

KIC 009992083

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})
009992083-01	OBS	No	1.258881	131.995073	0.0	3.084	31.1	0.0	0.52	3764	0.00	141.89
009992083-02	OBS	No	1.259380	132.144238	287.4	4.290	67.5	8.9	0.52	3764	1.32	141.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009992083-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009992083-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

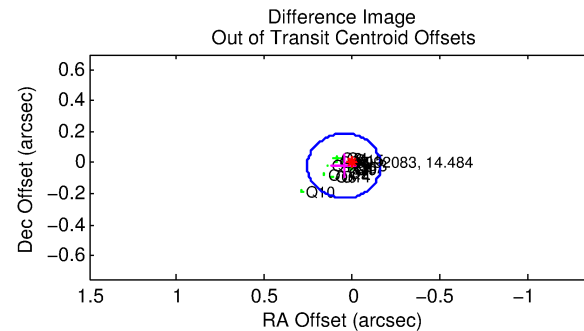
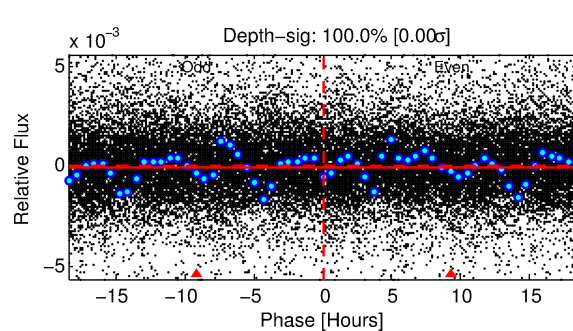
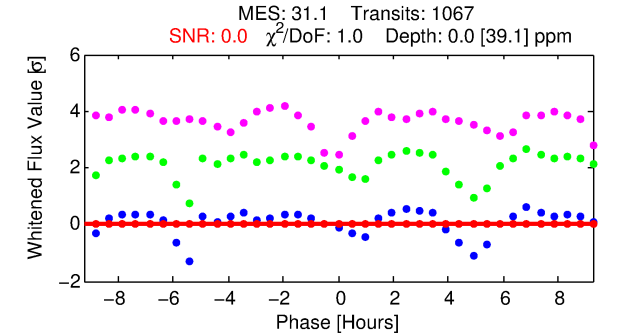
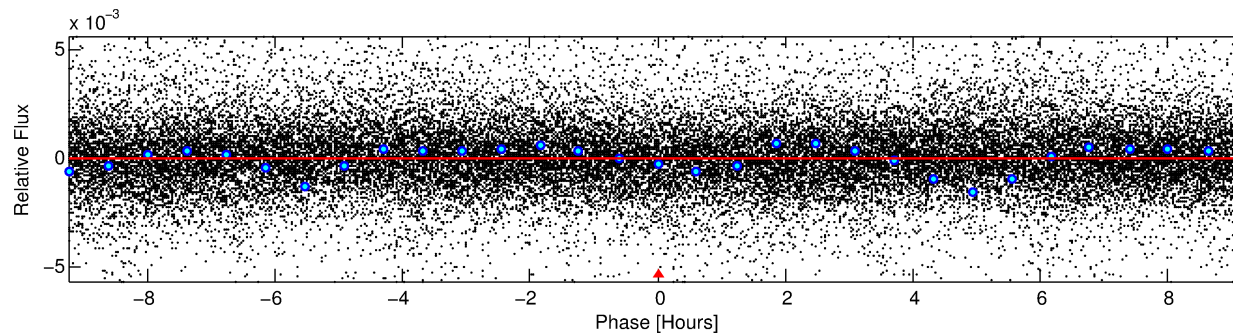
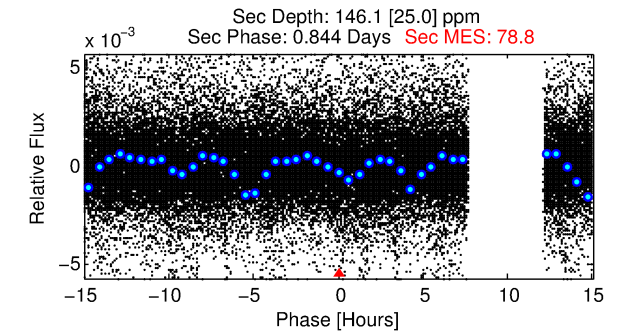
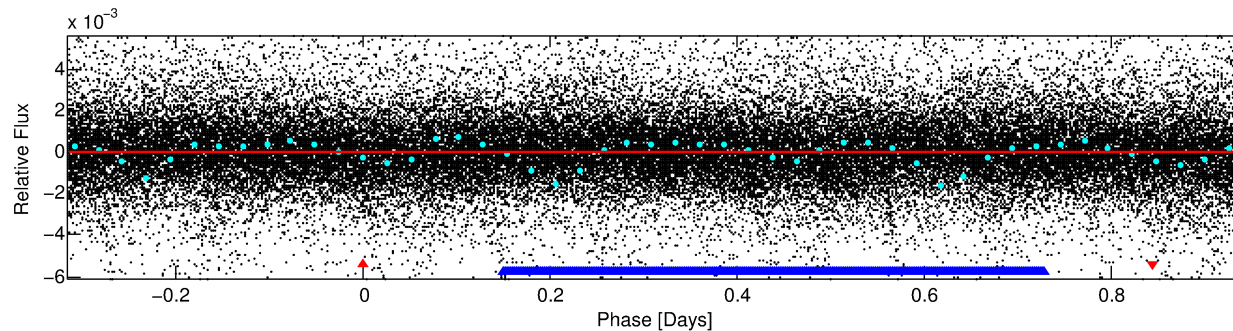
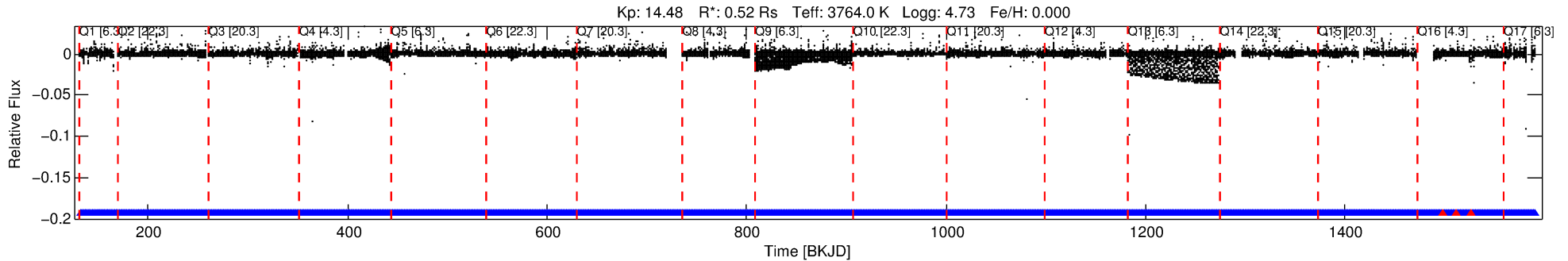
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009992083-01

No Significant Match Found

DV One-Page Summary

KIC: 9992083 Candidate: 1 of 2 Period: 1.259 d



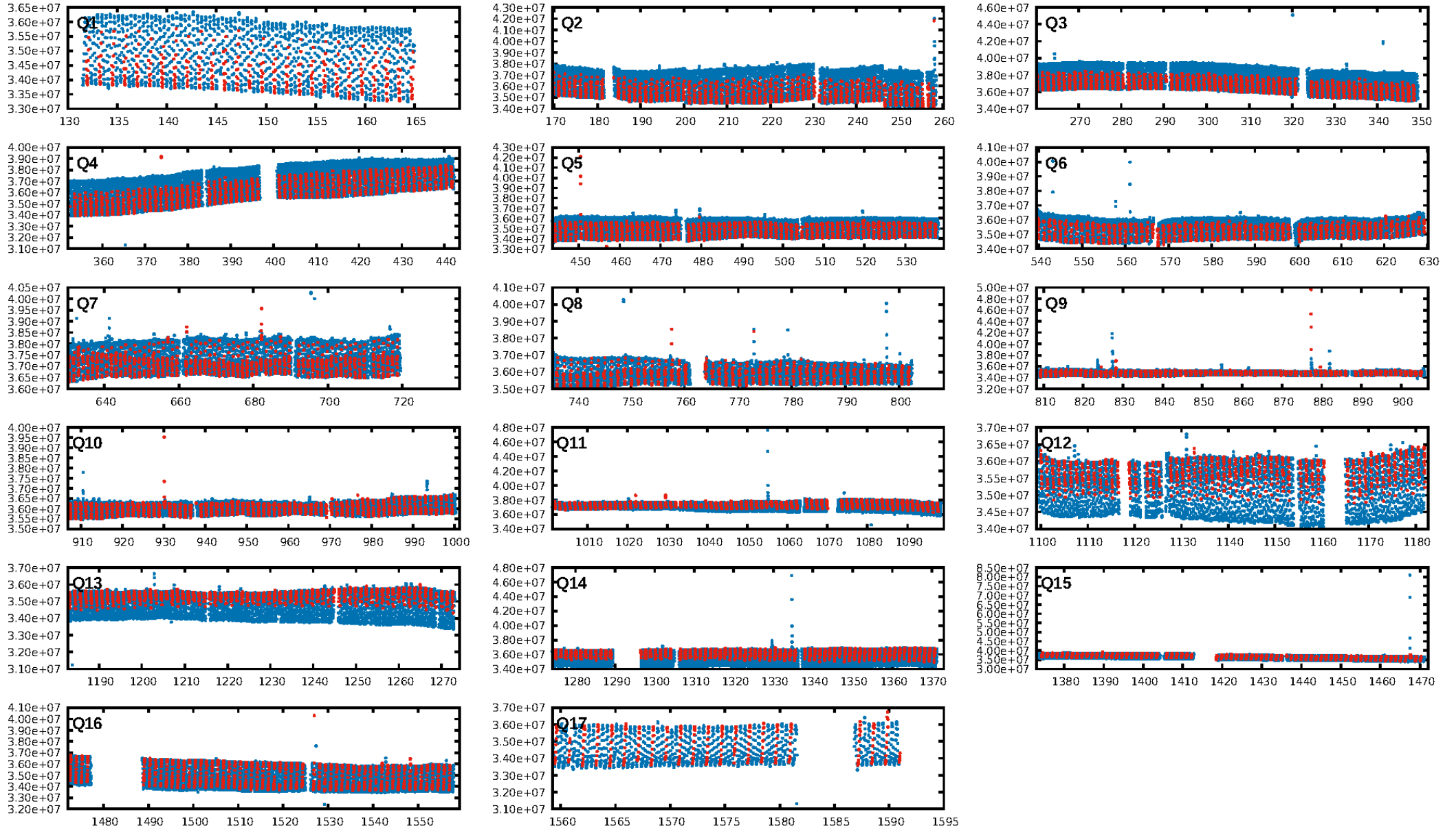
DV Fit Results:

Period = 1.25888 [60.24245] d
Epoch = 131.9951 [10147.1979] BKJD
Rp/R* = 0.0000 [2.5141]
a/R* = 1.96 [55857.85]
b = 0.83 [27040.63]
Seff = 141.89 [9053.23]
Teq = 880 [14038] K
Rp = 0.00 [141.56] Re
a = 0.0184 [0.5861] AU
Ag = 121918674.86 [73175898131845.425] W
Teffp = 142979 [21455320453] K

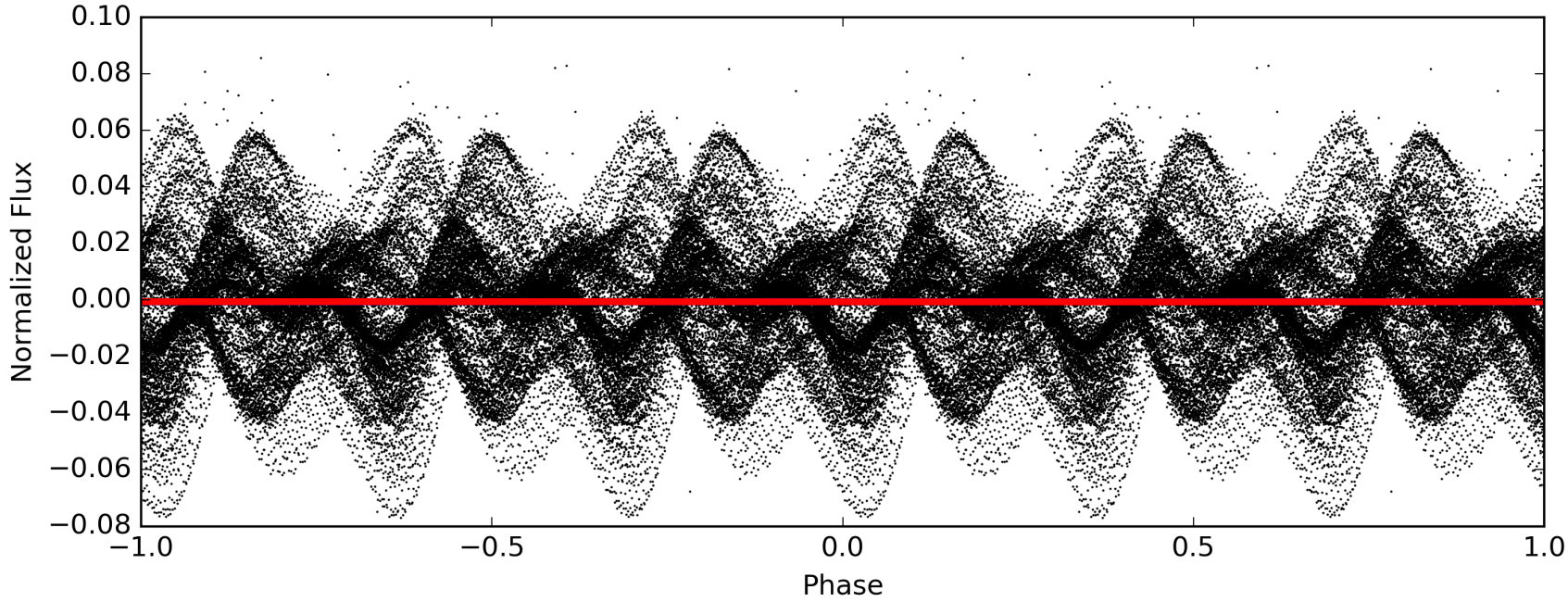
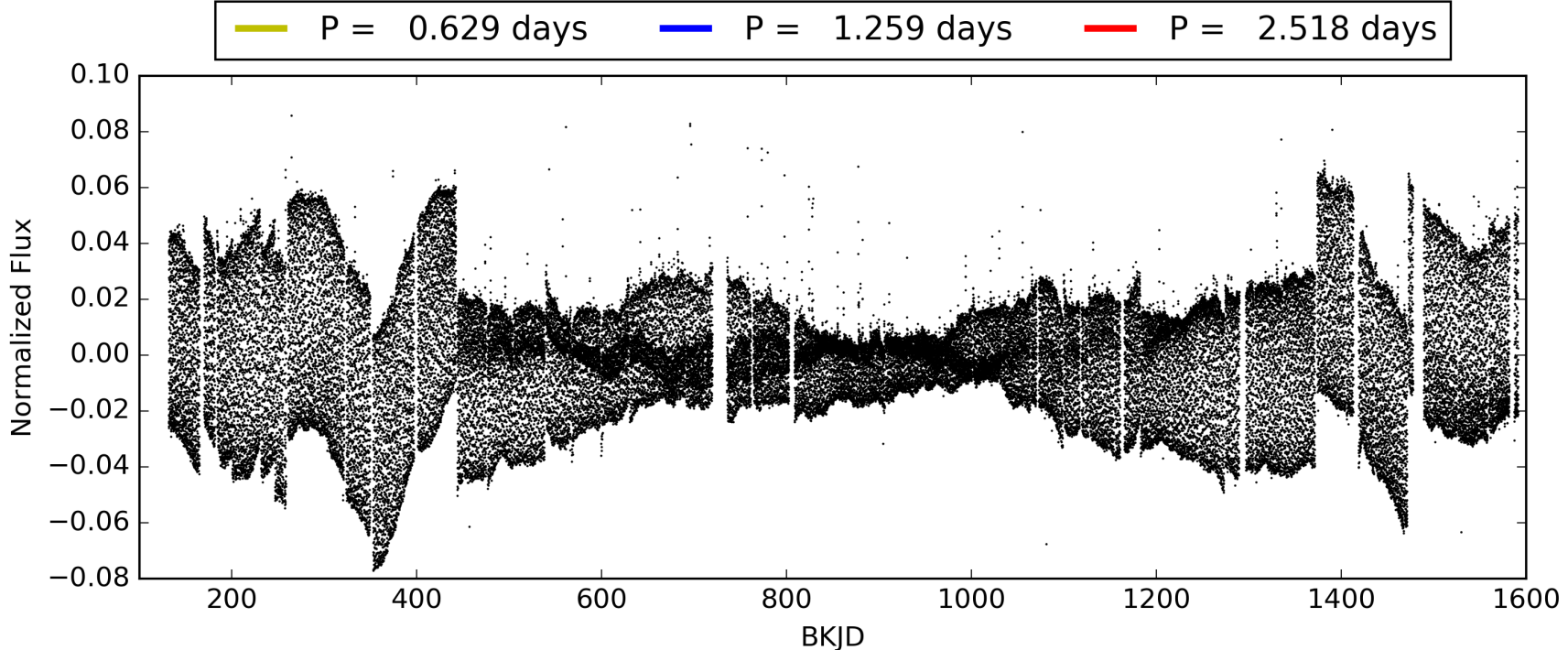
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1015/1018]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OptOffset-rm: 0.052 arcsec [0.75σ]
KicOffset-rm: 0.351 arcsec [5.04σ]
OptOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 0.59 [10/17]

TCE 009992083-01, PDC Light Curves

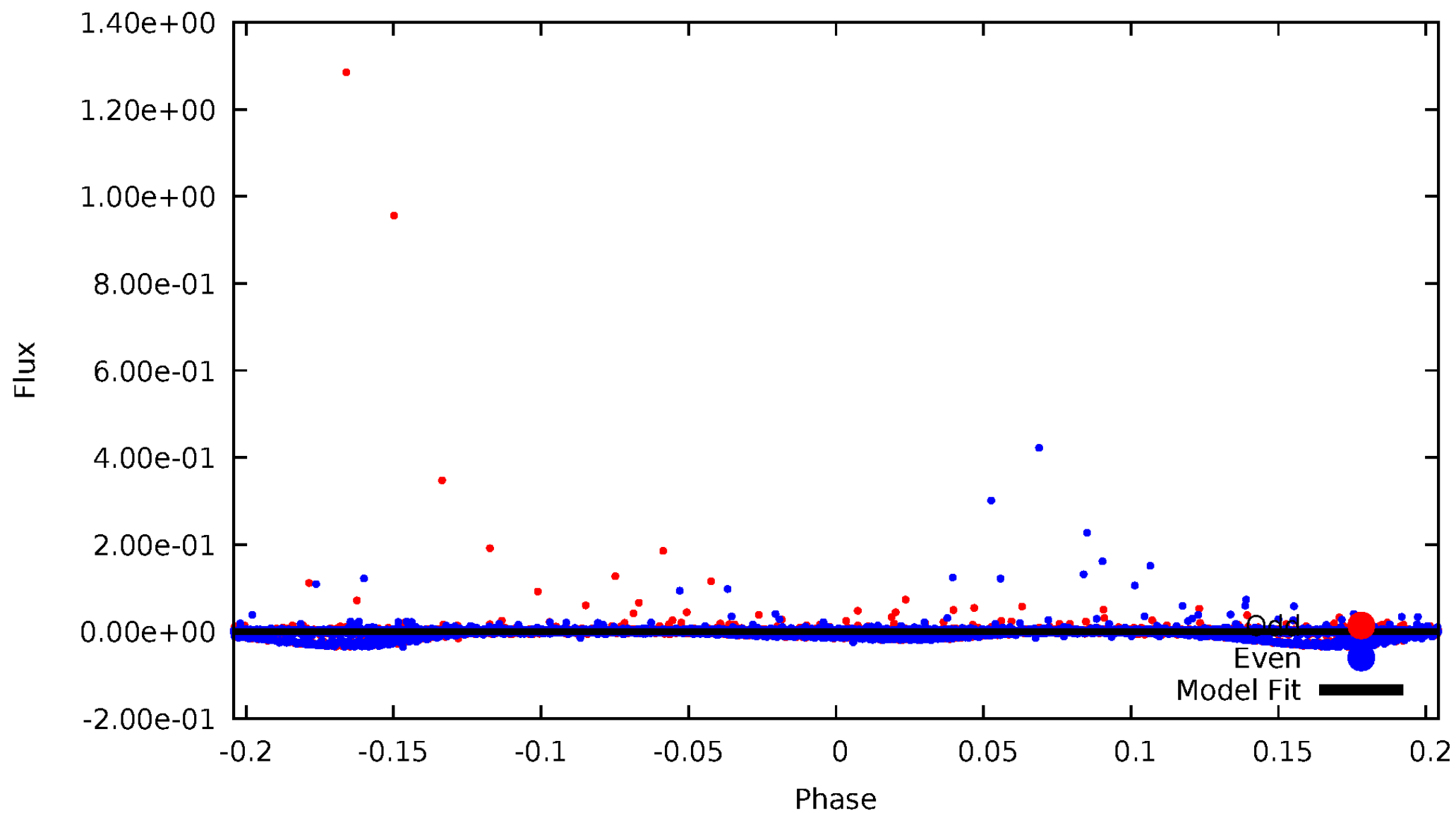


TCE 009992083-01



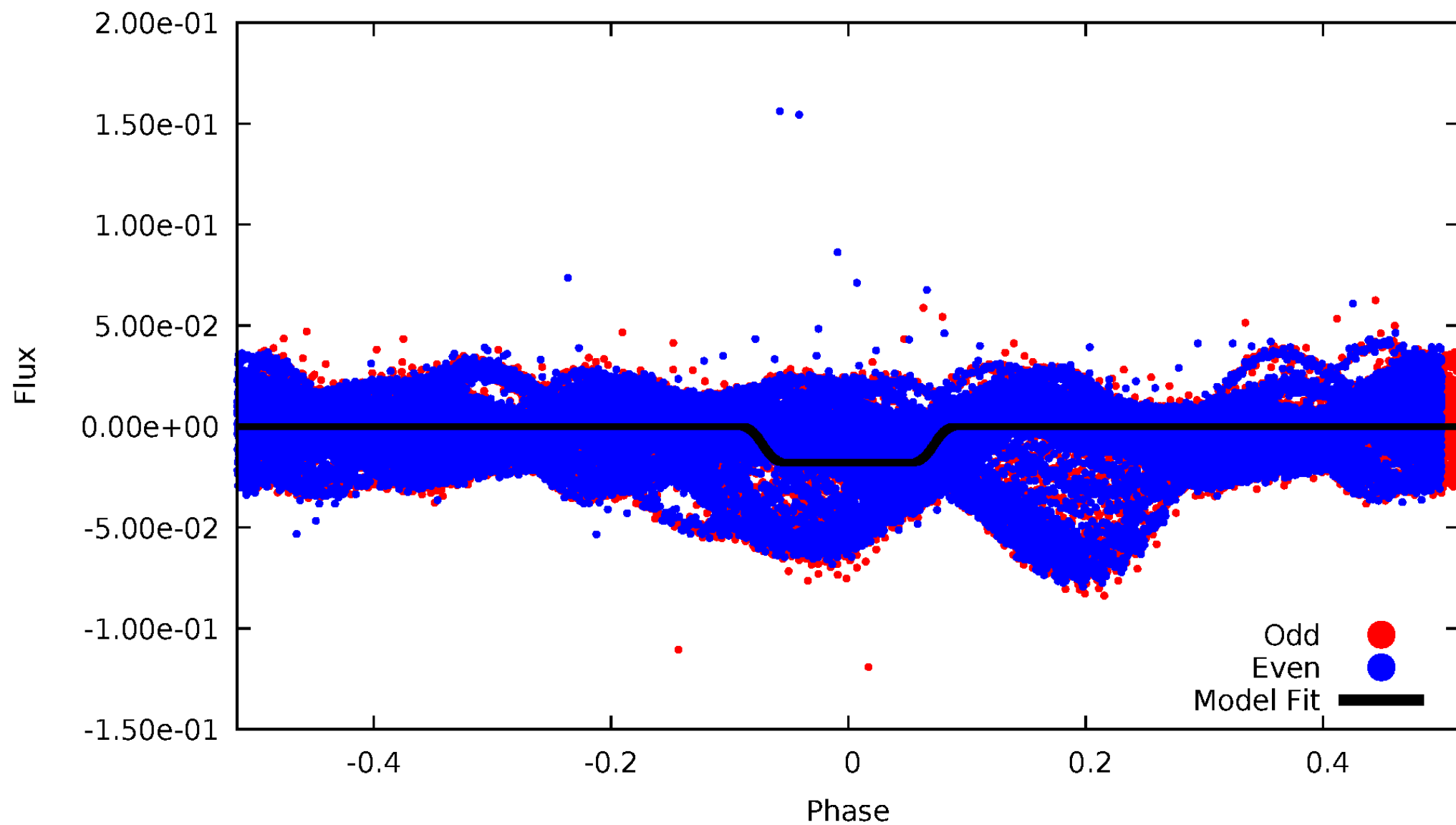
DV Odd/Even

TCE 009992083-01



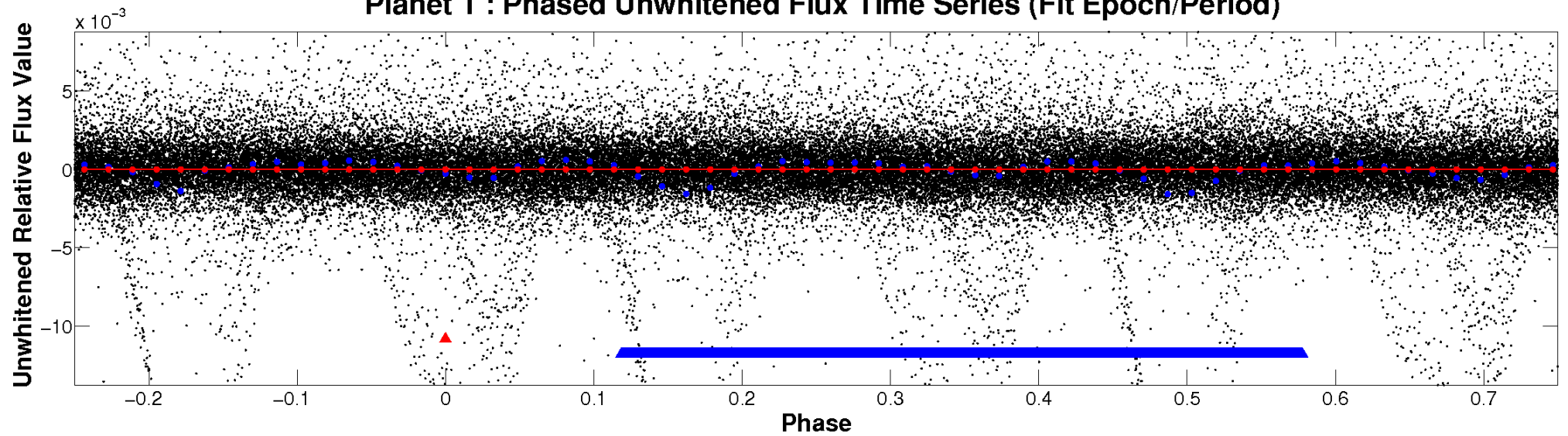
ALT Odd/Even

TCE 009992083-01

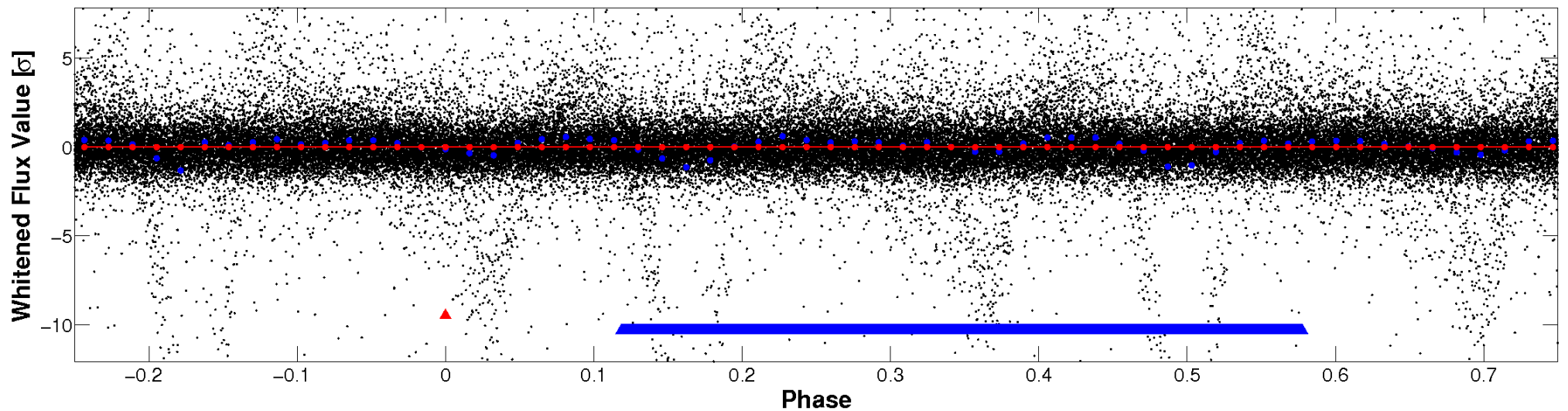


Non-Whitened Vs. Whitened Light Curve

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

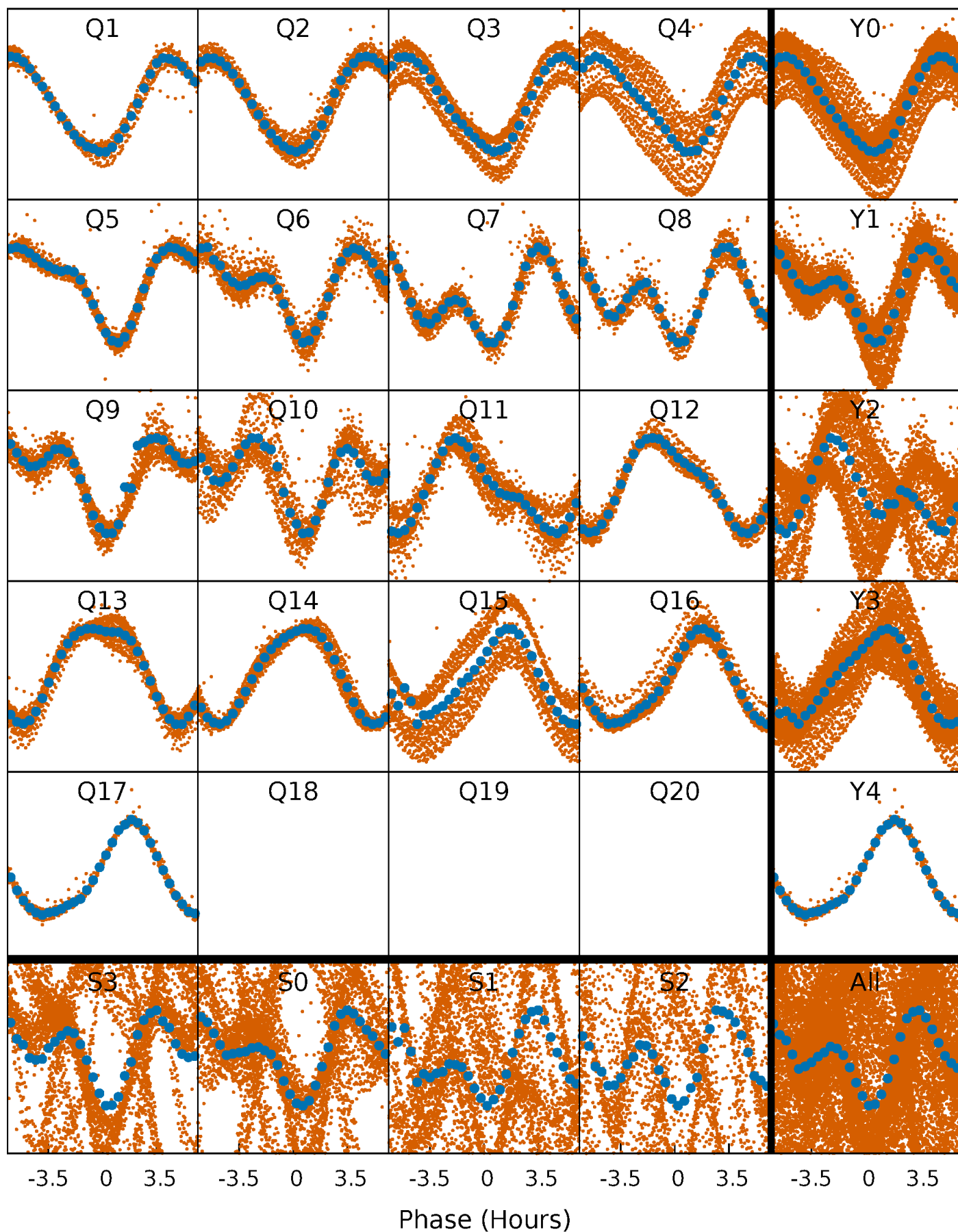


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



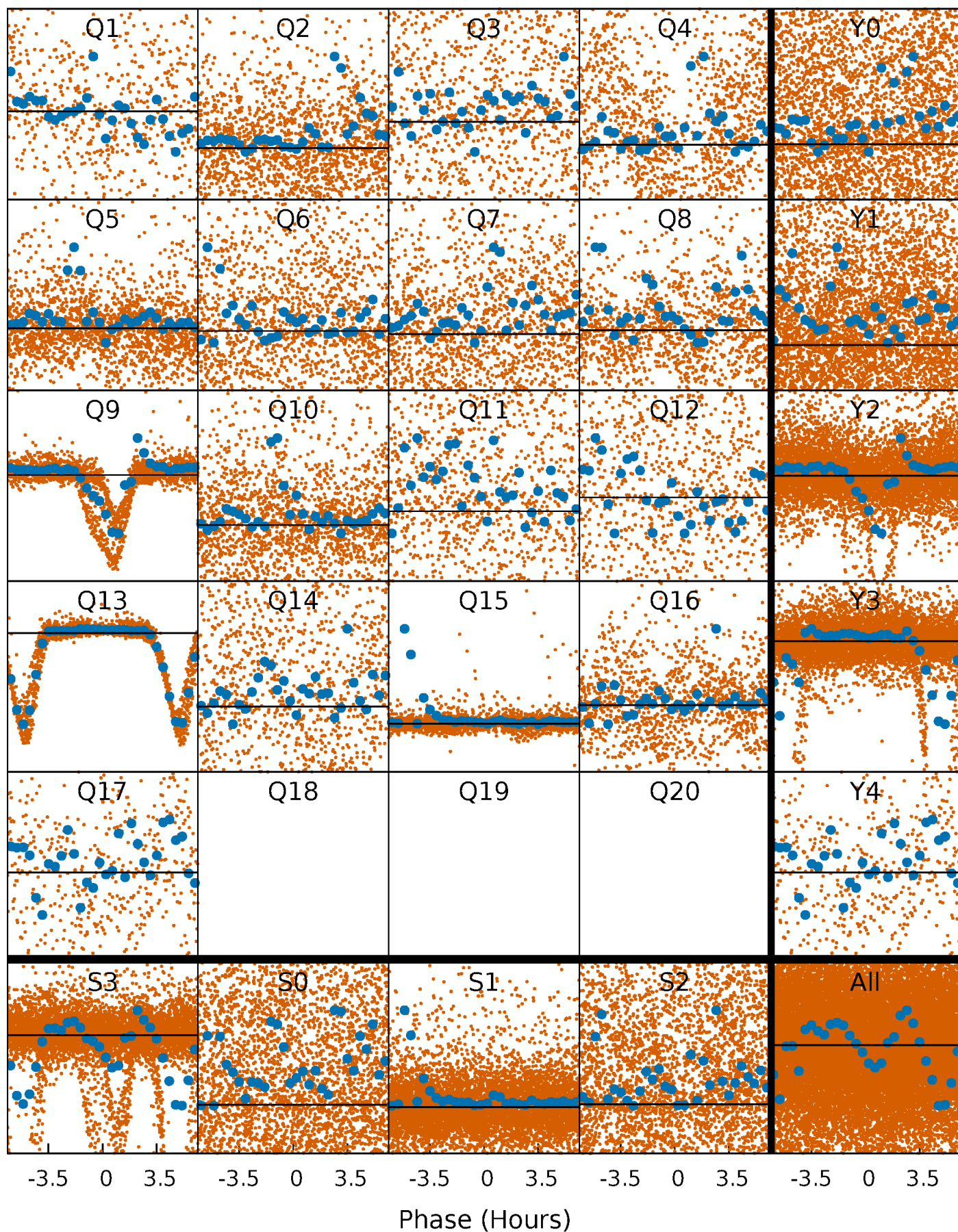
PDC Quarter-Phased Transit Curves

TCE 009992083-01 P= 1.258881 Days $T_0=131.995073$ (BKJD)



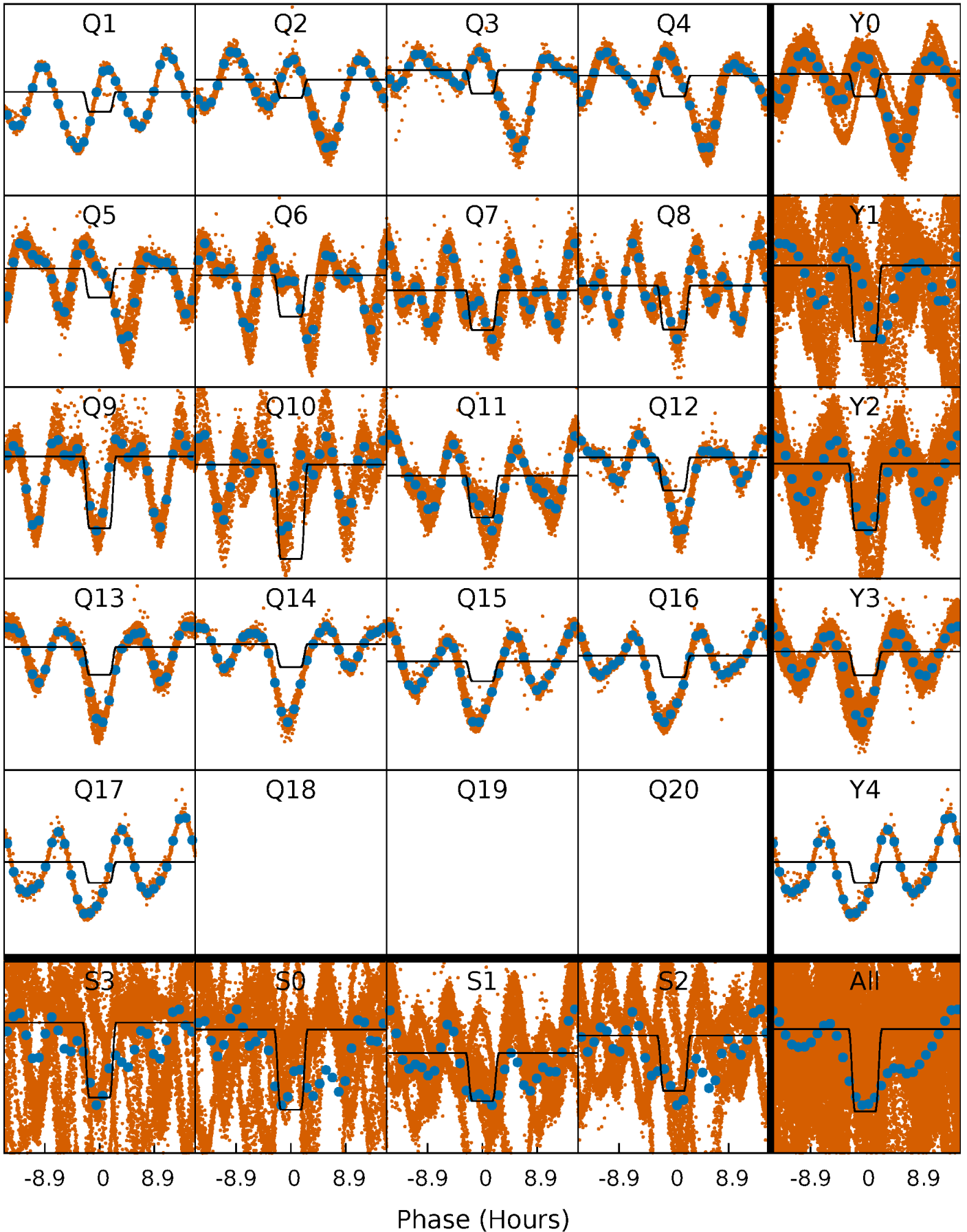
DV Quarter-Phased Transit Curves

TCE 009992083-01 P= 1.258881 Days $T_0=131.995073$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

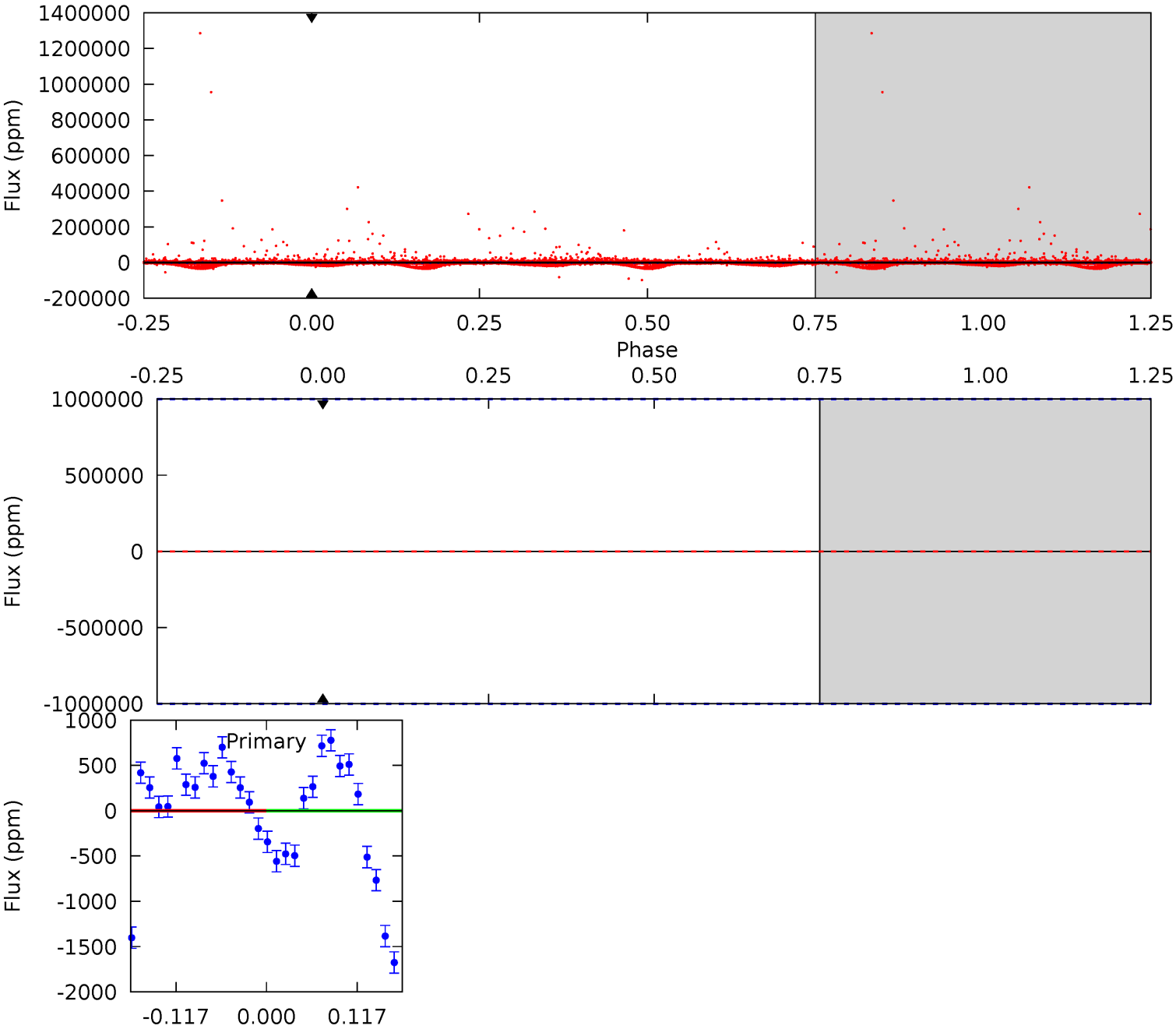
TCE 009992083-01 P= 1.259441 Days $T_0=132.125441$ (BKJD)



DV Model-Shift Uniqueness Test

009992083-01, P = 1.258881 Days, E = 130.736192 Days

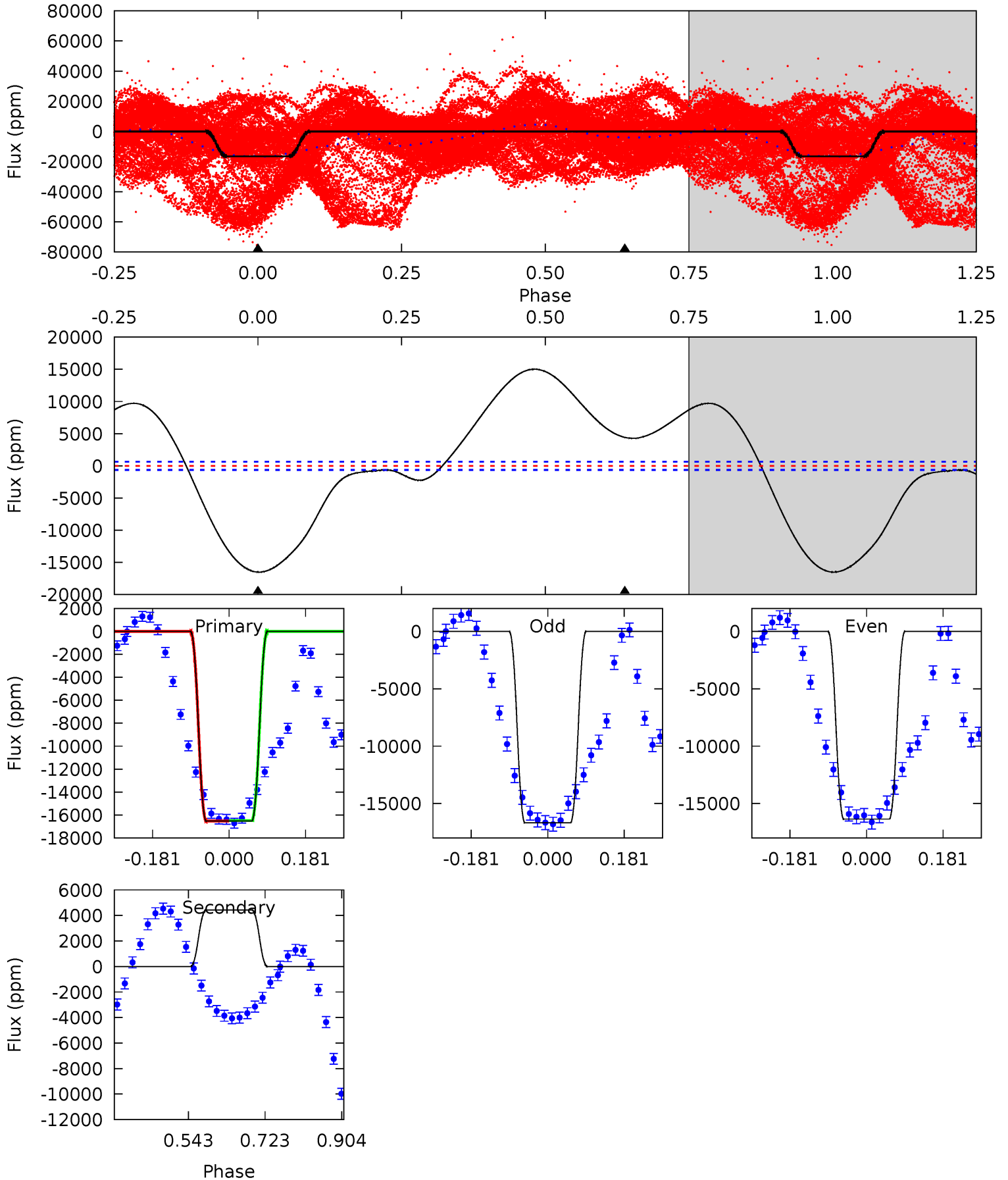
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009992083-01, P = 1.259441 Days, E = 130.866000 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
113.1	-30.3	0	0	4.44	1.34	37.4	113.1	113.1	-30.3	-30.3	1.26	1.42	0.48	0.12



Stellar Parameters For KIC 009992083

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+45}_{-51}	$4.730^{+0.030}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.516^{+0.020}_{-0.028}$	$0.523^{+0.024}_{-0.022}$	$5.345^{+0.681}_{-0.380}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+13%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009992083-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$96.99^{+99.05}_{-69.00}$	387^{+192}_{-85}	-1582^{+4140}_{-960}	$-0.082^{+323.431}_{-477.347}$
Alt.	4430 ± 146	$96.99^{+106.81}_{-66.64}$	374^{+197}_{-80}	-1745^{+205}_{-422}	$-10.086^{+8.932}_{-115.140}$

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

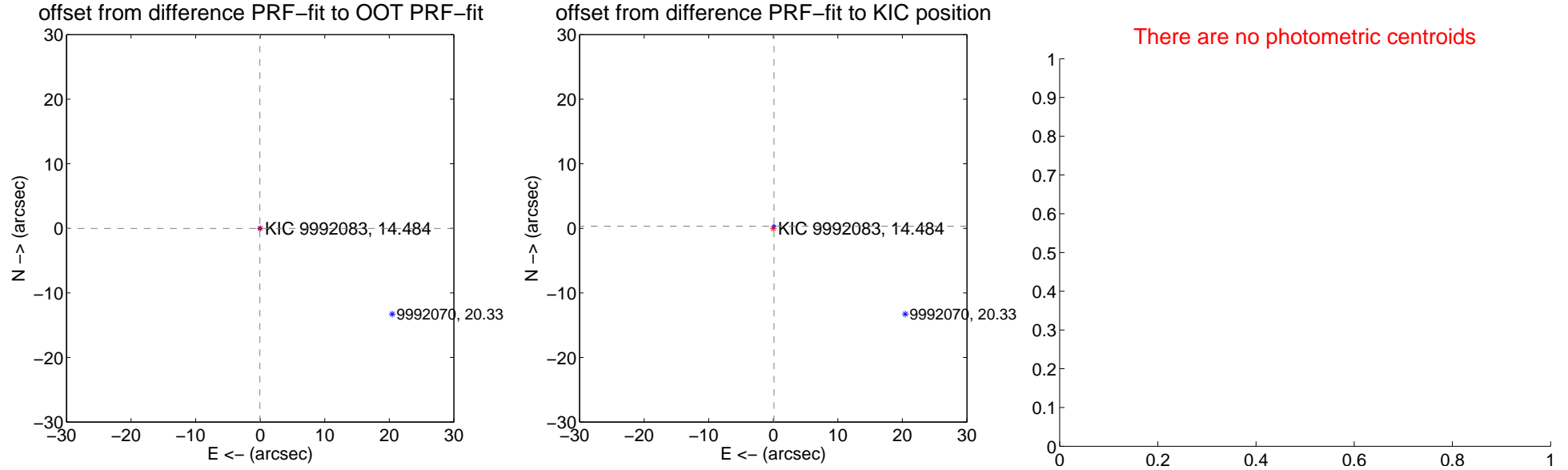
DV Centroid Data

Supplemental centroid analysis for 009992083-01. Kepler magnitude: 14.48. Transit SNR 0.00

There are 10 quarters with good PRF difference image offsets

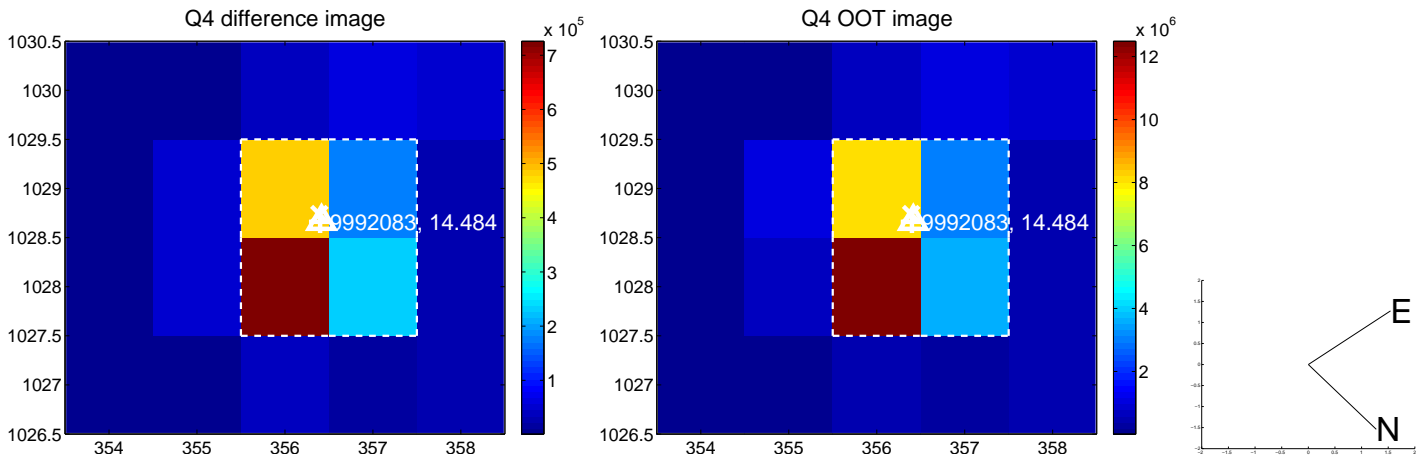
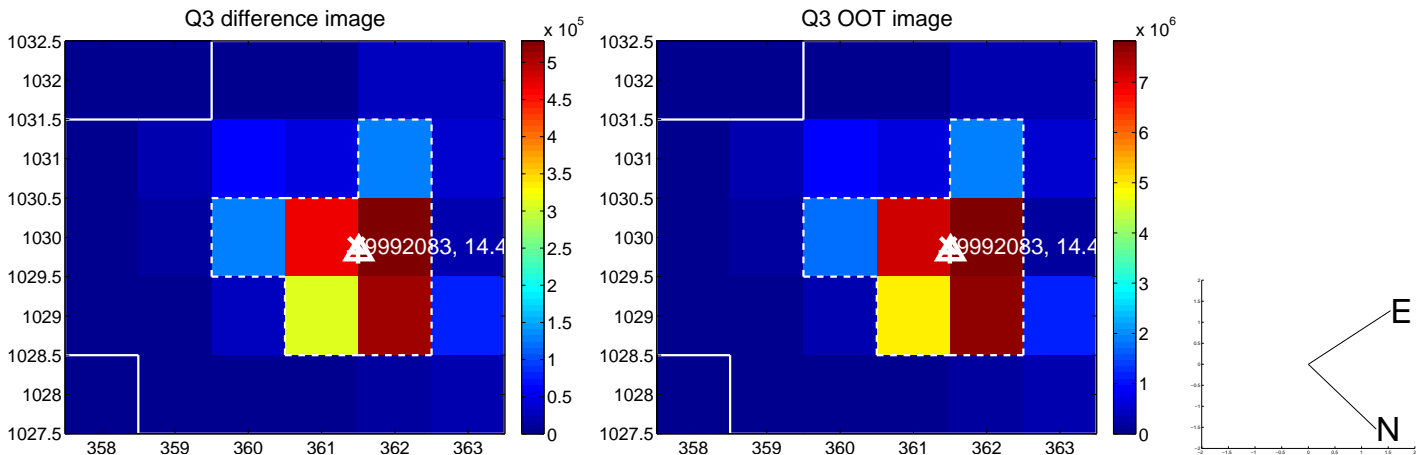
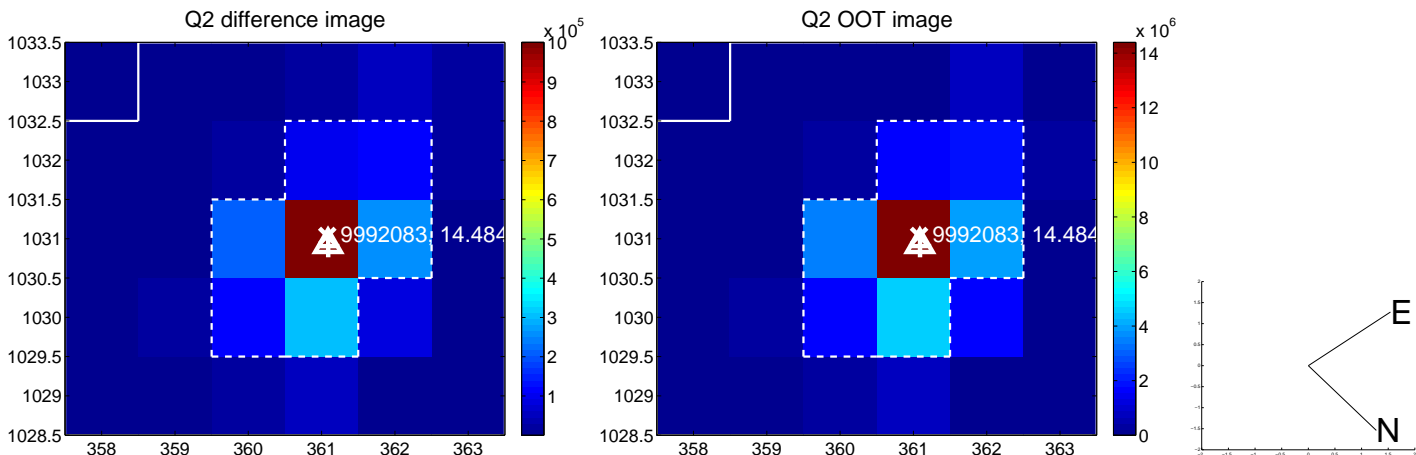
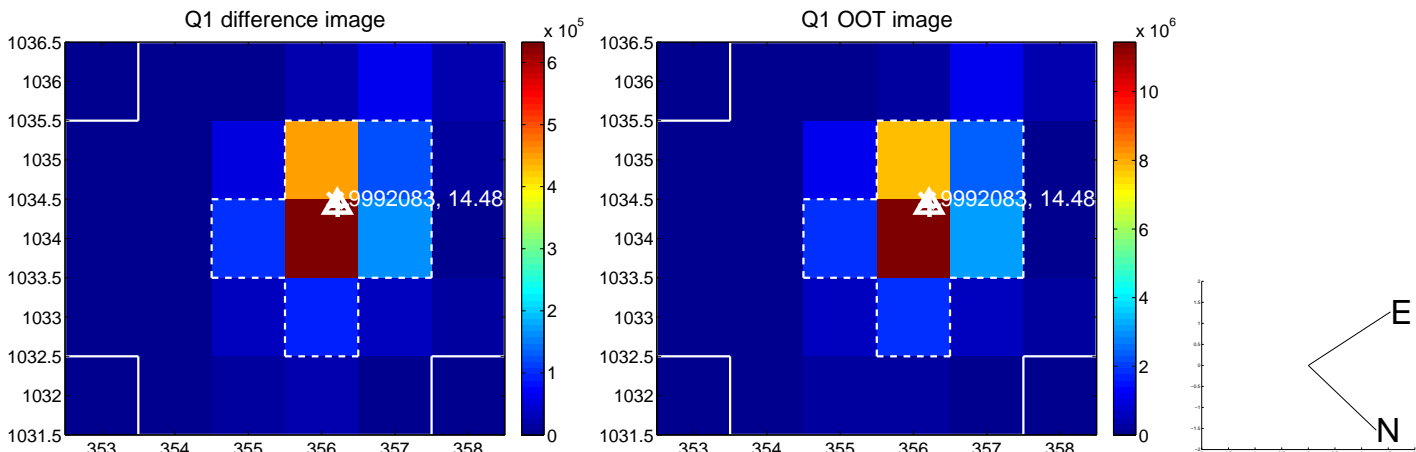
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.052 ± 0.070	0.75	0.048 ± 0.069	-0.020 ± 0.068
PRF-fit source offset from KIC position	0.351 ± 0.070	5.04	-0.105 ± 0.069	0.334 ± 0.069
photometric centroid source offset	—	—	—	—

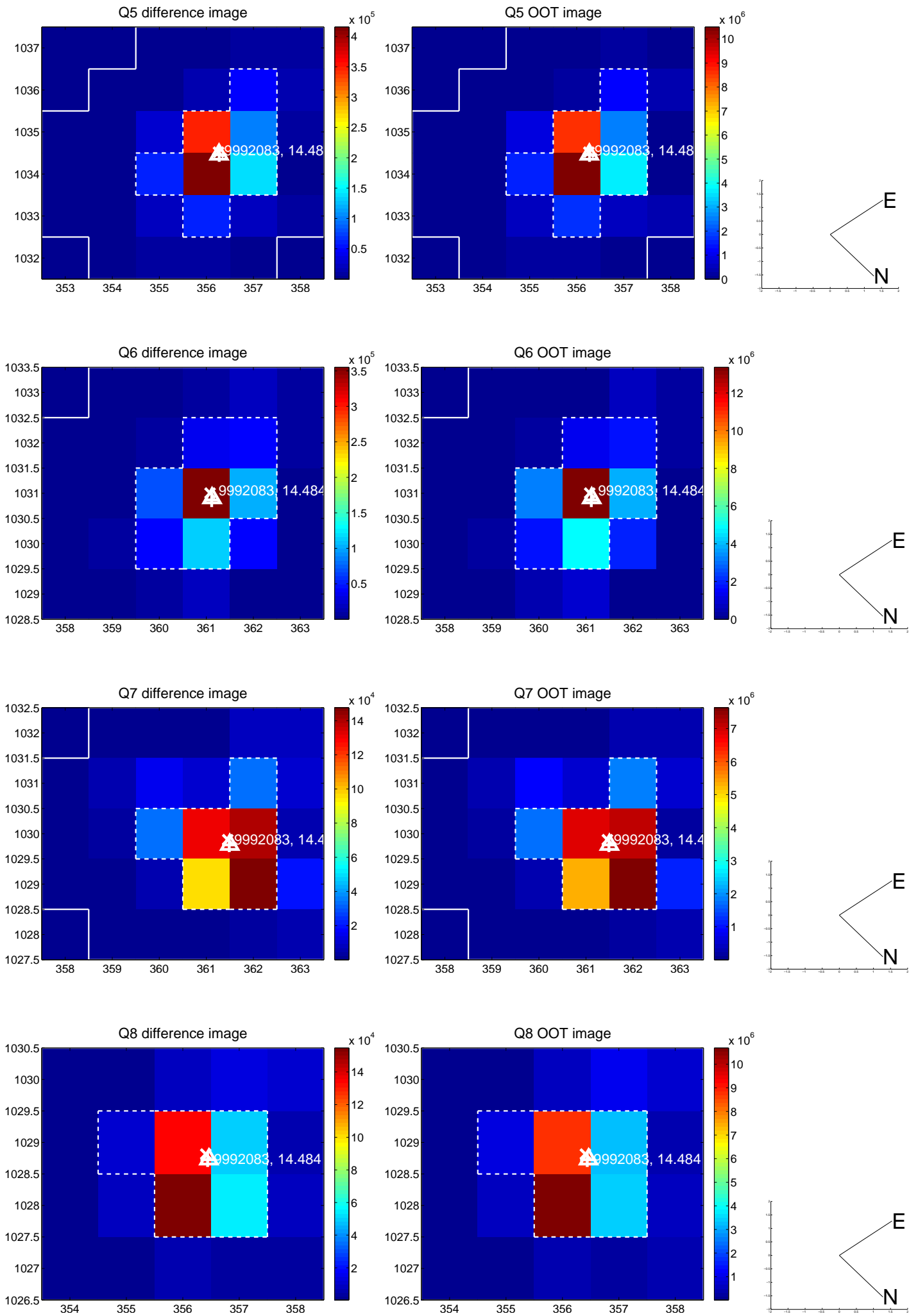


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

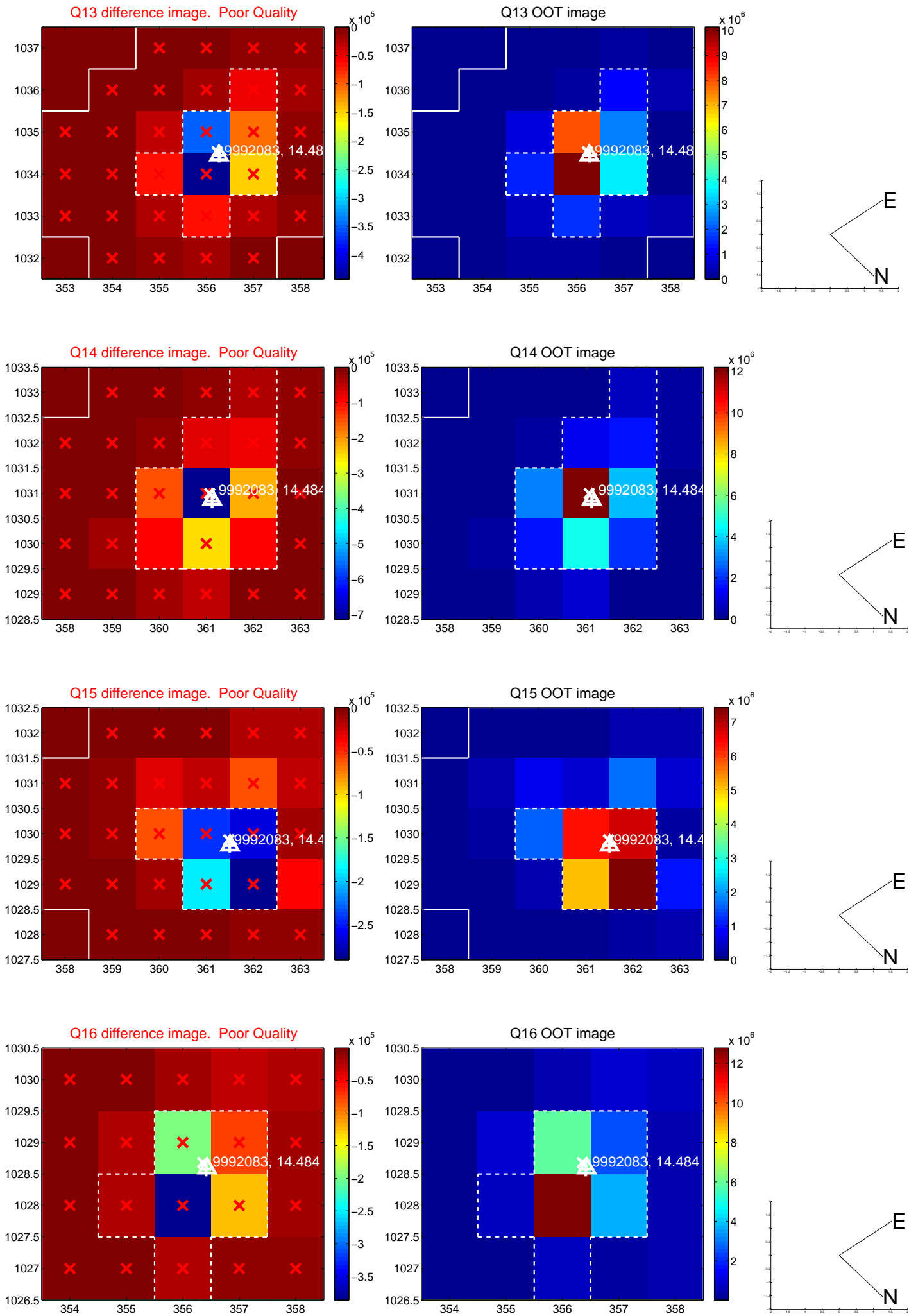
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



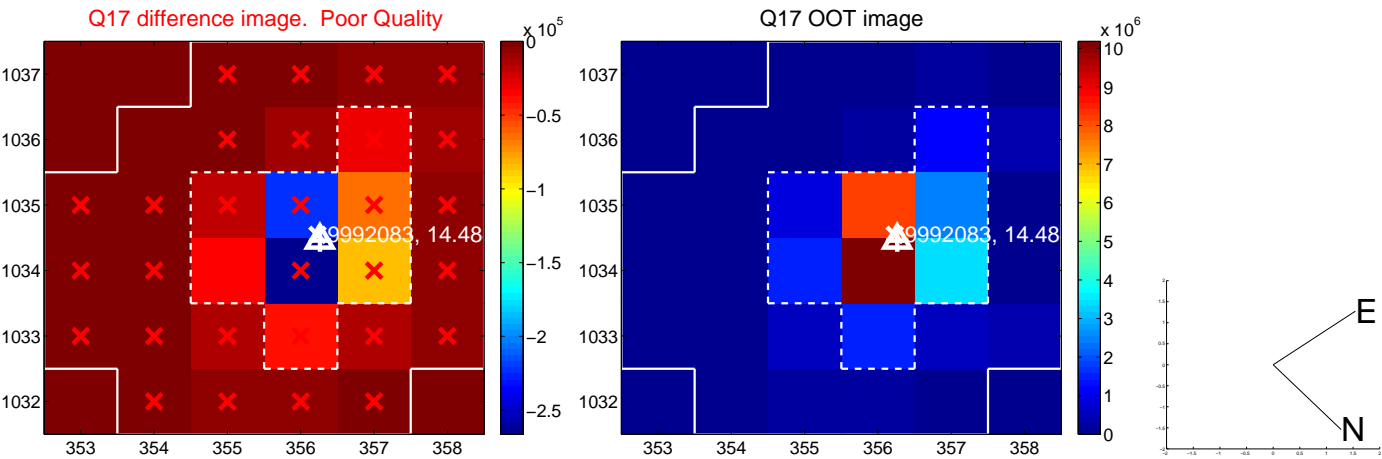
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



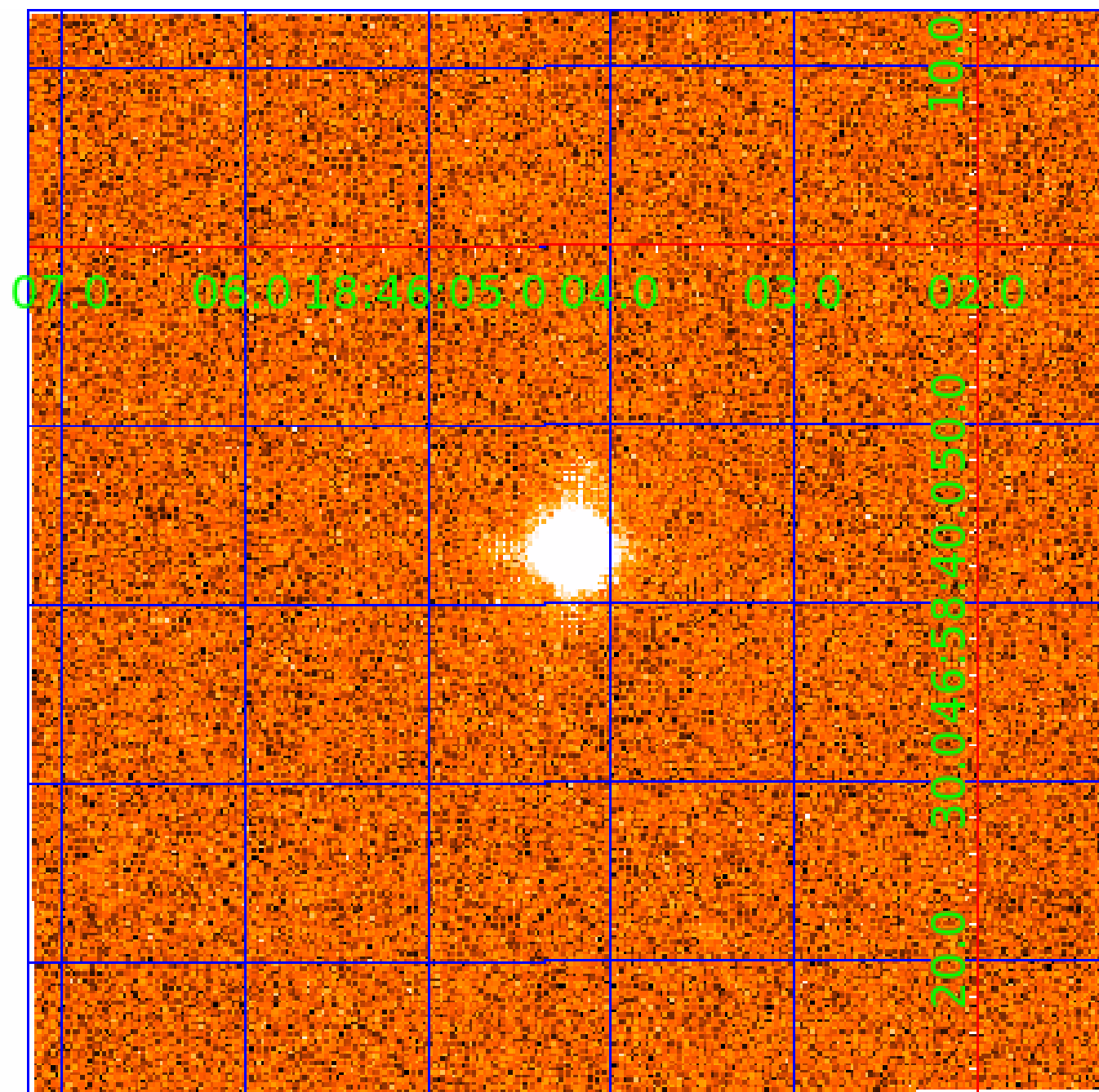
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 009992083

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})
009992083-01	OBS	No	1.258881	131.995073	0.0	3.084	31.1	0.0	0.52	3764	0.00	141.89
009992083-02	OBS	No	1.259380	132.144238	287.4	4.290	67.5	8.9	0.52	3764	1.32	141.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009992083-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009992083-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

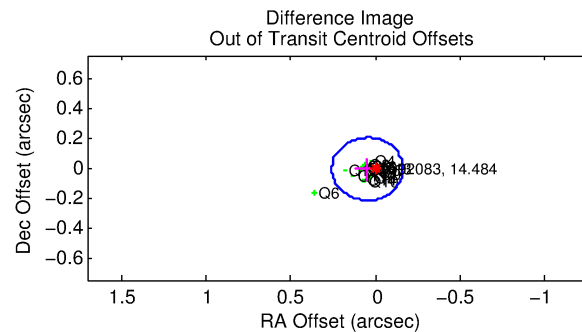
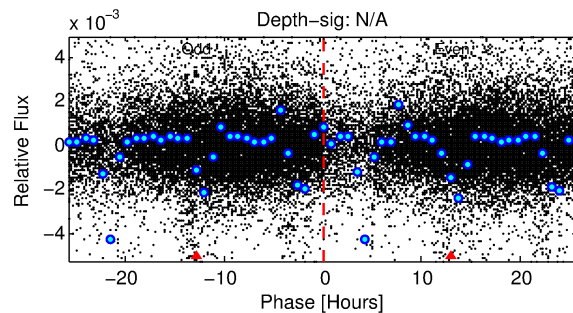
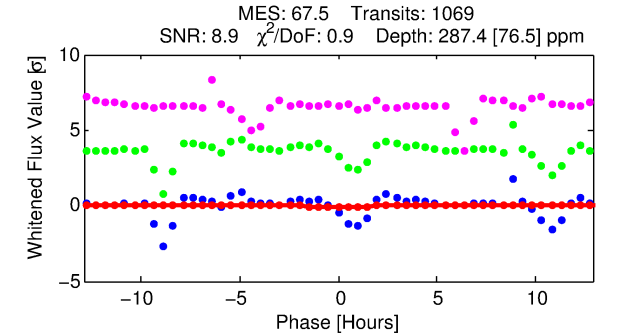
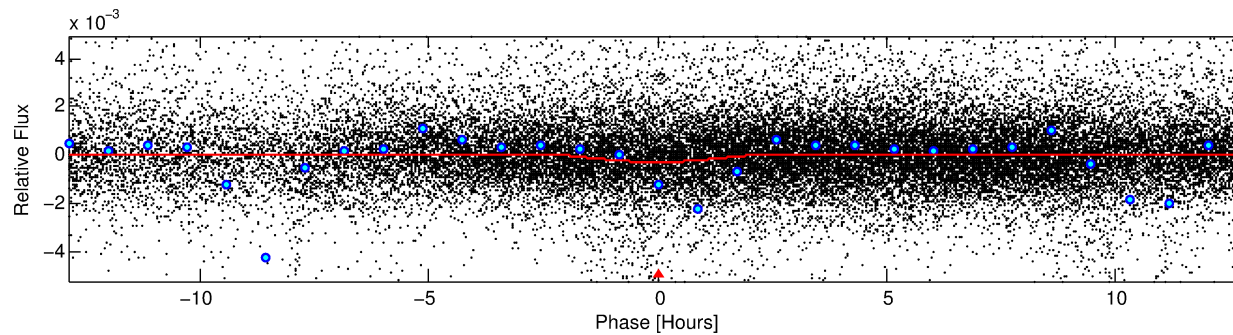
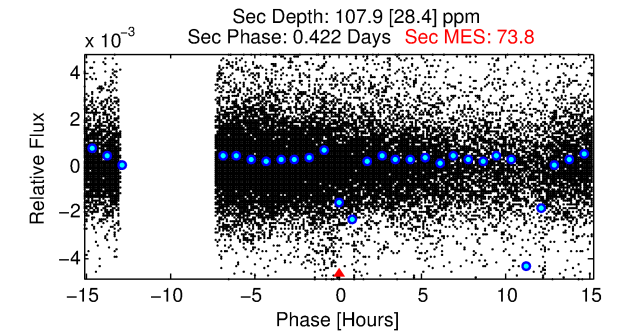
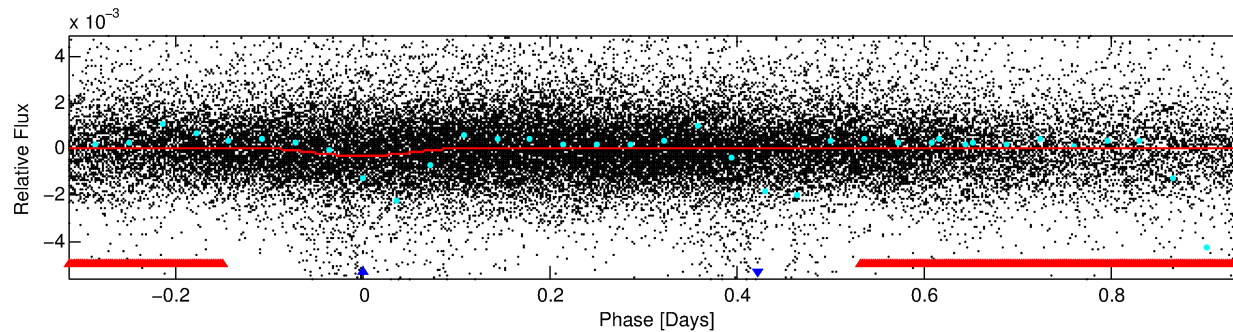
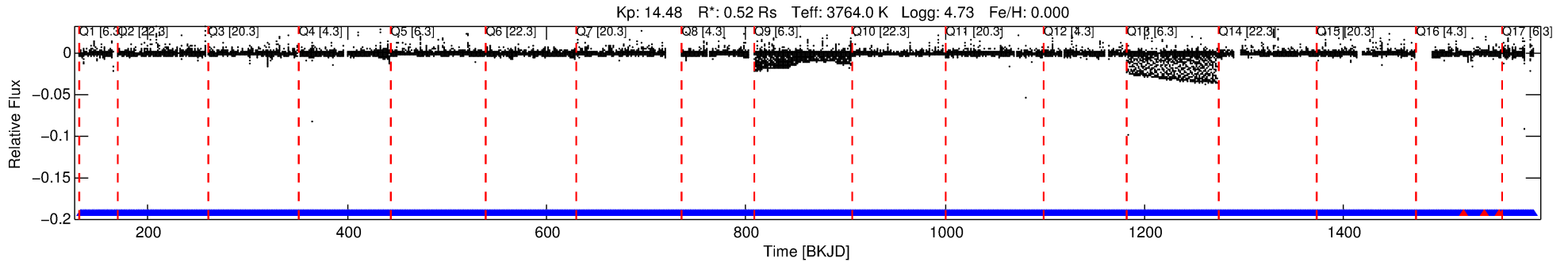
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009992083-02

No Significant Match Found

DV One-Page Summary

KIC: 9992083 Candidate: 2 of 2 Period: 1.259 d



DV Fit Results:

Period = 1.25938 [0.00001] d
Epoch = 132.1442 [0.0052] BKJD
Rp/R* = 0.0235 [0.0095]
a/R* = 1.18 [0.06]
b = 0.98 [0.02]
Seff = 141.81 [11.32]
Teq = 880 [18] K
Rp = 1.32 [0.54] Re
a = 0.0184 [0.0008] AU
Ag = 11.46 [9.74] [1.07σ]
Teffp = 2503 [531] K [3.05σ]

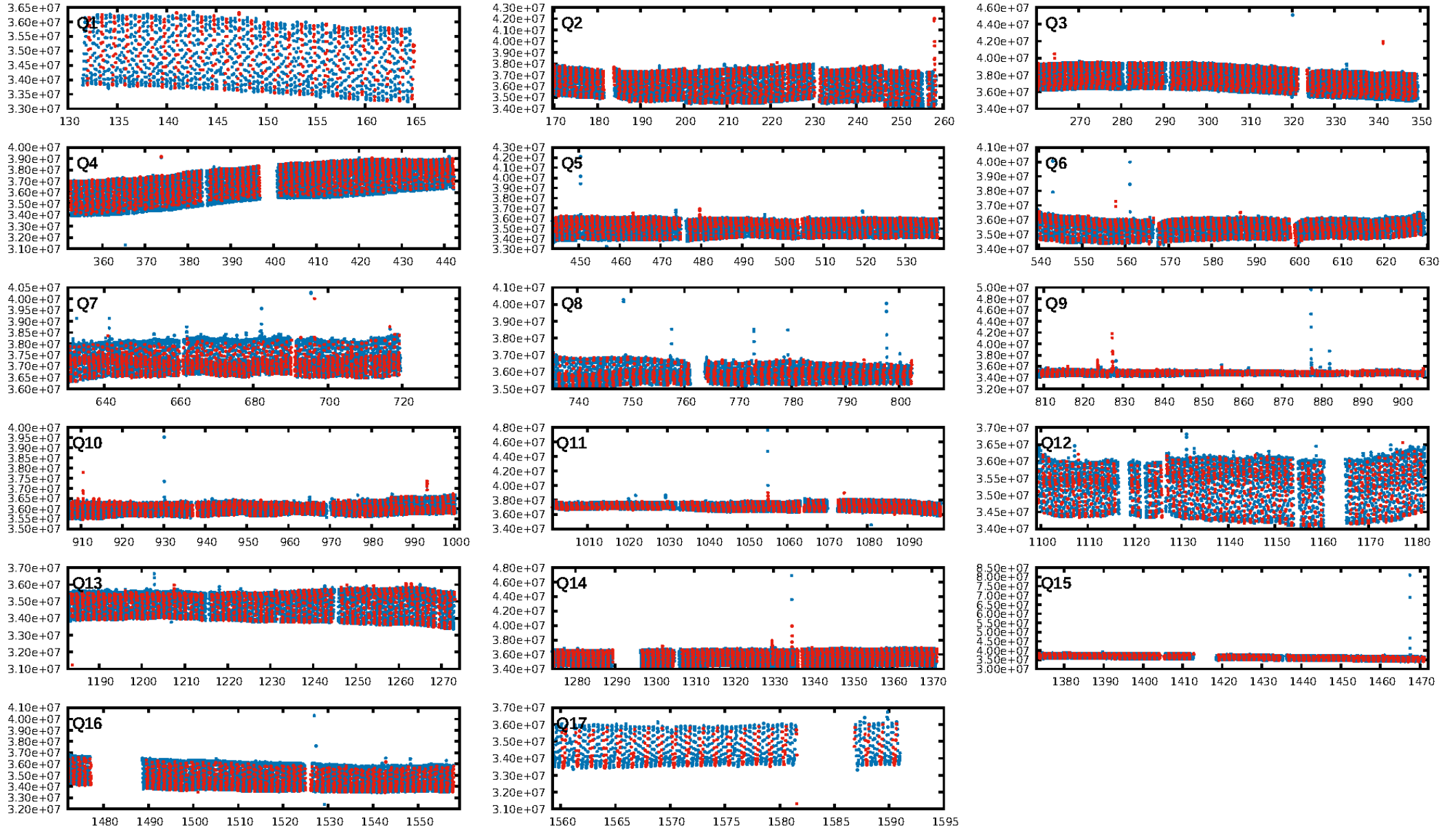
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1019/1022]
GhostDiagnostic-chr: -4.412
Centroid-sig: 10.3%
Centroid-so: 0.404 arcsec [1.64σ]
OotOffset-rm: 0.048 arcsec [0.69σ]
KicOffset-rm: 0.357 arcsec [5.13σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 0.47 [8/17]

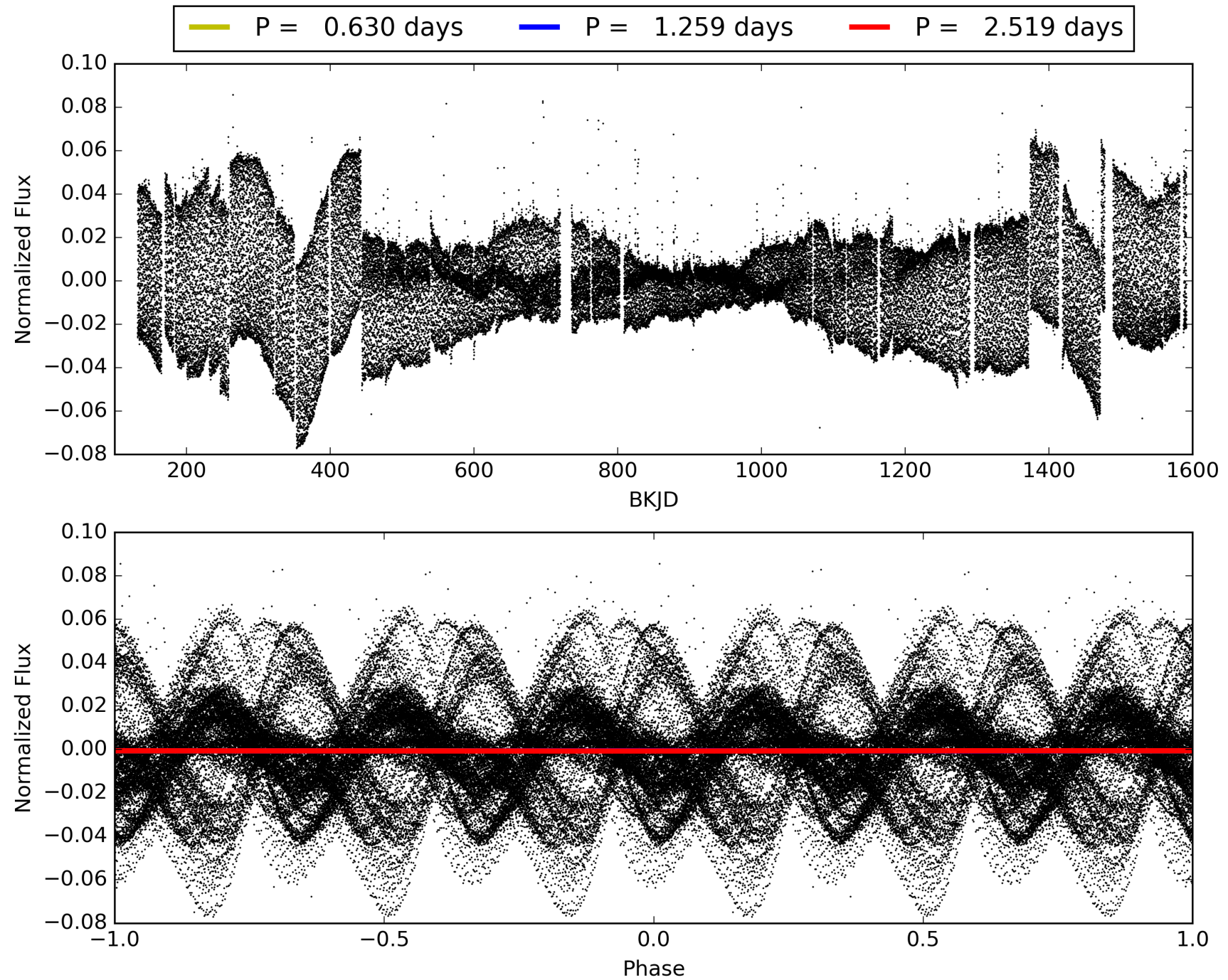
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:05:59 Z

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

TCE 009992083-02, PDC Light Curves

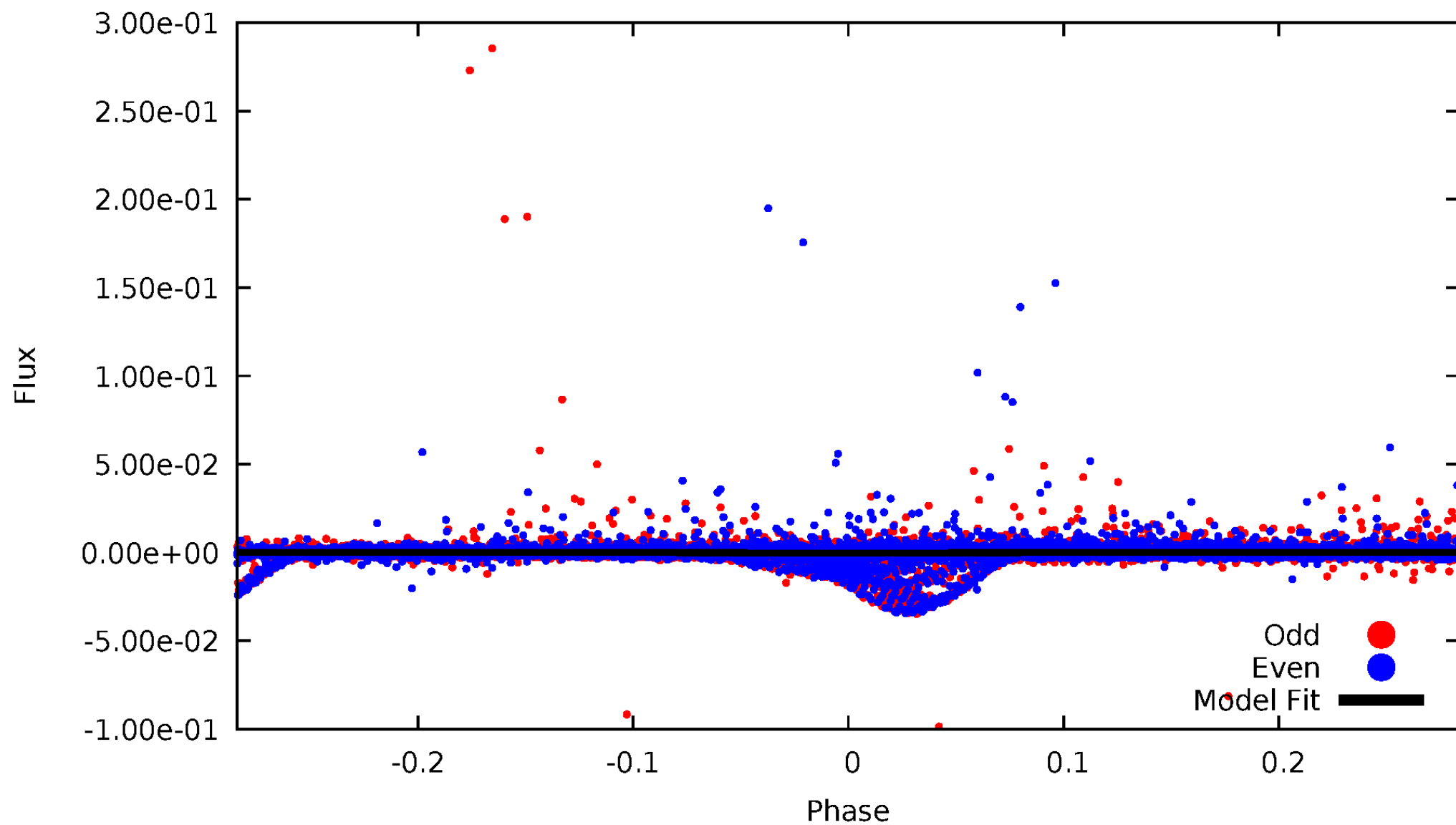


TCE 009992083-02



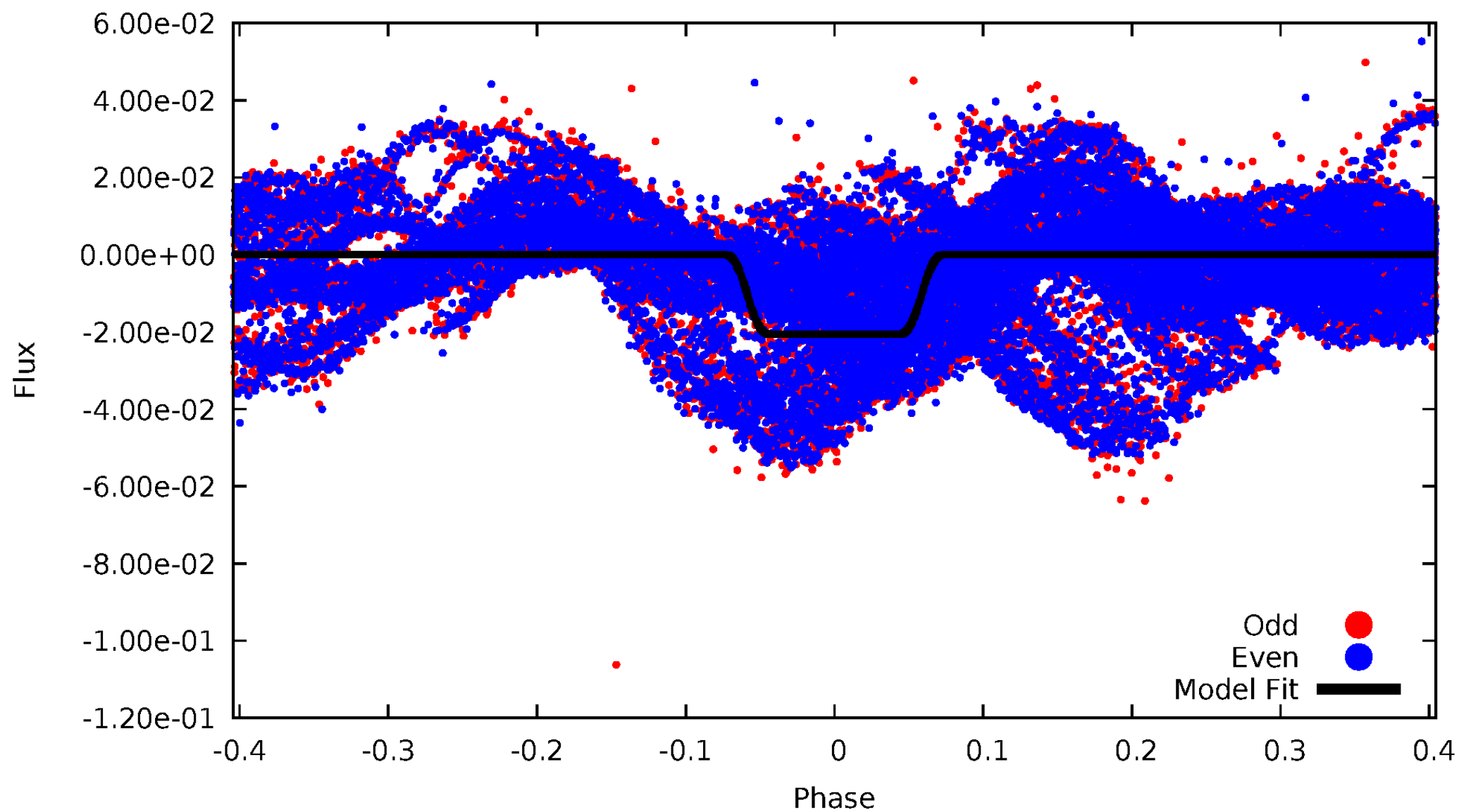
DV Odd/Even

TCE 009992083-02



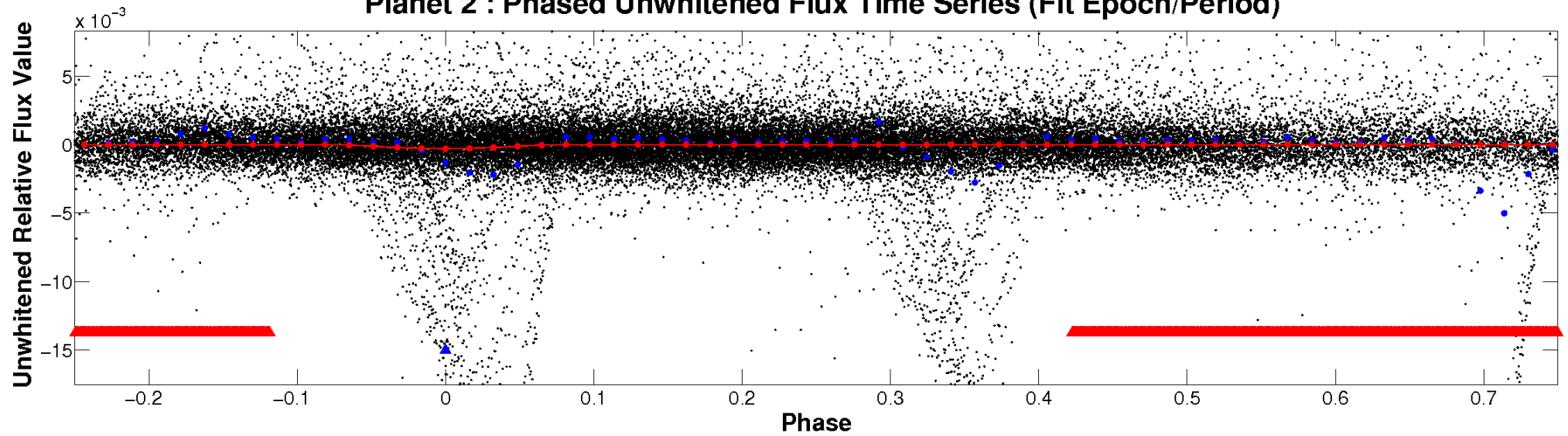
ALT Odd/Even

TCE 009992083-02

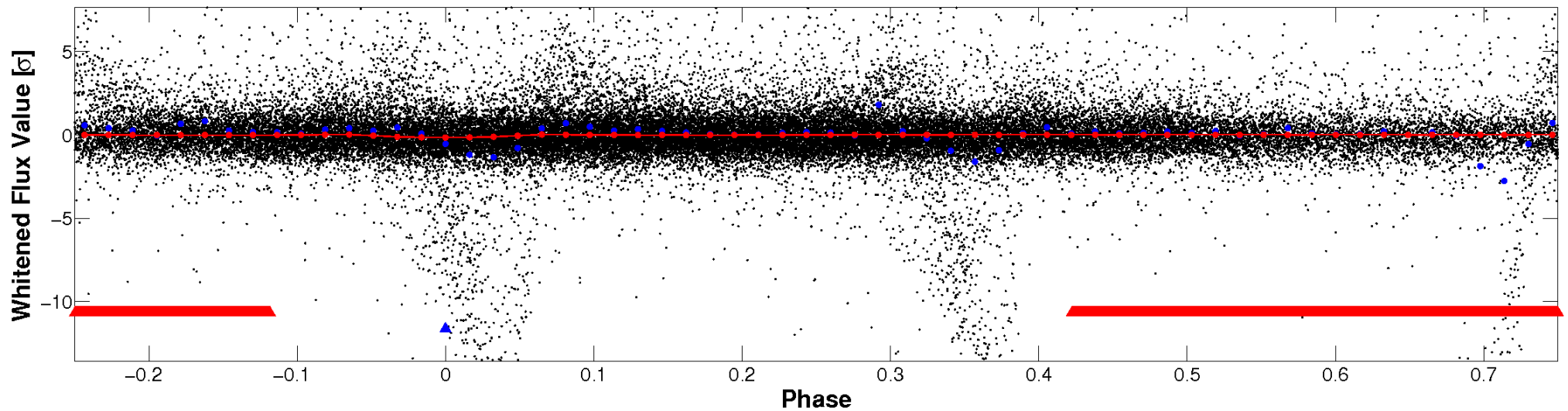


Non-Whitened Vs. Whitened Light Curve

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

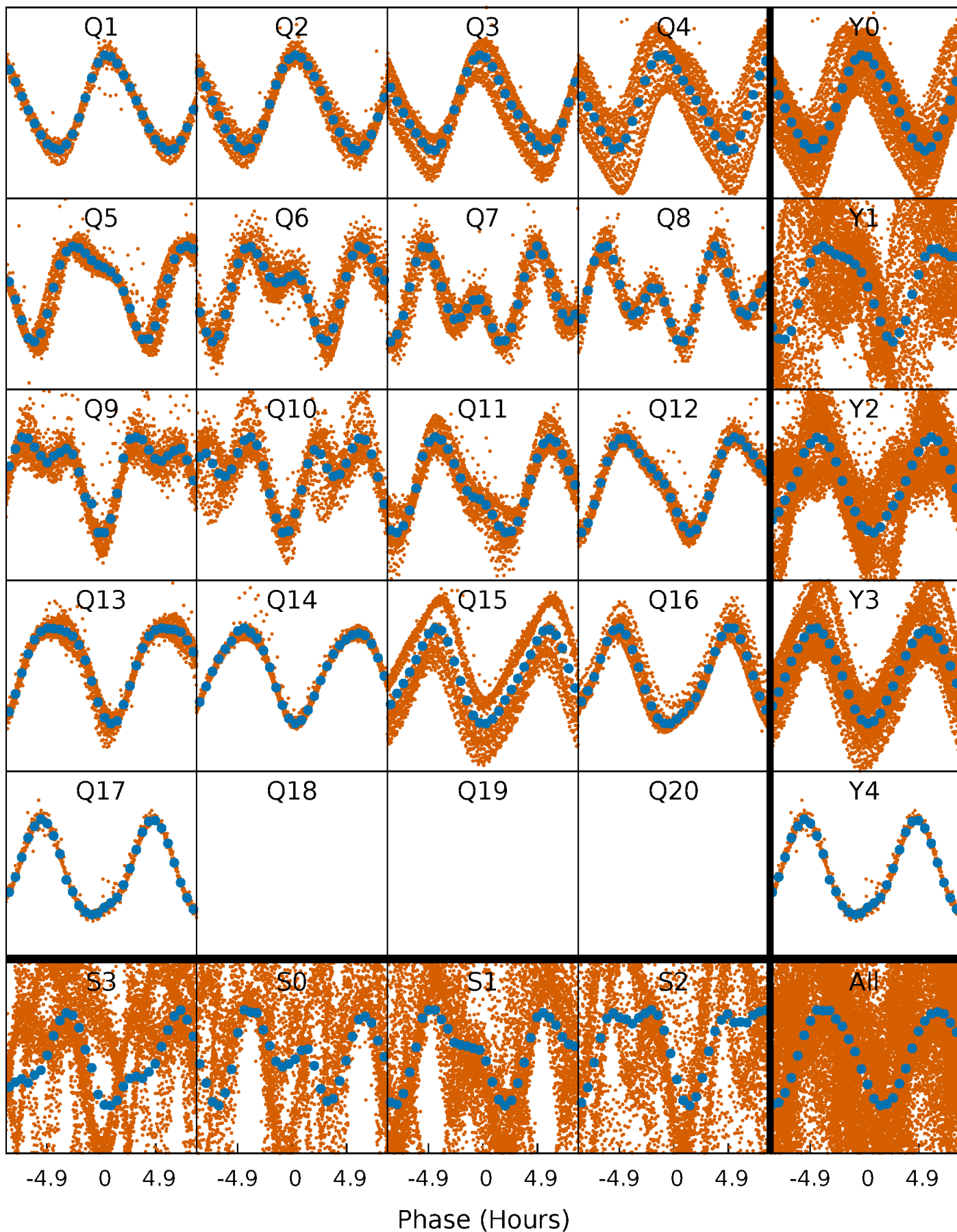


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



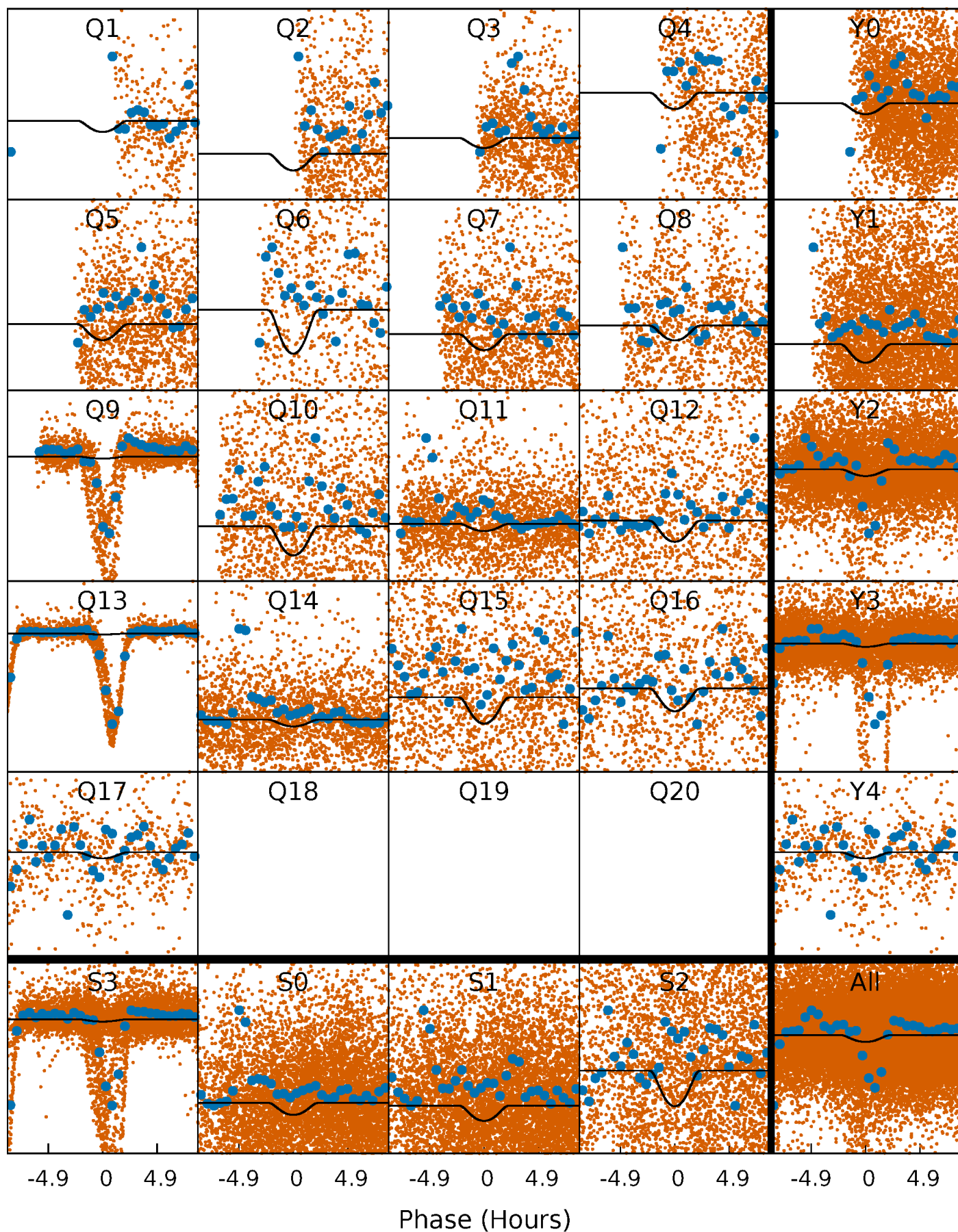
PDC Quarter-Phased Transit Curves

TCE 009992083-02 P= 1.259380 Days $T_0=132.144238$ (BKJD)



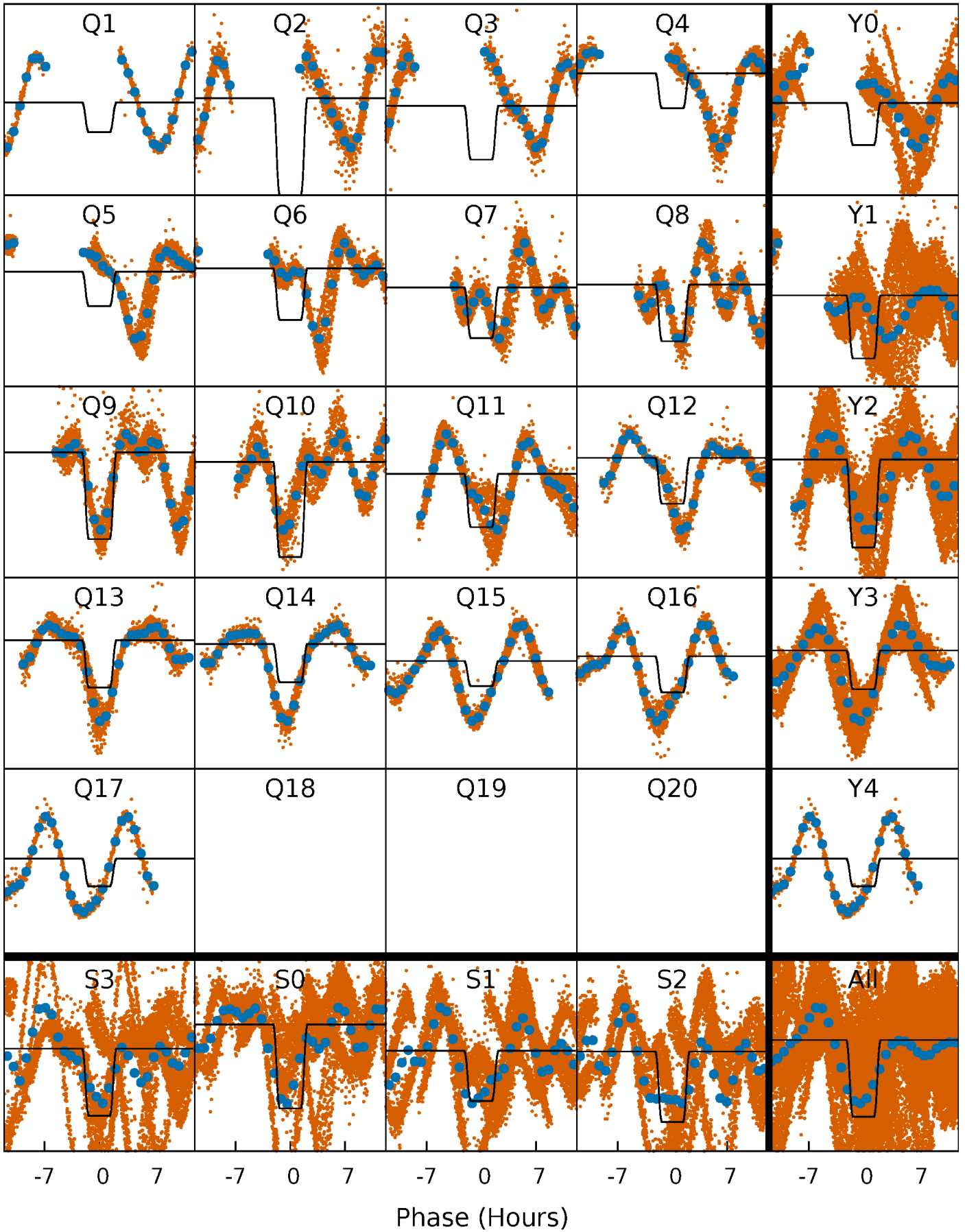
DV Quarter-Phased Transit Curves

TCE 009992083-02 P= 1.259380 Days $T_0=132.144238$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

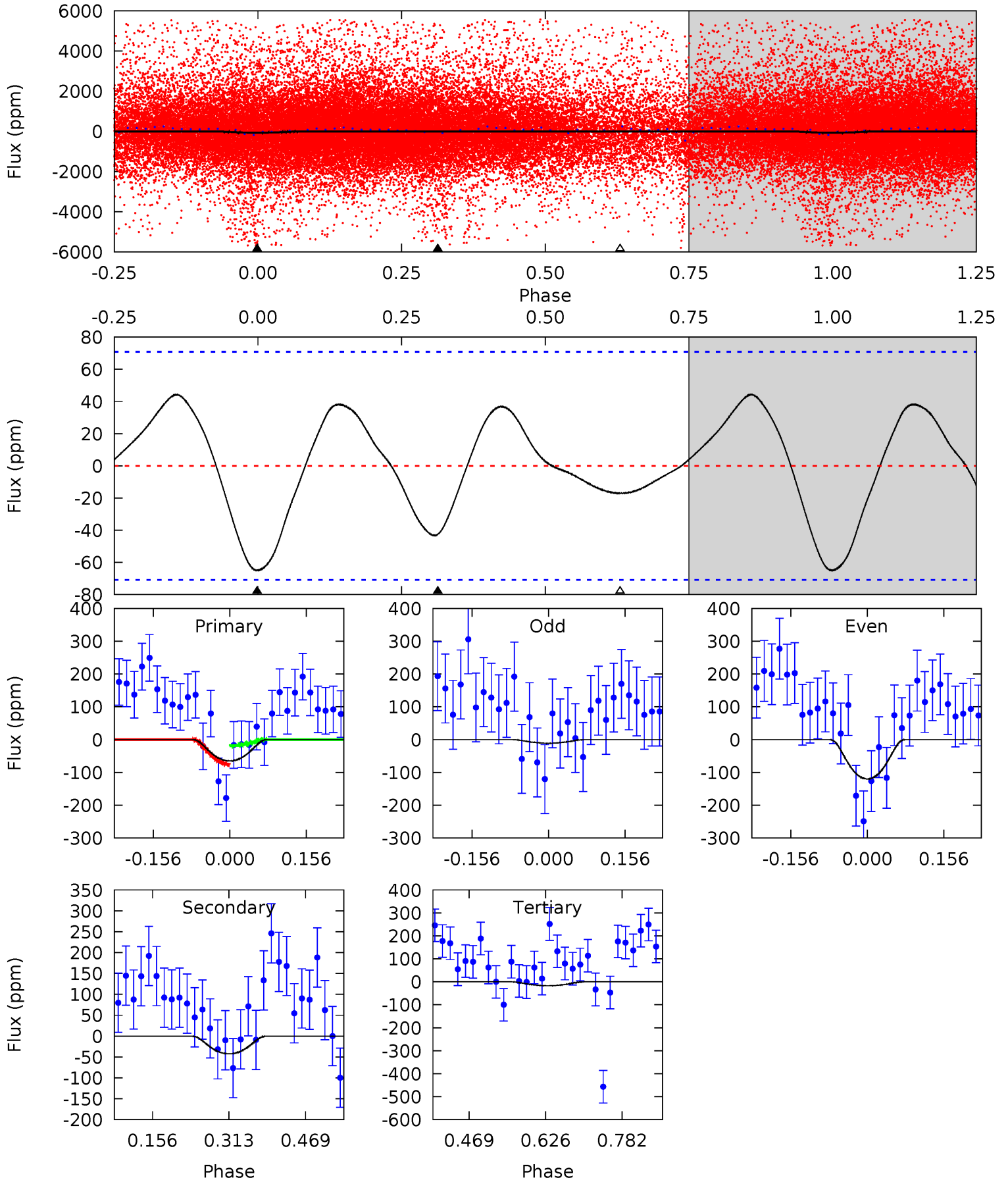
TCE 009992083-02 P= 1.259484 Days $T_0=132.079654$ (BKJD)



DV Model-Shift Uniqueness Test

009992083-02, P = 1.259380 Days, E = 130.884858 Days

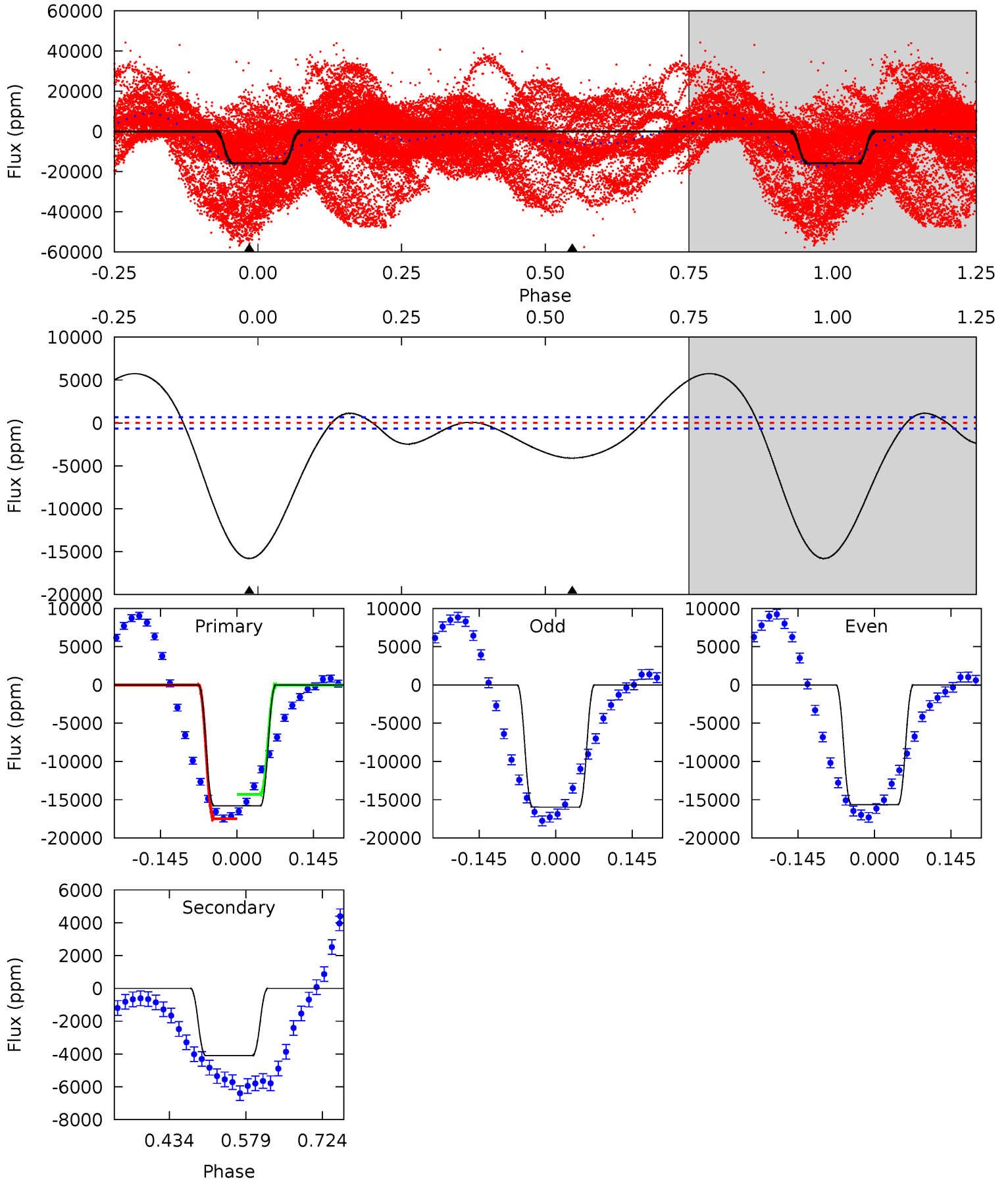
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.09	2.68	1.08	0	4.47	1.42	1.02	3.02	4.09	1.60	2.68	3.46	8.39	0.41	1.81



Alt Model-Shift Uniqueness Test

009992083-02, P = 1.259484 Days, E = 130.820170 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
107.6	27.9	0	0	4.49	1.46	16.4	107.6	107.6	27.9	27.9	1.13	1.10	0.27	11.5



Stellar Parameters For KIC 009992083

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+45}_{-51}	$4.730^{+0.030}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.516^{+0.020}_{-0.028}$	$0.523^{+0.024}_{-0.022}$	$5.345^{+0.681}_{-0.380}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+13%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009992083-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-42 ± 16	$1.31^{+0.54}_{-0.53}$	1226^{+20}_{-20}	2569^{+396}_{-276}	$4.491^{+8.548}_{-2.591}$
Alt.	-4096 ± 147	$8.07^{+0.56}_{-0.56}$	1225^{+18}_{-20}	2933^{+68}_{-65}	12^{+2}_{-1}

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

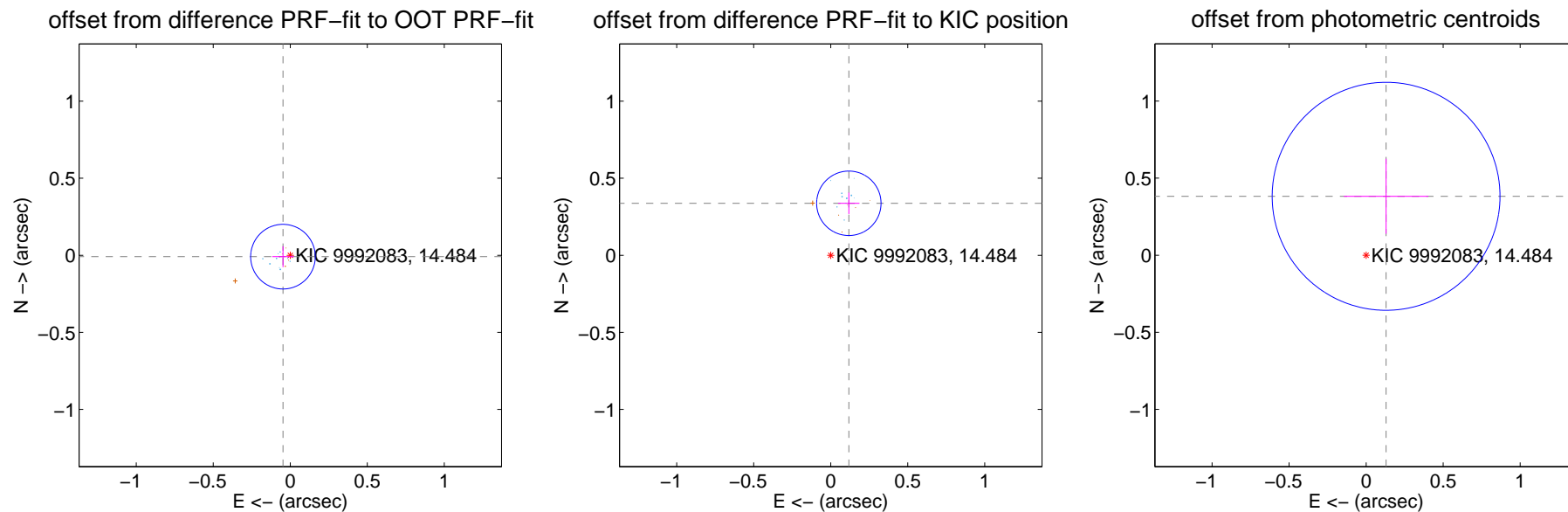
DV Centroid Data

Supplemental centroid analysis for 009992083-02. Kepler magnitude: 14.48. Transit SNR 8.89

There are 11 quarters with good PRF difference image offsets

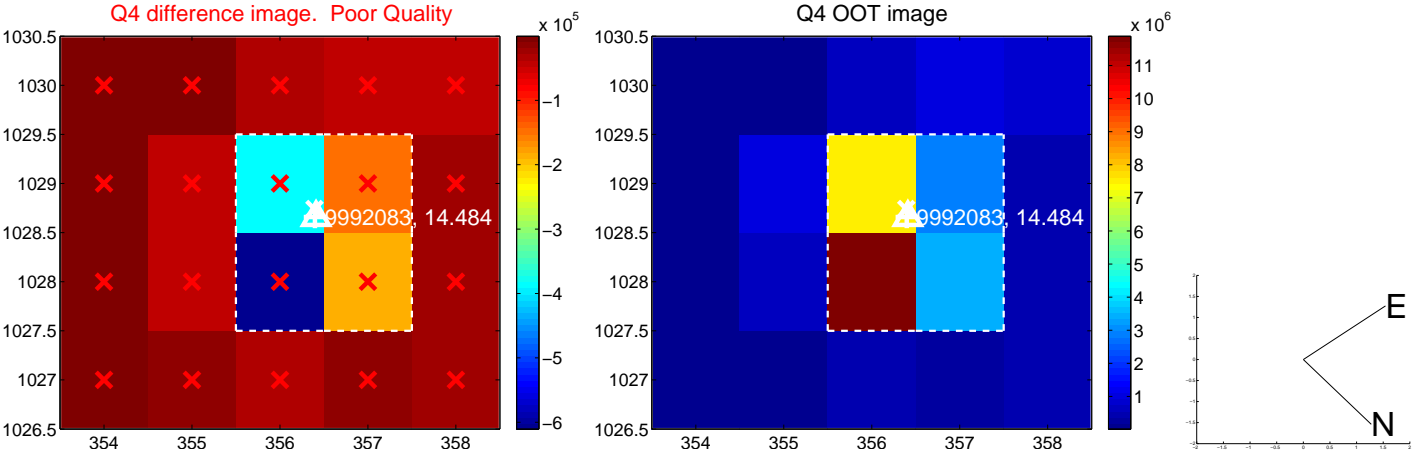
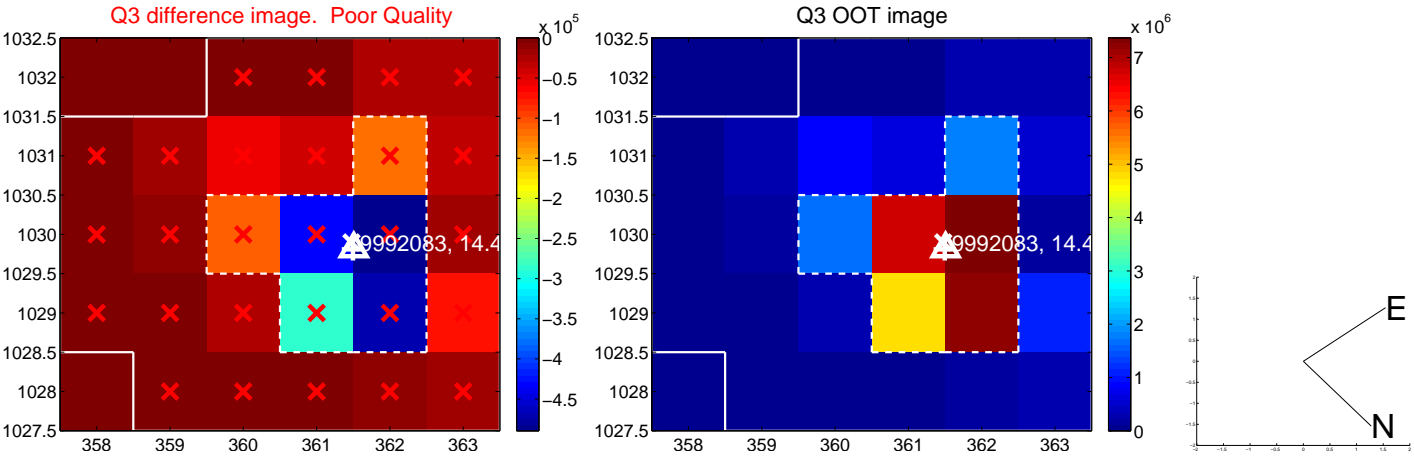
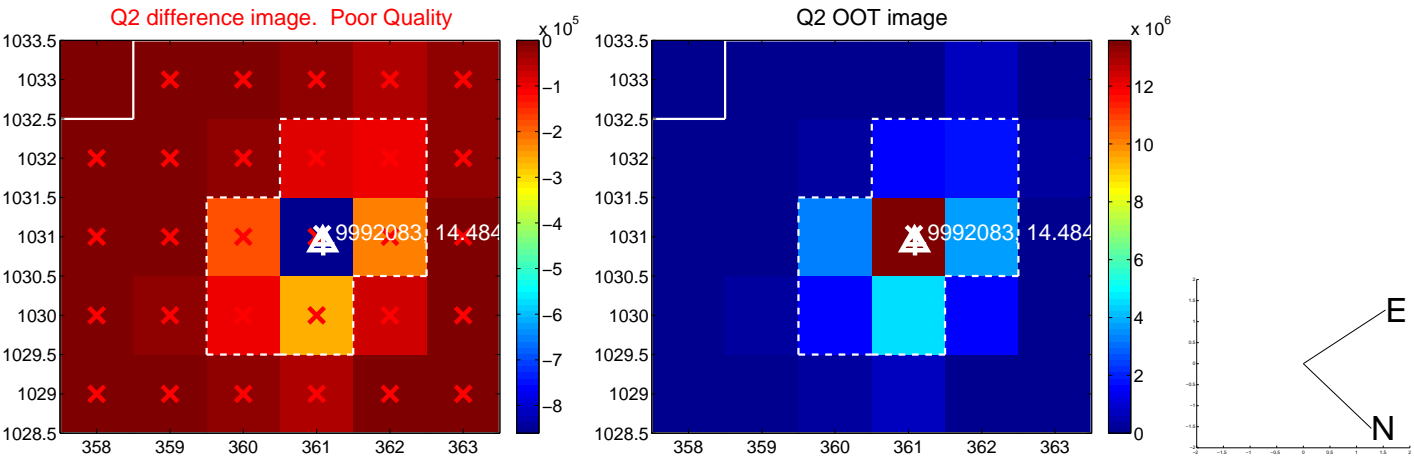
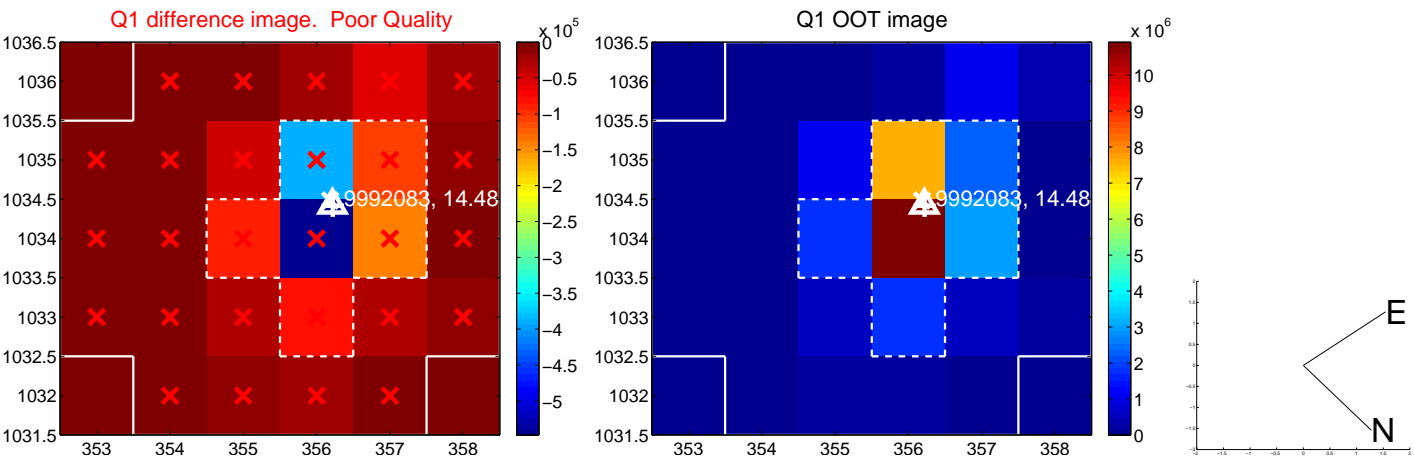
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.048 ± 0.070	0.69	0.047 ± 0.070	-0.009 ± 0.068
PRF-fit source offset from KIC position	0.357 ± 0.070	5.13	-0.118 ± 0.069	0.337 ± 0.069
photometric centroid source offset	0.40 ± 0.25	1.64	-0.13 ± 0.27	0.38 ± 0.24

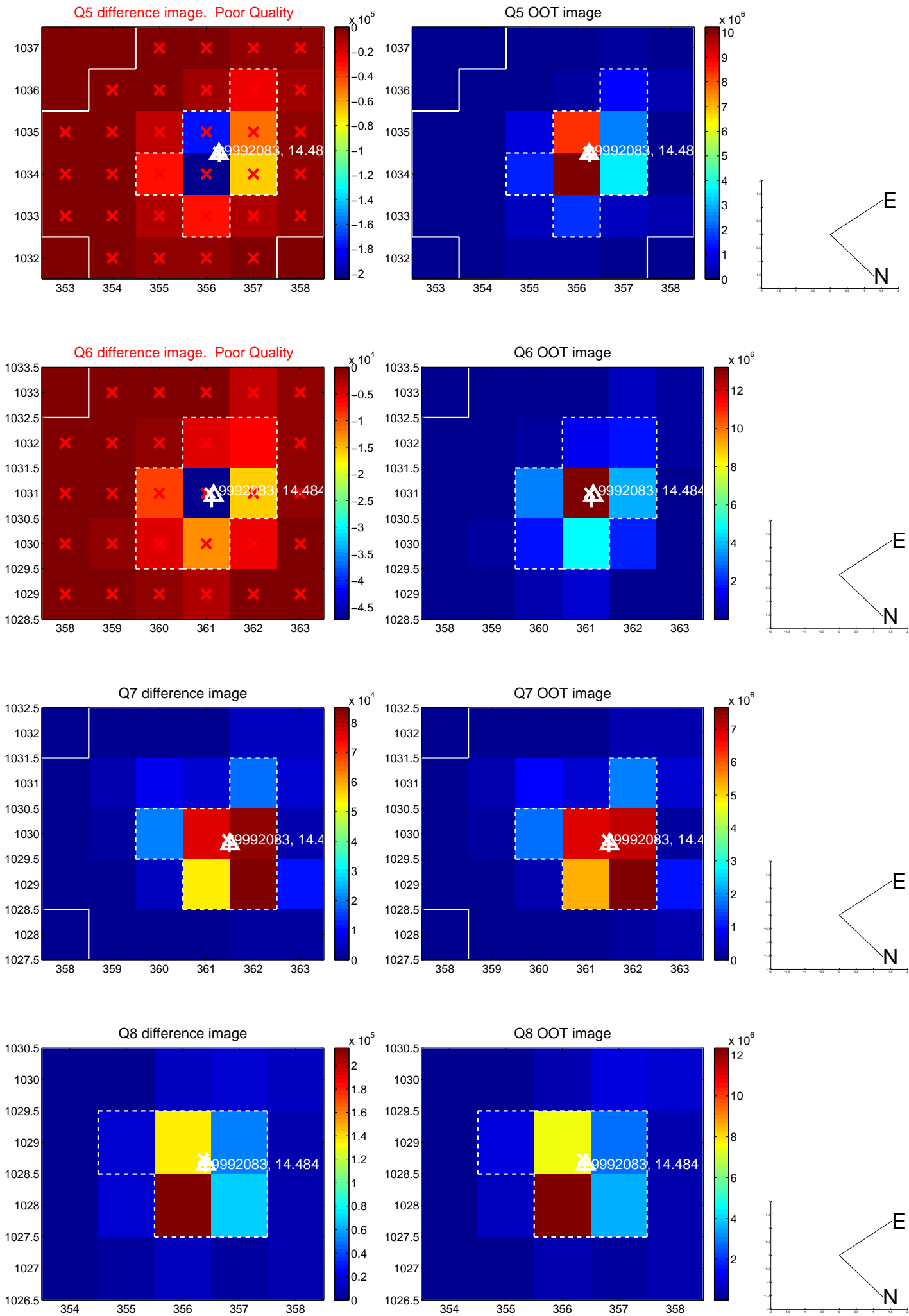


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

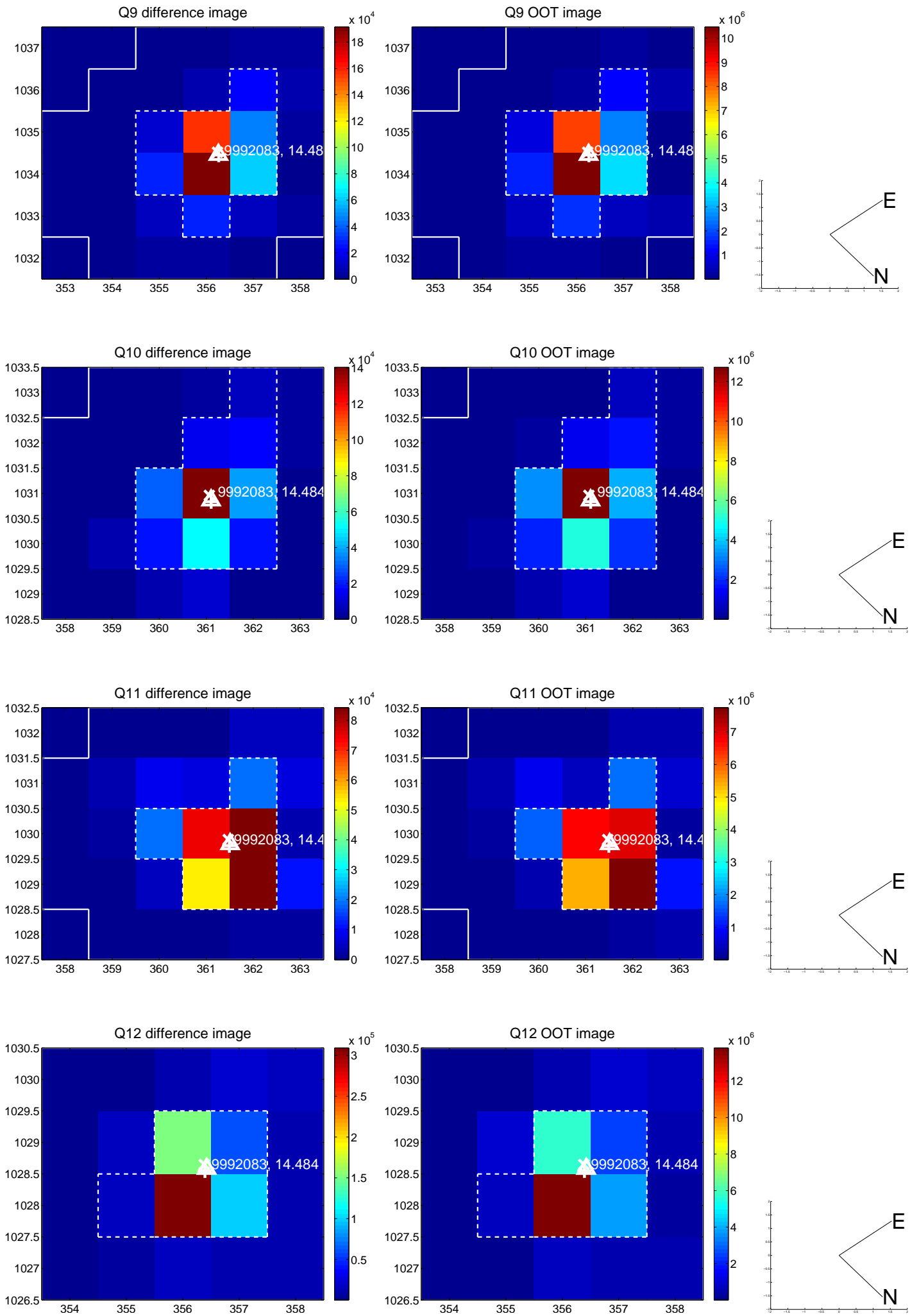
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



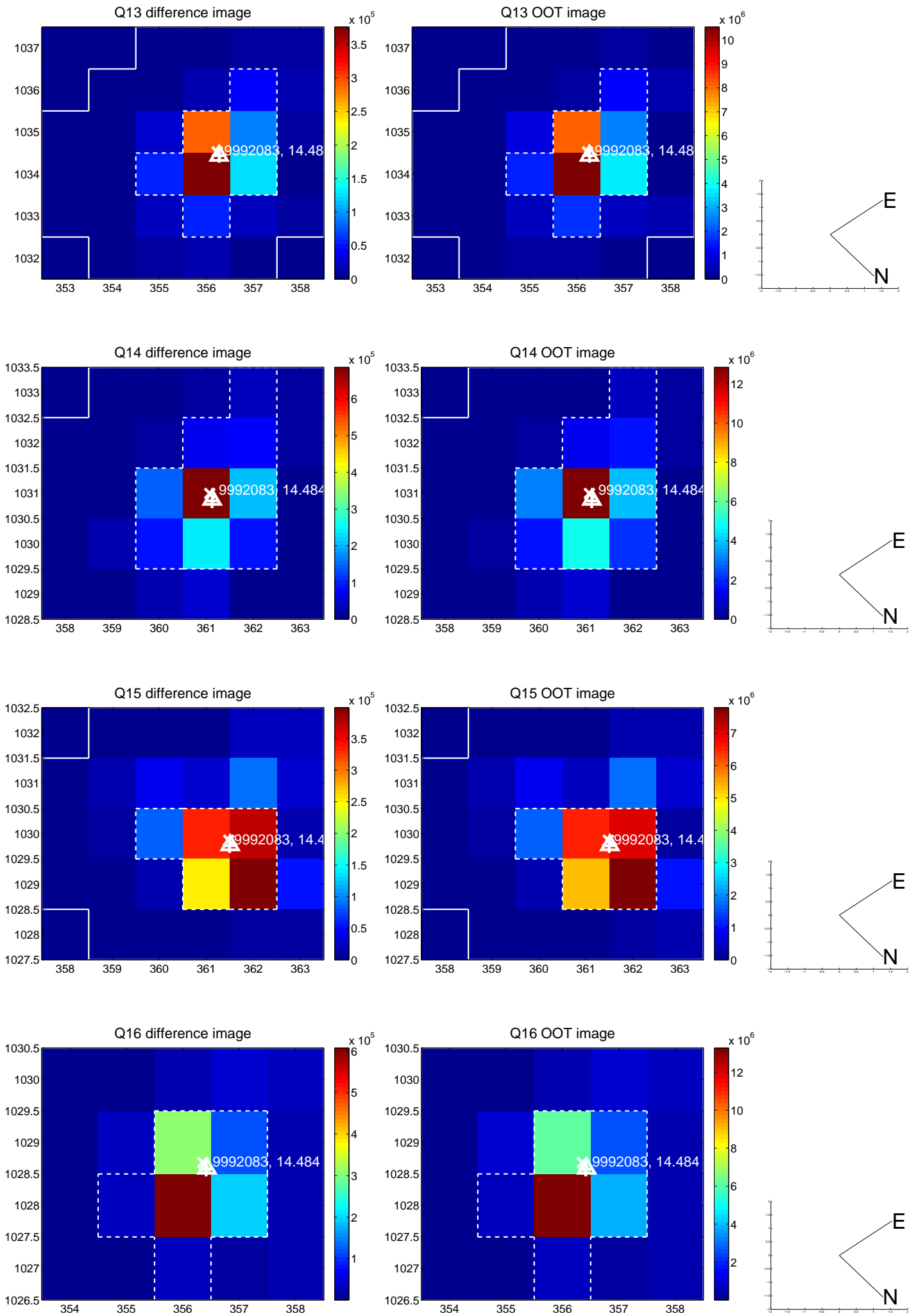
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



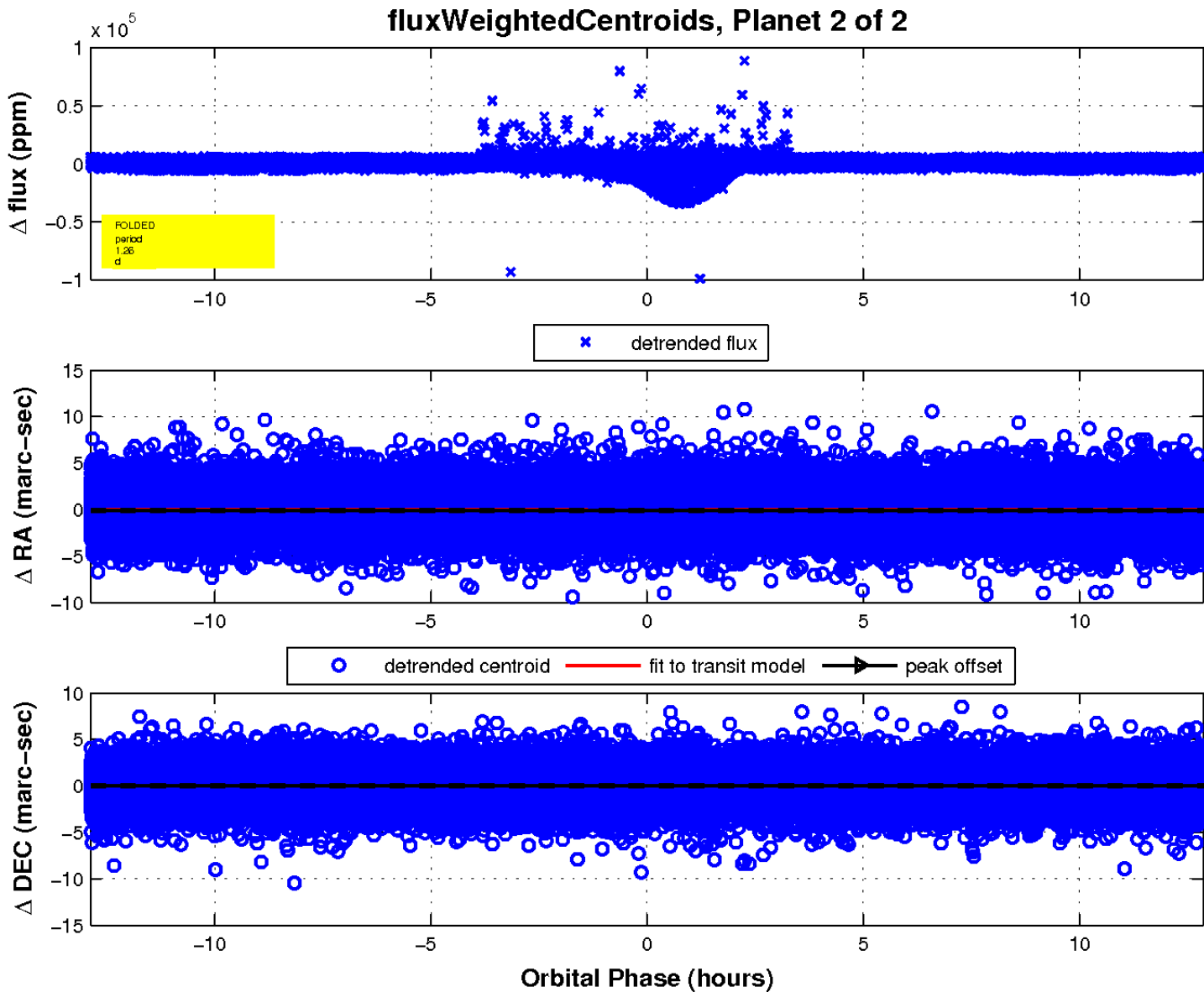
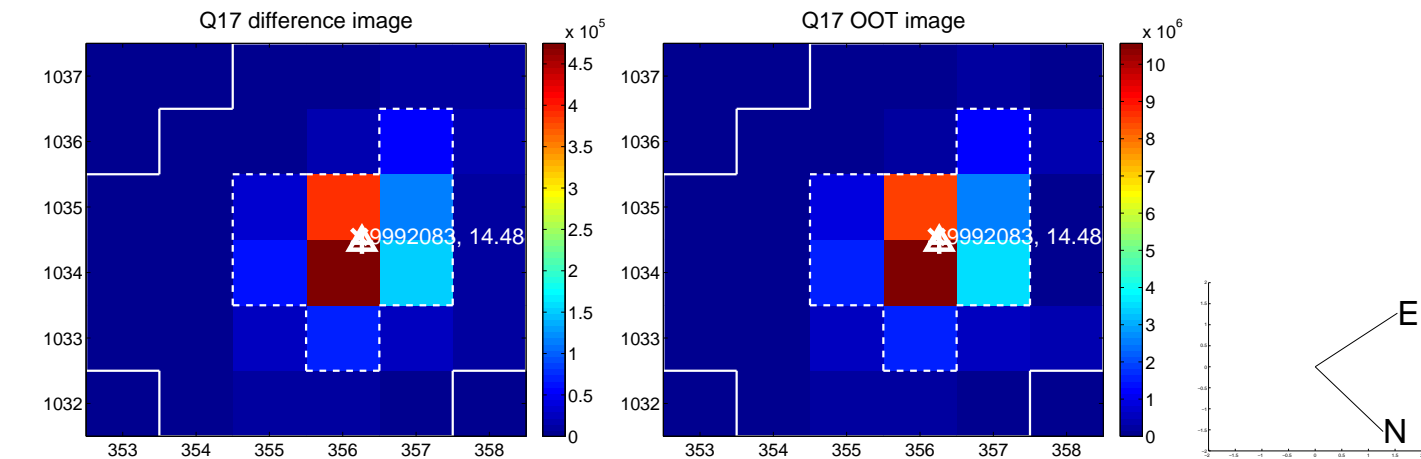
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

