

KIC 008701099

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})
008701099-01	OBS	No	5.773148	135.188295	28.1	24.701	13.0	5.3	1.80	7280	1.11	1472.45
008701099-02	OBS	No	5.773461	131.994252	134.6	42.127	7.9	18.7	1.80	7280	2.59	1472.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008701099-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008701099-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

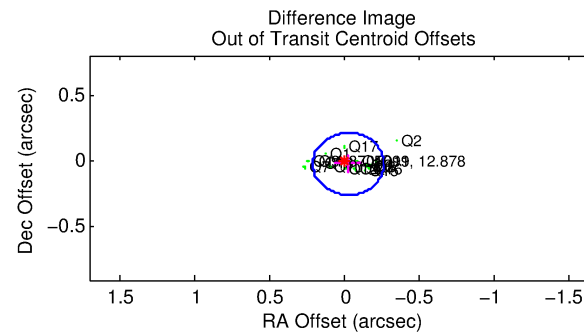
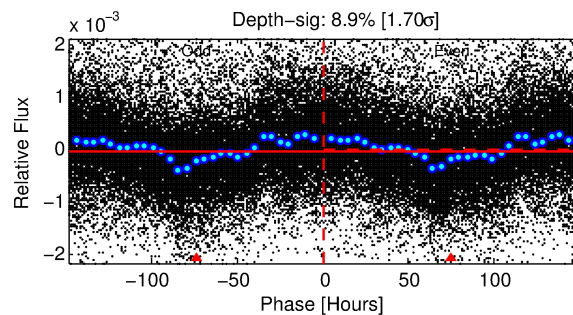
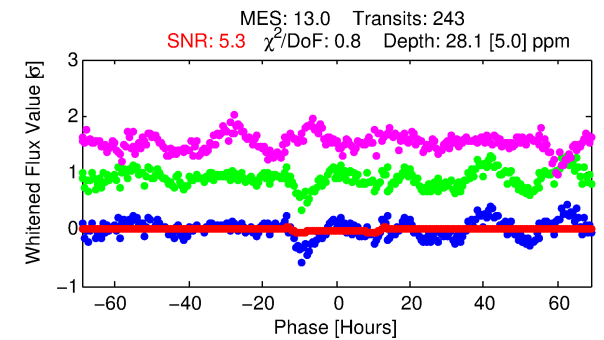
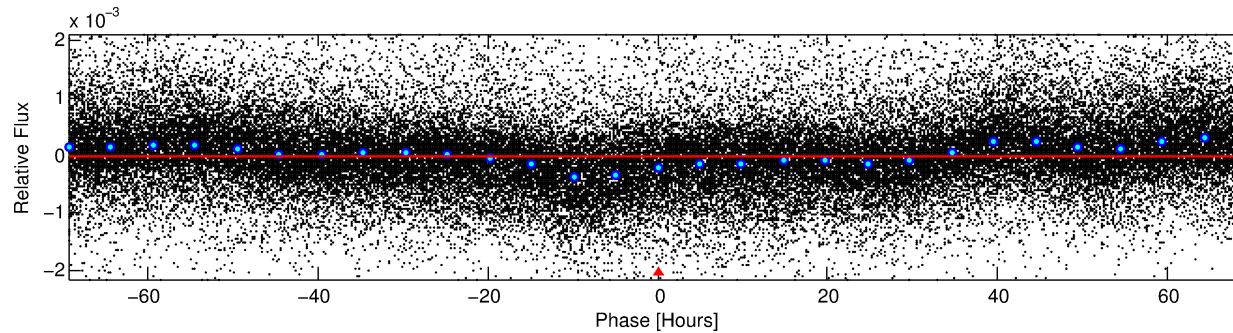
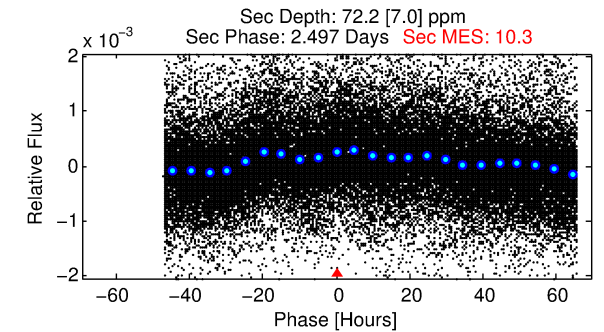
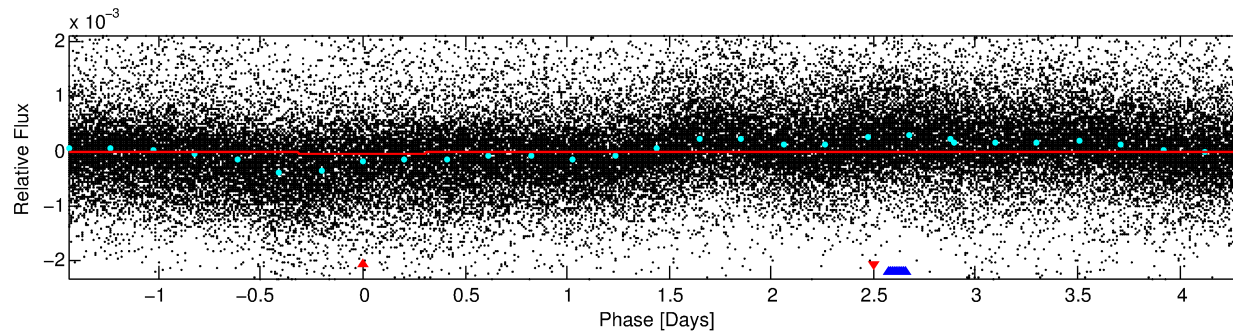
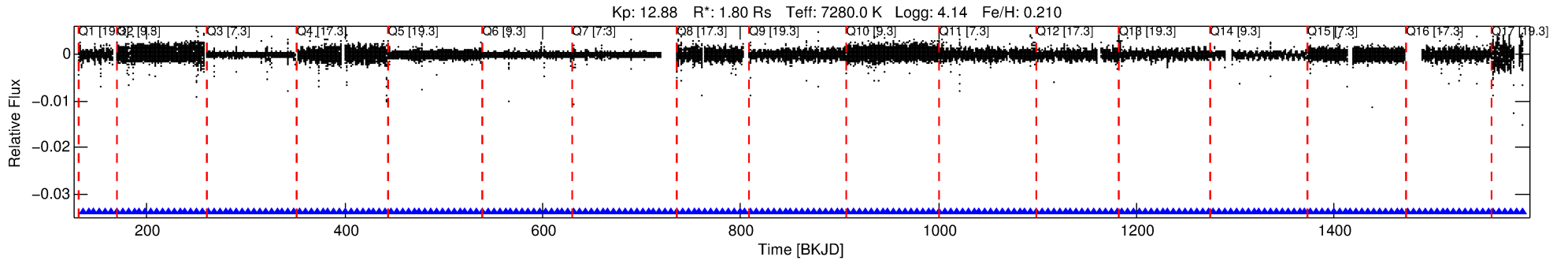
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008701099-01

No Significant Match Found

DV One-Page Summary

KIC: 8701099 Candidate: 1 of 2 Period: 5.773 d



DV Fit Results:

Period = 5.77315 [0.00026] d
Epoch = 135.1883 [0.0340] BKJD
Rp/R* = 0.0056 [0.0011]
a/R* = 1.23 [0.46]
b = 0.90 [0.23]
Seff = 1472.45 [587.67]
Teq = 1580 [158] K
Rp = 1.11 [0.42] Re
a = 0.0745 [0.0190] AU
Ag = 178.68 [97.94] [1.81σ]
Teffp = 8929 [1010] K [7.19σ]

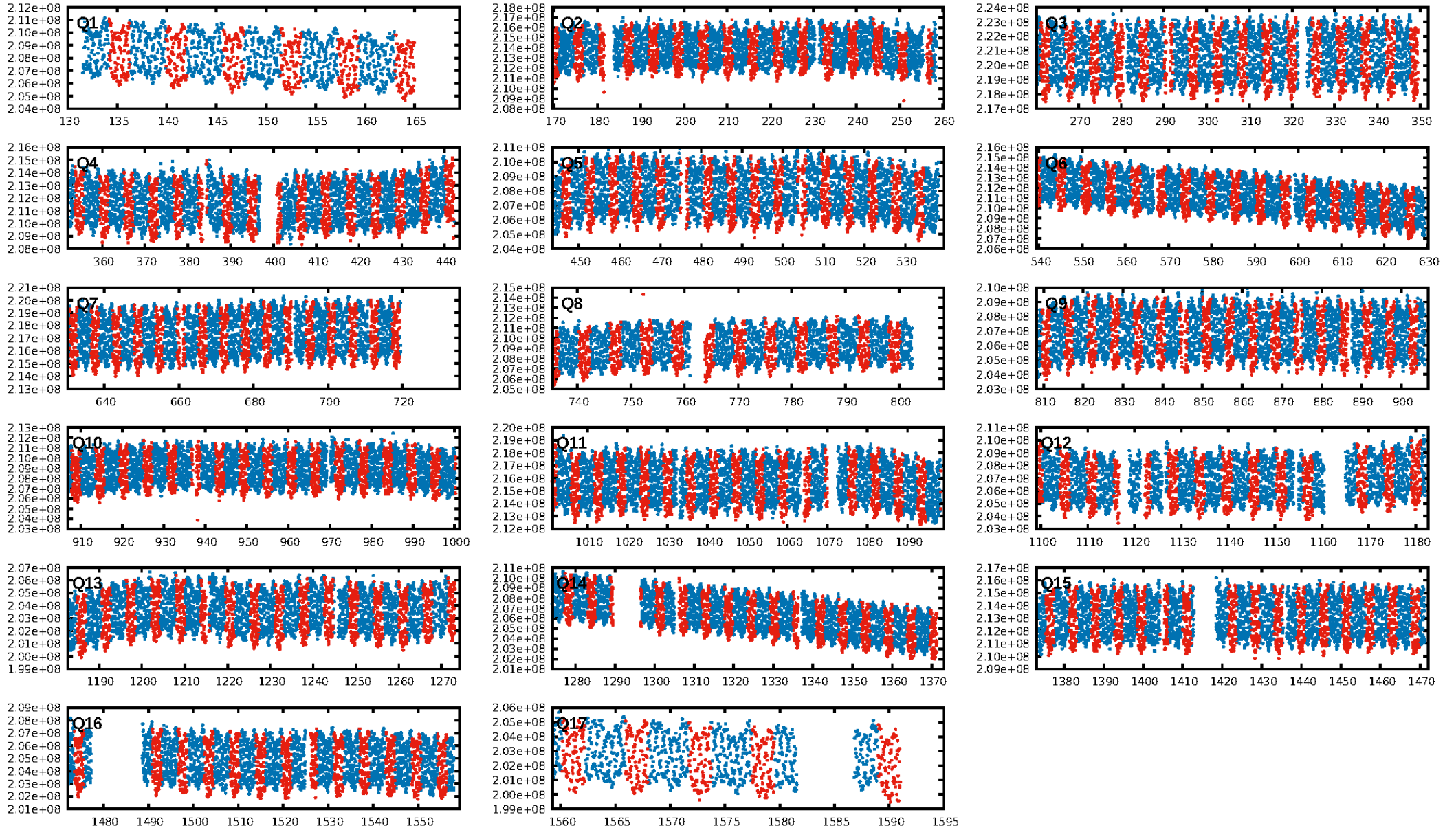
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [232/232]
GhostDiagnostic-chr: 0.8898
Centroid-sig: 0.0%
Centroid-so: 1.907 arcsec [3.76σ]
OotOffset-rm: 0.038 arcsec [0.49σ]
KicOffset-rm: 0.148 arcsec [1.89σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

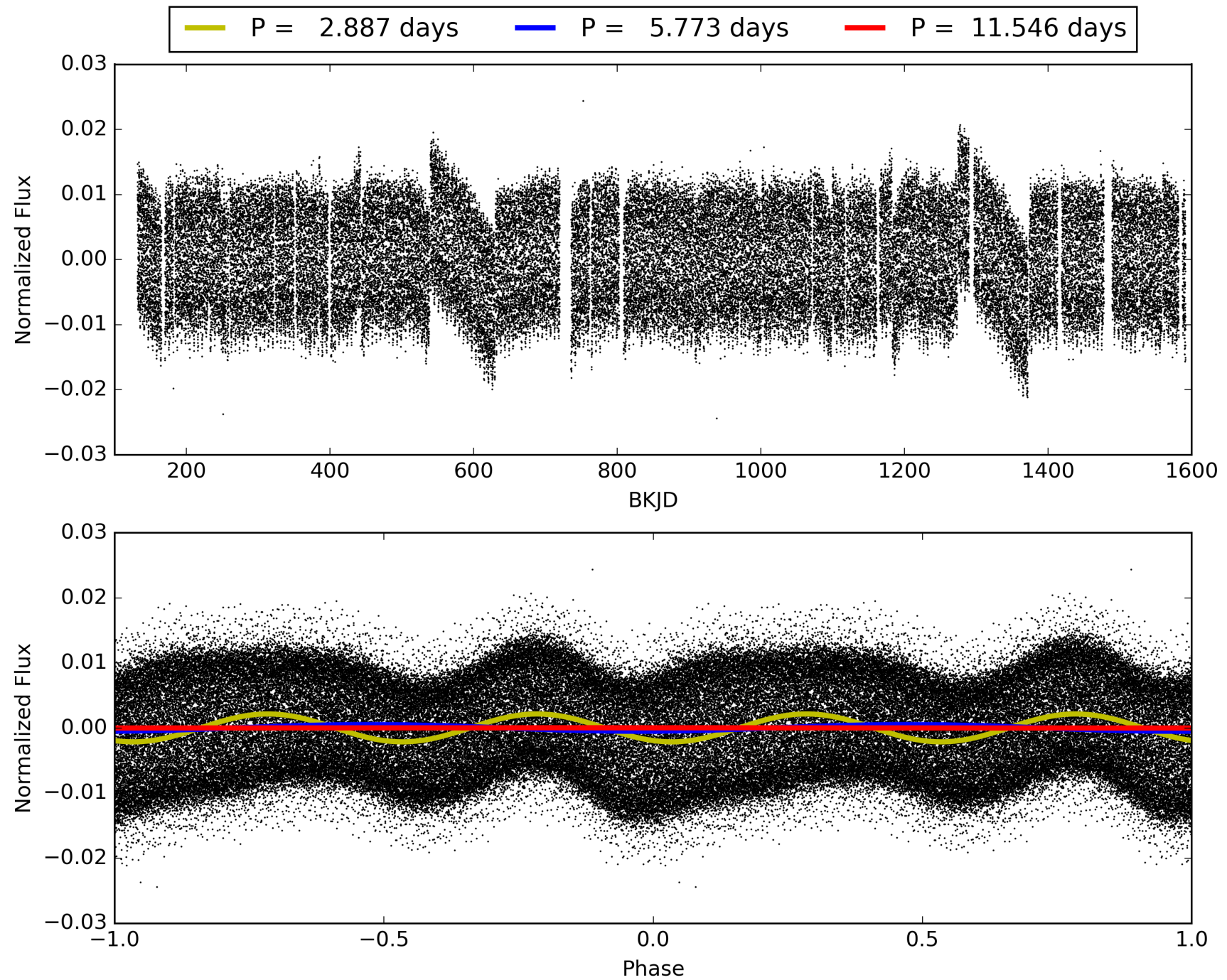
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:54:07 Z

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

TCE 008701099-01, PDC Light Curves

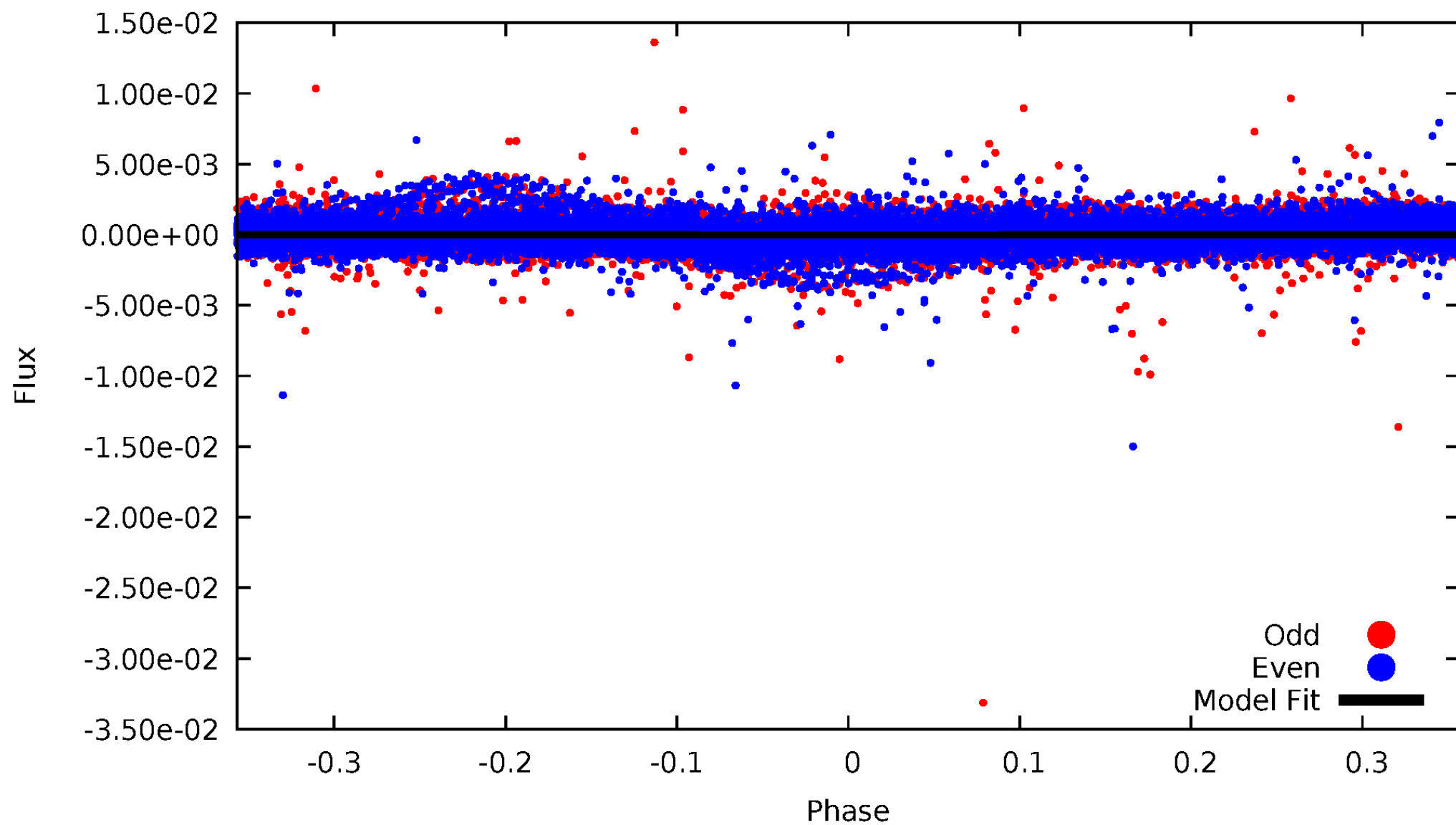


TCE 008701099-01



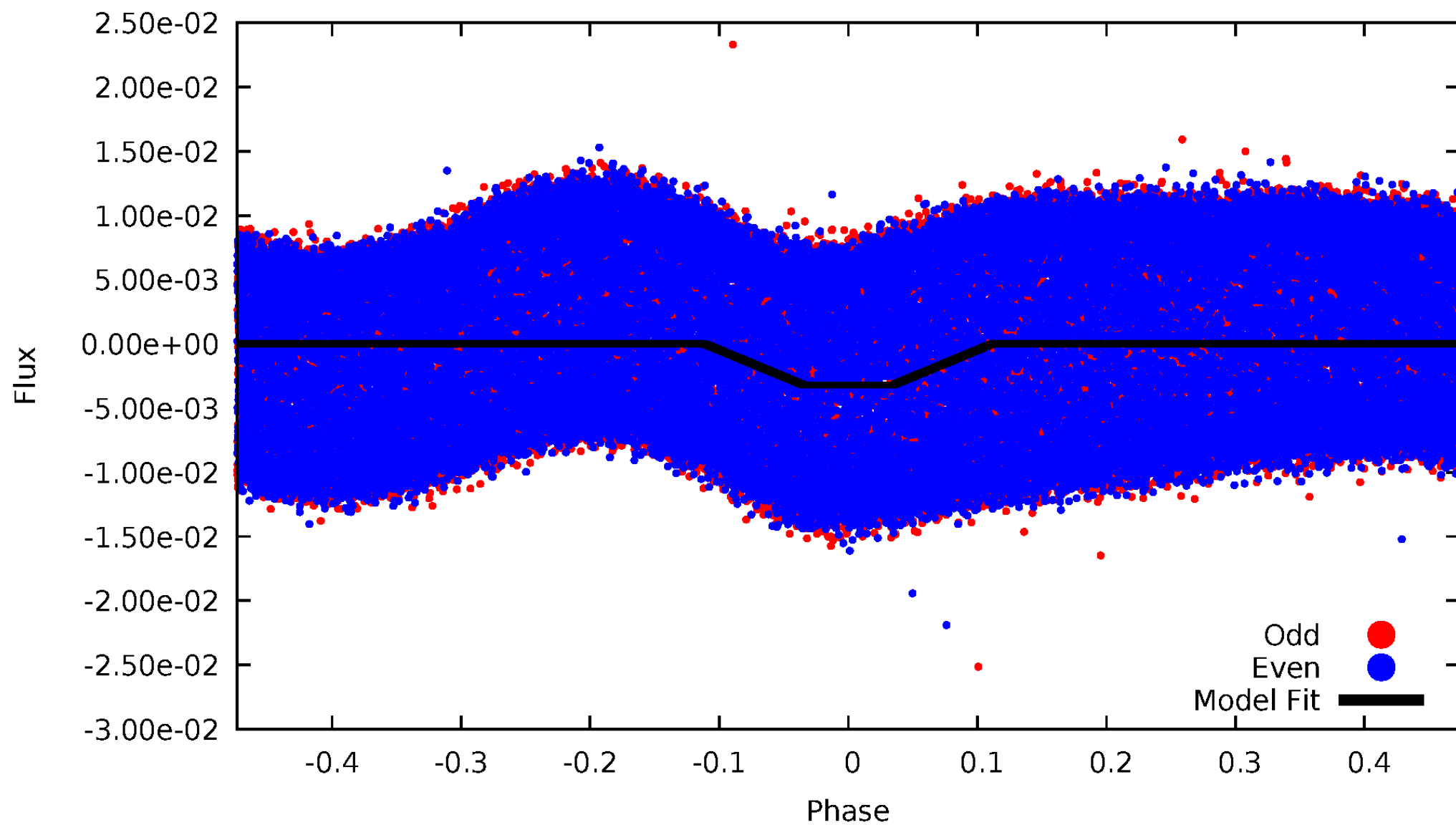
DV Odd/Even

TCE 008701099-01



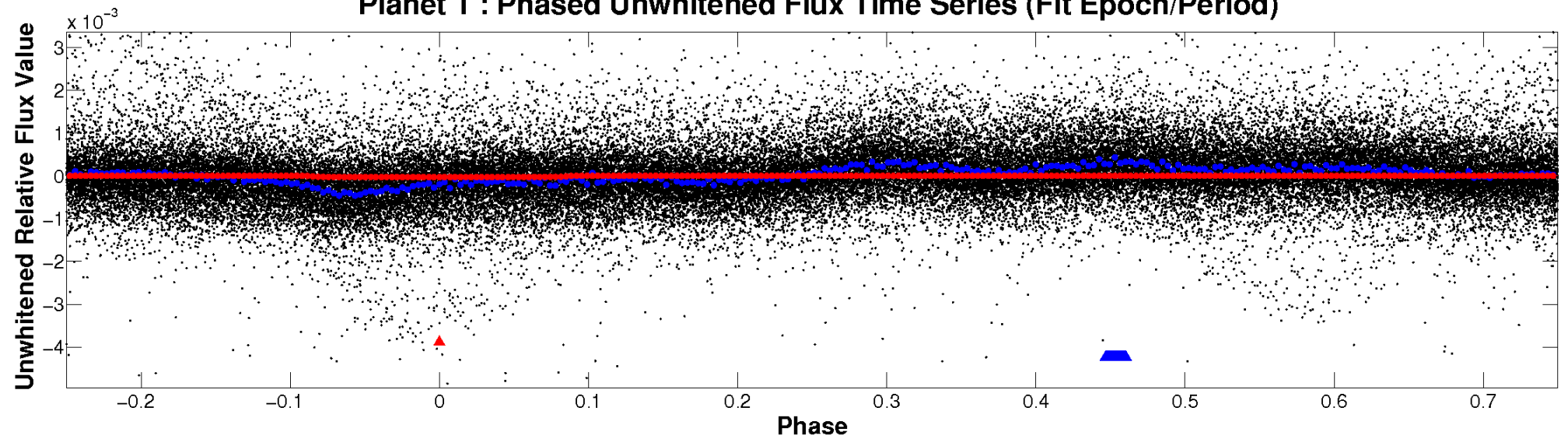
ALT Odd/Even

TCE 008701099-01

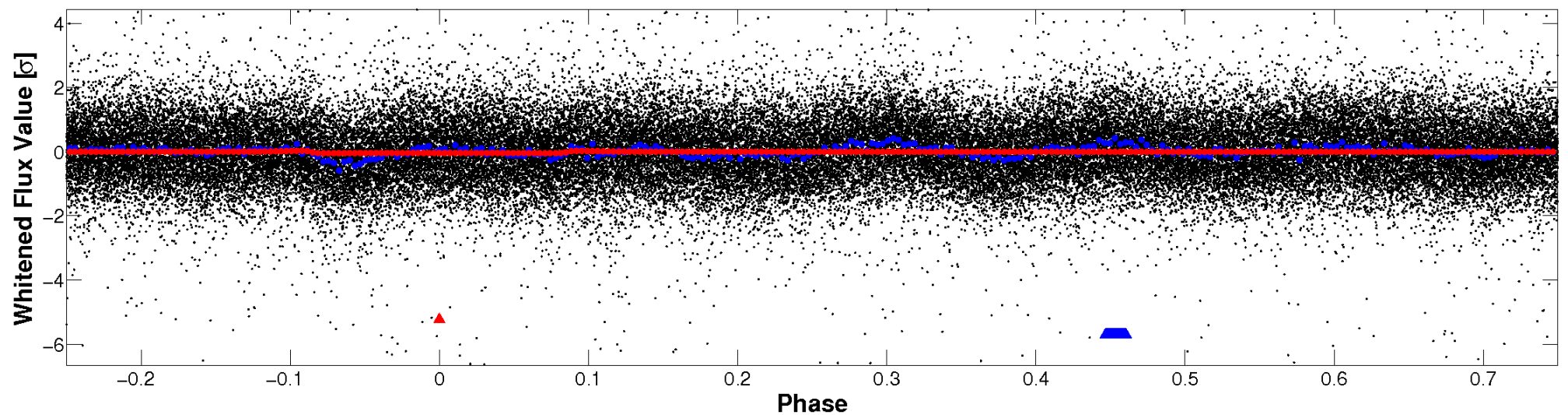


Non-Whitened Vs. Whitened Light Curve

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

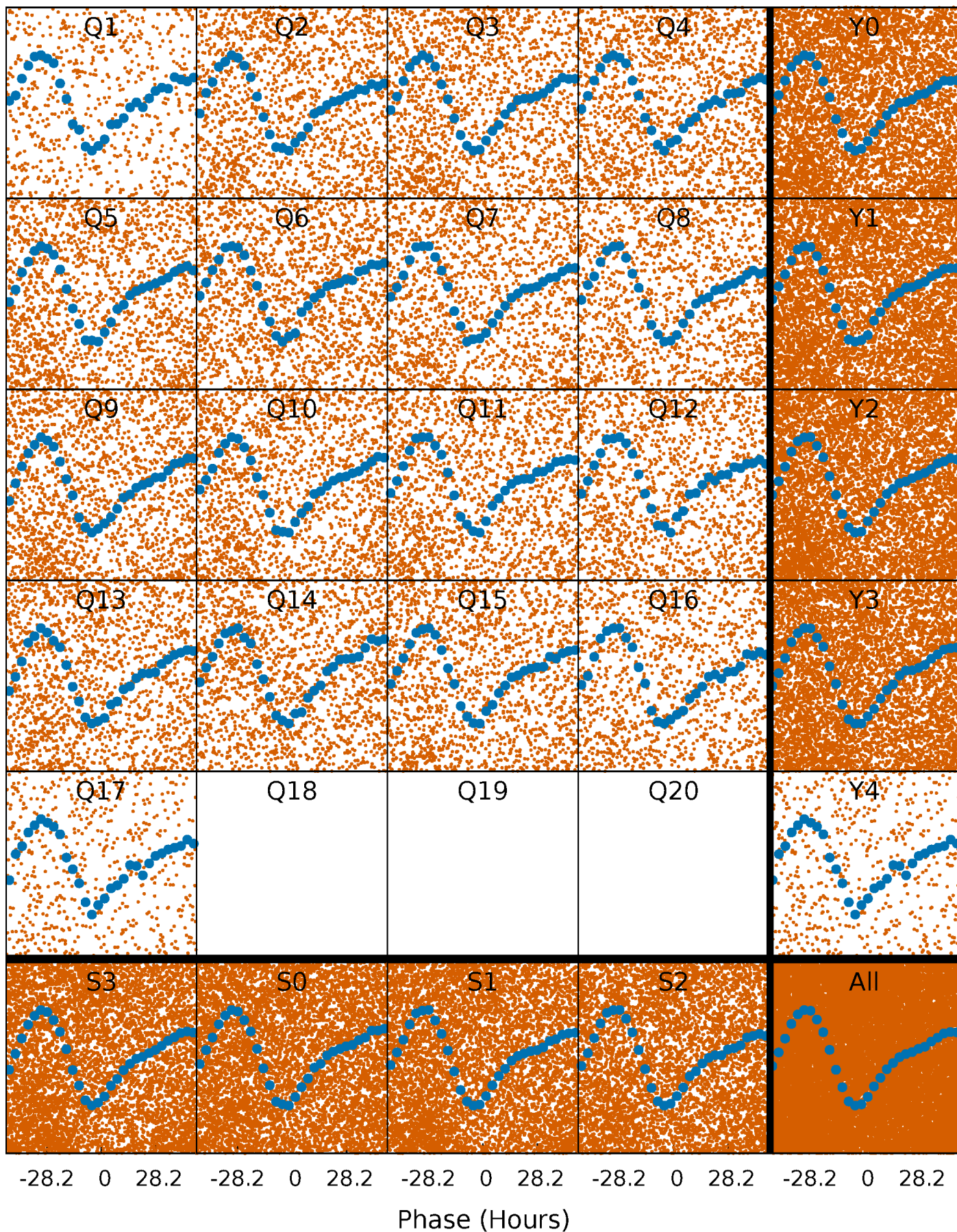


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



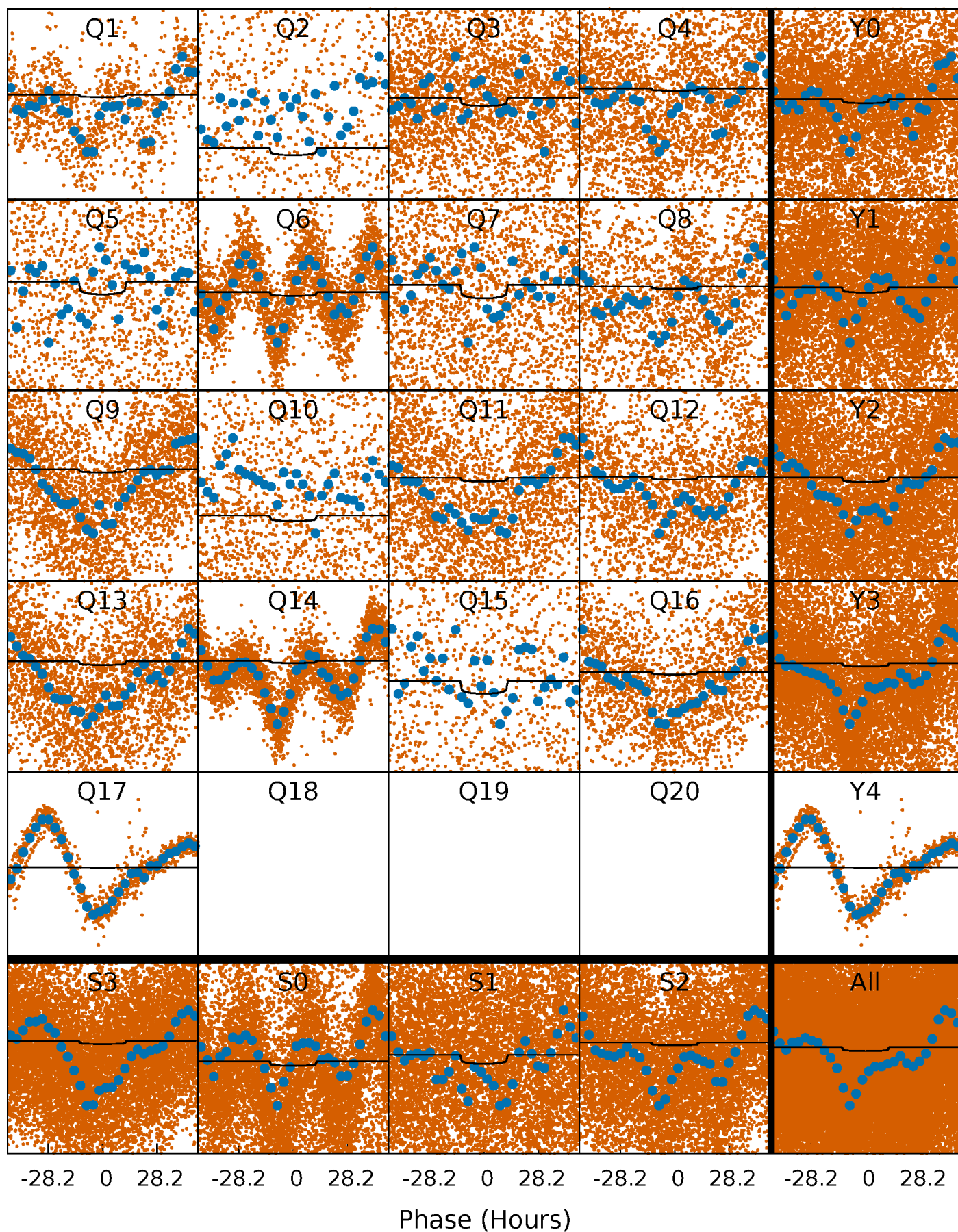
PDC Quarter-Phased Transit Curves

TCE 008701099-01 P= 5.773148 Days $T_0=135.188295$ (BKJD)



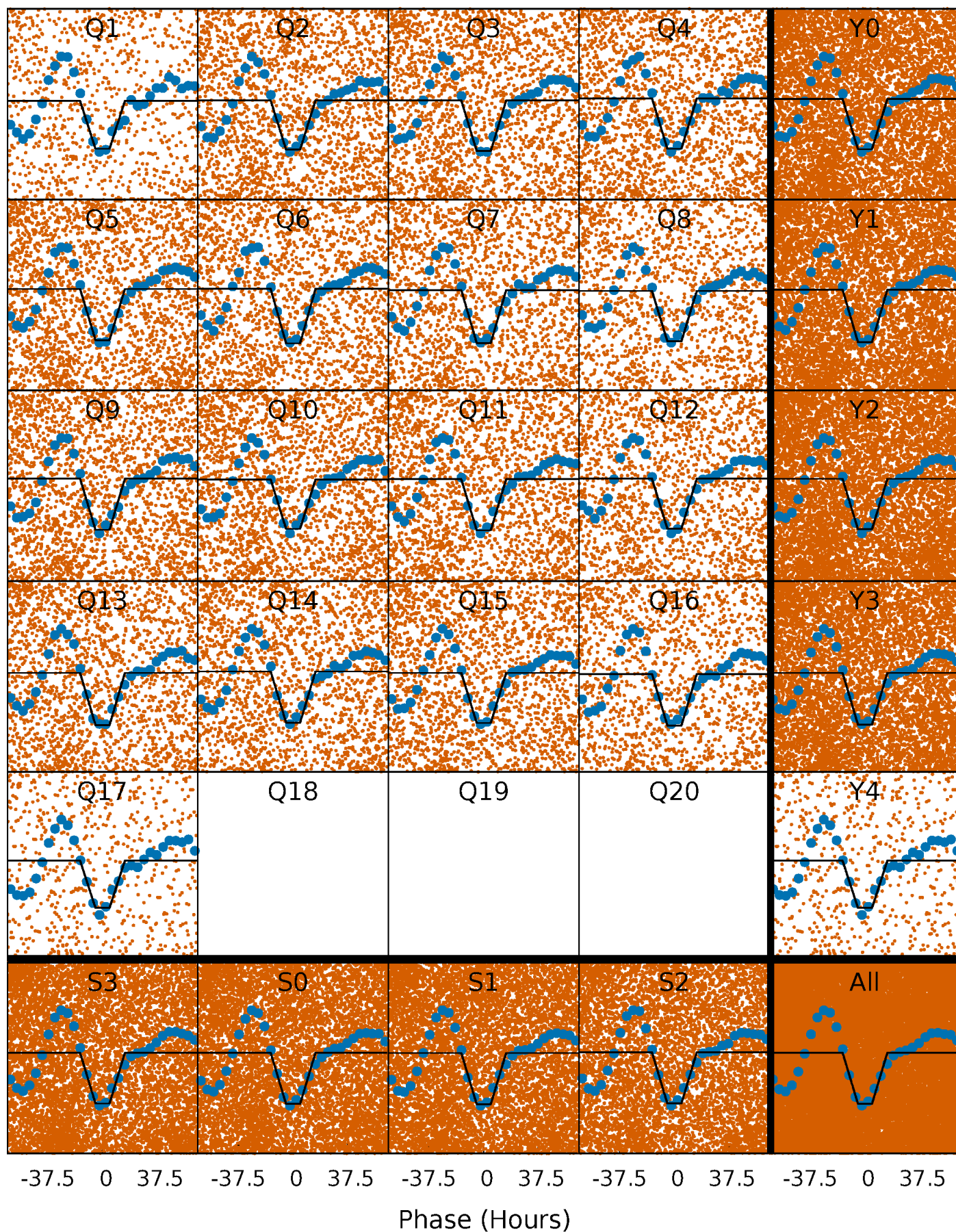
DV Quarter-Phased Transit Curves

TCE 008701099-01 P= 5.773148 Days $T_0=135.188295$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

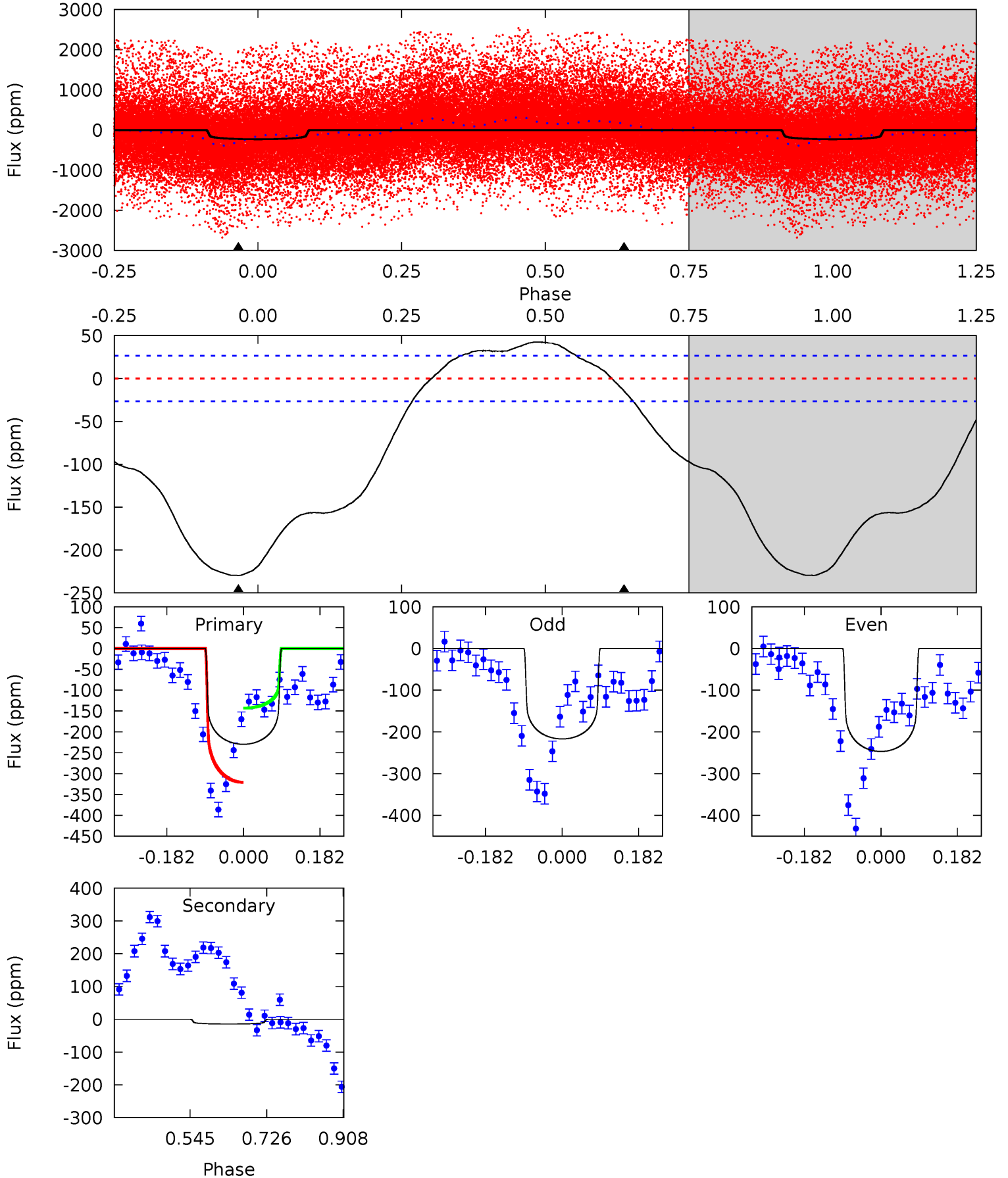
TCE 008701099-01 P= 5.773443 Days $T_0=135.019701$ (BKJD)



DV Model-Shift Uniqueness Test

008701099-01, P = 5.773148 Days, E = 129.415147 Days

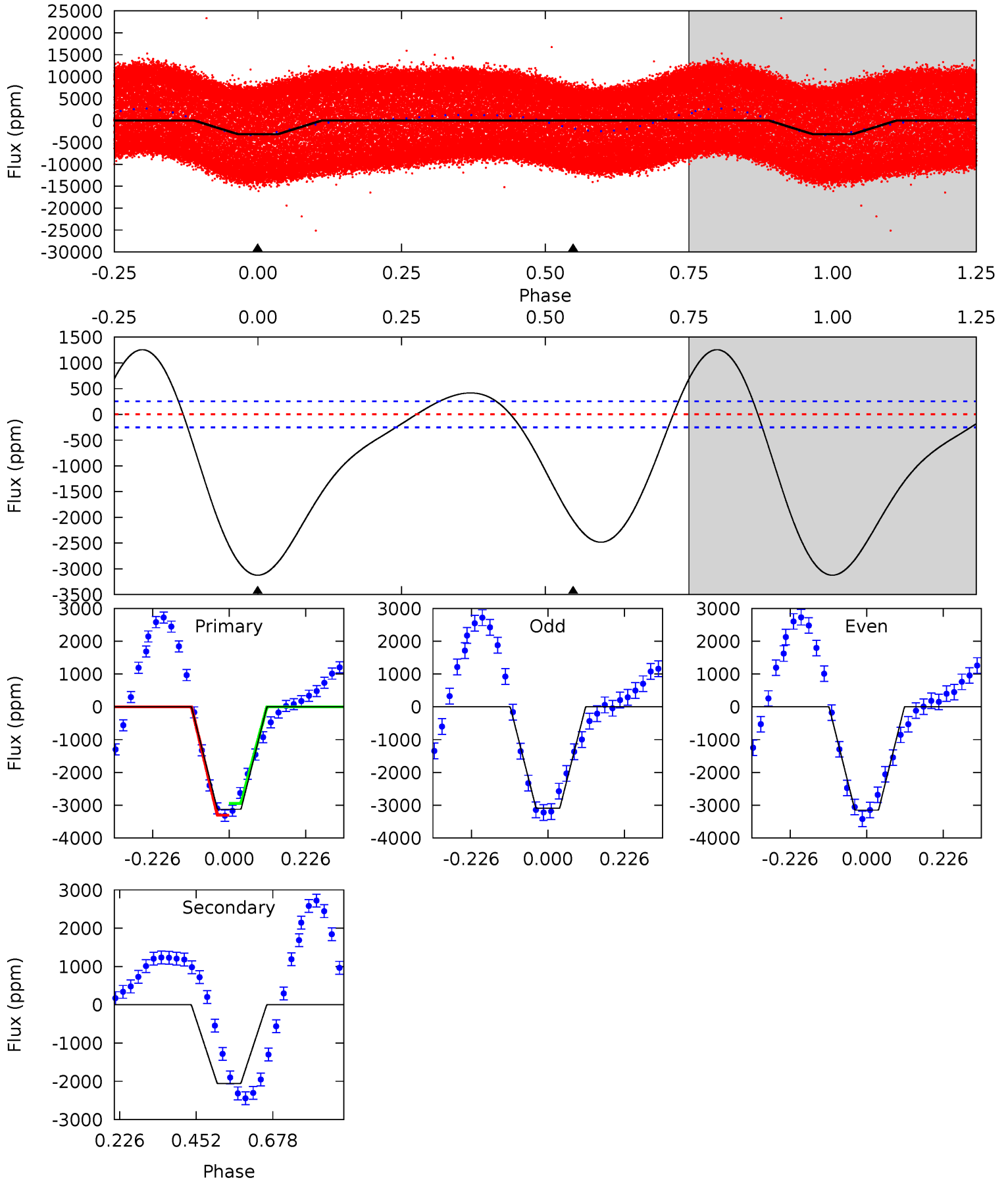
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.3	2.42	0	0	4.44	1.34	10.7	38.3	38.3	2.42	2.42	2.52	1.39	0.16	15.5



Alt Model-Shift Uniqueness Test

008701099-01, P = 5.773443 Days, E = 129.246258 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.4	35.8	0	0	4.39	1.21	5.06	54.4	54.4	35.8	35.8	0.48	1.00	0.29	3.13



Stellar Parameters For KIC 008701099

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7280^{+206}_{-324}	$4.145^{+0.087}_{-0.188}$	$0.210^{+0.150}_{-0.350}$	$1.802^{+0.569}_{-0.306}$	$1.655^{+0.193}_{-0.235}$	$0.399^{+0.191}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+32%/-17%	+12%/-14%	+48%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008701099-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15 ± 6	$1.14^{+0.31}_{-0.26}$	2238^{+165}_{-140}	5851^{+931}_{-877}	32^{+29}_{-17}
Alt.	-2056 ± 57	$11.38^{+1.88}_{-1.00}$	2242^{+163}_{-134}	6427^{+213}_{-238}	48^{+9}_{-11}

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

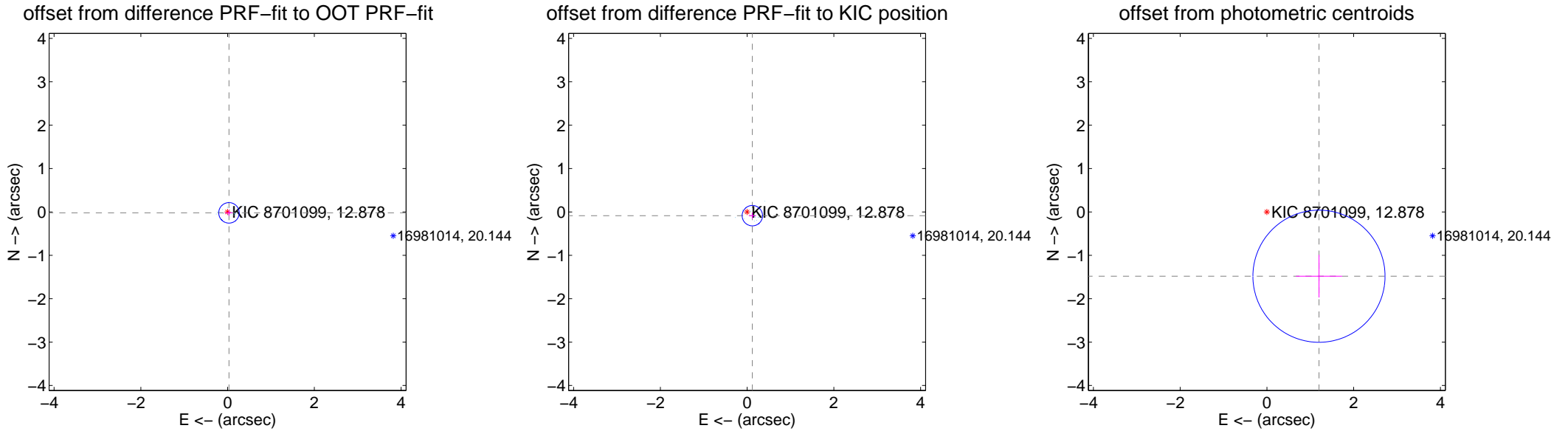
DV Centroid Data

Supplemental centroid analysis for 008701099-01. Kepler magnitude: 12.88. Transit SNR 5.26

There are 17 quarters with good PRF difference image offsets

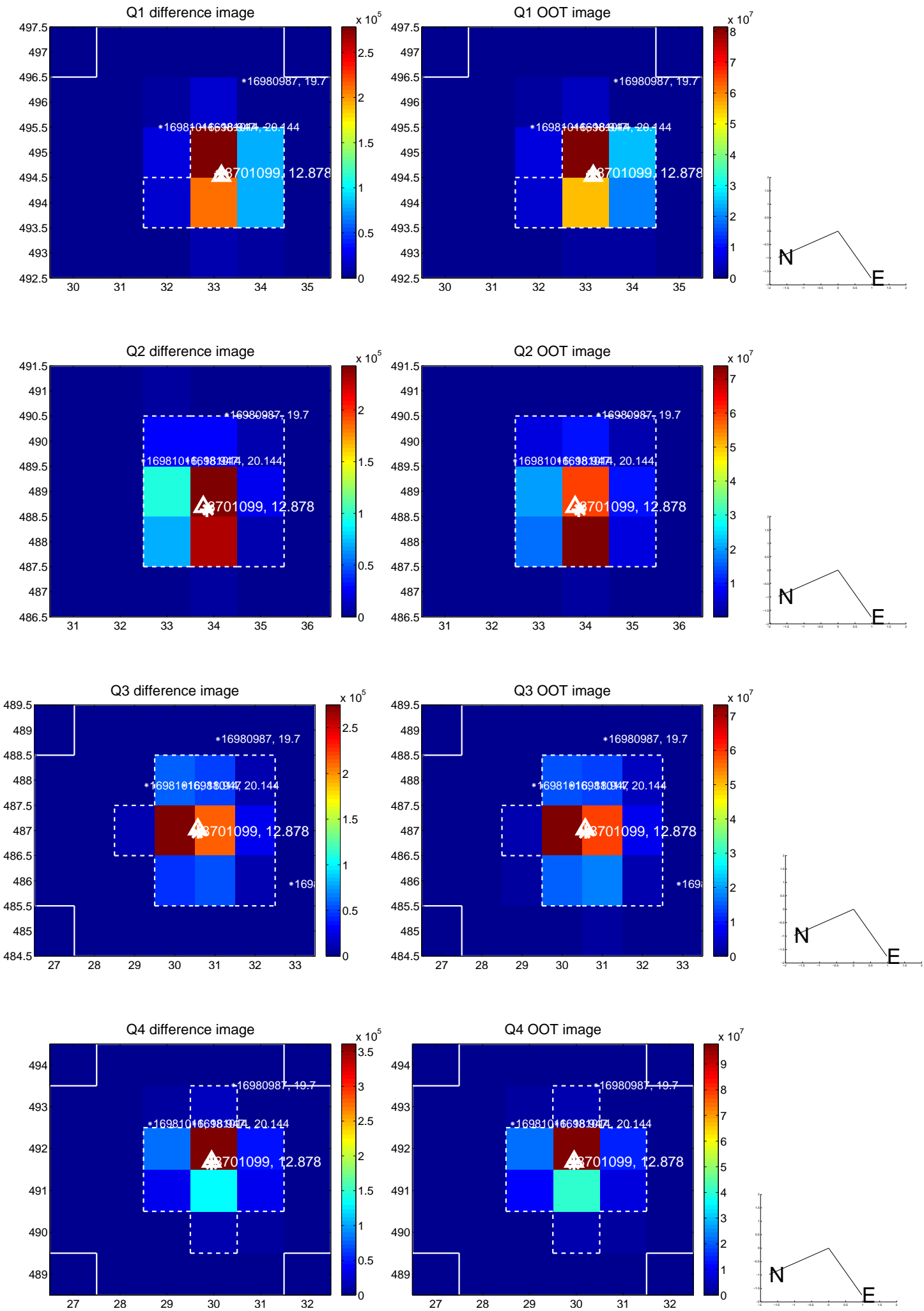
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.038 ± 0.079	0.49	-0.032 ± 0.083	-0.021 ± 0.067
PRF-fit source offset from KIC position	0.148 ± 0.078	1.89	-0.120 ± 0.082	-0.086 ± 0.070
photometric centroid source offset	1.91 ± 0.51	3.76	-1.20 ± 0.53	-1.48 ± 0.49

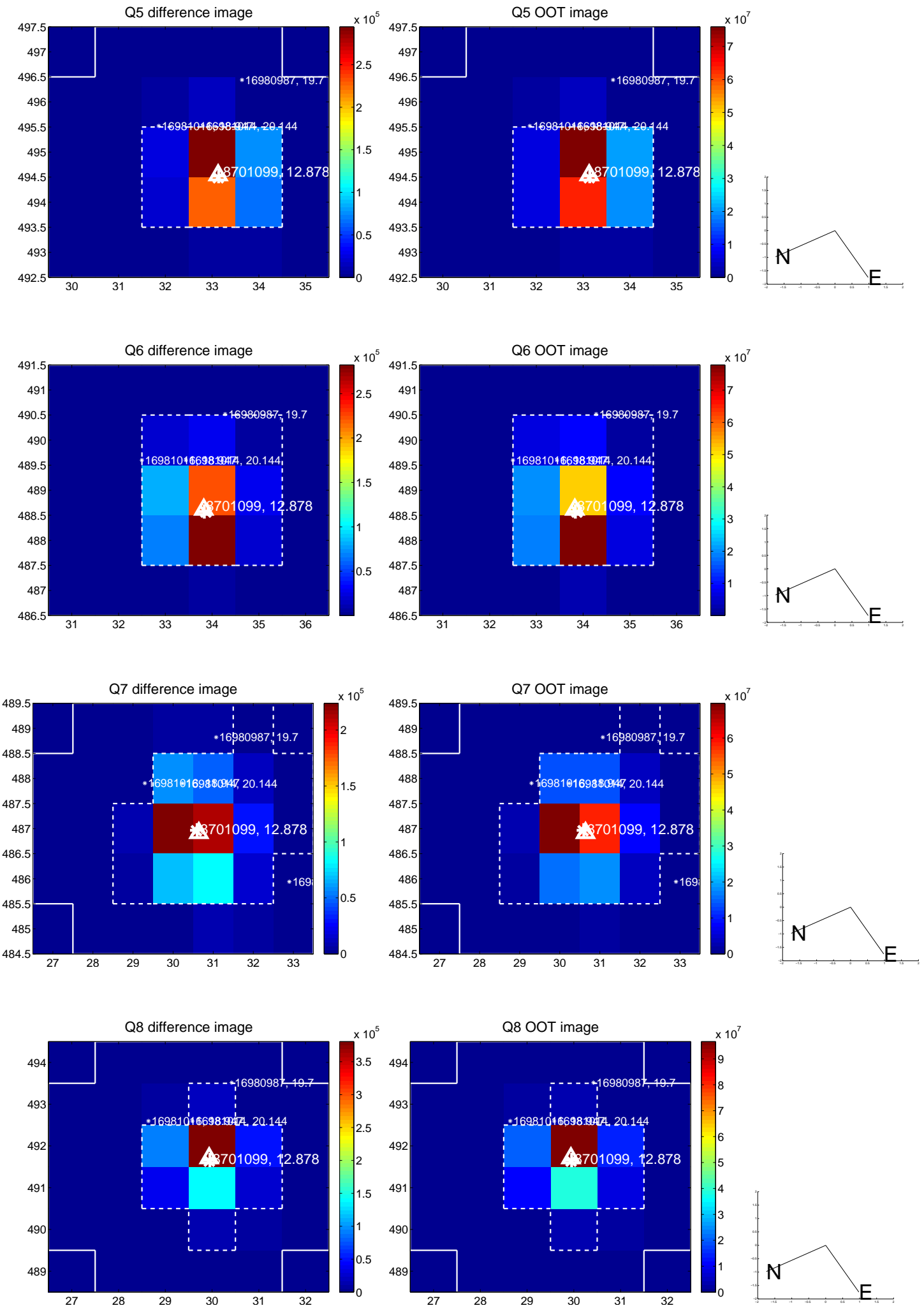


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

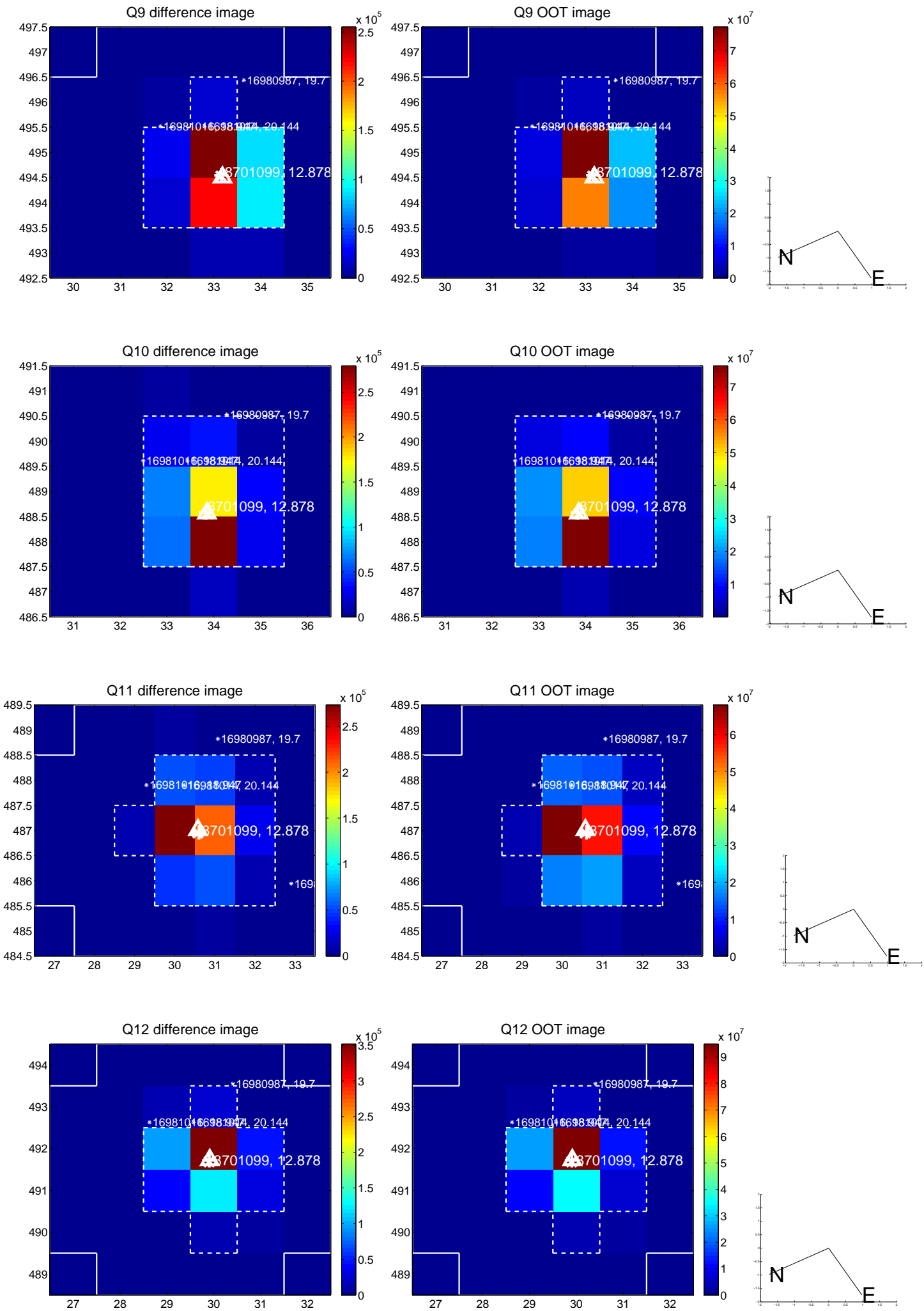
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



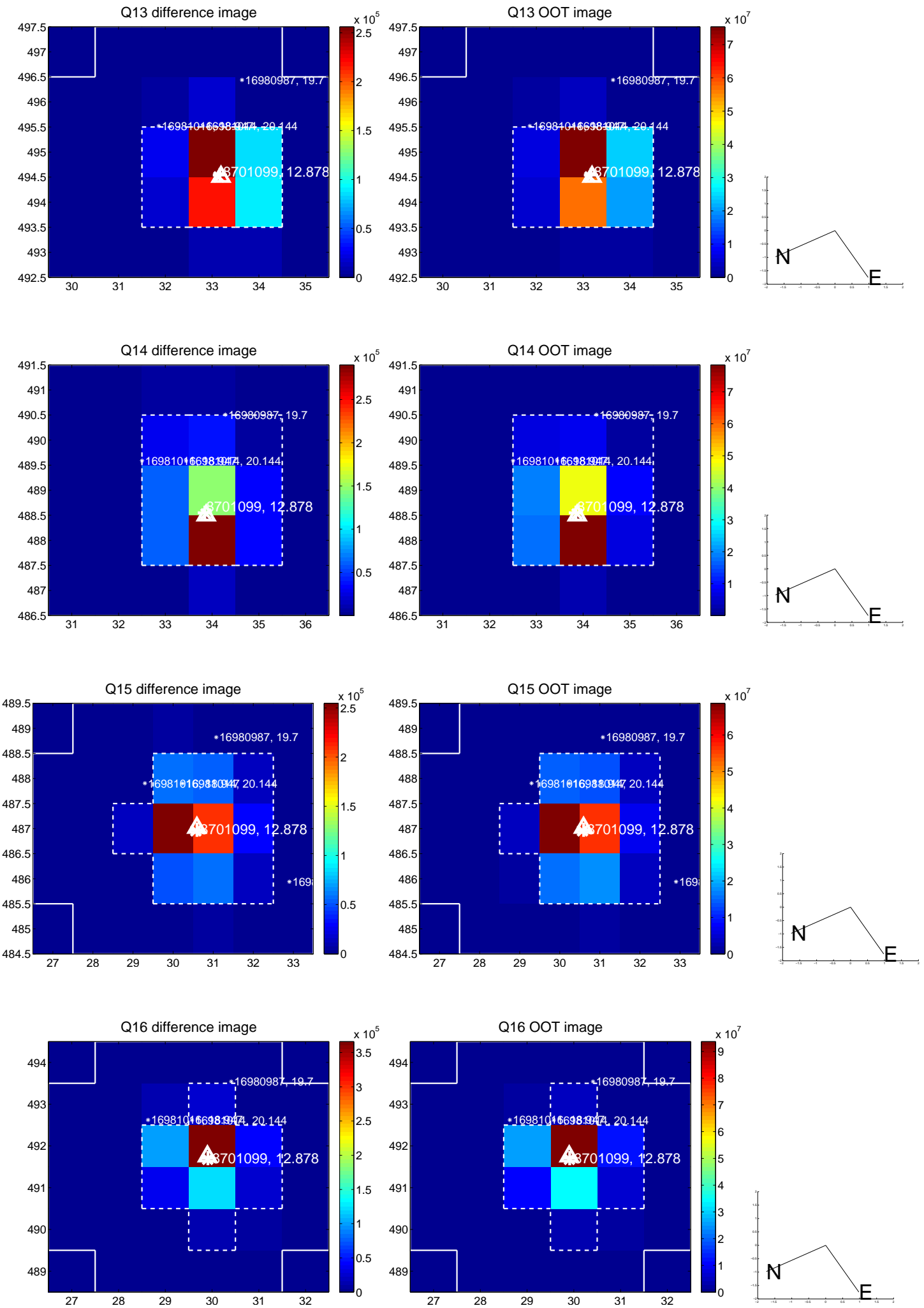
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

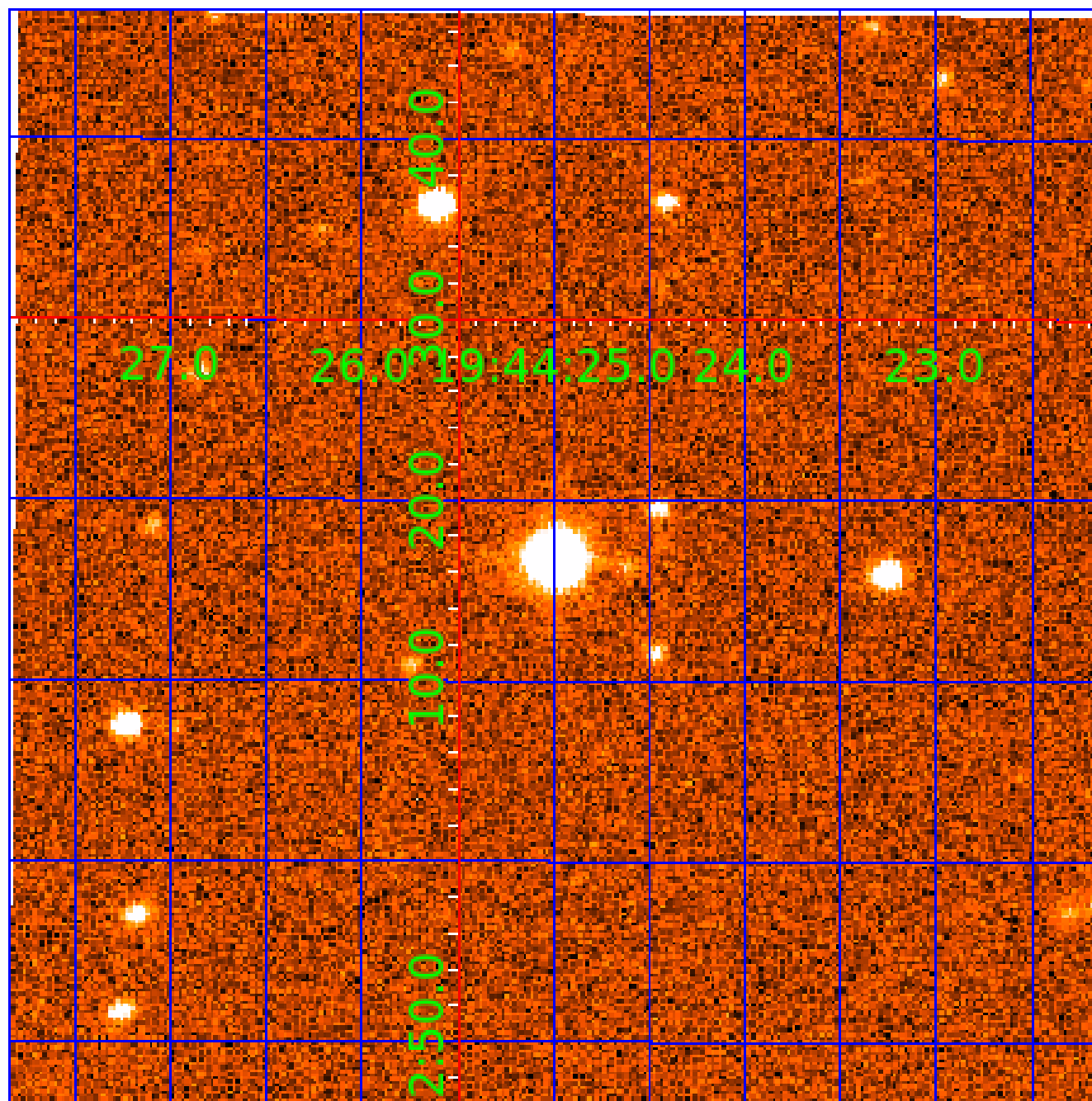


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008701099

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})
008701099-01	OBS	No	5.773148	135.188295	28.1	24.701	13.0	5.3	1.80	7280	1.11	1472.45
008701099-02	OBS	No	5.773461	131.994252	134.6	42.127	7.9	18.7	1.80	7280	2.59	1472.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008701099-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008701099-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

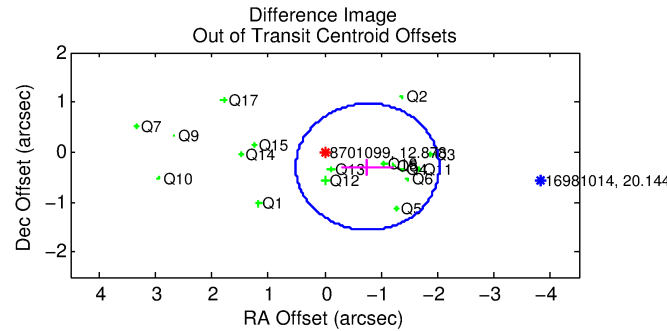
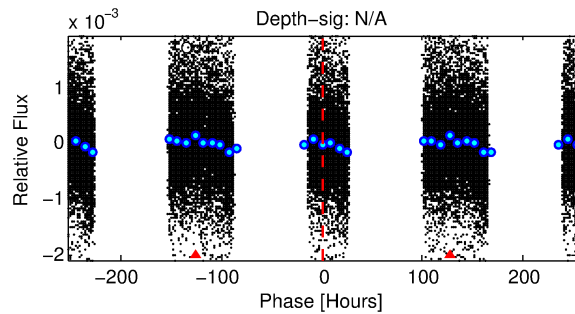
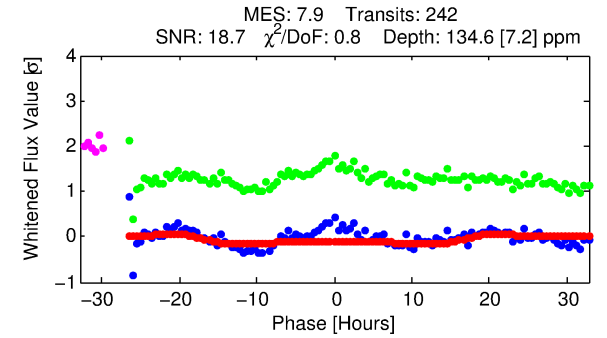
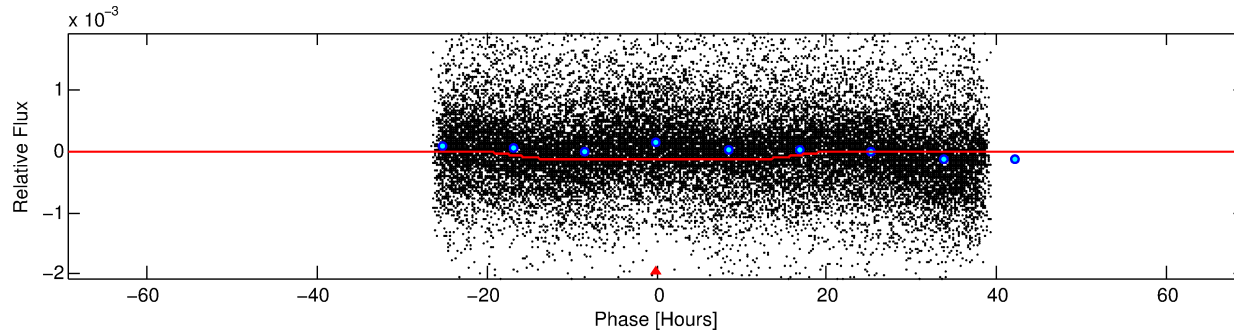
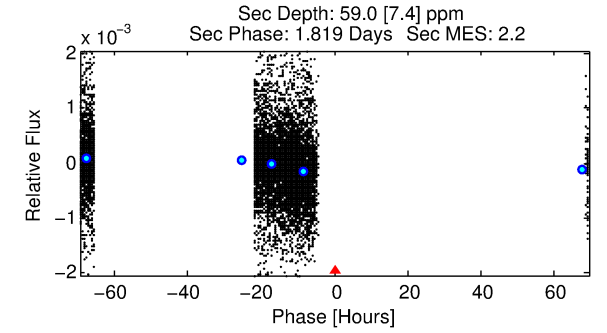
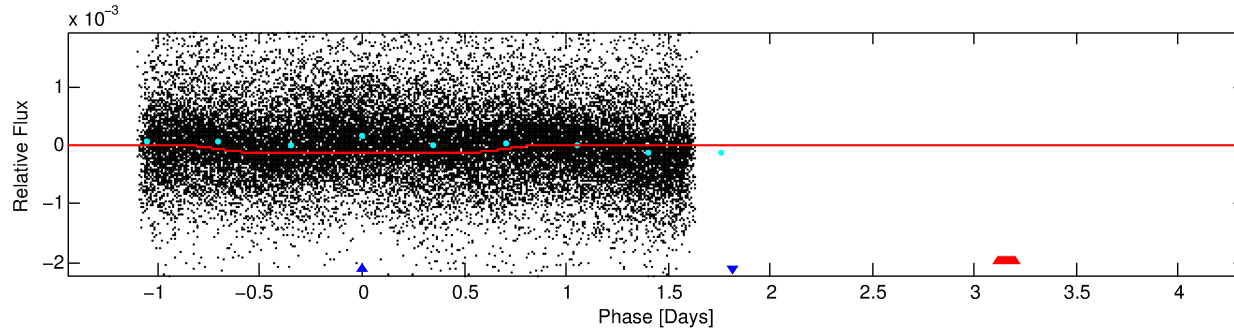
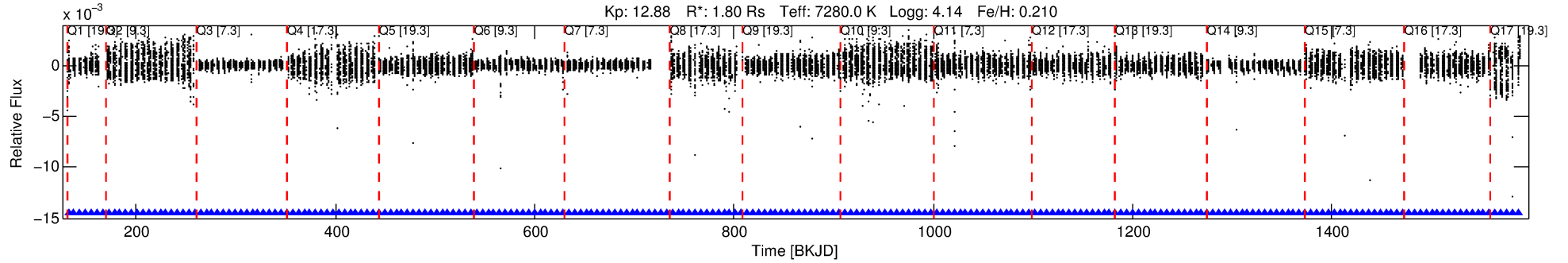
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008701099-02

No Significant Match Found

DV One-Page Summary

KIC: 8701099 Candidate: 2 of 2 Period: 5.773 d



DV Fit Results:

Period = 5.77346 [0.00019] d
Epoch = 131.9943 [0.0257] BKJD
Rp/R* = 0.0132 [0.0004]
a/R* = 1.04 [0.01]
b = 0.96 [0.01]
Seff = 1472.34 [587.63]
Teq = 1580 [158] K
Rp = 2.59 [0.82] Re
a = 0.0745 [0.0190] AU
Ag = 26.94 [10.32] [2.51σ]
Teffp = 5564 [313] K [11.35σ]

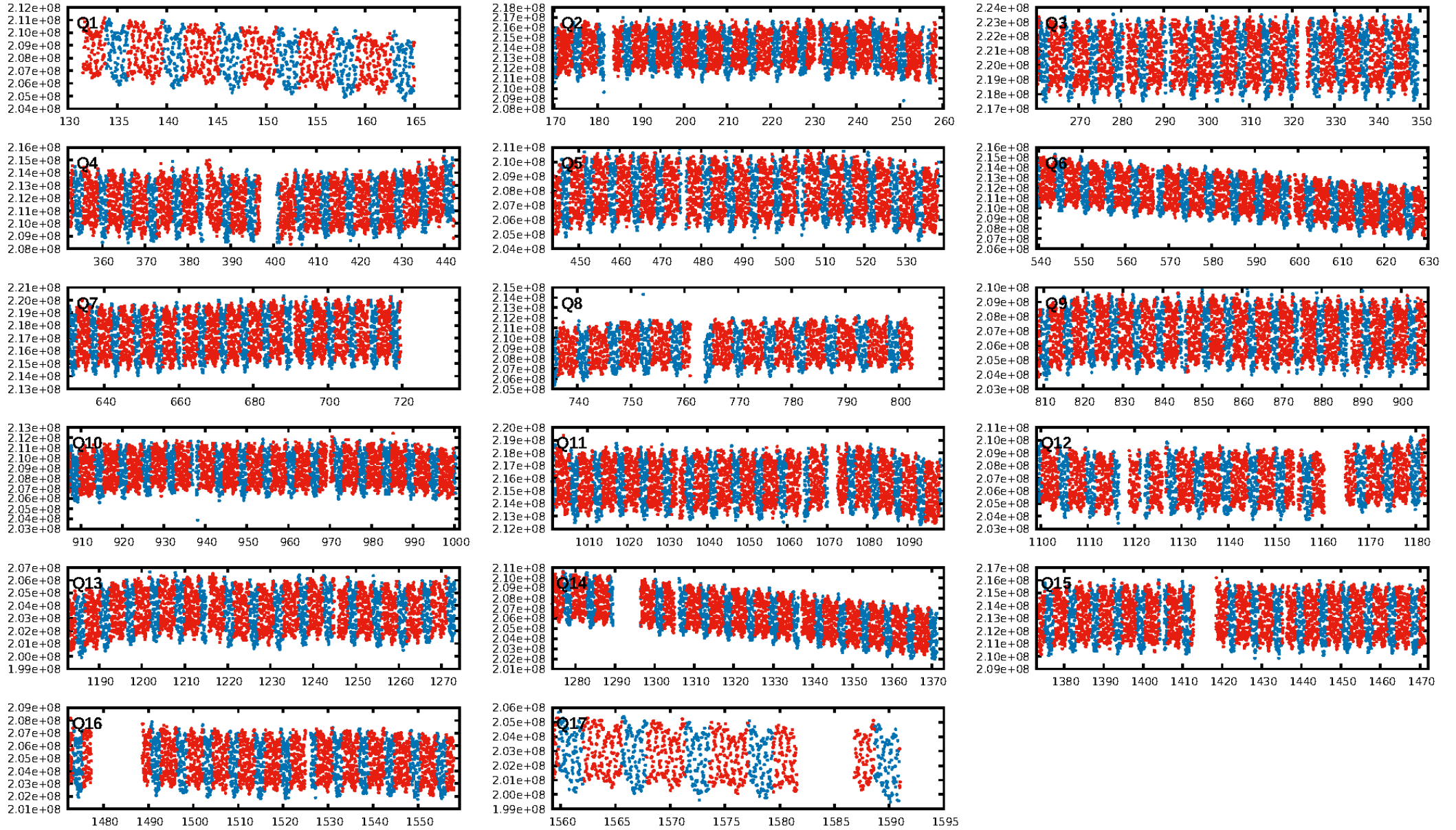
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [231/231]
GhostDiagnostic-chr: 4.211
Centroid-sig: 0.0%
Centroid-so: 0.393 arcsec [4.31σ]
OotOffset-rm: 0.813 arcsec [1.92σ]
KicOffset-rm: 0.923 arcsec [2.28σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.00 [0/17]

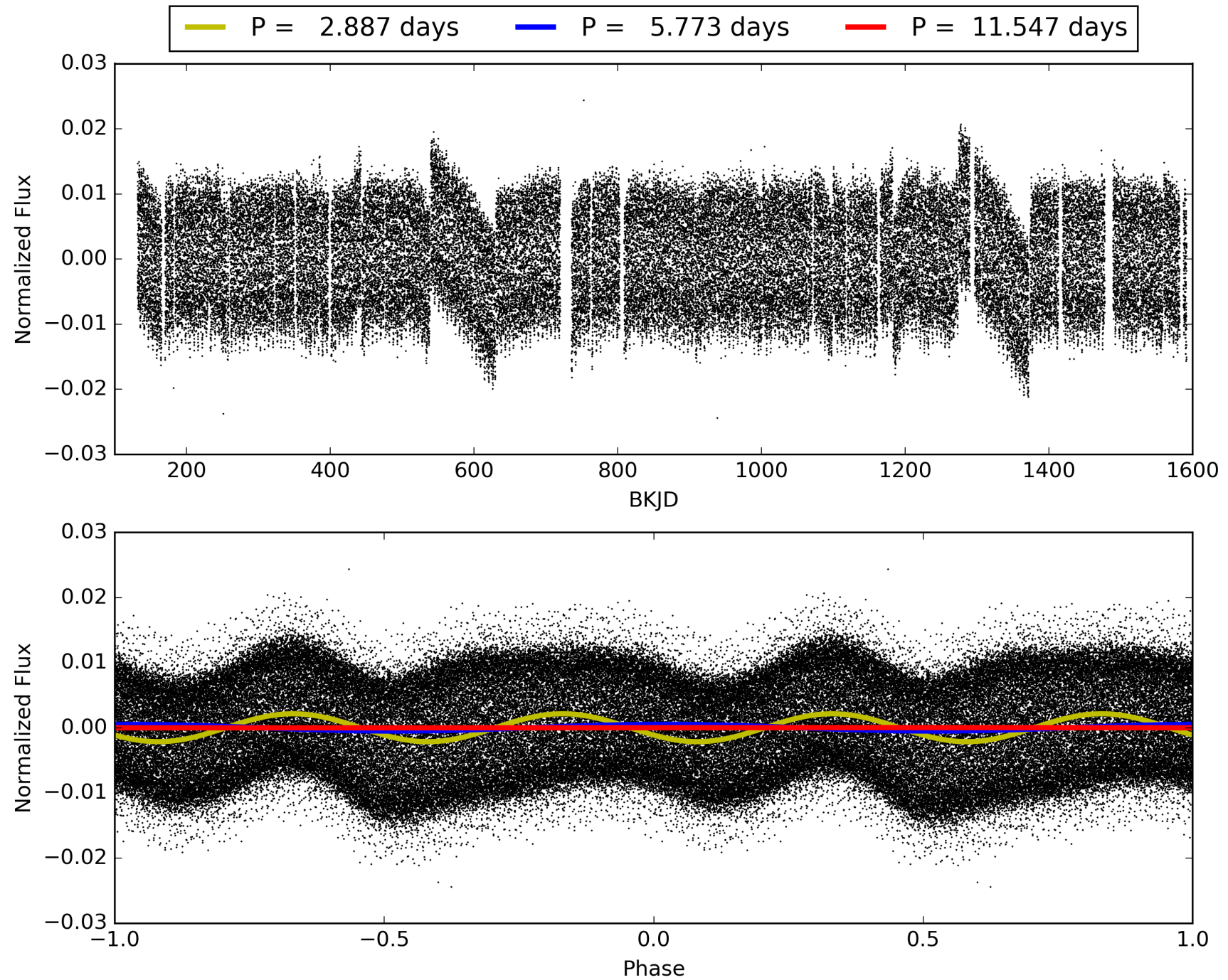
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:54:22 Z

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

TCE 008701099-02, PDC Light Curves

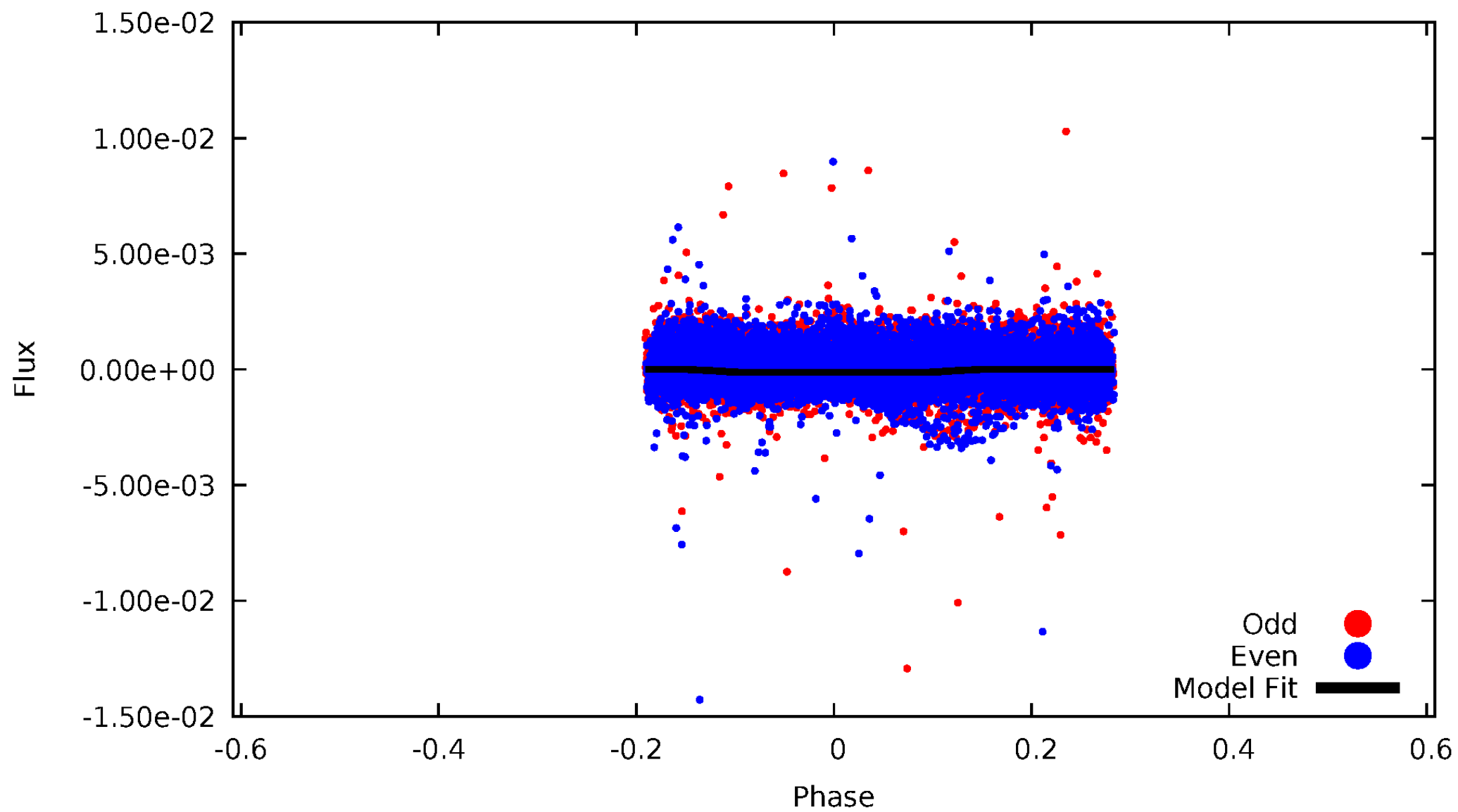


TCE 008701099-02



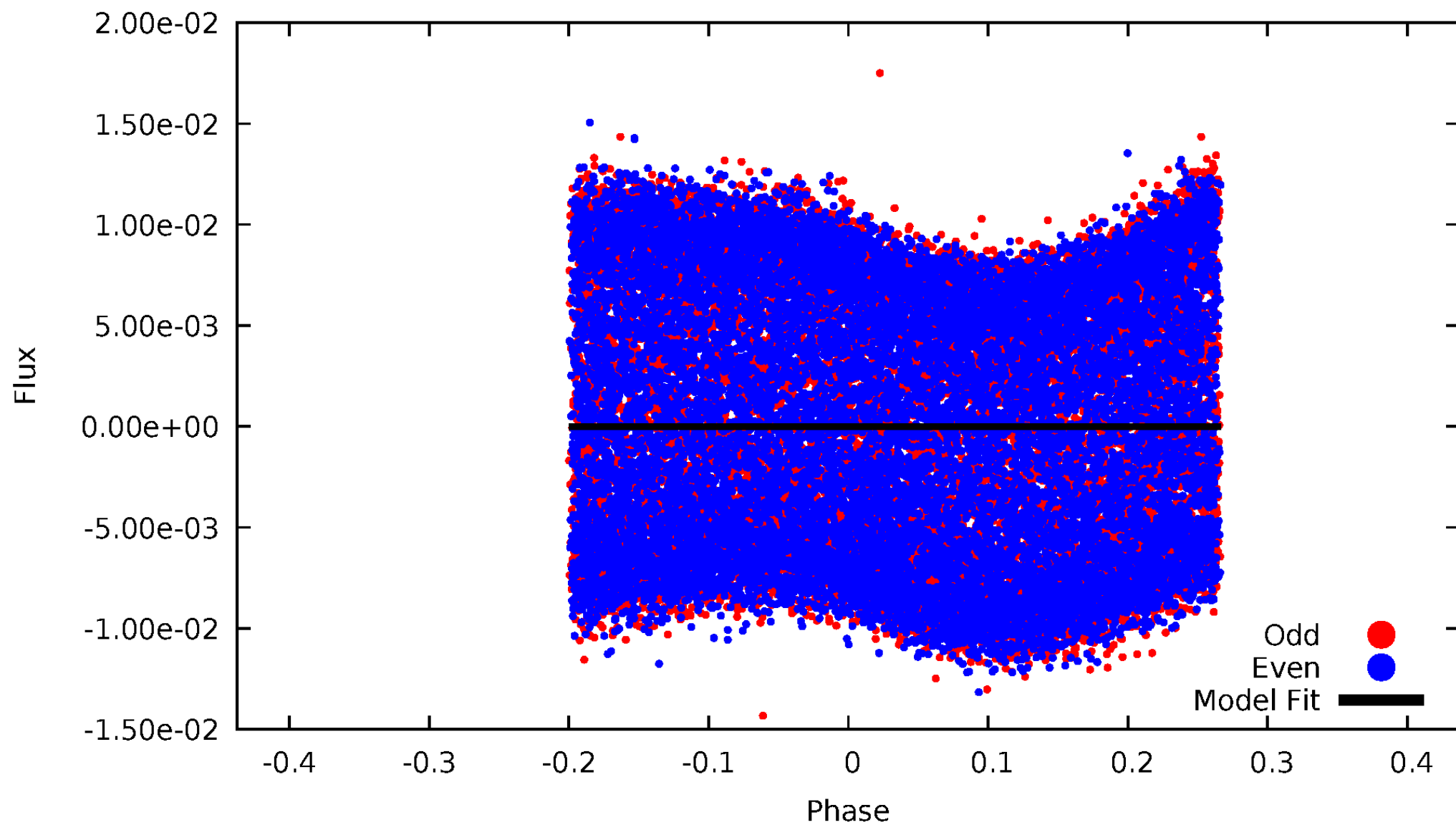
DV Odd/Even

TCE 008701099-02



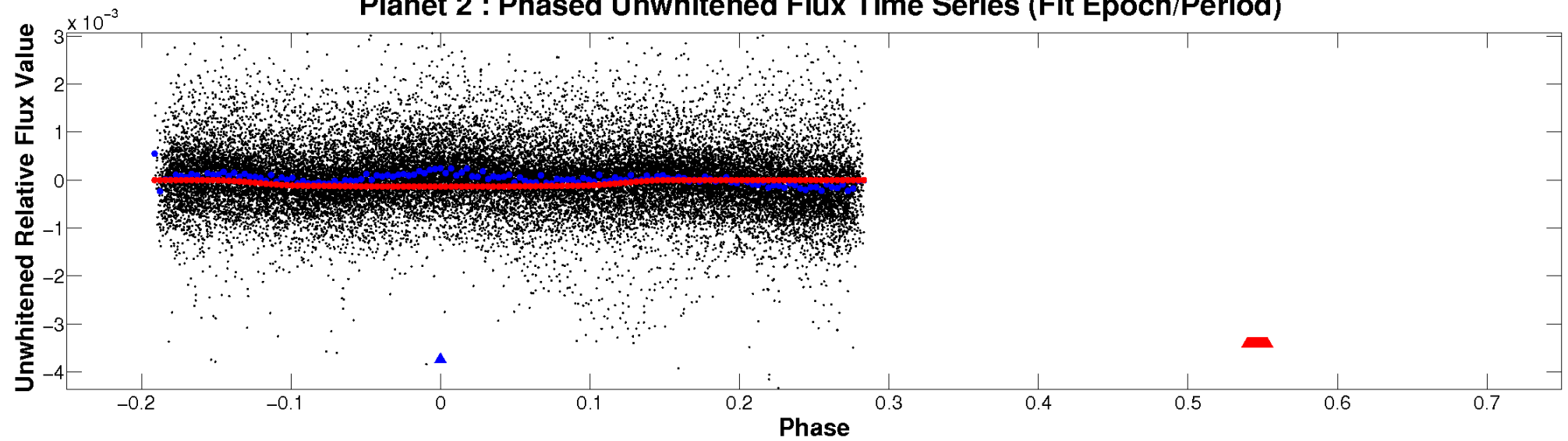
ALT Odd/Even

TCE 008701099-02

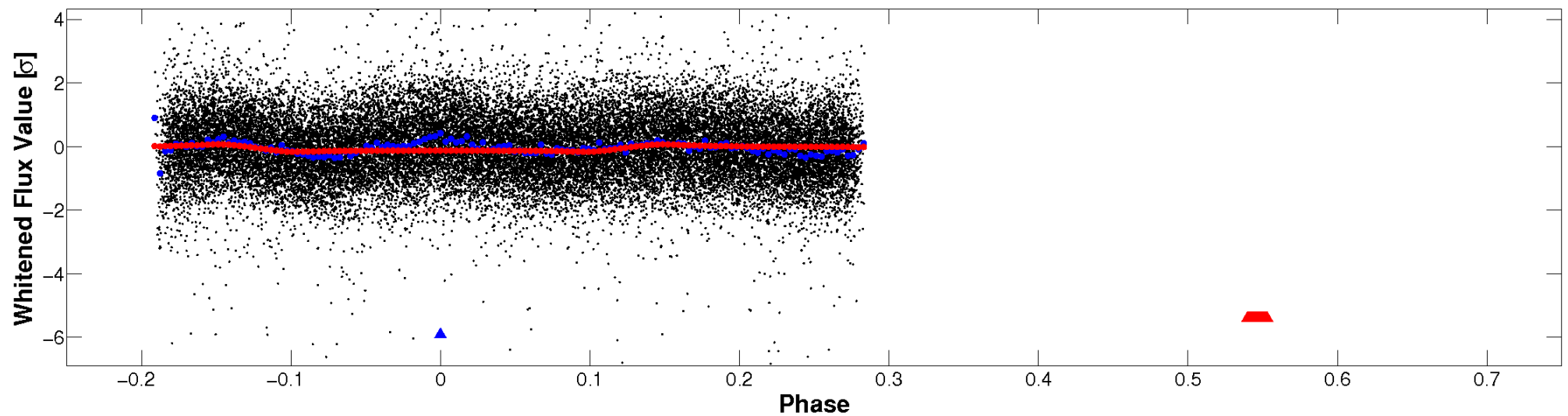


Non-Whitened Vs. Whitened Light Curve

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

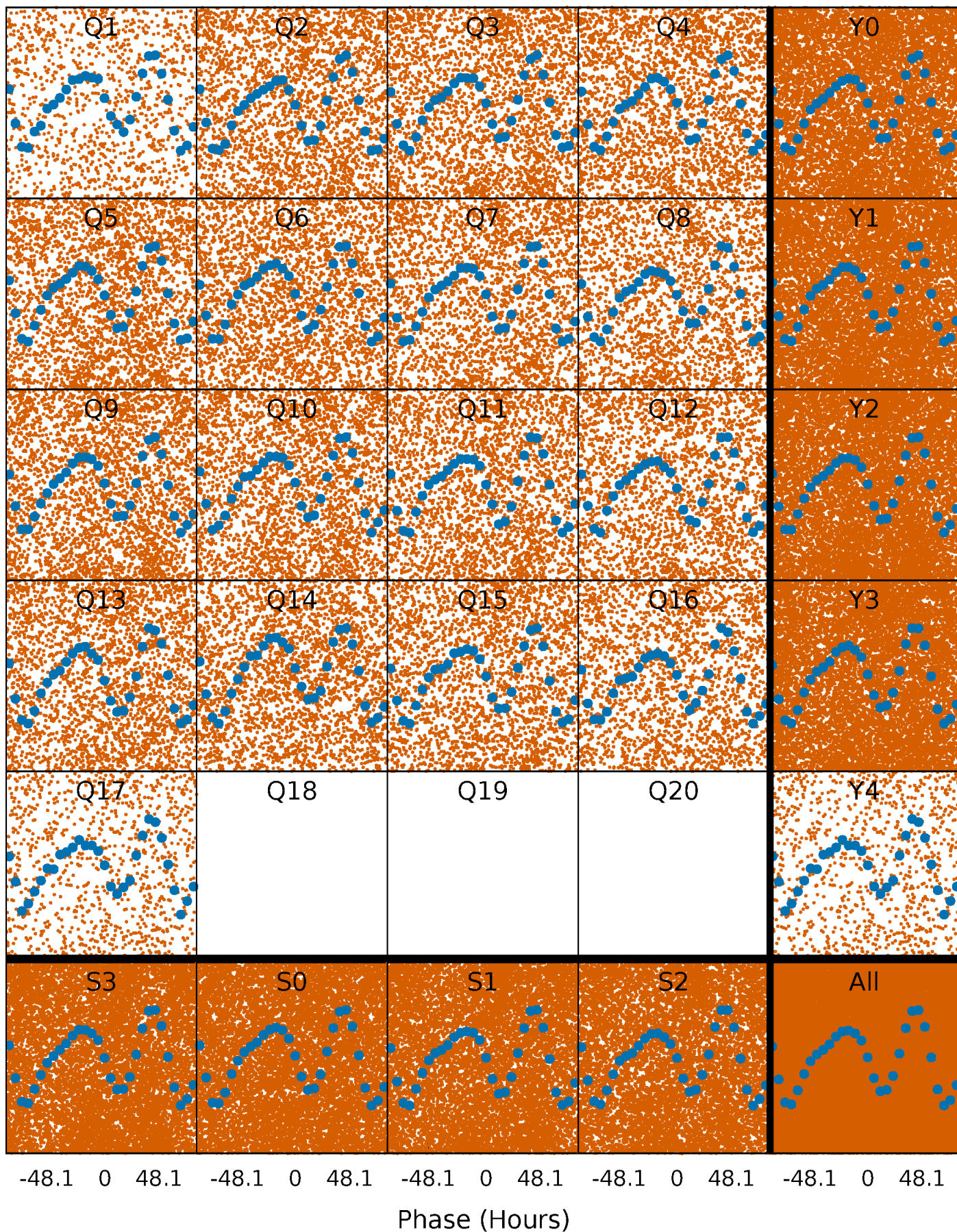


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



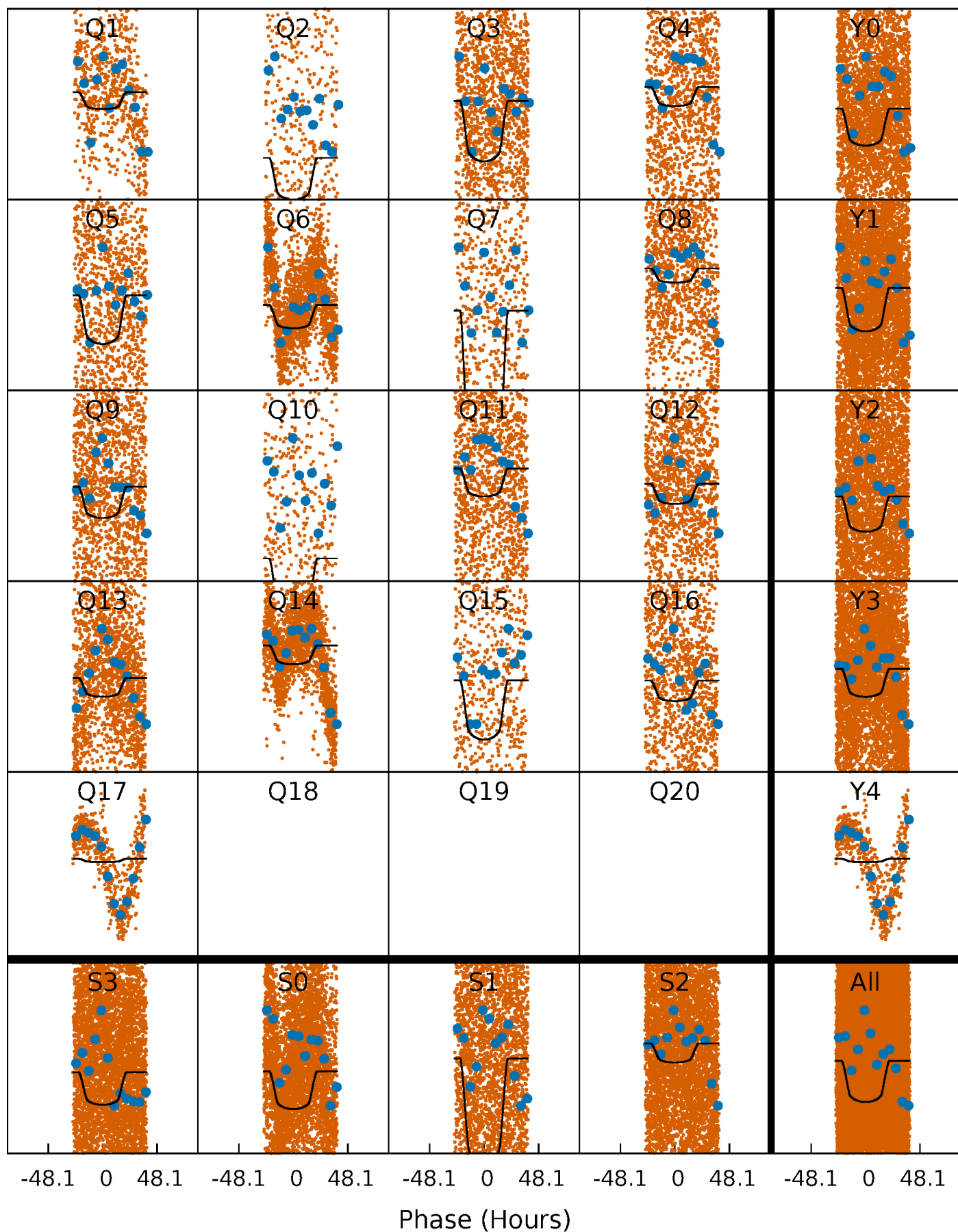
PDC Quarter-Phased Transit Curves

TCE 008701099-02 P= 5.773461 Days $T_0=131.994252$ (BKJD)



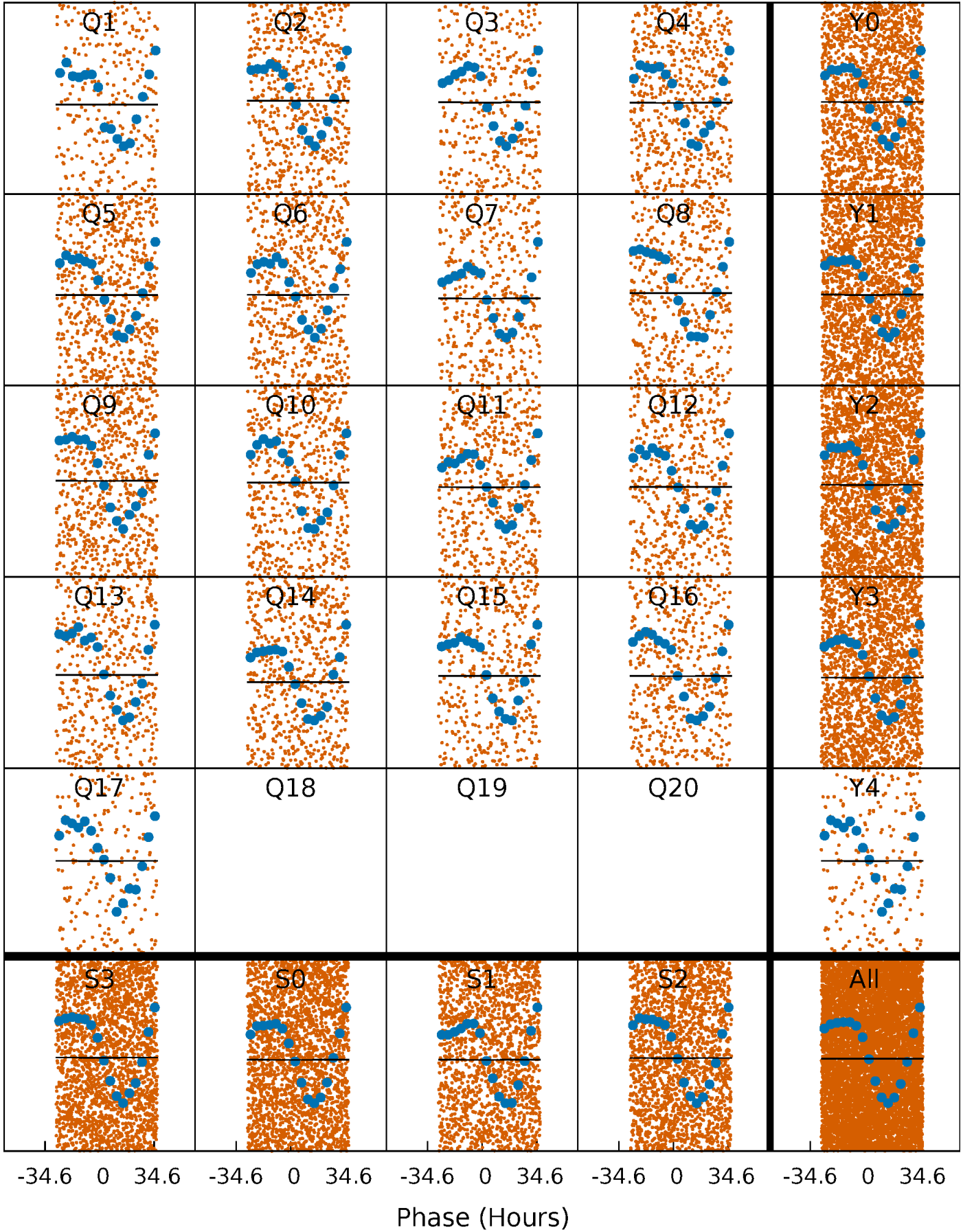
DV Quarter-Phased Transit Curves

TCE 008701099-02 P= 5.773461 Days $T_0=131.994252$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

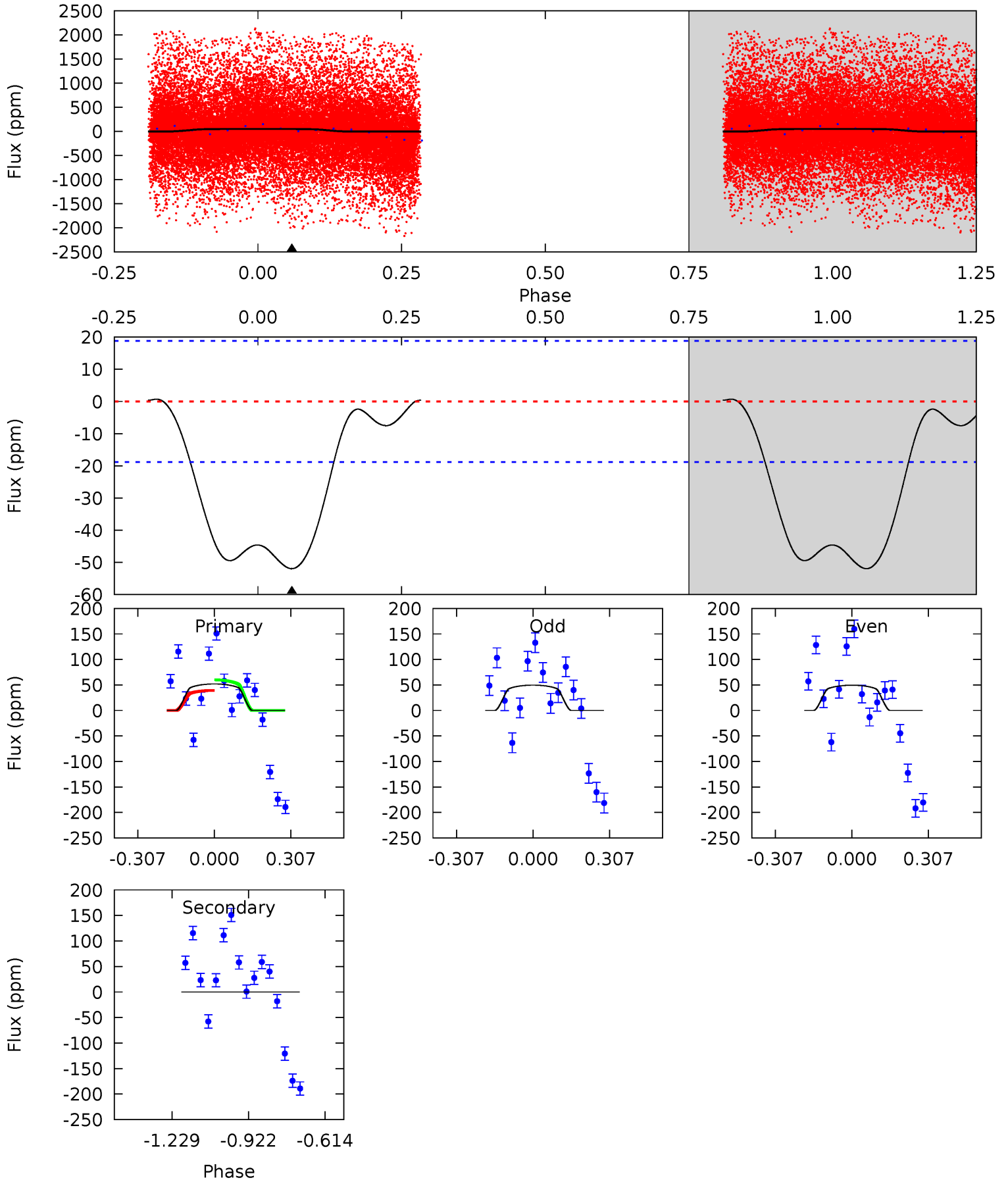
TCE 008701099-02 $P = 5.773262$ Days $T_0 = 132.094893$ (BKJD)



DV Model-Shift Uniqueness Test

008701099-02, P = 5.773461 Days, E = 126.220791 Days

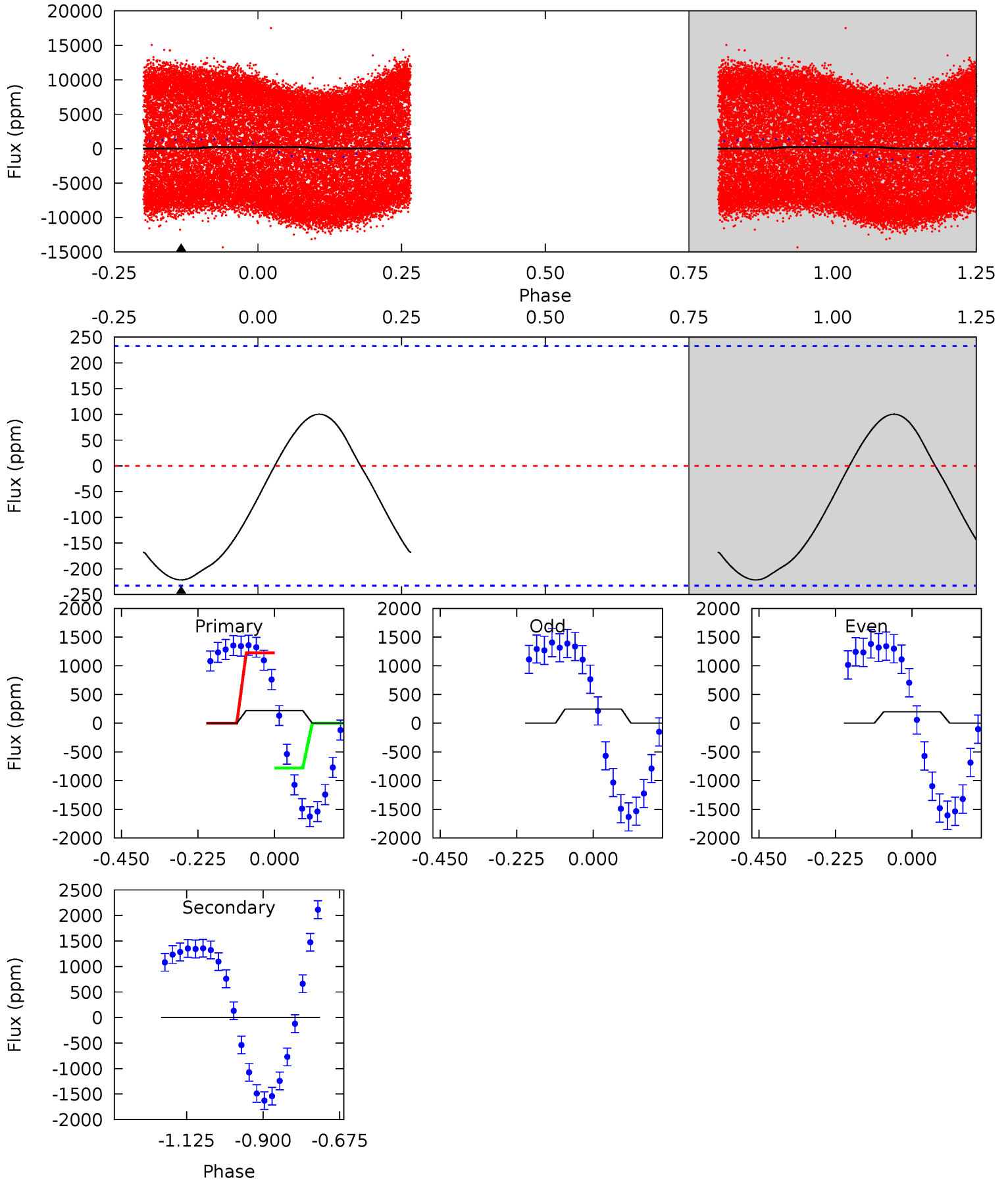
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	0	0	0	4.32	1.02	0.27	11.9	11.9	0	0	0.02	1.58	0.01	2.40



Alt Model-Shift Uniqueness Test

008701099-02, P = 5.773262 Days, E = 126.321631 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.18	0	0	0	4.39	1.21	1.67	4.18	4.18	0	0	0.42	1.03	0.31	3.96



Stellar Parameters For KIC 008701099

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7280^{+206}_{-324}	$4.145^{+0.087}_{-0.188}$	$0.210^{+0.150}_{-0.350}$	$1.802^{+0.569}_{-0.306}$	$1.655^{+0.193}_{-0.235}$	$0.399^{+0.191}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+32%/-17%	+12%/-14%	+48%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008701099-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 4	$2.64^{+0.41}_{-0.27}$	2228^{+155}_{-131}	-2635^{+5893}_{-842}	$-0.000^{+1.682}_{-1.920}$
Alt.	0 ± 53	$0.52^{+0.11}_{-0.09}$	2232^{+170}_{-136}	-3521^{+19641}_{-12983}	$-2.969^{+604.700}_{-593.566}$

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 $A_{obs} \gg 1.0$

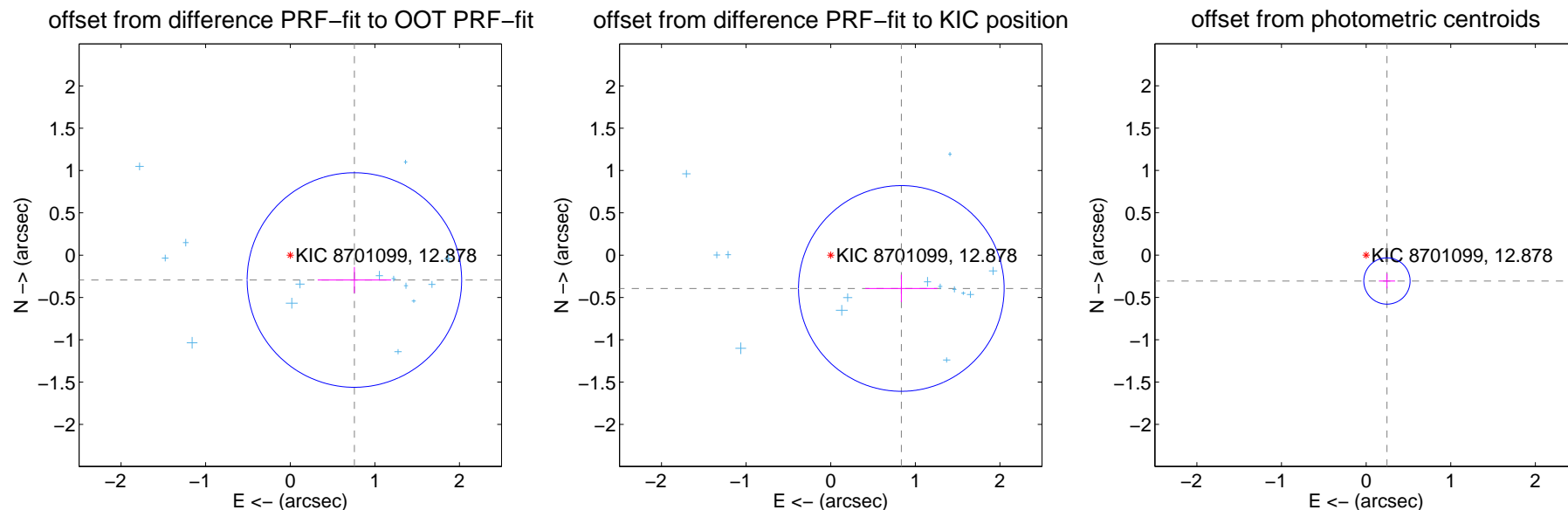
DV Centroid Data

Supplemental centroid analysis for 008701099-02. Kepler magnitude: 12.88. Transit SNR 18.73

There are 15 quarters with good PRF difference image offsets

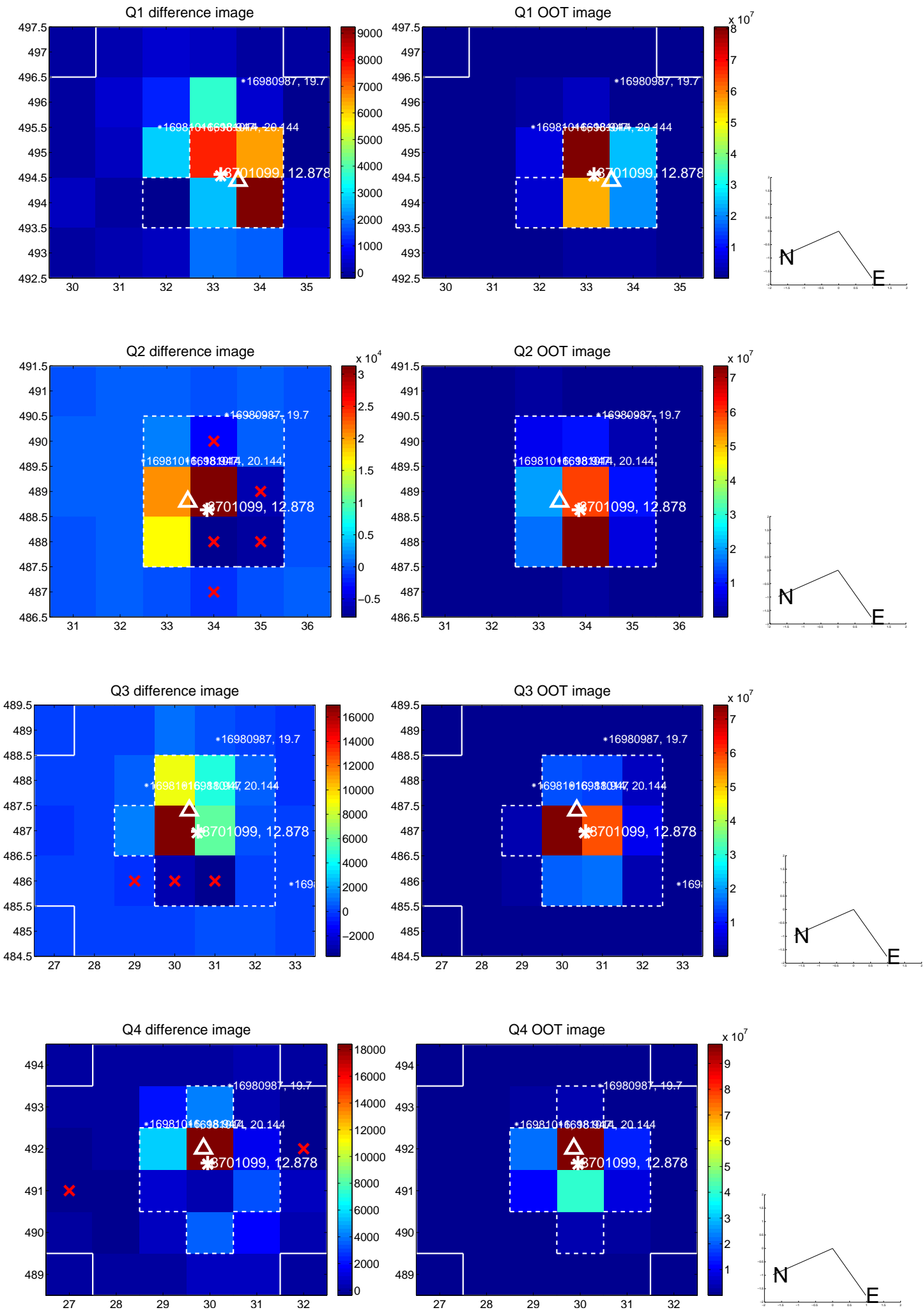
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.813 ± 0.423	1.92	-0.758 ± 0.433	-0.294 ± 0.154
PRF-fit source offset from KIC position	0.923 ± 0.405	2.28	-0.835 ± 0.426	-0.394 ± 0.162
photometric centroid source offset	0.39 ± 0.09	4.31	-0.25 ± 0.10	-0.31 ± 0.09

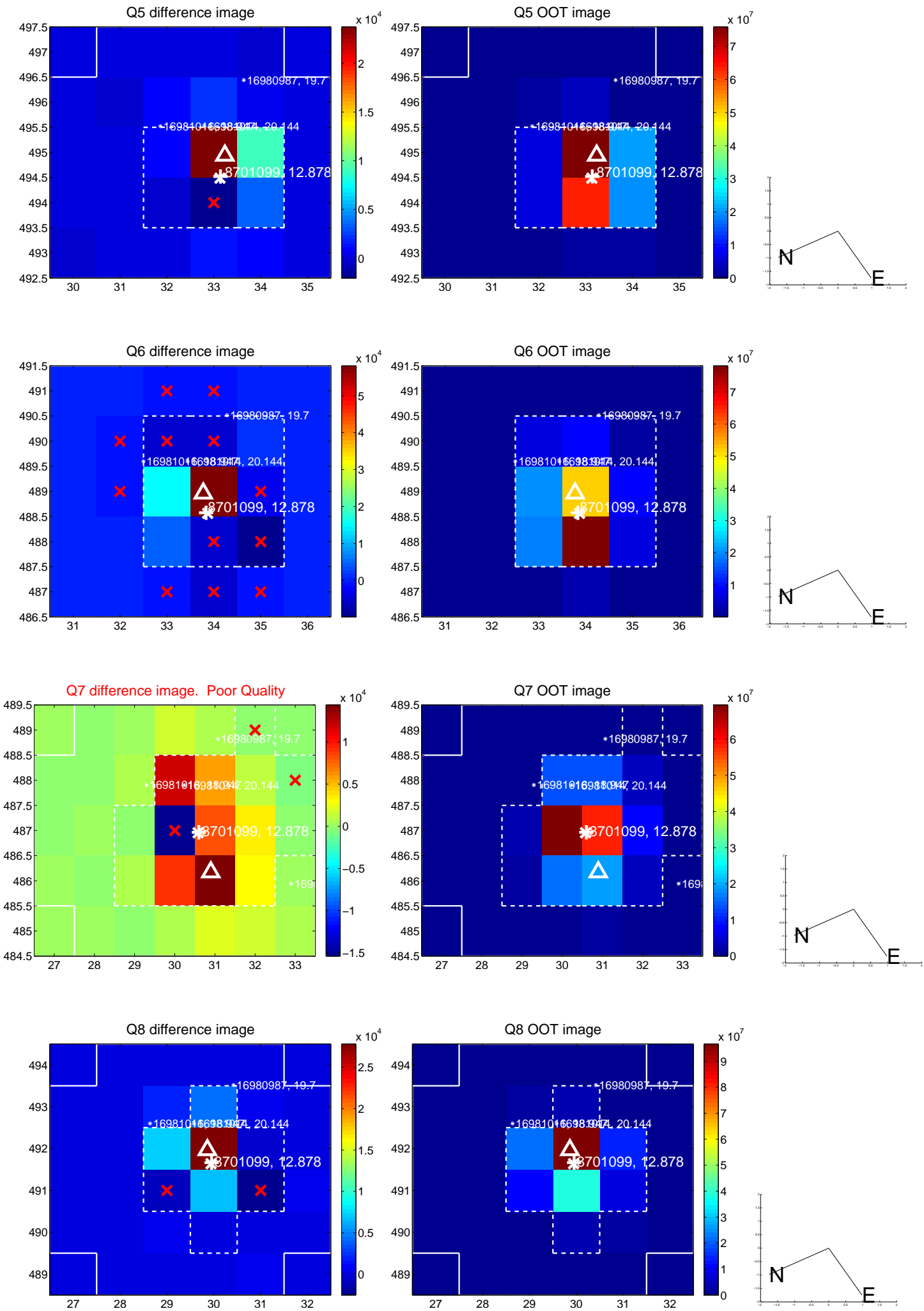


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

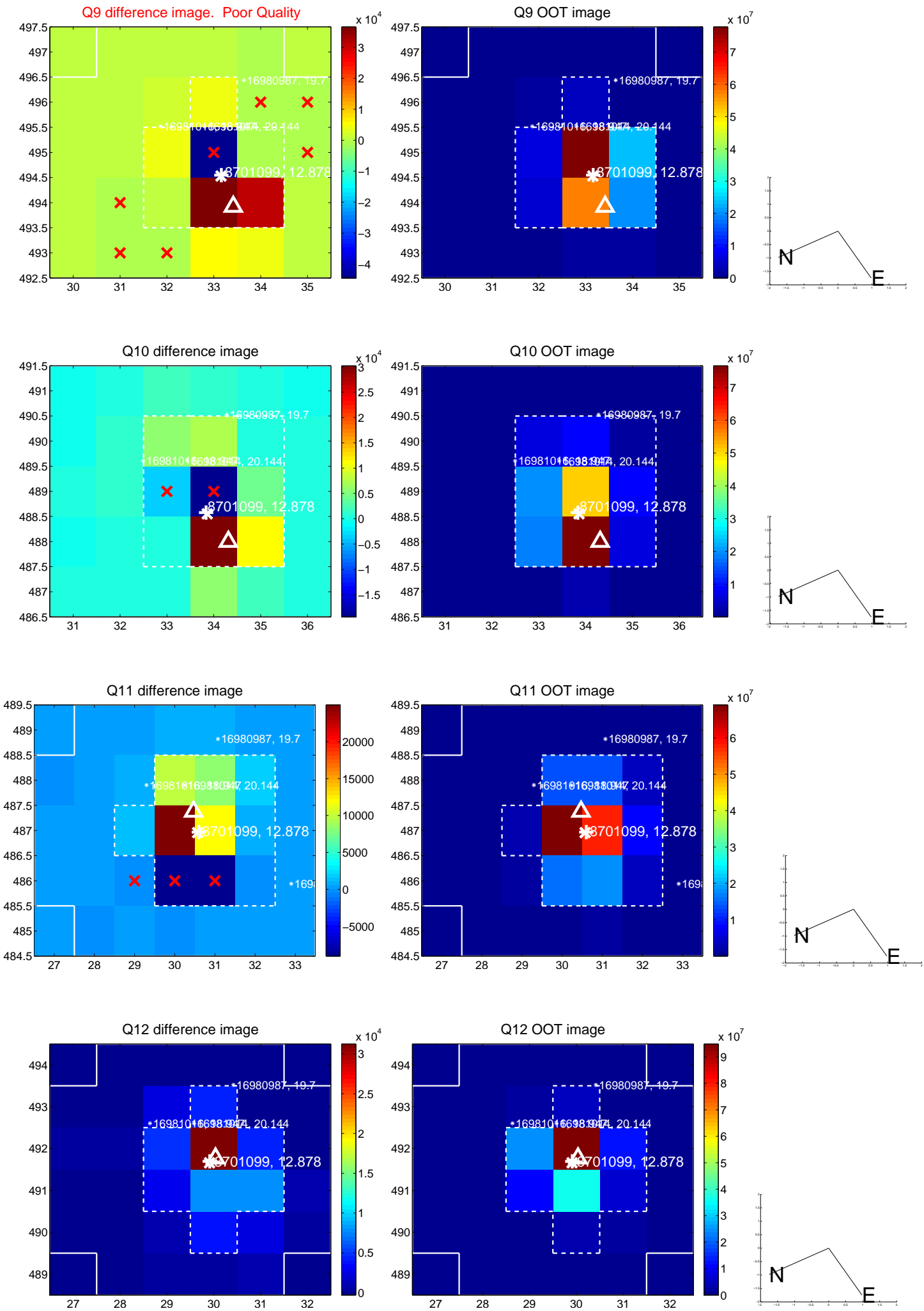
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



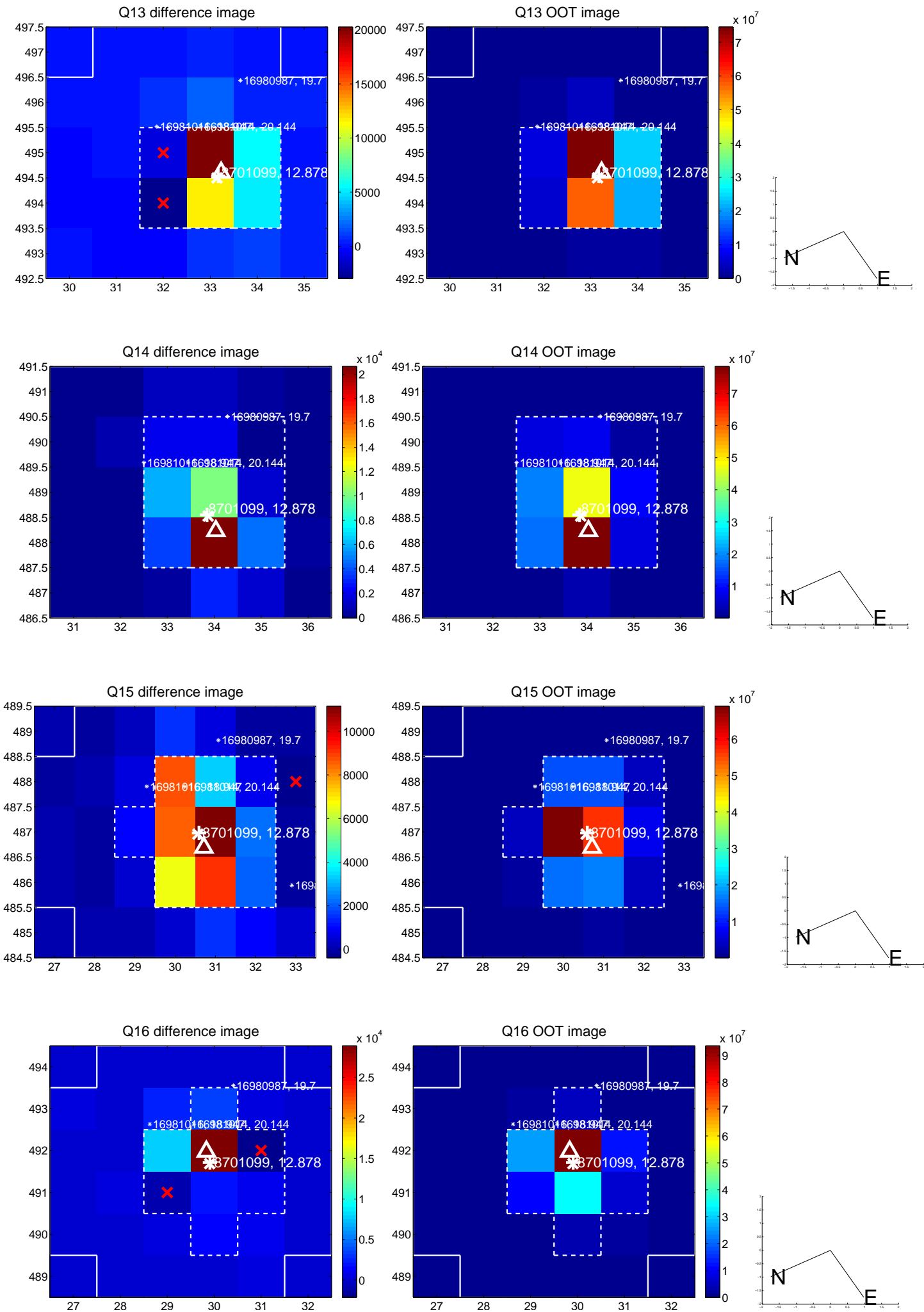
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

