

KIC 004947726

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})
004947726-01	OBS	6478.01	4.726086	132.923080	182291.1	4.404	2797.7	5494.8	0.86	5873	41.88	268.95
004947726-02	OBS	No	4.726090	135.524677	14795.4	3.285	651.3	635.5	0.86	5873	12.20	268.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004947726-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
004947726-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

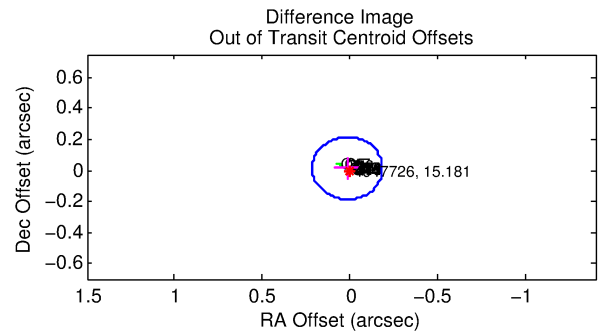
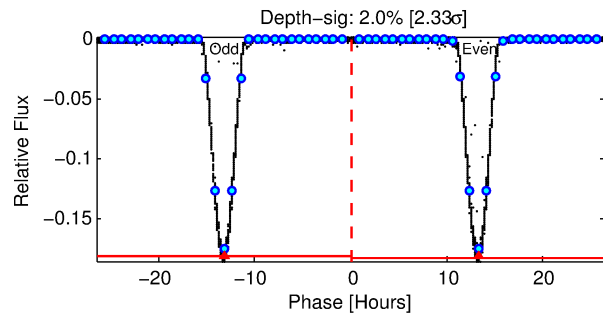
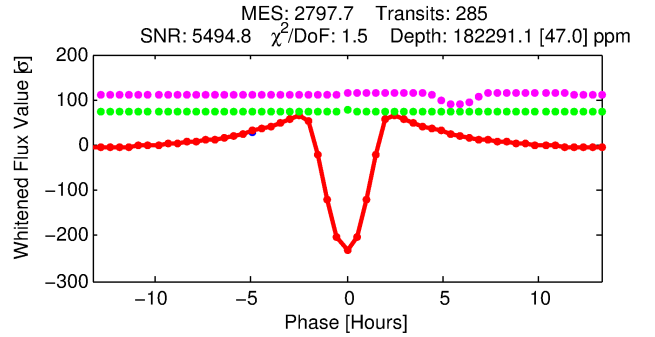
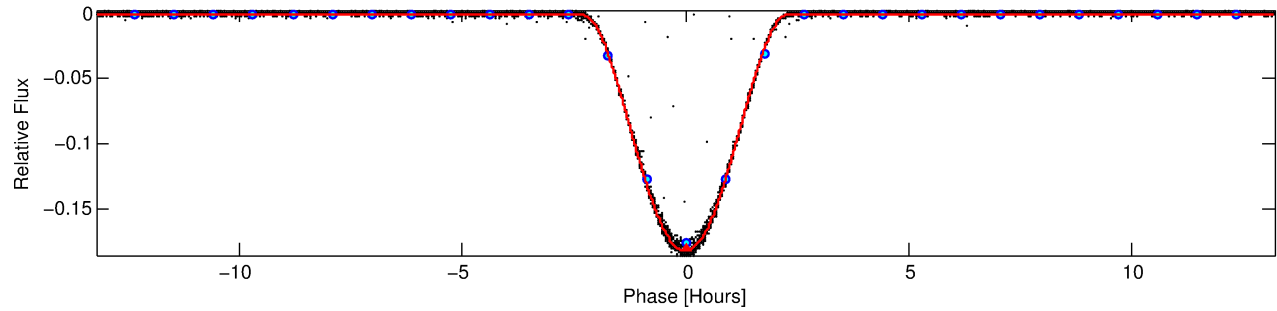
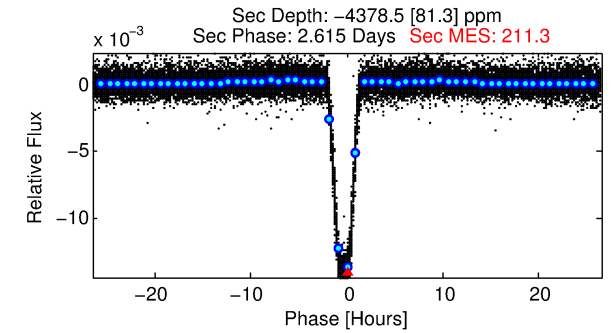
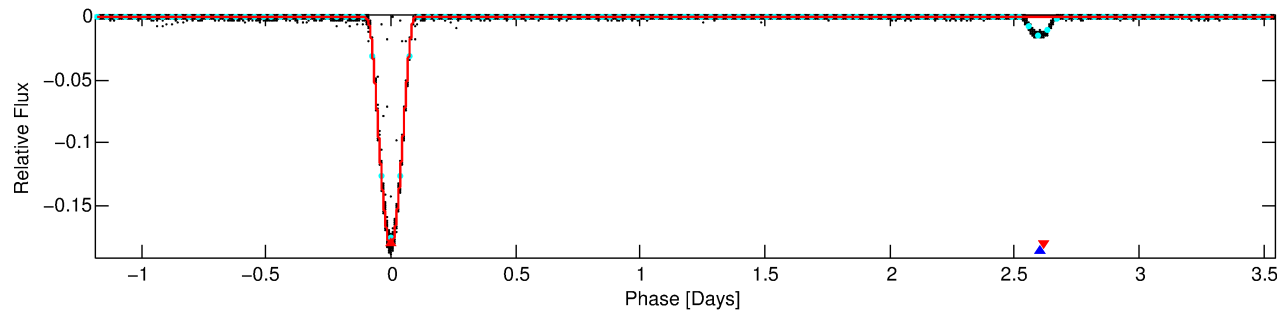
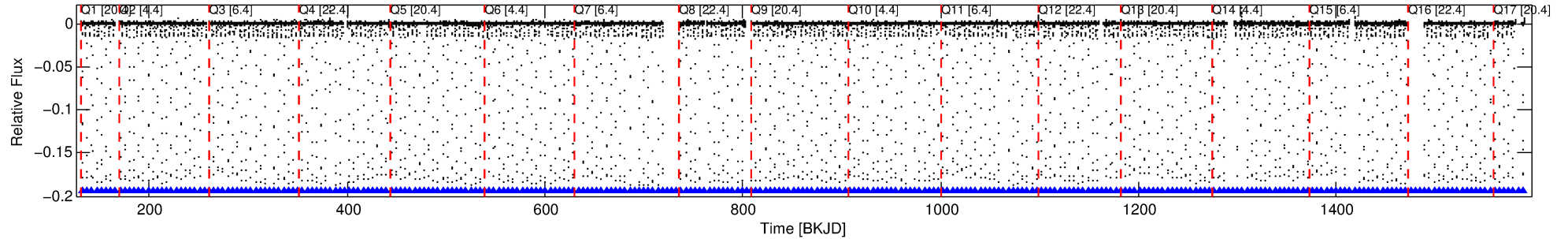
Ephemeris Match Information For 004947726-01

No Significant Match Found

DV One-Page Summary

KIC: 4947726 Candidate: 1 of 2 Period: 4.726 d
KOI: K06478.01 Corr: 0.999

Kp: 15.18 R*: 0.86 Rs Teff: 5873.0 K Logg: 4.55 Fe/H: -0.220



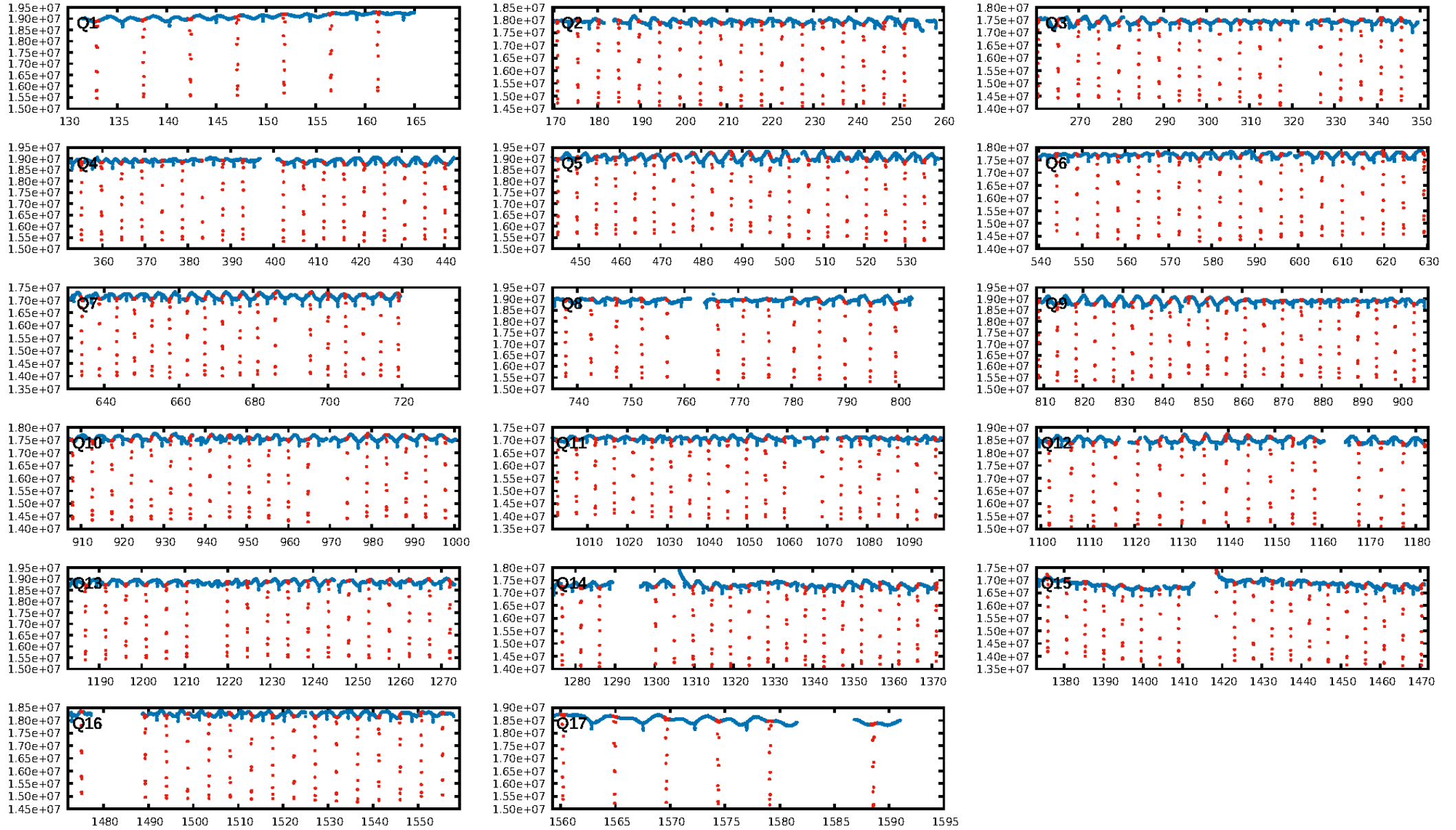
DV Fit Results:

Period = 4.72609 [0.00000] d
Epoch = 132.9231 [0.0000] BKJD
Rp/R* = 0.4447 [0.0009]
a/R* = 10.58 [0.00]
b = 0.66 [0.00]
Seff = 268.95 [93.14]
Teff = 1033 [89] K
Rp = 41.88 [11.31] Re
a = 0.0543 [0.0122] AU
Ag = N/A
Teffp = N/A

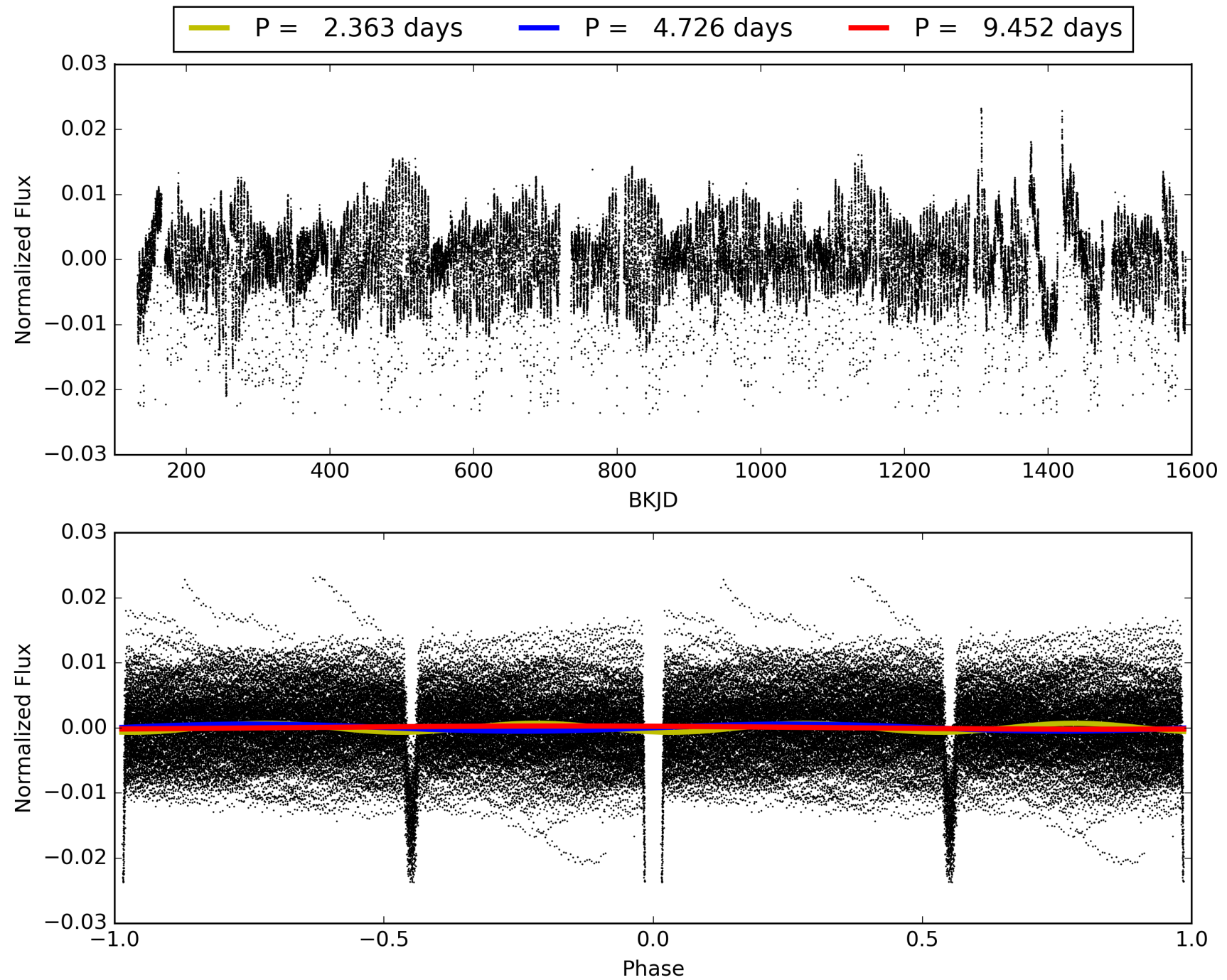
DV Diagnostic Results:

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 [272/272]
GhostDiagnostic-chr: 1.983
Centroid-sig: 0.0%
Centroid-so: 0.407 arcsec [305.65σ]
OotOffset-rm: 0.022 arcsec [0.33σ]
KicOffset-rm: 0.018 arcsec [0.27σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004947726-01, PDC Light Curves

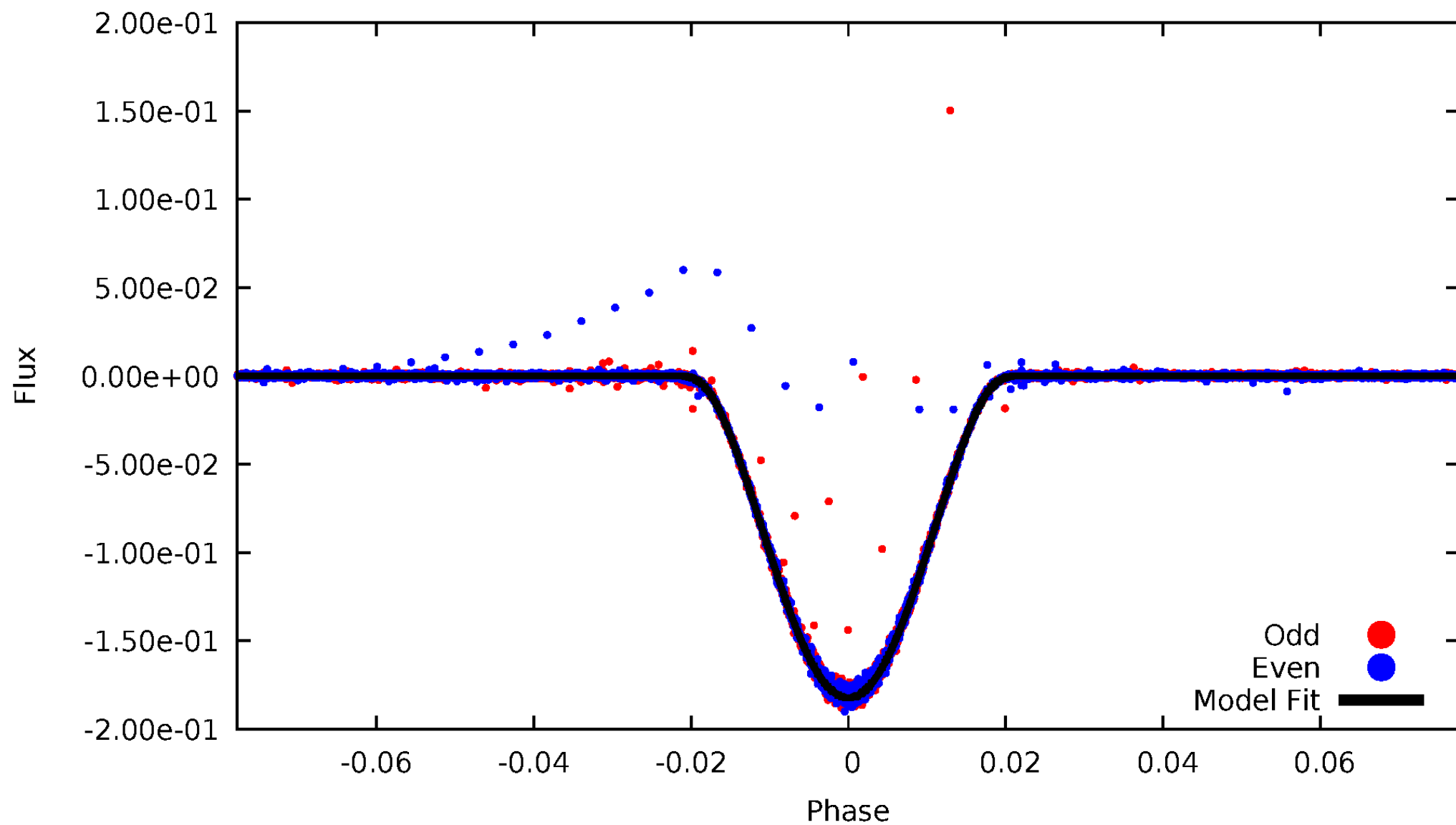


TCE 004947726-01



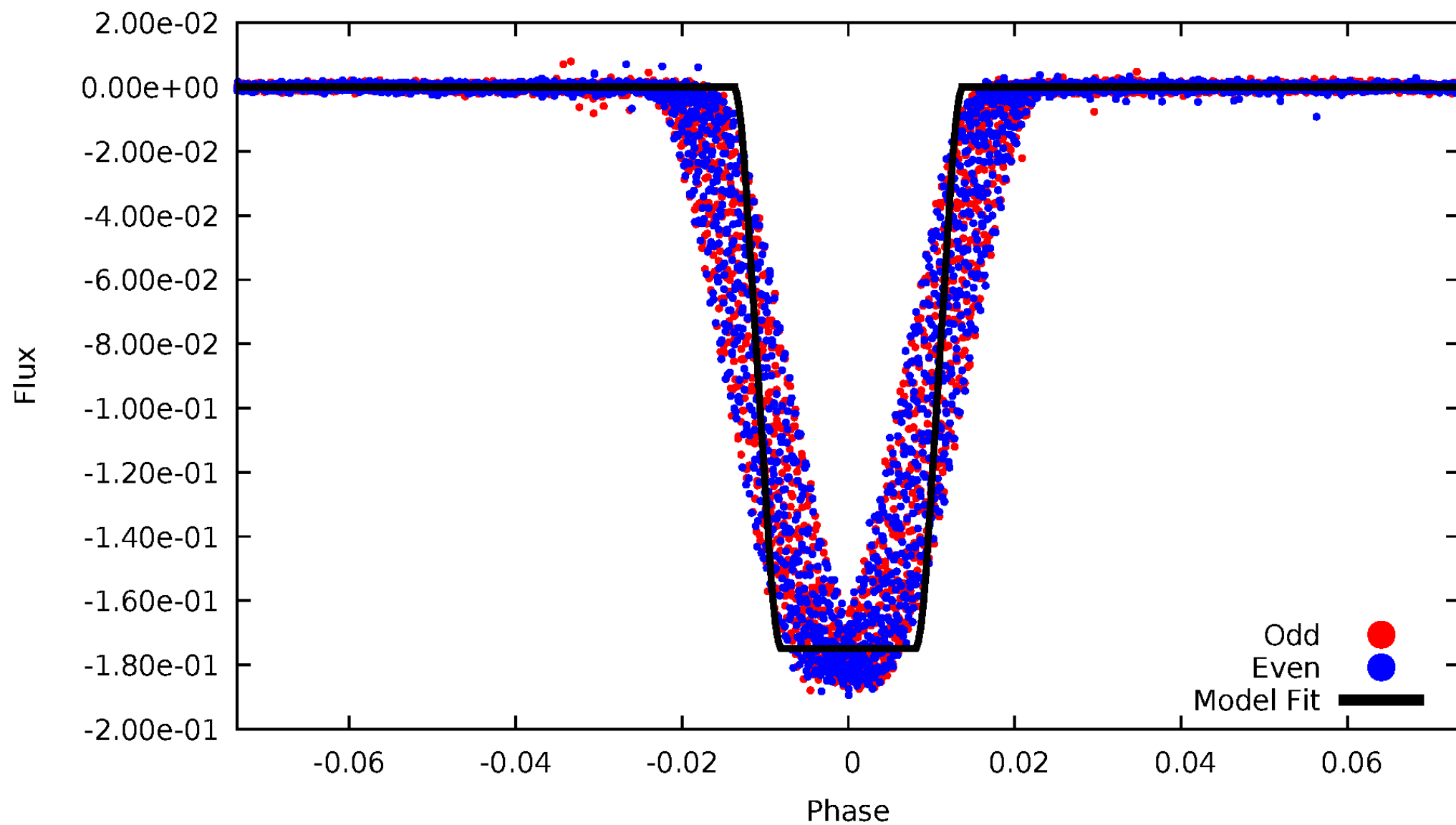
DV Odd/Even

TCE 004947726-01



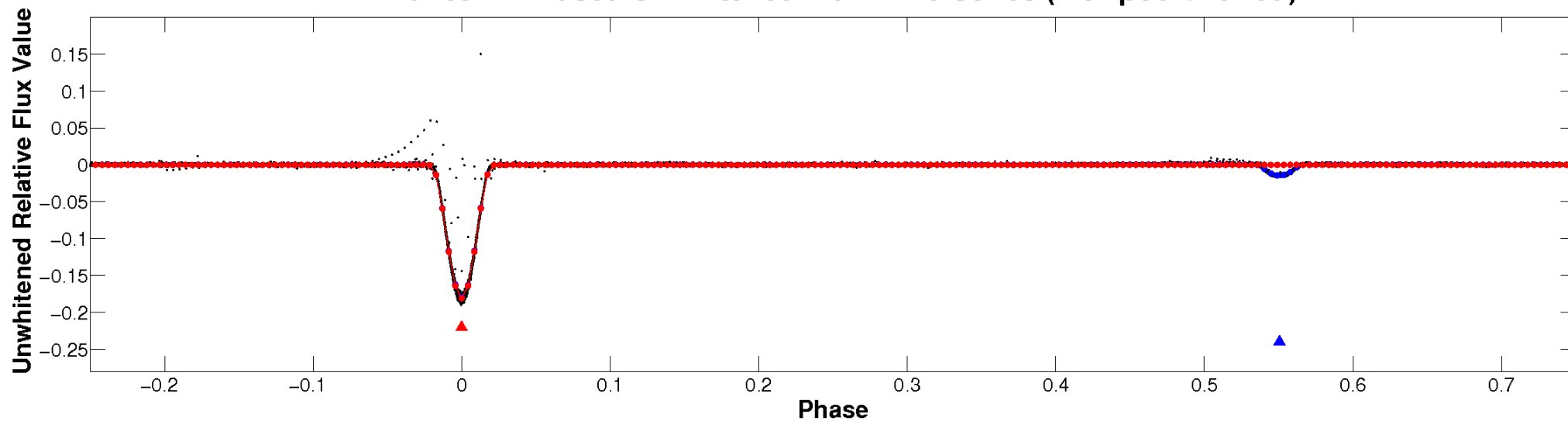
ALT Odd/Even

TCE 004947726-01

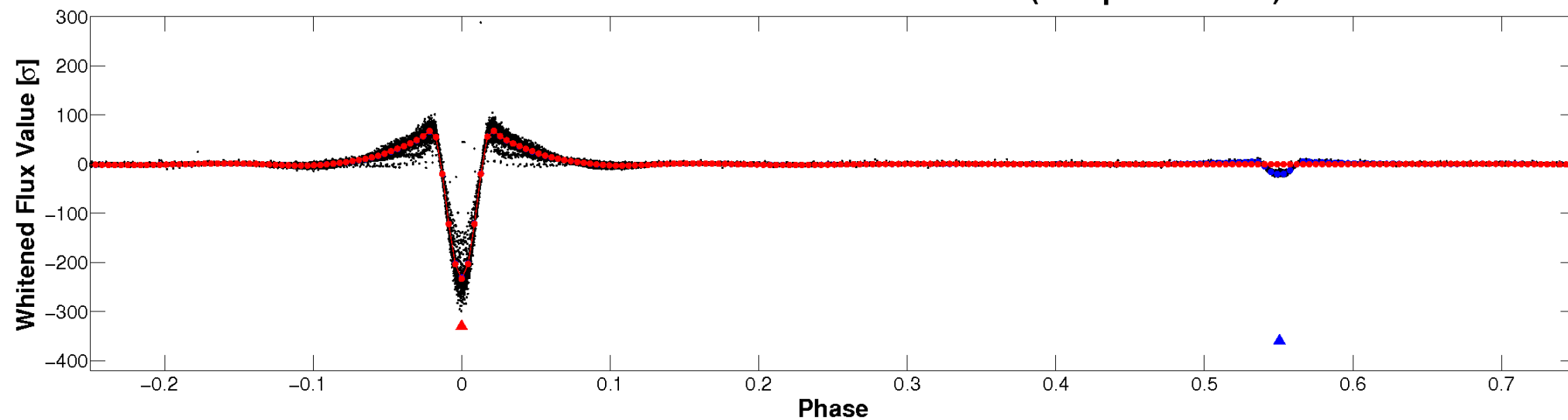


Non-Whitened Vs. Whitened Light Curve

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

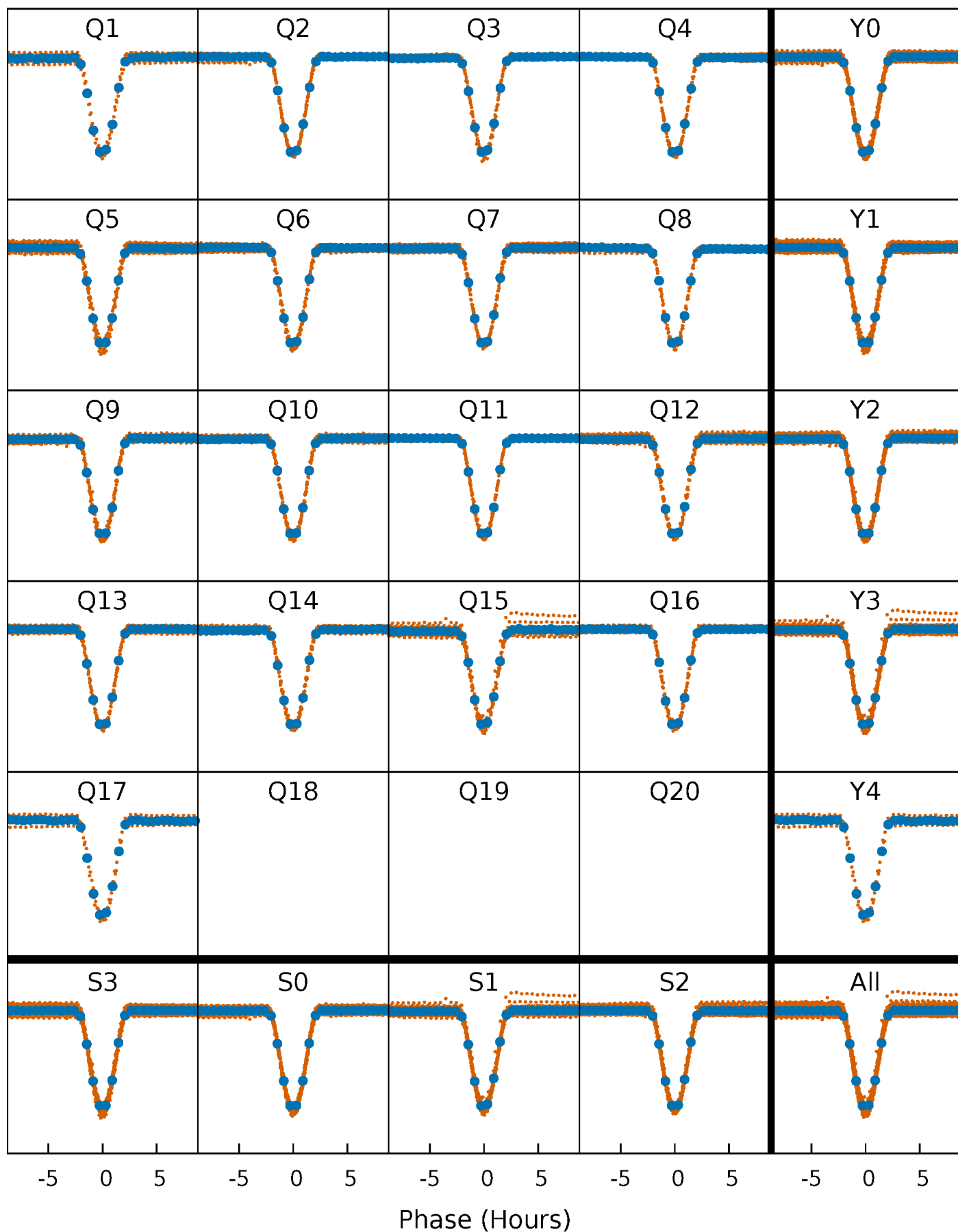


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



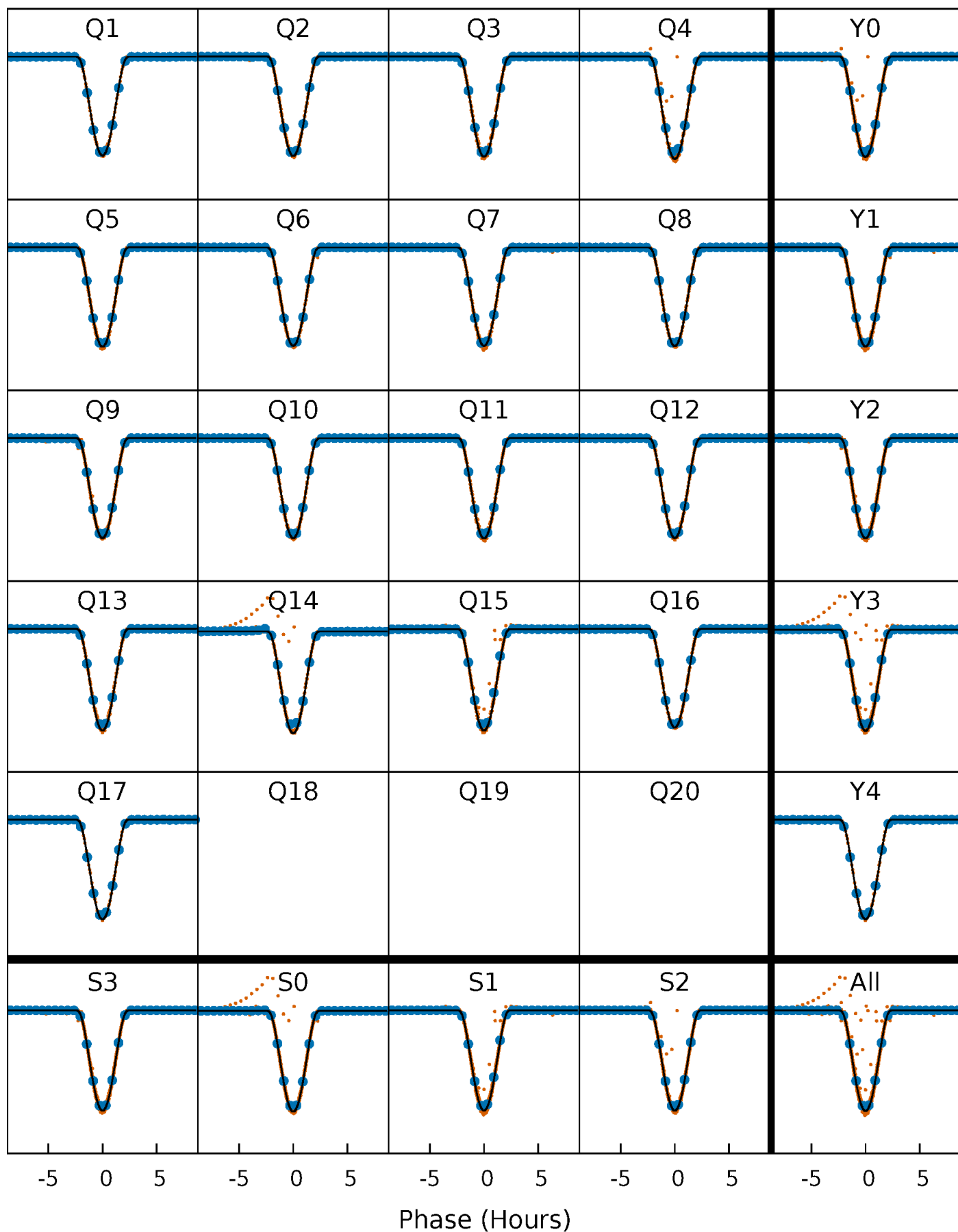
PDC Quarter-Phased Transit Curves

TCE 004947726-01 P= 4.726086 Days $T_0=132.923080$ (BKJD)



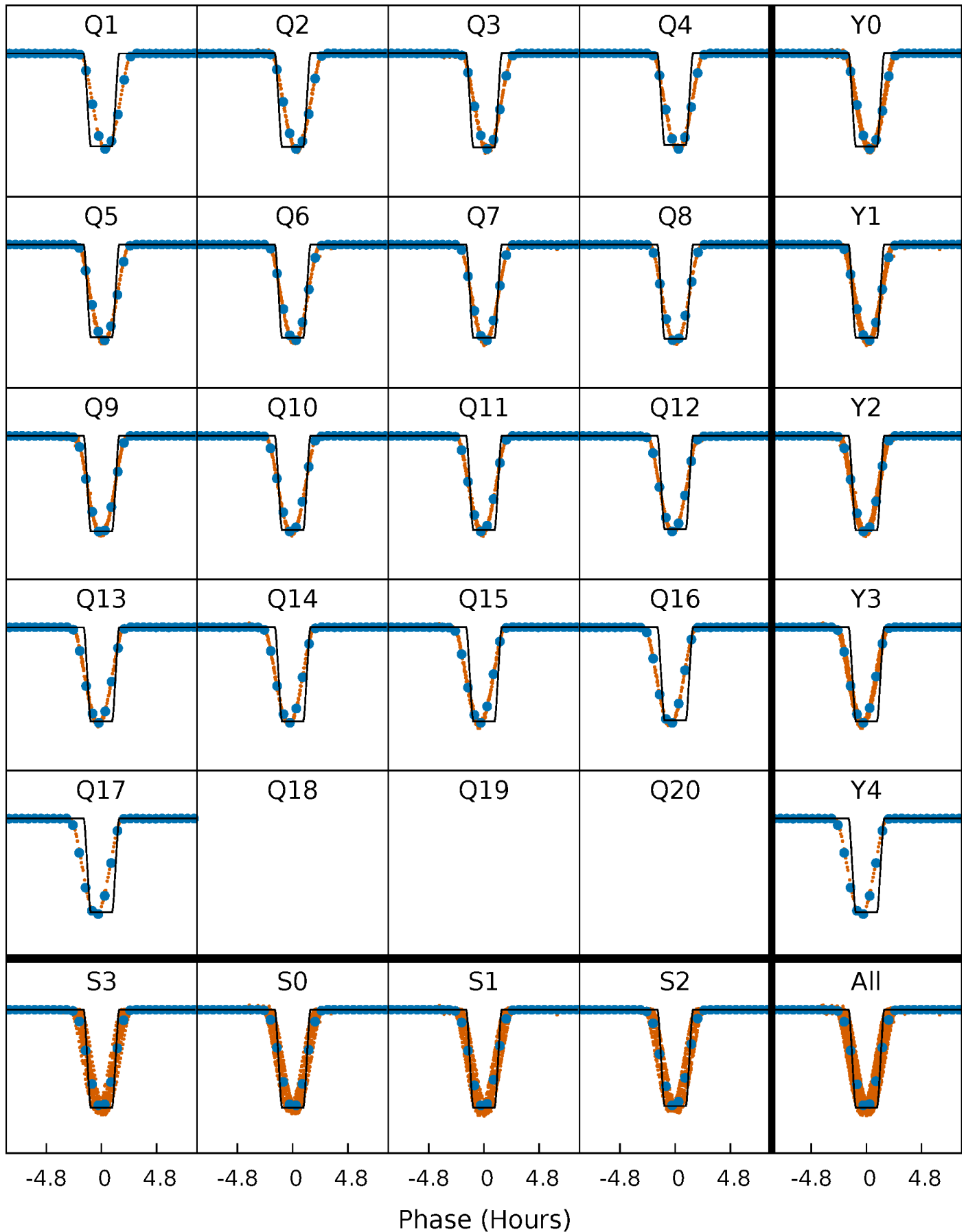
DV Quarter-Phased Transit Curves

TCE 004947726-01 P= 4.726086 Days $T_0=132.923080$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

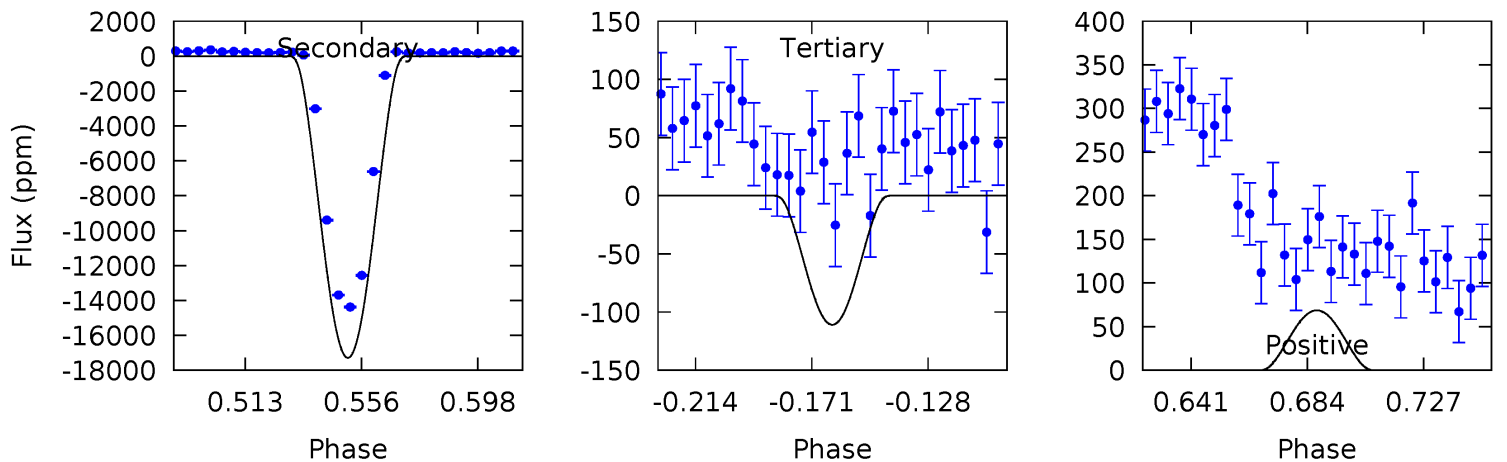
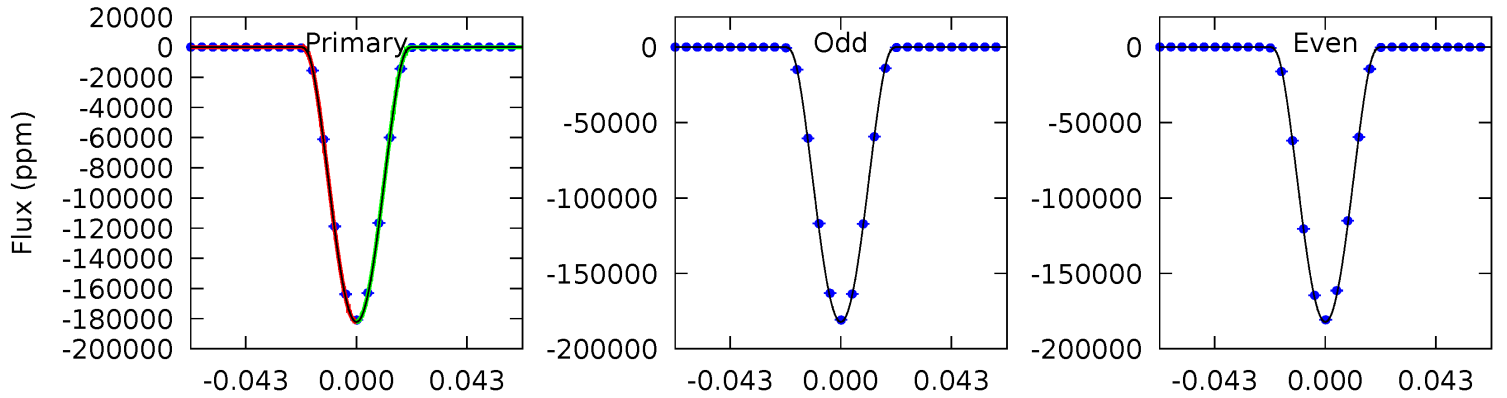
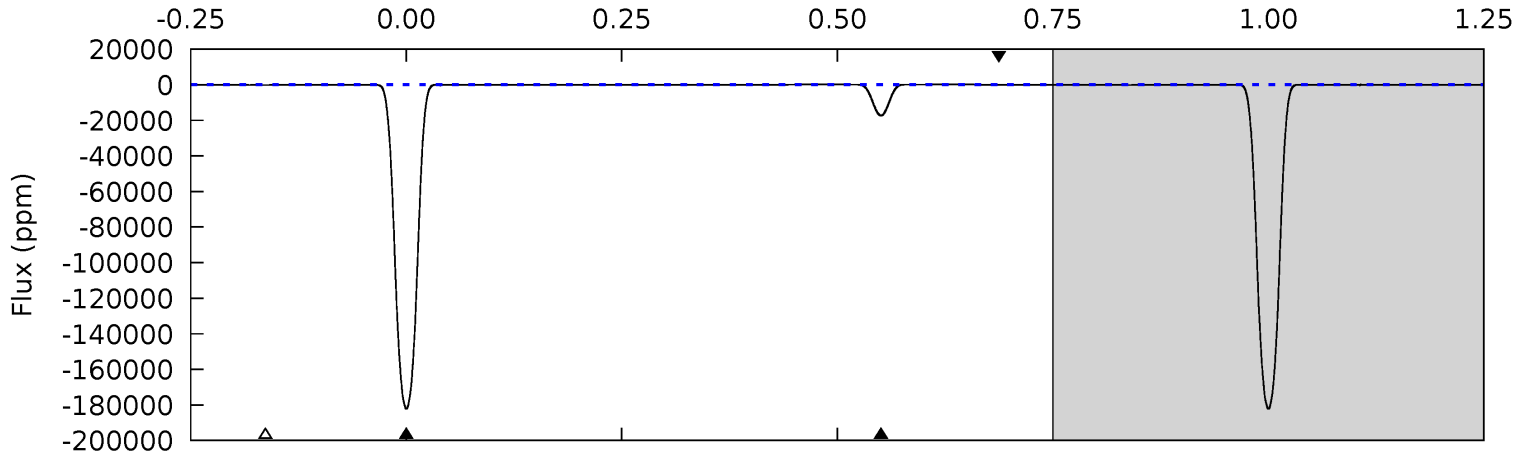
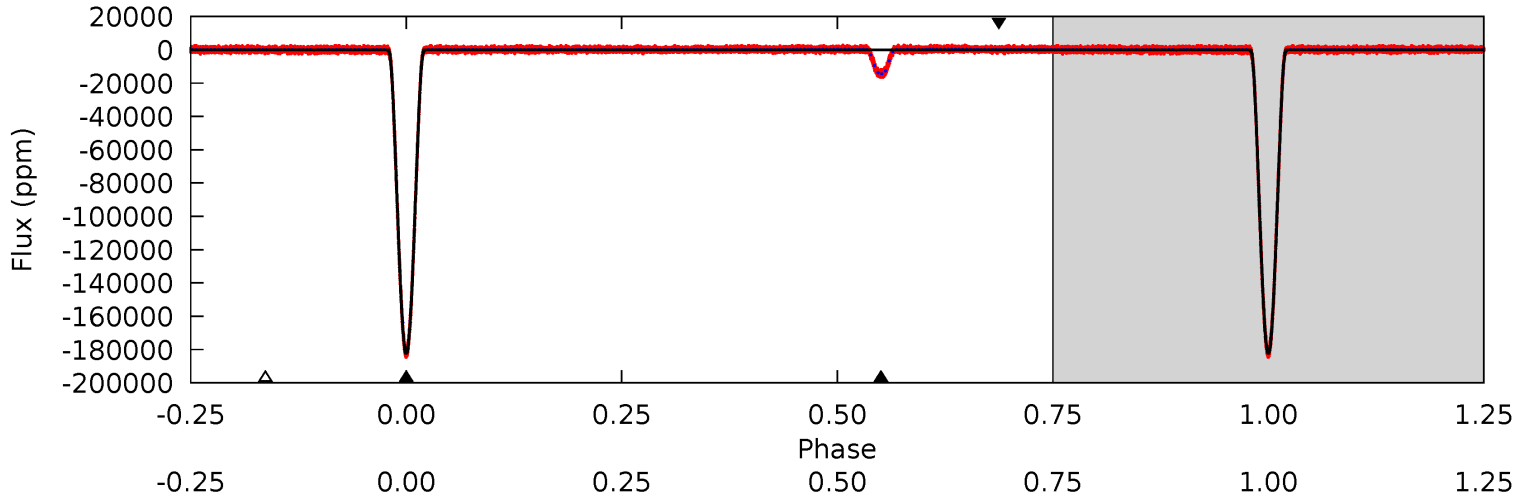
TCE 004947726-01 P= 4.726208 Days $T_0=132.905489$ (BKJD)



DV Model-Shift Uniqueness Test

004947726-01, P = 4.726086 Days, E = 128.196994 Days

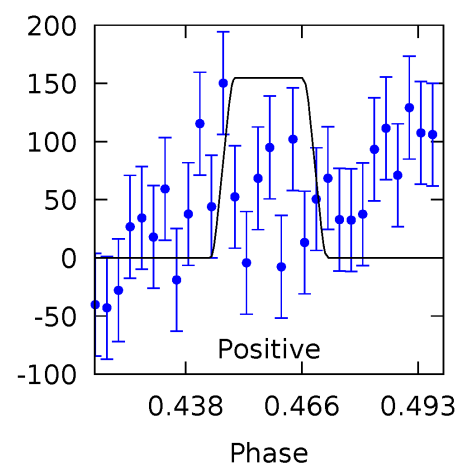
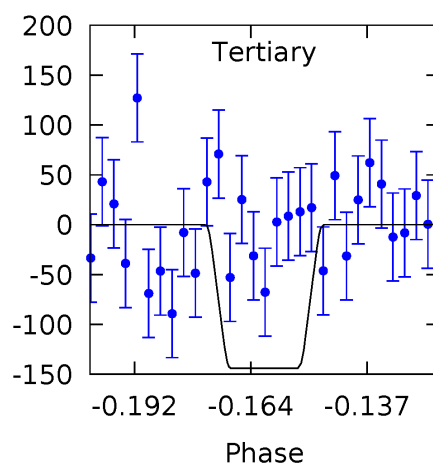
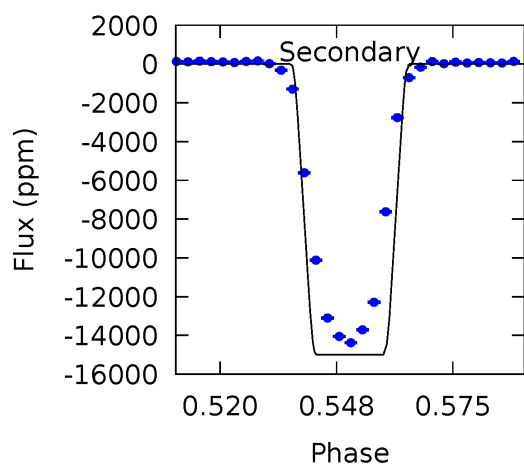
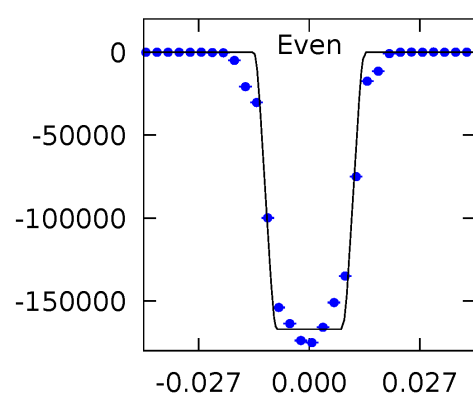
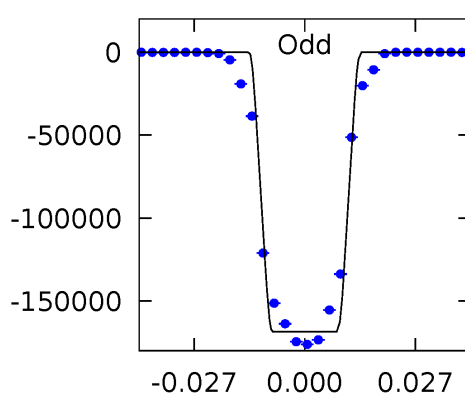
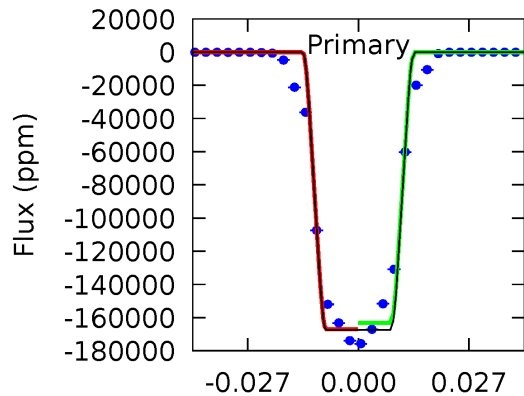
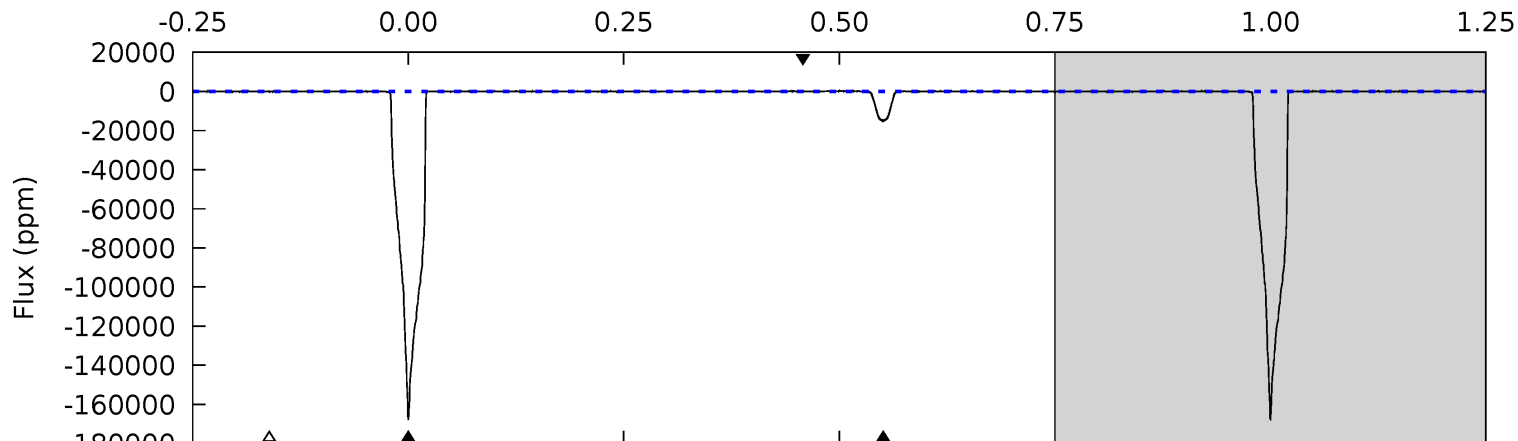
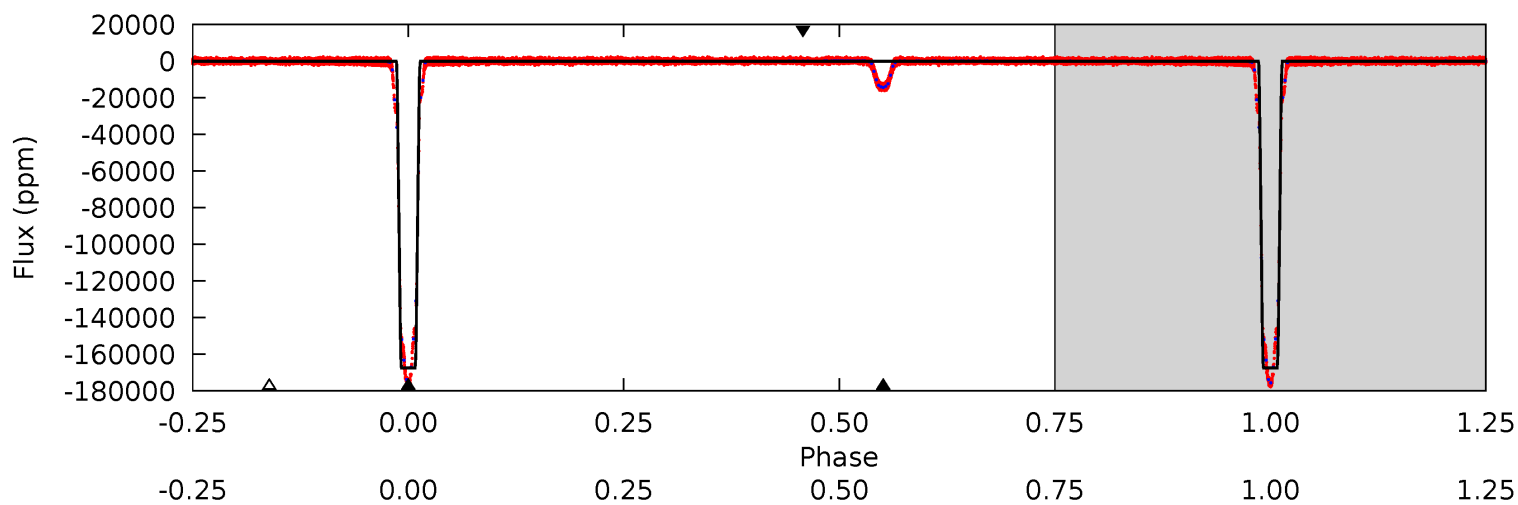
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13673	1297	8.32	5.15	4.74	2.03	7.83	13665	13668	1289	1292	0.90	0.99	0.00	2.62



Alt Model-Shift Uniqueness Test

004947726-01, P = 4.726208 Days, E = 128.179281 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3905	349.4	3.36	3.60	4.83	2.21	1.35	3901	3901	346.1	345.8	18.8	1.00	0.00	0



Stellar Parameters For KIC 004947726

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5873^{+159}_{-177}	$4.547^{+0.044}_{-0.176}$	$-0.220^{+0.300}_{-0.300}$	$0.863^{+0.233}_{-0.078}$	$0.954^{+0.110}_{-0.121}$	$2.094^{+0.376}_{-1.011}$
	+3%/-3%	+1%/-4%	+136%/-136%	+27%/-9%	+12%/-13%	+18%/-48%
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 004947726-01 / KOI 6478.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-17288 ± 13	$42.64^{+6.40}_{-2.81}$	1472^{+93}_{-64}	3636^{+62}_{-82}	15^{+2}_{-3}
Alt.	-14992 ± 43	$39.87^{+6.23}_{-2.46}$	1470^{+93}_{-62}	3620^{+64}_{-74}	15^{+2}_{-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 $A_{\text{obs}} \gg 1.0$

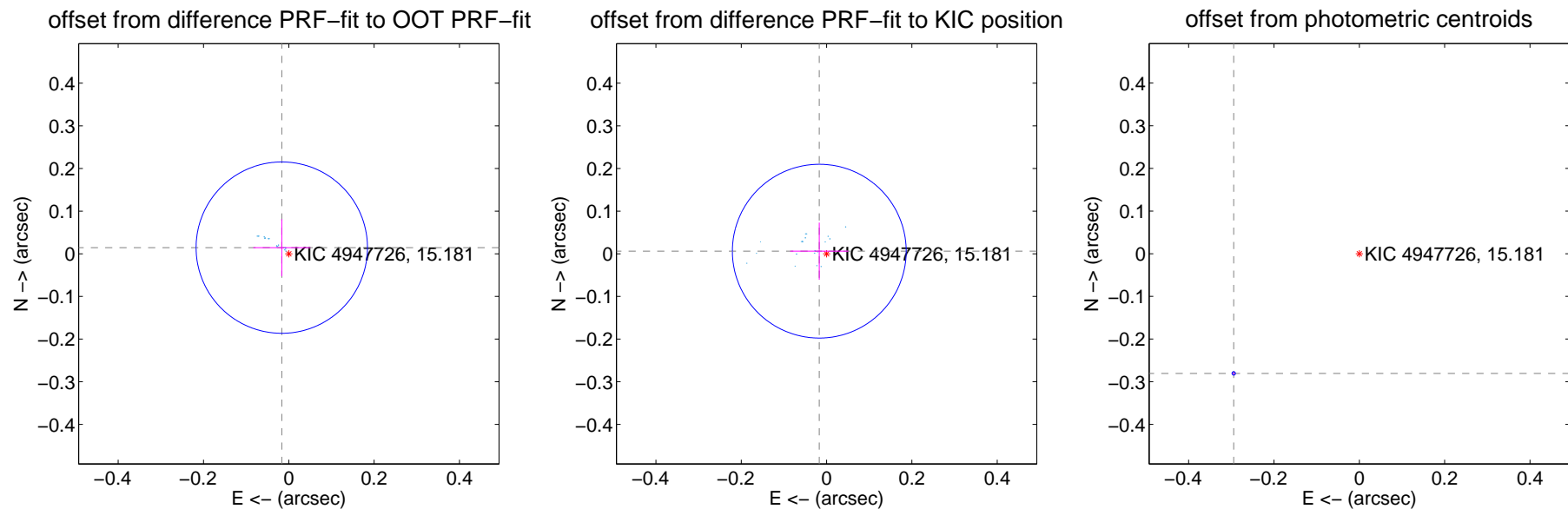
DV Centroid Data

Supplemental centroid analysis for 004947726-01. Kepler magnitude: 15.18. Transit SNR 5494.82

There are 17 quarters with good PRF difference image offsets

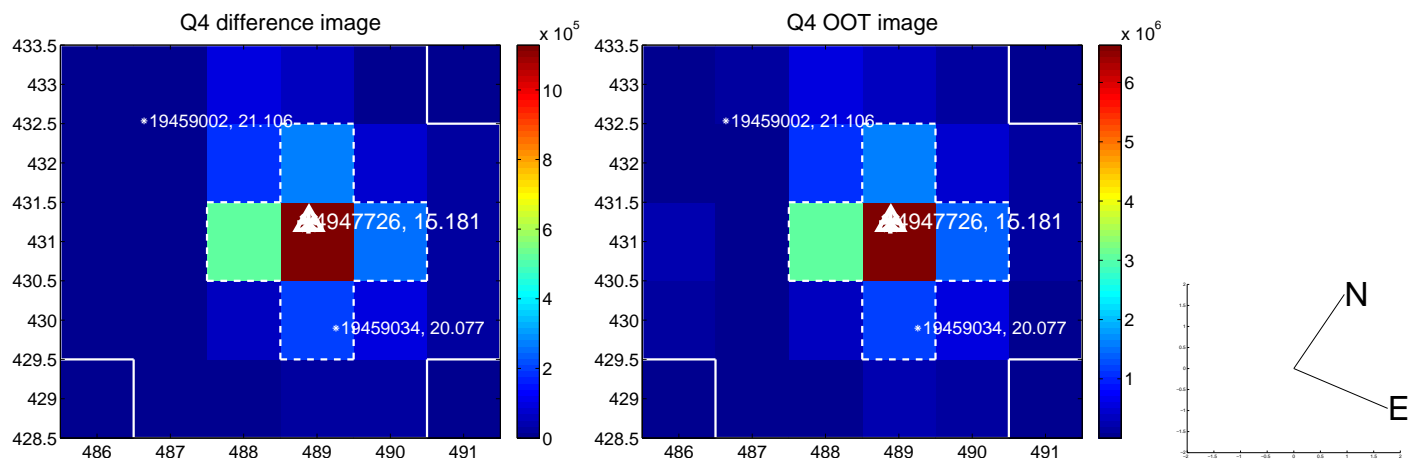
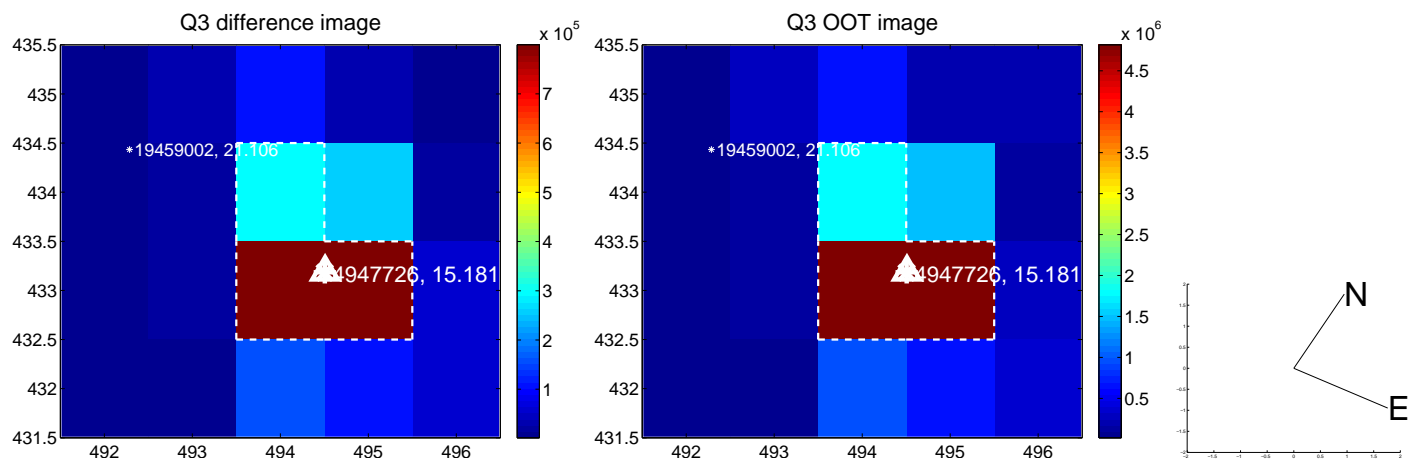
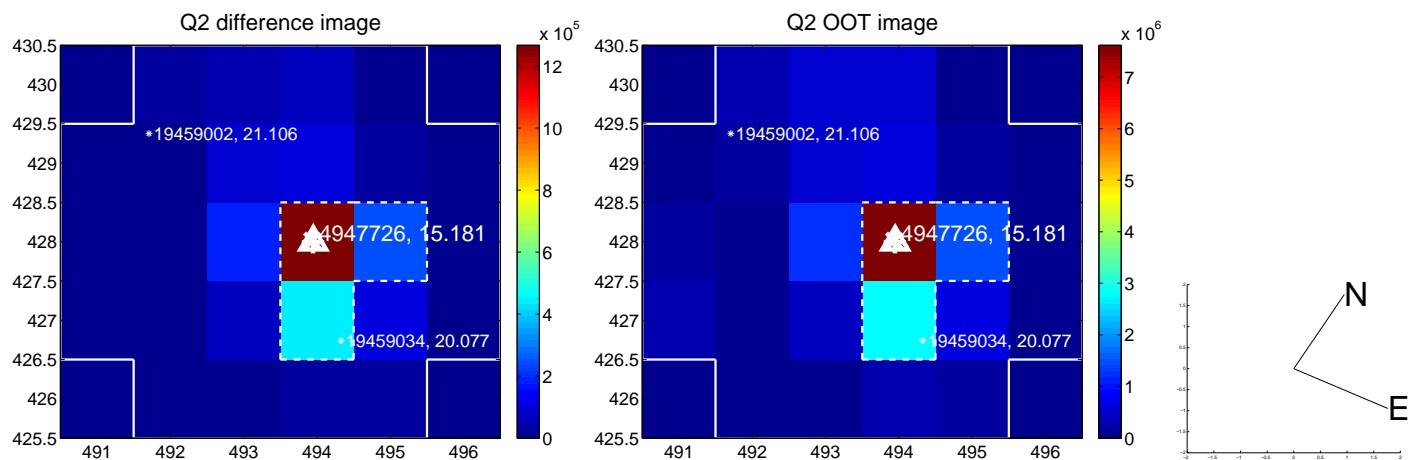
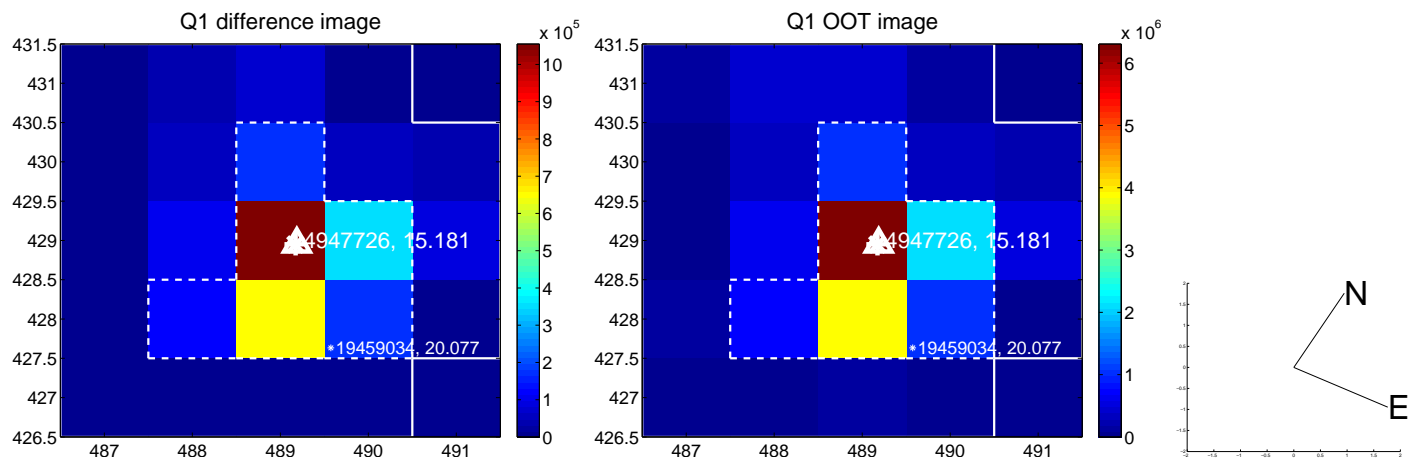
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.022 ± 0.067	0.33	0.016 ± 0.067	0.014 ± 0.067
PRF-fit source offset from KIC position	0.018 ± 0.068	0.27	0.017 ± 0.068	0.006 ± 0.067
photometric centroid source offset	0.41 ± 0.00	305.65	0.29 ± 0.00	-0.28 ± 0.00

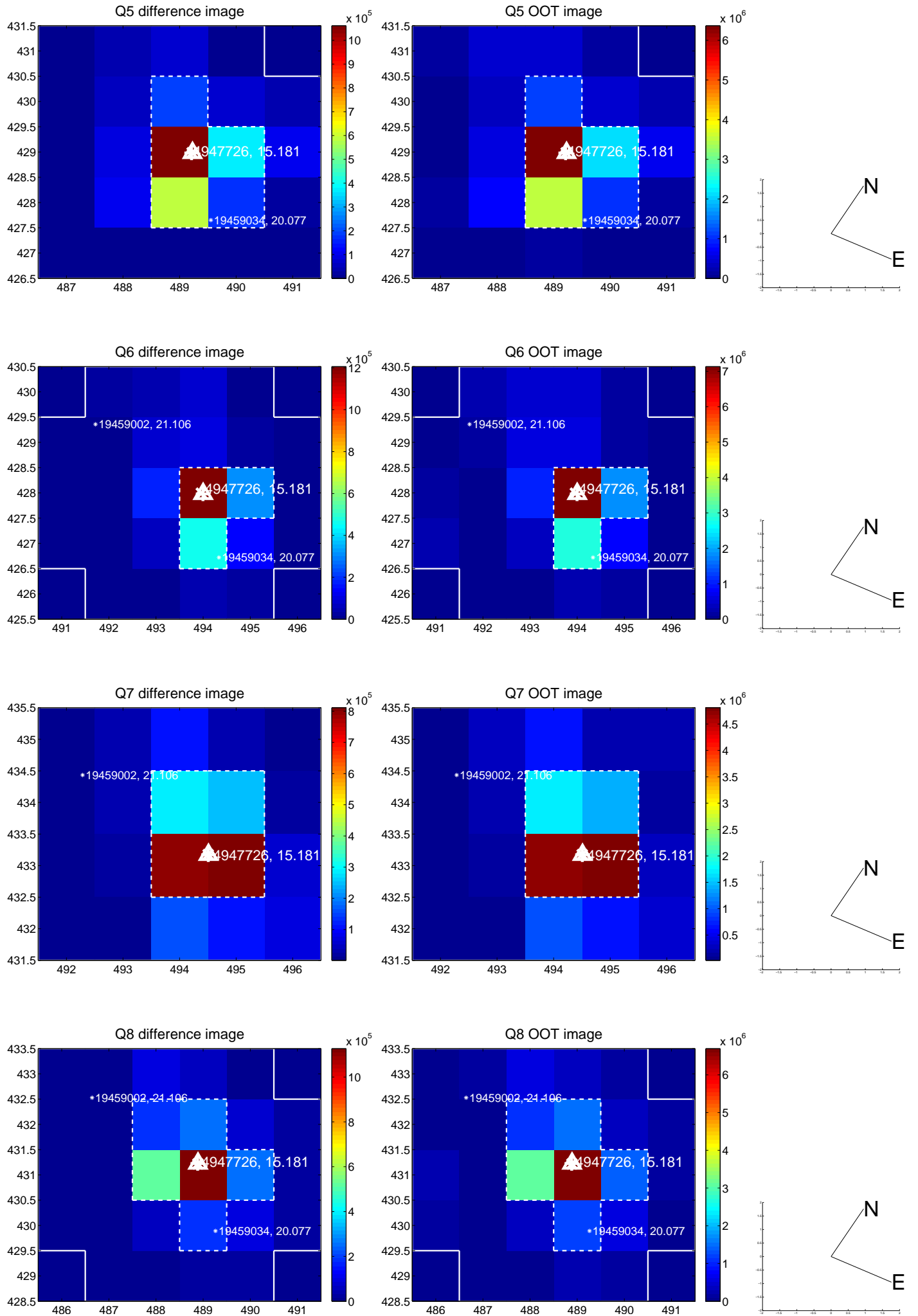


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

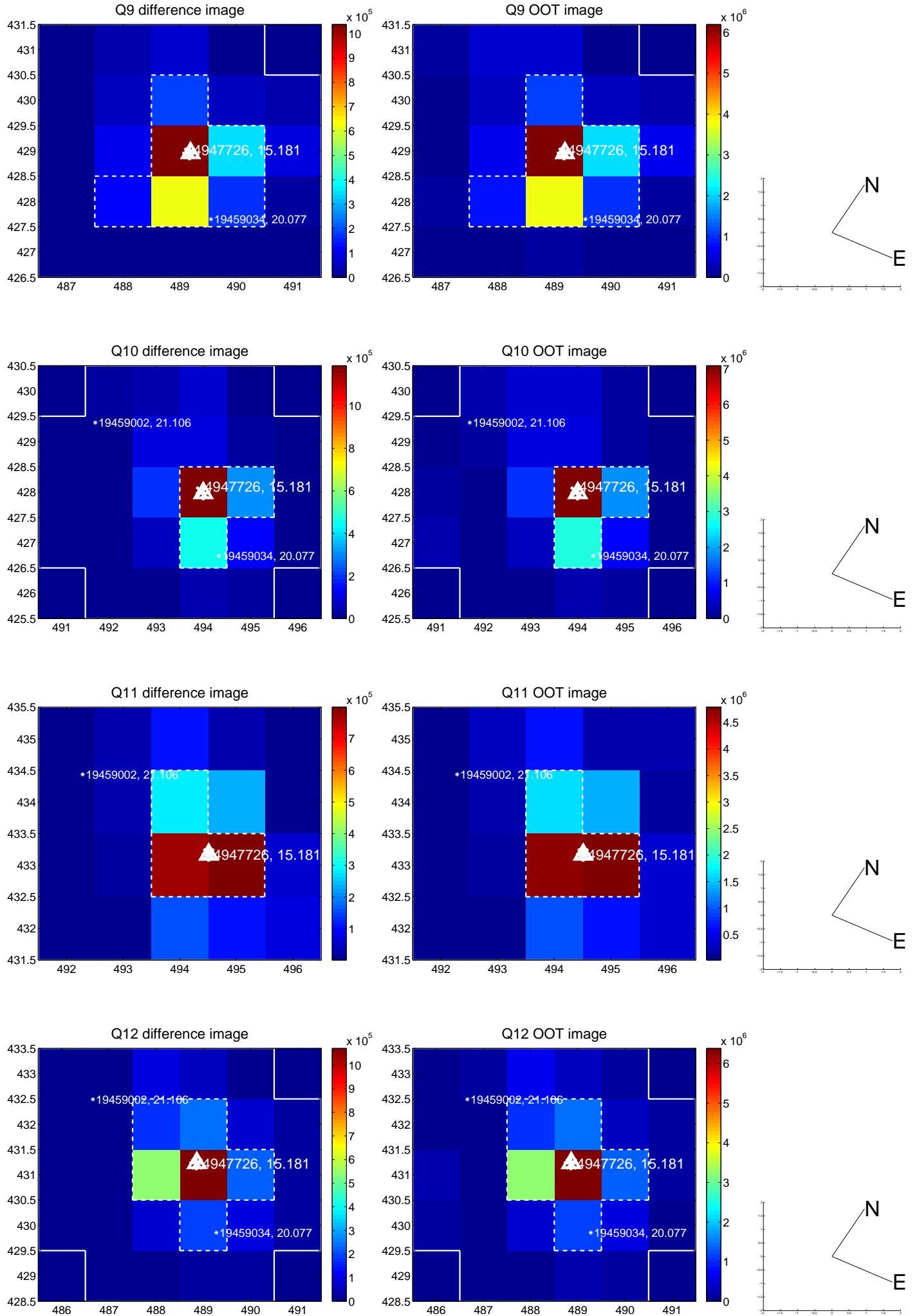
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



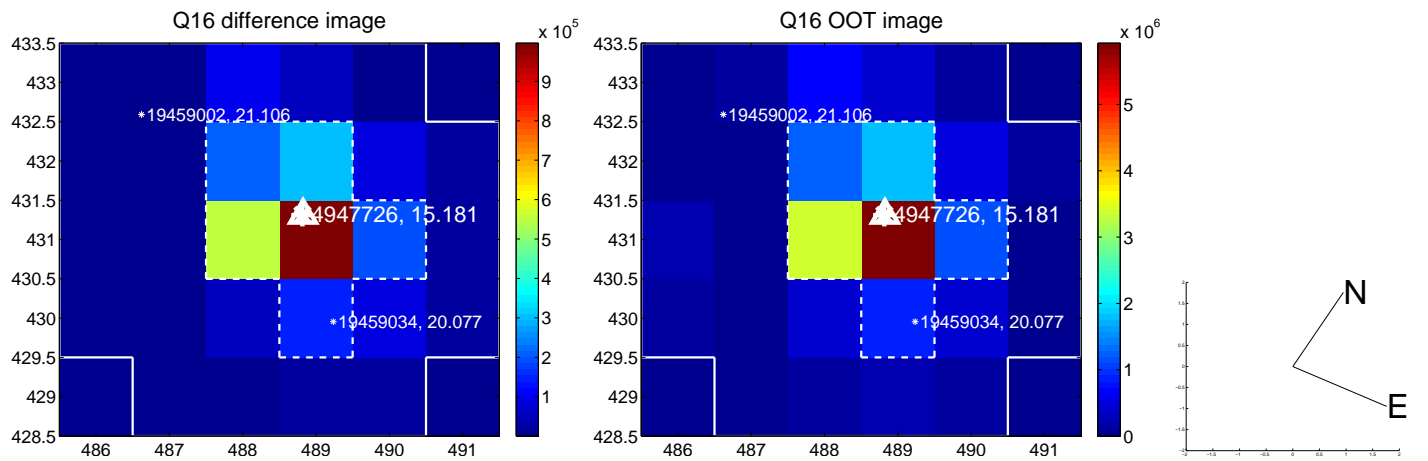
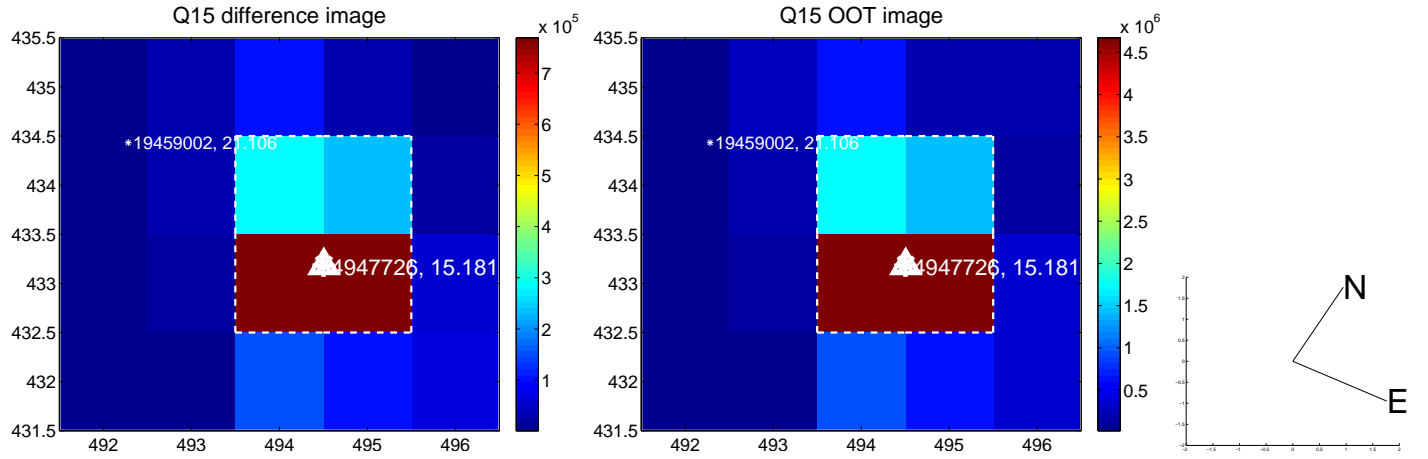
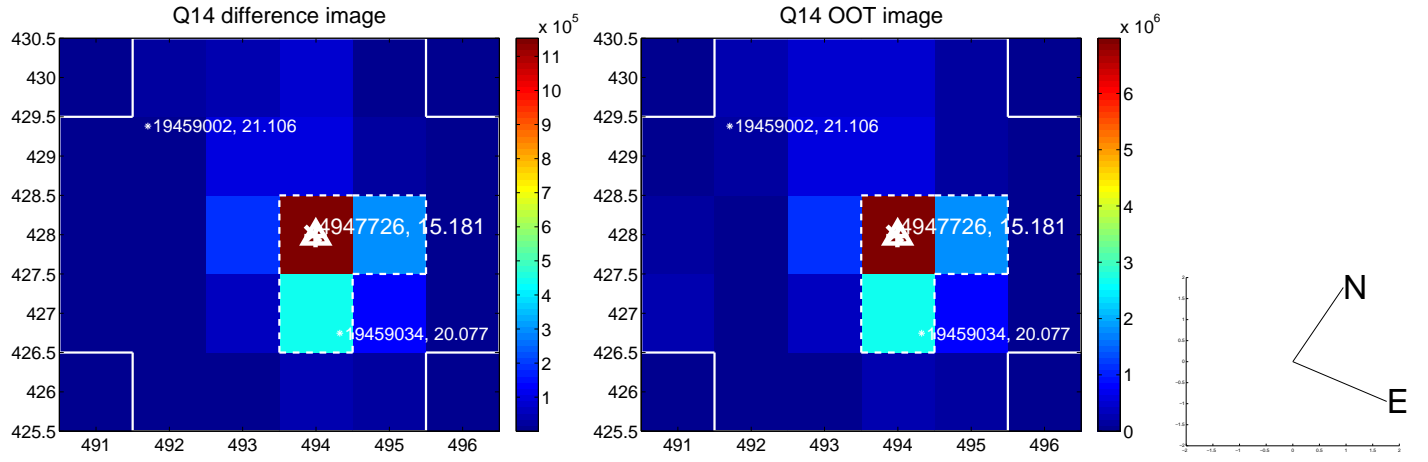
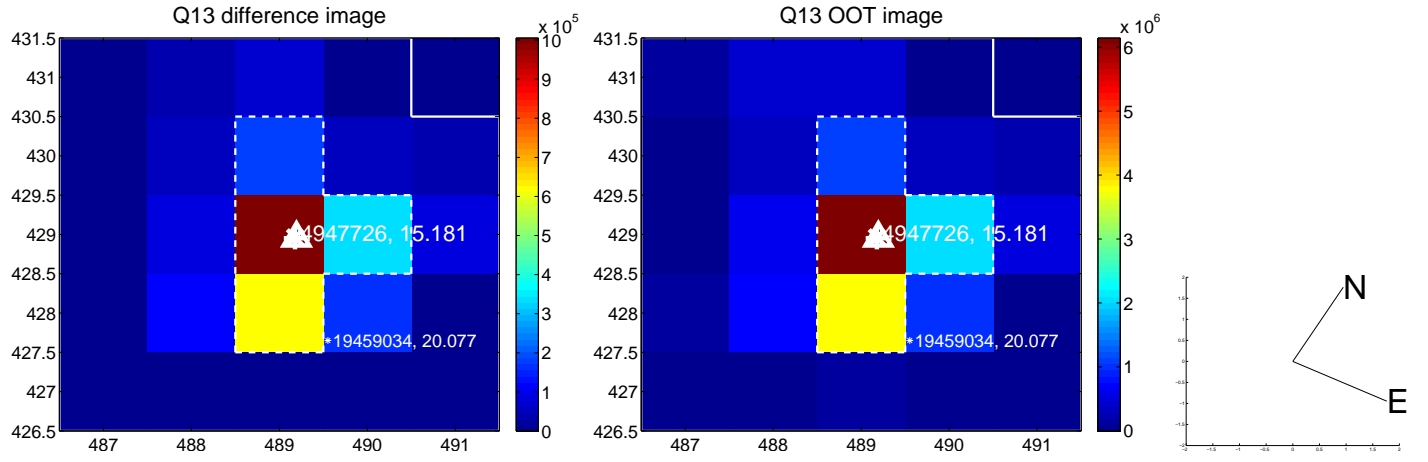
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



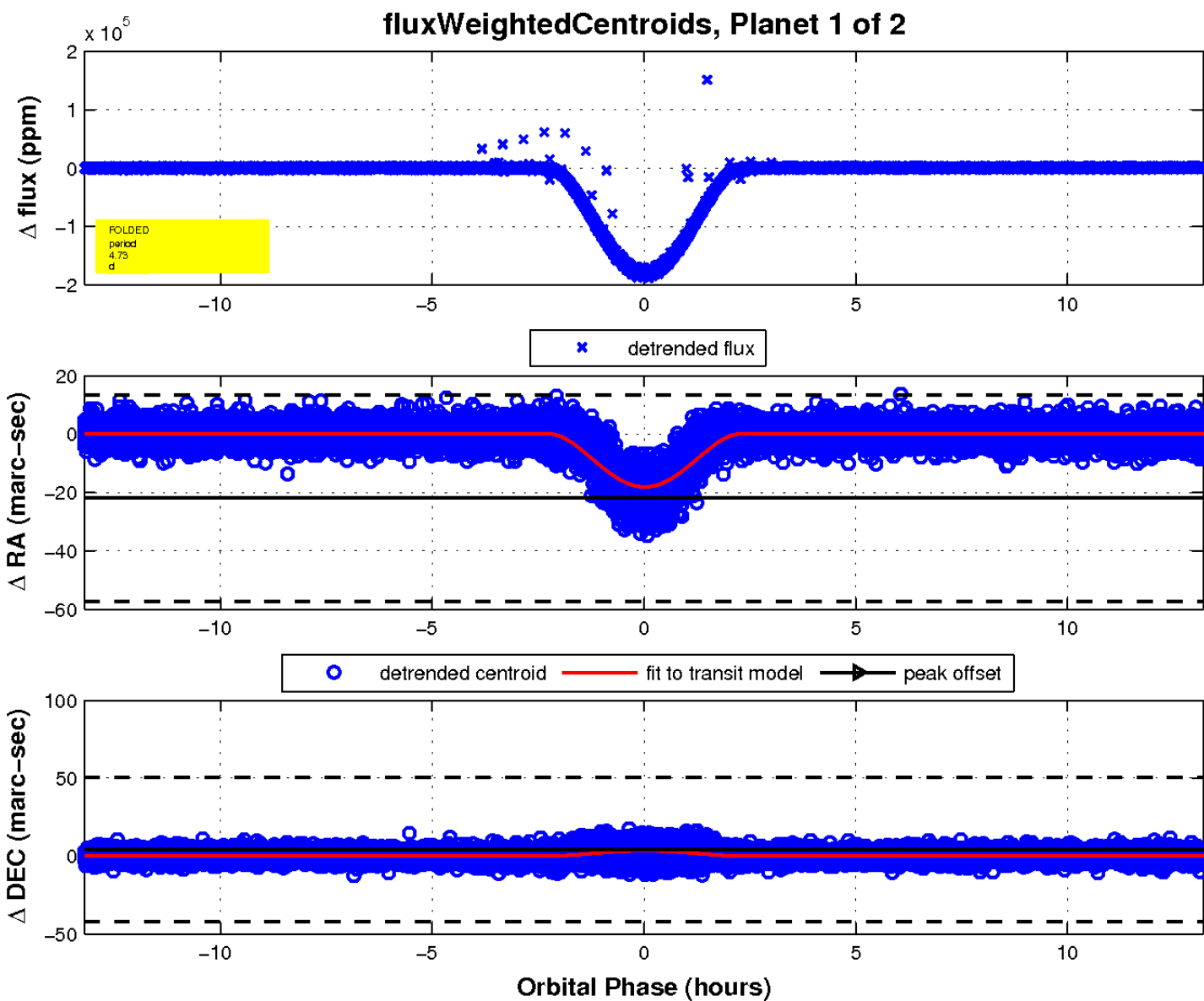
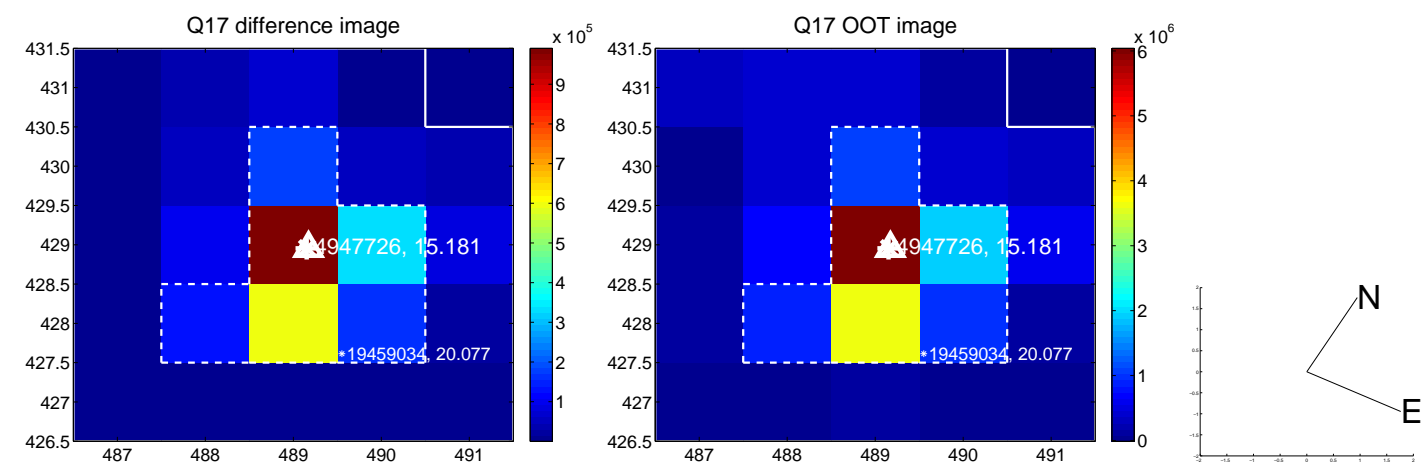
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

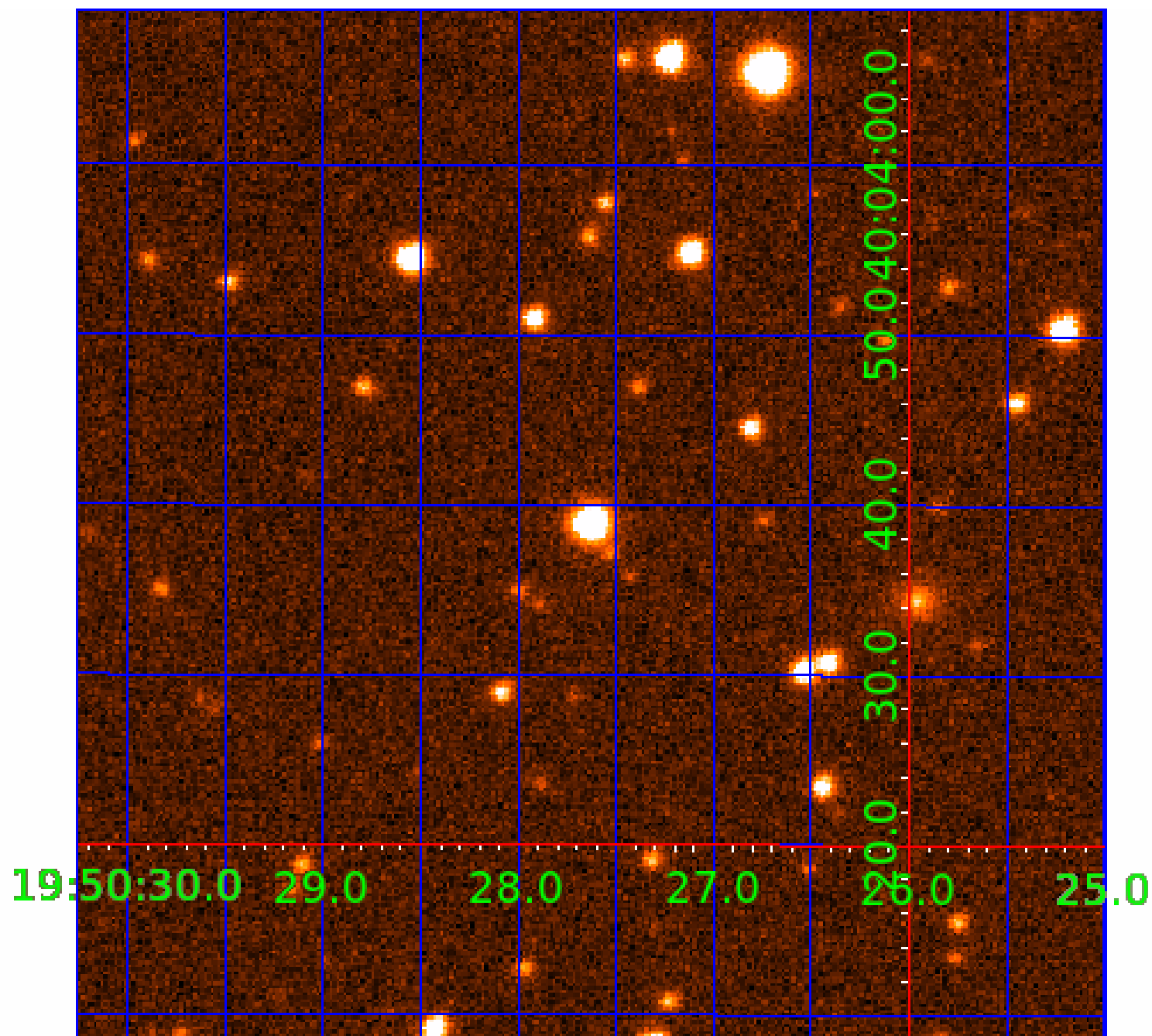


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004947726

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})
004947726-01	OBS	6478.01	4.726086	132.923080	182291.1	4.404	2797.7	5494.8	0.86	5873	41.88	268.95
004947726-02	OBS	No	4.726090	135.524677	14795.4	3.285	651.3	635.5	0.86	5873	12.20	268.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004947726-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
004947726-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

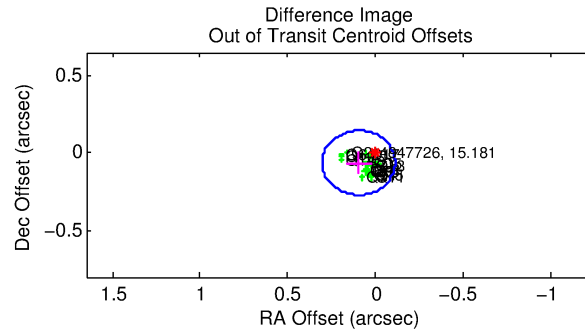
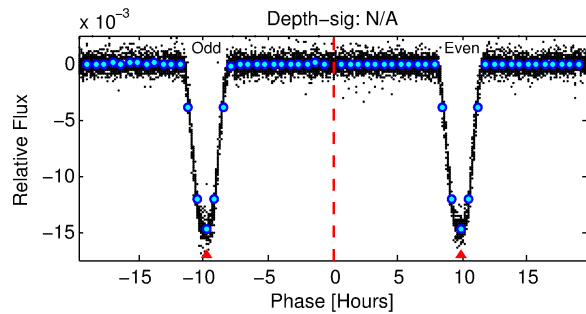
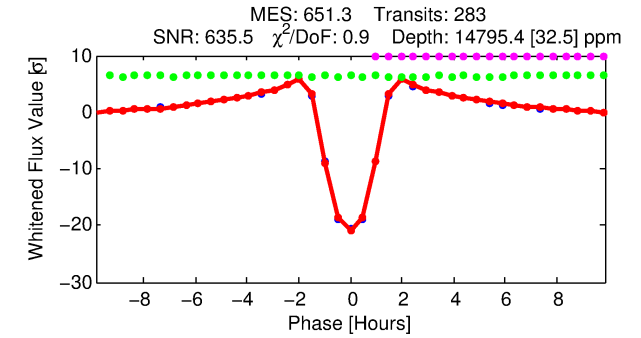
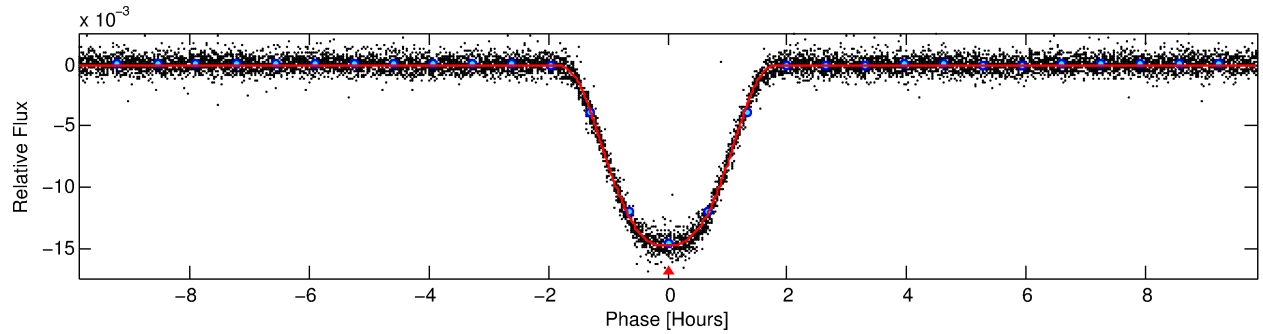
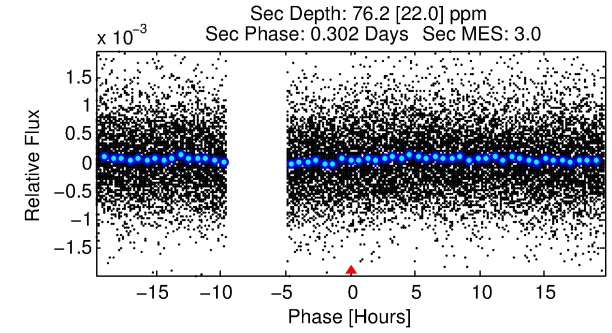
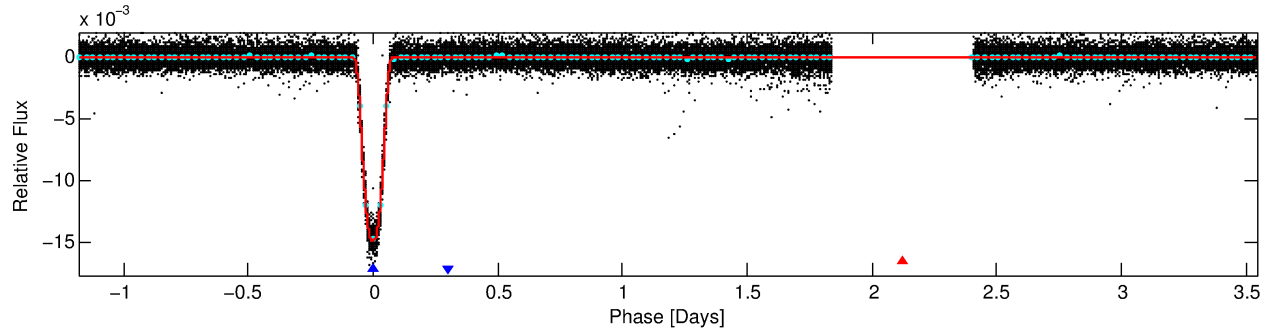
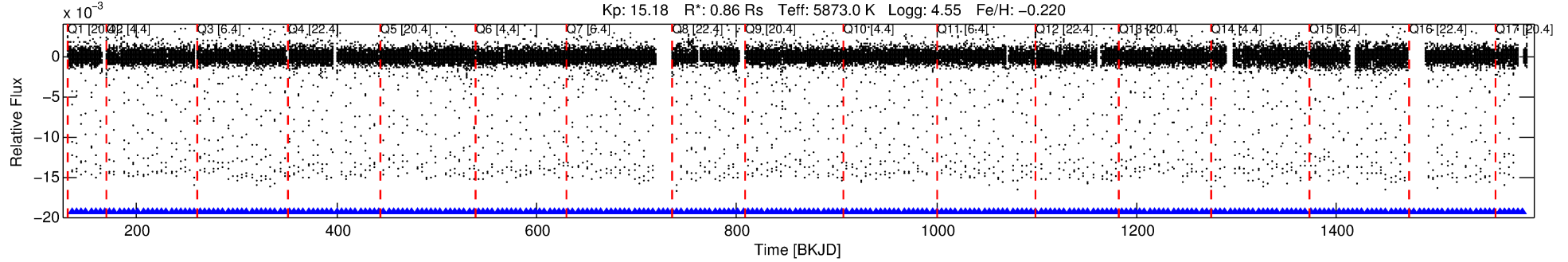
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004947726-02

No Significant Match Found

DV One-Page Summary

KIC: 4947726 Candidate: 2 of 2 Period: 4.726 d
KOI: K06478 Corr: No Ephemeris Match



DV Fit Results:

Period = 4.72609 [0.00000] d
Epoch = 135.5247 [0.0001] BKJD
Rp/R* = 0.1296 [0.0002]
a/R* = 8.09 [0.02]
b = 0.86 [0.00]
Seff = 268.95 [93.14]
Teff = 1033 [89] K
Rp = 12.20 [3.29] Re
a = 0.0543 [0.0122] AU
Ag = 0.83 [0.36] [-0.47 σ]
Teffp = 1525 [119] K [3.31 σ]

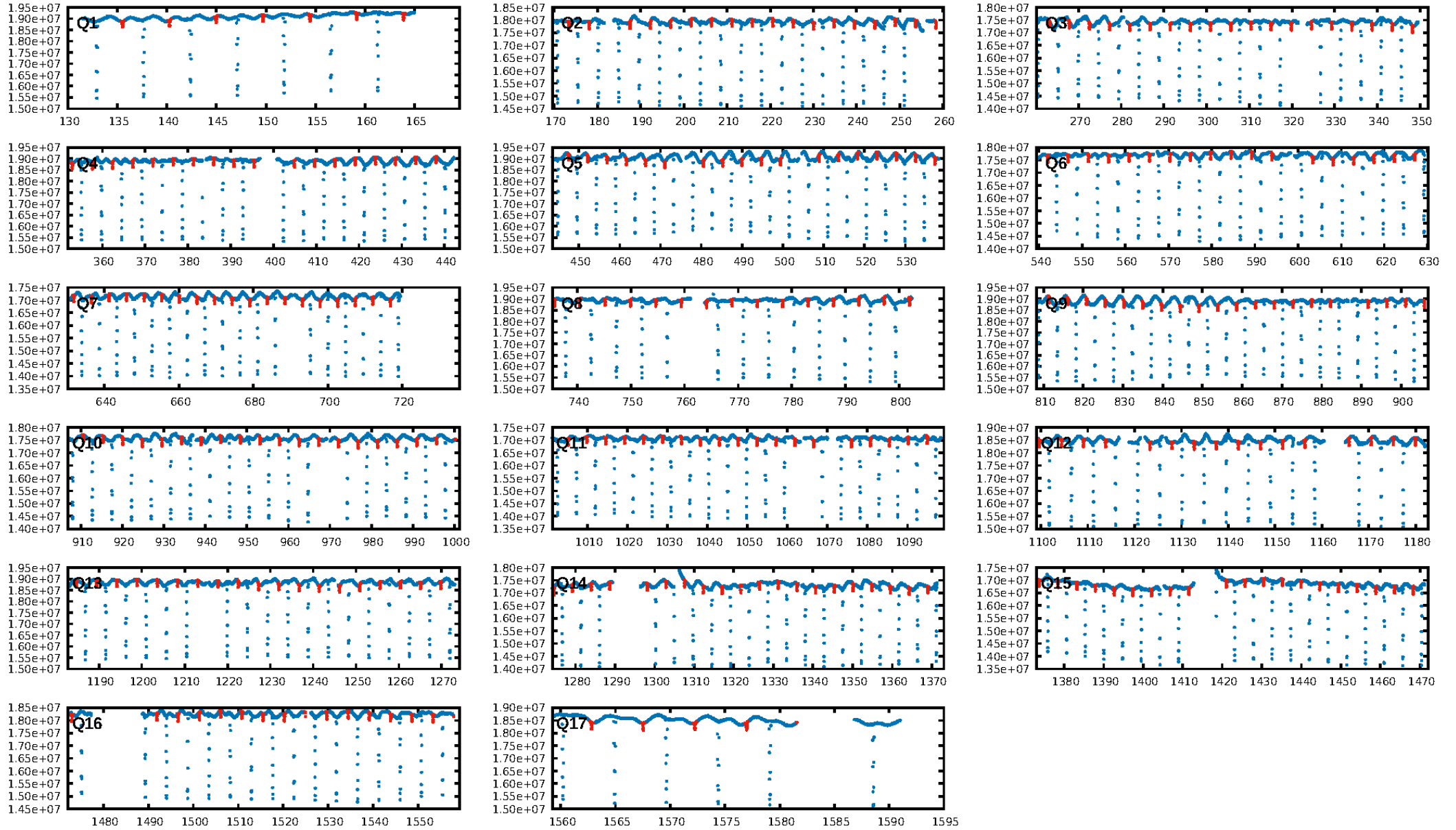
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [272/272]
GhostDiagnostic-chr: 2.598
Centroid-sig: 0.0%
Centroid-so: 0.451 arcsec [28.20 σ]
OotOffset-rm: 0.116 arcsec [1.67 σ]
KicOffset-rm: 0.083 arcsec [1.21 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

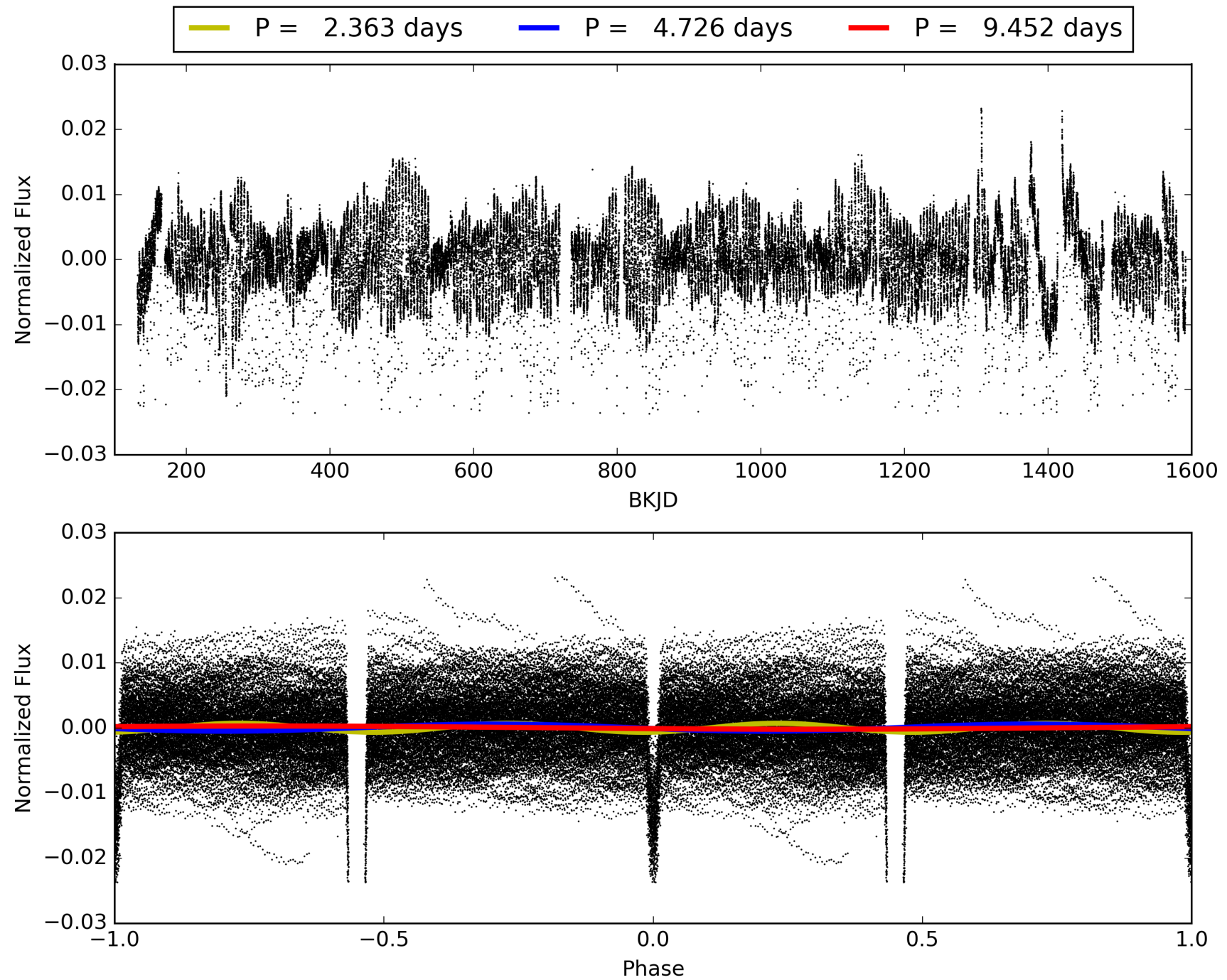
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:47:00 Z

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

TCE 004947726-02, PDC Light Curves

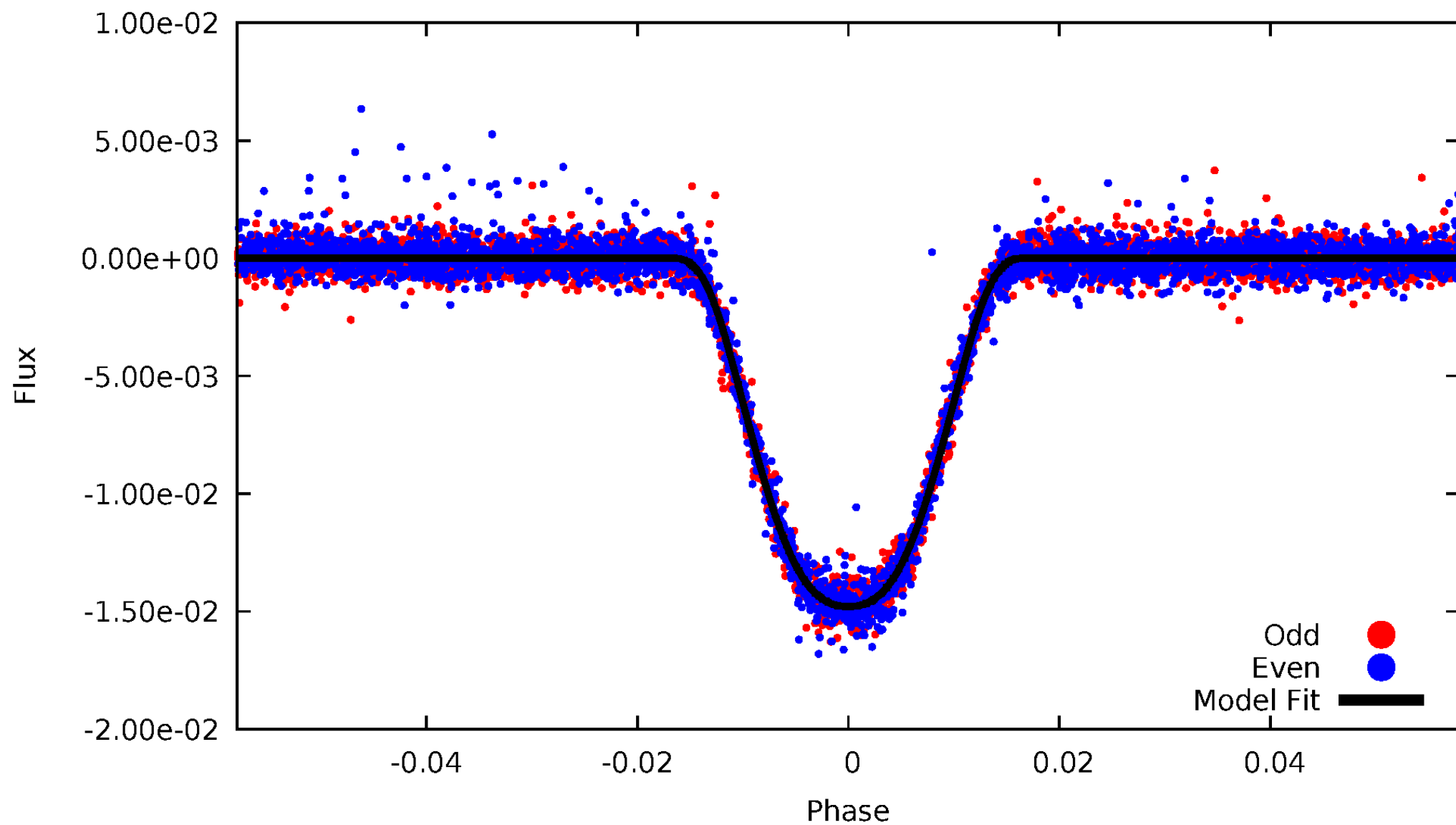


TCE 004947726-02



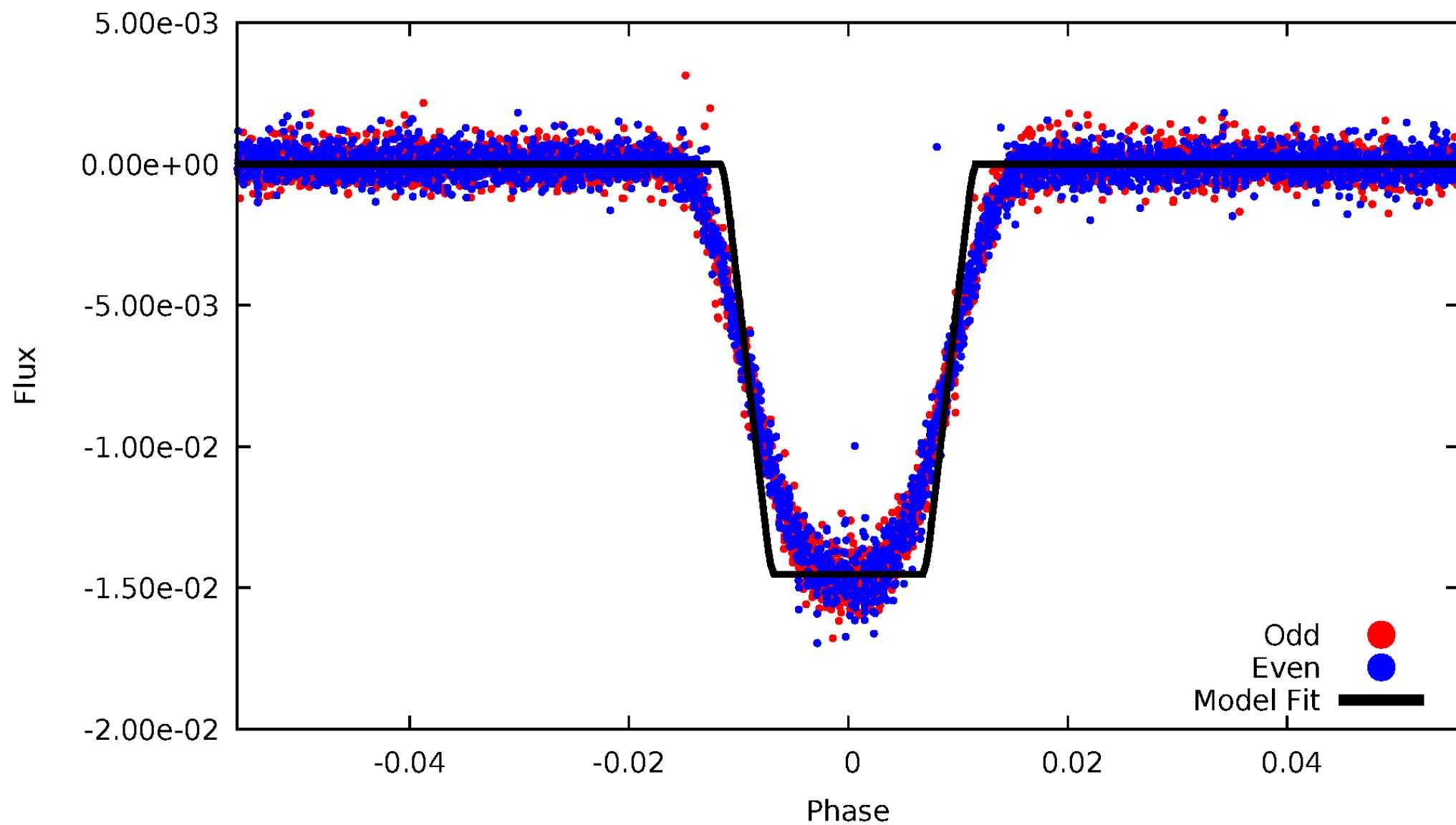
DV Odd/Even

TCE 004947726-02



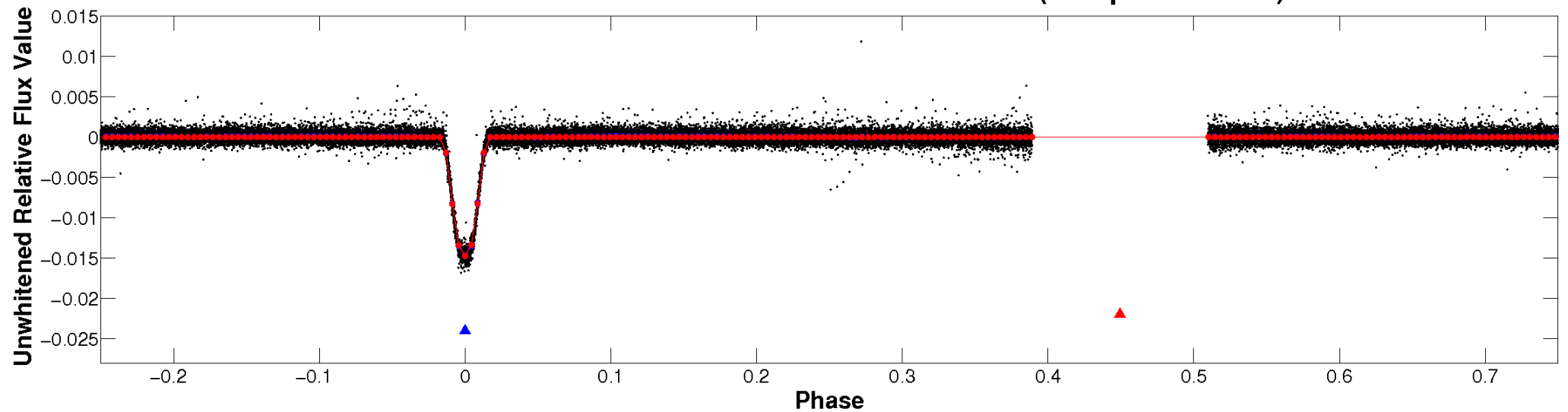
ALT Odd/Even

TCE 004947726-02

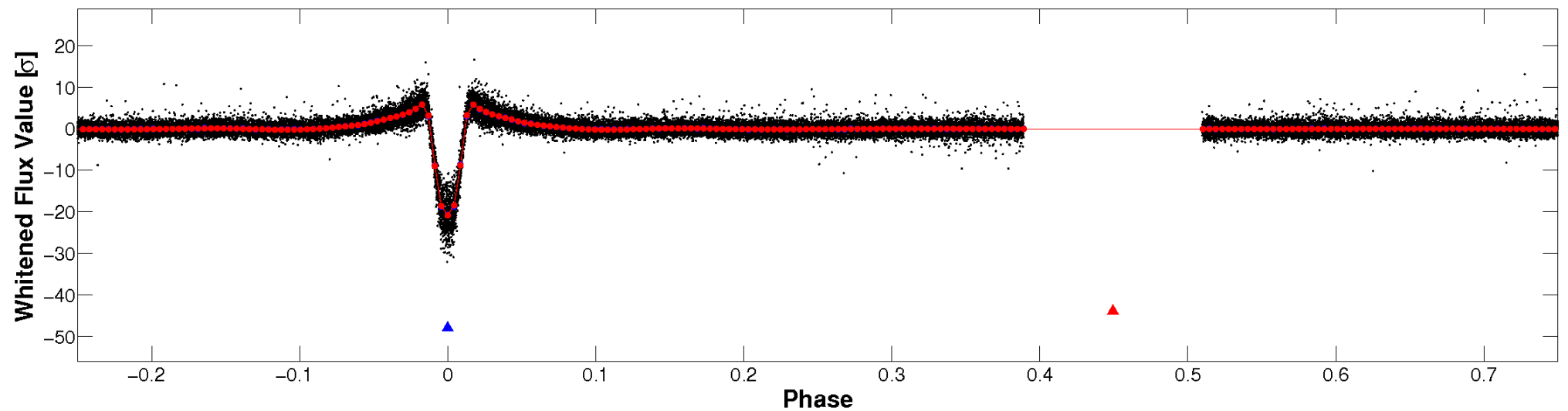


Non-Whitened Vs. Whitened Light Curve

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

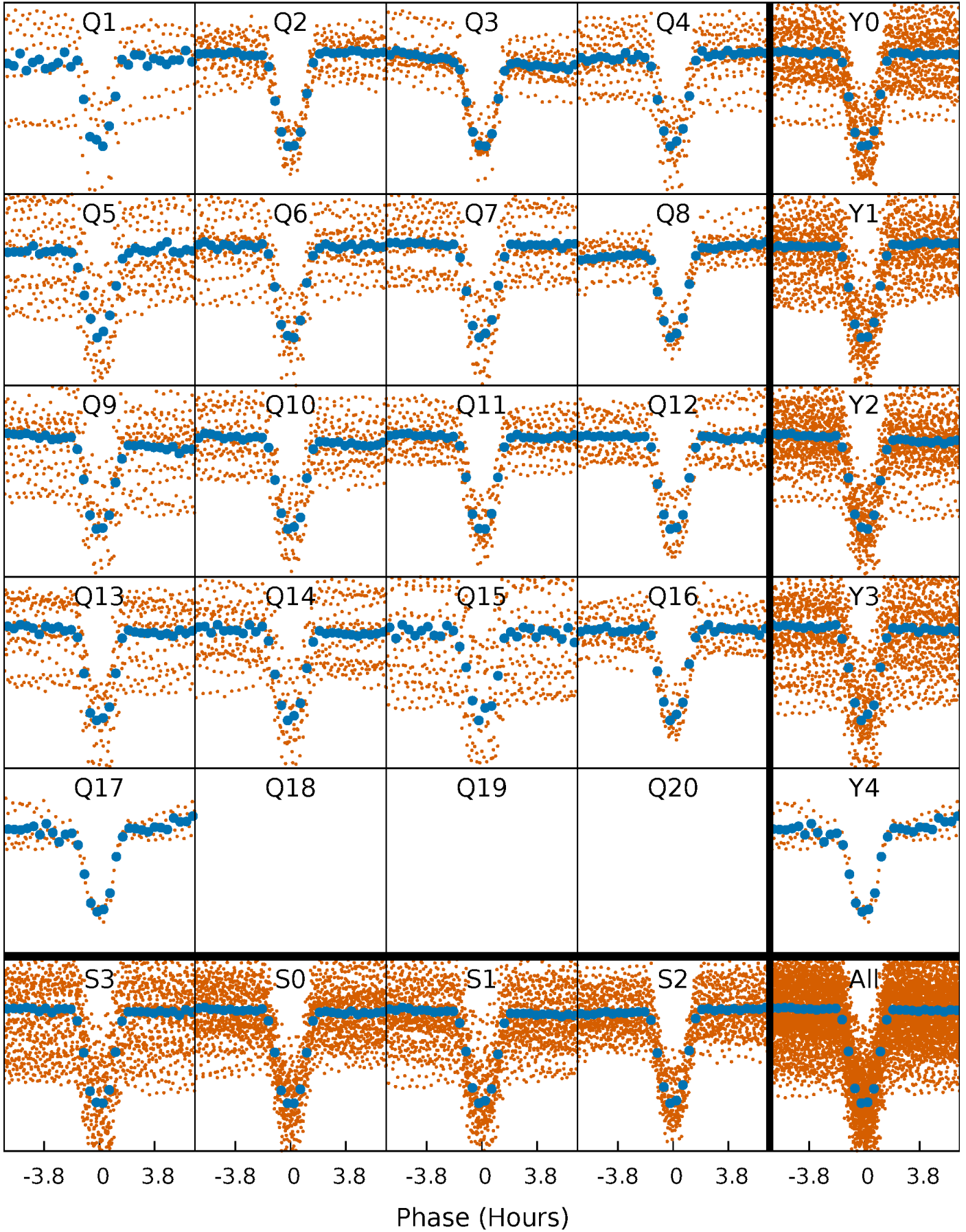


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



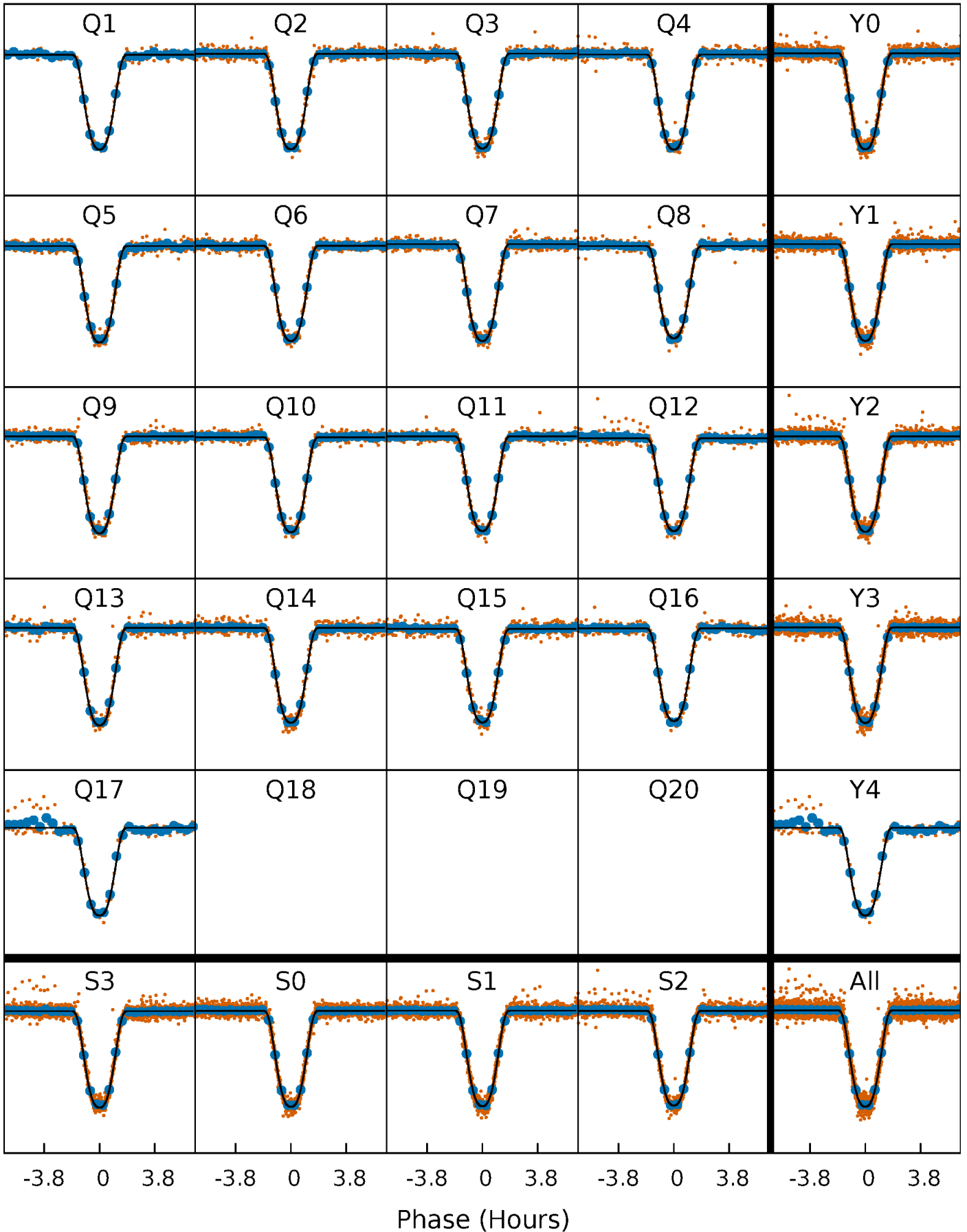
PDC Quarter-Phased Transit Curves

TCE 004947726-02 P= 4.726090 Days $T_0=135.524677$ (BKJD)



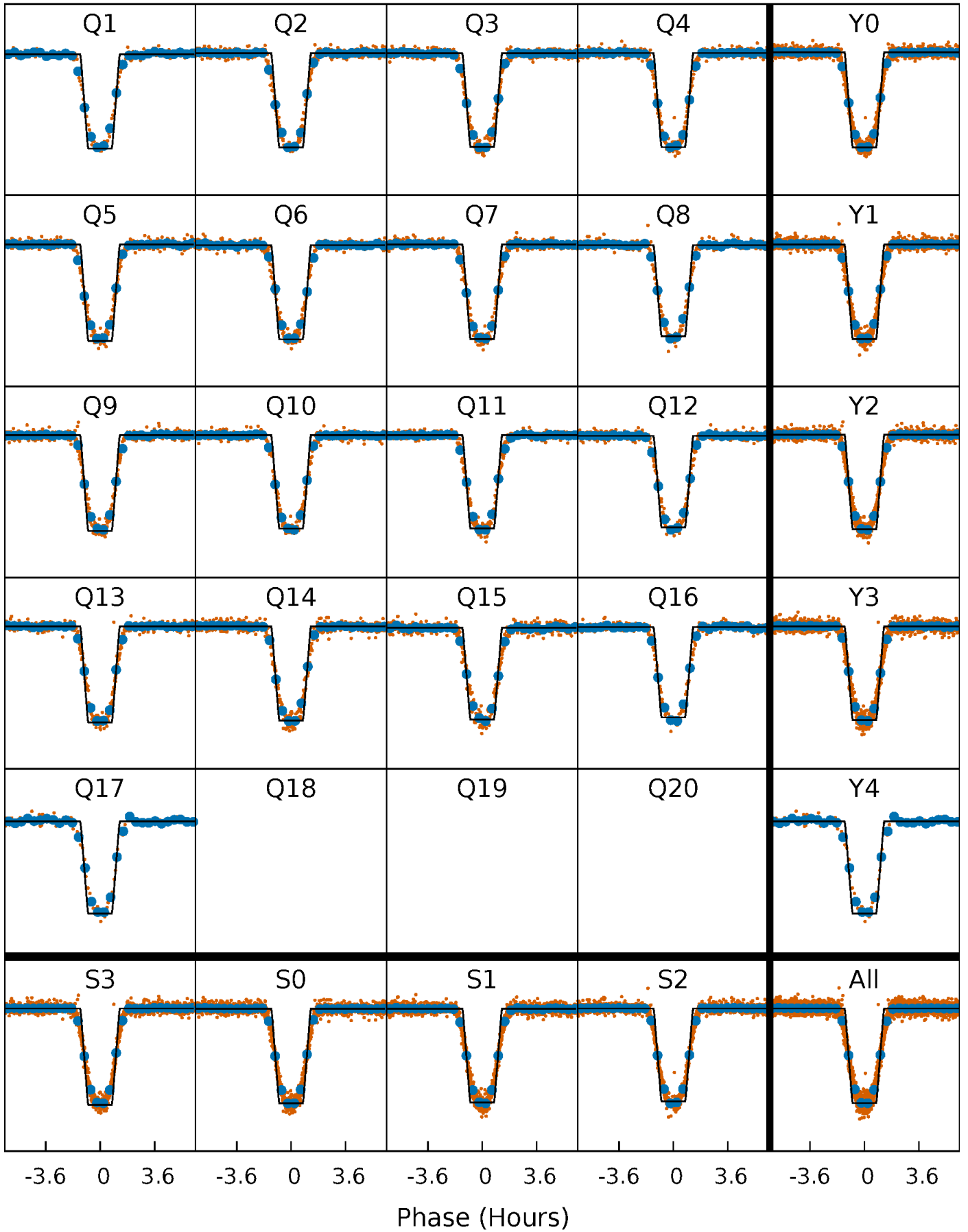
DV Quarter-Phased Transit Curves

TCE 004947726-02 P= 4.726090 Days $T_0=135.524677$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

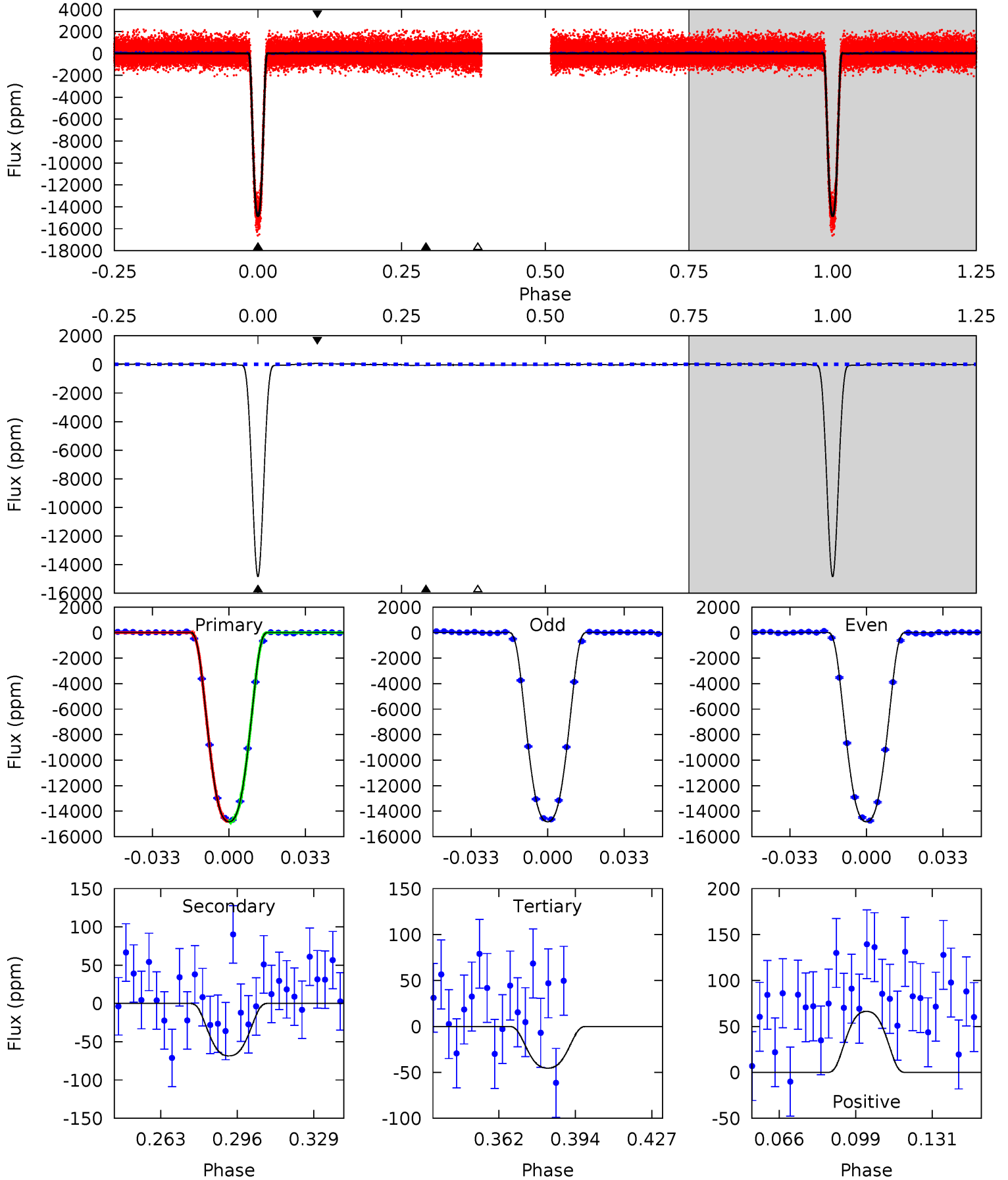
TCE 004947726-02 P= 4.726083 Days $T_0=135.525752$ (BKJD)



DV Model-Shift Uniqueness Test

004947726-02, P = 4.726090 Days, E = 130.798587 Days

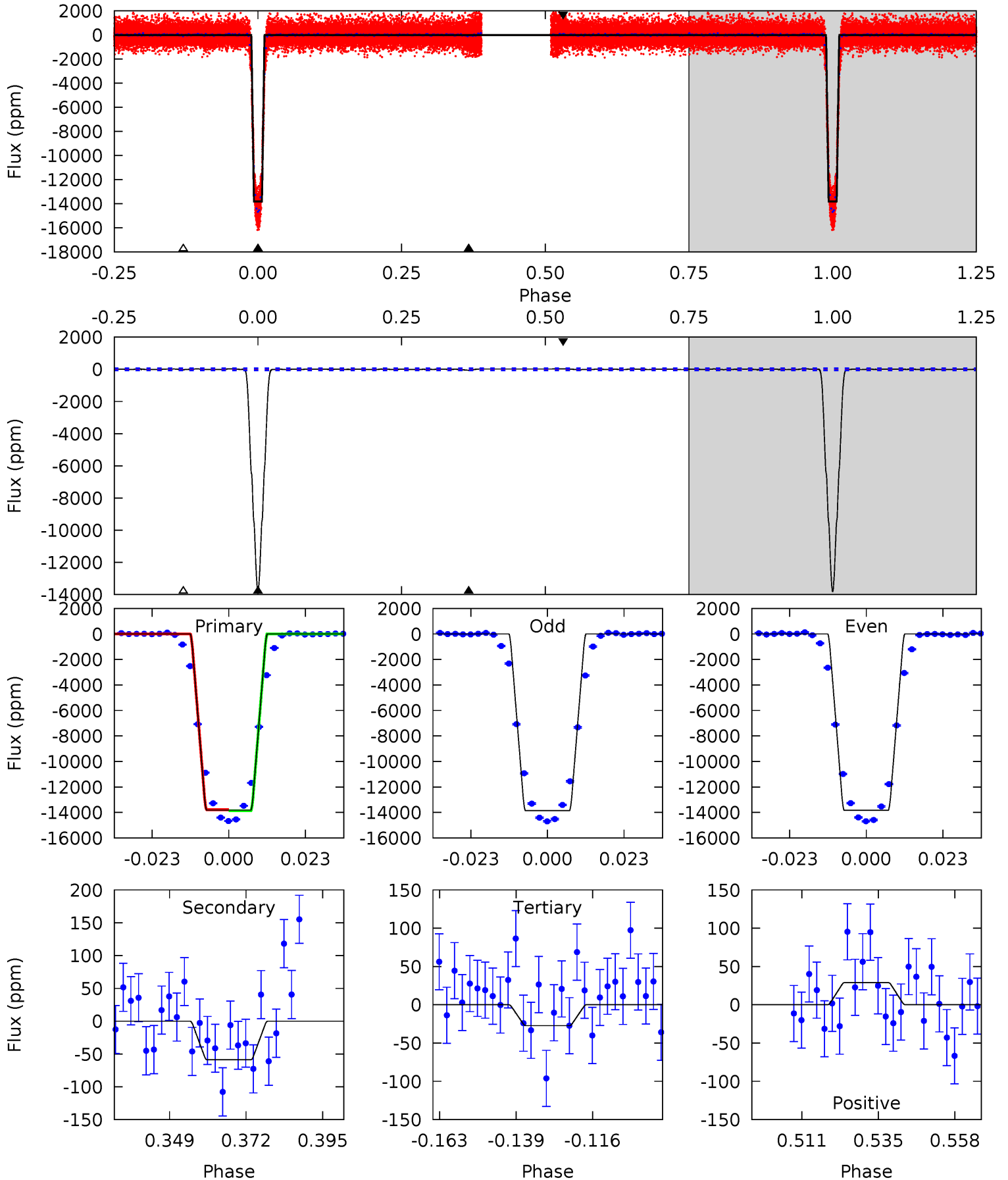
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1238	5.72	3.79	5.54	4.79	2.13	2.33	1235	1233	1.93	0.17	0.03	1.00	0.00	2.15



Alt Model-Shift Uniqueness Test

004947726-02, P = 4.726083 Days, E = 130.799669 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1052	4.47	2.07	2.20	4.86	2.27	0.86	1050	1050	2.40	2.27	0.99	1.00	0.00	2.97



Stellar Parameters For KIC 004947726

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5873^{+159}_{-177}	$4.547^{+0.044}_{-0.176}$	$-0.220^{+0.300}_{-0.300}$	$0.863^{+0.233}_{-0.078}$	$0.954^{+0.110}_{-0.121}$	$2.094^{+0.376}_{-1.011}$
	+3%/-3%	+1%/-4%	+136%/-136%	+27%/-9%	+12%/-13%	+18%/-48%
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 004947726-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-68 ± 12	$12.25^{+2.01}_{-0.66}$	1470^{+87}_{-67}	2221^{+83}_{-116}	$0.683^{+0.167}_{-0.174}$
Alt.	-59 ± 13	$11.59^{+1.52}_{-0.74}$	1472^{+87}_{-65}	2217^{+101}_{-138}	$0.671^{+0.198}_{-0.189}$

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 $A_{obs} \gg 1.0$

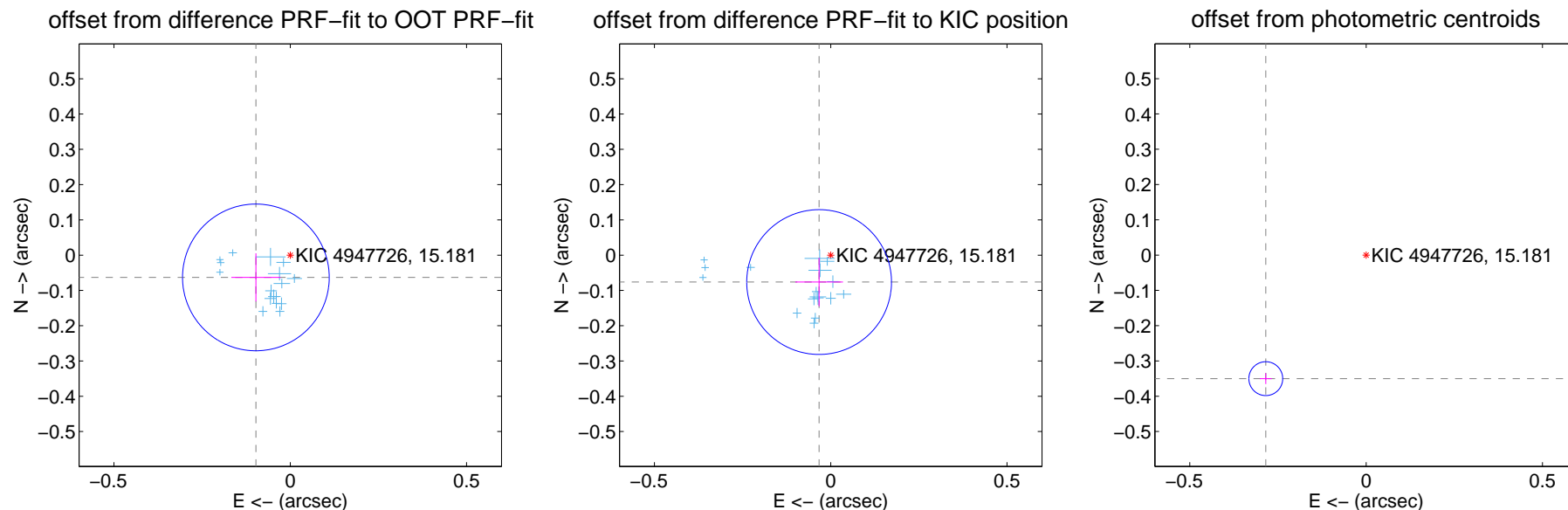
DV Centroid Data

Supplemental centroid analysis for 004947726-02. Kepler magnitude: 15.18. Transit SNR 635.47

There are 17 quarters with good PRF difference image offsets

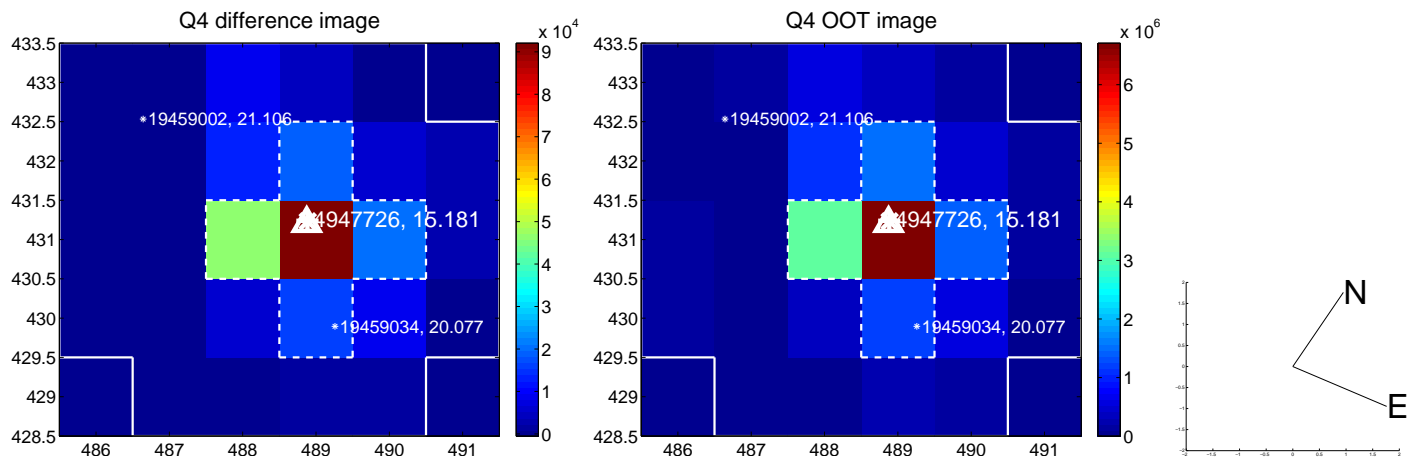
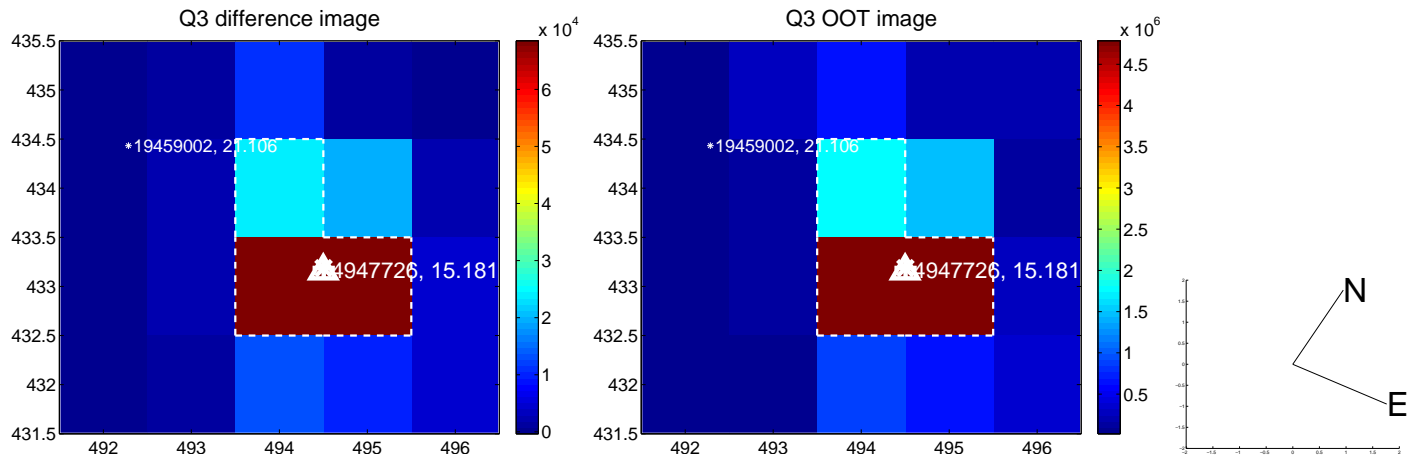
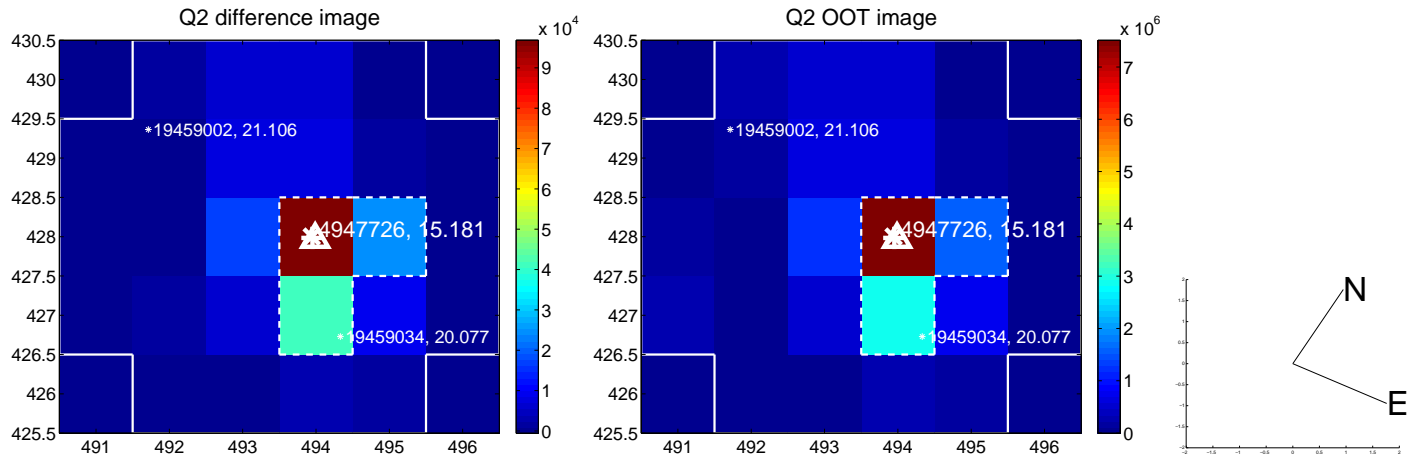
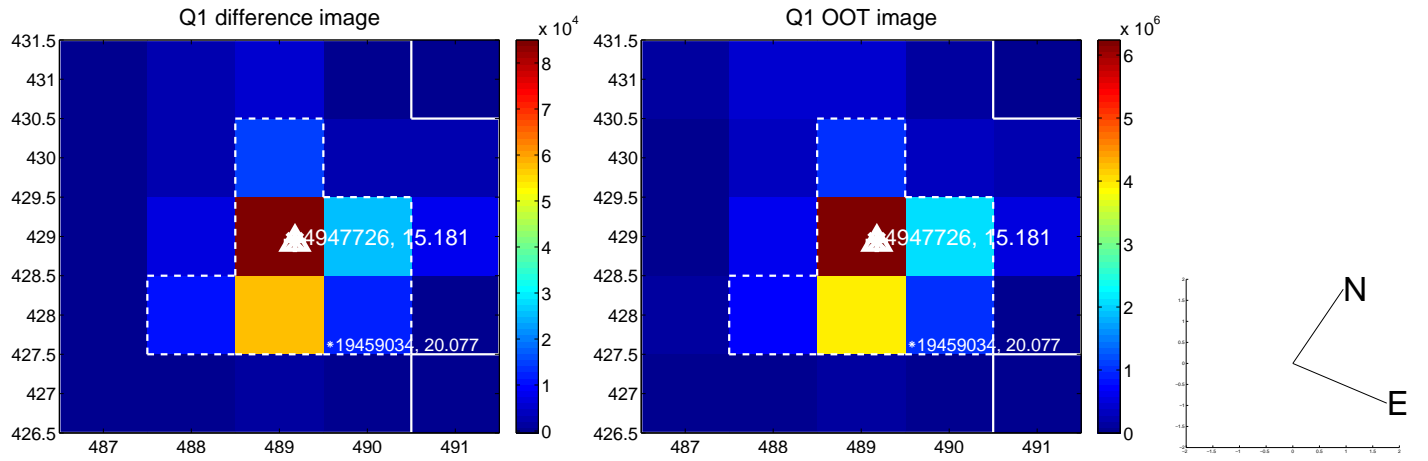
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.116 ± 0.069	1.67	0.097 ± 0.070	-0.063 ± 0.068
PRF-fit source offset from KIC position	0.083 ± 0.068	1.21	0.033 ± 0.068	-0.076 ± 0.069
photometric centroid source offset	0.45 ± 0.02	28.20	0.28 ± 0.02	-0.35 ± 0.02

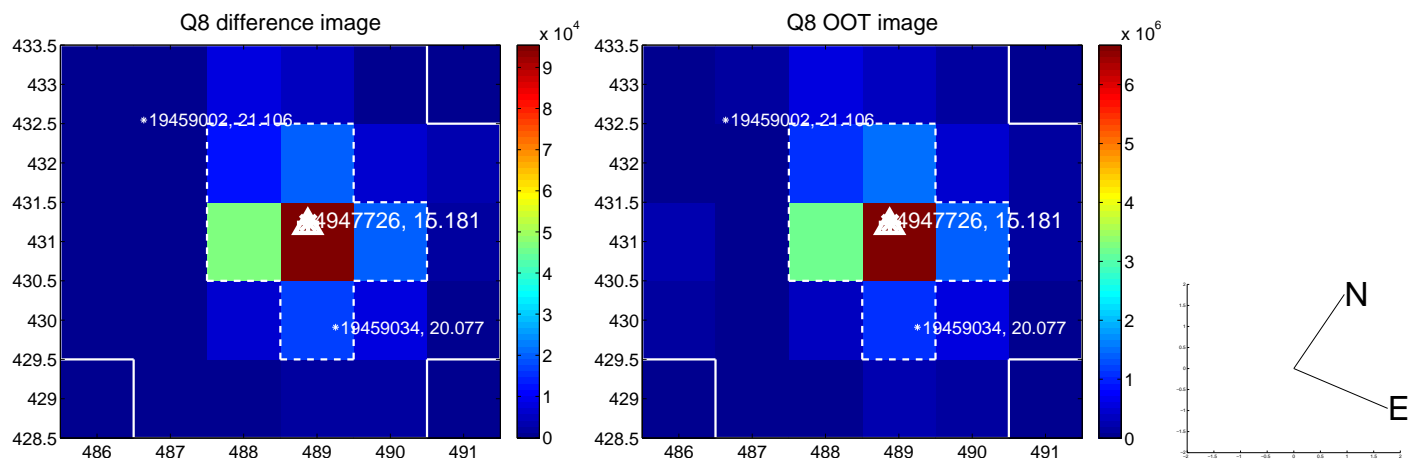
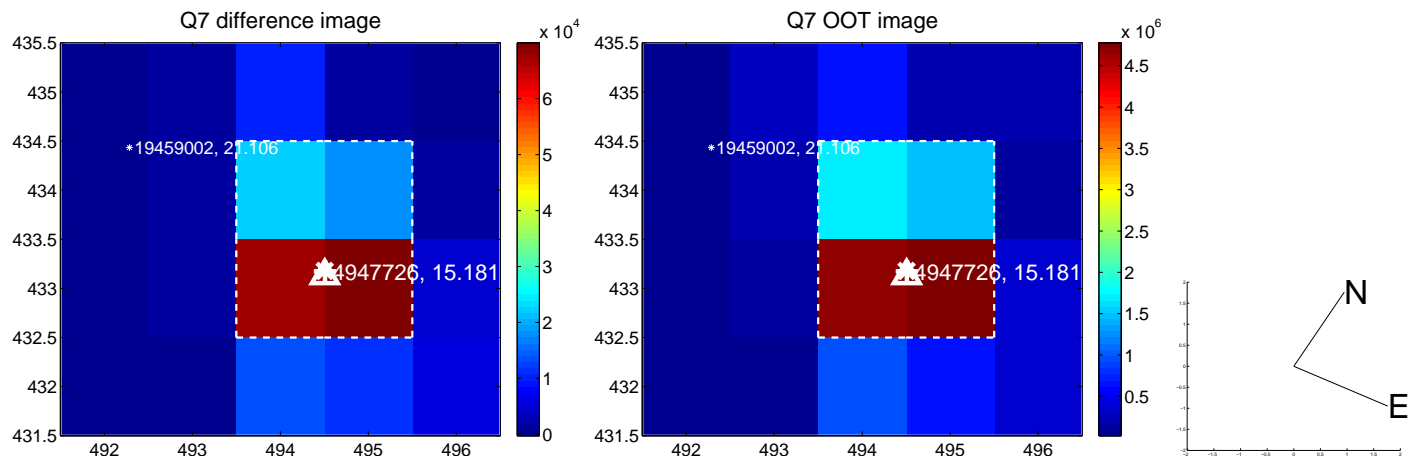
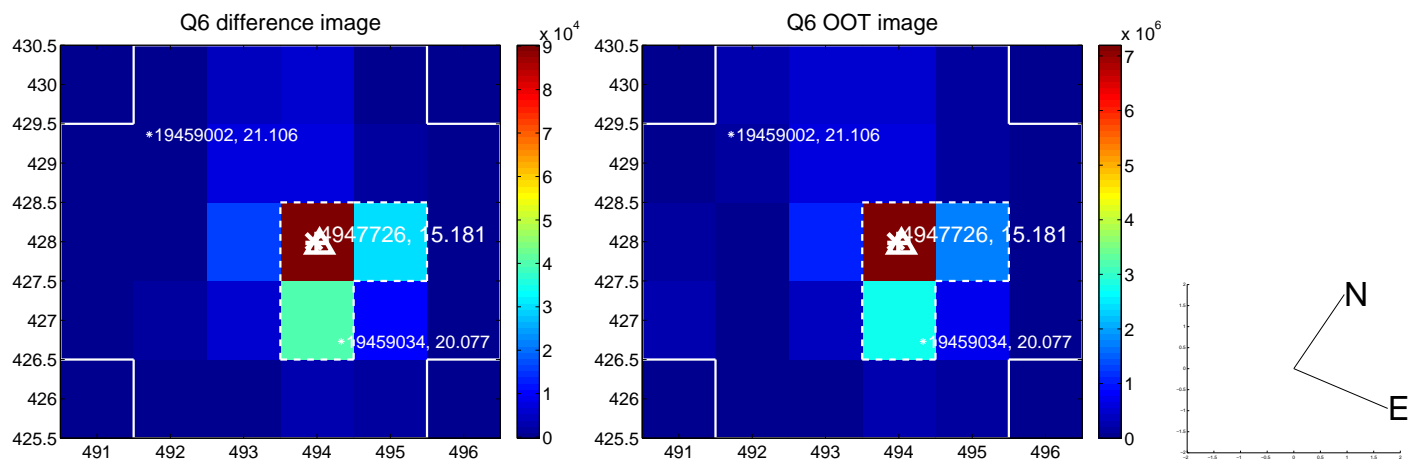
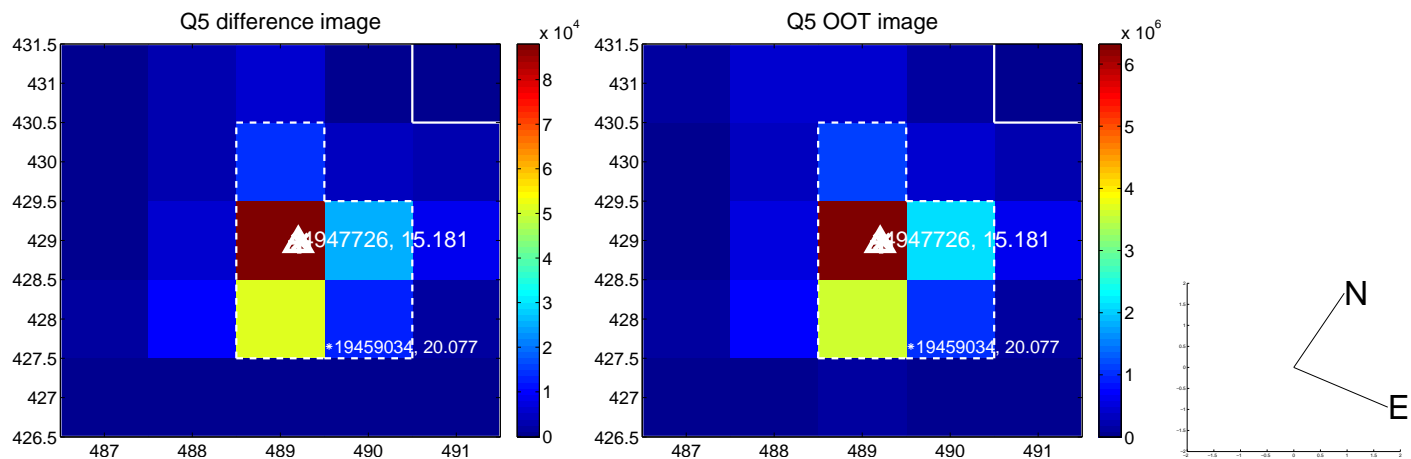


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

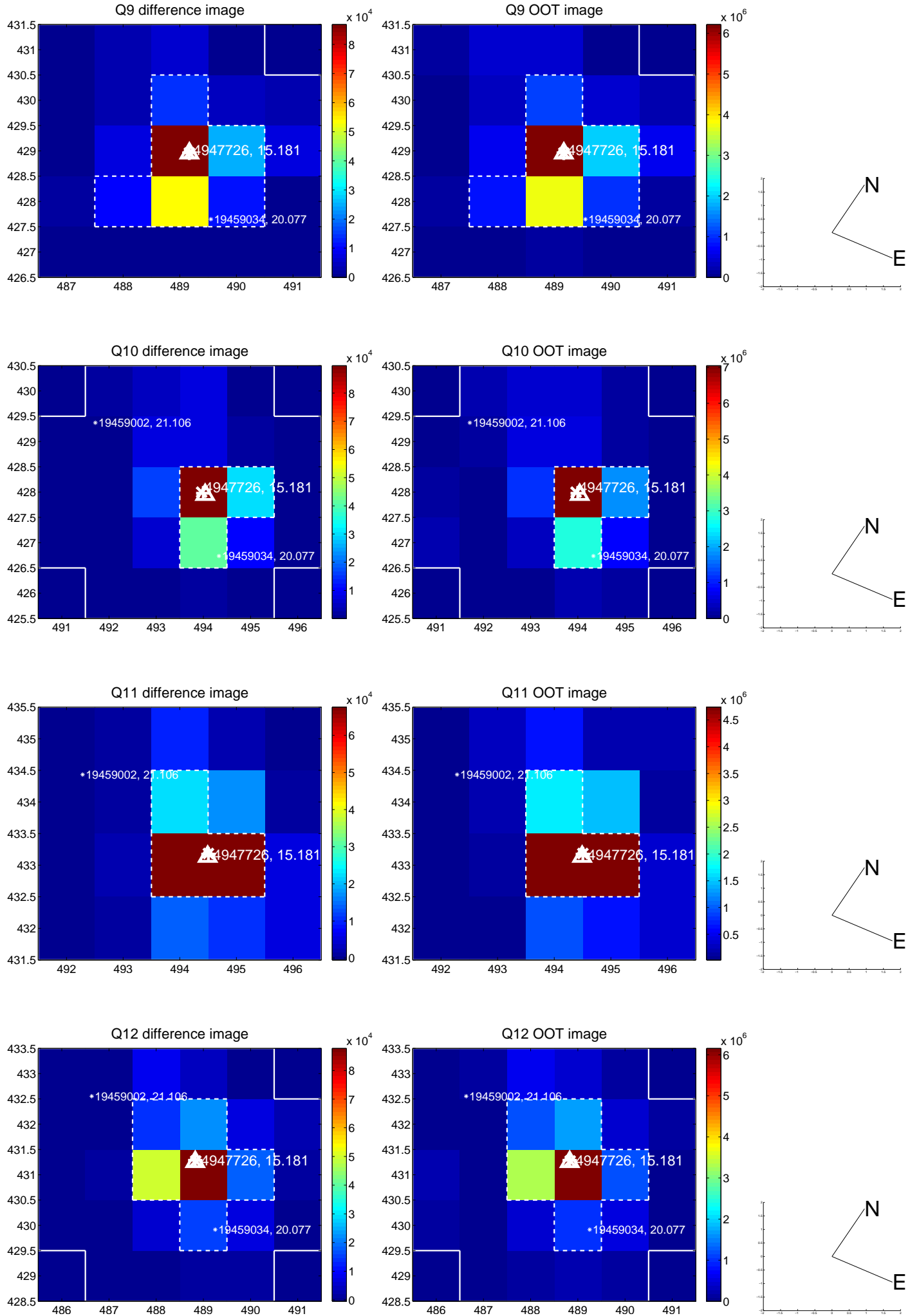
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



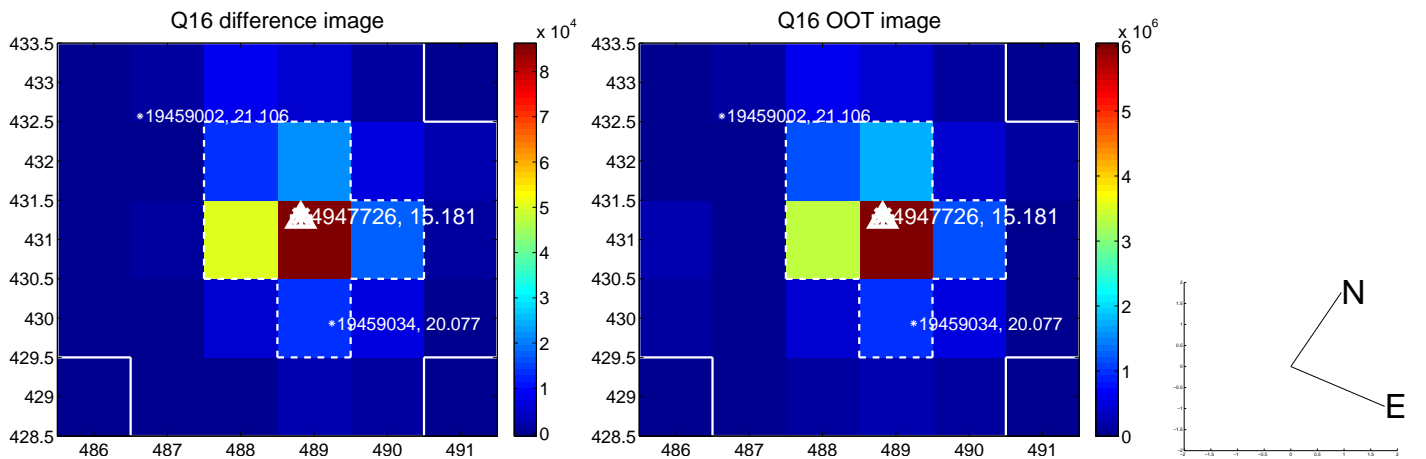
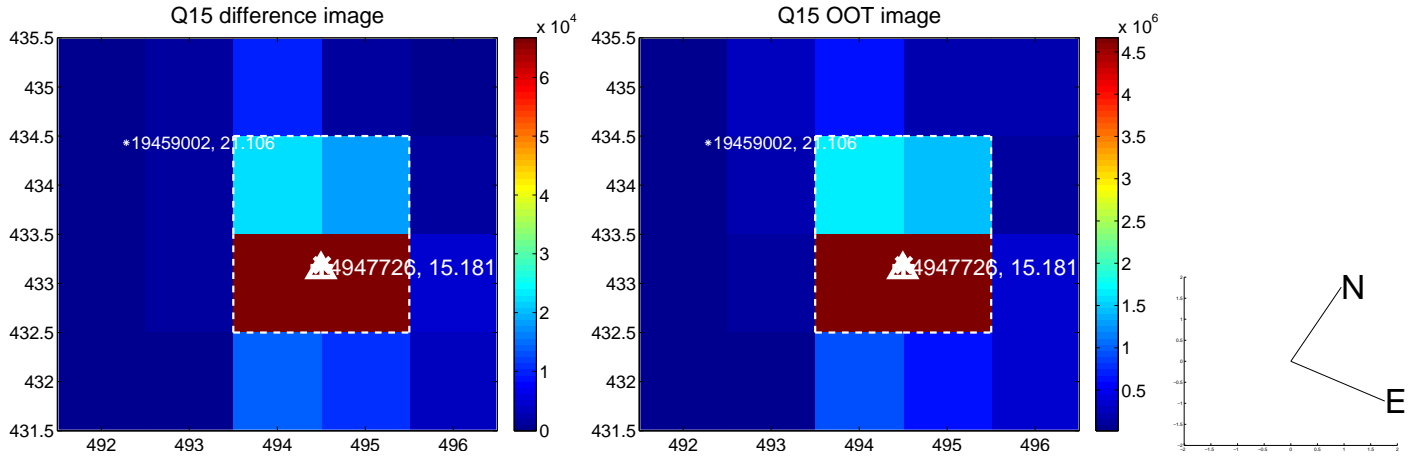
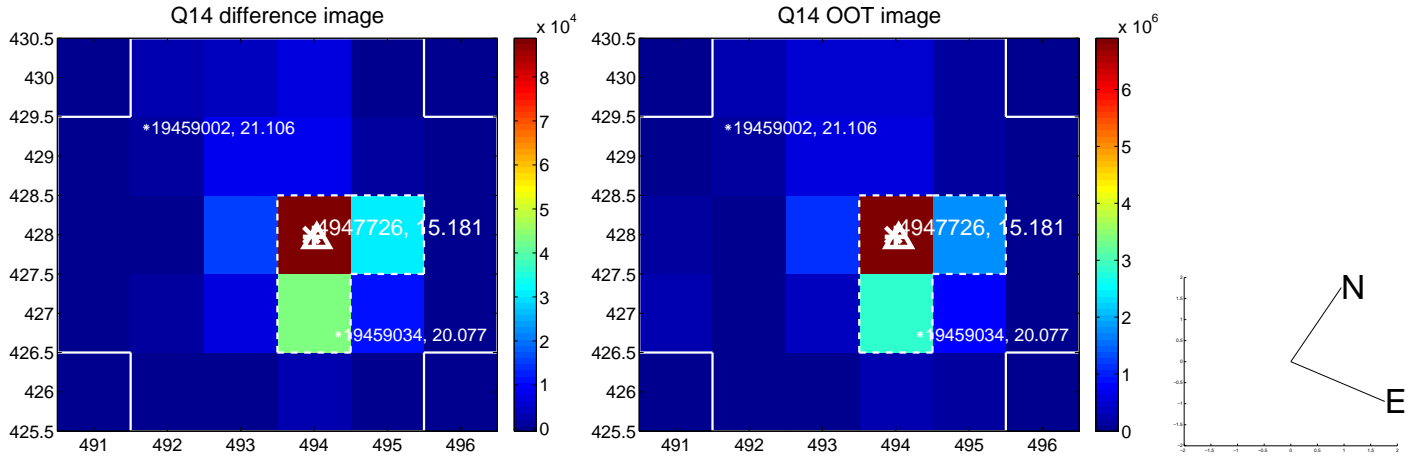
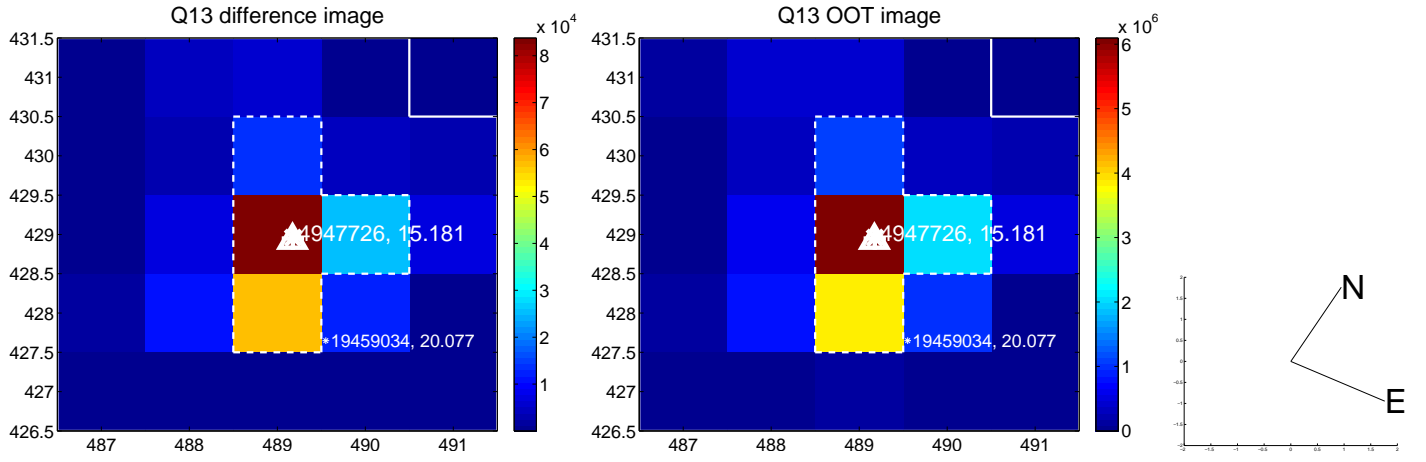
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



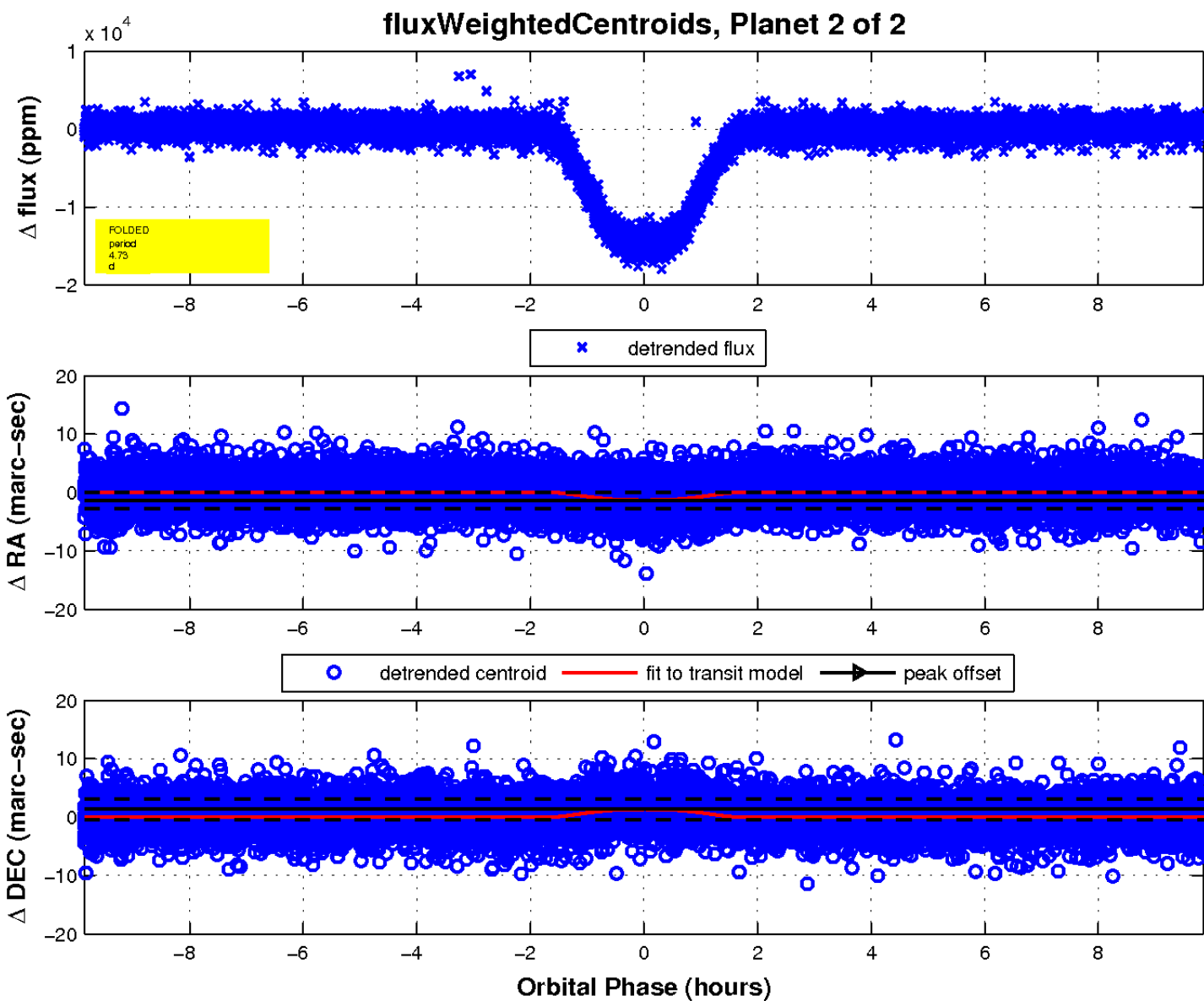
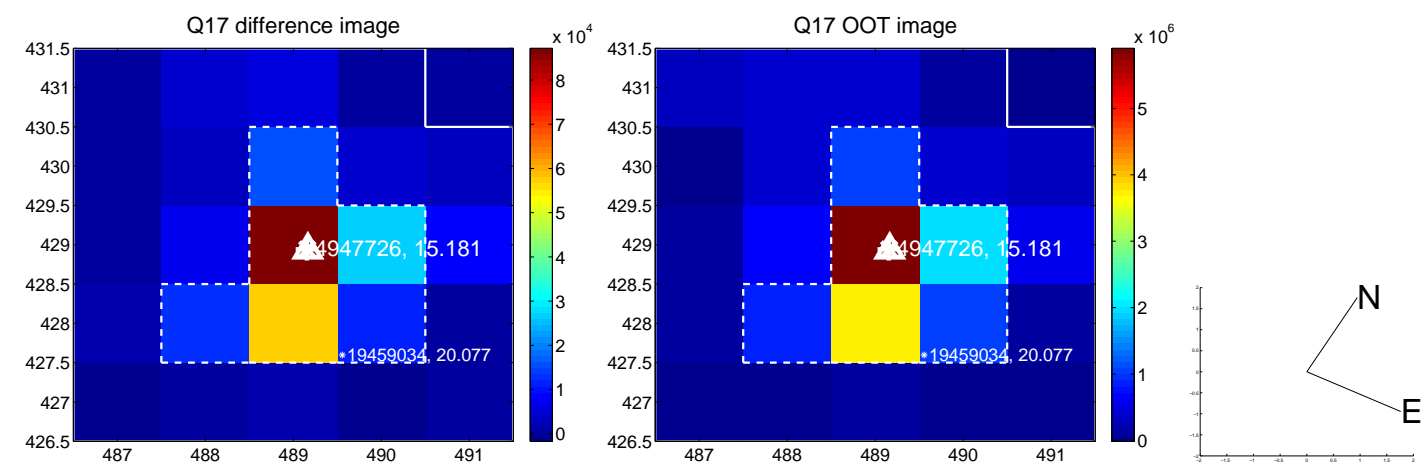
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

