

KIC 008646725

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})
008646725-01	OBS	No	2.645933	133.829948	3.2	6.828	7.6	0.9	2.82	6220	0.72	6086.57
008646725-02	OBS	No	333.263522	340.838656	350.2	13.742	14.6	7.0	2.82	6220	6.81	9.64
008646725-03	OBS	No	2.647199	133.769772	58.0	4.560	8.3	9.1	2.82	6220	2.30	6082.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008646725-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
008646725-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008646725-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV

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

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

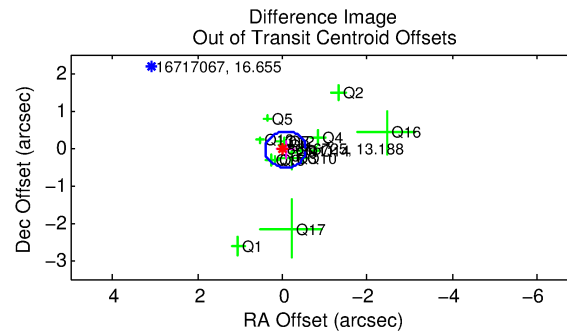
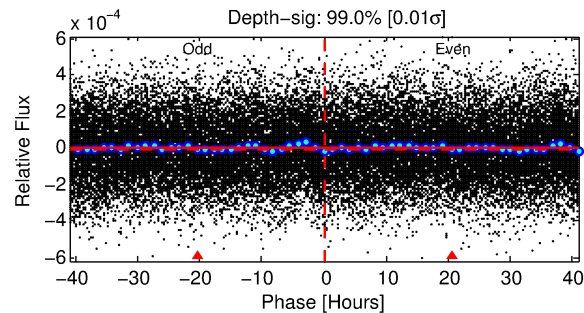
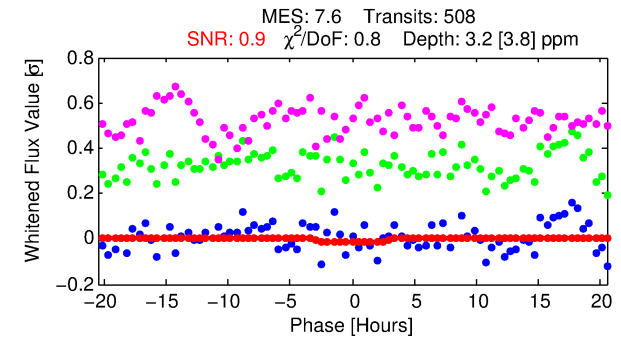
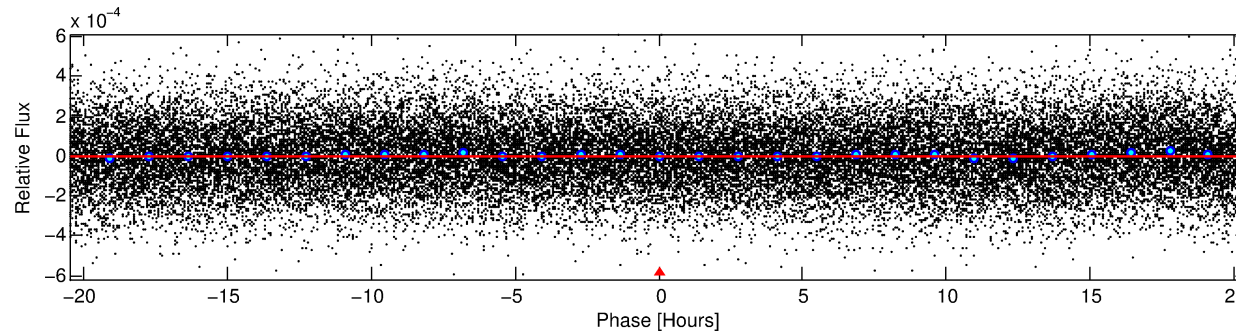
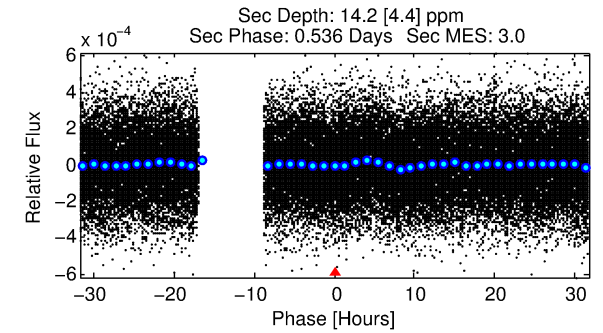
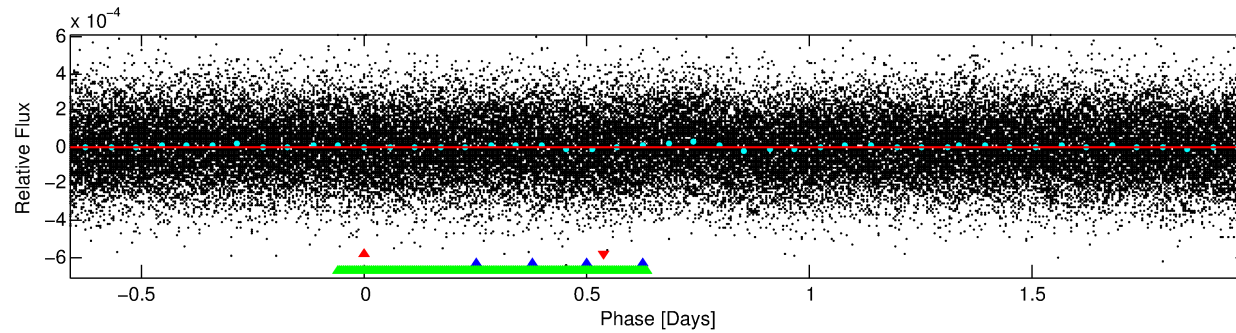
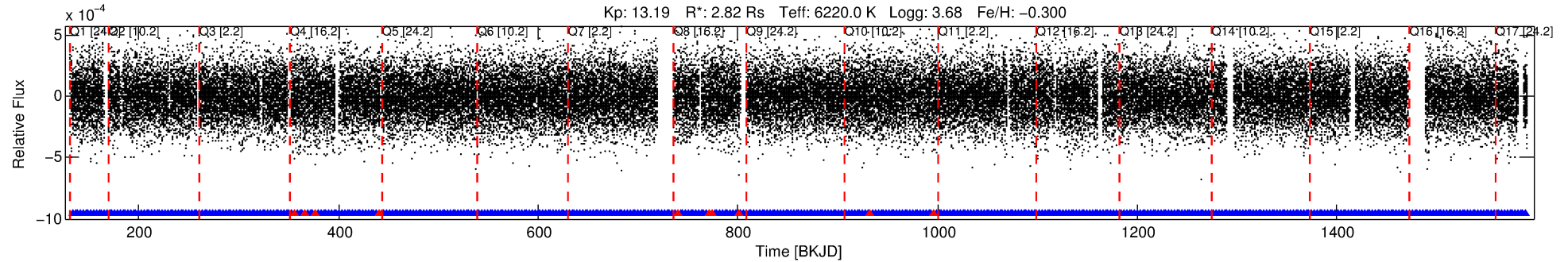
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008646725-01

No Significant Match Found

DV One-Page Summary

KIC: 8646725 Candidate: 1 of 3 Period: 2.646 d



DV Fit Results:

Period = 2.64593 [0.00034] d
Epoch = 133.8299 [0.0820] BKJD
Rp/R* = 0.0023 [0.0017]
a/R* = 1.07 [0.37]
b = 0.99 [0.03]
Seff = 6086.57 [3411.48]
Teq = 2252 [316] K
Rp = 0.72 [0.58] Re
a = 0.0418 [0.0147] AU
Ag = 26.33 [41.00] [0.62σ]
Teffp = 7888 [2885] K [1.94σ]

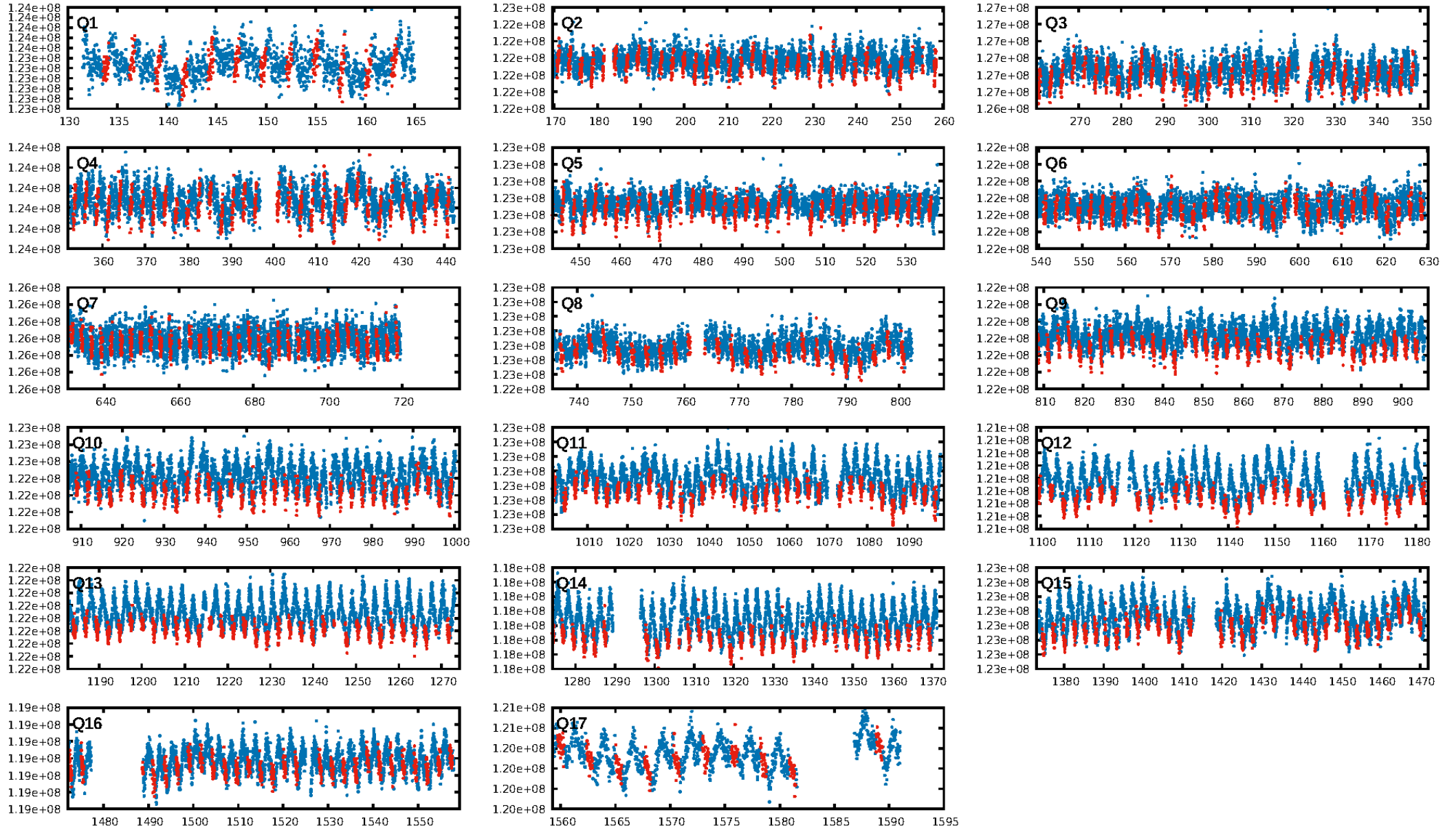
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.3% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.32e-11
RollingBand-fgt: 0.98 [476/486]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.092 arcsec [0.57σ]
KicOffset-rm: 0.126 arcsec [0.61σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.00 [0/17]

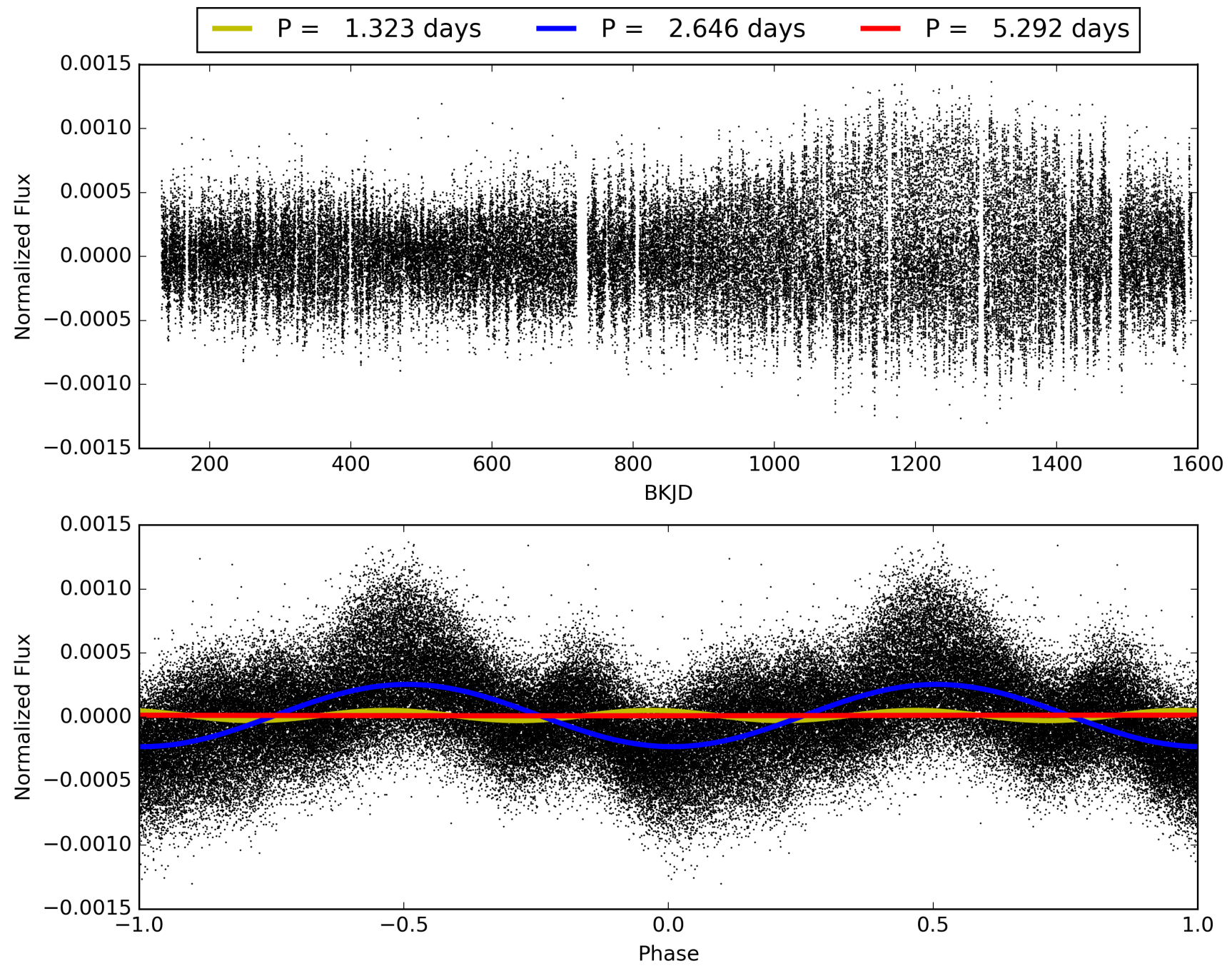
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008646725-01, PDC Light Curves

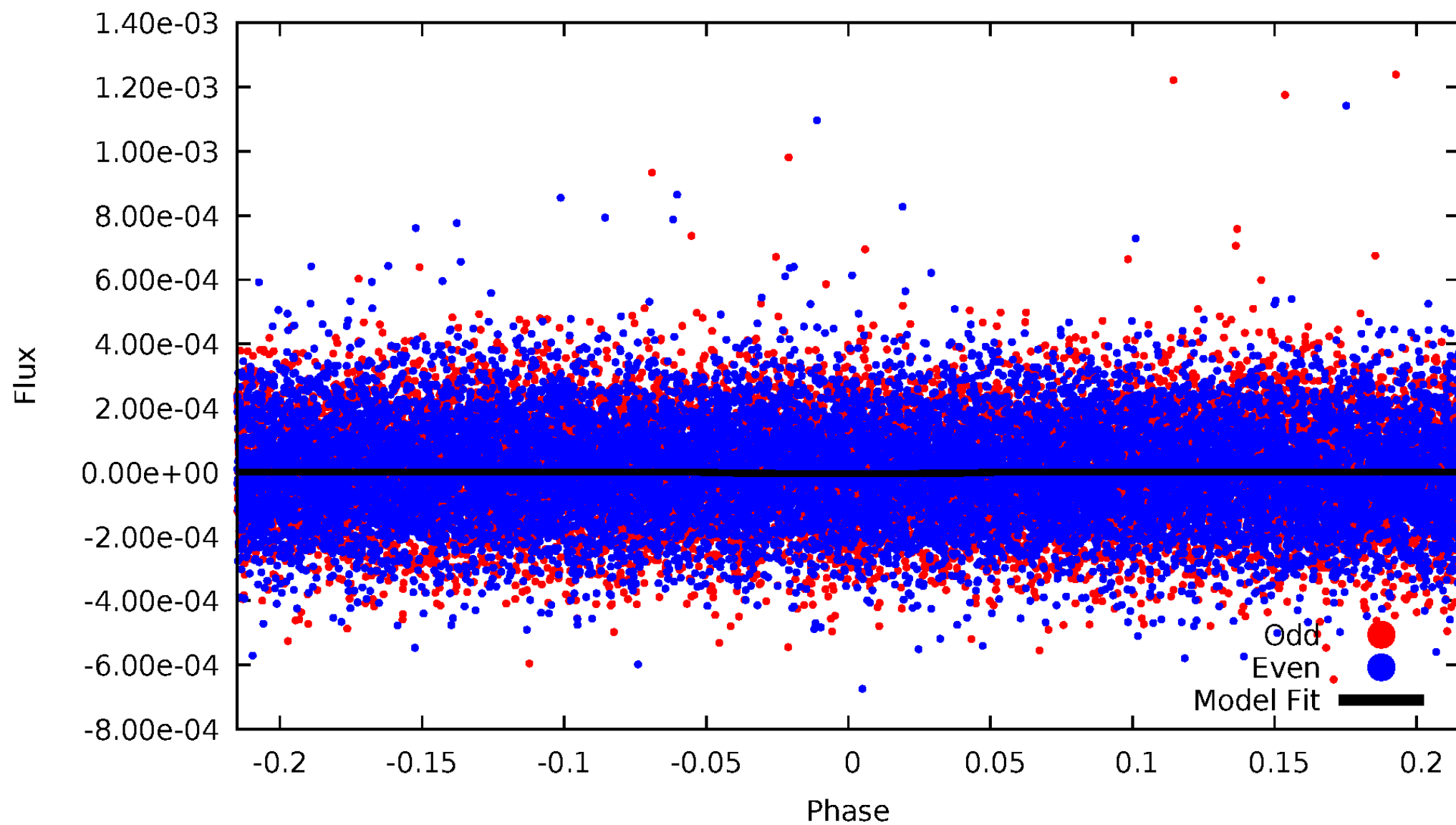


TCE 008646725-01



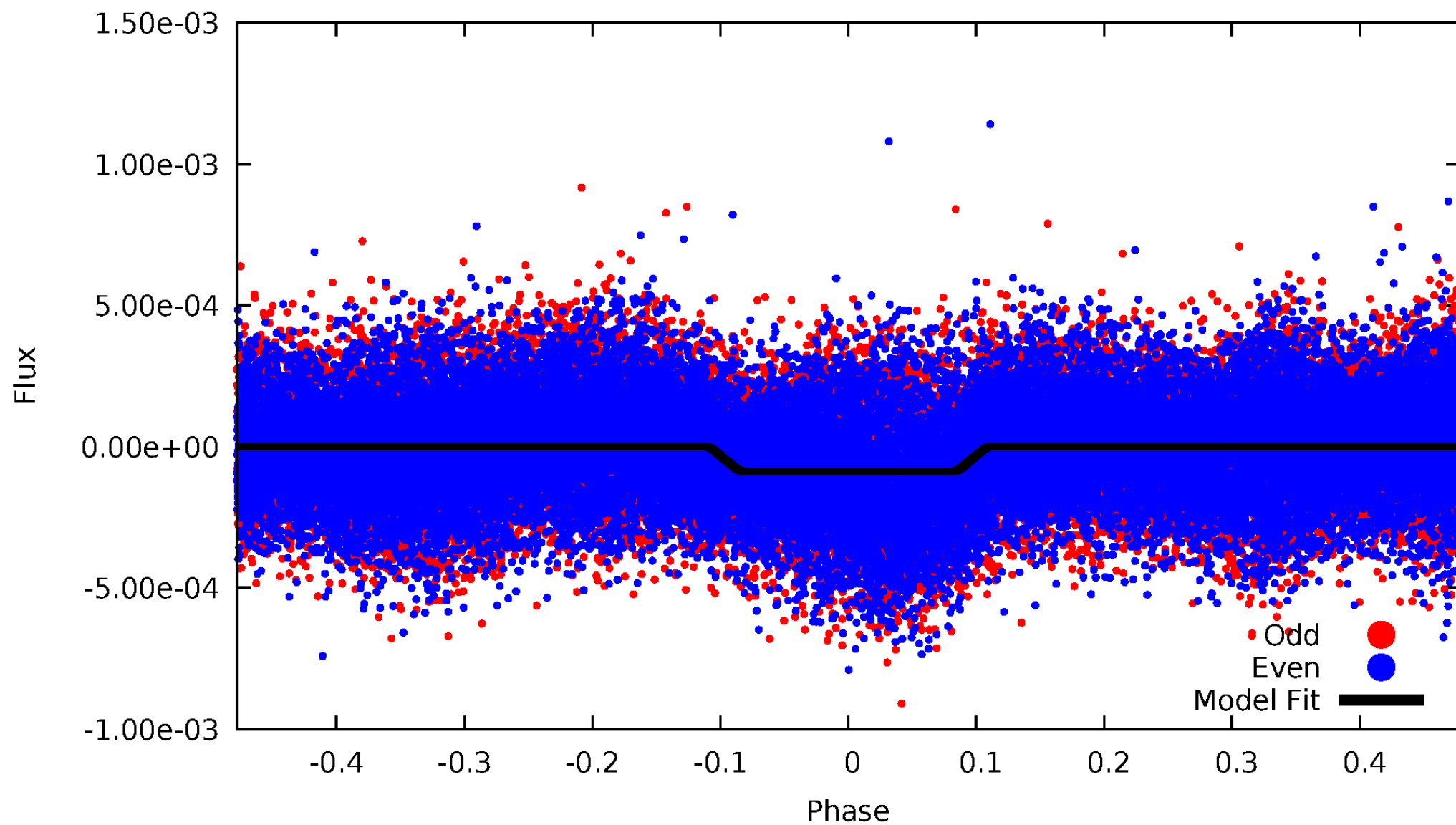
DV Odd/Even

TCE 008646725-01



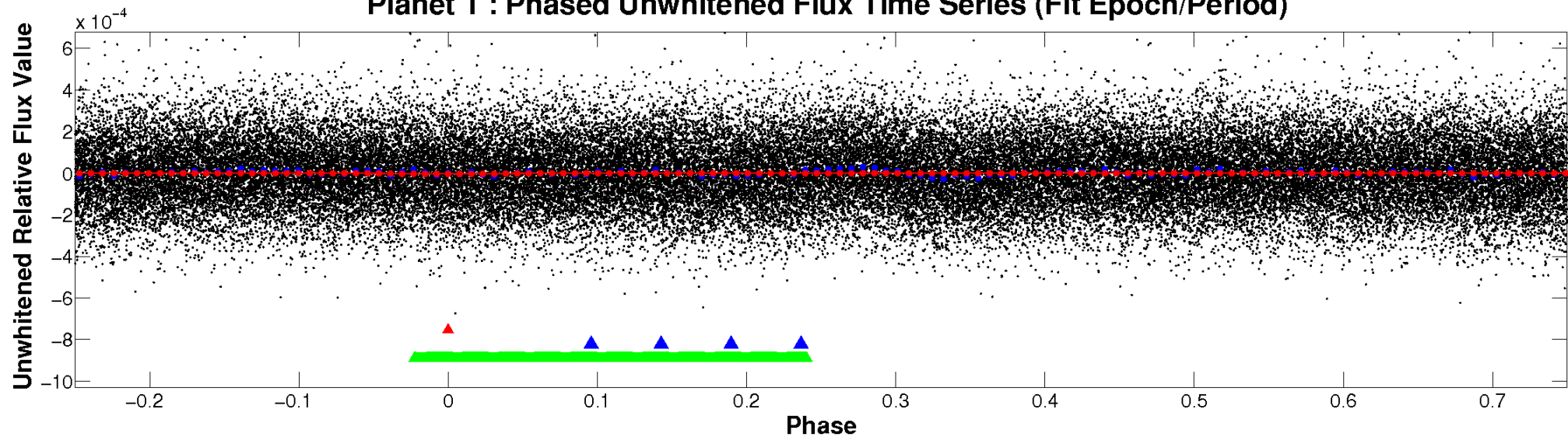
ALT Odd/Even

TCE 008646725-01

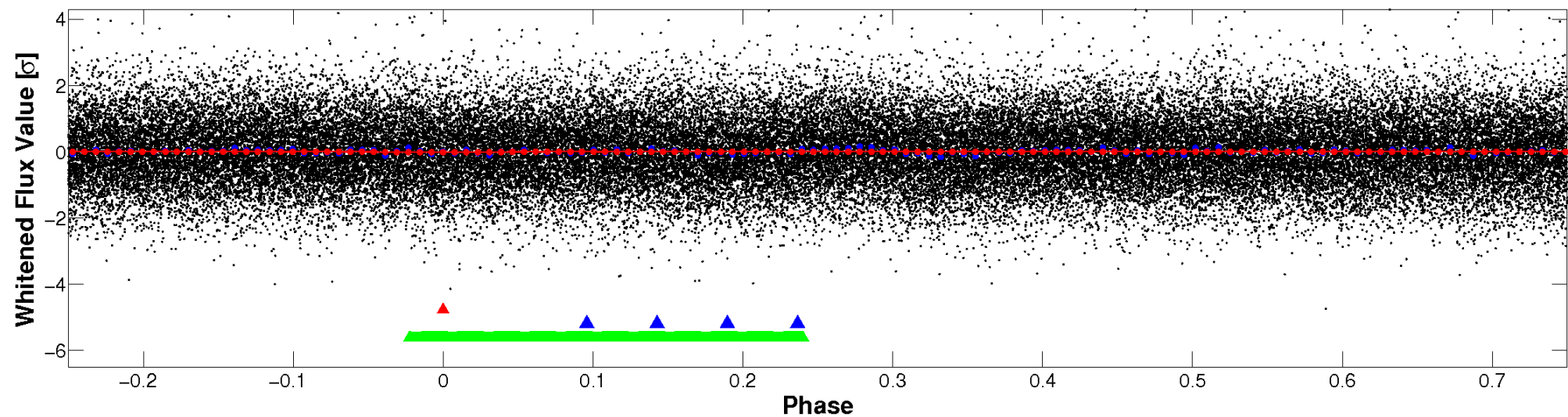


Non-Whitened Vs. Whitened Light Curve

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

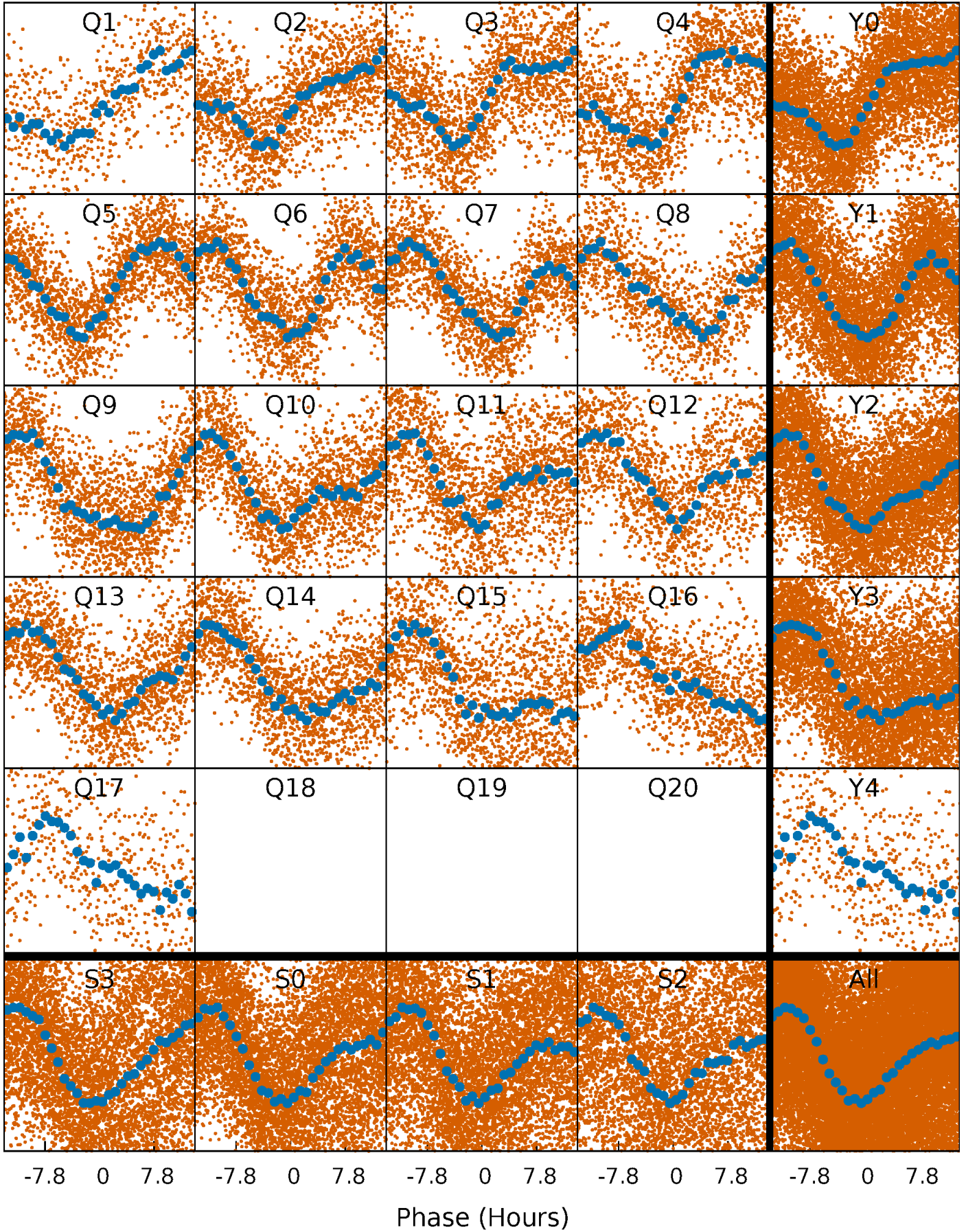


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



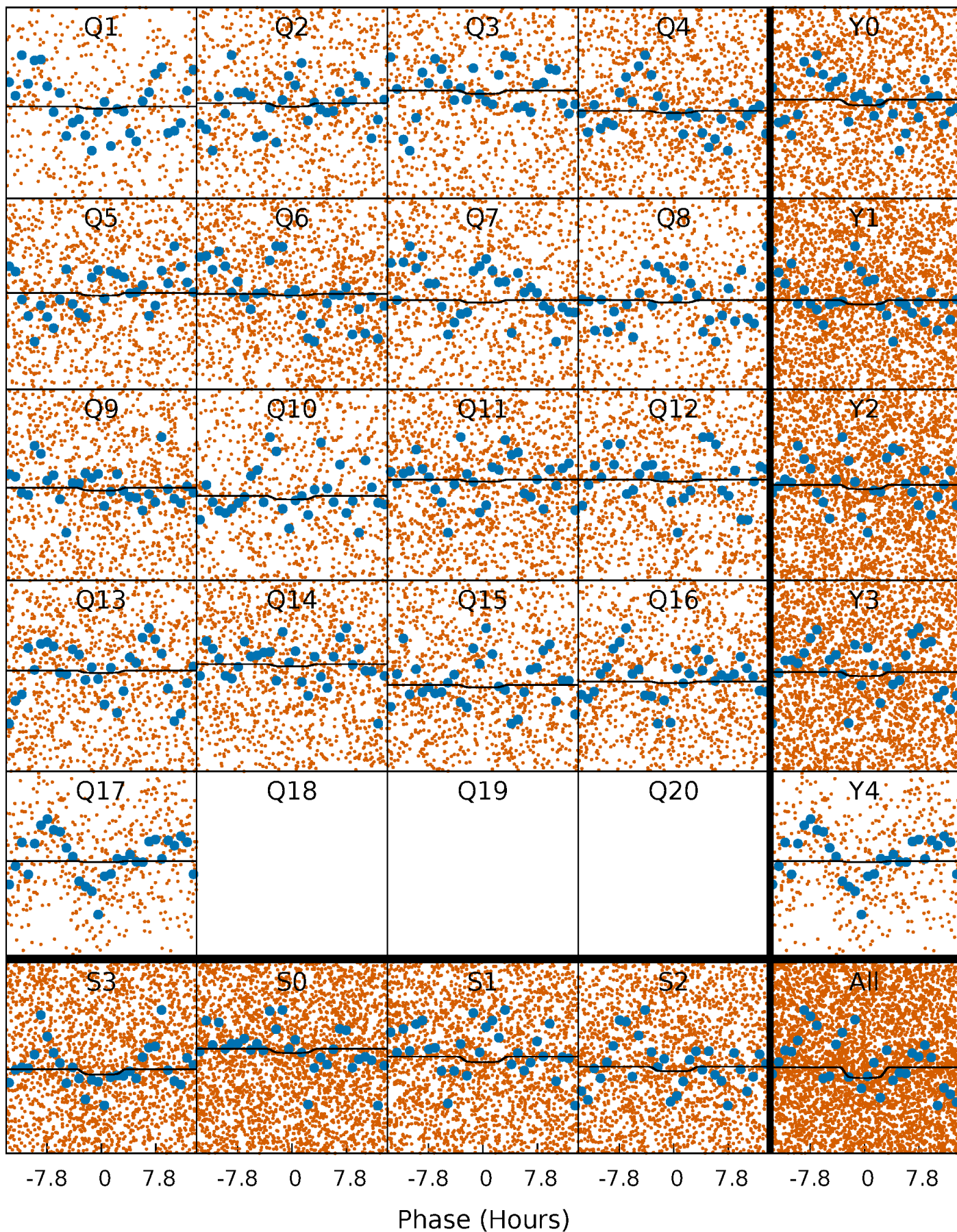
PDC Quarter-Phased Transit Curves

TCE 008646725-01 P= 2.645933 Days $T_0=133.829949$ (BKJD)



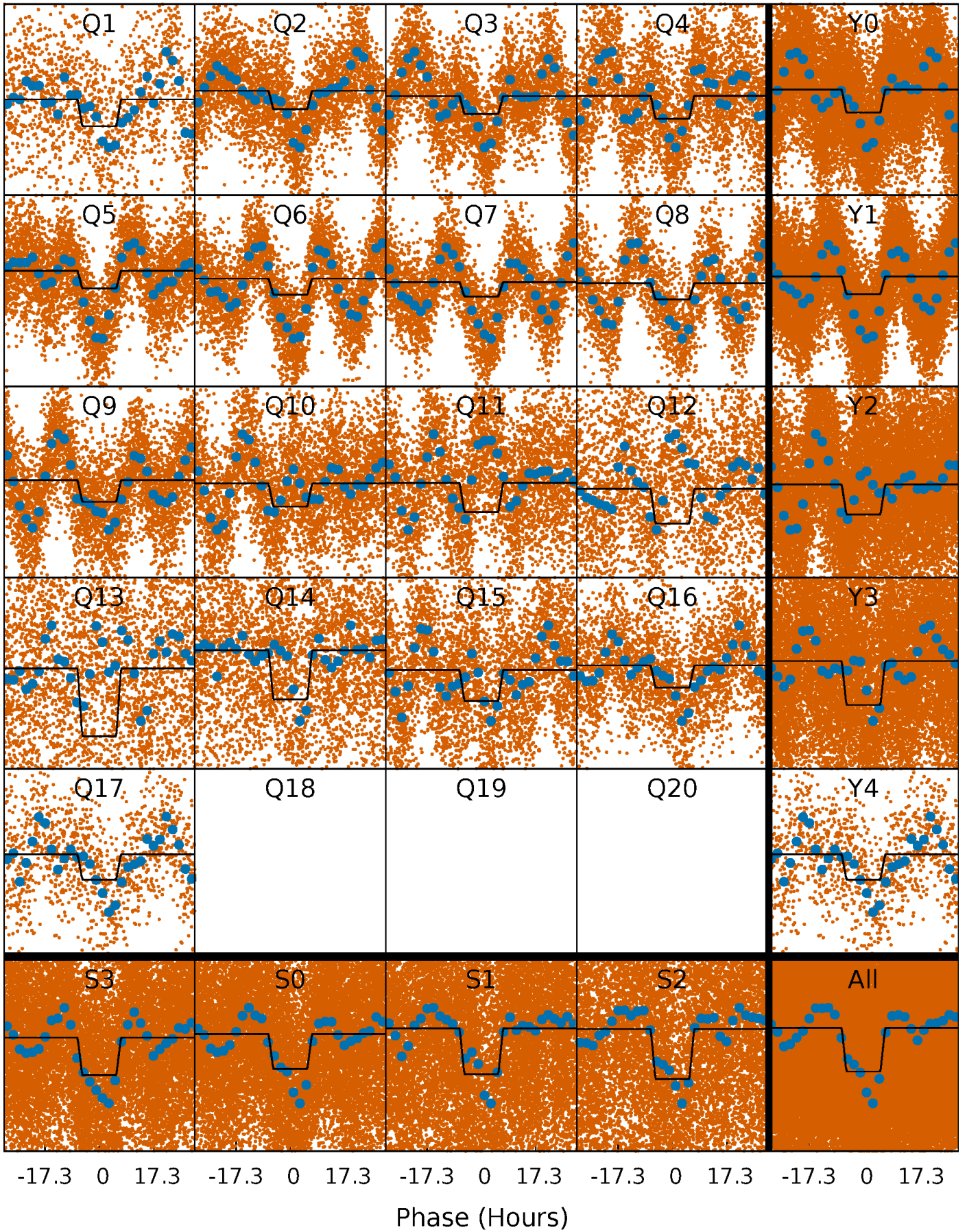
DV Quarter-Phased Transit Curves

TCE 008646725-01 P= 2.645933 Days $T_0=133.829949$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

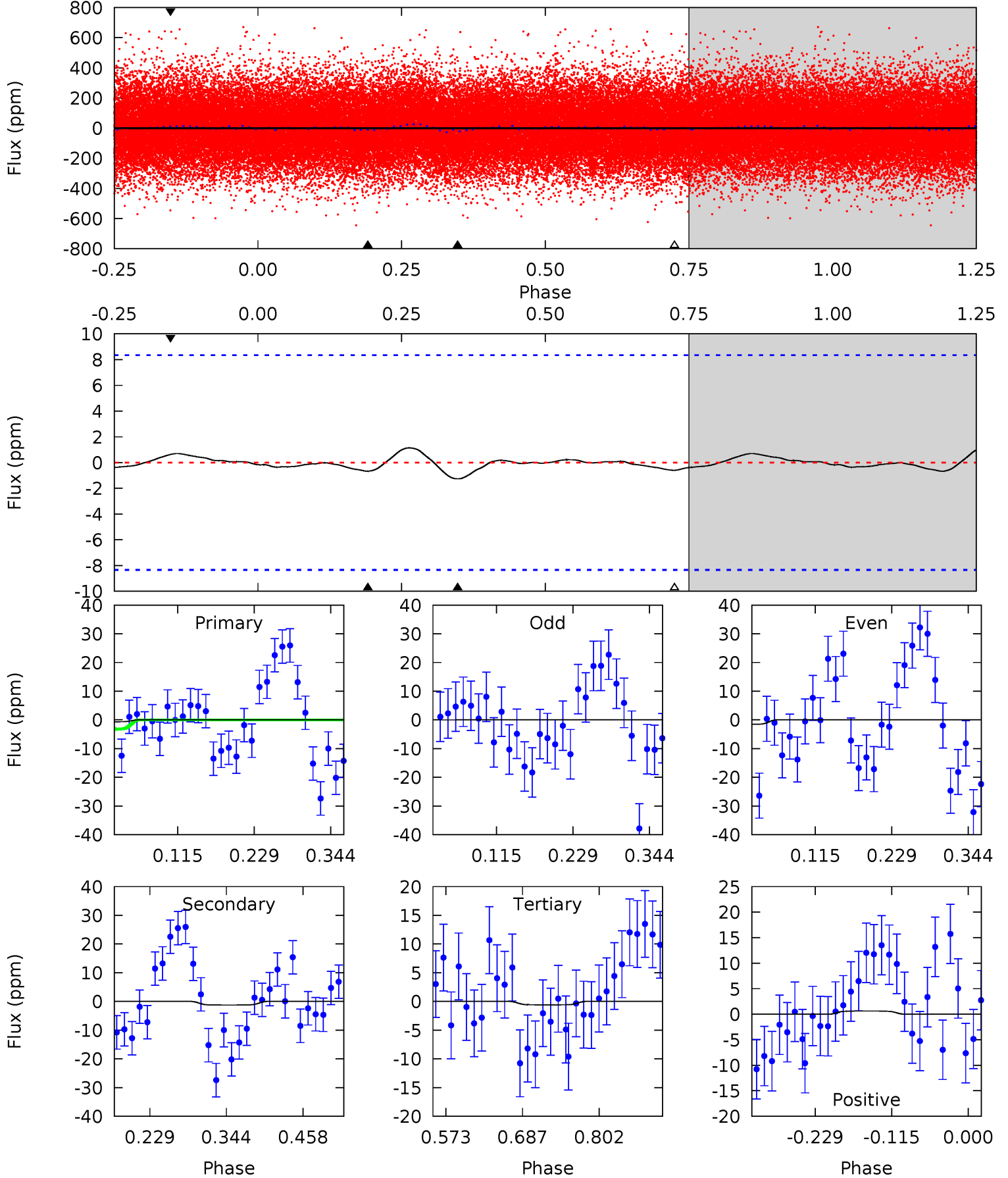
TCE 008646725-01 P= 2.647404 Days $T_0=133.524214$ (BKJD)



DV Model-Shift Uniqueness Test

008646725-01, P = 2.645933 Days, E = 131.184016 Days

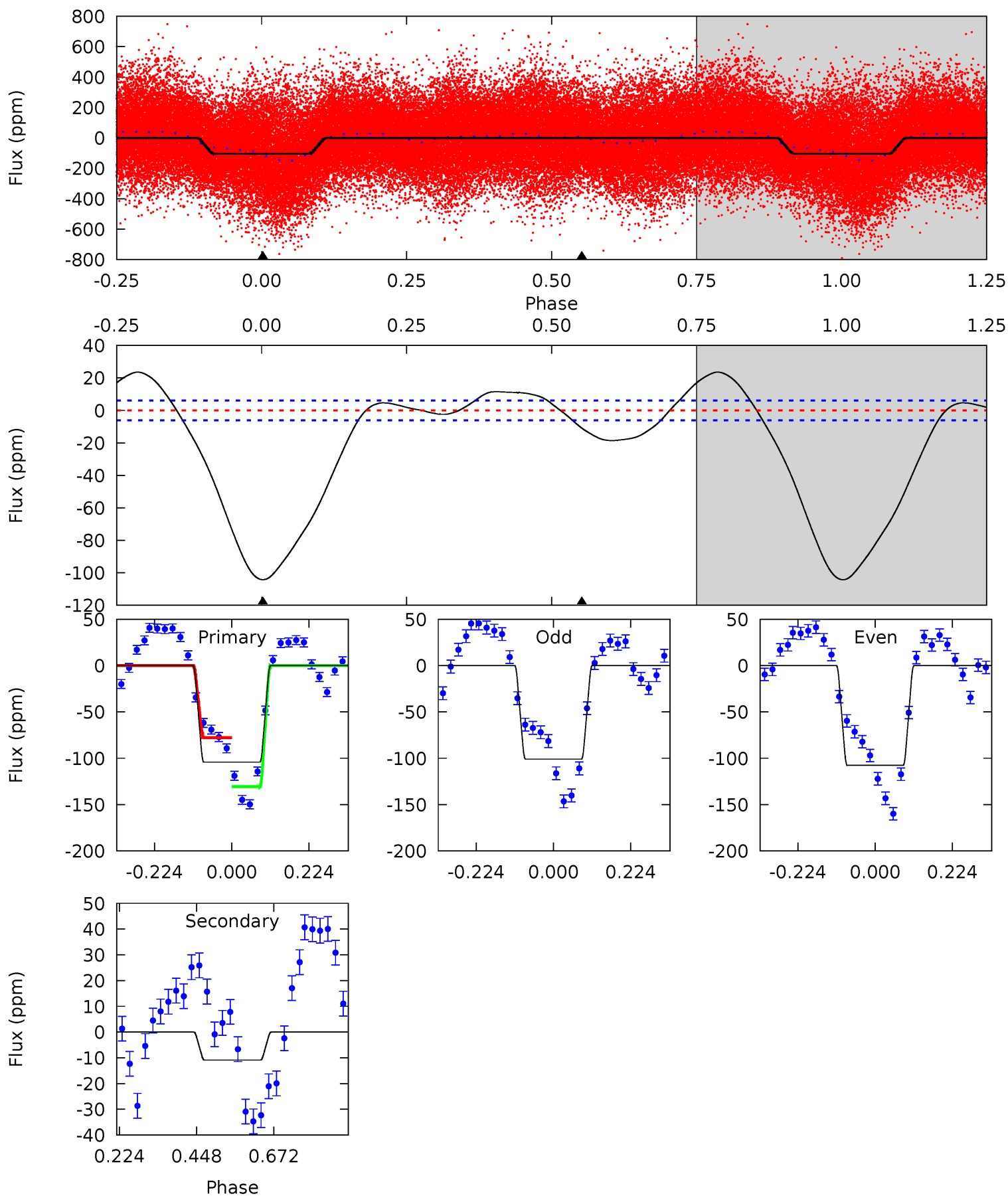
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.36	0.69	0.33	0.34	4.54	1.58	0.17	0.04	0.02	0.36	0.35	0.43	1.40	0.47	0.43



Alt Model-Shift Uniqueness Test

008646725-01, P = 2.647404 Days, E = 130.876810 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
75.3	7.86	0	0	4.39	1.22	2.71	75.3	75.3	7.86	7.86	2.40	0.98	0.18	19.5



Stellar Parameters For KIC 008646725

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6220^{+191}_{-191}	$3.682^{+0.315}_{-0.105}$	$-0.300^{+0.350}_{-0.300}$	$2.816^{+0.463}_{-1.079}$	$1.392^{+0.227}_{-0.340}$	$0.088^{+0.202}_{-0.029}$
	+3%/-3%	+9%/-3%	+117%/-100%	+16%/-38%	+16%/-24%	+230%/-33%
Source	PHO1	FLK73	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 008646725-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1 ± 2	$0.73^{+0.51}_{-0.40}$	3081^{+223}_{-262}	4075^{+2062}_{-7884}	$1.765^{+10.624}_{-2.500}$
Alt.	-11 ± 1	$2.71^{+0.67}_{-0.69}$	3065^{+221}_{-269}	3846^{+415}_{-325}	$1.446^{+1.093}_{-0.534}$

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

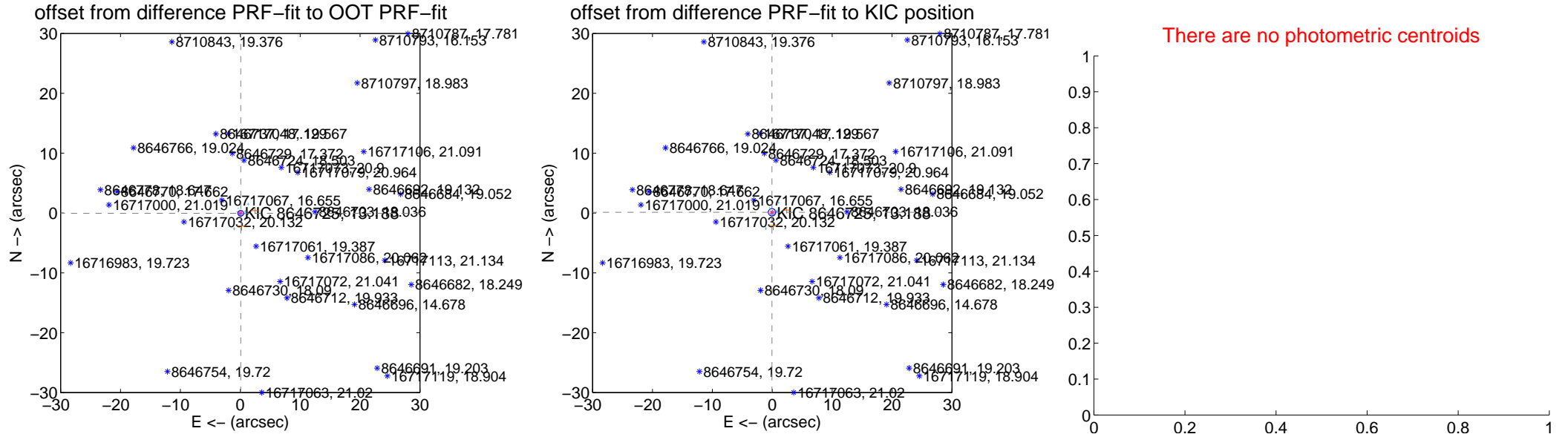
DV Centroid Data

Supplemental centroid analysis for 008646725-01. Kepler magnitude: 13.19. Transit SNR 0.90

There are 15 quarters with good PRF difference image offsets

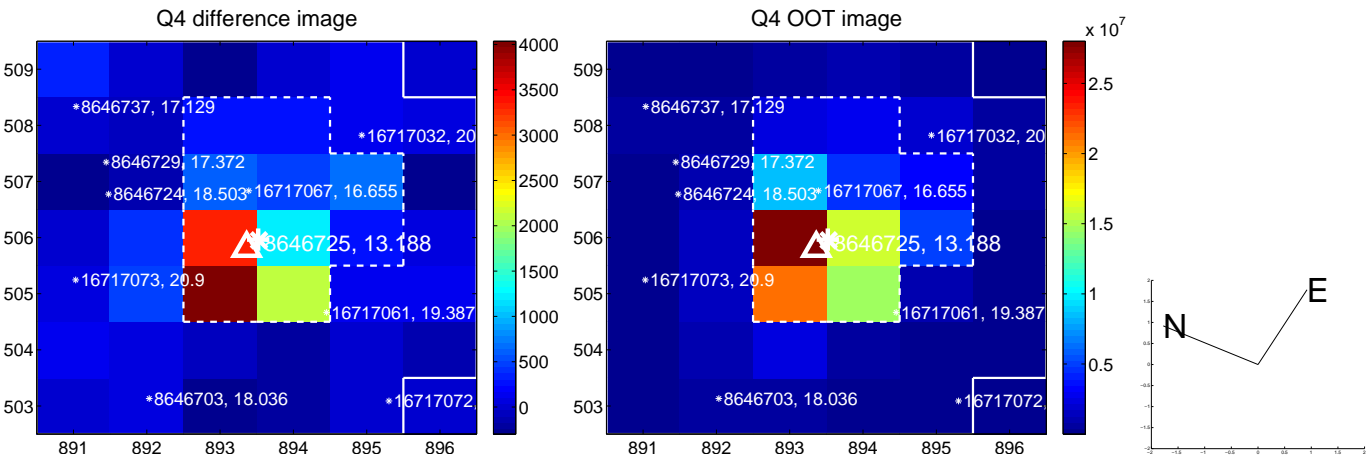
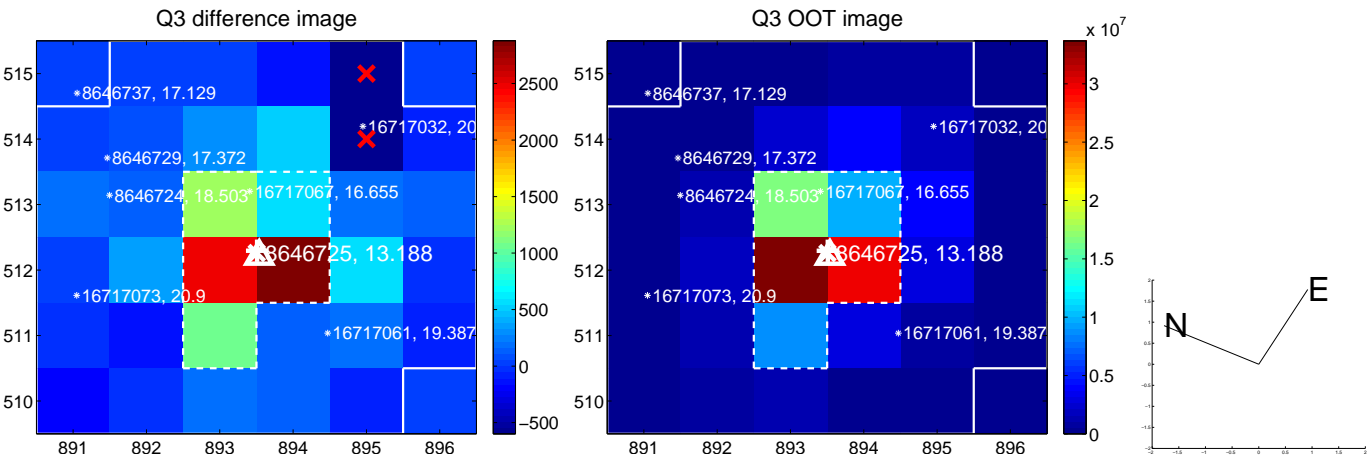
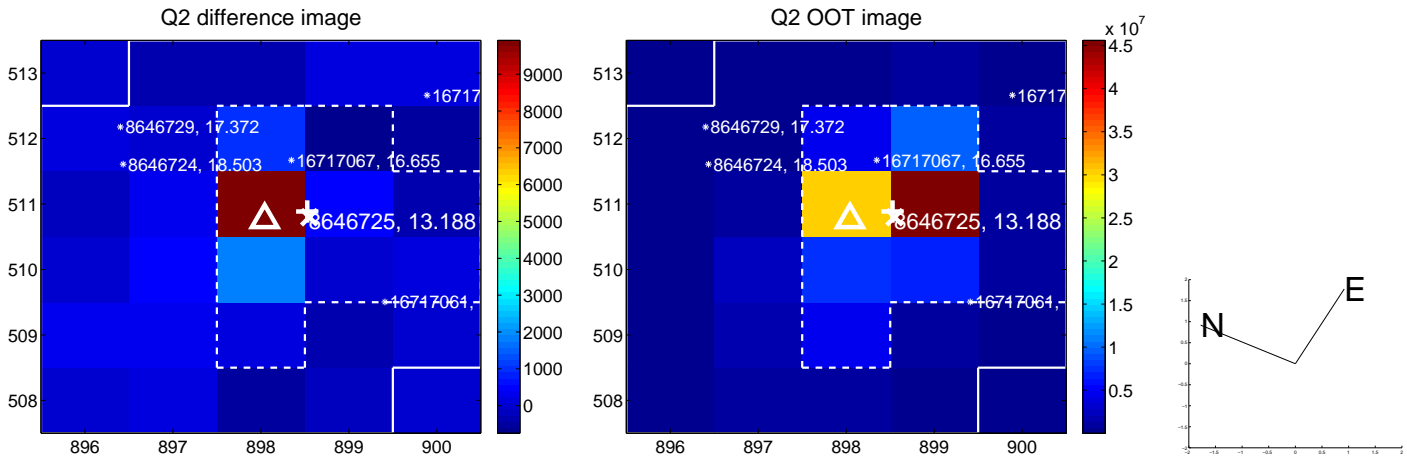
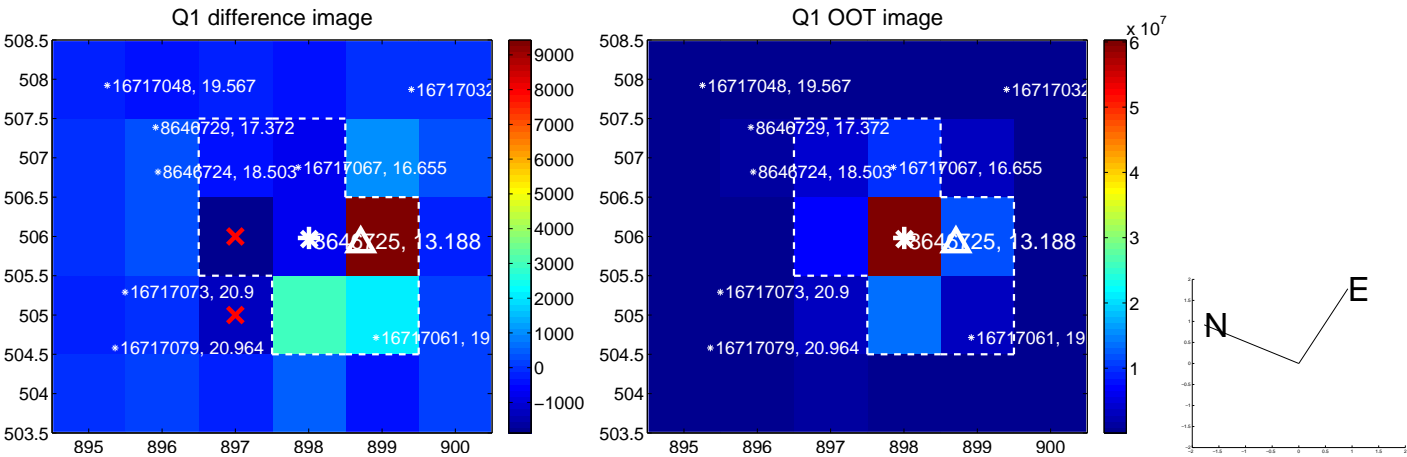
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.160	0.57	-0.081 ± 0.191	-0.043 ± 0.232
PRF-fit source offset from KIC position	0.126 ± 0.206	0.61	0.043 ± 0.182	0.118 ± 0.233
photometric centroid source offset	—	—	—	—

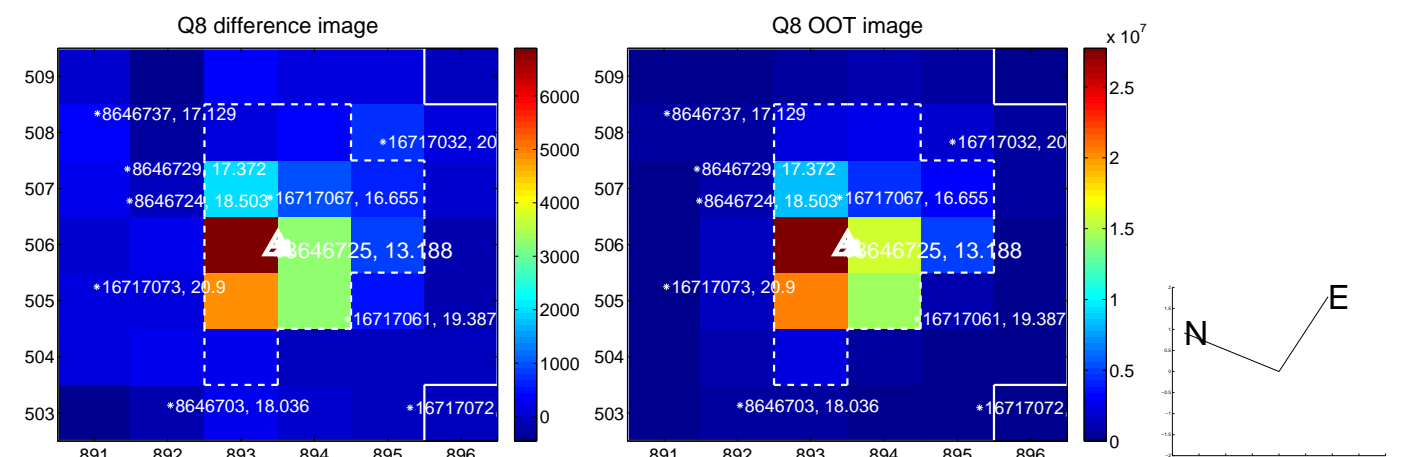
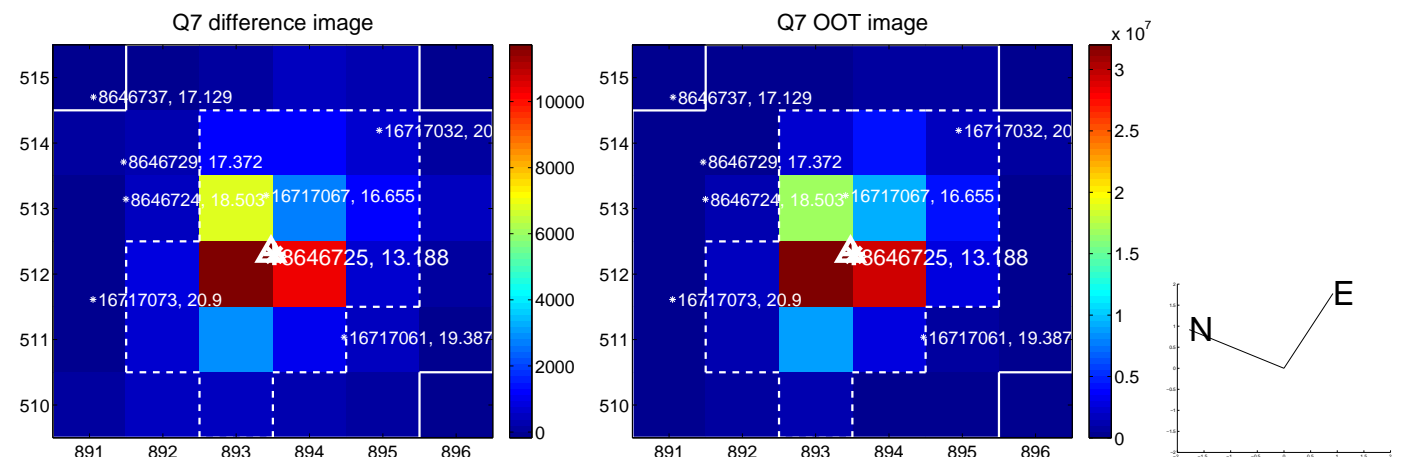
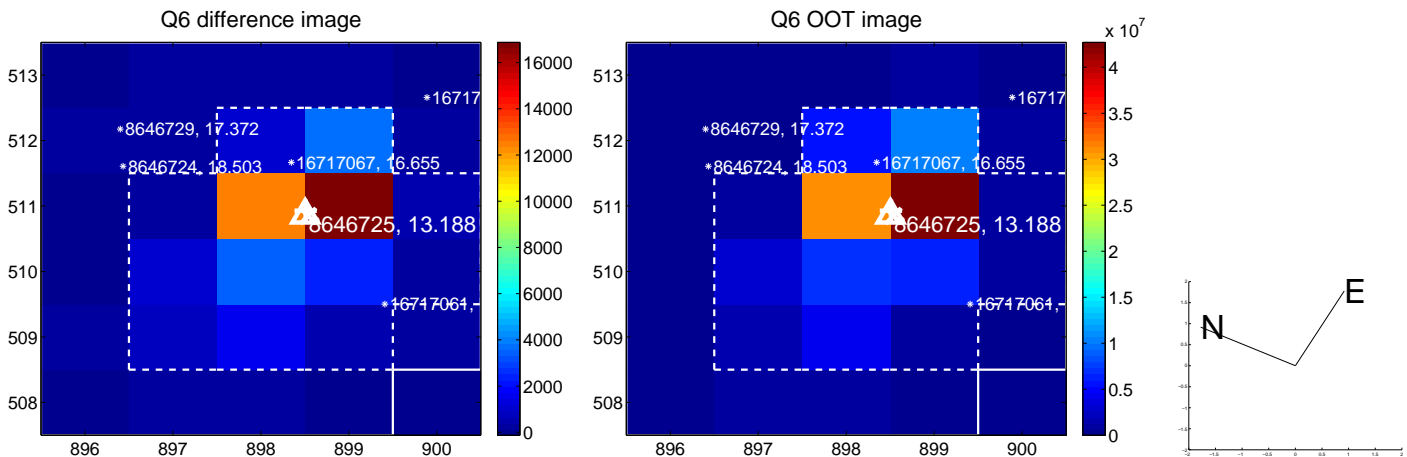
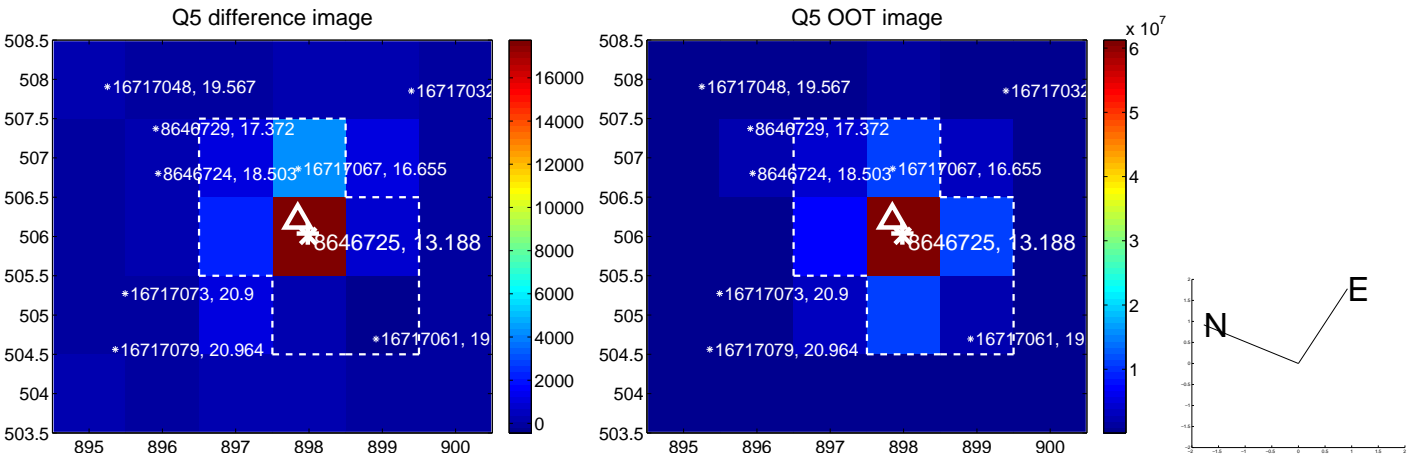


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

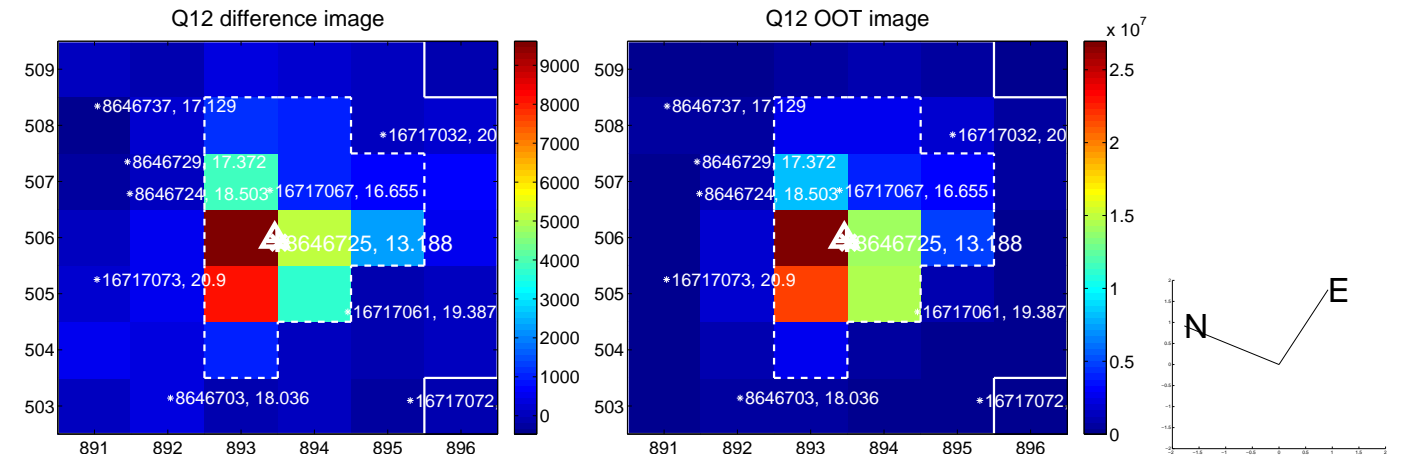
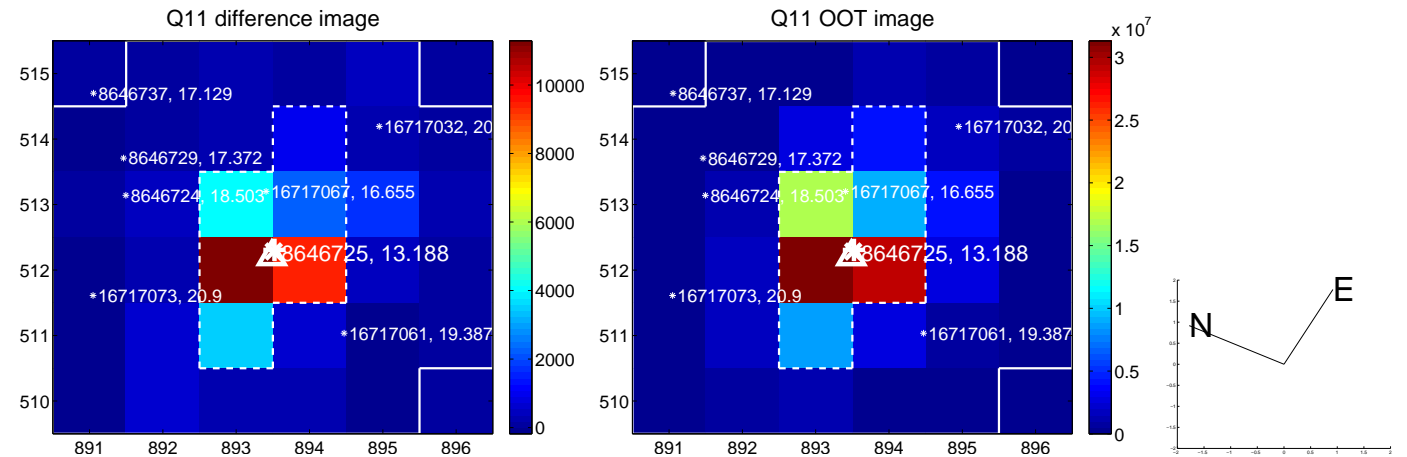
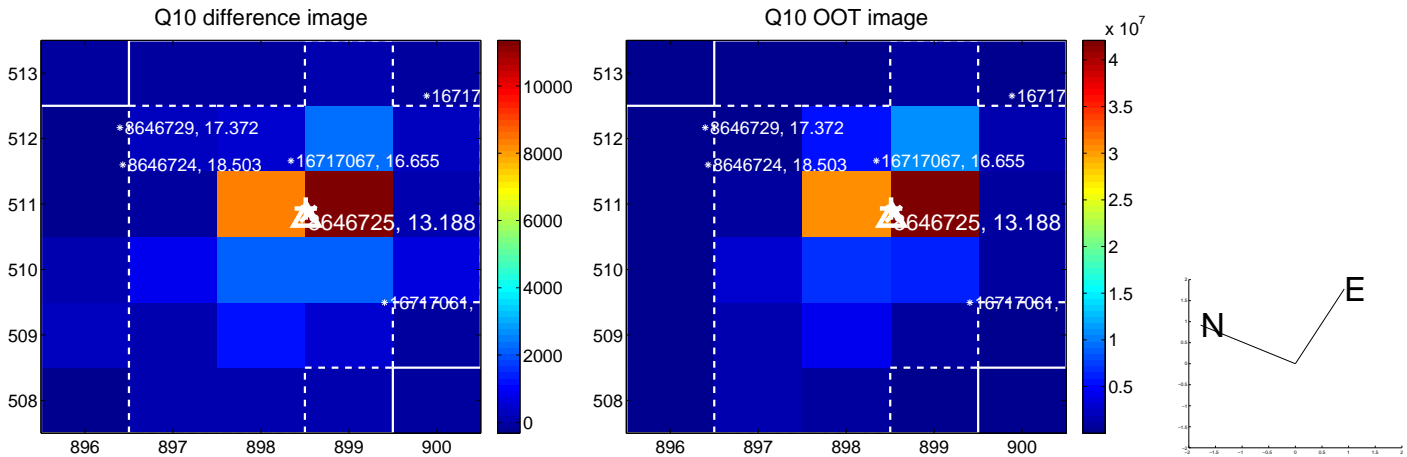
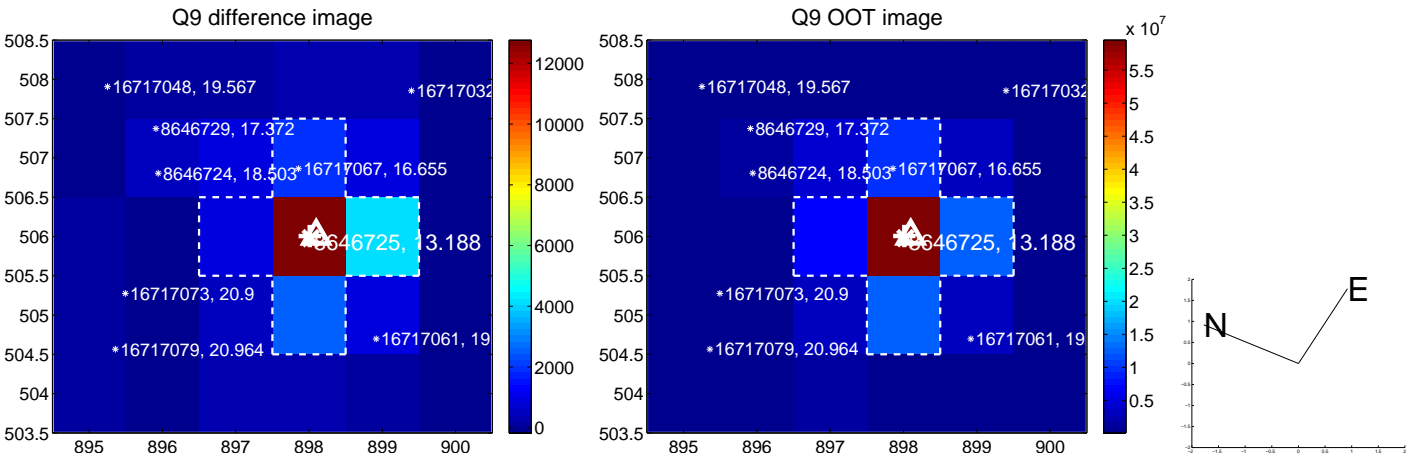
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



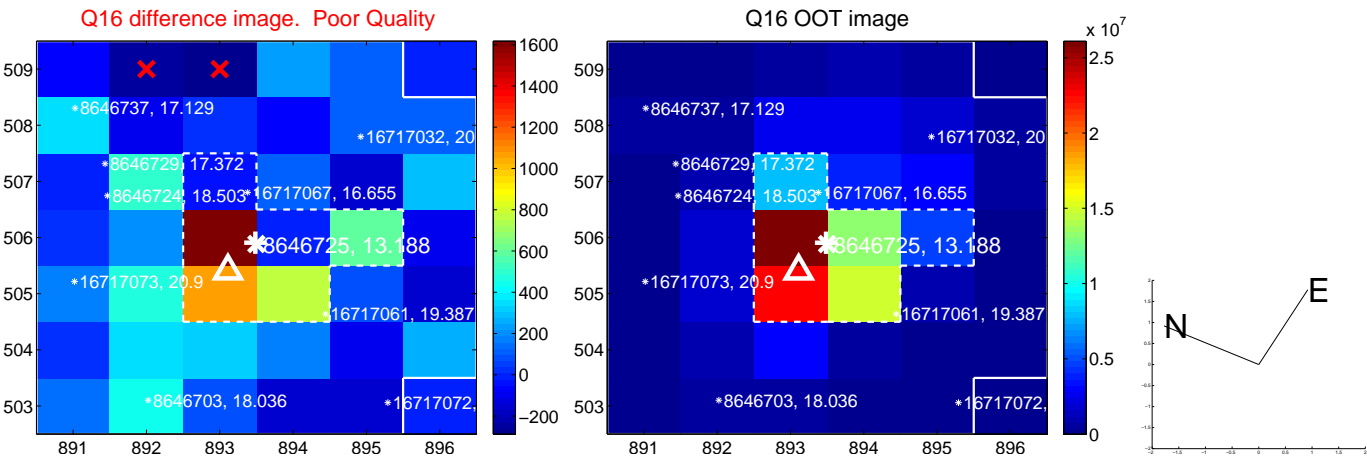
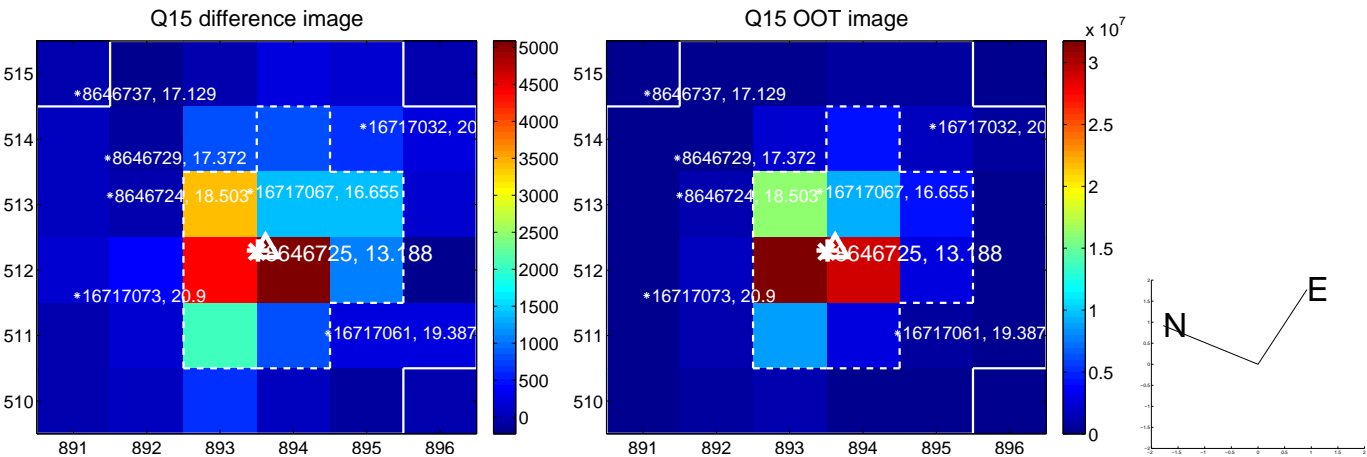
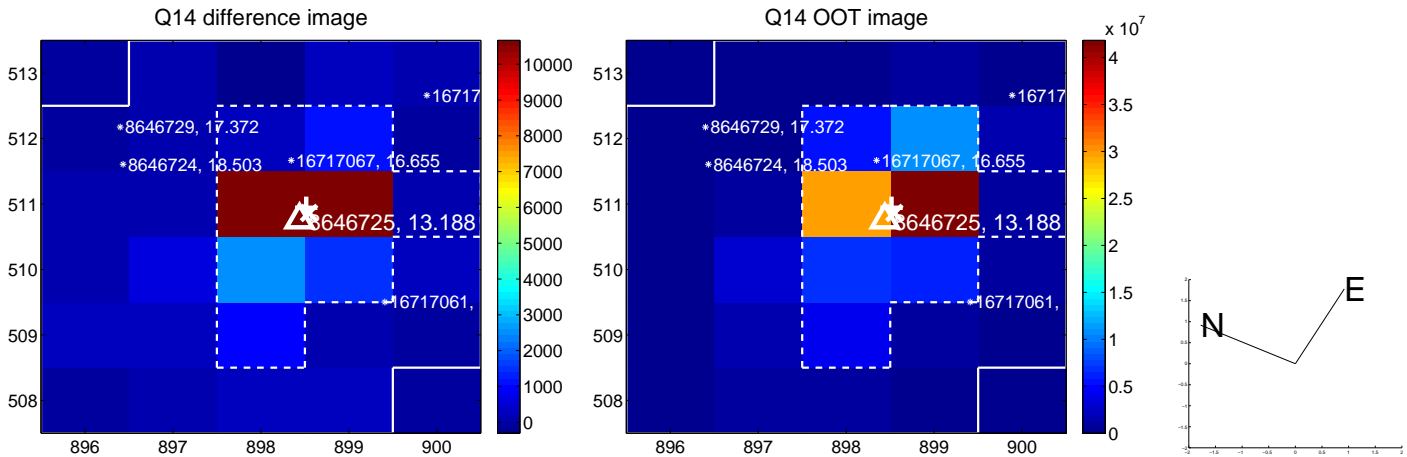
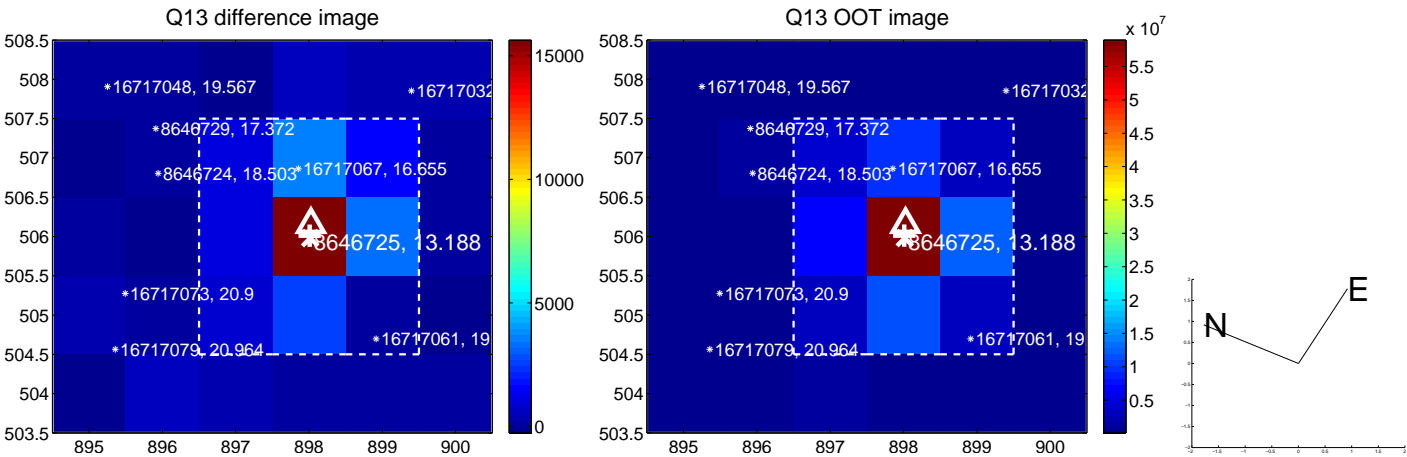
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



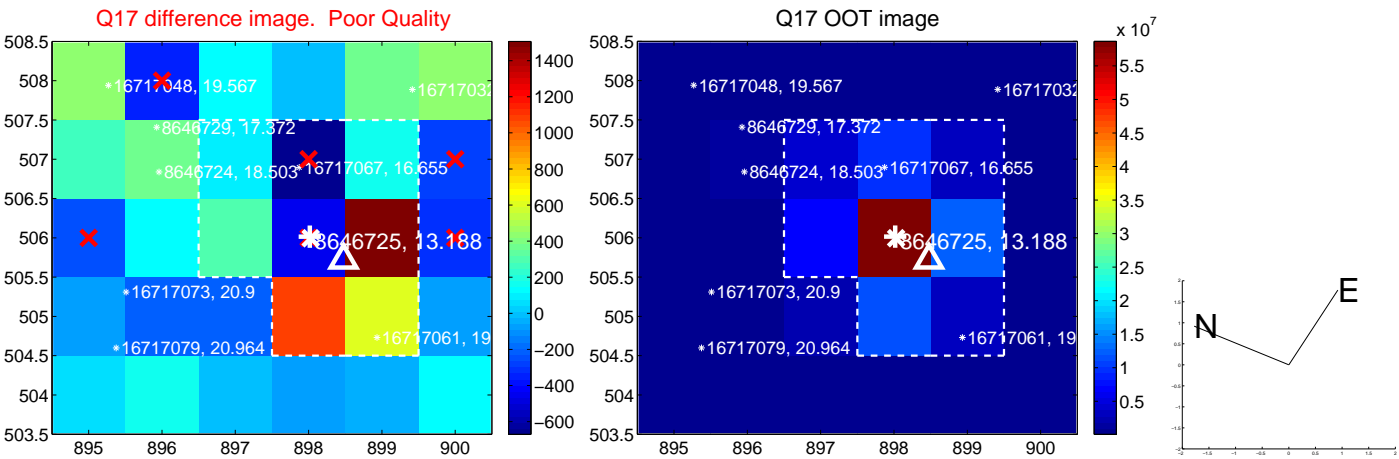
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

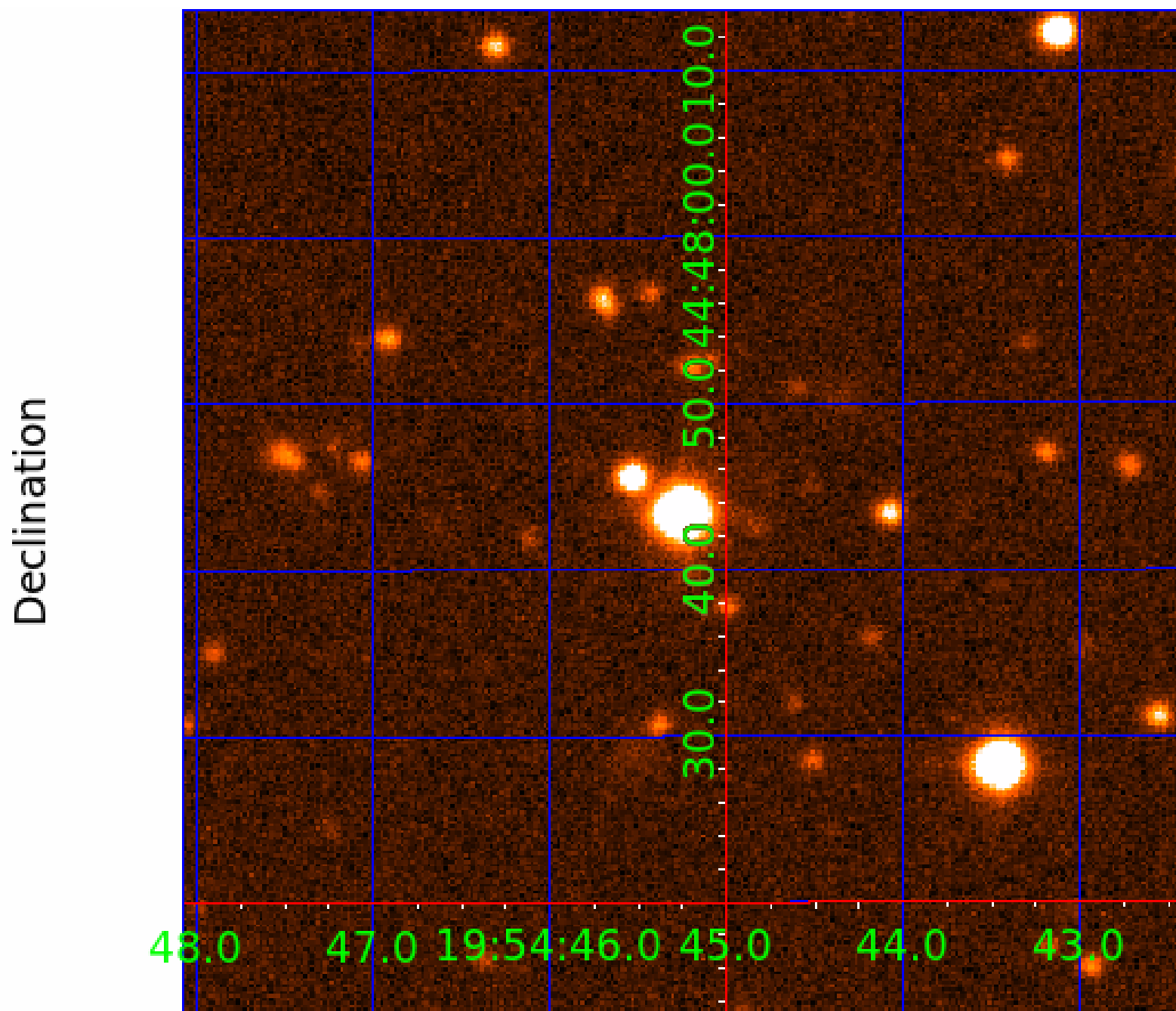


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image



KIC 008646725

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})
008646725-01	OBS	No	2.645933	133.829948	3.2	6.828	7.6	0.9	2.82	6220	0.72	6086.57
008646725-02	OBS	No	333.263522	340.838656	350.2	13.742	14.6	7.0	2.82	6220	6.81	9.64
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008646725-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008646725-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV

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

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

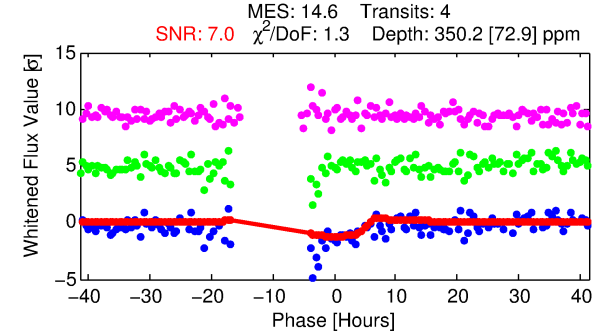
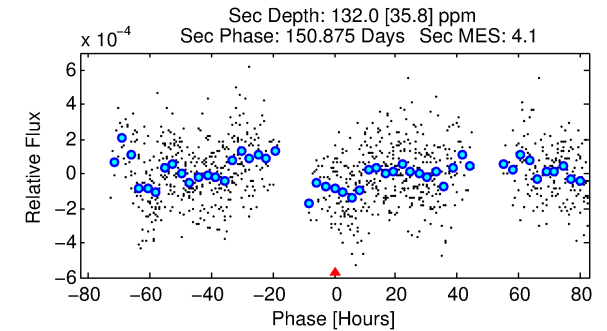
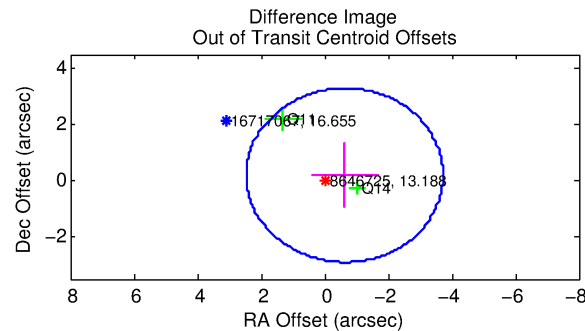
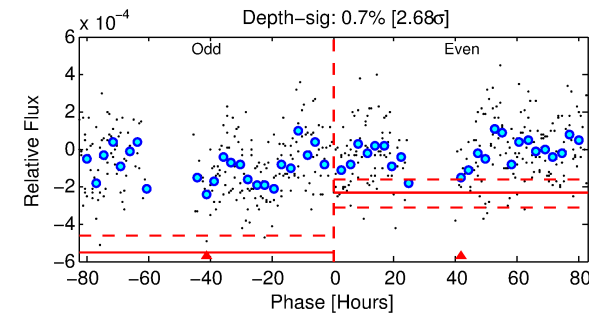
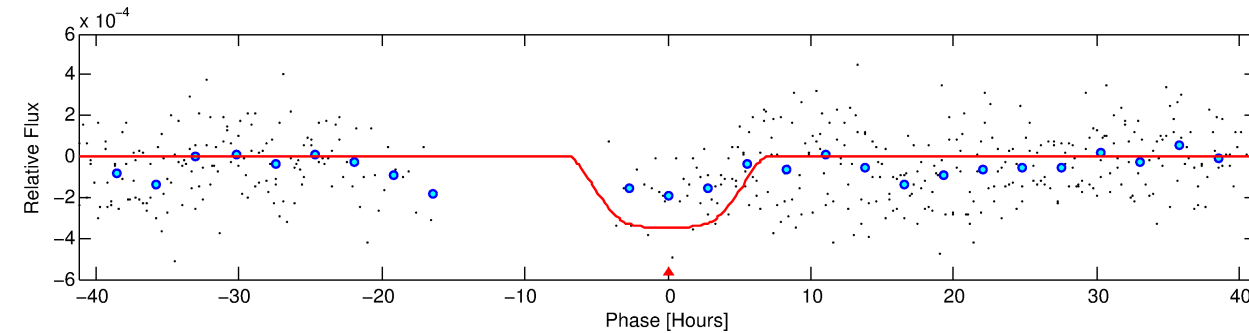
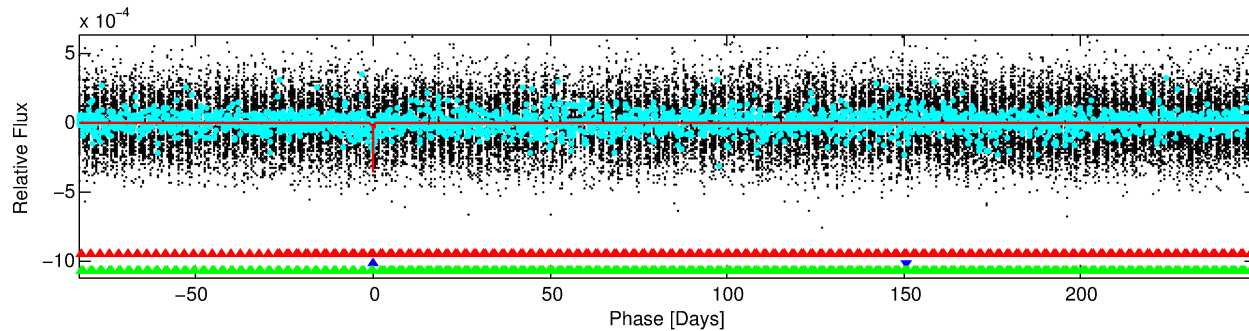
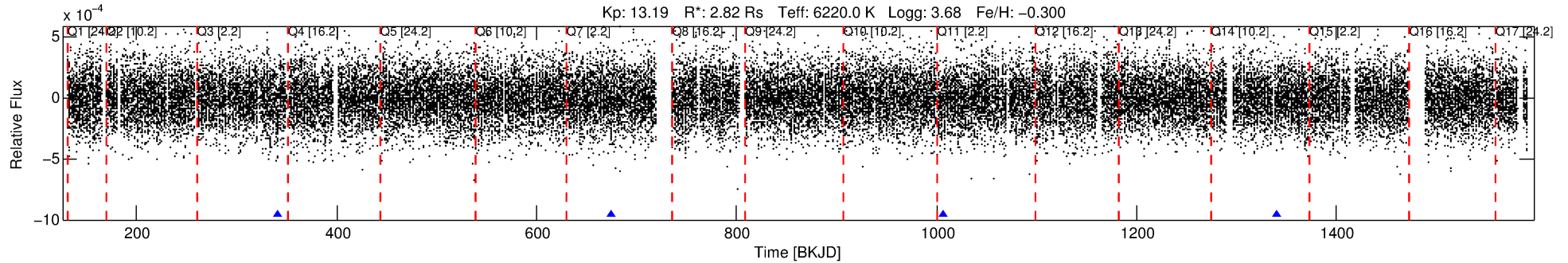
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008646725-02

No Significant Match Found

DV One-Page Summary

KIC: 8646725 Candidate: 2 of 3 Period: 333.264 d



DV Fit Results:

Period = 333.26352 [0.01952] d
Epoch = 340.8387 [0.0553] BKJD
Rp/R* = 0.0222 [0.0028]
a/R* = 60.37 [20.81]
b = 0.97 [0.02]
Seff = 9.64 [5.40]
Teq = 449 [63] K
Rp = 6.81 [2.75] Re
a = 1.0503 [0.3694] AU
Ag = 1728.83 [1141.31] [1.51 σ]
Teffp = 4479 [436] K [9.14 σ]

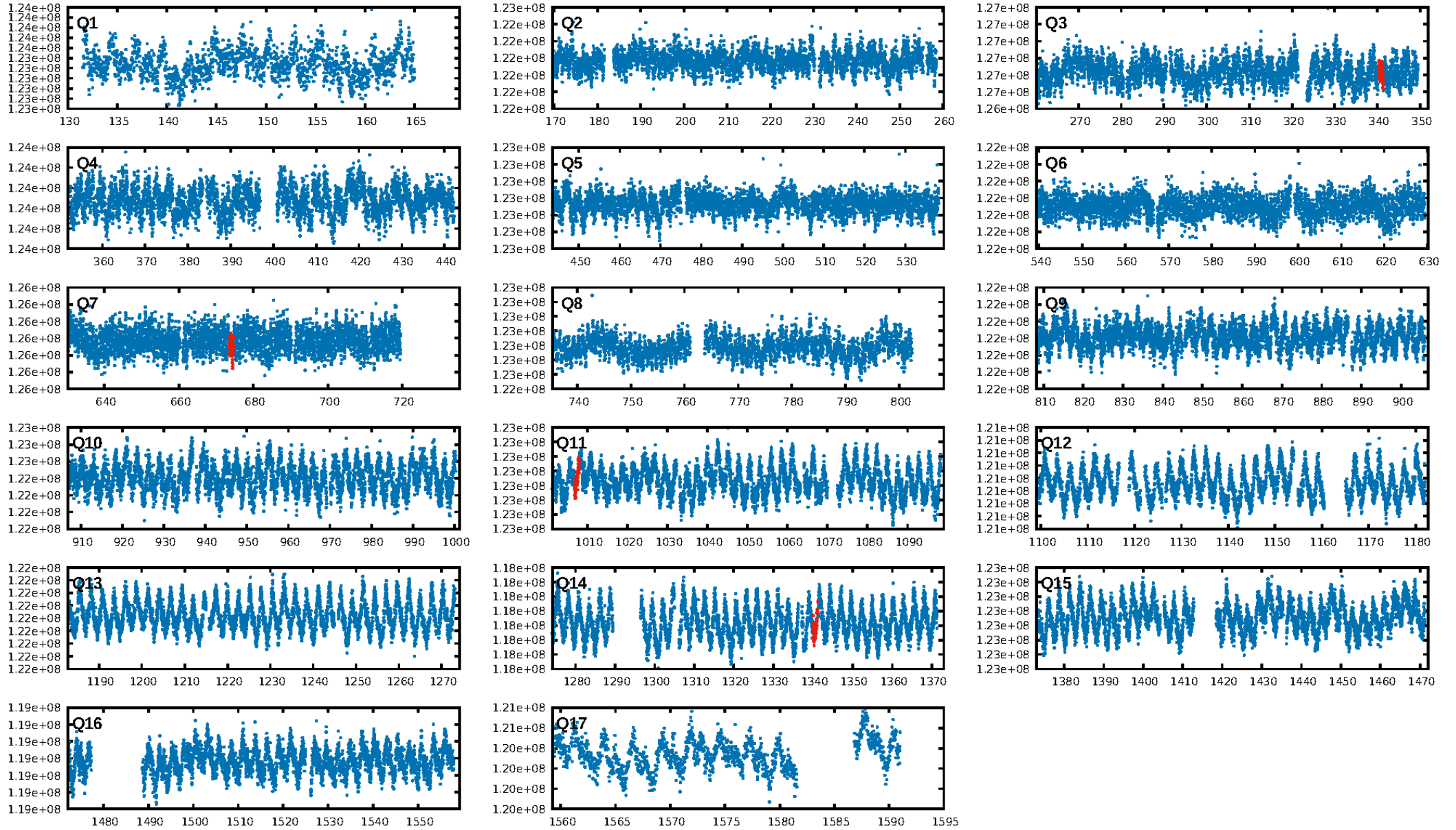
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [548.04 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.68e-33
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4995
Centroid-sig: 55.7%
Centroid-so: 0.622 arcsec [0.74 σ]
OotOffset-rm: 0.659 arcsec [0.64 σ]
KicOffset-rm: 0.596 arcsec [0.58 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/4]

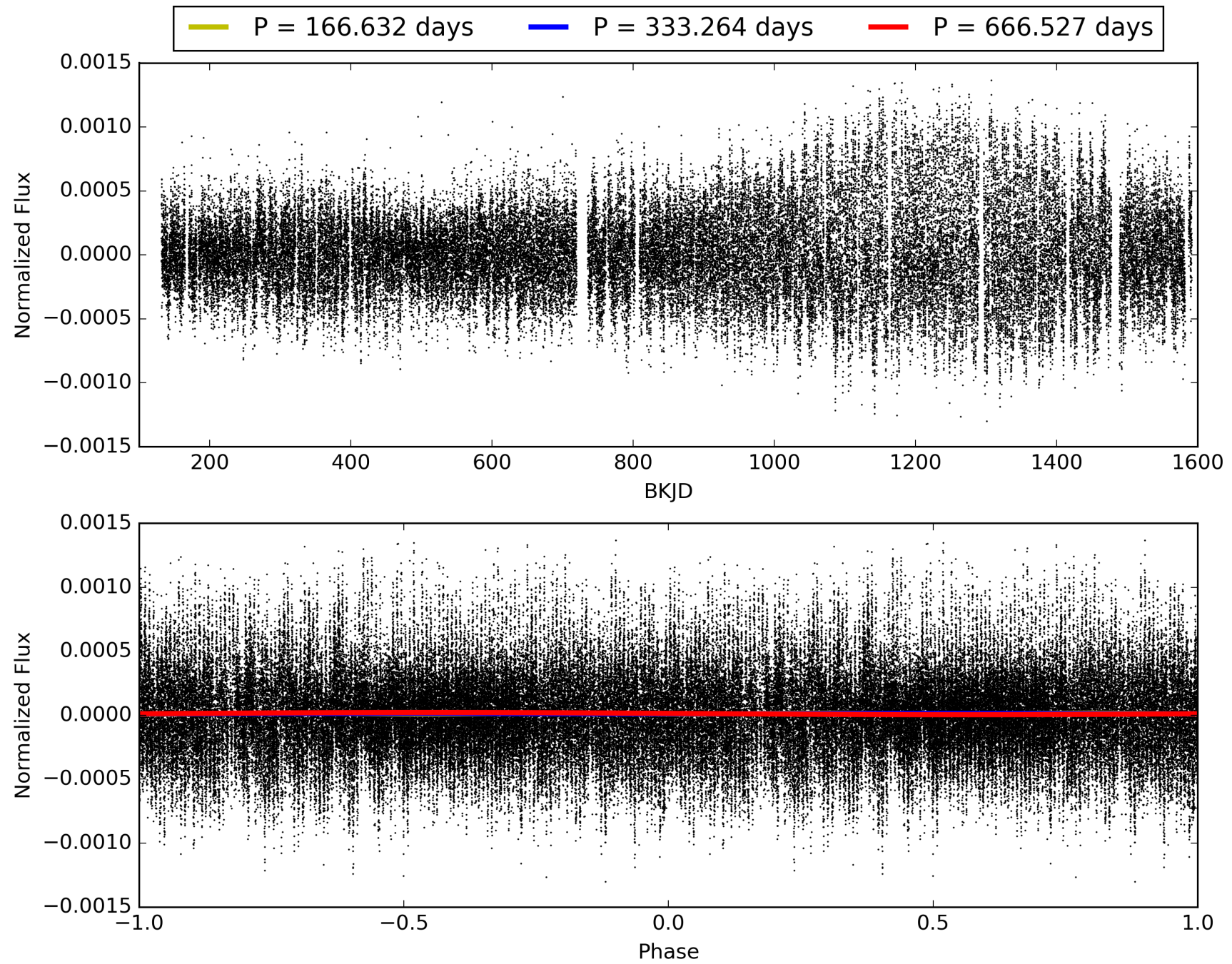
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:21:06 Z

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

TCE 008646725-02, PDC Light Curves

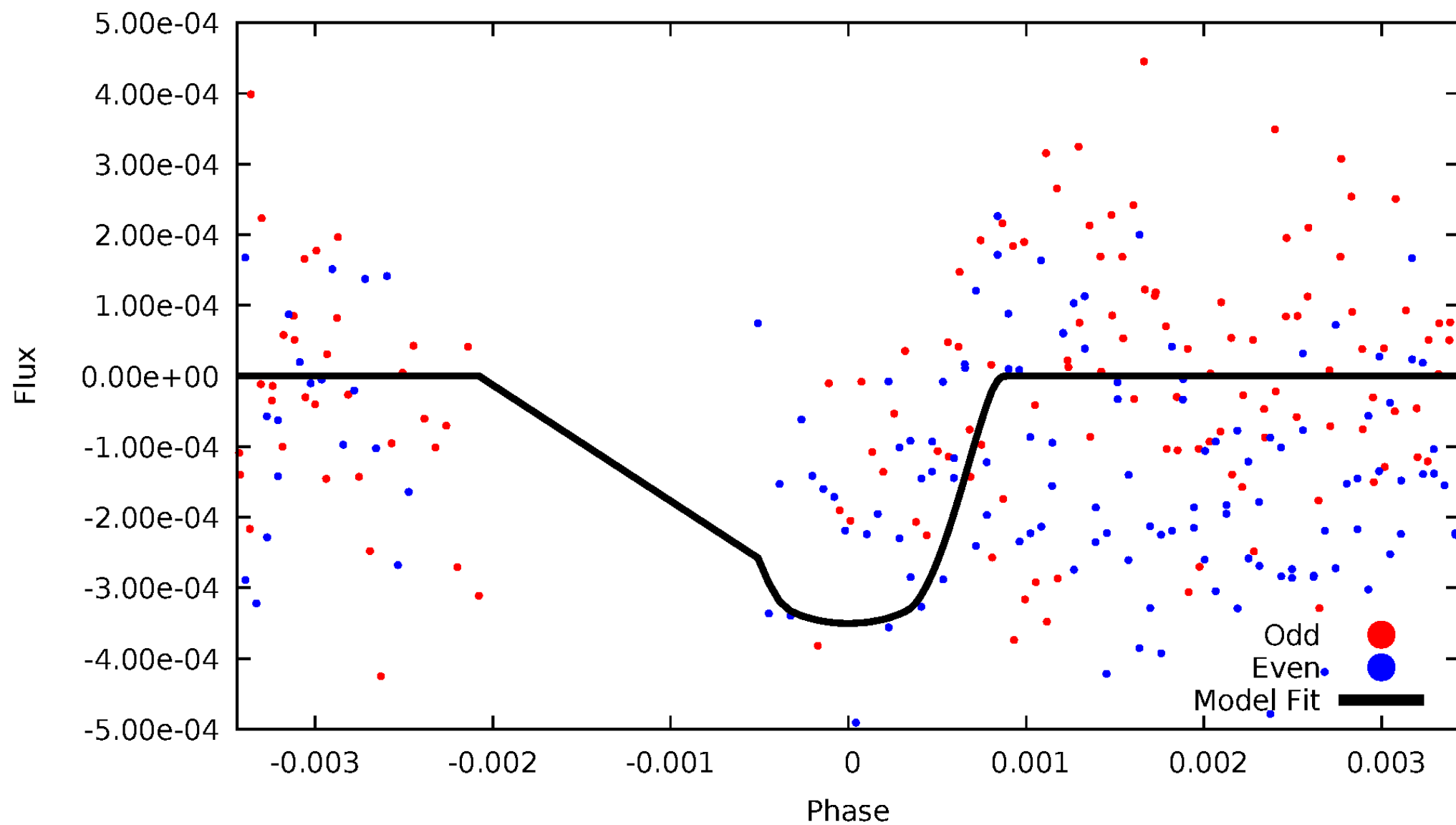


TCE 008646725-02



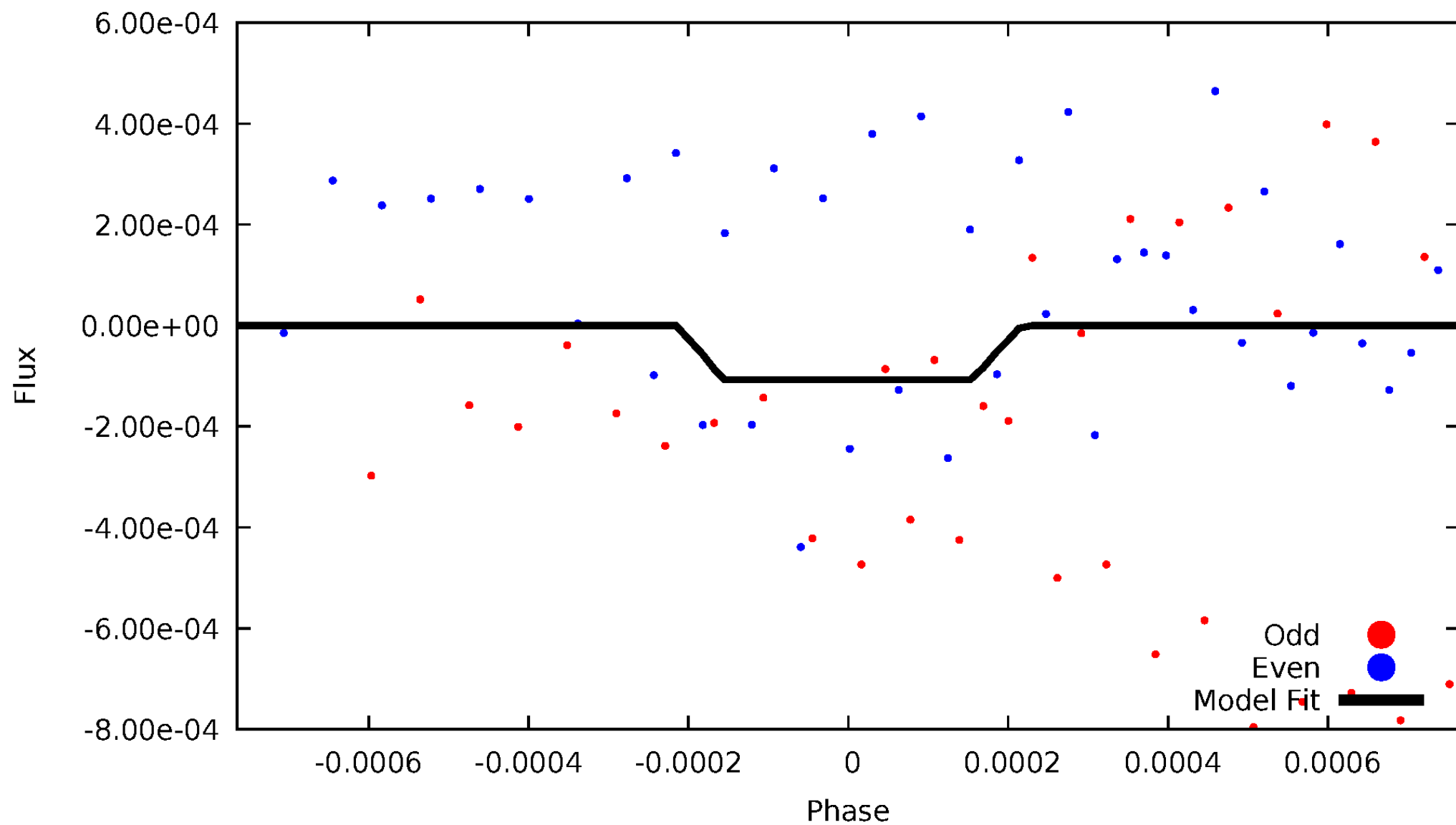
DV Odd/Even

TCE 008646725-02



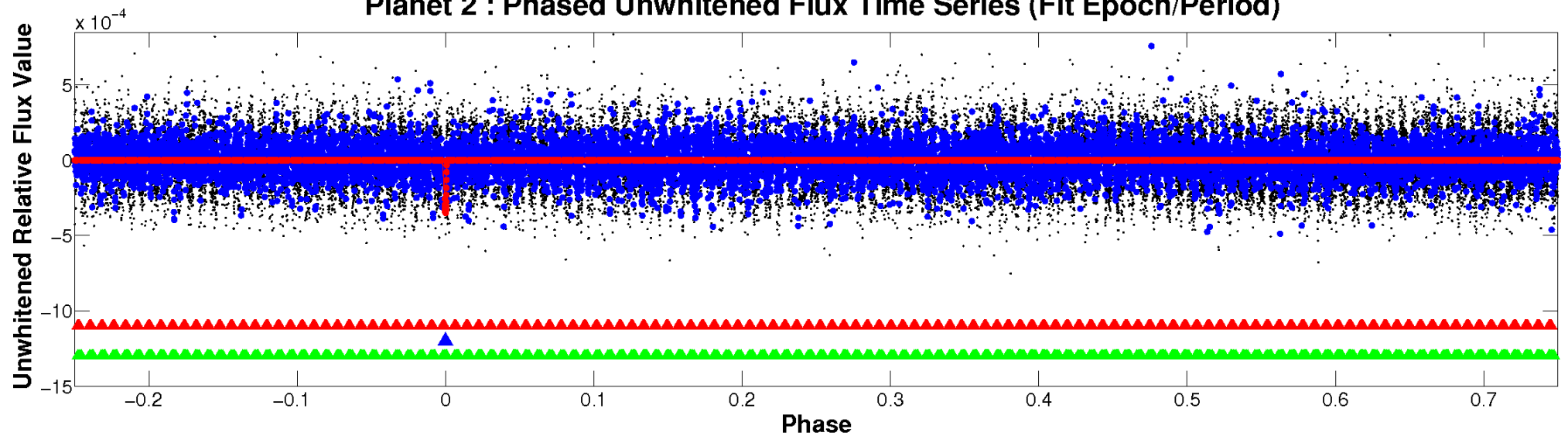
ALT Odd/Even

TCE 008646725-02

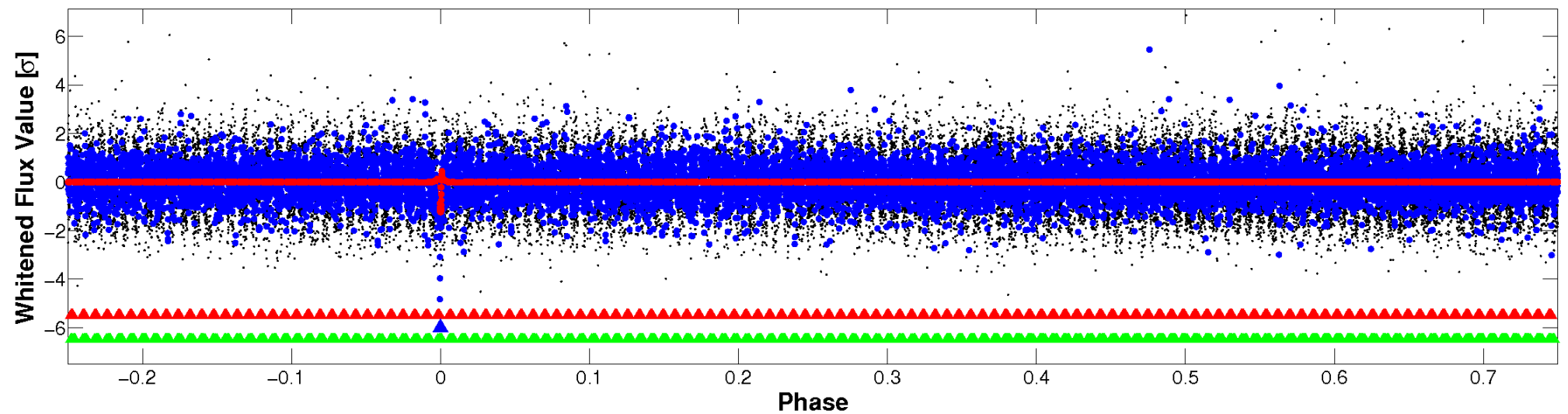


Non-Whitened Vs. Whitened Light Curve

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

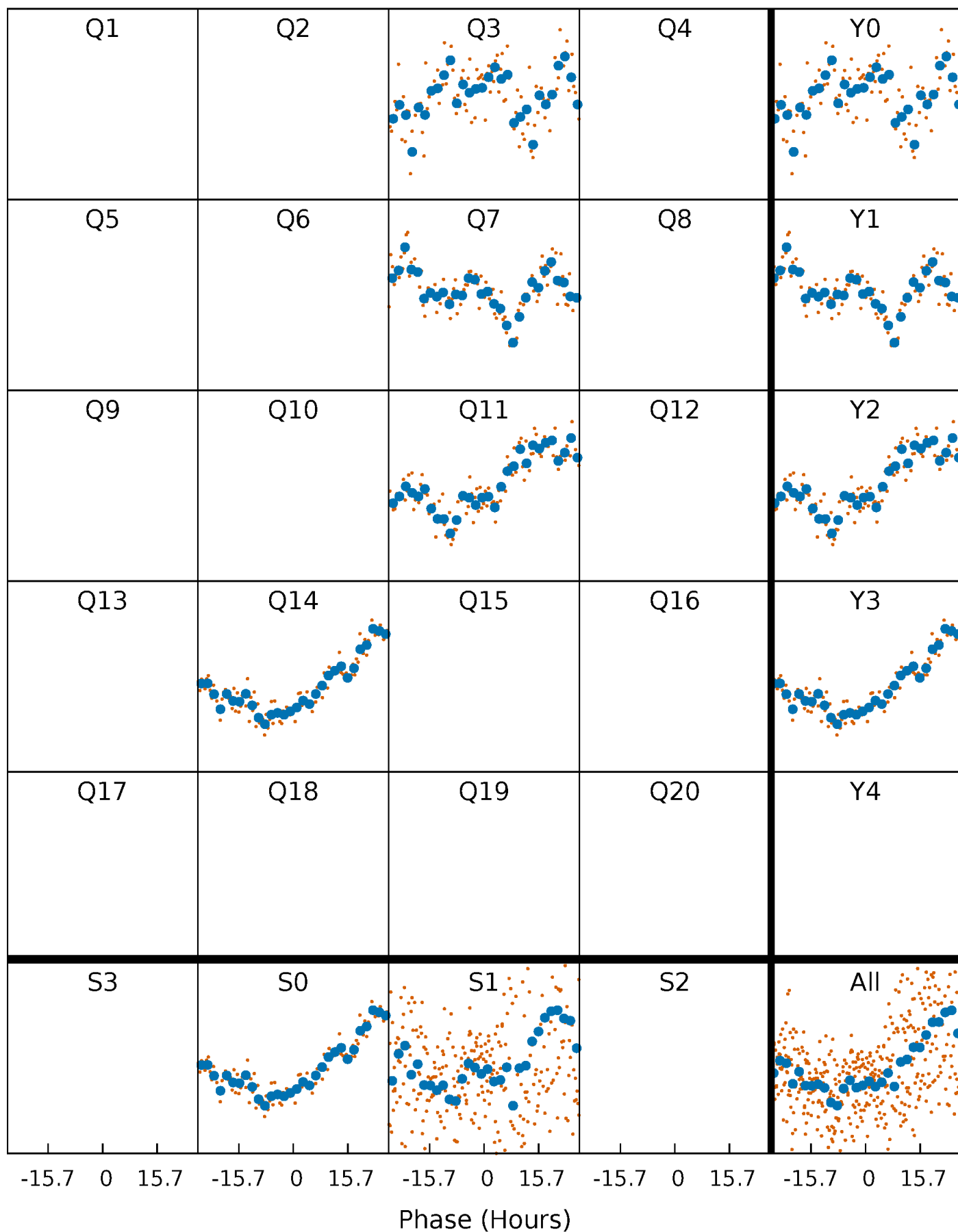


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



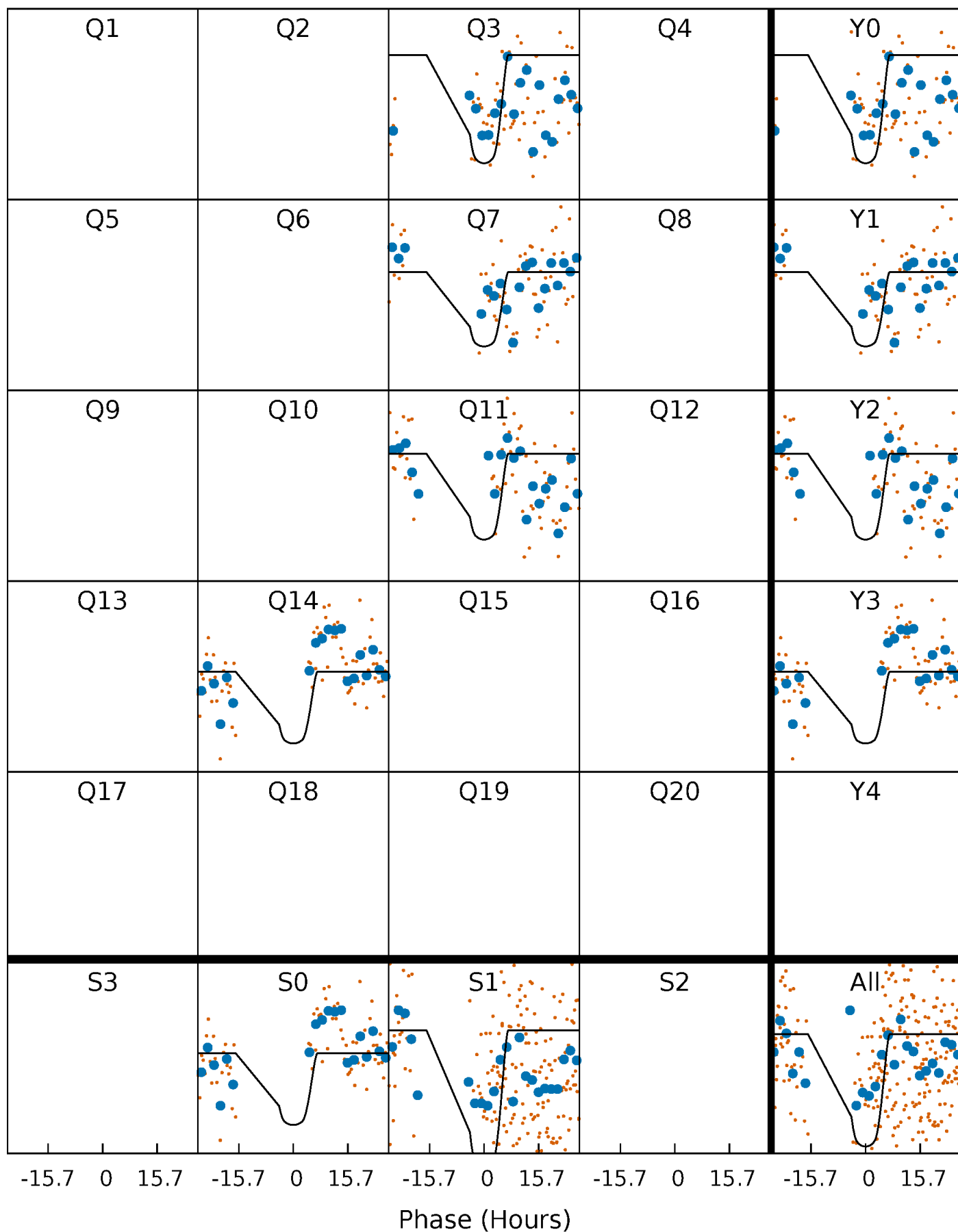
PDC Quarter-Phased Transit Curves

TCE 008646725-02 $P=333.263522$ Days $T_0=340.838656$ (BKJD)



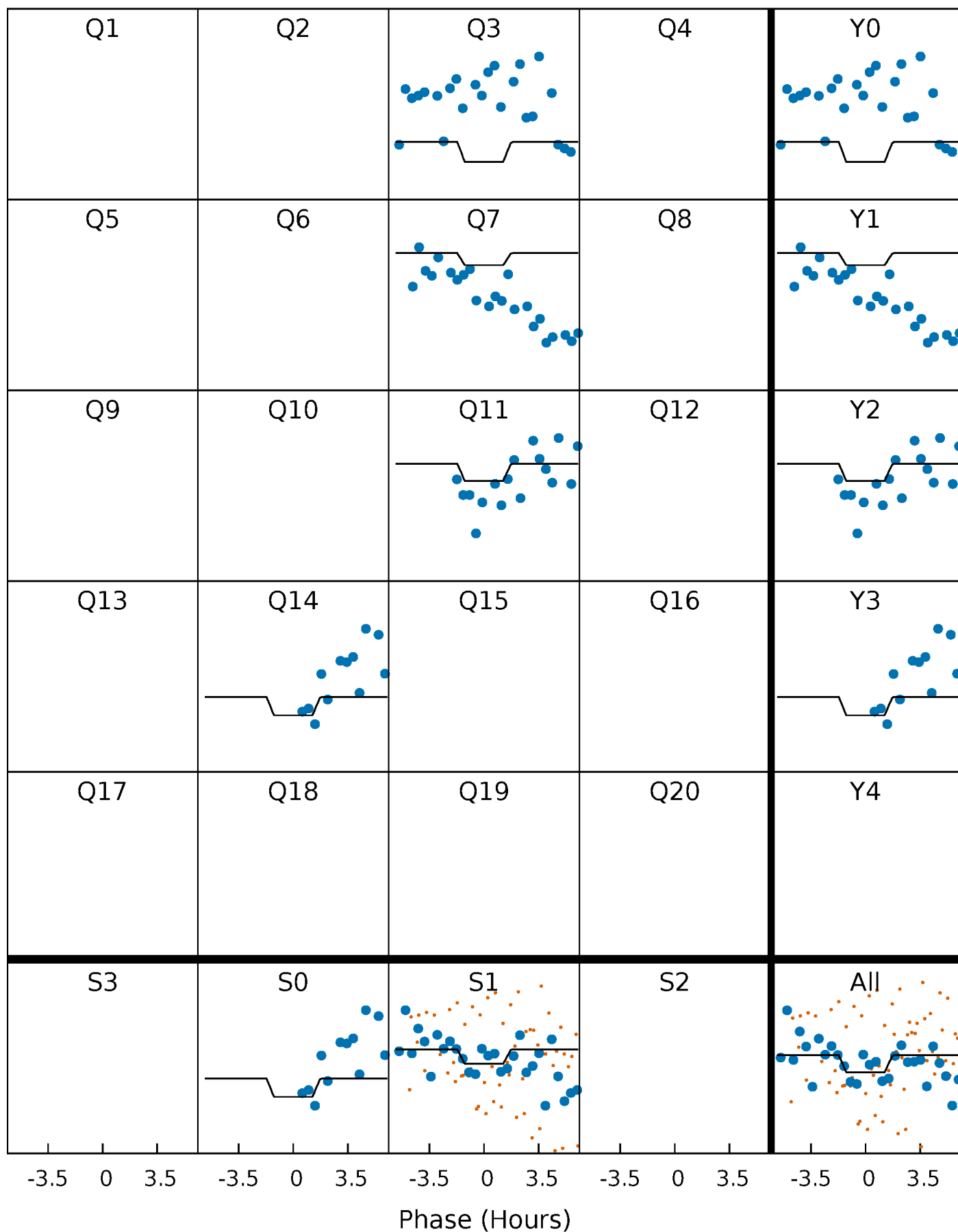
DV Quarter-Phased Transit Curves

TCE 008646725-02 $P=333.263522$ Days $T_0=340.838656$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

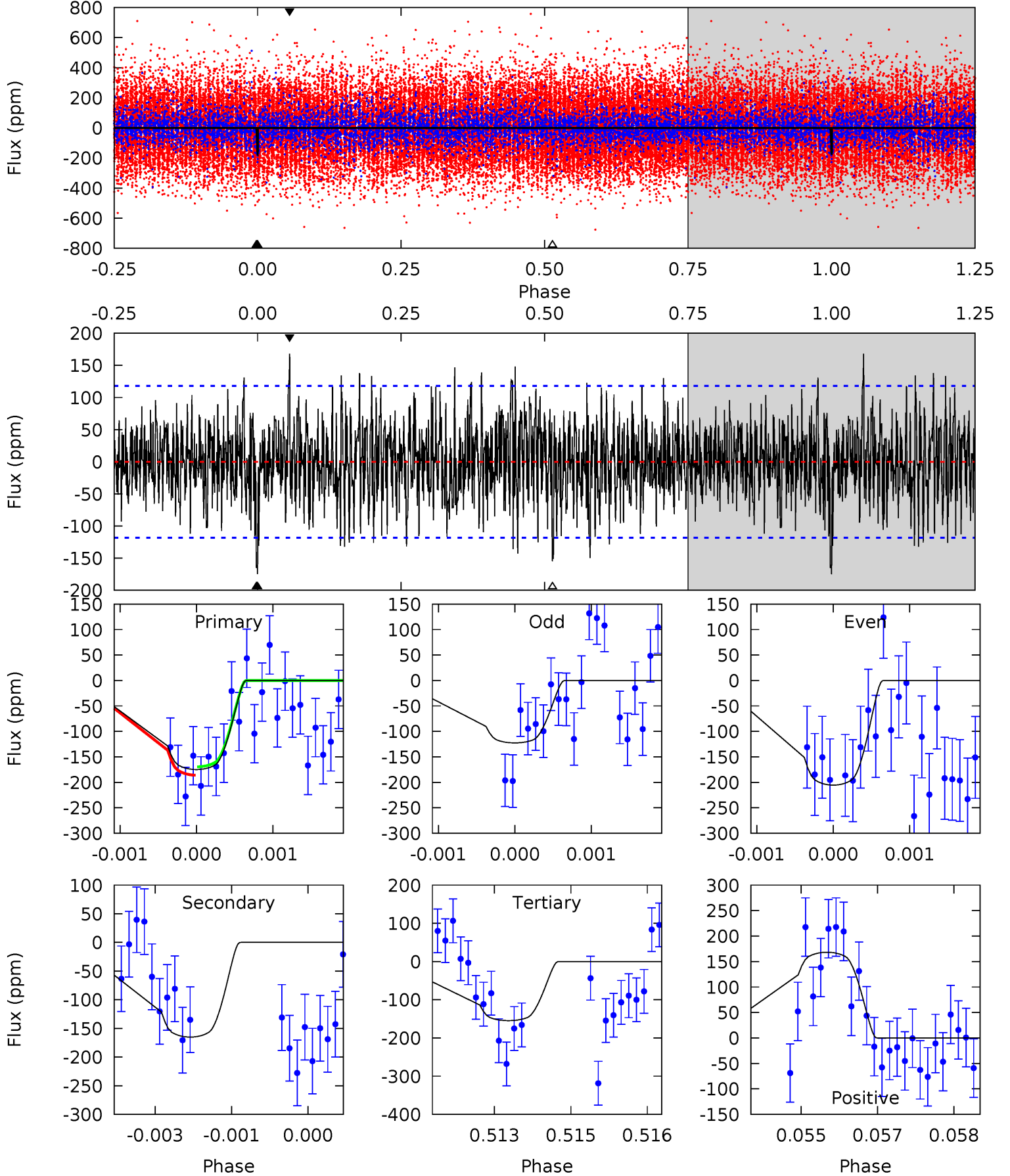
TCE 008646725-02 P=333.278175 Days $T_0=340.965707$ (BKJD)



DV Model-Shift Uniqueness Test

008646725-02, P = 333.263522 Days, E = 7.575134 Days

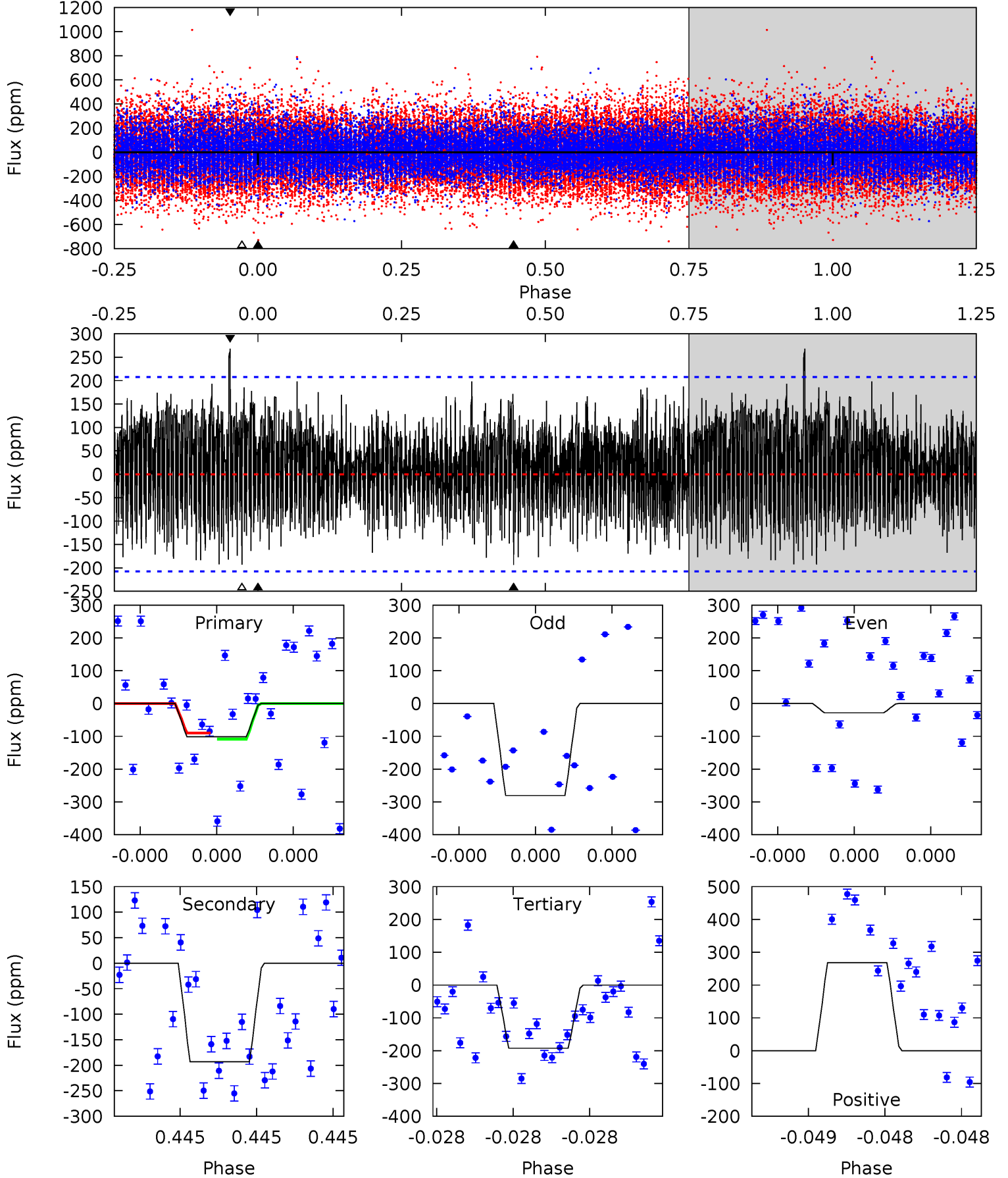
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.99	7.54	7.06	7.68	5.40	3.21	2.00	0.92	0.30	0.48	-0.14	1.89	0.79	0.49	0.29



Alt Model-Shift Uniqueness Test

008646725-02, P = 333.278175 Days, E = 7.687532 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.74	5.23	5.21	7.26	5.61	3.54	1.75	-2.48	-4.52	0.02	-2.03	3.40	0.59	0.58	0.24



Stellar Parameters For KIC 008646725

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6220^{+191}_{-191}	$3.682^{+0.315}_{-0.105}$	$-0.300^{+0.350}_{-0.300}$	$2.816^{+0.463}_{-1.079}$	$1.392^{+0.227}_{-0.340}$	$0.088^{+0.202}_{-0.029}$
	+3%/-3%	+9%/-3%	+117%/-100%	+16%/-38%	+16%/-24%	+230%/-33%
Source	PHO1	FLK73	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 008646725-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-165 ± 22	$6.47^{+1.41}_{-1.52}$	617^{+40}_{-62}	4858^{+344}_{-297}	2397^{+1591}_{-757}
Alt.	-193 ± 37	$2.98^{+1.00}_{-0.89}$	618^{+37}_{-48}	7277^{+1758}_{-991}	13510^{+12817}_{-6078}

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

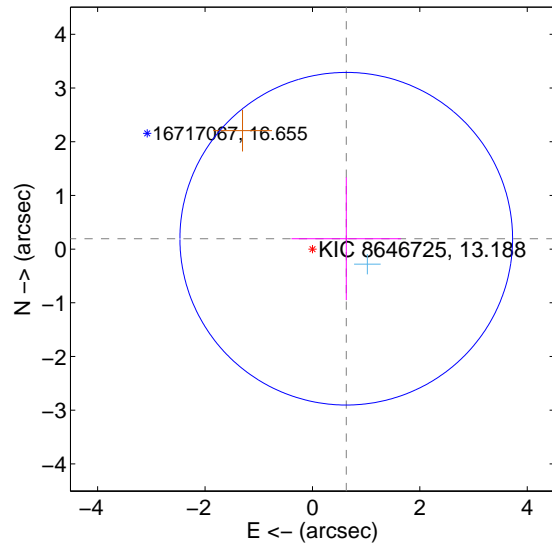
Supplemental centroid analysis for 008646725-02. Kepler magnitude: 13.19. Transit SNR 7.04

There are 1 quarters with good PRF difference image offsets

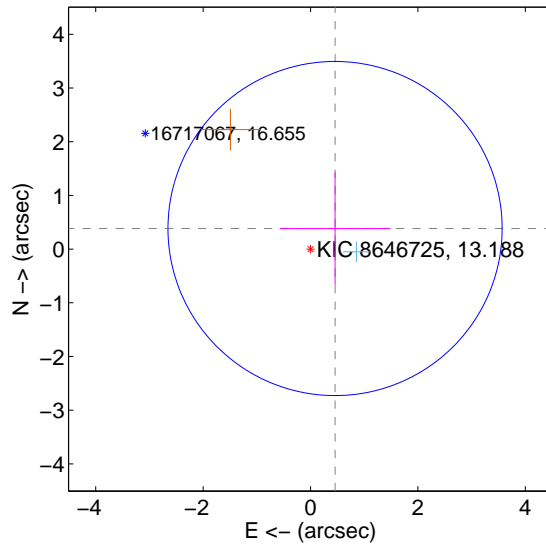
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.659 ± 1.033	0.64	-0.630 ± 1.021	0.193 ± 1.144
PRF-fit source offset from KIC position	0.596 ± 1.037	0.58	-0.457 ± 1.030	0.383 ± 1.047
photometric centroid source offset	0.62 ± 0.85	0.74	0.35 ± 0.97	0.51 ± 0.78

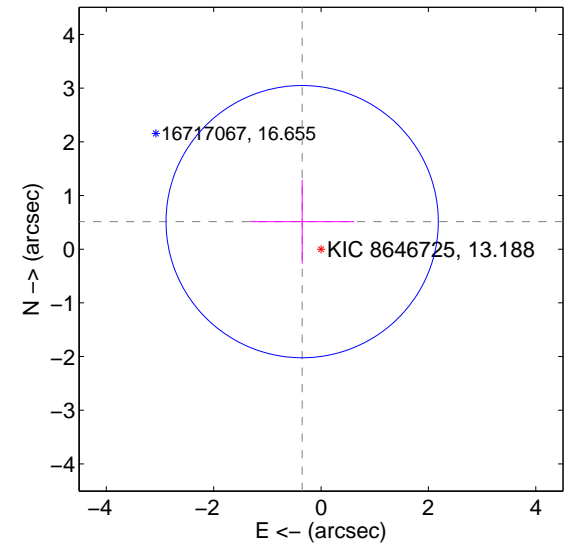
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

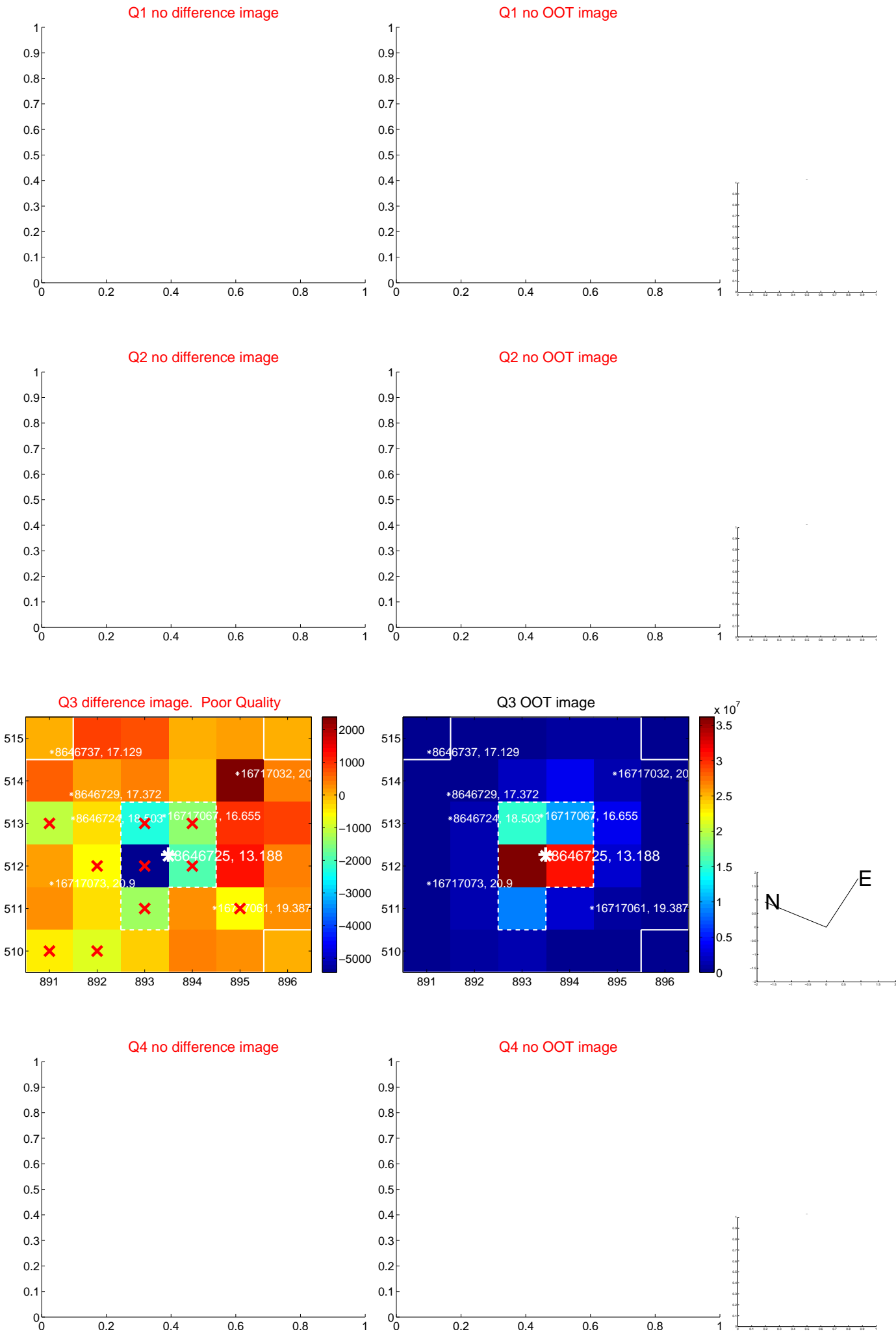


offset from photometric centroids



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

Q5 no difference image



Q5 no OOT image



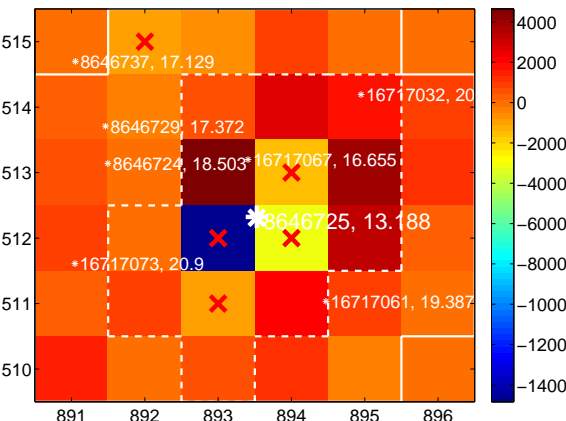
Q6 no difference image



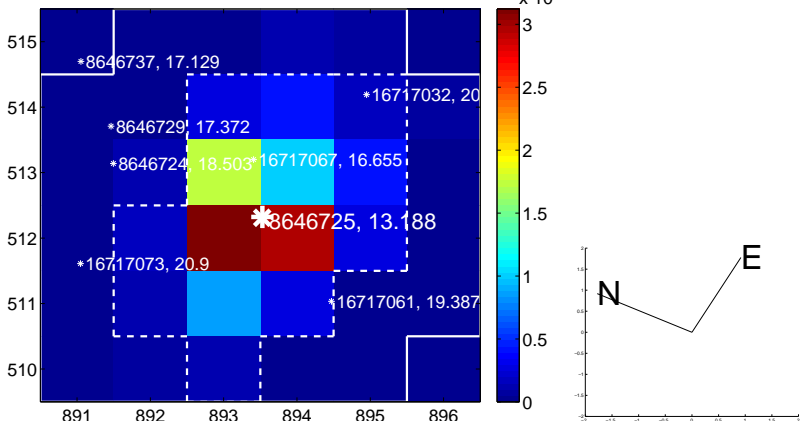
Q6 no OOT image



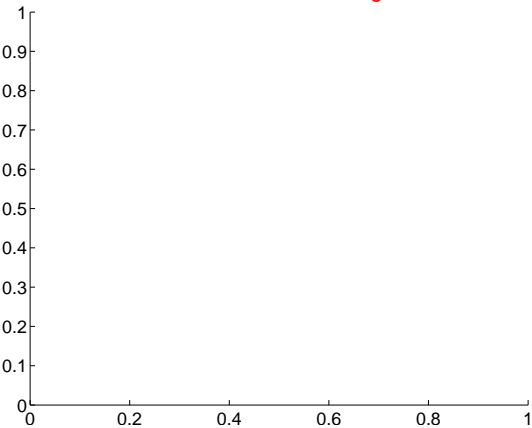
Q7 difference image. Poor Quality



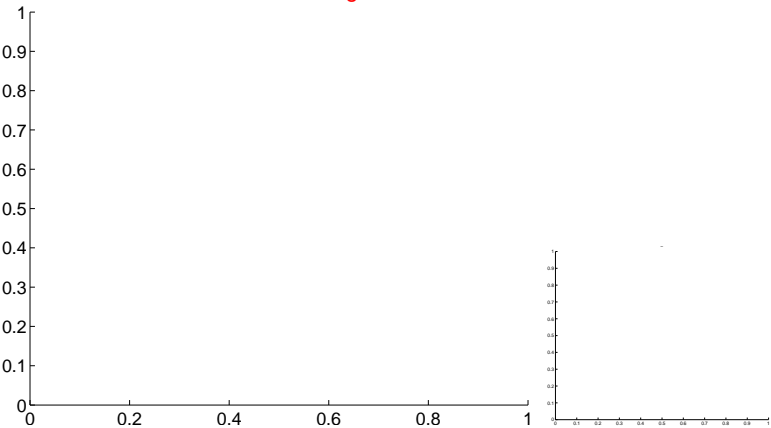
Q7 OOT image



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



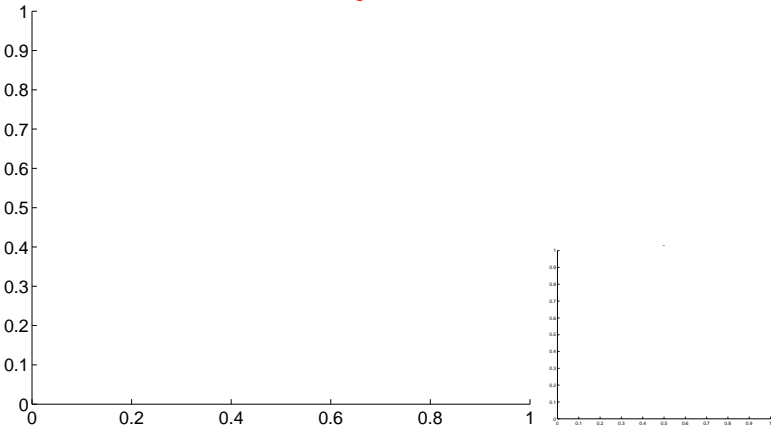
Q9 no OOT image



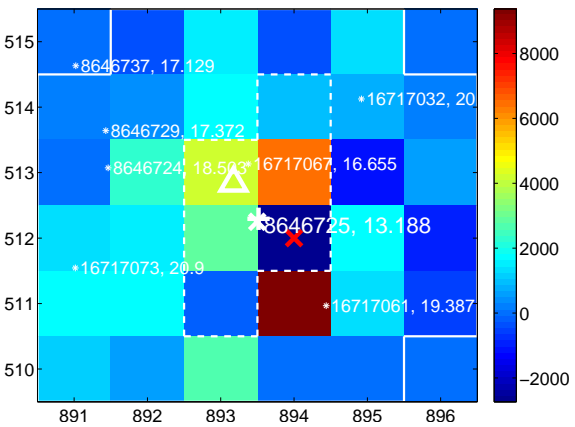
Q10 no difference image



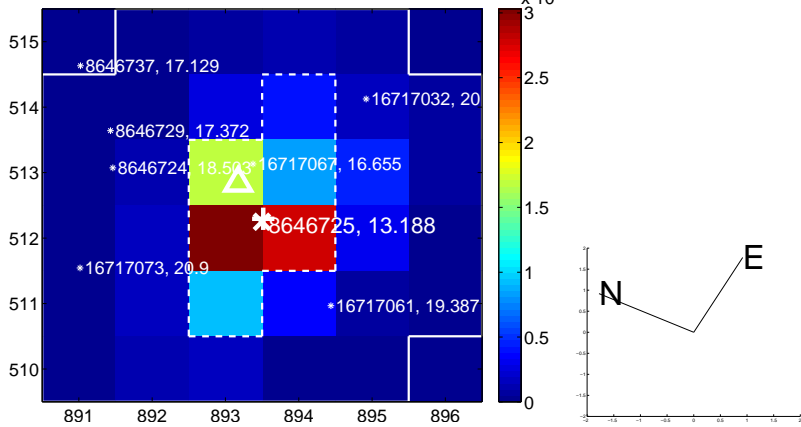
Q10 no OOT image



Q11 difference image. Poor Quality



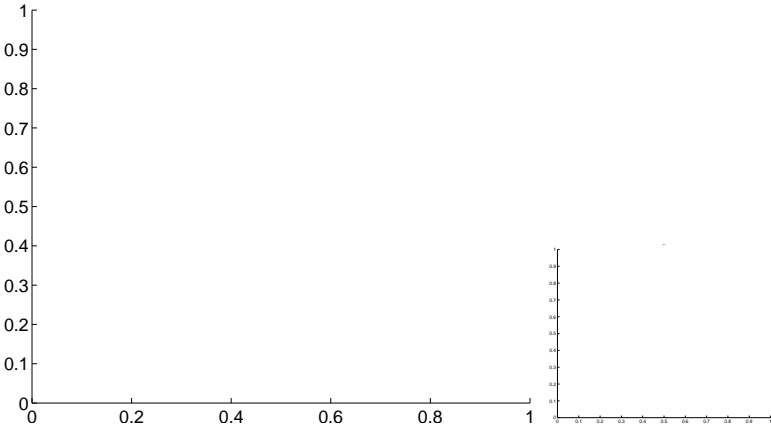
Q11 OOT image



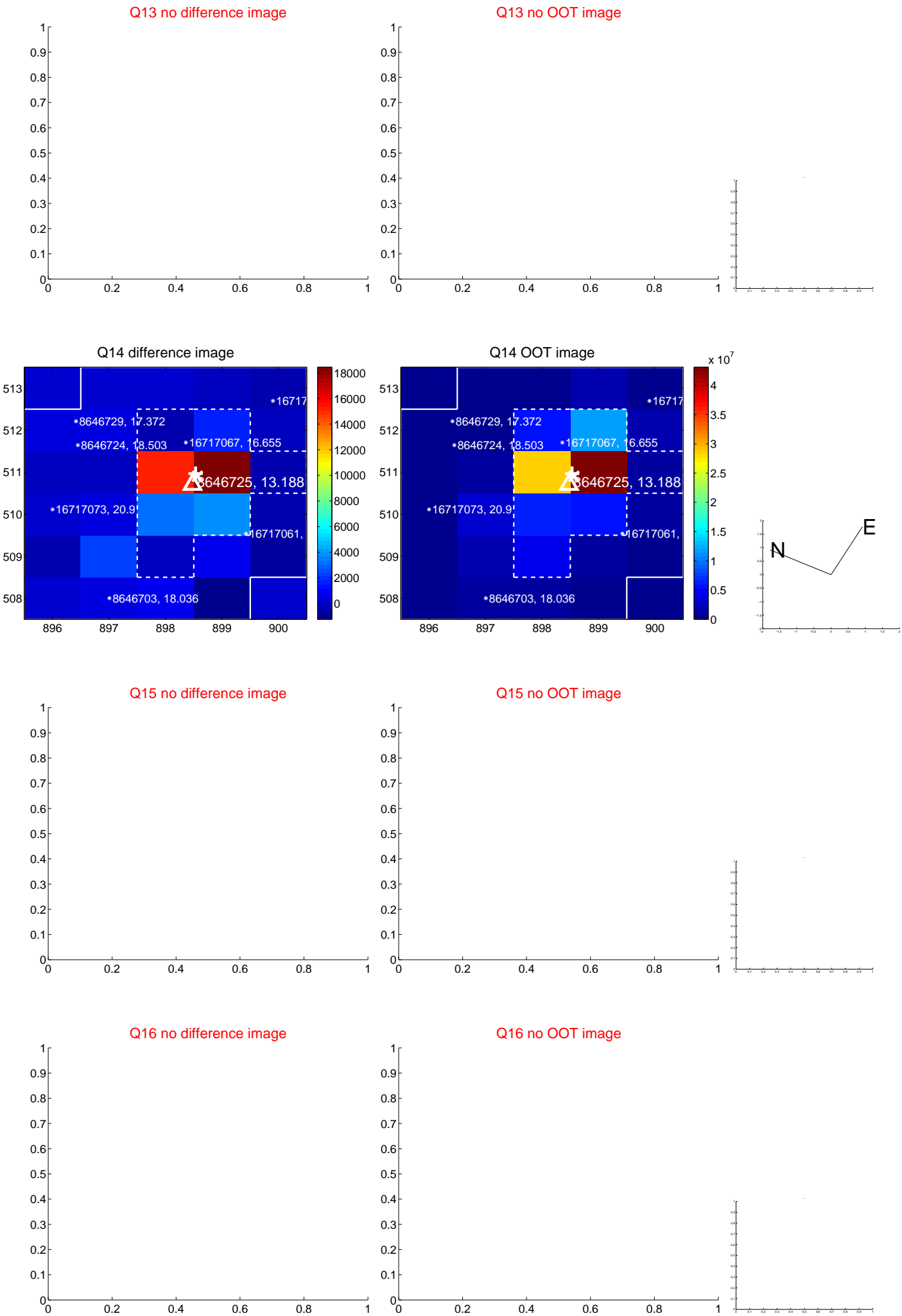
Q12 no difference image



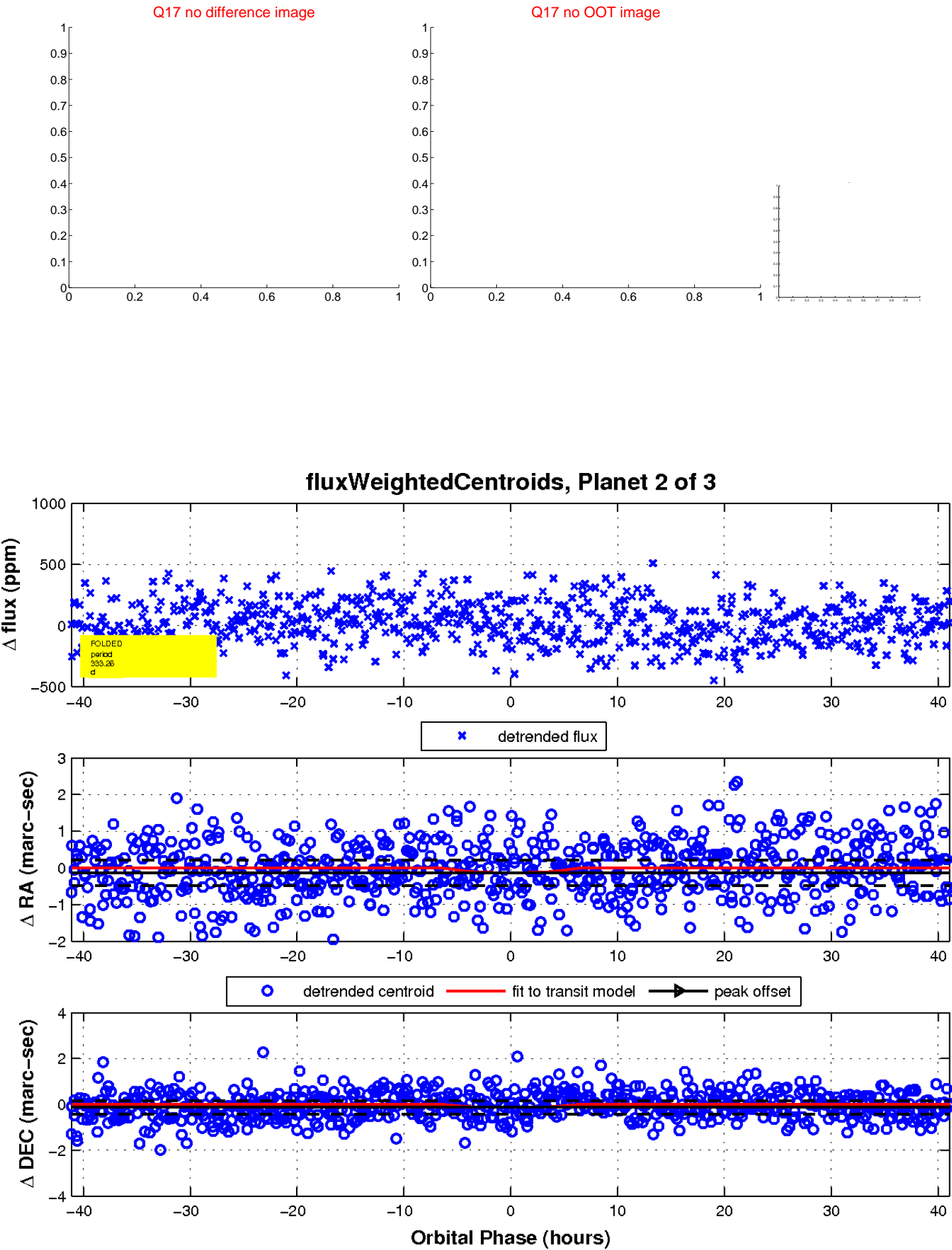
Q12 no OOT image



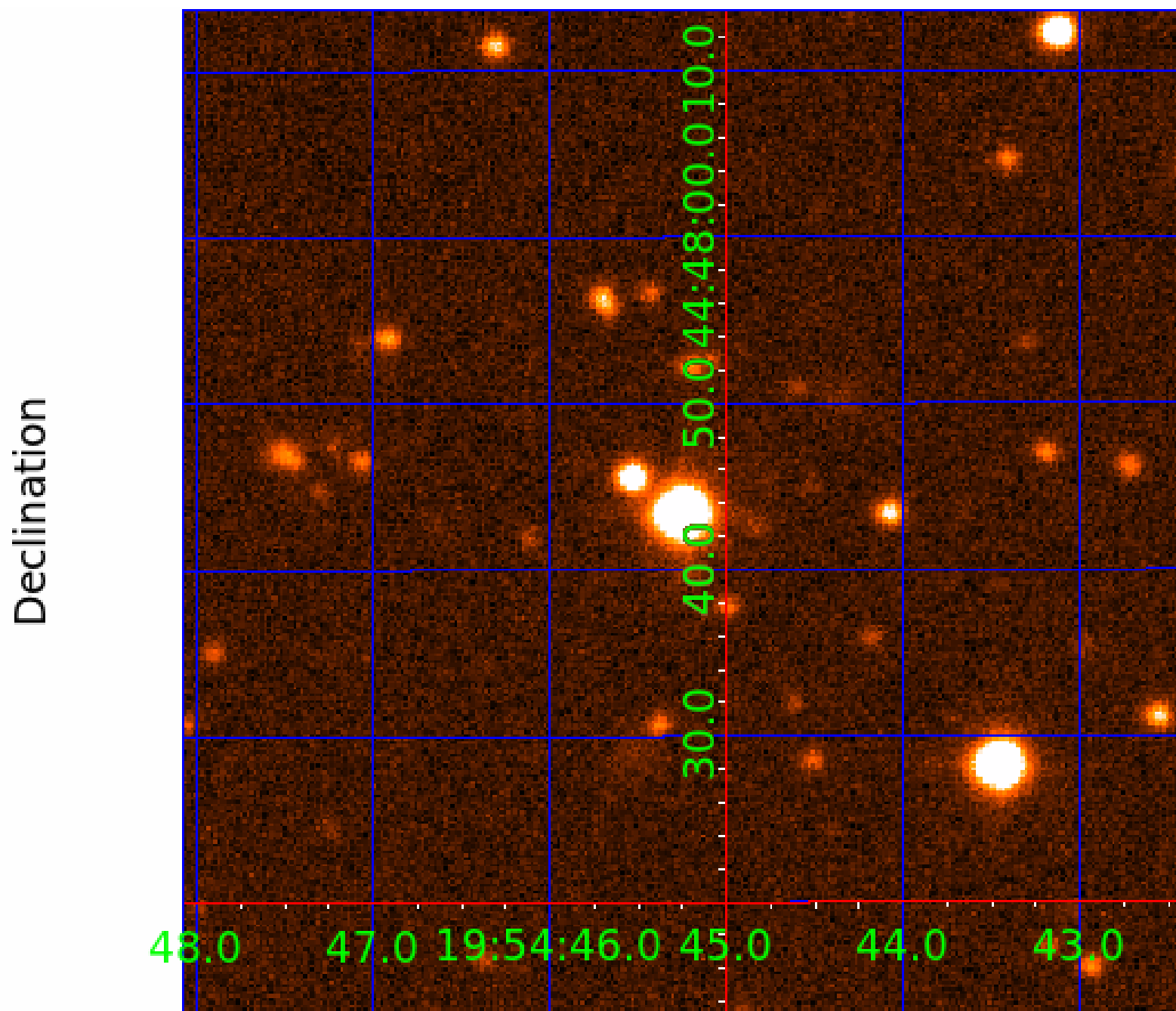
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008646725

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})
008646725-01	OBS	No	2.645933	133.829948	3.2	6.828	7.6	0.9	2.82	6220	0.72	6086.57
008646725-02	OBS	No	333.263522	340.838656	350.2	13.742	14.6	7.0	2.82	6220	6.81	9.64
008646725-03	OBS	No	2.647199	133.769772	58.0	4.560	8.3	9.1	2.82	6220	2.30	6082.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008646725-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
008646725-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008646725-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV

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

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

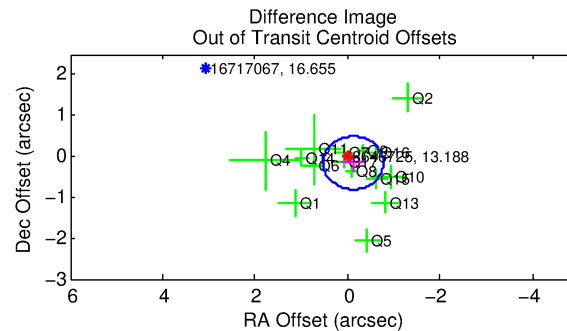
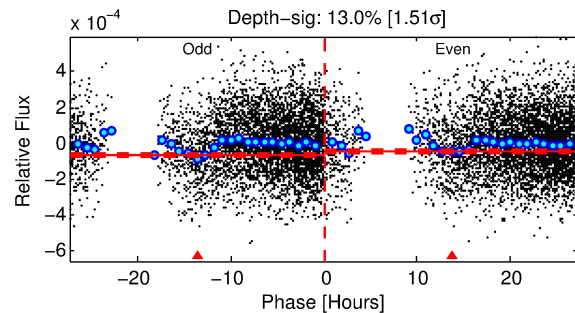
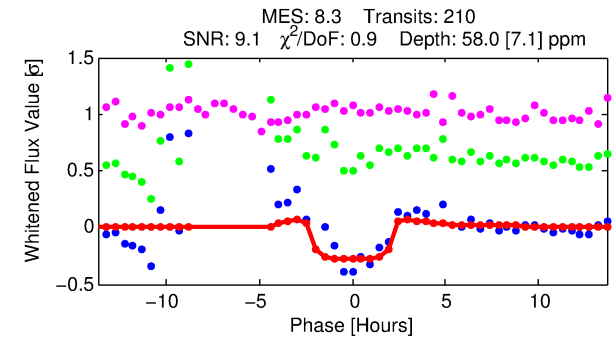
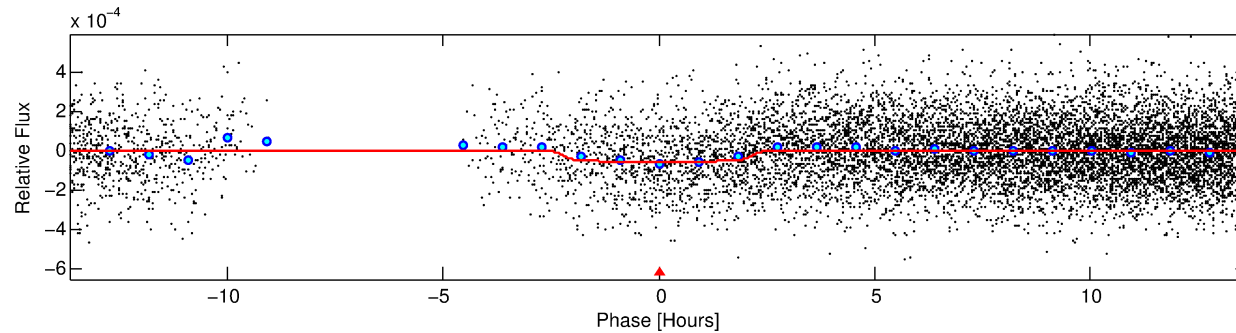
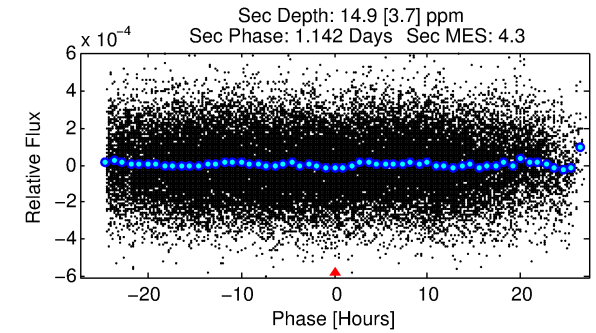
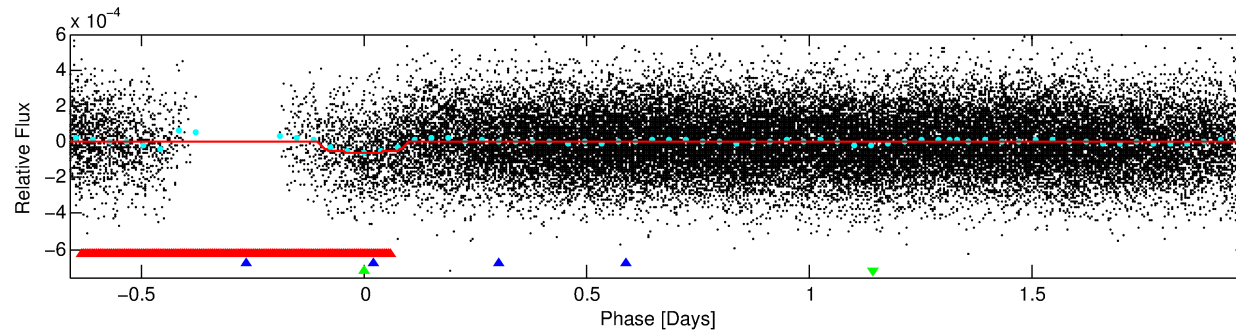
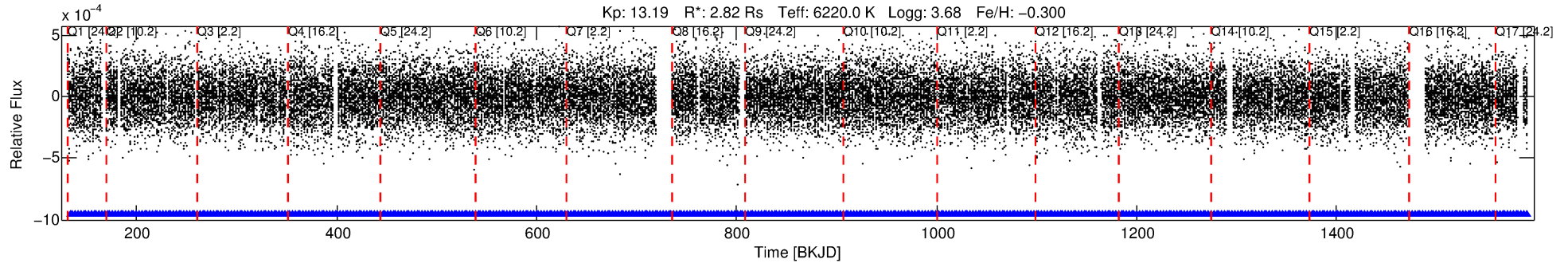
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008646725-03

No Significant Match Found

DV One-Page Summary

KIC: 8646725 Candidate: 3 of 3 Period: 2.647 d



DV Fit Results:

Period = 2.64720 [0.00002] d
Epoch = 133.7698 [0.0055] BKJD
Rp/R* = 0.0075 [0.0033]
a/R* = 3.26 [6.83]
b = 0.71 [1.60]
Seff = 6082.69 [3409.31]
Teq = 2252 [316] K
Rp = 2.30 [1.34] Re
a = 0.0418 [0.0147] AU
Ag = 2.71 [2.88] [0.59σ]
Teffp = 4466 [1029] K [2.06σ]

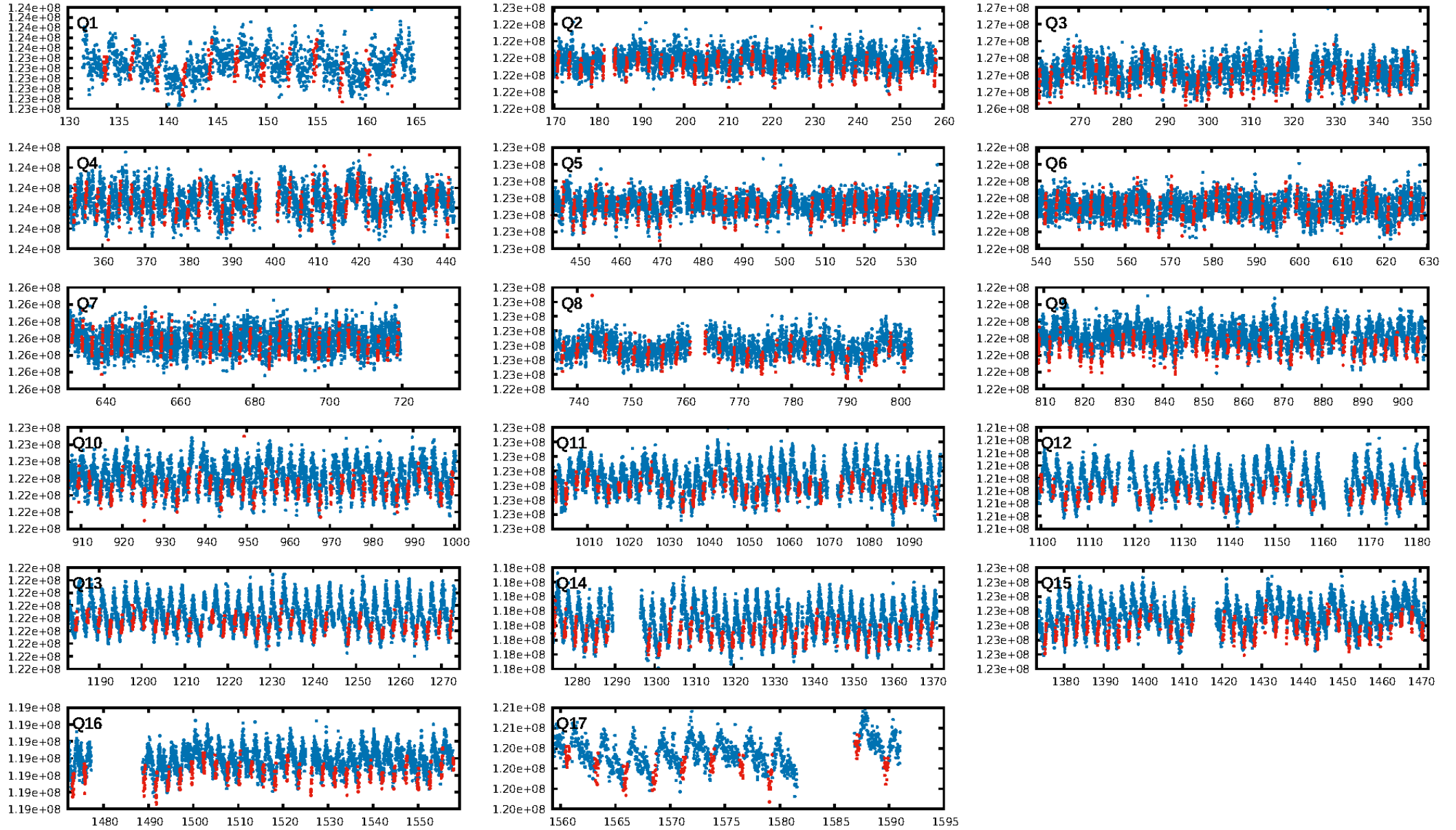
DV Diagnostic Results:

ShortPeriod-sig: 0.3% [0.00σ]
LongPeriod-sig: 100.0% [548.04σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.58e-13
RollingBand-fgt: 1.00 [200/200]
GhostDiagnostic-chr: 1.042
Centroid-sig: 89.0%
Centroid-so: 0.261 arcsec [0.46σ]
OotOffset-rm: 0.194 arcsec [0.90σ]
KicOffset-rm: 0.053 arcsec [0.23σ]
OotOffset-st: 4/3/3/5 [15]
KicOffset-st: 4/3/3/5 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 0.18 [3/17]

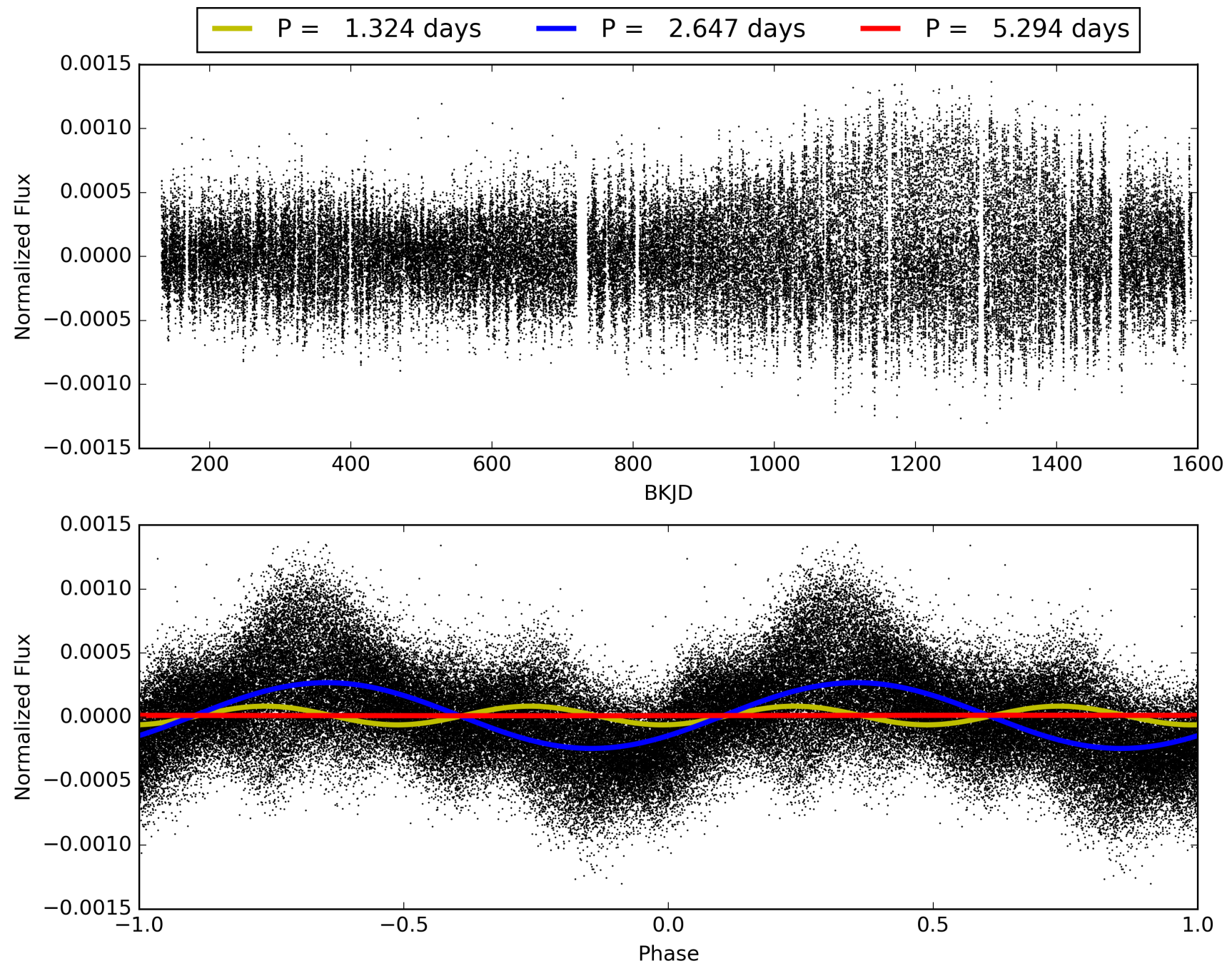
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:21:12 Z

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

TCE 008646725-03, PDC Light Curves

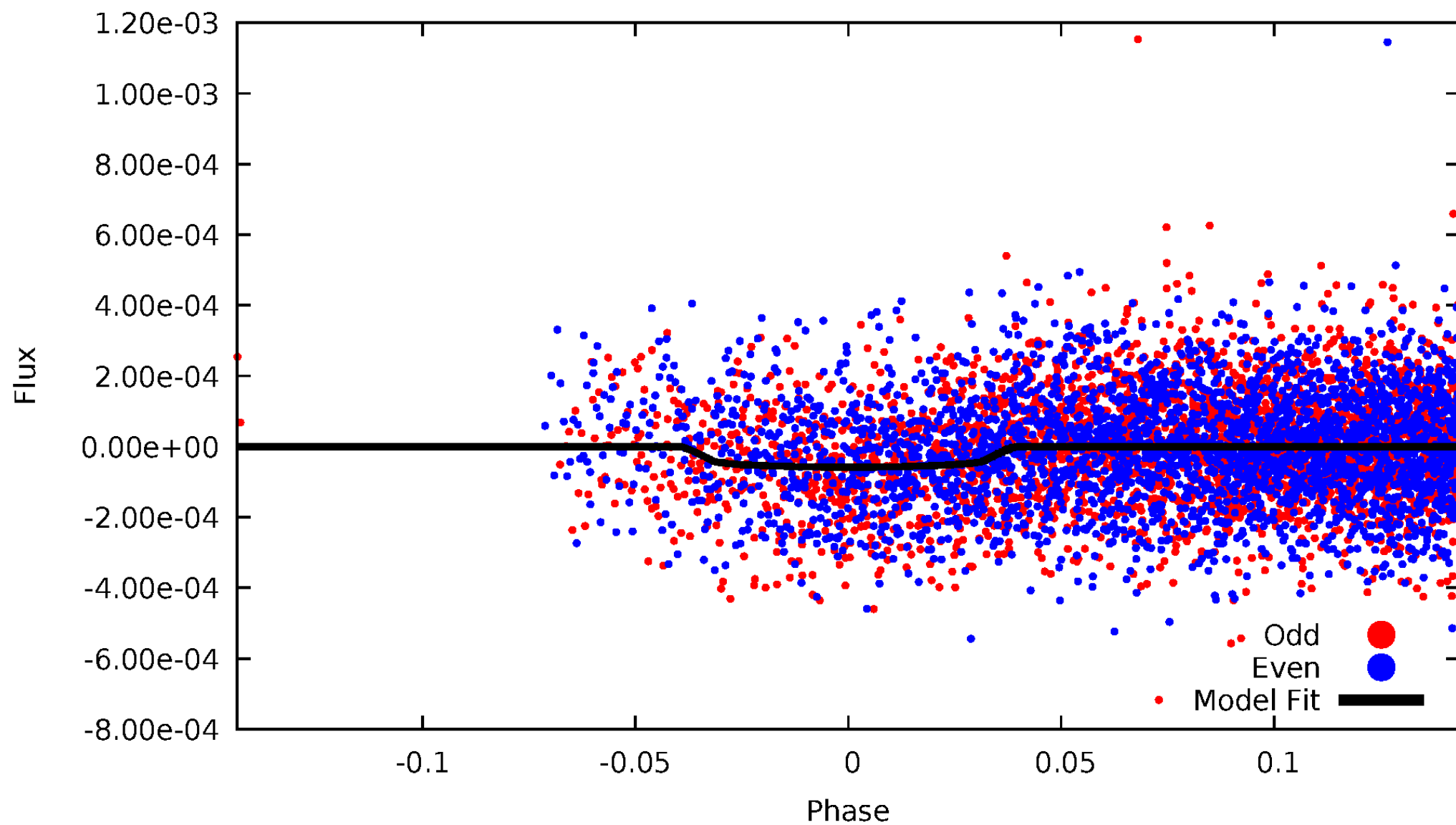


TCE 008646725-03



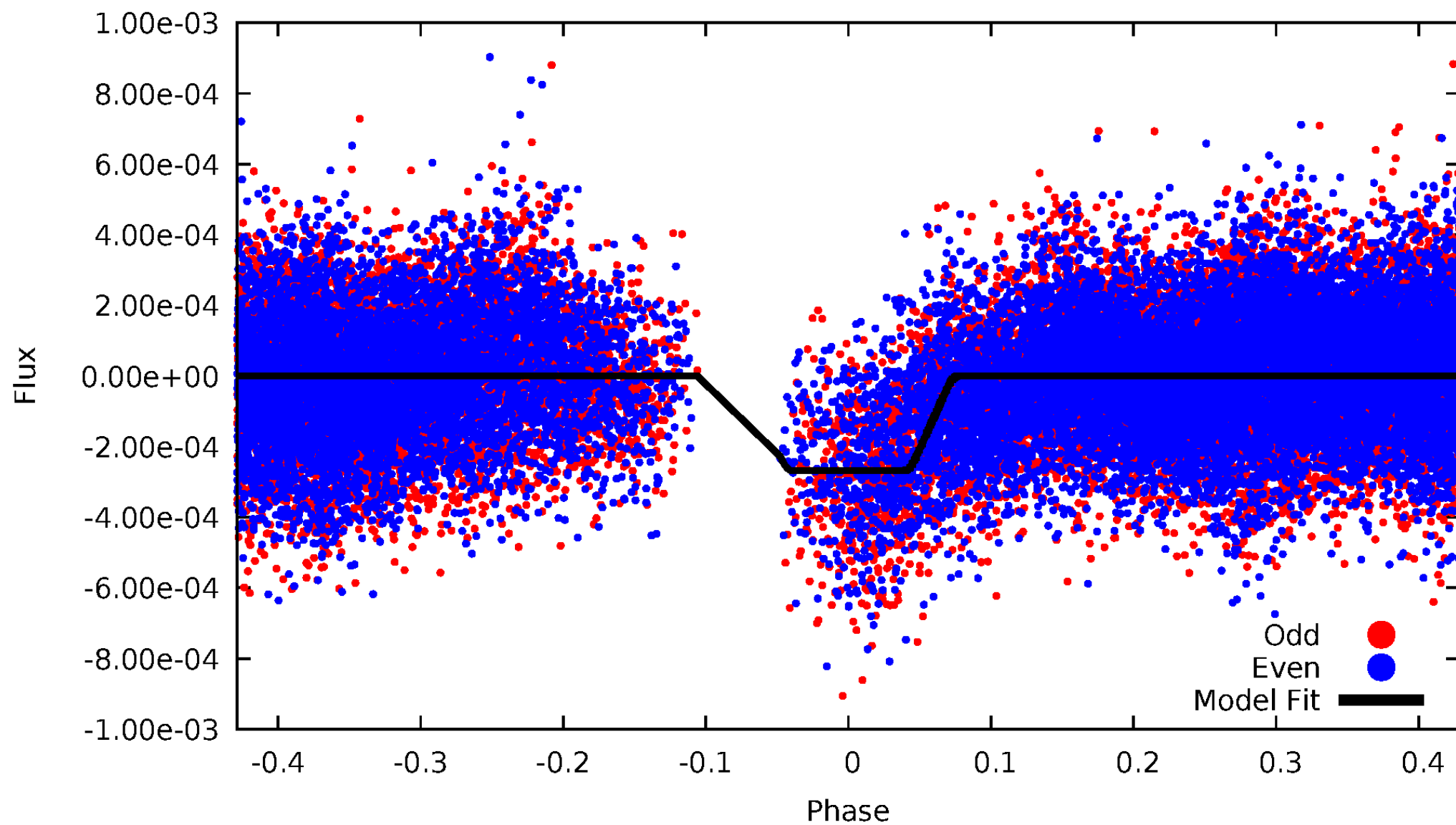
DV Odd/Even

TCE 008646725-03



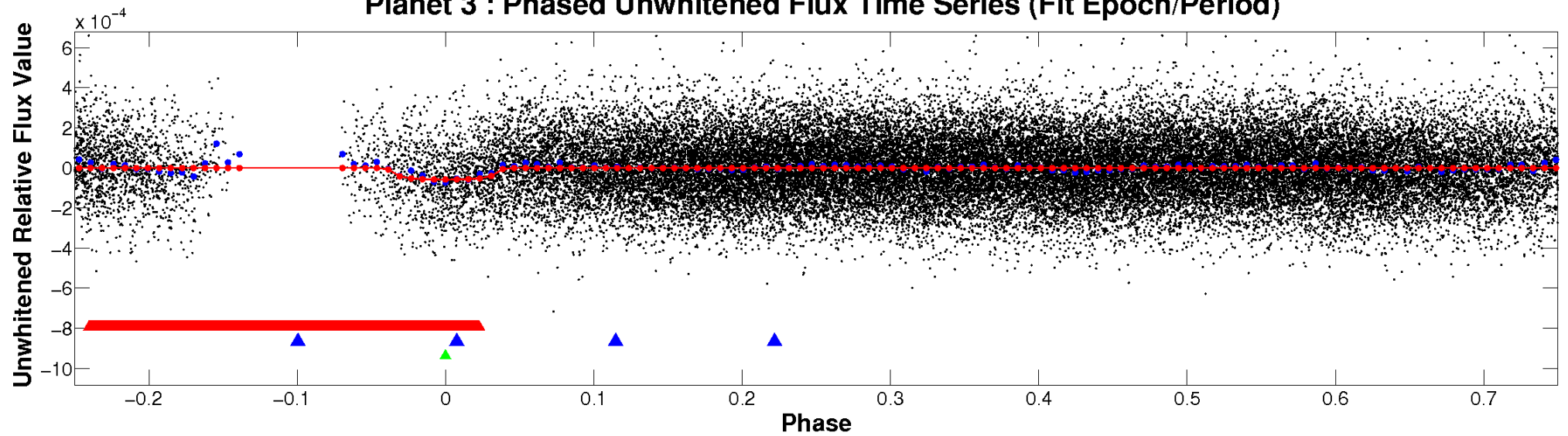
ALT Odd/Even

TCE 008646725-03

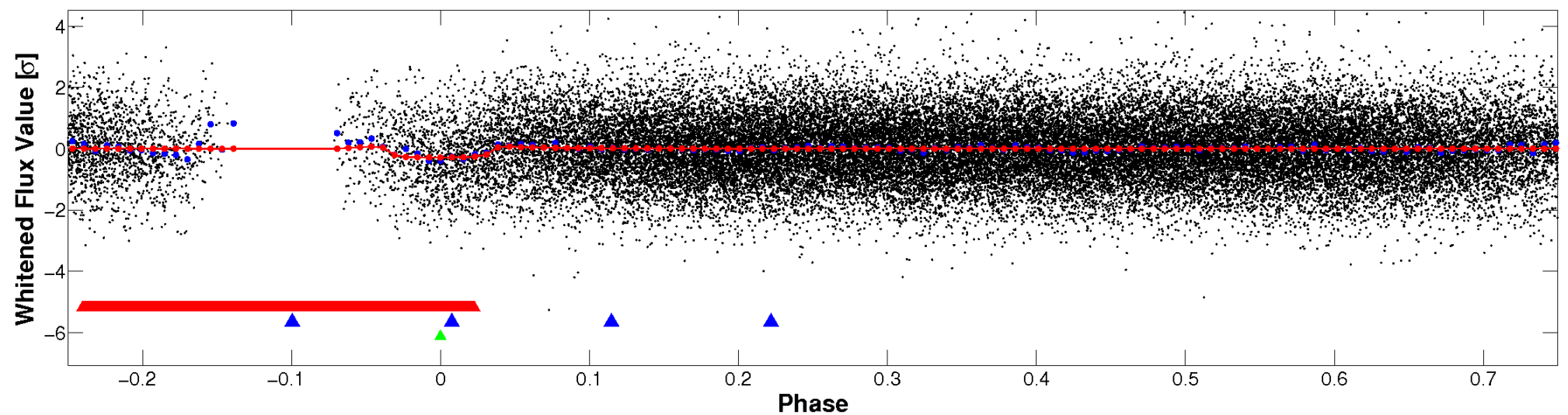


Non-Whitened Vs. Whitened Light Curve

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

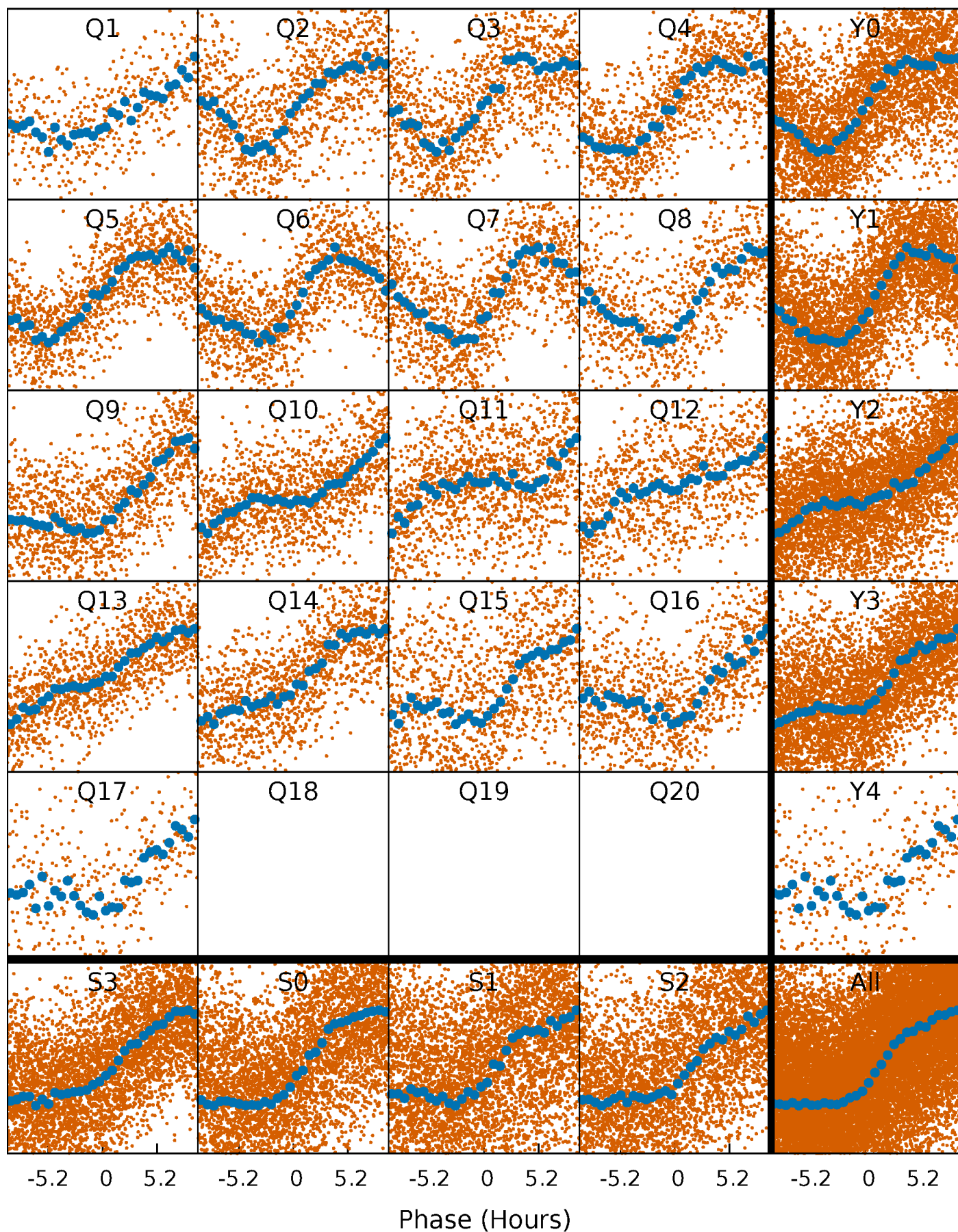


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



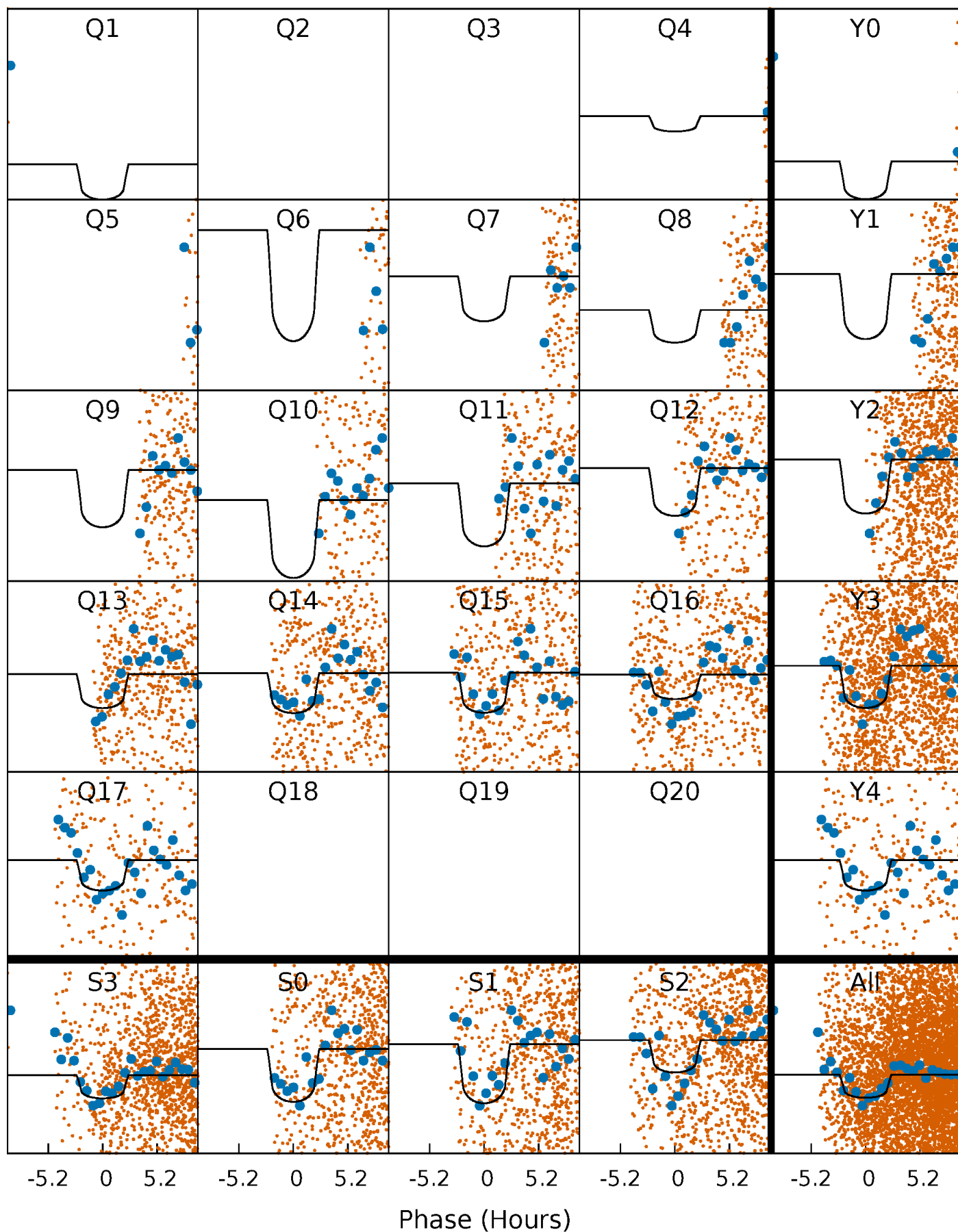
PDC Quarter-Phased Transit Curves

TCE 008646725-03 P= 2.647199 Days $T_0=133.769772$ (BKJD)



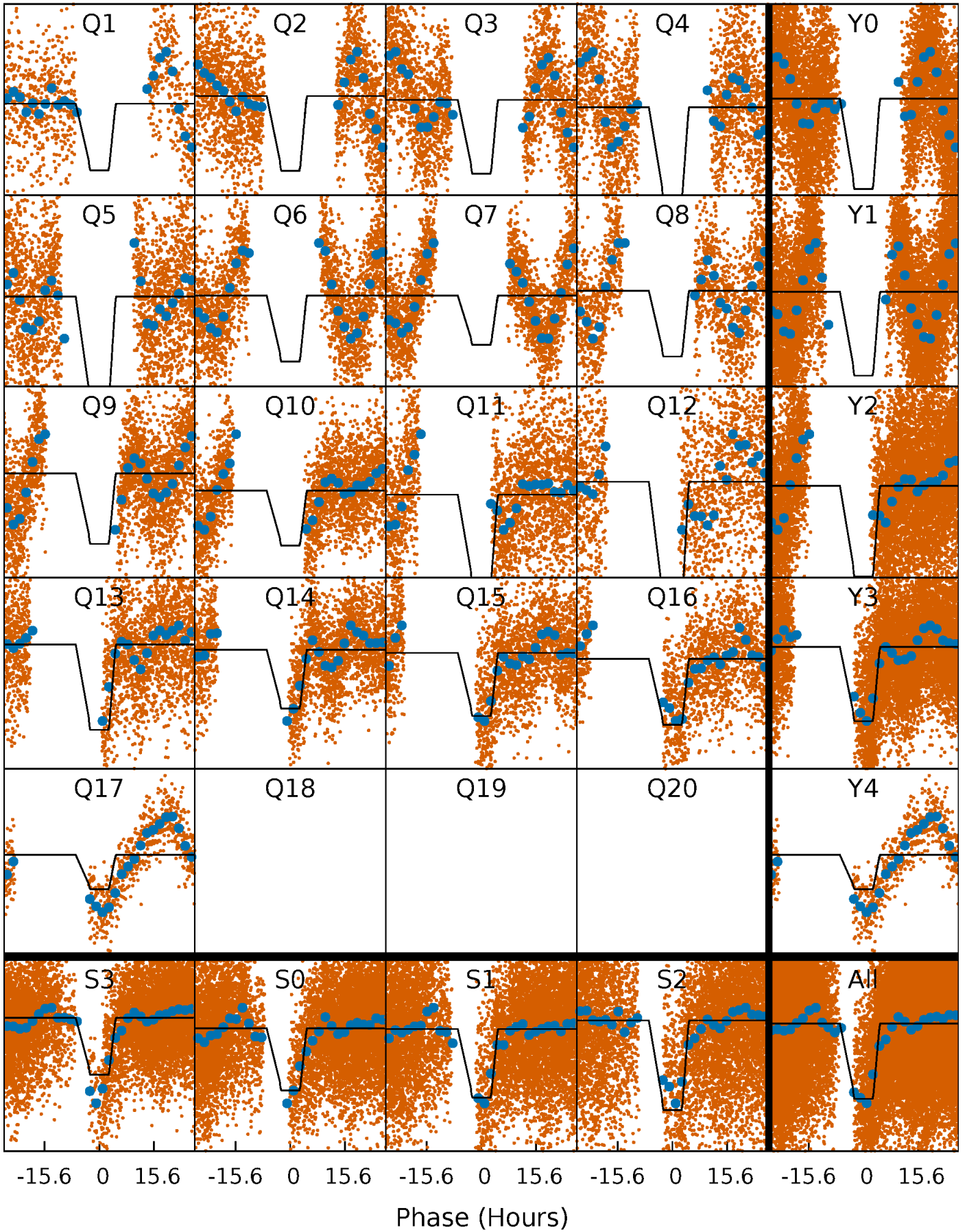
DV Quarter-Phased Transit Curves

TCE 008646725-03 P= 2.647199 Days $T_0=133.769772$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

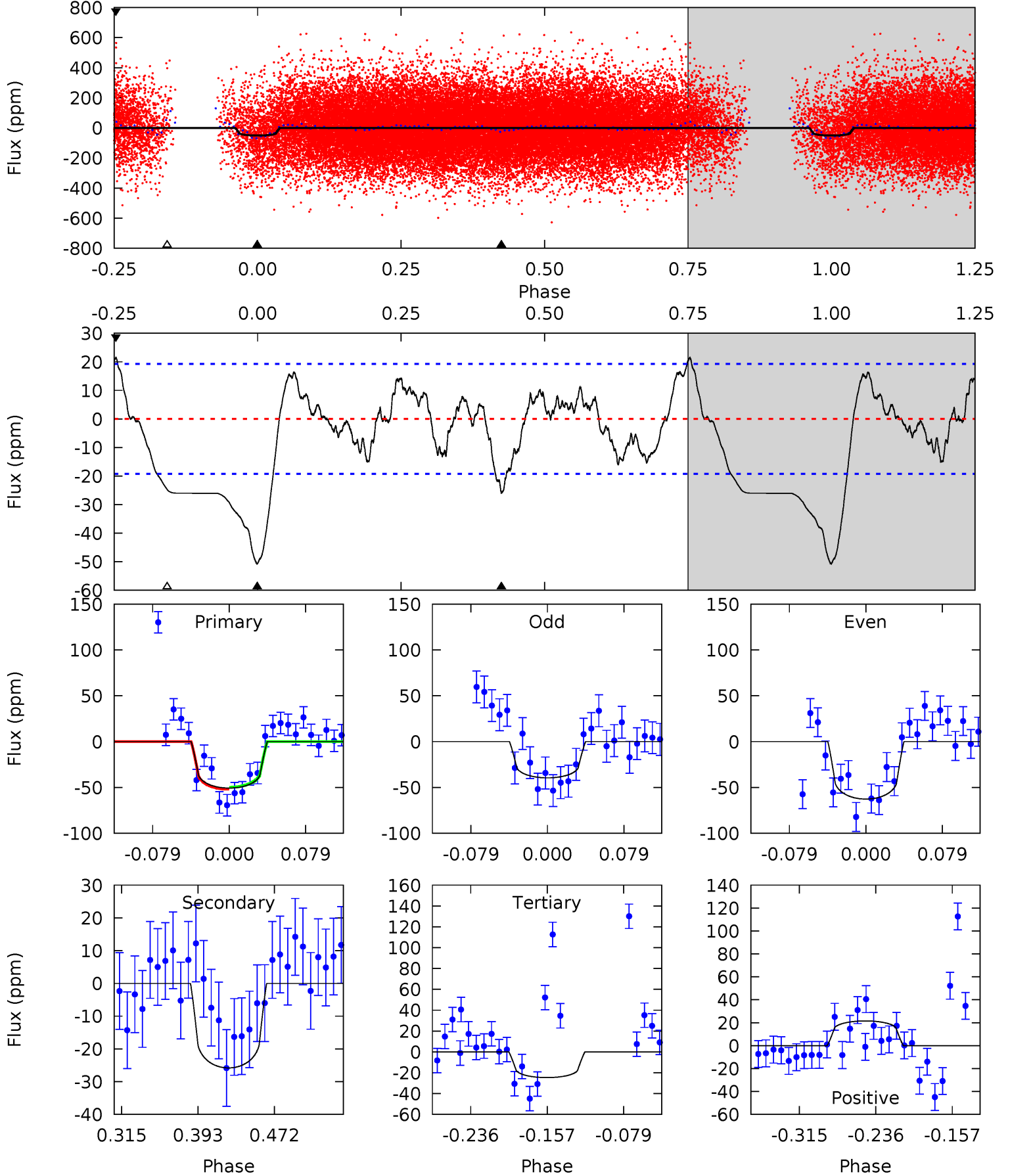
TCE 008646725-03 P= 2.647263 Days $T_0=133.672089$ (BKJD)



DV Model-Shift Uniqueness Test

008646725-03, P = 2.647199 Days, E = 131.122573 Days

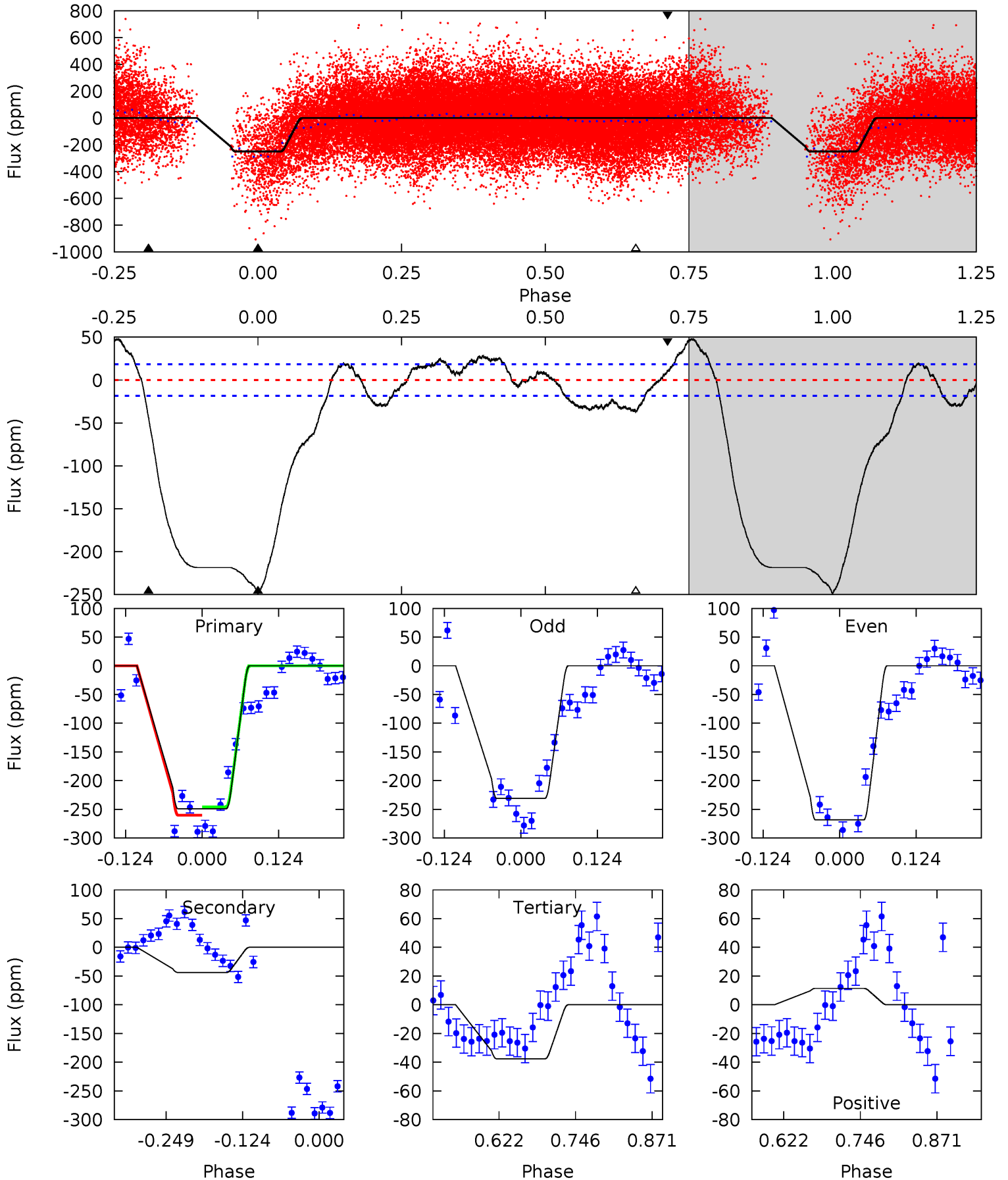
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	6.19	5.92	5.16	4.61	1.76	2.00	6.24	7.00	0.27	1.03	2.78	0.90	0.30	0.24



Alt Model-Shift Uniqueness Test

008646725-03, P = 2.647263 Days, E = 131.024826 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.5	10.8	9.30	2.82	4.52	1.54	5.12	52.2	58.7	1.54	8.02	4.62	1.14	0.16	1.29



Stellar Parameters For KIC 008646725

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6220^{+191}_{-191}	$3.682^{+0.315}_{-0.105}$	$-0.300^{+0.350}_{-0.300}$	$2.816^{+0.463}_{-1.079}$	$1.392^{+0.227}_{-0.340}$	$0.088^{+0.202}_{-0.029}$
	+3%/-3%	+9%/-3%	+117%/-100%	+16%/-38%	+16%/-24%	+230%/-33%
Source	PHO1	FLK73	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 008646725-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-26 ± 4	$2.16^{+1.07}_{-0.93}$	3099^{+202}_{-266}	5097^{+1580}_{-764}	$5.234^{+11.080}_{-2.925}$
Alt.	-44 ± 4	$4.75^{+1.42}_{-1.20}$	3098^{+200}_{-298}	4068^{+470}_{-332}	$1.864^{+1.422}_{-0.726}$

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

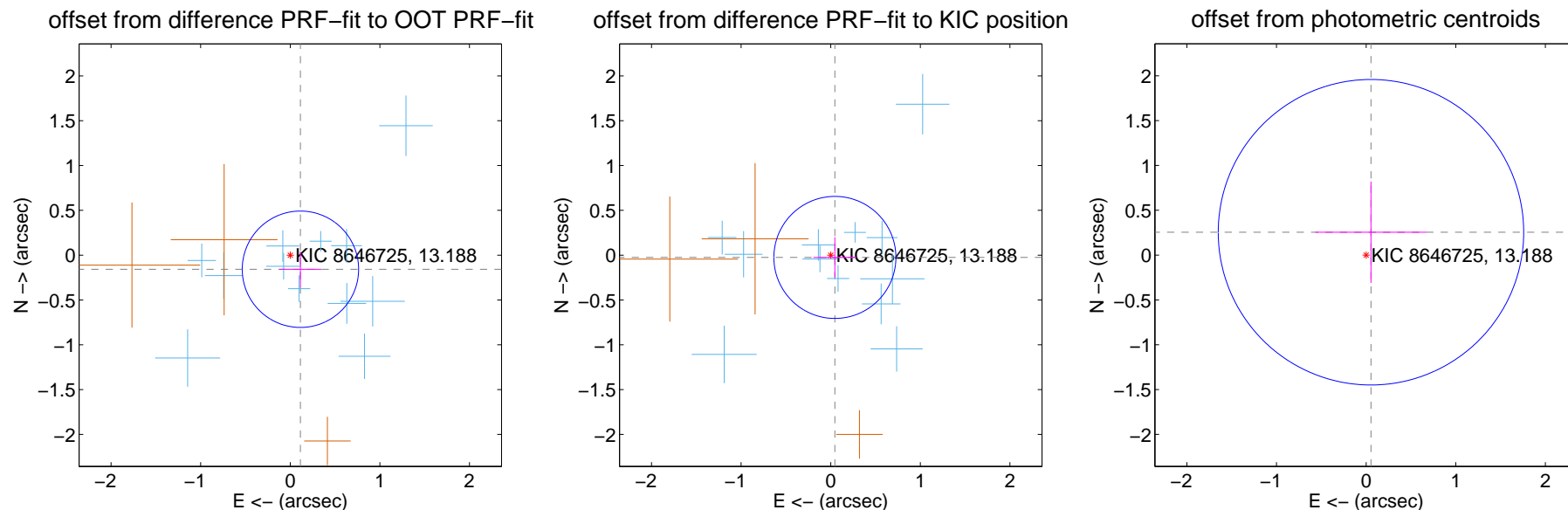
DV Centroid Data

Supplemental centroid analysis for 008646725-03. Kepler magnitude: 13.19. Transit SNR 9.06

There are 12 quarters with good PRF difference image offsets

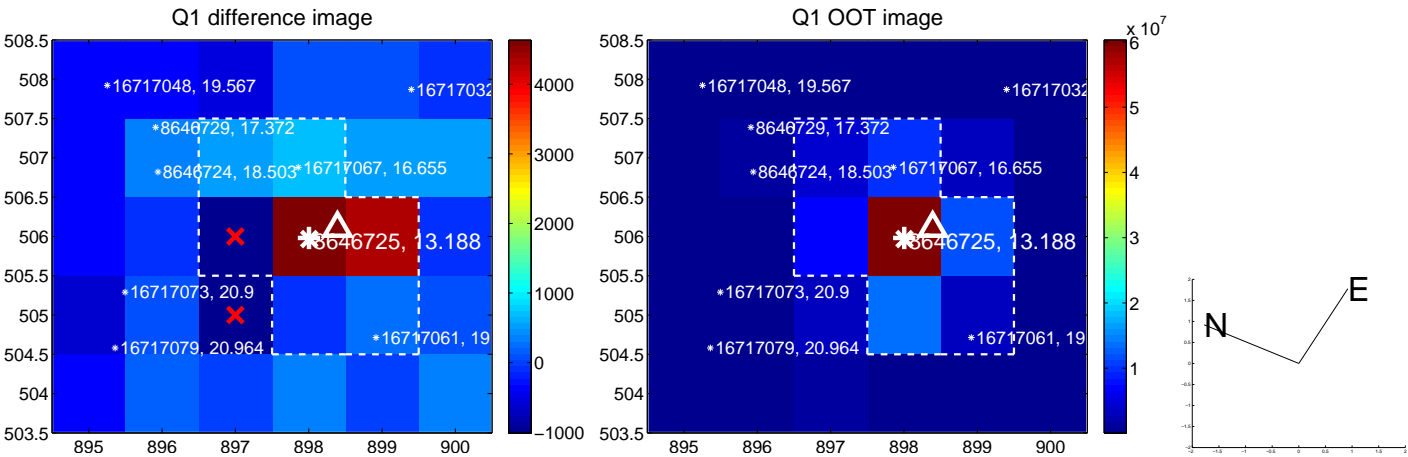
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.194 ± 0.216	0.90	-0.113 ± 0.234	-0.157 ± 0.198
PRF-fit source offset from KIC position	0.053 ± 0.227	0.23	-0.047 ± 0.240	-0.025 ± 0.225
photometric centroid source offset	0.26 ± 0.57	0.46	-0.05 ± 0.62	0.25 ± 0.57

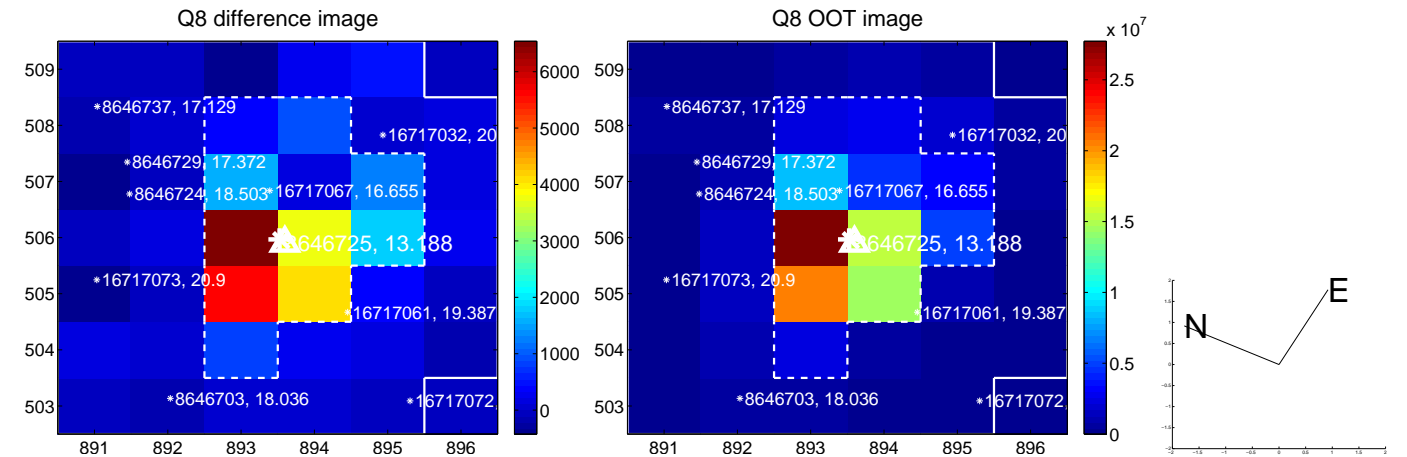
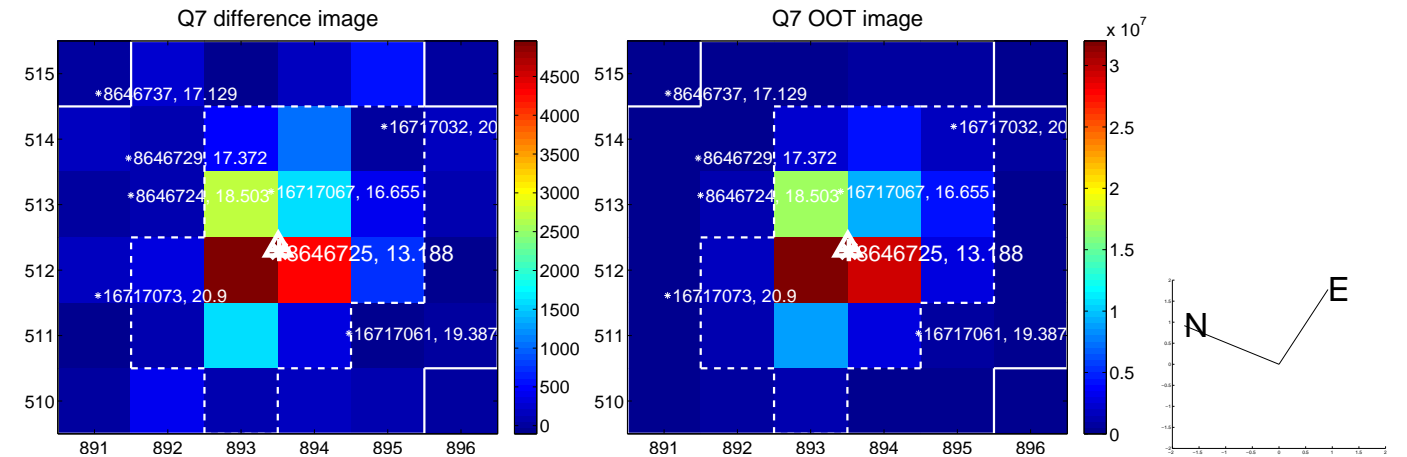
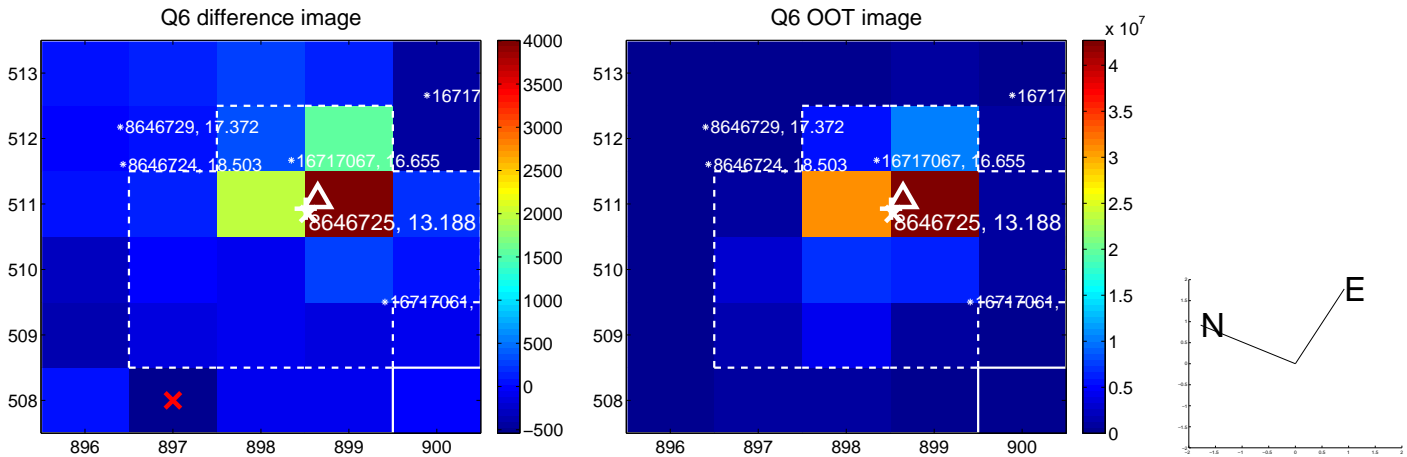
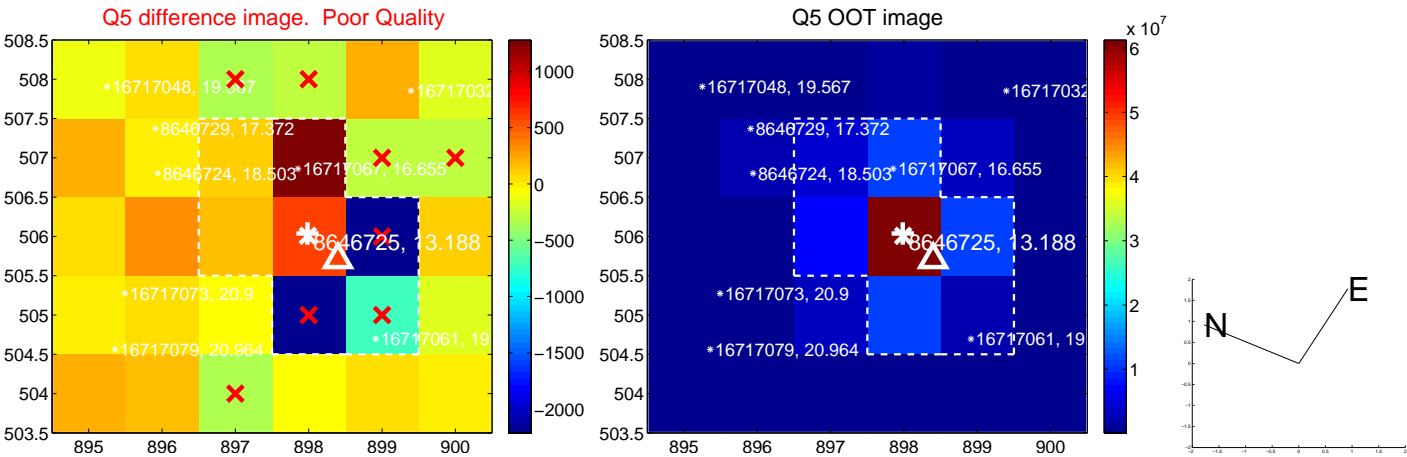


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

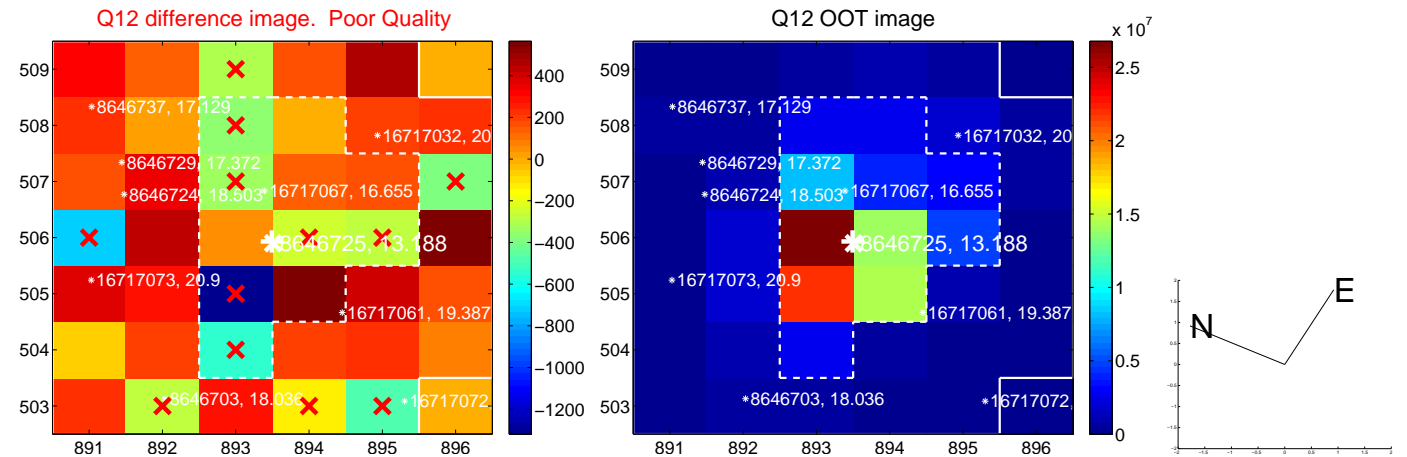
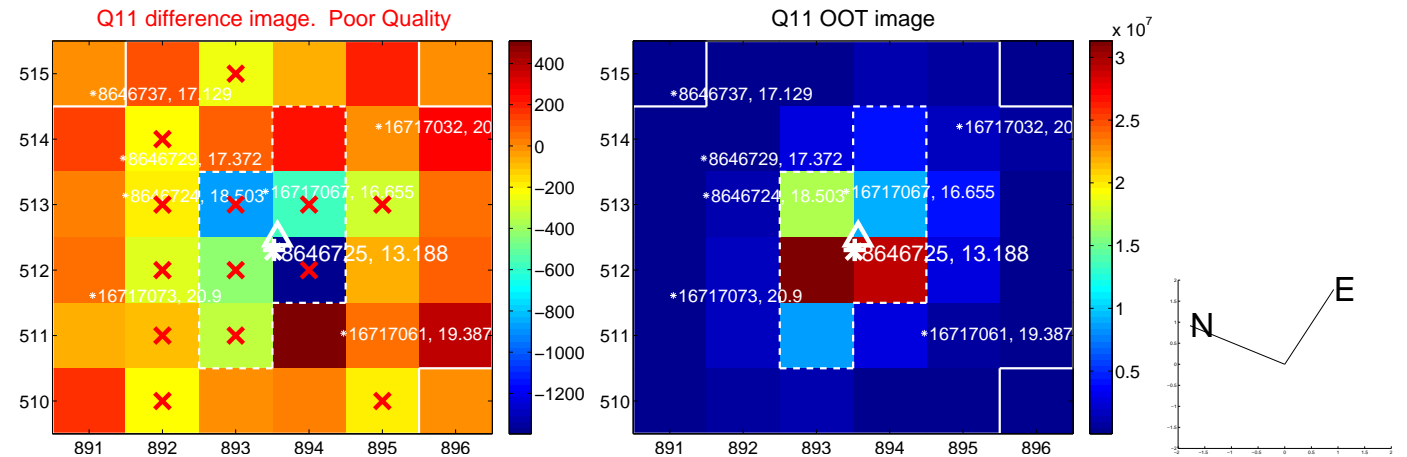
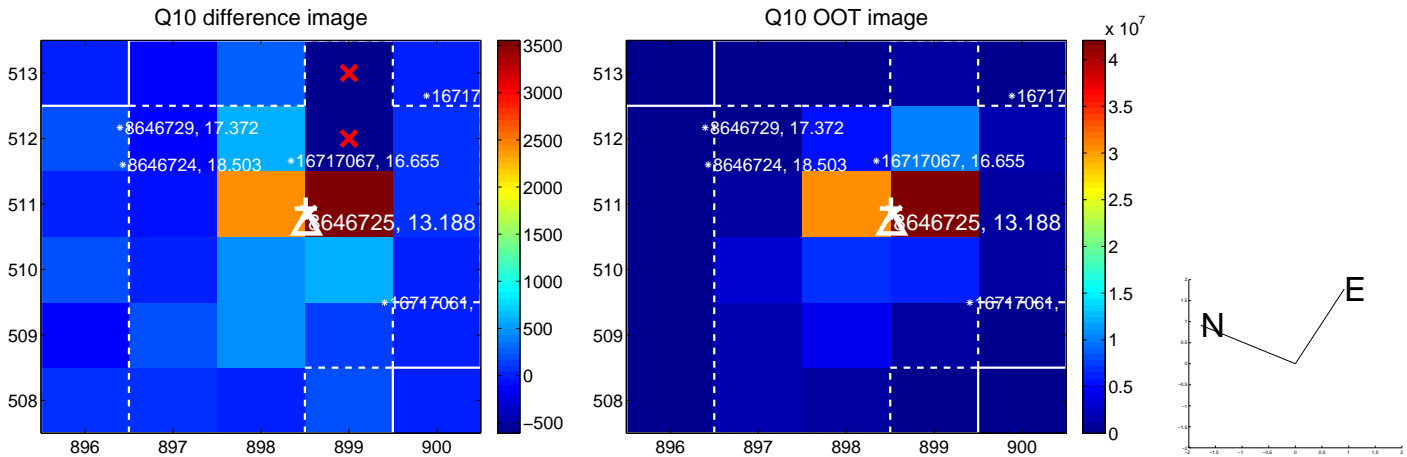
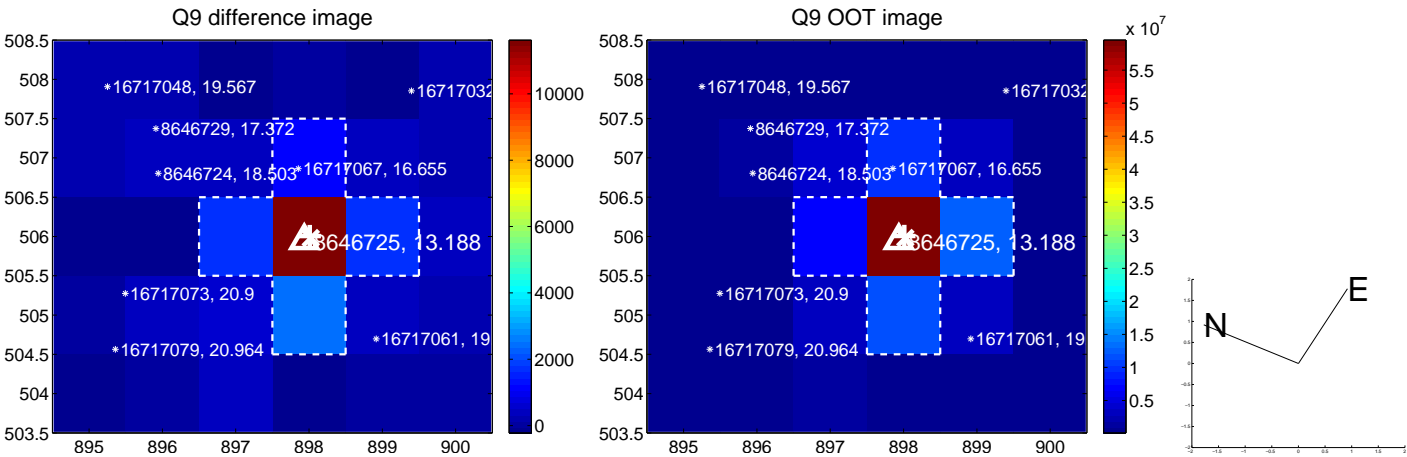
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



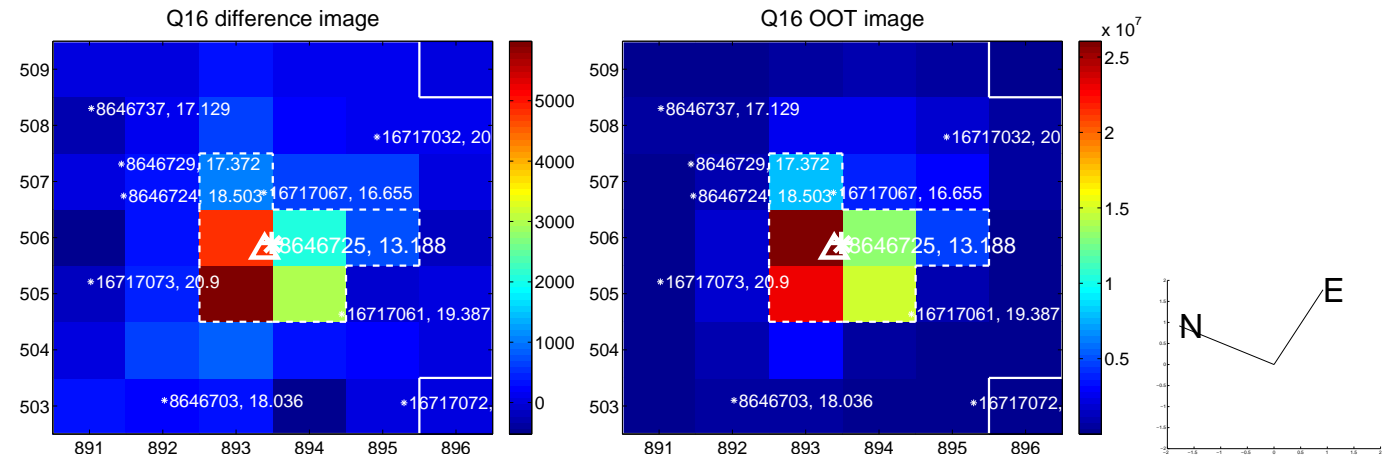
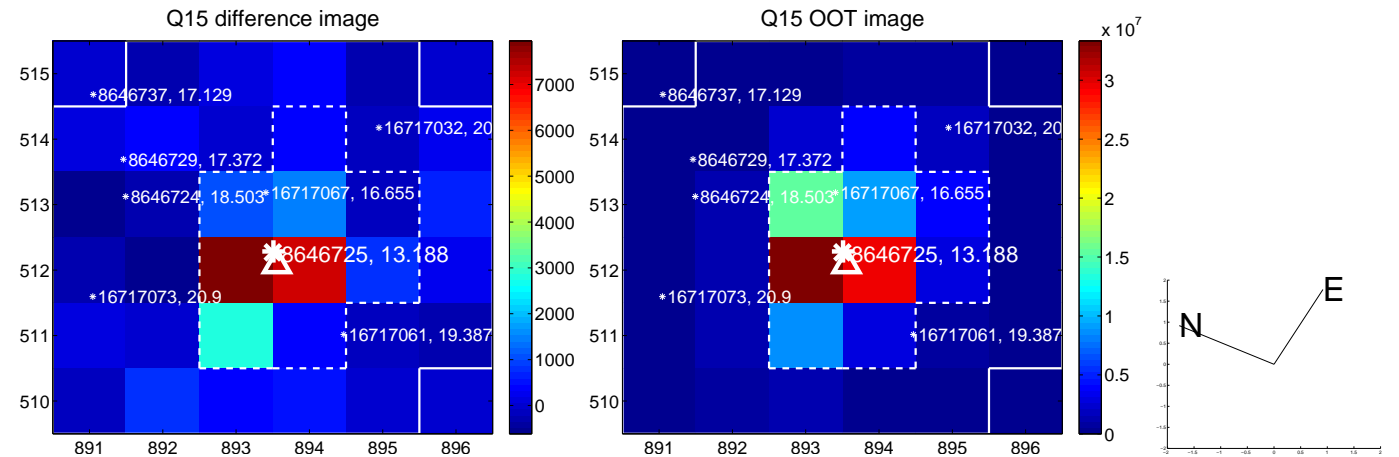
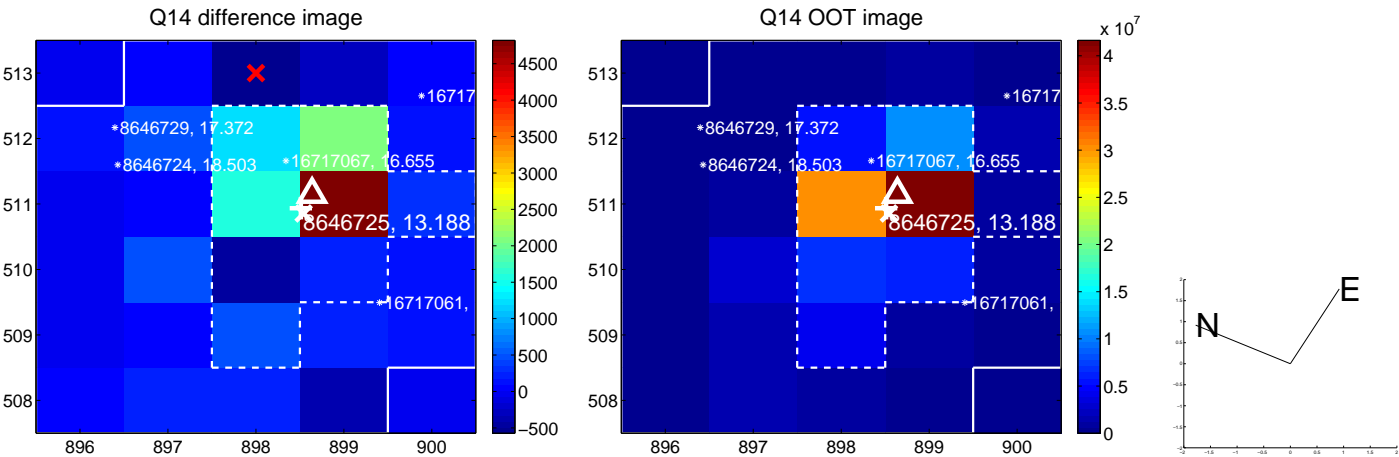
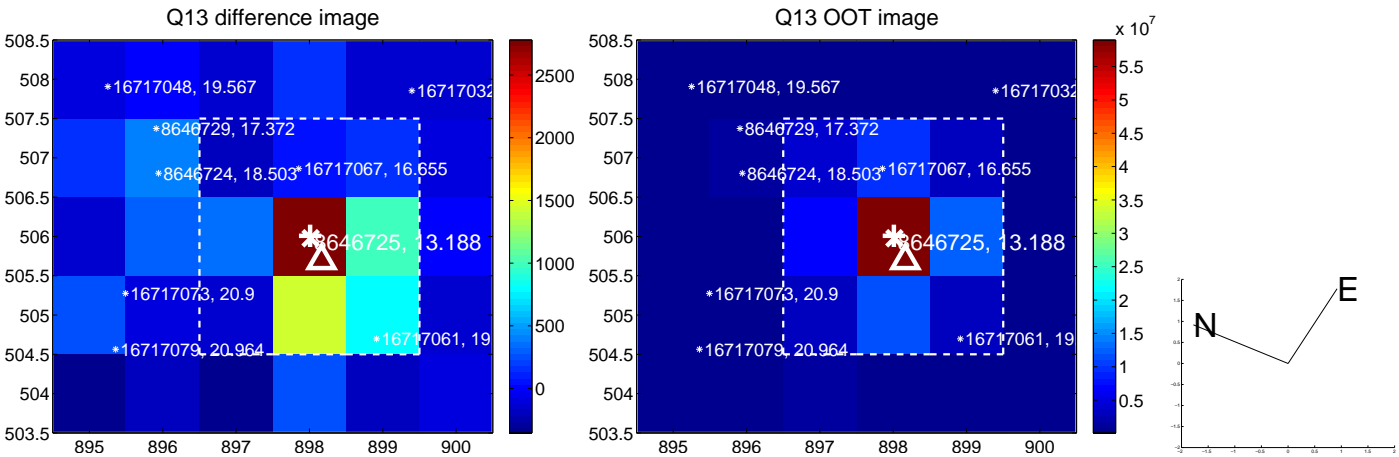
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



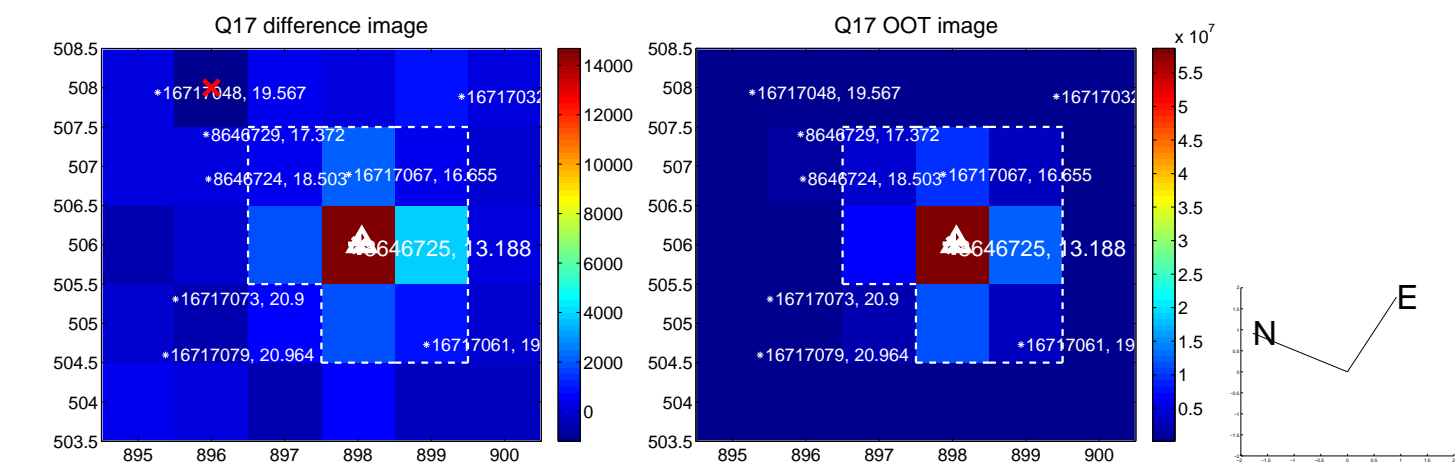
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



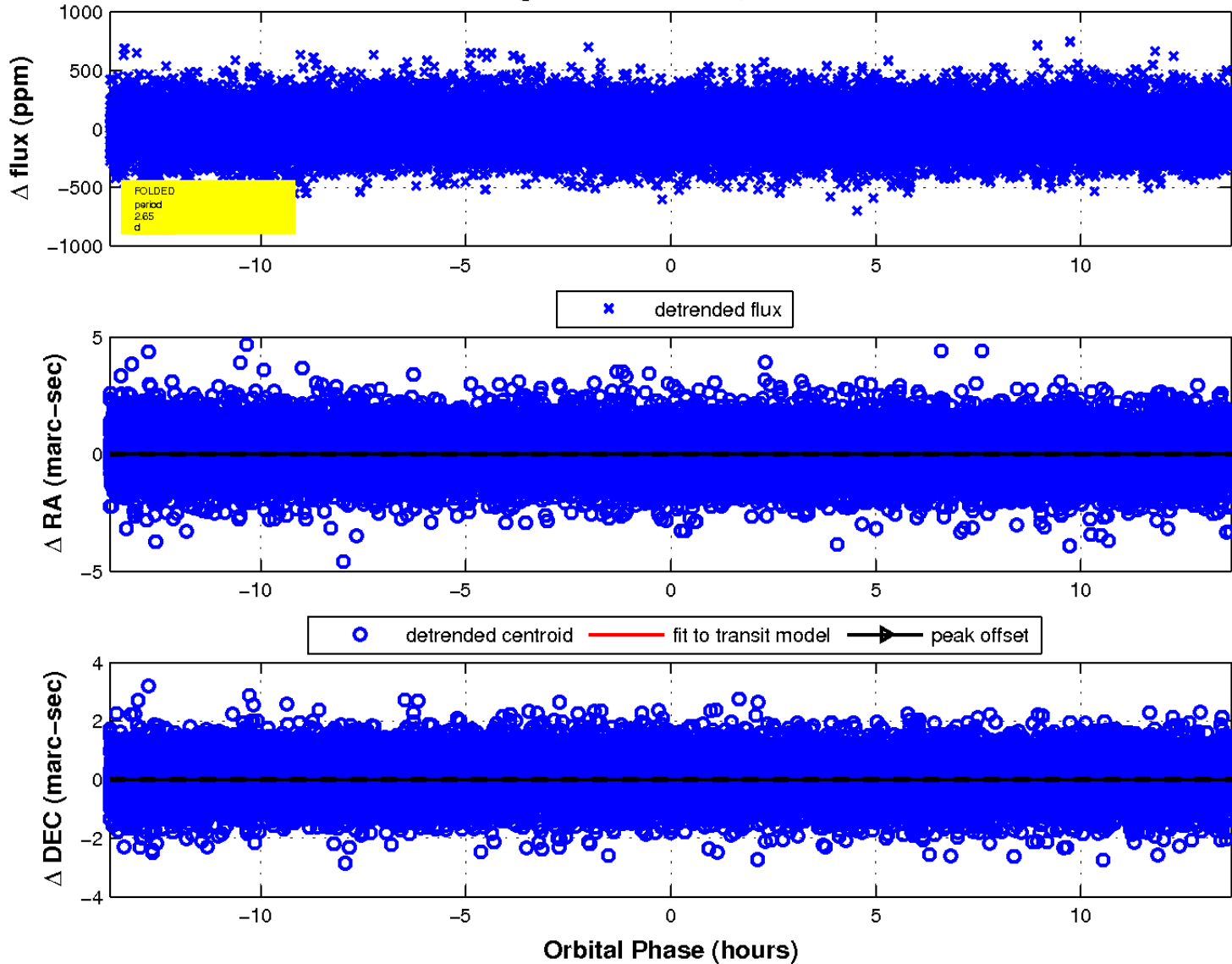
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

