

KIC 008581944

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})
008581944-01	OBS	No	361.944553	256.479204	133.7	4.054	8.3	7.5	3.47	7776	4.63	24.59
008581944-02	OBS	No	428.787319	339.508475	129.9	8.403	12.1	10.6	3.47	7776	4.57	19.61
008581944-03	OBS	No	362.886683	255.308668	146.0	4.369	11.1	7.7	3.47	7776	4.70	24.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008581944-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008581944-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008581944-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_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.

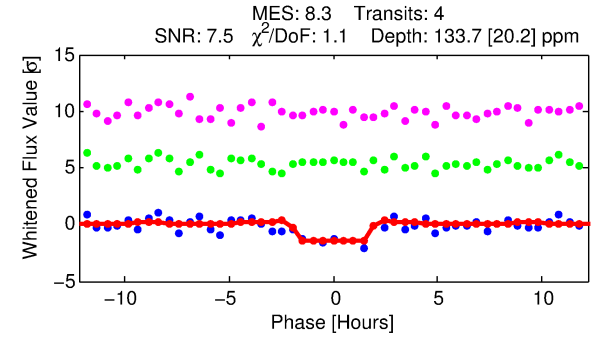
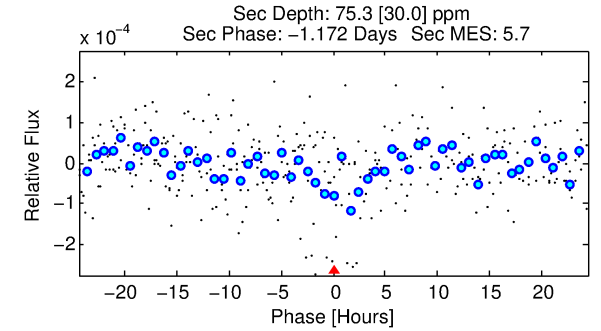
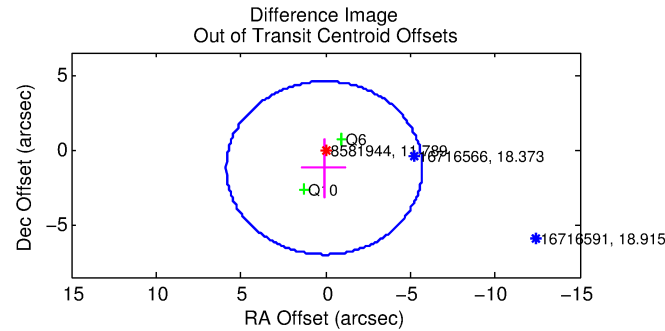
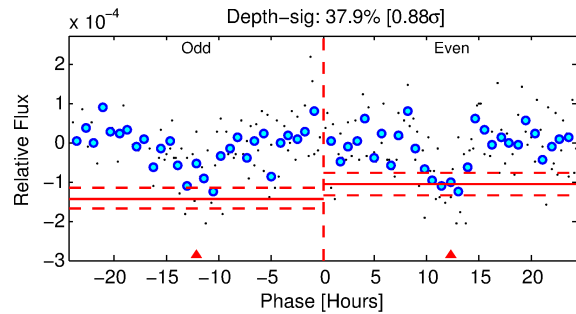
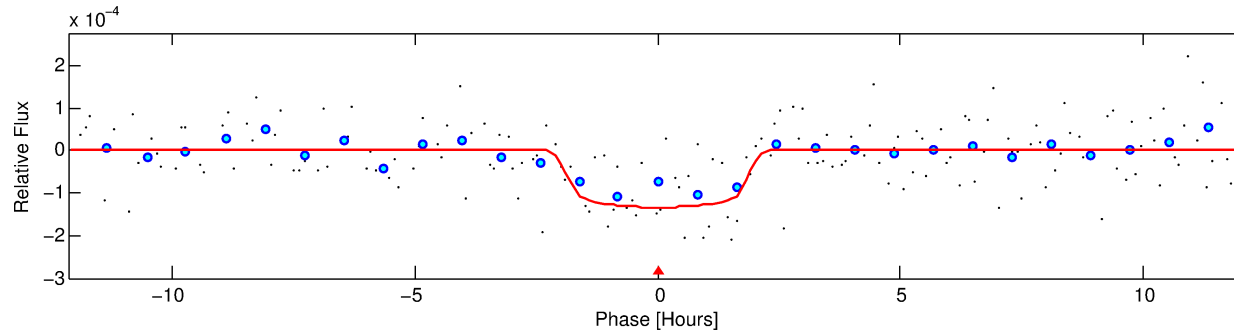
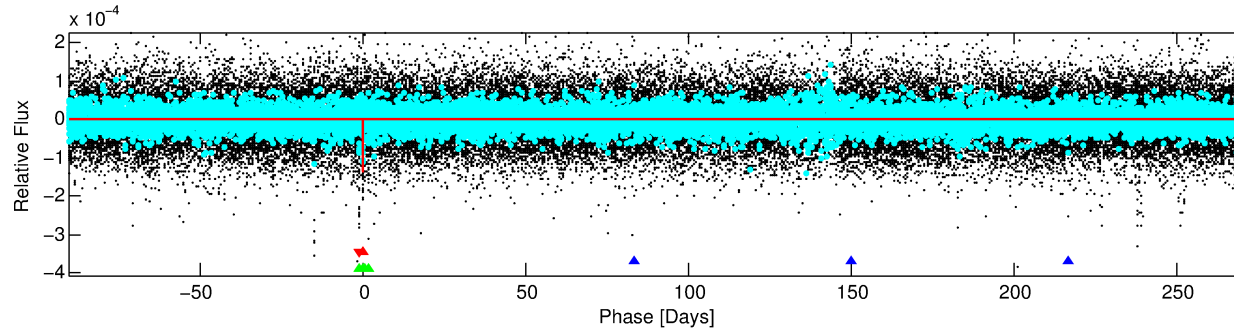
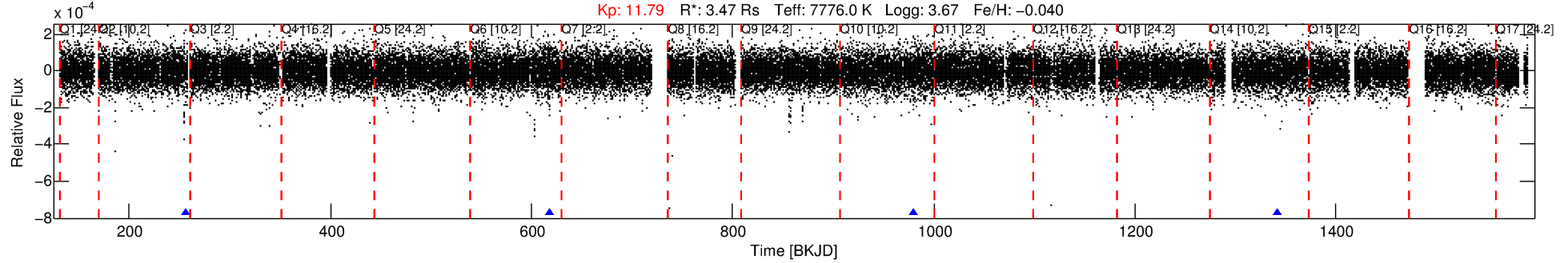
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008581944-01

No Significant Match Found

DV One-Page Summary

KIC: 8581944 Candidate: 1 of 3 Period: 361.945 d



DV Fit Results:

Period = 361.94455 [0.00454] d
Epoch = 256.4792 [0.0086] BKJD
Rp/R* = 0.0122 [0.0071]
a/R* = 330.24 [1153.27]
b = 0.89 [0.84]
Seff = 24.59 [19.65]
Teq = 568 [113] K
Rp = 4.63 [3.54] Re
a = 1.2670 [0.6134] AU
Ag = 3097.53 [4488.81] [0.69 σ]
Teffp = 6549 [2022] K [2.95 σ]

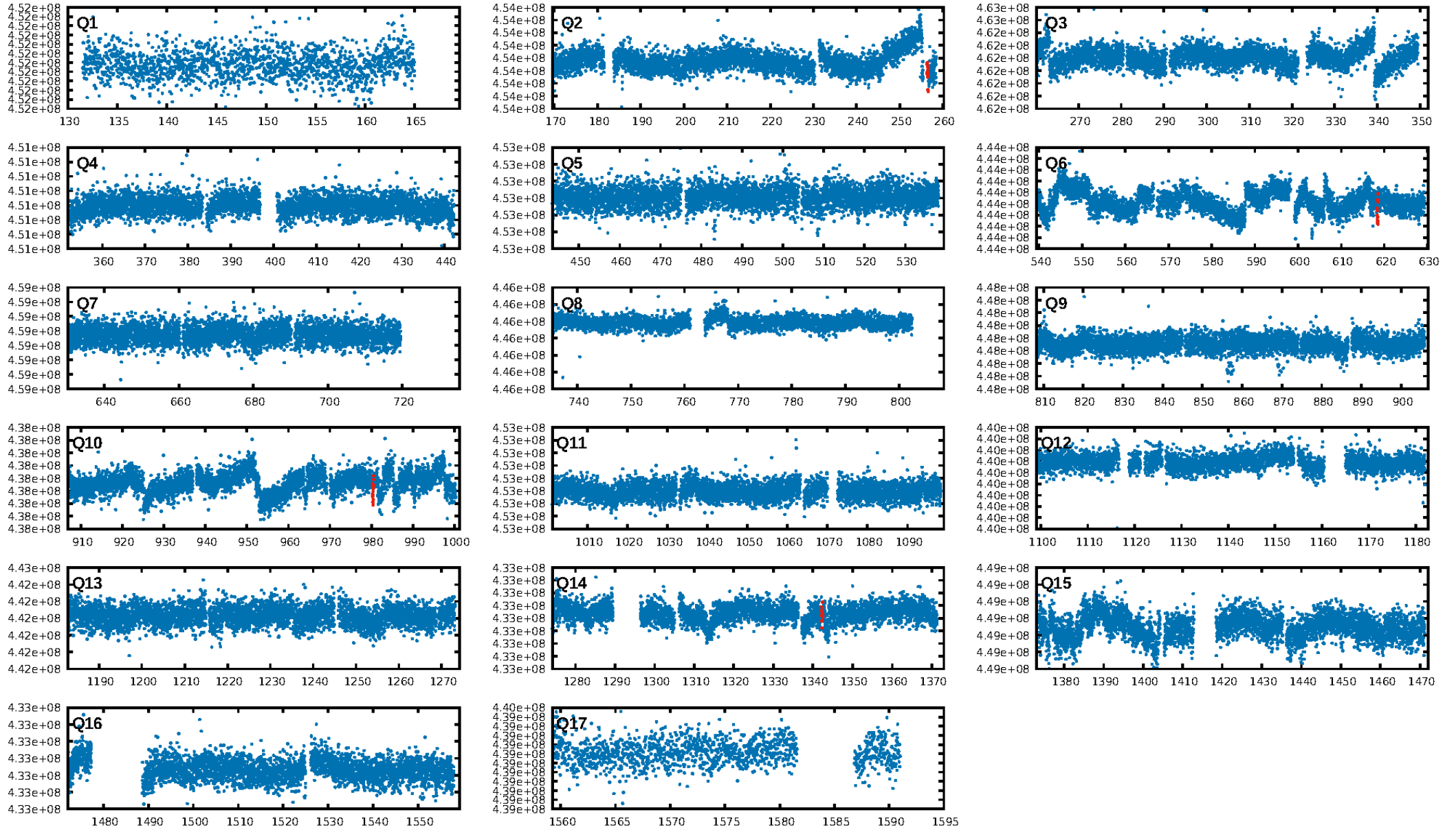
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.79 σ]
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 3.18e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.327
Centroid-sig: 94.1%
Centroid-so: 0.478 arcsec [0.20 σ]
OotOffset-rm: 1.224 arcsec [0.63 σ]
KicOffset-rm: 1.264 arcsec [0.66 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.67 [2/3]

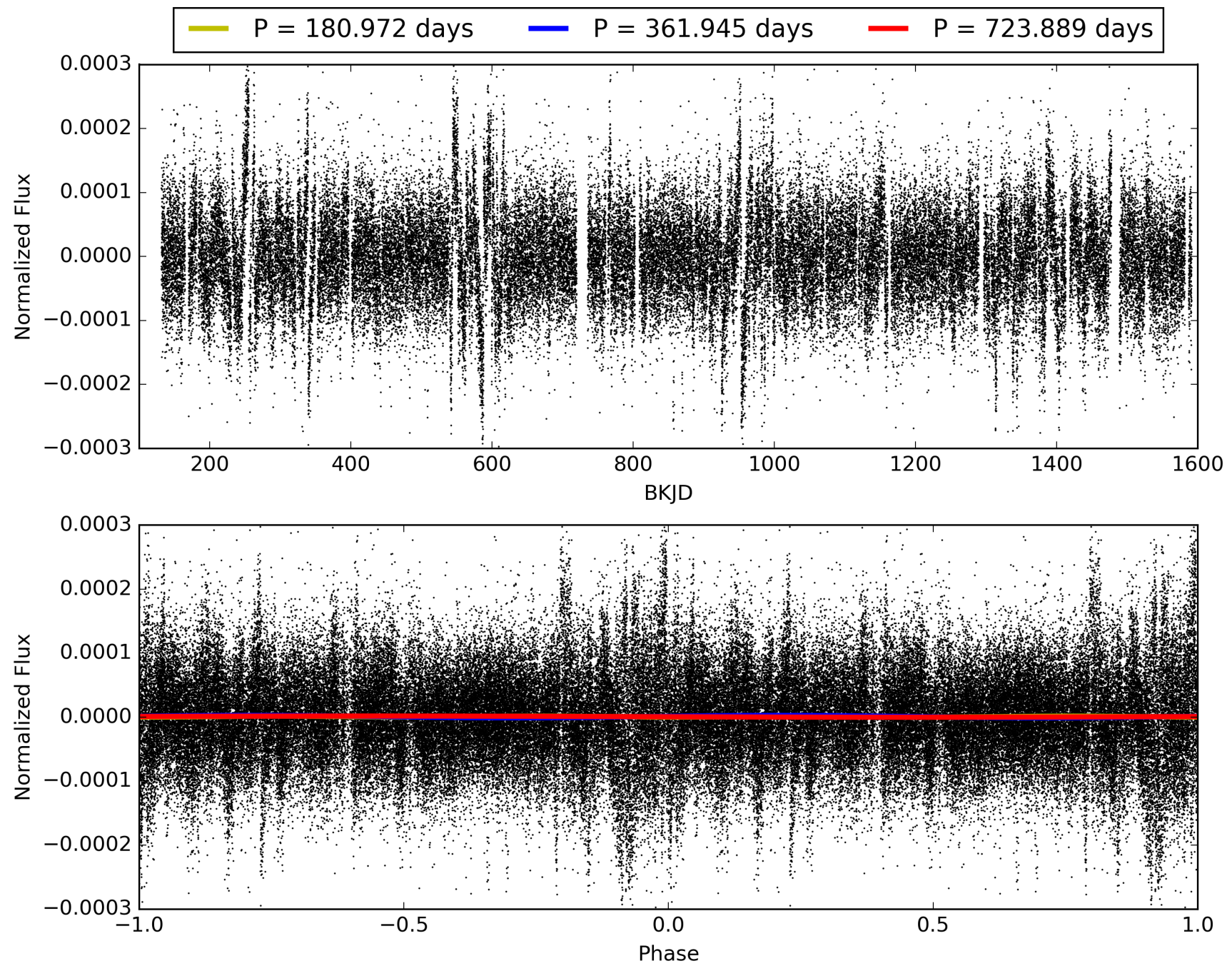
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:27:50 Z

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

TCE 008581944-01, PDC Light Curves

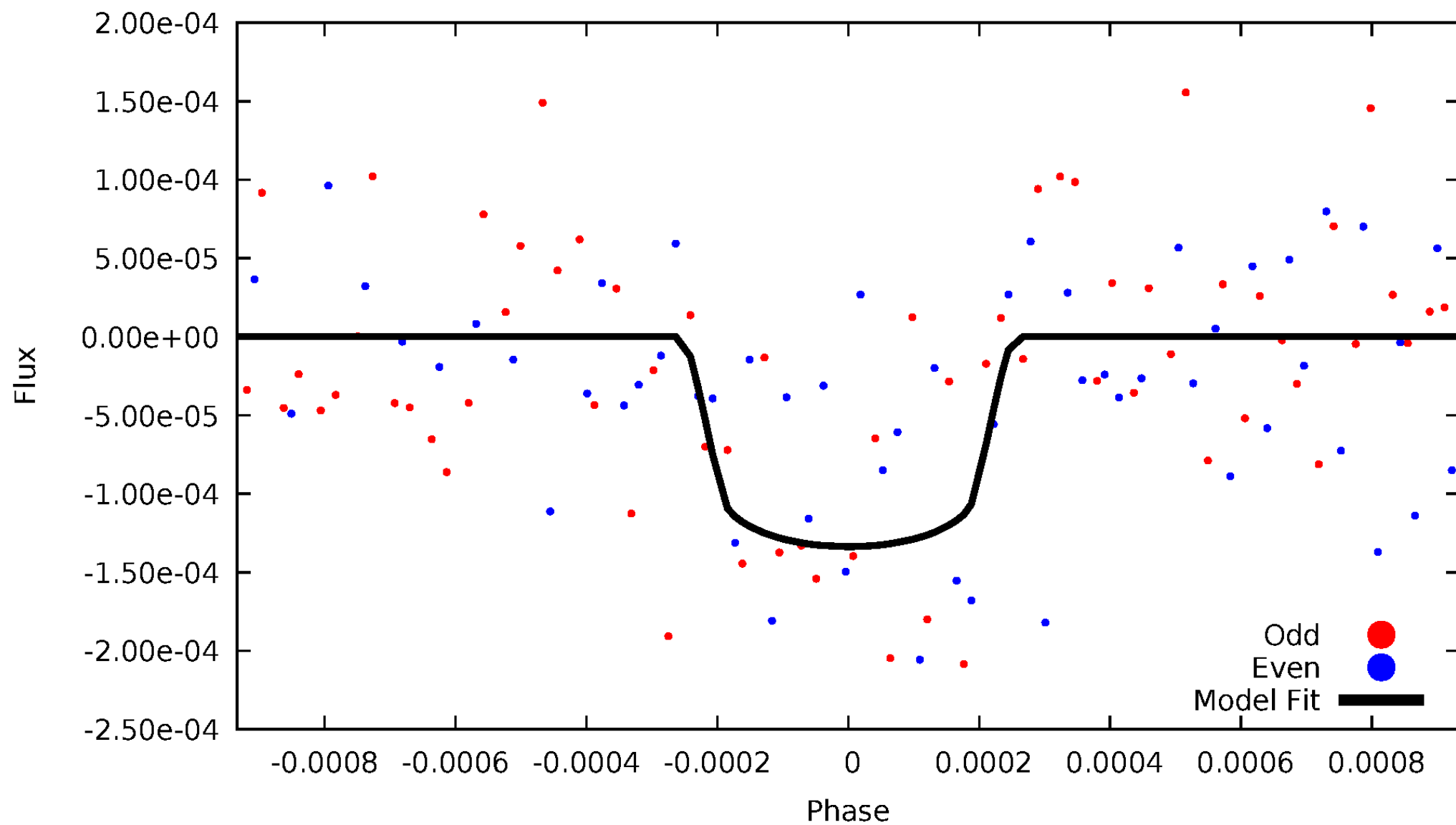


TCE 008581944-01



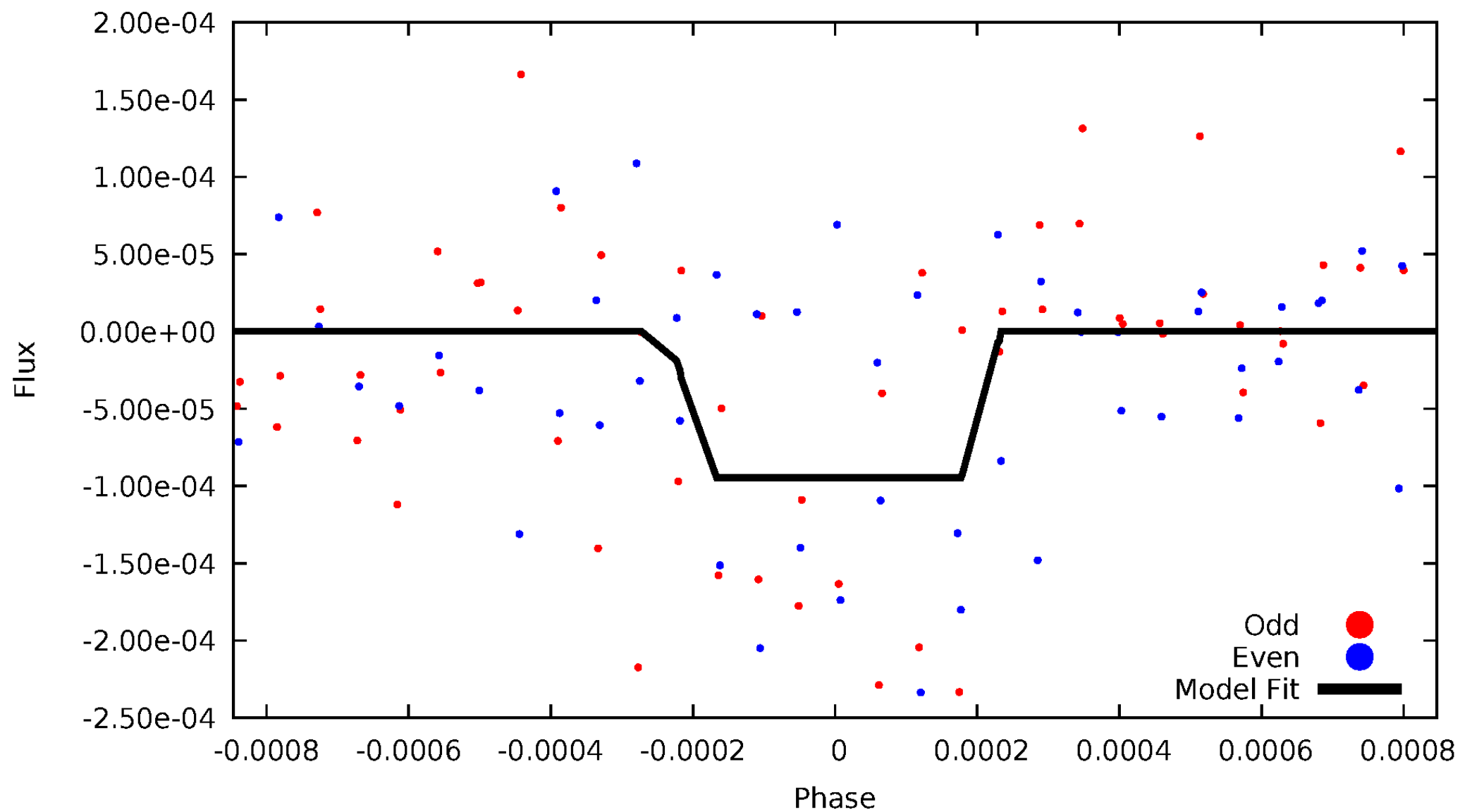
DV Odd/Even

TCE 008581944-01



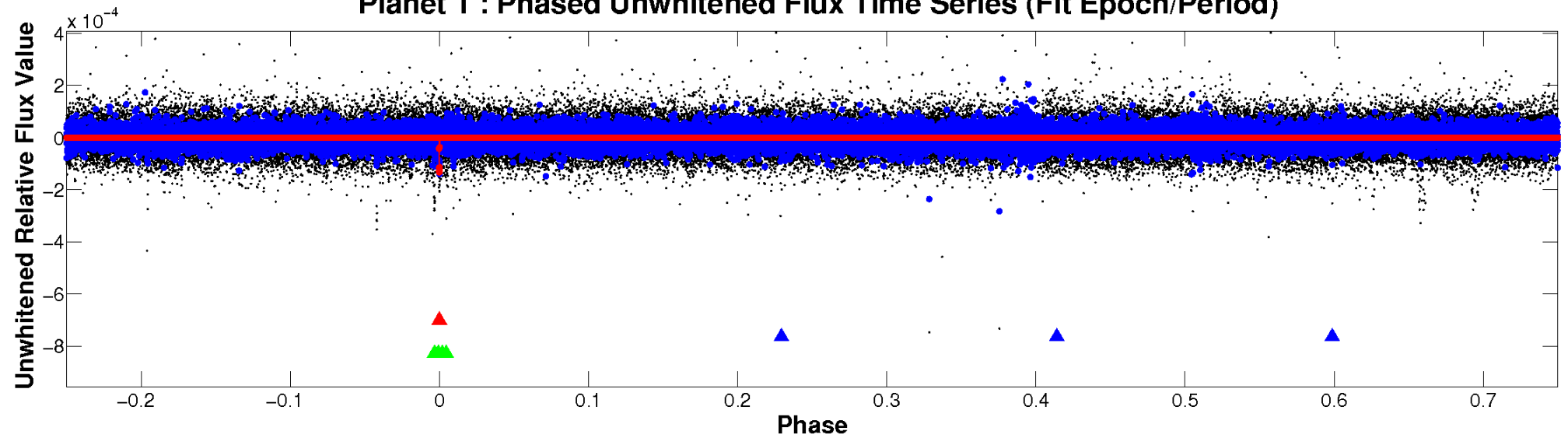
ALT Odd/Even

TCE 008581944-01

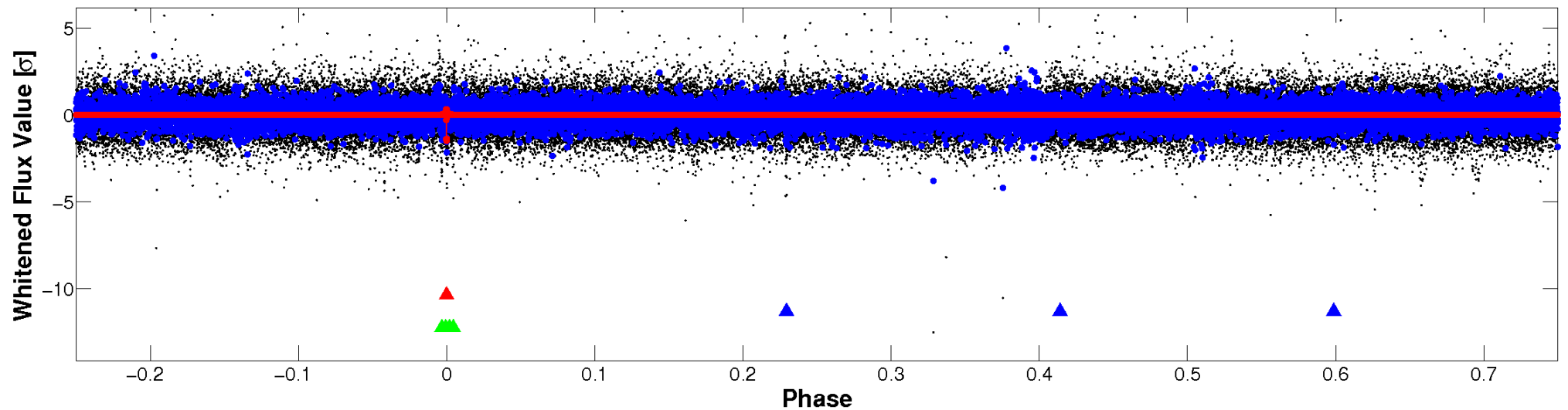


Non-Whitened Vs. Whitened Light Curve

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

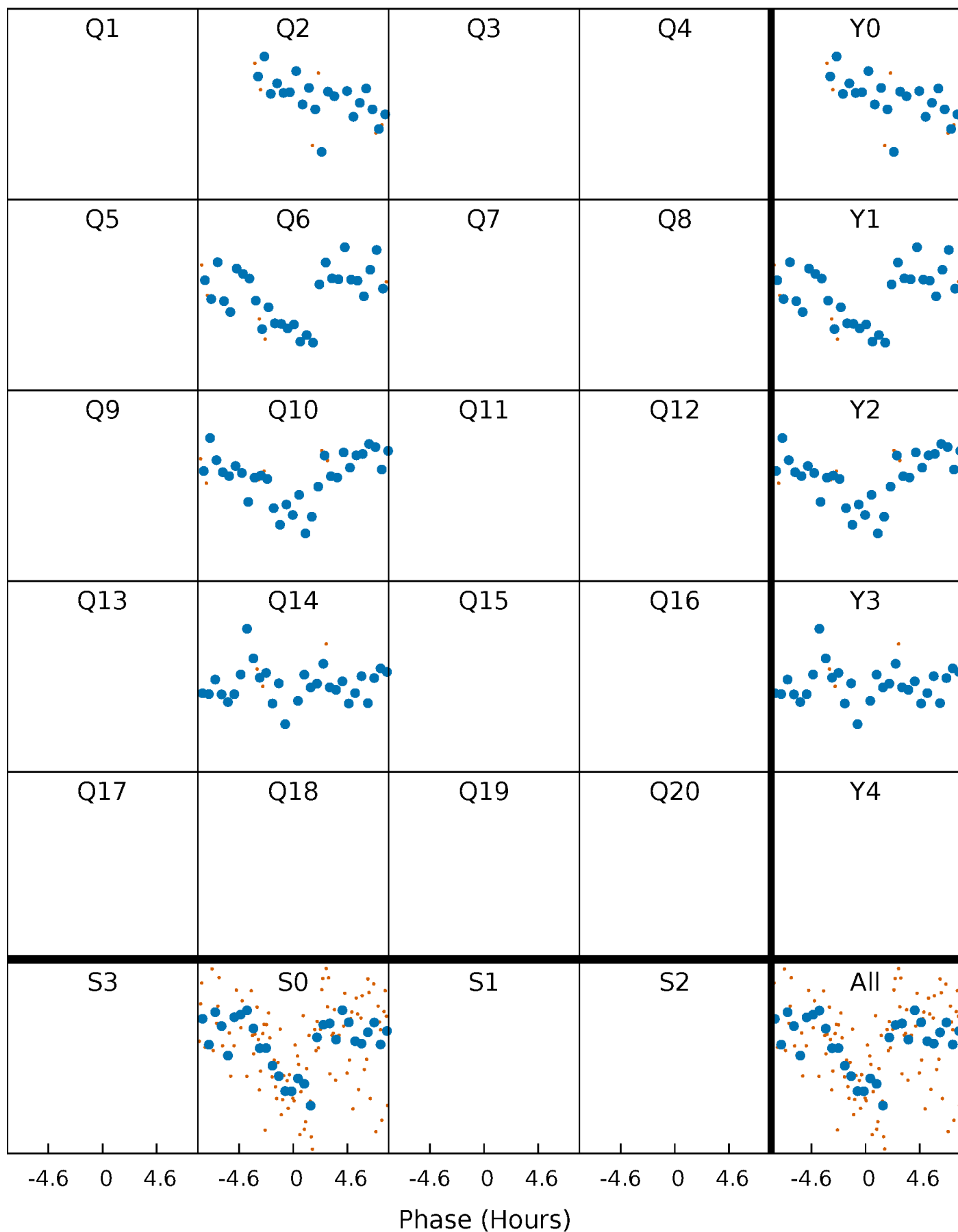


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



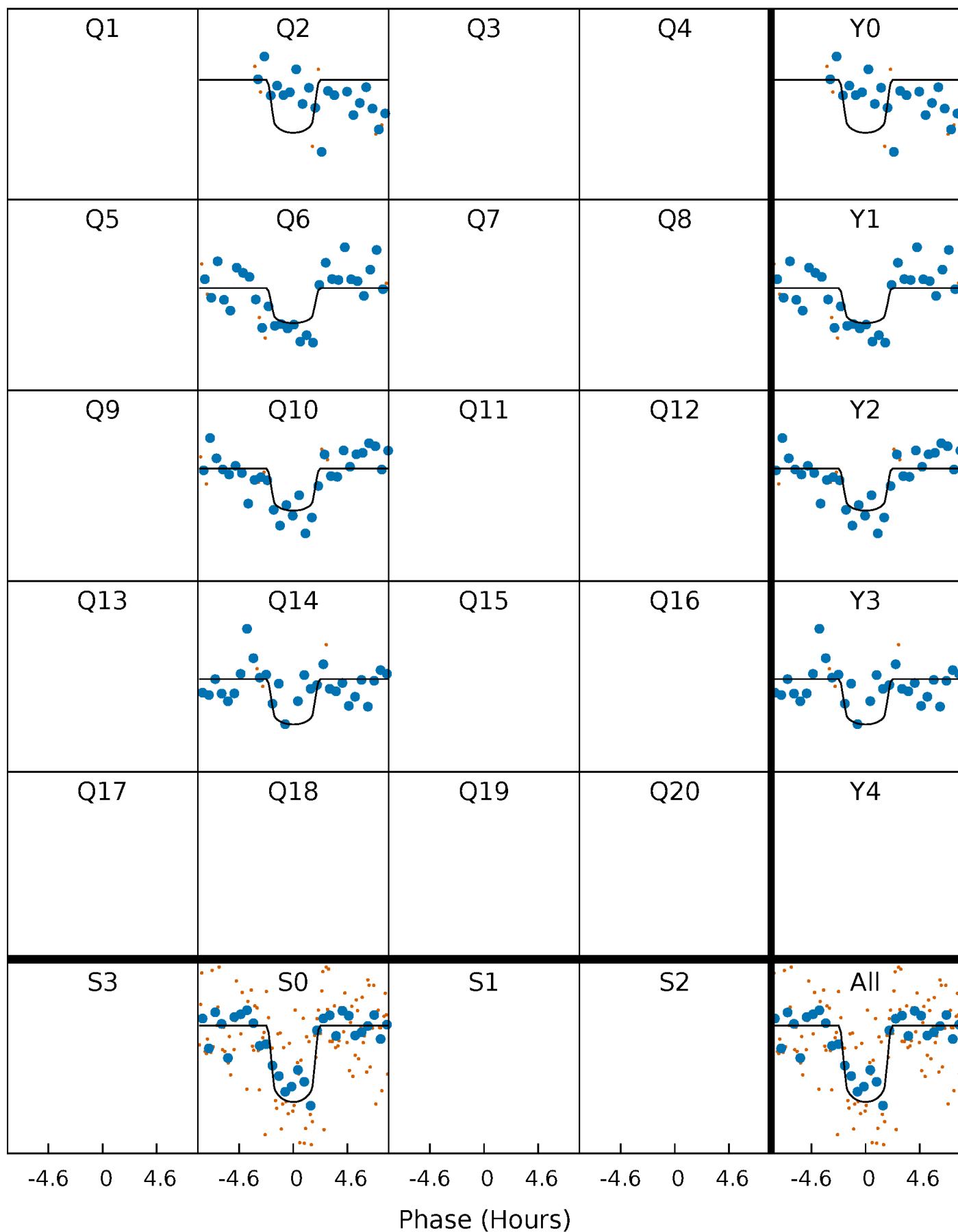
PDC Quarter-Phased Transit Curves

TCE 008581944-01 P=361.944553 Days $T_0=256.479204$ (BKJD)



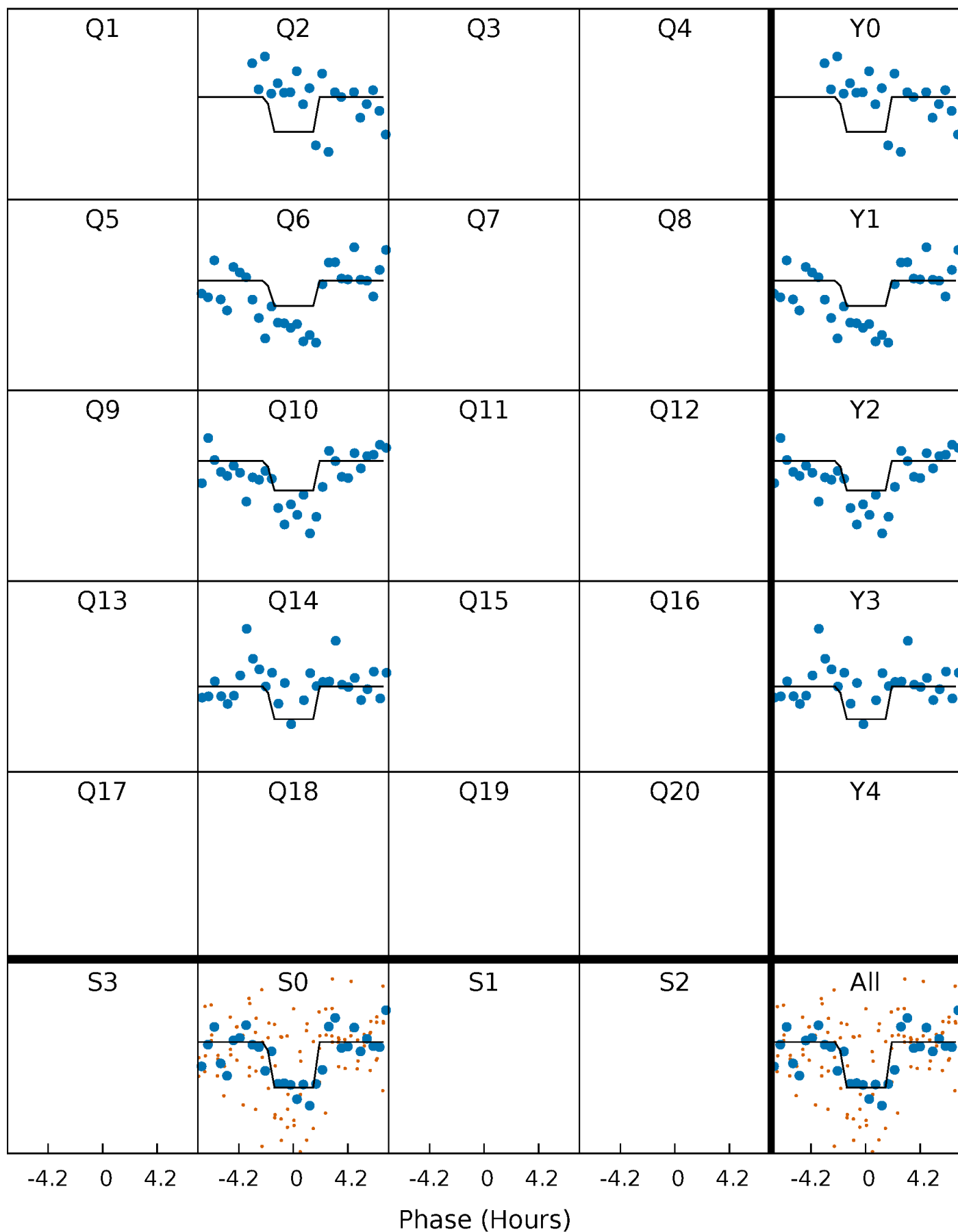
DV Quarter-Phased Transit Curves

TCE 008581944-01 P=361.944553 Days $T_0=256.479204$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

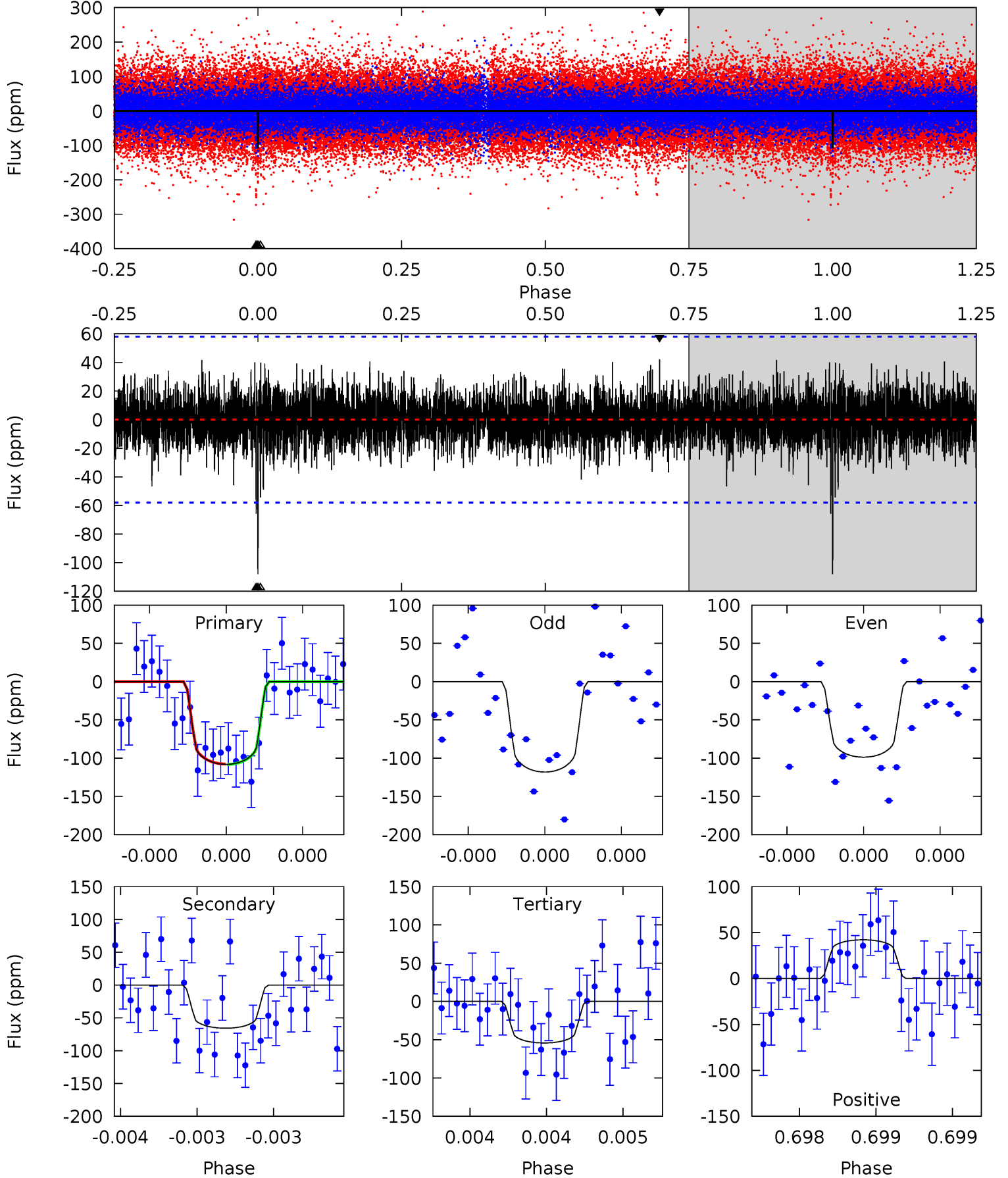
TCE 008581944-01 P=361.939648 Days $T_0=256.484884$ (BKJD)



DV Model-Shift Uniqueness Test

008581944-01, P = 361.944553 Days, E = 256.479204 Days

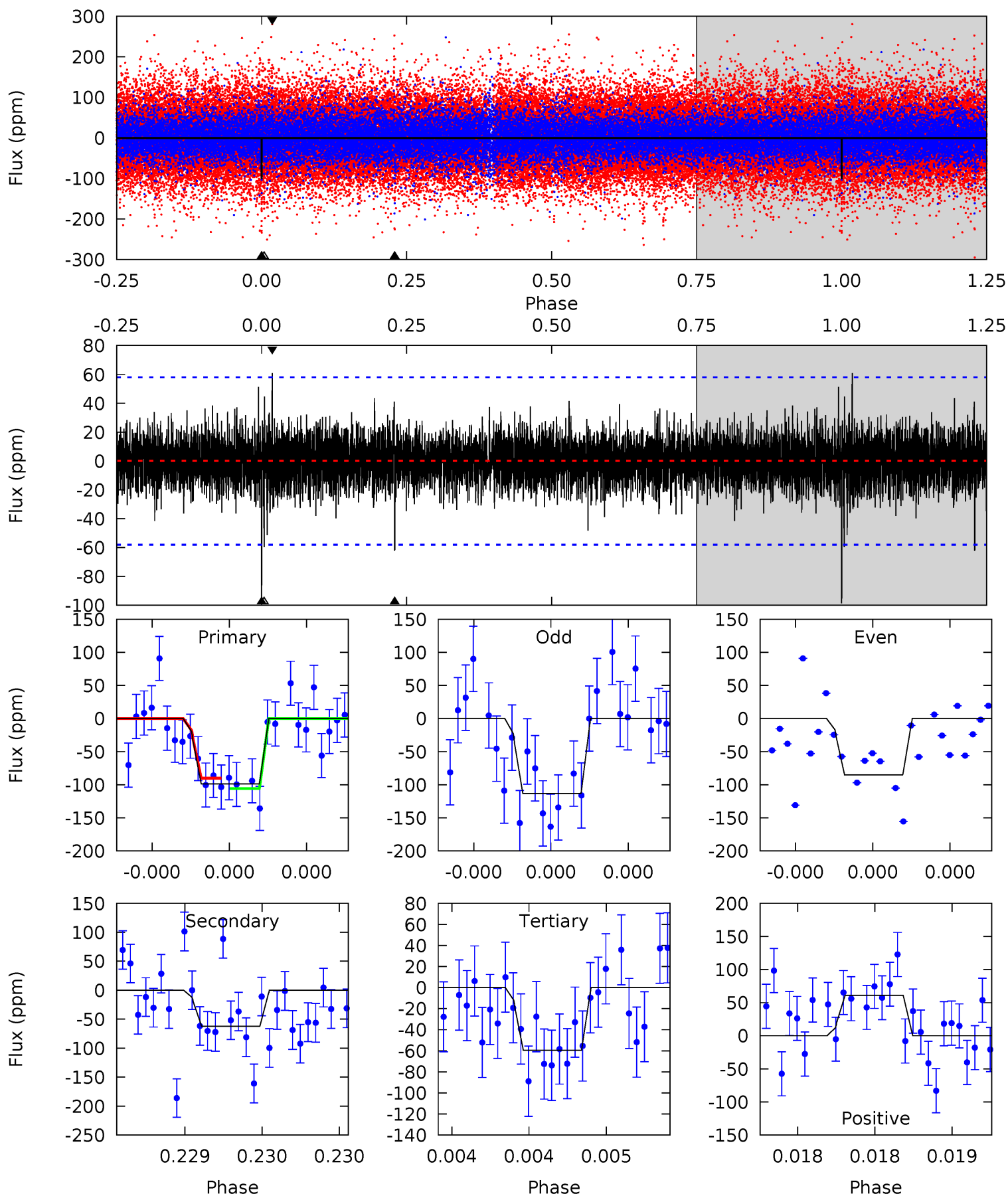
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	6.33	5.22	4.06	5.58	3.49	1.14	5.18	6.34	1.11	2.28	0.94	1.03	0.28	0.03



Alt Model-Shift Uniqueness Test

008581944-01, P = 361.939648 Days, E = 256.484884 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.51	5.99	5.74	5.86	5.59	3.51	1.10	3.77	3.64	0.25	0.13	1.39	0.99	0.38	0.76



Stellar Parameters For KIC 008581944

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7776^{+214}_{-349}	$3.673^{+0.459}_{-0.081}$	$-0.040^{+0.200}_{-0.350}$	$3.471^{+0.692}_{-1.729}$	$2.068^{+0.302}_{-0.518}$	$0.070^{+0.325}_{-0.023}$
	+3%/-4%	+12%/-2%	+500%/-875%	+20%/-50%	+15%/-25%	+467%/-33%
Source	KIC0	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 008581944-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-66 ± 10	$4.11^{+2.65}_{-2.18}$	760^{+57}_{-94}	6096^{+2973}_{-1146}	3252^{+11507}_{-2012}
Alt.	-62 ± 10	$3.37^{+2.67}_{-1.81}$	758^{+60}_{-96}	6521^{+4711}_{-1405}	4735^{+18657}_{-3280}

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 $A_{obs} \gg 1.0$

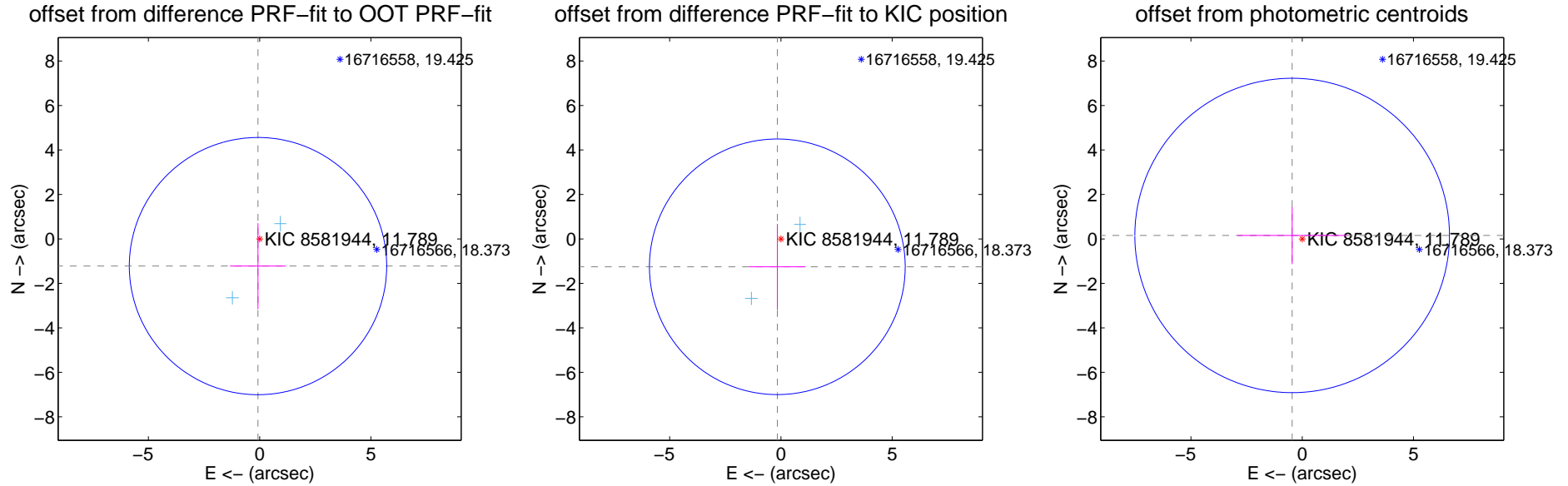
DV Centroid Data

Supplemental centroid analysis for 008581944-01. **Kepler magnitude: 11.79.** Transit SNR 7.48

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.224 ± 1.928	0.63	0.073 ± 1.257	-1.221 ± 1.930
PRF-fit source offset from KIC position	1.264 ± 1.916	0.66	0.162 ± 1.276	-1.253 ± 1.924
photometric centroid source offset	0.48 ± 2.36	0.20	0.45 ± 2.45	0.16 ± 1.29

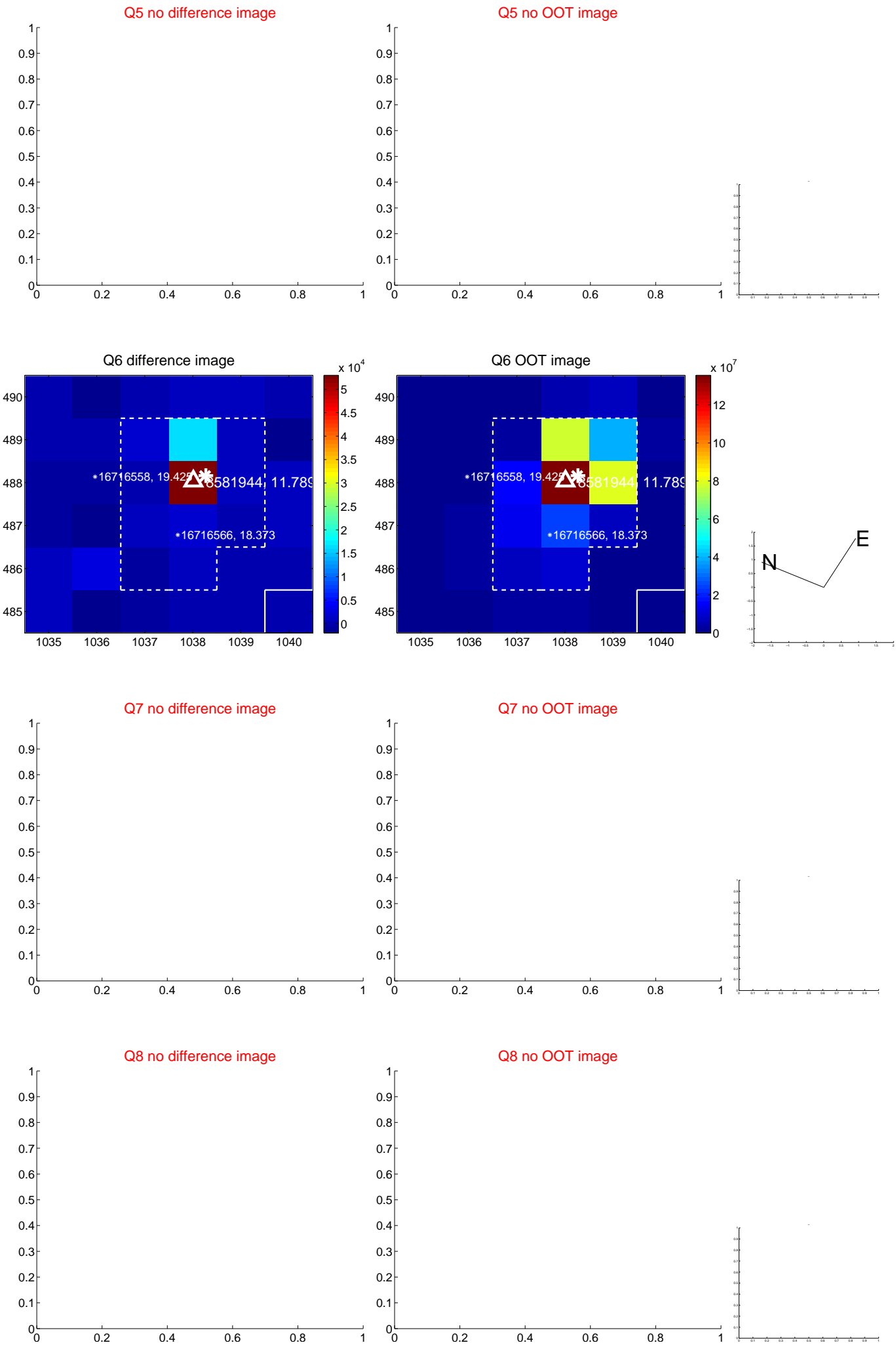


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

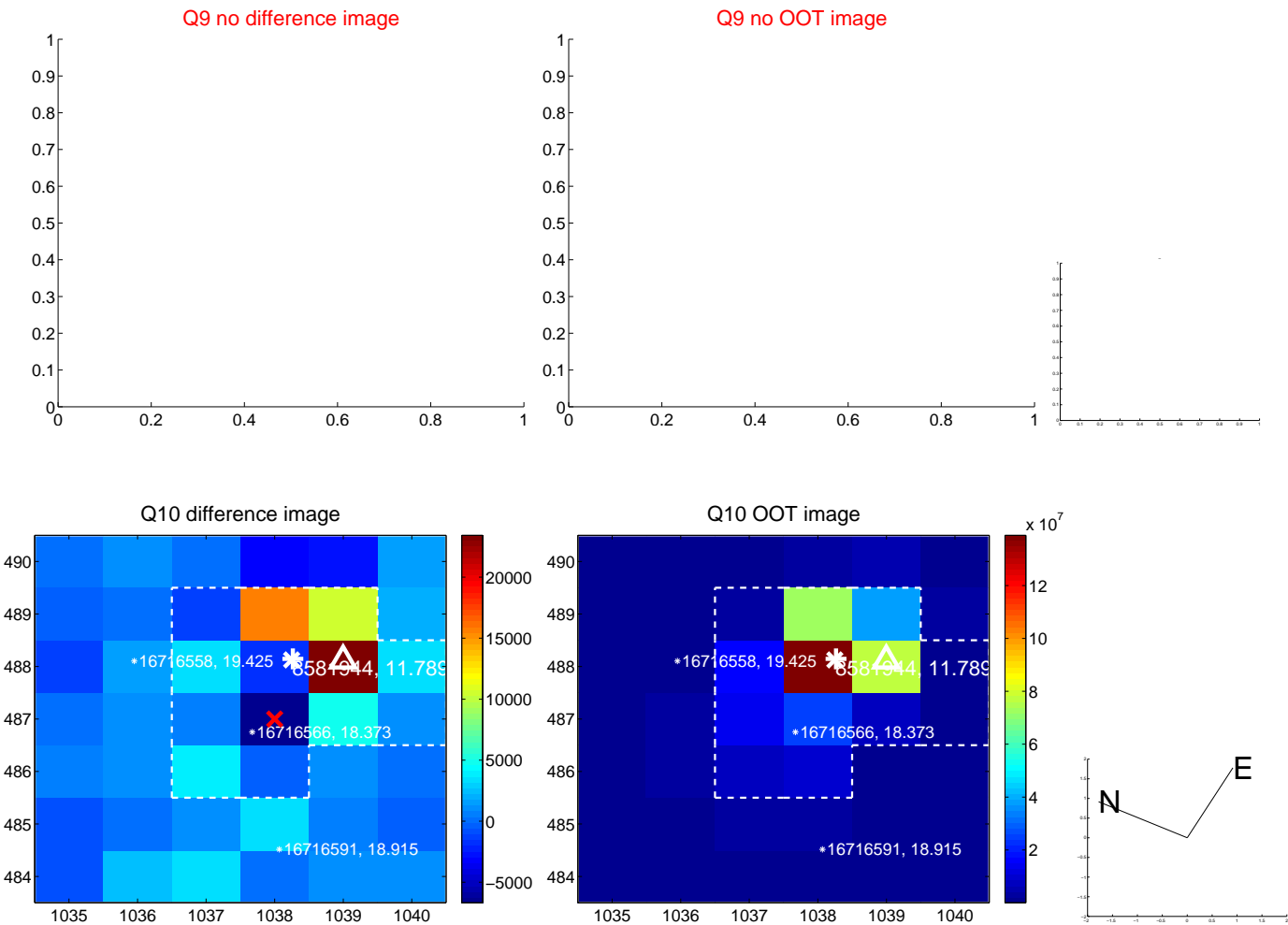
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



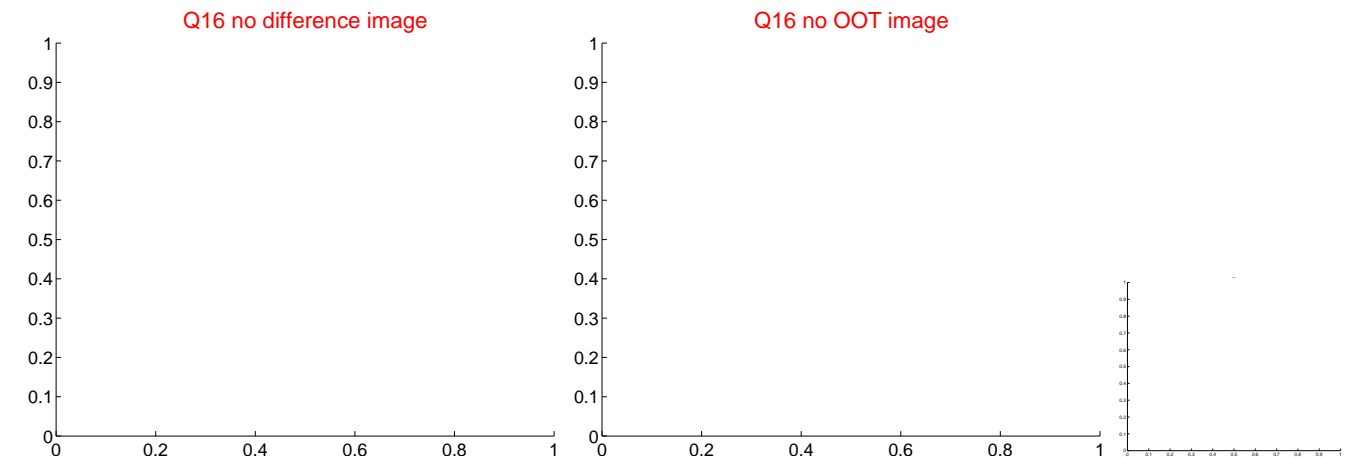
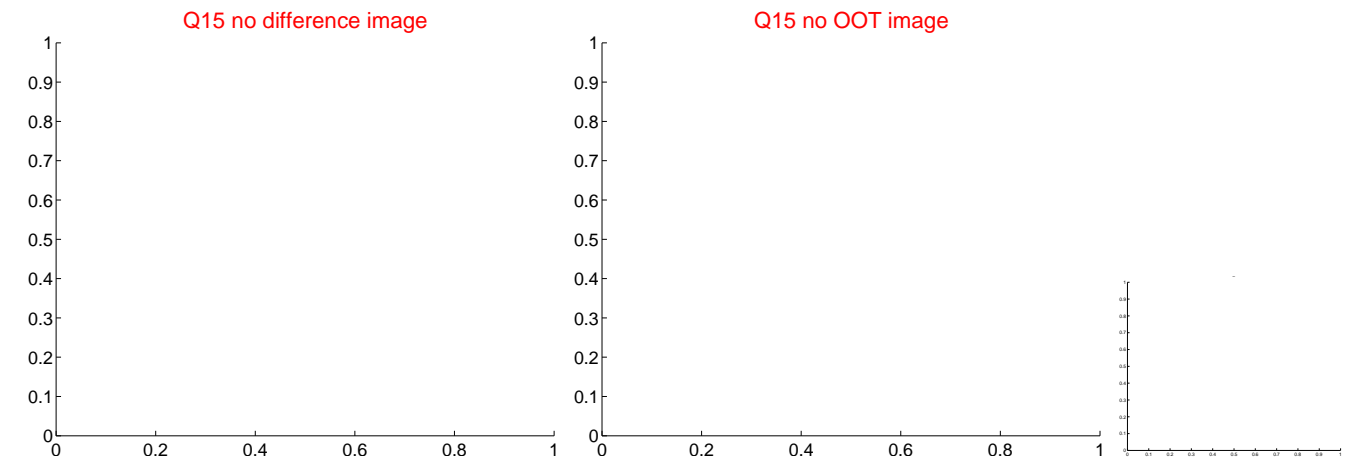
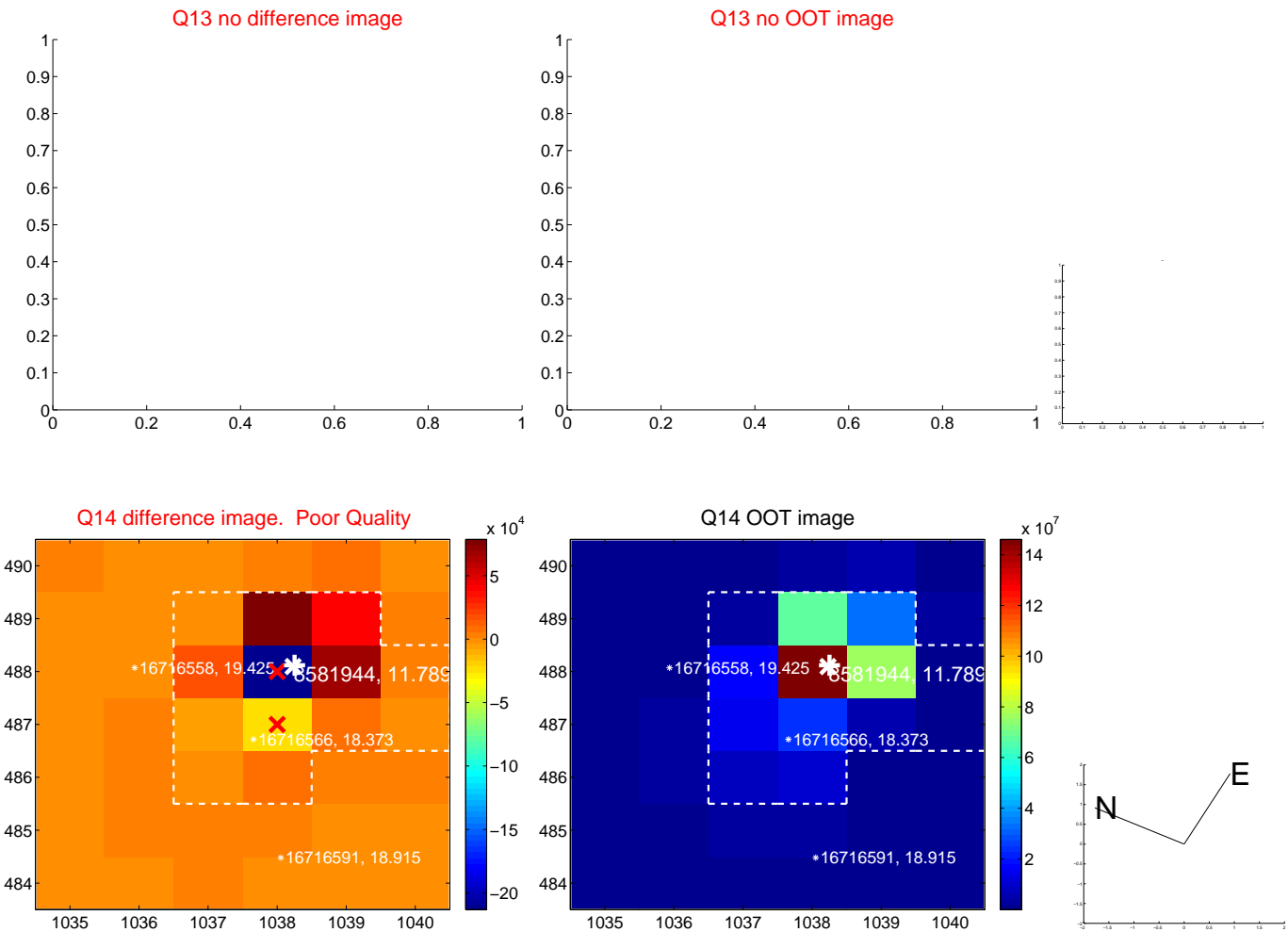
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



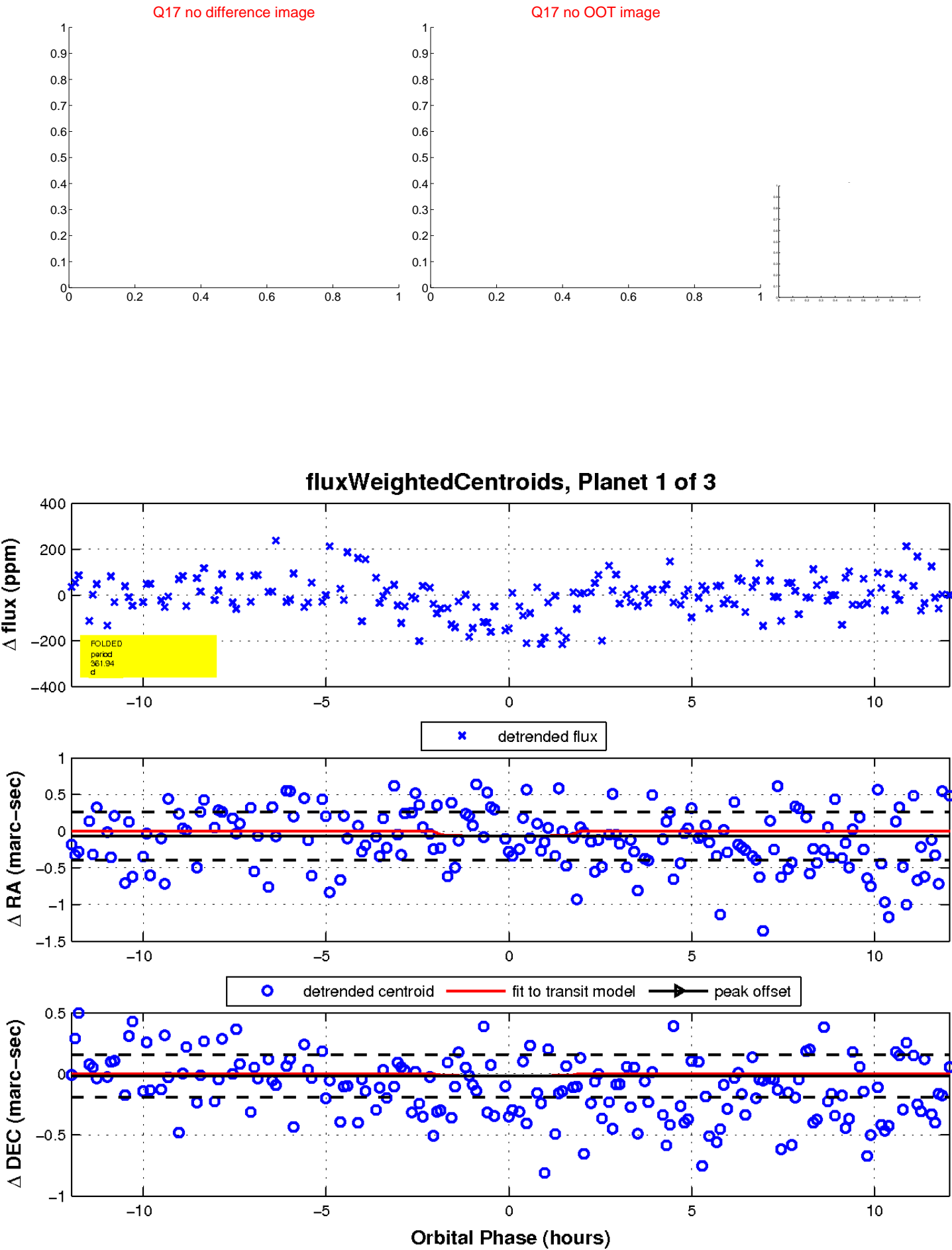
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

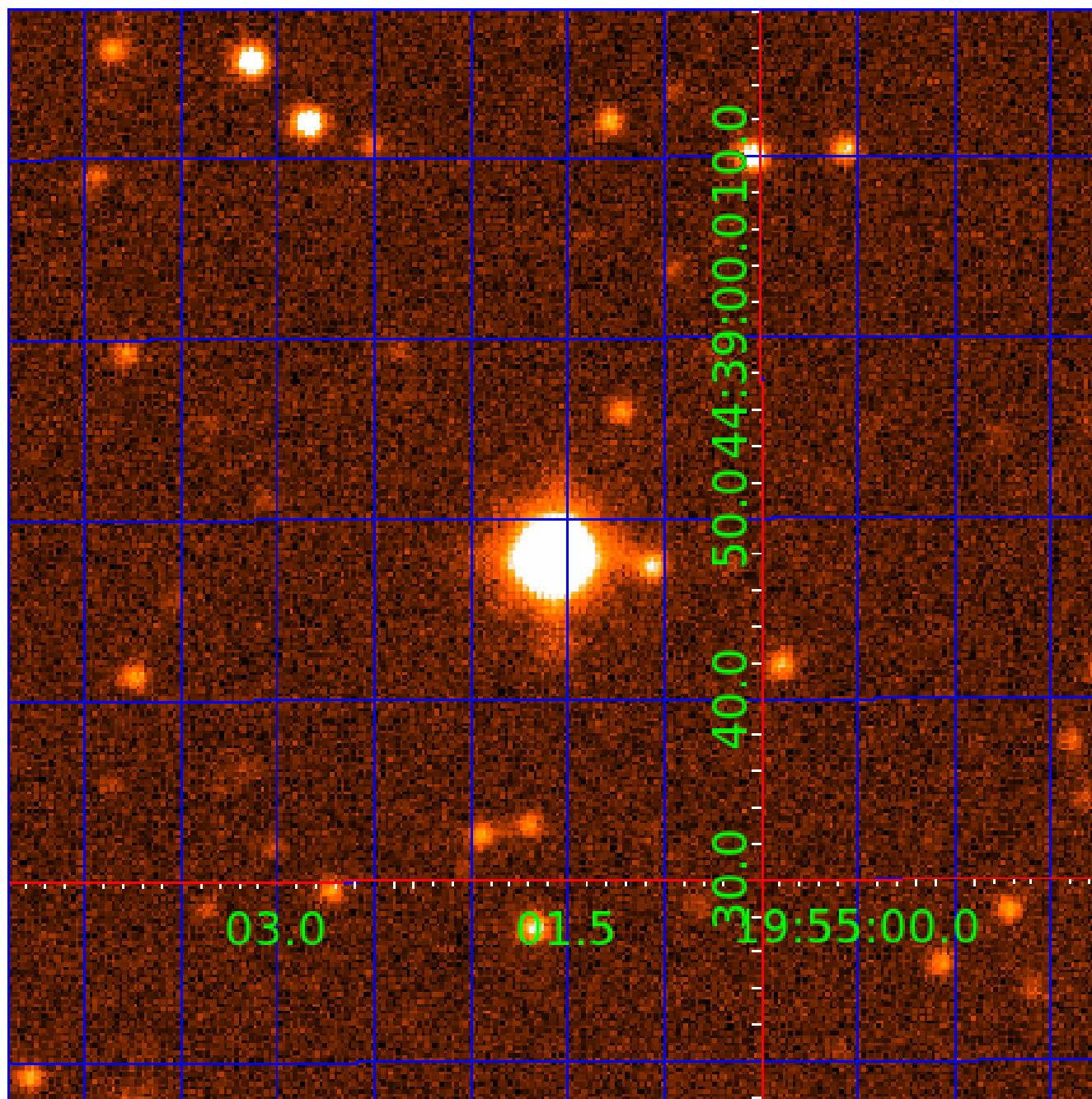


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008581944

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})
008581944-01	OBS	No	361.944553	256.479204	133.7	4.054	8.3	7.5	3.47	7776	4.63	24.59
008581944-02	OBS	No	428.787319	339.508475	129.9	8.403	12.1	10.6	3.47	7776	4.57	19.61
008581944-03	OBS	No	362.886683	255.308668	146.0	4.369	11.1	7.7	3.47	7776	4.70	24.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008581944-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008581944-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008581944-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_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.

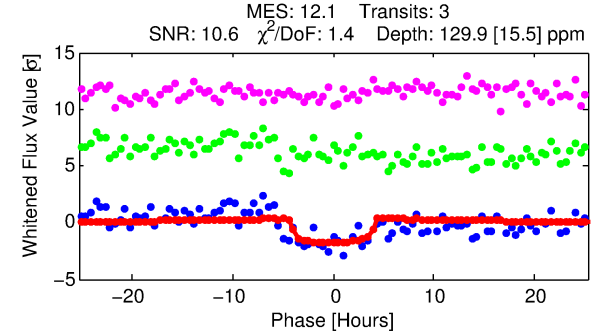
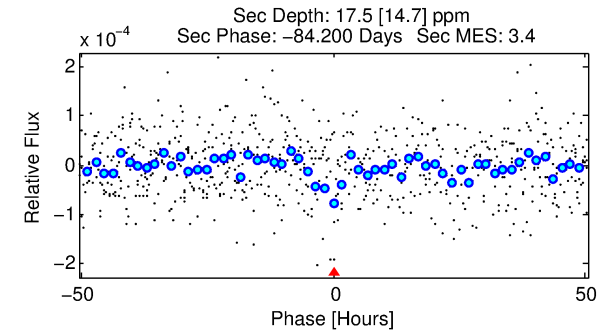
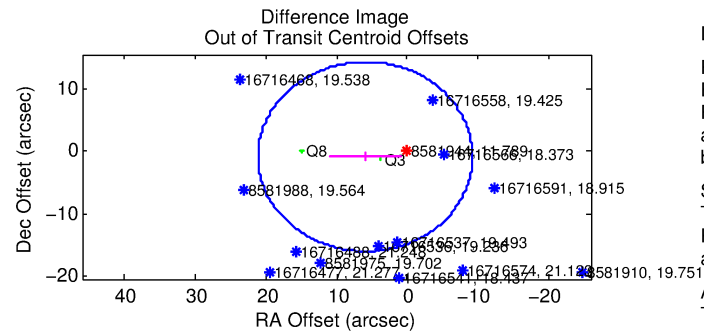
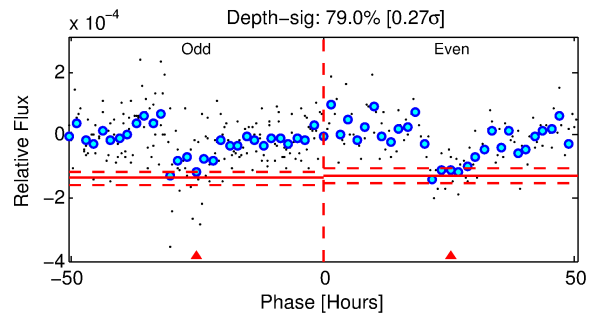
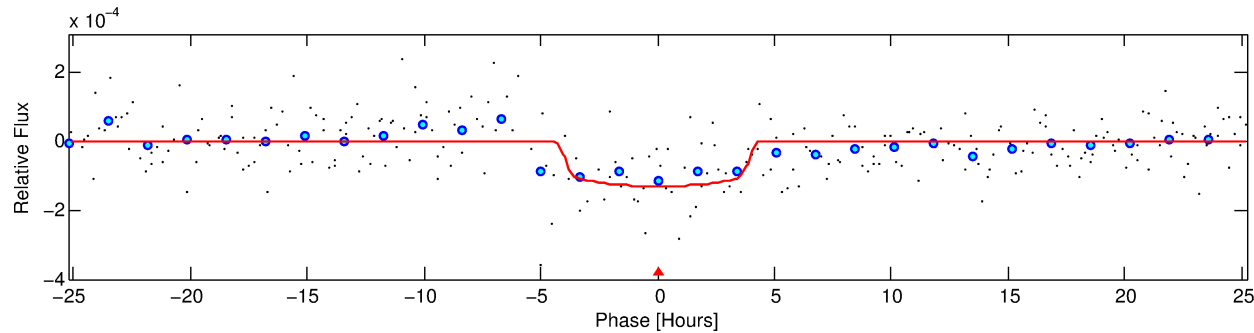
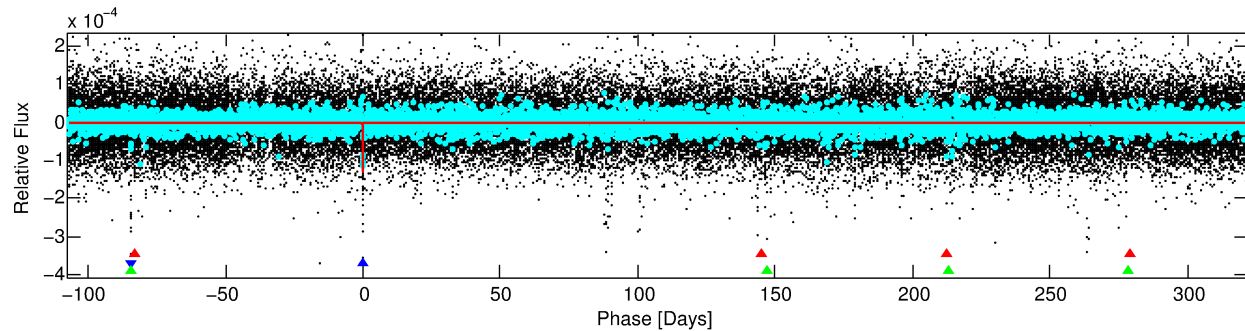
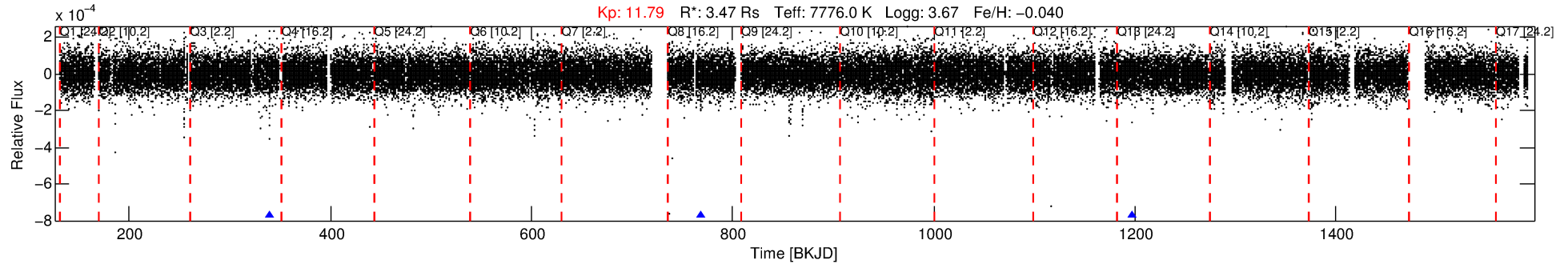
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008581944-02

No Significant Match Found

DV One-Page Summary

KIC: 8581944 Candidate: 2 of 3 Period: 428.787 d



DV Fit Results:

Period = 428.78732 [0.01162] d
Epoch = 339.5085 [0.0174] BKJD
Rp/R* = 0.0121 [0.0037]
a/R* = 187.99 [351.14]
b = 0.89 [0.44]
Seff = 19.61 [15.68]
Teq = 537 [107] K
Rp = 4.57 [2.68] Re
a = 1.4185 [0.6868] AU
Ag = 929.61 [1207.41] [0.77 σ]
Teffp = 4581 [1208] K [3.34 σ]

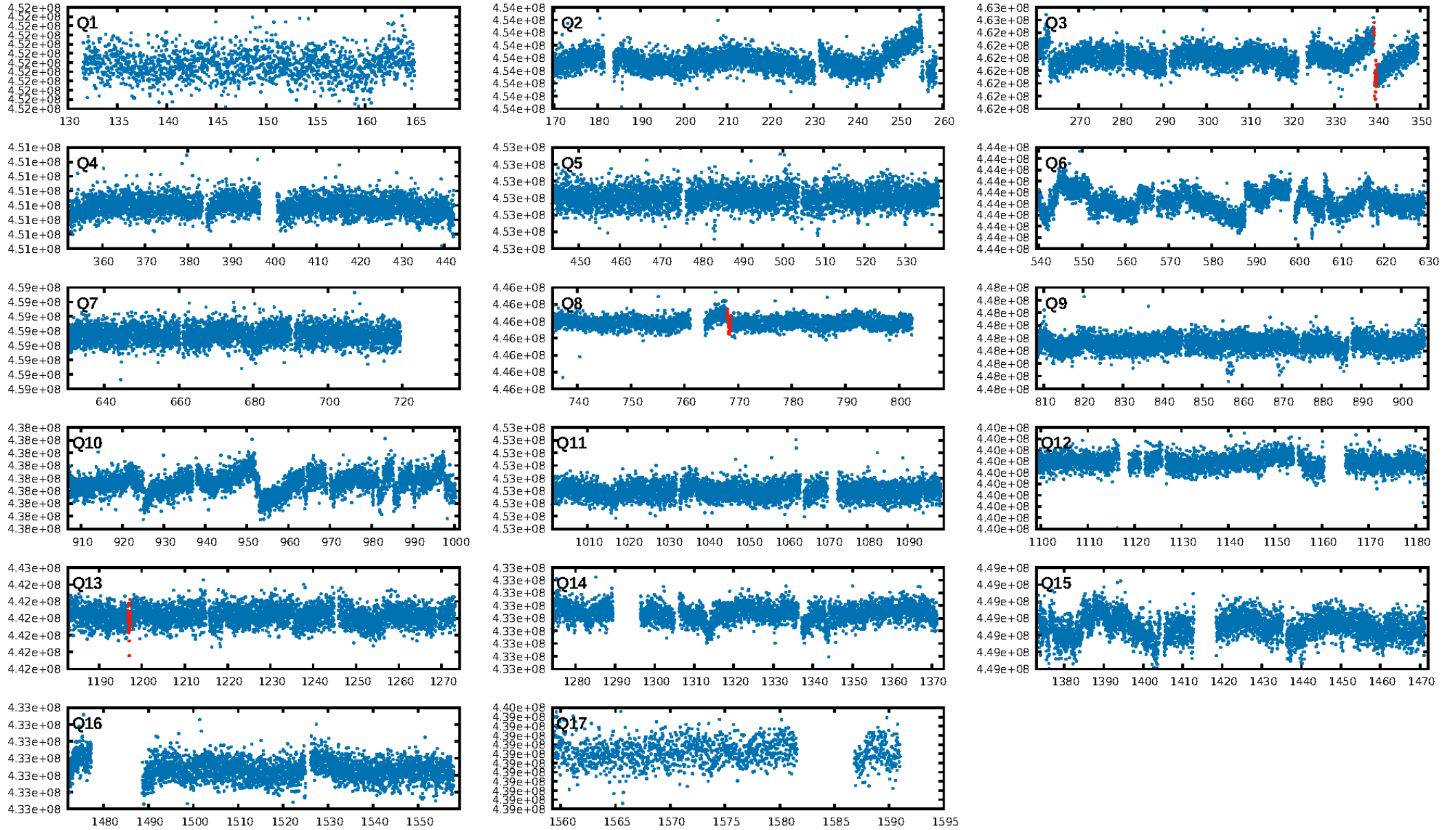
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [167.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 79.1%
Bootstrap-pfa: 1.23e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -9.912
Centroid-sig: 0.0%
Centroid-so: 4.023 arcsec [2.41 σ]
OotOffset-rm: 6.002 arcsec [1.19 σ]
KicOffset-rm: 6.027 arcsec [1.19 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
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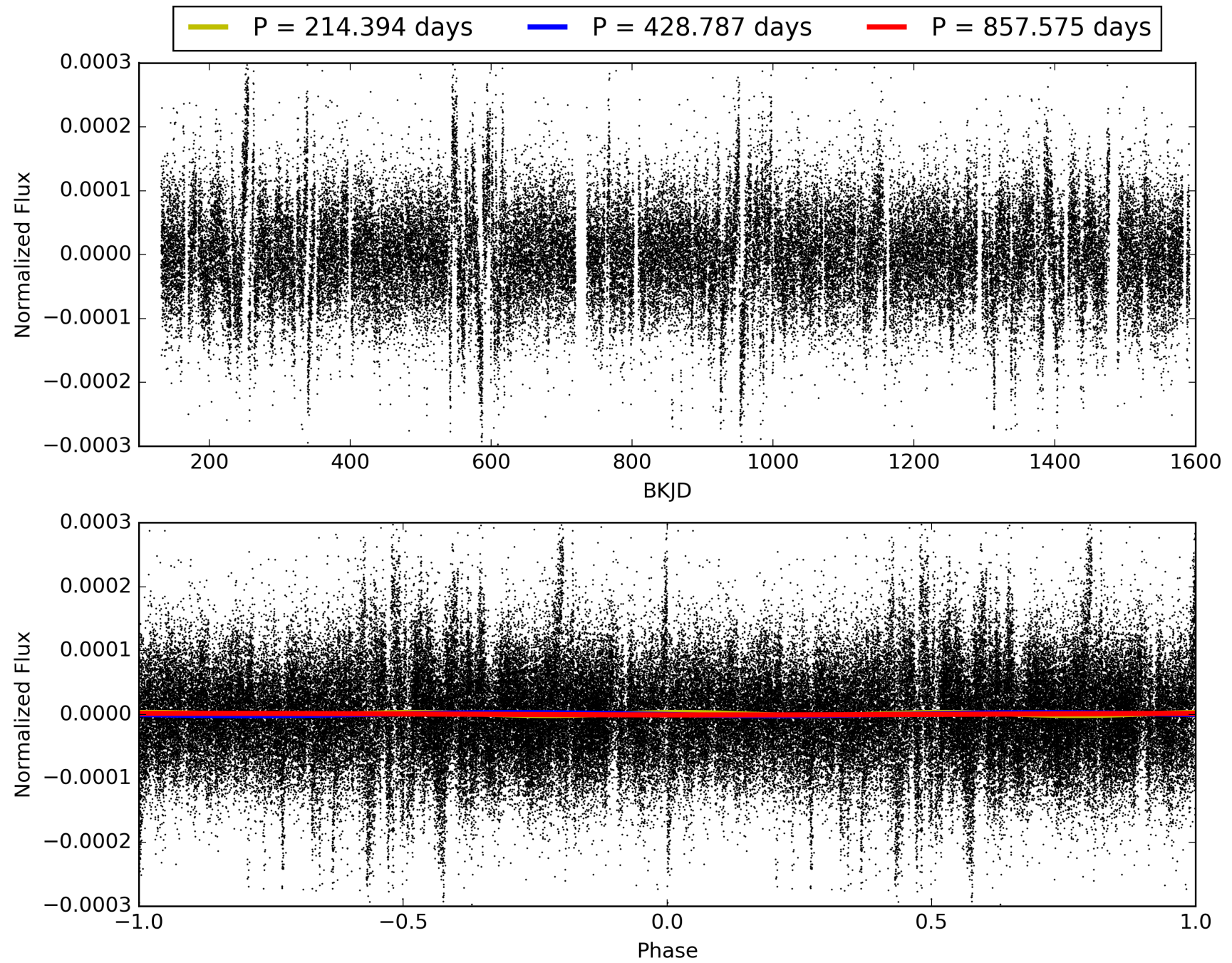
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:28:01 Z

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

TCE 008581944-02, PDC Light Curves

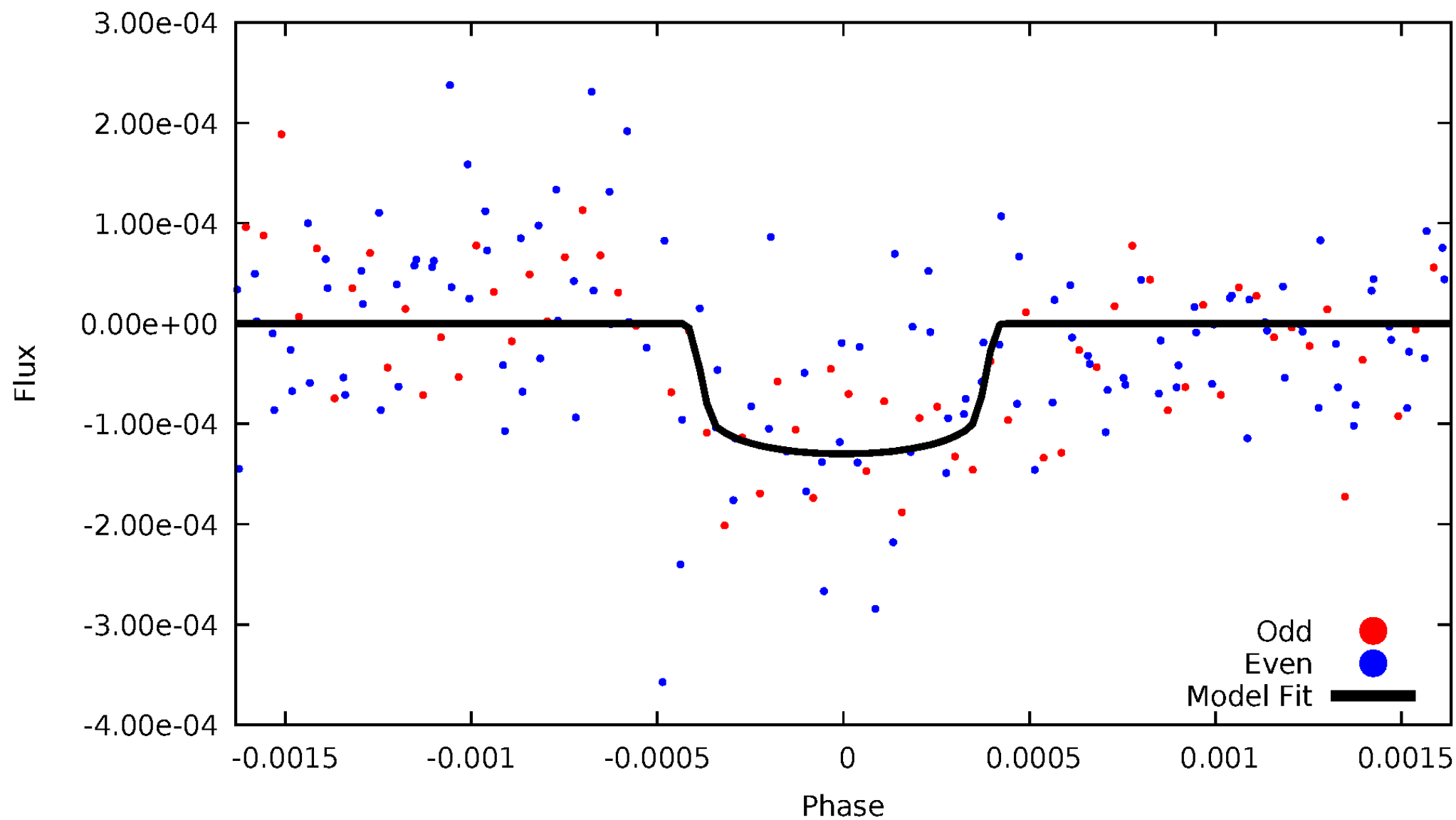


TCE 008581944-02



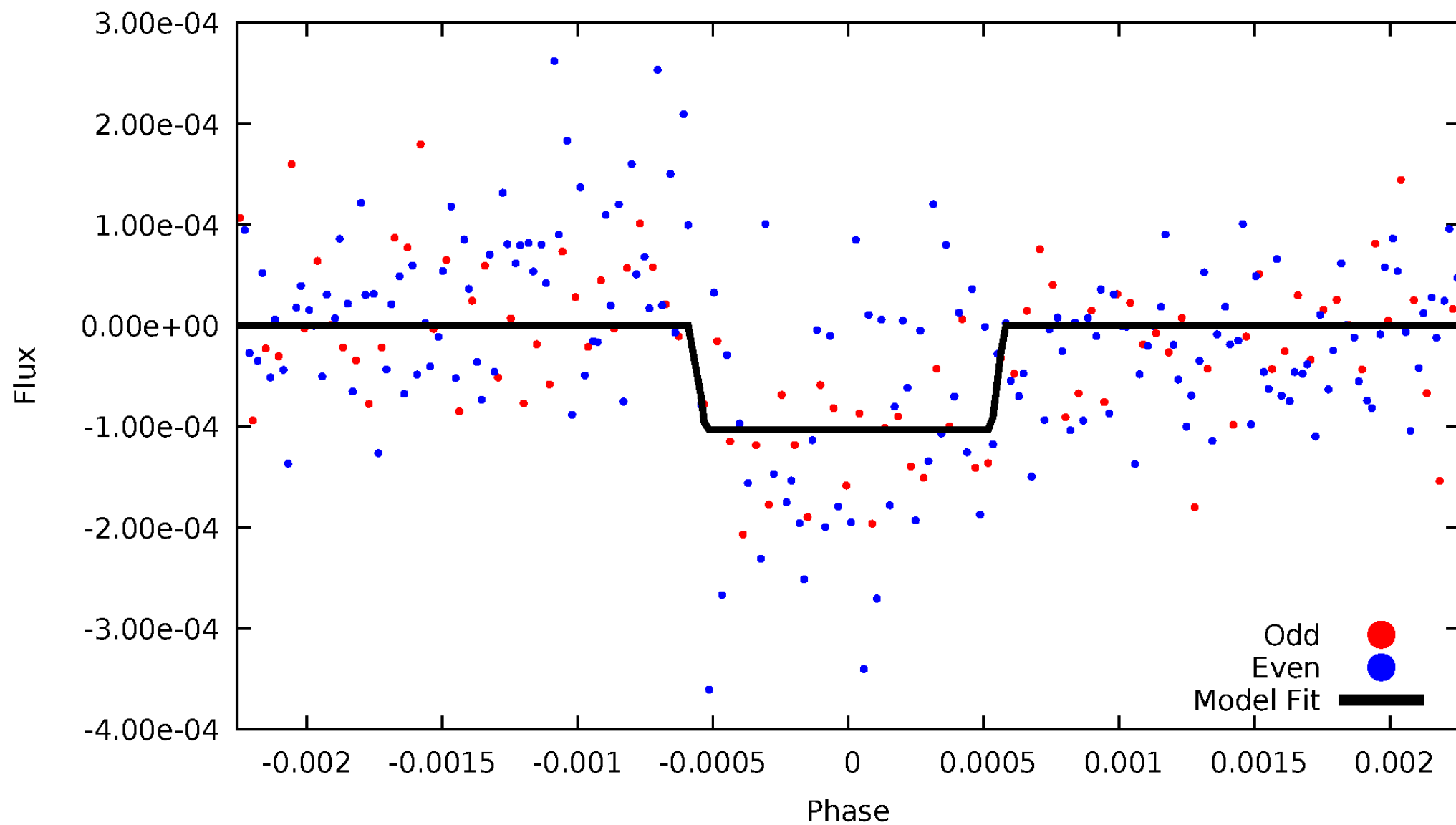
DV Odd/Even

TCE 008581944-02



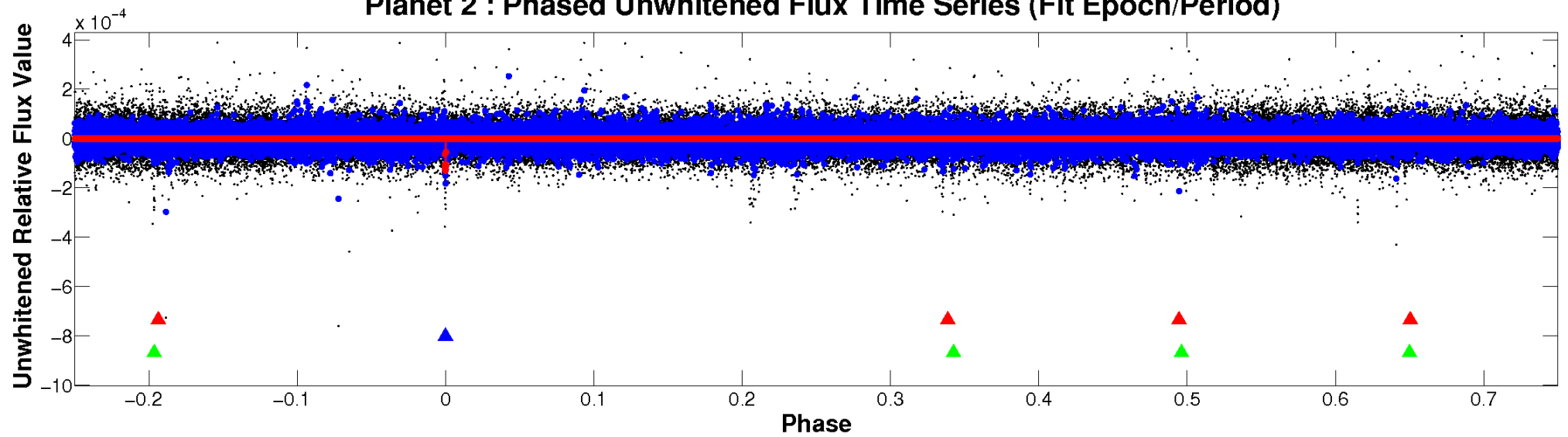
ALT Odd/Even

TCE 008581944-02

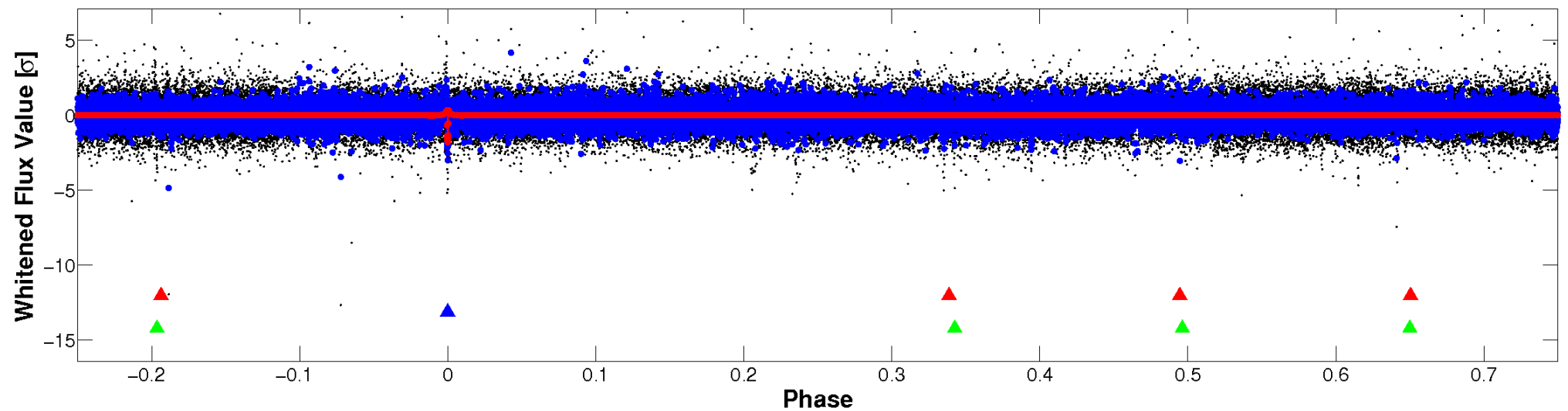


Non-Whitened Vs. Whitened Light Curve

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

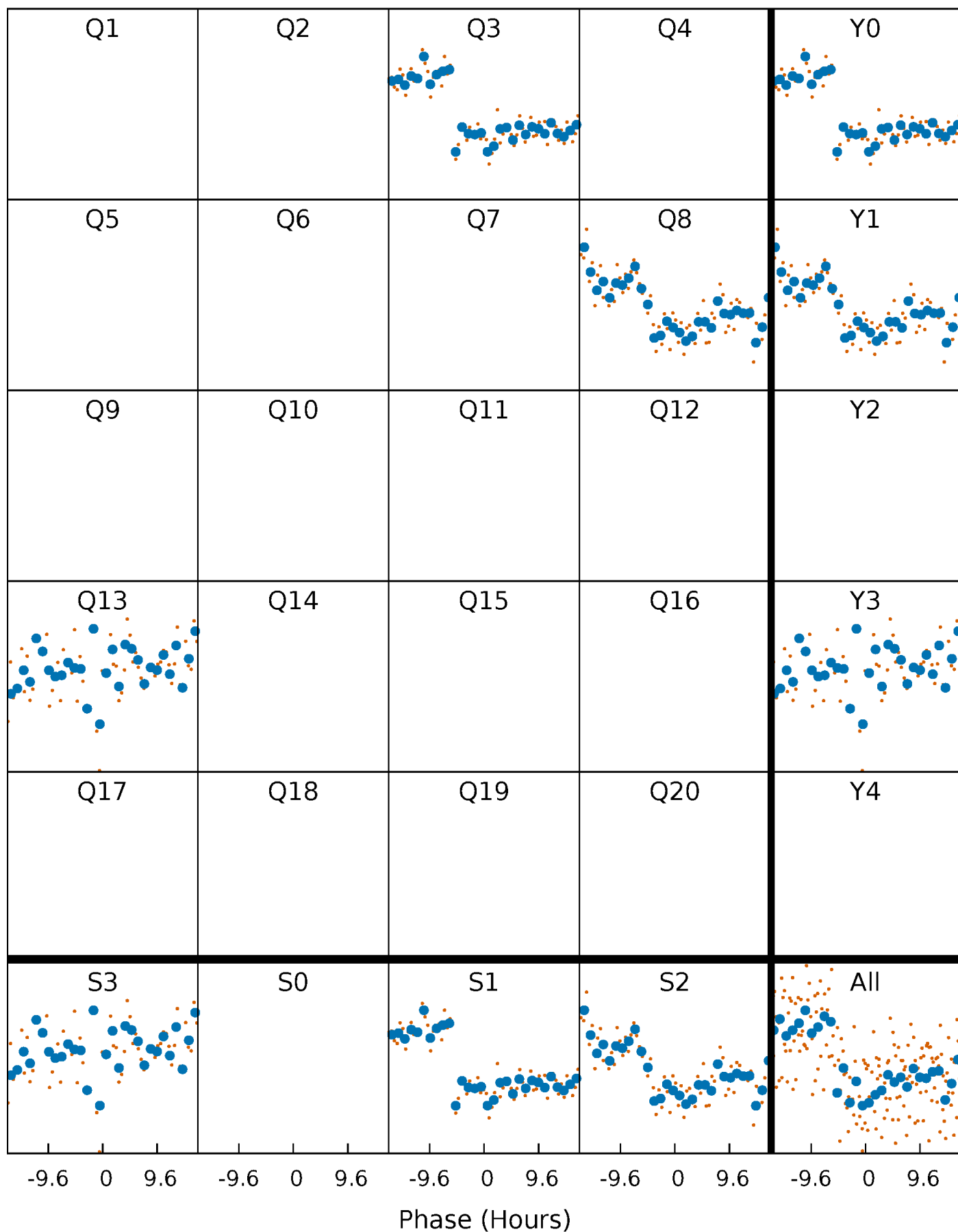


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



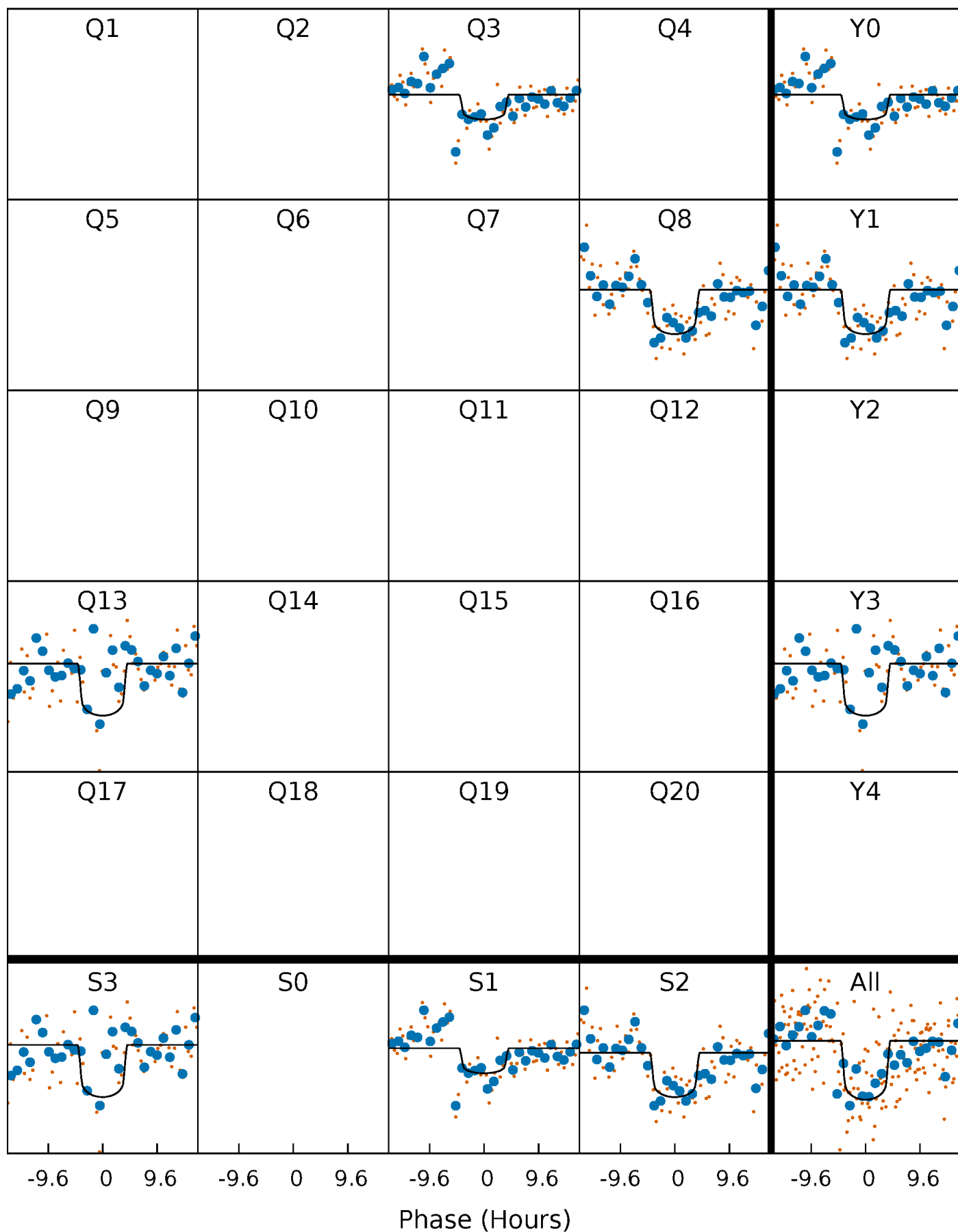
PDC Quarter-Phased Transit Curves

TCE 008581944-02 P=428.787319 Days $T_0=339.508475$ (BKJD)



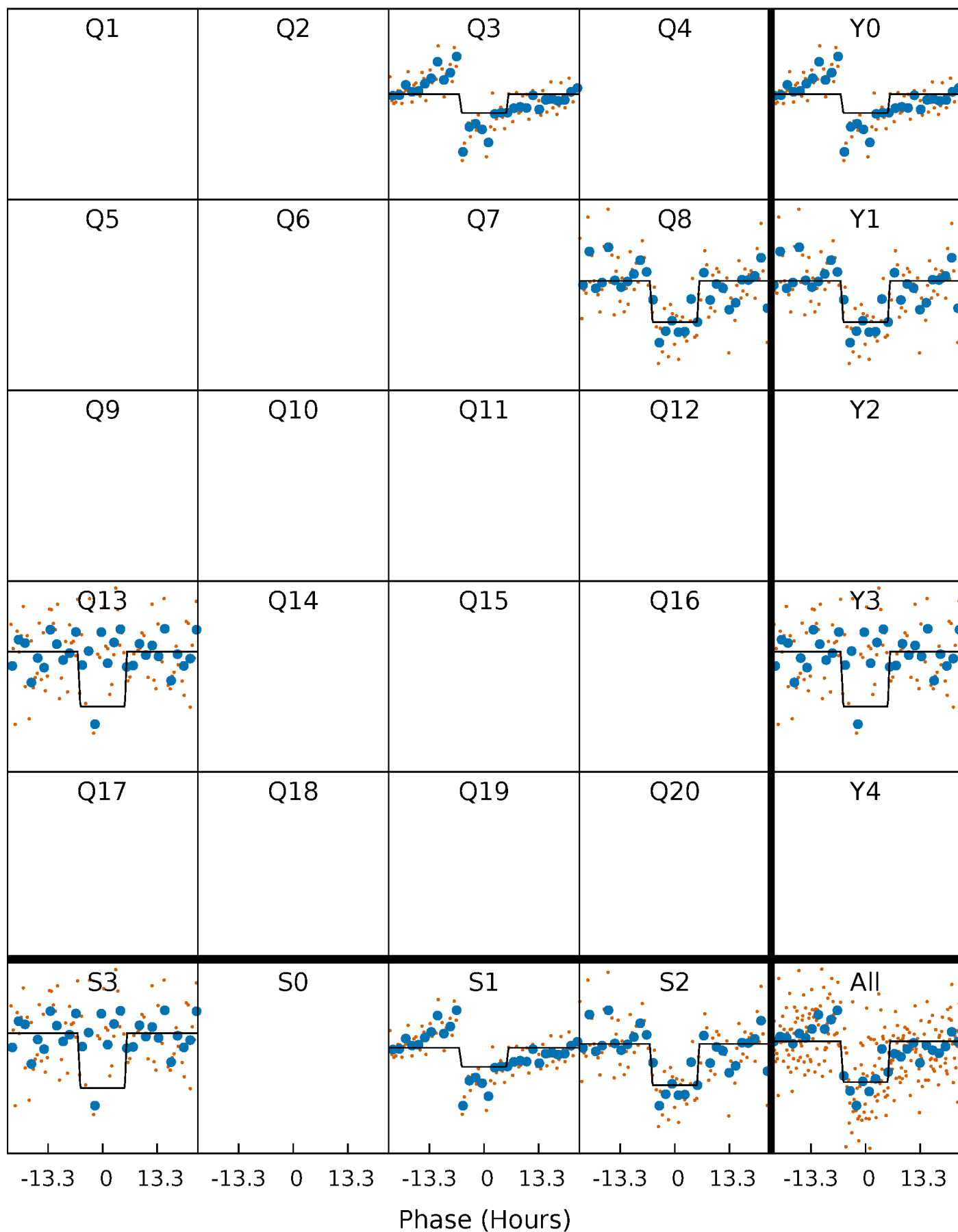
DV Quarter-Phased Transit Curves

TCE 008581944-02 $P=428.787319$ Days $T_0=339.508475$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

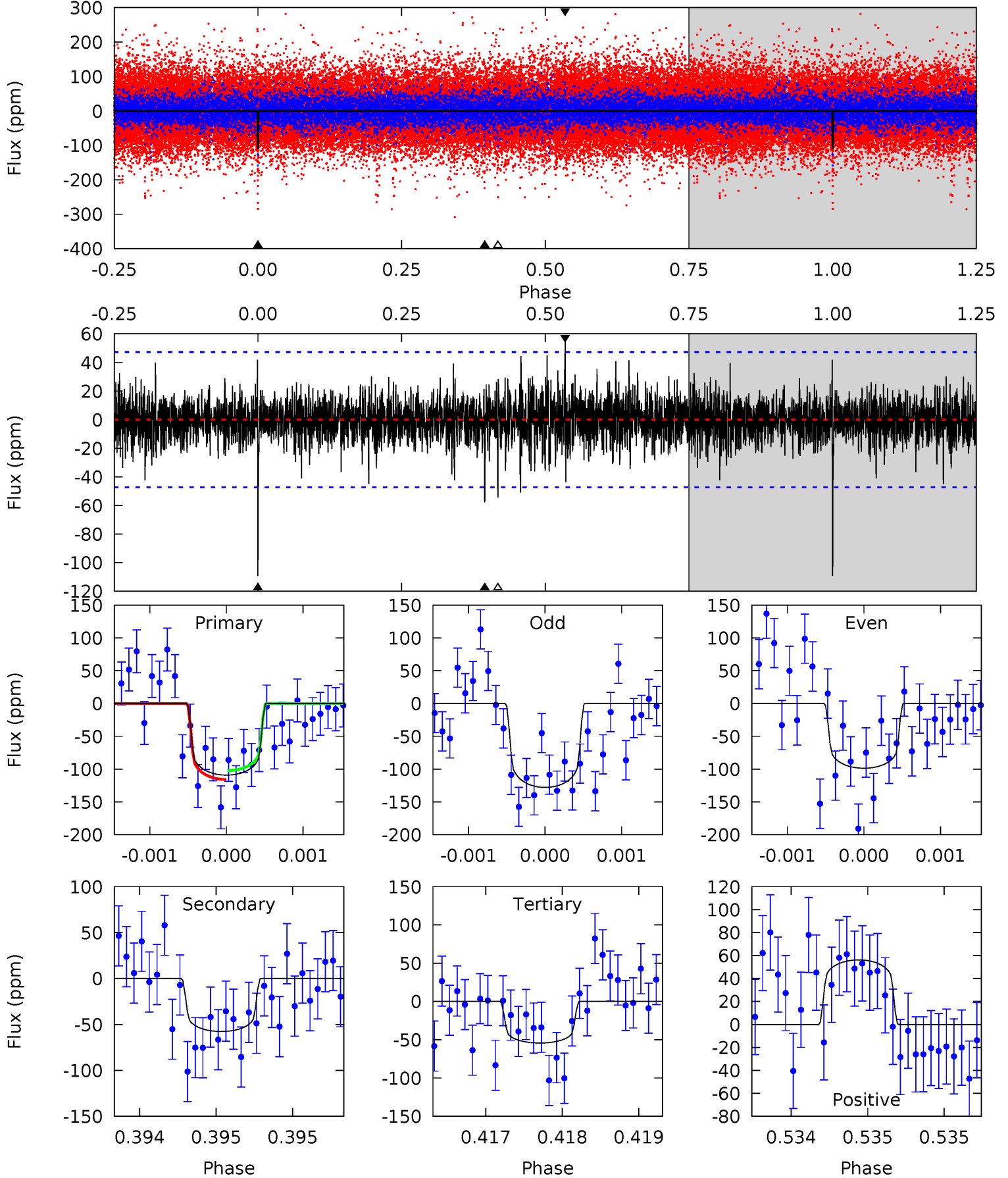
TCE 008581944-02 $P=428.805068$ Days $T_0=339.520495$ (BKJD)



DV Model-Shift Uniqueness Test

008581944-02, P = 428.787319 Days, E = 339.508475 Days

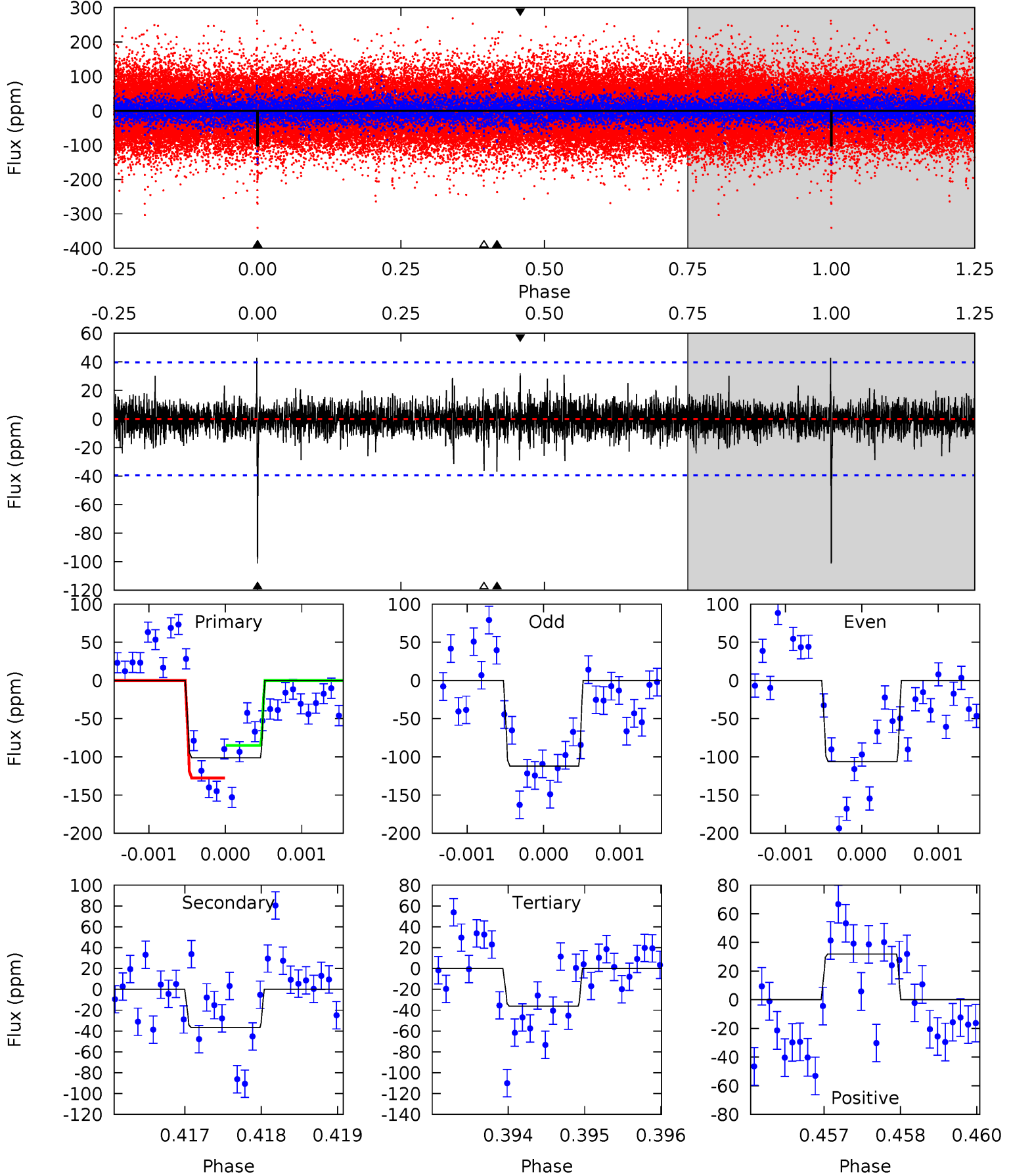
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	6.69	6.30	6.51	5.48	3.34	1.29	6.37	6.15	0.40	0.18	1.63	0.83	0.34	0.78



Alt Model-Shift Uniqueness Test

008581944-02, $P = 428.805068$ Days, $E = 339.520495$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	5.04	4.98	4.38	5.43	3.26	0.96	8.91	9.51	0.06	0.66	0.38	0.91	0.30	2.88



Stellar Parameters For KIC 008581944

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7776^{+214}_{-349}	$3.673^{+0.459}_{-0.081}$	$-0.040^{+0.200}_{-0.350}$	$3.471^{+0.692}_{-1.729}$	$2.068^{+0.302}_{-0.518}$	$0.070^{+0.325}_{-0.023}$
	+3%/-4%	+12%/-2%	+500%/-875%	+20%/-50%	+15%/-25%	+467%/-33%
Source	KIC0	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 008581944-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-58 ± 9	$4.11^{+1.63}_{-1.55}$	718^{+55}_{-92}	5955^{+1378}_{-705}	3756^{+5544}_{-1786}
Alt.	-37 ± 7	$3.38^{+1.56}_{-1.47}$	717^{+58}_{-86}	5892^{+1926}_{-855}	3567^{+7053}_{-1874}

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

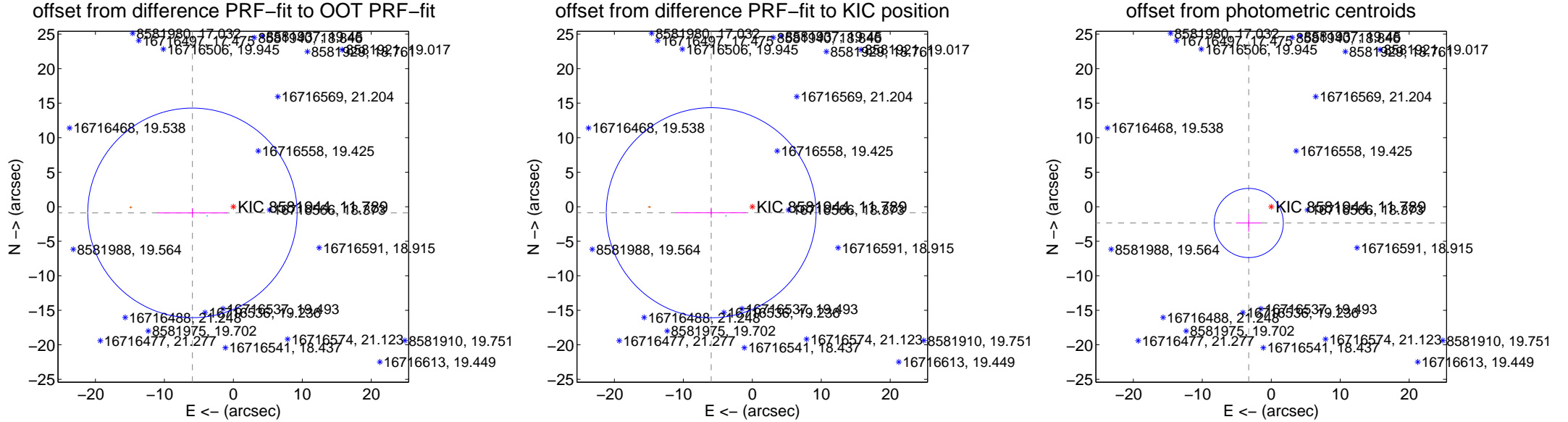
DV Centroid Data

Supplemental centroid analysis for 008581944-02. **Kepler magnitude: 11.79.** Transit SNR 10.59

There are 1 quarters with good PRF difference image offsets

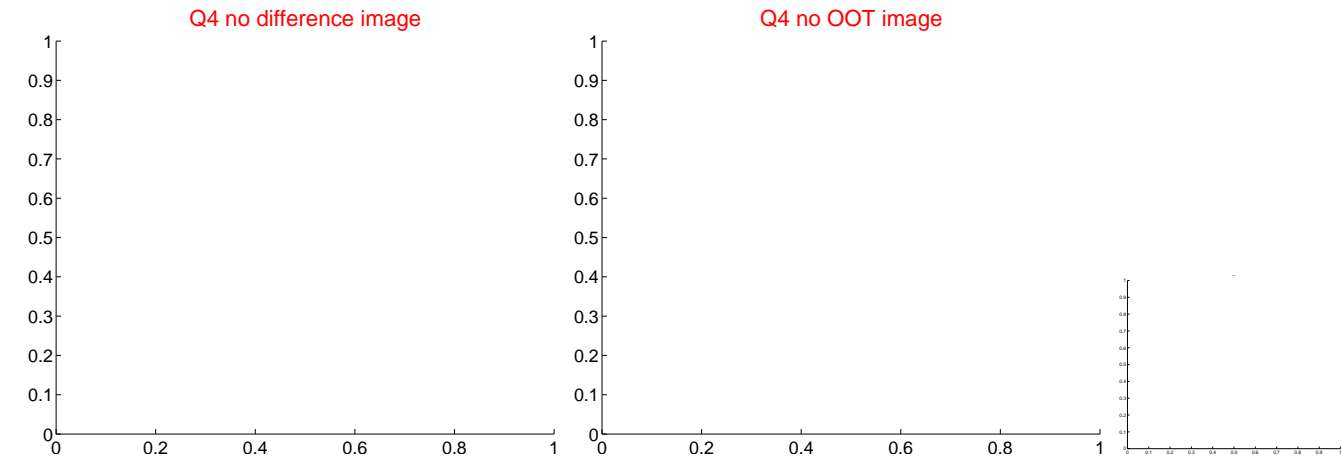
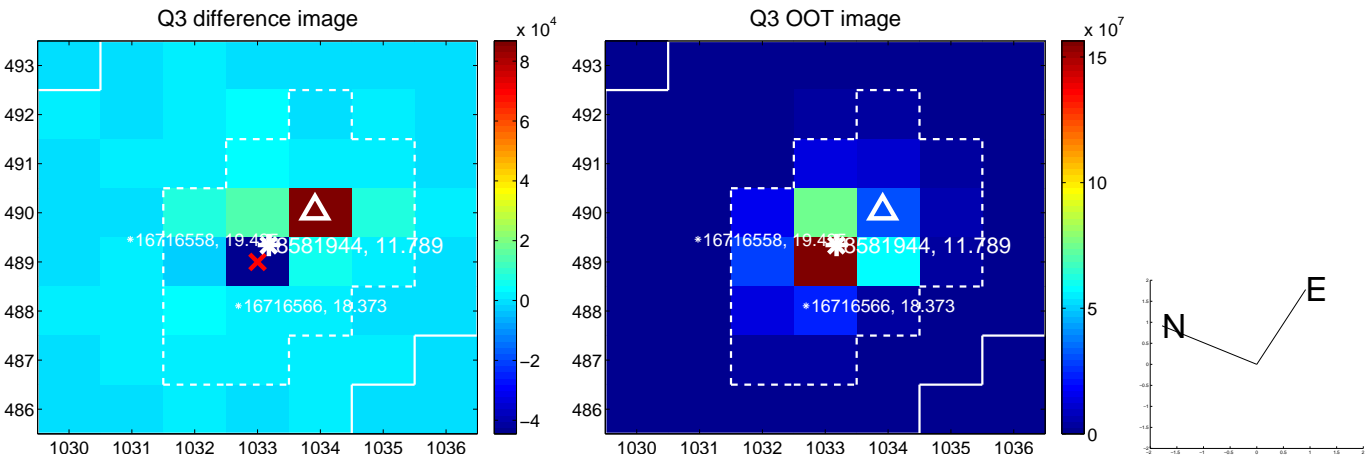
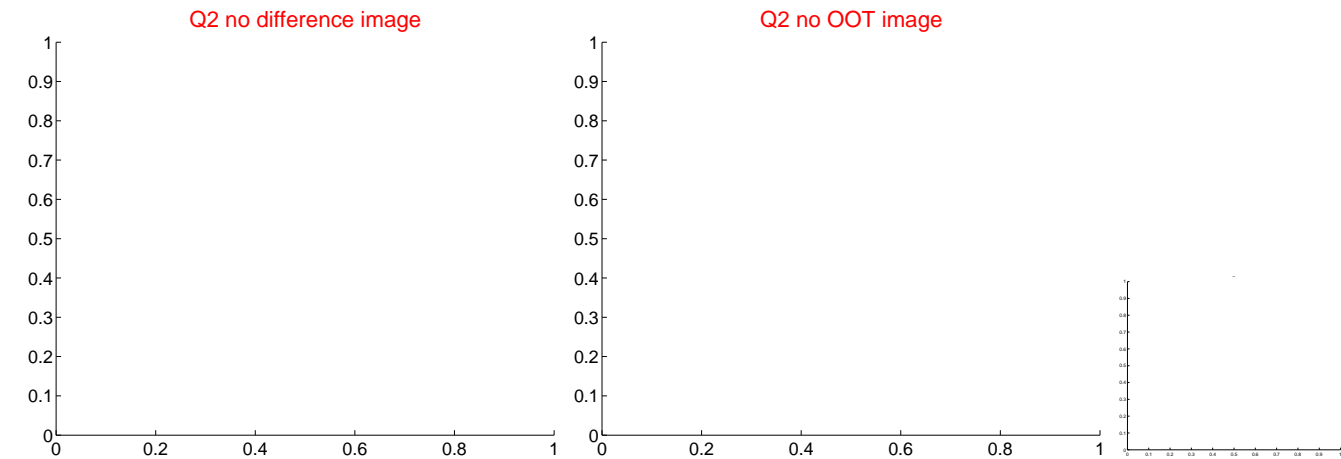
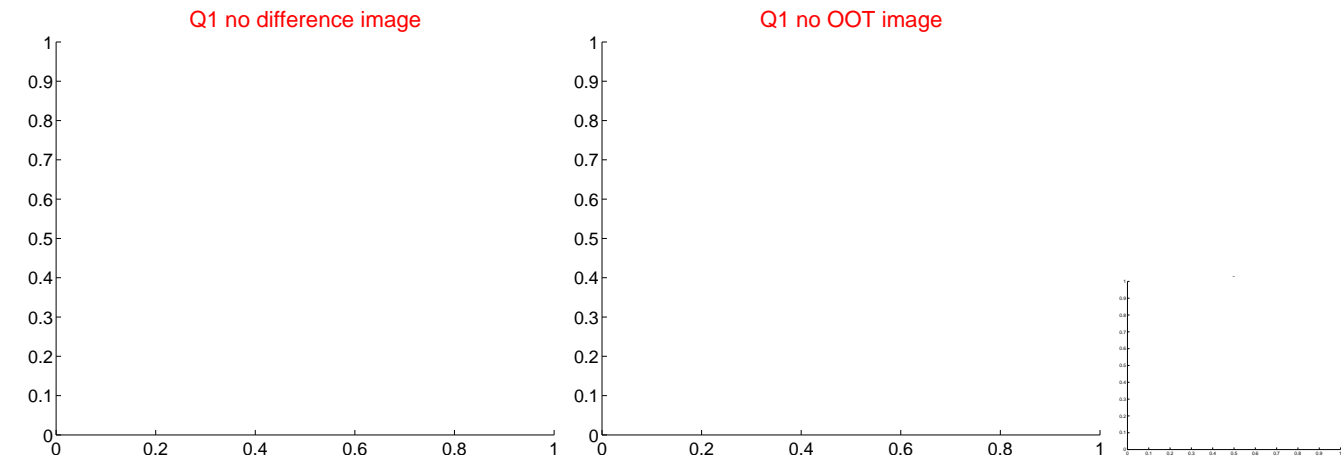
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.002 ± 5.059	1.19	5.935 ± 5.114	-0.892 ± 0.692
PRF-fit source offset from KIC position	6.027 ± 5.070	1.19	5.963 ± 5.122	-0.869 ± 0.725
photometric centroid source offset	4.02 ± 1.67	2.41	3.26 ± 1.85	-2.36 ± 1.26



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.

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



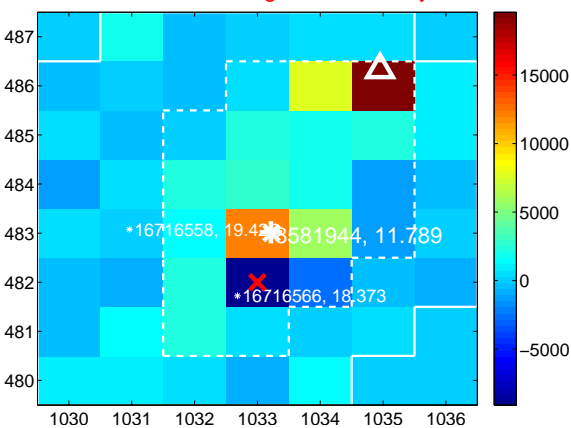
Q7 no difference image



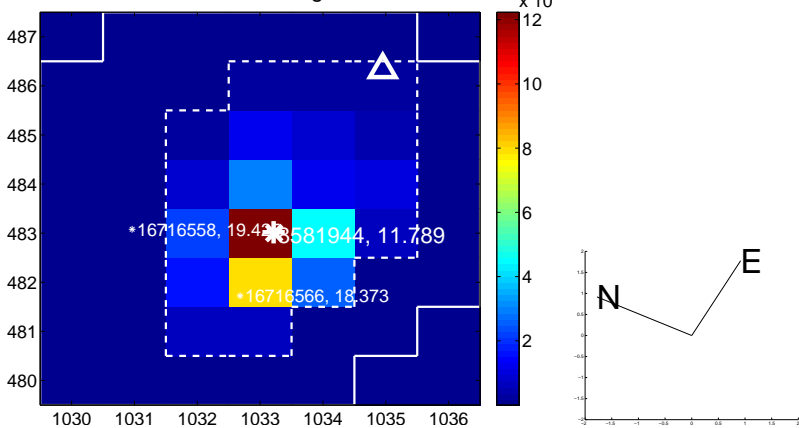
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image



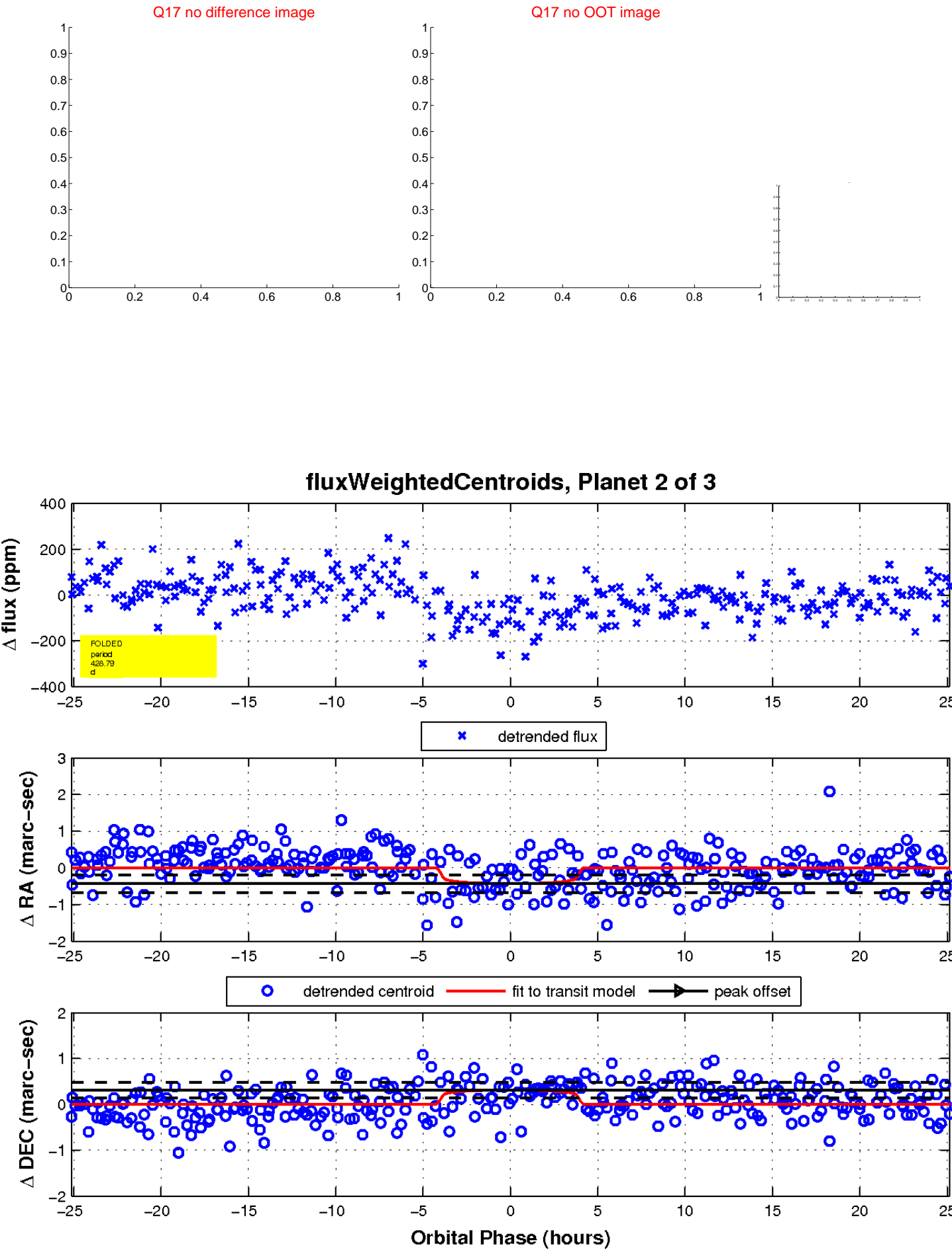
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

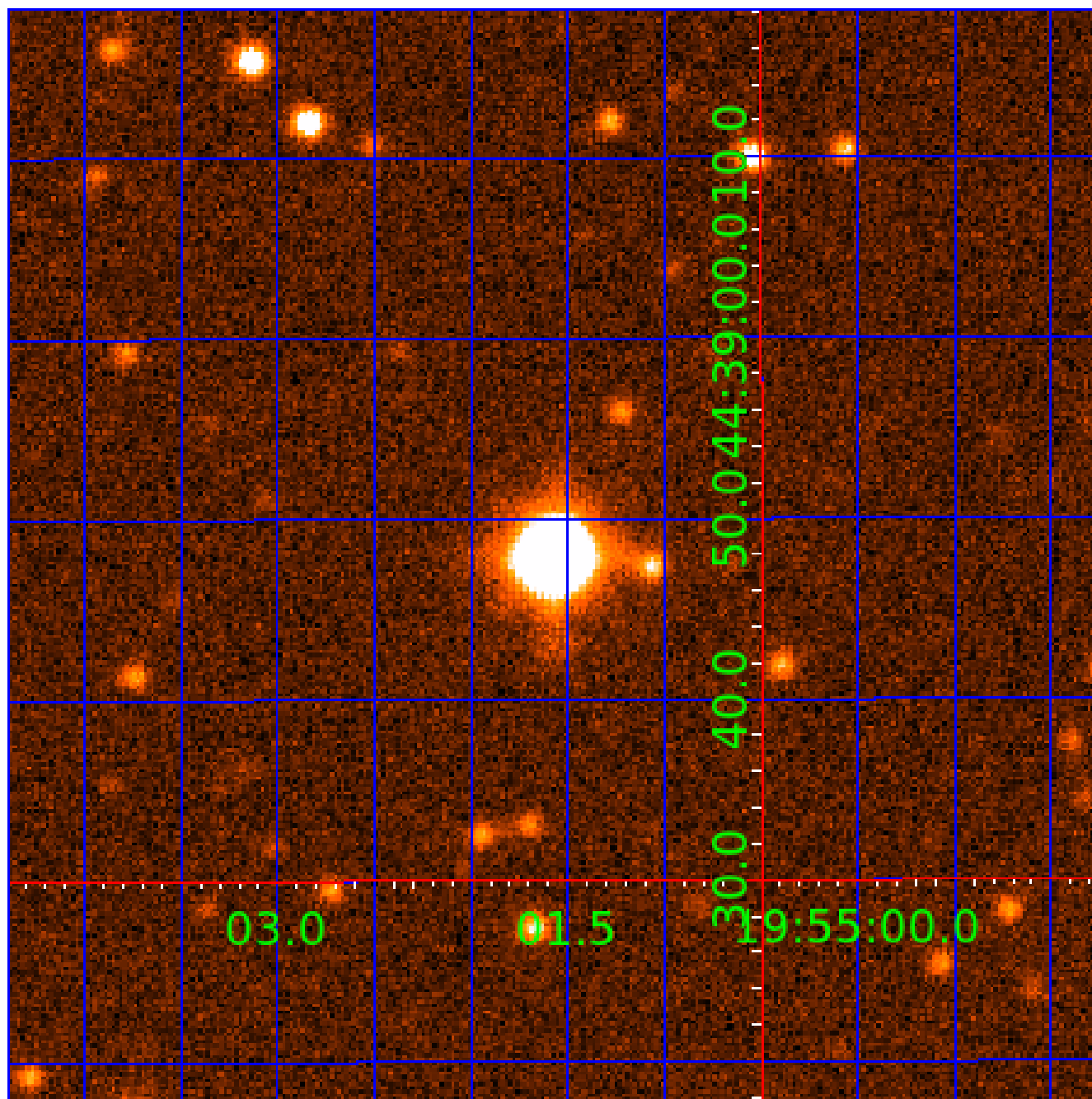


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008581944

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})
008581944-01	OBS	No	361.944553	256.479204	133.7	4.054	8.3	7.5	3.47	7776	4.63	24.59
008581944-02	OBS	No	428.787319	339.508475	129.9	8.403	12.1	10.6	3.47	7776	4.57	19.61
008581944-03	OBS	No	362.886683	255.308668	146.0	4.369	11.1	7.7	3.47	7776	4.70	24.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008581944-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008581944-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008581944-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_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.

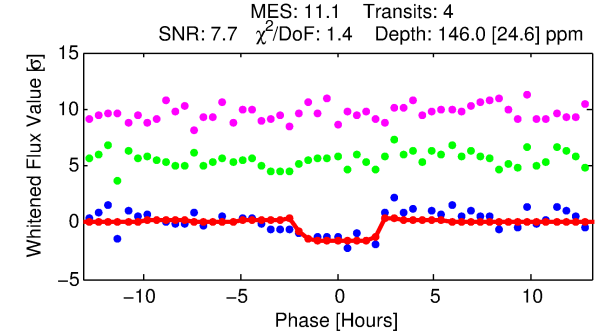
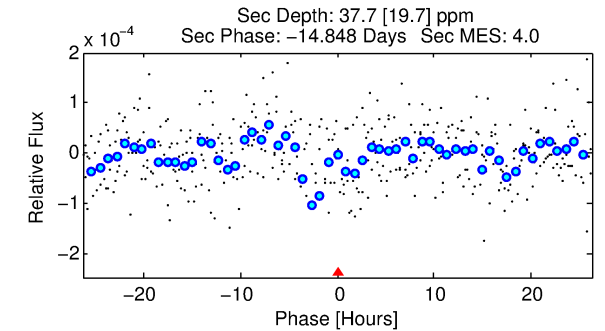
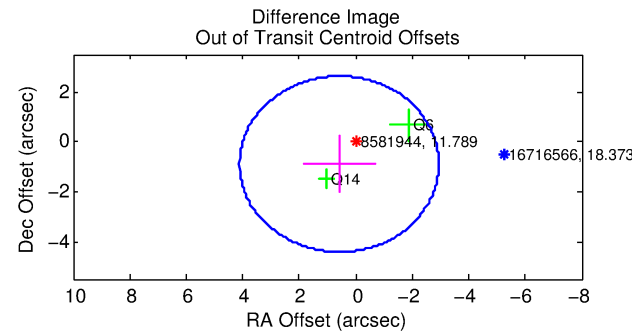
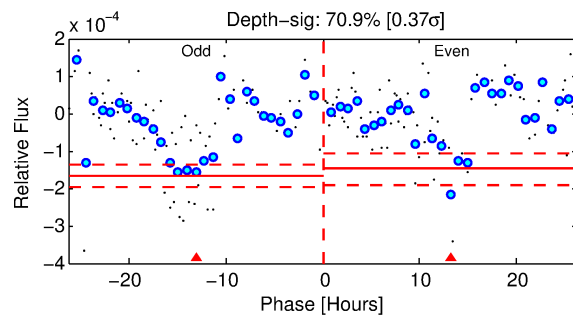
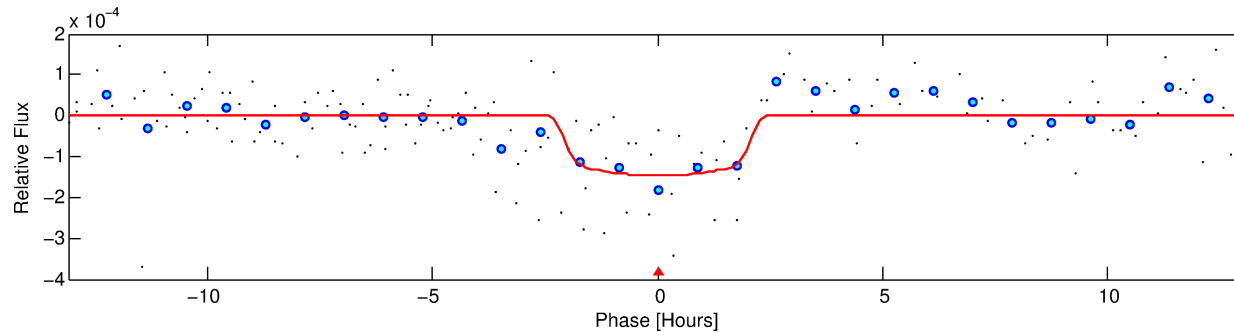
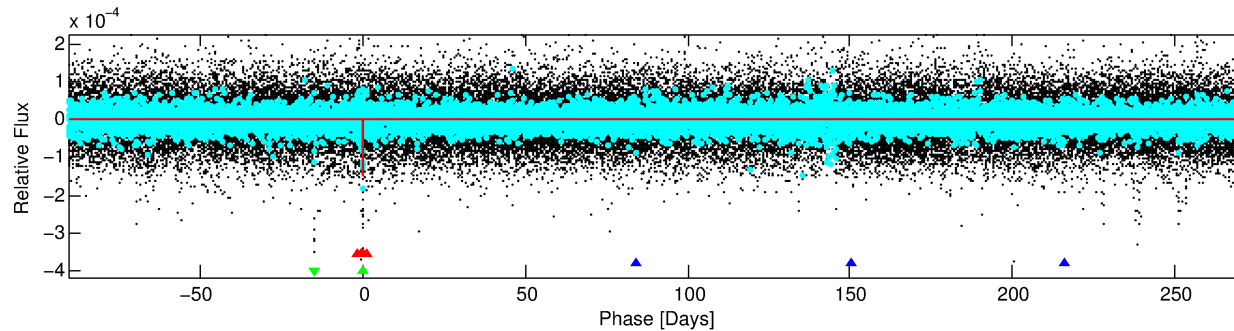
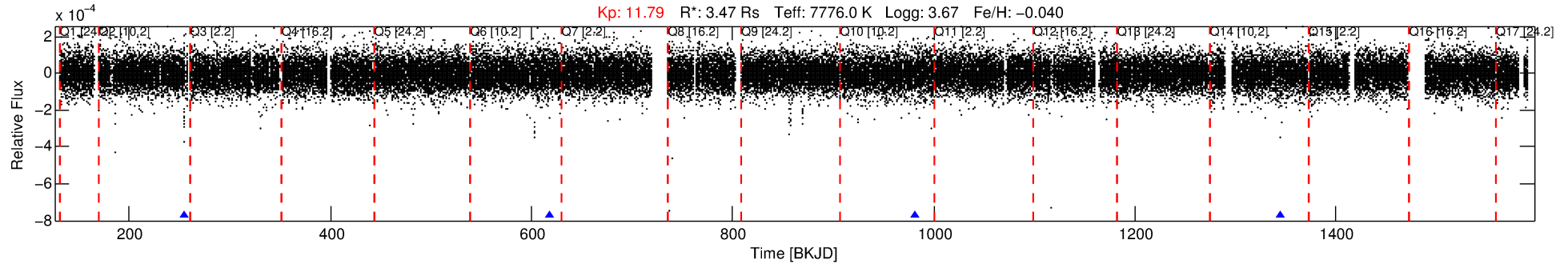
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008581944-03

No Significant Match Found

DV One-Page Summary

KIC: 8581944 Candidate: 3 of 3 Period: 362.887 d



DV Fit Results:

Period = 362.88668 [0.00693] d
Epoch = 255.3087 [0.0154] BKJD
Rp/R* = 0.0124 [0.0092]
a/R* = 362.82 [1583.97]
b = 0.84 [1.61]
Seff = 24.50 [19.59]
Teq = 567 [113] K
Rp = 4.70 [4.21] Re
a = 1.2692 [0.6144] AU
Ag = 1514.56 [2665.85] [0.57 σ]
Teffp = 5472 [2173] K [2.25 σ]

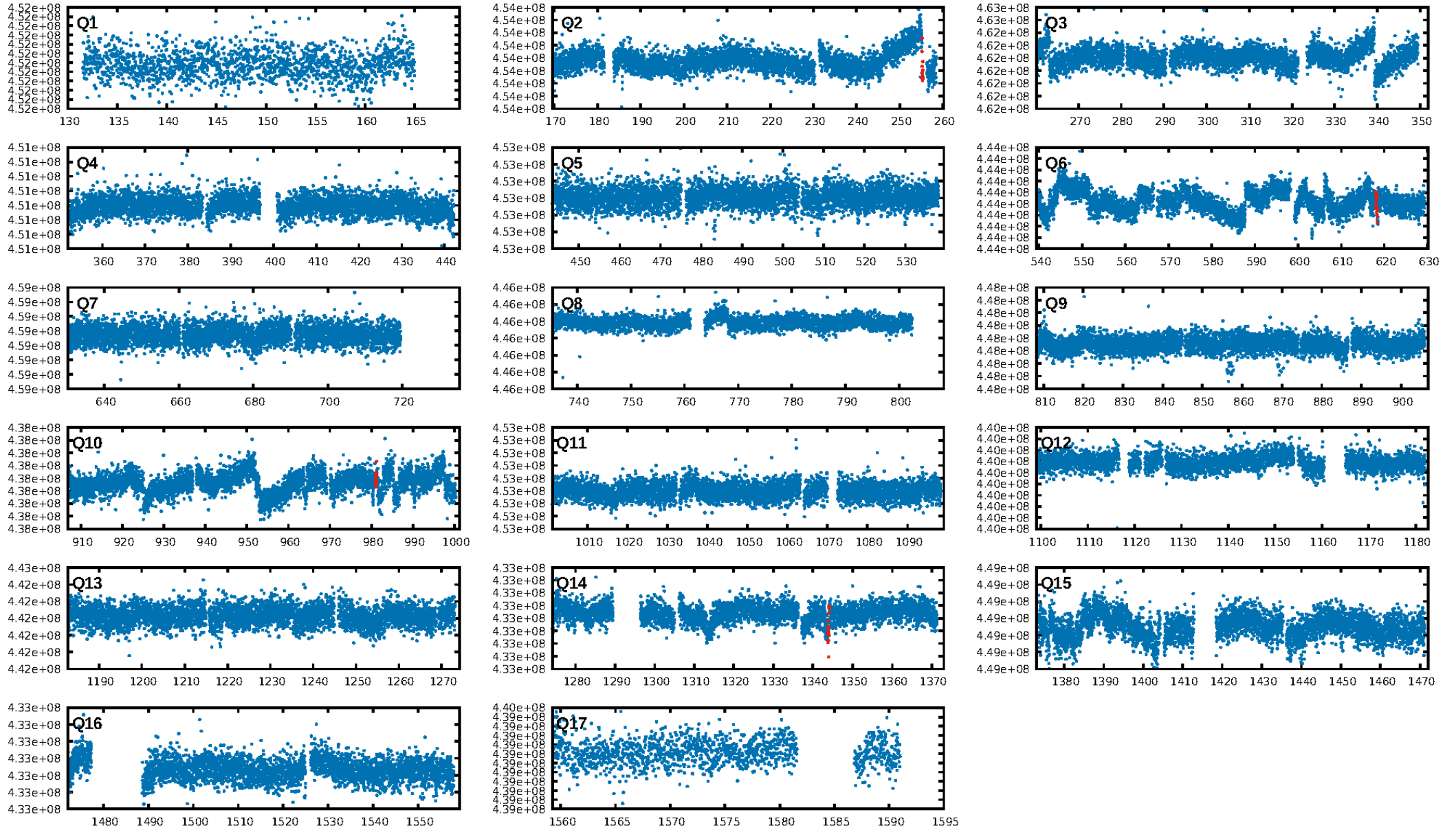
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.79 σ]
LongPeriod-sig: 100.0% [167.00 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 79.7%
Bootstrap-pfa: 2.57e-17
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -4.547
Centroid-sig: 27.2%
Centroid-so: 2.252 arcsec [1.05 σ]
OotOffset-rm: 1.072 arcsec [0.91 σ]
KicOffset-rm: 1.163 arcsec [0.98 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.67 [2/3]

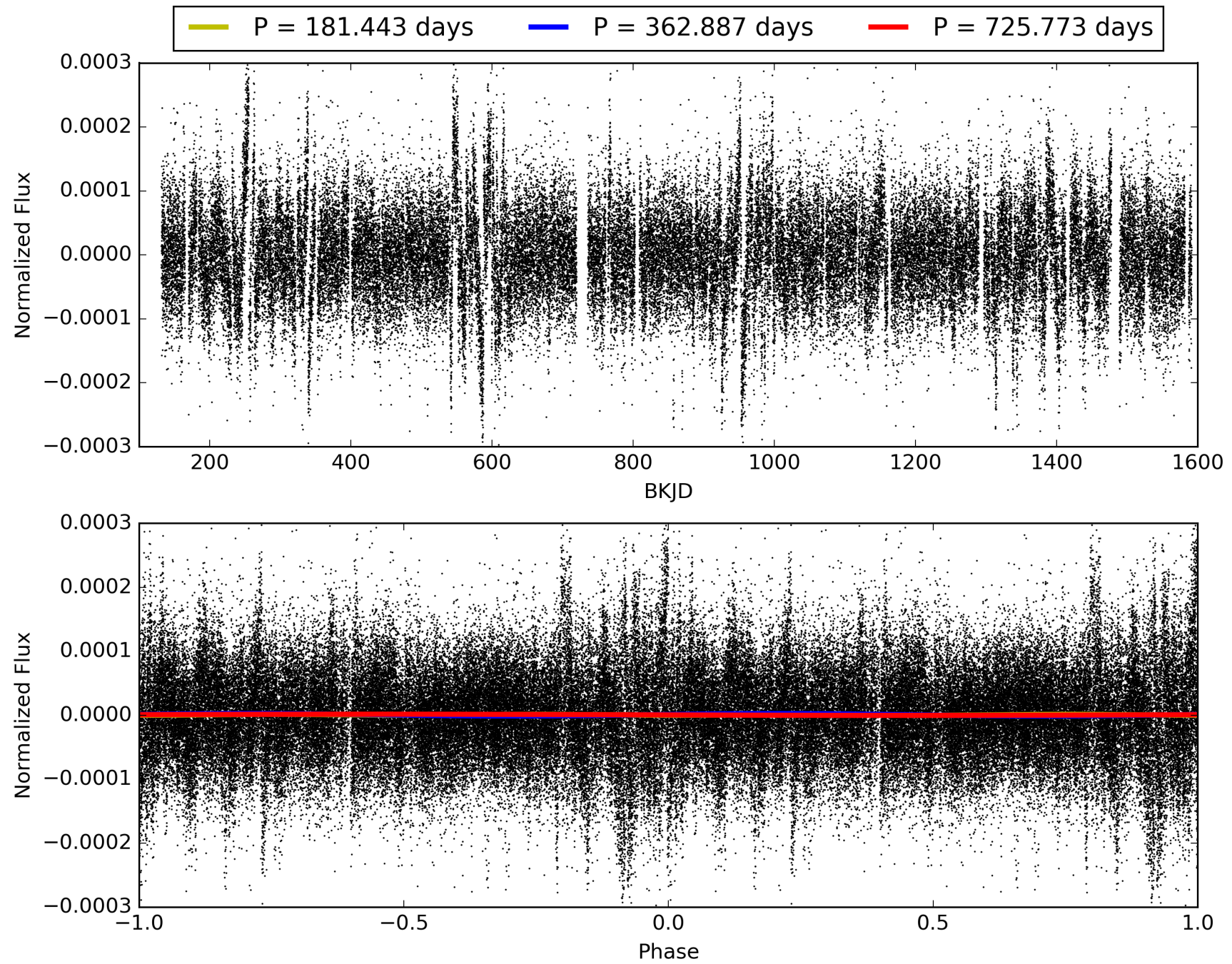
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:28:15 Z

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

TCE 008581944-03, PDC Light Curves

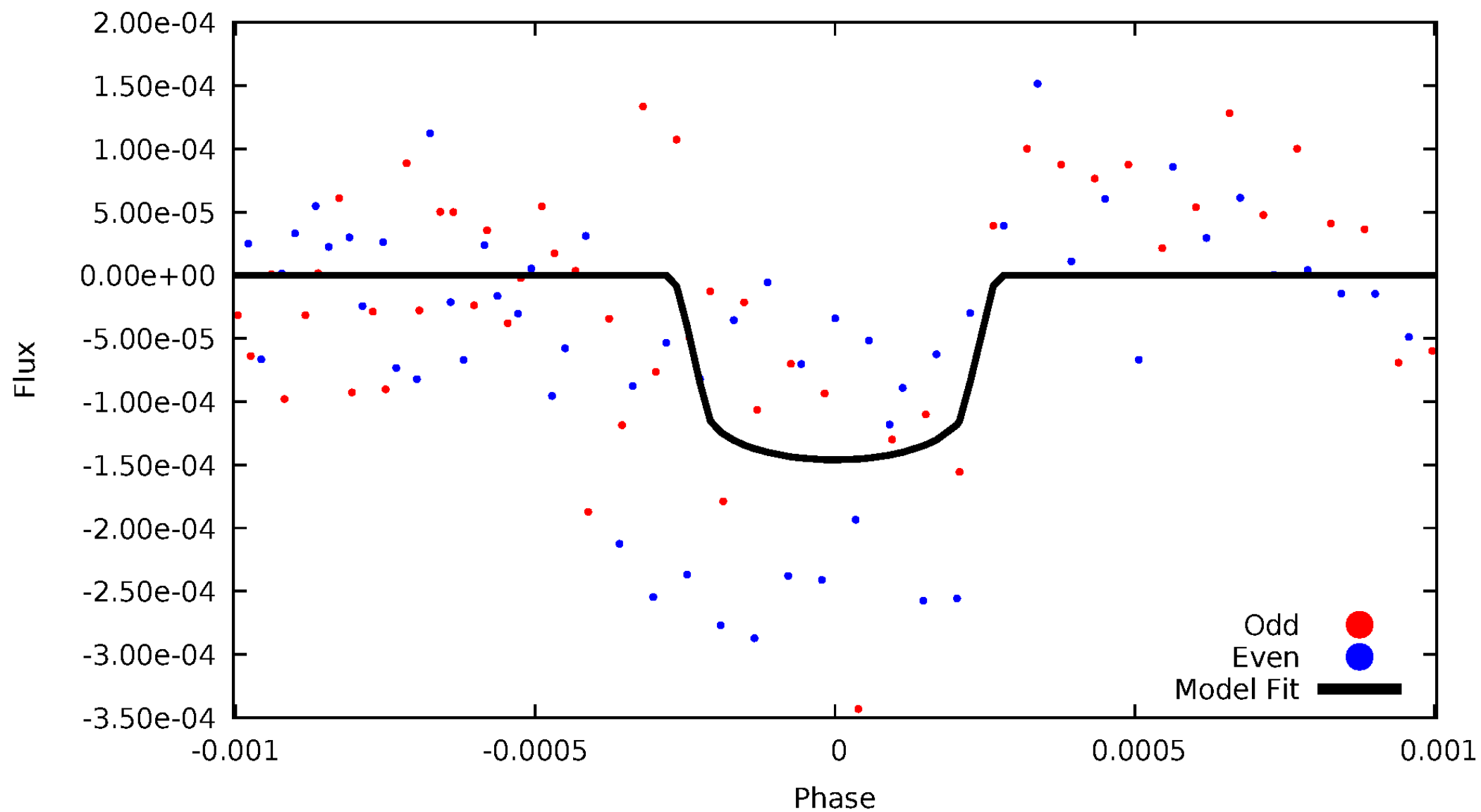


TCE 008581944-03



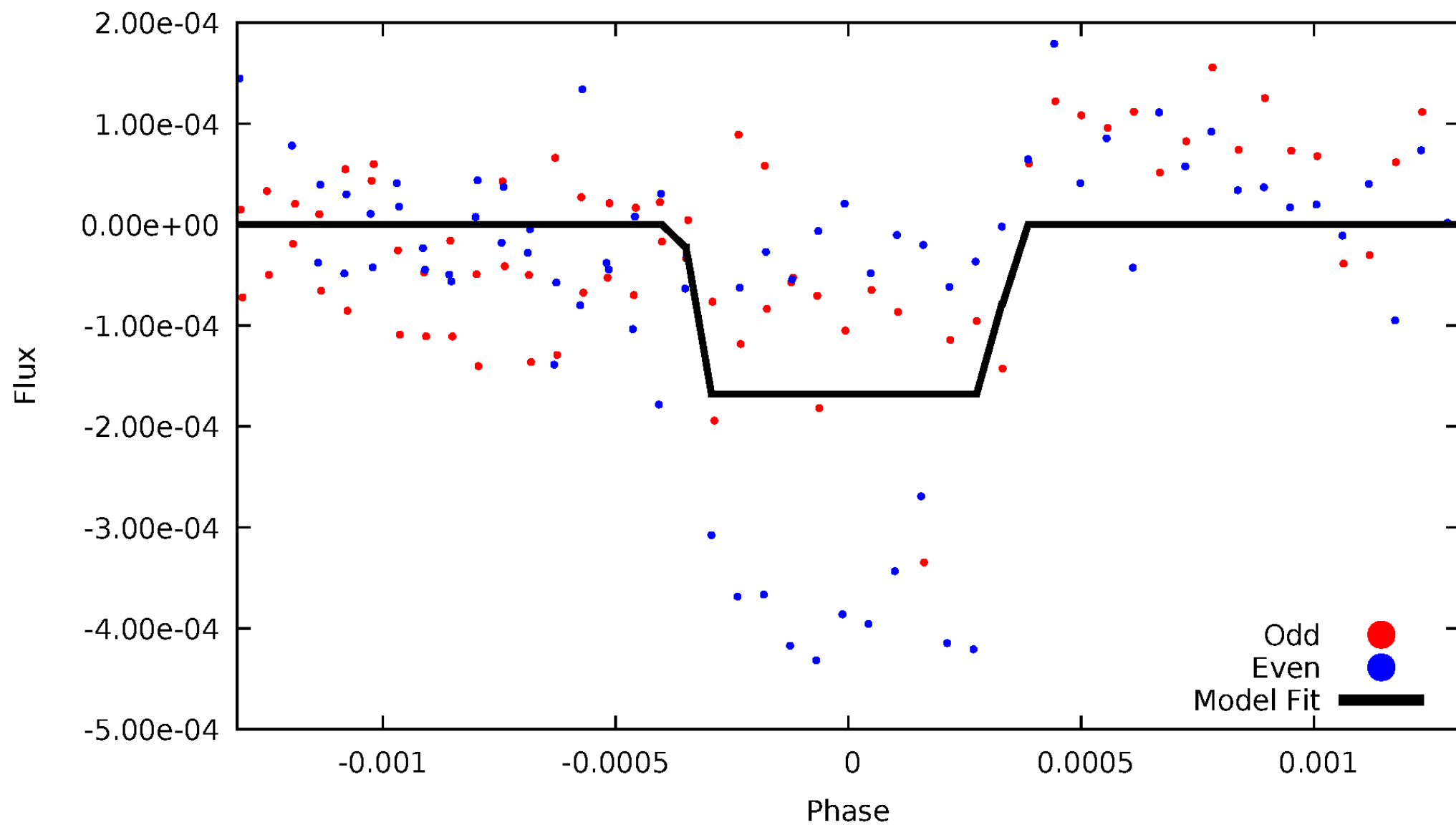
DV Odd/Even

TCE 008581944-03



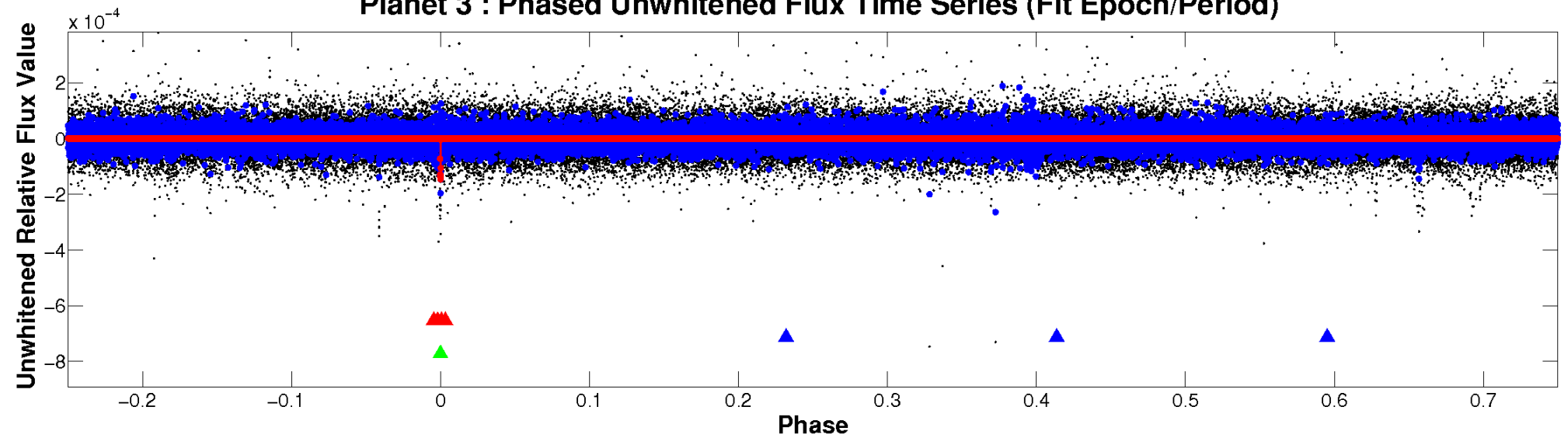
ALT Odd/Even

TCE 008581944-03

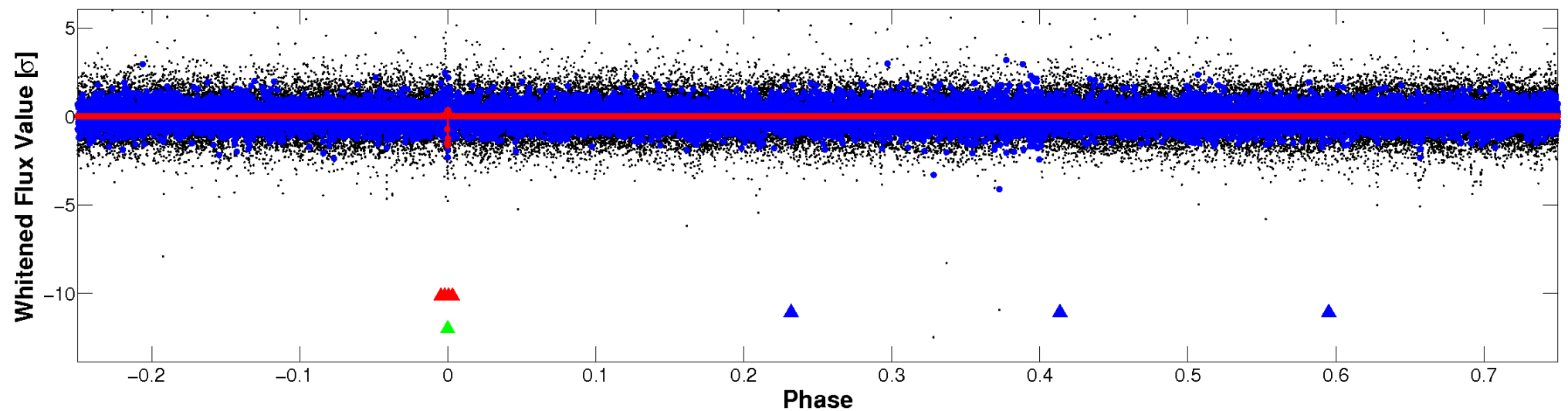


Non-Whitened Vs. Whitened Light Curve

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

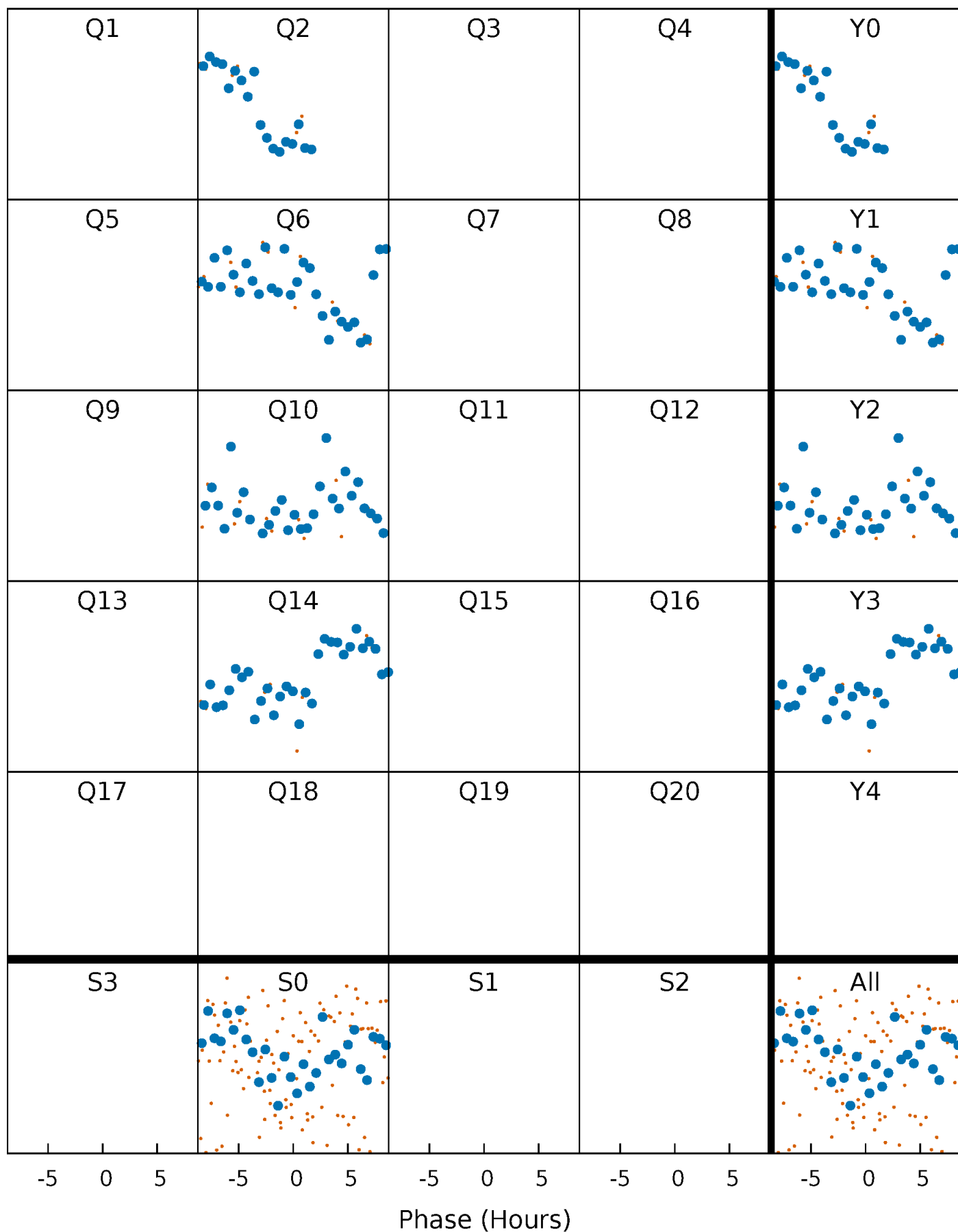


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



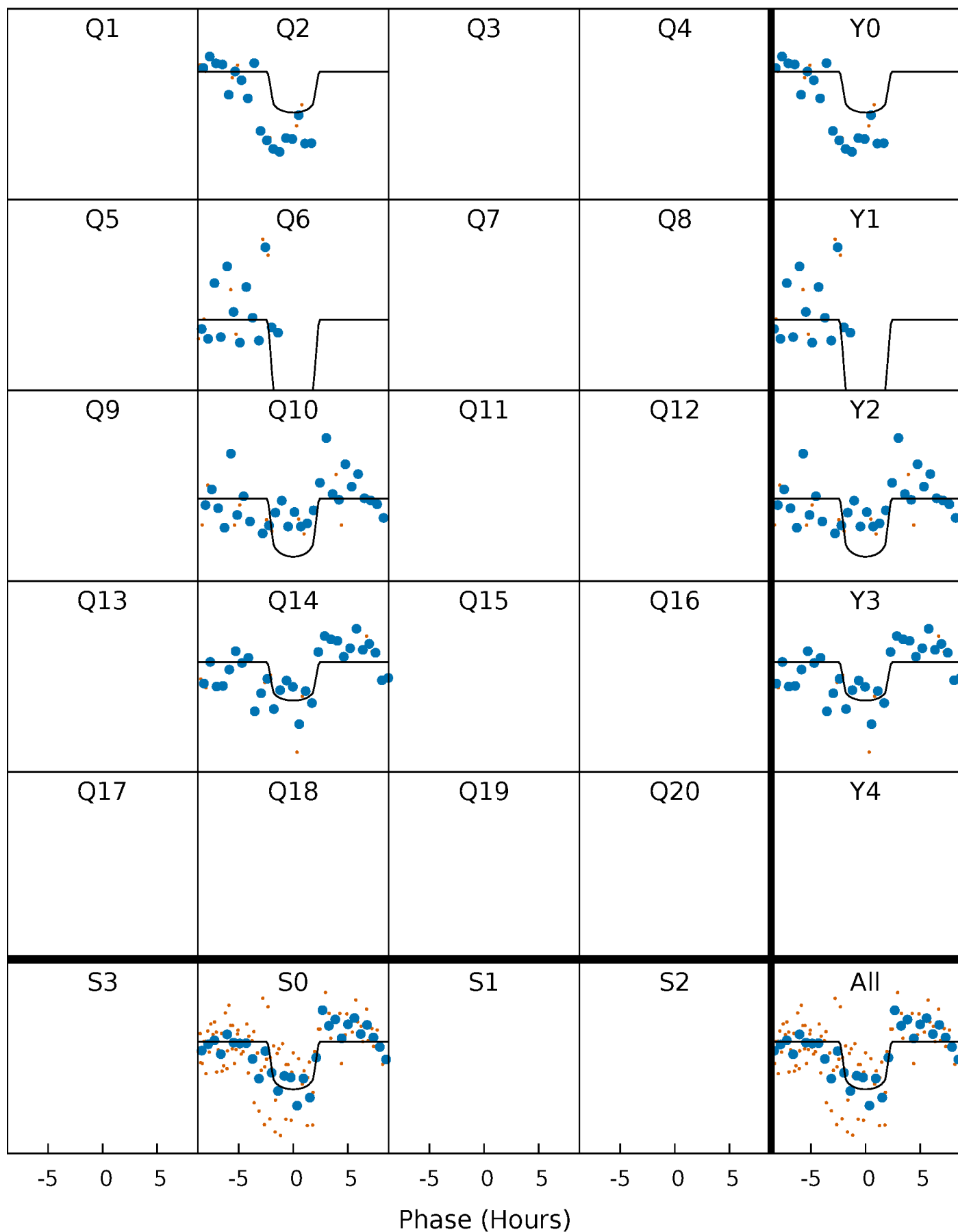
PDC Quarter-Phased Transit Curves

TCE 008581944-03 $P=362.886683$ Days $T_0=255.308668$ (BKJD)



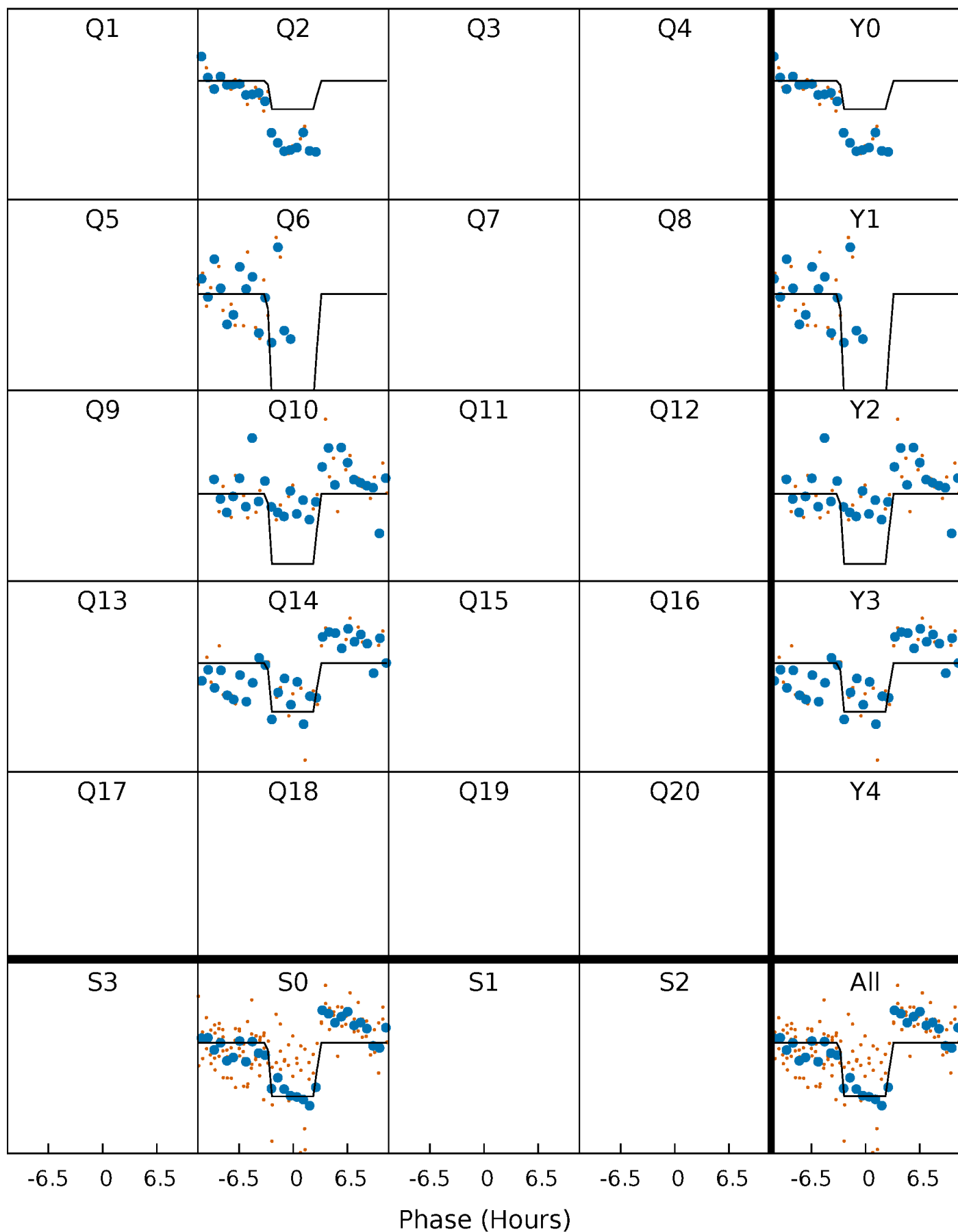
DV Quarter-Phased Transit Curves

TCE 008581944-03 P=362.886683 Days $T_0=255.308668$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

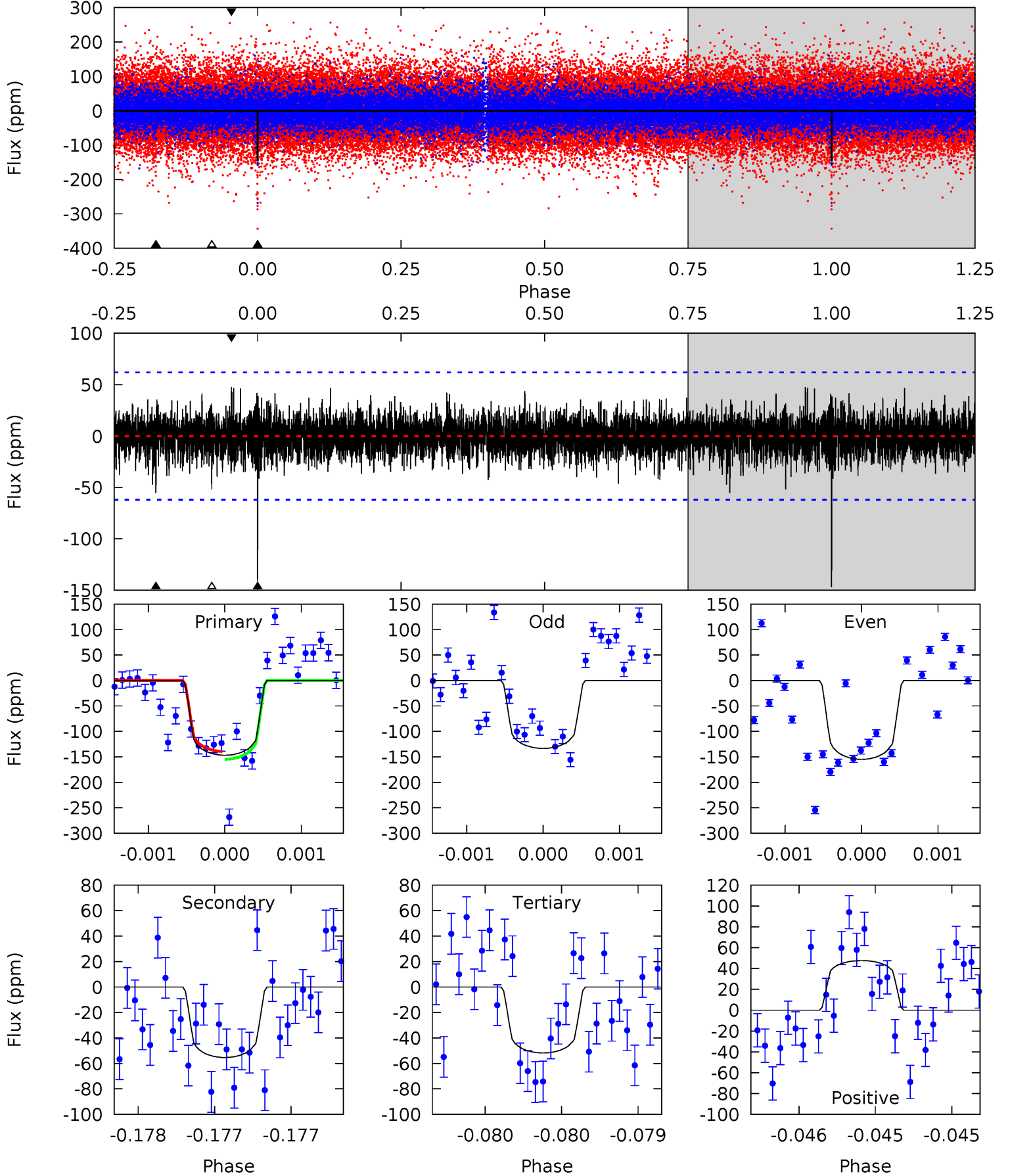
TCE 008581944-03 P=362.879592 Days $T_0=255.285011$ (BKJD)



DV Model-Shift Uniqueness Test

008581944-03, P = 362.886683 Days, E = 255.308668 Days

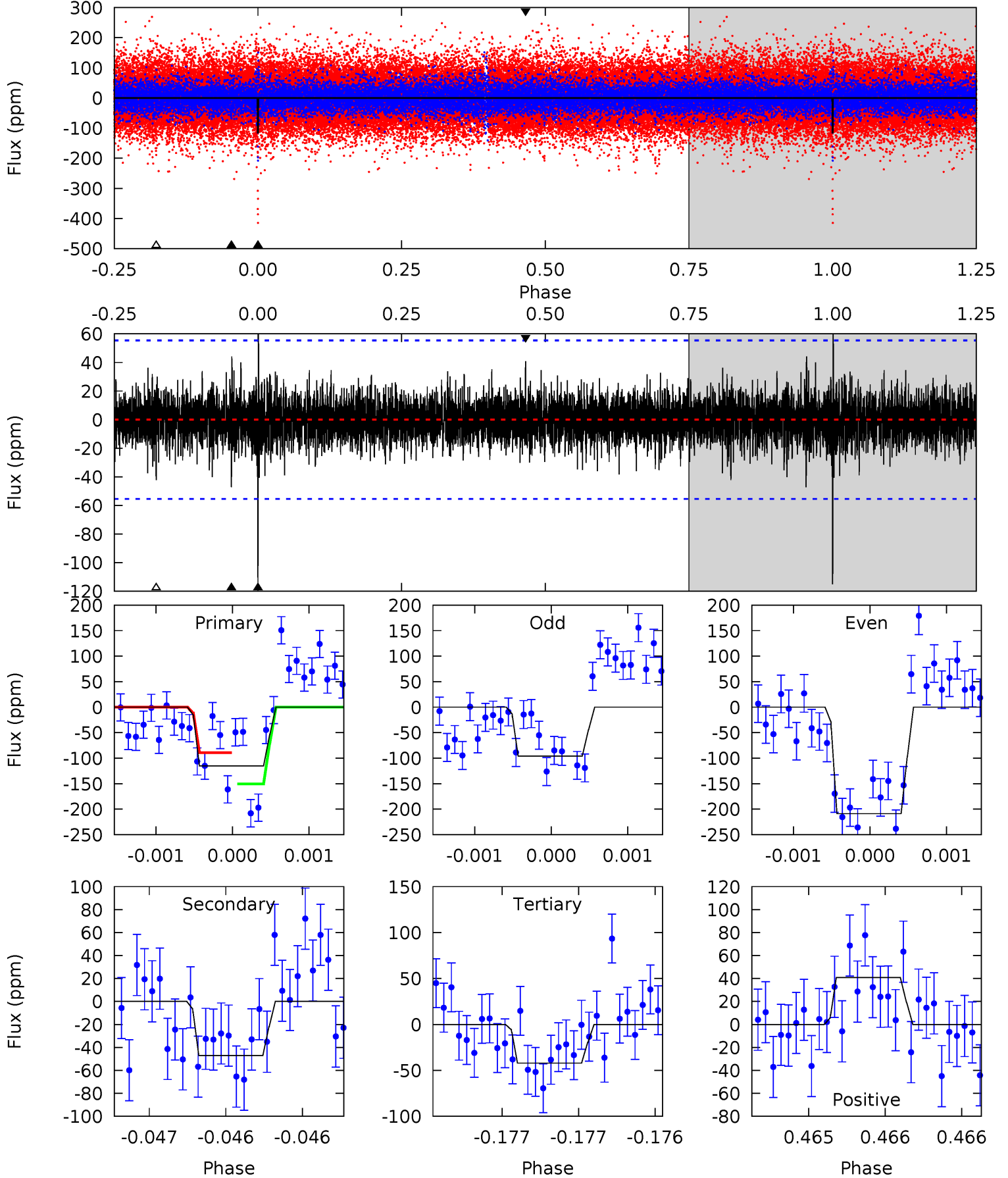
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	4.98	4.66	4.28	5.57	3.47	1.11	8.55	8.93	0.32	0.70	0.96	1.13	0.24	0.69



Alt Model-Shift Uniqueness Test

008581944-03, P = 362.879592 Days, E = 255.285011 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	4.69	4.19	4.06	5.52	3.40	1.04	7.25	7.38	0.50	0.63	6.04	1.68	0.34	2.99



Stellar Parameters For KIC 008581944

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7776^{+214}_{-349}	$3.673^{+0.459}_{-0.081}$	$-0.040^{+0.200}_{-0.350}$	$3.471^{+0.692}_{-1.729}$	$2.068^{+0.302}_{-0.518}$	$0.070^{+0.325}_{-0.023}$
	+3%/-4%	+12%/-2%	+500%/-875%	+20%/-50%	+15%/-25%	+467%/-33%
Source	KIC0	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 008581944-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-55 ± 11	$4.51^{+3.15}_{-2.48}$	761^{+56}_{-96}	5563^{+3183}_{-1066}	2359^{+9756}_{-1561}
Alt.	-47 ± 10	$4.28^{+3.43}_{-2.38}$	758^{+59}_{-96}	5468^{+2964}_{-1106}	2190^{+8677}_{-1497}

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

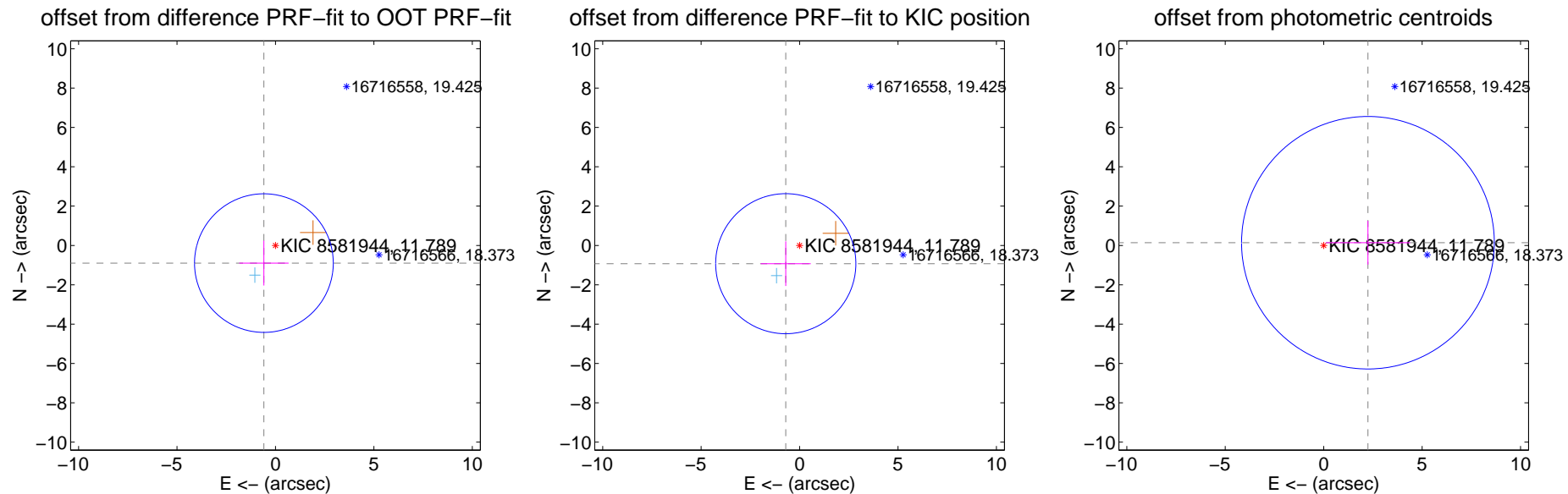
DV Centroid Data

Supplemental centroid analysis for 008581944-03. **Kepler magnitude: 11.79.** Transit SNR 7.73

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.072 ± 1.175	0.91	0.587 ± 1.252	-0.896 ± 1.140
PRF-fit source offset from KIC position	1.163 ± 1.187	0.98	0.701 ± 1.272	-0.927 ± 1.135
photometric centroid source offset	2.25 ± 2.14	1.05	-2.25 ± 2.14	0.14 ± 1.11

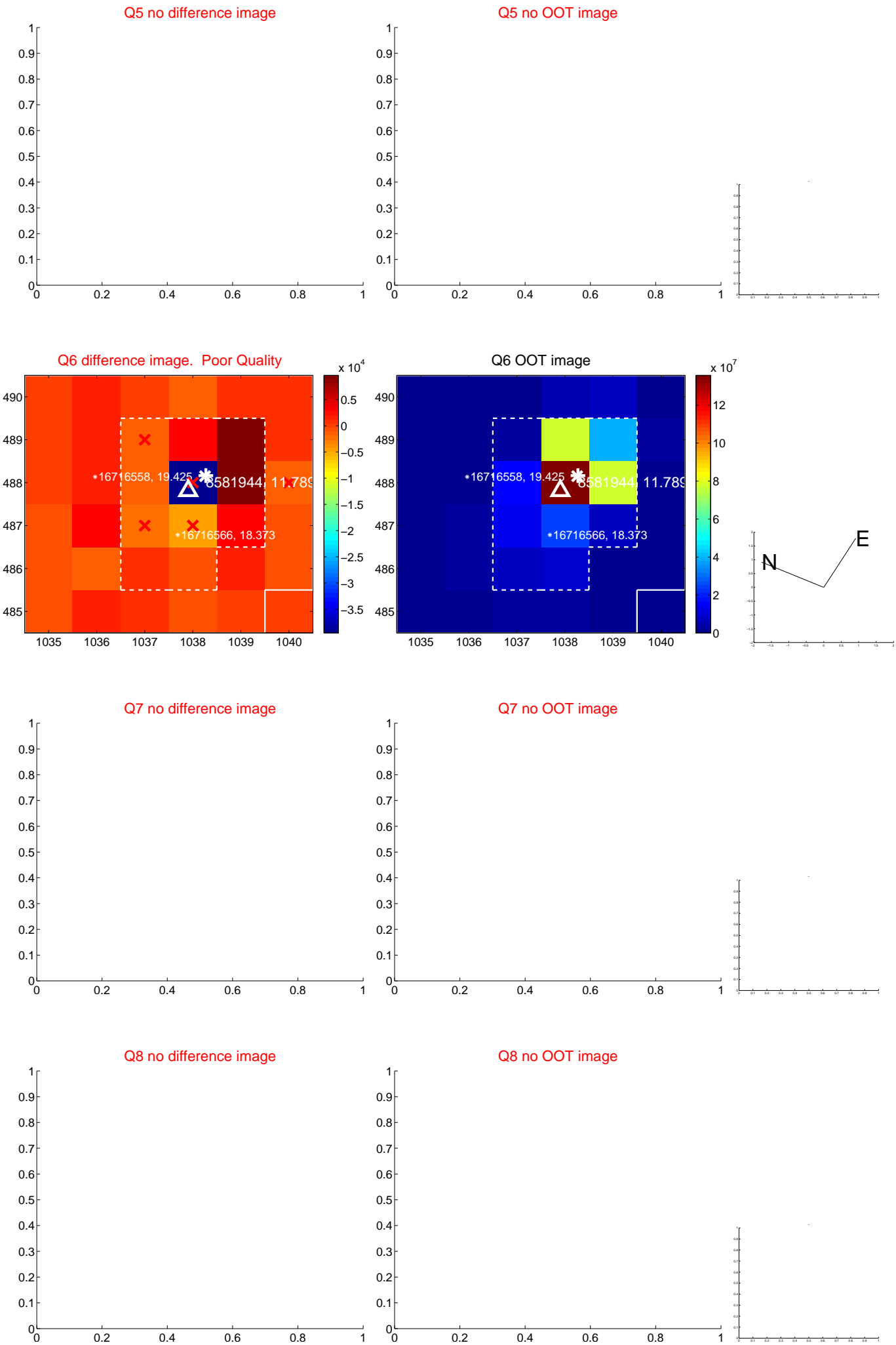


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

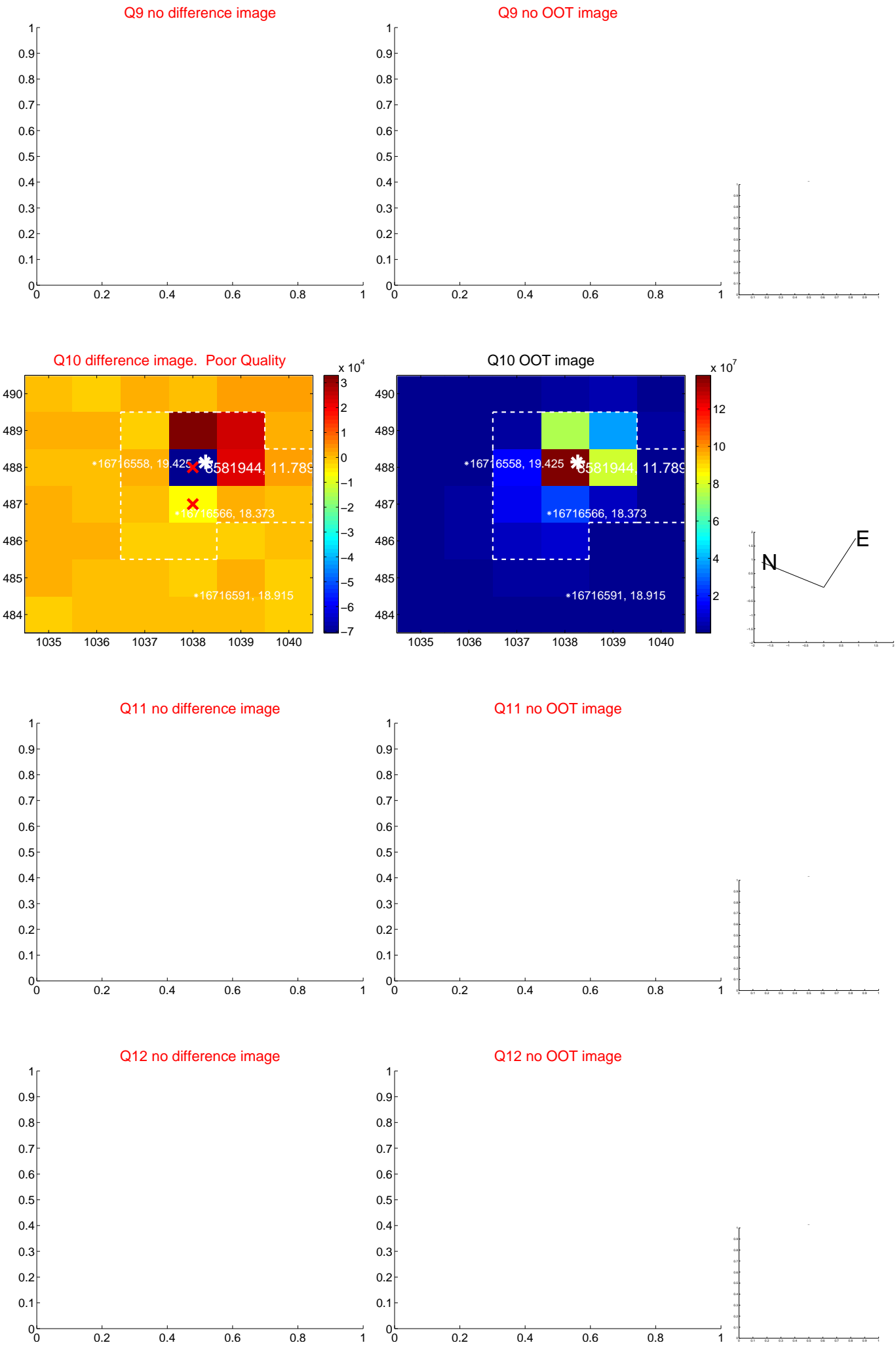
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



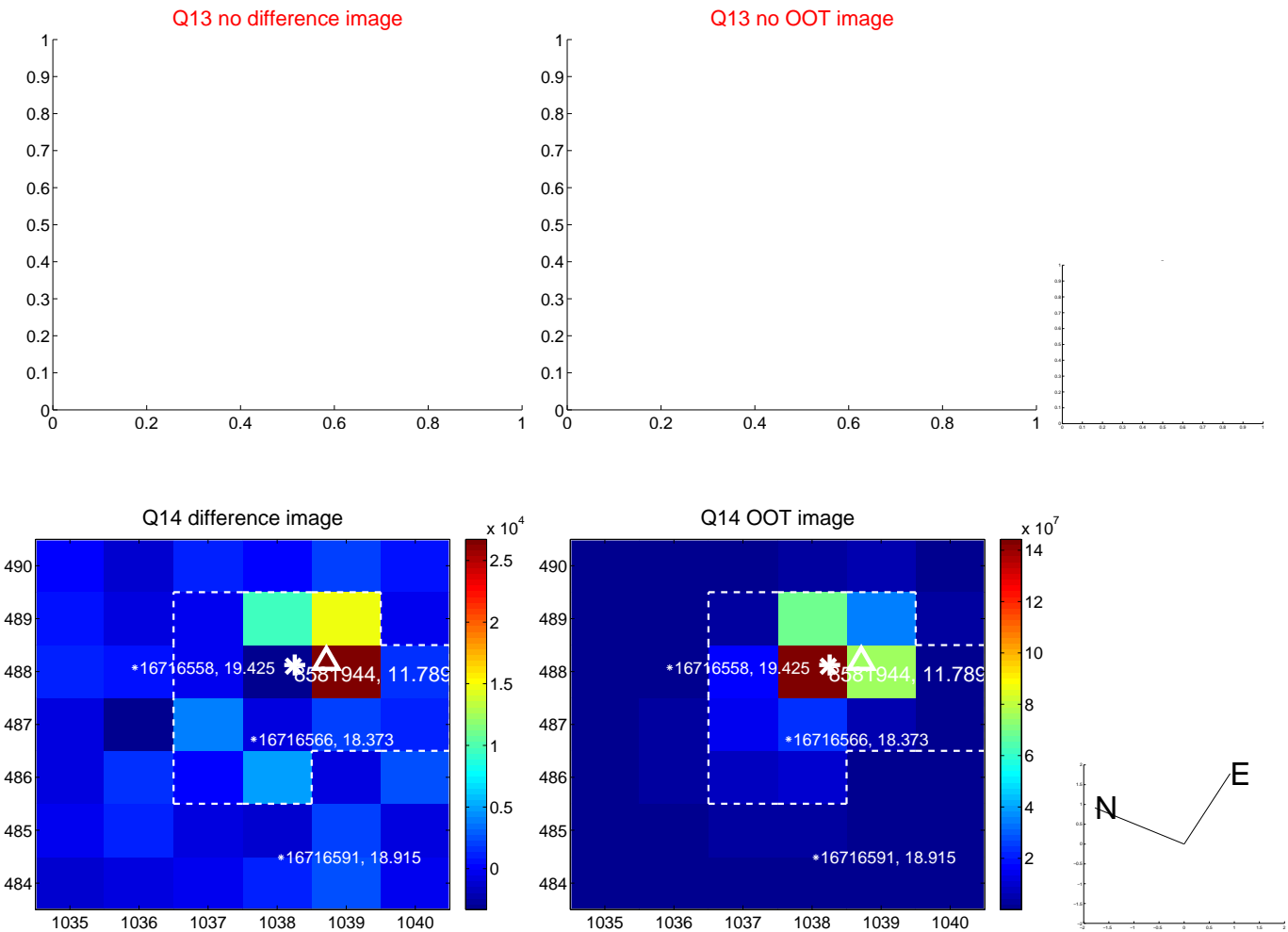
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



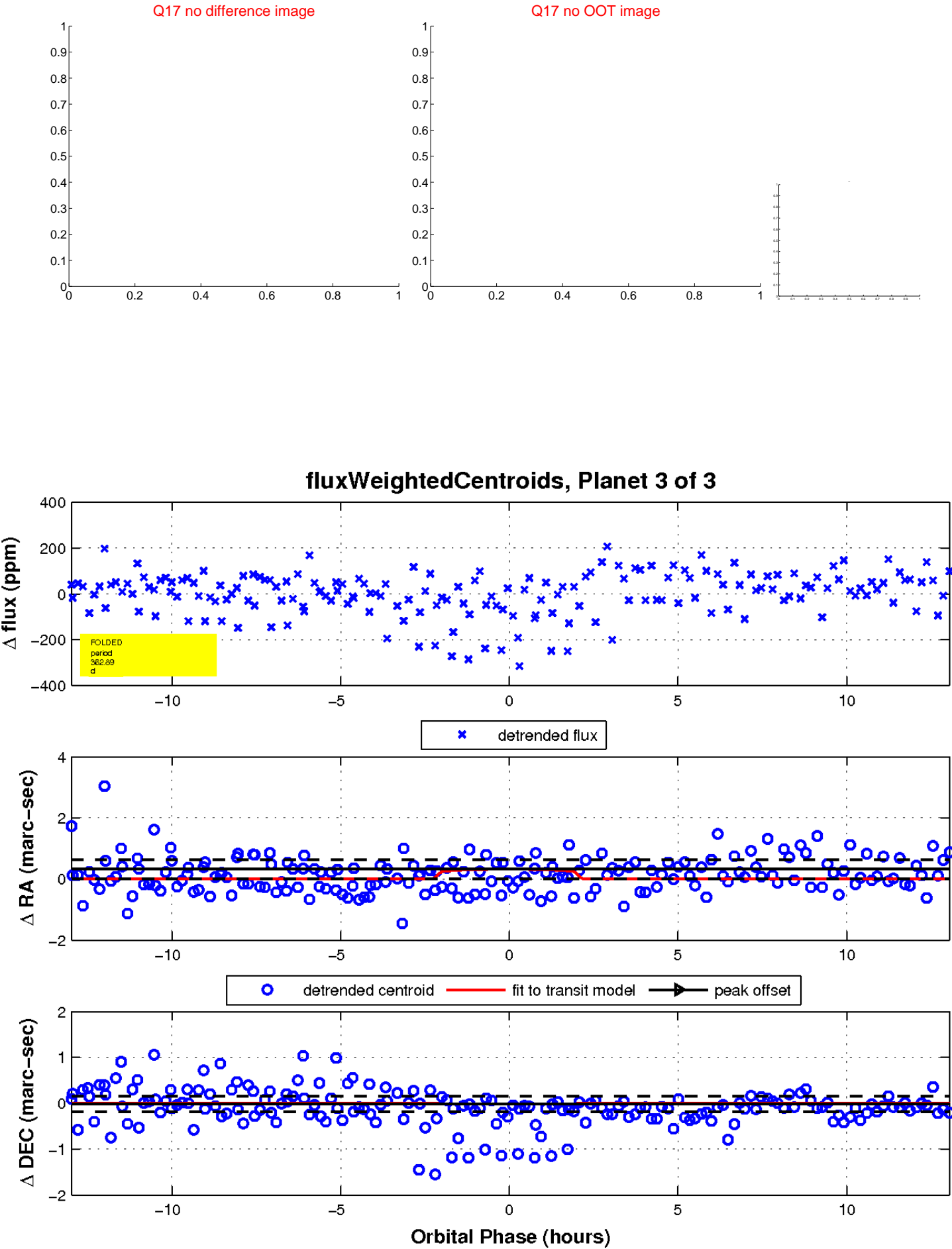
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

