

KIC 006280903

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})
006280903-01	OBS	No	581.455778	302.780127	508.7	16.161	8.3	8.6	0.91	6074	2.16	0.58
006280903-02	OBS	No	509.164760	512.689051	430.2	22.080	7.9	8.7	0.91	6074	2.00	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006280903-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—CENT_FEW_DIFFS
006280903-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

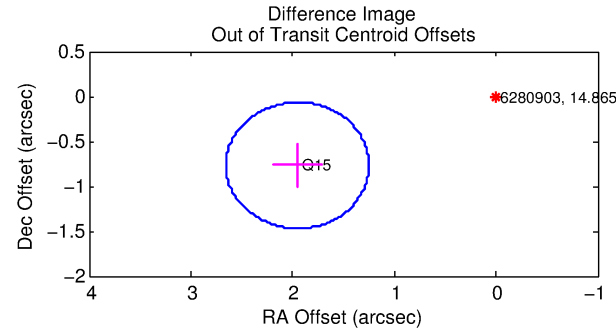
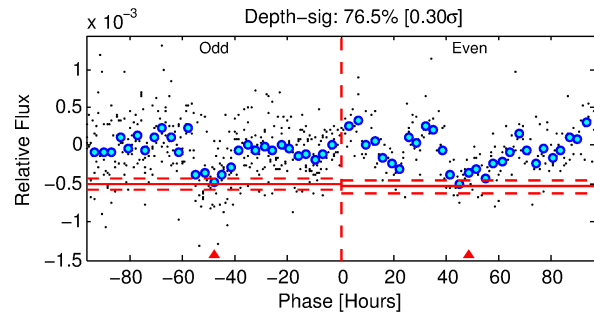
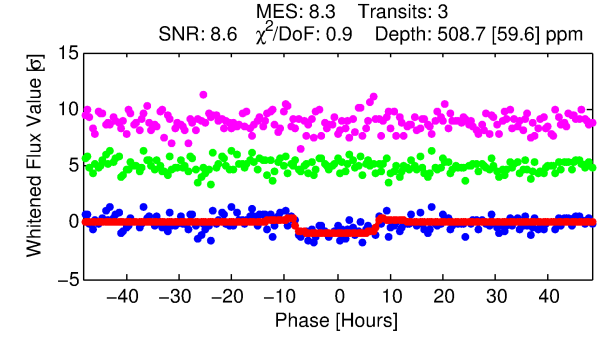
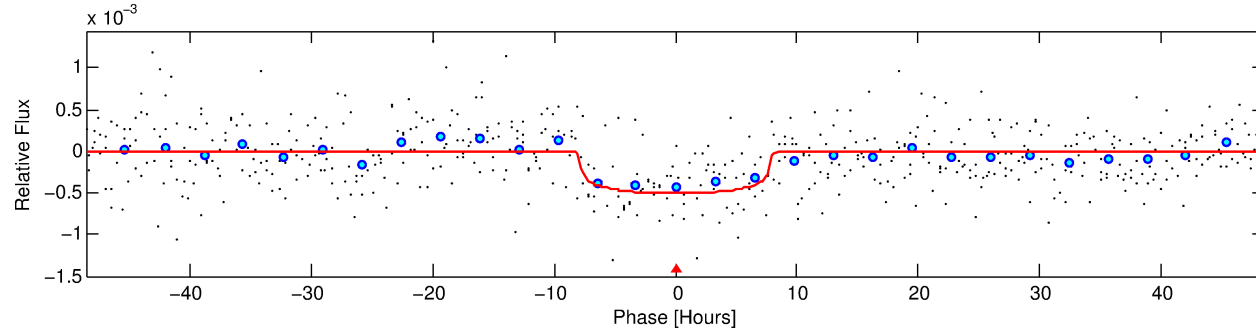
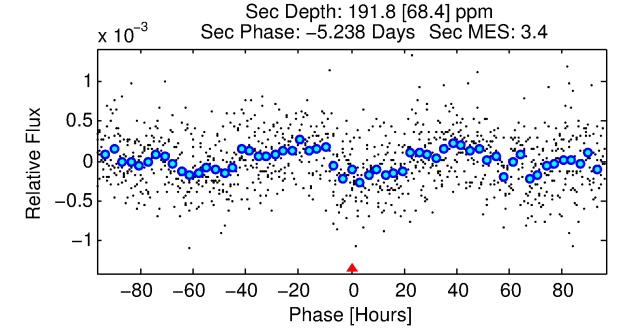
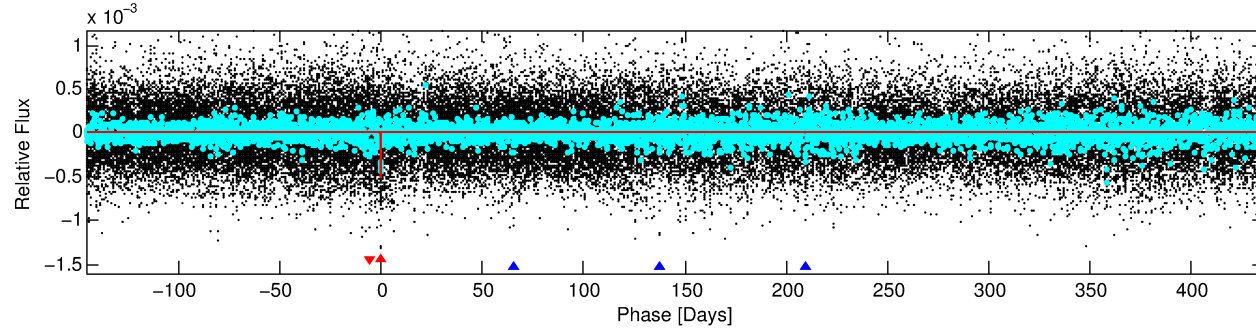
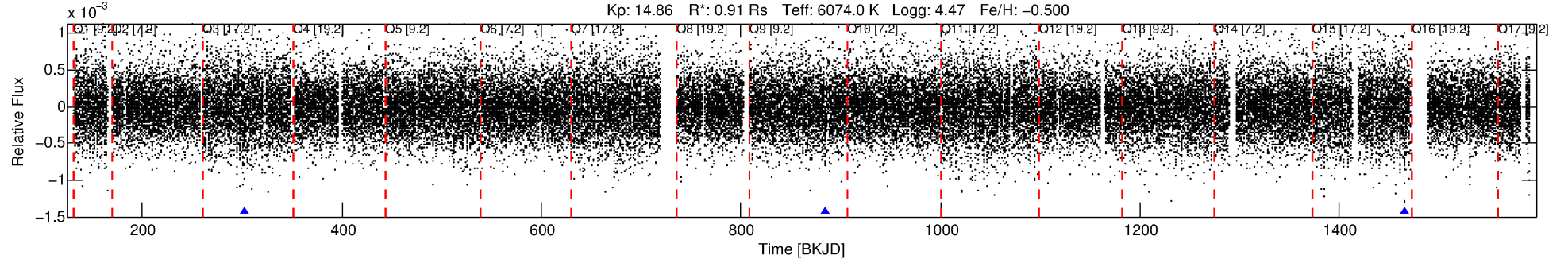
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006280903-01

No Significant Match Found

DV One-Page Summary

KIC: 6280903 Candidate: 1 of 2 Period: 581.456 d



DV Fit Results:

Period = 581.45578 [0.01350] d
Epoch = 302.7801 [0.0169] BKJD
Rp/R* = 0.0217 [0.0056]
a/R* = 222.15 [286.33]
b = 0.63 [1.26]
Seff = 0.58 [0.21]
Teq = 223 [20] K
Rp = 2.16 [0.81] Re
a = 1.3164 [0.3036] AU
Ag = 39204.75 [28045.76] [1.40 σ]
Teffp = 4850 [776] K [5.96 σ]

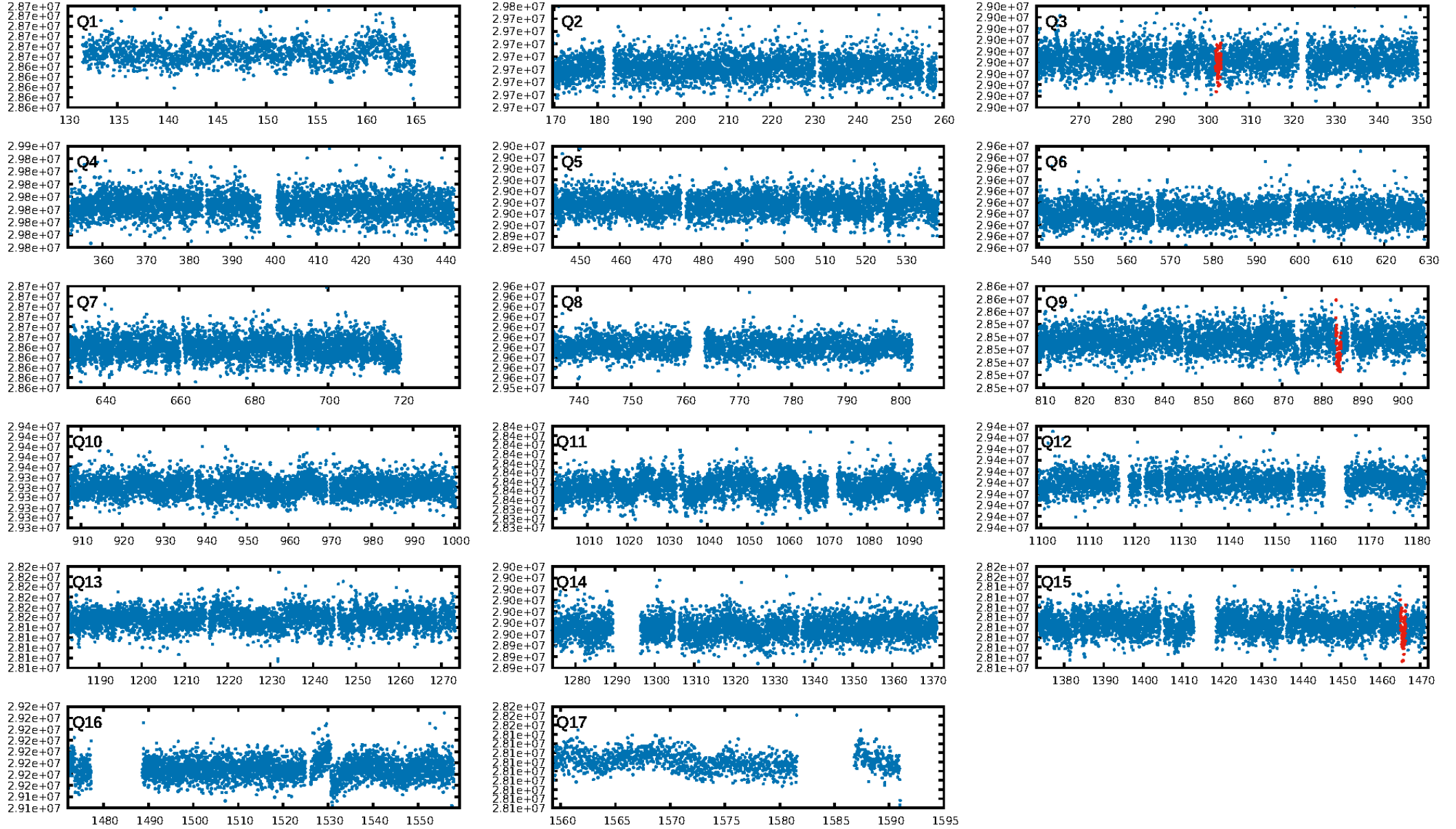
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [63.41 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 15.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.44e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.251
Centroid-sig: 29.7%
Centroid-so: 1.923 arcsec [1.00 σ]
OotOffset-rm: 2.098 arcsec [8.96 σ]
KicOffset-rm: 2.131 arcsec [9.04 σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

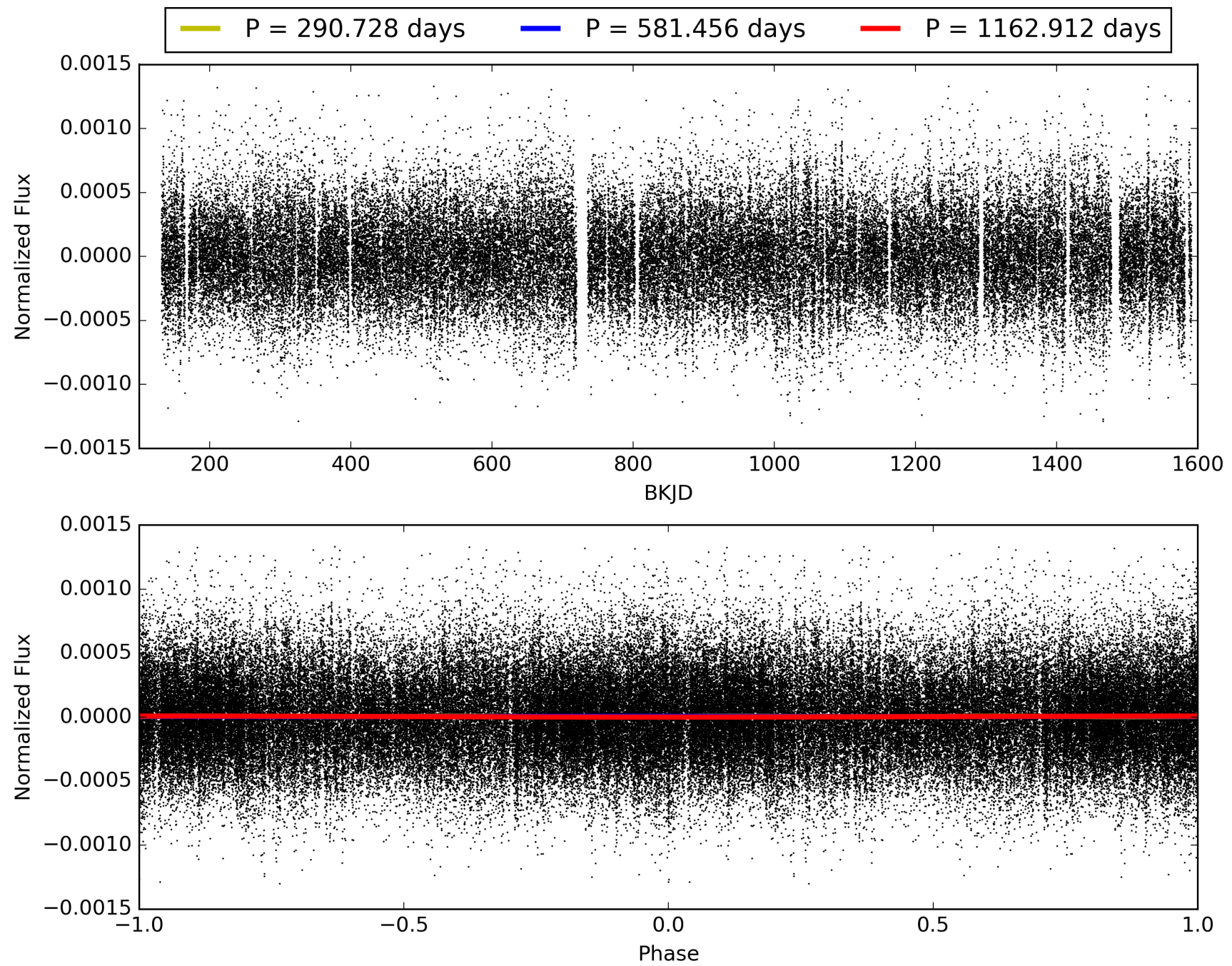
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:25:04 Z

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

TCE 006280903-01, PDC Light Curves

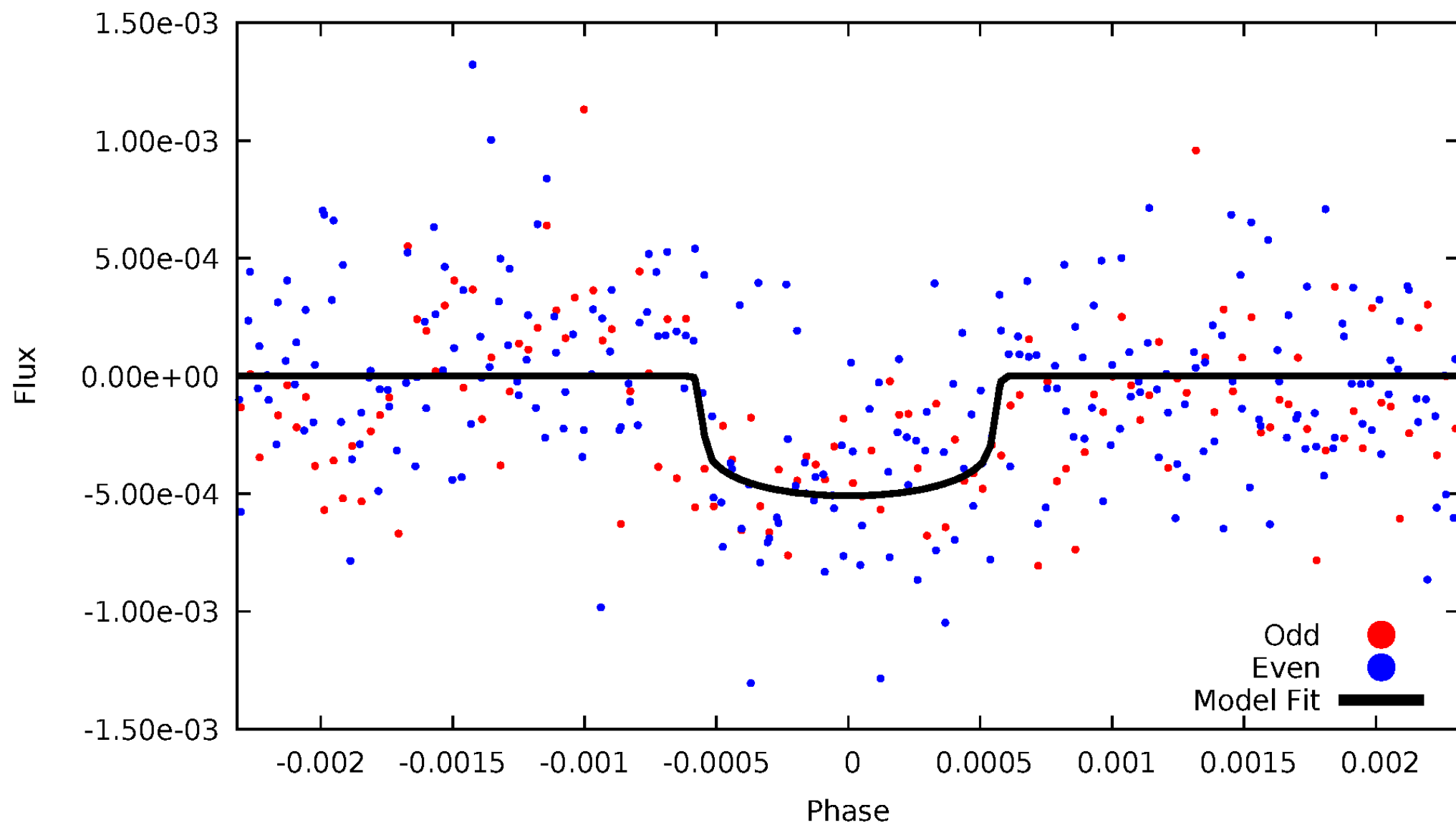


TCE 006280903-01



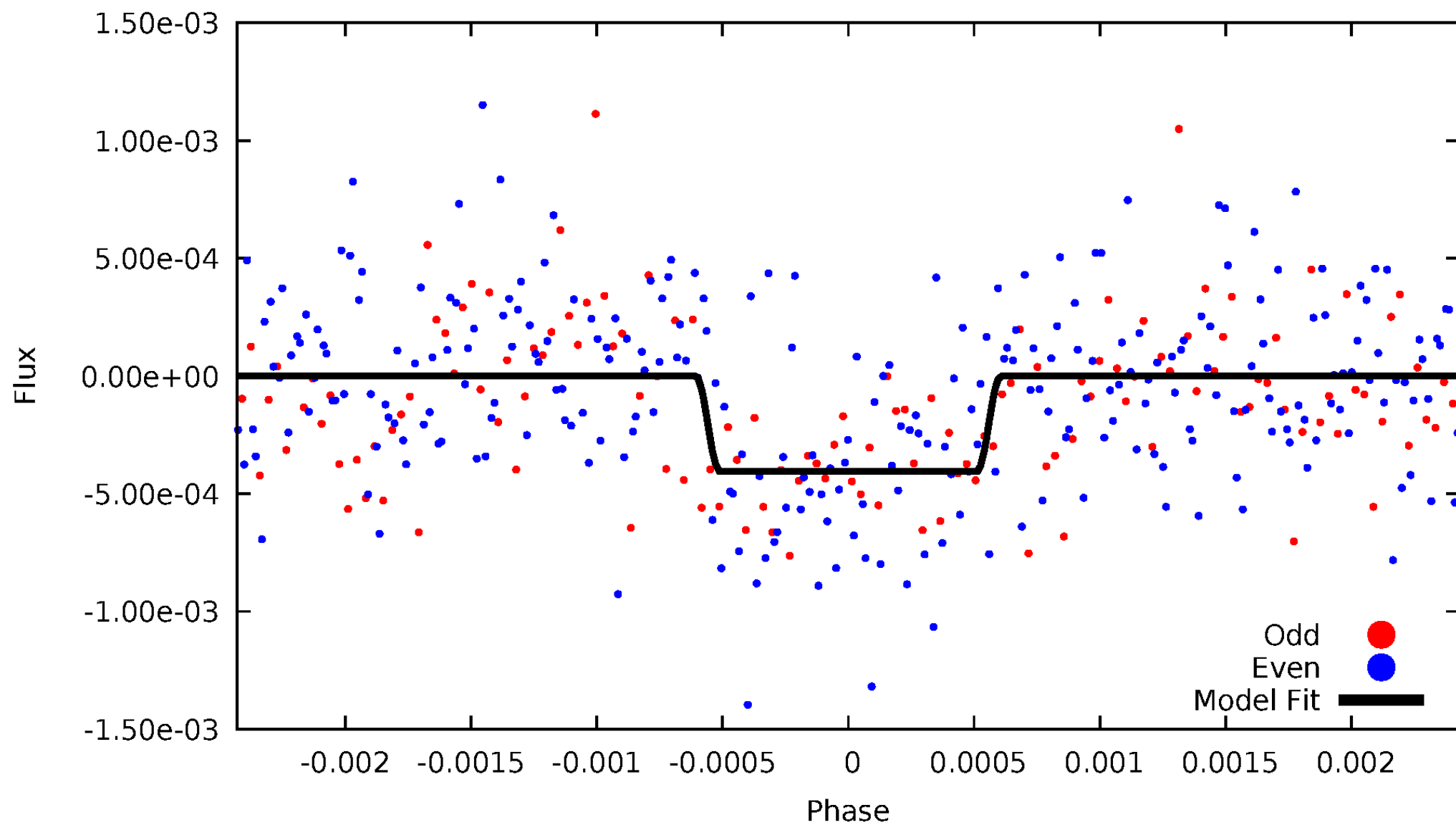
DV Odd/Even

TCE 006280903-01



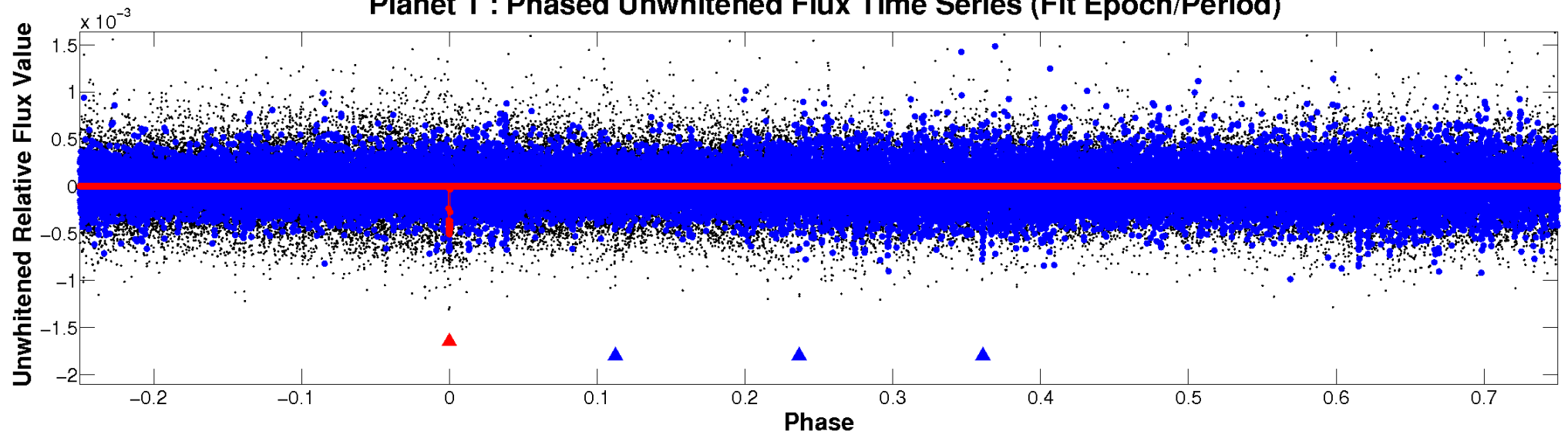
ALT Odd/Even

TCE 006280903-01

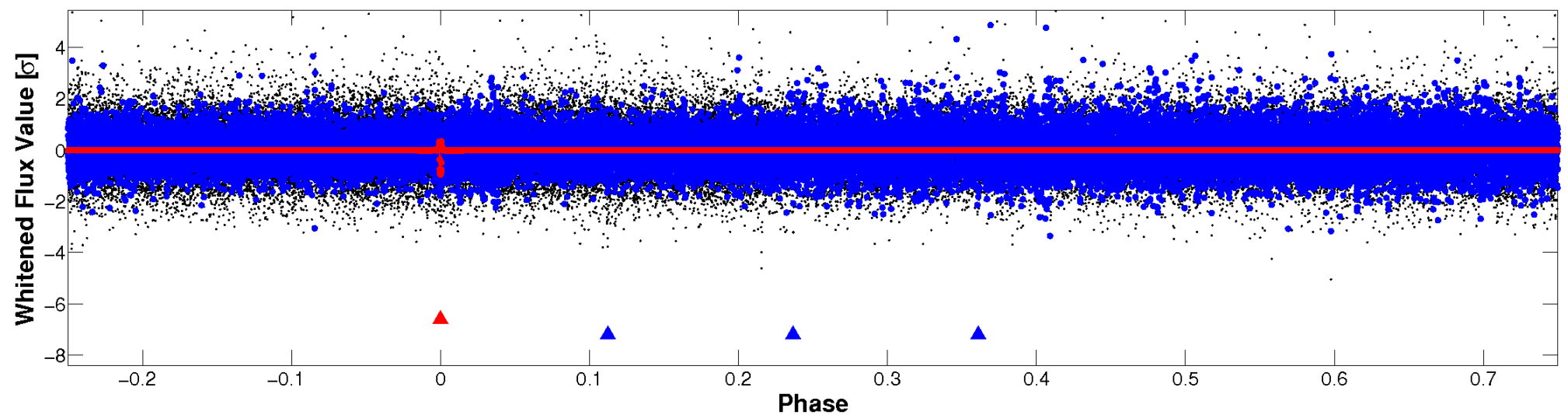


Non-Whitened Vs. Whitened Light Curve

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

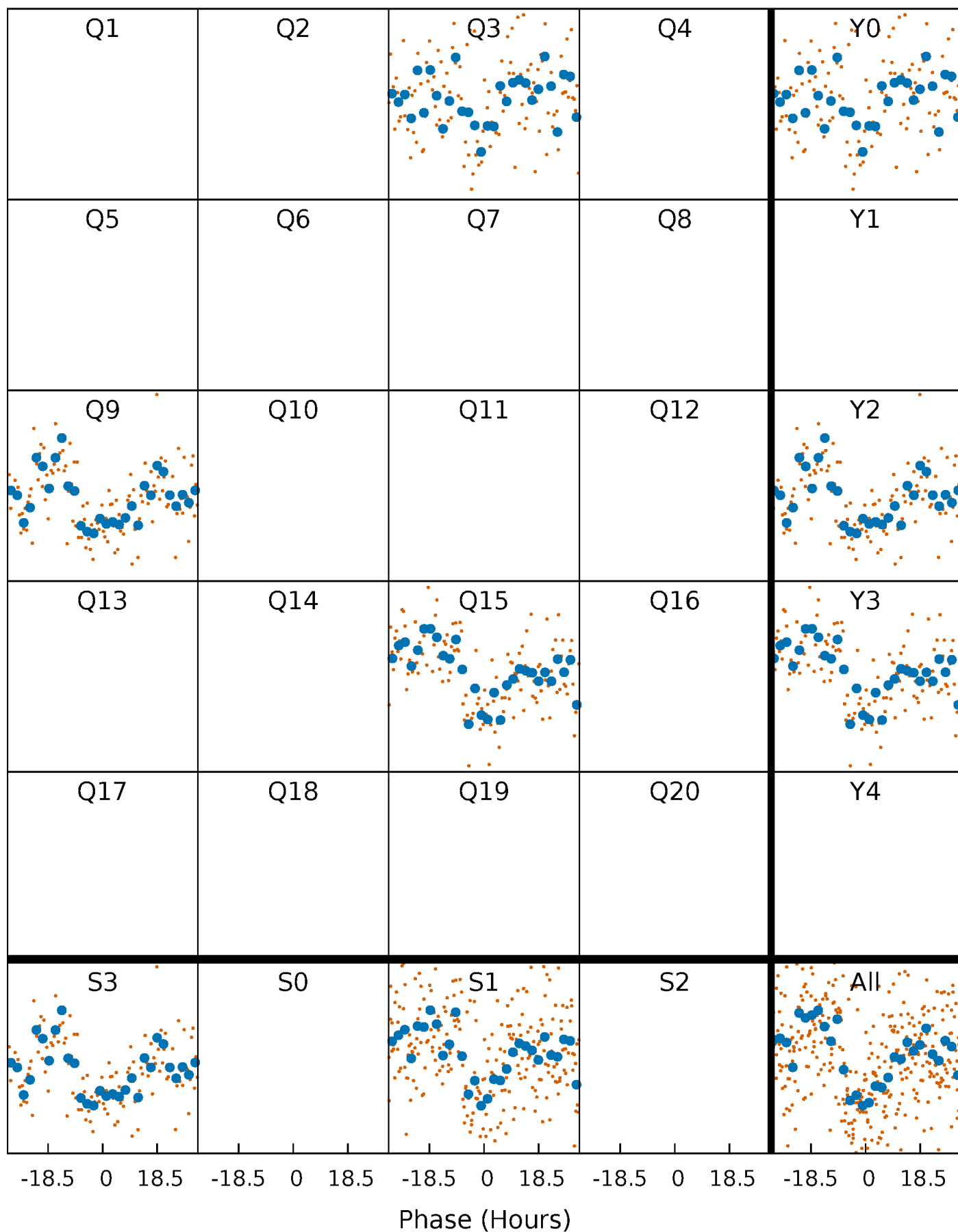


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 006280903-01 P=581.455778 Days $T_0=302.780127$ (BKJD)



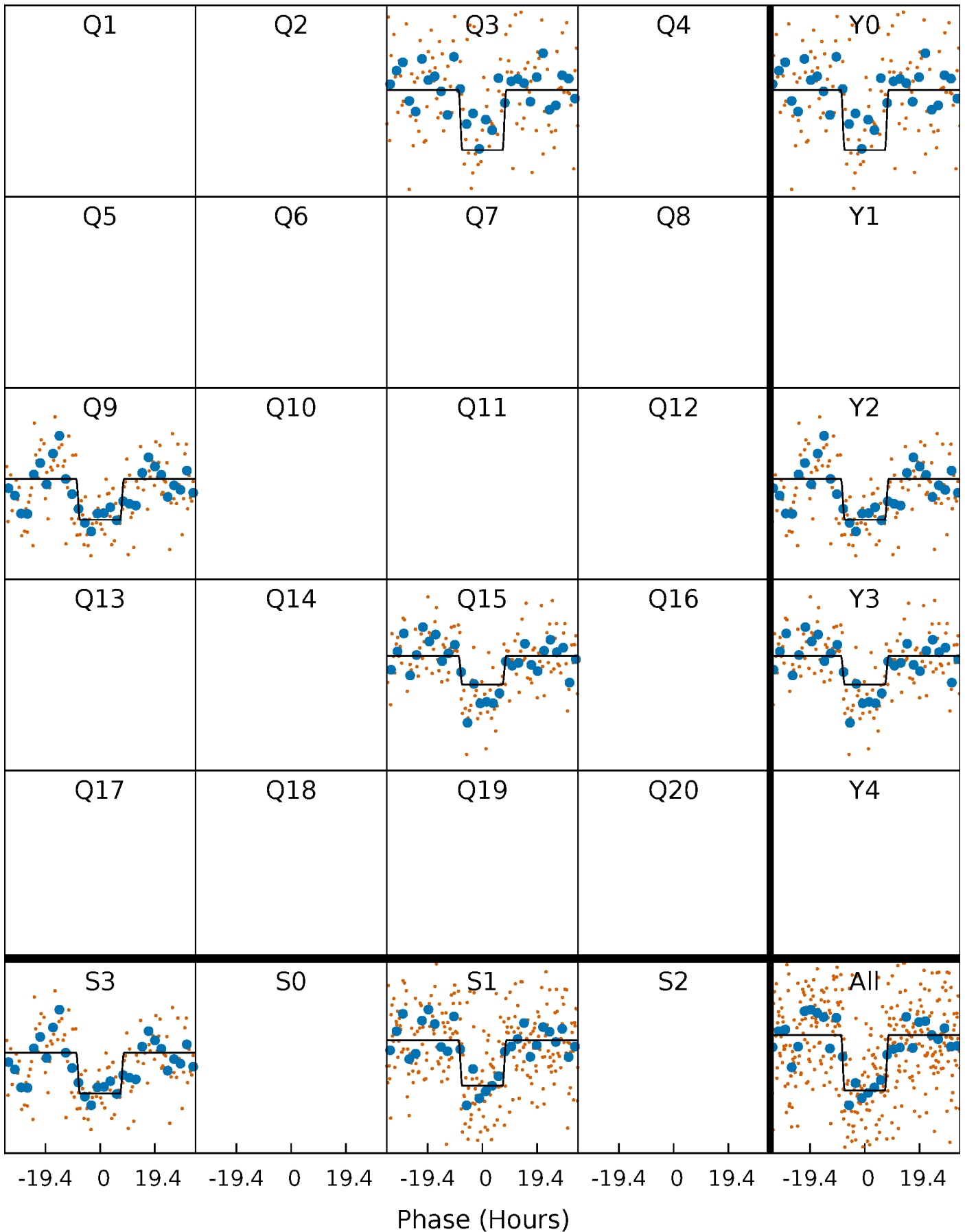
DV Quarter-Phased Transit Curves

TCE 006280903-01 P=581.455778 Days $T_0=302.780127$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

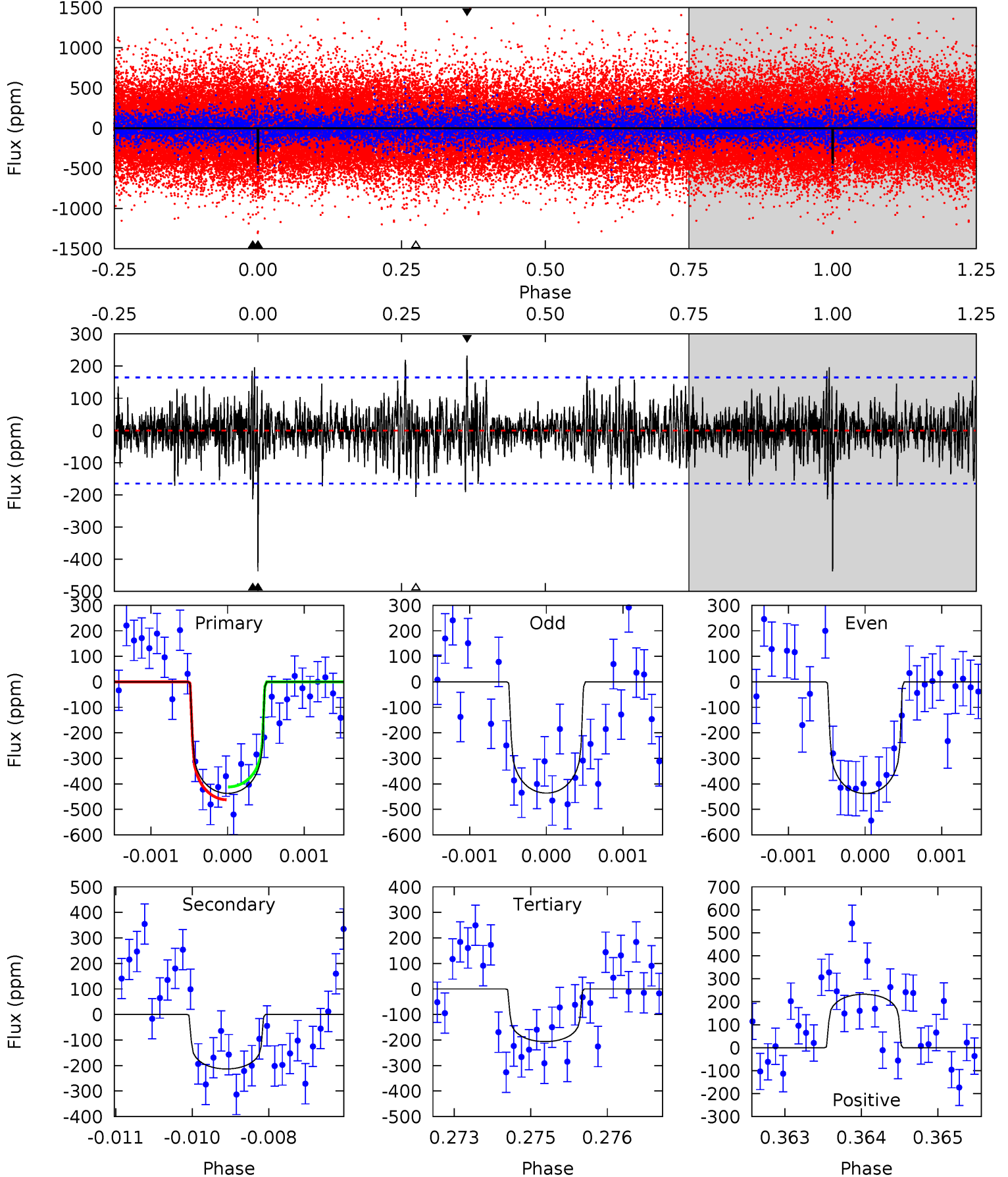
TCE 006280903-01 P=581.471006 Days $T_0=302.766766$ (BKJD)



DV Model-Shift Uniqueness Test

006280903-01, $P = 581.455778$ Days, $E = 302.780127$ Days

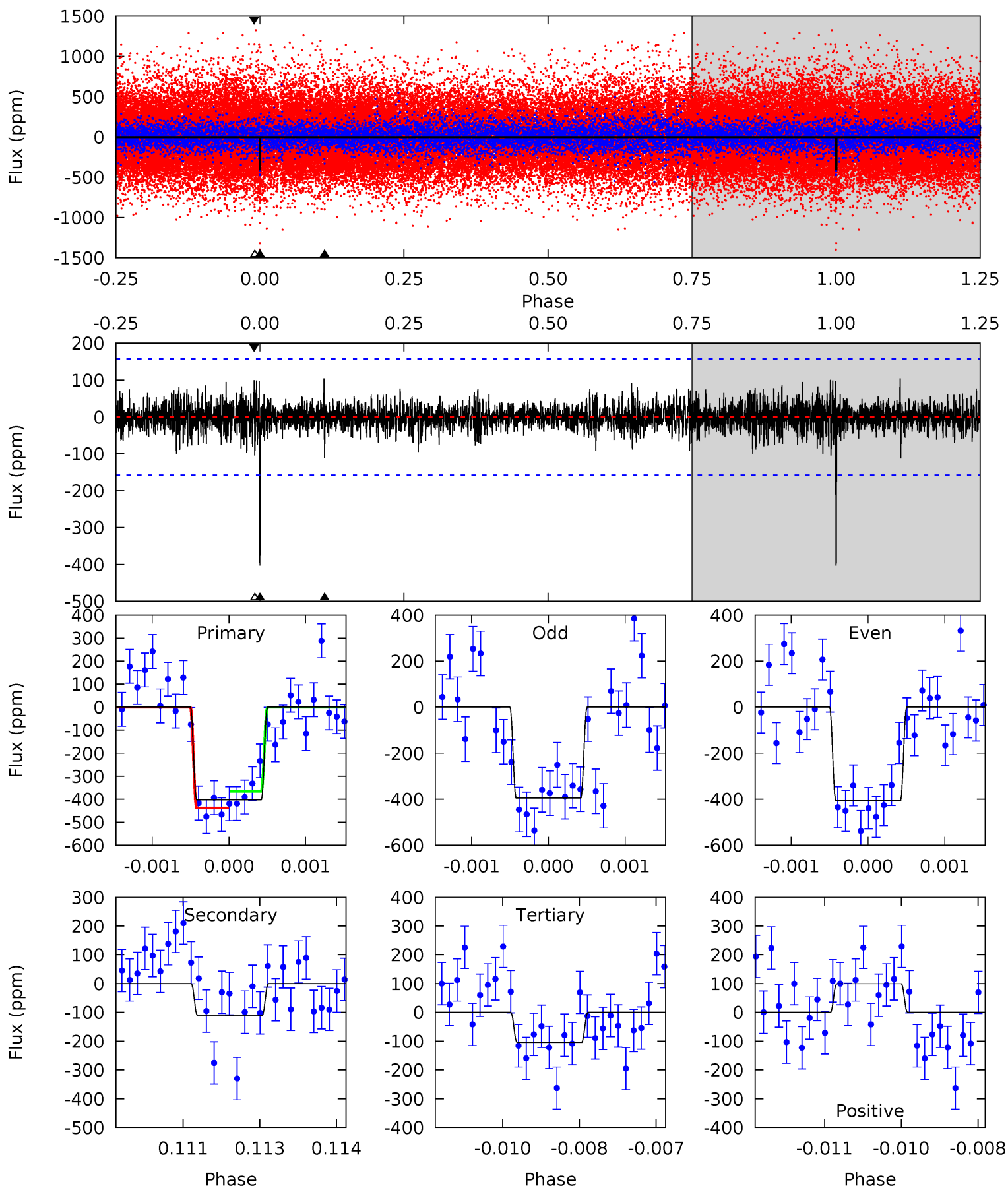
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	7.02	6.79	7.65	5.42	3.24	1.69	7.60	6.74	0.23	-0.63	0.03	1.00	0.35	0.83



Alt Model-Shift Uniqueness Test

006280903-01, P = 581.471006 Days, E = 302.766766 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	3.82	3.57	3.40	5.42	3.24	0.90	10.2	10.4	0.25	0.42	0.18	1.02	0.21	1.24



Stellar Parameters For KIC 006280903

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6074^{+181}_{-181}	$4.473^{+0.081}_{-0.189}$	$-0.500^{+0.300}_{-0.300}$	$0.911^{+0.245}_{-0.105}$	$0.901^{+0.109}_{-0.089}$	$1.675^{+0.564}_{-0.823}$
	+3%/-3%	+2%/-4%	+60%/-60%	+27%/-12%	+12%/-10%	+34%/-49%
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 006280903-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-213 ± 30	$2.20^{+0.65}_{-0.60}$	316^{+20}_{-16}	5110^{+760}_{-550}	42088^{+36855}_{-18338}
Alt.	-112 ± 29	$2.06^{+0.66}_{-0.59}$	315^{+21}_{-17}	4561^{+700}_{-472}	24903^{+25506}_{-11710}

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

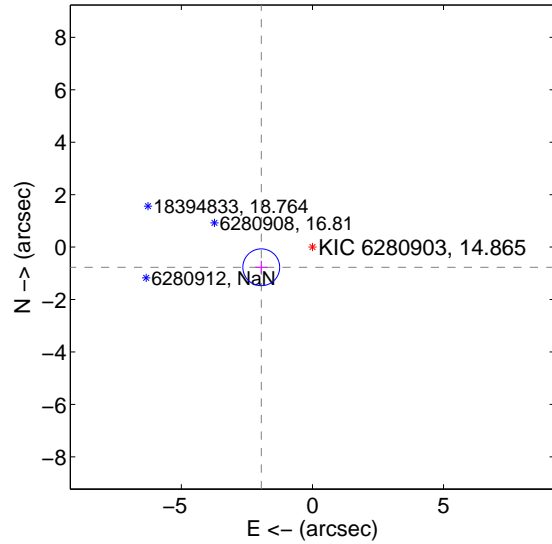
Supplemental centroid analysis for 006280903-01. Kepler magnitude: 14.87. Transit SNR 8.58

There are 1 quarters with good PRF difference image offsets

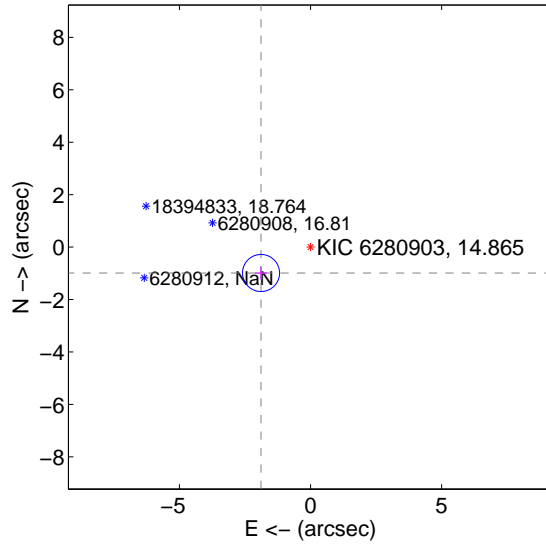
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.098 \pm 0.234	8.96	1.952 ± 0.232	-0.770 ± 0.249
PRF-fit source offset from KIC position	2.131 \pm 0.236	9.04	1.888 ± 0.232	-0.988 ± 0.249
photometric centroid source offset	1.92 ± 1.92	1.00	0.45 ± 2.09	-1.87 ± 1.91

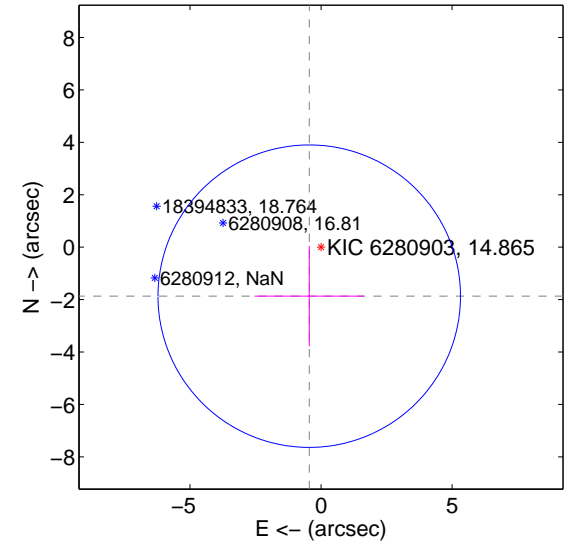
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

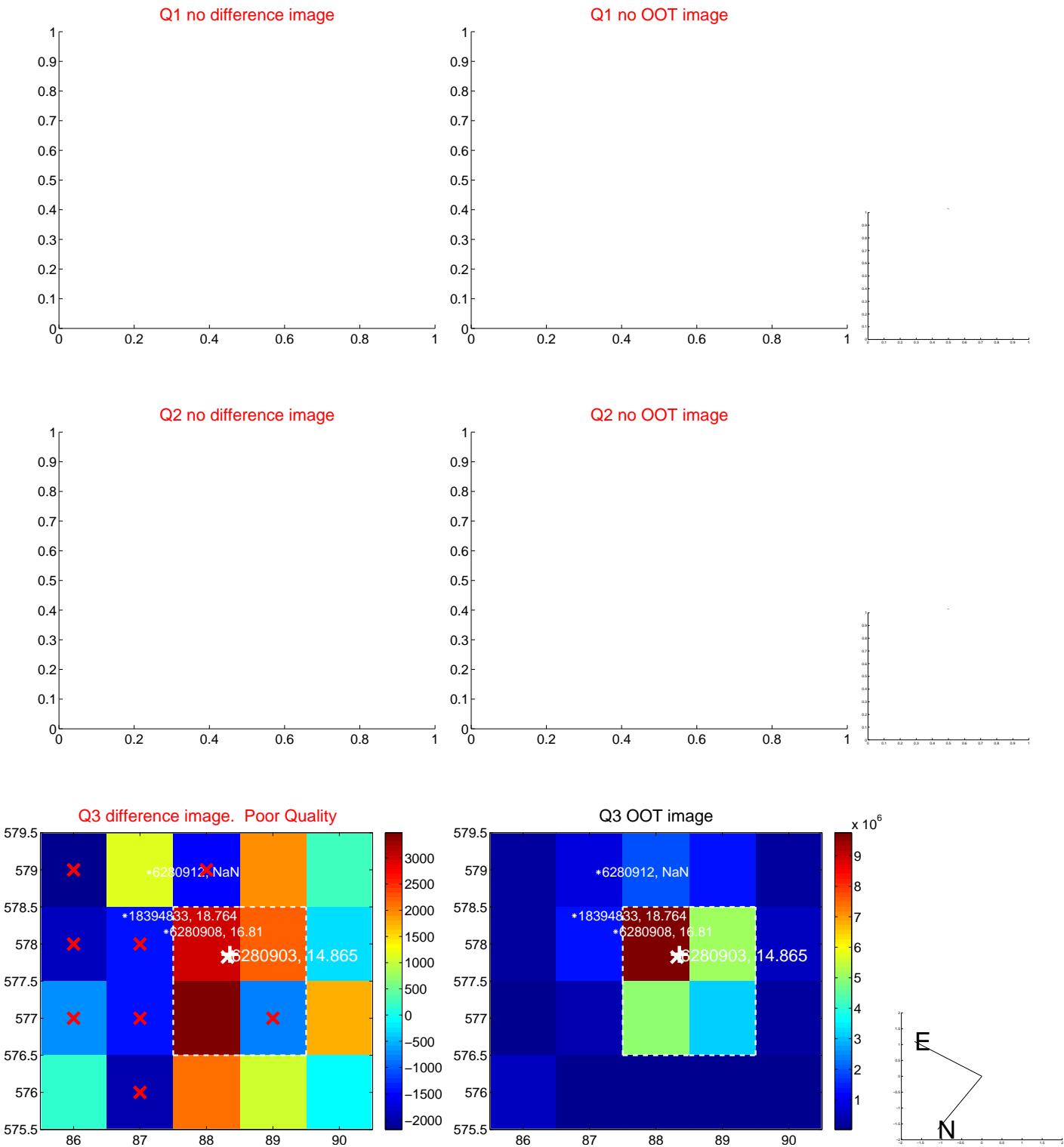


offset from photometric centroids



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.

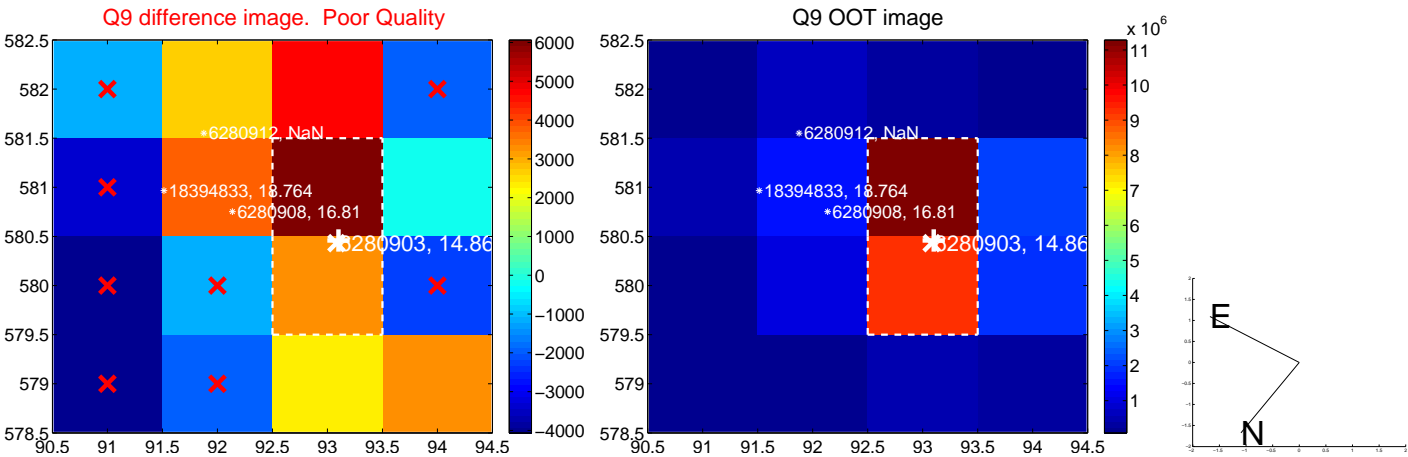
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



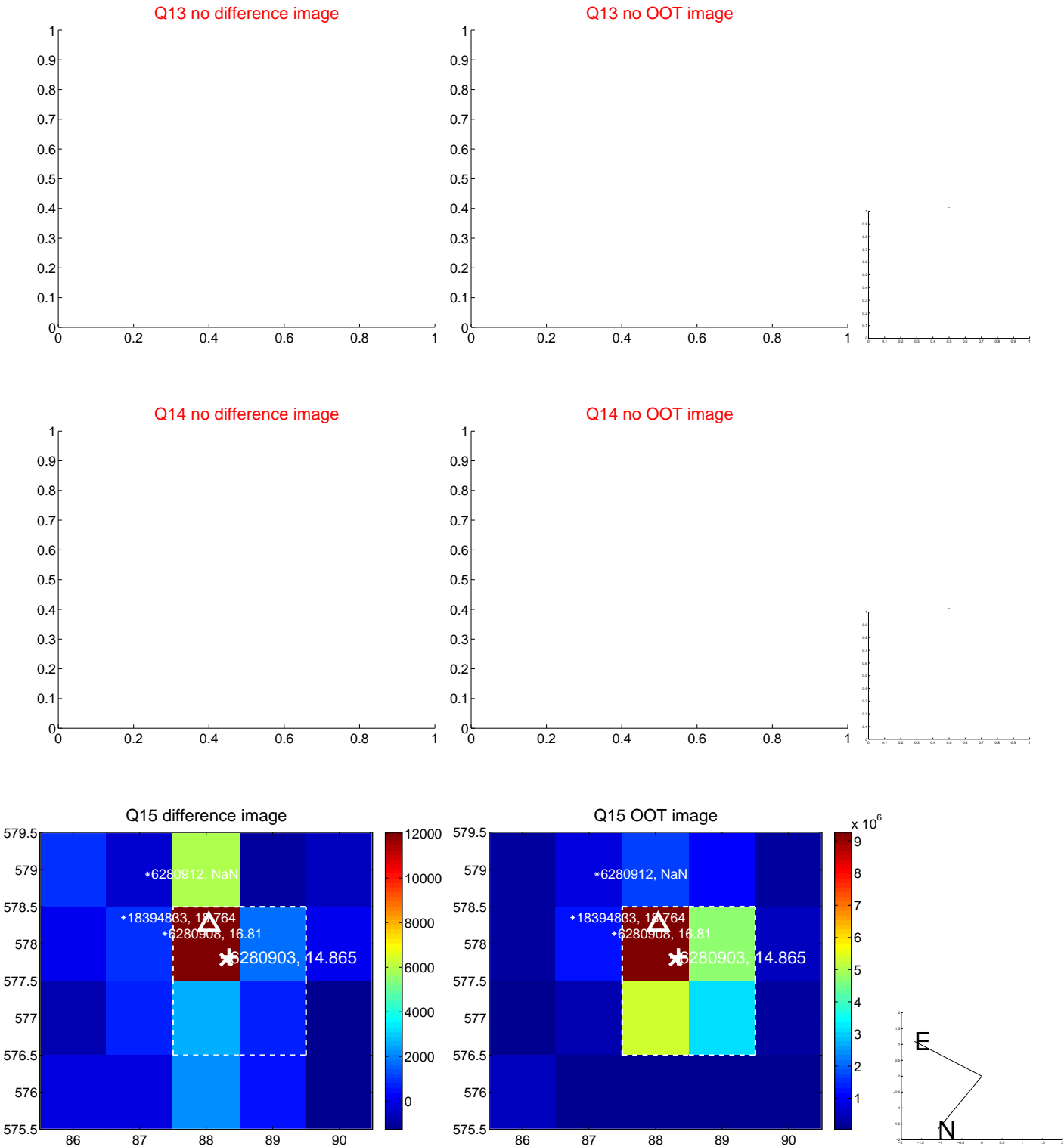
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



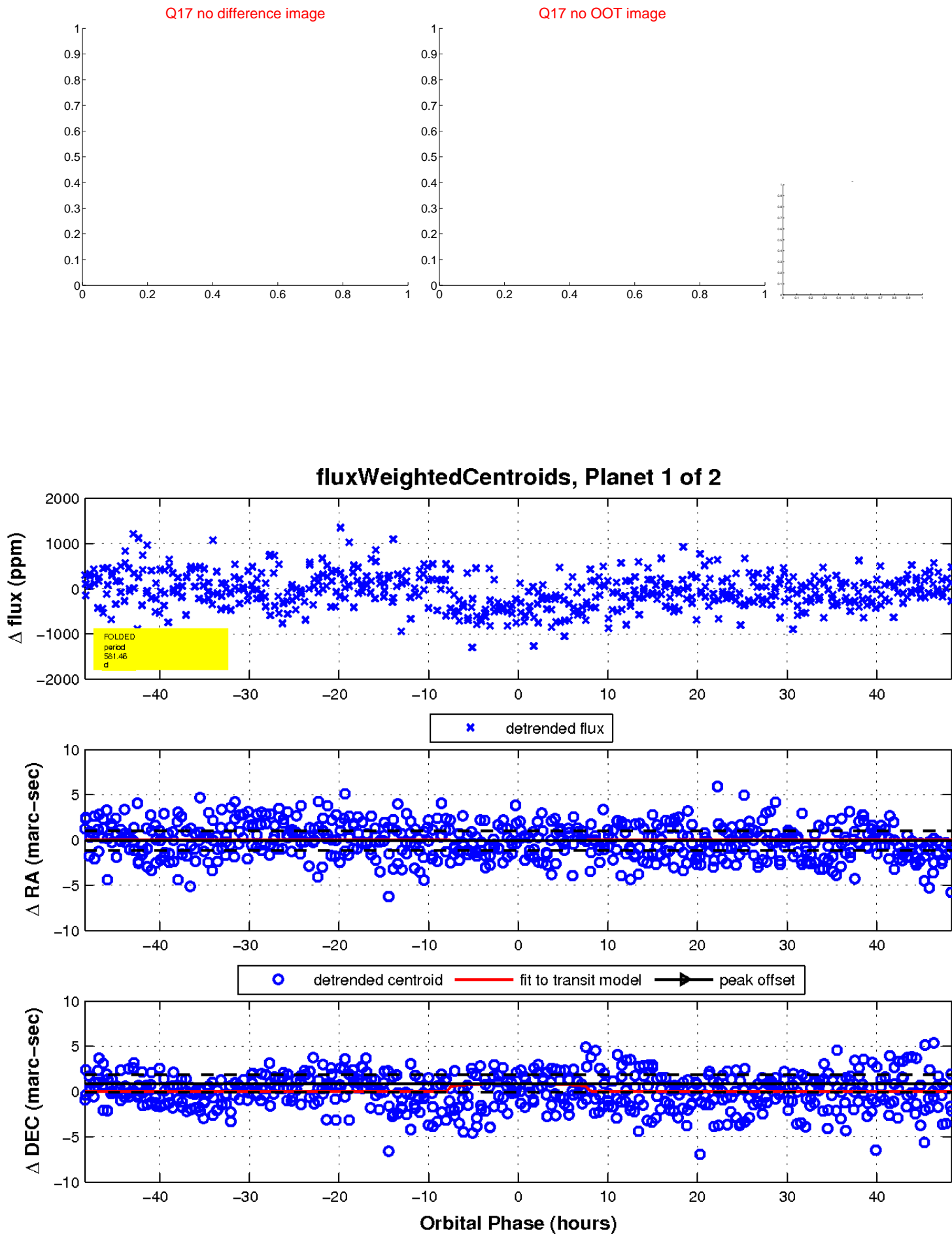
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

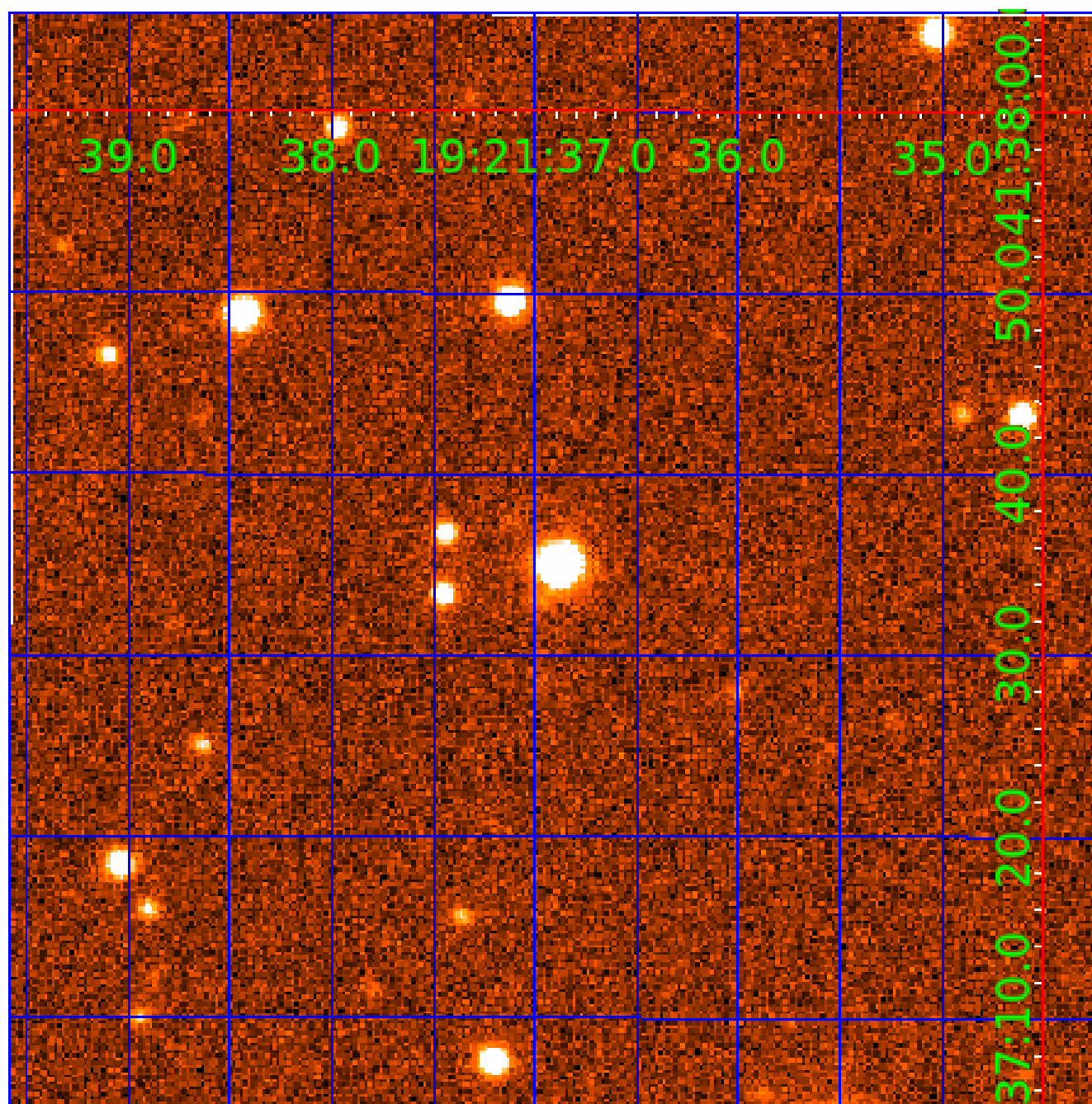


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006280903

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})
006280903-01	OBS	No	581.455778	302.780127	508.7	16.161	8.3	8.6	0.91	6074	2.16	0.58
006280903-02	OBS	No	509.164760	512.689051	430.2	22.080	7.9	8.7	0.91	6074	2.00	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006280903-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—CENT_FEW_DIFFS
006280903-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

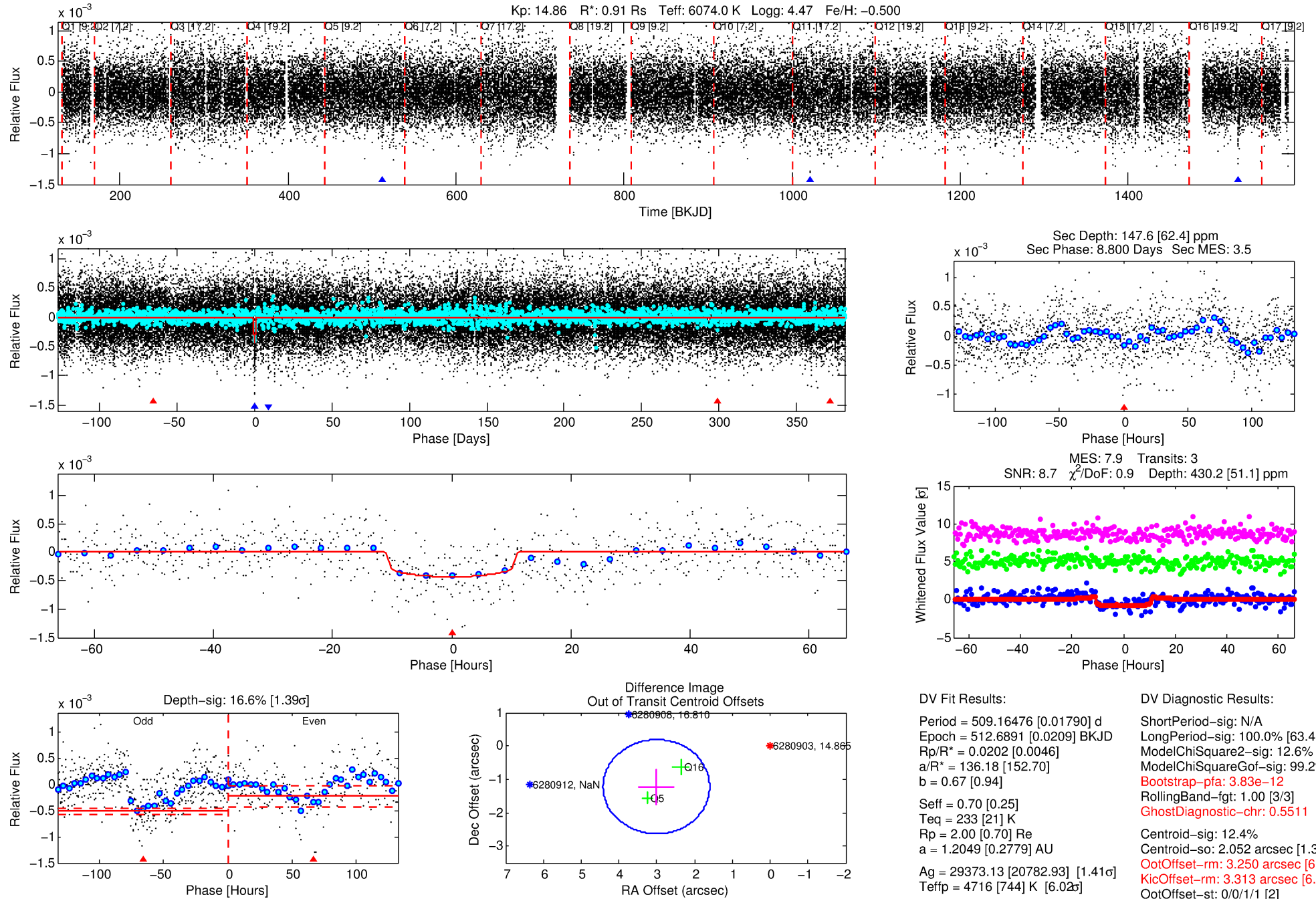
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006280903-02

No Significant Match Found

DV One-Page Summary

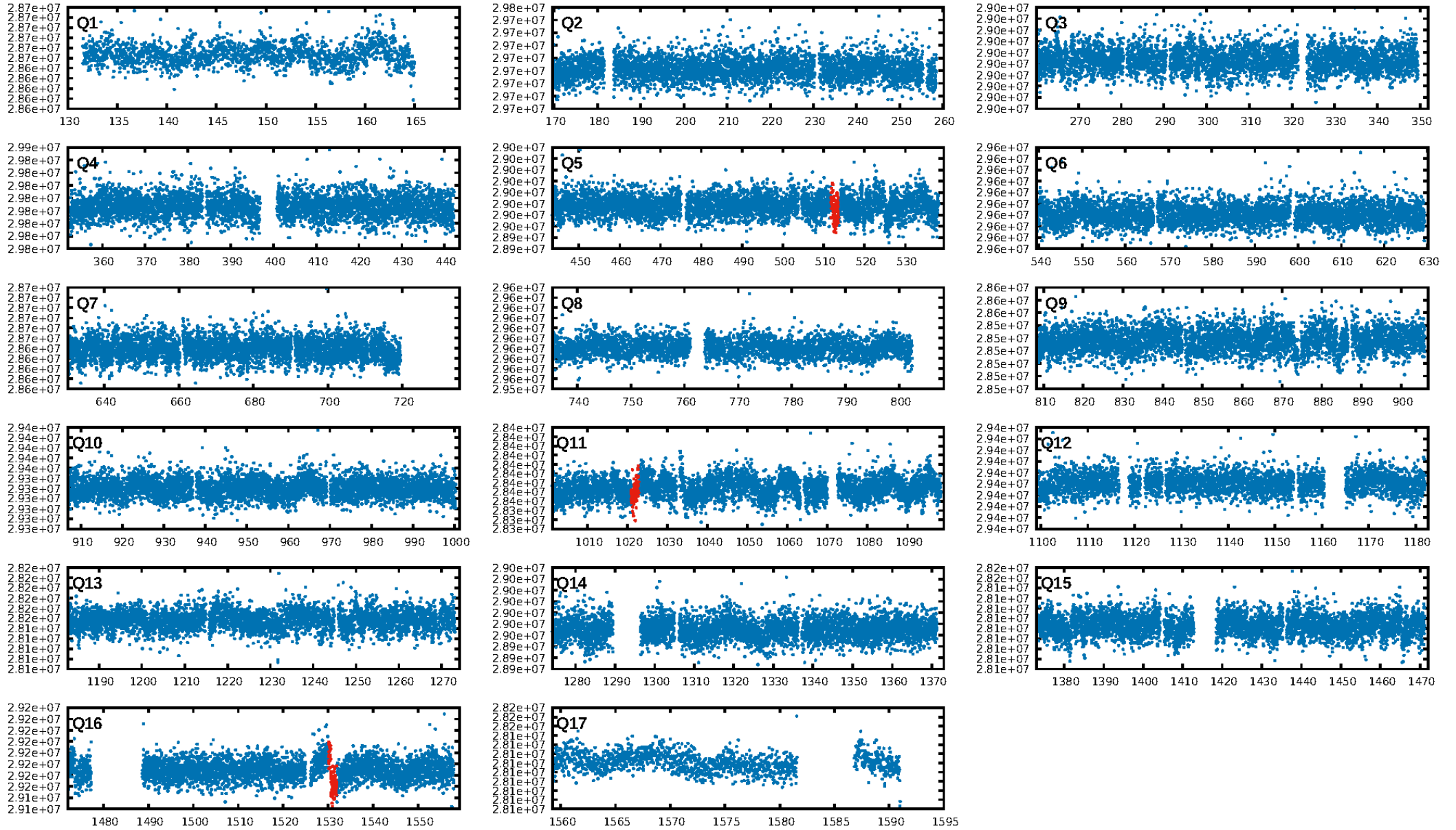
KIC: 6280903 Candidate: 2 of 2 Period: 509.165 d



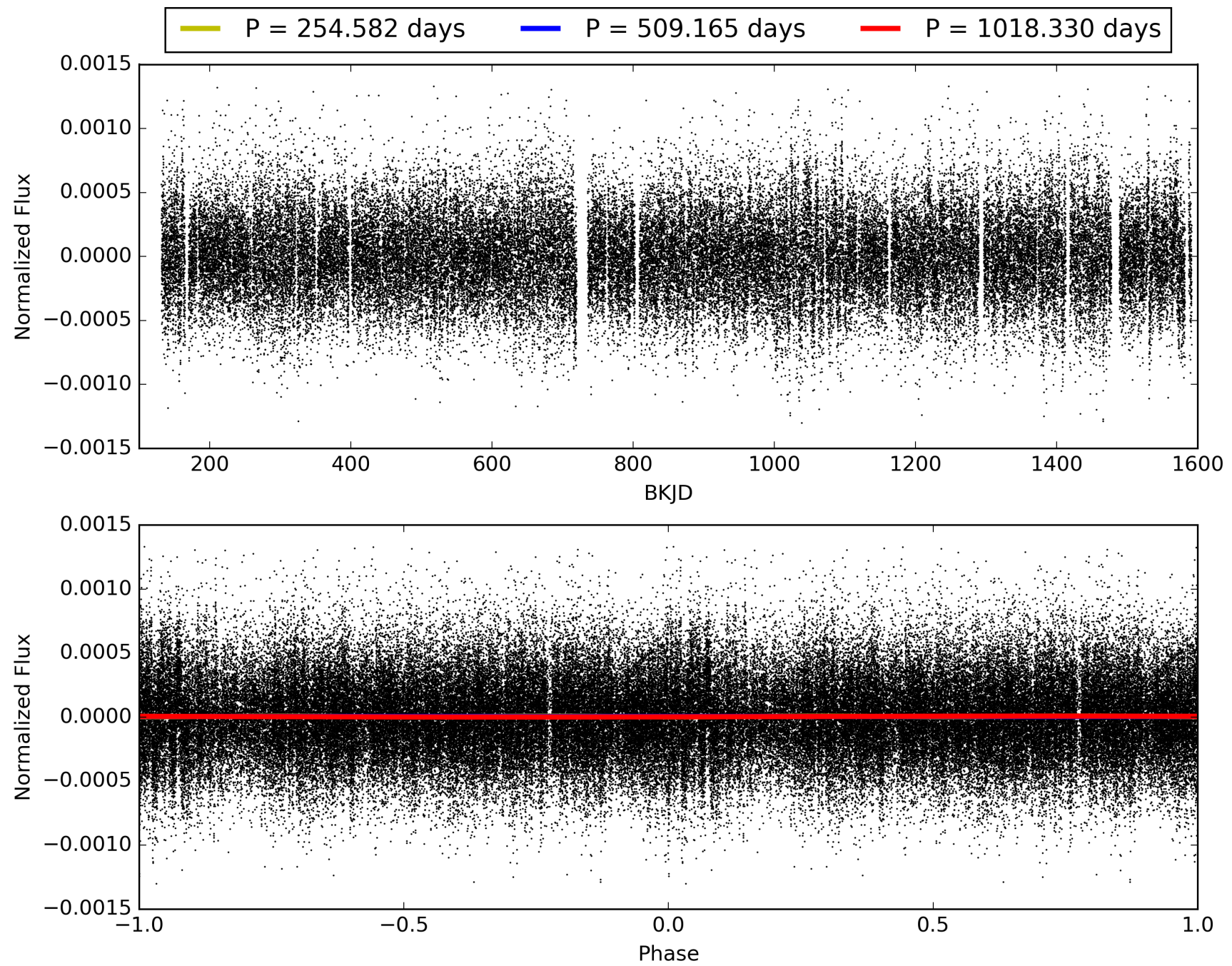
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:25:13 Z

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

TCE 006280903-02, PDC Light Curves

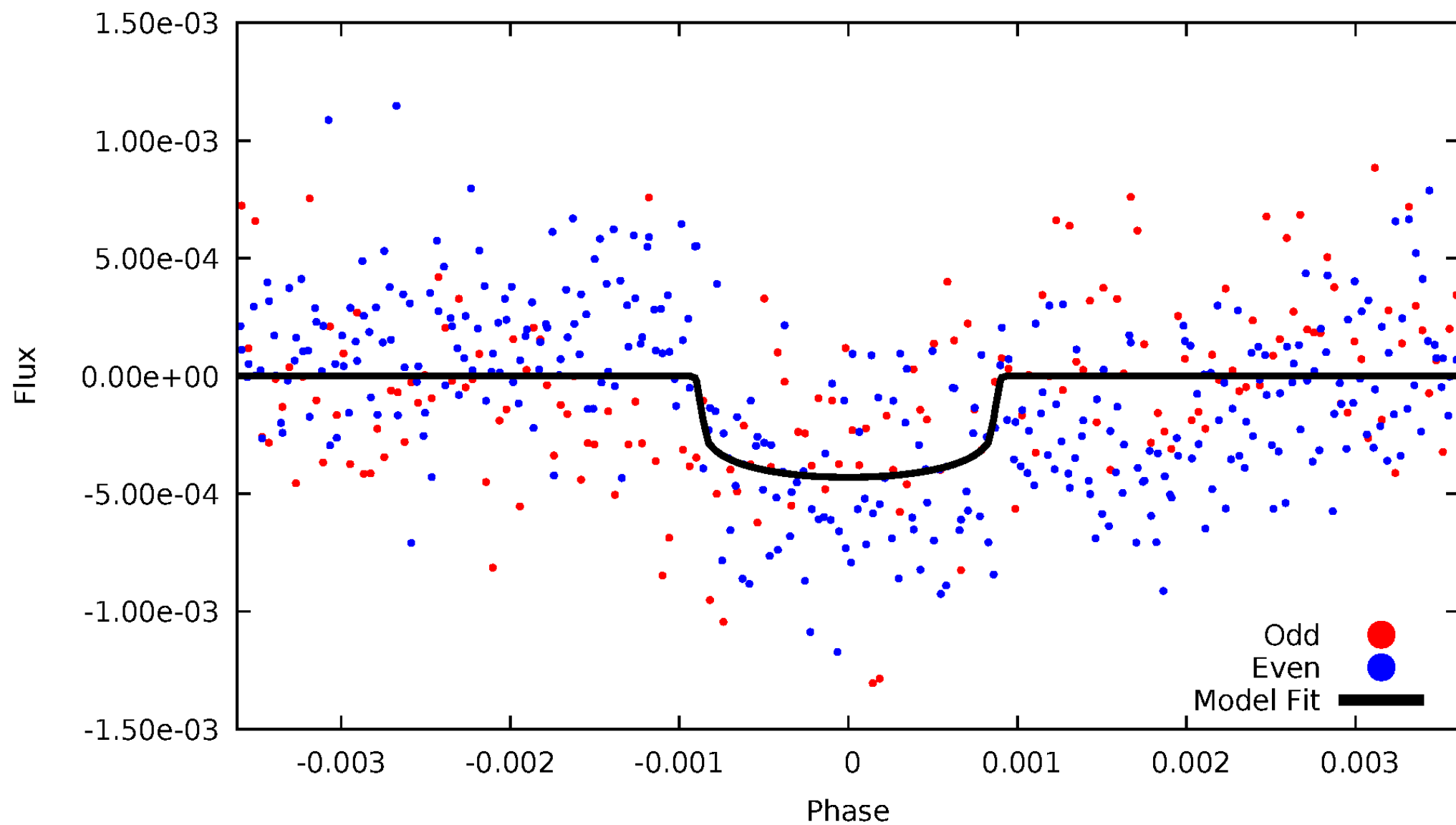


TCE 006280903-02



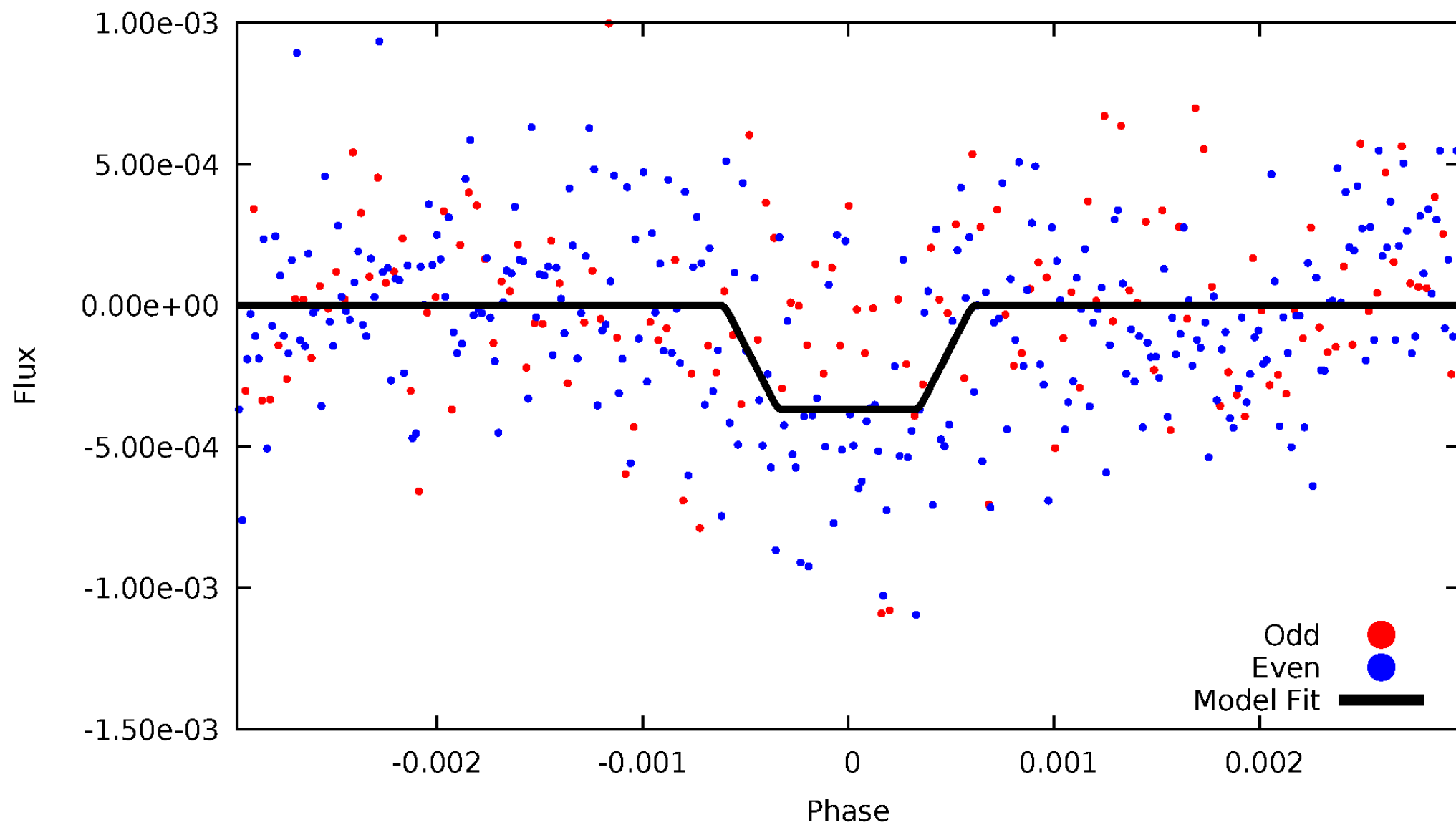
DV Odd/Even

TCE 006280903-02



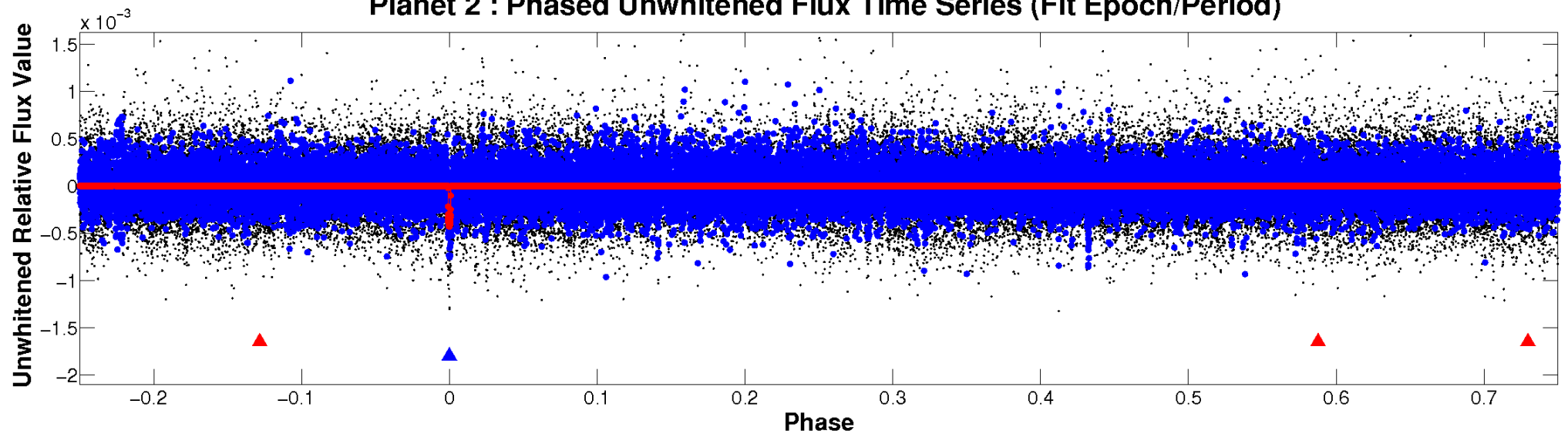
ALT Odd/Even

TCE 006280903-02

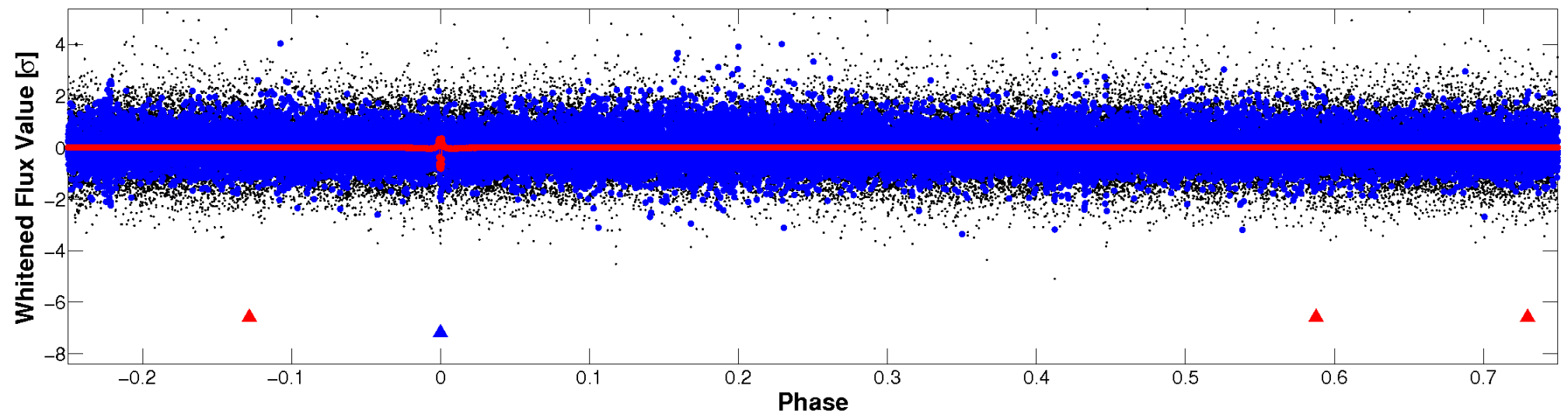


Non-Whitened Vs. Whitened Light Curve

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 006280903-02 P=509.164760 Days $T_0=512.689052$ (BKJD)



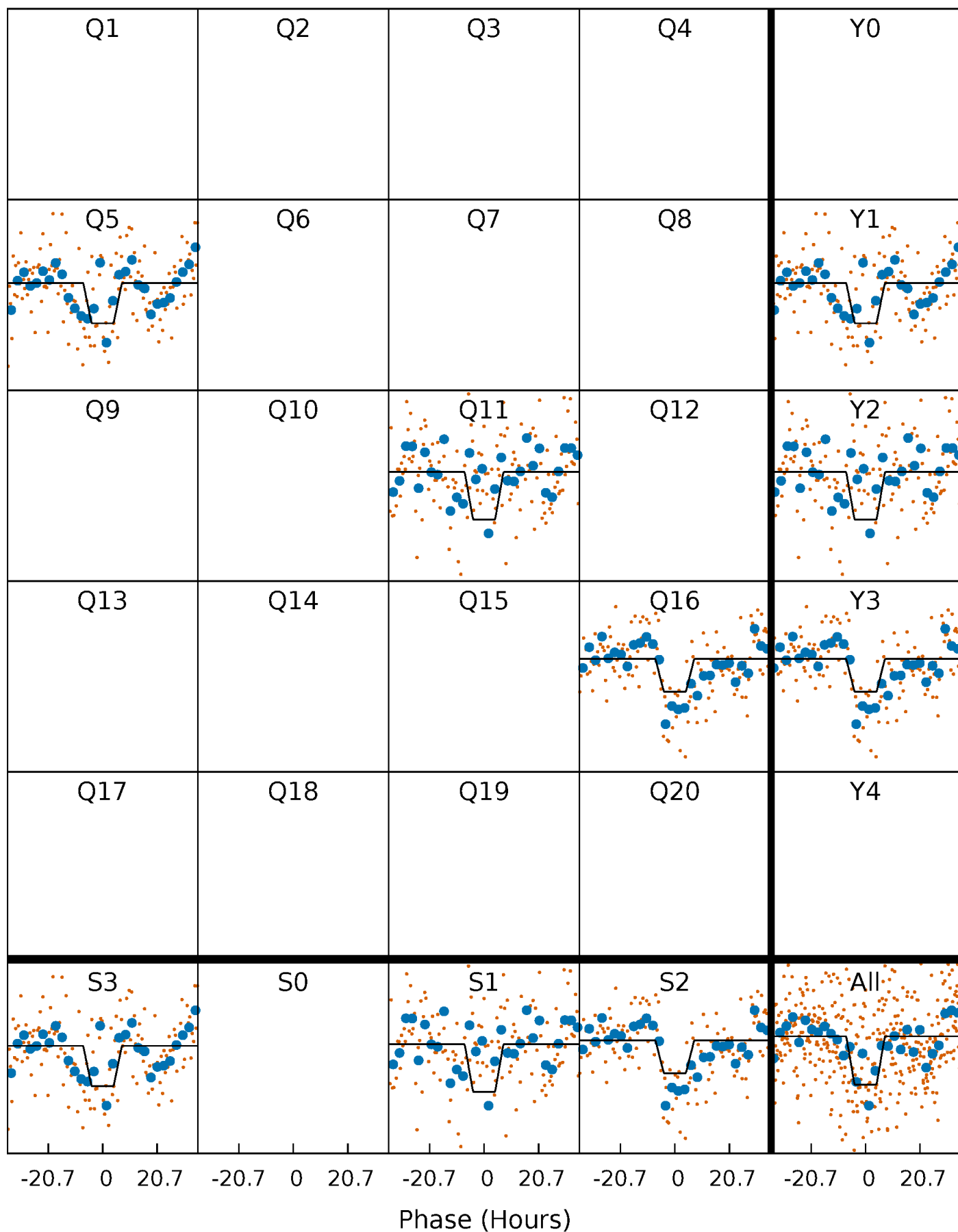
DV Quarter-Phased Transit Curves

TCE 006280903-02 $P=509.164760$ Days $T_0=512.689052$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

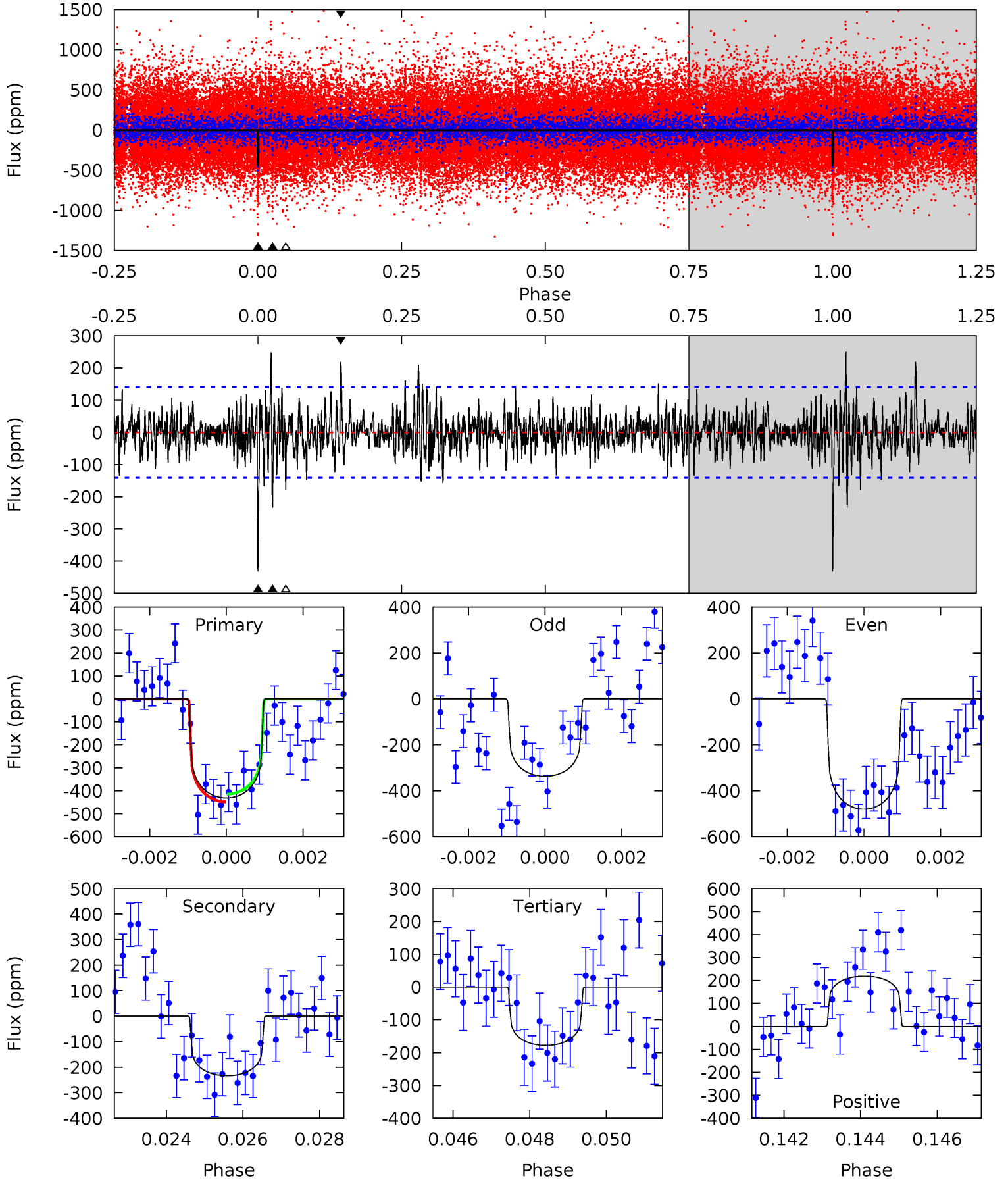
TCE 006280903-02 P=508.972735 Days $T_0=512.872631$ (BKJD)



DV Model-Shift Uniqueness Test

006280903-02, P = 509.164760 Days, E = 3.524292 Days

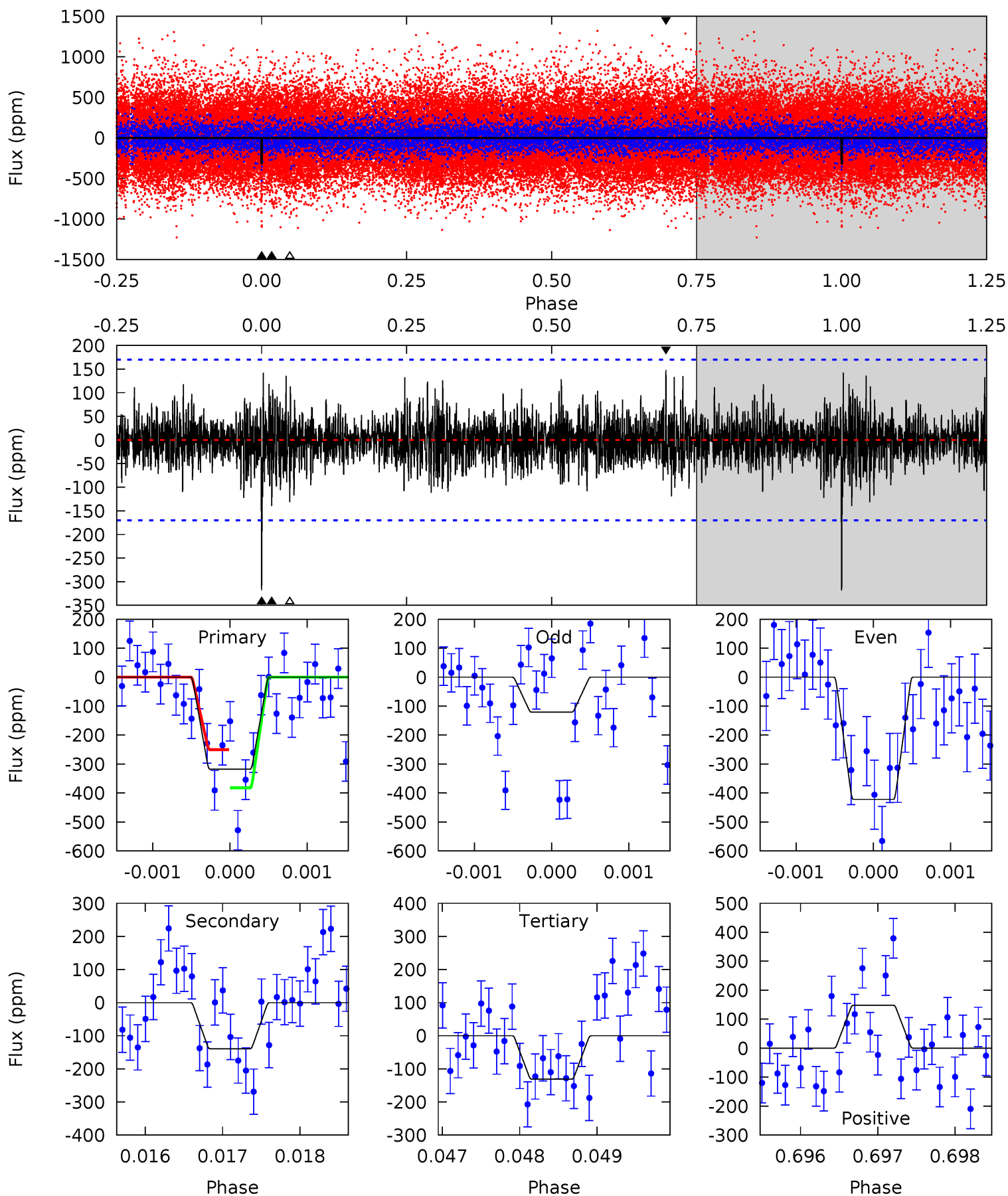
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	8.85	6.74	8.30	5.34	3.11	1.82	9.61	8.04	2.11	0.54	2.60	1.04	0.37	0.64



Alt Model-Shift Uniqueness Test

006280903-02, P = 508.972735 Days, E = 3.899896 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	4.44	4.17	4.72	5.41	3.23	1.20	5.95	5.41	0.26	-0.28	4.57	1.26	0.32	2.09



Stellar Parameters For KIC 006280903

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6074^{+181}_{-181}	$4.473^{+0.081}_{-0.189}$	$-0.500^{+0.300}_{-0.300}$	$0.911^{+0.245}_{-0.105}$	$0.901^{+0.109}_{-0.089}$	$1.675^{+0.564}_{-0.823}$
	+3%/-3%	+2%/-4%	+60%/-60%	+27%/-12%	+12%/-10%	+34%/-49%
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 006280903-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-234 ± 26	$2.08^{+0.51}_{-0.50}$	330^{+22}_{-17}	5355^{+673}_{-486}	42427^{+32276}_{-14661}
Alt.	-139 ± 31	$1.96^{+0.56}_{-0.48}$	331^{+24}_{-16}	4853^{+687}_{-431}	27644^{+23580}_{-11033}

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

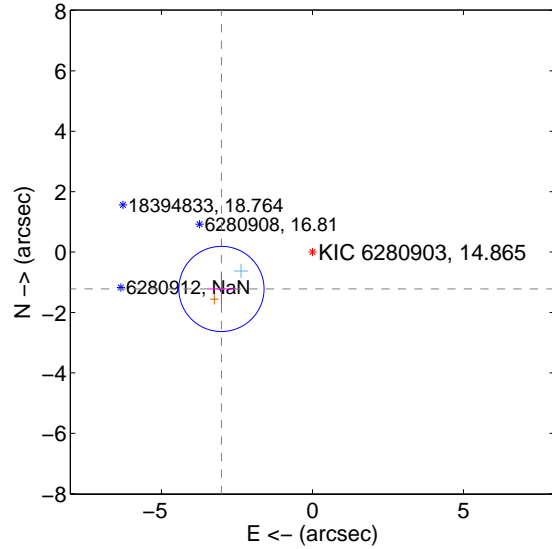
Supplemental centroid analysis for 006280903-02. Kepler magnitude: 14.87. Transit SNR 8.73

There are 1 quarters with good PRF difference image offsets

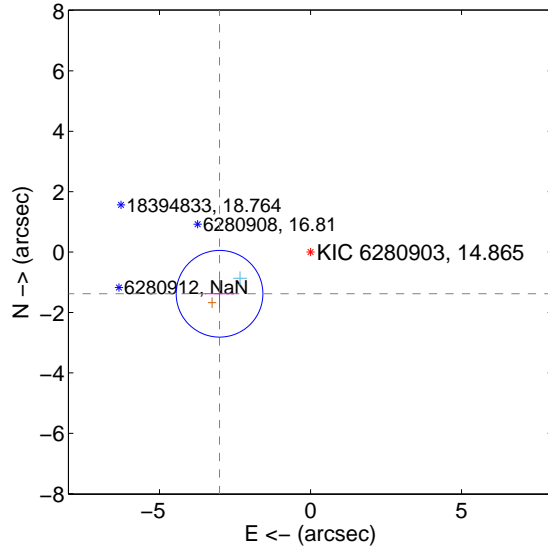
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.250 \pm 0.470	6.91	3.013 \pm 0.460	-1.220 \pm 0.529
PRF-fit source offset from KIC position	3.313 \pm 0.478	6.92	3.012 \pm 0.483	-1.379 \pm 0.458
photometric centroid source offset	2.05 \pm 1.54	1.33	-2.04 \pm 1.54	-0.19 \pm 1.59

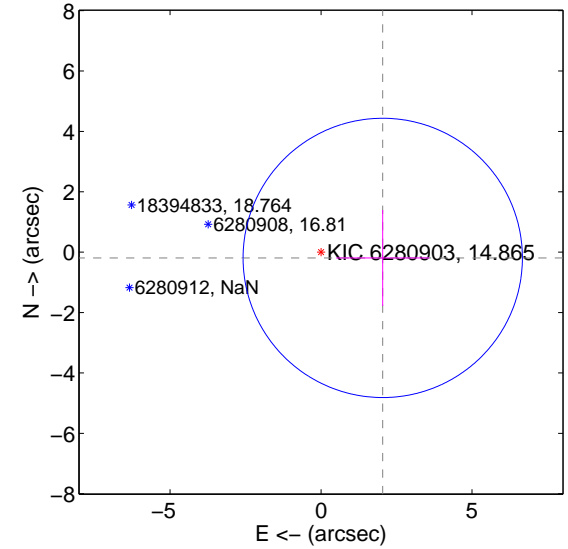
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

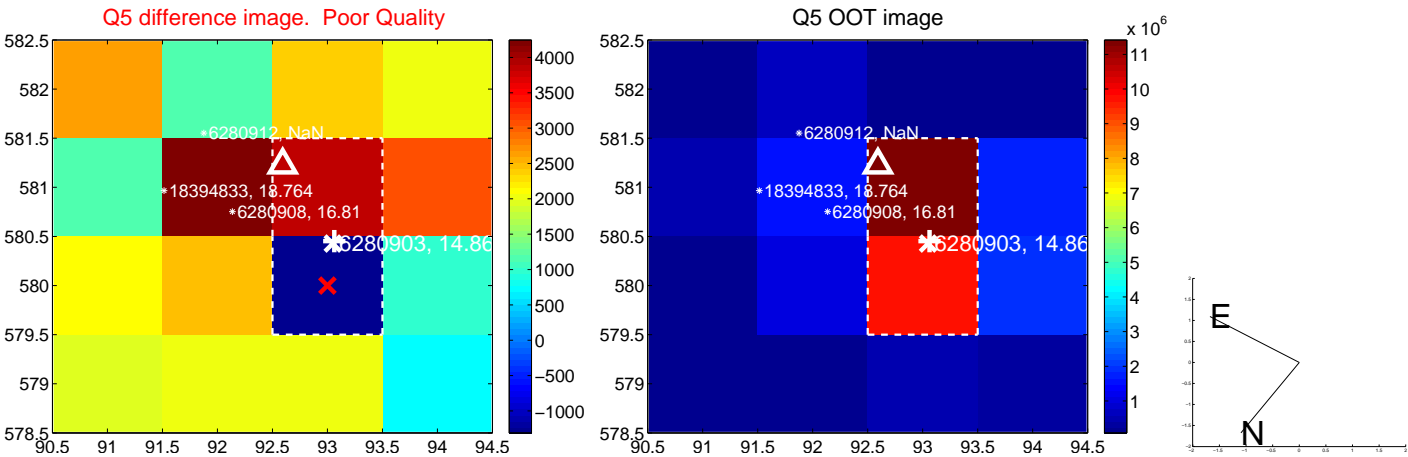


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



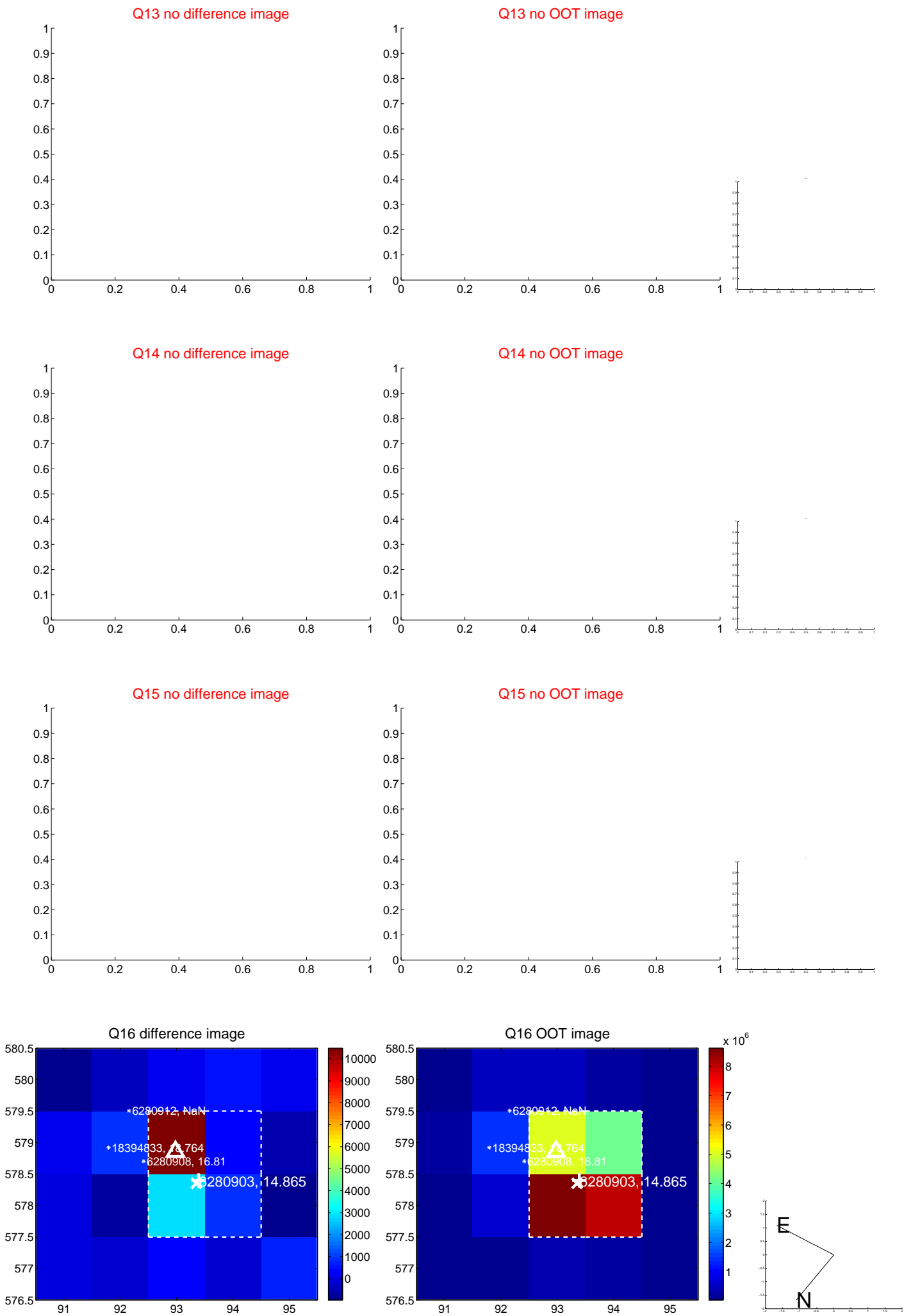
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



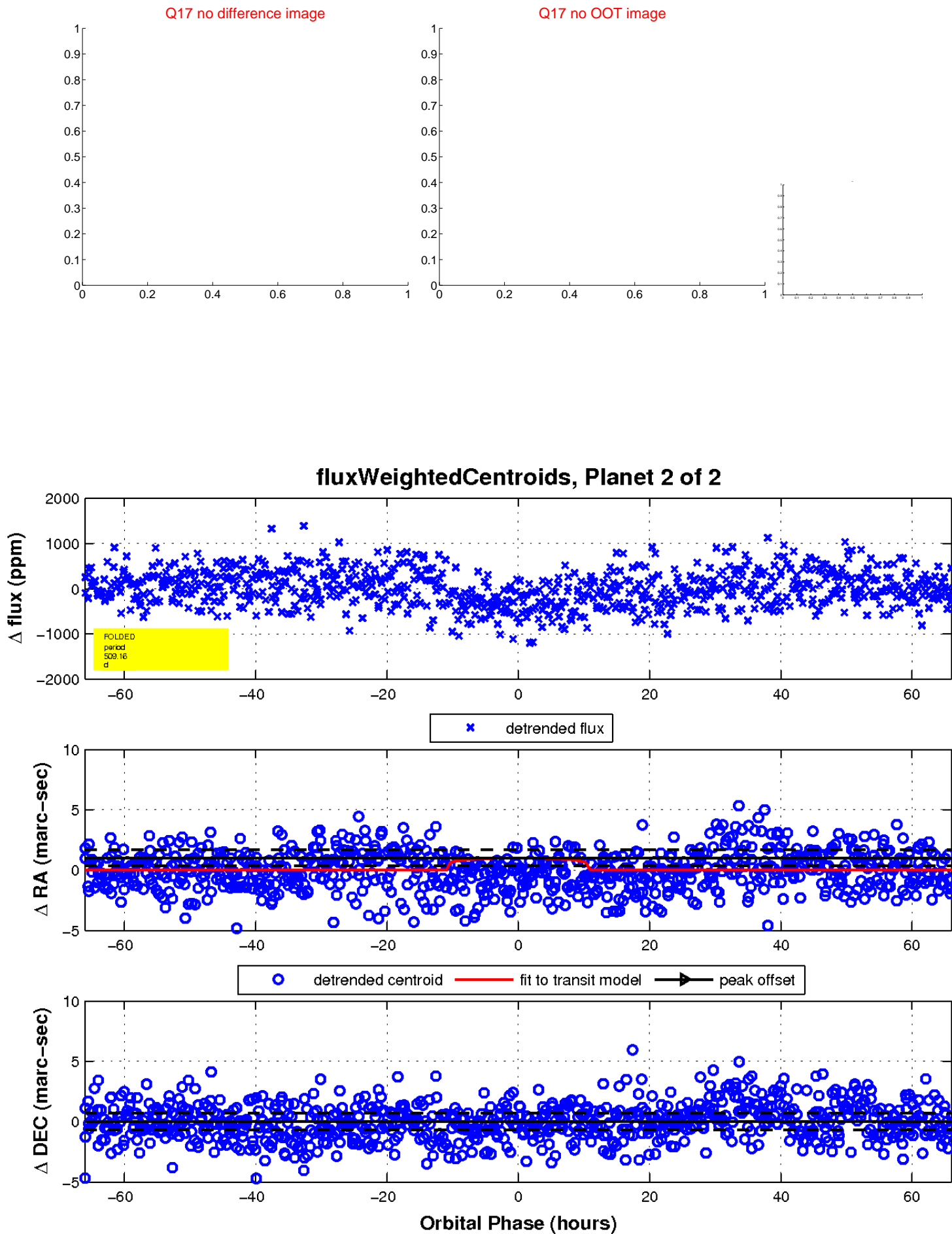
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

