

KIC 006889235

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})
006889235-01	OBS	No	5.188653	133.665749	1239.8	4.954	950.9	878.1	1.94	9523	7.34	4763.58
006889235-02	OBS	0074.01	2.594333	133.663511	489.5	4.740	393.0	385.7	1.94	9523	4.70	12003.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006889235-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
006889235-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SAME_NTL_PERIOD—CENT_SATURATED

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

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

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

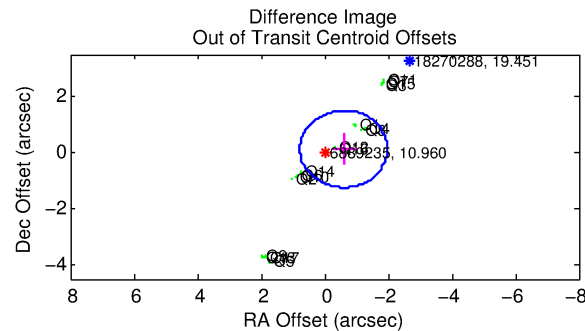
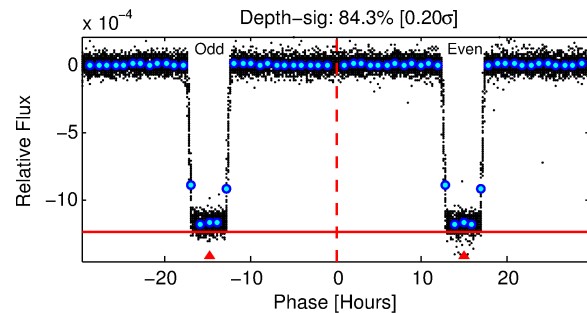
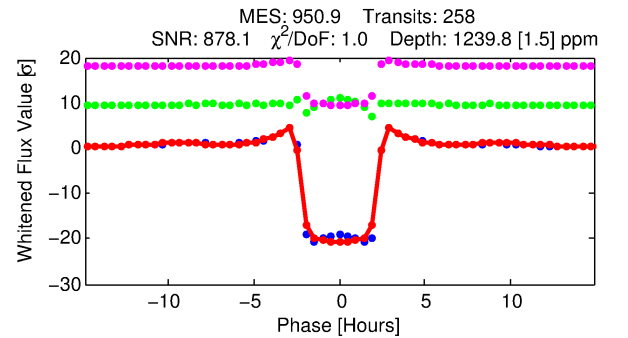
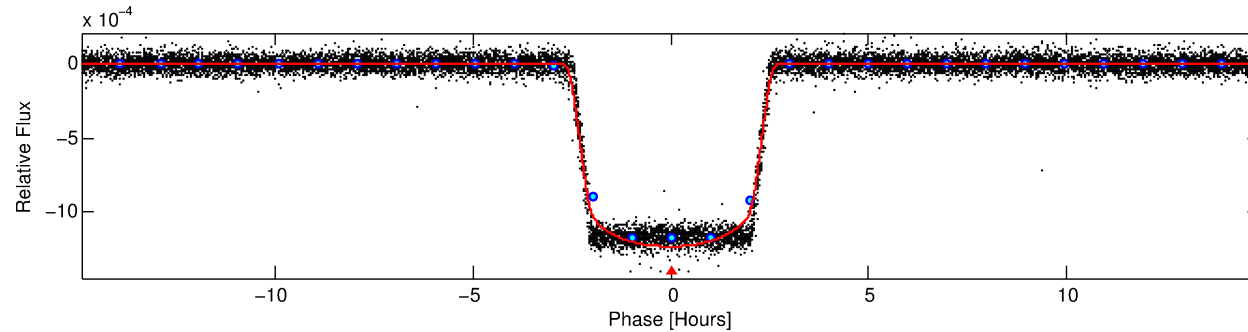
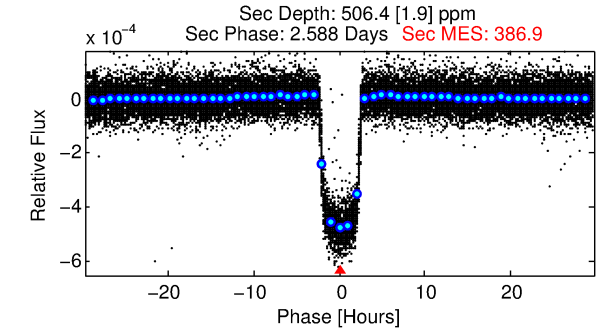
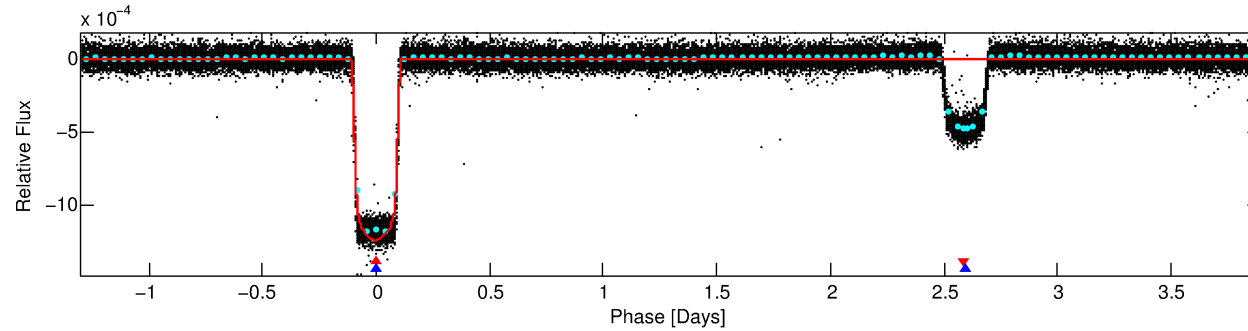
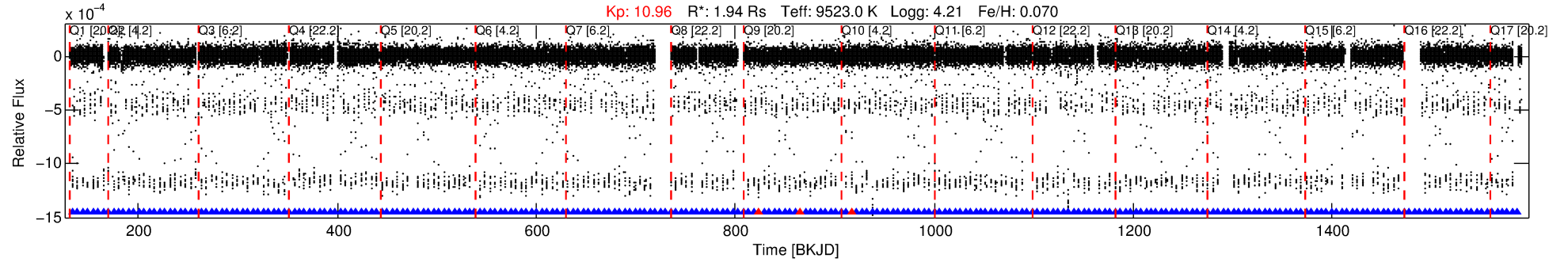
Ephemeris Match Information For 006889235-01

No Significant Match Found

DV One-Page Summary

KIC: 6889235 Candidate: 1 of 2 Period: 5.189 d

KOI: K00074 Corr: No Ephemeris Match



DV Fit Results:

Period = 5.18865 [0.00000] d
Epoch = 133.6657 [0.0001] BKJD
Rp/R* = 0.0347 [0.0001]
a/R* = 6.15 [0.13]
b = 0.70 [0.02]
Seff = 4763.58 [2235.23]
Teff = 2118 [249] K
Rp = 7.34 [3.01] Re
a = 0.0763 [0.0245] AU
Ag = 30.10 [13.11] [2.22 σ]
Teffp = 7672 [335] K [13.30 σ]

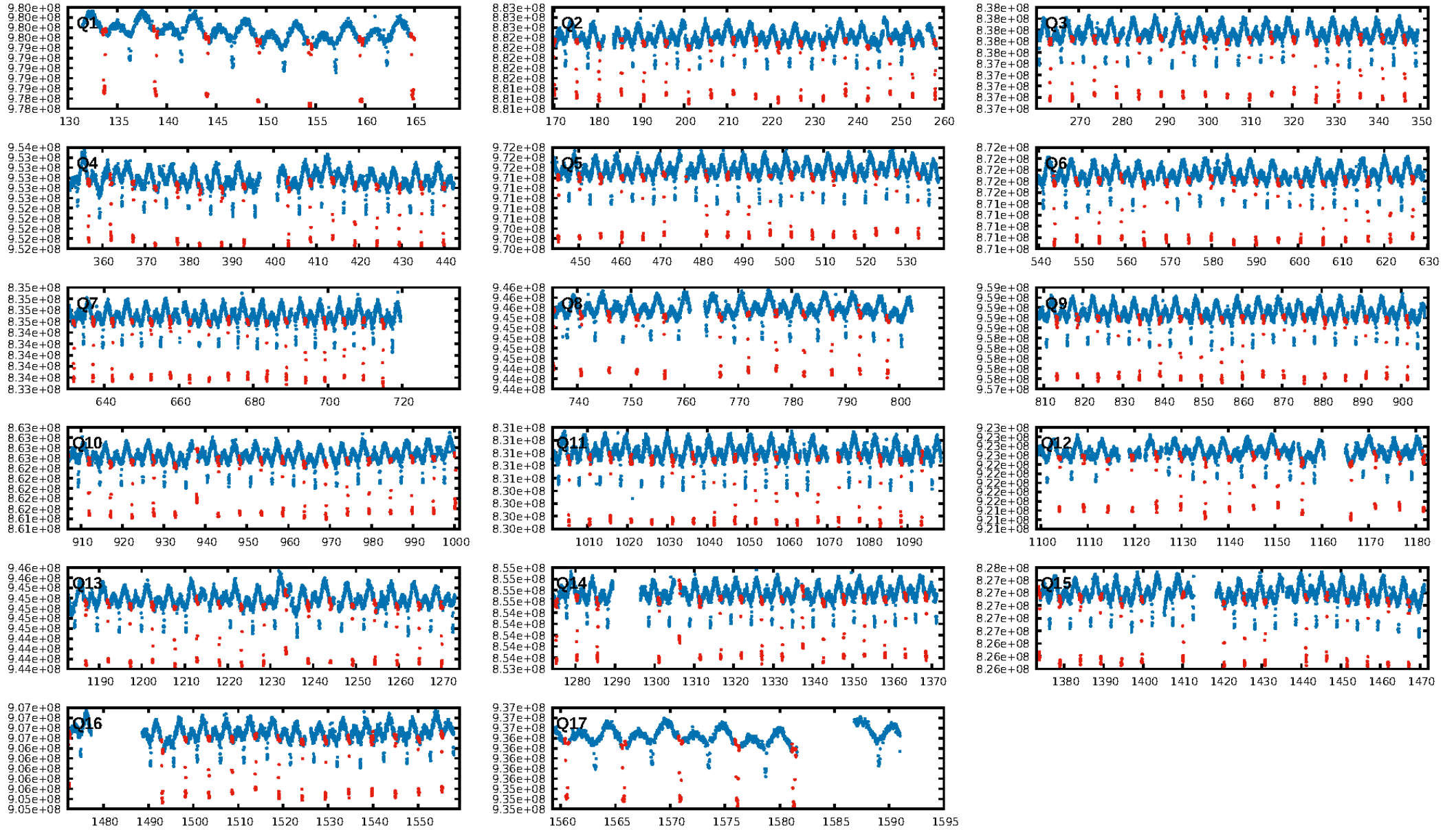
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.08 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [243/246]
GhostDiagnostic-chr: 5.88
Centroid-sig: 0.0%
Centroid-so: 0.228 arcsec [8.68 σ]
OotOffset-rm: 0.610 arcsec [1.33 σ]
KicOffset-rm: 0.783 arcsec [1.97 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 0.00 [0/17]

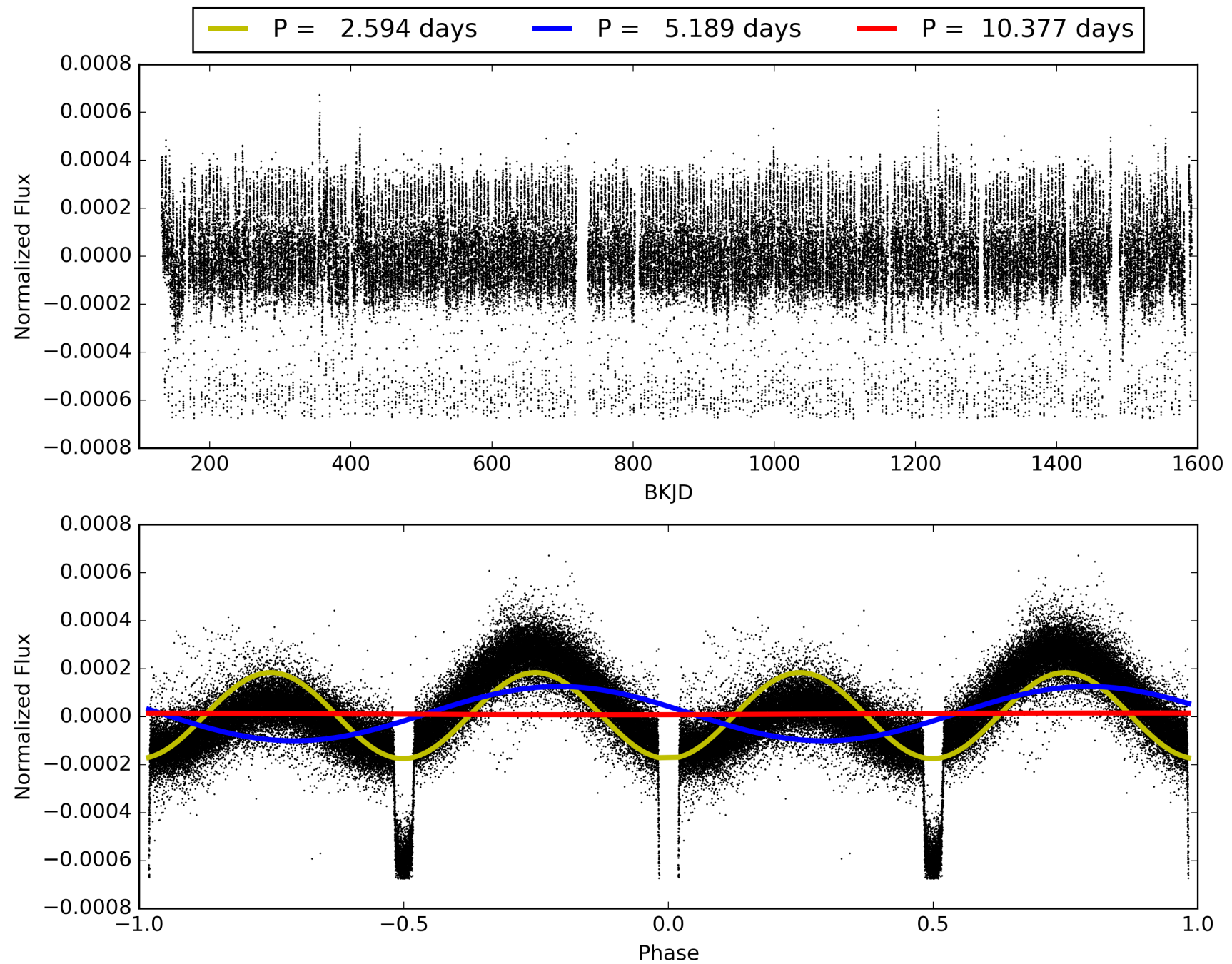
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:41:42 Z

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

TCE 006889235-01, PDC Light Curves

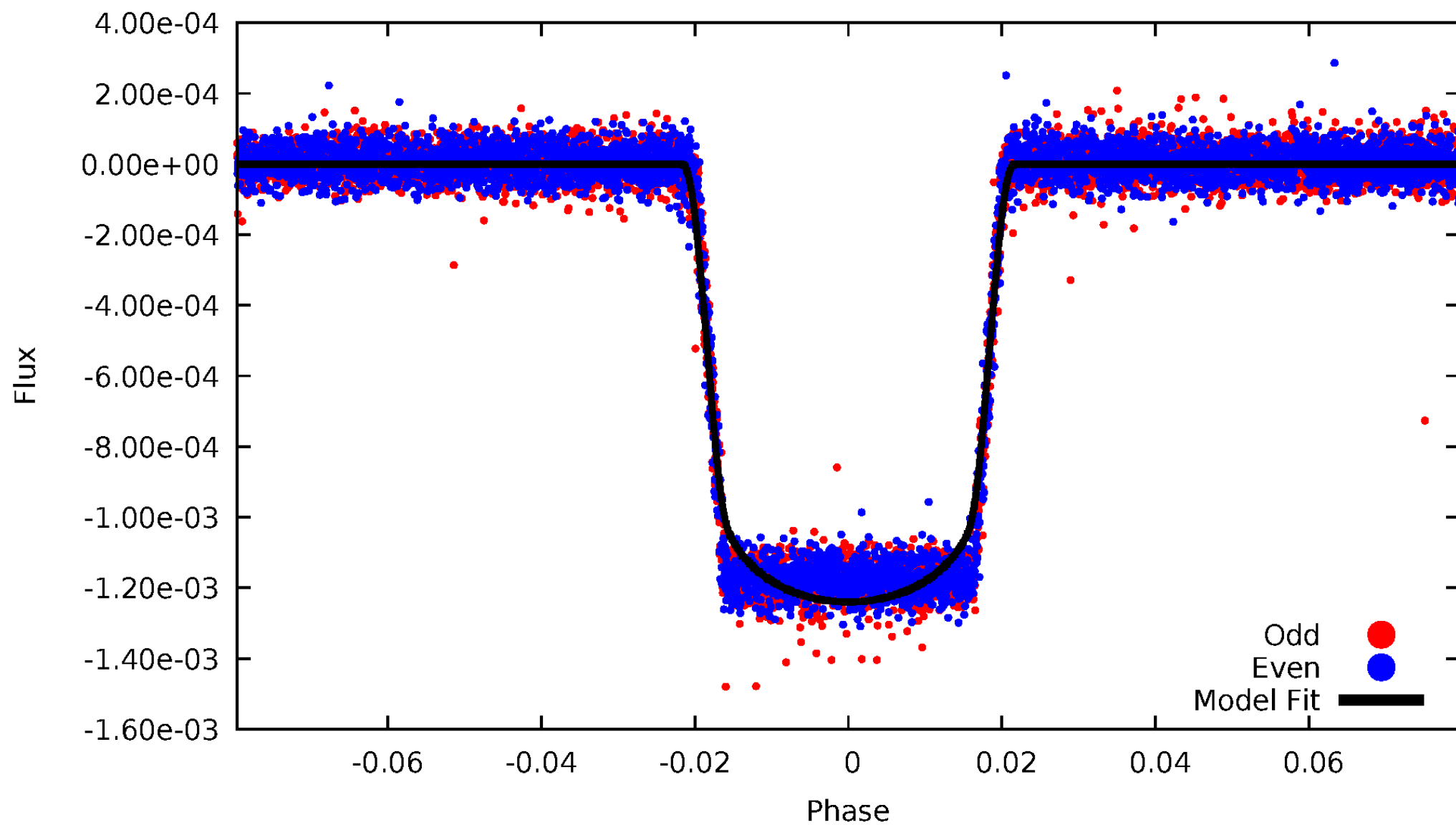


TCE 006889235-01



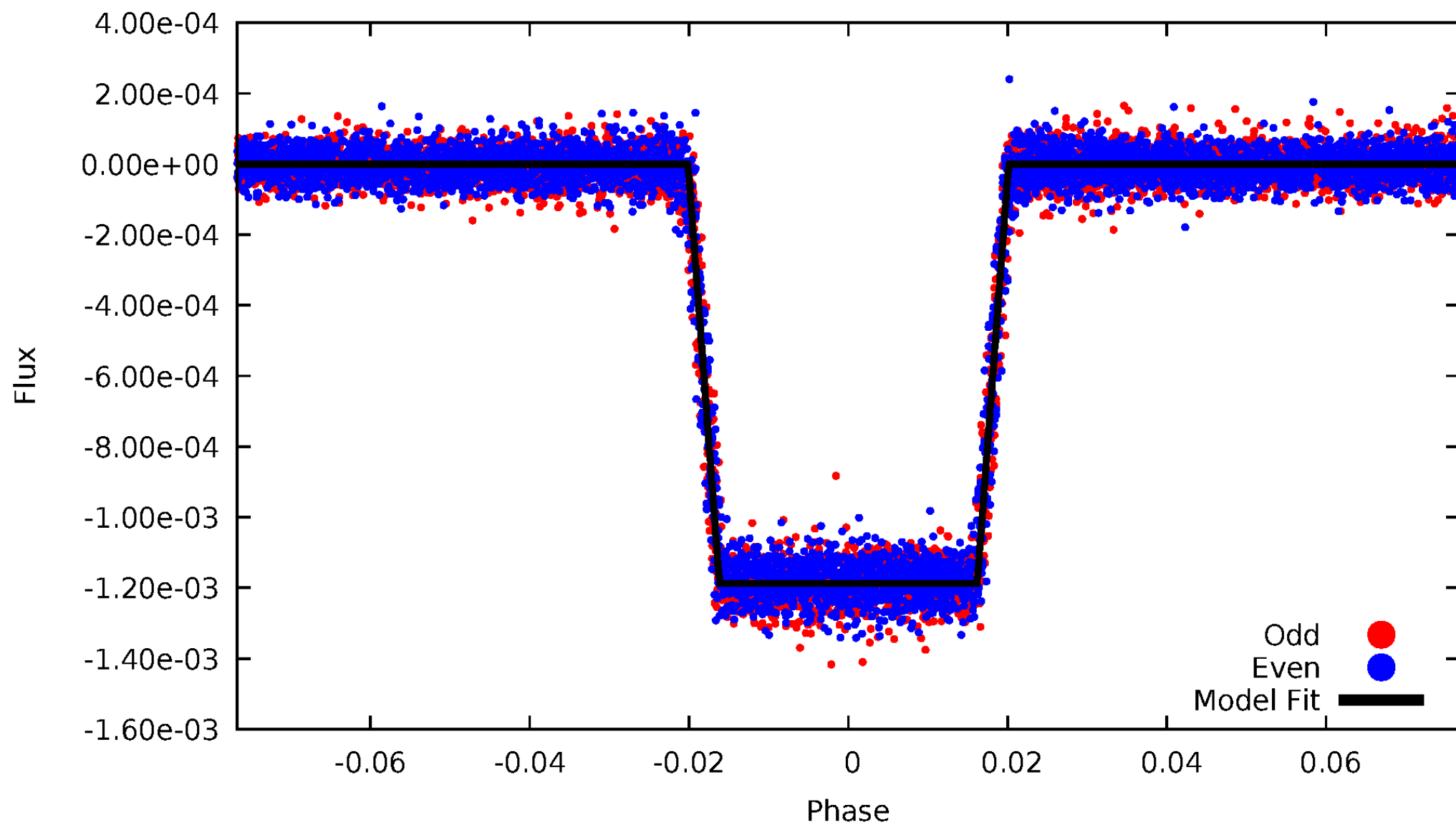
DV Odd/Even

TCE 006889235-01

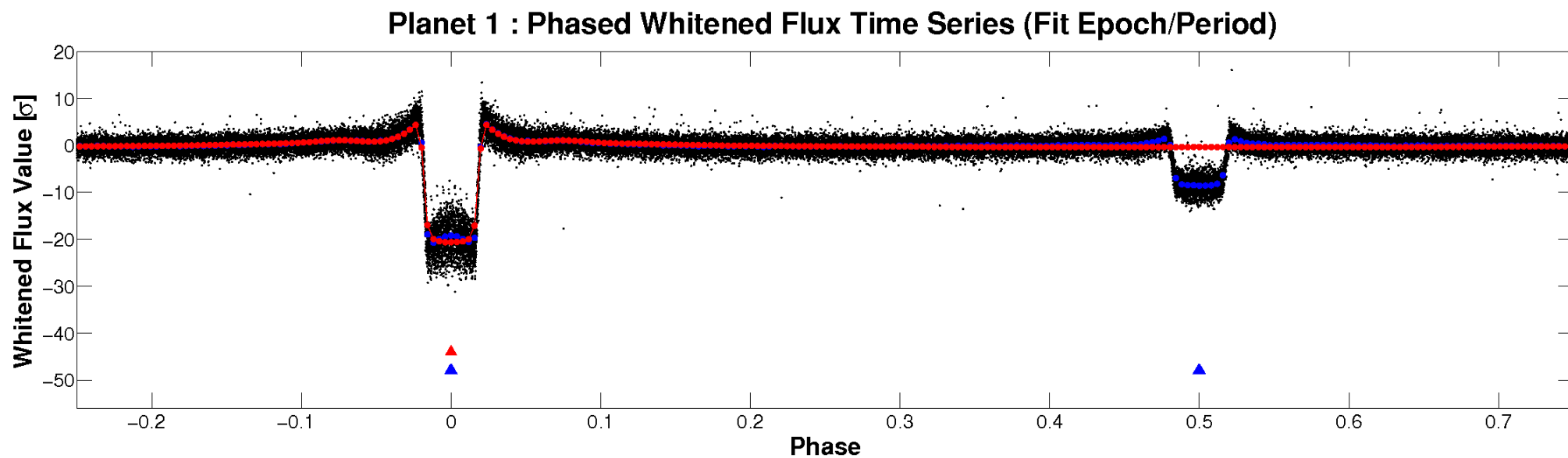
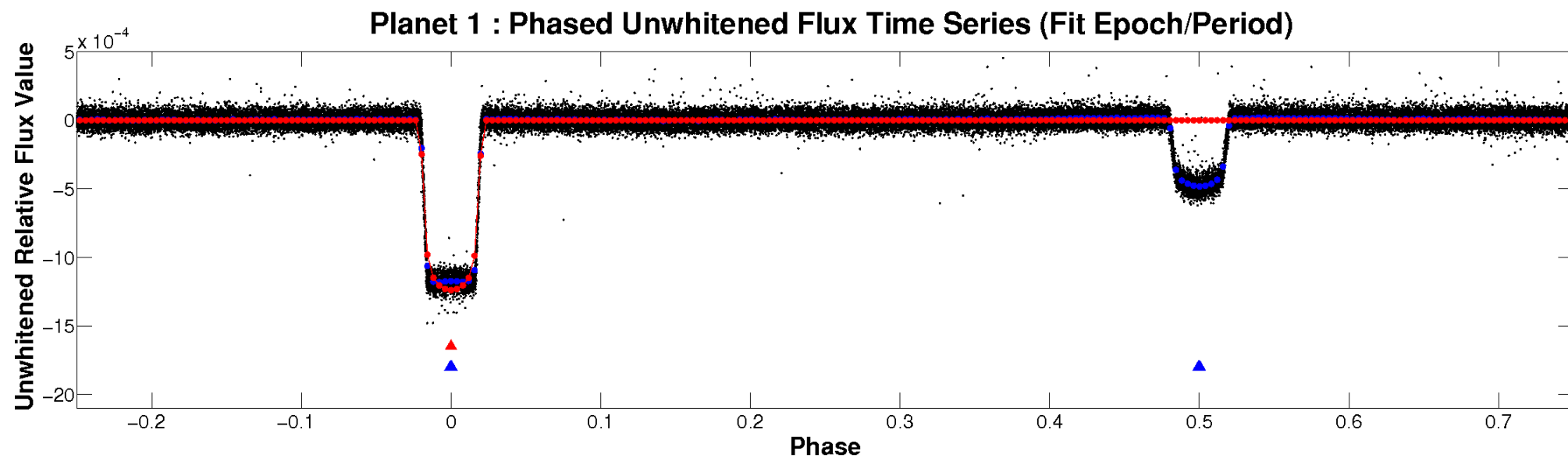


ALT Odd/Even

TCE 006889235-01

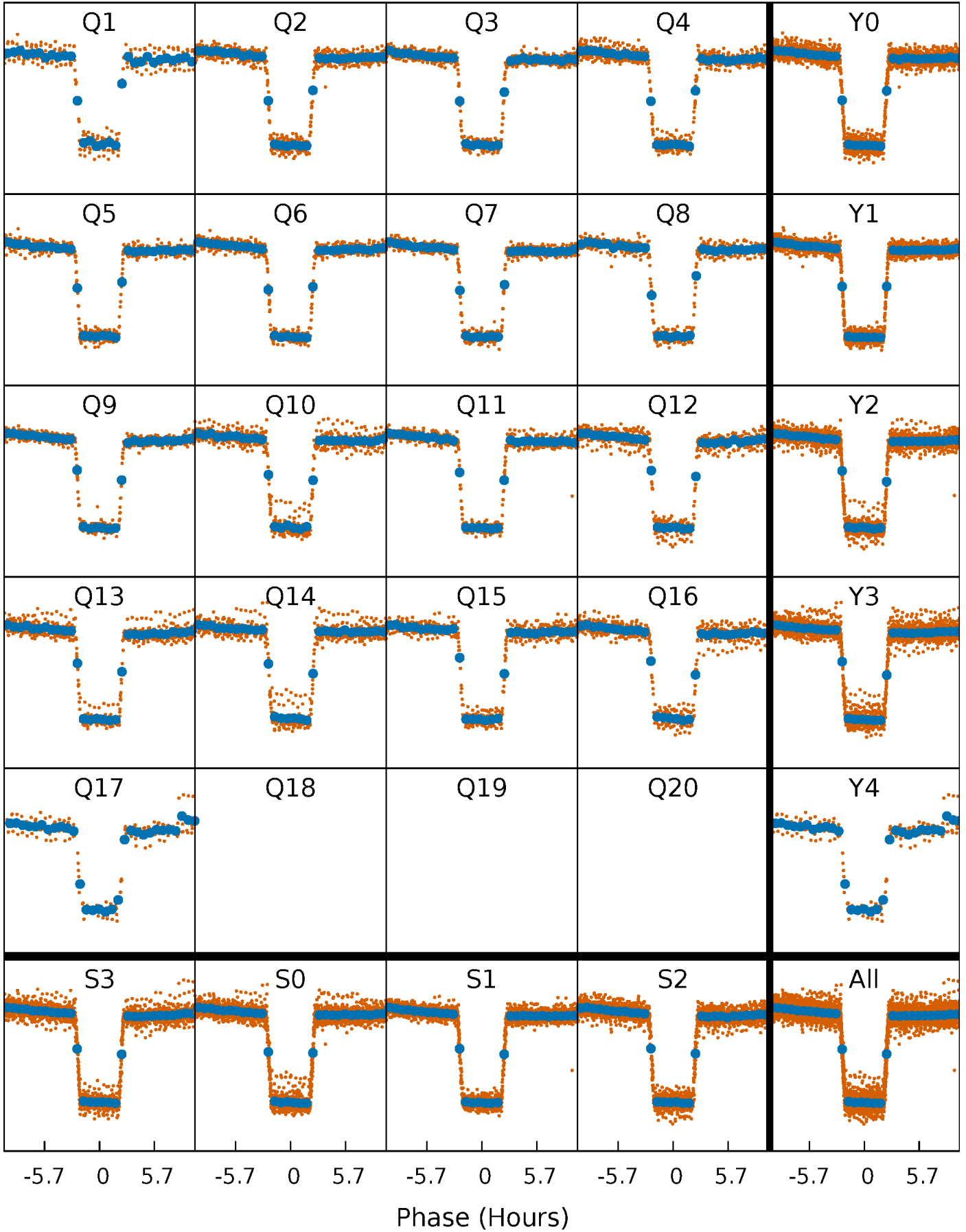


Non-Whitened Vs. Whitened Light Curve



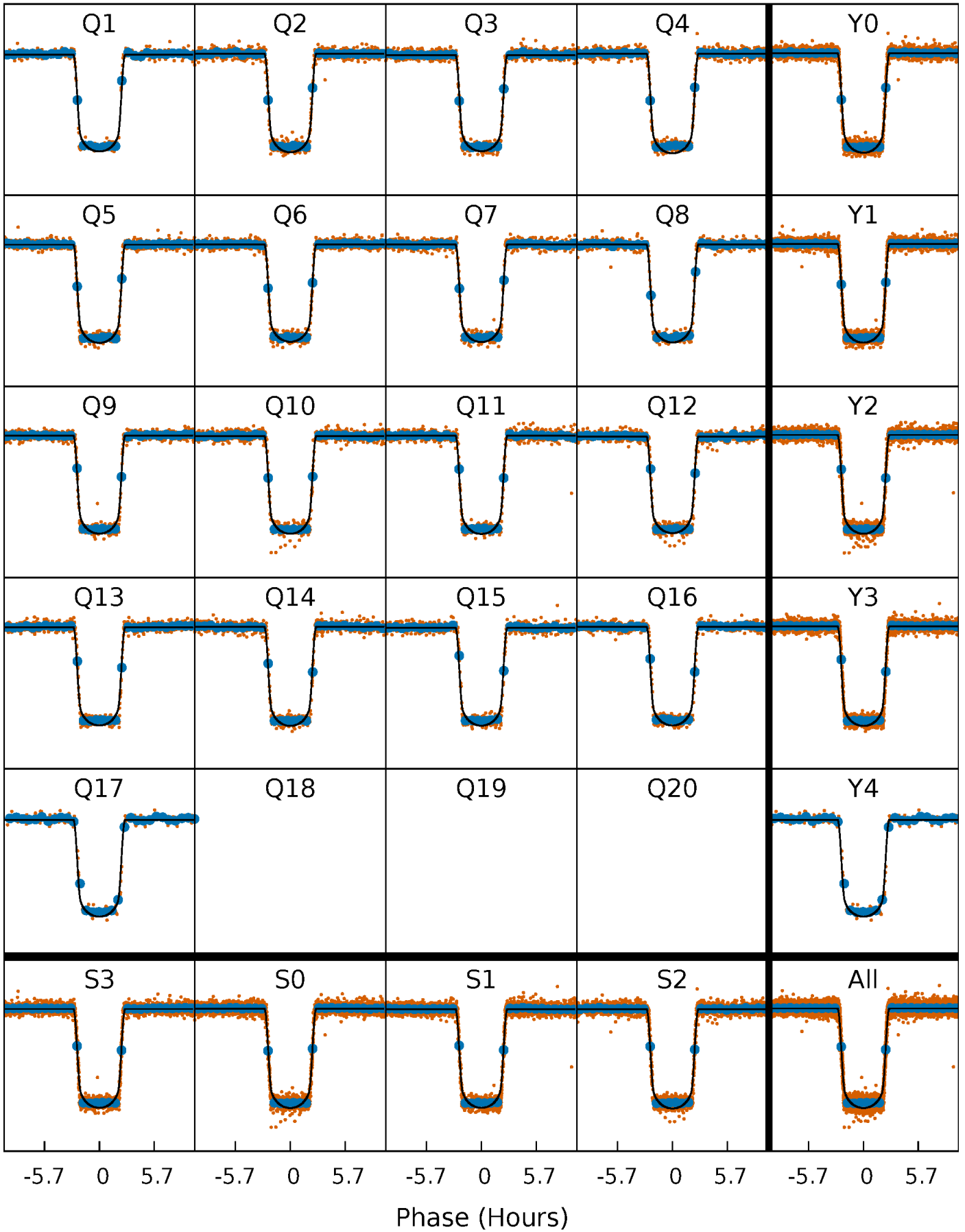
PDC Quarter-Phased Transit Curves

TCE 006889235-01 P= 5.188653 Days $T_0=133.665749$ (BKJD)



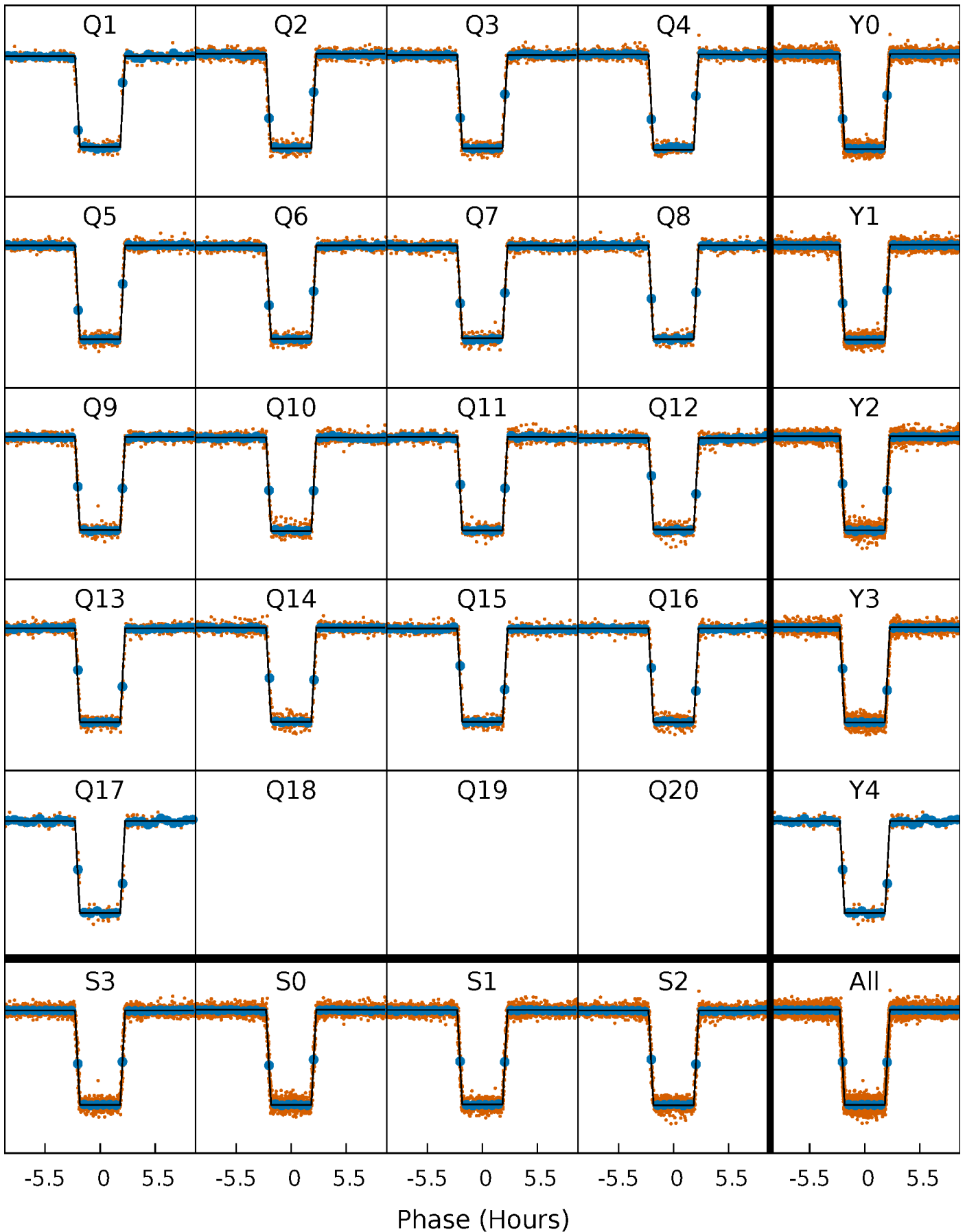
DV Quarter-Phased Transit Curves

TCE 006889235-01 P= 5.188653 Days $T_0=133.665749$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

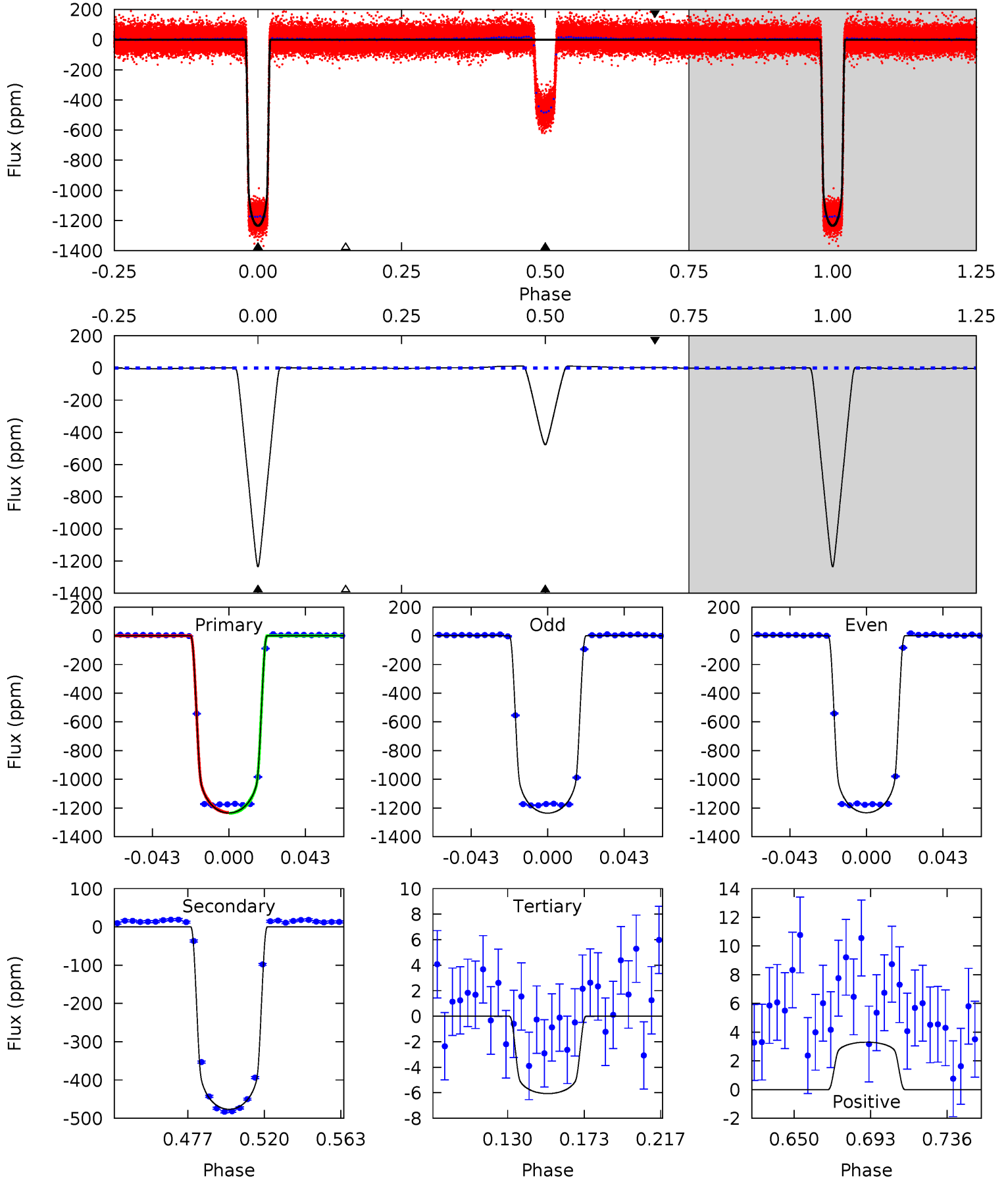
TCE 006889235-01 P= 5.188639 Days $T_0=133.668109$ (BKJD)



DV Model-Shift Uniqueness Test

006889235-01, P = 5.188653 Days, E = 128.477096 Days

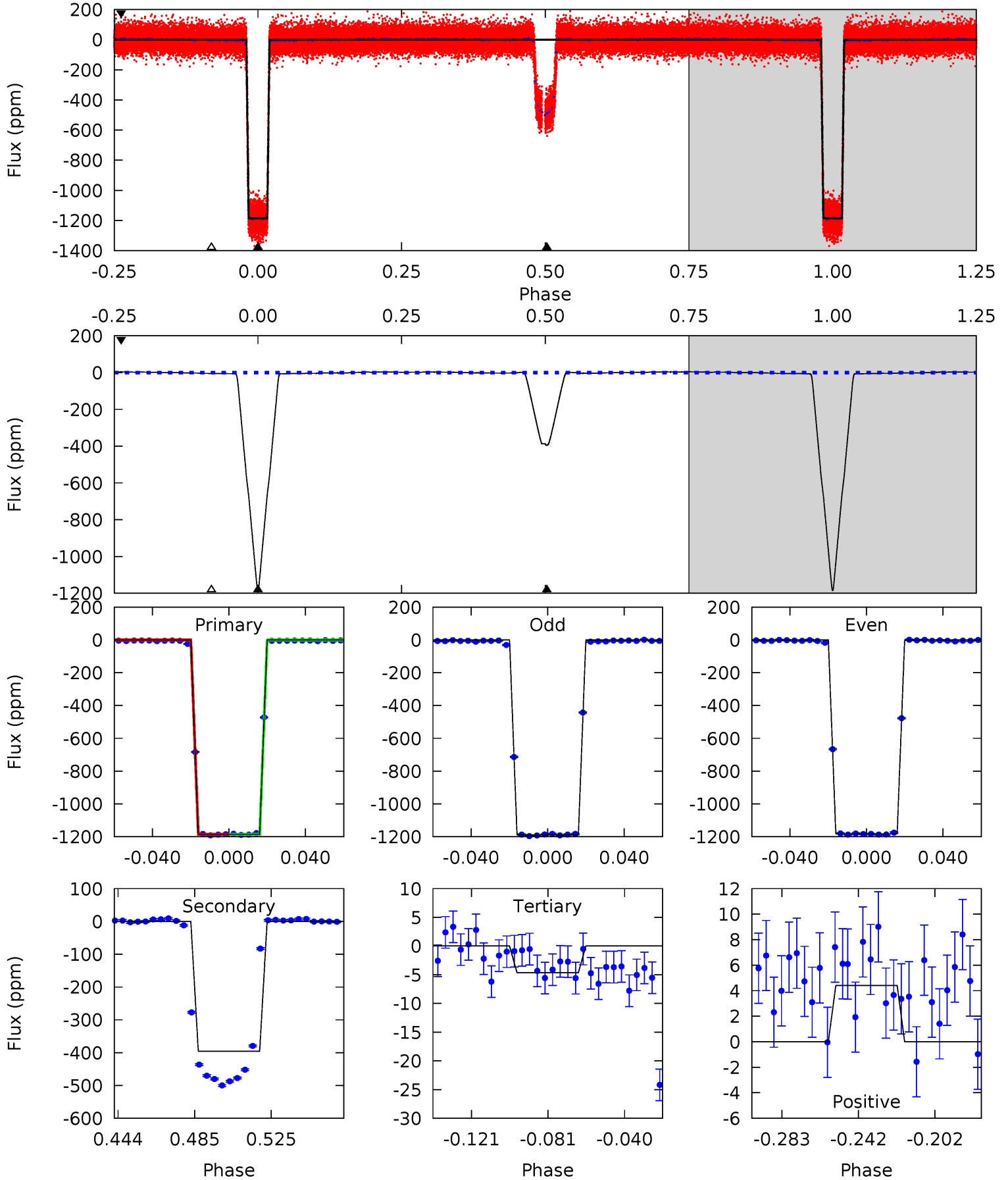
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1505	580.8	7.39	4.03	4.74	2.02	5.33	1498	1501	573.4	576.8	1.66	1.00	0.01	2.97



Alt Model-Shift Uniqueness Test

006889235-01, P = 5.188639 Days, E = 128.479470 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1393	465.1	5.47	5.18	4.75	2.05	3.38	1387	1388	459.6	459.9	3.78	1.00	0.00	0.14



Stellar Parameters For KIC 006889235

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9523^{+302}_{-416}	$4.205^{+0.136}_{-0.221}$	$0.070^{+0.150}_{-0.650}$	$1.941^{+0.795}_{-0.428}$	$2.202^{+0.450}_{-0.550}$	$0.424^{+0.310}_{-0.237}$
	+3%/-4%	+3%/-5%	+214%/-929%	+41%/-22%	+20%/-25%	+73%/-56%
Source	KIC0	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 006889235-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-476 ± 1	$7.31^{+1.59}_{-0.94}$	2970^{+278}_{-215}	7098^{+190}_{-264}	28^{+7}_{-8}
Alt.	-396 ± 1	$7.32^{+1.72}_{-0.82}$	3002^{+274}_{-220}	6767^{+164}_{-230}	23^{+6}_{-7}

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

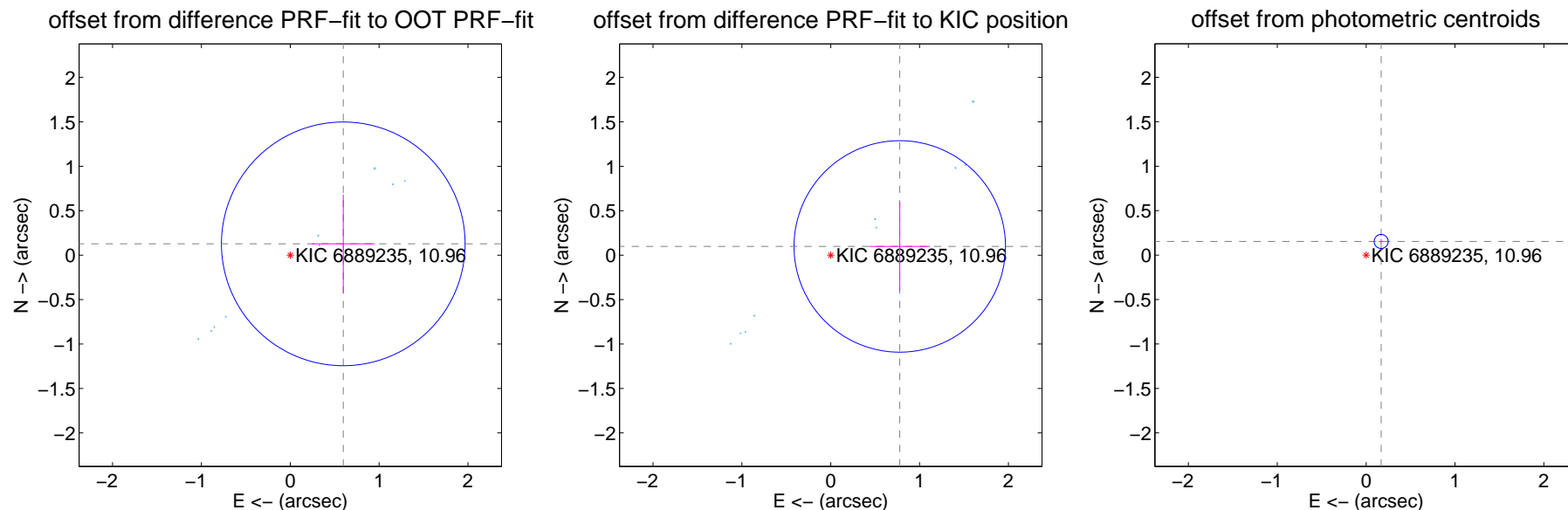
DV Centroid Data

Supplemental centroid analysis for 006889235-01. **Kepler magnitude: 10.96.** Transit SNR 878.07

There are 13 quarters with good PRF difference image offsets

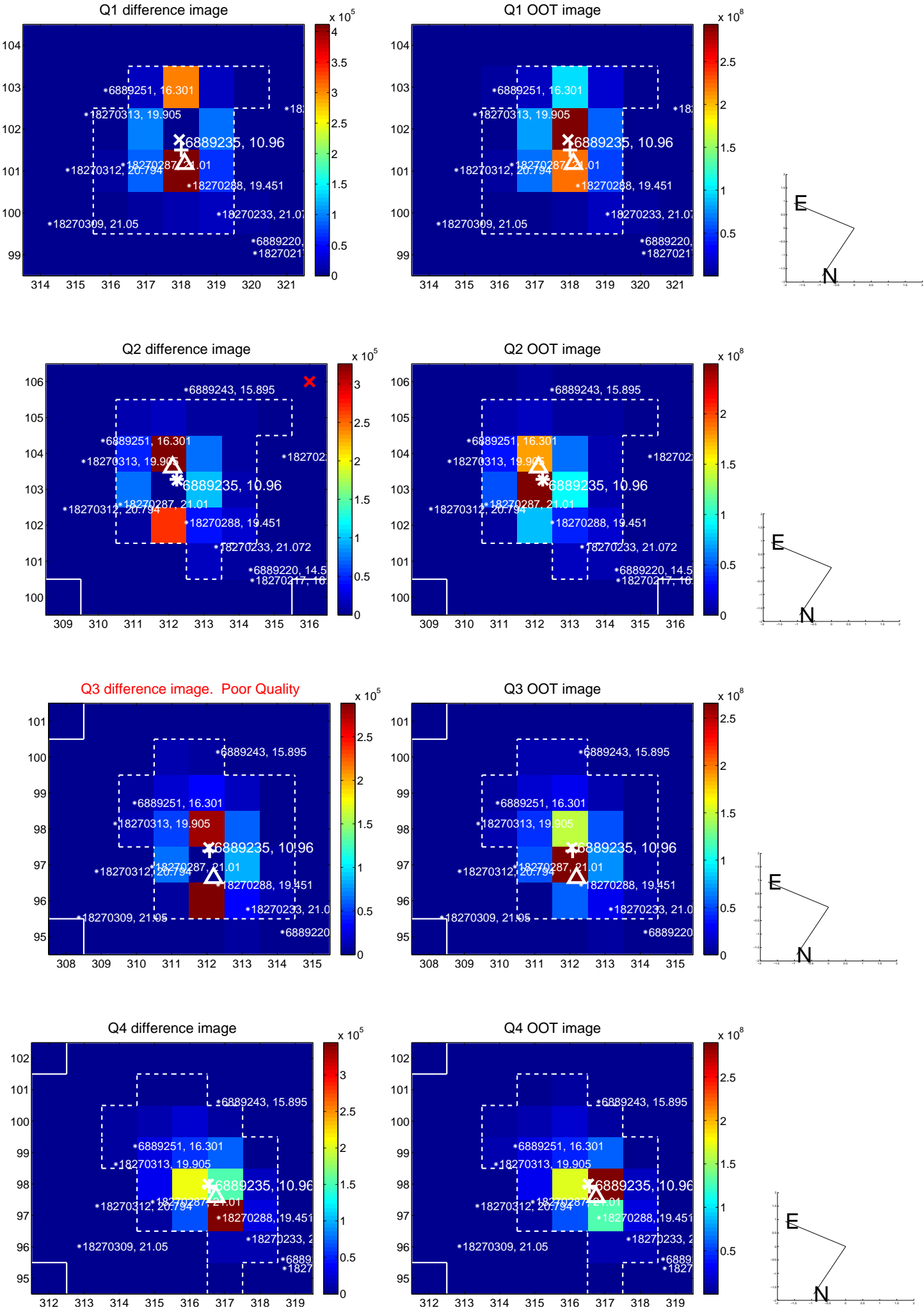
The direct PRF centroid is offset from the target star catalog position by about 0.95 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.610 ± 0.457	1.33	-0.597 ± 0.354	0.127 ± 0.555
PRF-fit source offset from KIC position	0.783 ± 0.397	1.97	-0.777 ± 0.340	0.098 ± 0.504
photometric centroid source offset	0.23 ± 0.03	8.68	-0.17 ± 0.03	0.15 ± 0.03

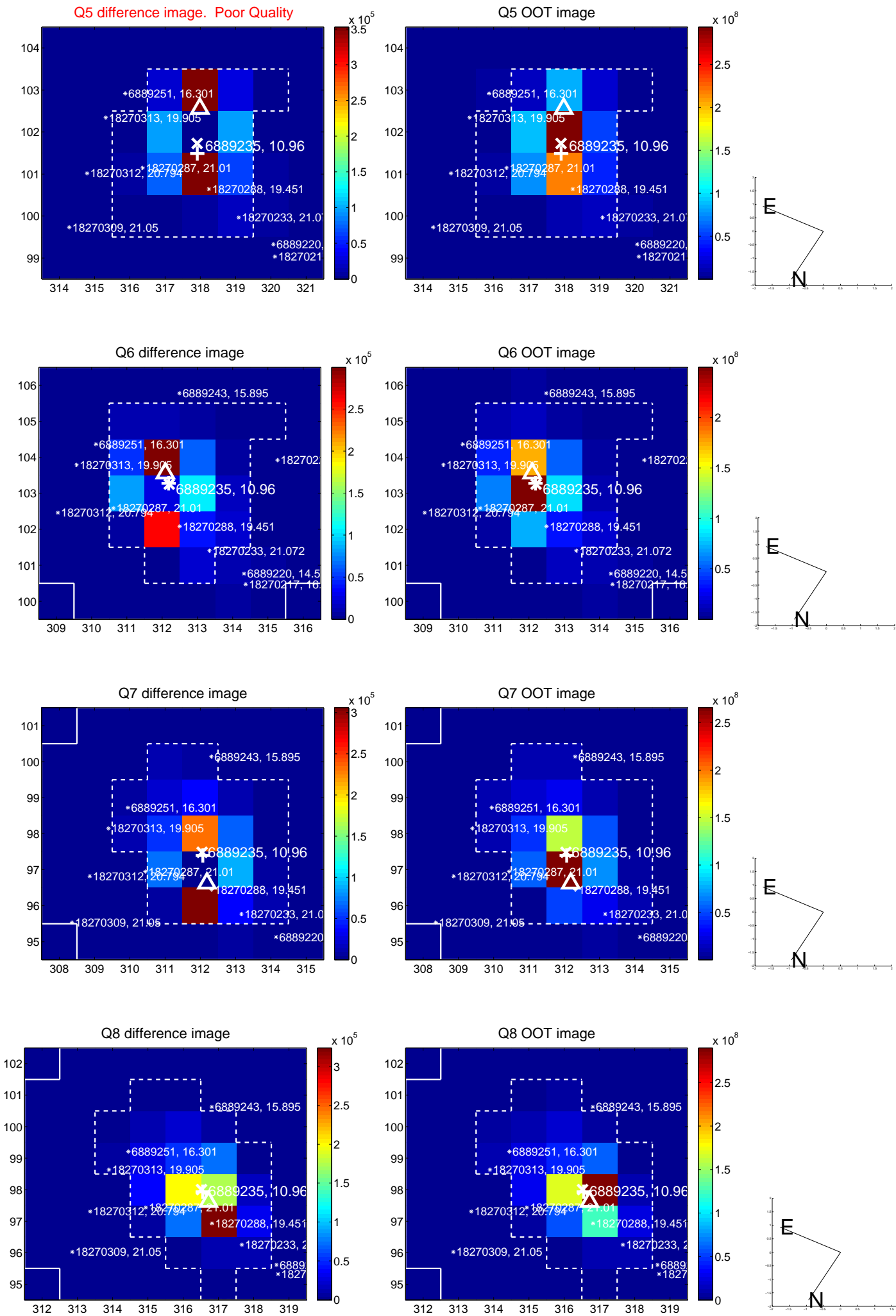


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

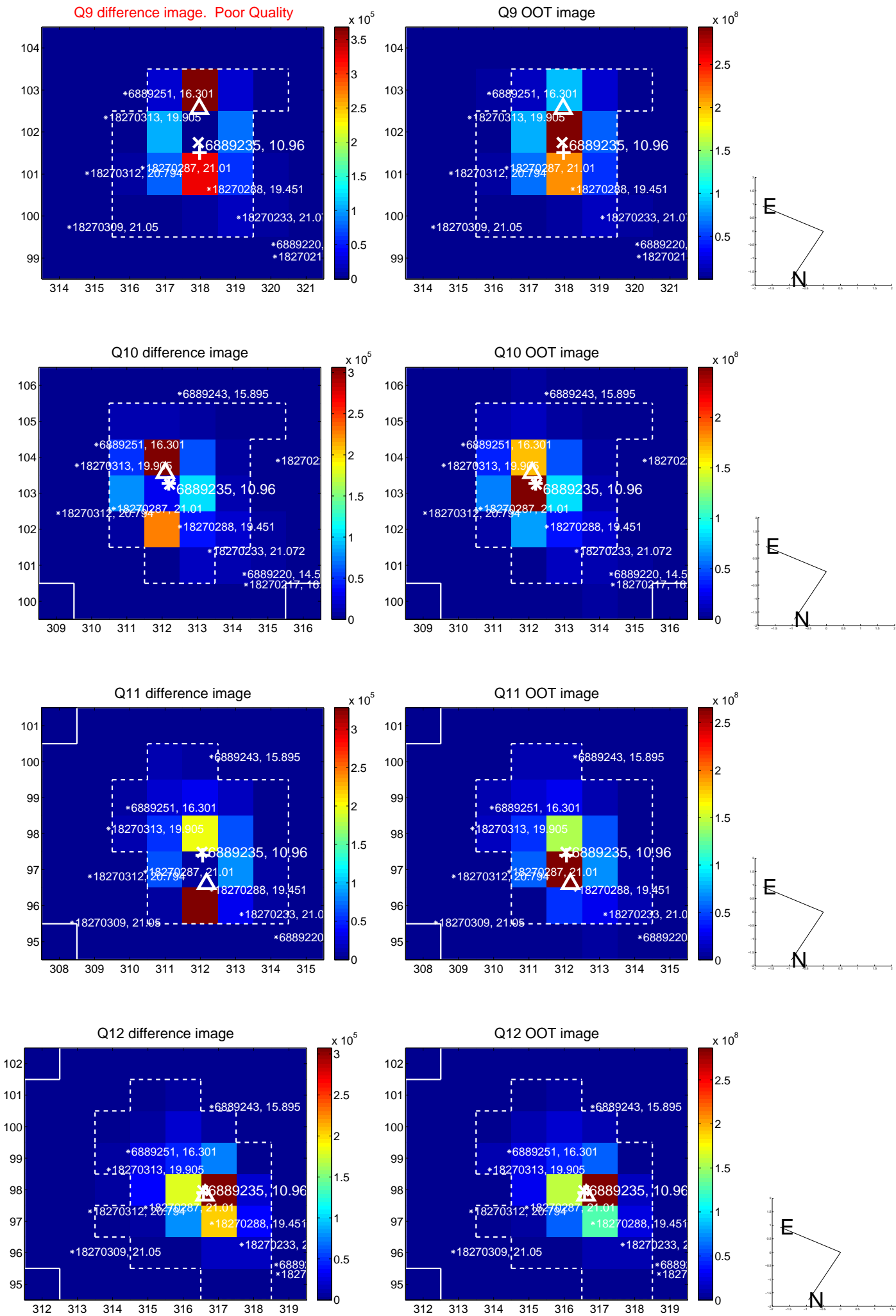
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



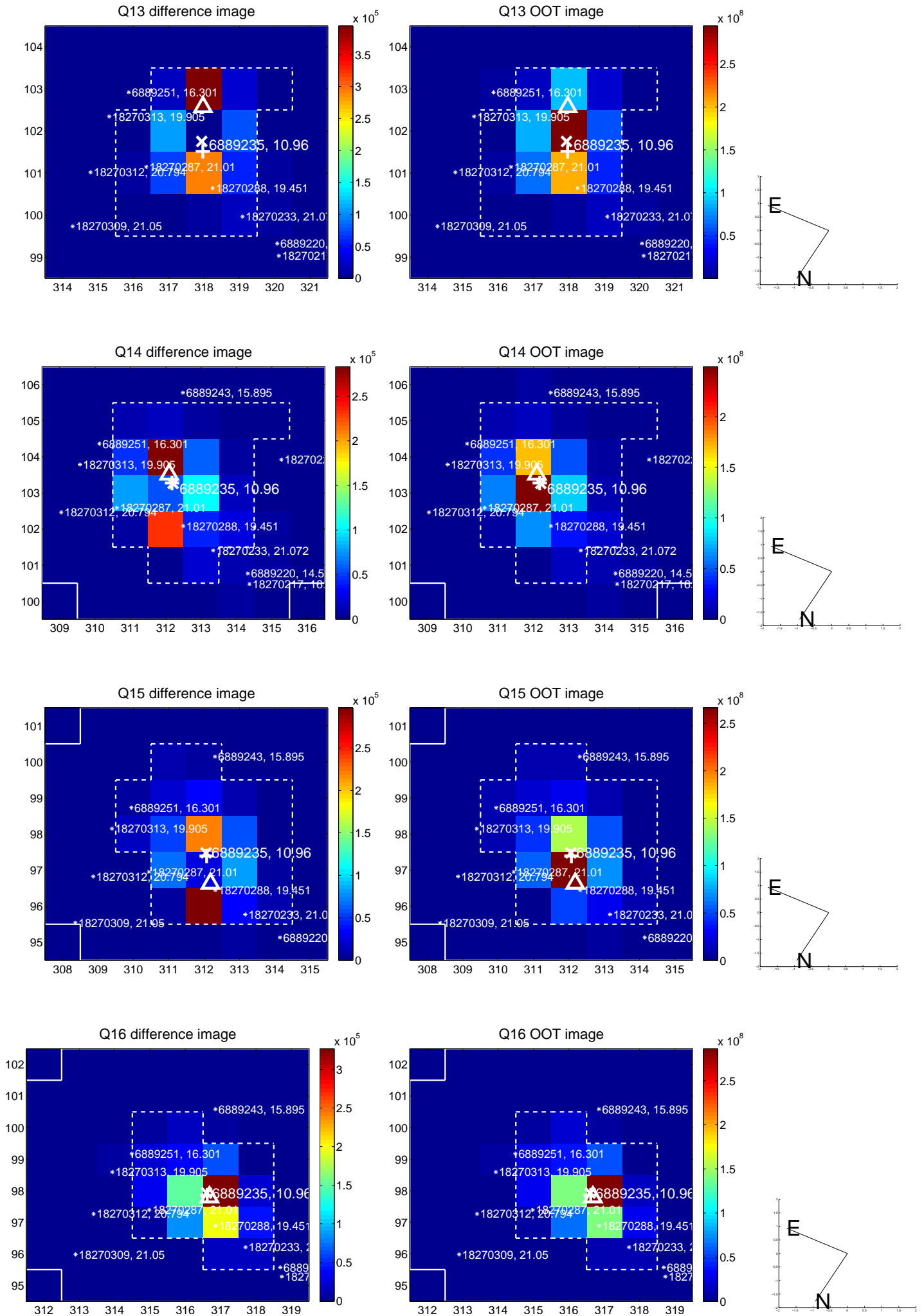
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



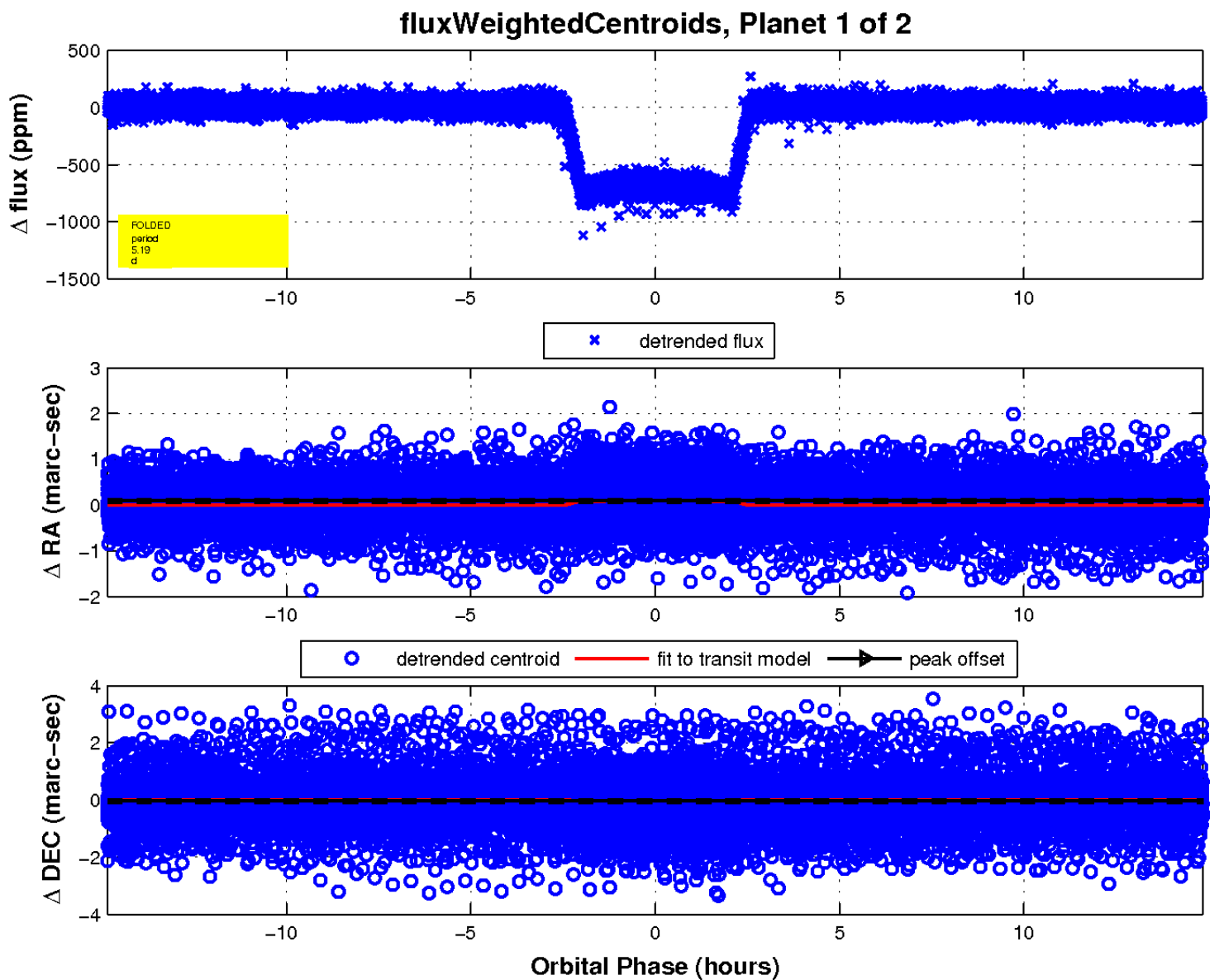
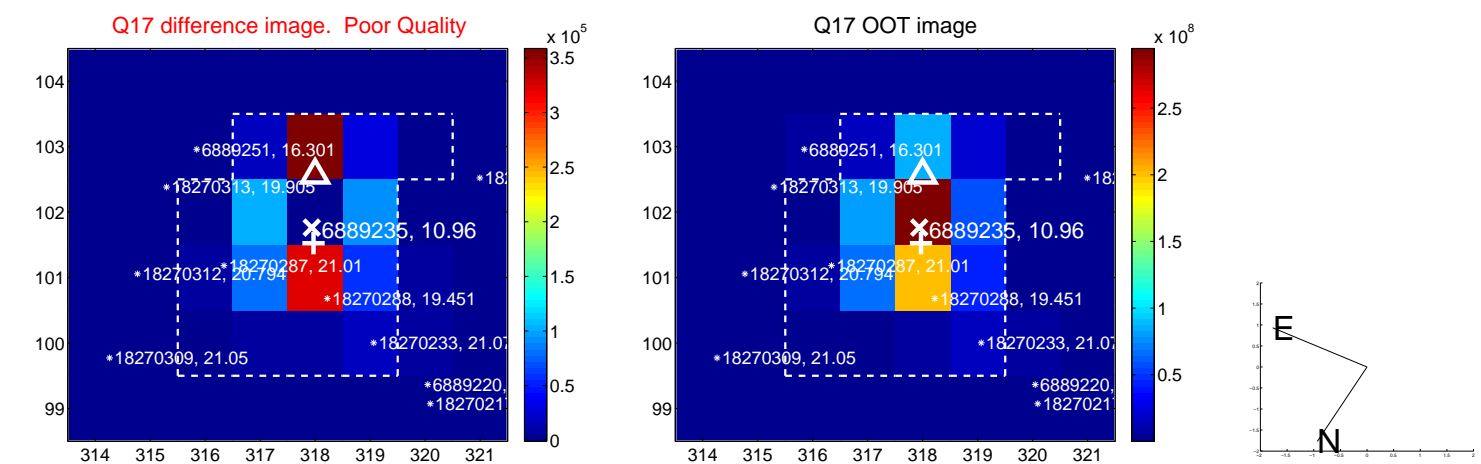
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

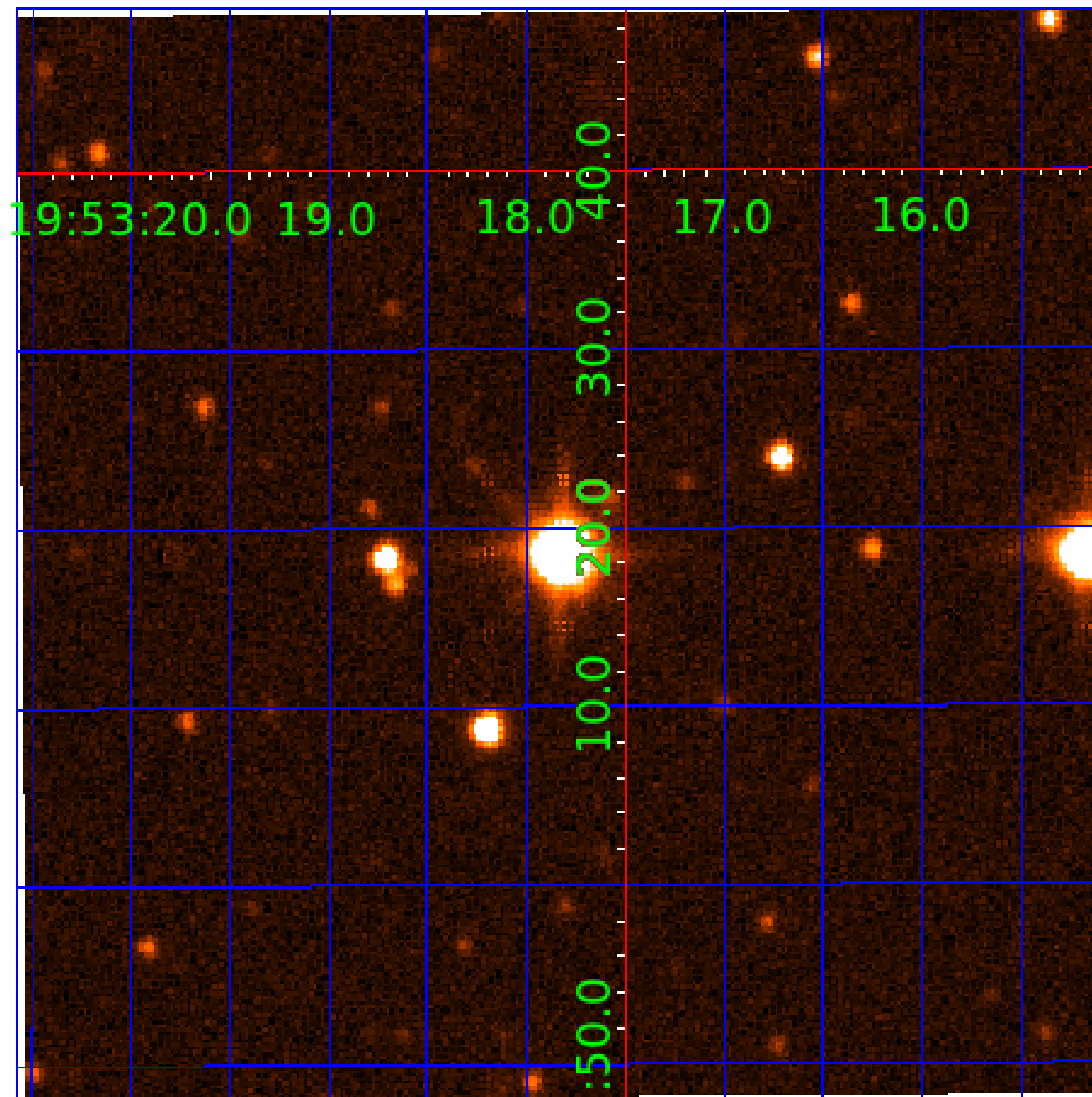


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006889235

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})
006889235-01	OBS	No	5.188653	133.665749	1239.8	4.954	950.9	878.1	1.94	9523	7.34	4763.58
006889235-02	OBS	0074.01	2.594333	133.663511	489.5	4.740	393.0	385.7	1.94	9523	4.70	12003.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006889235-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
006889235-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SAME_NTL_PERIOD—CENT_SATURATED

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

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

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

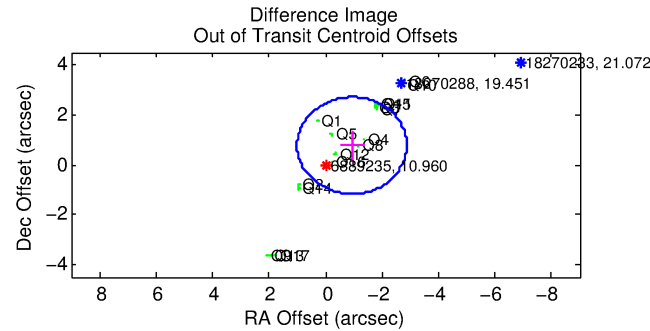
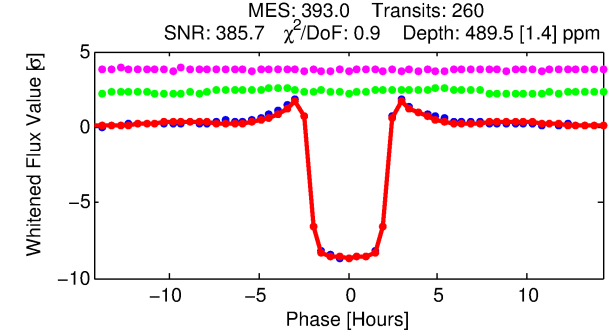
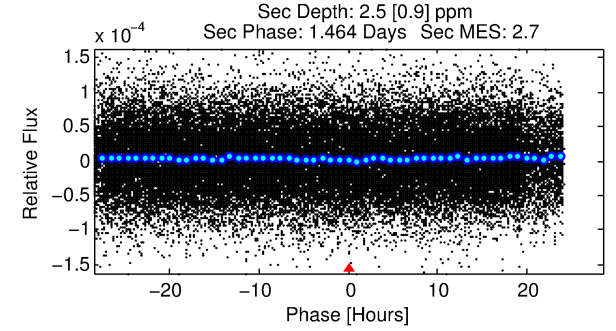
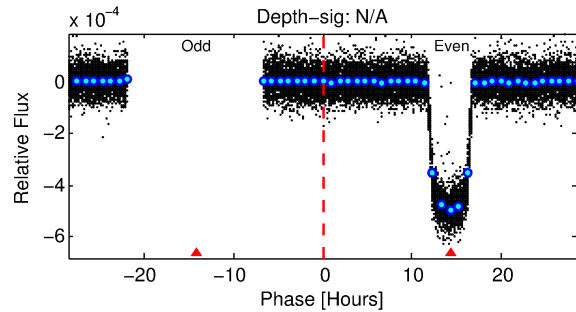
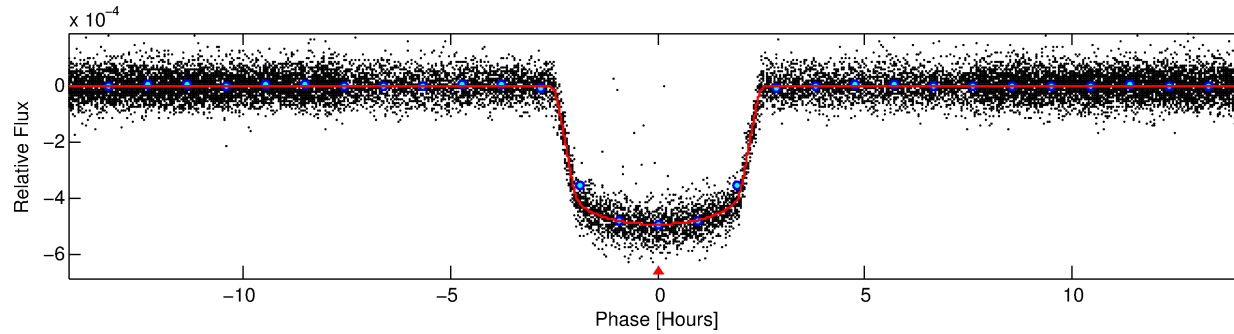
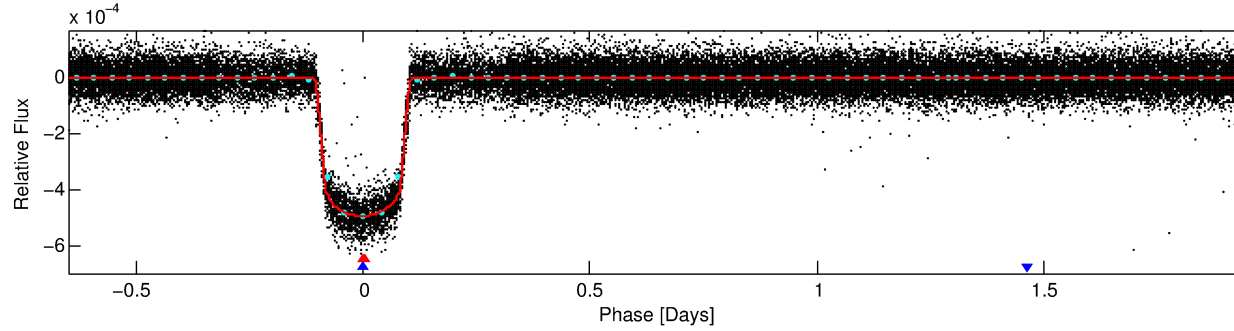
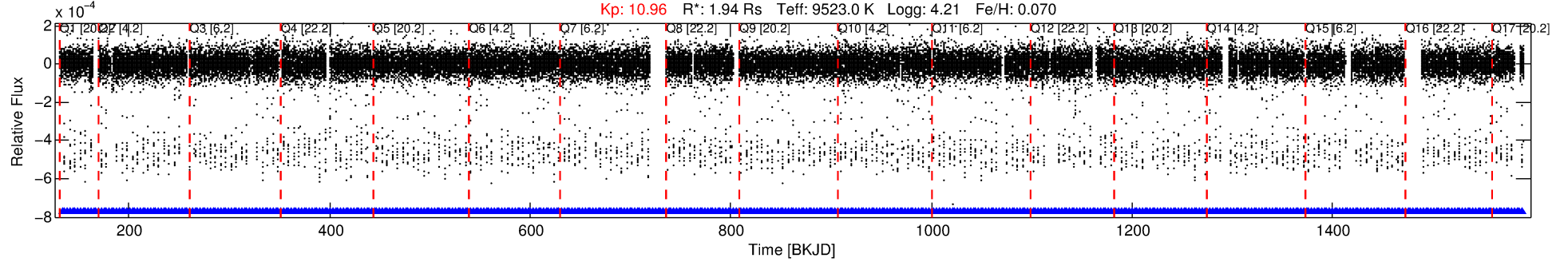
Ephemeris Match Information For 006889235-02

No Significant Match Found

DV One-Page Summary

KIC: 6889235 Candidate: 2 of 2 Period: 2.594 d
KOI: K00074 Corr: No Ephemeris Match

Kp: 10.96 R*: 1.94 Rs Teff: 9523.0 K Logg: 4.21 Fe/H: 0.070



DV Fit Results:

Period = 2.59433 [0.00000] d
Epoch = 133.6635 [0.0001] BKJD
Rp/R* = 0.0222 [0.0002]
a/R* = 2.91 [0.14]
b = 0.78 [0.03]
Seff = 12003.43 [5632.42]
Teff = 2669 [313] K
Rp = 4.70 [1.92] Re
a = 0.0481 [0.0155] AU
Ag = 0.15 [0.08] [-10.28σ]
Teffp = 2549 [260] K [-0.30σ]

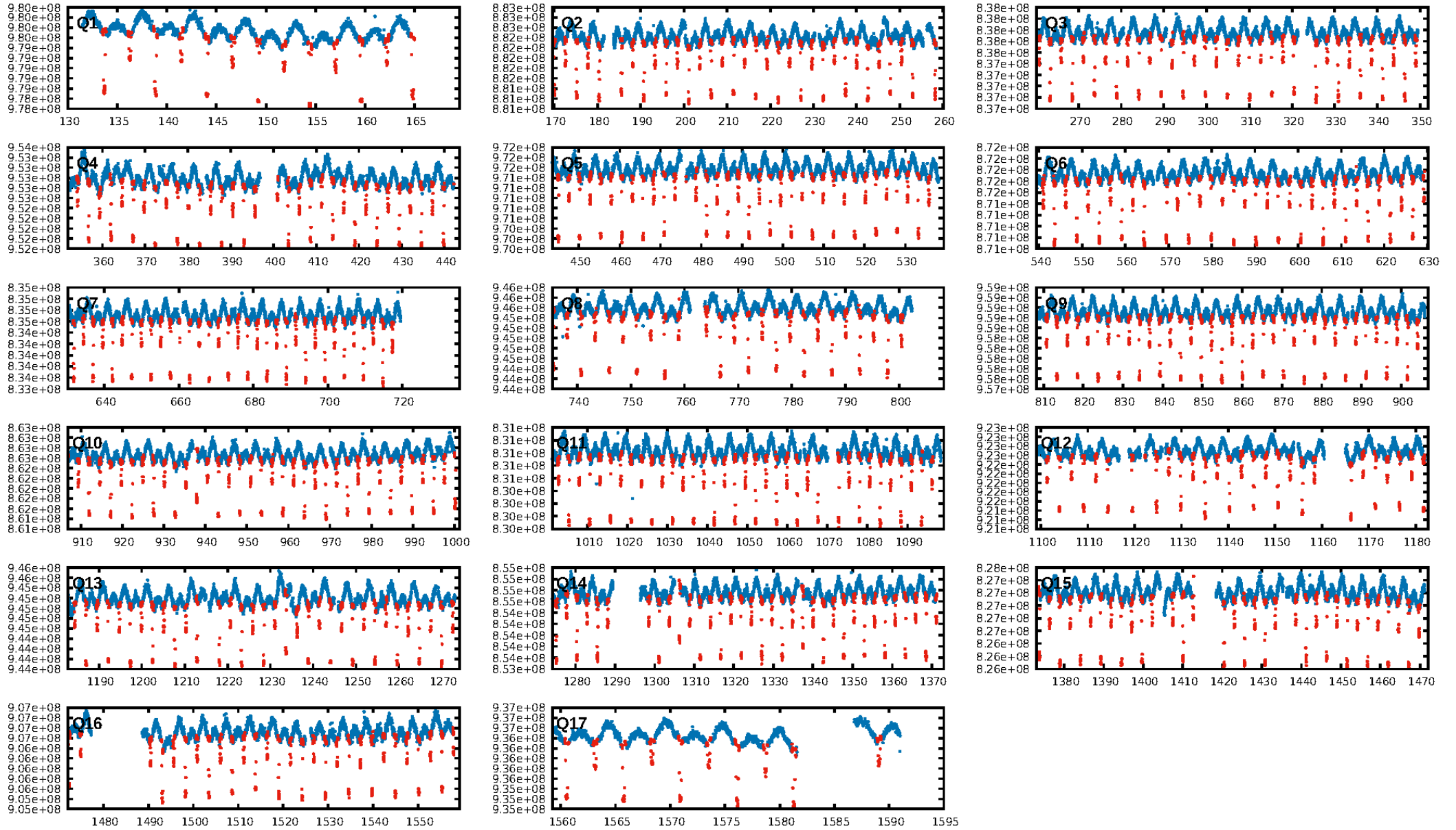
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [9.08σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [249/249]
GhostDiagnostic-chr: 21.05
Centroid-sig: 0.0%
Centroid-so: 0.382 arcsec [8.03σ]
OotOffset-rm: 1.209 arcsec [1.87σ]
KicOffset-rm: 1.533 arcsec [2.61σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
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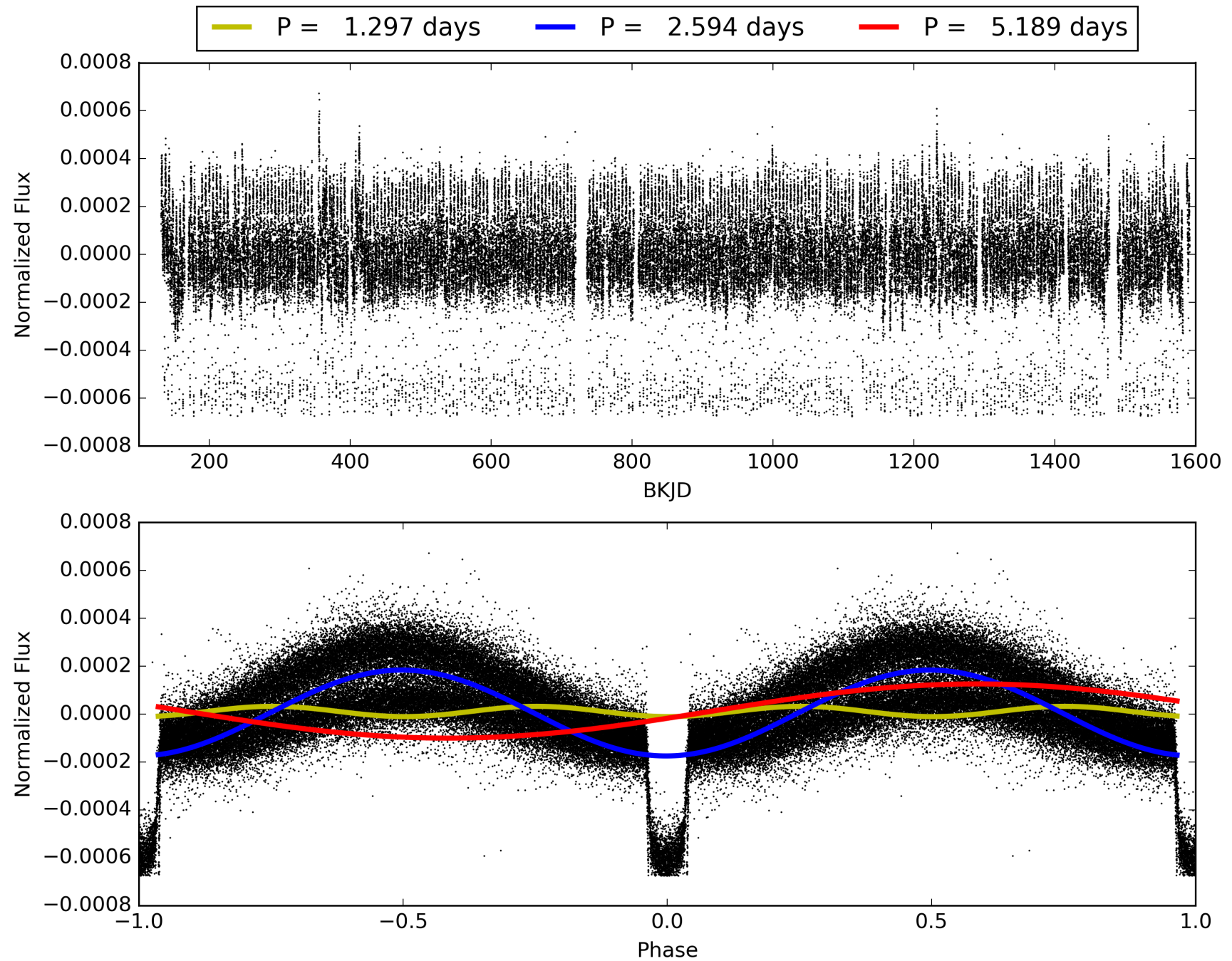
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:41:50 Z

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

TCE 006889235-02, PDC Light Curves

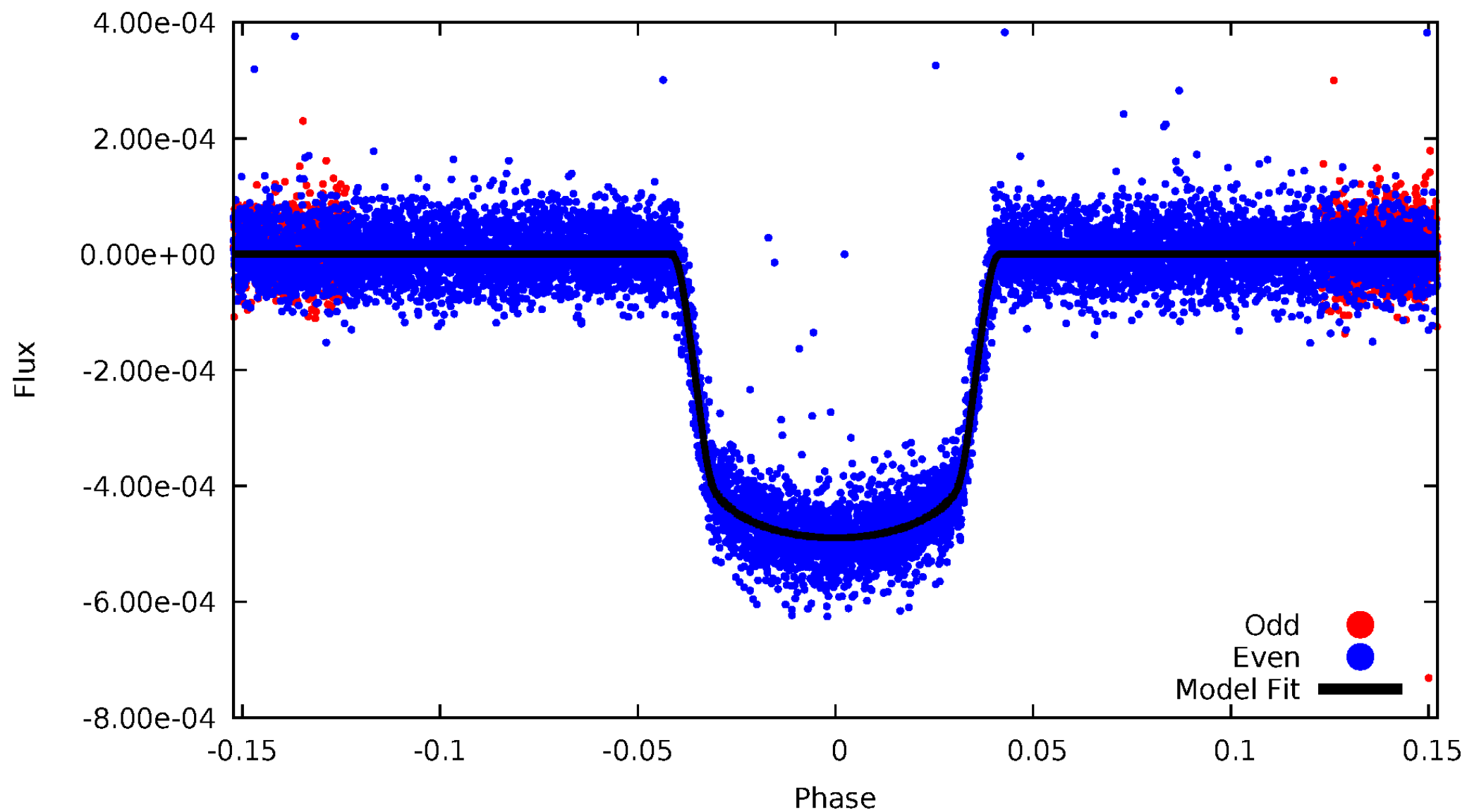


TCE 006889235-02



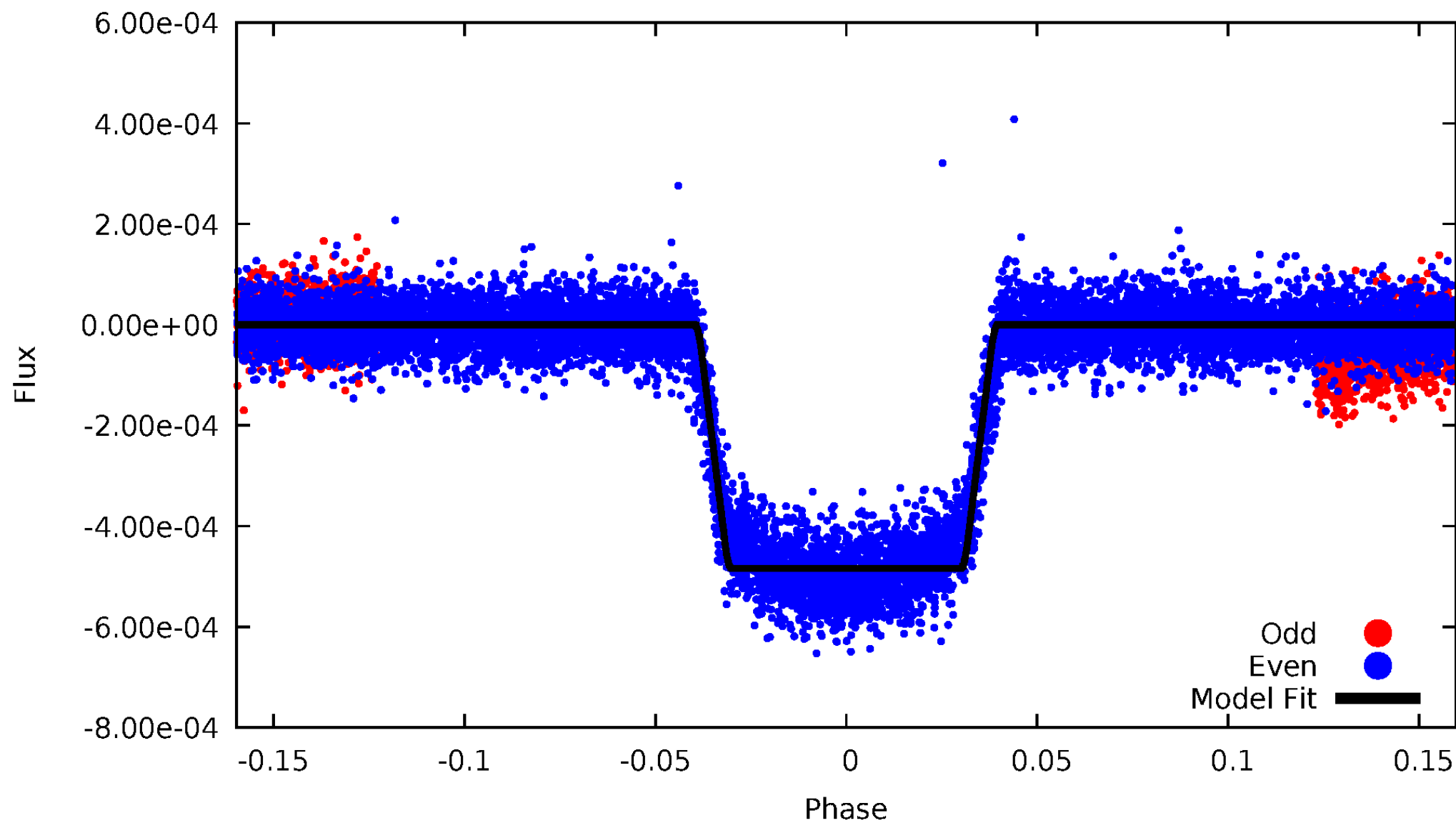
DV Odd/Even

TCE 006889235-02



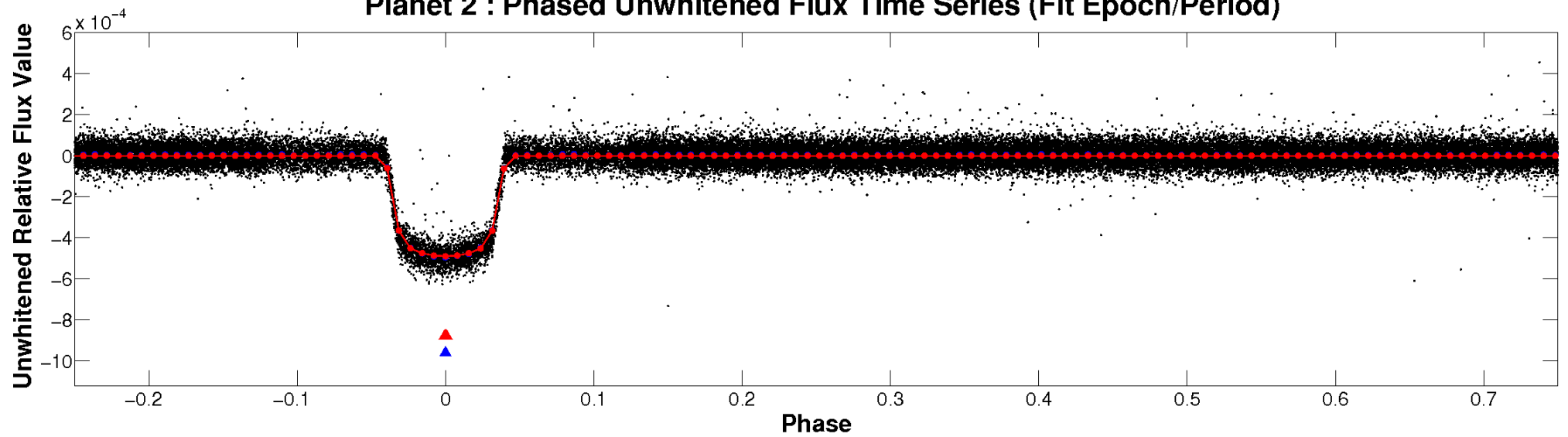
ALT Odd/Even

TCE 006889235-02

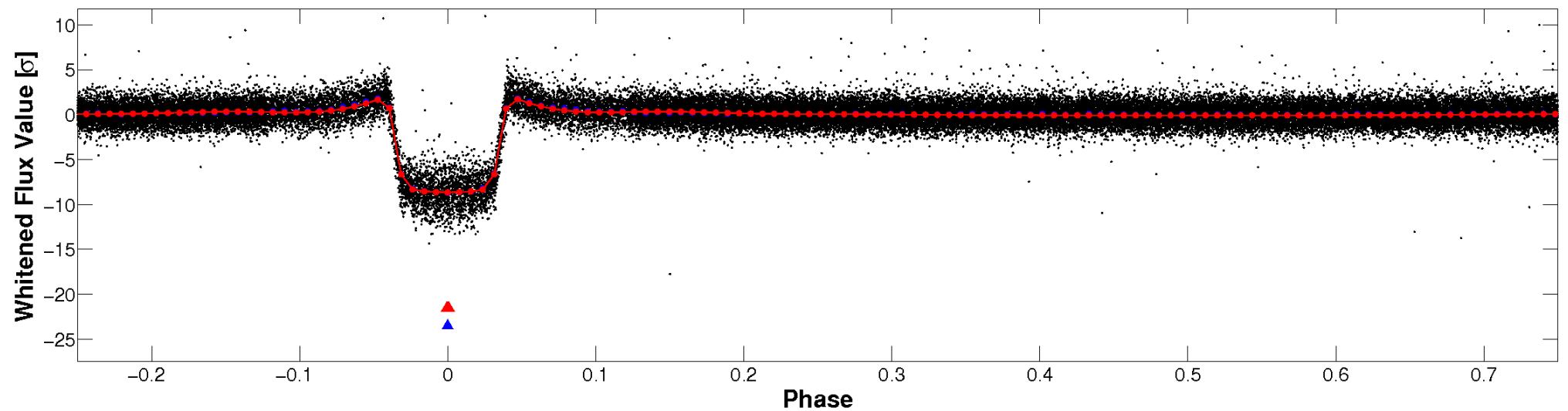


Non-Whitened Vs. Whitened Light Curve

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

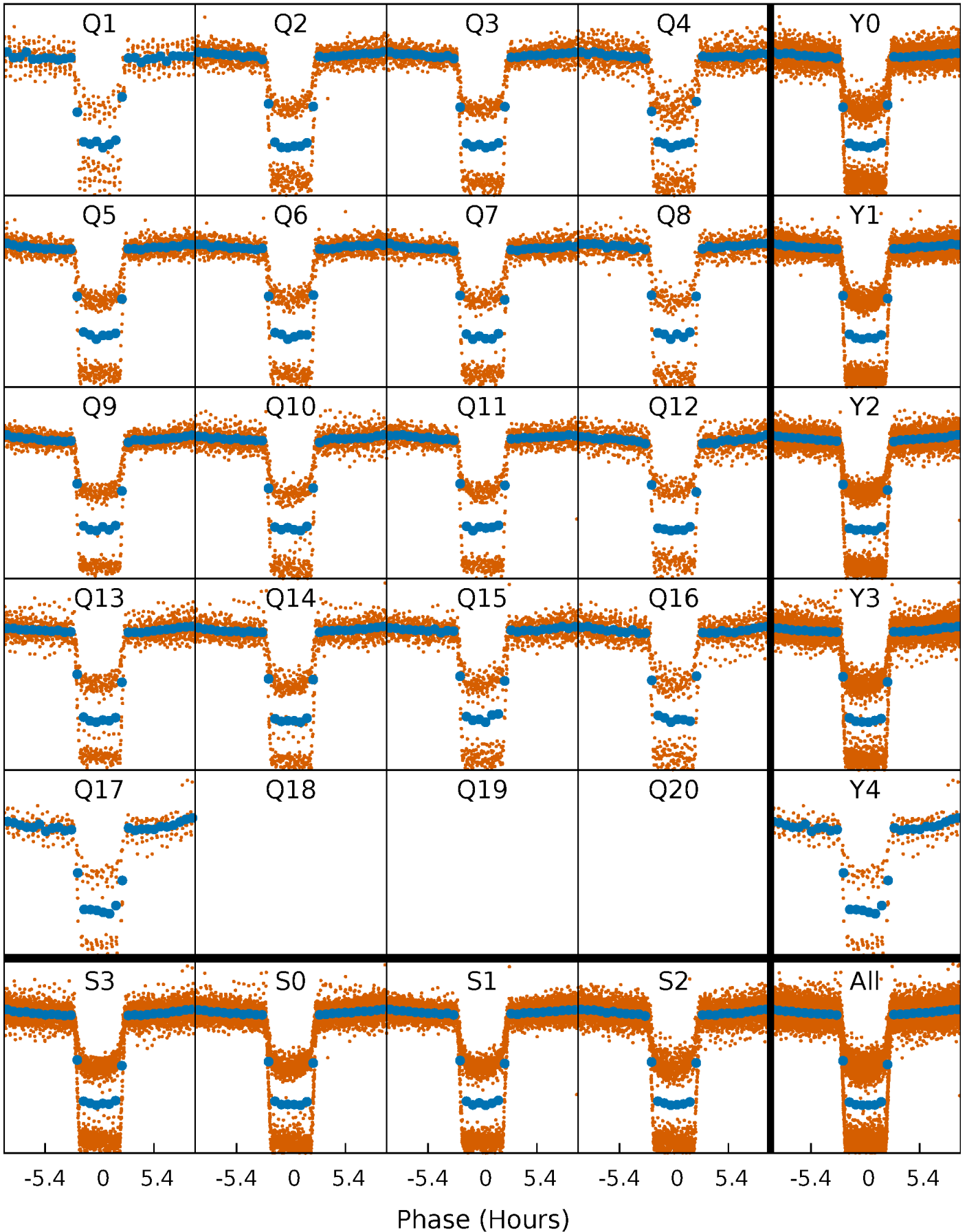


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



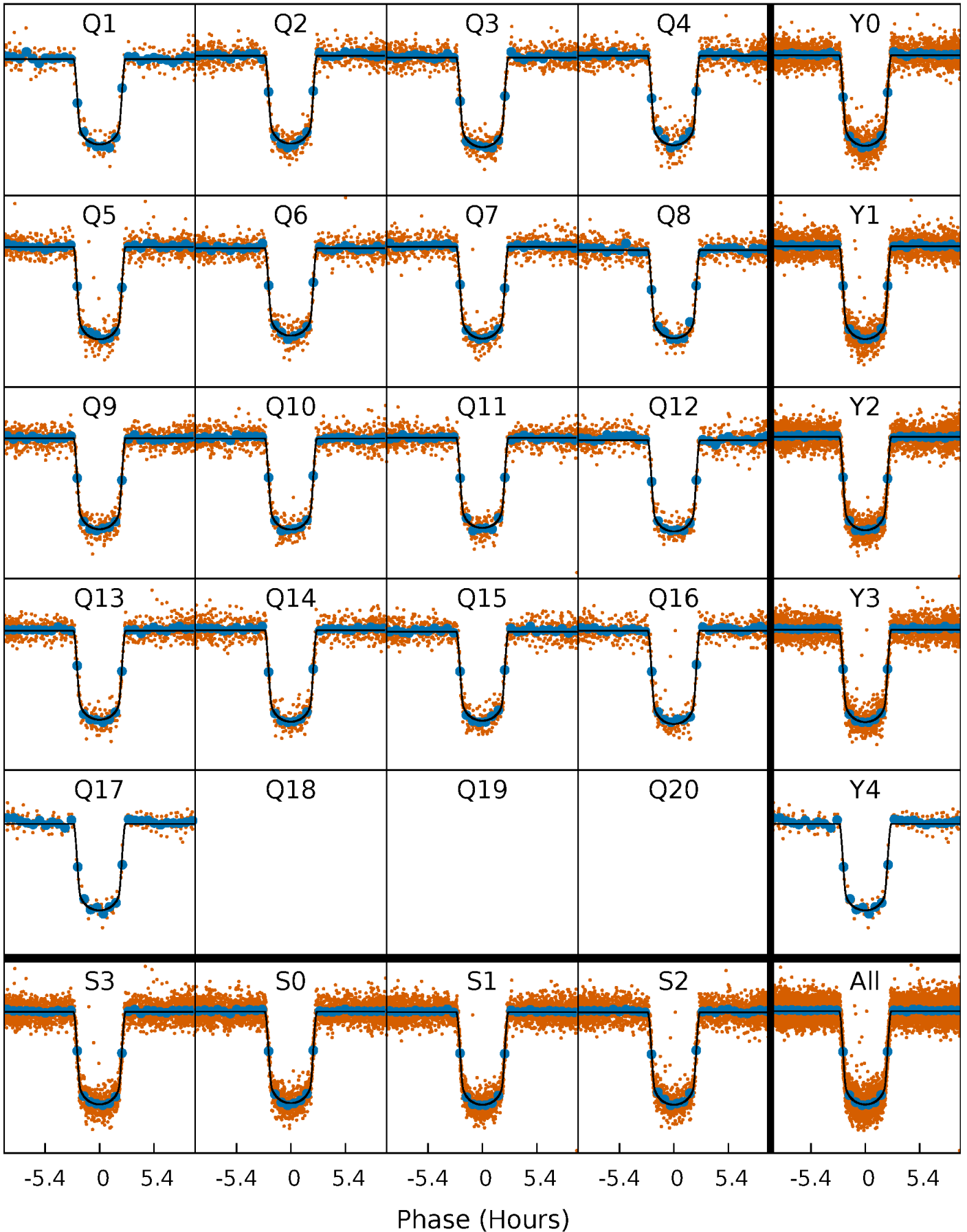
PDC Quarter-Phased Transit Curves

TCE 006889235-02 P= 2.594333 Days $T_0=133.663511$ (BKJD)



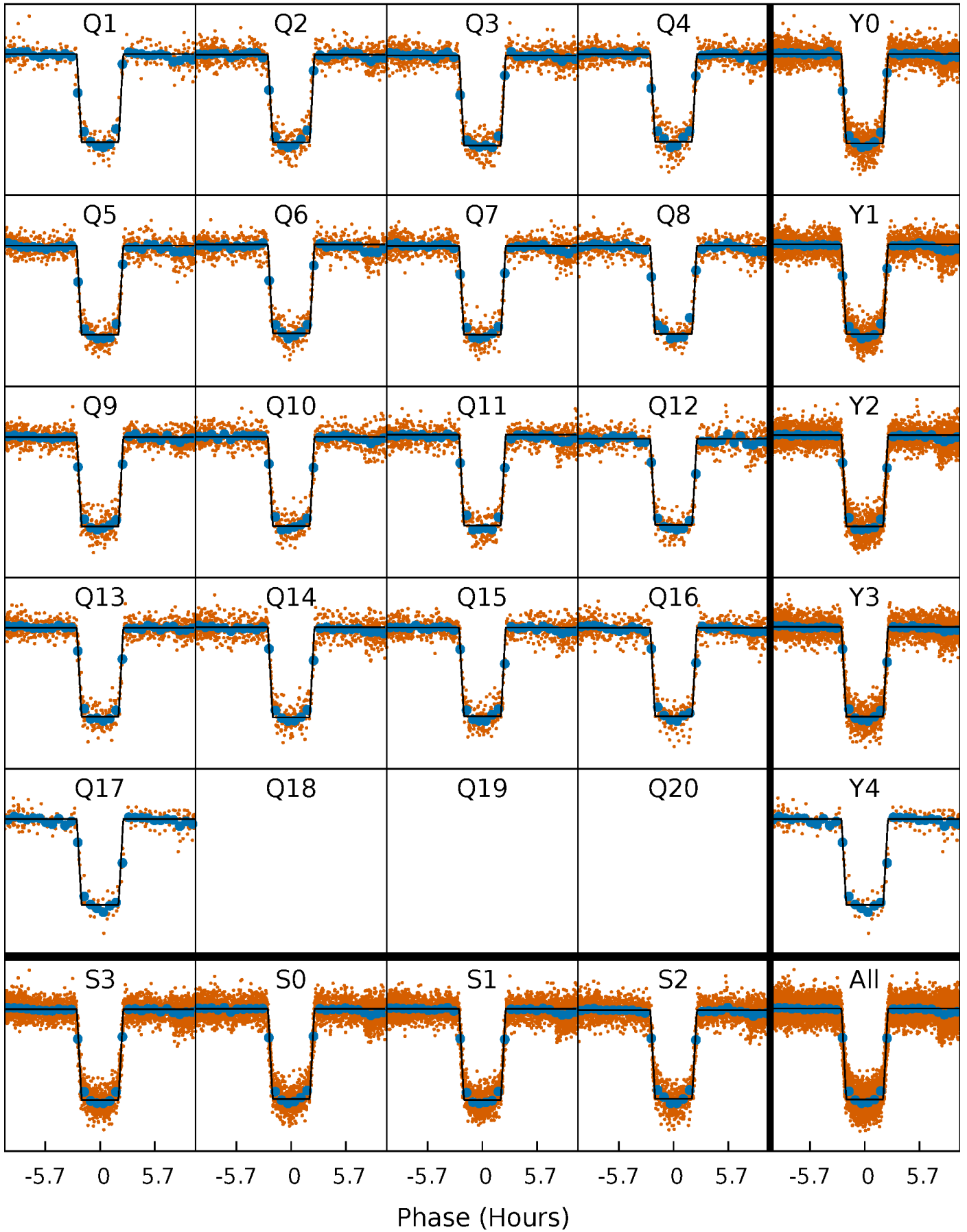
DV Quarter-Phased Transit Curves

TCE 006889235-02 P= 2.594333 Days $T_0=133.663511$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

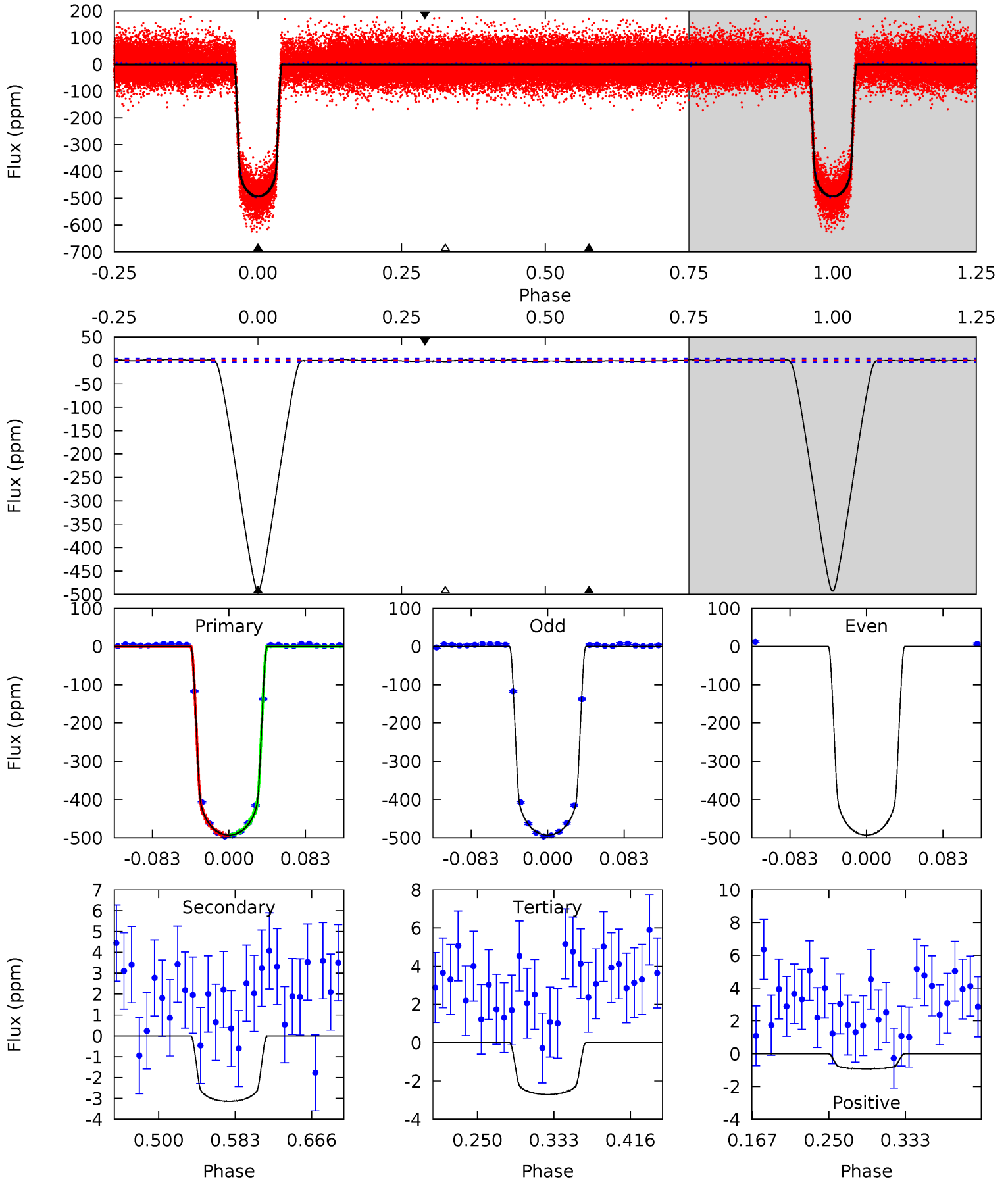
TCE 006889235-02 P= 2.594321 Days $T_0=133.666856$ (BKJD)



DV Model-Shift Uniqueness Test

006889235-02, P = 2.594333 Days, E = 131.069178 Days

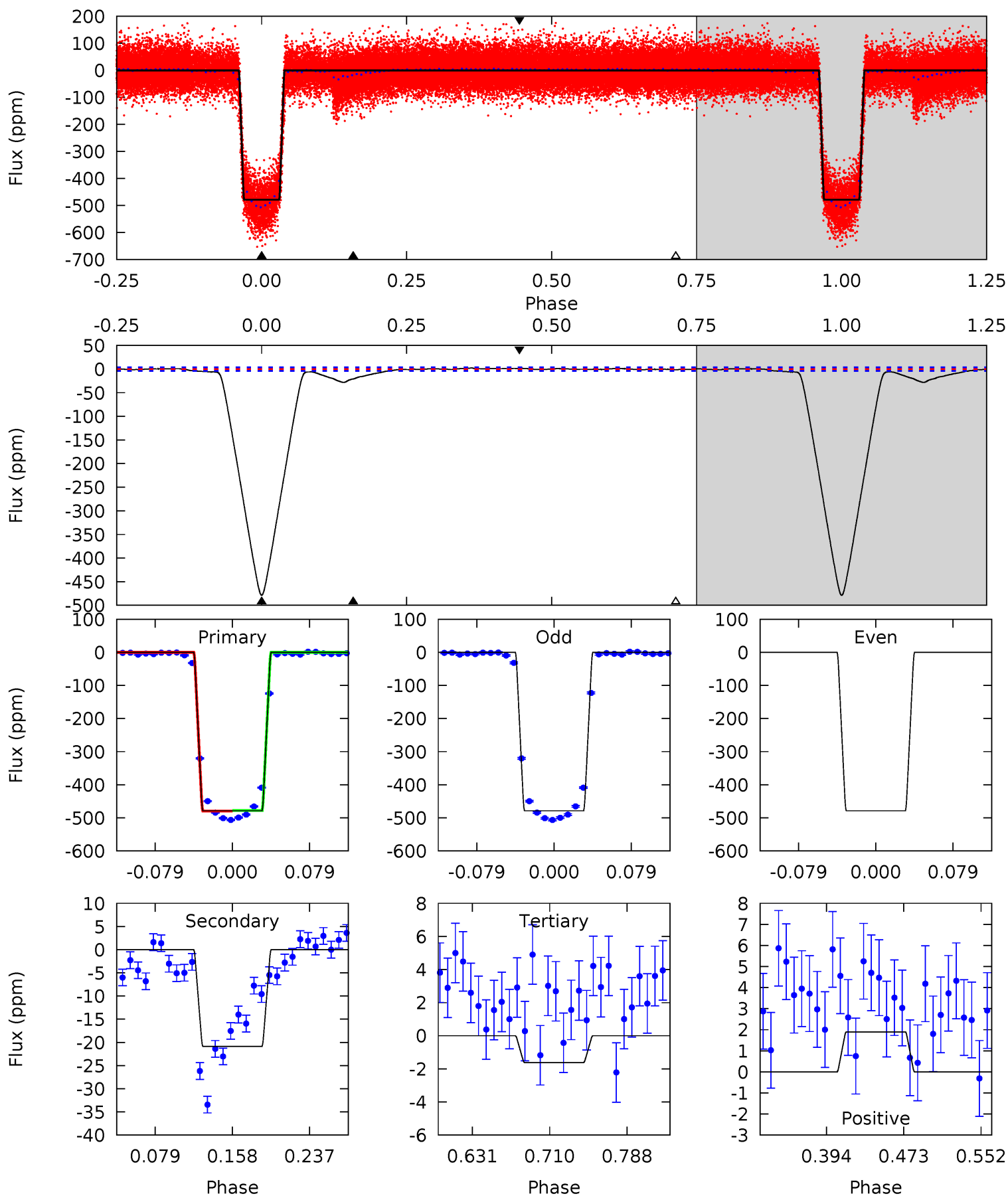
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
596.0	3.80	3.27	-1.12	4.60	1.73	1.41	592.7	597.1	0.53	4.92	0	0.99	0.00	1.41



Alt Model-Shift Uniqueness Test

006889235-02, P = 2.594321 Days, E = 131.072535 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
583.7	25.4	1.98	2.31	4.61	1.76	1.54	581.7	581.4	23.5	23.1	0	1.00	0.00	0.93



Stellar Parameters For KIC 006889235

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9523^{+302}_{-416}	$4.205^{+0.136}_{-0.221}$	$0.070^{+0.150}_{-0.650}$	$1.941^{+0.795}_{-0.428}$	$2.202^{+0.450}_{-0.550}$	$0.424^{+0.310}_{-0.237}$
	+3%/-4%	+3%/-5%	+214%/-929%	+41%/-22%	+20%/-25%	+73%/-56%
Source	KIC0	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 006889235-02 / KOI 0074.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3 ± 1	$4.71^{+1.03}_{-0.59}$	3761^{+340}_{-254}	-3001^{+388}_{-320}	$0.168^{+0.075}_{-0.060}$
Alt.	-21 ± 1	$4.69^{+0.95}_{-0.58}$	3754^{+362}_{-267}	4050^{+106}_{-137}	$1.181^{+0.305}_{-0.328}$

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

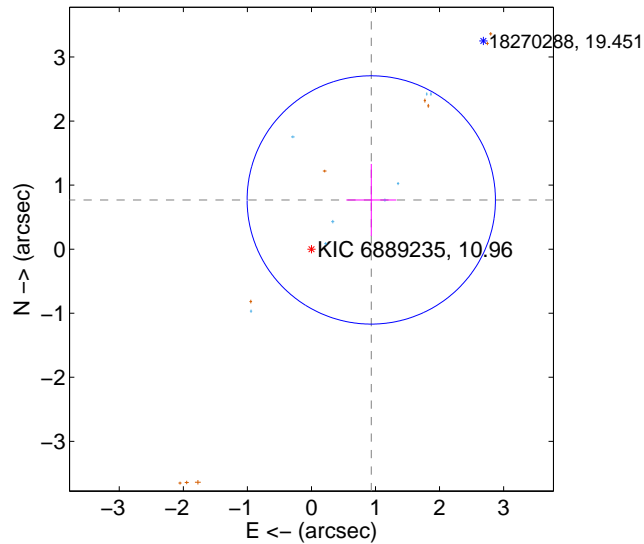
Supplemental centroid analysis for 006889235-02. **Kepler magnitude: 10.96.** Transit SNR 385.68

There are 8 quarters with good PRF difference image offsets

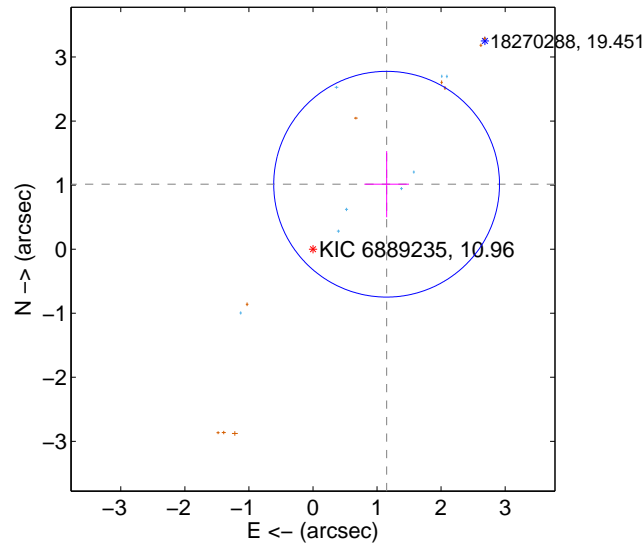
The direct PRF centroid is offset from the target star catalog position by about 0.94 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.209 ± 0.646	1.87	-0.934 ± 0.390	0.768 ± 0.563
PRF-fit source offset from KIC position	1.533 ± 0.587	2.61	-1.150 ± 0.349	1.014 ± 0.517
photometric centroid source offset	0.38 ± 0.05	8.03	-0.19 ± 0.05	0.33 ± 0.05

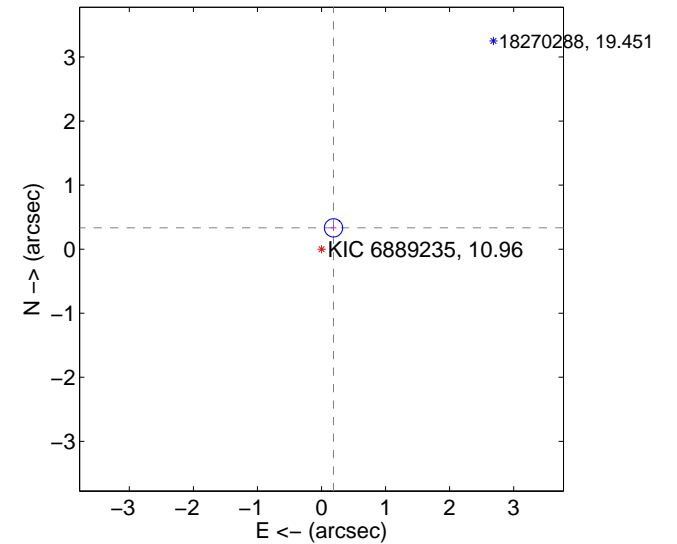
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

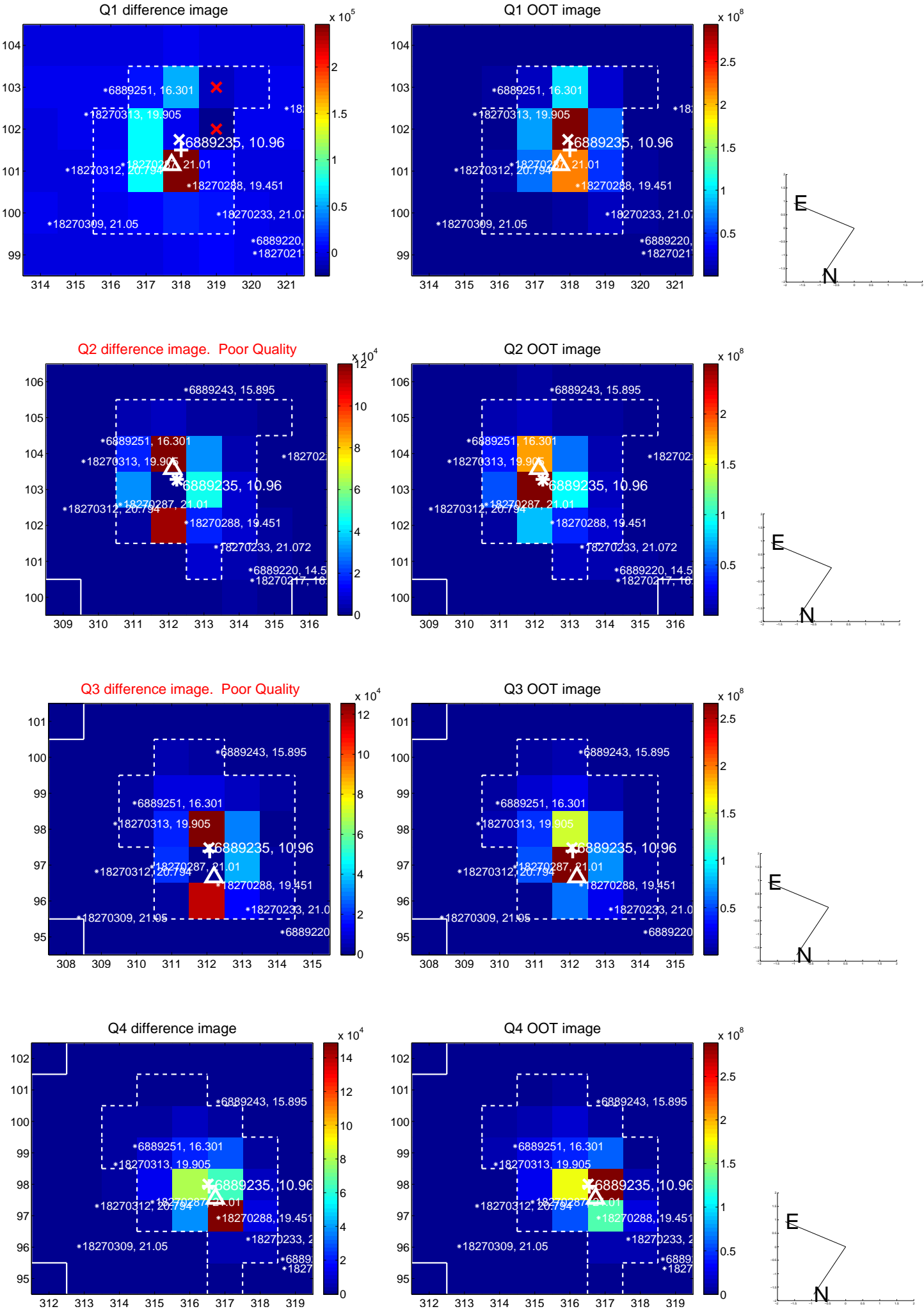


offset from photometric centroids

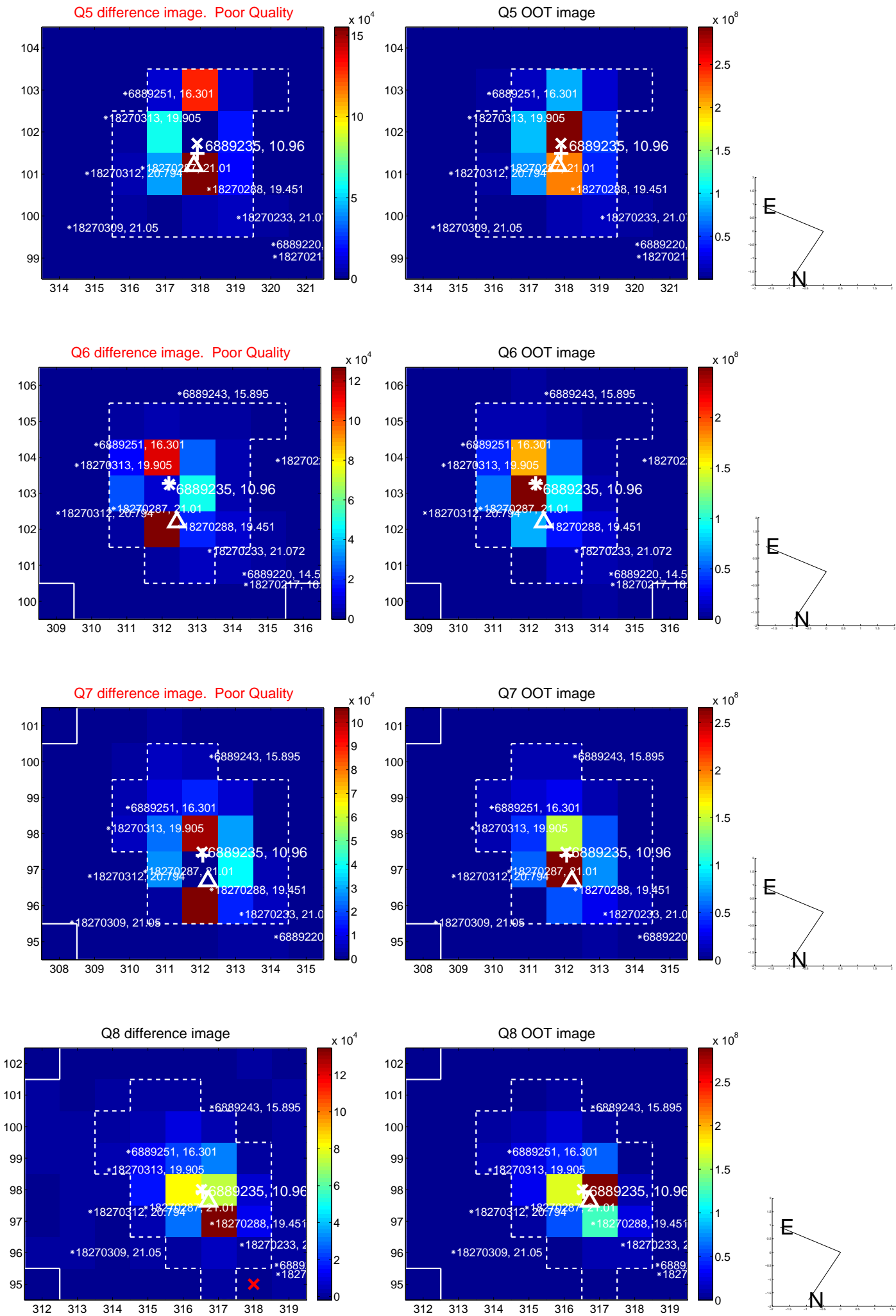


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

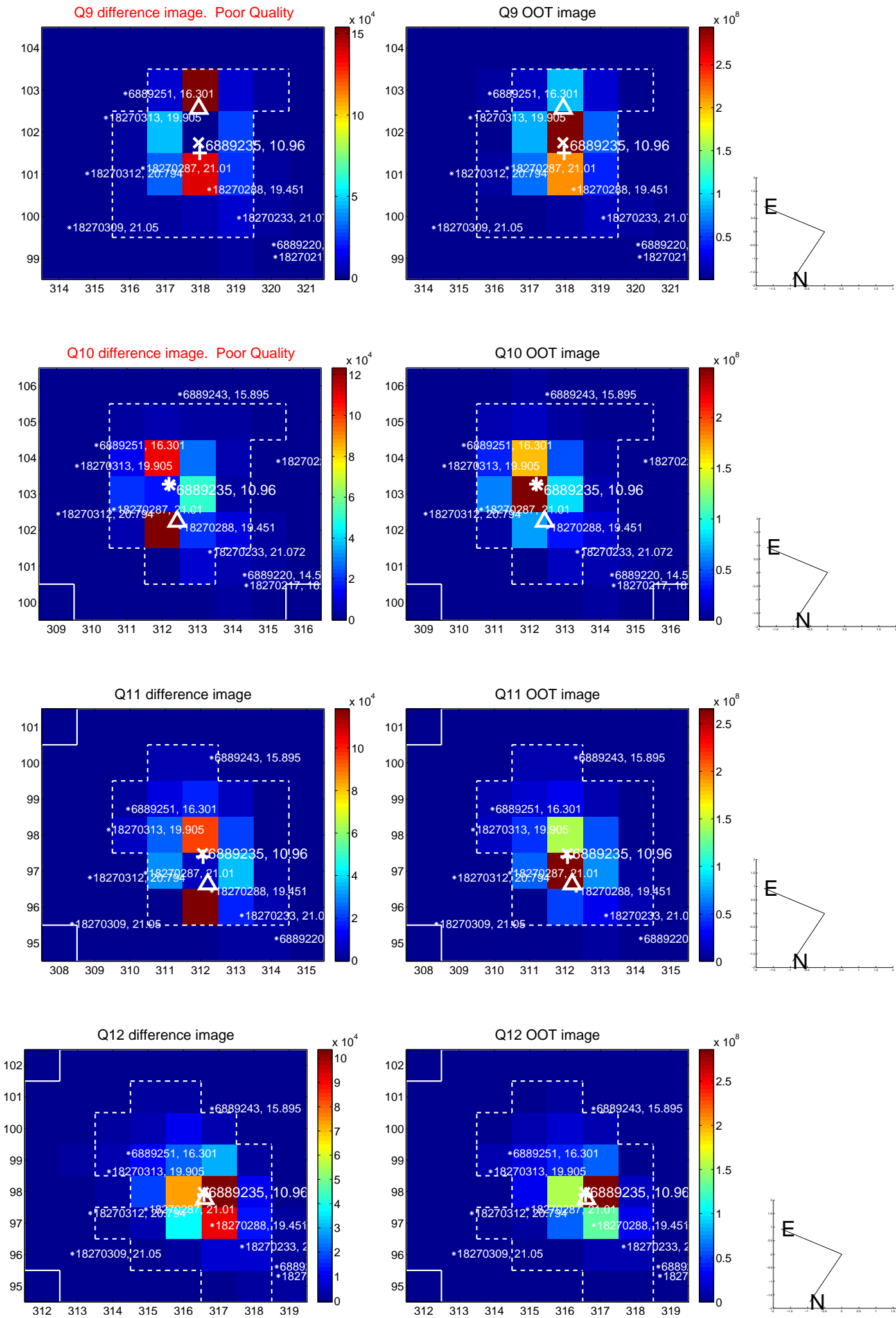
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



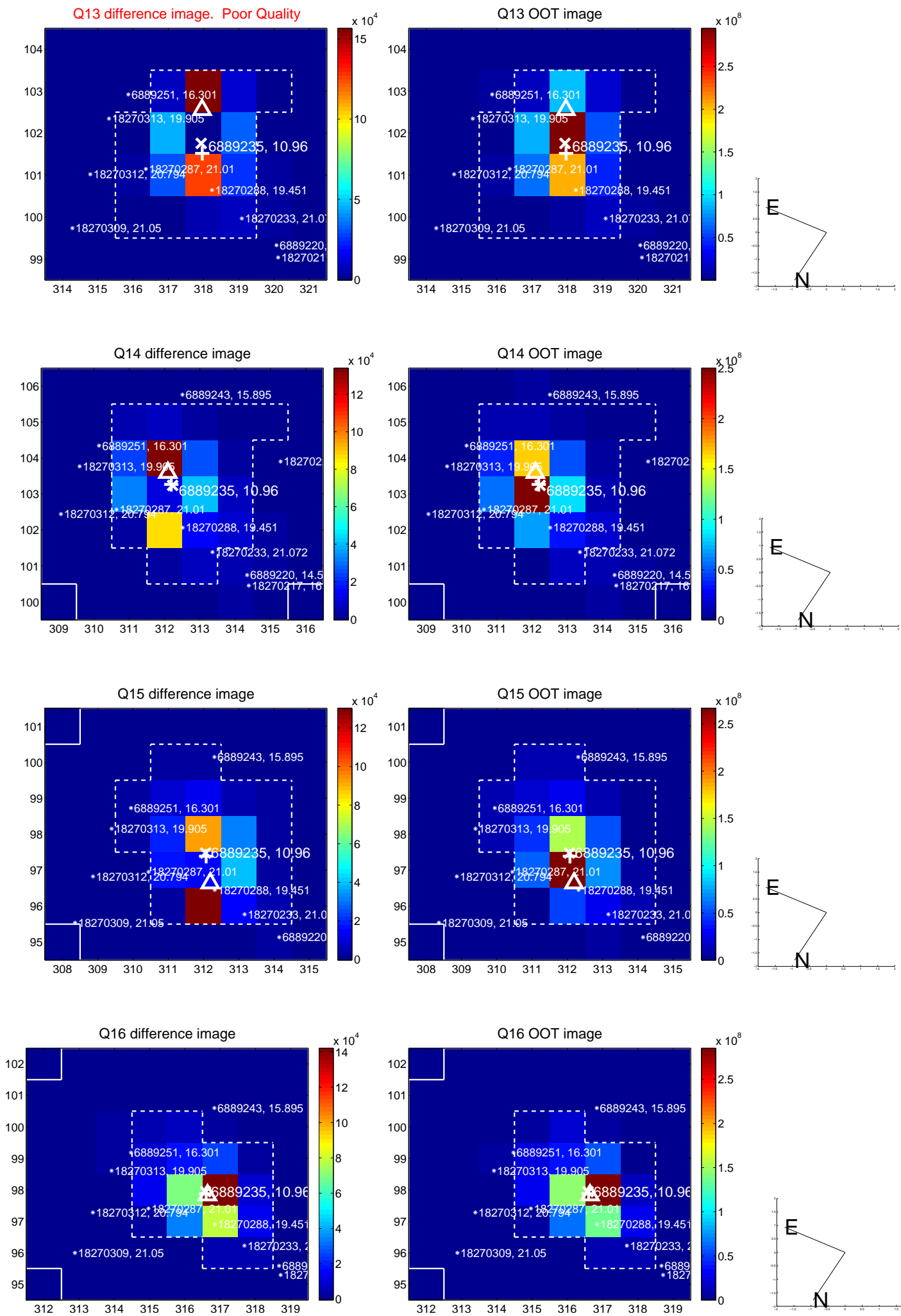
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



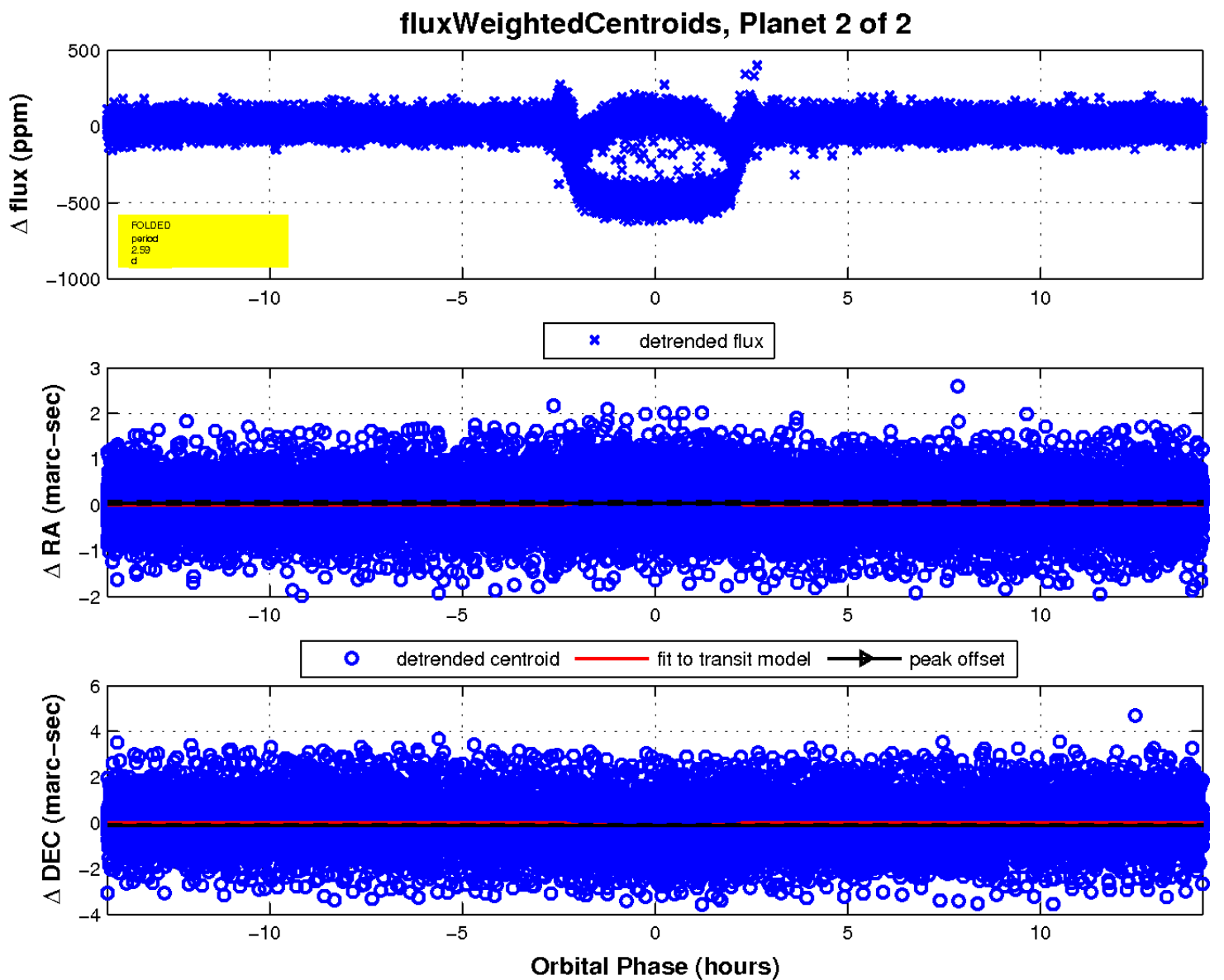
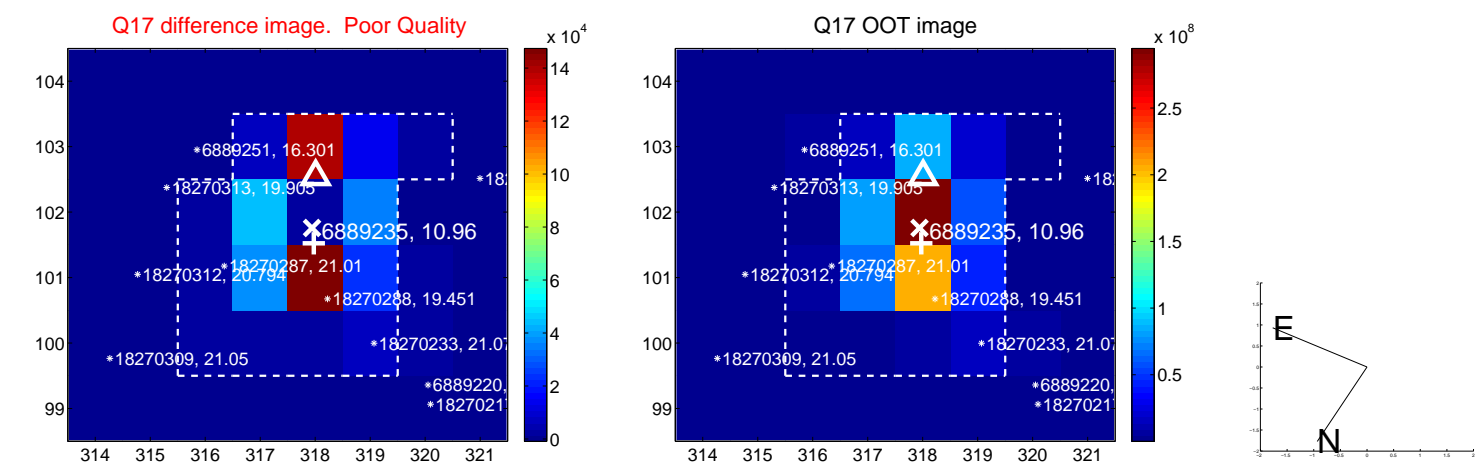
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Declination

