

KIC 003326377

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})
003326377-01	OBS	1830.01	13.227132	142.202780	822.6	3.459	45.2	49.1	0.80	5180	2.58	39.17
003326377-02	OBS	1830.02	198.710876	156.517475	2060.0	8.708	44.3	42.3	0.80	5180	3.75	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003326377-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
003326377-02	OBS	PC	1.00	0	0	0	0	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.

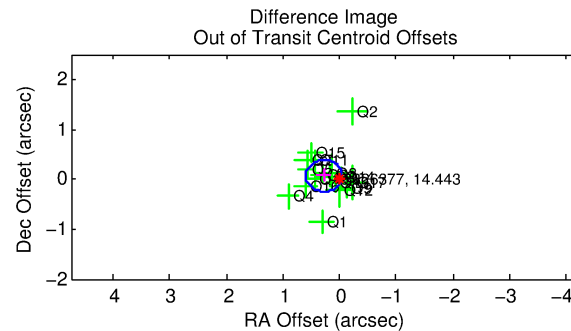
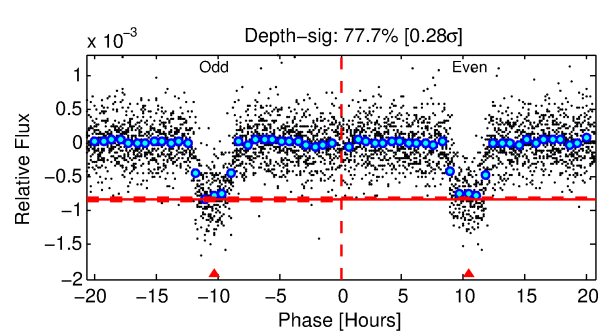
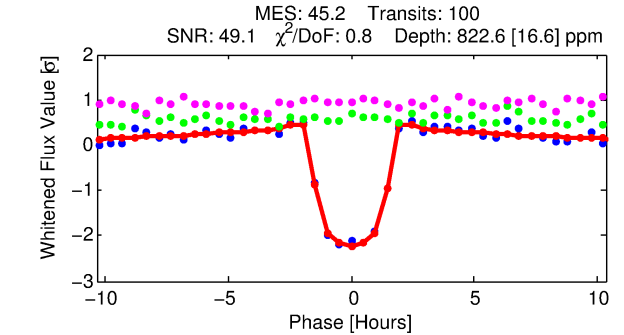
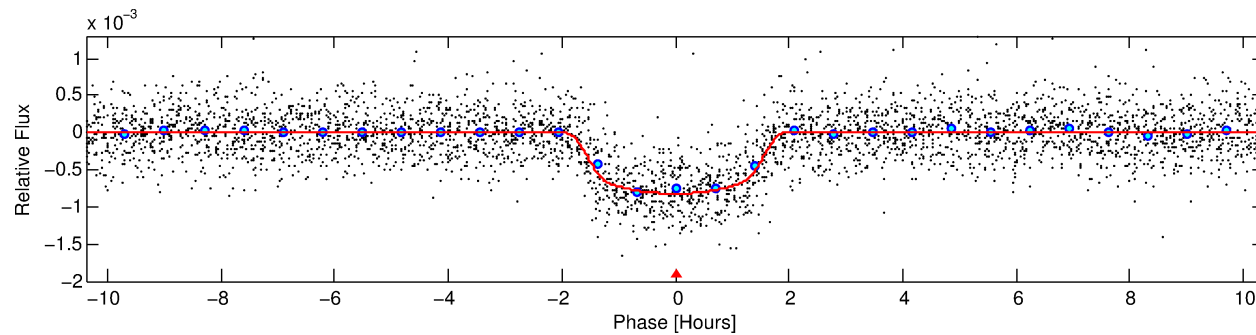
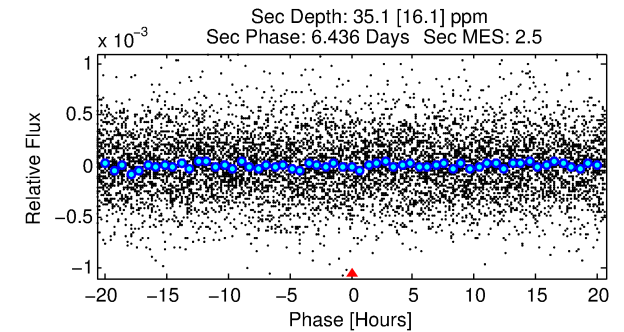
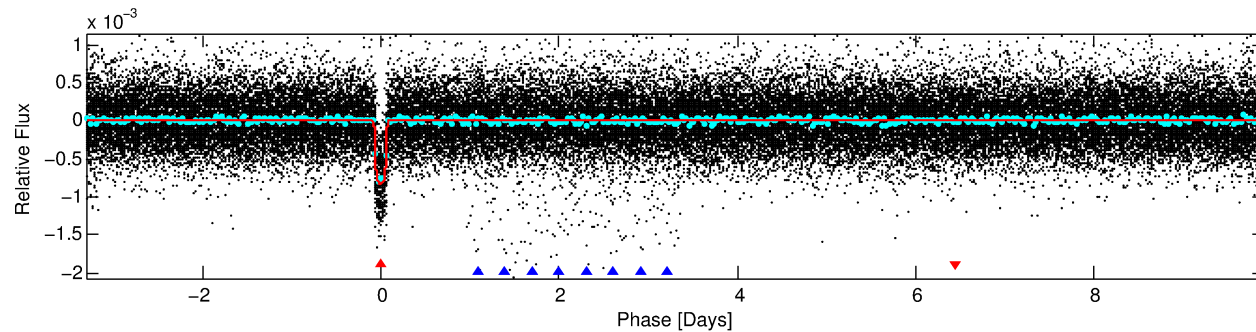
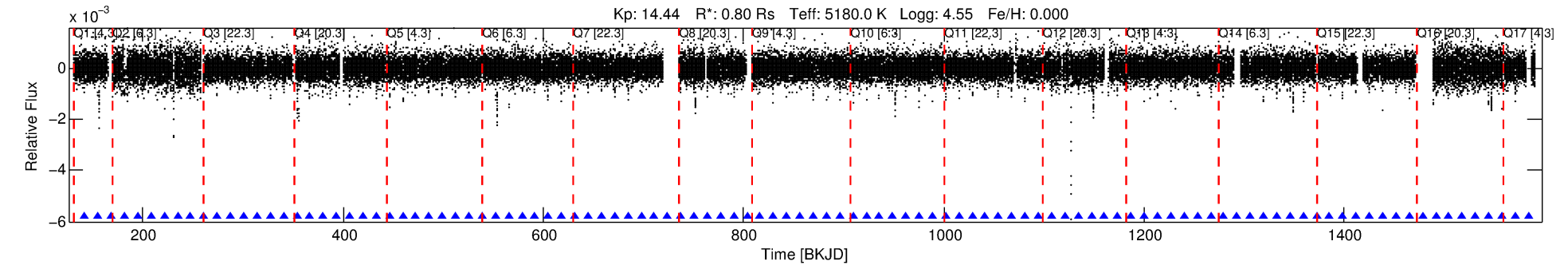
Ephemeris Match Information For 003326377-01

No Significant Match Found

DV One-Page Summary

KIC: 3326377 Candidate: 1 of 2 Period: 13.227 d

KOI: K01830.01 Corr: 0.975



DV Fit Results:

Period = 13.22713 [0.00002] d
Epoch = 142.2028 [0.0014] BKJD
Rp/R* = 0.0296 [0.0039]
a/R* = 18.57 [9.06]
b = 0.81 [0.21]
Seff = 39.17 [4.83]
Teff = 638 [20] K
Rp = 2.58 [0.38] Re
a = 0.1027 [0.0063] AU
Ag = 30.53 [16.36] [1.81σ]
Teffp = 2319 [309] K [5.43σ]

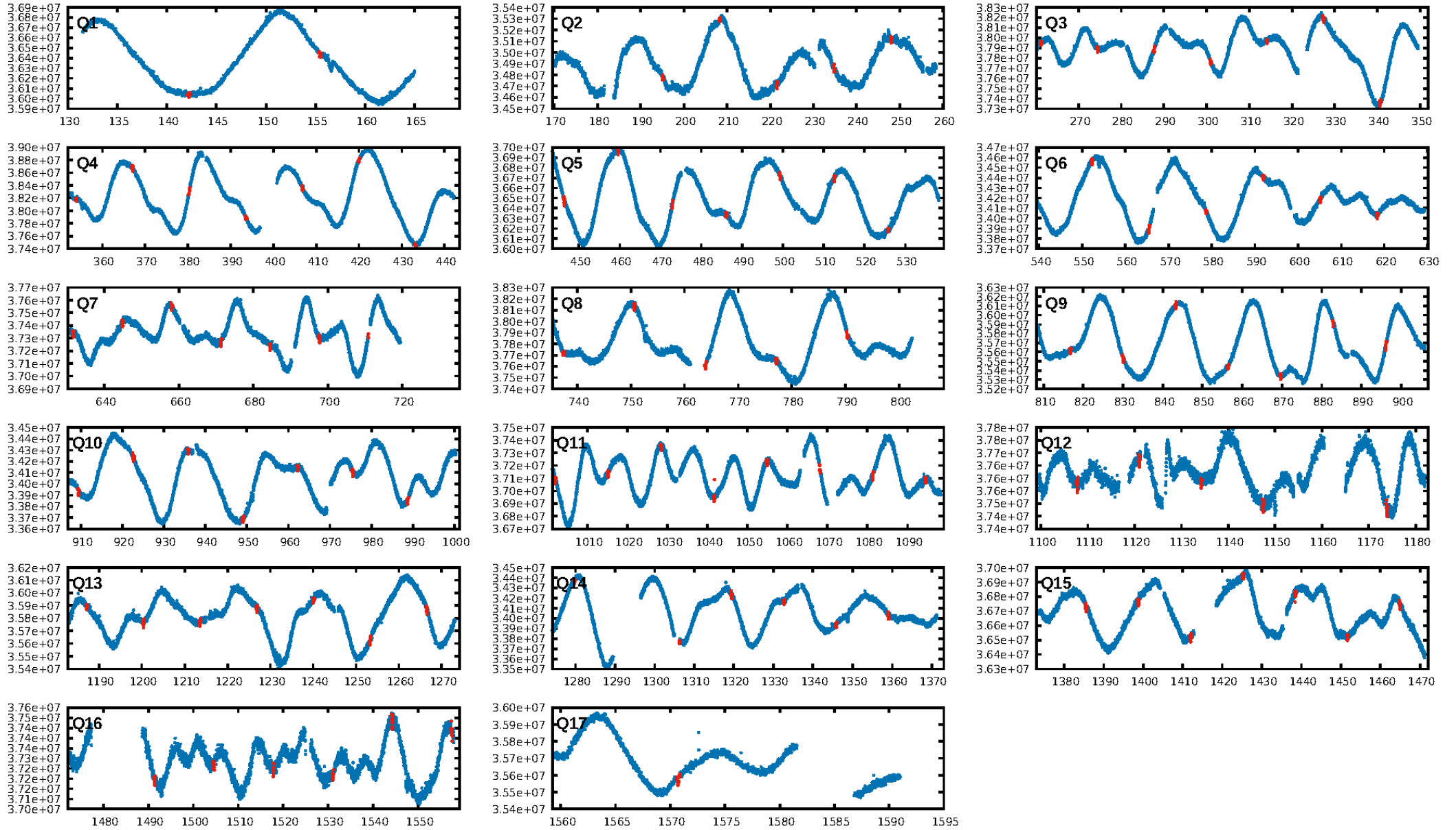
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [475.12σ]
ModelChiSquare2-sig: 95.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [97/97]
GhostDiagnostic-chr: 3.138
Centroid-sig: 0.9%
Centroid-so: 1.235 arcsec [4.99σ]
OotOffset-rm: 0.285 arcsec [2.68σ]
KicOffset-rm: 0.281 arcsec [2.08σ]
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]

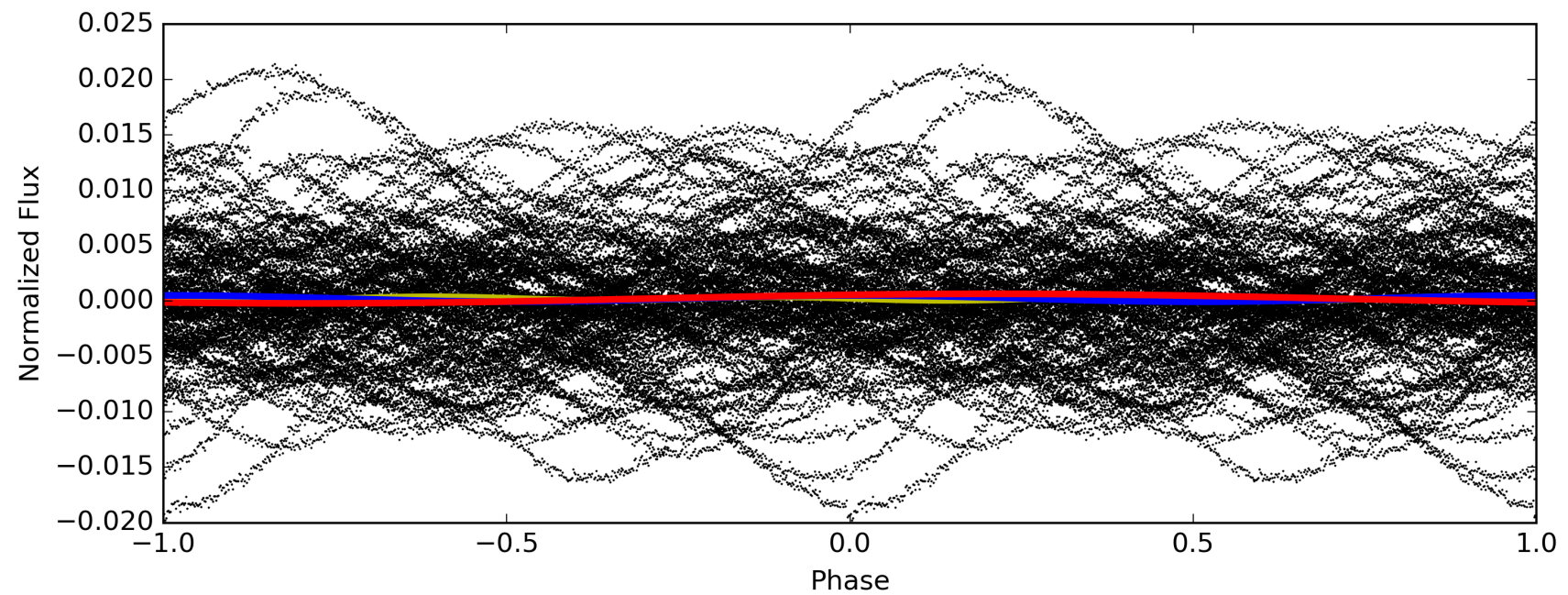
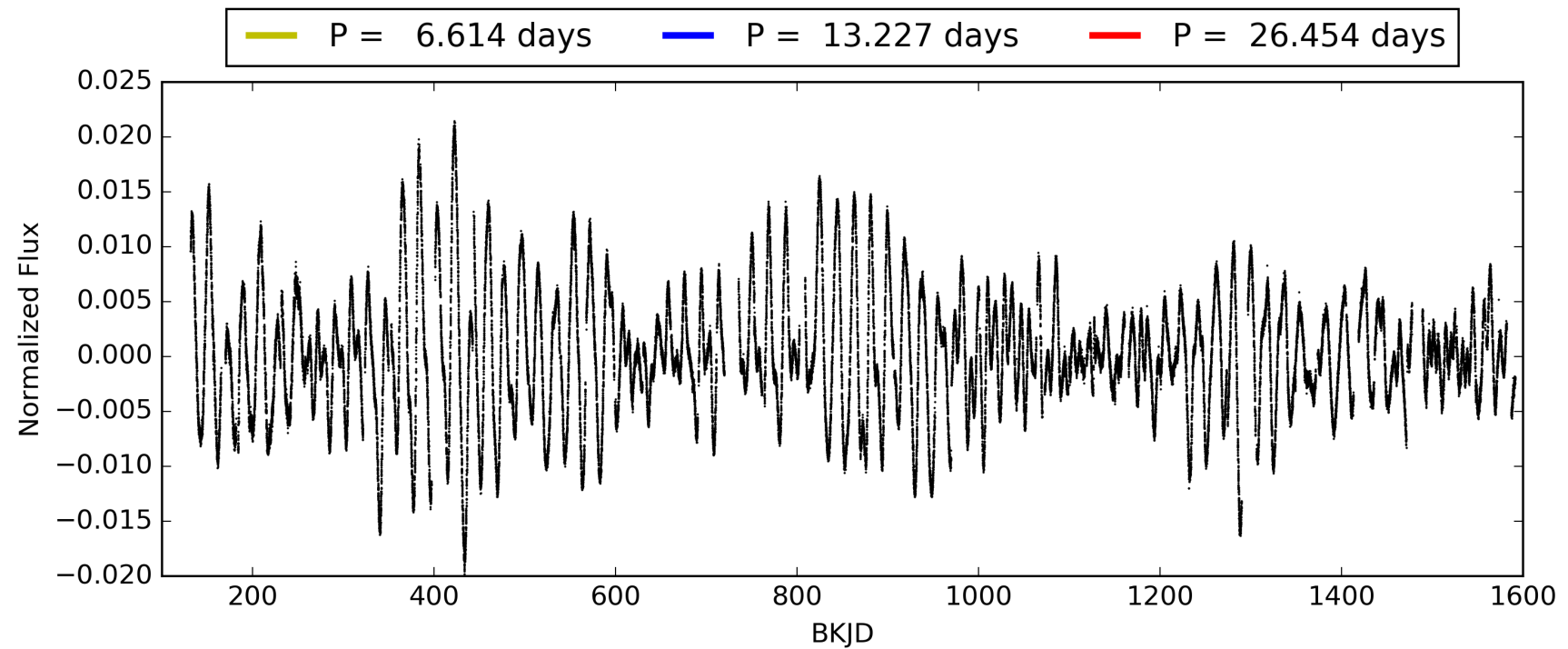
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:10:15 Z

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

TCE 003326377-01, PDC Light Curves

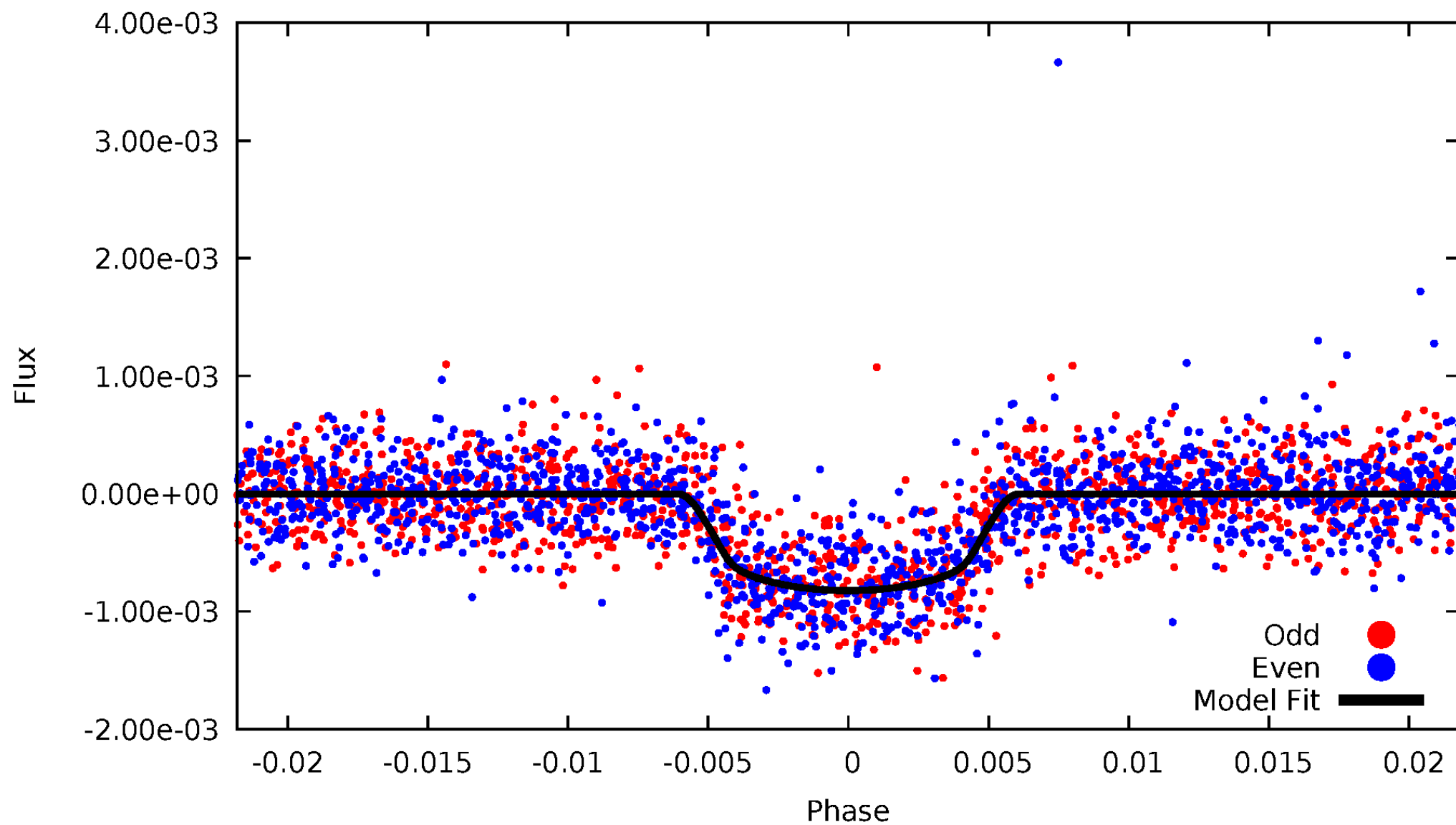


TCE 003326377-01



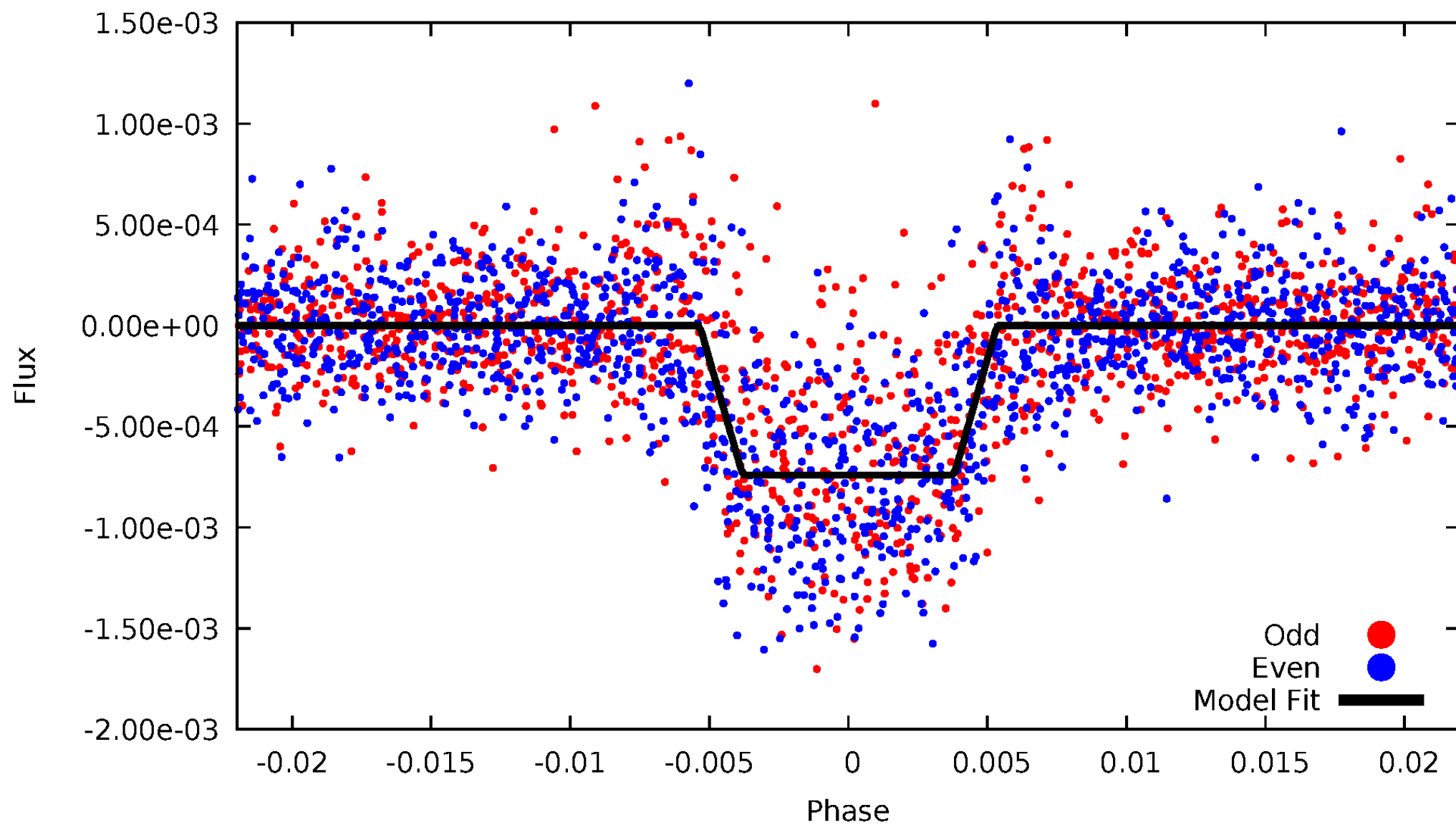
DV Odd/Even

TCE 003326377-01

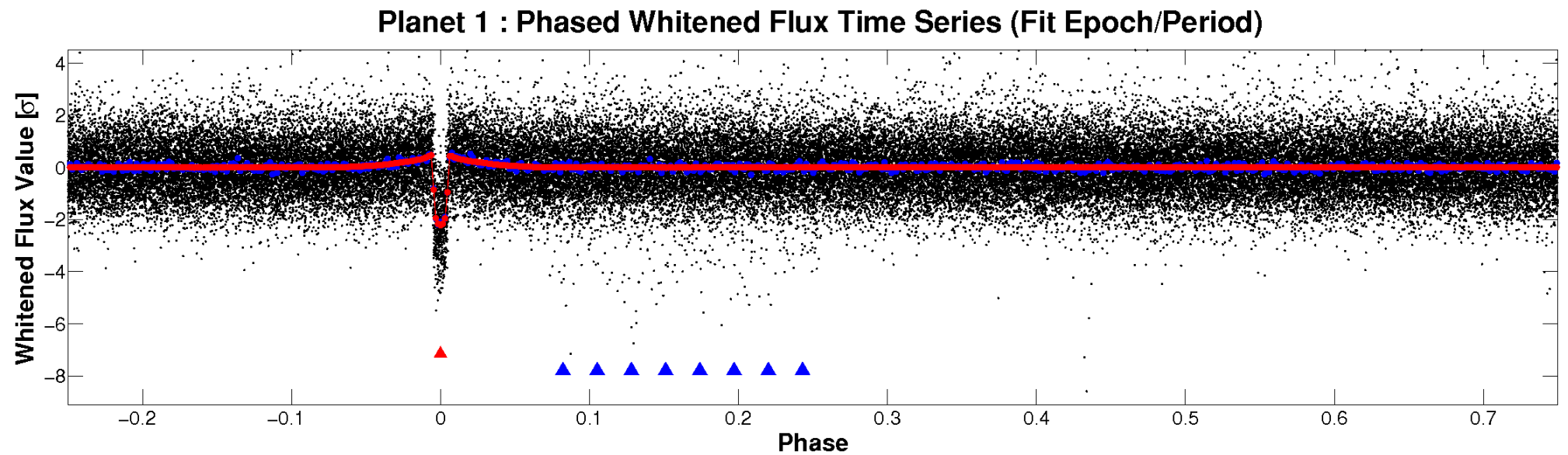
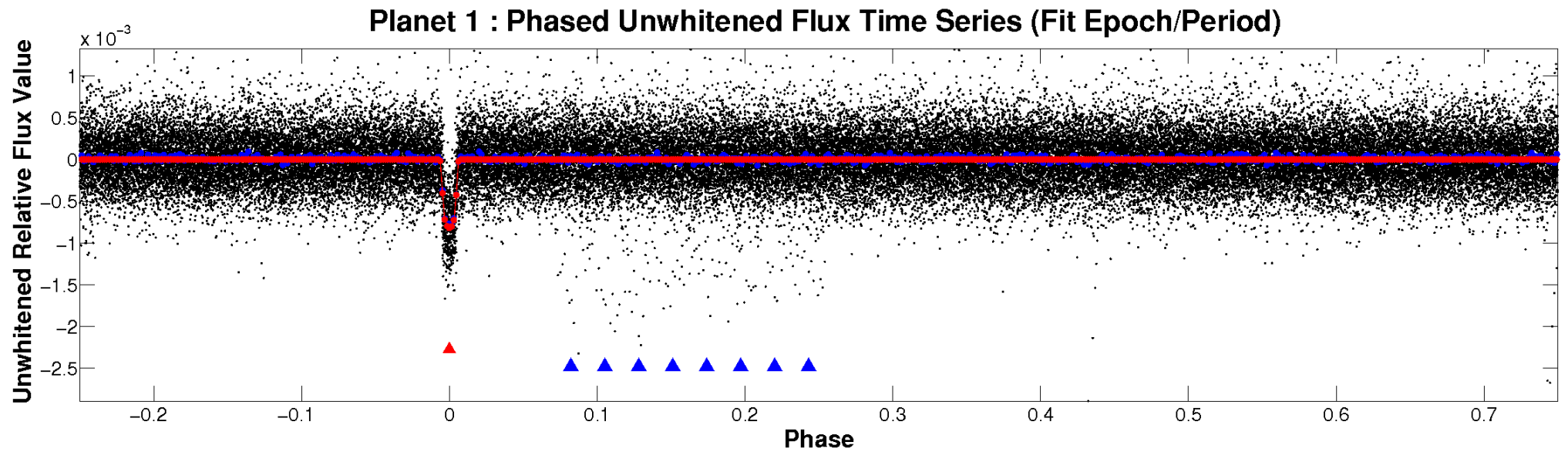


ALT Odd/Even

TCE 003326377-01

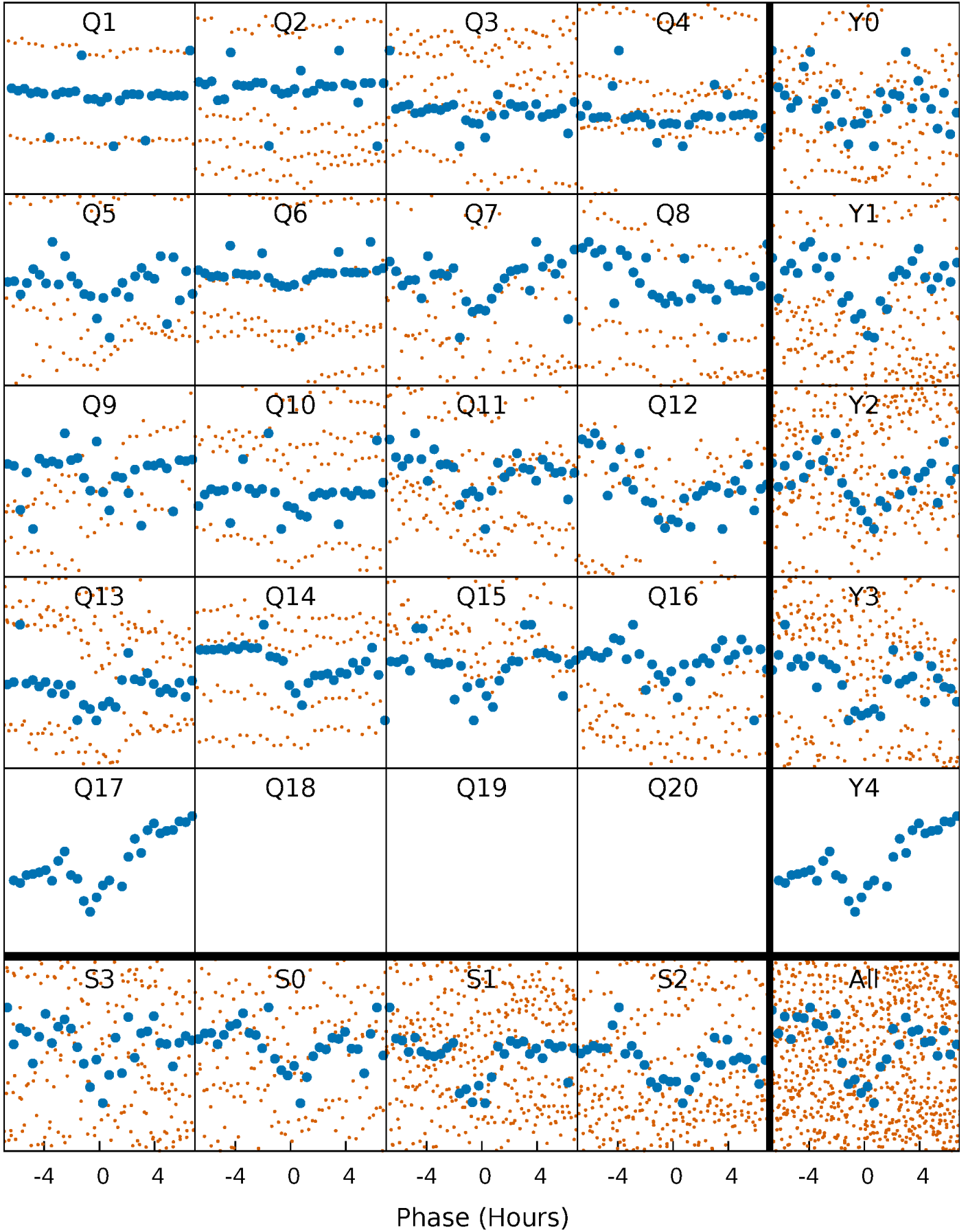


Non-Whitened Vs. Whitened Light Curve



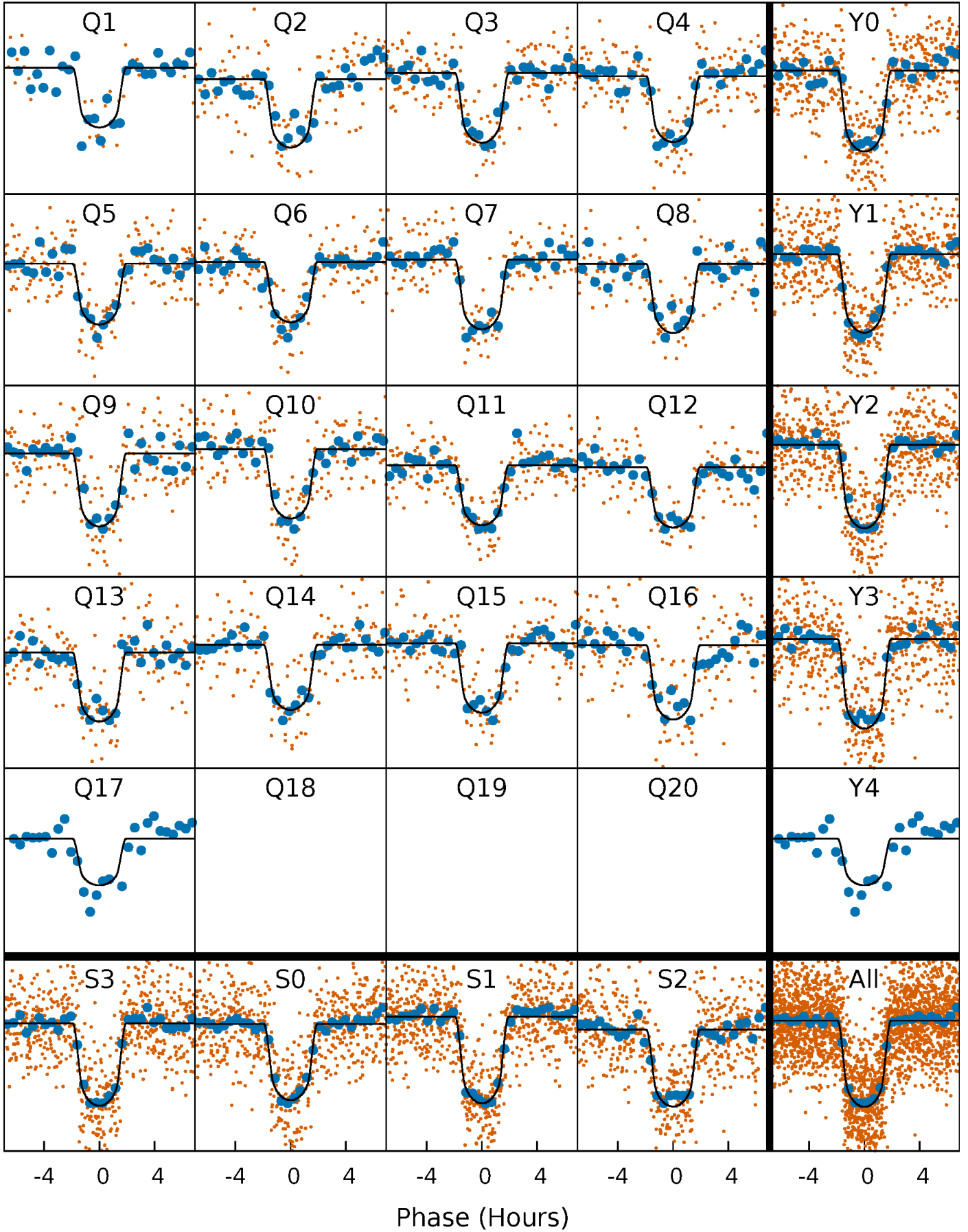
PDC Quarter-Phased Transit Curves

TCE 003326377-01 P= 13.227132 Days $T_0=142.202780$ (BKJD)



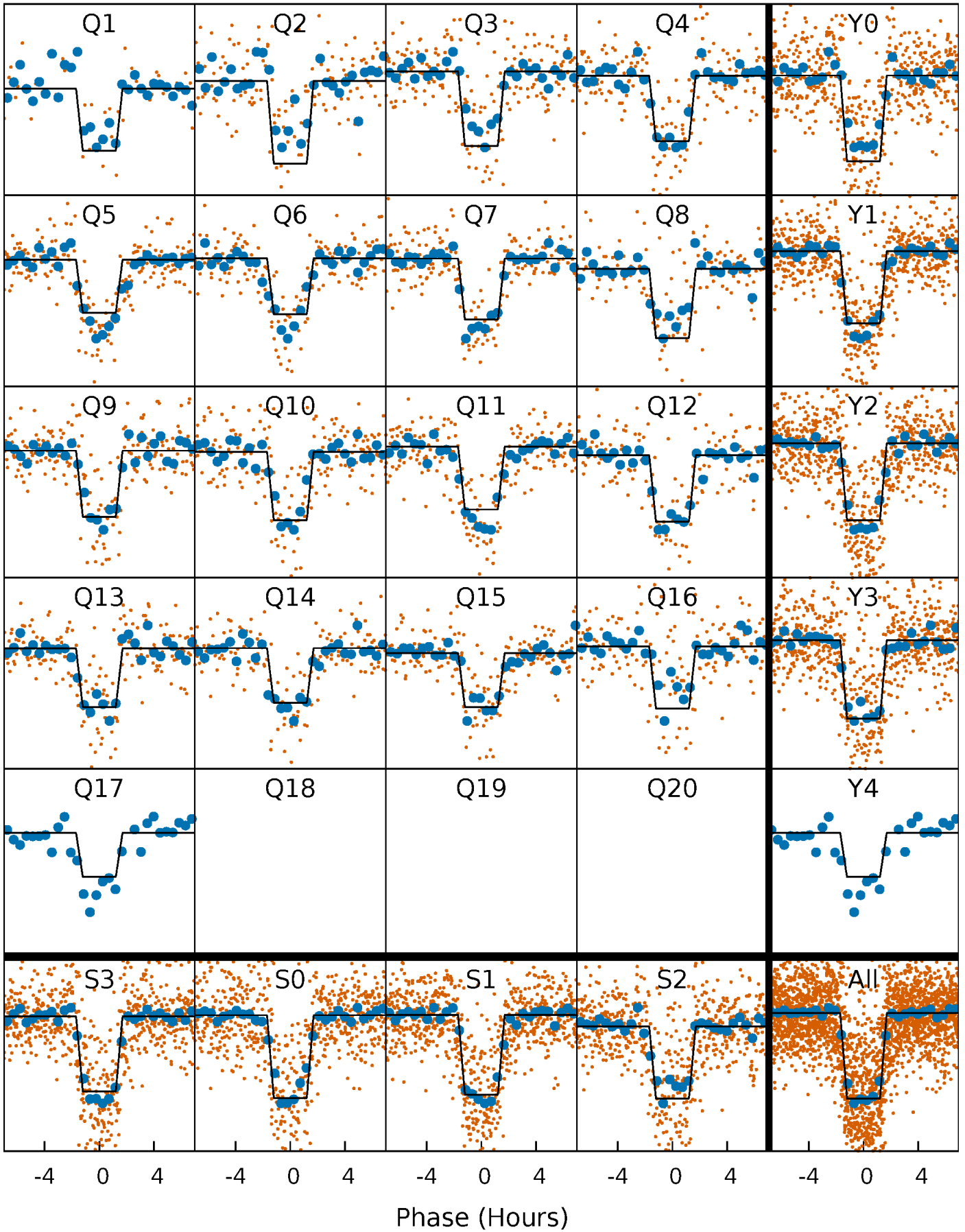
DV Quarter-Phased Transit Curves

TCE 003326377-01 P= 13.227132 Days $T_0=142.202780$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

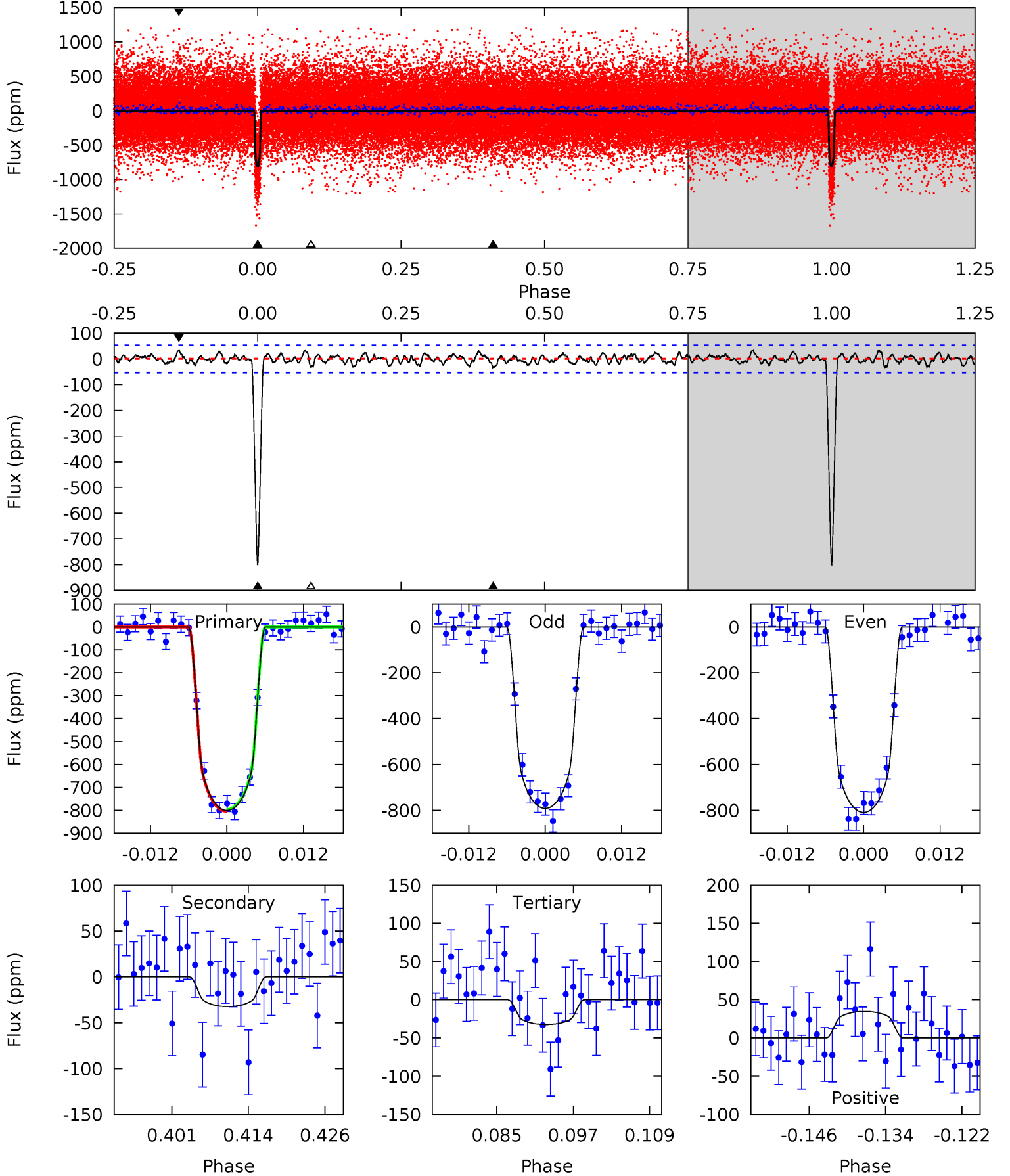
TCE 003326377-01 P= 13.227141 Days $T_0=142.203327$ (BKJD)



DV Model-Shift Uniqueness Test

003326377-01, $P = 13.227132$ Days, $E = 128.975648$ Days

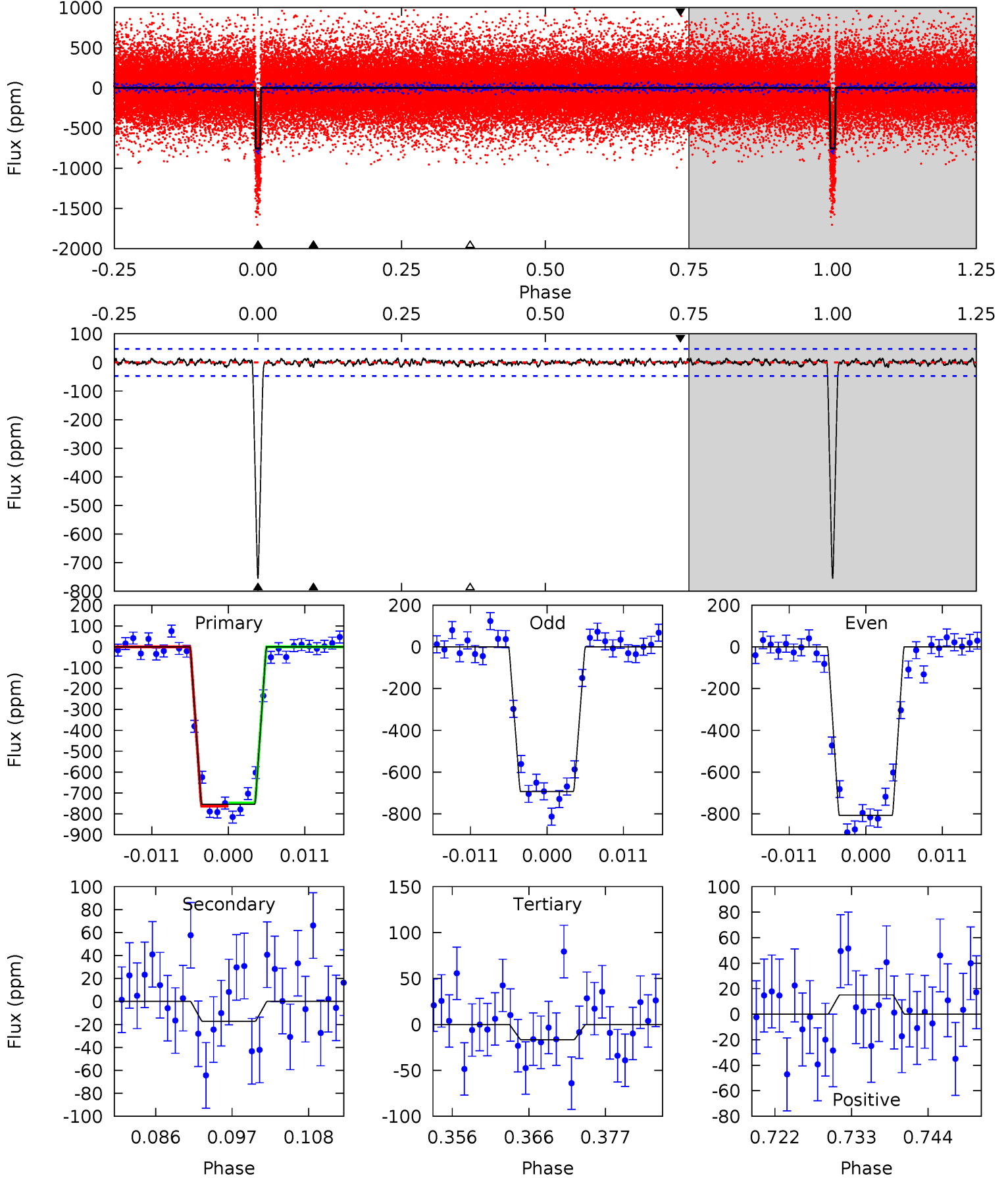
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
75.1	3.05	3.04	3.26	4.99	2.51	1.19	72.1	71.9	0.01	-0.21	0.83	0.98	0.04	0.39



Alt Model-Shift Uniqueness Test

003326377-01, P = 13.227141 Days, E = 128.976186 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
80.0	1.82	1.76	1.60	5.01	2.55	0.62	78.2	78.4	0.06	0.22	6.08	0.94	0.02	0.84



Stellar Parameters For KIC 003326377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5180^{+103}_{-103}	$4.548^{+0.036}_{-0.054}$	$0.000^{+0.150}_{-0.150}$	$0.800^{+0.054}_{-0.043}$	$0.825^{+0.046}_{-0.046}$	$2.267^{+0.351}_{-0.366}$
	+2%/-2%	+1%/-1%	+inf%/-inf%	+7%/-5%	+6%/-6%	+16%/-16%
Source	SPE57	SPE57	SPE57	DSEP		

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

Secondary Eclipse Parameters for KIC 003326377-01 / KOI 1830.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 11	$2.59^{+0.34}_{-0.37}$	894^{+24}_{-20}	2929^{+187}_{-173}	28^{+15}_{-10}
Alt.	-17 ± 9	$2.40^{+0.34}_{-0.34}$	894^{+25}_{-23}	2758^{+198}_{-314}	18^{+12}_{-10}

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

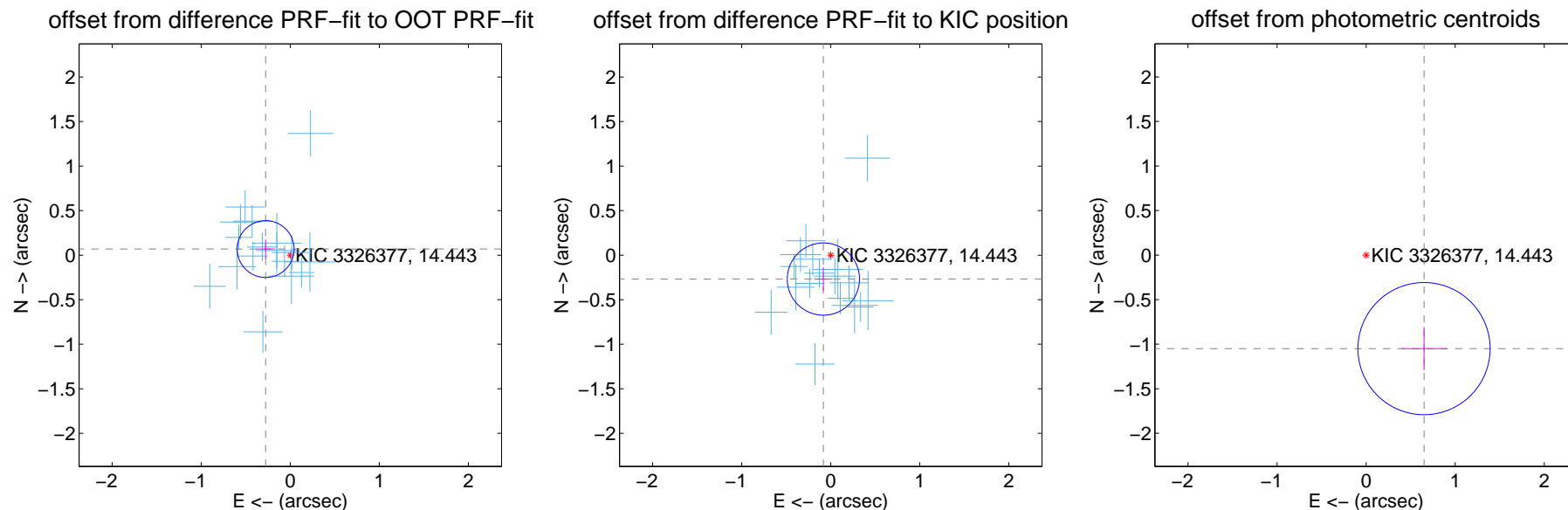
DV Centroid Data

Supplemental centroid analysis for 003326377-01. Kepler magnitude: 14.44. Transit SNR 49.09

There are 17 quarters with good PRF difference image offsets

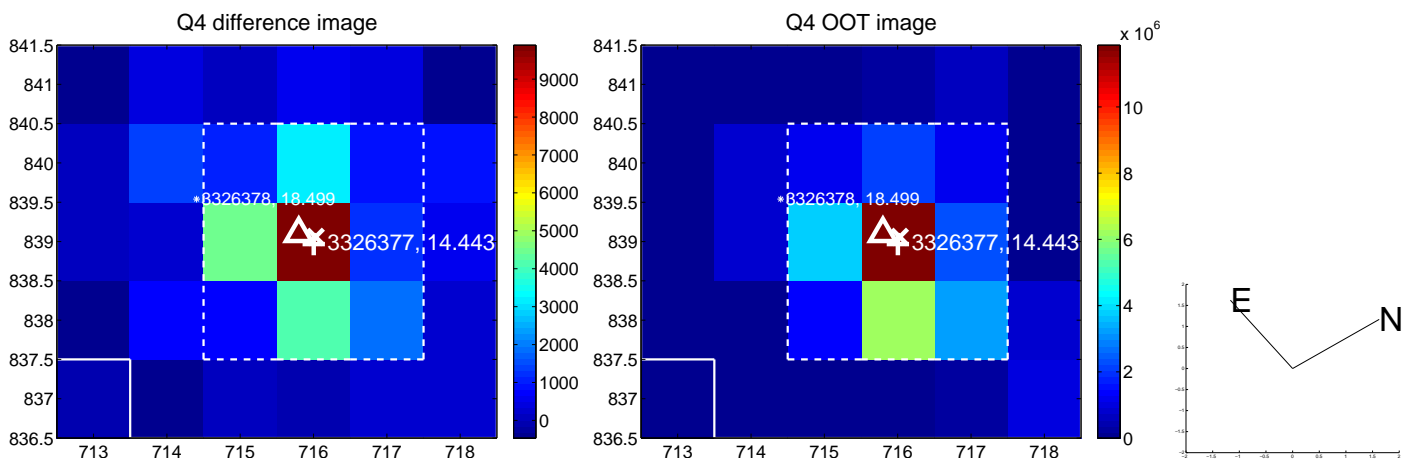
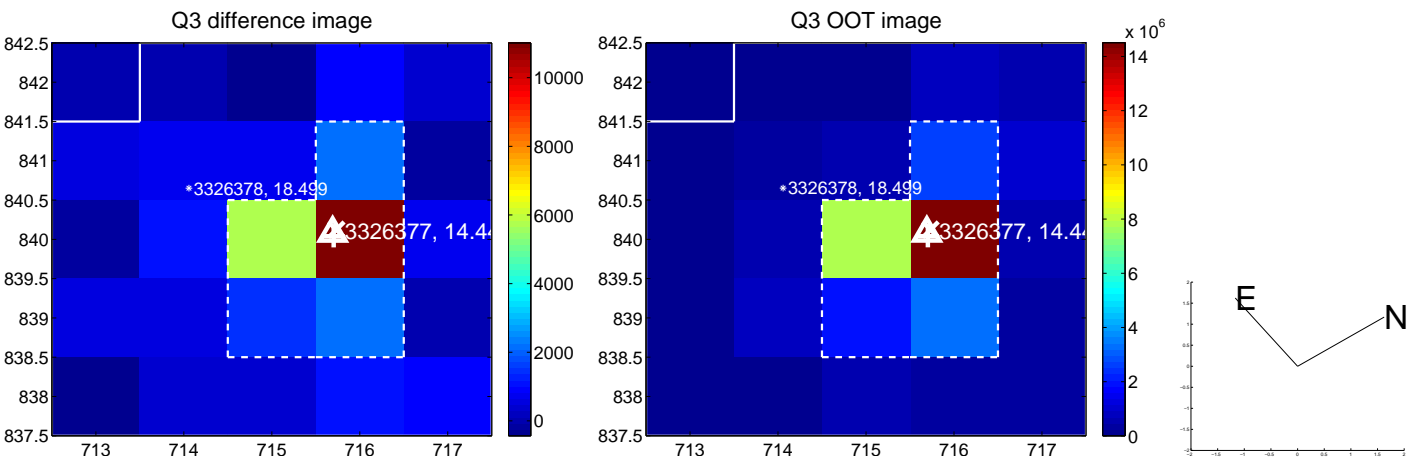
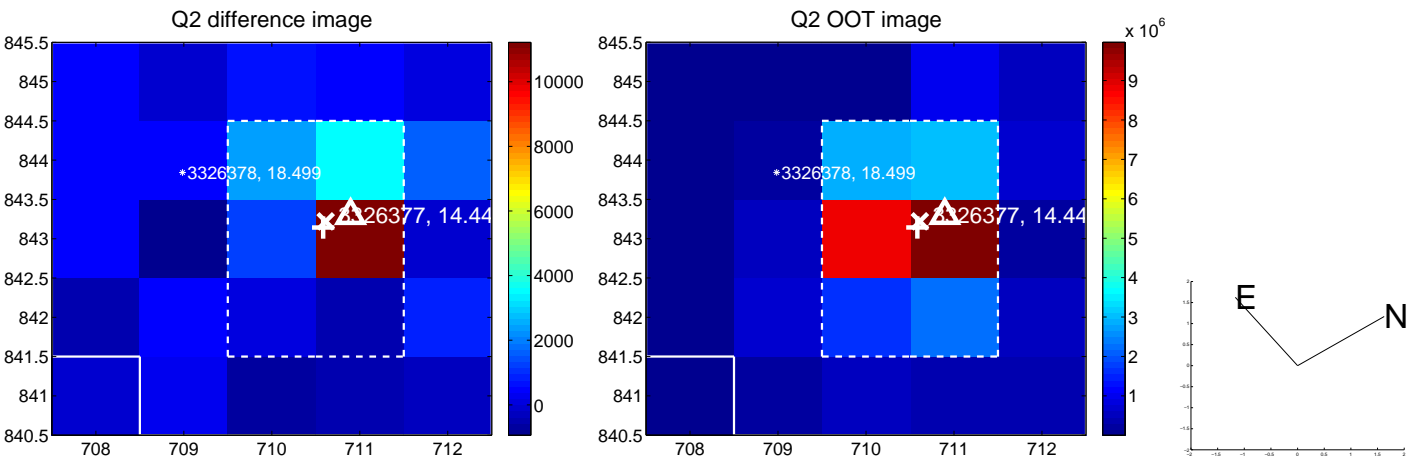
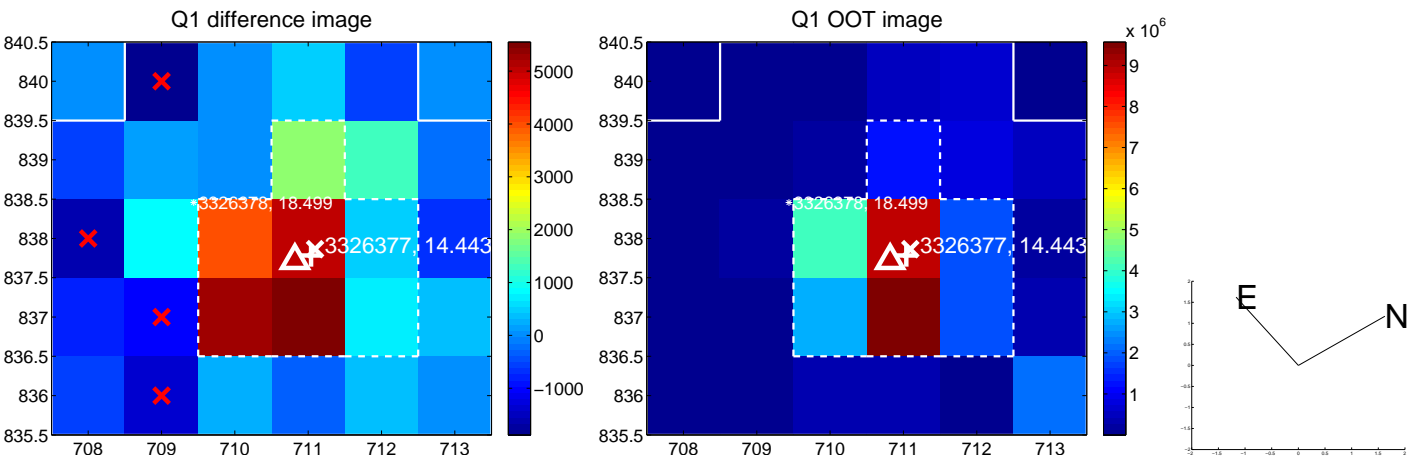
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.285 ± 0.106	2.68	0.276 ± 0.106	0.068 ± 0.107
PRF-fit source offset from KIC position	0.281 ± 0.135	2.08	0.082 ± 0.099	-0.268 ± 0.133
photometric centroid source offset	1.23 ± 0.25	4.99	-0.65 ± 0.26	-1.05 ± 0.24

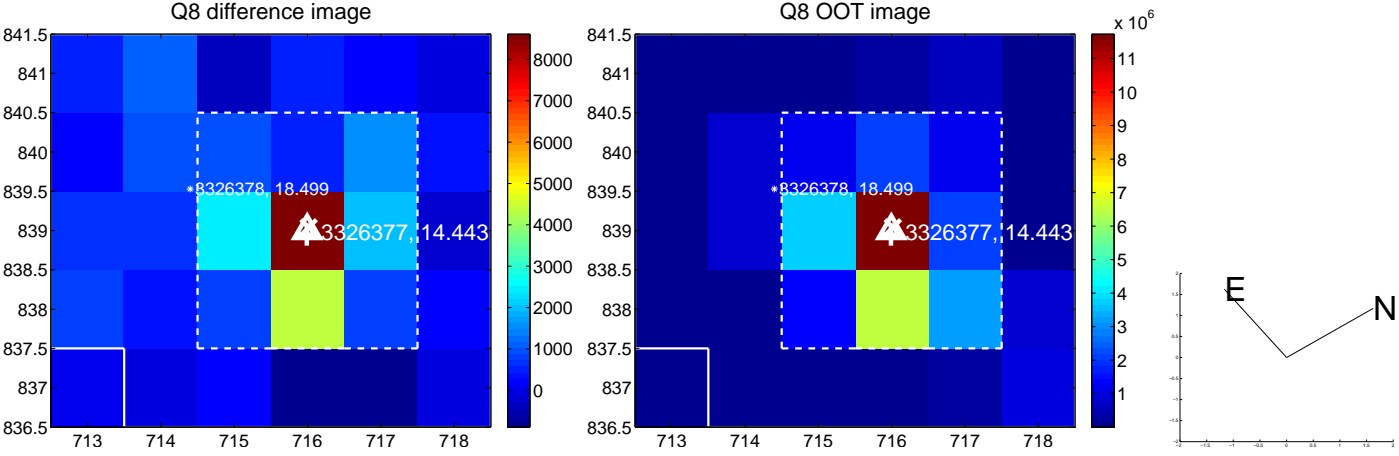
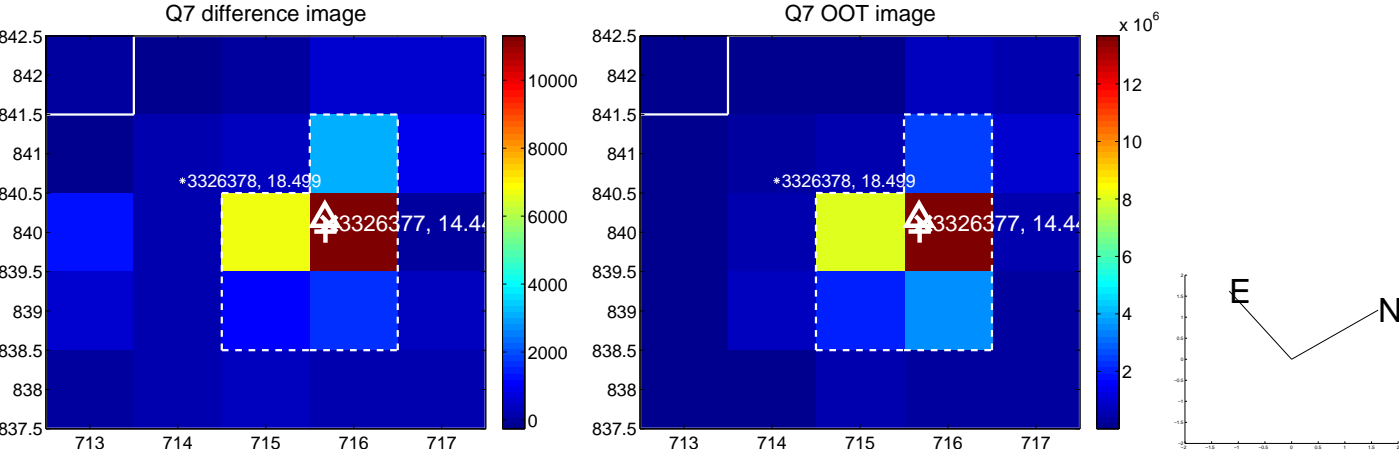
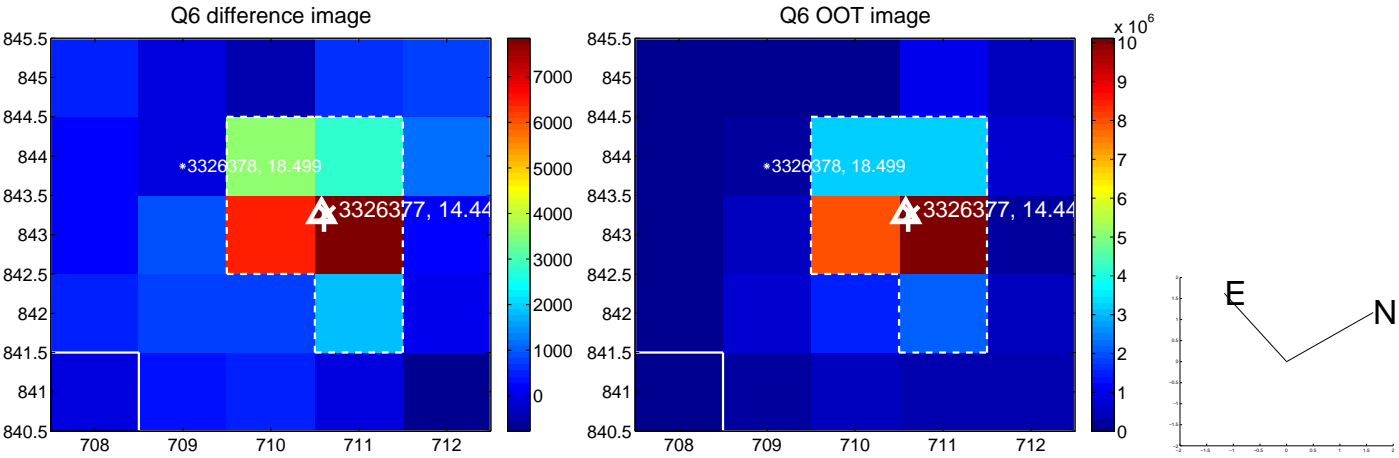
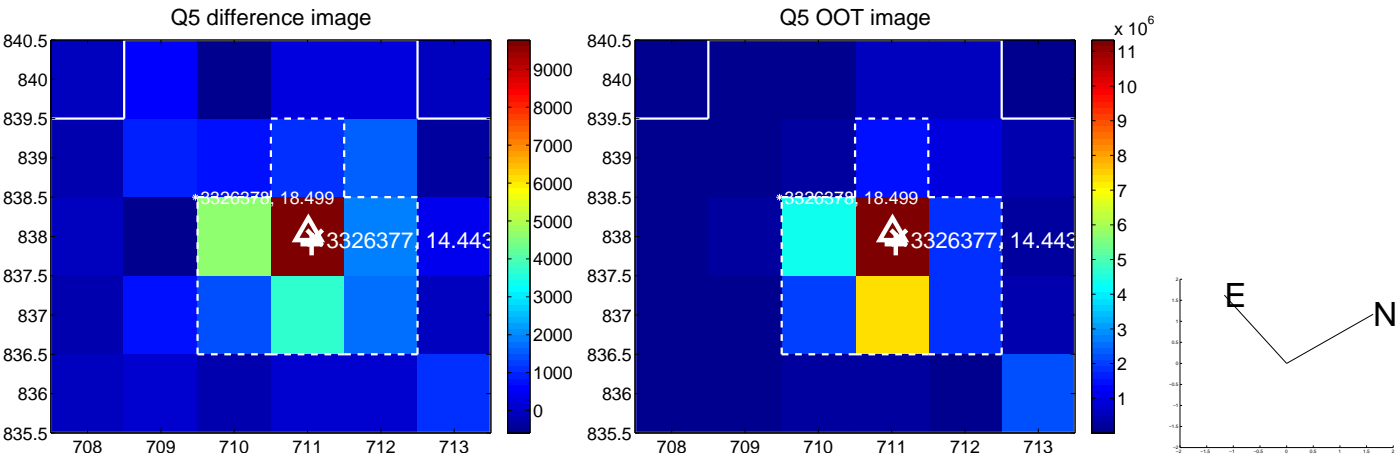


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

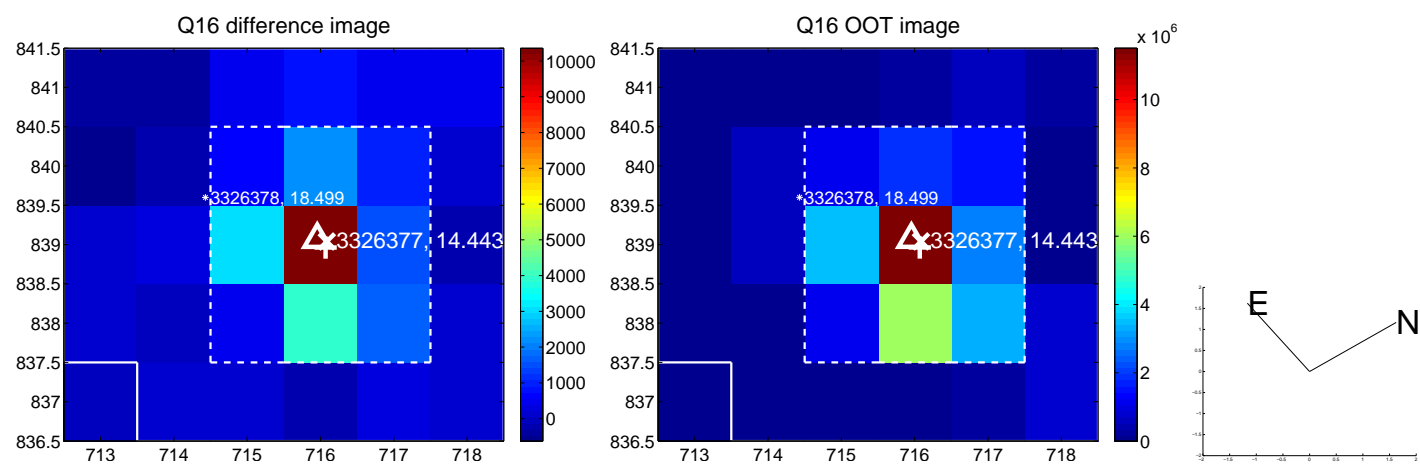
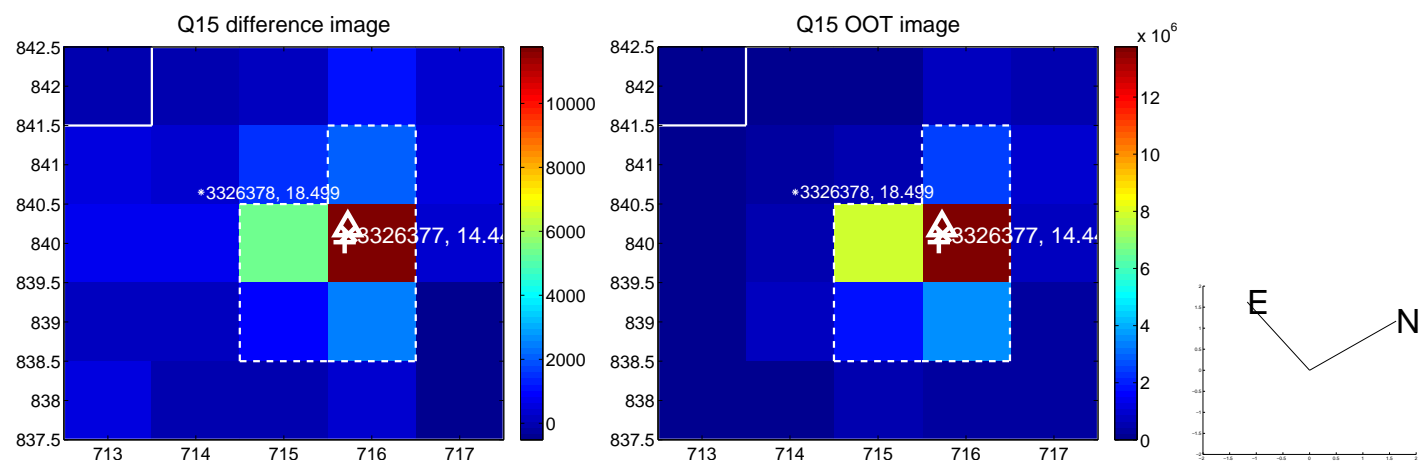
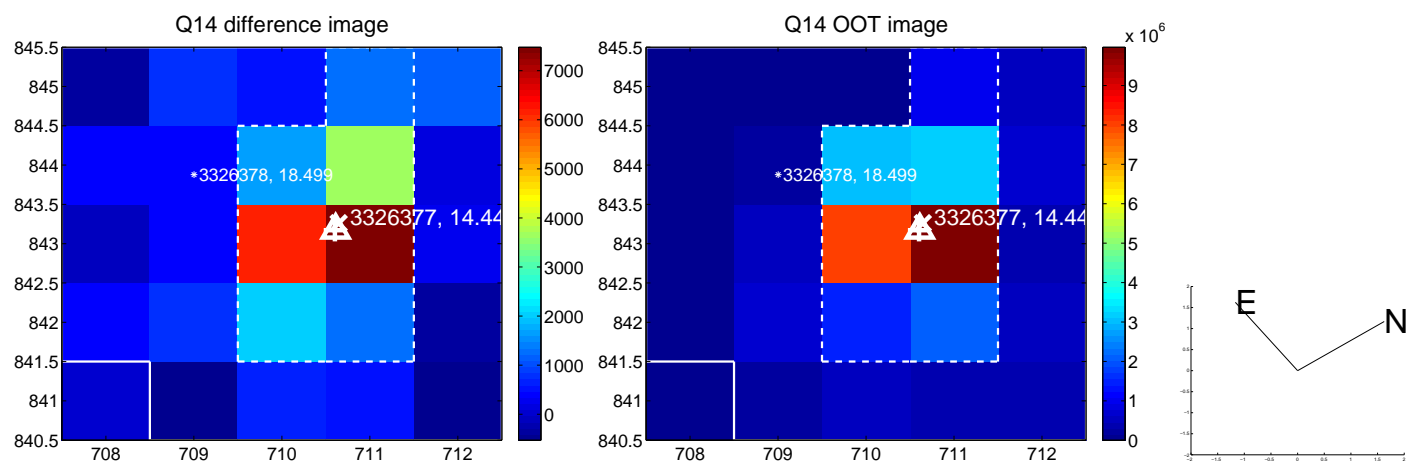
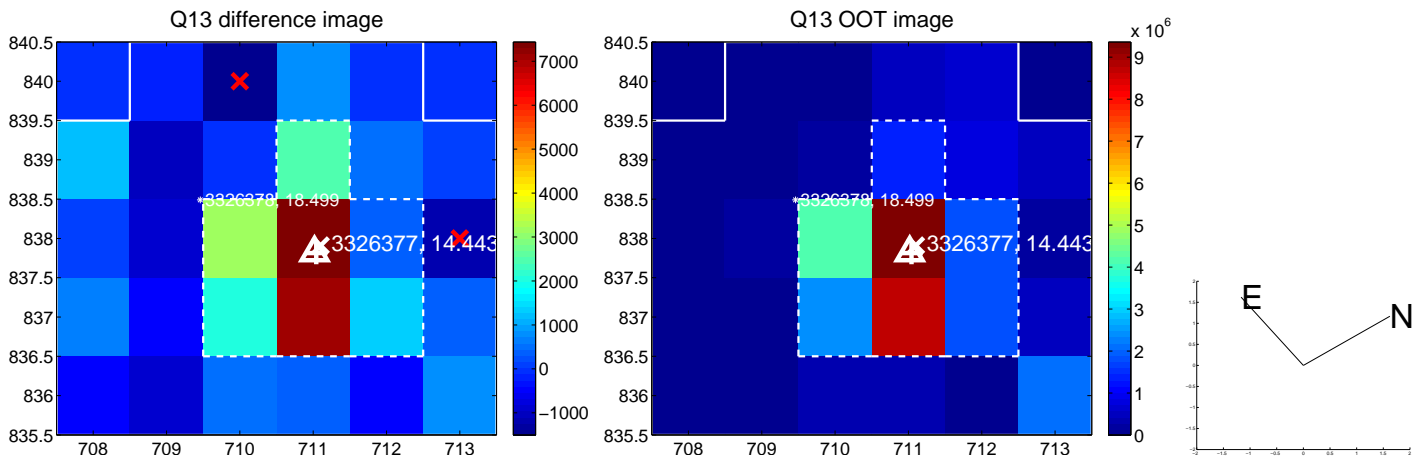
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



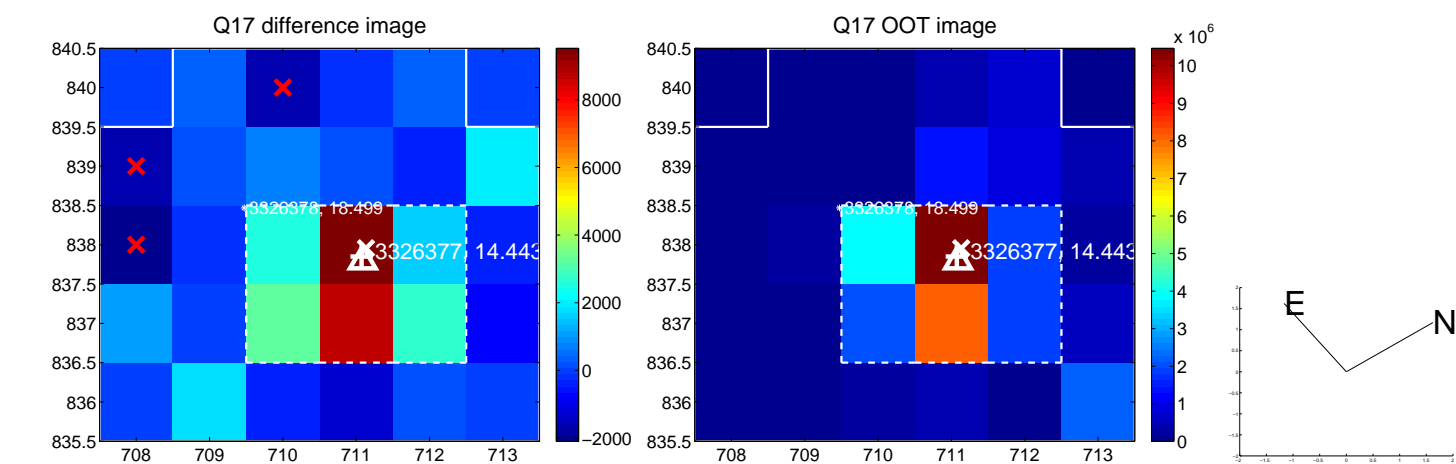
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



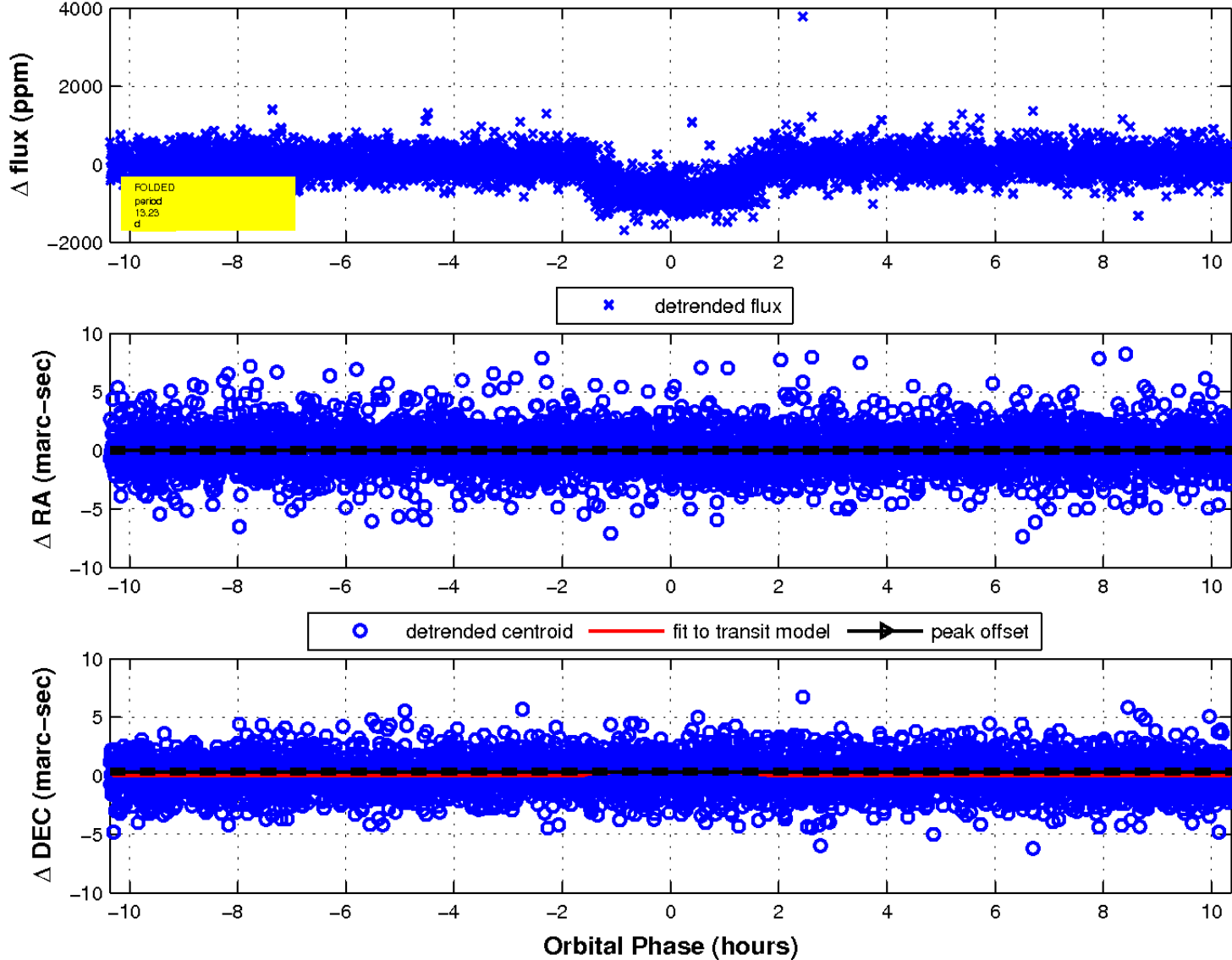
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

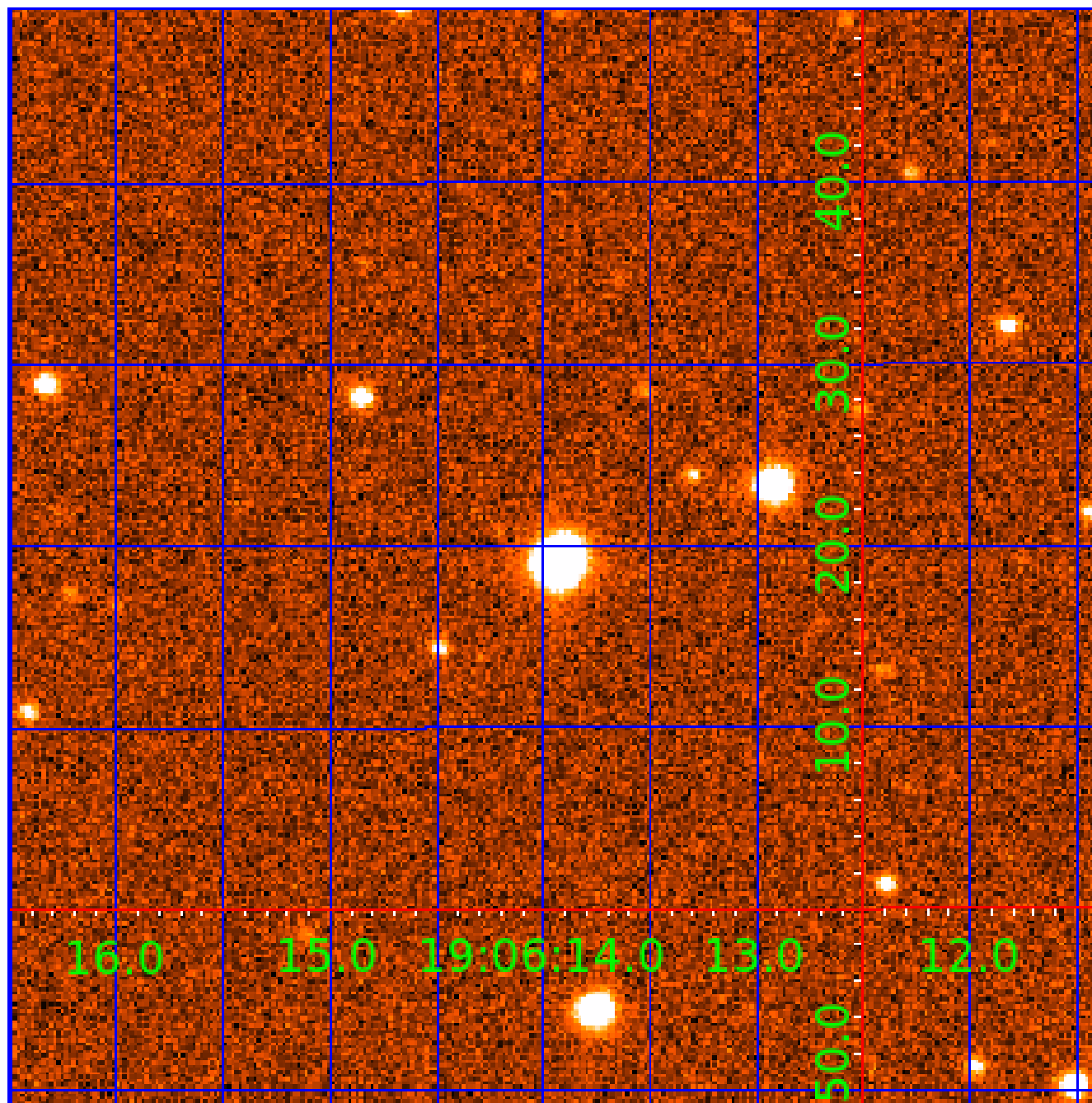


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003326377

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})
003326377-01	OBS	1830.01	13.227132	142.202780	822.6	3.459	45.2	49.1	0.80	5180	2.58	39.17
003326377-02	OBS	1830.02	198.710876	156.517475	2060.0	8.708	44.3	42.3	0.80	5180	3.75	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003326377-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
003326377-02	OBS	PC	1.00	0	0	0	0	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.

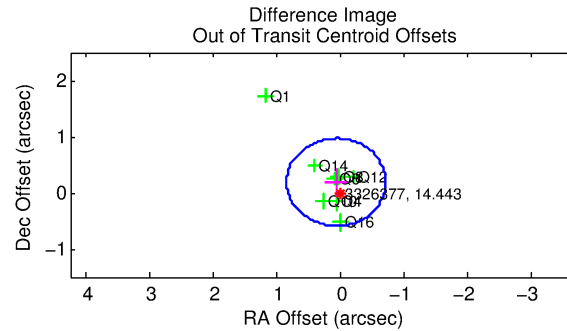
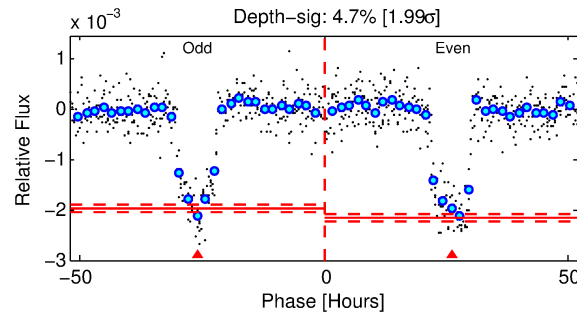
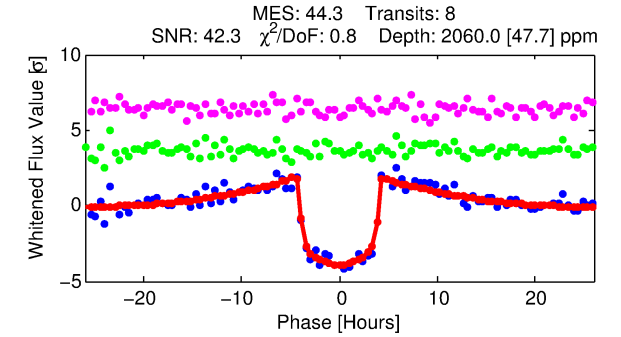
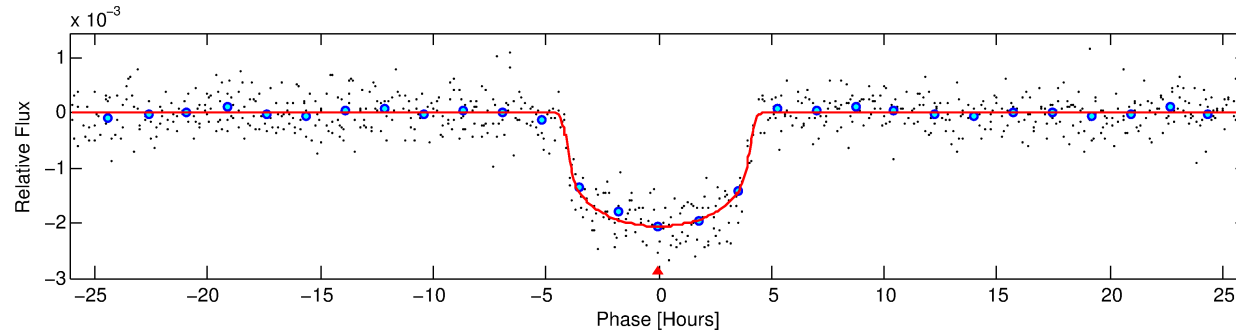
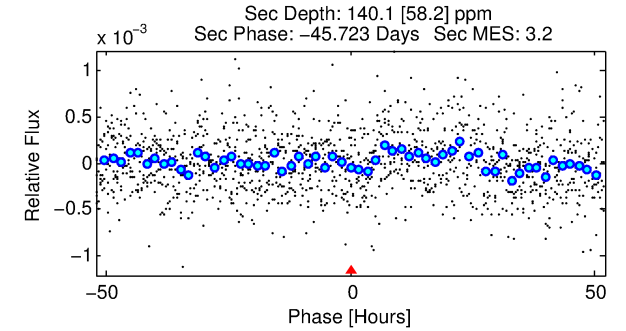
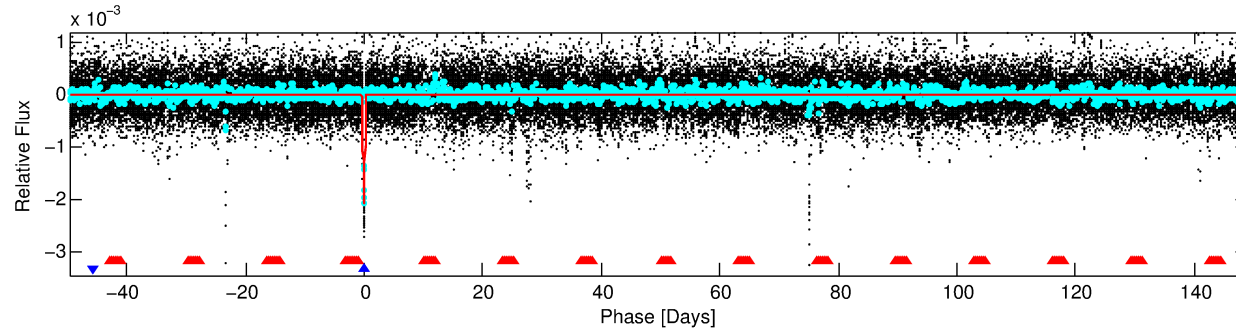
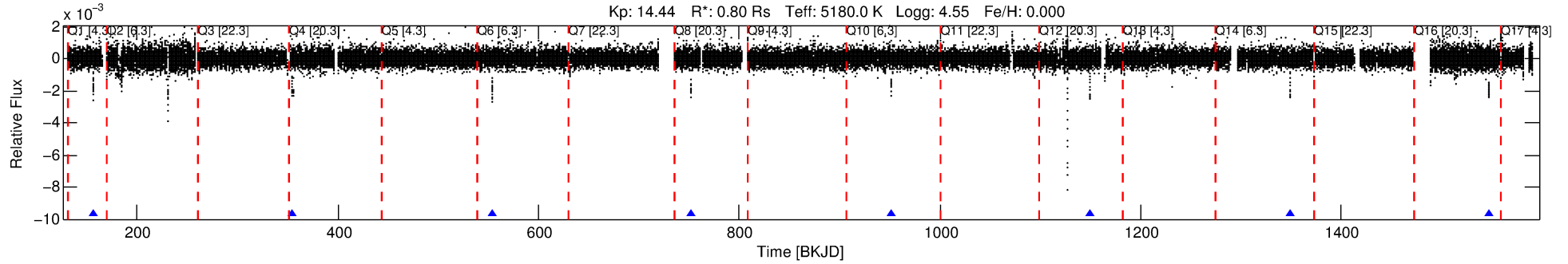
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003326377-02

No Significant Match Found

DV One-Page Summary

KIC: 3326377 Candidate: 2 of 2 Period: 198.711 d
KOI: K01830.02 Corr: 0.991



DV Fit Results:

Period = 198.71088 [0.00063] d
Epoch = 156.5175 [0.0026] BKJD
Rp/R* = 0.0429 [0.0033]
a/R* = 149.27 [39.91]
b = 0.60 [0.29]
Seff = 1.06 [0.13]
Teq = 259 [8] K
Rp = 3.75 [0.38] Re
a = 0.6250 [0.0382] AU
Ag = 2141.19 [969.04] [2.21σ]
Teffp = 2719 [306] K [8.05σ]

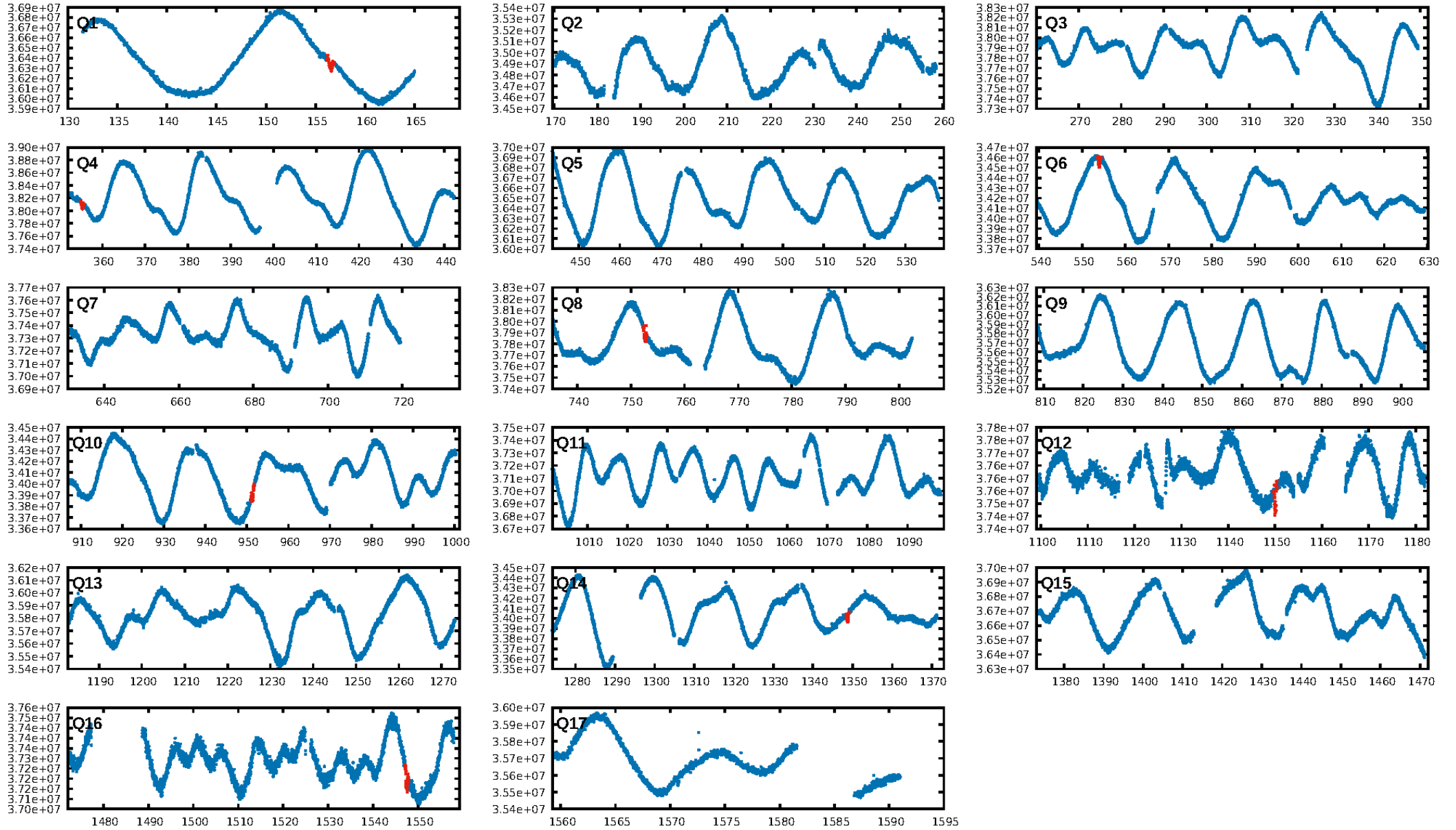
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [475.12σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 50.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.04e-181
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 3.118
Centroid-sig: 3.3%
Centroid-so: 0.709 arcsec [2.59σ]
OotOffset-rm: 0.199 arcsec [0.77σ]
KicOffset-rm: 0.179 arcsec [0.71σ]
OotOffset-st: 3/0/4/1 [8]
KicOffset-st: 3/0/4/1 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

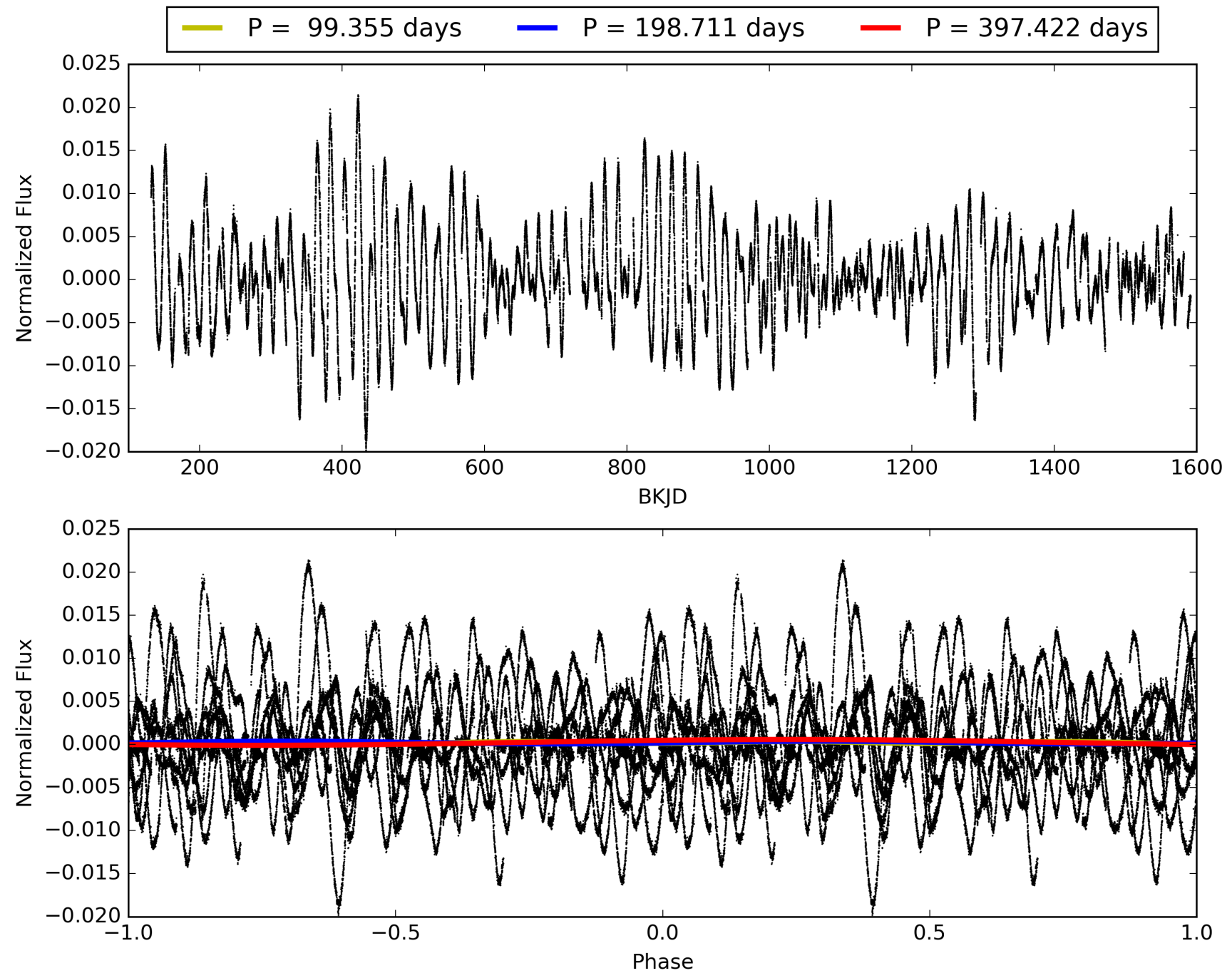
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:10:24 Z

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

TCE 003326377-02, PDC Light Curves

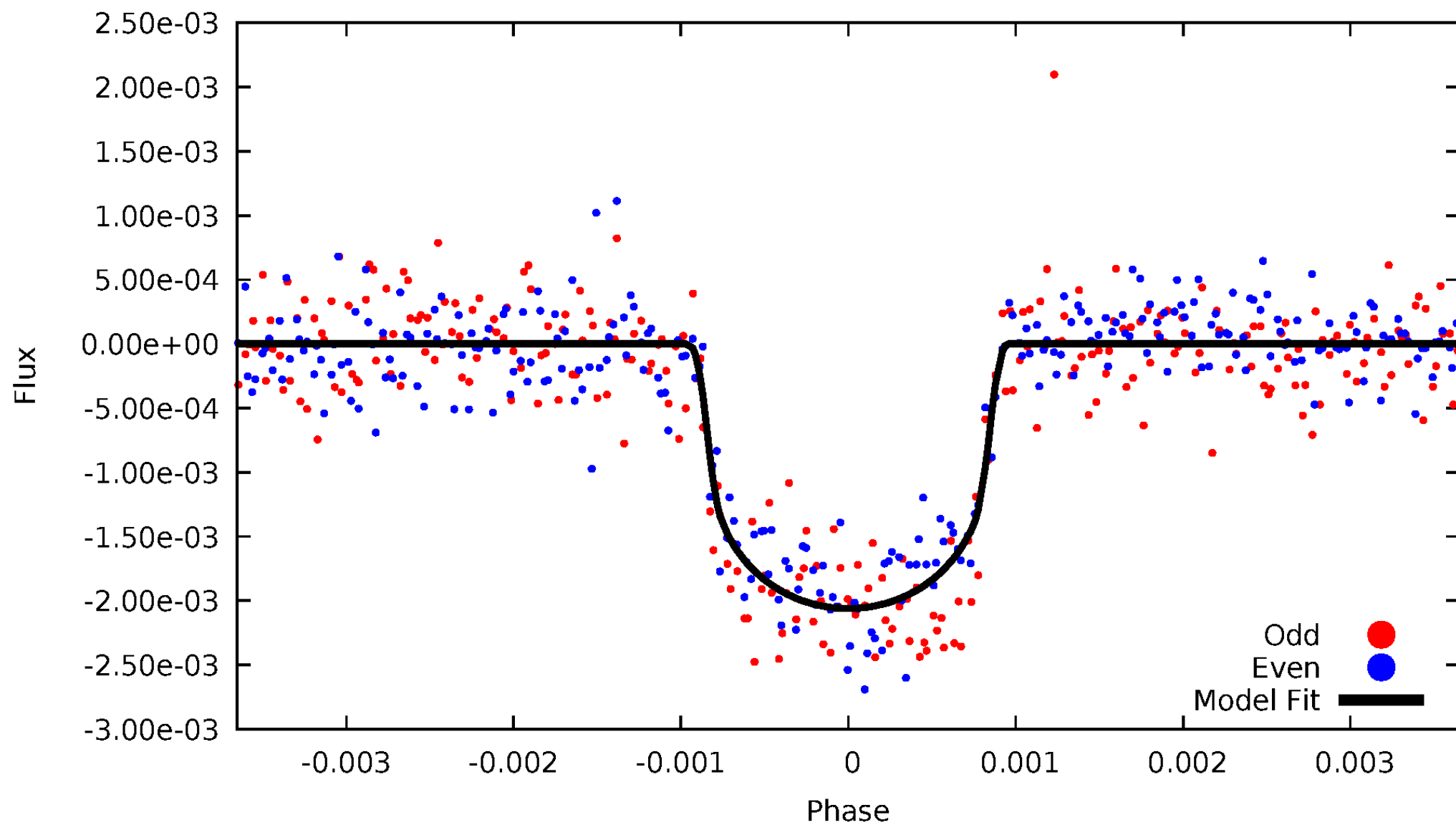


TCE 003326377-02



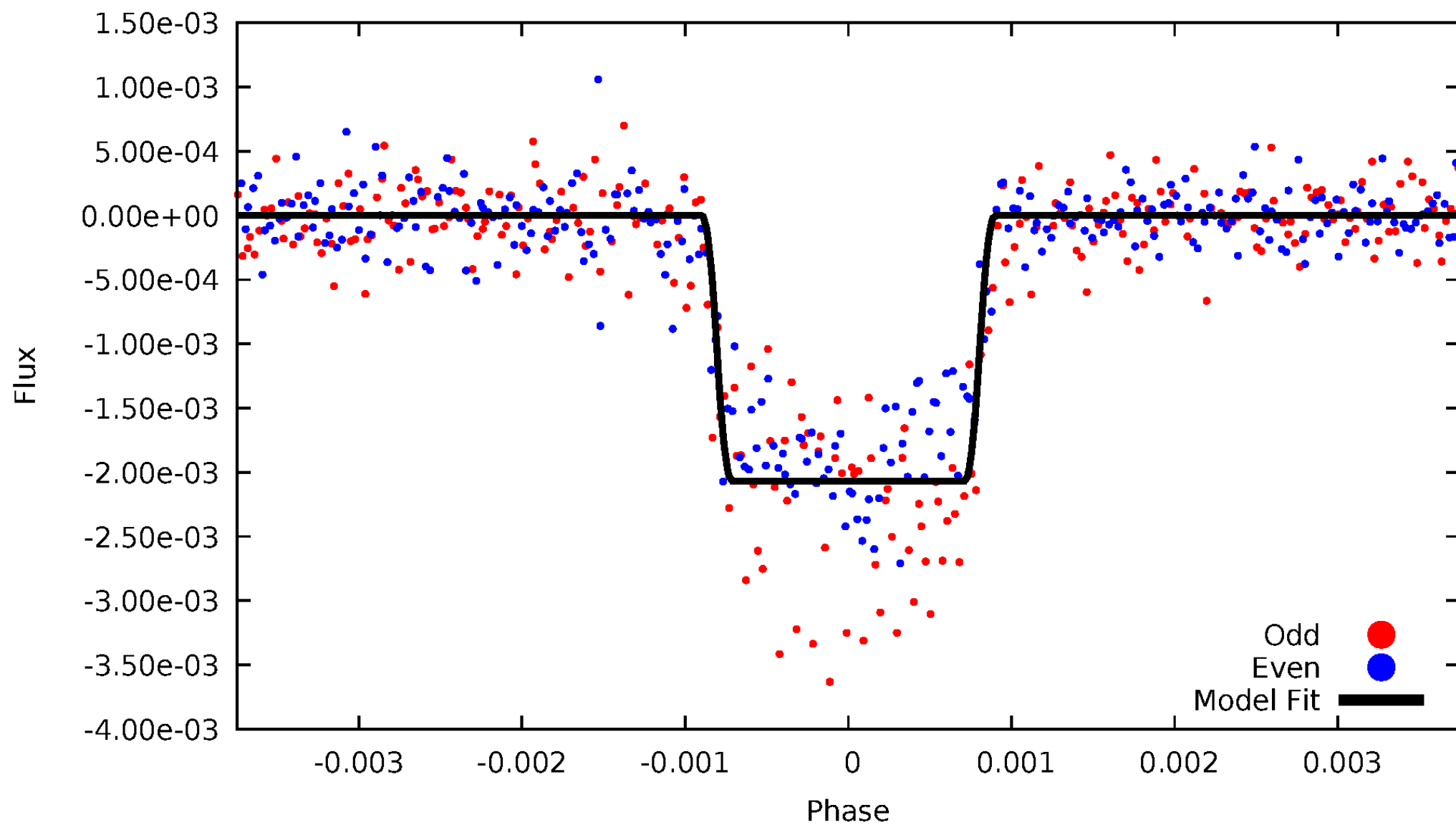
DV Odd/Even

TCE 003326377-02



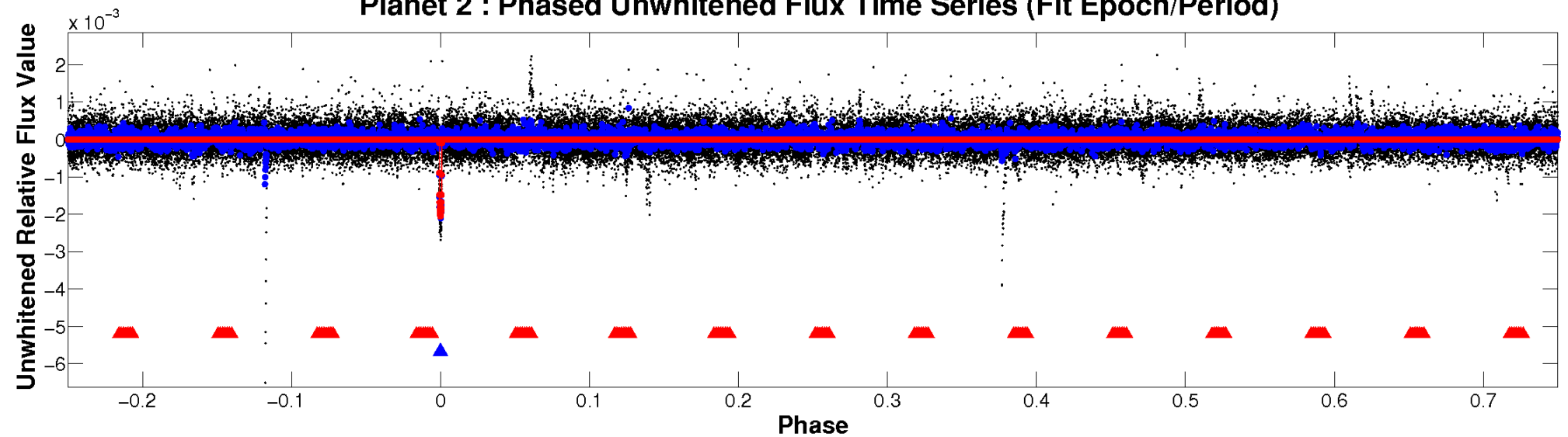
ALT Odd/Even

TCE 003326377-02

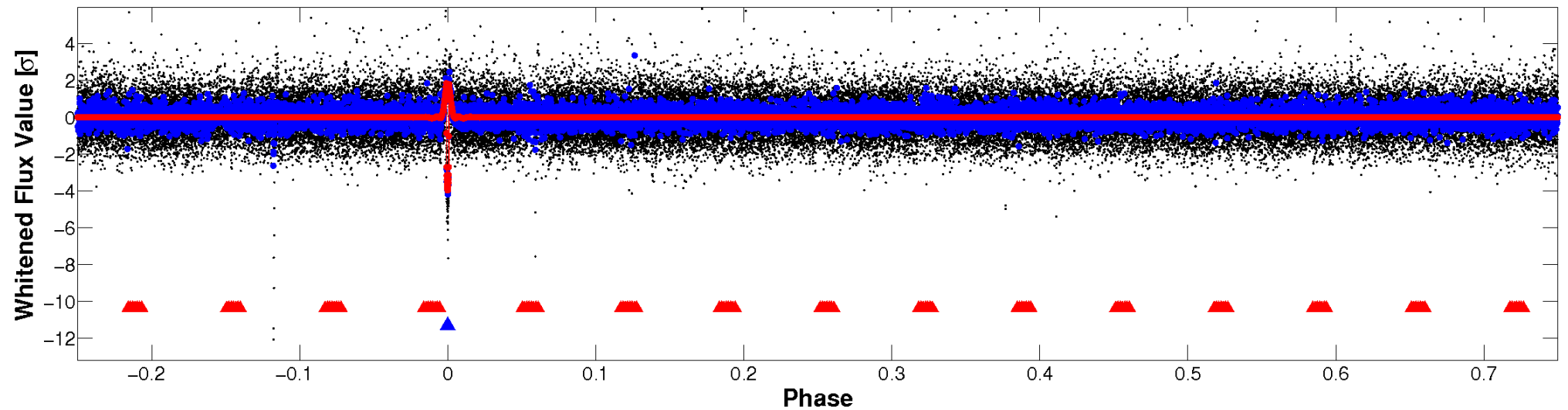


Non-Whitened Vs. Whitened Light Curve

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

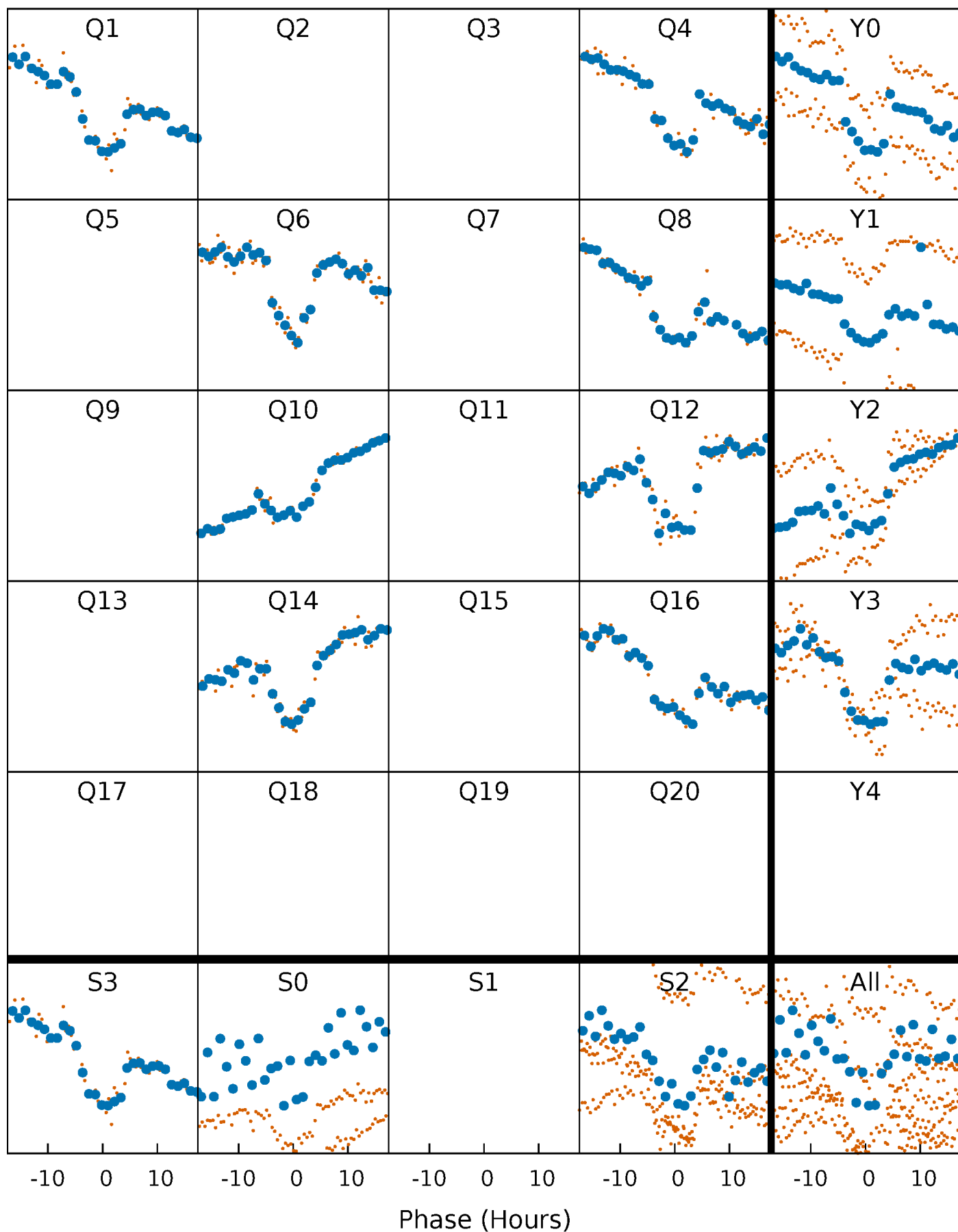


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



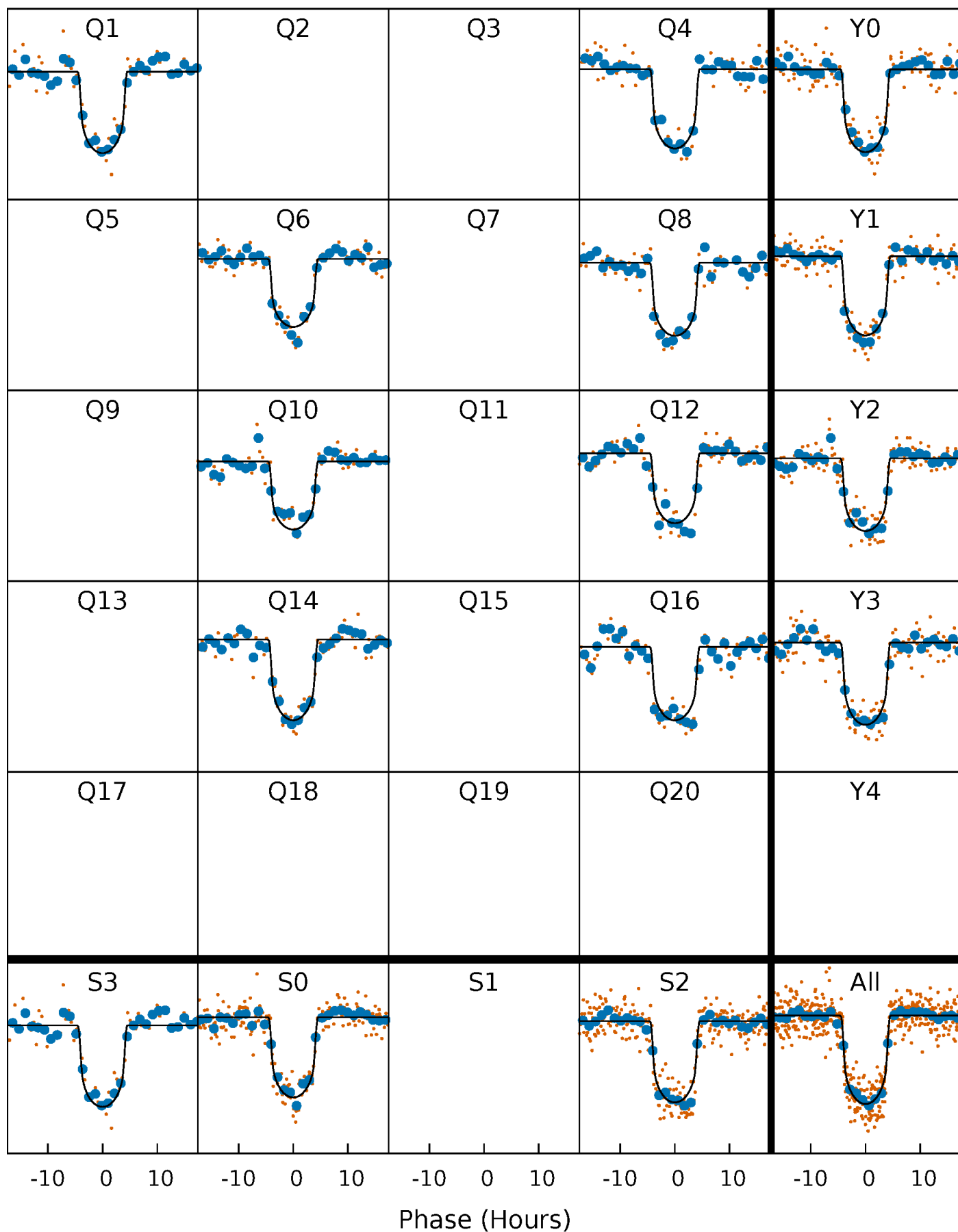
PDC Quarter-Phased Transit Curves

TCE 003326377-02 P=198.710876 Days $T_0=156.517475$ (BKJD)



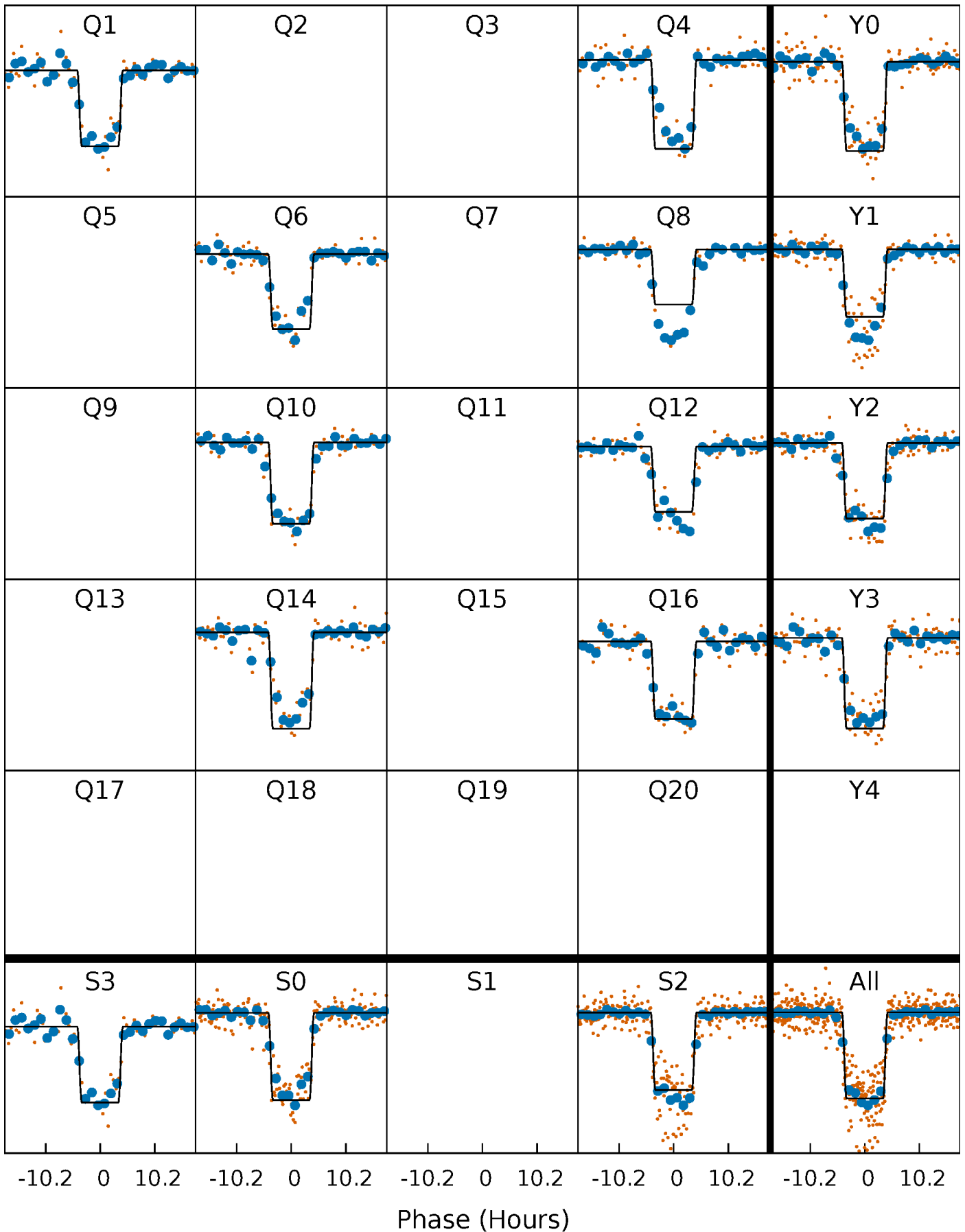
DV Quarter-Phased Transit Curves

TCE 003326377-02 P=198.710876 Days $T_0=156.517475$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

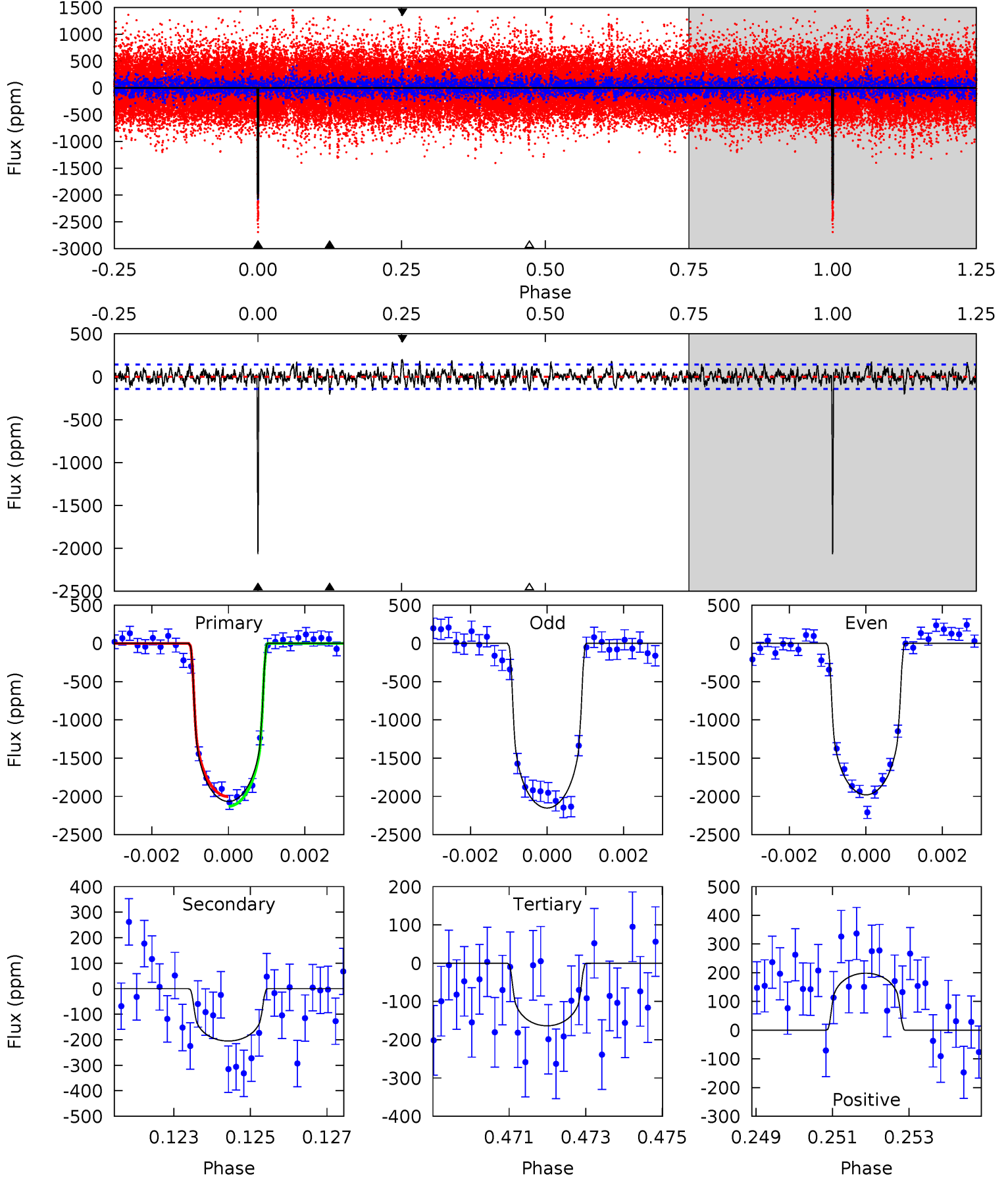
TCE 003326377-02 P=198.709560 Days $T_0=156.522802$ (BKJD)



DV Model-Shift Uniqueness Test

003326377-02, P = 198.710876 Days, E = 156.517475 Days

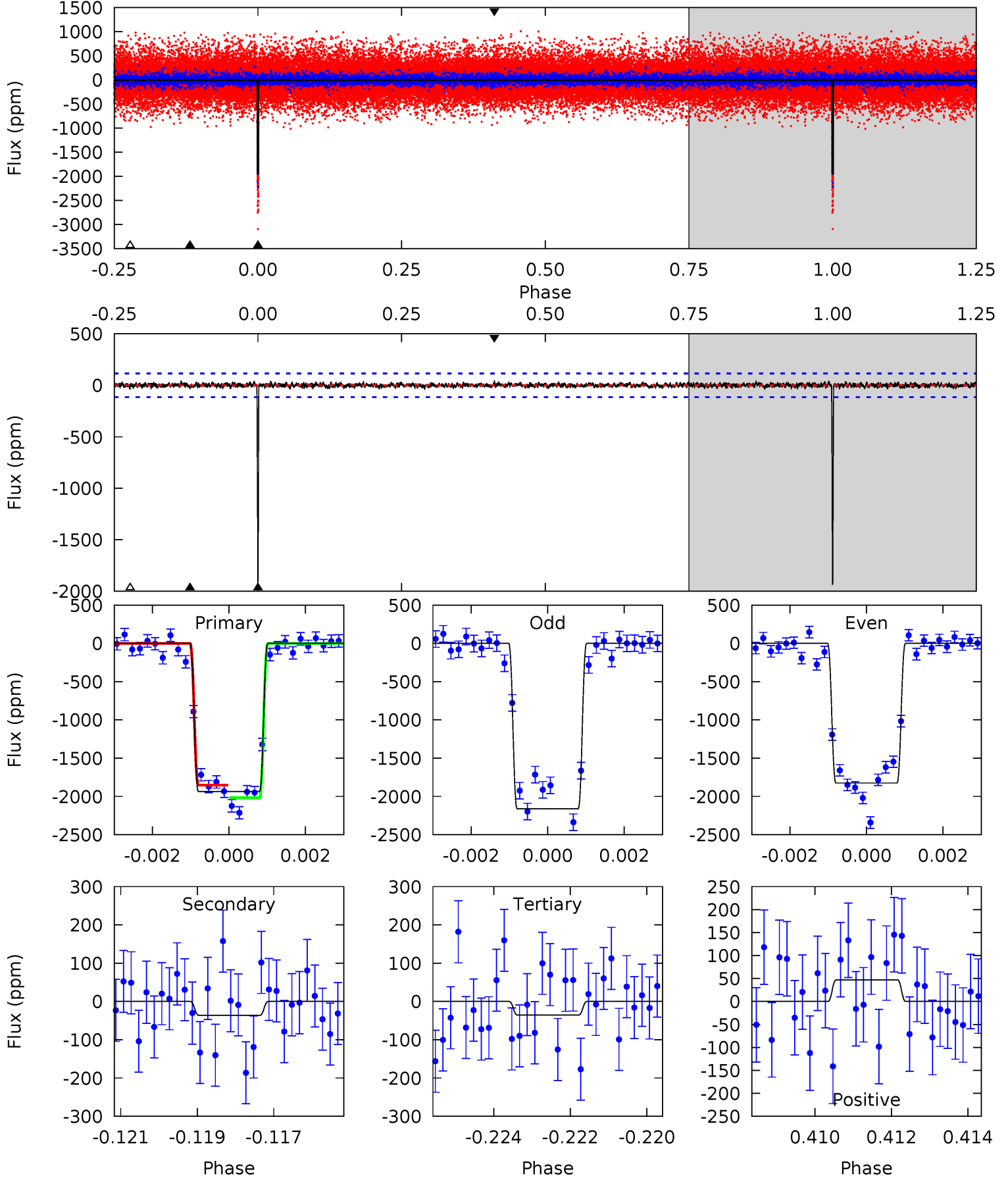
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.1	7.75	6.19	7.50	5.34	3.11	2.05	71.9	70.6	1.57	0.25	3.26	1.00	0.09	2.38



Alt Model-Shift Uniqueness Test

003326377-02, P = 198.709560 Days, E = 156.522802 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
90.0	1.69	1.66	2.19	5.35	3.13	0.49	88.3	87.8	0.03	-0.50	7.85	1.05	0.02	0



Stellar Parameters For KIC 003326377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5180^{+103}_{-103}	$4.548^{+0.036}_{-0.054}$	$0.000^{+0.150}_{-0.150}$	$0.800^{+0.054}_{-0.043}$	$0.825^{+0.046}_{-0.046}$	$2.267^{+0.351}_{-0.366}$
	+2%/-2%	+1%/-1%	+inf%/-inf%	+7%/-5%	+6%/-6%	+16%/-16%
Source	SPE57	SPE57	SPE57	DSEP		

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

Secondary Eclipse Parameters for KIC 003326377-02 / KOI 1830.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-205 ± 26	$3.78^{+0.35}_{-0.33}$	362^{+10}_{-9}	3456^{+116}_{-112}	3098^{+728}_{-597}
Alt.	-36 ± 22	$3.99^{+0.34}_{-0.32}$	363^{+10}_{-9}	2668^{+182}_{-310}	501^{+297}_{-322}

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 $A_{obs} \gg 1.0$

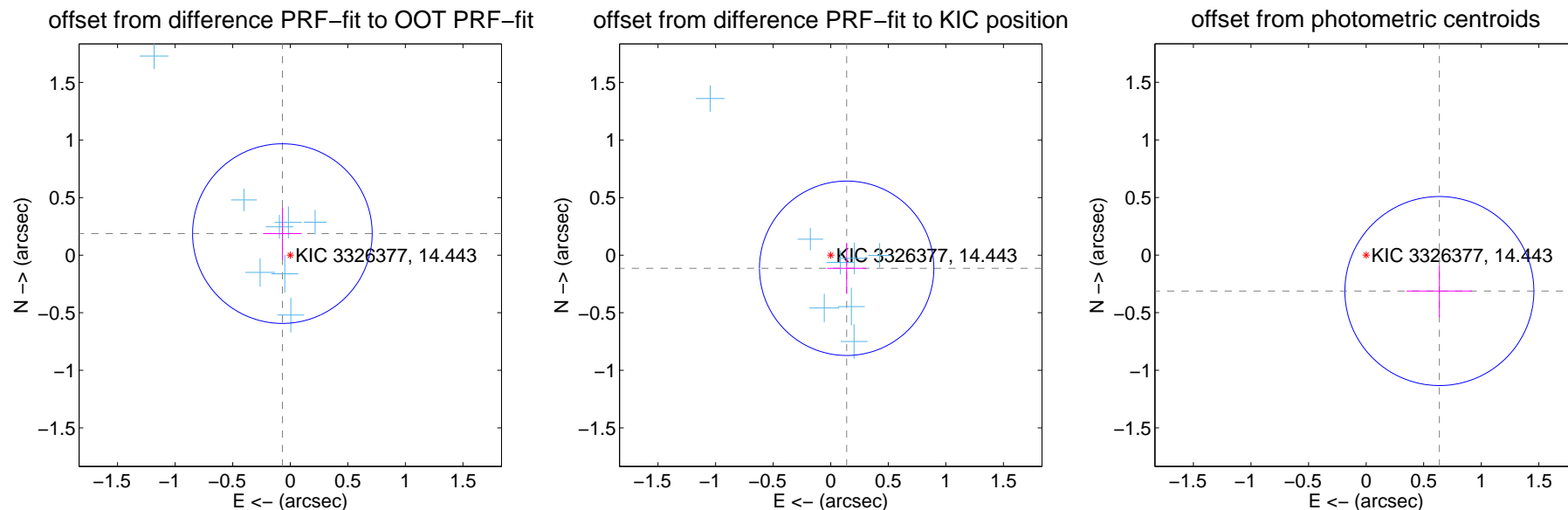
DV Centroid Data

Supplemental centroid analysis for 003326377-02. Kepler magnitude: 14.44. Transit SNR 42.30

There are 8 quarters with good PRF difference image offsets

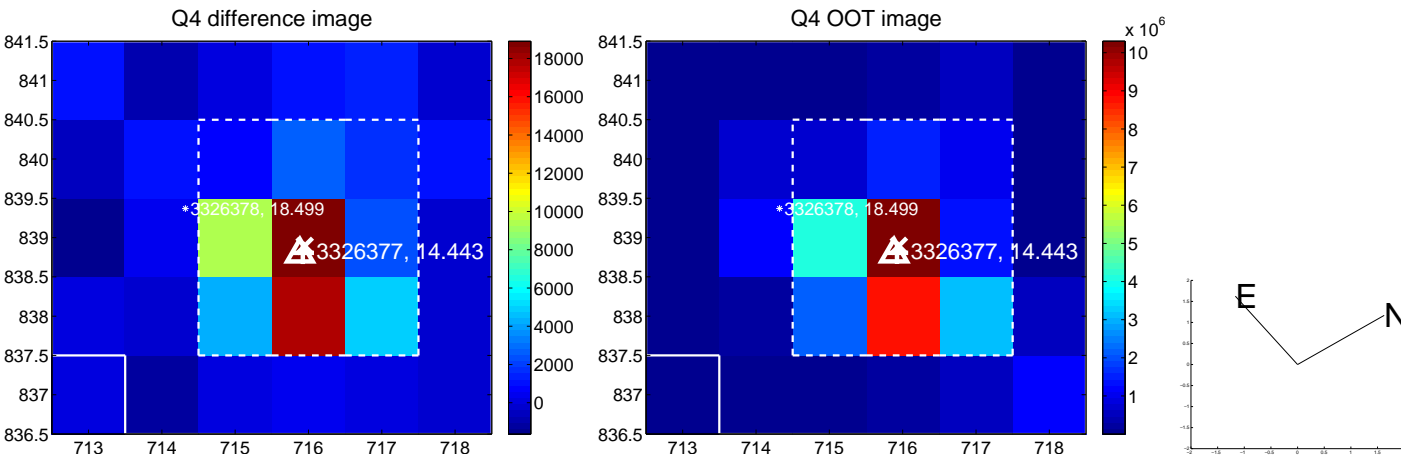
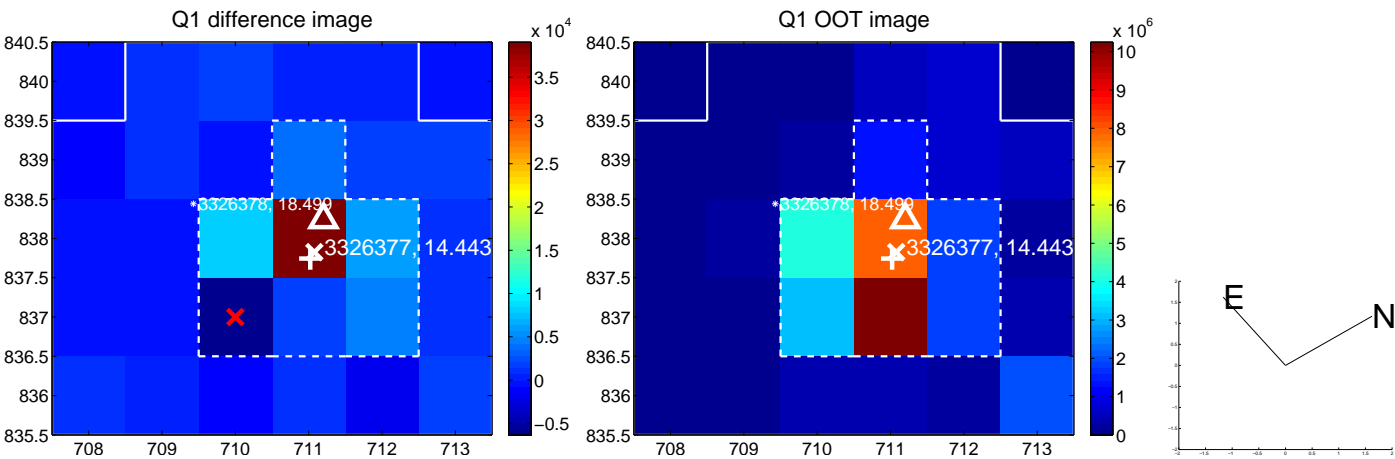
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.199 ± 0.260	0.77	0.068 ± 0.168	0.187 ± 0.229
PRF-fit source offset from KIC position	0.179 ± 0.252	0.71	-0.138 ± 0.169	-0.114 ± 0.221
photometric centroid source offset	0.71 ± 0.27	2.59	-0.64 ± 0.28	-0.31 ± 0.23

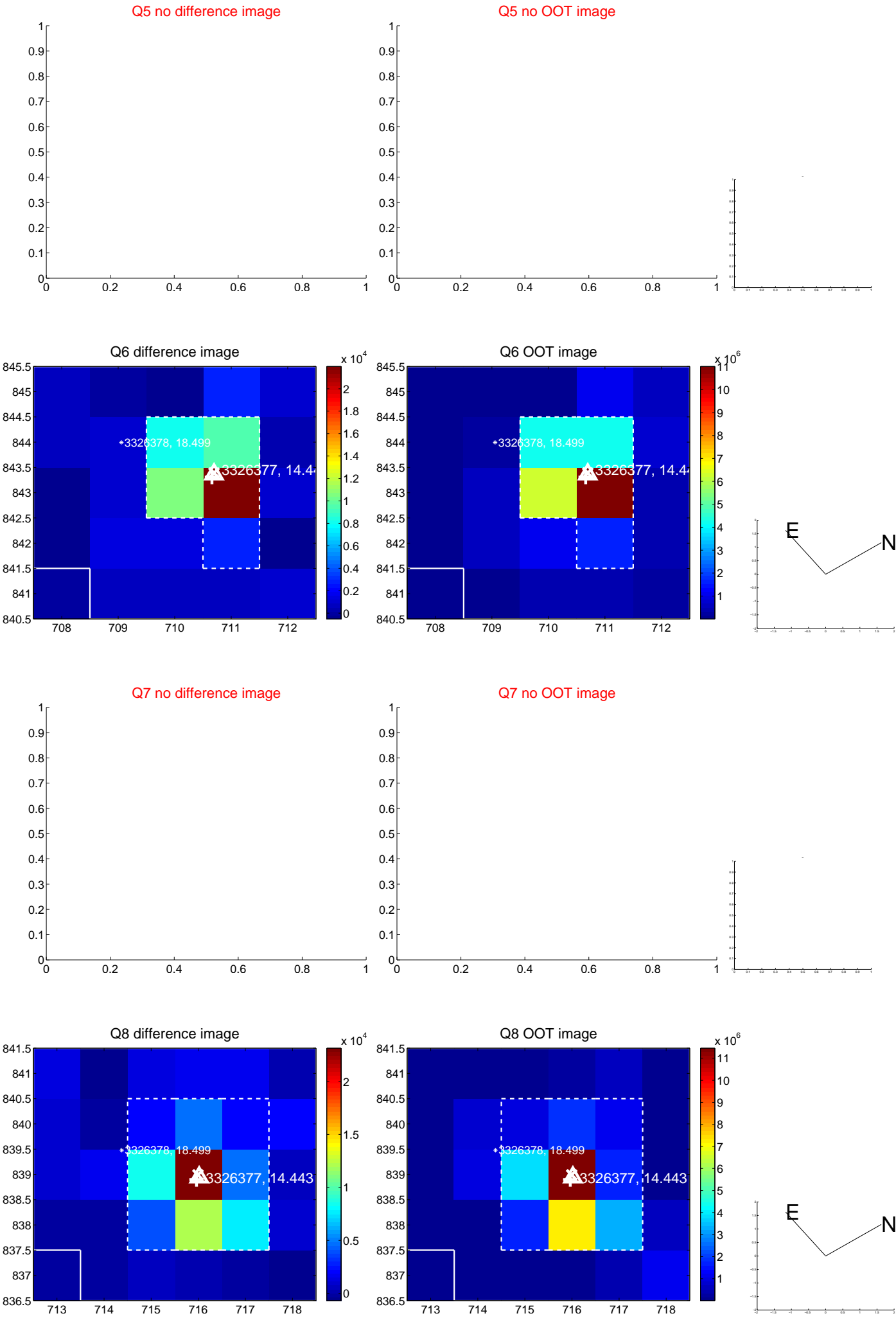


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

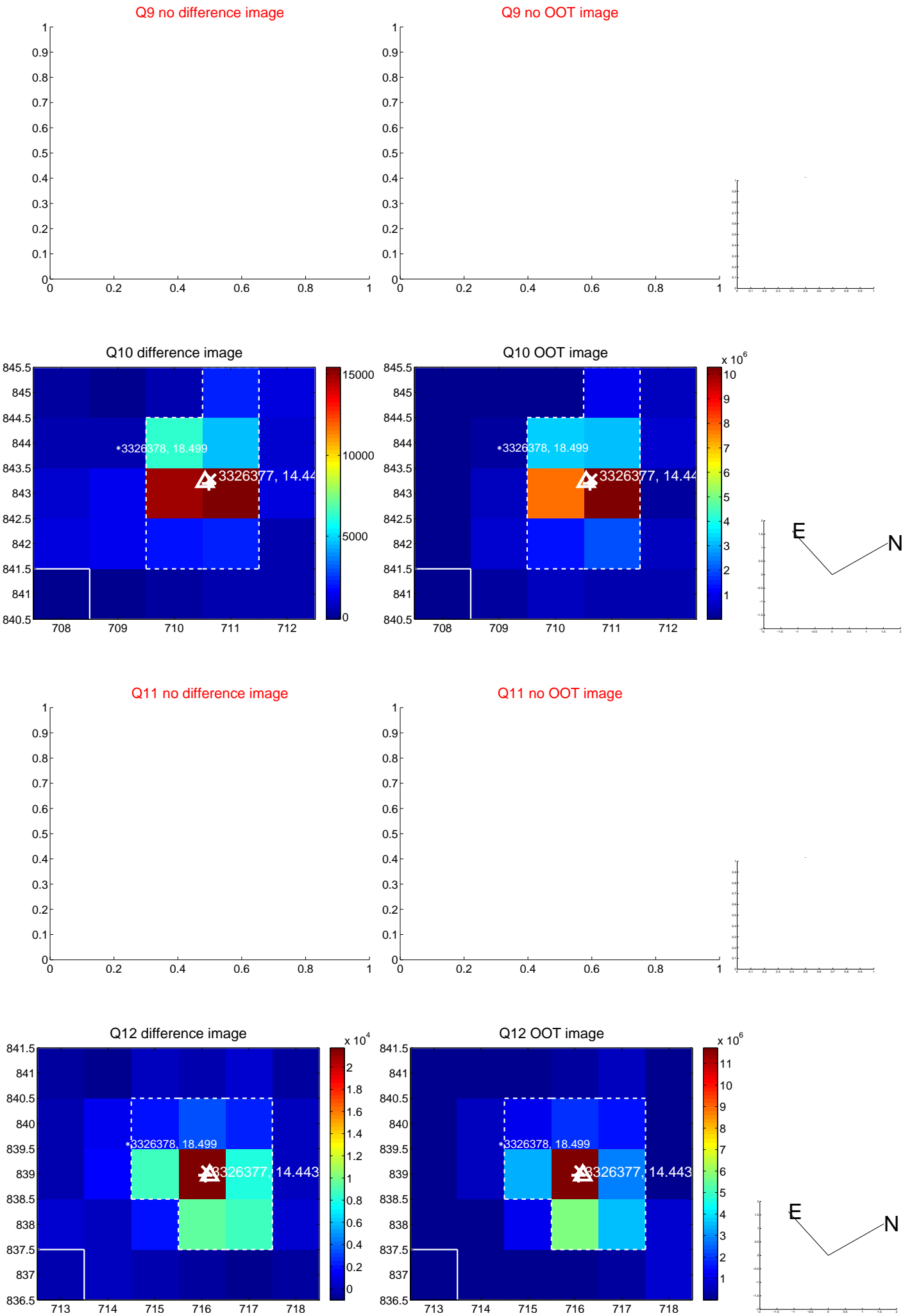
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



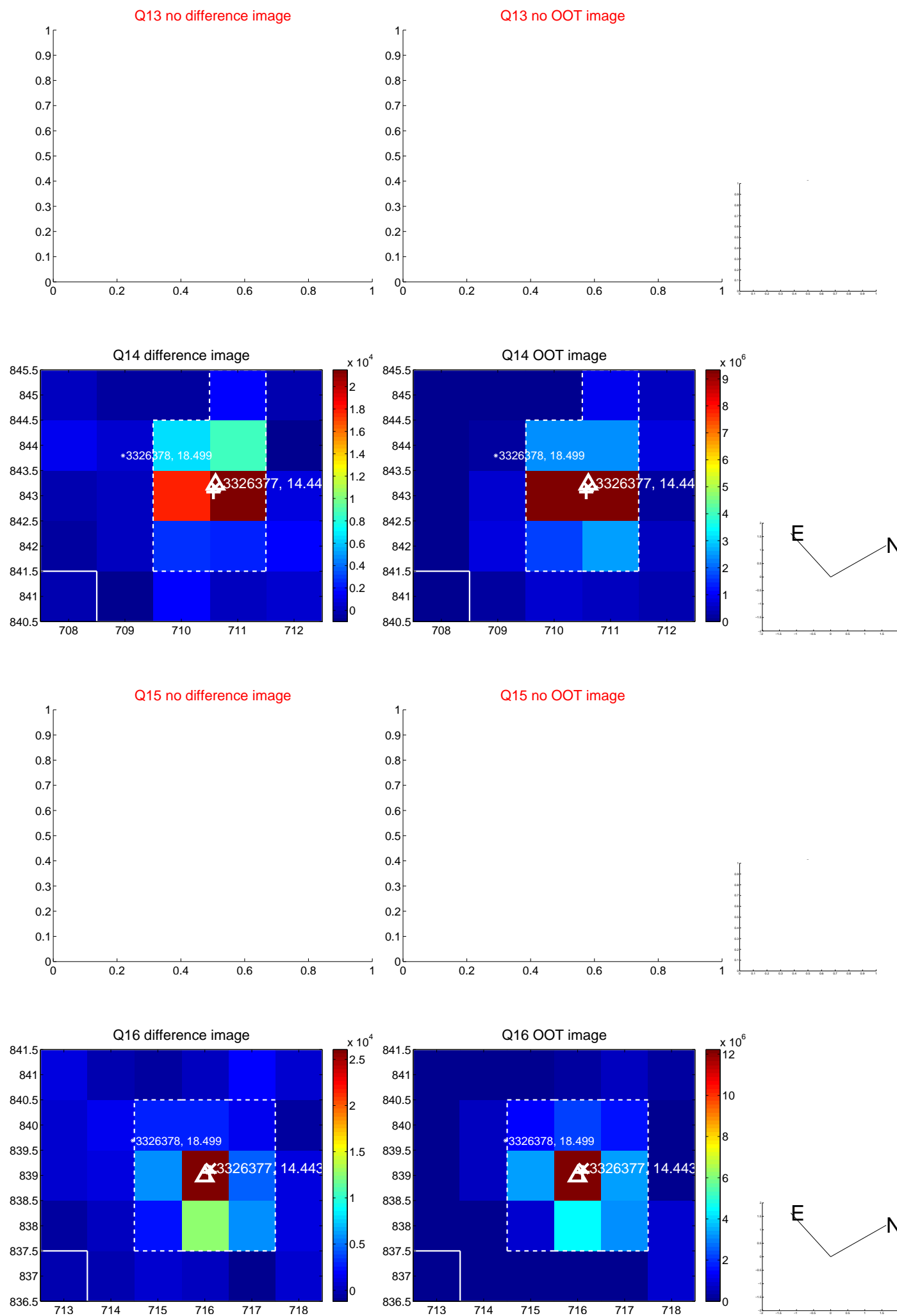
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



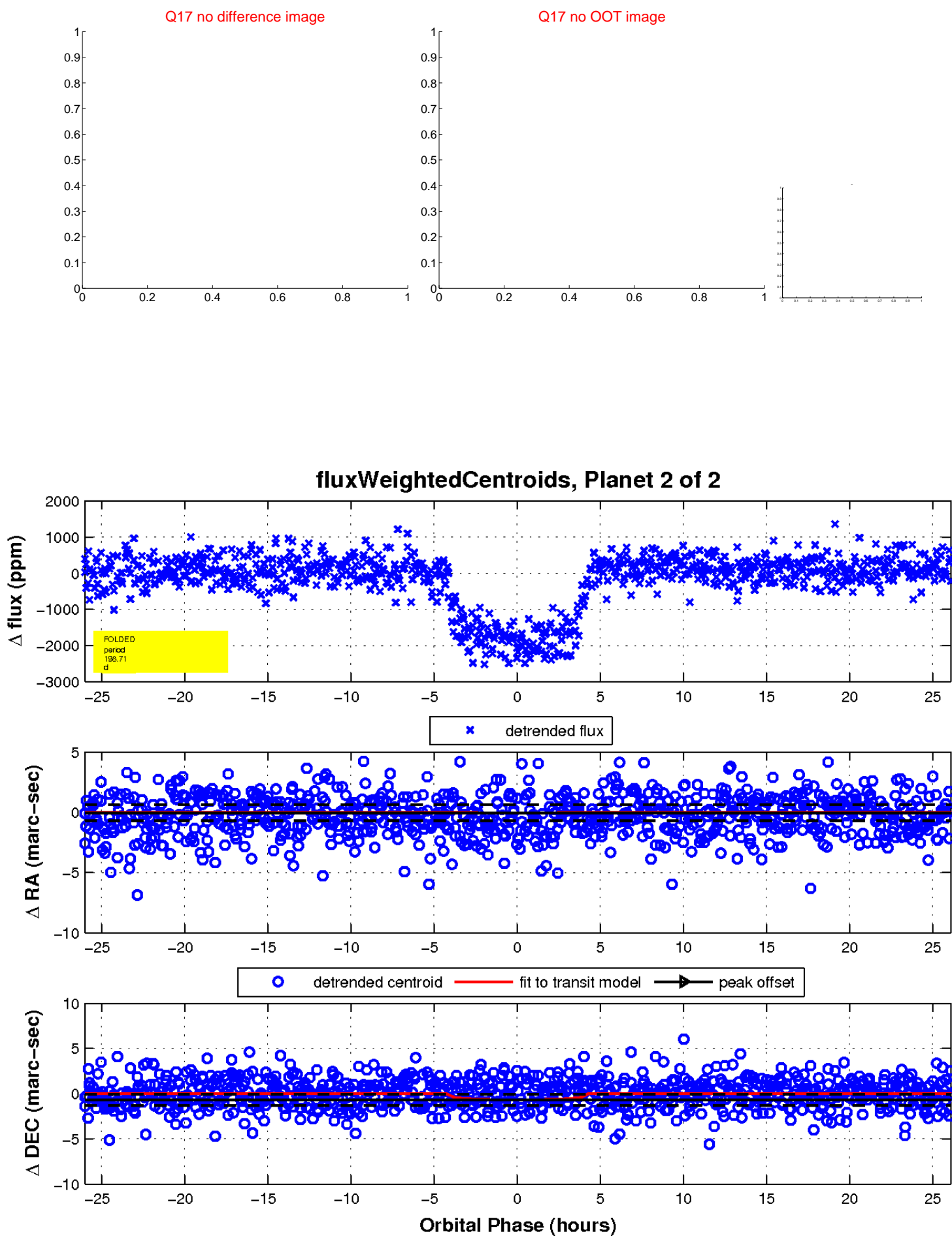
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

