

KIC 007983108

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})
007983108-01	OBS	No	0.770939	132.211818	34.3	2.892	10.2	11.6	1.46	6937	0.99	12787.81
007983108-02	OBS	No	0.770917	131.835977	15.4	3.738	10.9	5.7	1.46	6937	0.59	12788.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007983108-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007983108-02	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.

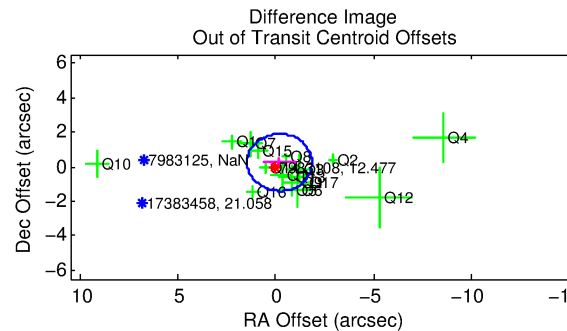
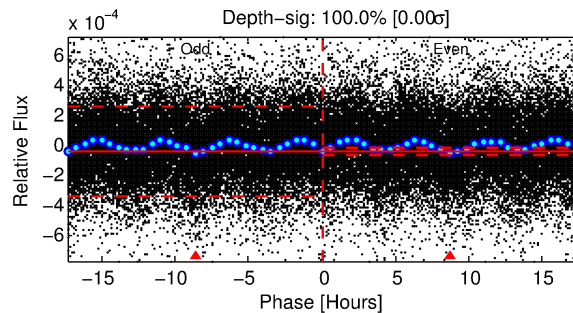
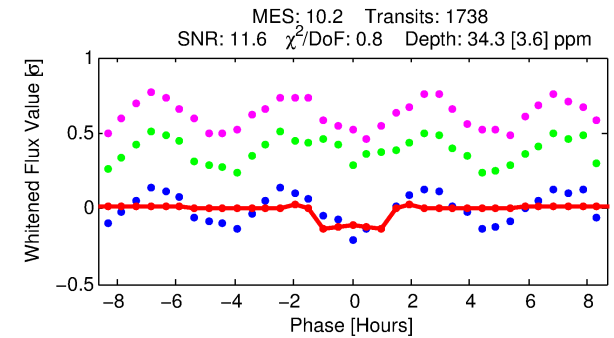
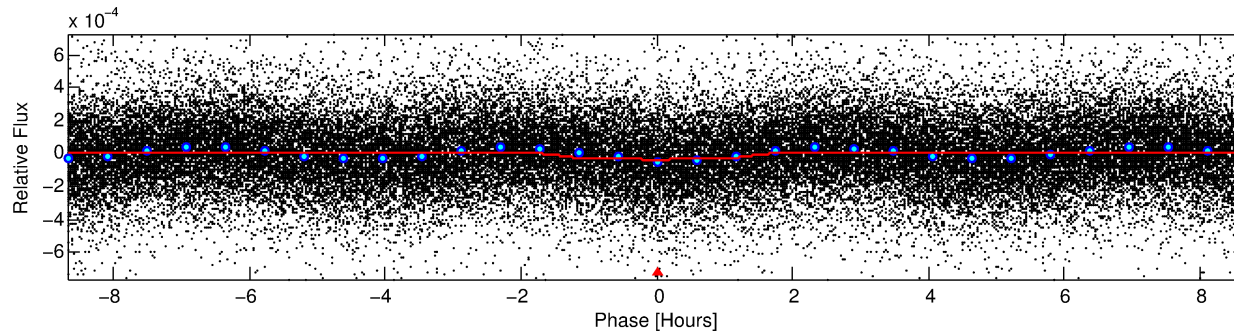
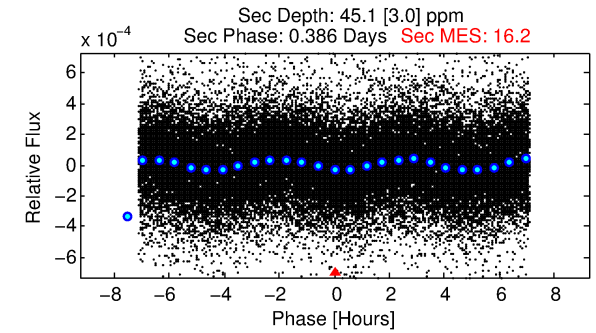
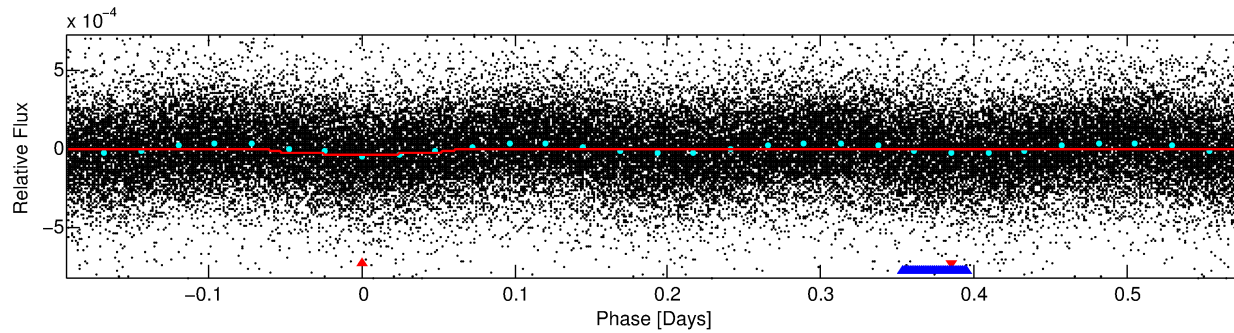
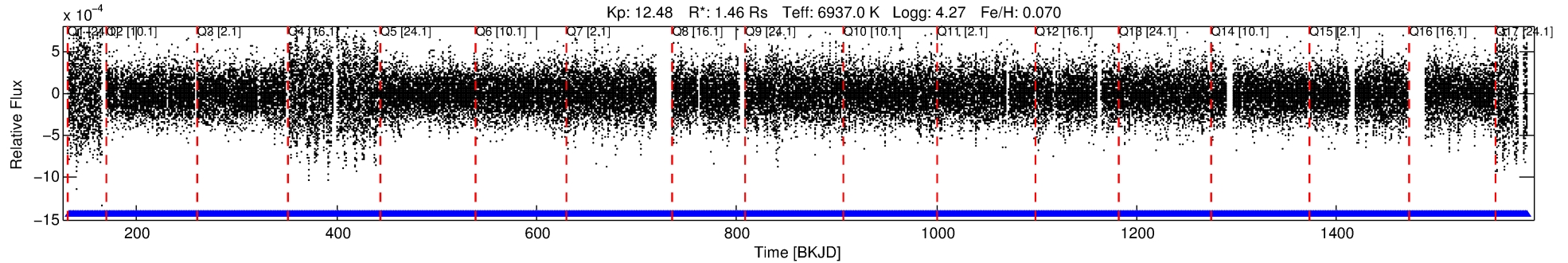
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007983108-01

No Significant Match Found

DV One-Page Summary

KIC: 7983108 Candidate: 1 of 2 Period: 0.771 d



DV Fit Results:

Period = 0.77094 [0.00001] d
Epoch = 132.2118 [0.0018] BKJD
Rp/R* = 0.0063 [0.0016]
a/R* = 1.31 [0.82]
b = 0.90 [0.32]
Seff = 12787.81 [5726.38]
Teff = 2712 [304] K
Rp = 0.99 [0.42] Re
a = 0.0185 [0.0053] AU
Ag = 8.63 [5.61] [1.36σ]
Teffp = 7187 [975] K [4.38σ]

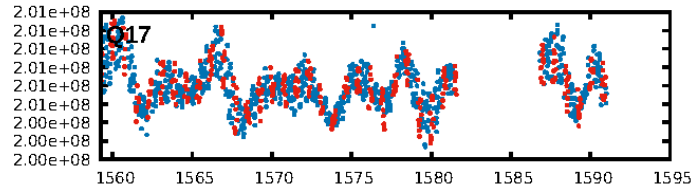
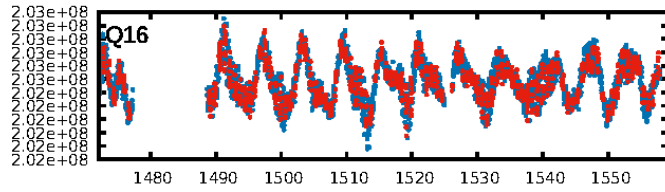
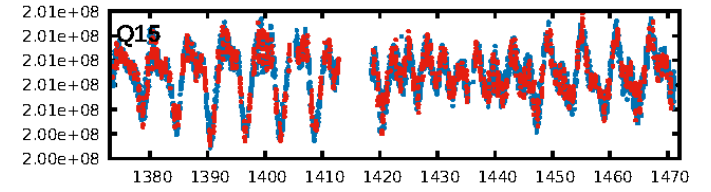
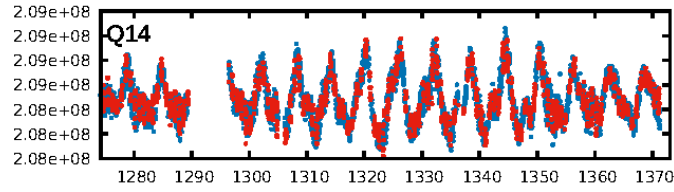
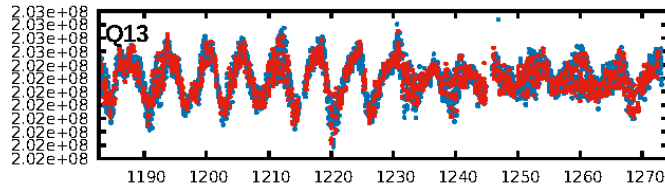
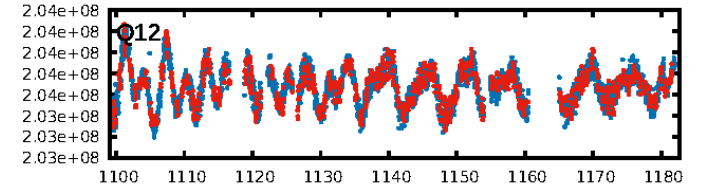
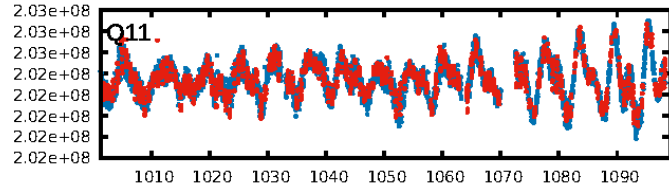
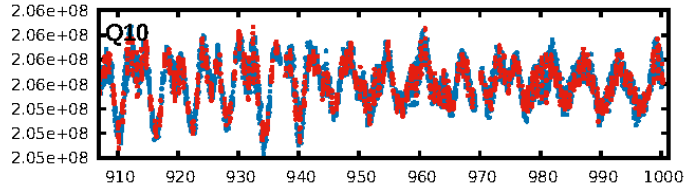
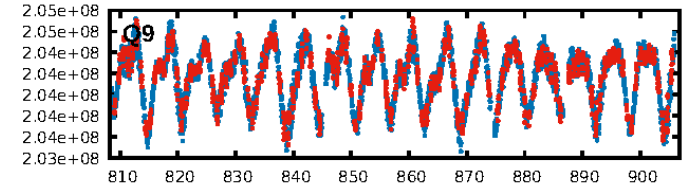
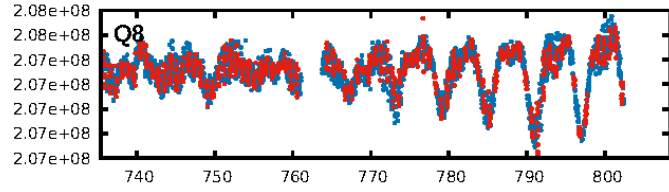
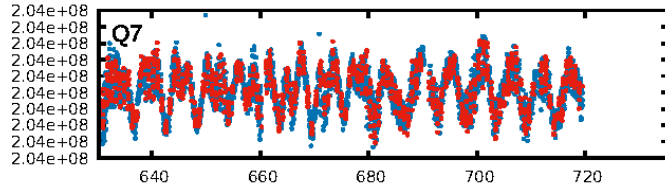
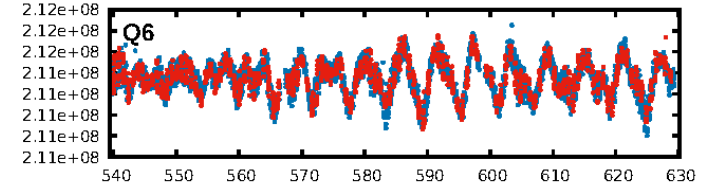
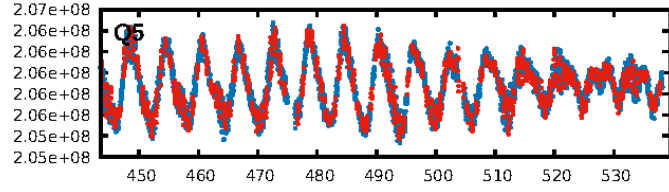
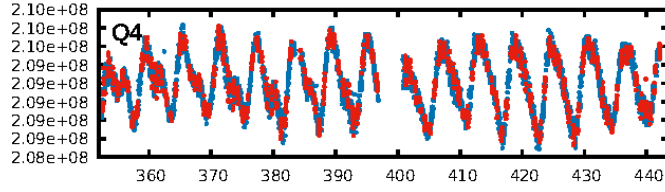
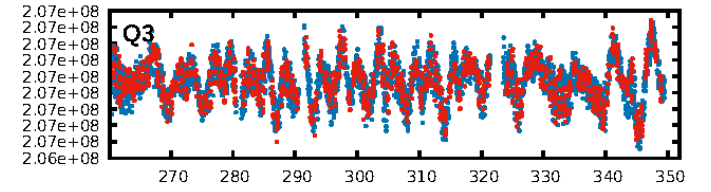
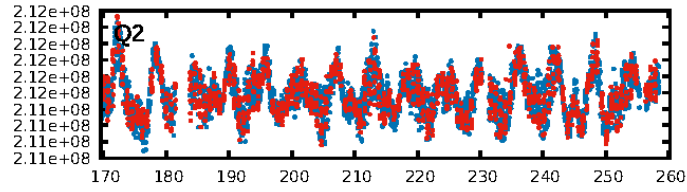
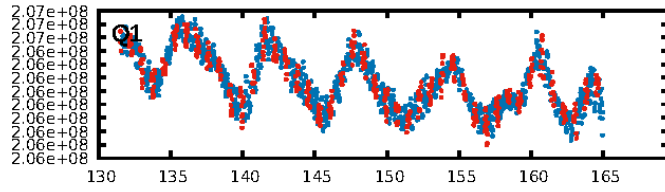
DV Diagnostic Results:

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 [1659/1659]
GhostDiagnostic-chr: 0.8422
Centroid-sig: 11.6%
Centroid-so: 0.626 arcsec [1.20σ]
OotOffset-rm: 0.306 arcsec [0.56σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.395 arcsec [1.02σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 0.18 [3/17]

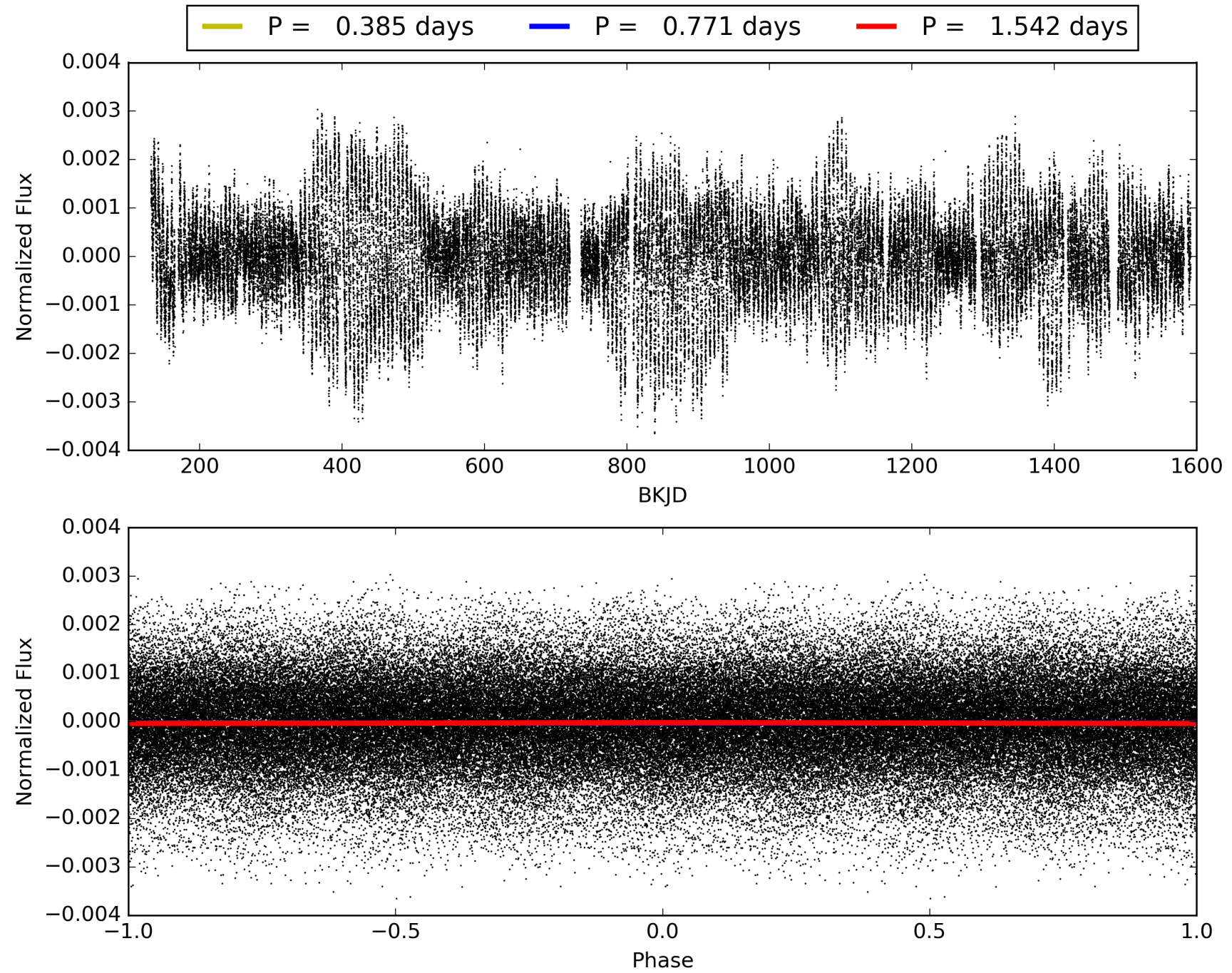
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:09:27 Z

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

TCE 007983108-01, PDC Light Curves

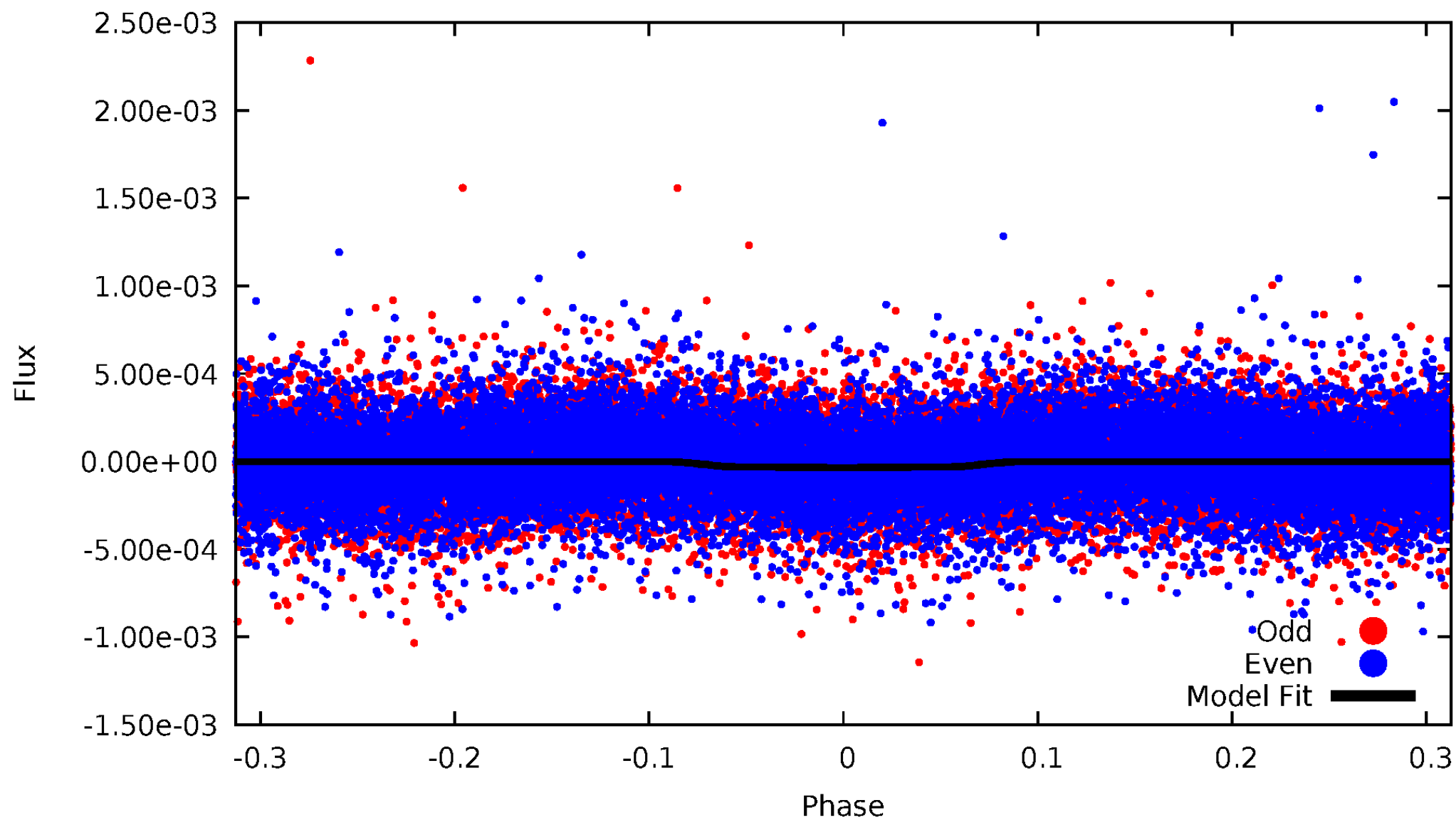


TCE 007983108-01



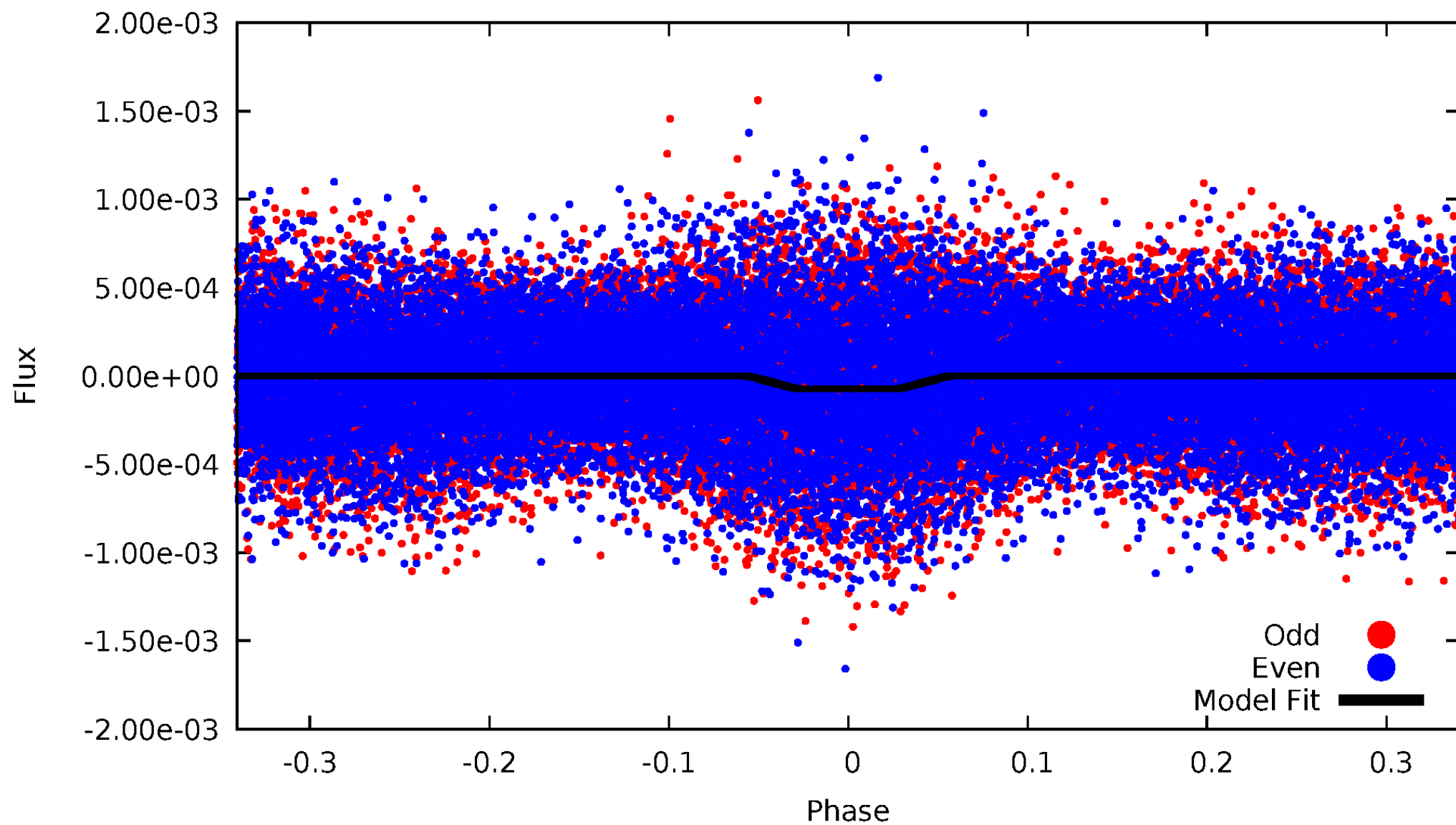
DV Odd/Even

TCE 007983108-01

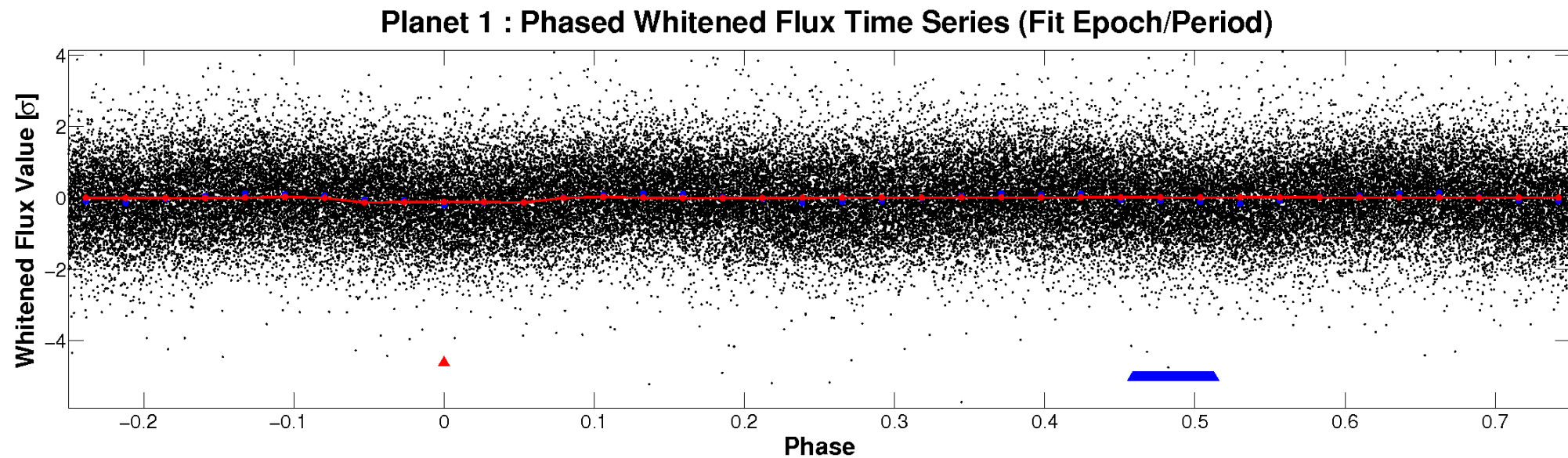
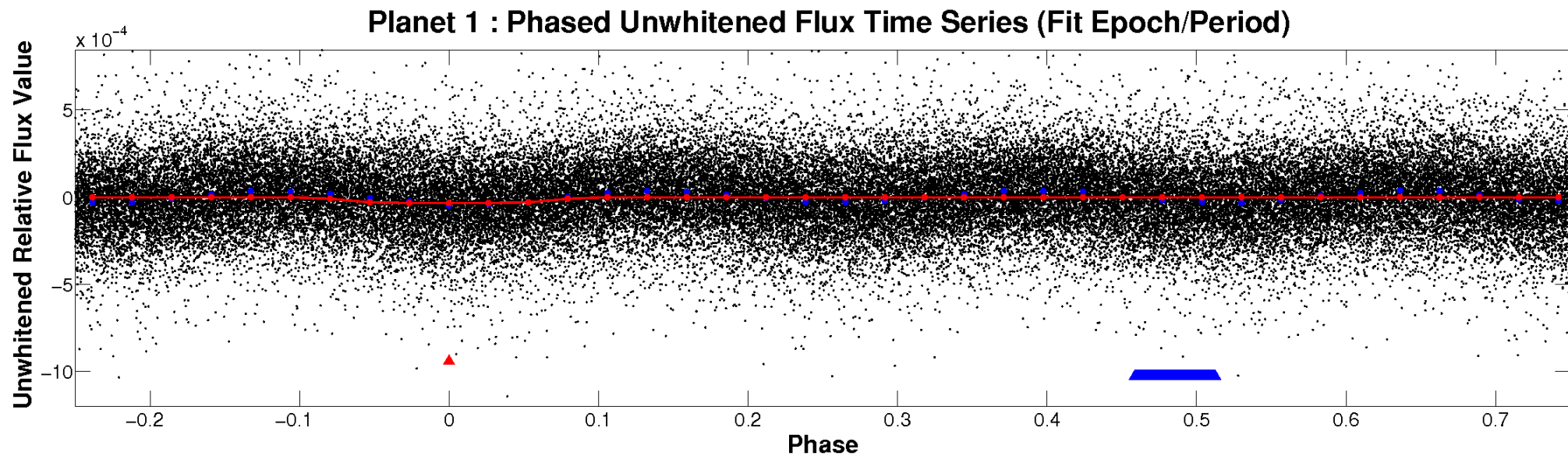


ALT Odd/Even

TCE 007983108-01

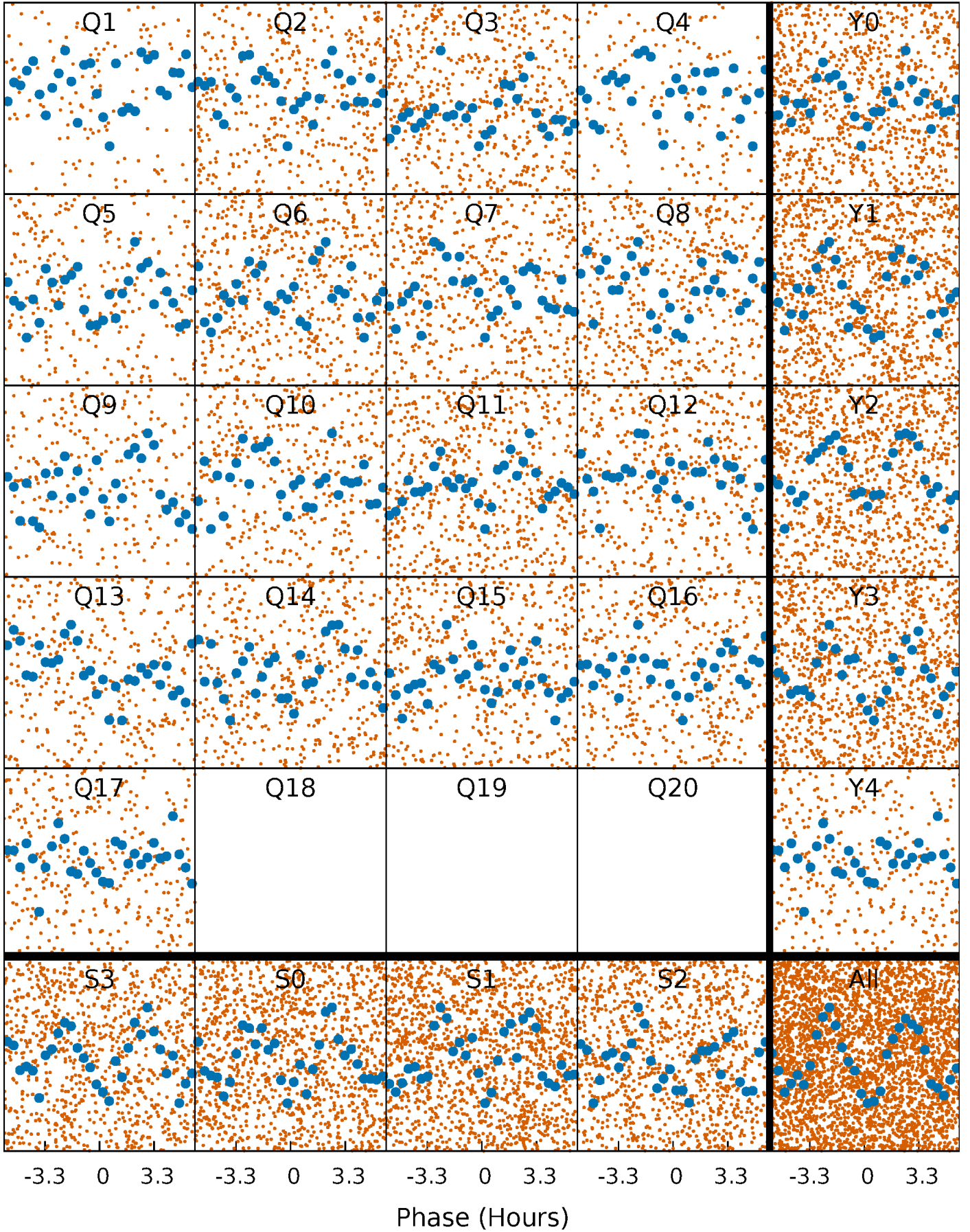


Non-Whitened Vs. Whitened Light Curve



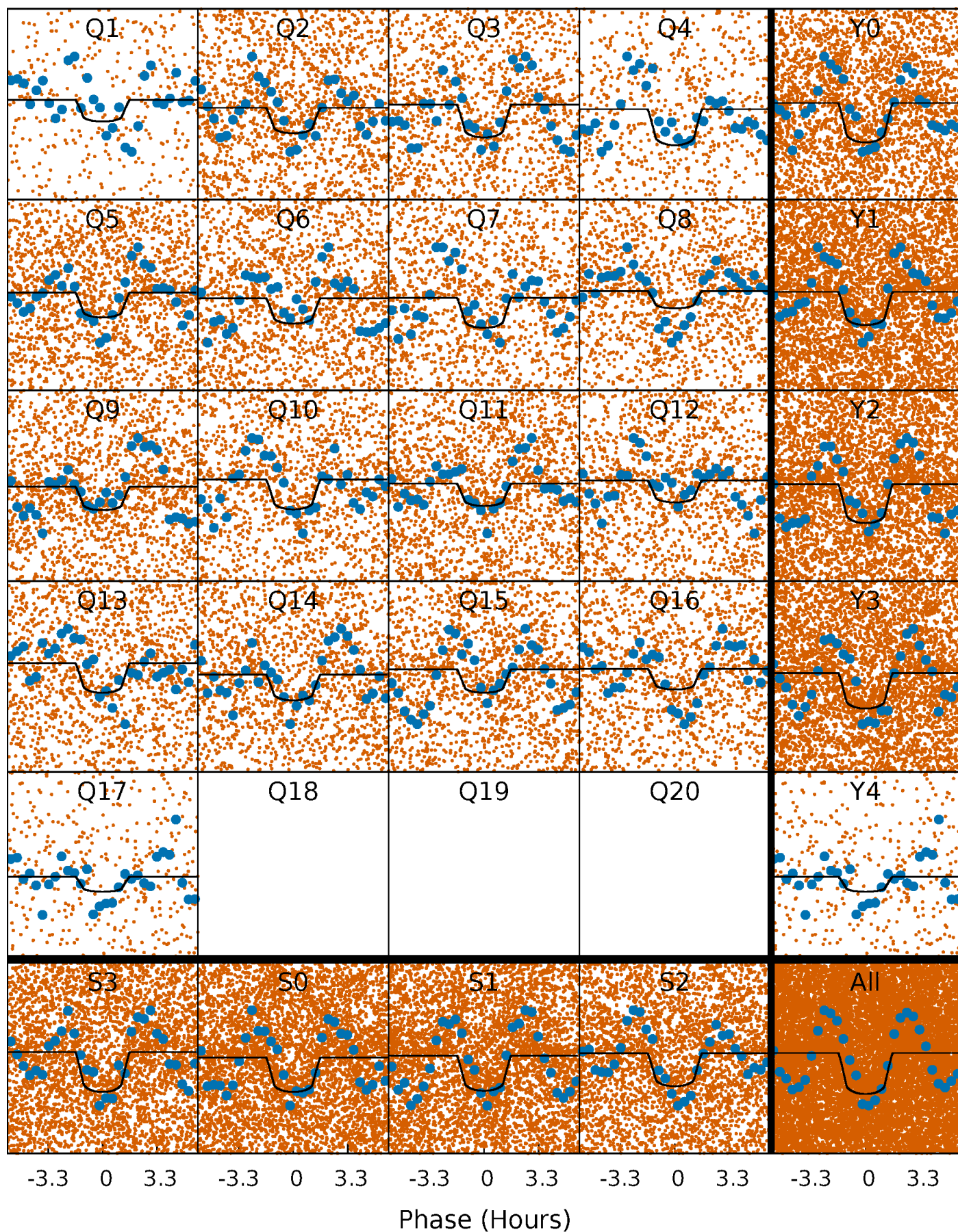
PDC Quarter-Phased Transit Curves

TCE 007983108-01 P= 0.770939 Days $T_0=132.211818$ (BKJD)



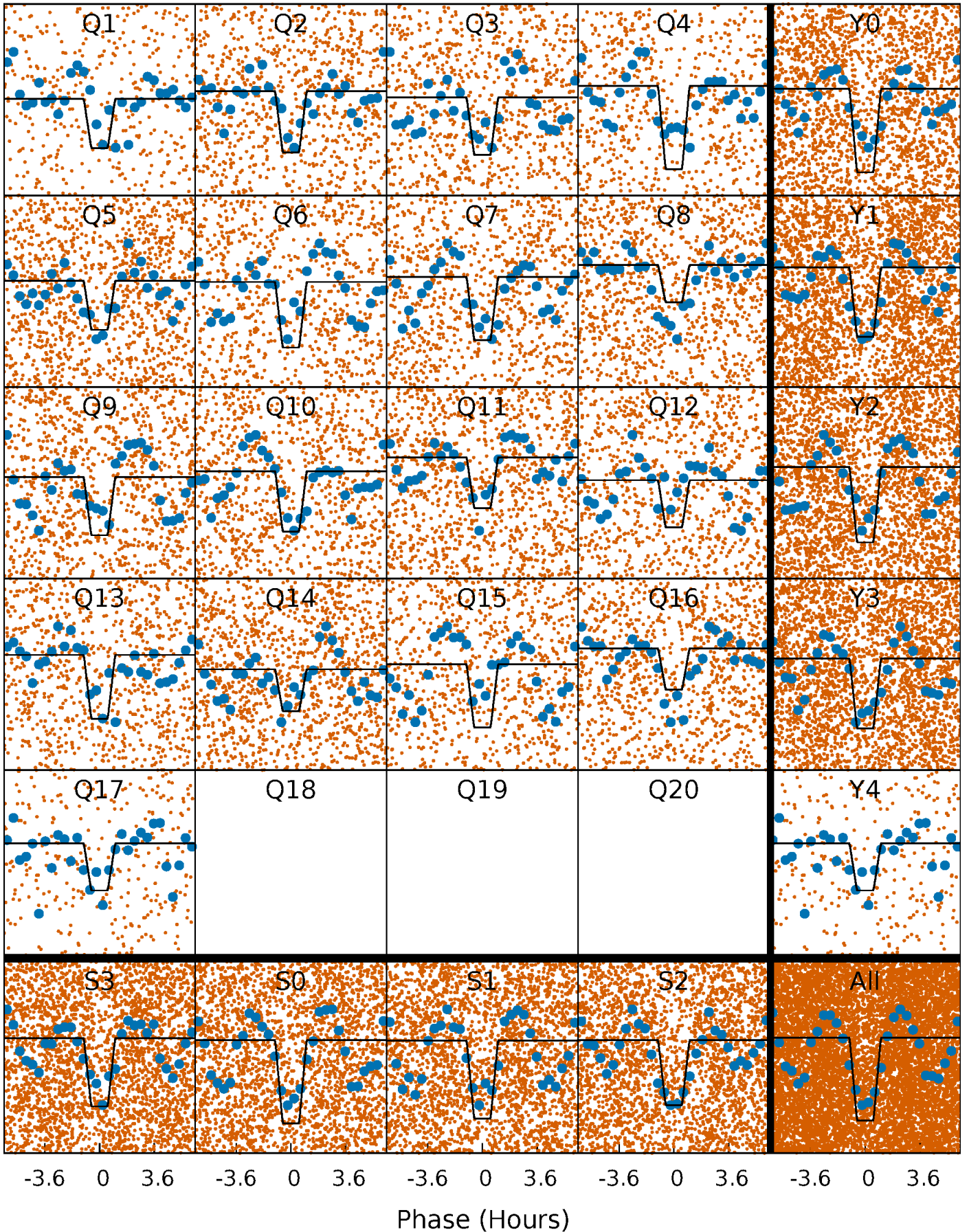
DV Quarter-Phased Transit Curves

TCE 007983108-01 P= 0.770939 Days $T_0=132.211818$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

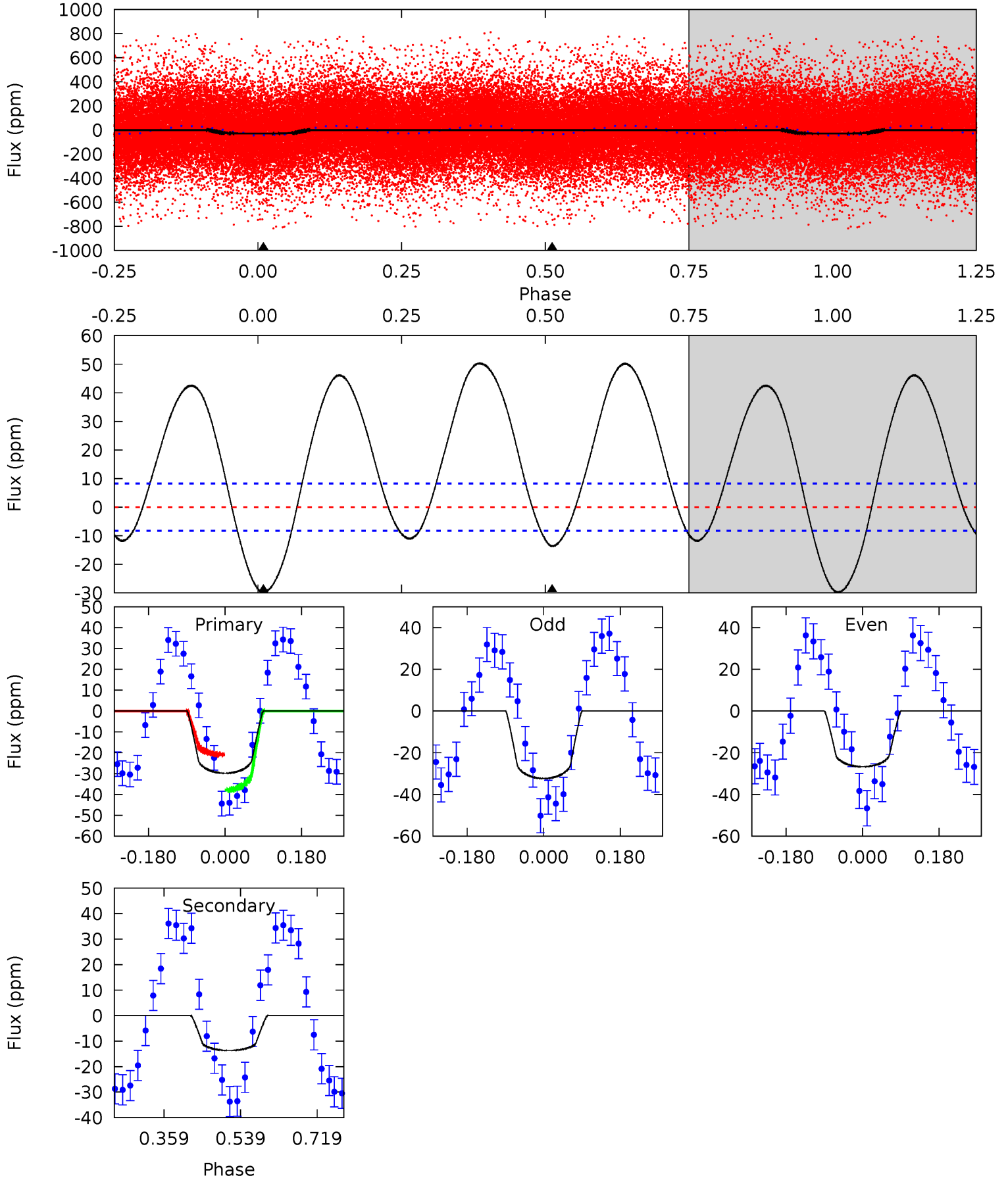
TCE 007983108-01 P= 0.770950 Days $T_0=132.210117$ (BKJD)



DV Model-Shift Uniqueness Test

007983108-01, P = 0.770939 Days, E = 131.440879 Days

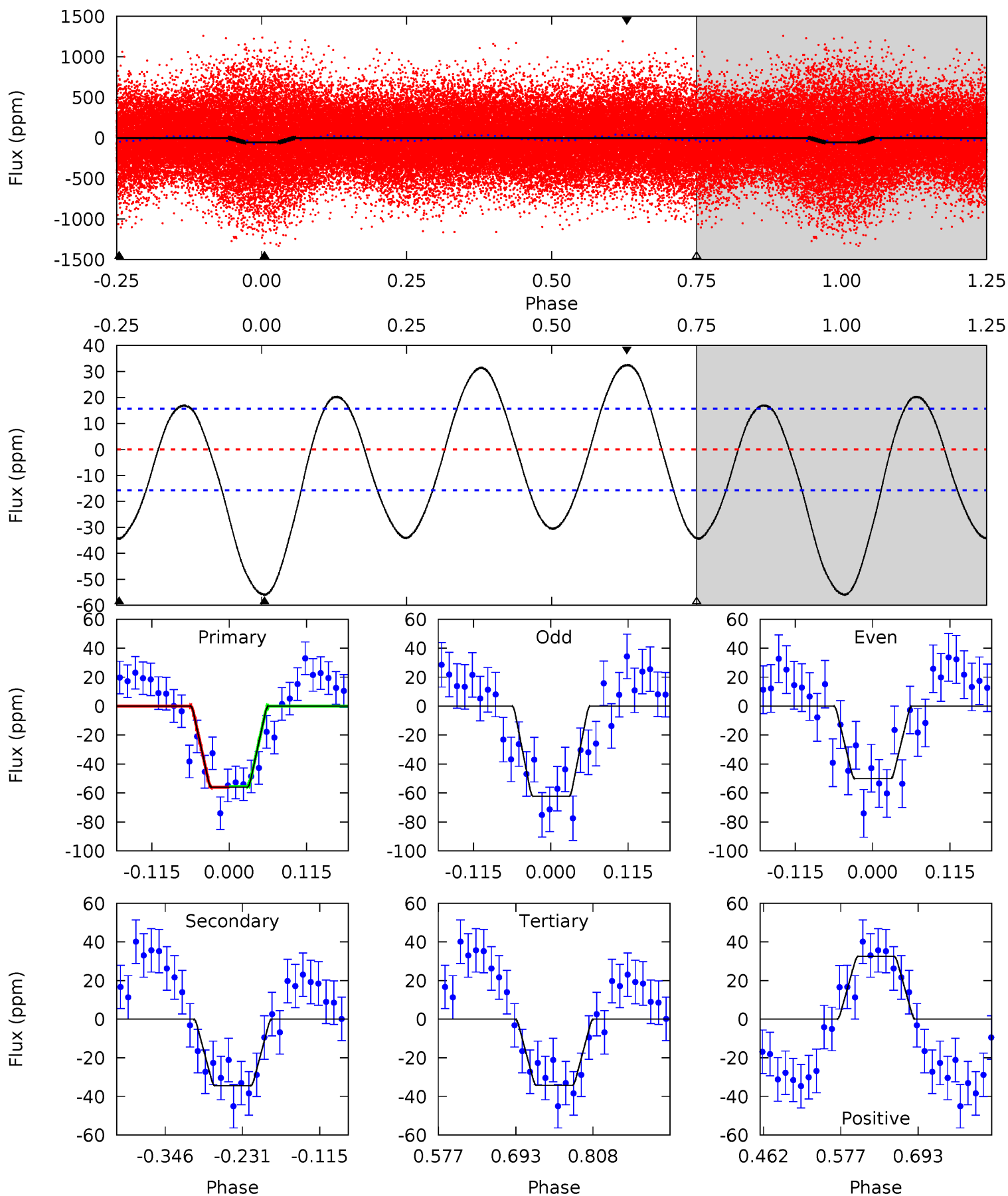
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	7.34	0	0	4.44	1.34	6.16	16.0	16.0	7.34	7.34	1.52	1.21	0.63	4.60



Alt Model-Shift Uniqueness Test

007983108-01, P = 0.770950 Days, E = 131.439167 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	9.92	9.86	9.37	4.53	1.57	6.32	6.26	6.76	0.05	0.55	1.76	1.32	0.37	0.08



Stellar Parameters For KIC 007983108

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6937^{+194}_{-333}	$4.267^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.455^{+0.501}_{-0.215}$	$1.426^{+0.216}_{-0.216}$	$0.653^{+0.264}_{-0.358}$
	+3%/-5%	+2%/-5%	+286%/-500%	+34%/-15%	+15%/-15%	+40%/-55%
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 007983108-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 2	$1.04^{+0.32}_{-0.27}$	3863^{+282}_{-226}	5138^{+787}_{-564}	$2.342^{+1.930}_{-0.968}$
Alt.	-34 ± 3	$1.37^{+0.37}_{-0.27}$	3868^{+285}_{-249}	5601^{+700}_{-523}	$3.339^{+2.057}_{-1.279}$

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

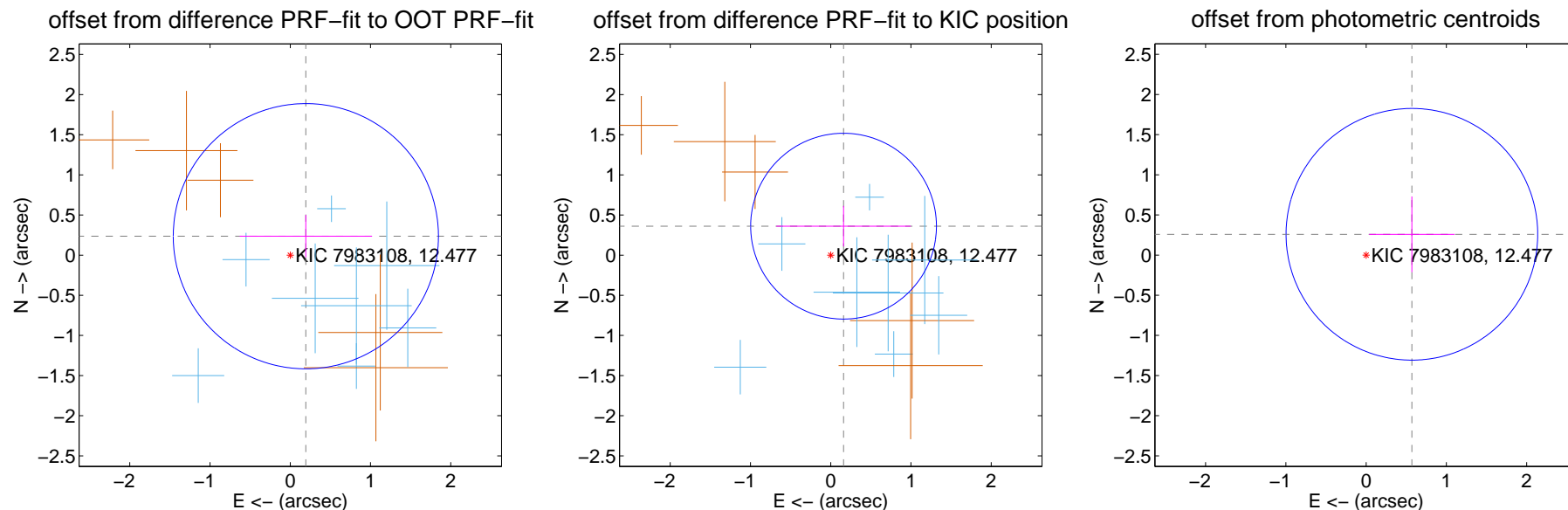
DV Centroid Data

Supplemental centroid analysis for 007983108-01. Kepler magnitude: 12.48. Transit SNR 11.58

There are 9 quarters with good PRF difference image offsets

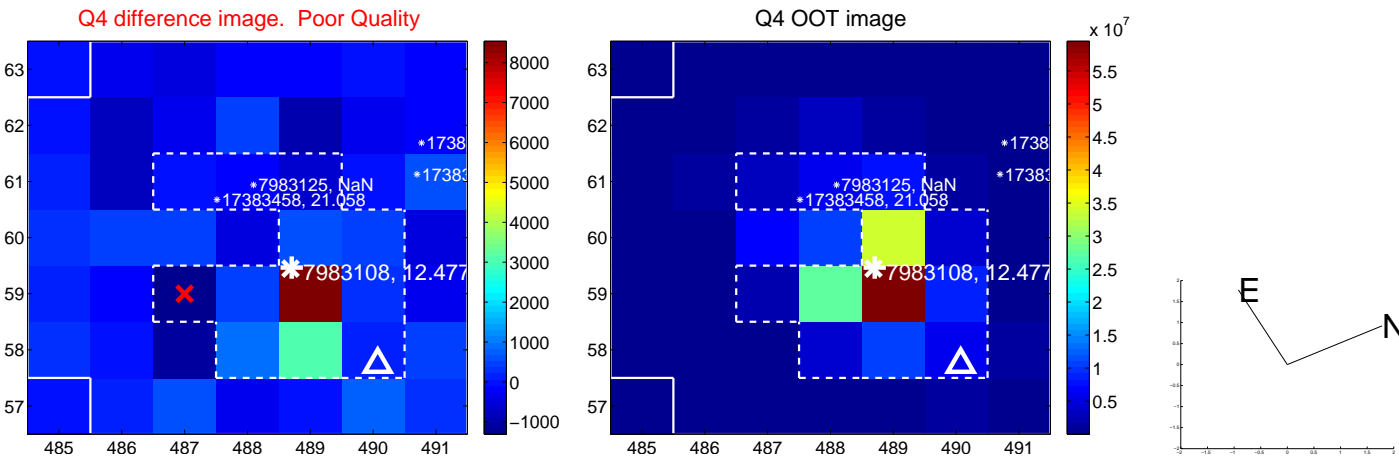
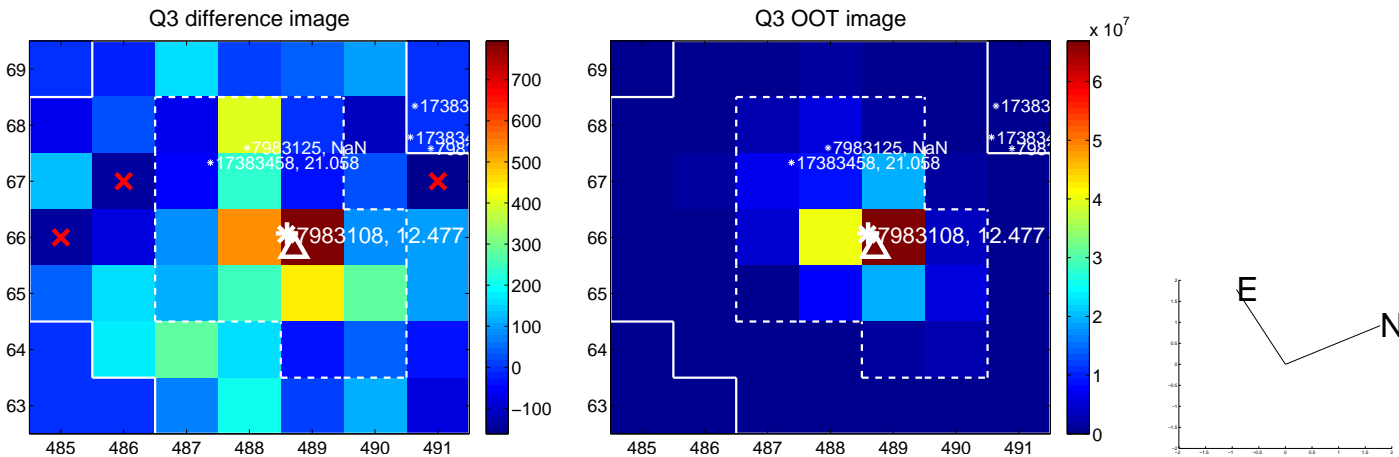
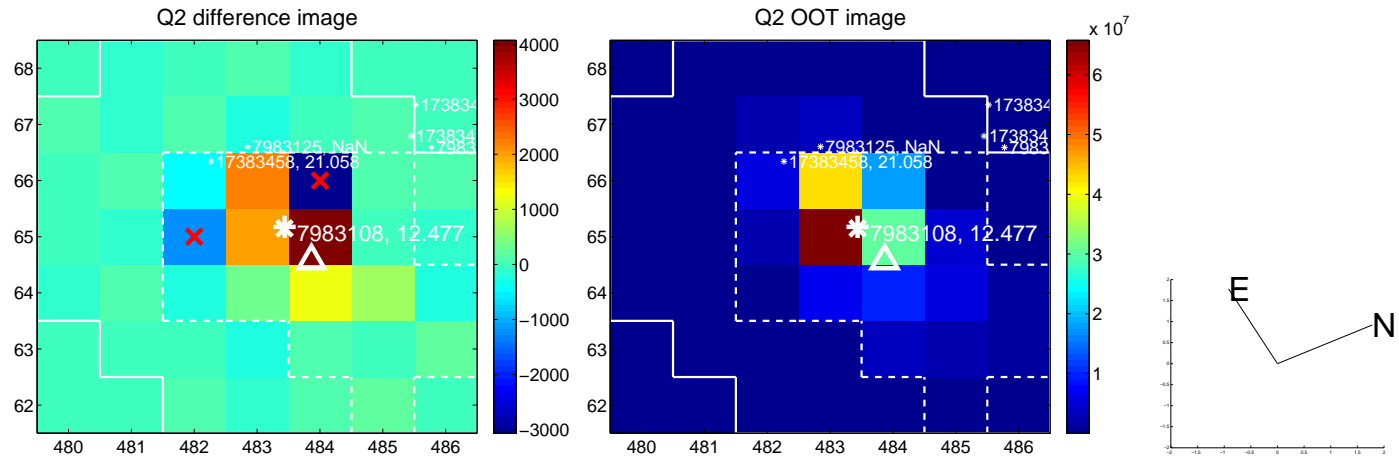
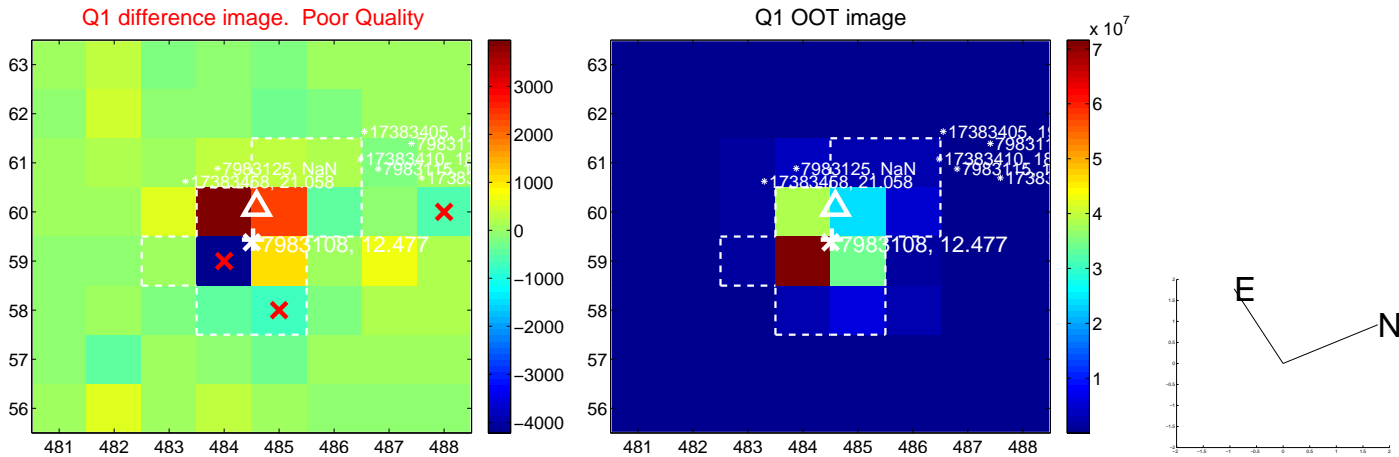
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.306 ± 0.551	0.56	-0.194 ± 0.824	0.236 ± 0.264
PRF-fit source offset from KIC position	0.395 ± 0.386	1.02	-0.160 ± 0.838	0.361 ± 0.252
photometric centroid source offset	0.63 ± 0.52	1.20	-0.57 ± 0.53	0.26 ± 0.47

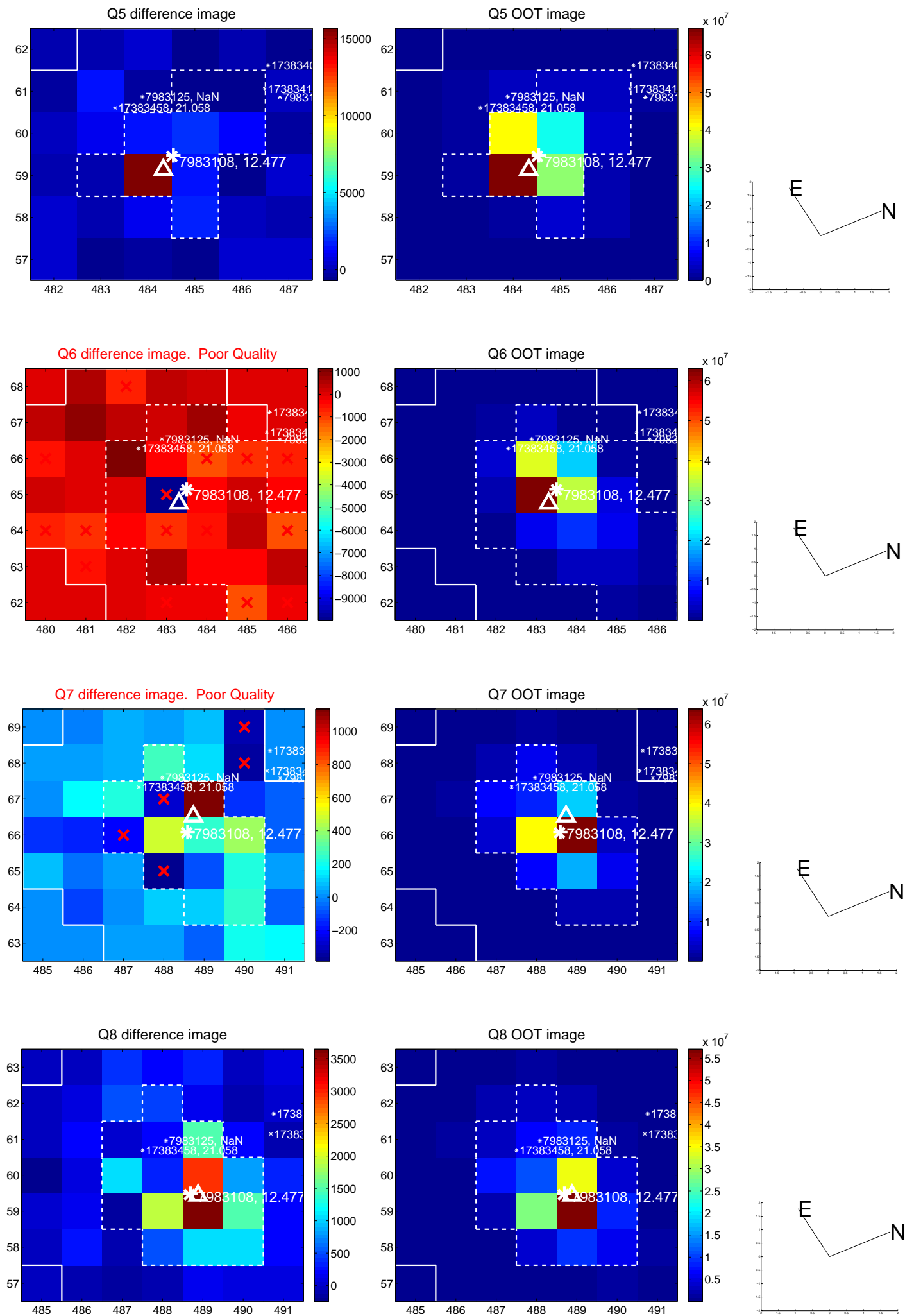


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

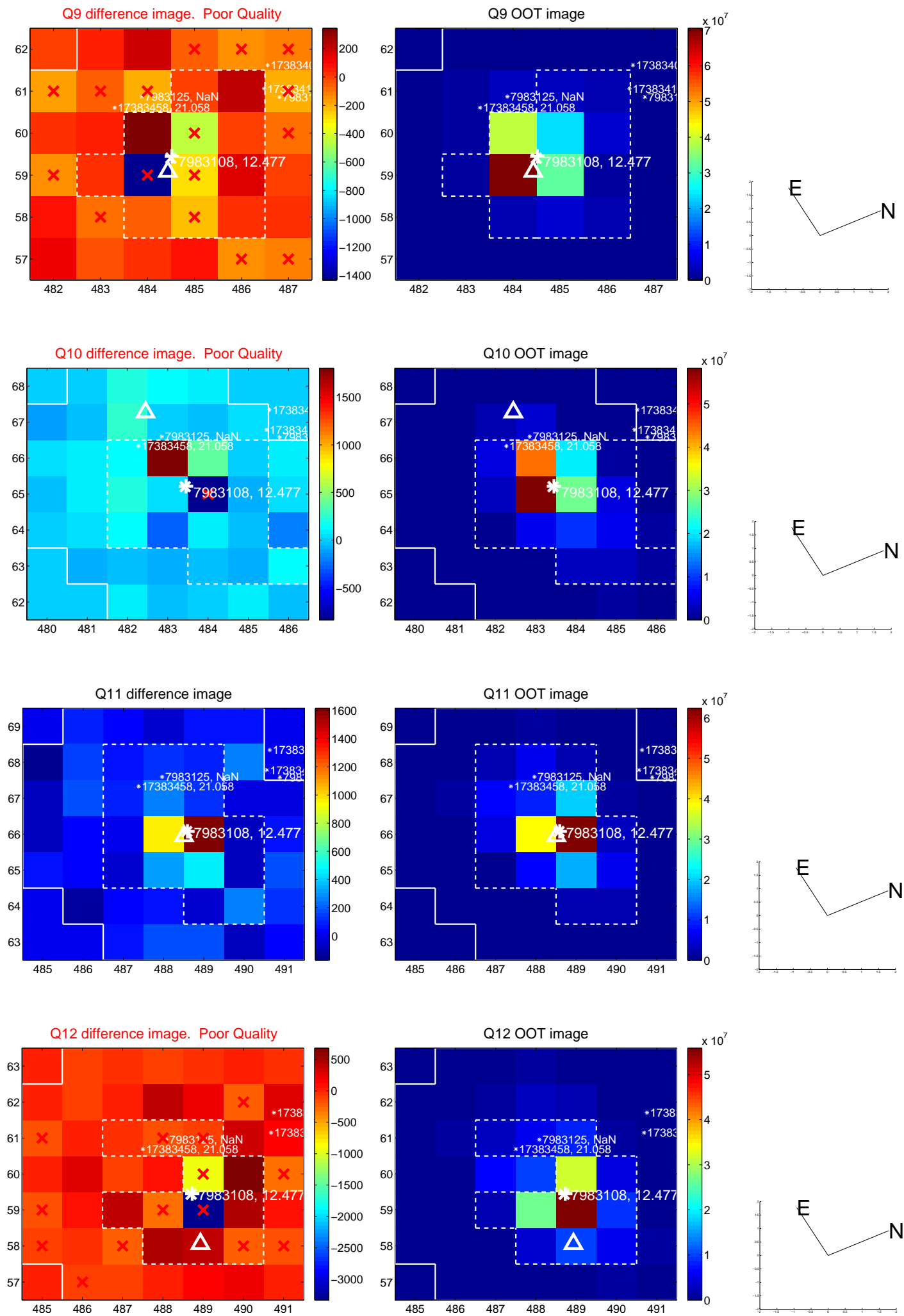
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



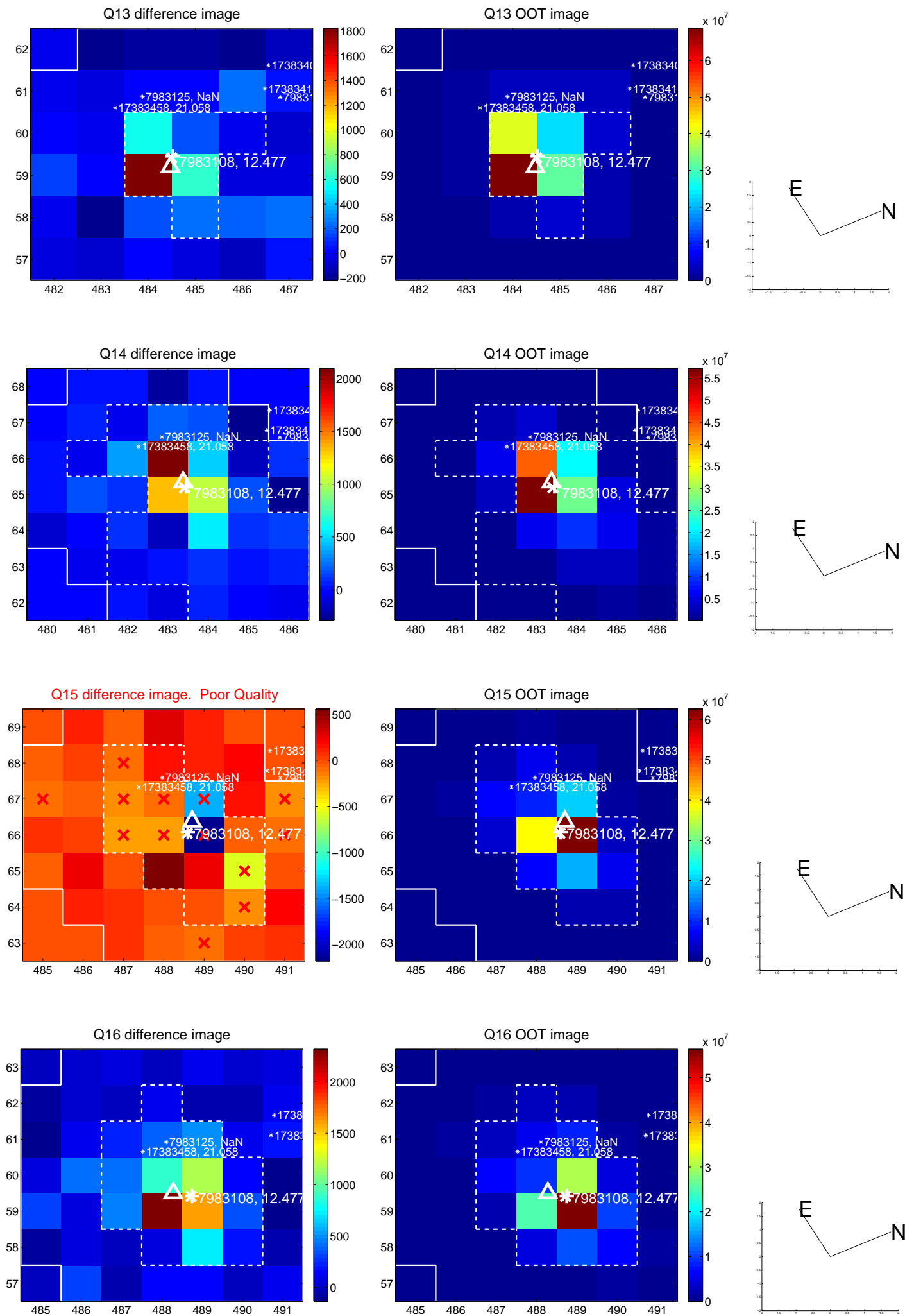
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



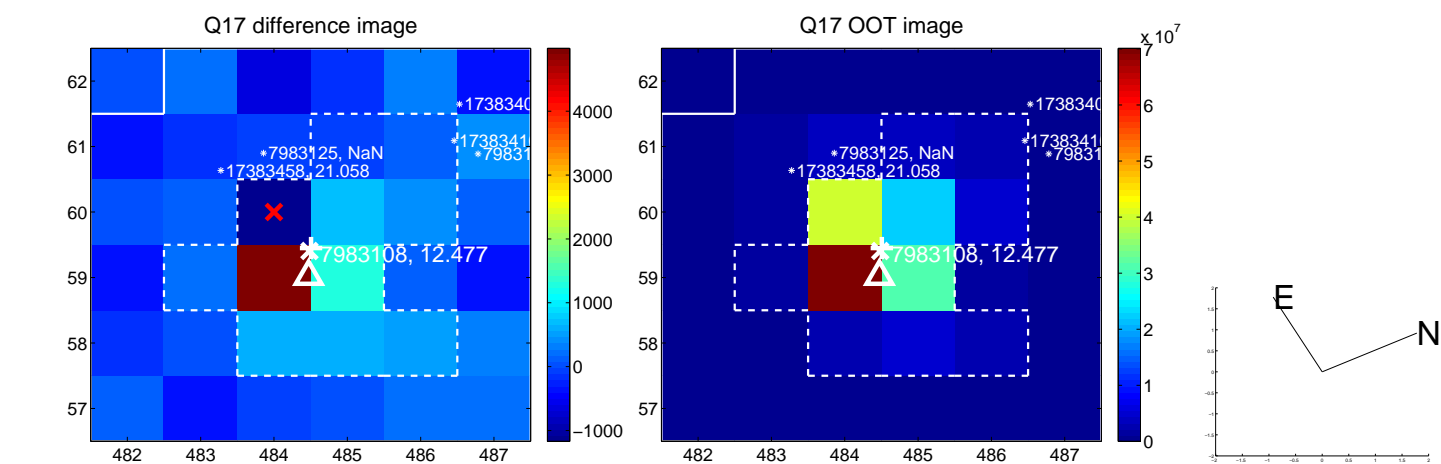
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



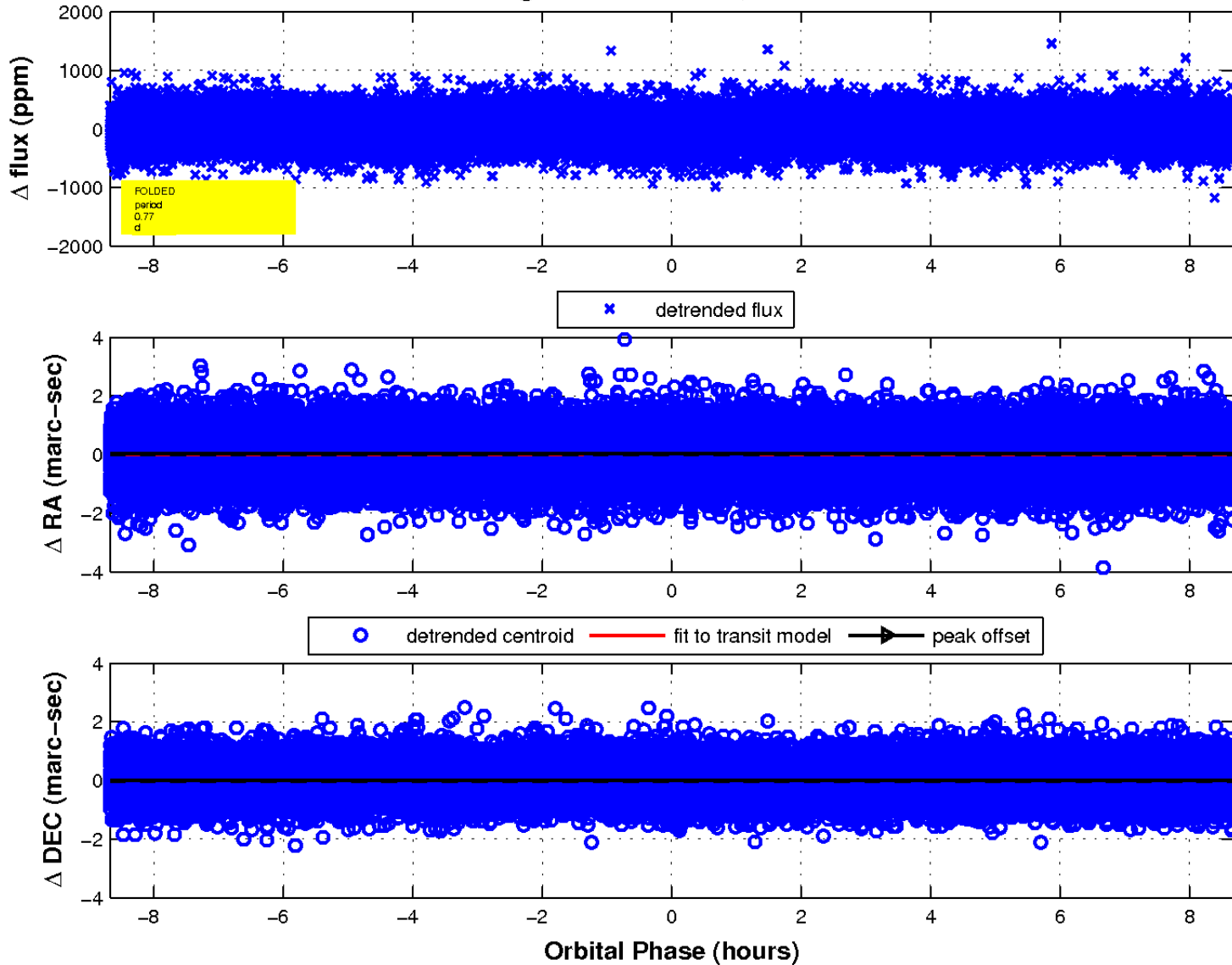
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



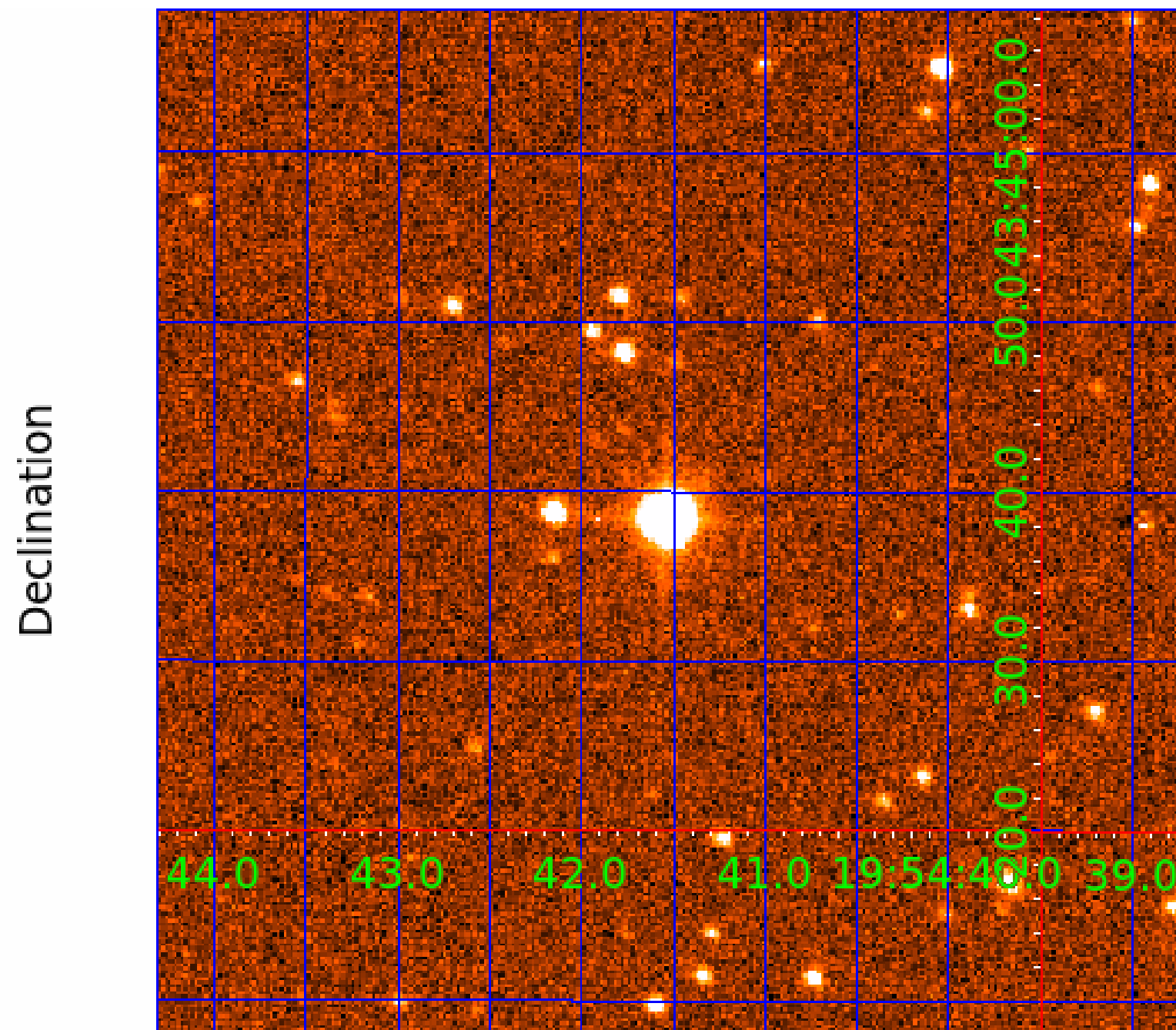
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 007983108

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})
007983108-01	OBS	No	0.770939	132.211818	34.3	2.892	10.2	11.6	1.46	6937	0.99	12787.81
007983108-02	OBS	No	0.770917	131.835977	15.4	3.738	10.9	5.7	1.46	6937	0.59	12788.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007983108-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007983108-02	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.

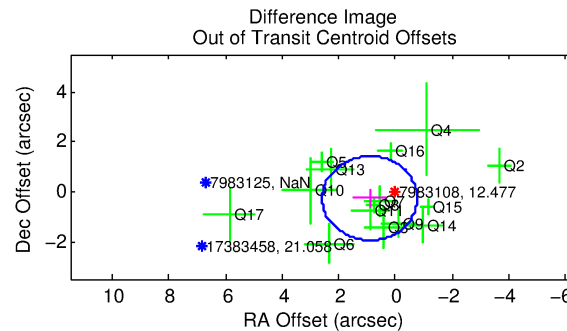
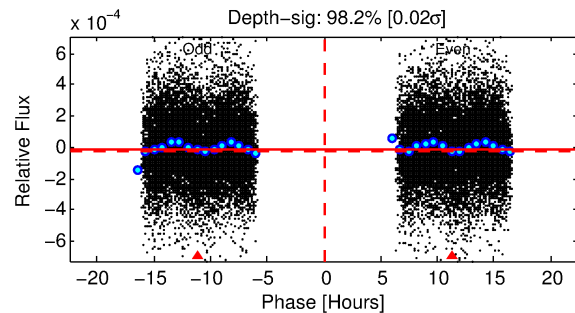
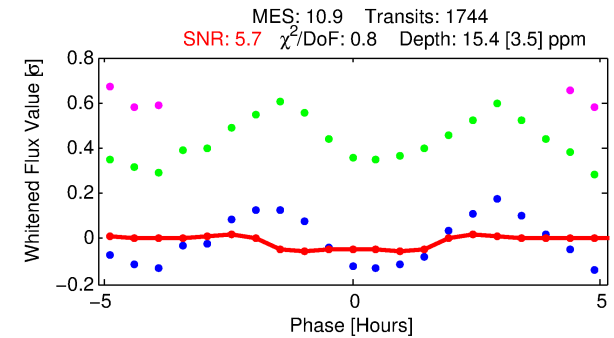
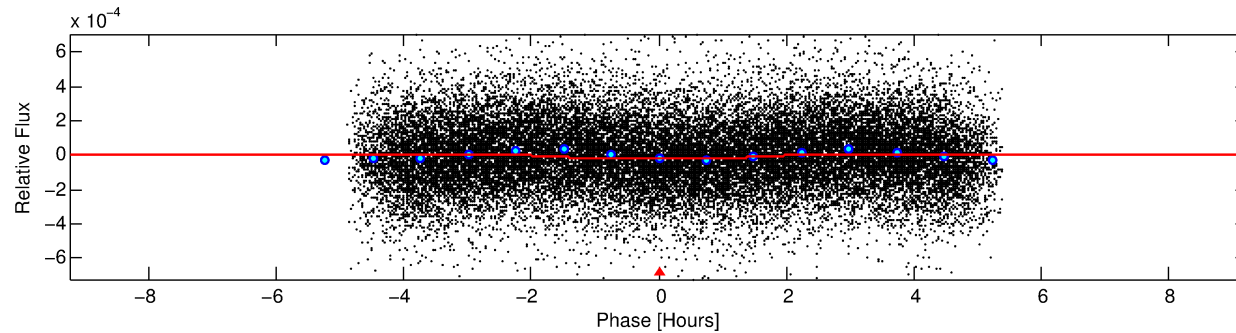
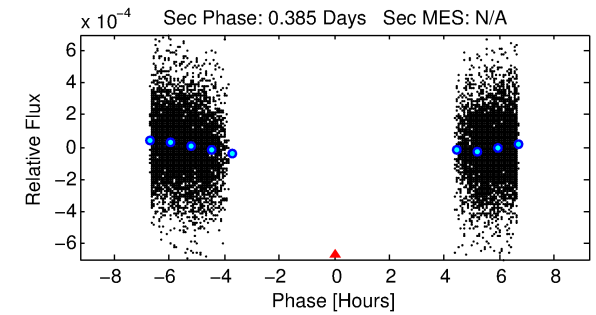
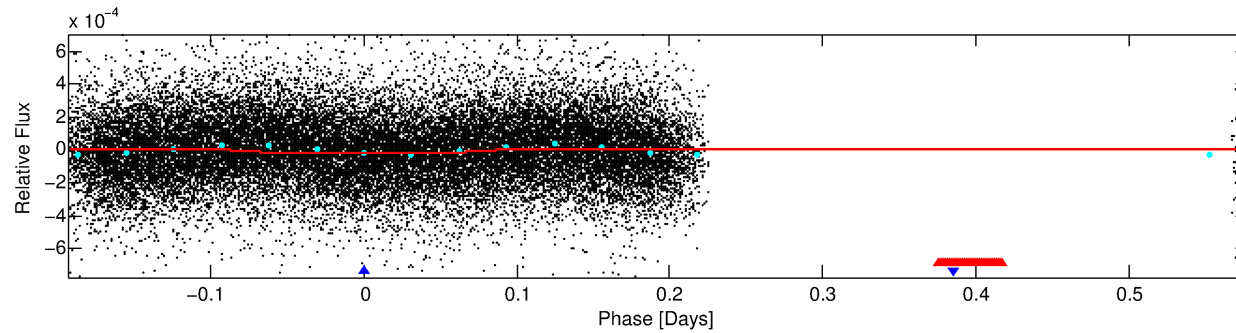
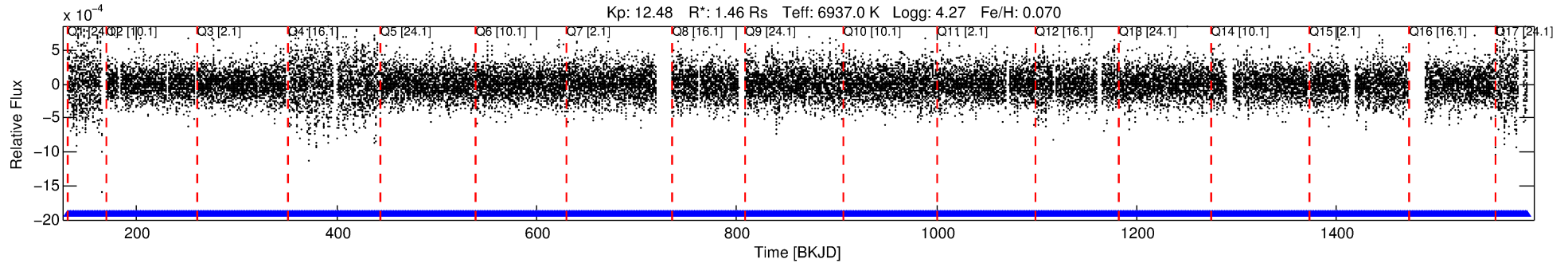
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007983108-02

No Significant Match Found

DV One-Page Summary

KIC: 7983108 Candidate: 2 of 2 Period: 0.771 d



DV Fit Results:

Period = 0.77092 [0.00002] d
Epoch = 131.8360 [0.0044] BKJD
Rp/R* = 0.0037 [0.0012]
a/R* = 1.53 [1.56]
b = 0.54 [2.40]
Seff = 12788.30 [5726.59]
Teq = 2712 [304] K
Rp = 0.59 [0.28] Re
a = 0.0185 [0.0053] AU

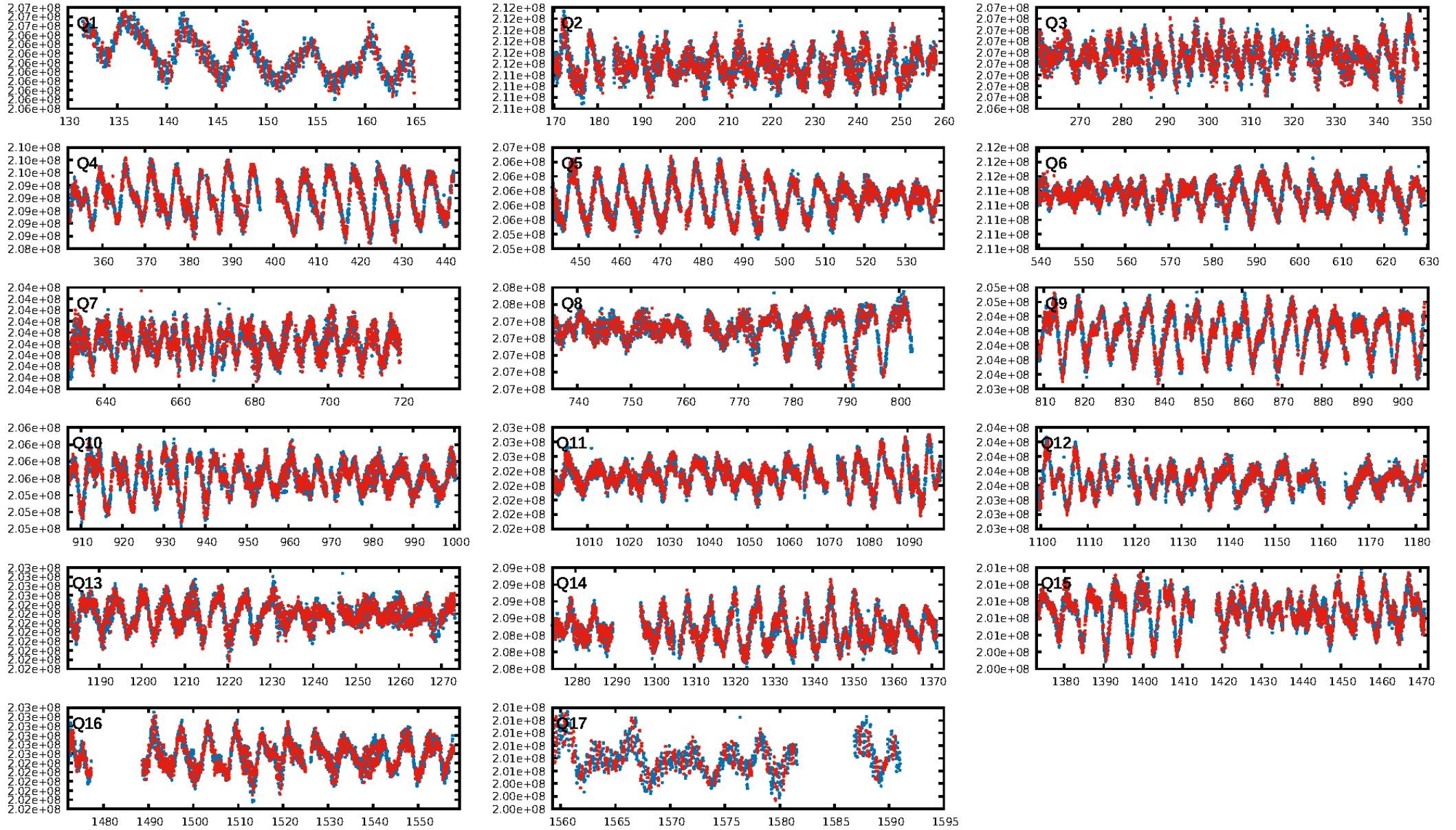
DV Diagnostic Results:

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 [1666/1666]
GhostDiagnostic-chr: 0.2786
Centroid-sig: 47.9%
Centroid-so: 0.591 arcsec [0.62σ]
OotOffset-rm: 0.945 arcsec [1.69σ]
KicOffset-rm: 0.534 arcsec [0.93σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 0.00 [0/17]

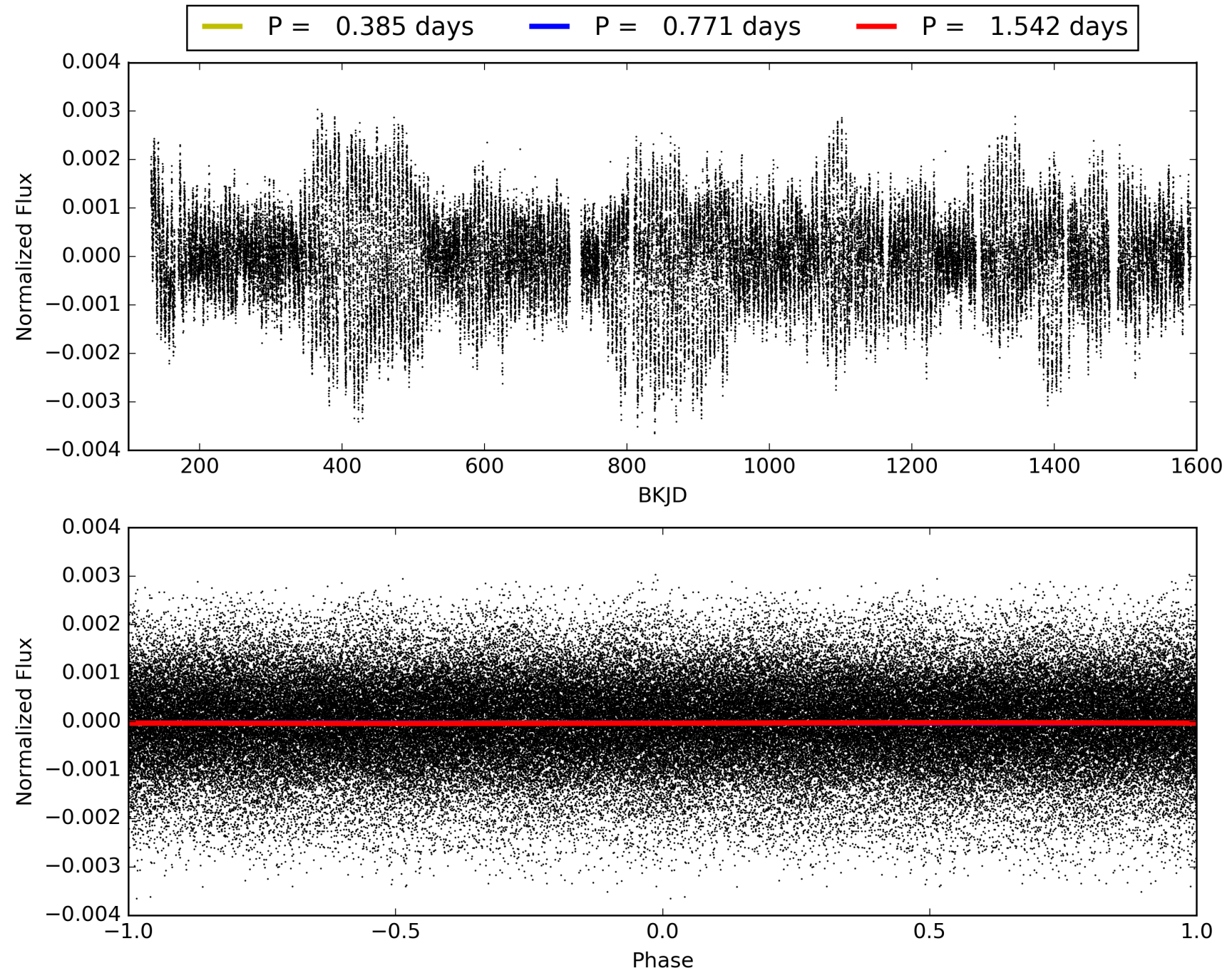
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:09:40 Z

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

TCE 007983108-02, PDC Light Curves

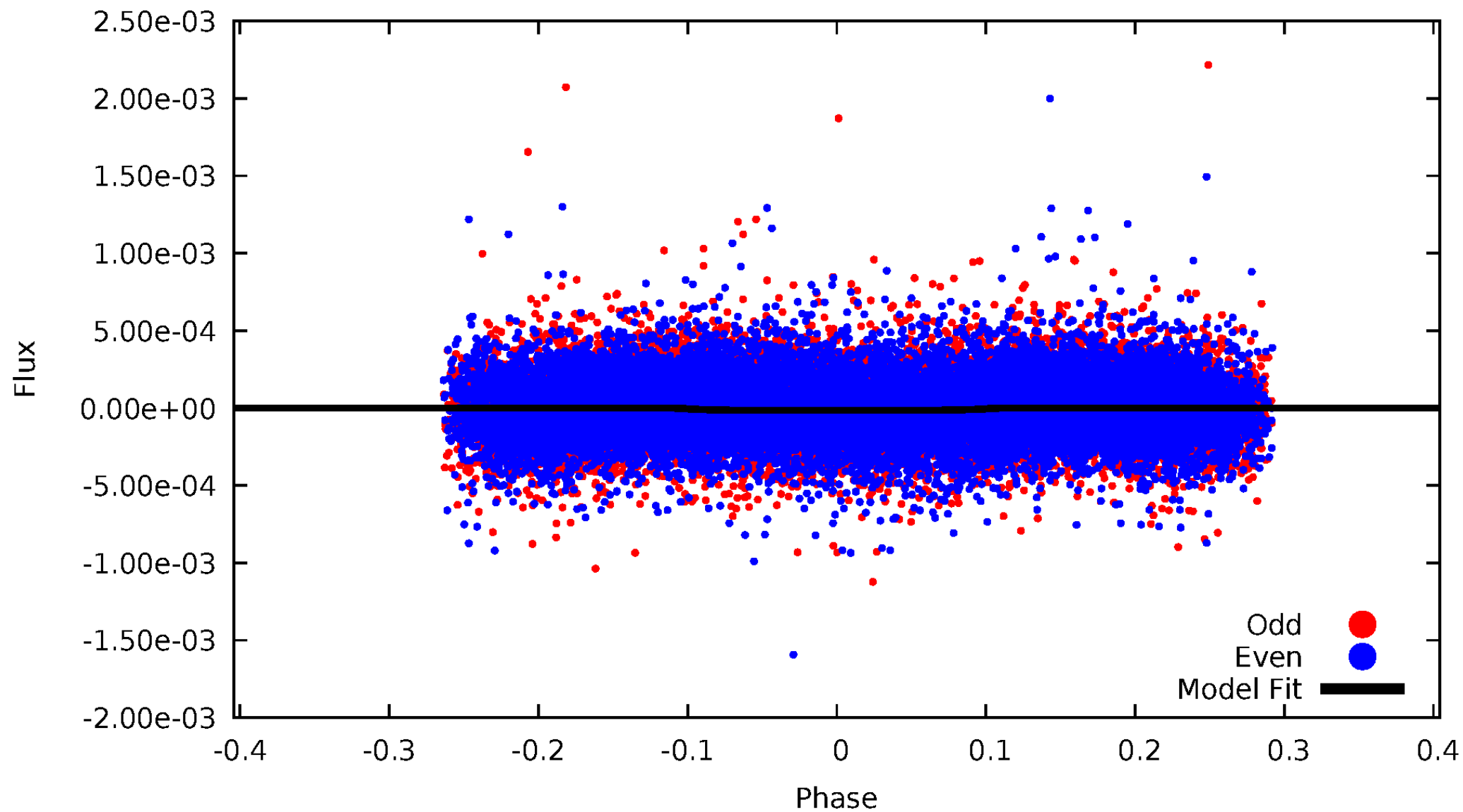


TCE 007983108-02



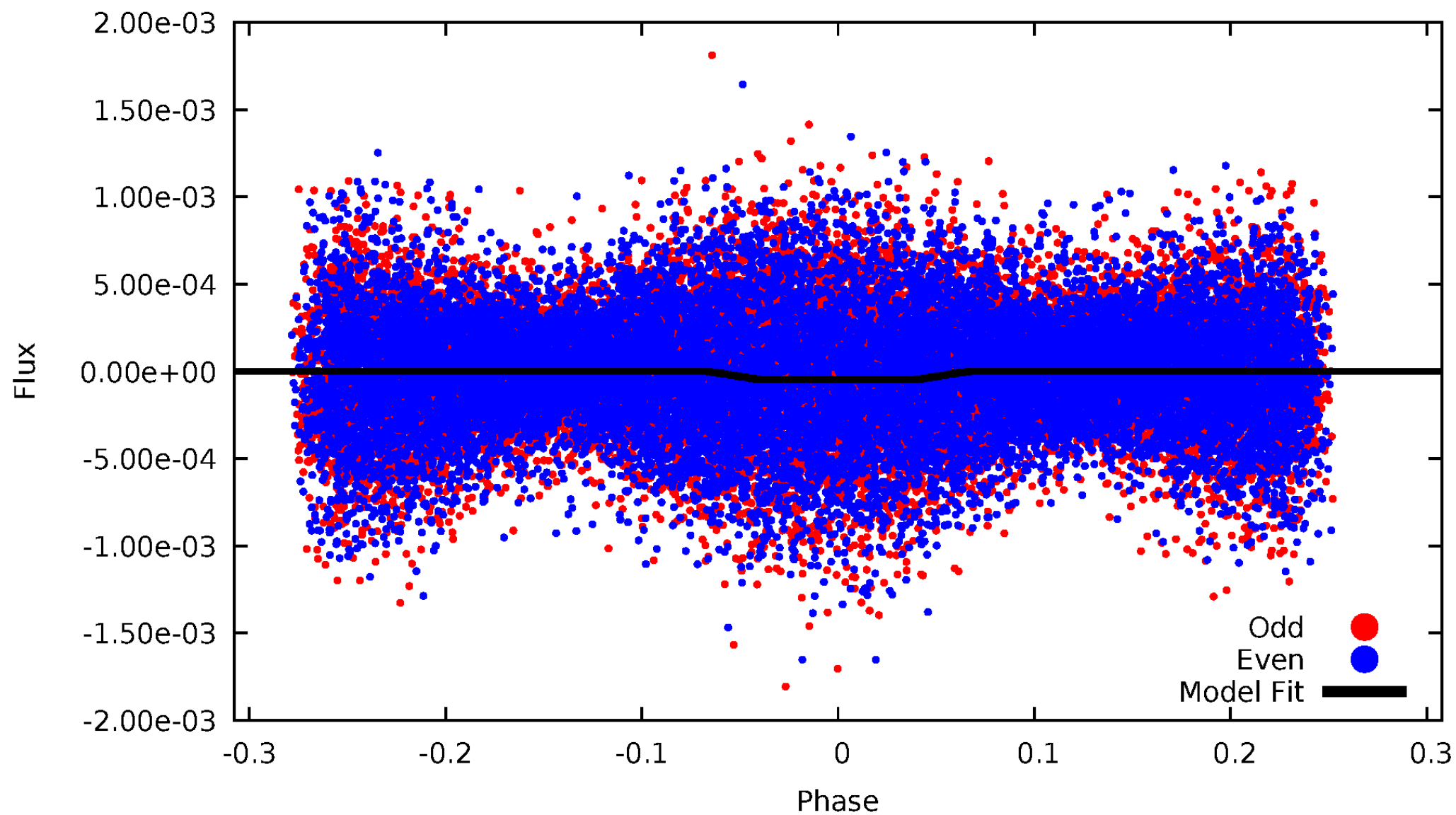
DV Odd/Even

TCE 007983108-02



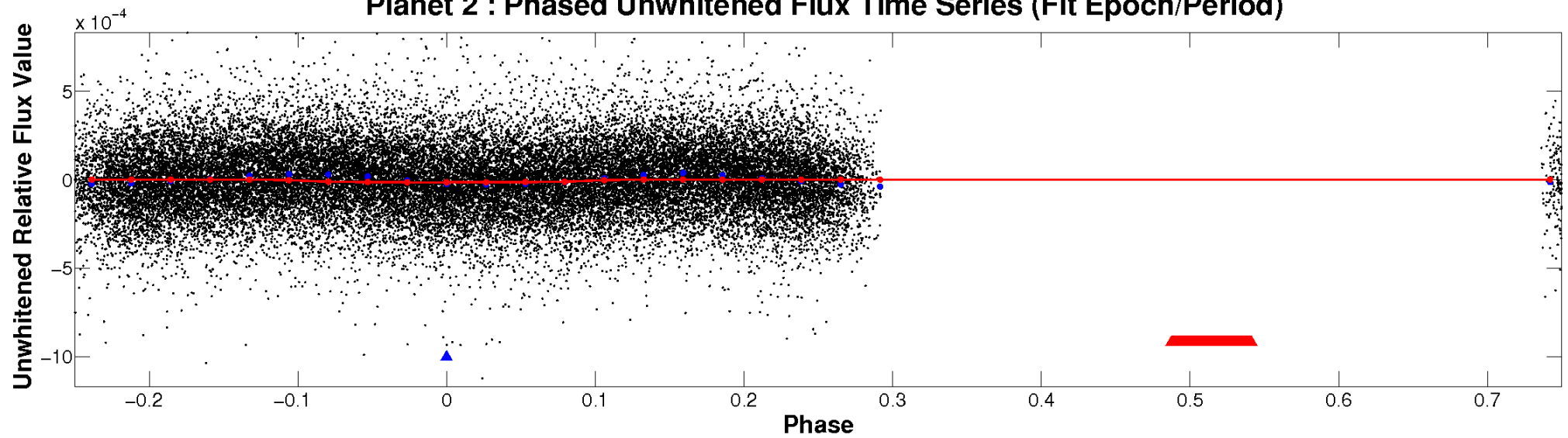
ALT Odd/Even

TCE 007983108-02

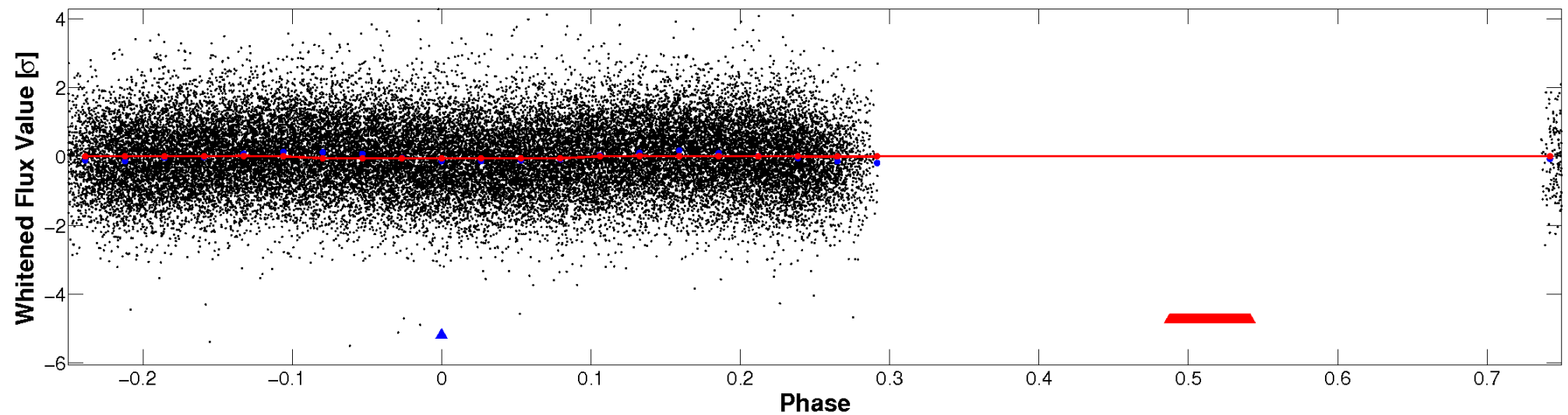


Non-Whitened Vs. Whitened Light Curve

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

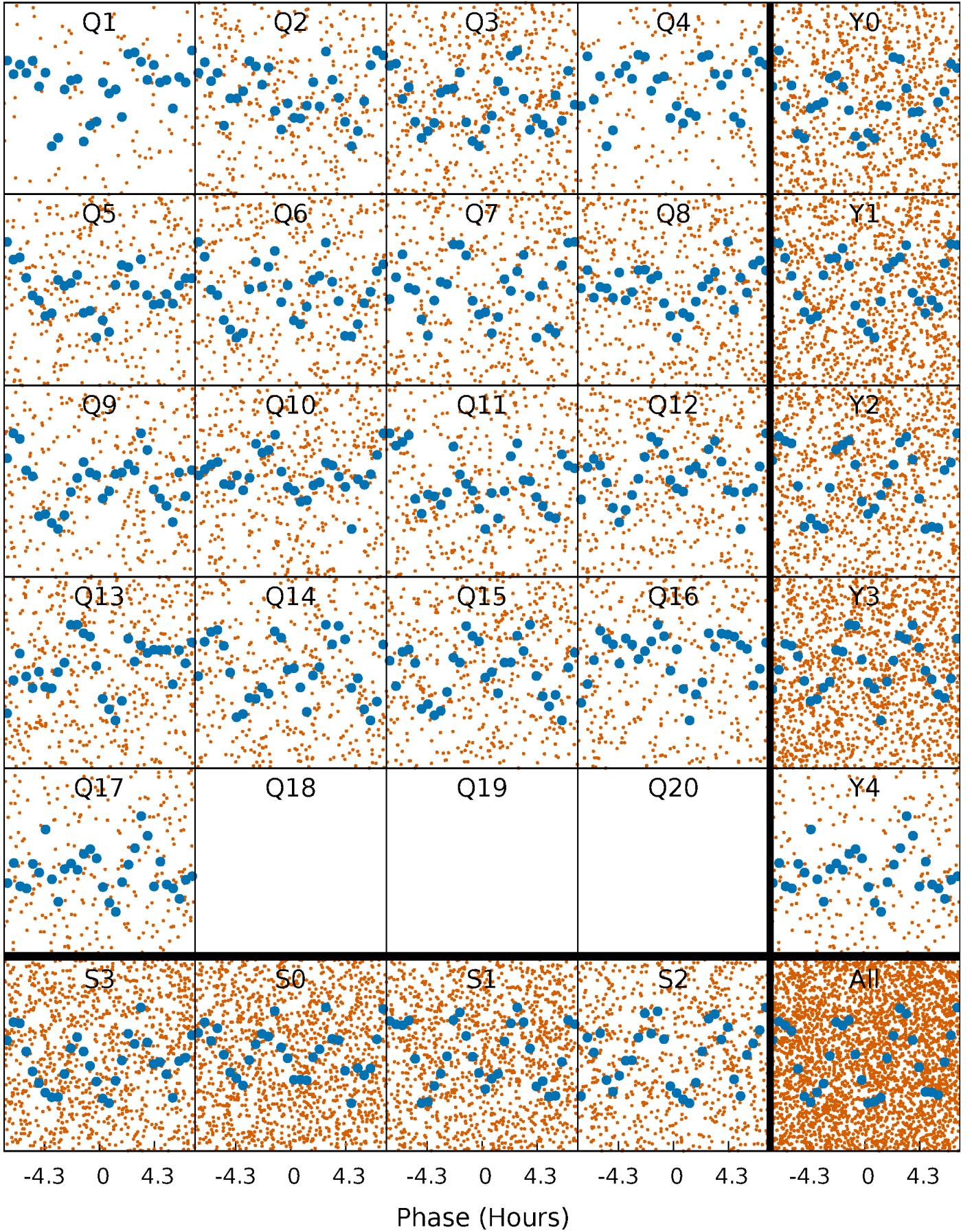


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



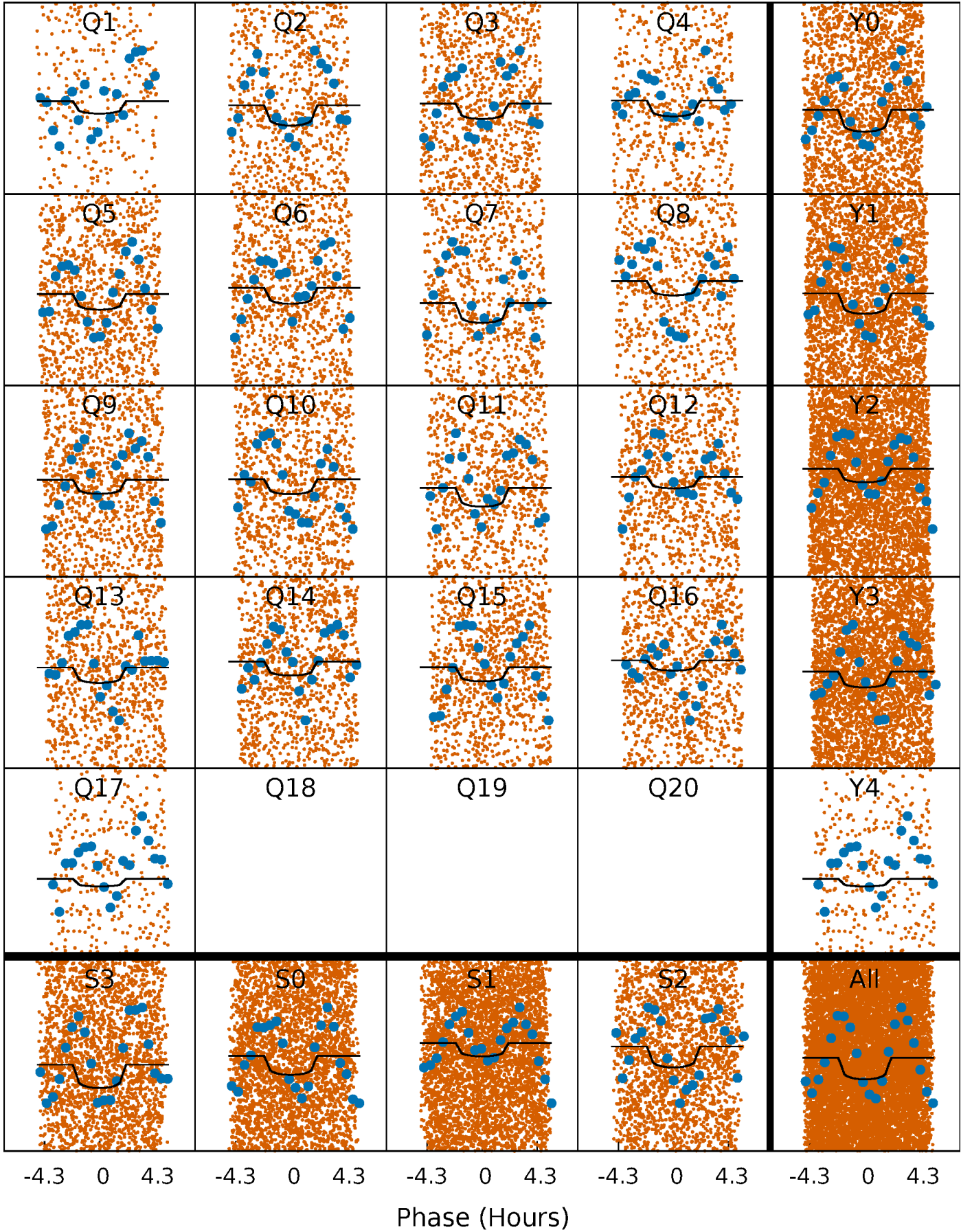
PDC Quarter-Phased Transit Curves

TCE 007983108-02 P= 0.770917 Days $T_0=131.835976$ (BKJD)



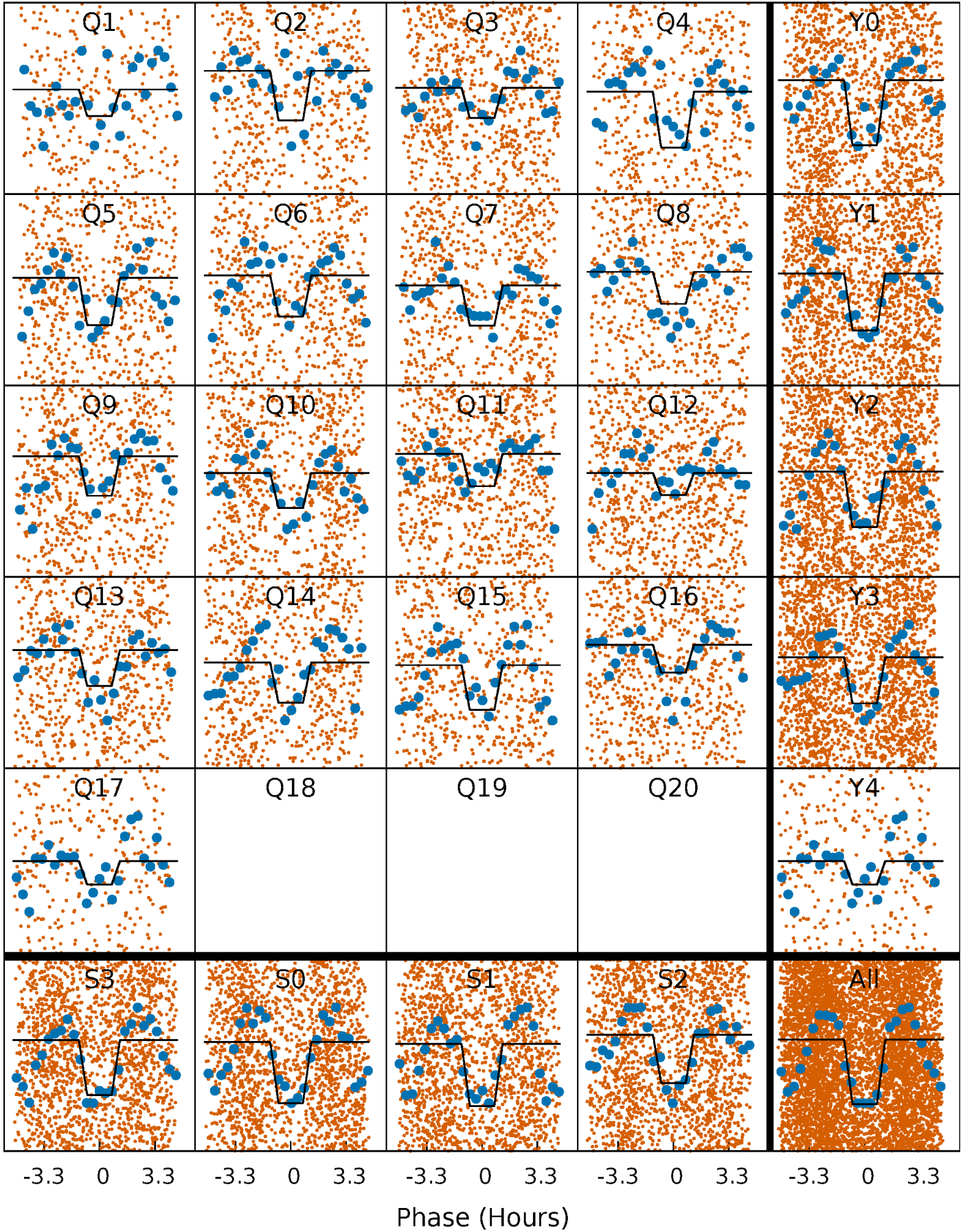
DV Quarter-Phased Transit Curves

TCE 007983108-02 P= 0.770917 Days $T_0=131.835976$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

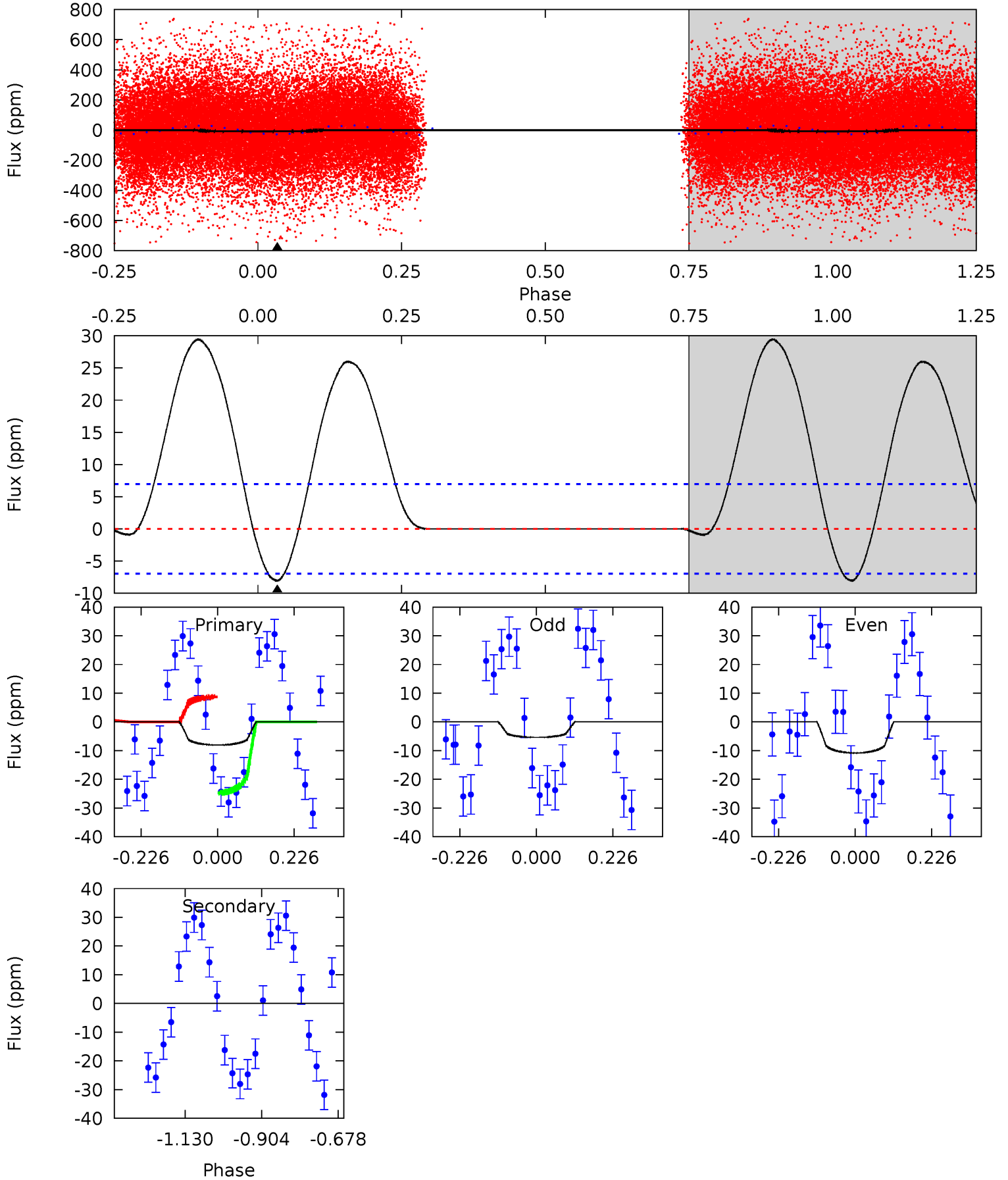
TCE 007983108-02 P= 0.770950 Days $T_0=131.826266$ (BKJD)



DV Model-Shift Uniqueness Test

007983108-02, P = 0.770917 Days, E = 131.065059 Days

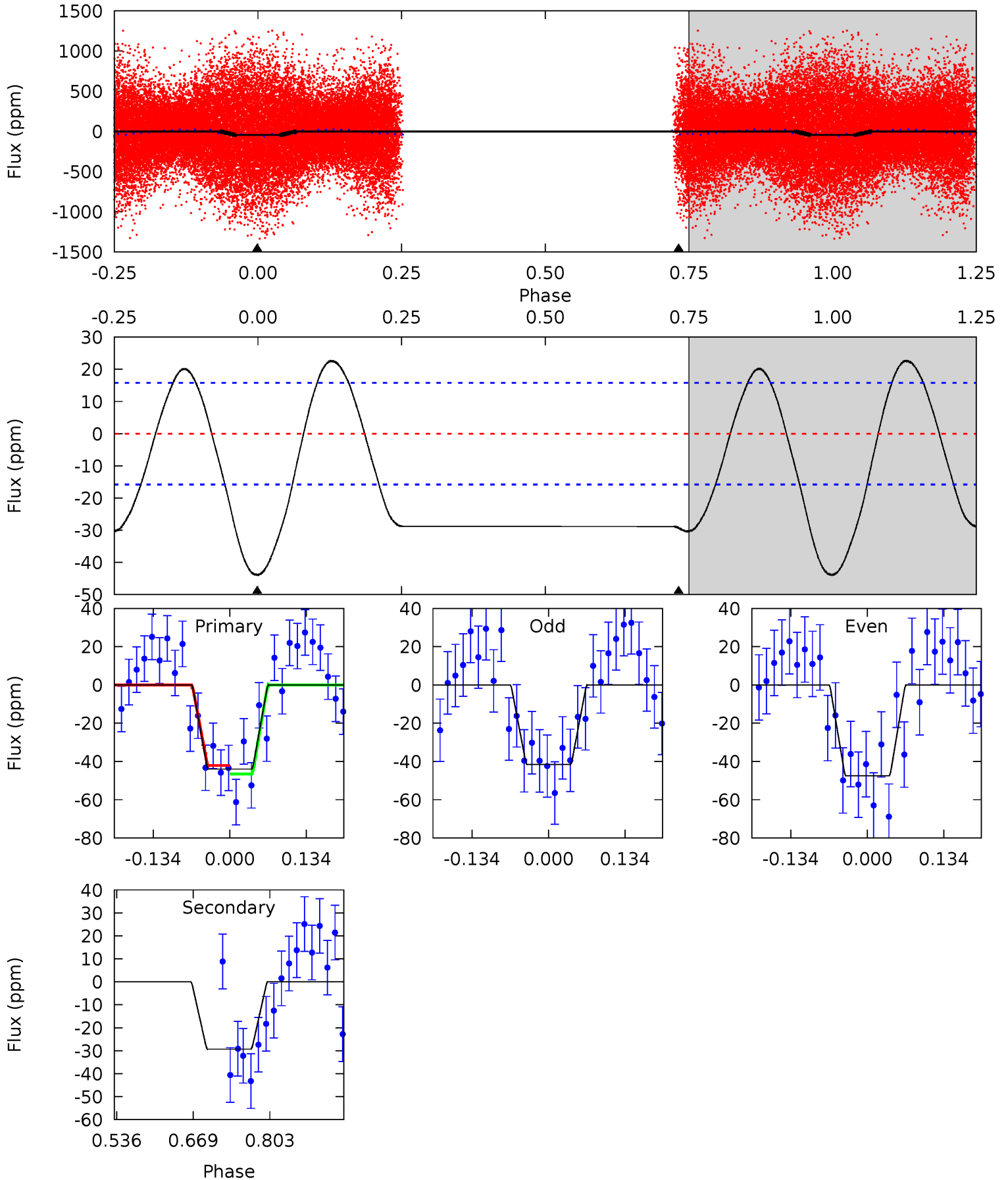
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.10	0	0	0	4.39	1.21	0.74	5.10	5.10	0	0	1.72	0.79	0.78	5.07



Alt Model-Shift Uniqueness Test

007983108-02, P = 0.770950 Days, E = 131.055316 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	8.36	0	0	4.50	1.50	4.81	12.5	12.5	8.36	8.36	0.84	1.13	0.34	0.58



Stellar Parameters For KIC 007983108

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6937^{+194}_{-333}	$4.267^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.455^{+0.501}_{-0.215}$	$1.426^{+0.216}_{-0.216}$	$0.653^{+0.264}_{-0.358}$
	+3%/-5%	+2%/-5%	+286%/-500%	+34%/-15%	+15%/-15%	+40%/-55%
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 007983108-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 2	$0.62^{+0.22}_{-0.20}$	3856^{+319}_{-261}	-3574^{+7576}_{-1005}	$0.043^{+0.847}_{-0.836}$
Alt.	-29 ± 4	$1.15^{+0.26}_{-0.24}$	3846^{+304}_{-244}	5936^{+662}_{-555}	$4.074^{+2.306}_{-1.419}$

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

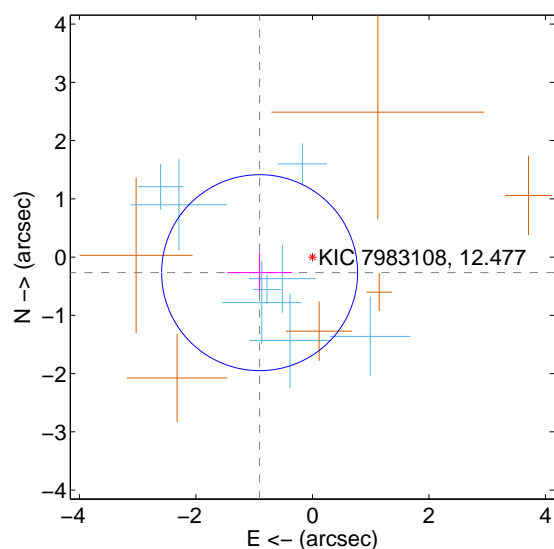
Supplemental centroid analysis for 007983108-02. Kepler magnitude: 12.48. Transit SNR 5.71

There are 8 quarters with good PRF difference image offsets

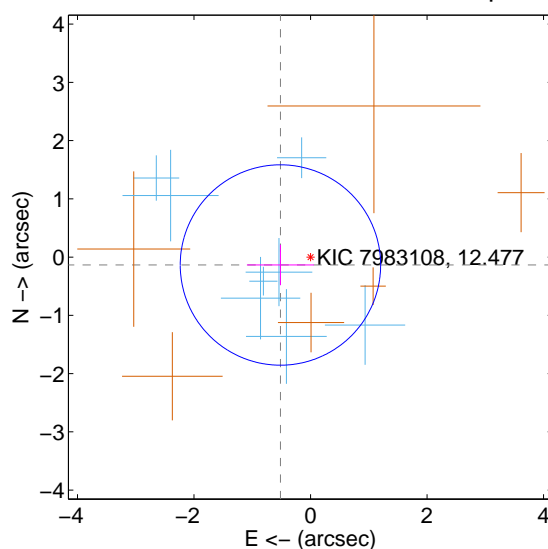
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.945 ± 0.561	1.69	0.907 ± 0.556	-0.267 ± 0.345
PRF-fit source offset from KIC position	0.534 ± 0.573	0.93	0.517 ± 0.575	-0.136 ± 0.346
photometric centroid source offset	0.59 ± 0.96	0.62	-0.30 ± 1.05	0.51 ± 0.92

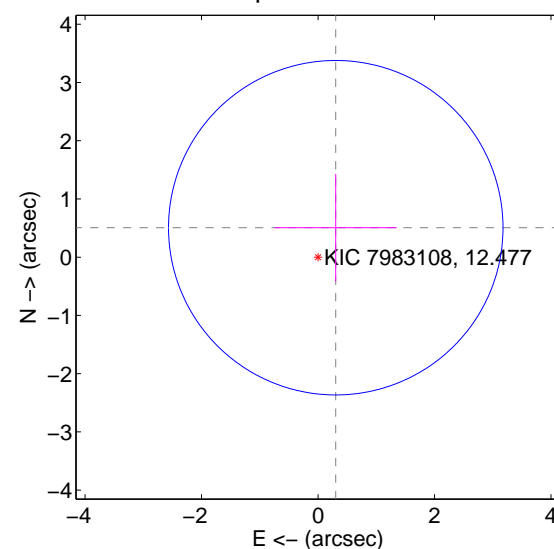
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

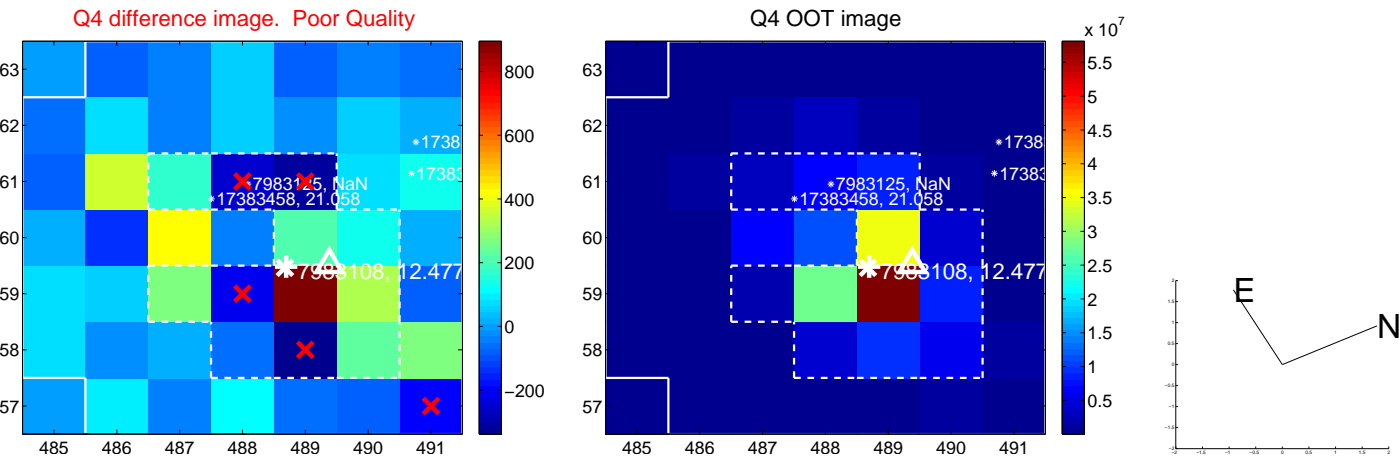
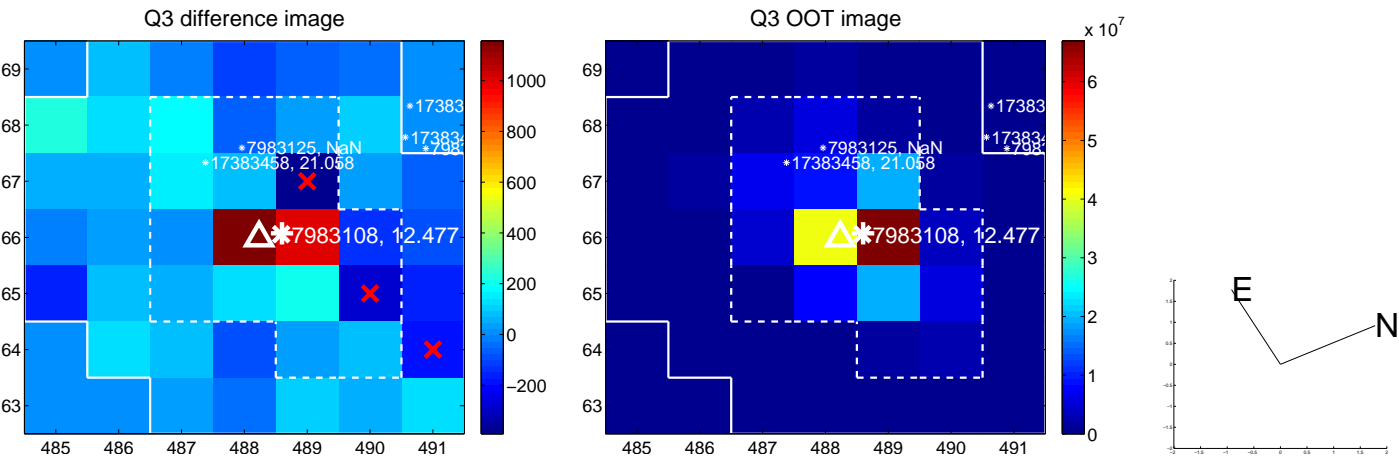
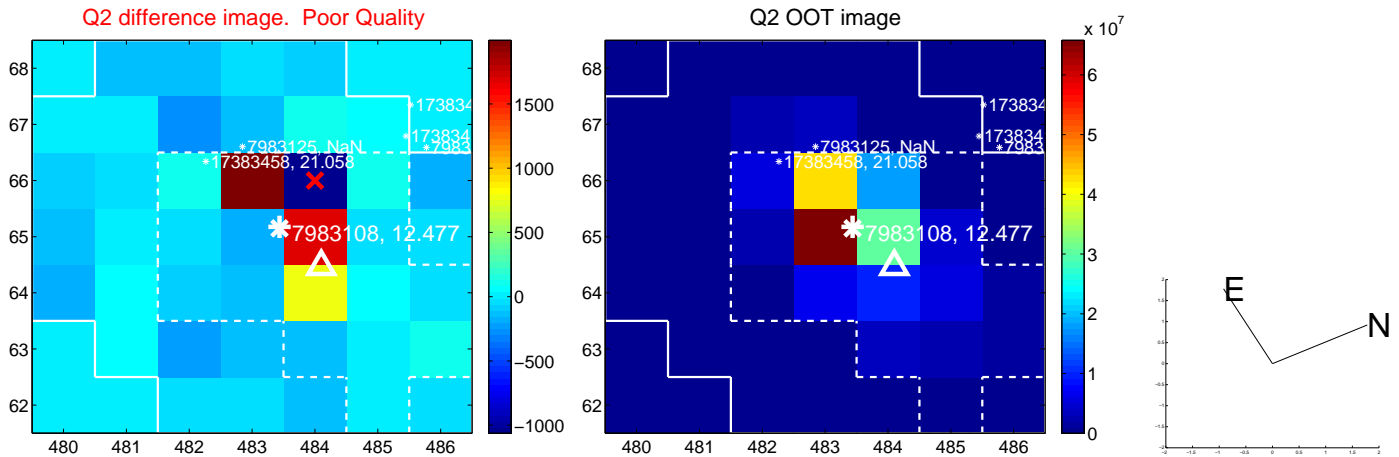
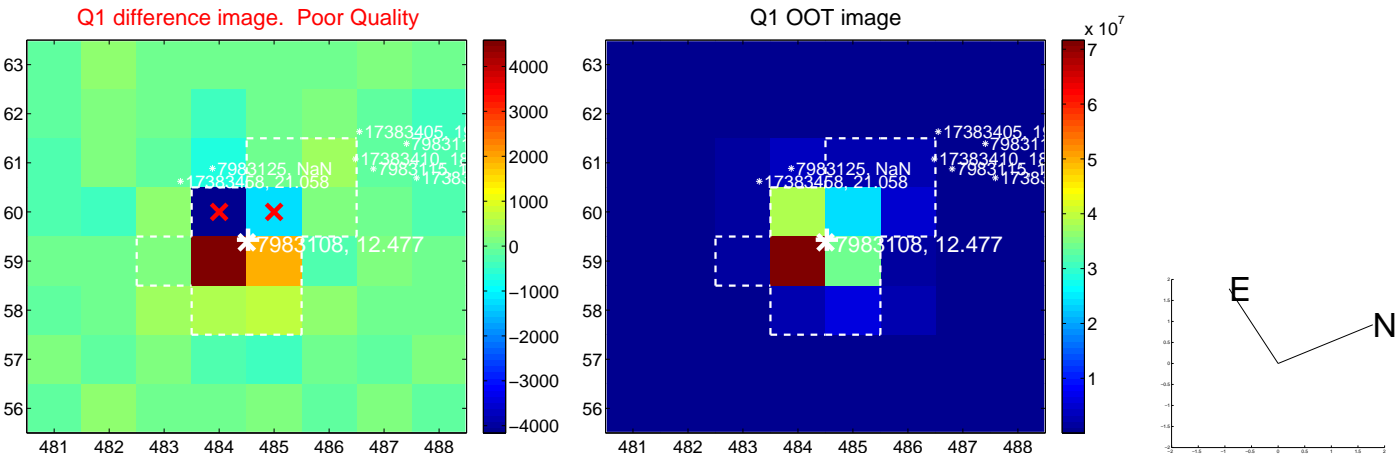


offset from photometric centroids

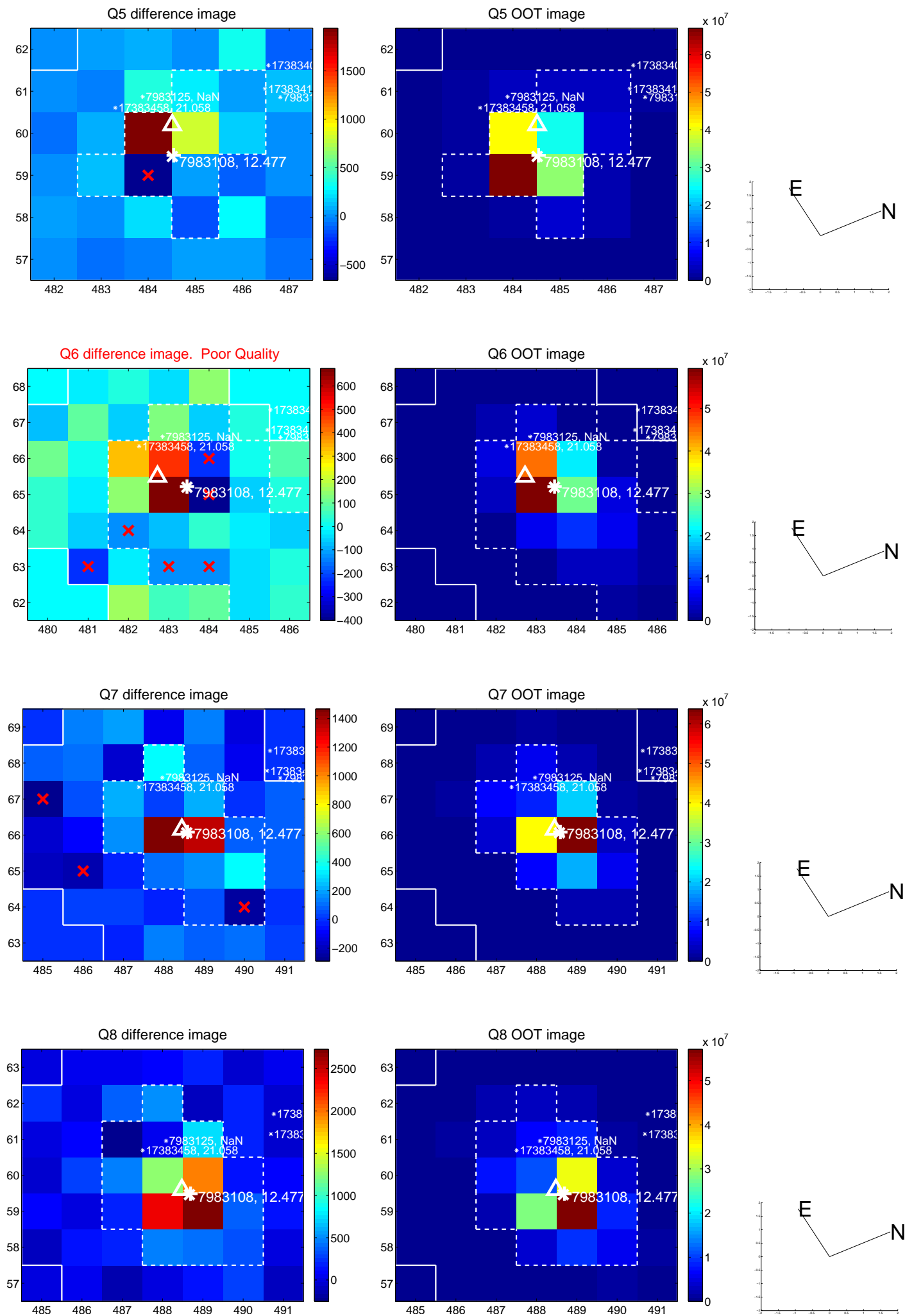


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

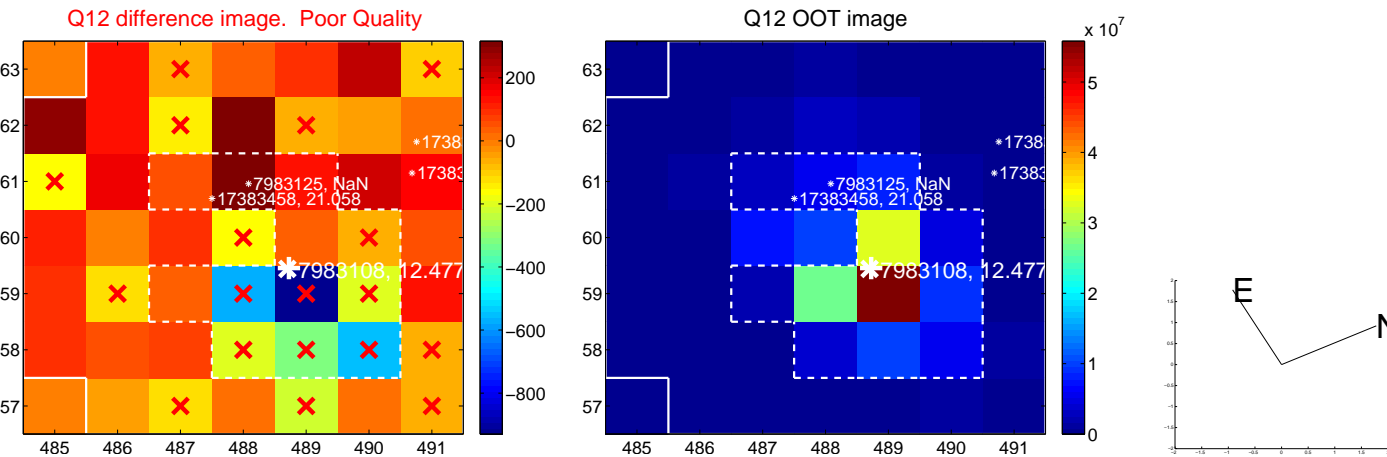
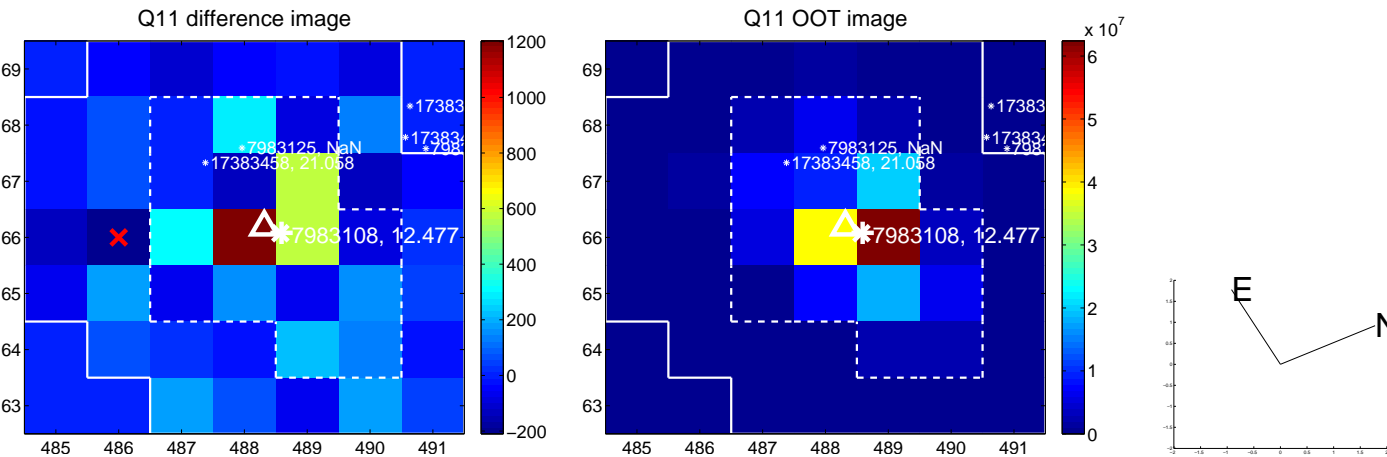
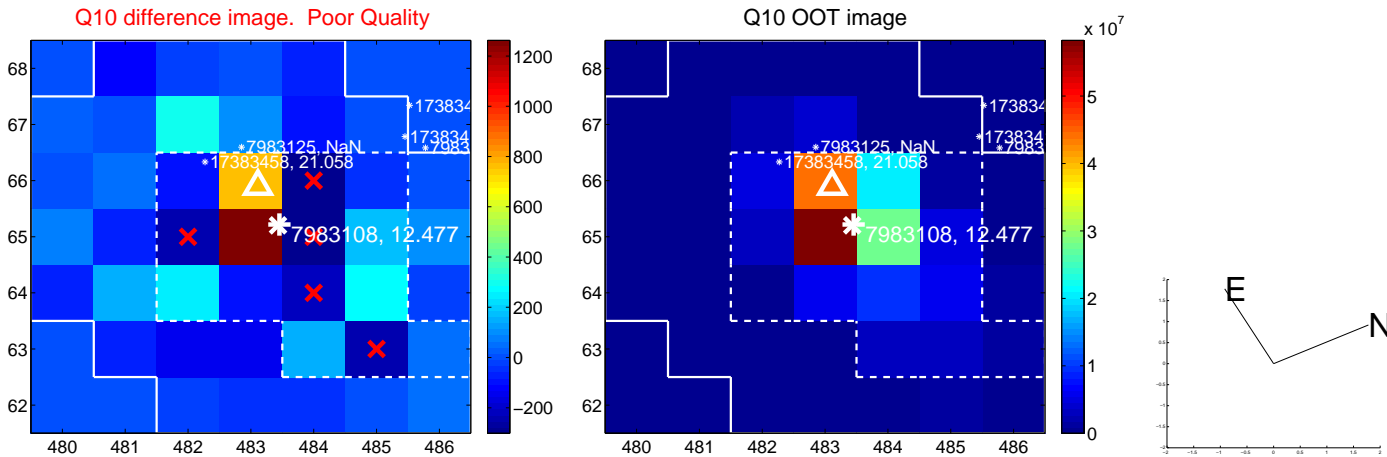
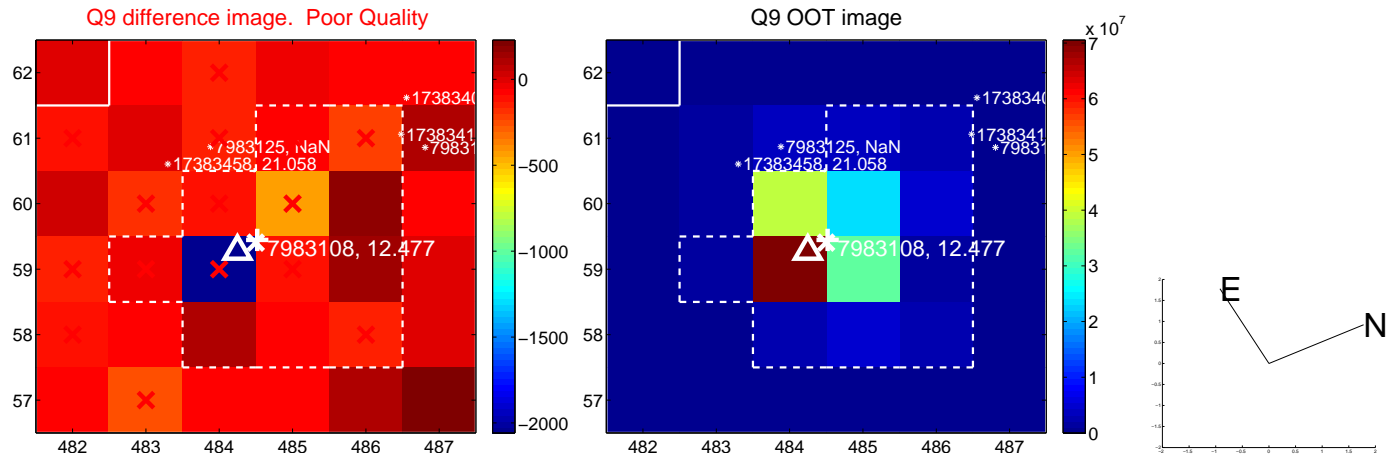
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



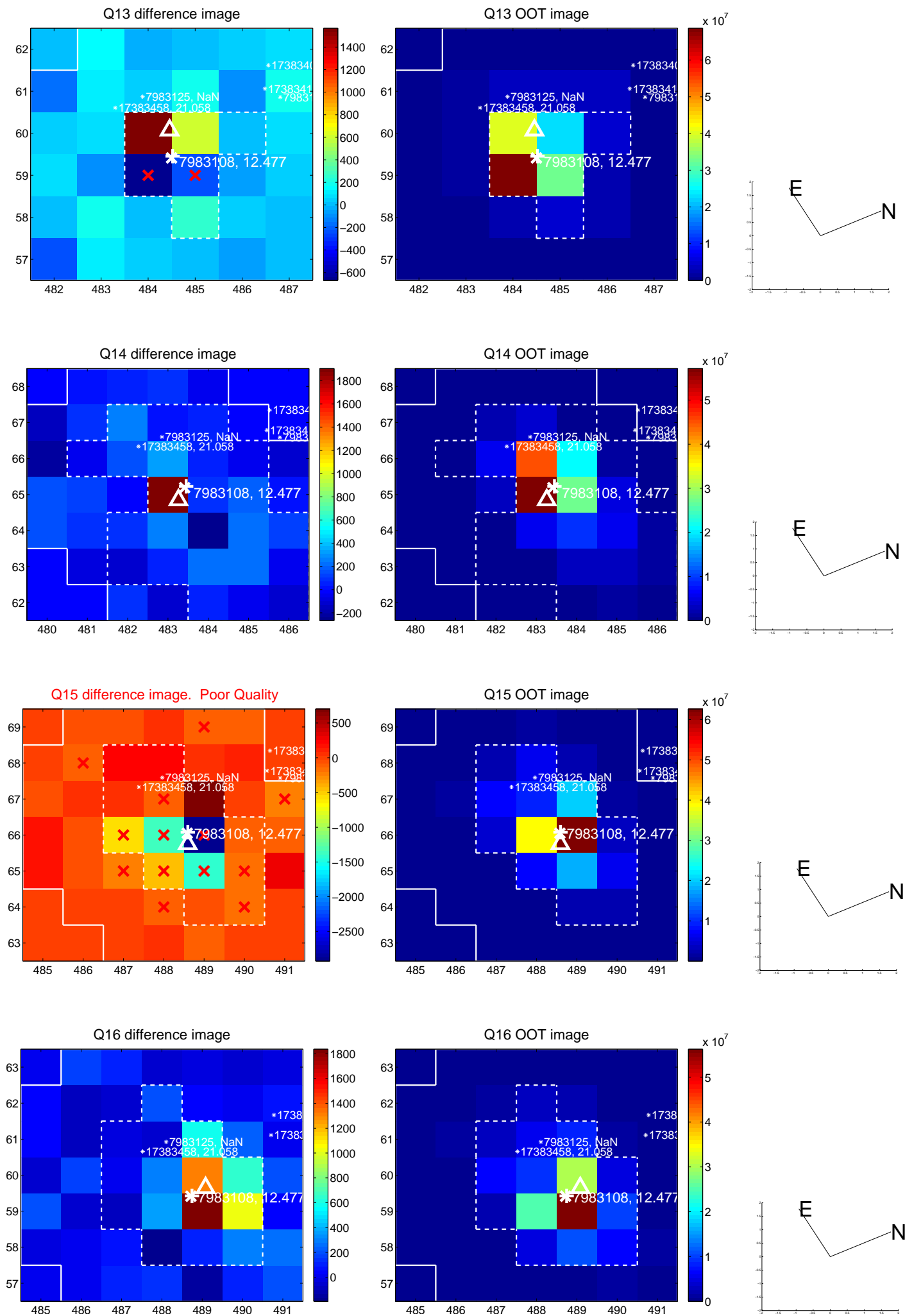
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



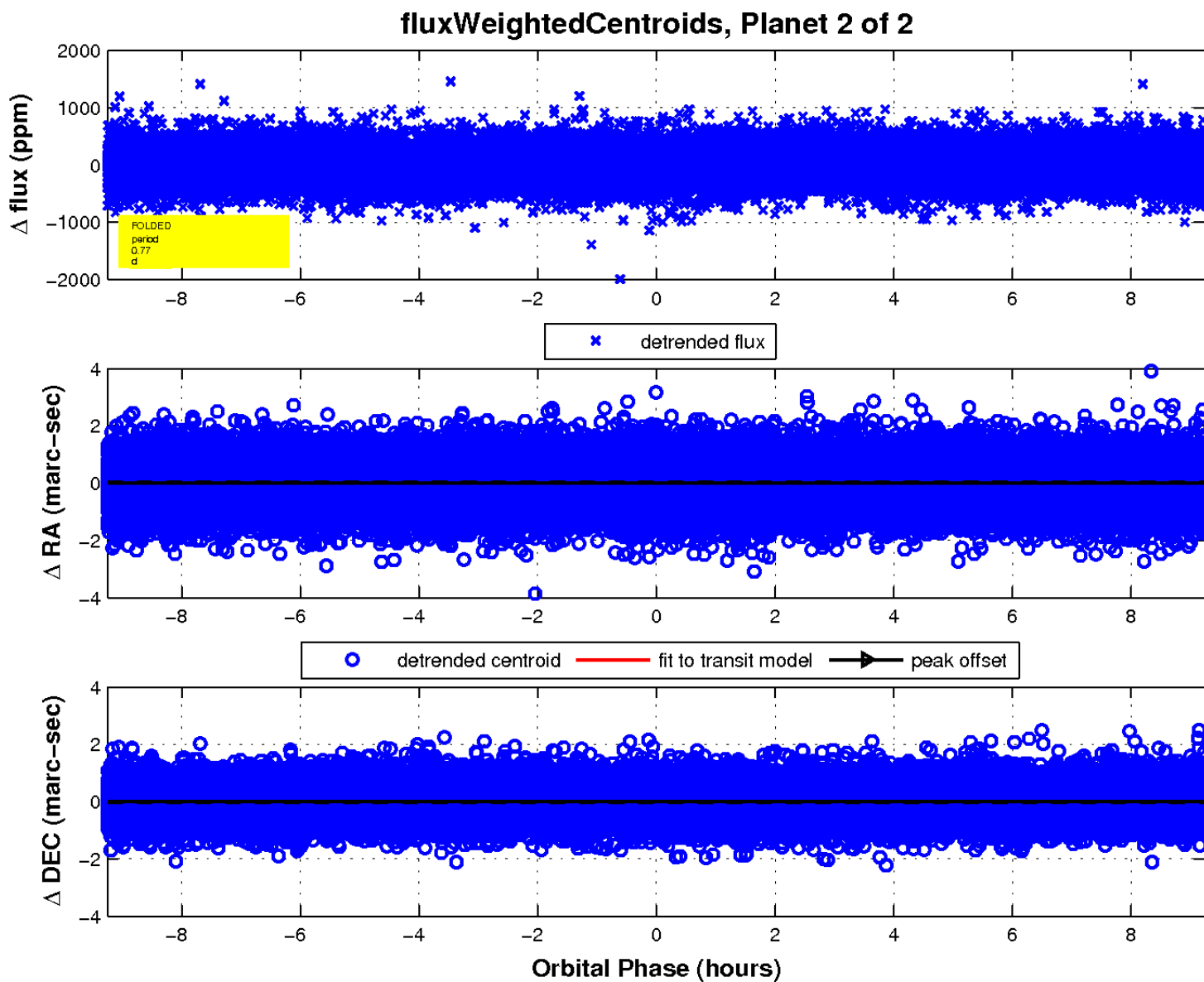
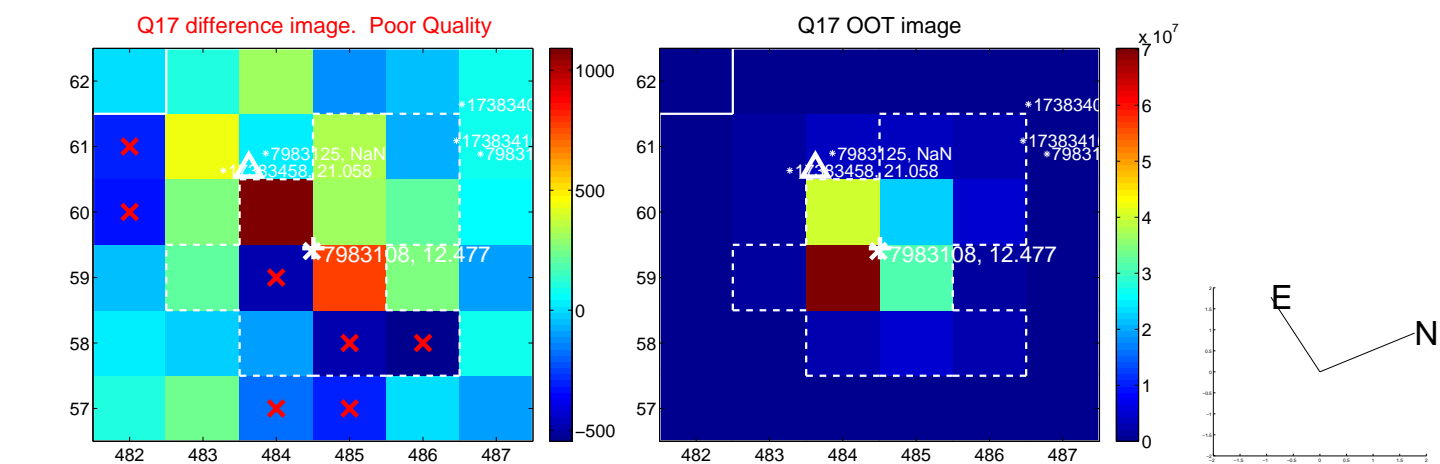
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

