

KIC 006280959

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})
006280959-01	OBS	No	505.464311	378.106920	759.8	16.198	9.4	7.9	0.81	4837	2.42	0.24
006280959-02	OBS	No	368.374584	154.302631	915.7	31.636	7.3	8.3	0.81	4837	5.04	0.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006280959-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006280959-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST

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

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

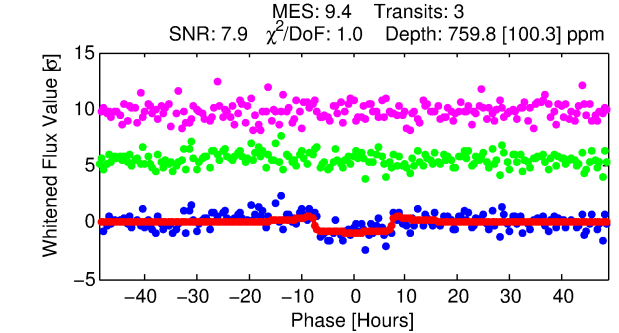
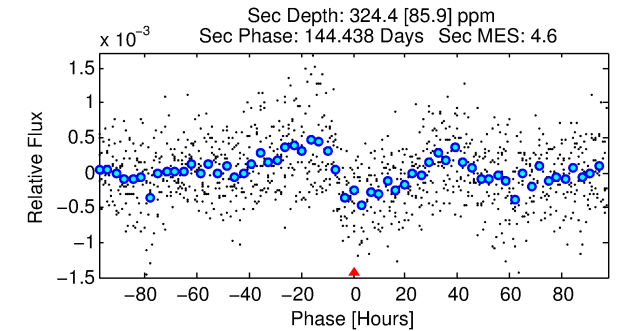
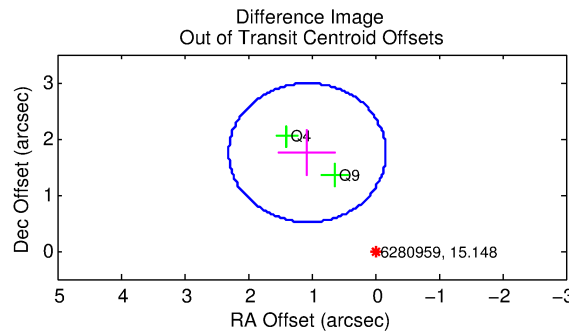
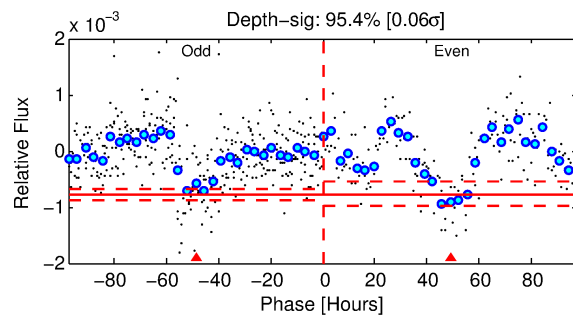
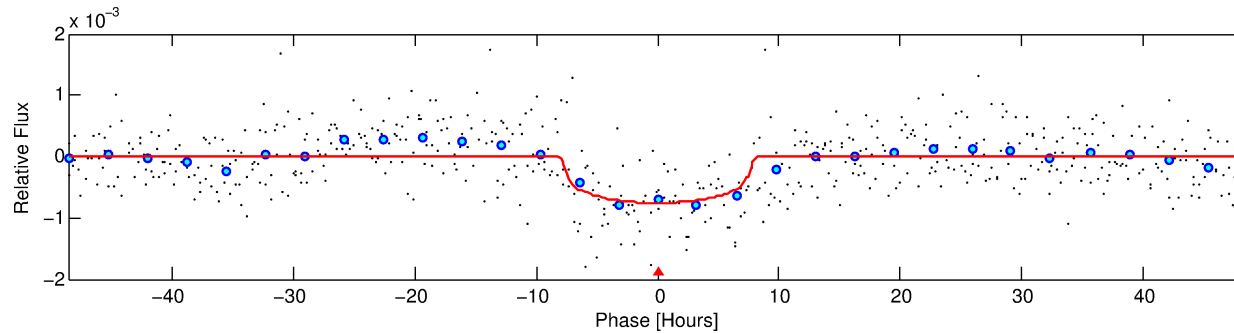
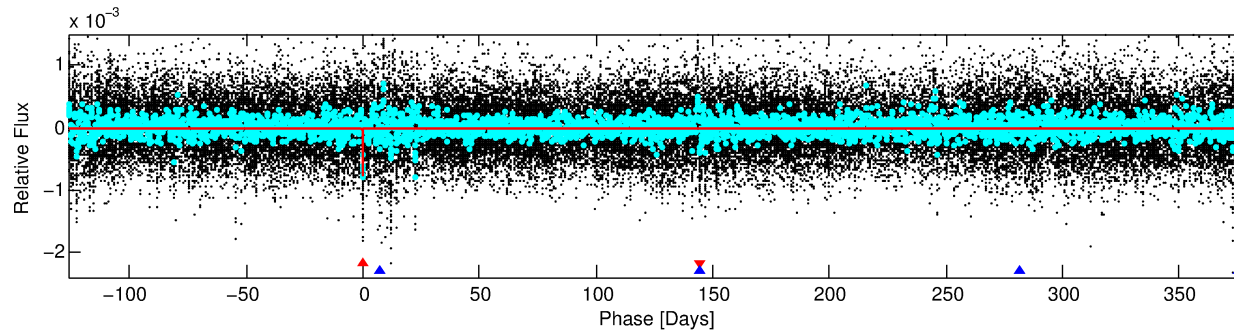
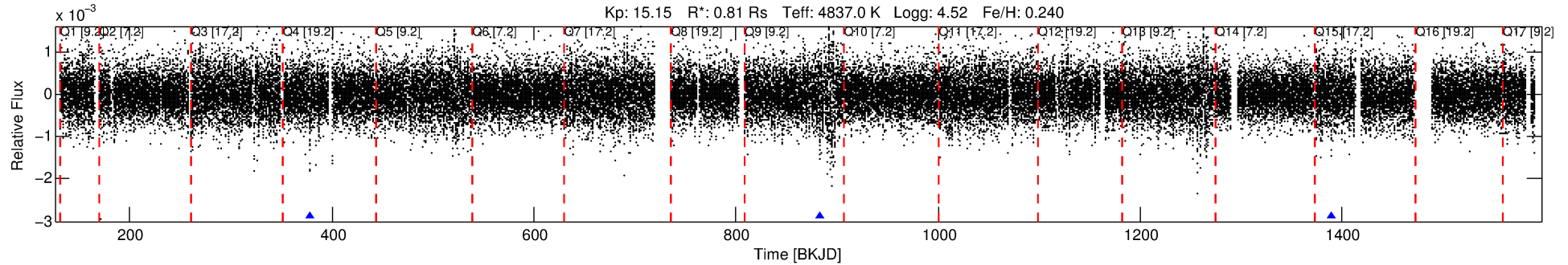
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006280959-01

No Significant Match Found

DV One-Page Summary

KIC: 6280959 Candidate: 1 of 2 Period: 505.464 d



DV Fit Results:

Period = 505.46431 [0.01382] d
Epoch = 378.1069 [0.0177] BKJD
Rp/R* = 0.0274 [0.0061]
a/R* = 170.05 [119.65]
b = 0.74 [0.44]
Seff = 0.24 [0.04]
Teq = 179 [8] K
Rp = 2.42 [0.58] Re
a = 1.1449 [0.0979] AU
Ag = 40023.22 [21382.01] [1.87σ]
Teffp = 3920 [520] K [7.19σ]

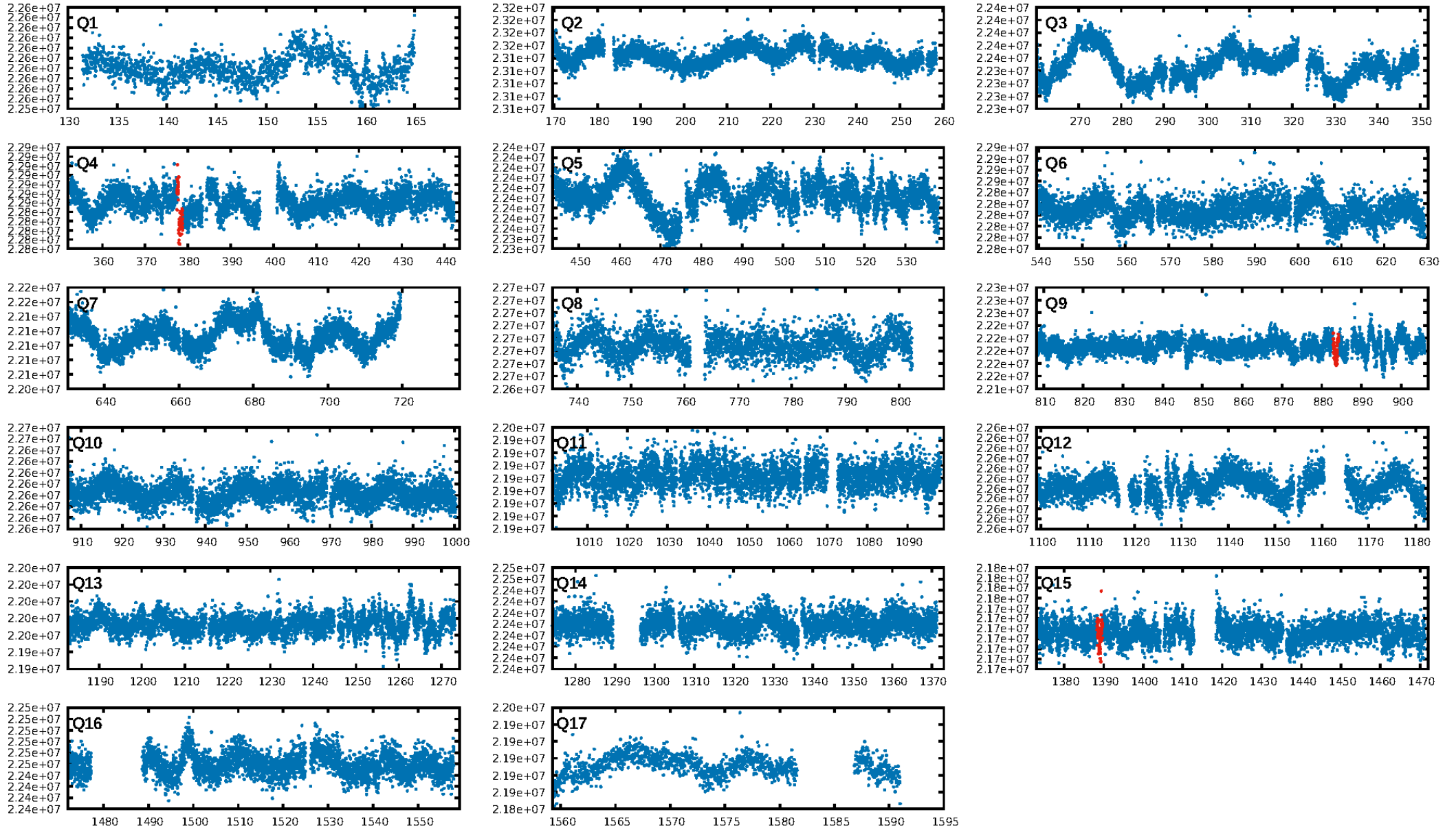
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [92.57σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 40.8%
ModelChiSquareGof-sig: 98.3%
Bootstrap-pfa: 2.29e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 5.964
Centroid-sig: 0.1%
Centroid-so: 3.443 arcsec [2.05σ]
OotOffset-rm: 2.046 arcsec [4.97σ]
KicOffset-rm: 2.018 arcsec [4.47σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

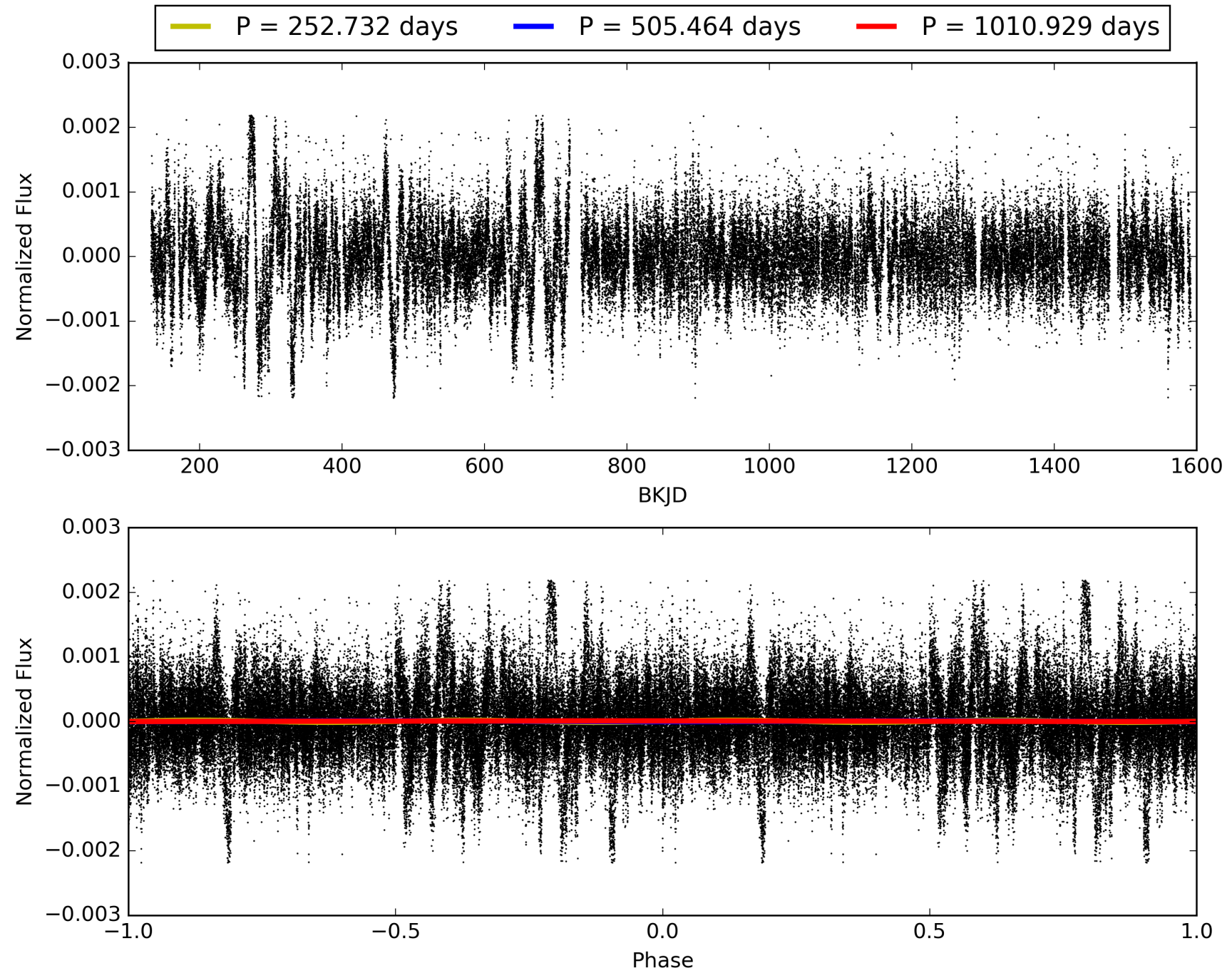
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:17:44 Z

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

TCE 006280959-01, PDC Light Curves

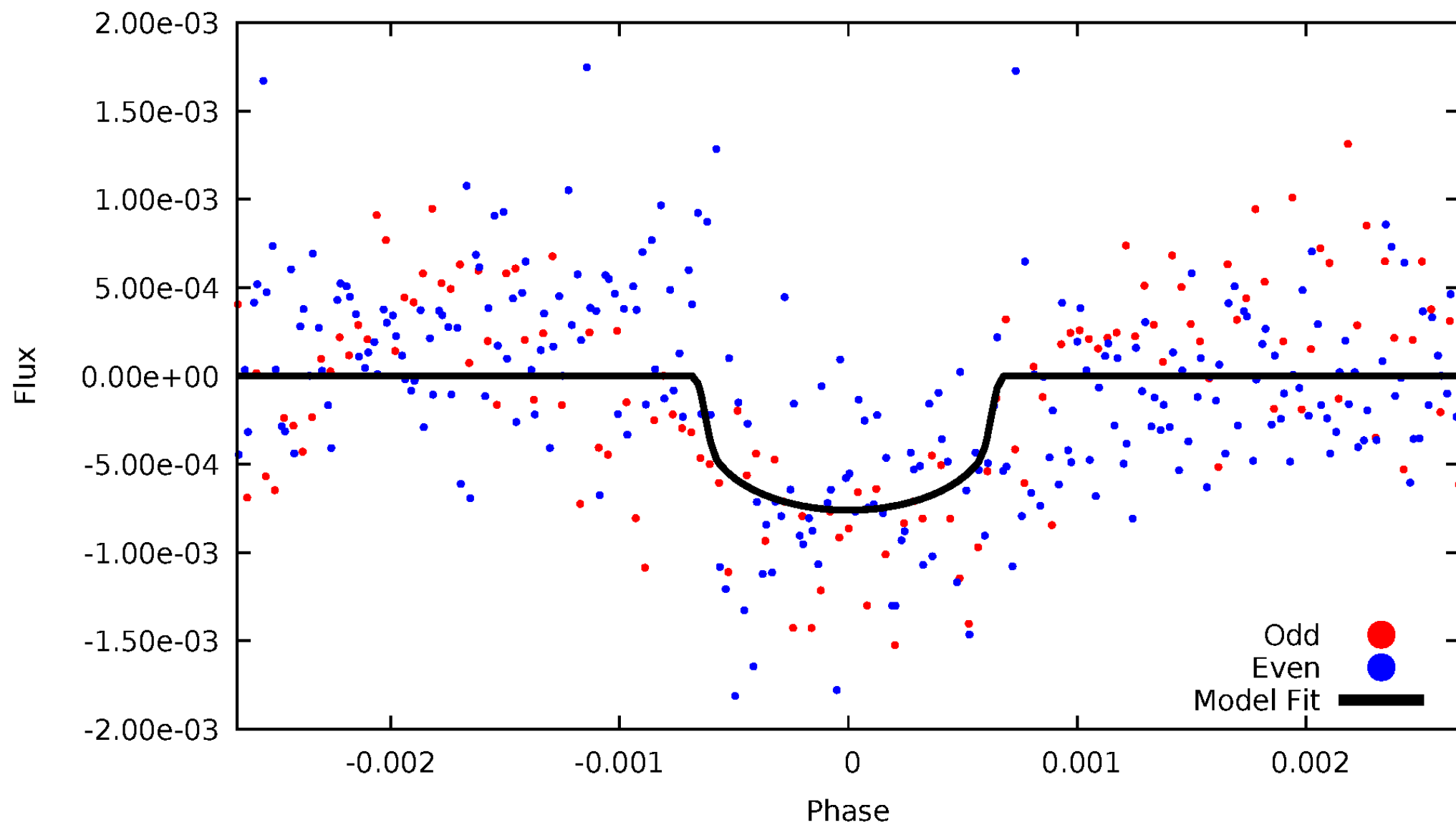


TCE 006280959-01



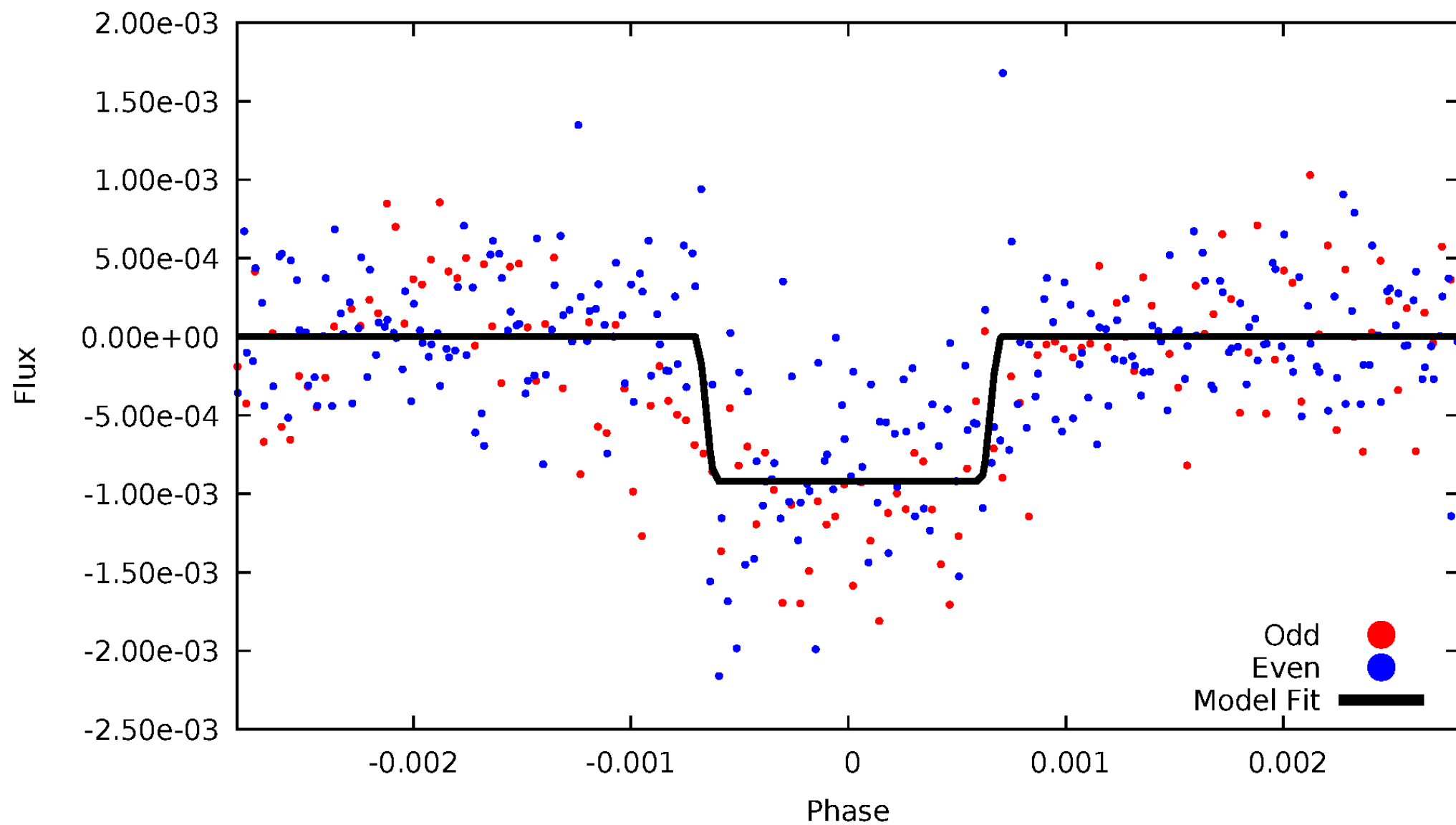
DV Odd/Even

TCE 006280959-01



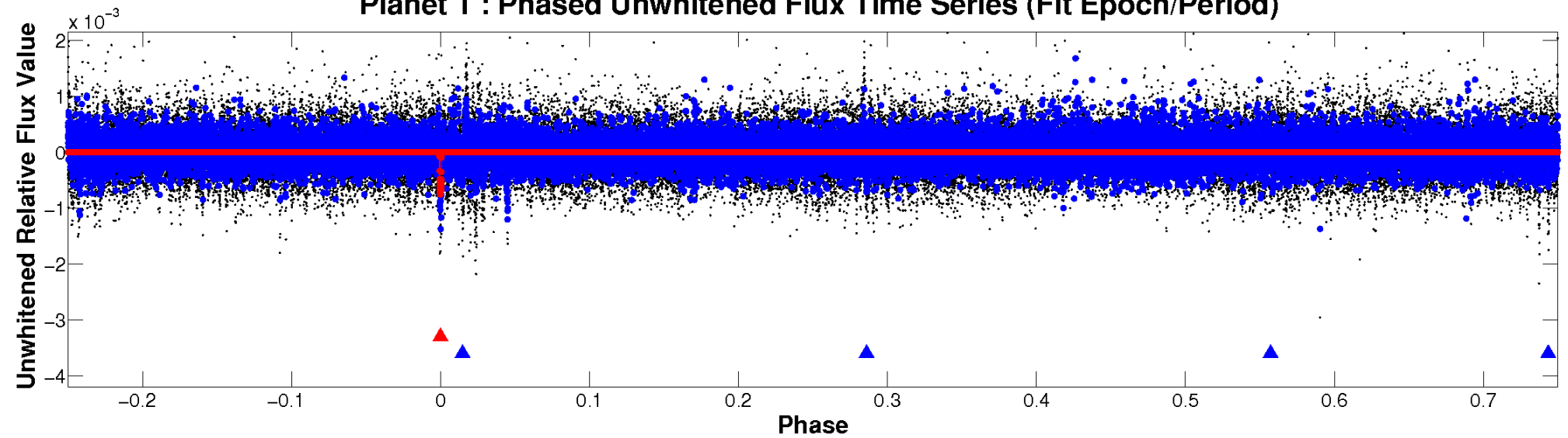
ALT Odd/Even

TCE 006280959-01

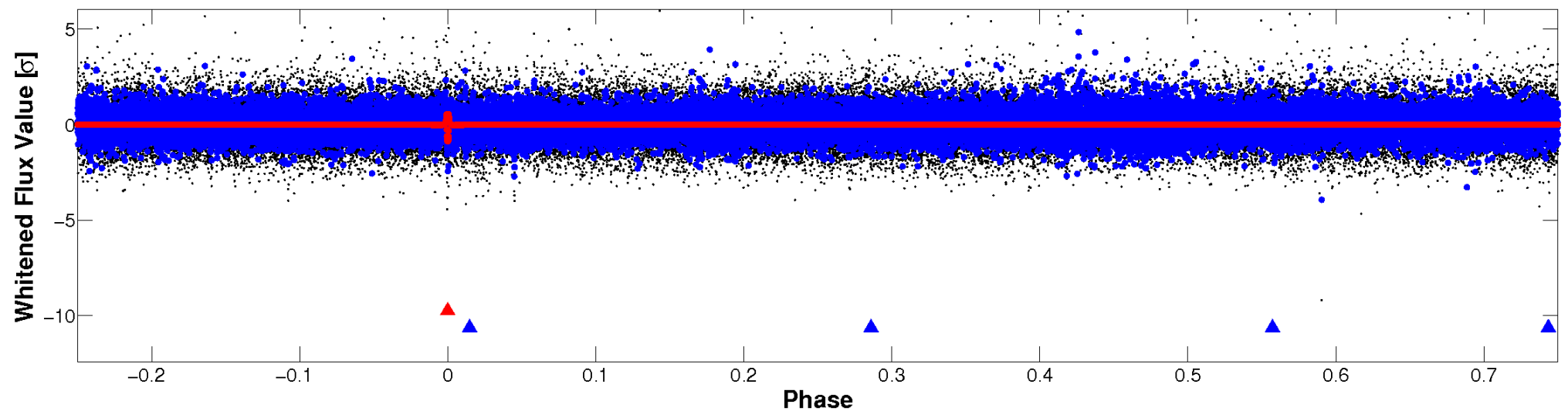


Non-Whitened Vs. Whitened Light Curve

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

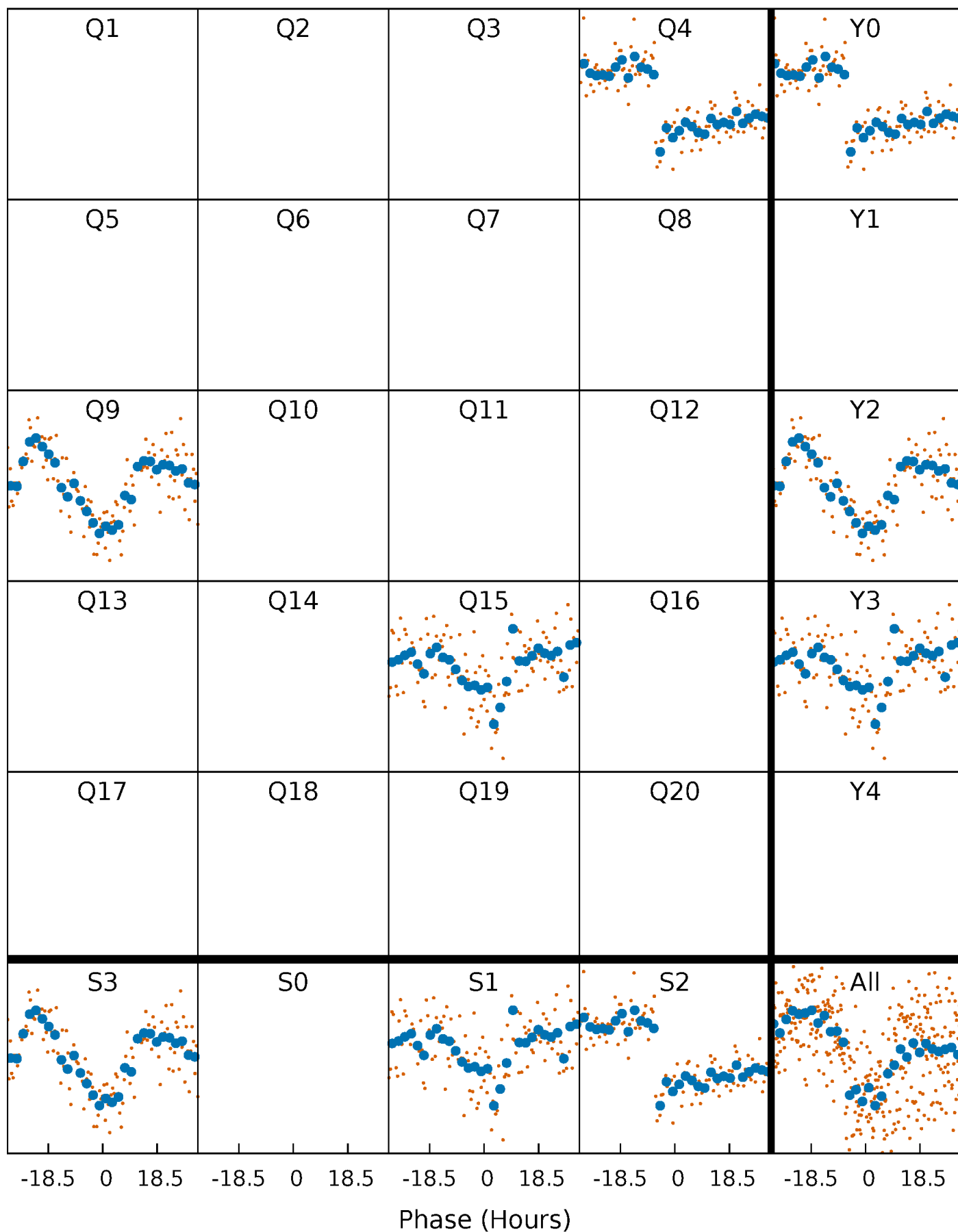


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



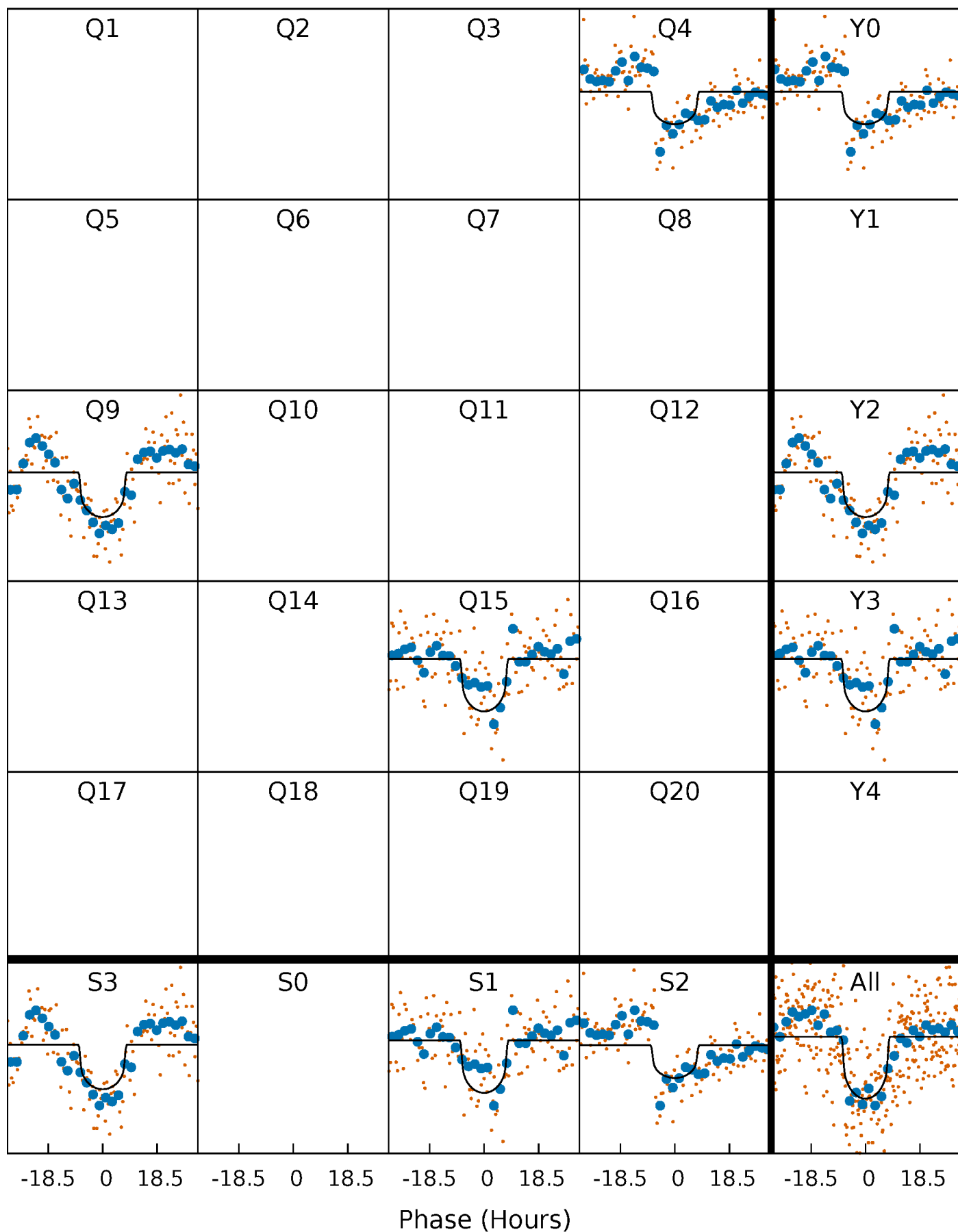
PDC Quarter-Phased Transit Curves

TCE 006280959-01 P=505.464311 Days $T_0=378.106920$ (BKJD)



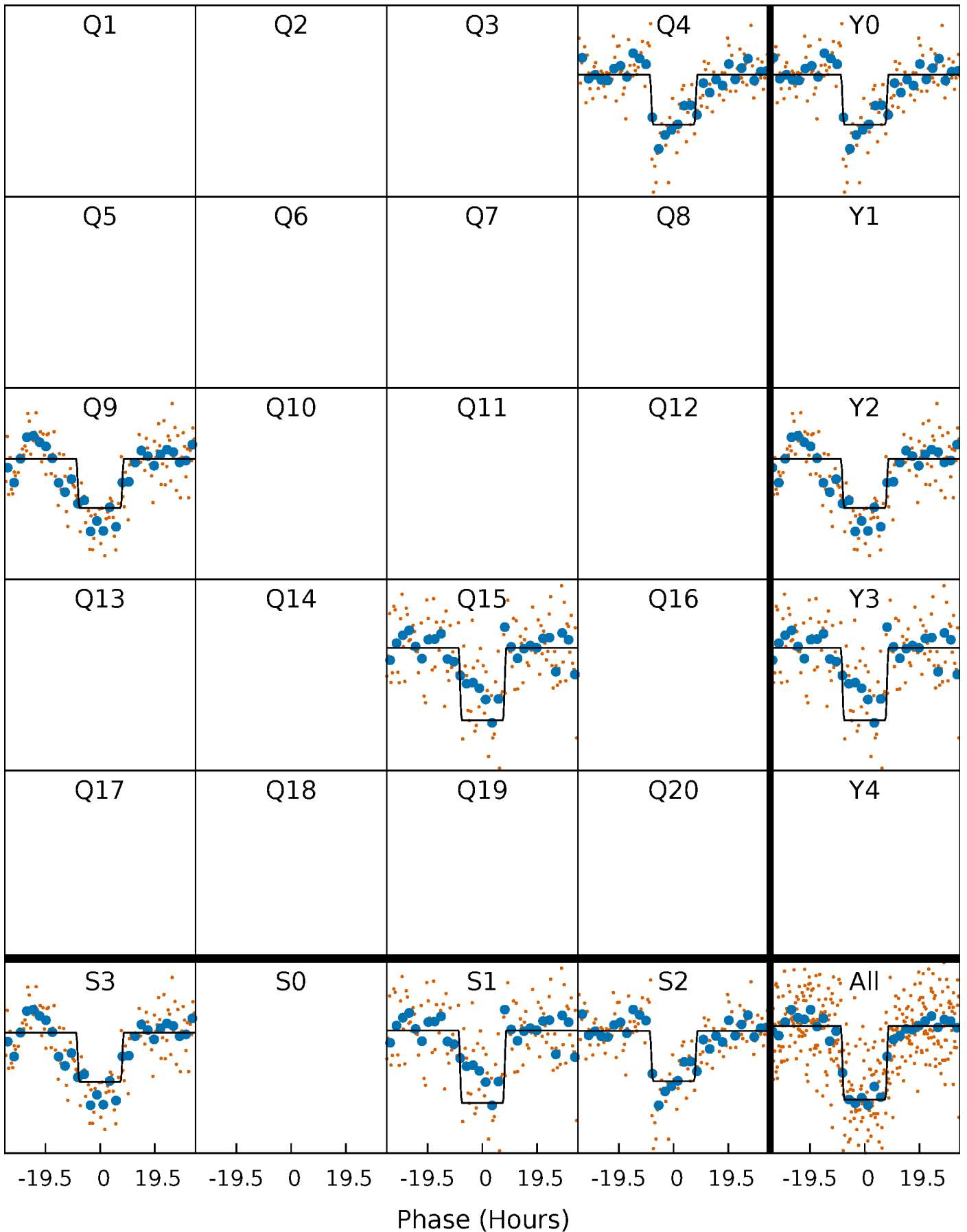
DV Quarter-Phased Transit Curves

TCE 006280959-01 P=505.464311 Days $T_0=378.106920$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

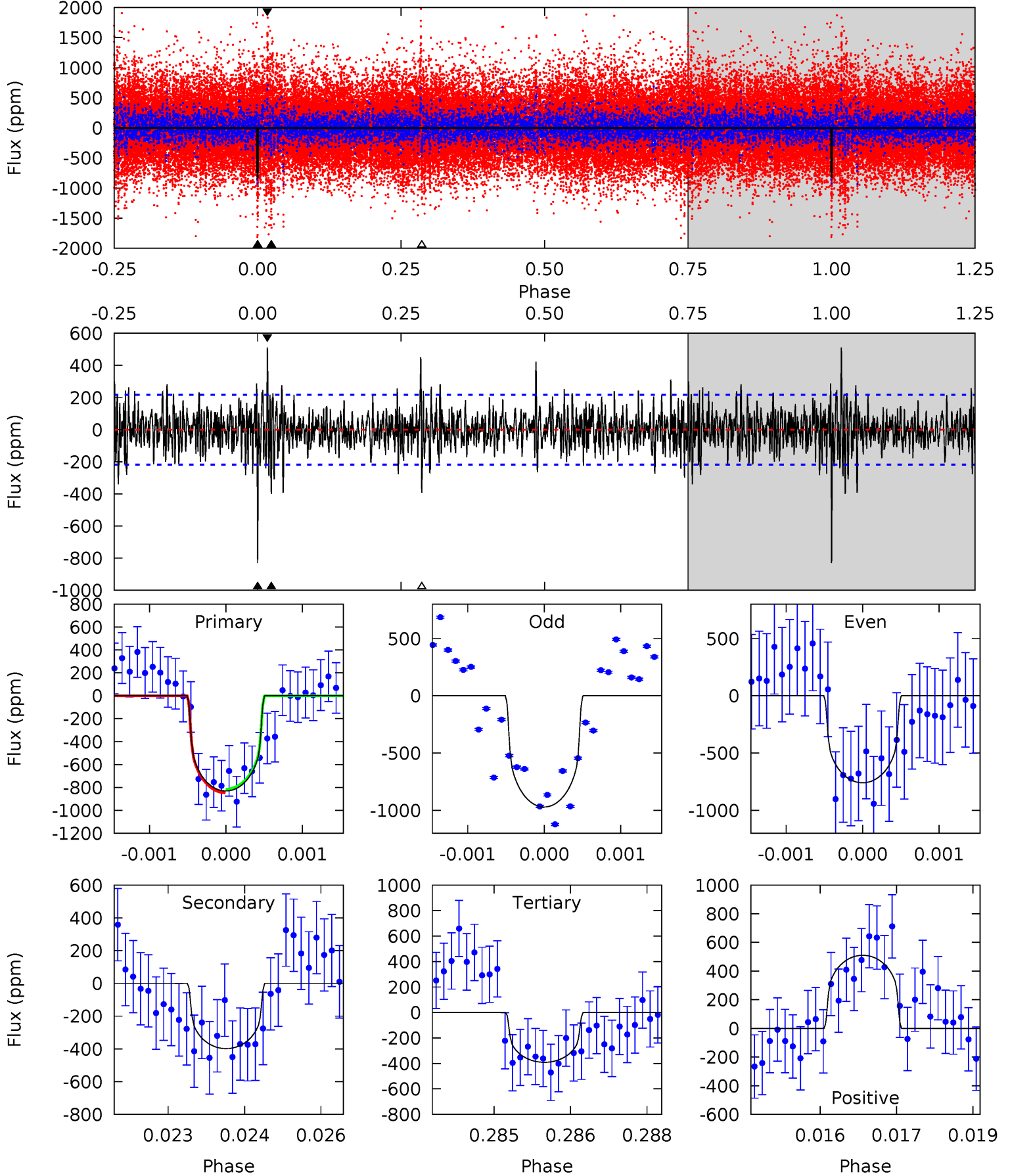
TCE 006280959-01 P=505.444540 Days $T_0=378.157230$ (BKJD)



DV Model-Shift Uniqueness Test

006280959-01, P = 505.464311 Days, E = 378.106920 Days

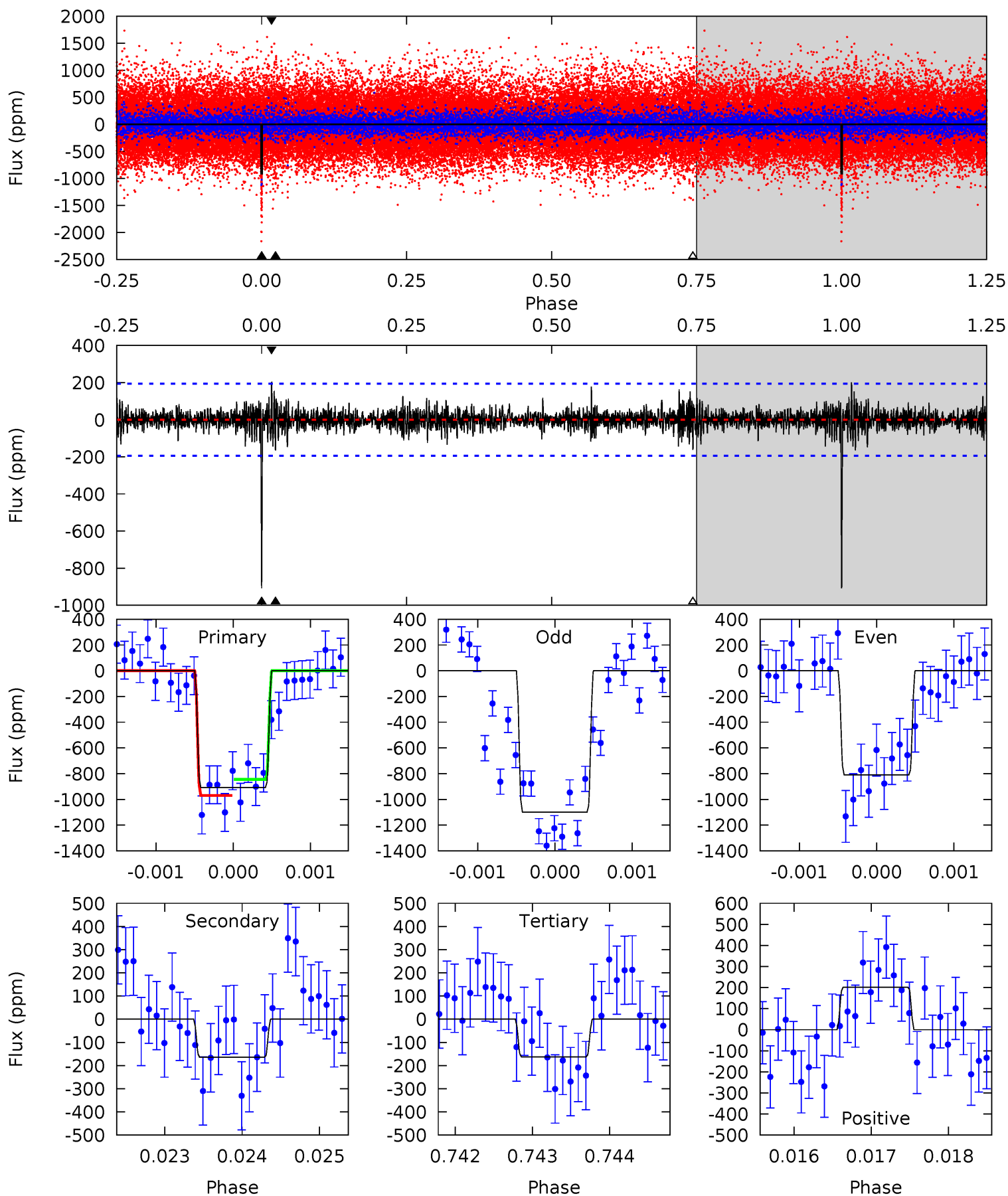
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.6	9.89	9.71	12.7	5.40	3.21	2.41	10.9	7.96	0.18	-2.78	2.46	0.92	0.38	0.40



Alt Model-Shift Uniqueness Test

006280959-01, P = 505.444540 Days, E = 378.157230 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.2	4.57	4.51	5.59	5.39	3.19	1.04	20.7	19.6	0.06	-1.02	3.75	0.89	0.18	1.72



Stellar Parameters For KIC 006280959

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4837^{+144}_{-144}	$4.517^{+0.078}_{-0.045}$	$0.240^{+0.200}_{-0.300}$	$0.808^{+0.049}_{-0.074}$	$0.782^{+0.060}_{-0.054}$	$2.088^{+0.680}_{-0.294}$
	+3%/-3%	+2%/-1%	+83%/-125%	+6%/-9%	+8%/-7%	+33%/-14%
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 006280959-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-398 ± 40	$2.40^{+0.54}_{-0.53}$	249^{+9}_{-9}	4293^{+453}_{-350}	51535^{+32545}_{-18245}
Alt.	-165 ± 36	$2.68^{+0.51}_{-0.59}$	250^{+9}_{-10}	3530^{+320}_{-251}	16619^{+11736}_{-6176}

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

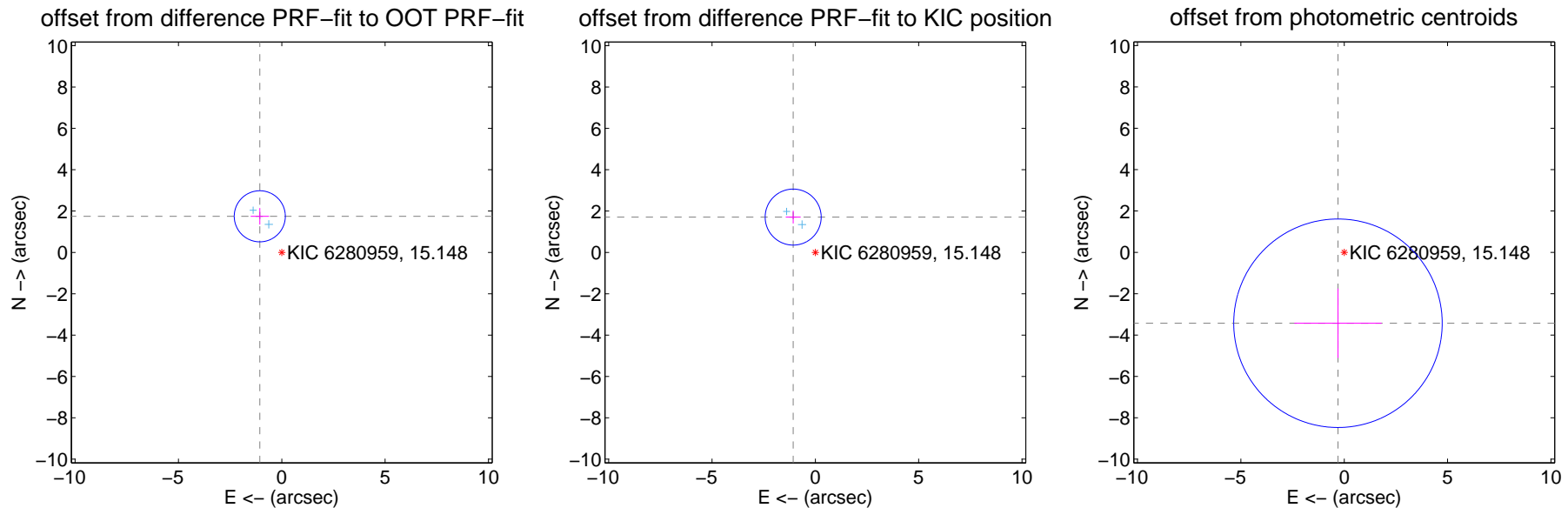
DV Centroid Data

Supplemental centroid analysis for 006280959-01. Kepler magnitude: 15.15. Transit SNR 7.88

There are 2 quarters with good PRF difference image offsets

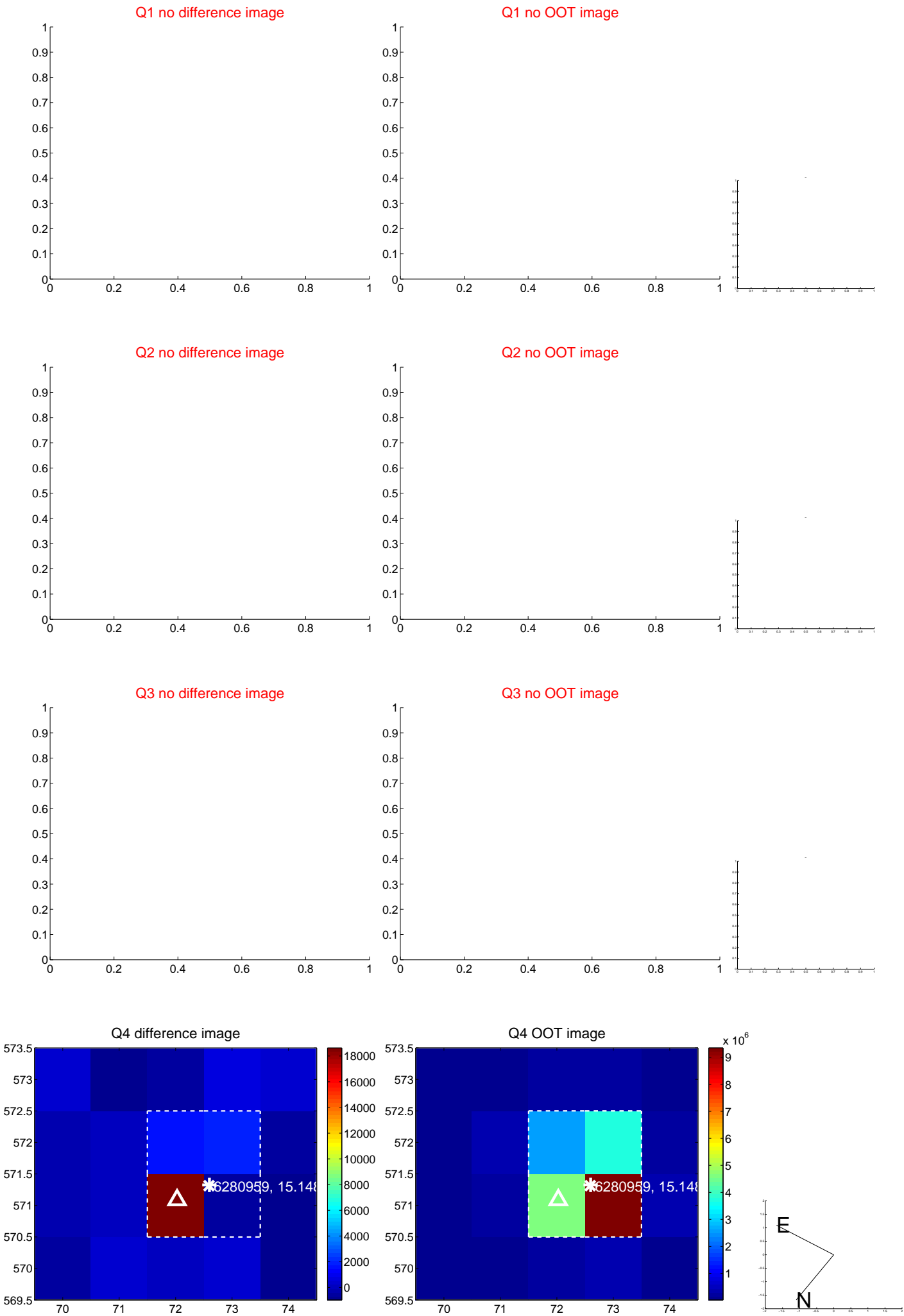
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.046 ± 0.412	4.97	1.064 ± 0.443	1.748 ± 0.400
PRF-fit source offset from KIC position	2.018 ± 0.452	4.47	1.073 ± 0.363	1.709 ± 0.311
photometric centroid source offset	3.44 ± 1.68	2.05	0.30 ± 2.11	-3.43 ± 1.68



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.

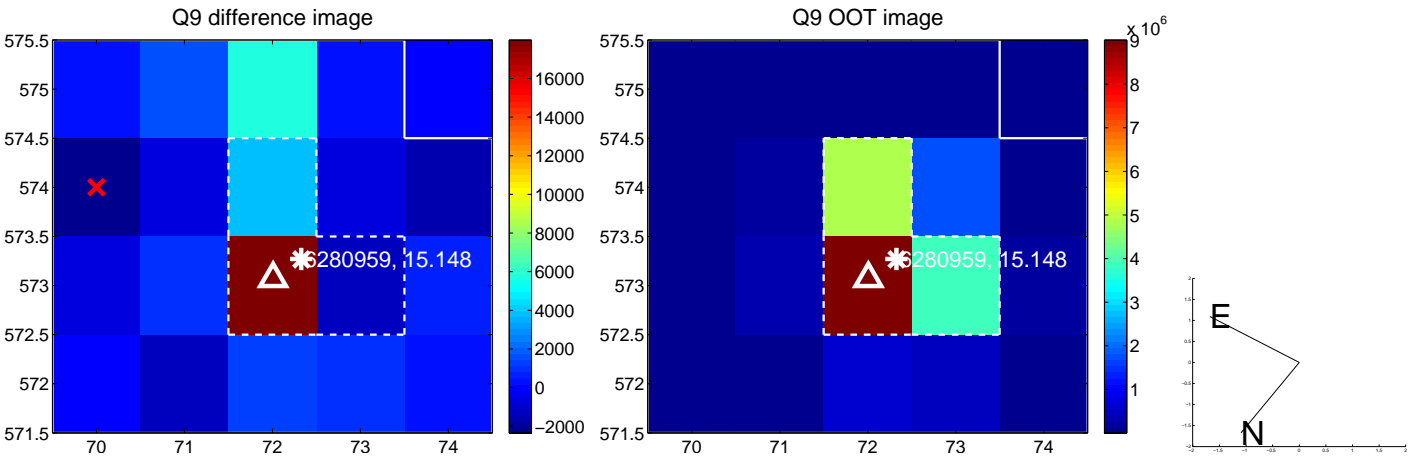
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



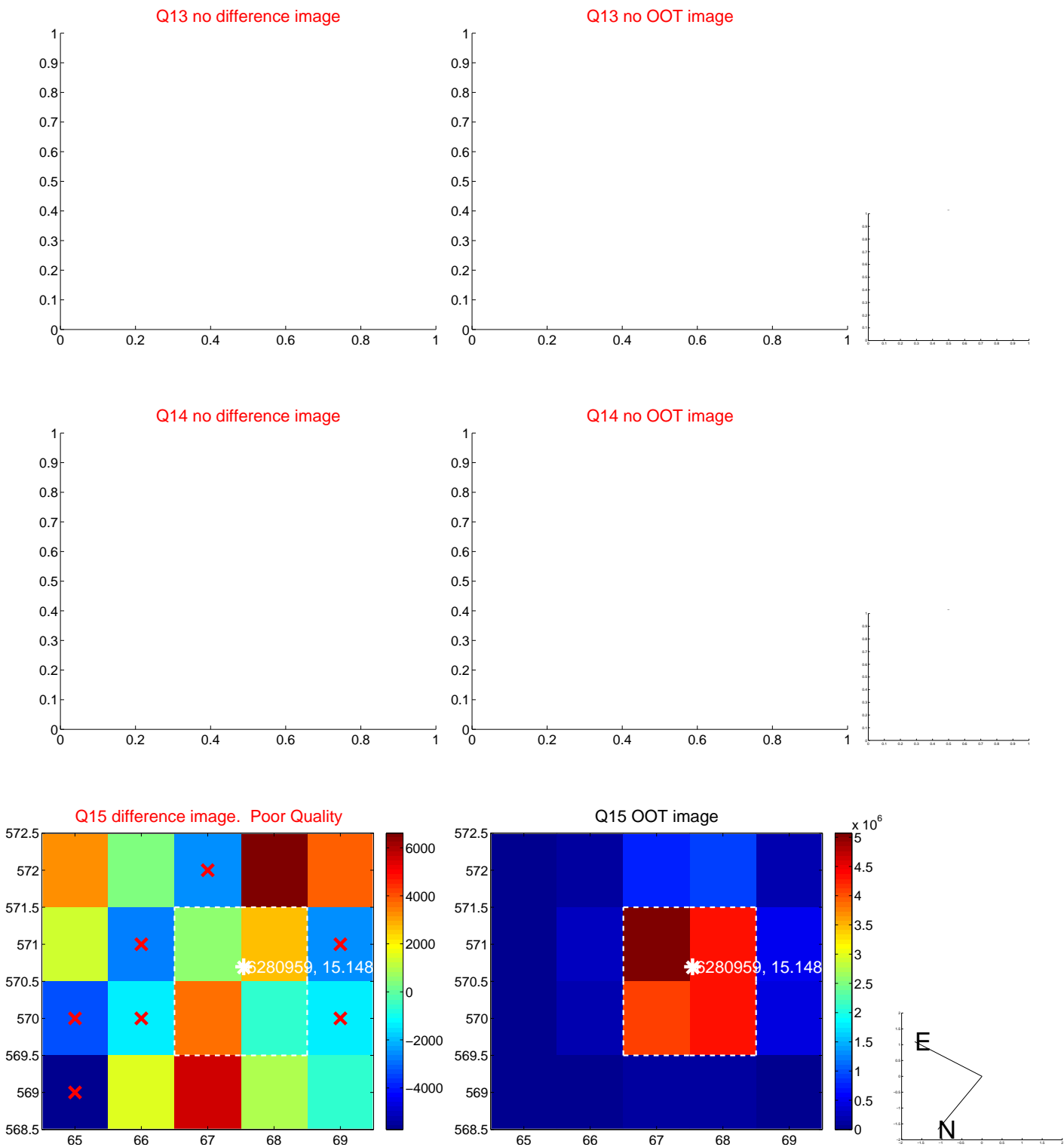
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



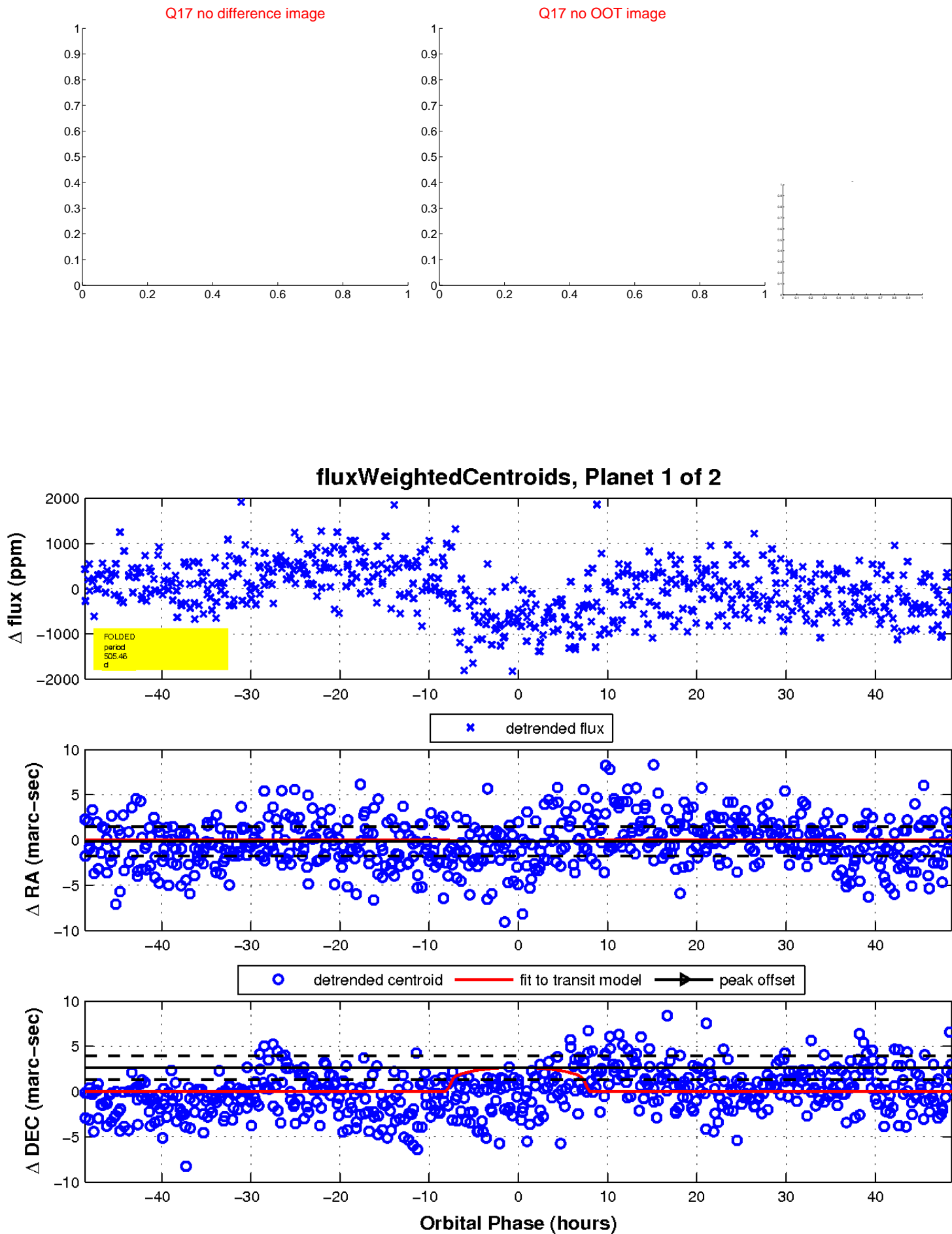
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



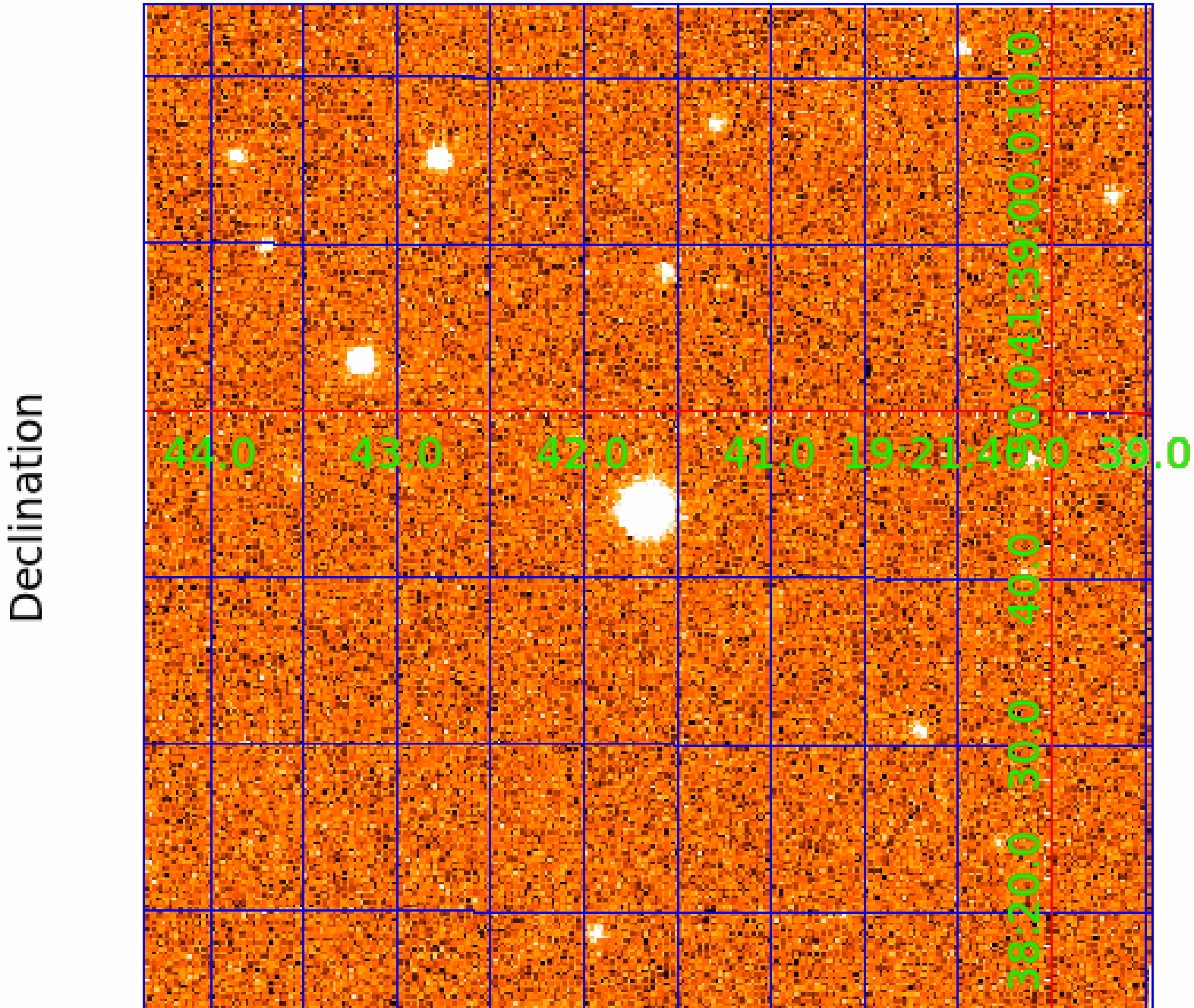
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image



KIC 006280959

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})
006280959-01	OBS	No	505.464311	378.106920	759.8	16.198	9.4	7.9	0.81	4837	2.42	0.24
006280959-02	OBS	No	368.374584	154.302631	915.7	31.636	7.3	8.3	0.81	4837	5.04	0.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006280959-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006280959-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST

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

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

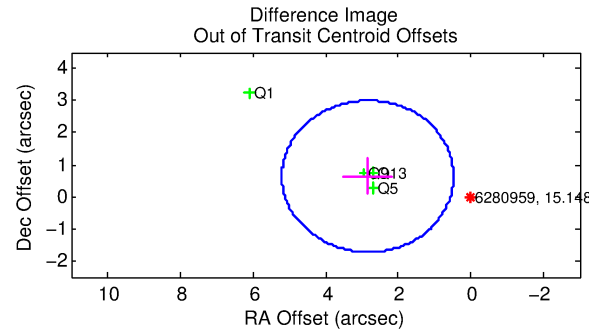
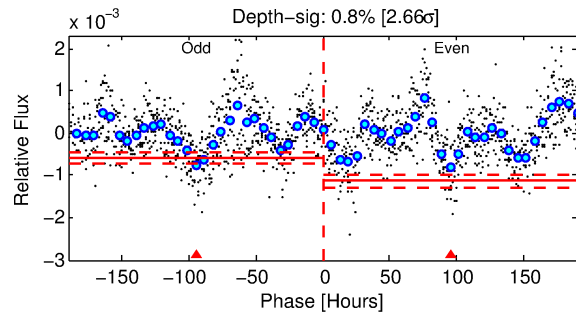
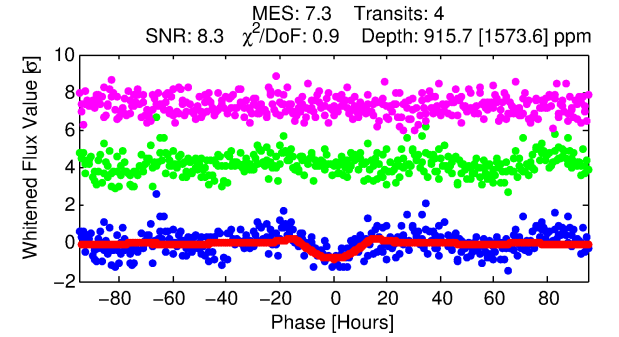
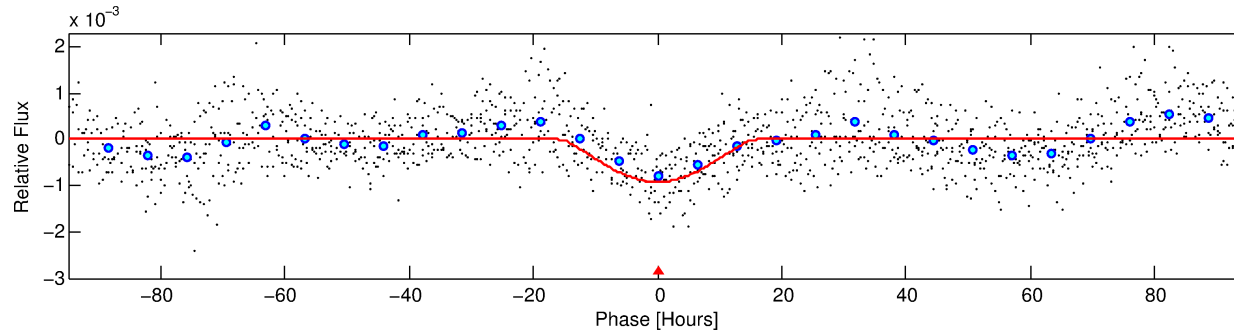
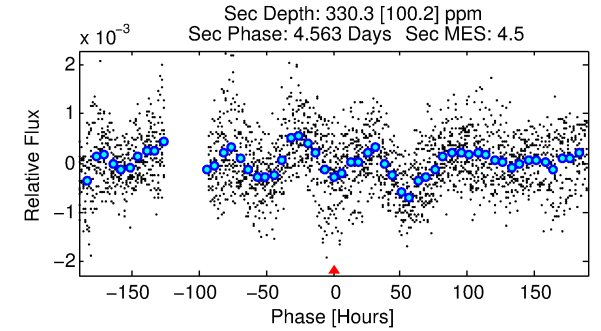
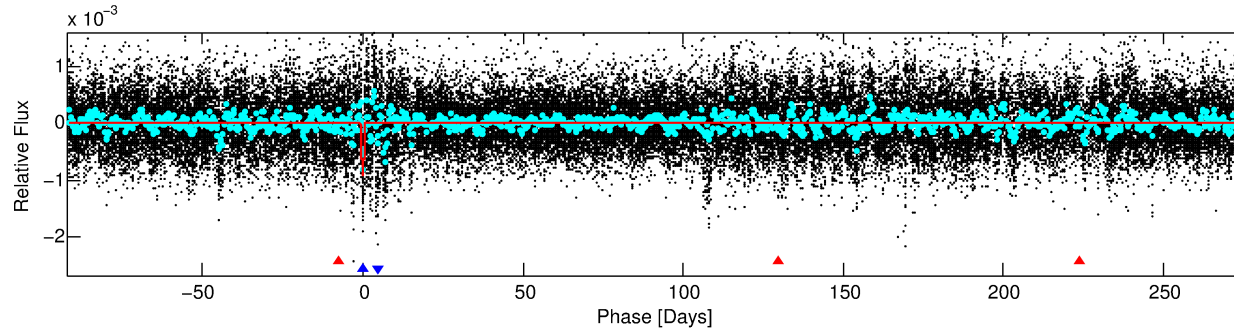
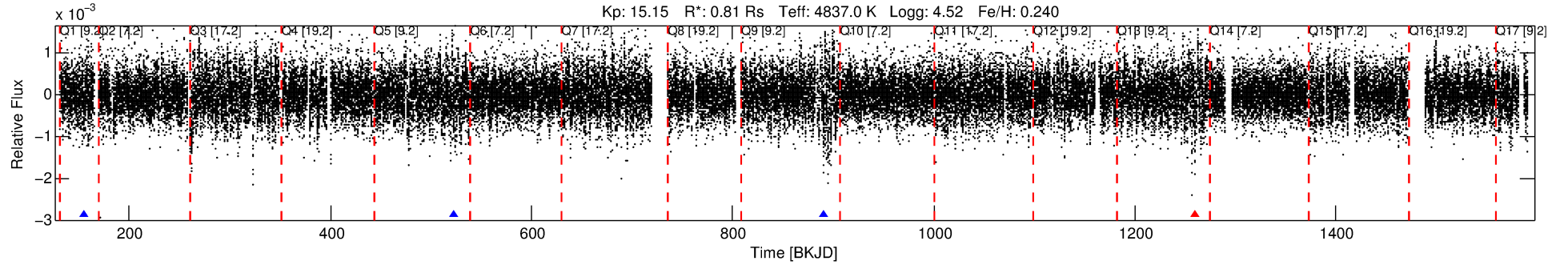
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006280959-02

No Significant Match Found

DV One-Page Summary

KIC: 6280959 Candidate: 2 of 2 Period: 368.375 d



DV Fit Results:

Period = 368.37458 [0.03238] d
Epoch = 154.3026 [0.0571] BKJD
Rp/R* = 0.0572 [0.1467]
a/R* = 30.54 [17.61]
b = 1.00 [0.27]
Seff = 0.37 [0.07]
Teq = 199 [9] K
Rp = 5.04 [12.94] Re
a = 0.9272 [0.0793] AU
Ag = 6138.58 [31546.08] [0.19σ]
Teffp = 2726 [3502] K [0.72σ]

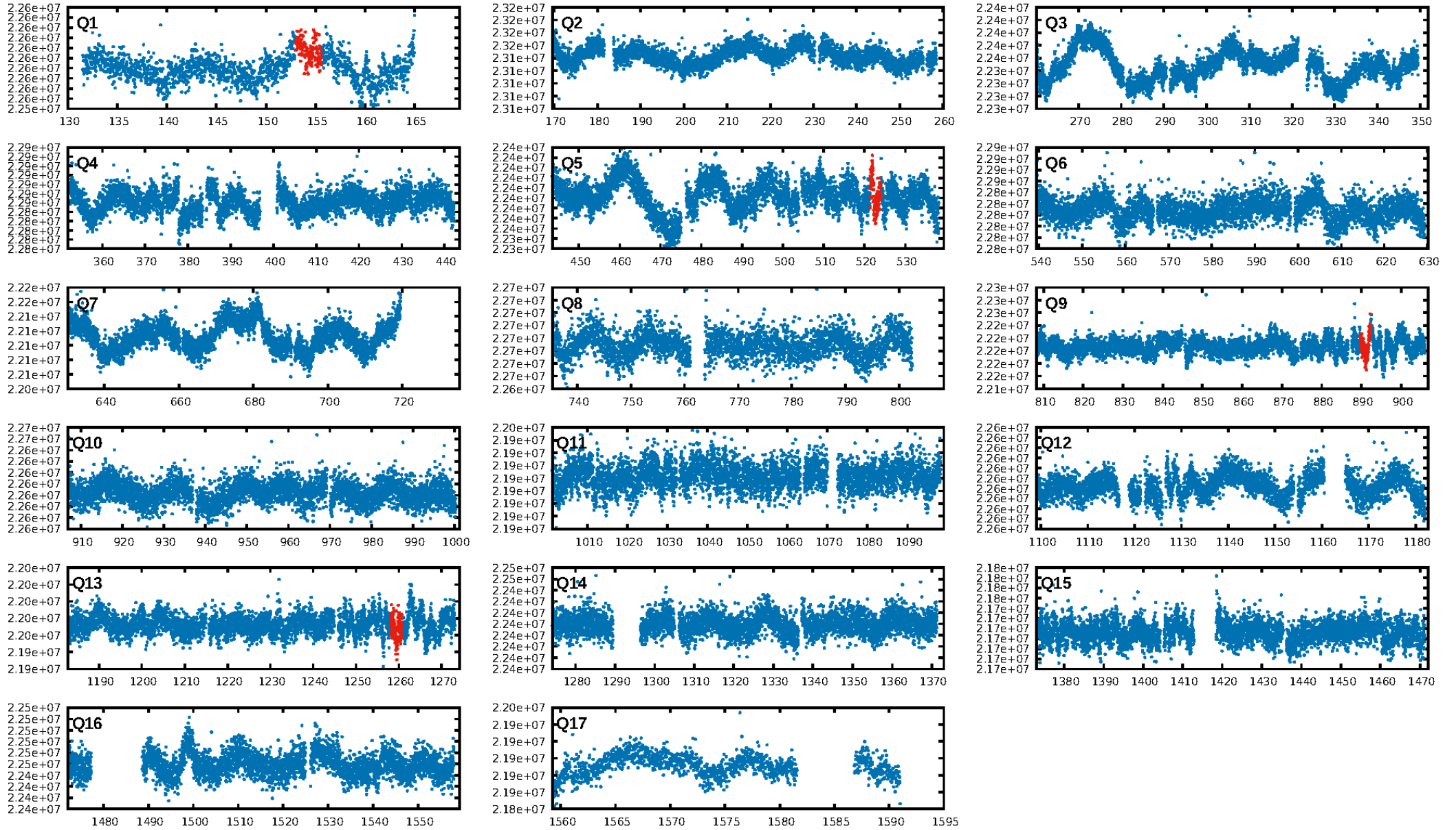
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [92.57σ]
ModelChiSquare2-sig: 14.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.21e-08
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: -0.2235
Centroid-sig: 0.0%
Centroid-so: 3.328 arcsec [3.04σ]
OotOffset-rm: 2.908 arcsec [3.69σ]
KicOffset-rm: 2.901 arcsec [4.16σ]
OotOffset-st: 0/0/0/4 [4]
KicOffset-st: 0/0/0/4 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 1.00 [4/4]

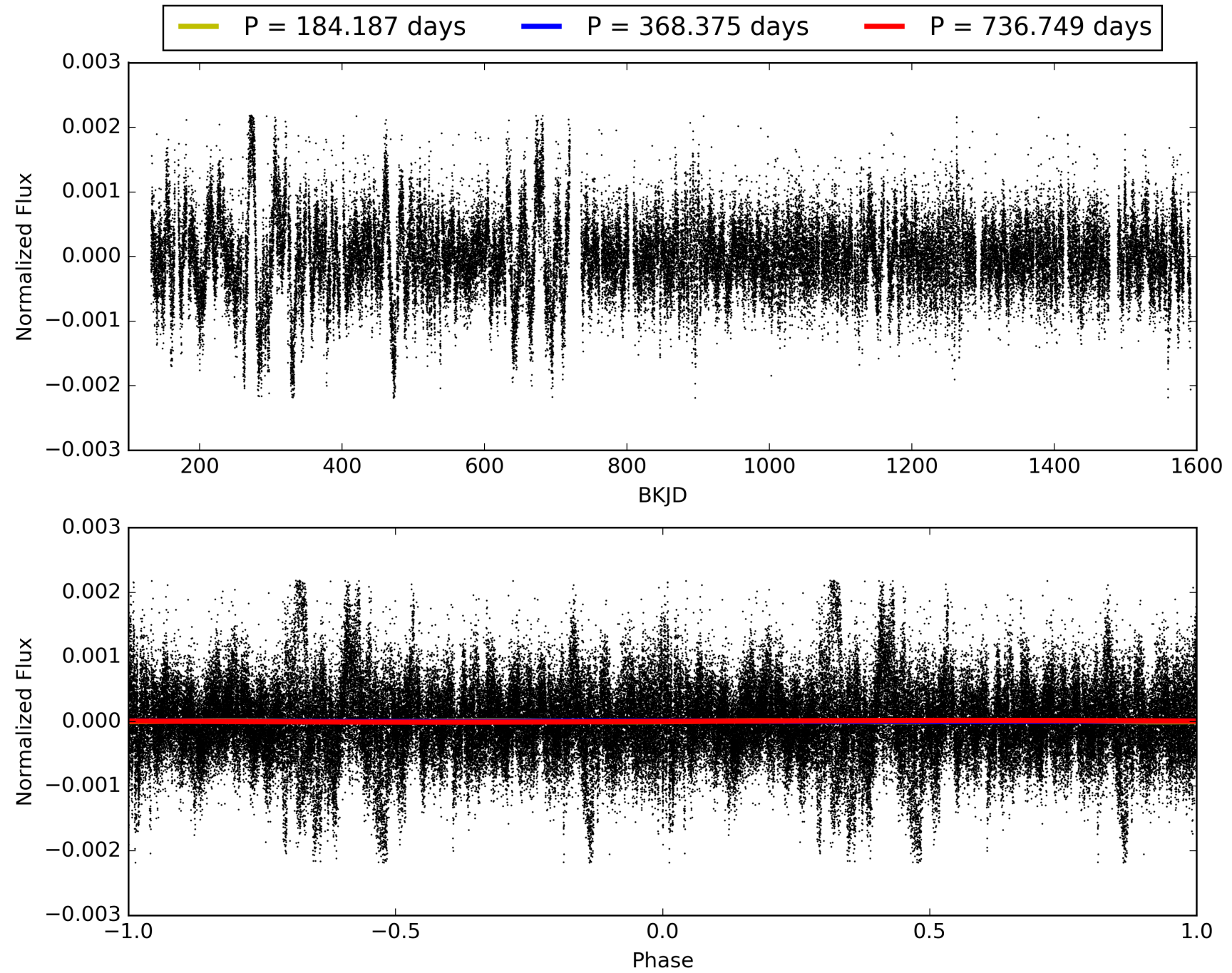
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:17:53 Z

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

TCE 006280959-02, PDC Light Curves

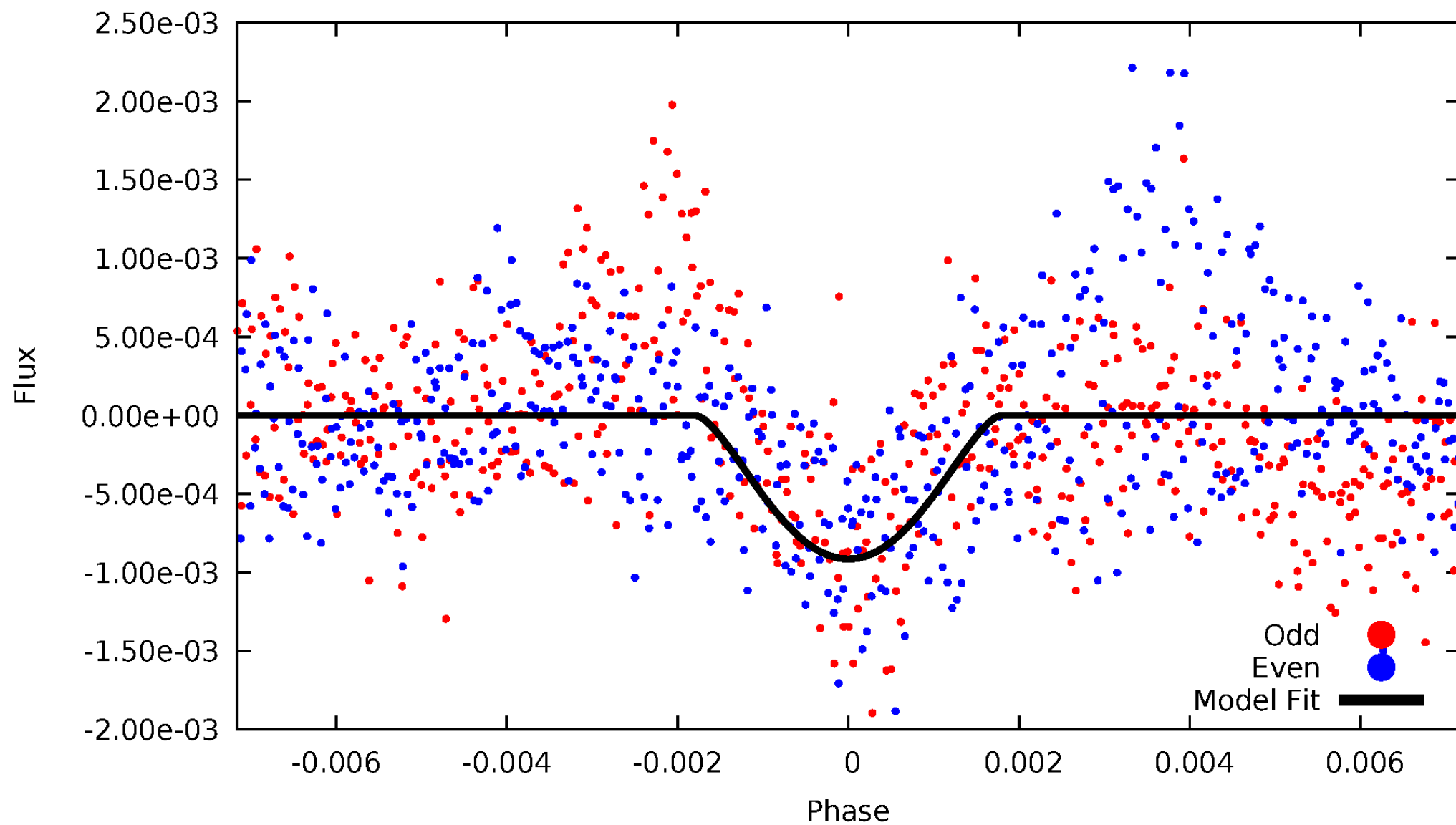


TCE 006280959-02



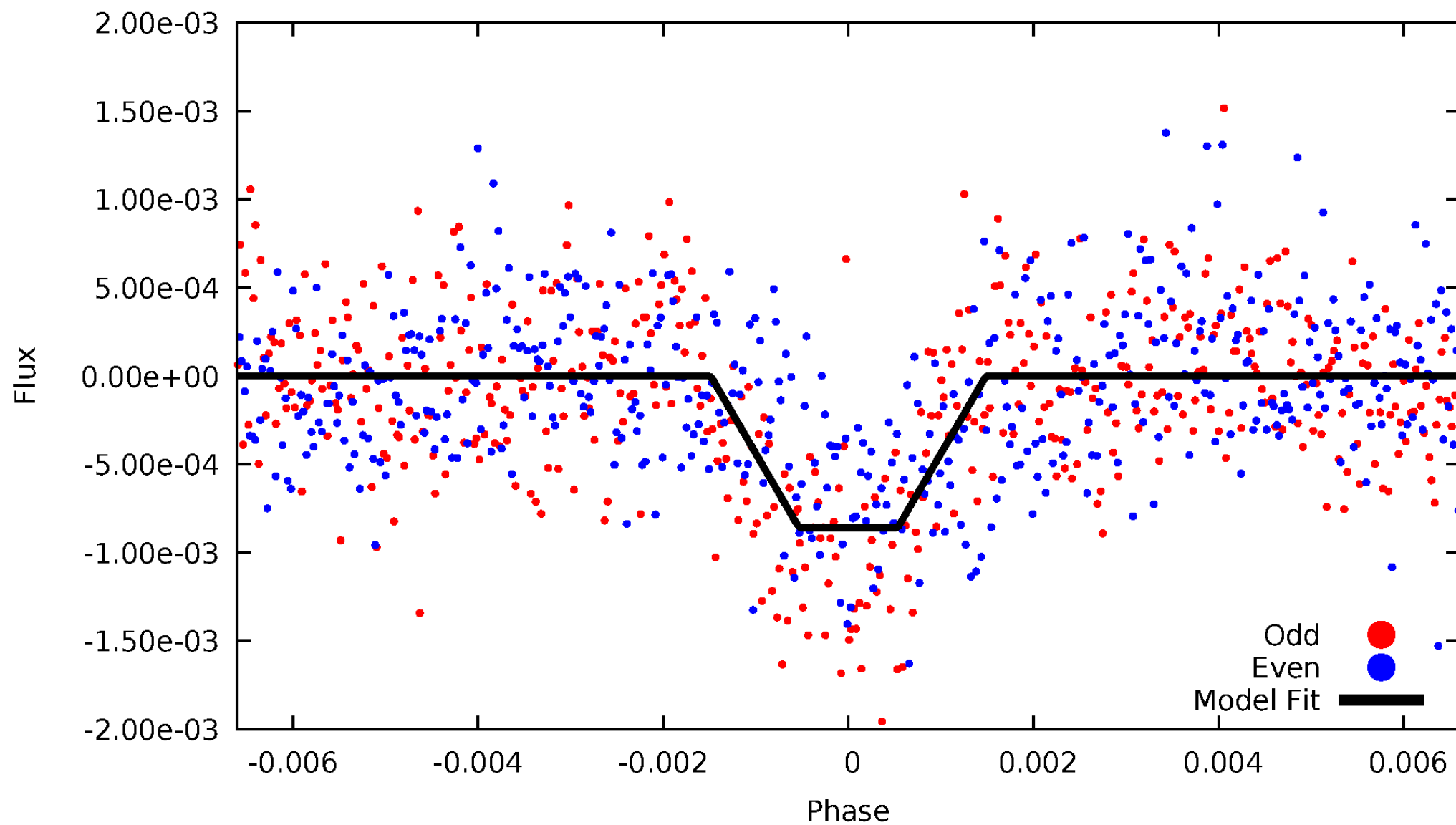
DV Odd/Even

TCE 006280959-02



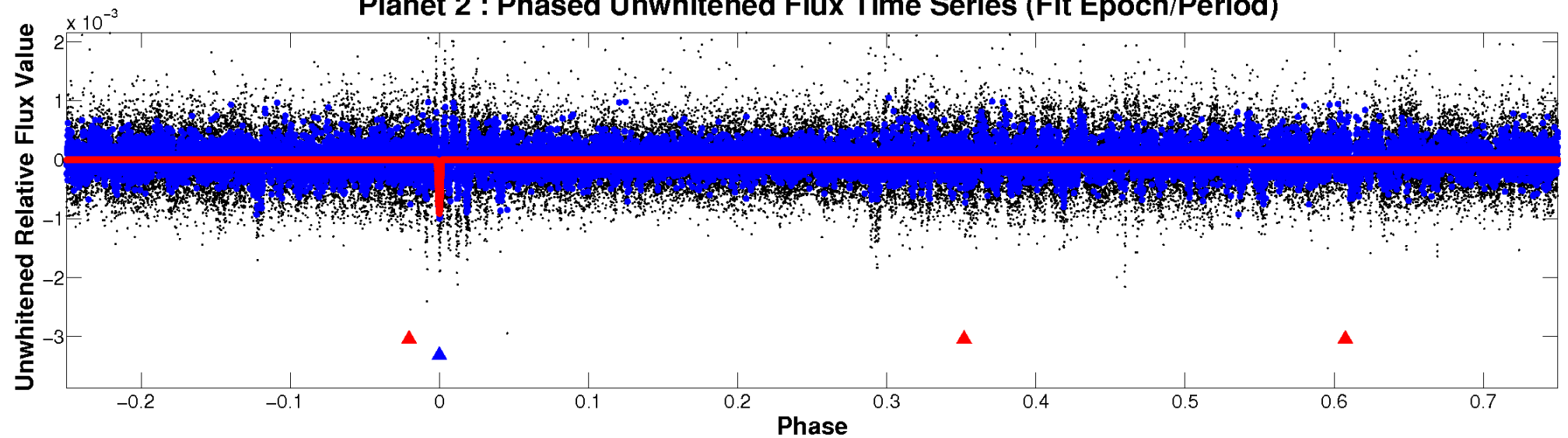
ALT Odd/Even

TCE 006280959-02

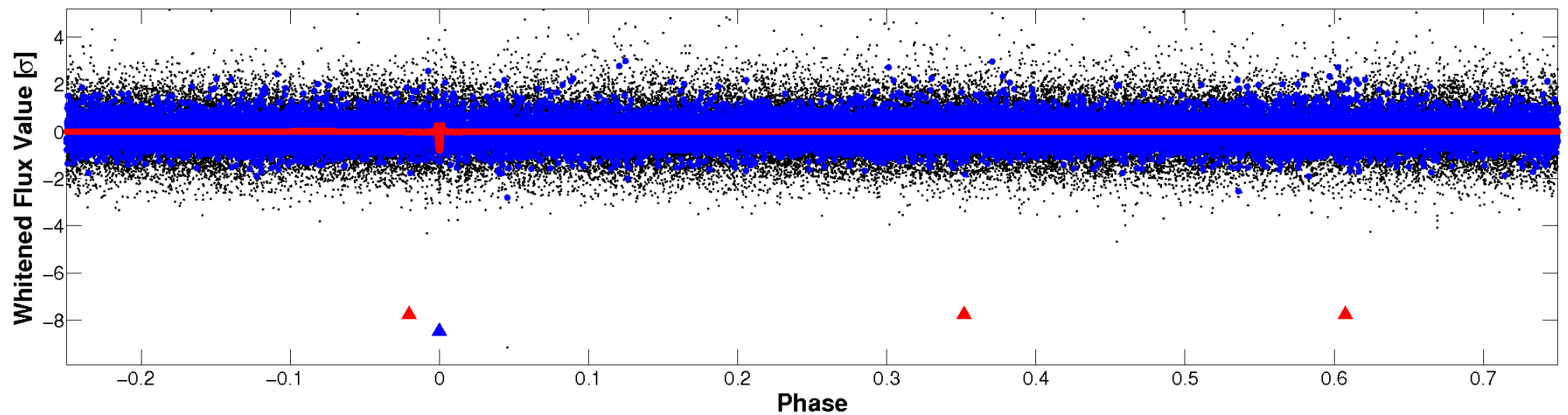


Non-Whitened Vs. Whitened Light Curve

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

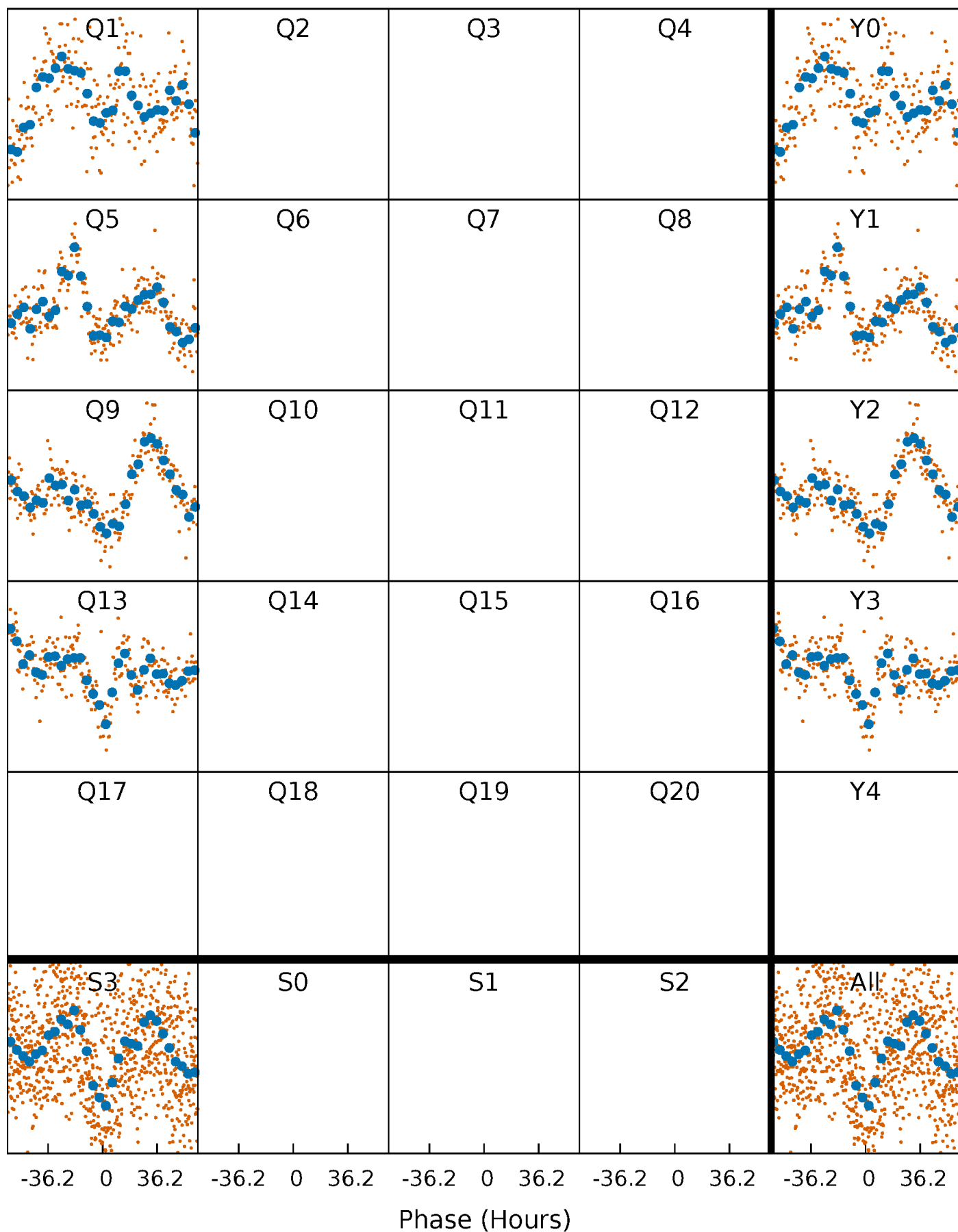


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



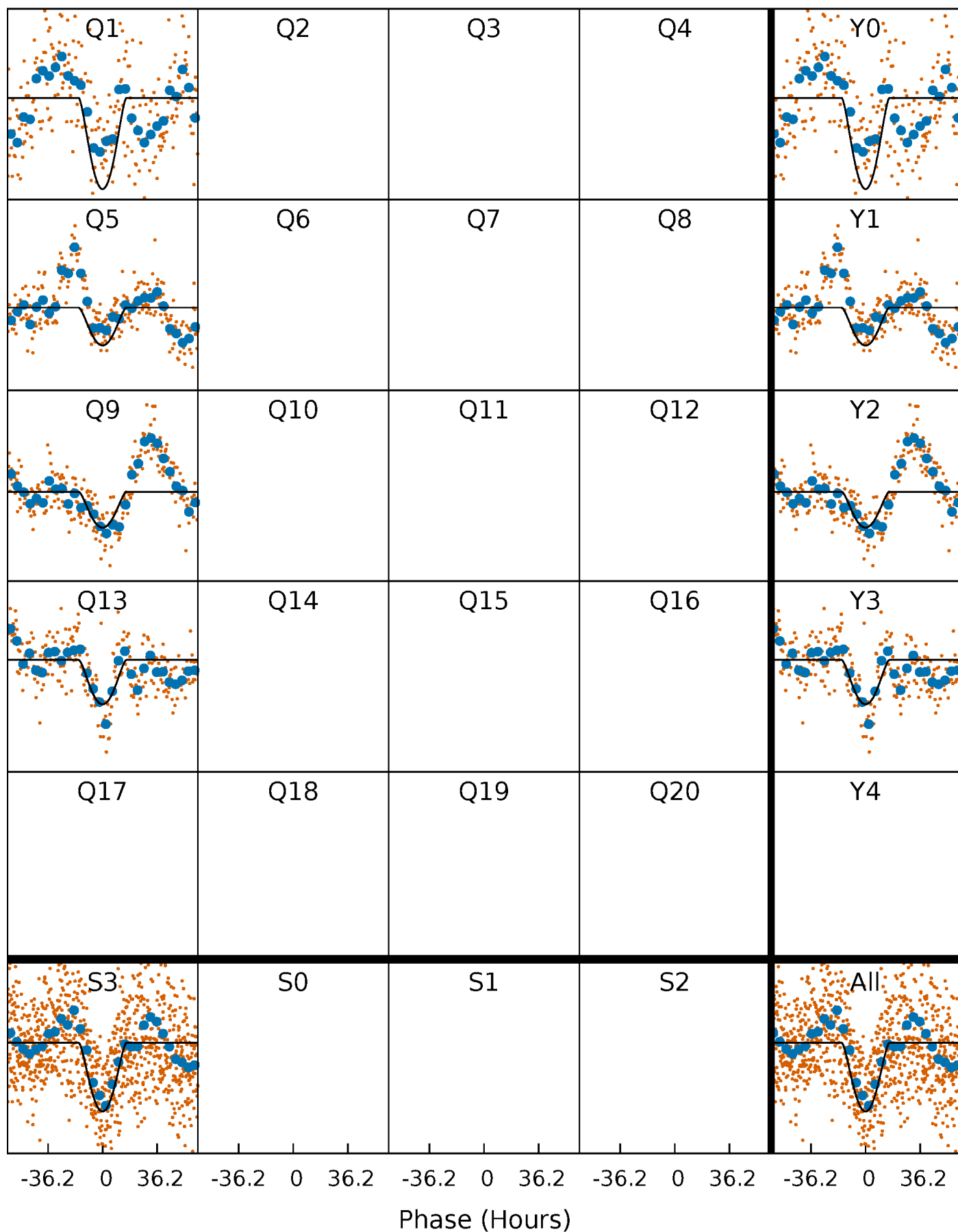
PDC Quarter-Phased Transit Curves

TCE 006280959-02 $P=368.374584$ Days $T_0=154.302631$ (BKJD)



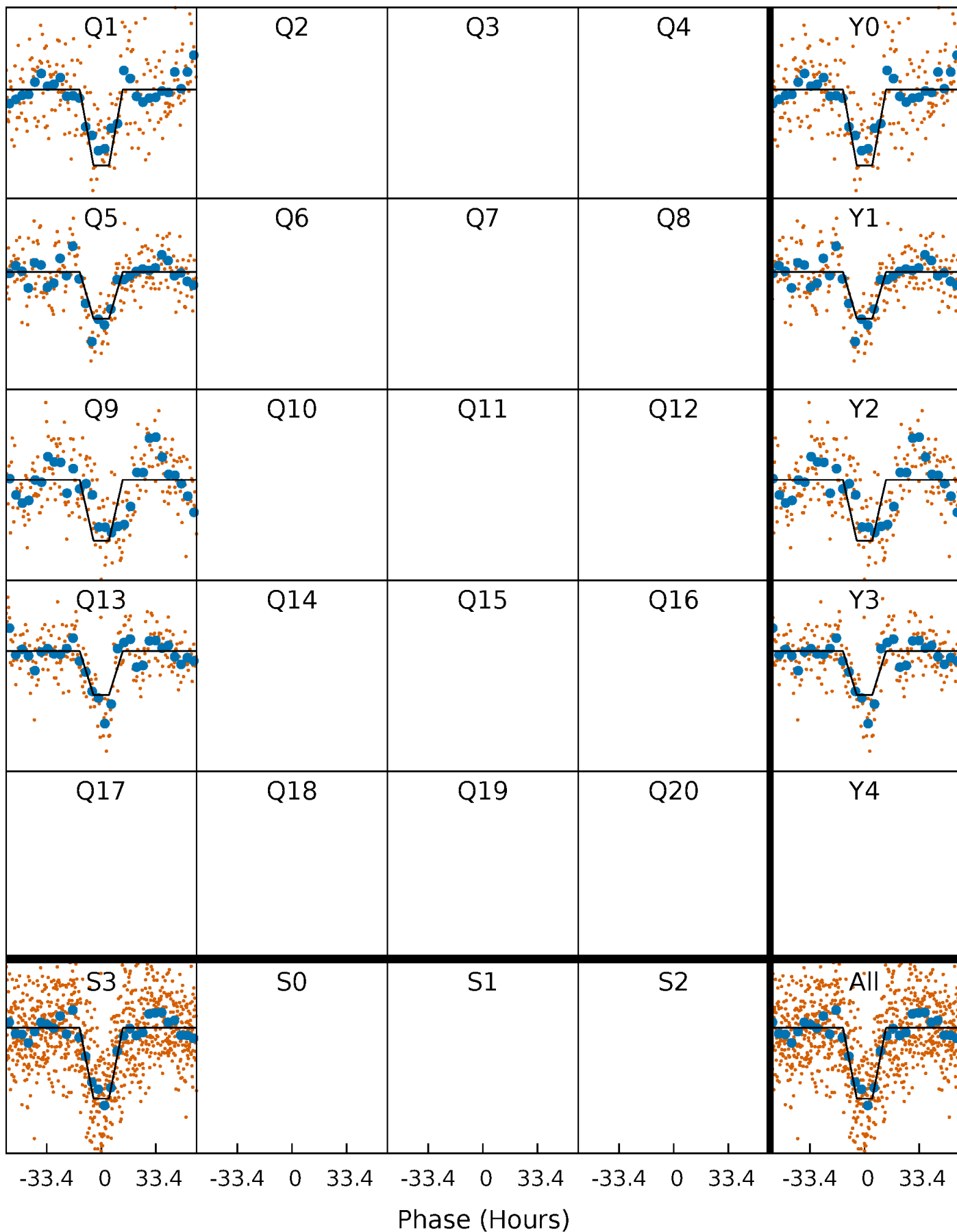
DV Quarter-Phased Transit Curves

TCE 006280959-02 $P=368.374584$ Days $T_0=154.302631$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

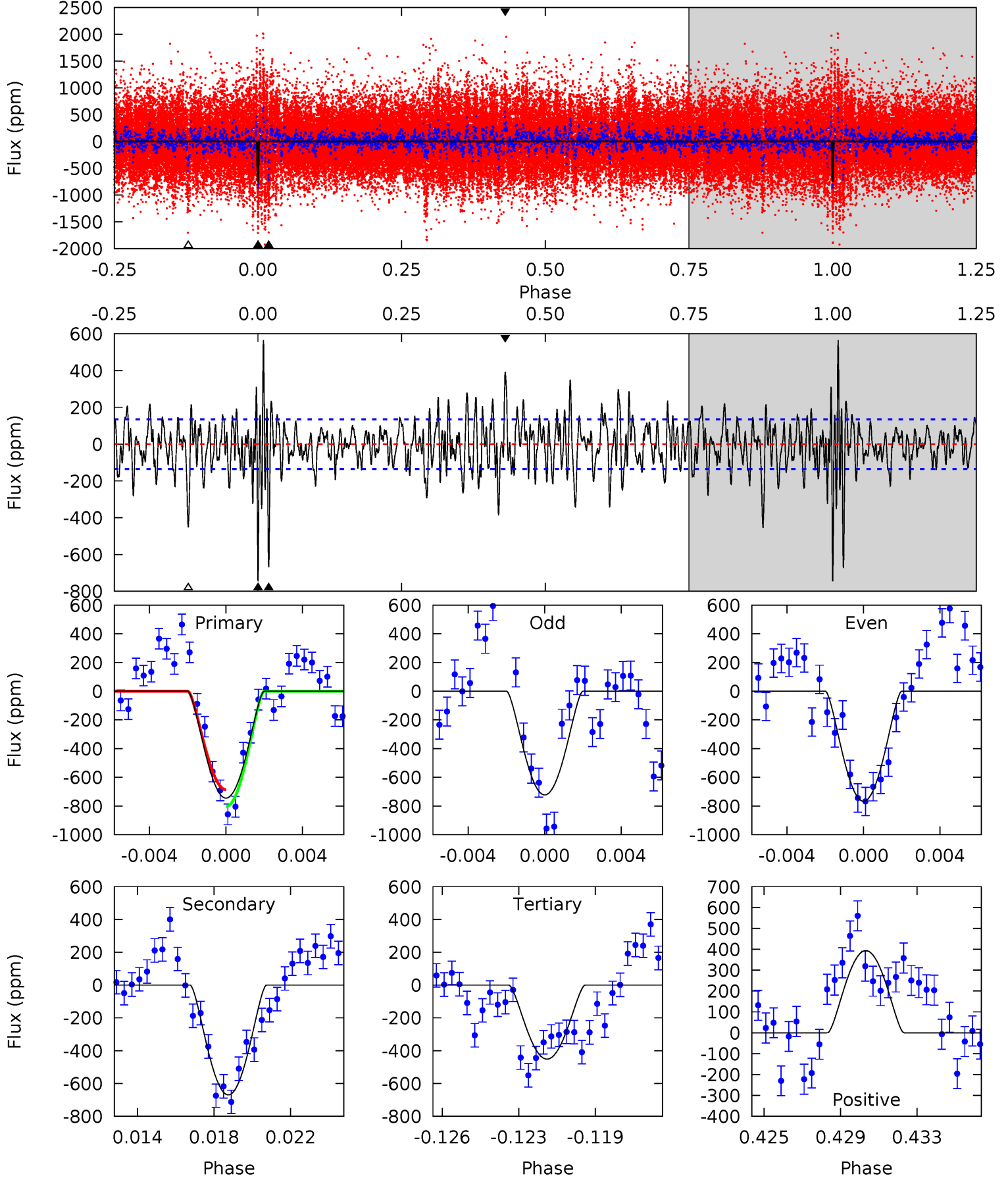
TCE 006280959-02 $P=368.383031$ Days $T_0=154.246573$ (BKJD)



DV Model-Shift Uniqueness Test

006280959-02, P = 368.374584 Days, E = 154.302631 Days

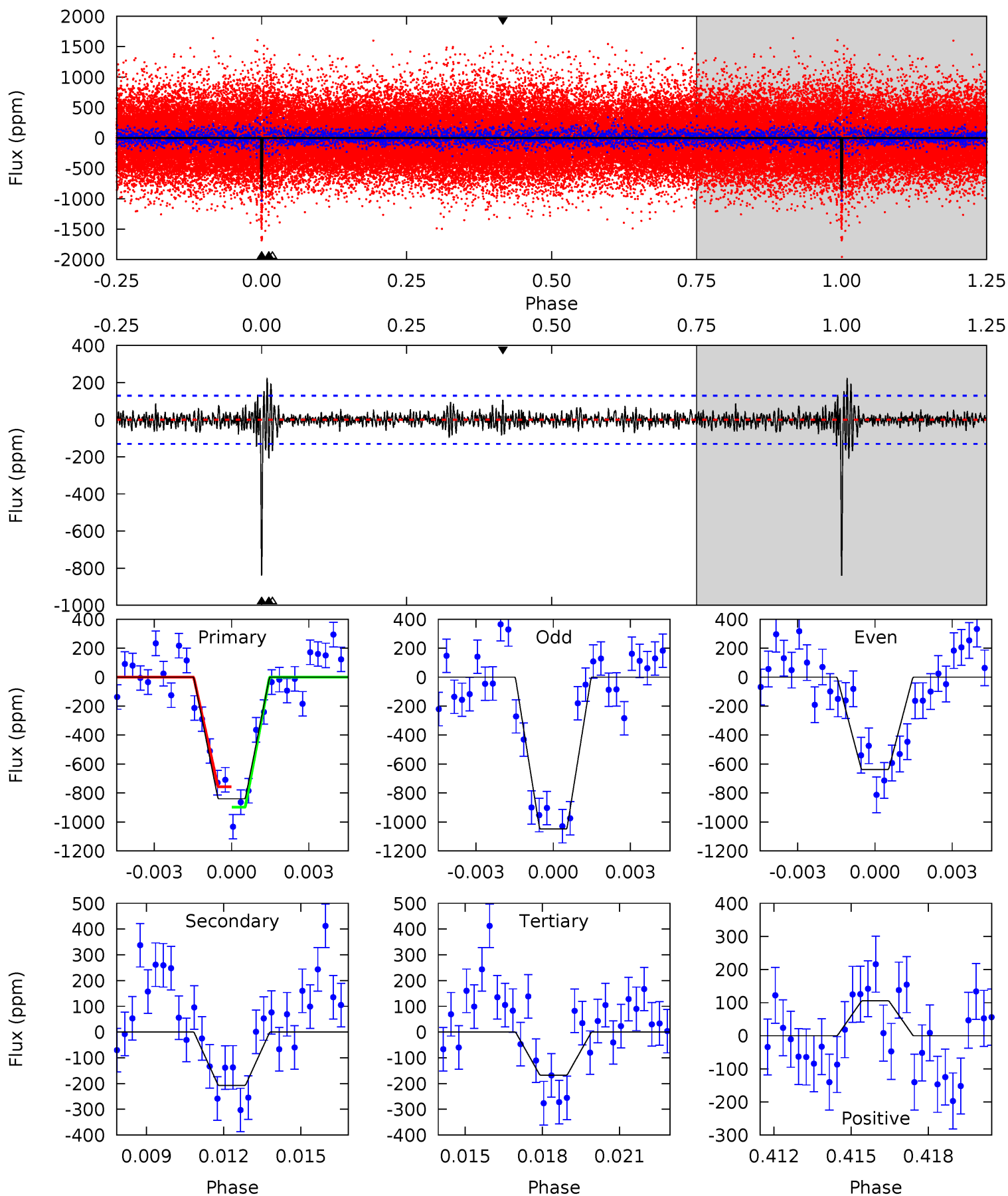
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.8	25.9	17.4	15.2	5.22	2.91	4.45	11.3	13.6	8.42	10.7	0.85	1.02	0.43	2.29



Alt Model-Shift Uniqueness Test

006280959-02, P = 368.383031 Days, E = 154.246573 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.9	8.37	6.76	4.26	5.25	2.96	1.21	27.2	29.7	1.61	4.11	8.34	1.00	0.21	2.86



Stellar Parameters For KIC 006280959

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4837^{+144}_{-144}	$4.517^{+0.078}_{-0.045}$	$0.240^{+0.200}_{-0.300}$	$0.808^{+0.049}_{-0.074}$	$0.782^{+0.060}_{-0.054}$	$2.088^{+0.680}_{-0.294}$
	+3%/-3%	+2%/-1%	+83%/-125%	+6%/-9%	+8%/-7%	+33%/-14%
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 006280959-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-669 ± 26	$11.24^{+10.34}_{-7.82}$	276^{+11}_{-10}	2855^{+1239}_{-445}	2551^{+24072}_{-1878}
Alt.	-207 ± 25	$9.33^{+10.53}_{-6.10}$	277^{+11}_{-11}	2562^{+881}_{-416}	1114^{+8292}_{-862}

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

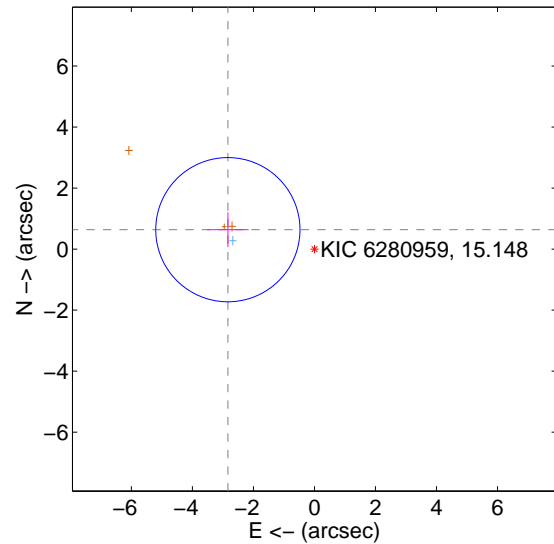
Supplemental centroid analysis for 006280959-02. Kepler magnitude: 15.15. Transit SNR 8.25

There are 1 quarters with good PRF difference image offsets

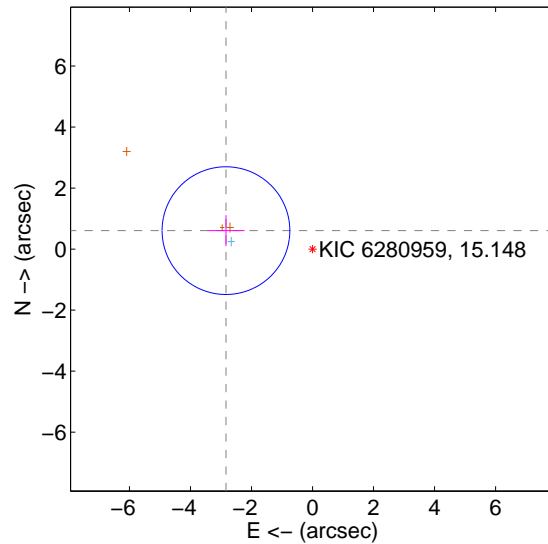
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.908 ± 0.788	3.69	2.837 ± 0.683	0.636 ± 0.566
PRF-fit source offset from KIC position	2.901 ± 0.698	4.16	2.837 ± 0.607	0.605 ± 0.507
photometric centroid source offset	3.33 ± 1.09	3.04	0.90 ± 1.36	3.20 ± 1.07

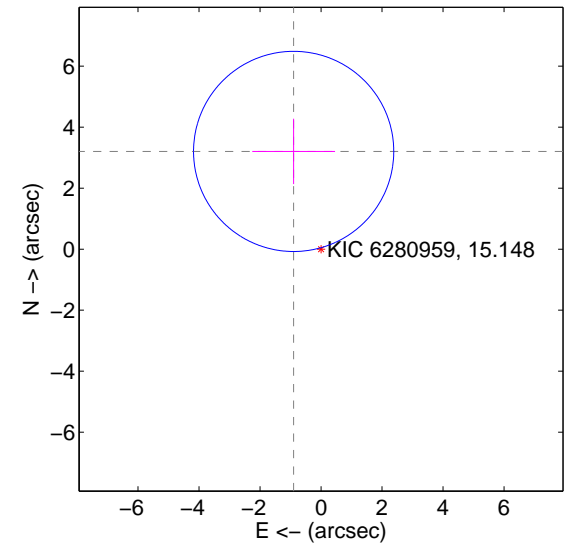
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

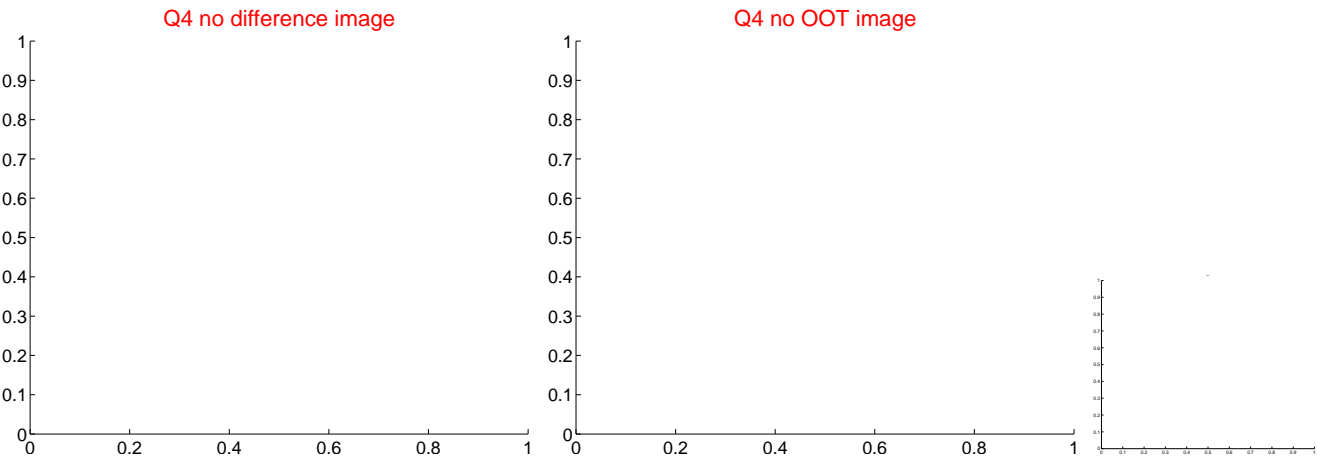
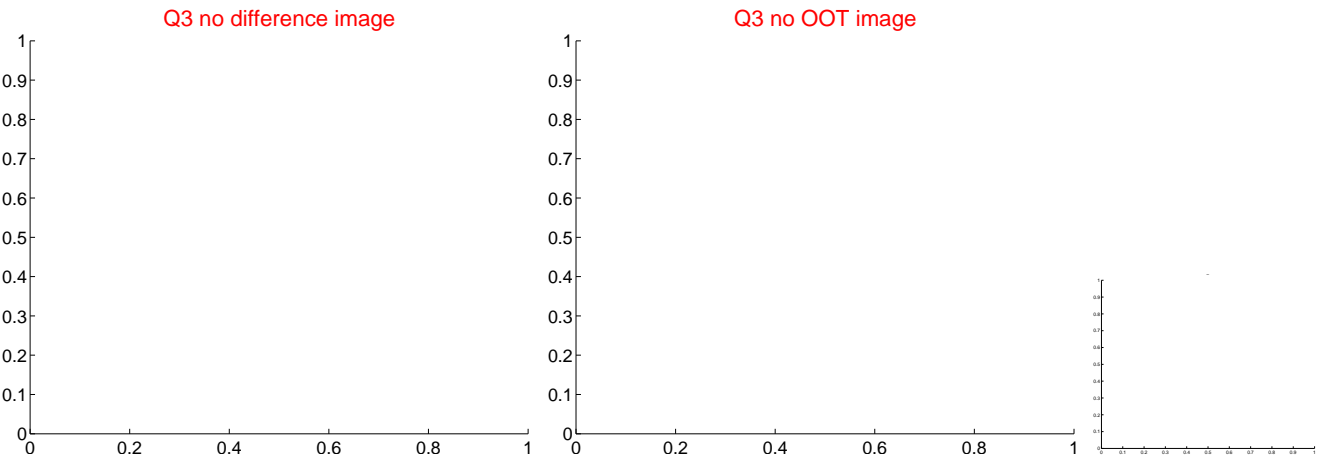
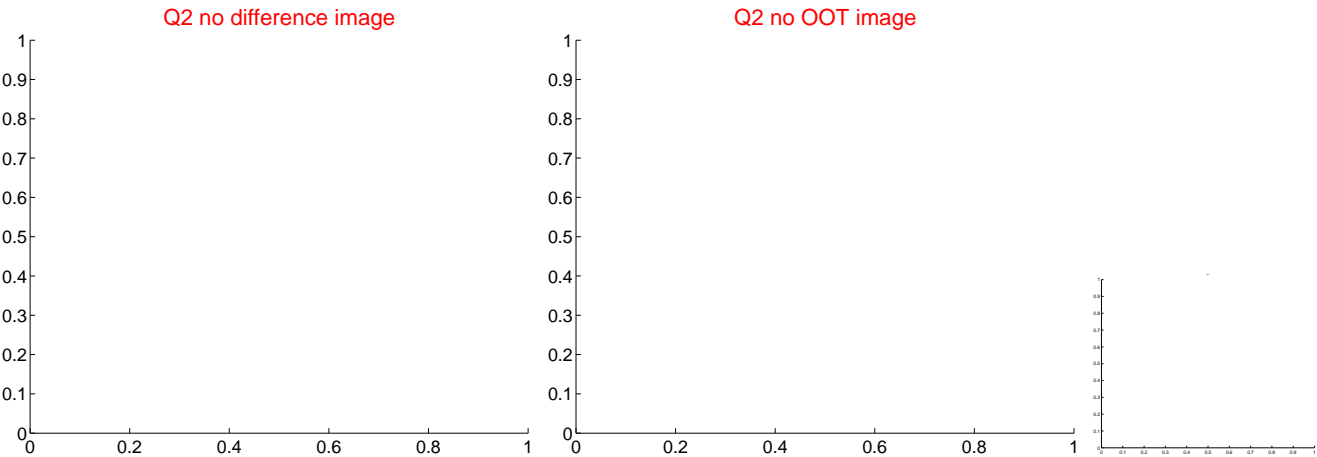
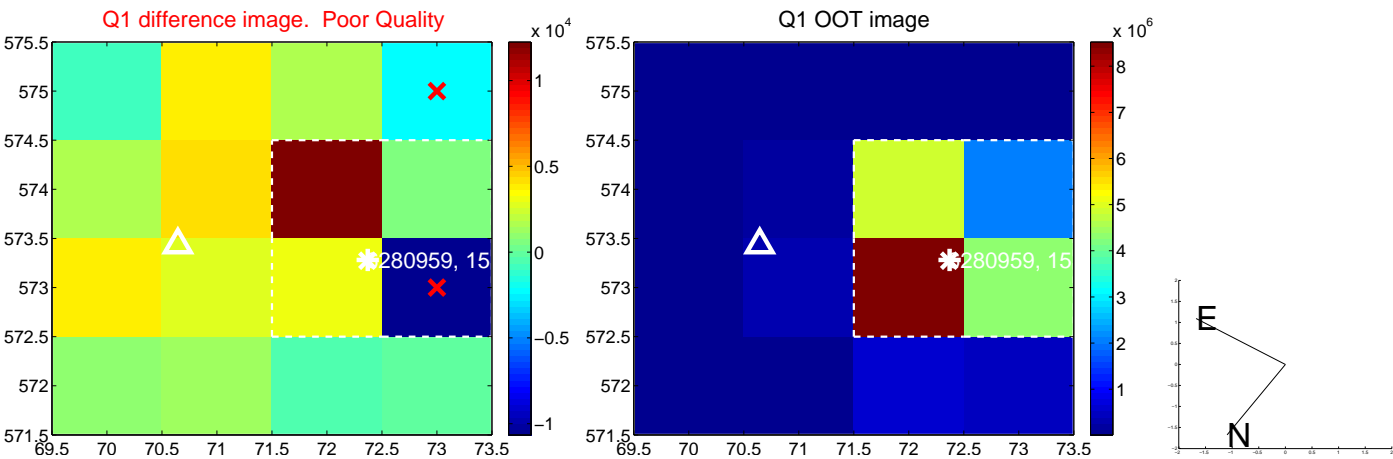


offset from photometric centroids

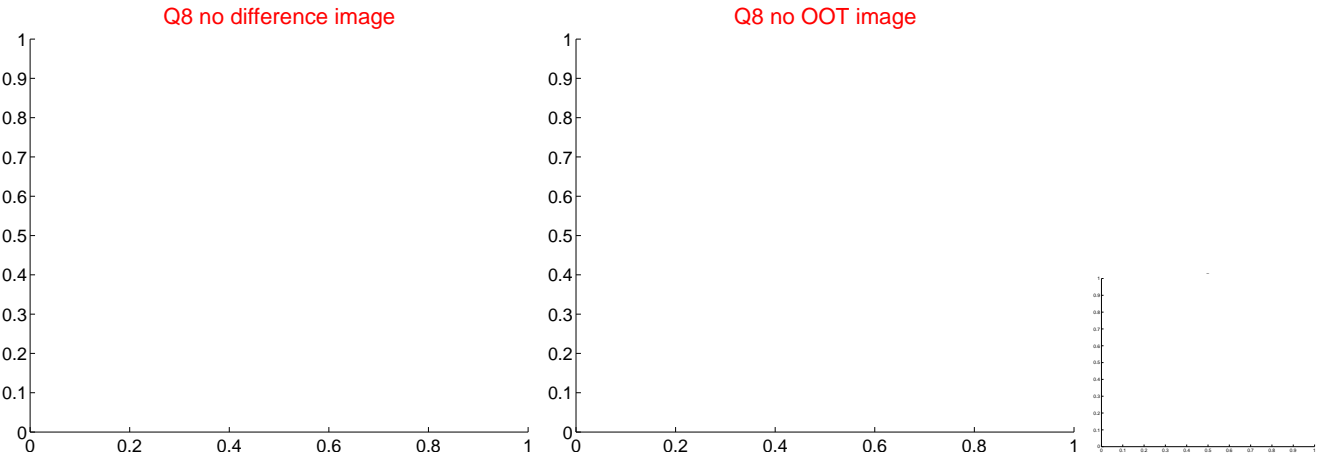
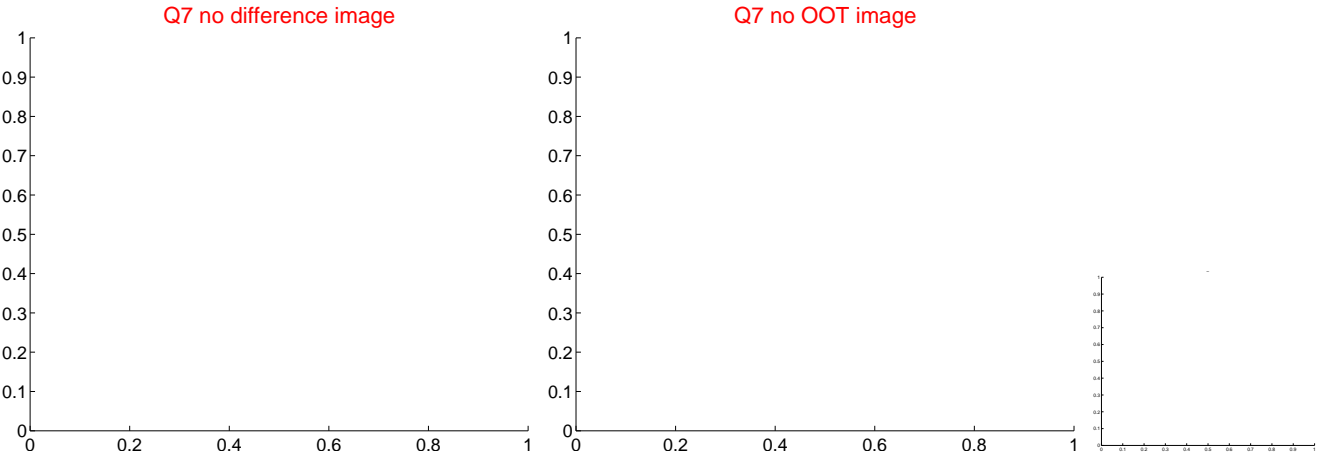
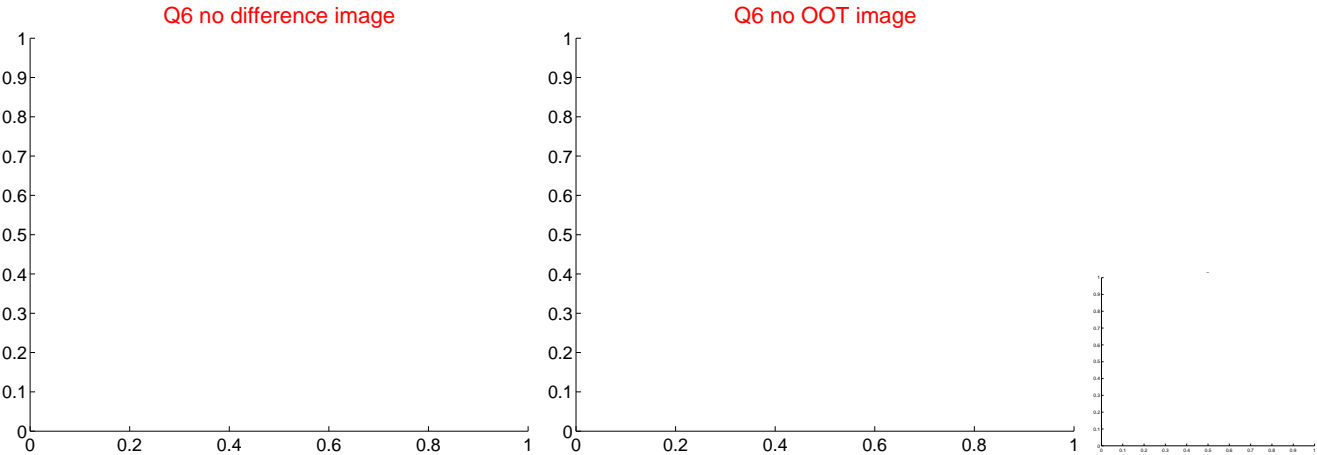
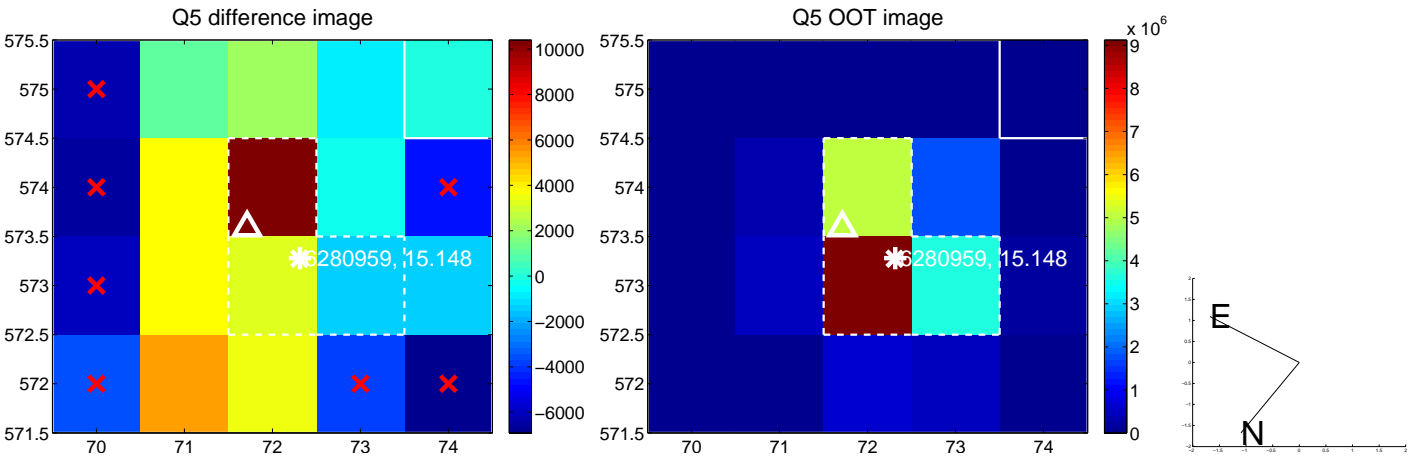


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

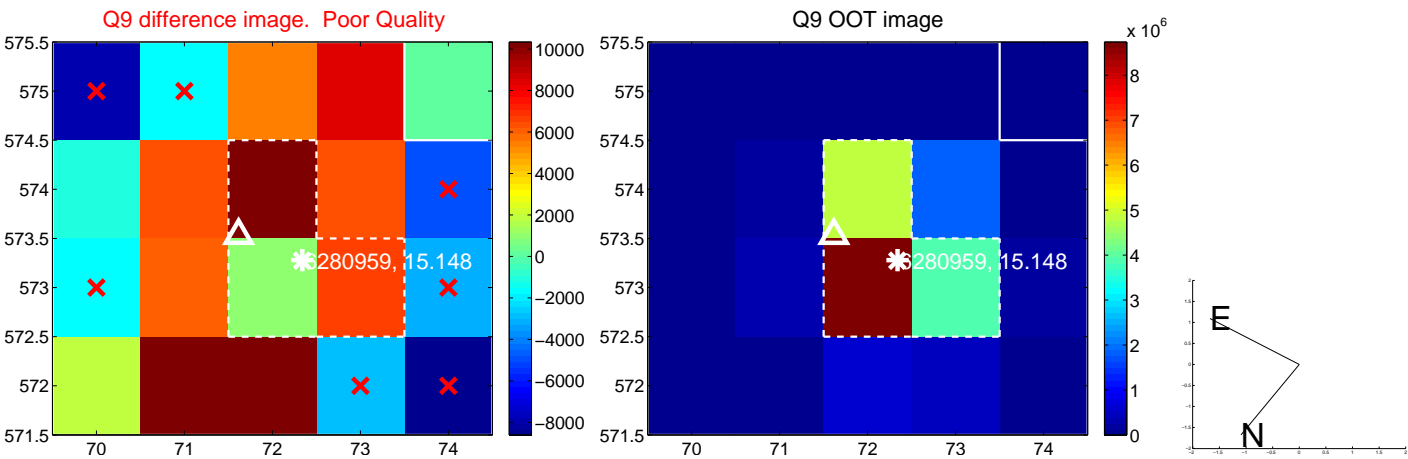
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



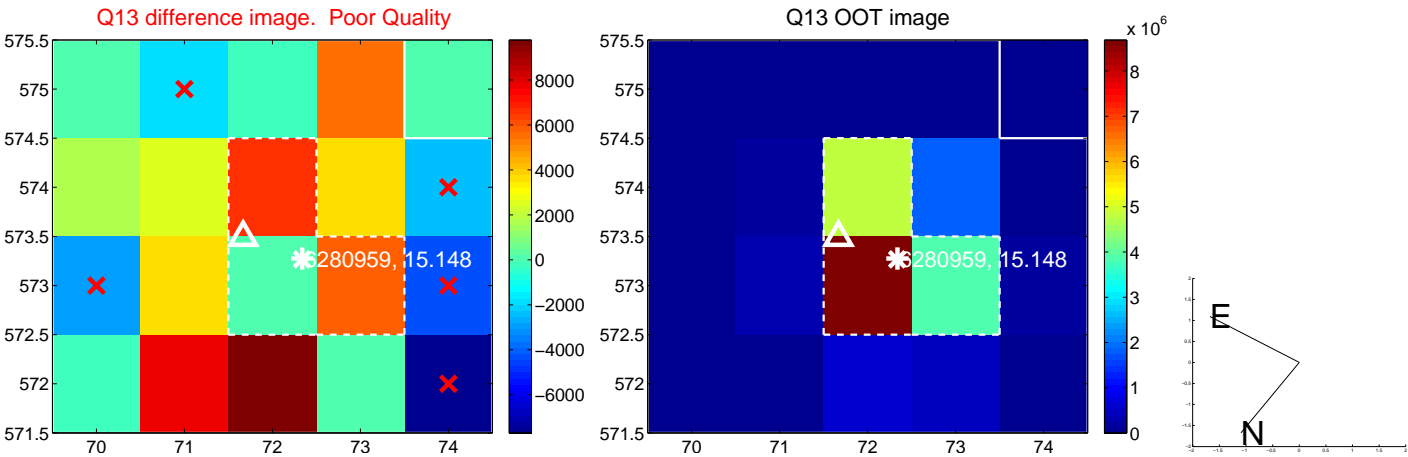
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



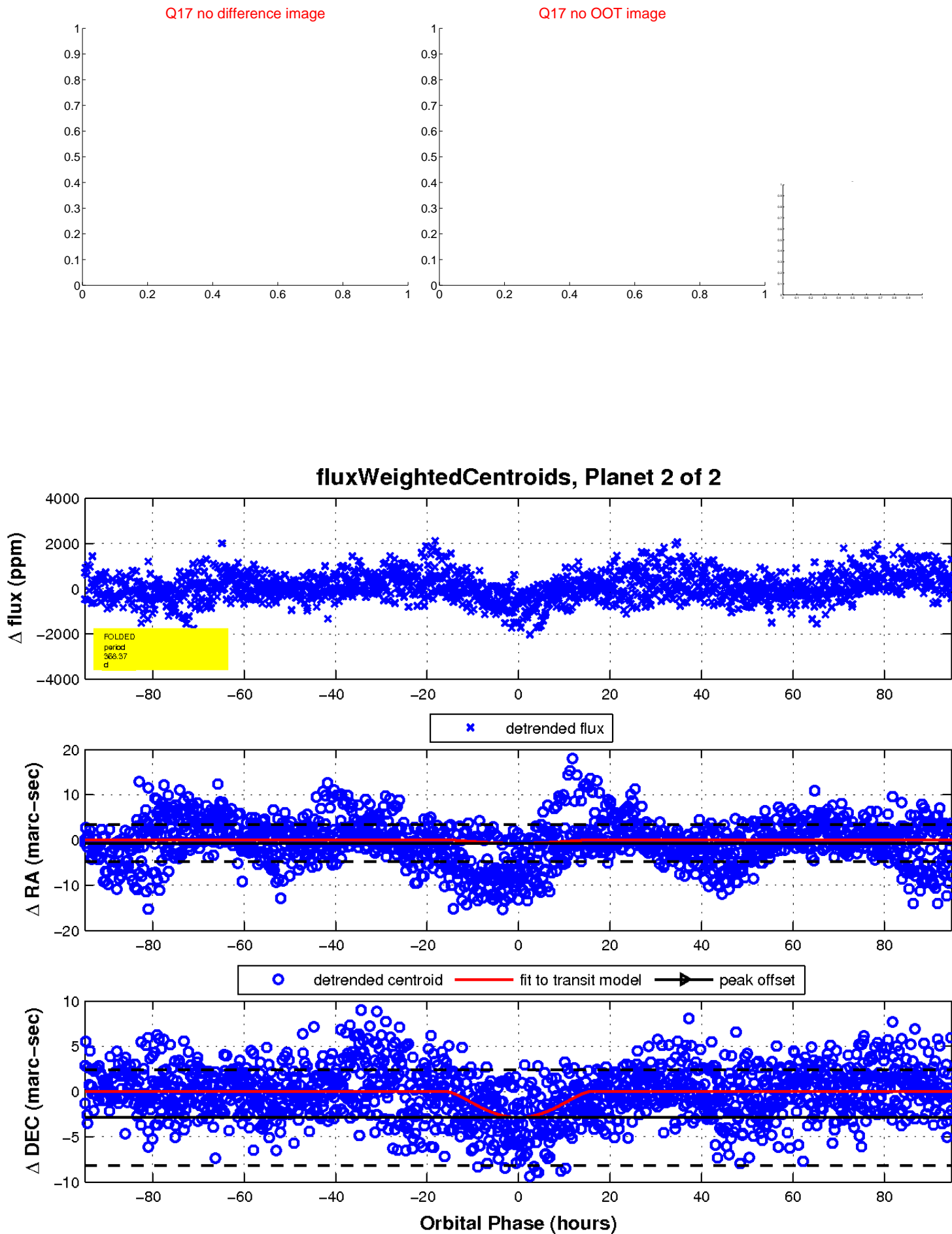
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

