

KIC 011709006

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})
011709006-01	OBS	No	209.598386	325.529100	192.8	2.469	12.5	6.2	0.99	6014	1.53	2.27
011709006-02	OBS	No	358.000679	325.136854	502.8	14.602	15.2	4.5	0.99	6014	2.77	1.11
011709006-03	OBS	No	498.268313	134.156093	147.8	8.149	13.4	2.3	0.99	6014	1.32	0.72
011709006-04	OBS	No	371.278877	176.636767	178.4	3.419	15.8	4.1	0.99	6014	1.41	1.06
011709006-05	OBS	8061.01	0.719710	131.921610	58.8	2.000	10.8	-1.0	0.99	6014	0.76	4385.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709006-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-03	OBS	FP	0.00	1	0	0	0	LPP_ALT—CENT_SATURATED
011709006-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

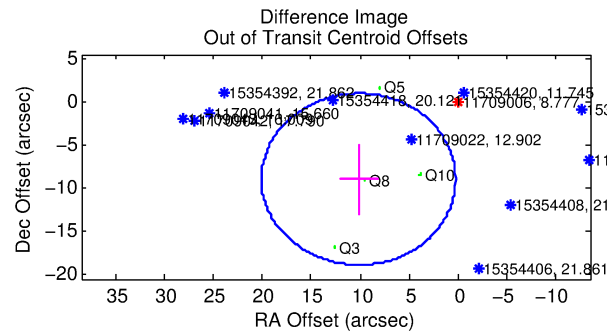
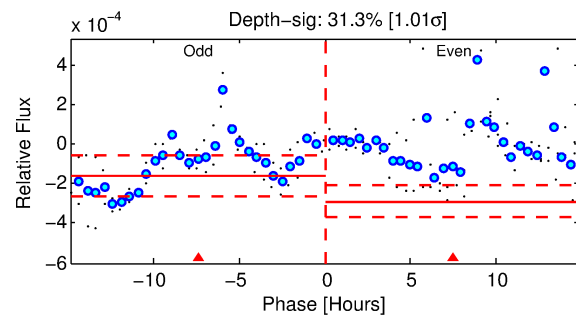
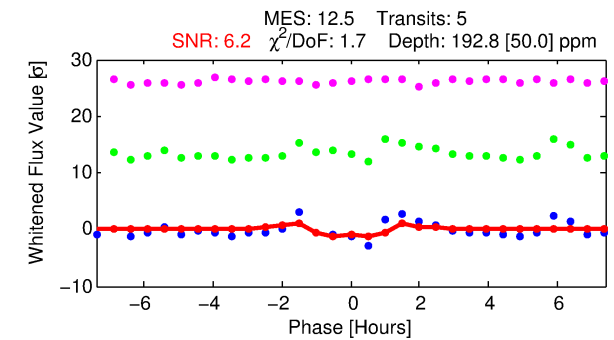
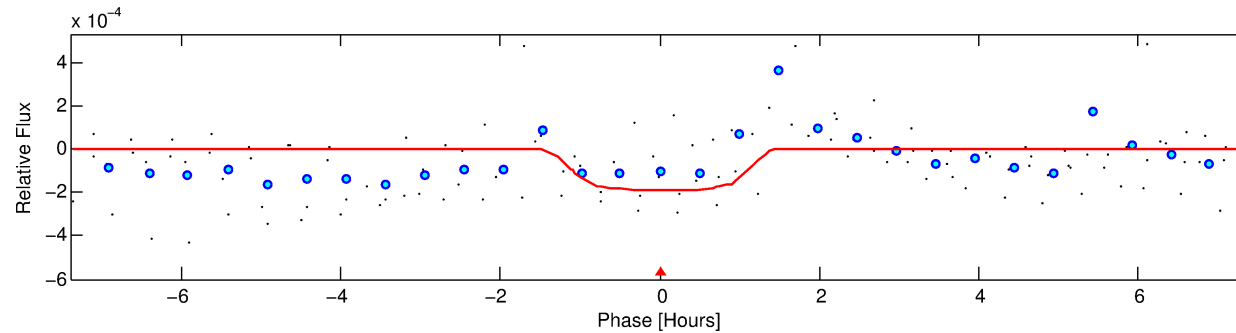
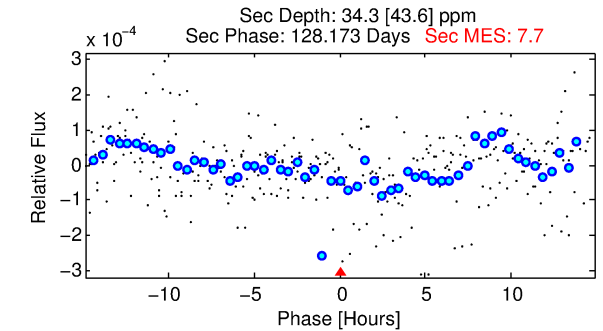
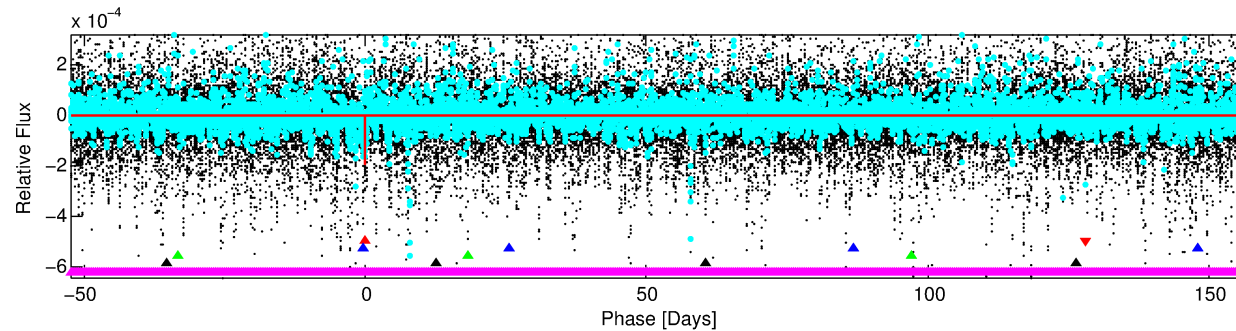
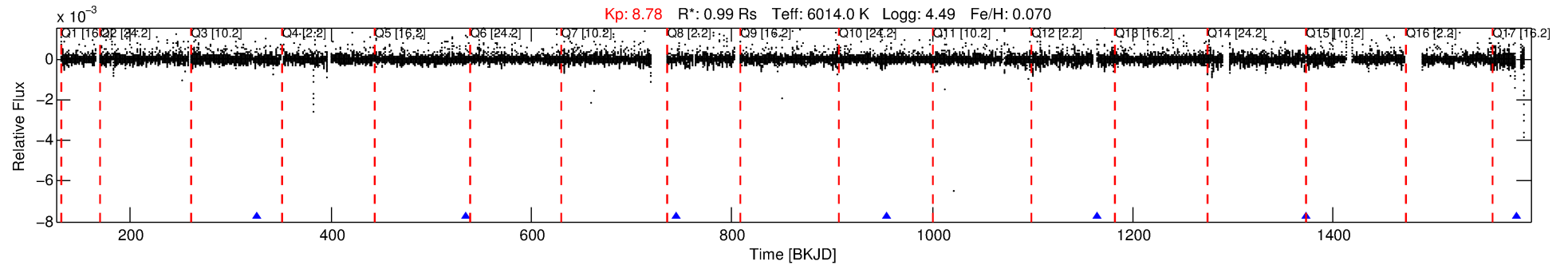
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709006-01

No Significant Match Found

DV One-Page Summary

KIC: 11709006 Candidate: 1 of 5 Period: 209.598 d



DV Fit Results:

Period = 209.59839 [0.00336] d
Epoch = 325.5291 [0.0086] BKJD
 $R_p/R^* = 0.0141$ [0.0195]
 $a/R^* = 401.37$ [2671.97]
 $b = 0.80$ [2.97]
 $\text{Seff} = 2.27$ [0.43]
 $T_{\text{eq}} = 313$ [15] K
 $R_p = 1.53$ [2.12] R_e
 $a = 0.7133$ [0.0768] AU
 $A_g = 4089.93$ [12459.47] [0.33 σ]
 $T_{\text{eff}} = 3871$ [2945] K [1.21 σ]

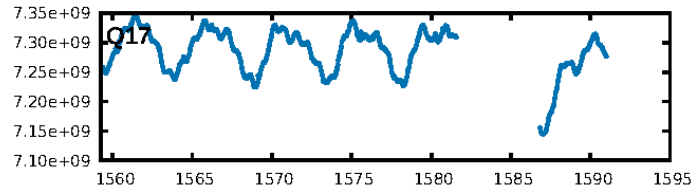
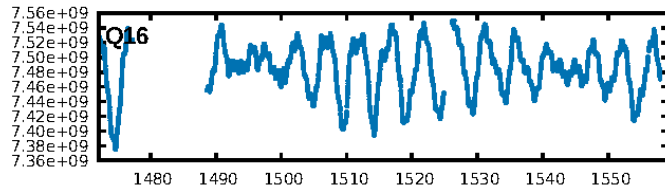
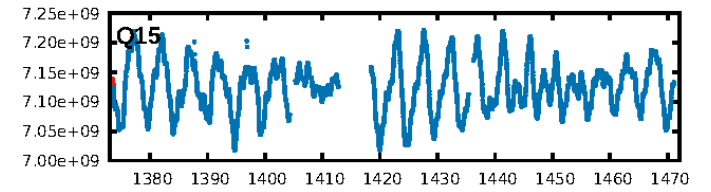
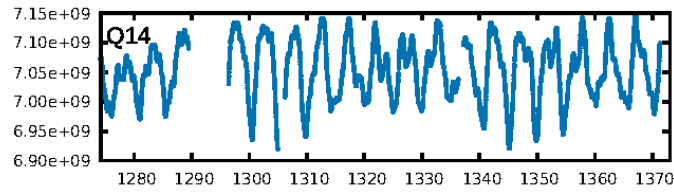
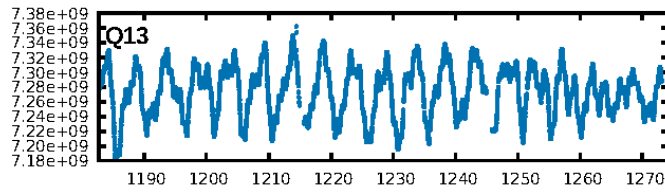
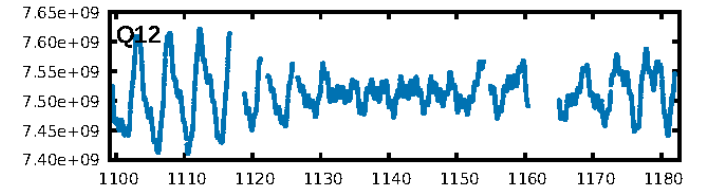
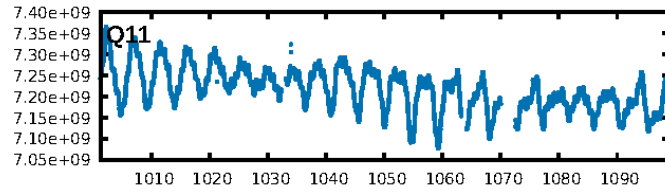
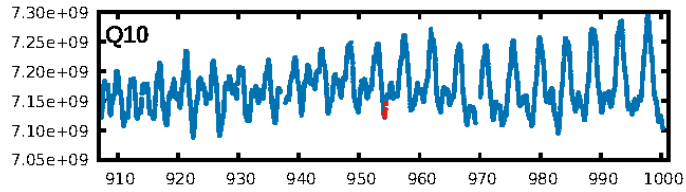
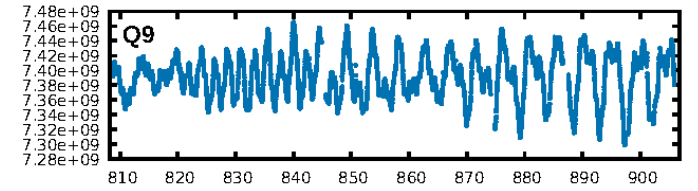
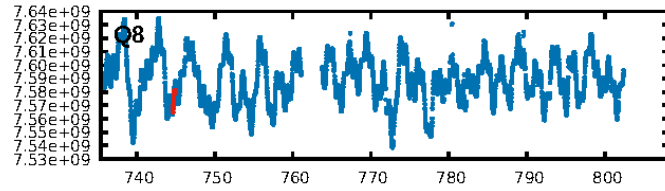
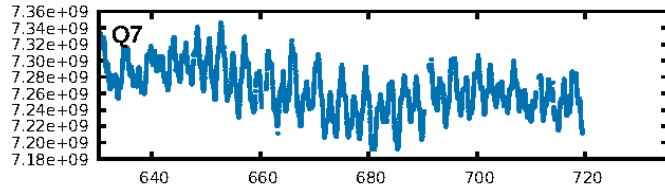
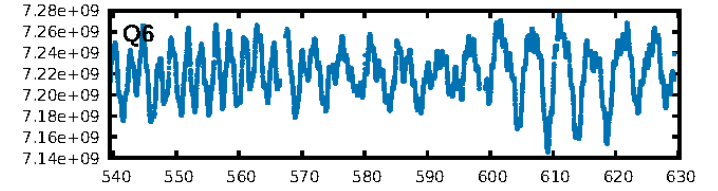
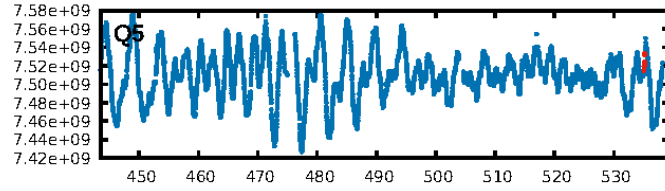
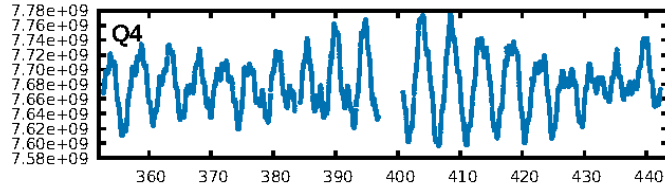
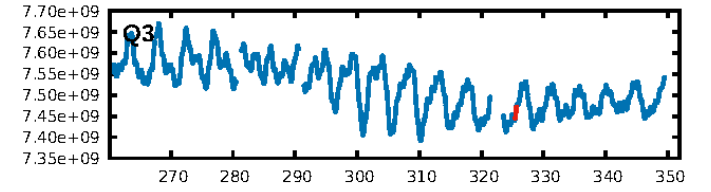
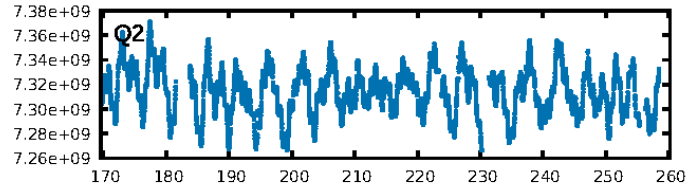
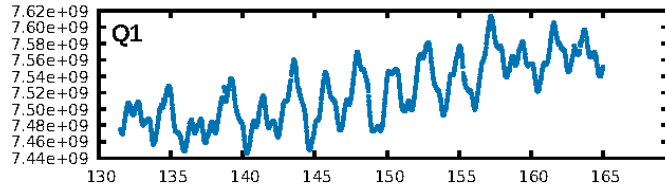
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1577.55 σ]
LongPeriod-sig: 100.0% [240.50 σ]
ModelChiSquare2-sig: 2.4%
ModelChiSquareGoF-sig: 37.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 13.608 arcsec [3.48 σ]
OotOffset-rm: 13.553 arcsec [4.10 σ]
KicOffset-rm: 14.129 arcsec [5.07 σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/4]

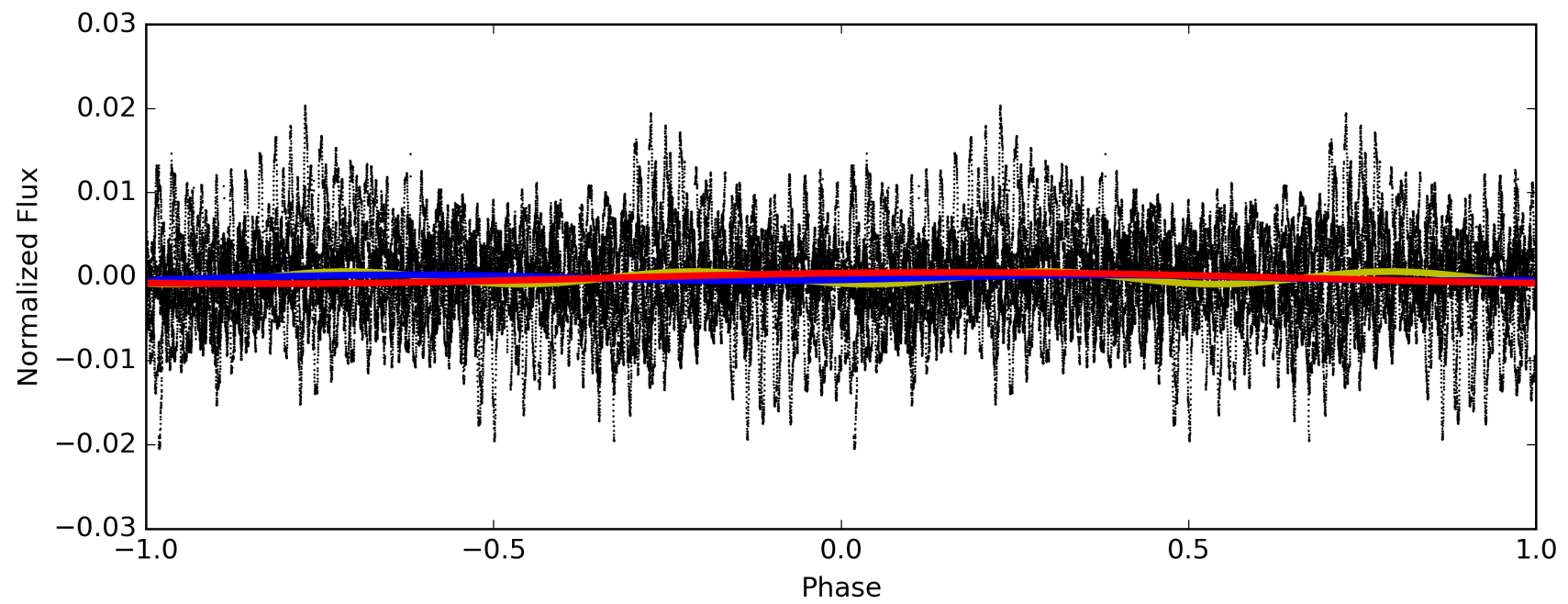
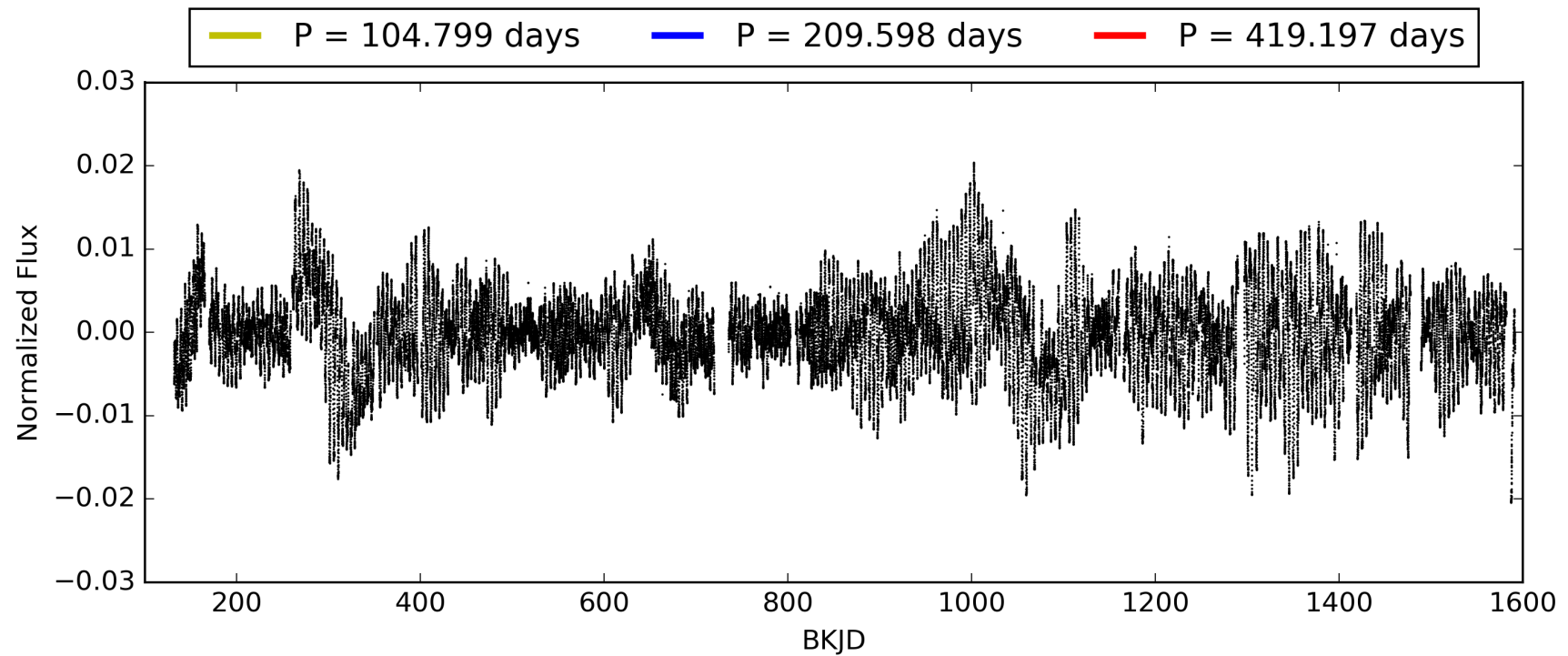
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:39:22 Z

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

TCE 011709006-01, PDC Light Curves

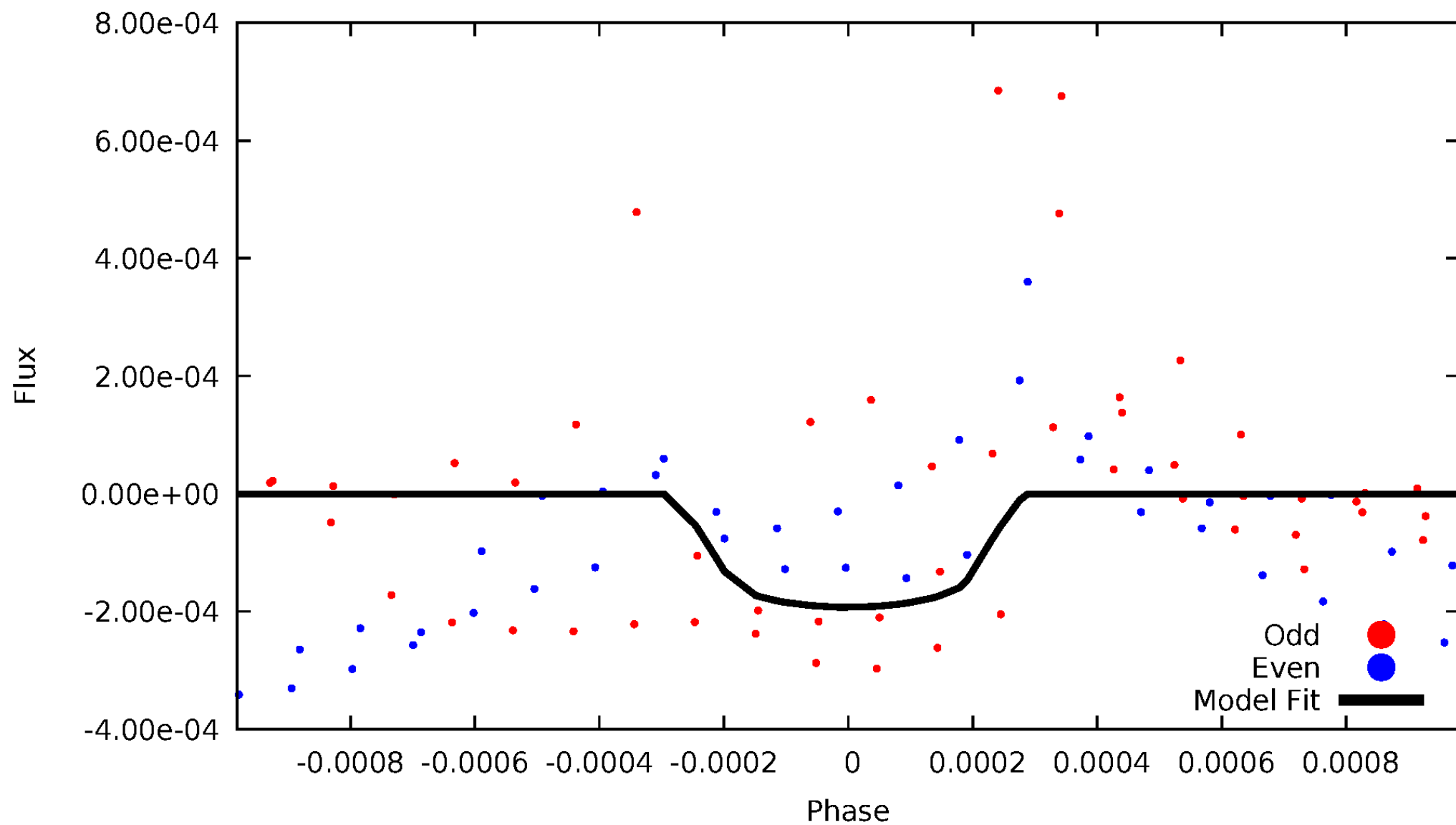


TCE 011709006-01



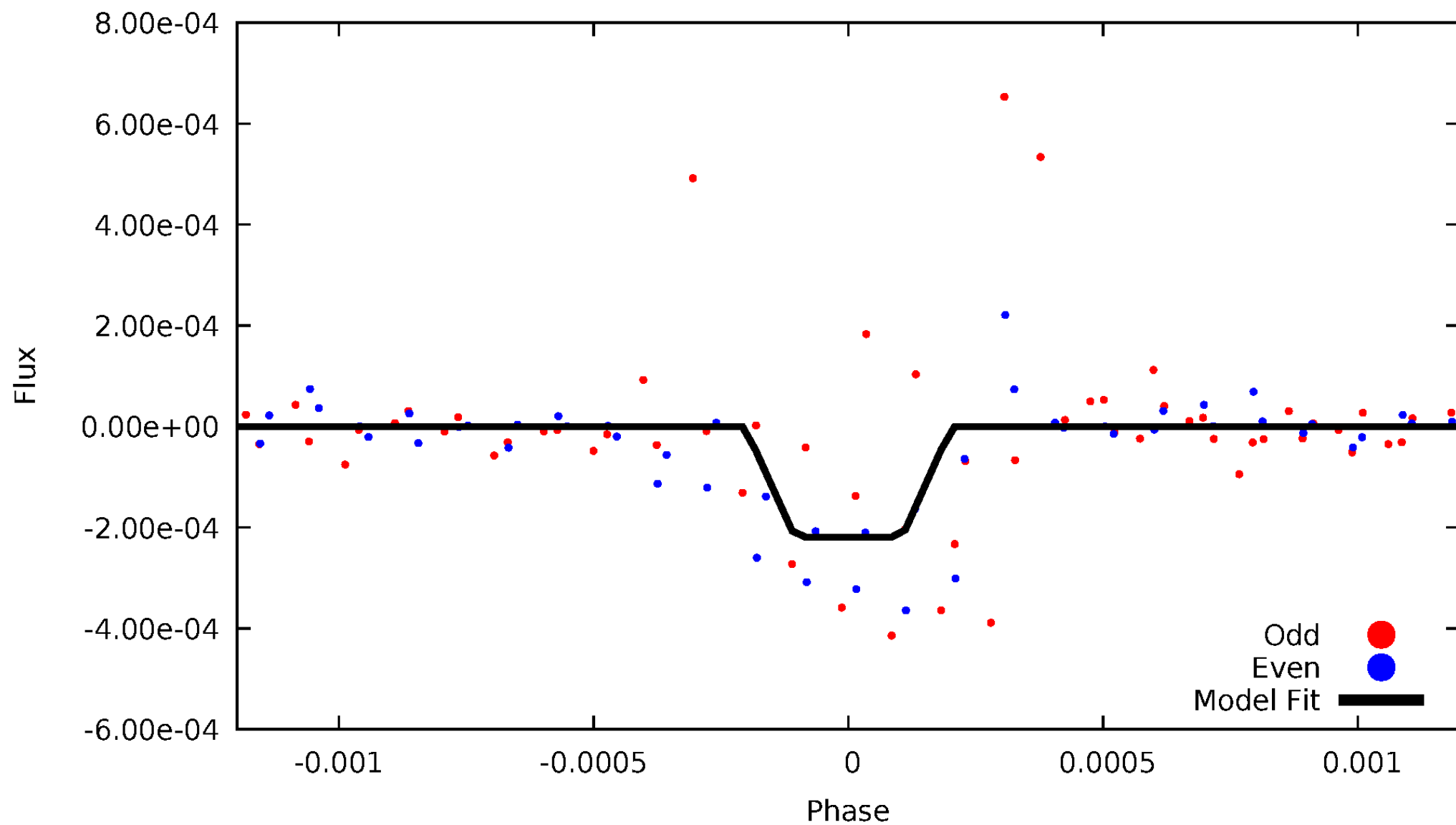
DV Odd/Even

TCE 011709006-01



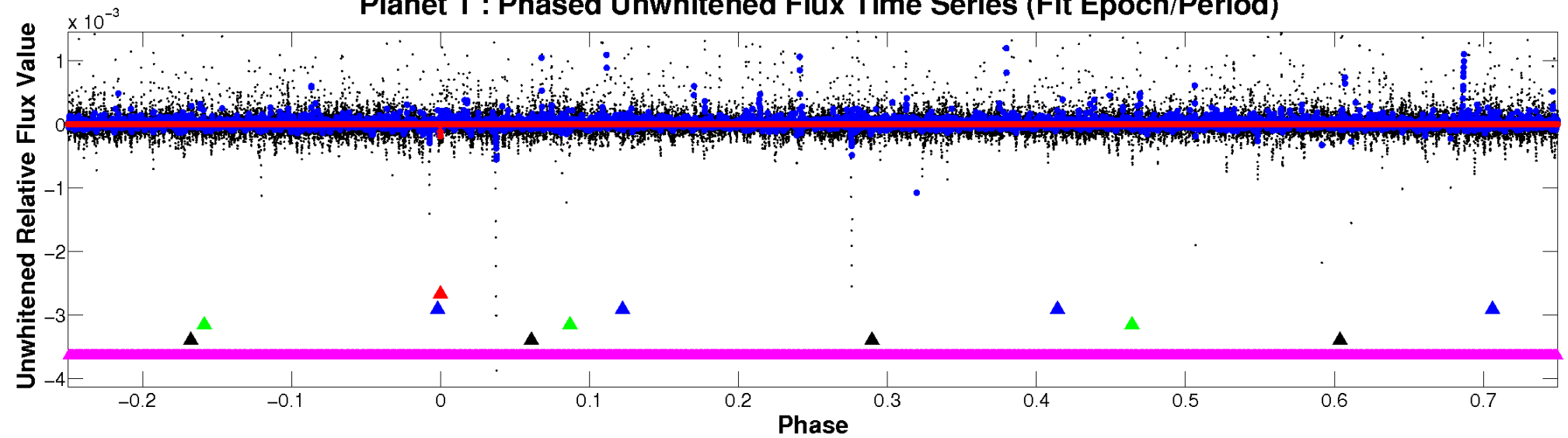
ALT Odd/Even

TCE 011709006-01

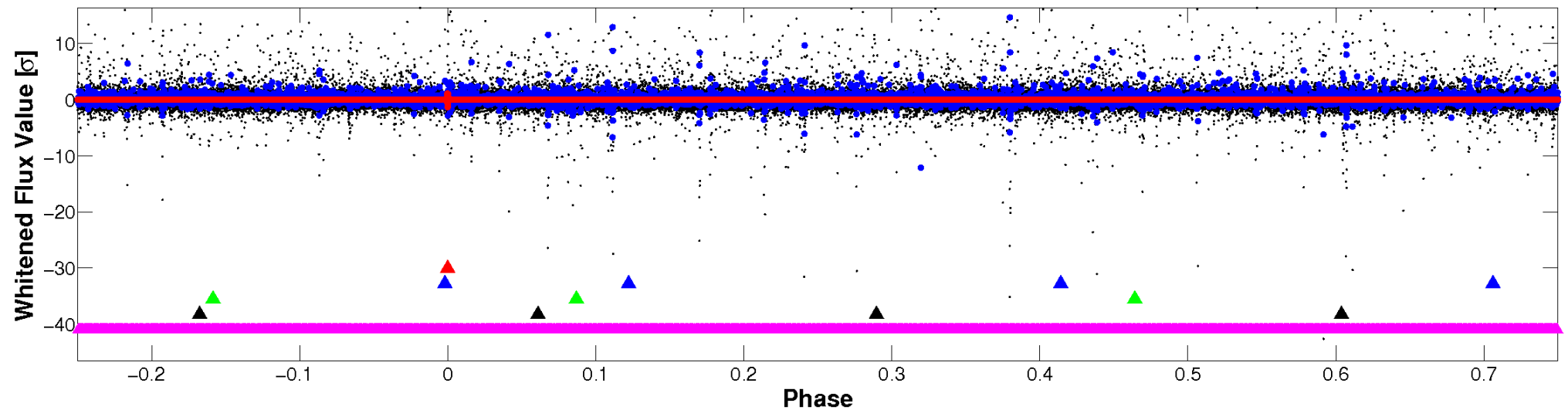


Non-Whitened Vs. Whitened Light Curve

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

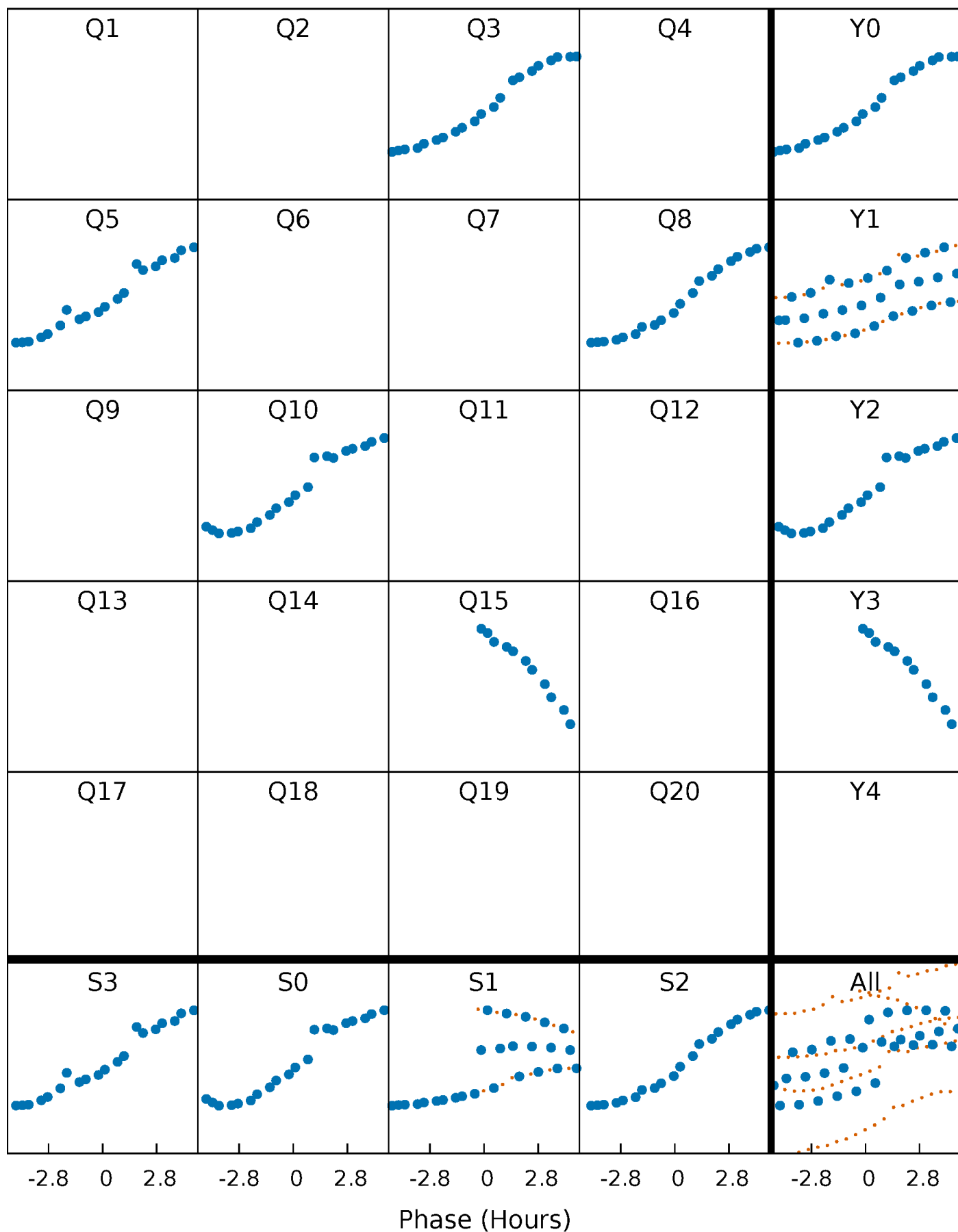


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



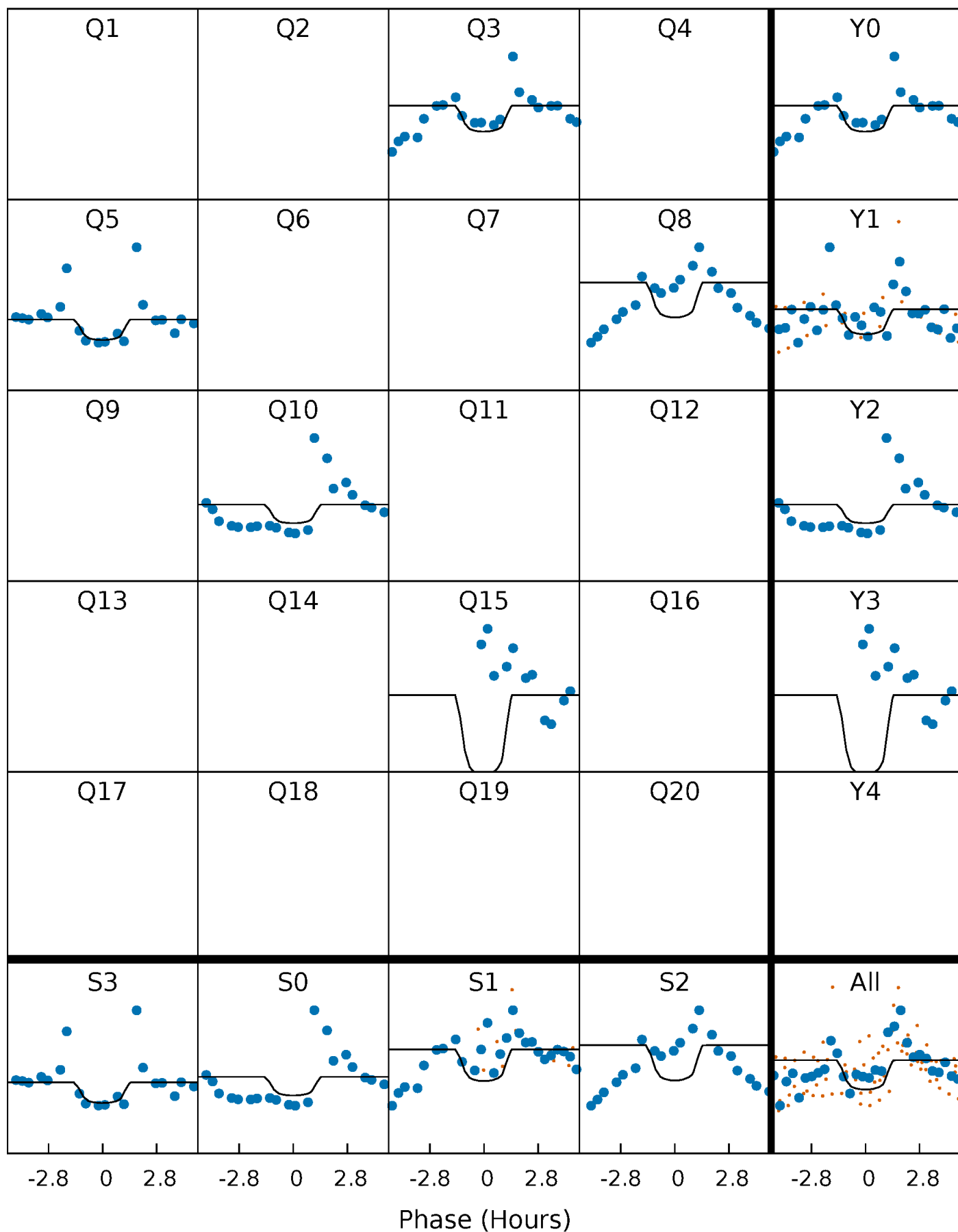
PDC Quarter-Phased Transit Curves

TCE 011709006-01 P=209.598386 Days $T_0=325.529100$ (BKJD)



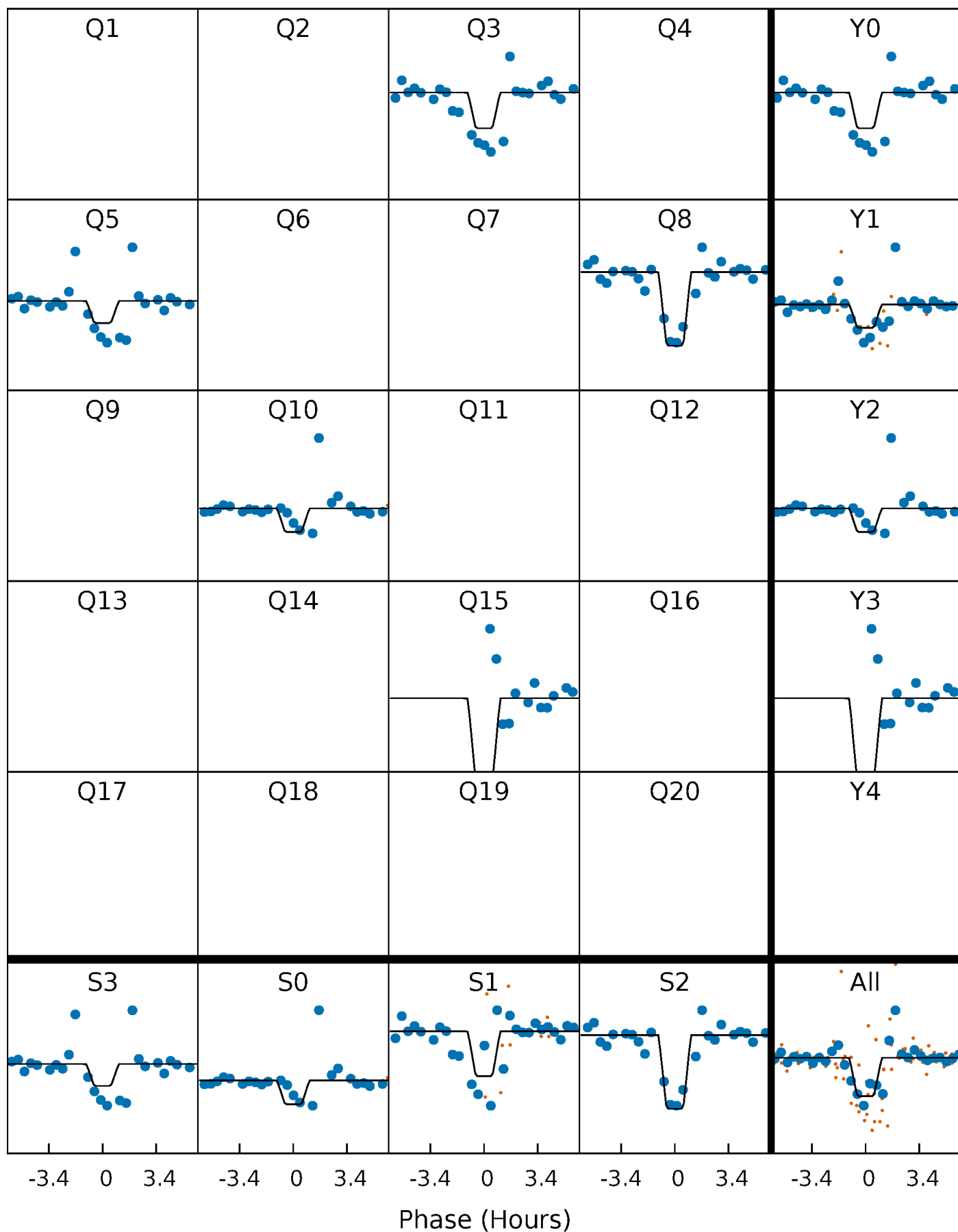
DV Quarter-Phased Transit Curves

TCE 011709006-01 P=209.598386 Days $T_0=325.529100$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

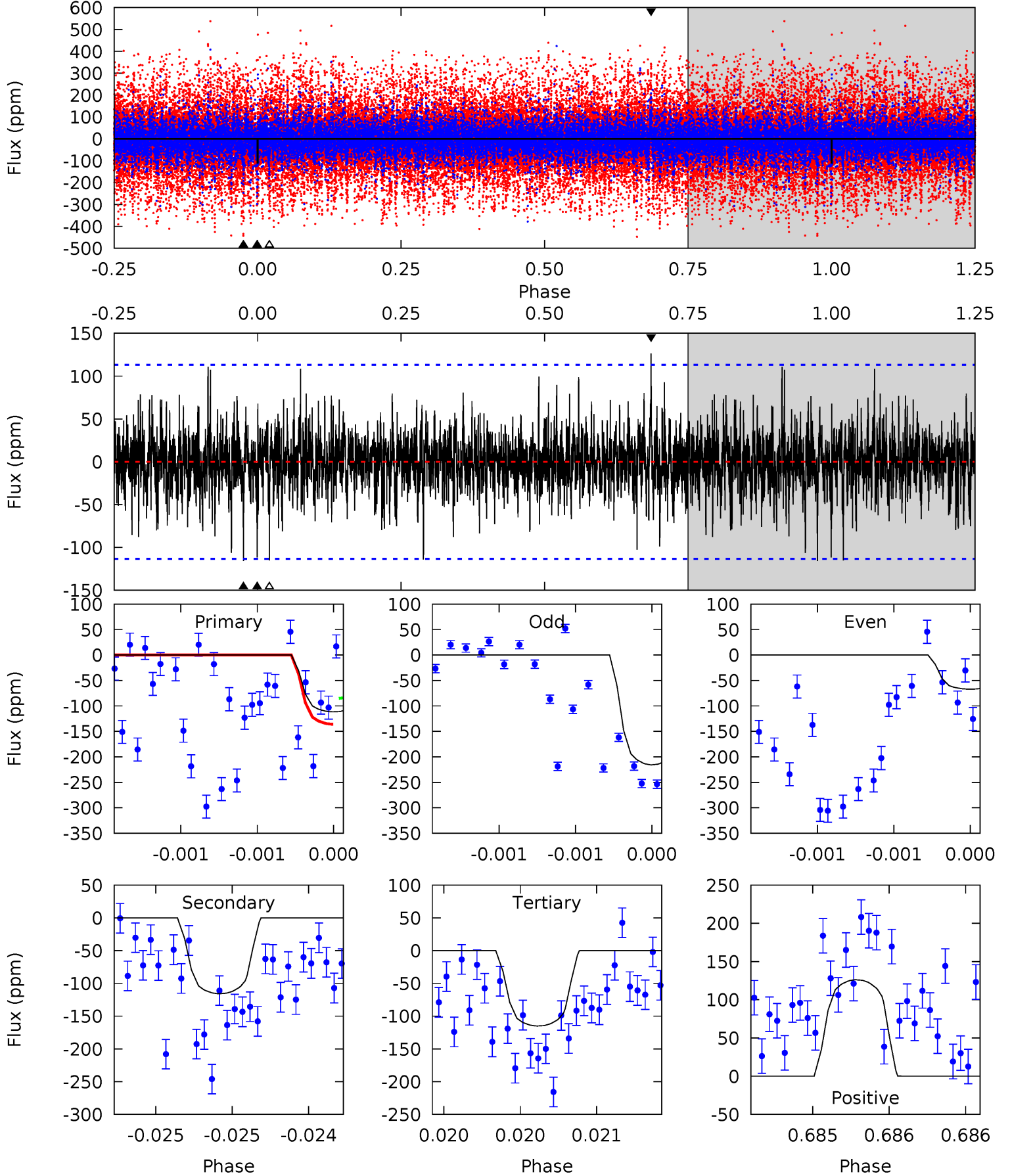
TCE 011709006-01 P=209.595193 Days $T_0=325.524958$ (BKJD)



DV Model-Shift Uniqueness Test

011709006-01, P = 209.598386 Days, E = 115.930714 Days

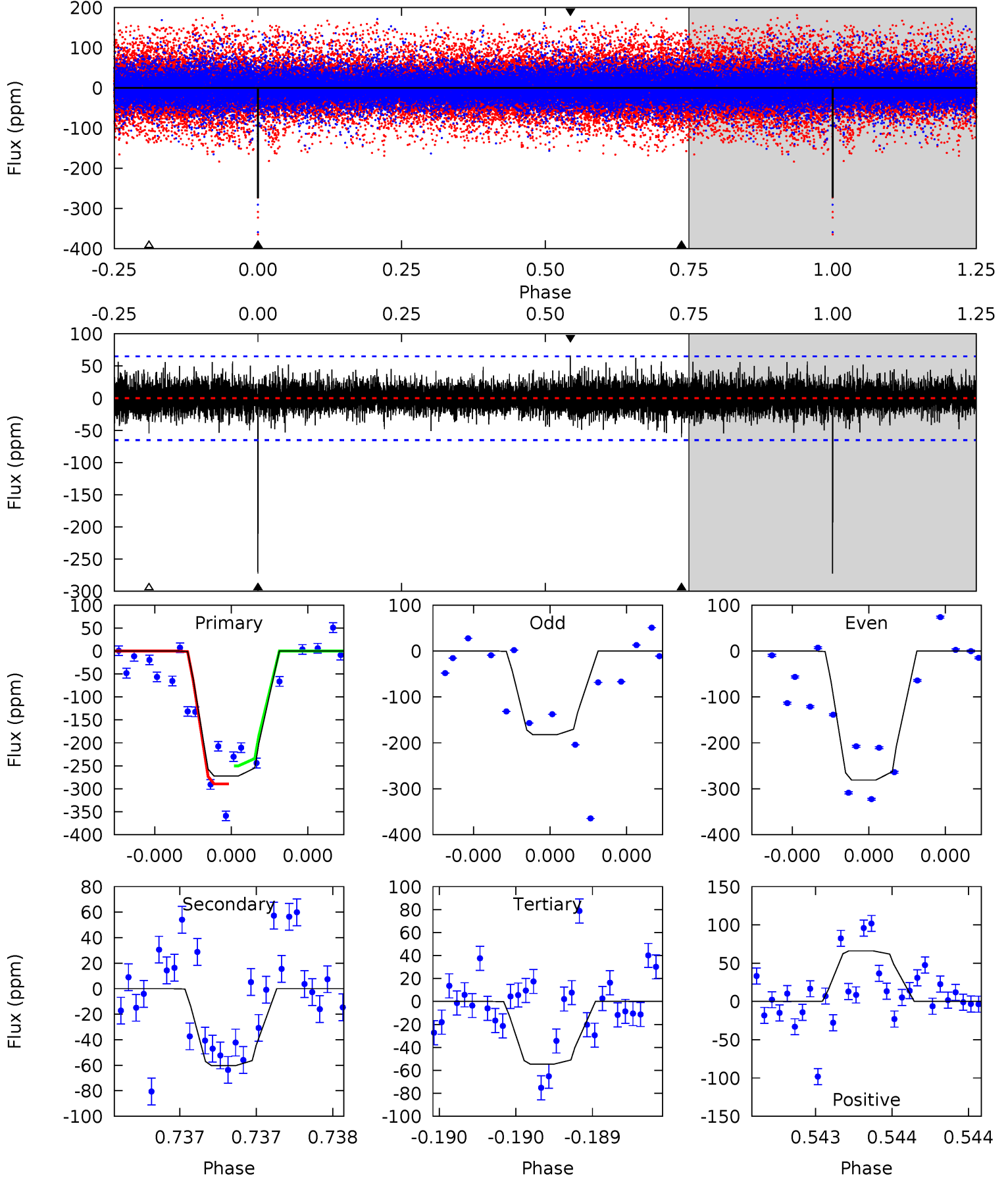
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.48	5.69	5.65	6.20	5.56	3.46	1.26	-0.17	-0.72	0.03	-0.51	3.48	0.70	0.52	1.26



Alt Model-Shift Uniqueness Test

011709006-01, P = 209.595193 Days, E = 115.929765 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	5.21	4.71	5.72	5.63	3.57	1.16	18.8	17.8	0.50	-0.50	3.68	0.83	0.20	1.61



Stellar Parameters For KIC 011709006

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6014^{+120}_{-132}	$4.486^{+0.024}_{-0.096}$	$0.070^{+0.150}_{-0.200}$	$0.993^{+0.117}_{-0.054}$	$1.101^{+0.053}_{-0.098}$	$1.584^{+0.183}_{-0.444}$
	+2%/-2%	+1%/-2%	+214%/-286%	+12%/-5%	+5%/-9%	+12%/-28%
Source	SPE13	SPE13	SPE13	DSEP		

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

Secondary Eclipse Parameters for KIC 011709006-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-116 ± 20	$2.21^{+2.01}_{-1.42}$	442^{+14}_{-13}	4568^{+2813}_{-948}	6565^{+43755}_{-4803}
Alt.	-60 ± 12	$2.26^{+1.73}_{-1.45}$	442^{+14}_{-12}	4006^{+2203}_{-689}	3211^{+22998}_{-2213}

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 $A_{obs} \gg 1.0$

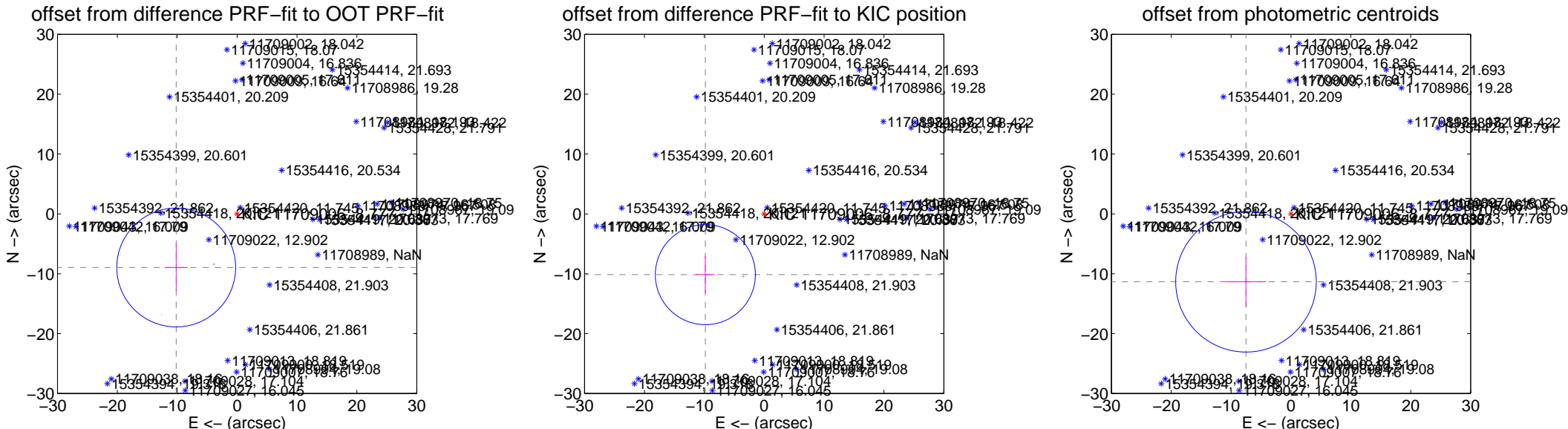
DV Centroid Data

Supplemental centroid analysis for 011709006-01. **Kepler magnitude: 8.78.** Transit SNR 6.22

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.12 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	13.553 \pm 3.308	4.10	10.171 \pm 1.930	-8.958 \pm 3.967
PRF-fit source offset from KIC position	14.129 \pm 2.785	5.07	9.827 \pm 1.574	-10.151 \pm 3.089
photometric centroid source offset	13.61 \pm 3.91	3.48	7.52 \pm 3.37	-11.34 \pm 4.13



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



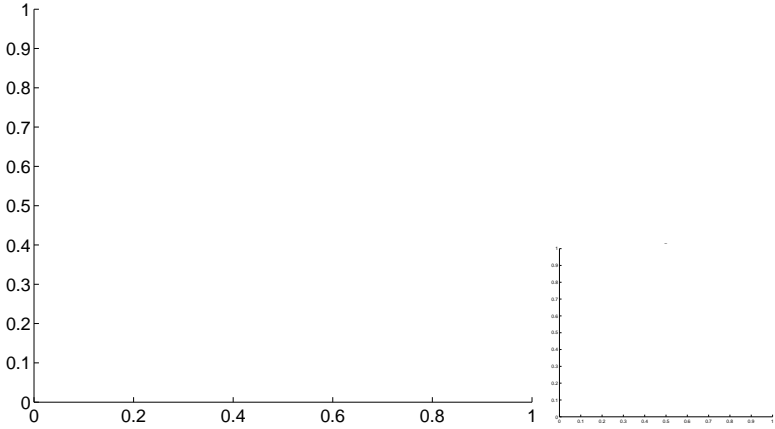
Q1 no OOT image



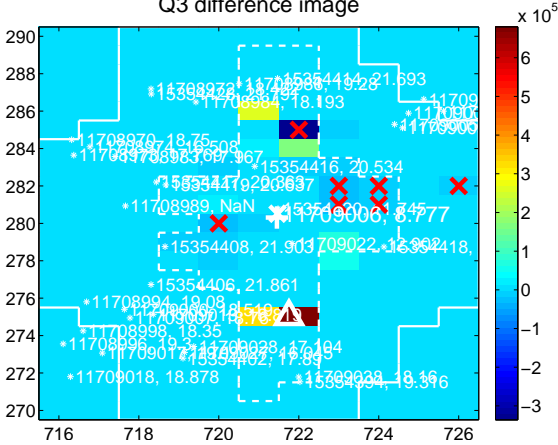
Q2 no difference image



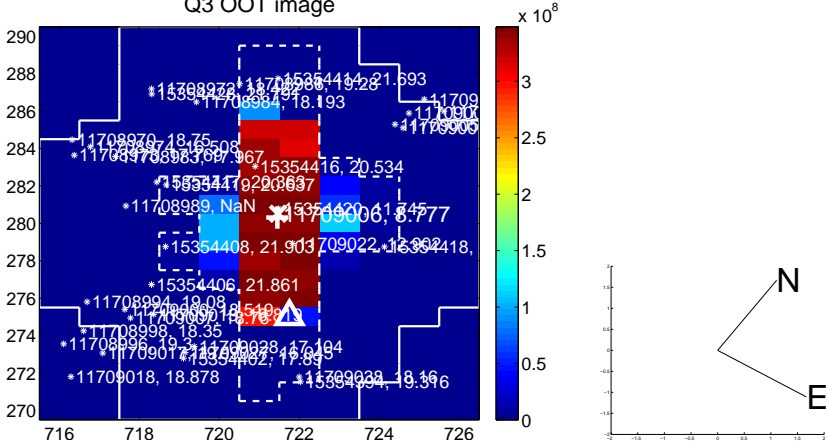
Q2 no OOT image



Q3 difference image



Q3 OOT image



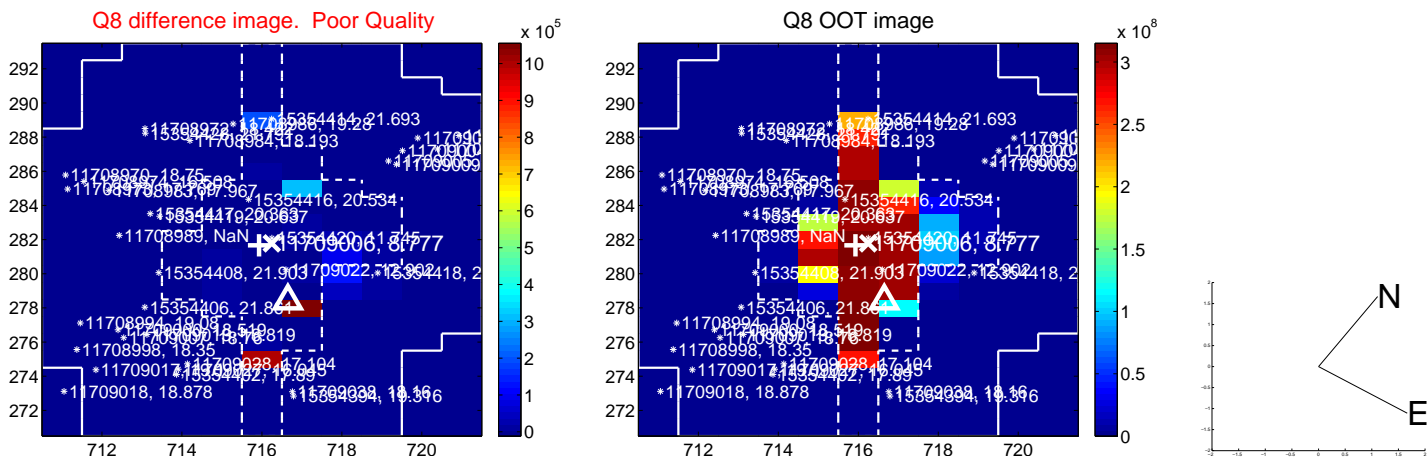
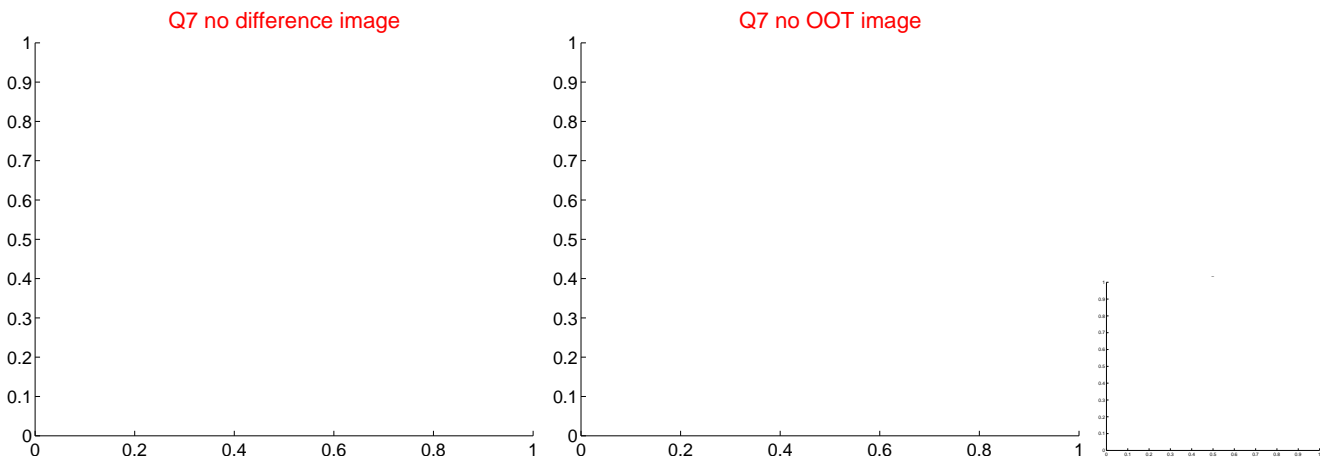
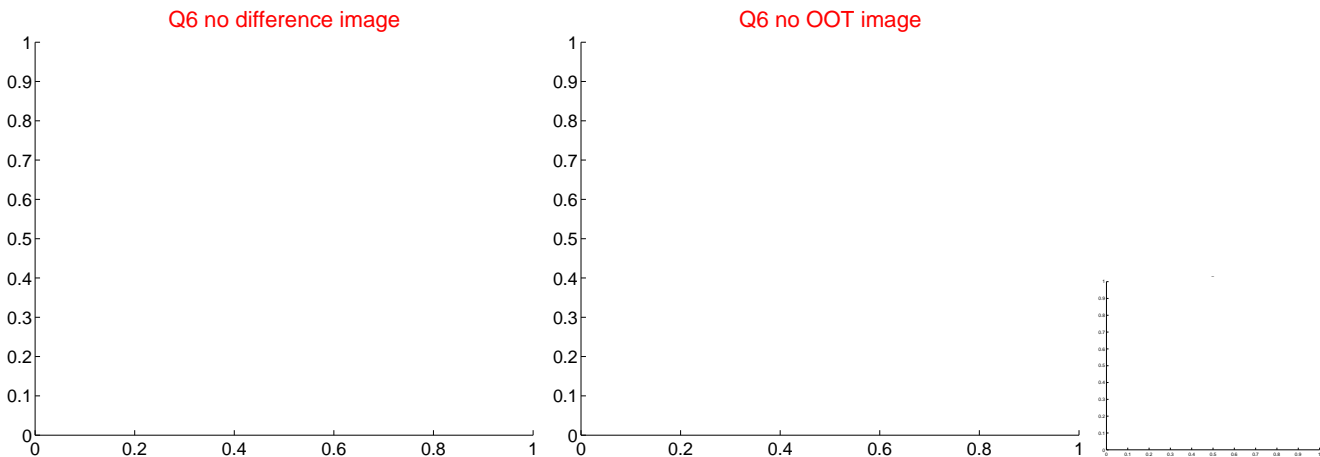
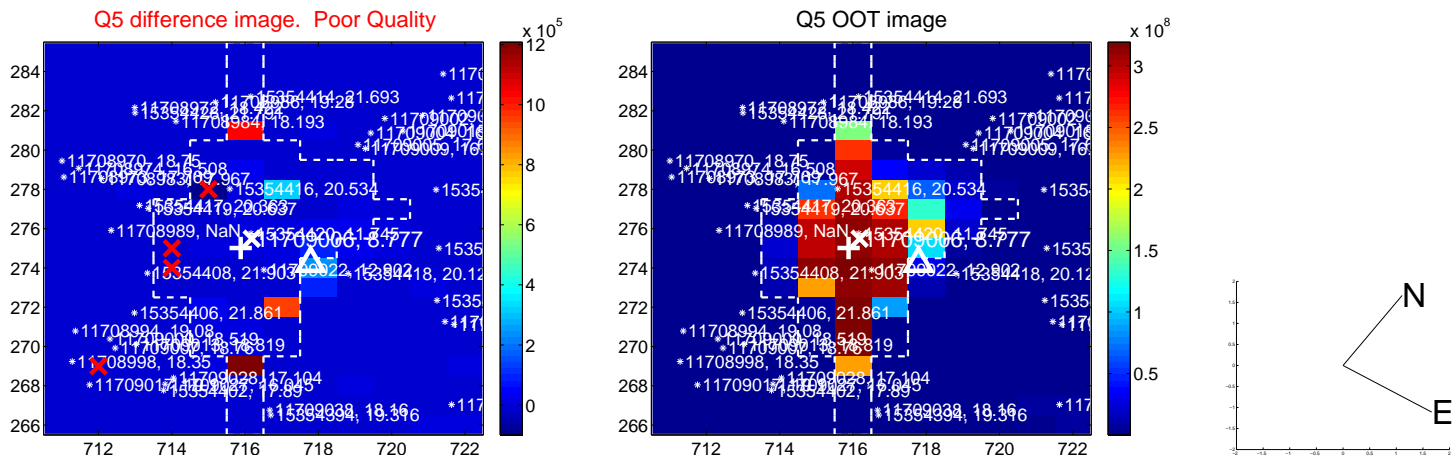
Q4 no difference image



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.

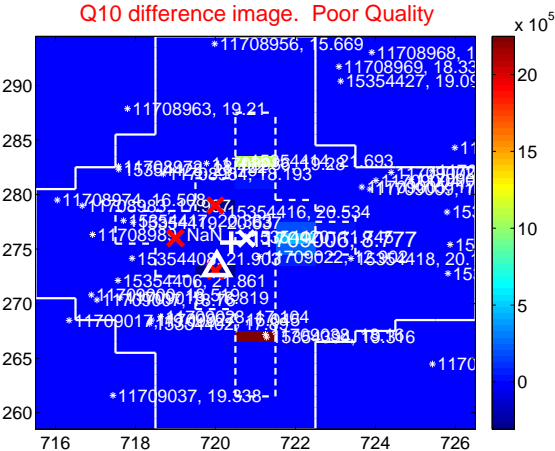
Q9 no difference image



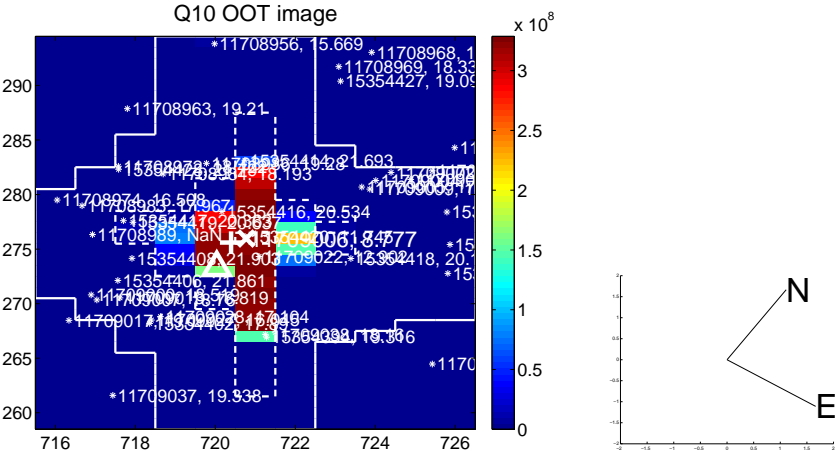
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



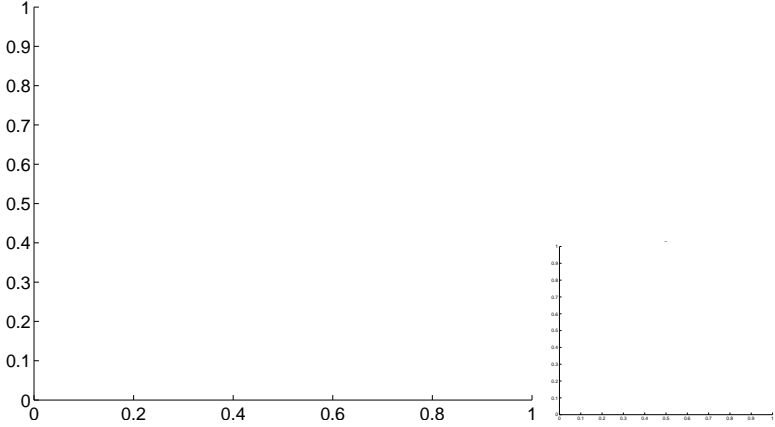
Q11 no OOT image



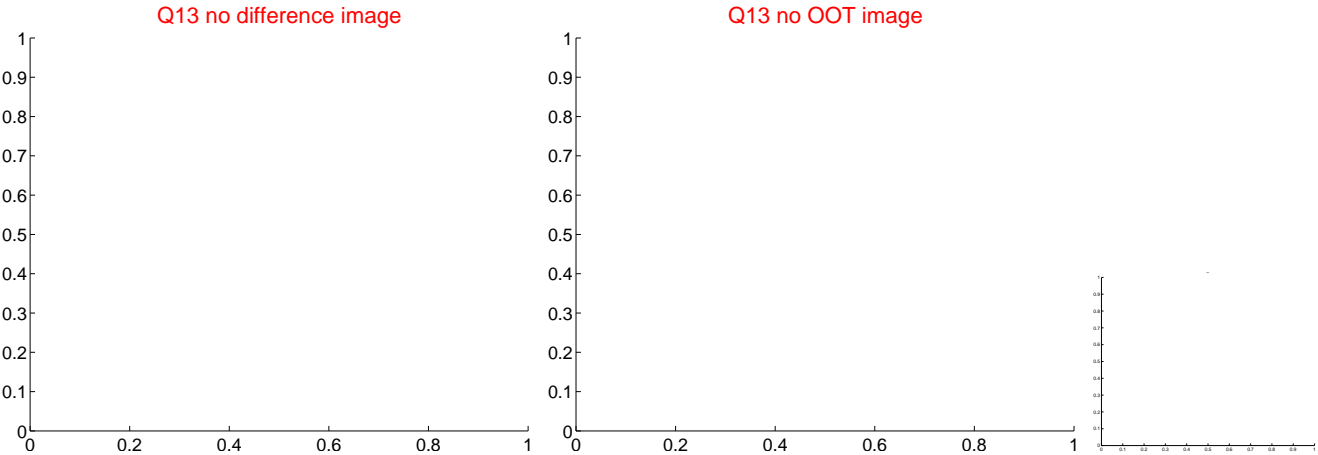
Q12 no difference image



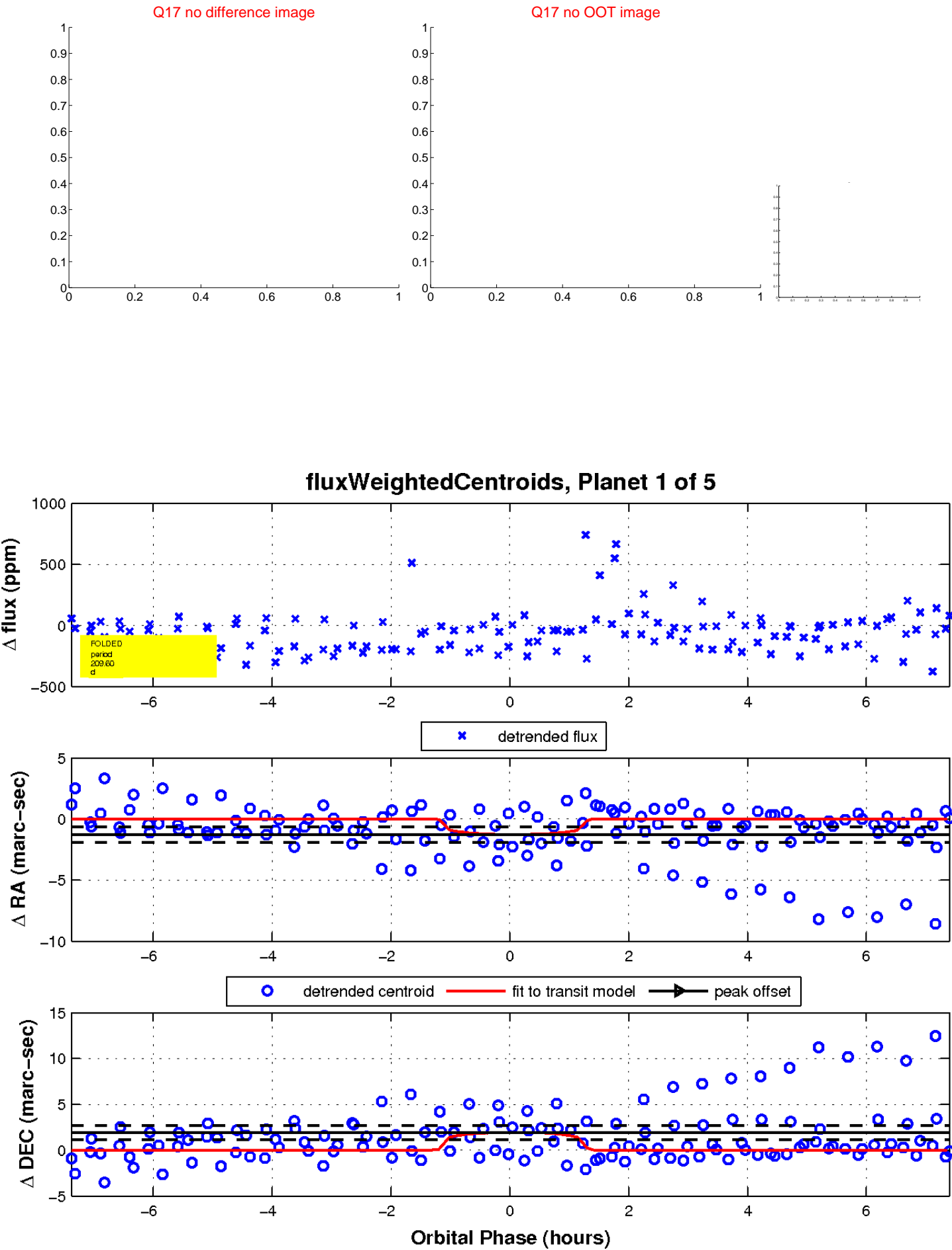
Q12 no OOT image



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

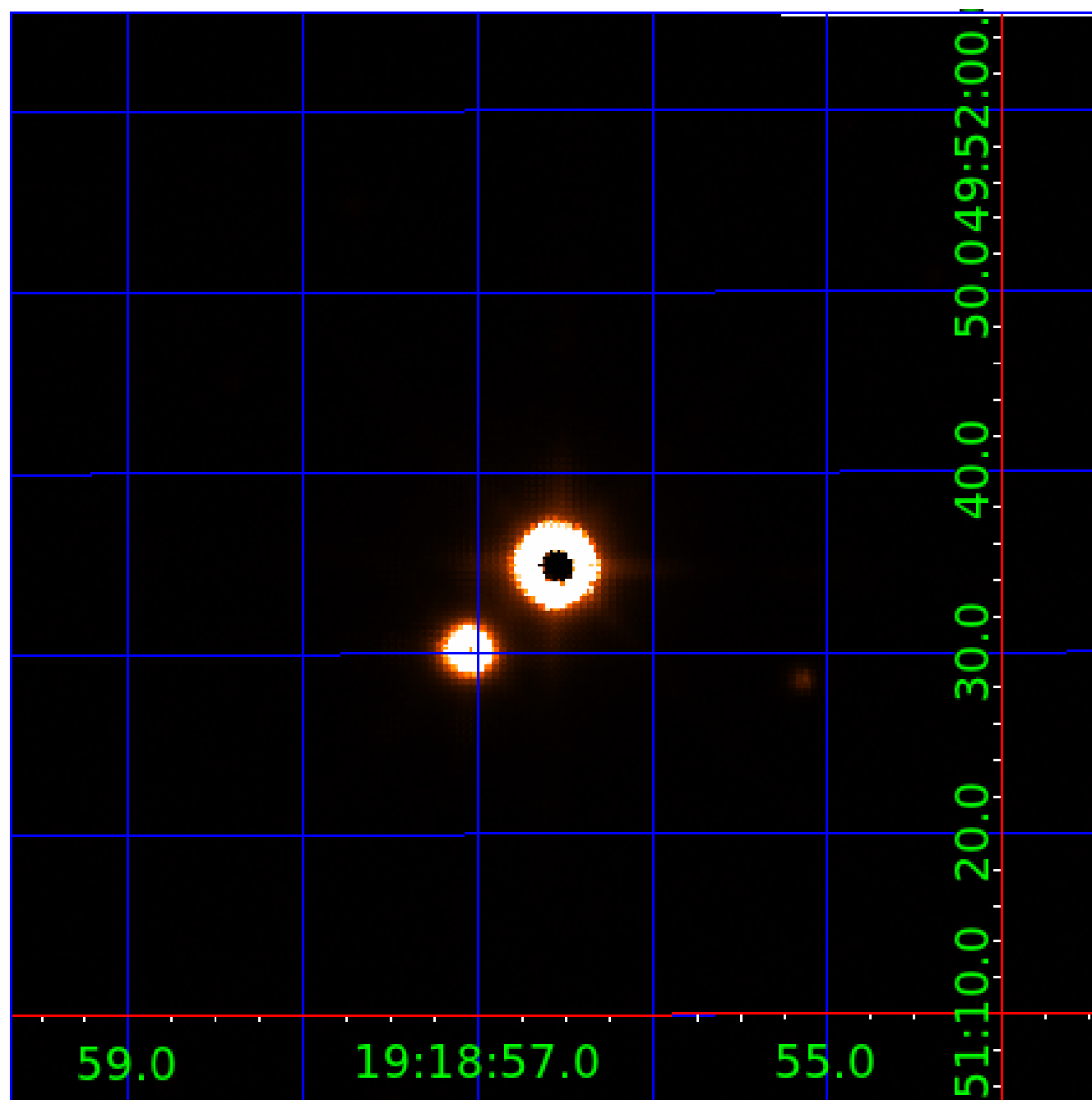


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011709006

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Robovetter Results

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011709006-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-03	OBS	FP	0.00	1	0	0	0	LPP_ALT—CENT_SATURATED
011709006-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

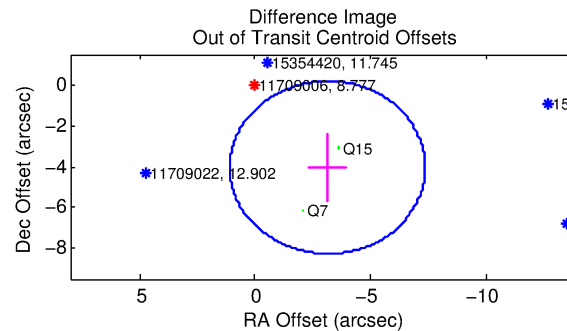
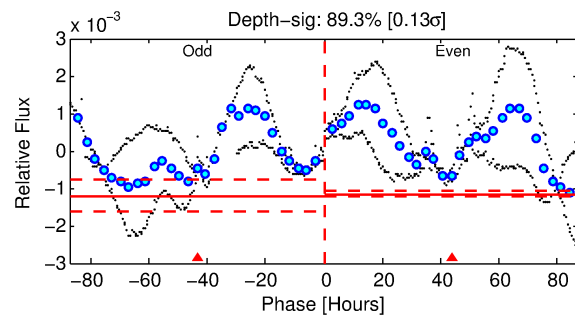
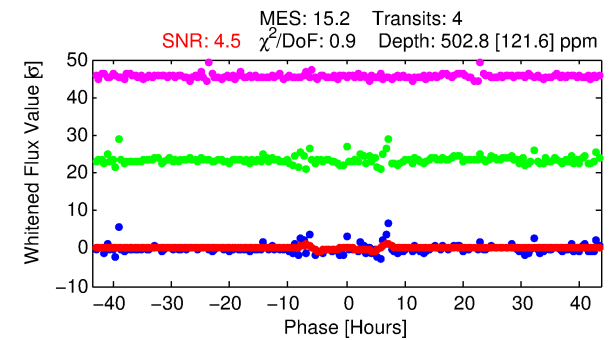
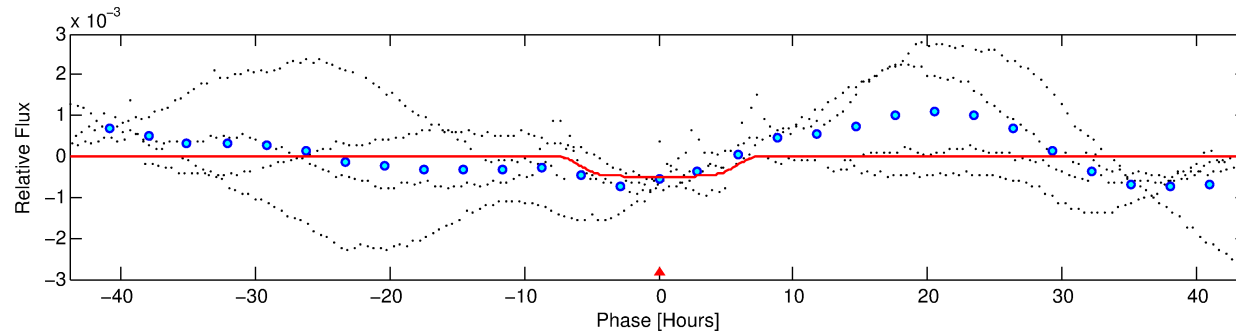
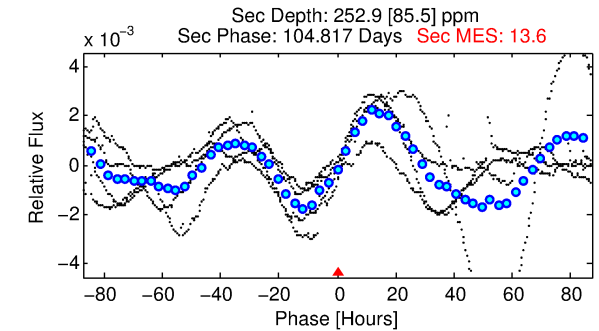
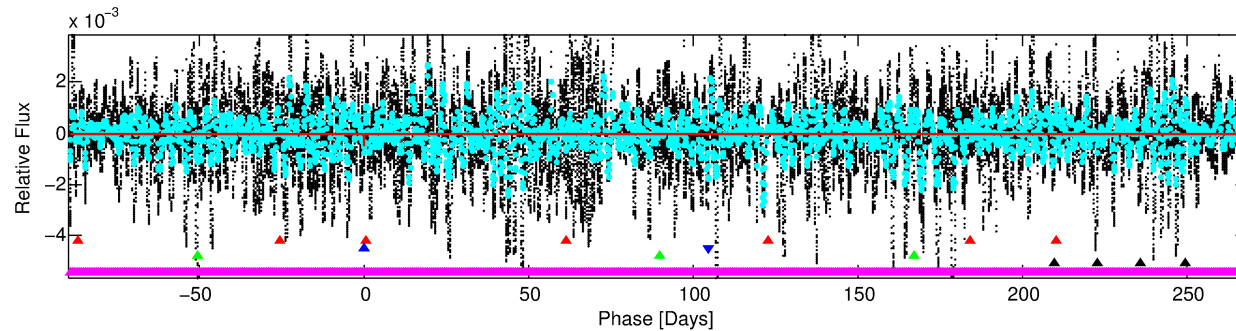
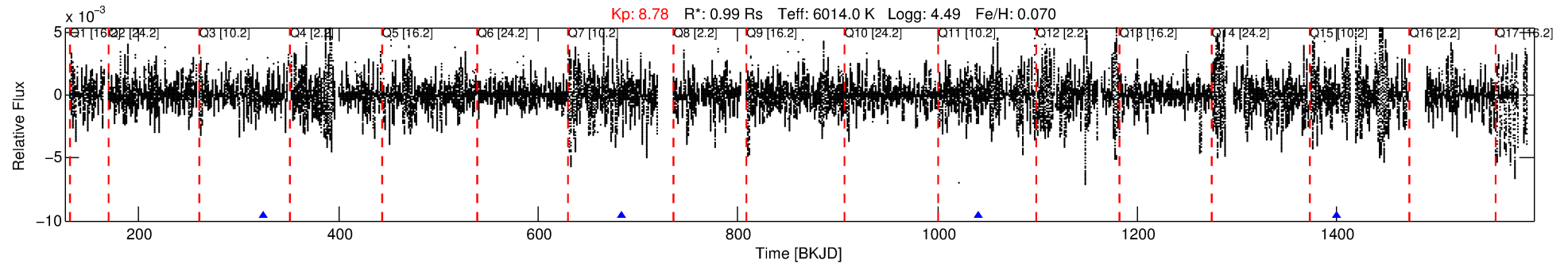
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709006-02

No Significant Match Found

DV One-Page Summary

KIC: 11709006 Candidate: 2 of 5 Period: 358.001 d



DV Fit Results:

Period = 358.00068 [0.00743] d
Epoch = 325.1369 [0.0152] BKJD
Rp/R* = 0.0256 [0.0031]
a/R* = 75.57 [5.73]
b = 0.94 [0.01]
Seff = 1.11 [0.21]
Teq = 262 [12] K
Rp = 2.77 [0.47] Re
a = 1.0192 [0.1098] AU
Ag = 18793.43 [8441.42] [2.23 σ]
Teffp = 4741 [505] K [8.87 σ]

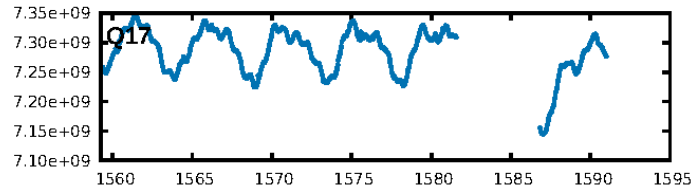
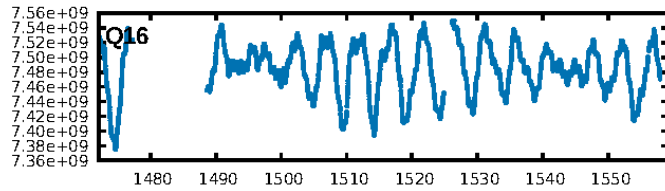
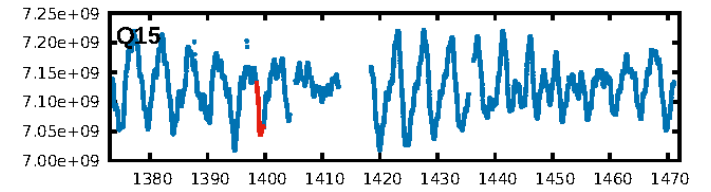
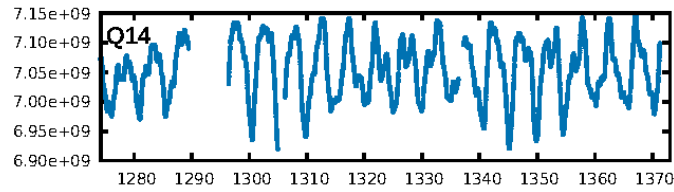
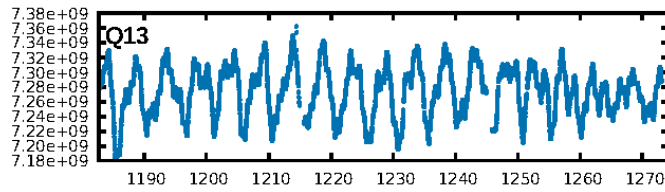
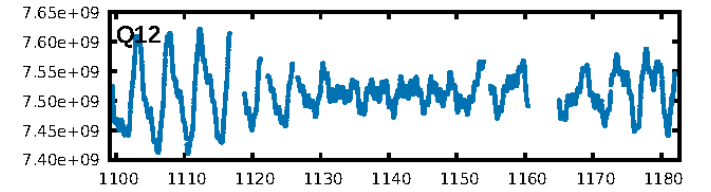
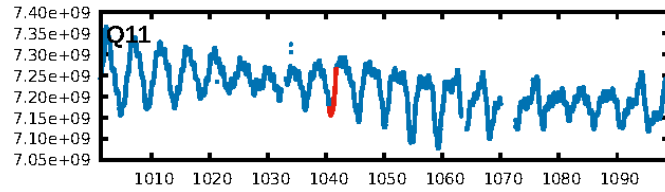
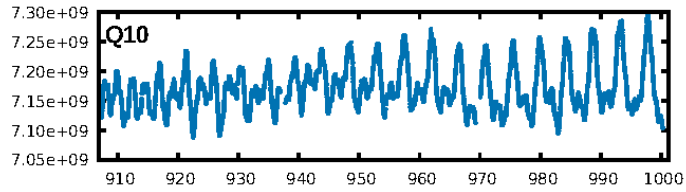
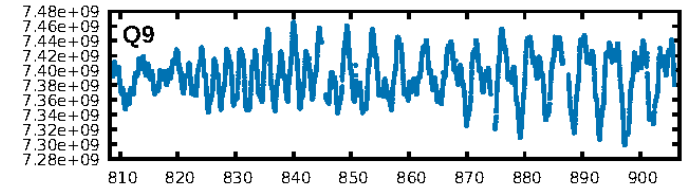
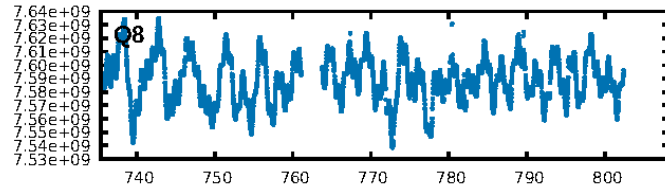
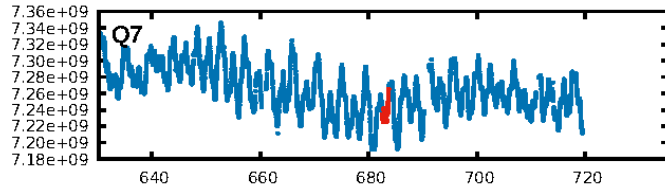
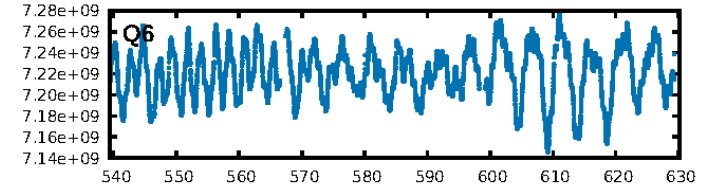
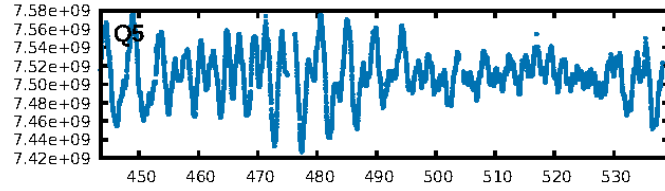
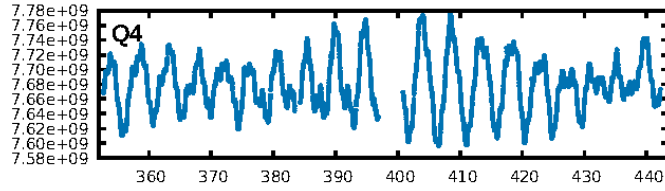
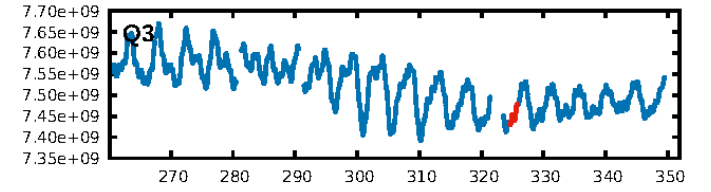
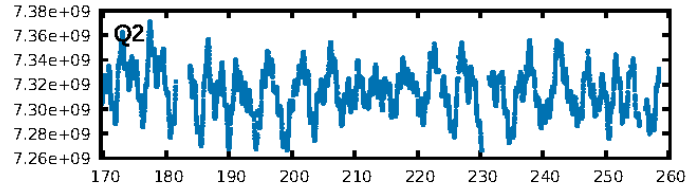
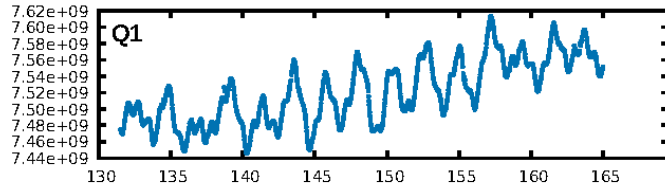
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [240.50 σ]
LongPeriod-sig: 100.0% [21.25 σ]
ModelChiSquare2-sig: 3.9%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.4%
Centroid-so: 6.843 arcsec [3.18 σ]
OotOffset-rm: 5.105 arcsec [3.62 σ]
KicOffset-rm: 5.822 arcsec [4.04 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/2]

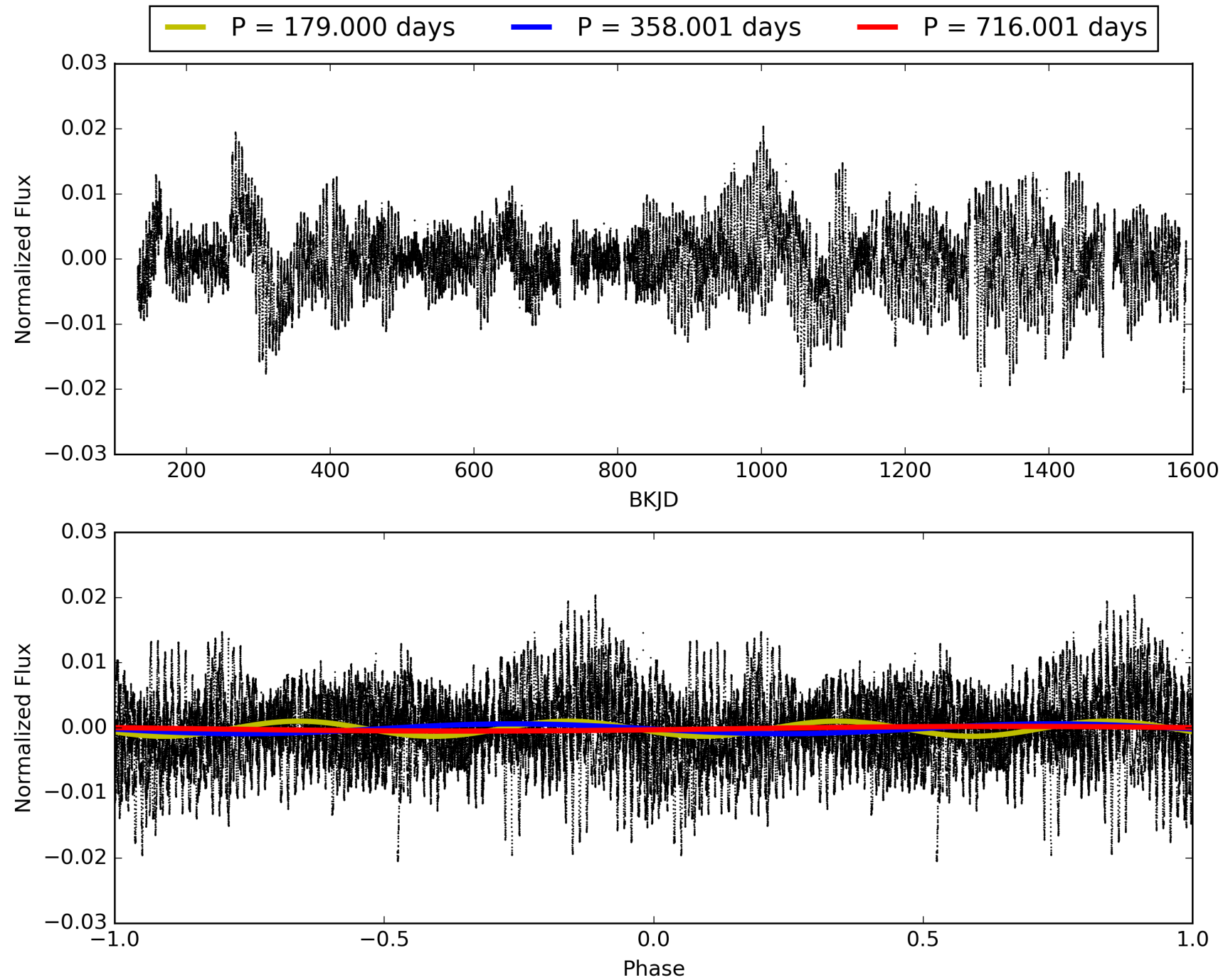
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:39:30 Z

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

TCE 011709006-02, PDC Light Curves

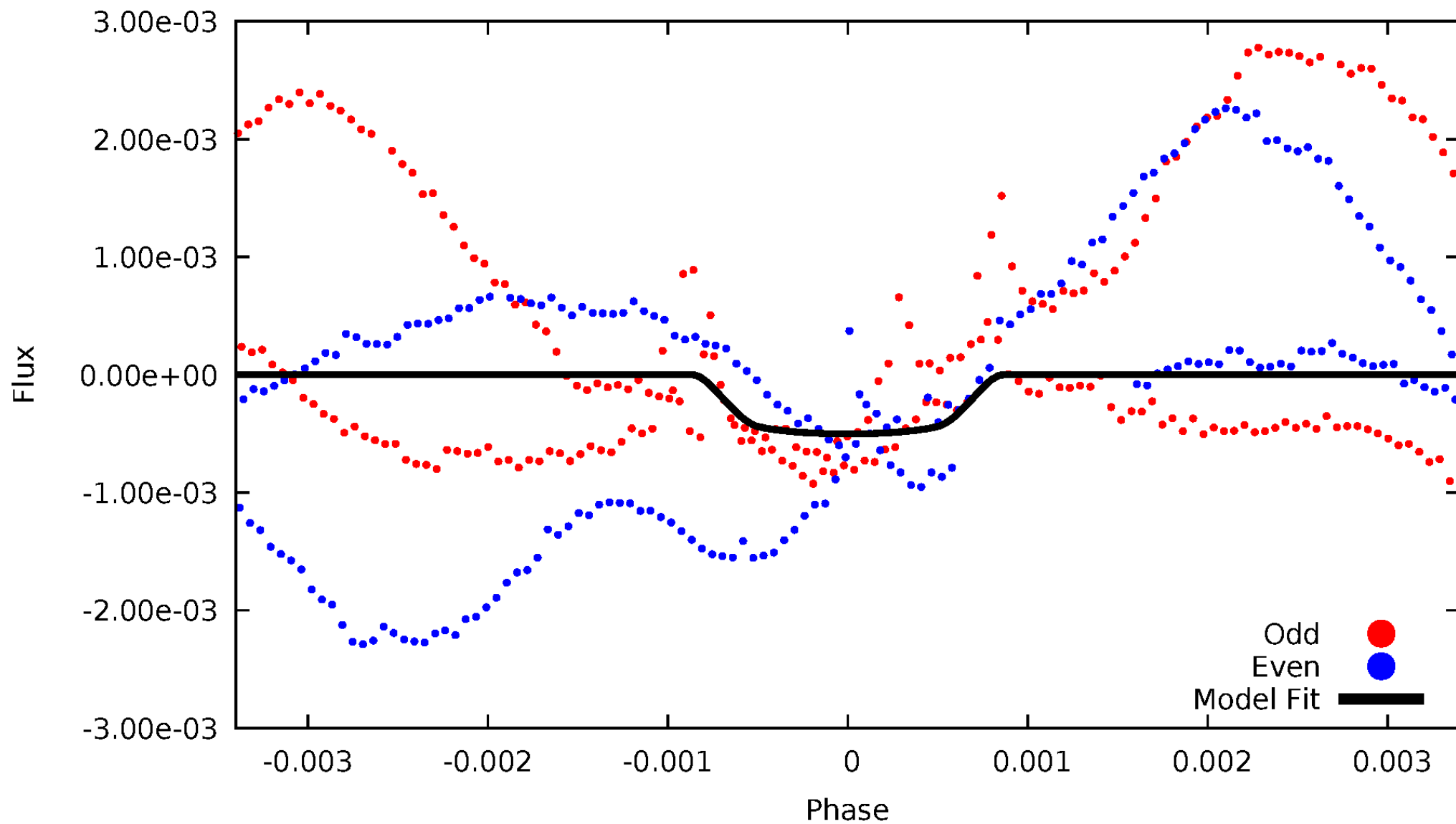


TCE 011709006-02



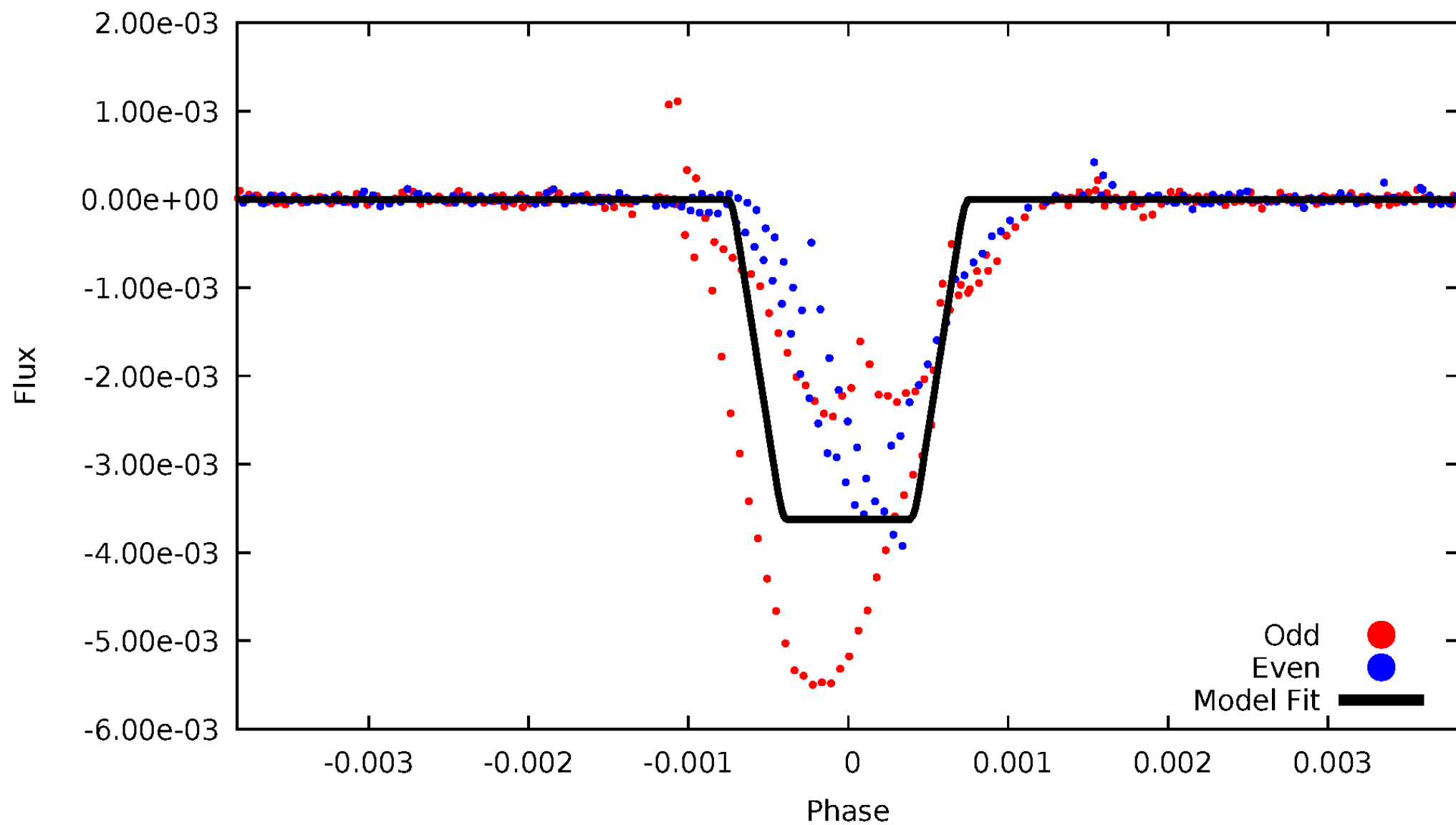
DV Odd/Even

TCE 011709006-02



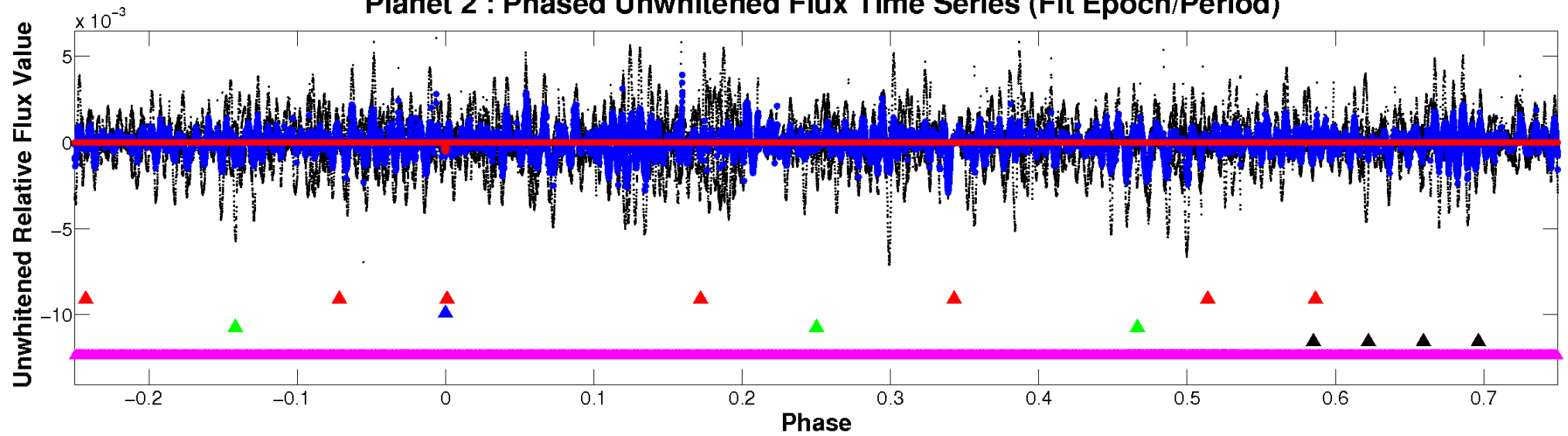
ALT Odd/Even

TCE 011709006-02

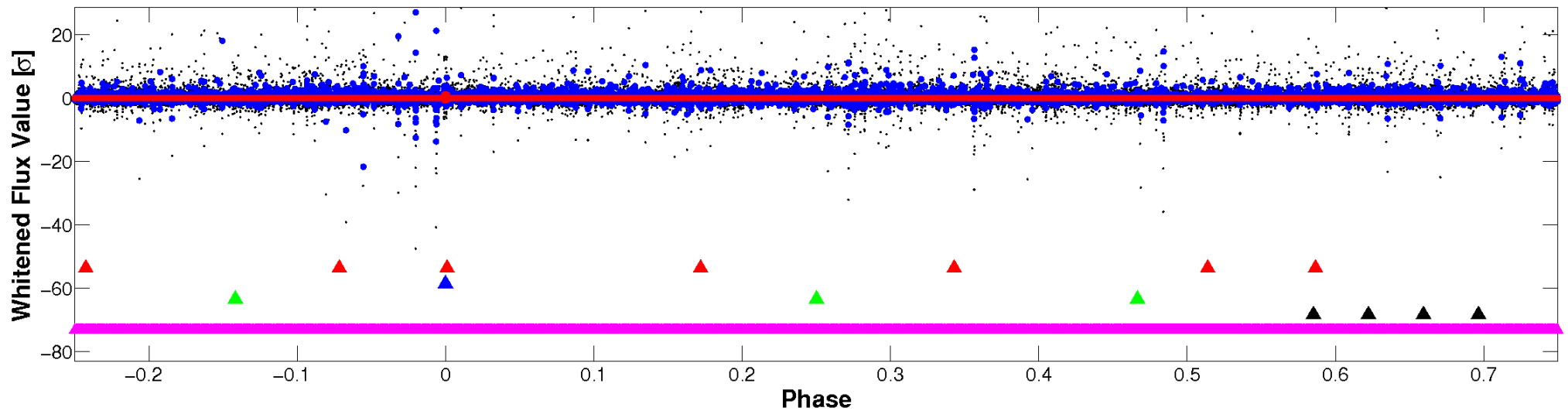


Non-Whitened Vs. Whitened Light Curve

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

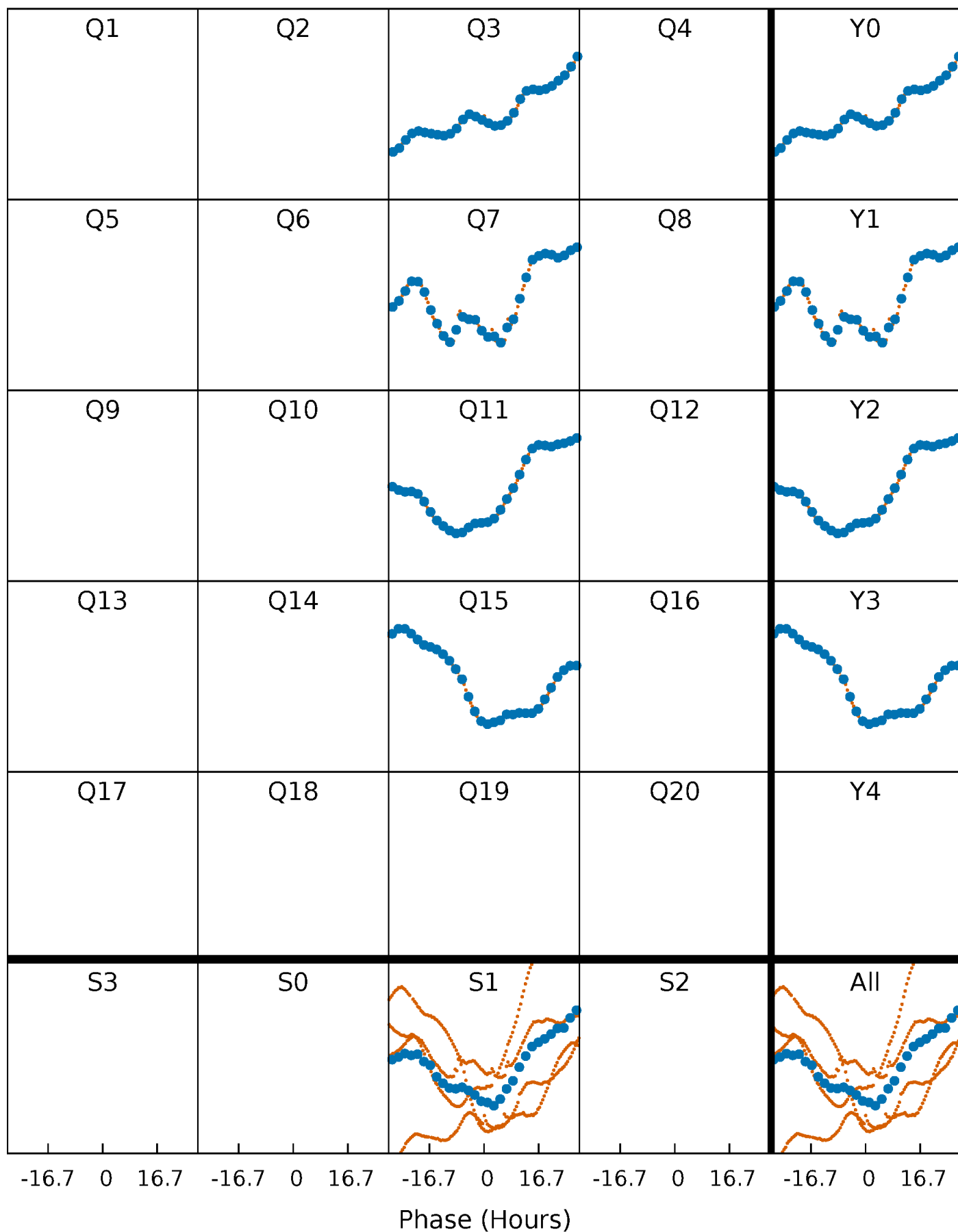


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



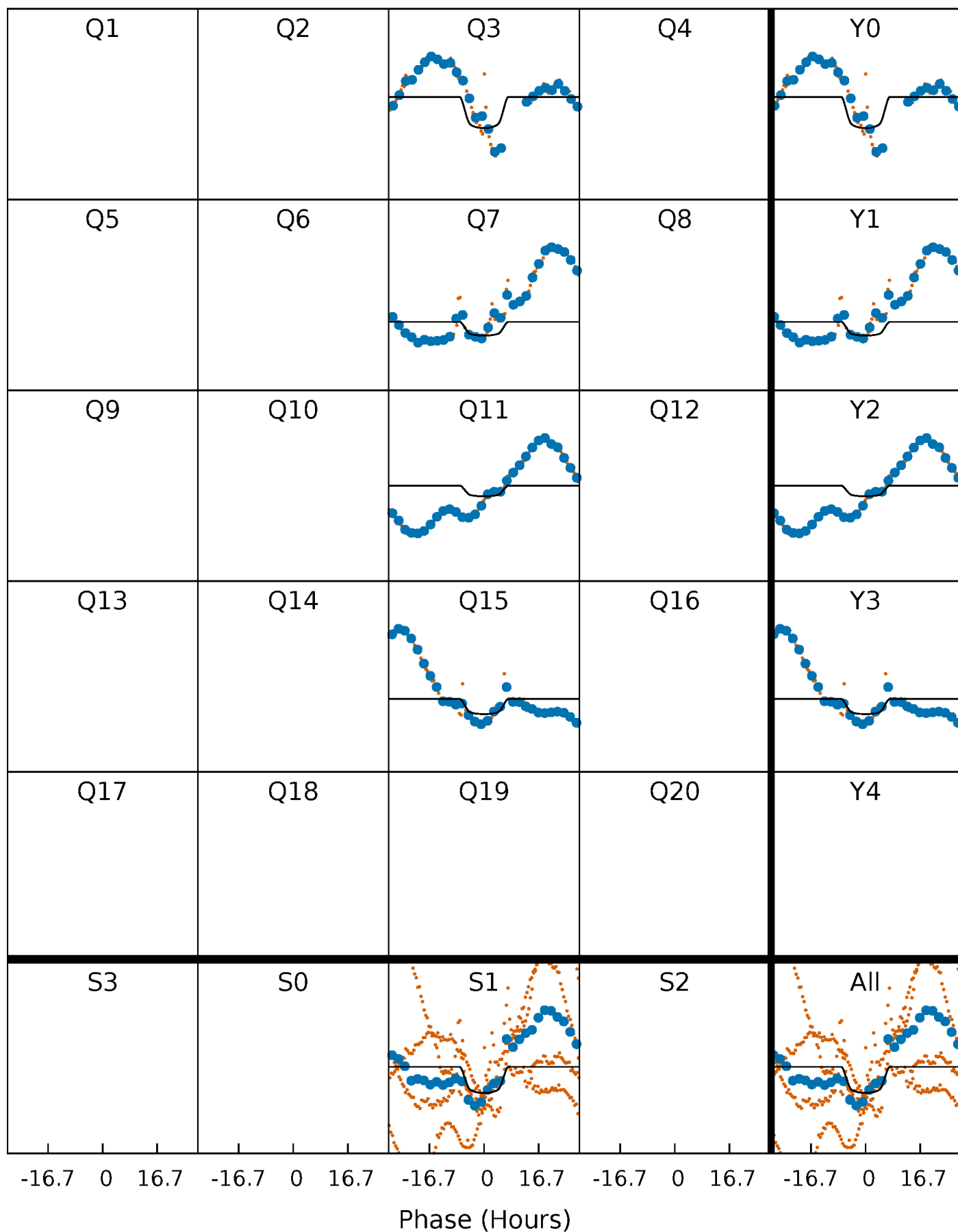
PDC Quarter-Phased Transit Curves

TCE 011709006-02 $P=358.000679$ Days $T_0=325.136854$ (BKJD)



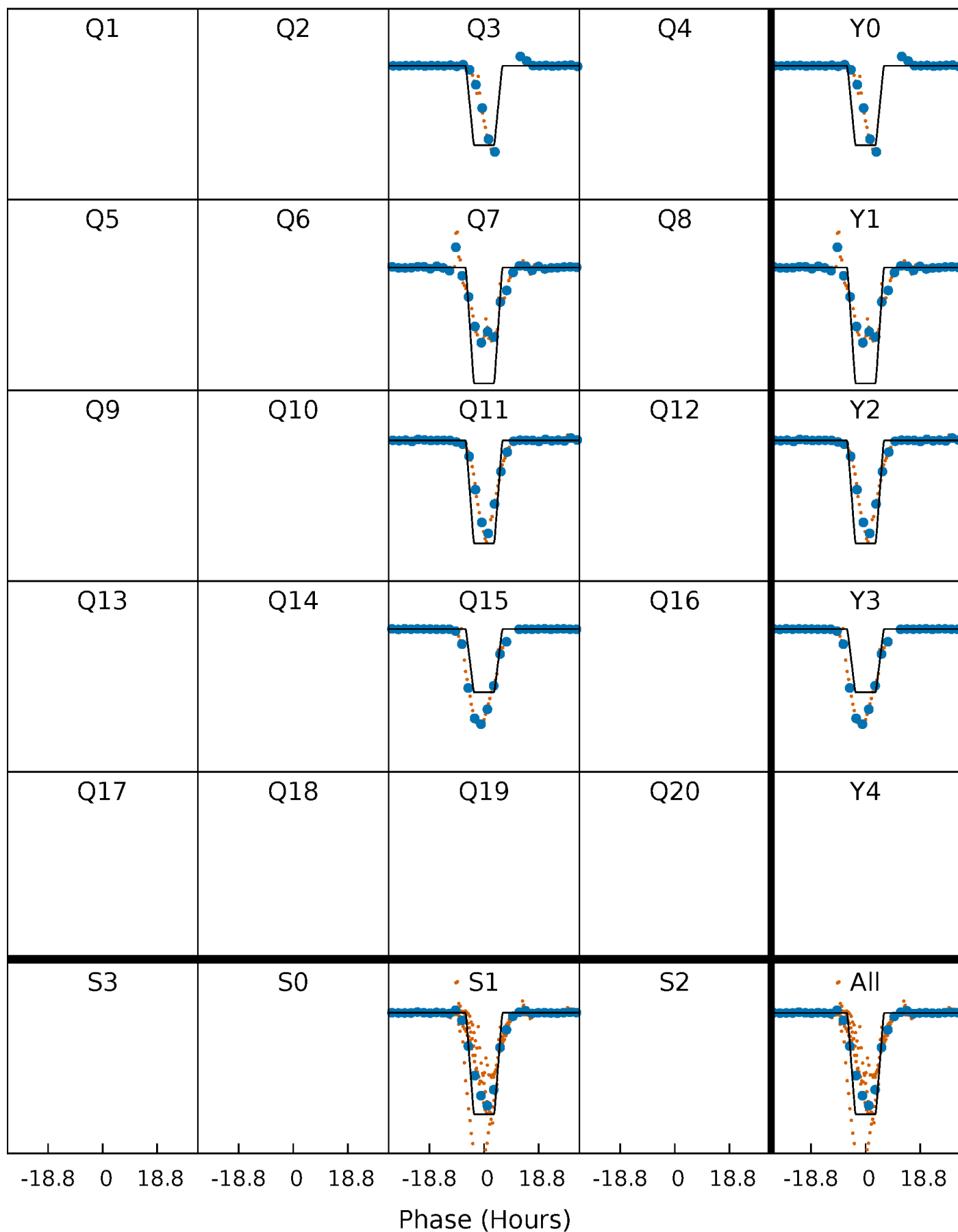
DV Quarter-Phased Transit Curves

TCE 011709006-02 $P=358.000679$ Days $T_0=325.136854$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

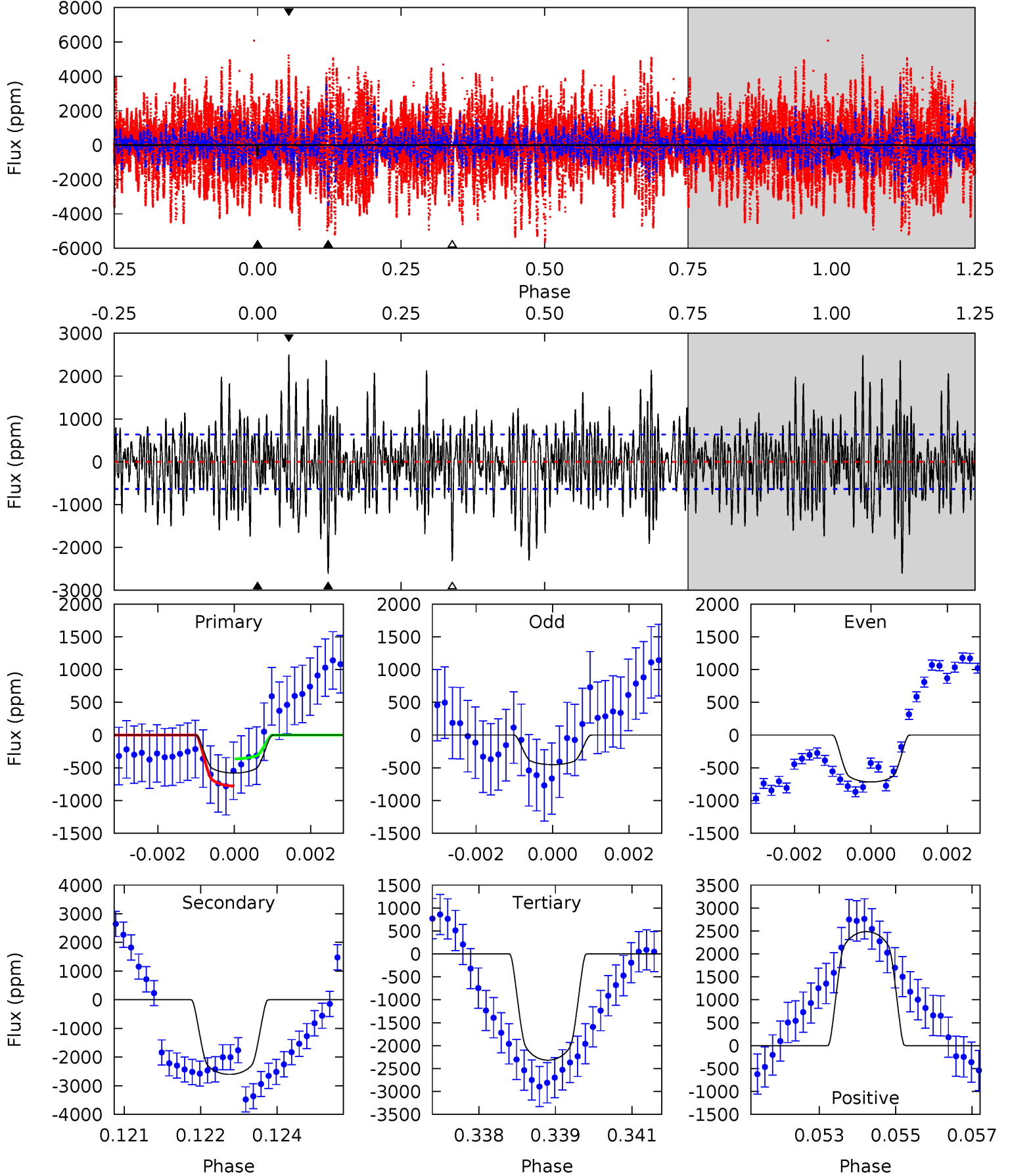
TCE 011709006-02 $P=357.989160$ Days $T_0=325.223092$ (BKJD)



DV Model-Shift Uniqueness Test

011709006-02, P = 358.000679 Days, E = 325.136854 Days

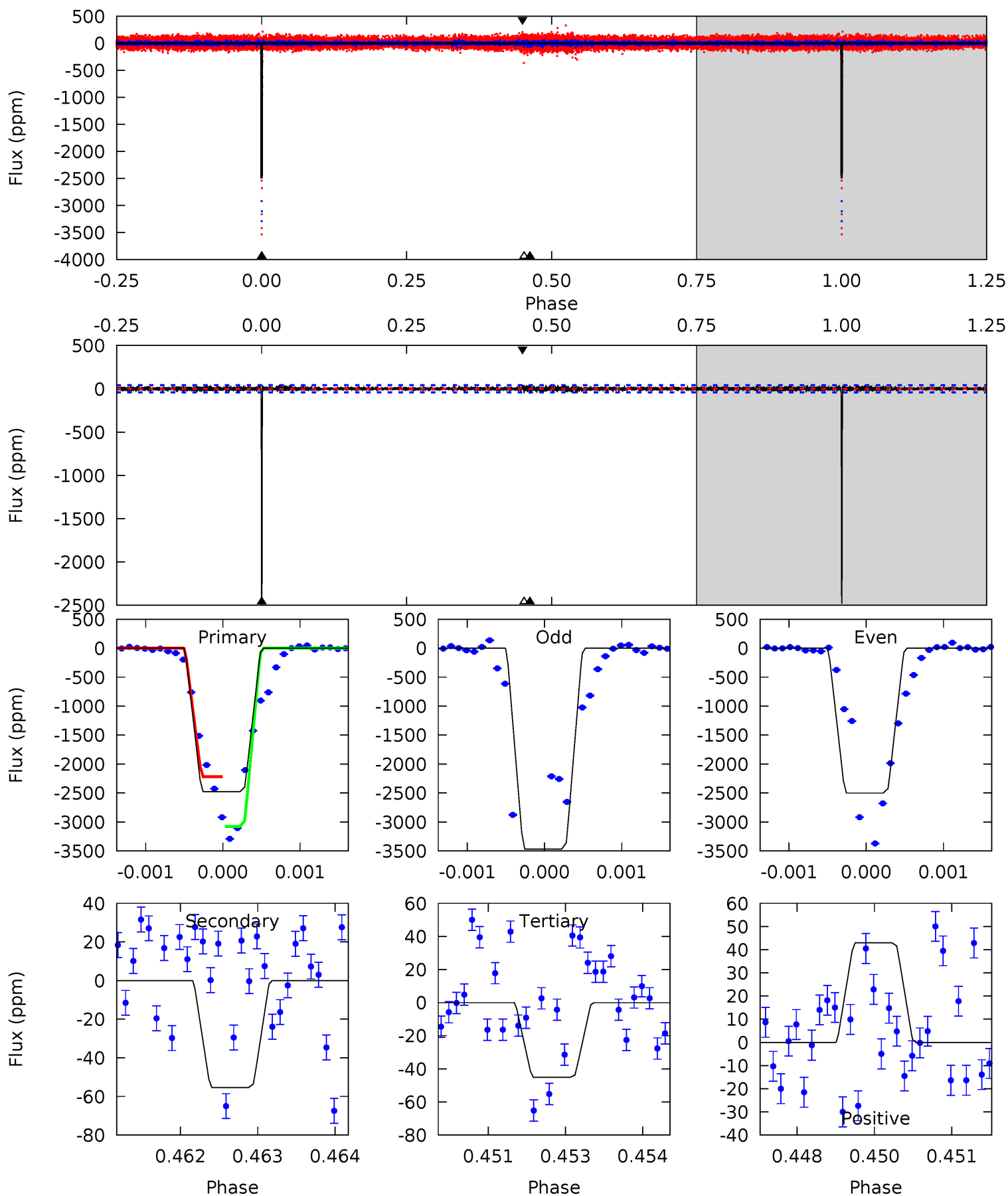
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.88	21.9	19.5	20.9	5.35	3.13	5.57	-14.6	-16.0	2.42	1.00	1.07	1.05	0.49	1.73



Alt Model-Shift Uniqueness Test

011709006-02, P = 357.989160 Days, E = 325.223092 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
311.5	6.96	5.67	5.40	5.38	3.18	1.20	305.8	306.1	1.29	1.56	46.5	1.25	0.02	56.7



Stellar Parameters For KIC 011709006

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6014^{+120}_{-132}	$4.486^{+0.024}_{-0.096}$	$0.070^{+0.150}_{-0.200}$	$0.993^{+0.117}_{-0.054}$	$1.101^{+0.053}_{-0.098}$	$1.584^{+0.183}_{-0.444}$
	+2%/-2%	+1%/-2%	+214%/-286%	+12%/-5%	+5%/-9%	+12%/-28%
Source	SPE13	SPE13	SPE13	DSEP		

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

Secondary Eclipse Parameters for KIC 011709006-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2604±119	$2.84^{+0.39}_{-0.38}$	369^{+13}_{-10}	8916^{+913}_{-677}	183772^{+59384}_{-41492}
Alt.	-55±8	$6.66^{+0.55}_{-0.50}$	371^{+12}_{-11}	2846^{+75}_{-83}	701^{+156}_{-130}

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 $A_{obs} \gg 1.0$

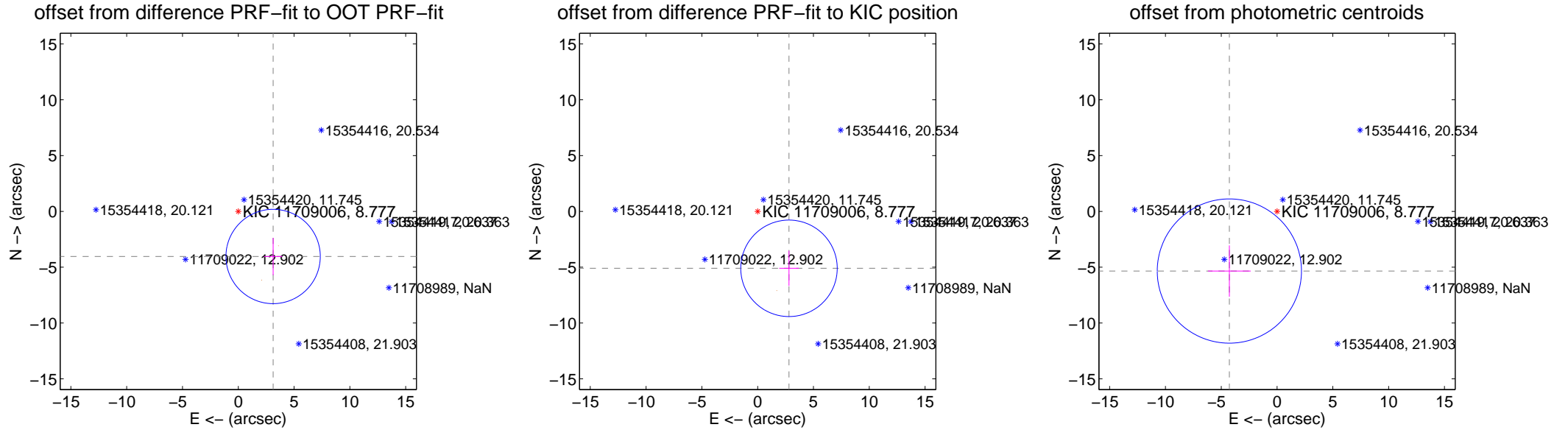
DV Centroid Data

Supplemental centroid analysis for 011709006-02. **Kepler magnitude: 8.78.** Transit SNR 4.50

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.105 ± 1.409	3.62	-3.122 ± 0.820	-4.040 ± 1.664
PRF-fit source offset from KIC position	5.822 ± 1.441	4.04	-2.807 ± 0.873	-5.100 ± 1.573
photometric centroid source offset	6.84 ± 2.15	3.18	4.27 ± 1.91	-5.34 ± 2.30



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



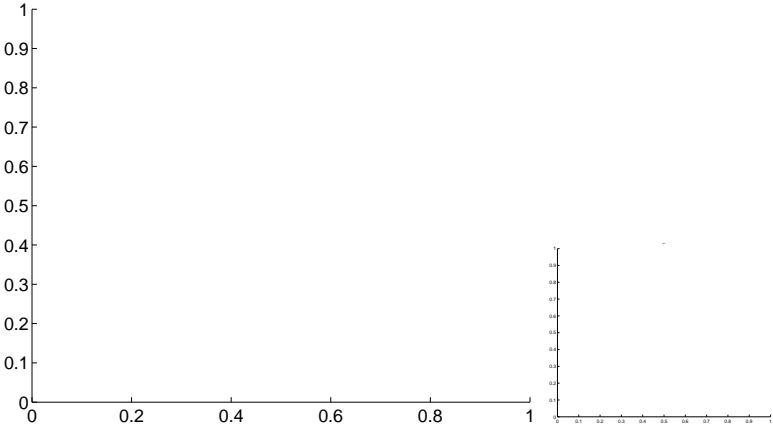
Q5 no OOT image



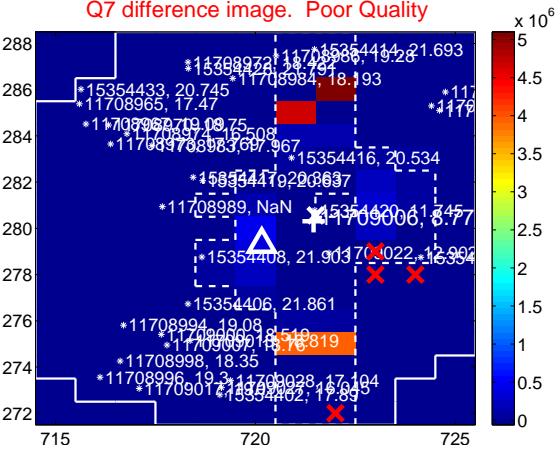
Q6 no difference image



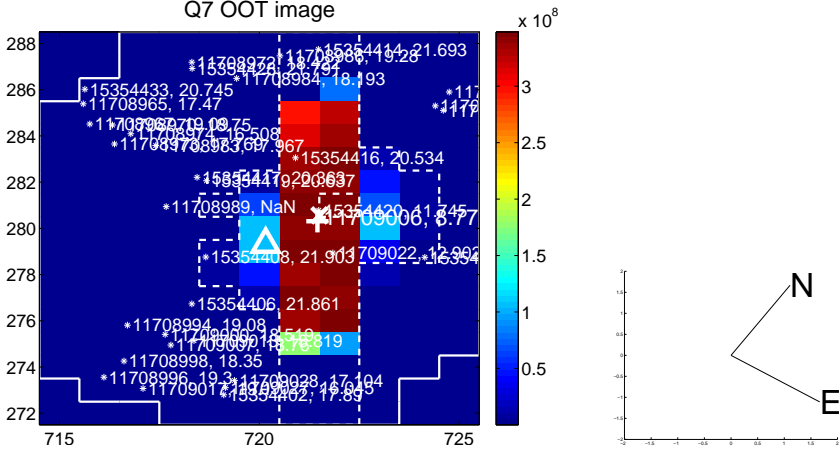
Q6 no OOT image



Q7 difference image. Poor Quality



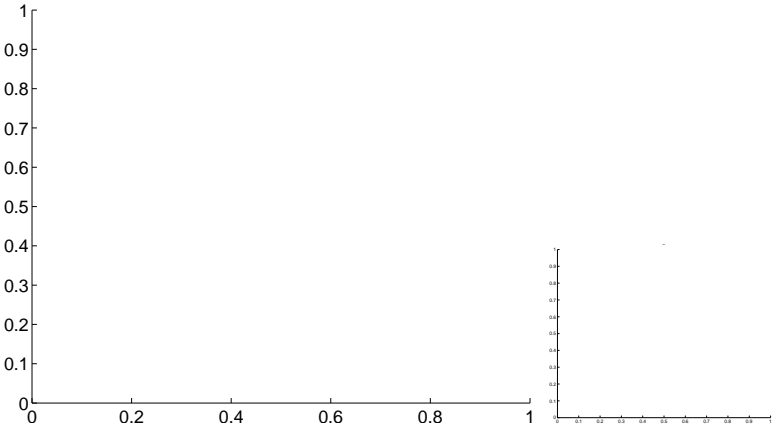
Q7 OOT image



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

Q13 no difference image



Q13 no OOT image



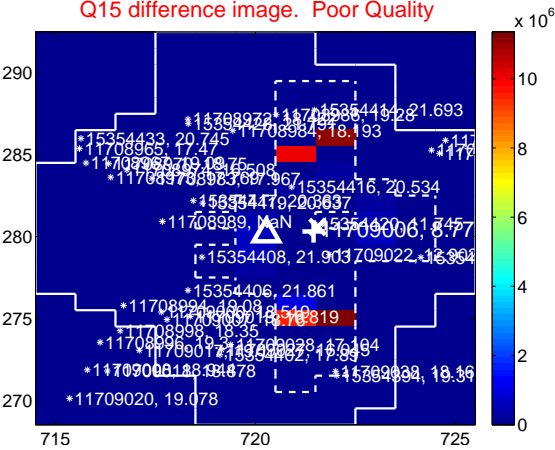
Q14 no difference image



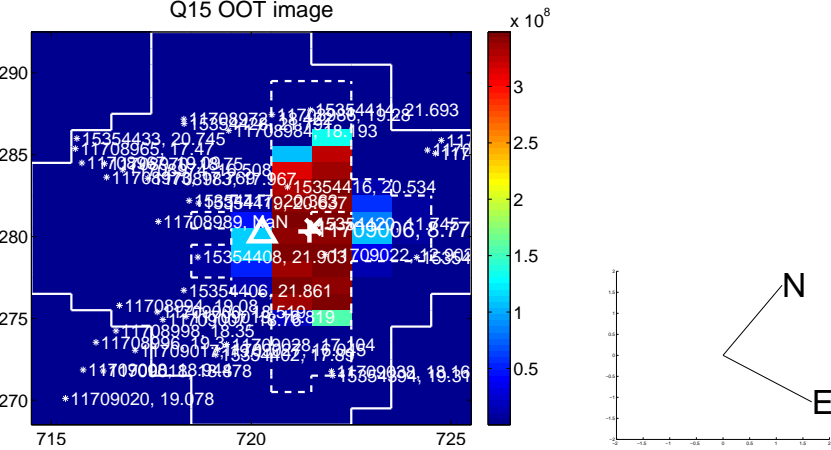
Q14 no OOT image



Q15 difference image. Poor Quality



Q15 OOT image



Q16 no difference image



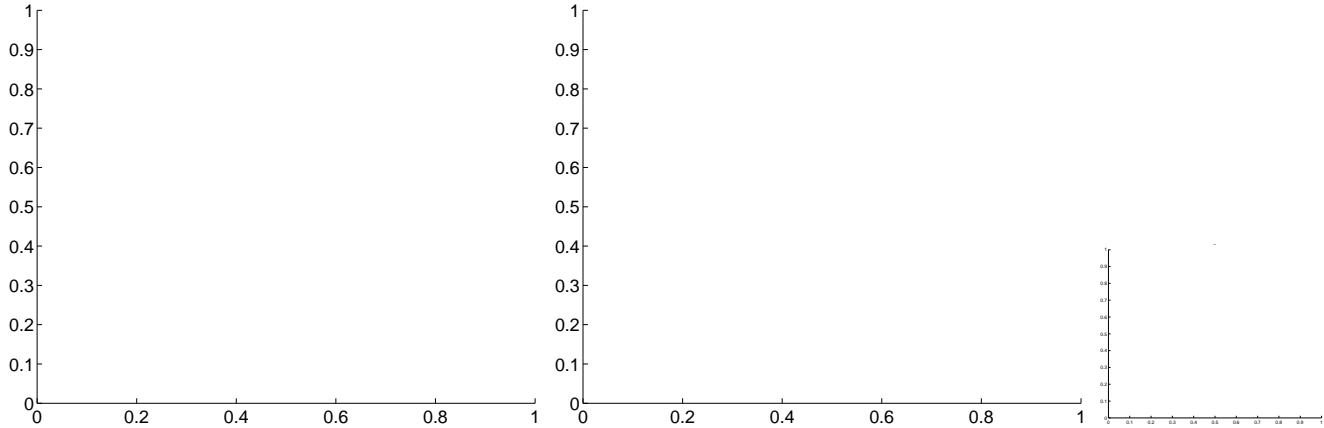
Q16 no OOT image



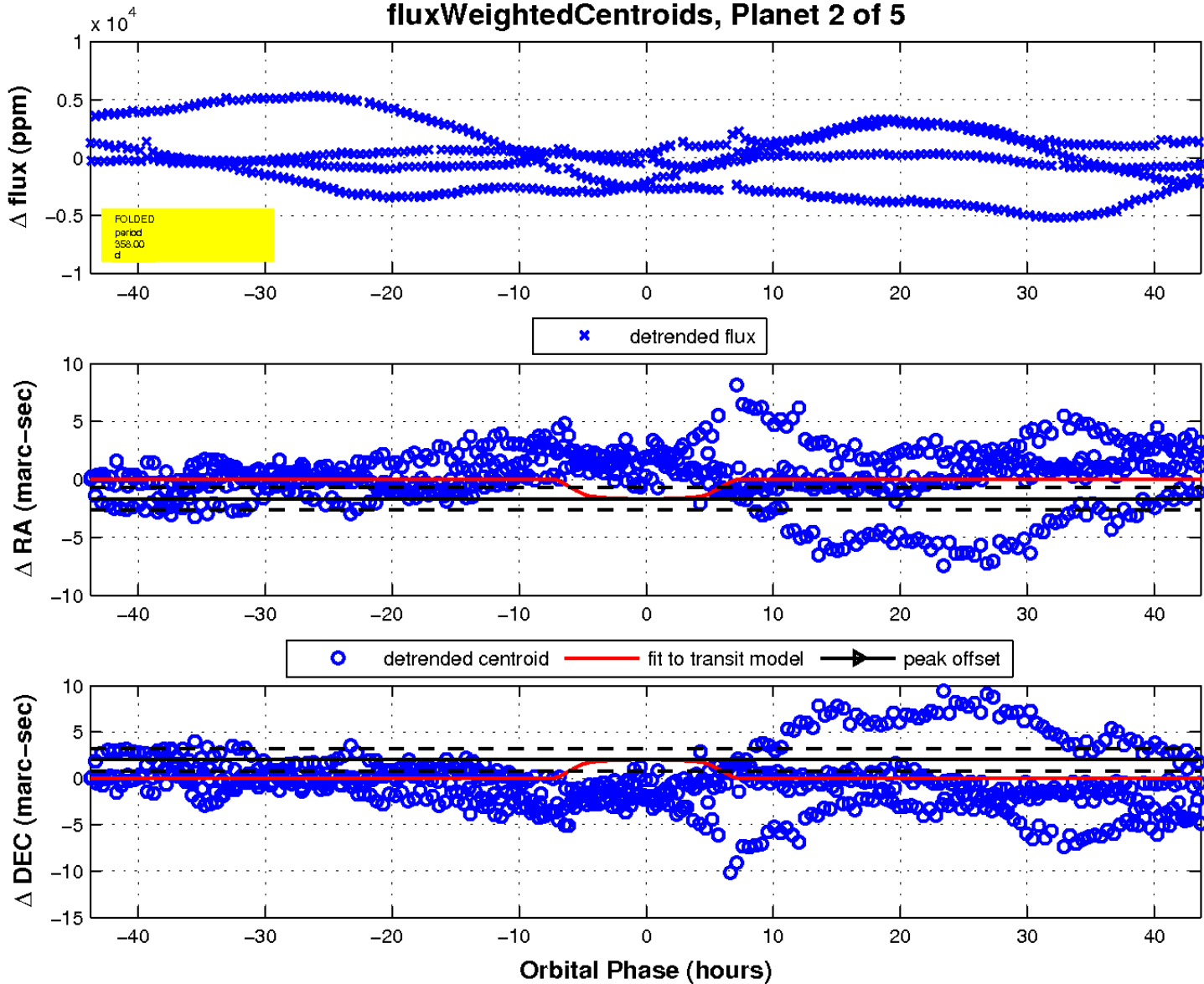
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image

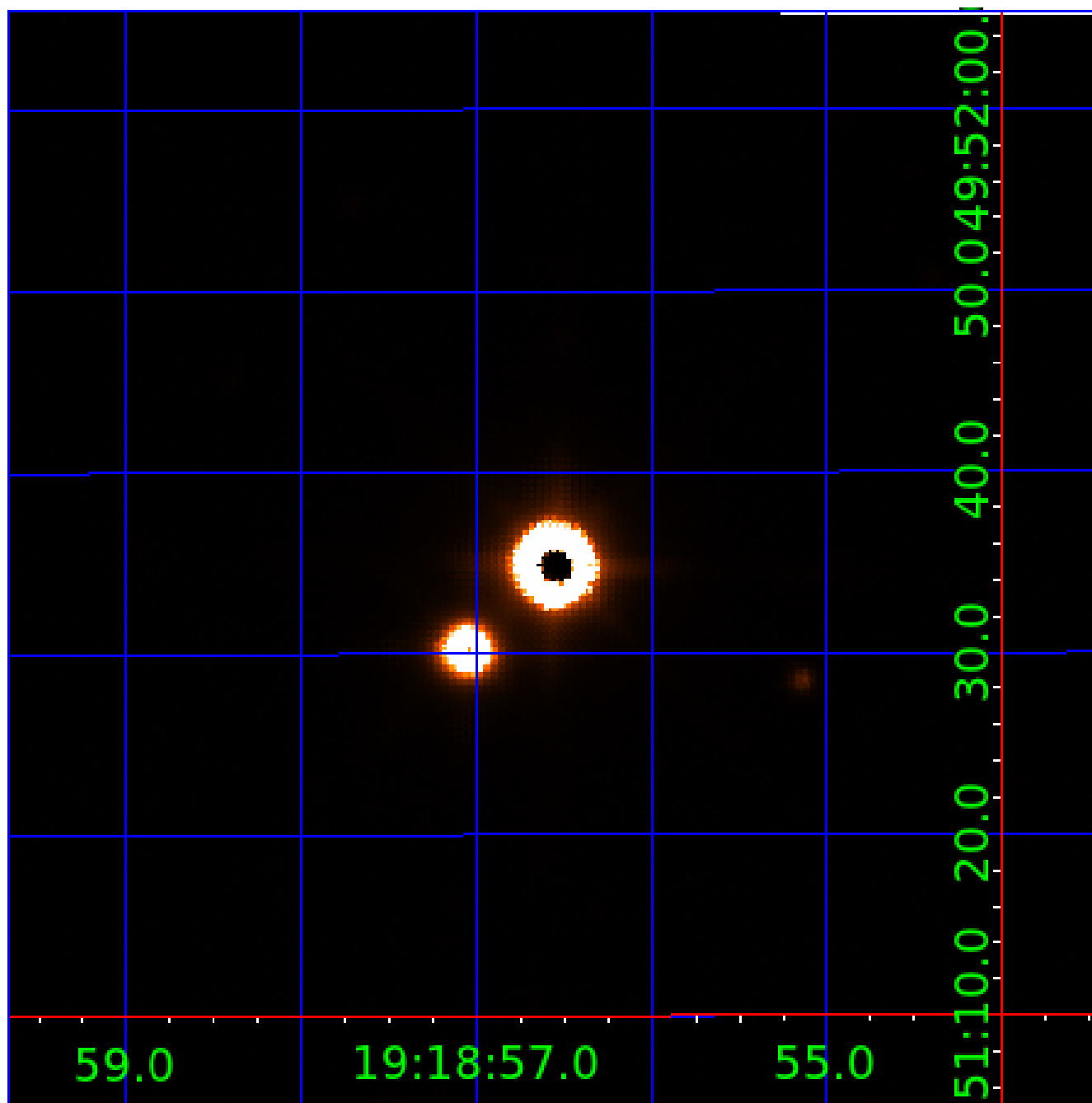


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 011709006

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})
011709006-01	OBS	No	209.598386	325.529100	192.8	2.469	12.5	6.2	0.99	6014	1.53	2.27
011709006-02	OBS	No	358.000679	325.136854	502.8	14.602	15.2	4.5	0.99	6014	2.77	1.11
011709006-03	OBS	No	498.268313	134.156093	147.8	8.149	13.4	2.3	0.99	6014	1.32	0.72
011709006-04	OBS	No	371.278877	176.636767	178.4	3.419	15.8	4.1	0.99	6014	1.41	1.06
011709006-05	OBS	8061.01	0.719710	131.921610	58.8	2.000	10.8	-1.0	0.99	6014	0.76	4385.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709006-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-03	OBS	FP	0.00	1	0	0	0	LPP_ALT—CENT_SATURATED
011709006-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

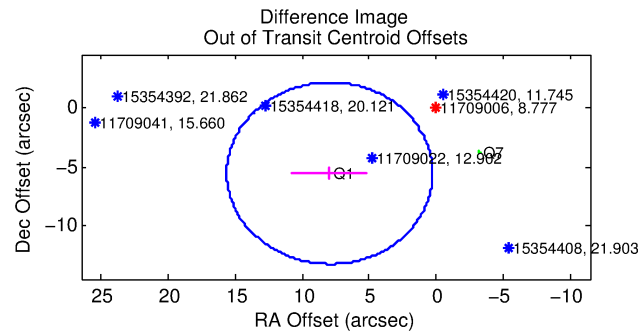
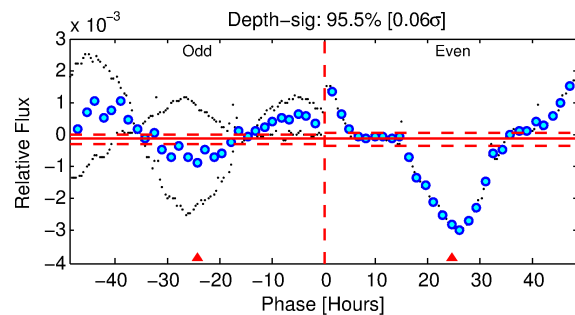
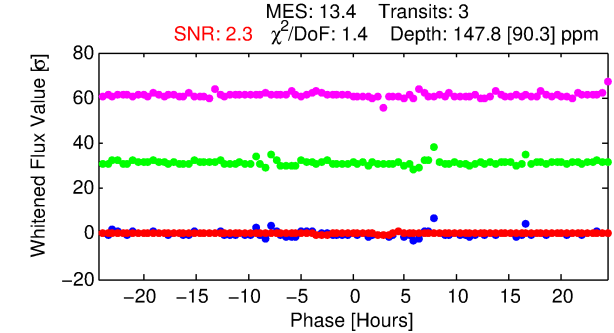
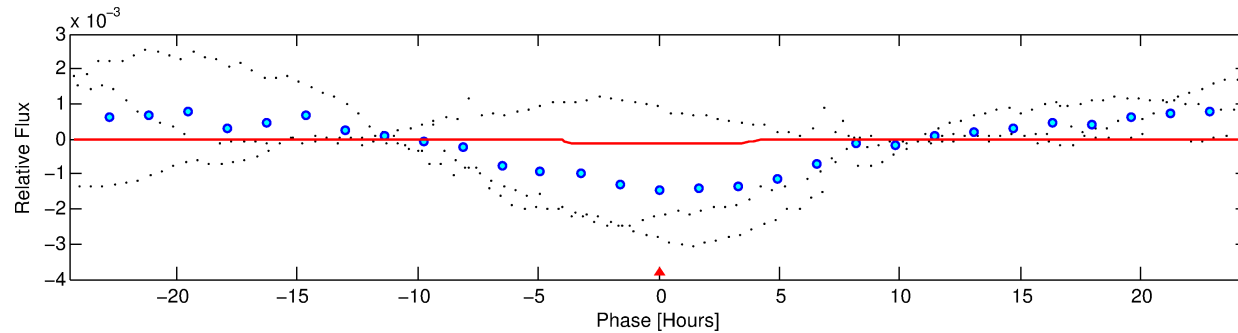
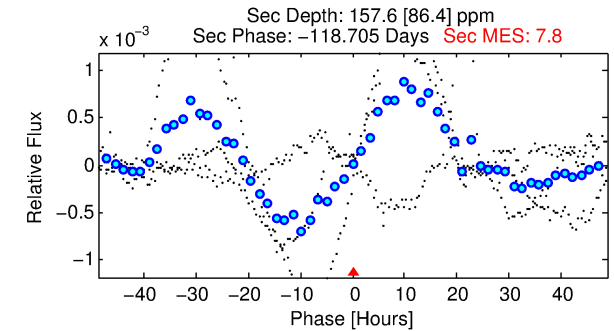
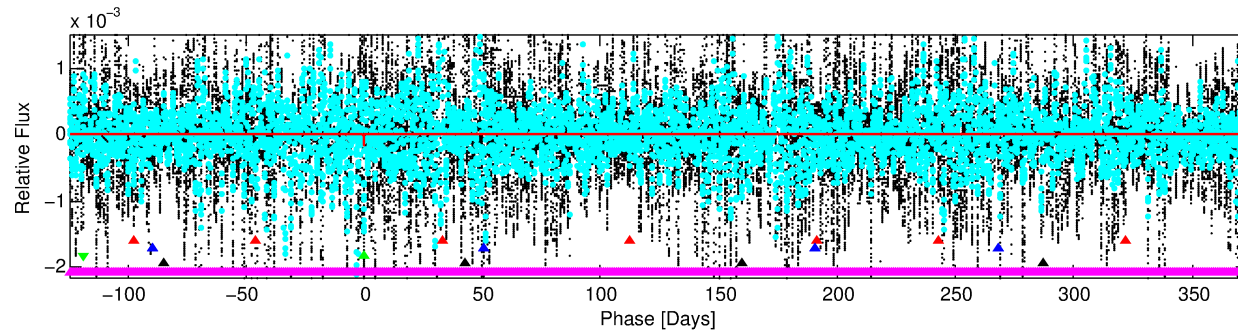
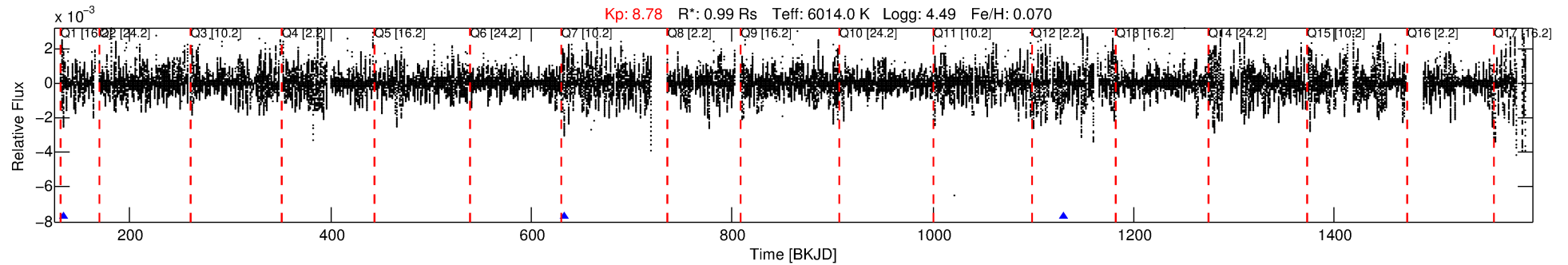
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709006-03

No Significant Match Found

DV One-Page Summary

KIC: 11709006 Candidate: 3 of 5 Period: 498.268 d



DV Fit Results:

Period = 498.26831 [0.01339] d
Epoch = 134.1561 [0.0205] BKJD
 $R_p/R^* = 0.0122$ [0.0111]
 $a/R^* = 309.84$ [1198.60]
 $b = 0.76$ [2.12]
 $\text{Seff} = 0.72$ [0.14]
 $T_{\text{eq}} = 235$ [11] K
 $a = 1.32$ [1.21] Re
 $a = 1.2705$ [0.1368] AU
 $A_g = 80596.84$ [154004.37] [0.52σ]
 $T_{\text{eff}} = 6110$ [2911] K [2.02σ]

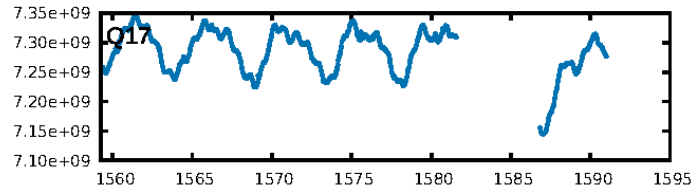
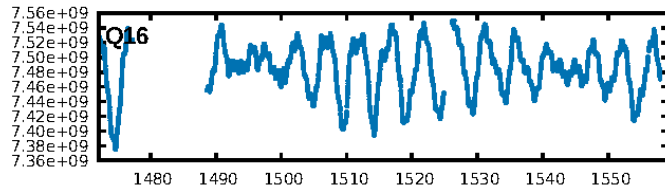
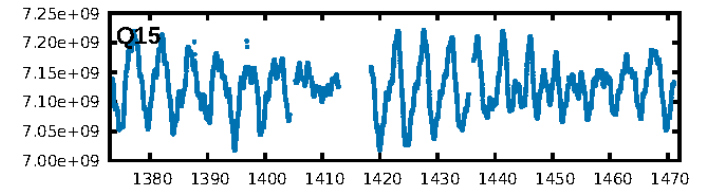
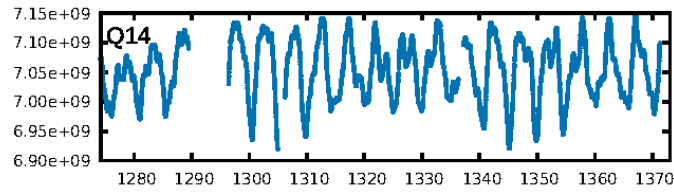
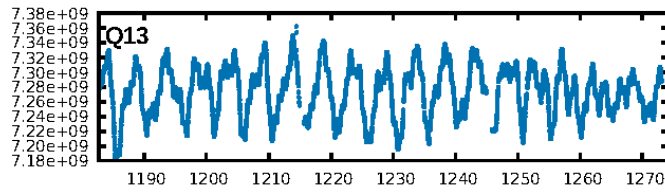
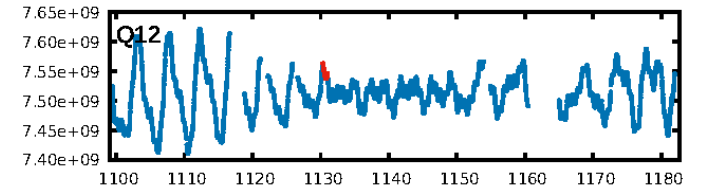
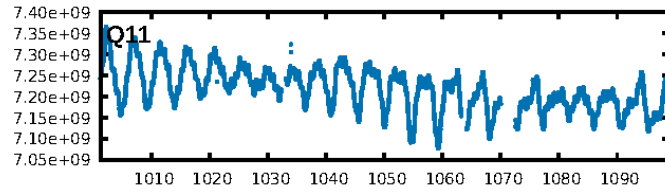
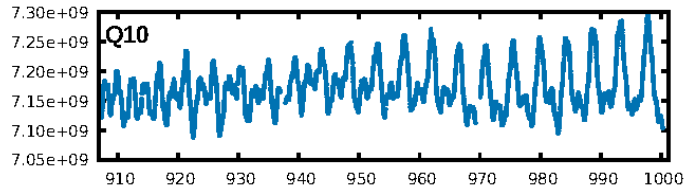
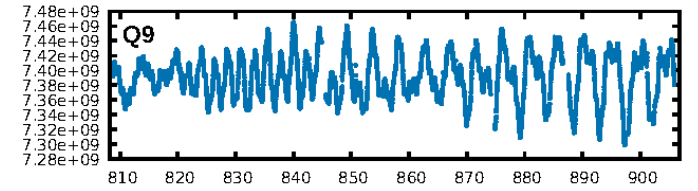
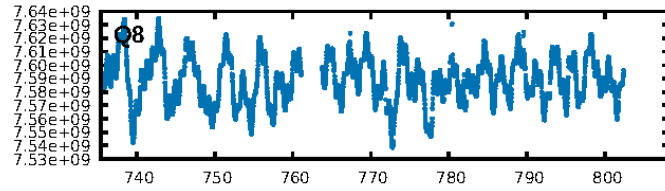
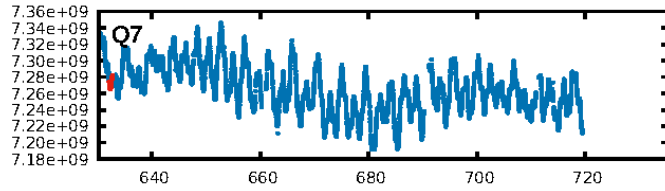
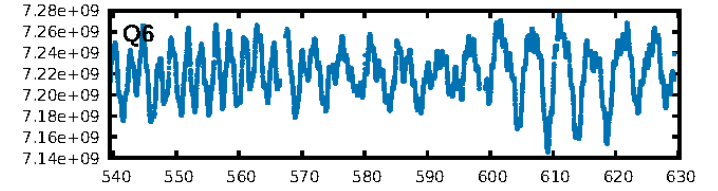
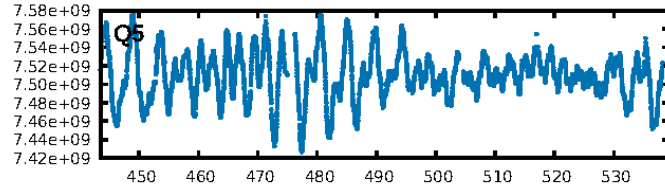
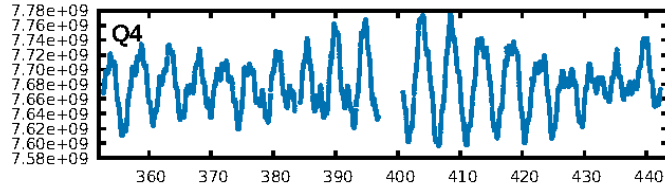
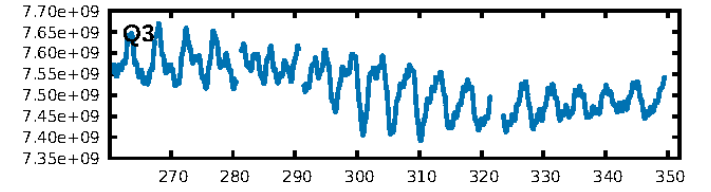
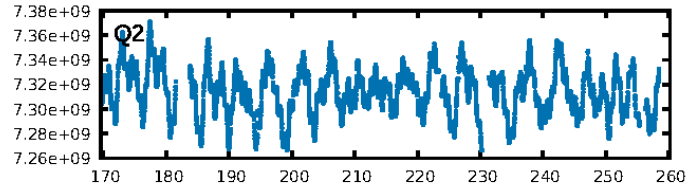
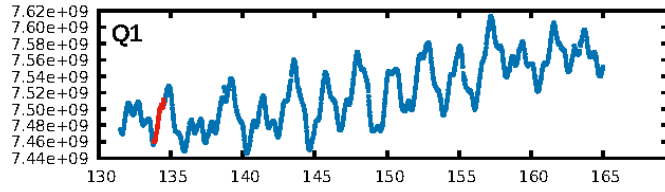
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [344.88σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.1%
ModelChiSquareGof-sig: 95.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: N/A
Centroid-sig: 89.4%
Centroid-so: 2.190 arcsec [0.31σ]
OotOffset-rm: 9.699 arcsec [3.79σ]
KicOffset-rm: 11.122 arcsec [2.29σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/3]

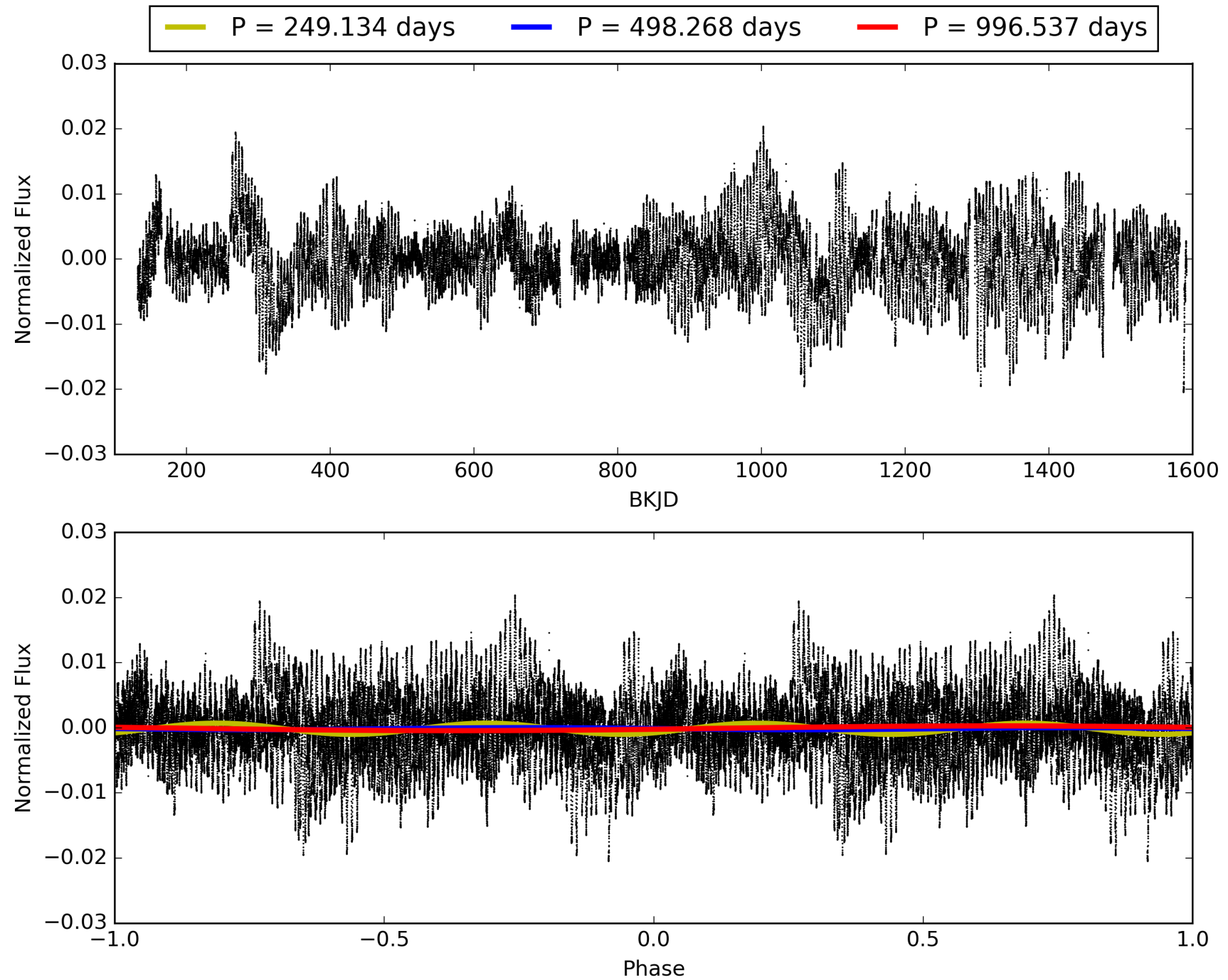
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:39:41 Z

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

TCE 011709006-03, PDC Light Curves

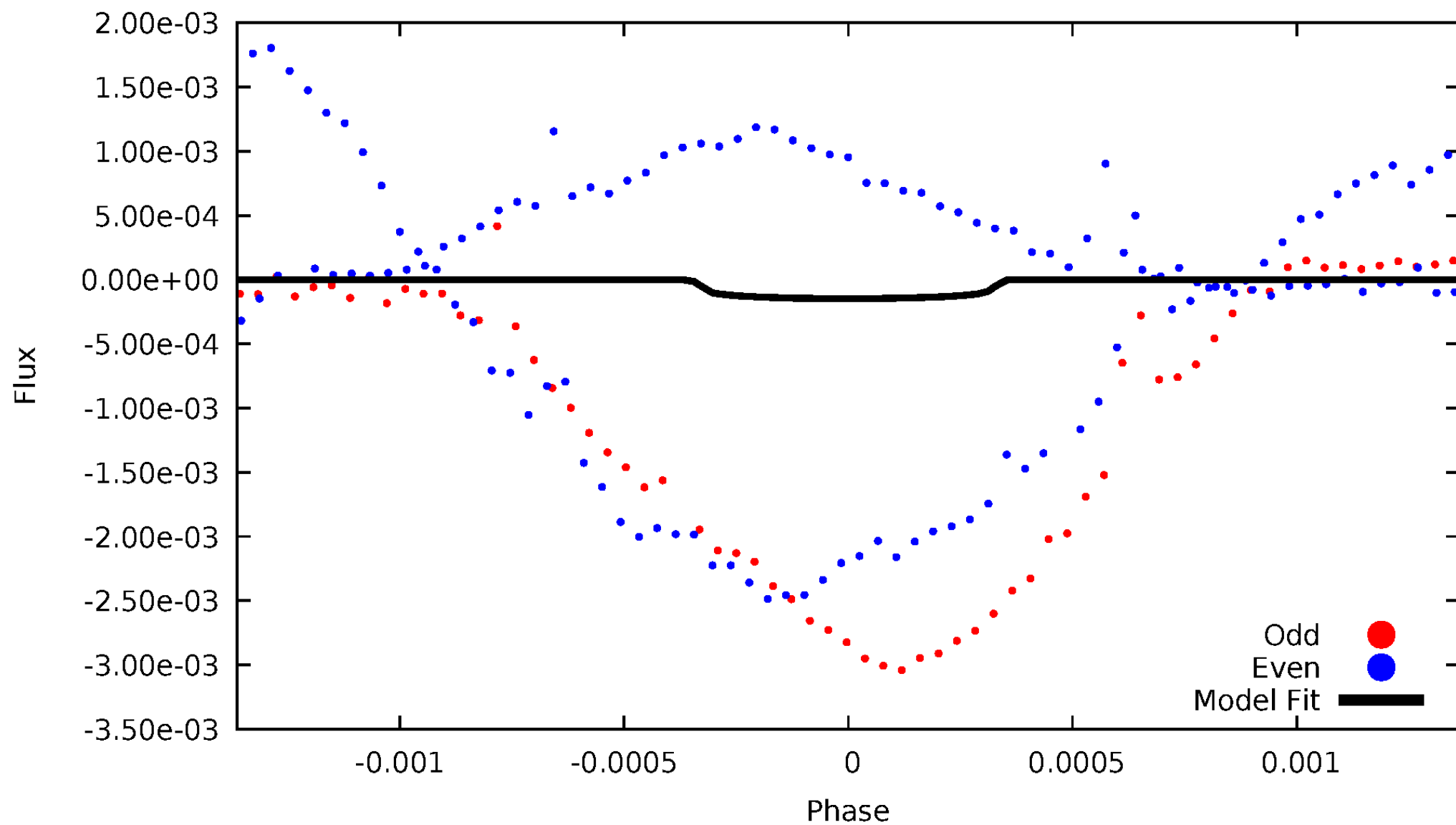


TCE 011709006-03



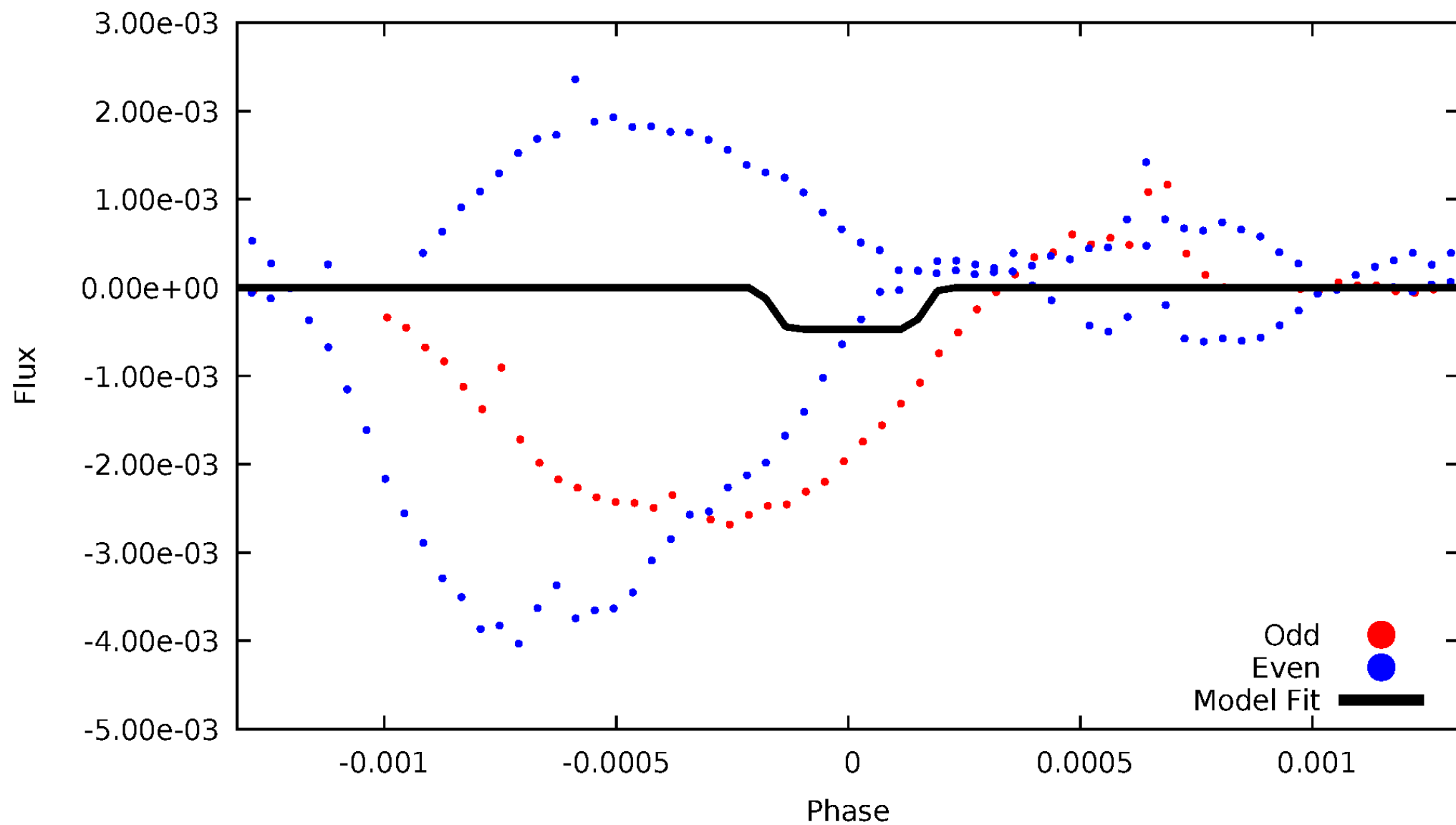
DV Odd/Even

TCE 011709006-03



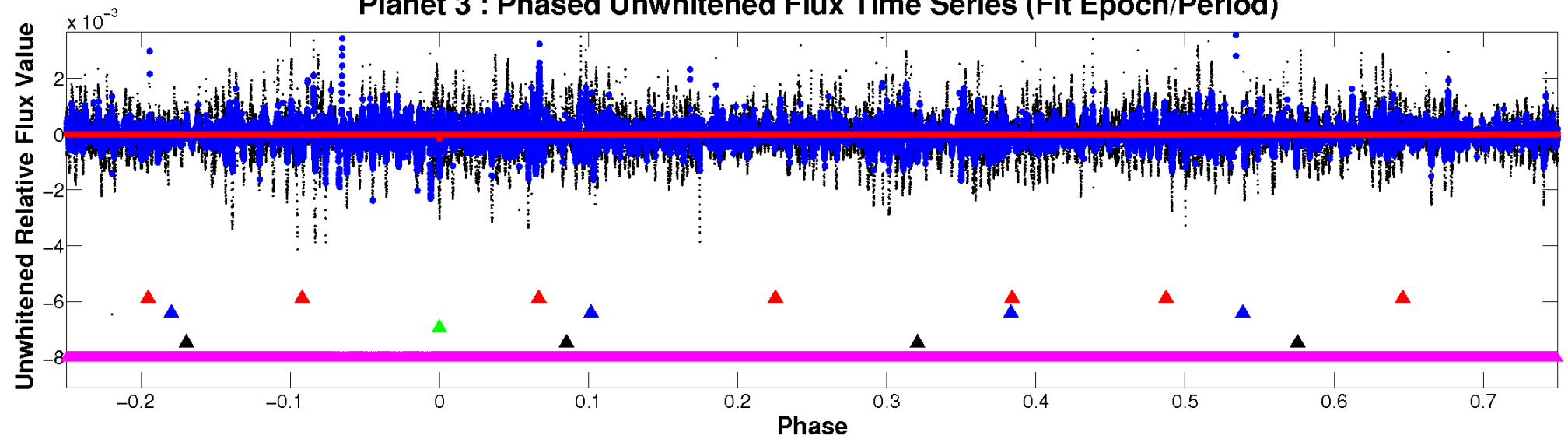
ALT Odd/Even

TCE 011709006-03

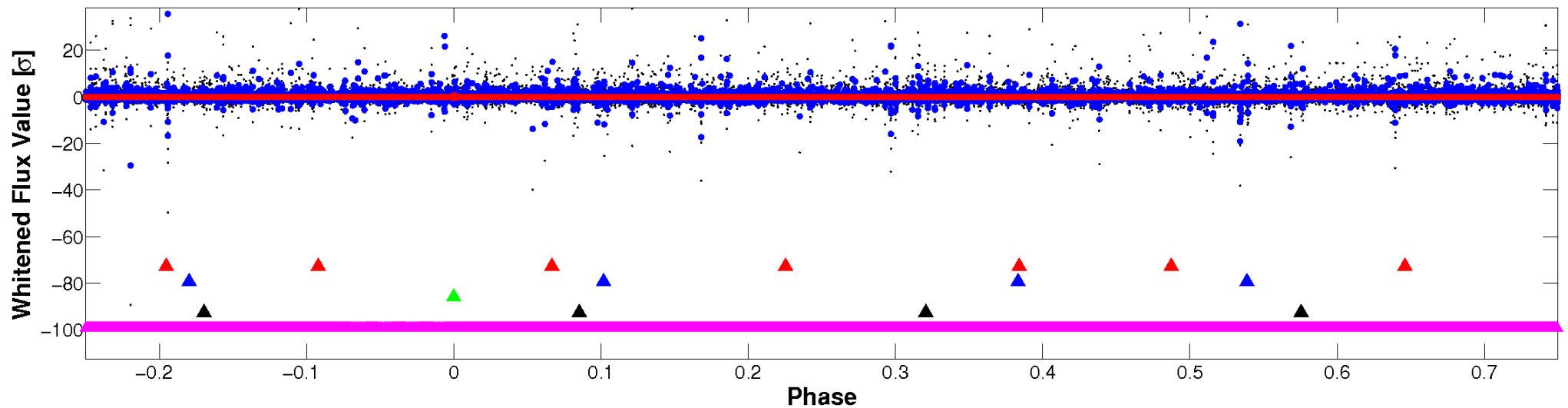


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

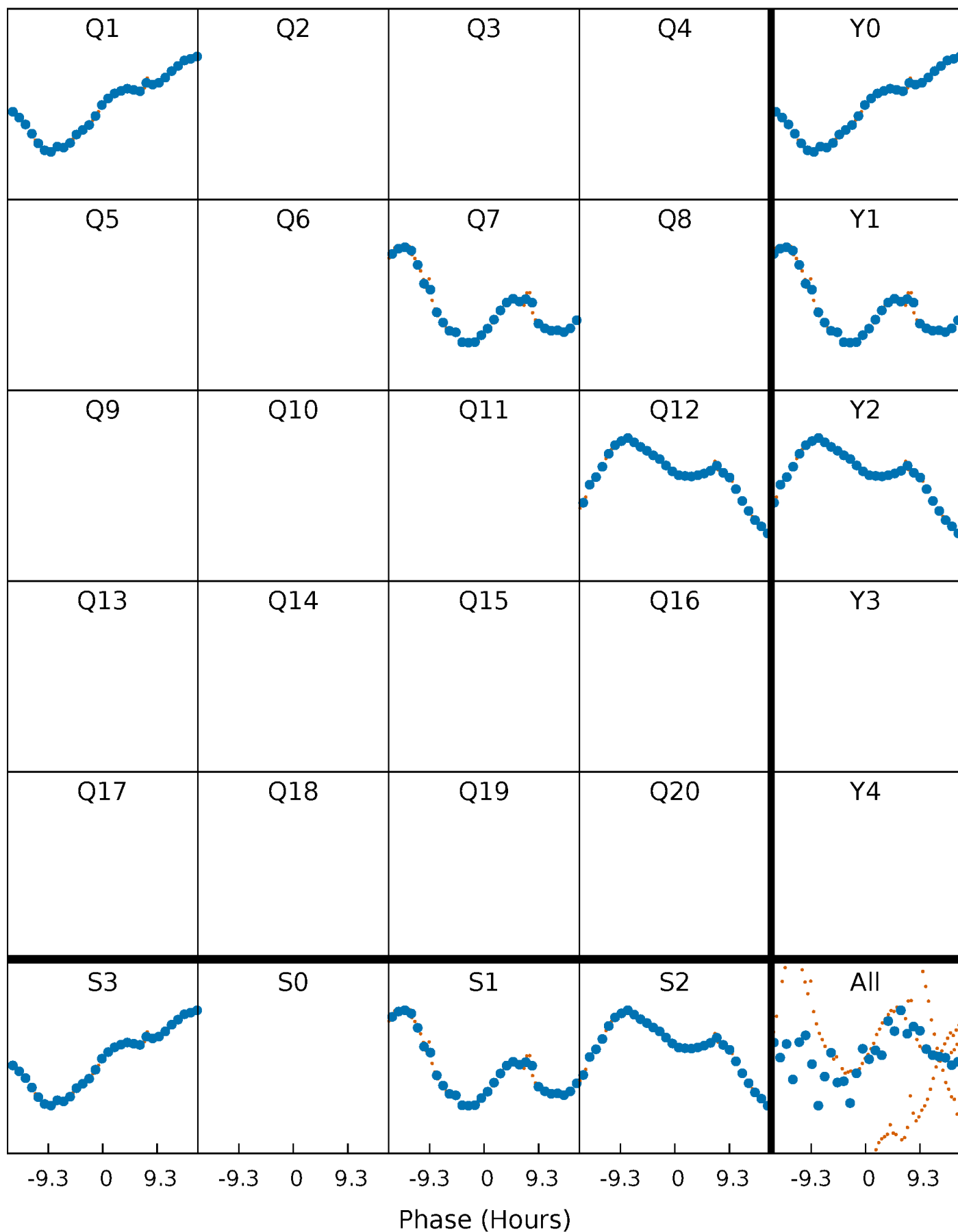


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



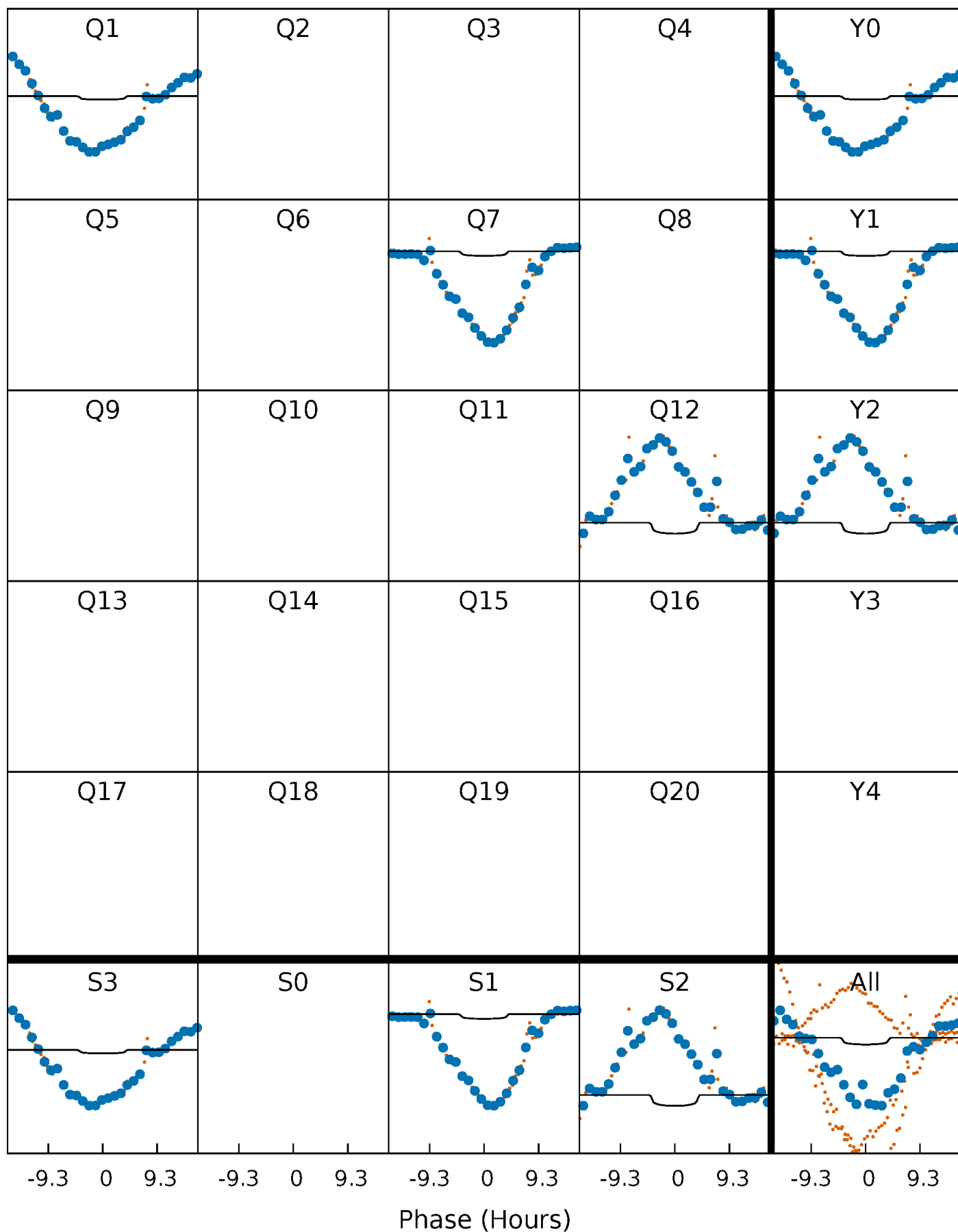
PDC Quarter-Phased Transit Curves

TCE 011709006-03 P=498.268313 Days $T_0=134.156093$ (BKJD)



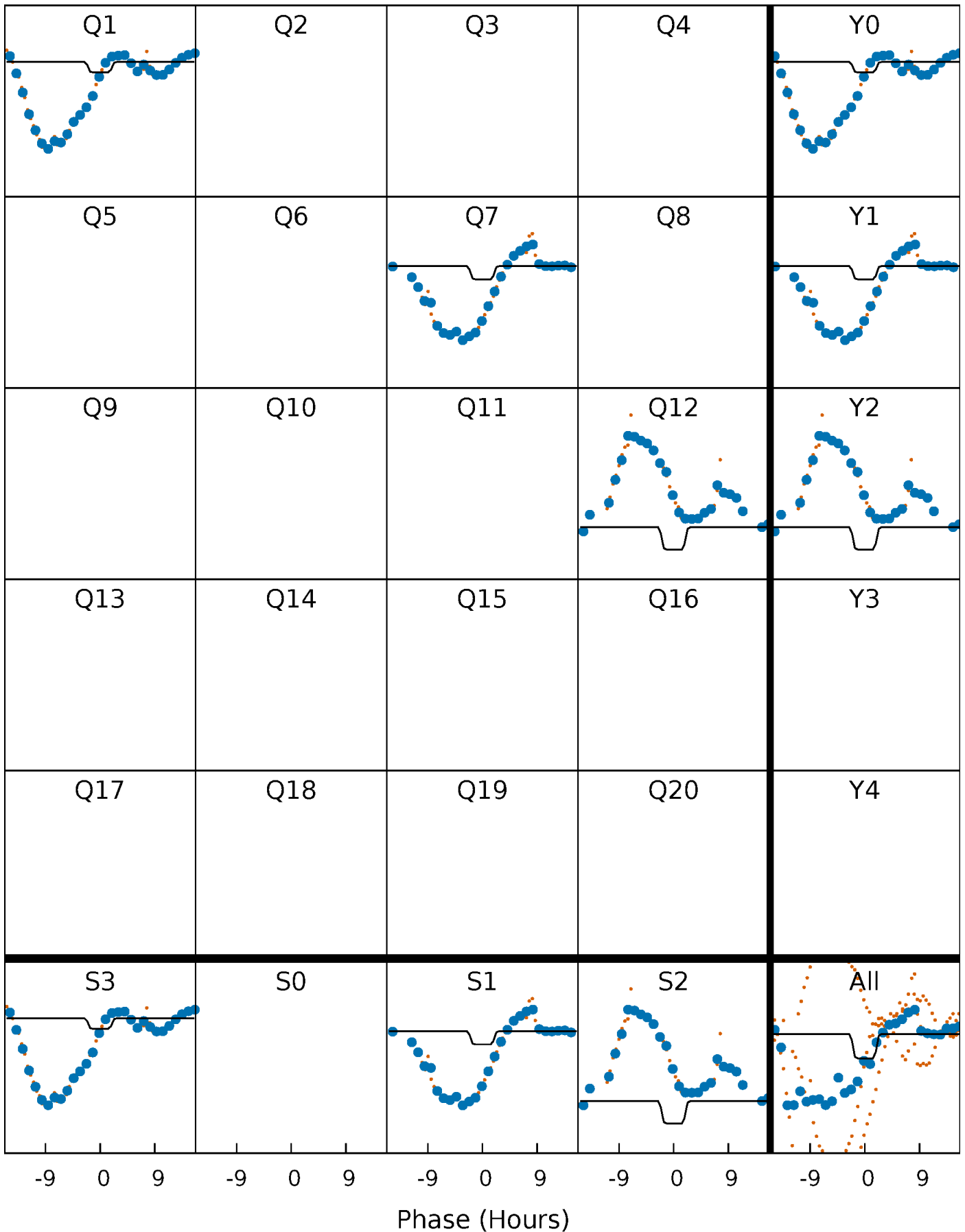
DV Quarter-Phased Transit Curves

TCE 011709006-03 $P=498.268313$ Days $T_0=134.156093$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

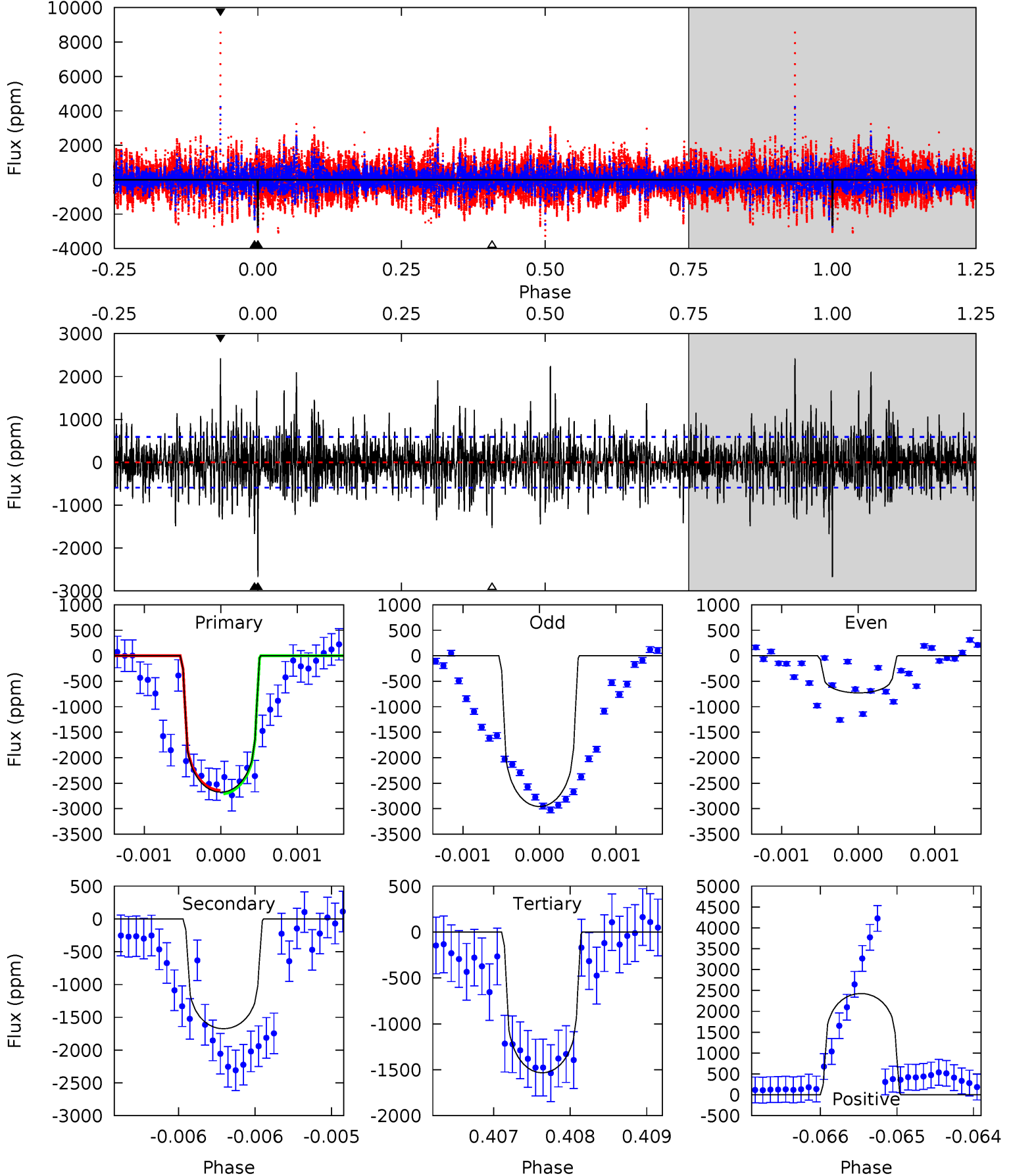
TCE 011709006-03 P=498.251927 Days $T_0=134.154897$ (BKJD)



DV Model-Shift Uniqueness Test

011709006-03, P = 498.268313 Days, E = 134.156093 Days

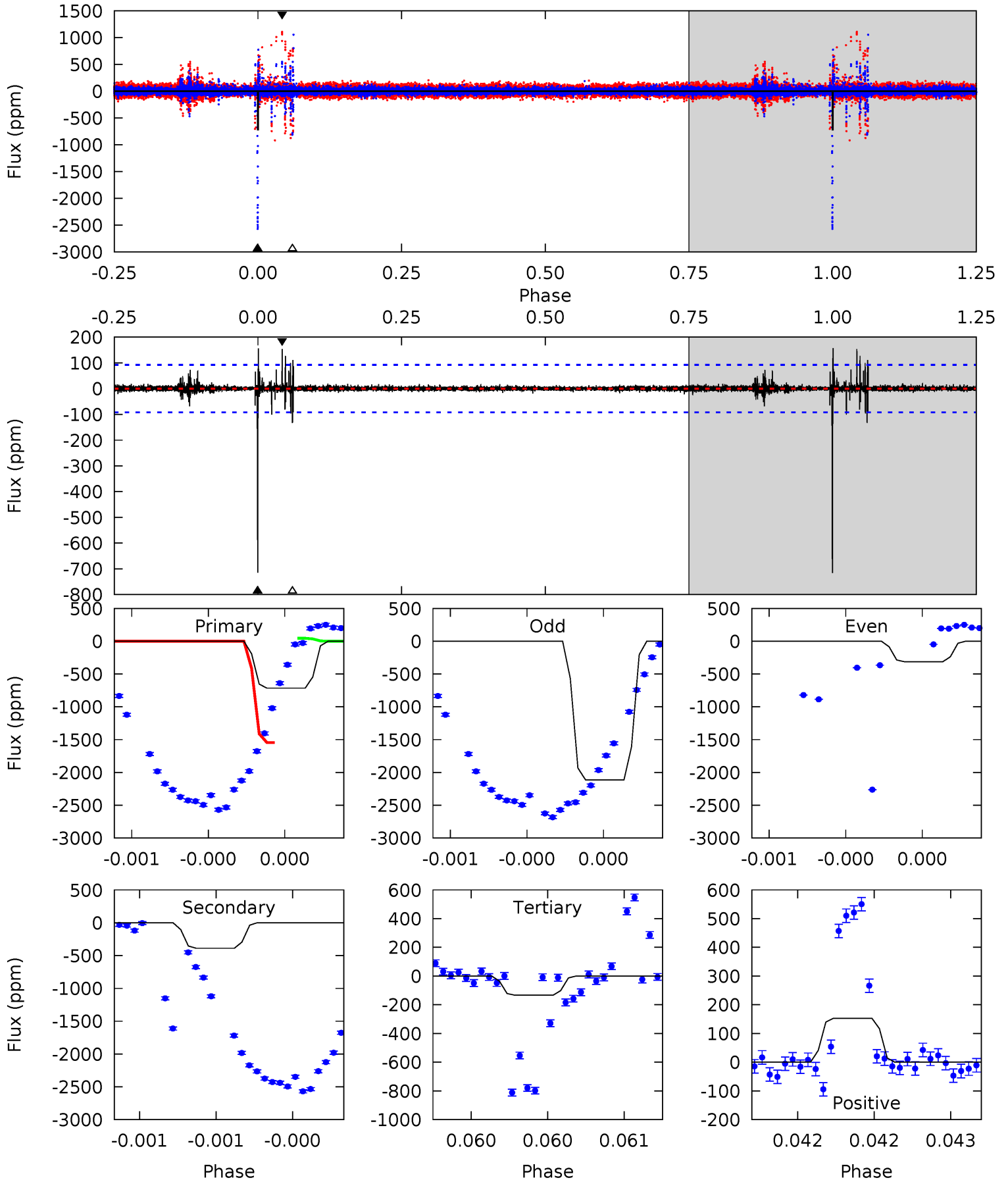
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.9	15.6	14.3	22.6	5.52	3.39	3.82	10.6	2.32	1.32	-7.01	11.1	0.61	0.48	0



Alt Model-Shift Uniqueness Test

011709006-03, P = 498.251927 Days, E = 134.154897 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.5	23.6	8.09	9.30	5.61	3.53	0.44	35.4	34.2	15.5	14.3	39.6	0.93	0.18	0



Stellar Parameters For KIC 011709006

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6014^{+120}_{-132}	$4.486^{+0.024}_{-0.096}$	$0.070^{+0.150}_{-0.200}$	$0.993^{+0.117}_{-0.054}$	$1.101^{+0.053}_{-0.098}$	$1.584^{+0.183}_{-0.444}$
	+2%/-2%	+1%/-2%	+214%/-286%	+12%/-5%	+5%/-9%	+12%/-28%
Source	SPE13	SPE13	SPE13	DSEP		

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

Secondary Eclipse Parameters for KIC 011709006-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1672 ± 107	$1.58^{+1.08}_{-0.96}$	332^{+10}_{-10}	11638^{+20004}_{-3571}	$585245^{+3115233}_{-375547}$
Alt.	-388 ± 16	$2.42^{+1.20}_{-1.19}$	332^{+11}_{-10}	5719^{+2520}_{-938}	$57768^{+165736}_{-31717}$

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

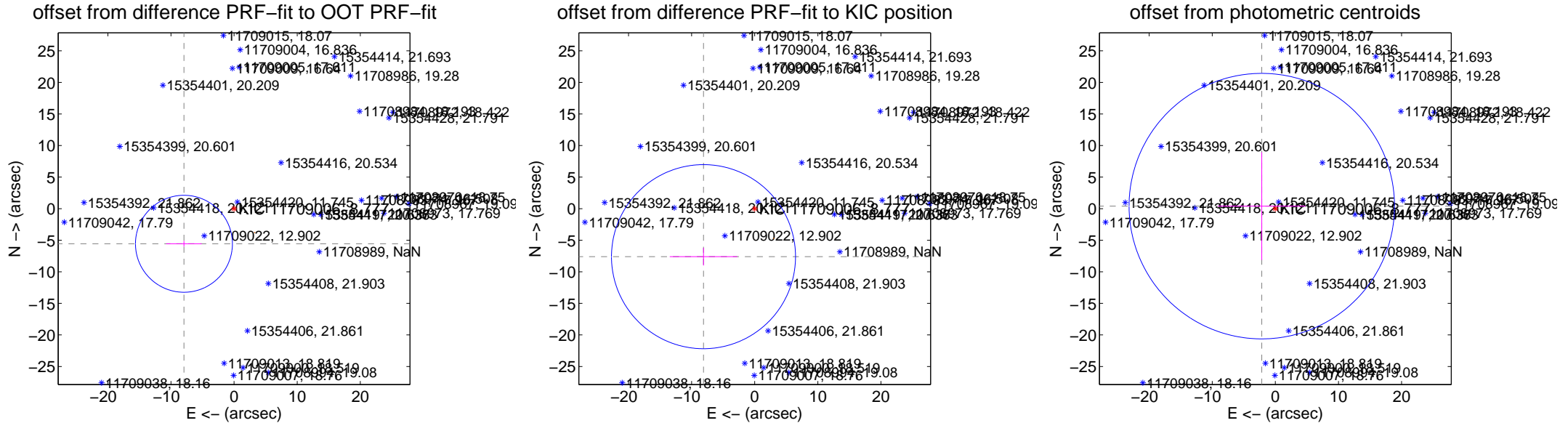
DV Centroid Data

Supplemental centroid analysis for 011709006-03. **Kepler magnitude: 8.78.** Transit SNR 2.32

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.96 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.699 \pm 2.560	3.79	7.946 \pm 2.811	-5.562 \pm 0.453
PRF-fit source offset from KIC position	11.122 \pm 4.860	2.29	8.117 \pm 5.355	-7.603 \pm 1.393
photometric centroid source offset	2.19 \pm 7.01	0.31	2.15 \pm 6.95	0.40 \pm 8.54



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.

Q5 no difference image



Q5 no OOT image



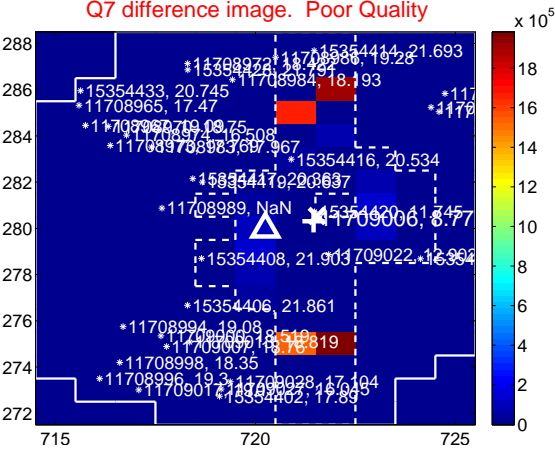
Q6 no difference image



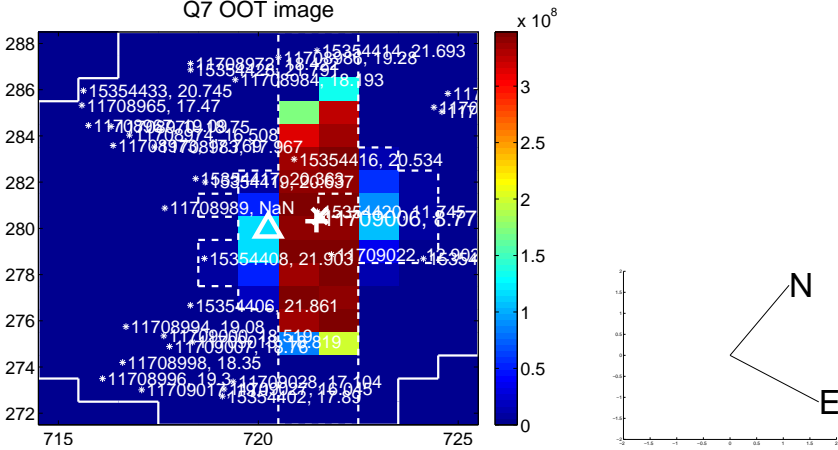
Q6 no OOT image



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.

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



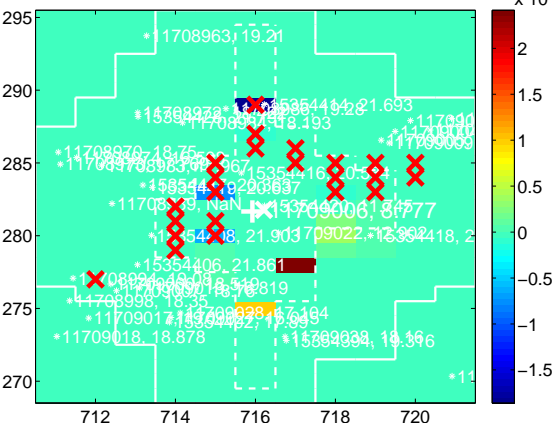
Q11 no difference image



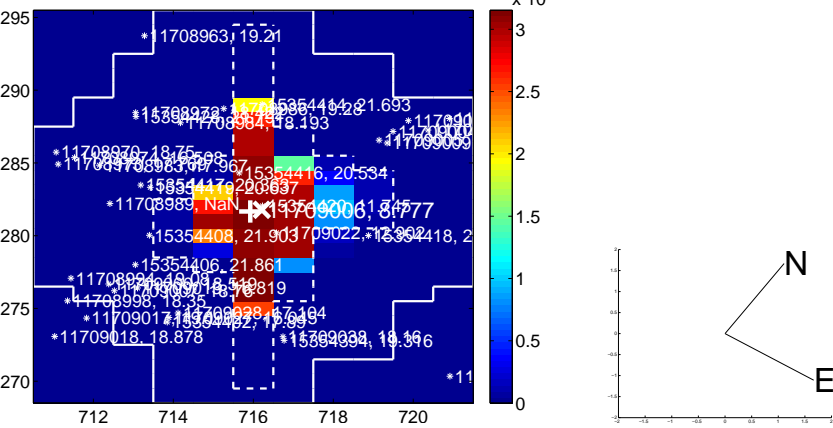
Q11 no OOT image



Q12 difference image. Poor Quality



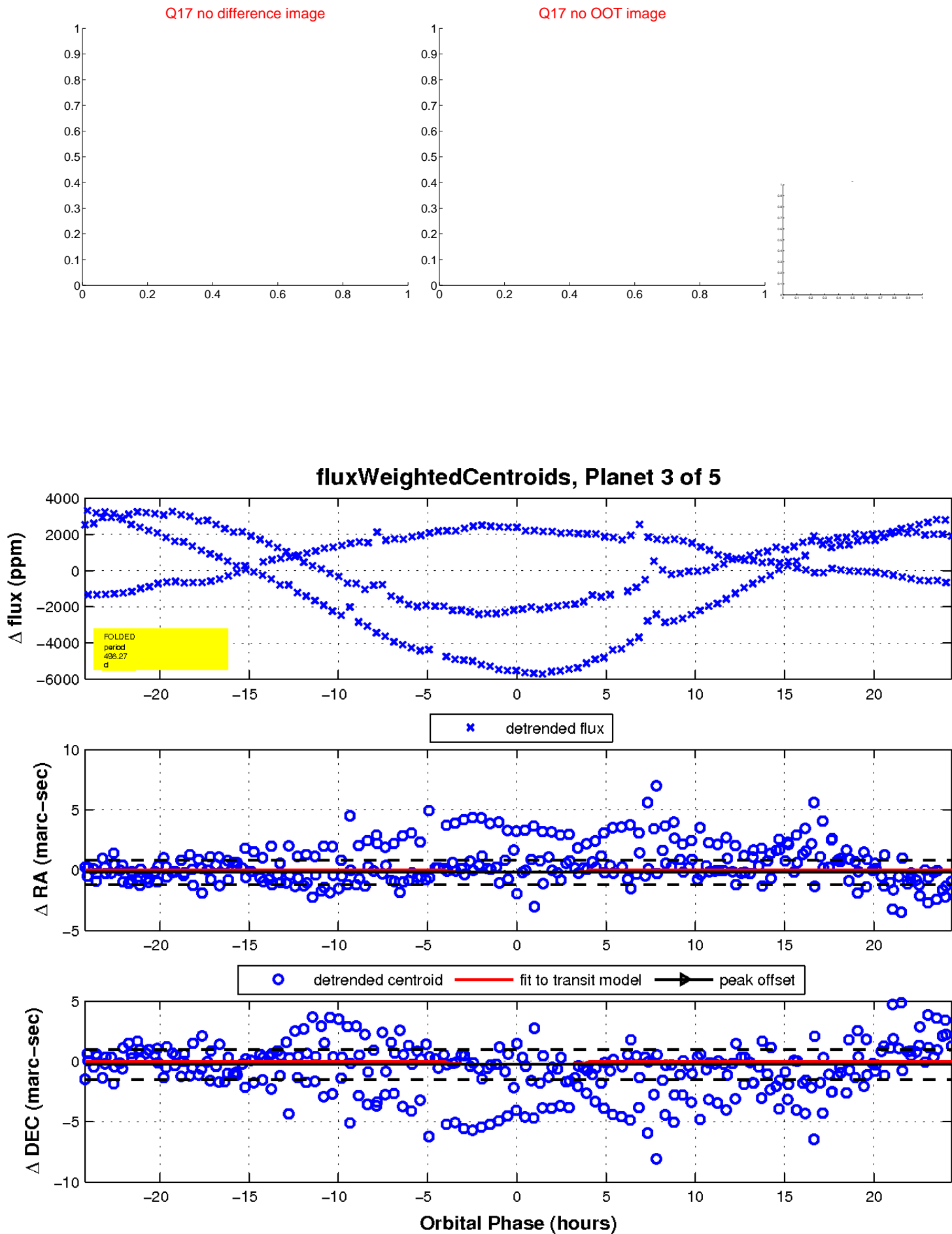
Q12 OOT image



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

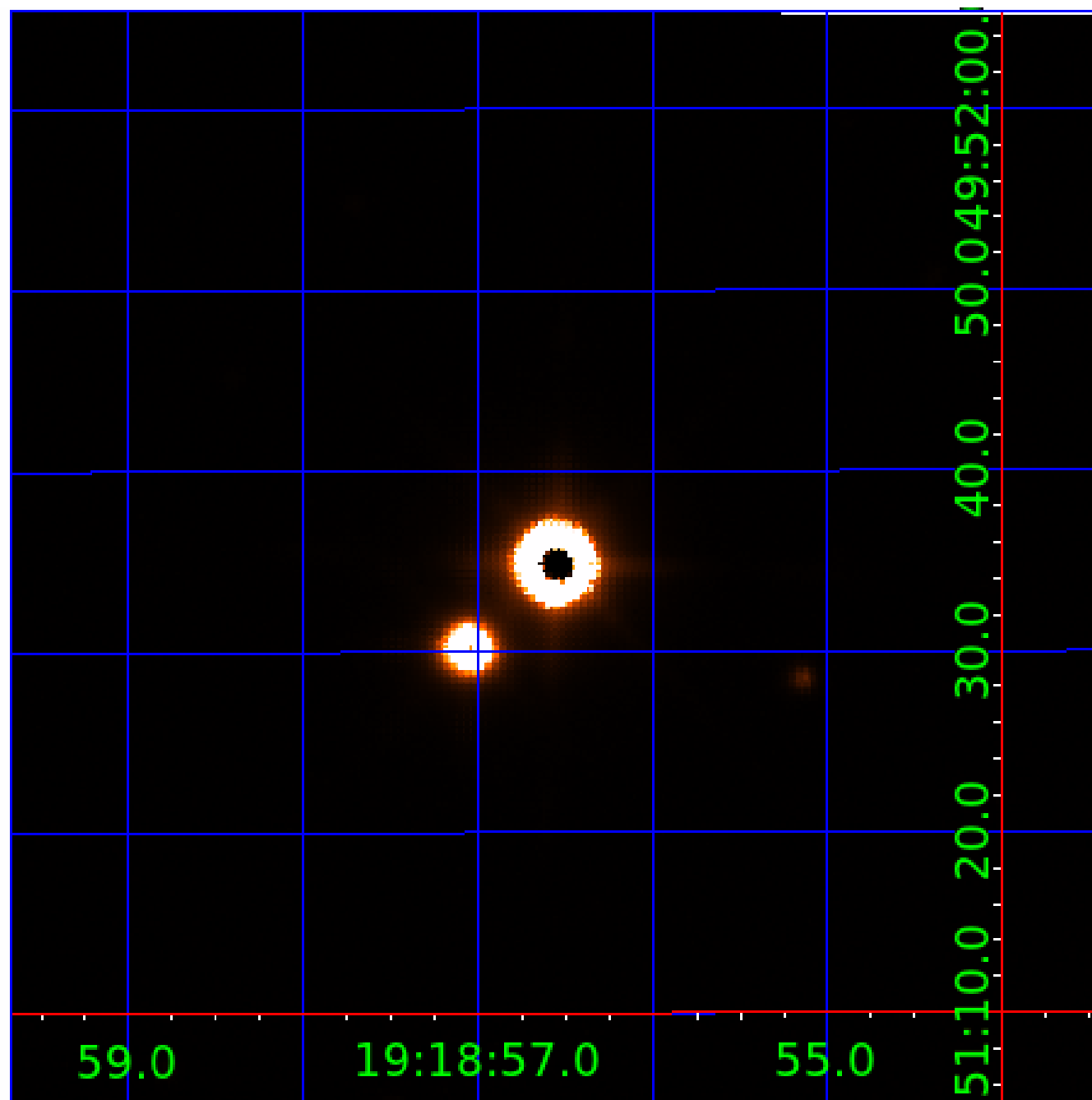


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011709006

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})
011709006-01	OBS	No	209.598386	325.529100	192.8	2.469	12.5	6.2	0.99	6014	1.53	2.27
011709006-02	OBS	No	358.000679	325.136854	502.8	14.602	15.2	4.5	0.99	6014	2.77	1.11
011709006-03	OBS	No	498.268313	134.156093	147.8	8.149	13.4	2.3	0.99	6014	1.32	0.72
011709006-04	OBS	No	371.278877	176.636767	178.4	3.419	15.8	4.1	0.99	6014	1.41	1.06
011709006-05	OBS	8061.01	0.719710	131.921610	58.8	2.000	10.8	-1.0	0.99	6014	0.76	4385.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709006-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-03	OBS	FP	0.00	1	0	0	0	LPP_ALT—CENT_SATURATED
011709006-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

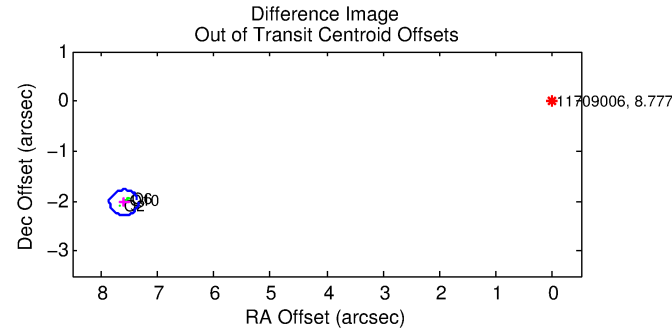
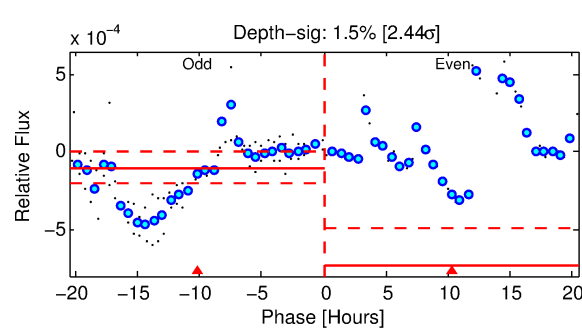
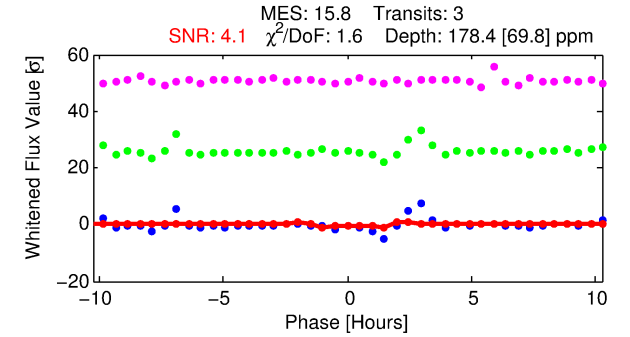
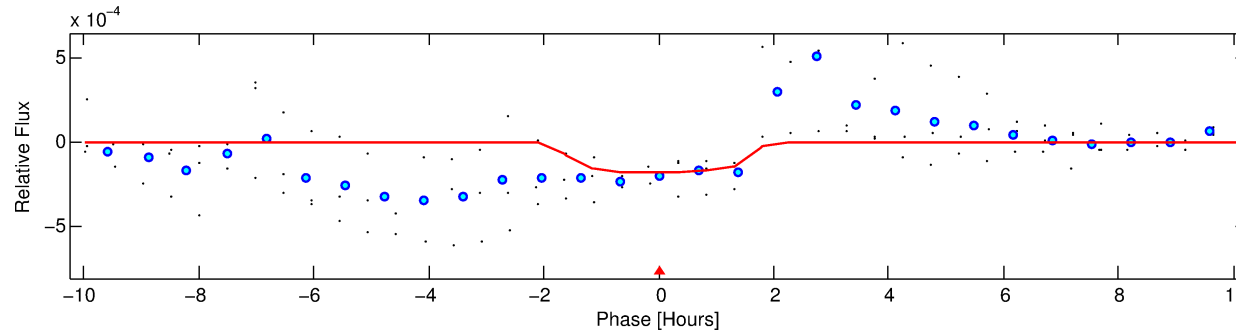
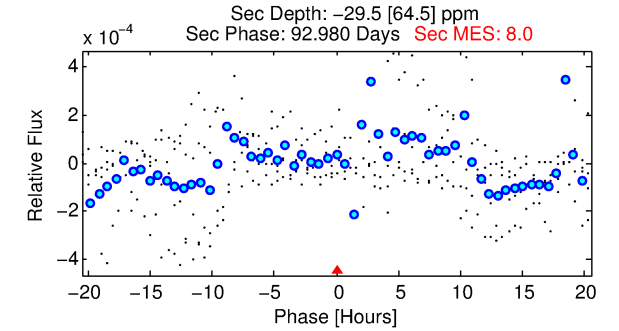
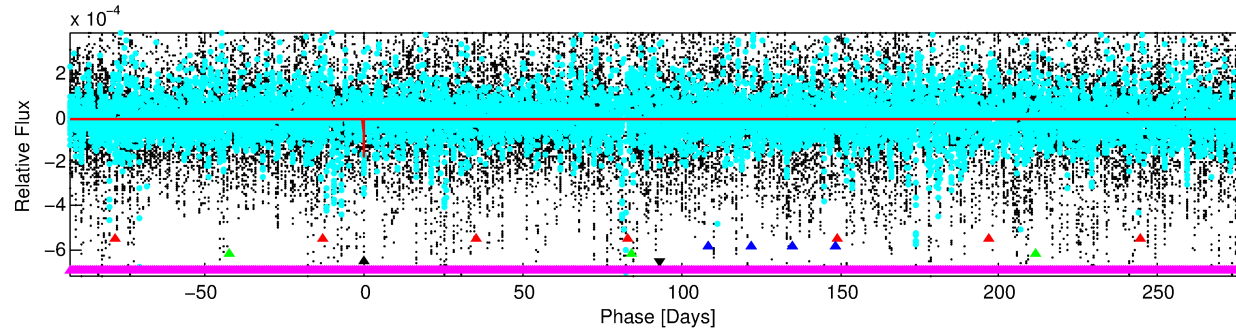
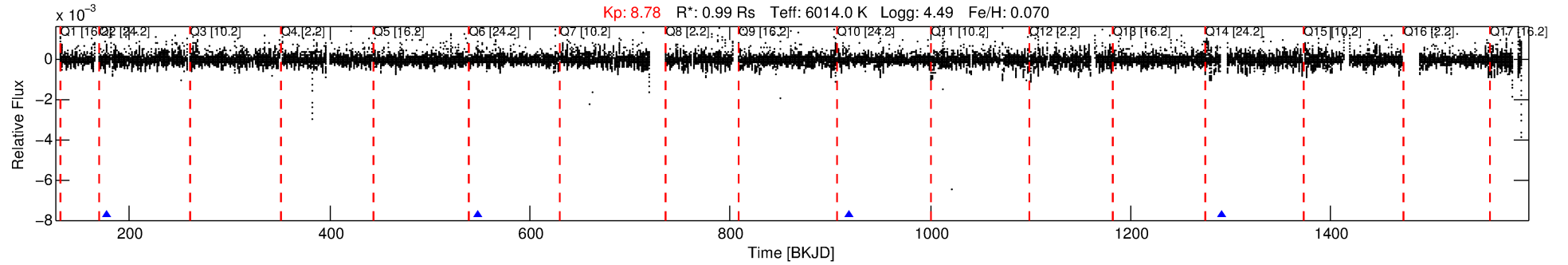
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709006-04

No Significant Match Found

DV One-Page Summary

KIC: 11709006 Candidate: 4 of 5 Period: 371.279 d



DV Fit Results:

Period = 371.27888 [0.01459] d
Epoch = 176.6368 [0.0151] BKJD
 $R_p/R^* = 0.0130 [0.0307]$
 $a/R^* = 626.98 [6999.54]$
 $b = 0.67 [9.16]$
 $\text{Seff} = 1.06 [0.20]$
 $T_{\text{eq}} = 259 [12] \text{ K}$
 $R_p = 1.41 [3.33] R_e$
 $a = 1.0442 [0.1125] \text{ AU}$
 $\text{Ag} = \text{N/A}$
 $T_{\text{eff}} = \text{N/A}$

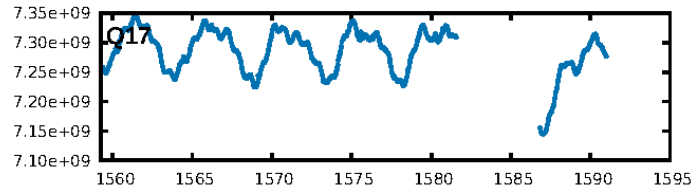
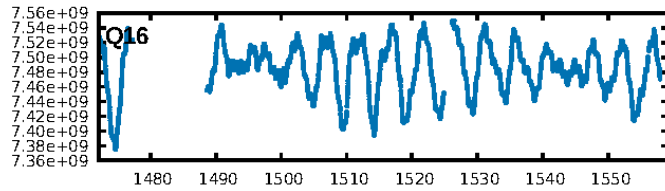
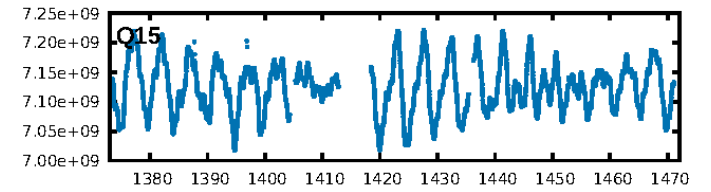
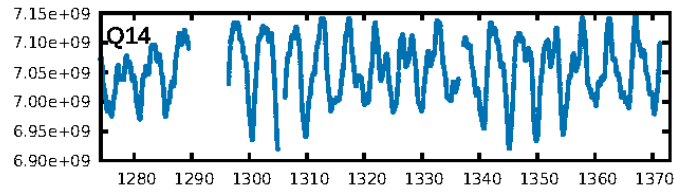
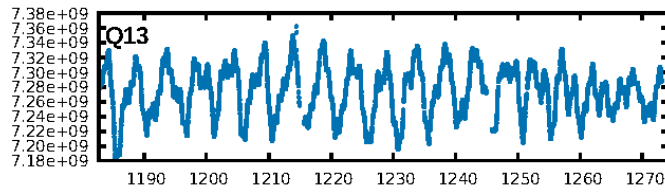
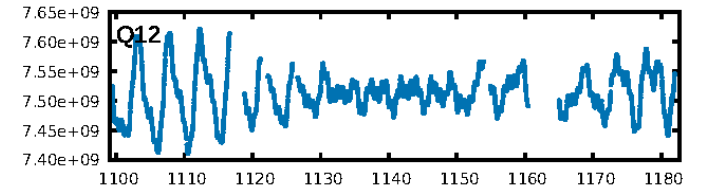
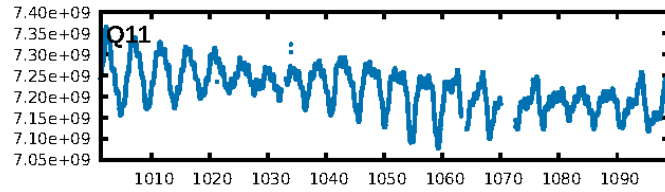
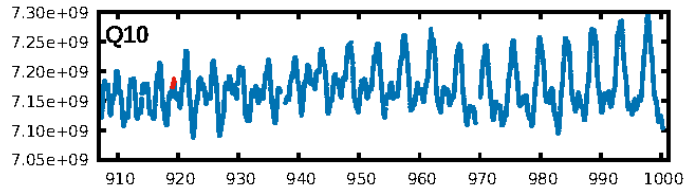
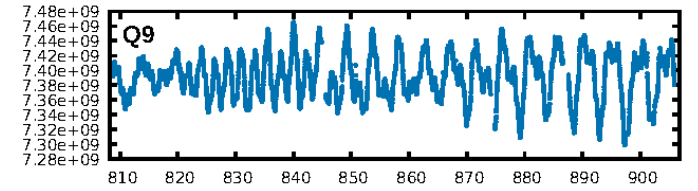
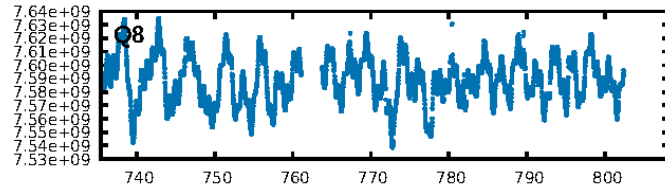
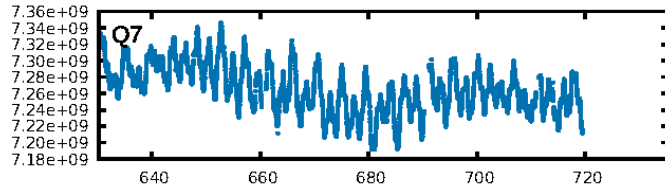
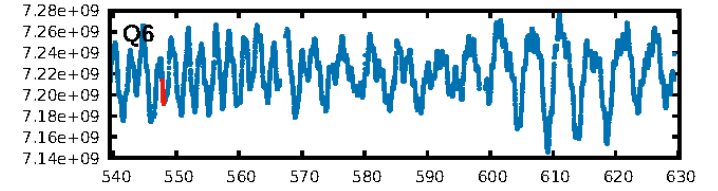
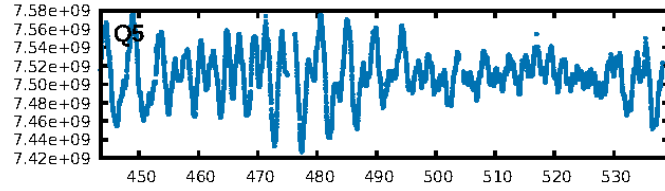
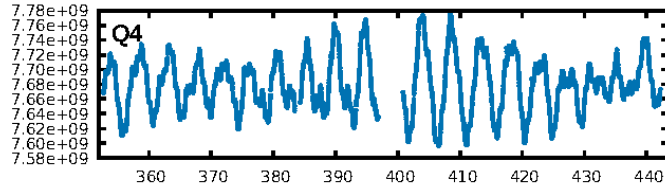
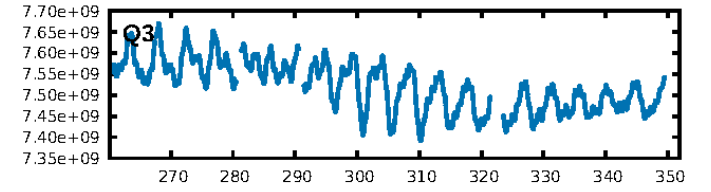
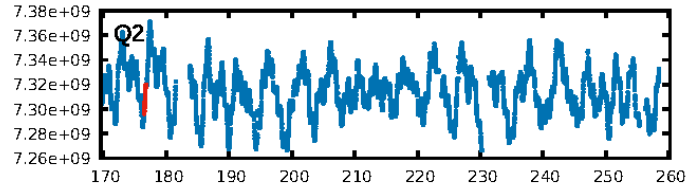
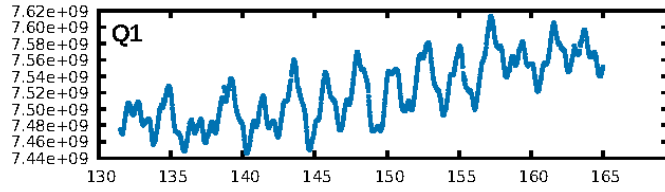
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.25σ]
LongPeriod-sig: 100.0% [344.88σ]
ModelChiSquare2-sig: 22.8%
ModelChiSquareGof-sig: 79.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 36.306 arcsec [3.32σ]
OotOffset-rm: 7.853 arcsec [93.23σ]
KicOffset-rm: 7.965 arcsec [105.07σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

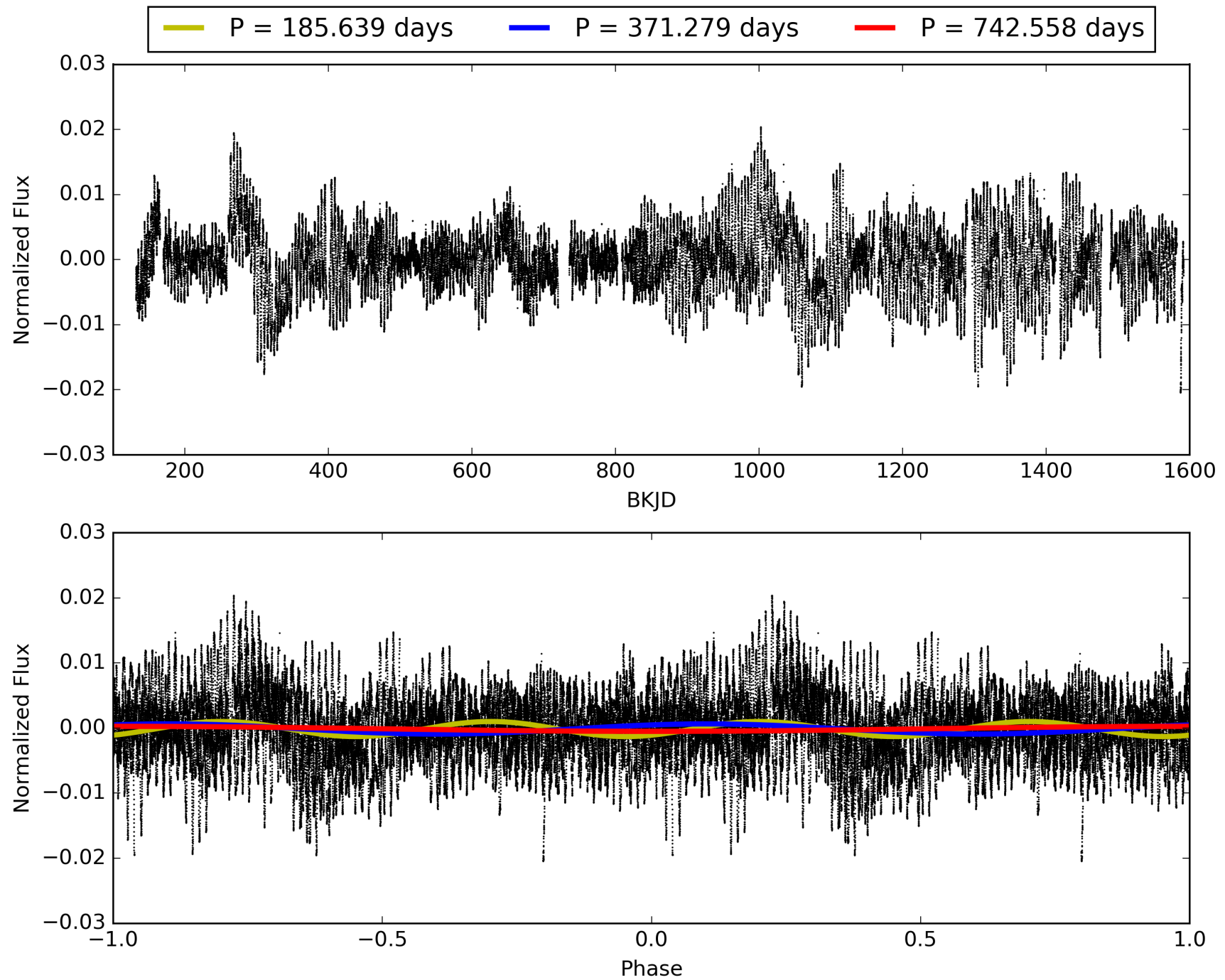
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:39:57 Z

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

TCE 011709006-04, PDC Light Curves

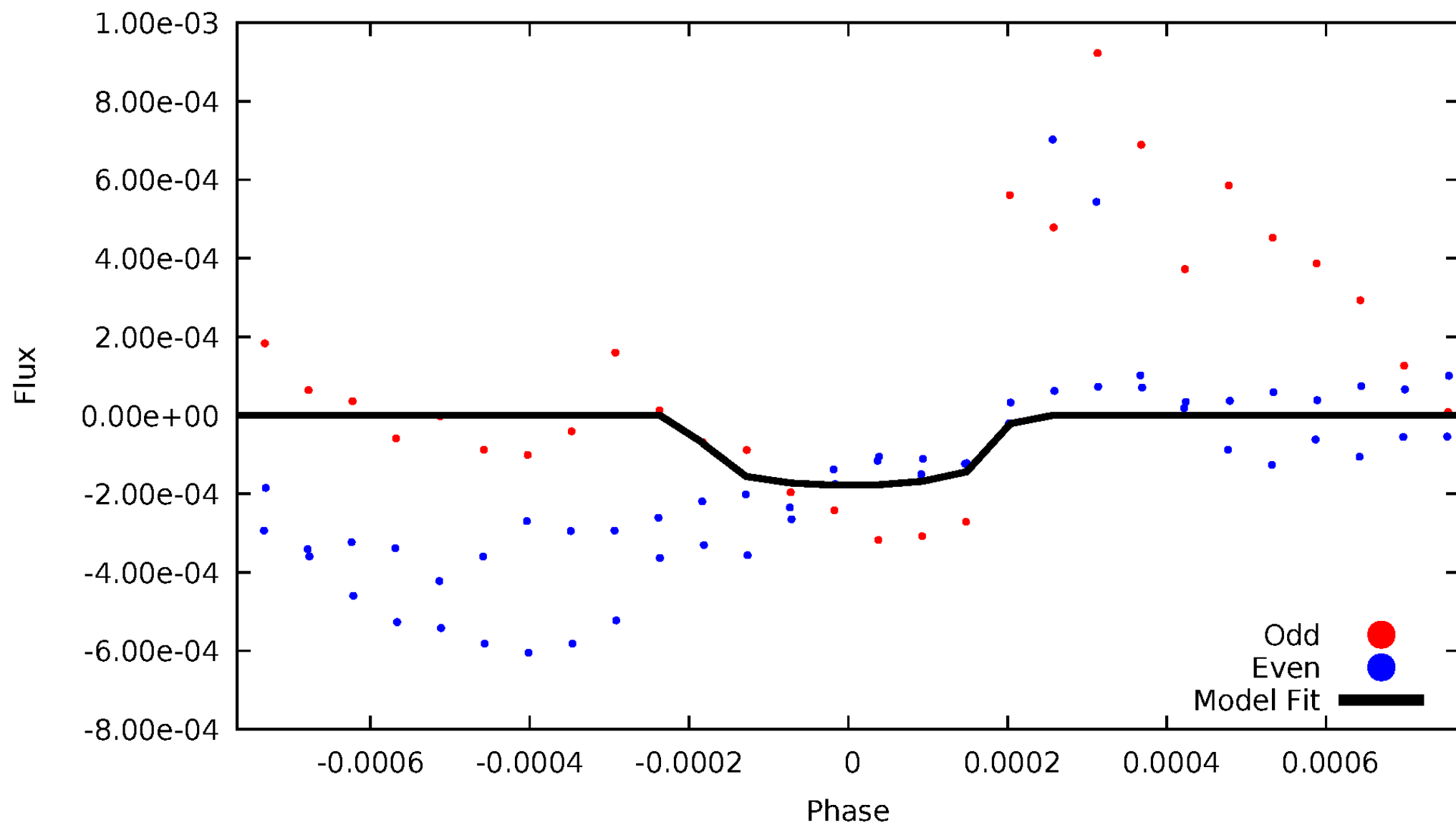


TCE 011709006-04



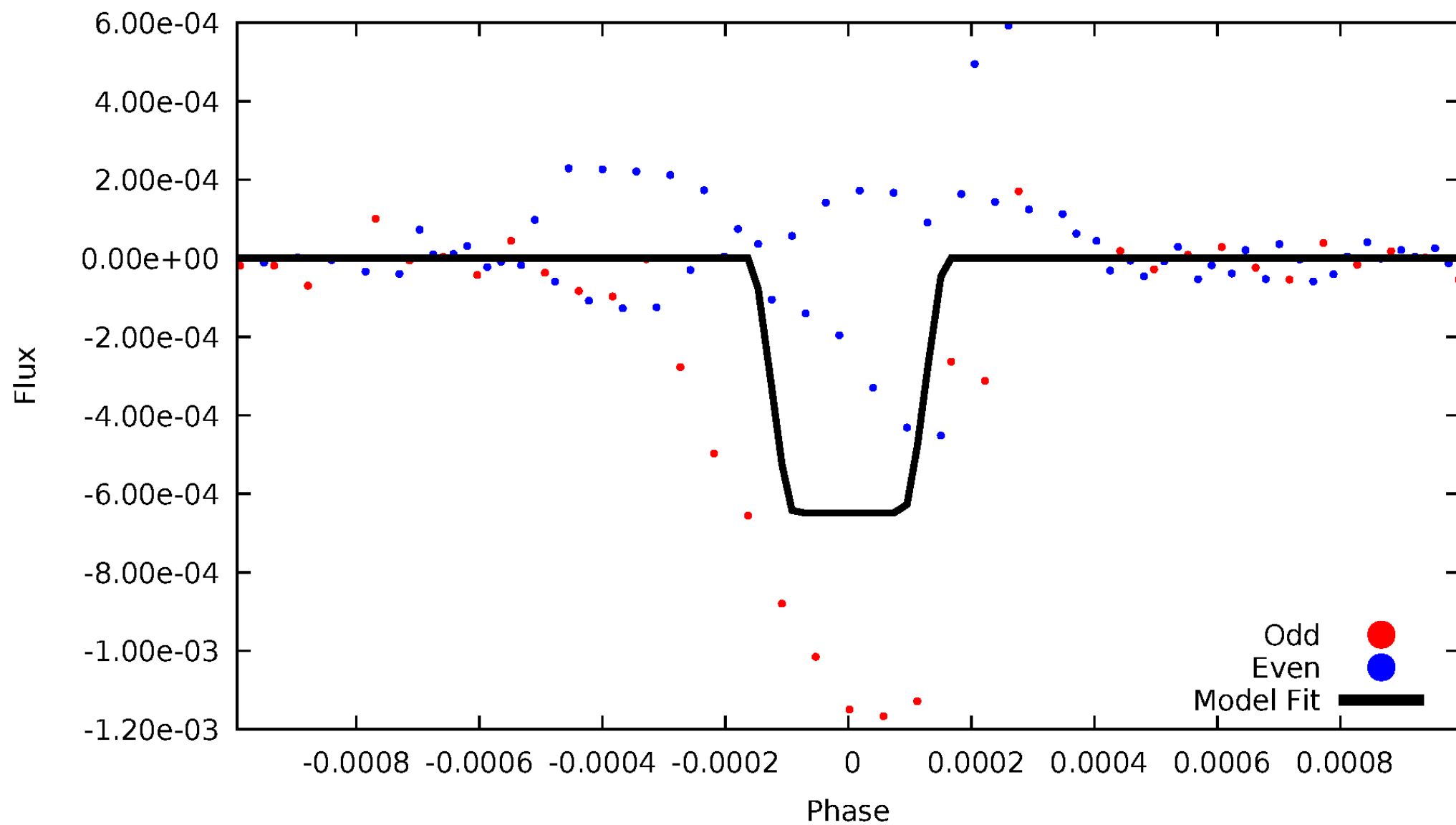
DV Odd/Even

TCE 011709006-04



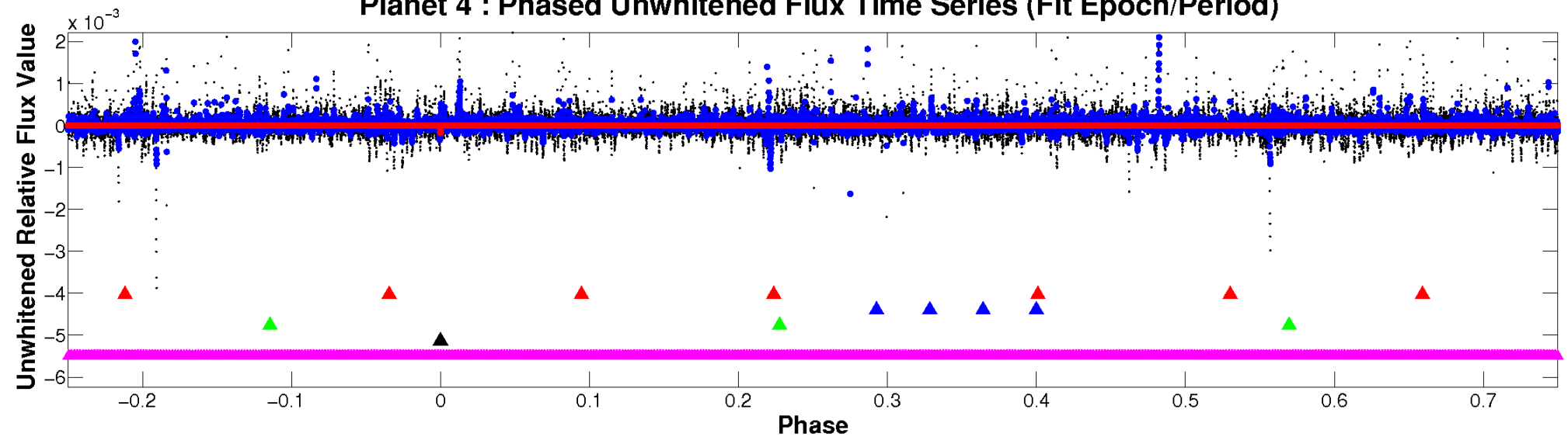
ALT Odd/Even

TCE 011709006-04

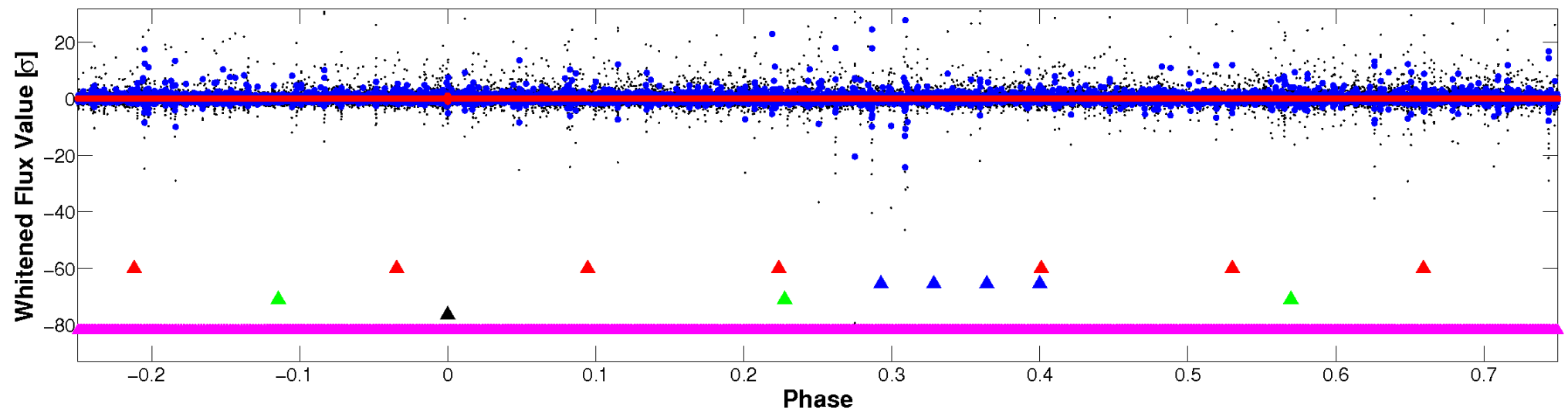


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

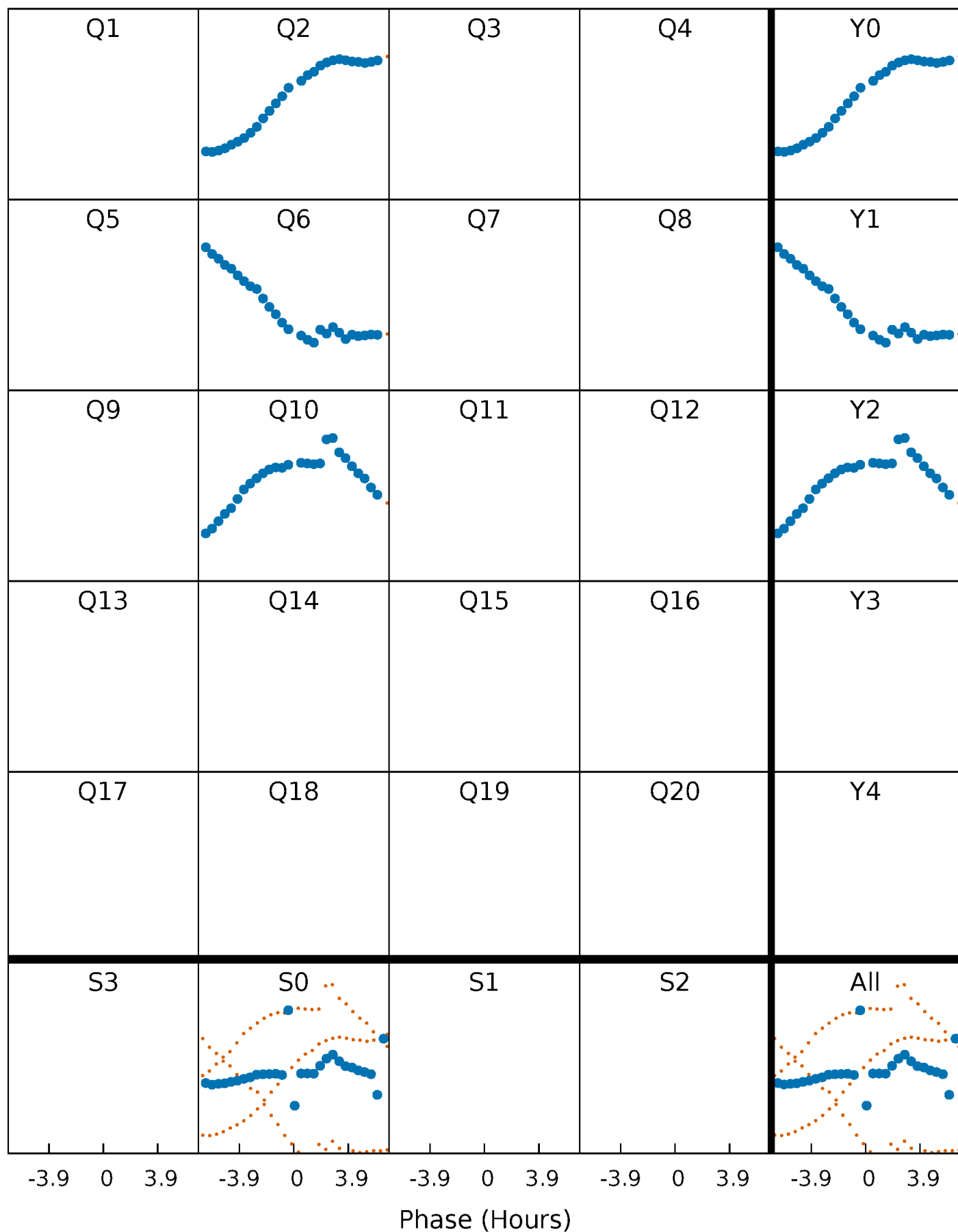


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



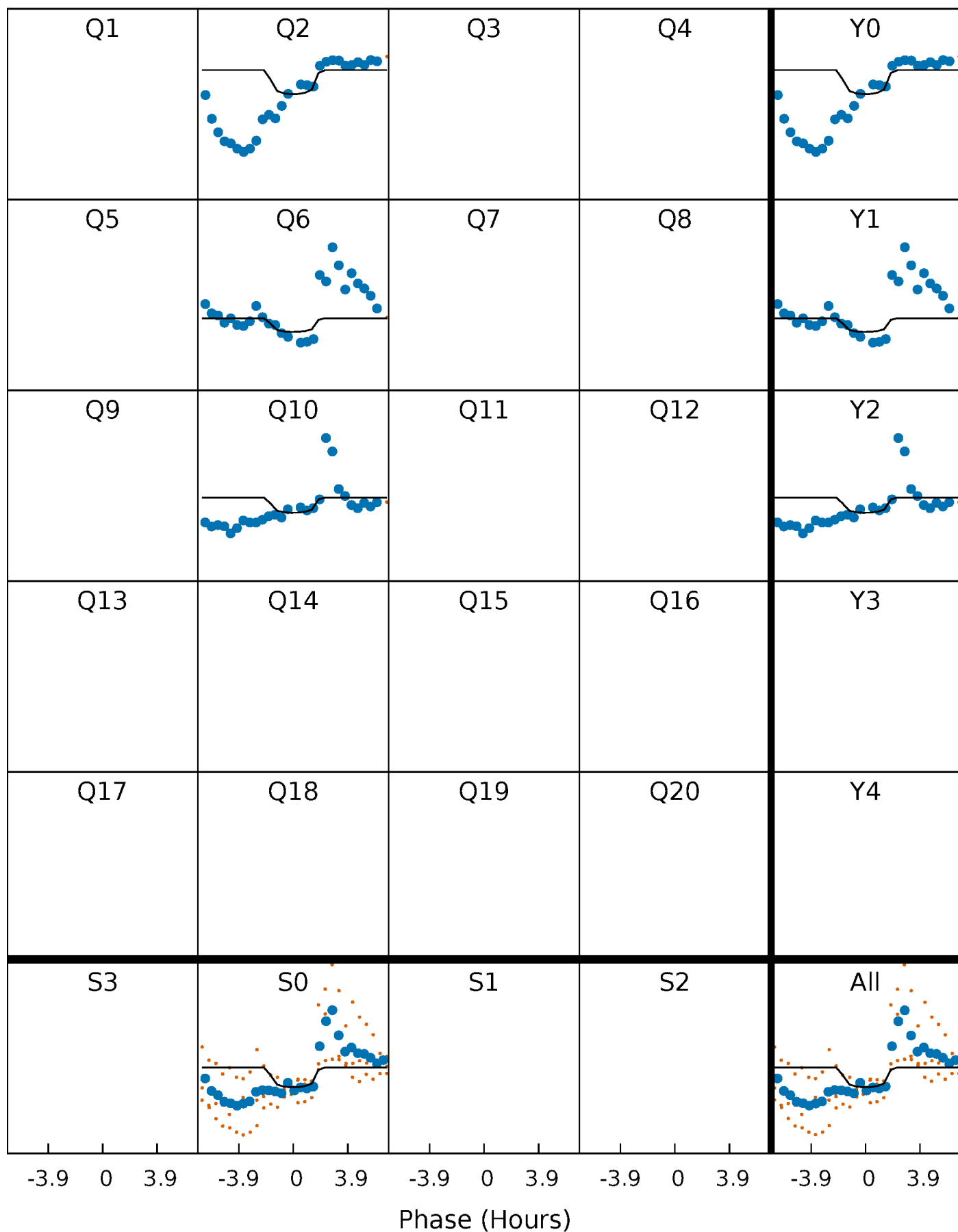
PDC Quarter-Phased Transit Curves

TCE 011709006-04 P=371.278877 Days $T_0=176.636767$ (BKJD)



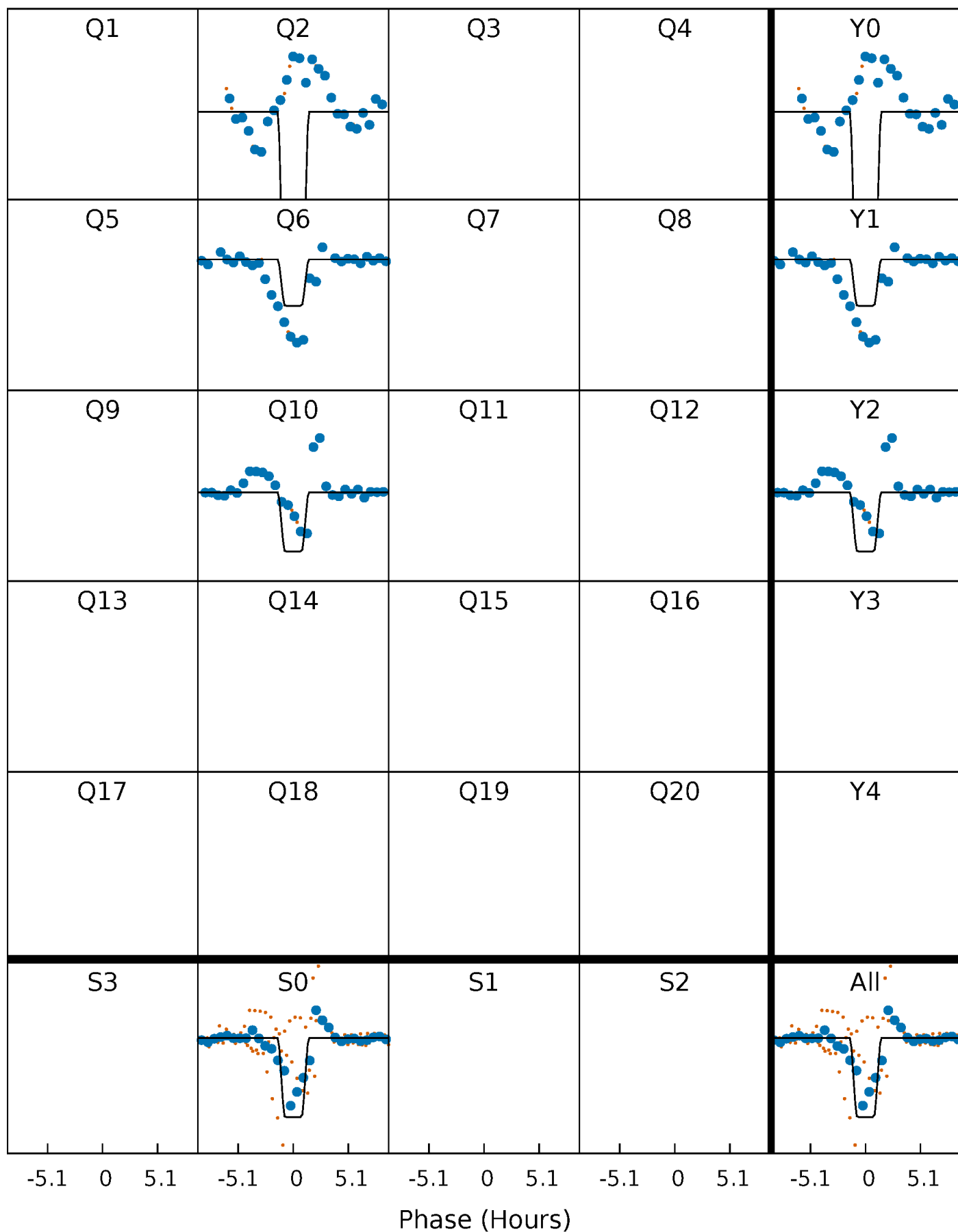
DV Quarter-Phased Transit Curves

TCE 011709006-04 P=371.278877 Days $T_0=176.636767$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

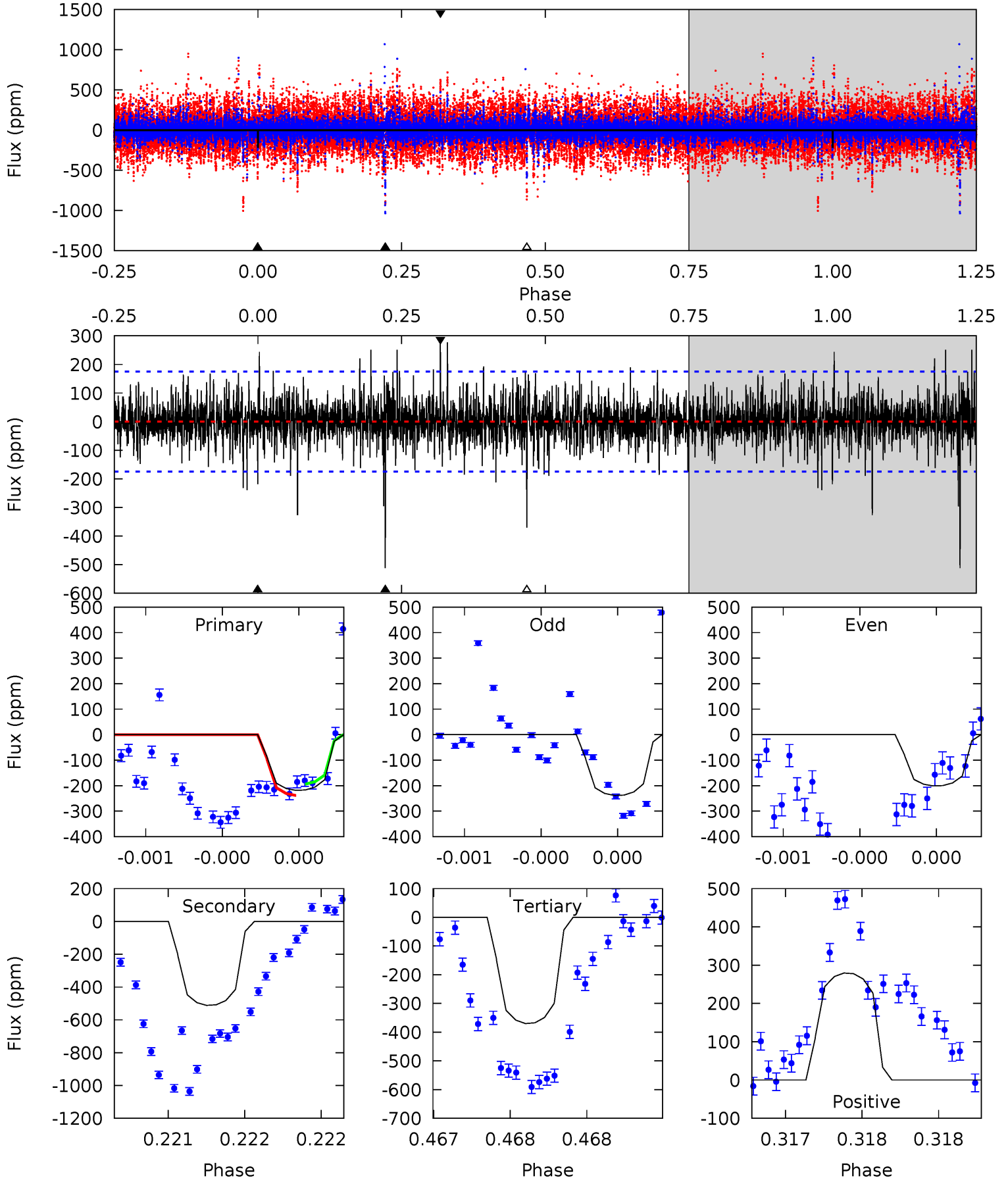
TCE 011709006-04 $P=371.284596$ Days $T_0=176.644309$ (BKJD)



DV Model-Shift Uniqueness Test

011709006-04, P = 371.278877 Days, E = 176.636767 Days

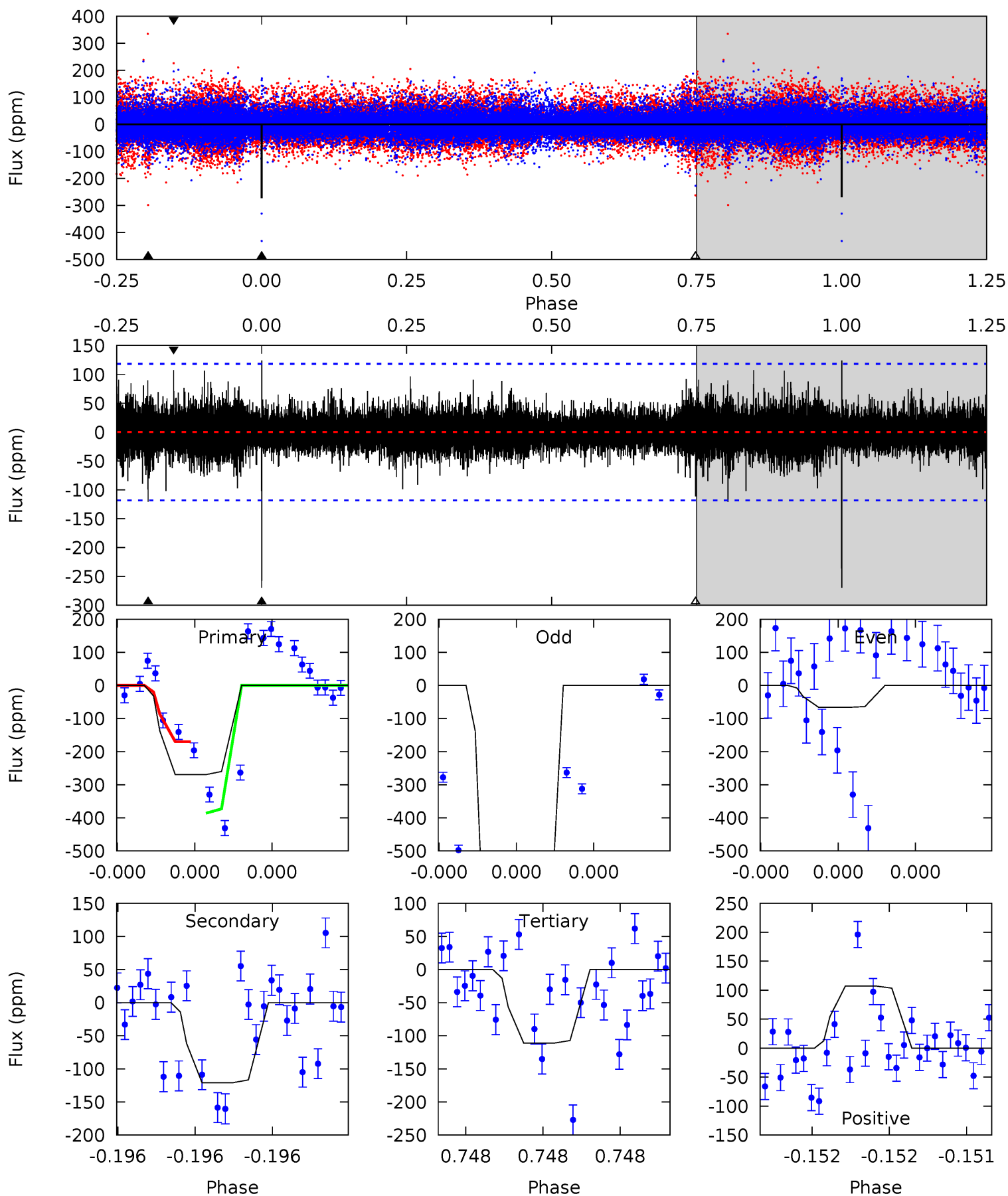
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.98	16.4	11.8	8.94	5.60	3.52	1.63	-4.85	-1.96	4.53	7.42	0.48	0.97	0.35	0.72



Alt Model-Shift Uniqueness Test

011709006-04, P = 371.284596 Days, E = 176.644309 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	5.80	5.33	5.15	5.68	3.64	0.90	7.59	7.78	0.47	0.65	41.9	1.56	0.32	5.22



Stellar Parameters For KIC 011709006

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6014^{+120}_{-132}	$4.486^{+0.024}_{-0.096}$	$0.070^{+0.150}_{-0.200}$	$0.993^{+0.117}_{-0.054}$	$1.101^{+0.053}_{-0.098}$	$1.584^{+0.183}_{-0.444}$
	+2%/-2%	+1%/-2%	+214%/-286%	+12%/-5%	+5%/-9%	+12%/-28%
Source	SPE13	SPE13	SPE13	DSEP		

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

Secondary Eclipse Parameters for KIC 011709006-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-512±31	$2.99^{+2.65}_{-2.02}$	365^{+11}_{-10}	5566^{+5407}_{-1324}	$34414^{+309830}_{-24986}$
Alt.	-121±21	$3.63^{+2.93}_{-2.33}$	366^{+12}_{-11}	3817^{+1972}_{-640}	5250^{+35642}_{-3614}

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 $A_{obs} \gg 1.0$

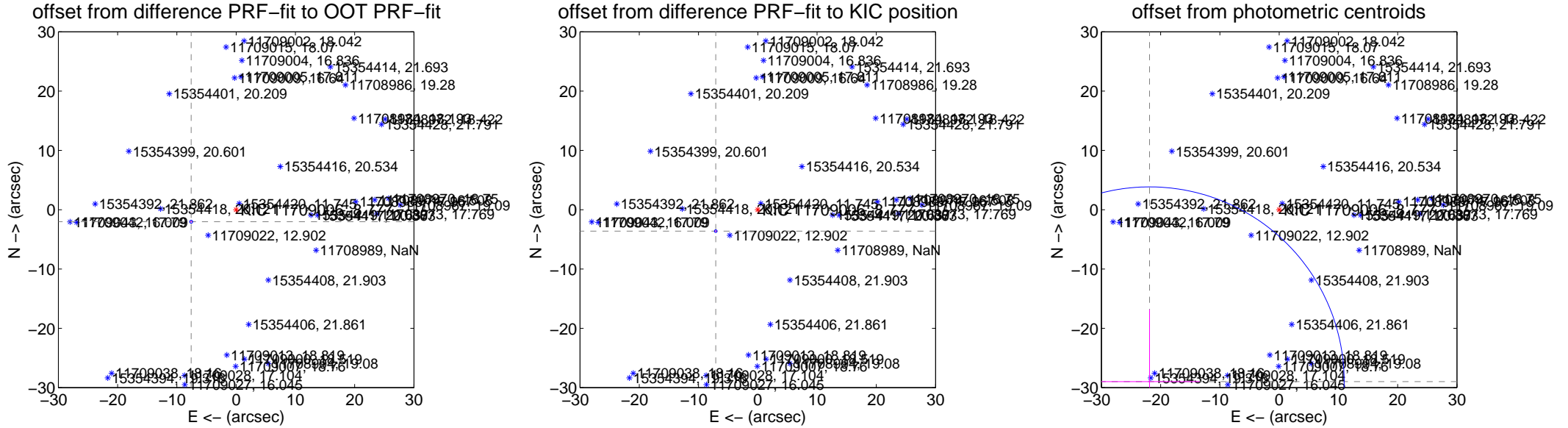
DV Centroid Data

Supplemental centroid analysis for 011709006-04. **Kepler magnitude: 8.78.** Transit SNR 4.06

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.78 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.853 ± 0.084	93.23	7.588 ± 0.084	-2.026 ± 0.084
PRF-fit source offset from KIC position	7.965 ± 0.076	105.07	7.095 ± 0.075	-3.619 ± 0.080
photometric centroid source offset	36.31 ± 10.95	3.32	21.86 ± 8.45	-28.99 ± 12.14



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.

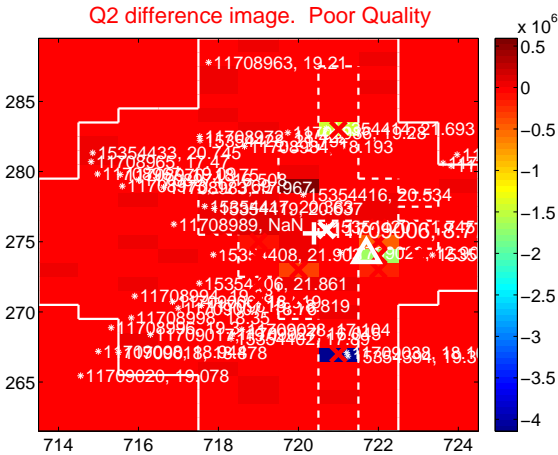
Q1 no difference image



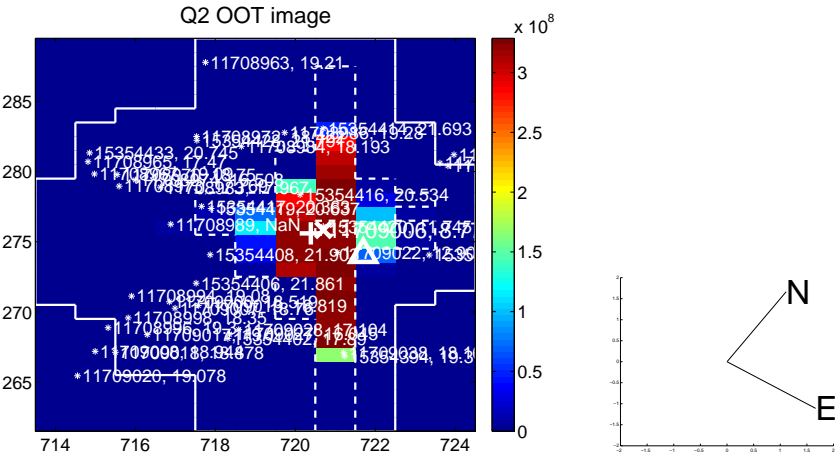
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



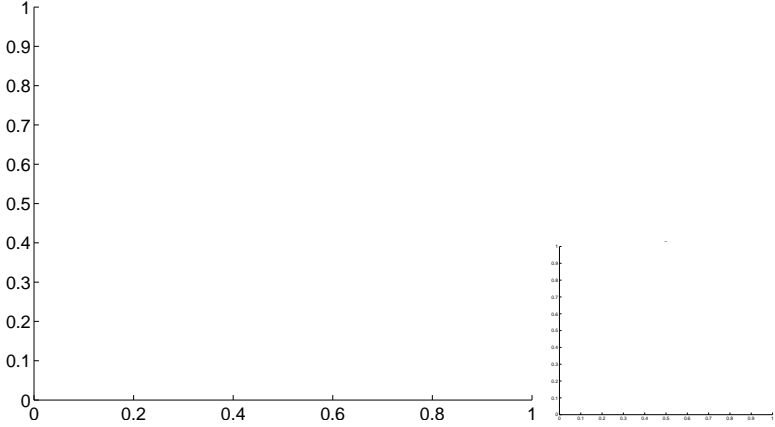
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

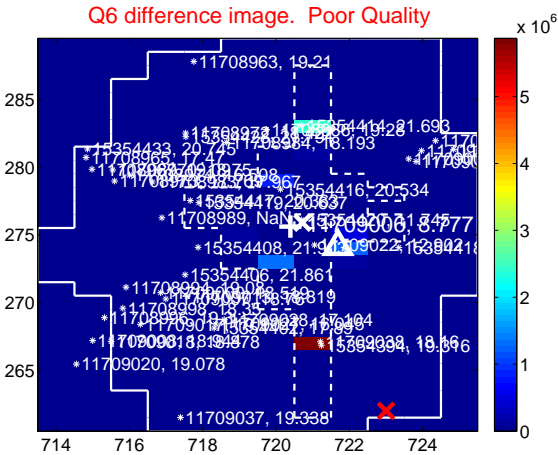
Q5 no difference image



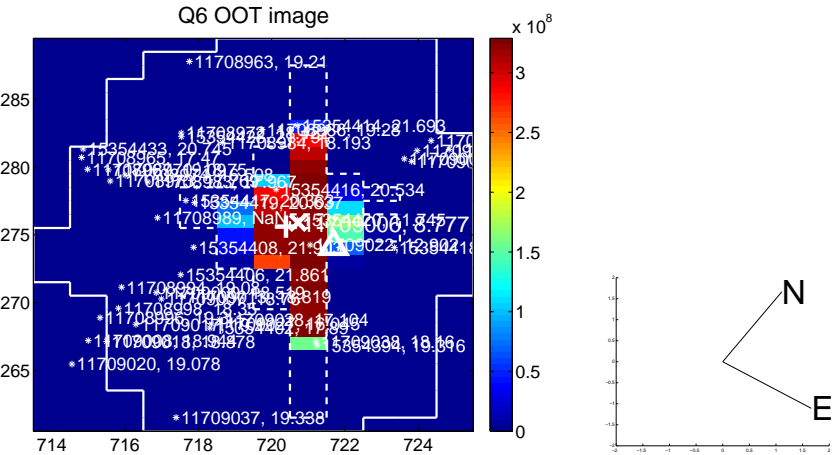
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



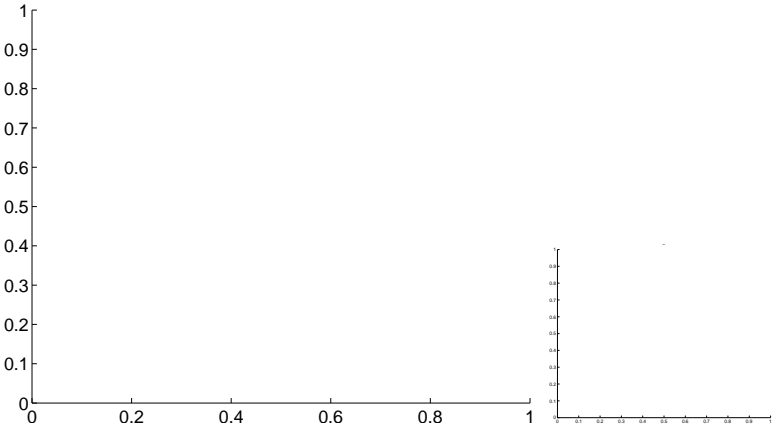
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

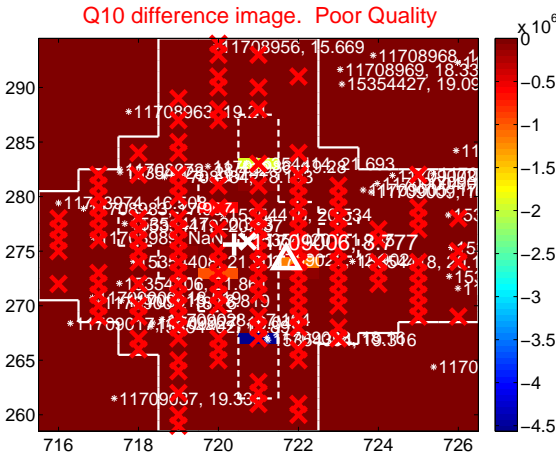
Q9 no difference image



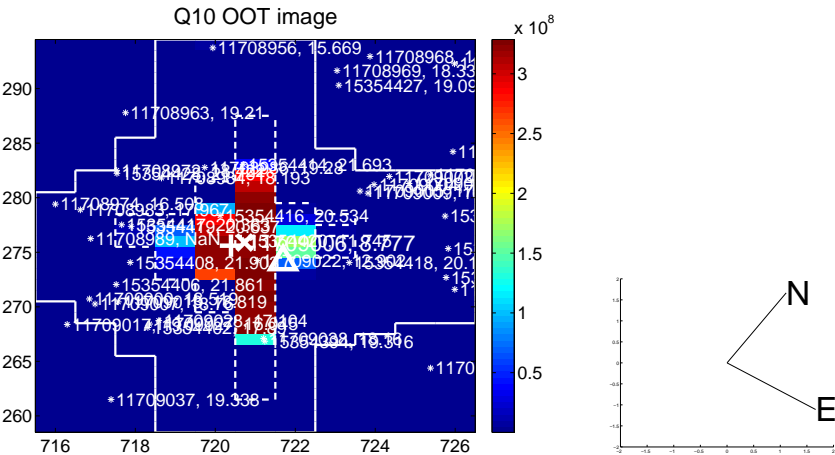
Q9 no OOT image



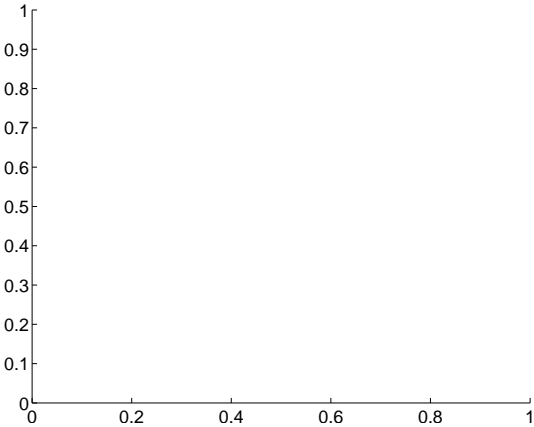
Q10 difference image. Poor Quality



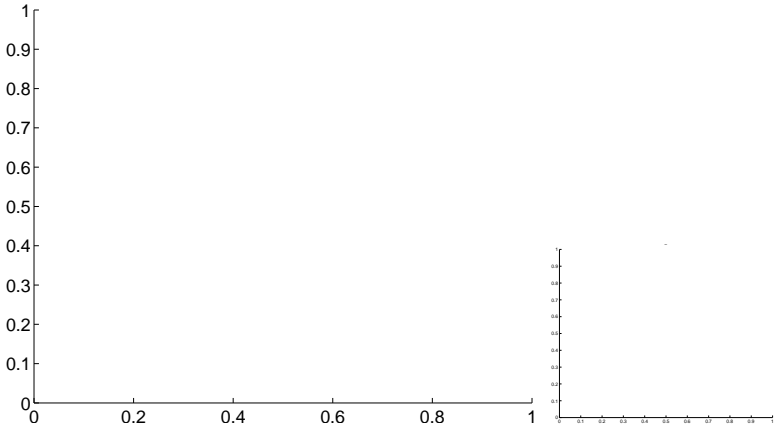
Q10 OOT image



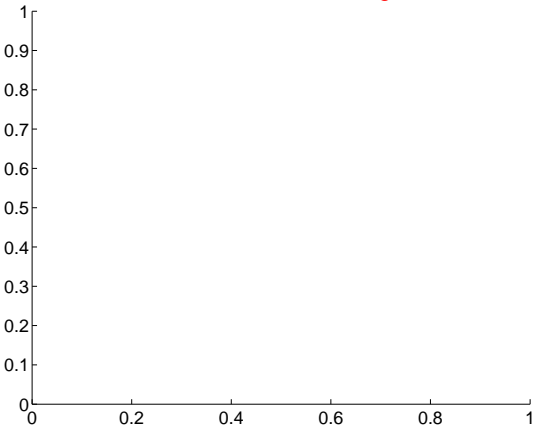
Q11 no difference image



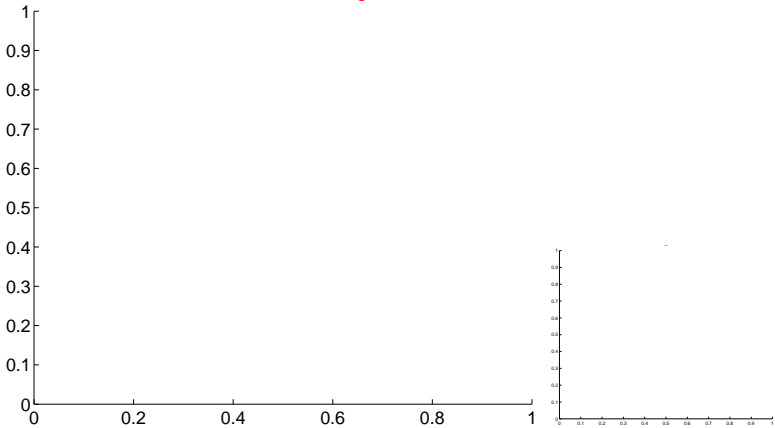
Q11 no OOT image



Q12 no difference image



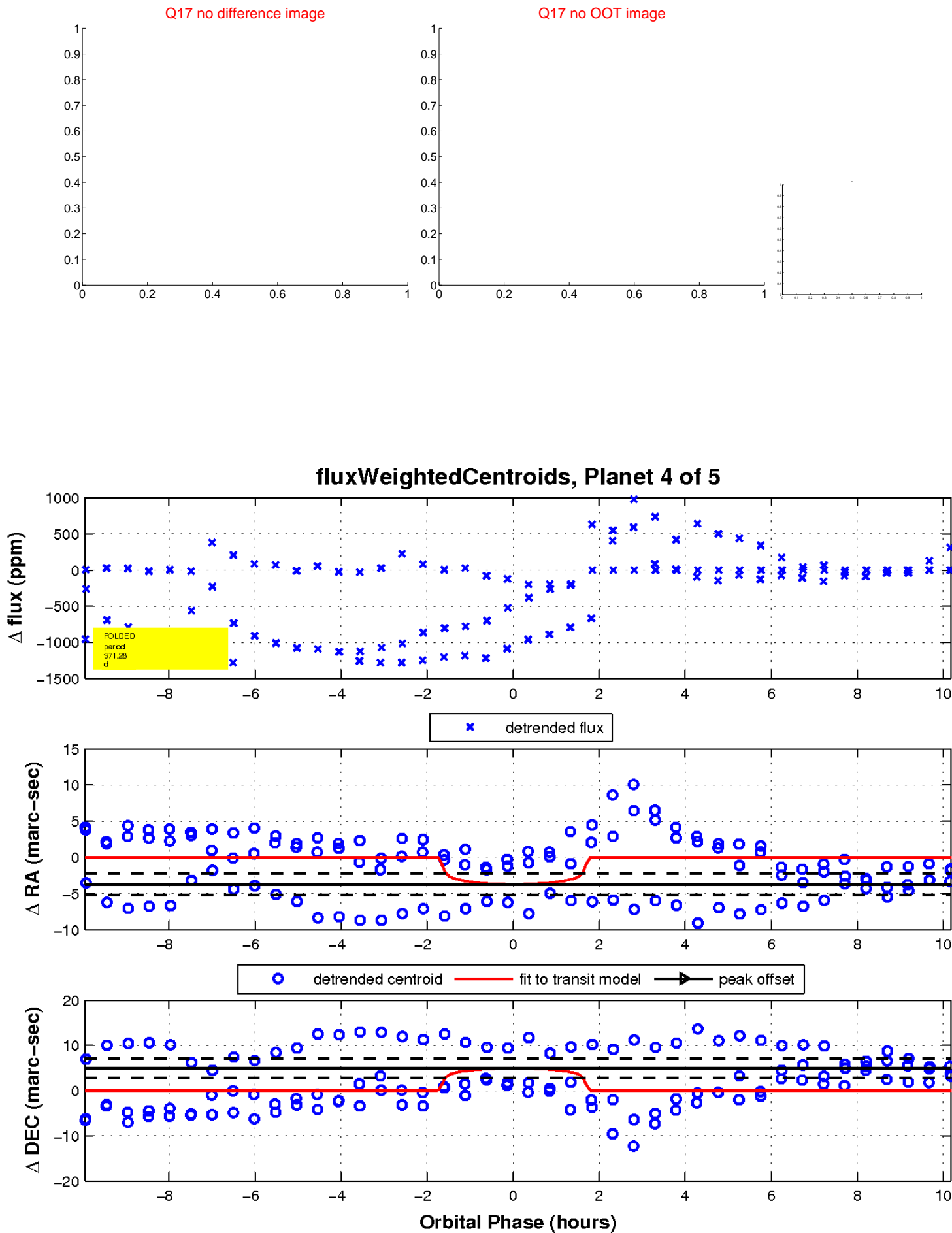
Q12 no OOT image



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.



Declination

KIC 011709006

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})
011709006-01	OBS	No	209.598386	325.529100	192.8	2.469	12.5	6.2	0.99	6014	1.53	2.27
011709006-02	OBS	No	358.000679	325.136854	502.8	14.602	15.2	4.5	0.99	6014	2.77	1.11
011709006-03	OBS	No	498.268313	134.156093	147.8	8.149	13.4	2.3	0.99	6014	1.32	0.72
011709006-04	OBS	No	371.278877	176.636767	178.4	3.419	15.8	4.1	0.99	6014	1.41	1.06
011709006-05	OBS	8061.01	0.719710	131.921610	58.8	2.000	10.8	-1.0	0.99	6014	0.76	4385.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709006-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-03	OBS	FP	0.00	1	0	0	0	LPP_ALT—CENT_SATURATED
011709006-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
011709006-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

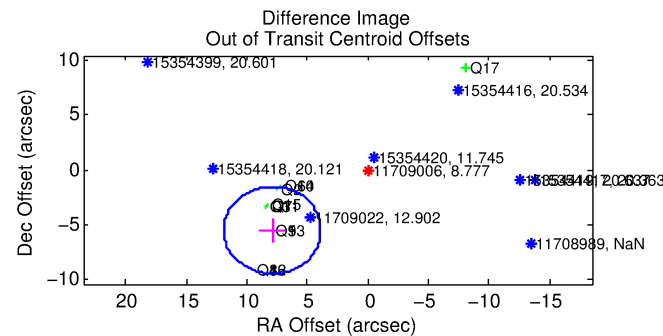
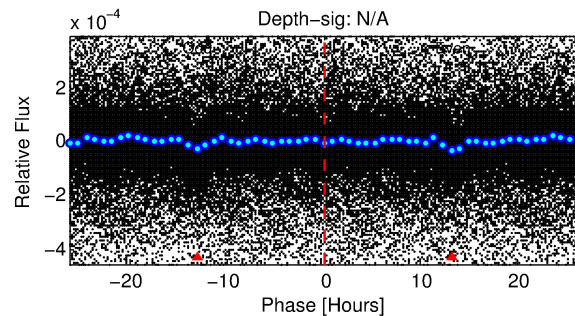
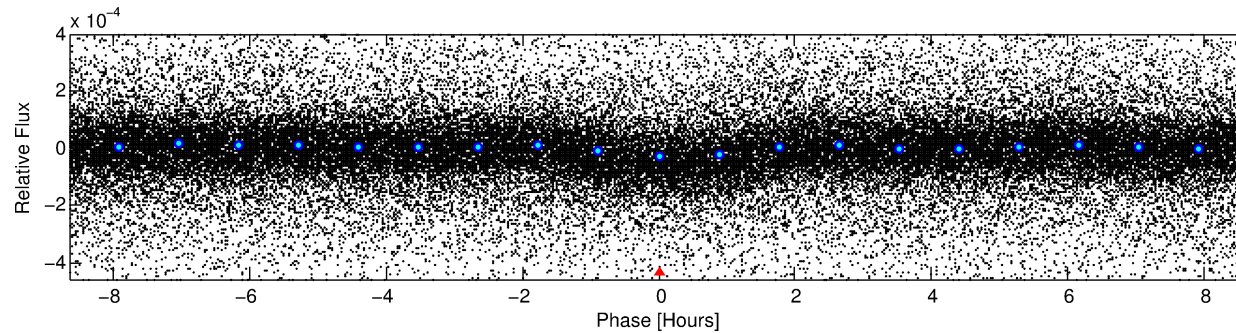
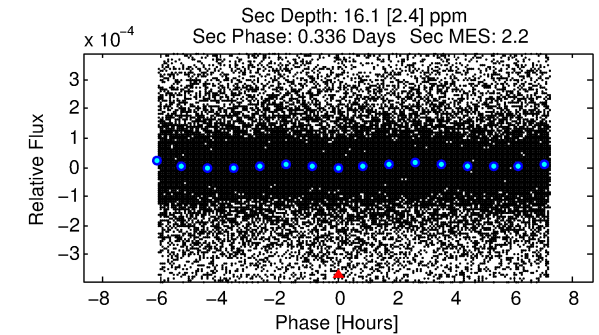
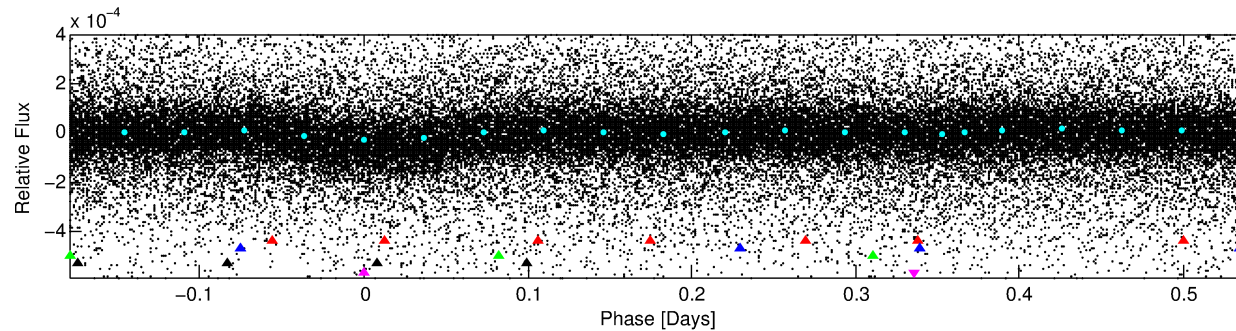
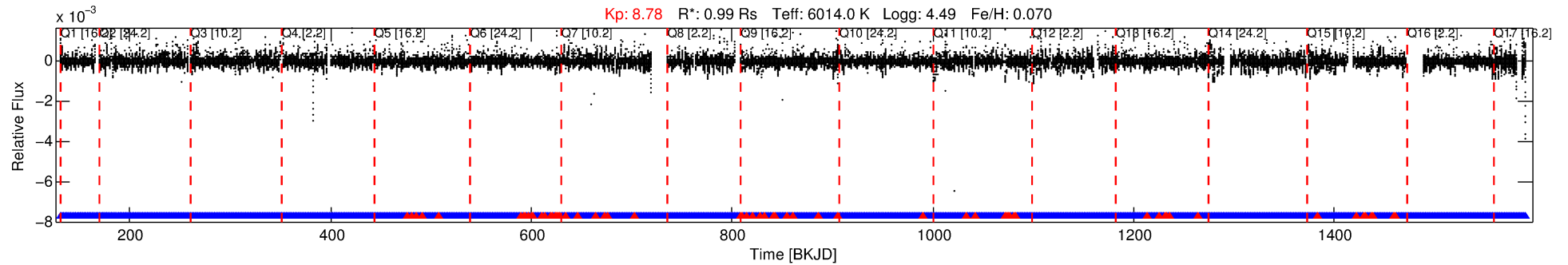
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709006-05

No Significant Match Found

DV One-Page Summary

KIC: 11709006 Candidate: 5 of 5 Period: 0.720 d



TPS TCE Results:

Period = 0.71971 d
Epoch = 131.9216 BKJD

DV fit results are unavailable

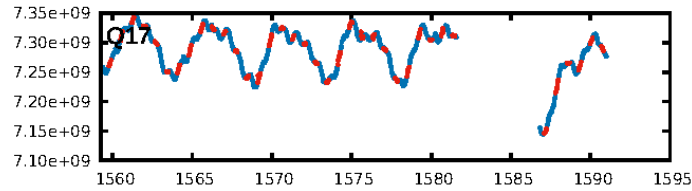
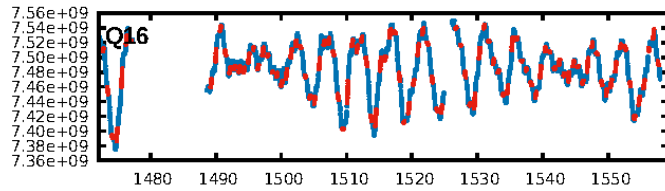
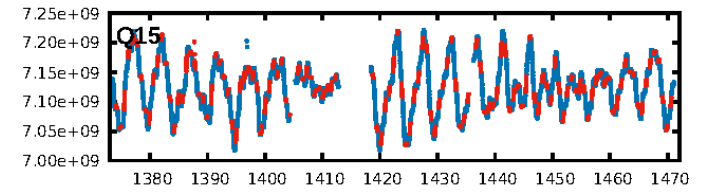
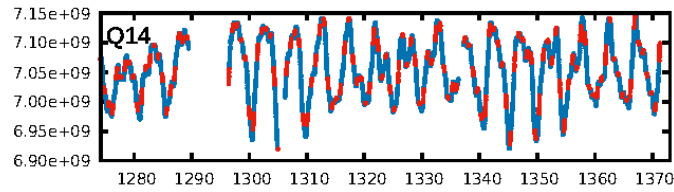
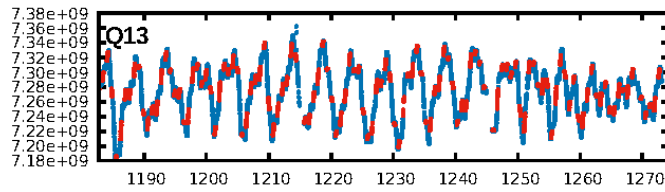
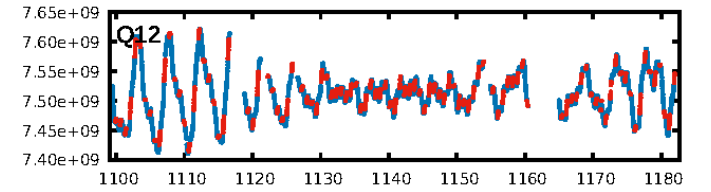
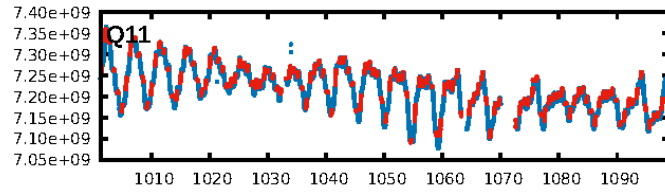
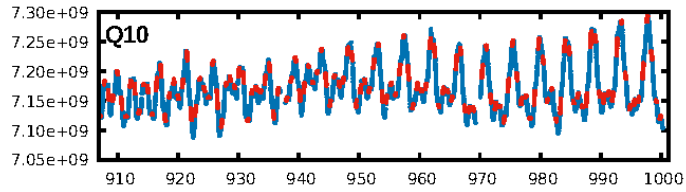
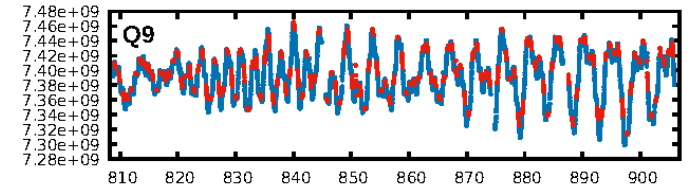
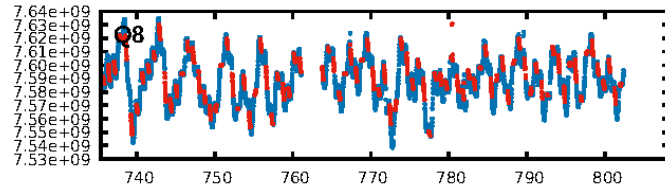
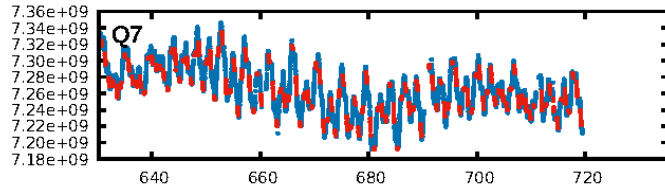
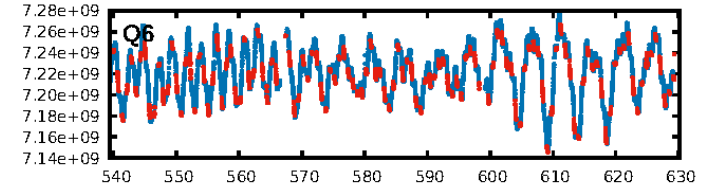
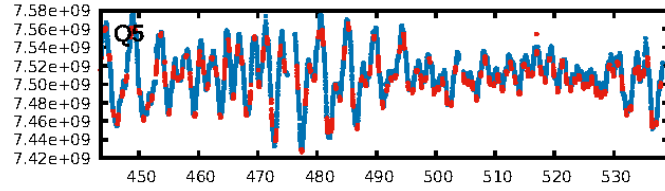
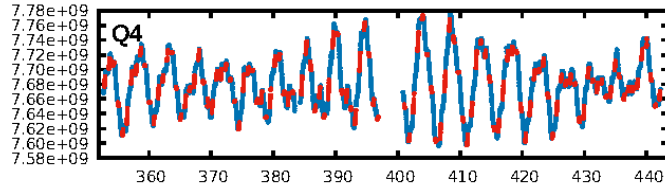
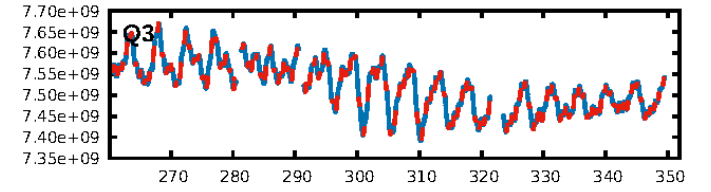
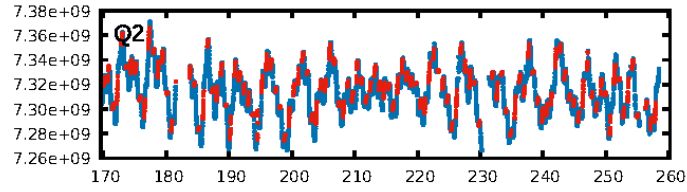
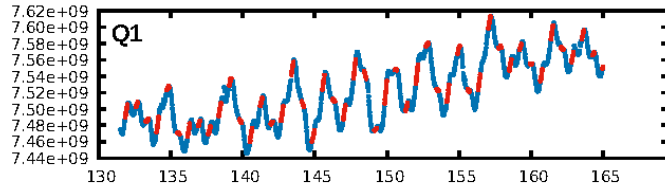
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1577.55σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [1701/1768]
GhostDiagnostic-chr: N/A
Centroid-sig: 69.3%
Centroid-so: 2.013 arcsec [3.01σ]
OotOffset-rm: 9.664 arcsec [7.23σ]
KicOffset-rm: 10.839 arcsec [8.00σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

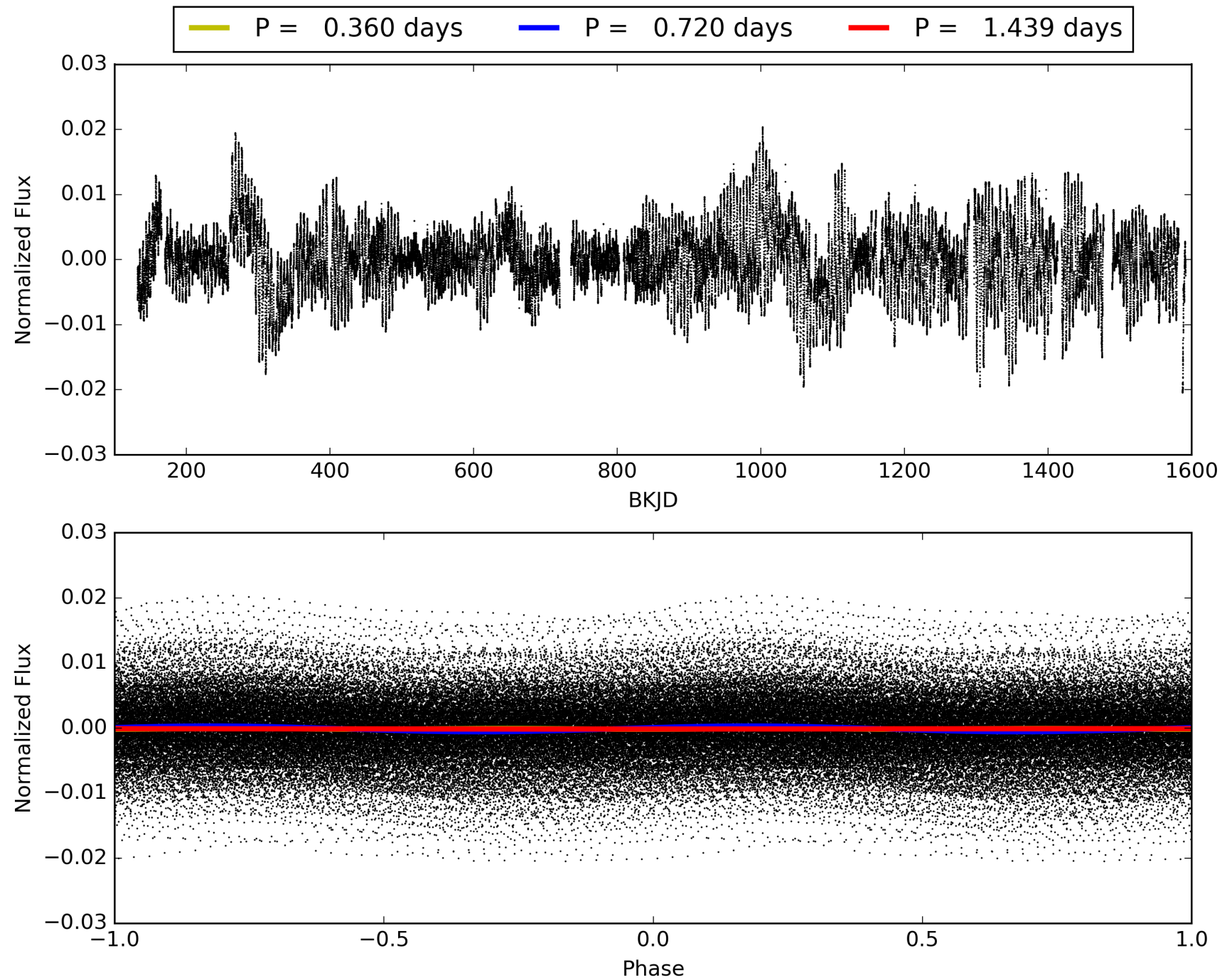
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:40:05 Z

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

TCE 011709006-05, PDC Light Curves

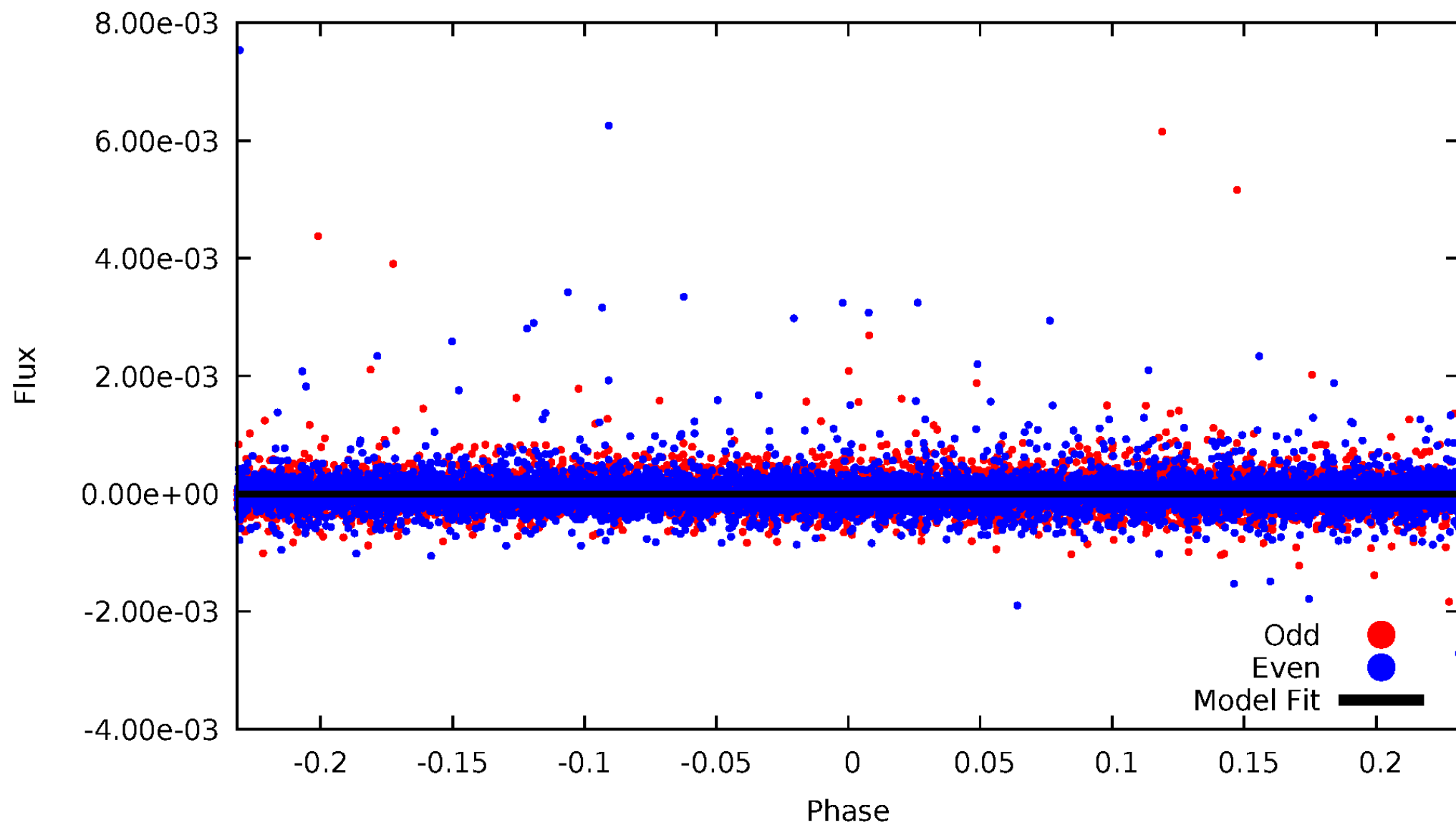


TCE 011709006-05



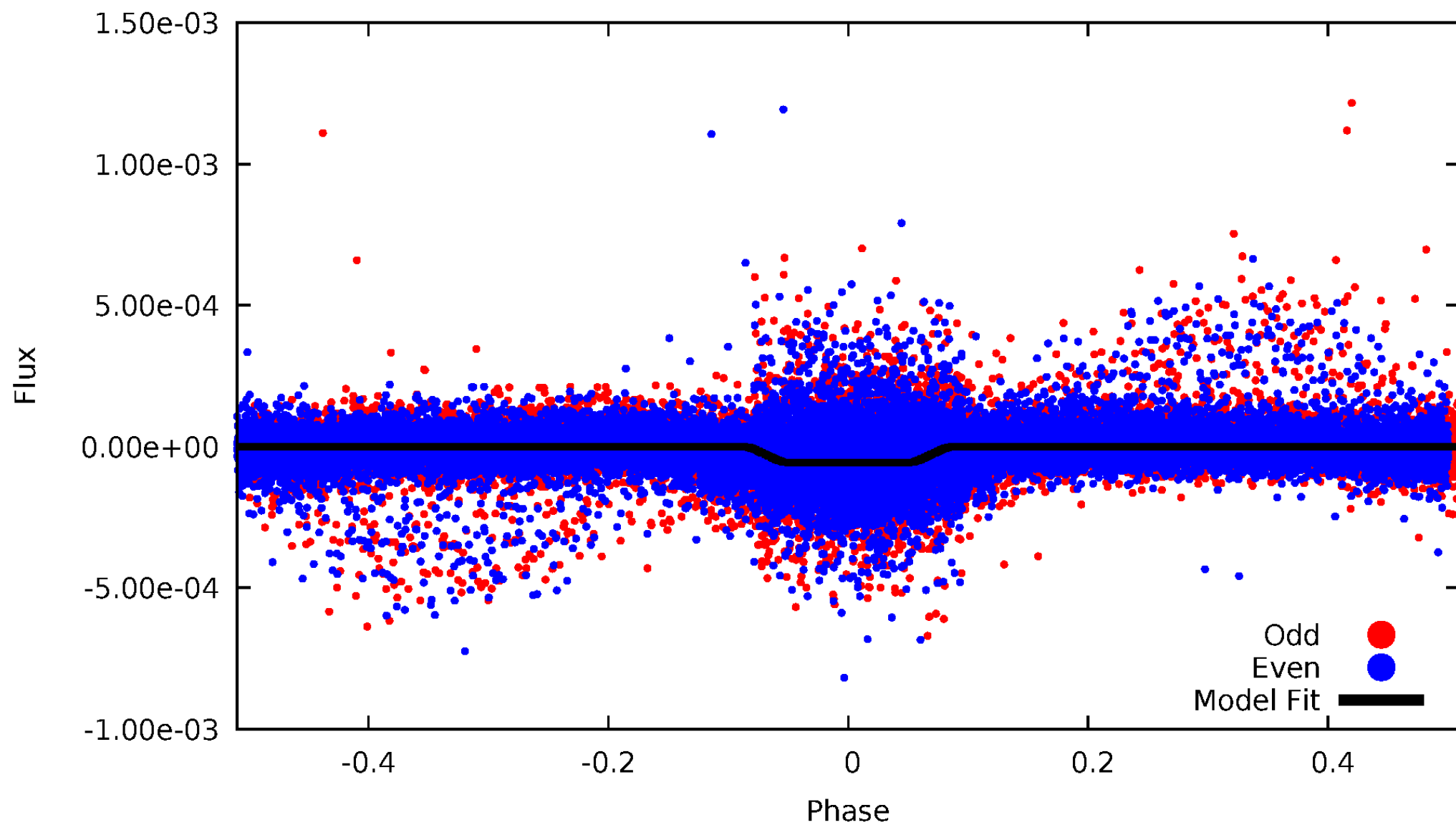
DV Odd/Even

TCE 011709006-05

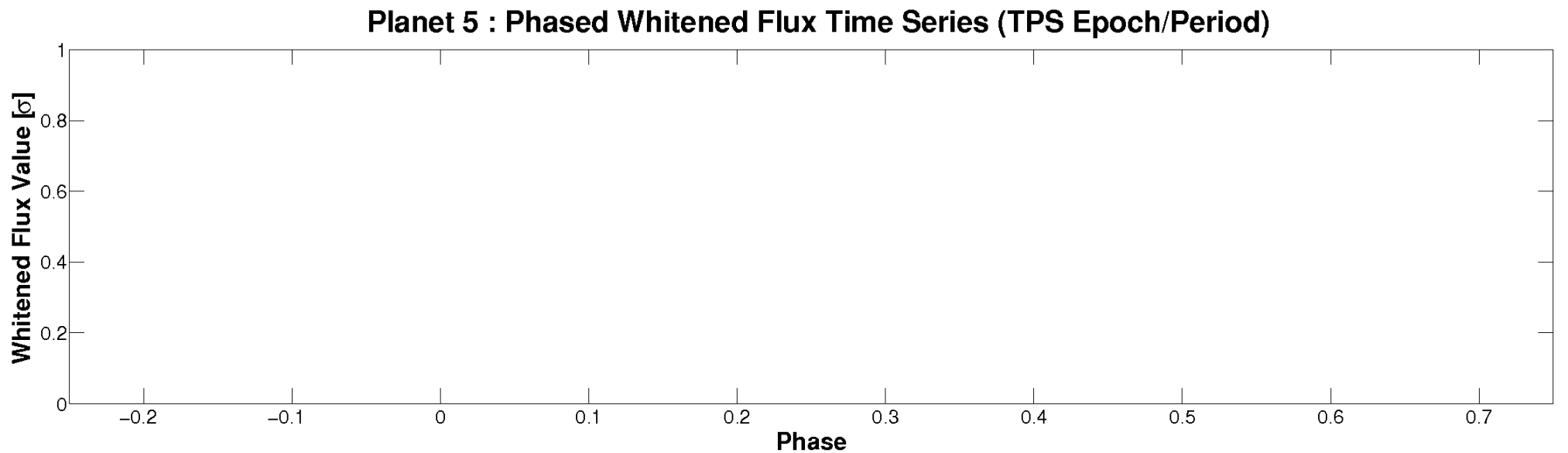
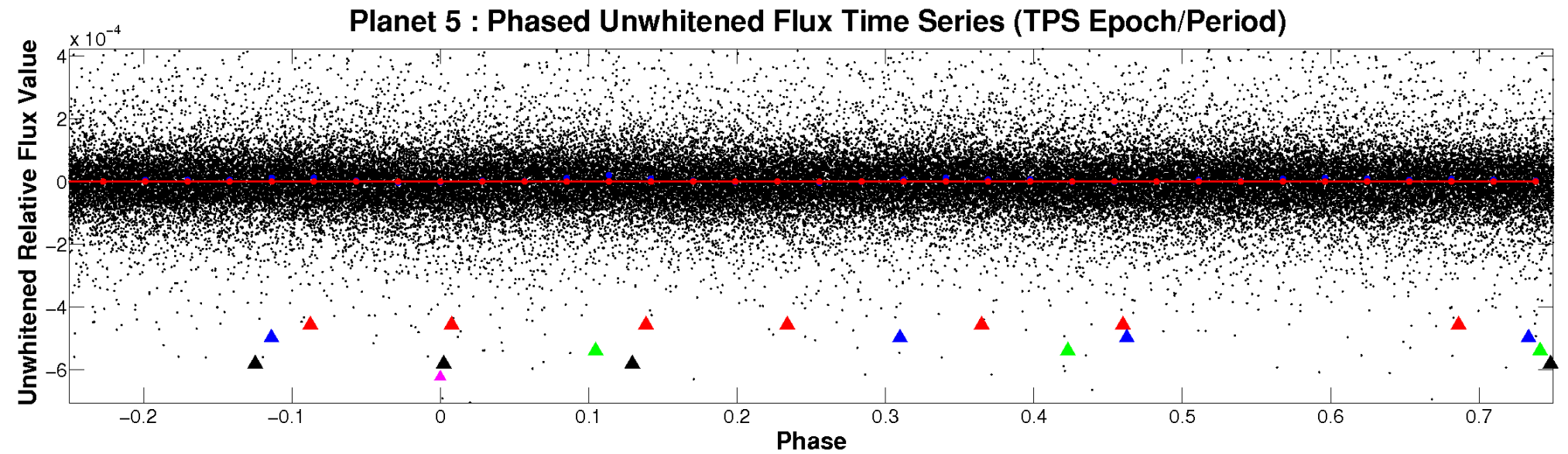


ALT Odd/Even

TCE 011709006-05

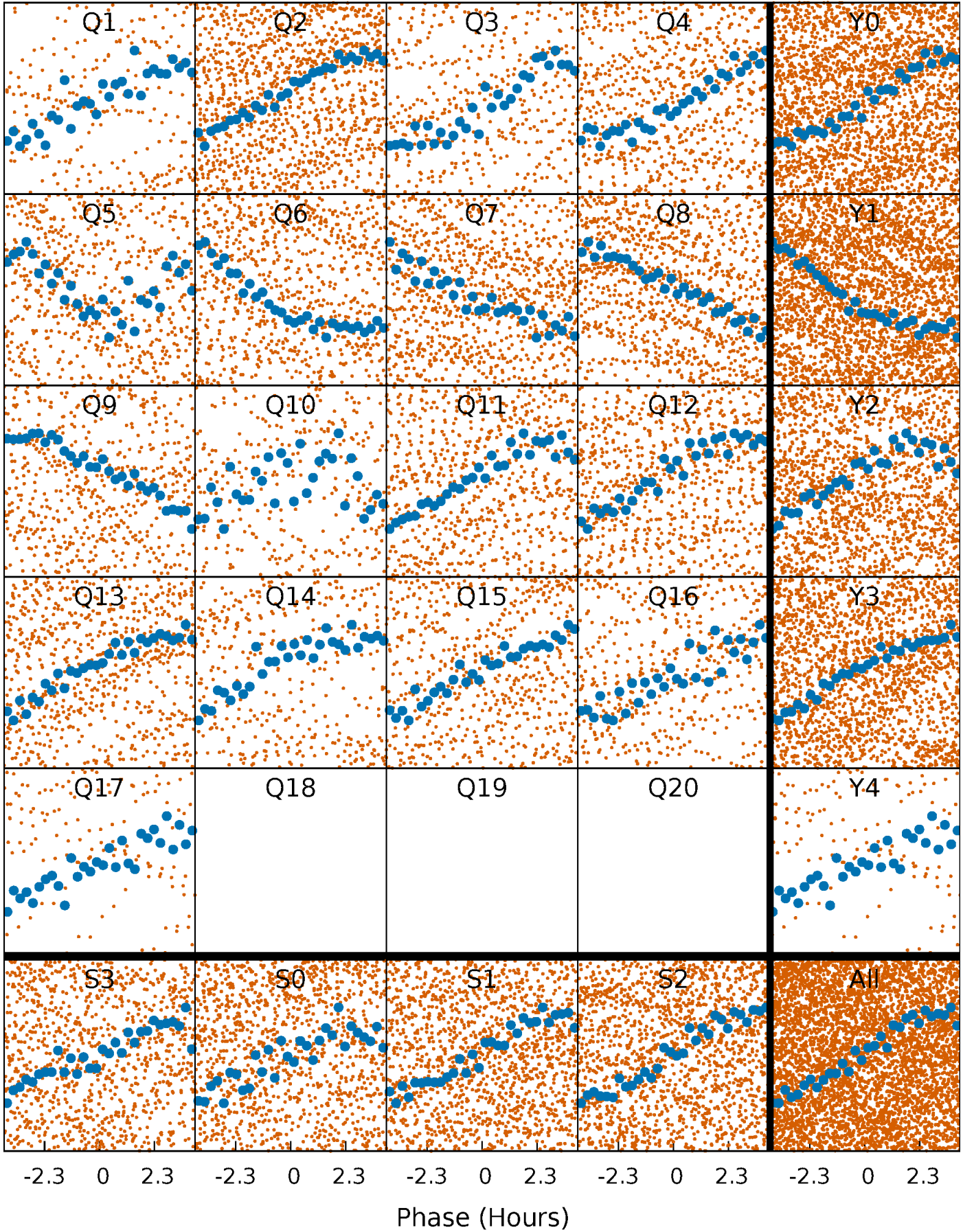


Non-Whitened Vs. Whitened Light Curve



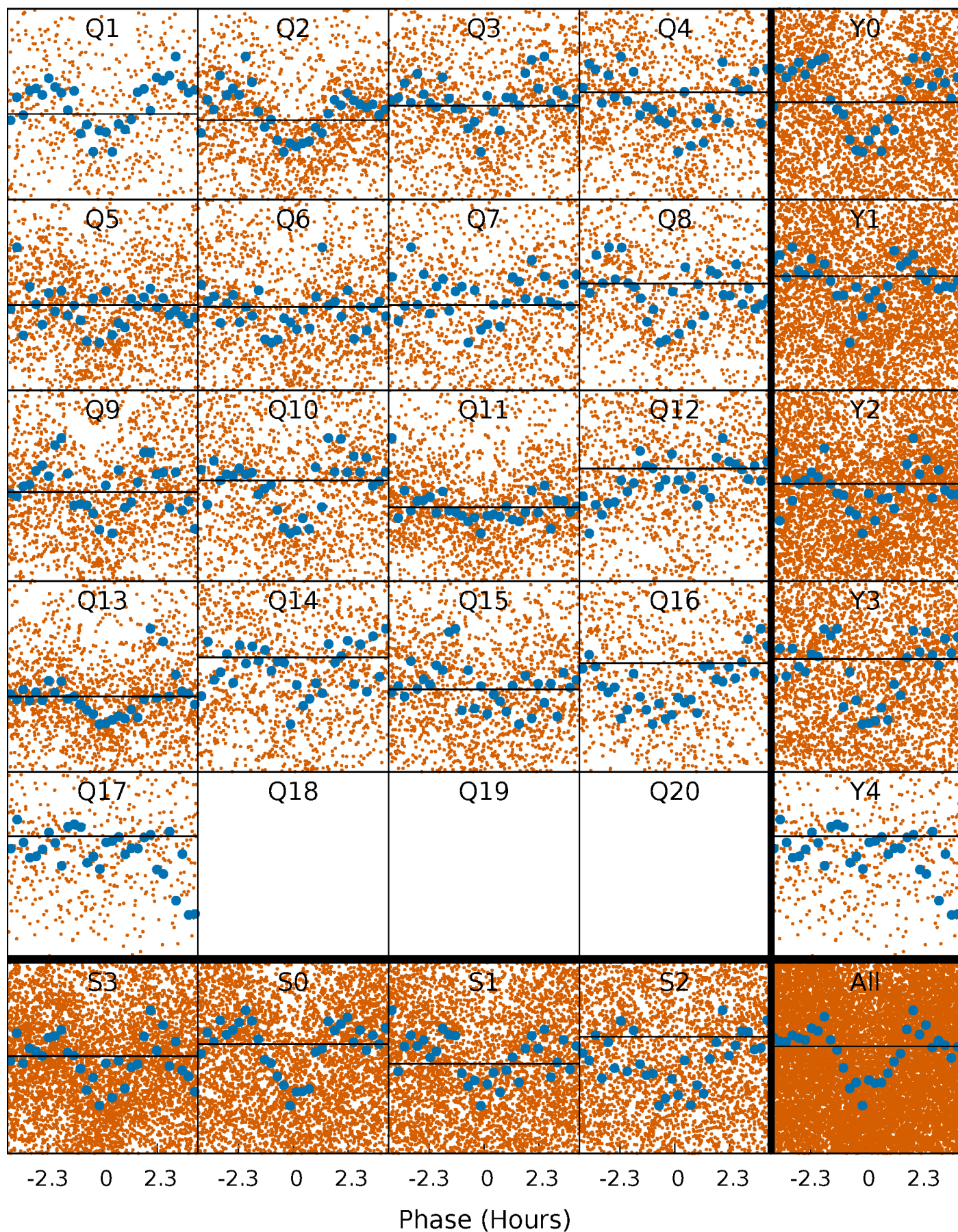
PDC Quarter-Phased Transit Curves

TCE 011709006-05 $P = 0.719710$ Days $T_0 = 131.921611$ (BKJD)



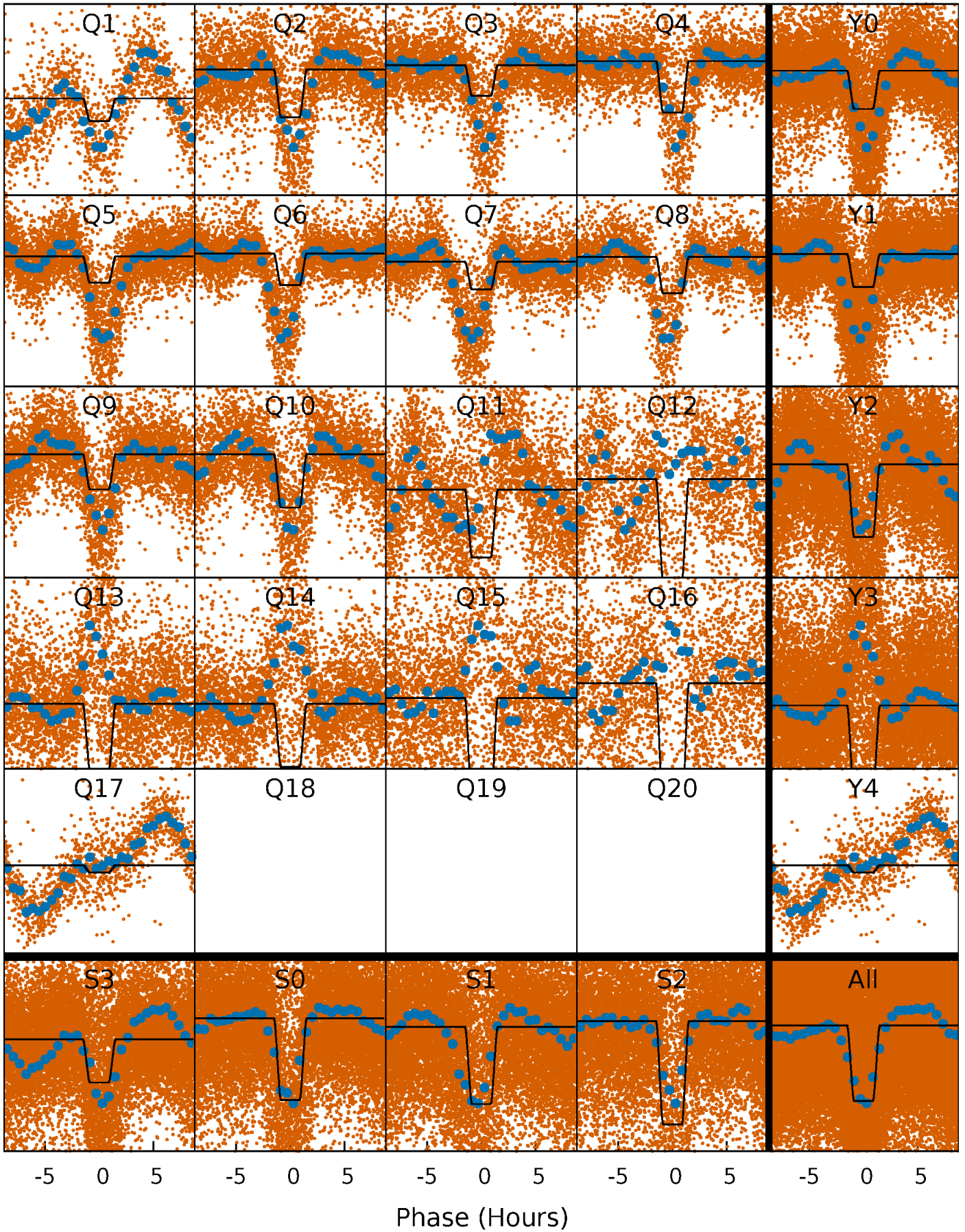
DV Quarter-Phased Transit Curves

TCE 011709006-05 P= 0.719710 Days $T_0=131.921611$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

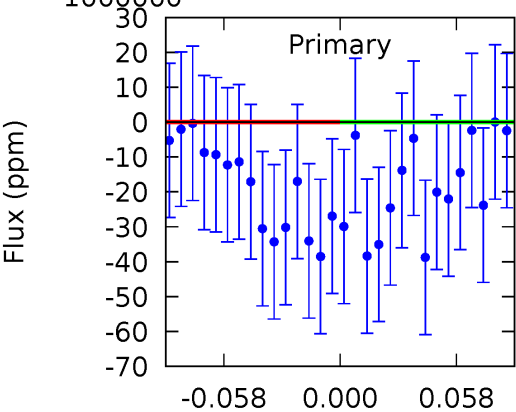
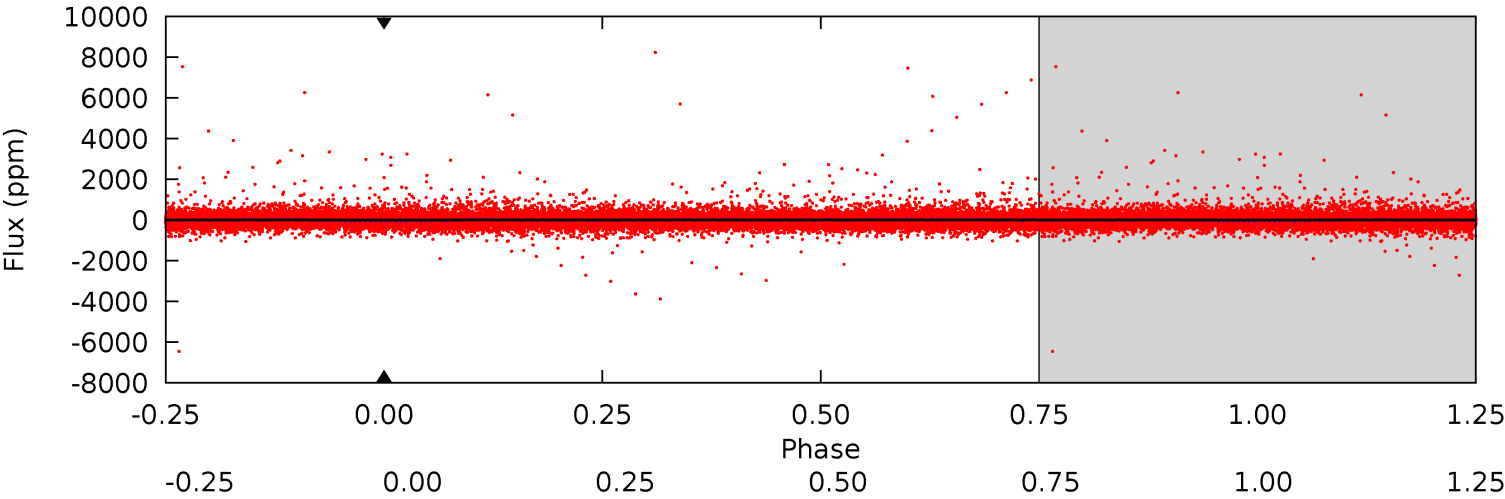
TCE 011709006-05 $P = 0.719710$ Days $T_0 = 131.915045$ (BKJD)



DV Model-Shift Uniqueness Test

011709006-05, P = 0.719710 Days, E = 131.201901 Days

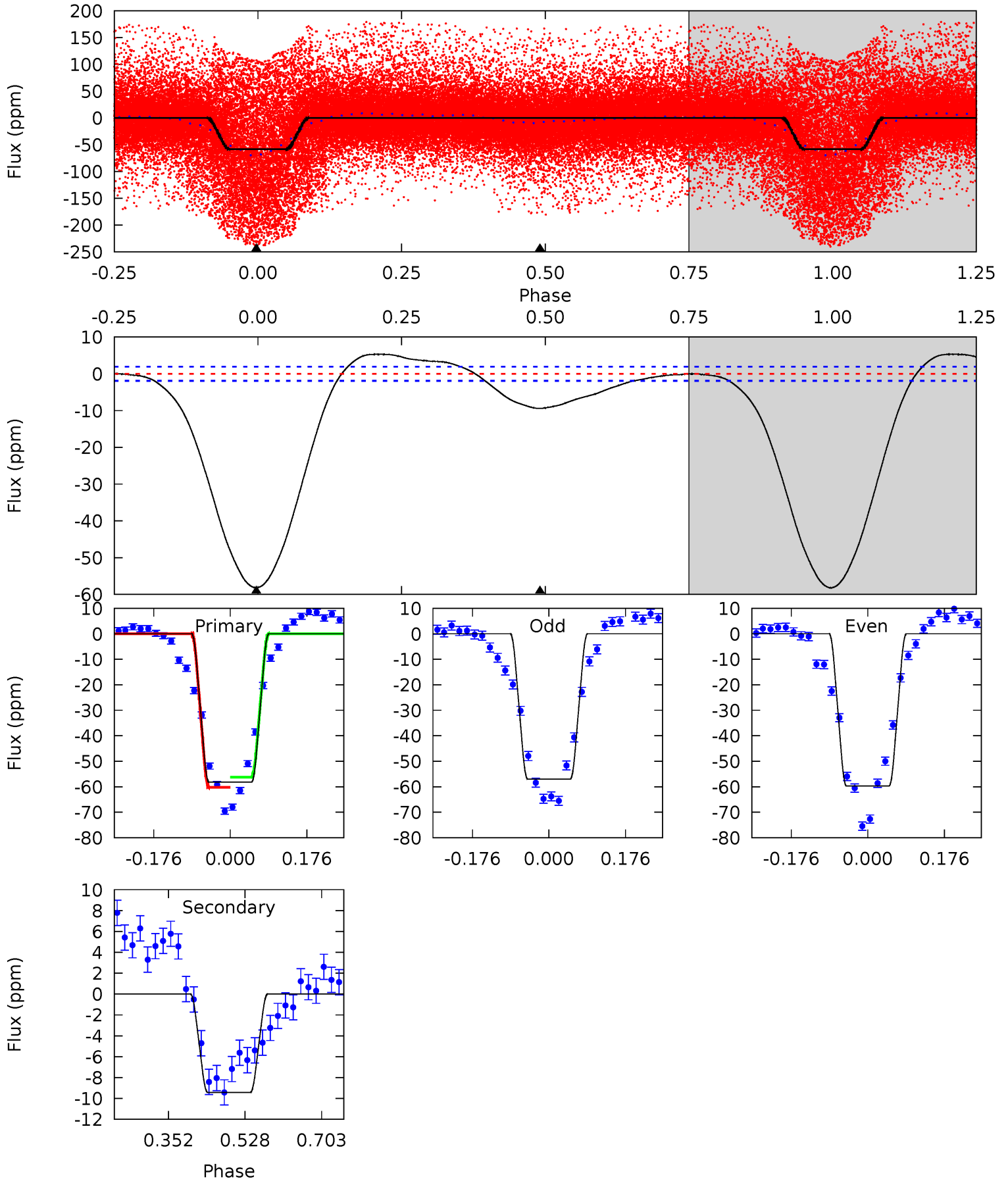
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011709006-05, P = 0.719710 Days, E = 131.195335 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
134.6	21.8	0	0	4.44	1.35	6.01	134.6	134.6	21.8	21.8	3.09	0.84	0.08	4.56



Stellar Parameters For KIC 011709006

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6014^{+120}_{-132}	$4.486^{+0.024}_{-0.096}$	$0.070^{+0.150}_{-0.200}$	$0.993^{+0.117}_{-0.054}$	$1.101^{+0.053}_{-0.098}$	$1.584^{+0.183}_{-0.444}$
	+2%/-2%	+1%/-2%	+214%/-286%	+12%/-5%	+5%/-9%	+12%/-28%
Source	SPE13	SPE13	SPE13	DSEP		

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

Secondary Eclipse Parameters for KIC 011709006-05 / KOI 8061.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$8.00^{+8.56}_{-5.77}$	2934^{+95}_{-83}	-4922^{+32204}_{-17427}	$-4.683^{+497.874}_{-359.696}$
Alt.	-9 ± 0	$8.00^{+7.96}_{-5.43}$	2931^{+106}_{-84}	-3000^{+344}_{-80}	$0.021^{+0.180}_{-0.016}$

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 $A_{obs} \gg 1.0$

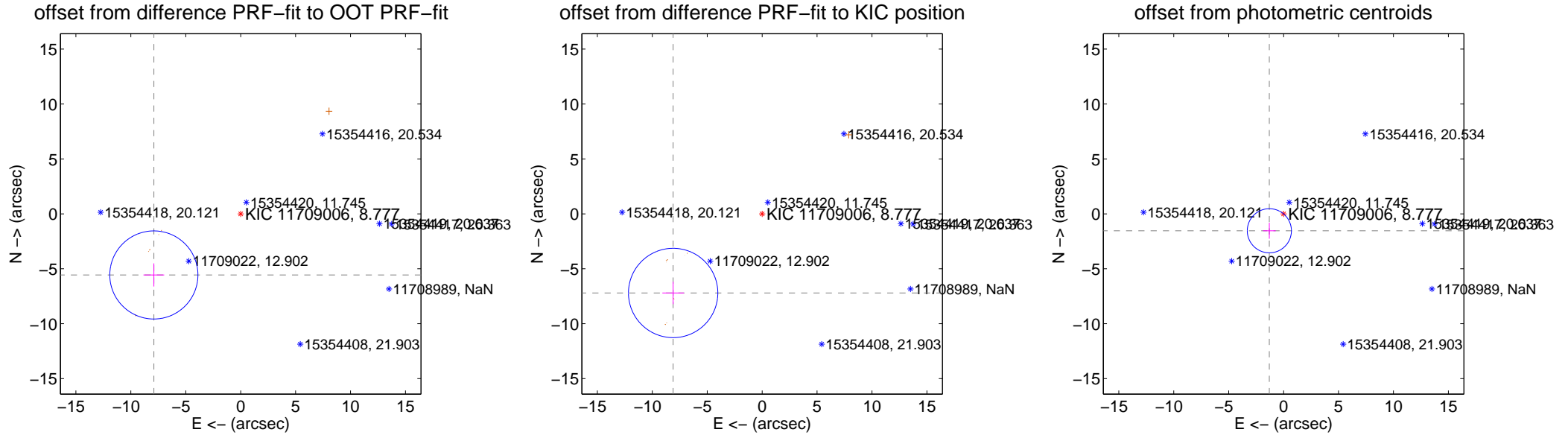
DV Centroid Data

Supplemental centroid analysis for 011709006-05. **Kepler magnitude: 8.78.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

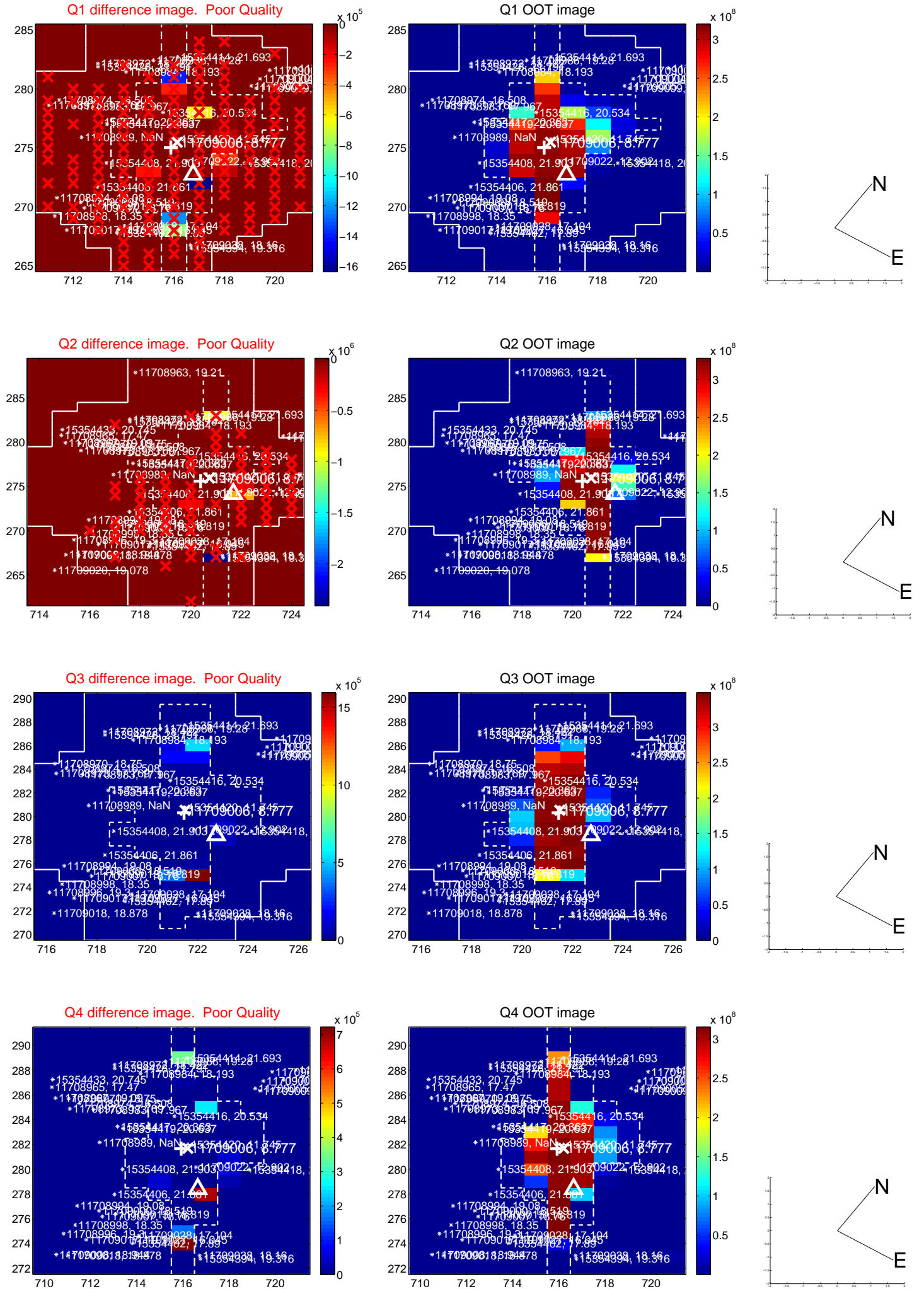
The OOT PRF centroid is offset from the target star catalog position by about 2.15 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.664 ± 1.337	7.23	7.903 ± 0.944	-5.562 ± 1.051
PRF-fit source offset from KIC position	10.839 ± 1.355	8.00	8.101 ± 0.983	-7.202 ± 1.022
photometric centroid source offset	2.01 ± 0.67	3.01	1.30 ± 0.58	-1.54 ± 0.73

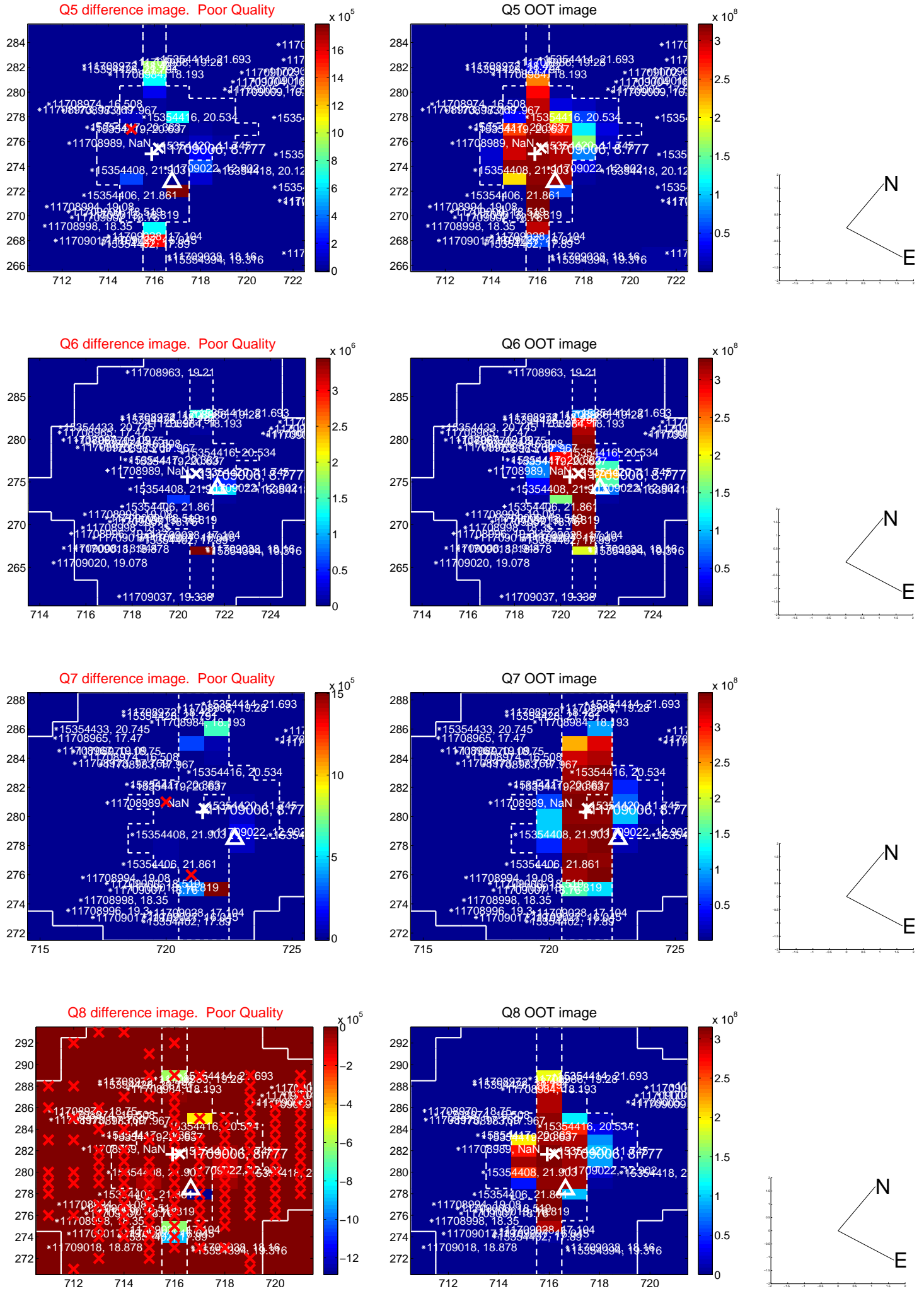


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

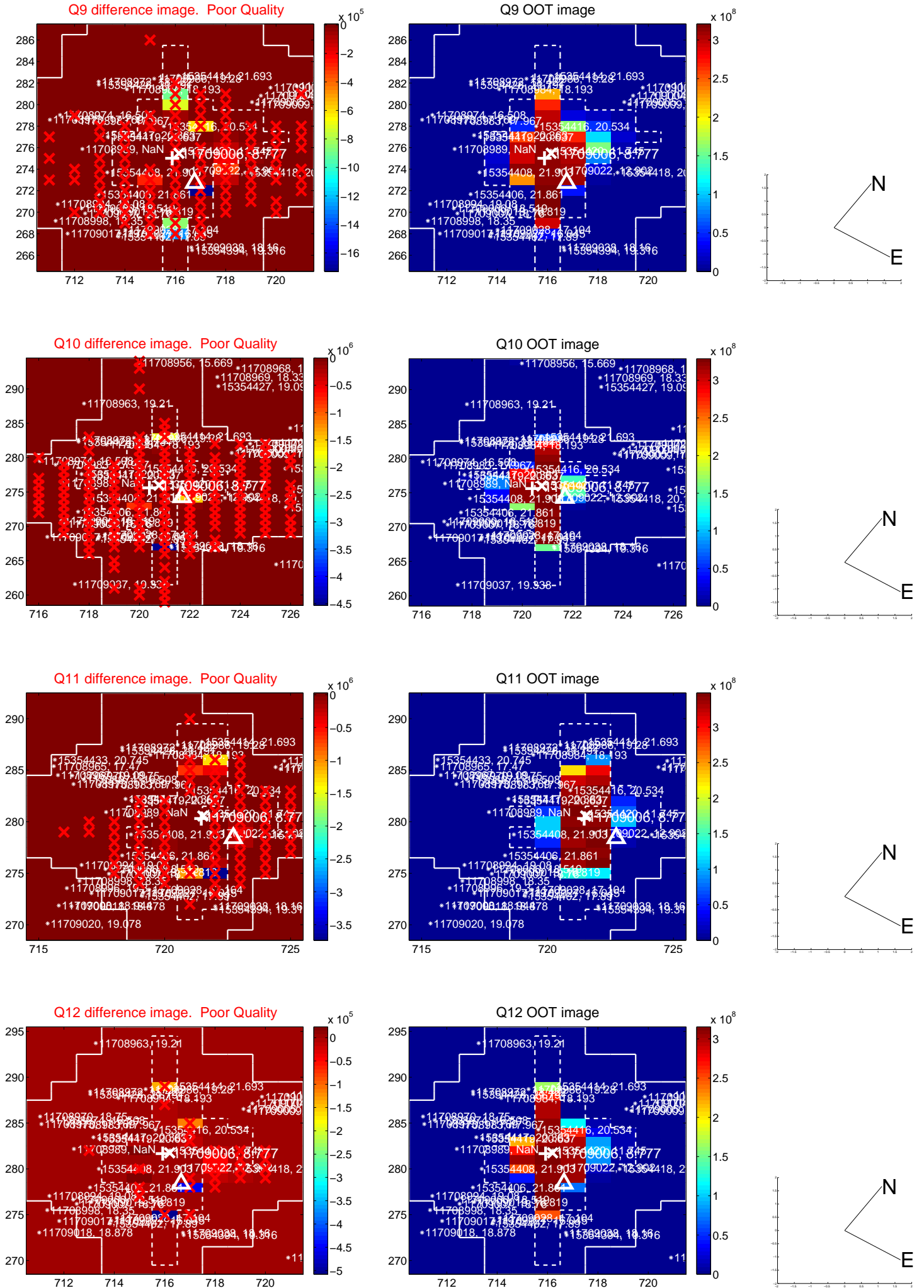
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



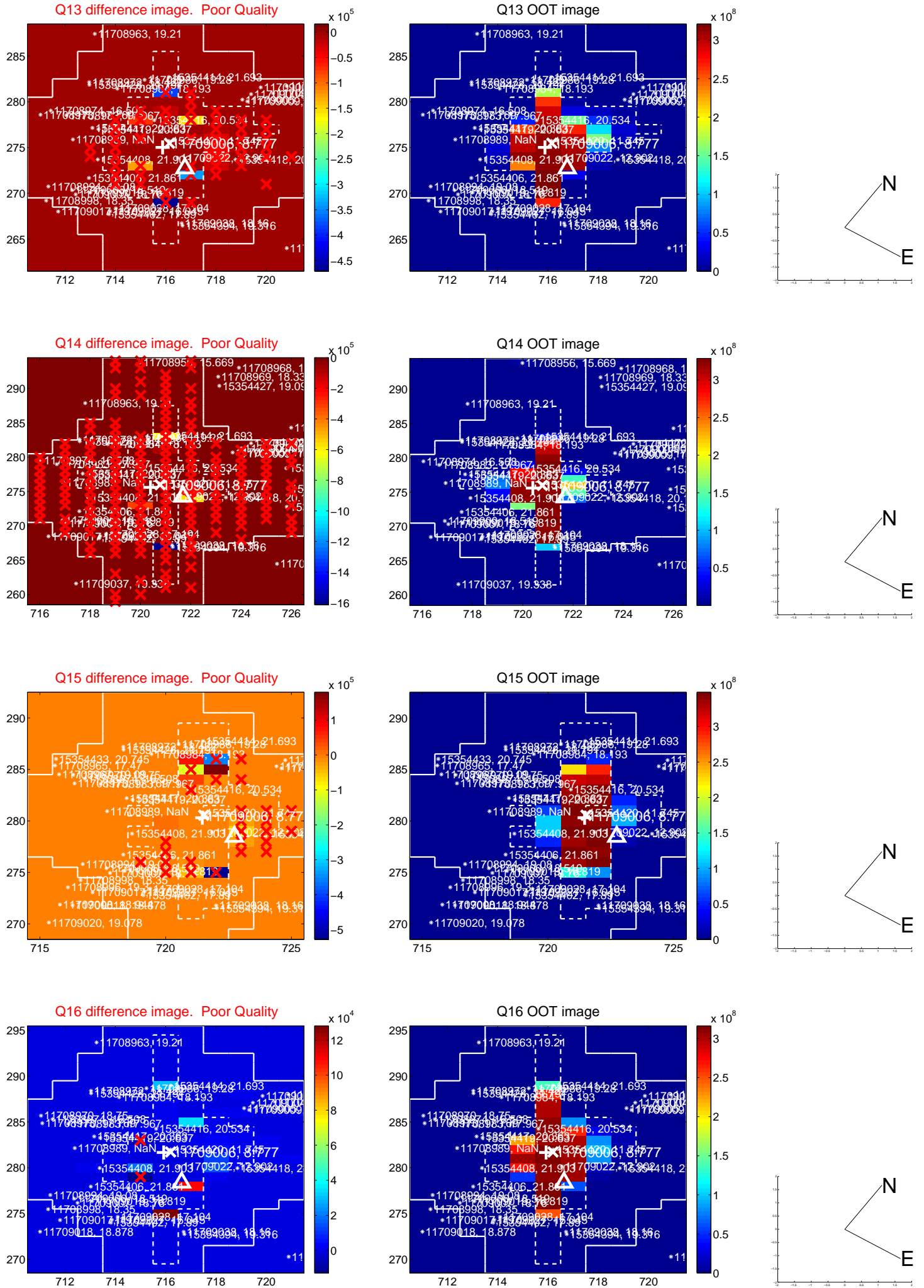
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



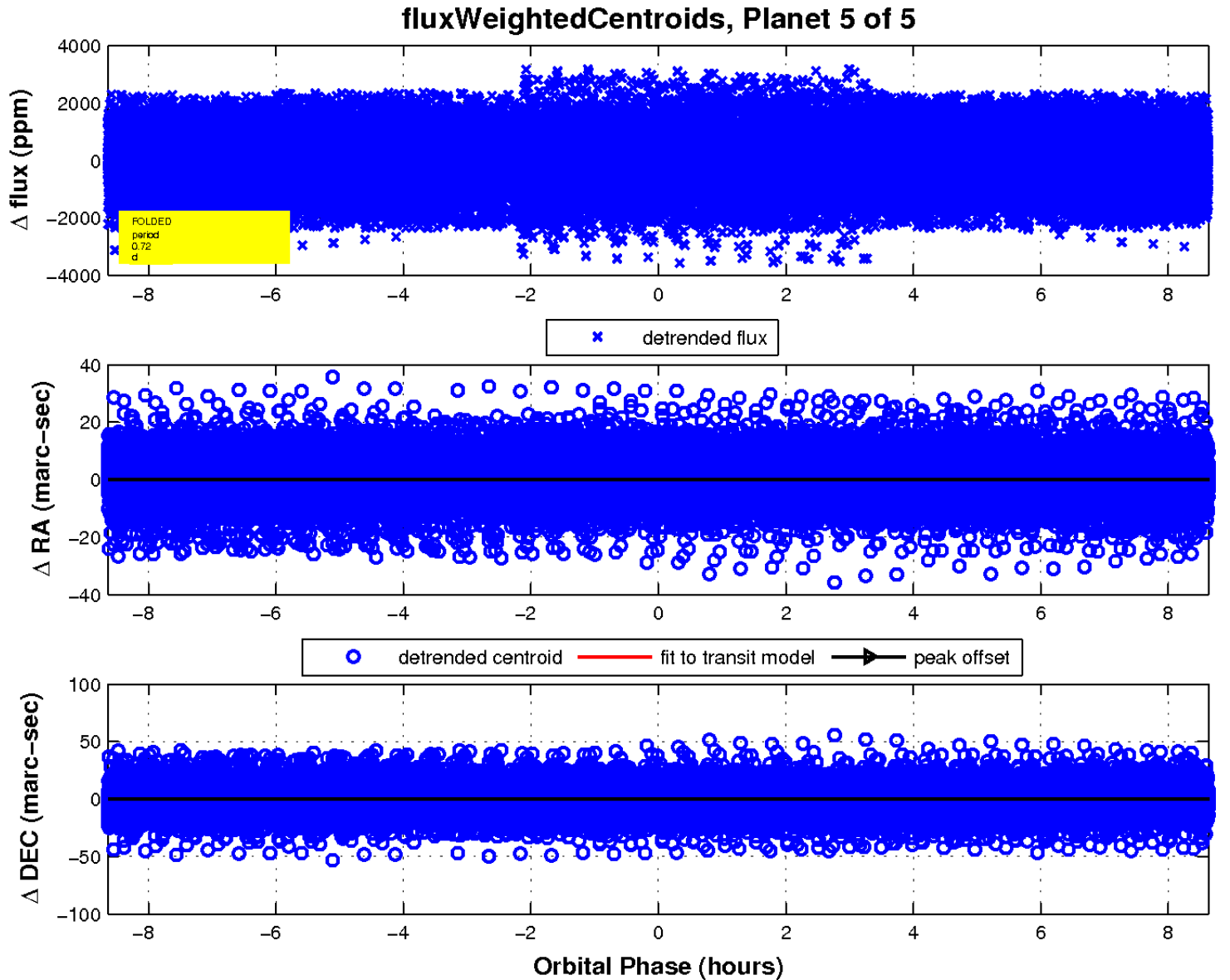
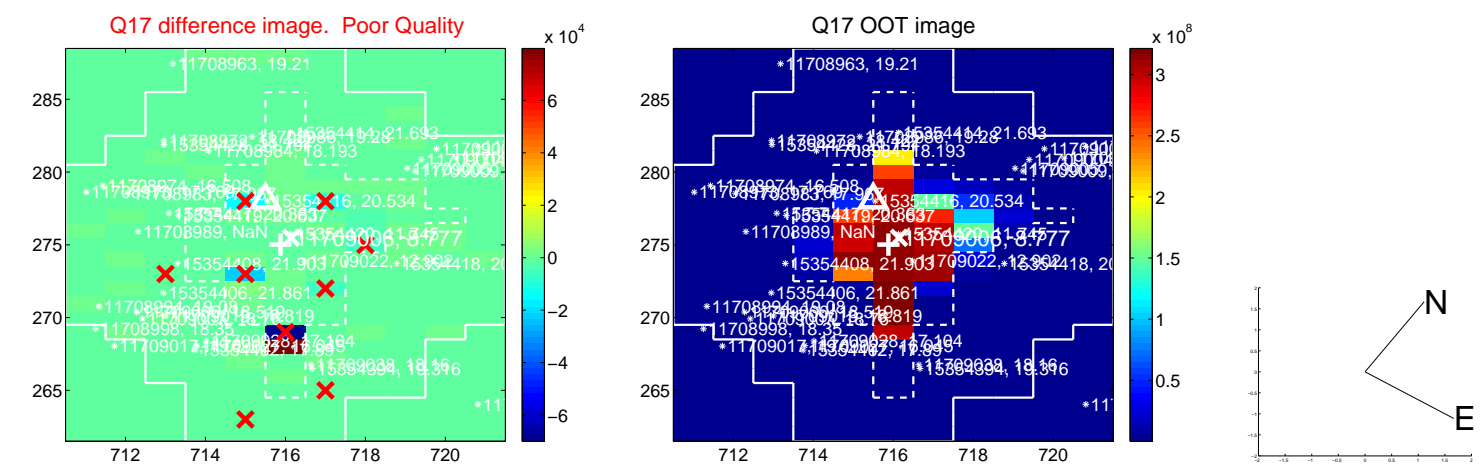
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

