

KIC 008845312

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})
008845312-01	OBS	No	2.639181	133.192508	146.7	10.809	7.7	7.7	3.91	7498	5.50	19399.82
008845312-02	OBS	No	0.715255	132.006130	253.1	7.064	10.3	13.2	3.91	7498	6.45	110613.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008845312-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008845312-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

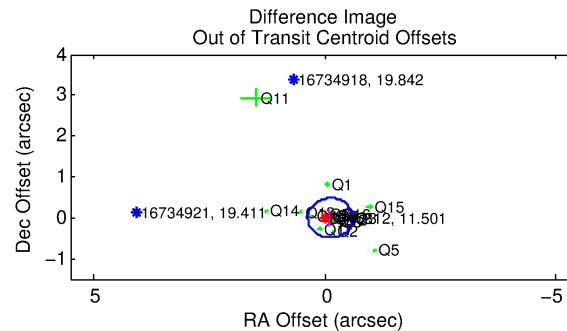
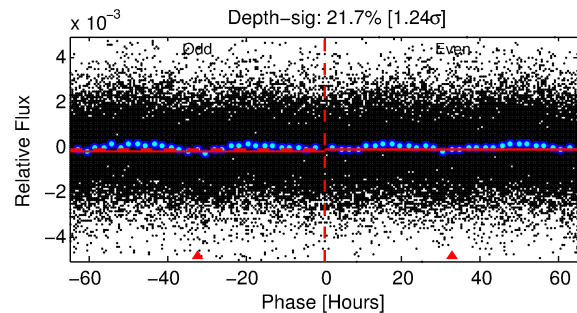
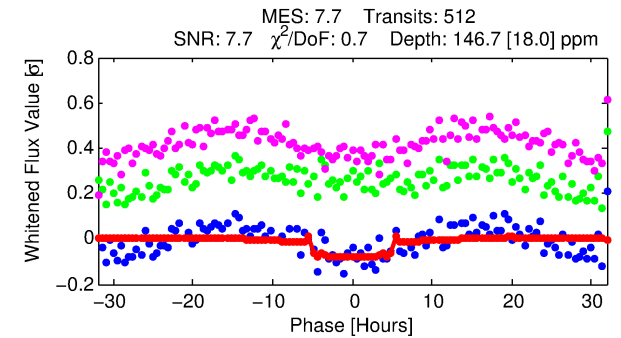
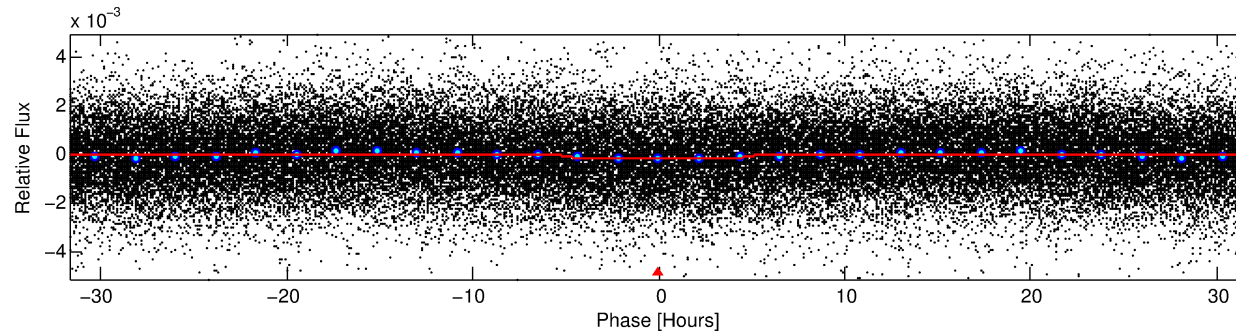
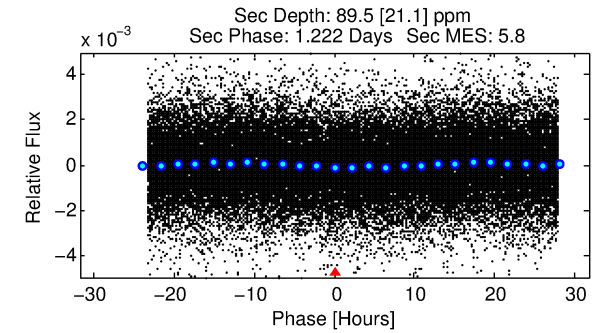
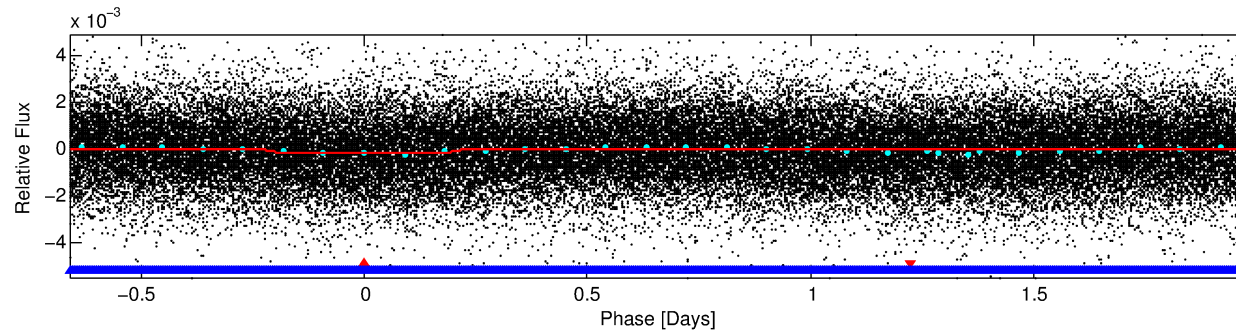
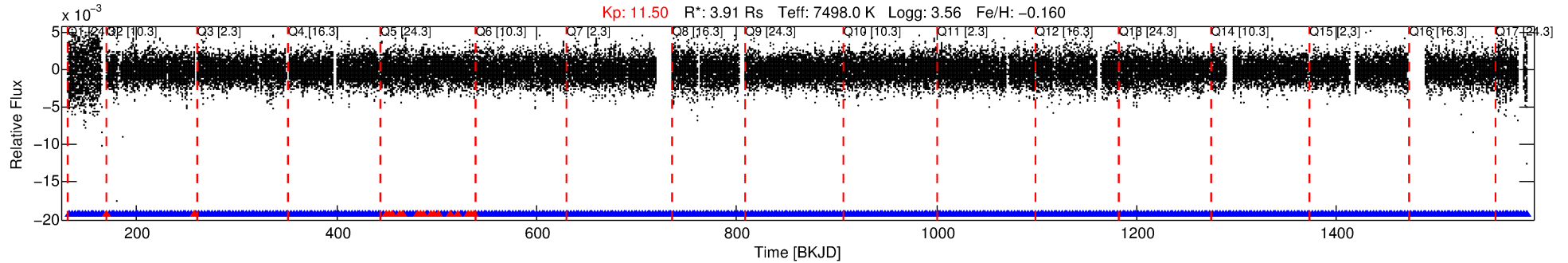
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008845312-01

No Significant Match Found

DV One-Page Summary

KIC: 8845312 Candidate: 1 of 2 Period: 2.639 d



DV Fit Results:

Period = 2.63918 [0.00004] d
Epoch = 133.1925 [0.0063] BKJD
Rp/R* = 0.0129 [0.0012]
a/R* = 1.30 [0.21]
b = 0.89 [0.10]
Seff = 19399.82 [17222.52]
Teq = 3009 [668] K
Rp = 5.50 [2.93] Re
a = 0.0473 [0.0251] AU
Ag = 3.65 [3.37] [0.79σ]
Teffp = 6429 [542] K [3.98σ]

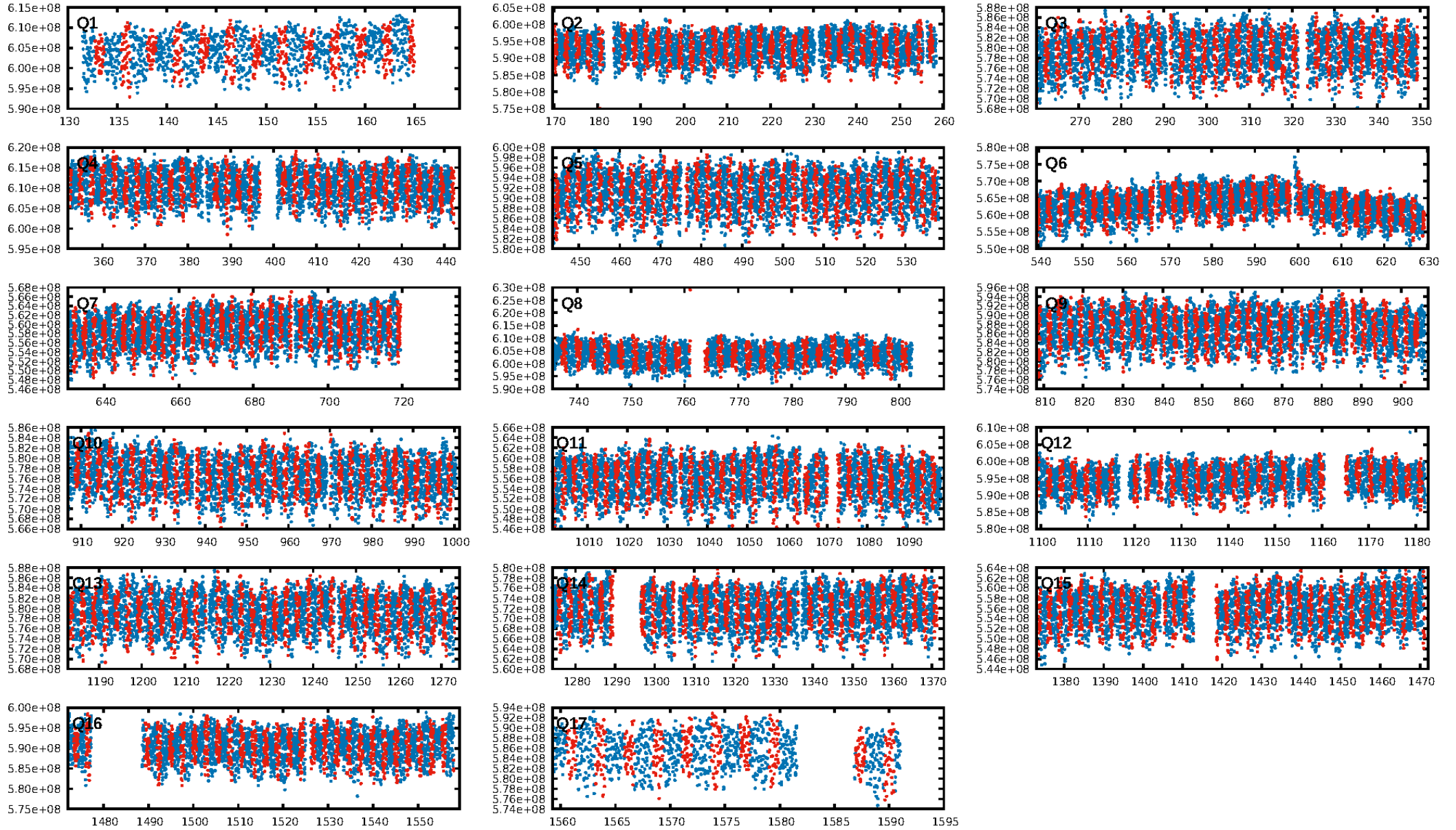
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.58σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [471/489]
GhostDiagnostic-chr: 0.9647
Centroid-sig: 2.4%
Centroid-so: 0.292 arcsec [3.45σ]
OotOffset-rm: 0.120 arcsec [0.74σ]
KicOffset-rm: 0.300 arcsec [1.49σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 0.00 [0/17]

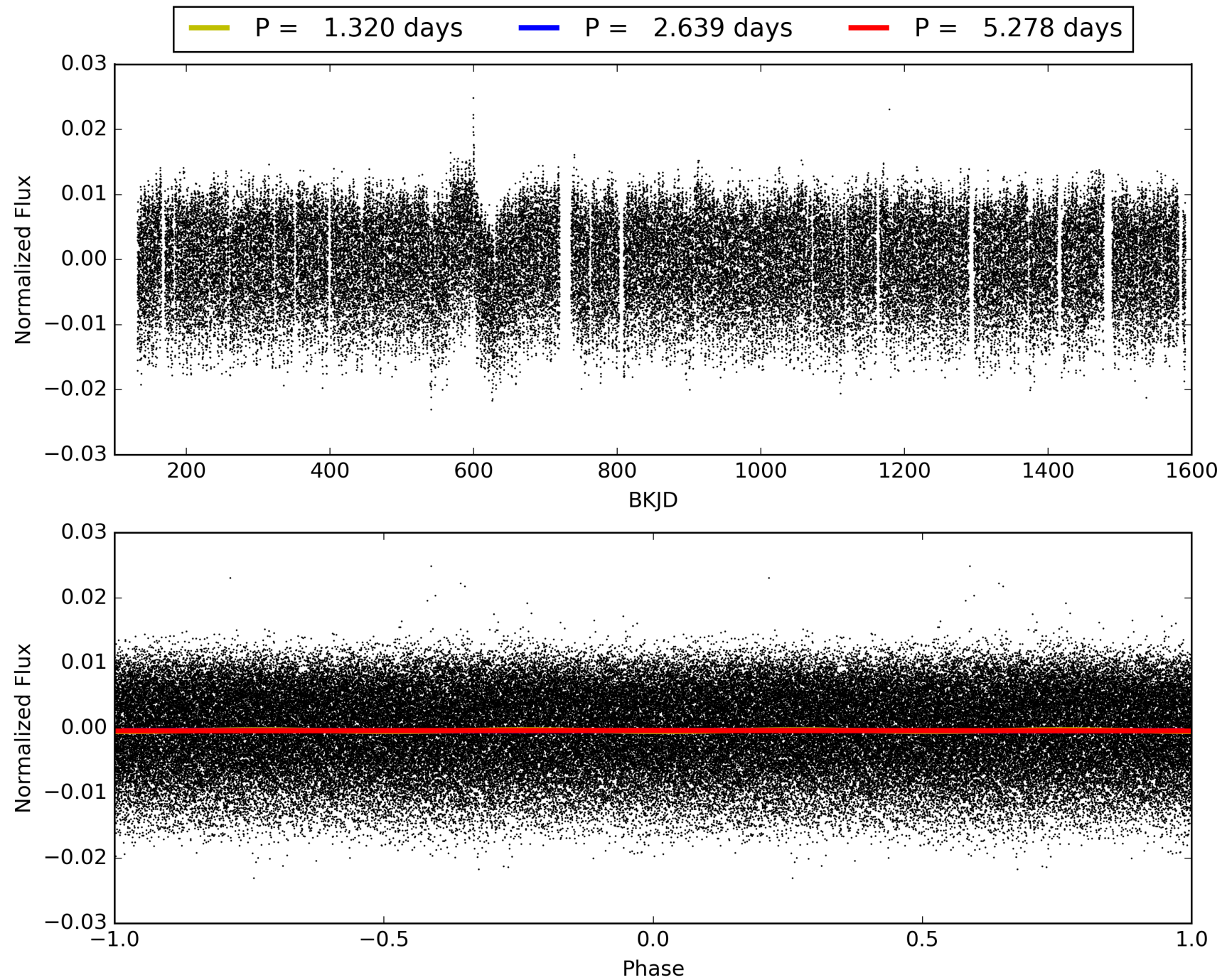
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:08:07 Z

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

TCE 008845312-01, PDC Light Curves

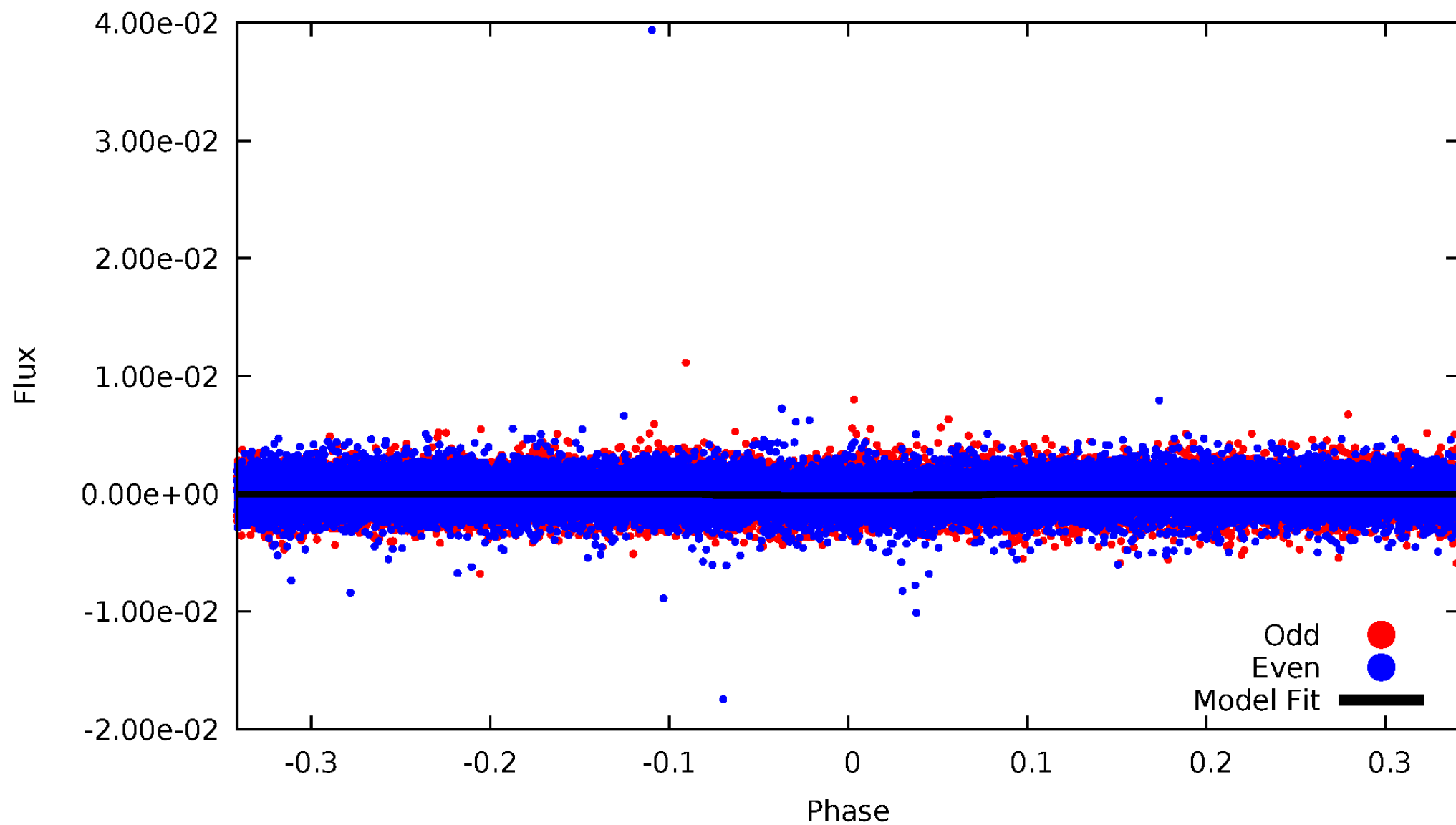


TCE 008845312-01



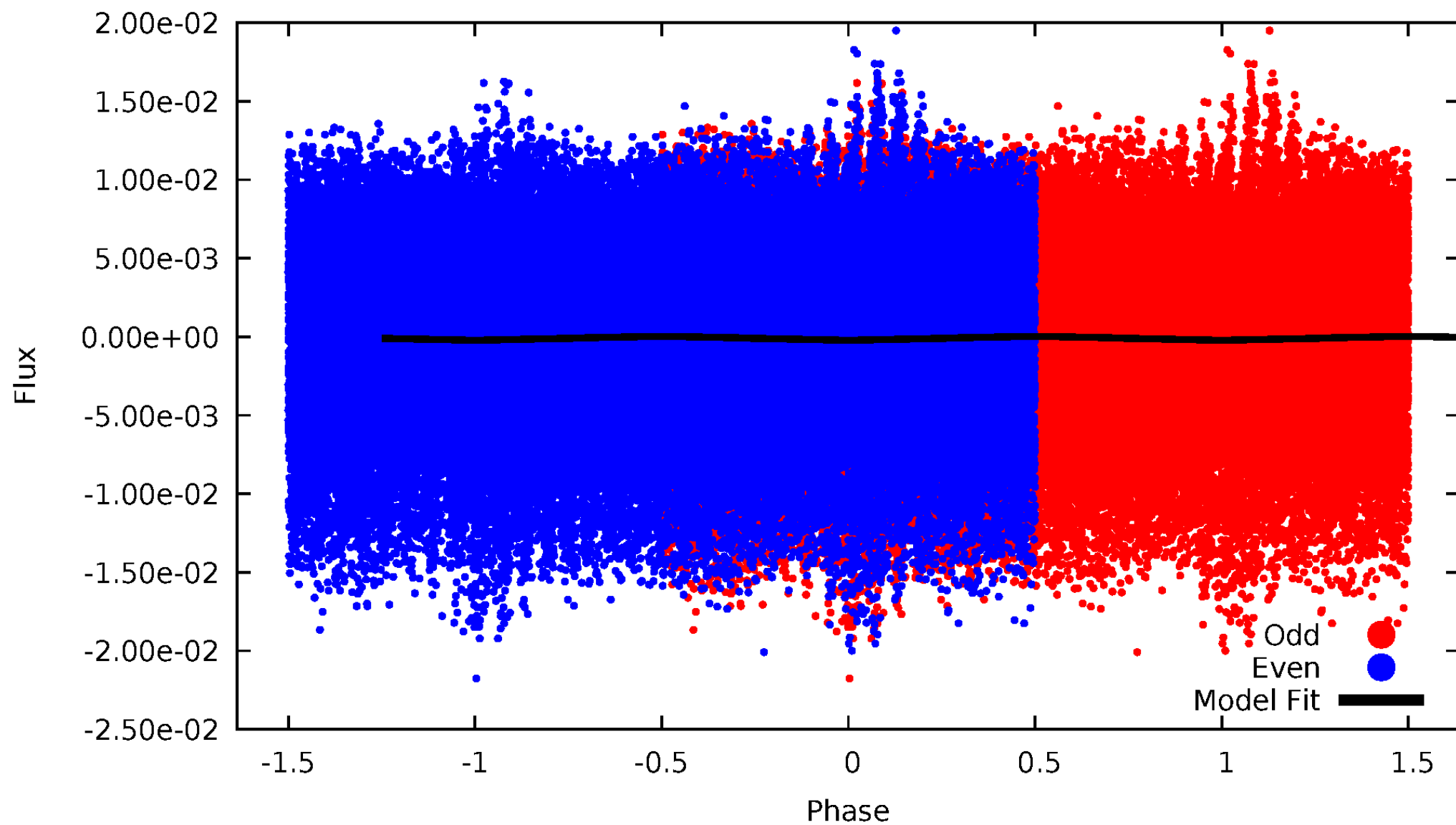
DV Odd/Even

TCE 008845312-01

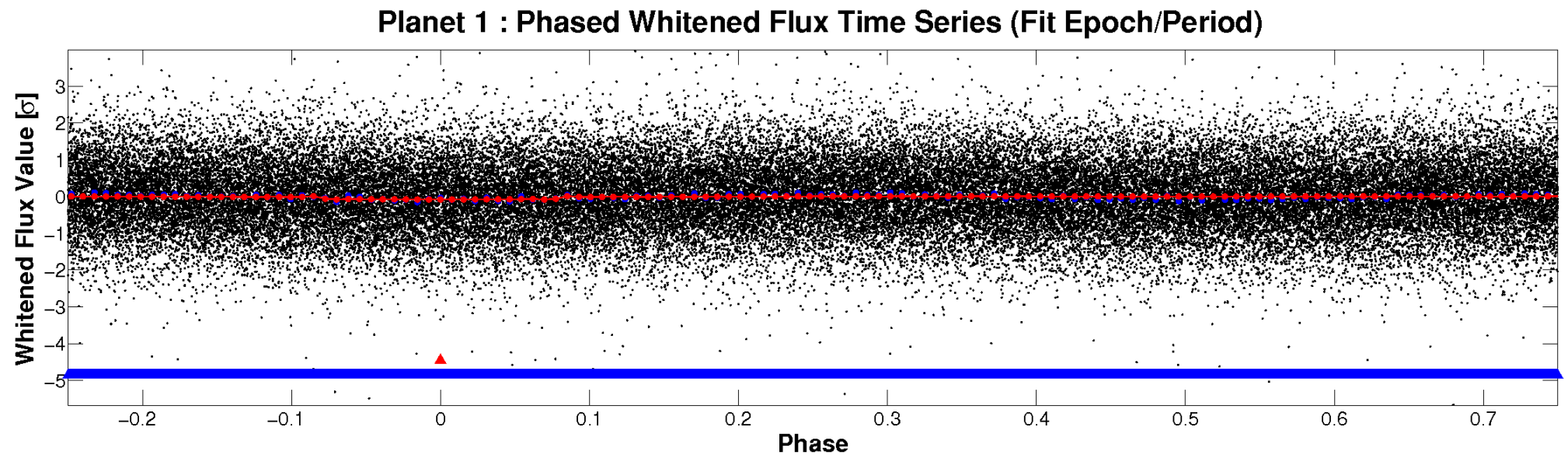
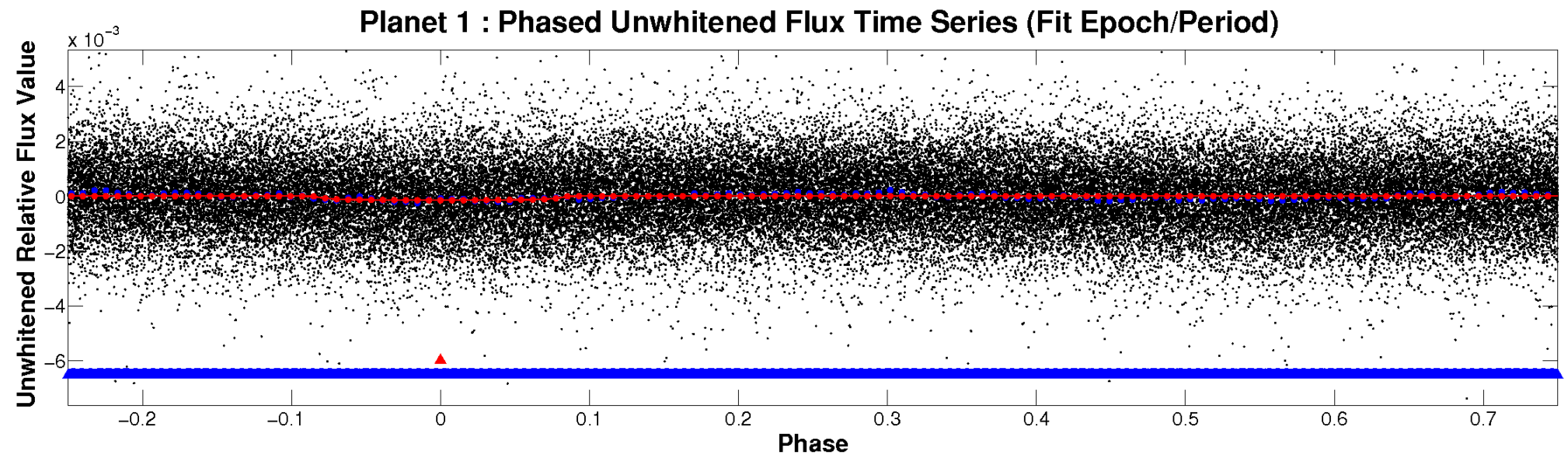


ALT Odd/Even

TCE 008845312-01

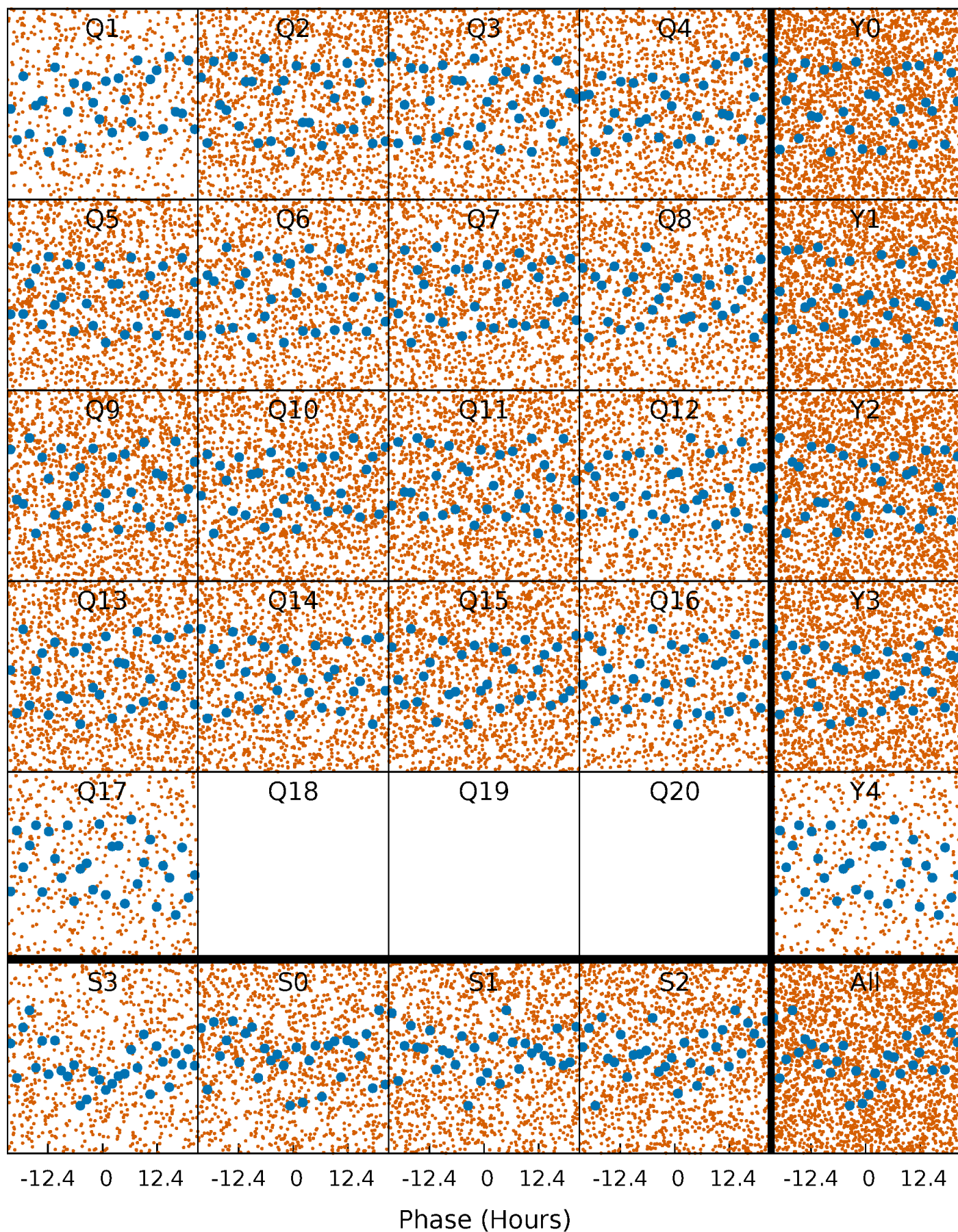


Non-Whitened Vs. Whitened Light Curve



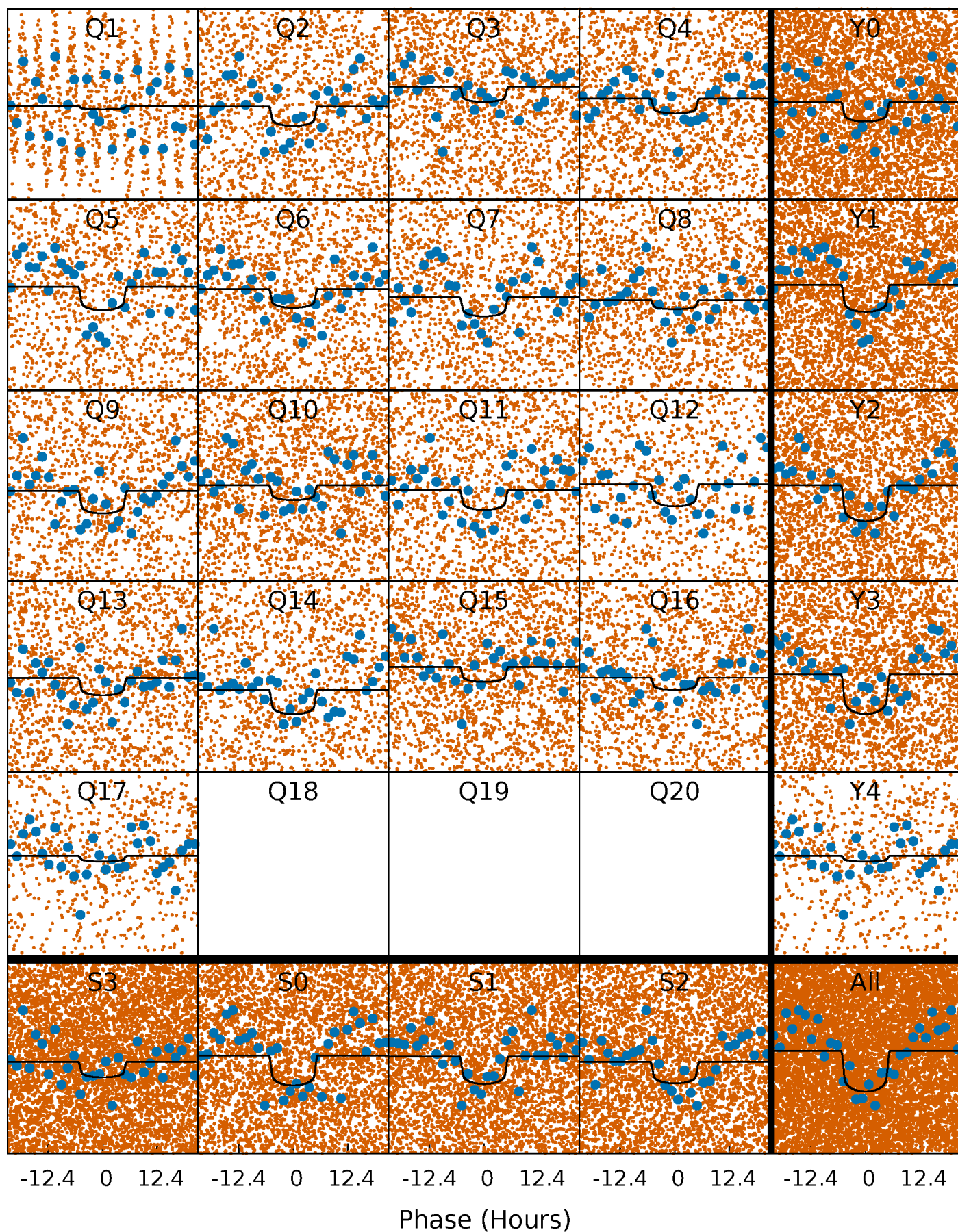
PDC Quarter-Phased Transit Curves

TCE 008845312-01 P= 2.639181 Days $T_0=133.192508$ (BKJD)



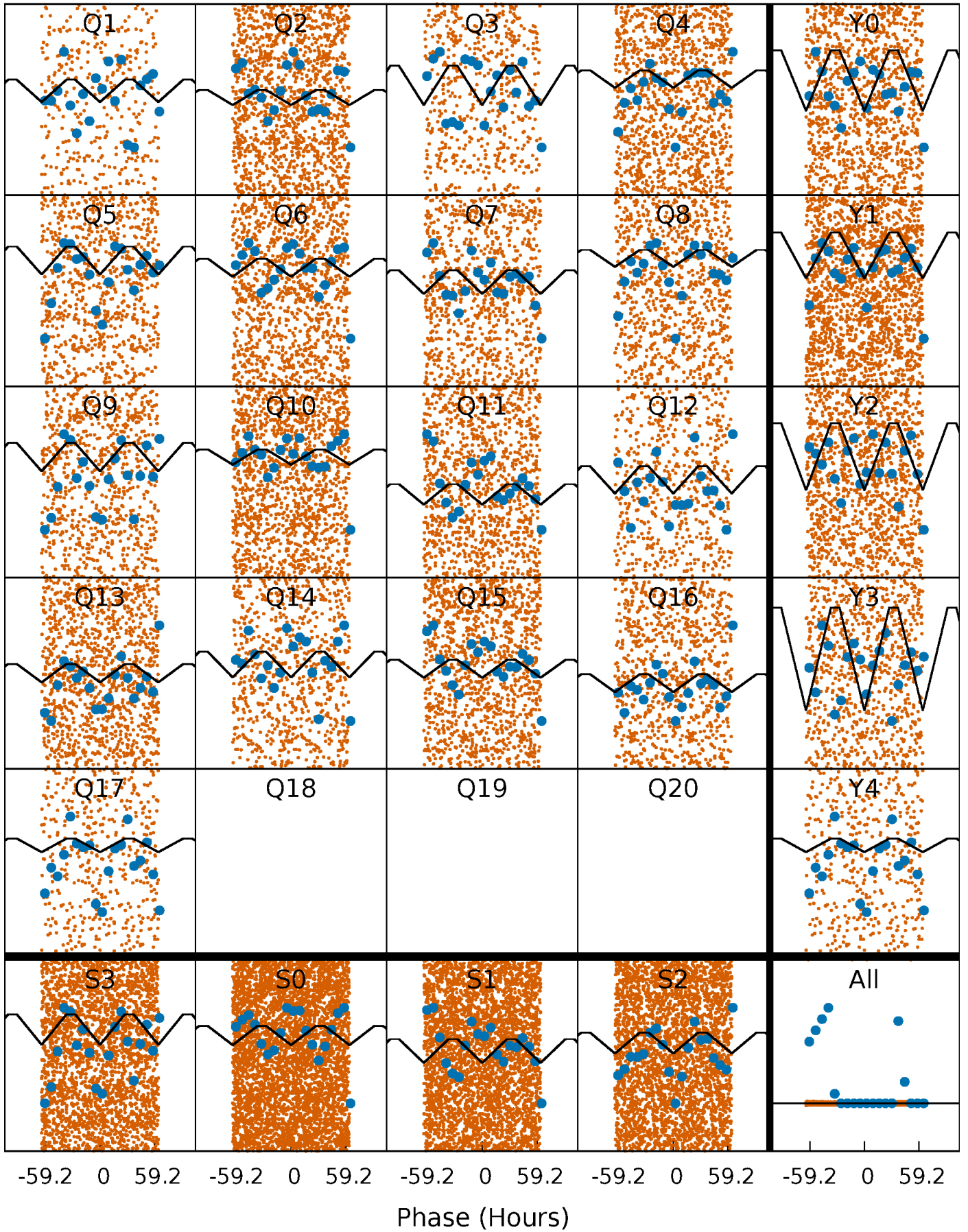
DV Quarter-Phased Transit Curves

TCE 008845312-01 P= 2.639181 Days $T_0=133.192508$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

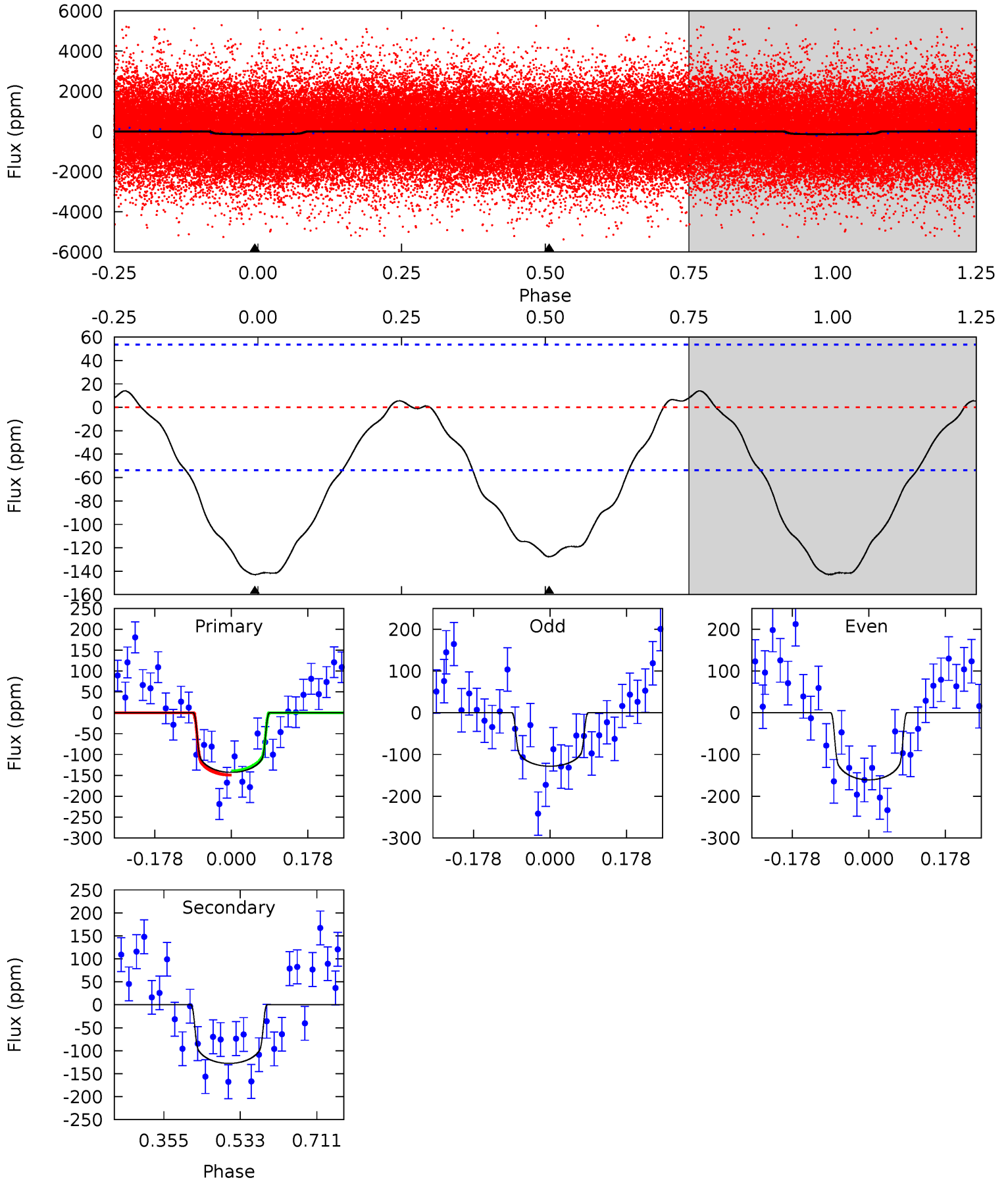
TCE 008845312-01 P= 2.638874 Days $T_0=133.218619$ (BKJD)



DV Model-Shift Uniqueness Test

008845312-01, P = 2.639181 Days, E = 130.553327 Days

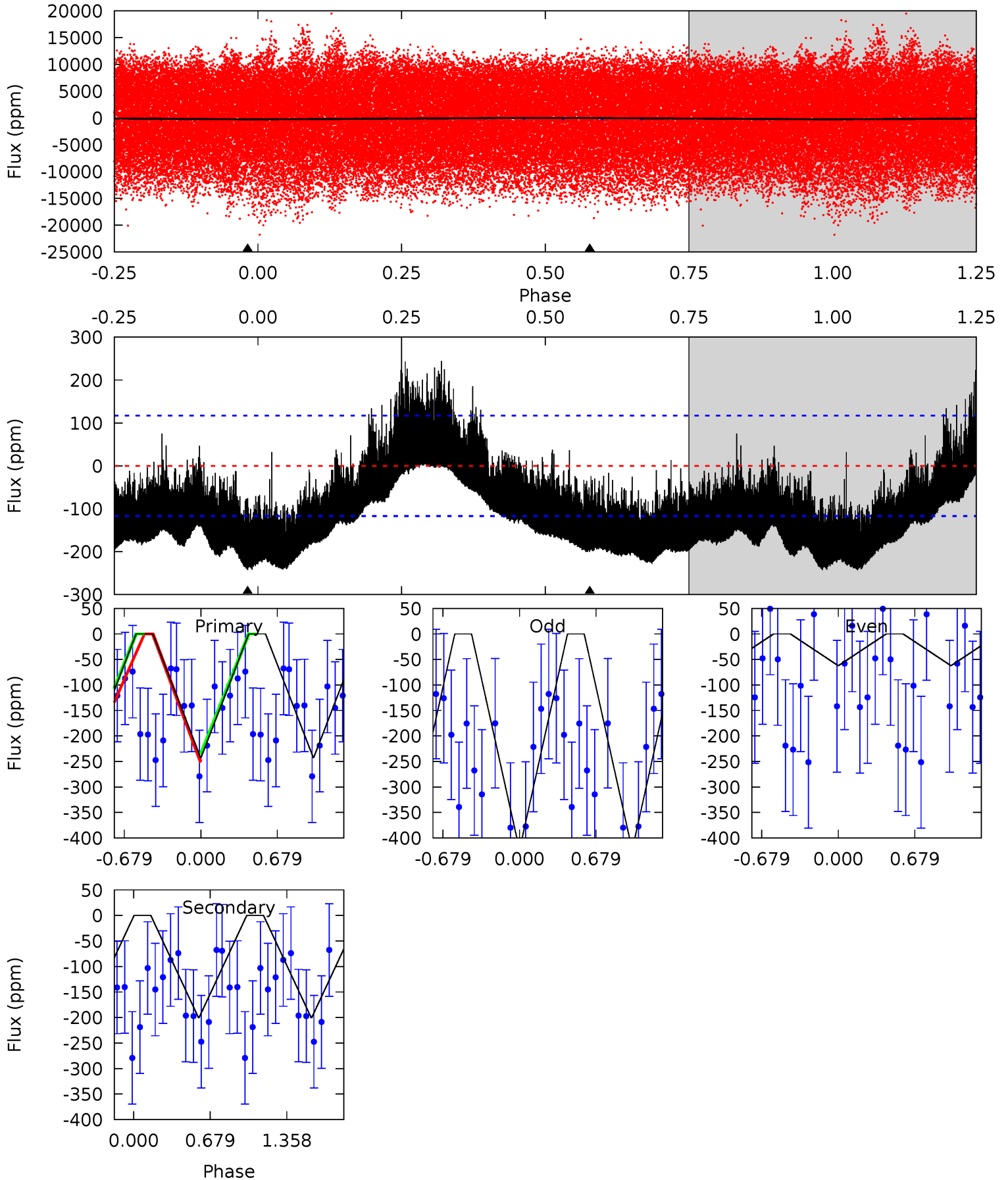
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	10.6	0	0	4.44	1.35	0.87	11.8	11.8	10.6	10.6	1.35	0.94	0.09	0.41



Alt Model-Shift Uniqueness Test

008845312-01, P = 2.638874 Days, E = 130.579745 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.57	7.09	0	0	4.15	0.41	1.51	8.57	8.57	7.09	7.09	6.31	1.00	0.54	0.25



Stellar Parameters For KIC 008845312

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7498^{+236}_{-289}	$3.559^{+0.522}_{-0.058}$	$-0.160^{+0.250}_{-0.300}$	$3.914^{+0.513}_{-2.053}$	$2.025^{+0.166}_{-0.531}$	$0.048^{+0.274}_{-0.010}$
	+3%/-4%	+15%/-2%	+156%/-188%	+13%/-52%	+8%/-26%	+577%/-21%
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 008845312-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-128 ± 12	$4.99^{+0.93}_{-1.43}$	4007^{+310}_{-550}	6839^{+522}_{-453}	$6.344^{+5.080}_{-1.876}$
Alt.	-200 ± 28	$6.00^{+1.10}_{-1.72}$	4028^{+290}_{-581}	7024^{+459}_{-474}	$6.863^{+5.098}_{-1.996}$

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 $A_{obs} \gg 1.0$

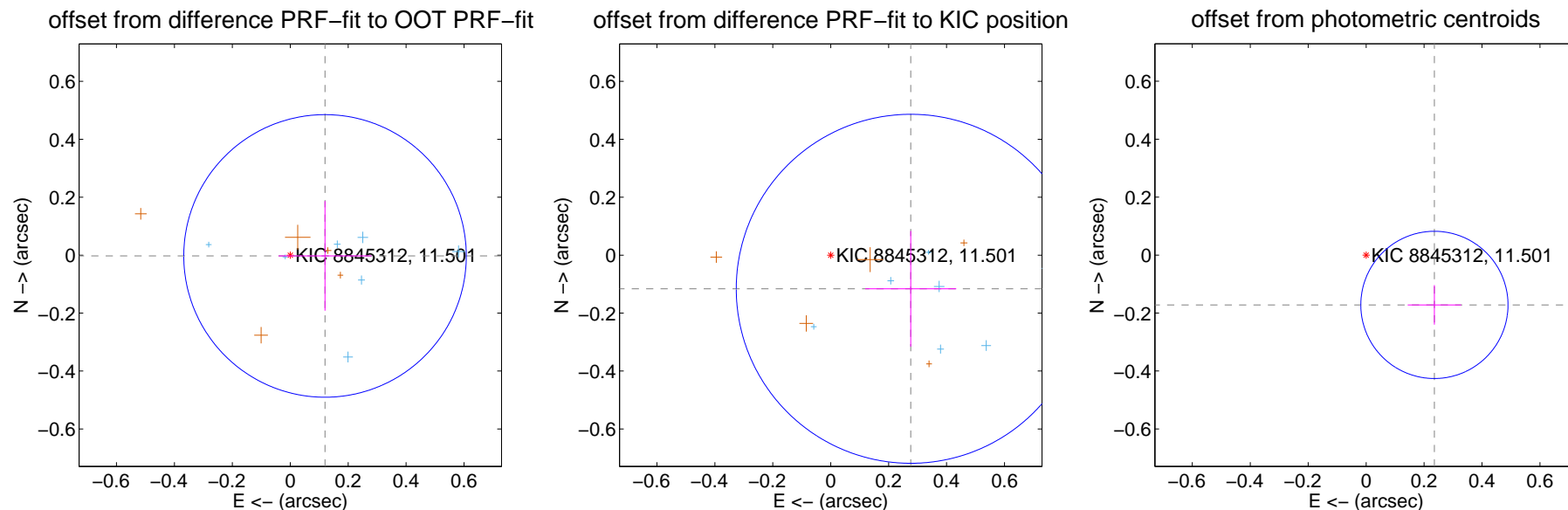
DV Centroid Data

Supplemental centroid analysis for 008845312-01. **Kepler magnitude: 11.50**. Transit SNR 7.66

There are 10 quarters with good PRF difference image offsets

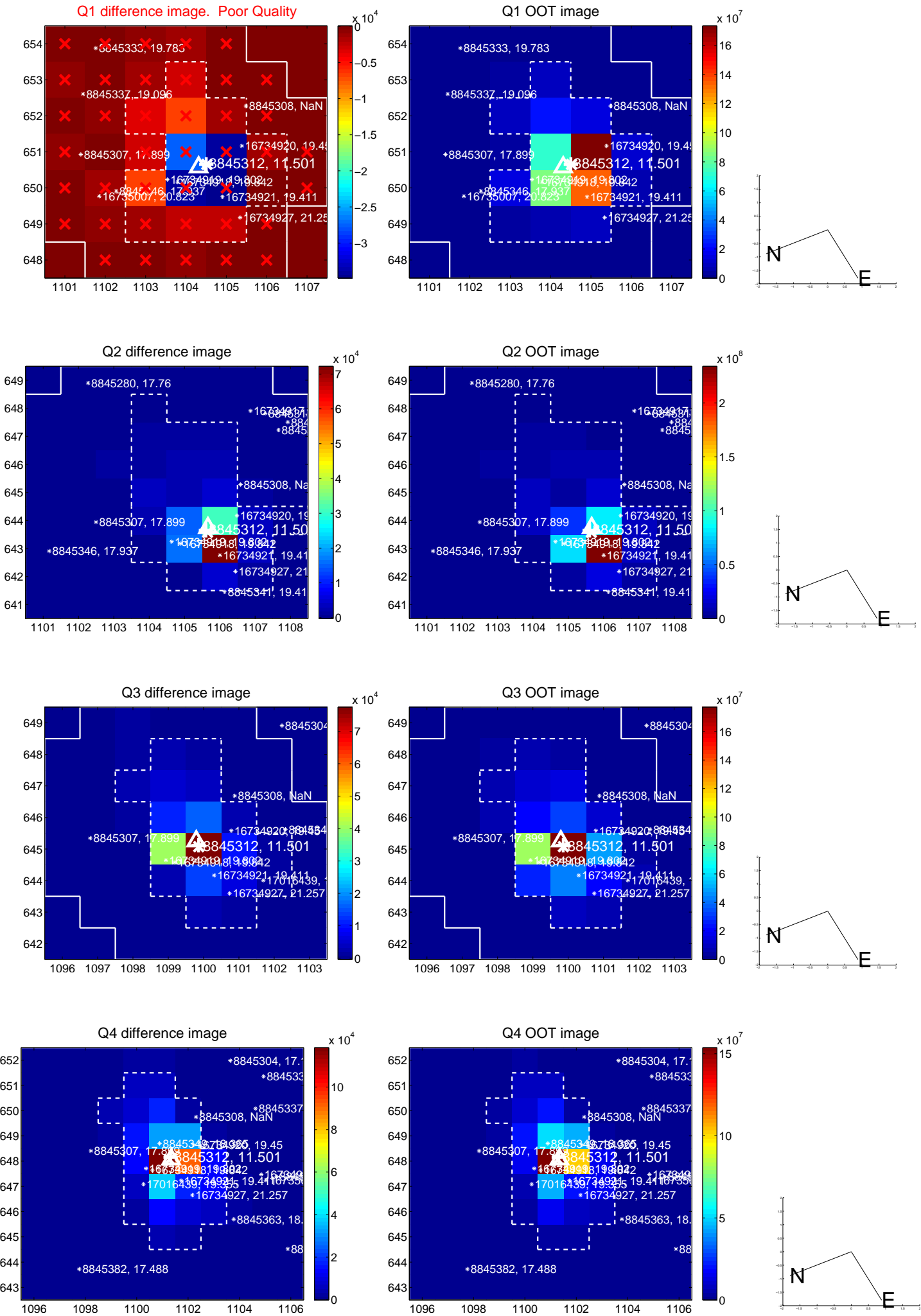
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.120 ± 0.163	0.74	-0.120 ± 0.160	-0.003 ± 0.189
PRF-fit source offset from KIC position	0.300 ± 0.201	1.49	-0.276 ± 0.157	-0.116 ± 0.200
photometric centroid source offset	0.29 ± 0.08	3.45	-0.24 ± 0.09	-0.17 ± 0.07

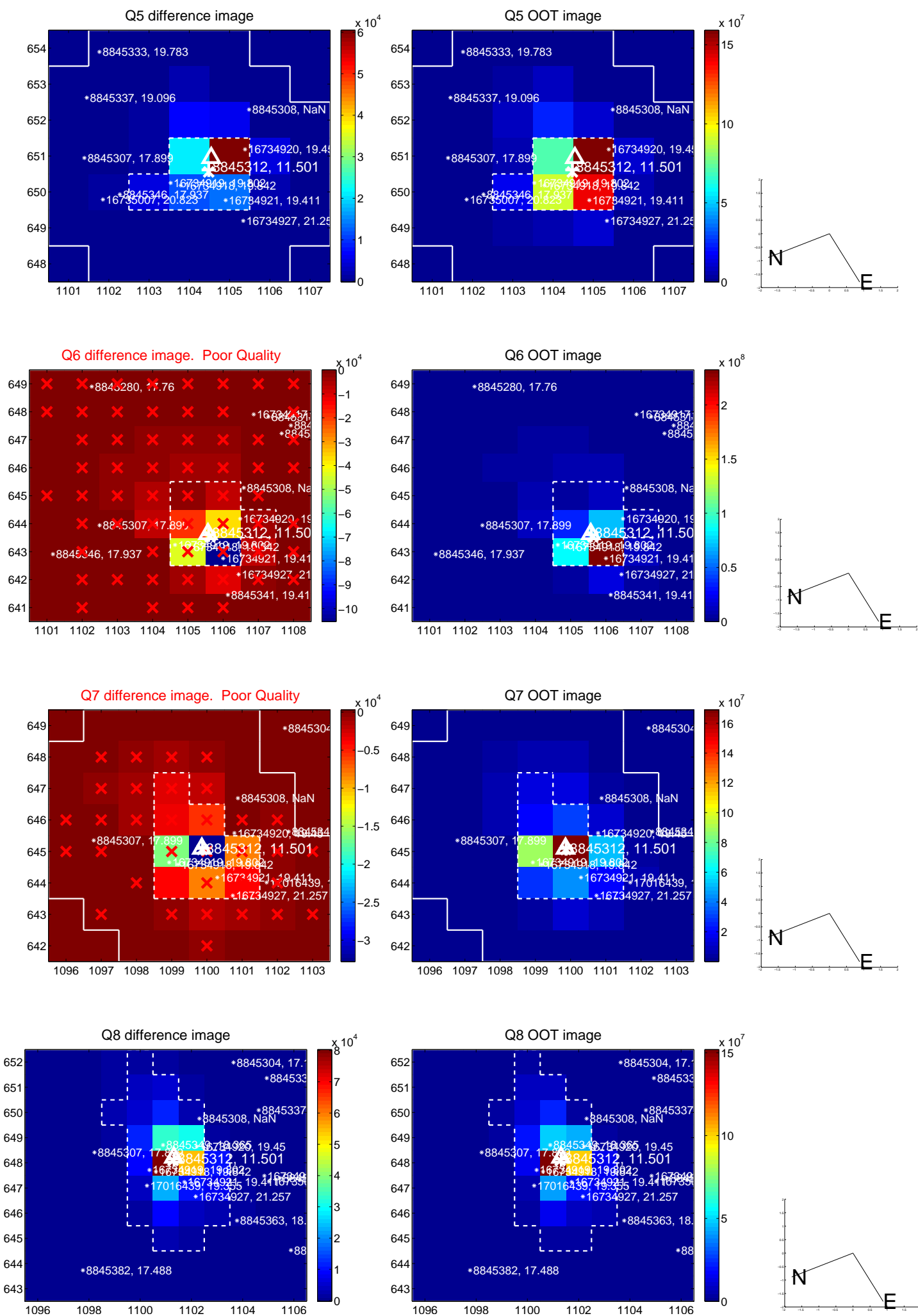


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

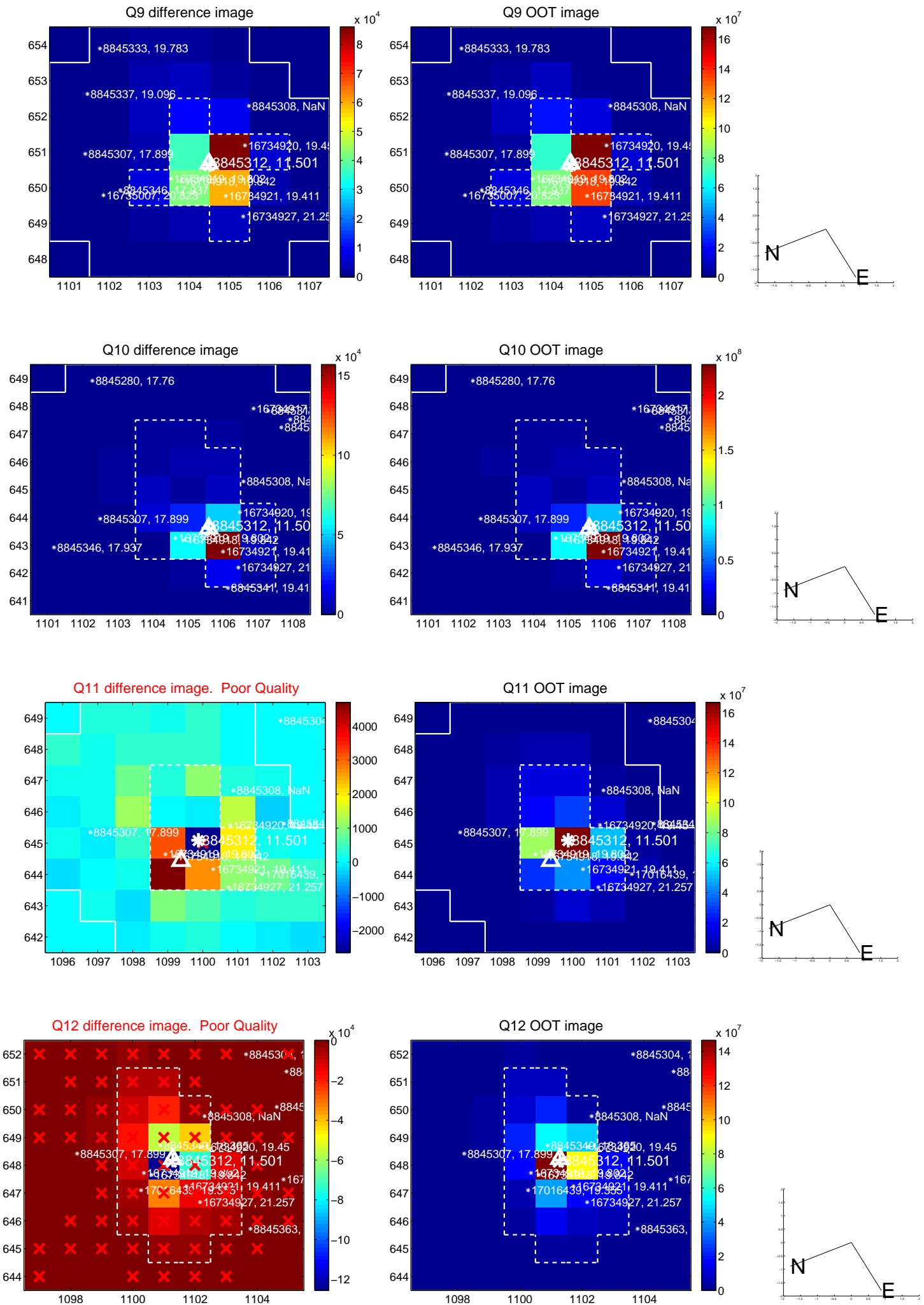
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



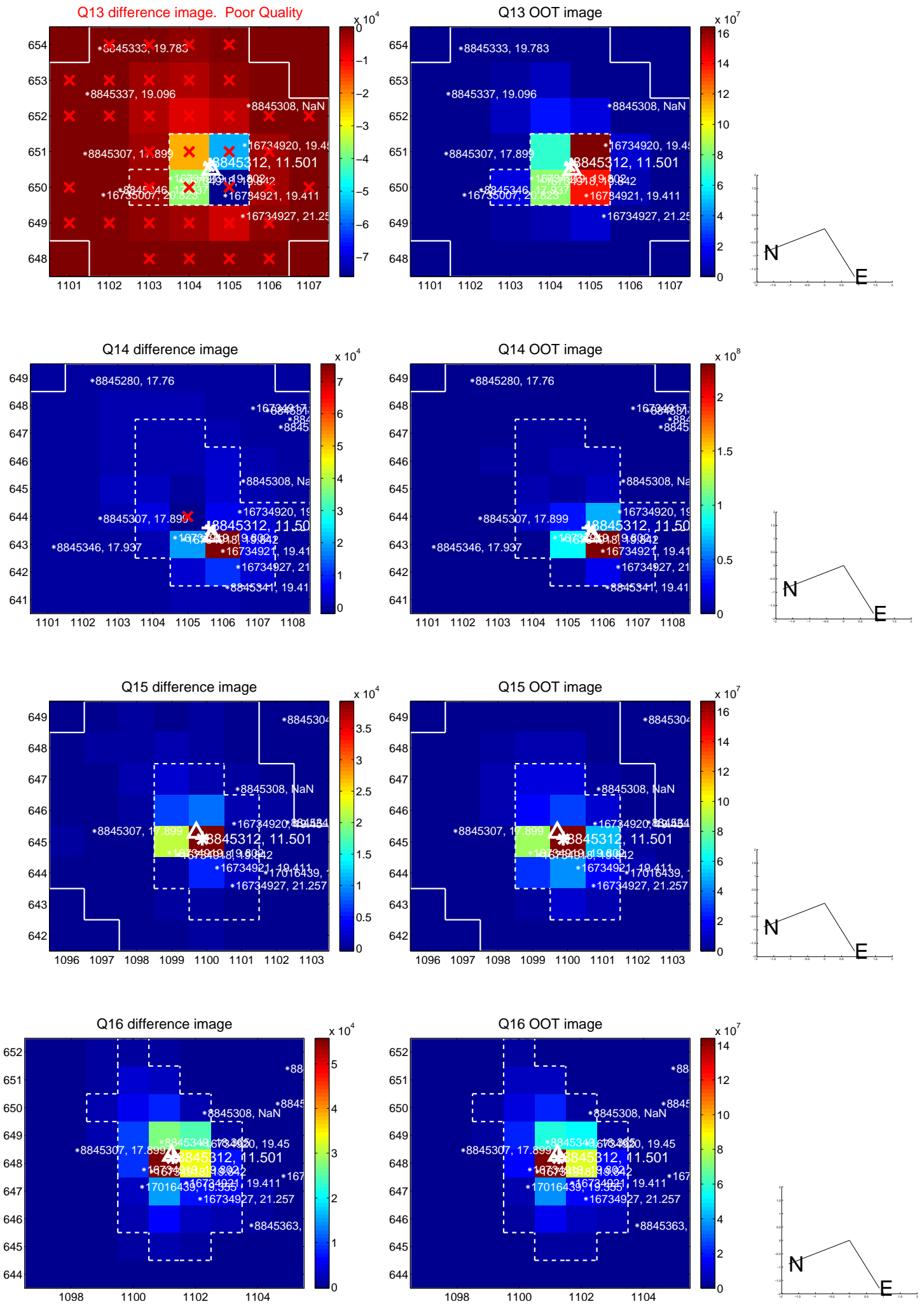
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

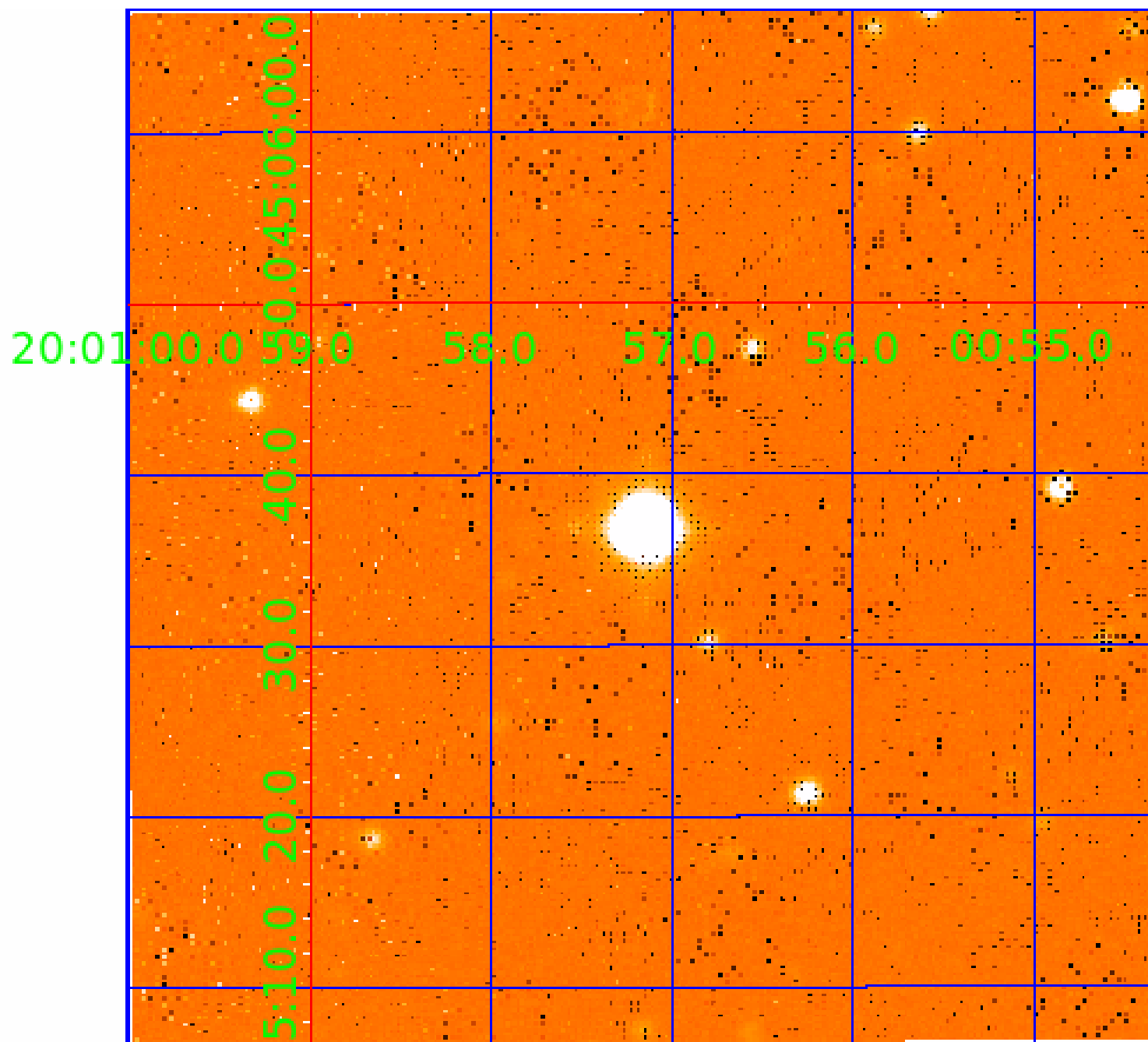


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008845312

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})
008845312-01	OBS	No	2.639181	133.192508	146.7	10.809	7.7	7.7	3.91	7498	5.50	19399.82
008845312-02	OBS	No	0.715255	132.006130	253.1	7.064	10.3	13.2	3.91	7498	6.45	110613.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008845312-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008845312-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

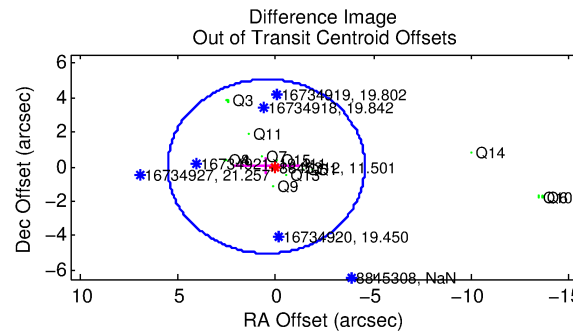
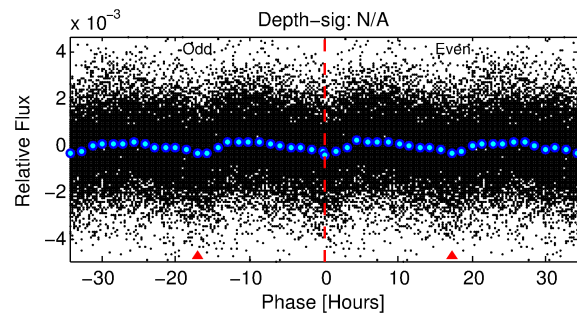
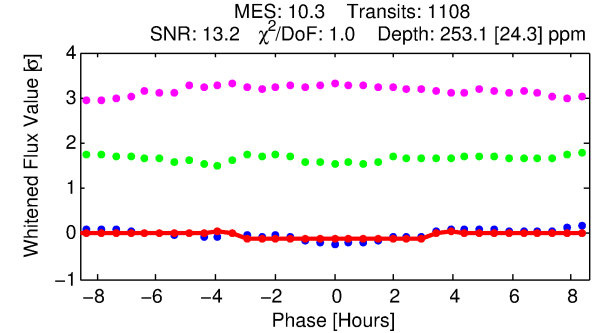
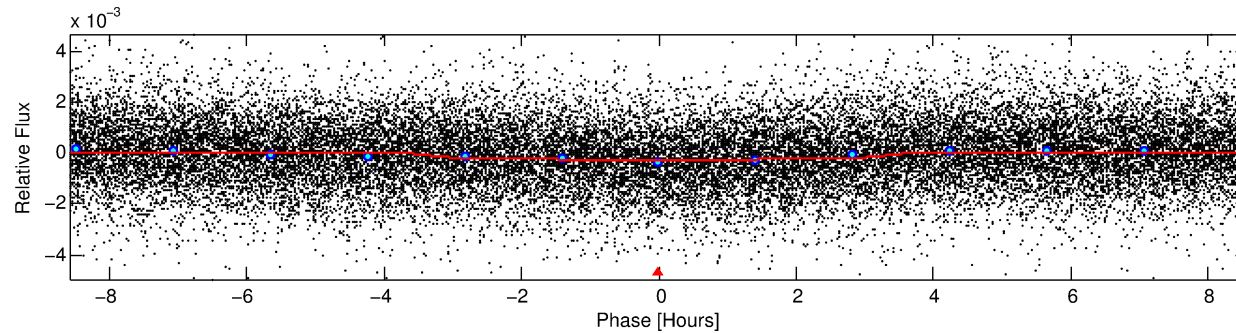
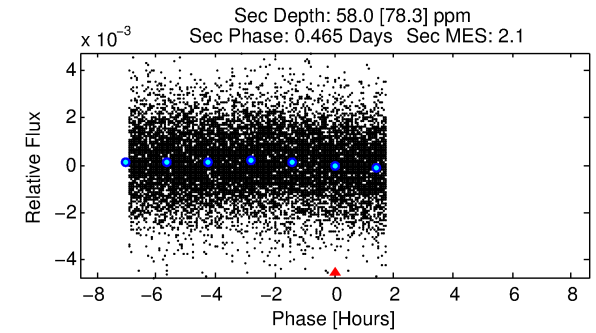
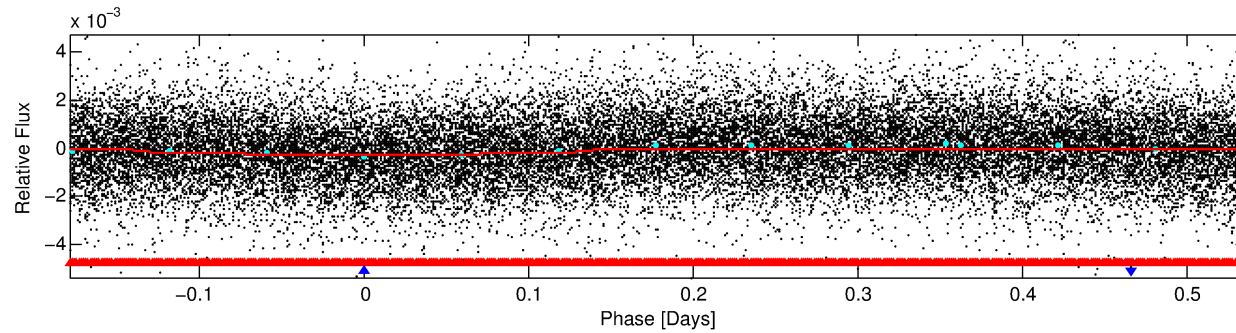
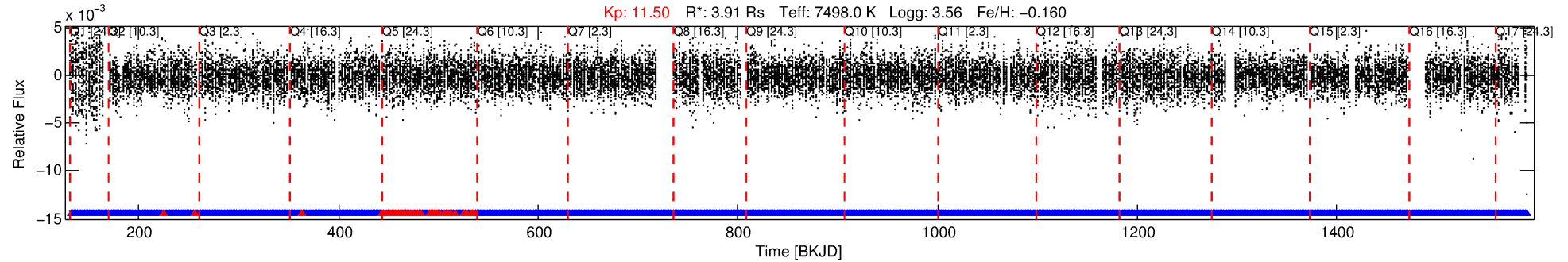
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008845312-02

No Significant Match Found

DV One-Page Summary

KIC: 8845312 Candidate: 2 of 2 Period: 0.715 d



DV Fit Results:

Period = 0.71525 [0.00001] d
Epoch = 132.0061 [0.0025] BKJD
Rp/R* = 0.0151 [0.0028]
a/R* = 1.04 [0.08]
b = 0.53 [1.28]
Seff = 110613.76 [98199.25]
Teq = 4650 [1032] K
Rp = 6.45 [3.59] Re
a = 0.0198 [0.0105] AU
Ag = 0.30 [0.50] [-1.41σ]
Teffp = 5323 [1873] K [0.31σ]

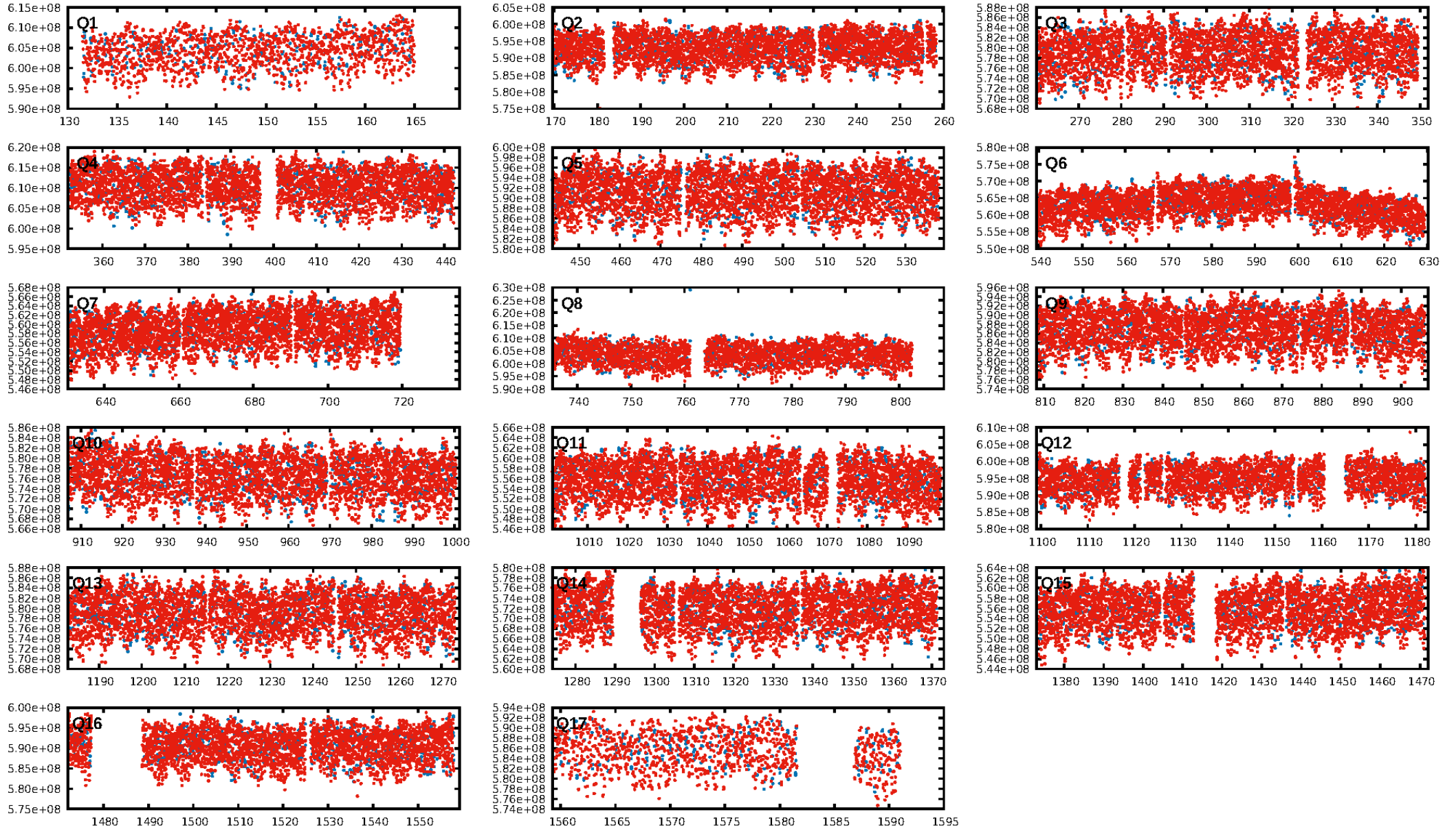
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.58σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [1011/1059]
GhostDiagnostic-chr: 0.8829
Centroid-sig: 0.7%
Centroid-so: 0.154 arcsec [5.83σ]
OotOffset-rm: 0.479 arcsec [0.29σ]
KicOffset-rm: 0.379 arcsec [0.25σ]
OotOffset-st: 3/4/2/4 [13]
KicOffset-st: 3/4/2/4 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 1.00 [17/17]

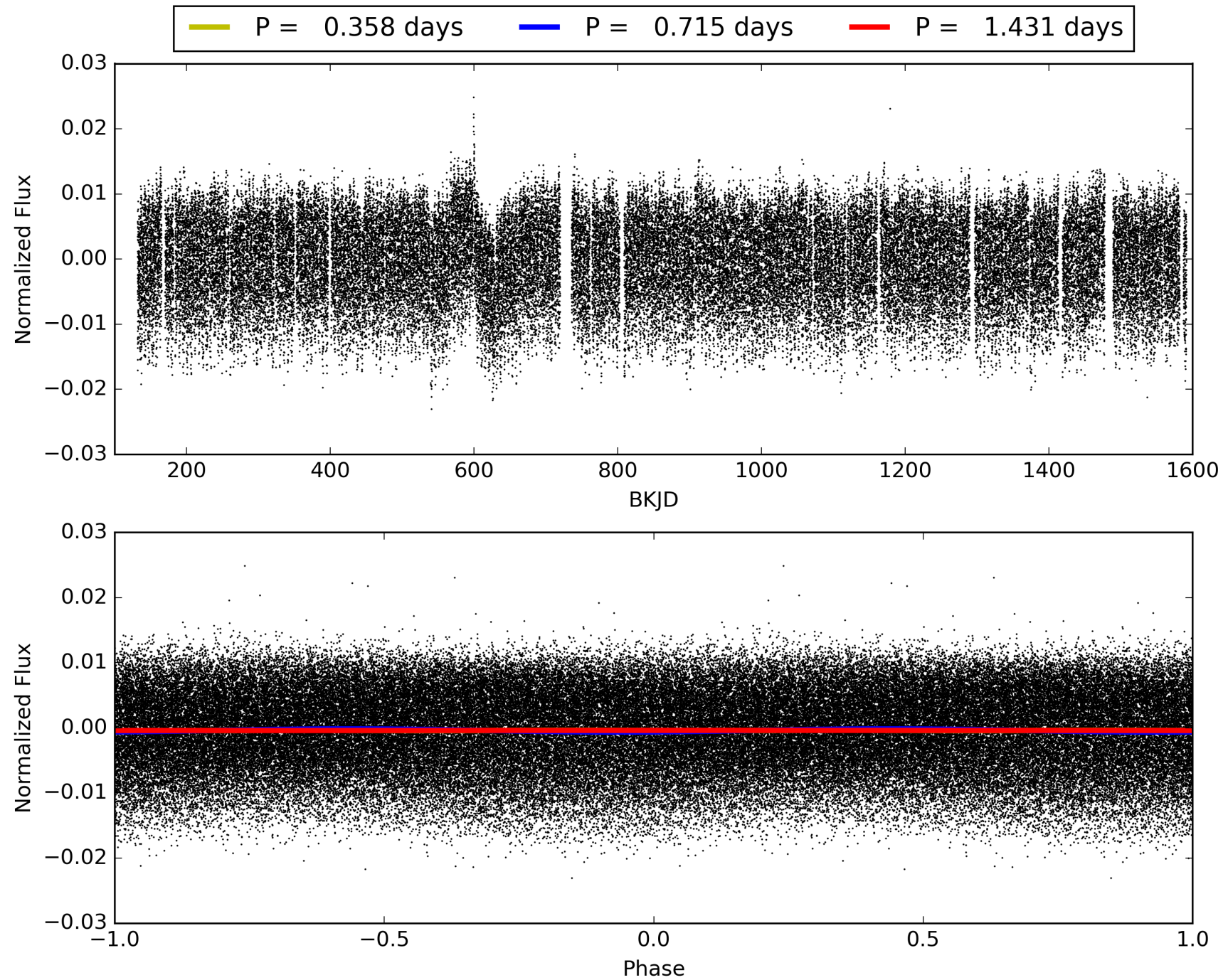
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:08:23 Z

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

TCE 008845312-02, PDC Light Curves

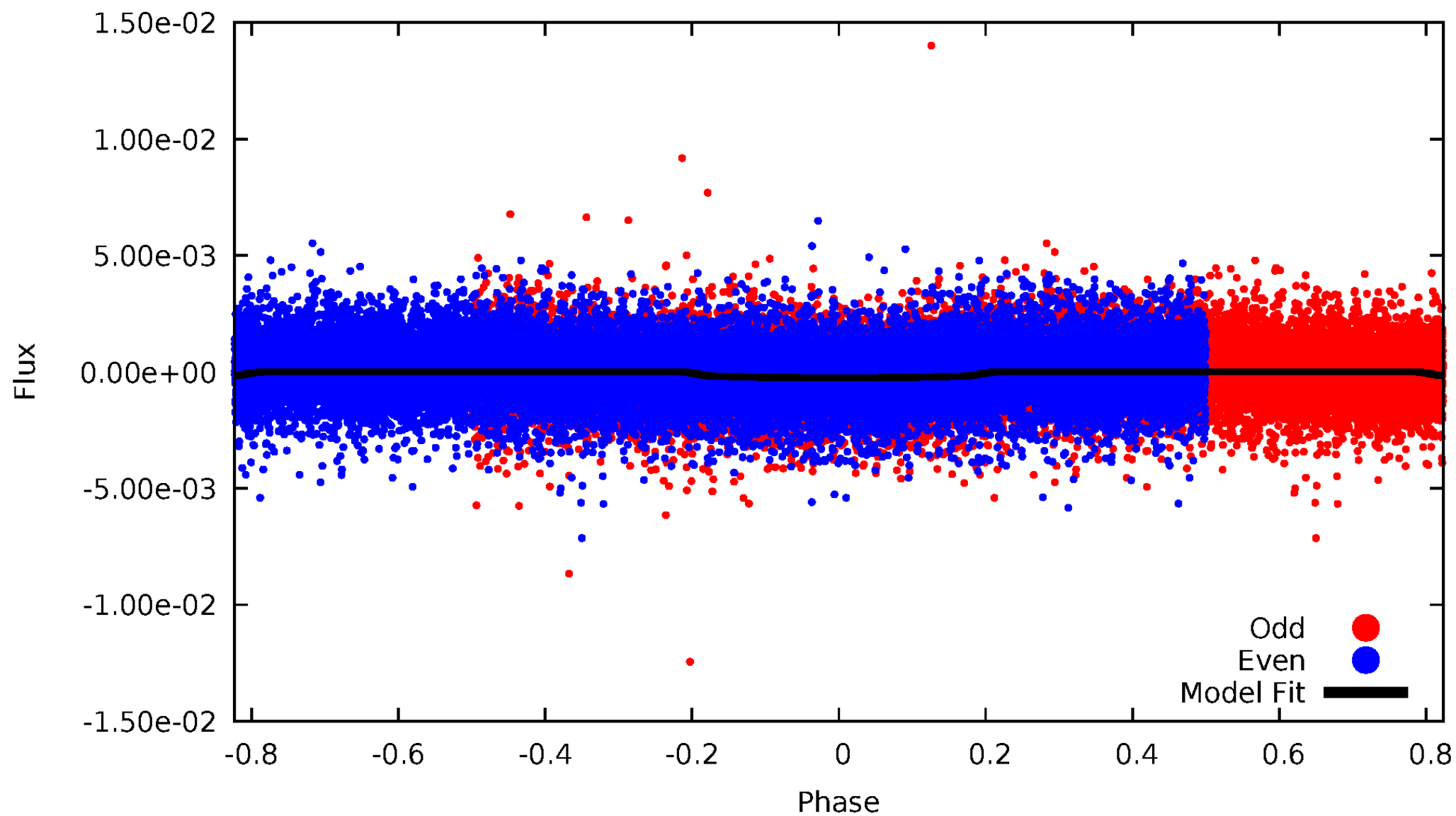


TCE 008845312-02



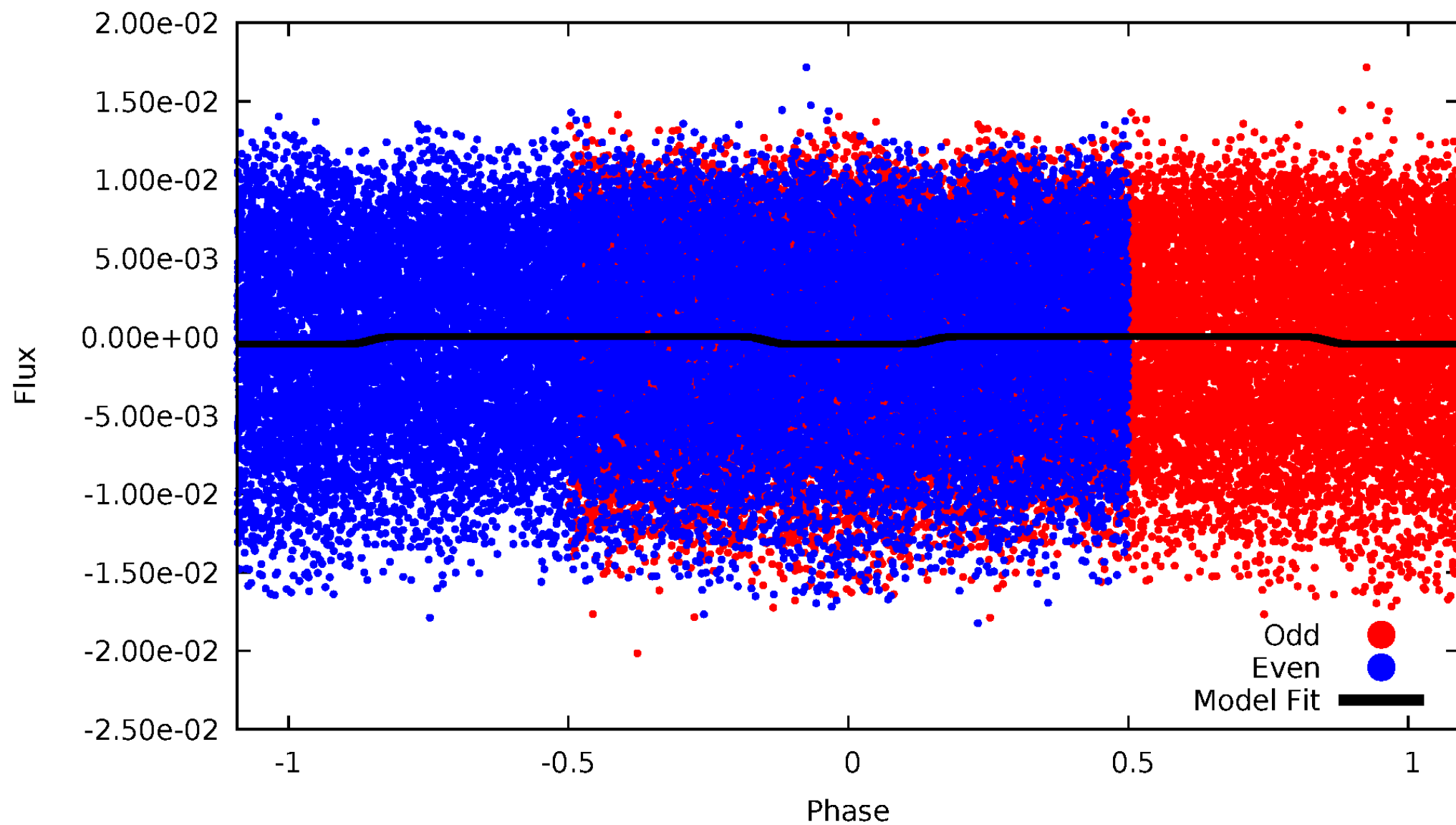
DV Odd/Even

TCE 008845312-02



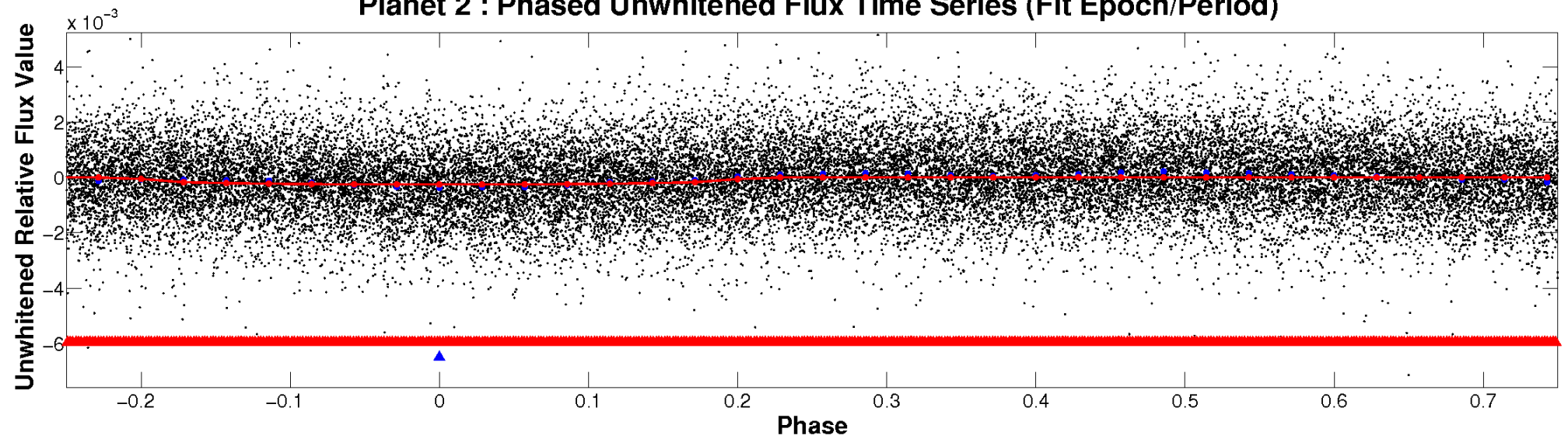
ALT Odd/Even

TCE 008845312-02

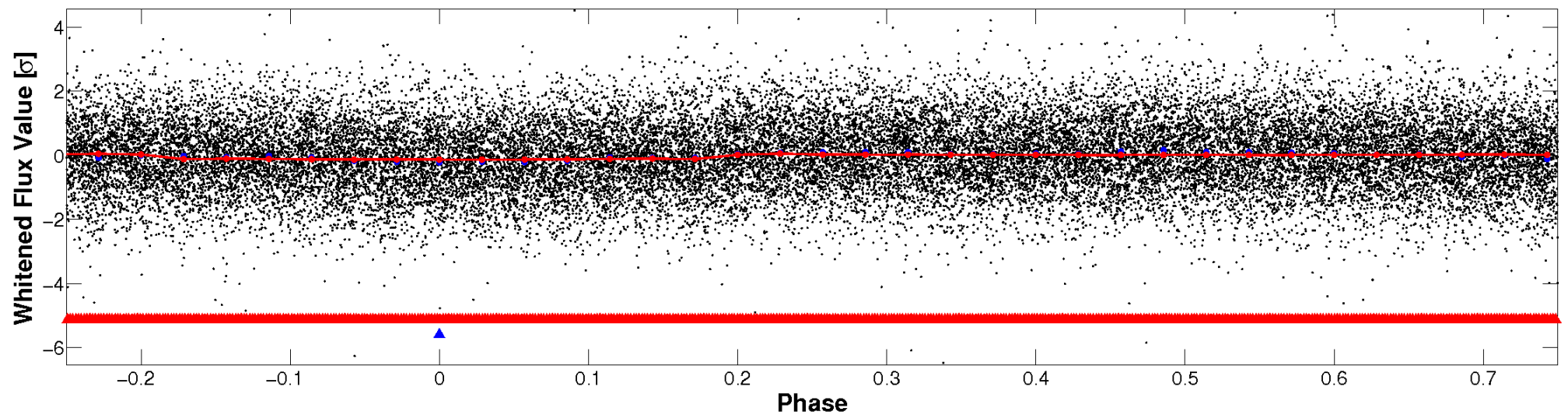


Non-Whitened Vs. Whitened Light Curve

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

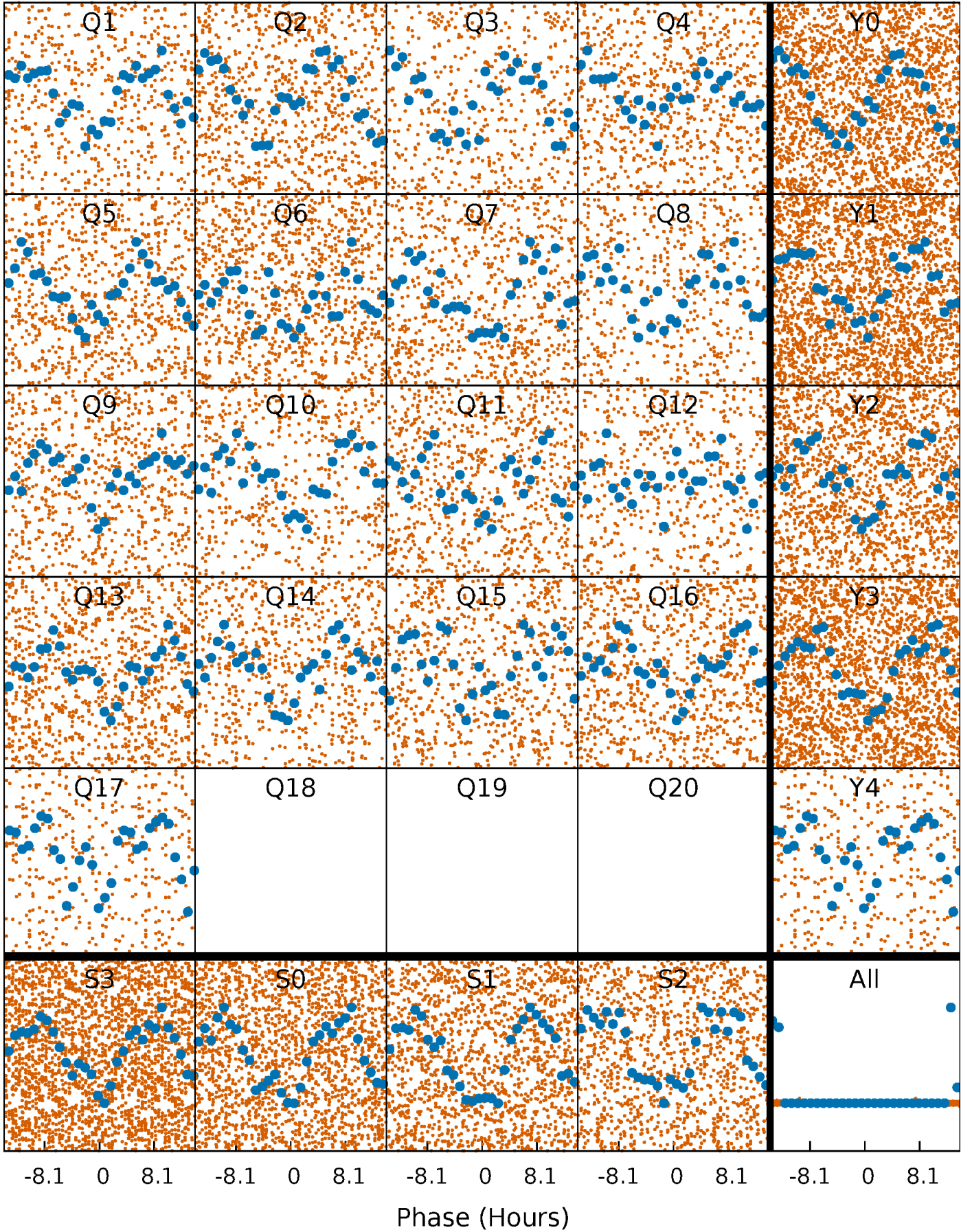


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



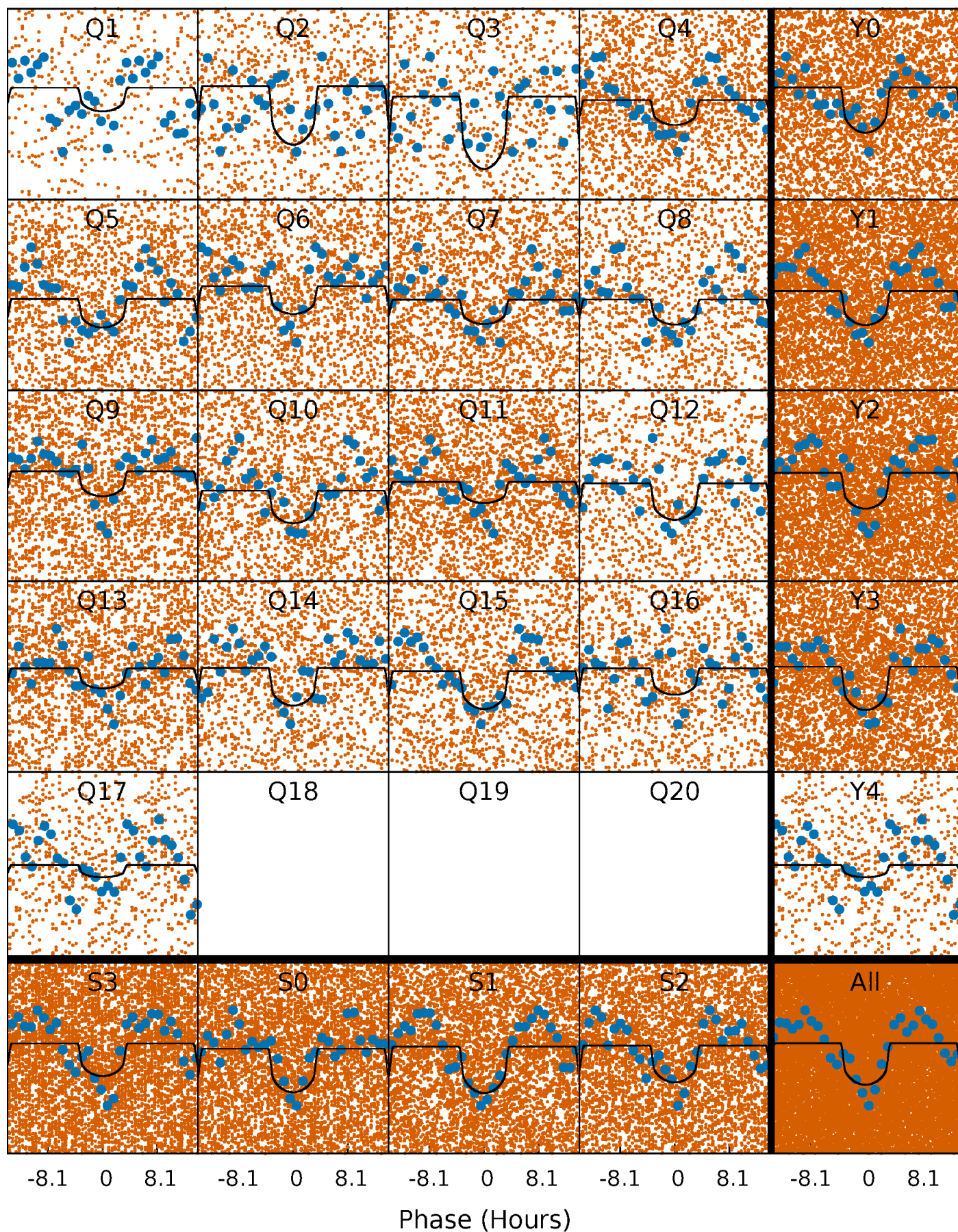
PDC Quarter-Phased Transit Curves

TCE 008845312-02 P= 0.715255 Days $T_0=132.006130$ (BKJD)



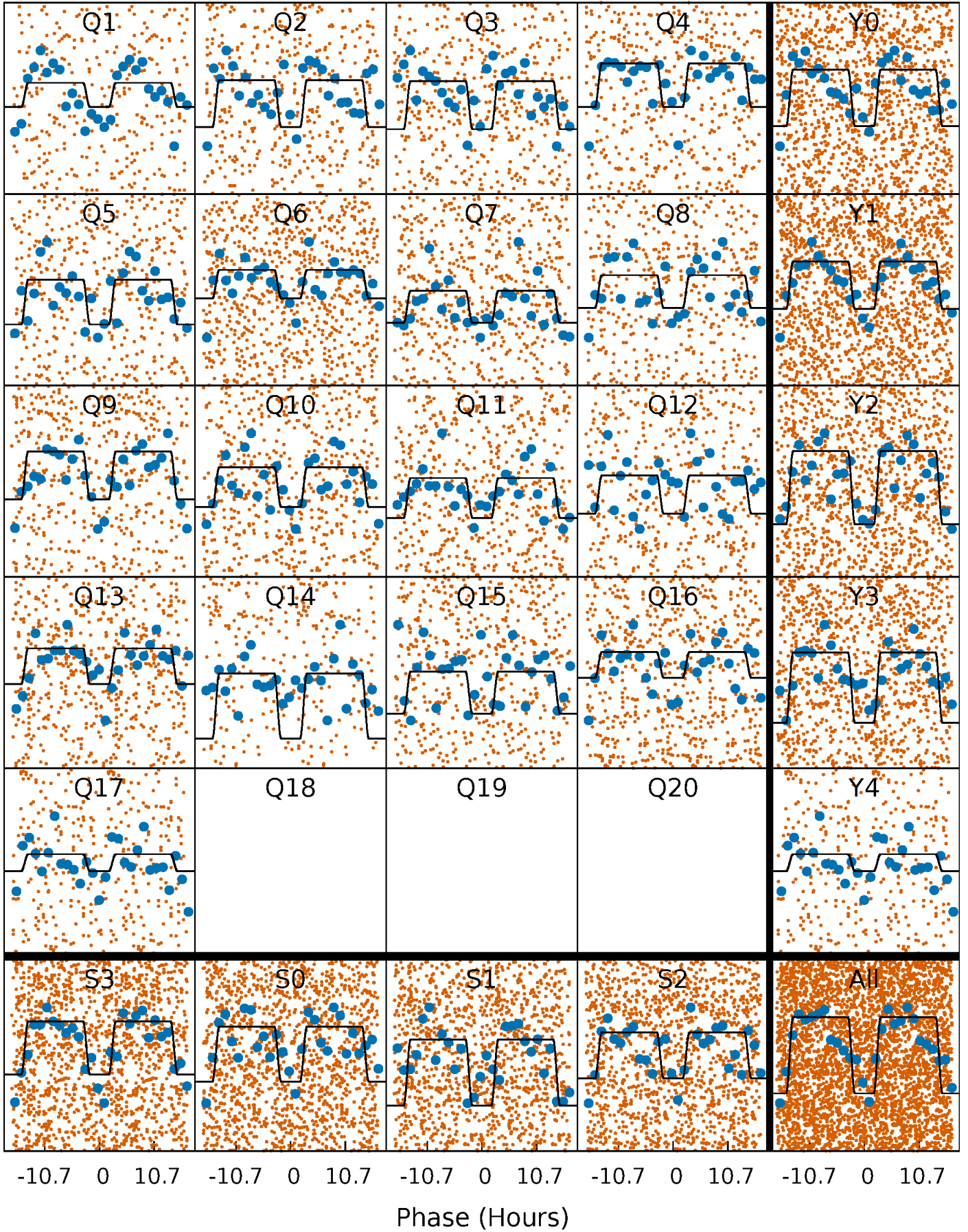
DV Quarter-Phased Transit Curves

TCE 008845312-02 P= 0.715255 Days $T_0=132.006130$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

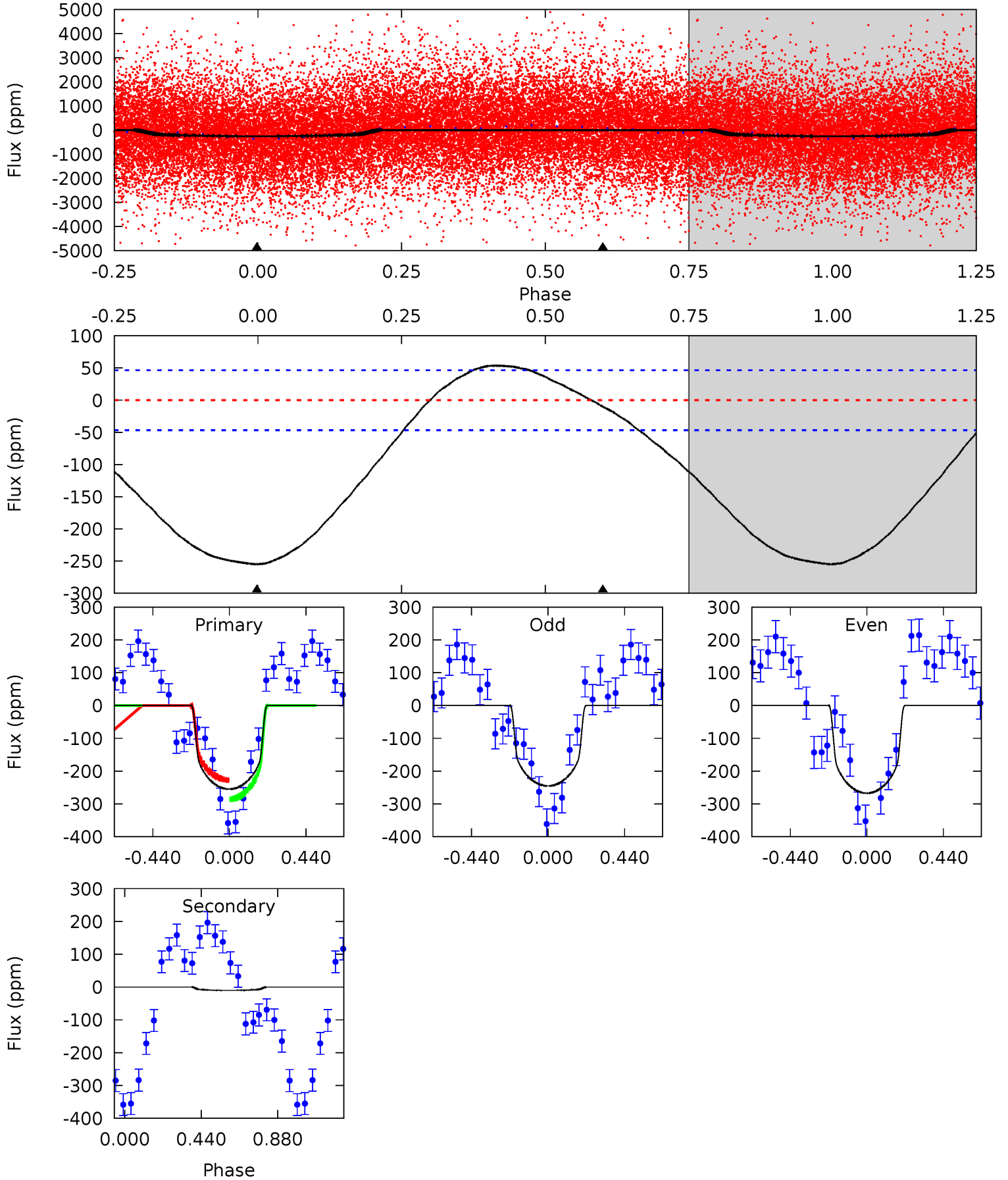
TCE 008845312-02 P= 0.715260 Days $T_0=132.000923$ (BKJD)



DV Model-Shift Uniqueness Test

008845312-02, P = 0.715255 Days, E = 131.290875 Days

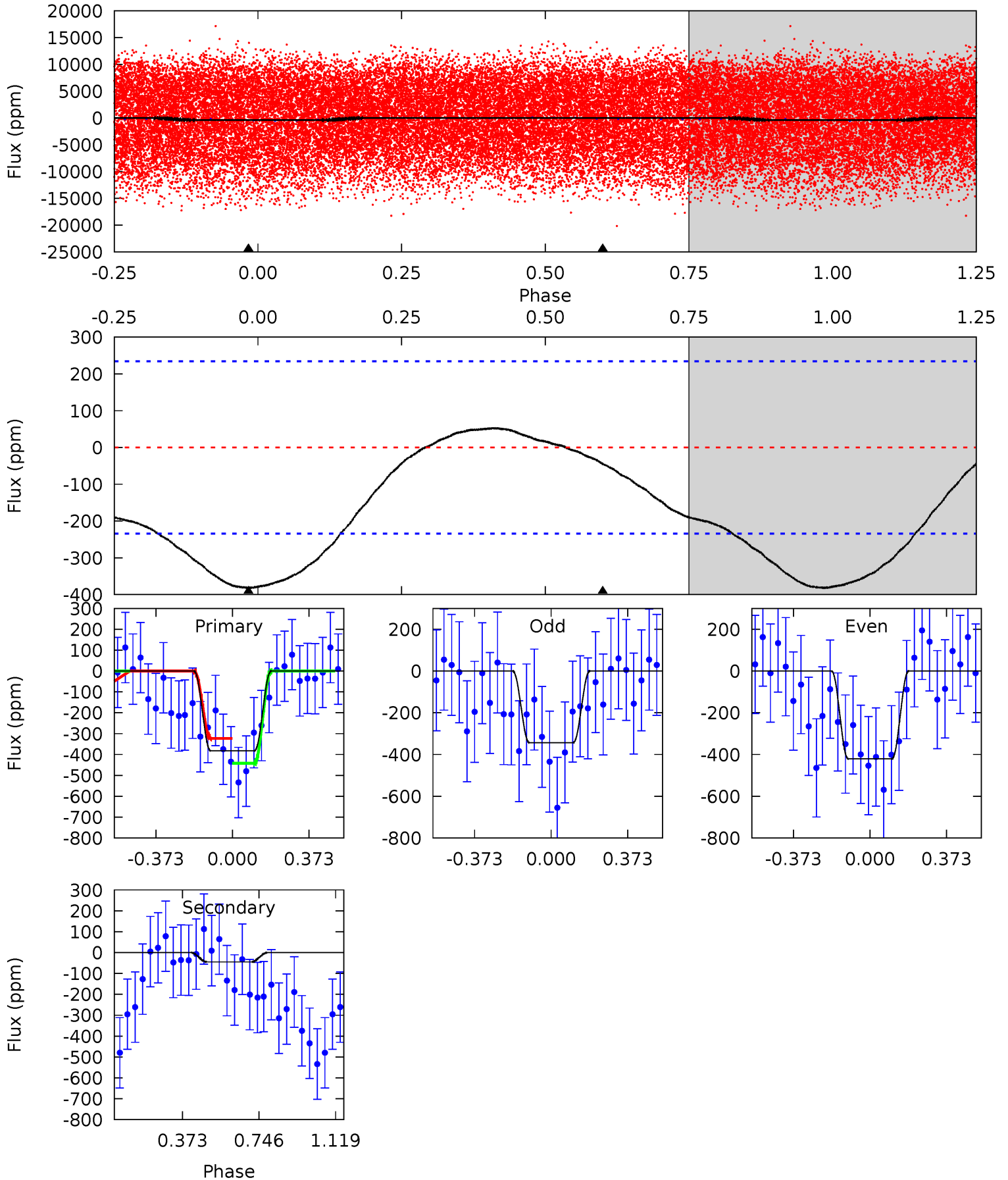
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	0.93	0	0	4.24	0.77	2.32	23.2	23.2	0.93	0.93	1.01	0.98	0.17	2.77



Alt Model-Shift Uniqueness Test

008845312-02, P = 0.715260 Days, E = 131.285663 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.98	0.82	0	0	4.28	0.89	0.48	6.98	6.98	0.82	0.82	0.70	2.22	0.12	1.05



Stellar Parameters For KIC 008845312

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7498^{+236}_{-289}	$3.559^{+0.522}_{-0.058}$	$-0.160^{+0.250}_{-0.300}$	$3.914^{+0.513}_{-2.053}$	$2.025^{+0.166}_{-0.531}$	$0.048^{+0.274}_{-0.010}$
	+3%/-4%	+15%/-2%	+156%/-188%	+13%/-52%	+8%/-26%	+577%/-21%
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 008845312-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10 ± 11	$5.77^{+1.43}_{-1.81}$	6204^{+468}_{-894}	-4775^{+819}_{-474}	$0.066^{+0.108}_{-0.068}$
Alt.	-45 ± 55	$8.22^{+1.79}_{-2.22}$	6228^{+431}_{-773}	-4416^{+8179}_{-850}	$0.142^{+0.231}_{-0.191}$

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

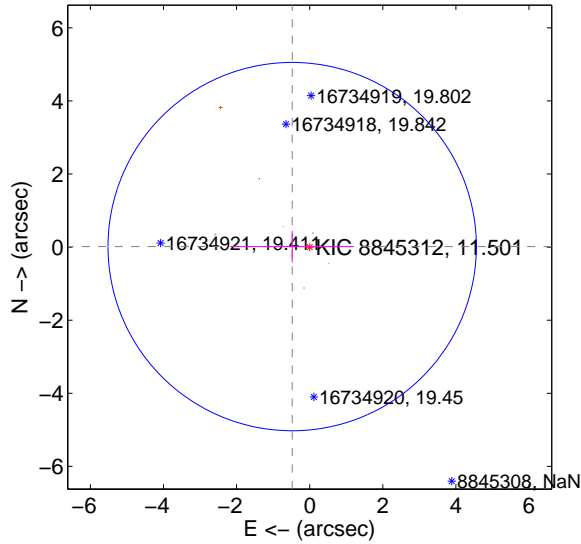
Supplemental centroid analysis for 008845312-02. **Kepler magnitude: 11.50**. Transit SNR 13.22

There are 6 quarters with good PRF difference image offsets

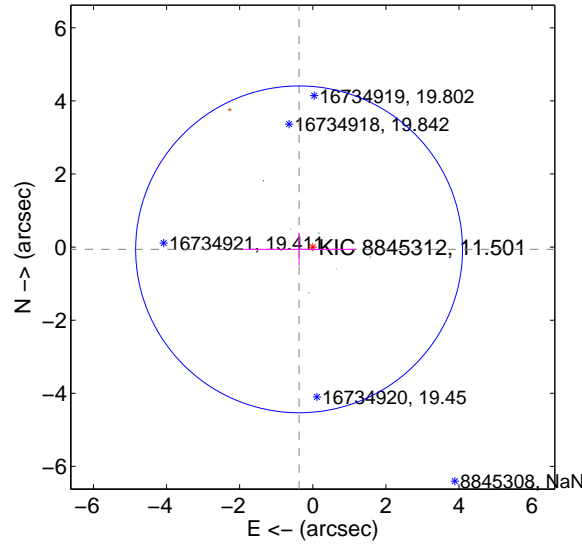
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.479 ± 1.679	0.29	0.479 ± 1.672	0.014 ± 0.432
PRF-fit source offset from KIC position	0.379 ± 1.490	0.25	0.374 ± 1.555	-0.062 ± 0.445
photometric centroid source offset	0.15 ± 0.03	5.83	-0.11 ± 0.03	-0.11 ± 0.02

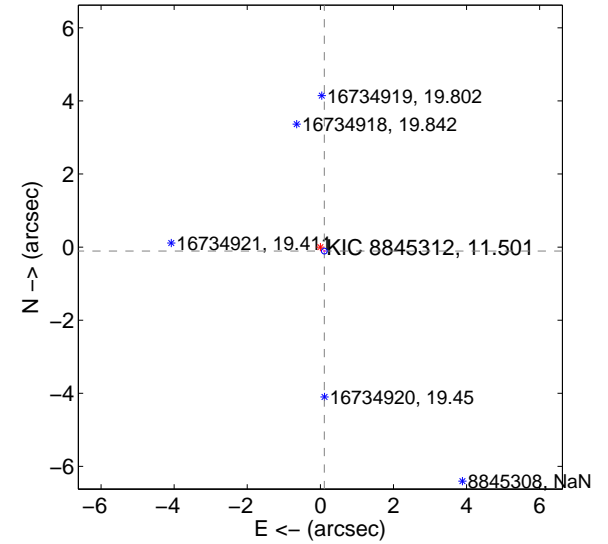
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

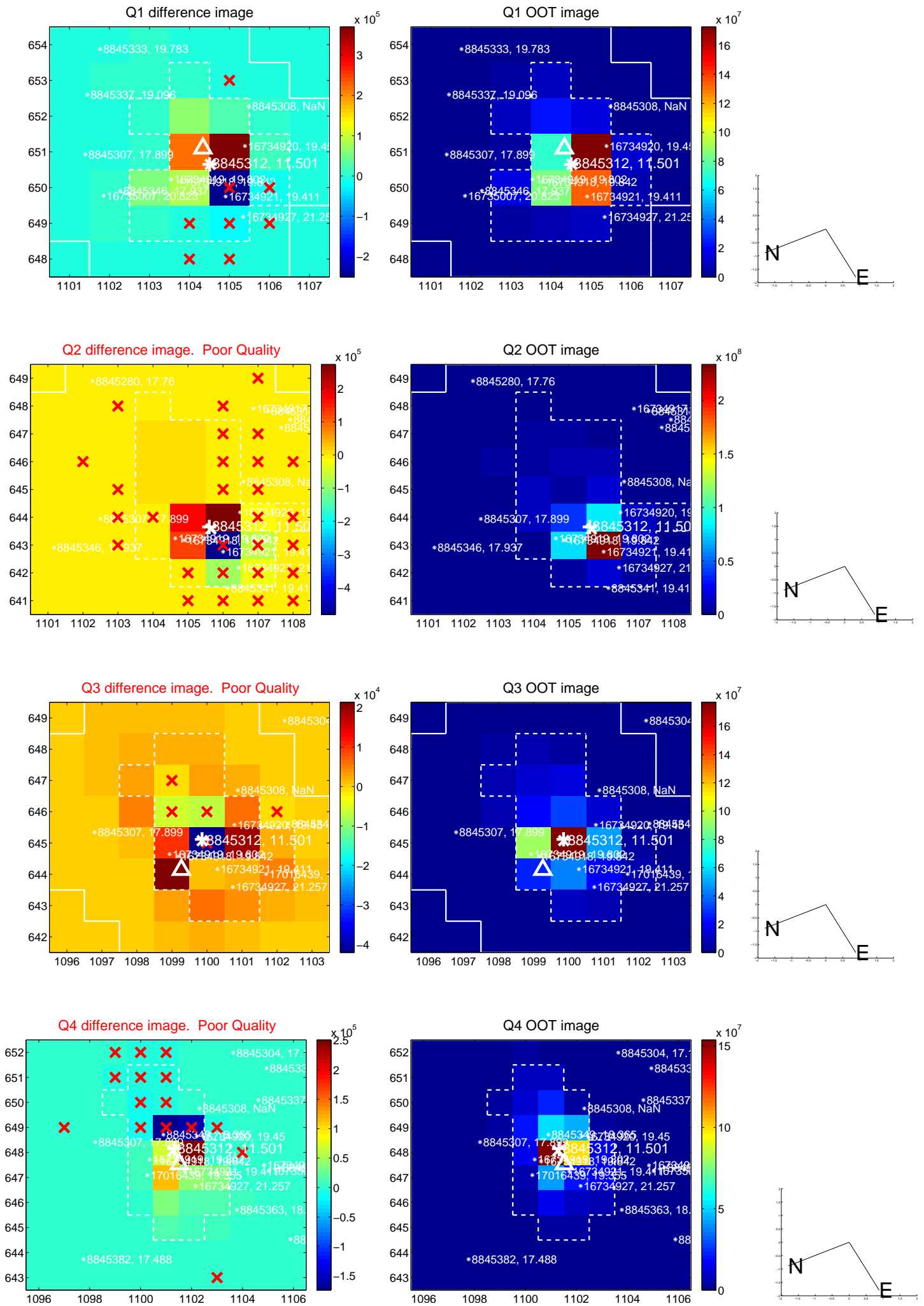


offset from photometric centroids

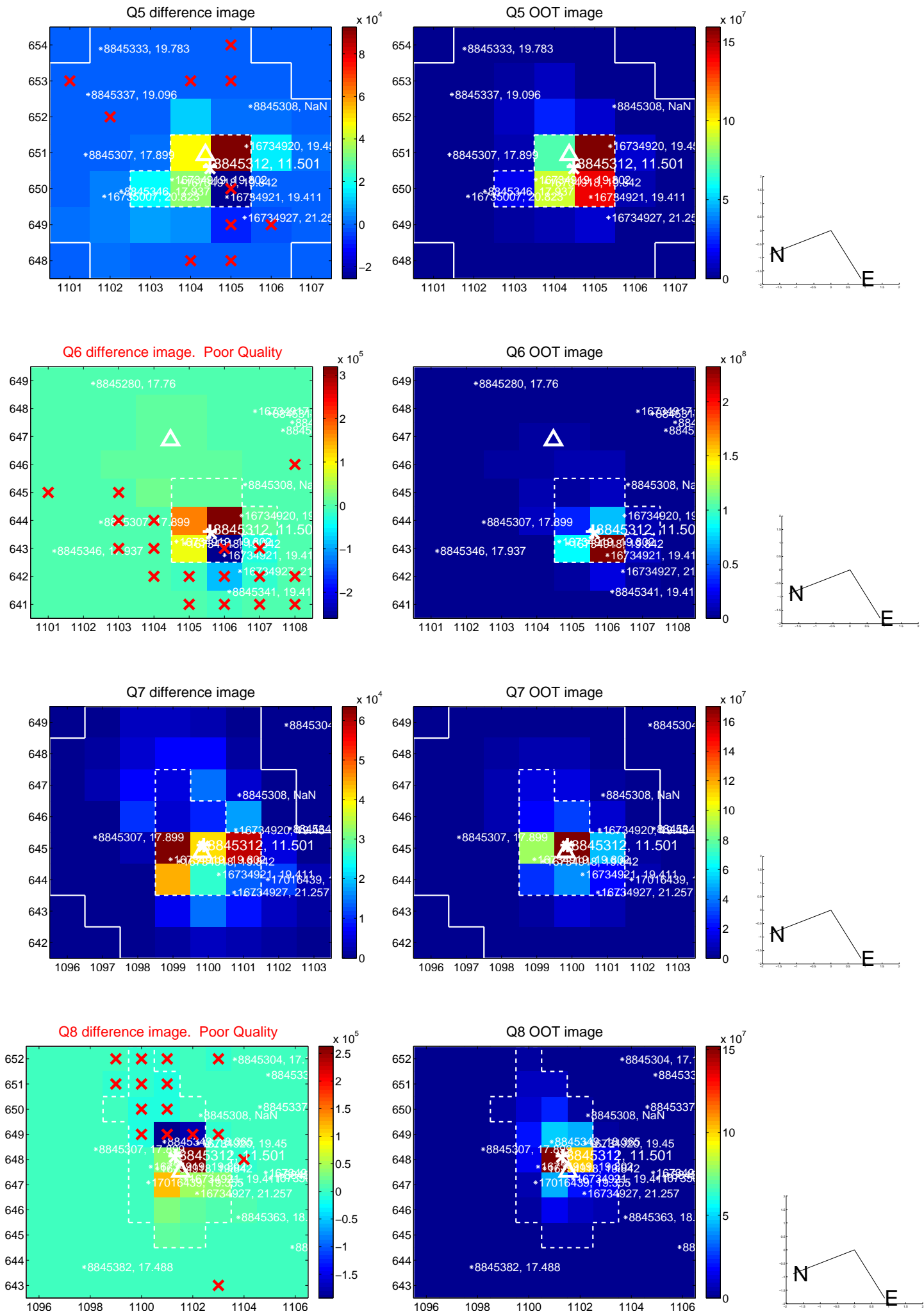


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

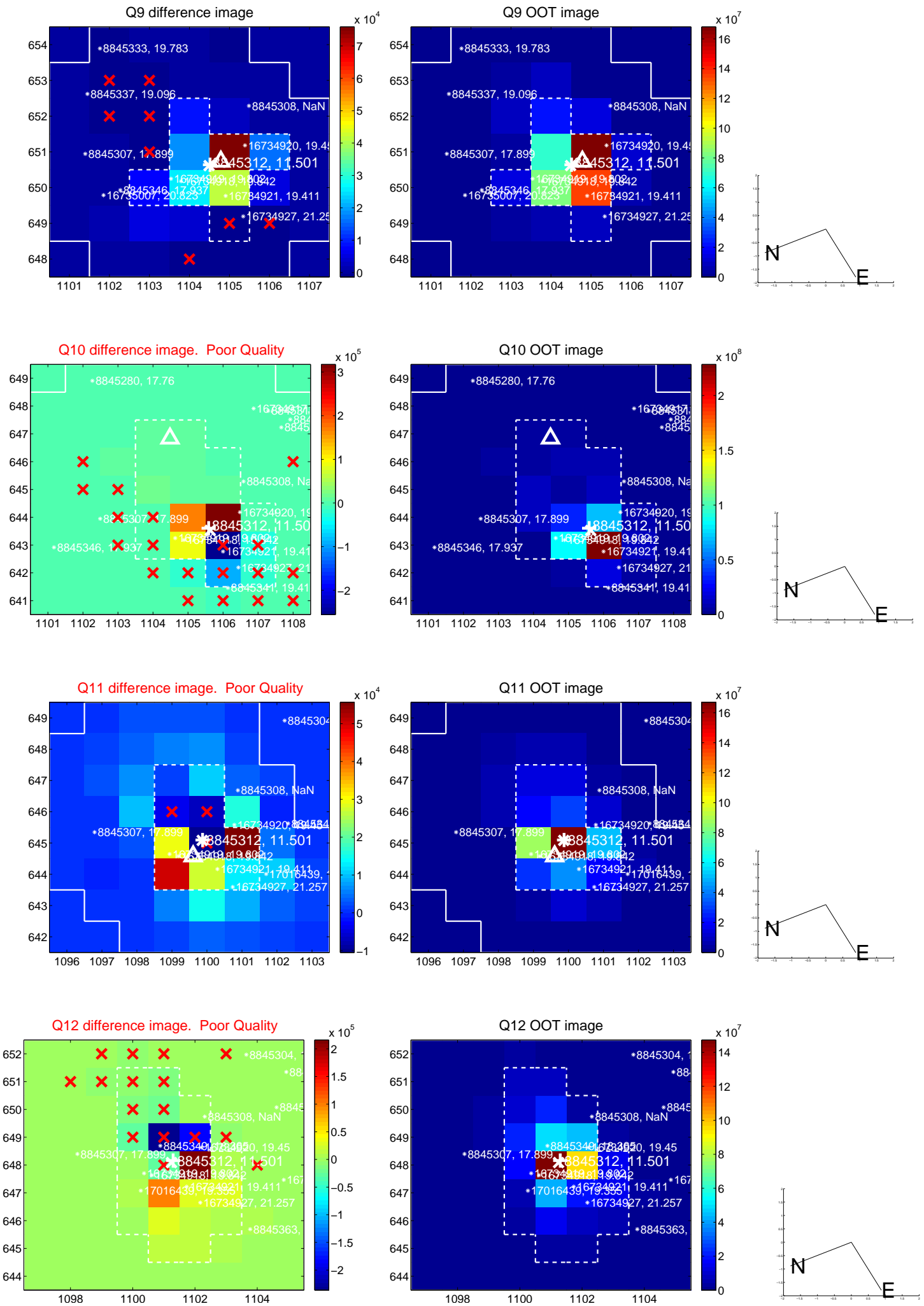
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



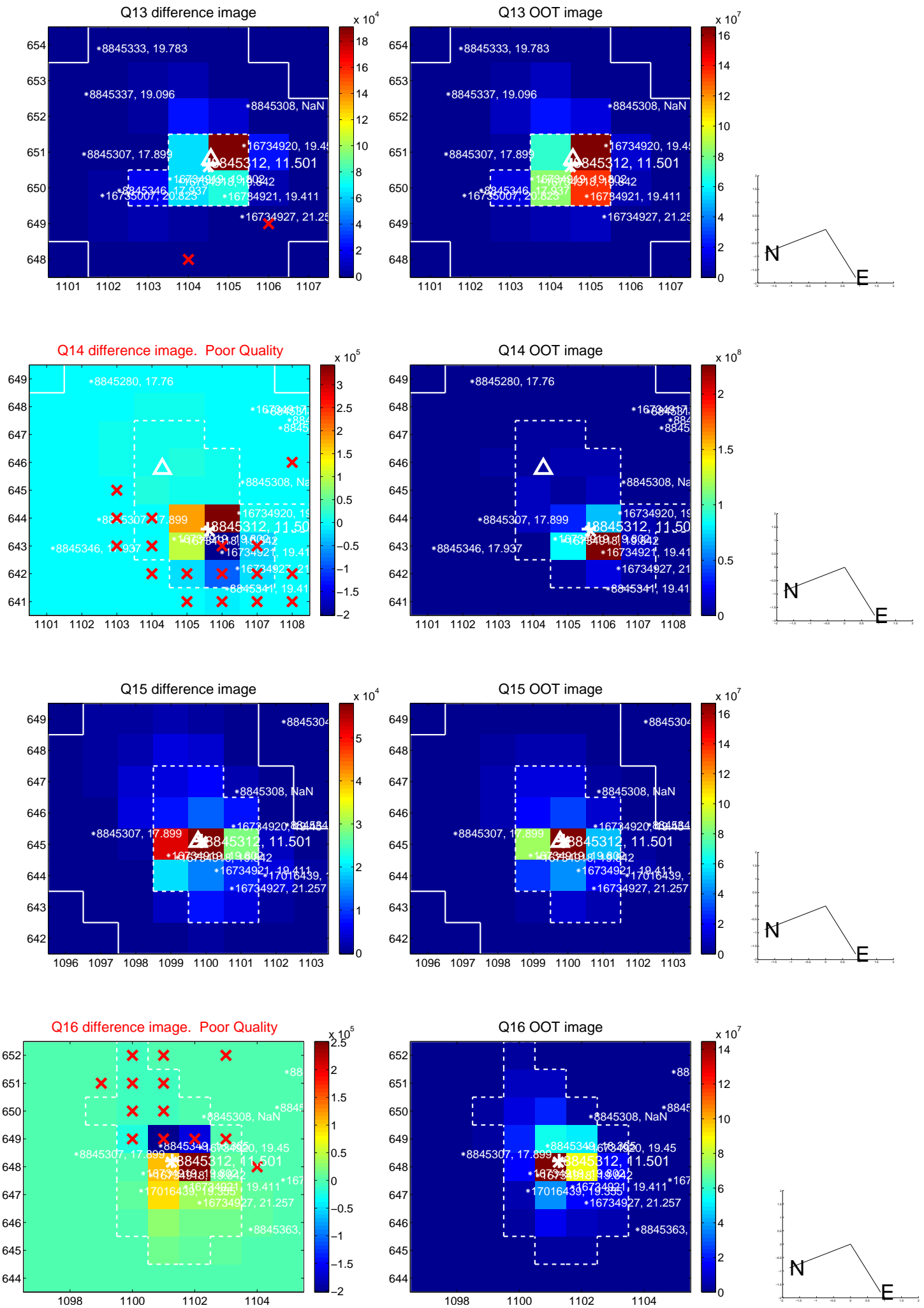
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

