

KIC 008883727

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})
008883727-01	OBS	3822.01	2.529060	133.394246	1276.5	1.536	59.2	68.0	0.77	5465	3.29	396.39
008883727-02	OBS	No	2.529057	132.127771	446.1	1.276	19.3	23.1	0.77	5465	1.95	396.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008883727-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST
008883727-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST

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

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

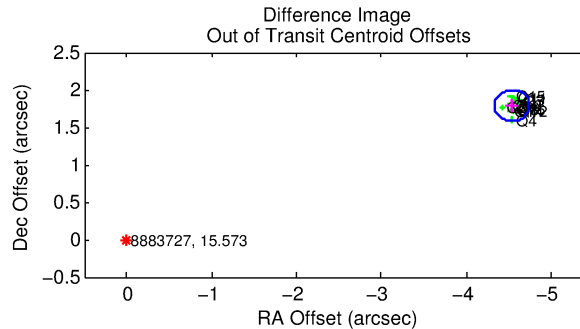
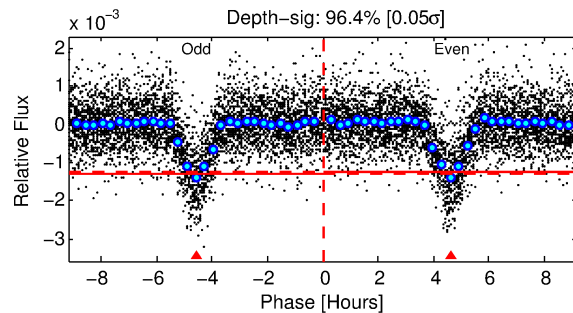
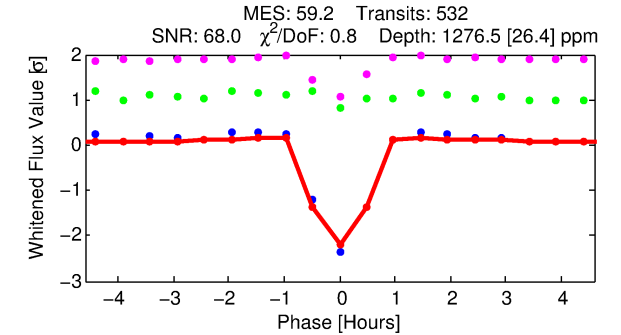
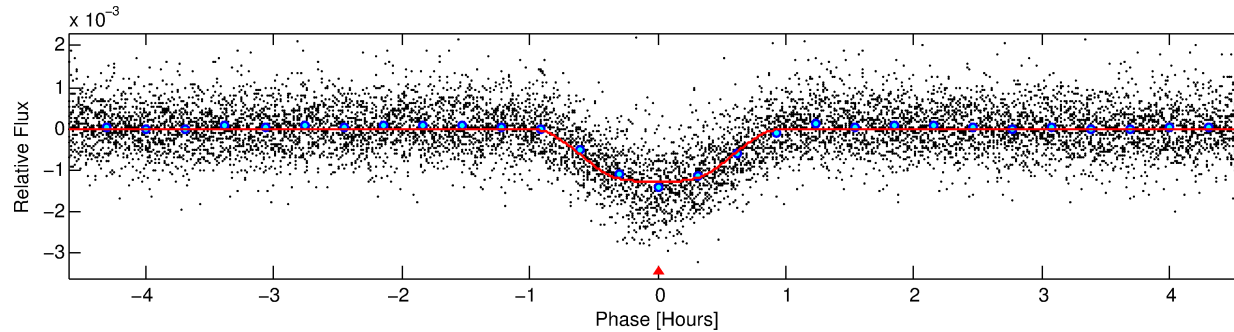
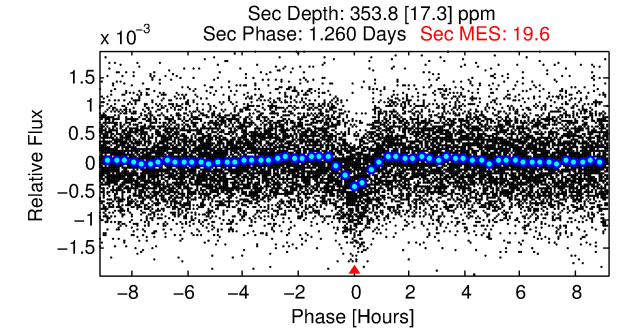
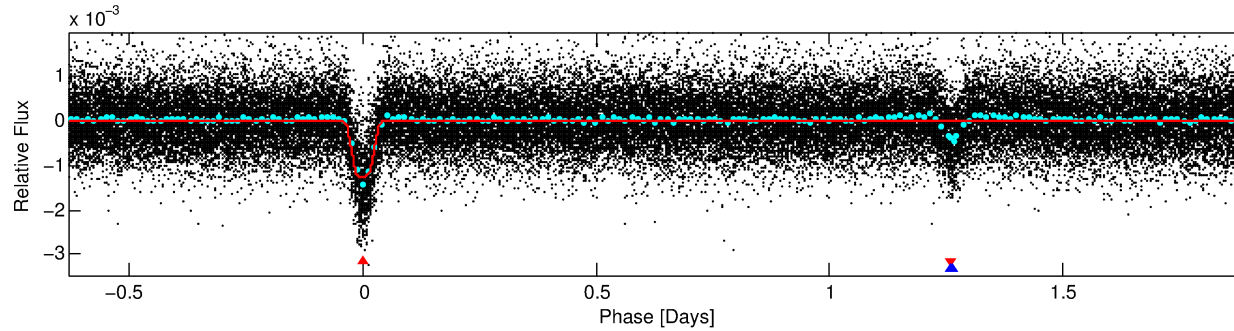
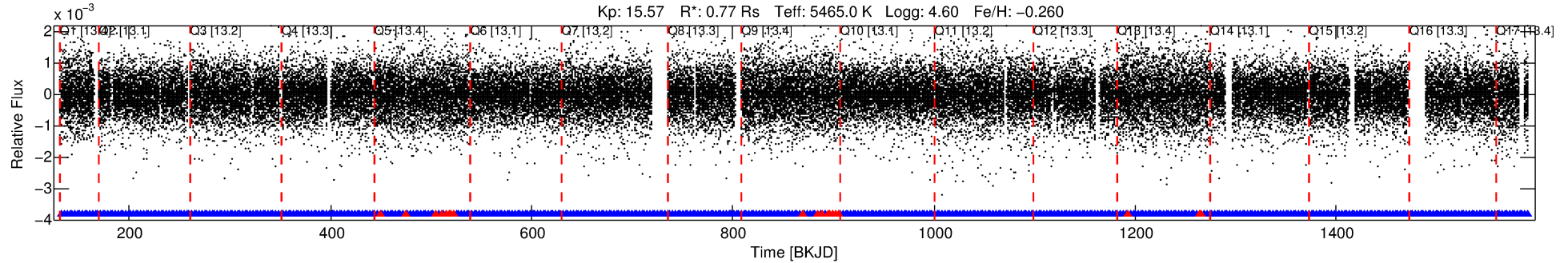
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008883727-01

No Significant Match Found

DV One-Page Summary

KIC: 8883727 Candidate: 1 of 2 Period: 2.529 d
KOI: K03822.01 Corr: 0.961



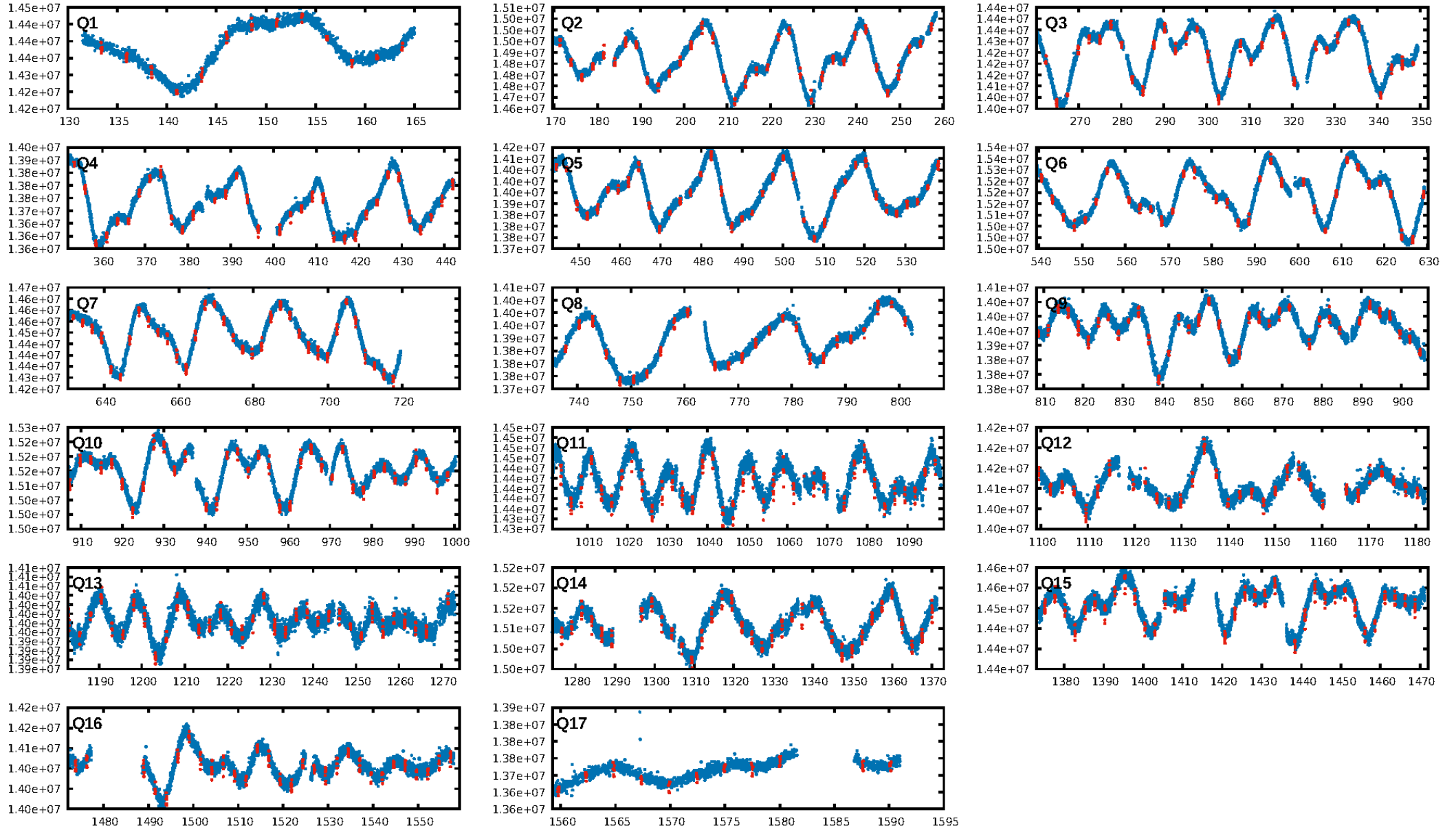
DV Fit Results:

Period = 2.52906 [0.00000] d
Epoch = 133.3942 [0.0003] BKJD
Rp/R* = 0.0394 [0.0020]
a/R* = 6.61 [1.29]
b = 0.90 [0.04]
Seff = 396.40 [104.15]
Teq = 1138 [75] K
Rp = 3.29 [0.65] Re
a = 0.0344 [0.0055] AU
Ag = 21.24 [5.51] [3.67 σ]
Teff = 3777 [153] K [15.48 σ]

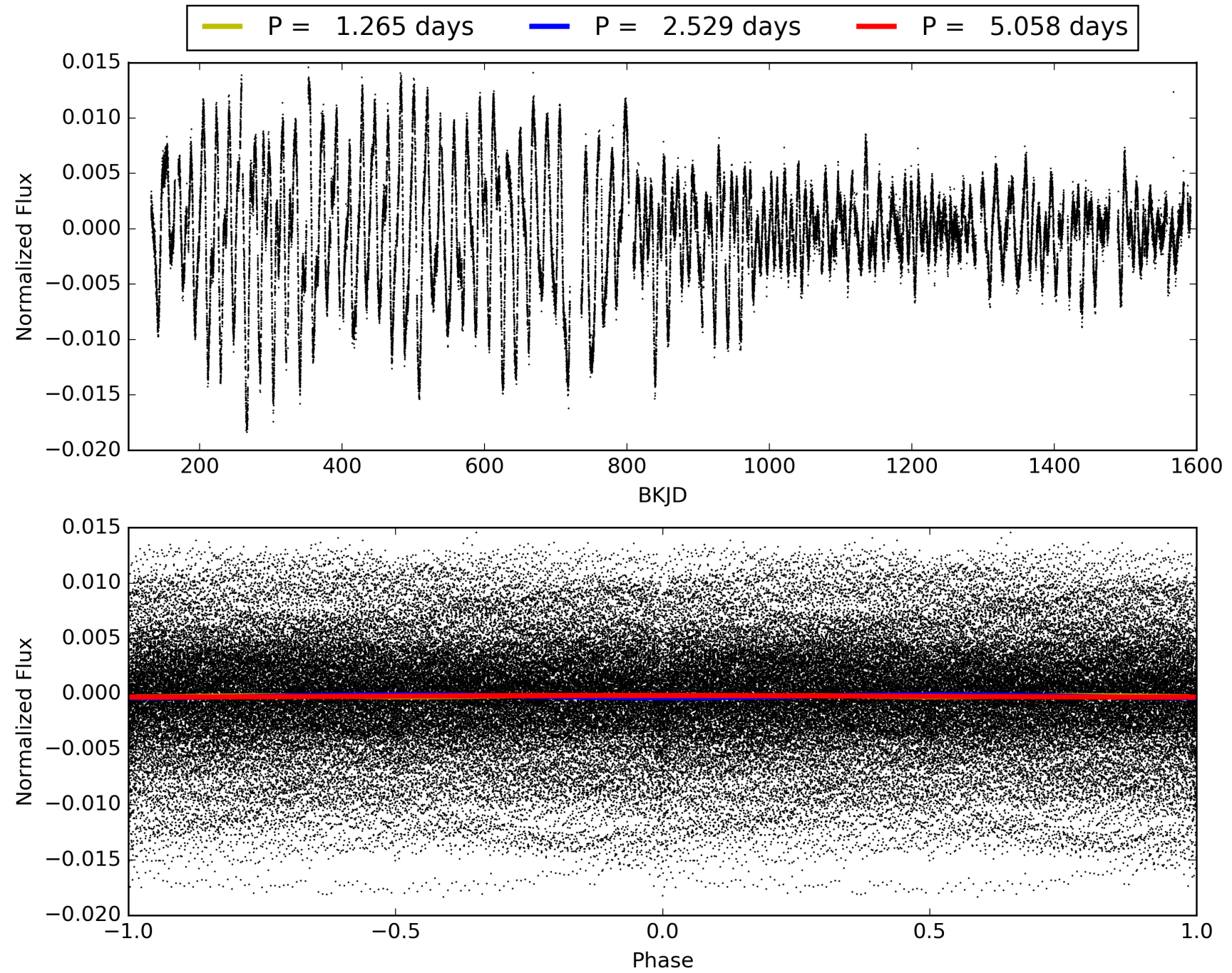
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.96 [489/508]
GhostDiagnostic-chr: -0.1163
Centroid-sig: 0.0%
Centroid-so: 19.888 arcsec [109.02 σ]
OotOffset-rm: 4.879 arcsec [70.26 σ]
KicOffset-rm: 4.917 arcsec [68.34 σ]
OotOffset-st: 4/4/4/0 [12]
KicOffset-st: 4/4/4/0 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008883727-01, PDC Light Curves

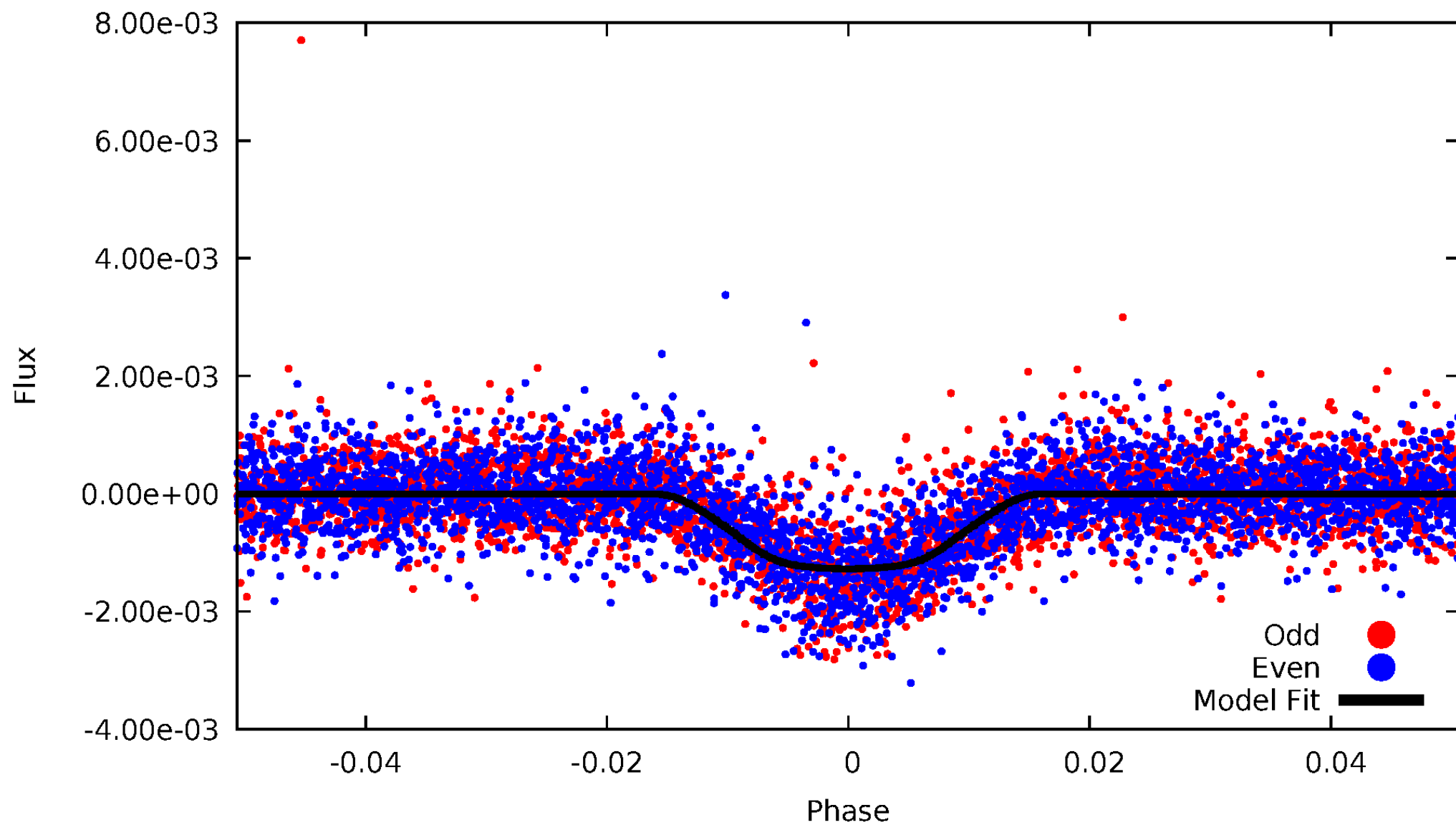


TCE 008883727-01



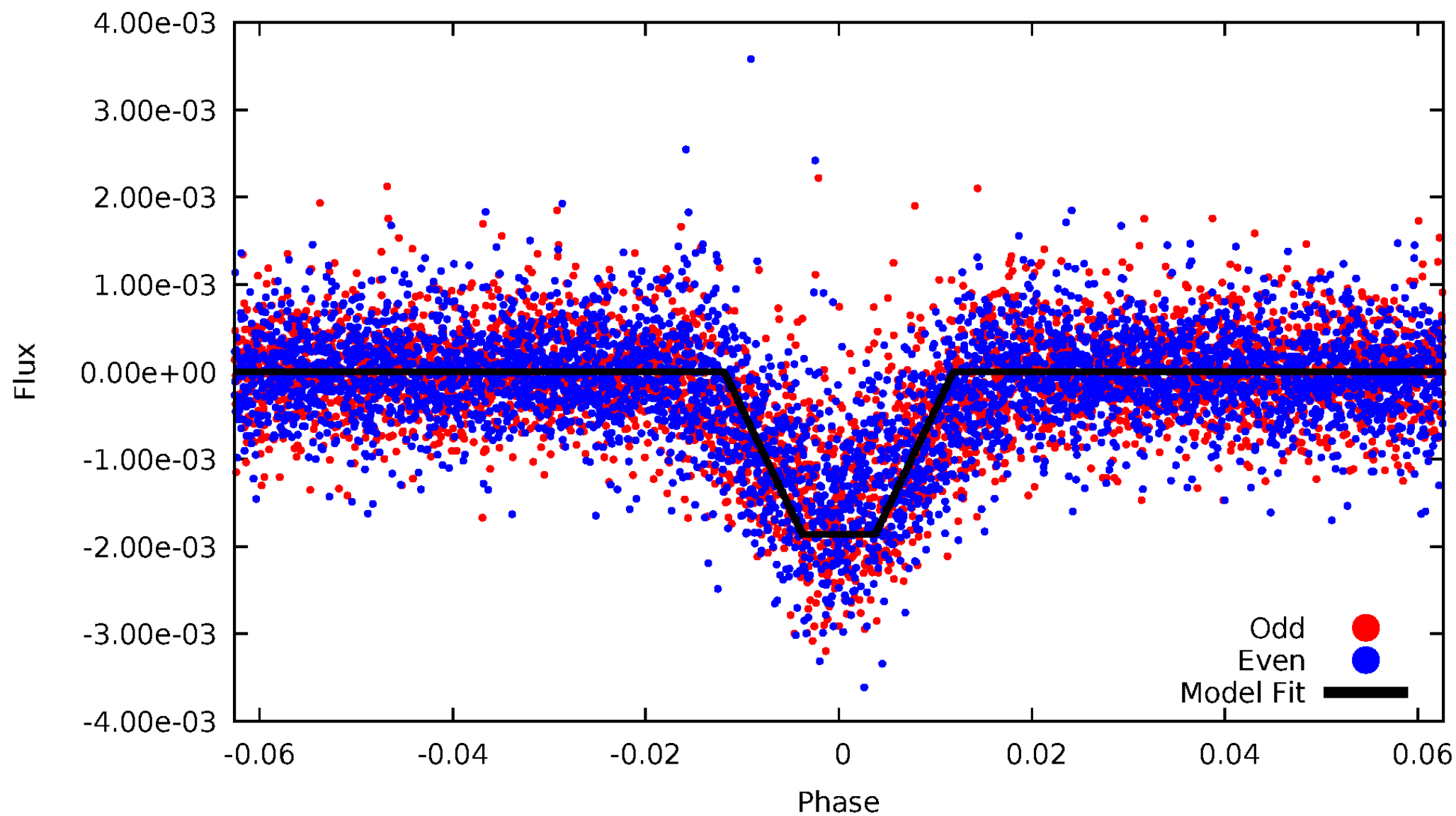
DV Odd/Even

TCE 008883727-01



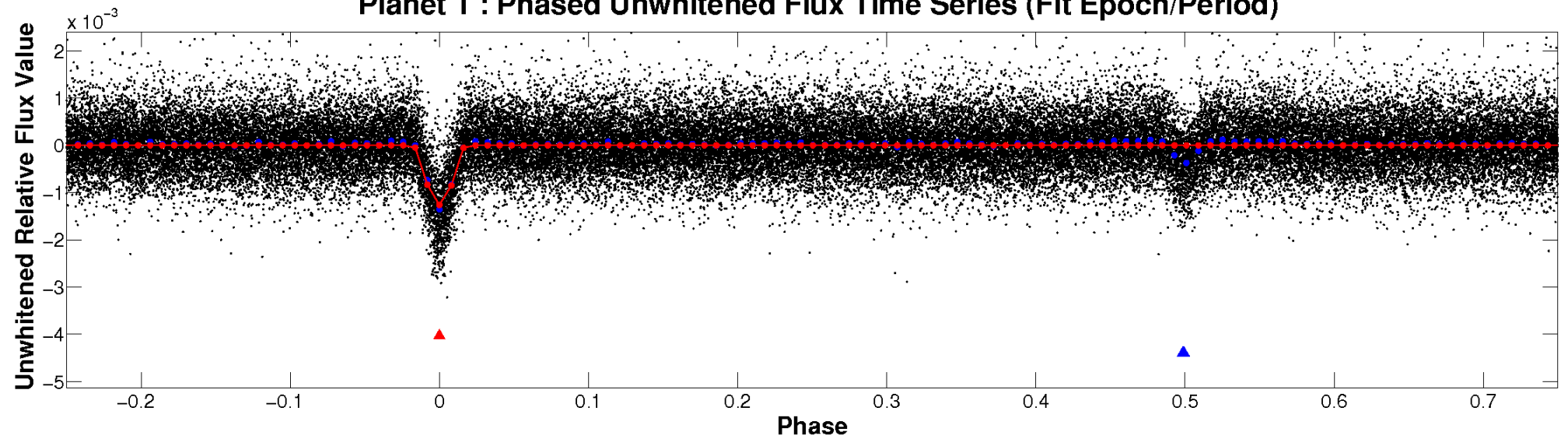
ALT Odd/Even

TCE 008883727-01

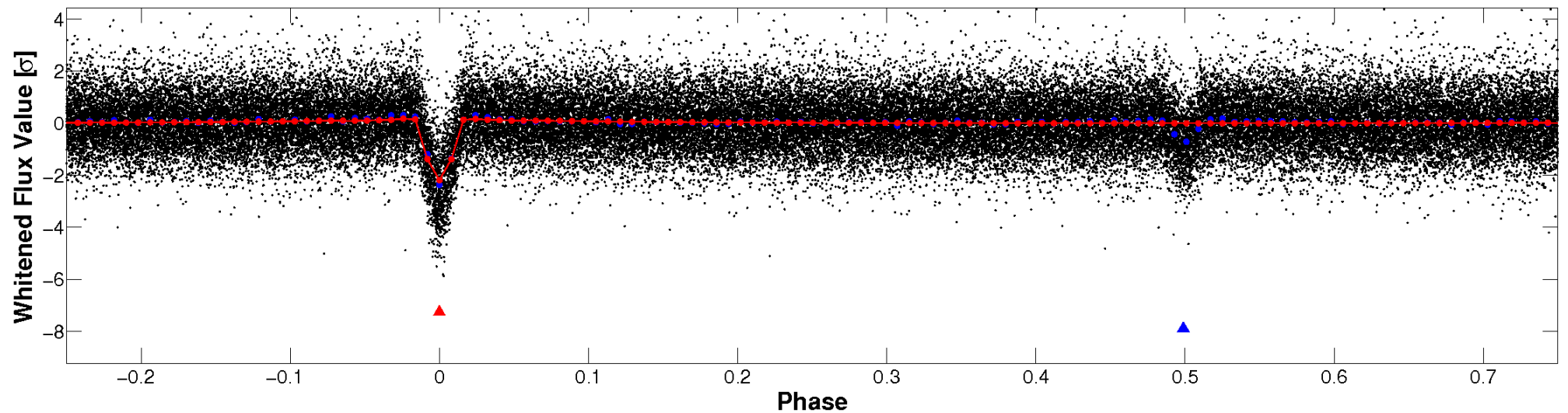


Non-Whitened Vs. Whitened Light Curve

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

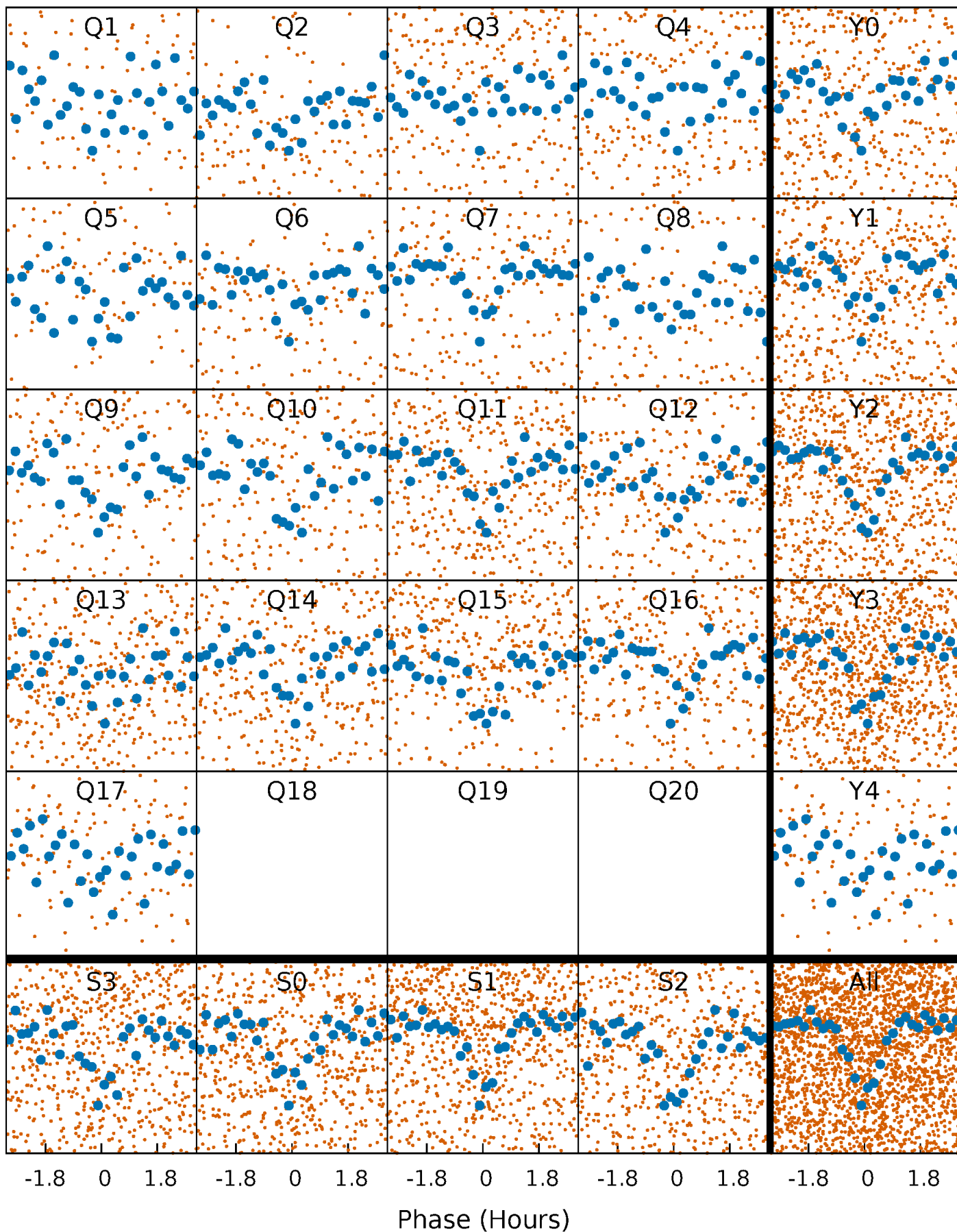


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



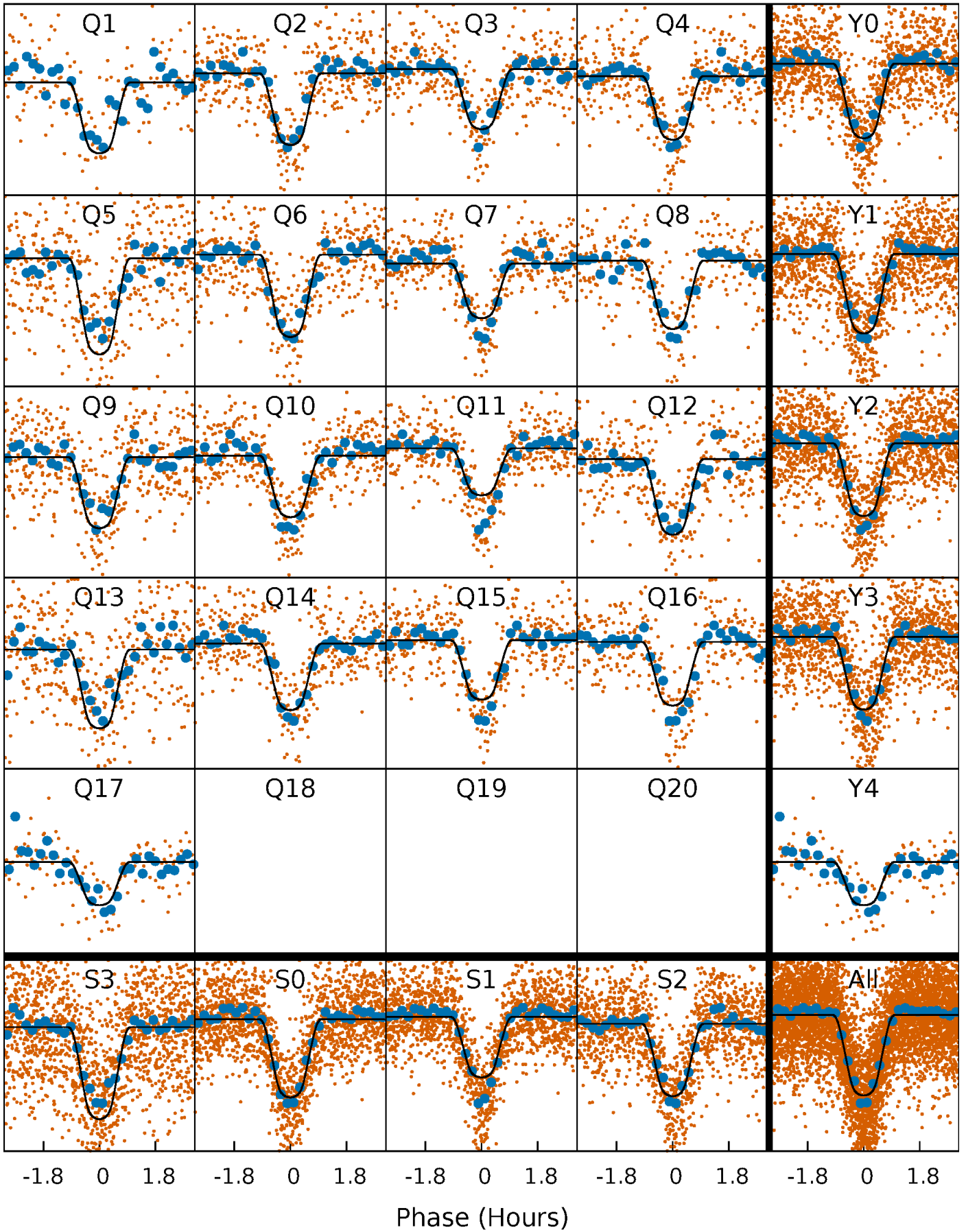
PDC Quarter-Phased Transit Curves

TCE 008883727-01 P= 2.529060 Days $T_0=133.394246$ (BKJD)



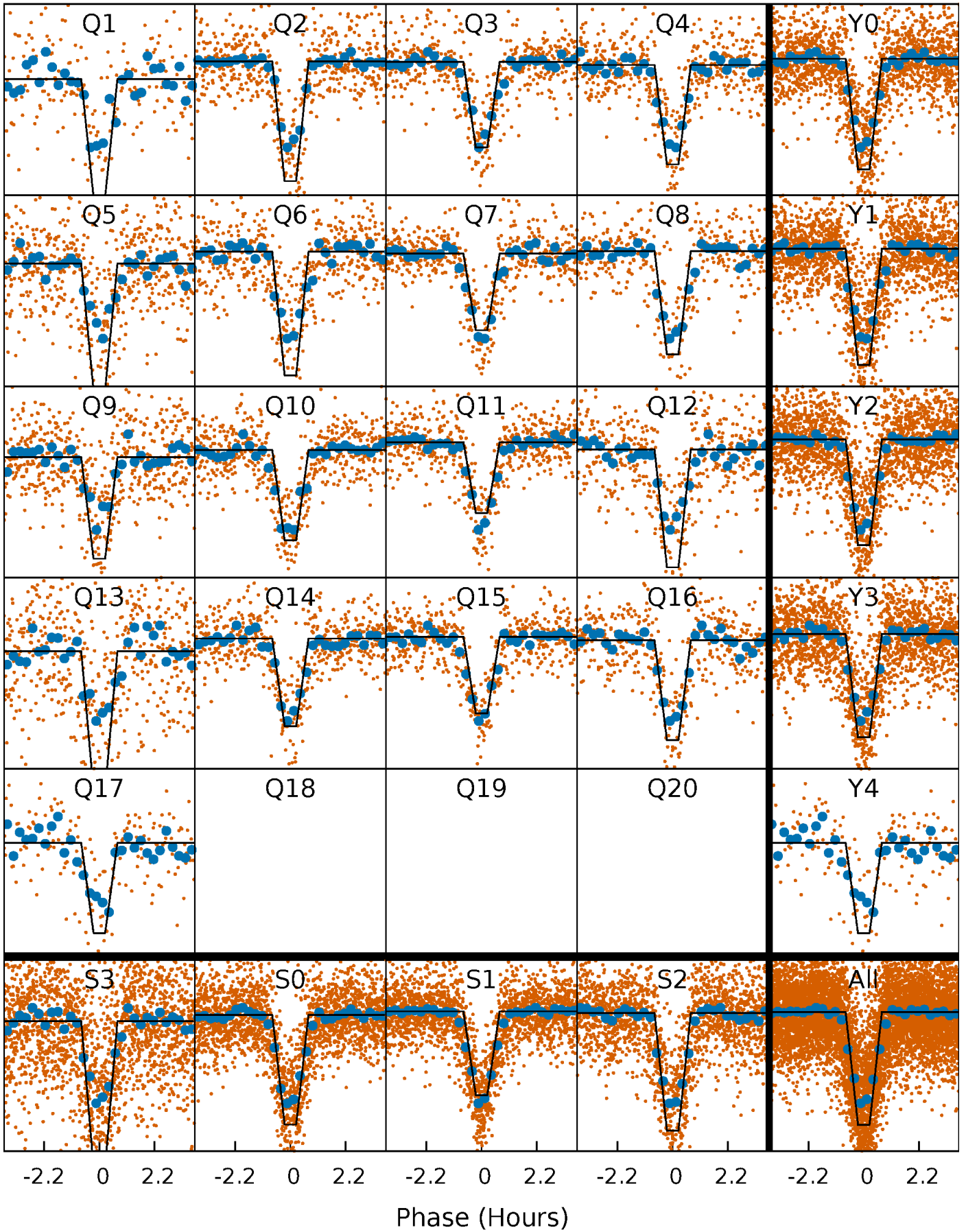
DV Quarter-Phased Transit Curves

TCE 008883727-01 P= 2.529060 Days $T_0=133.394246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

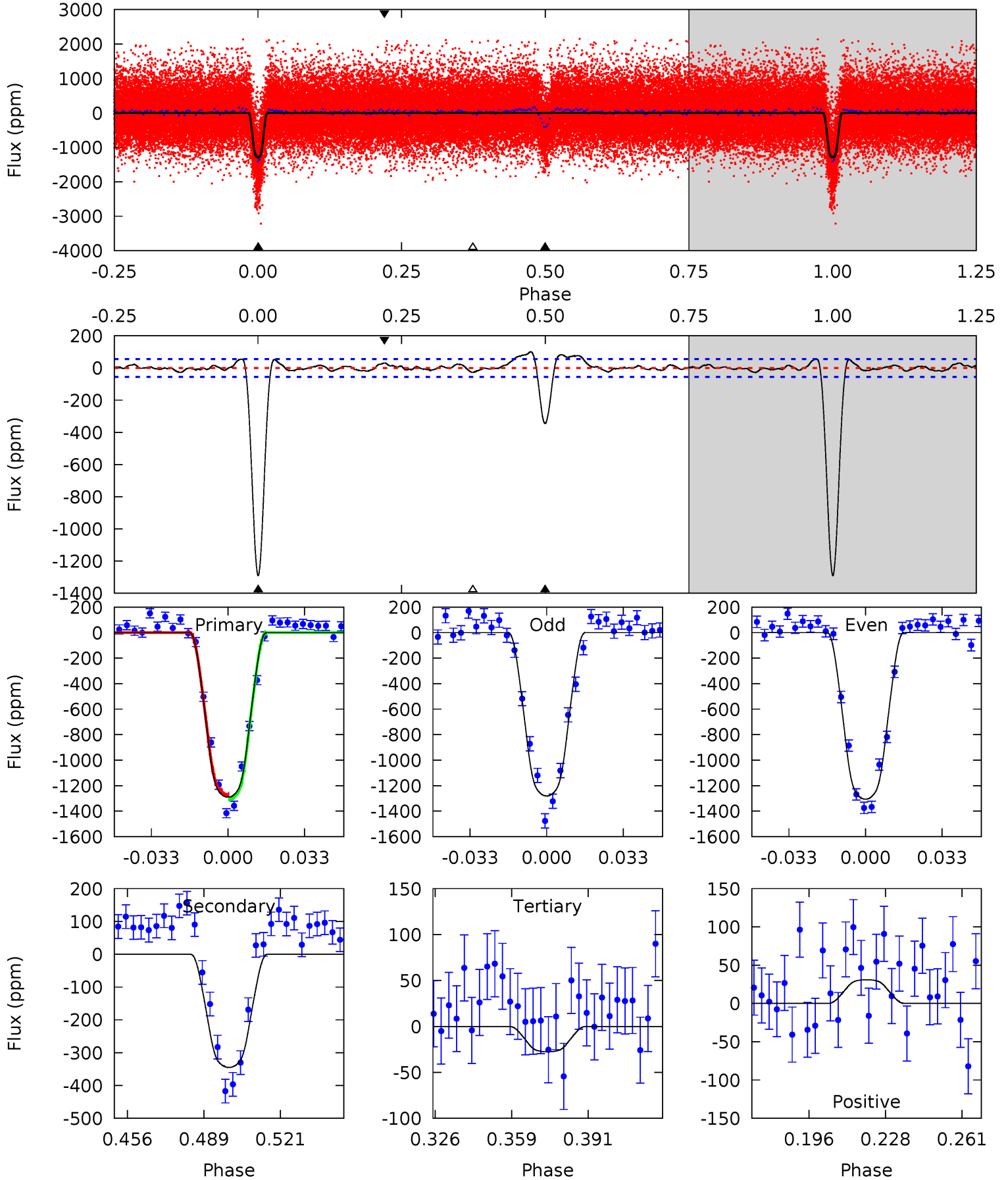
TCE 008883727-01 P= 2.529075 Days $T_0=133.390934$ (BKJD)



DV Model-Shift Uniqueness Test

008883727-01, P = 2.529060 Days, E = 130.865186 Days

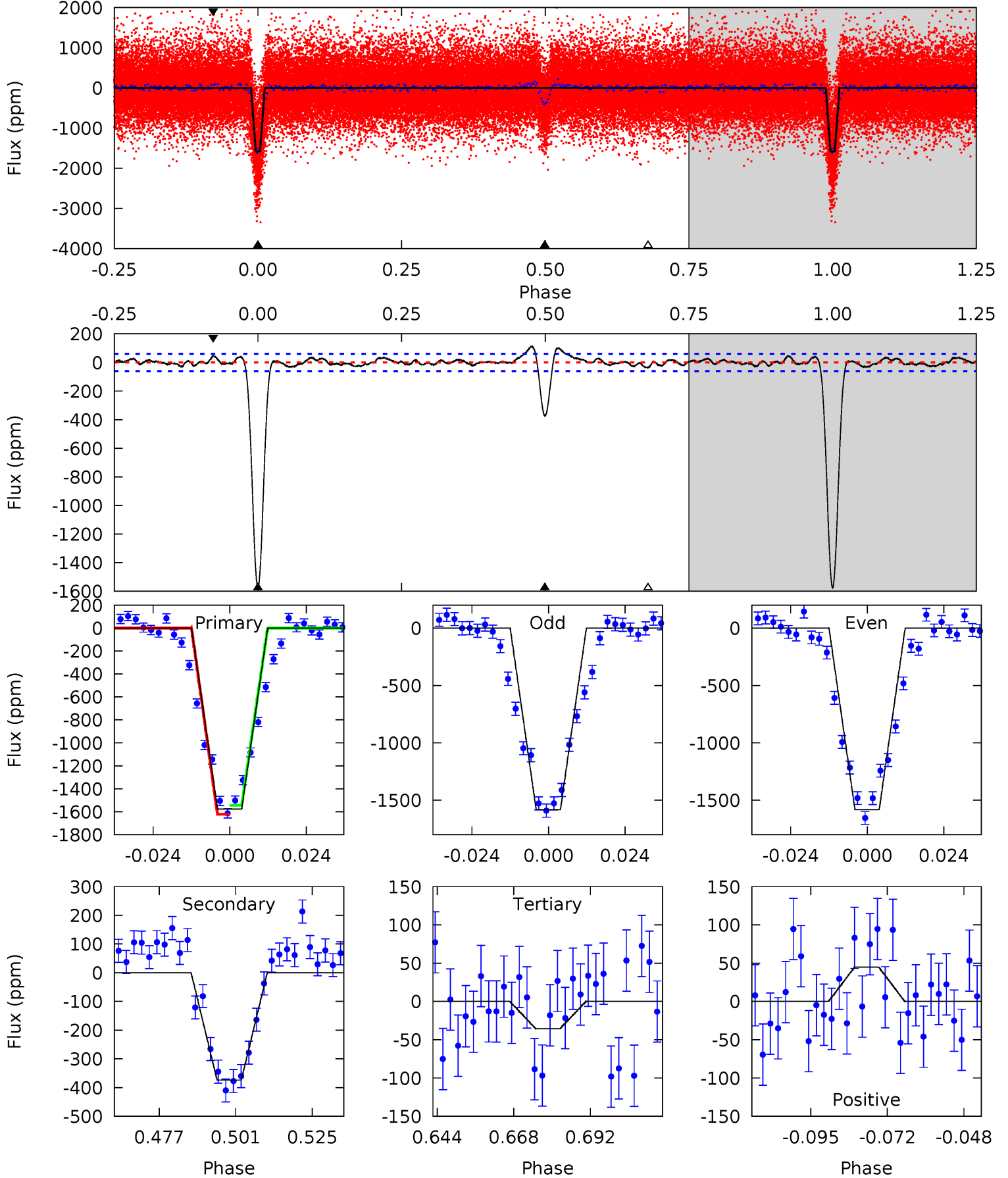
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
111.8	29.9	2.39	2.69	4.79	2.14	1.90	109.4	109.1	27.5	27.2	1.10	1.00	0.07	1.74



Alt Model-Shift Uniqueness Test

008883727-01, P = 2.529075 Days, E = 130.861859 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
127.1	30.1	2.87	3.62	4.86	2.26	1.74	124.3	123.5	27.3	26.5	0.02	0.98	0.07	3.14



Stellar Parameters For KIC 008883727

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5465^{+162}_{-146}	$4.598^{+0.032}_{-0.128}$	$-0.260^{+0.300}_{-0.300}$	$0.766^{+0.147}_{-0.068}$	$0.857^{+0.080}_{-0.098}$	$2.691^{+0.474}_{-1.039}$
	+3%/-3%	+1%/-3%	+115%/-115%	+19%/-9%	+9%/-11%	+18%/-39%
Source	PHO1	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 008883727-01 / KOI 3822.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-345 ± 12	$3.40^{+0.37}_{-0.28}$	1618^{+78}_{-60}	4019^{+122}_{-99}	19^{+3}_{-3}
Alt.	-374 ± 12	$3.69^{+0.40}_{-0.30}$	1620^{+78}_{-62}	3963^{+113}_{-106}	18^{+3}_{-3}

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

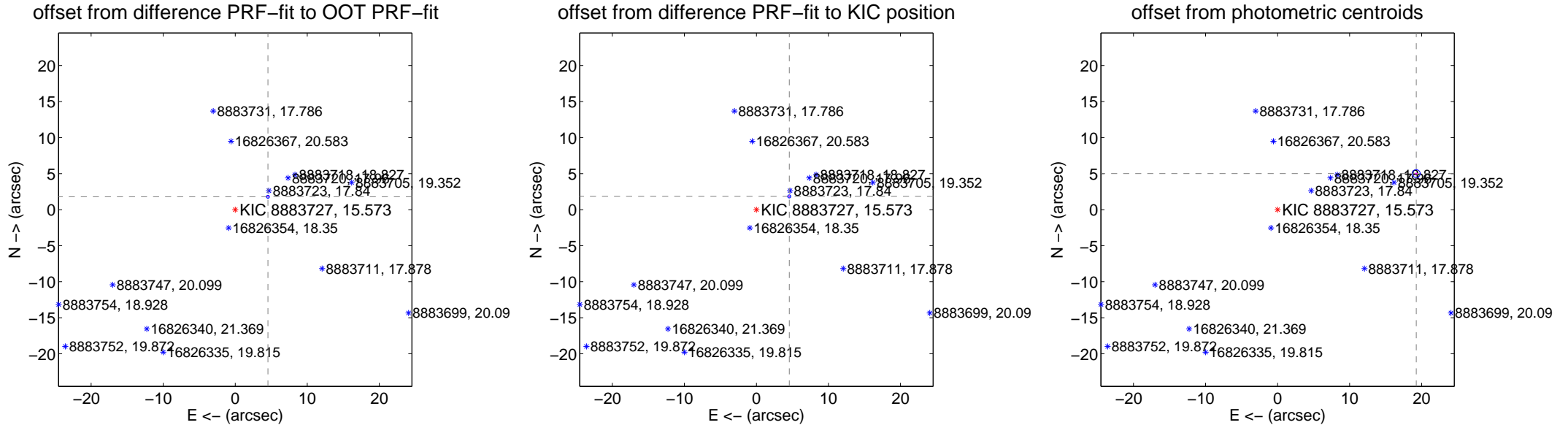
DV Centroid Data

Supplemental centroid analysis for 008883727-01. Kepler magnitude: 15.57. Transit SNR 68.05

There are 12 quarters with good PRF difference image offsets

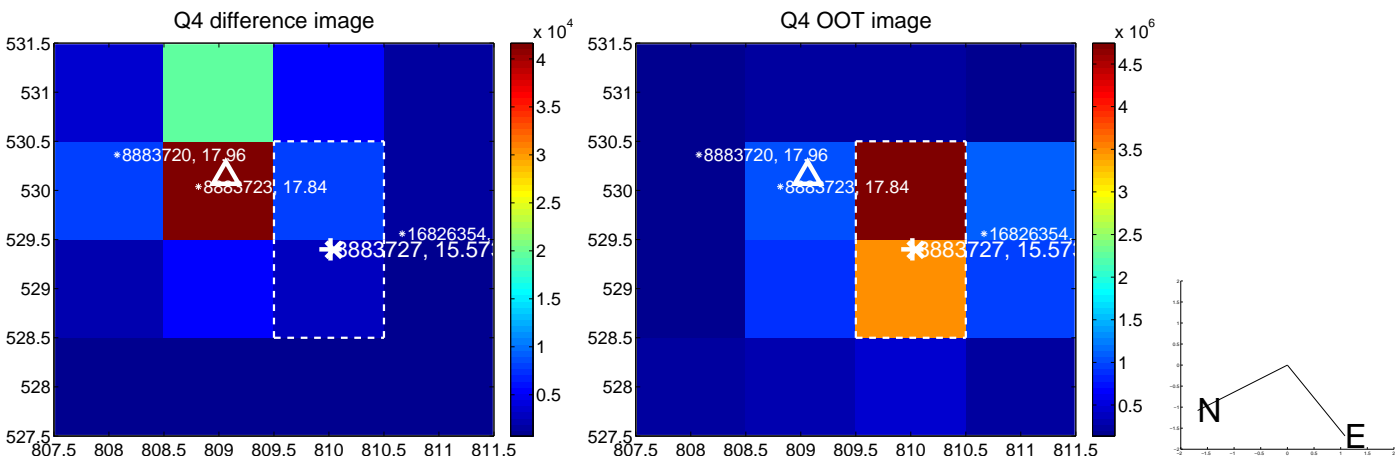
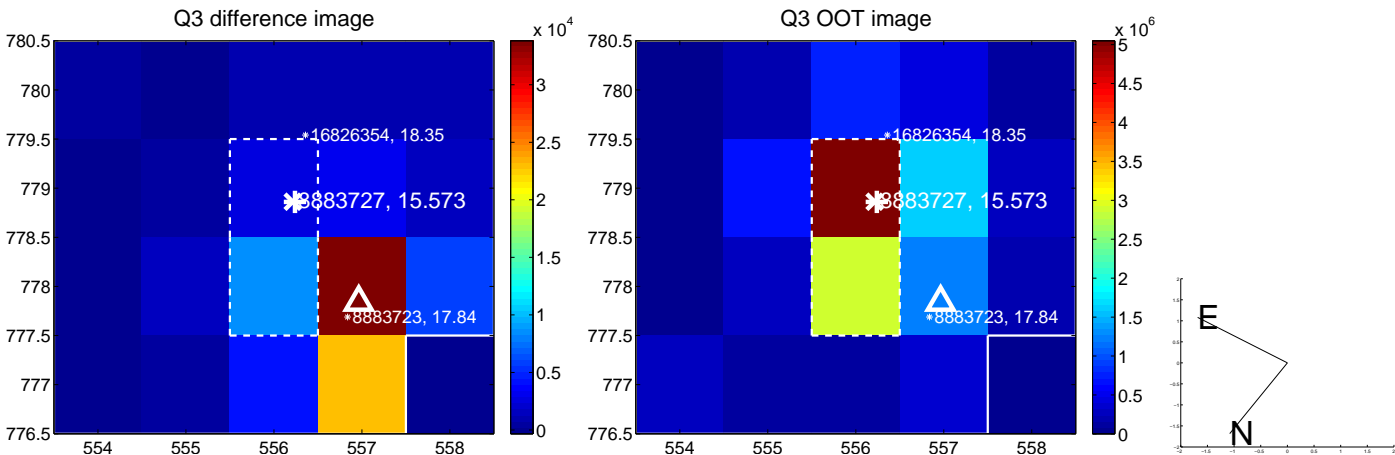
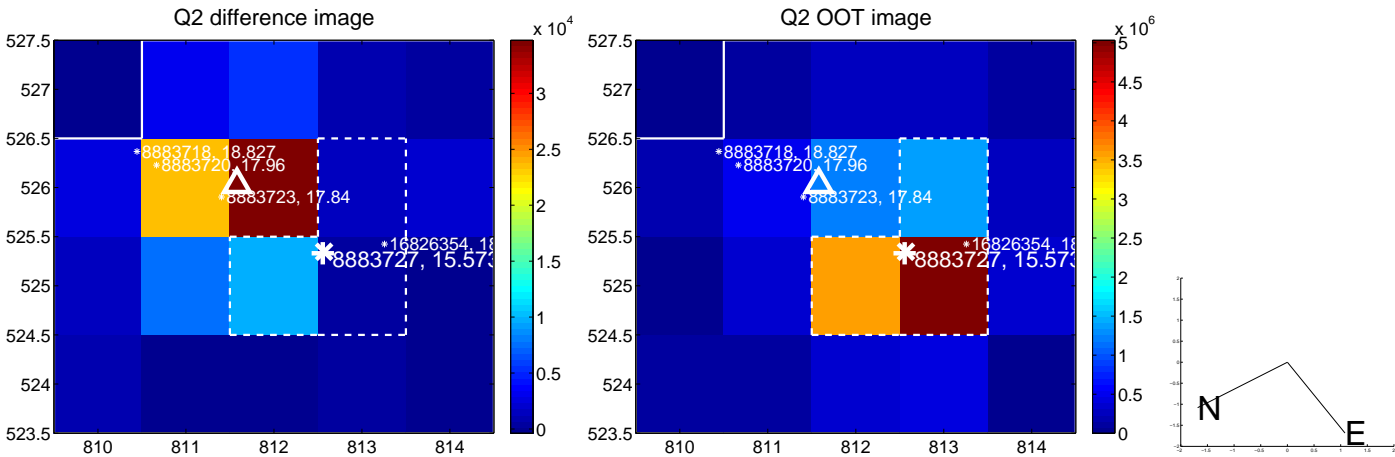
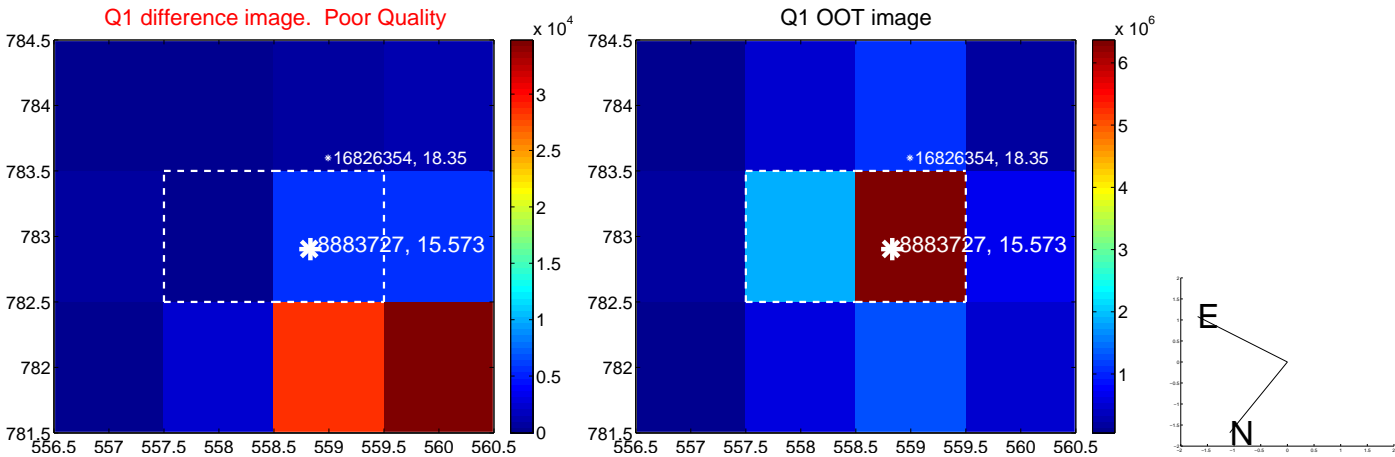
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.879 \pm 0.069	70.26	-4.540 \pm 0.068	1.789 \pm 0.071
PRF-fit source offset from KIC position	4.917 \pm 0.072	68.34	-4.561 \pm 0.073	1.838 \pm 0.067
photometric centroid source offset	19.89 \pm 0.18	109.02	-19.25 \pm 0.18	5.00 \pm 0.15

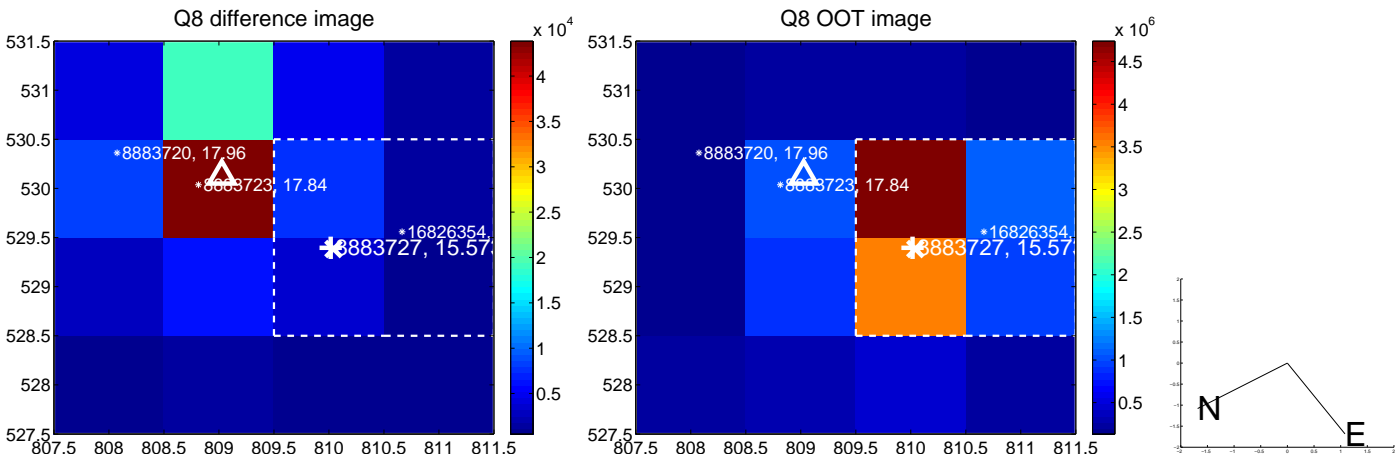
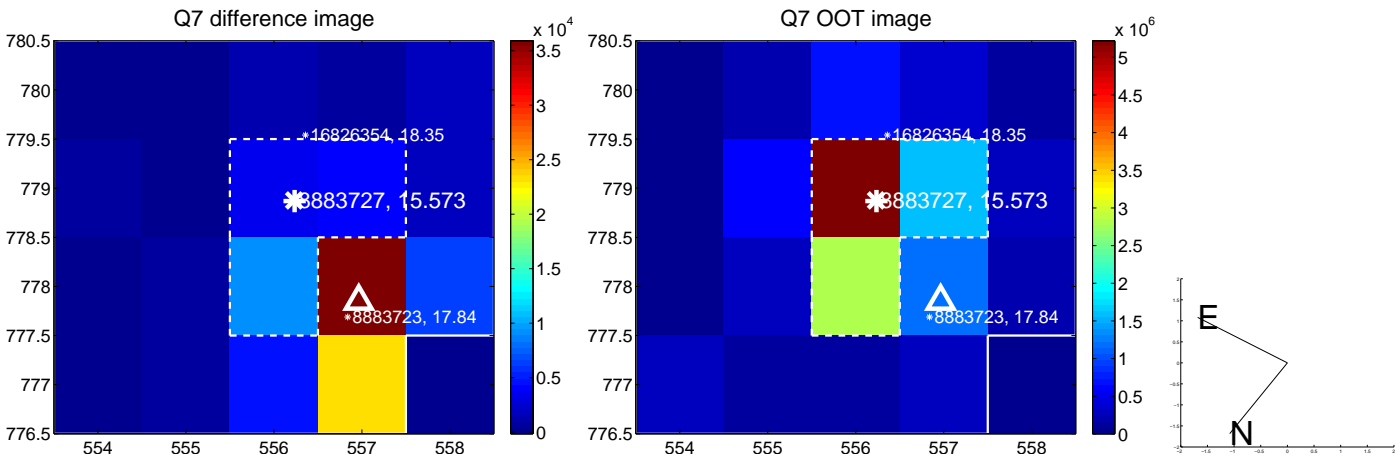
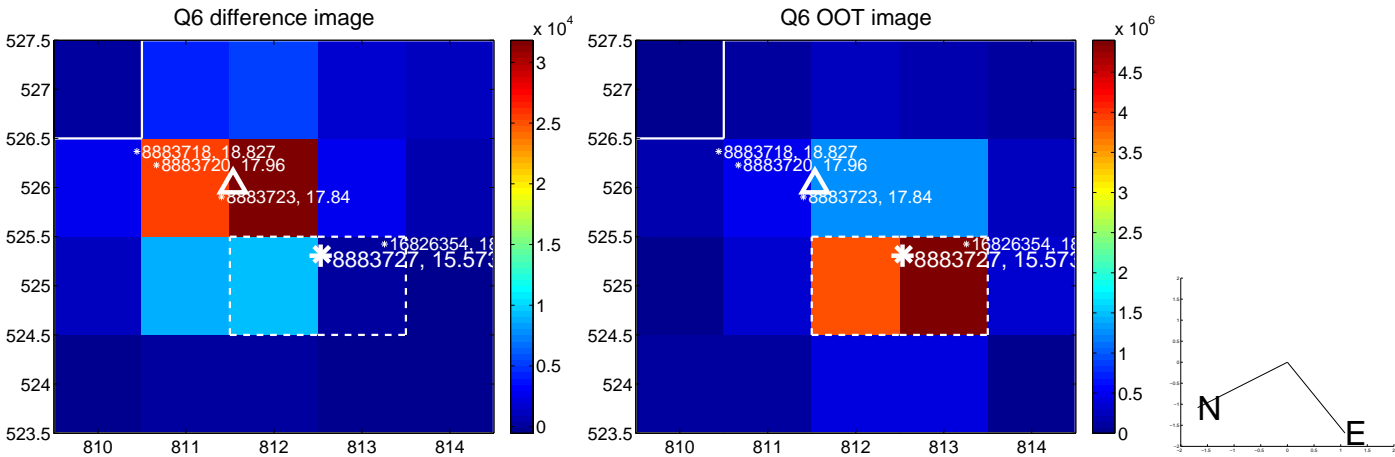
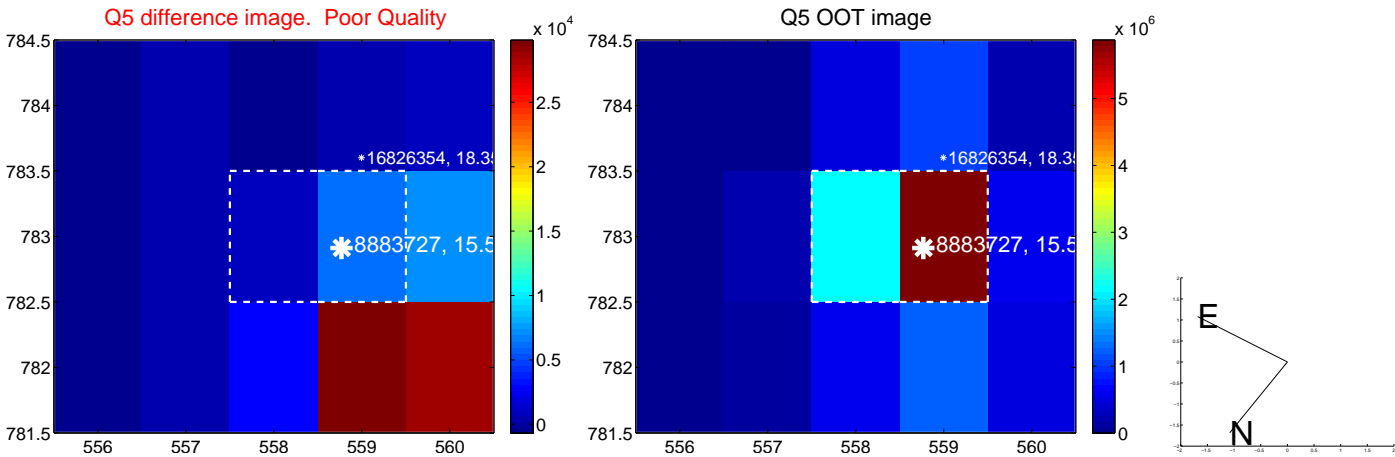


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

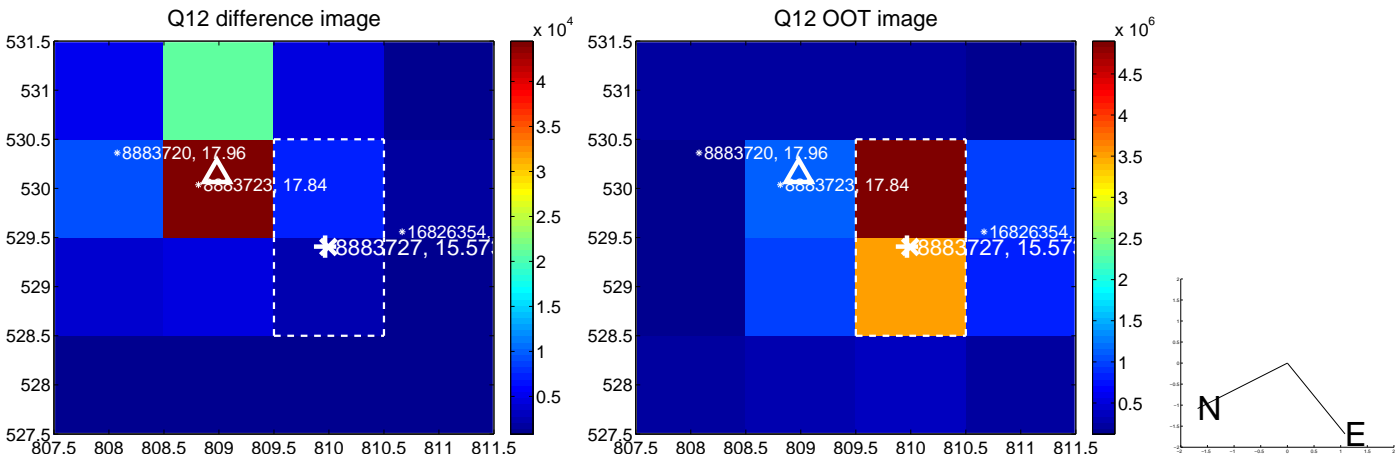
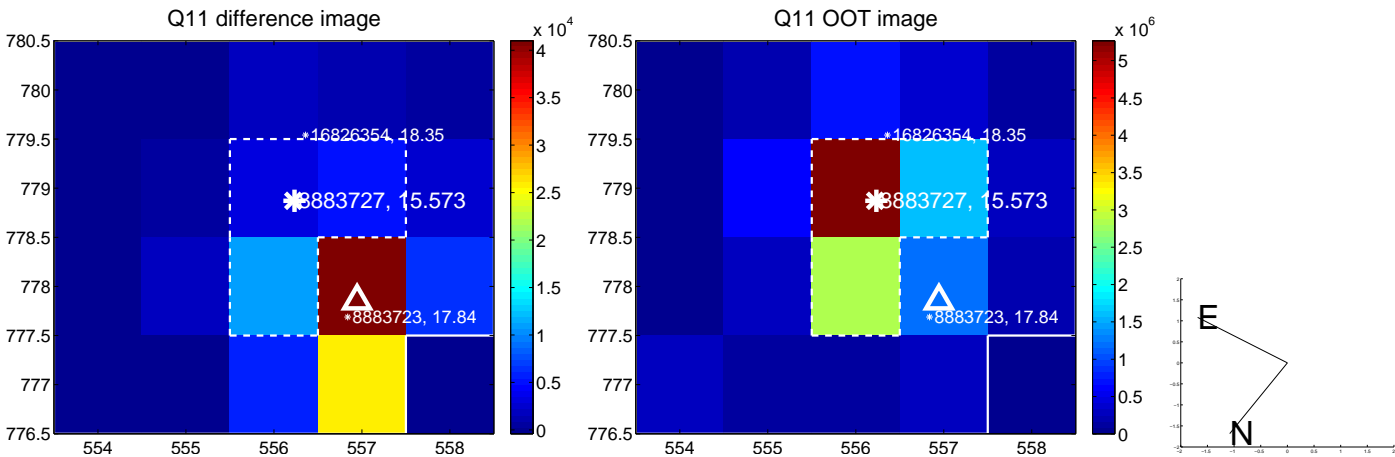
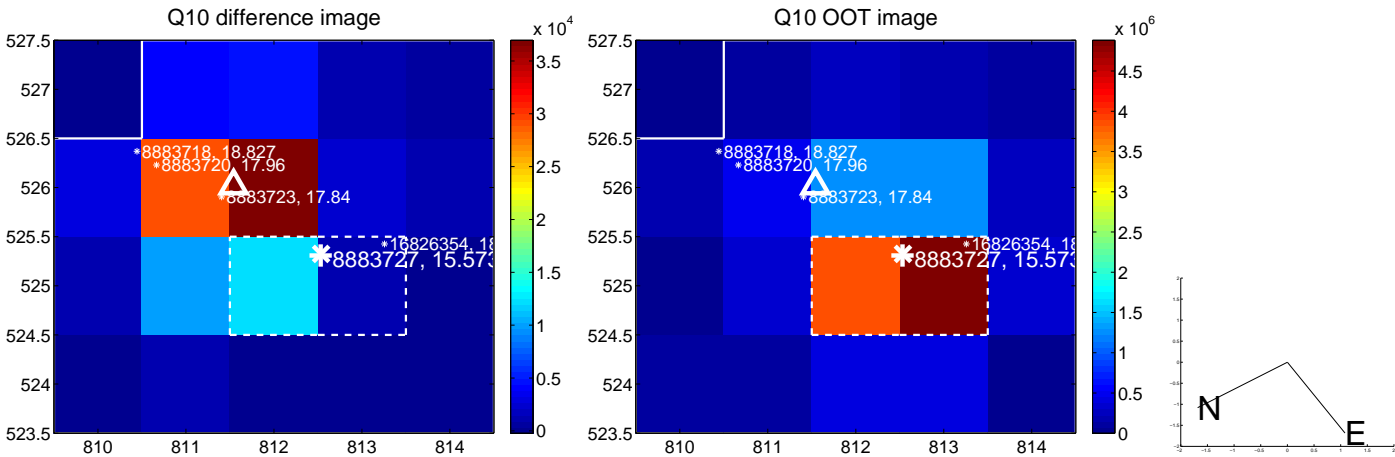
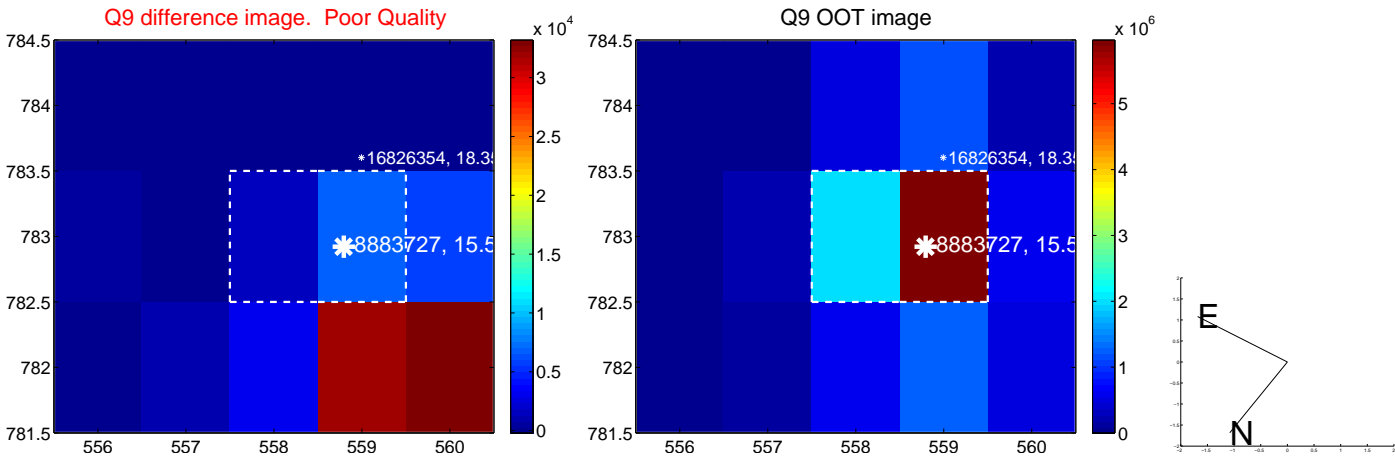
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



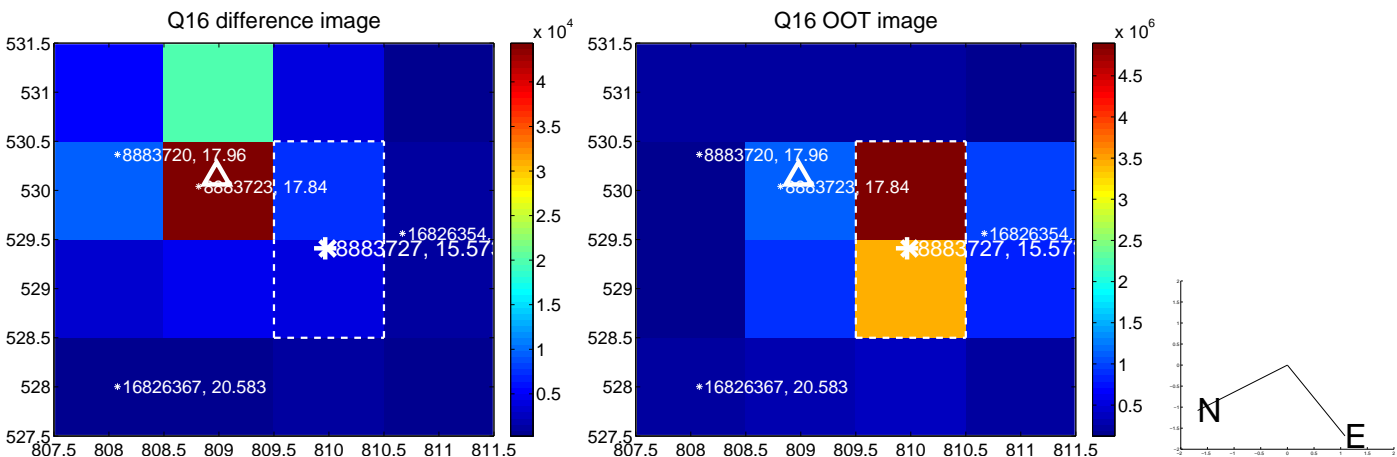
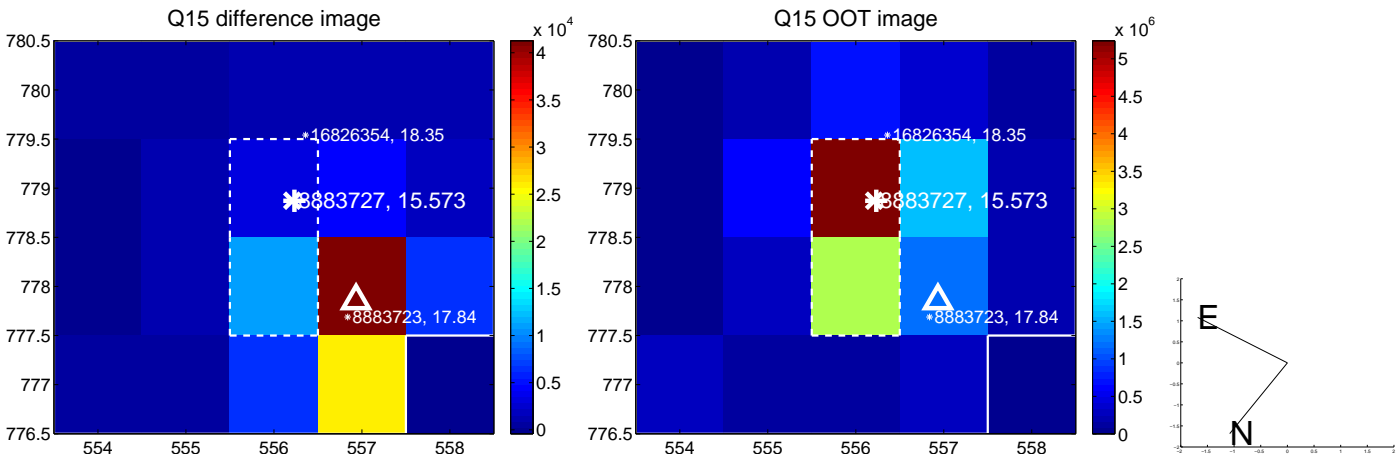
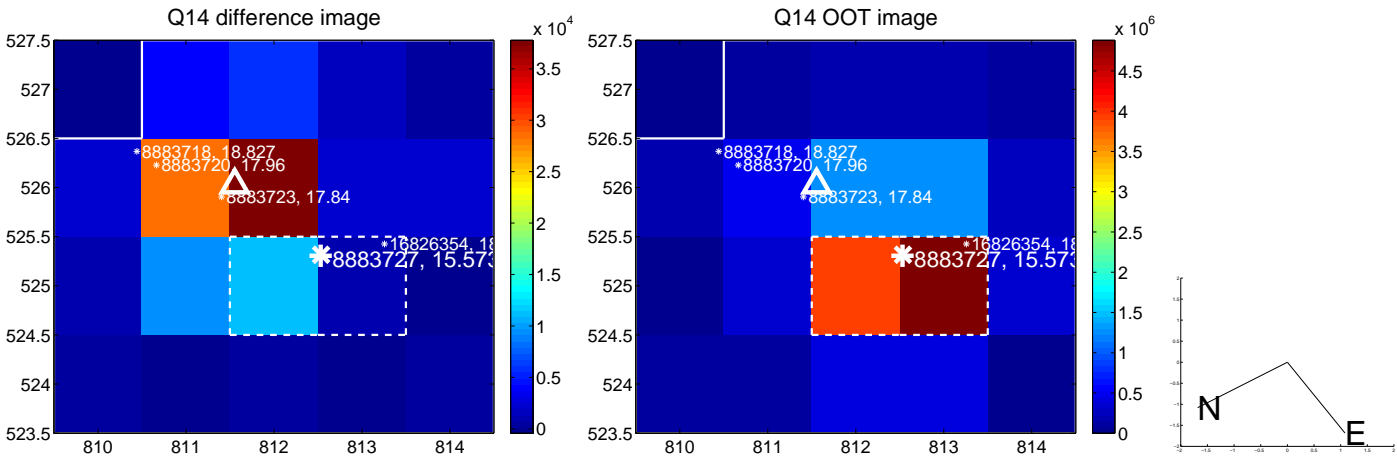
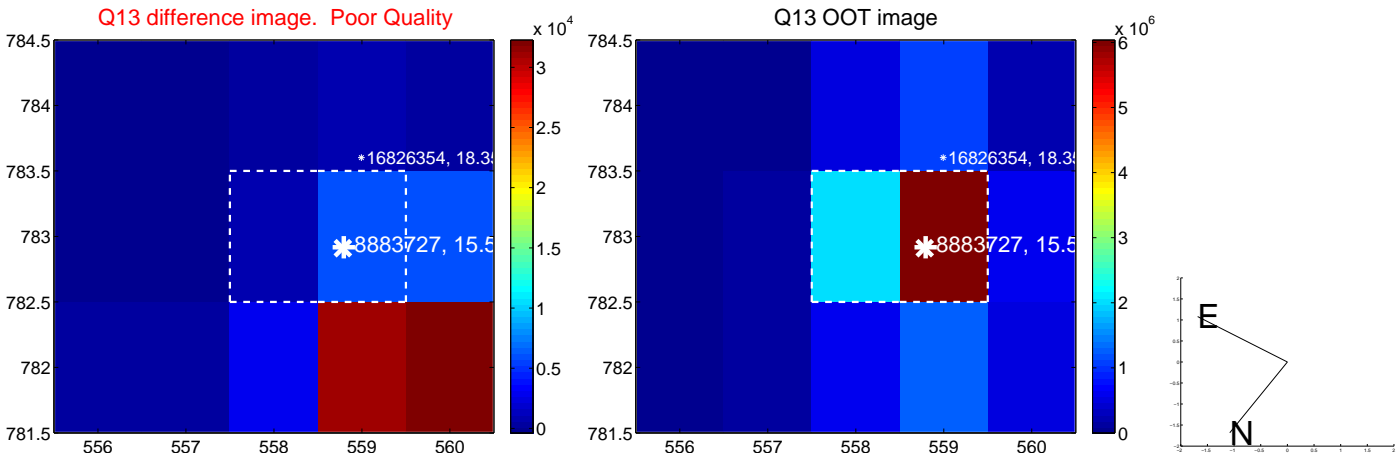
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



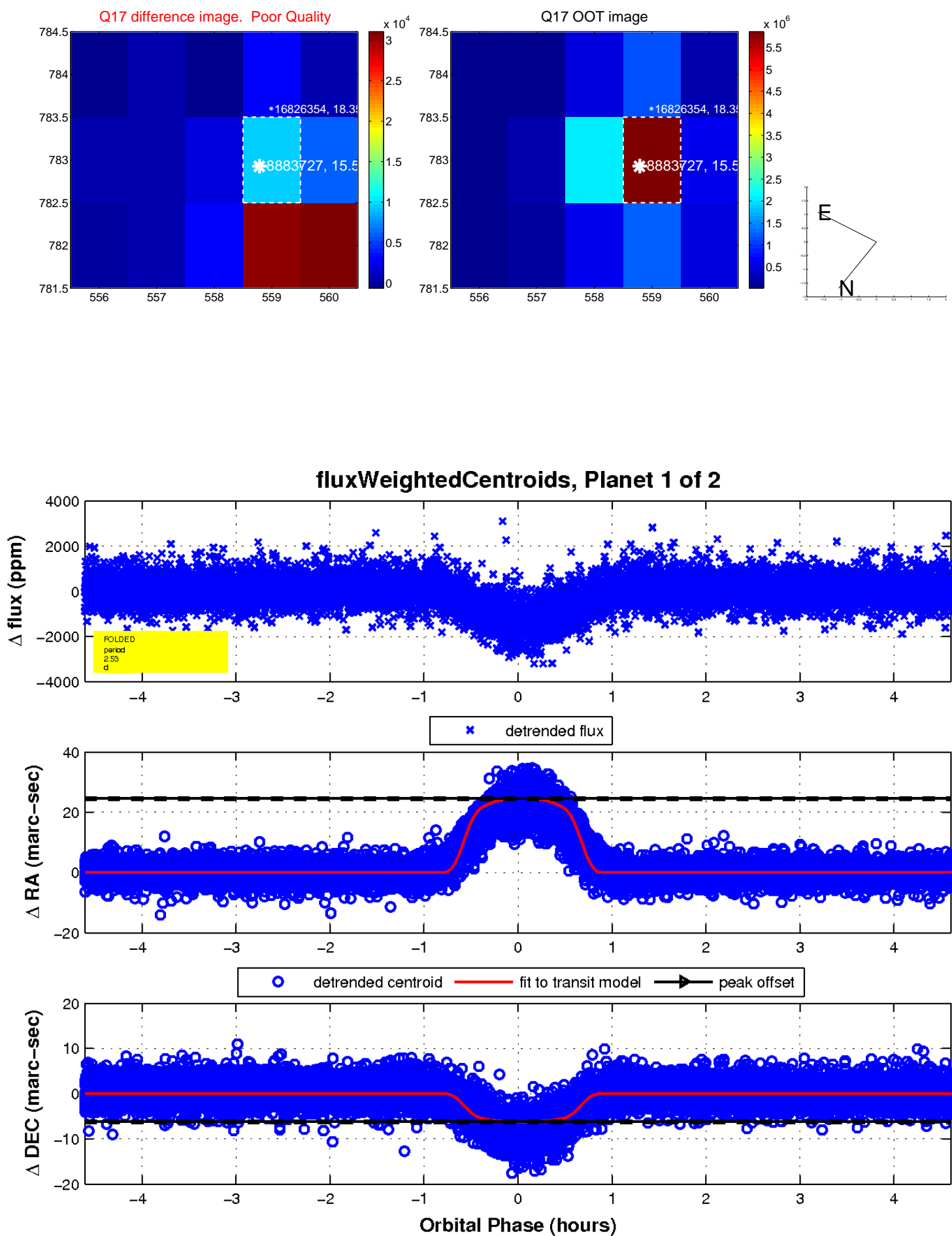
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



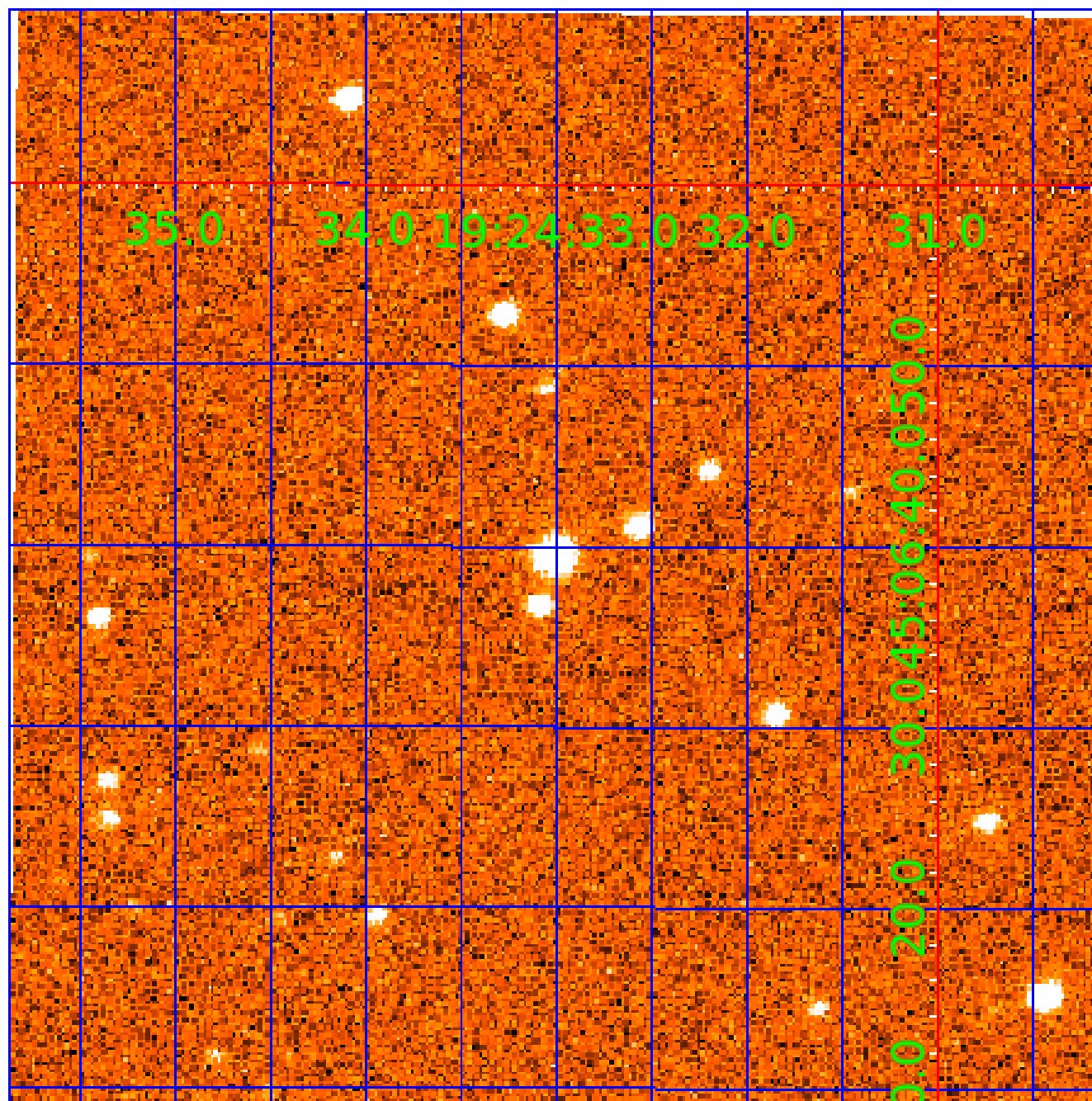
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008883727

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})
008883727-01	OBS	3822.01	2.529060	133.394246	1276.5	1.536	59.2	68.0	0.77	5465	3.29	396.39
008883727-02	OBS	No	2.529057	132.127771	446.1	1.276	19.3	23.1	0.77	5465	1.95	396.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008883727-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST
008883727-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST

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.

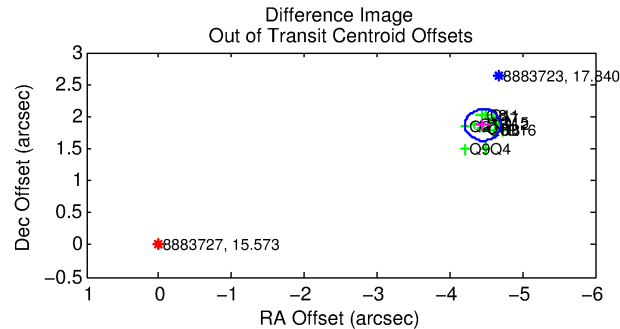
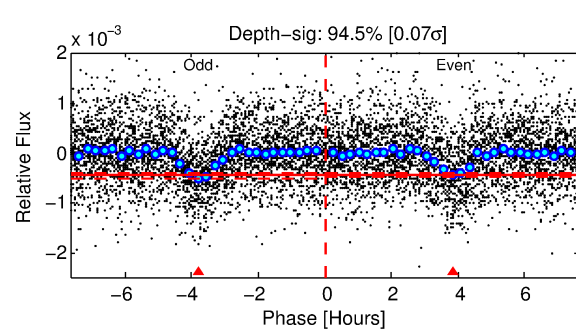
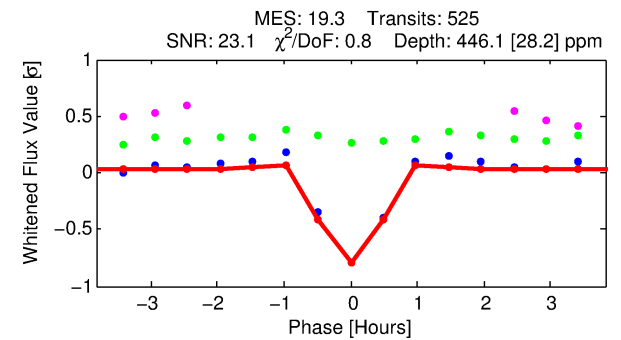
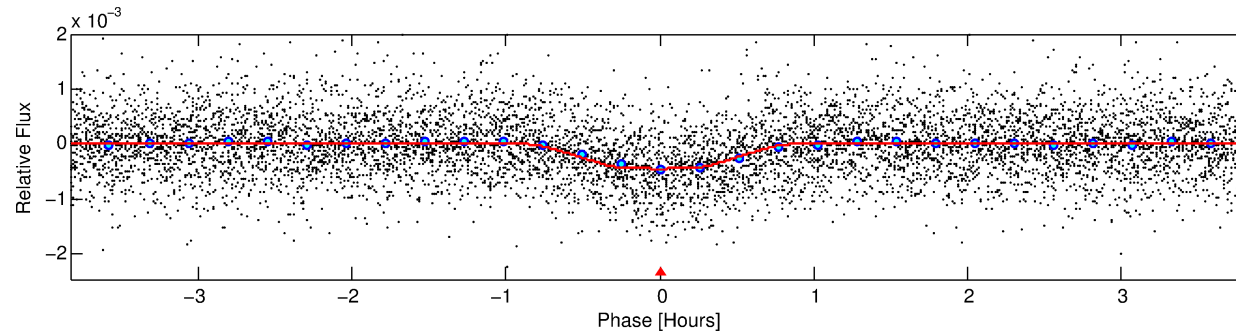
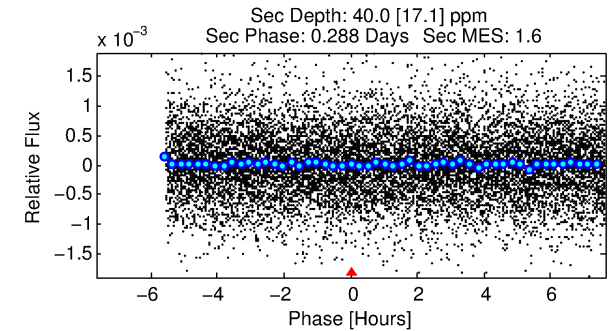
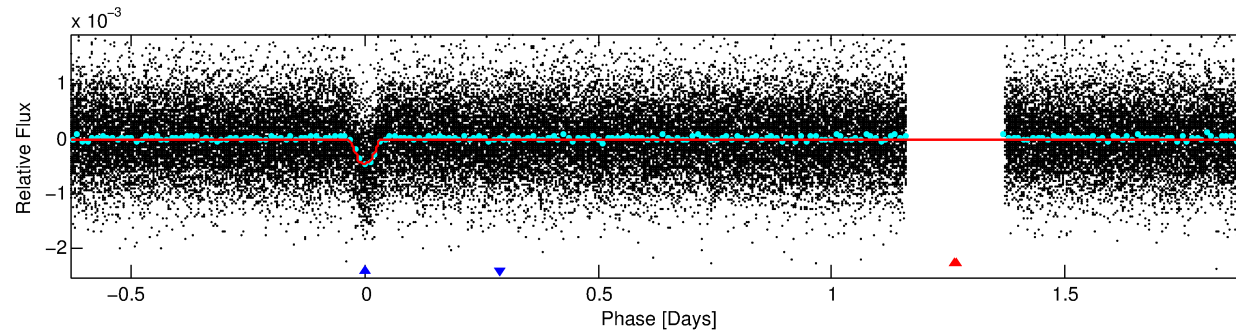
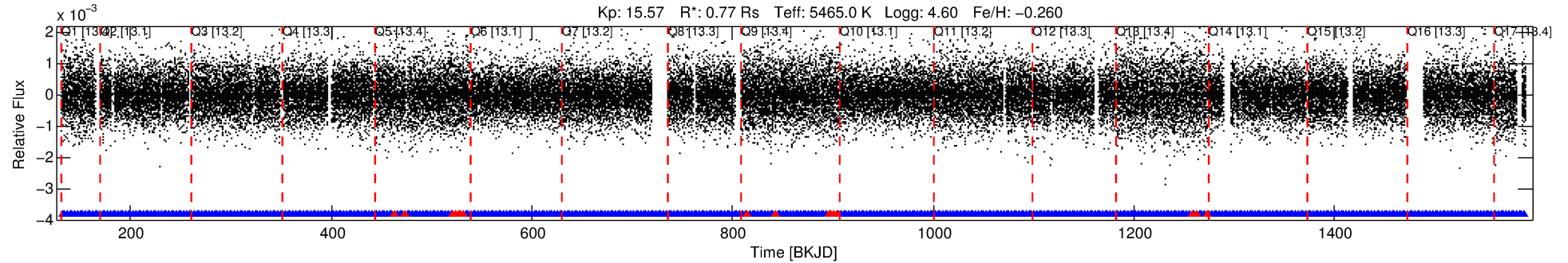
Ephemeris Match Information For 008883727-02

No Significant Match Found

DV One-Page Summary

KIC: 8883727 Candidate: 2 of 2 Period: 2.529 d
KOI: K03822 Corr: No Ephemeris Match

Kp: 15.57 R*: 0.77 Rs Teff: 5465.0 K Logg: 4.60 Fe/H: -0.260



DV Fit Results:

Period = 2.52906 [0.00001] d
Epoch = 132.1278 [0.0009] BKJD
Rp/R* = 0.0233 [0.0069]
a/R* = 7.42 [9.49]
b = 0.90 [0.28]
Seff = 396.40 [104.15]
Teq = 1138 [75] K
Rp = 1.95 [0.69] Re
a = 0.0344 [0.0055] AU
Ag = 6.86 [5.27] [1.11σ]
Teff = 2847 [528] K [3.21σ]

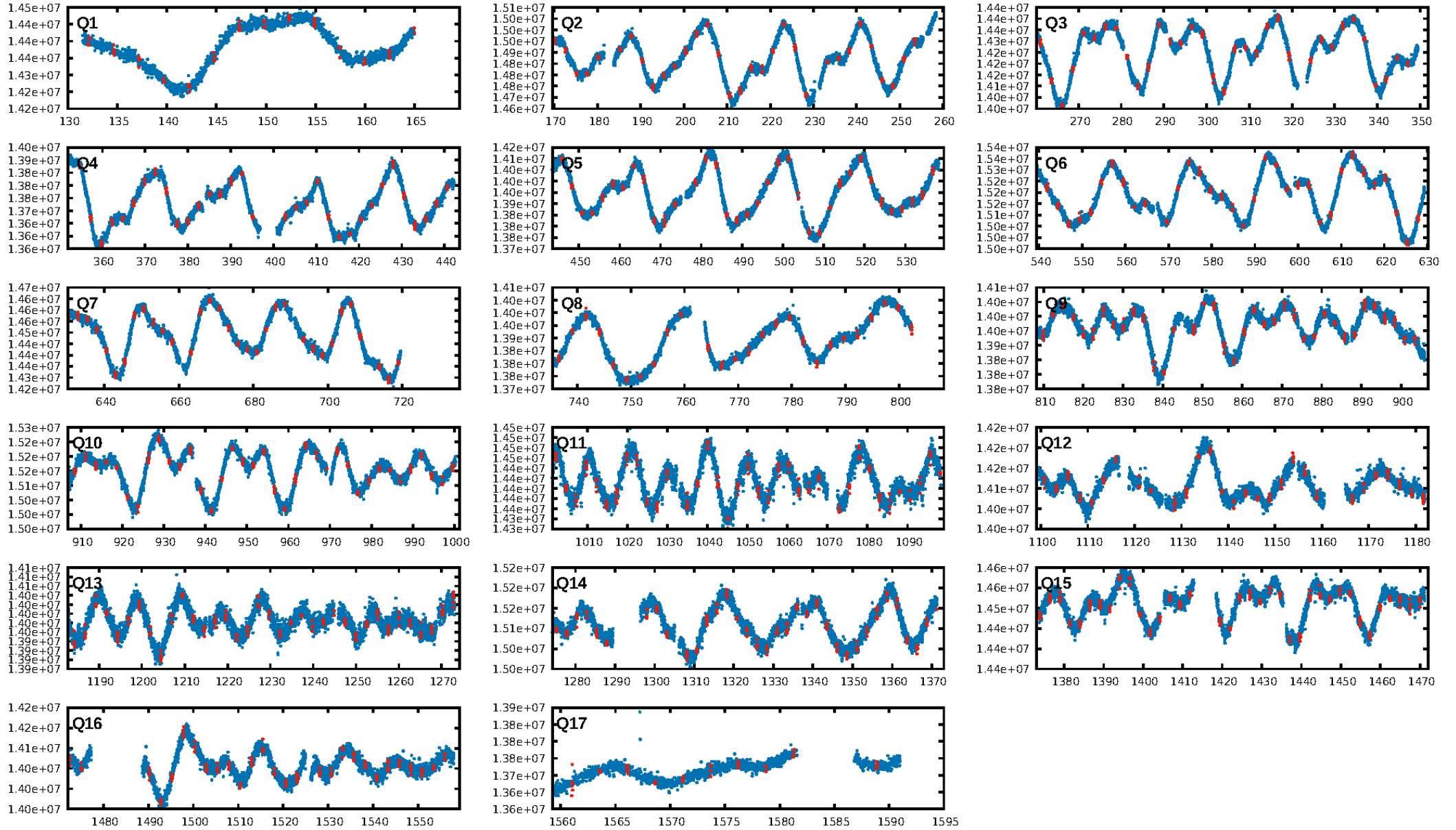
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 8.30e-78
RollingBand-fgt: 0.97 [485/501]
GhostDiagnostic-chr: -0.0887
Centroid-sig: 0.0%
Centroid-so: 15.613 arcsec [29.07σ]
OotOffset-rm: 4.831 arcsec [58.82σ]
KicOffset-rm: 4.866 arcsec [55.90σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

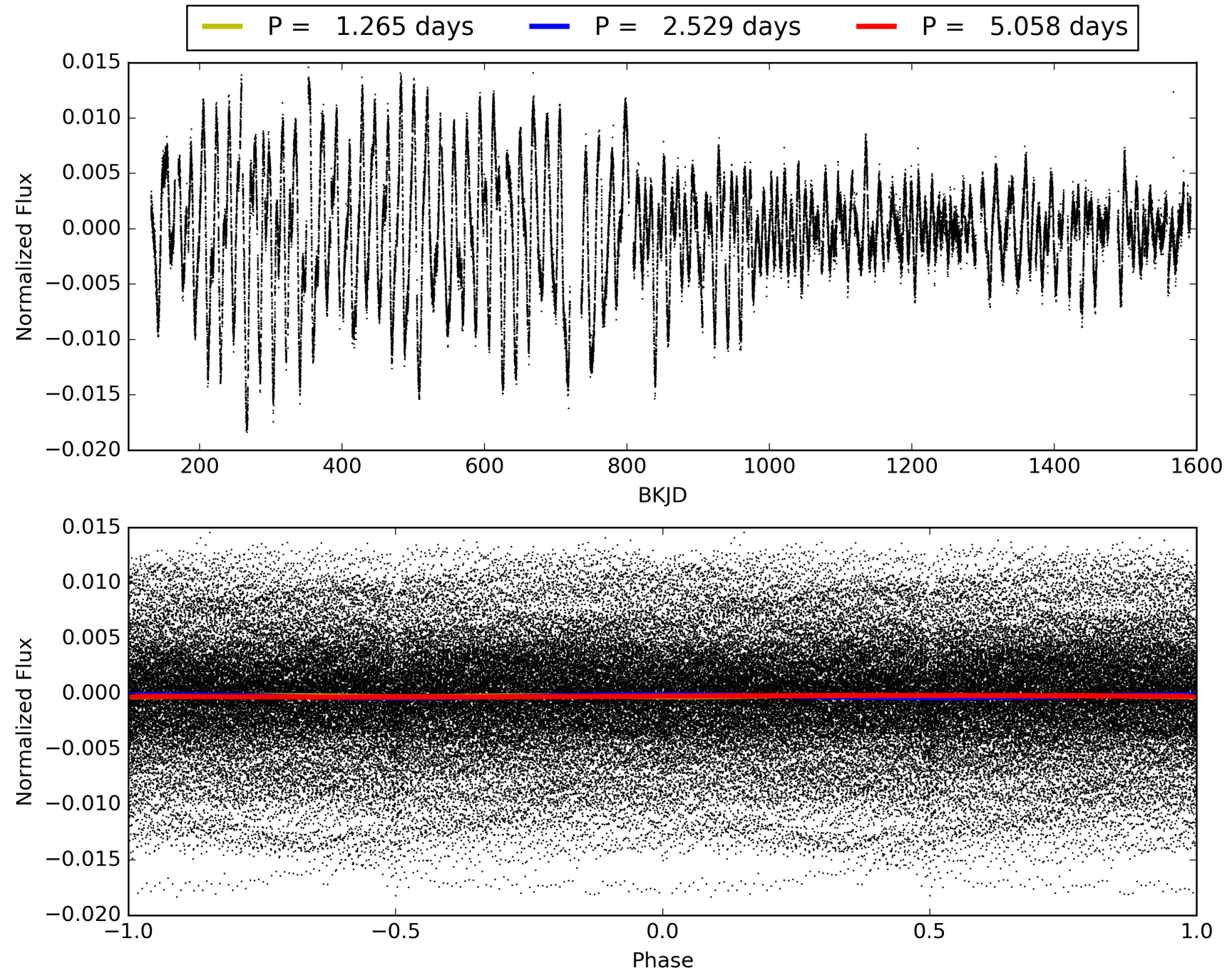
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:59:28 Z

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

TCE 008883727-02, PDC Light Curves

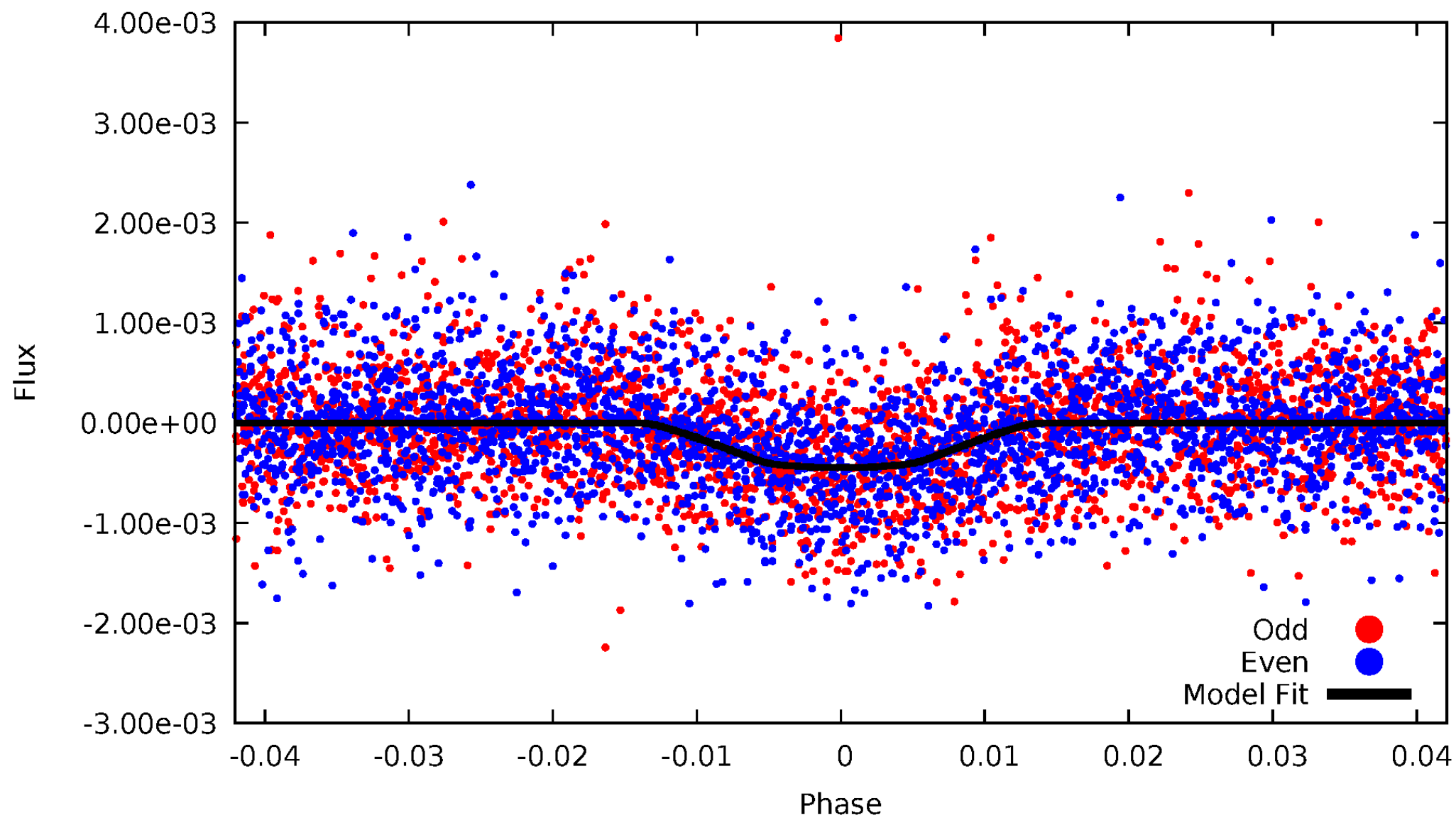


TCE 008883727-02



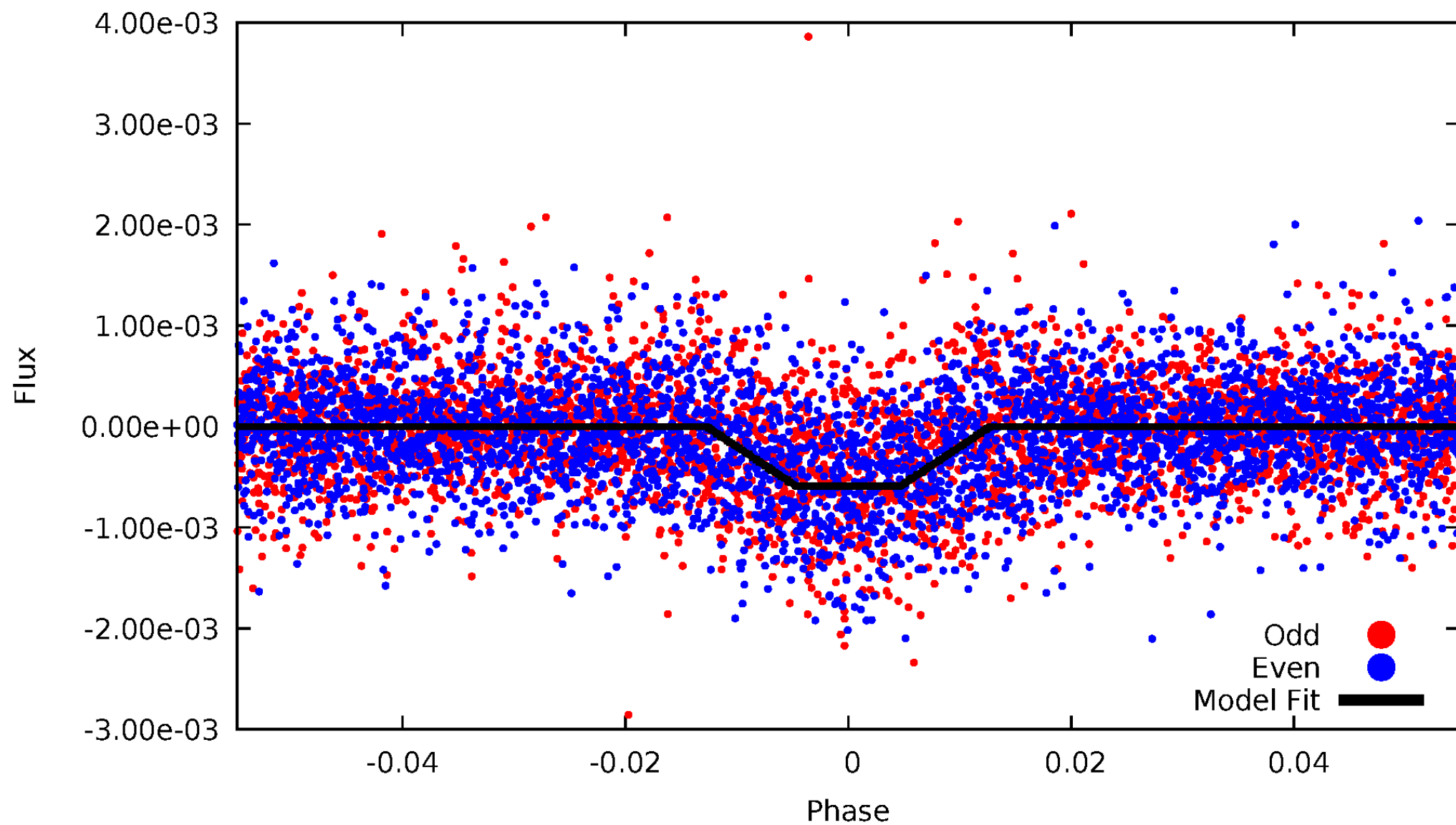
DV Odd/Even

TCE 008883727-02



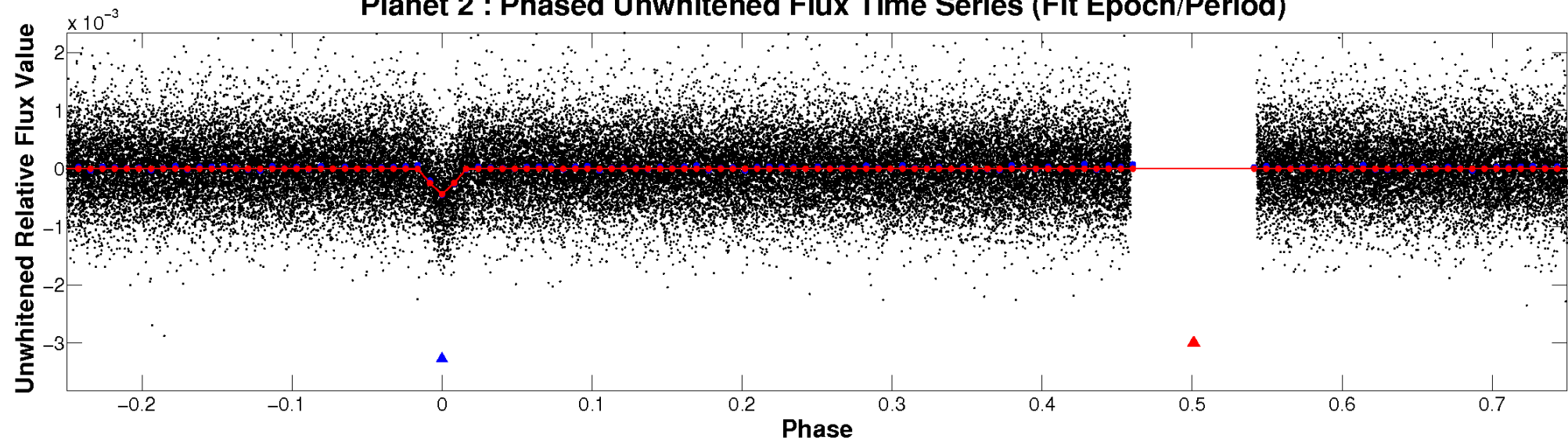
ALT Odd/Even

TCE 008883727-02

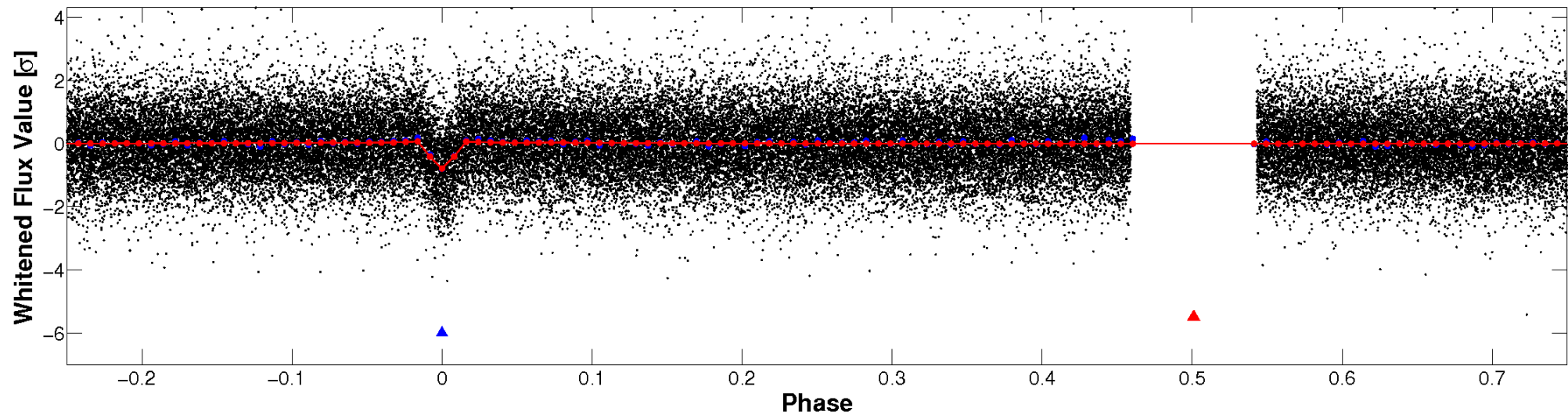


Non-Whitened Vs. Whitened Light Curve

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

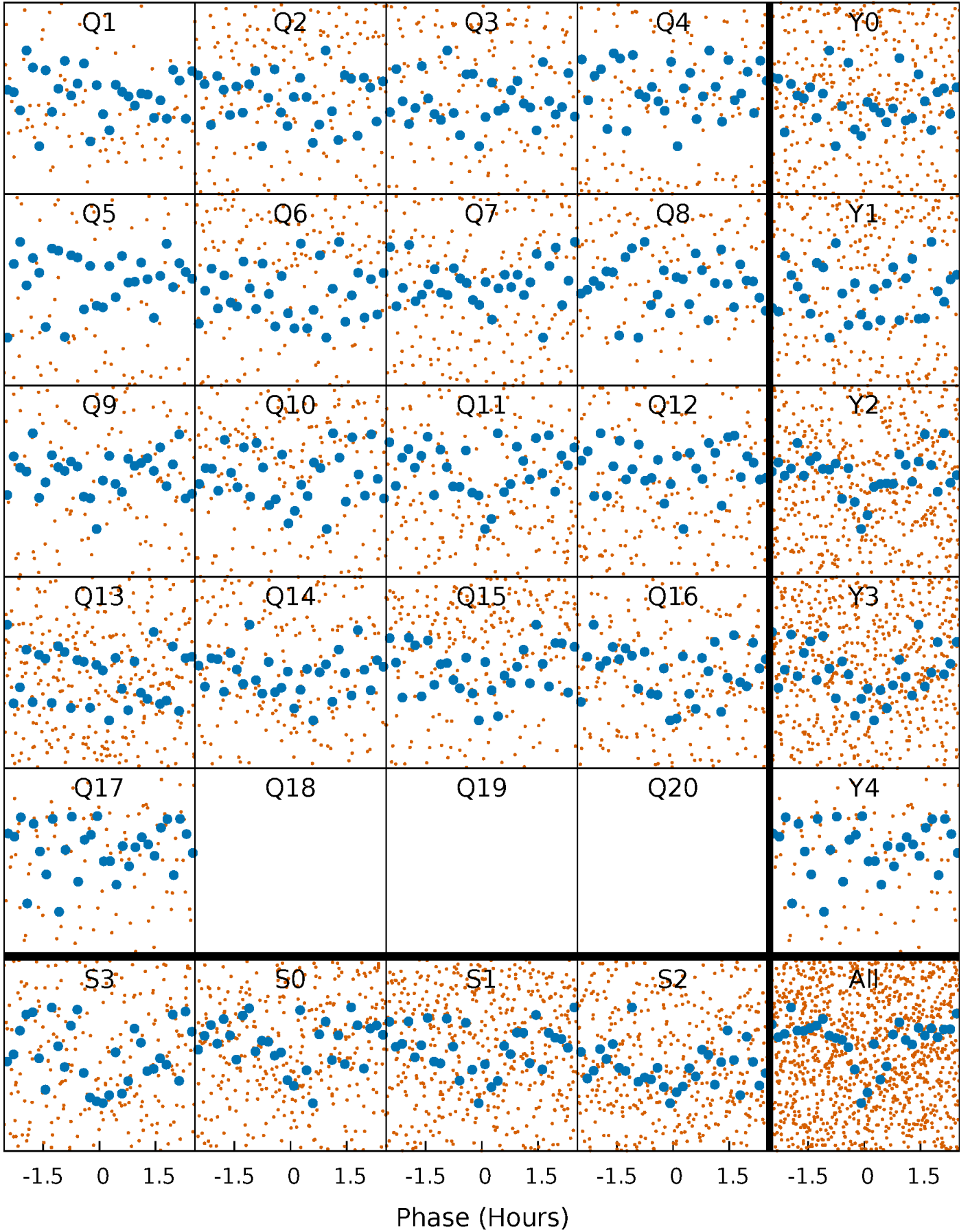


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



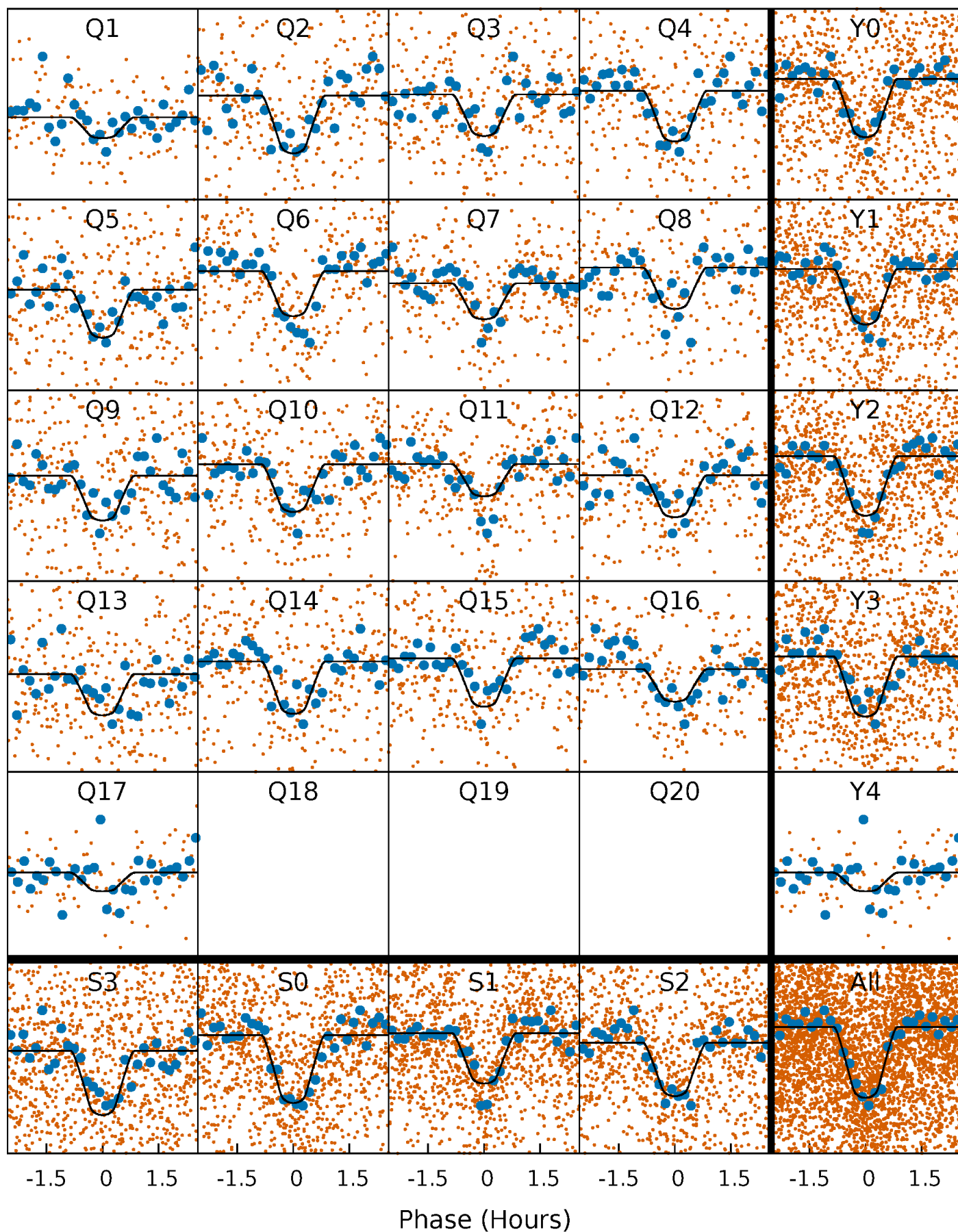
PDC Quarter-Phased Transit Curves

TCE 008883727-02 P= 2.529057 Days $T_0=132.127771$ (BKJD)



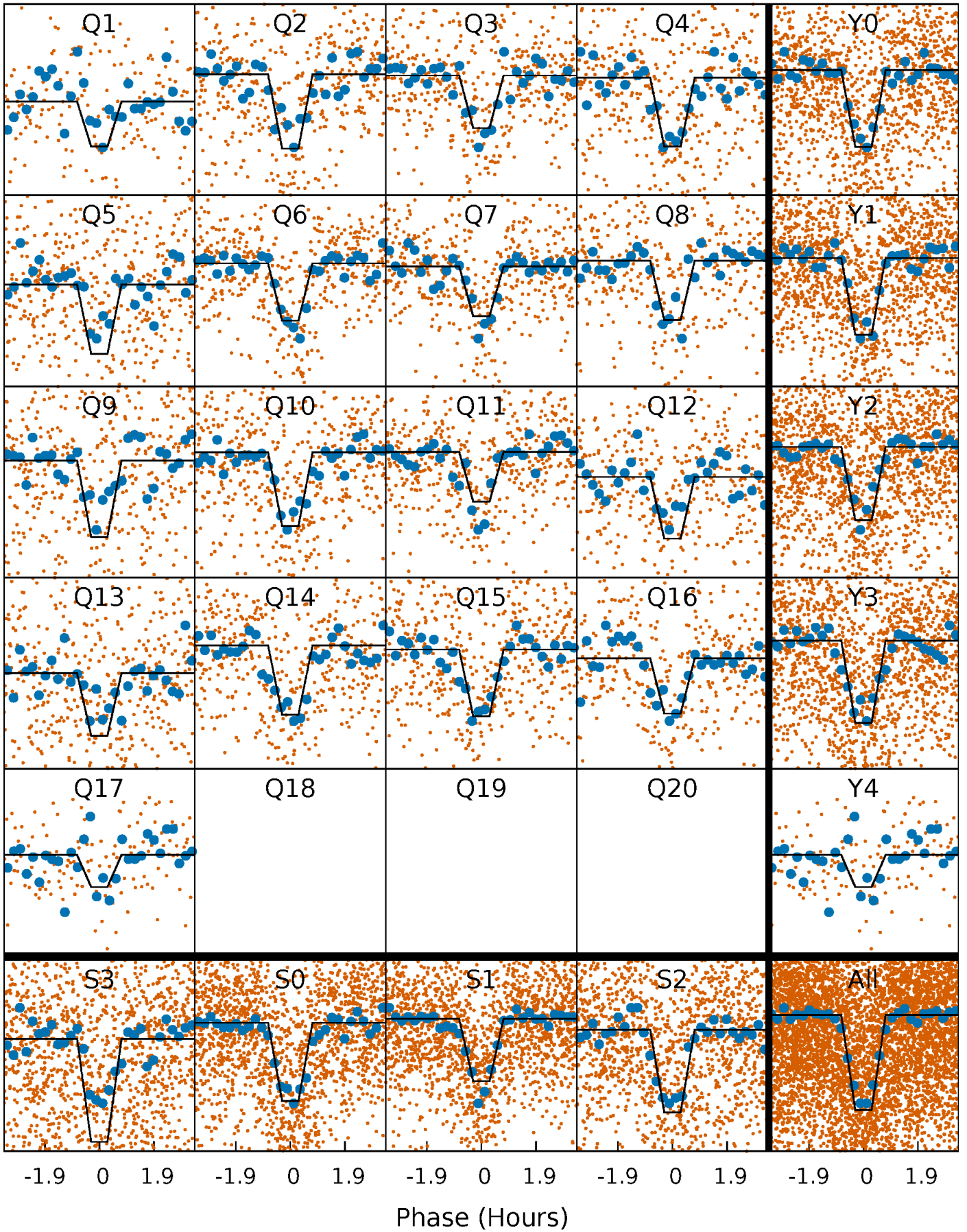
DV Quarter-Phased Transit Curves

TCE 008883727-02 P= 2.529057 Days $T_0=132.127771$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

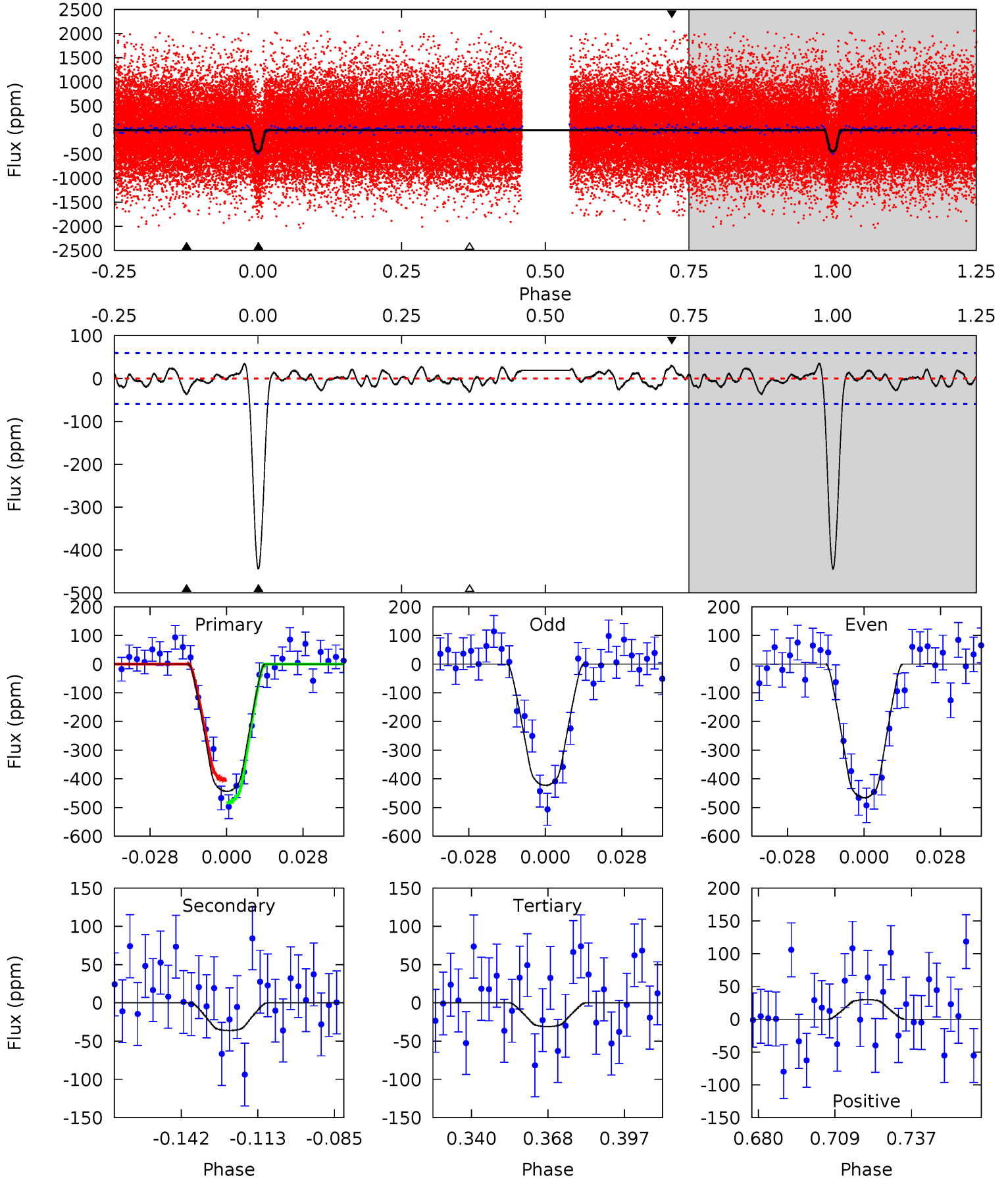
TCE 008883727-02 $P = 2.529079$ Days $T_0 = 132.123859$ (BKJD)



DV Model-Shift Uniqueness Test

008883727-02, P = 2.529057 Days, E = 129.598714 Days

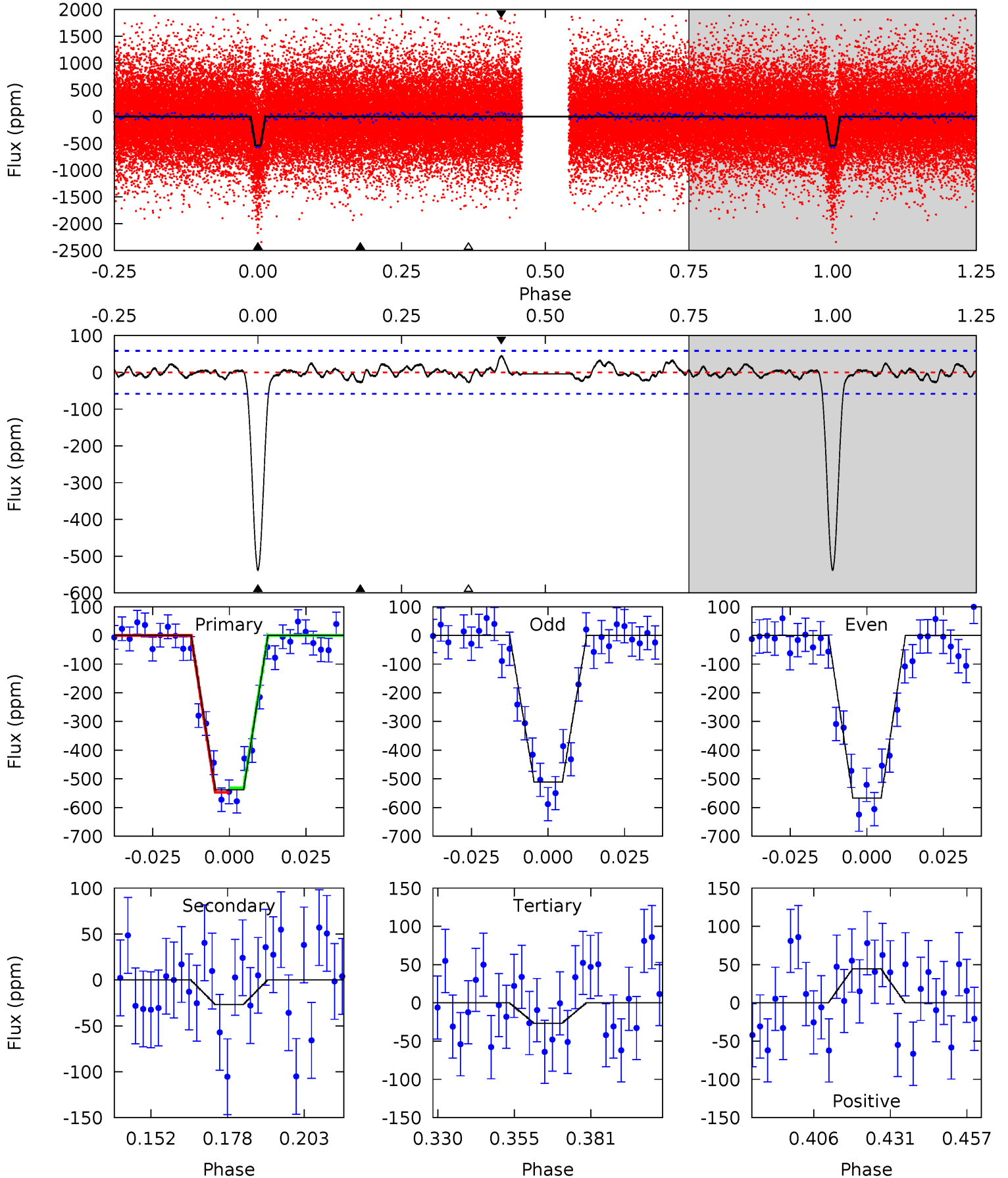
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.9	2.93	2.51	2.42	4.82	2.19	0.98	33.4	33.5	0.42	0.51	1.75	0.97	0.07	3.18



Alt Model-Shift Uniqueness Test

008883727-02, P = 2.529079 Days, E = 129.594780 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.5	2.21	2.19	3.69	4.84	2.24	1.05	42.3	40.8	0.02	-1.48	2.32	0.98	0.08	0.65



Stellar Parameters For KIC 008883727

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5465^{+162}_{-146}	$4.598^{+0.032}_{-0.128}$	$-0.260^{+0.300}_{-0.300}$	$0.766^{+0.147}_{-0.068}$	$0.857^{+0.080}_{-0.098}$	$2.691^{+0.474}_{-1.039}$
	+3%/-3%	+1%/-3%	+115%/-115%	+19%/-9%	+9%/-11%	+18%/-39%
Source	PHO1	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 008883727-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-36 ± 12	$1.94^{+0.67}_{-0.61}$	1617^{+77}_{-61}	3317^{+443}_{-331}	$6.045^{+6.796}_{-3.030}$
Alt.	-27 ± 12	$2.10^{+0.65}_{-0.63}$	1619^{+75}_{-59}	3064^{+412}_{-332}	$3.661^{+4.758}_{-1.978}$

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

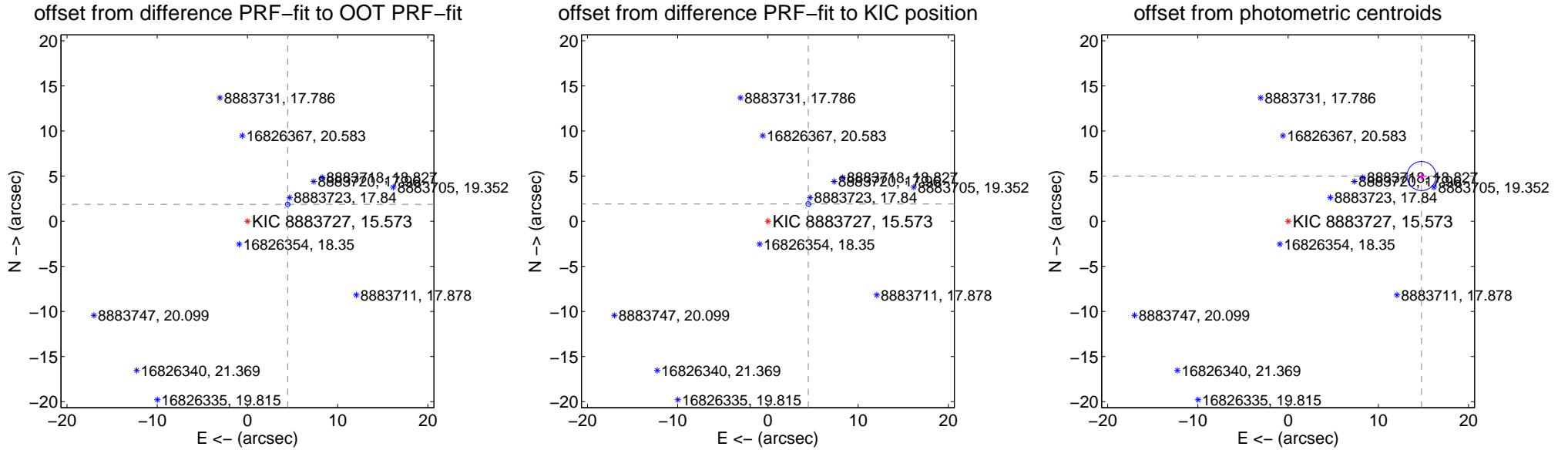
DV Centroid Data

Supplemental centroid analysis for 008883727-02. Kepler magnitude: 15.57. Transit SNR 23.12

There are 13 quarters with good PRF difference image offsets

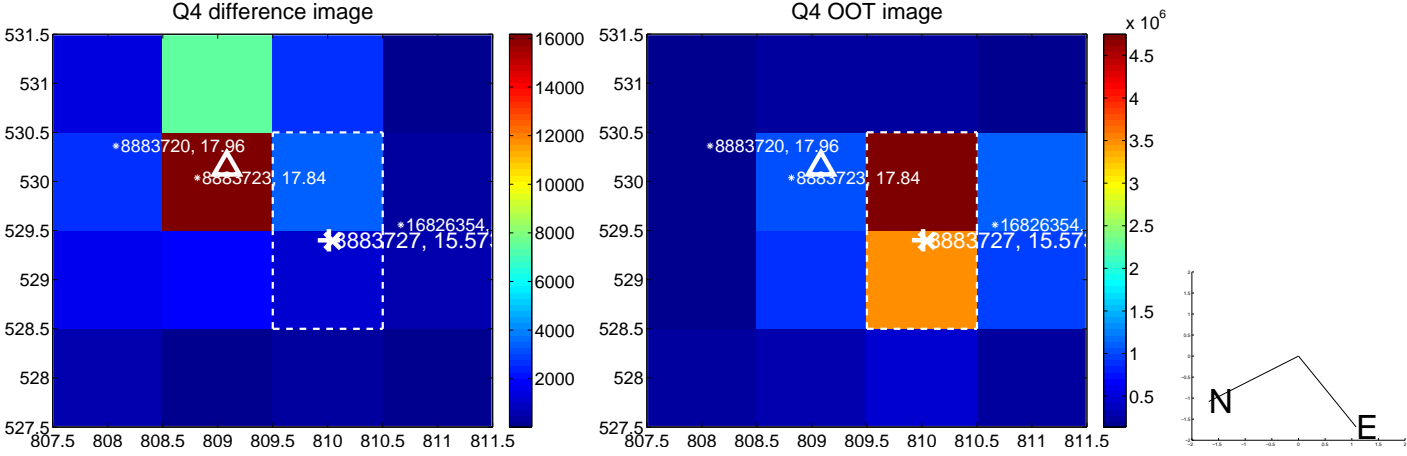
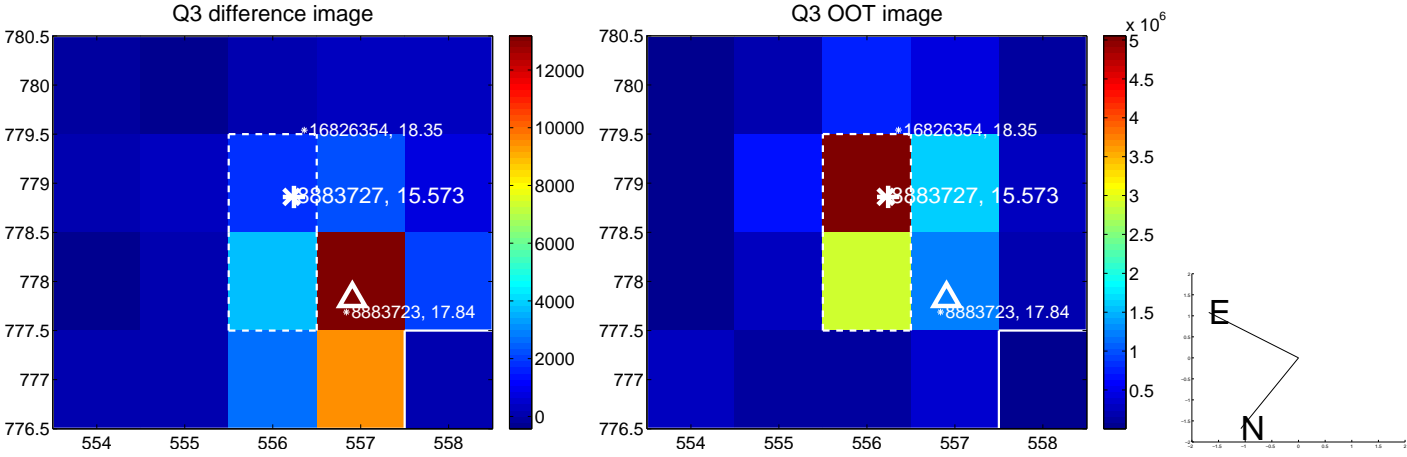
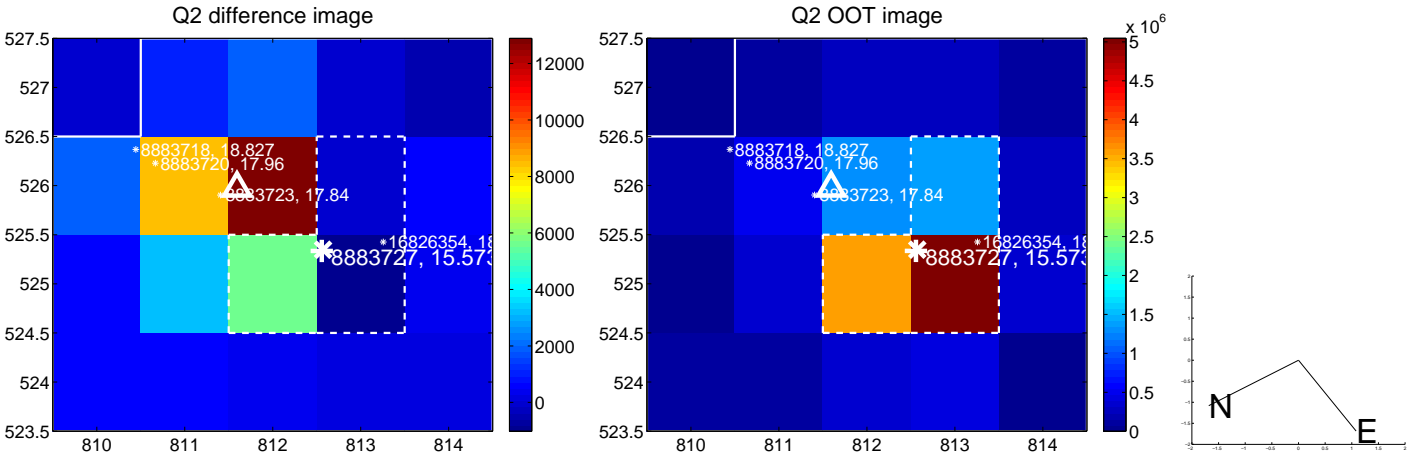
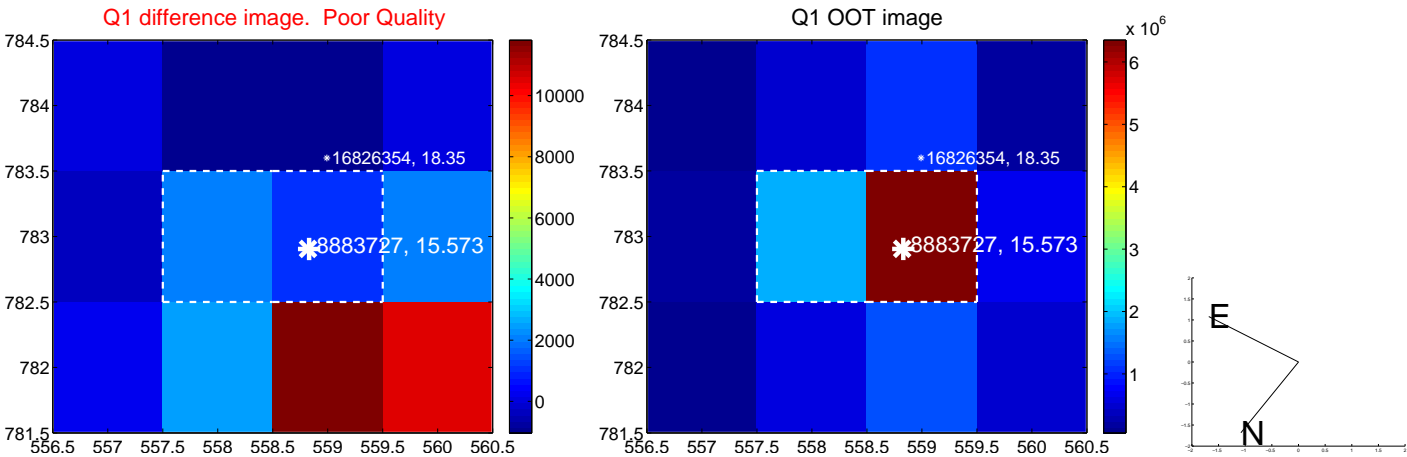
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.831 ± 0.082	58.82	-4.454 ± 0.083	1.870 ± 0.079
PRF-fit source offset from KIC position	4.866 ± 0.087	55.90	-4.473 ± 0.090	1.915 ± 0.071
photometric centroid source offset	15.61 ± 0.54	29.07	-14.79 ± 0.55	5.01 ± 0.46

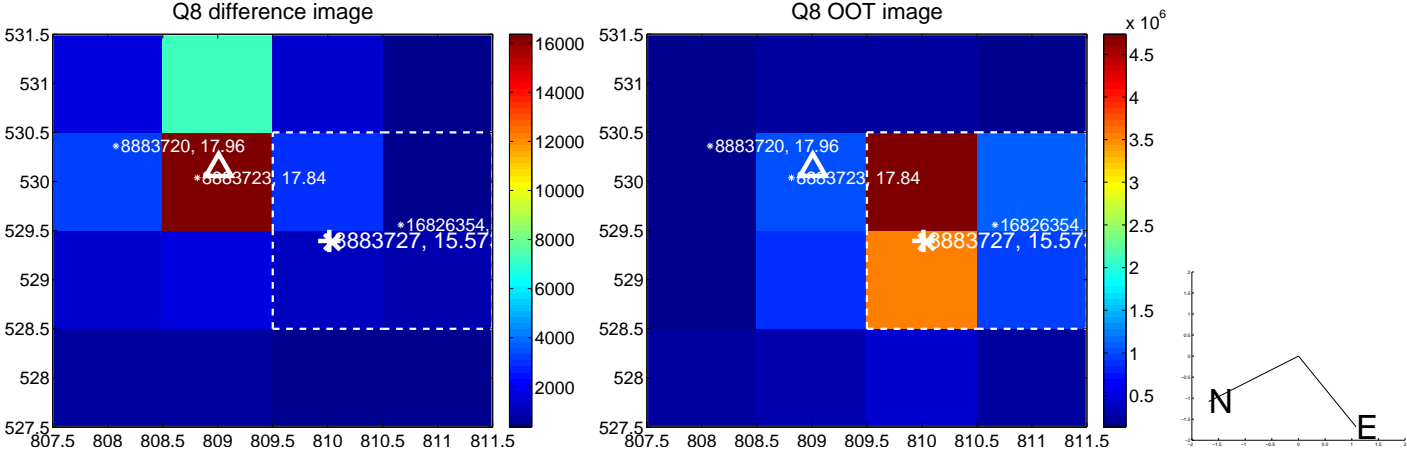
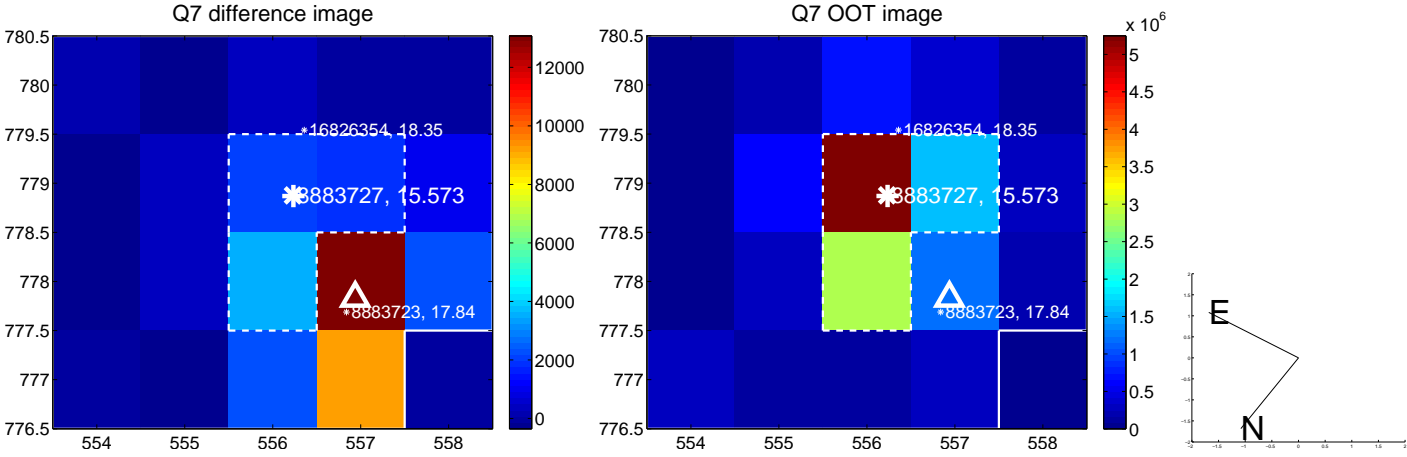
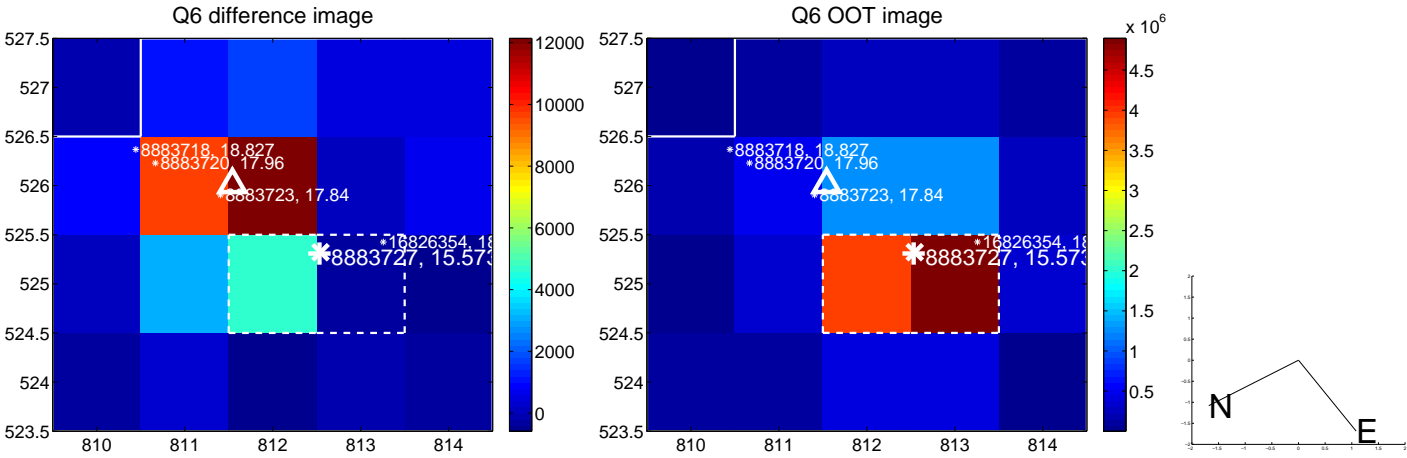
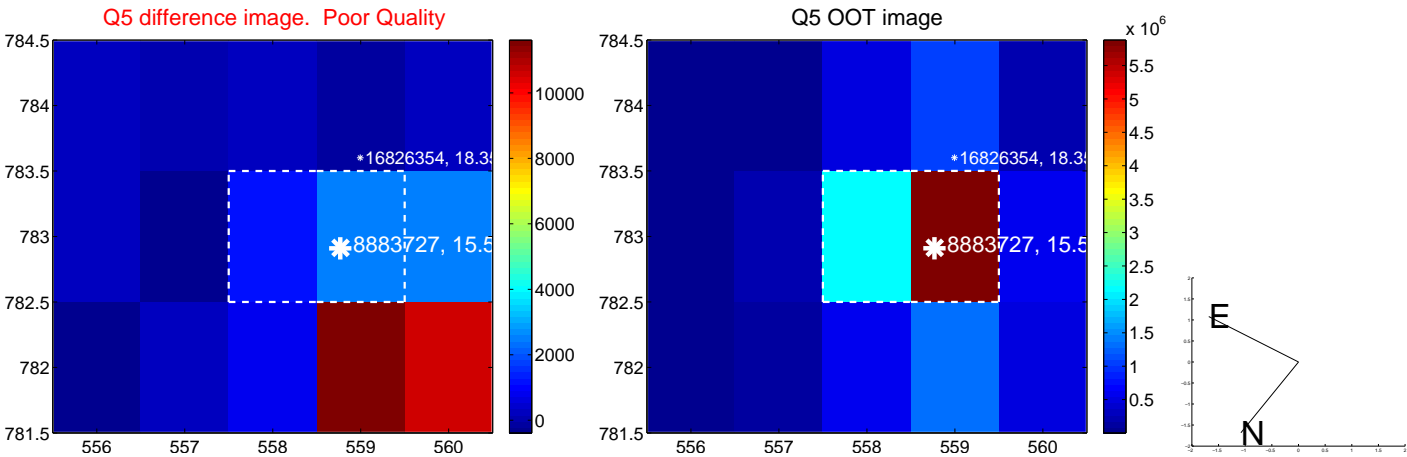


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

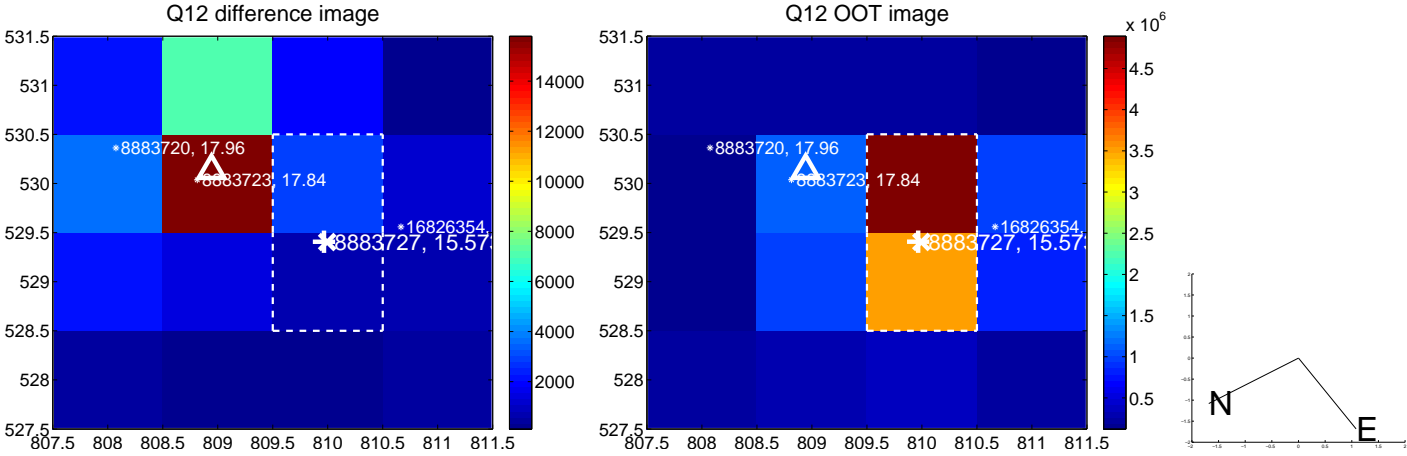
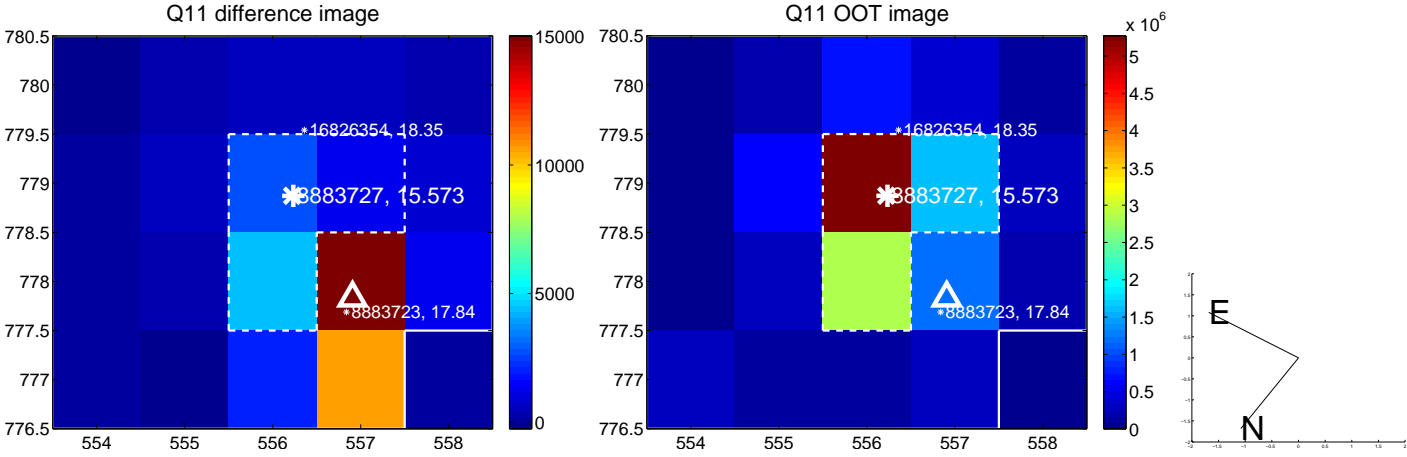
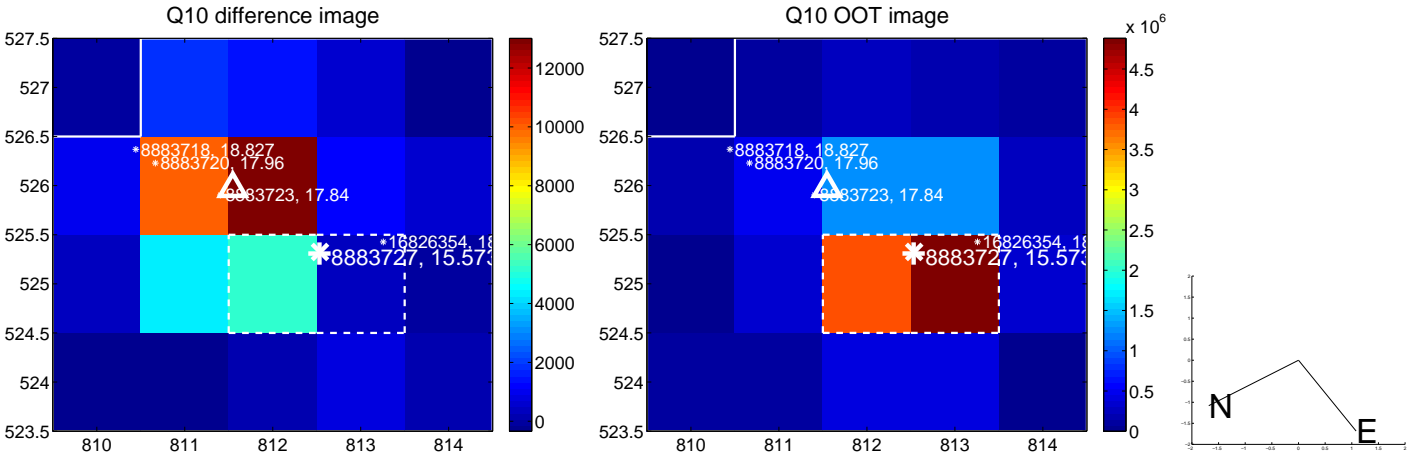
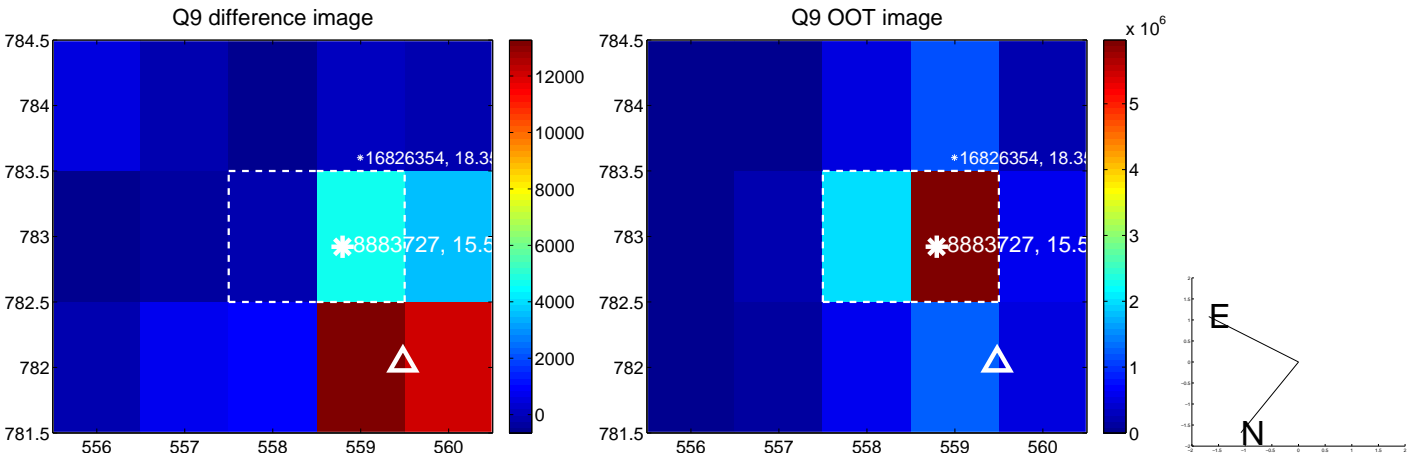
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



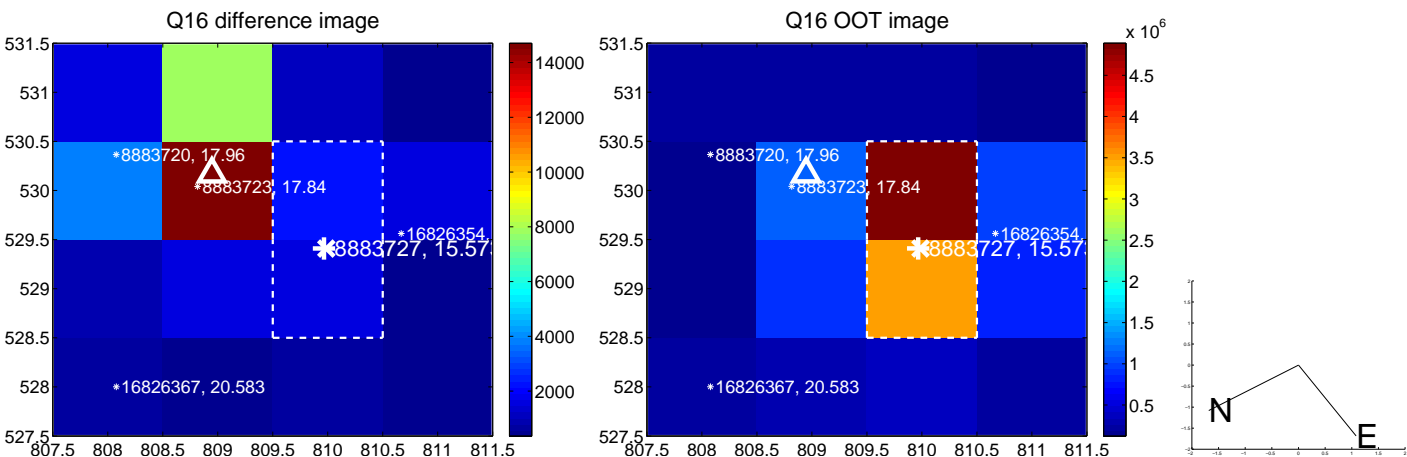
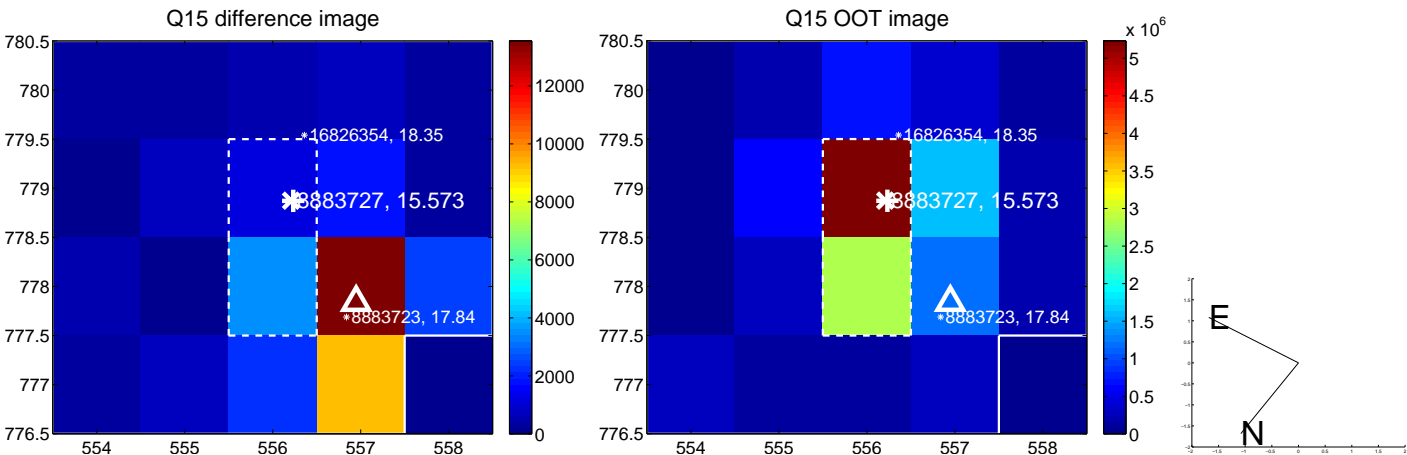
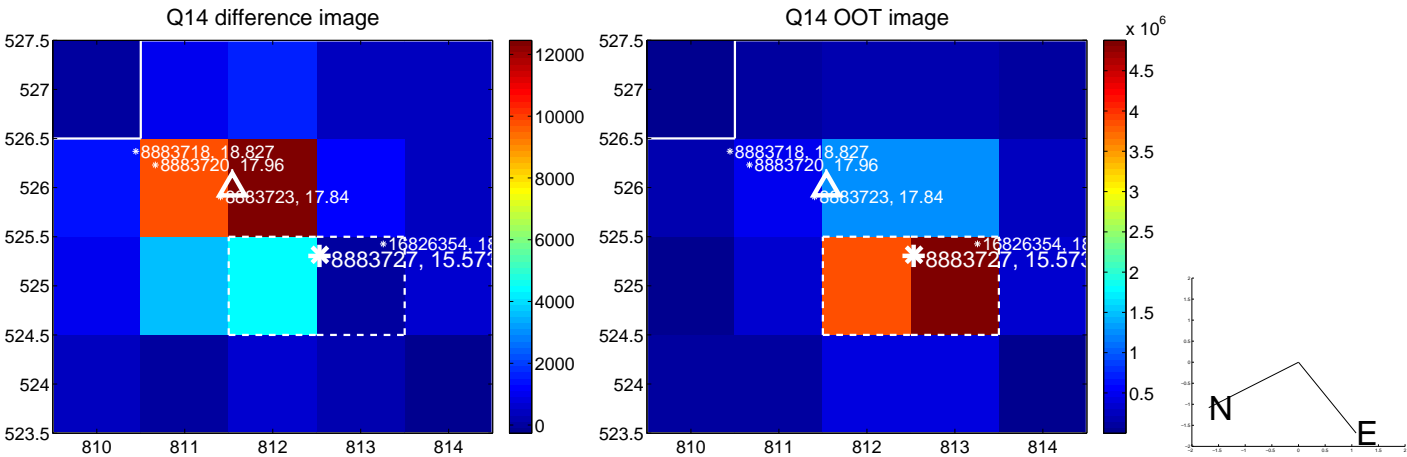
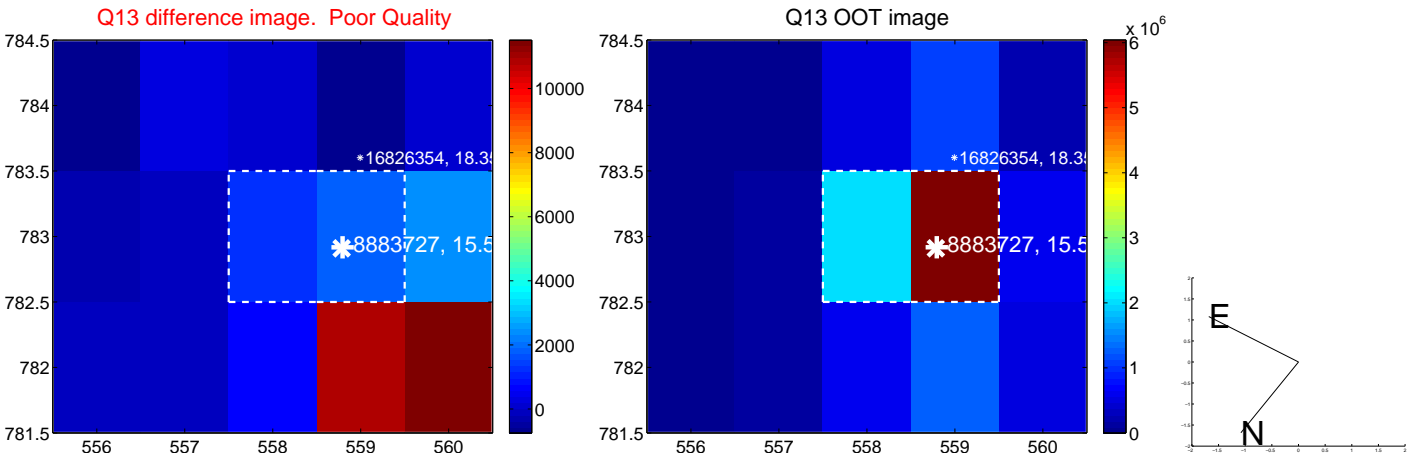
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



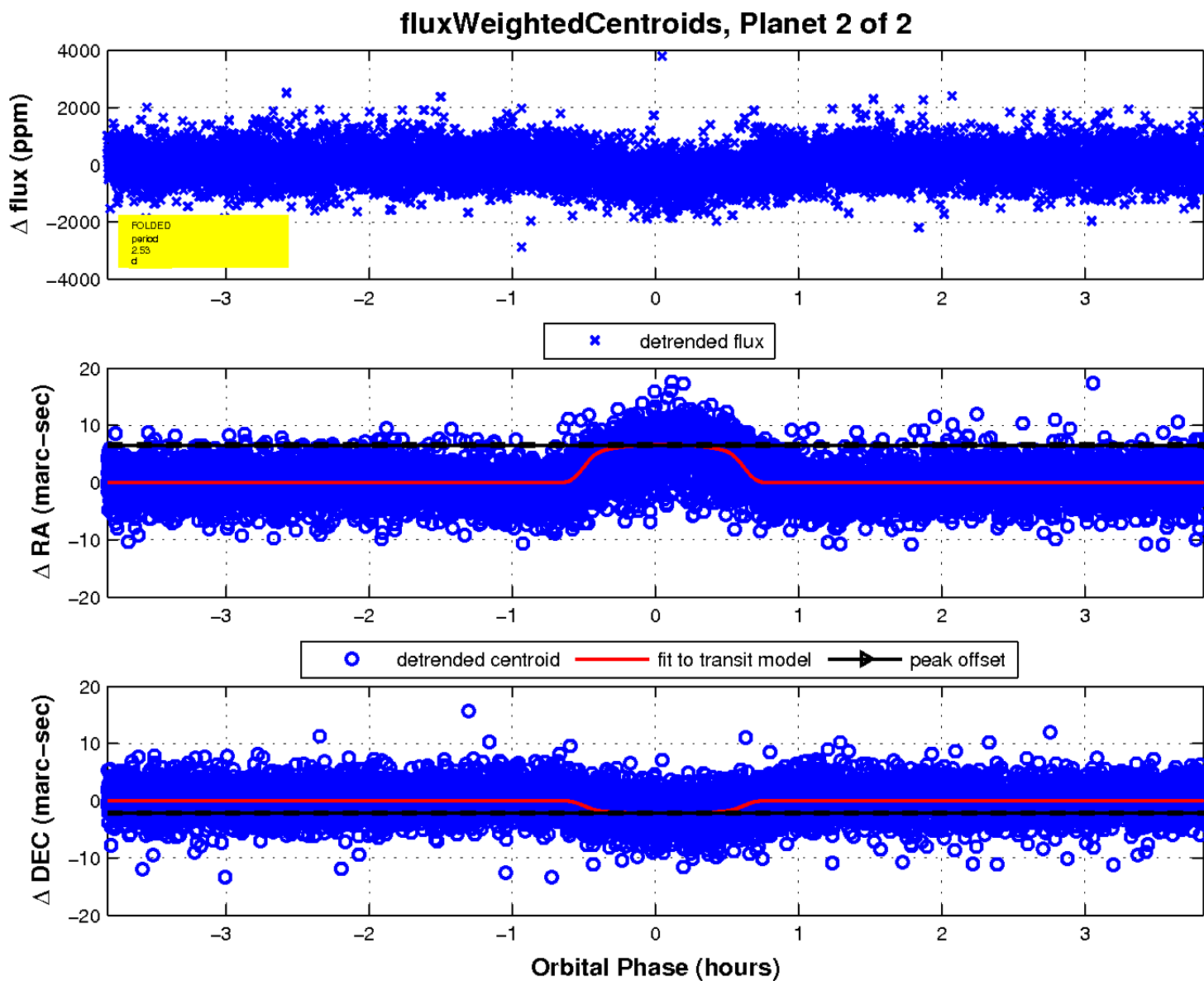
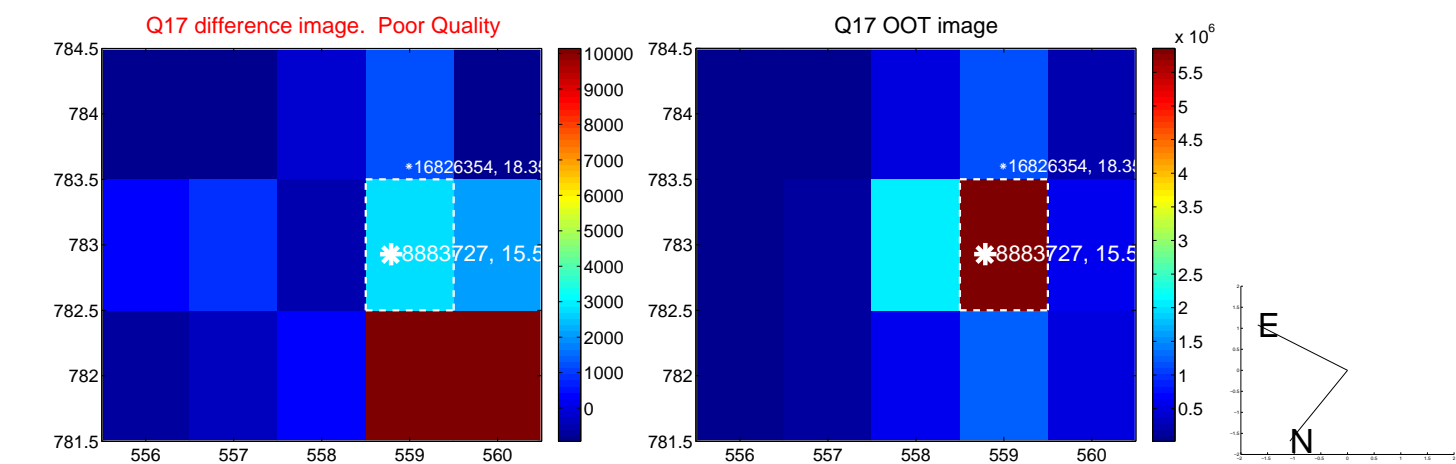
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

