

KIC 006865416

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})
006865416-01	OBS	No	536.884787	358.914406	1018.9	12.796	12.2	3.6	0.83	5435	2.67	0.39
006865416-02	OBS	No	335.894438	334.929591	1242.6	4.634	19.0	7.3	0.83	5435	3.04	0.73
006865416-03	OBS	No	535.551182	390.232311	1558.6	6.262	16.4	7.5	0.83	5435	3.23	0.39
006865416-04	OBS	No	545.651884	430.282318	893.2	3.547	12.4	6.0	0.83	5435	2.60	0.38
006865416-05	OBS	No	230.414322	269.634963	659.9	1.798	14.2	5.0	0.83	5435	2.30	1.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006865416-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006865416-03	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
006865416-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV

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

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

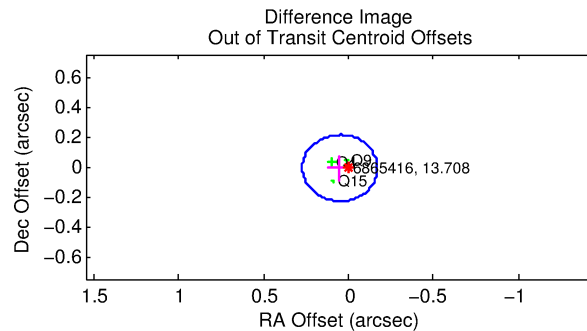
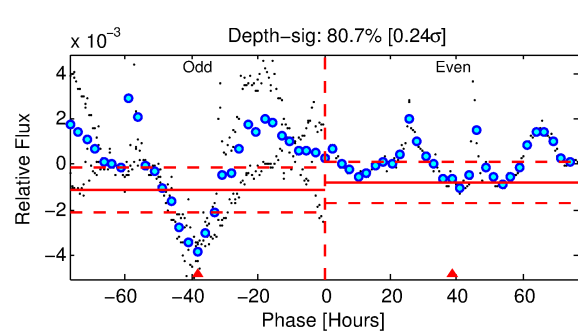
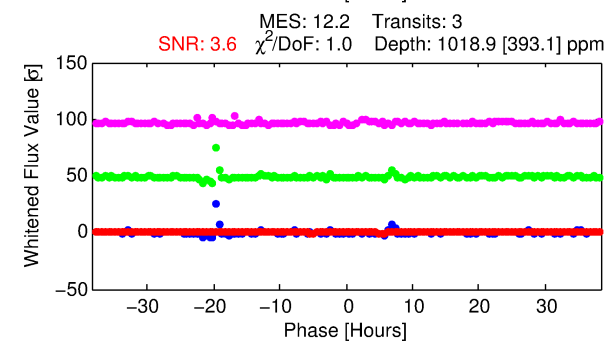
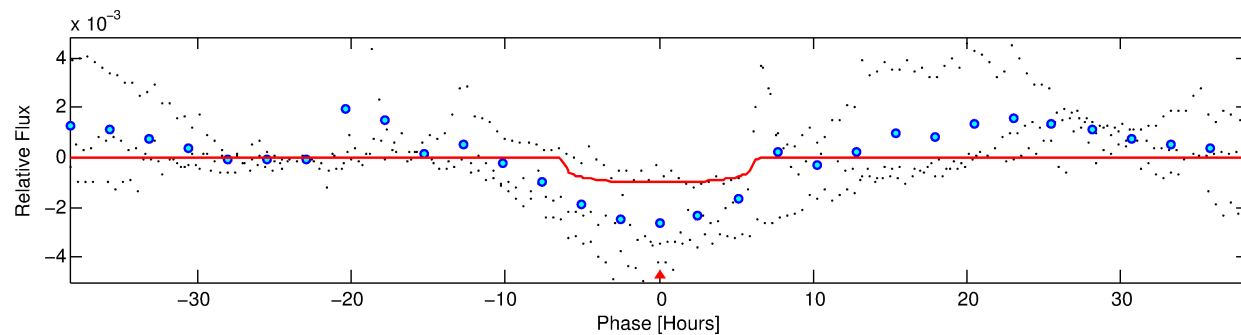
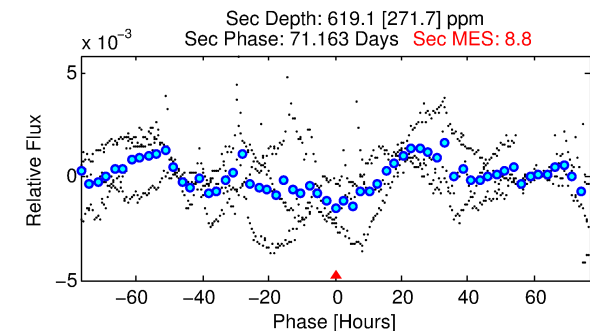
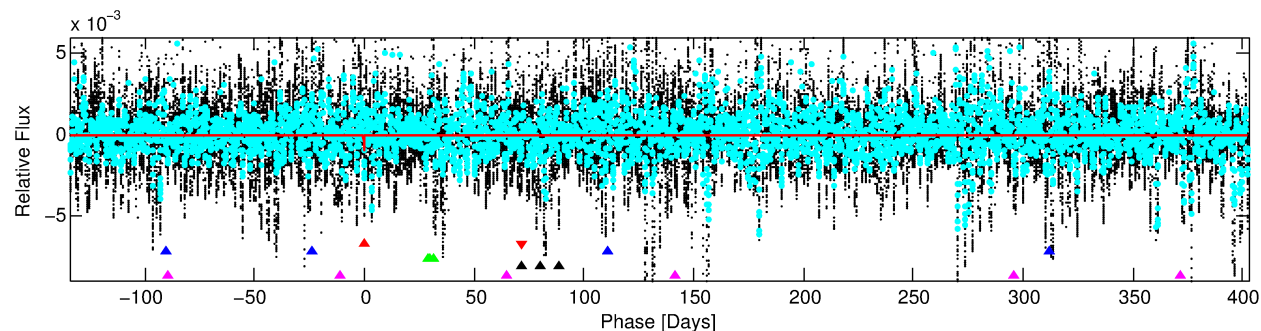
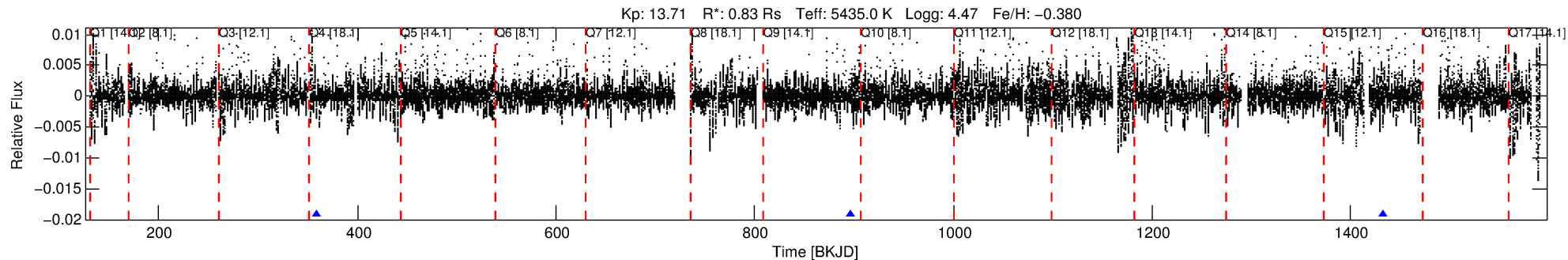
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006865416-01

No Significant Match Found

DV One-Page Summary

KIC: 6865416 Candidate: 1 of 5 Period: 536.885 d



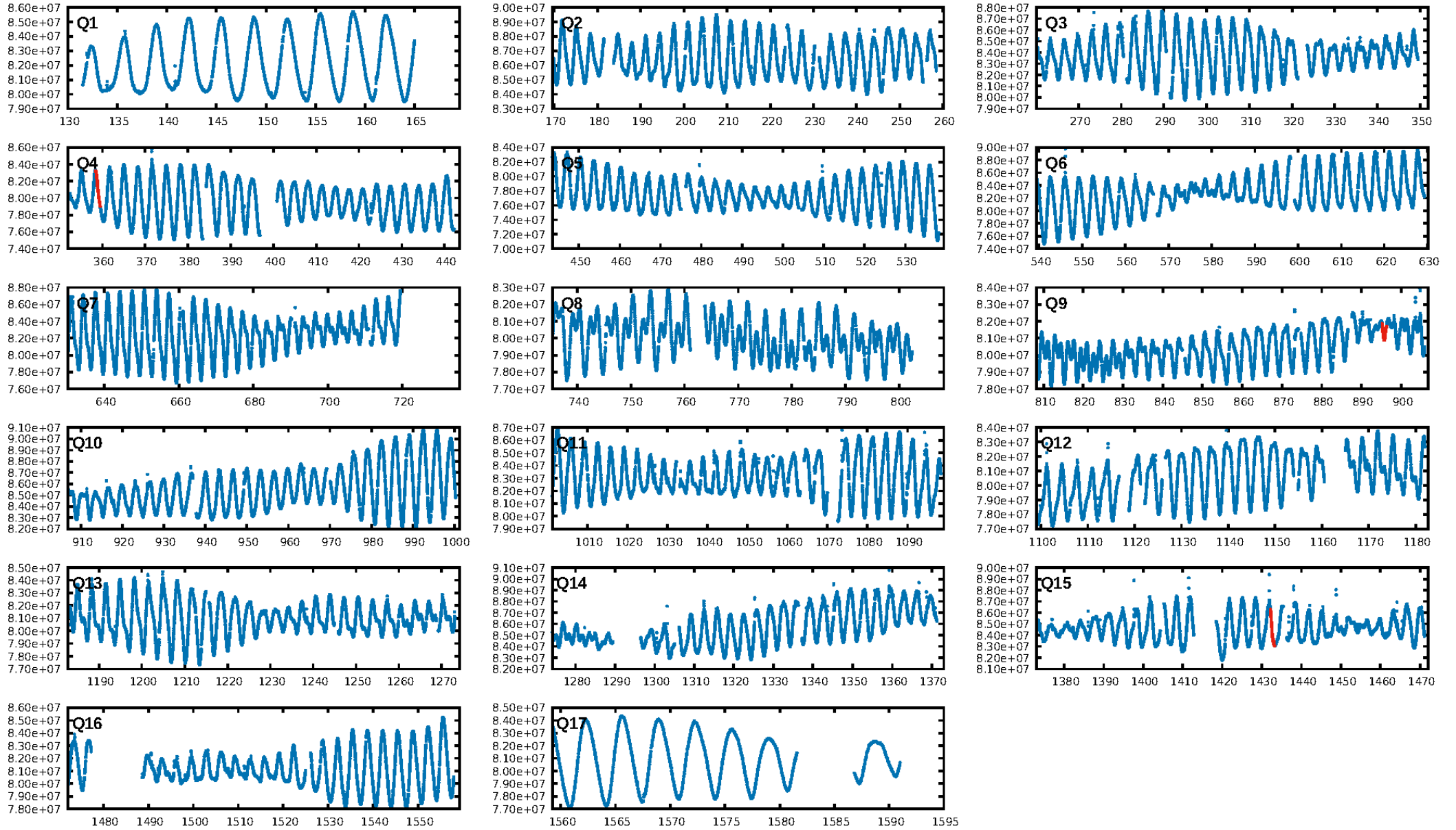
DV Fit Results:

Period = 536.88479 [0.01340] d
Epoch = 358.9144 [0.0145] BKJD
Rp/R* = 0.0296 [0.0135]
a/R* = 297.33 [453.40]
b = 0.45 [2.74]
Seff = 0.39 [0.10]
Teq = 202 [13] K
Rp = 2.67 [1.30] Re
a = 1.1721 [0.1706] AU
Ag = 65506.26 [67937.78] [0.96 σ]
Teffp = 4985 [1271] K [3.76 σ]

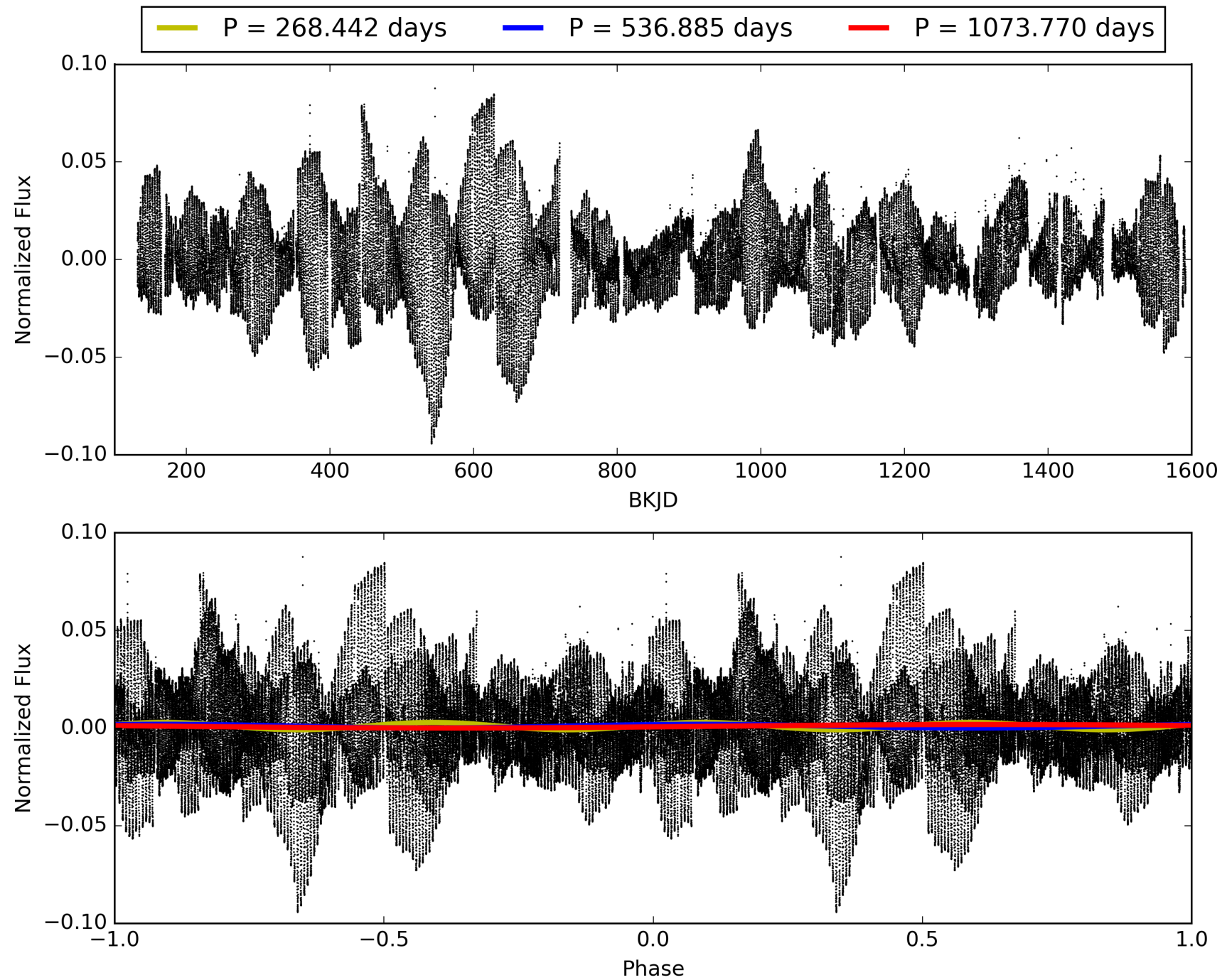
DV Diagnostic Results:

ShortPeriod-sig: 97.5% [2.25 σ]
LongPeriod-sig: 100.0% [15.85 σ]
ModelChiSquare2-sig: 50.7%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.2011
Centroid-sig: 1.5%
Centroid-so: 0.896 arcsec [1.57 σ]
OotOffset-rm: 0.053 arcsec [0.71 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.127 arcsec [1.78 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 006865416-01, PDC Light Curves

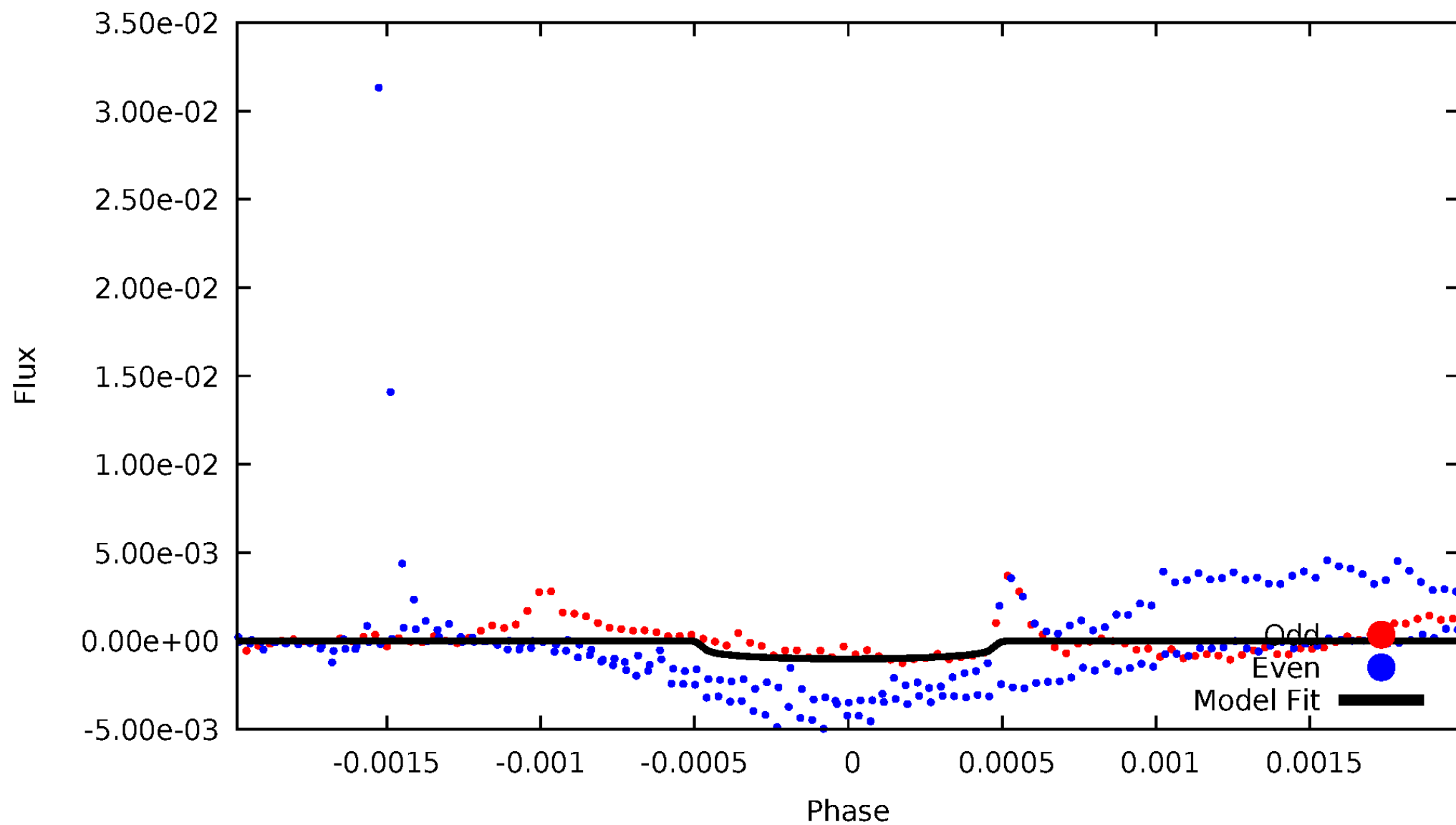


TCE 006865416-01



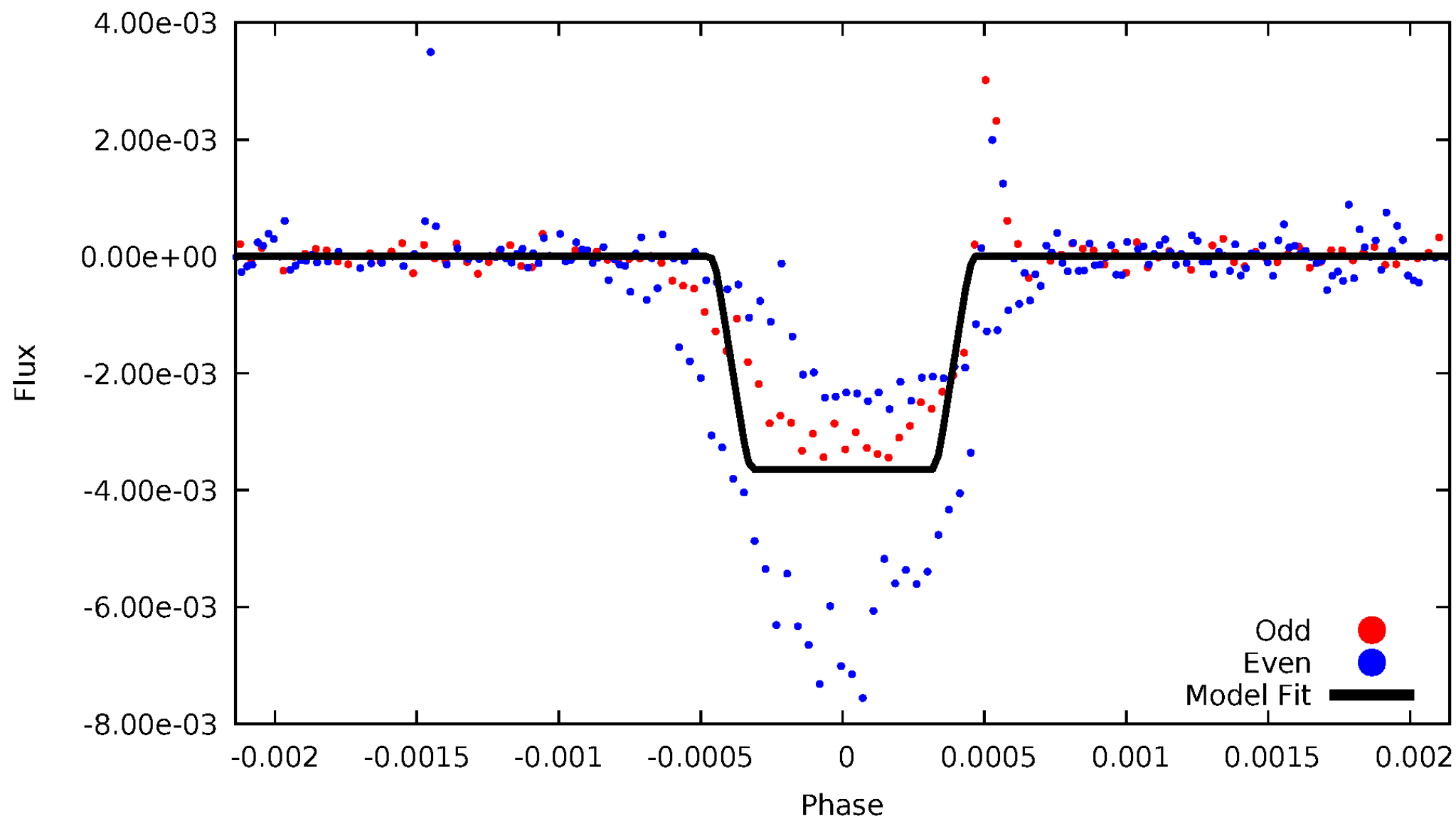
DV Odd/Even

TCE 006865416-01



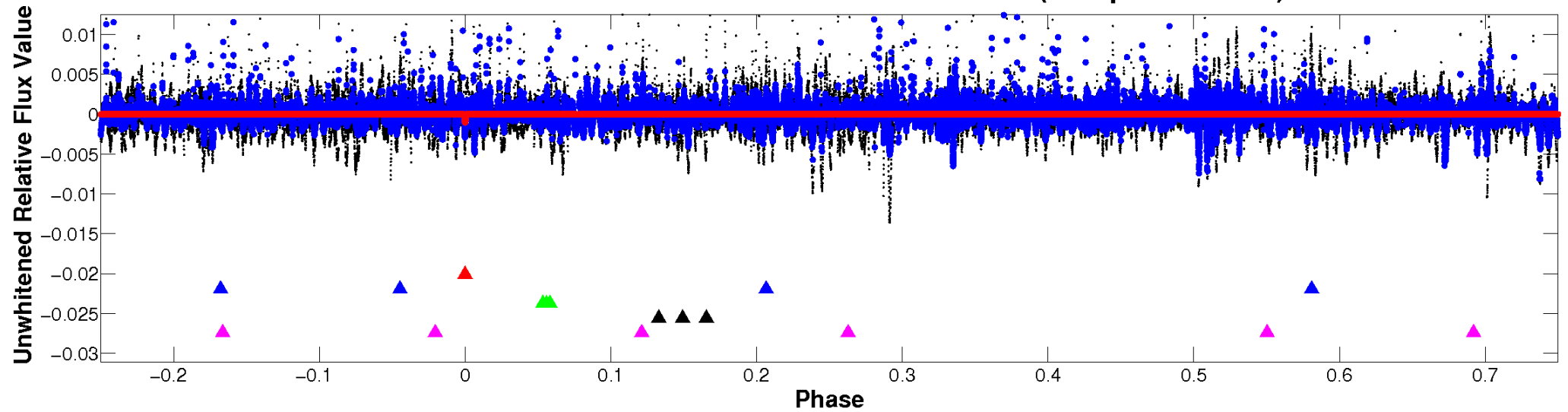
ALT Odd/Even

TCE 006865416-01

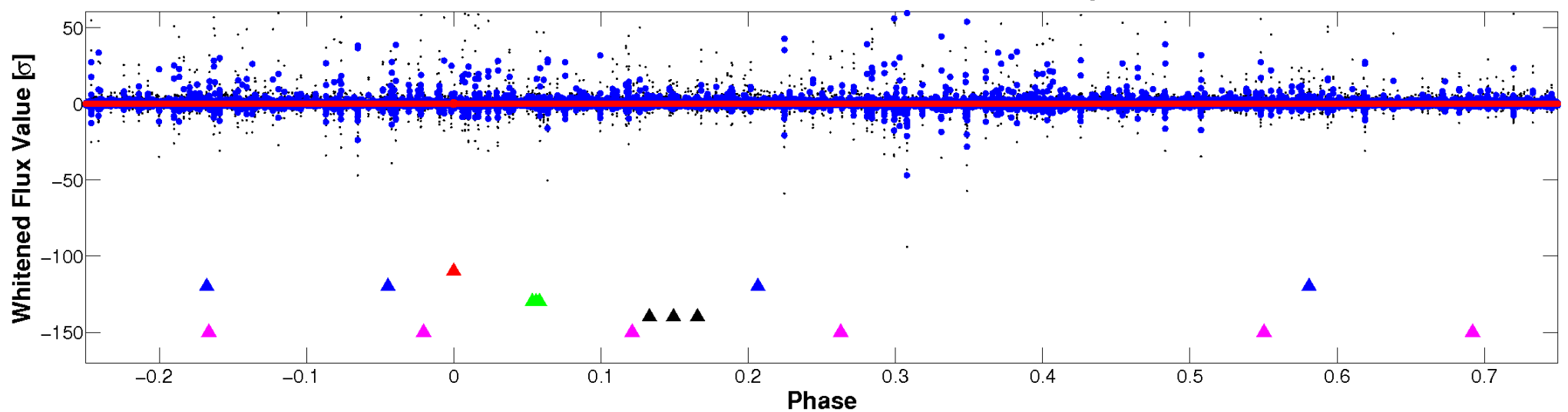


Non-Whitened Vs. Whitened Light Curve

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

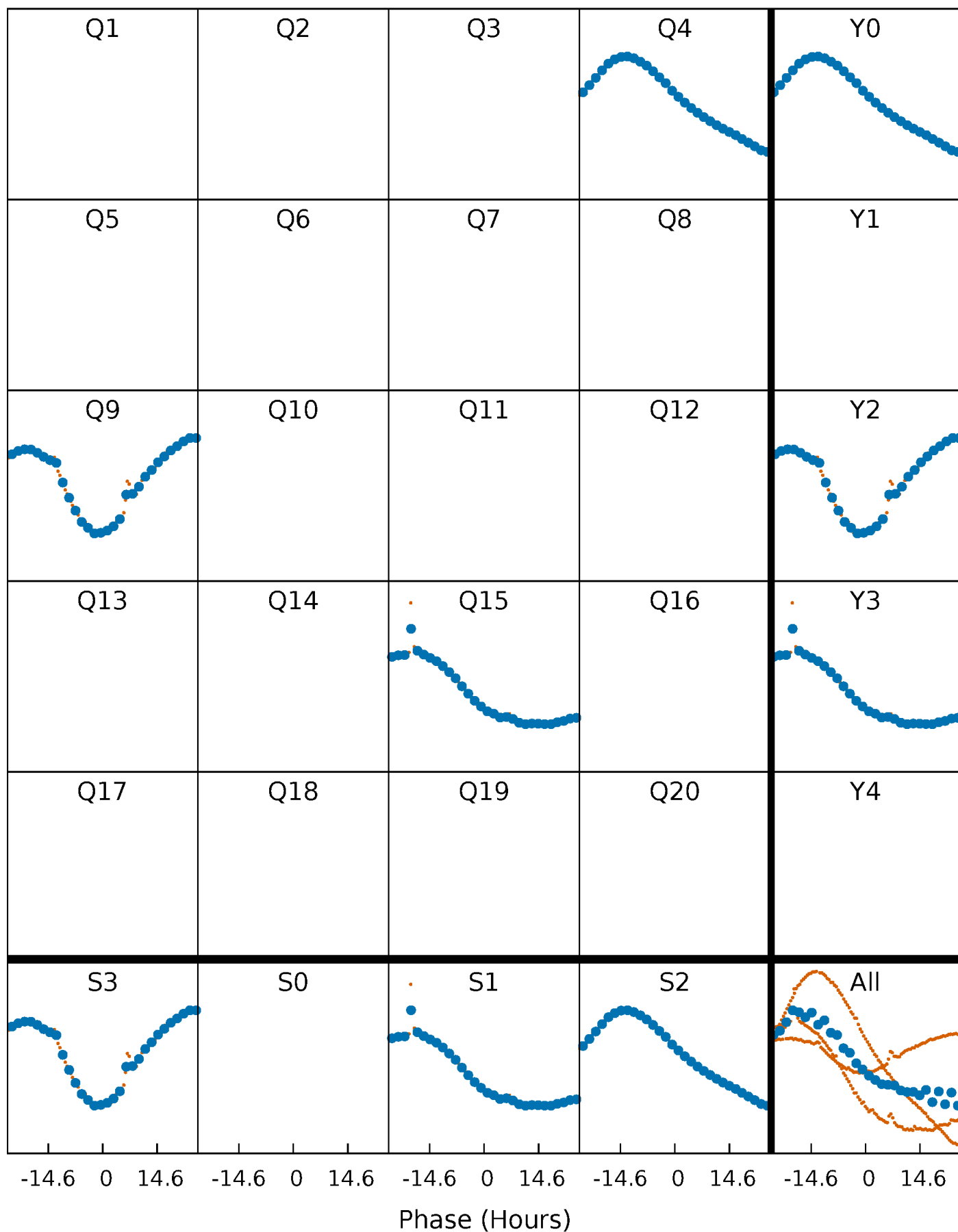


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



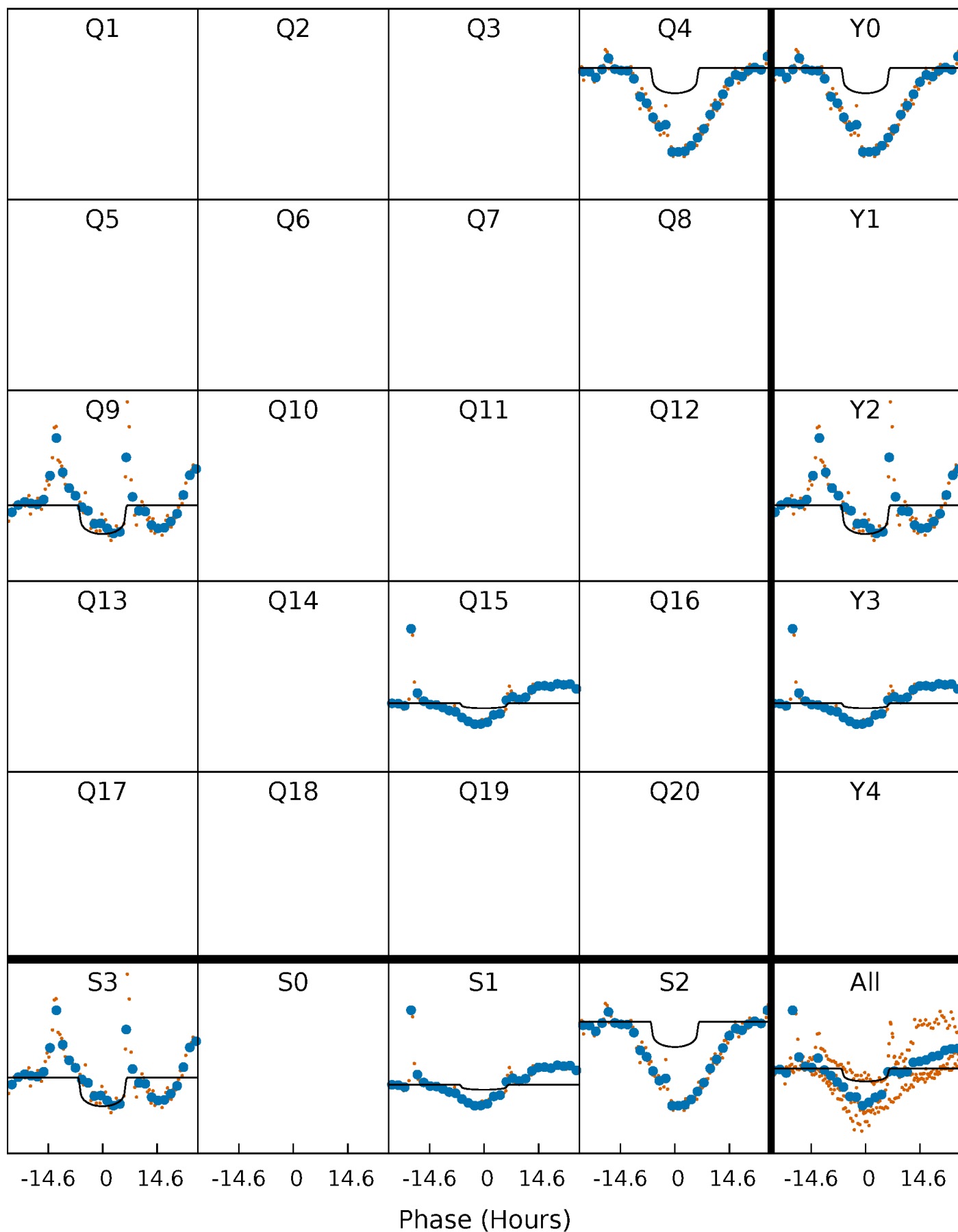
PDC Quarter-Phased Transit Curves

TCE 006865416-01 P=536.884788 Days $T_0=358.914406$ (BKJD)



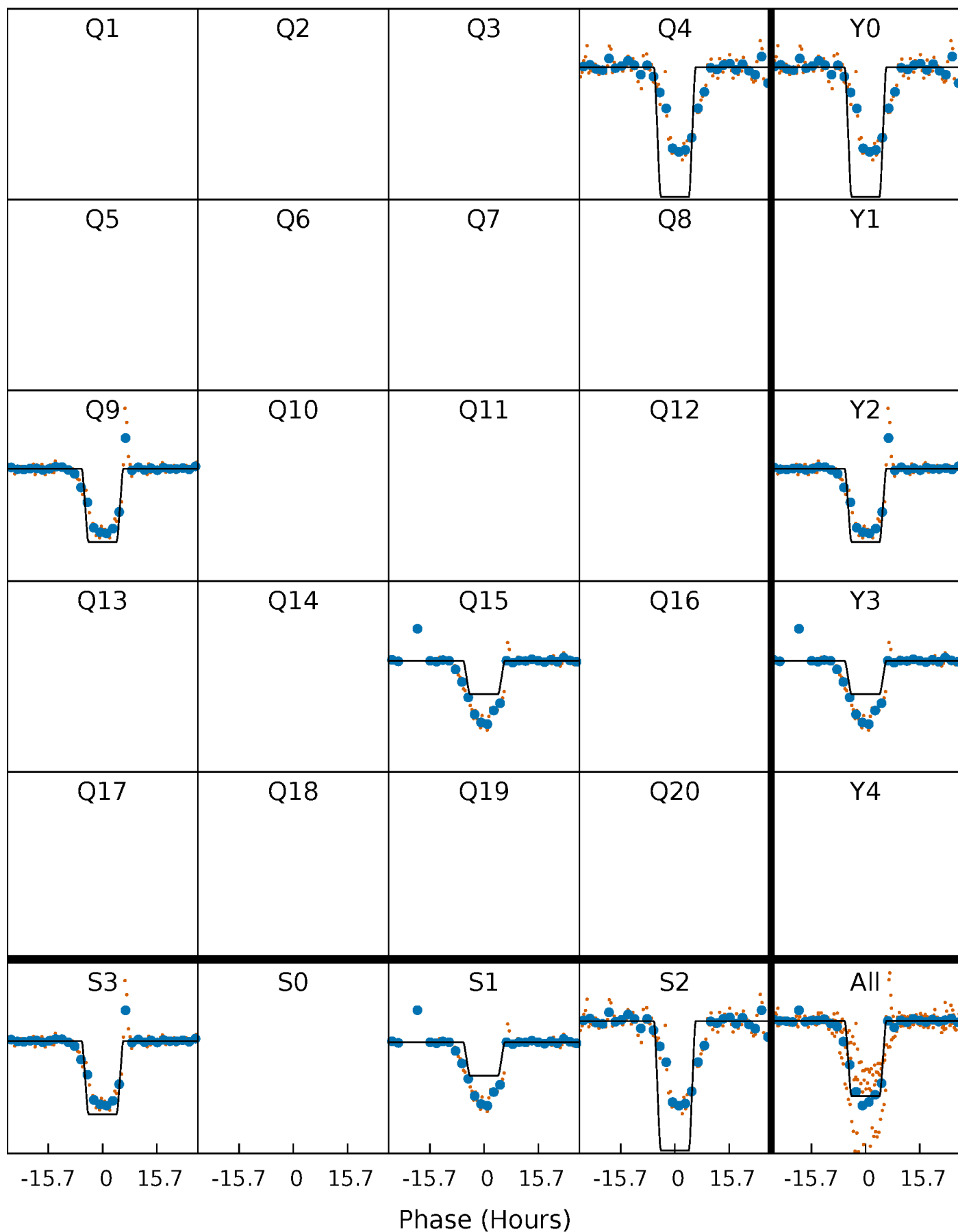
DV Quarter-Phased Transit Curves

TCE 006865416-01 P=536.884788 Days $T_0=358.914406$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

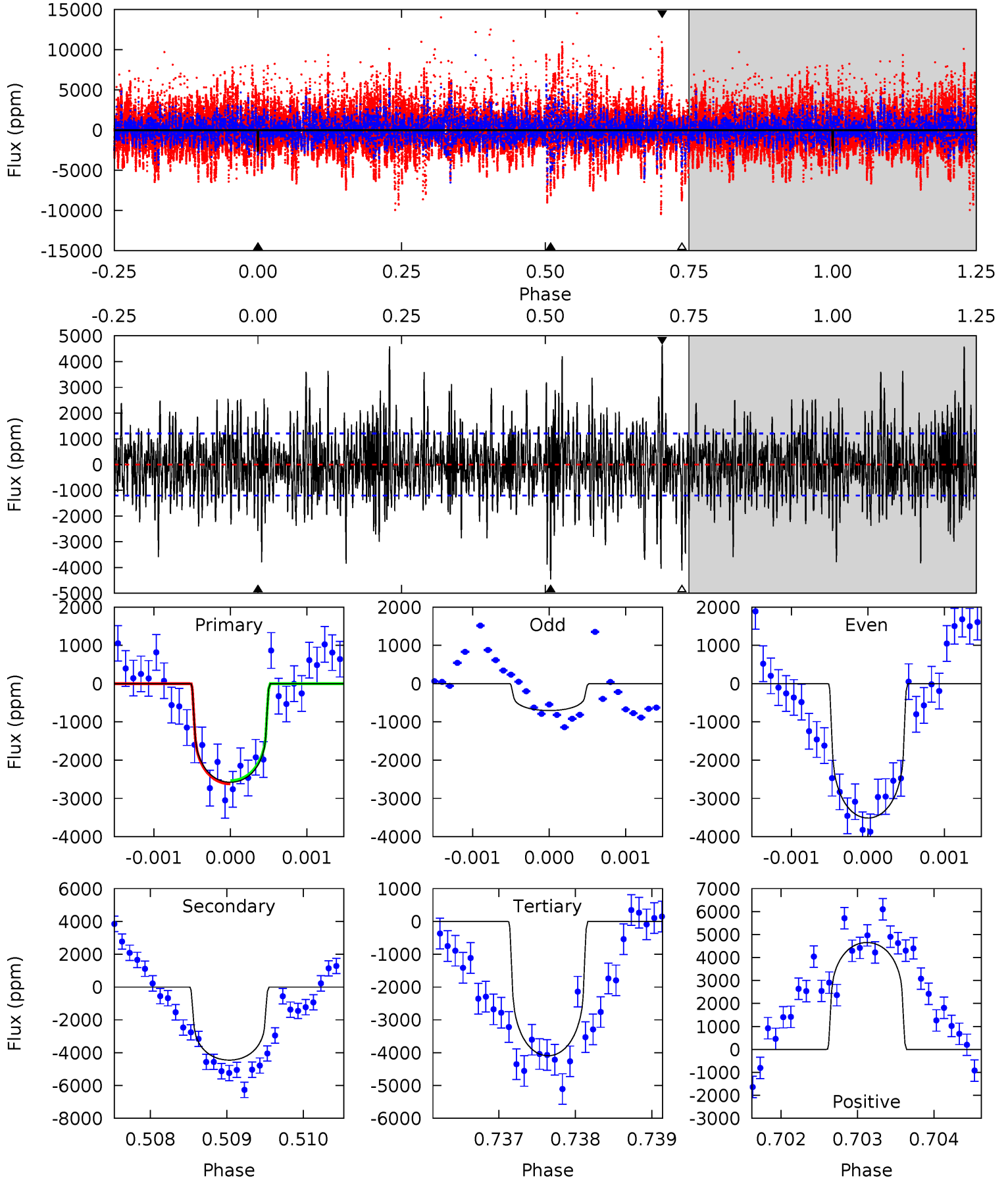
TCE 006865416-01 P=536.878167 Days $T_0=358.928396$ (BKJD)



DV Model-Shift Uniqueness Test

006865416-01, P = 536.884788 Days, E = 358.914406 Days

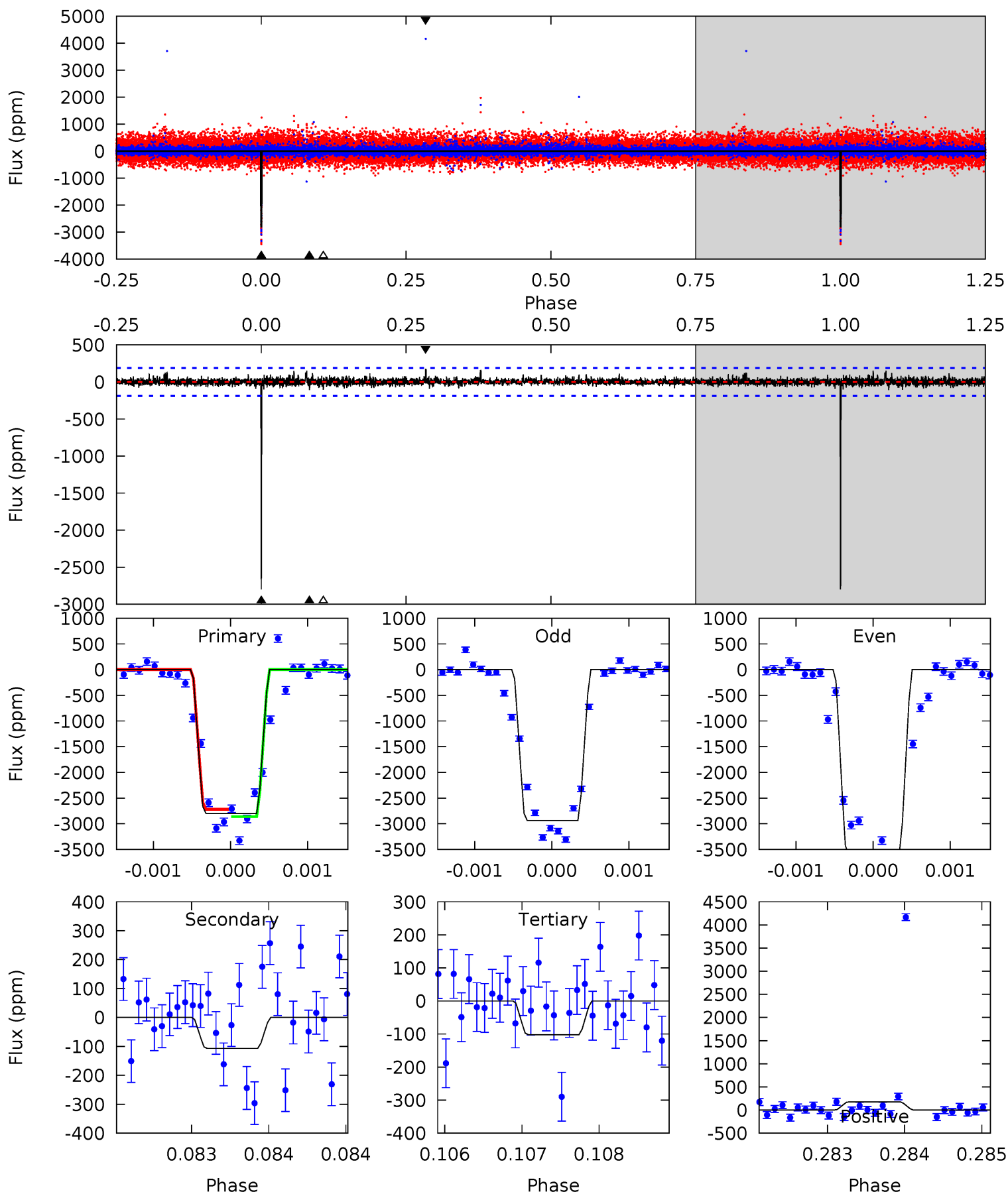
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	20.2	18.5	21.1	5.45	3.29	4.97	-6.87	-9.40	1.63	-0.91	5.61	0.78	0.51	0.20



Alt Model-Shift Uniqueness Test

006865416-01, P = 536.878167 Days, E = 358.928396 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
81.4	3.10	2.97	5.12	5.46	3.31	0.66	78.4	76.3	0.13	-2.01	11.2	1.24	0.06	0



Stellar Parameters For KIC 006865416

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5435^{+160}_{-160}	$4.474^{+0.125}_{-0.125}$	$-0.380^{+0.350}_{-0.300}$	$0.828^{+0.136}_{-0.111}$	$0.746^{+0.115}_{-0.046}$	$1.853^{+1.017}_{-0.657}$
	+3%/-3%	+3%/-3%	+92%/-79%	+16%/-13%	+15%/-6%	+55%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006865416-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4454 ± 221	$2.59^{+1.28}_{-1.17}$	281^{+15}_{-13}	8609^{+4652}_{-1812}	$518968^{+1152929}_{-285879}$
Alt.	-107 ± 34	$5.45^{+1.29}_{-1.40}$	281^{+15}_{-15}	2917^{+293}_{-220}	2634^{+2556}_{-1230}

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 $A_{obs} \gg 1.0$

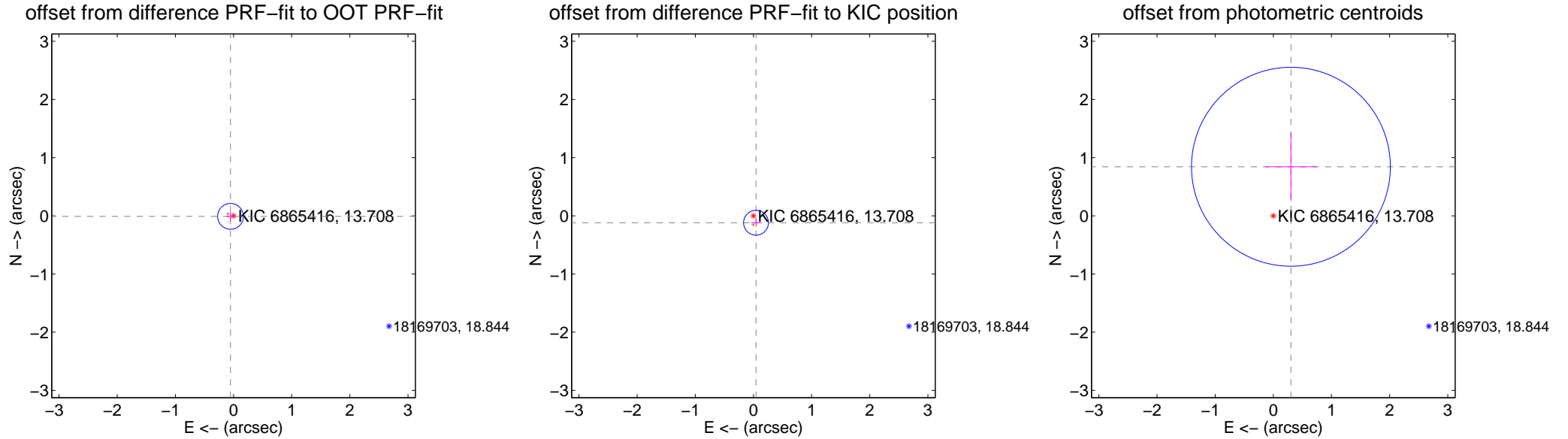
DV Centroid Data

Supplemental centroid analysis for 006865416-01. Kepler magnitude: 13.71. Transit SNR 3.65

There are 2 quarters with good PRF difference image offsets

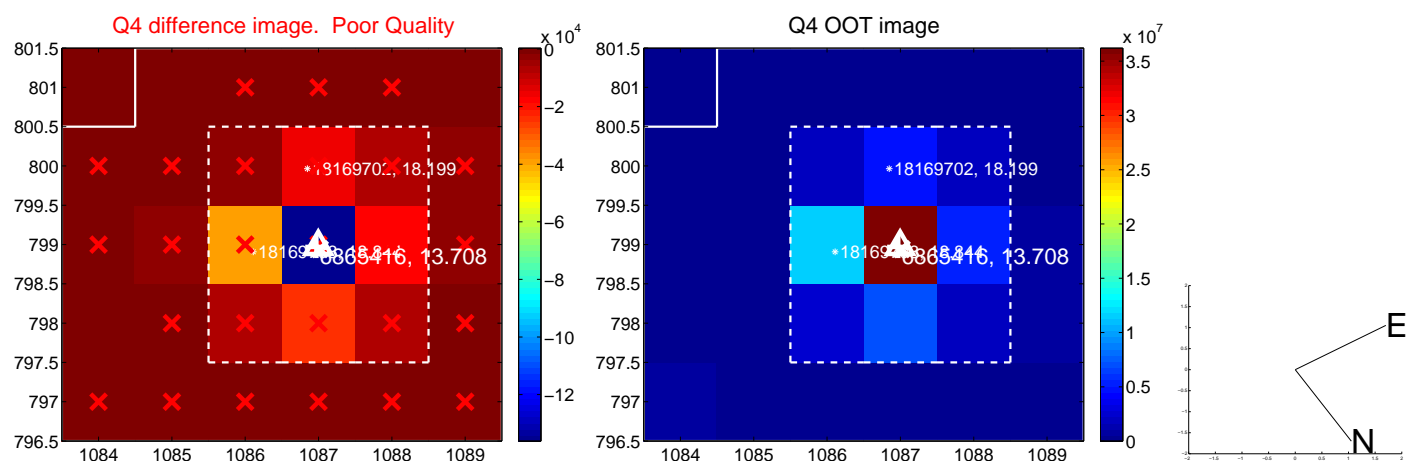
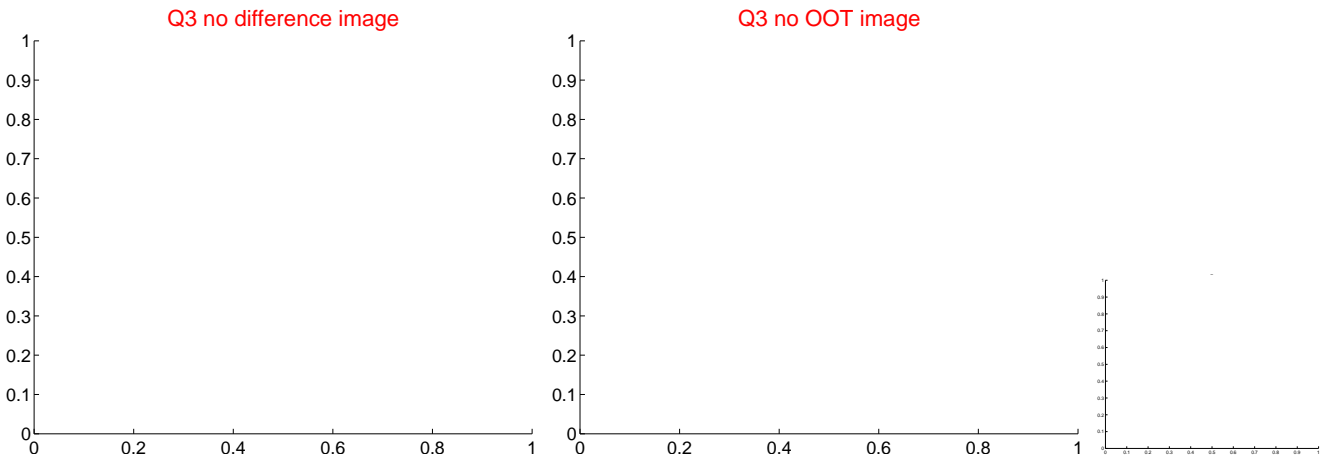
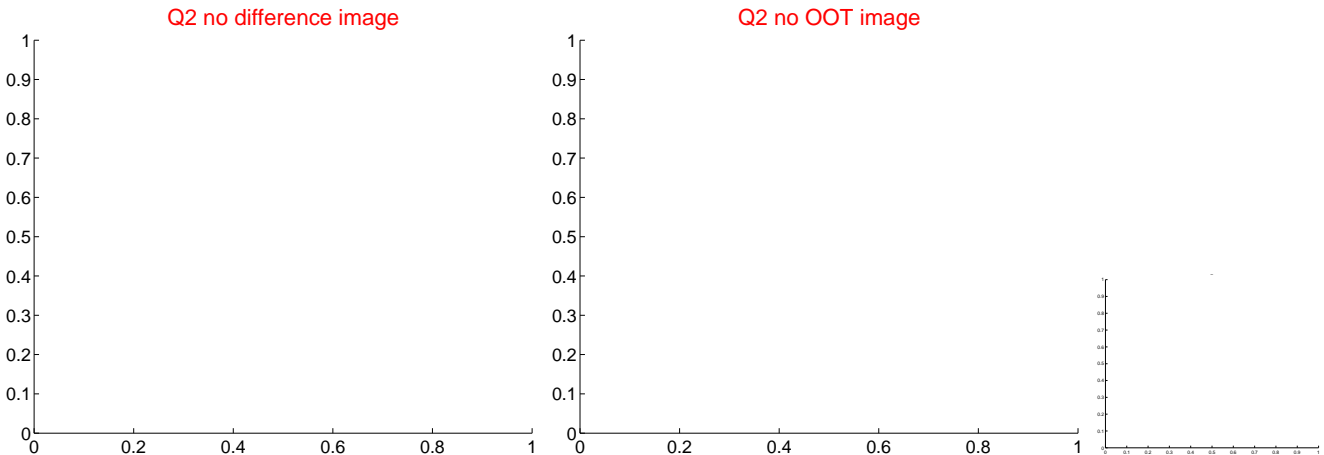
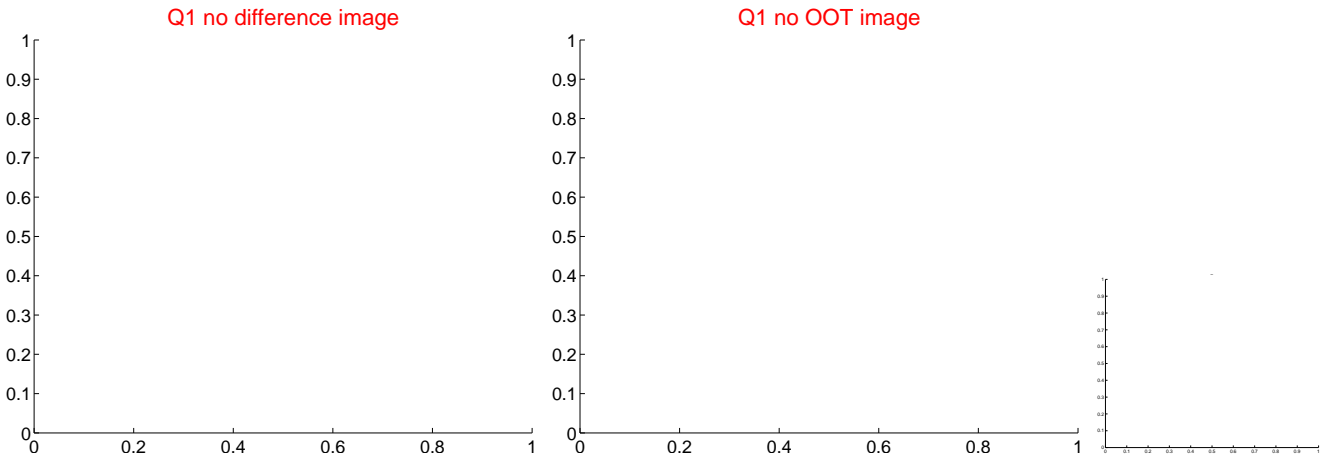
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.053 ± 0.074	0.71	0.052 ± 0.074	-0.009 ± 0.083
PRF-fit source offset from KIC position	0.127 ± 0.071	1.78	-0.044 ± 0.084	-0.119 ± 0.069
photometric centroid source offset	0.90 ± 0.57	1.57	-0.30 ± 0.44	0.84 ± 0.58



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.

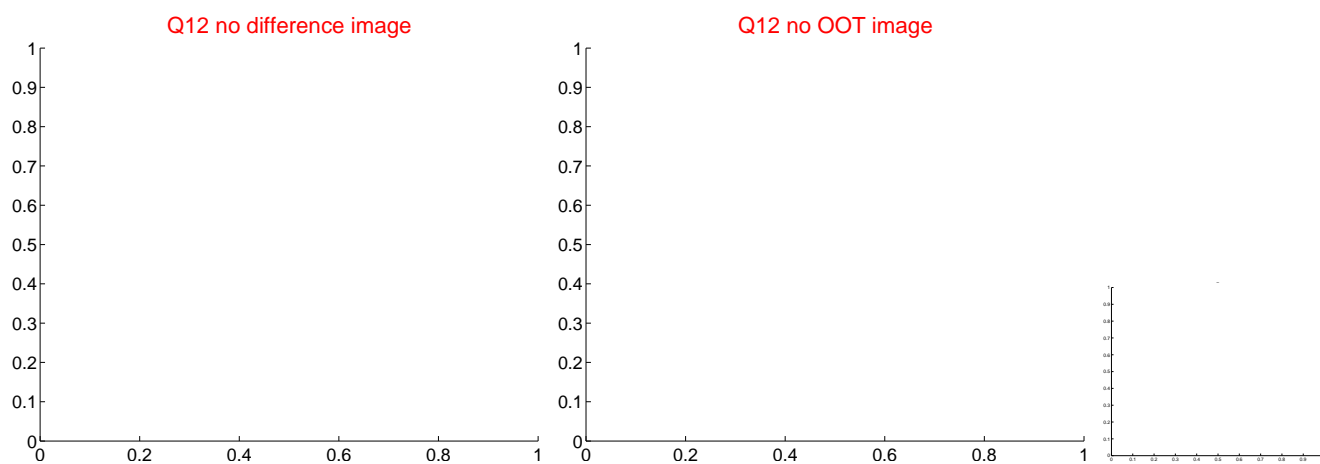
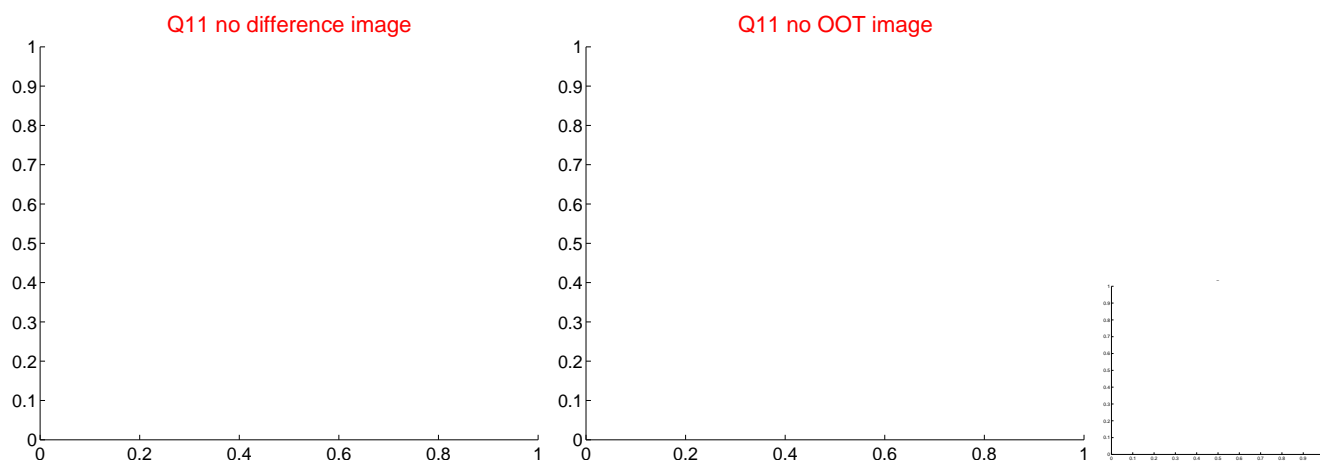
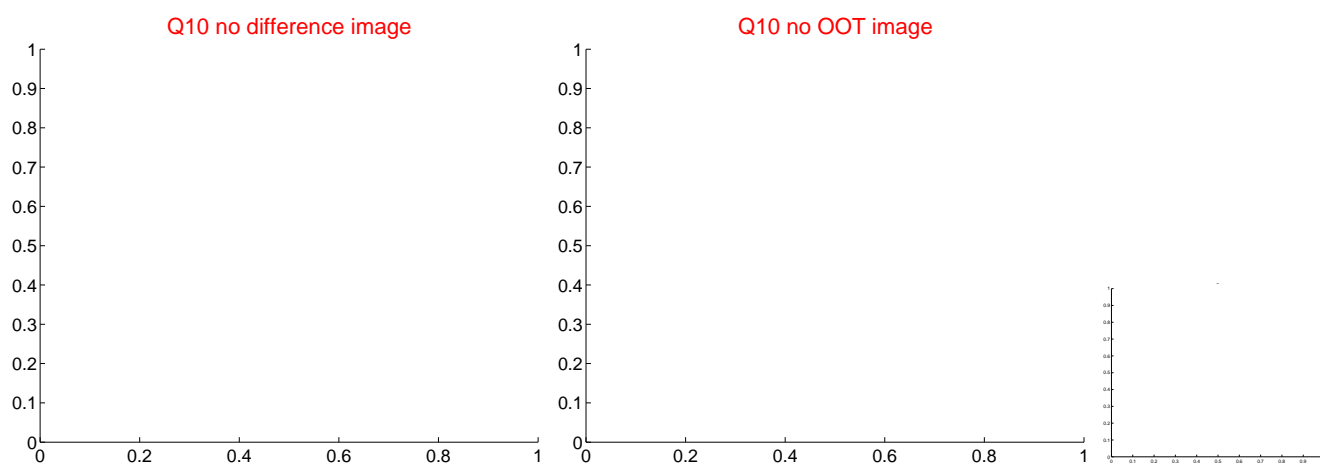
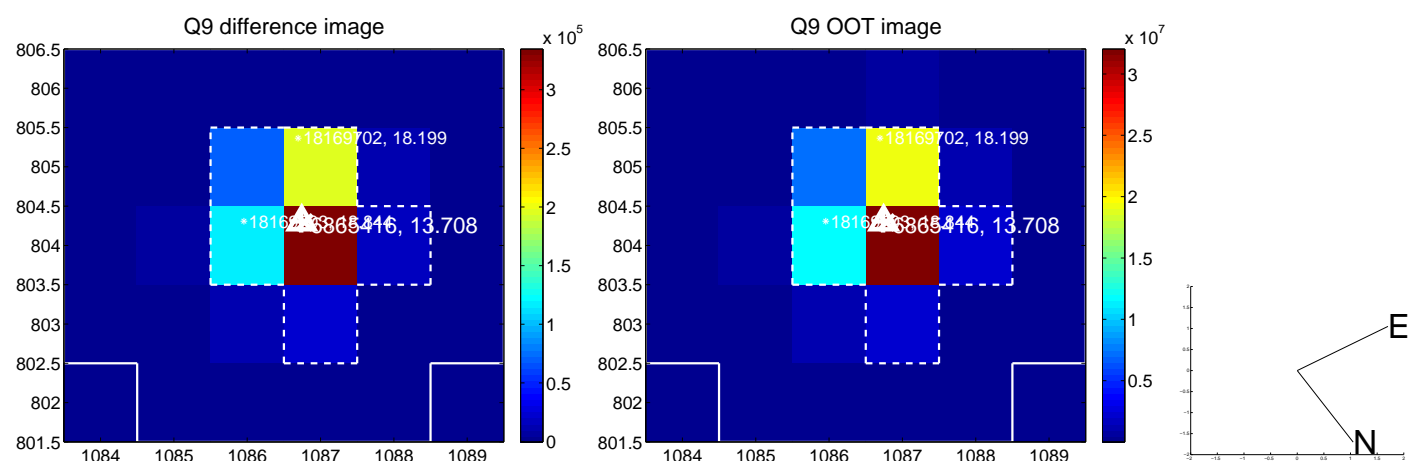
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



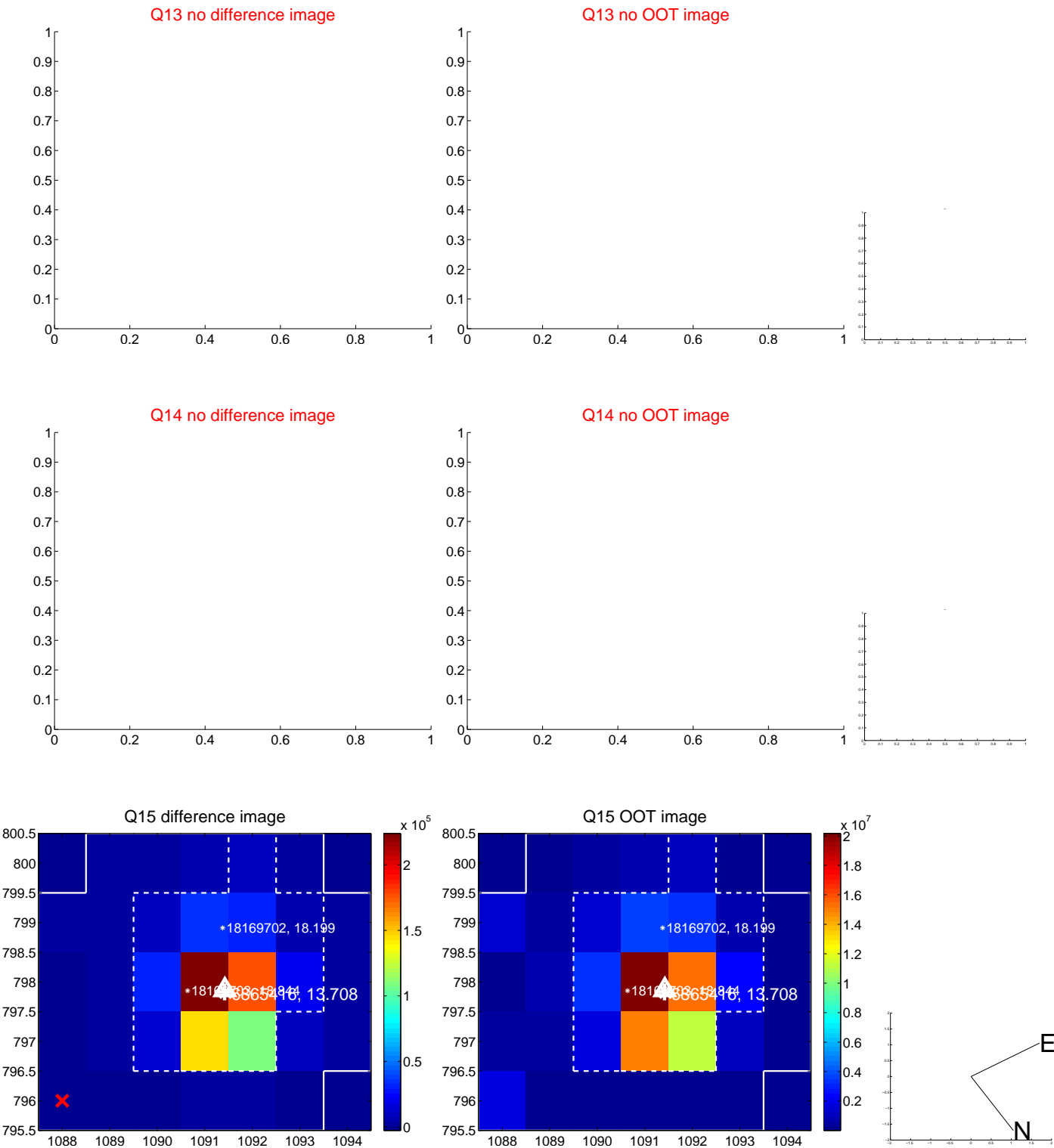
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



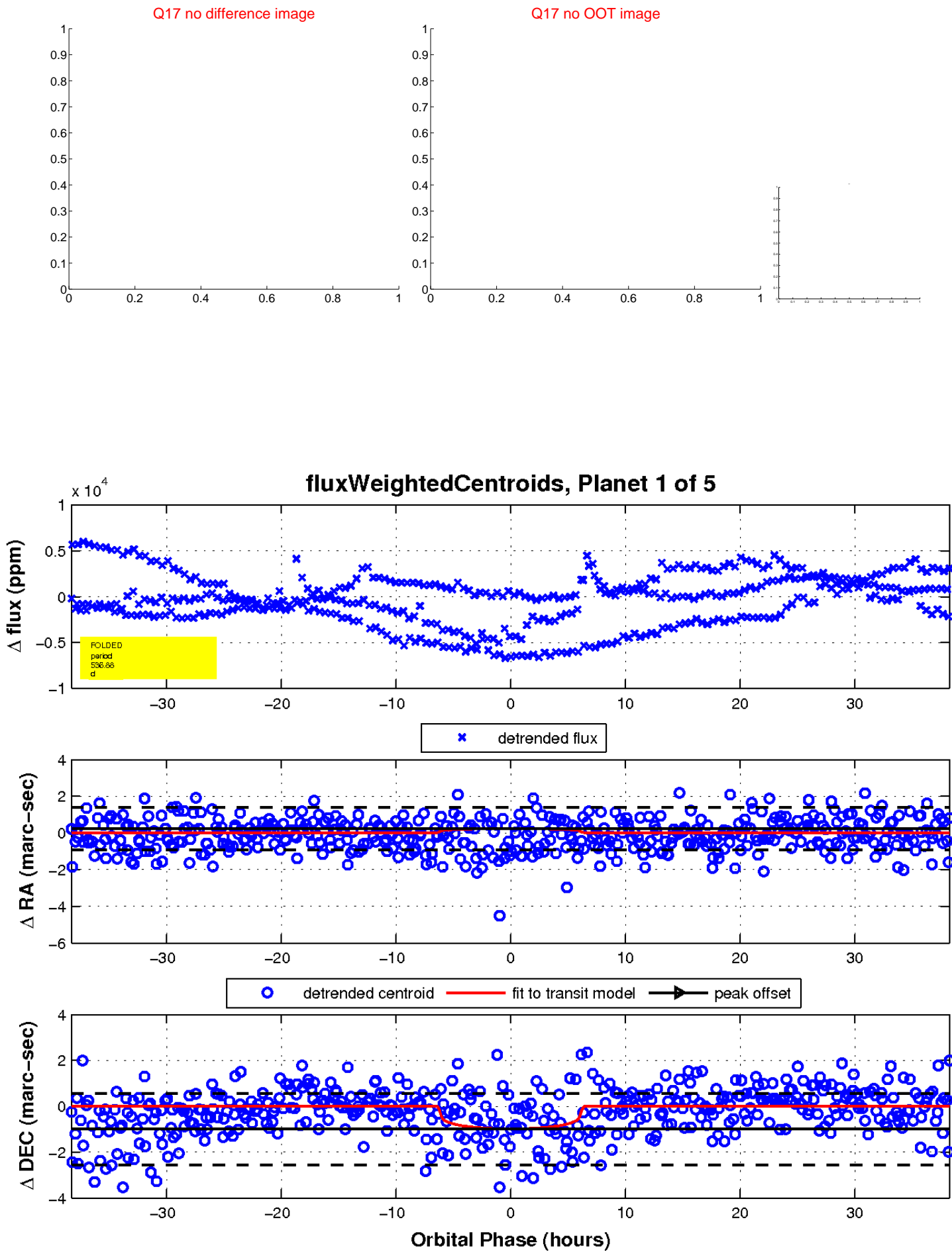
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



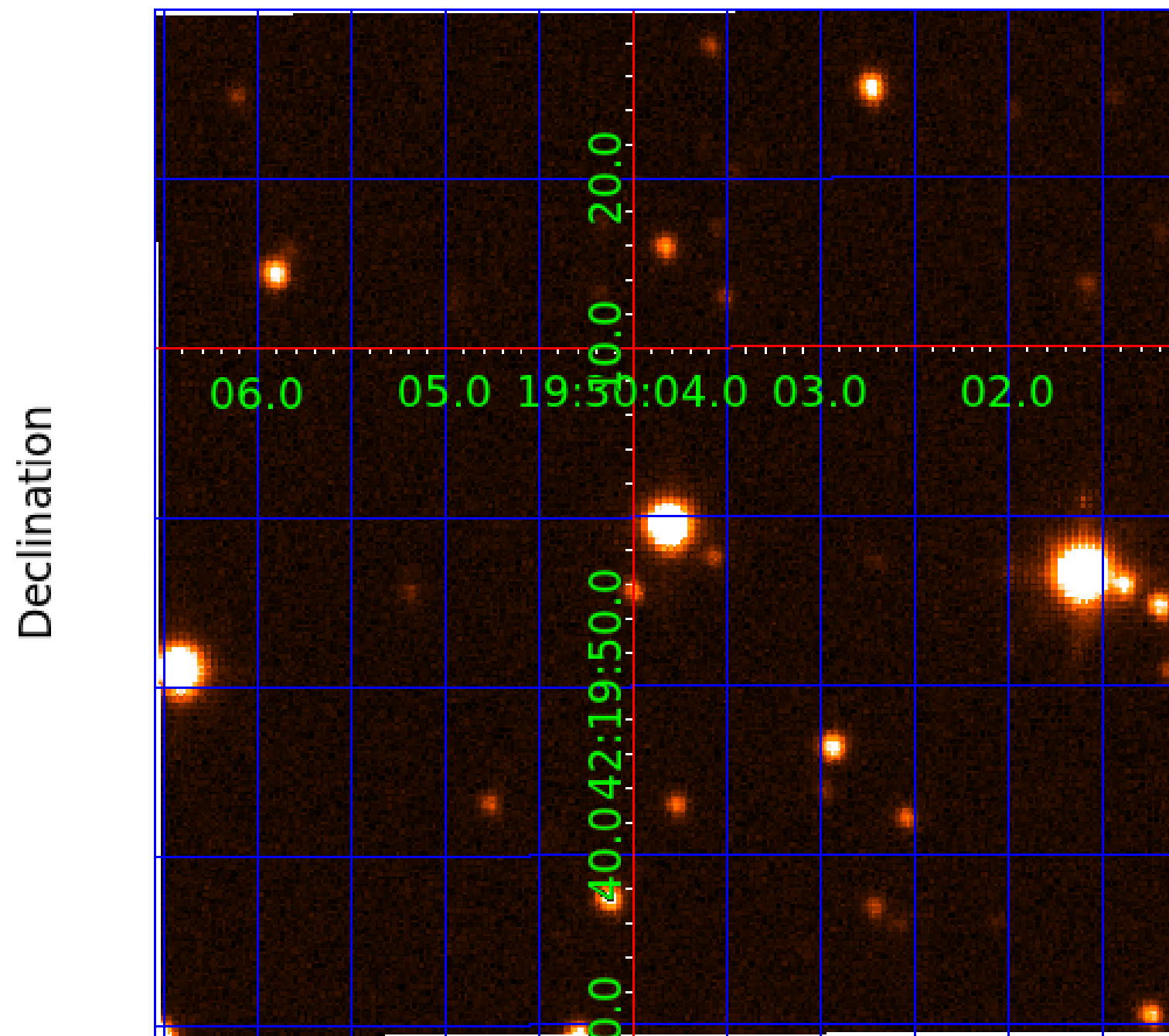
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006865416

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})
006865416-01	OBS	No	536.884787	358.914406	1018.9	12.796	12.2	3.6	0.83	5435	2.67	0.39
006865416-02	OBS	No	335.894438	334.929591	1242.6	4.634	19.0	7.3	0.83	5435	3.04	0.73
006865416-03	OBS	No	535.551182	390.232311	1558.6	6.262	16.4	7.5	0.83	5435	3.23	0.39
006865416-04	OBS	No	545.651884	430.282318	893.2	3.547	12.4	6.0	0.83	5435	2.60	0.38
006865416-05	OBS	No	230.414322	269.634963	659.9	1.798	14.2	5.0	0.83	5435	2.30	1.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006865416-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006865416-03	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
006865416-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV

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

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

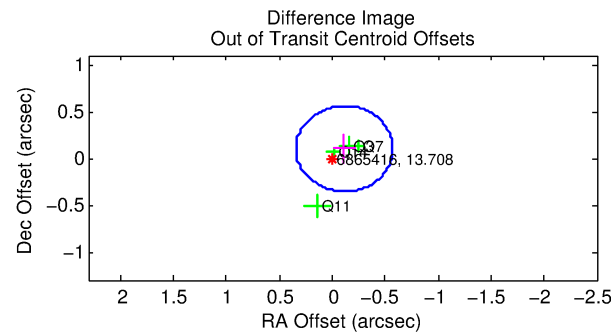
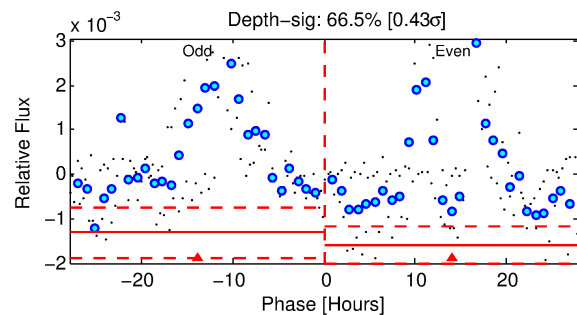
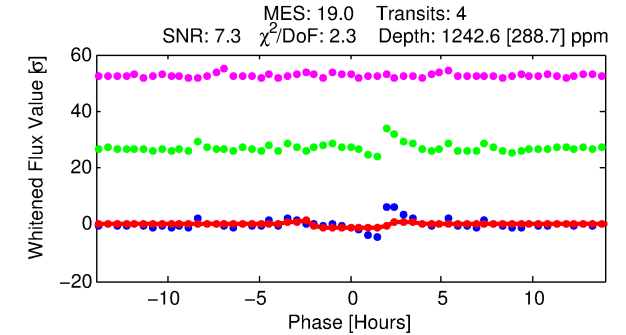
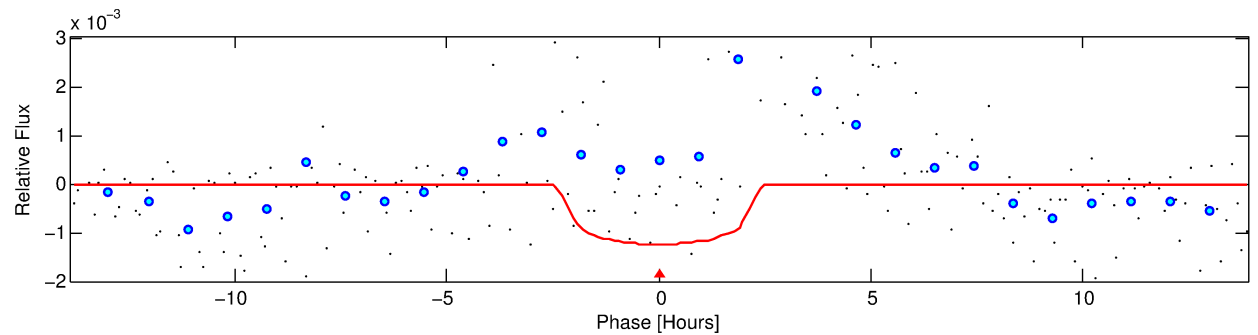
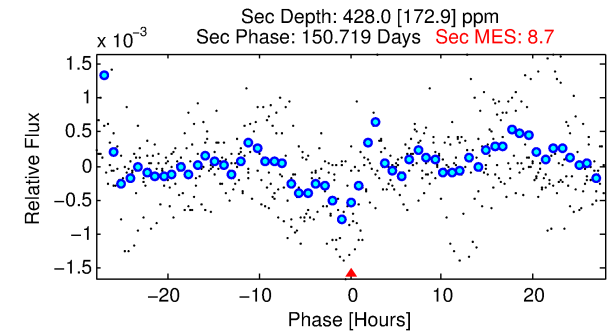
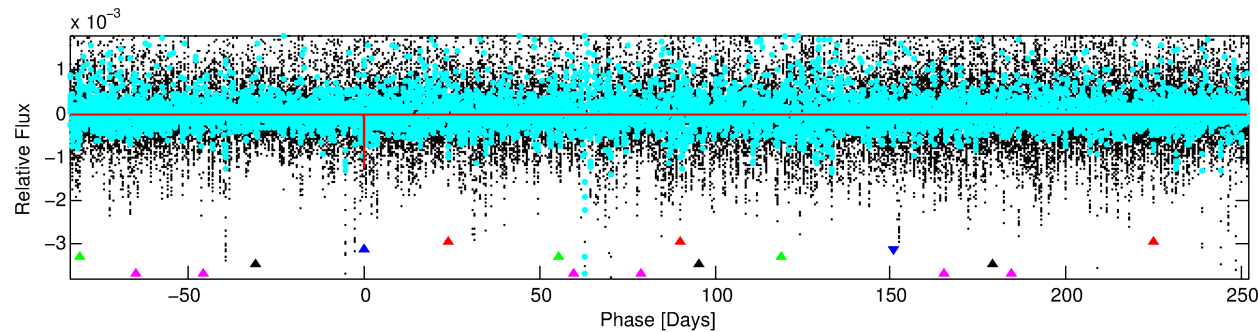
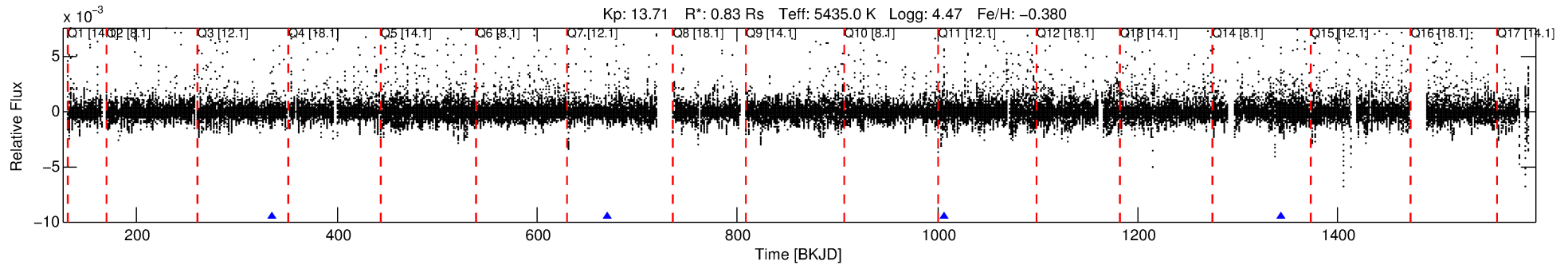
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006865416-02

No Significant Match Found

DV One-Page Summary

KIC: 6865416 Candidate: 2 of 5 Period: 335.894 d



DV Fit Results:

Period = 335.89444 [0.00615] d
Epoch = 334.9296 [0.0096] BKJD
Rp/R* = 0.0336 [0.0351]
a/R* = 463.97 [1987.84]
b = 0.61 [4.53]
Seff = 0.73 [0.18]
Teq = 236 [15] K
Rp = 3.04 [3.21] Re
a = 0.8574 [0.1248] AU
Ag = 18779.67 [40225.53] [0.47 σ]
Teffp = 4265 [2275] K [1.77 σ]

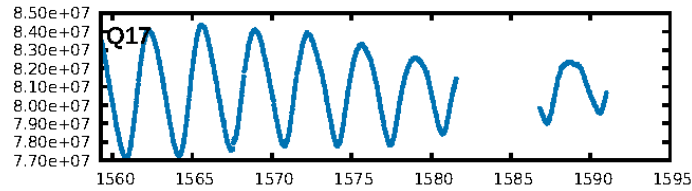
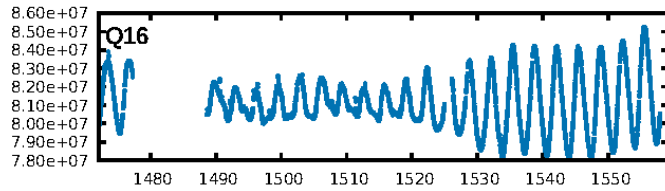
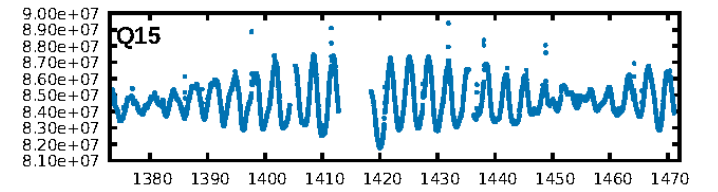
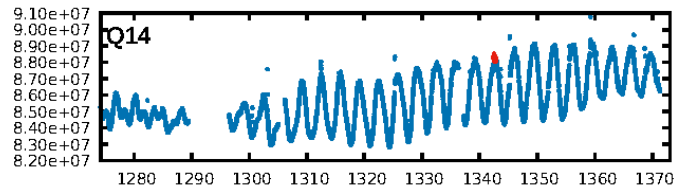
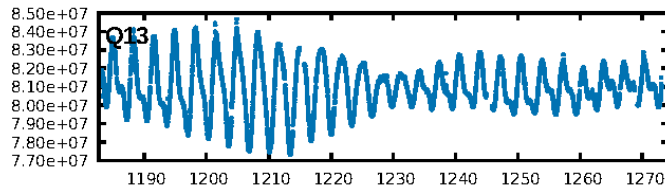
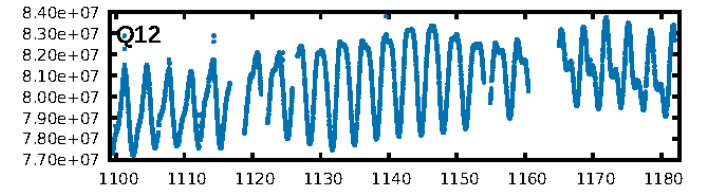
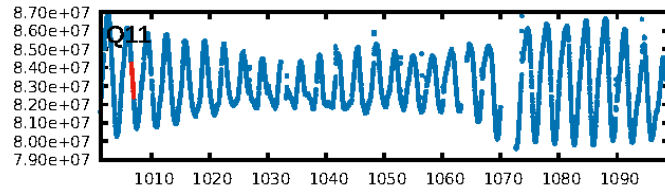
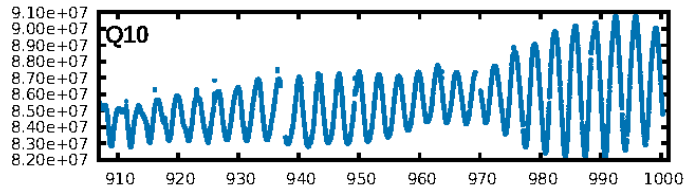
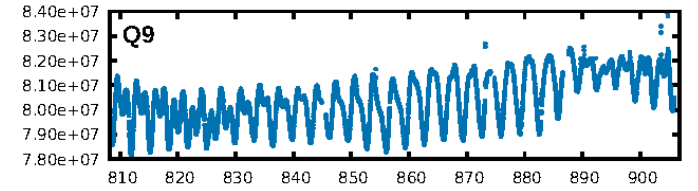
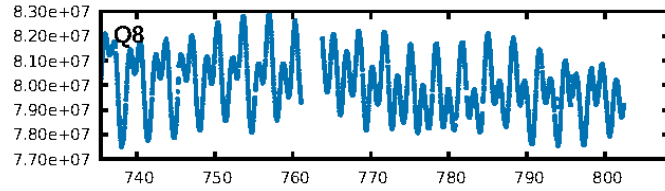
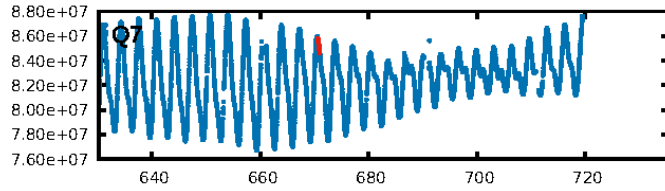
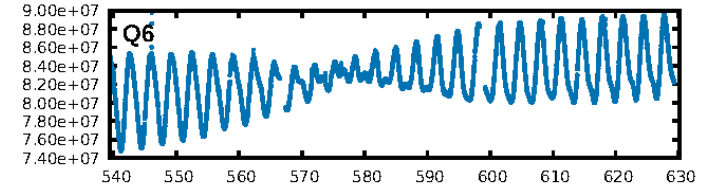
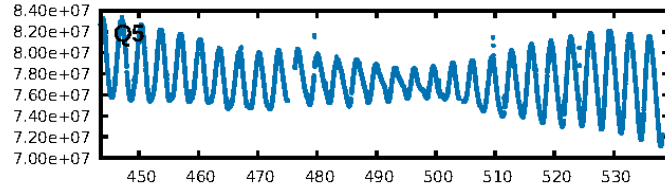
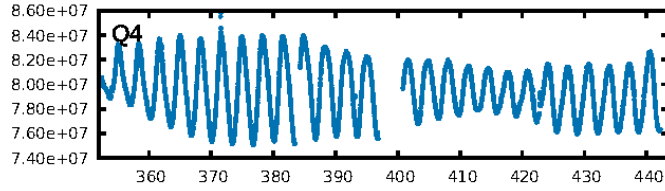
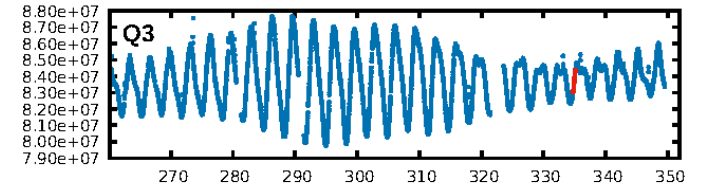
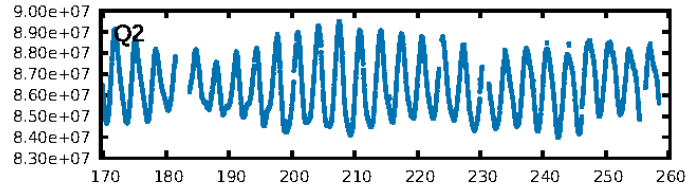
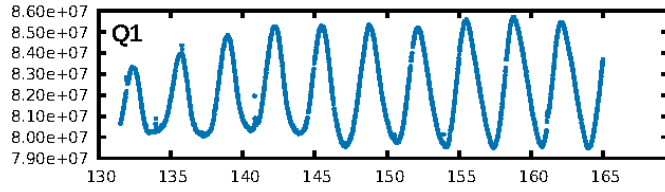
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [509.29 σ]
LongPeriod-sig: 100.0% [615.11 σ]
ModelChiSquare2-sig: 32.2%
ModelChiSquareGof-sig: 2.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 7.258
Centroid-sig: 17.2%
Centroid-so: 0.401 arcsec [0.95 σ]
OotOffset-rm: 0.154 arcsec [1.01 σ]
OotOffset-st: 1/3/0/0 [4]
KicOffset-rm: 0.220 arcsec [2.00 σ]
KicOffset-st: 1/3/0/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 1.00 [4/4]

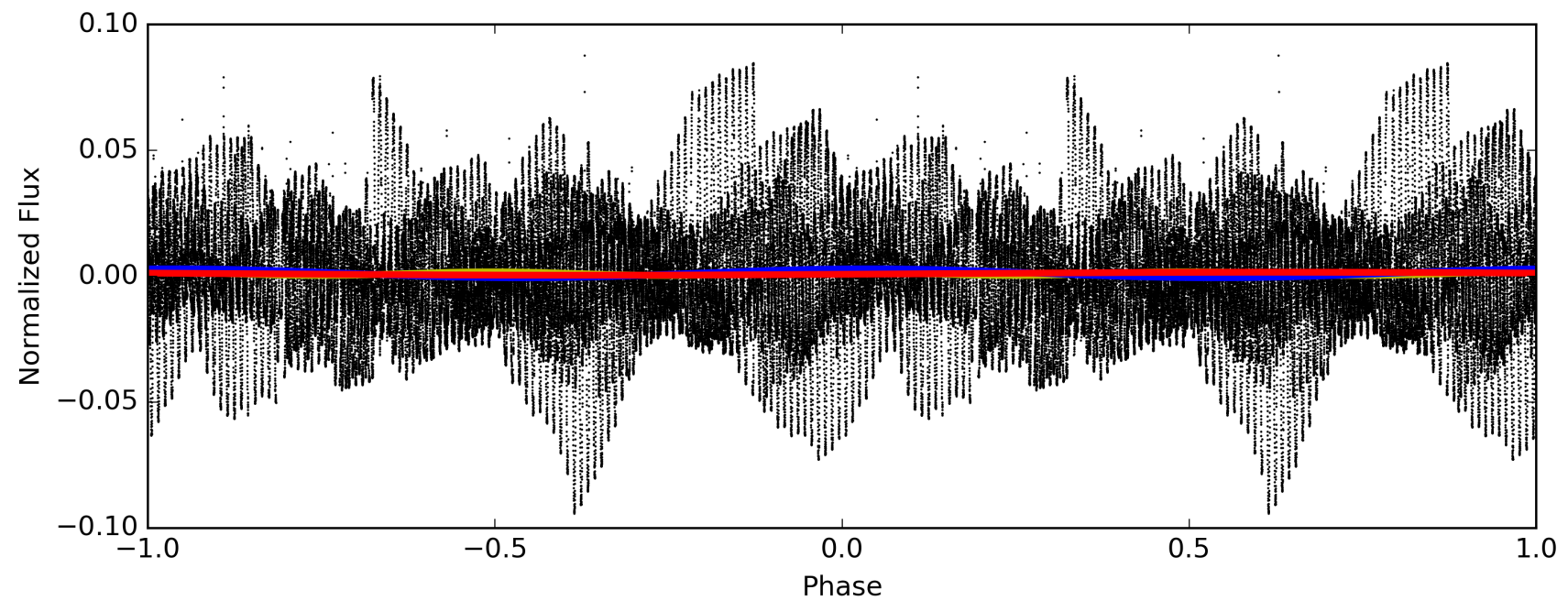
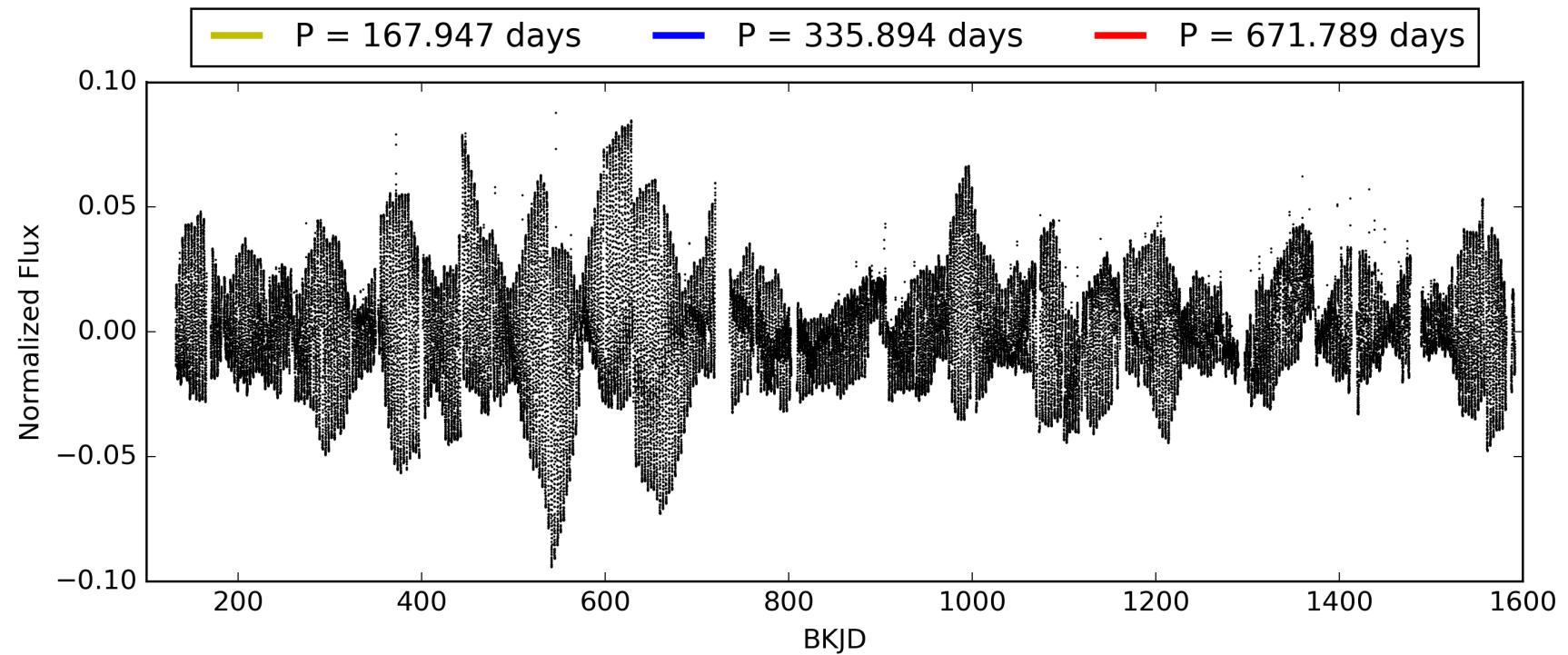
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:05:42 Z

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

TCE 006865416-02, PDC Light Curves

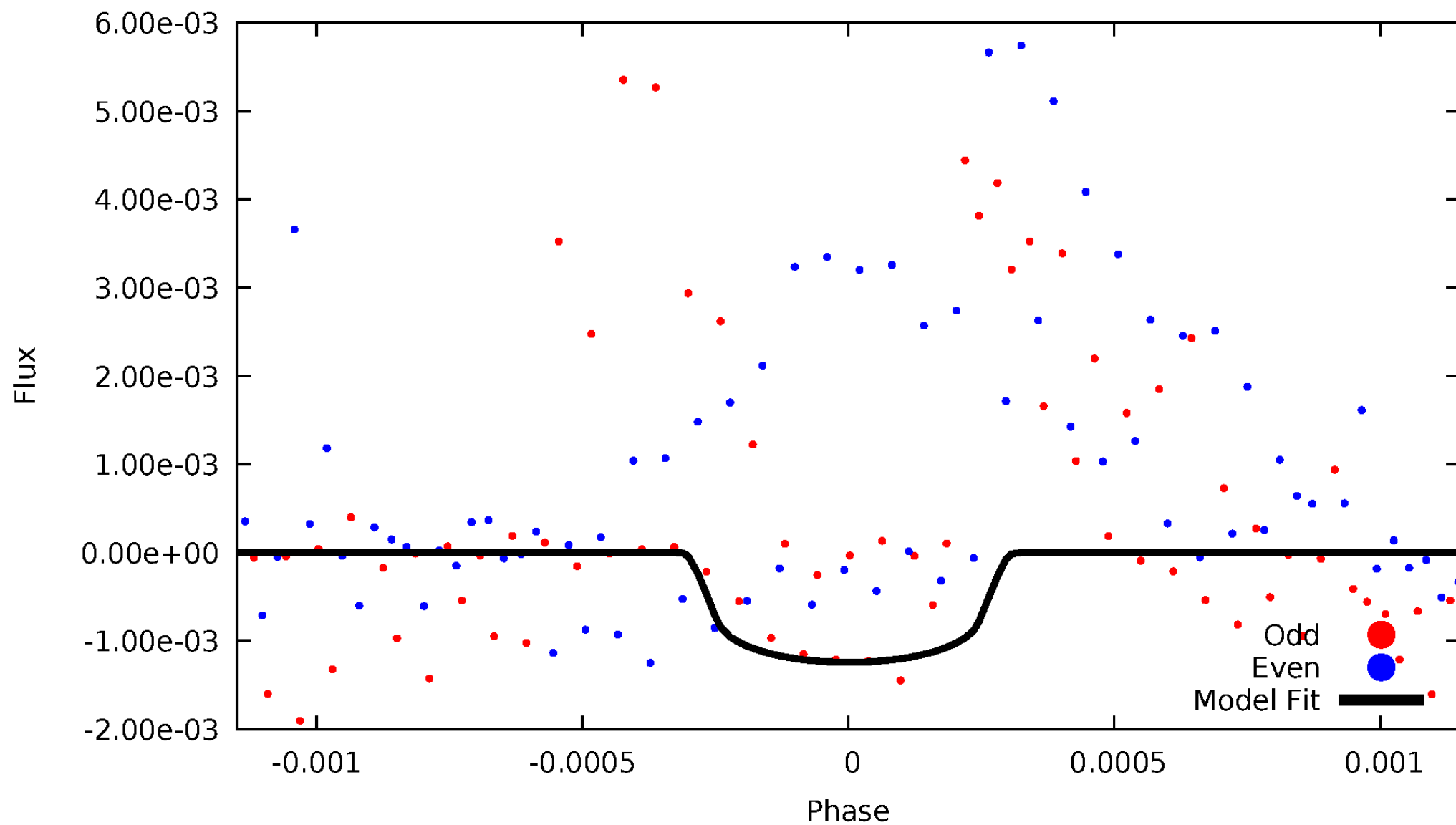


TCE 006865416-02



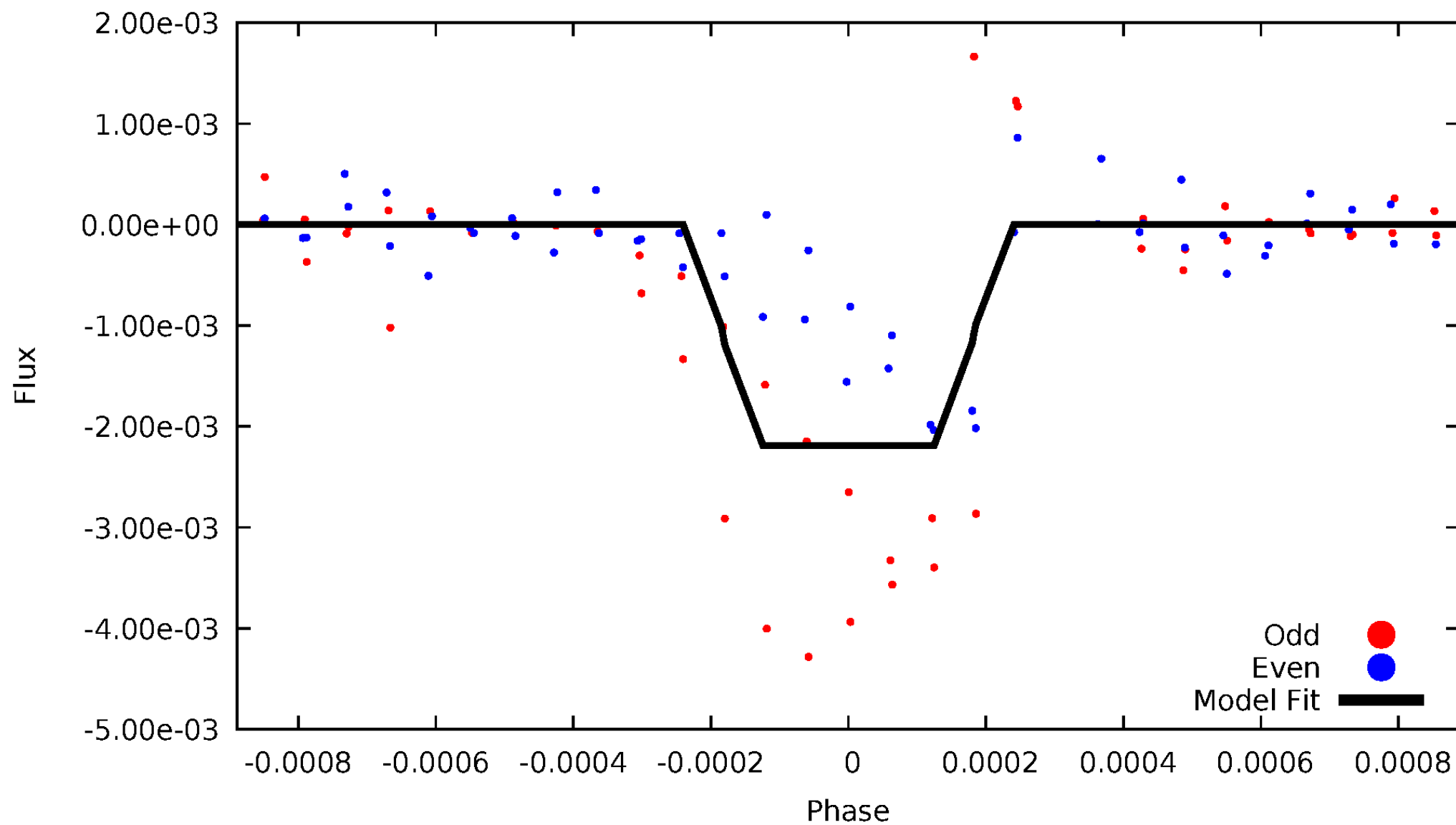
DV Odd/Even

TCE 006865416-02



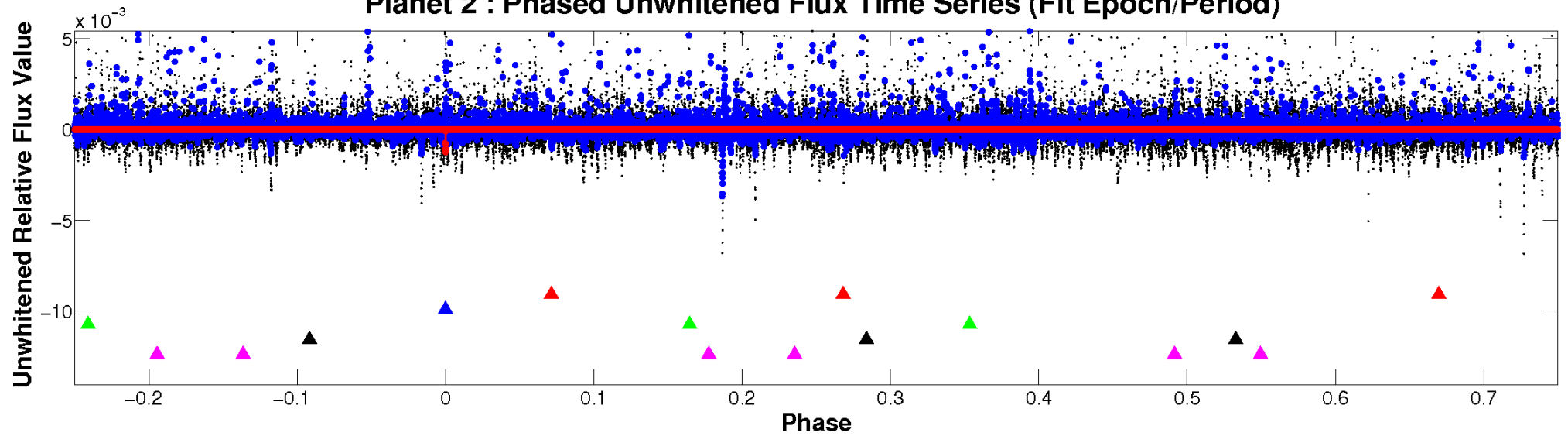
ALT Odd/Even

TCE 006865416-02

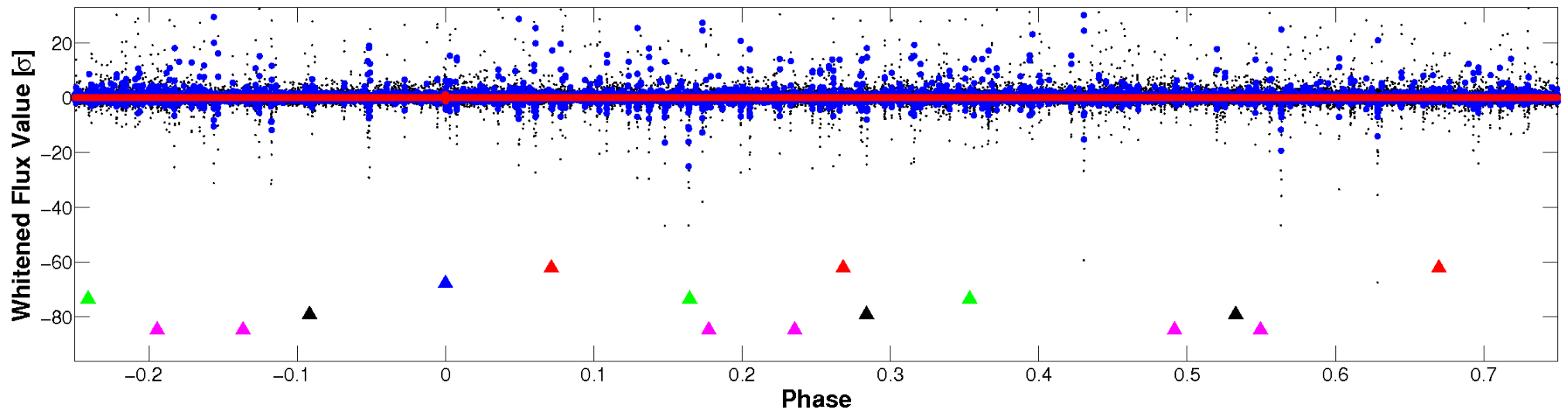


Non-Whitened Vs. Whitened Light Curve

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

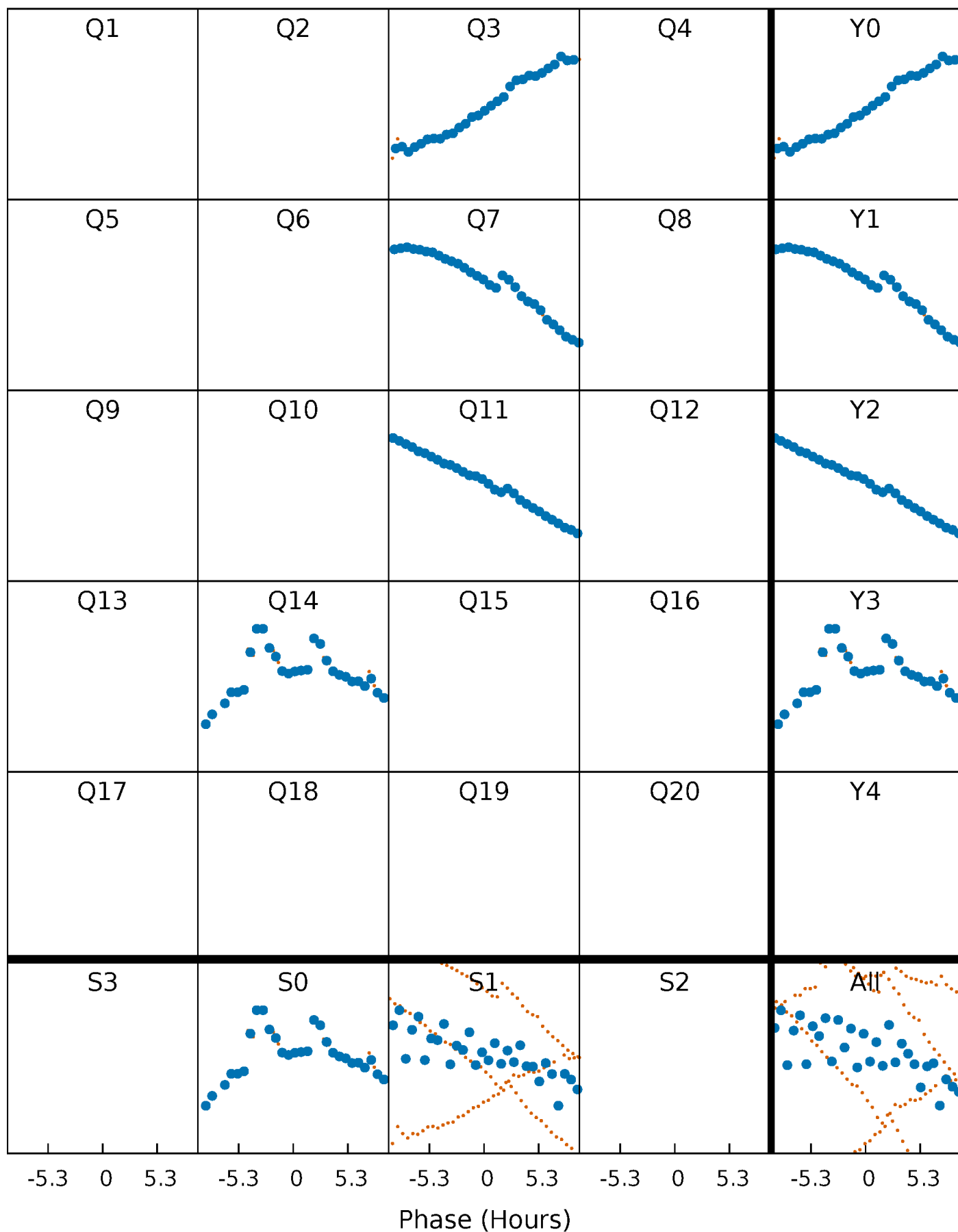


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



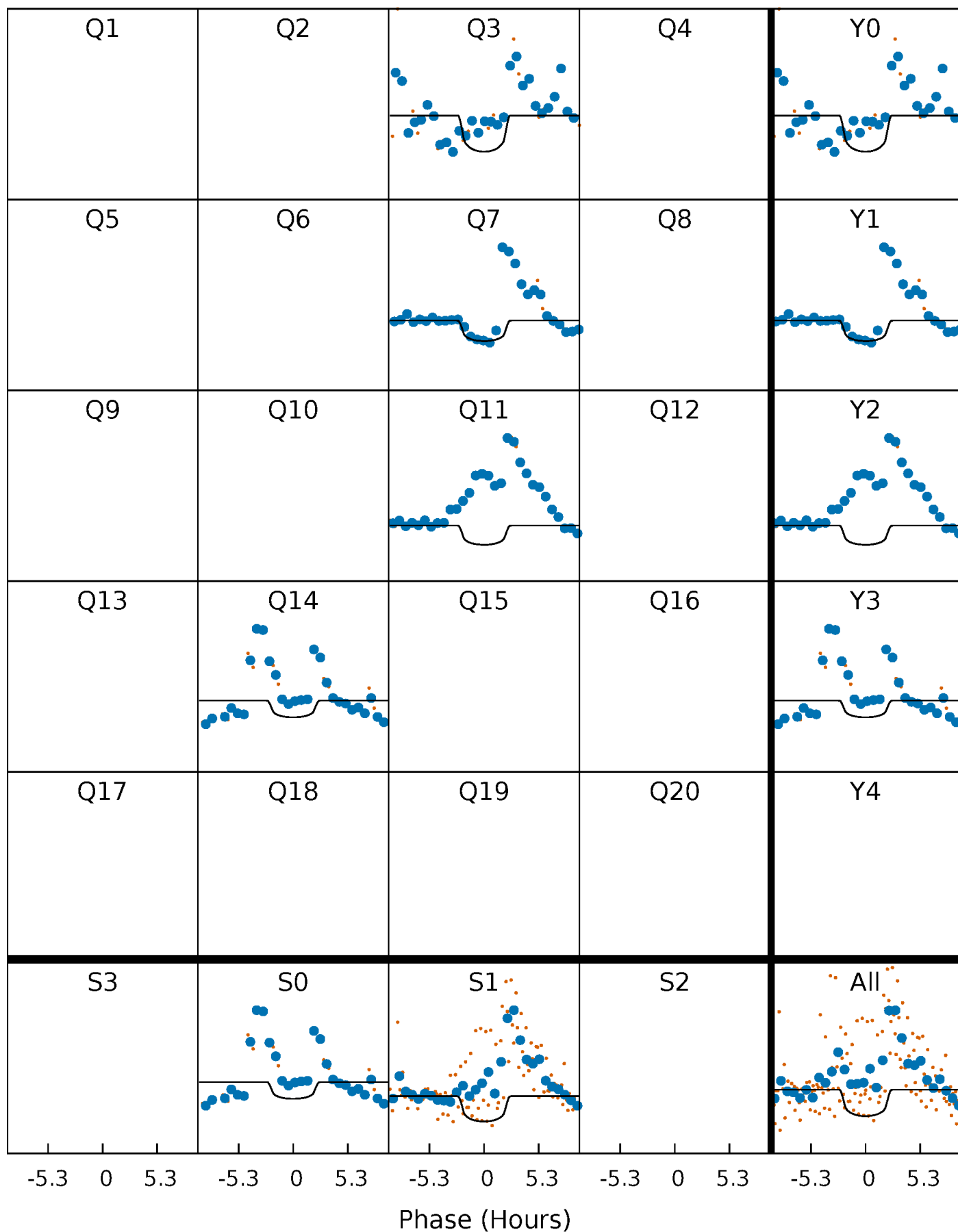
PDC Quarter-Phased Transit Curves

TCE 006865416-02 $P=335.894438$ Days $T_0=334.929591$ (BKJD)



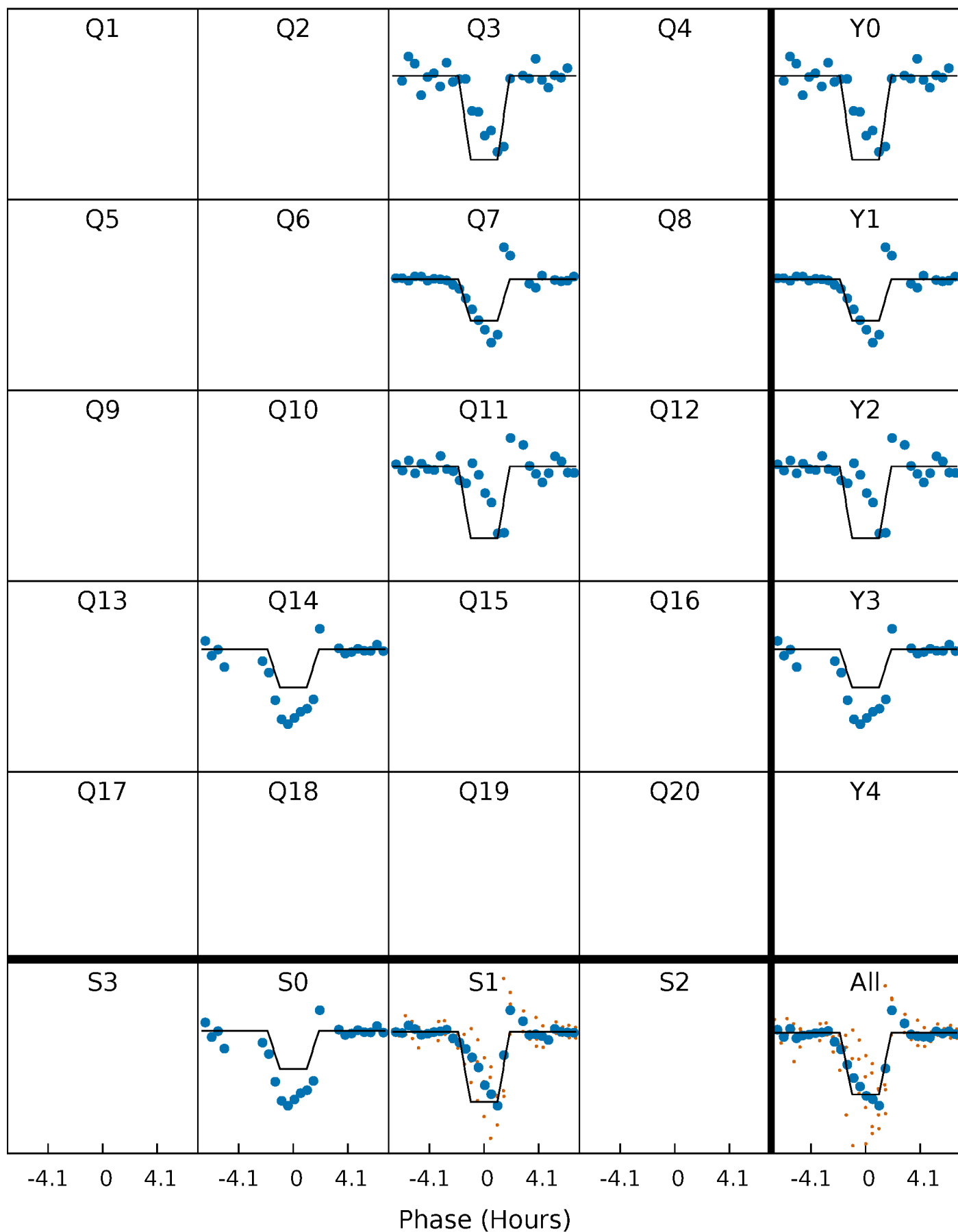
DV Quarter-Phased Transit Curves

TCE 006865416-02 P=335.894438 Days $T_0=334.929591$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

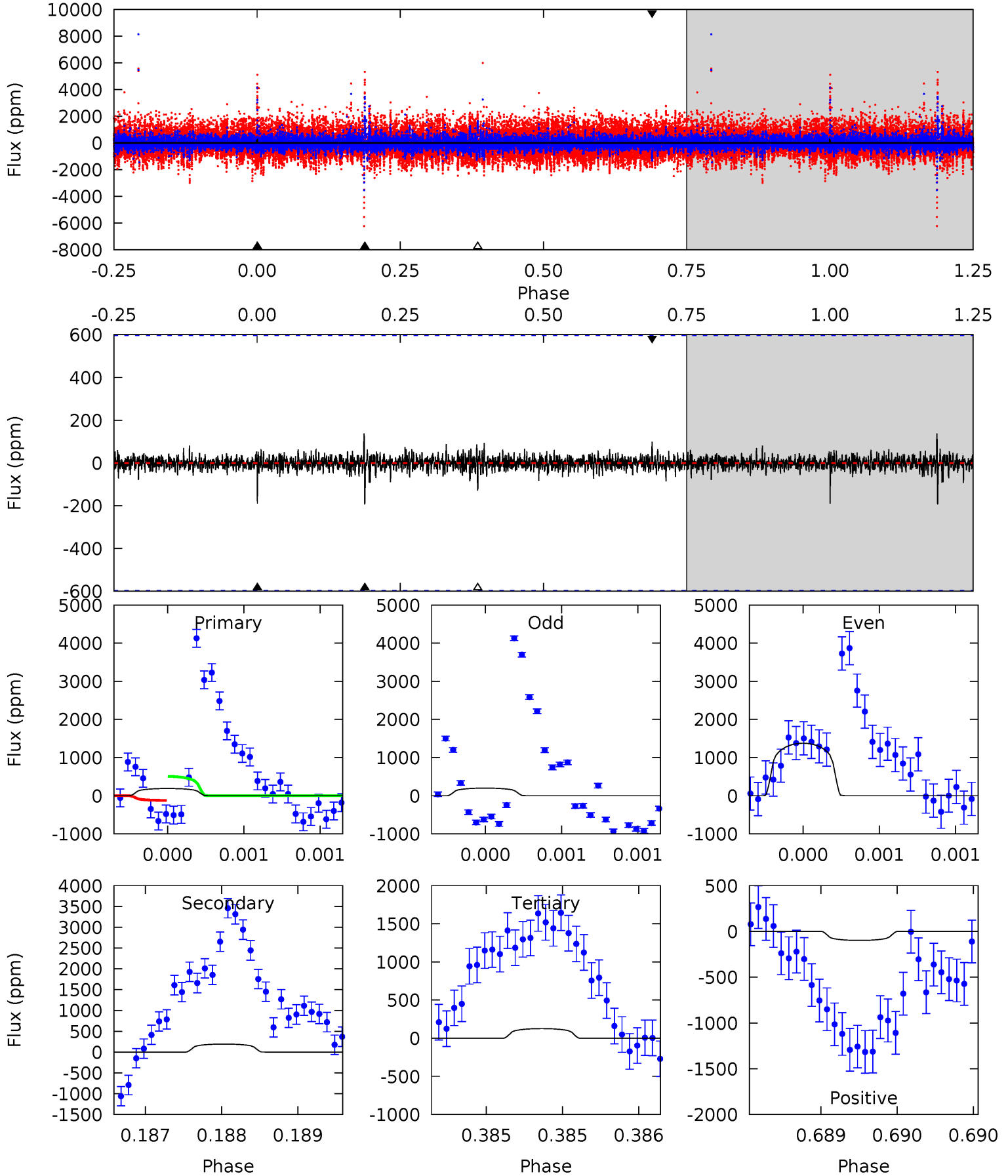
TCE 006865416-02 P=335.888180 Days $T_0=334.948218$ (BKJD)



DV Model-Shift Uniqueness Test

006865416-02, P = 335.894438 Days, E = 334.929591 Days

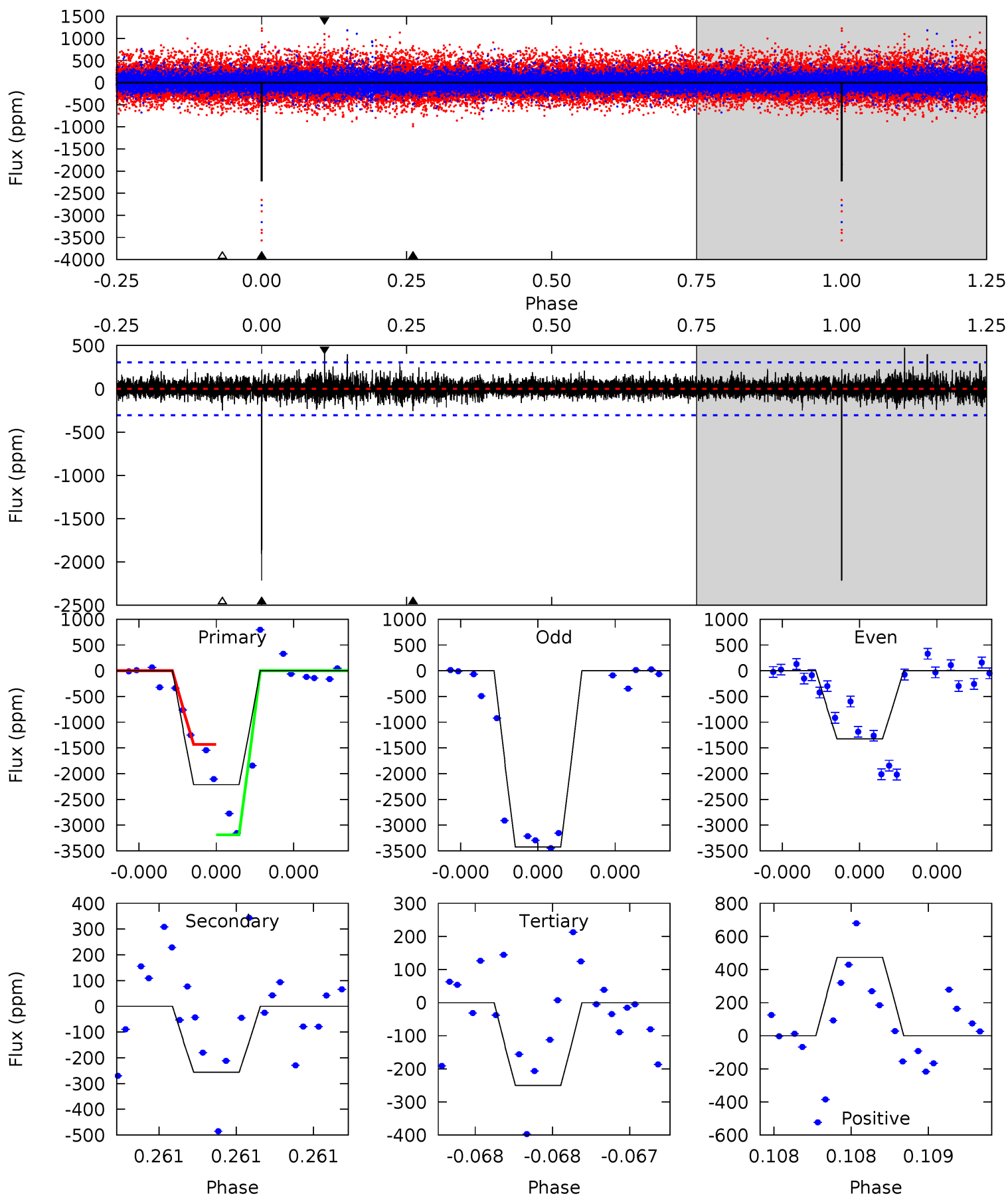
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.75	1.79	1.17	0.91	5.53	3.42	0.21	0.59	0.84	0.62	0.88	5.34	4.22	0.42	1.79



Alt Model-Shift Uniqueness Test

006865416-02, P = 335.888180 Days, E = 334.948218 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.7	4.70	4.59	8.70	5.60	3.53	0.97	36.1	32.0	0.11	-4.00	23.4	1.18	0.18	15.5



Stellar Parameters For KIC 006865416

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5435^{+160}_{-160}	$4.474^{+0.125}_{-0.125}$	$-0.380^{+0.350}_{-0.300}$	$0.828^{+0.136}_{-0.111}$	$0.746^{+0.115}_{-0.046}$	$1.853^{+1.017}_{-0.657}$
	+3%/-3%	+3%/-3%	+92%/-79%	+16%/-13%	+15%/-6%	+55%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006865416-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-193 ± 108	$3.74^{+2.98}_{-2.38}$	329^{+18}_{-16}	3538^{+1562}_{-694}	5142^{+34562}_{-4024}
Alt.	-256 ± 54	$4.66^{+3.13}_{-2.74}$	330^{+16}_{-17}	3496^{+1352}_{-496}	4912^{+24304}_{-3176}

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 $A_{obs} \gg 1.0$

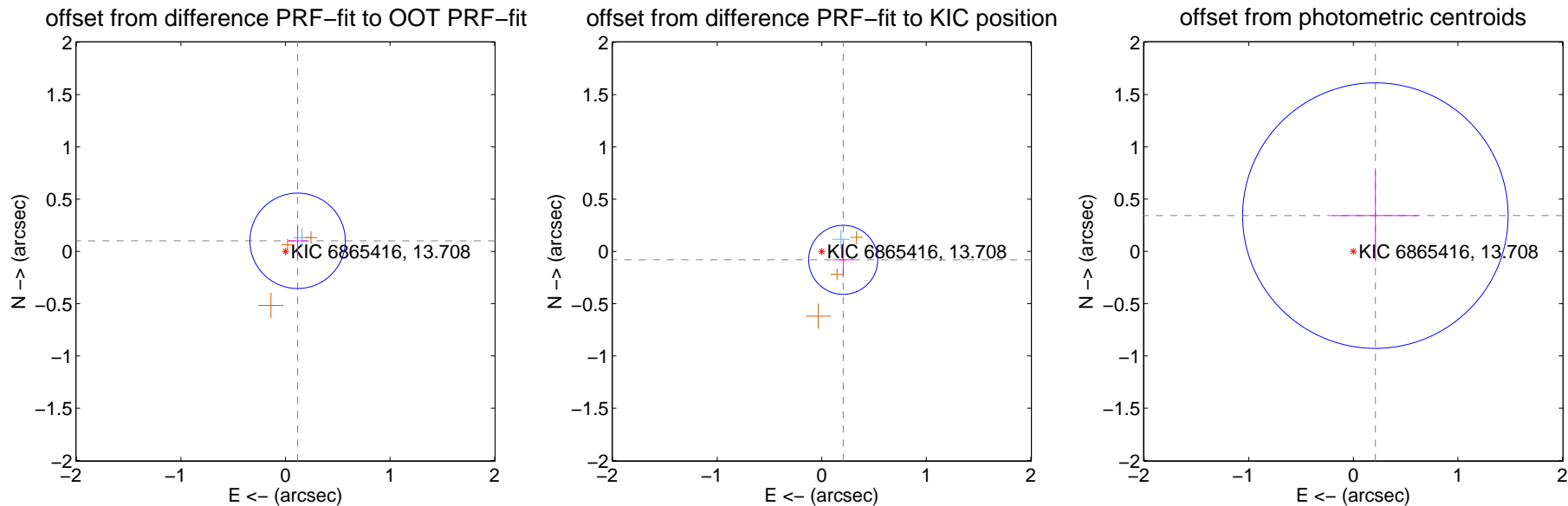
DV Centroid Data

Supplemental centroid analysis for 006865416-02. Kepler magnitude: 13.71. Transit SNR 7.31

There are 1 quarters with good PRF difference image offsets

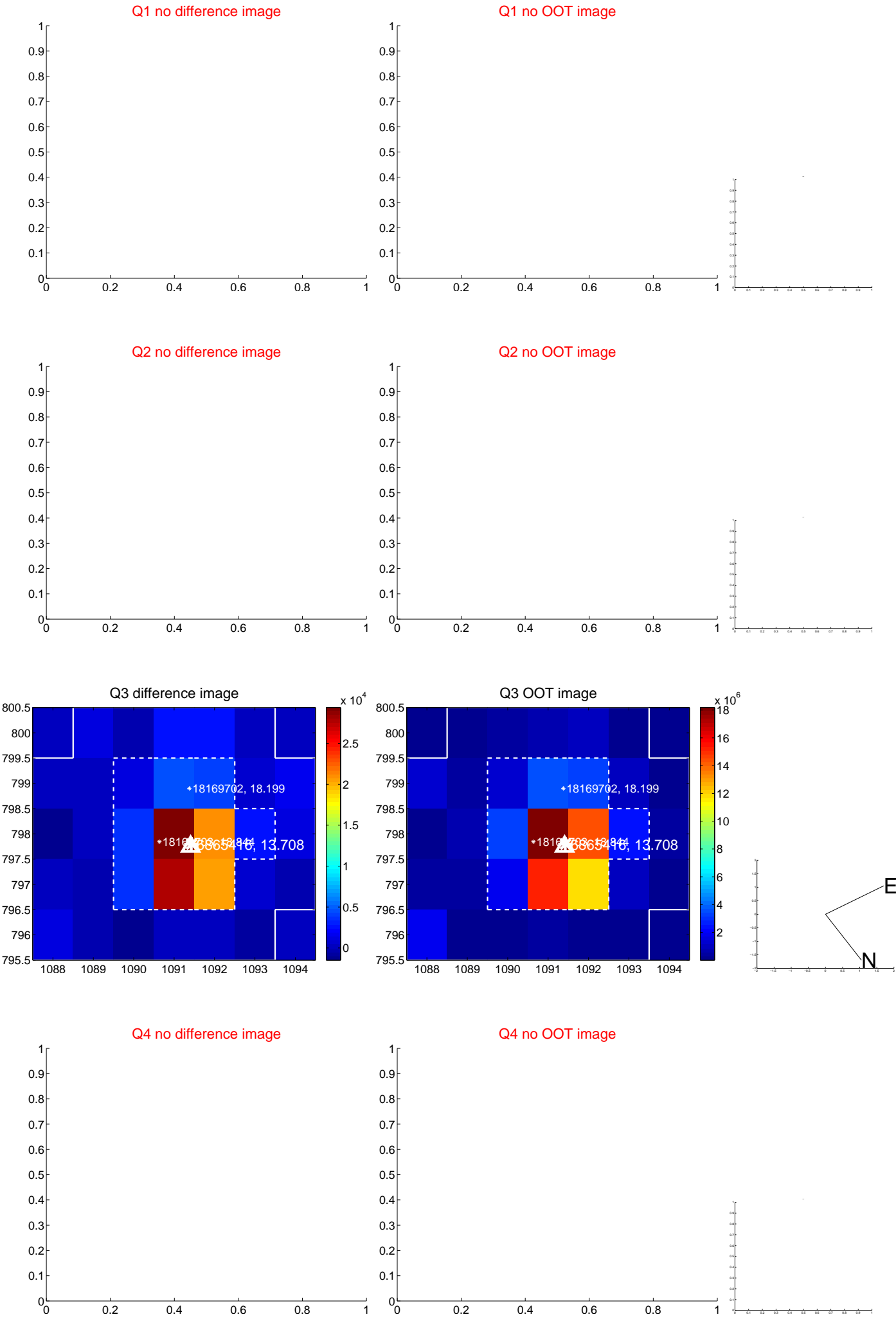
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.154 ± 0.152	1.01	-0.116 ± 0.094	0.101 ± 0.154
PRF-fit source offset from KIC position	0.220 ± 0.110	2.00	-0.205 ± 0.099	-0.080 ± 0.165
photometric centroid source offset	0.40 ± 0.42	0.95	-0.21 ± 0.41	0.34 ± 0.43

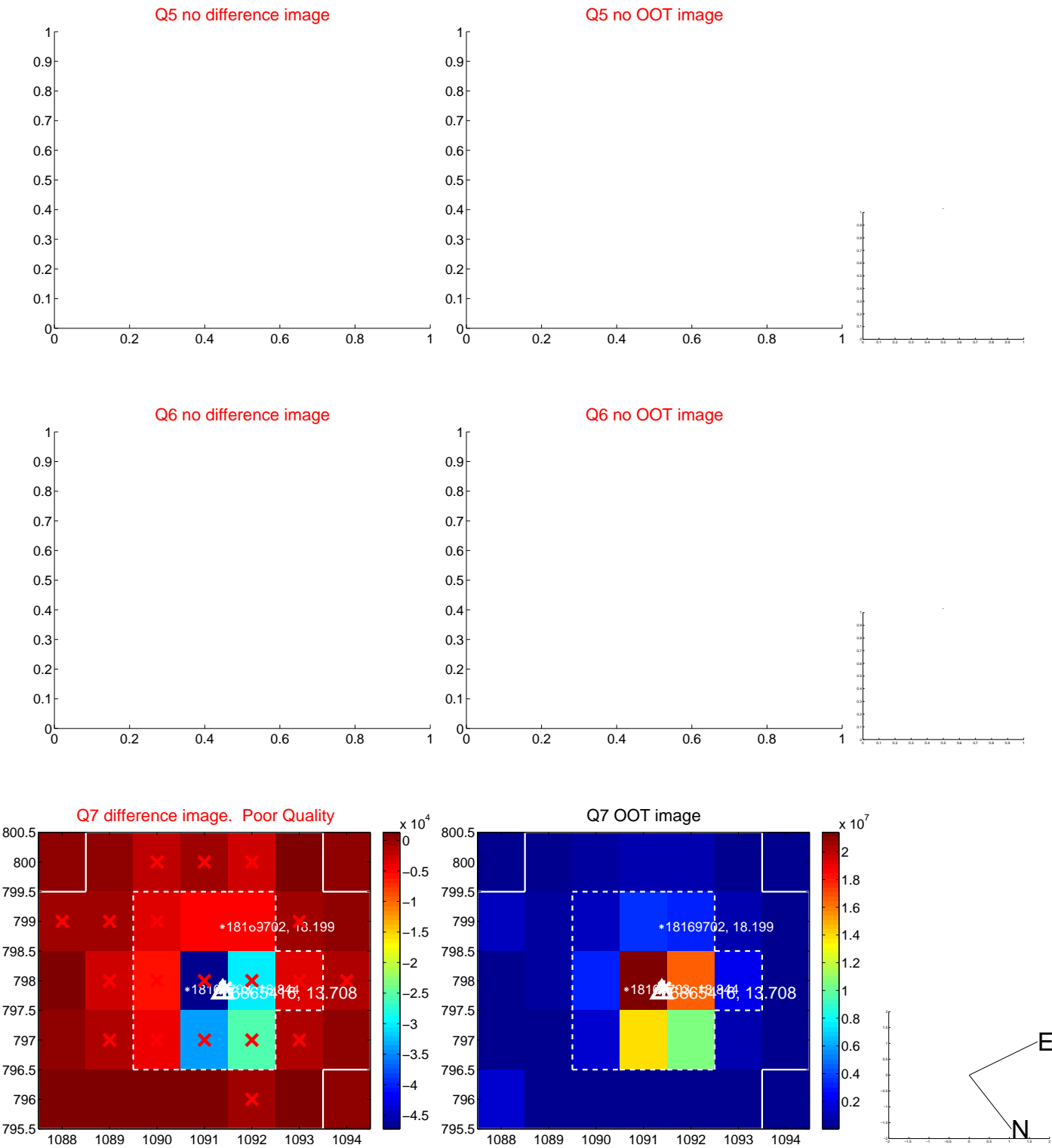


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

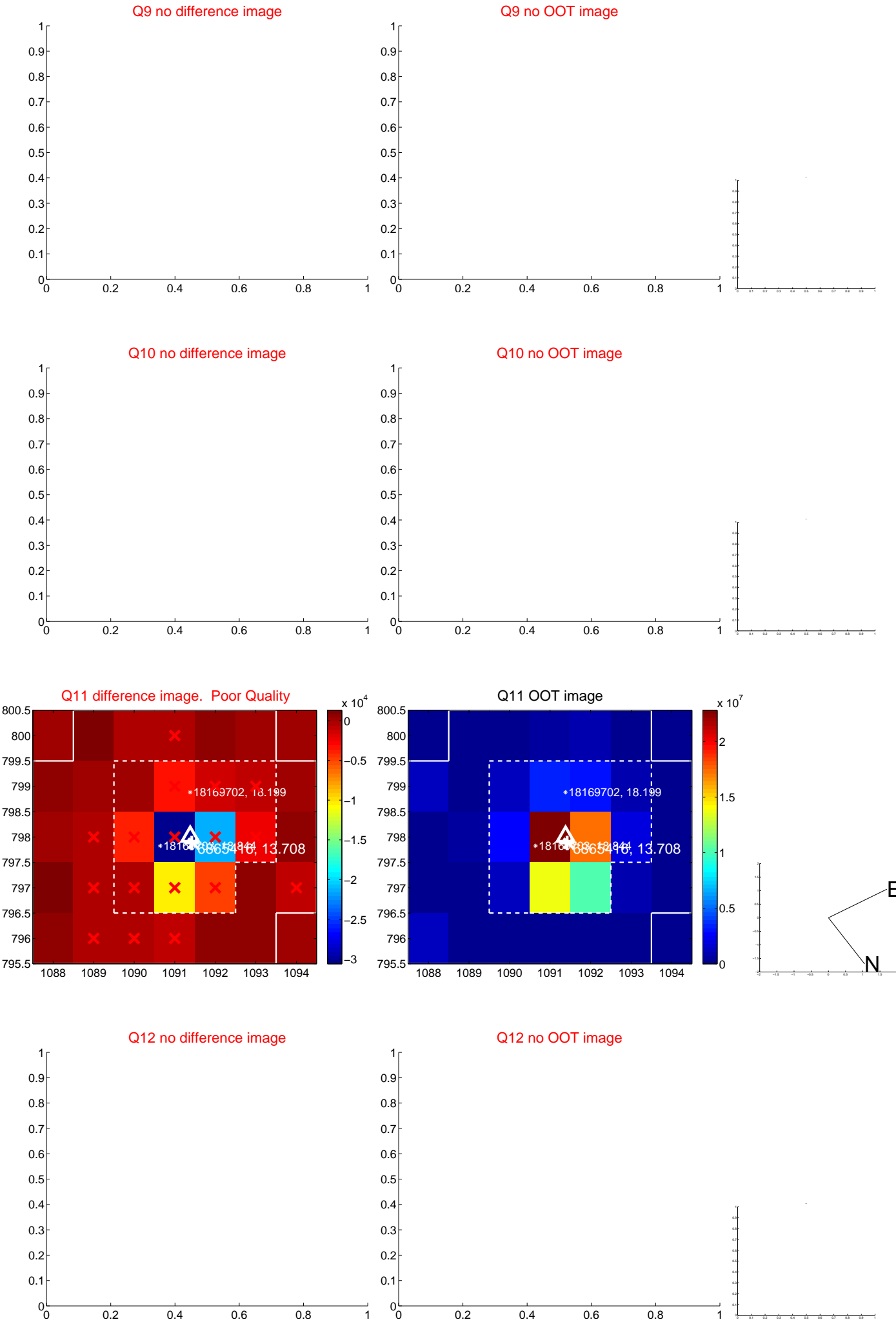
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



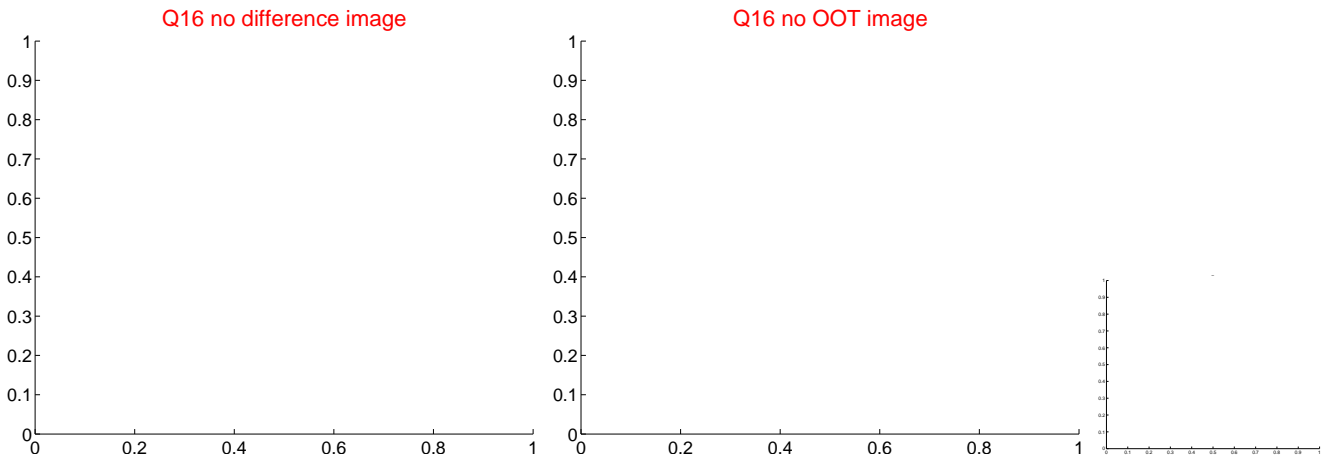
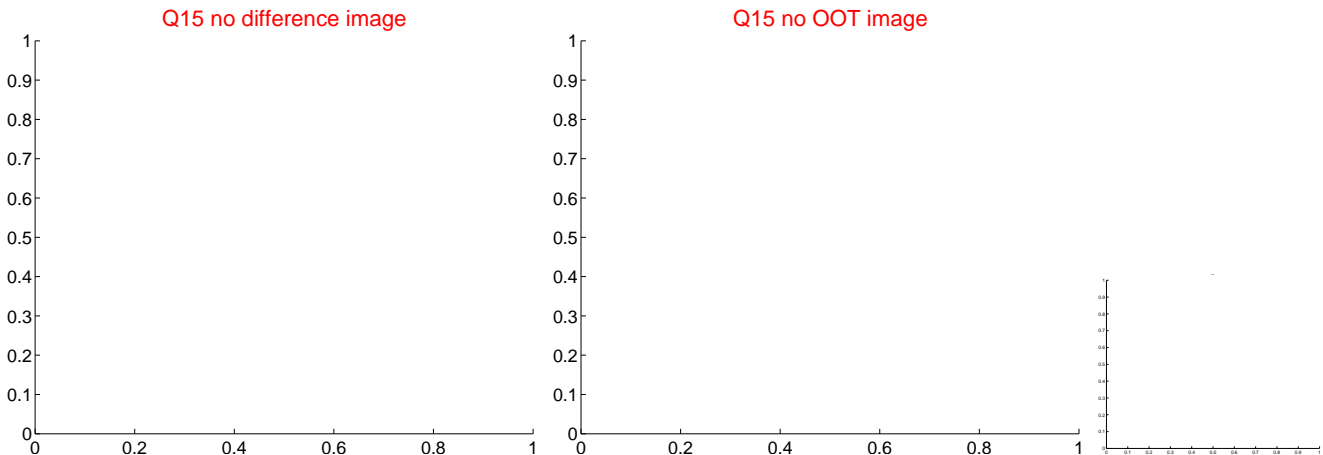
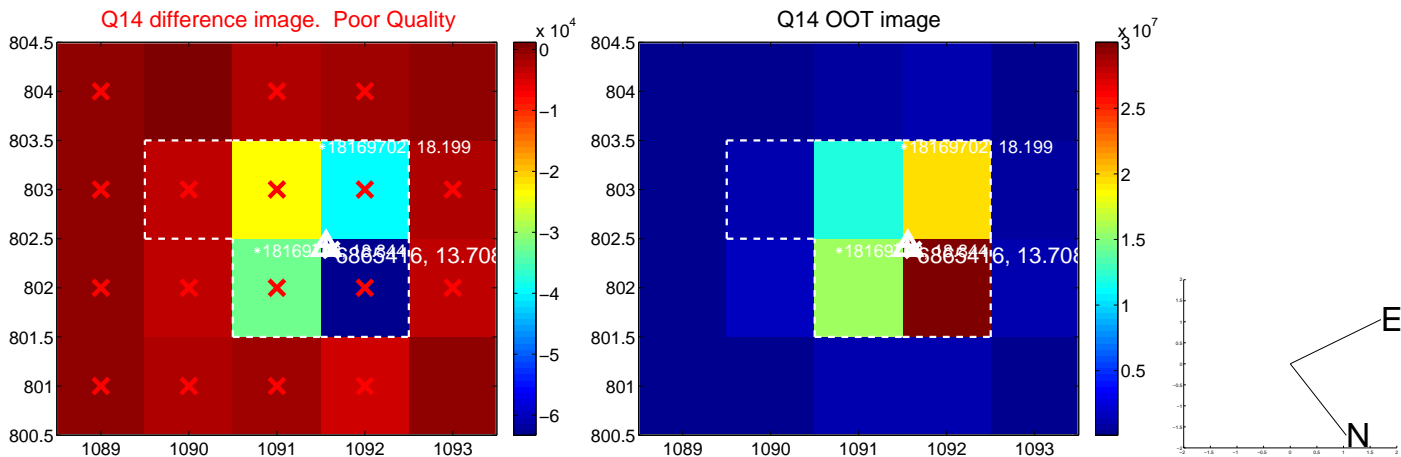
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



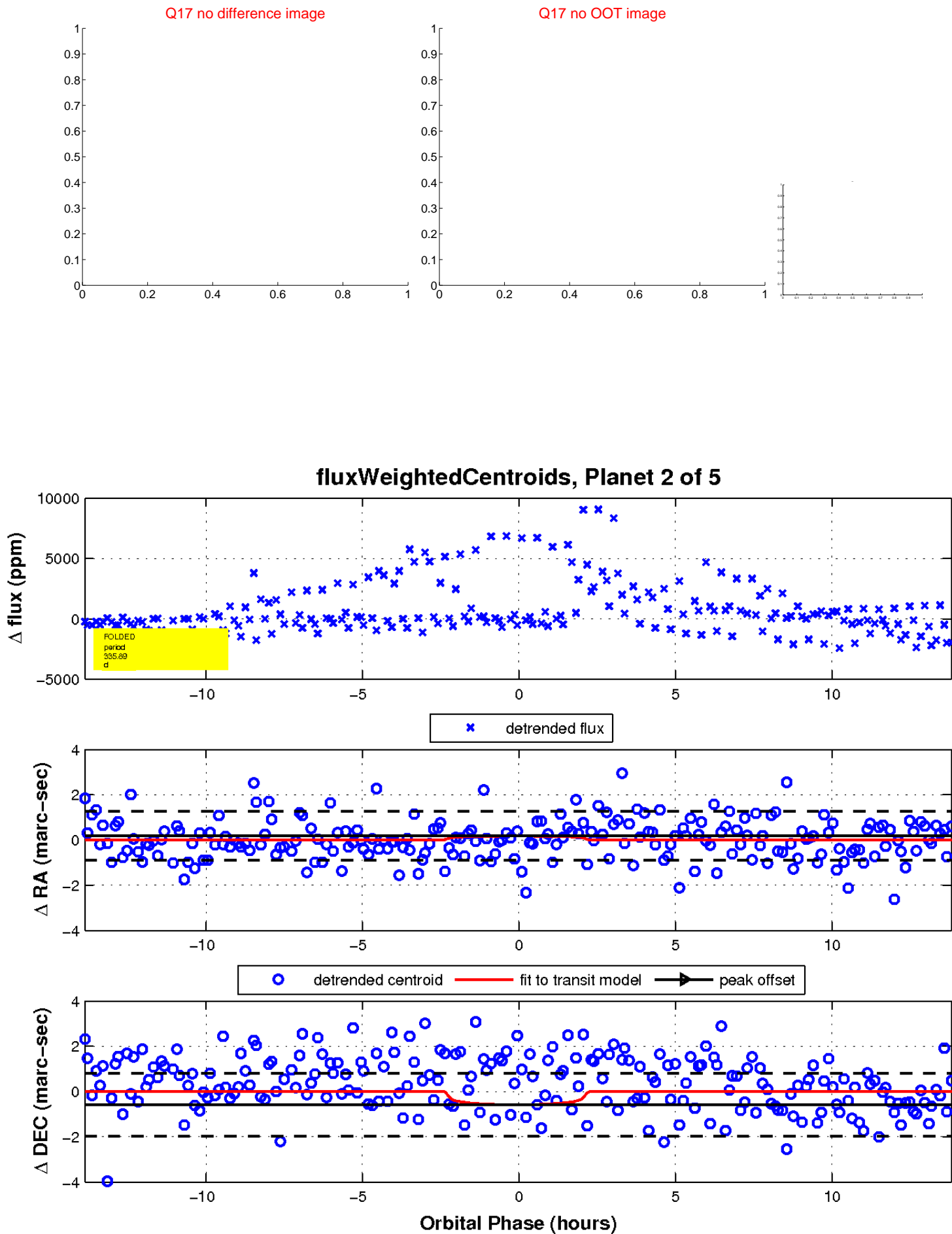
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



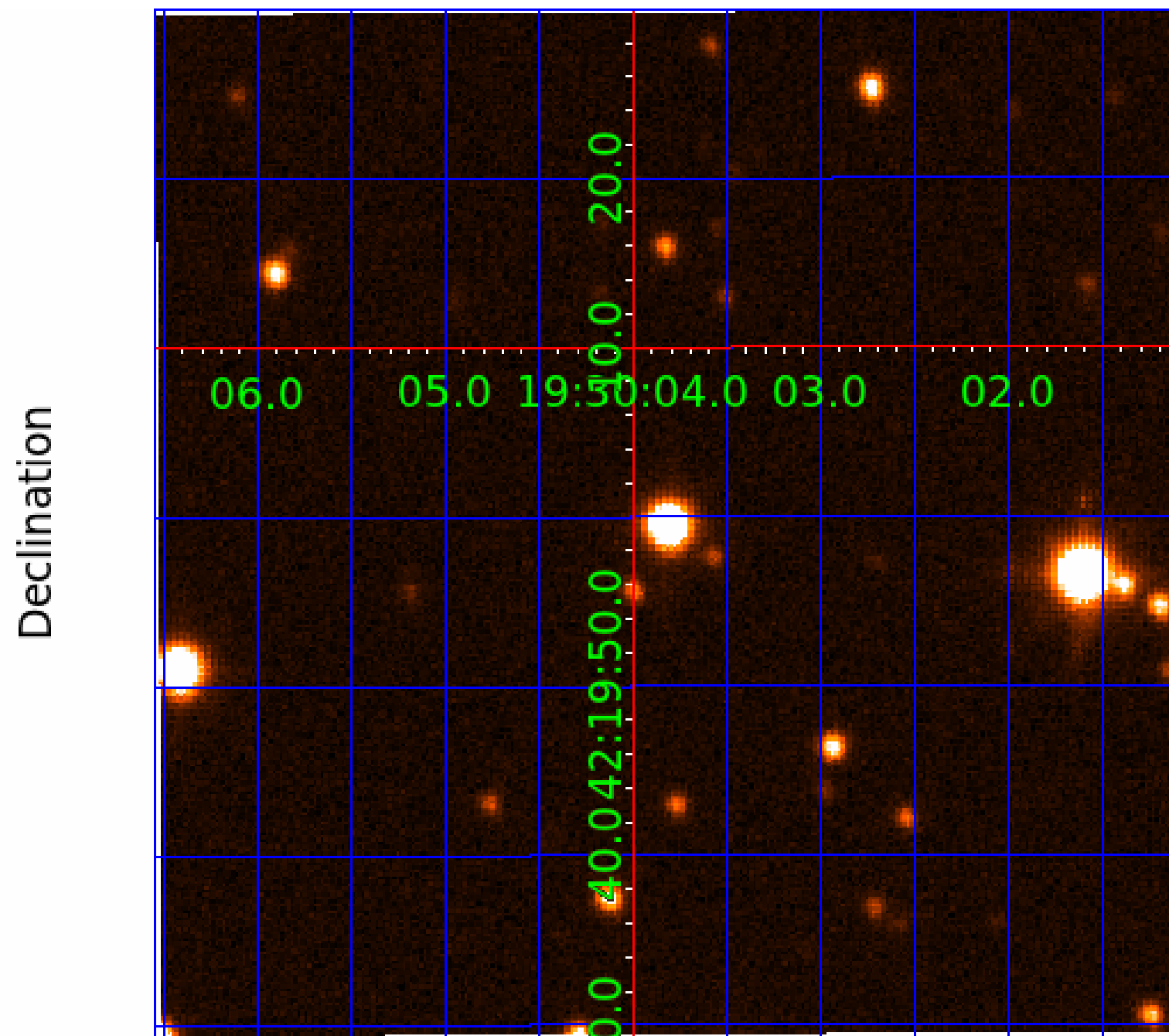
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image



KIC 006865416

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})
006865416-01	OBS	No	536.884787	358.914406	1018.9	12.796	12.2	3.6	0.83	5435	2.67	0.39
006865416-02	OBS	No	335.894438	334.929591	1242.6	4.634	19.0	7.3	0.83	5435	3.04	0.73
006865416-03	OBS	No	535.551182	390.232311	1558.6	6.262	16.4	7.5	0.83	5435	3.23	0.39
006865416-04	OBS	No	545.651884	430.282318	893.2	3.547	12.4	6.0	0.83	5435	2.60	0.38
006865416-05	OBS	No	230.414322	269.634963	659.9	1.798	14.2	5.0	0.83	5435	2.30	1.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006865416-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006865416-03	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
006865416-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV

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

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

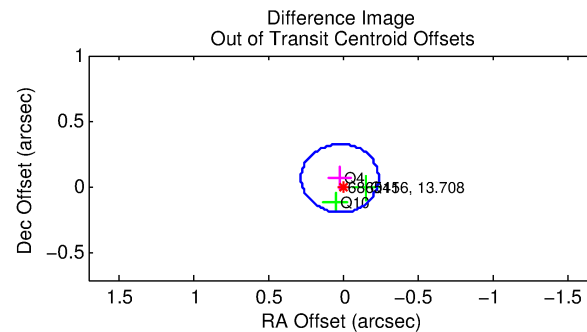
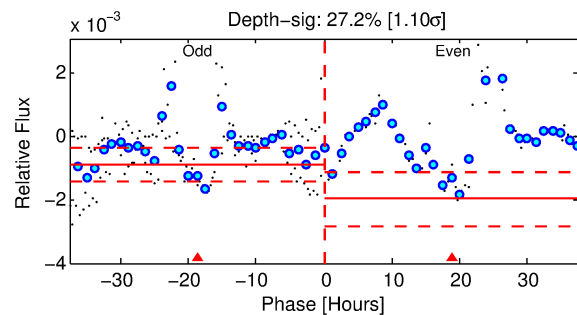
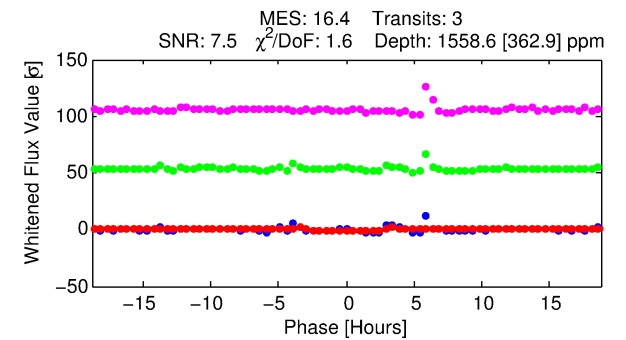
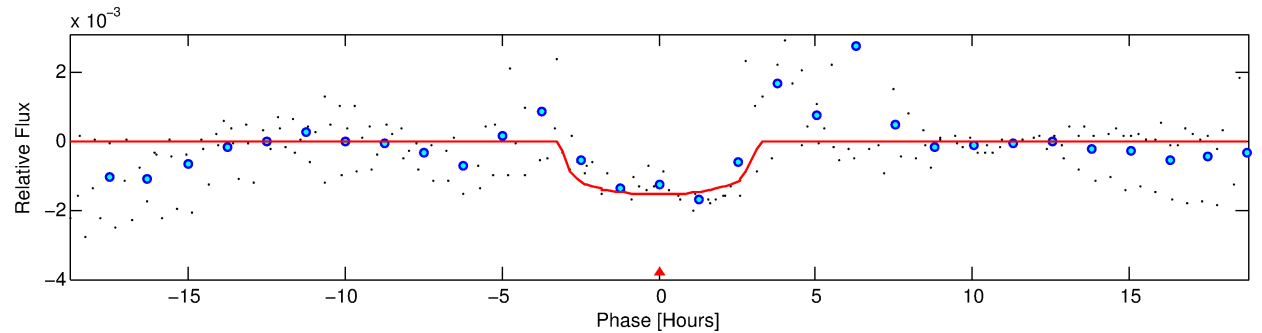
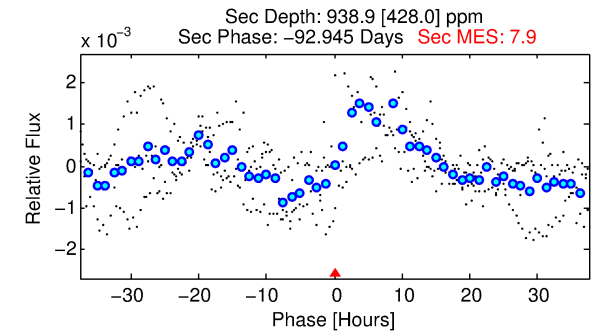
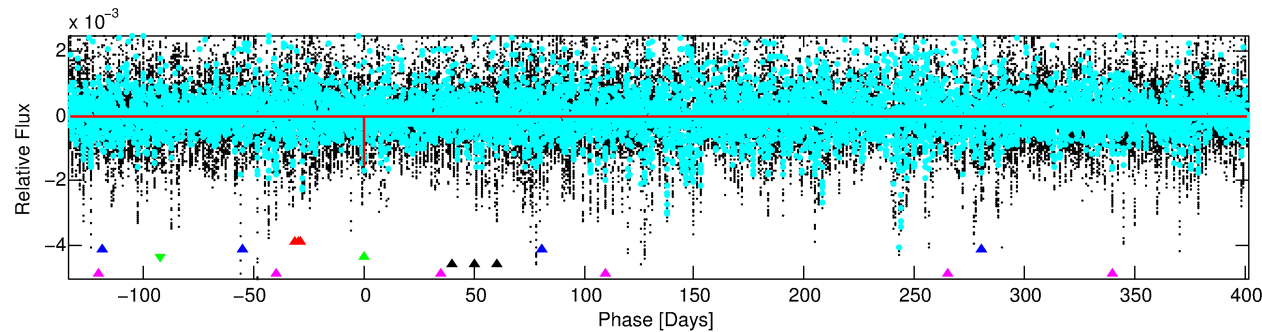
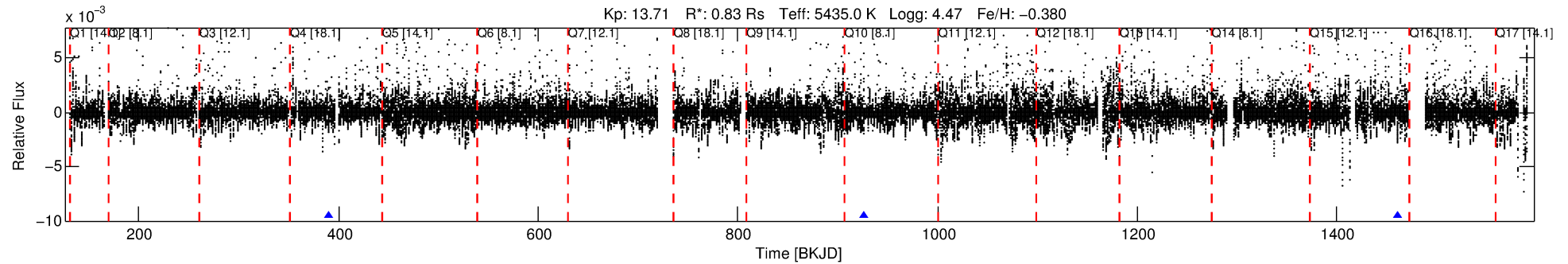
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006865416-03

No Significant Match Found

DV One-Page Summary

KIC: 6865416 Candidate: 3 of 5 Period: 535.551 d



DV Fit Results:

Period = 535.55118 [0.00605] d
Epoch = 390.2323 [0.0073] BKJD
Rp/R* = 0.0357 [0.0352]
a/R* = 672.39 [2679.61]
b = 0.12 [33.84]
Seff = 0.39 [0.10]
Teq = 202 [13] K
Rp = 3.23 [3.23] Re
a = 1.1702 [0.1704] AU
Ag = 67940.31 [138464.67] [0.49 σ]
Teffp = 5035 [2554] K [1.89 σ]

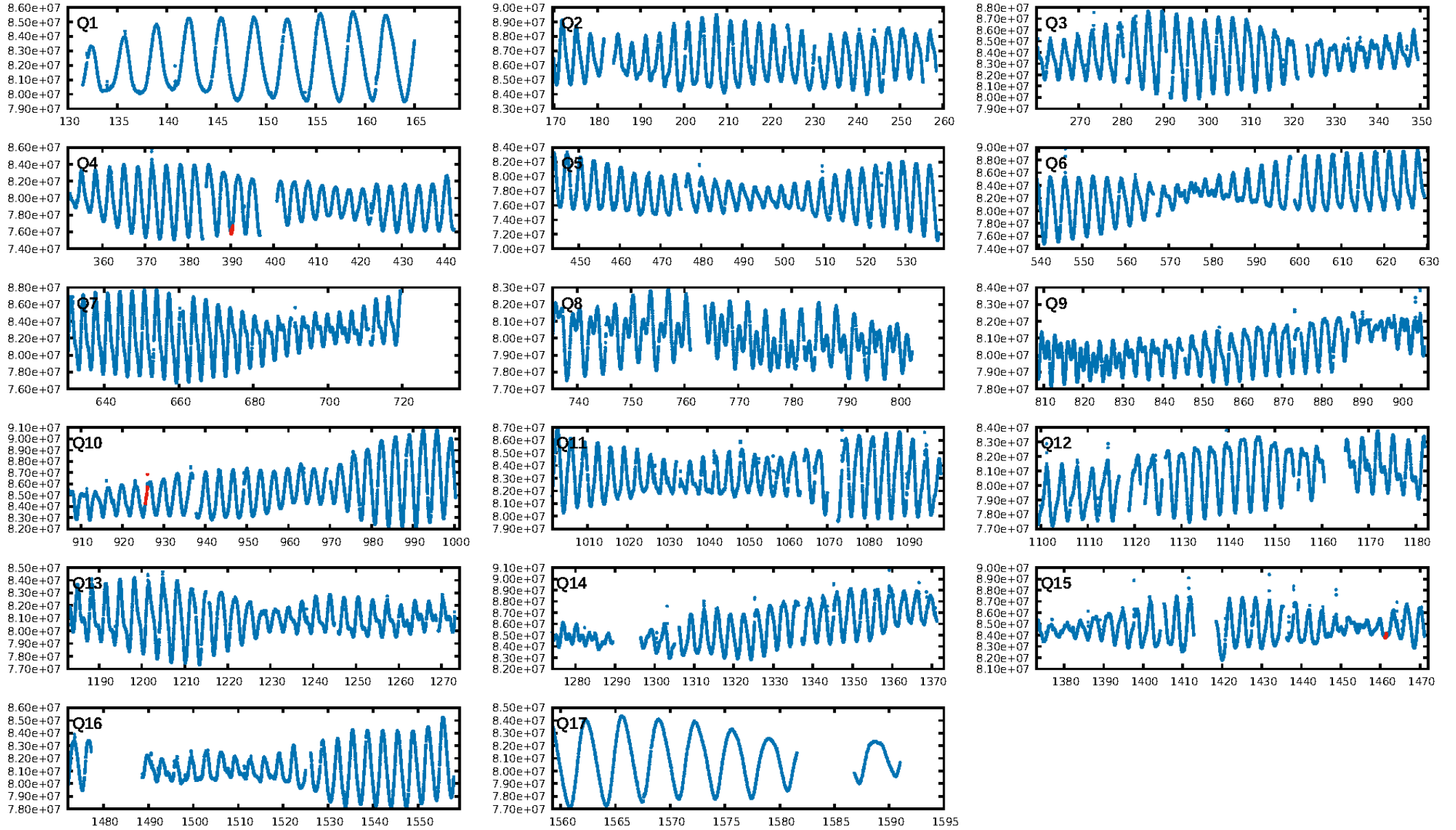
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [615.11 σ]
LongPeriod-sig: 97.5% [2.25 σ]
ModelChiSquare2-sig: 38.6%
ModelChiSquareGof-sig: 17.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9882
Centroid-sig: 2.0%
Centroid-so: 0.660 arcsec [1.79 σ]
OotOffset-rm: 0.072 arcsec [0.84 σ]
KicOffset-rm: 0.148 arcsec [1.91 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

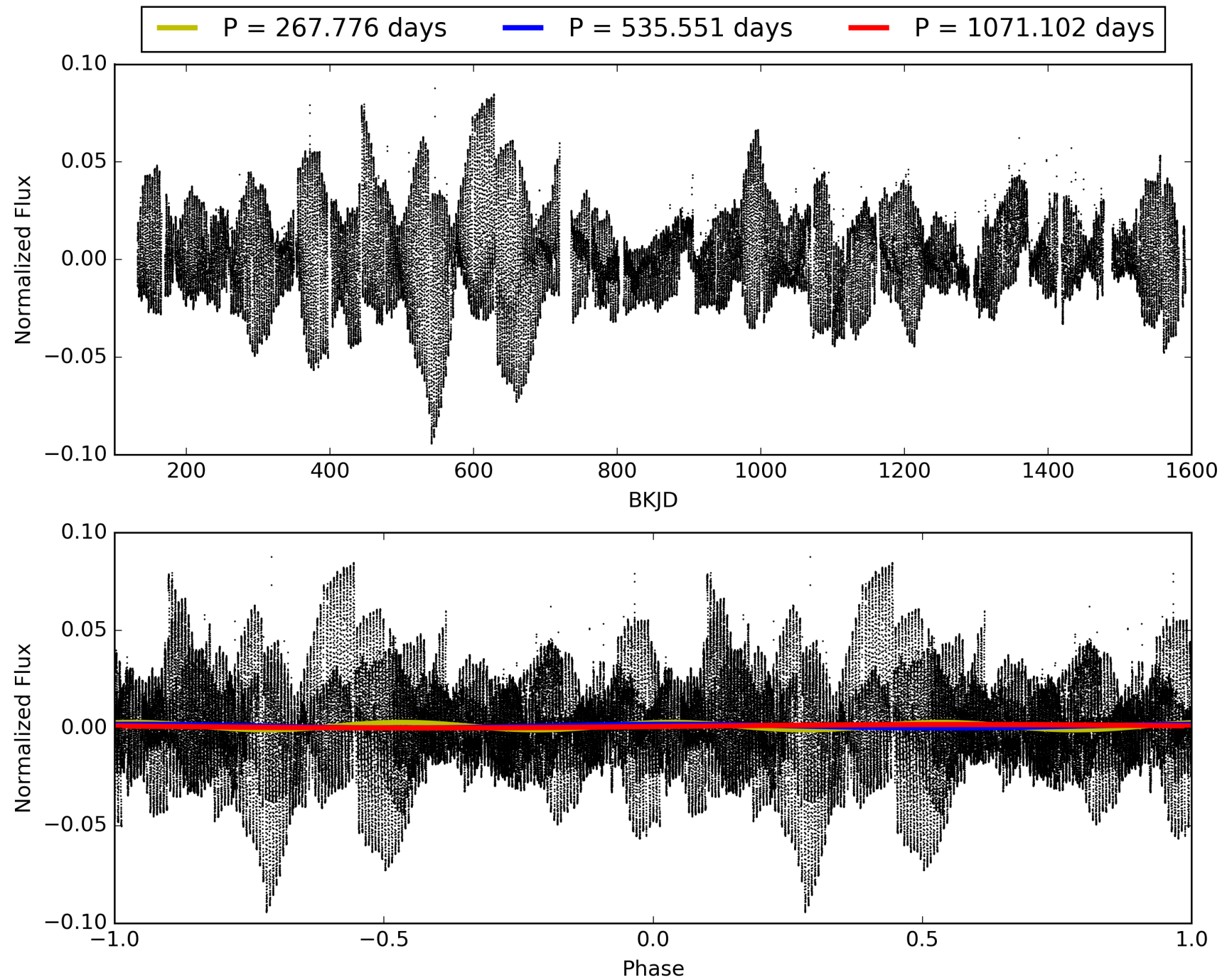
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:05:56 Z

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

TCE 006865416-03, PDC Light Curves

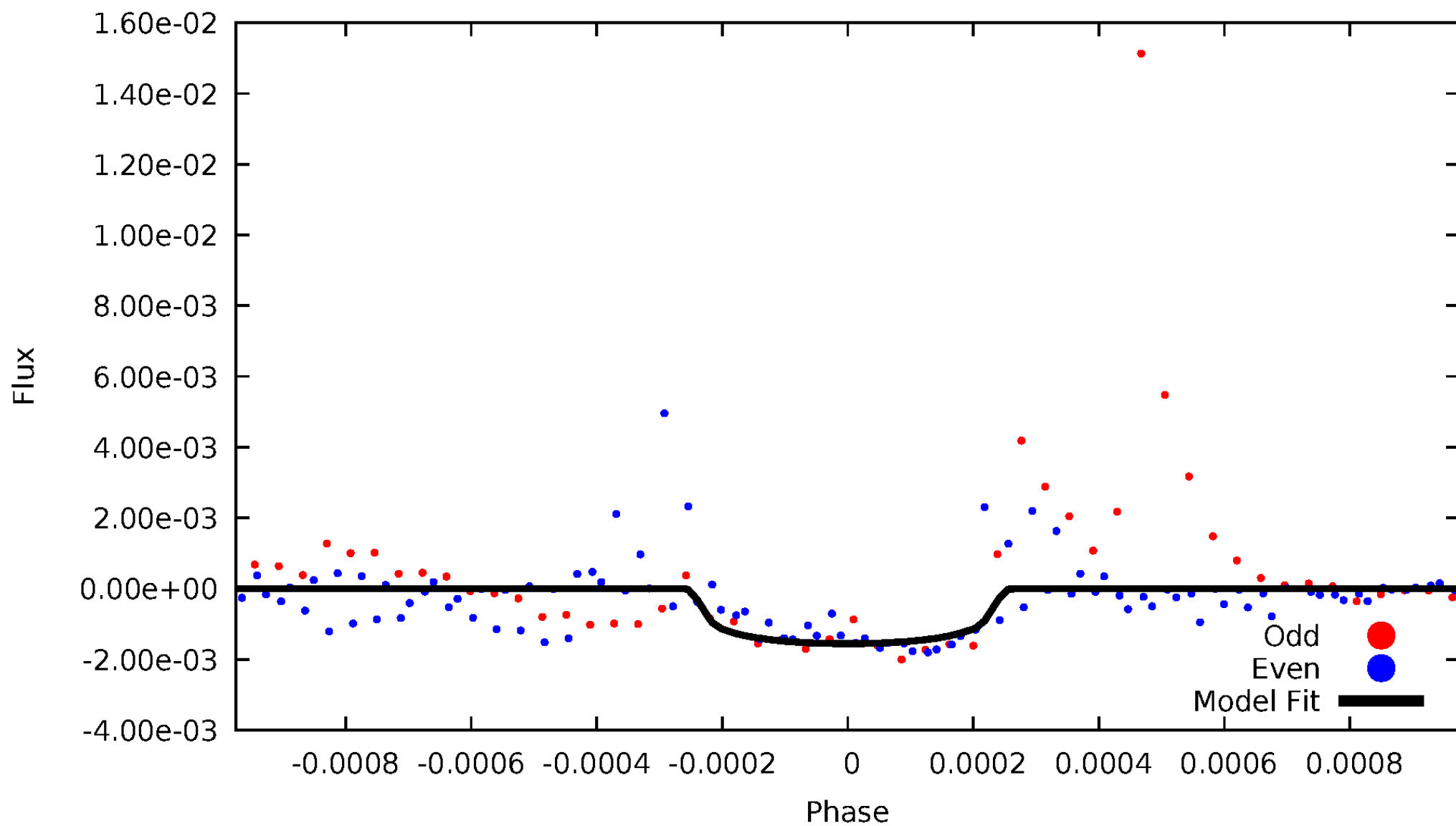


TCE 006865416-03



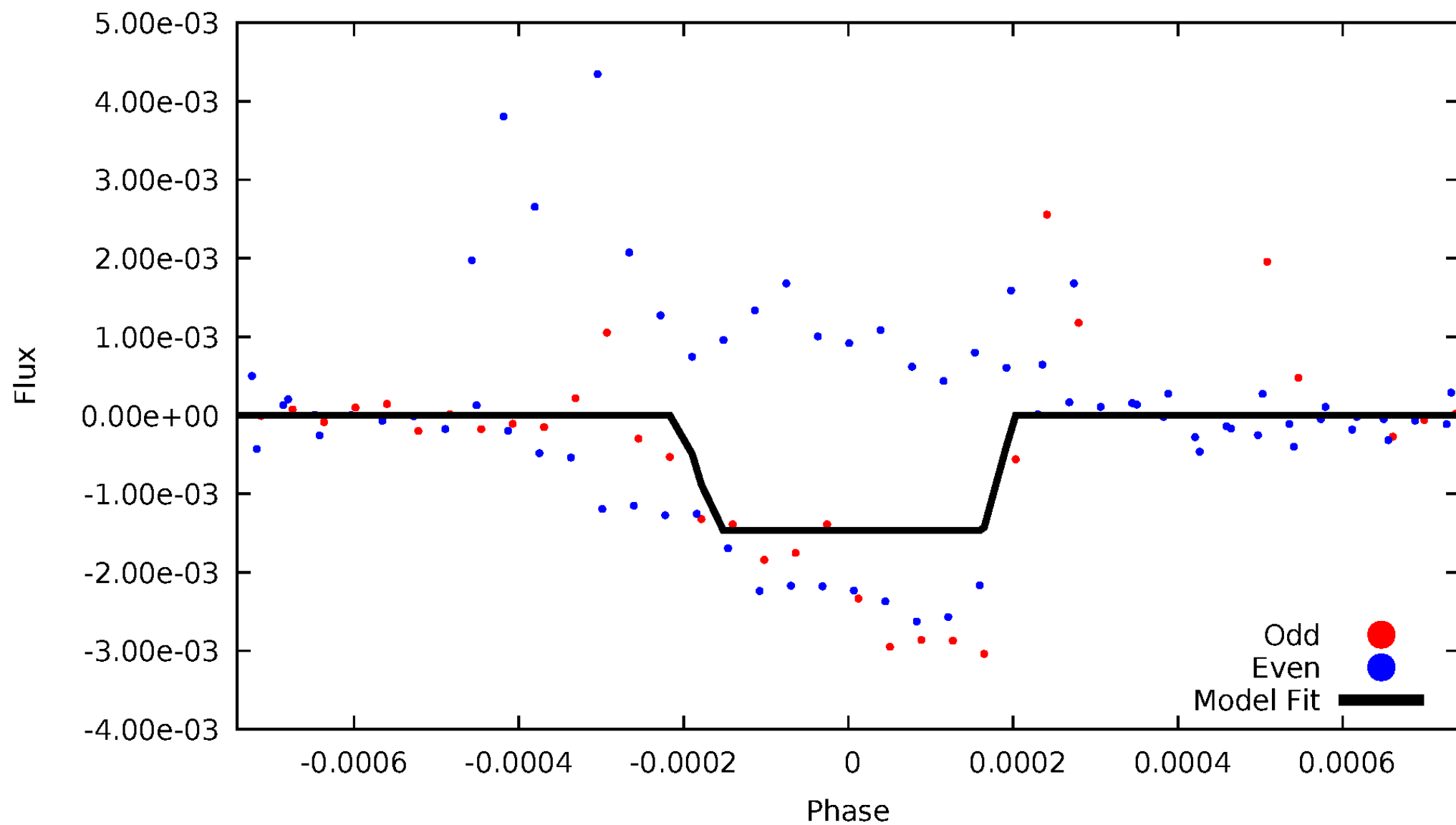
DV Odd/Even

TCE 006865416-03



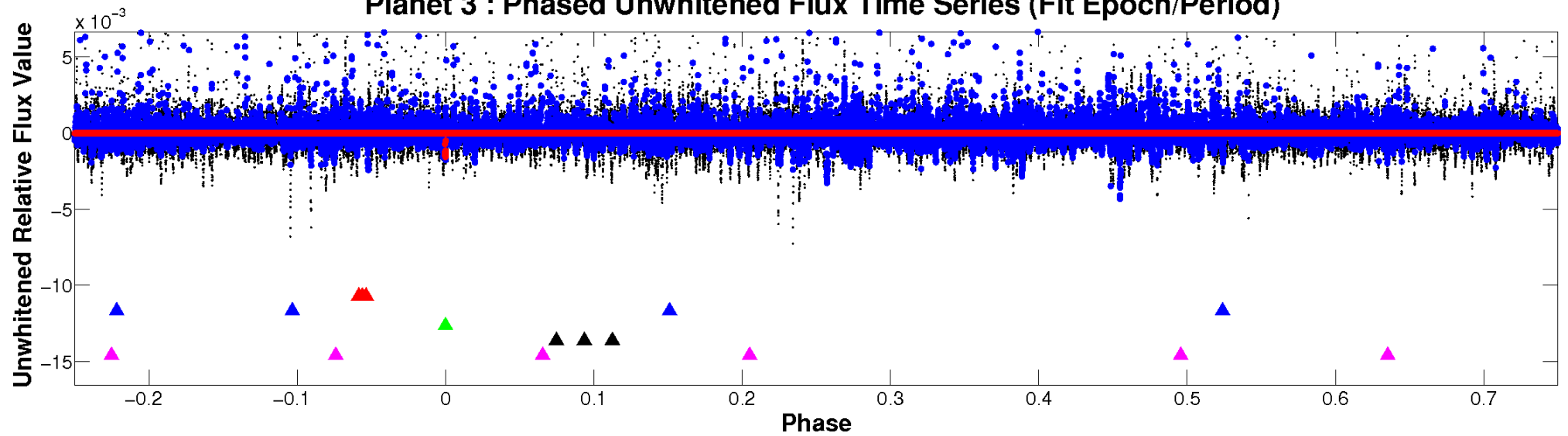
ALT Odd/Even

TCE 006865416-03

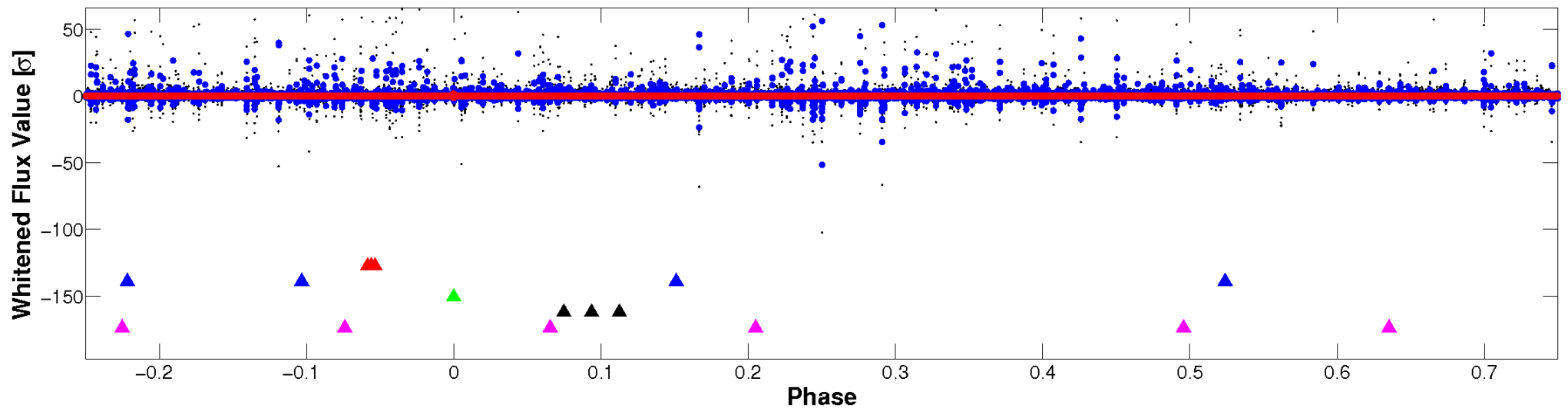


Non-Whitened Vs. Whitened Light Curve

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

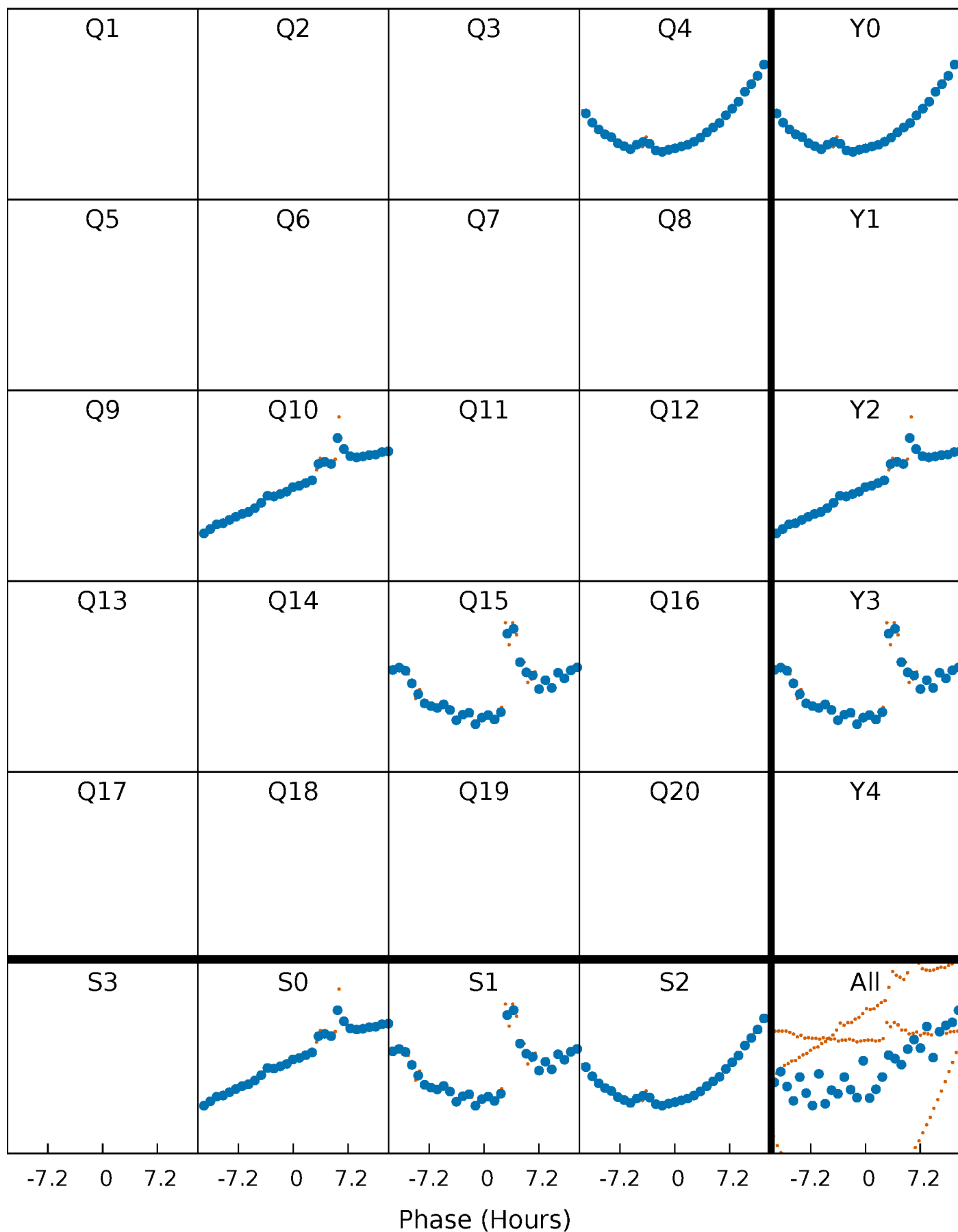


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



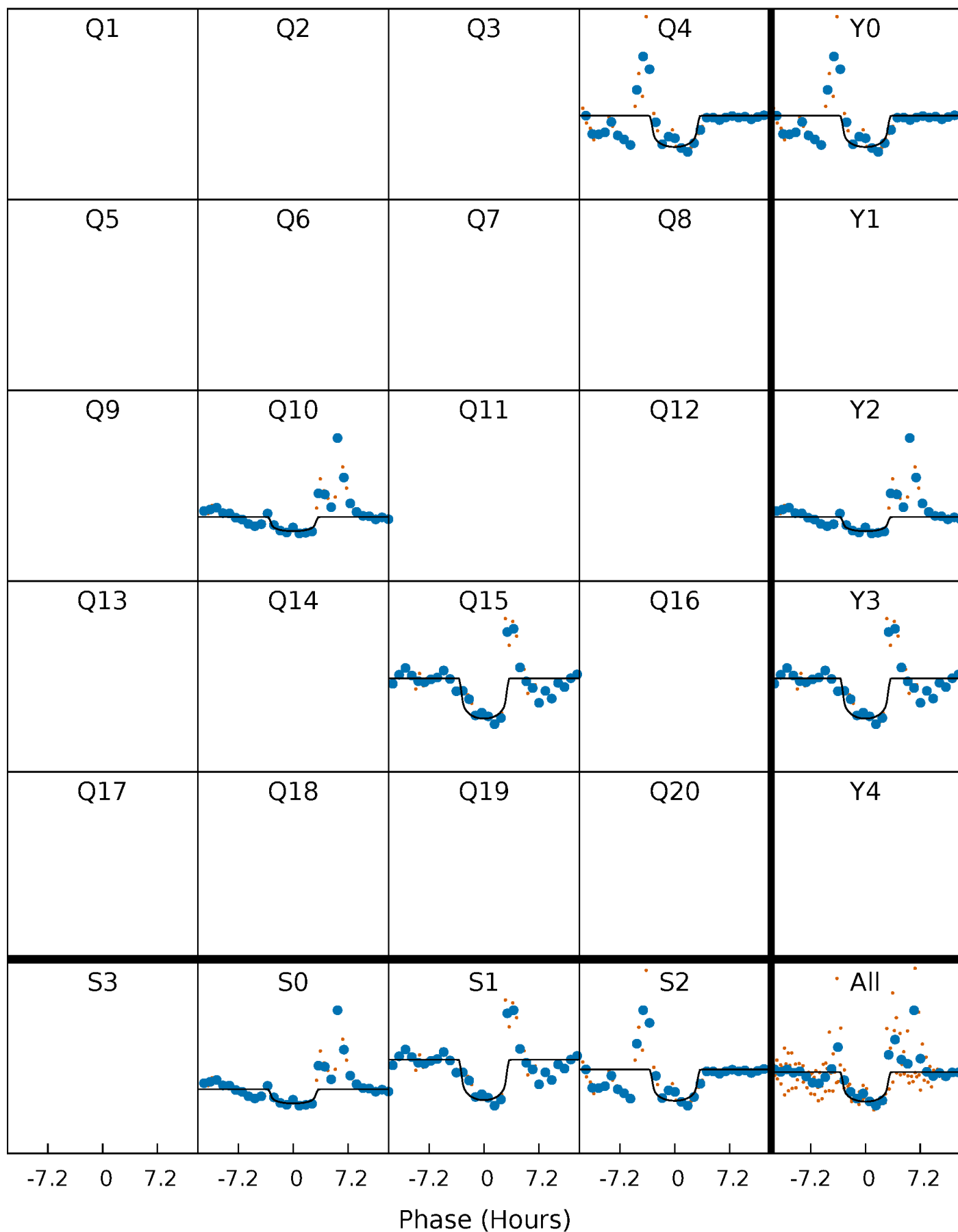
PDC Quarter-Phased Transit Curves

TCE 006865416-03 P=535.551182 Days $T_0=390.232311$ (BKJD)



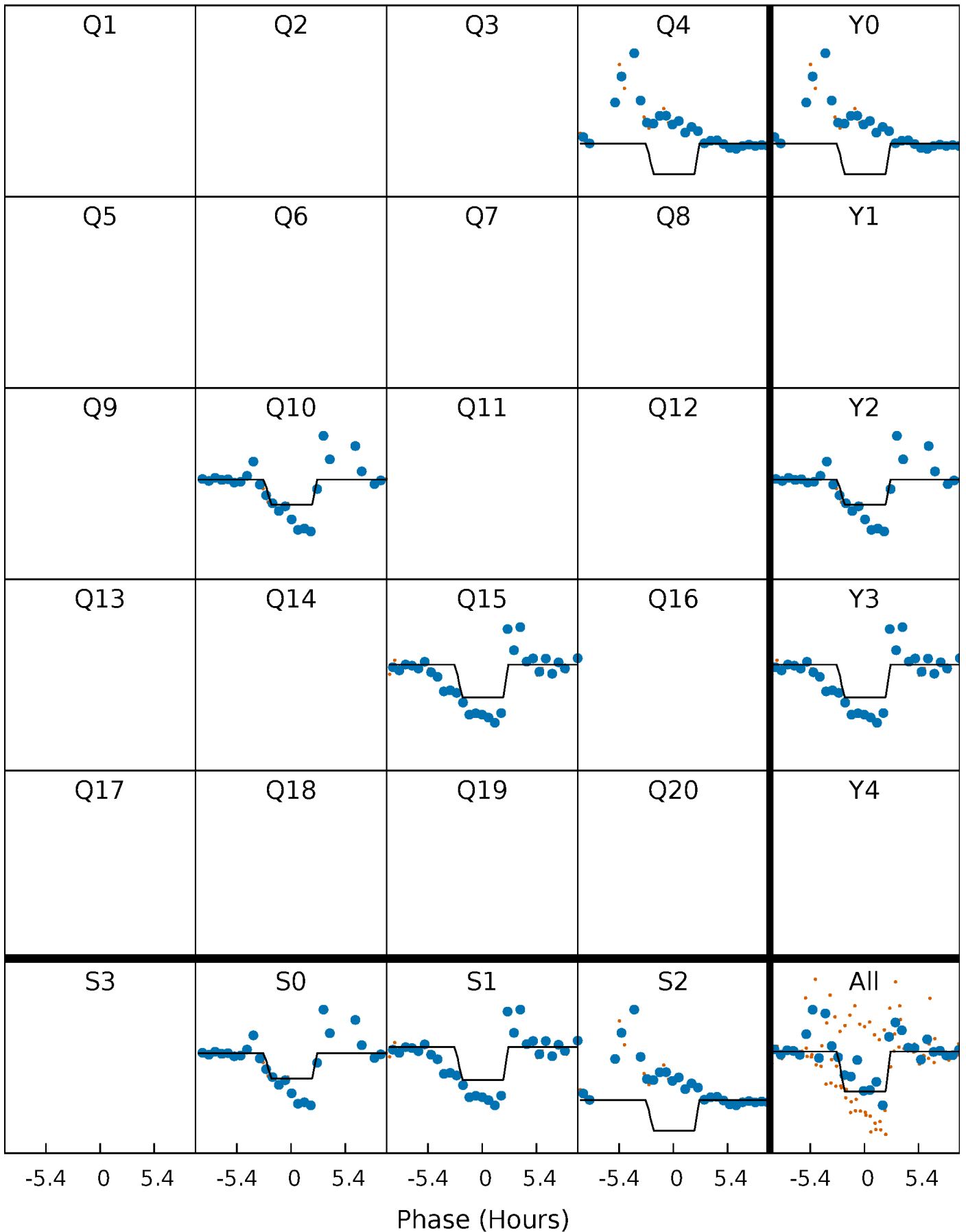
DV Quarter-Phased Transit Curves

TCE 006865416-03 P=535.551182 Days $T_0=390.232311$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

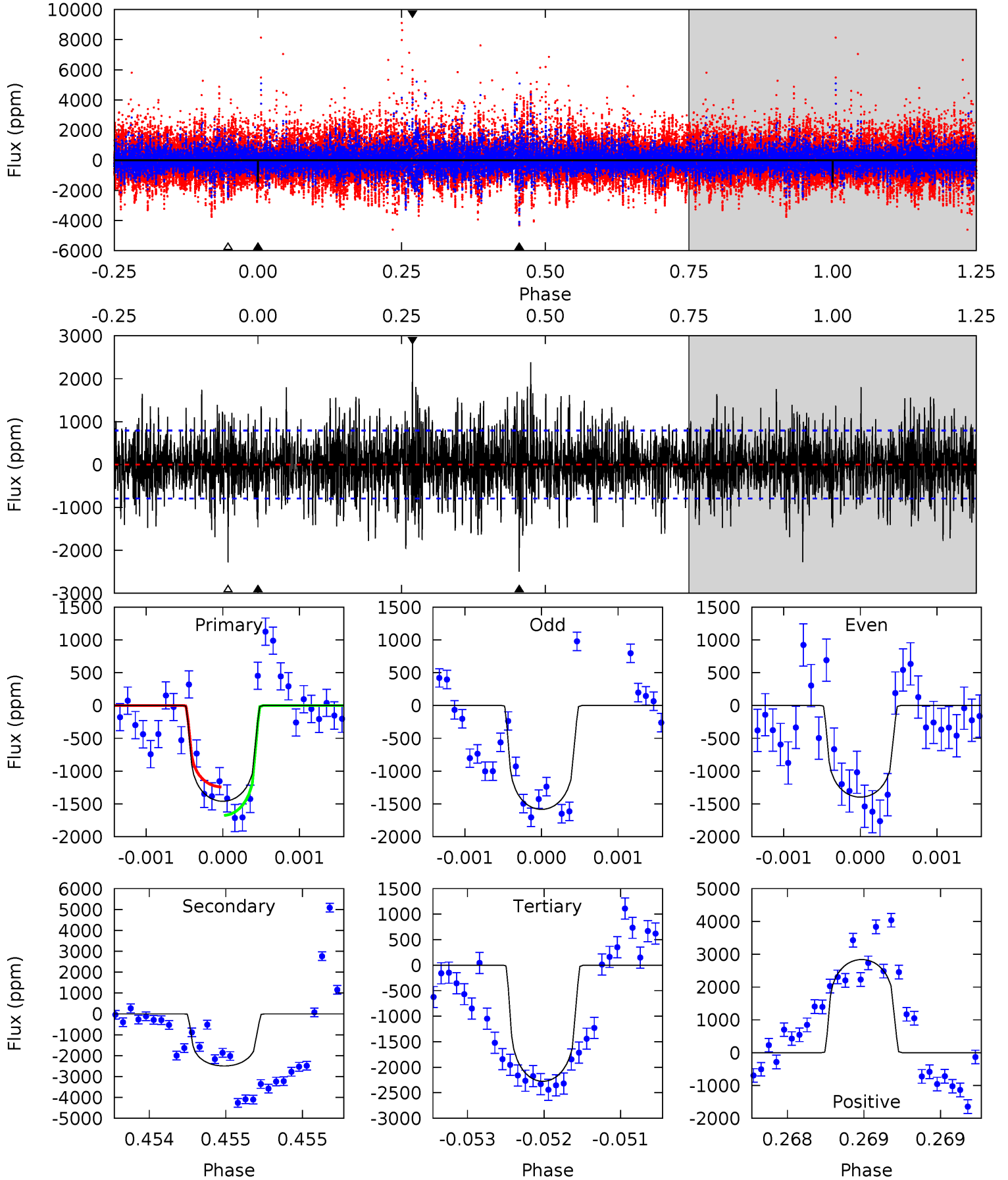
TCE 006865416-03 $P=535.543174$ Days $T_0=390.259198$ (BKJD)



DV Model-Shift Uniqueness Test

006865416-03, P = 535.551182 Days, E = 390.232311 Days

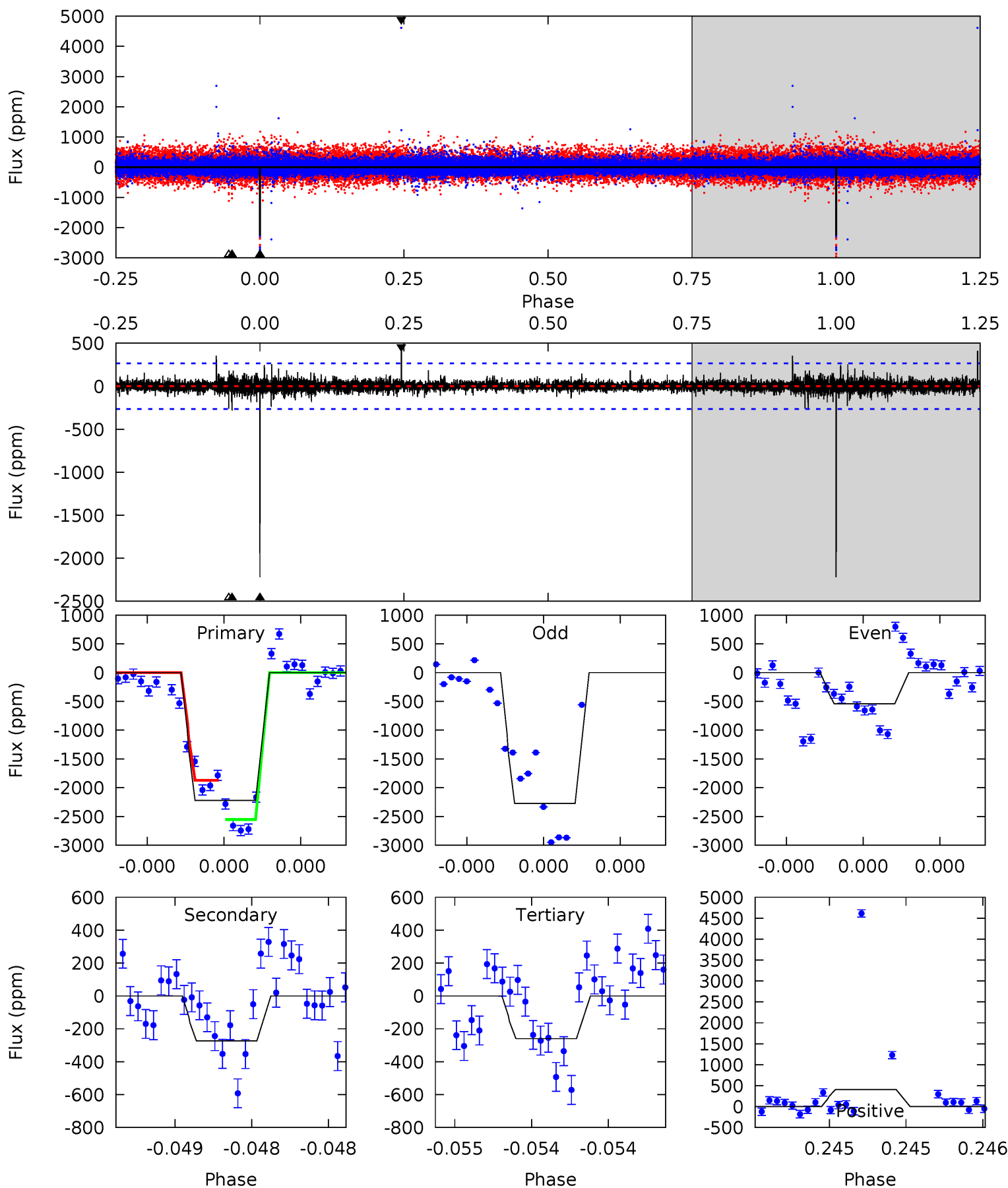
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	17.5	16.0	19.9	5.56	3.46	3.66	-5.73	-9.68	1.55	-2.40	0.46	1.01	0.53	1.52



Alt Model-Shift Uniqueness Test

006865416-03, P = 535.543174 Days, E = 390.259198 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.1	5.79	5.51	8.68	5.62	3.55	0.75	41.6	38.4	0.27	-2.89	20.7	0.52	0.16	7.29



Stellar Parameters For KIC 006865416

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5435^{+160}_{-160}	$4.474^{+0.125}_{-0.125}$	$-0.380^{+0.350}_{-0.300}$	$0.828^{+0.136}_{-0.111}$	$0.746^{+0.115}_{-0.046}$	$1.853^{+1.017}_{-0.657}$
	+3%/-3%	+3%/-3%	+92%/-79%	+16%/-13%	+15%/-6%	+55%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006865416-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2495 ± 142	$3.73^{+3.15}_{-2.40}$	282^{+14}_{-15}	6035^{+5445}_{-1483}	$140045^{+930787}_{-99959}$
Alt.	-273 ± 47	$4.18^{+3.01}_{-2.60}$	282^{+14}_{-15}	3660^{+1652}_{-567}	11651^{+75918}_{-7695}

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

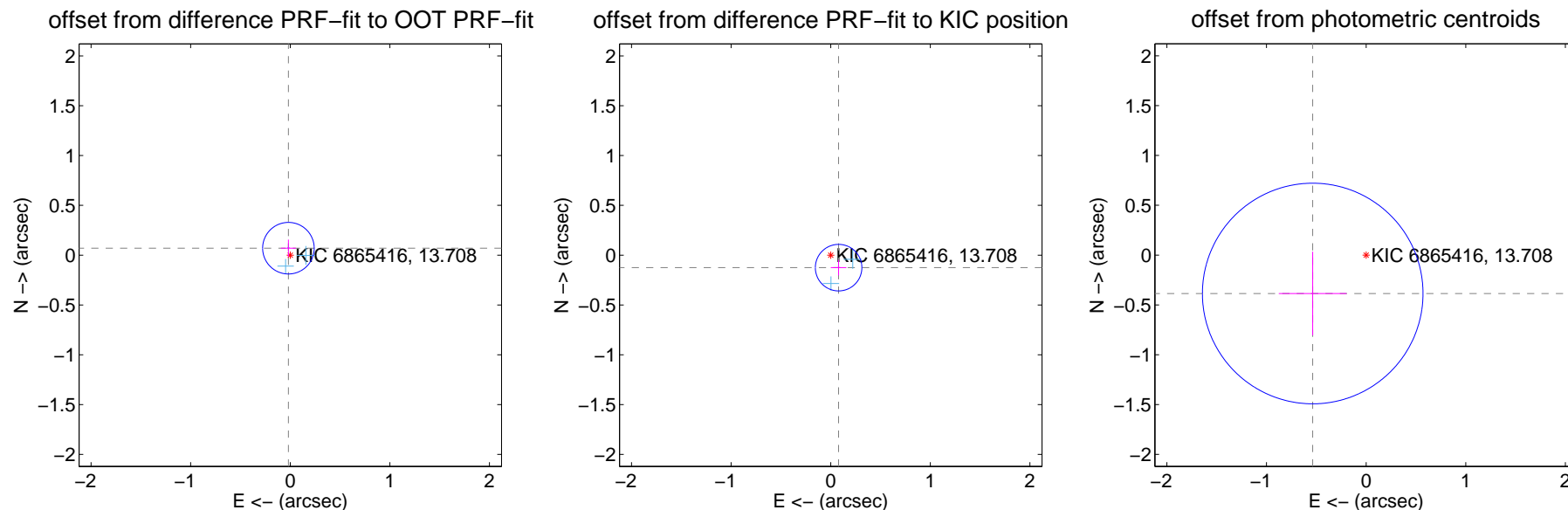
DV Centroid Data

Supplemental centroid analysis for 006865416-03. Kepler magnitude: 13.71. Transit SNR 7.49

There are 3 quarters with good PRF difference image offsets

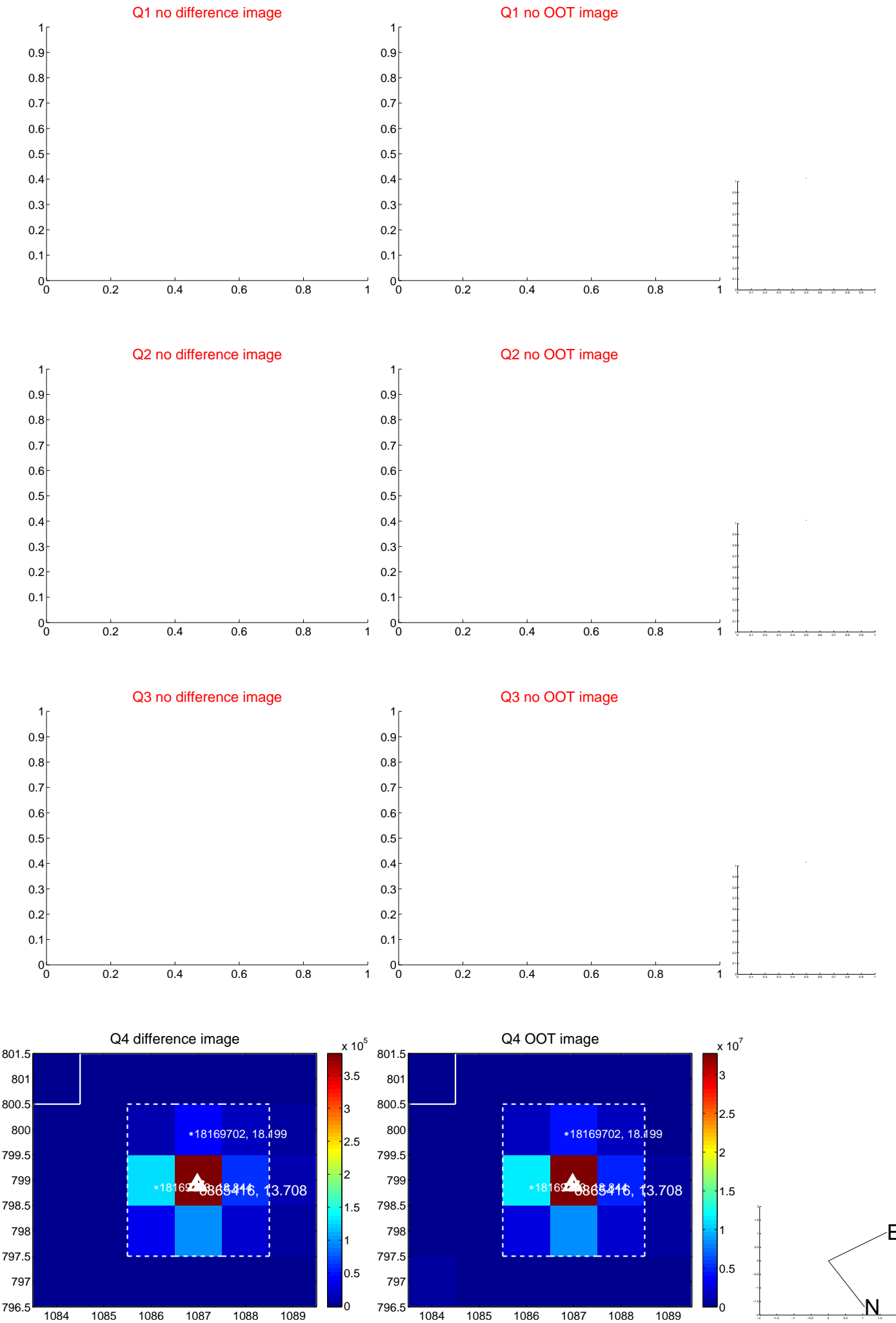
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.072 ± 0.086	0.84	0.018 ± 0.076	0.070 ± 0.086
PRF-fit source offset from KIC position	0.148 ± 0.078	1.91	-0.079 ± 0.078	-0.125 ± 0.078
photometric centroid source offset	0.66 ± 0.37	1.79	0.54 ± 0.34	-0.39 ± 0.42



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.

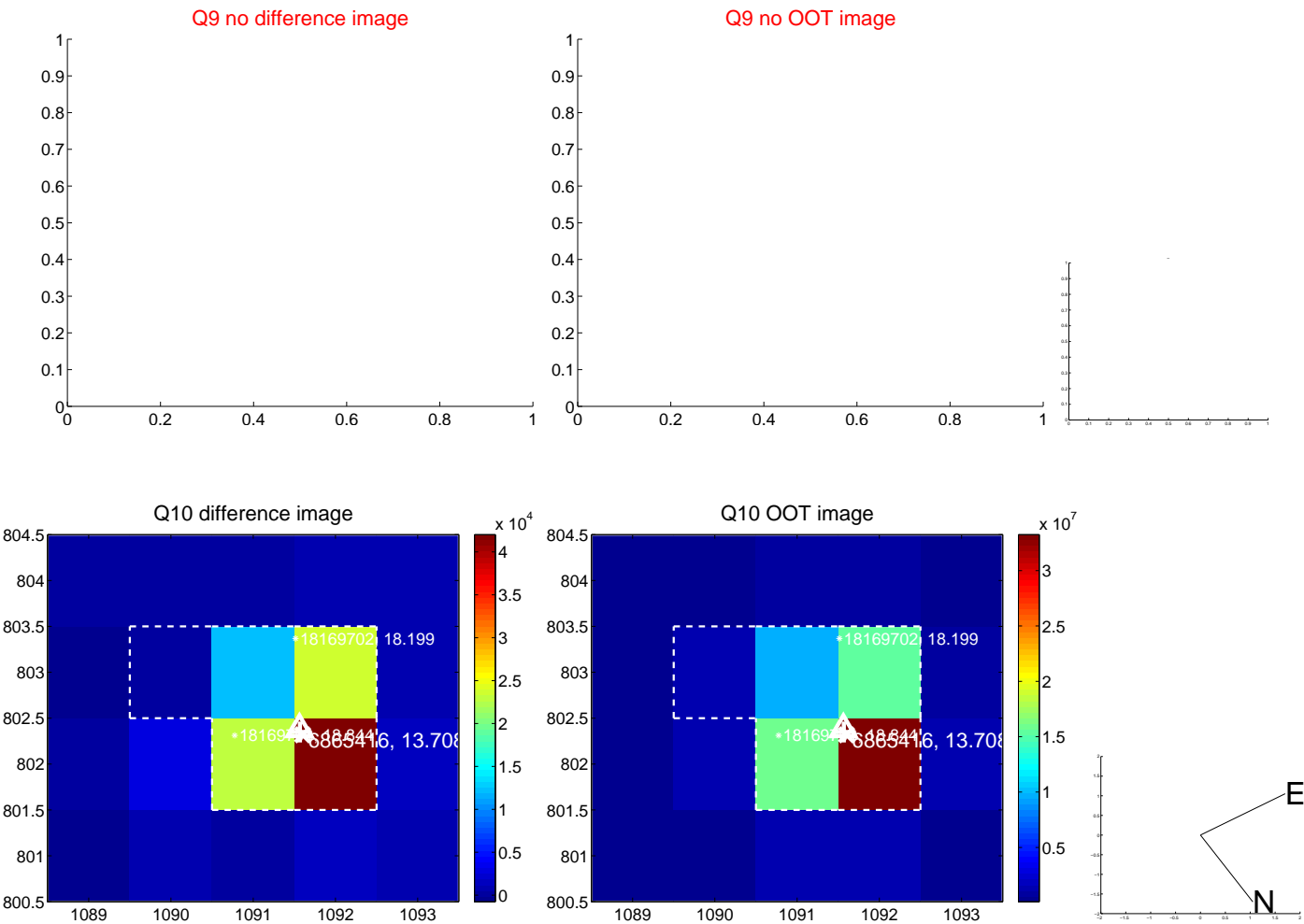
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



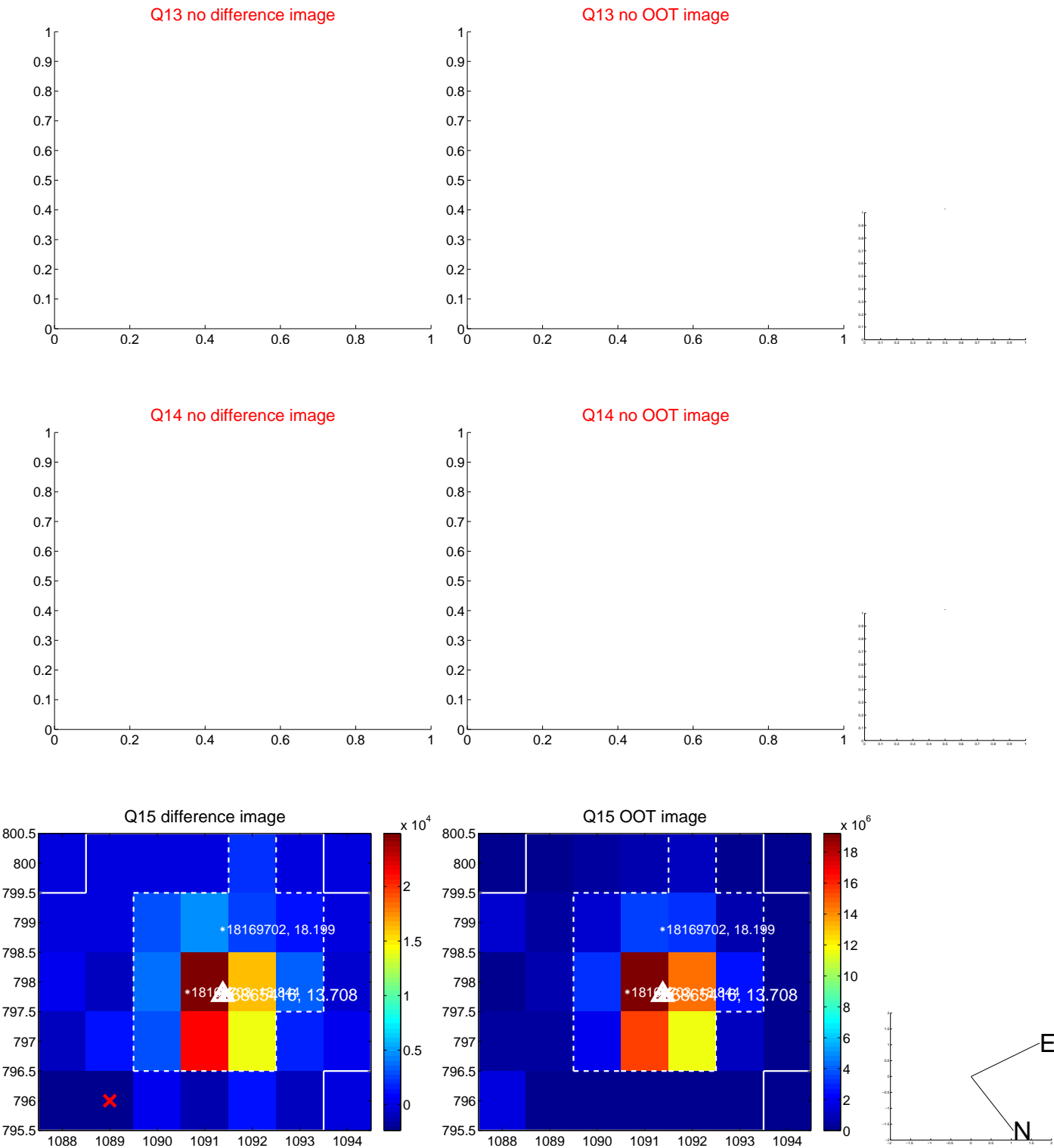
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



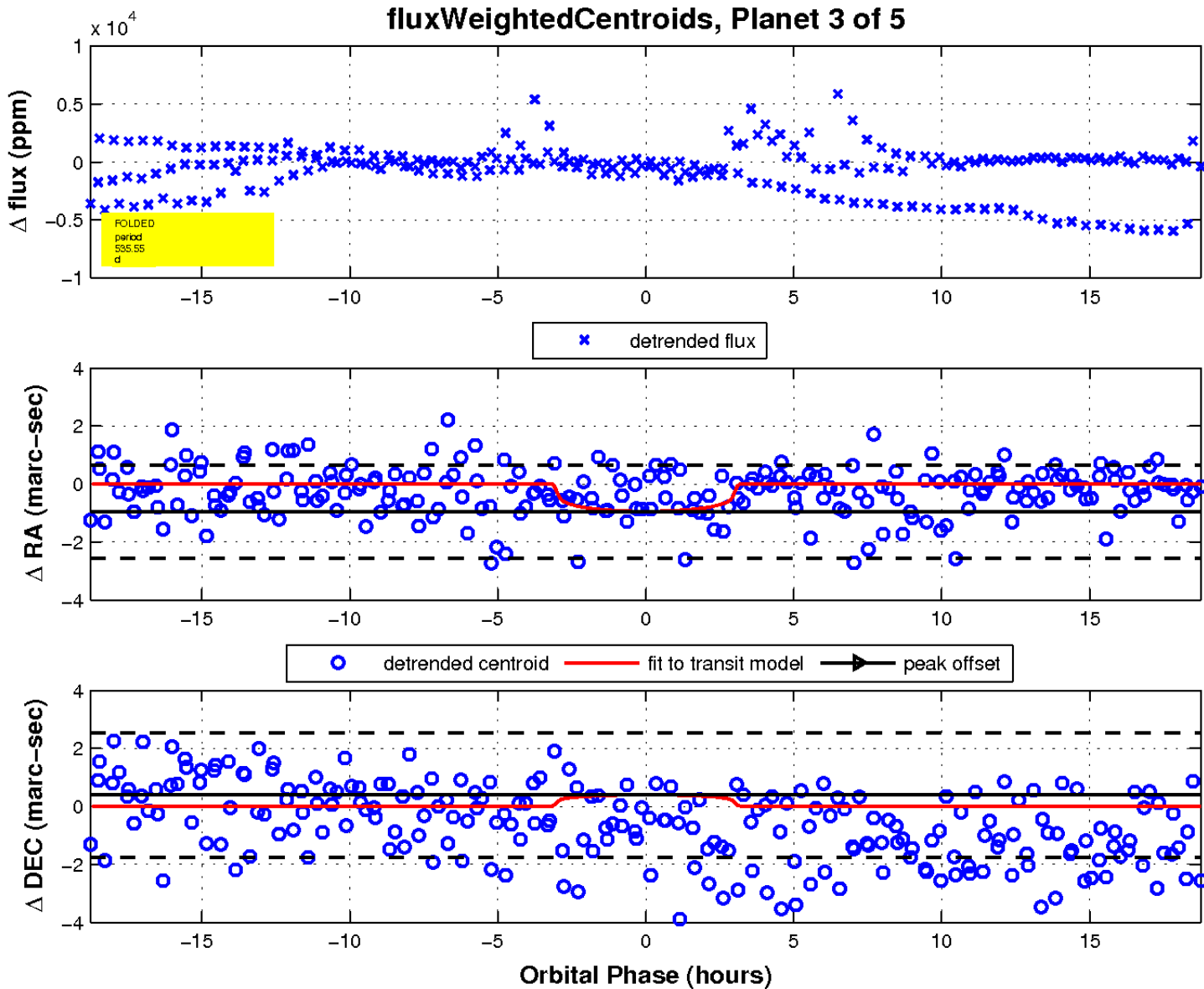
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



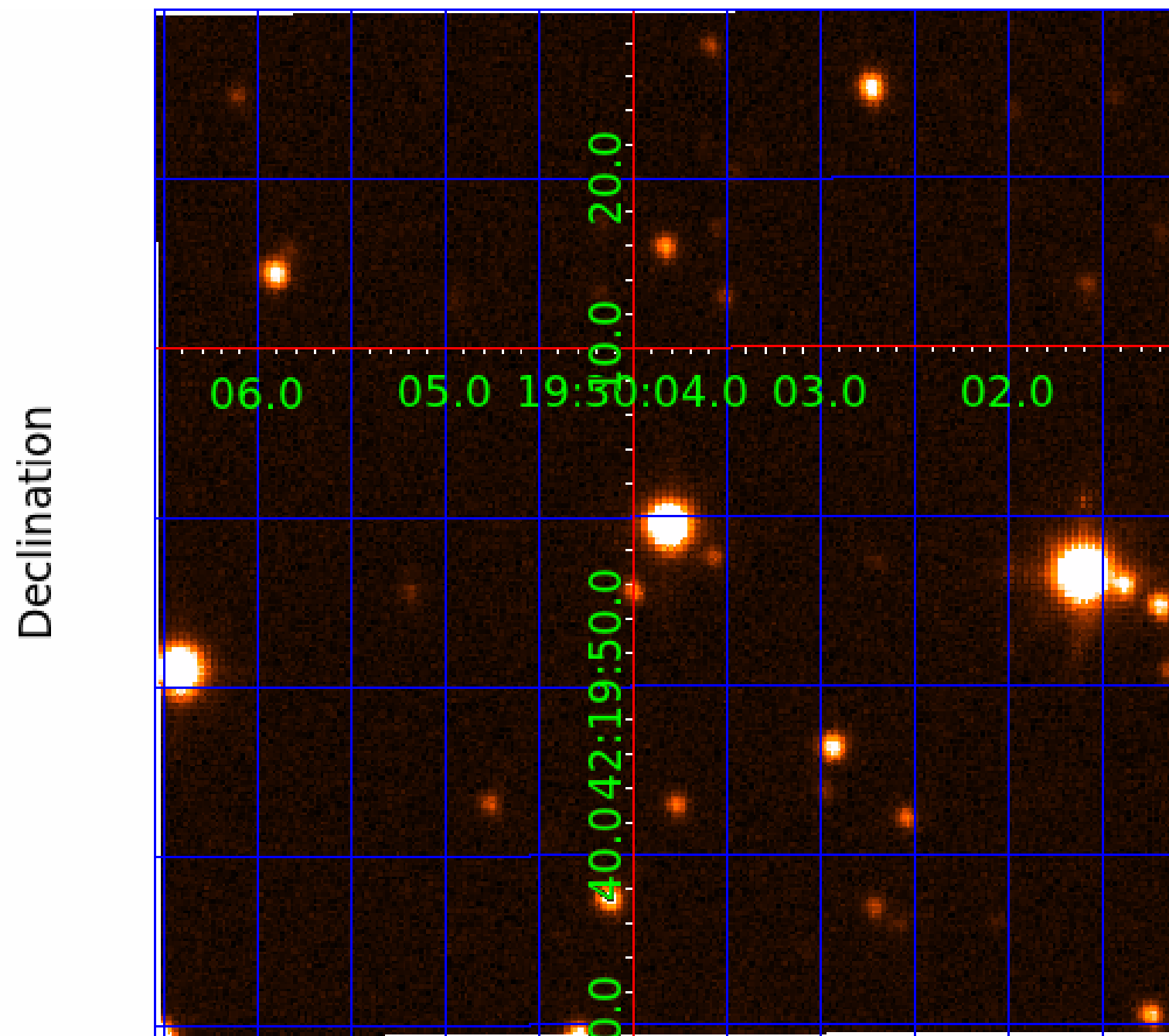
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image



UKIRT Image



KIC 006865416

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})
006865416-01	OBS	No	536.884787	358.914406	1018.9	12.796	12.2	3.6	0.83	5435	2.67	0.39
006865416-02	OBS	No	335.894438	334.929591	1242.6	4.634	19.0	7.3	0.83	5435	3.04	0.73
006865416-03	OBS	No	535.551182	390.232311	1558.6	6.262	16.4	7.5	0.83	5435	3.23	0.39
006865416-04	OBS	No	545.651884	430.282318	893.2	3.547	12.4	6.0	0.83	5435	2.60	0.38
006865416-05	OBS	No	230.414322	269.634963	659.9	1.798	14.2	5.0	0.83	5435	2.30	1.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006865416-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006865416-03	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
006865416-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV

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

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

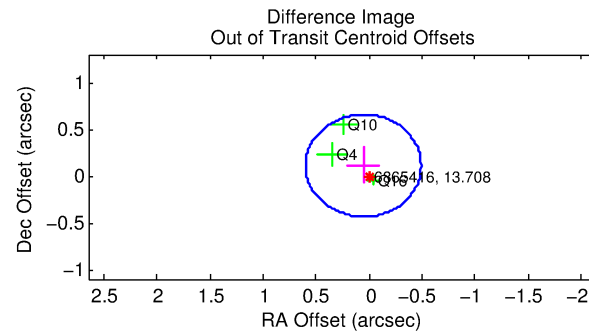
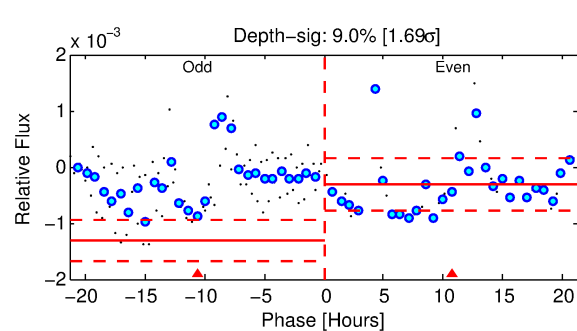
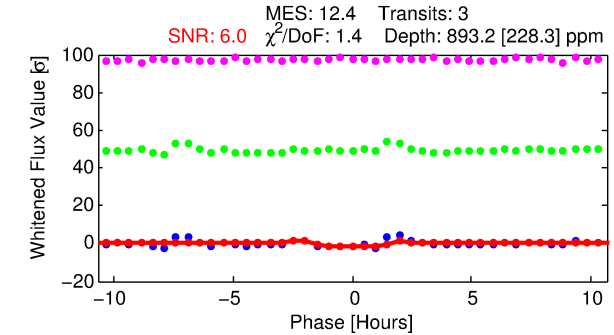
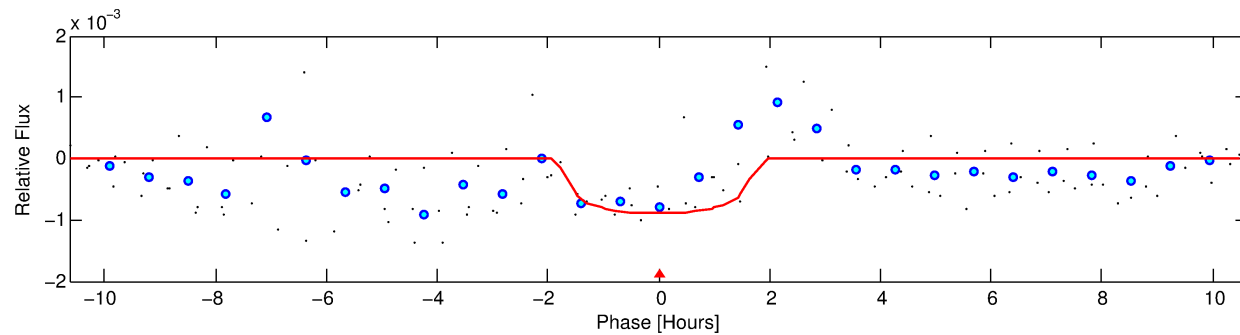
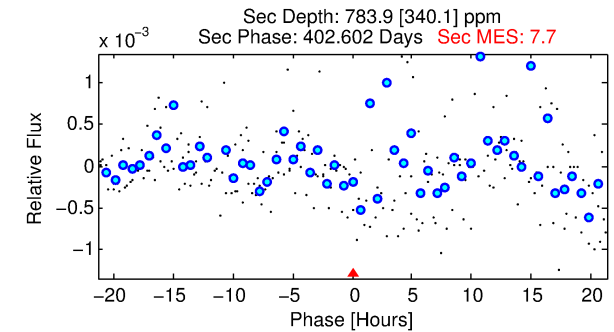
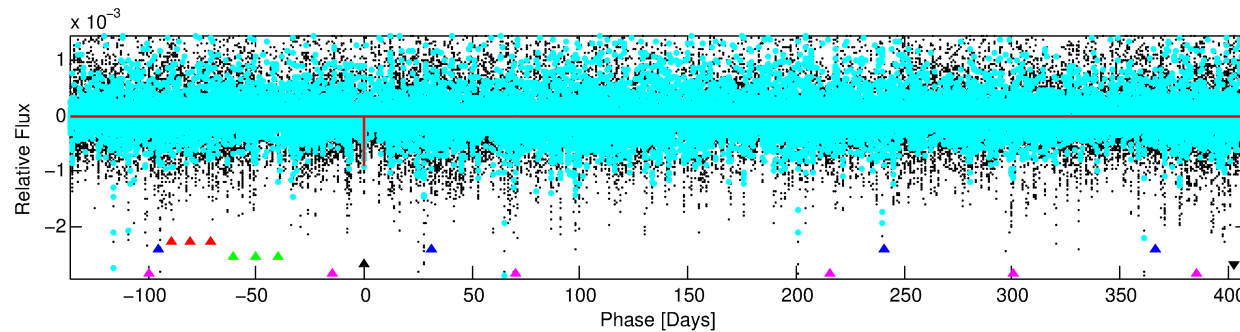
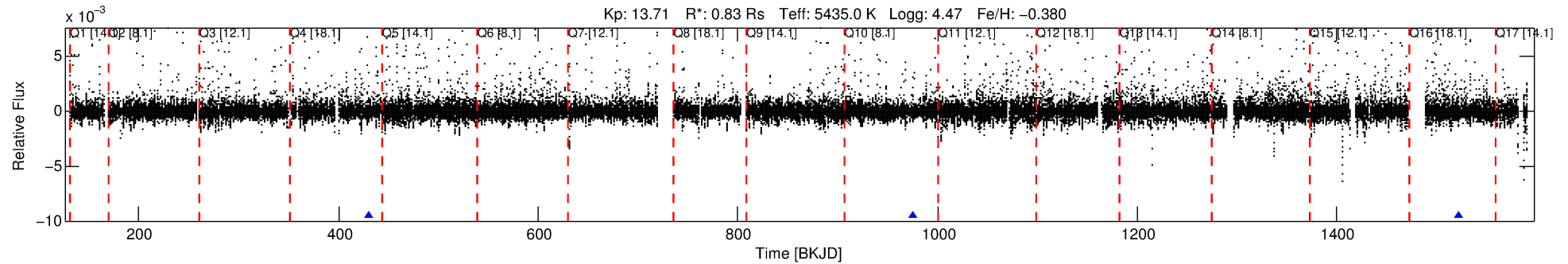
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006865416-04

No Significant Match Found

DV One-Page Summary

KIC: 6865416 Candidate: 4 of 5 Period: 545.652 d



DV Fit Results:

Period = 545.65188 [0.00700] d
Epoch = 430.2823 [0.0082] BKJD
Rp/R* = 0.0288 [0.0369]
a/R* = 942.08 [4883.26]
b = 0.64 [4.74]
Seff = 0.38 [0.10]
Teq = 200 [13] K
Rp = 2.60 [3.36] Re
a = 1.1848 [0.1725] AU
Ag = 89574.40 [233697.12] [0.38%]
Teffp = 5361 [3488] K [1.48%]

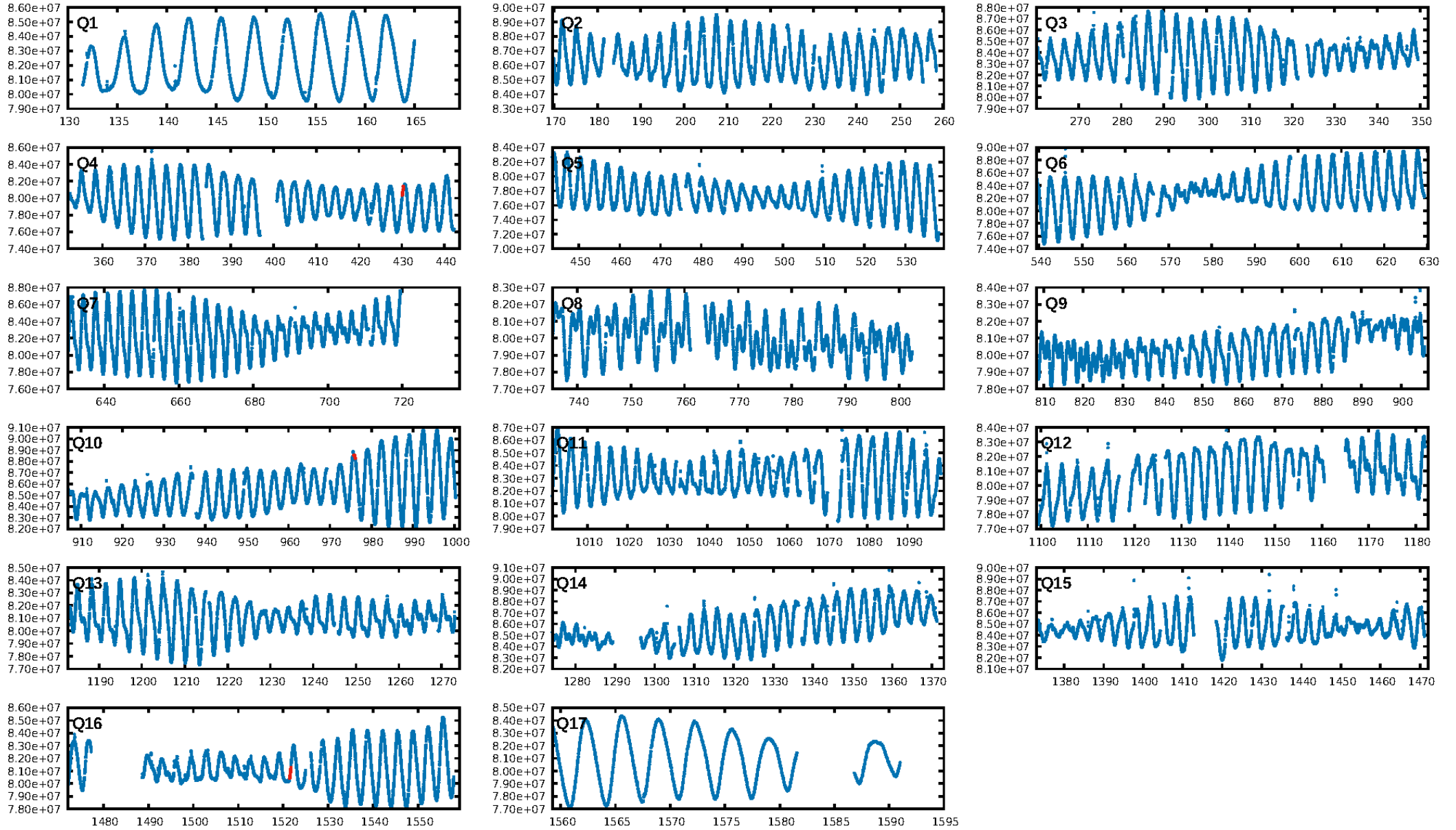
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.85%]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.5%
ModelChiSquareGof-sig: 98.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1293
Centroid-sig: 11.2%
Centroid-so: 0.925 arcsec [1.37%]
OotOffset-rm: 0.124 arcsec [0.68%]
OotOffset-st: 1/0/2/0 [3]
KicOffset-rm: 0.085 arcsec [0.44%]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

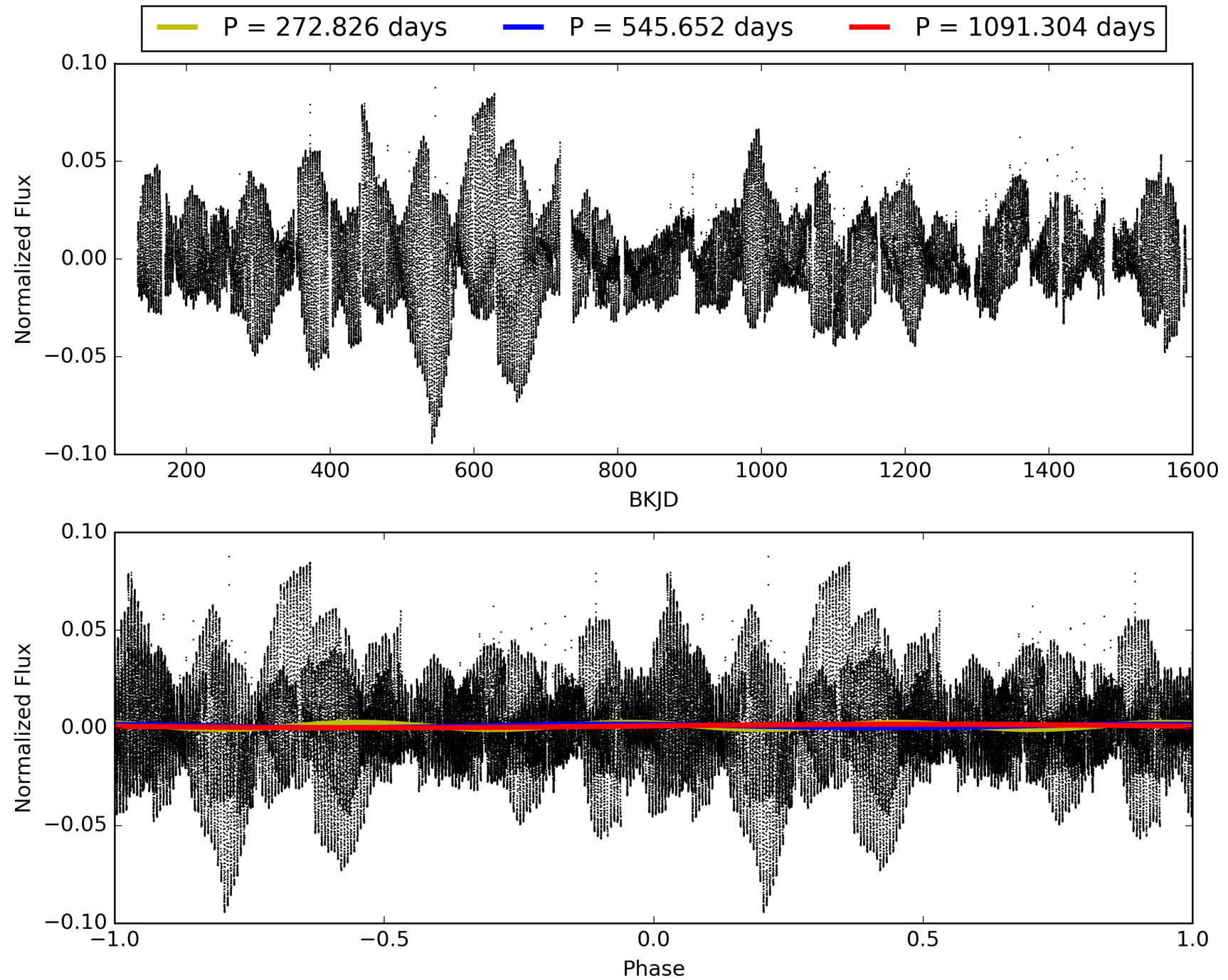
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:06:17 Z

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

TCE 006865416-04, PDC Light Curves

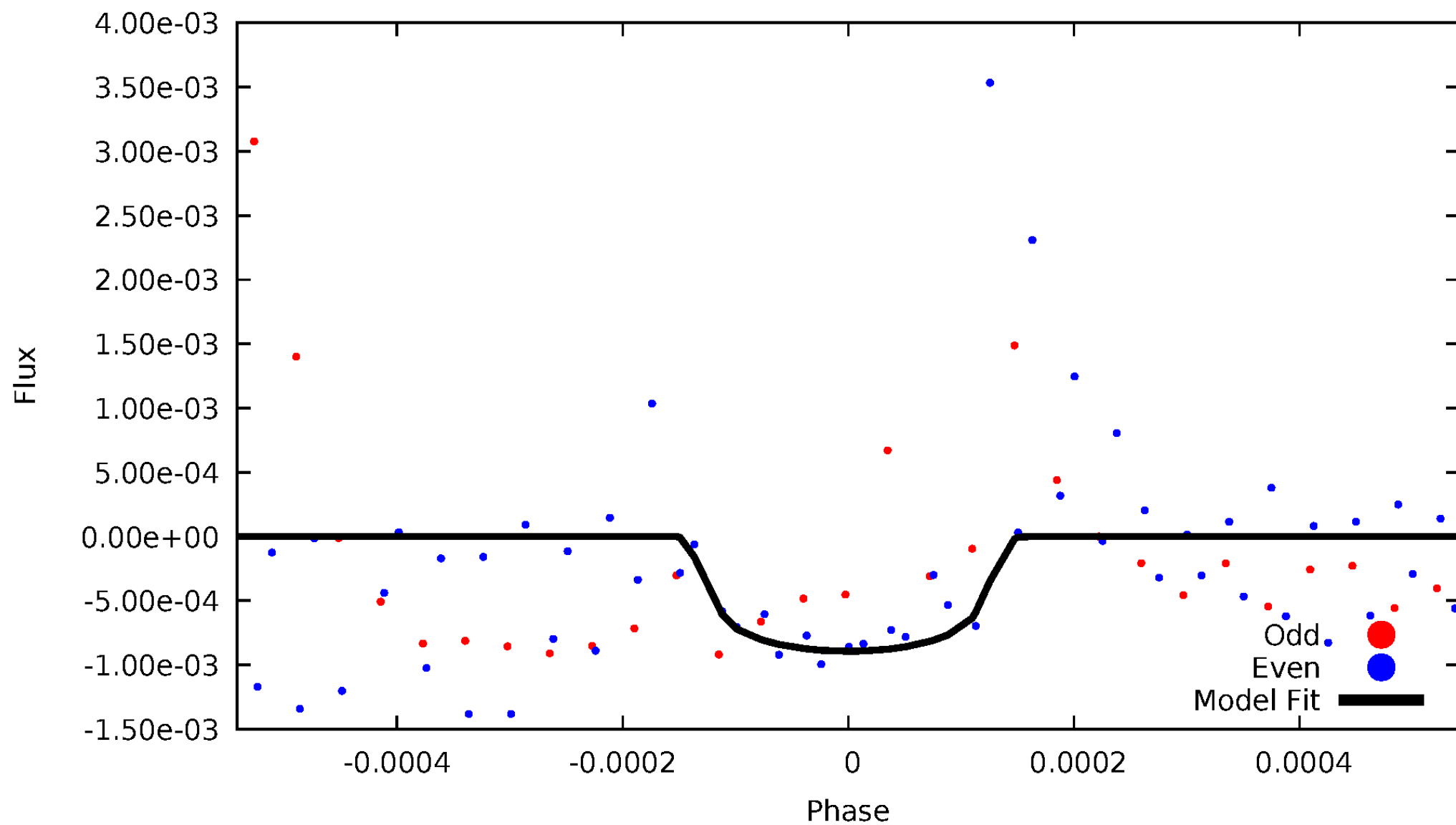


TCE 006865416-04



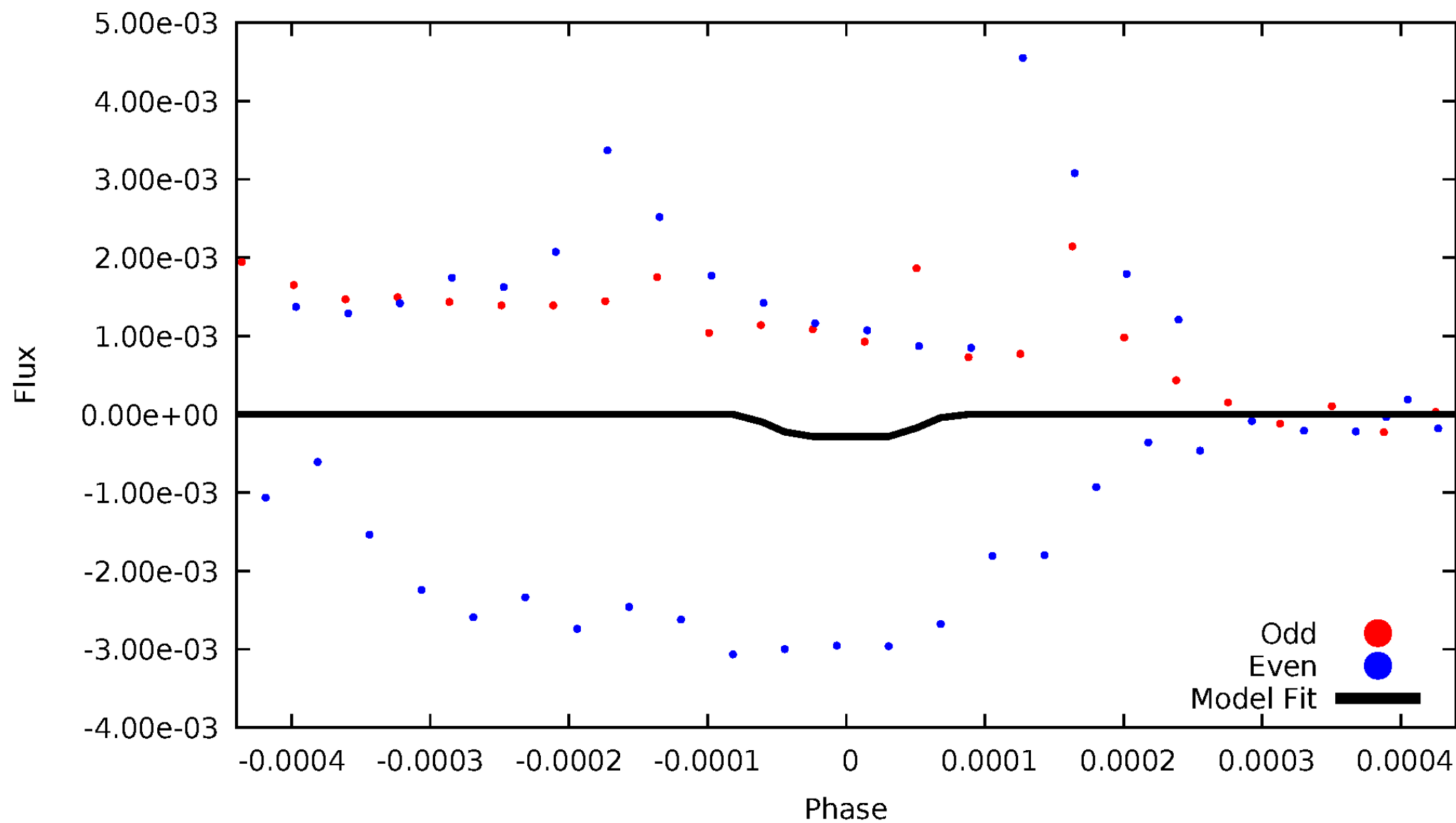
DV Odd/Even

TCE 006865416-04



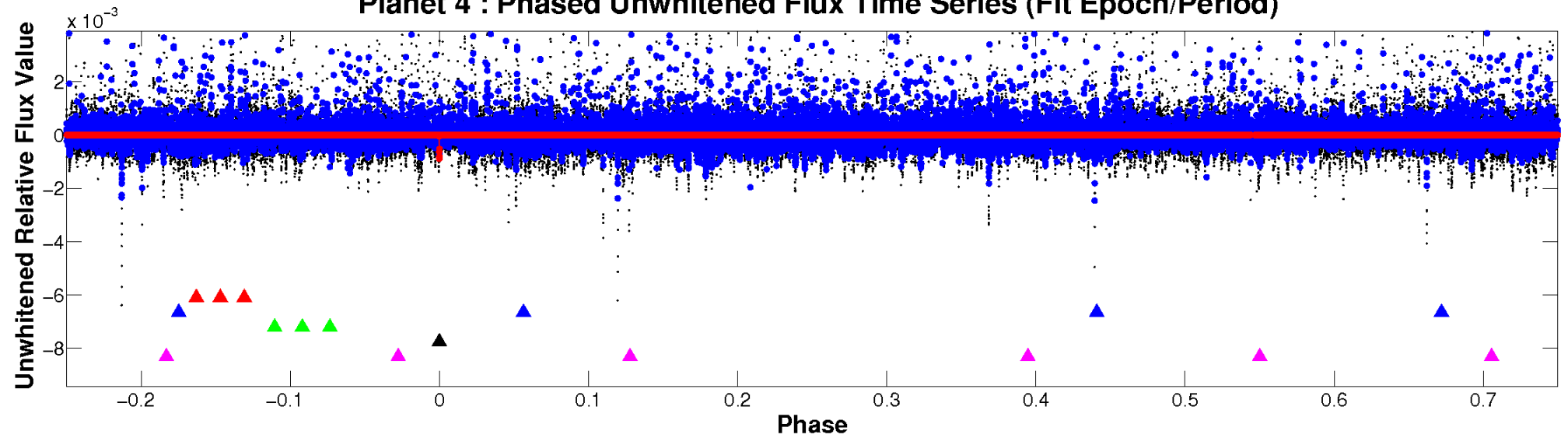
ALT Odd/Even

TCE 006865416-04

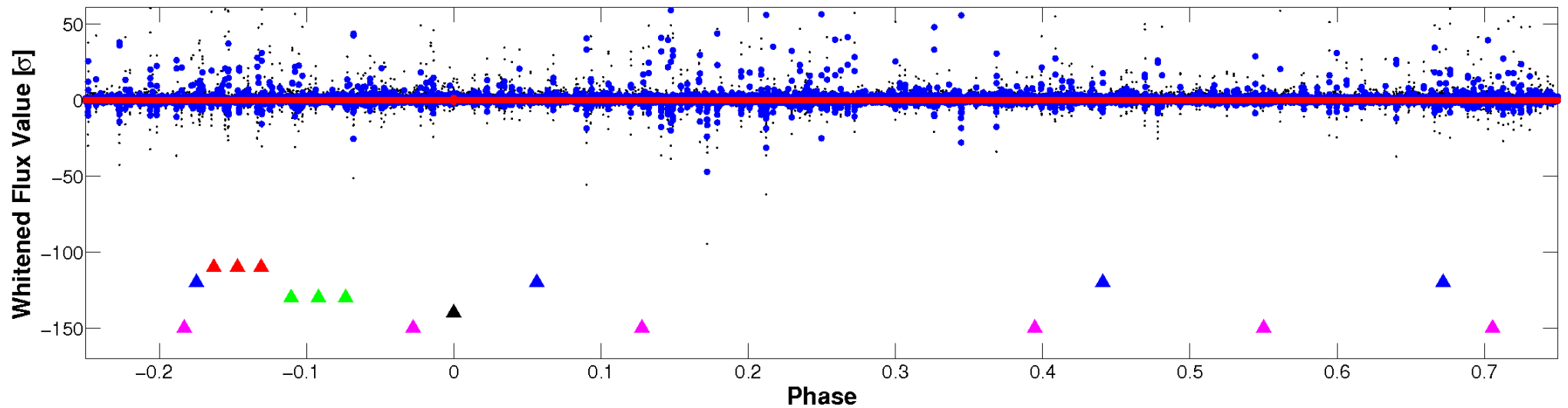


Non-Whitened Vs. Whitened Light Curve

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

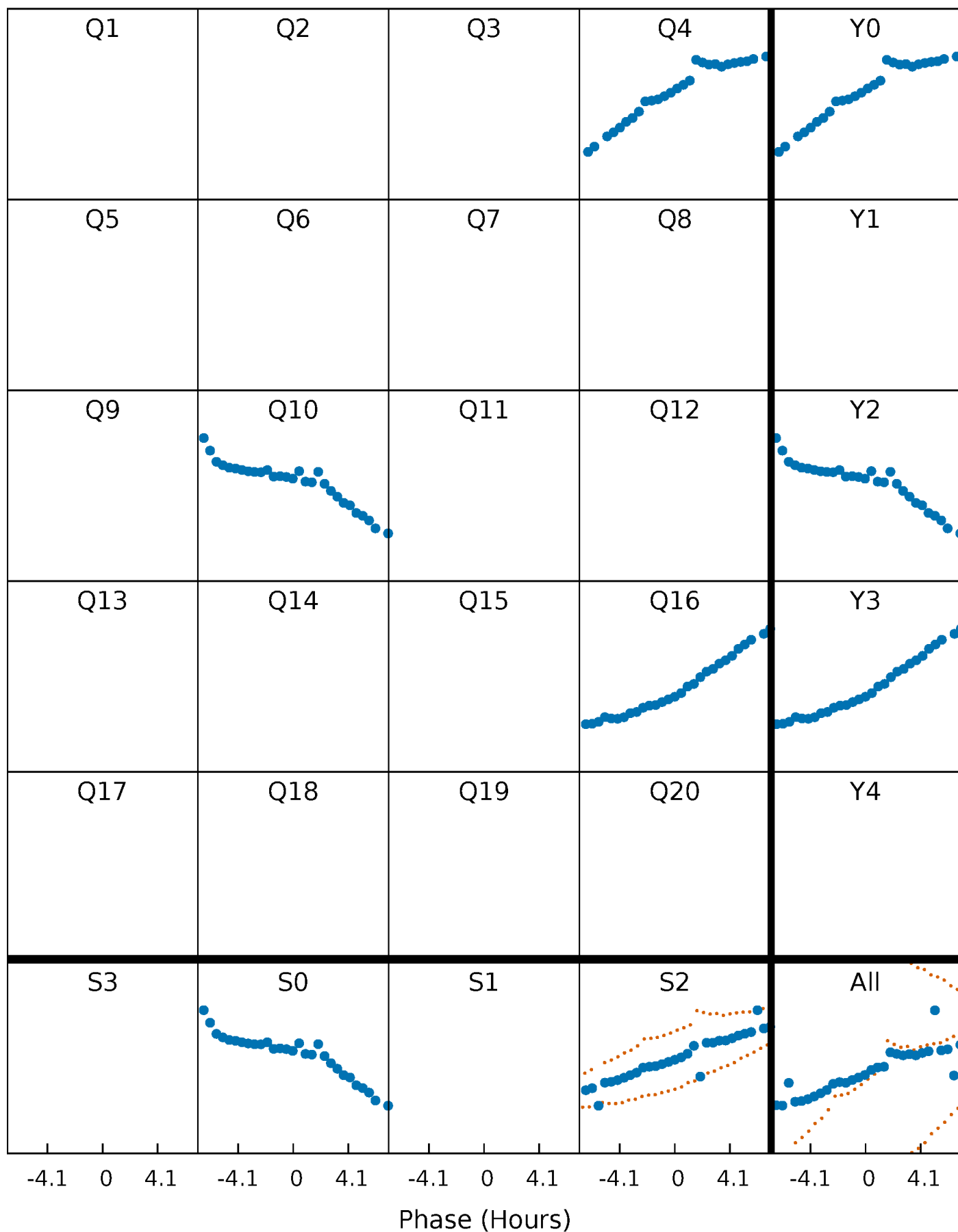


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



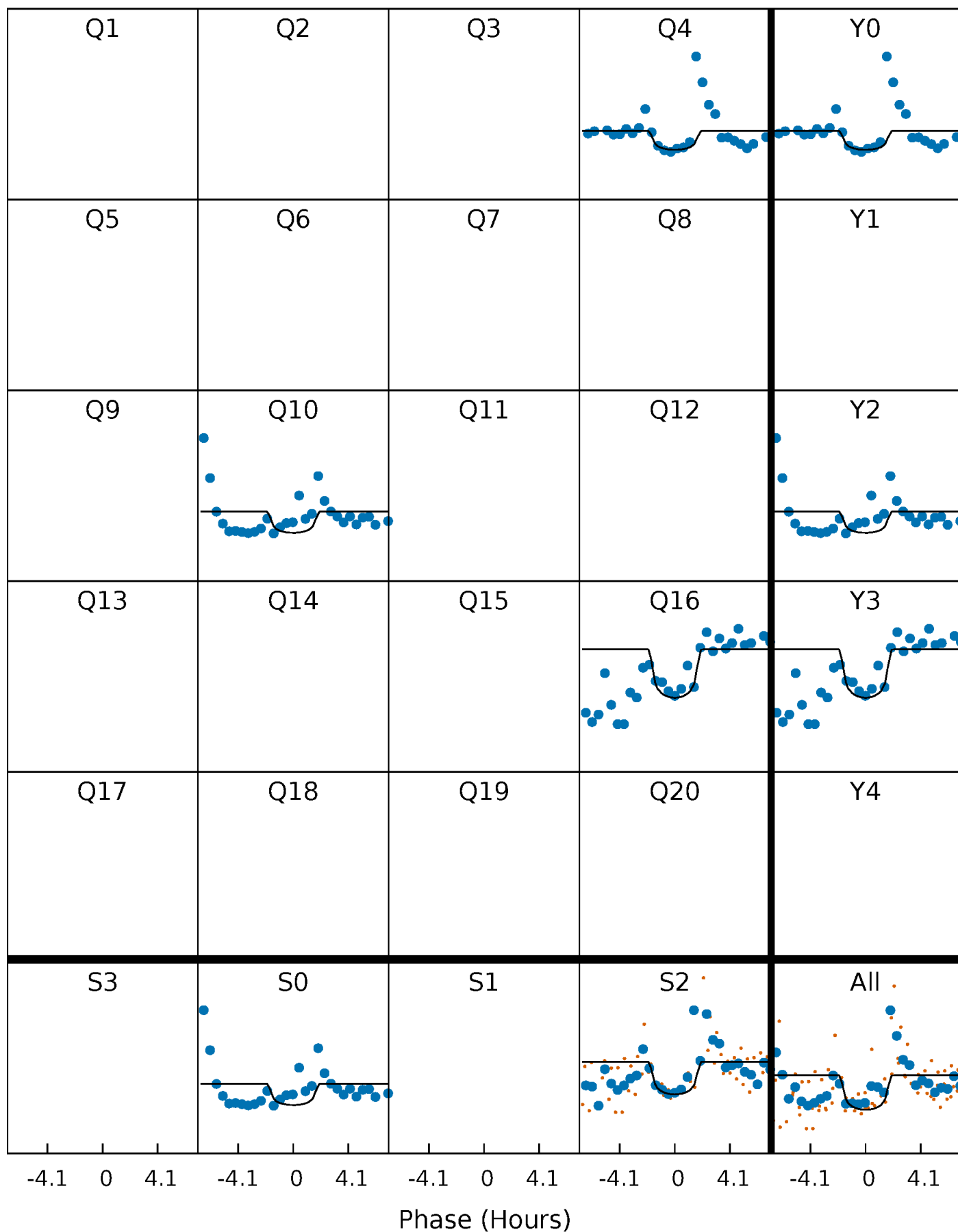
PDC Quarter-Phased Transit Curves

TCE 006865416-04 P=545.651884 Days $T_0=430.282318$ (BKJD)



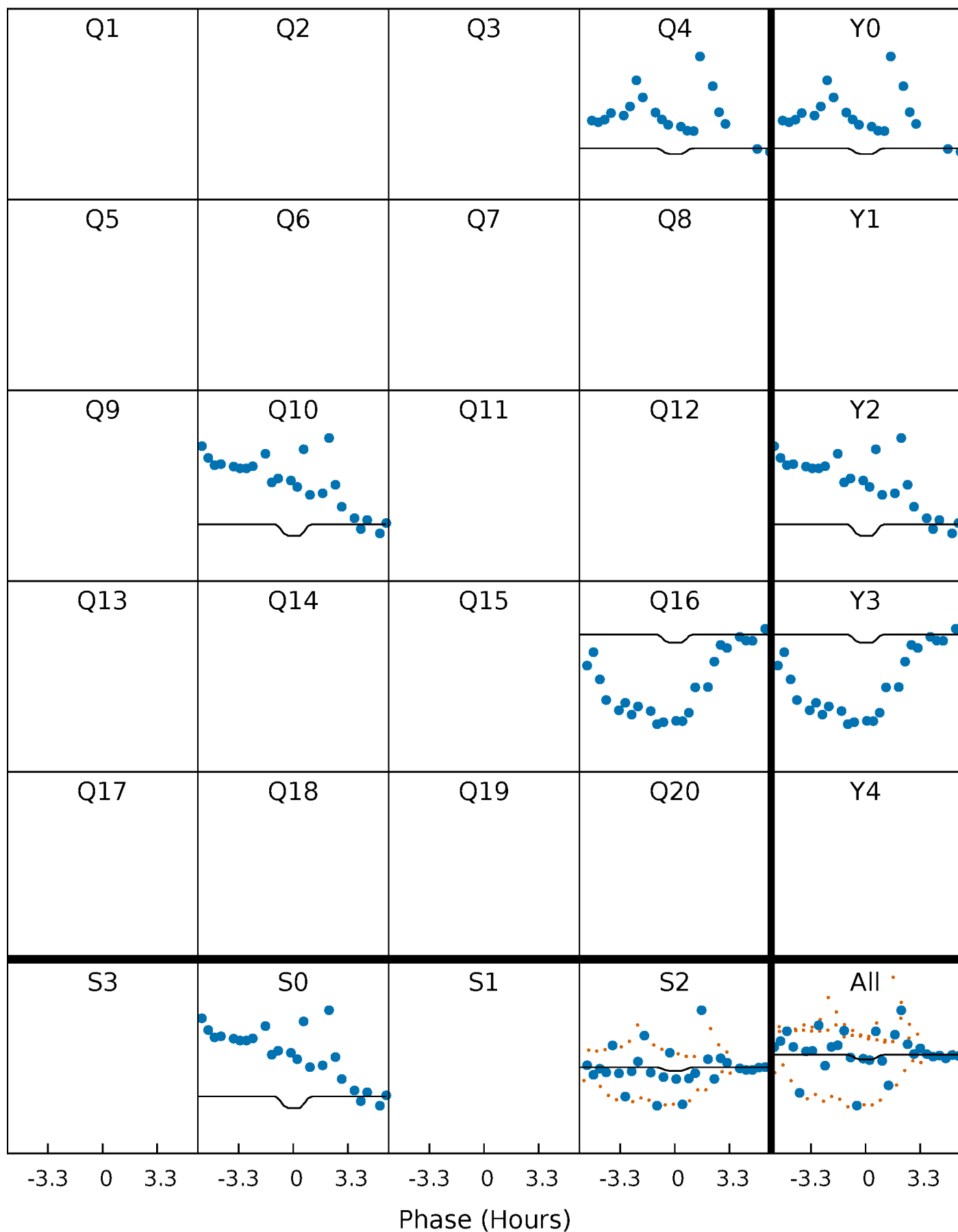
DV Quarter-Phased Transit Curves

TCE 006865416-04 $P=545.651884$ Days $T_0=430.282318$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

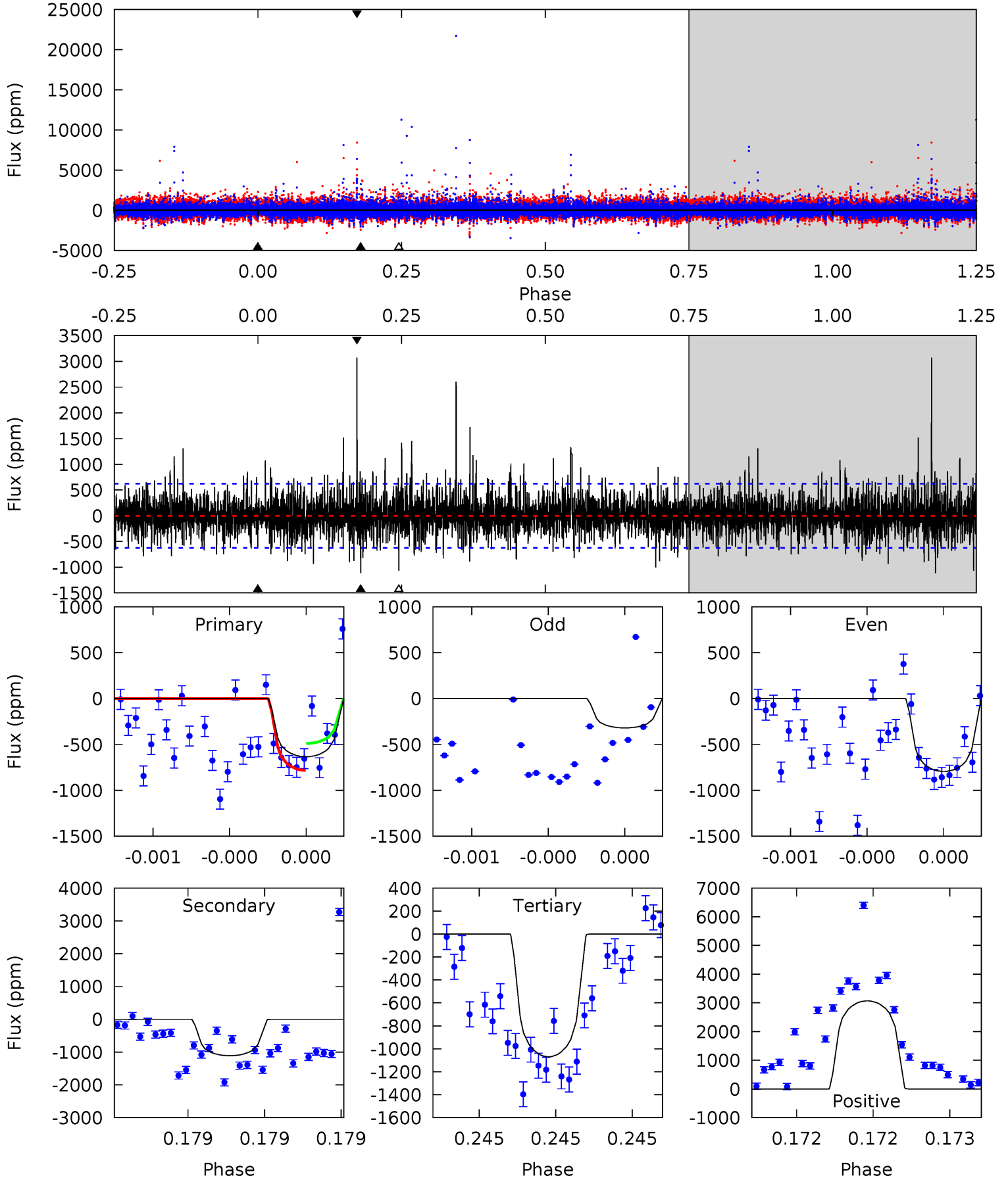
TCE 006865416-04 P=545.644164 Days $T_0=430.281394$ (BKJD)



DV Model-Shift Uniqueness Test

006865416-04, P = 545.651884 Days, E = 430.282318 Days

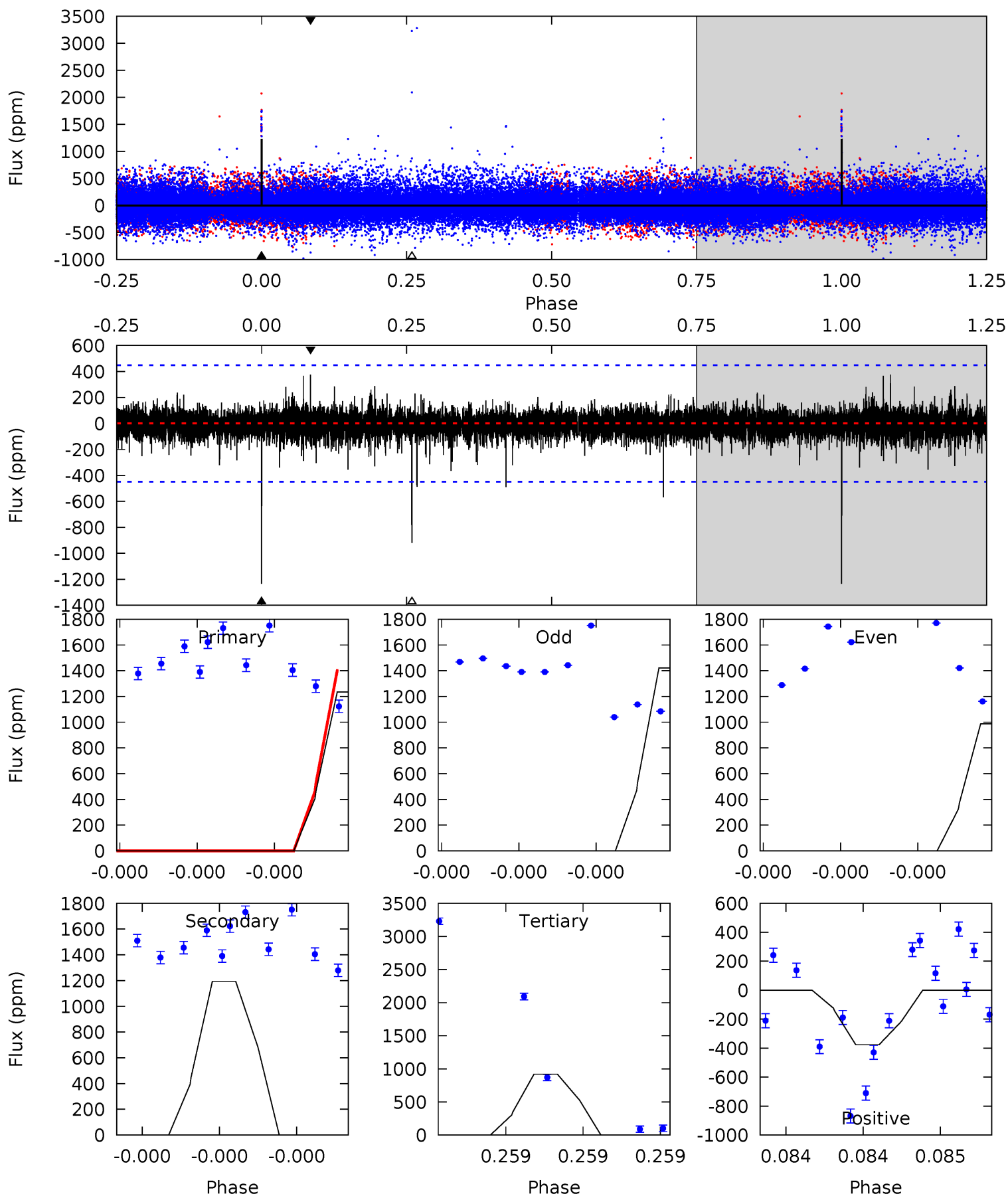
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.75	10.1	9.70	27.8	5.66	3.61	2.36	-3.95	-22.1	0.38	-17.8	1.33	0.94	0.73	1.33



Alt Model-Shift Uniqueness Test

006865416-04, P = 545.644164 Days, E = 430.281394 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	15.4	11.9	4.87	5.80	3.83	0.72	4.07	11.1	3.54	10.6	3.12	-0.14	0.23	0



Stellar Parameters For KIC 006865416

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5435^{+160}_{-160}	$4.474^{+0.125}_{-0.125}$	$-0.380^{+0.350}_{-0.300}$	$0.828^{+0.136}_{-0.111}$	$0.746^{+0.115}_{-0.046}$	$1.853^{+1.017}_{-0.657}$
	+3%/-3%	+3%/-3%	+92%/-79%	+16%/-13%	+15%/-6%	+55%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006865416-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1112 ± 110	$3.66^{+2.71}_{-2.34}$	279^{+15}_{-15}	5008^{+3421}_{-988}	$67723^{+428441}_{-46383}$
Alt.	-1193 ± 77	$2.92^{+2.82}_{-2.04}$	280^{+16}_{-14}	5655^{+5733}_{-1379}	$111460^{+1089824}_{-82944}$

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

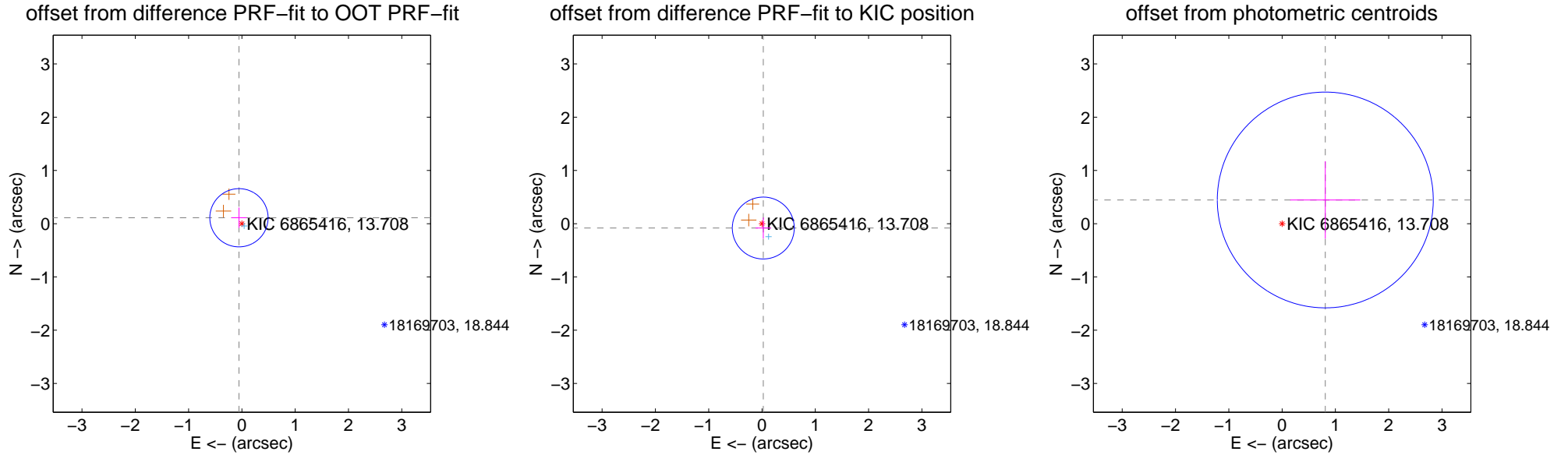
DV Centroid Data

Supplemental centroid analysis for 006865416-04. Kepler magnitude: 13.71. Transit SNR 6.03

There are 1 quarters with good PRF difference image offsets

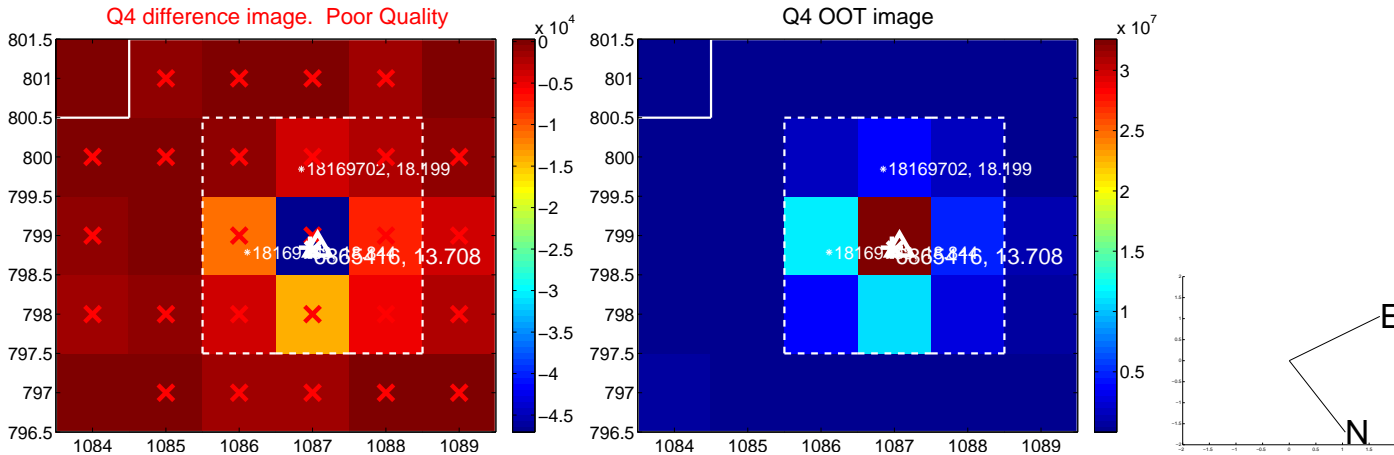
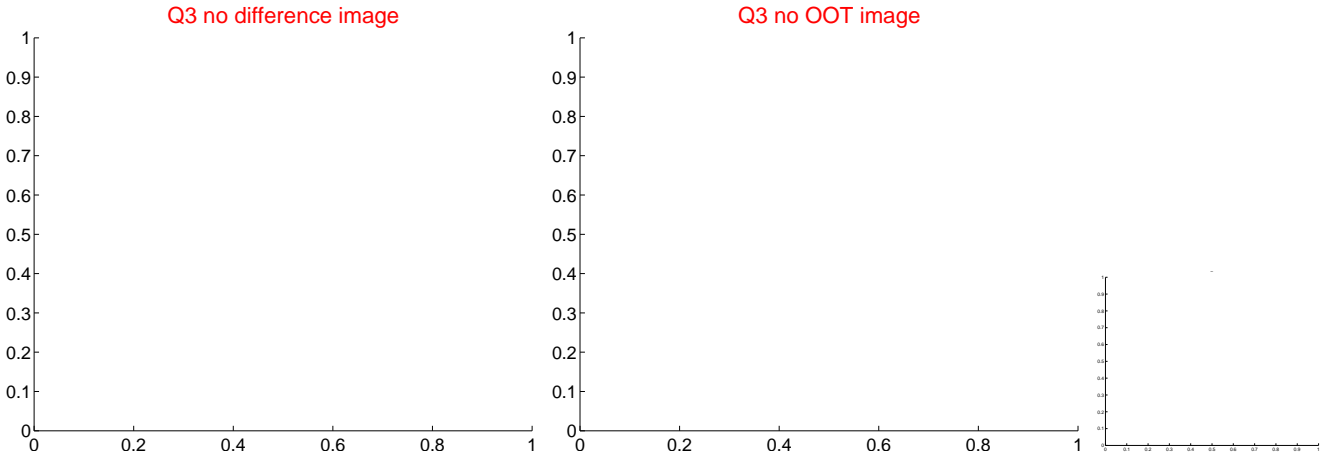
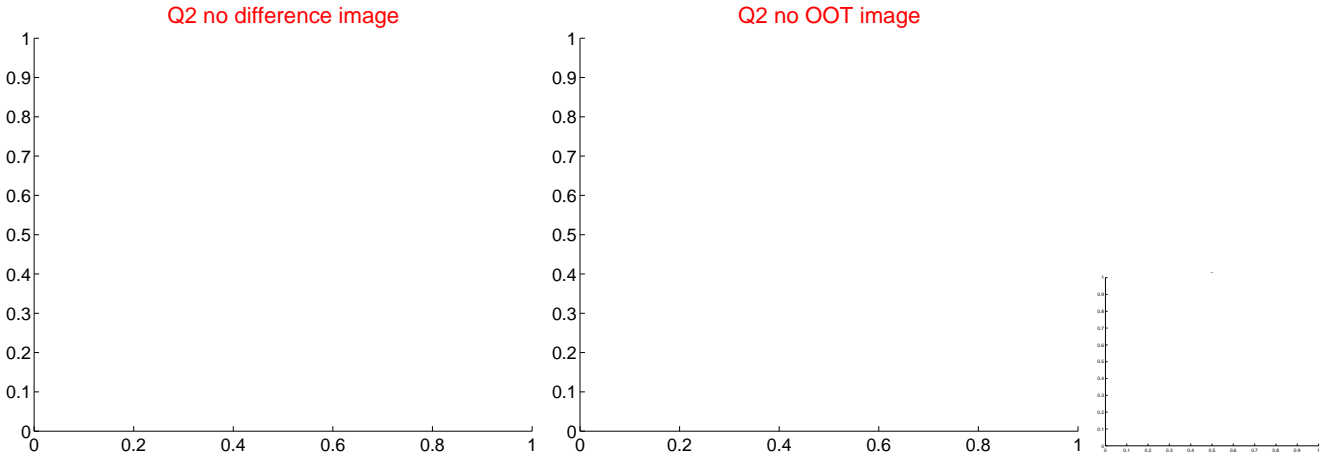
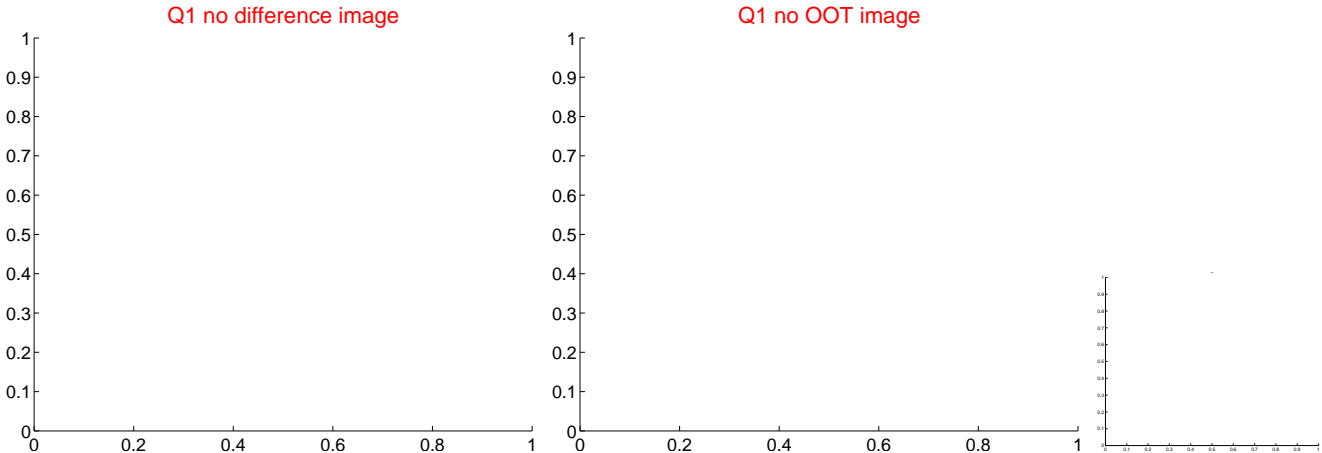
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.124 ± 0.182	0.68	0.055 ± 0.143	0.111 ± 0.191
PRF-fit source offset from KIC position	0.085 ± 0.194	0.44	-0.024 ± 0.145	-0.082 ± 0.197
photometric centroid source offset	0.92 ± 0.68	1.37	-0.81 ± 0.66	0.45 ± 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.

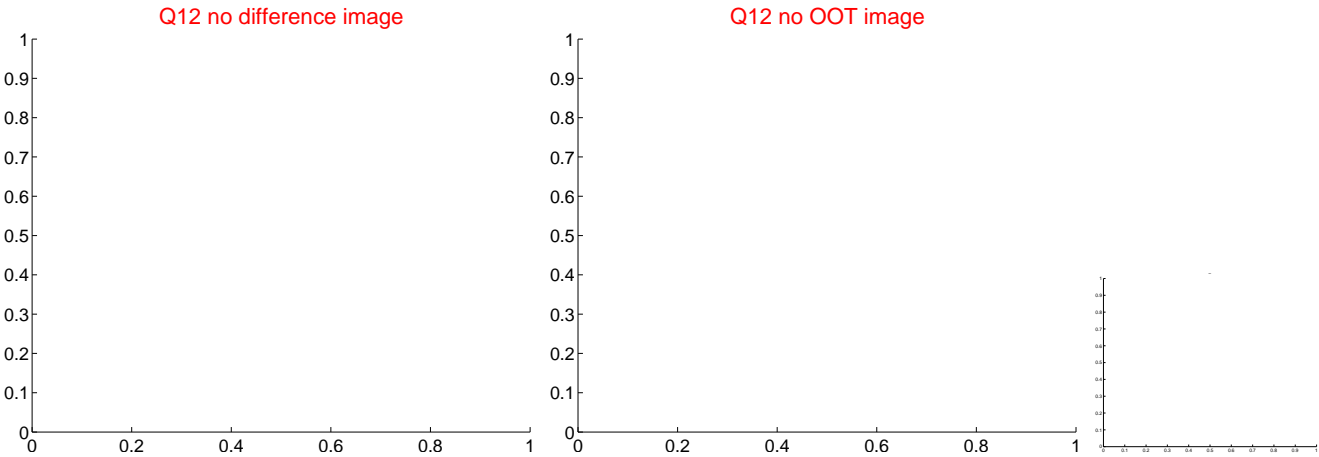
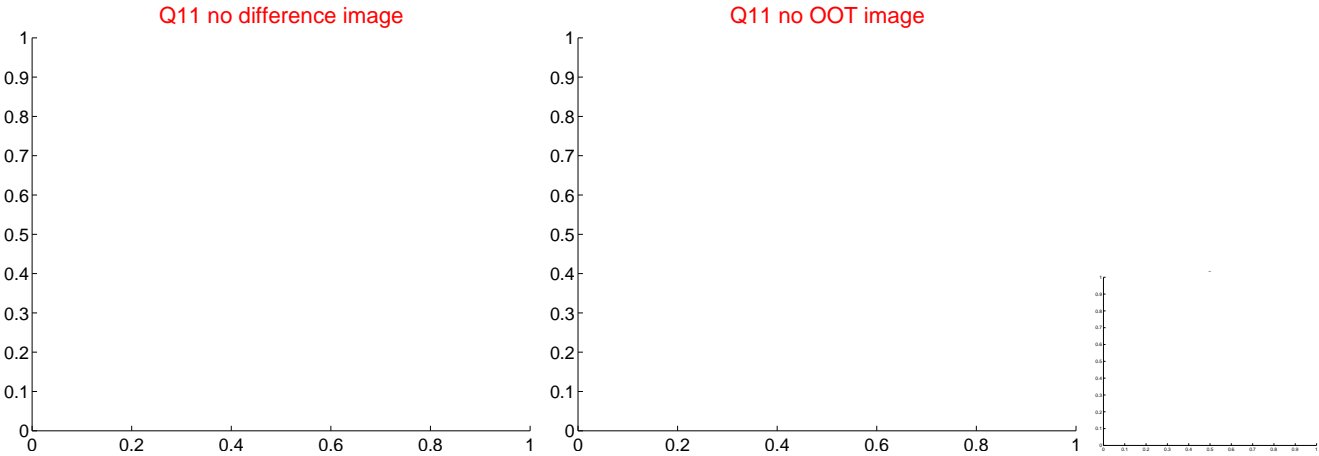
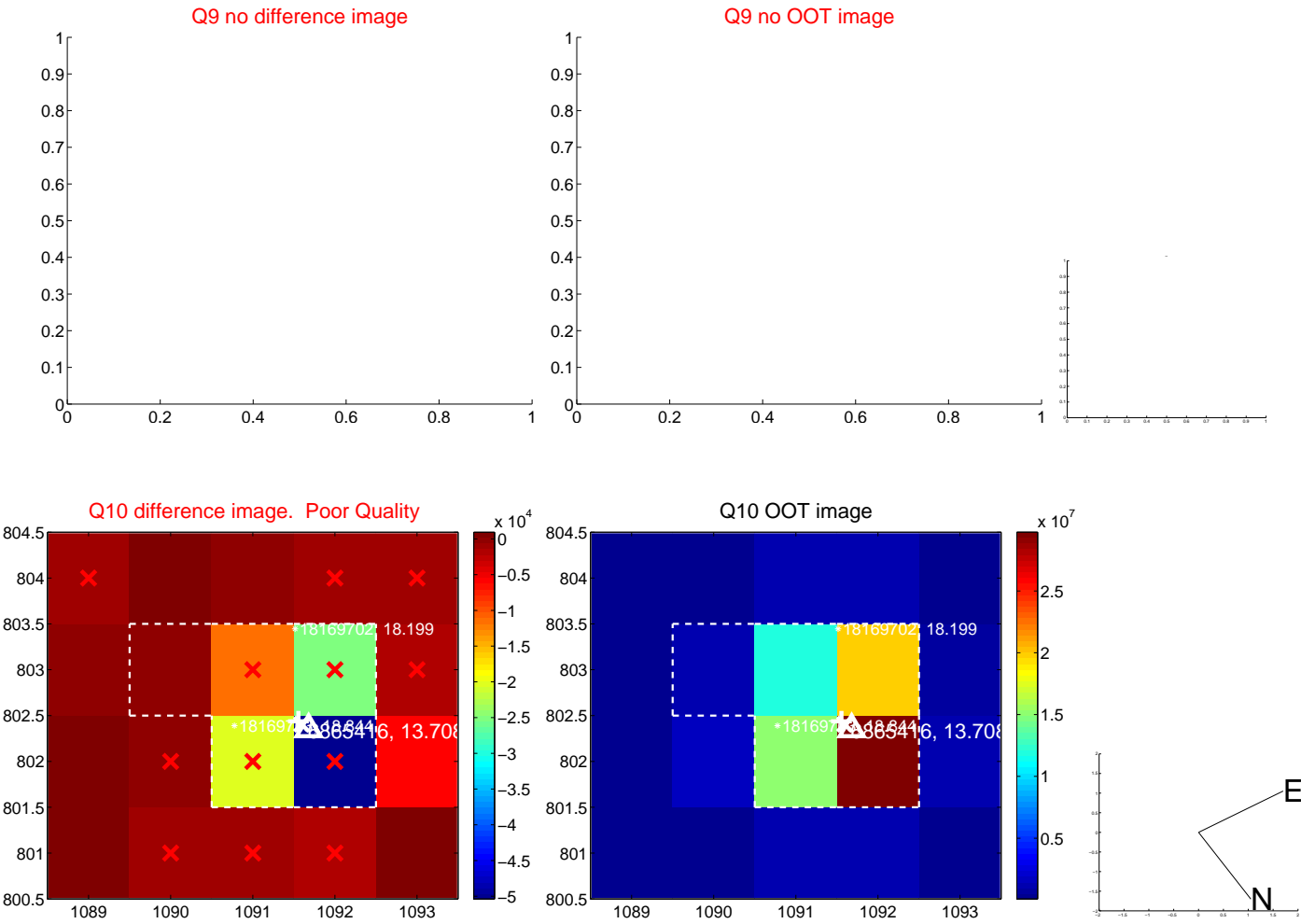
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



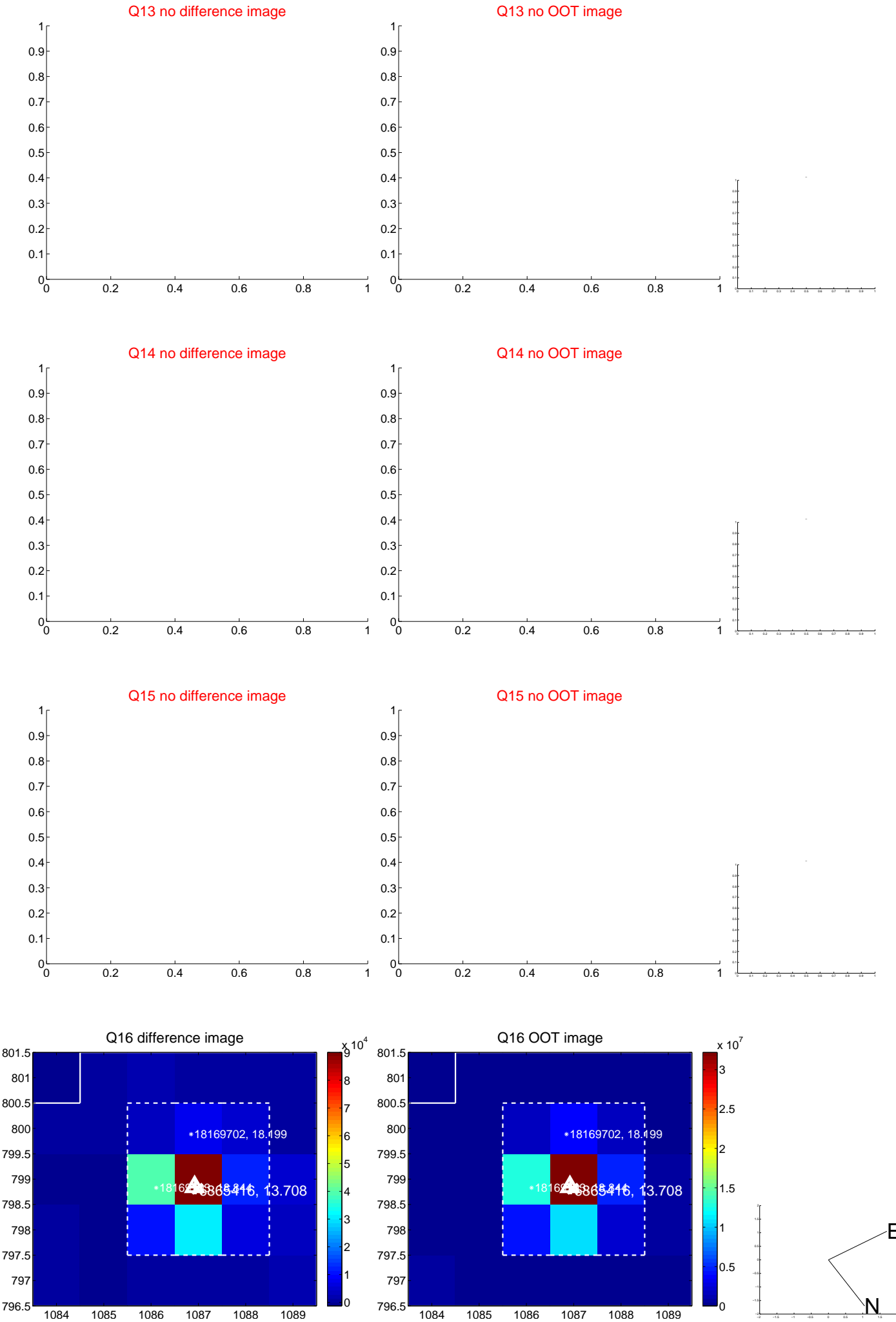
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



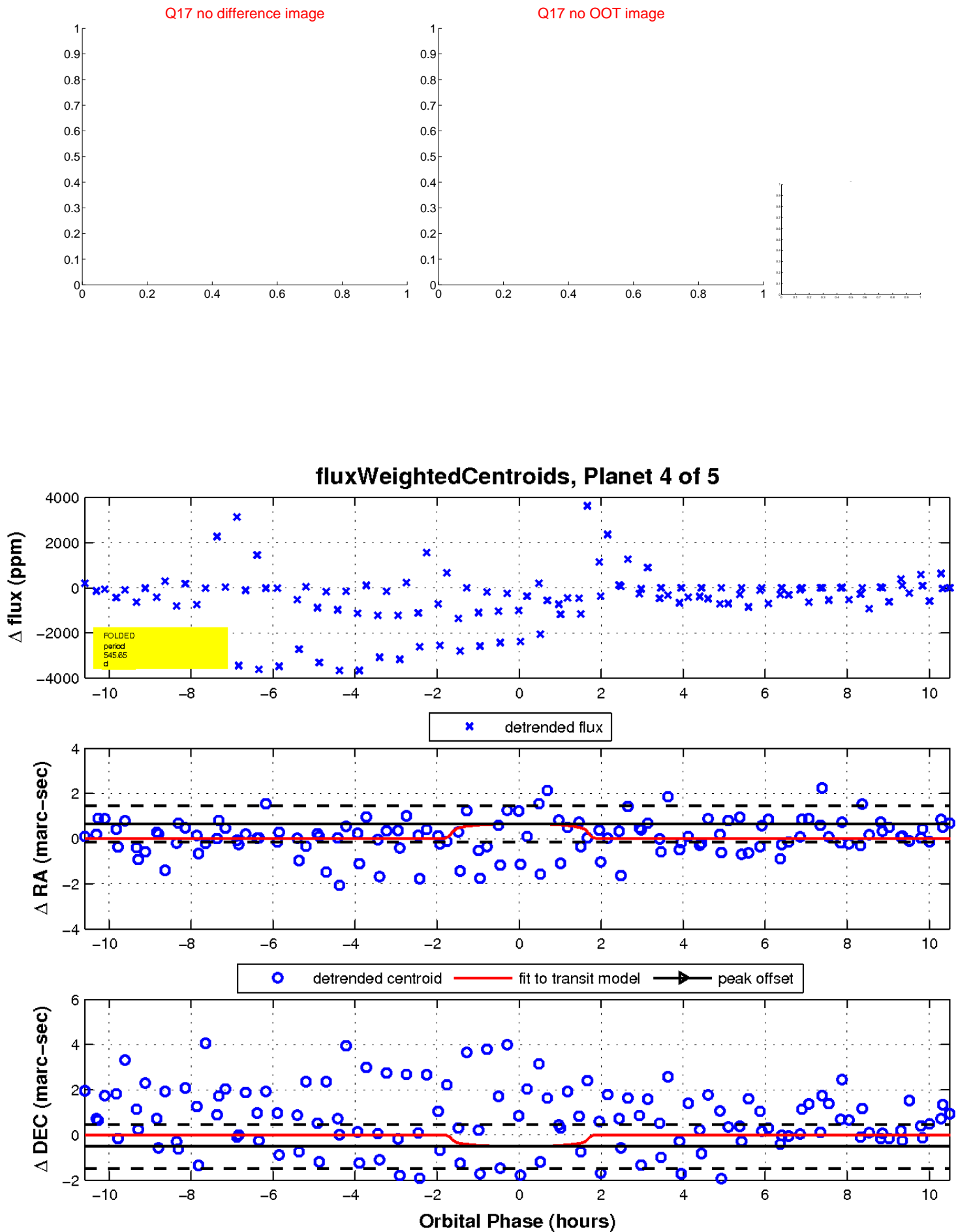
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



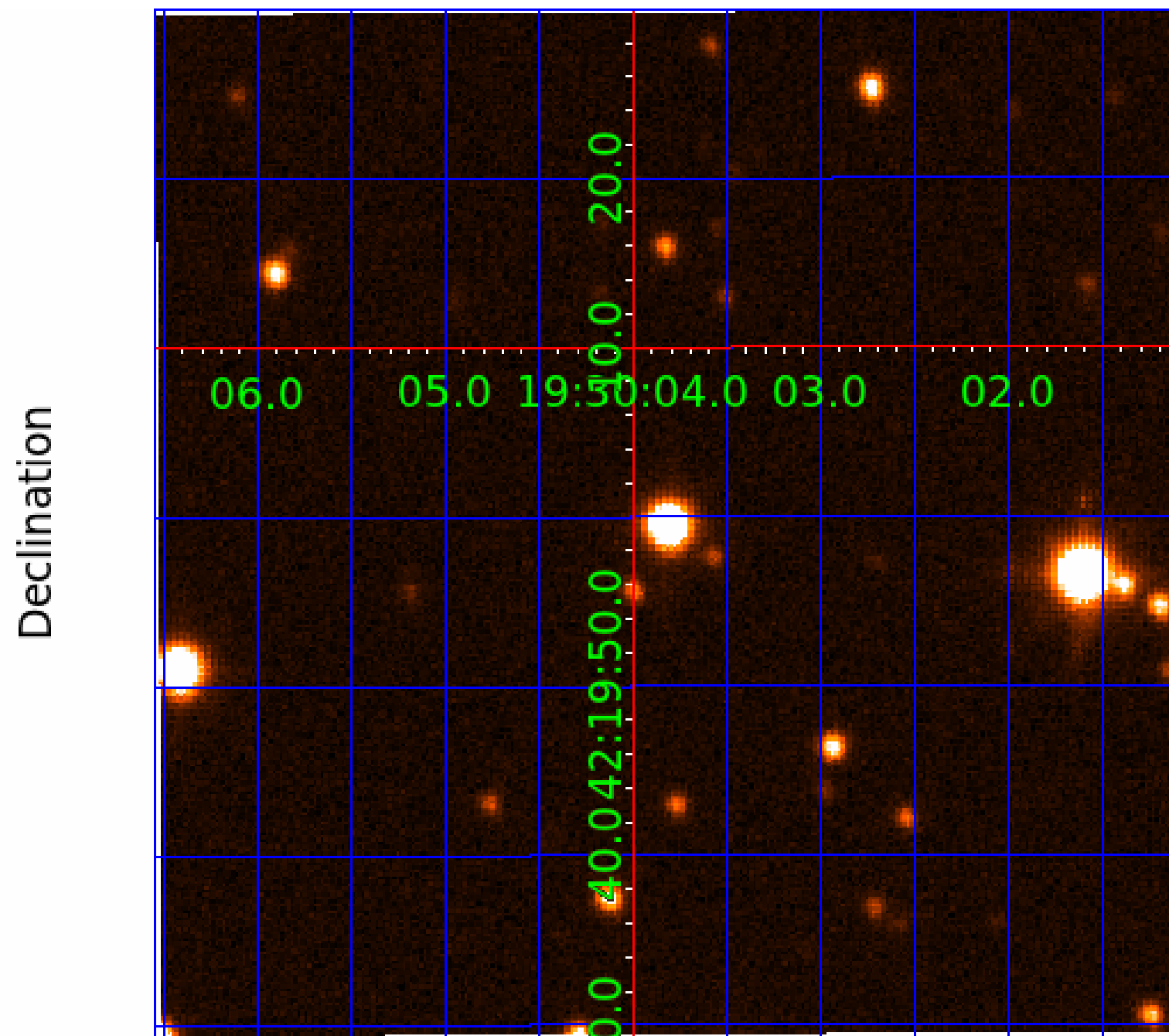
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006865416

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})
006865416-01	OBS	No	536.884787	358.914406	1018.9	12.796	12.2	3.6	0.83	5435	2.67	0.39
006865416-02	OBS	No	335.894438	334.929591	1242.6	4.634	19.0	7.3	0.83	5435	3.04	0.73
006865416-03	OBS	No	535.551182	390.232311	1558.6	6.262	16.4	7.5	0.83	5435	3.23	0.39
006865416-04	OBS	No	545.651884	430.282318	893.2	3.547	12.4	6.0	0.83	5435	2.60	0.38
006865416-05	OBS	No	230.414322	269.634963	659.9	1.798	14.2	5.0	0.83	5435	2.30	1.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006865416-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006865416-03	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
006865416-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006865416-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV

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

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

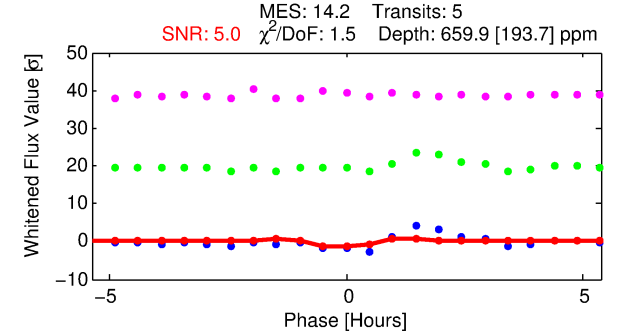
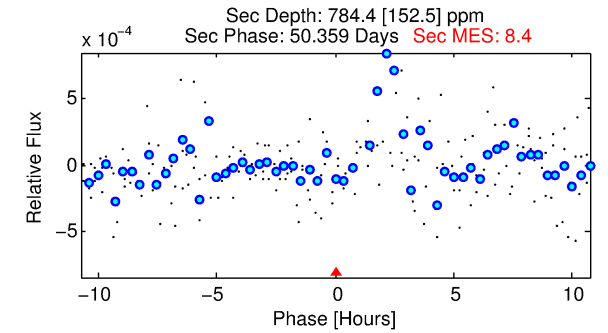
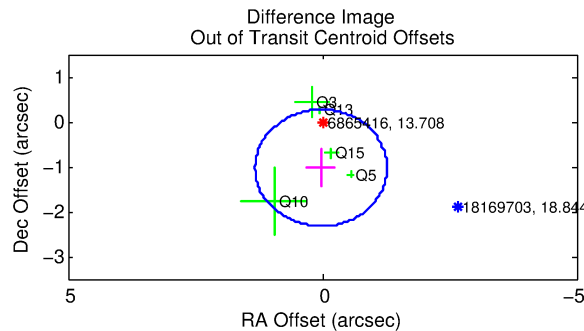
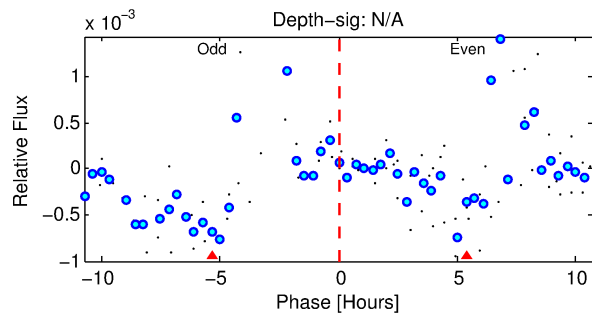
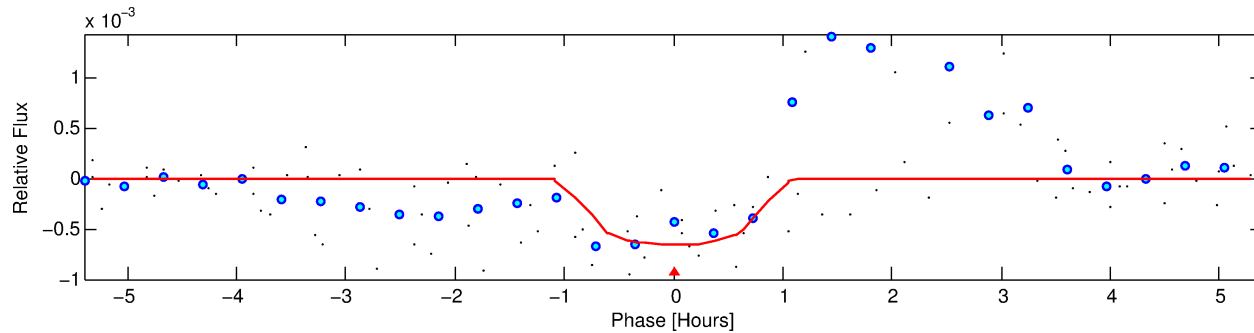
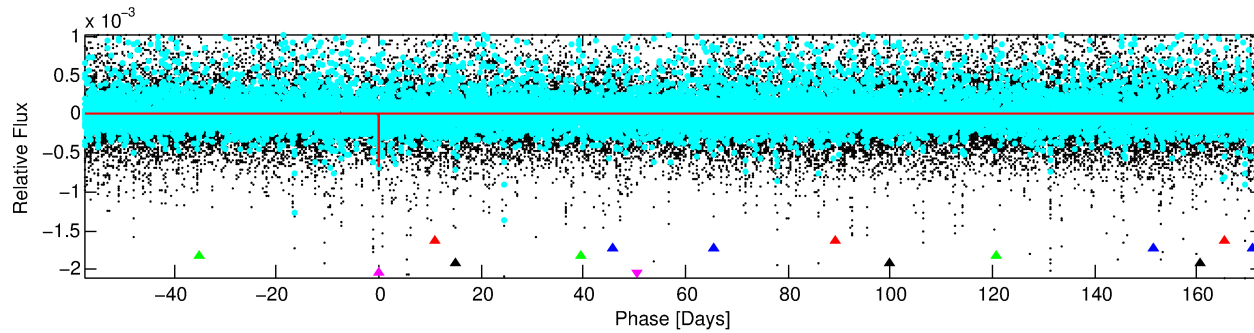
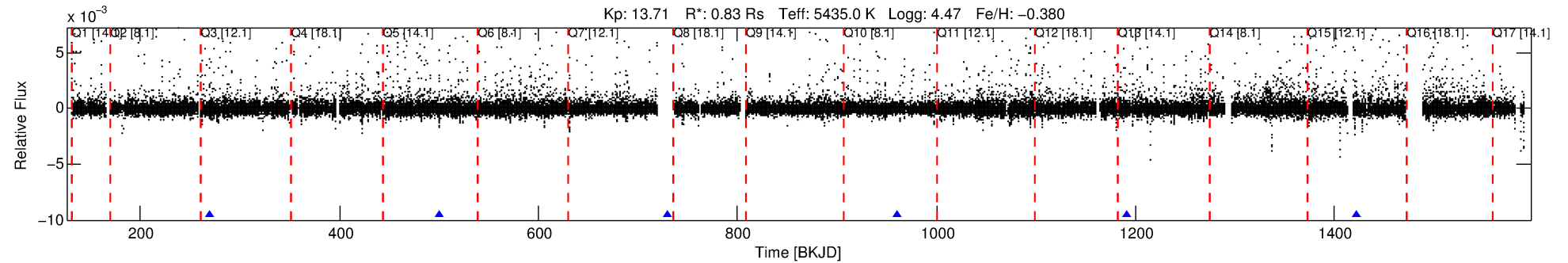
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006865416-05

No Significant Match Found

DV One-Page Summary

KIC: 6865416 Candidate: 5 of 5 Period: 230.414 d



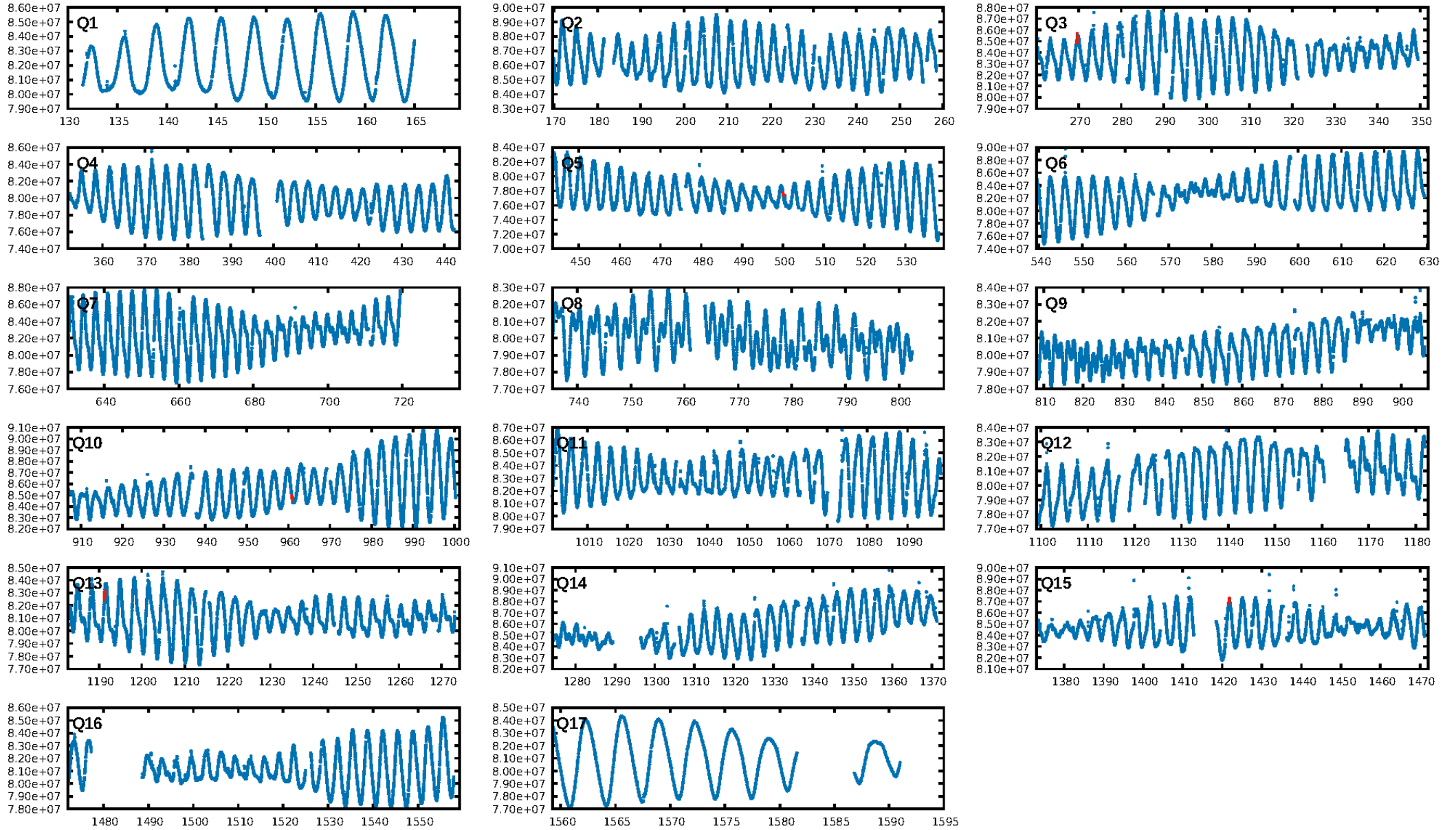
DV Fit Results:

Period = 230.41432 [0.00241] d
Epoch = 269.6350 [0.0084] BKJD
Rp/R* = 0.0254 [0.0654]
a/R* = 711.38 [7707.23]
b = 0.72 [7.25]
Seff = 1.21 [0.30]
Teq = 267 [17] K
Rp = 2.30 [5.92] Re
a = 0.6669 [0.0971] AU
Ag = 36387.75 [187668.45] [0.19σ]
Teffp = 5705 [7351] K [0.74σ]

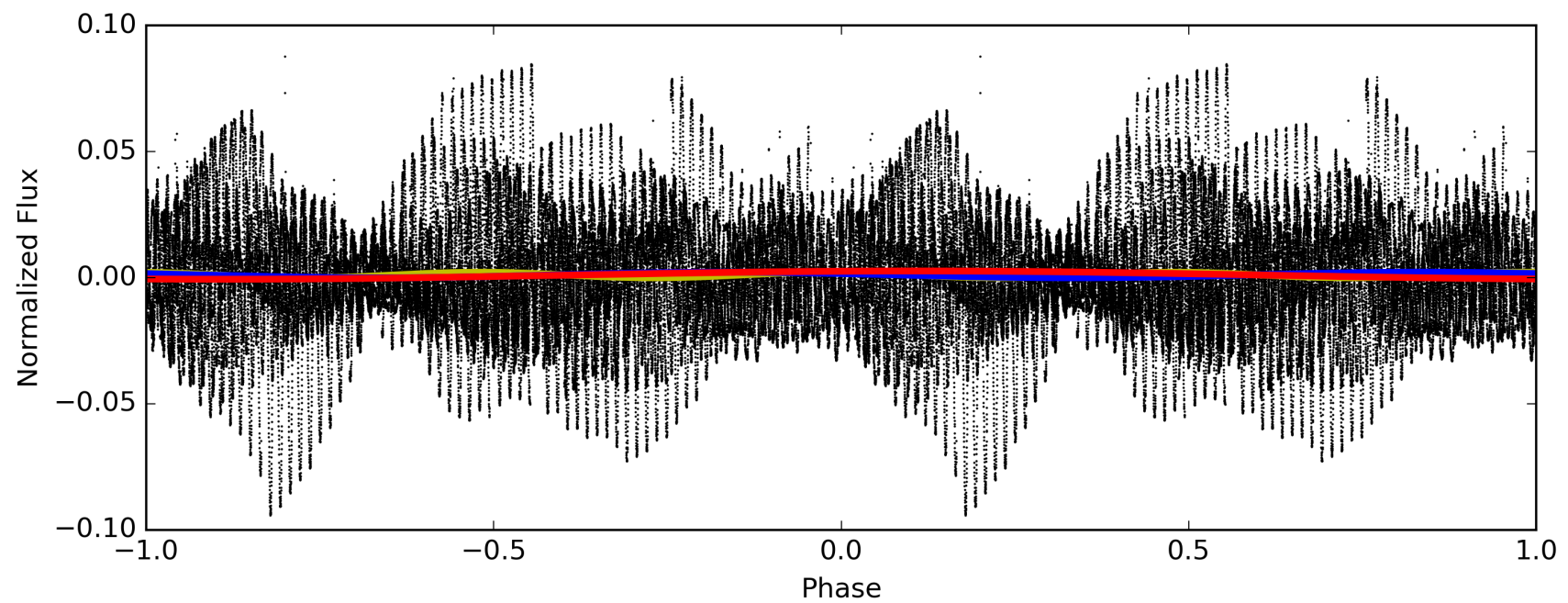
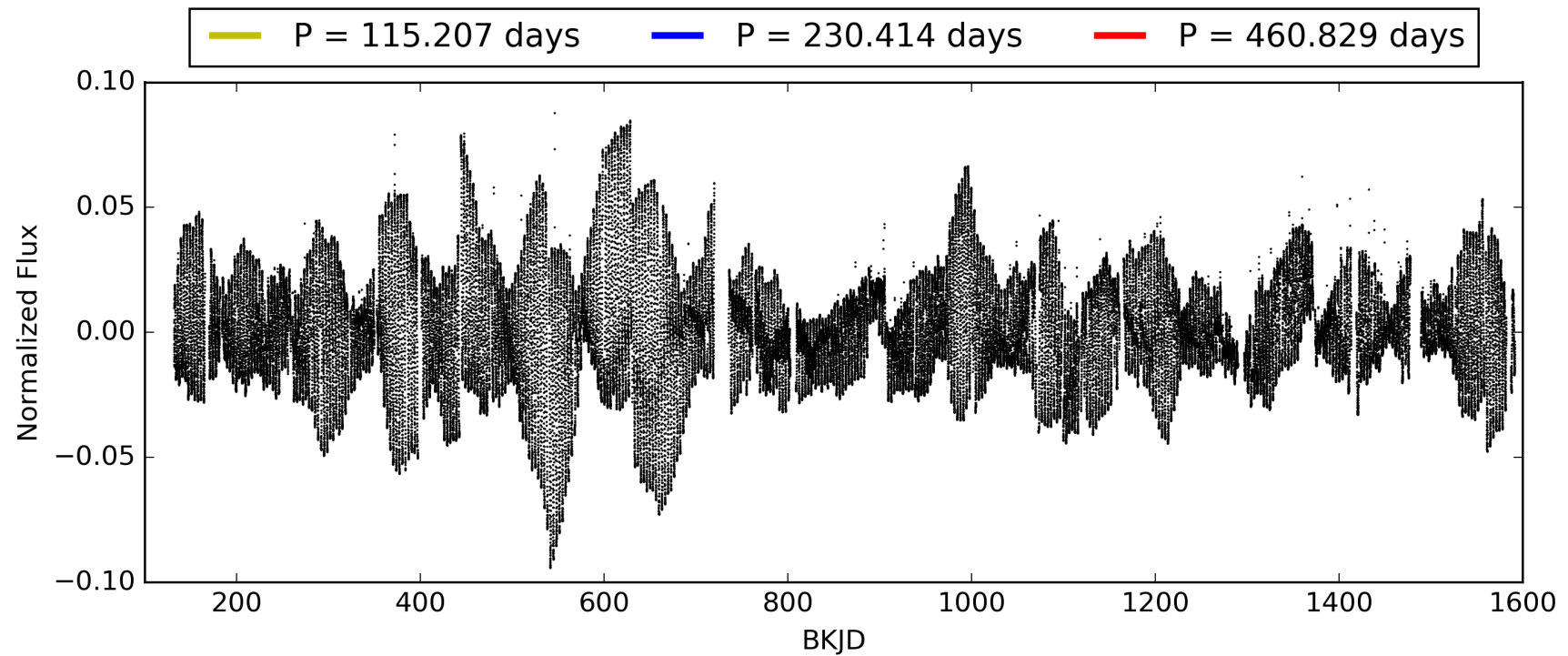
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [509.29σ]
ModelChiSquare2-sig: 1.7%
ModelChiSquareGof-sig: 48.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.654
Centroid-sig: 27.9%
Centroid-so: 1.171 arcsec [1.16σ]
OotOffset-rm: 1.028 arcsec [2.38σ]
KicOffset-rm: 1.035 arcsec [2.52σ]
OotOffset-st: 1/2/0/2 [5]
KicOffset-st: 1/2/0/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [5/5]

TCE 006865416-05, PDC Light Curves

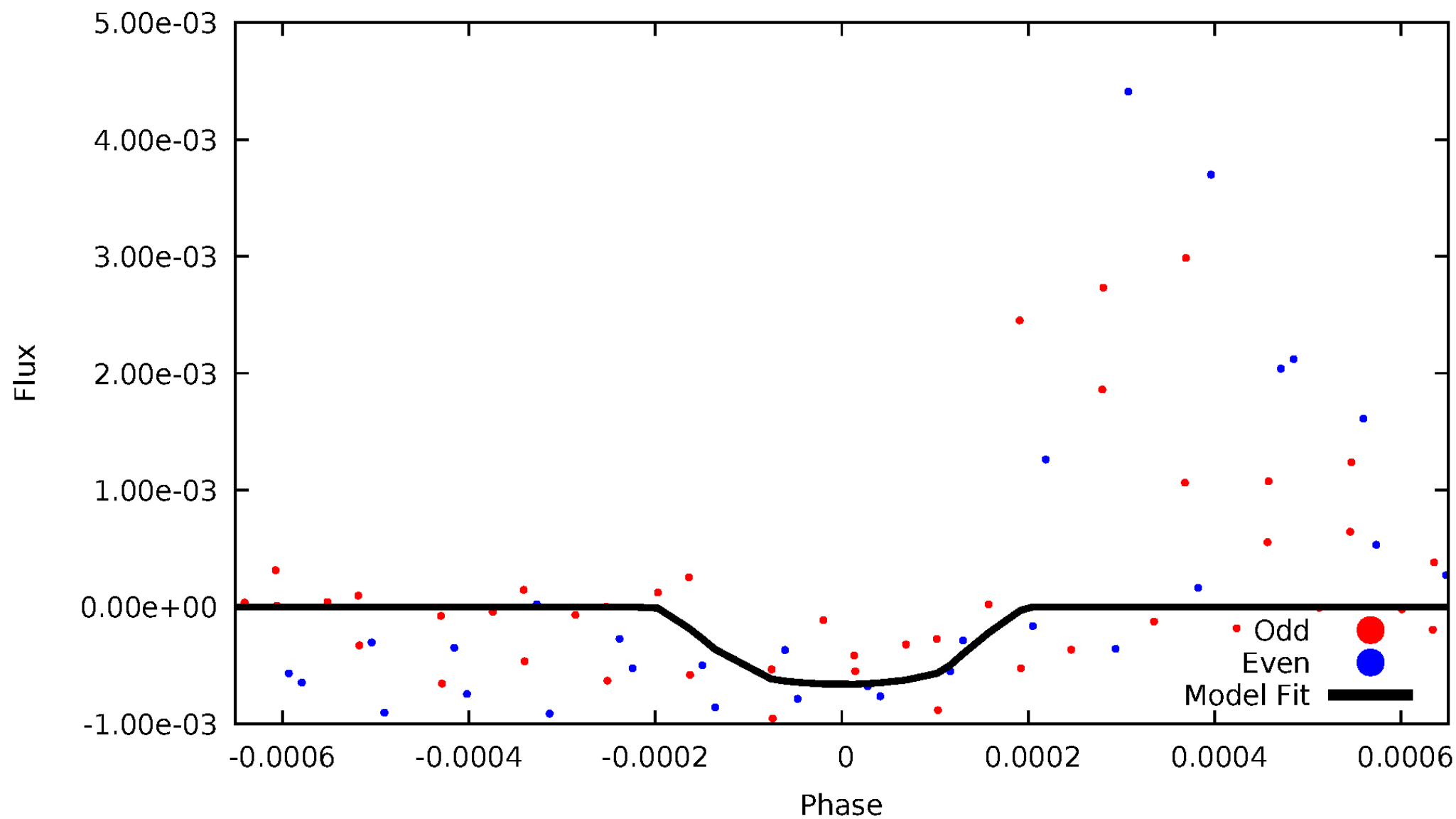


TCE 006865416-05



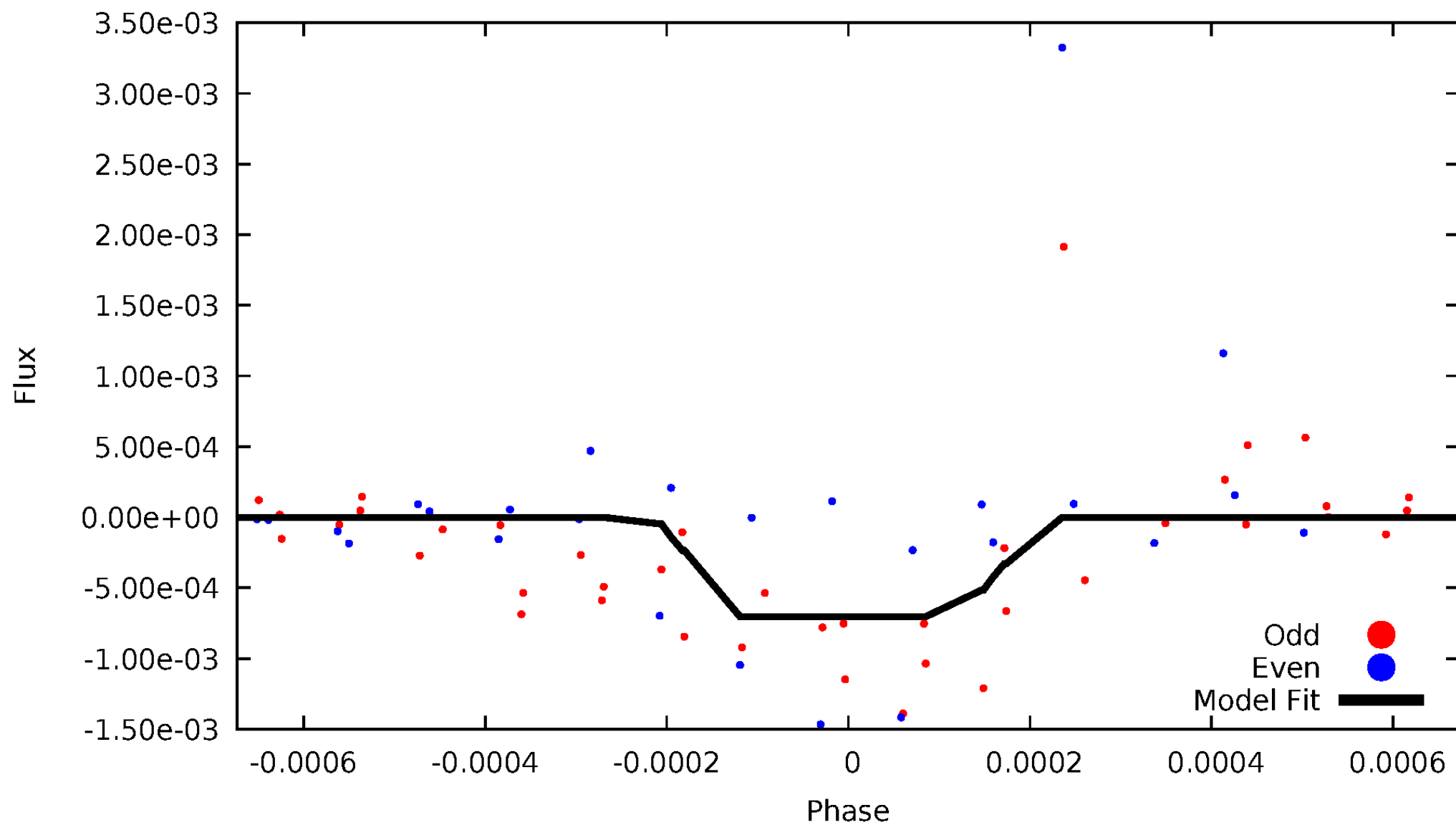
DV Odd/Even

TCE 006865416-05



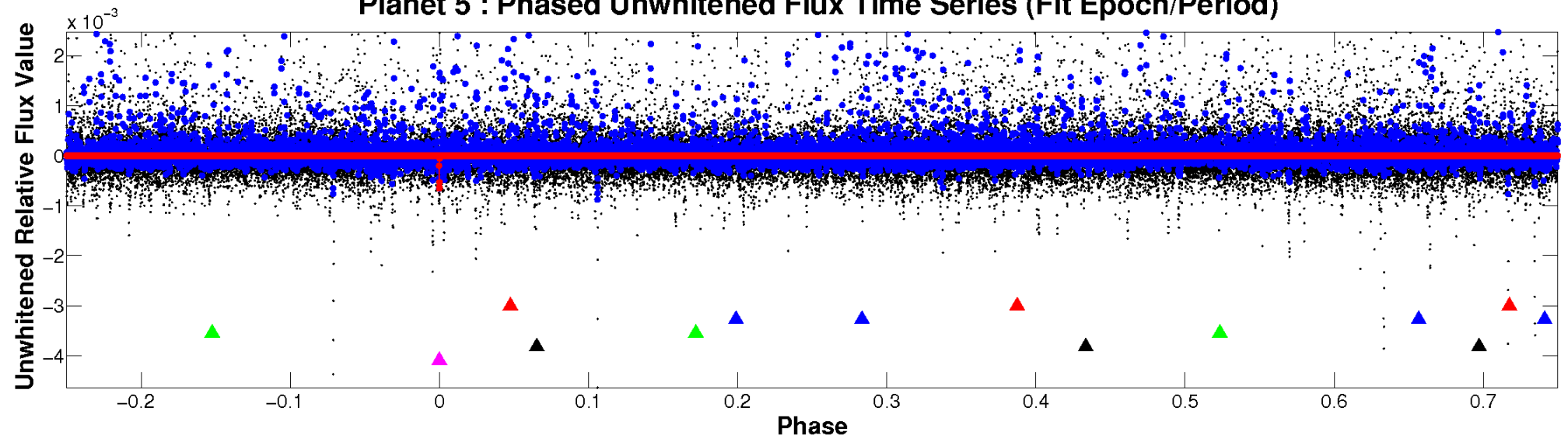
ALT Odd/Even

TCE 006865416-05

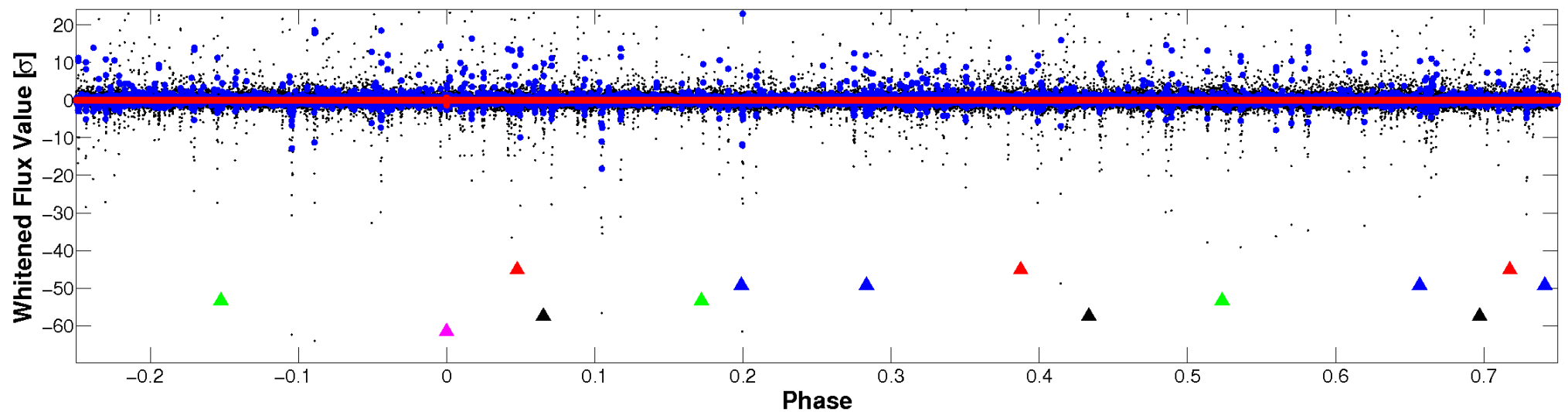


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

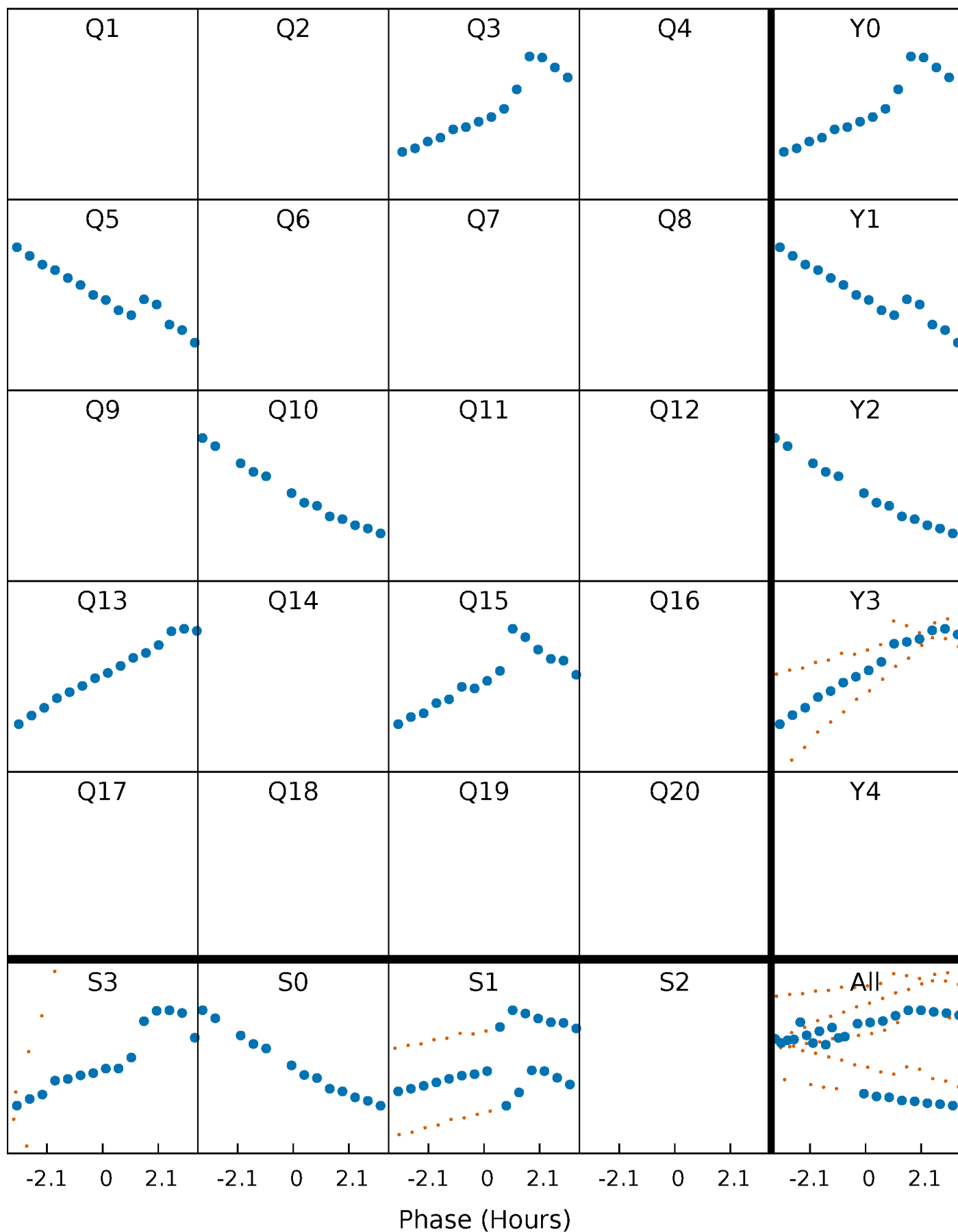


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



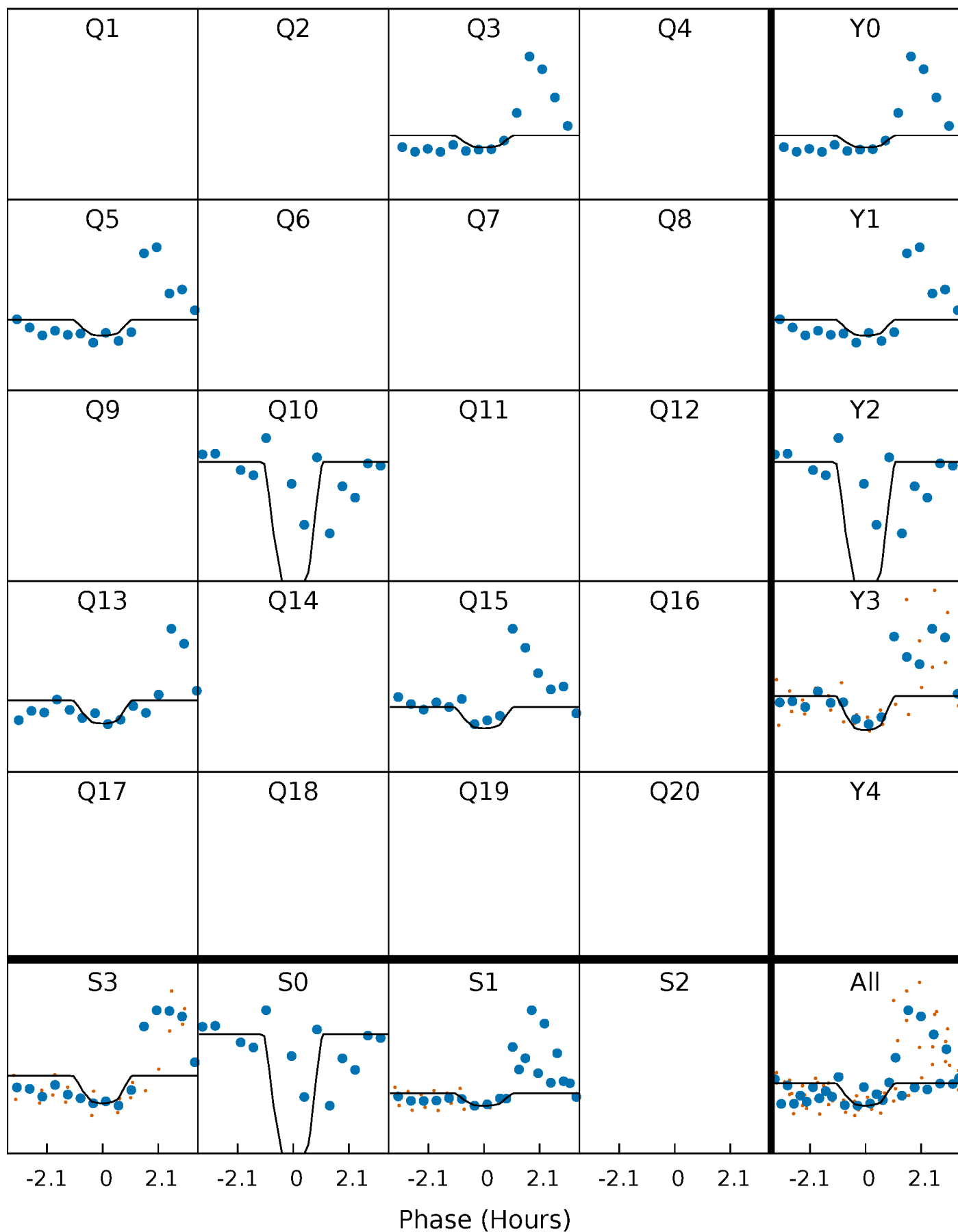
PDC Quarter-Phased Transit Curves

TCE 006865416-05 $P=230.414322$ Days $T_0=269.634963$ (BKJD)



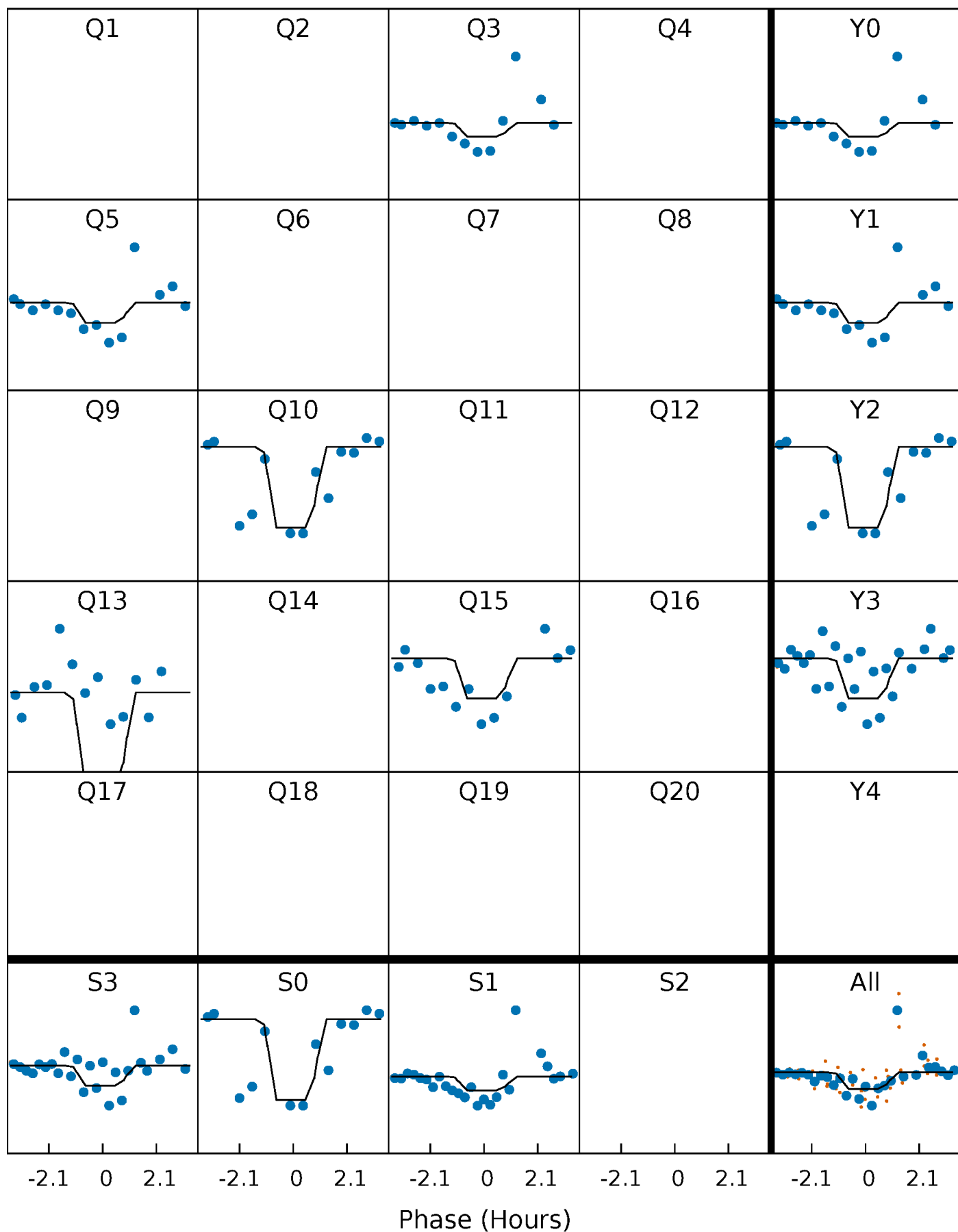
DV Quarter-Phased Transit Curves

TCE 006865416-05 $P=230.414322$ Days $T_0=269.634963$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

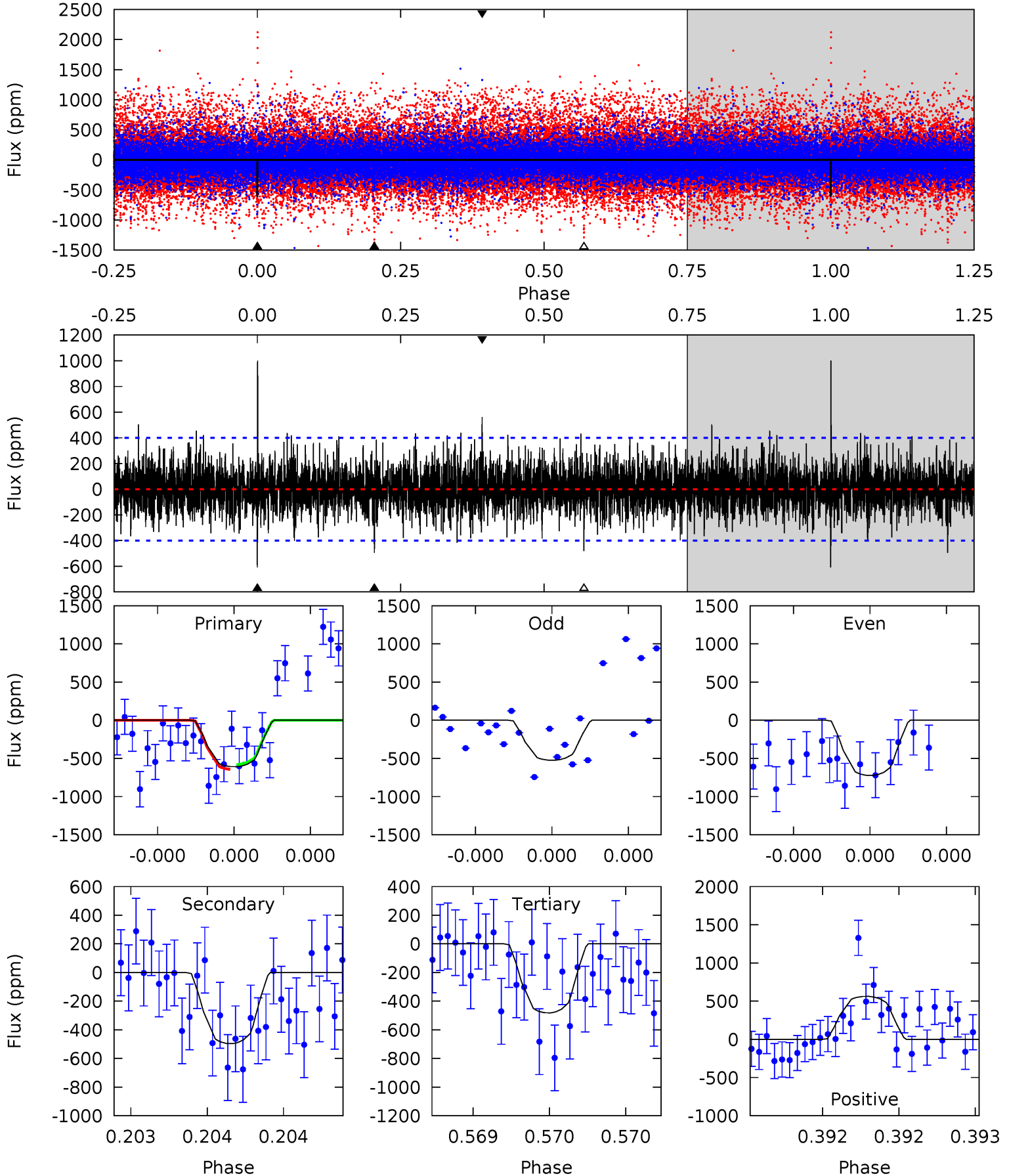
TCE 006865416-05 $P=230.407698$ Days $T_0=269.651536$ (BKJD)



DV Model-Shift Uniqueness Test

006865416-05, $P = 230.414322$ Days, $E = 39.220641$ Days

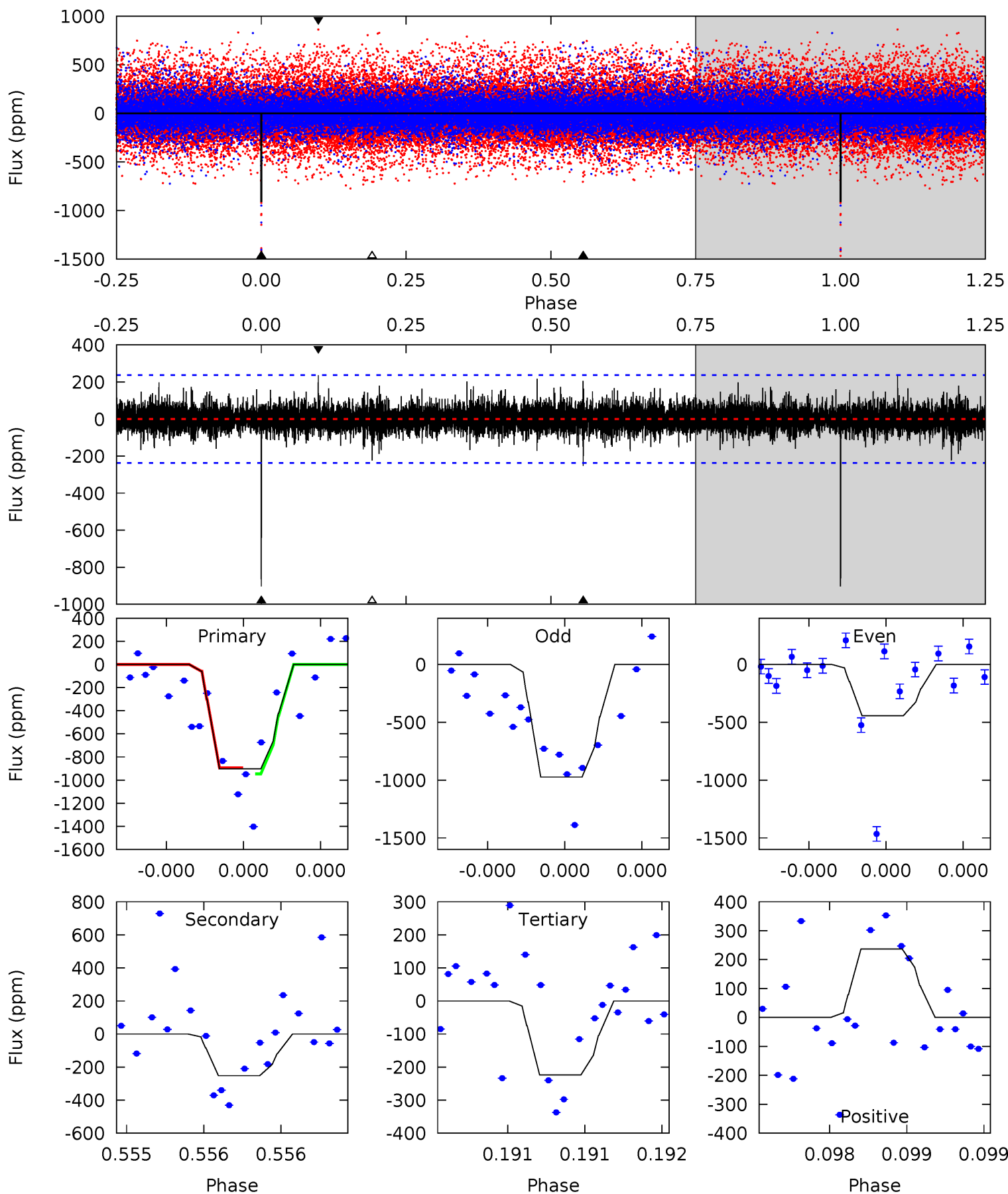
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.54	6.97	6.76	7.90	5.62	3.55	1.65	1.78	0.64	0.20	-0.93	1.28	0.93	0.62	0.45



Alt Model-Shift Uniqueness Test

006865416-05, P = 230.407698 Days, E = 39.243838 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	5.97	5.30	5.60	5.62	3.55	1.05	16.1	15.8	0.67	0.37	6.42	0.80	0.21	0.57



Stellar Parameters For KIC 006865416

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5435^{+160}_{-160}	$4.474^{+0.125}_{-0.125}$	$-0.380^{+0.350}_{-0.300}$	$0.828^{+0.136}_{-0.111}$	$0.746^{+0.115}_{-0.046}$	$1.853^{+1.017}_{-0.657}$
	+3%/-3%	+3%/-3%	+92%/-79%	+16%/-13%	+15%/-6%	+55%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006865416-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-496 ± 71	$4.78^{+5.53}_{-3.26}$	374^{+19}_{-19}	3884^{+2421}_{-834}	5351^{+47798}_{-4205}
Alt.	-252 ± 42	$5.04^{+5.08}_{-3.30}$	375^{+20}_{-21}	3413^{+1576}_{-631}	2305^{+18171}_{-1731}

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

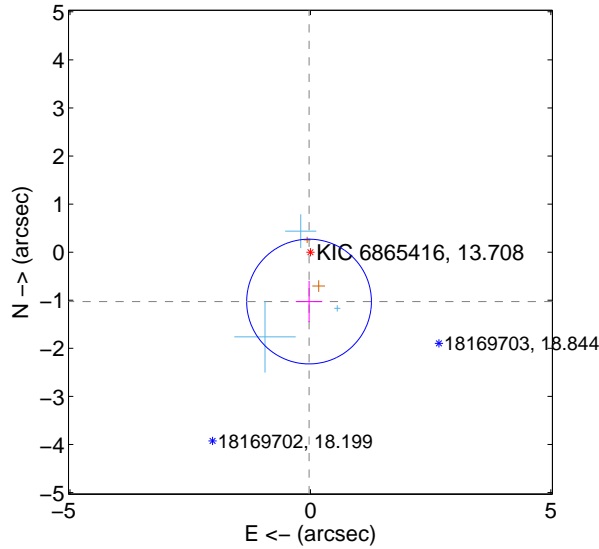
Supplemental centroid analysis for 006865416-05. Kepler magnitude: 13.71. Transit SNR 4.96

There are 3 quarters with good PRF difference image offsets

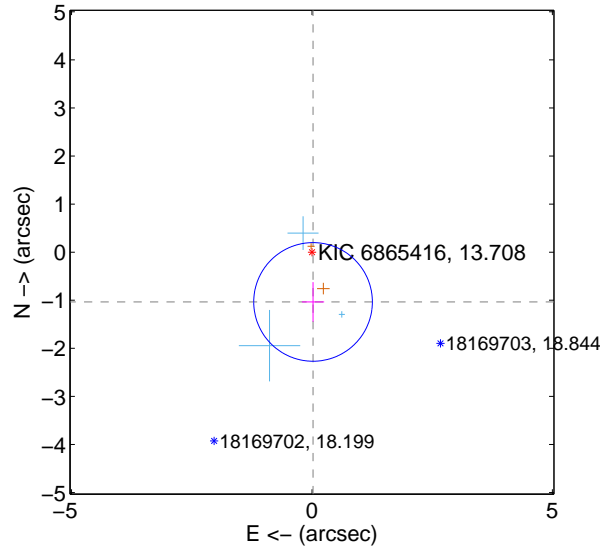
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.028 ± 0.432	2.38	0.028 ± 0.275	-1.027 ± 0.429
PRF-fit source offset from KIC position	1.035 ± 0.411	2.52	-0.023 ± 0.231	-1.035 ± 0.413
photometric centroid source offset	1.17 ± 1.01	1.16	-1.08 ± 1.01	-0.45 ± 0.98

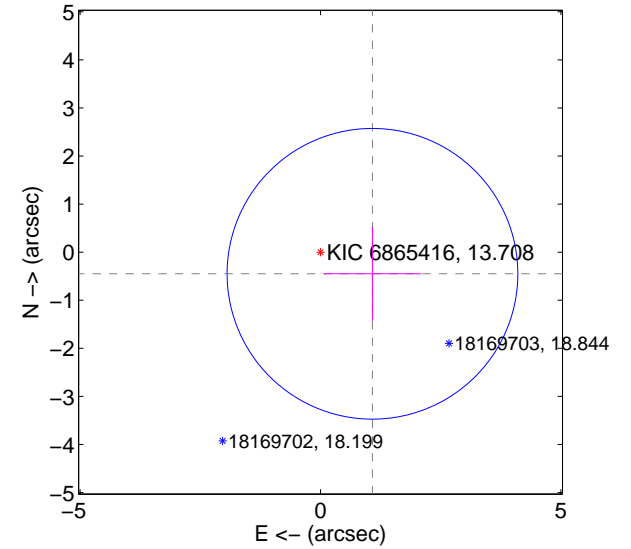
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

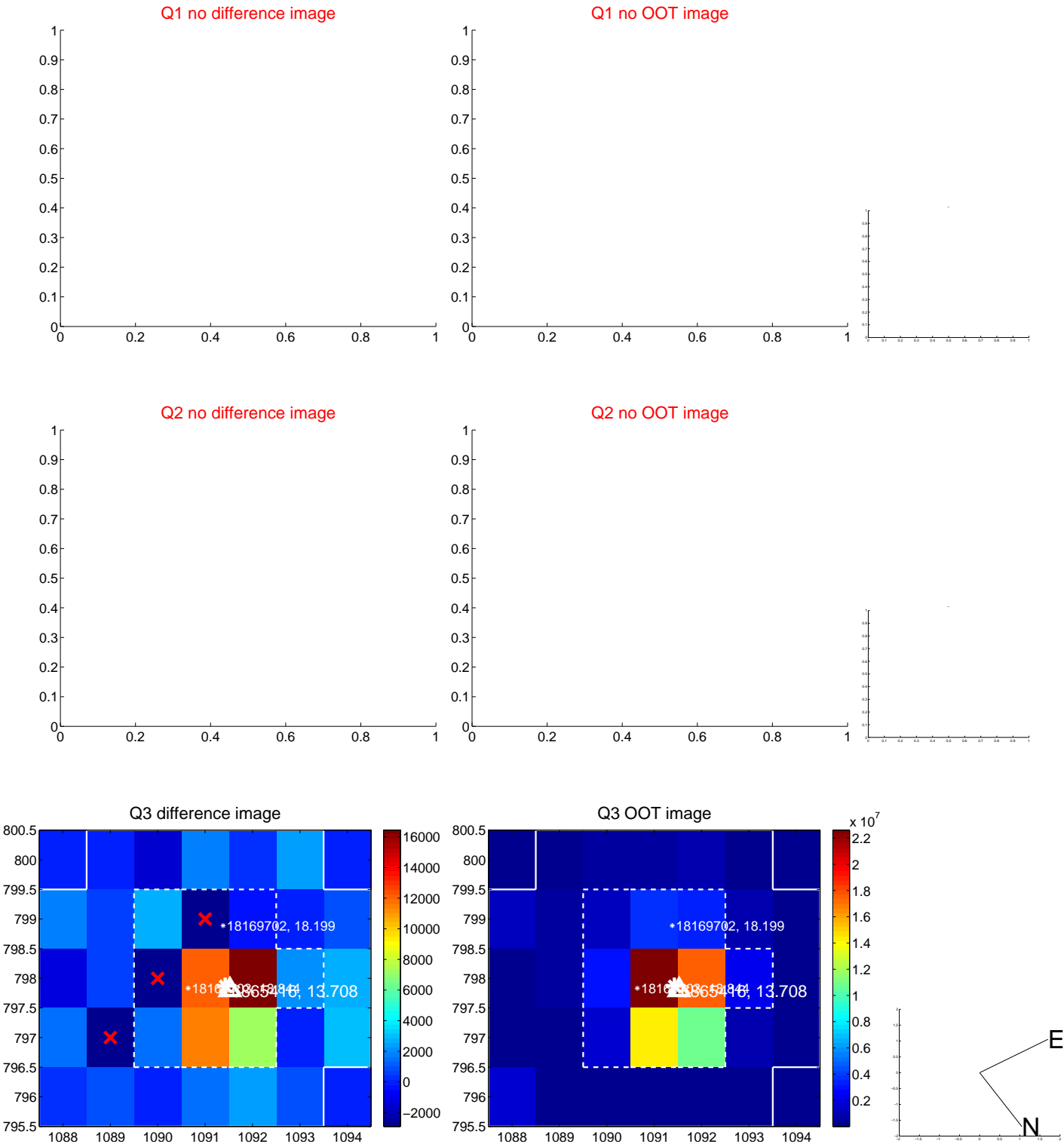


offset from photometric centroids

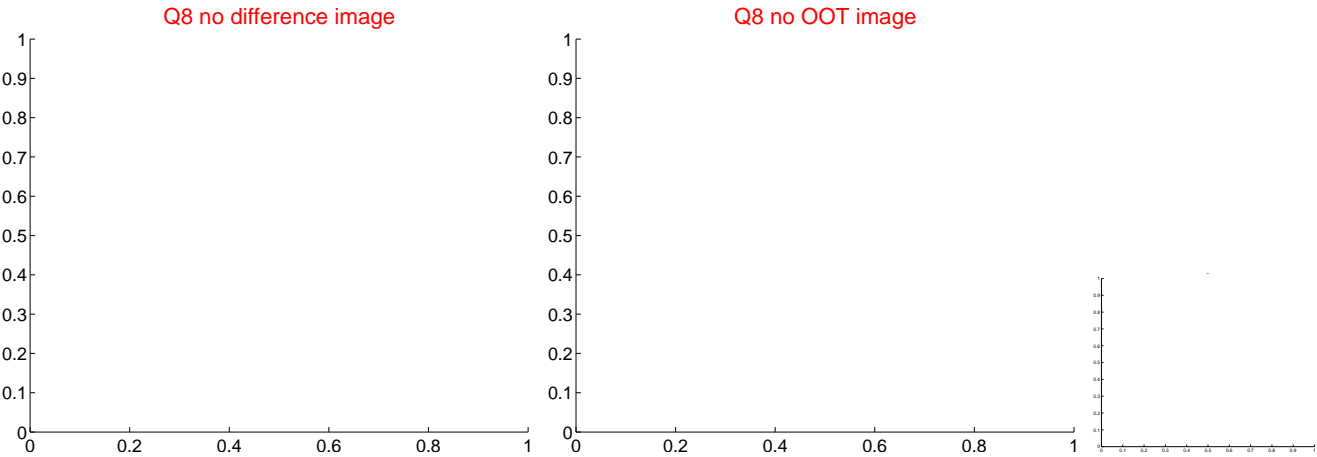
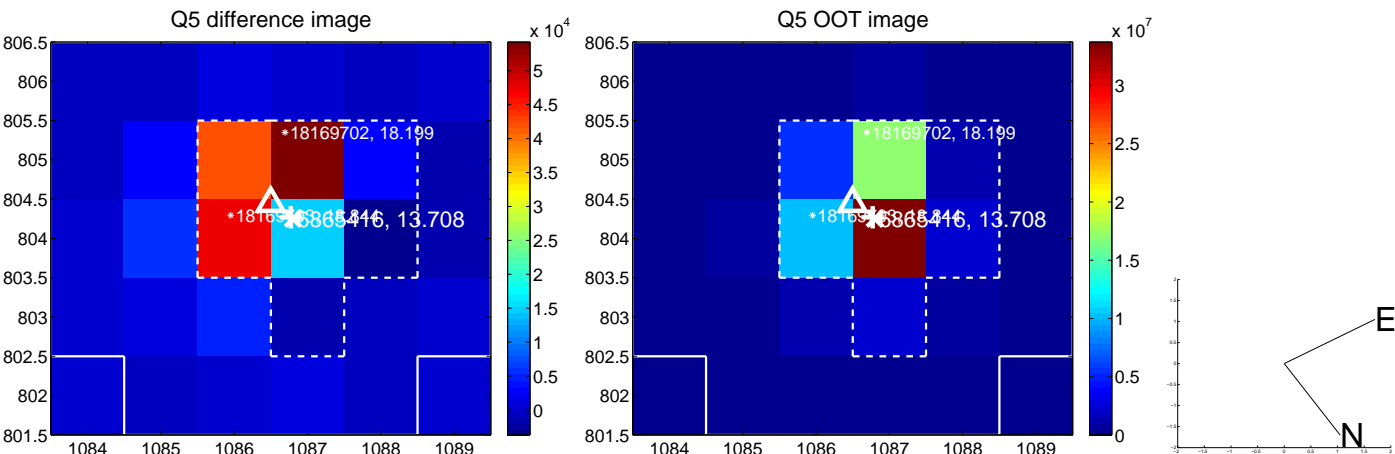


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

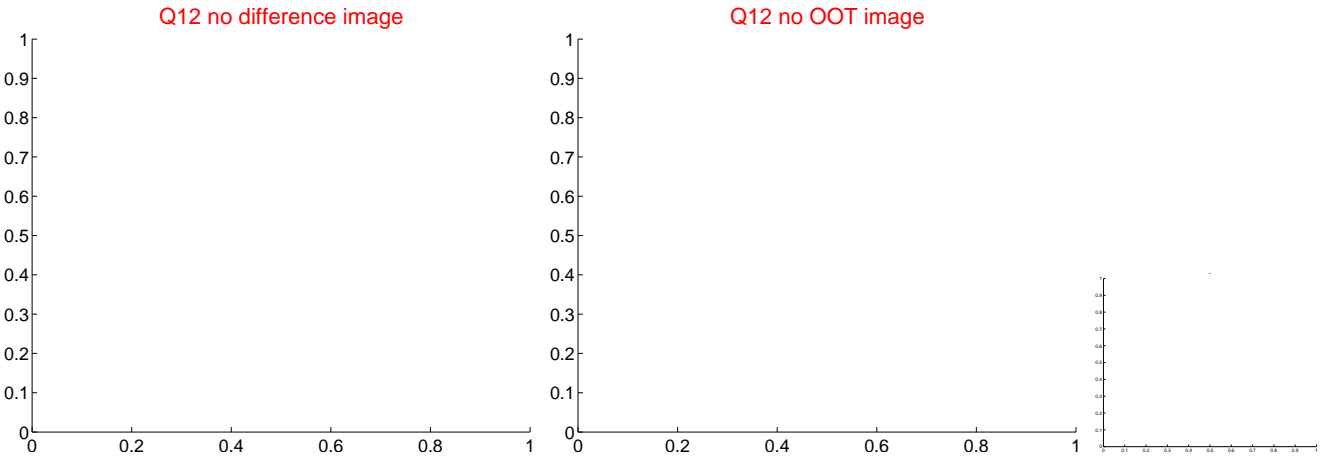
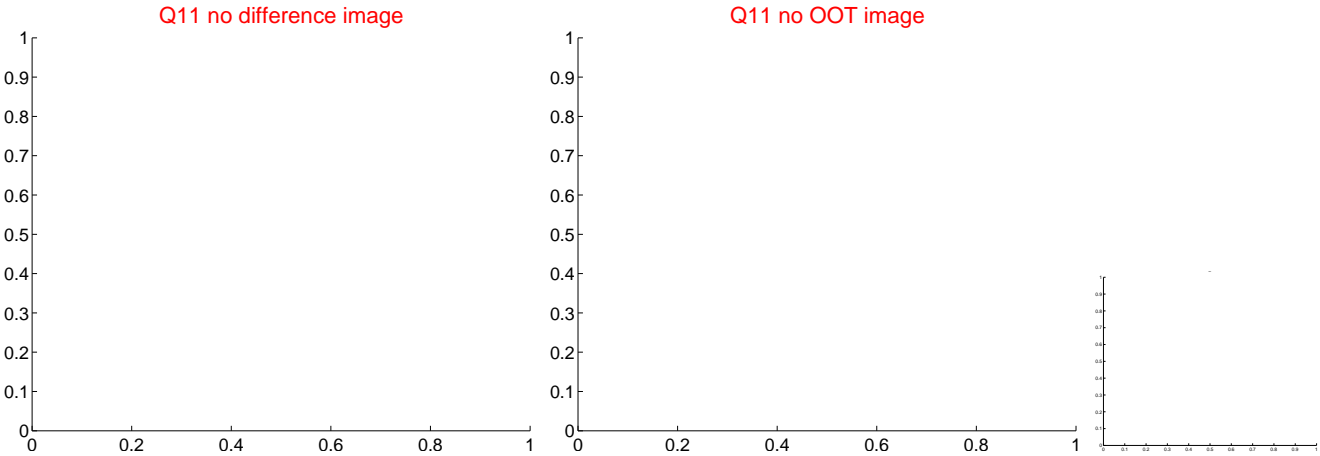
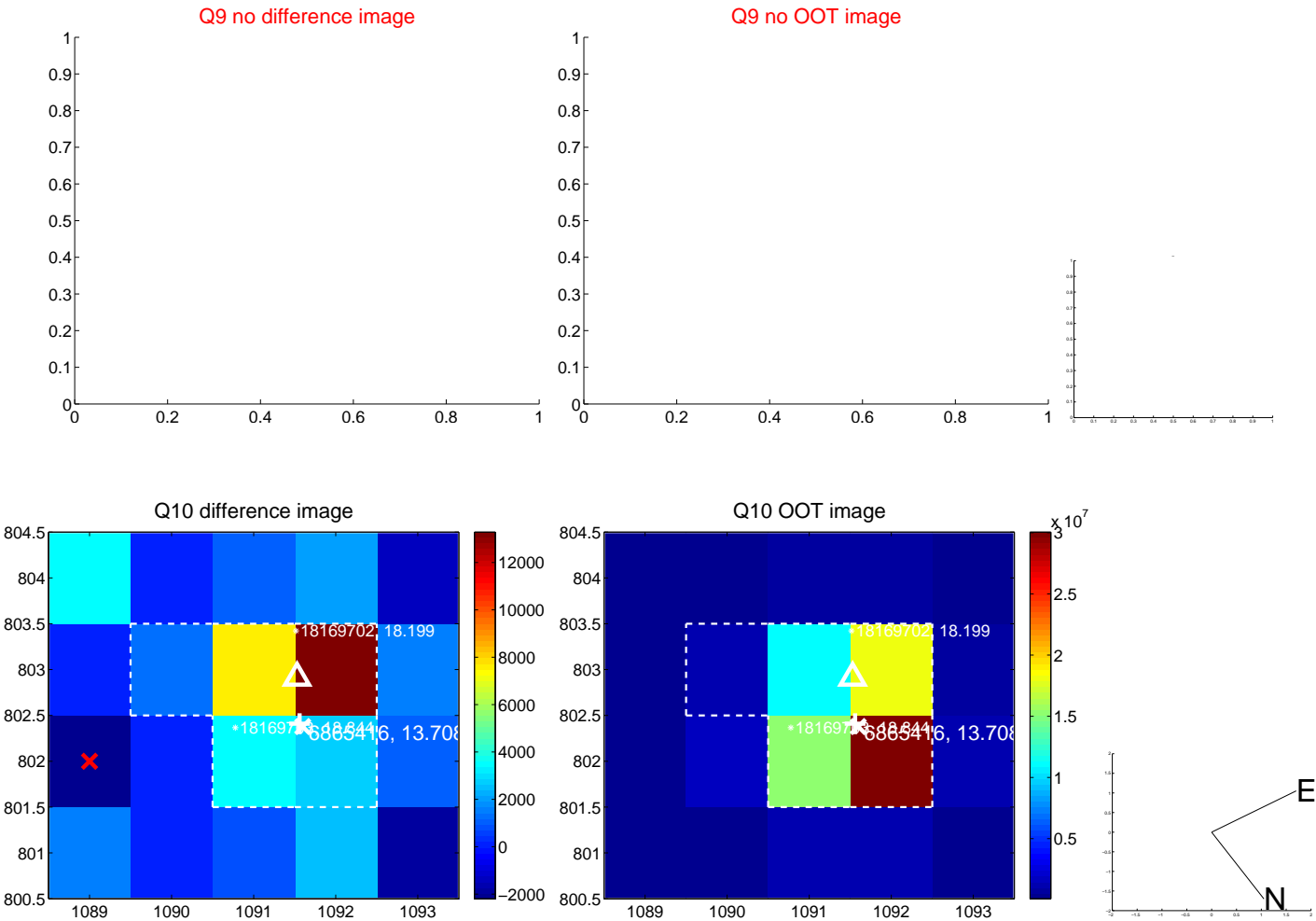
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



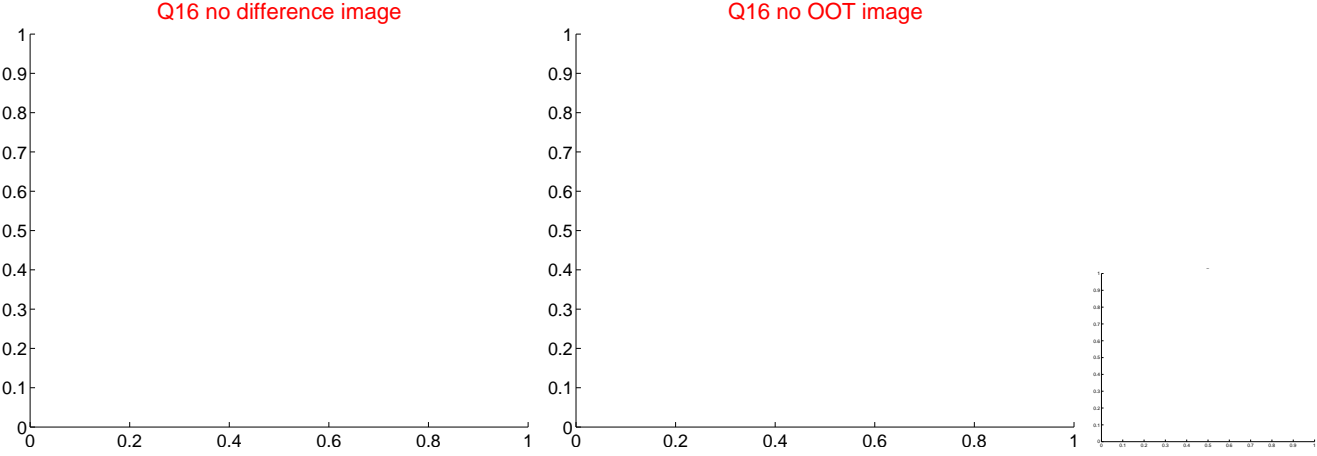
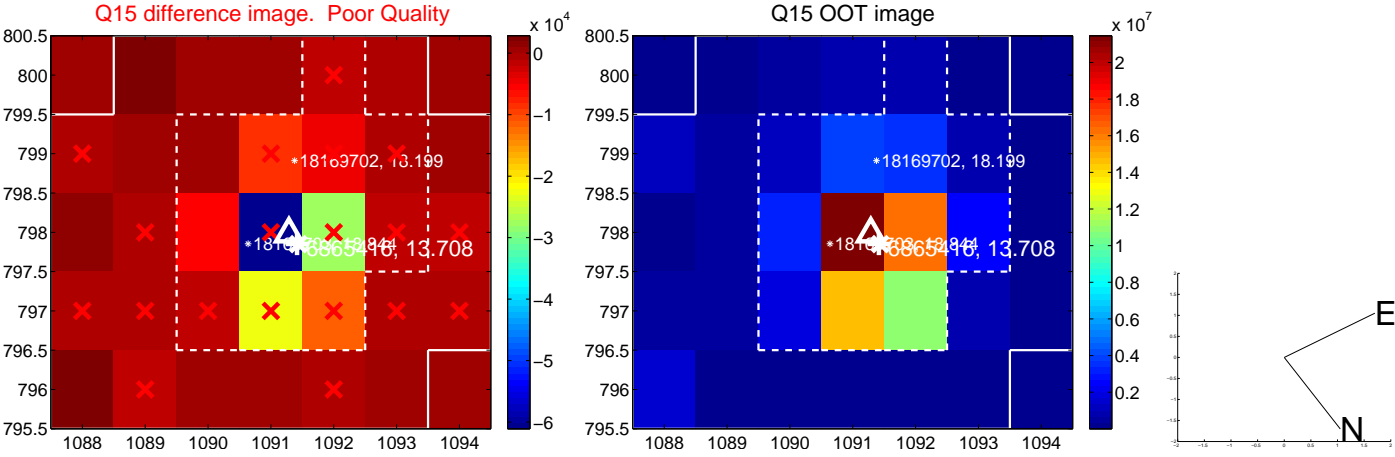
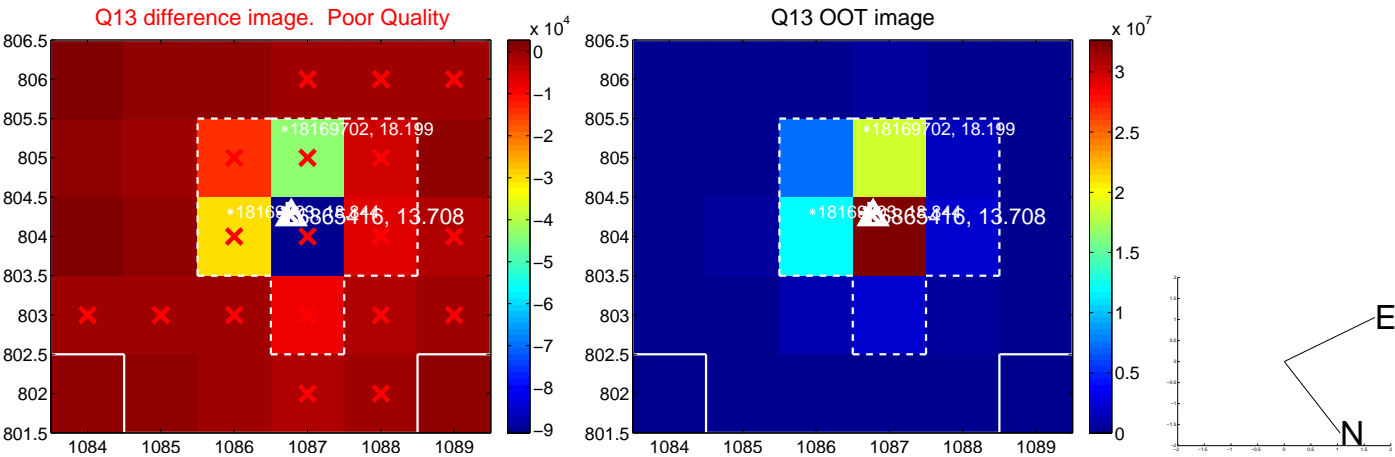
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



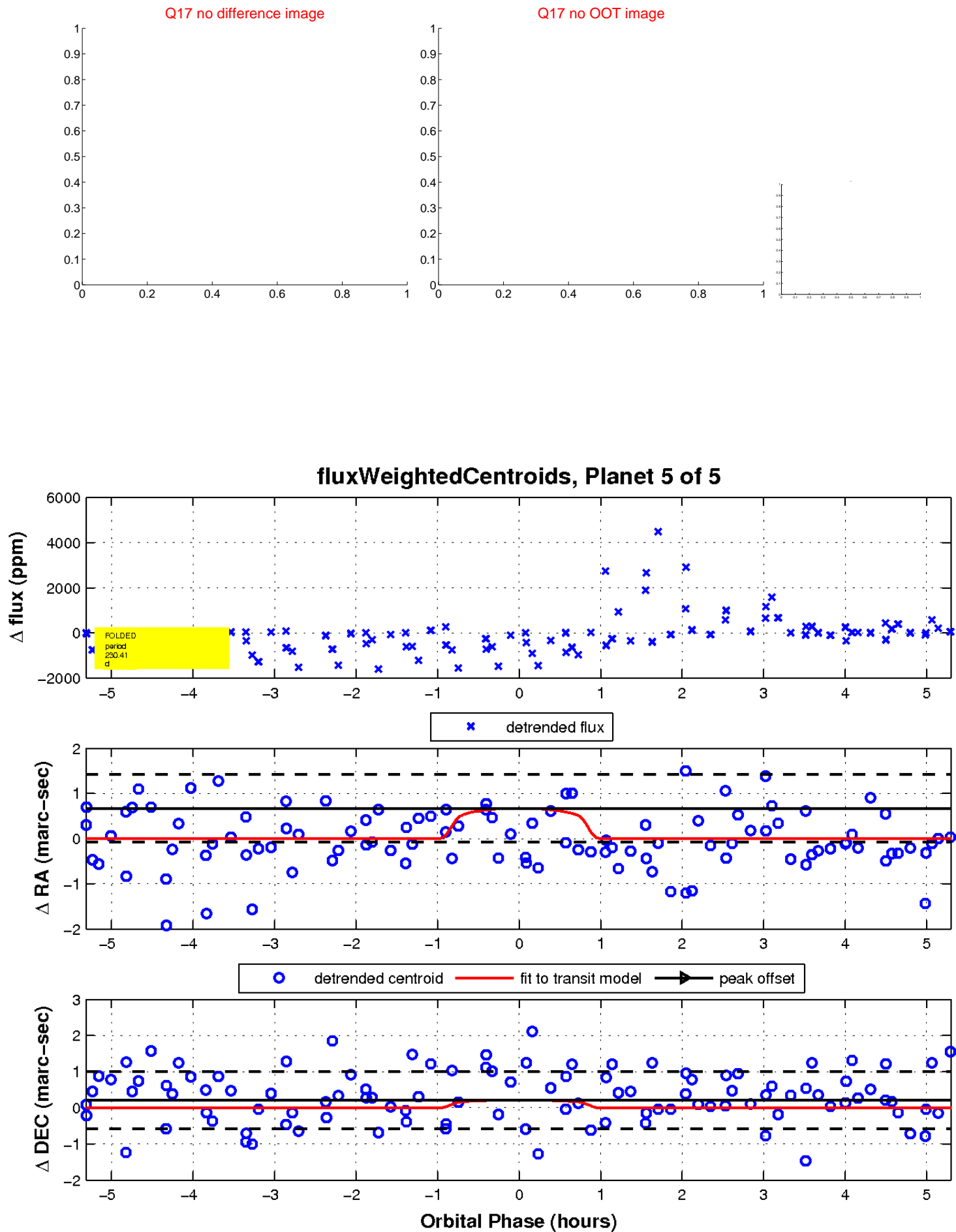
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

