

KIC 008259713

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})
008259713-01	OBS	2935.01	27.880733	134.525951	195.3	7.337	13.0	14.4	1.05	6434	1.84	50.96
008259713-02	OBS	No	3.552234	134.625200	36.7	7.470	8.8	8.2	1.05	6434	0.84	794.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008259713-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008259713-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

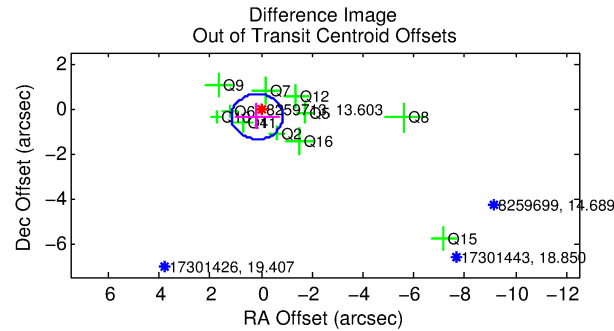
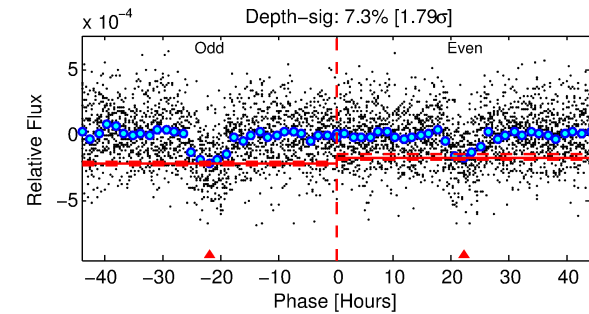
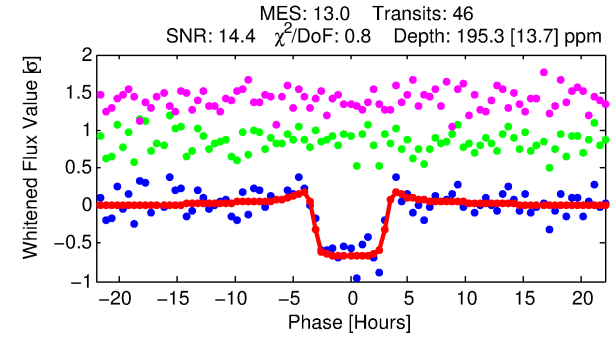
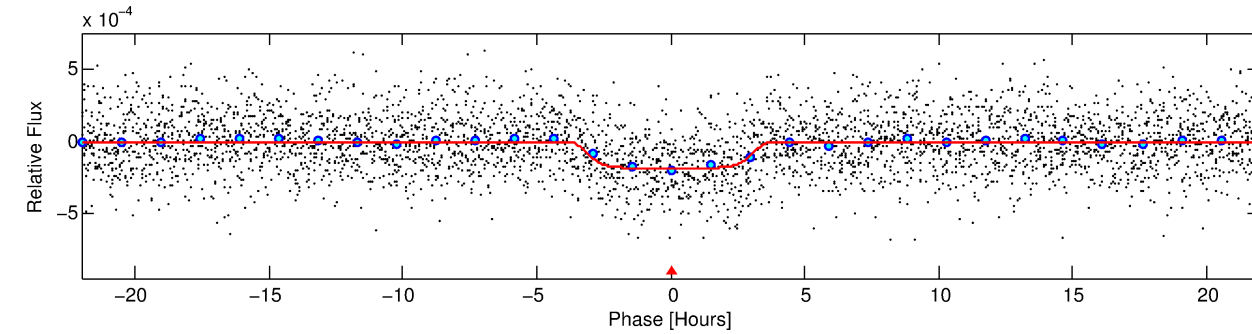
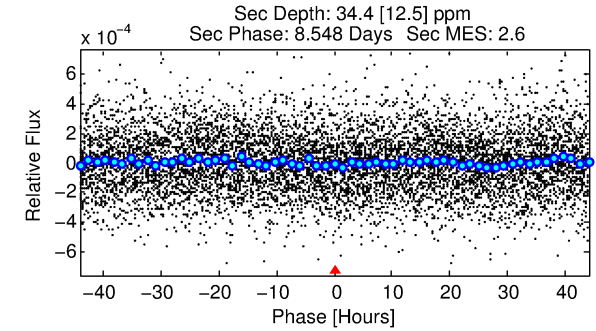
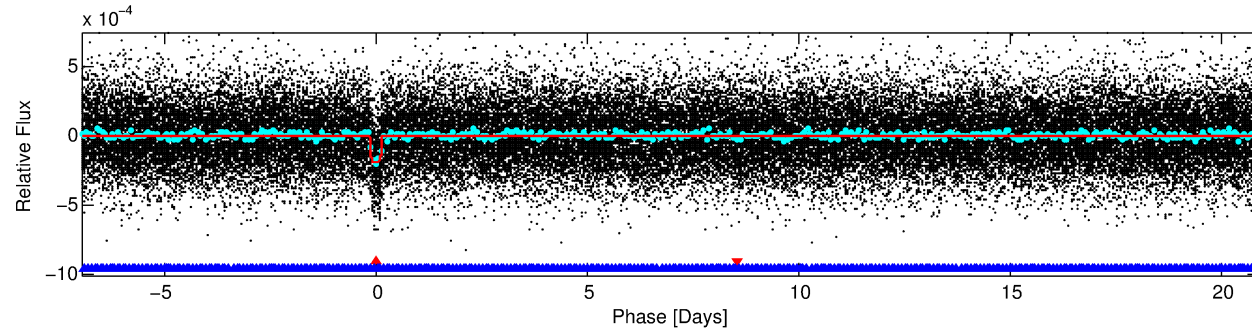
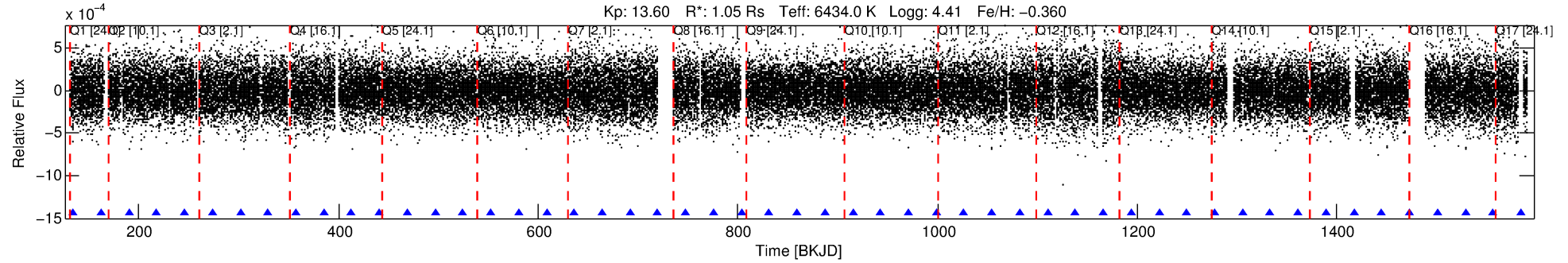
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008259713-01

No Significant Match Found

DV One-Page Summary

KIC: 8259713 Candidate: 1 of 2 Period: 27.881 d
KOI: K02935.01 Corr: 0.930



DV Fit Results:

Period = 27.88073 [0.00028] d
Epoch = 134.5260 [0.0078] BKJD
Rp/R* = 0.0160 [0.0008]
a/R* = 10.05 [1.98]
b = 0.96 [0.02]
Seff = 50.96 [20.04]
Teq = 681 [67] K
Rp = 1.84 [0.57] Re
a = 0.1831 [0.0469] AU
Ag = 187.83 [99.63] [1.88σ]
Teffp = 3900 [390] K [8.12σ]

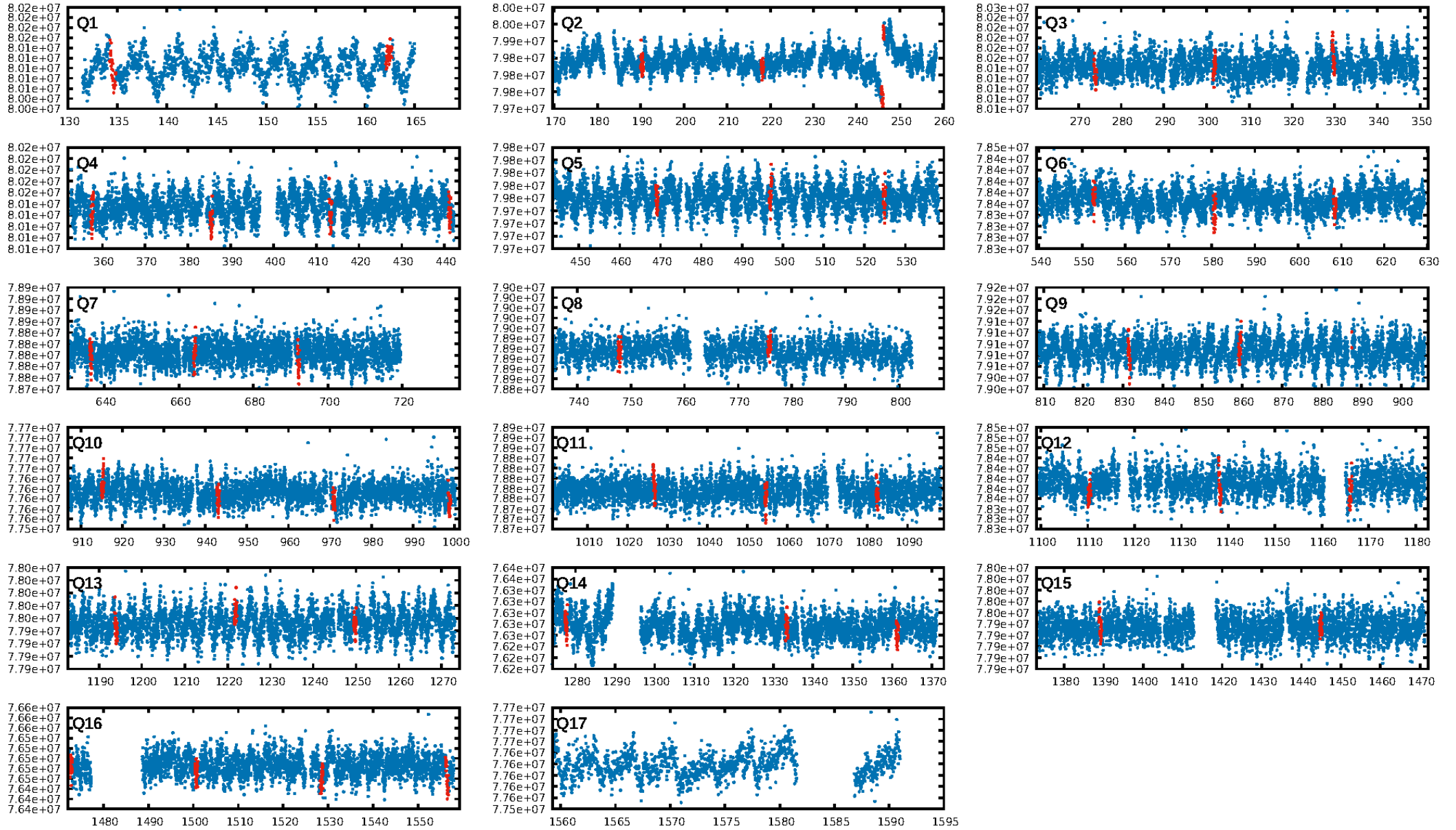
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [55.76σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 87.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.06e-32
RollingBand-fgt: 1.00 [44/44]
GhostDiagnostic-chr: -3.897
Centroid-sig: 22.6%
Centroid-so: 2.086 arcsec [1.77σ]
OotOffset-rm: 0.395 arcsec [1.17σ]
KicOffset-rm: 0.535 arcsec [1.14σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 0.62 [10/16]

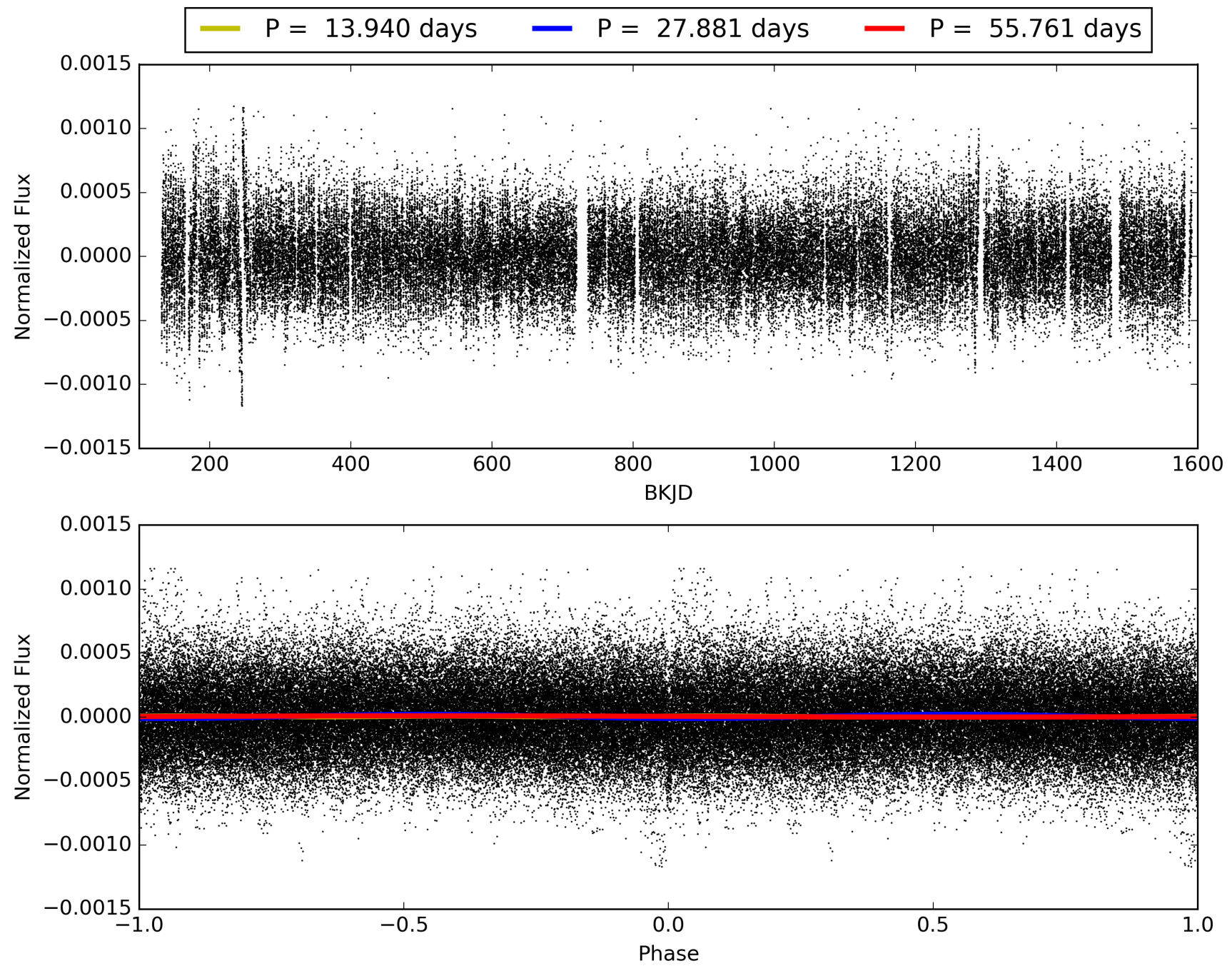
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:29:33 Z

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

TCE 008259713-01, PDC Light Curves

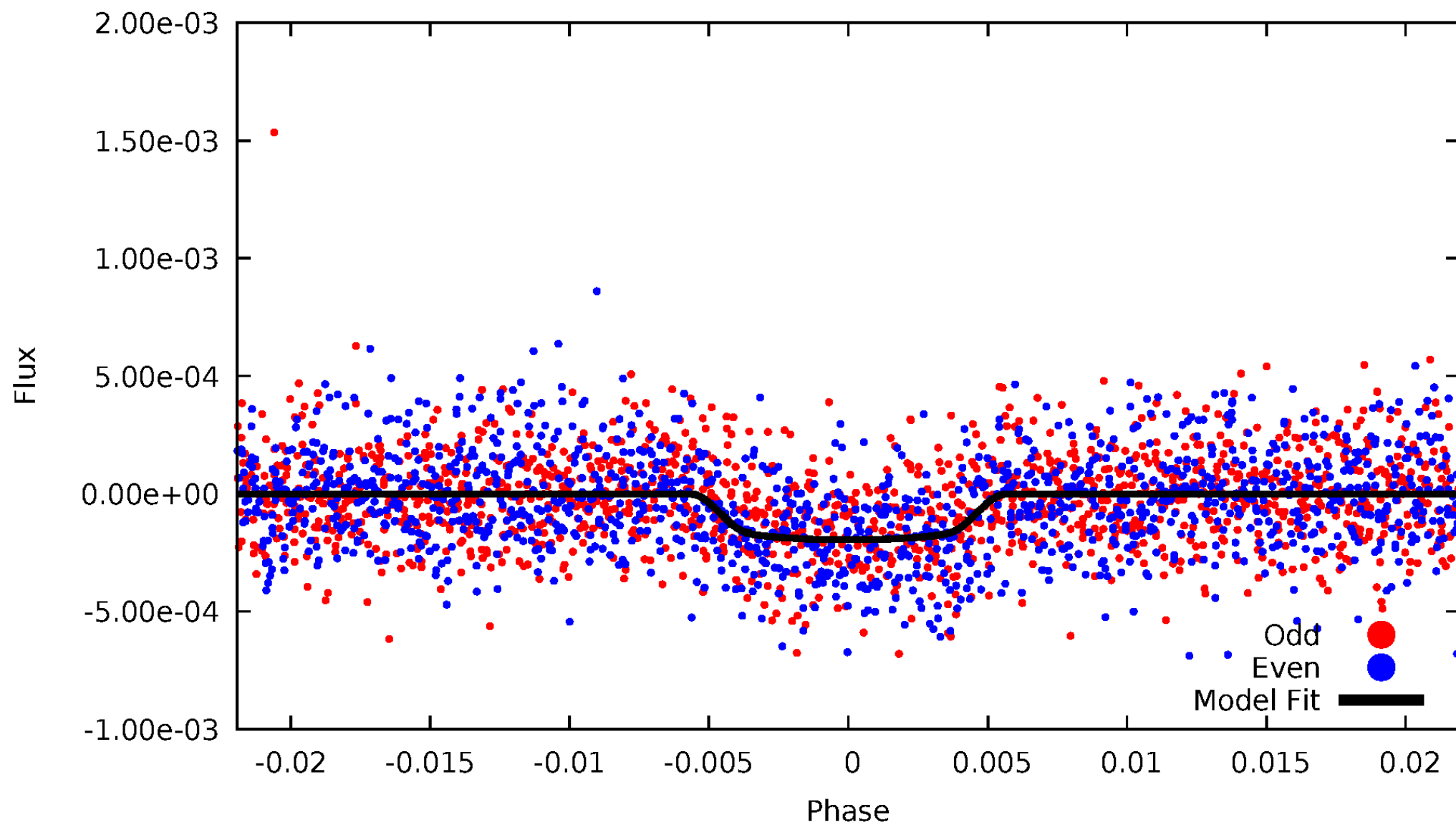


TCE 008259713-01



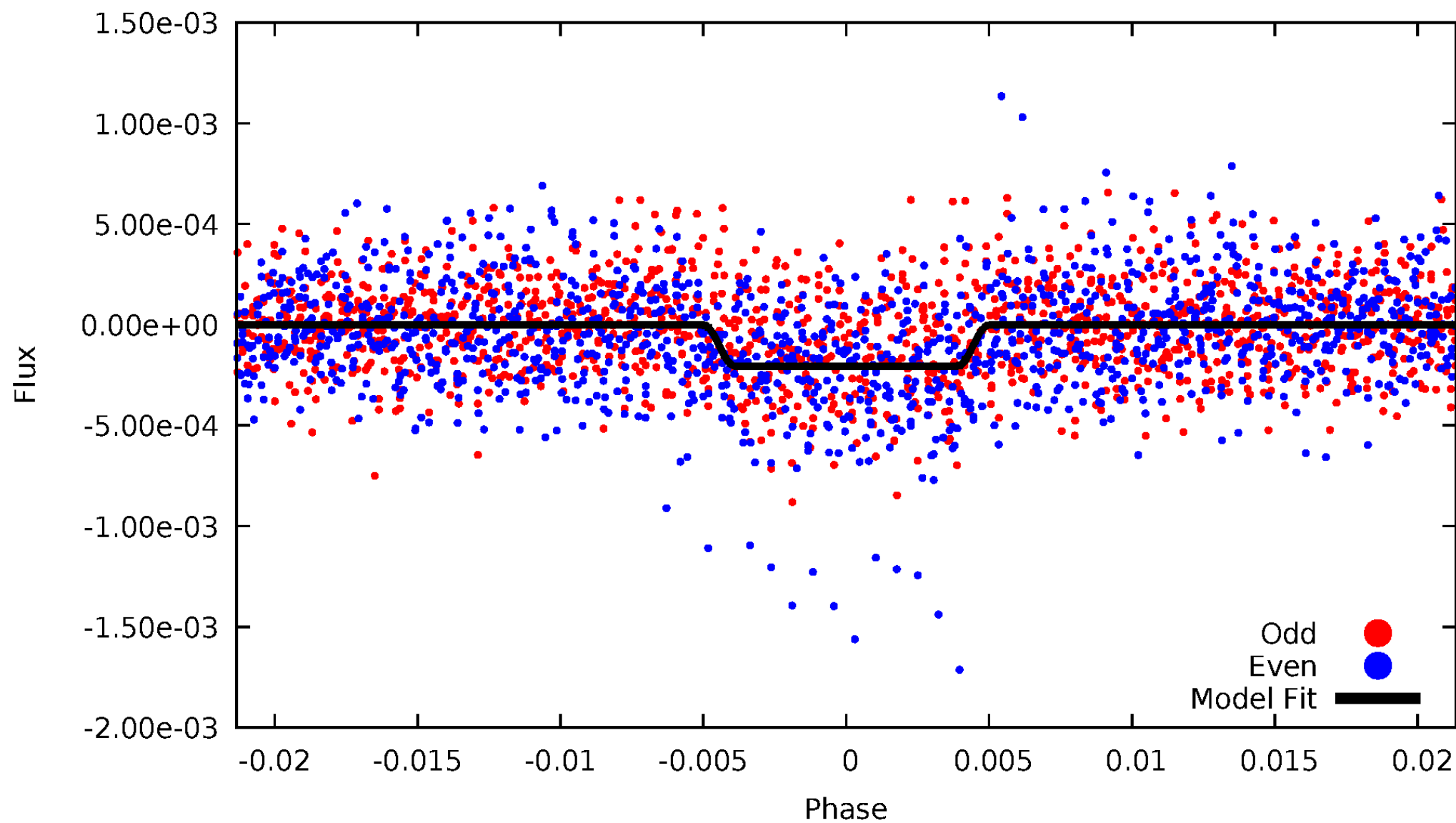
DV Odd/Even

TCE 008259713-01

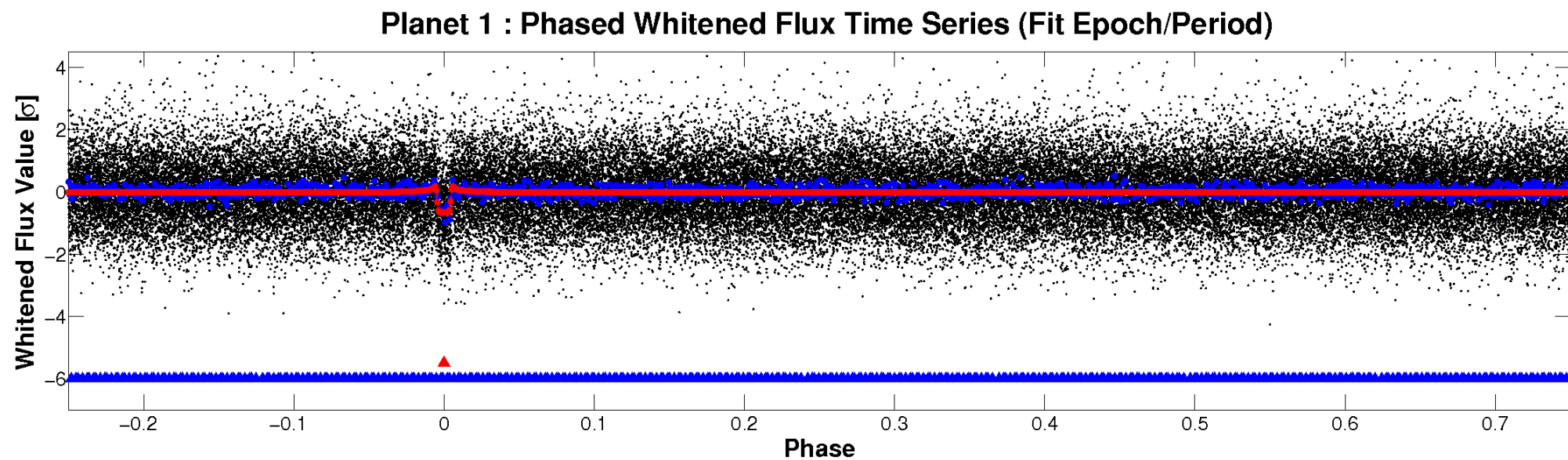
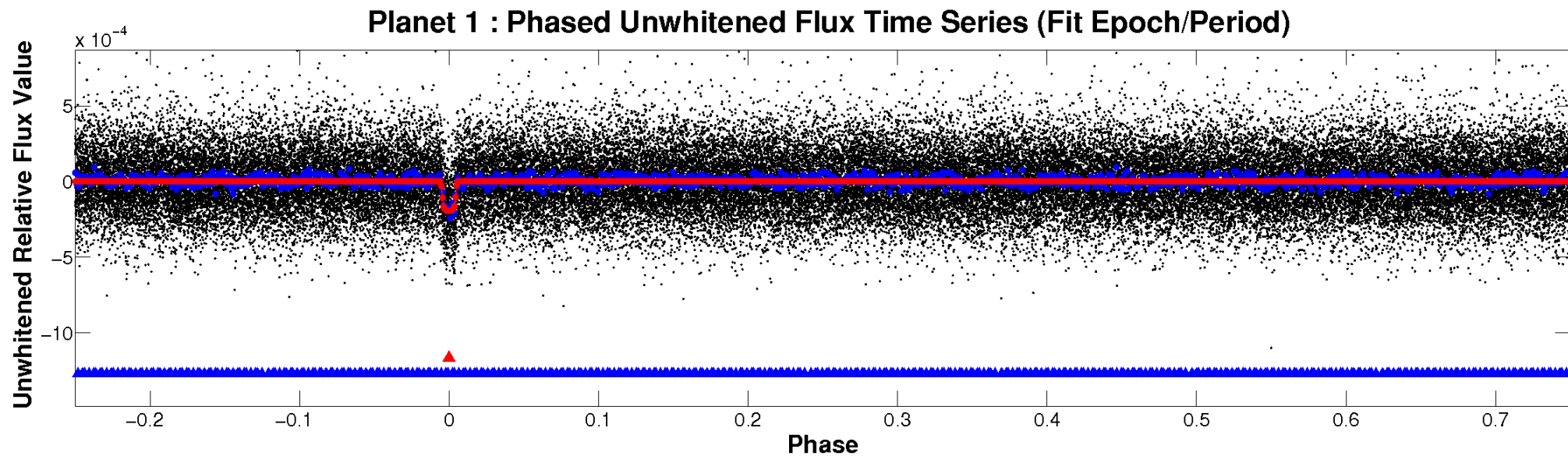


ALT Odd/Even

TCE 008259713-01

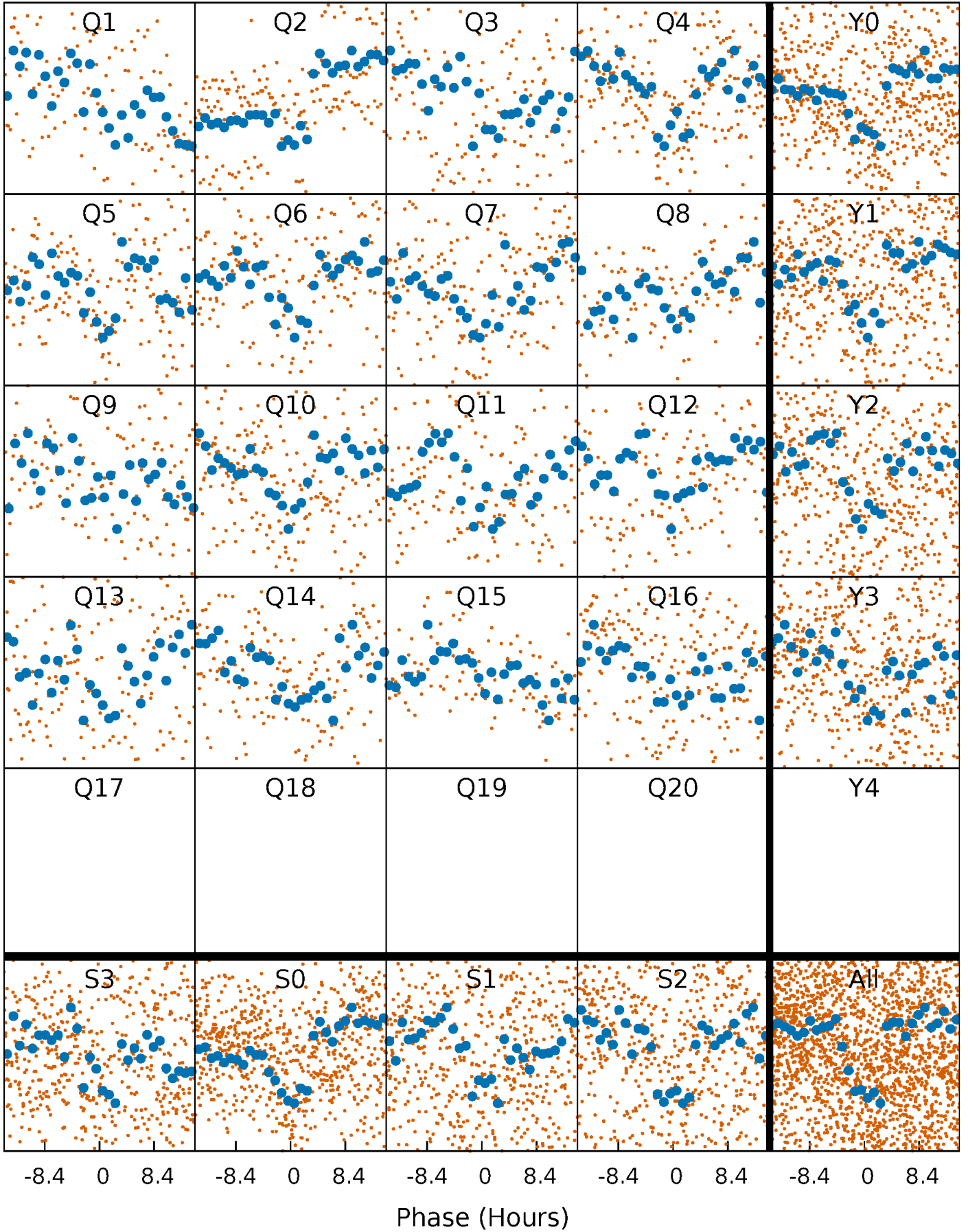


Non-Whitened Vs. Whitened Light Curve



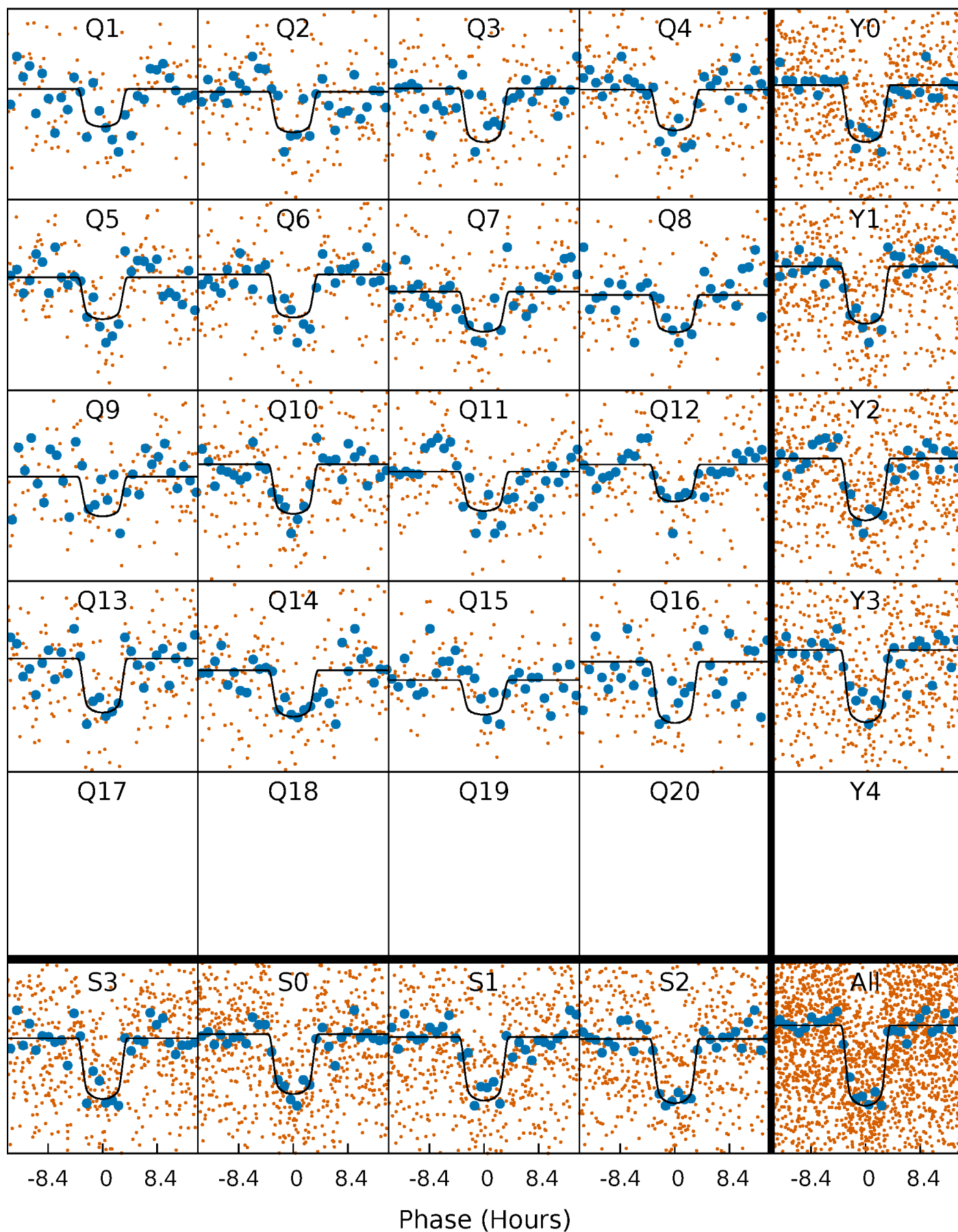
PDC Quarter-Phased Transit Curves

TCE 008259713-01 P= 27.880733 Days $T_0=134.525951$ (BKJD)



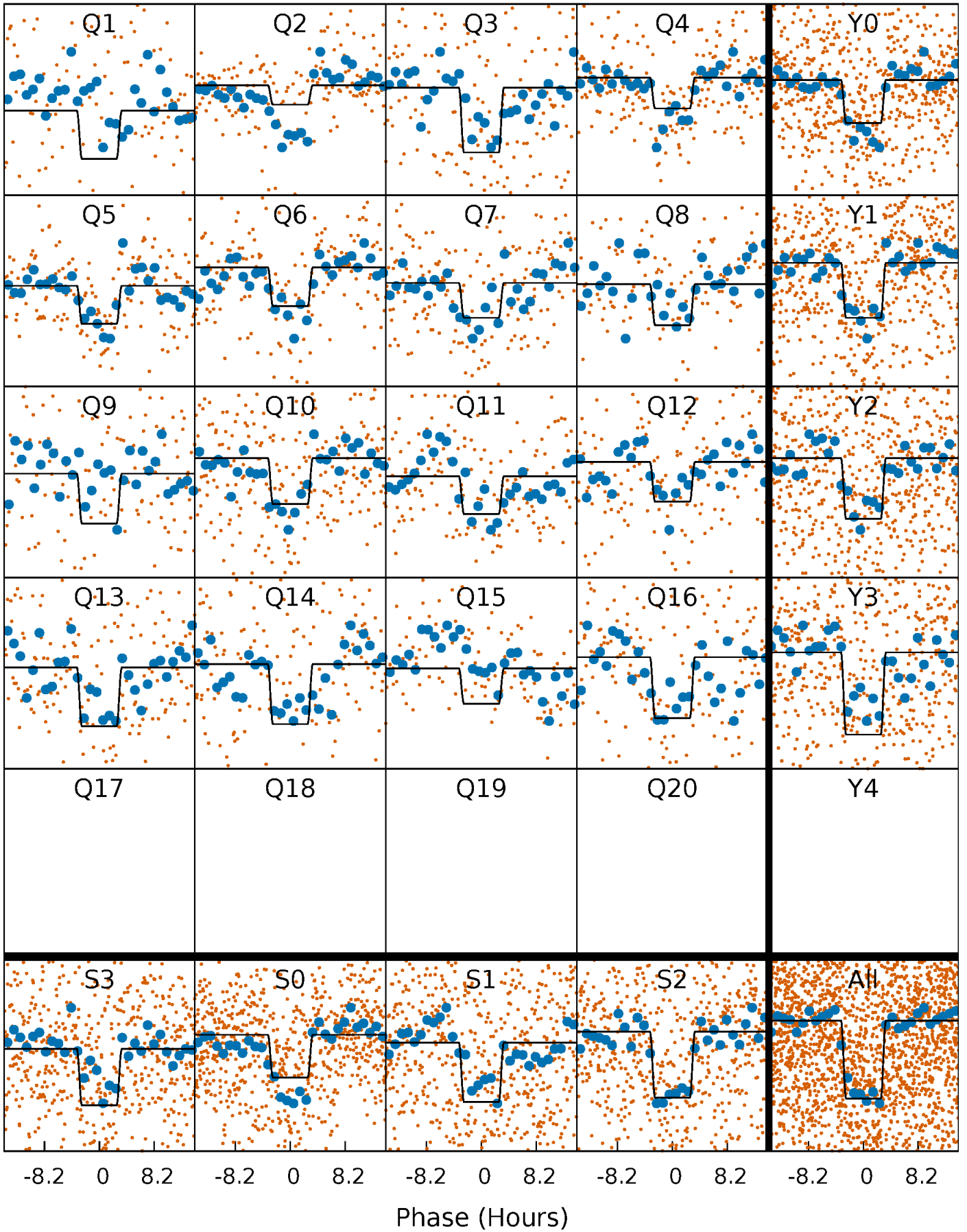
DV Quarter-Phased Transit Curves

TCE 008259713-01 P= 27.880733 Days $T_0=134.525951$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

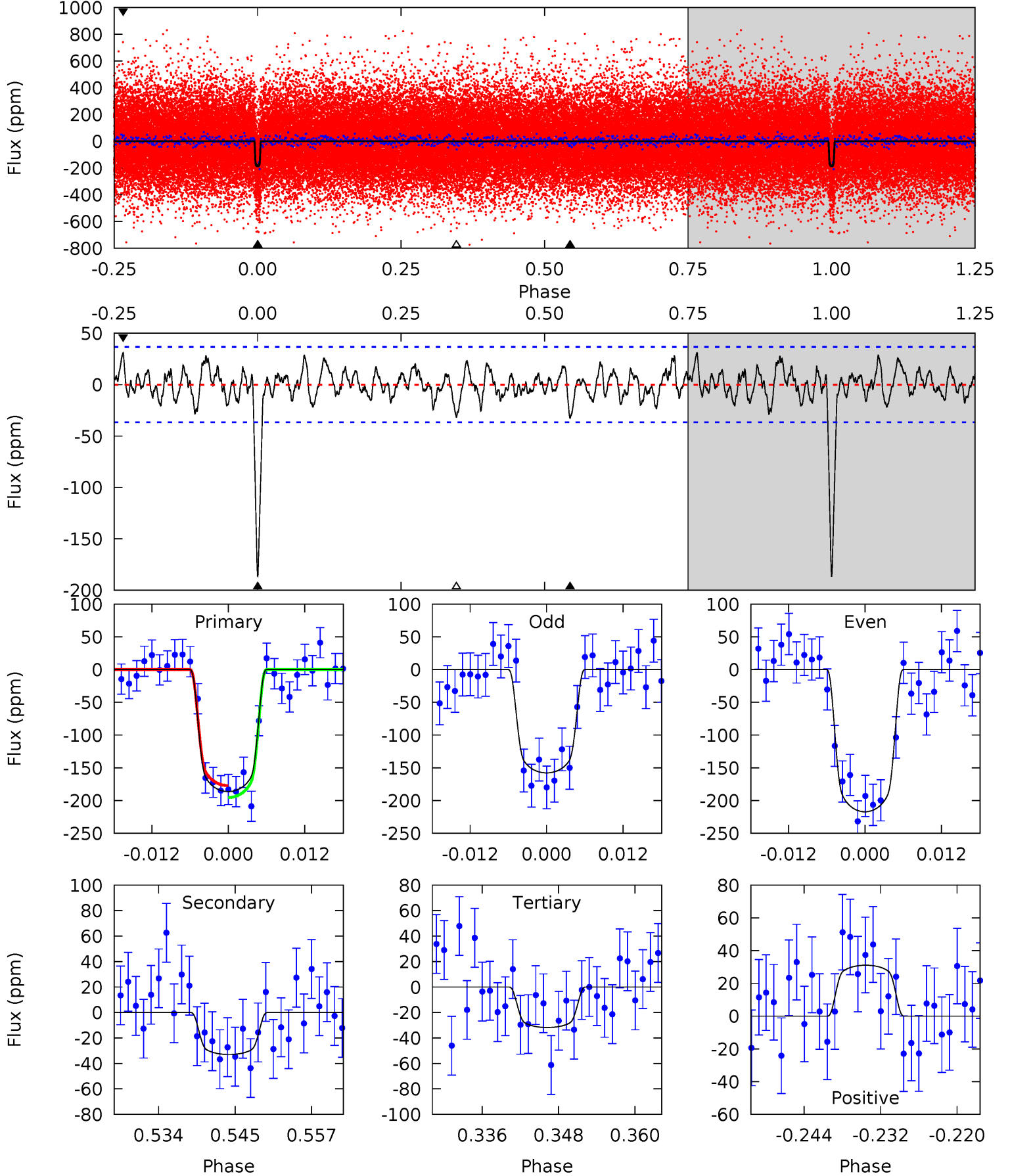
TCE 008259713-01 P= 27.880508 Days $T_0=134.534625$ (BKJD)



DV Model-Shift Uniqueness Test

008259713-01, P = 27.880733 Days, E = 106.645218 Days

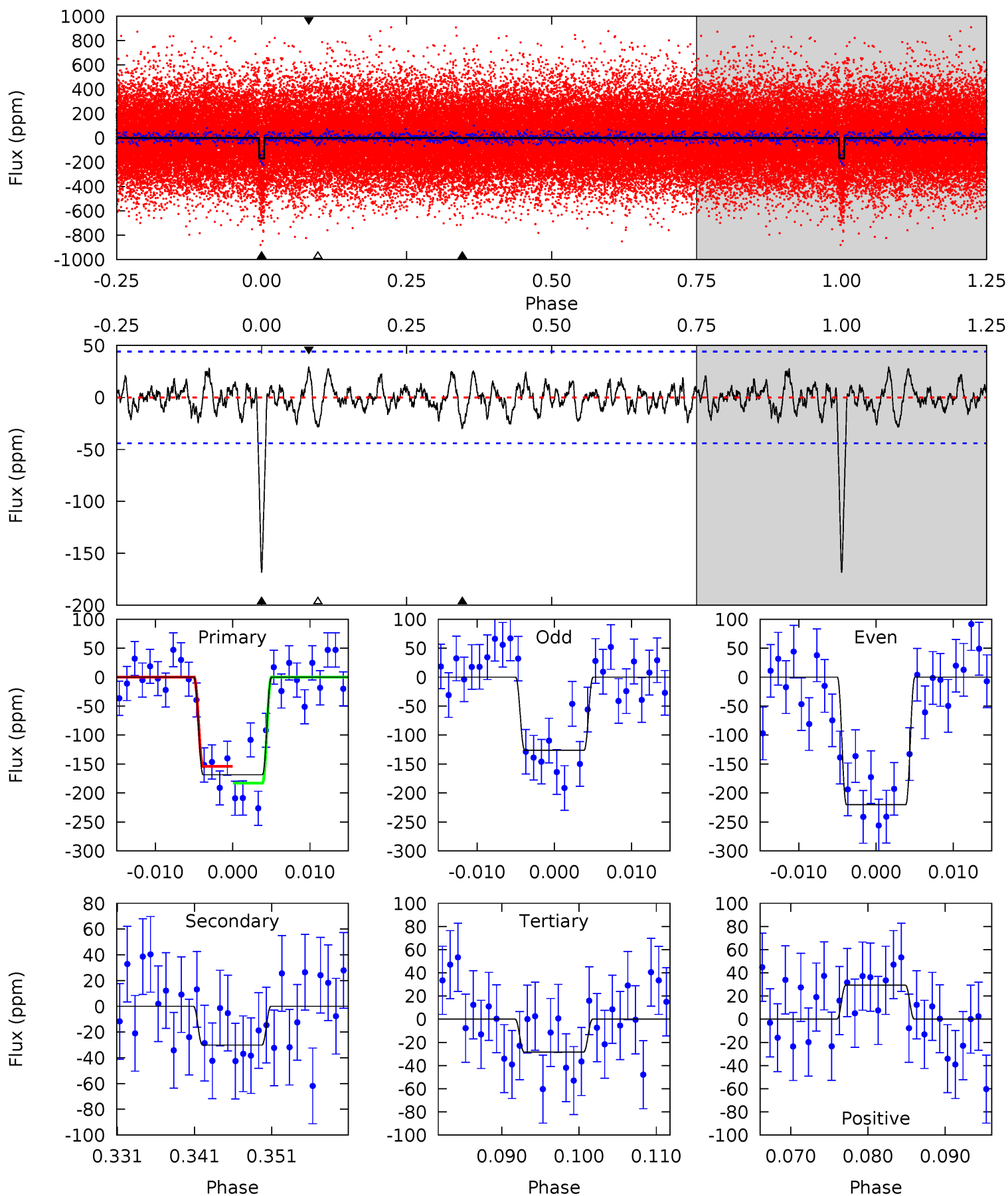
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	4.50	4.34	4.24	5.00	2.52	1.52	21.1	21.2	0.16	0.26	4.06	0.98	0.14	1.24



Alt Model-Shift Uniqueness Test

008259713-01, $P = 27.880508$ Days, $E = 106.654117$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	3.43	3.23	3.35	5.03	2.57	1.19	16.0	15.8	0.19	0.08	5.35	1.02	0.15	1.66



Stellar Parameters For KIC 008259713

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6434^{+152}_{-209}	$4.414^{+0.067}_{-0.202}$	$-0.360^{+0.250}_{-0.300}$	$1.055^{+0.323}_{-0.139}$	$1.048^{+0.156}_{-0.128}$	$1.257^{+0.448}_{-0.634}$
	+2%/-3%	+2%/-5%	+69%/-83%	+31%/-13%	+15%/-12%	+36%/-50%
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 008259713-01 / KOI 2935.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33 ± 7	$1.89^{+0.29}_{-0.20}$	965^{+71}_{-46}	4121^{+200}_{-207}	165^{+56}_{-51}
Alt.	-30 ± 9	$1.71^{+0.29}_{-0.19}$	968^{+68}_{-48}	4209^{+269}_{-274}	184^{+75}_{-66}

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

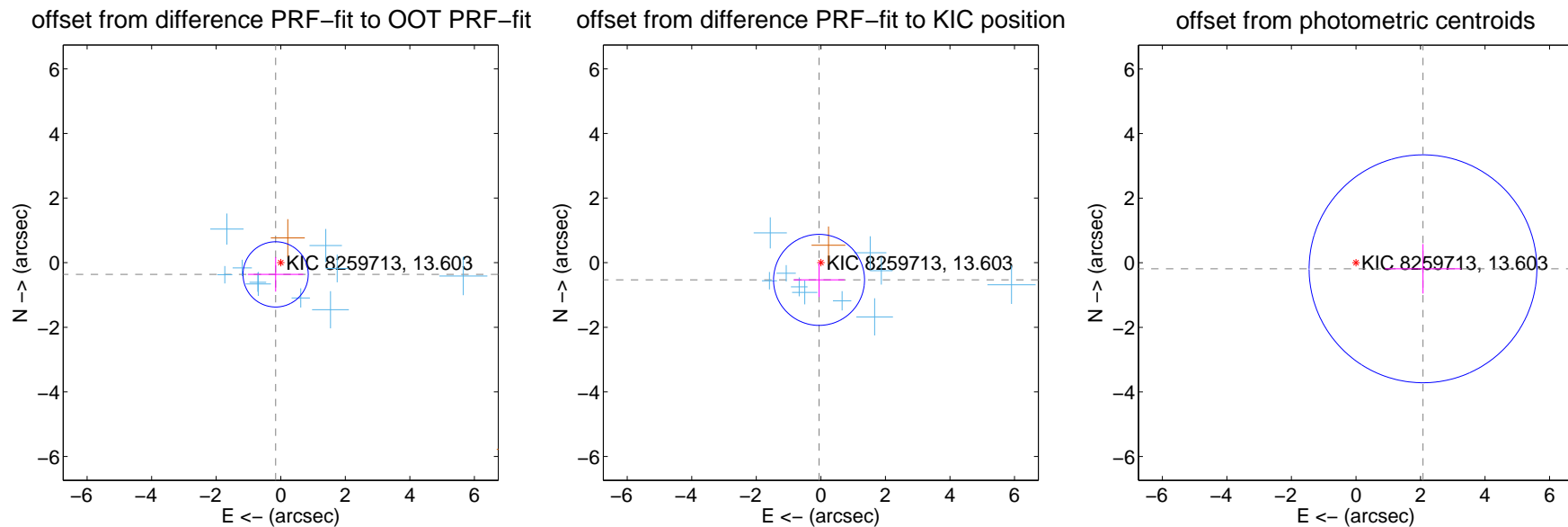
DV Centroid Data

Supplemental centroid analysis for 008259713-01. Kepler magnitude: 13.60. Transit SNR 14.45

There are 10 quarters with good PRF difference image offsets

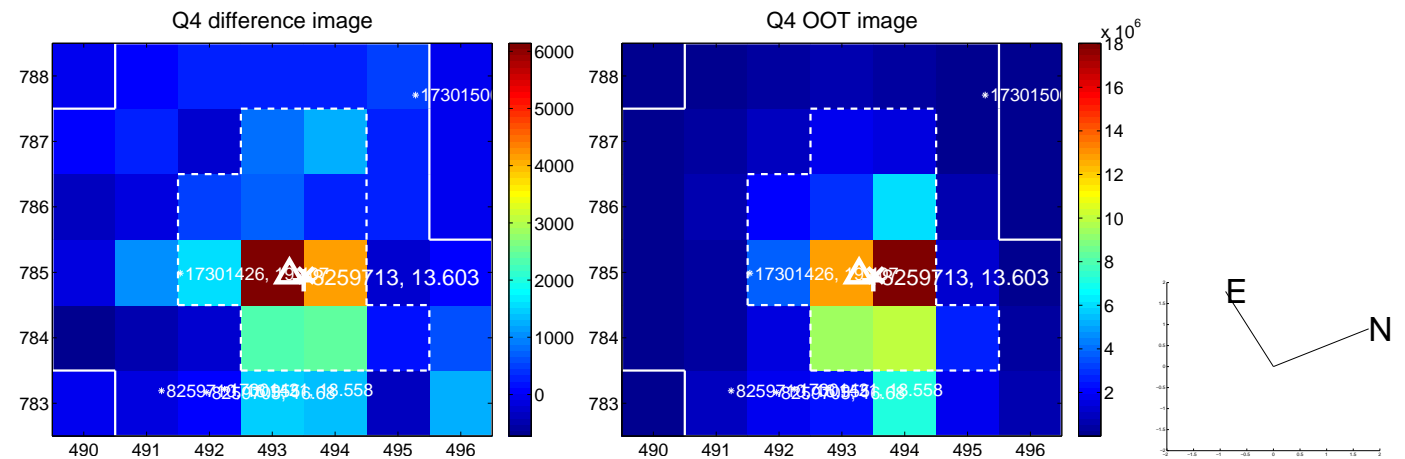
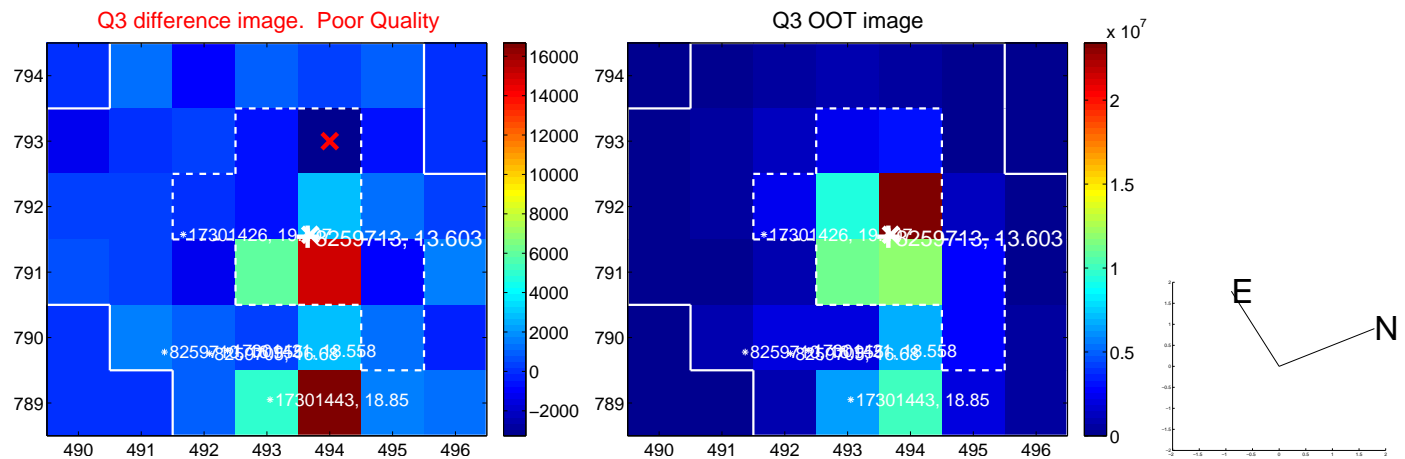
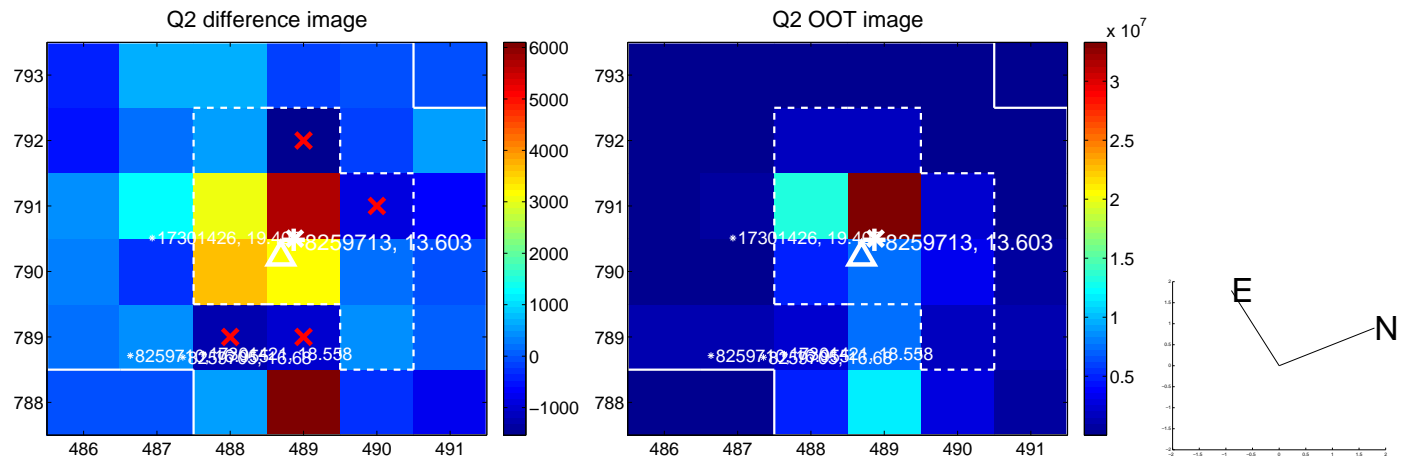
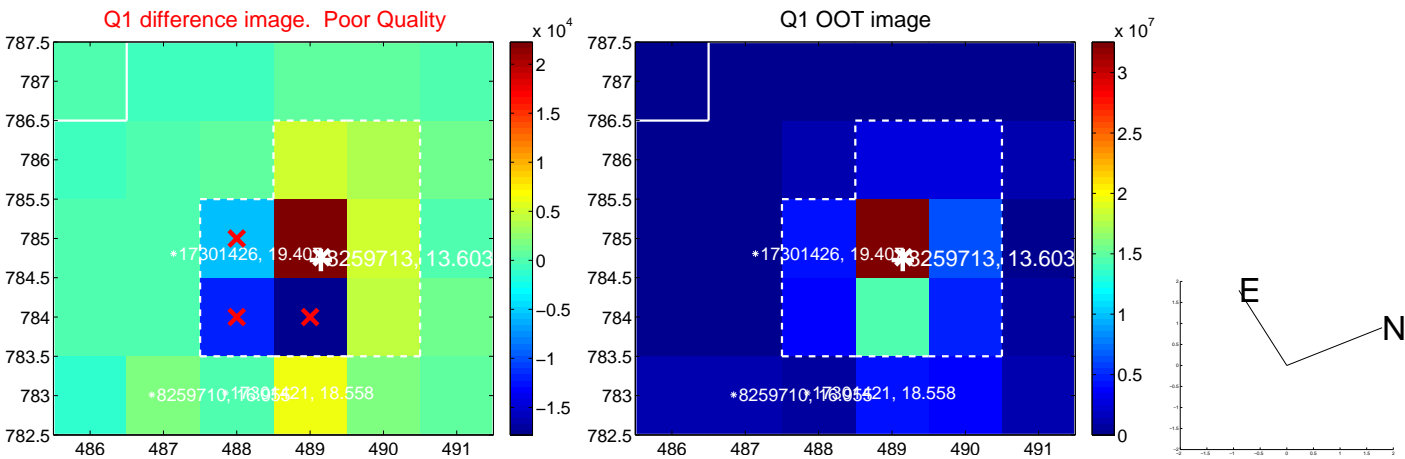
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.395 ± 0.337	1.17	0.159 ± 0.860	-0.362 ± 0.534
PRF-fit source offset from KIC position	0.535 ± 0.470	1.14	0.056 ± 0.788	-0.532 ± 0.528
photometric centroid source offset	2.09 ± 1.18	1.77	-2.08 ± 1.18	-0.19 ± 0.76

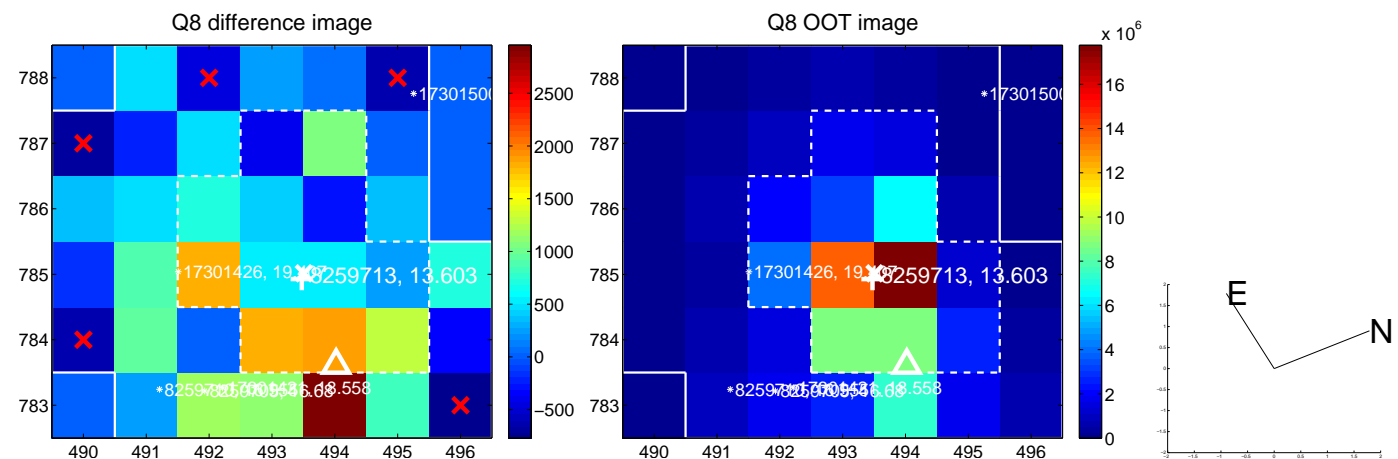
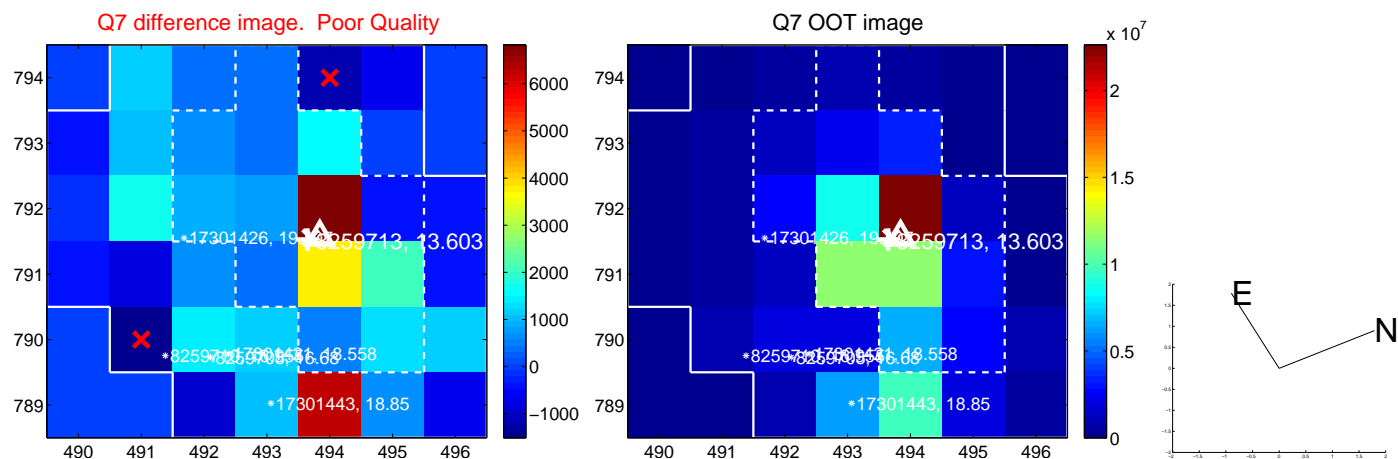
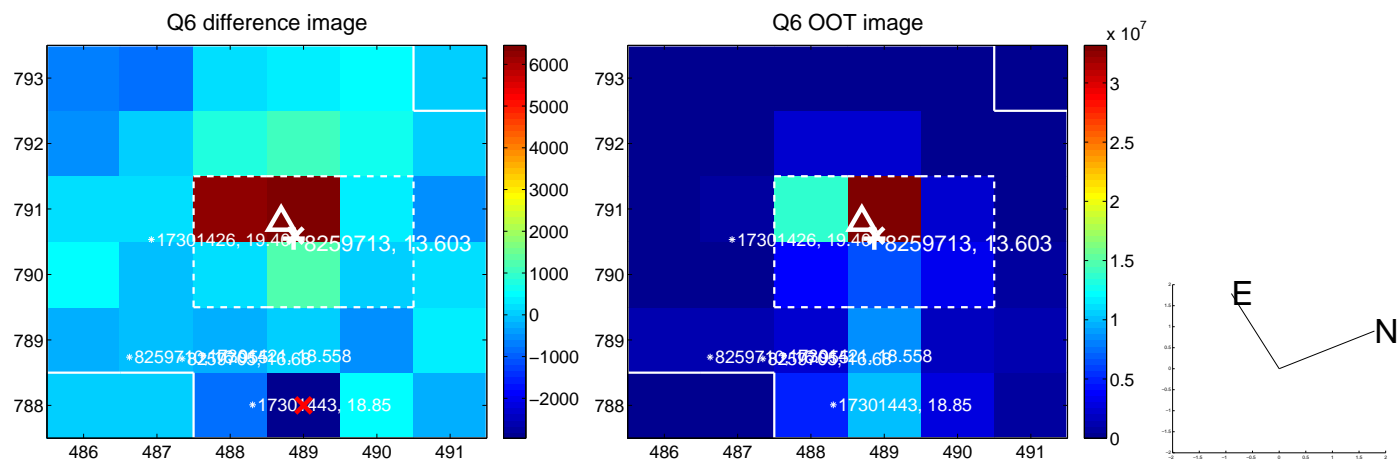
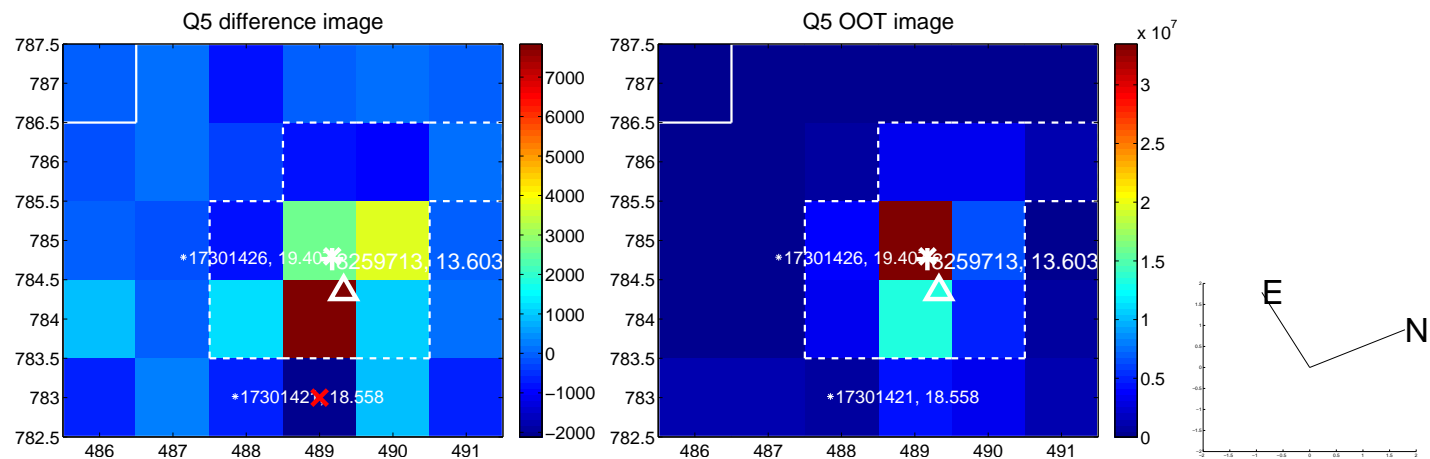


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

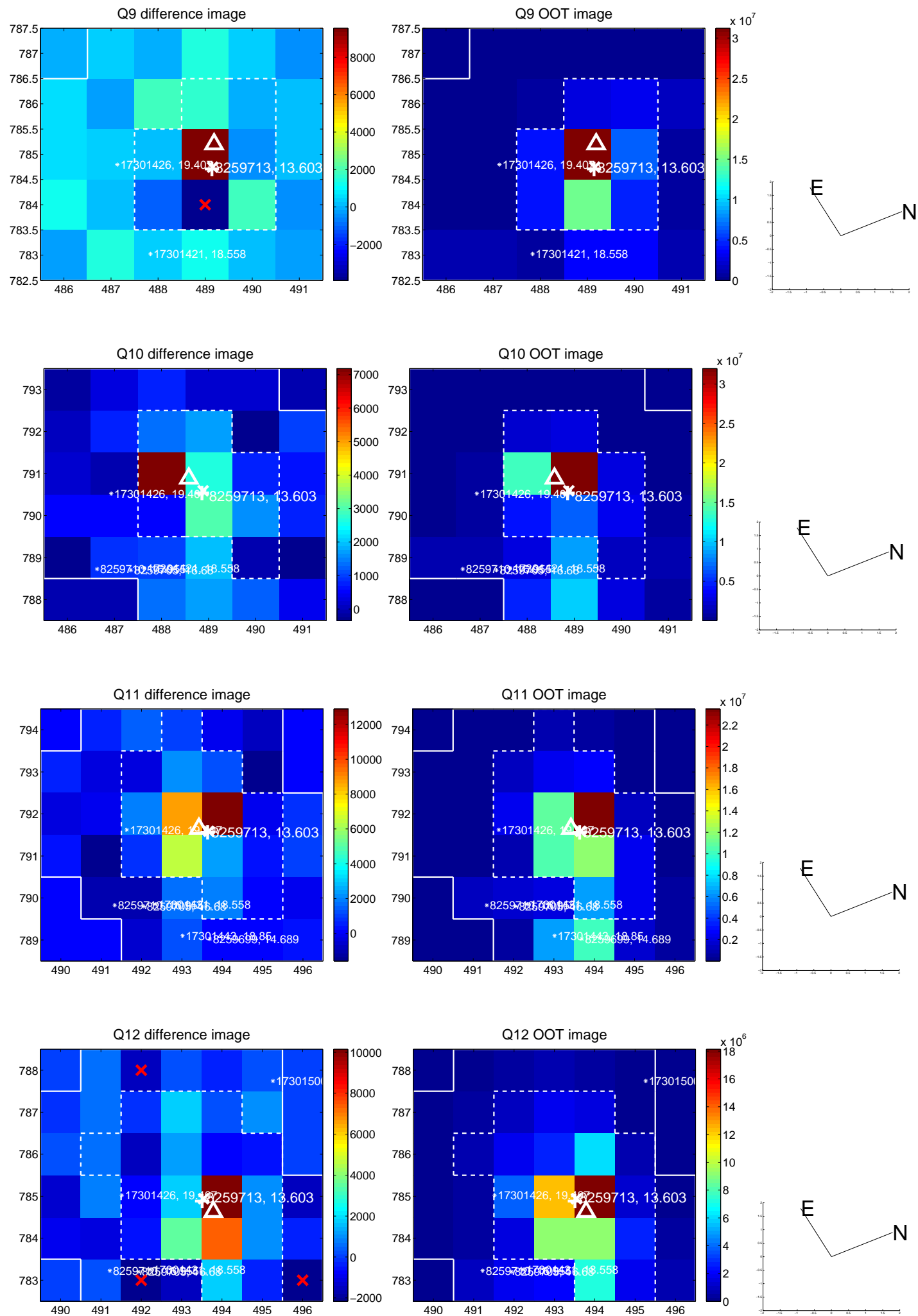
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



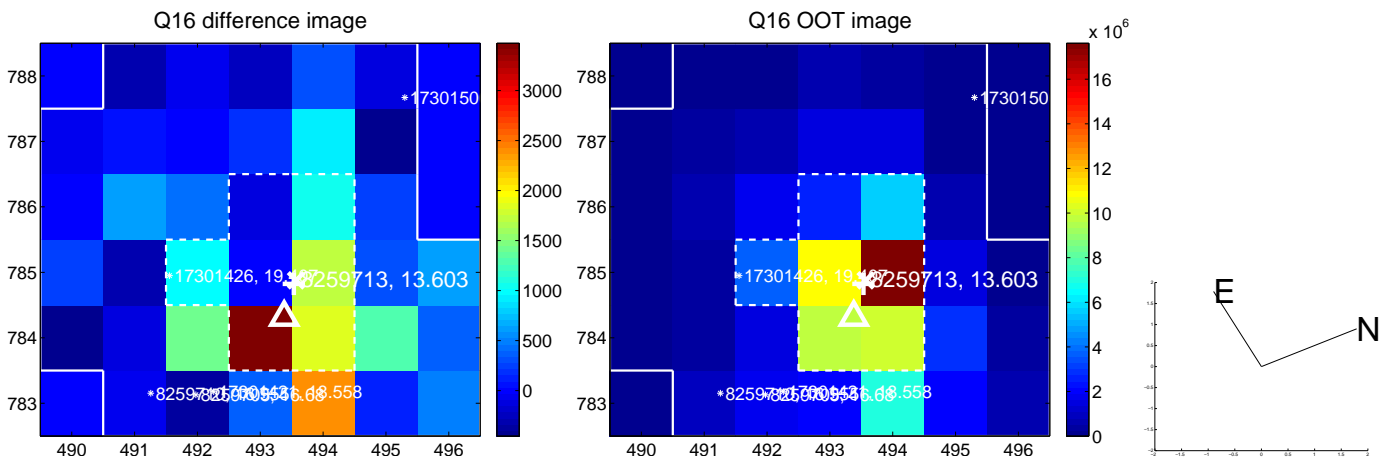
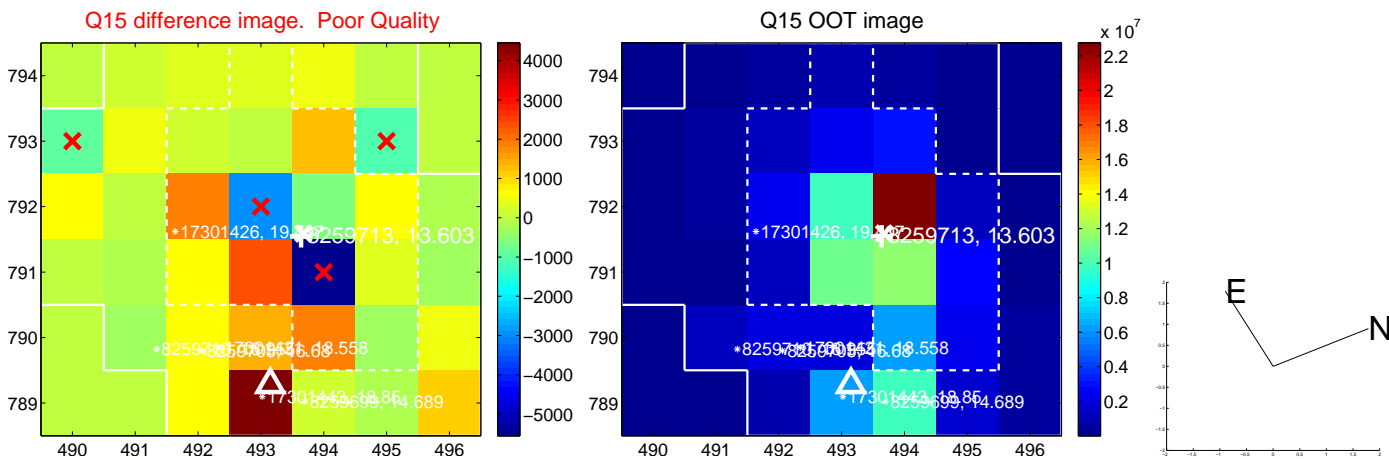
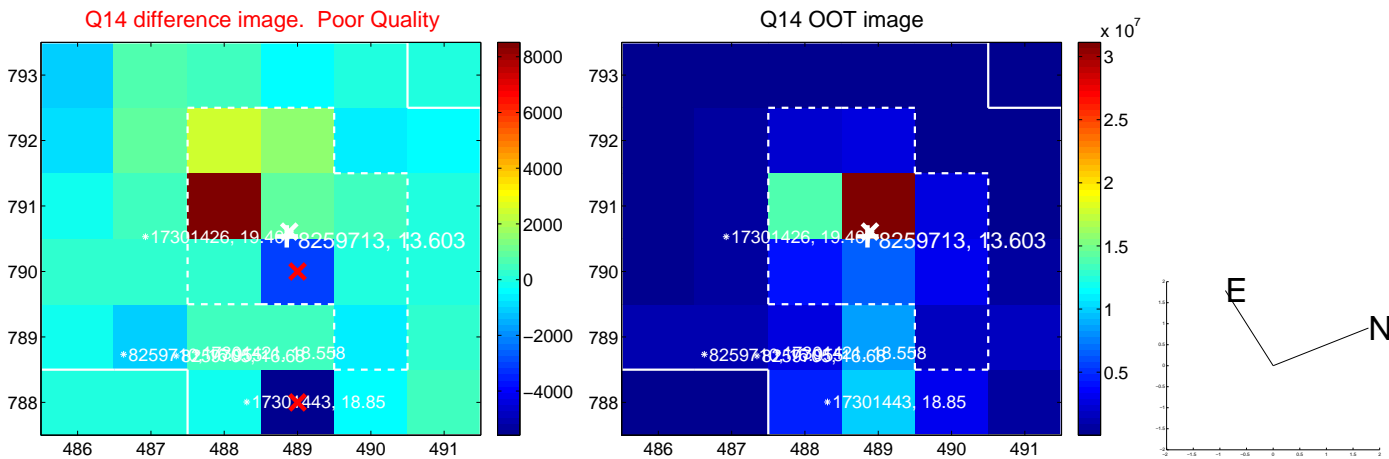
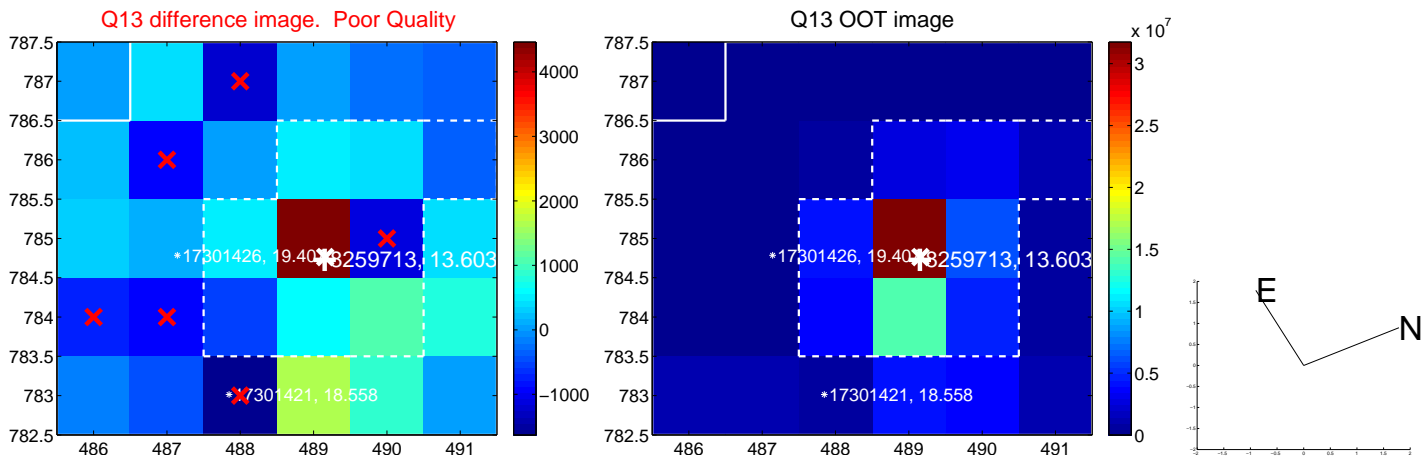
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



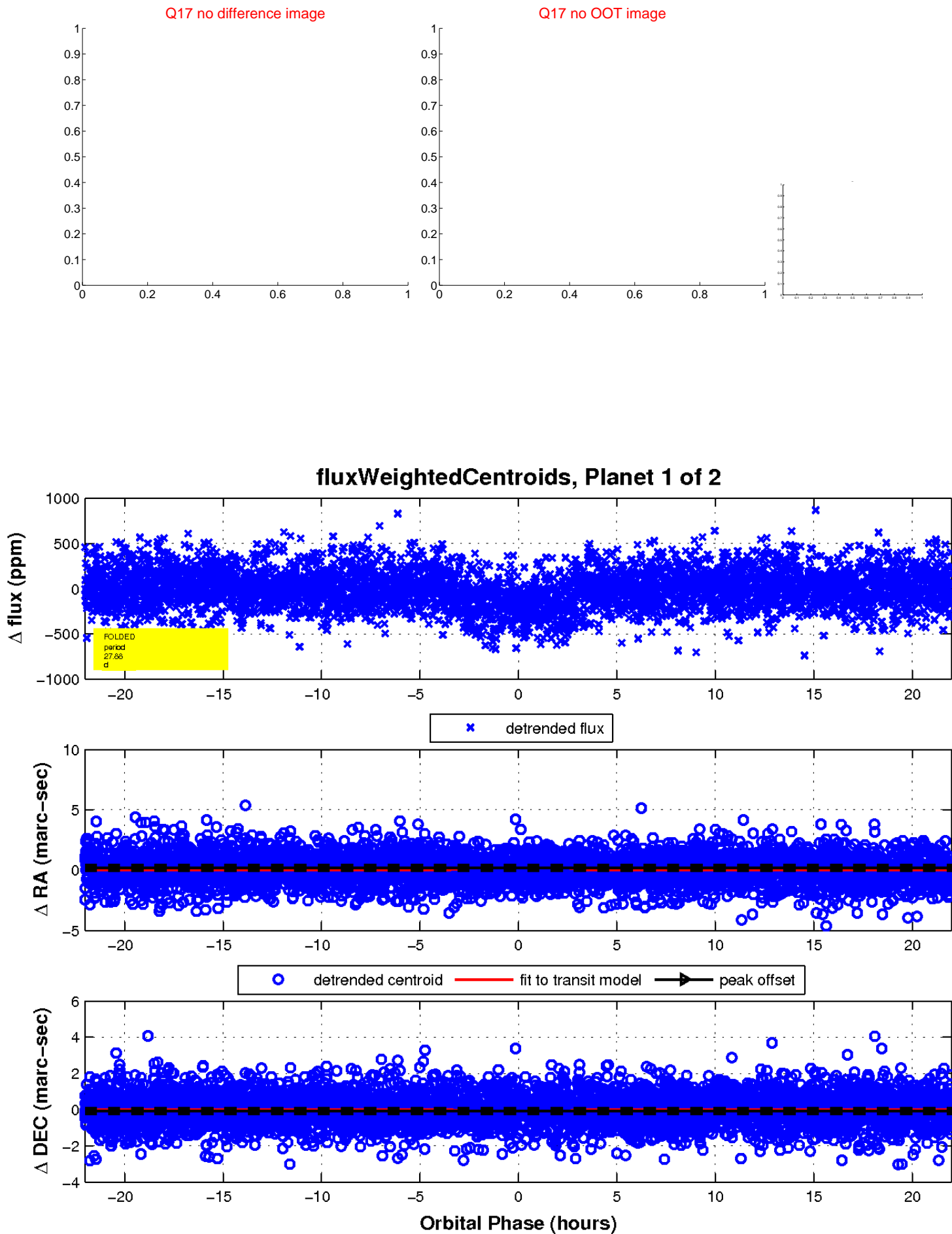
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

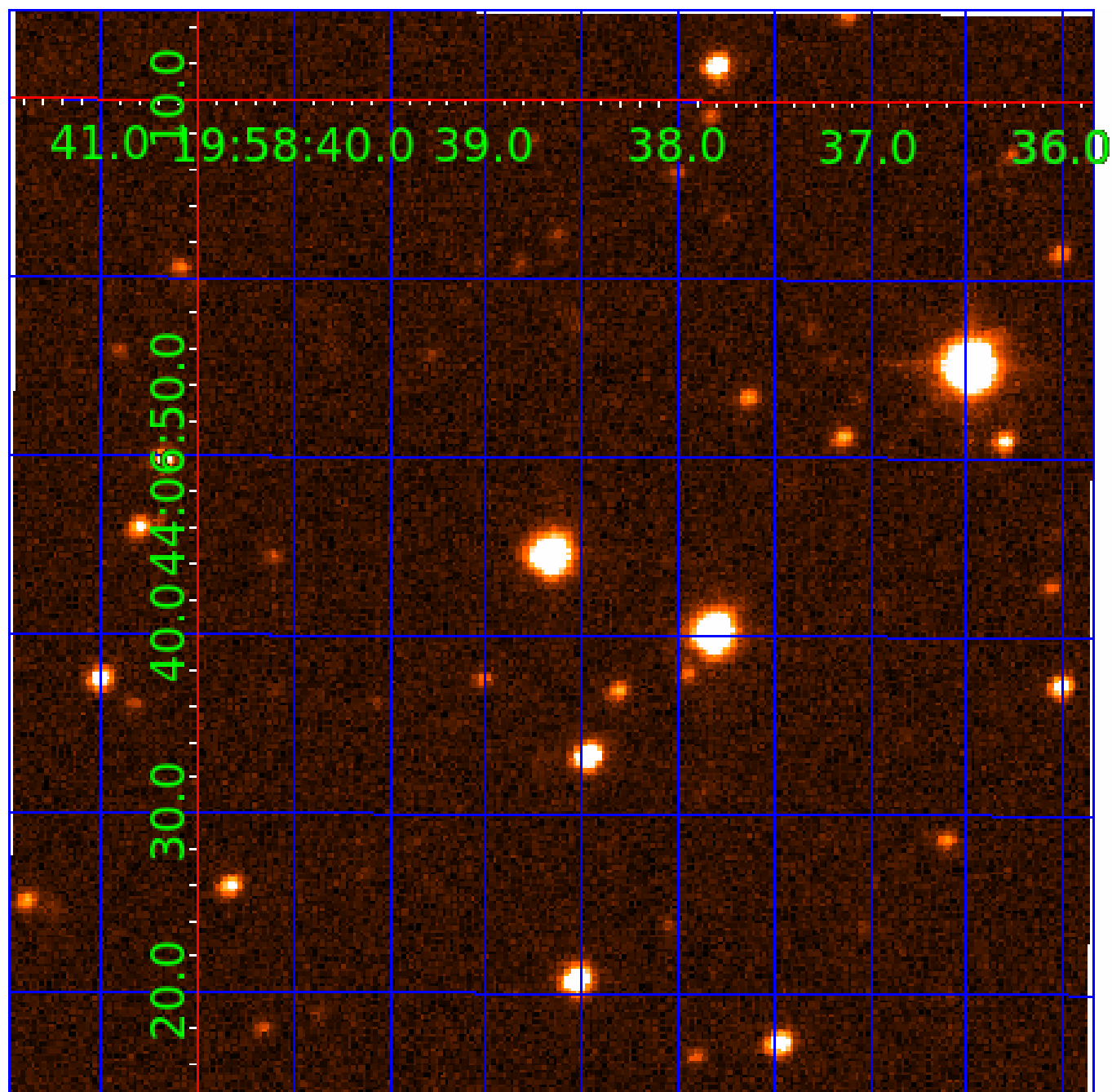


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008259713

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})
008259713-01	OBS	2935.01	27.880733	134.525951	195.3	7.337	13.0	14.4	1.05	6434	1.84	50.96
008259713-02	OBS	No	3.552234	134.625200	36.7	7.470	8.8	8.2	1.05	6434	0.84	794.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008259713-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008259713-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

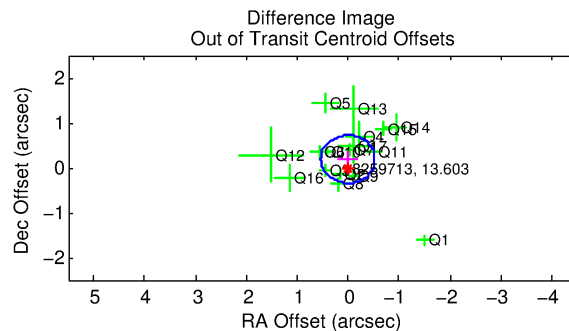
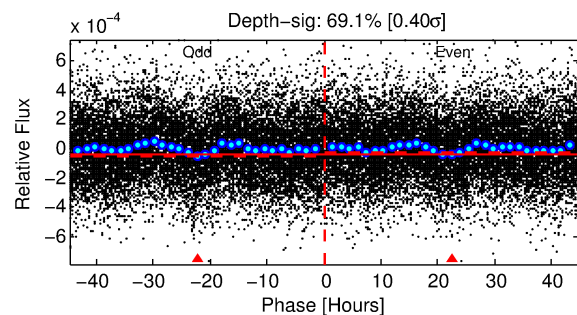
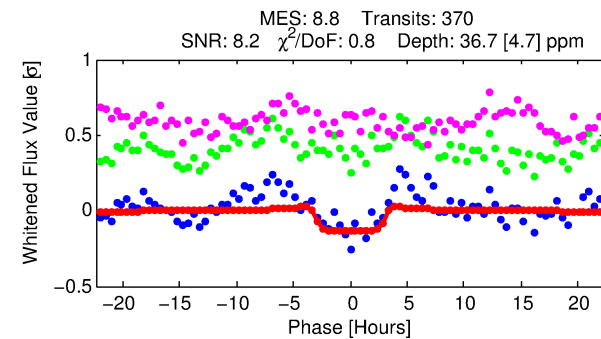
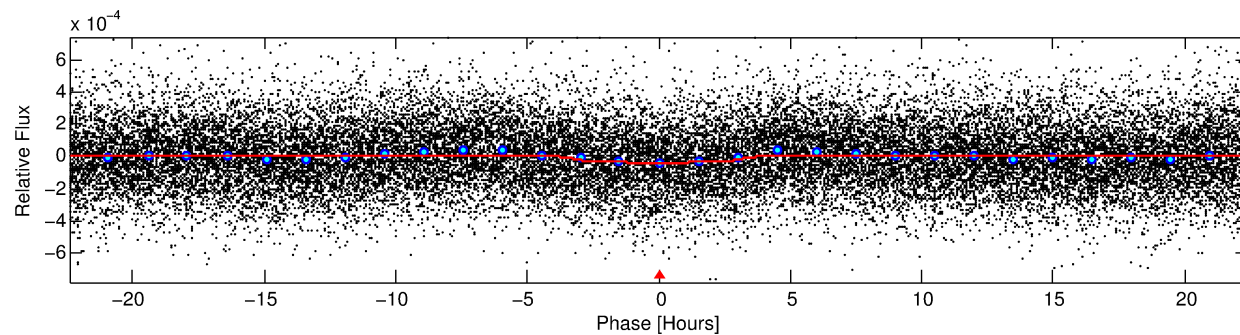
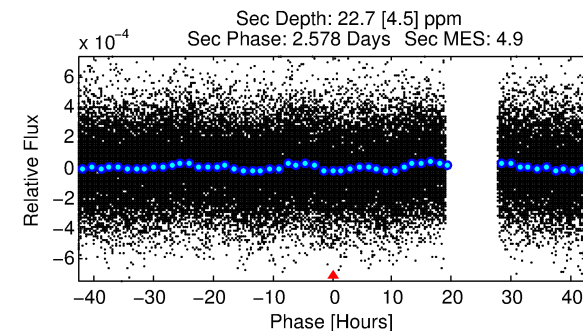
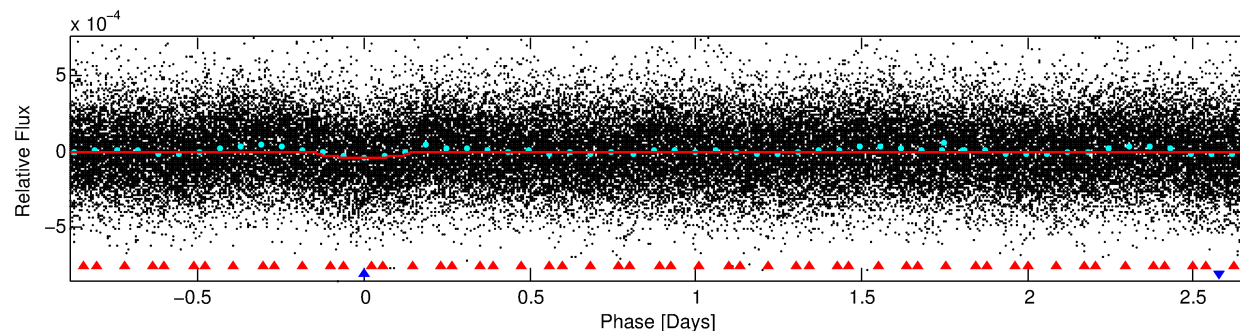
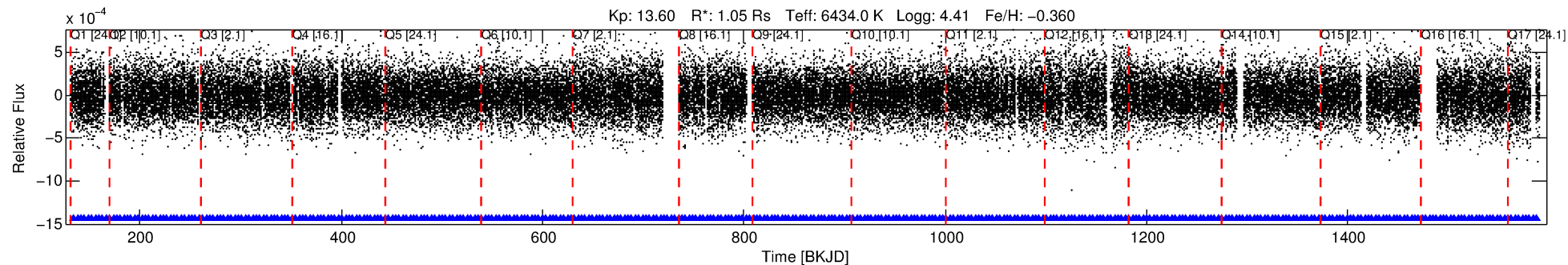
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008259713-02

No Significant Match Found

DV One-Page Summary

KIC: 8259713 Candidate: 2 of 2 Period: 3.552 d
KOI: K02935 Corr: No Ephemeris Match



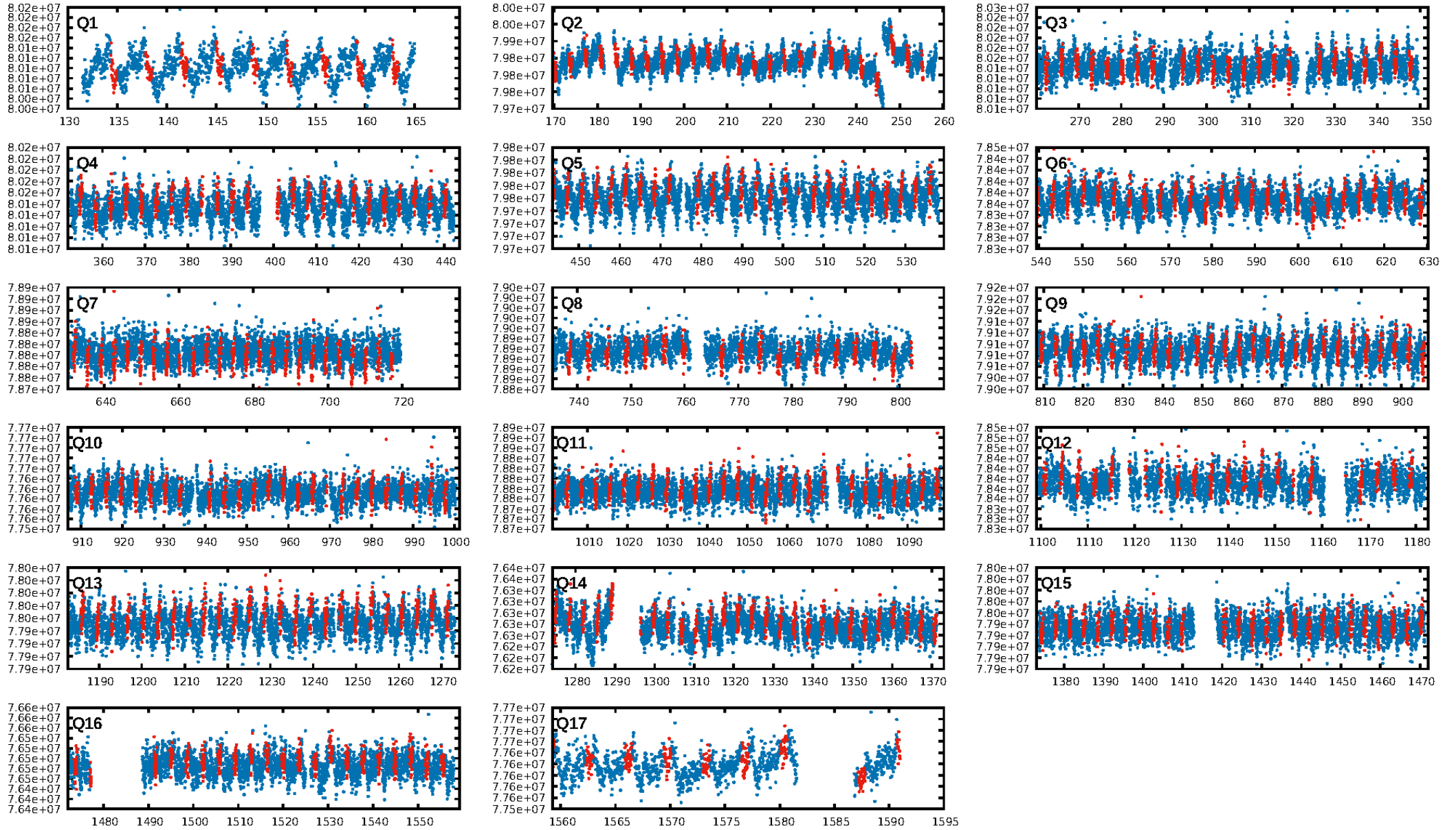
DV Fit Results:

Period = 3.55223 [0.00006] d
Epoch = 134.6252 [0.0122] BKJD
Rp/R* = 0.0073 [0.0007]
a/R* = 1.31 [0.22]
b = 0.98 [0.02]
Seff = 794.91 [312.65]
Teq = 1354 [133] K
Rp = 0.84 [0.27] Re
a = 0.0464 [0.0119] AU
Ag = 37.83 [17.43] [2.11σ]
Teffp = 5192 [393] K [9.26σ]

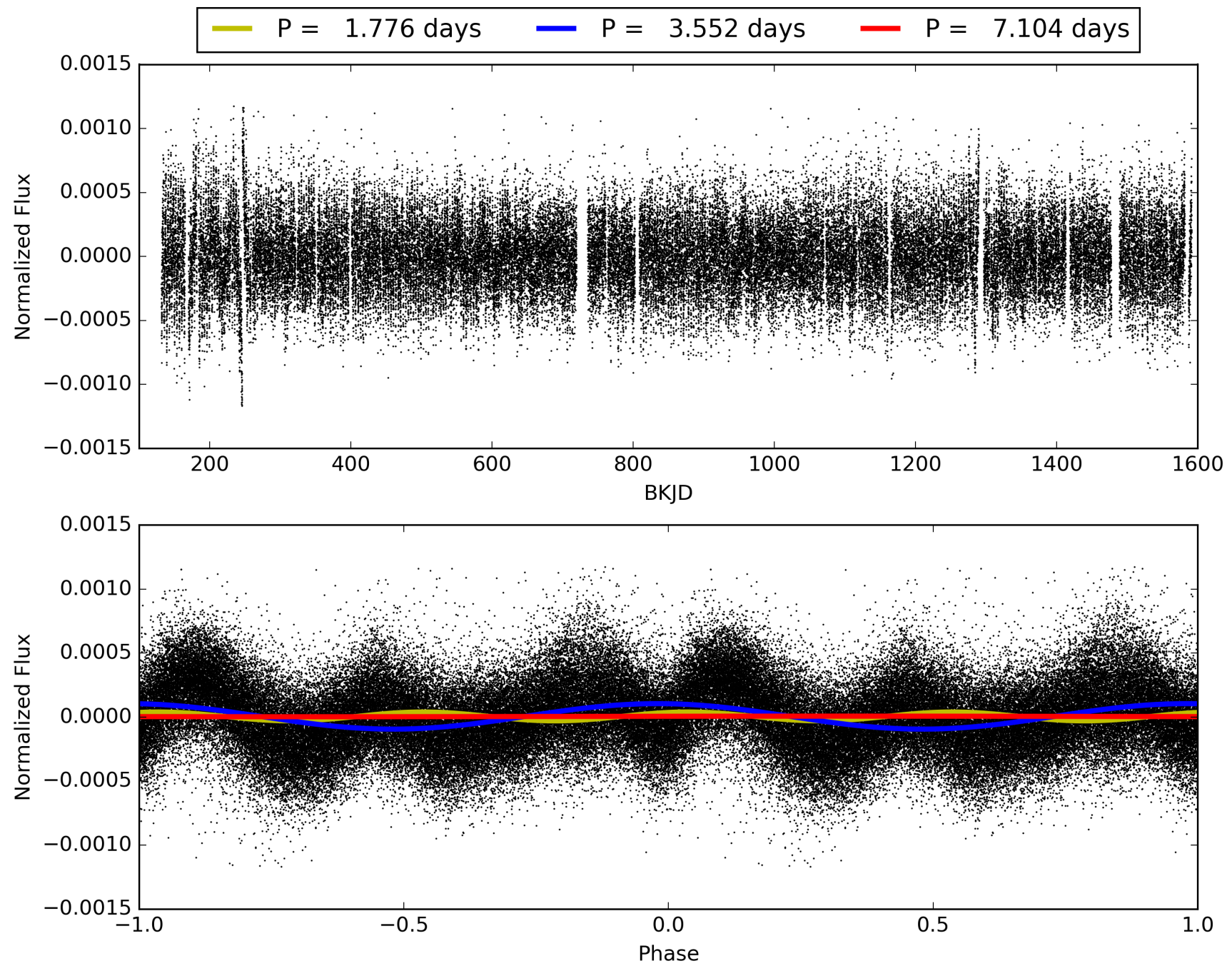
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [55.76σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.28e-15
RollingBand-fgt: 1.00 [354/354]
GhostDiagnostic-chr: 1.881
Centroid-sig: 0.0%
Centroid-so: 3.571 arcsec [2.09σ]
OotOffset-rm: 0.190 arcsec [1.07σ]
KicOffset-rm: 0.100 arcsec [0.54σ]
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 008259713-02, PDC Light Curves

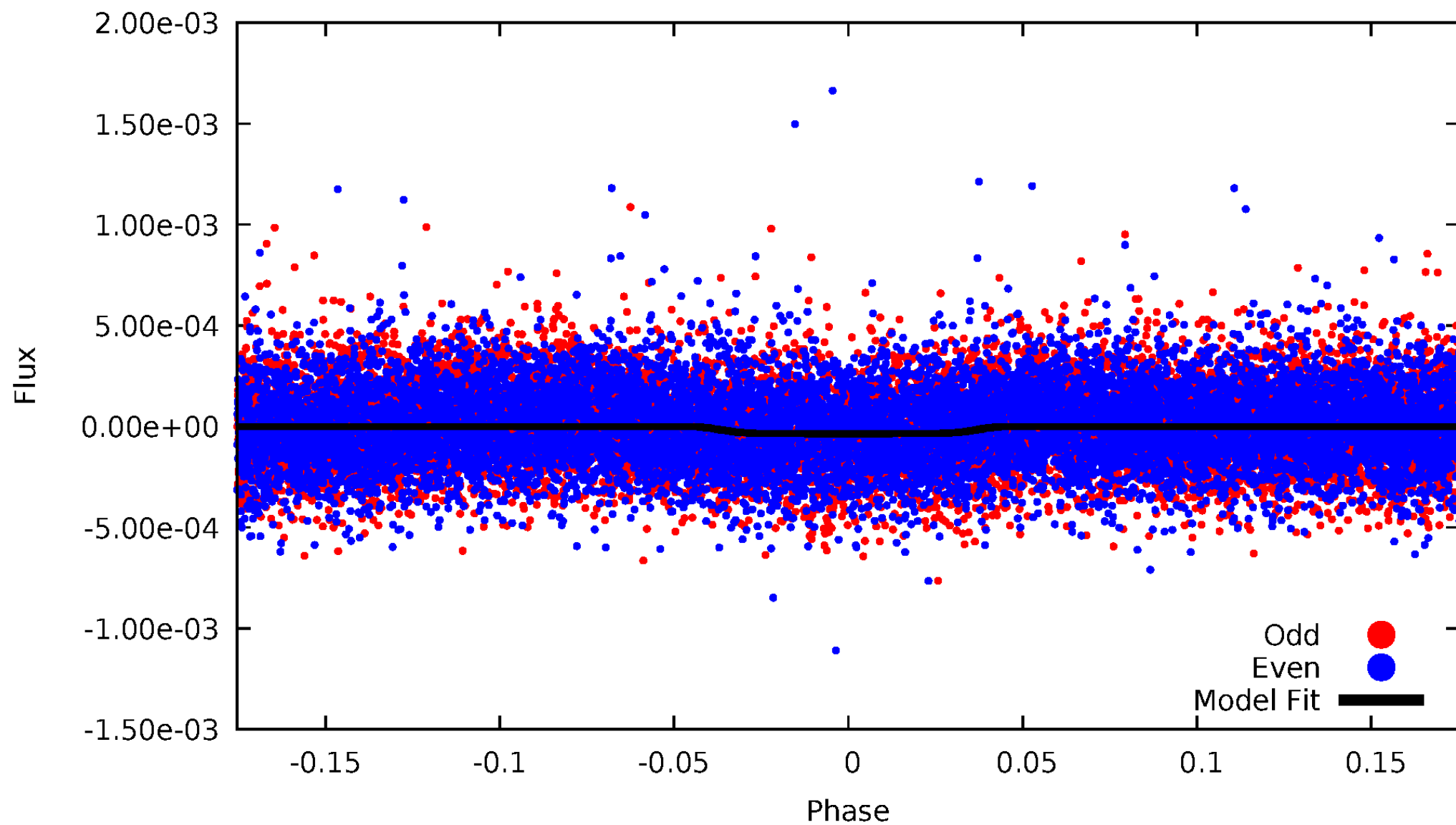


TCE 008259713-02



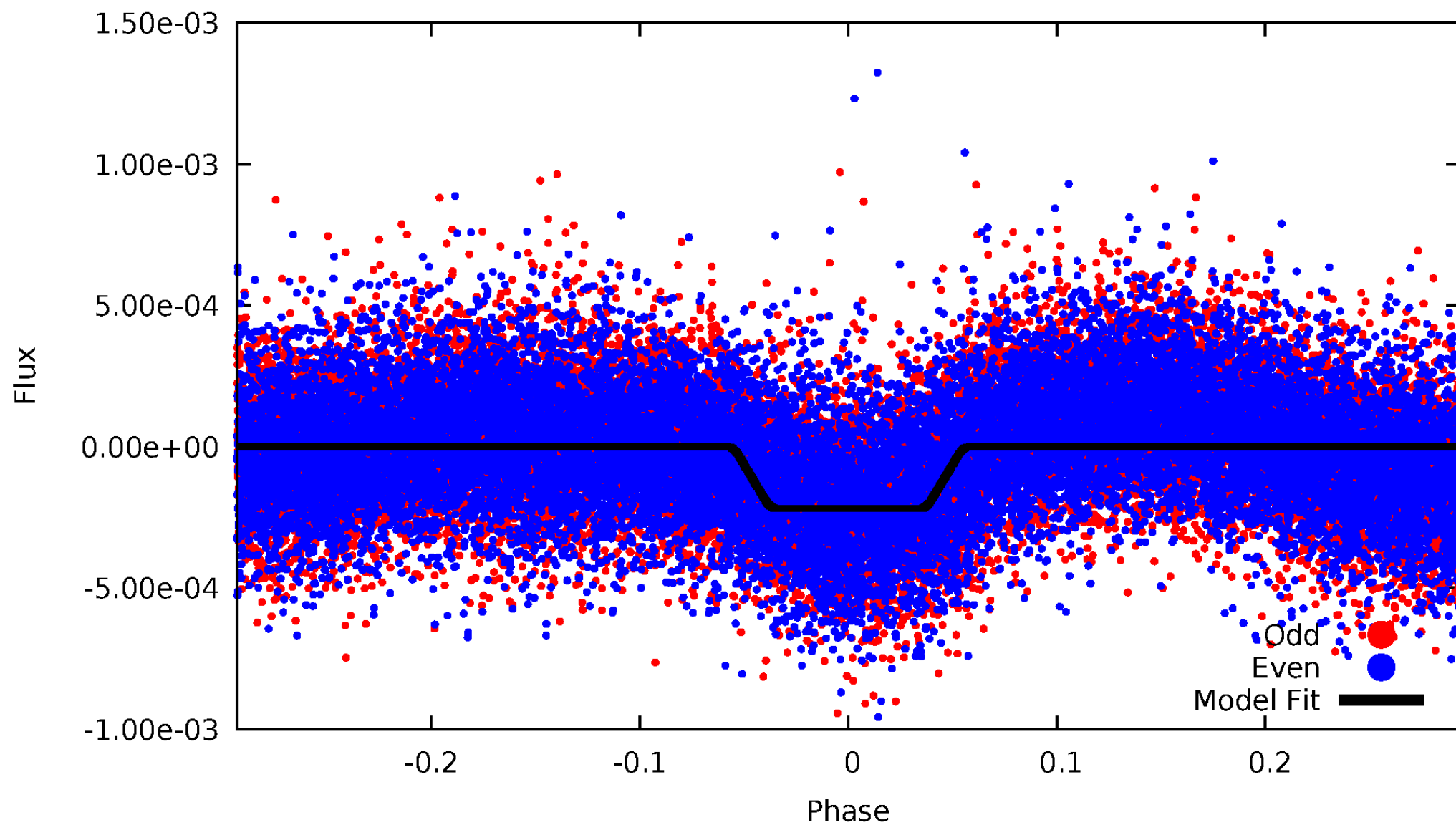
DV Odd/Even

TCE 008259713-02



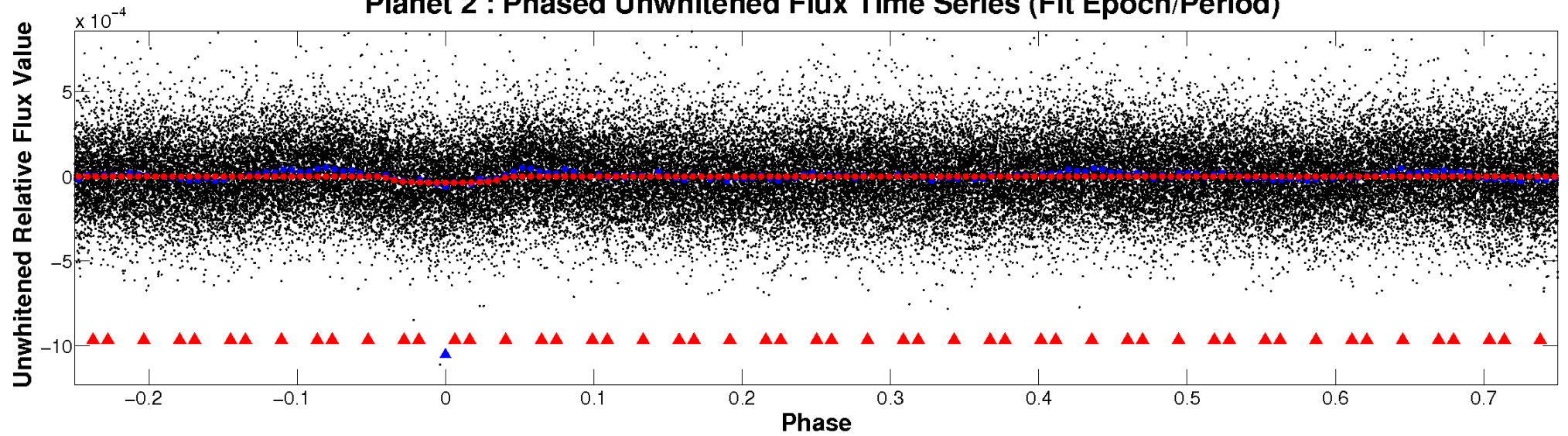
ALT Odd/Even

TCE 008259713-02

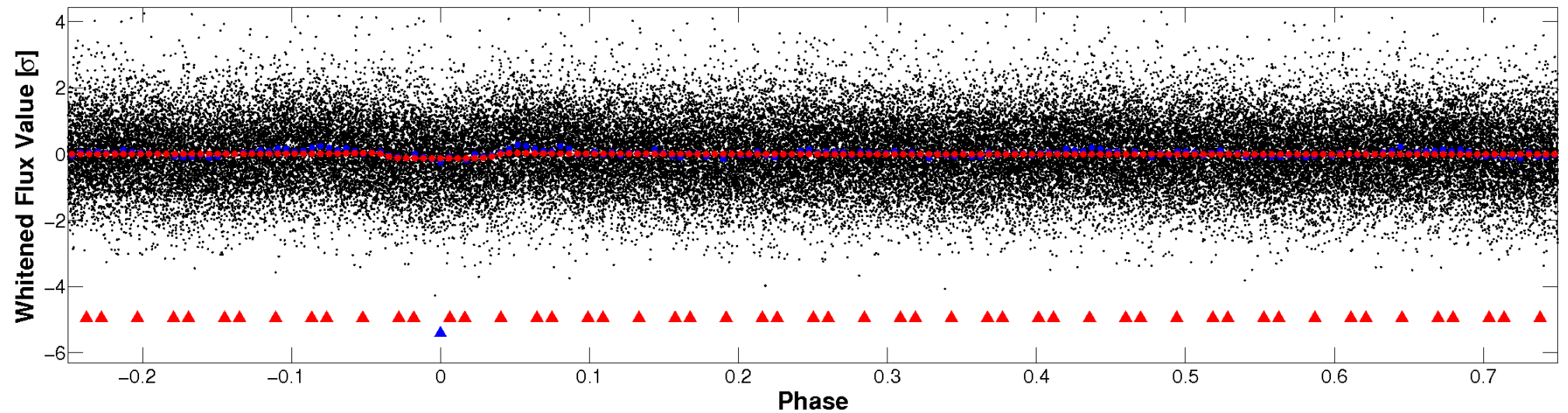


Non-Whitened Vs. Whitened Light Curve

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

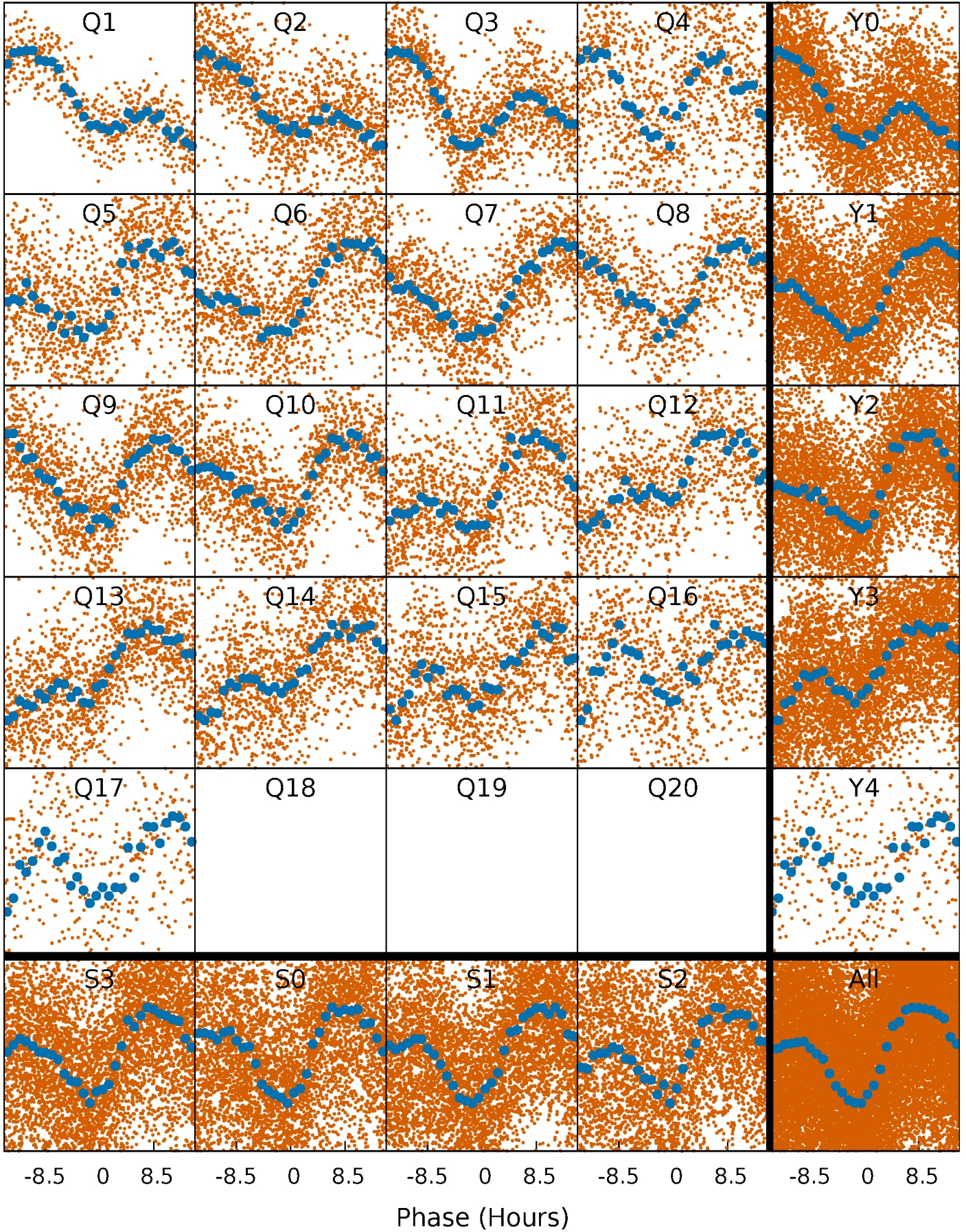


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



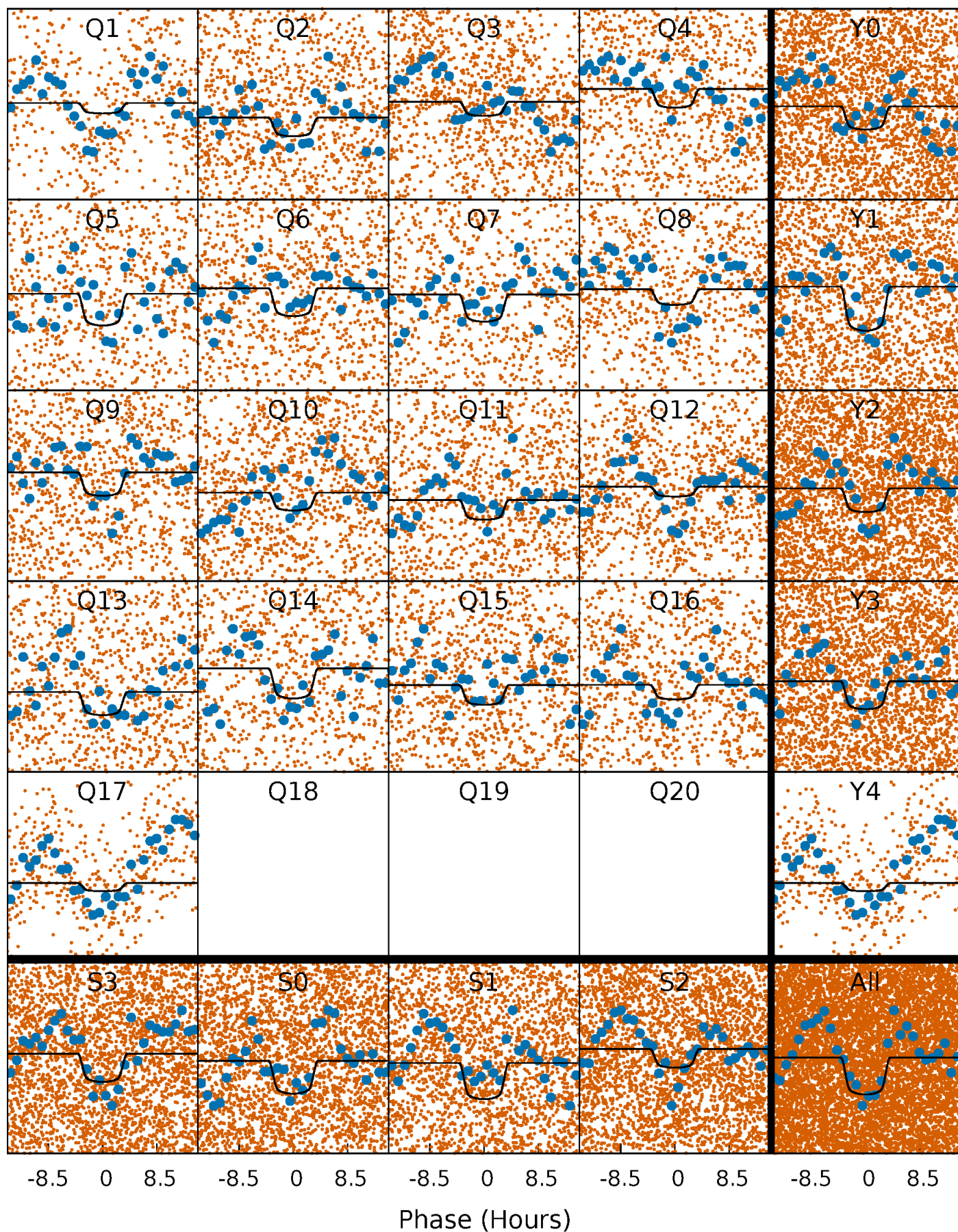
PDC Quarter-Phased Transit Curves

TCE 008259713-02 P= 3.552234 Days $T_0=134.625200$ (BKJD)



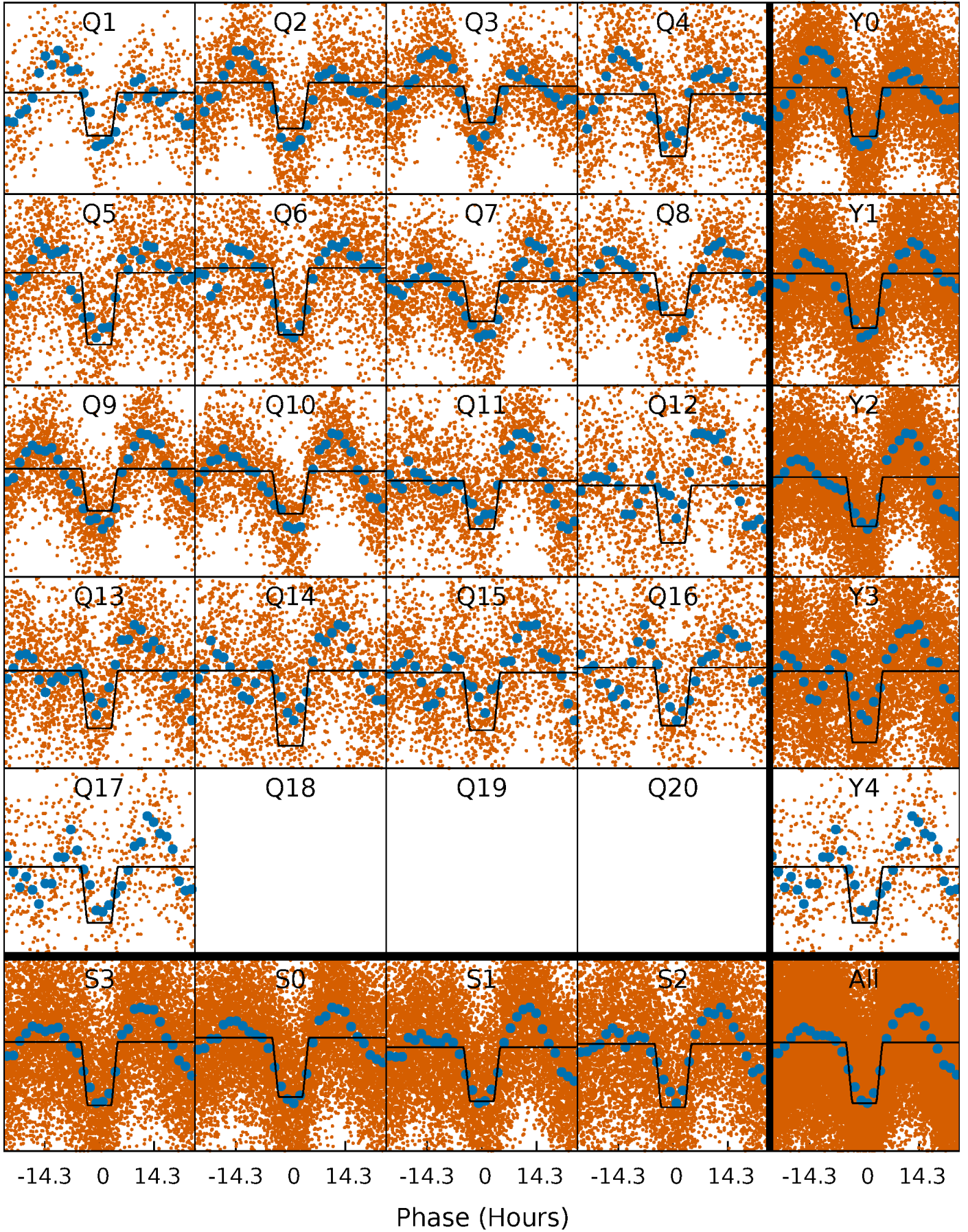
DV Quarter-Phased Transit Curves

TCE 008259713-02 P= 3.552234 Days $T_0=134.625200$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

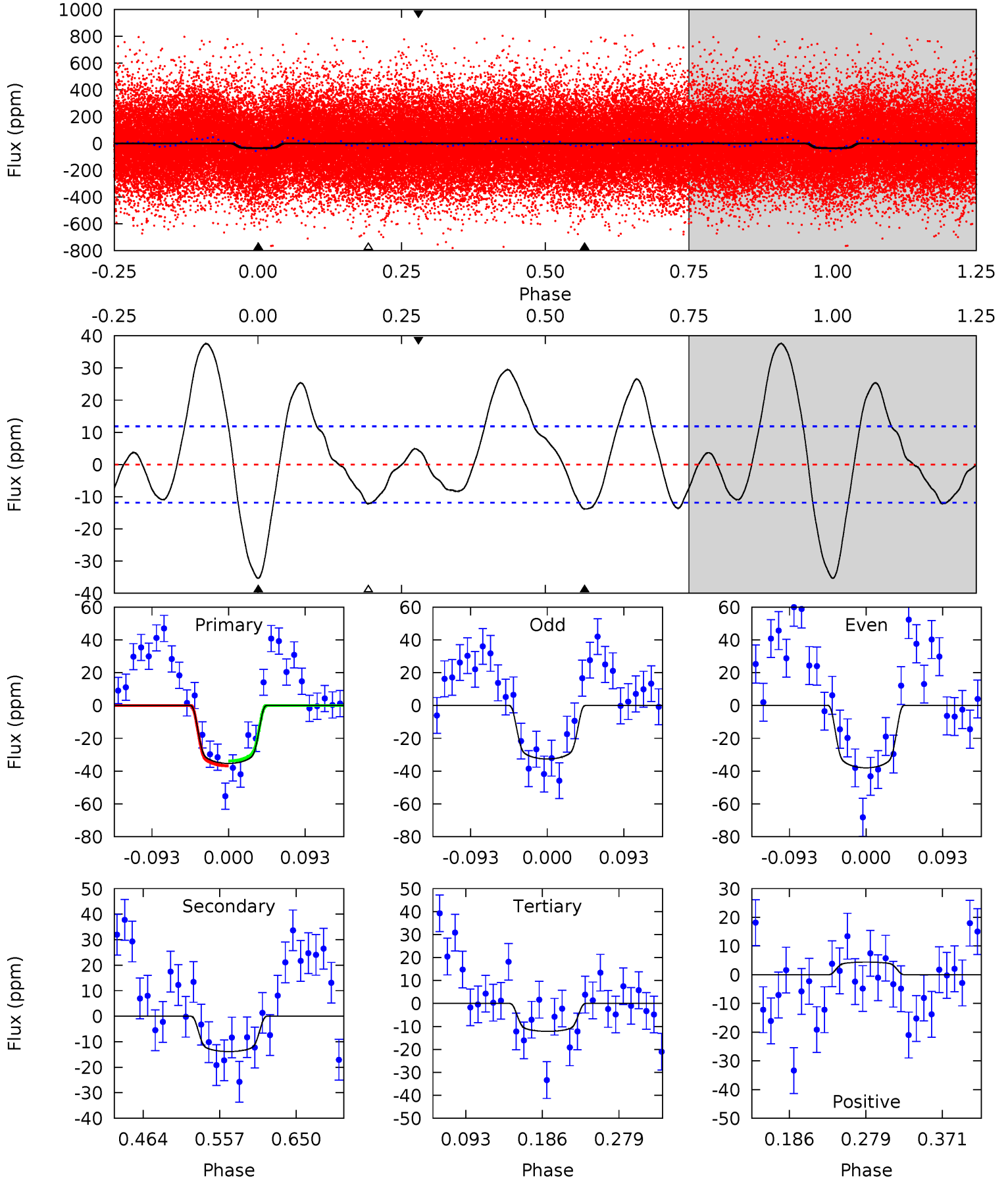
TCE 008259713-02 P= 3.552248 Days $T_0=134.557024$ (BKJD)



DV Model-Shift Uniqueness Test

008259713-02, P = 3.552234 Days, E = 131.072966 Days

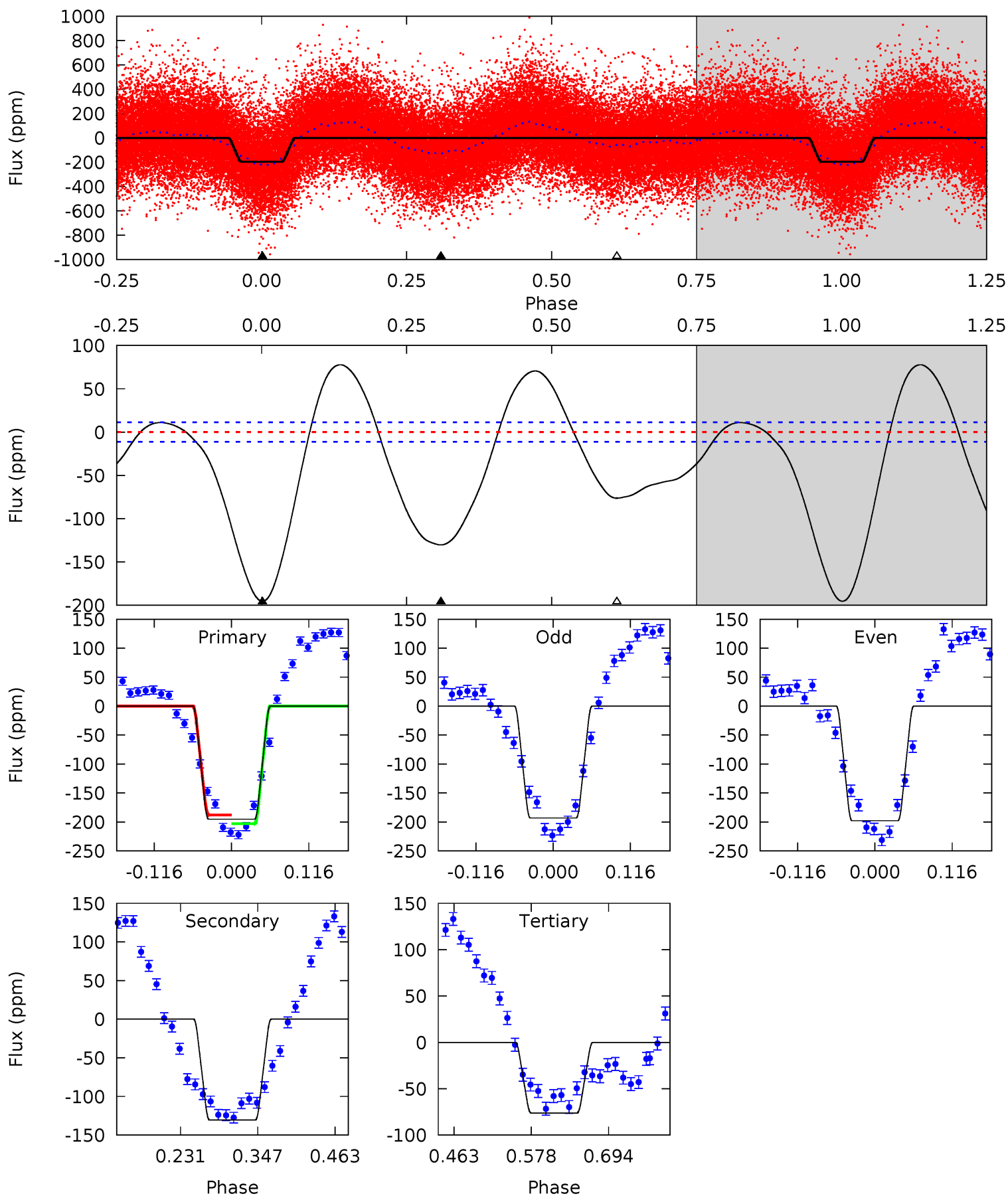
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	5.35	4.69	1.70	4.58	1.68	4.94	8.95	11.9	0.66	3.65	1.04	1.37	0.52	0.57



Alt Model-Shift Uniqueness Test

008259713-02, P = 3.552248 Days, E = 131.004776 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.6	52.5	30.7	0	4.53	1.57	20.3	47.9	78.6	21.8	52.5	0.96	1.03	0.28	3.07



Stellar Parameters For KIC 008259713

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6434^{+152}_{-209}	$4.414^{+0.067}_{-0.202}$	$-0.360^{+0.250}_{-0.300}$	$1.055^{+0.323}_{-0.139}$	$1.048^{+0.156}_{-0.128}$	$1.257^{+0.448}_{-0.634}$
	+2%/-3%	+2%/-5%	+69%/-83%	+31%/-13%	+15%/-12%	+36%/-50%
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 008259713-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 3	$0.87^{+0.15}_{-0.12}$	1921^{+141}_{-93}	4695^{+293}_{-278}	21^{+9}_{-6}
Alt.	-130 ± 2	$1.75^{+0.30}_{-0.16}$	1921^{+131}_{-94}	5639^{+174}_{-188}	49^{+11}_{-11}

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

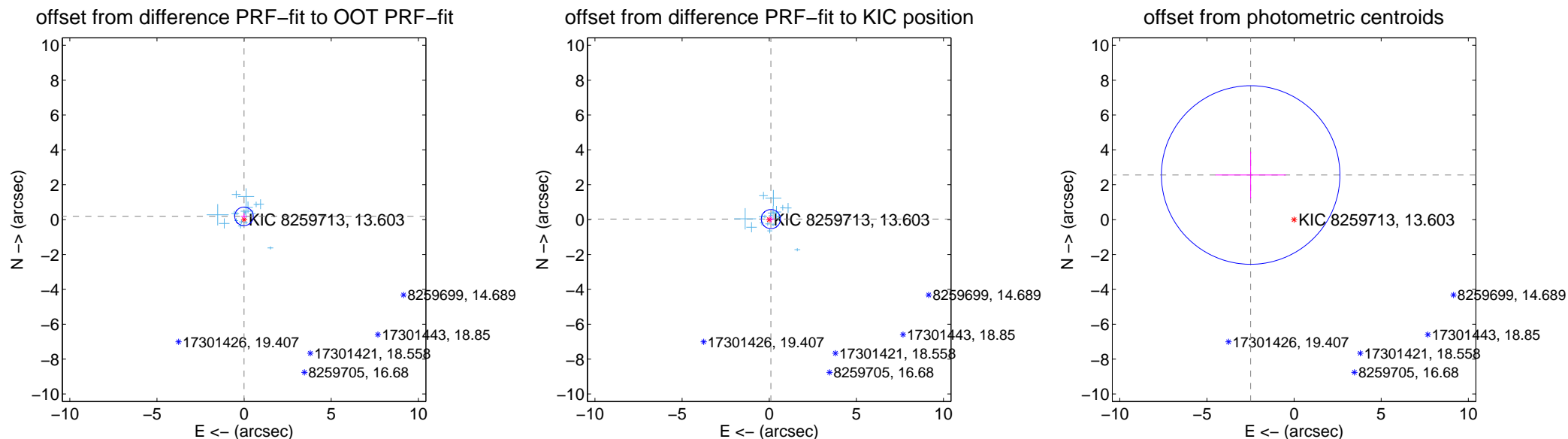
DV Centroid Data

Supplemental centroid analysis for 008259713-02. Kepler magnitude: 13.60. Transit SNR 8.19

There are 17 quarters with good PRF difference image offsets

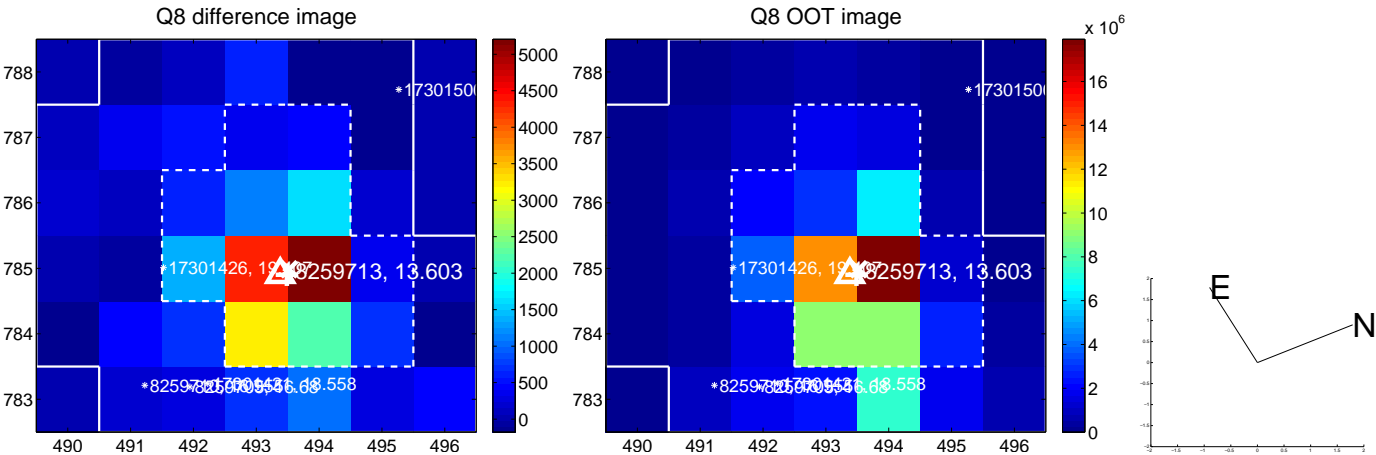
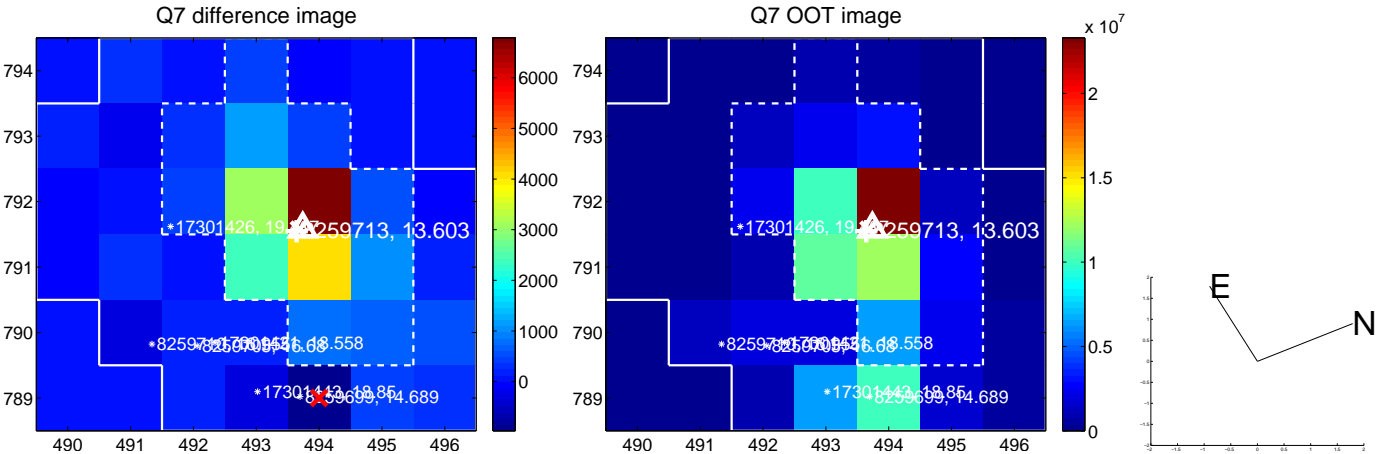
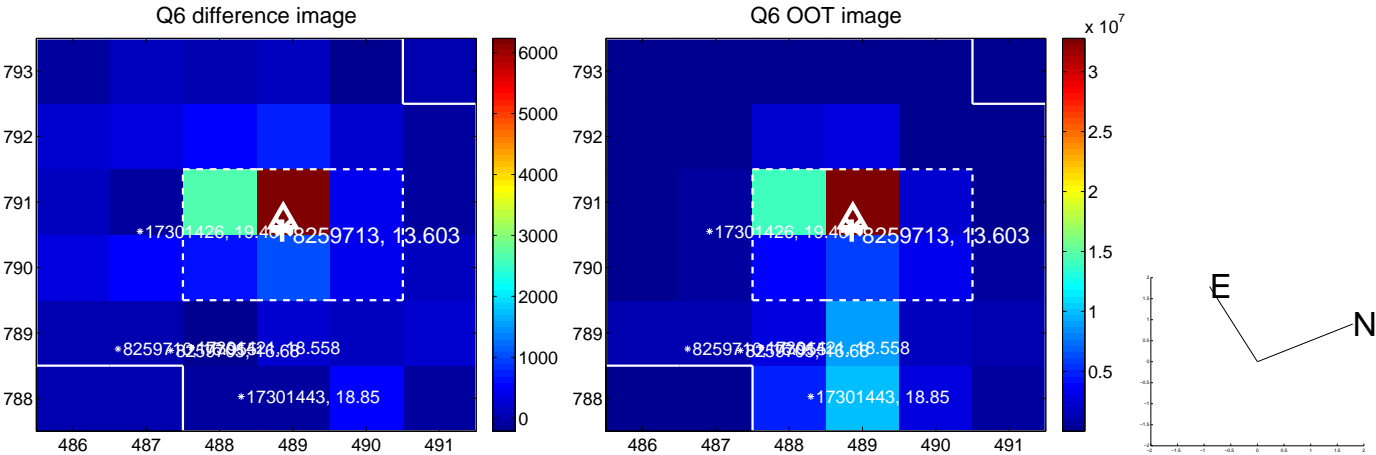
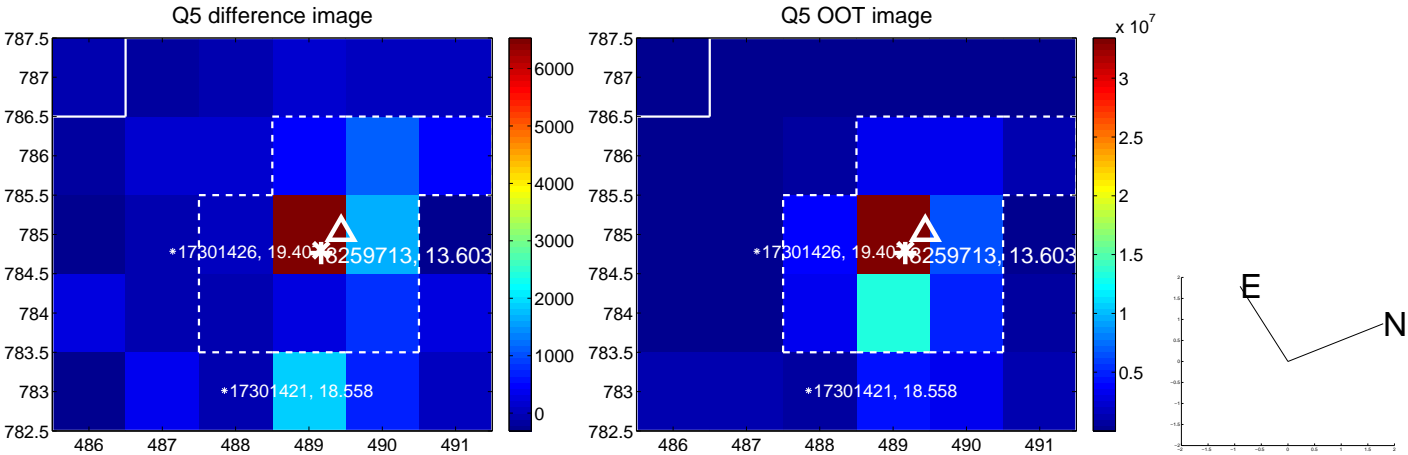
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.190 ± 0.178	1.07	0.004 ± 0.175	0.190 ± 0.177
PRF-fit source offset from KIC position	0.100 ± 0.183	0.54	-0.095 ± 0.191	0.030 ± 0.185
photometric centroid source offset	3.57 ± 1.71	2.09	2.49 ± 2.03	2.56 ± 1.34

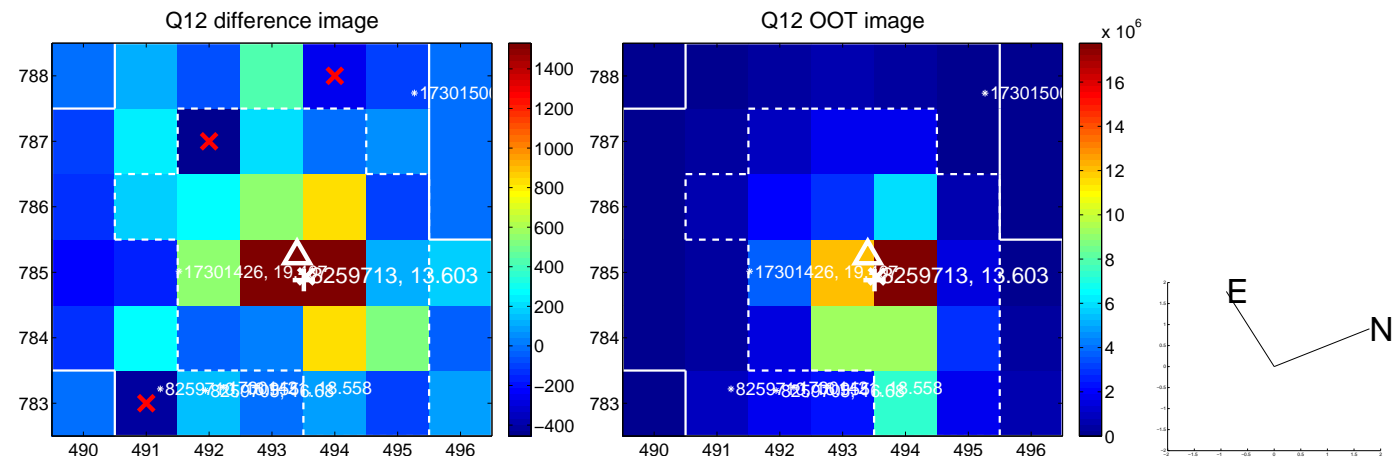
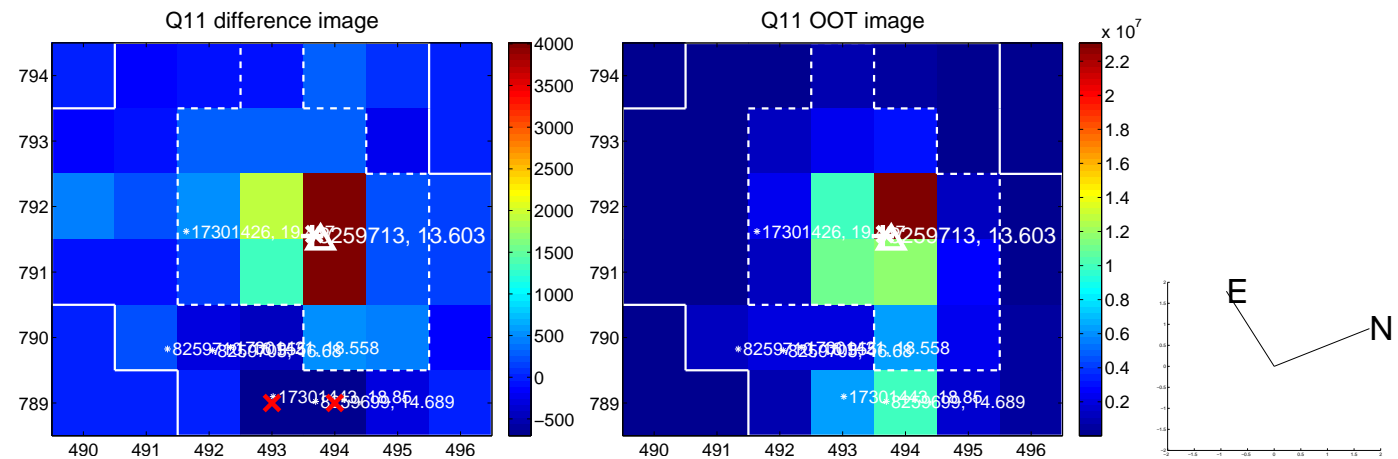
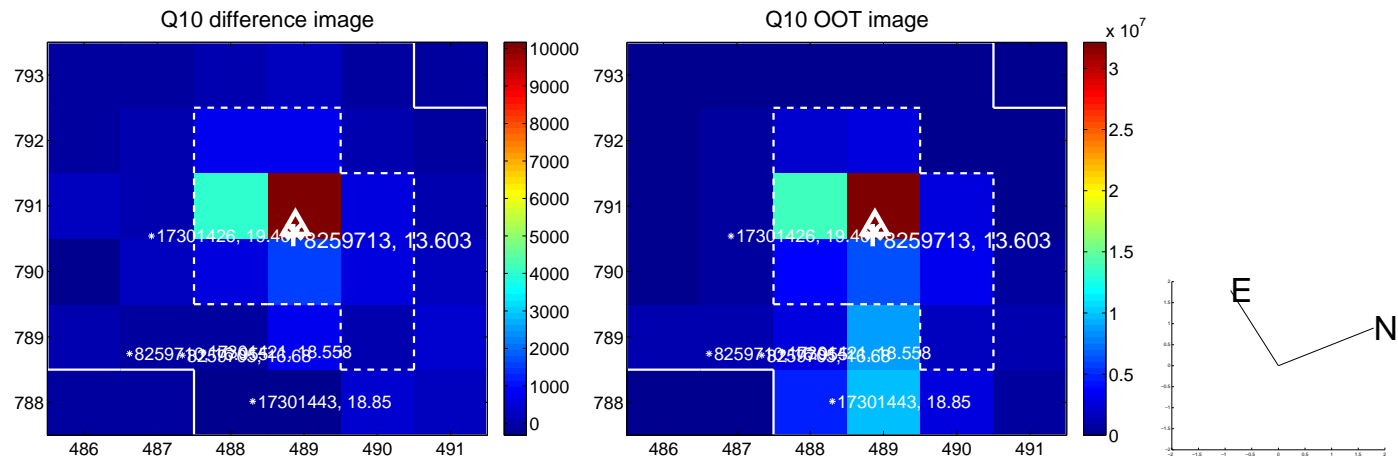
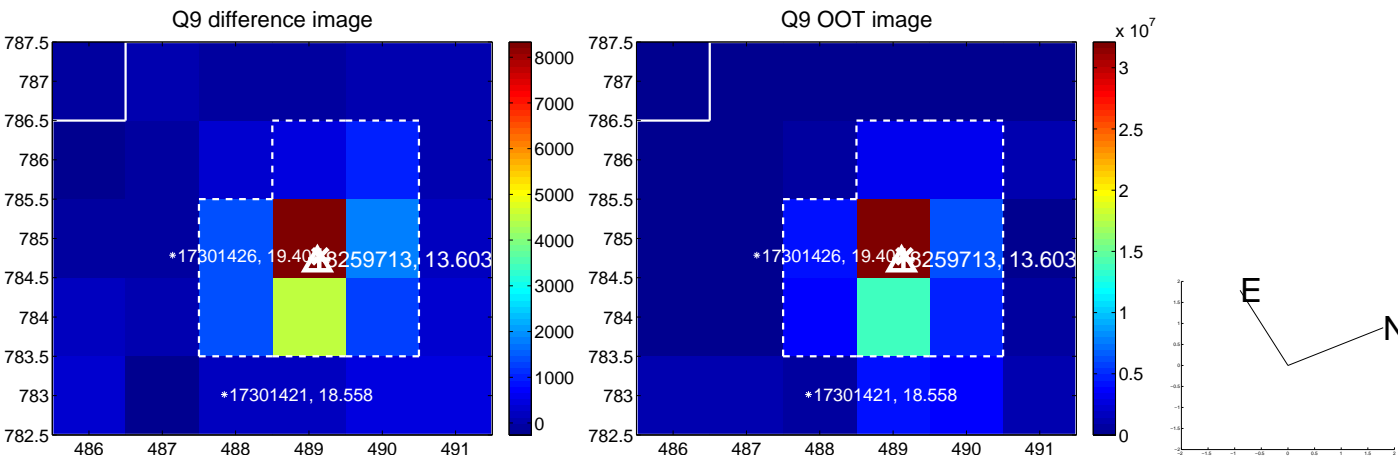


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

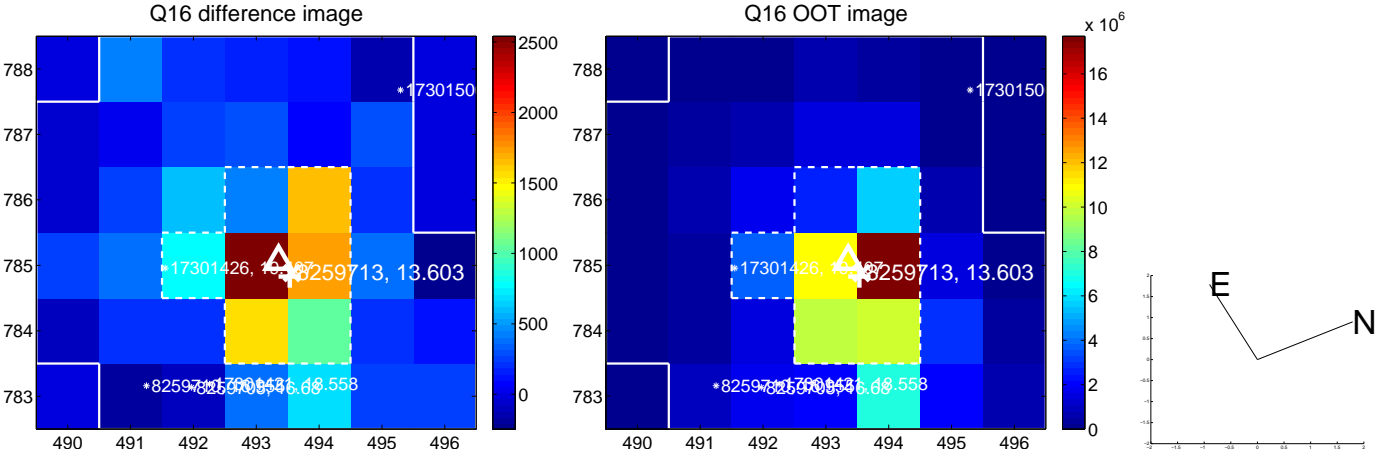
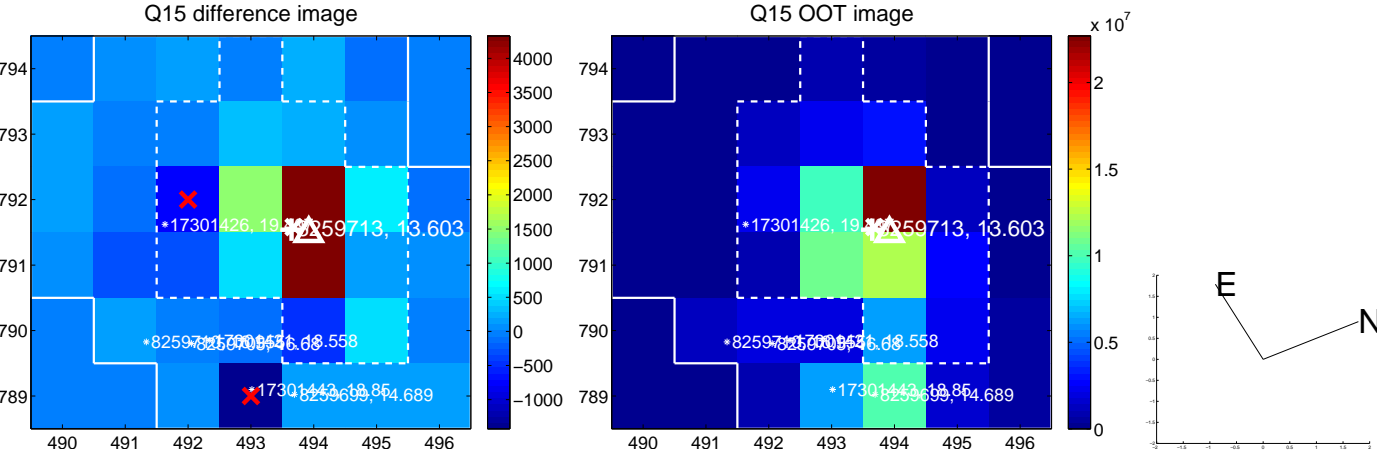
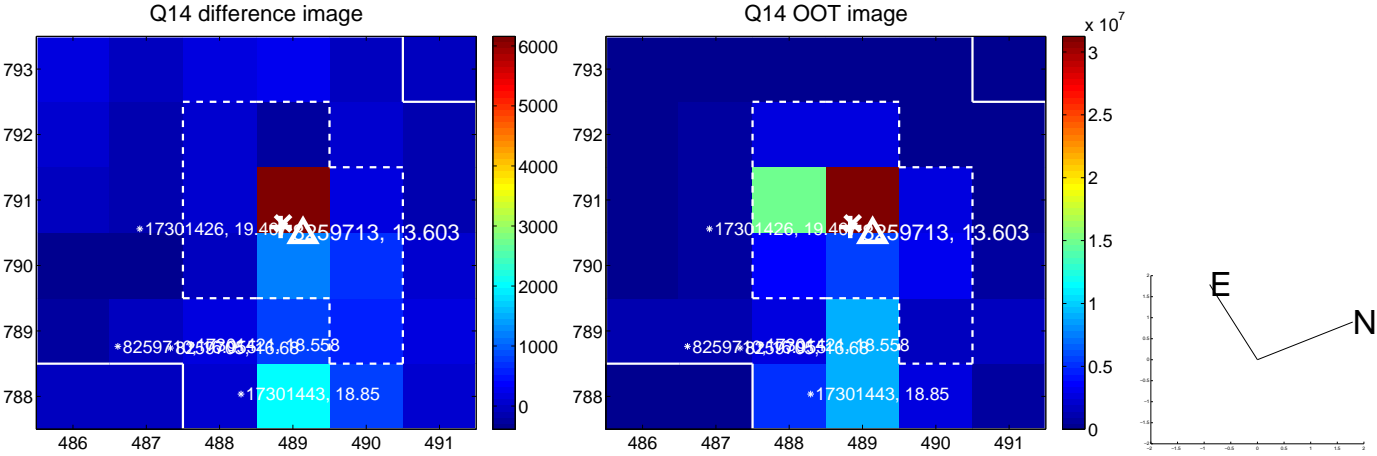
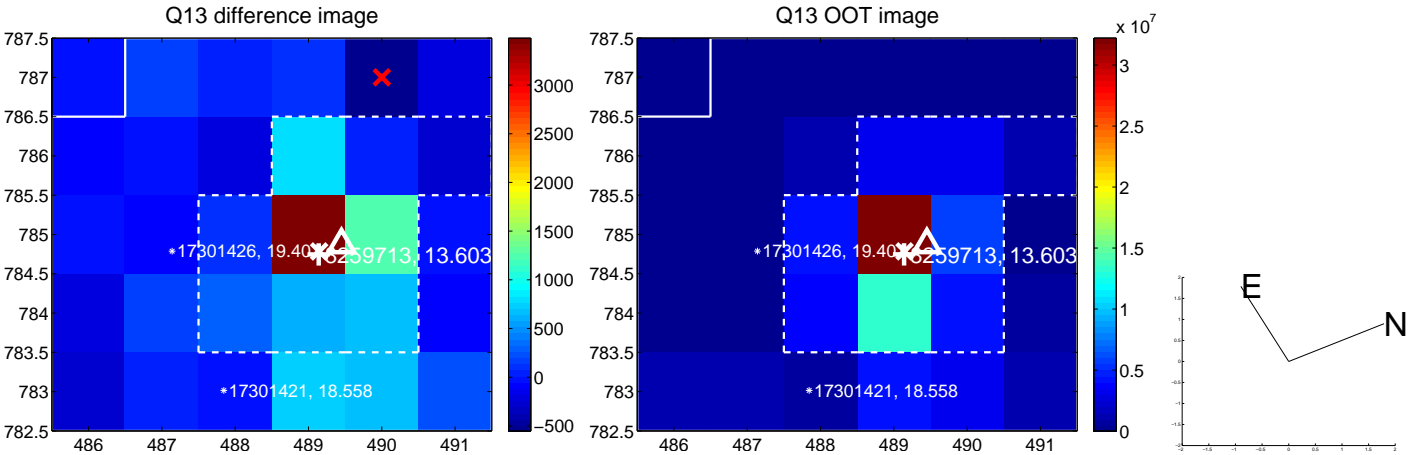
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



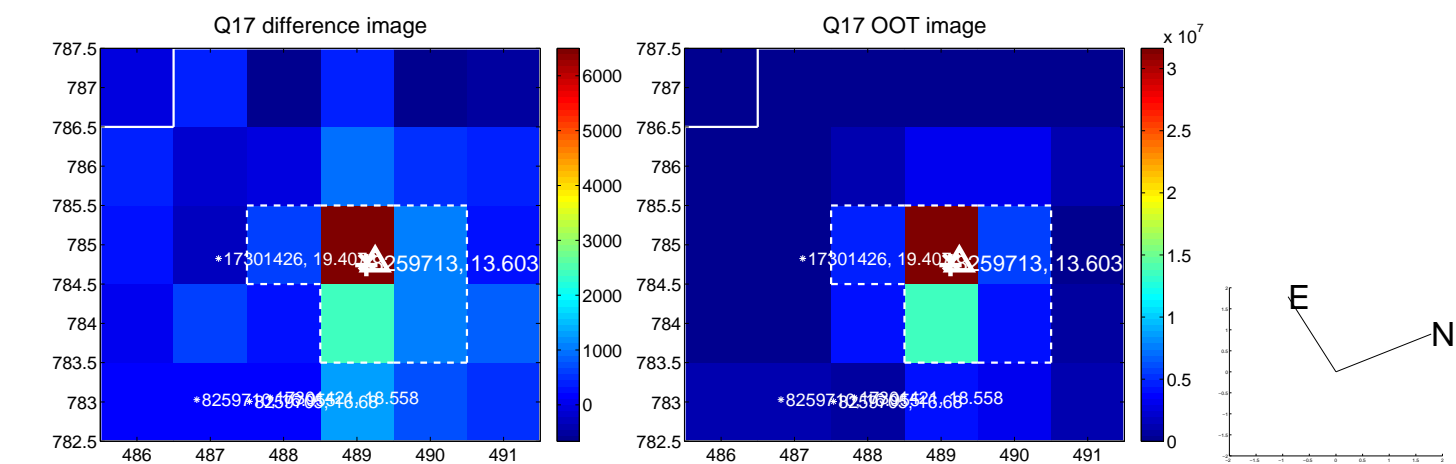
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



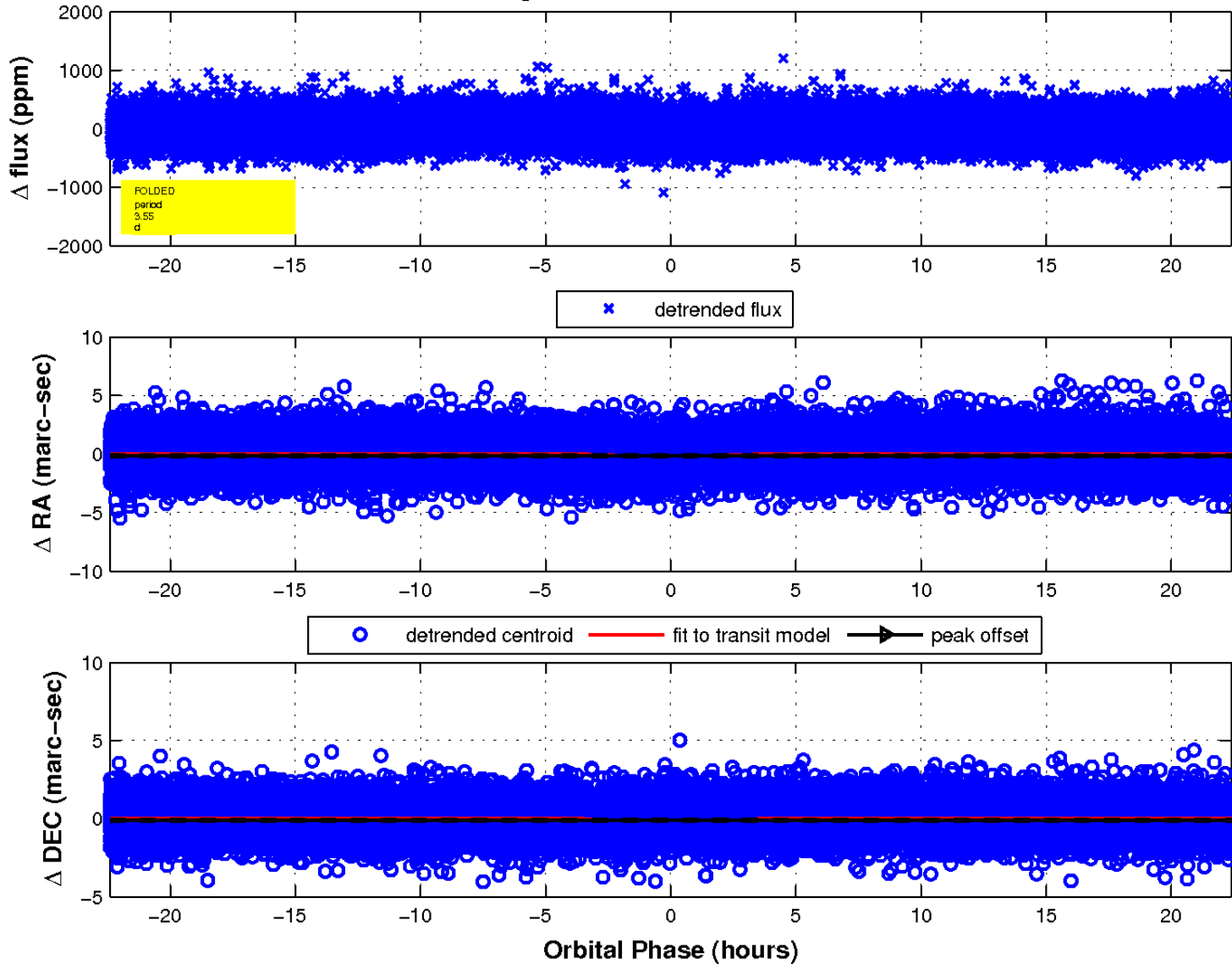
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

