

KIC 006286633

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})
006286633-01	OBS	No	59.722284	148.151706	12.4	3.012	12.5	4.7	12.87	5083	6.08	522.64
006286633-02	OBS	No	380.274281	478.482688	3584.8	6.857	13.1	10.0	12.87	5083	148.44	44.28
006286633-03	OBS	8120.01	366.281381	460.250946	2426.5	10.942	12.3	9.9	12.87	5083	68.47	46.55
006286633-04	OBS	No	365.924192	466.478343	121.1	12.500	12.3	-1.0	12.87	5083	13.76	46.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006286633-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
006286633-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006286633-03	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_SATURATED
006286633-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

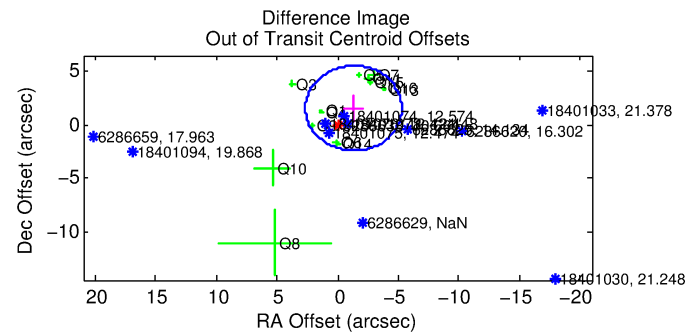
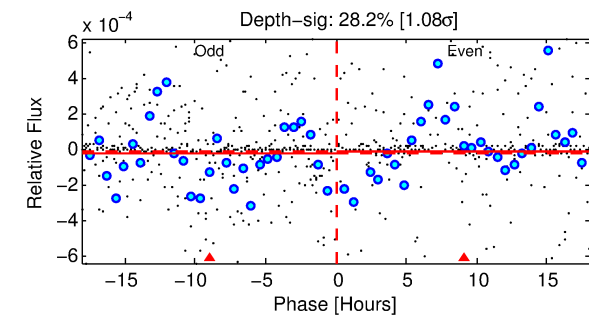
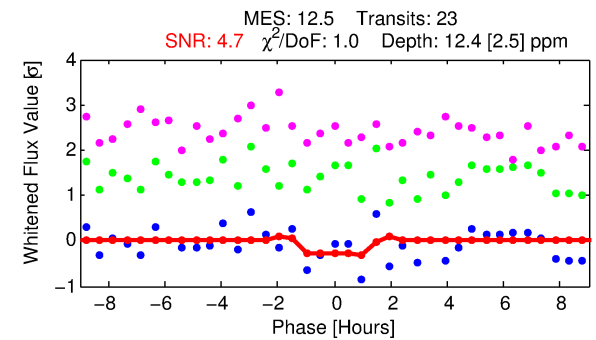
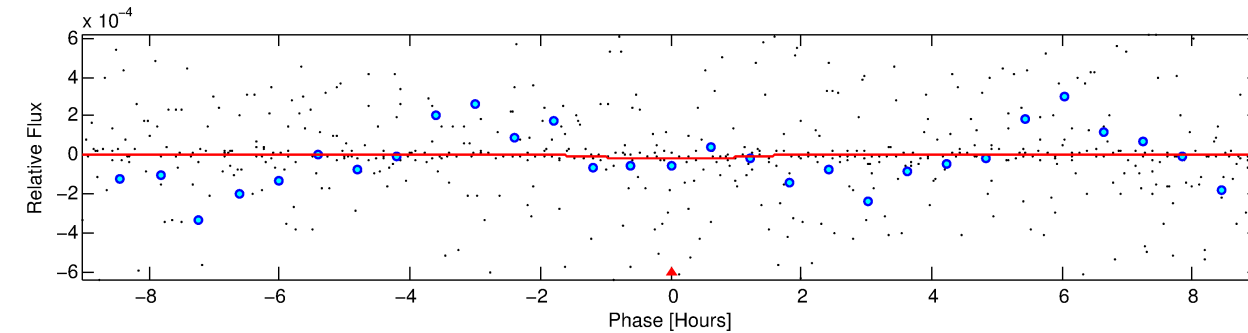
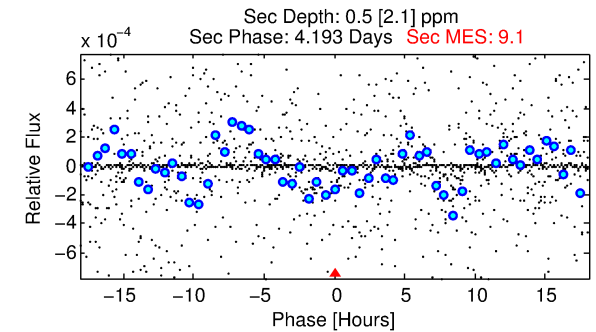
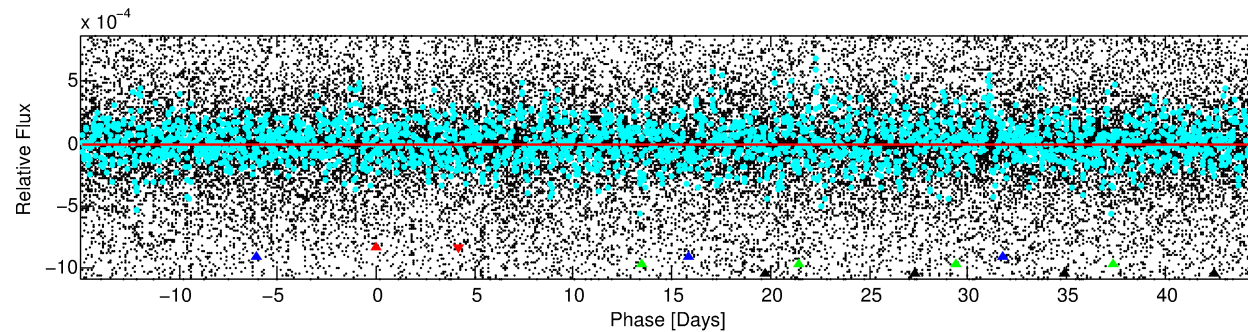
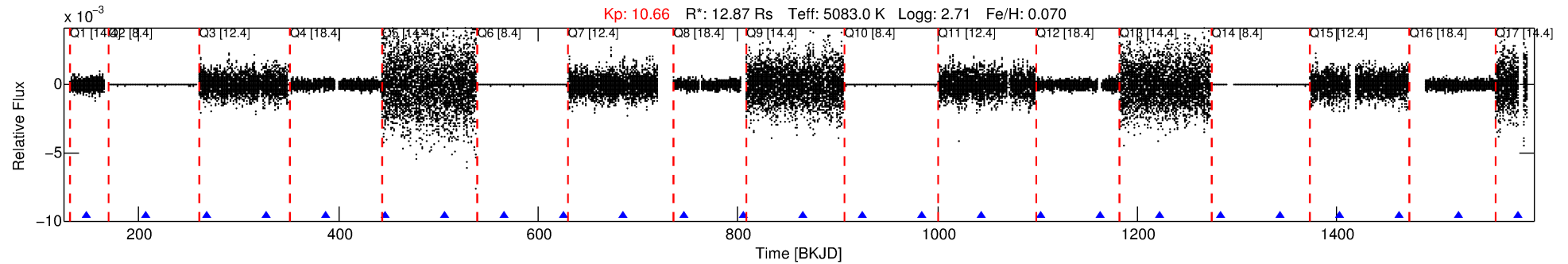
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006286633-01

No Significant Match Found

DV One-Page Summary

KIC: 6286633 Candidate: 1 of 4 Period: 59.722 d



DV Fit Results:

Period = 59.72228 [0.00088] d
Epoch = 148.1517 [0.0103] BKJD
Rp/R* = 0.0043 [0.0018]
a/R* = 44.22 [83.09]
b = 0.96 [0.15]
Seff = 522.64 [145.55]
Teff = 1219 [85] K
Rp = 6.08 [3.43] Re
a = 0.4353 [0.1111] AU
Ag = 1.42 [6.09] [0.07σ]
Teffp = 2056 [2209] K [0.38σ]

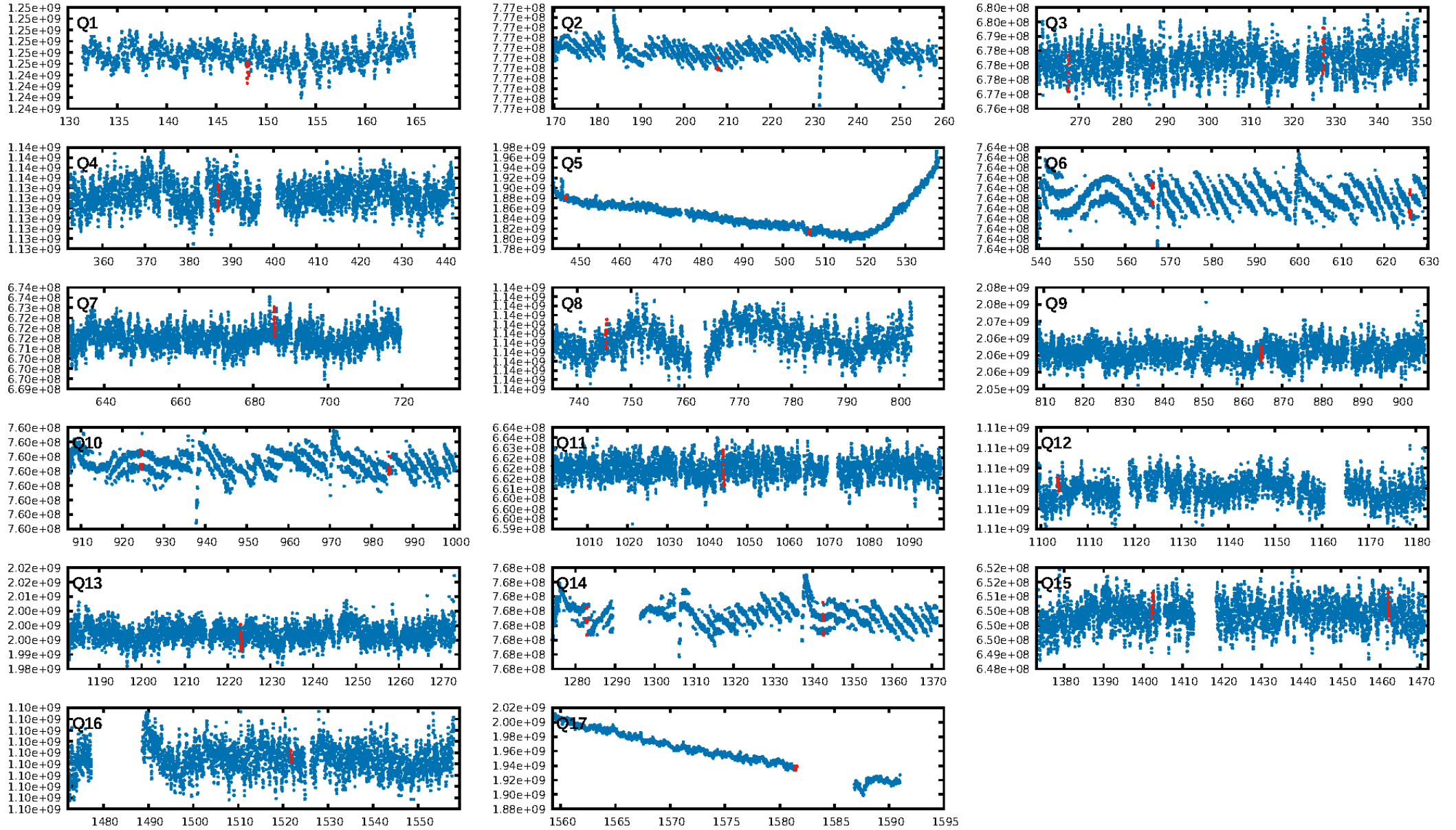
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [571.55σ]
ModelChiSquare2-sig: 12.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [21/21]
GhostDiagnostic-chr: -0.09386
Centroid-sig: 20.9%
Centroid-so: 5.418 arcsec [1.12σ]
OotOffset-rm: 2.037 arcsec [1.54σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-rm: 1.827 arcsec [1.31σ]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 1.00 [16/16]

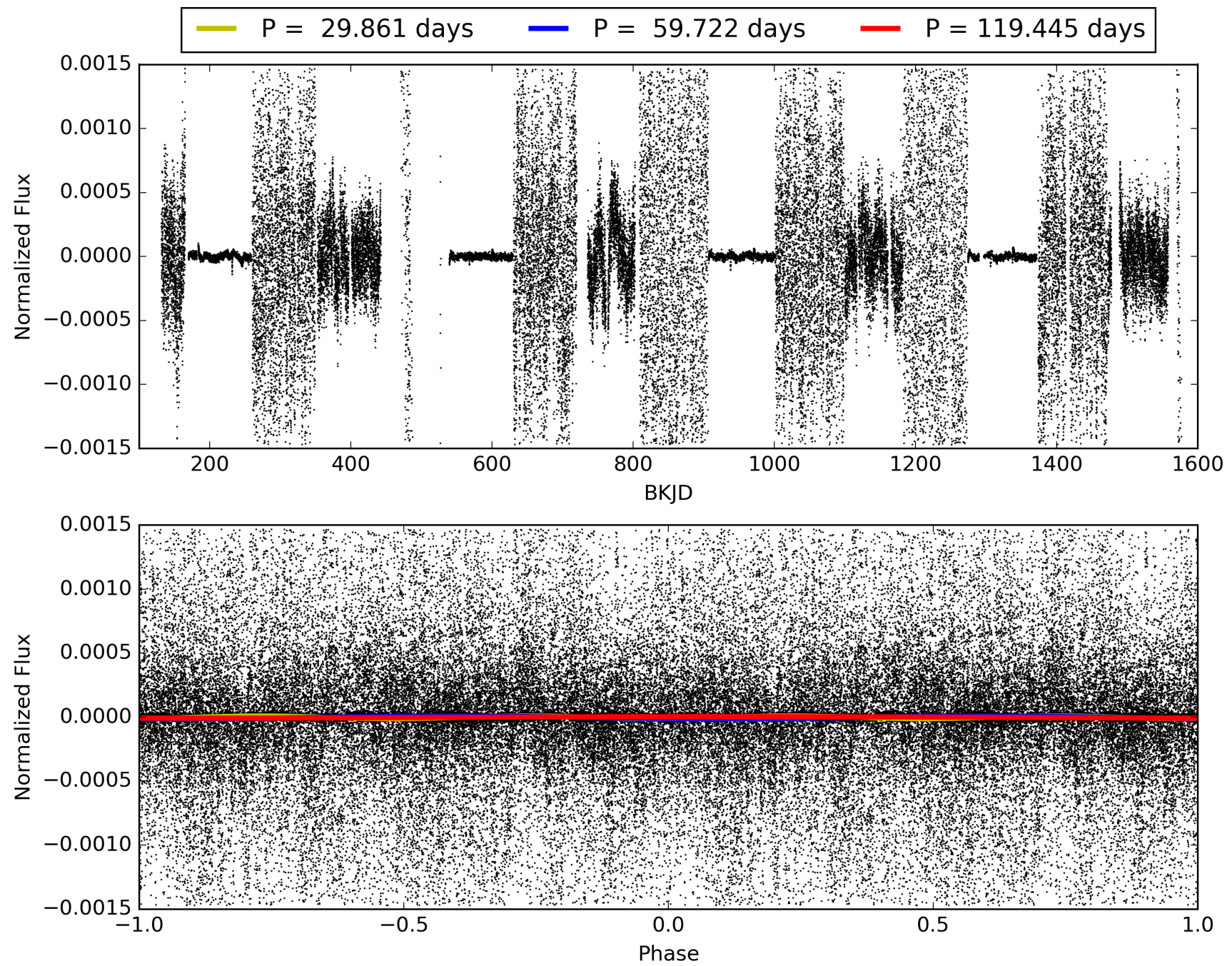
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006286633-01, PDC Light Curves

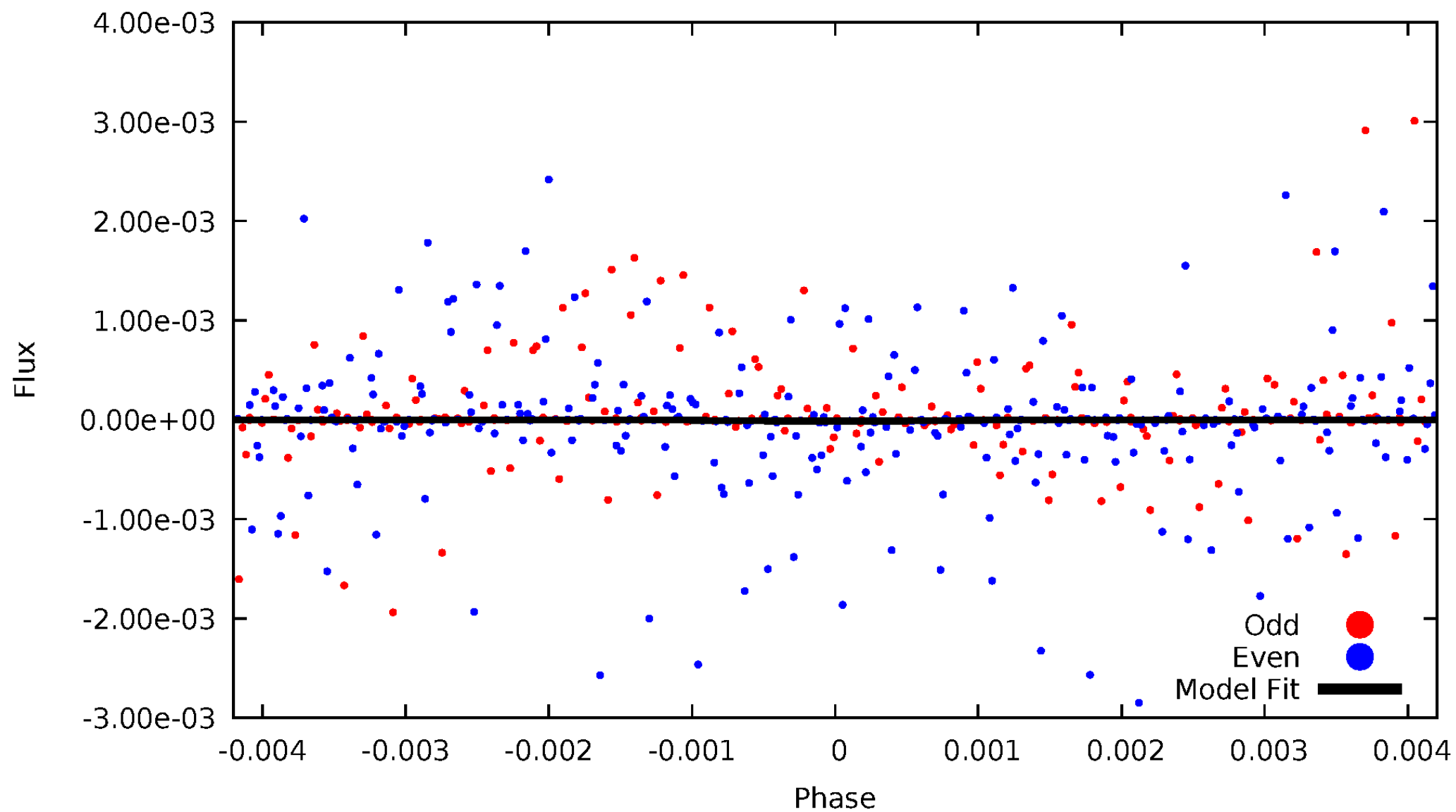


TCE 006286633-01



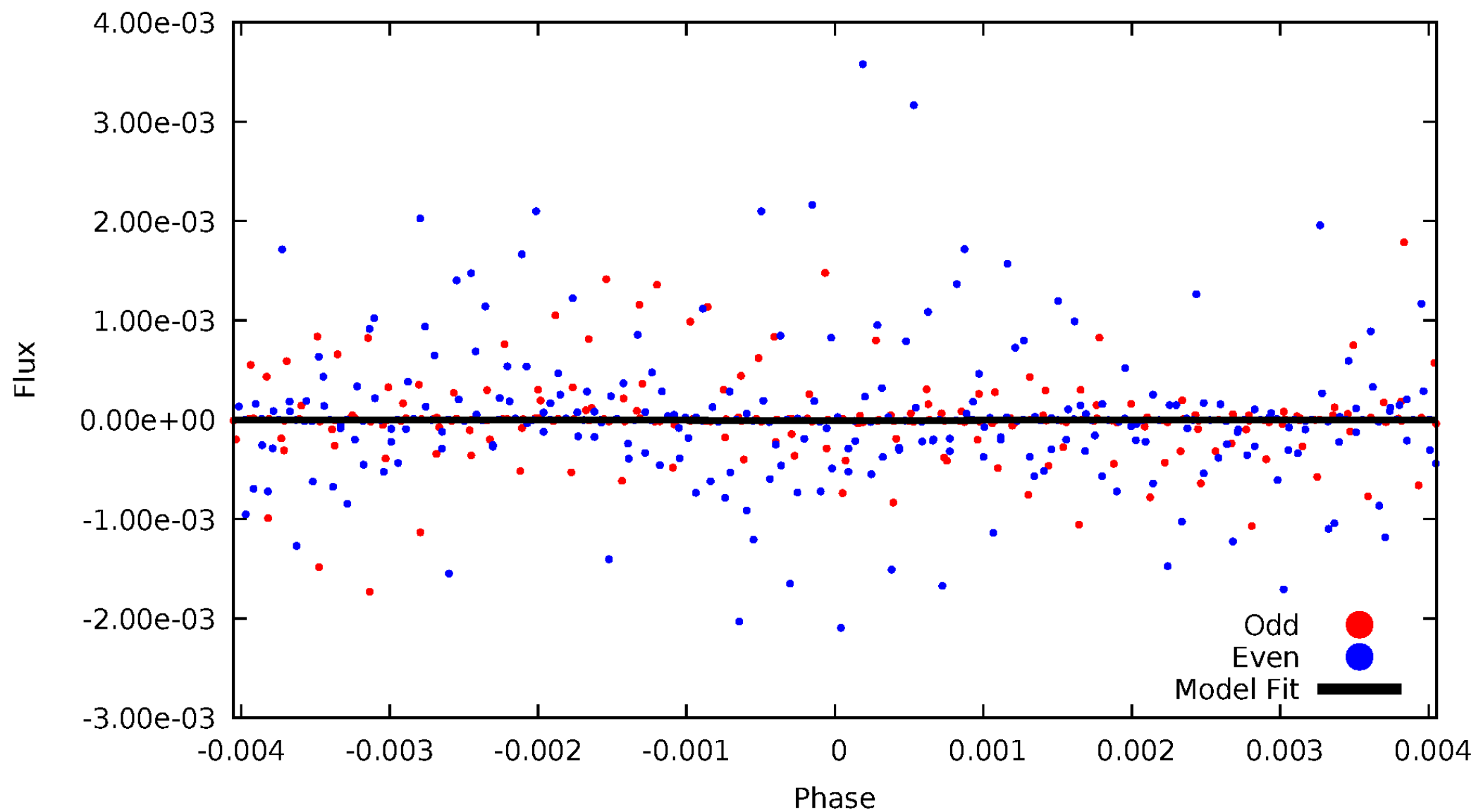
DV Odd/Even

TCE 006286633-01



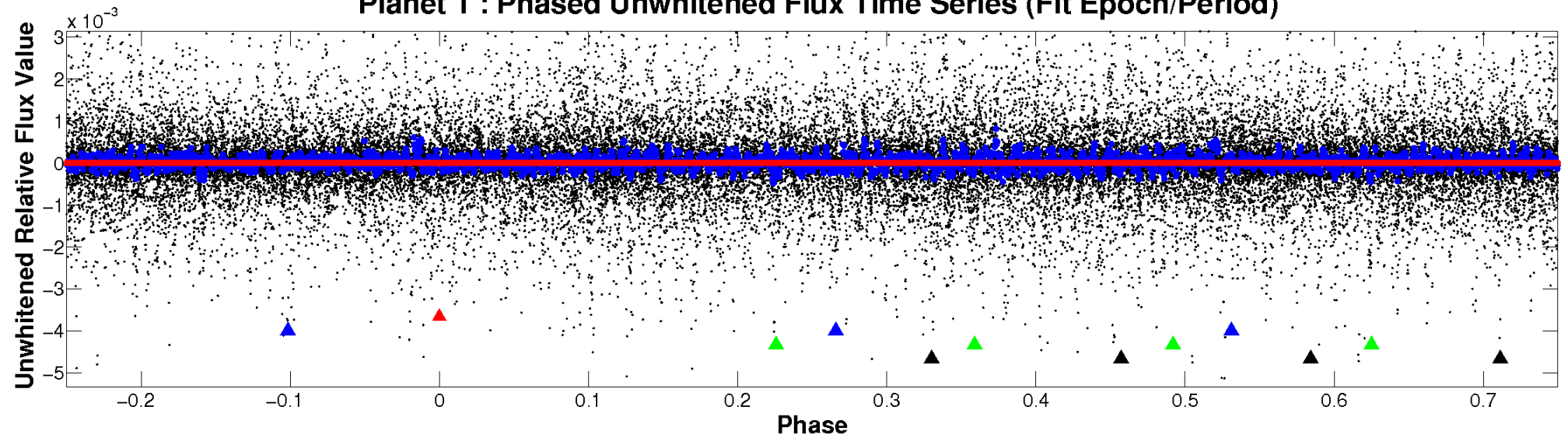
ALT Odd/Even

TCE 006286633-01

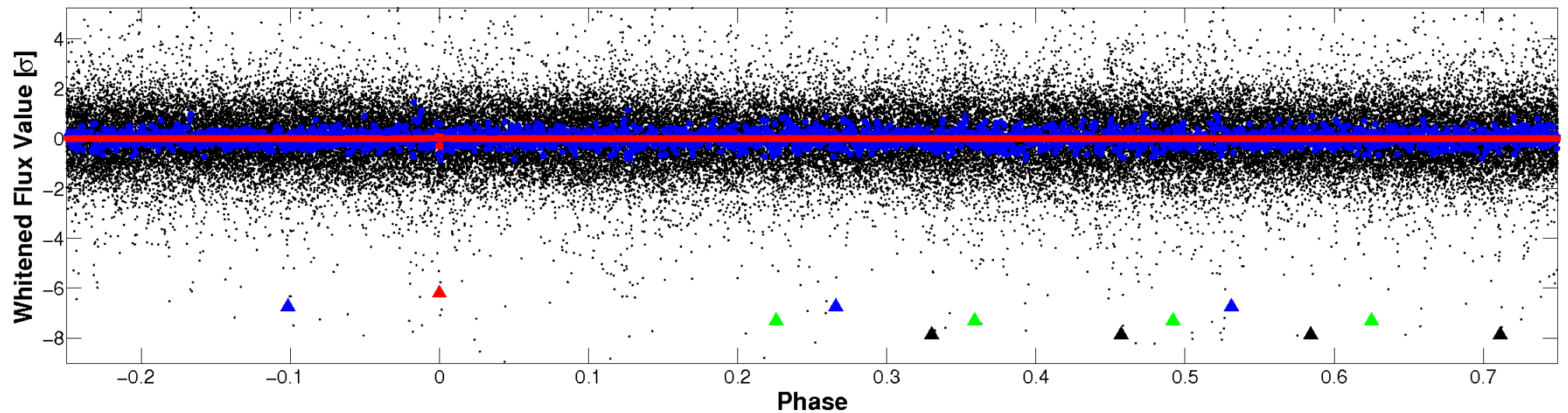


Non-Whitened Vs. Whitened Light Curve

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

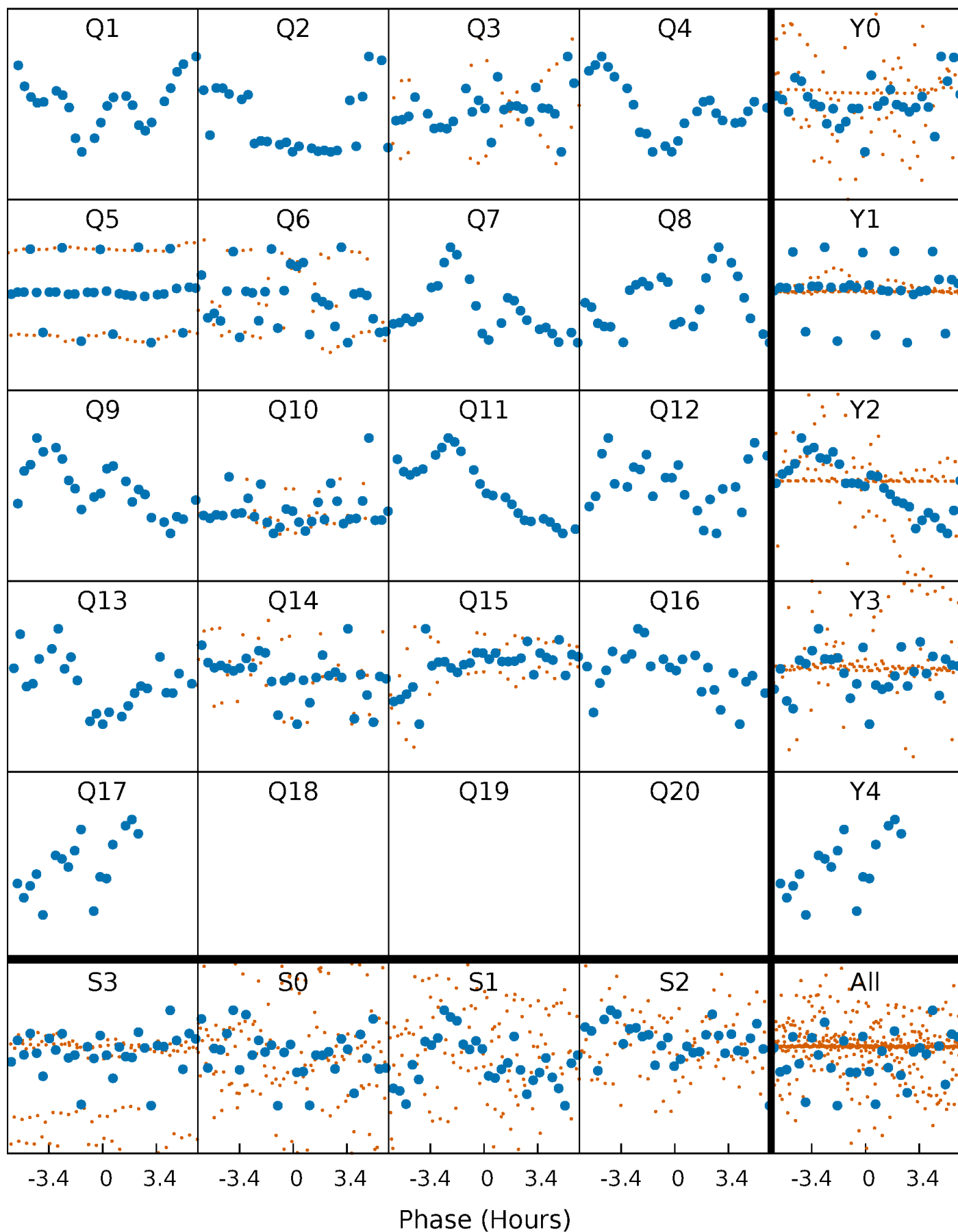


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



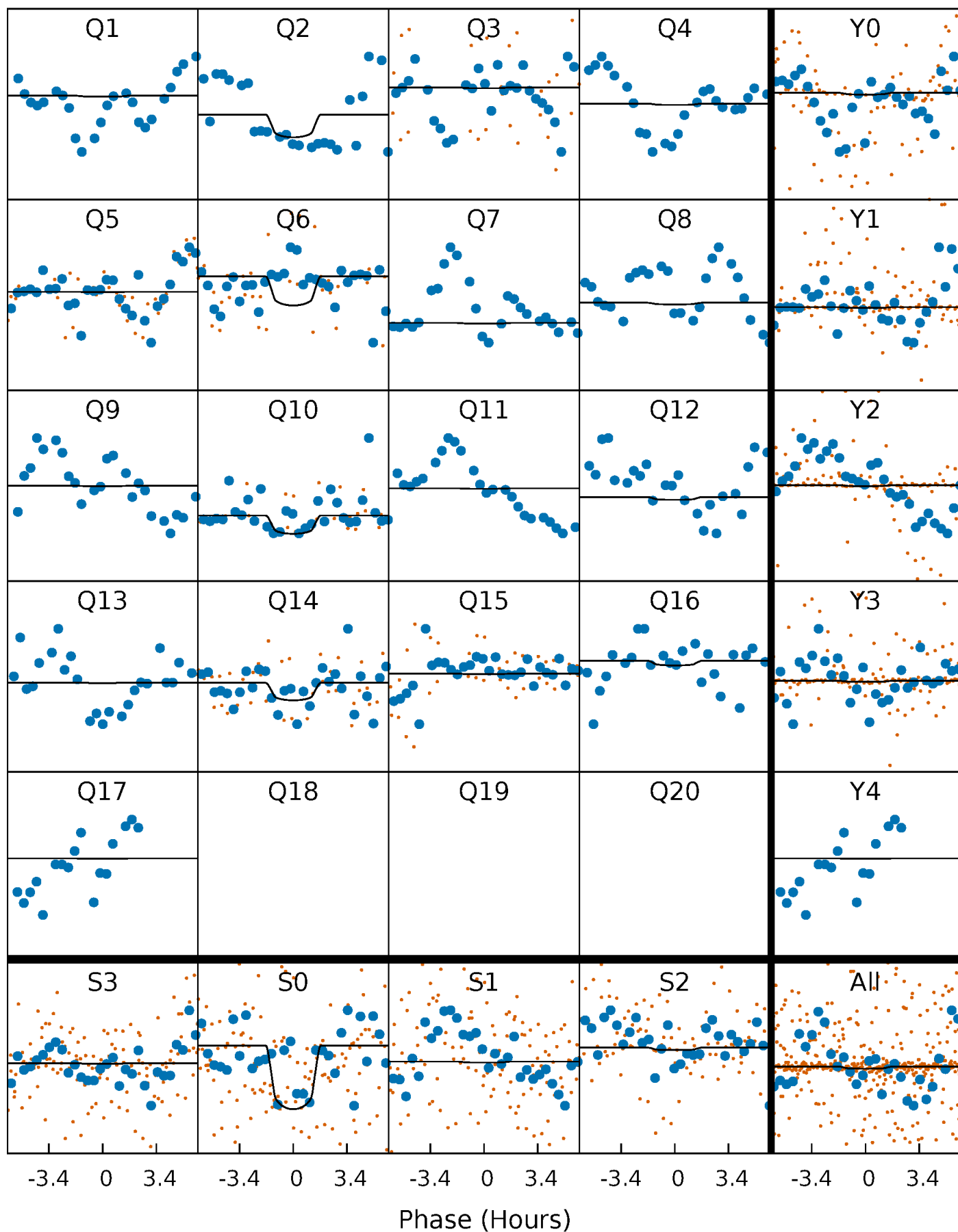
PDC Quarter-Phased Transit Curves

TCE 006286633-01 P= 59.722284 Days $T_0=148.151706$ (BKJD)



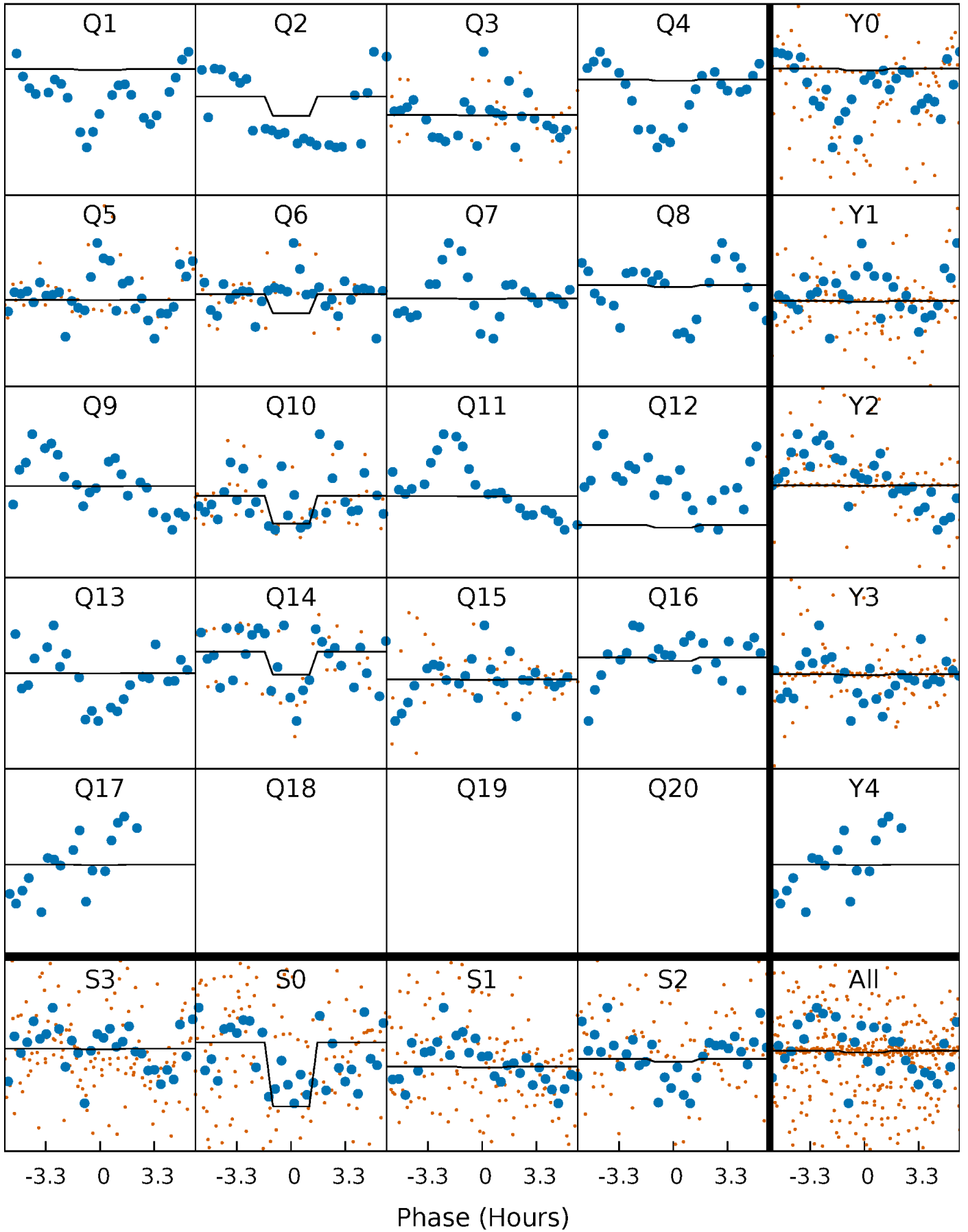
DV Quarter-Phased Transit Curves

TCE 006286633-01 P= 59.722284 Days $T_0=148.151706$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

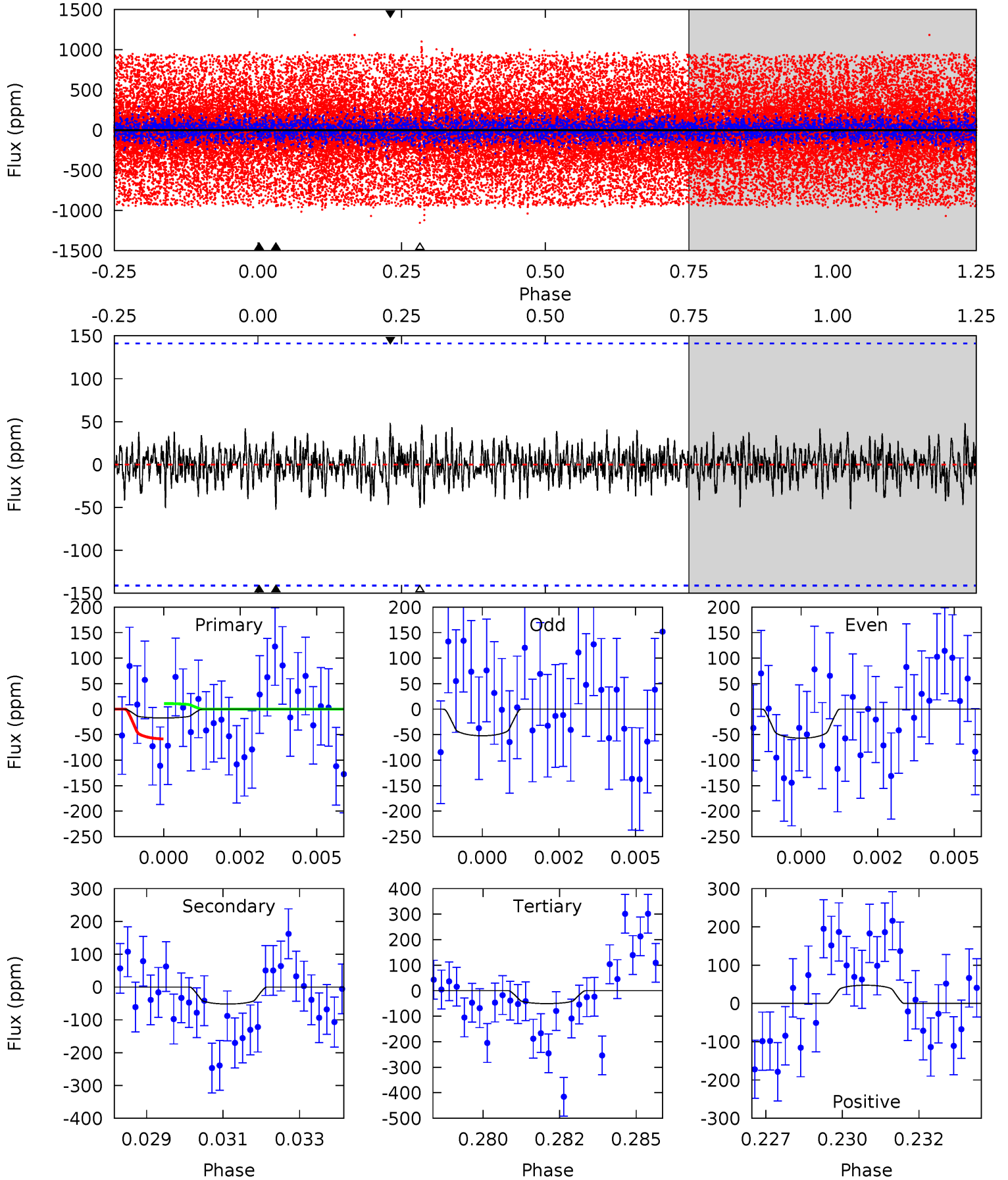
TCE 006286633-01 P= 59.722938 Days $T_0=148.140672$ (BKJD)



DV Model-Shift Uniqueness Test

006286633-01, P = 59.722284 Days, E = 88.429422 Days

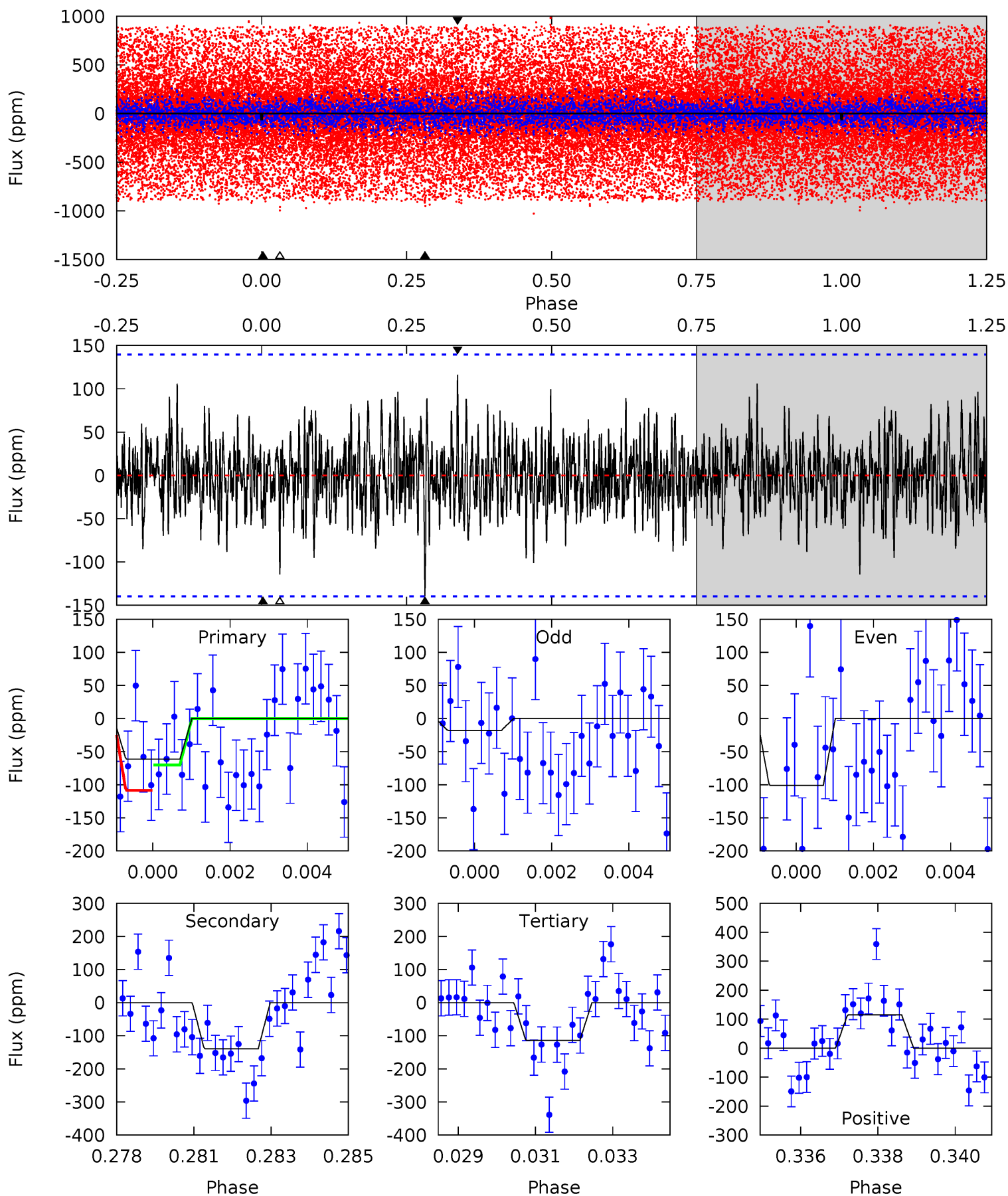
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.65	1.94	1.90	1.78	5.29	3.04	0.57	-1.25	-1.13	0.04	0.16	0.09	9.82	0.48	0.91



Alt Model-Shift Uniqueness Test

006286633-01, P = 59.722938 Days, E = 88.417734 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.33	5.30	4.34	4.38	5.31	3.06	1.24	-2.01	-2.05	0.95	0.92	1.57	-1.05	0.45	0.73



Stellar Parameters For KIC 006286633

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5083^{+50}_{-130}	$2.708^{+0.033}_{-0.027}$	$0.070^{+0.150}_{-0.750}$	$12.868^{+0.516}_{-4.903}$	$3.083^{+0.205}_{-1.950}$	$0.002^{+0.001}_{-0.000}$
	+1%/-3%	+1%/-1%	+214%/-1071%	+4%/-38%	+7%/-63%	+67%/-9%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 006286633-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-52 ± 27	$6.00^{+2.65}_{-2.55}$	1702^{+28}_{-51}	6403^{+2586}_{-1424}	147^{+301}_{-97}
Alt.	-139 ± 26	$4.55^{+2.71}_{-2.21}$	1702^{+31}_{-46}	10565^{+9055}_{-2923}	713^{+2026}_{-435}

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

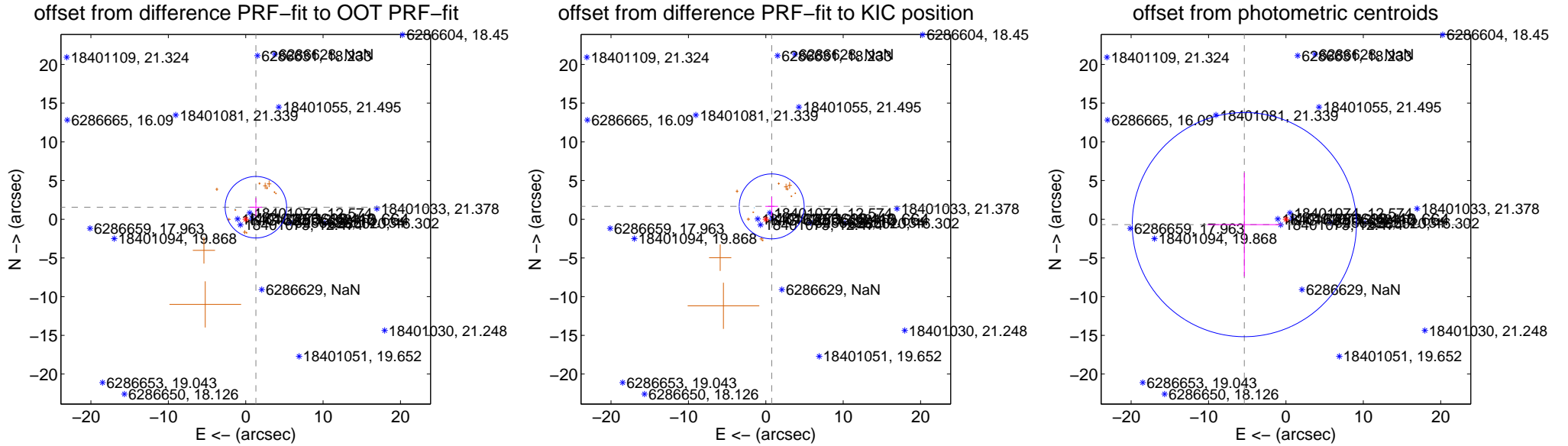
DV Centroid Data

Supplemental centroid analysis for 006286633-01. **Kepler magnitude: 10.66.** Transit SNR 4.75

There are 1 quarters with good PRF difference image offsets

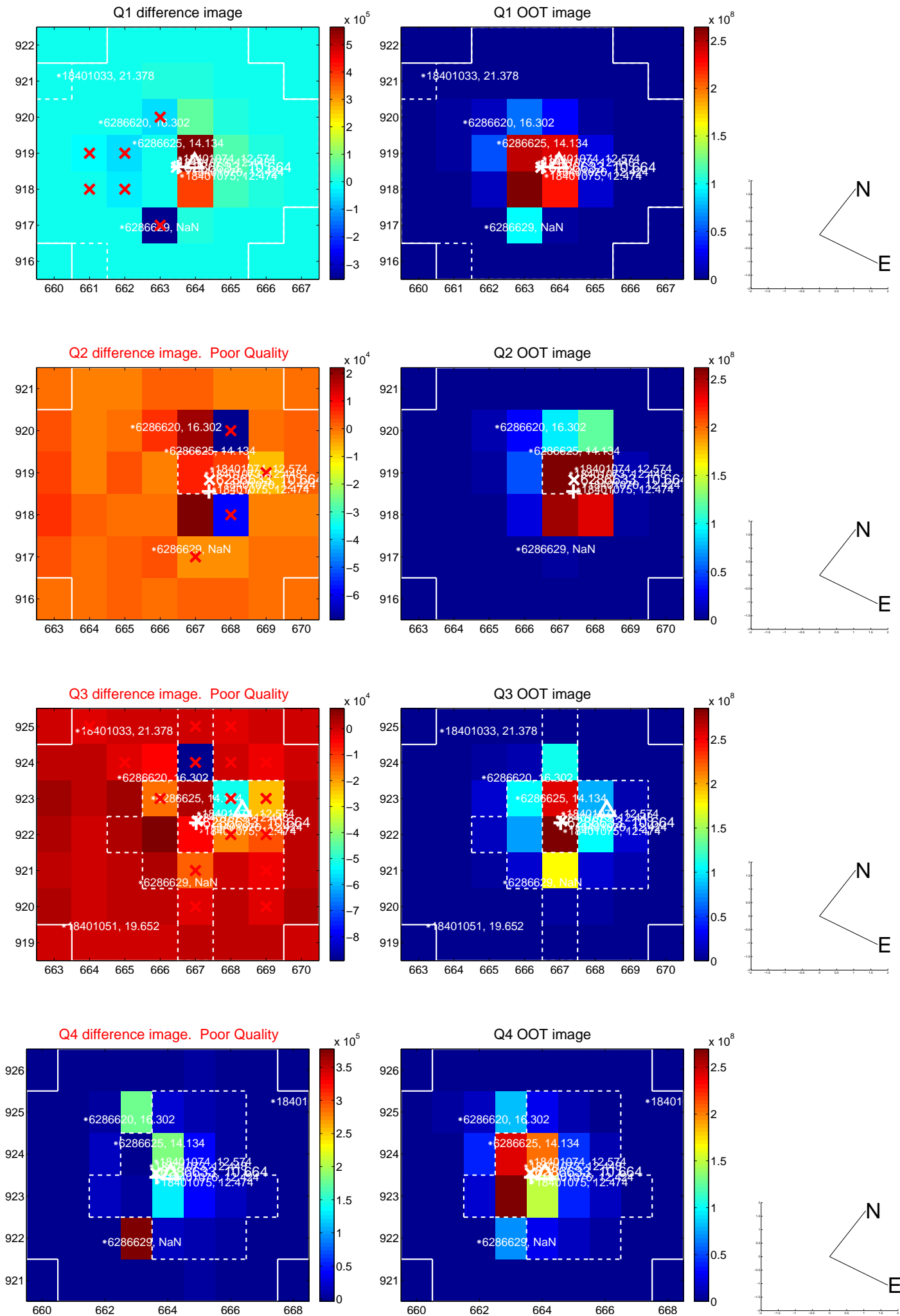
The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.037 ± 1.325	1.54	-1.314 ± 0.792	1.557 ± 1.203
PRF-fit source offset from KIC position	1.827 ± 1.398	1.31	-0.757 ± 0.821	1.663 ± 1.242
photometric centroid source offset	5.42 ± 4.83	1.12	5.37 ± 4.79	-0.69 ± 6.70

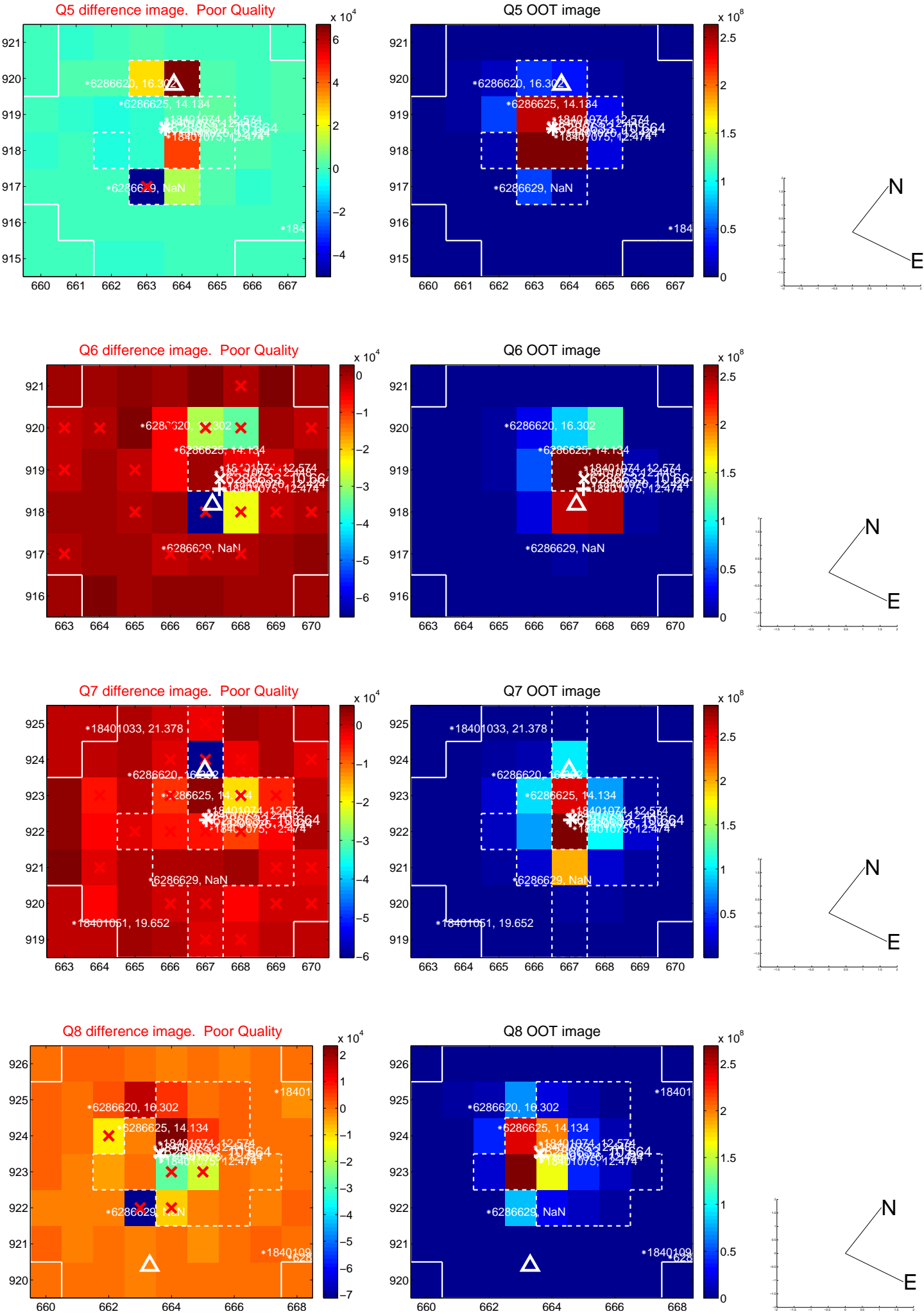


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

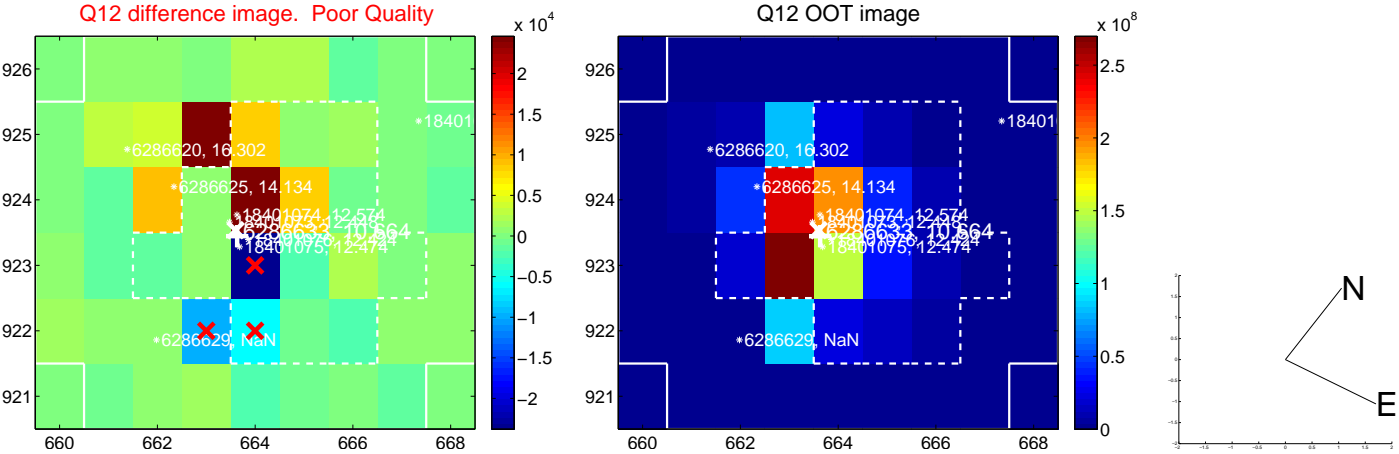
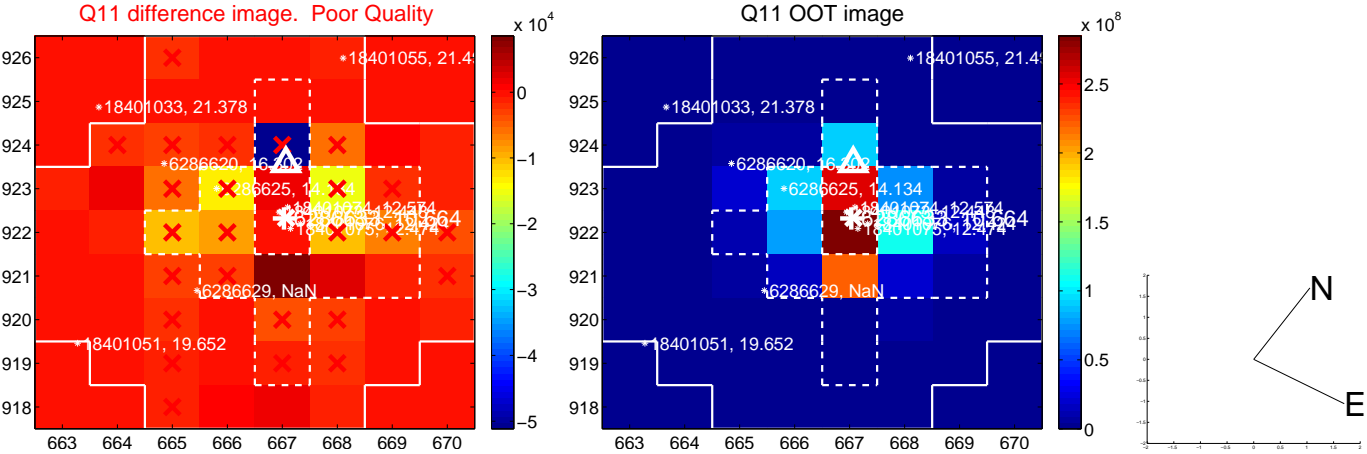
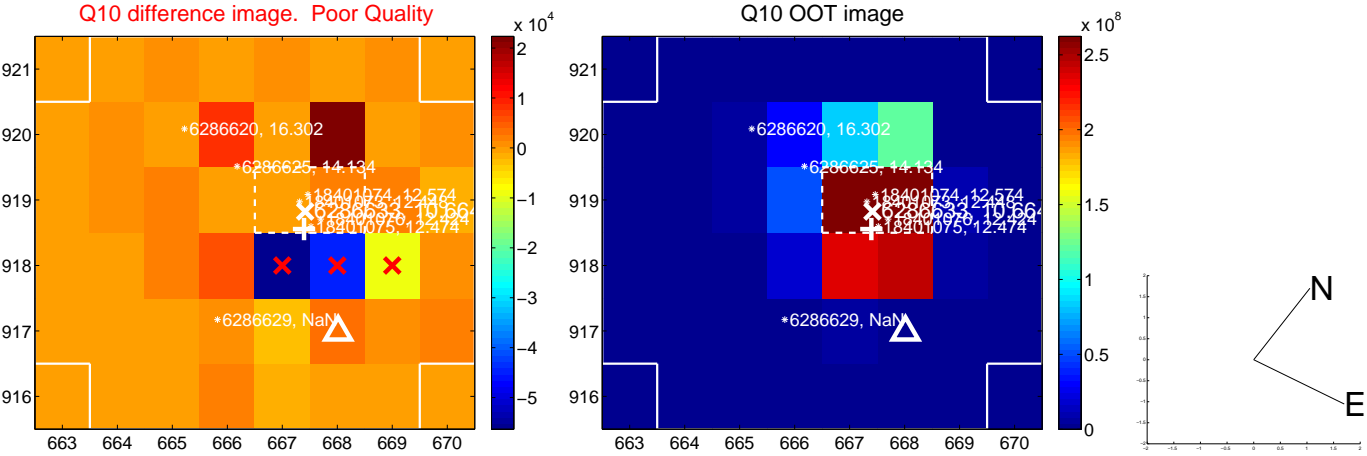
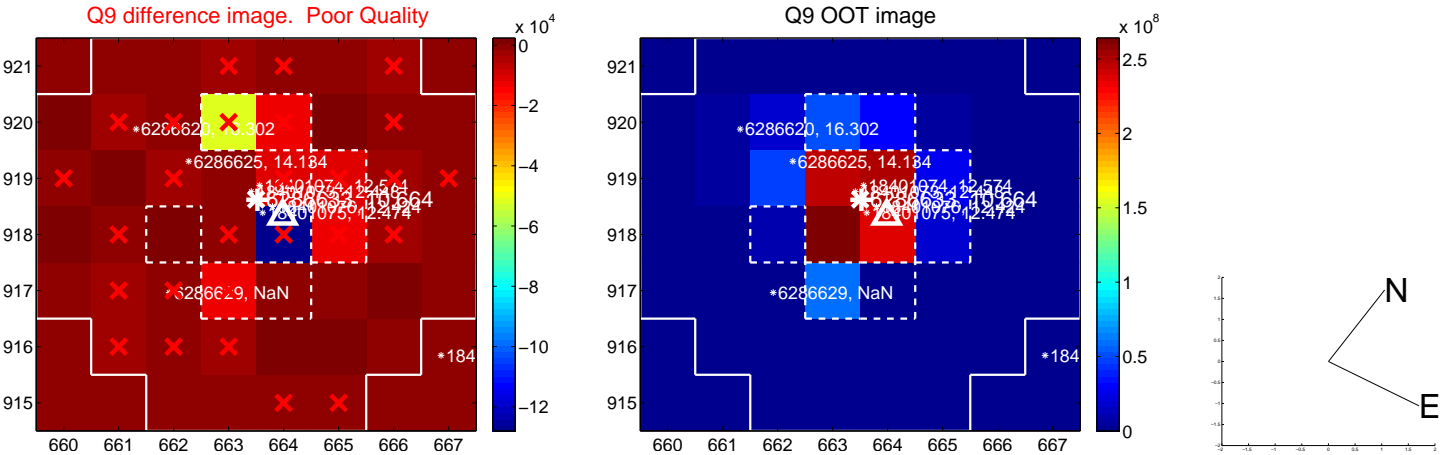
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



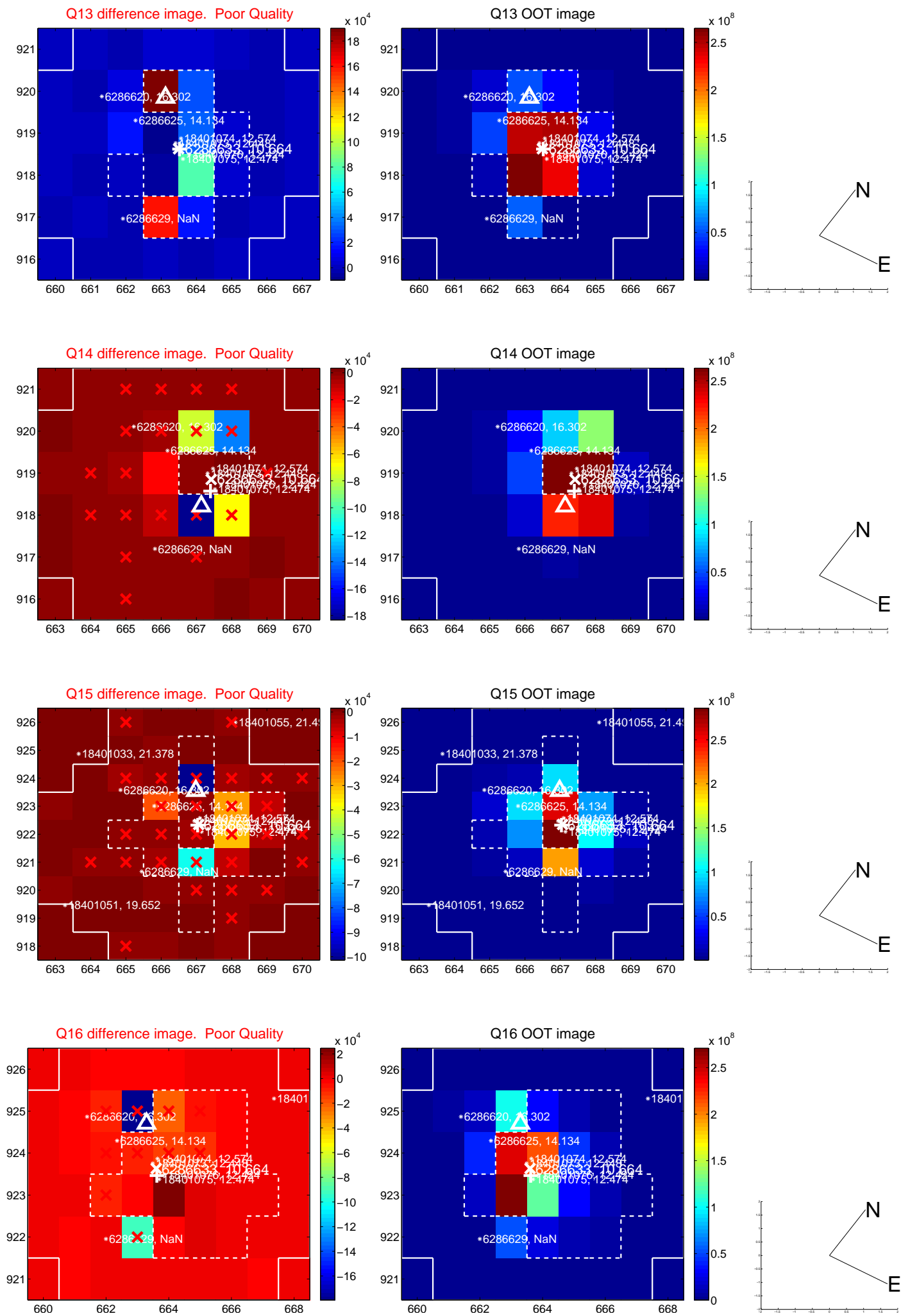
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



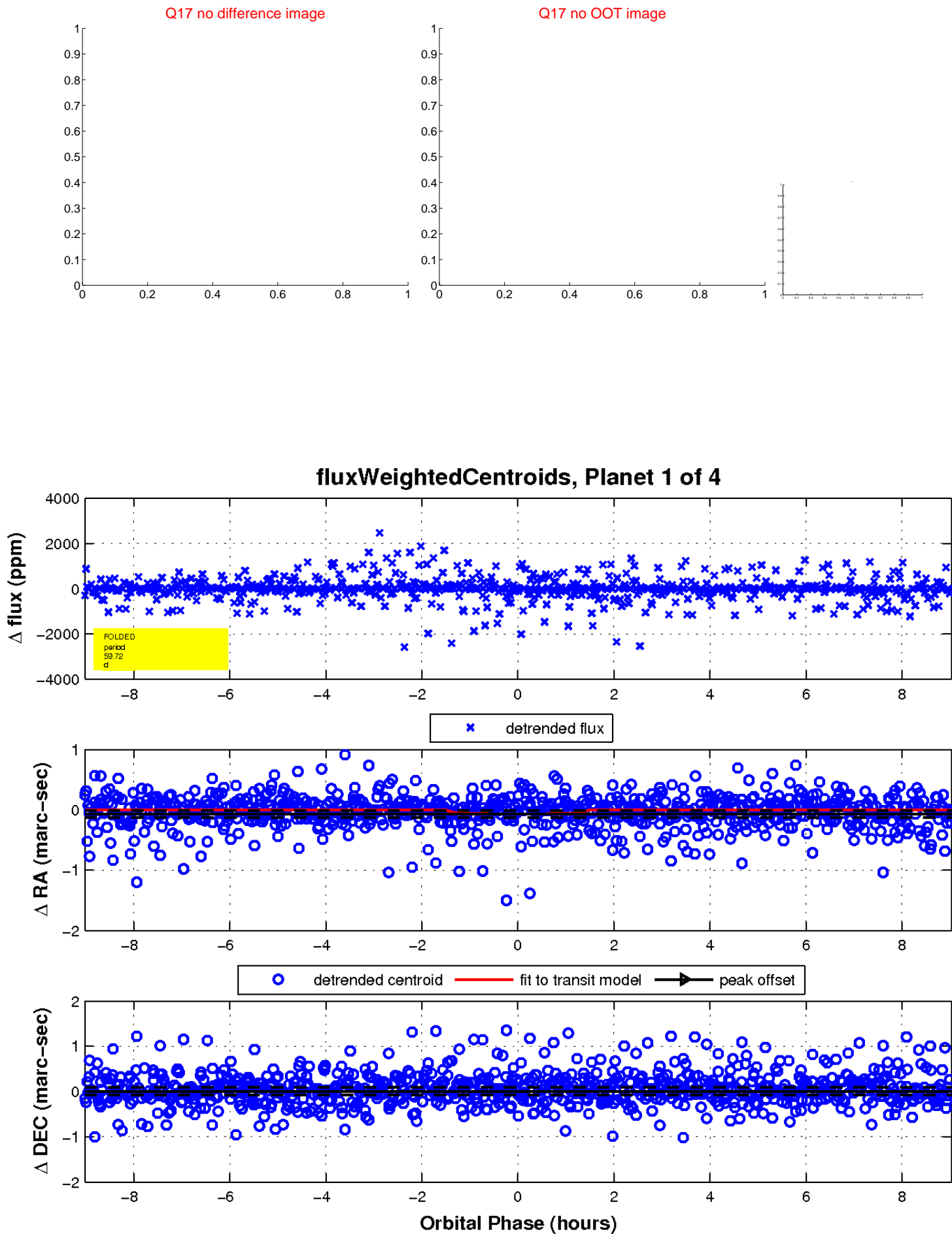
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



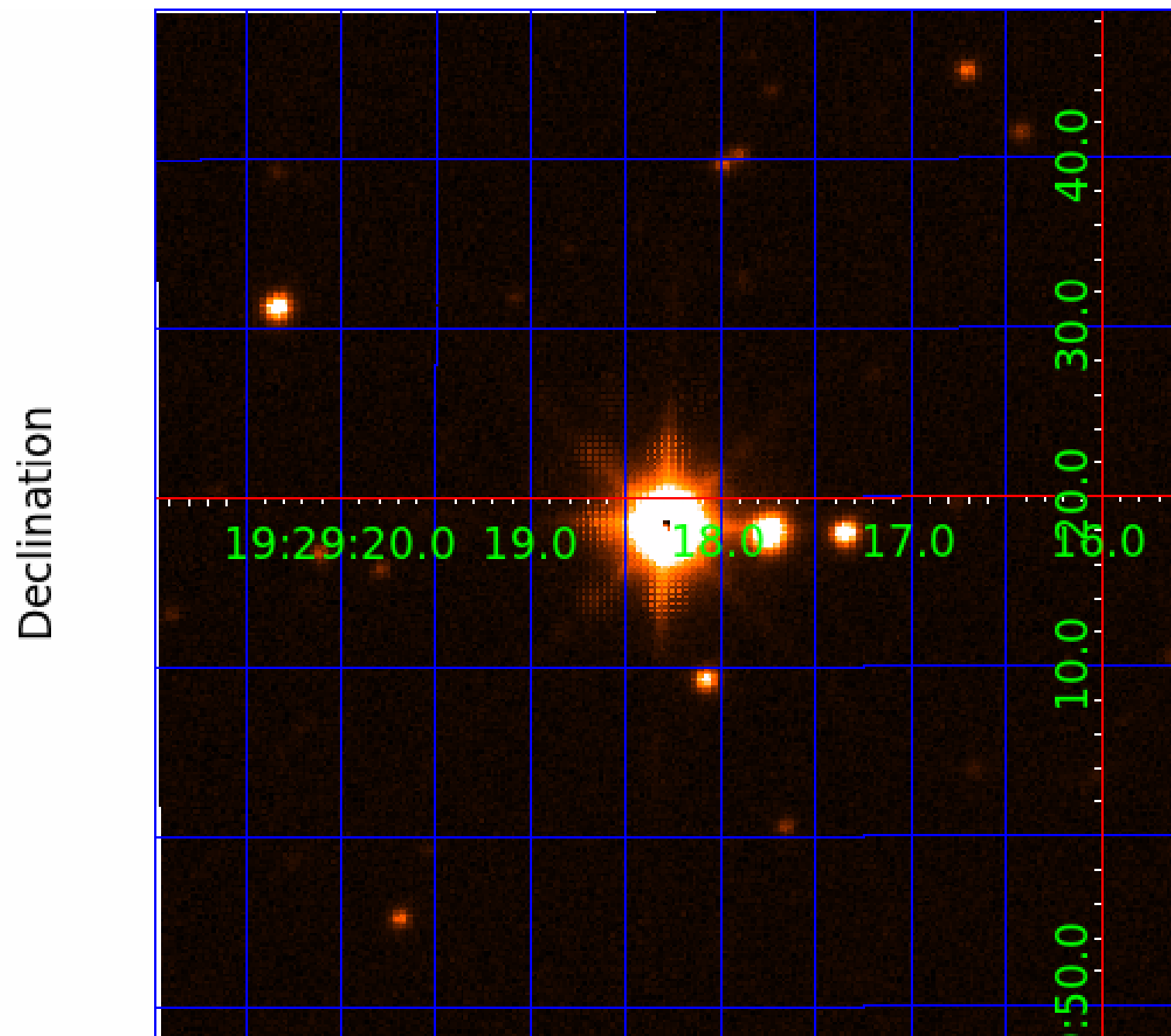
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006286633

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})
006286633-01	OBS	No	59.722284	148.151706	12.4	3.012	12.5	4.7	12.87	5083	6.08	522.64
006286633-02	OBS	No	380.274281	478.482688	3584.8	6.857	13.1	10.0	12.87	5083	148.44	44.28
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006286633-04	OBS	No	365.924192	466.478343	121.1	12.500	12.3	-1.0	12.87	5083	13.76	46.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006286633-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
006286633-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006286633-03	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_SATURATED
006286633-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

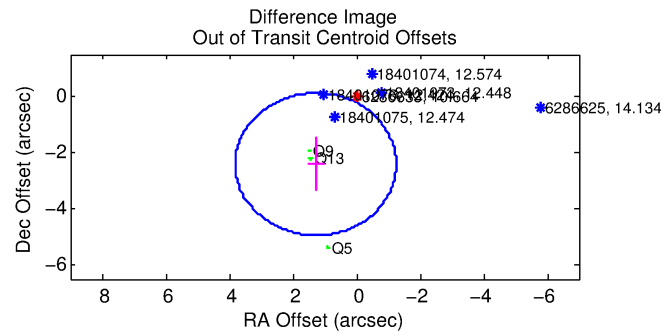
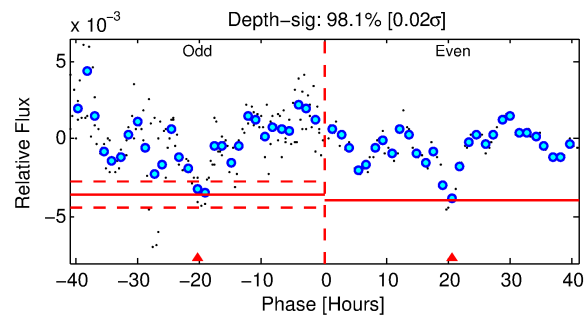
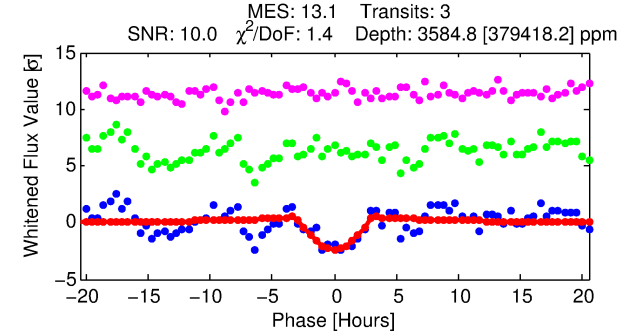
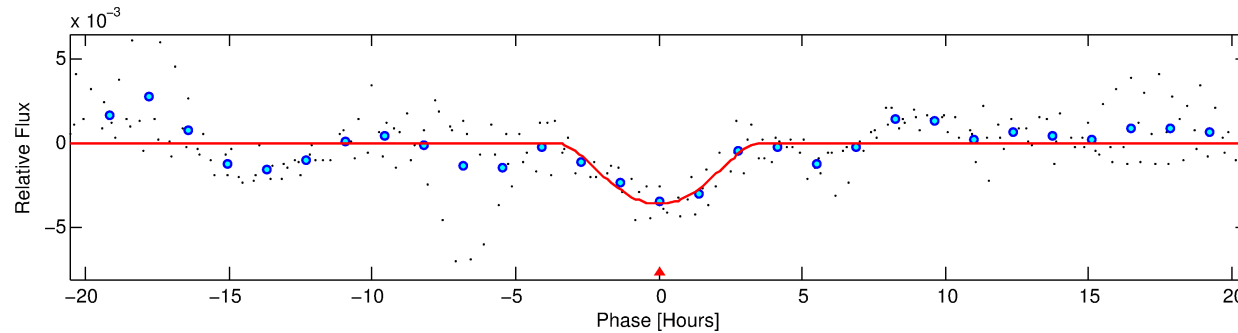
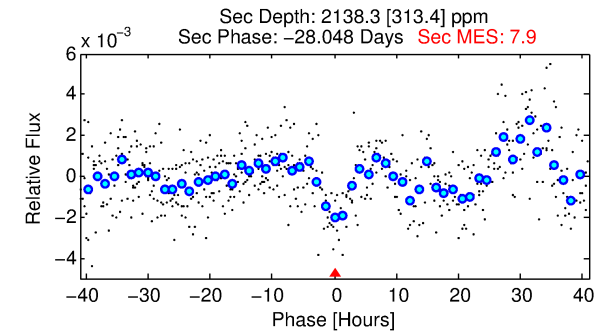
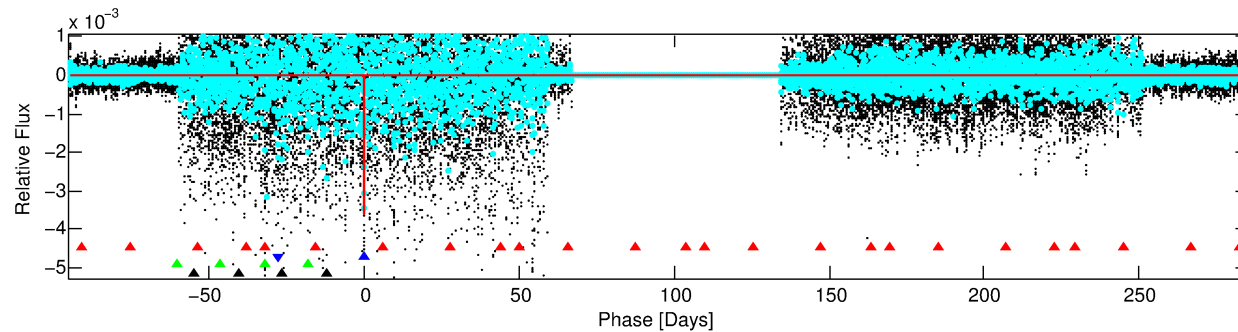
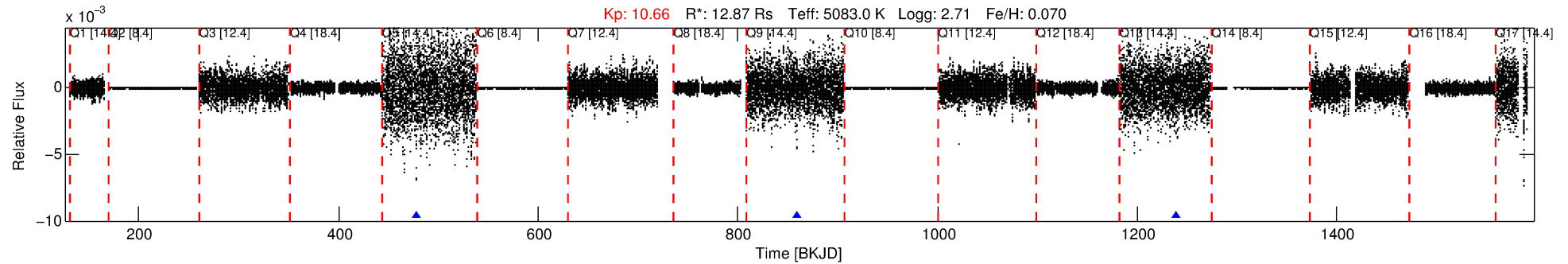
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006286633-02

No Significant Match Found

DV One-Page Summary

KIC: 6286633 Candidate: 2 of 4 Period: 380.274 d



DV Fit Results:

Period = 380.27428 [0.01050] d
Epoch = 478.4827 [0.0131] BKJD
Rp/R* = 0.1057 [0.3412]
a/R* = 199.89 [118.36]
b = 1.00 [7.73]
Seff = 44.28 [12.33]
Teq = 658 [46] K
Rp = 148.44 [482.37] Re
a = 1.4954 [0.3817] AU
Ag = 119.40 [771.45] [0.15σ]
Teffp = 3362 [5427] K [0.50σ]

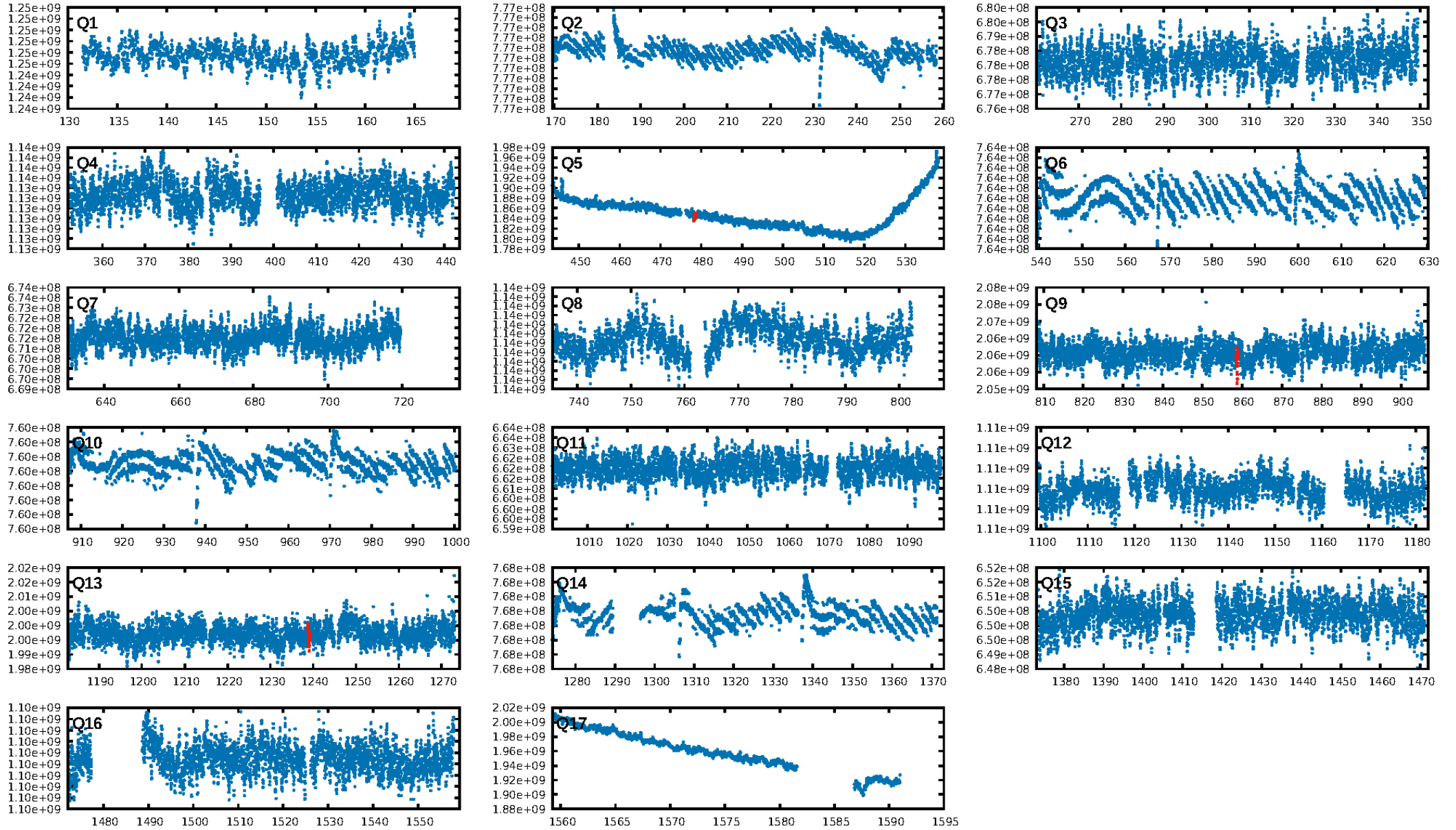
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [26.01σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 32.2%
ModelChiSquareGof-sig: 87.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.33
Centroid-sig: 0.0%
Centroid-so: 0.455 arcsec [3.26σ]
OotOffset-rm: 2.735 arcsec [3.24σ]
KicOffset-rm: 2.767 arcsec [3.21σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

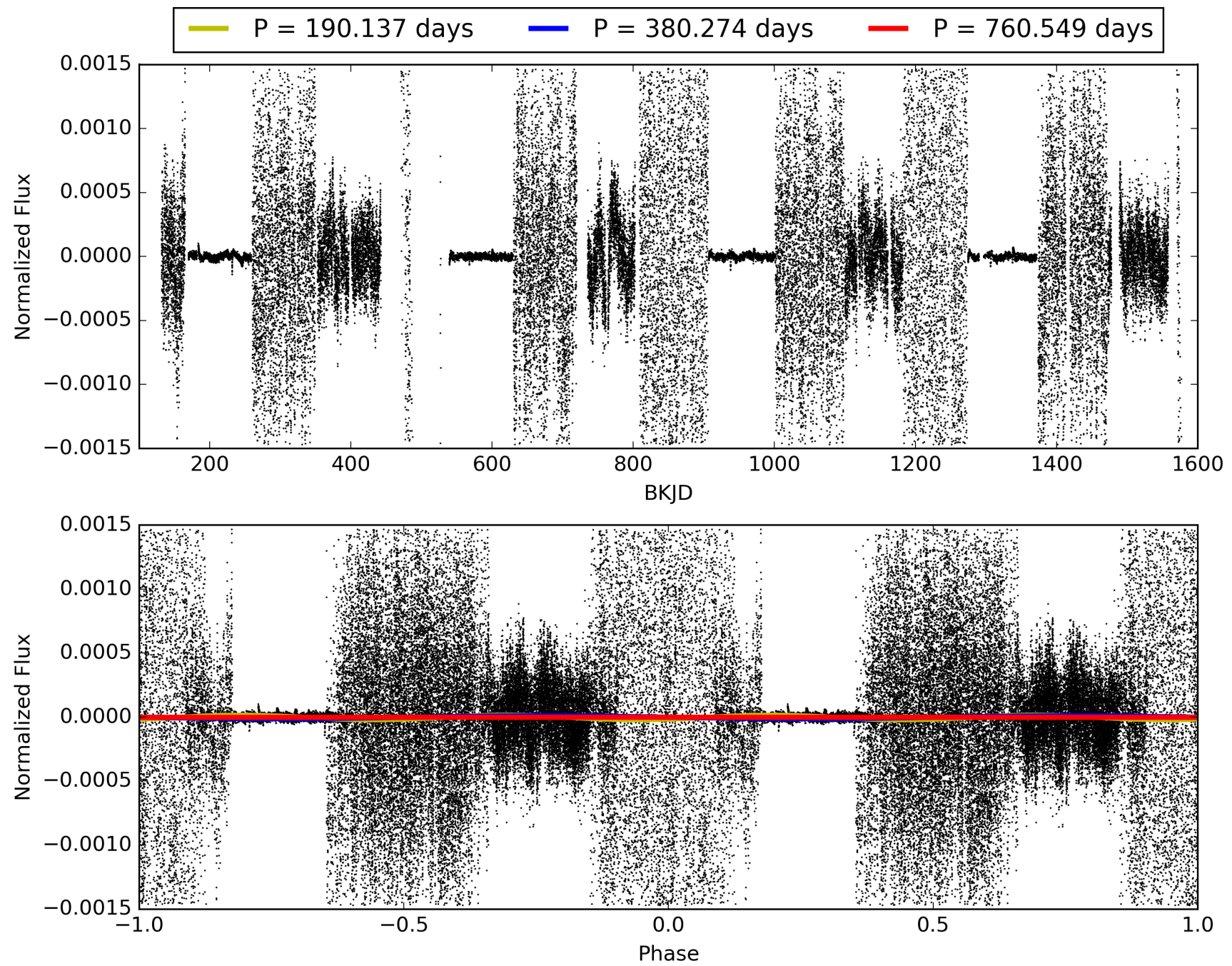
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:19:33 Z

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

TCE 006286633-02, PDC Light Curves

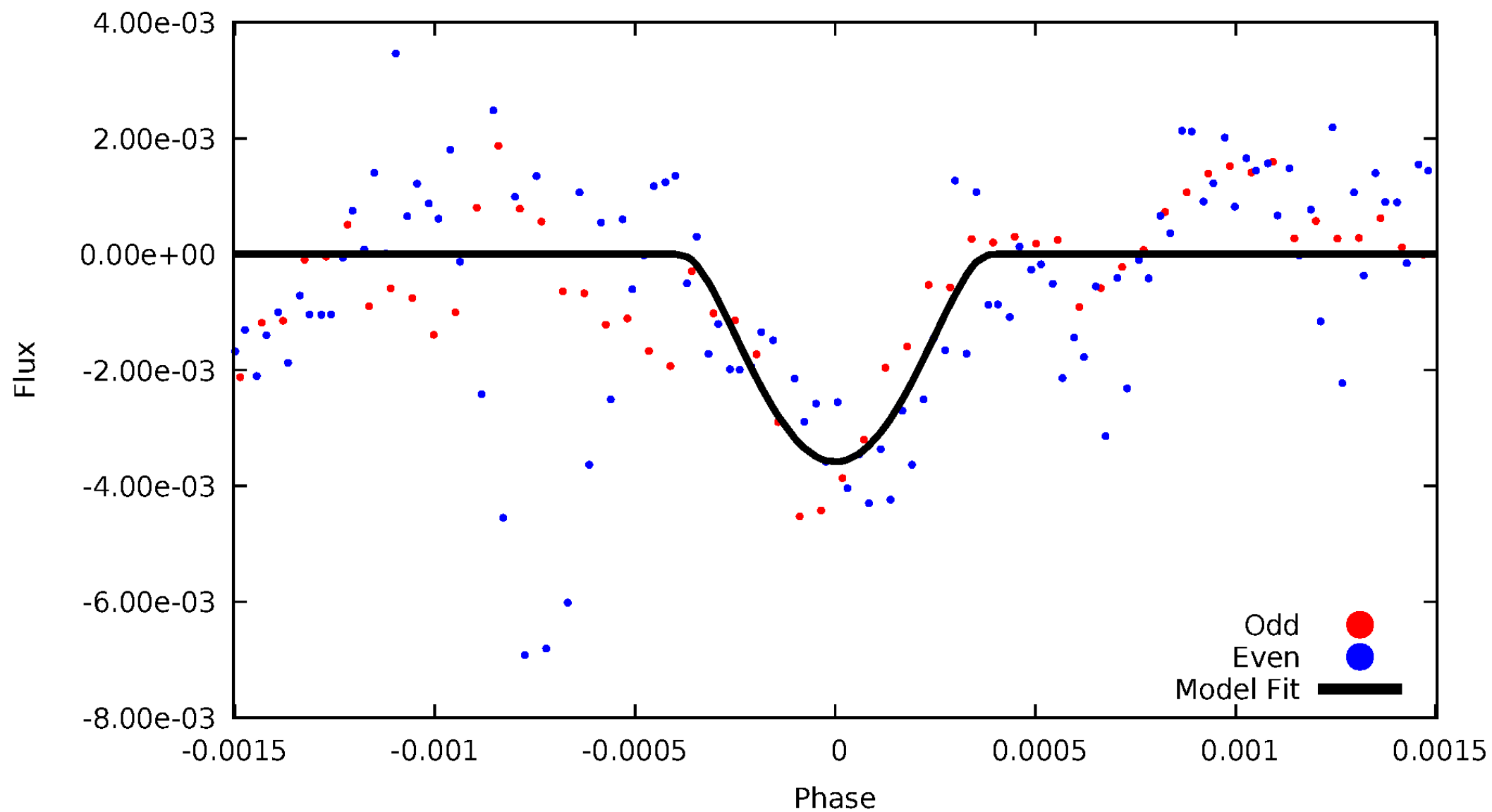


TCE 006286633-02



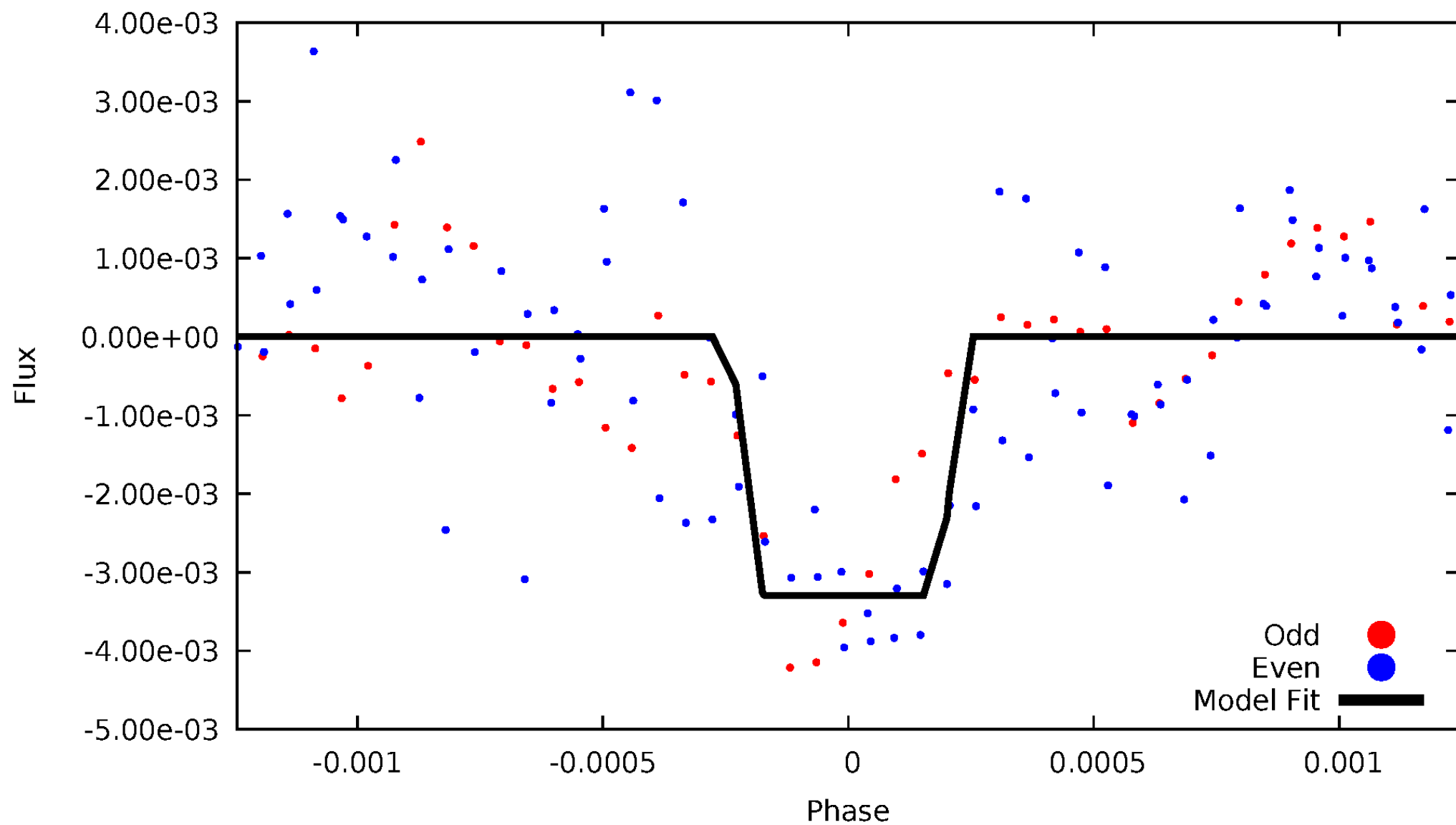
DV Odd/Even

TCE 006286633-02



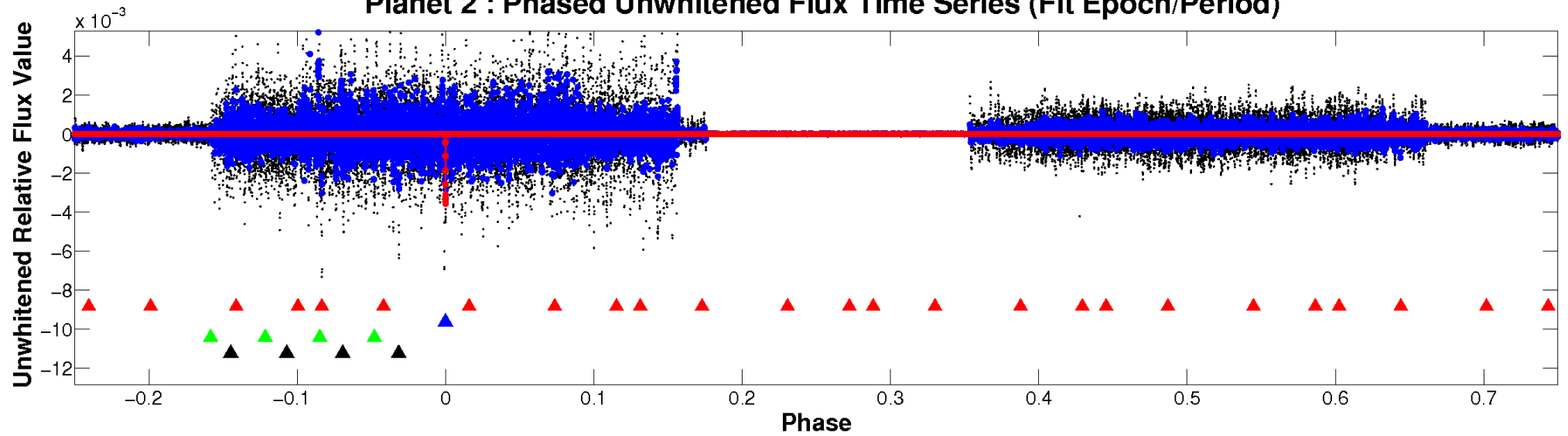
ALT Odd/Even

TCE 006286633-02

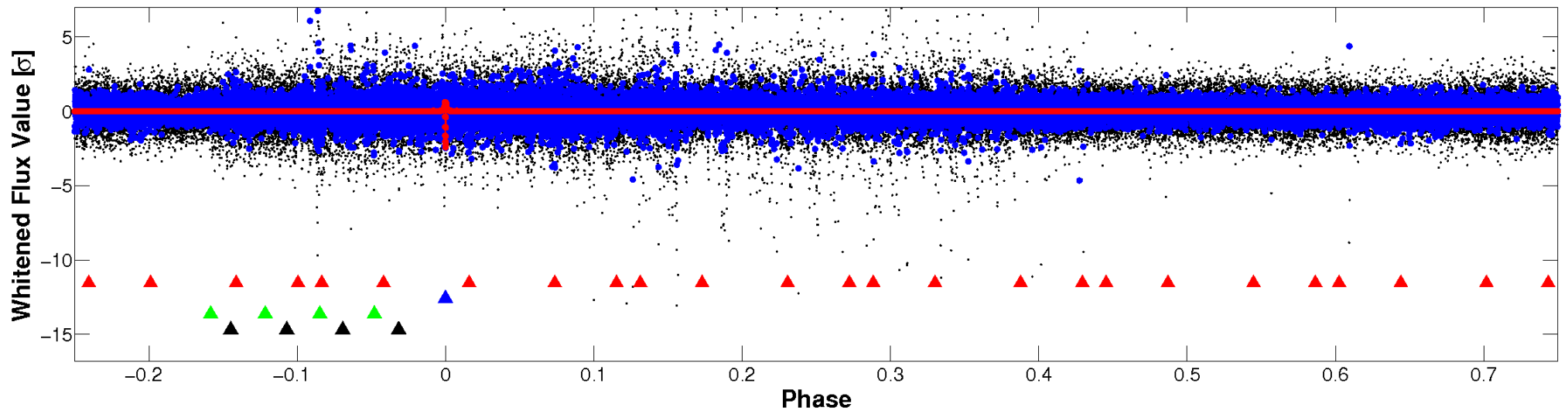


Non-Whitened Vs. Whitened Light Curve

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

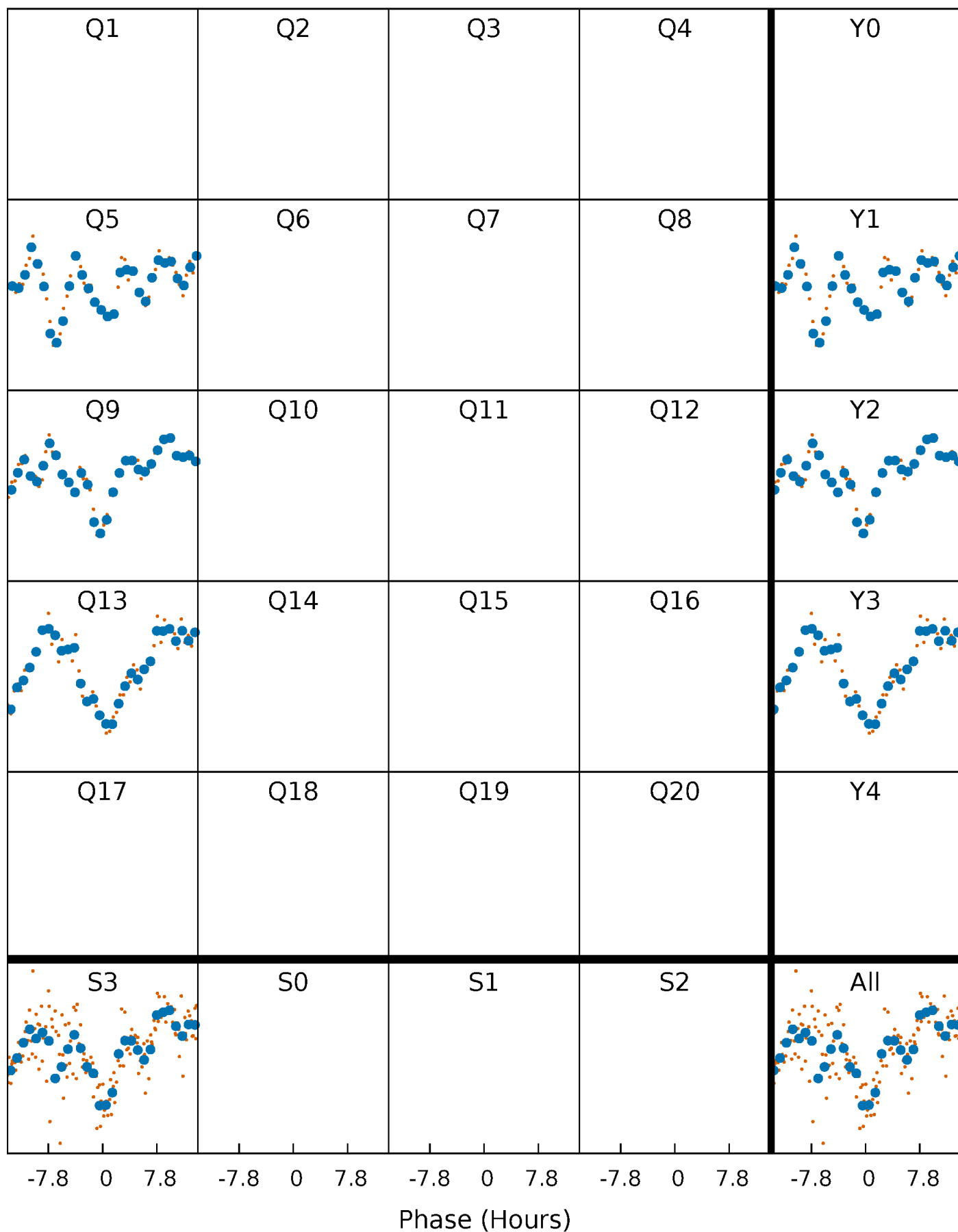


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



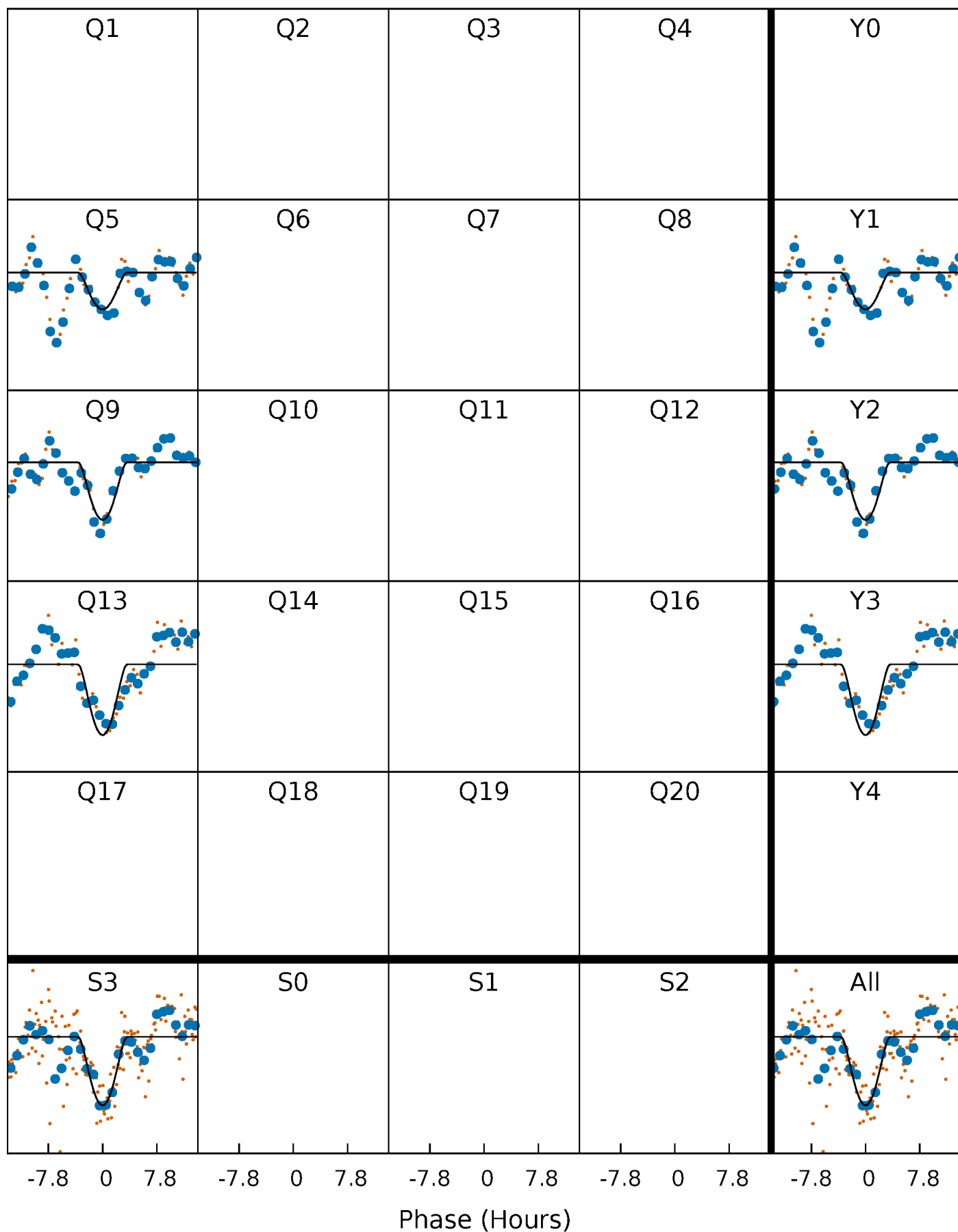
PDC Quarter-Phased Transit Curves

TCE 006286633-02 $P=380.274281$ Days $T_0=478.482688$ (BKJD)



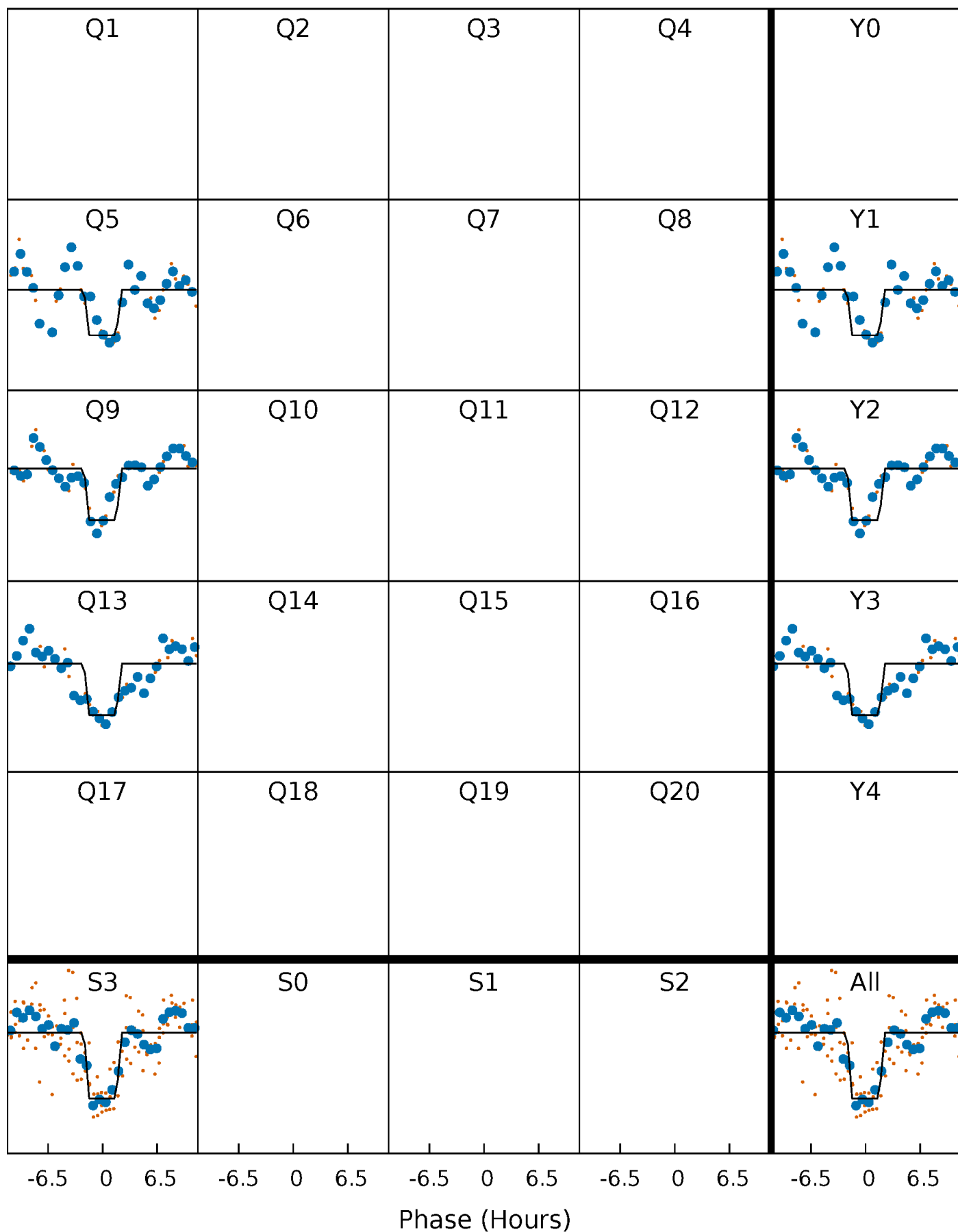
DV Quarter-Phased Transit Curves

TCE 006286633-02 $P=380.274281$ Days $T_0=478.482688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

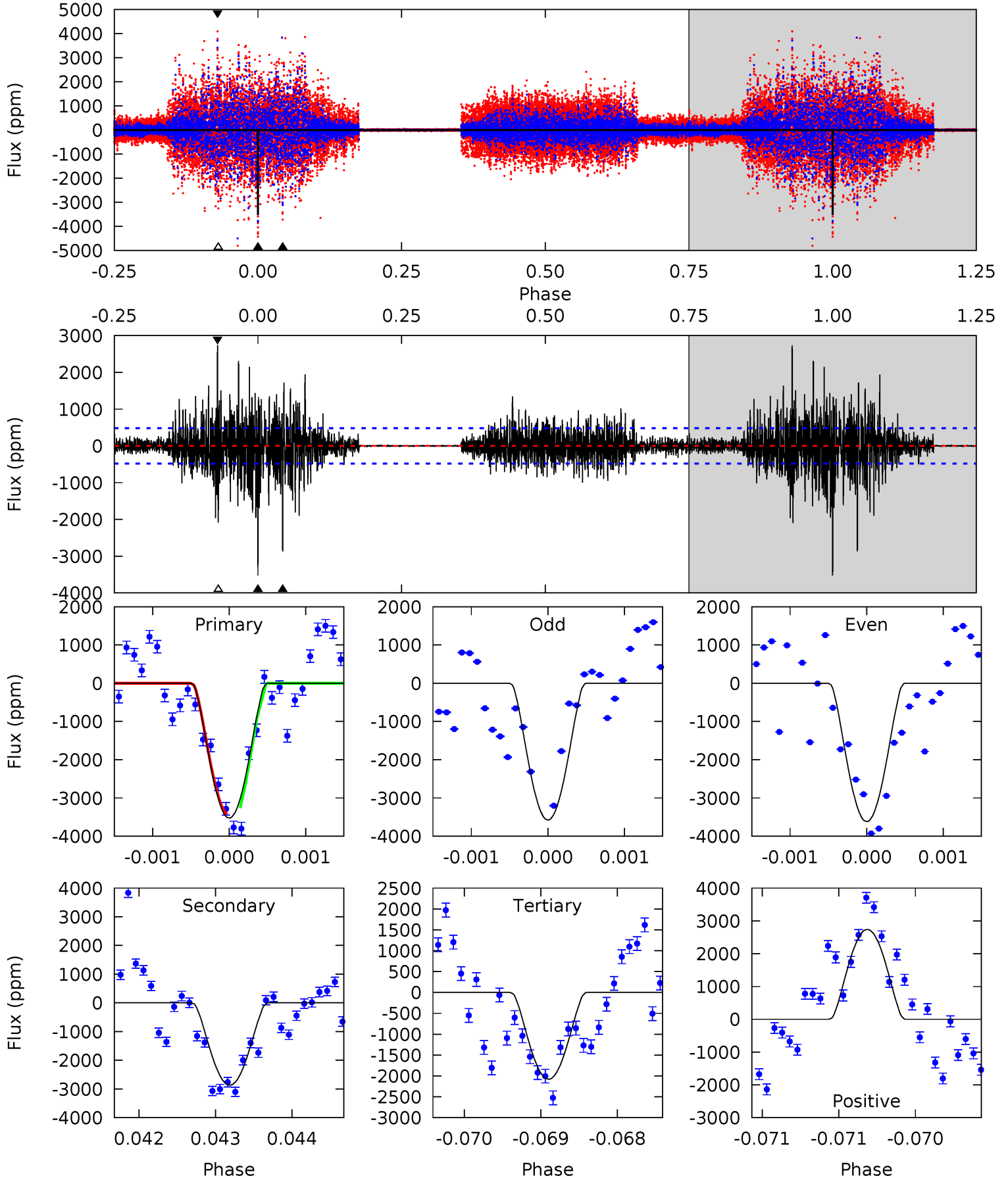
TCE 006286633-02 P=380.288985 Days $T_0=478.479240$ (BKJD)



DV Model-Shift Uniqueness Test

006286633-02, P = 380.274281 Days, E = 98.208407 Days

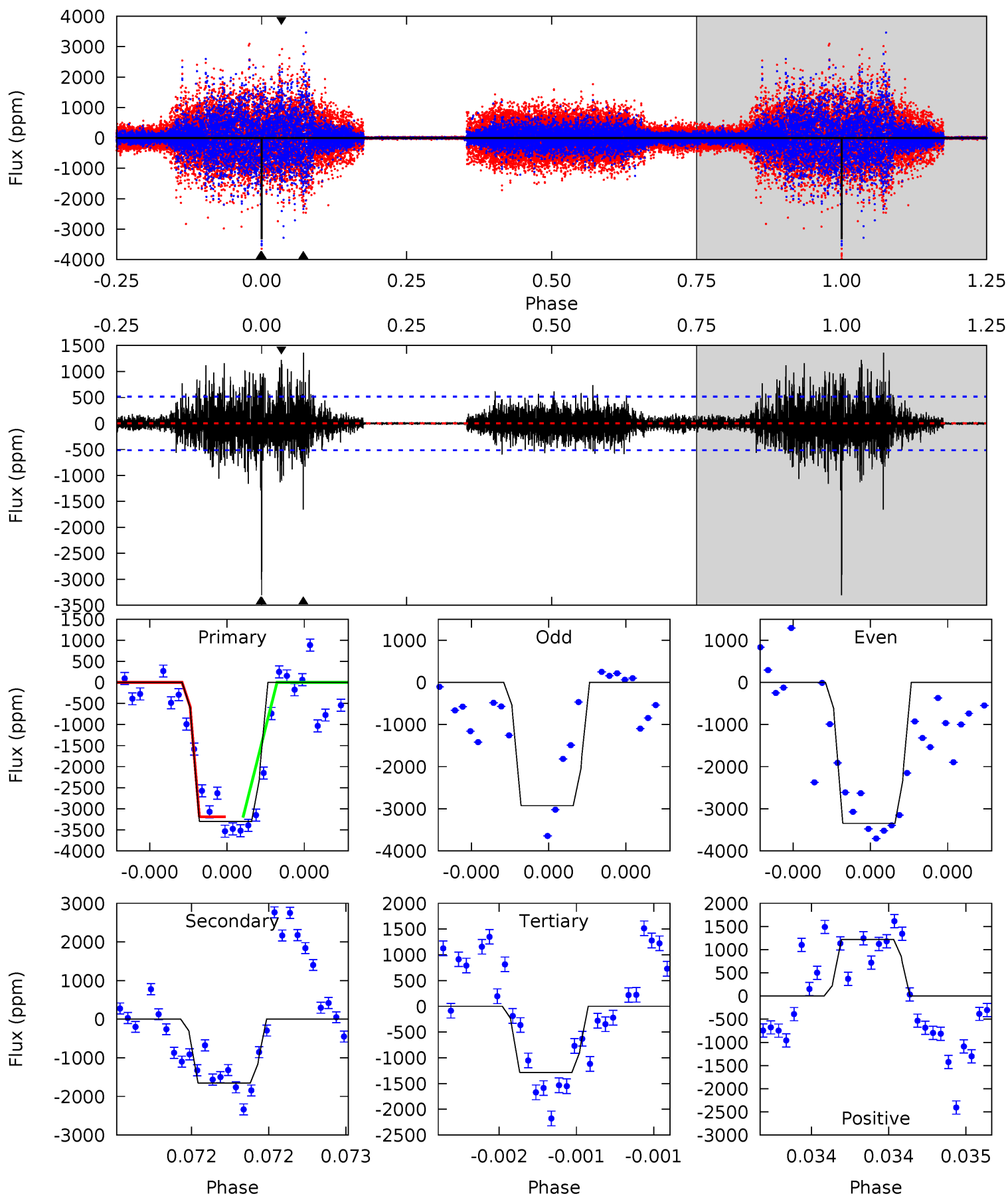
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.3	32.7	23.8	31.3	5.49	3.35	3.67	16.5	8.98	8.99	1.45	0.19	1.00	0.44	0.88



Alt Model-Shift Uniqueness Test

006286633-02, P = 380.288985 Days, E = 98.190255 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.7	17.9	13.9	13.2	5.58	3.49	1.90	21.8	22.5	4.00	4.70	1.93	1.03	0.29	0.06



Stellar Parameters For KIC 006286633

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5083^{+50}_{-130}	$2.708^{+0.033}_{-0.027}$	$0.070^{+0.150}_{-0.750}$	$12.868^{+0.516}_{-4.903}$	$3.083^{+0.205}_{-1.950}$	$0.002^{+0.001}_{-0.000}$
	+1%/-3%	+1%/-1%	+214%/-1071%	+4%/-38%	+7%/-63%	+67%/-9%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 006286633-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2868 ± 88	$392.81^{+370.19}_{-252.50}$	918^{+16}_{-26}	2896^{+1087}_{-470}	23^{+159}_{-17}
Alt.	-1655 ± 93	$379.93^{+377.59}_{-260.02}$	918^{+15}_{-24}	2721^{+1056}_{-451}	14^{+126}_{-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

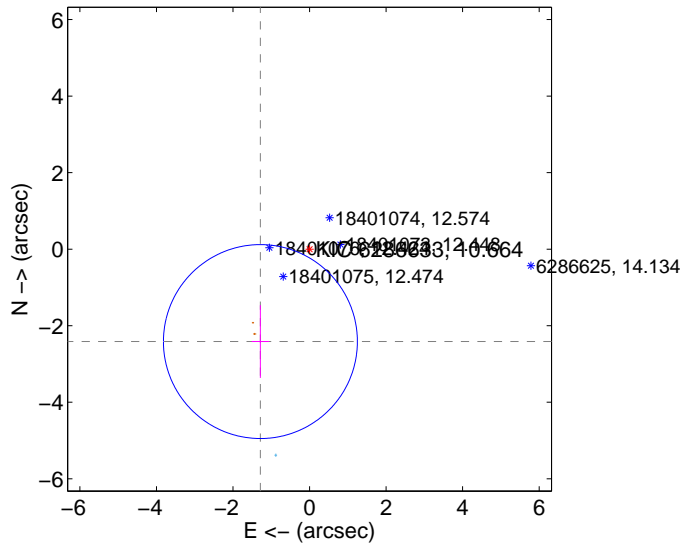
Supplemental centroid analysis for 006286633-02. **Kepler magnitude: 10.66.** Transit SNR 10.01

There are 1 quarters with good PRF difference image offsets

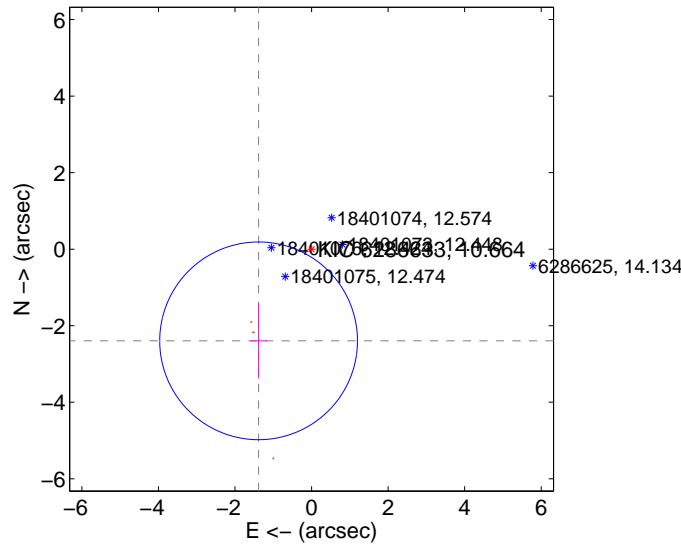
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.735 ± 0.845	3.24	1.284 ± 0.230	-2.415 ± 0.949
PRF-fit source offset from KIC position	2.767 ± 0.861	3.21	1.384 ± 0.221	-2.396 ± 0.986
photometric centroid source offset	0.46 ± 0.14	3.26	0.12 ± 0.13	-0.44 ± 0.14

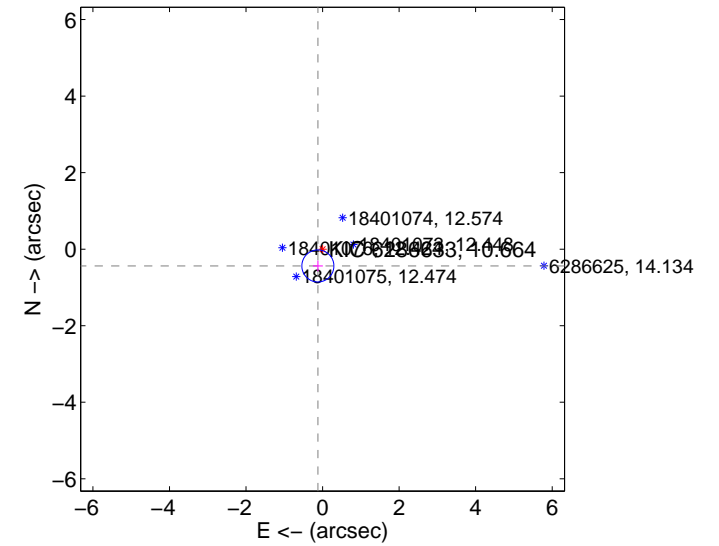
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

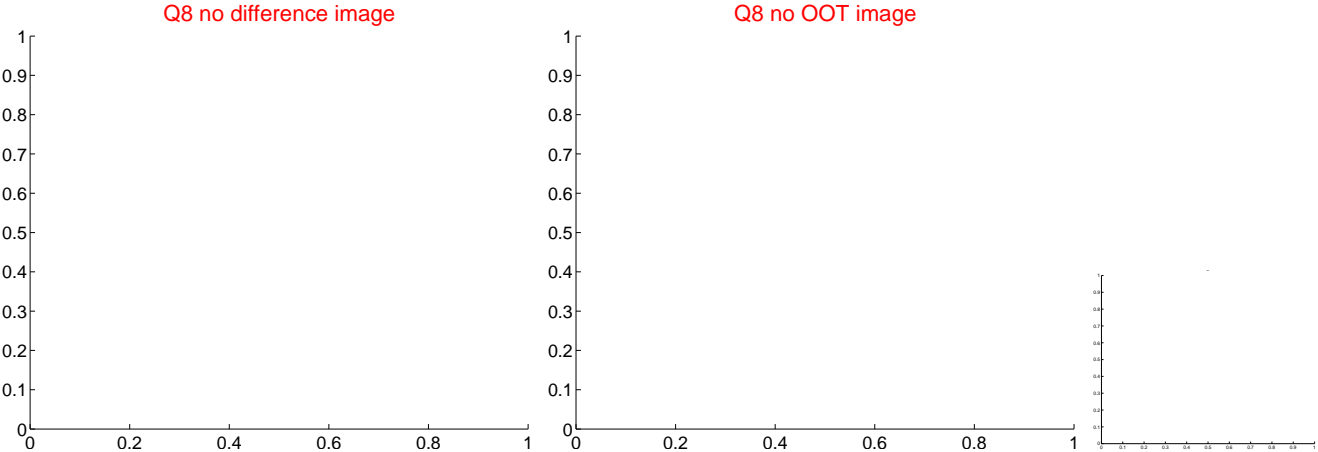
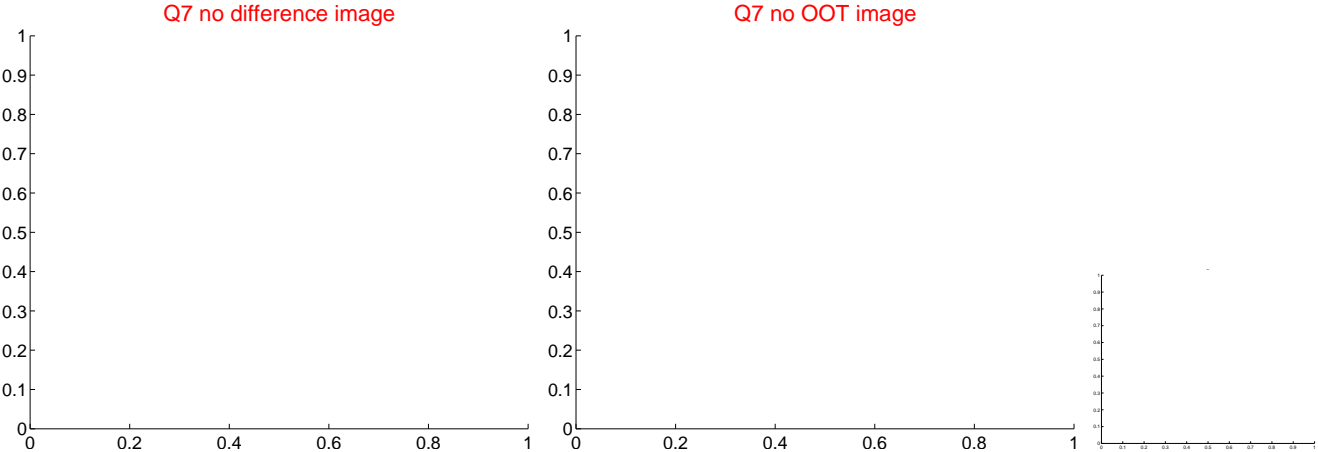
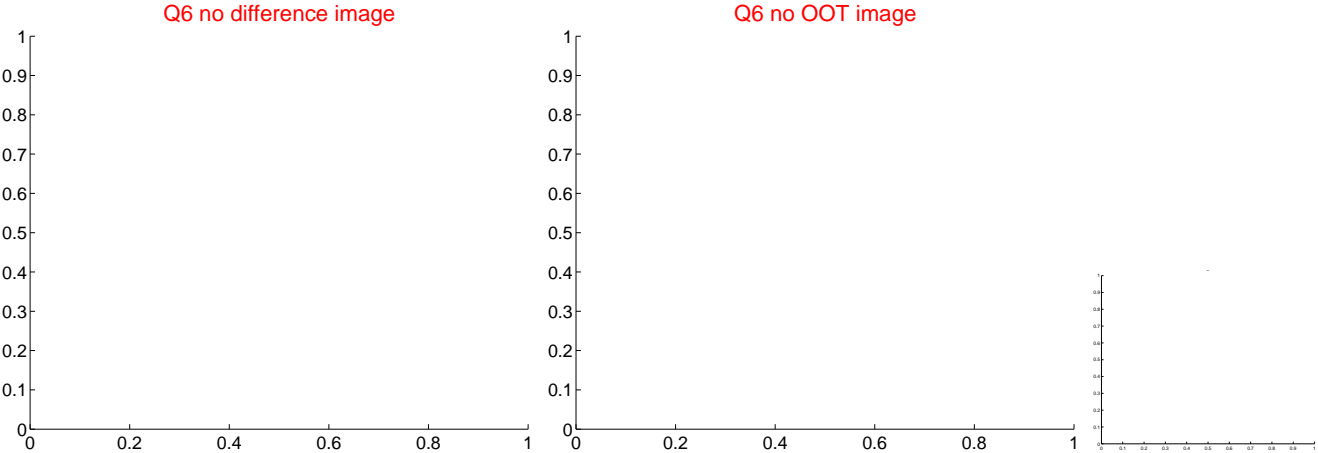
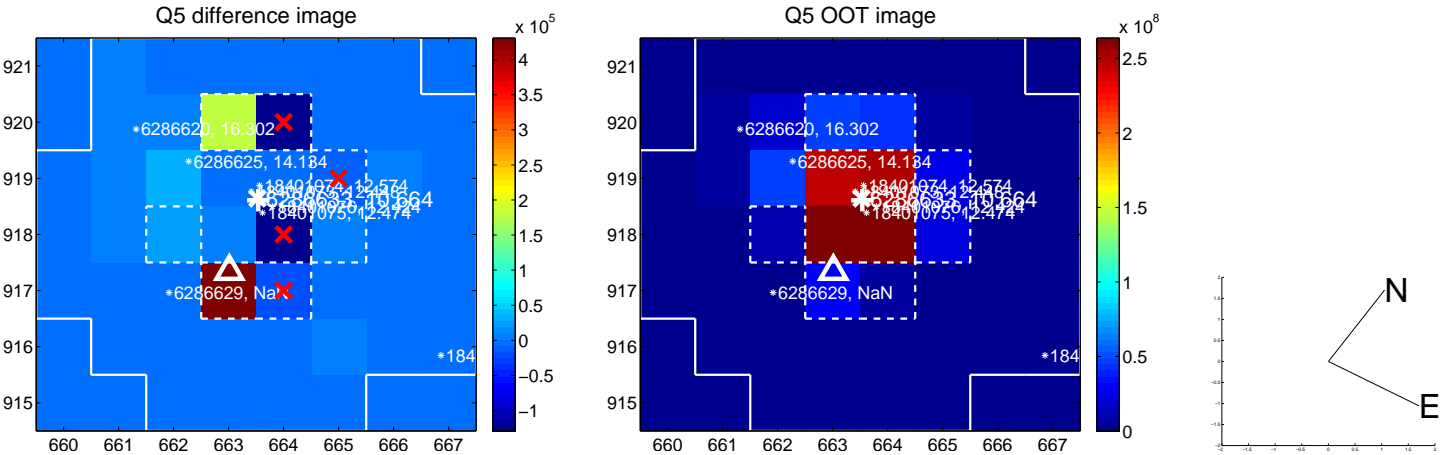


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

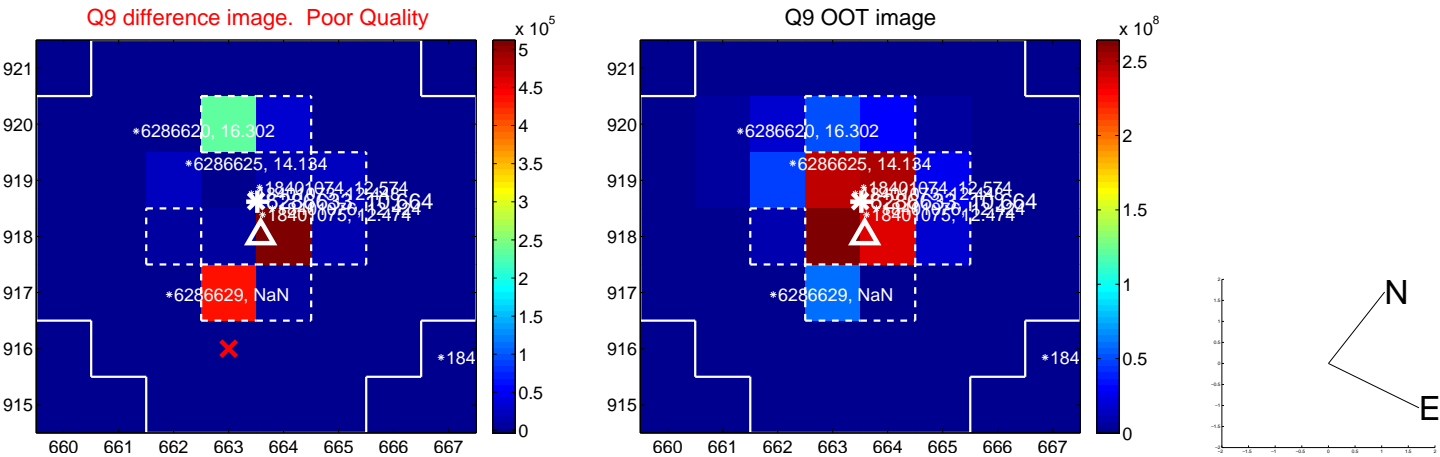
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



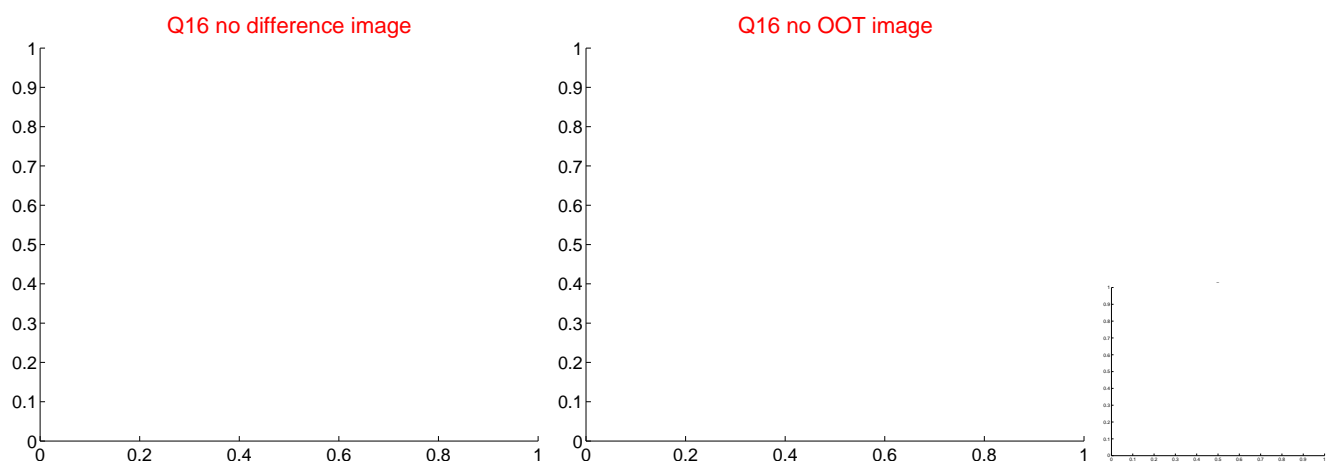
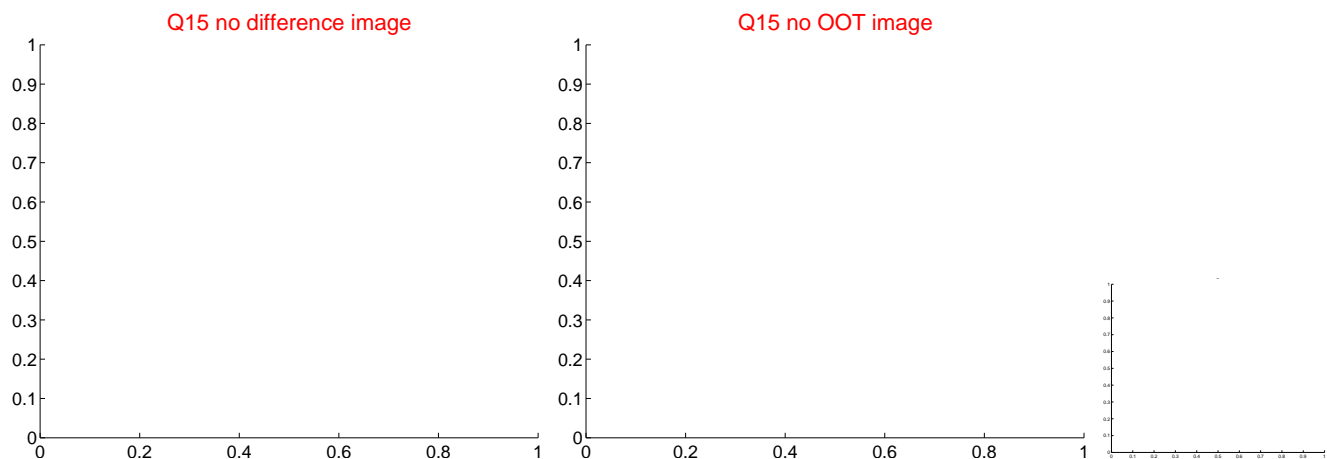
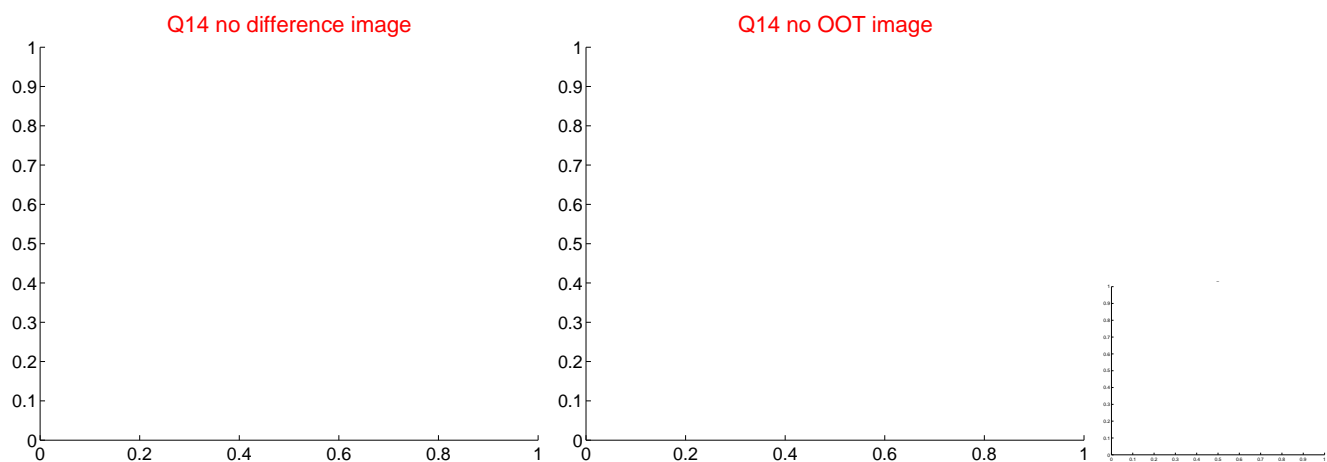
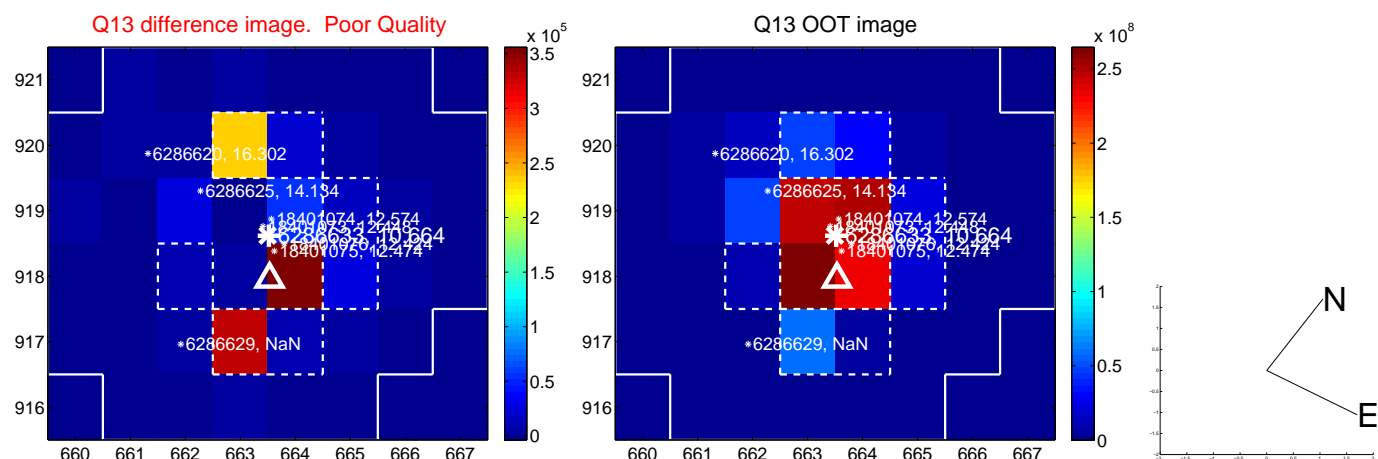
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



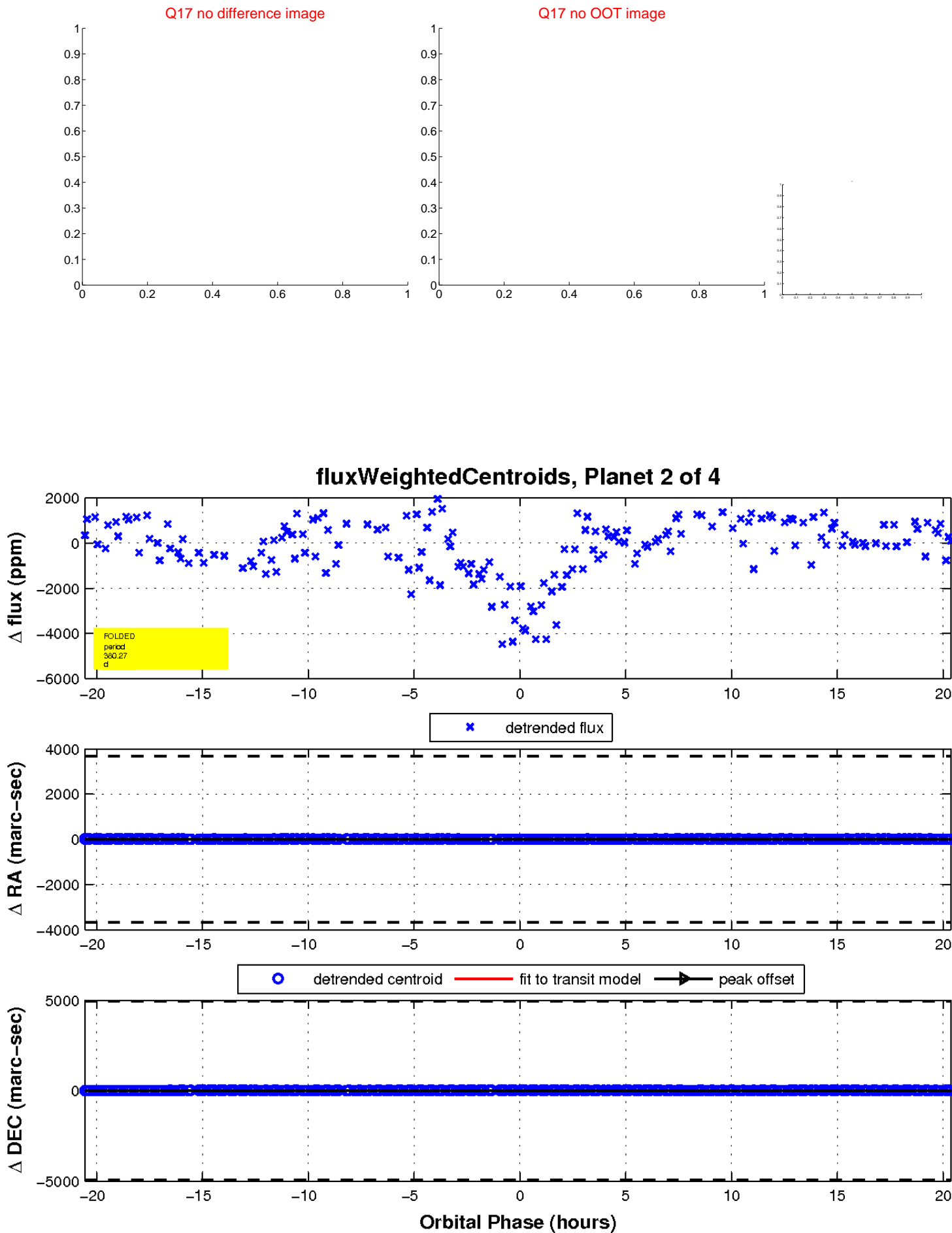
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



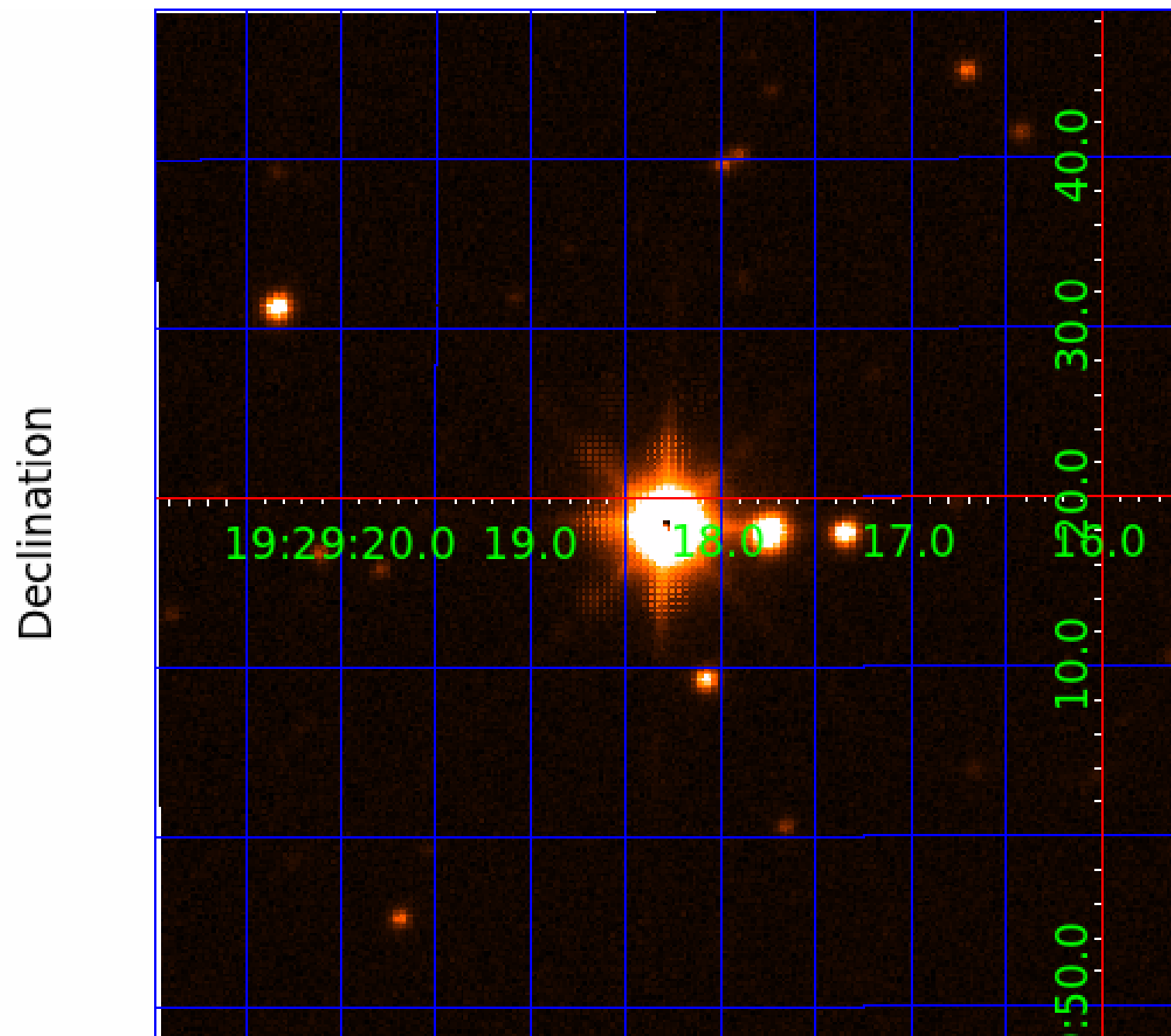
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image



KIC 006286633

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})
006286633-01	OBS	No	59.722284	148.151706	12.4	3.012	12.5	4.7	12.87	5083	6.08	522.64
006286633-02	OBS	No	380.274281	478.482688	3584.8	6.857	13.1	10.0	12.87	5083	148.44	44.28
006286633-03	OBS	8120.01	366.281381	460.250946	2426.5	10.942	12.3	9.9	12.87	5083	68.47	46.55
006286633-04	OBS	No	365.924192	466.478343	121.1	12.500	12.3	-1.0	12.87	5083	13.76	46.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006286633-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
006286633-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006286633-03	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_SATURATED
006286633-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

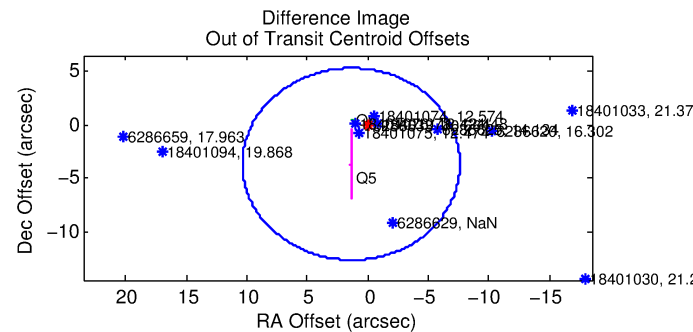
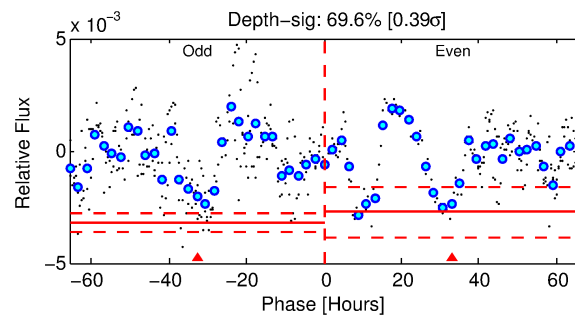
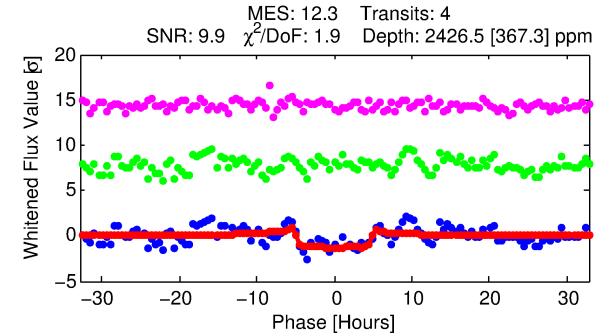
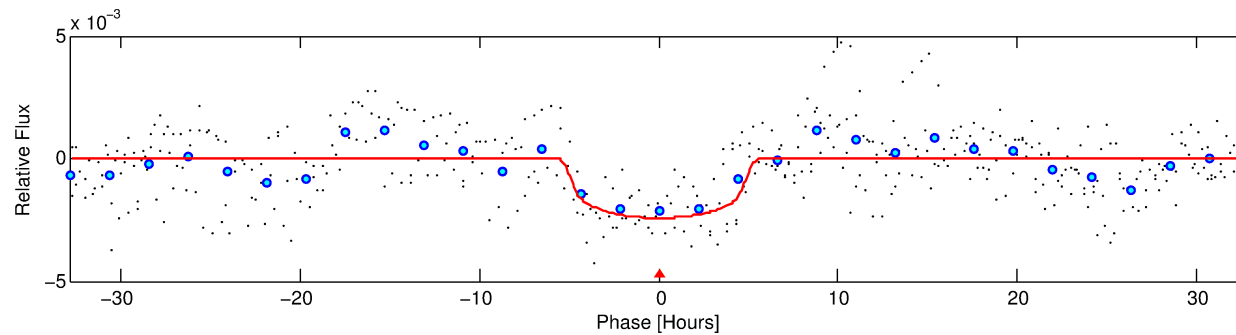
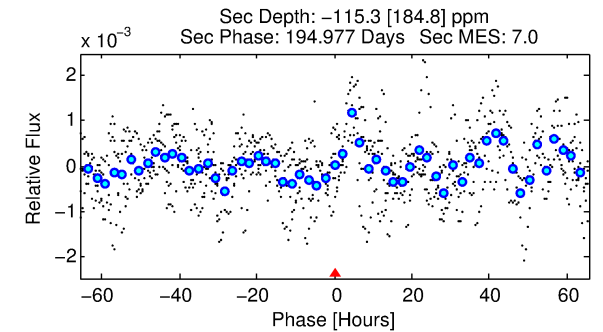
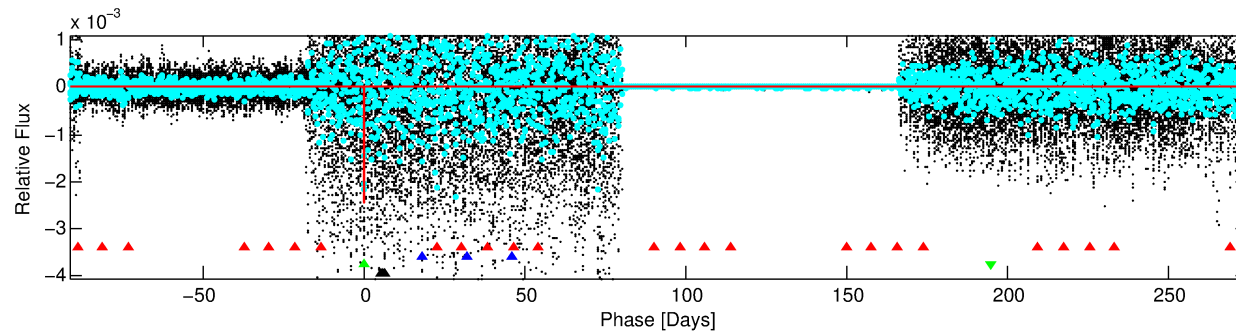
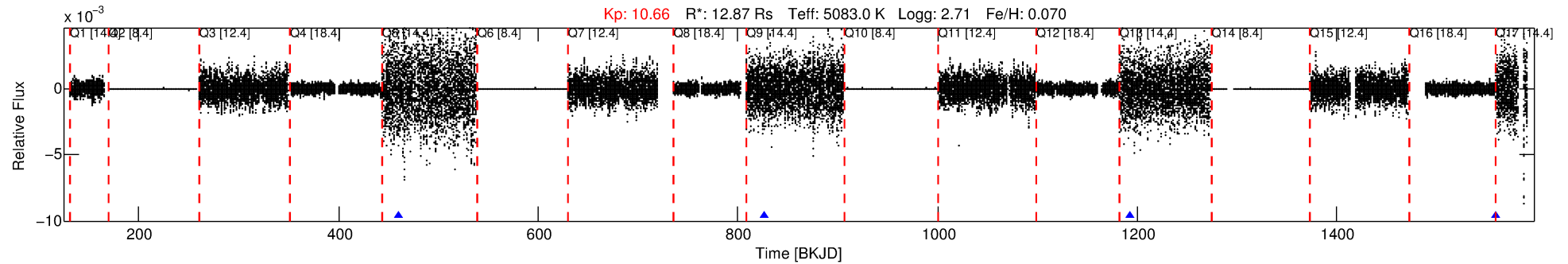
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006286633-03

No Significant Match Found

DV One-Page Summary

KIC: 6286633 Candidate: 3 of 4 Period: 366.281 d



DV Fit Results:

Period = 366.28138 [0.00799] d
Epoch = 460.2509 [0.0119] BKJD
Rp/R* = 0.0488 [0.0066]
a/R* = 192.23 [72.21]
b = 0.73 [0.24]
Seff = 46.55 [12.96]
Teq = 666 [46] K
Rp = 68.47 [27.68] Re
a = 1.4585 [0.3723] AU
Ag = N/A
Teffp = N/A

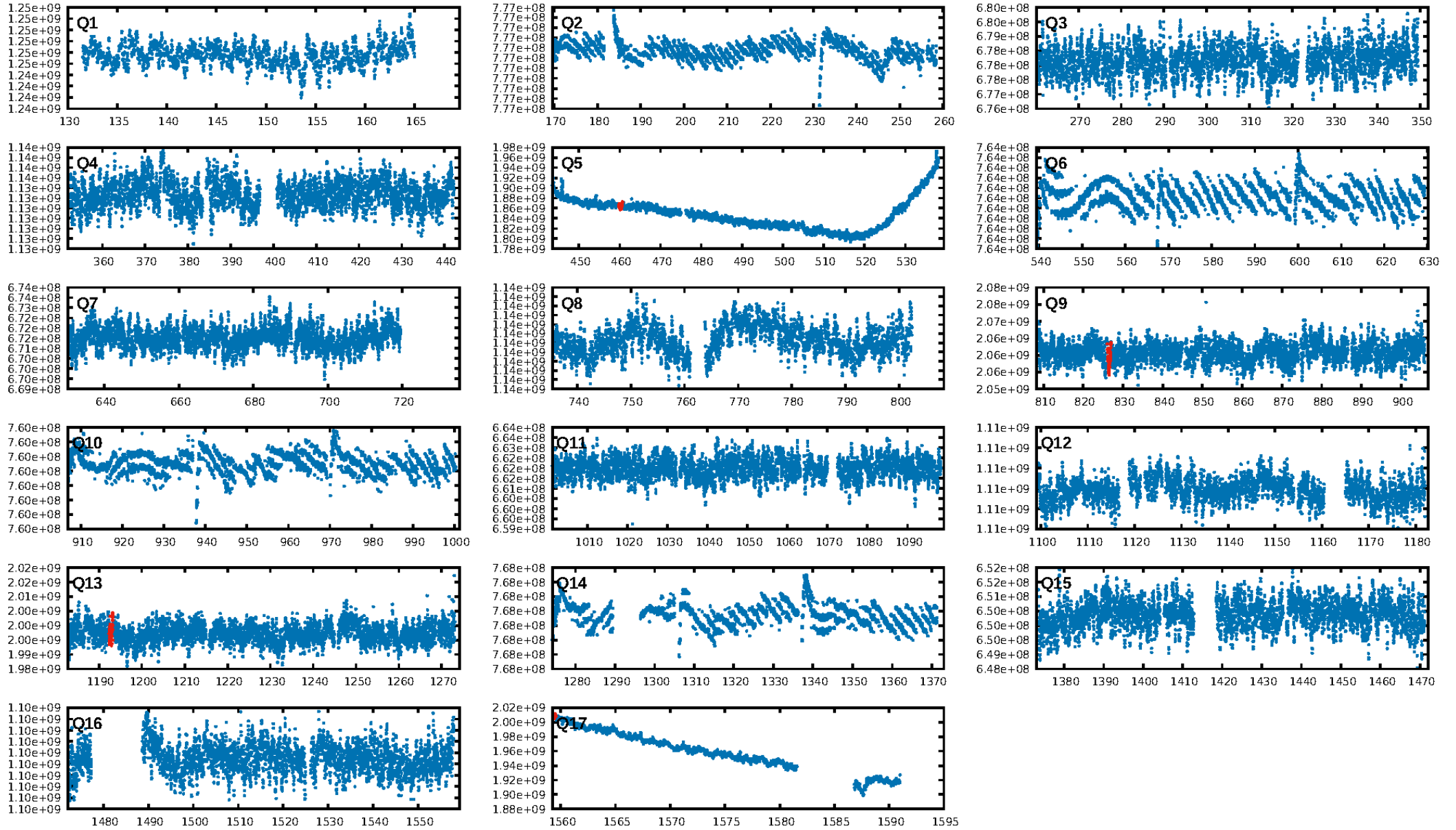
DV Diagnostic Results:

ShortPeriod-sig: 39.4% [0.52σ]
LongPeriod-sig: 100.0% [26.01σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 74.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.016
Centroid-sig: 5.0%
Centroid-so: 0.401 arcsec [3.43σ]
OotOffset-rm: 3.918 arcsec [1.31σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 3.988 arcsec [1.52σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

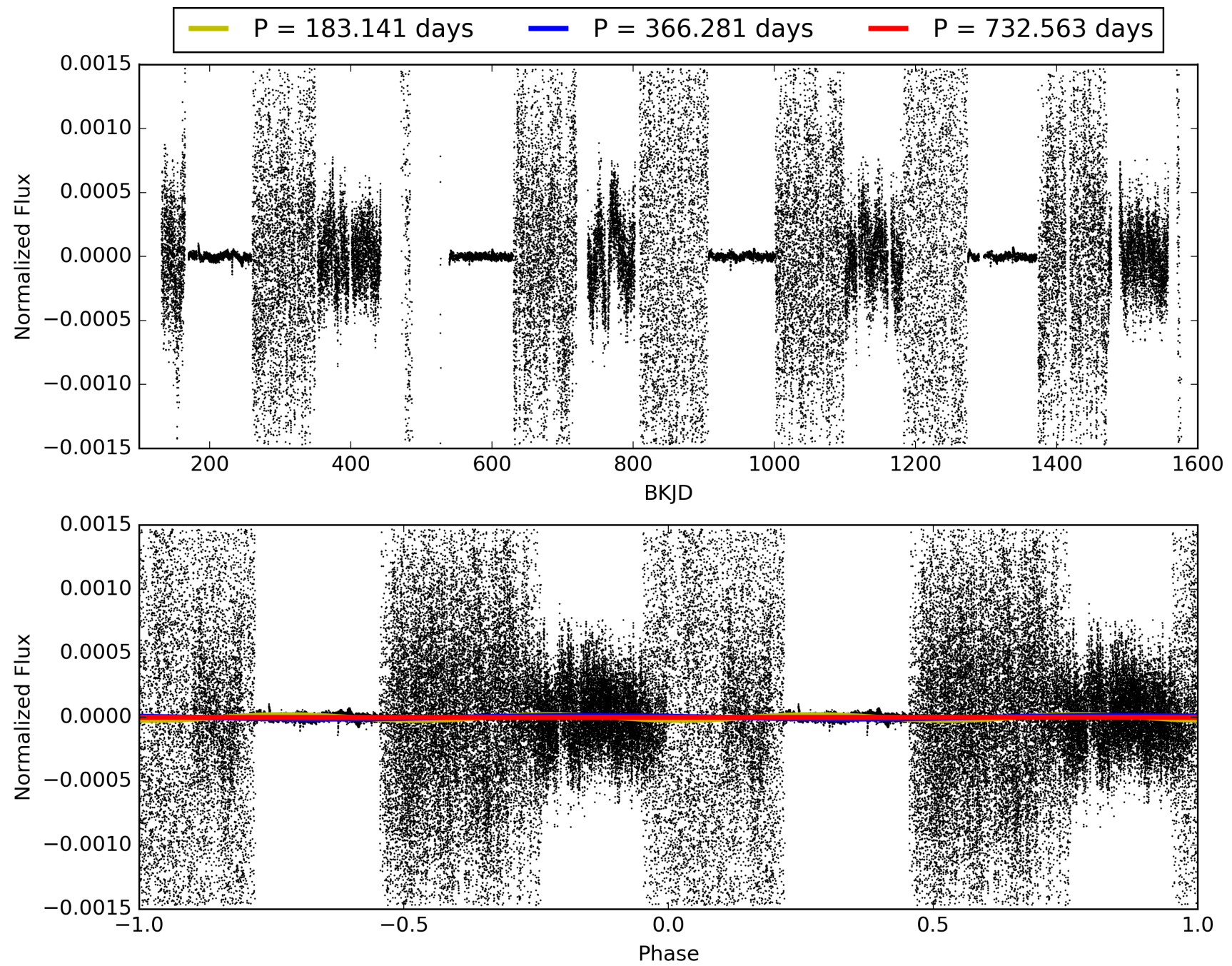
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:19:41 Z

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

TCE 006286633-03, PDC Light Curves

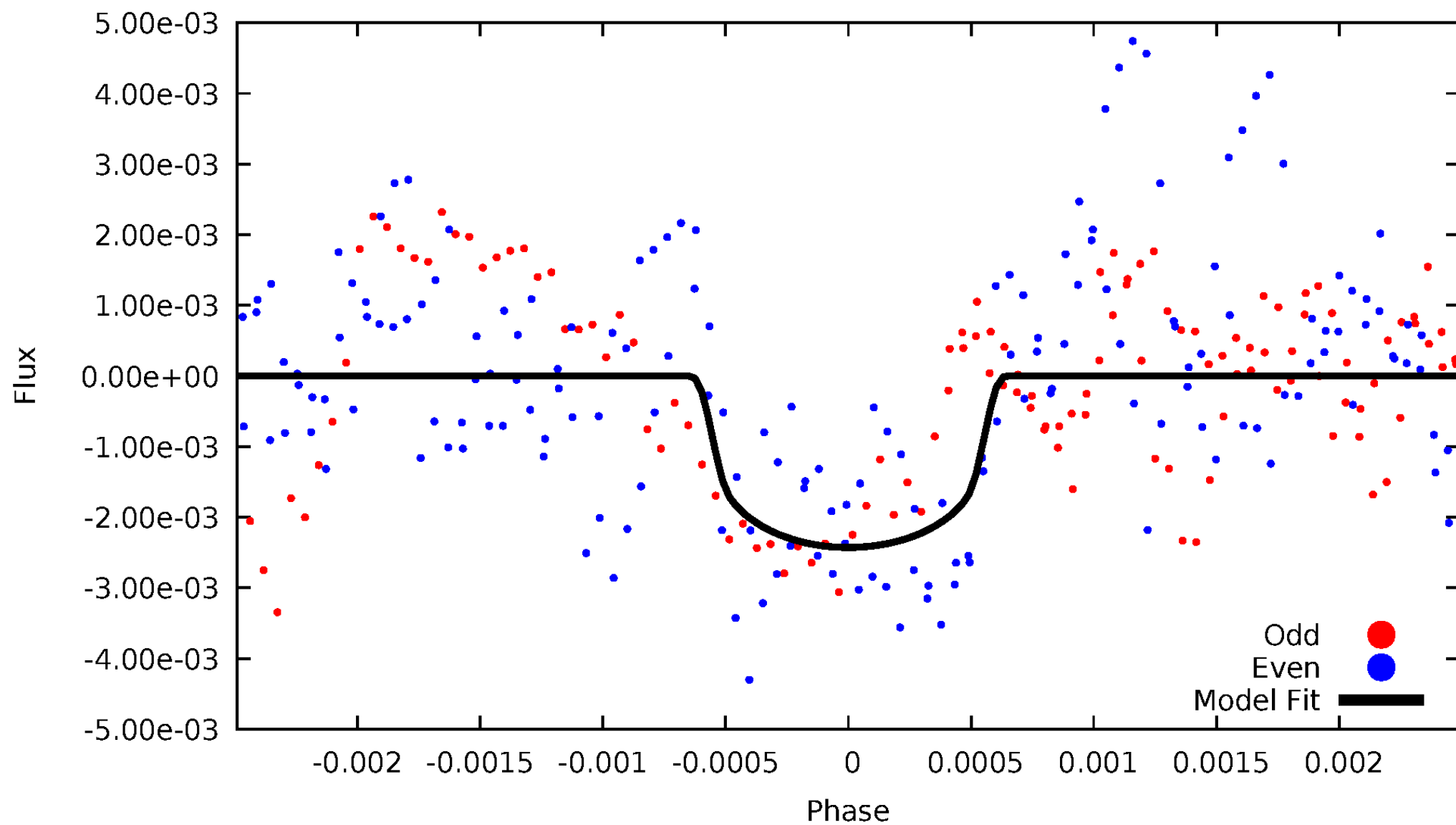


TCE 006286633-03



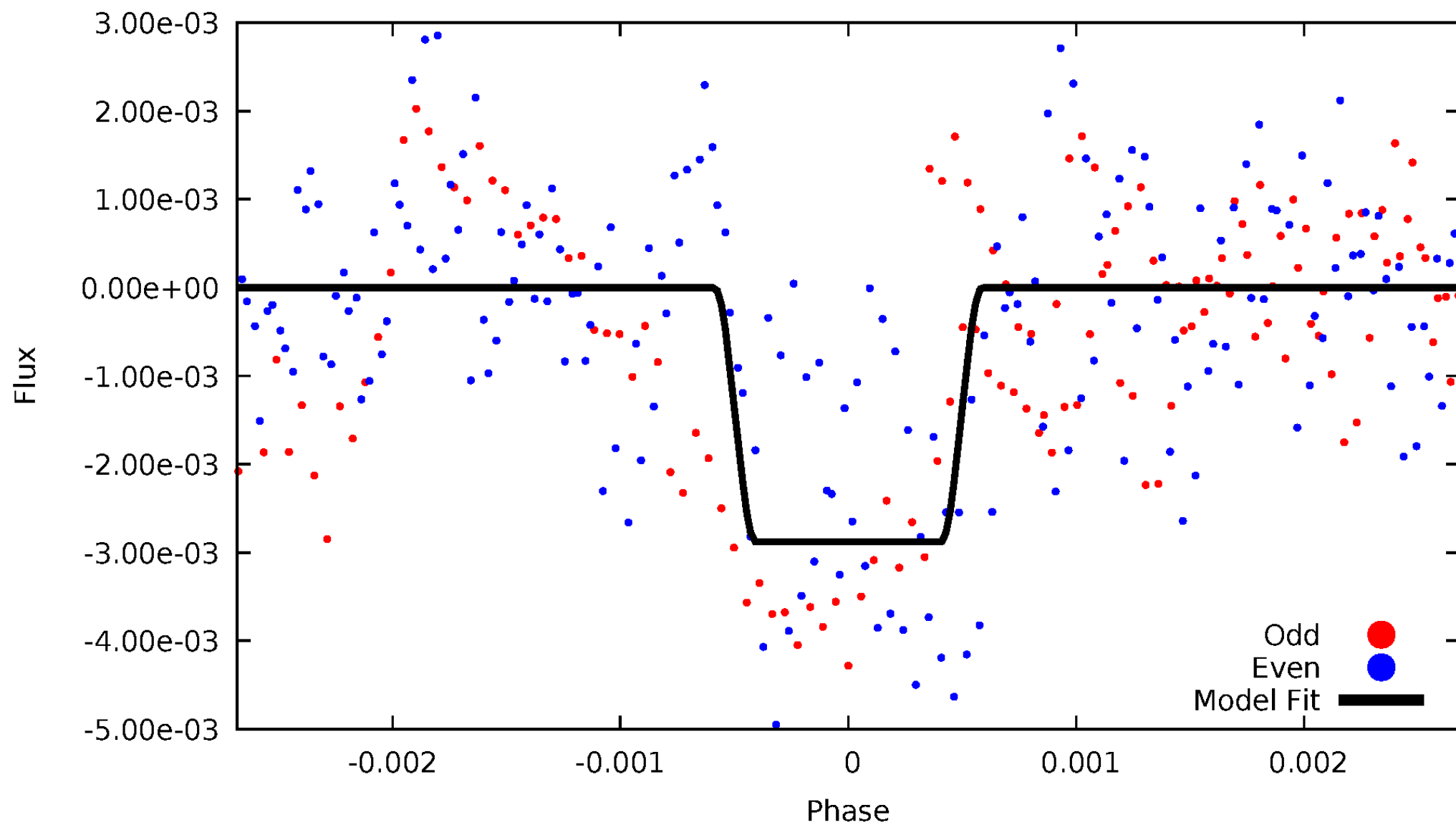
DV Odd/Even

TCE 006286633-03



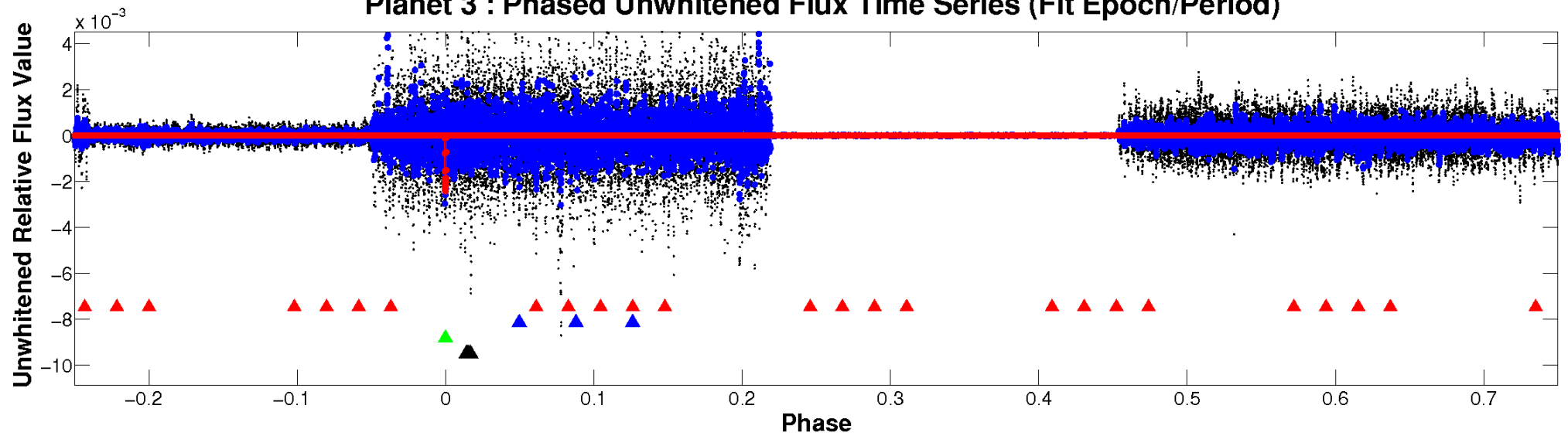
ALT Odd/Even

TCE 006286633-03

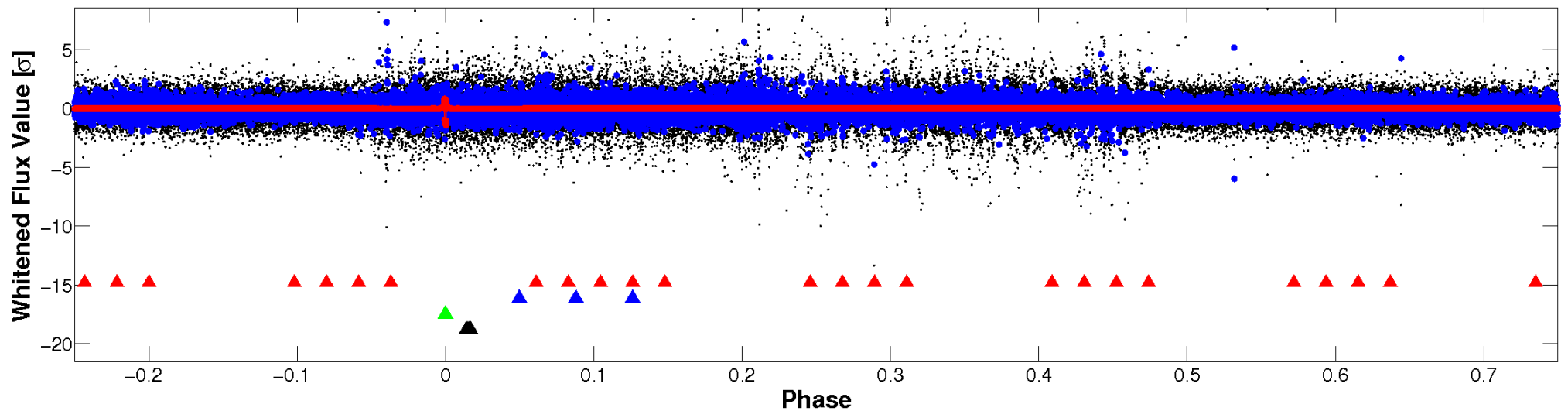


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

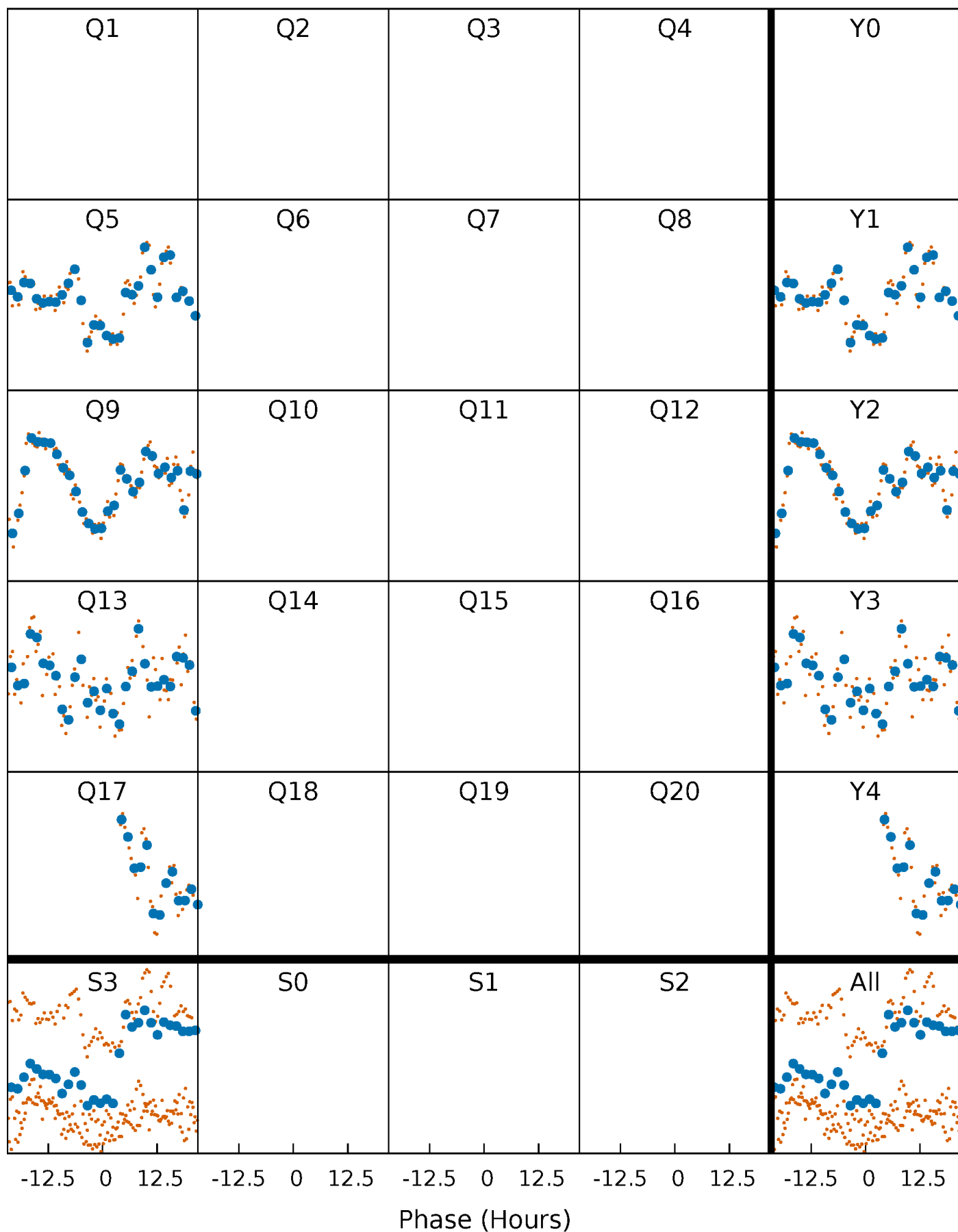


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



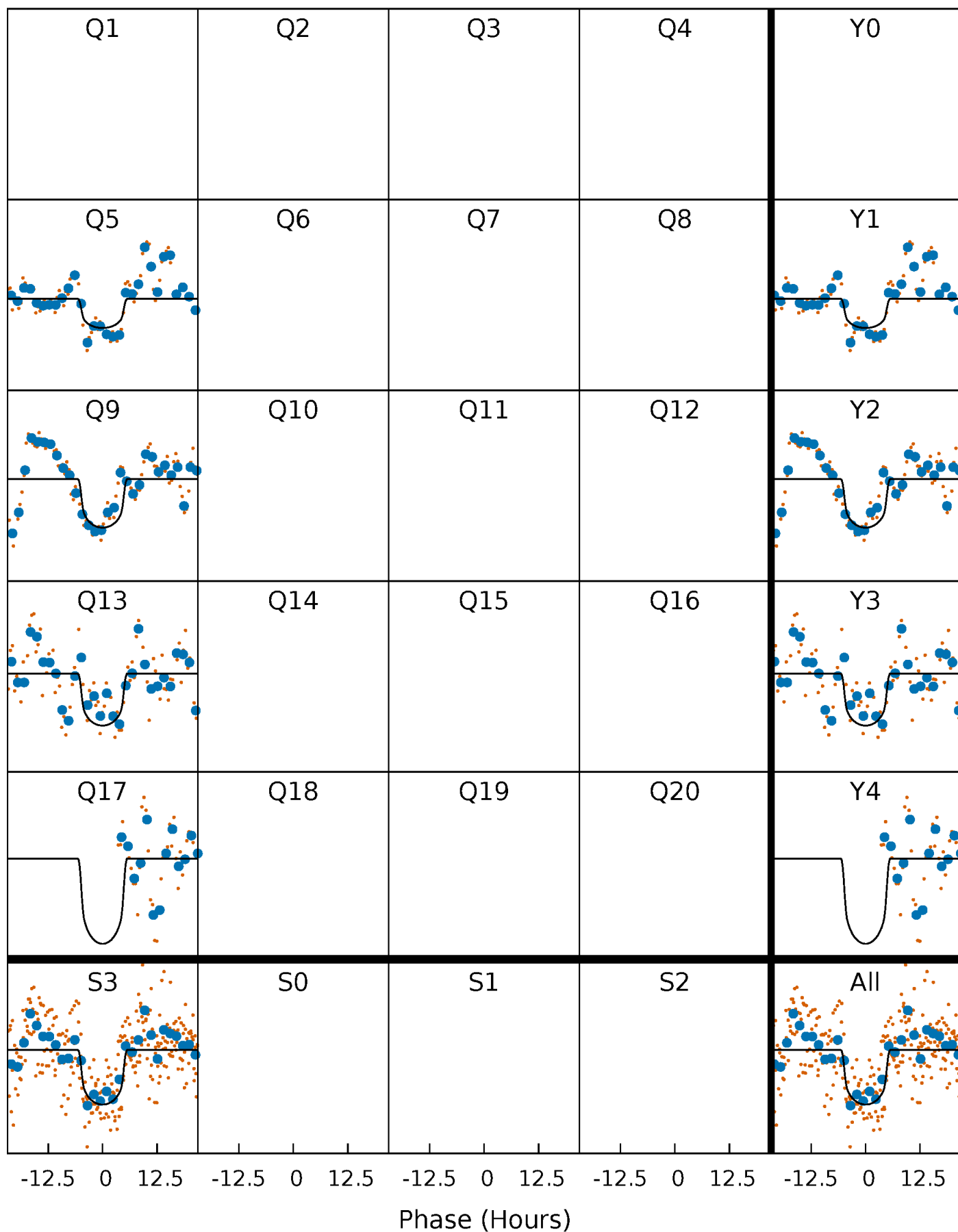
PDC Quarter-Phased Transit Curves

TCE 006286633-03 $P=366.281381$ Days $T_0=460.250946$ (BKJD)



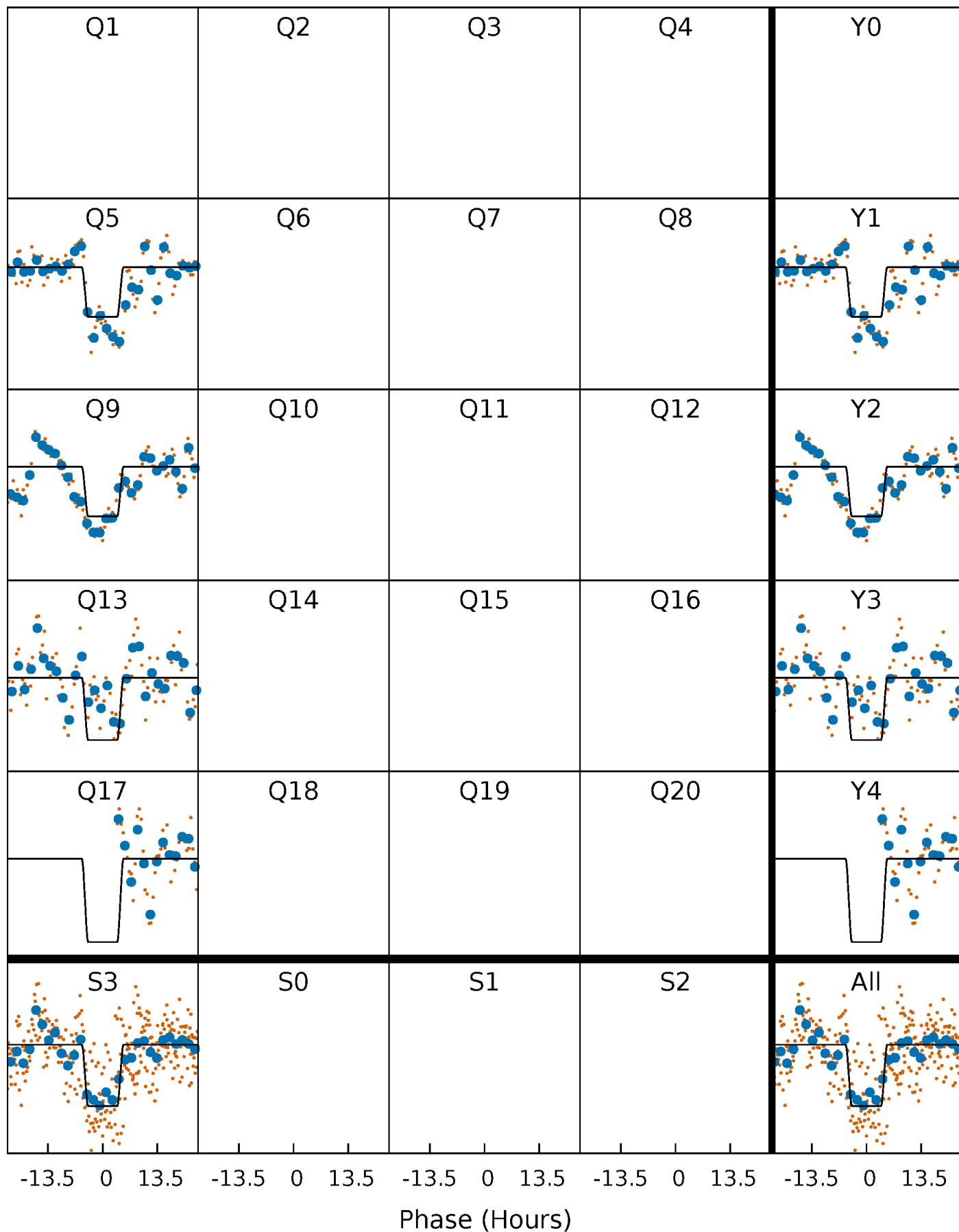
DV Quarter-Phased Transit Curves

TCE 006286633-03 $P=366.281381$ Days $T_0=460.250946$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

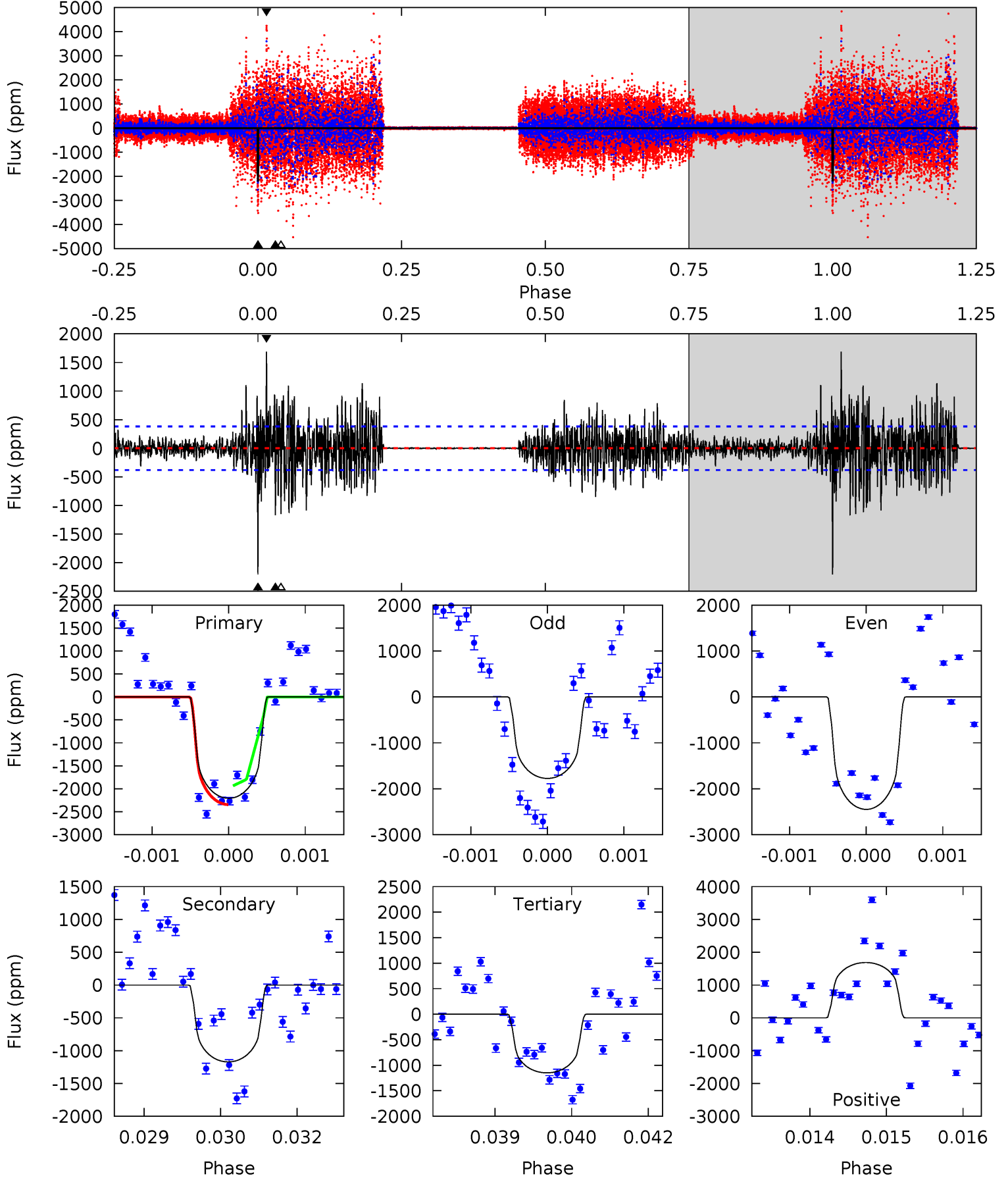
TCE 006286633-03 $P=366.298808$ Days $T_0=460.219395$ (BKJD)



DV Model-Shift Uniqueness Test

006286633-03, P = 366.281381 Days, E = 93.969565 Days

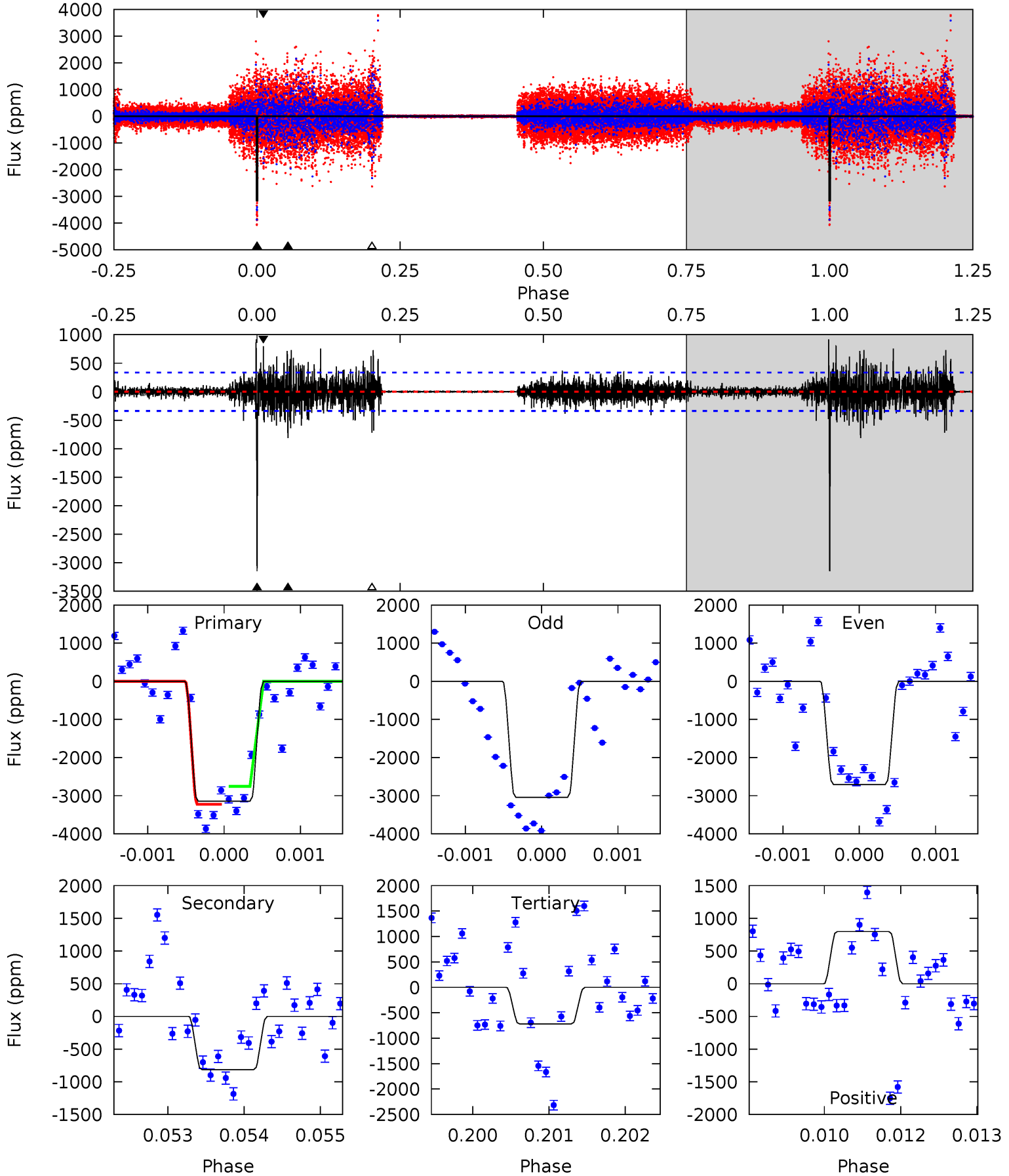
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.3	16.6	16.3	23.9	5.41	3.22	3.31	15.0	7.39	0.32	-7.31	3.94	0.80	0.43	2.33



Alt Model-Shift Uniqueness Test

006286633-03, P = 366.298808 Days, E = 93.920587 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.7	13.1	11.6	12.8	5.43	3.25	1.79	39.1	37.8	1.53	0.25	2.55	0.73	0.23	0



Stellar Parameters For KIC 006286633

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5083^{+50}_{-130}	$2.708^{+0.033}_{-0.027}$	$0.070^{+0.150}_{-0.750}$	$12.868^{+0.516}_{-4.903}$	$3.083^{+0.205}_{-1.950}$	$0.002^{+0.001}_{-0.000}$
	+1%/-3%	+1%/-1%	+214%/-1071%	+4%/-38%	+7%/-63%	+67%/-9%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 006286633-03 / KOI 8120.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1171 ± 70	$69.58^{+9.66}_{-10.04}$	930^{+15}_{-23}	4392^{+259}_{-230}	292^{+101}_{-69}
Alt.	-813 ± 62	$76.59^{+9.66}_{-10.40}$	931^{+15}_{-24}	3972^{+189}_{-189}	167^{+55}_{-35}

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 $A_{obs} \gg 1.0$

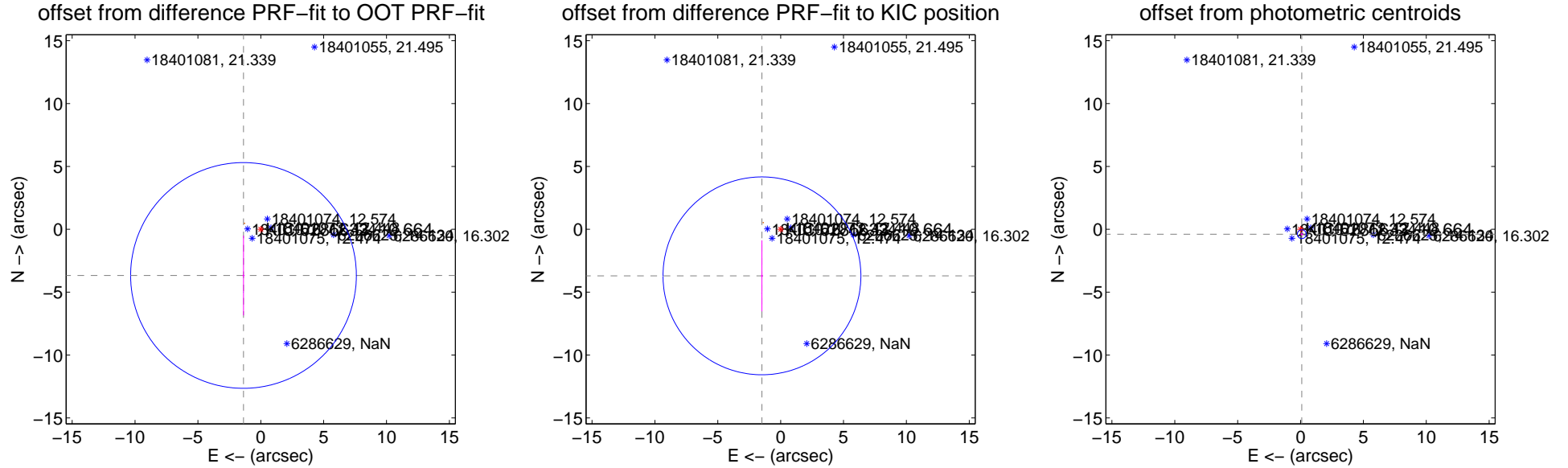
DV Centroid Data

Supplemental centroid analysis for 006286633-03. **Kepler magnitude: 10.66.** Transit SNR 9.91

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.918 ± 2.991	1.31	1.374 ± 0.086	-3.669 ± 3.174
PRF-fit source offset from KIC position	3.988 ± 2.622	1.52	1.487 ± 0.082	-3.700 ± 2.826
photometric centroid source offset	0.40 ± 0.12	3.43	-0.10 ± 0.12	-0.39 ± 0.12

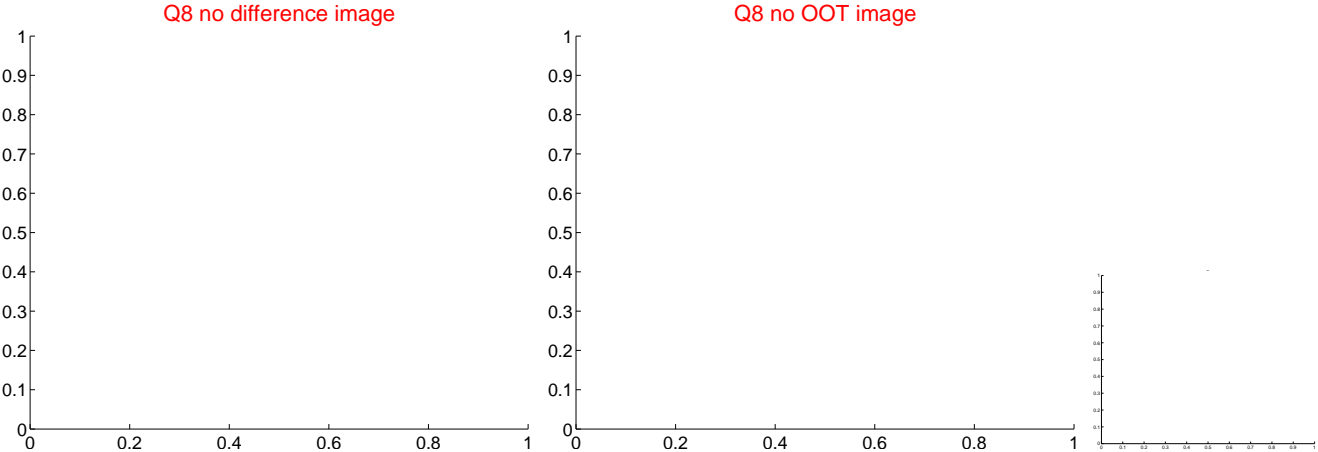
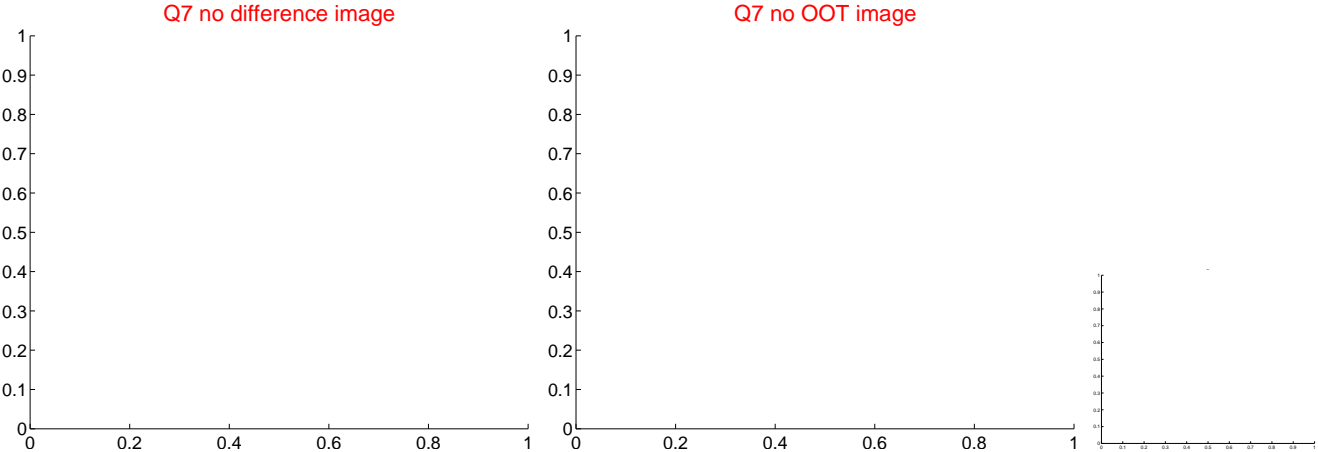
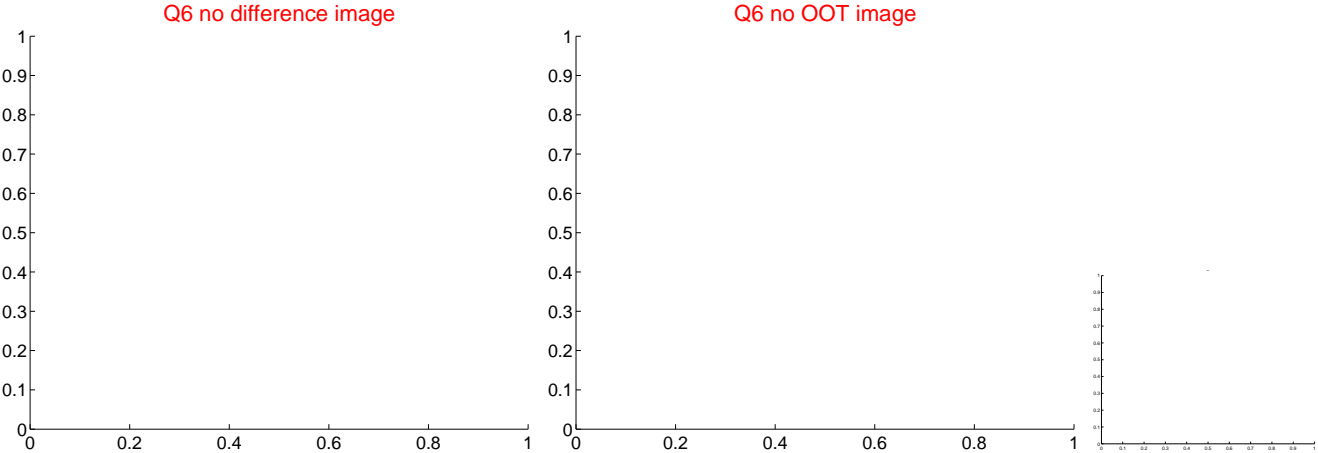
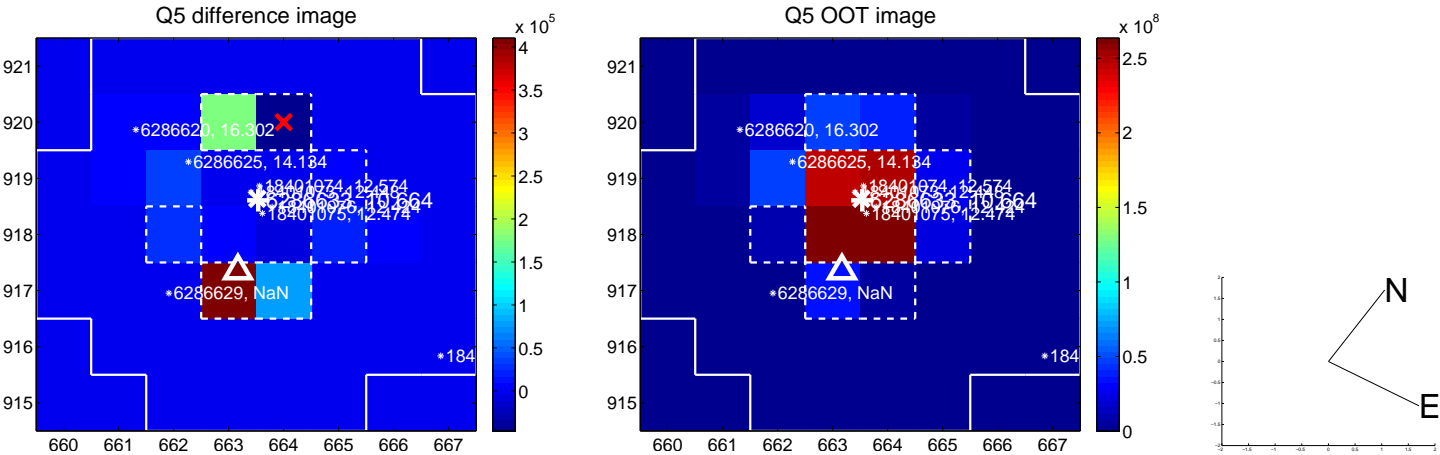


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

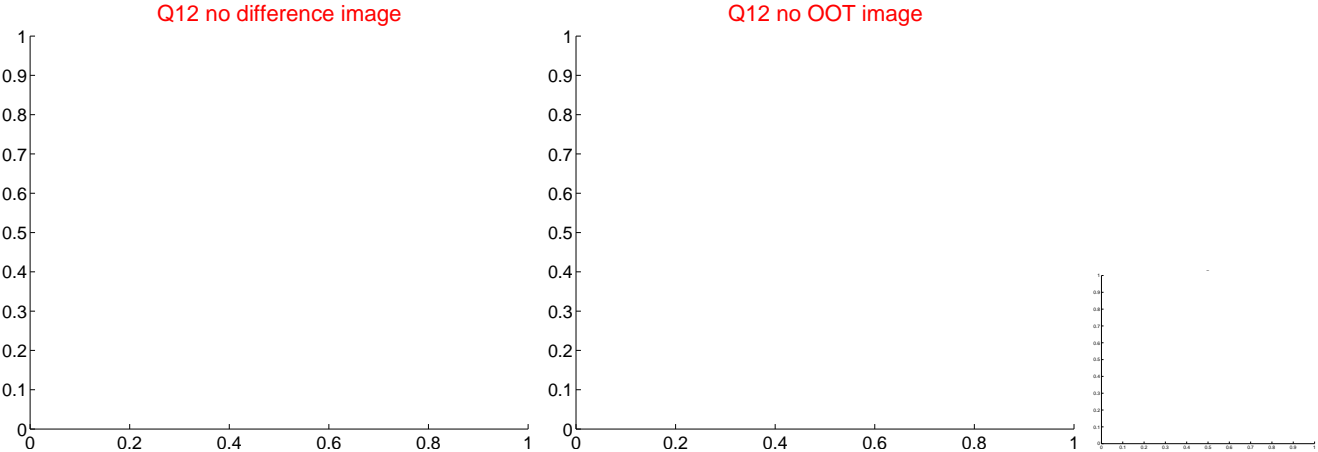
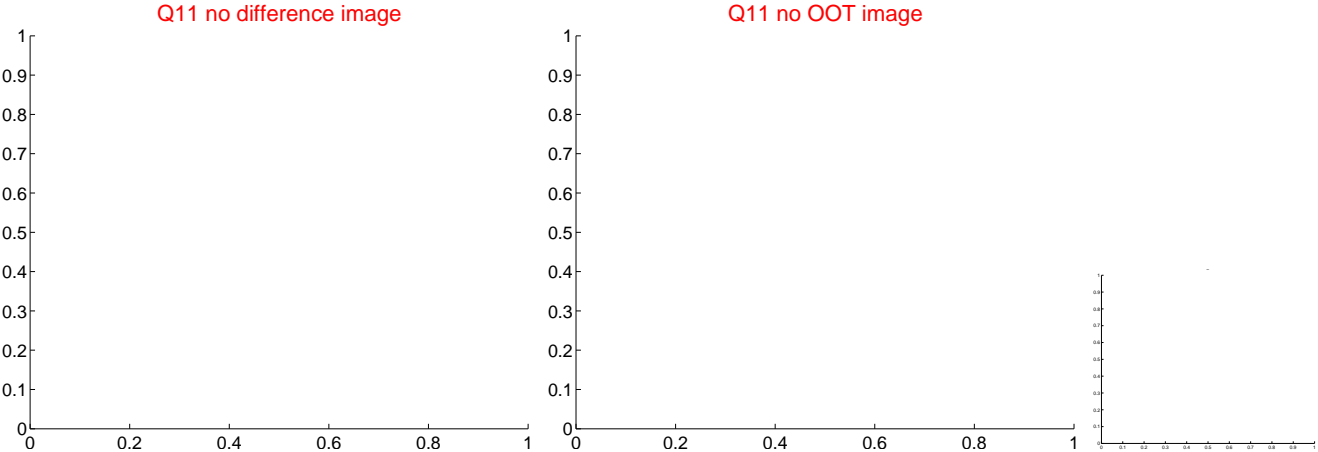
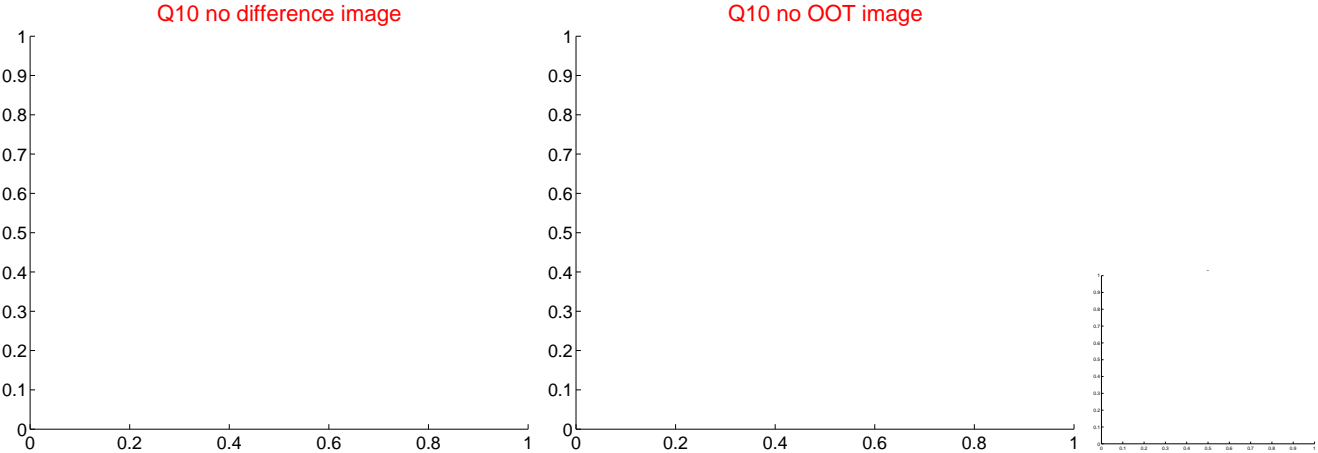
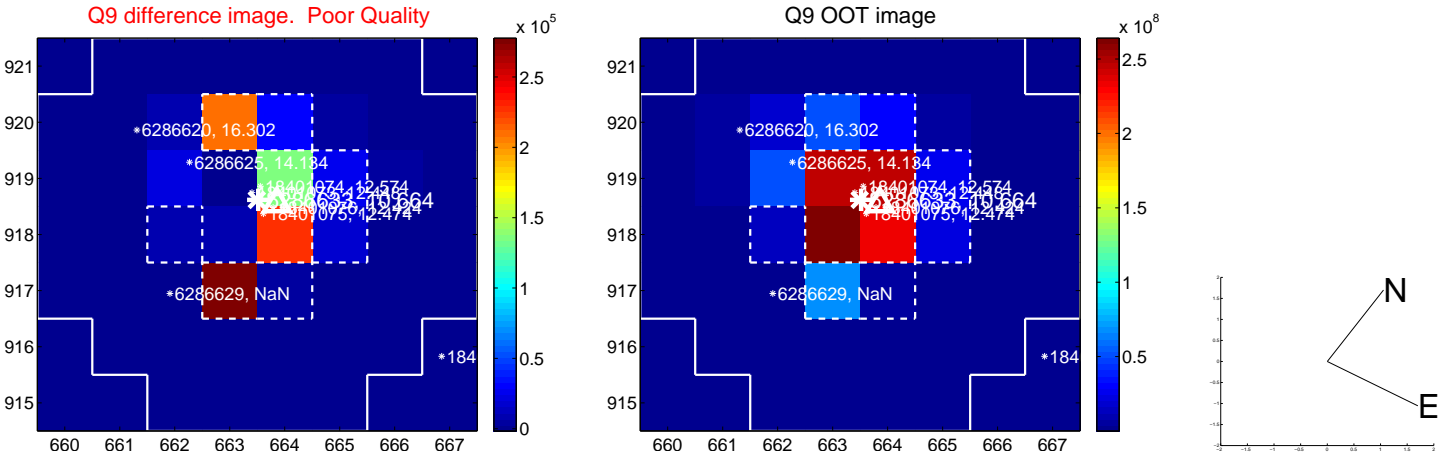
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



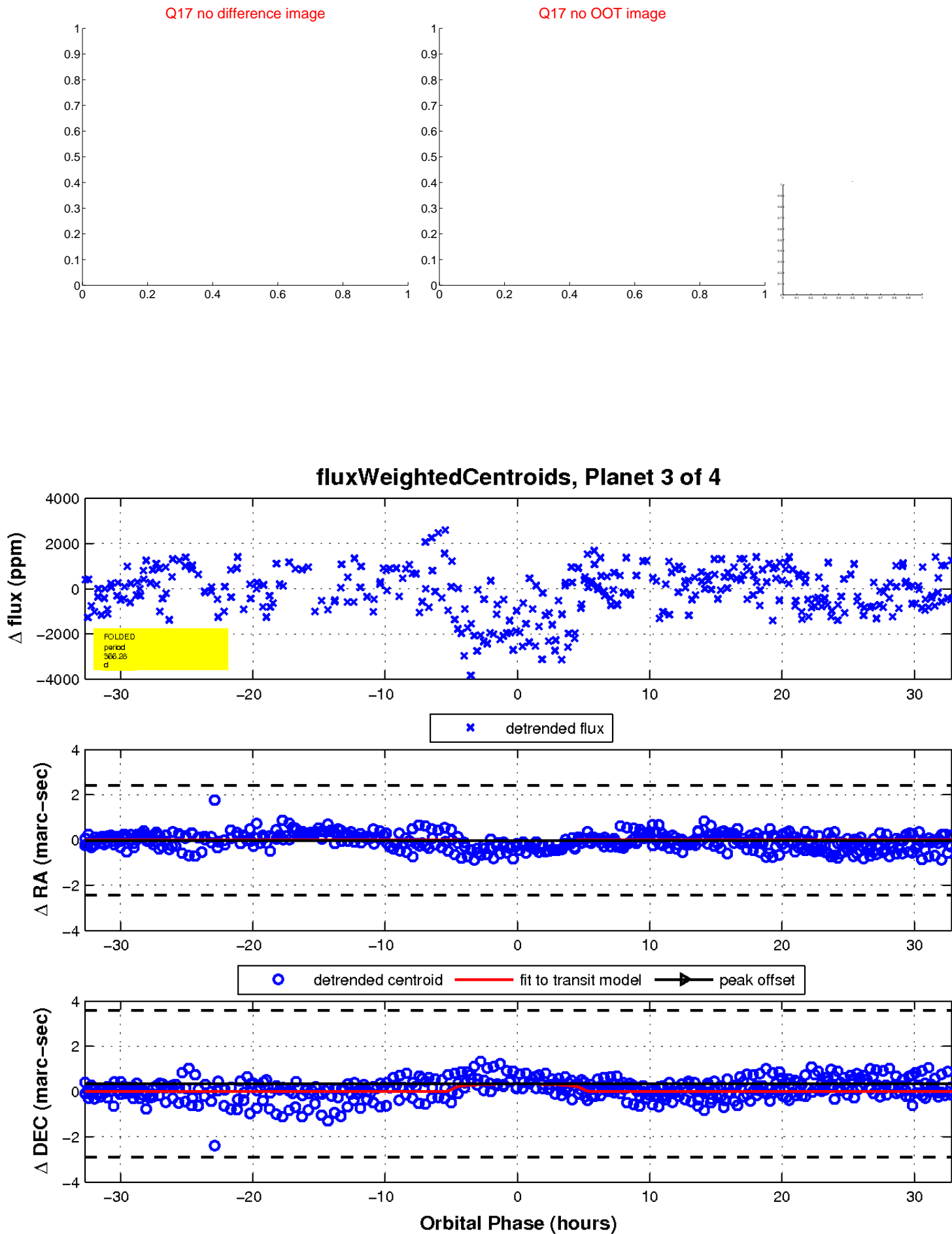
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



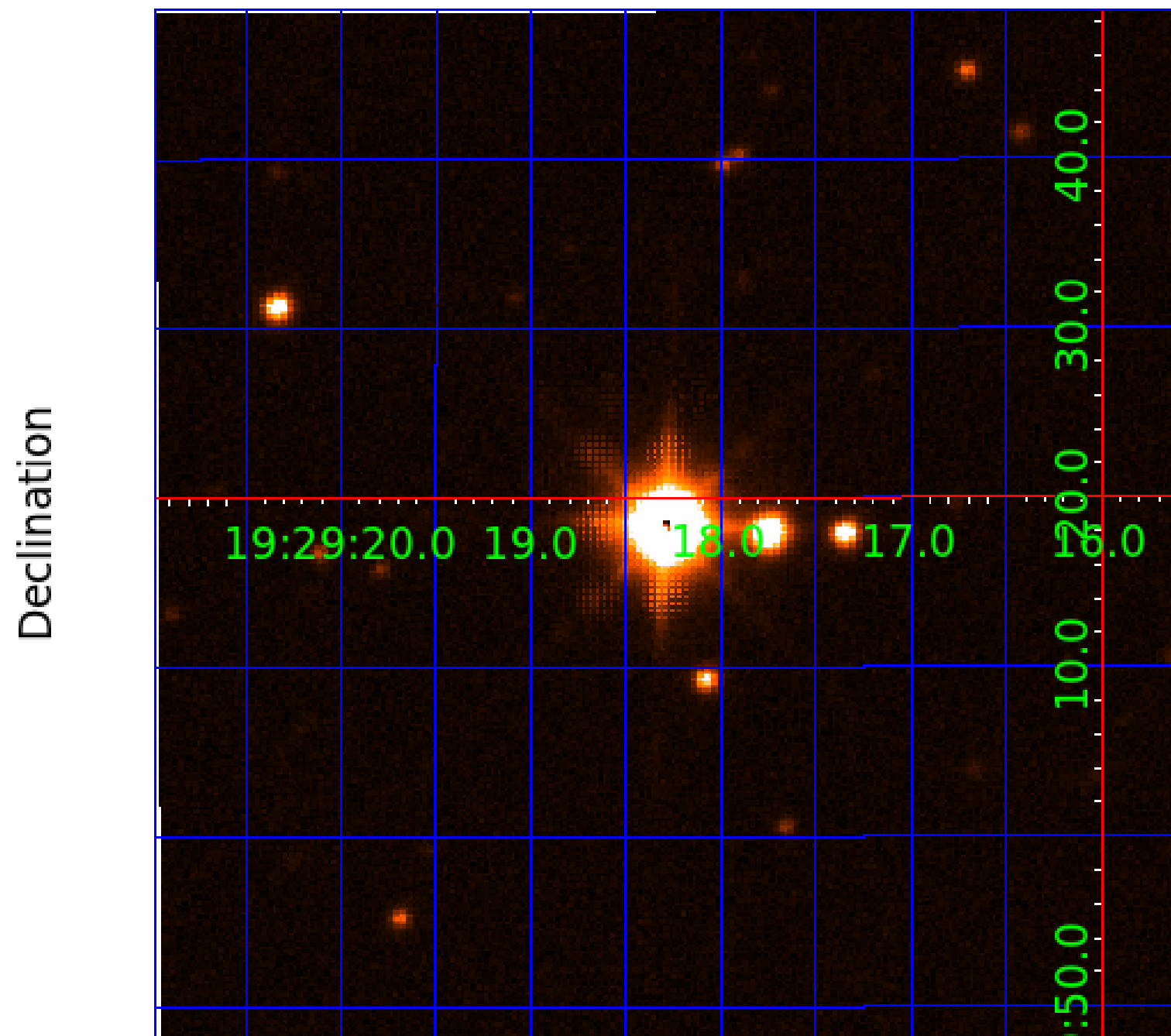
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006286633

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})
006286633-01	OBS	No	59.722284	148.151706	12.4	3.012	12.5	4.7	12.87	5083	6.08	522.64
006286633-02	OBS	No	380.274281	478.482688	3584.8	6.857	13.1	10.0	12.87	5083	148.44	44.28
006286633-03	OBS	8120.01	366.281381	460.250946	2426.5	10.942	12.3	9.9	12.87	5083	68.47	46.55
006286633-04	OBS	No	365.924192	466.478343	121.1	12.500	12.3	-1.0	12.87	5083	13.76	46.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006286633-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
006286633-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006286633-03	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_SATURATED
006286633-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

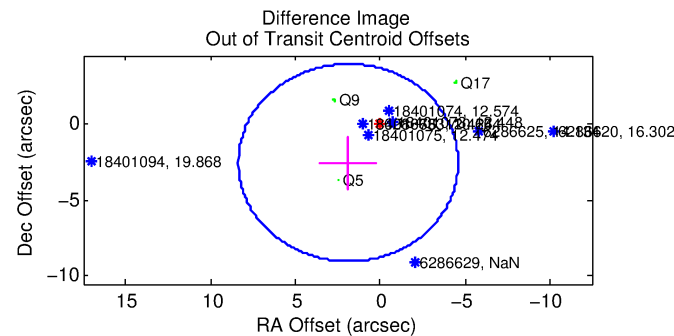
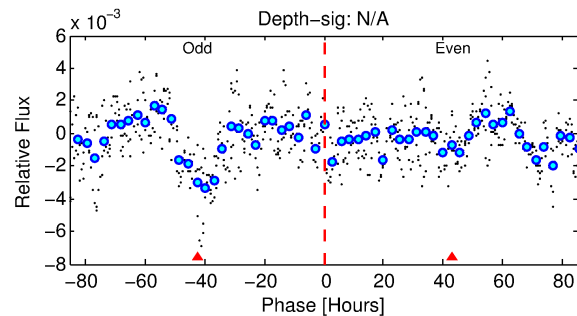
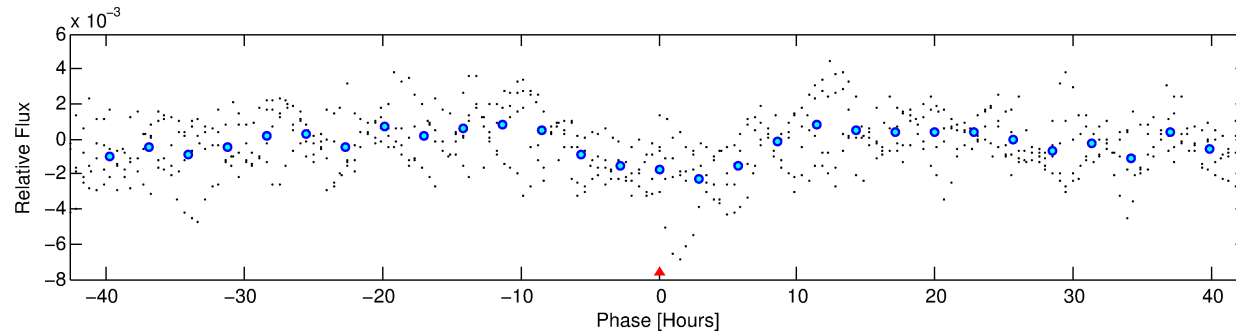
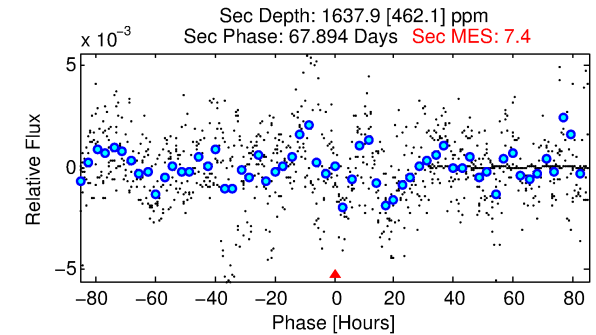
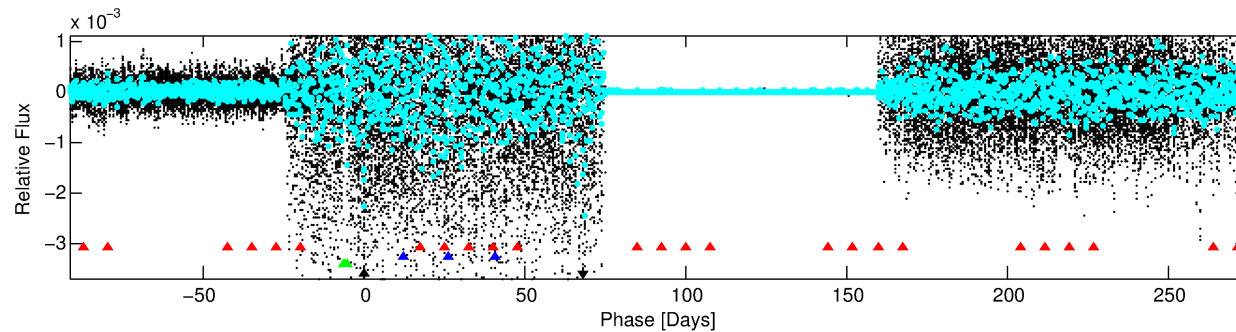
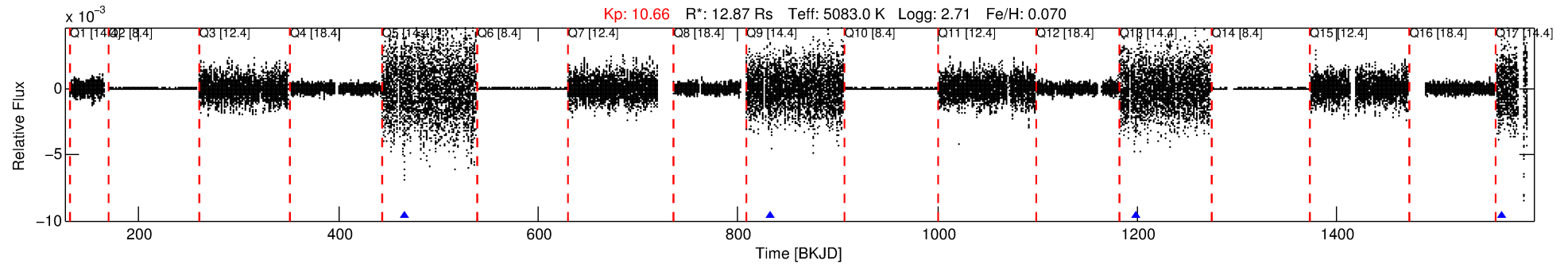
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006286633-04

No Significant Match Found

DV One-Page Summary

KIC: 6286633 Candidate: 4 of 4 Period: 365.924 d



TPS TCE Results:

Period = 365.92419 d
Epoch = 466.4783 BKJD

DV fit results are unavailable

DV Diagnostic Results:

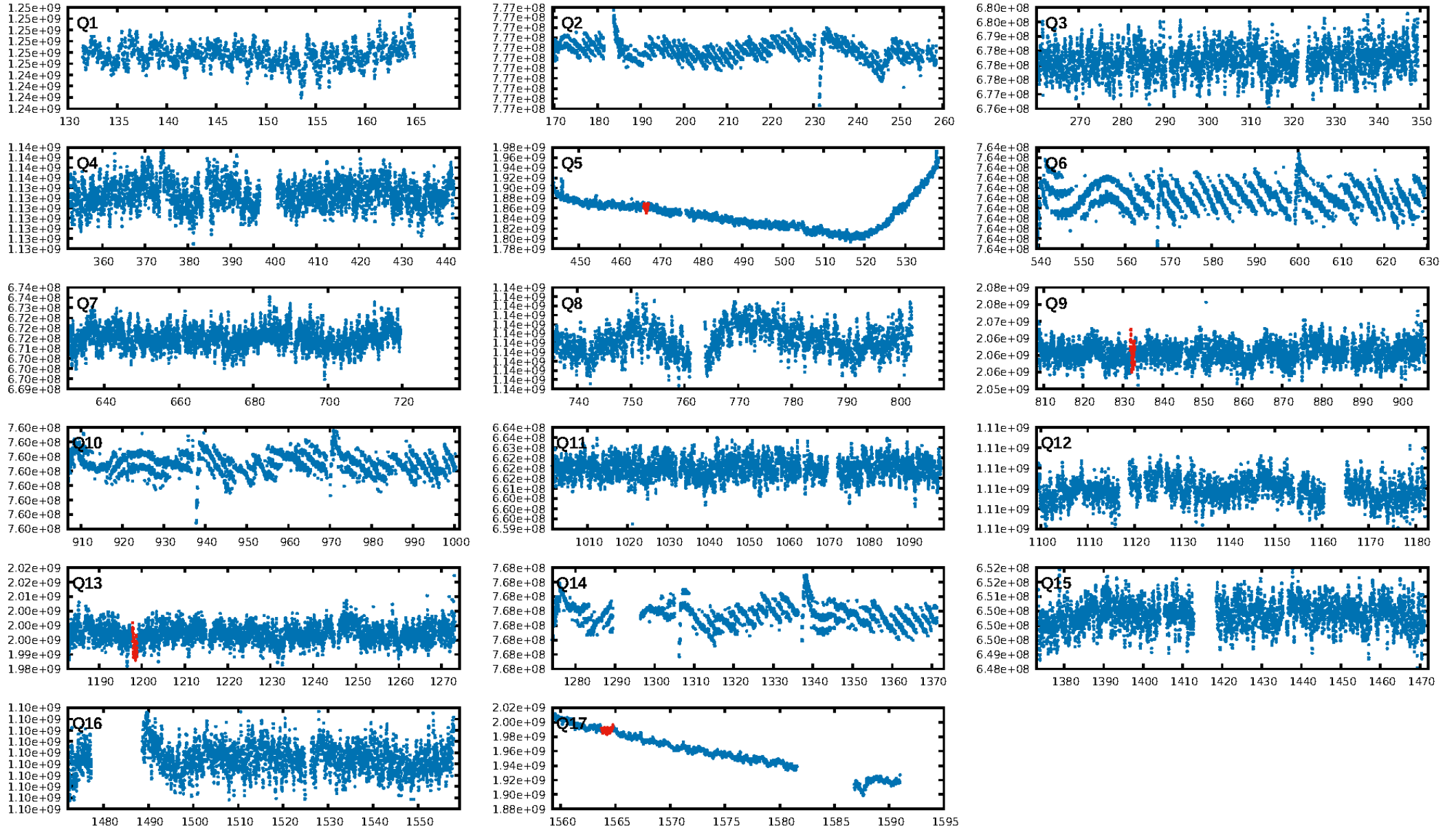
ShortPeriod-sig: 100.0% [571.55 σ]
LongPeriod-sig: 39.4% [0.52 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 9.539

Centroid-sig: 20.8%
Centroid-so: 0.285 arcsec [3.34 σ]
OotOffset-rm: 3.152 arcsec [1.46 σ]
KicOffset-rm: 3.255 arcsec [1.07 σ]
OotOffset-st: 0/0/0 [3]
KicOffset-st: 0/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

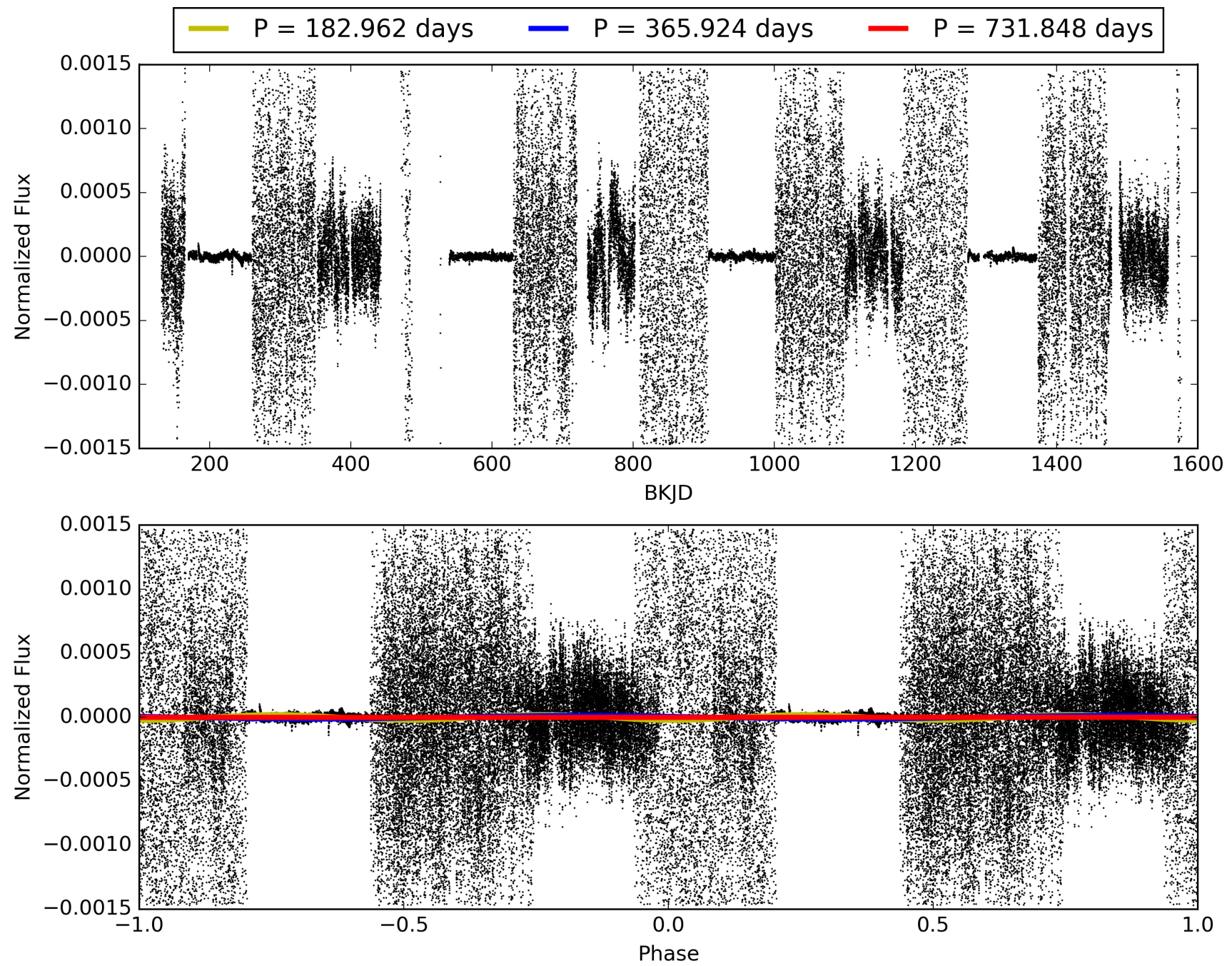
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:19:49 Z

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

TCE 006286633-04, PDC Light Curves

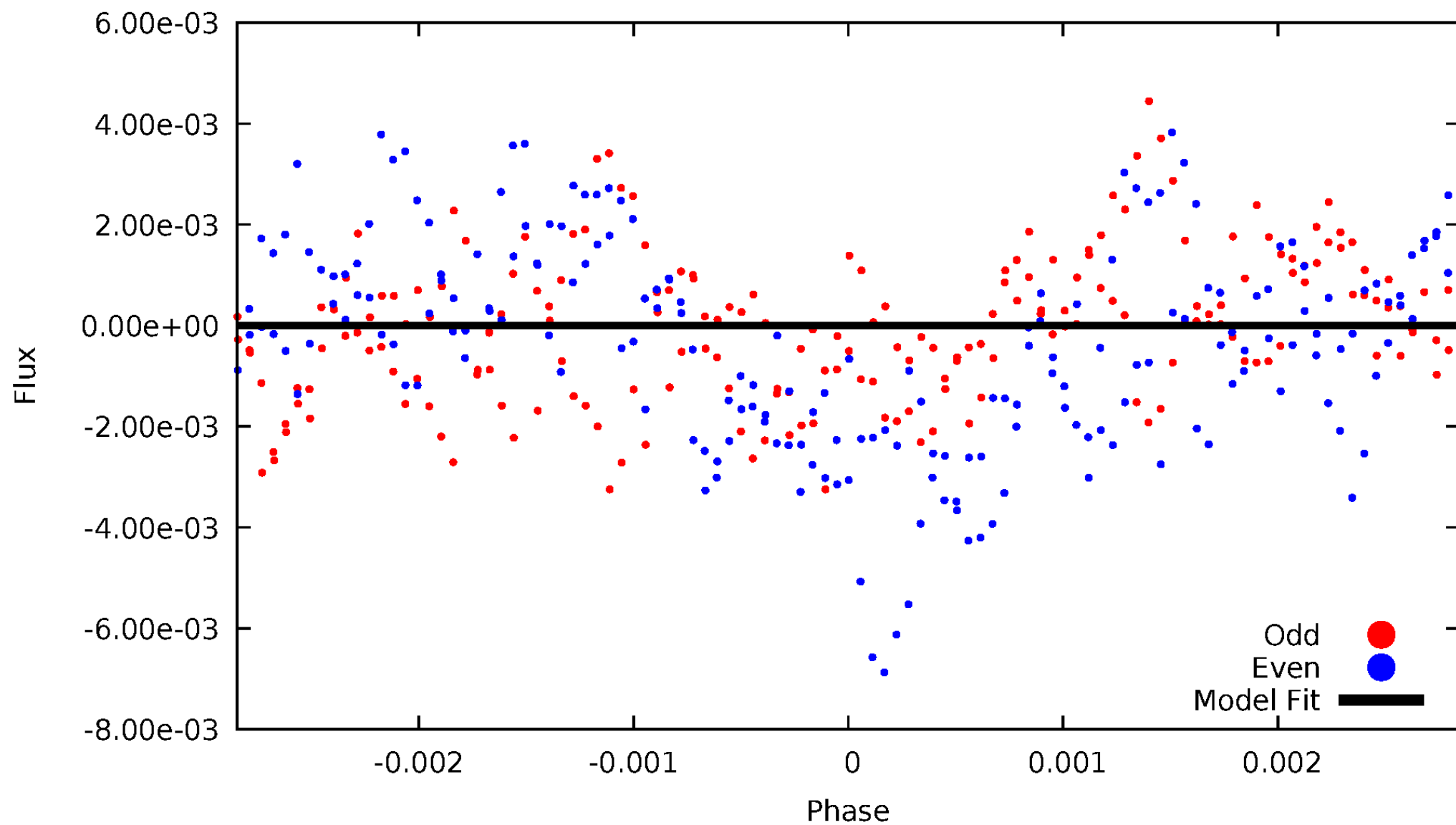


TCE 006286633-04



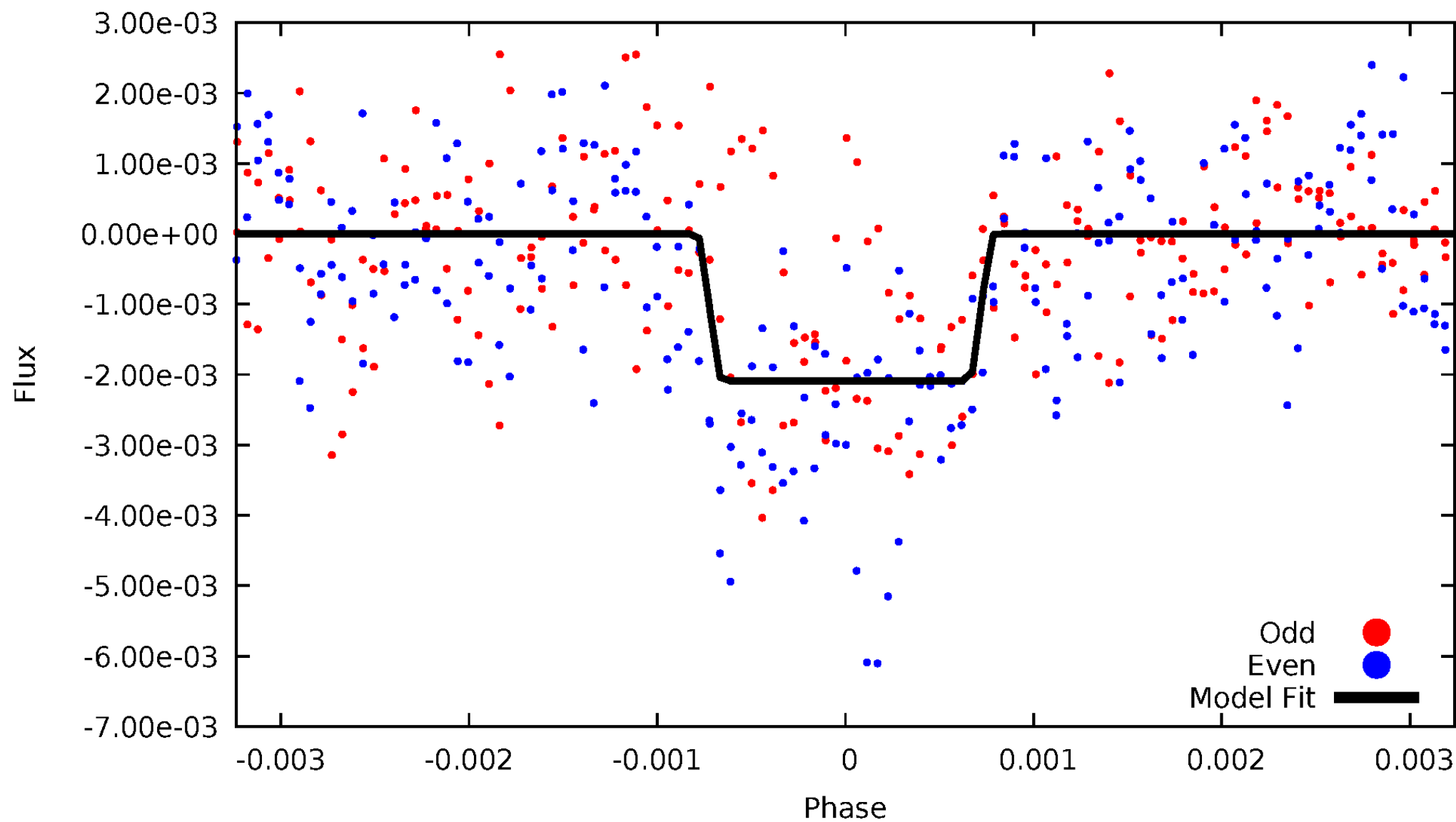
DV Odd/Even

TCE 006286633-04



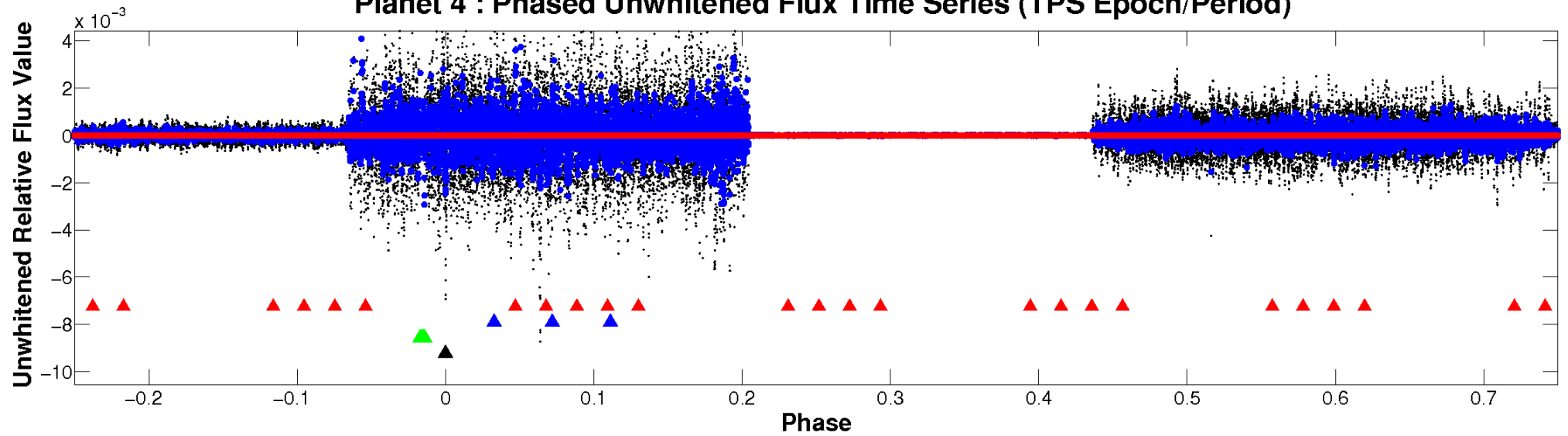
ALT Odd/Even

TCE 006286633-04

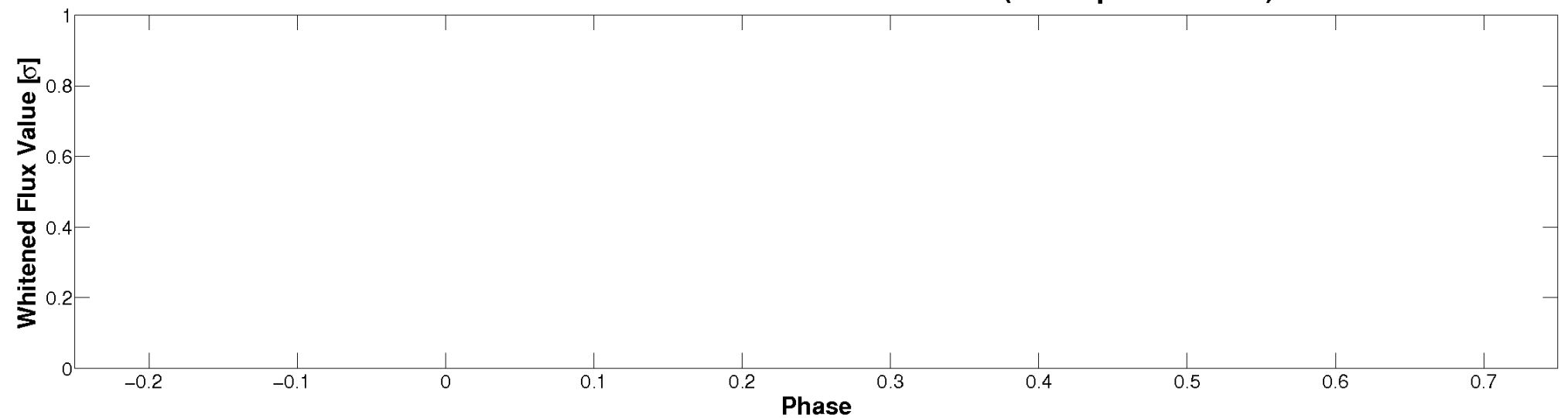


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

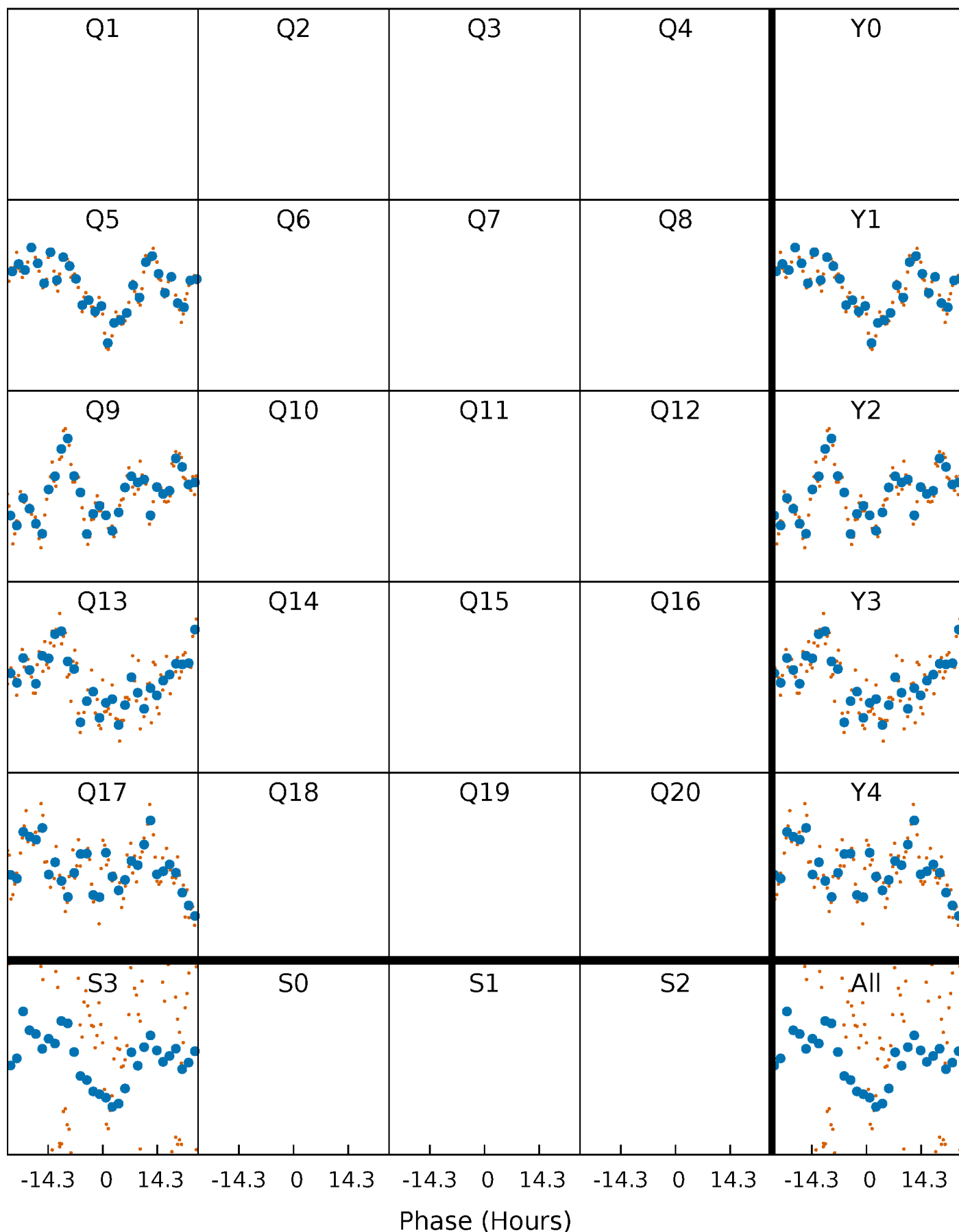


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



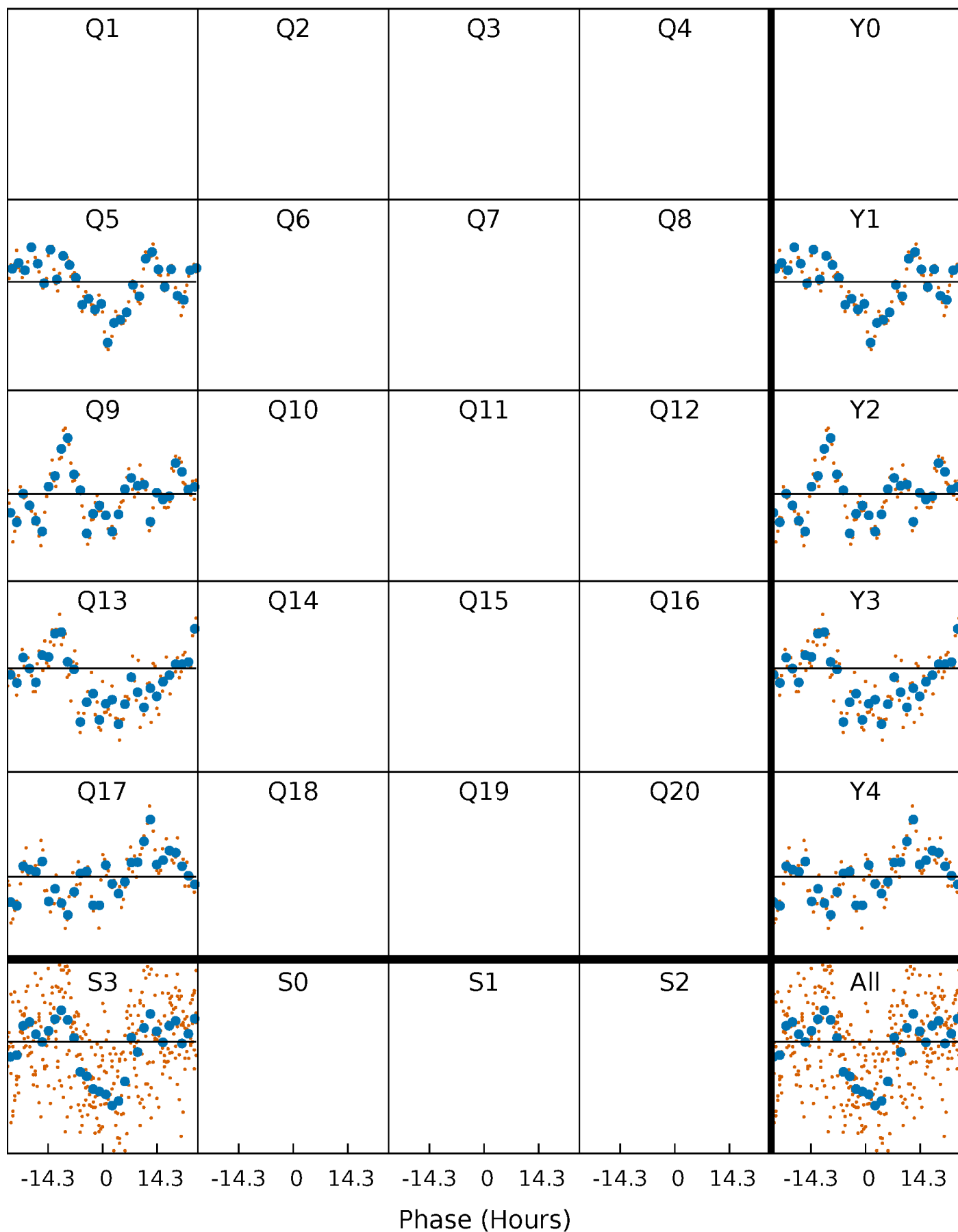
PDC Quarter-Phased Transit Curves

TCE 006286633-04 $P=365.924193$ Days $T_0=466.478343$ (BKJD)



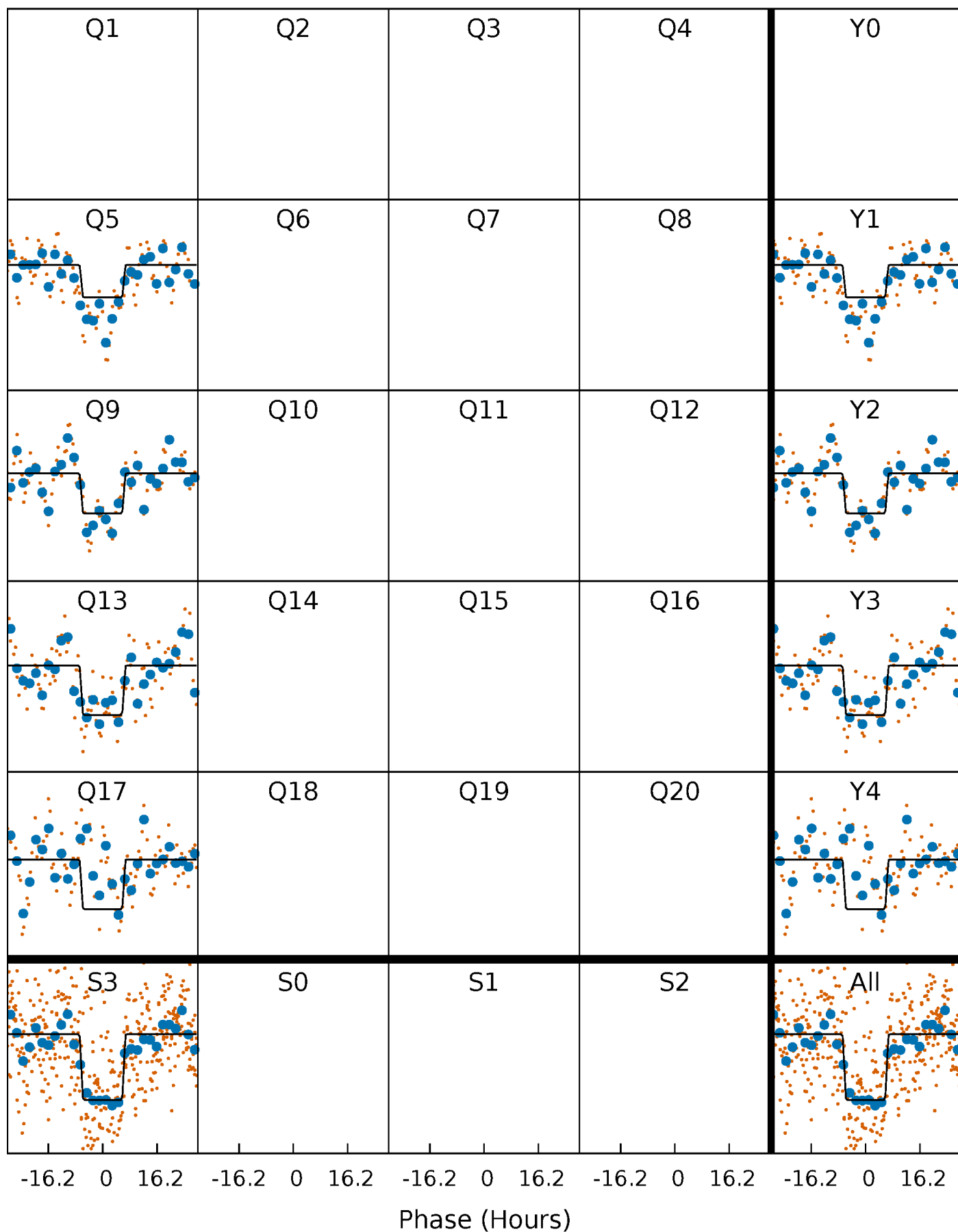
DV Quarter-Phased Transit Curves

TCE 006286633-04 $P=365.924193$ Days $T_0=466.478343$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

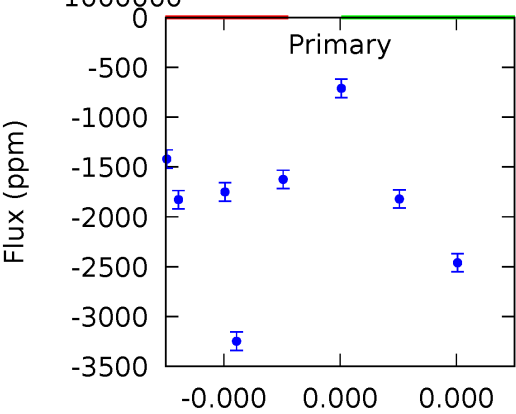
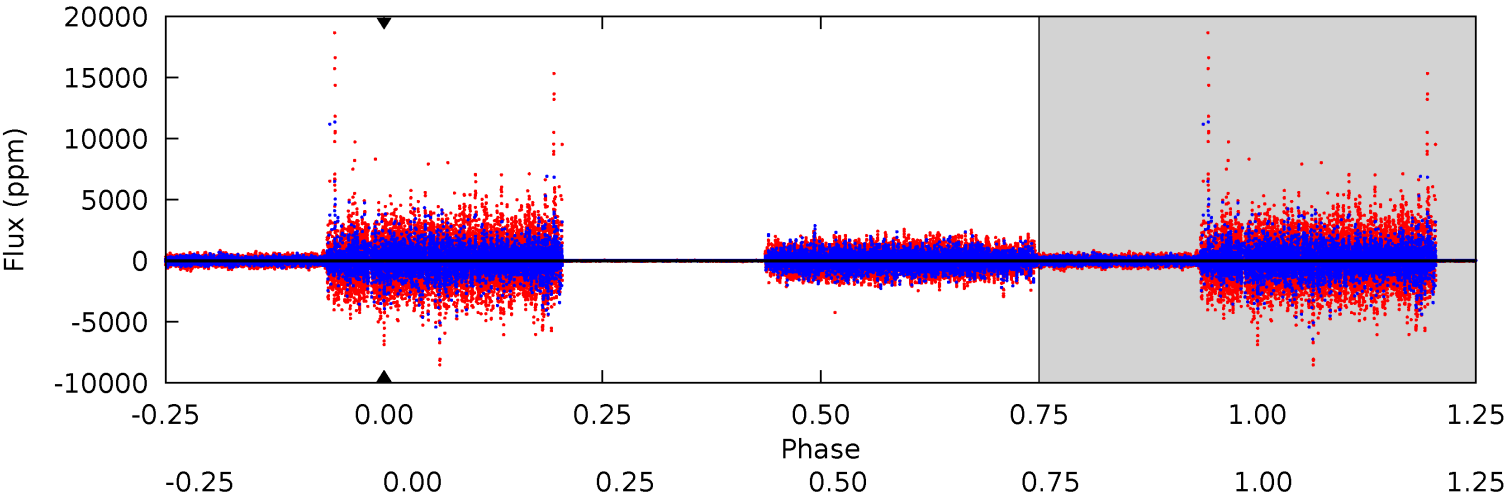
TCE 006286633-04 $P=365.924193$ Days $T_0=466.477633$ (BKJD)



DV Model-Shift Uniqueness Test

006286633-04, P = 365.924193 Days, E = 100.554150 Days

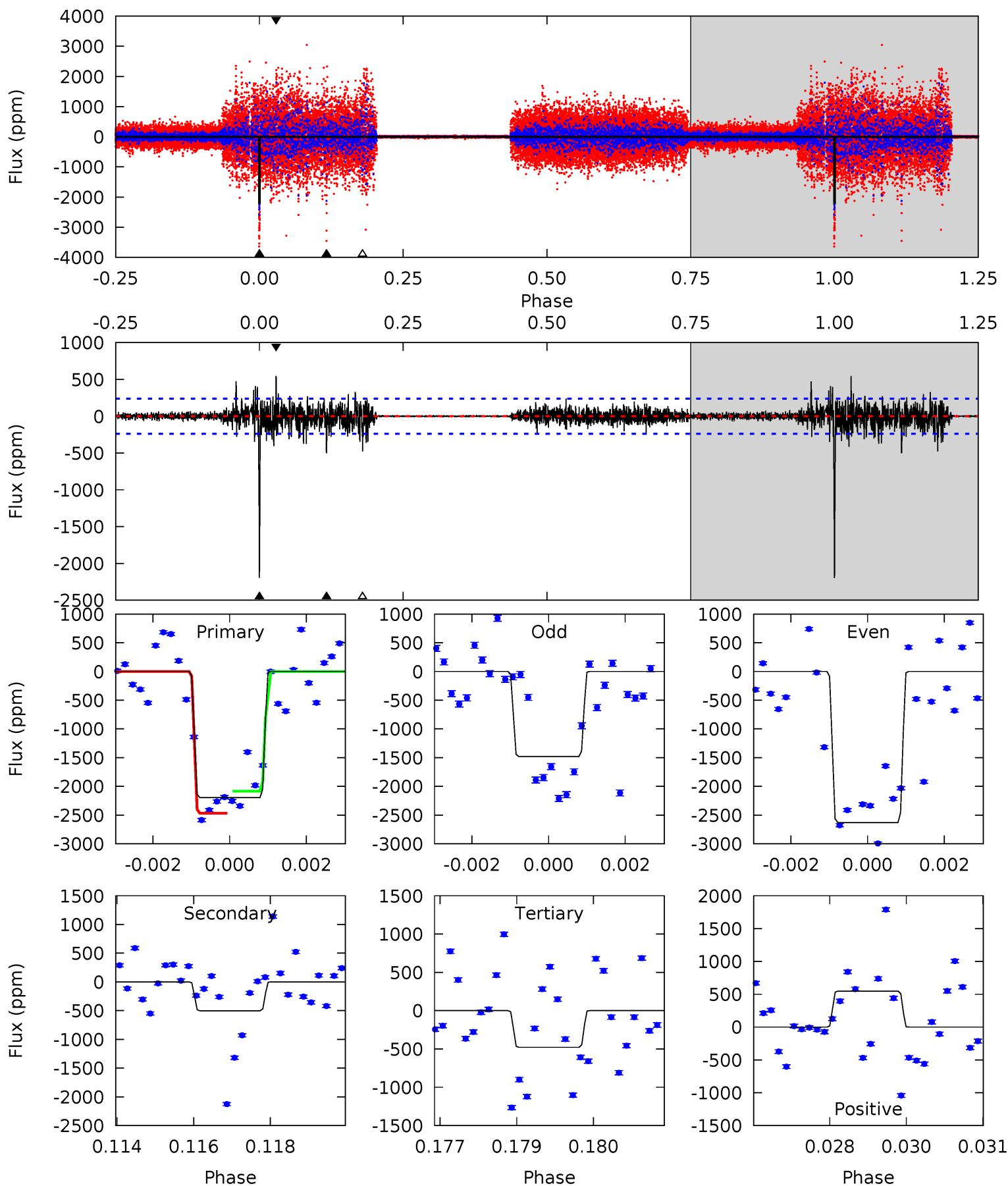
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006286633-04, P = 365.924193 Days, E = 100.553440 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.4	11.3	10.8	12.3	5.37	3.16	1.43	38.6	37.1	0.50	-1.04	11.3	0.96	0.20	0



Stellar Parameters For KIC 006286633

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5083^{+50}_{-130}	$2.708^{+0.033}_{-0.027}$	$0.070^{+0.150}_{-0.750}$	$12.868^{+0.516}_{-4.903}$	$3.083^{+0.205}_{-1.950}$	$0.002^{+0.001}_{-0.000}$
	+1%/-3%	+1%/-1%	+214%/-1071%	+4%/-38%	+7%/-63%	+67%/-9%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 006286633-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$103.55^{+105.42}_{-72.82}$	930^{+15}_{-28}	-3164^{+20140}_{-11339}	$-40.591^{+23660.610}_{-17048.612}$
Alt.	-501 ± 44	$123.66^{+126.21}_{-82.82}$	930^{+16}_{-26}	3115^{+1436}_{-545}	38^{+311}_{-28}

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 $A_{obs} \gg 1.0$

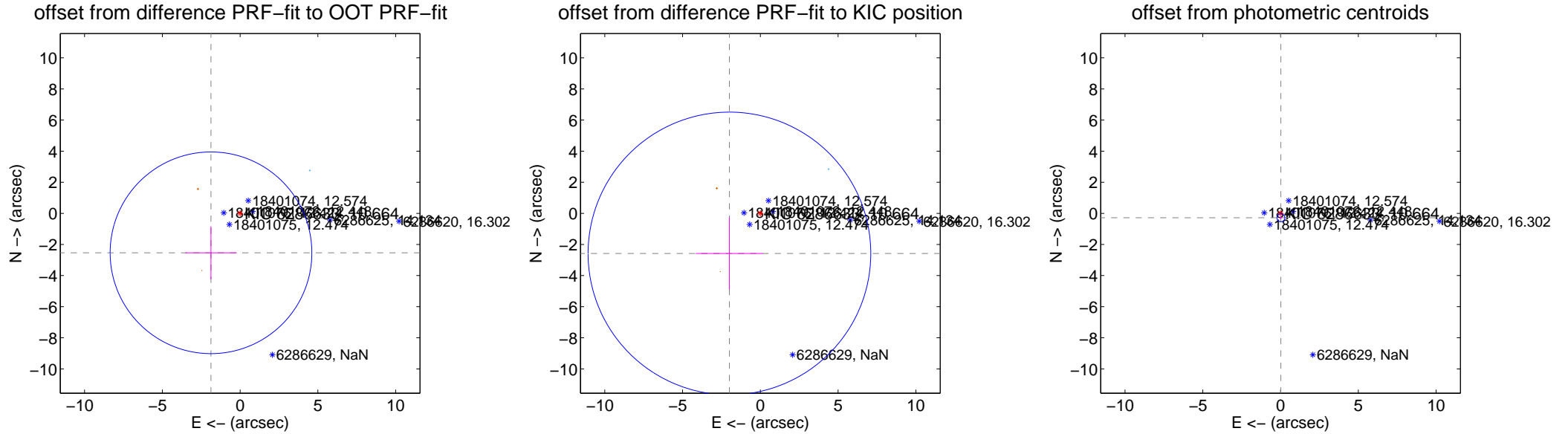
DV Centroid Data

Supplemental centroid analysis for 006286633-04. **Kepler magnitude: 10.66.** Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.152 ± 2.161	1.46	1.872 ± 1.652	-2.535 ± 1.701
PRF-fit source offset from KIC position	3.255 ± 3.029	1.07	1.987 ± 2.157	-2.579 ± 2.315
photometric centroid source offset	0.28 ± 0.09	3.34	-0.02 ± 0.10	-0.28 ± 0.09

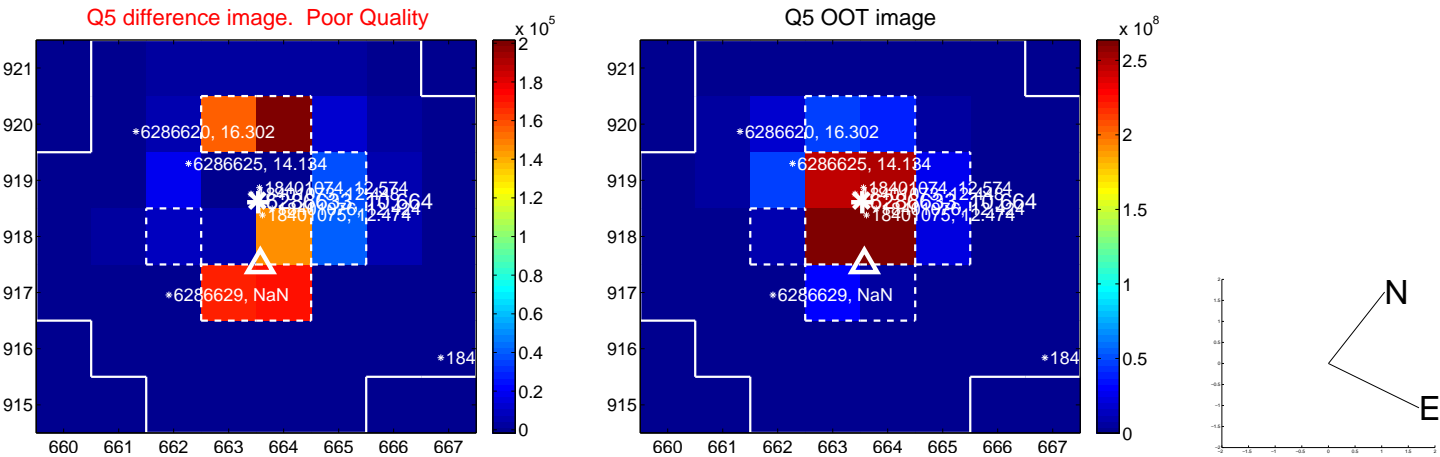


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

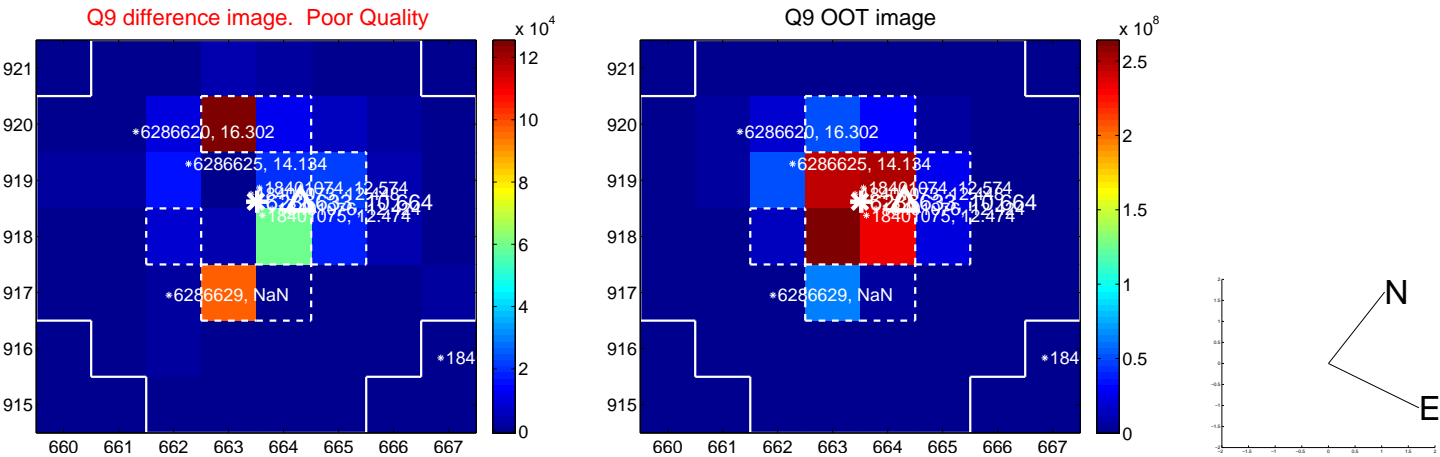
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



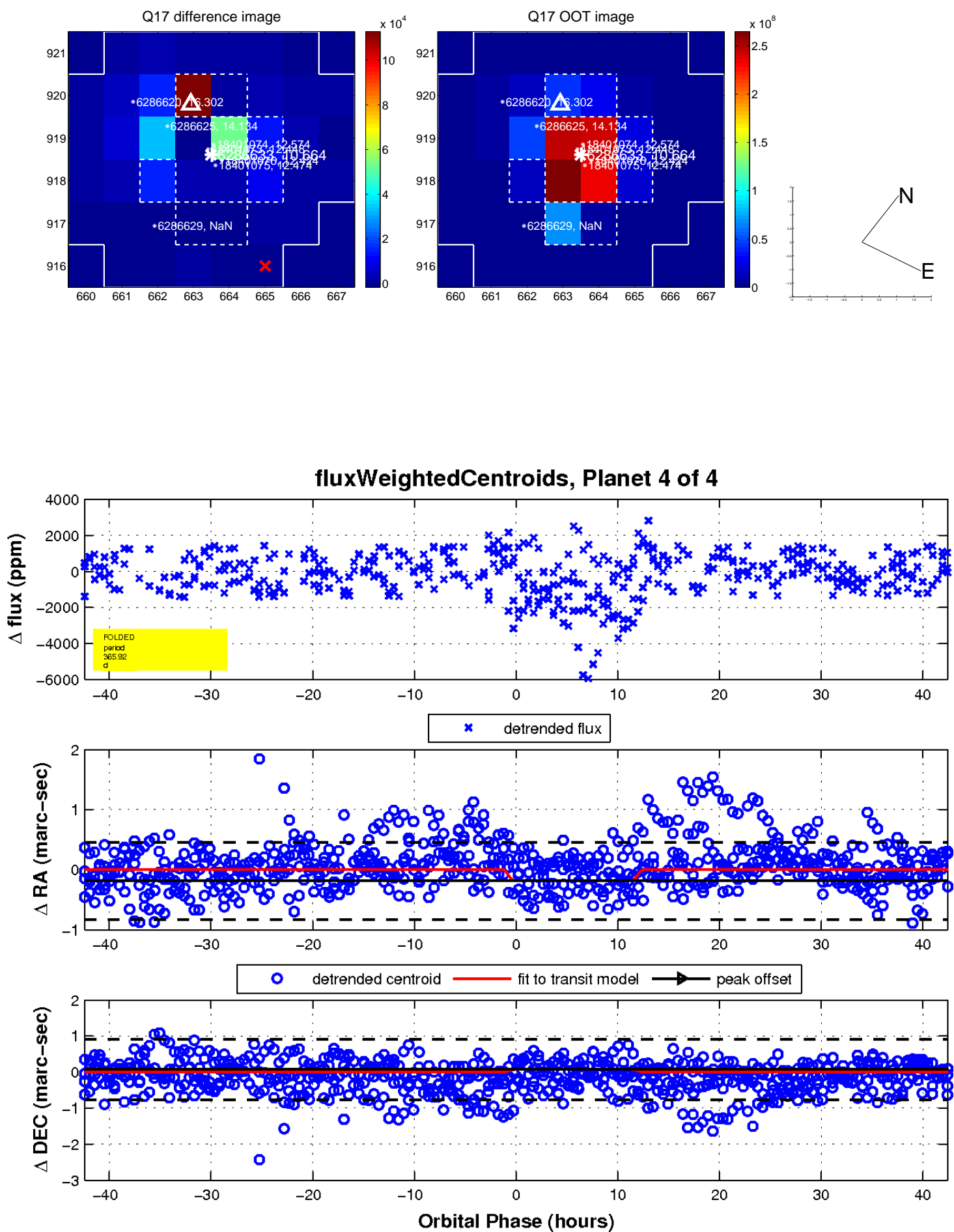
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

