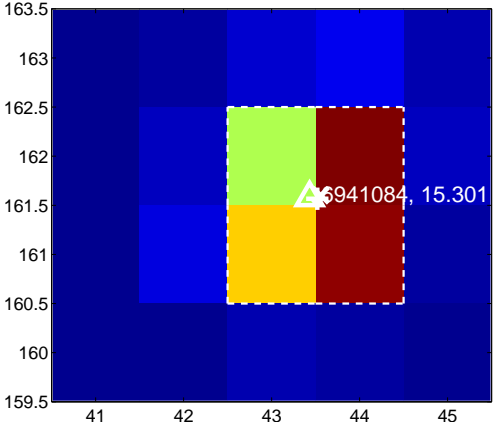
Q2 no OOT image



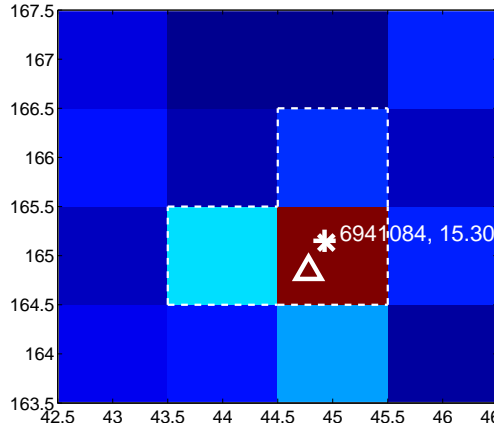
Q3 difference image. Poor Quality



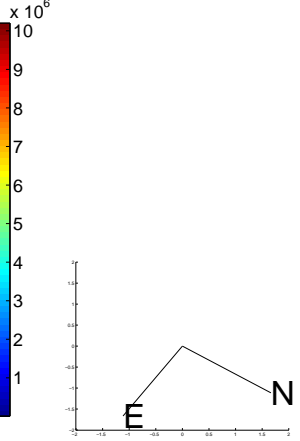
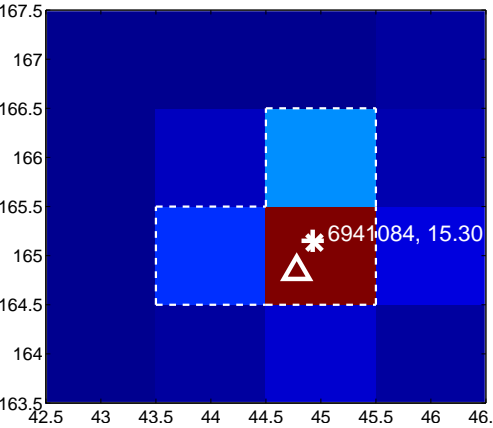
Q3 OOT image



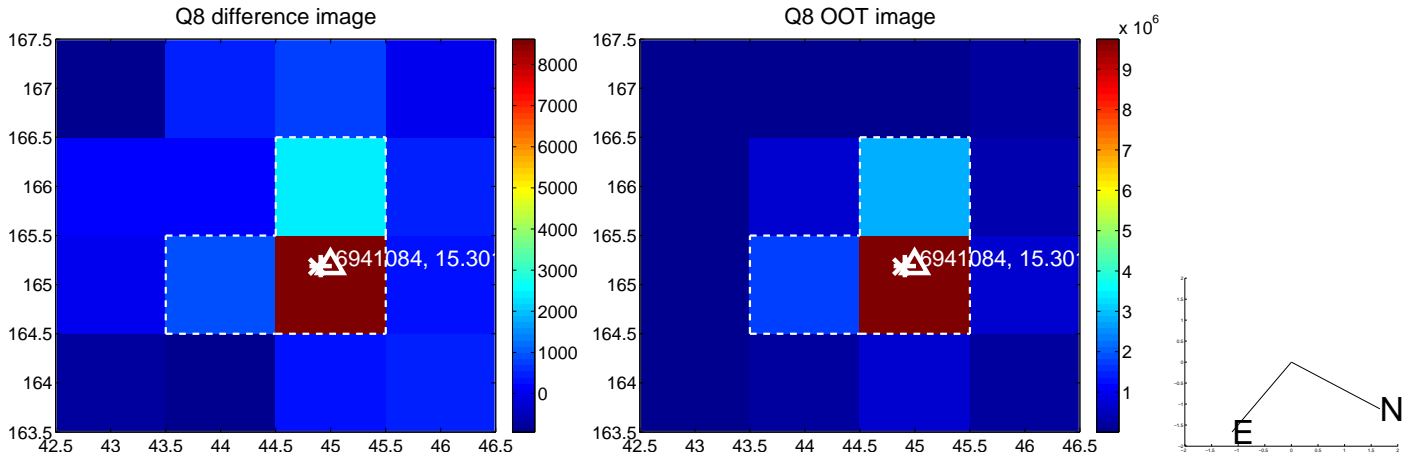
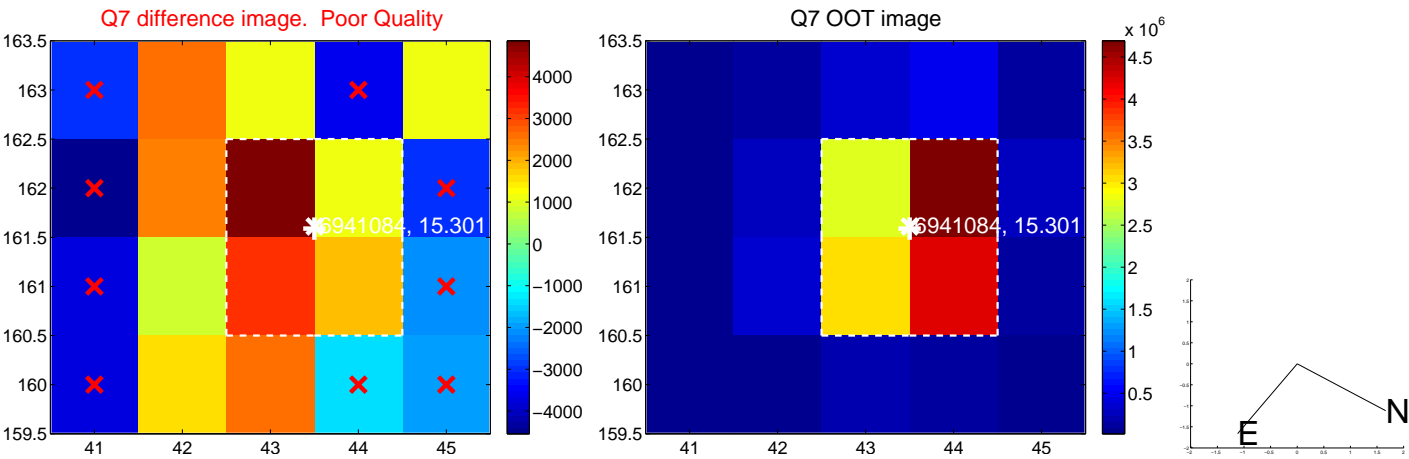
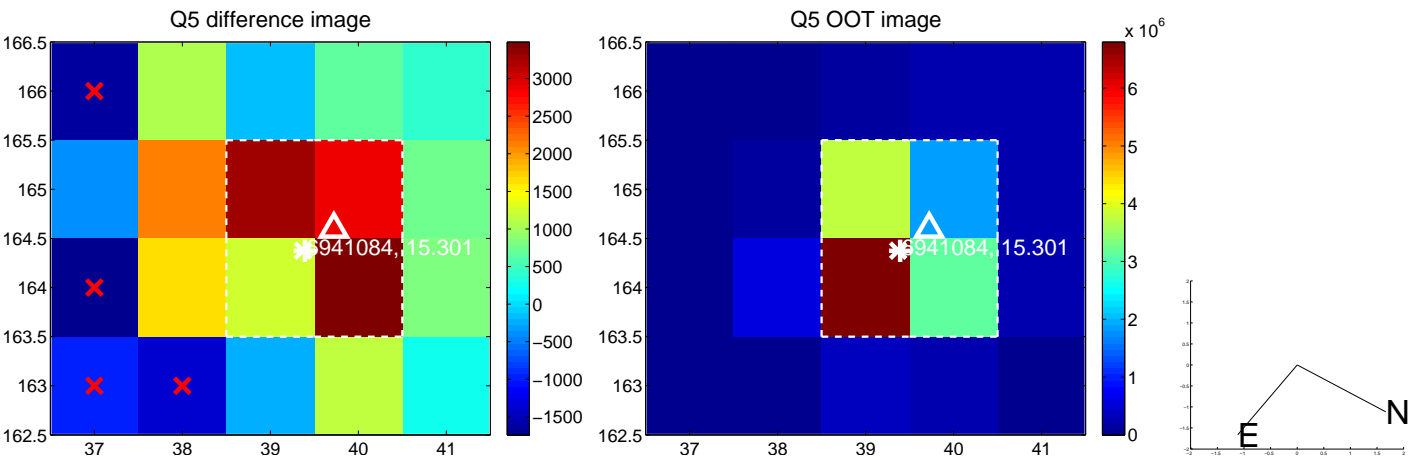
Q4 difference image



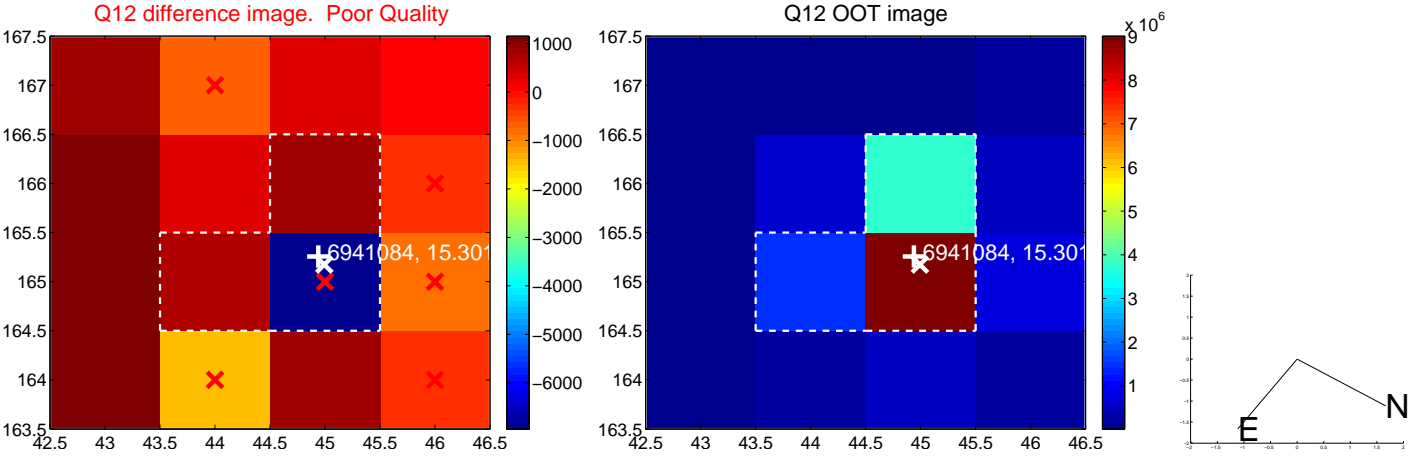
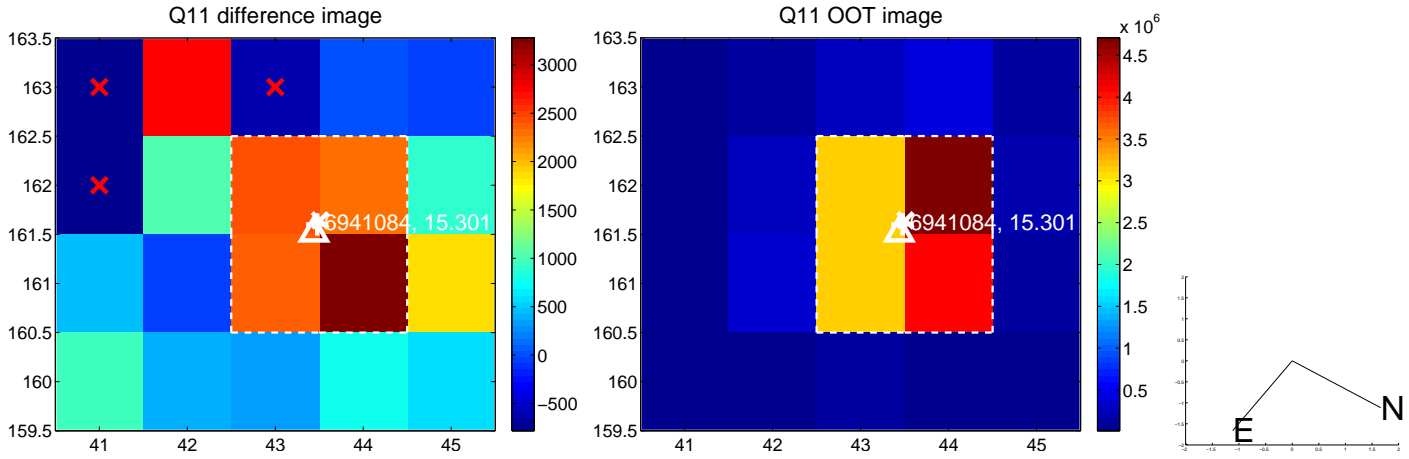
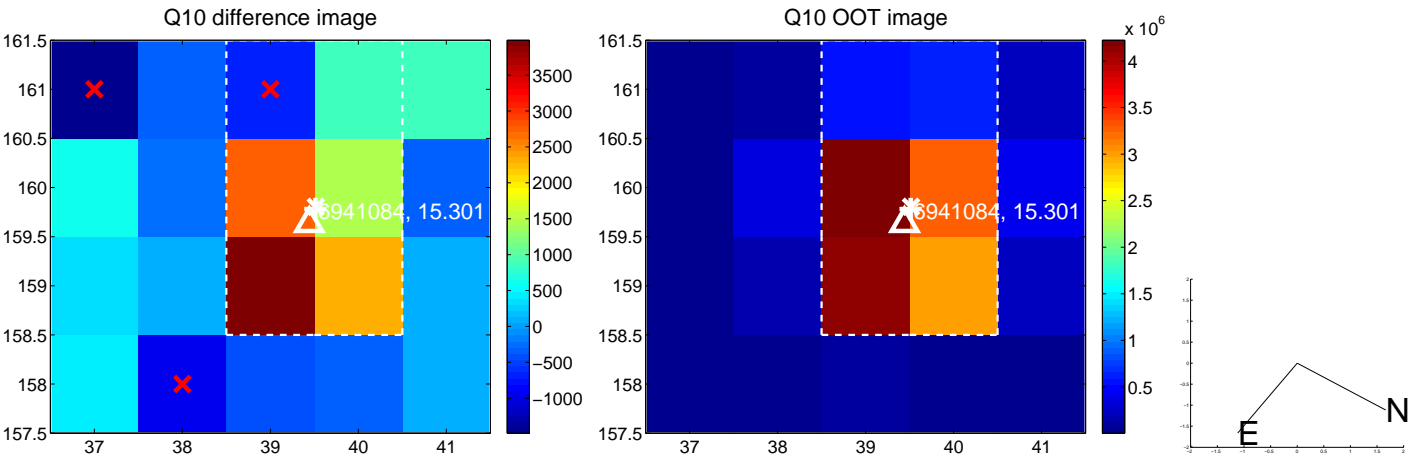
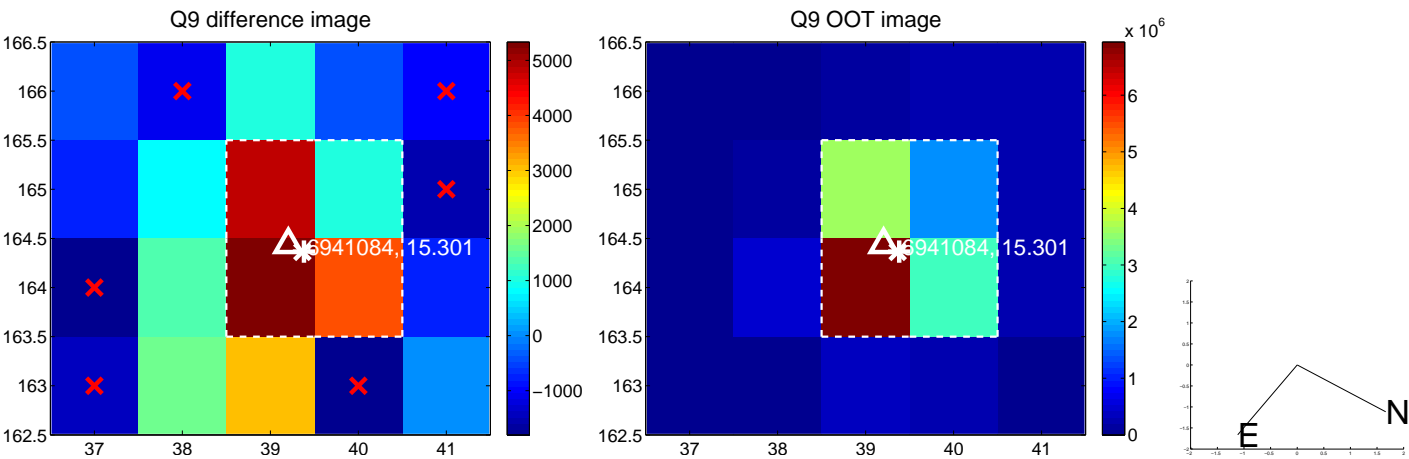
Q4 OOT image



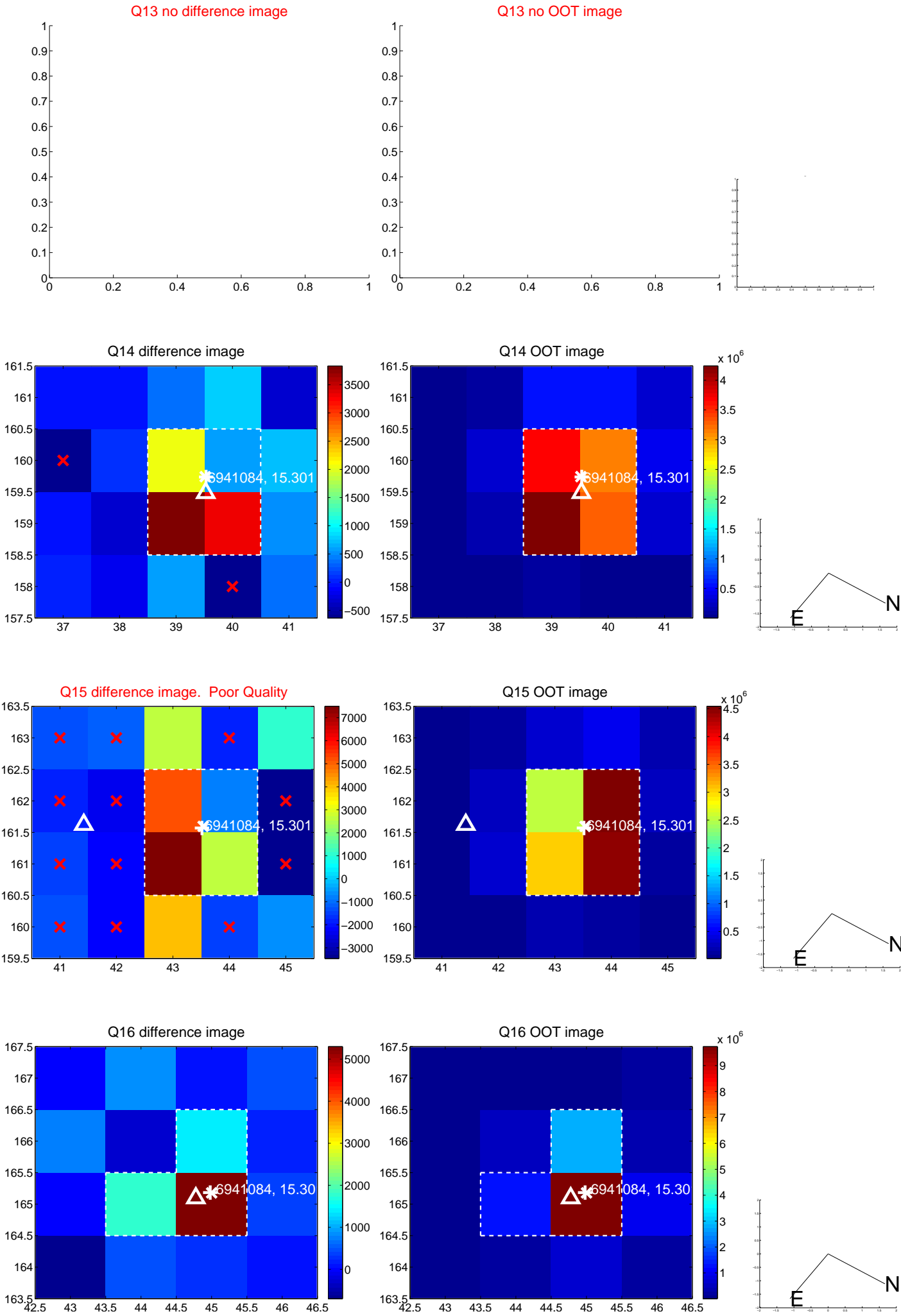
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



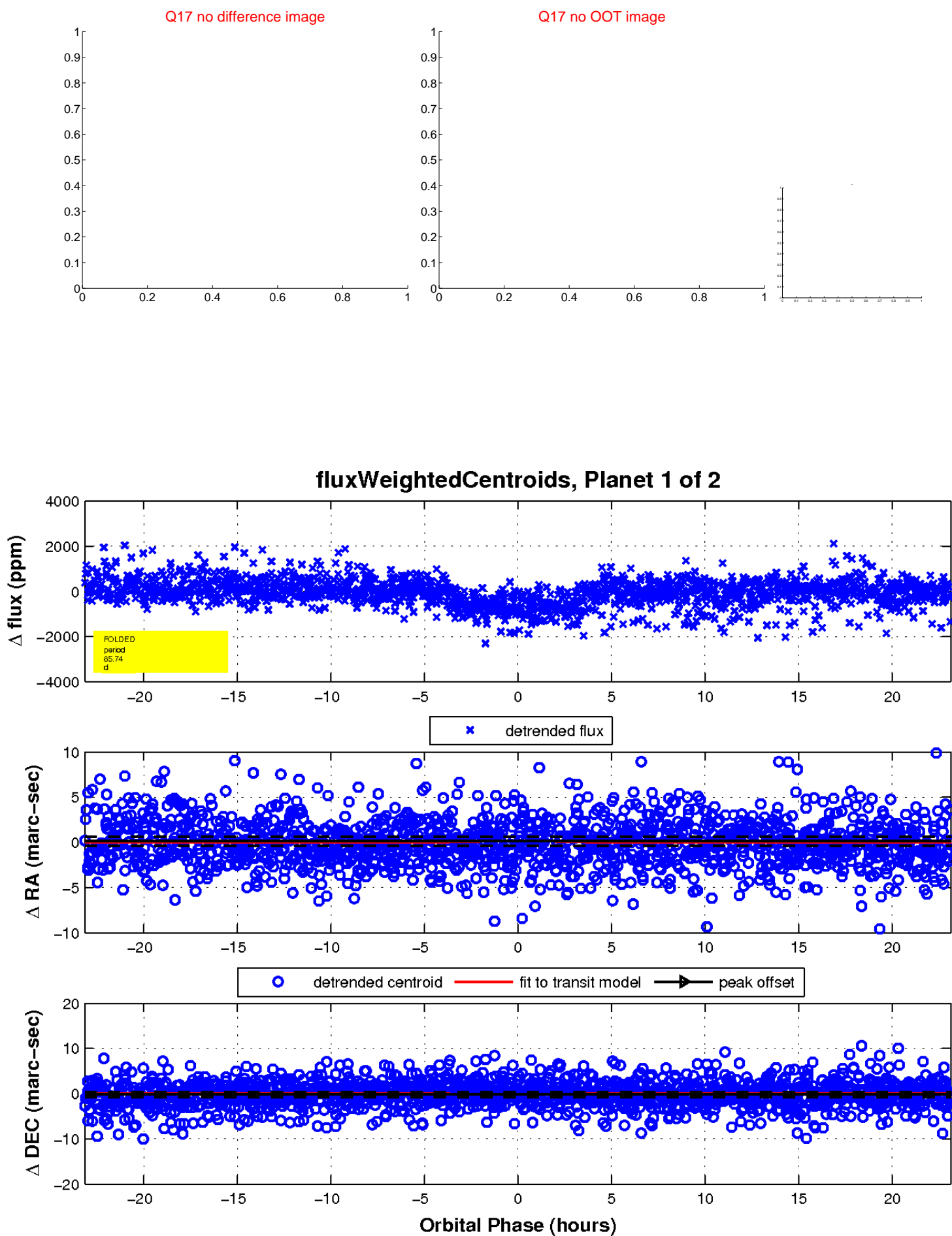
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

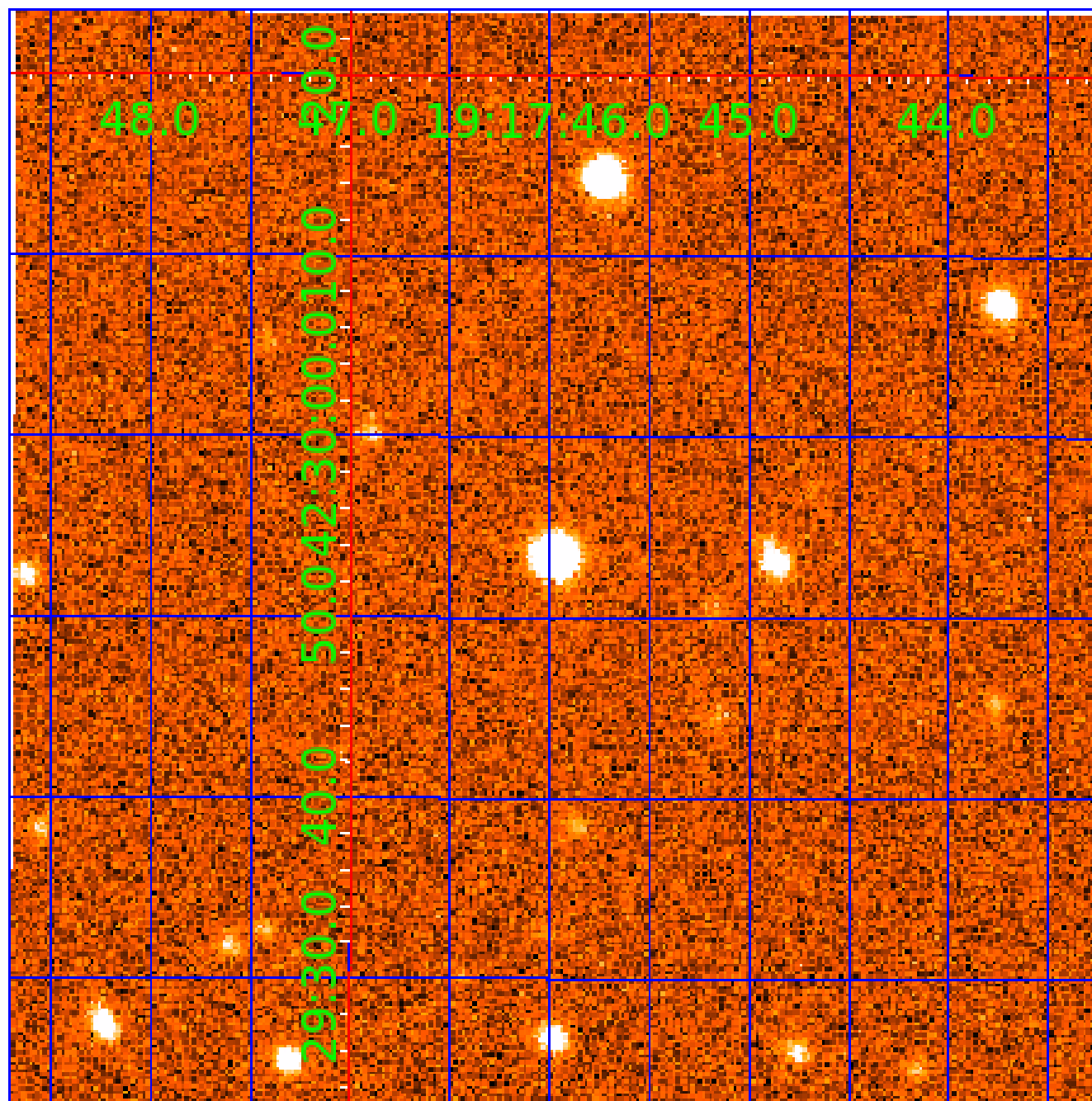


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006941084

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})
006941084-01	OBS	2348.01	85.735400	170.981543	712.1	7.729	16.8	20.2	1.08	6096	3.10	9.56
006941084-02	OBS	No	419.699884	167.119146	765.8	23.990	10.6	11.3	1.08	6096	3.04	1.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006941084-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
006941084-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

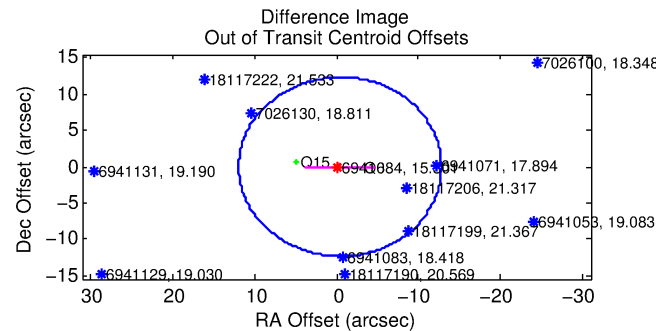
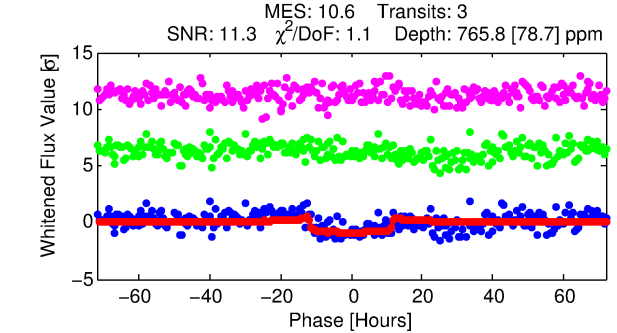
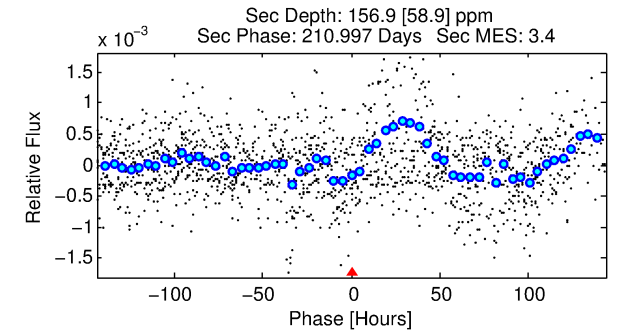
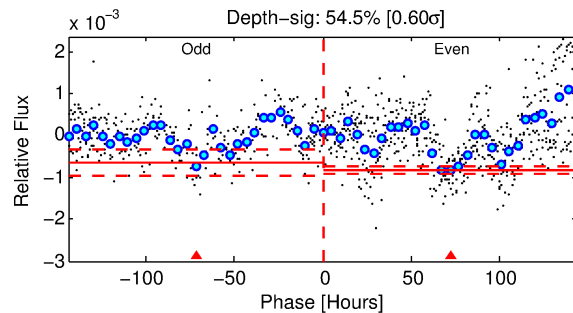
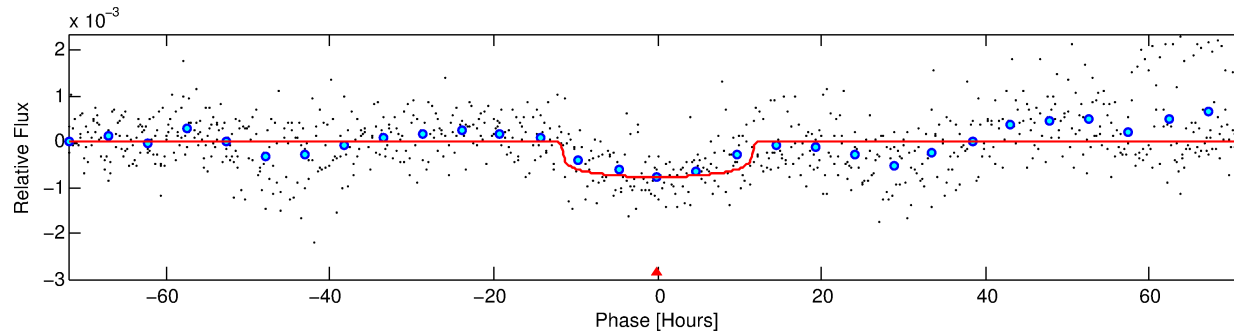
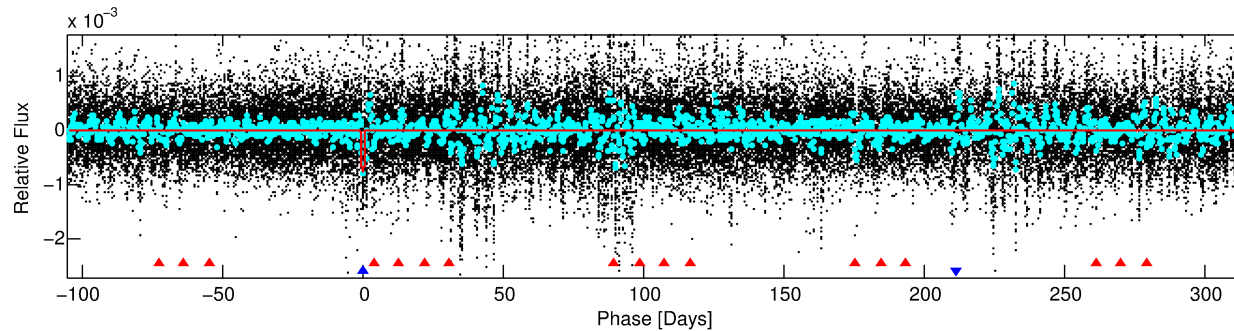
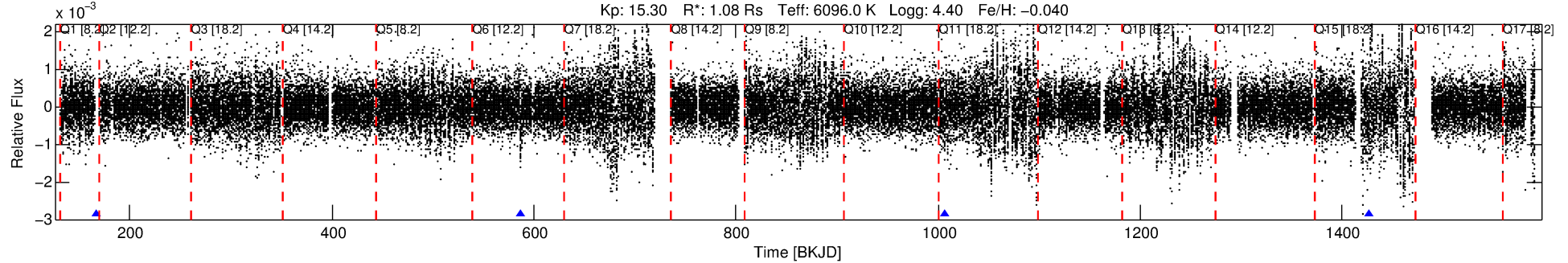
Ephemeris Match Information For 006941084-02

No Significant Match Found

DV One-Page Summary

KIC: 6941084 Candidate: 2 of 2 Period: 419.700 d
KOI: K02348 Corr: No Ephemeris Match

Kp: 15.30 R*: 1.08 Rs Teff: 6096.0 K Logg: 4.40 Fe/H: -0.040



DV Fit Results:

Period = 419.69988 [0.01576] d
Epoch = 167.1191 [0.0301] BKJD
Rp/R* = 0.0259 [0.0066]
a/R* = 122.60 [146.57]
b = 0.46 [2.07]
Seff = 1.15 [0.48]
Teq = 264 [27] K
Rp = 3.04 [1.28] Re
a = 1.1172 [0.3061] AU
Ag = 11623.00 [8670.58] [1.34σ]
Teffp = 4239 [689] K [5.76σ]

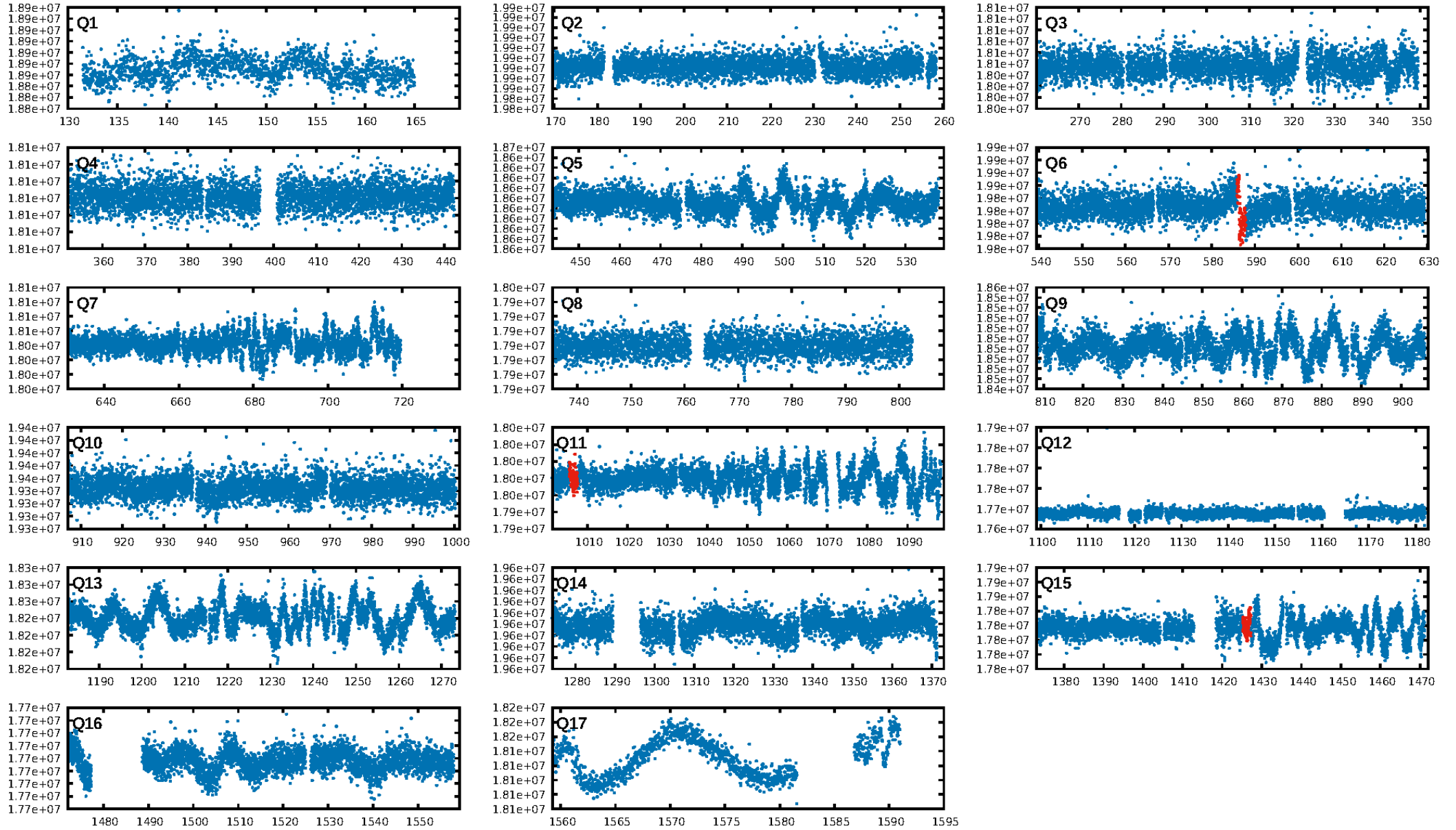
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [318.01σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.44e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 27.26
Centroid-sig: 0.1%
Centroid-so: 3.547 arcsec [2.38σ]
OotOffset-rm: 0.442 arcsec [0.11σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.410 arcsec [0.10σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

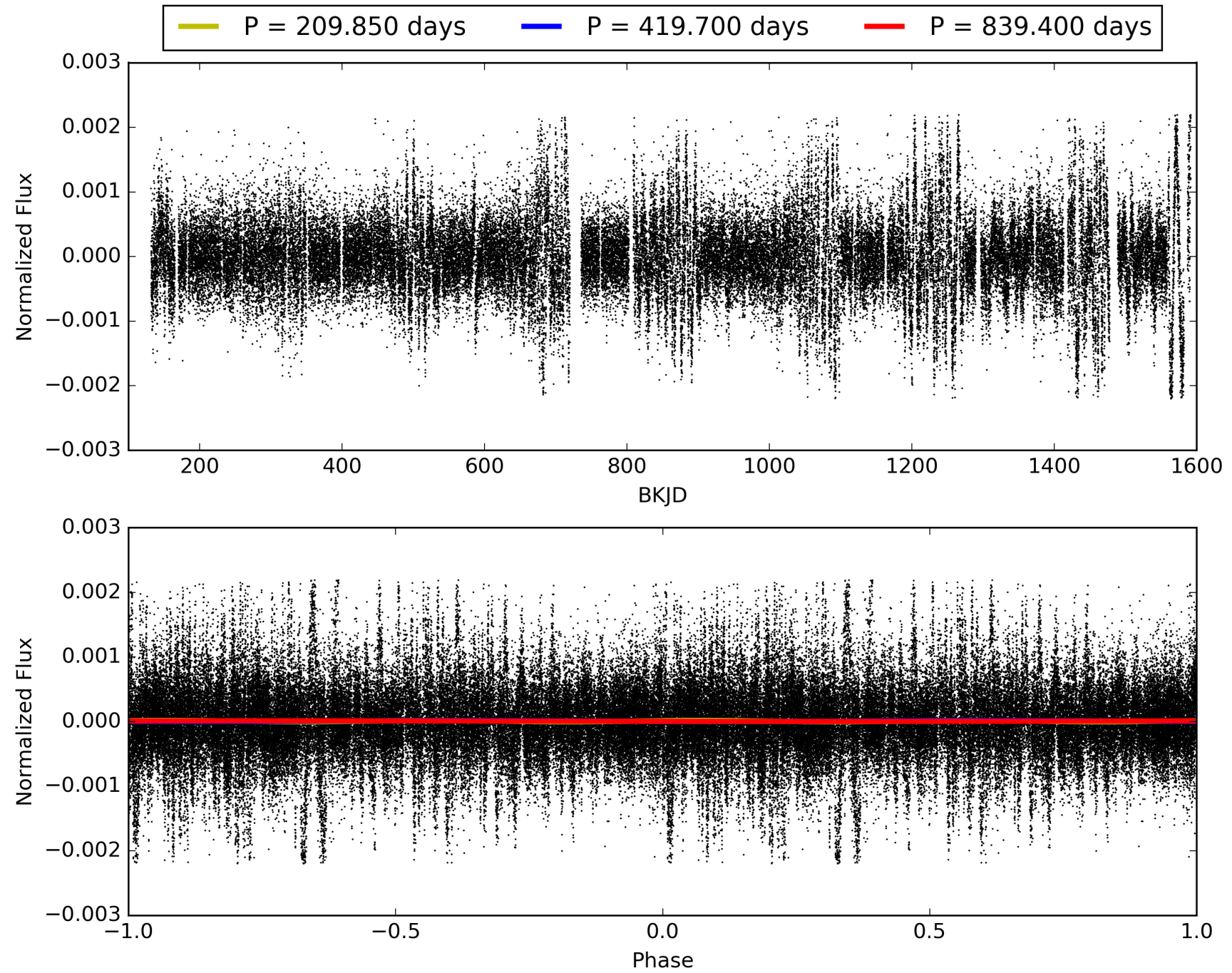
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:05:56 Z

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

TCE 006941084-02, PDC Light Curves

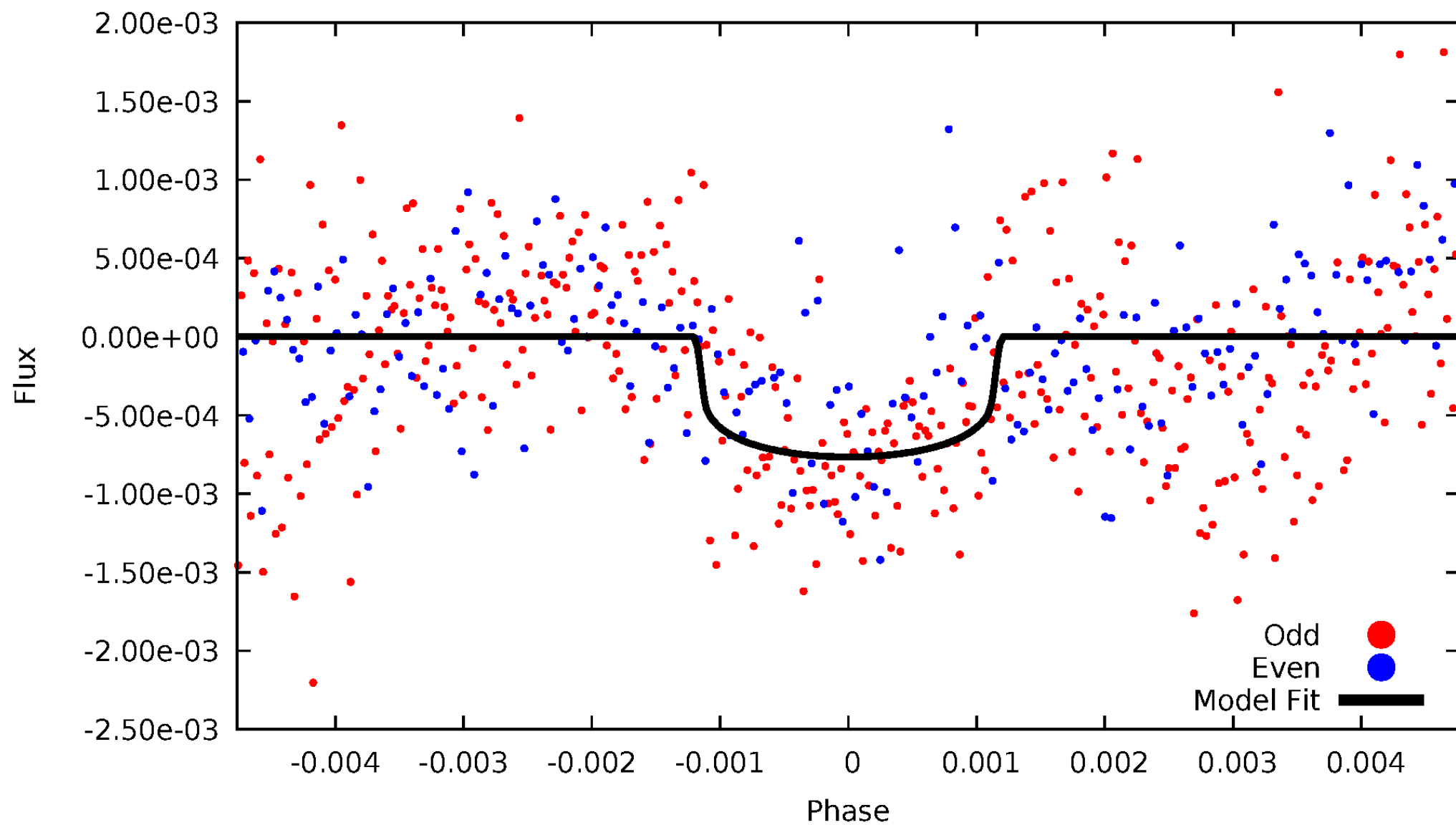


TCE 006941084-02



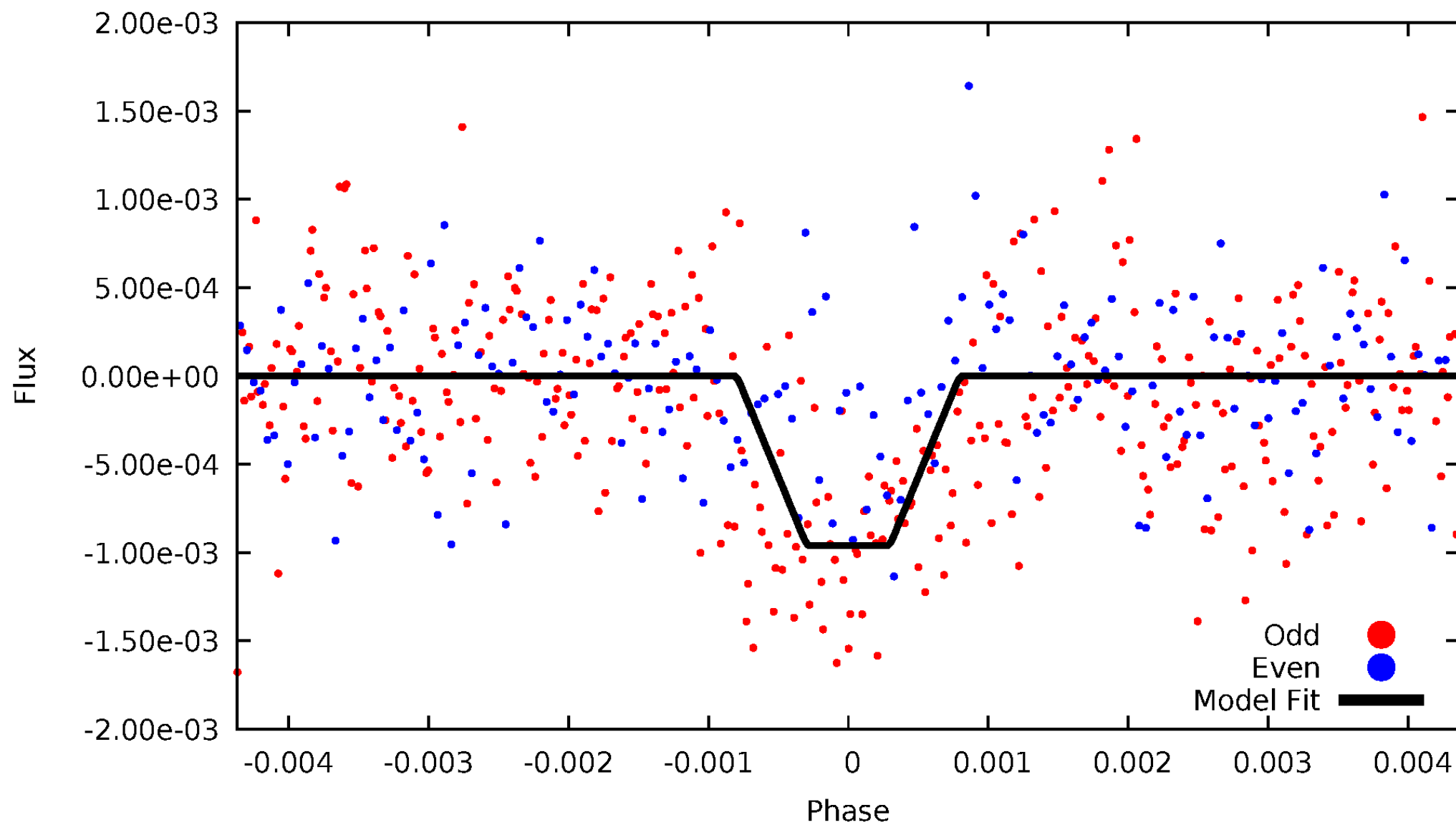
DV Odd/Even

TCE 006941084-02



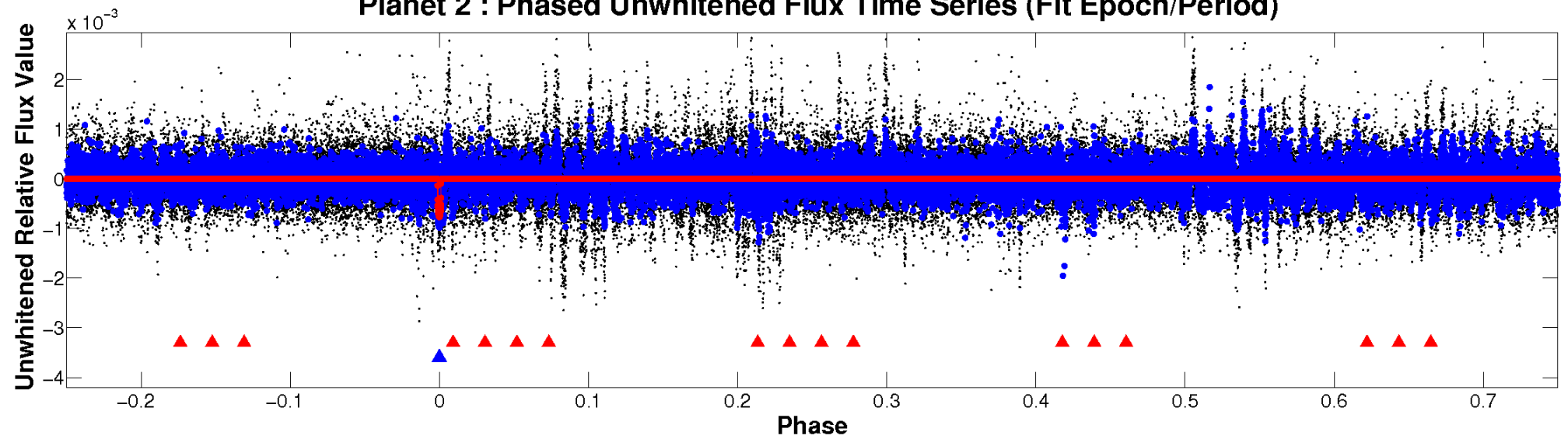
ALT Odd/Even

TCE 006941084-02

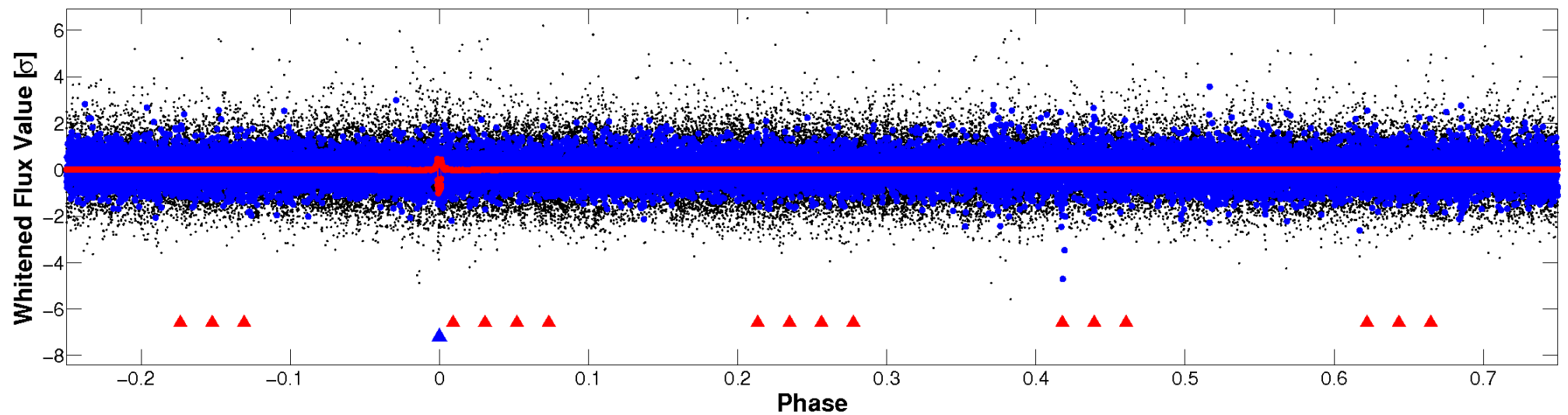


Non-Whitened Vs. Whitened Light Curve

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

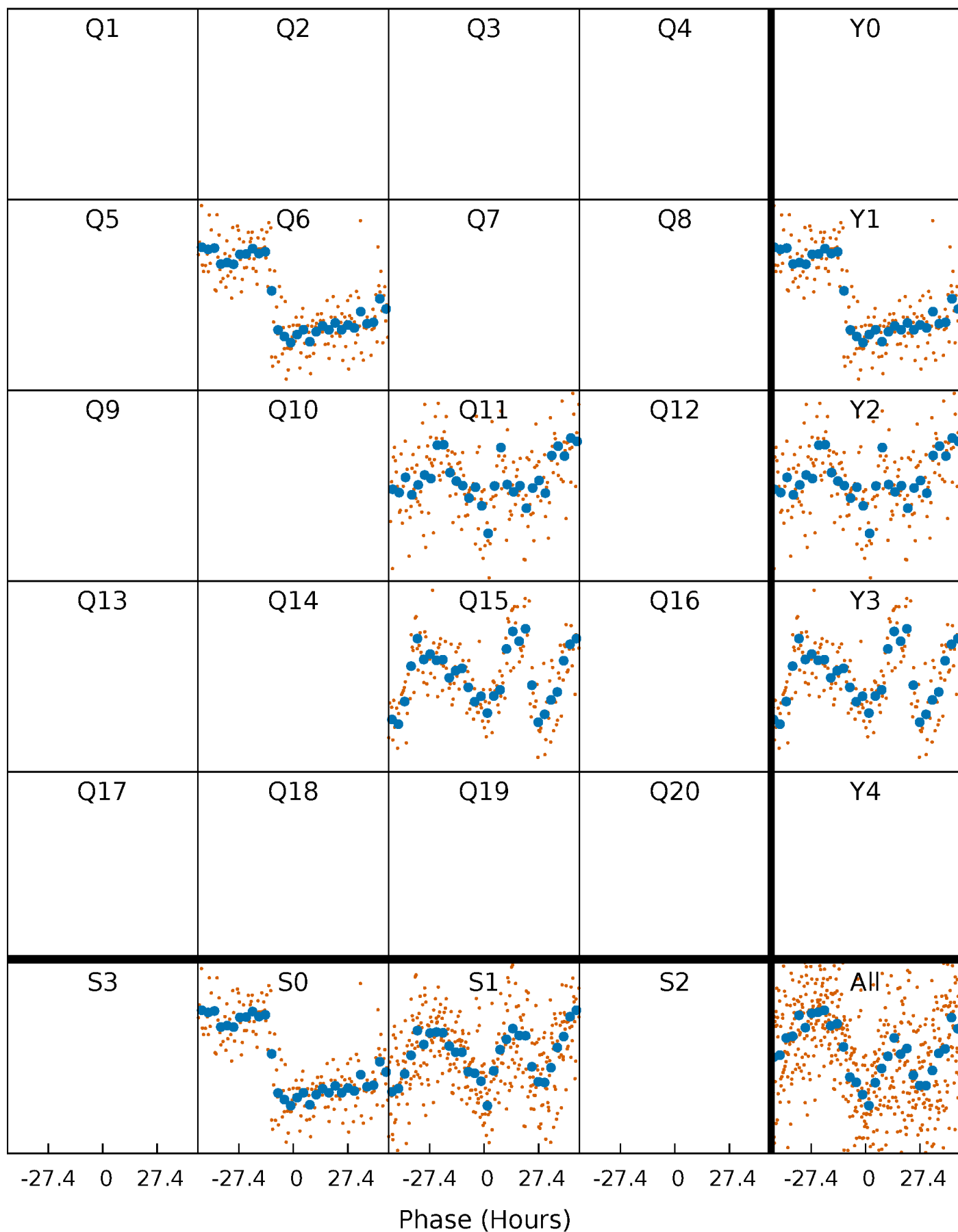


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



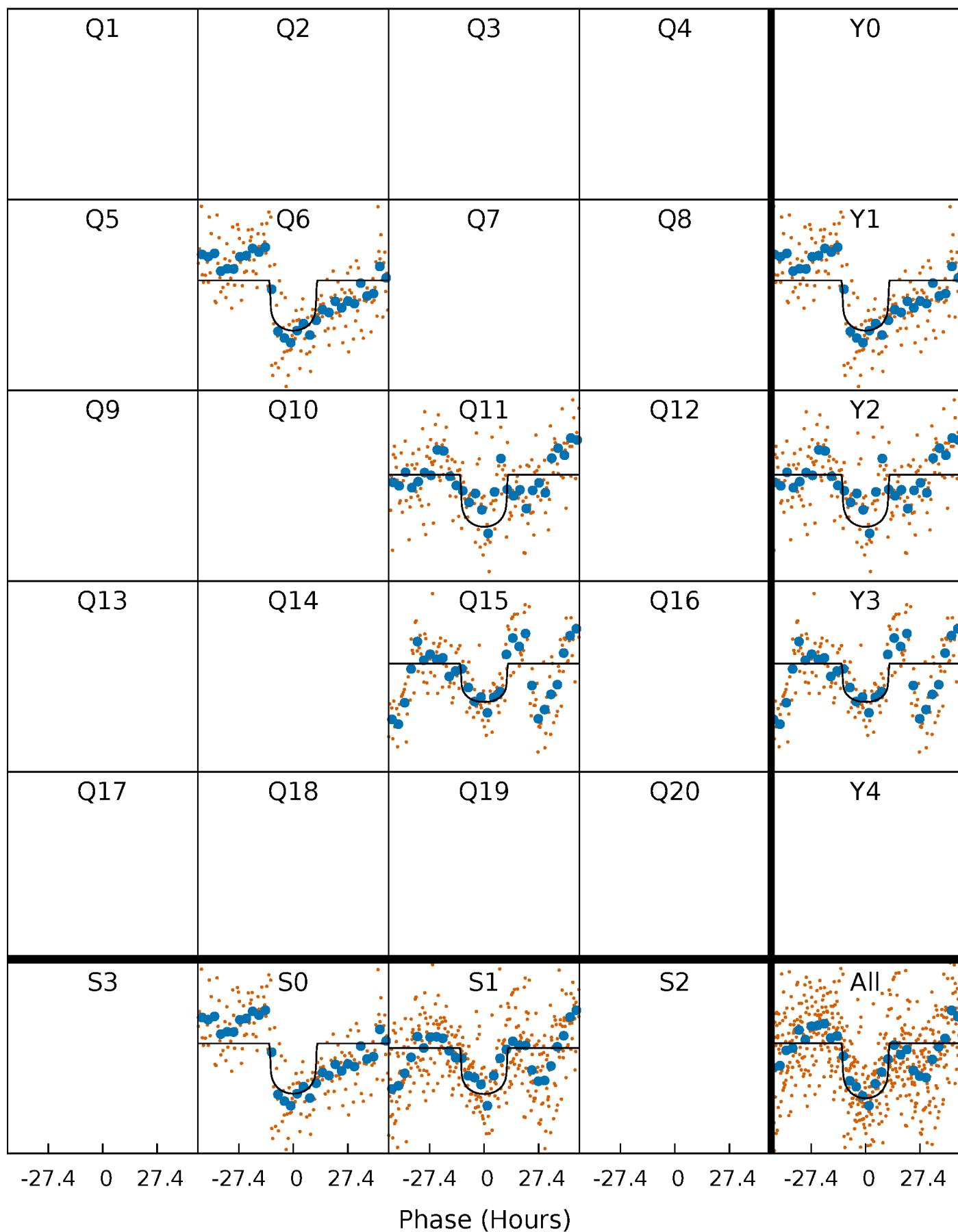
PDC Quarter-Phased Transit Curves

TCE 006941084-02 $P=419.699884$ Days $T_0=167.119146$ (BKJD)



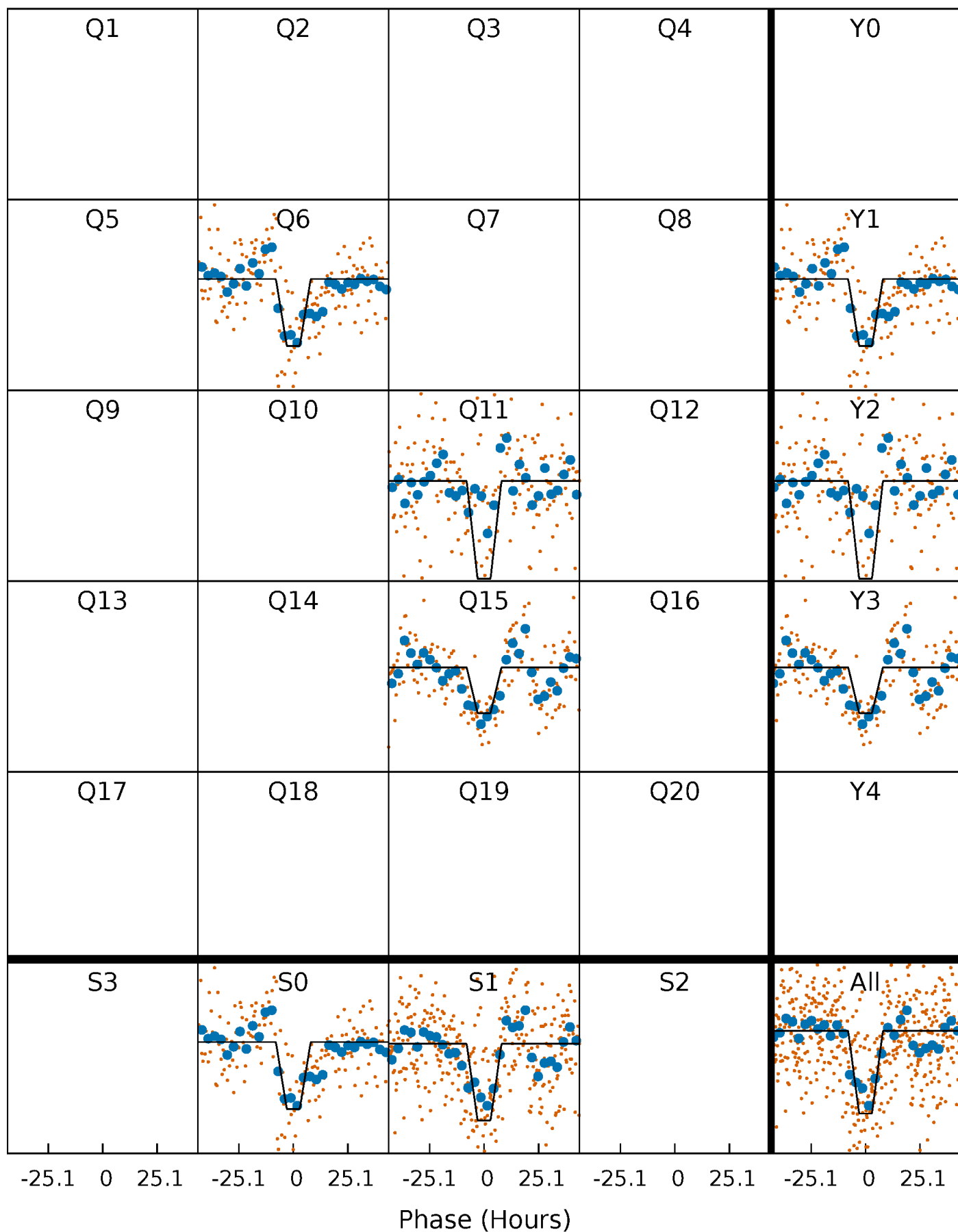
DV Quarter-Phased Transit Curves

TCE 006941084-02 P=419.699884 Days $T_0=167.119146$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

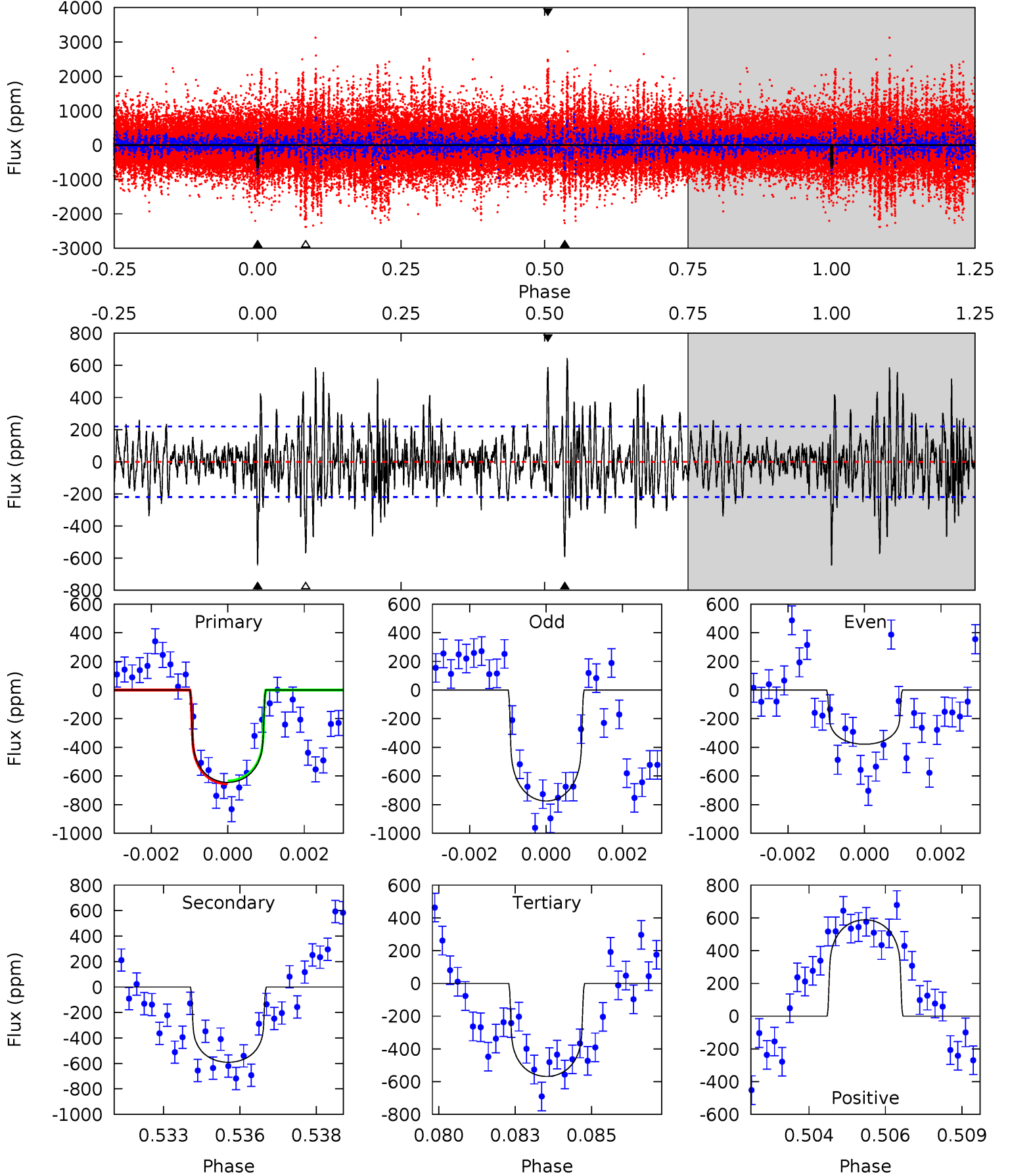
TCE 006941084-02 P=419.814301 Days $T_0=166.857770$ (BKJD)



DV Model-Shift Uniqueness Test

006941084-02, P = 419.699884 Days, E = 167.119146 Days

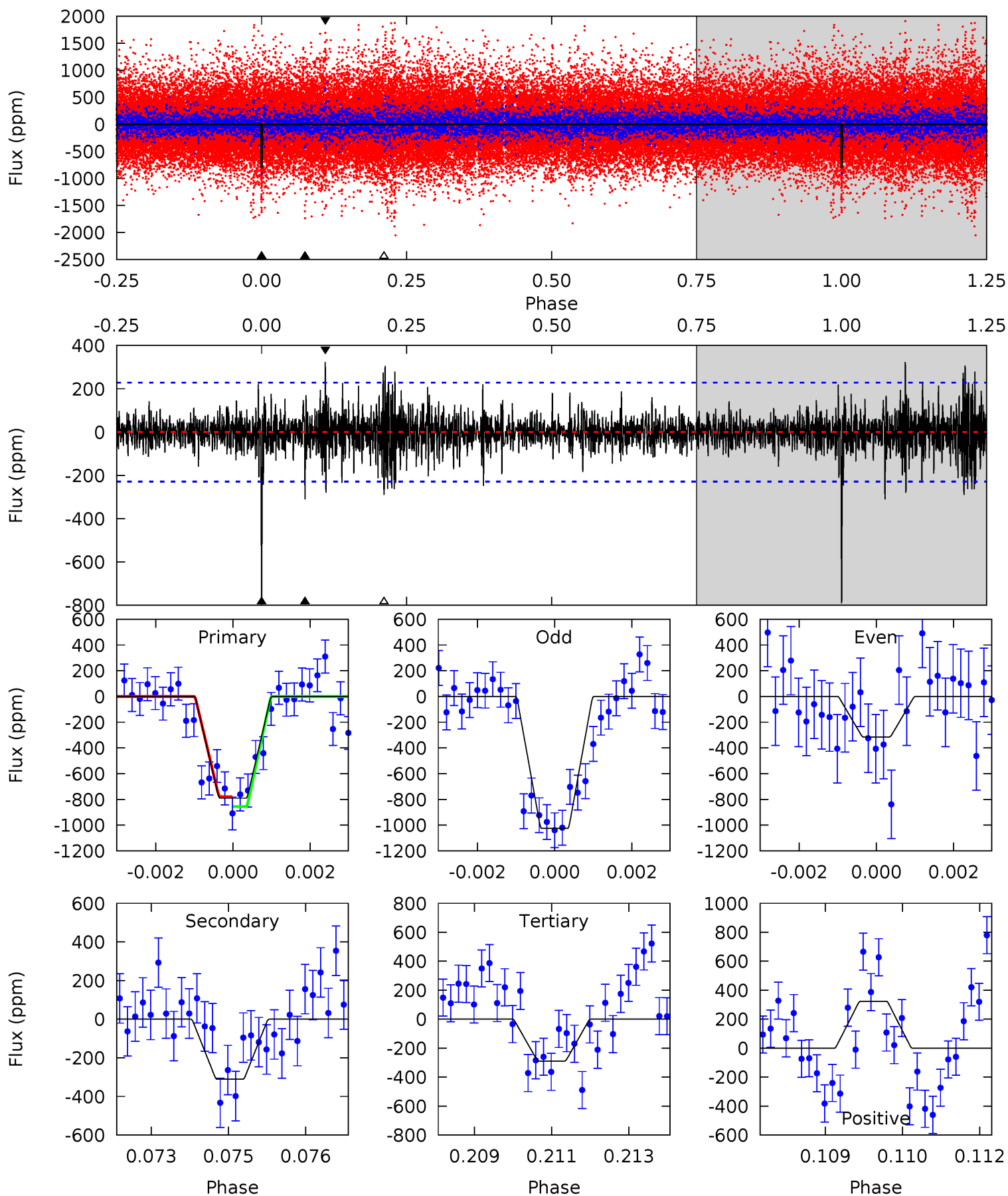
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	14.2	13.7	14.2	5.29	3.03	3.49	1.84	1.36	0.54	0.06	4.53	0.94	0.50	0.25



Alt Model-Shift Uniqueness Test

006941084-02, P = 419.814301 Days, E = 166.857770 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	7.30	6.79	7.59	5.36	3.15	1.52	11.8	11.0	0.50	-0.30	7.88	0.87	0.29	0.91



Stellar Parameters For KIC 006941084

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6096^{+193}_{-214}	$4.397^{+0.090}_{-0.210}$	$-0.040^{+0.250}_{-0.300}$	$1.077^{+0.358}_{-0.143}$	$1.054^{+0.166}_{-0.135}$	$1.188^{+0.460}_{-0.631}$
	+3%/-4%	+2%/-5%	+625%/-750%	+33%/-13%	+16%/-13%	+39%/-53%
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 006941084-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-591 ± 41	$3.17^{+0.96}_{-0.86}$	375^{+31}_{-21}	5931^{+940}_{-645}	40508^{+35492}_{-17072}
Alt.	-311 ± 43	$3.77^{+1.21}_{-0.90}$	376^{+33}_{-23}	4730^{+568}_{-403}	14745^{+10529}_{-6217}

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

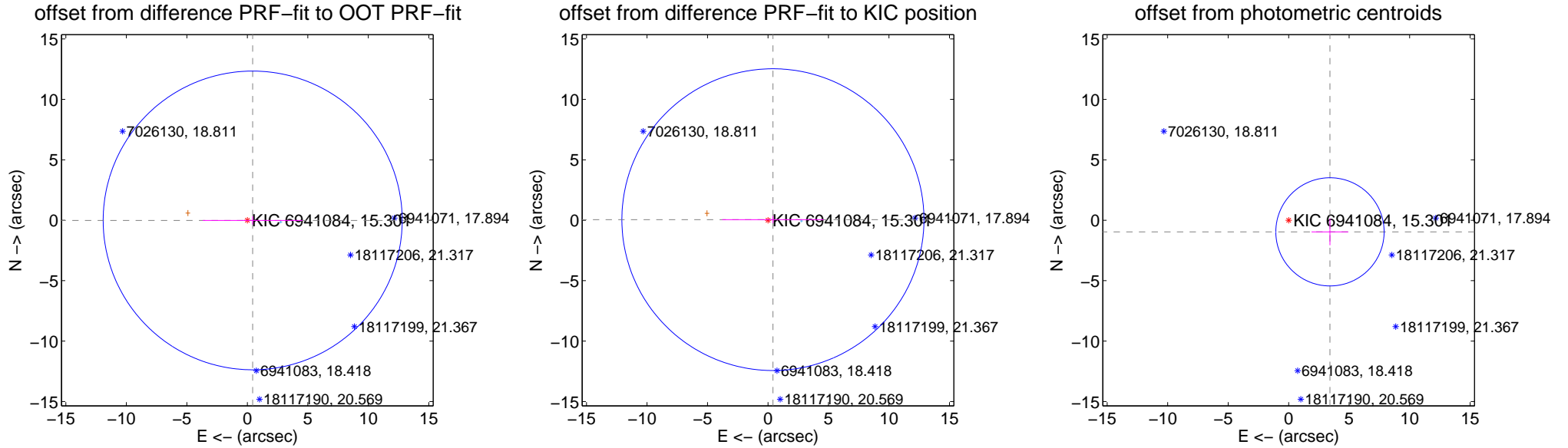
DV Centroid Data

Supplemental centroid analysis for 006941084-02. Kepler magnitude: 15.30. Transit SNR 11.31

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.442 ± 4.118	0.11	-0.442 ± 4.121	-0.016 ± 0.341
PRF-fit source offset from KIC position	0.410 ± 4.160	0.10	-0.407 ± 4.191	0.050 ± 0.293
photometric centroid source offset	3.55 ± 1.49	2.38	-3.41 ± 1.52	-0.96 ± 1.11



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.

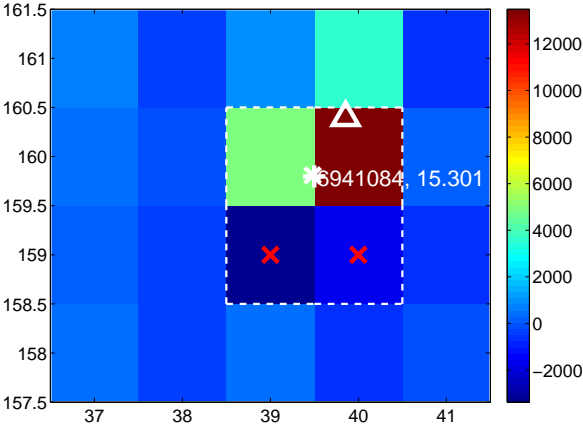
Q5 no difference image



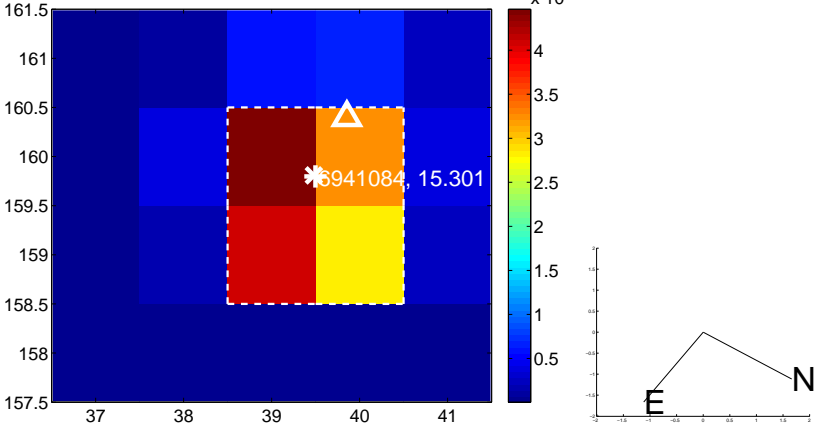
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



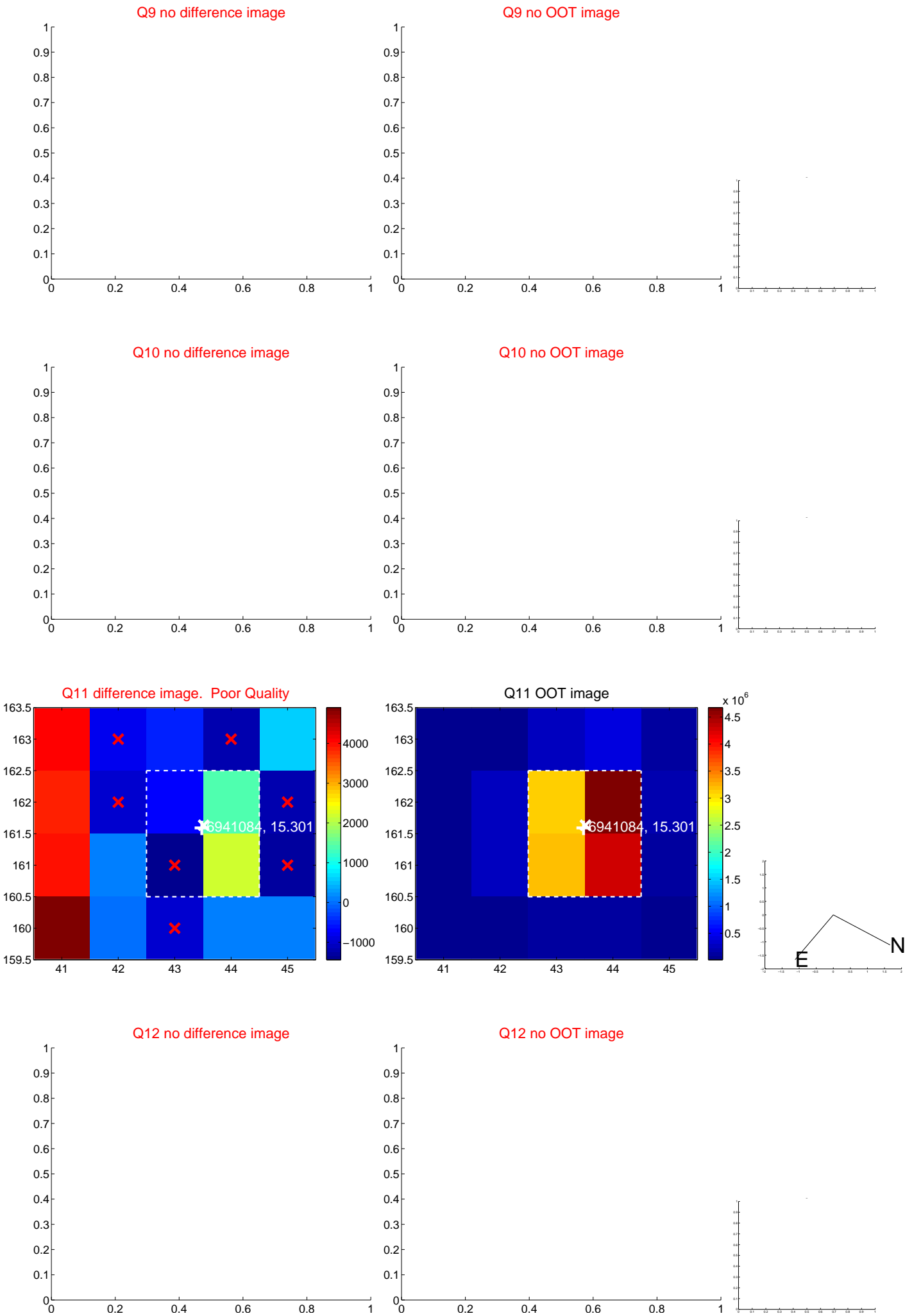
Q8 no difference image



Q8 no OOT image



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



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

Q13 no difference image



Q13 no OOT image



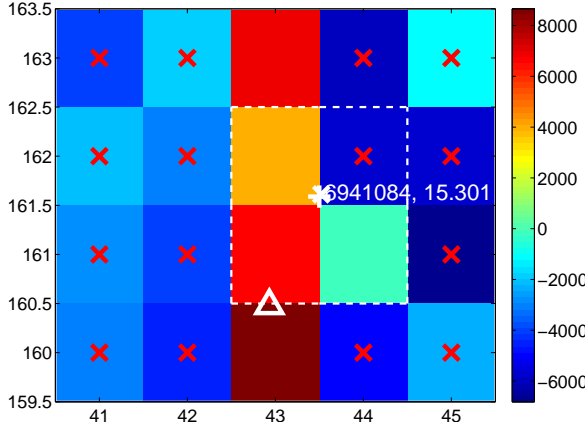
Q14 no difference image



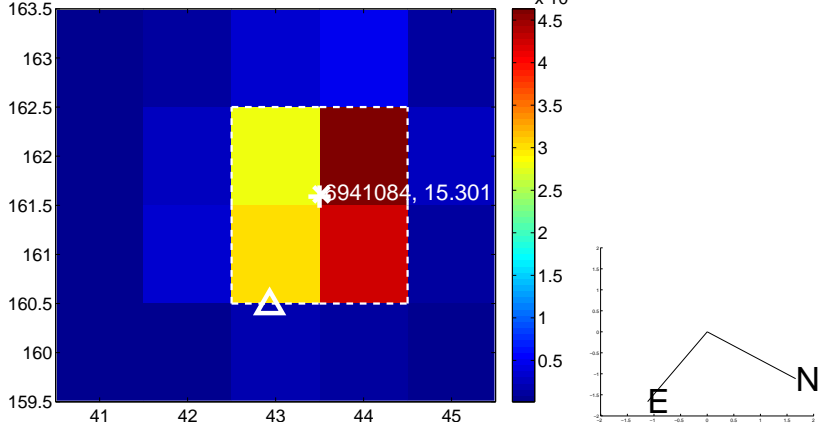
Q14 no OOT image



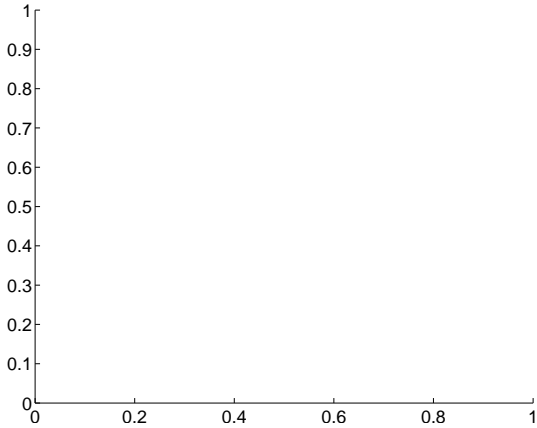
Q15 difference image. Poor Quality



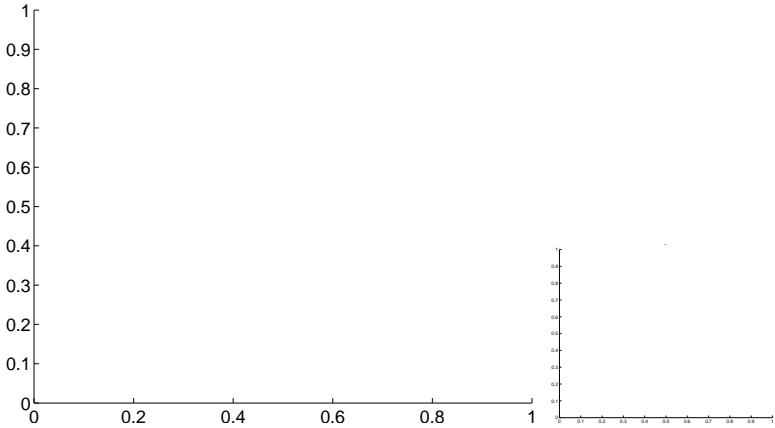
Q15 OOT image



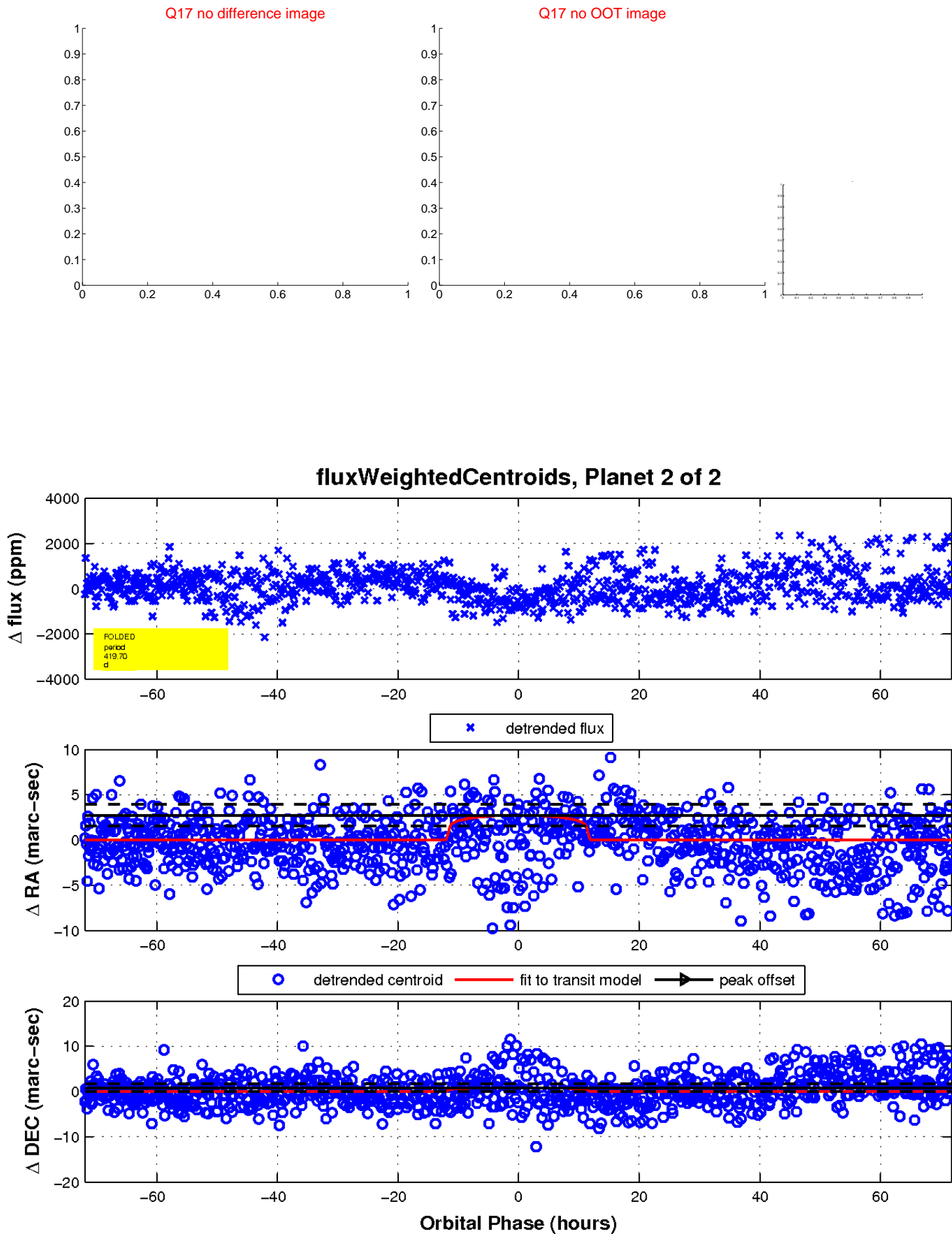
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

