

KIC 012600735

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})
012600735-01	OBS	0548.01	21.300183	147.105454	659.2	4.199	48.4	52.6	1.17	6008	3.22	65.50
012600735-02	OBS	0548.02	6.080028	136.433590	54.9	3.203	8.2	7.2	1.17	6008	1.02	348.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012600735-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012600735-02	OBS	PC	0.81	0	0	0	0	NO_COMMENT

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

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

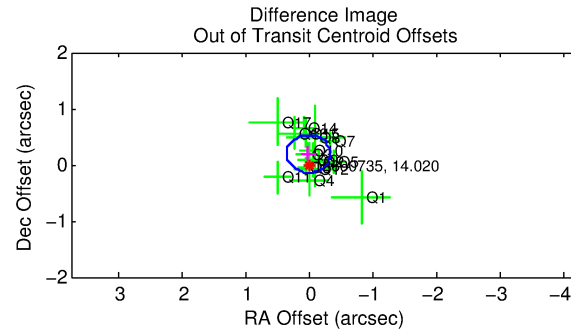
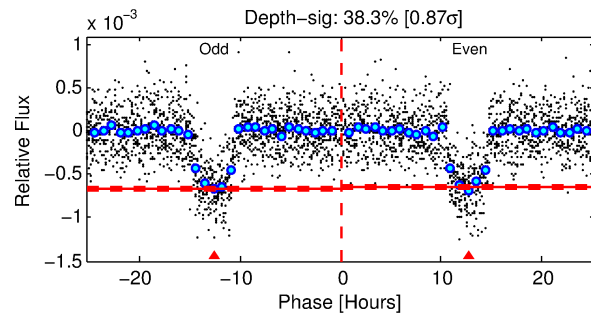
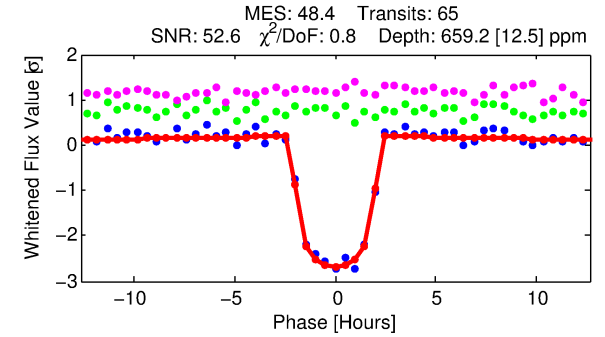
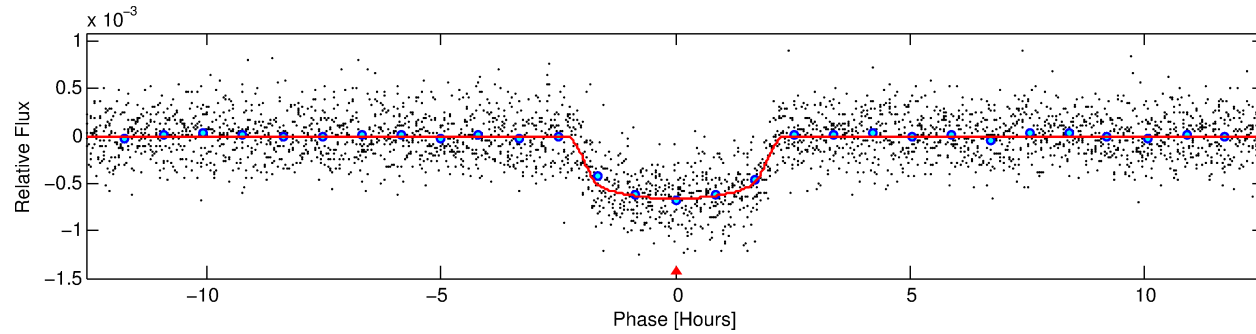
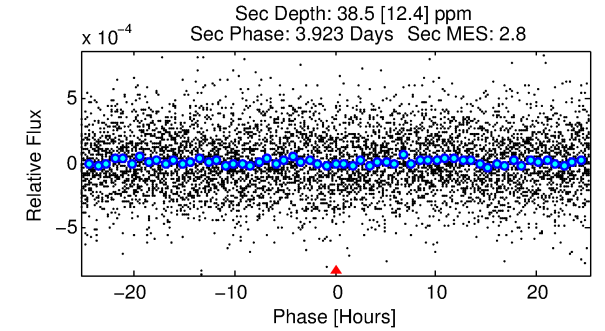
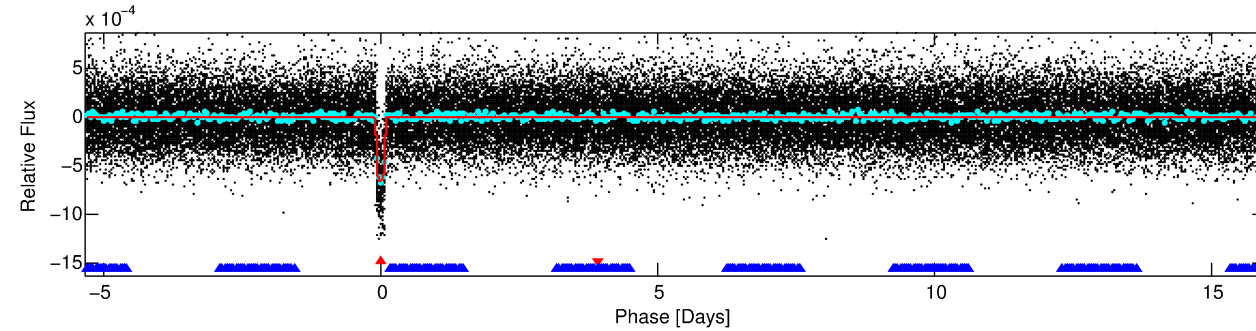
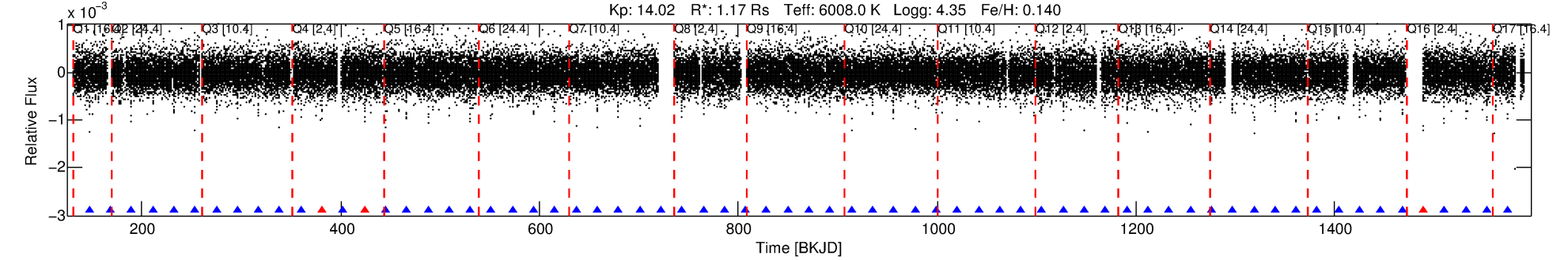
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012600735-01

No Significant Match Found

DV One-Page Summary

KIC: 12600735 Candidate: 1 of 2 Period: 21.300 d
KOI: K00548.01 Corr: 0.987



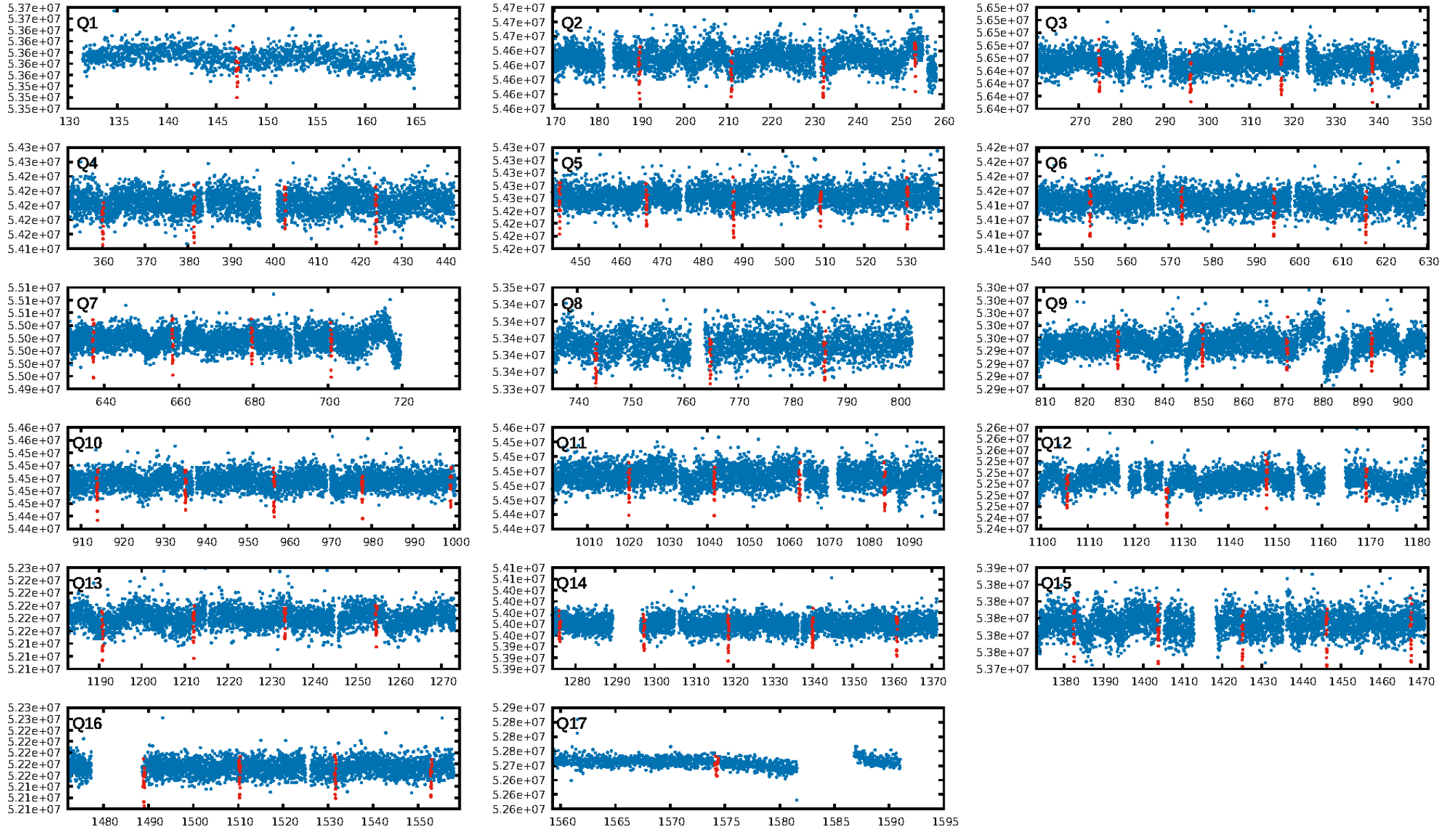
DV Fit Results:

Period = 21.30018 [0.00004] d
Epoch = 147.1055 [0.0017] BKJD
Rp/R* = 0.0252 [0.0046]
a/R* = 28.58 [24.06]
b = 0.71 [0.59]
Seff = 65.50 [14.64]
Teff = 725 [41] K
Rp = 3.22 [0.78] Re
a = 0.1559 [0.0222] AU
Ag = 49.84 [26.50] [1.84σ]
Teffp = 2980 [364] K [6.15σ]

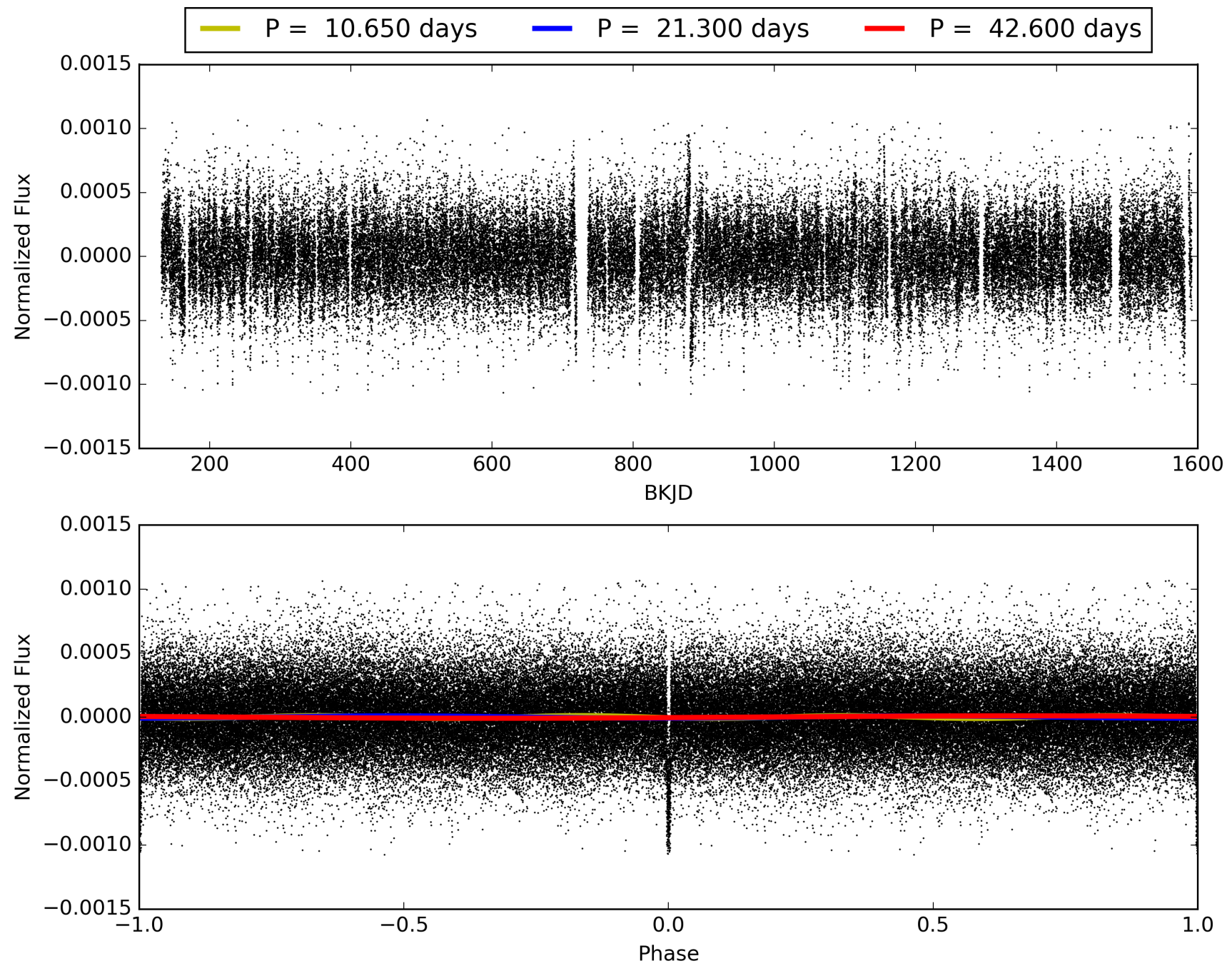
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [69.18σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.95 [60/63]
GhostDiagnostic-chr: 5.998
Centroid-sig: 12.4%
Centroid-so: 0.580 arcsec [2.35σ]
OotOffset-rm: 0.195 arcsec [1.73σ]
KicOffset-rm: 0.202 arcsec [1.98σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012600735-01, PDC Light Curves

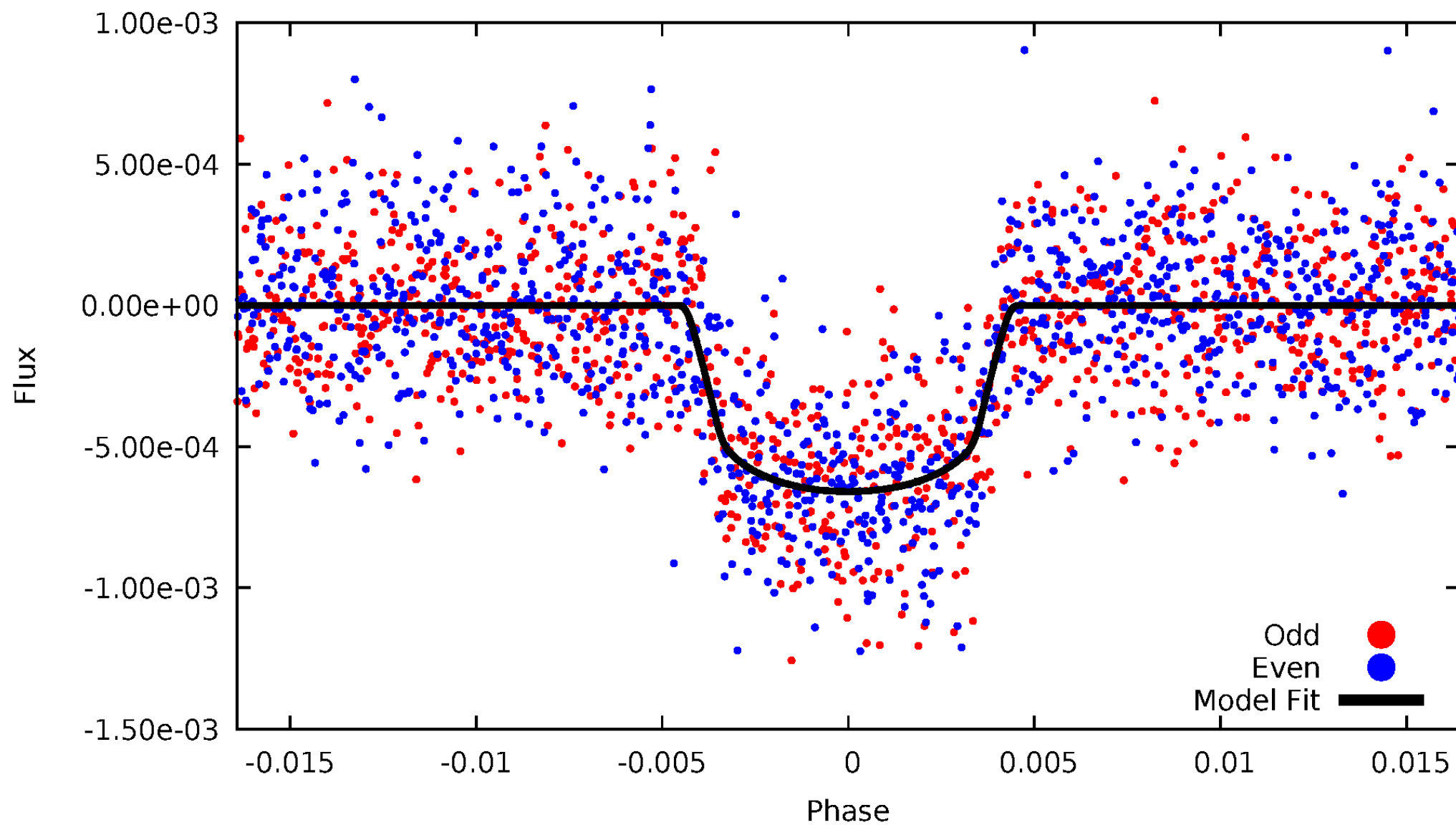


TCE 012600735-01



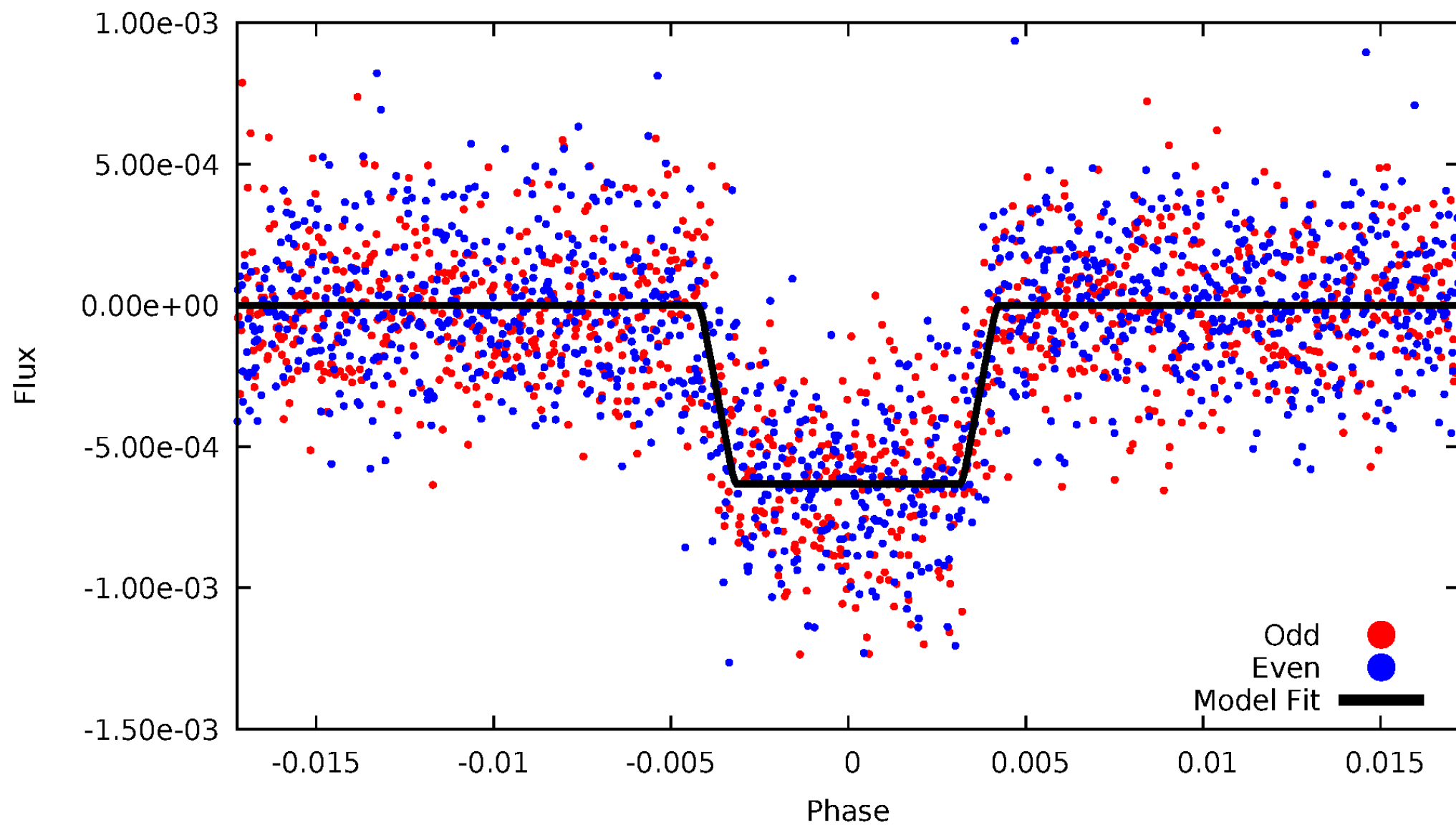
DV Odd/Even

TCE 012600735-01



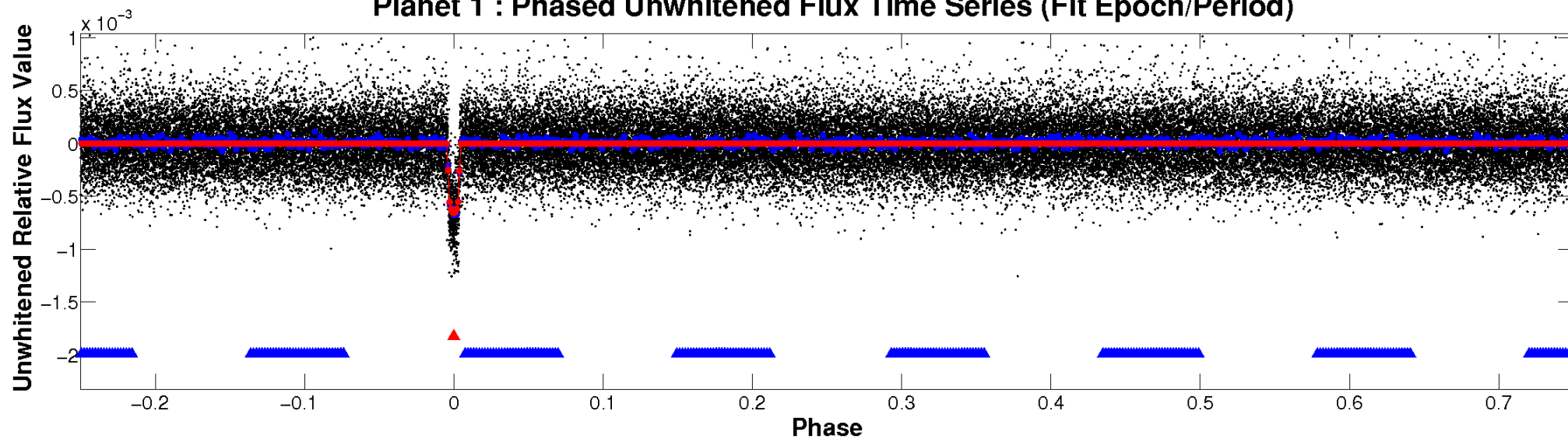
ALT Odd/Even

TCE 012600735-01

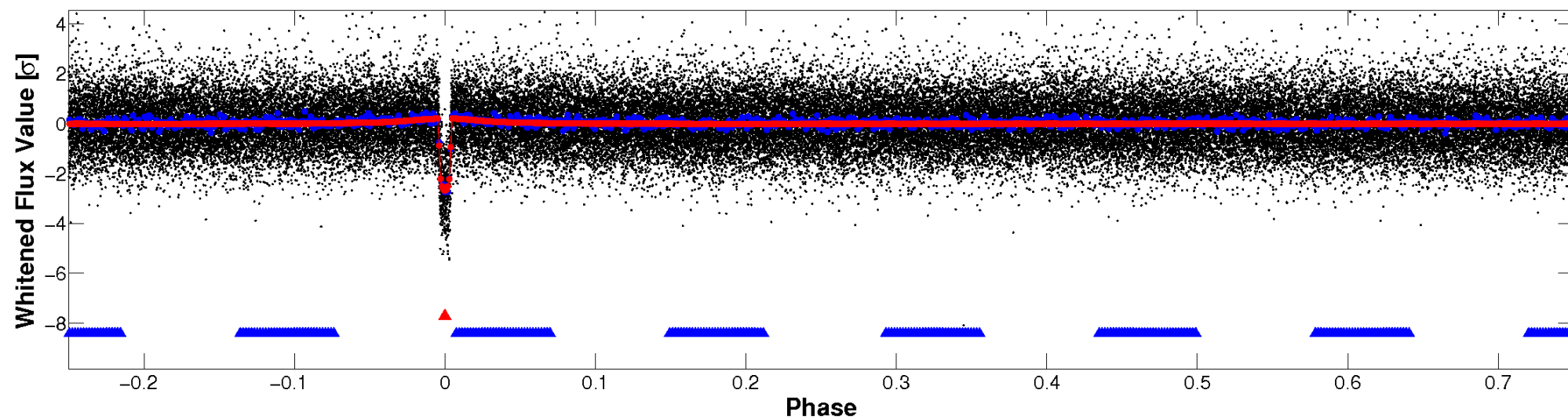


Non-Whitened Vs. Whitened Light Curve

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

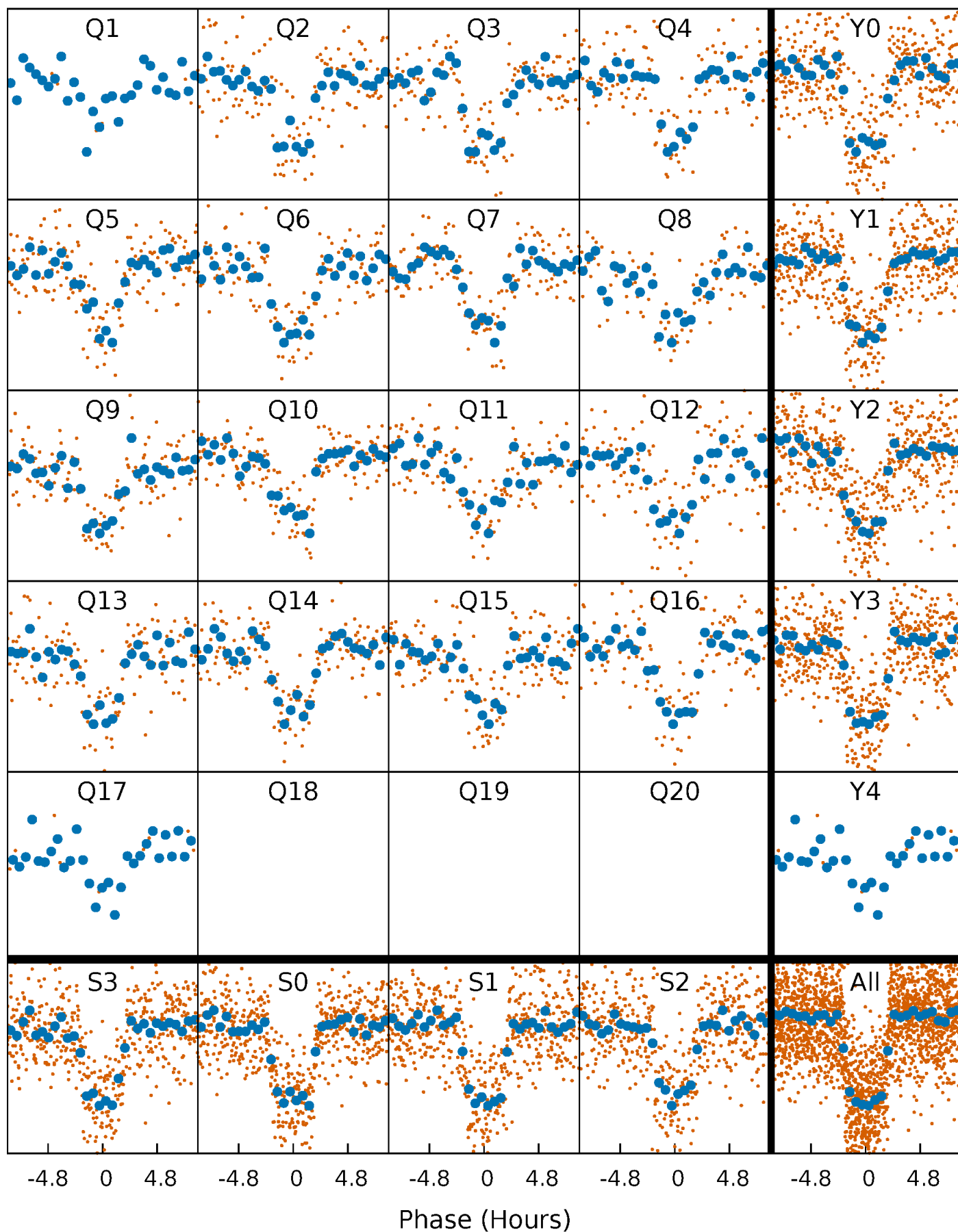


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



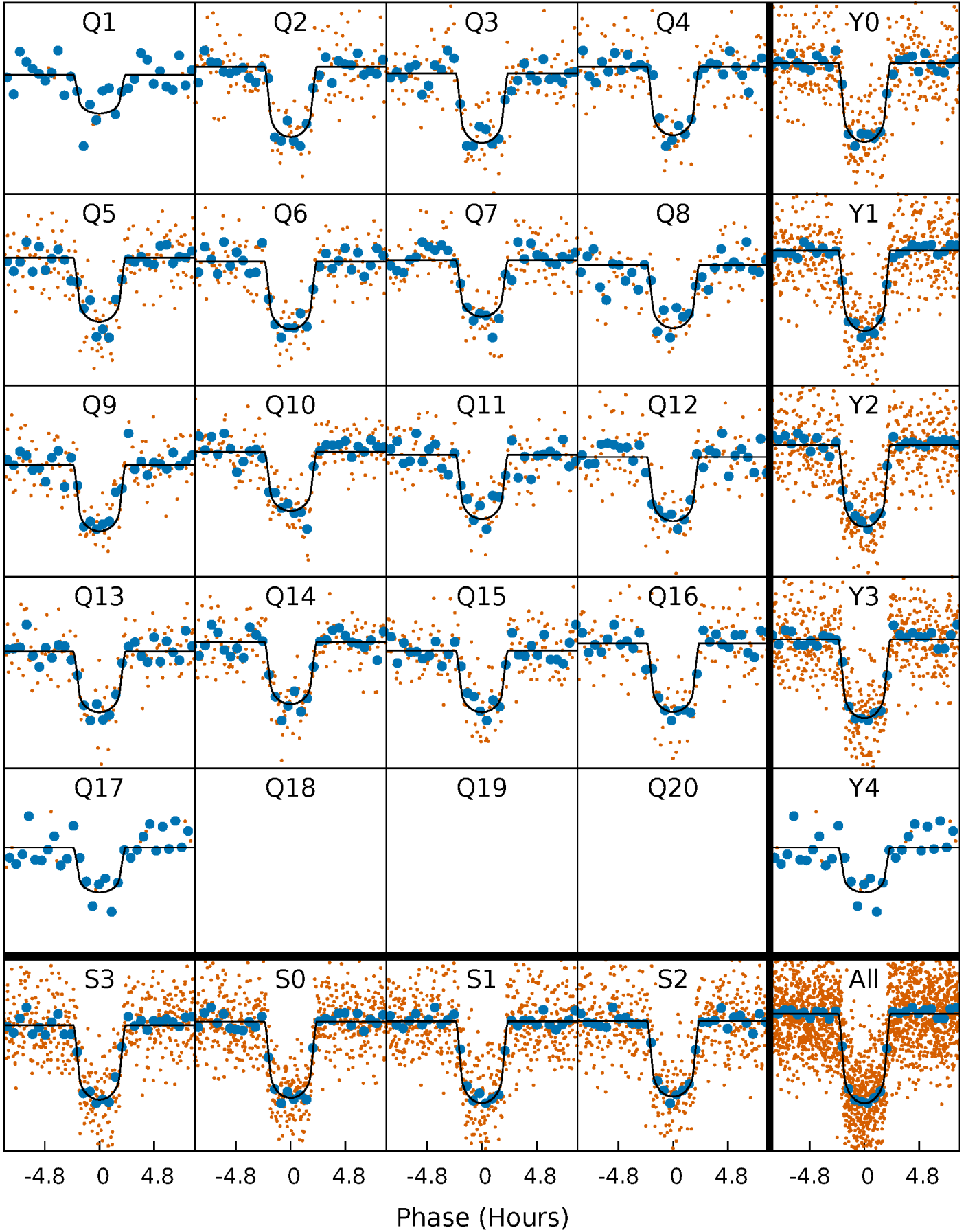
PDC Quarter-Phased Transit Curves

TCE 012600735-01 P= 21.300183 Days $T_0=147.105454$ (BKJD)



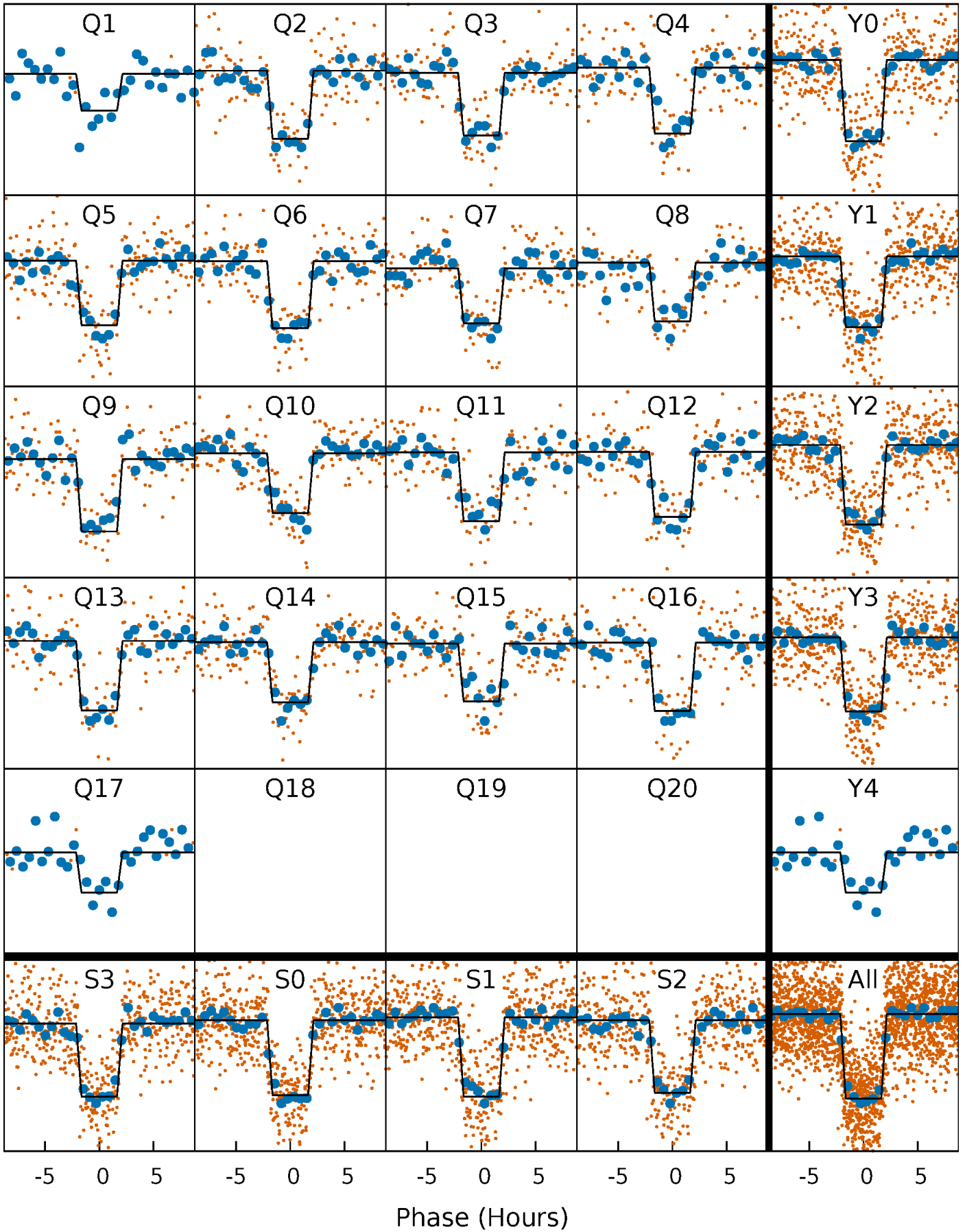
DV Quarter-Phased Transit Curves

TCE 012600735-01 P= 21.300183 Days $T_0=147.105454$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

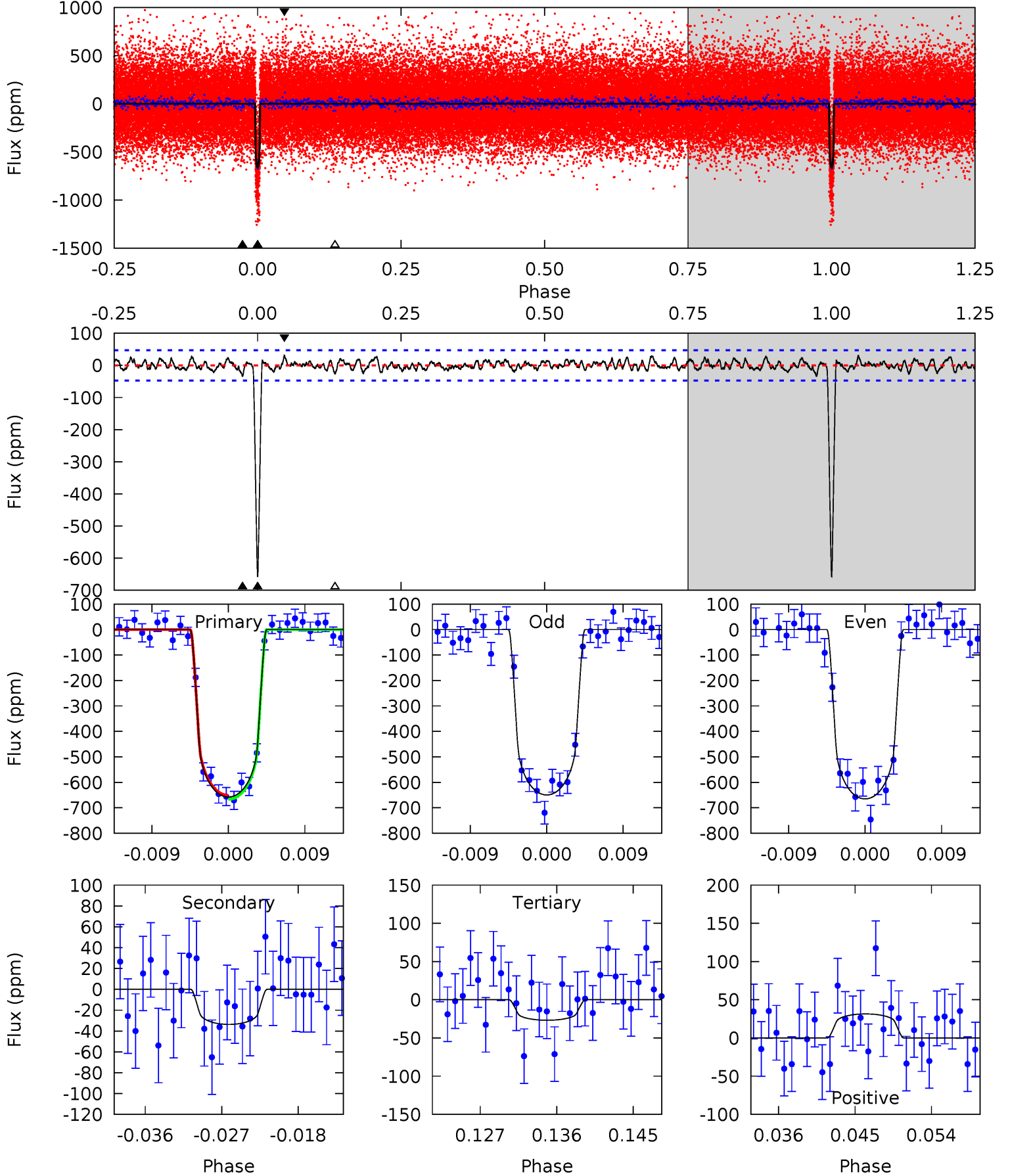
TCE 012600735-01 P= 21.299975 Days $T_0=147.113422$ (BKJD)



DV Model-Shift Uniqueness Test

012600735-01, $P = 21.300183$ Days, $E = 125.805271$ Days

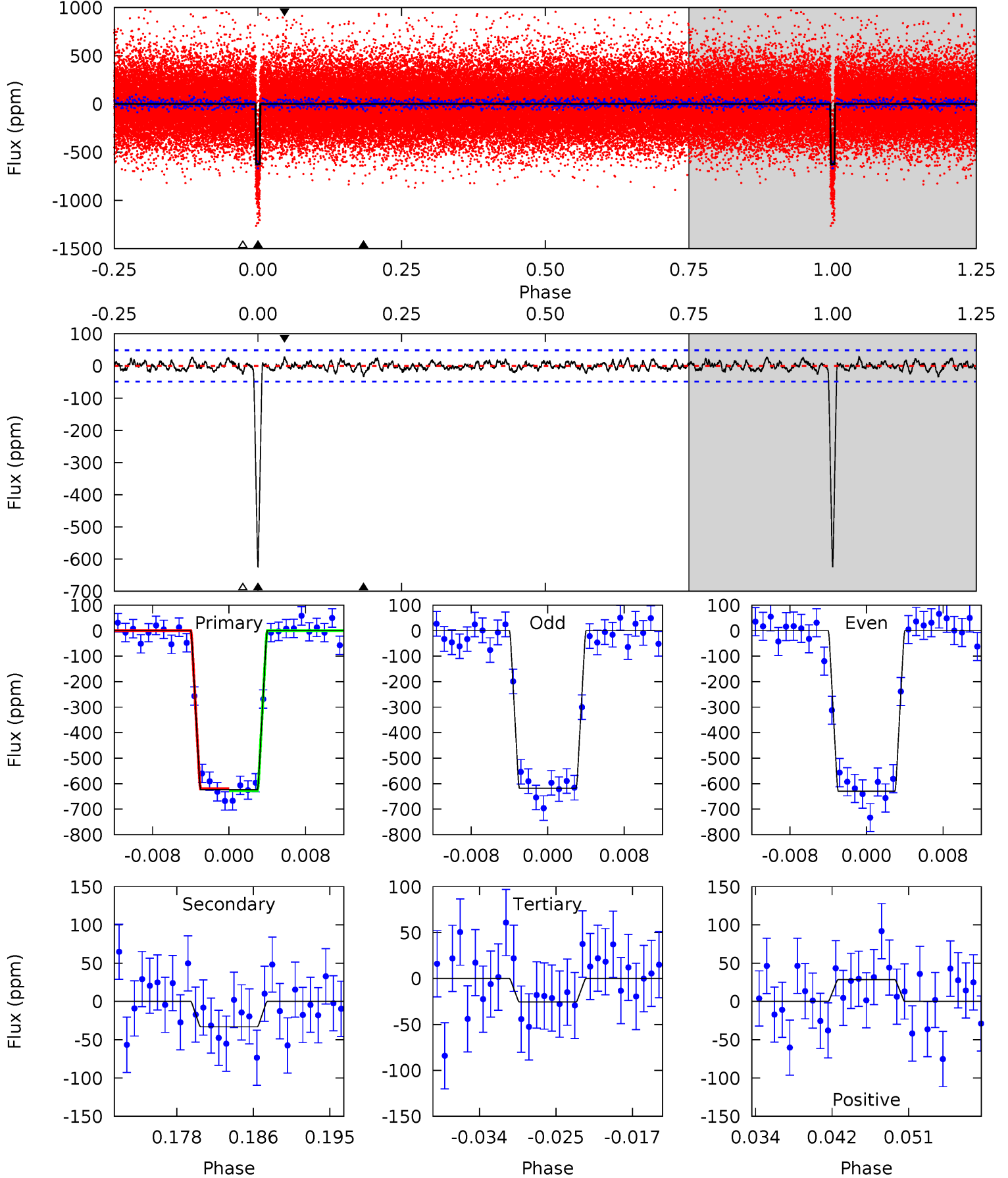
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
70.6	3.61	2.87	3.37	5.05	2.61	1.11	67.7	67.2	0.74	0.24	0.83	0.99	0.05	0.84



Alt Model-Shift Uniqueness Test

012600735-01, $P = 21.299975$ Days, $E = 125.813447$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.7	3.43	2.64	2.96	5.06	2.63	0.99	62.0	61.7	0.78	0.46	0.61	1.00	0.04	0.36



Stellar Parameters For KIC 012600735

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6008^{+77}_{-83}	$4.350^{+0.076}_{-0.123}$	$0.140^{+0.150}_{-0.150}$	$1.168^{+0.186}_{-0.109}$	$1.117^{+0.073}_{-0.073}$	$0.987^{+0.312}_{-0.333}$
	+1%/-1%	+2%/-3%	+107%/-107%	+16%/-9%	+7%/-7%	+32%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 012600735-01 / KOI 0548.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-34 ± 9	$3.27^{+0.64}_{-0.67}$	1016^{+43}_{-31}	3384^{+264}_{-210}	41^{+26}_{-15}
Alt.	-33 ± 10	$3.29^{+0.63}_{-0.66}$	1019^{+45}_{-31}	3383^{+280}_{-246}	41^{+27}_{-17}

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 $A_{obs} \gg 1.0$

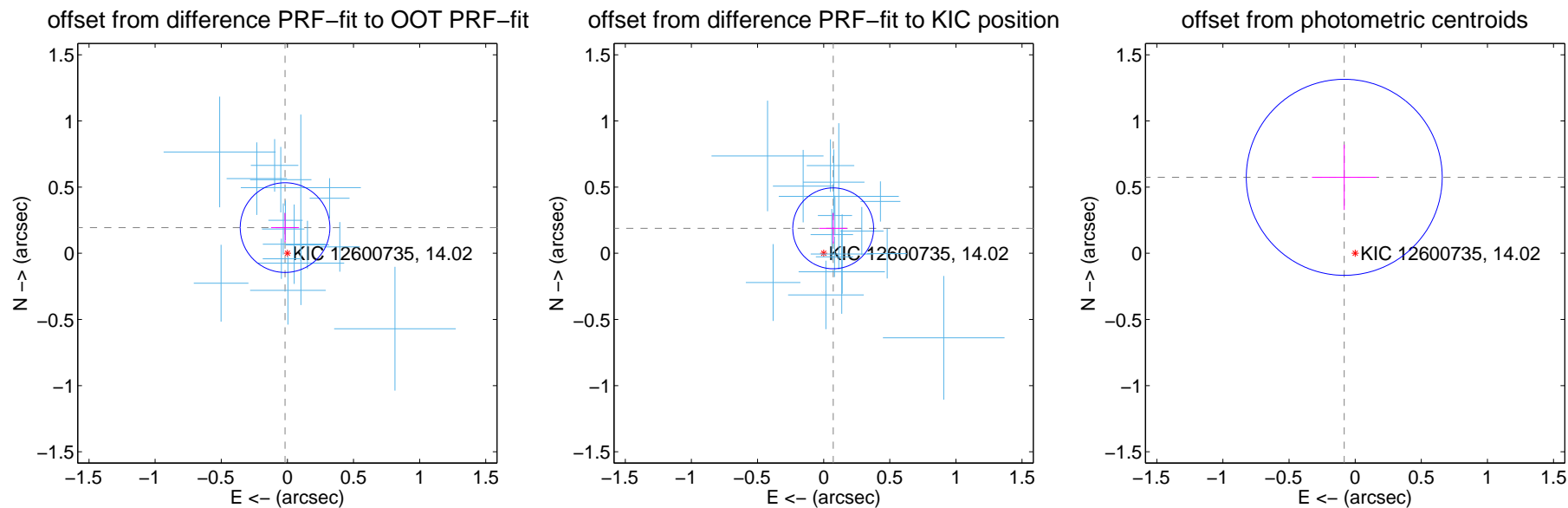
DV Centroid Data

Supplemental centroid analysis for 012600735-01. Kepler magnitude: 14.02. Transit SNR 52.58

There are 16 quarters with good PRF difference image offsets

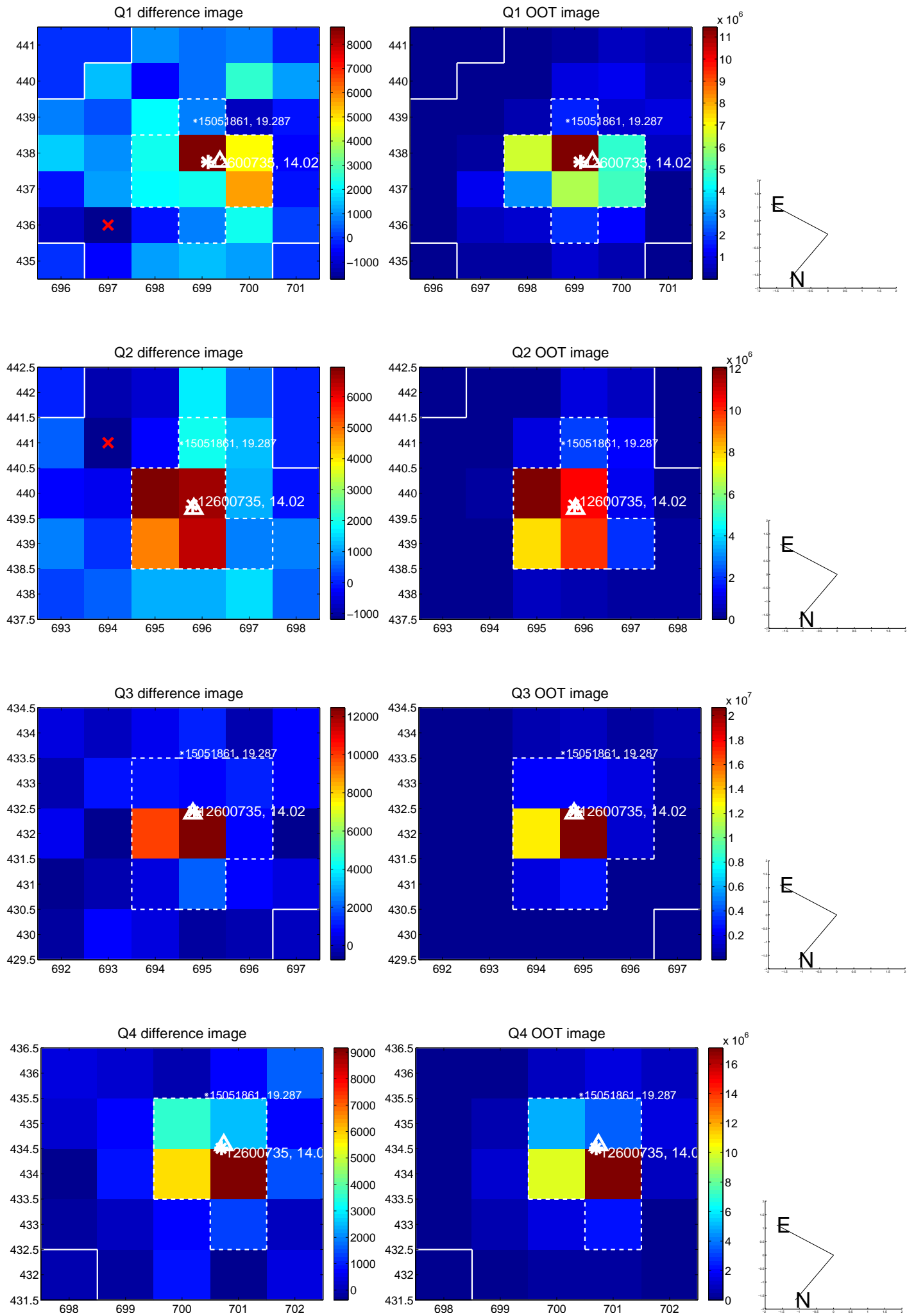
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.195 ± 0.113	1.73	0.018 ± 0.106	0.194 ± 0.110
PRF-fit source offset from KIC position	0.202 ± 0.102	1.98	-0.072 ± 0.105	0.189 ± 0.115
photometric centroid source offset	0.58 ± 0.25	2.35	0.08 ± 0.24	0.57 ± 0.25

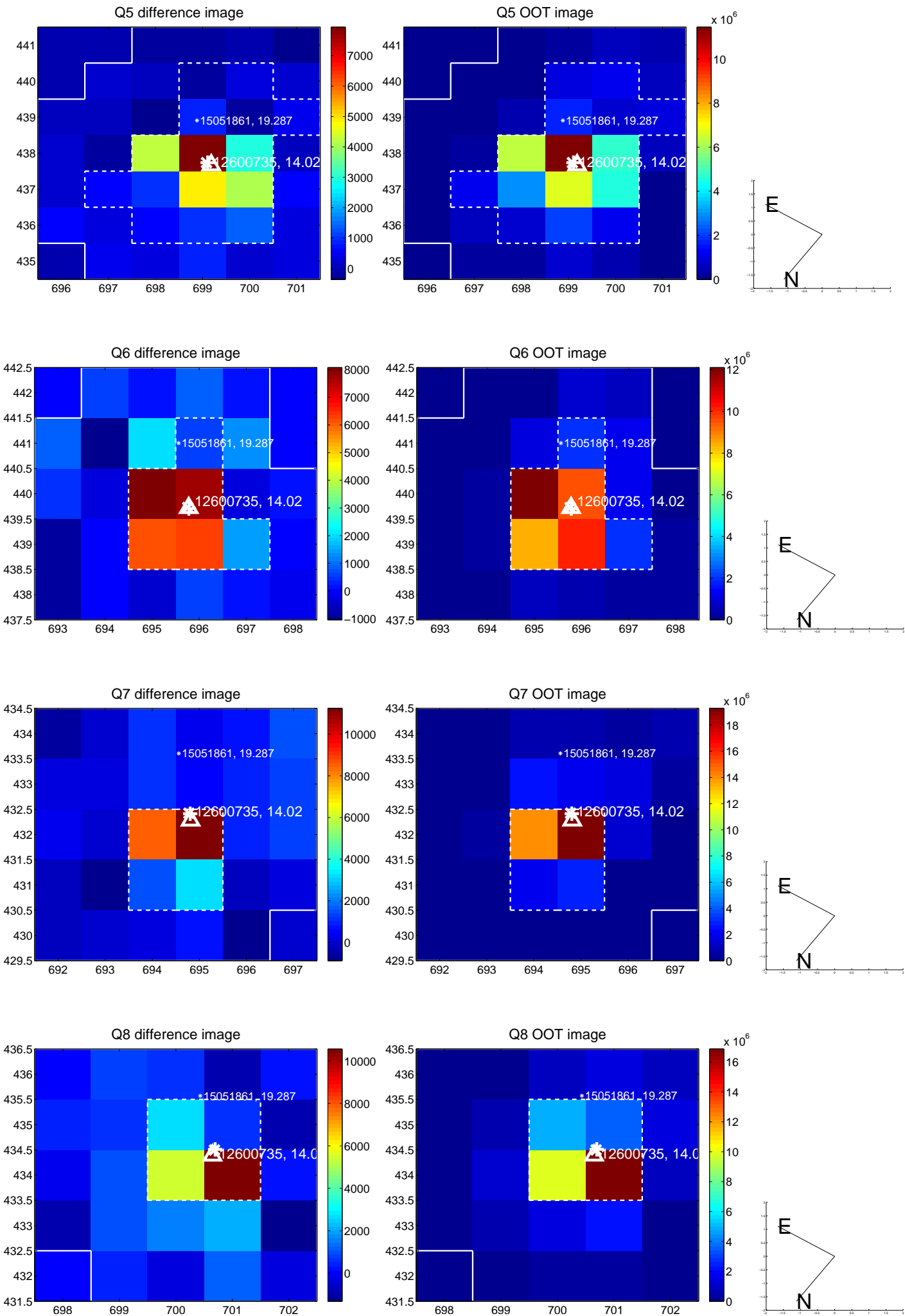


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

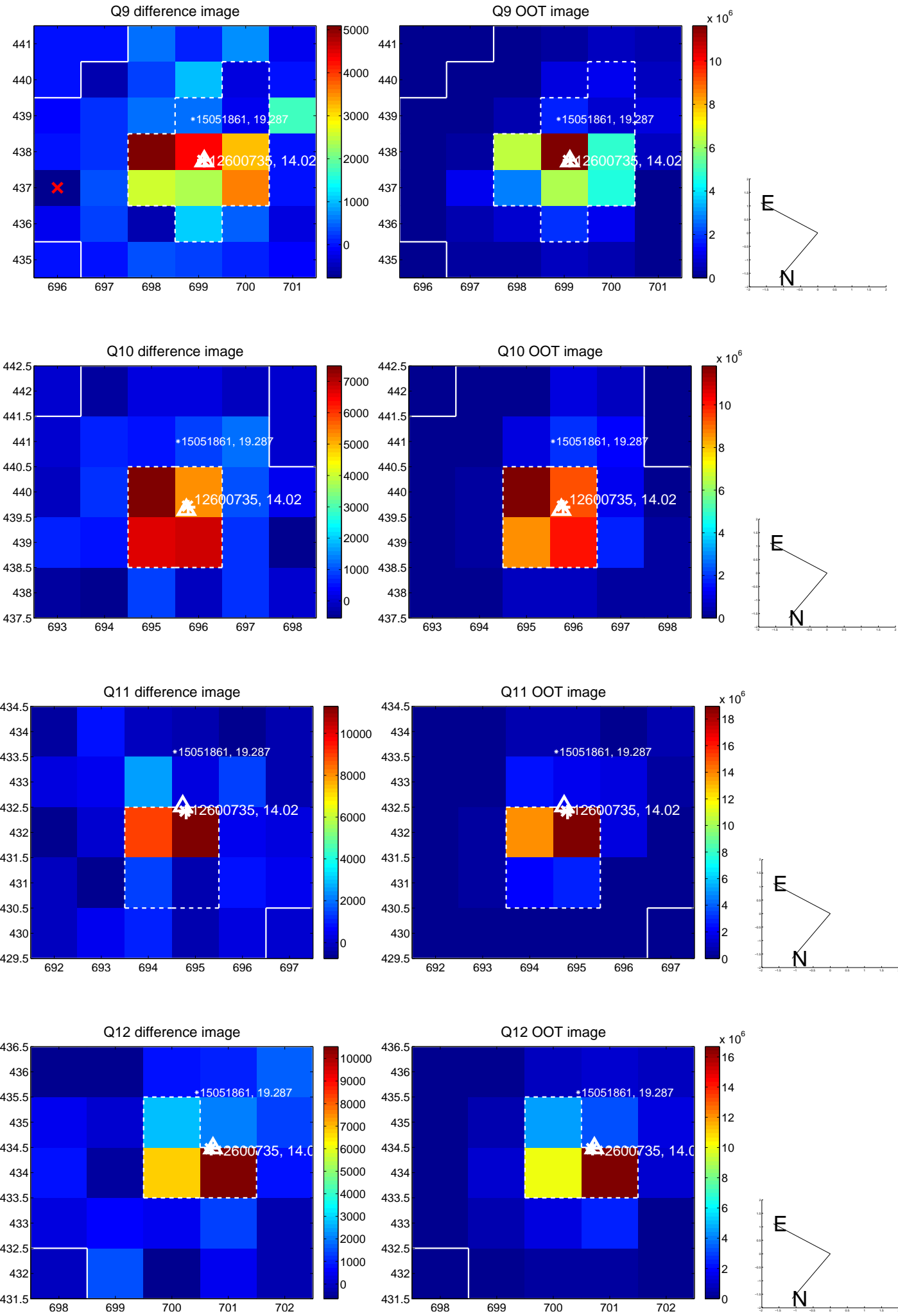
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



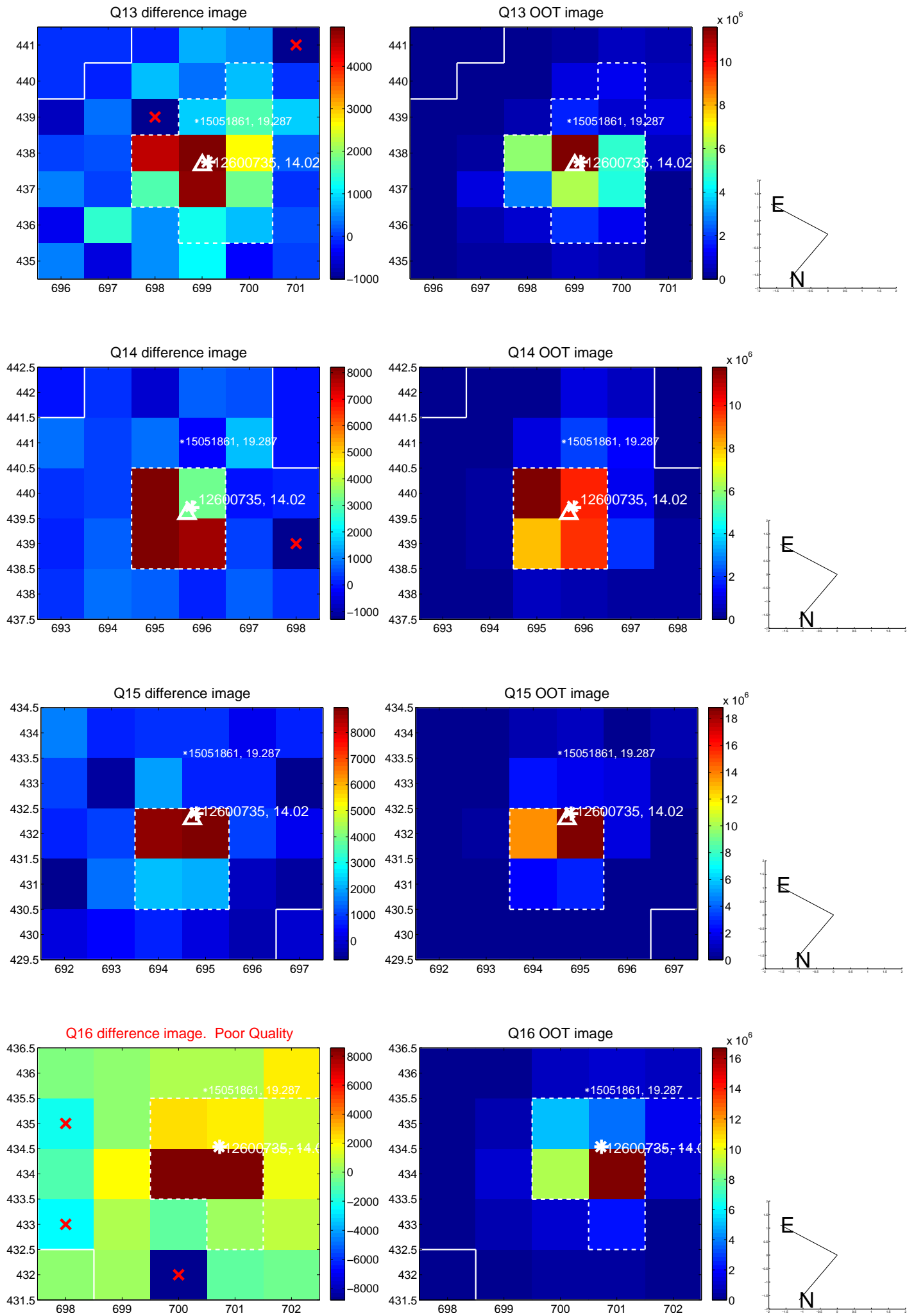
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



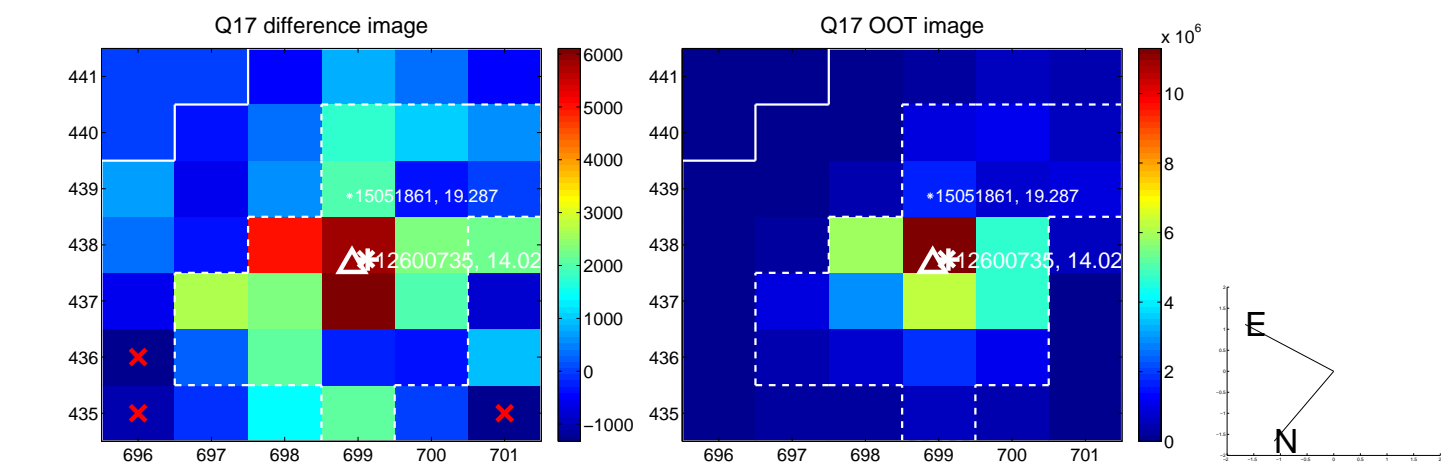
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



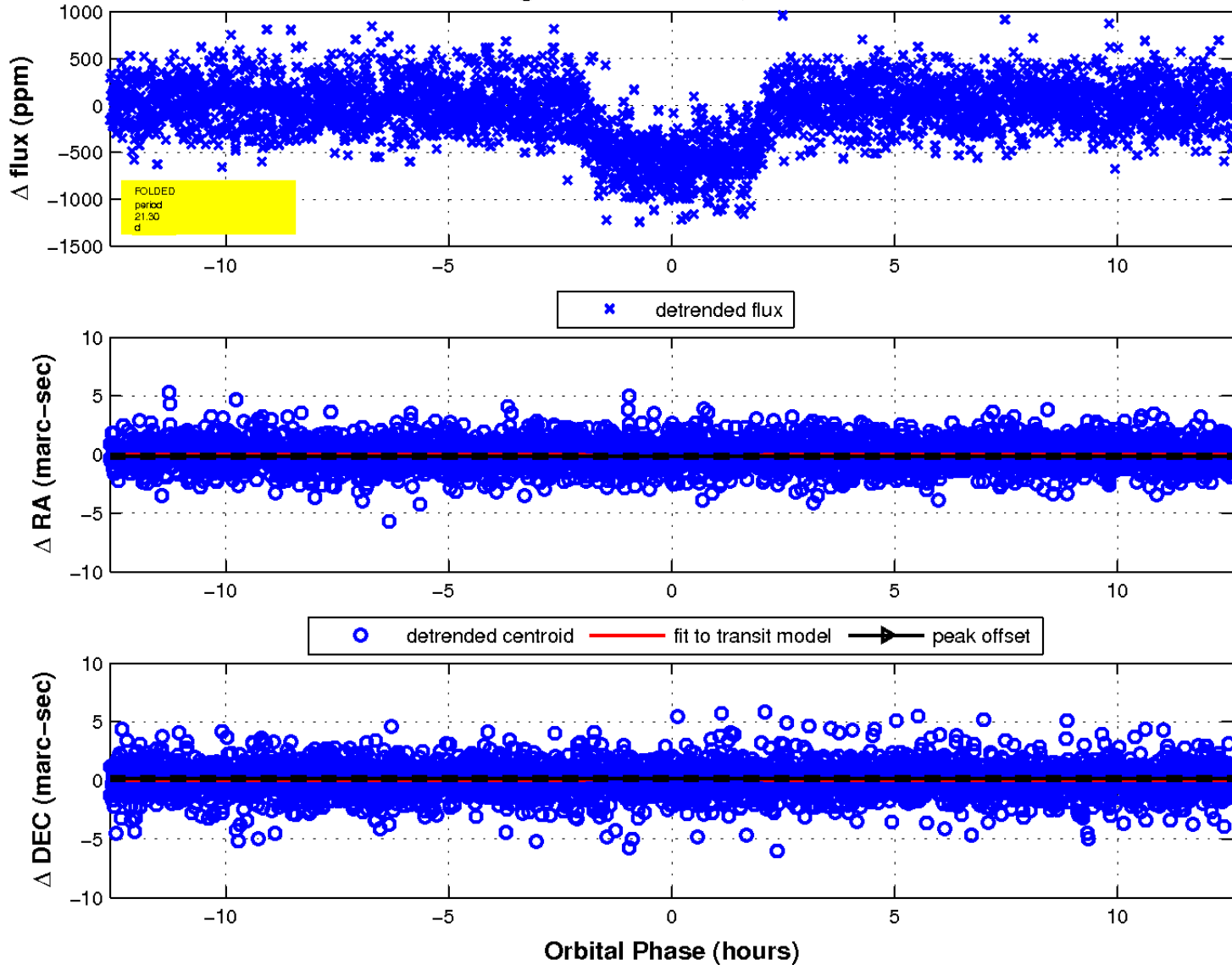
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



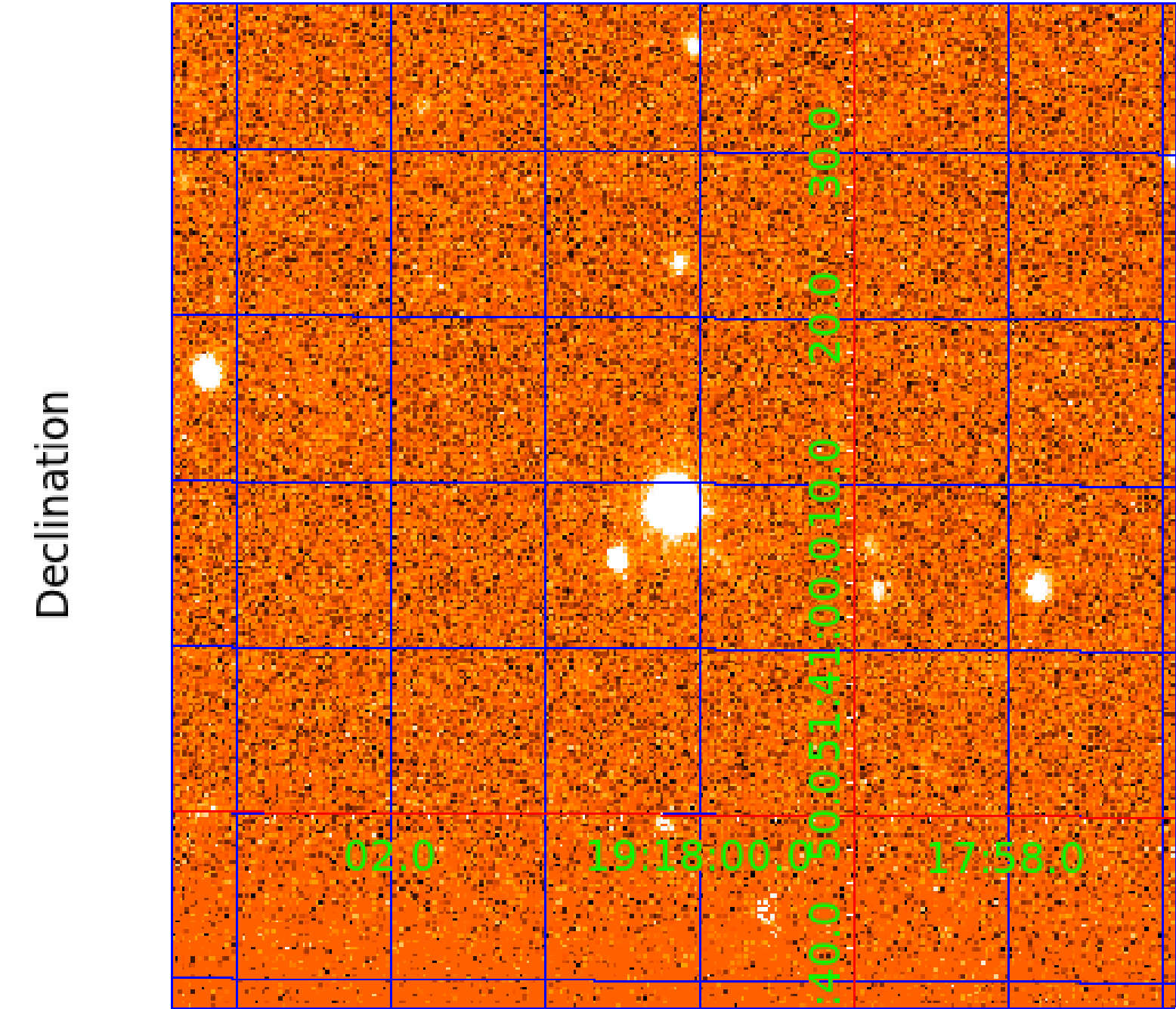
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 012600735

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})
012600735-01	OBS	0548.01	21.300183	147.105454	659.2	4.199	48.4	52.6	1.17	6008	3.22	65.50
012600735-02	OBS	0548.02	6.080028	136.433590	54.9	3.203	8.2	7.2	1.17	6008	1.02	348.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012600735-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012600735-02	OBS	PC	0.81	0	0	0	0	NO_COMMENT

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

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

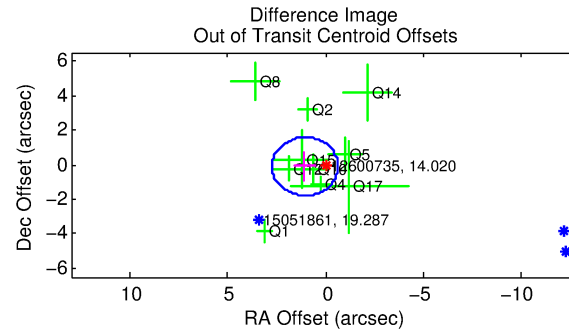
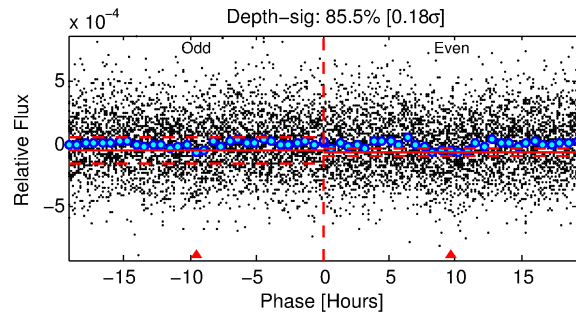
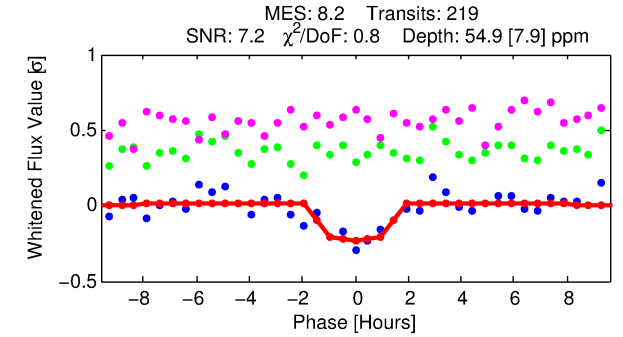
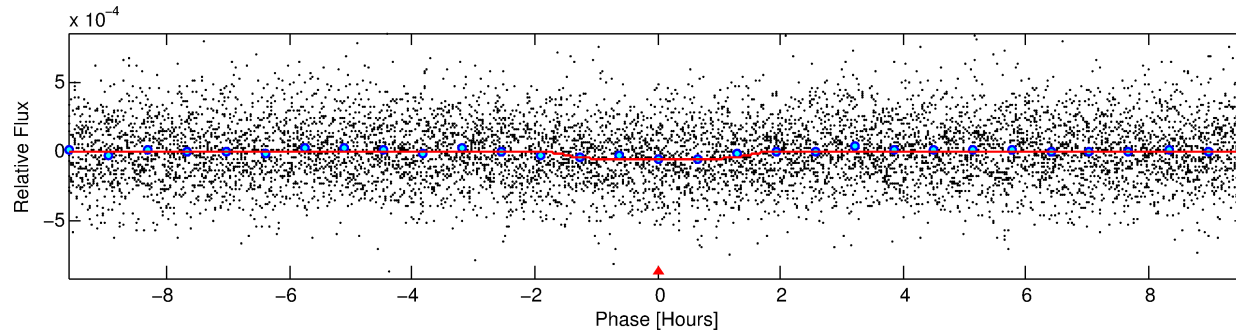
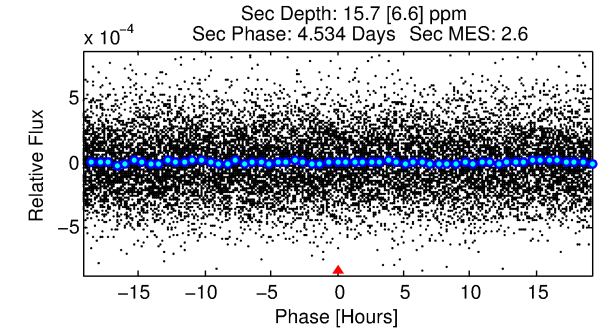
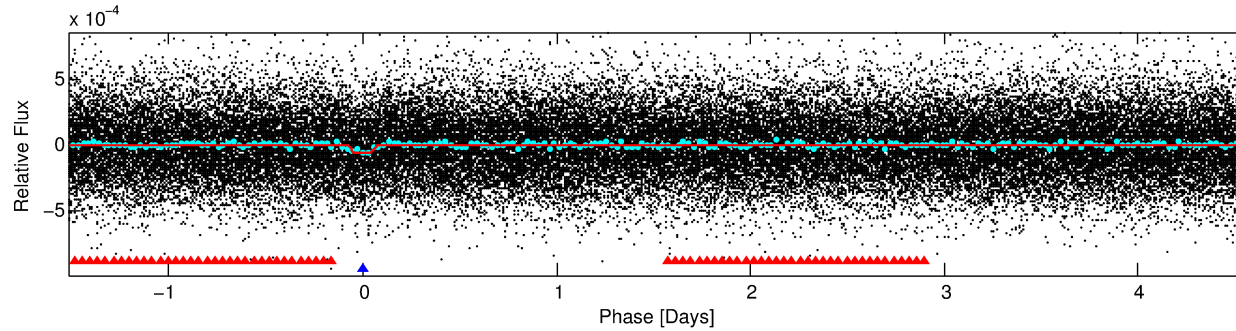
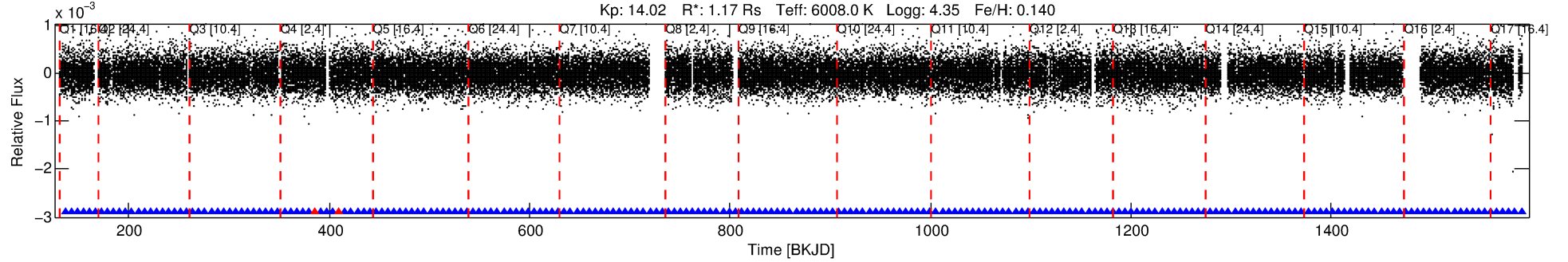
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012600735-02

No Significant Match Found

DV One-Page Summary

KIC: 12600735 Candidate: 2 of 2 Period: 6.080 d
KOI: K00548 Corr: No Ephemeris Match



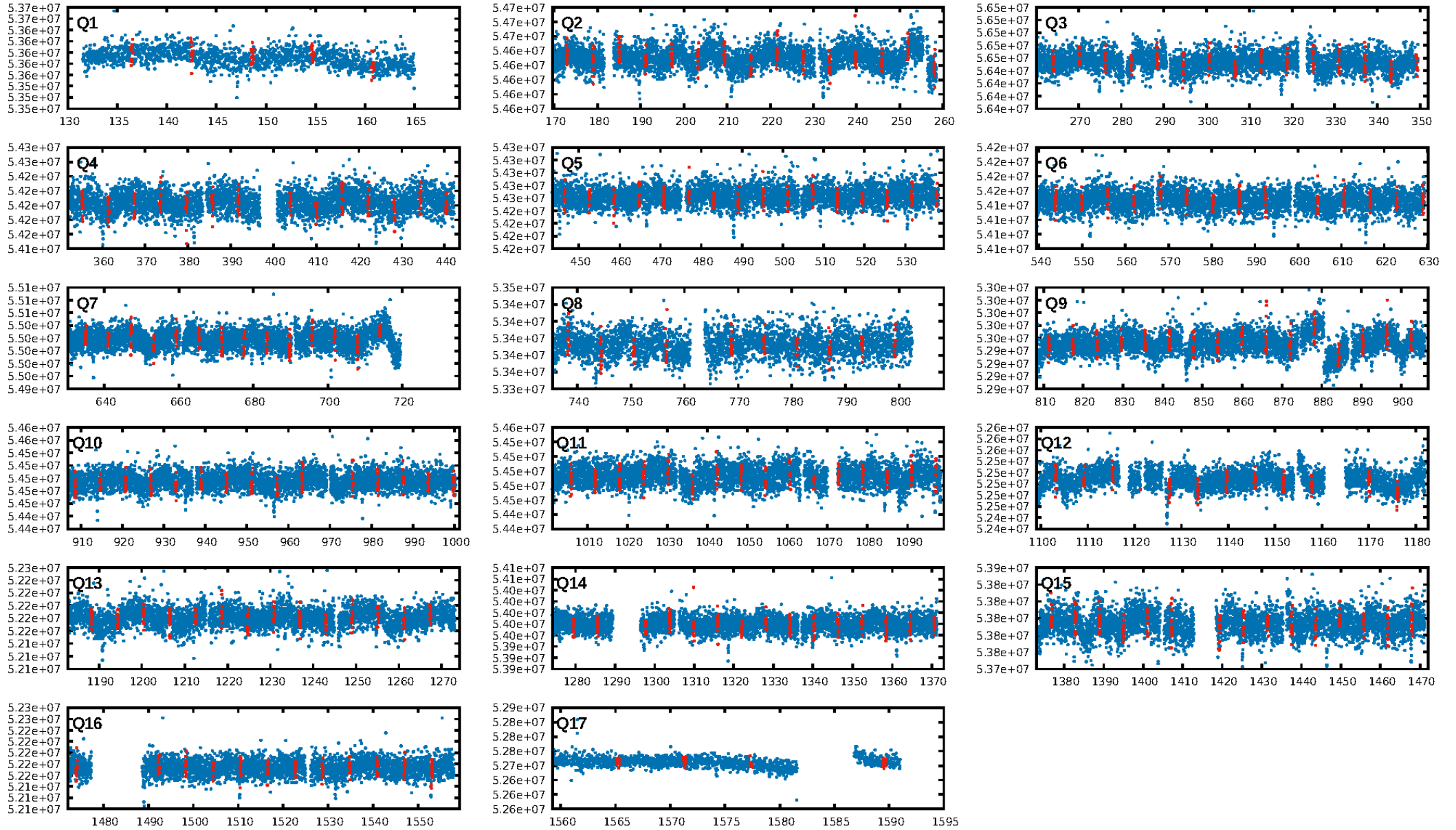
DV Fit Results:

Period = 6.08003 [0.00007] d
Epoch = 136.4336 [0.0081] BKJD
Rp/R* = 0.0080 [0.0061]
a/R* = 6.73 [25.23]
b = 0.90 [0.85]
Seff = 348.53 [77.91]
Teq = 1102 [62] K
Rp = 1.02 [0.80] Re
a = 0.0676 [0.0096] AU
Ag = 37.88 [60.42] [0.61σ]
Teffp = 4226 [1670] K [1.87σ]

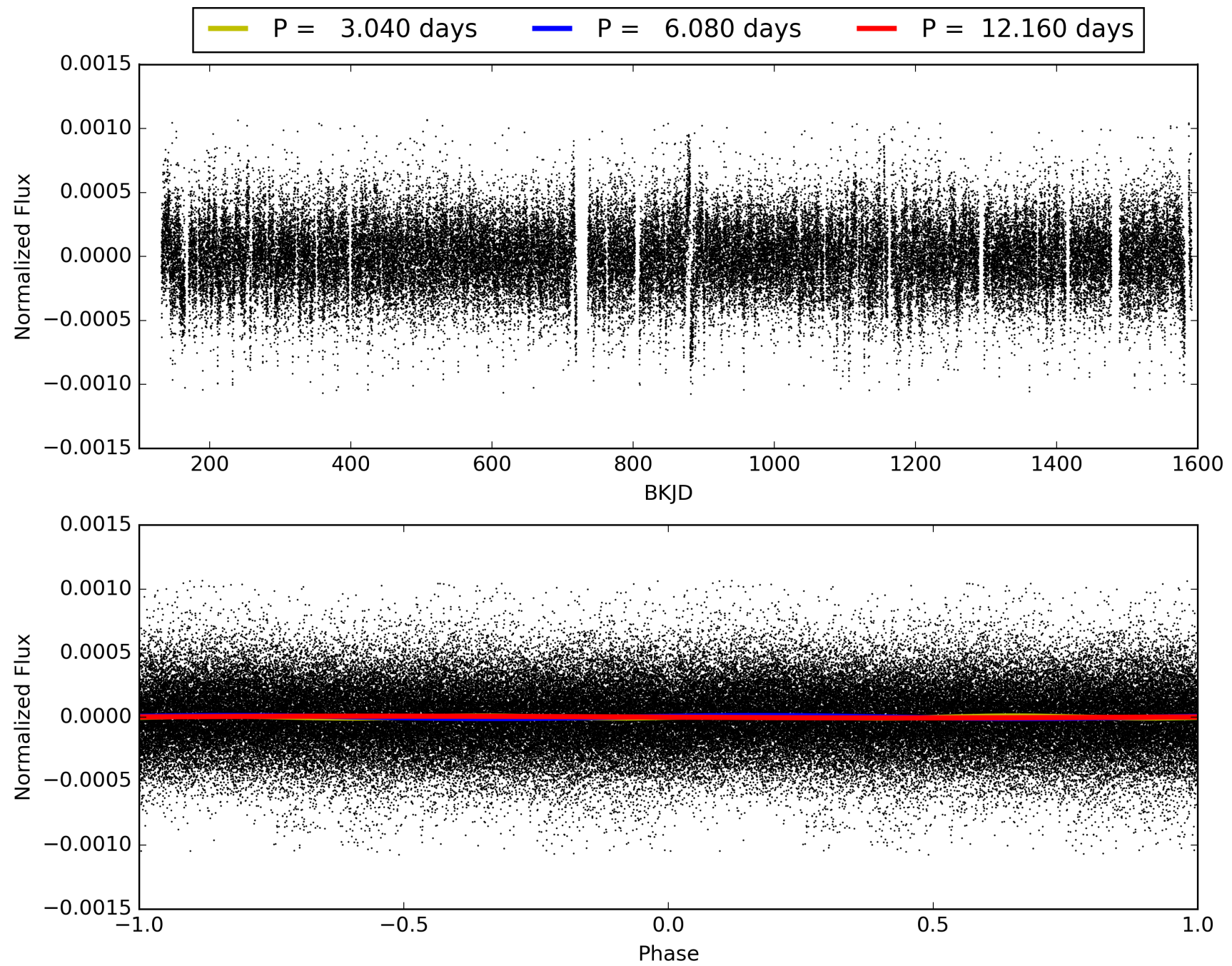
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [69.18σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.29e-16
RollingBand-fgt: 0.99 [208/210]
GhostDiagnostic-chr: 1.701
Centroid-sig: 87.1%
Centroid-so: 1.375 arcsec [0.75σ]
OotOffset-rm: 1.065 arcsec [1.89σ]
KicOffset-rm: 0.987 arcsec [1.95σ]
OotOffset-st: 3/1/3/3 [10]
KicOffset-st: 3/1/3/3 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012600735-02, PDC Light Curves

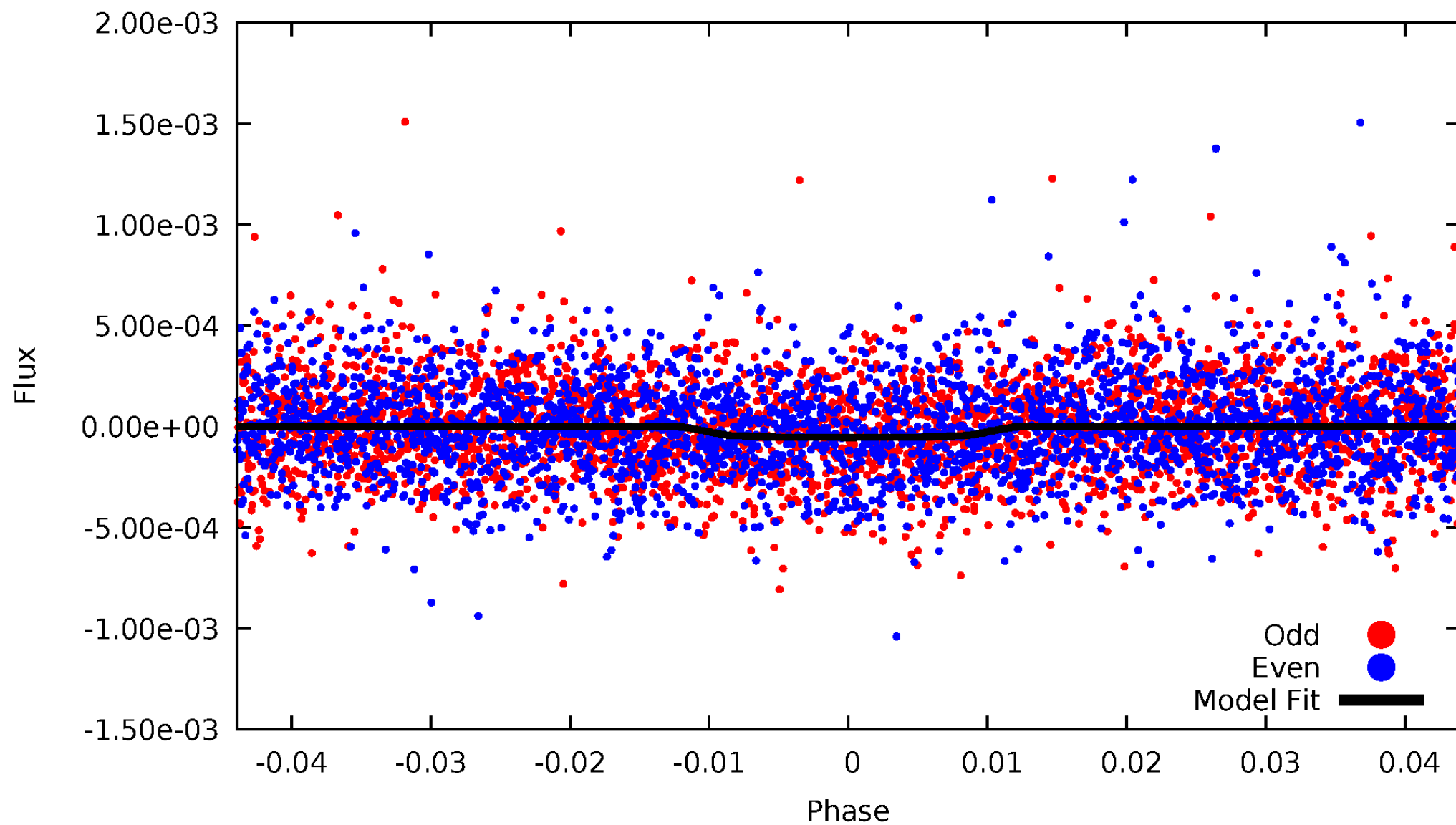


TCE 012600735-02



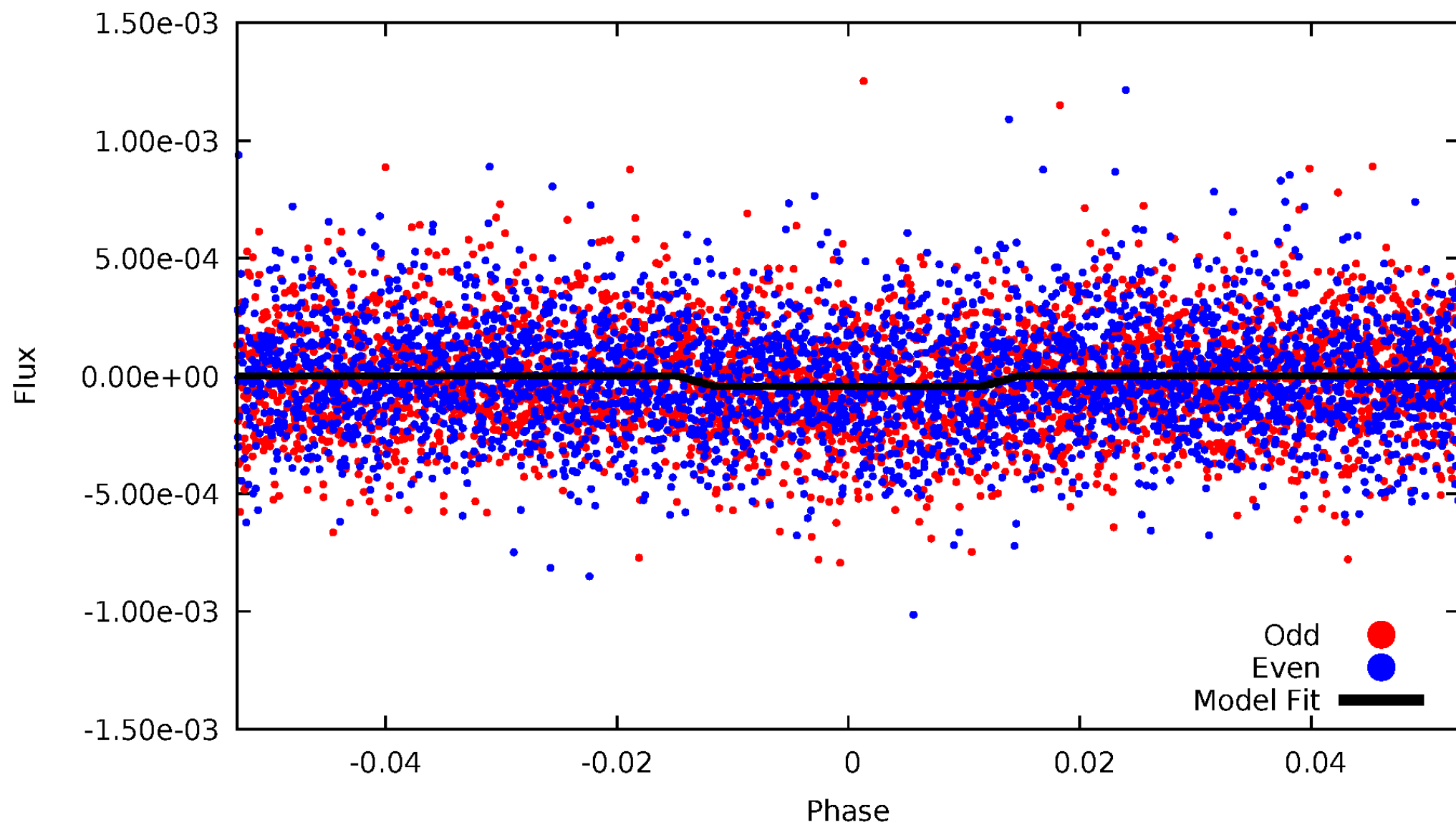
DV Odd/Even

TCE 012600735-02



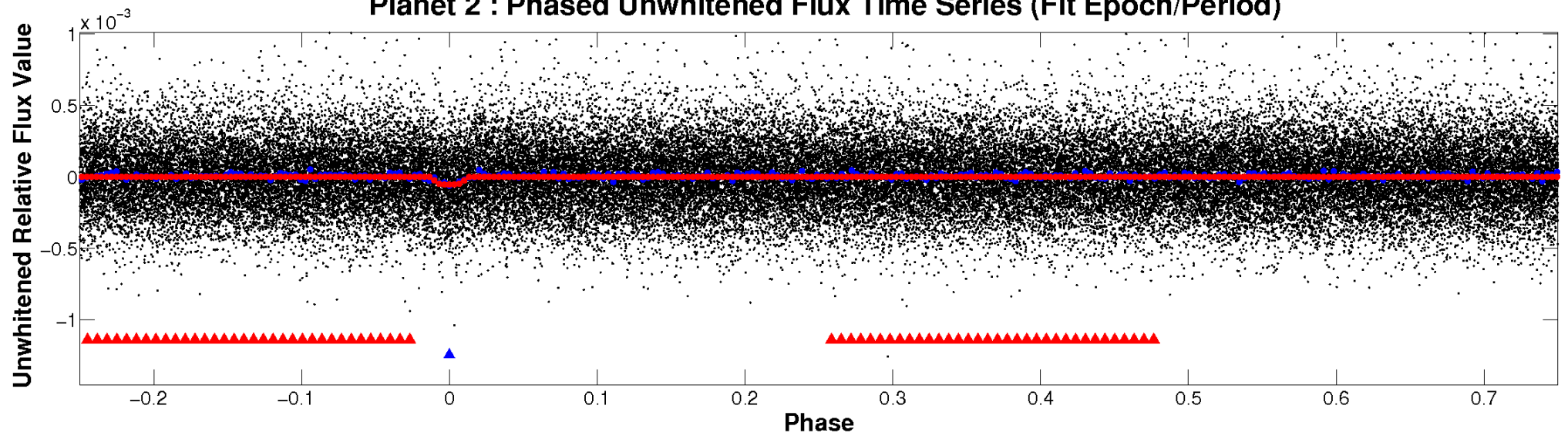
ALT Odd/Even

TCE 012600735-02

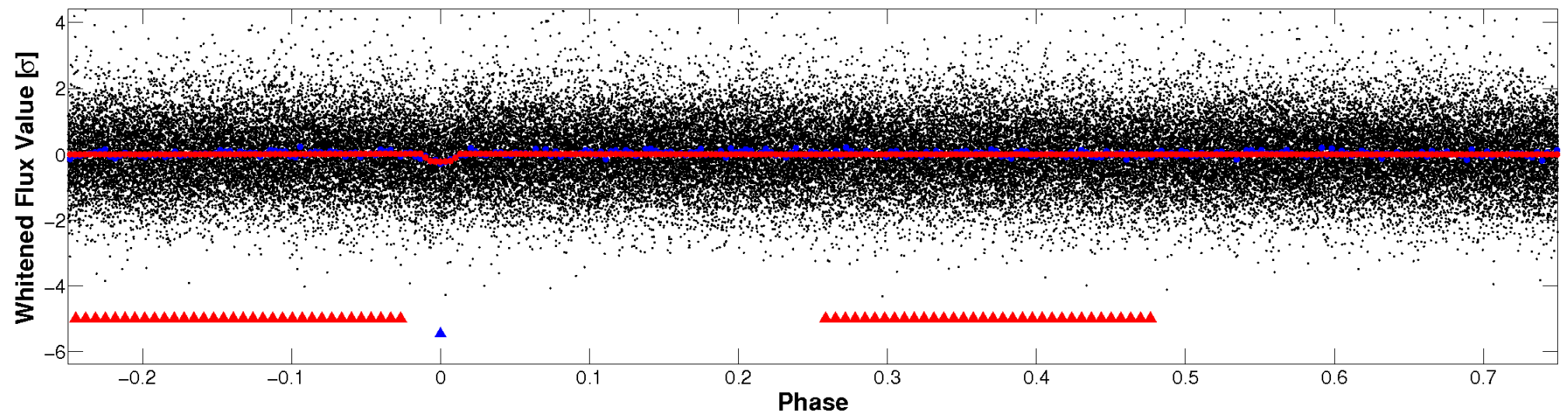


Non-Whitened Vs. Whitened Light Curve

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

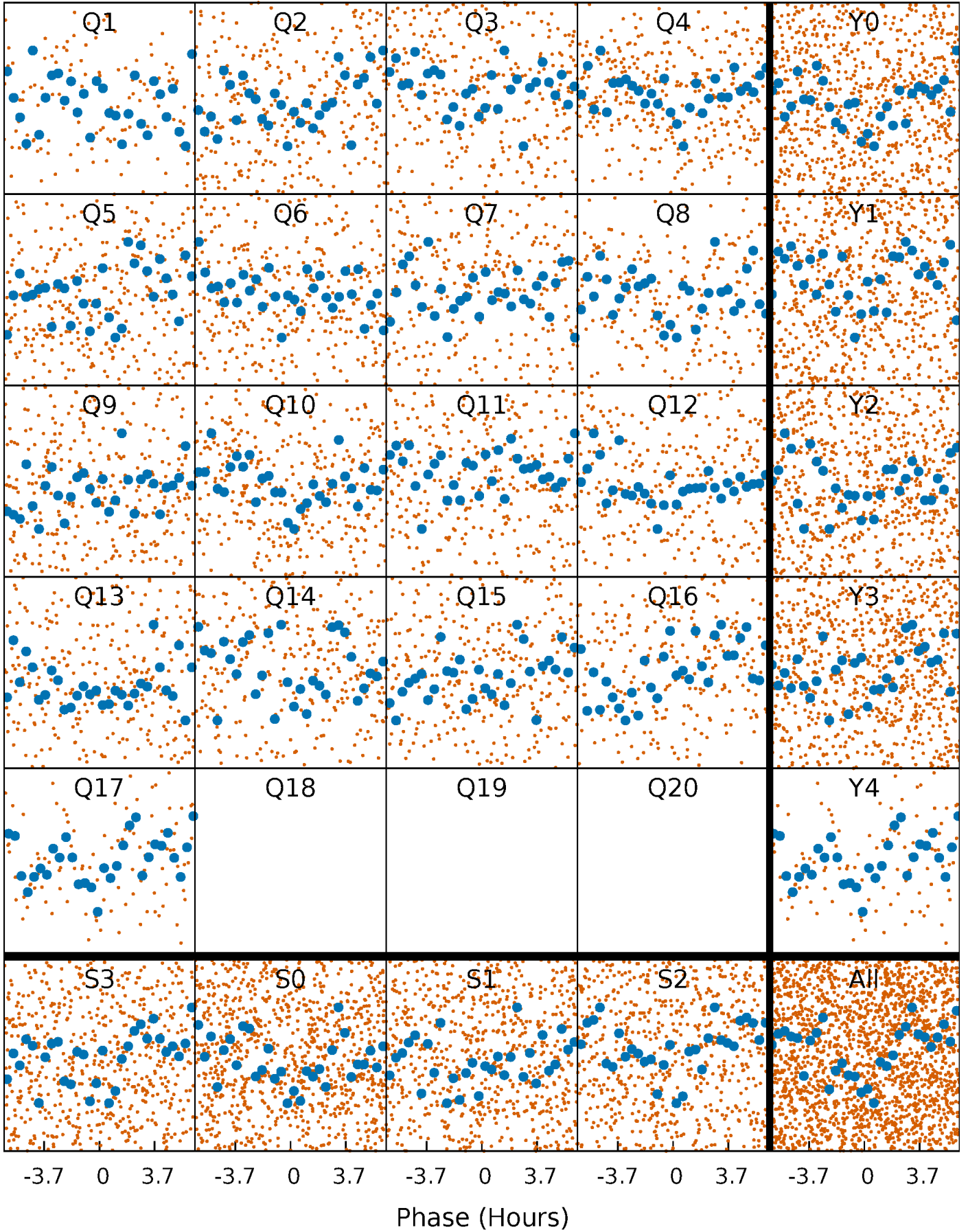


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



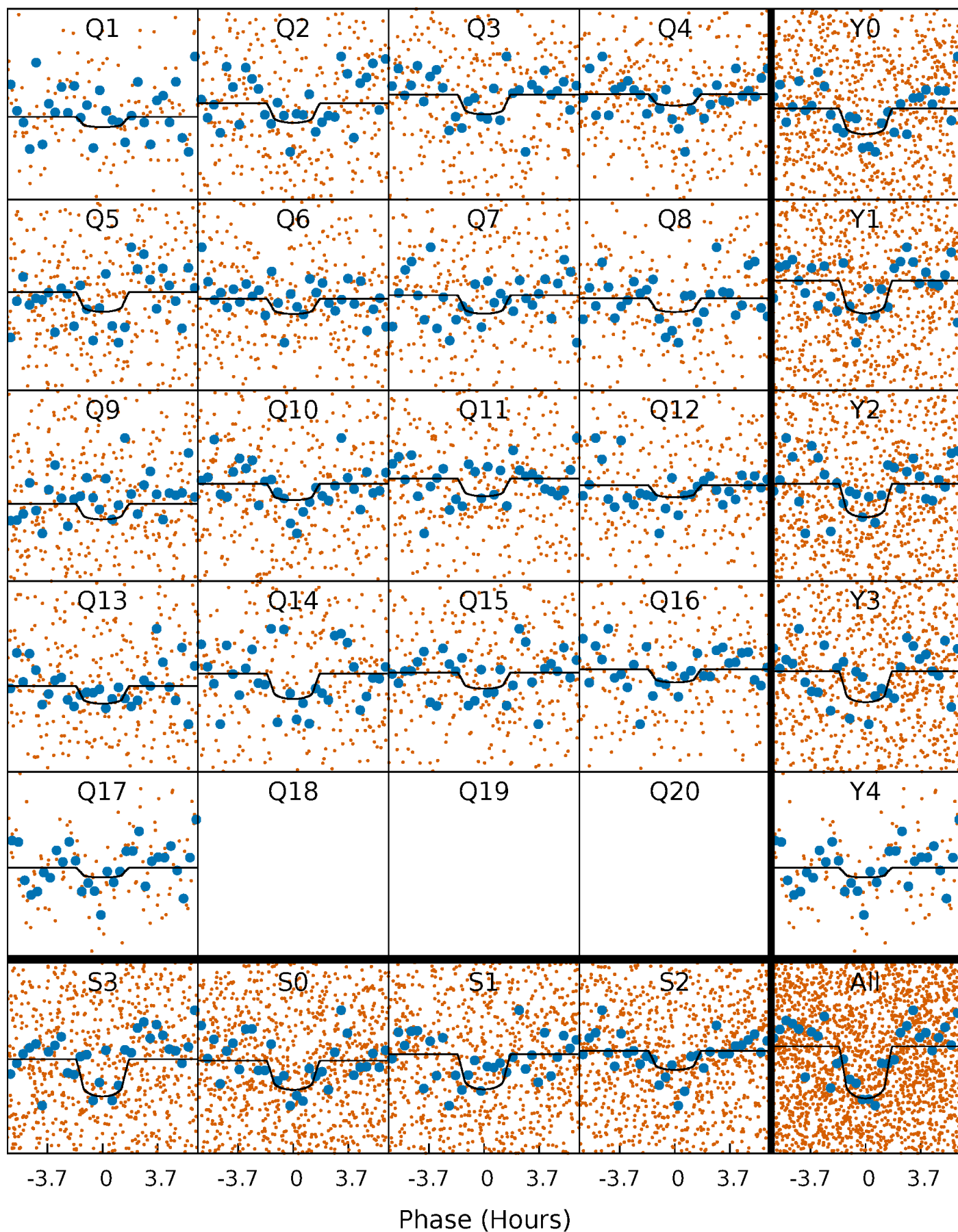
PDC Quarter-Phased Transit Curves

TCE 012600735-02 P= 6.080028 Days $T_0=136.433590$ (BKJD)



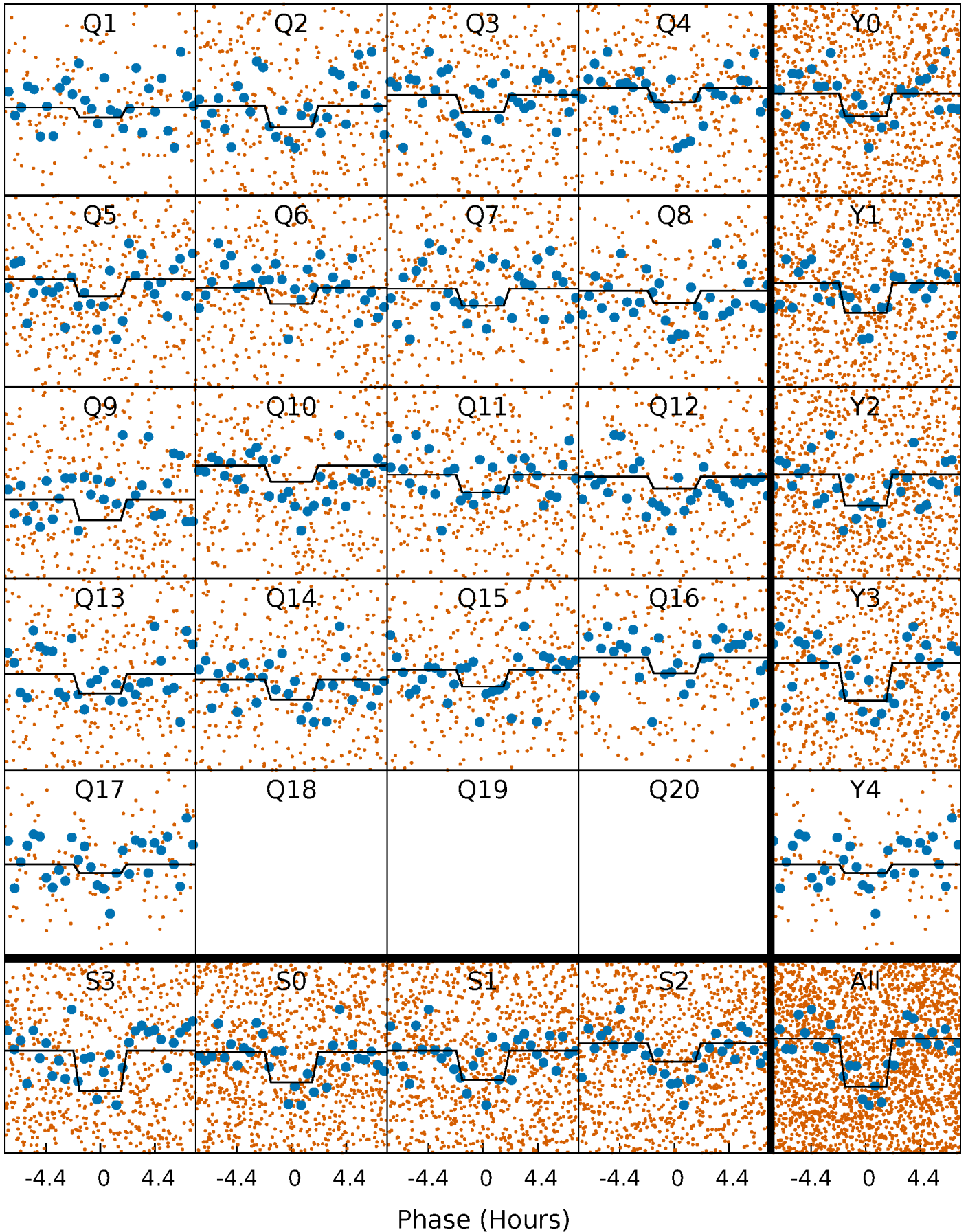
DV Quarter-Phased Transit Curves

TCE 012600735-02 P= 6.080028 Days $T_0=136.433590$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

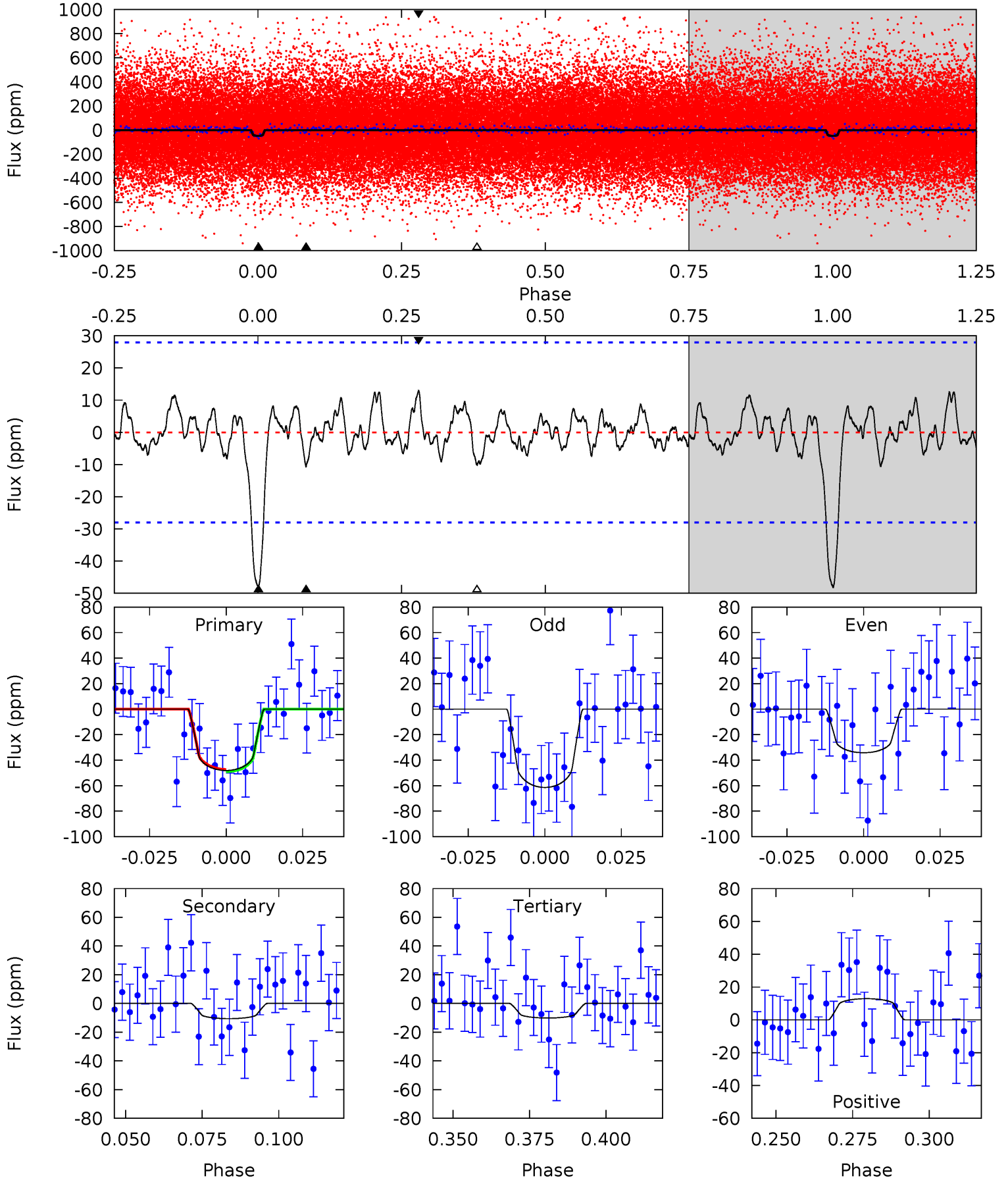
TCE 012600735-02 P= 6.079923 Days $T_0=136.424539$ (BKJD)



DV Model-Shift Uniqueness Test

012600735-02, P = 6.080028 Days, E = 130.353562 Days

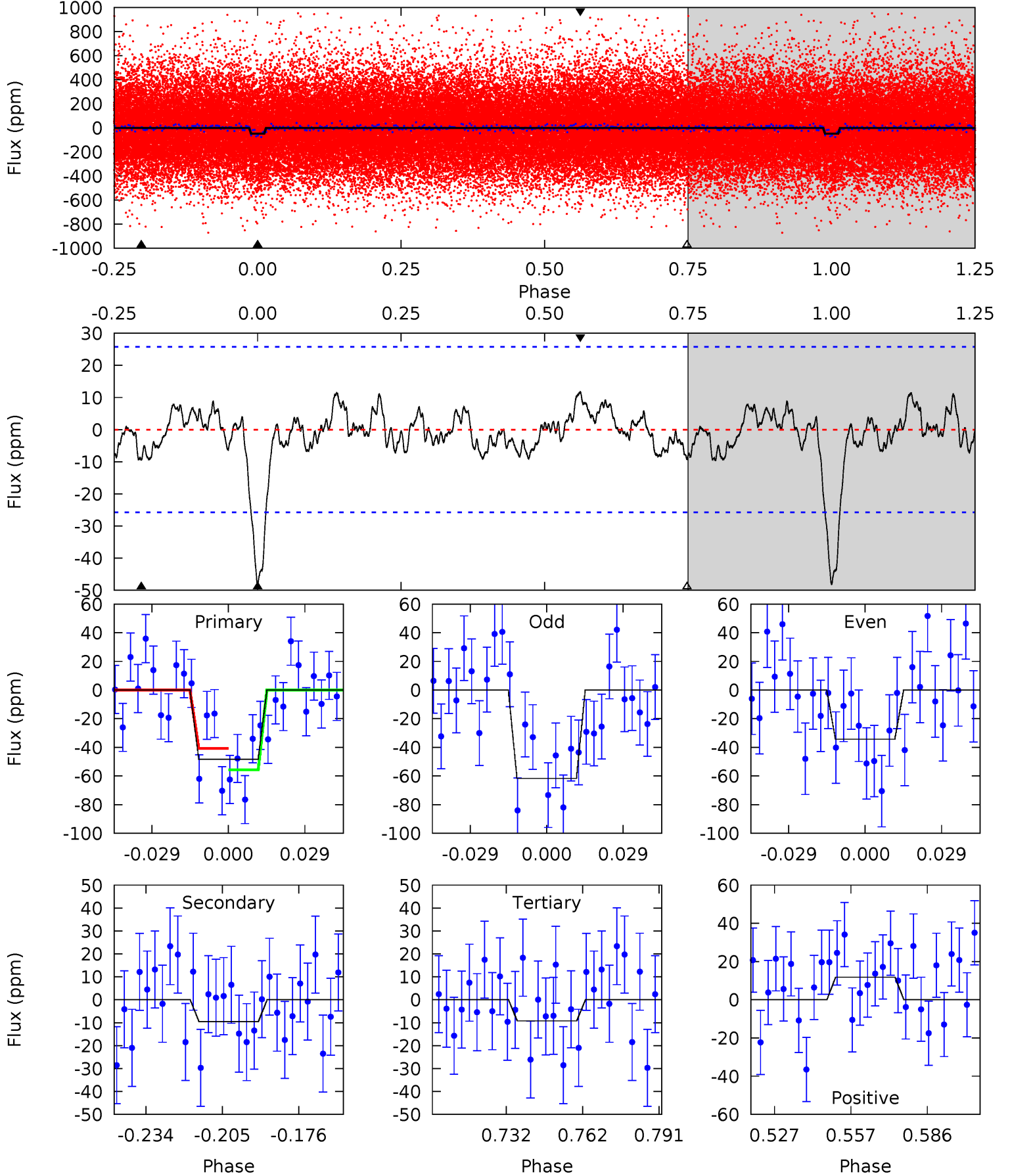
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.33	1.84	1.76	2.24	4.85	2.24	0.81	6.58	6.10	0.08	-0.40	2.36	0.92	0.21	0.14



Alt Model-Shift Uniqueness Test

012600735-02, P = 6.079923 Days, E = 130.344616 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.03	1.78	1.73	2.21	4.82	2.18	0.89	7.30	6.82	0.05	-0.43	2.56	1.41	0.20	1.40



Stellar Parameters For KIC 012600735

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6008^{+77}_{-83}	$4.350^{+0.076}_{-0.123}$	$0.140^{+0.150}_{-0.150}$	$1.168^{+0.186}_{-0.109}$	$1.117^{+0.073}_{-0.073}$	$0.987^{+0.312}_{-0.333}$
	+1%/-1%	+2%/-3%	+107%/-107%	+16%/-9%	+7%/-7%	+32%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 012600735-02 / KOI 0548.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 6	$1.11^{+0.71}_{-0.62}$	1547^{+64}_{-53}	3940^{+1827}_{-731}	19^{+104}_{-14}
Alt.	-9 ± 5	$1.08^{+0.70}_{-0.62}$	1546^{+73}_{-50}	3907^{+1663}_{-702}	20^{+89}_{-14}

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

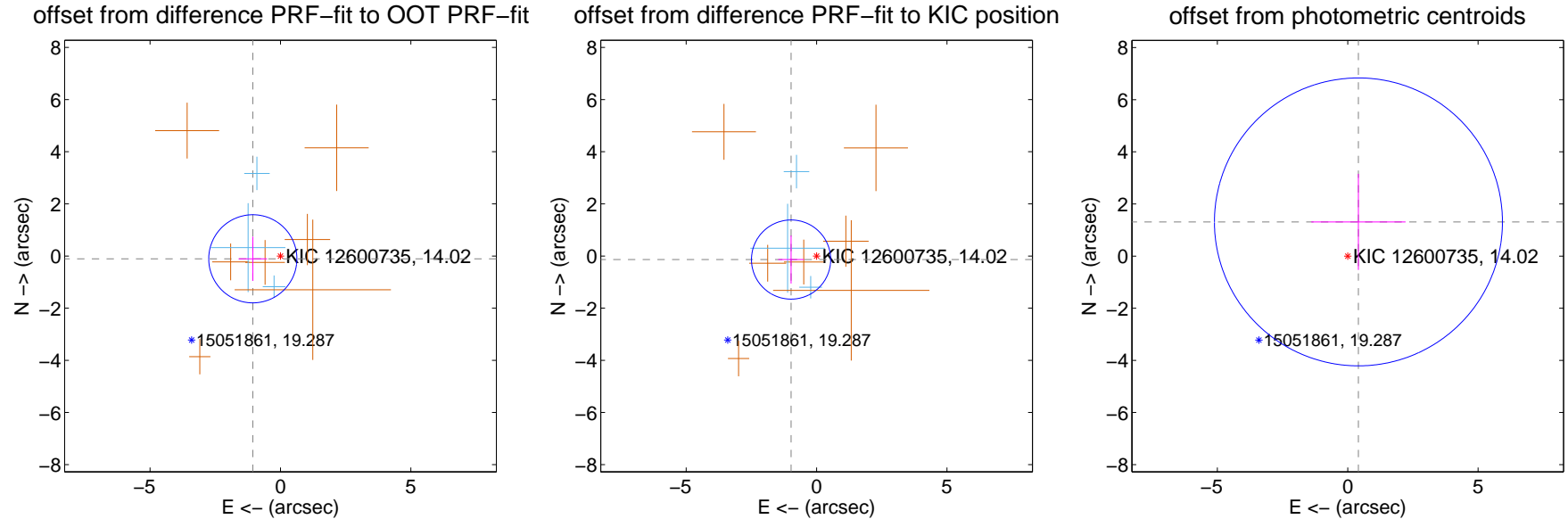
DV Centroid Data

Supplemental centroid analysis for 012600735-02. Kepler magnitude: 14.02. Transit SNR 7.20

There are 3 quarters with good PRF difference image offsets

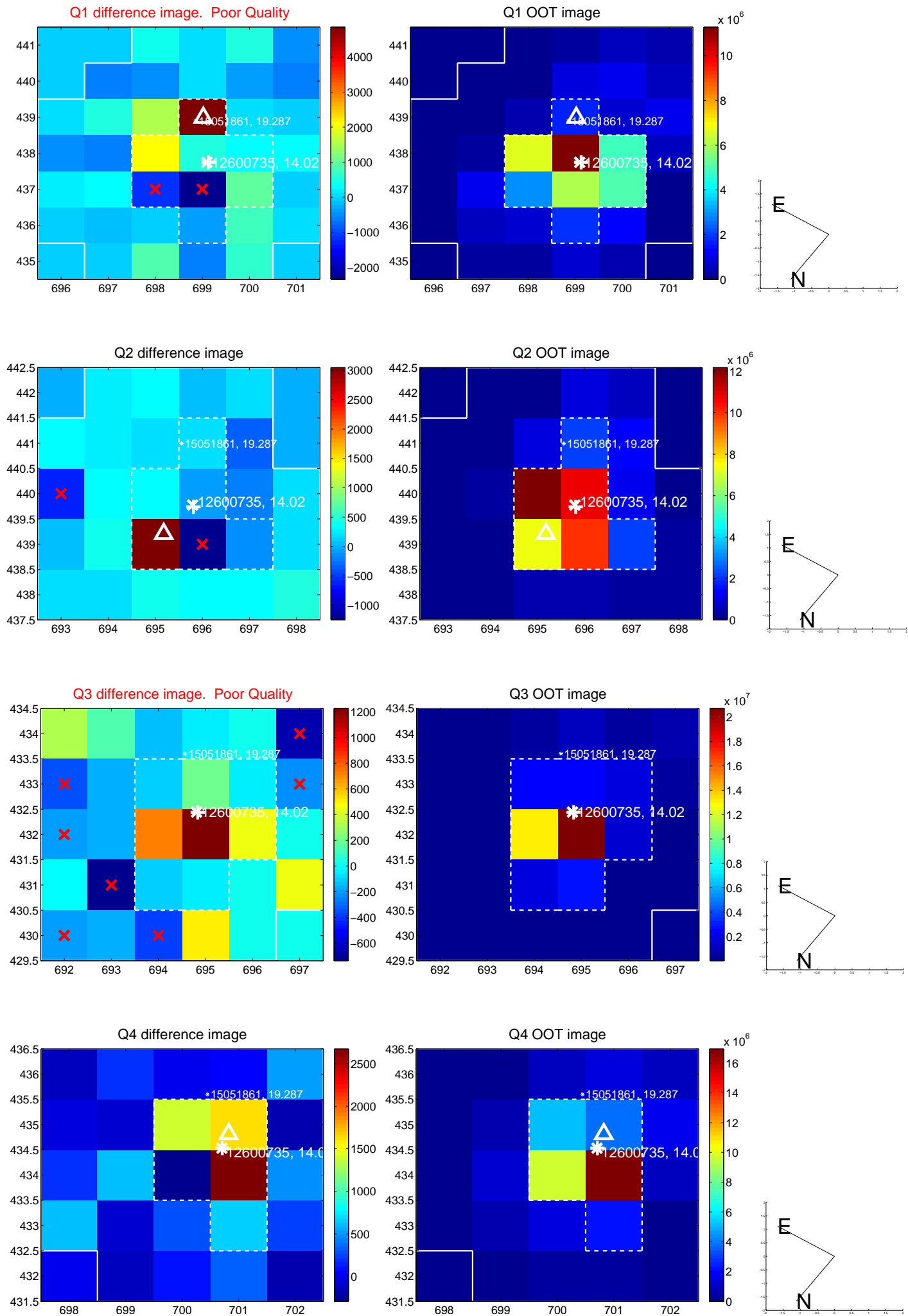
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.065 ± 0.563	1.89	1.060 ± 0.546	-0.106 ± 0.849
PRF-fit source offset from KIC position	0.987 ± 0.506	1.95	0.978 ± 0.495	-0.135 ± 0.920
photometric centroid source offset	1.37 ± 1.84	0.75	-0.41 ± 1.81	1.31 ± 1.84

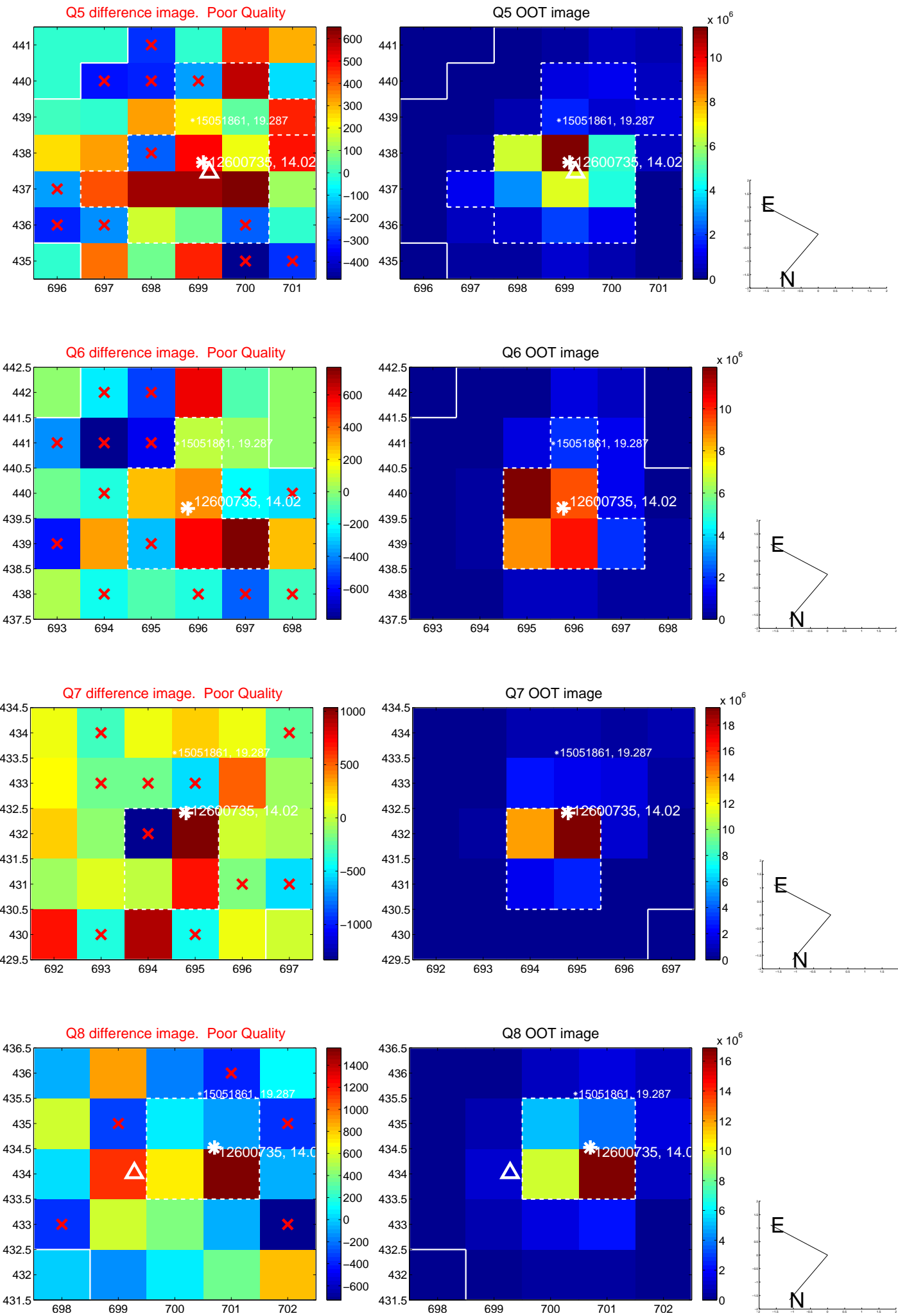


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

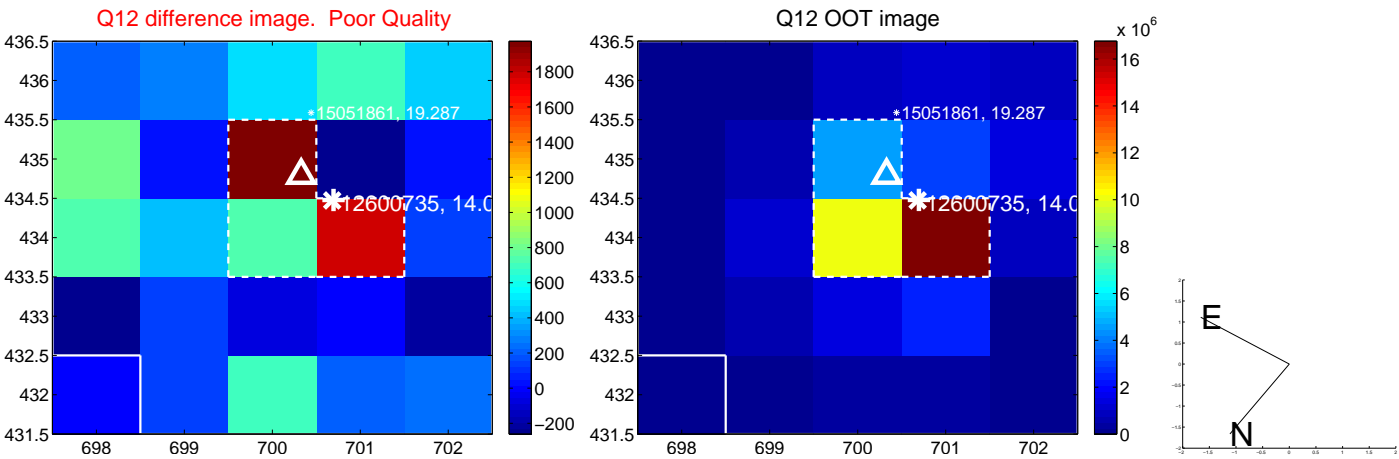
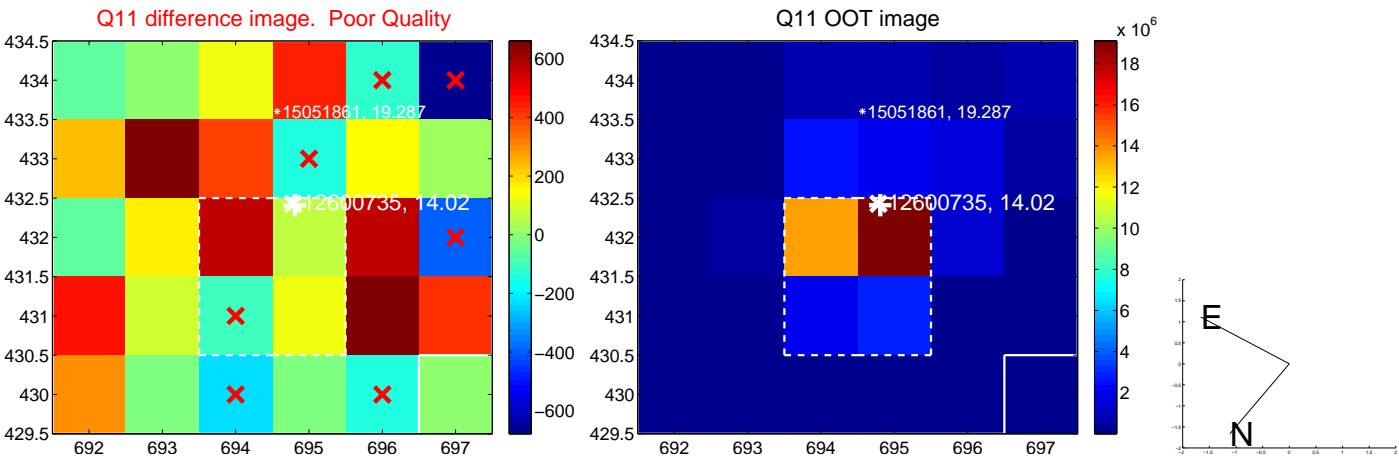
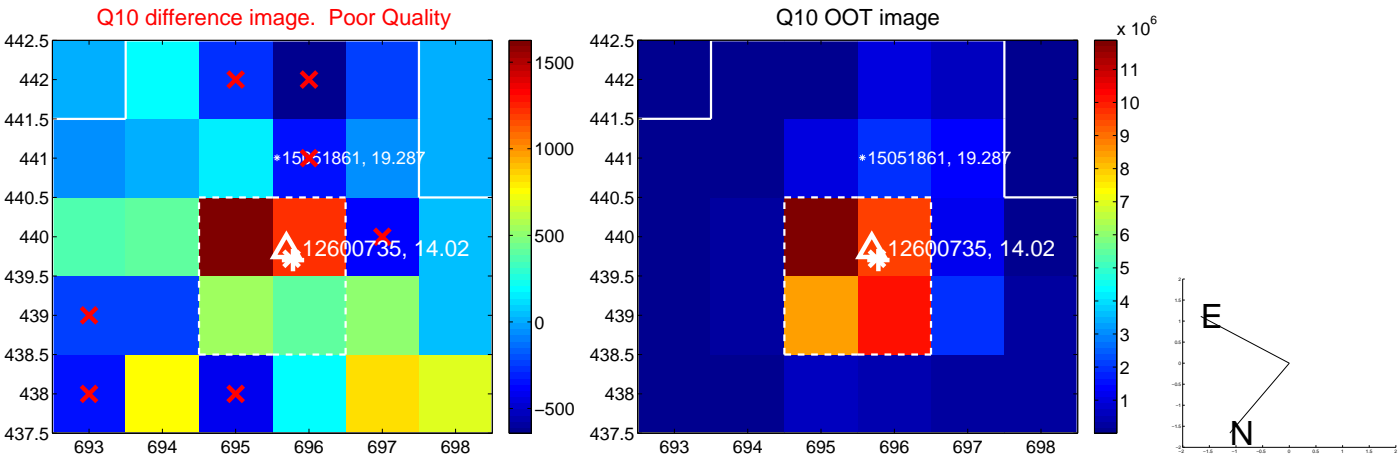
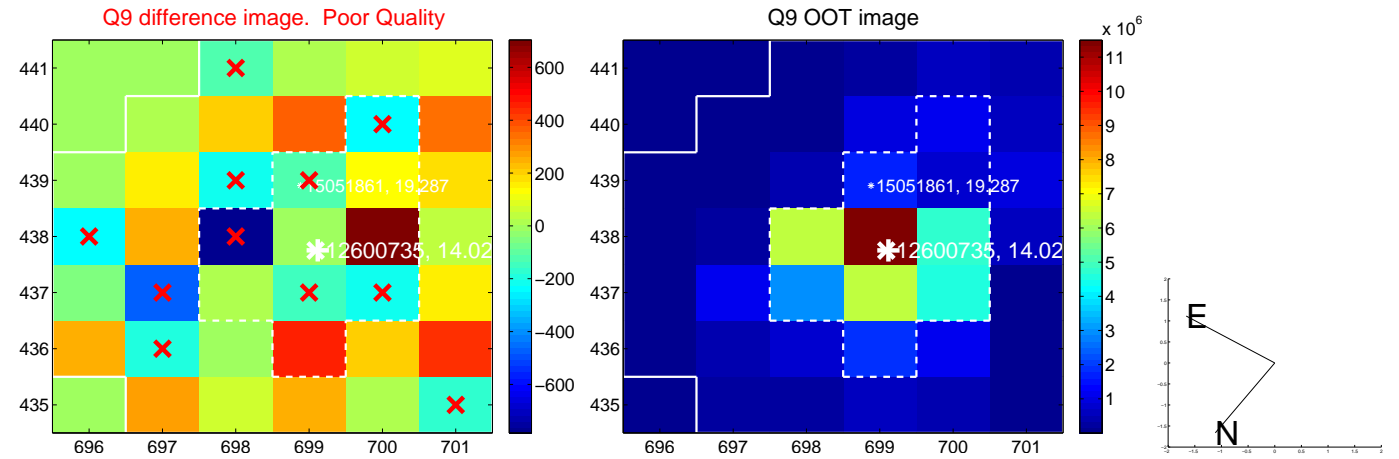
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



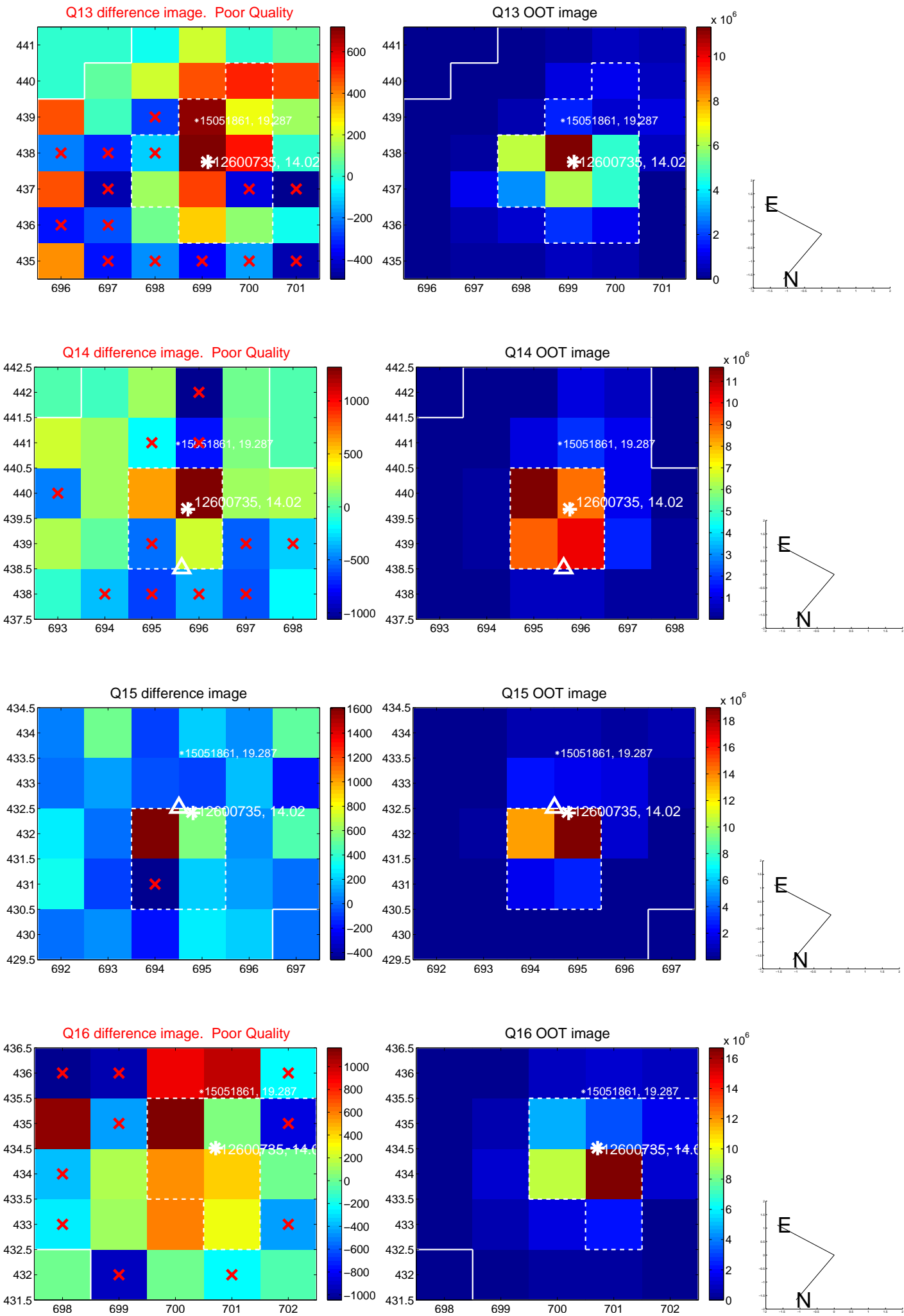
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



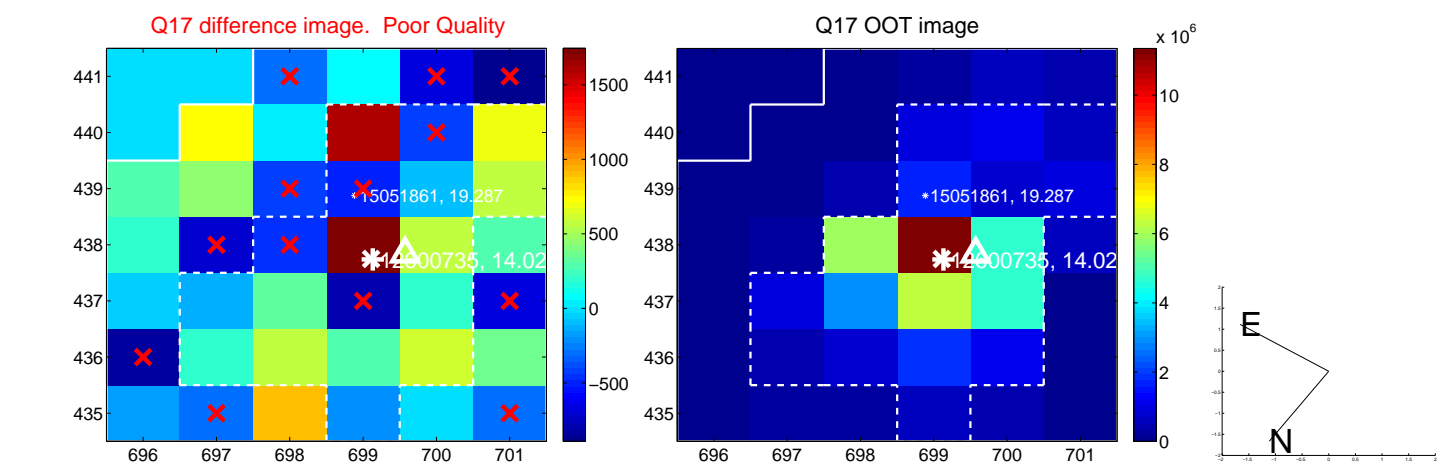
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



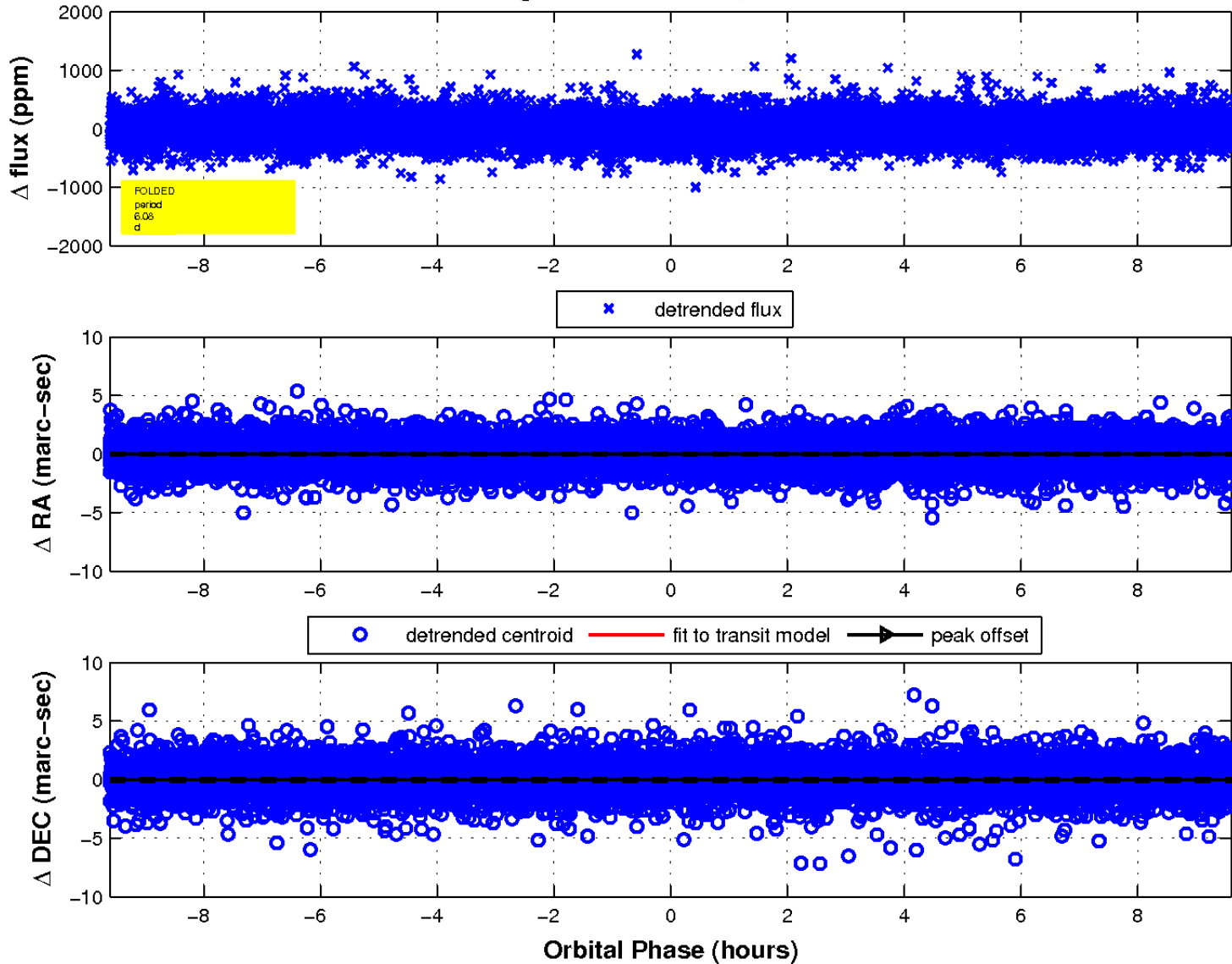
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

