

KIC 008941279

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})
008941279-01	OBS	No	404.745022	201.285143	730.1	19.844	11.1	11.5	0.90	5992	2.50	0.83
008941279-02	OBS	No	371.089024	178.580965	667.5	29.548	7.8	8.6	0.90	5992	2.82	0.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008941279-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE--INCONSISTENT_TRANS--CENT_FEW_DIFFS
008941279-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE--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.

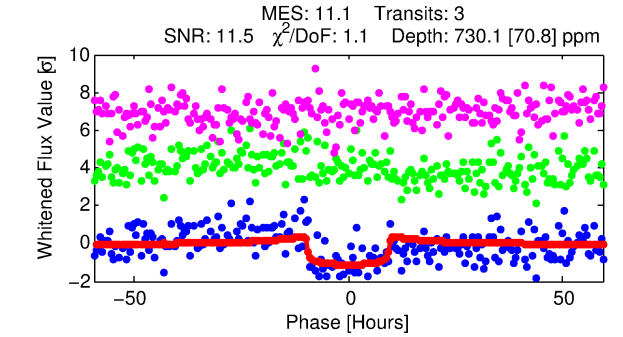
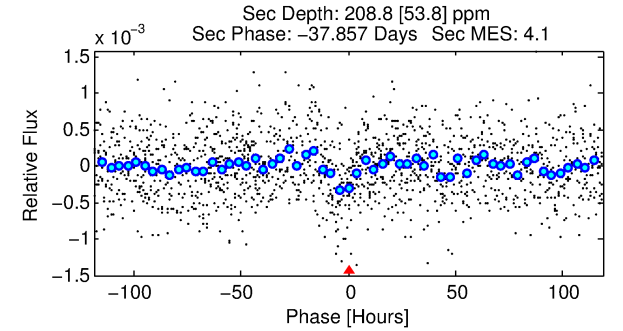
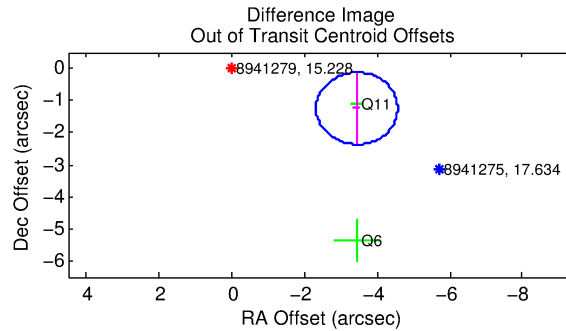
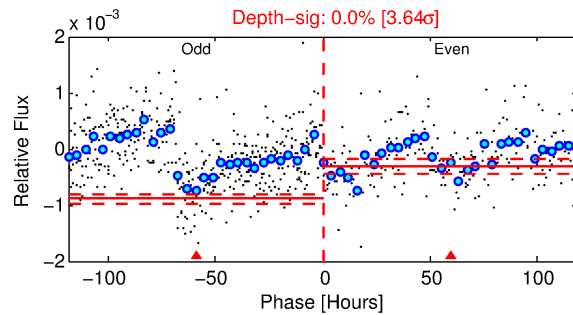
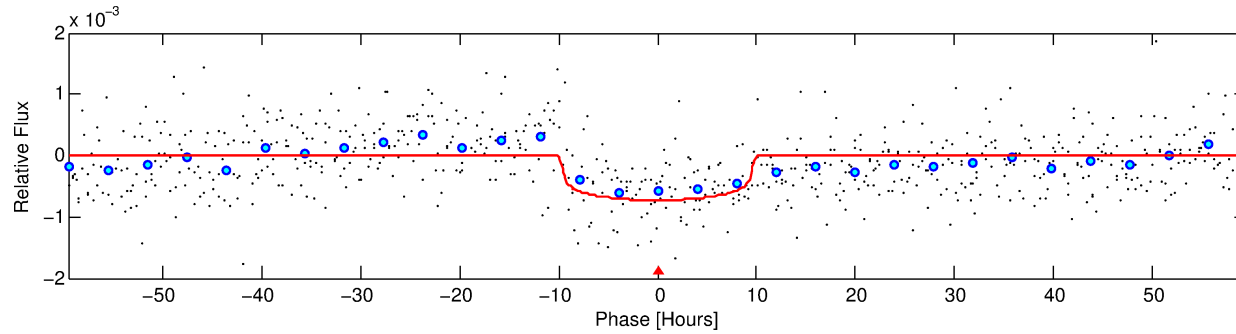
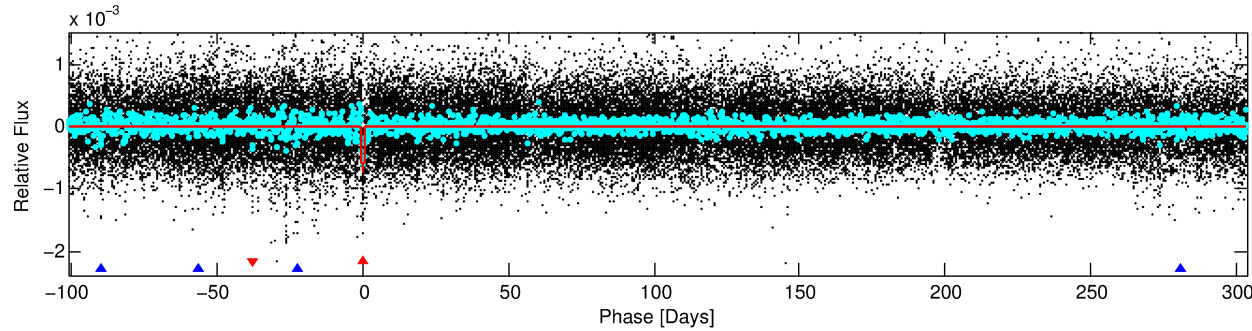
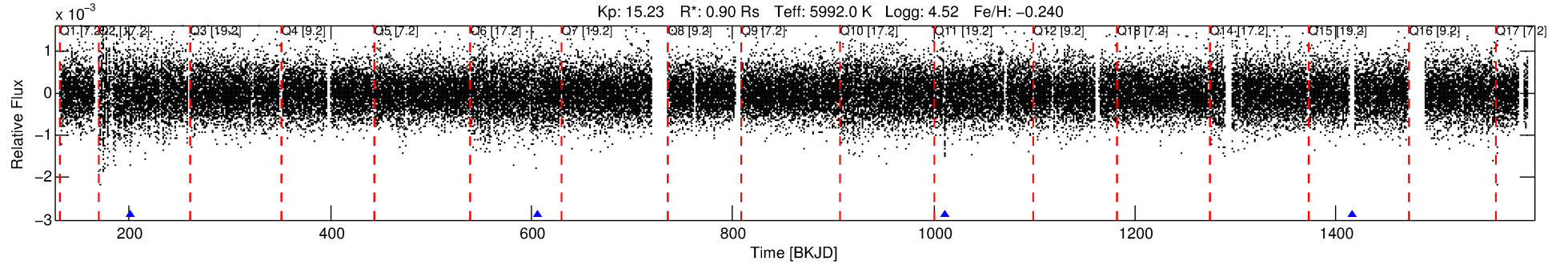
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008941279-01

No Significant Match Found

DV One-Page Summary

KIC: 8941279 Candidate: 1 of 2 Period: 404.745 d



DV Fit Results:

Period = 404.74502 [0.01369] d
Epoch = 201.2851 [0.0182] BKJD
Rp/R* = 0.0254 [0.0097]
a/R* = 139.57 [255.28]
b = 0.50 [2.76]
Seff = 0.83 [0.33]
Teq = 243 [24] K
Rp = 2.50 [1.23] Re
a = 1.0641 [0.2773] AU
Ag = 20854.72 [18615.14] [1.12 σ]
Teff = 4517 [924] K [4.62 σ]

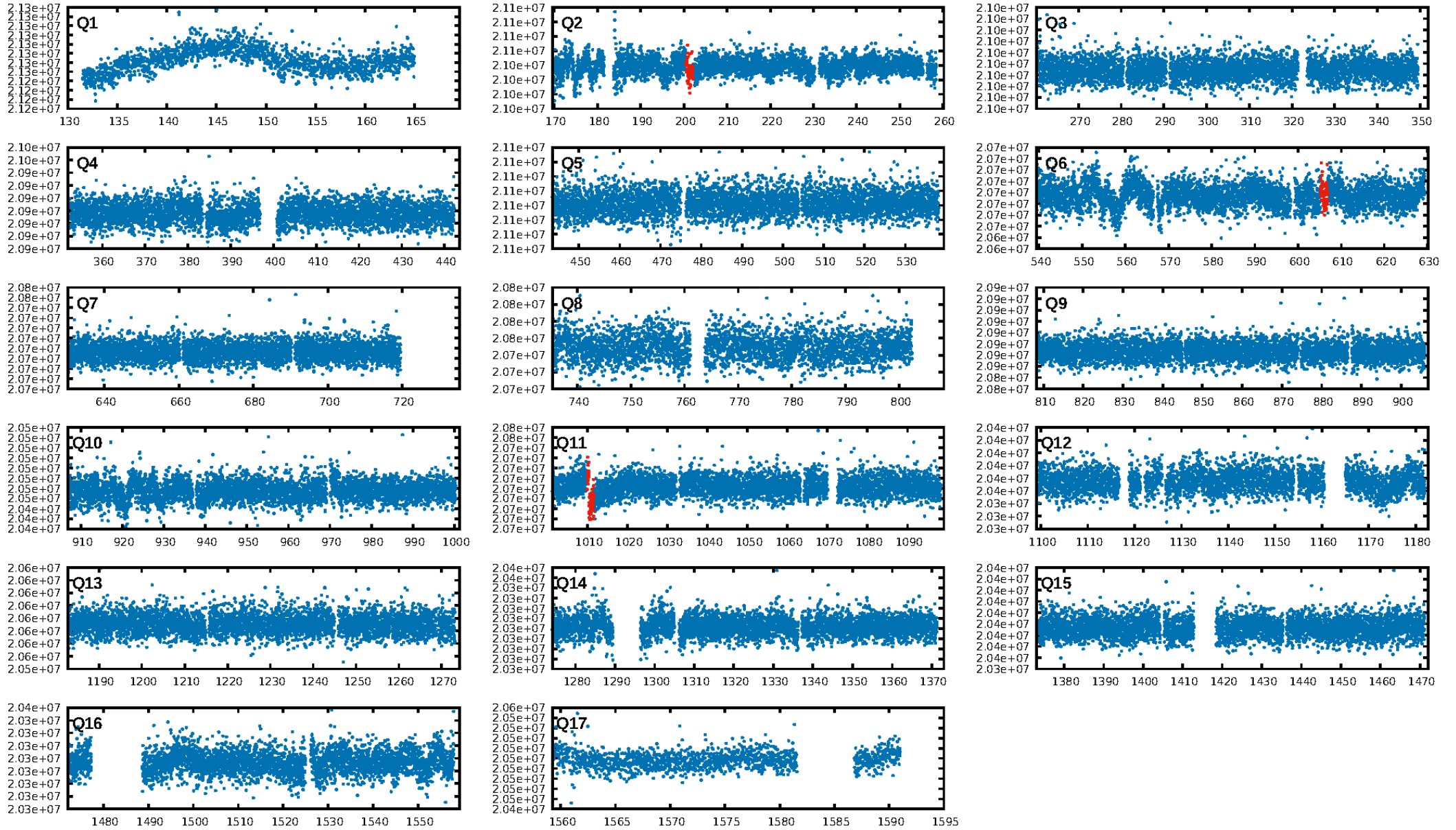
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.69 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 4.62e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.014
Centroid-sig: 4.6%
Centroid-so: 1.669 arcsec [1.17 σ]
OotOffset-rm: 3.661 arcsec [9.79 σ]
KicOffset-rm: 3.936 arcsec [8.94 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

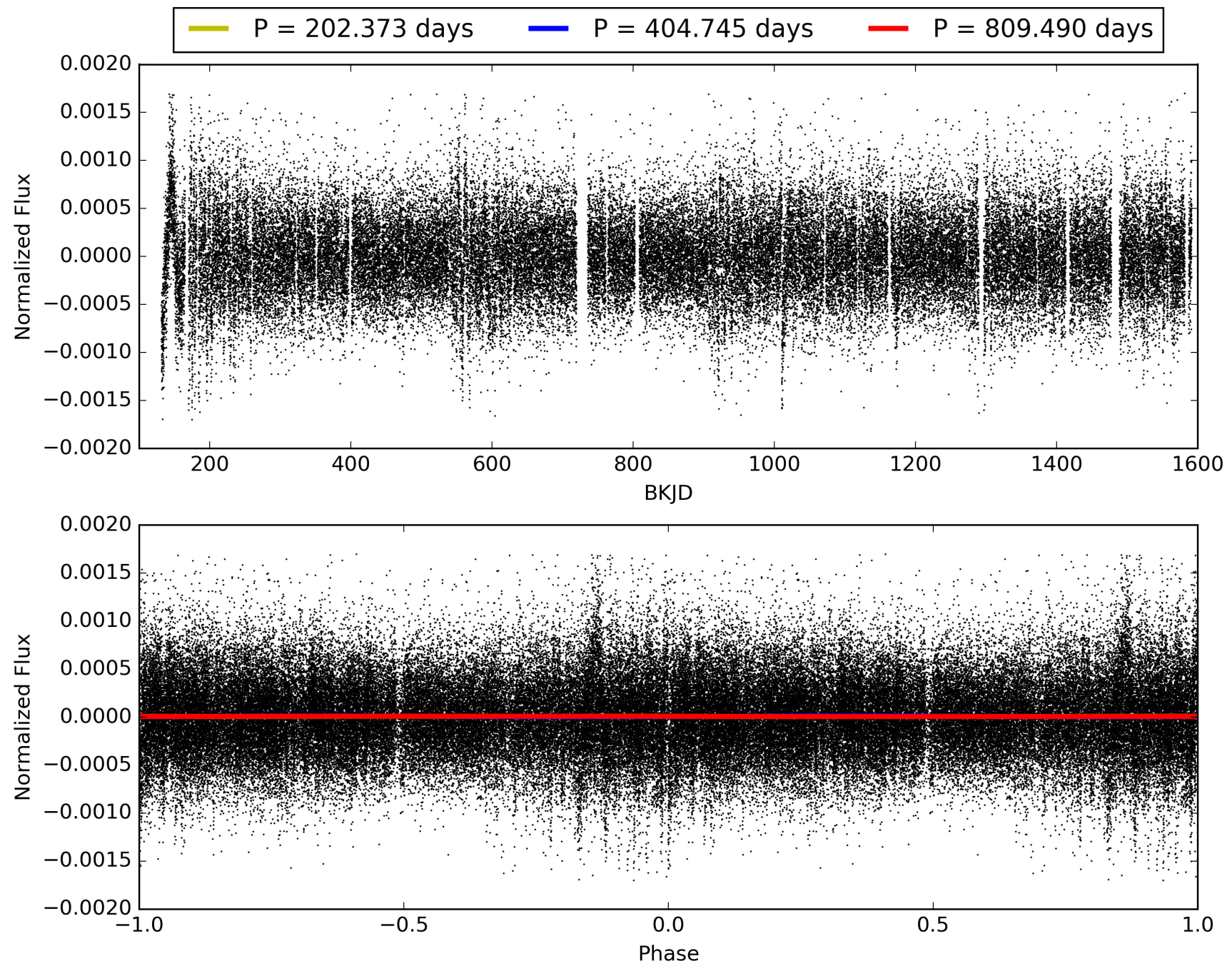
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:26:24 Z

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

TCE 008941279-01, PDC Light Curves

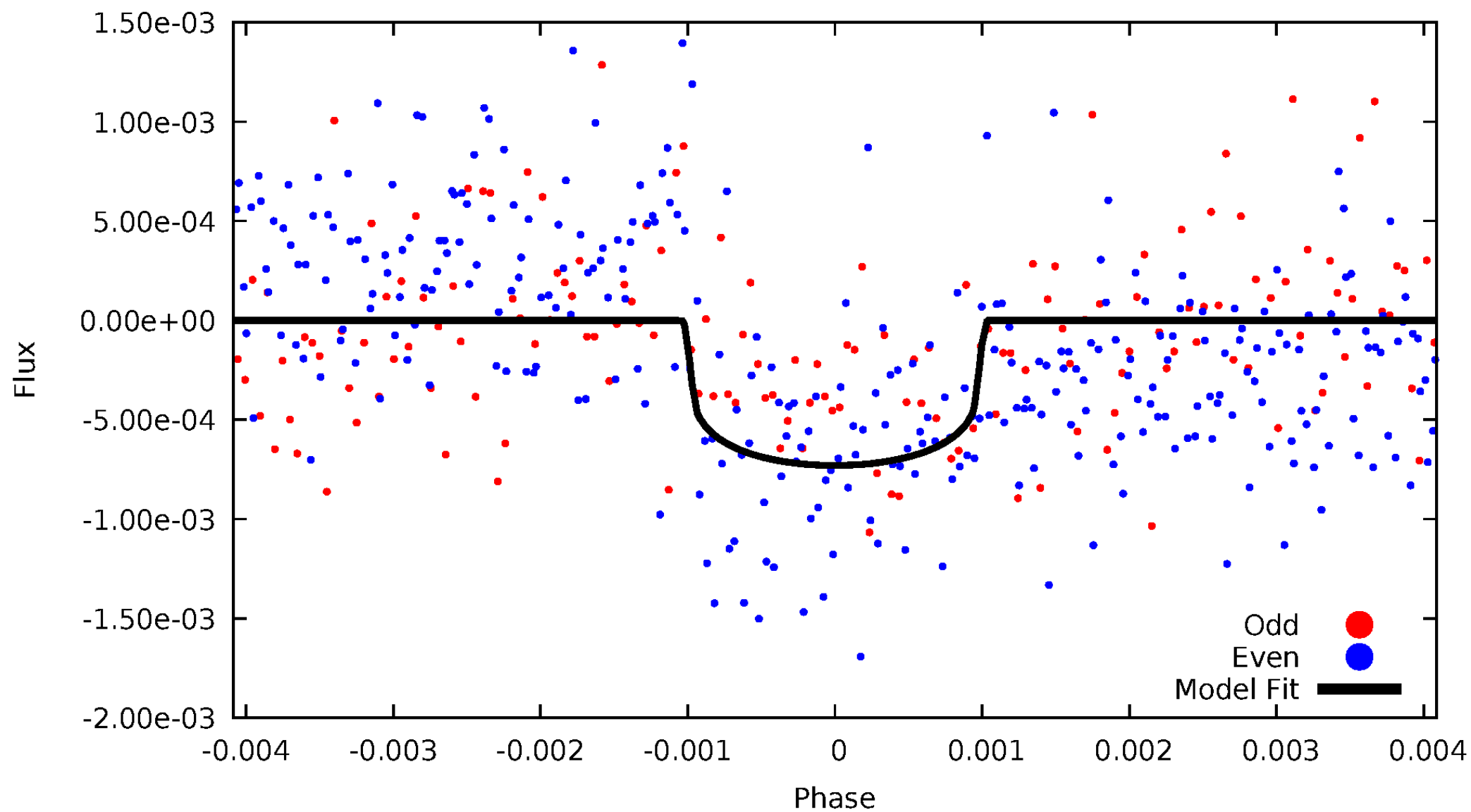


TCE 008941279-01



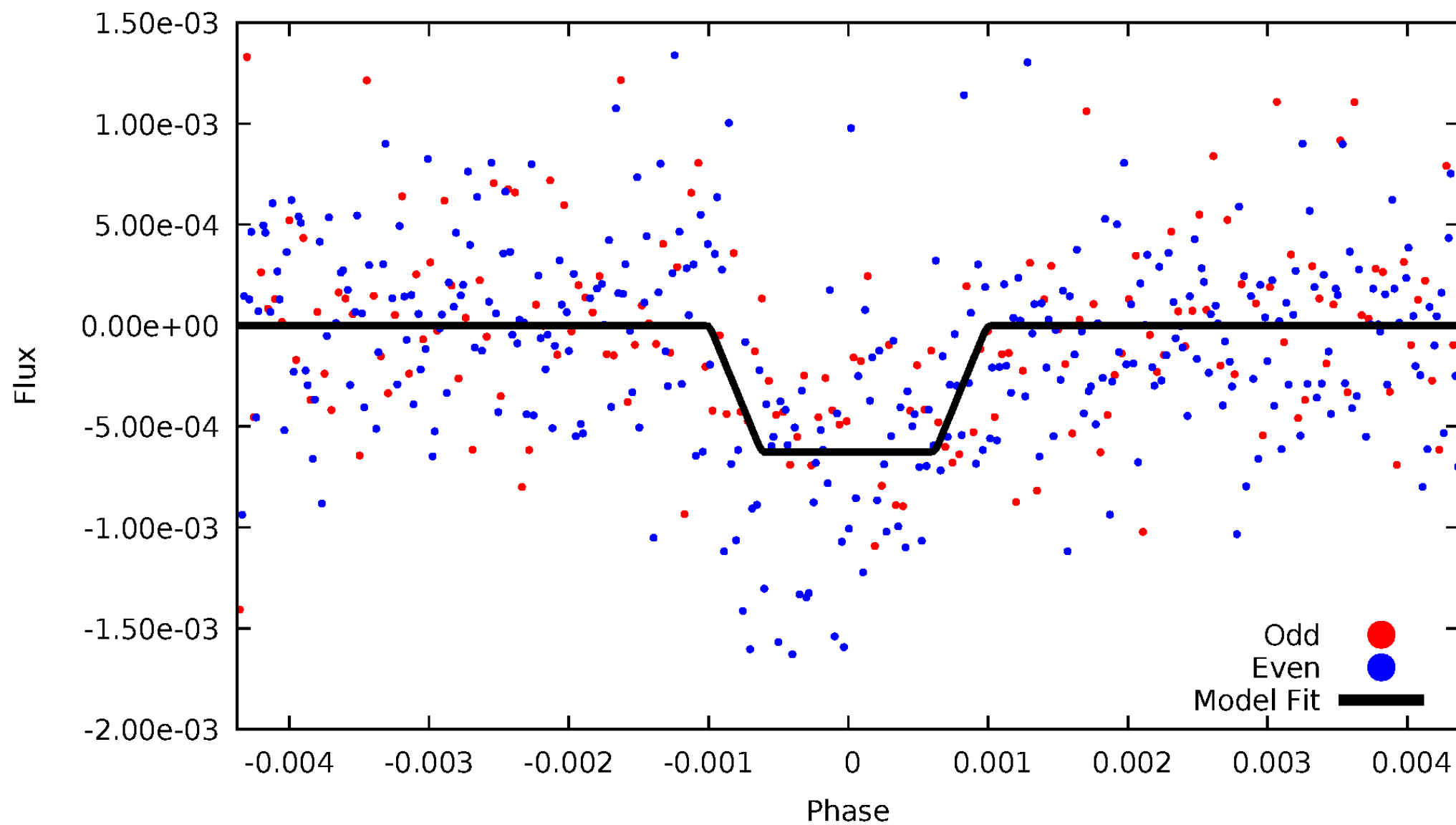
DV Odd/Even

TCE 008941279-01

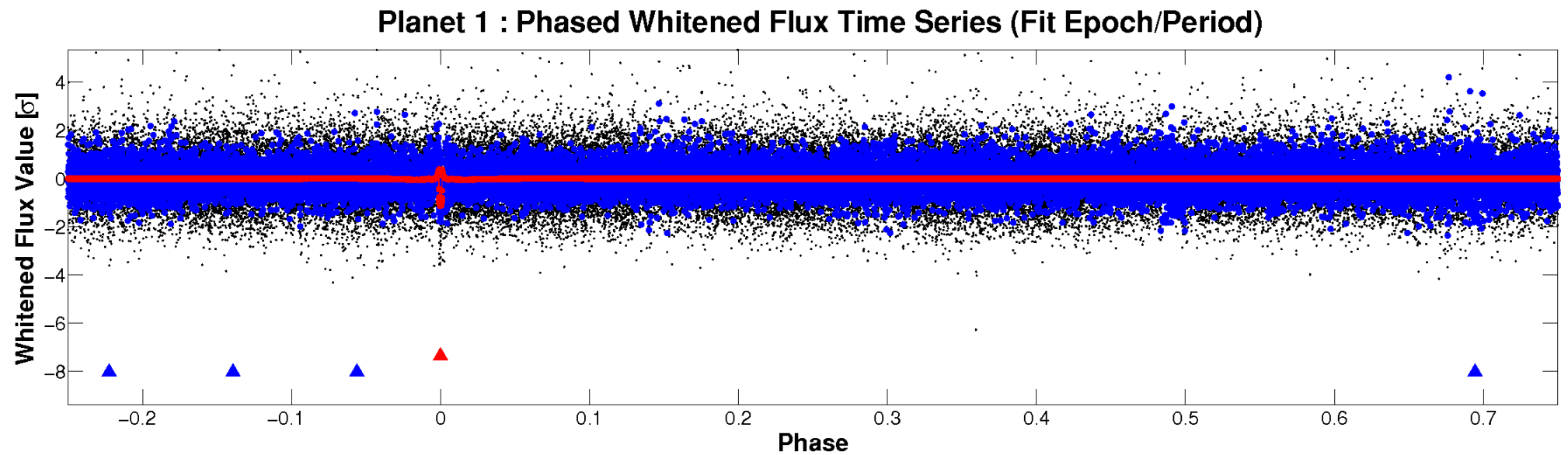
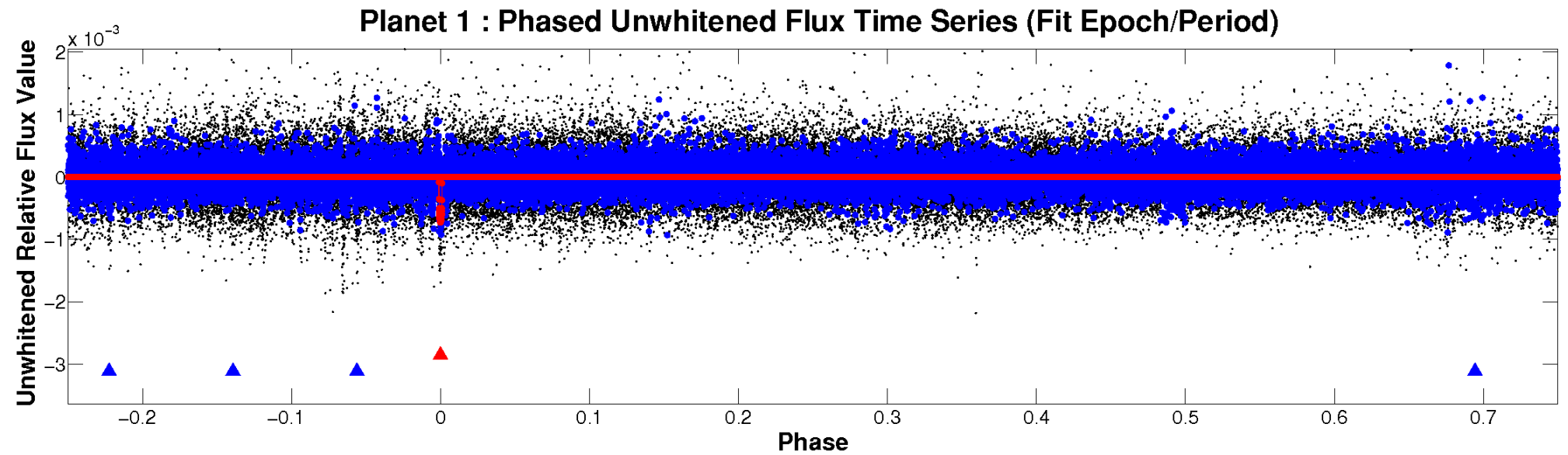


ALT Odd/Even

TCE 008941279-01

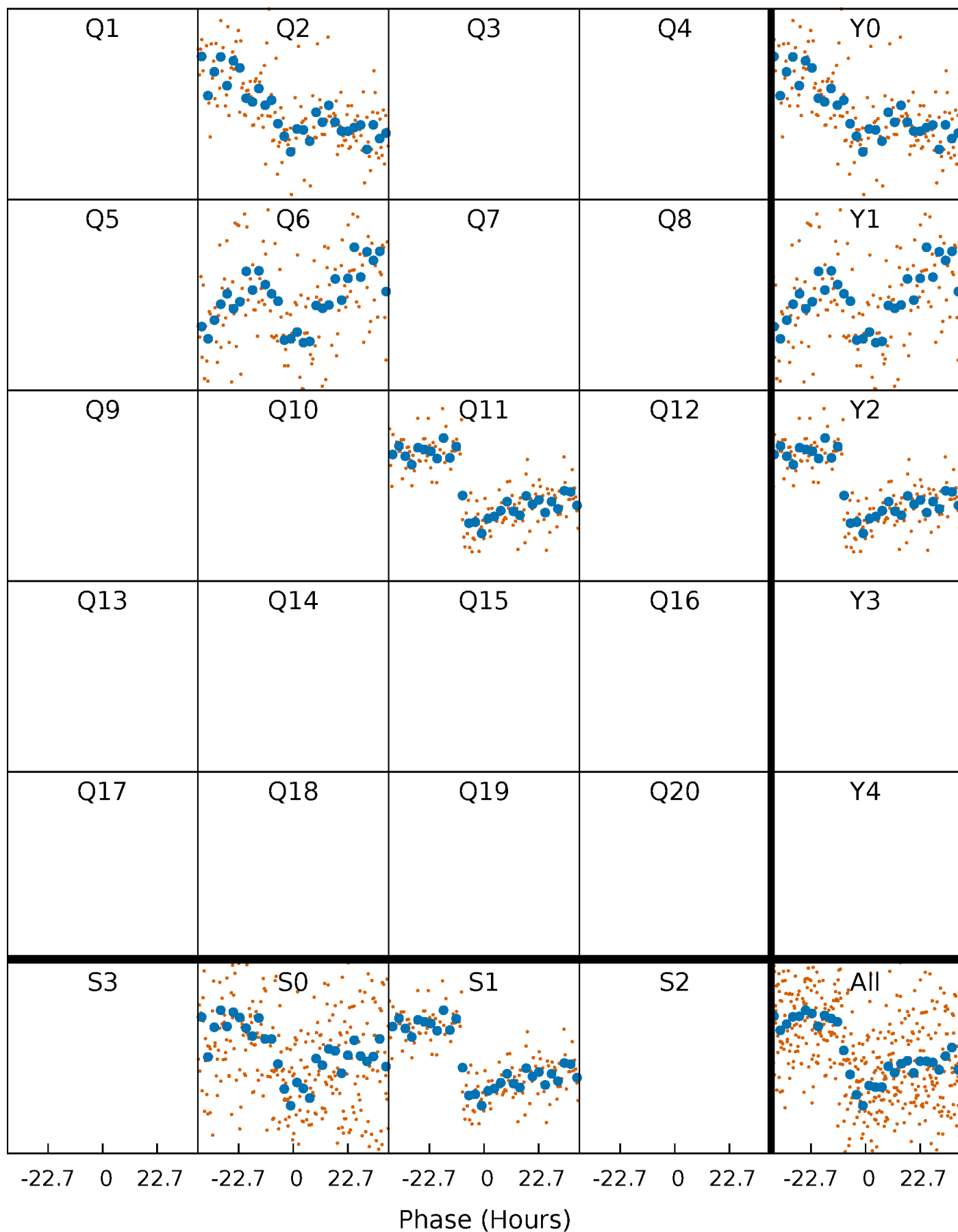


Non-Whitened Vs. Whitened Light Curve



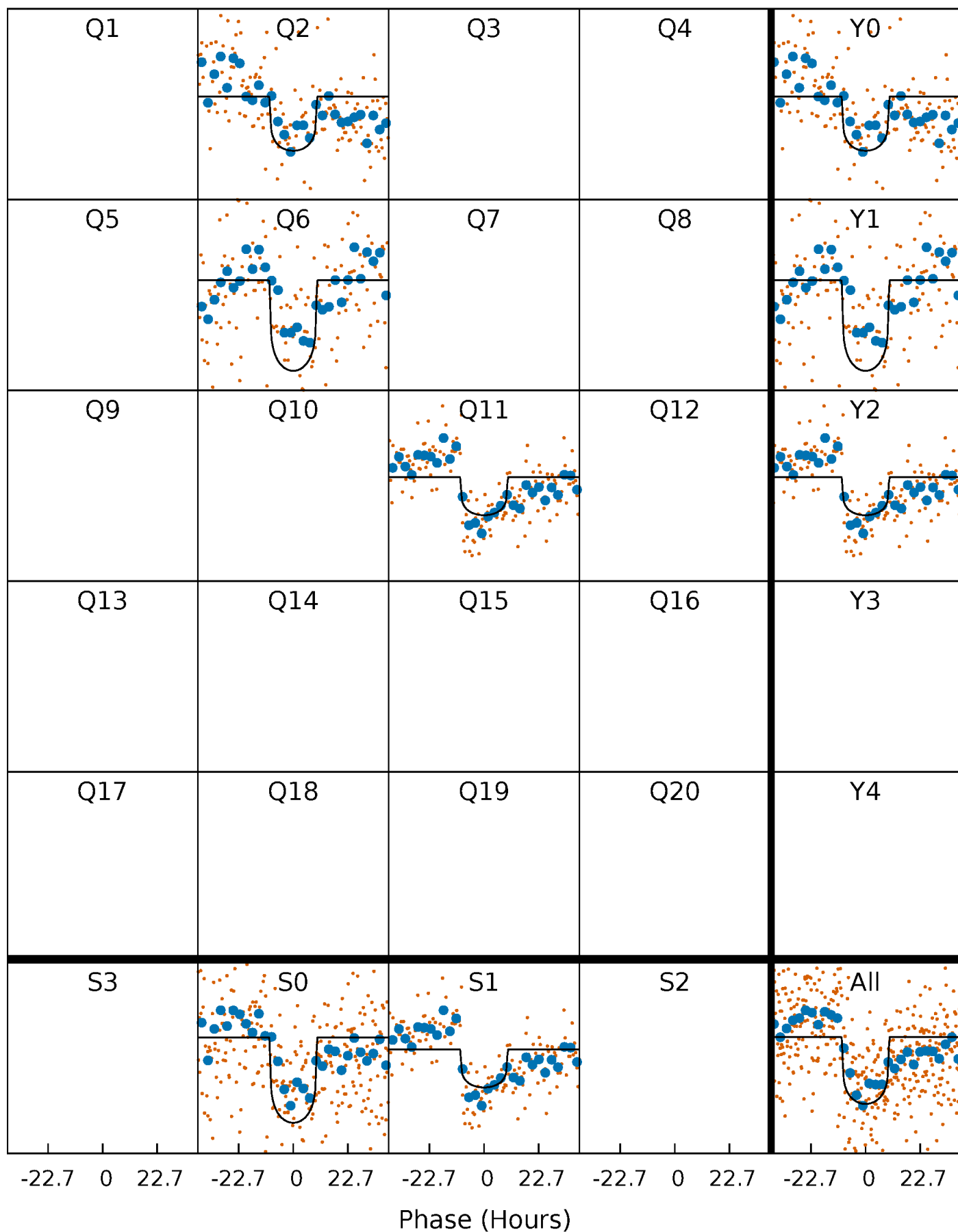
PDC Quarter-Phased Transit Curves

TCE 008941279-01 P=404.745022 Days $T_0=201.285144$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008941279-01 P=404.745022 Days $T_0=201.285144$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

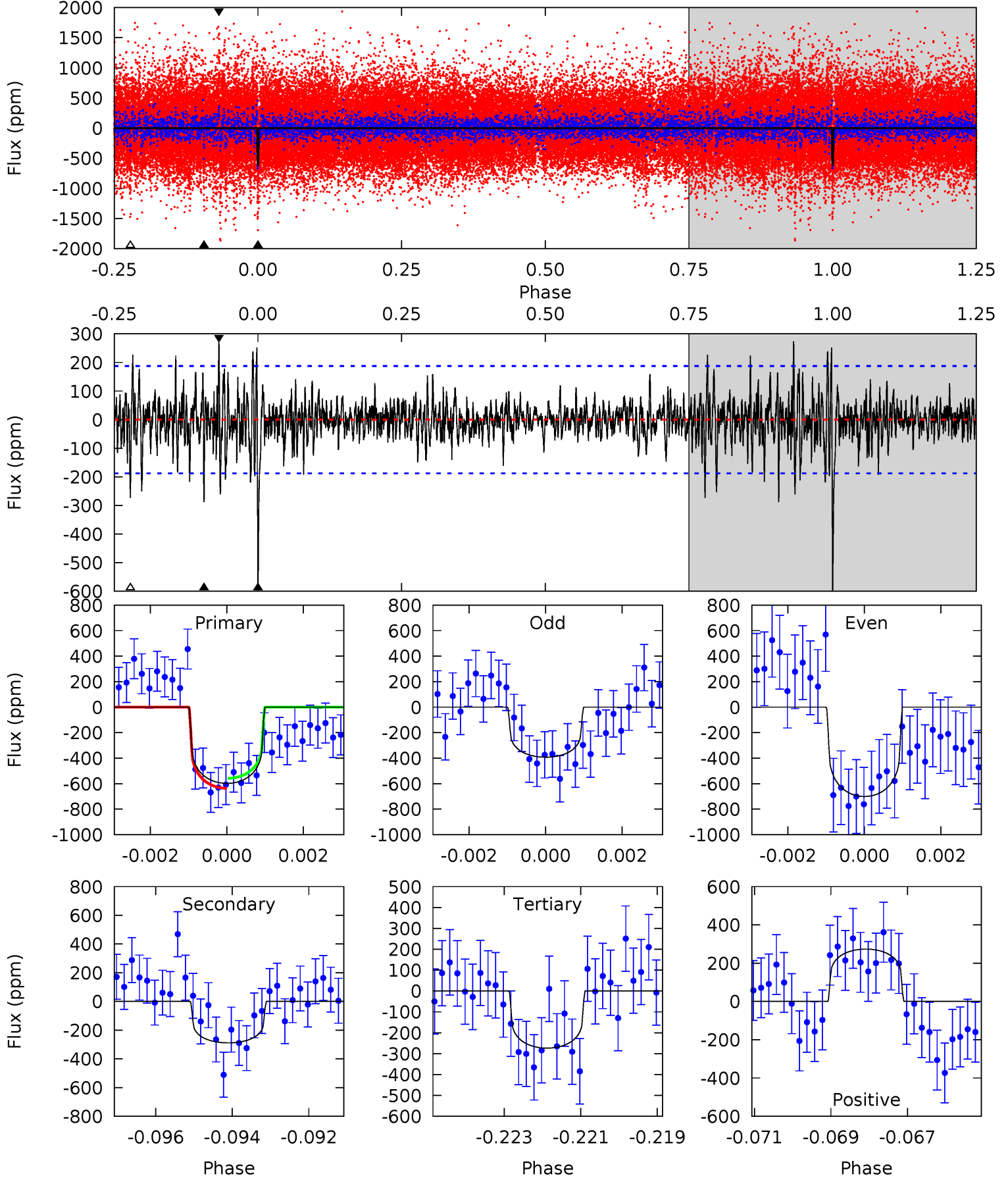
TCE 008941279-01 P=404.679845 Days $T_0=201.368615$ (BKJD)



DV Model-Shift Uniqueness Test

008941279-01, P = 404.745022 Days, E = 201.285144 Days

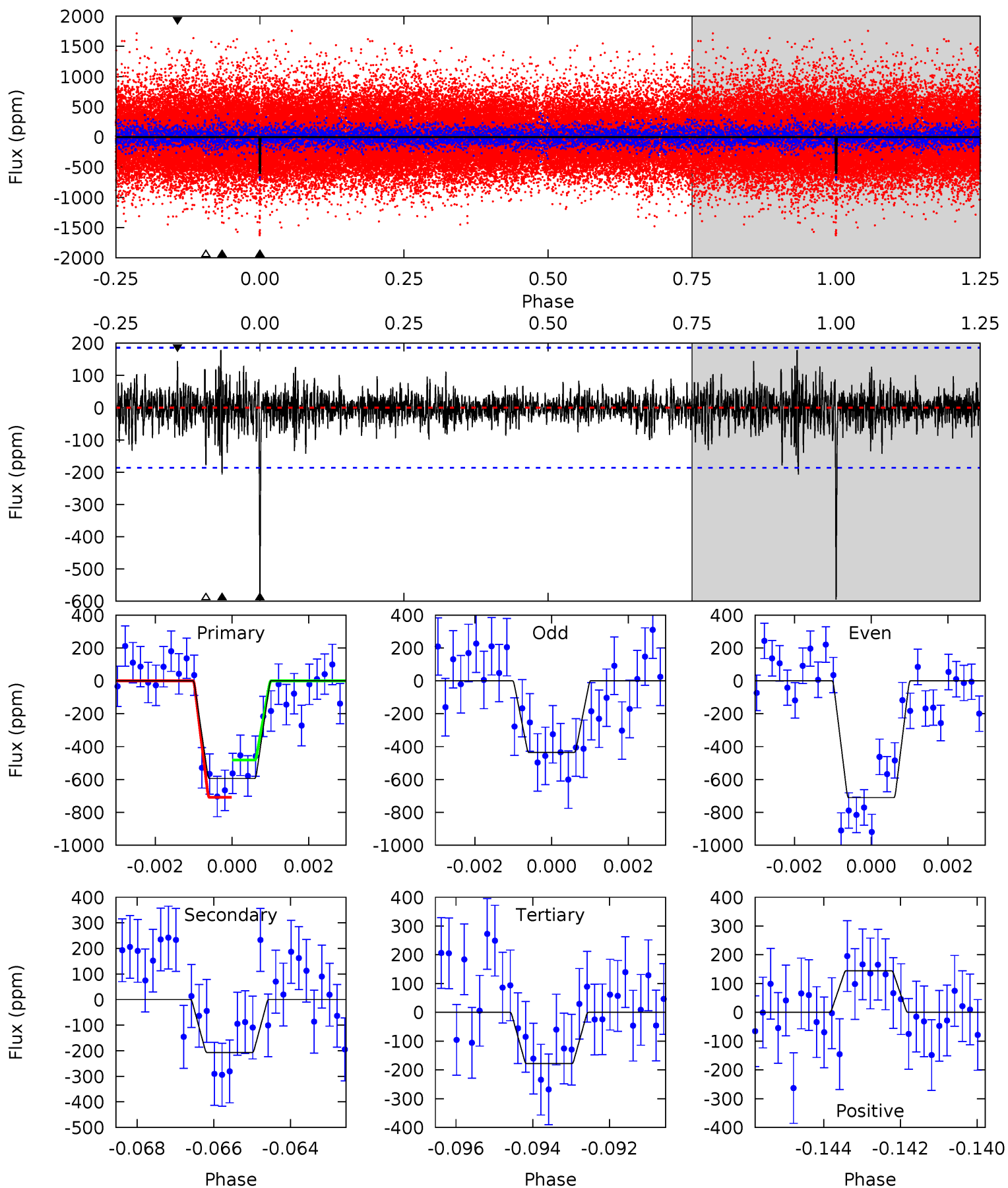
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	8.18	7.76	7.76	5.32	3.08	1.67	9.20	9.20	0.43	0.42	4.16	1.14	0.31	1.10



Alt Model-Shift Uniqueness Test

008941279-01, P = 404.679845 Days, E = 201.368615 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	5.91	5.10	4.13	5.33	3.09	1.03	11.9	12.9	0.81	1.78	3.71	1.36	0.23	3.23



Stellar Parameters For KIC 008941279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5992^{+162}_{-198}	$4.521^{+0.052}_{-0.208}$	$-0.240^{+0.300}_{-0.300}$	$0.900^{+0.278}_{-0.093}$	$0.981^{+0.121}_{-0.133}$	$1.894^{+0.394}_{-1.004}$
	+3%/-3%	+1%/-5%	+125%/-125%	+31%/-10%	+12%/-14%	+21%/-53%
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 008941279-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-288 ± 35	$2.59^{+1.10}_{-0.98}$	346^{+25}_{-16}	4996^{+1138}_{-624}	26086^{+42059}_{-13765}
Alt.	-207 ± 35	$2.55^{+1.16}_{-0.95}$	348^{+25}_{-16}	4659^{+1160}_{-557}	19242^{+29935}_{-9970}

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 $A_{obs} \gg 1.0$

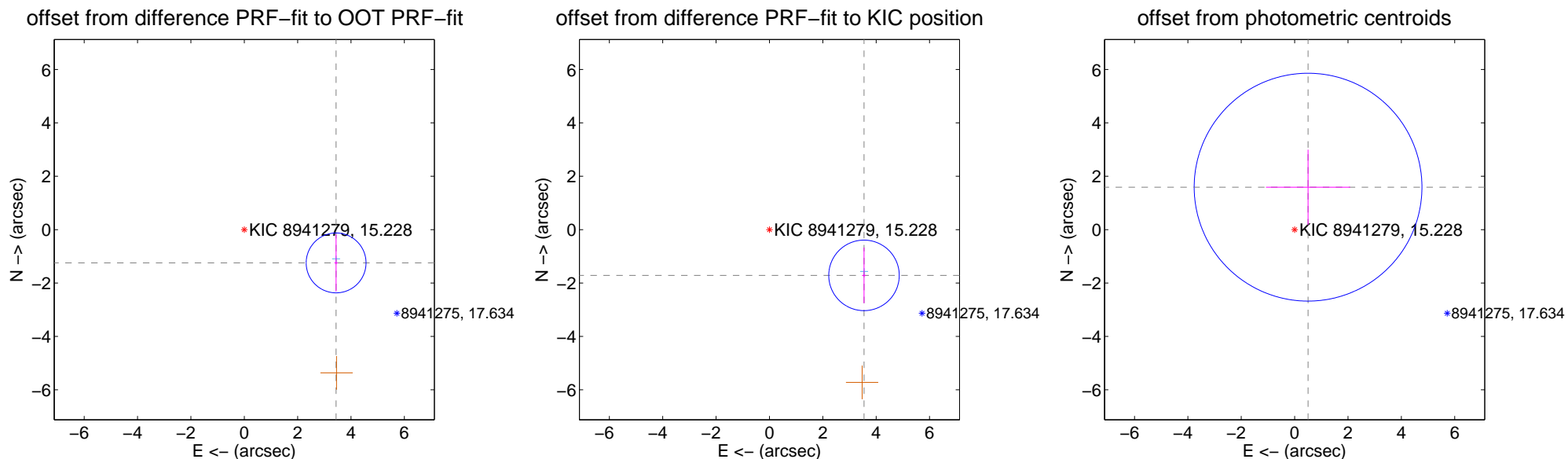
DV Centroid Data

Supplemental centroid analysis for 008941279-01. Kepler magnitude: 15.23. Transit SNR 11.51

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.661 ± 0.374	9.79	-3.442 ± 0.067	-1.247 ± 1.070
PRF-fit source offset from KIC position	3.936 ± 0.440	8.94	-3.544 ± 0.069	-1.714 ± 1.041
photometric centroid source offset	1.67 ± 1.42	1.17	-0.50 ± 1.58	1.59 ± 1.41

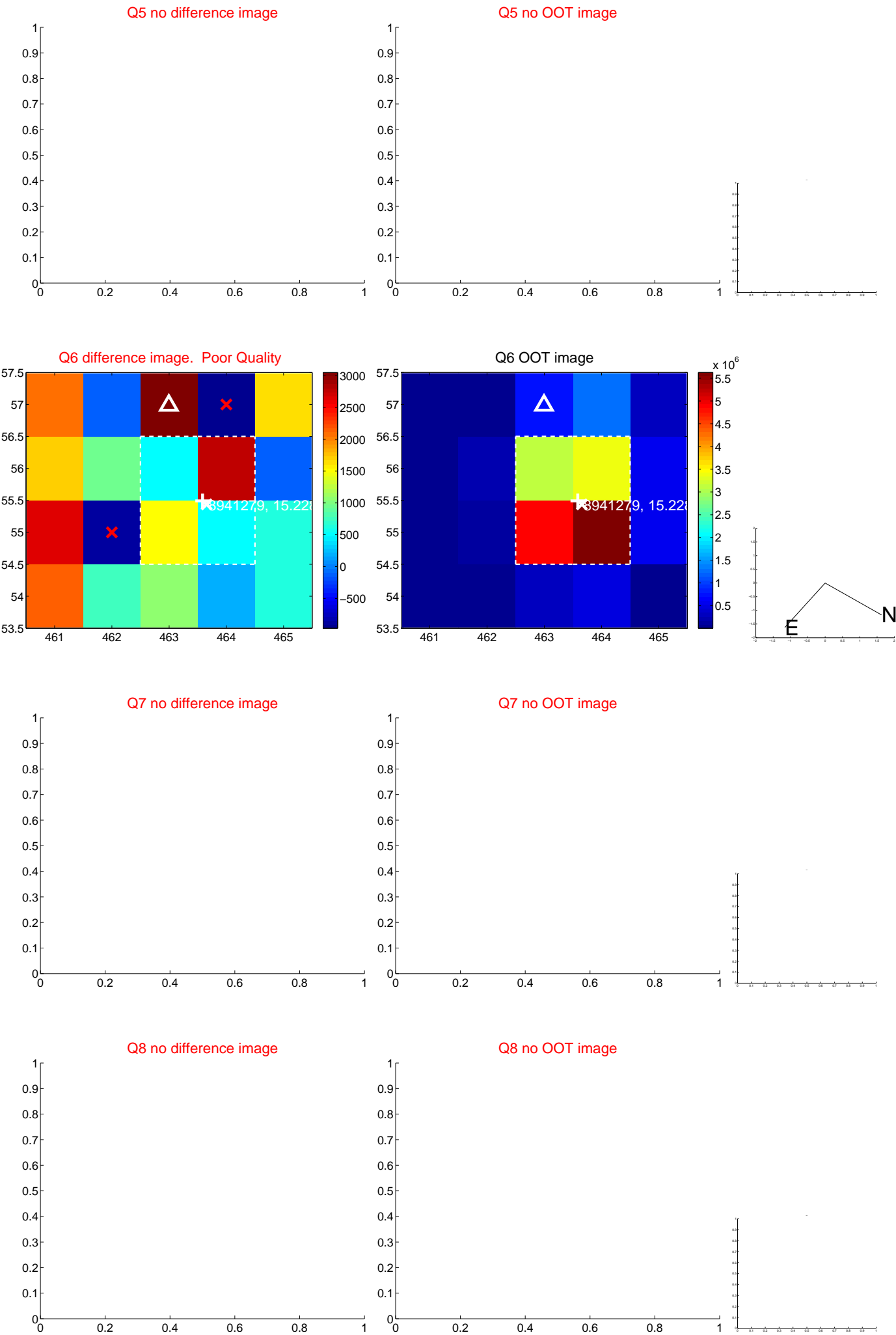


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



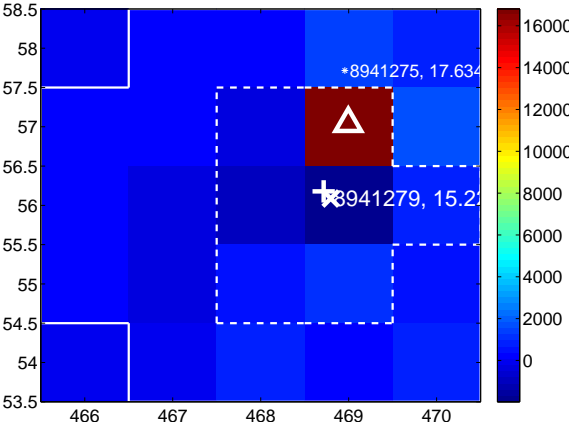
Q10 no difference image



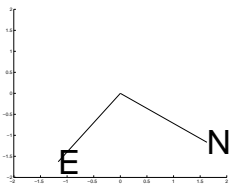
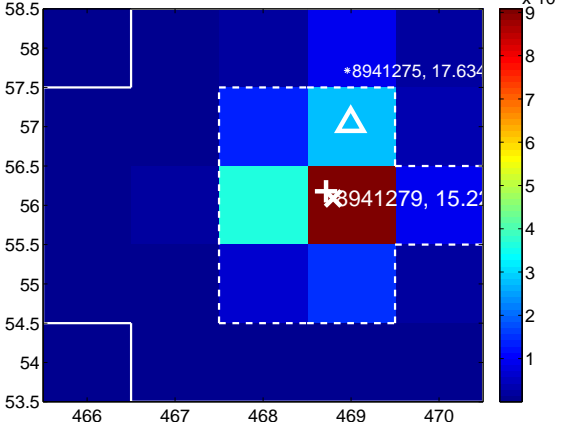
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



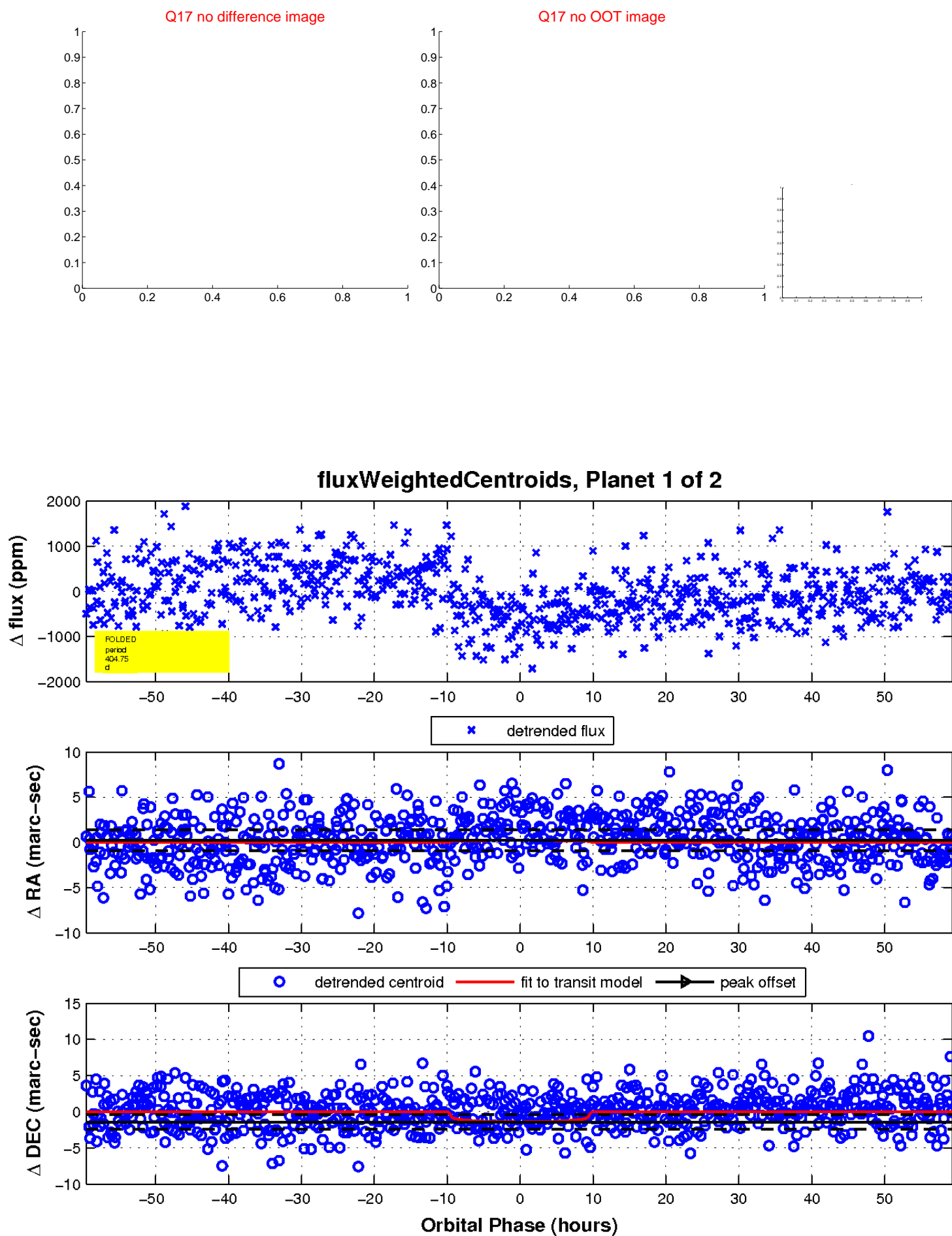
Q12 no OOT image



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

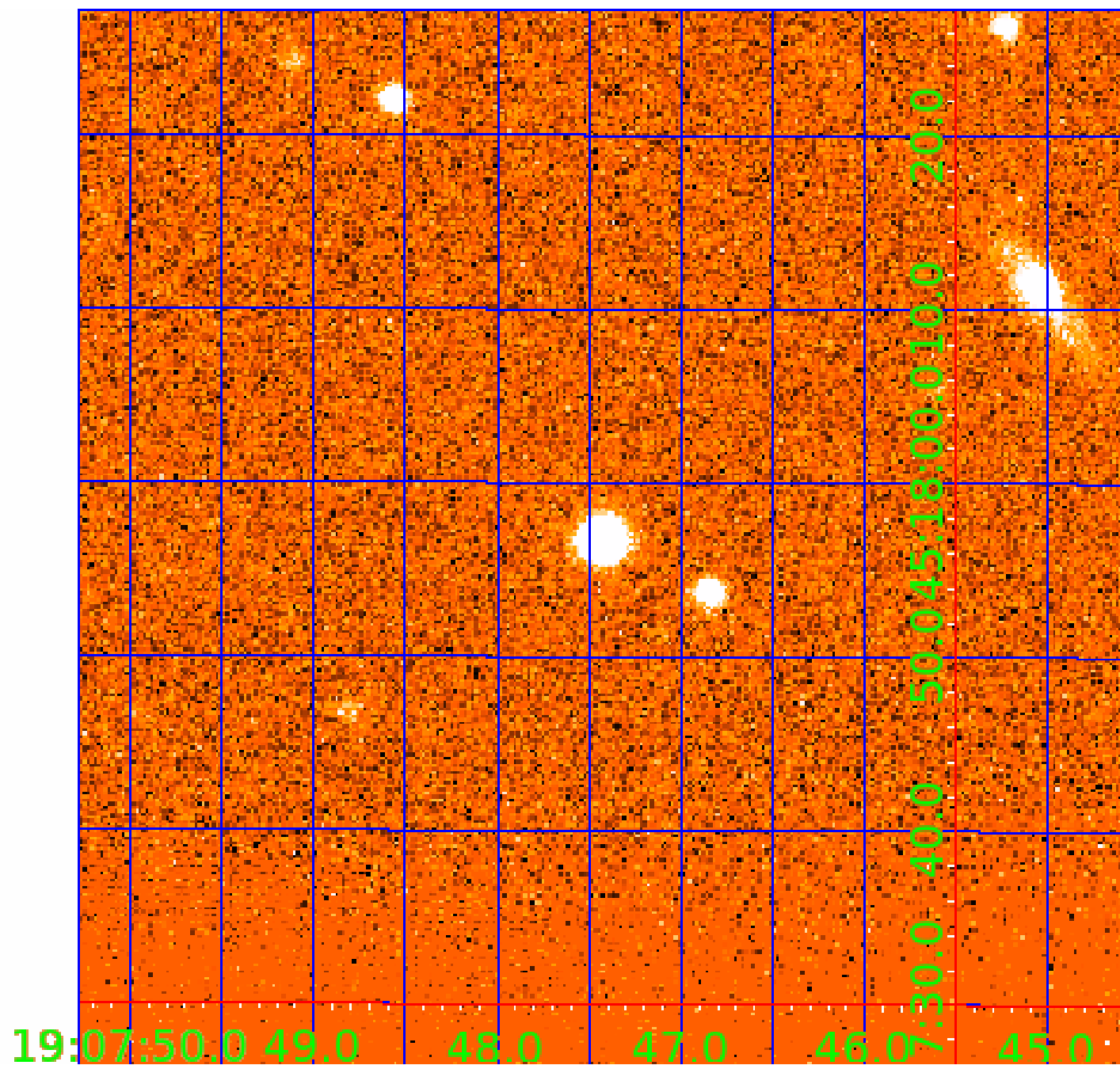


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008941279

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})
008941279-01	OBS	No	404.745022	201.285143	730.1	19.844	11.1	11.5	0.90	5992	2.50	0.83
008941279-02	OBS	No	371.089024	178.580965	667.5	29.548	7.8	8.6	0.90	5992	2.82	0.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008941279-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008941279-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

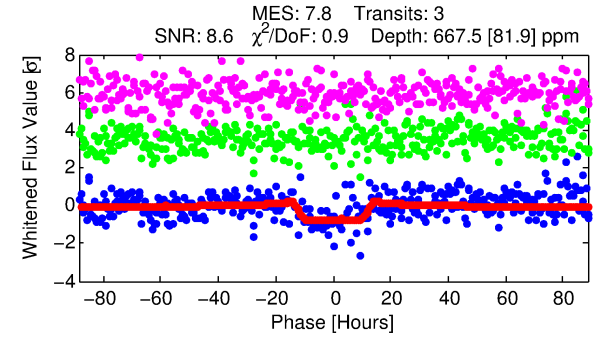
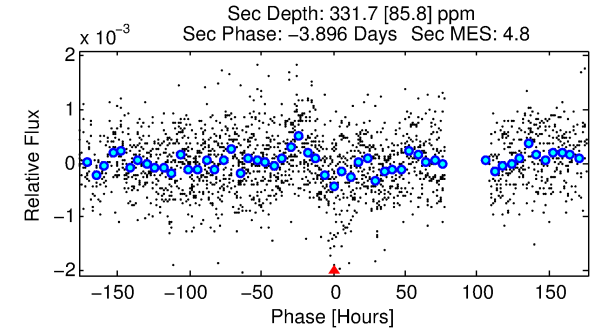
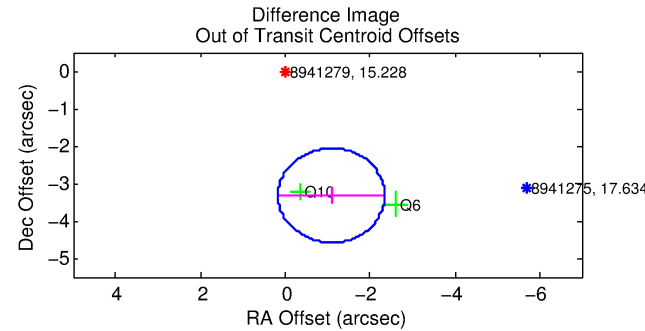
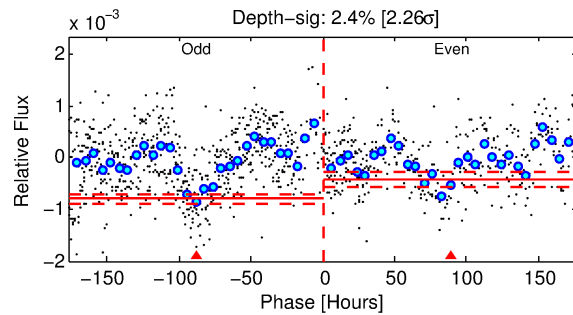
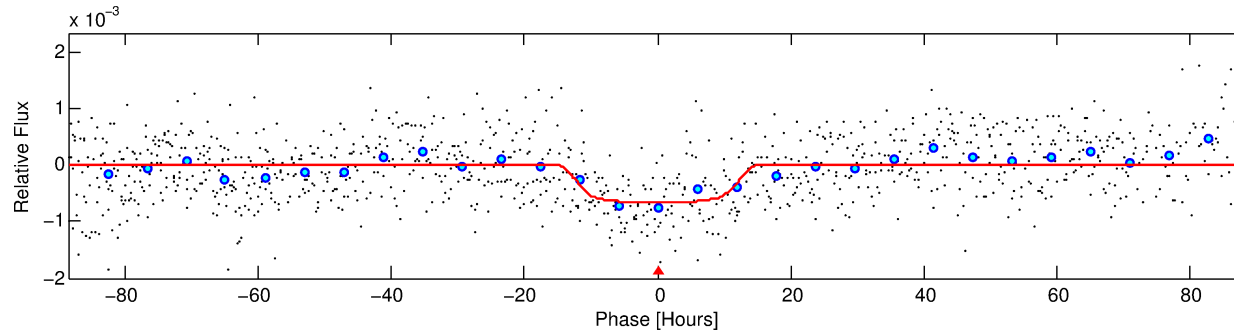
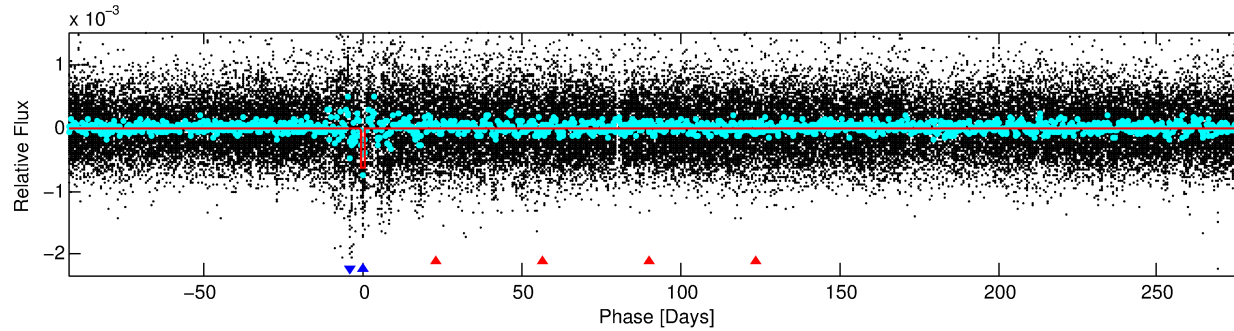
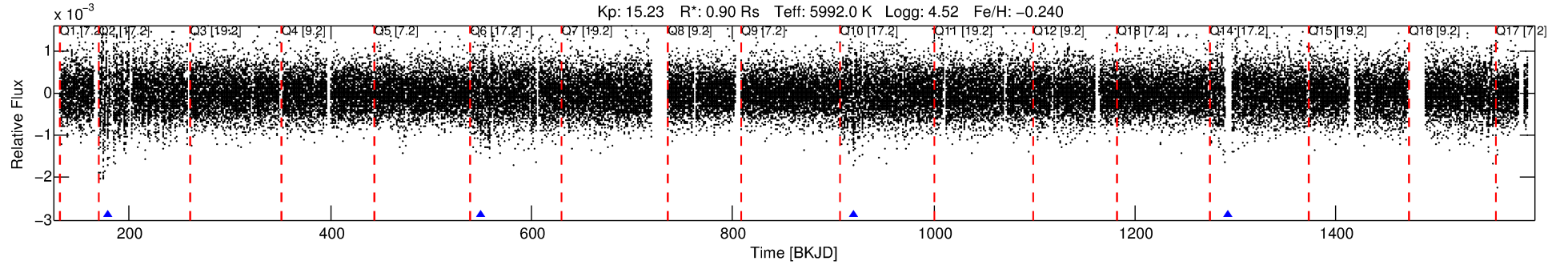
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008941279-02

No Significant Match Found

DV One-Page Summary

KIC: 8941279 Candidate: 2 of 2 Period: 371.089 d



DV Fit Results:

Period = 371.08902 [0.03710] d
Epoch = 178.5810 [0.0520] BKJD
Rp/R* = 0.0287 [0.0025]
a/R* = 42.71 [11.07]
b = 0.93 [0.04]
Seff = 0.93 [0.37]
Teq = 250 [25] K
Rp = 2.82 [0.90] Re
a = 1.0043 [0.2617] AU
Ag = 23123.70 [11337.56] [2.04 σ]
Teffp = 4771 [402] K [11.23 σ]

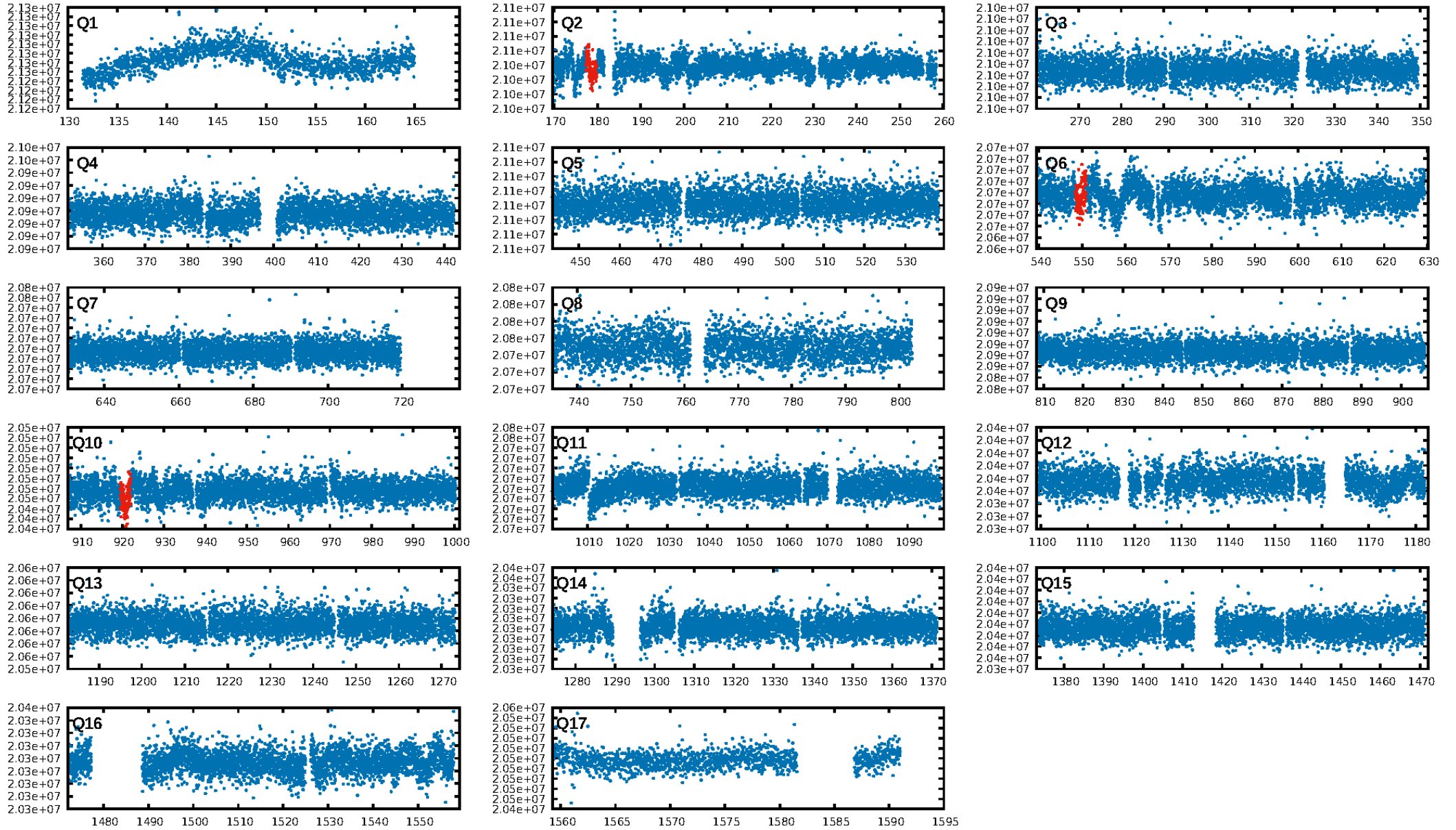
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [22.69 σ]
ModelChiSquare2-sig: 18.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.21e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.573
Centroid-sig: 48.8%
Centroid-so: 1.925 arcsec [1.05 σ]
OotOffset-rm: 3.497 arcsec [8.33 σ]
KicOffset-rm: 3.857 arcsec [9.63 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

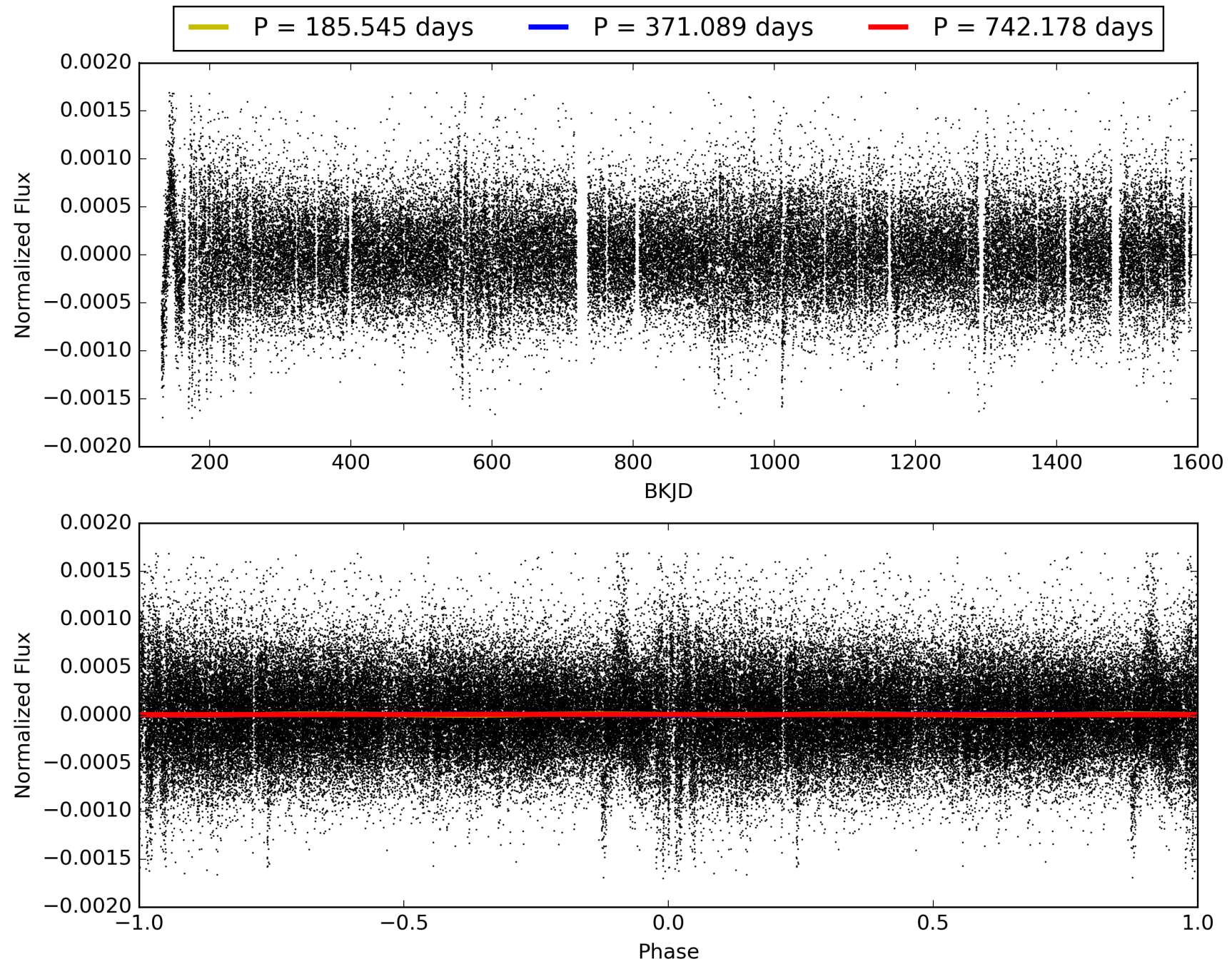
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:26:33 Z

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

TCE 008941279-02, PDC Light Curves

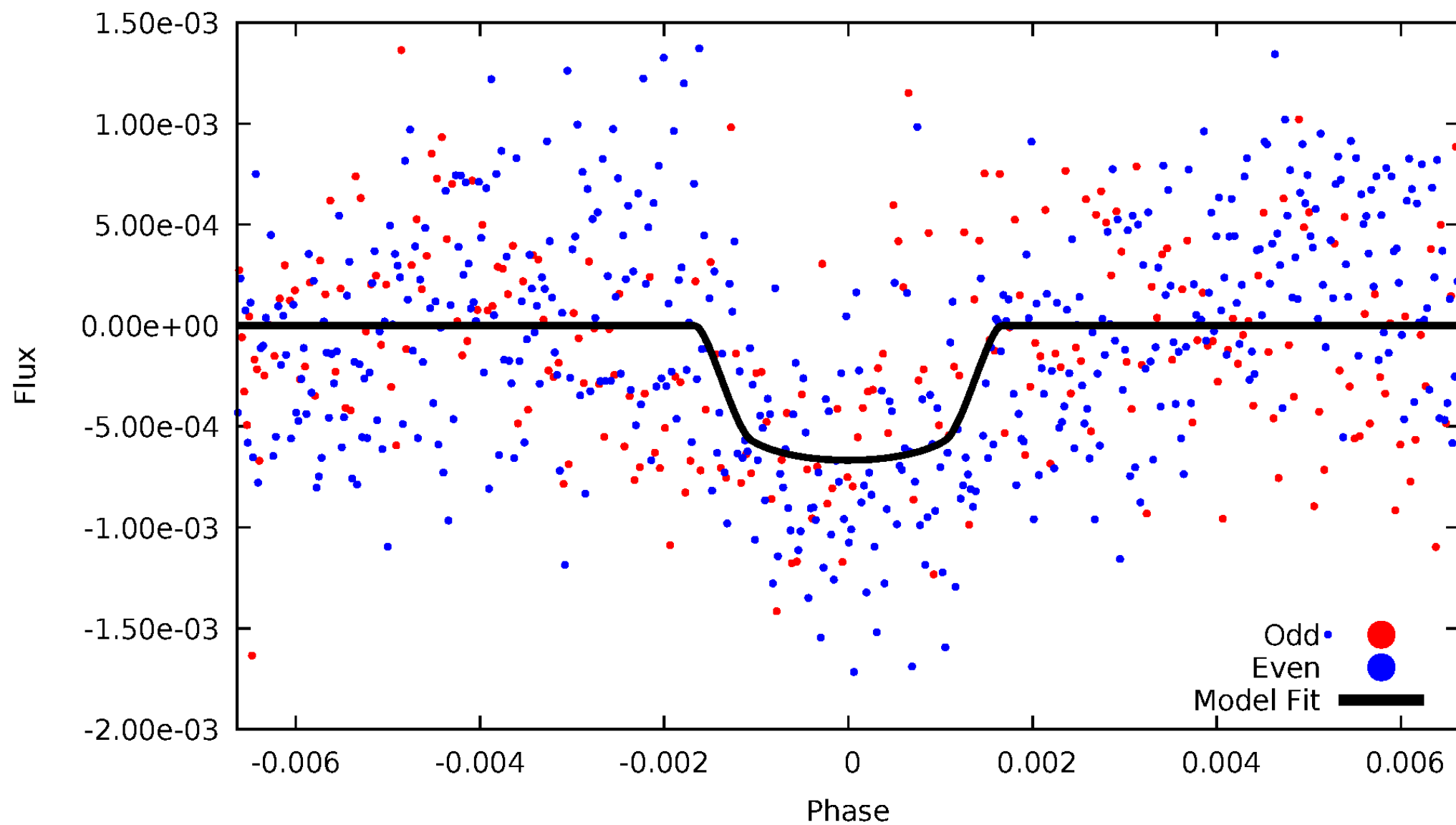


TCE 008941279-02



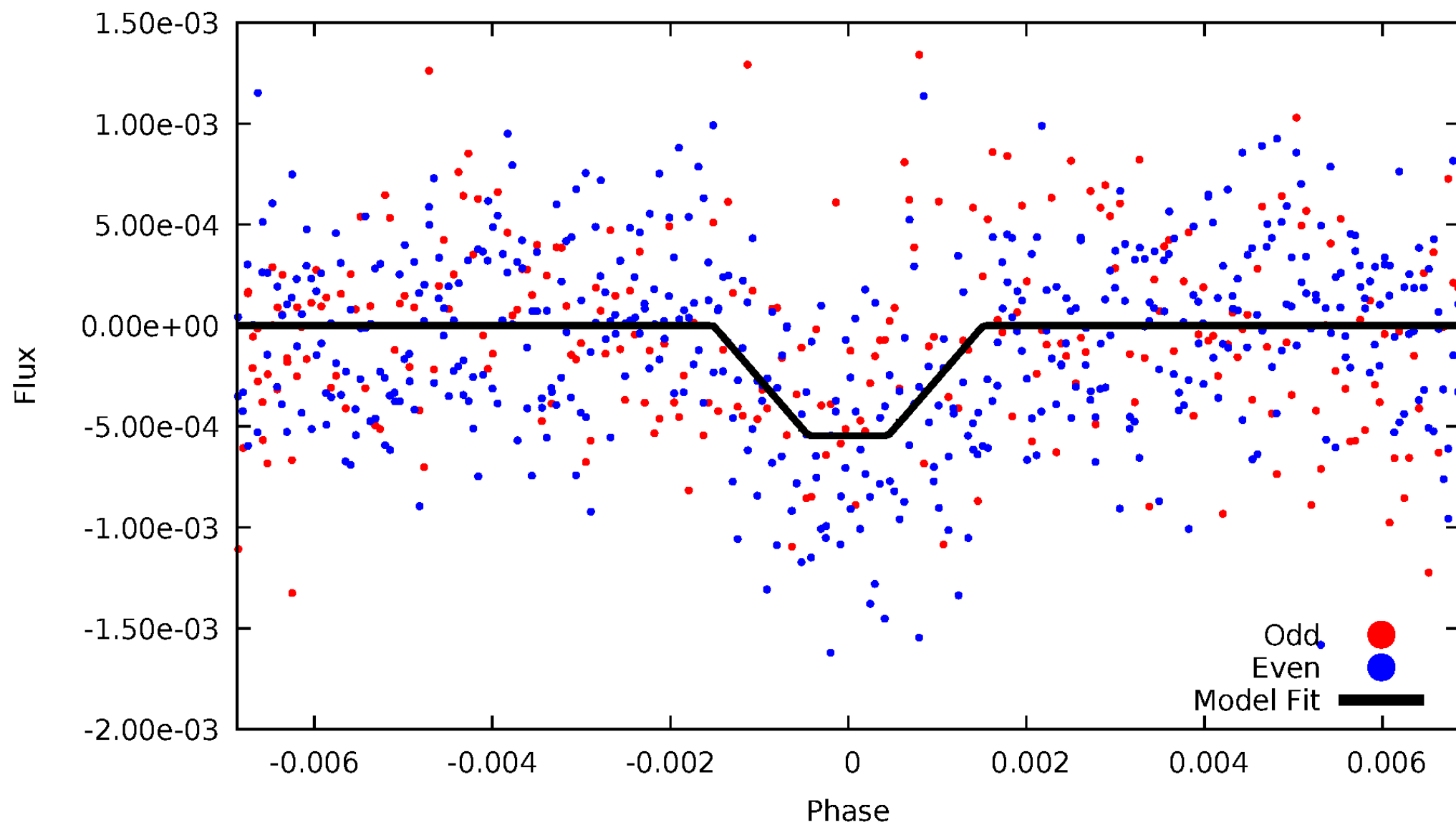
DV Odd/Even

TCE 008941279-02



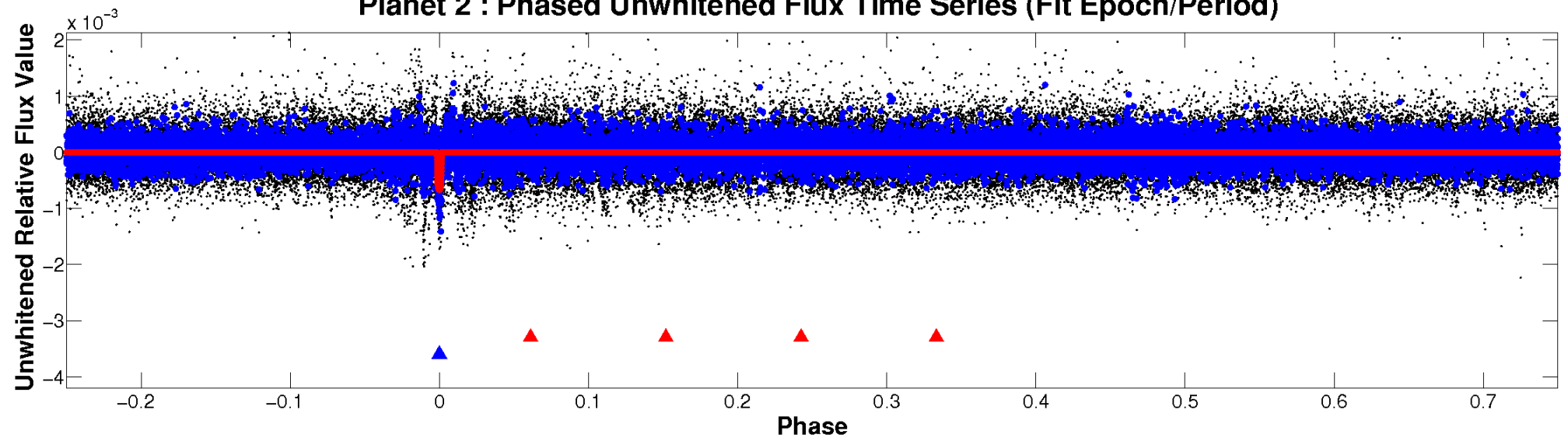
ALT Odd/Even

TCE 008941279-02

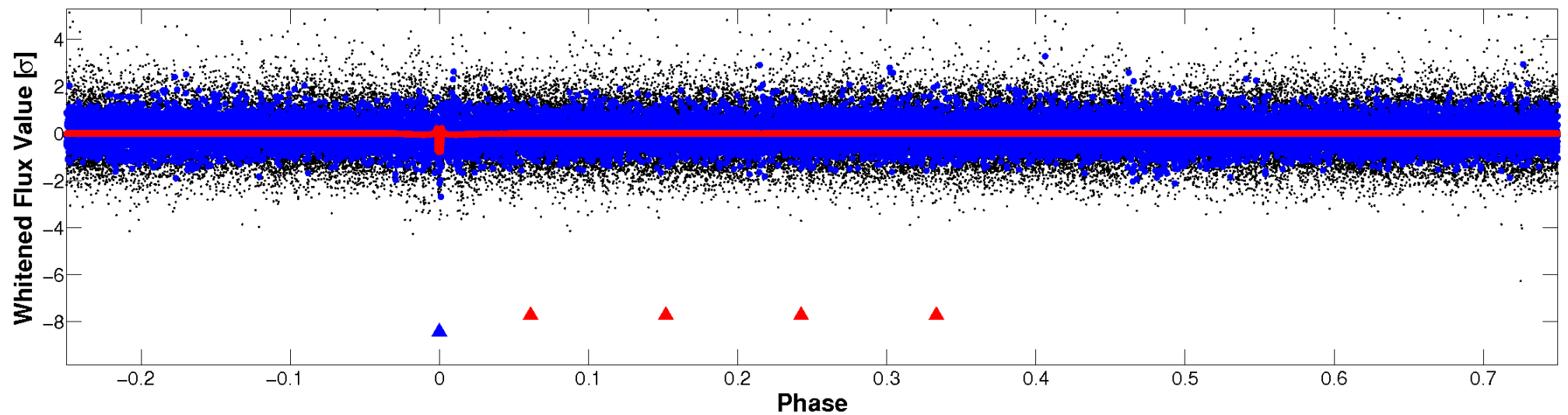


Non-Whitened Vs. Whitened Light Curve

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



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



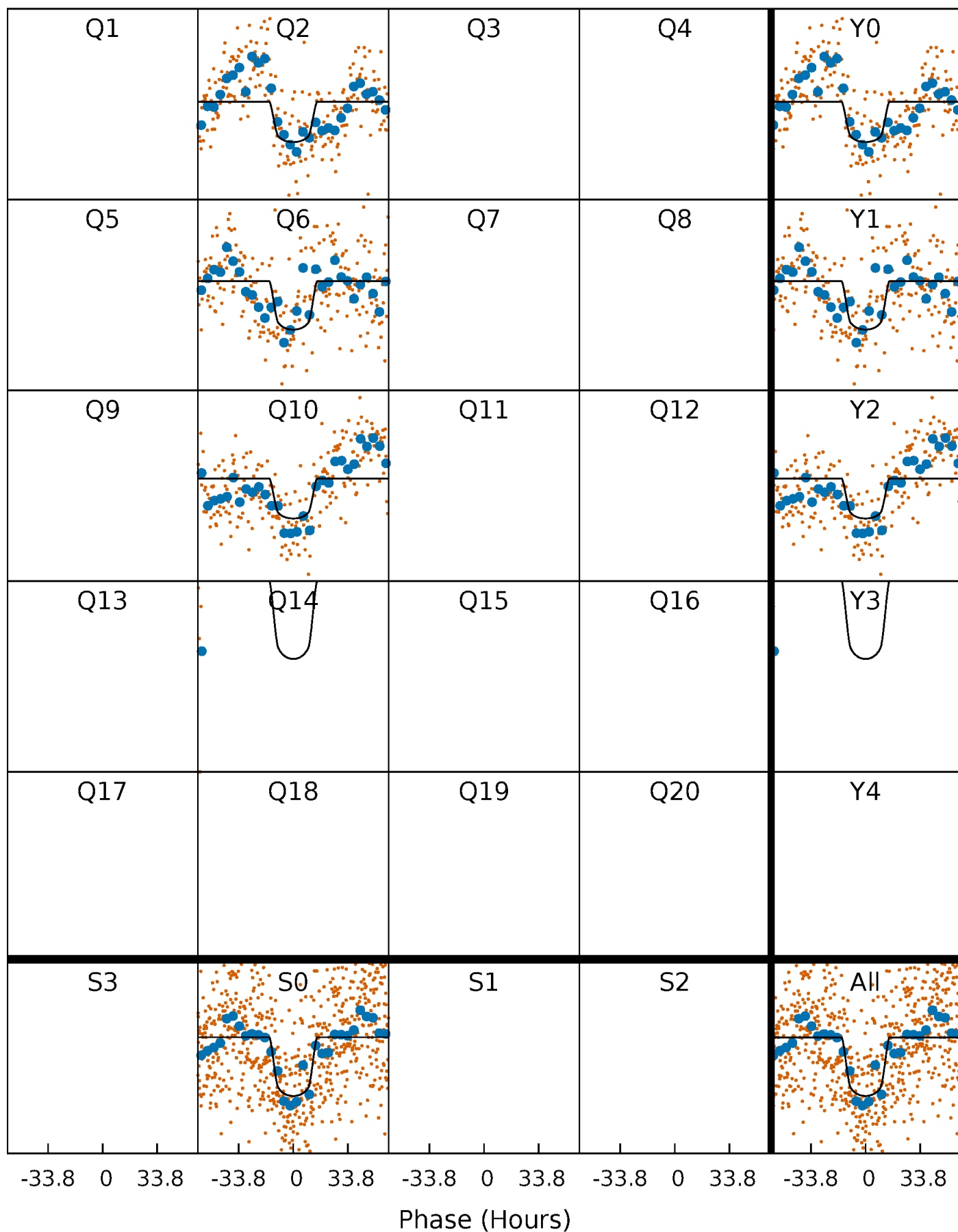
PDC Quarter-Phased Transit Curves

TCE 008941279-02 $P=371.089024$ Days $T_0=178.580965$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008941279-02 P=371.089024 Days $T_0=178.580965$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

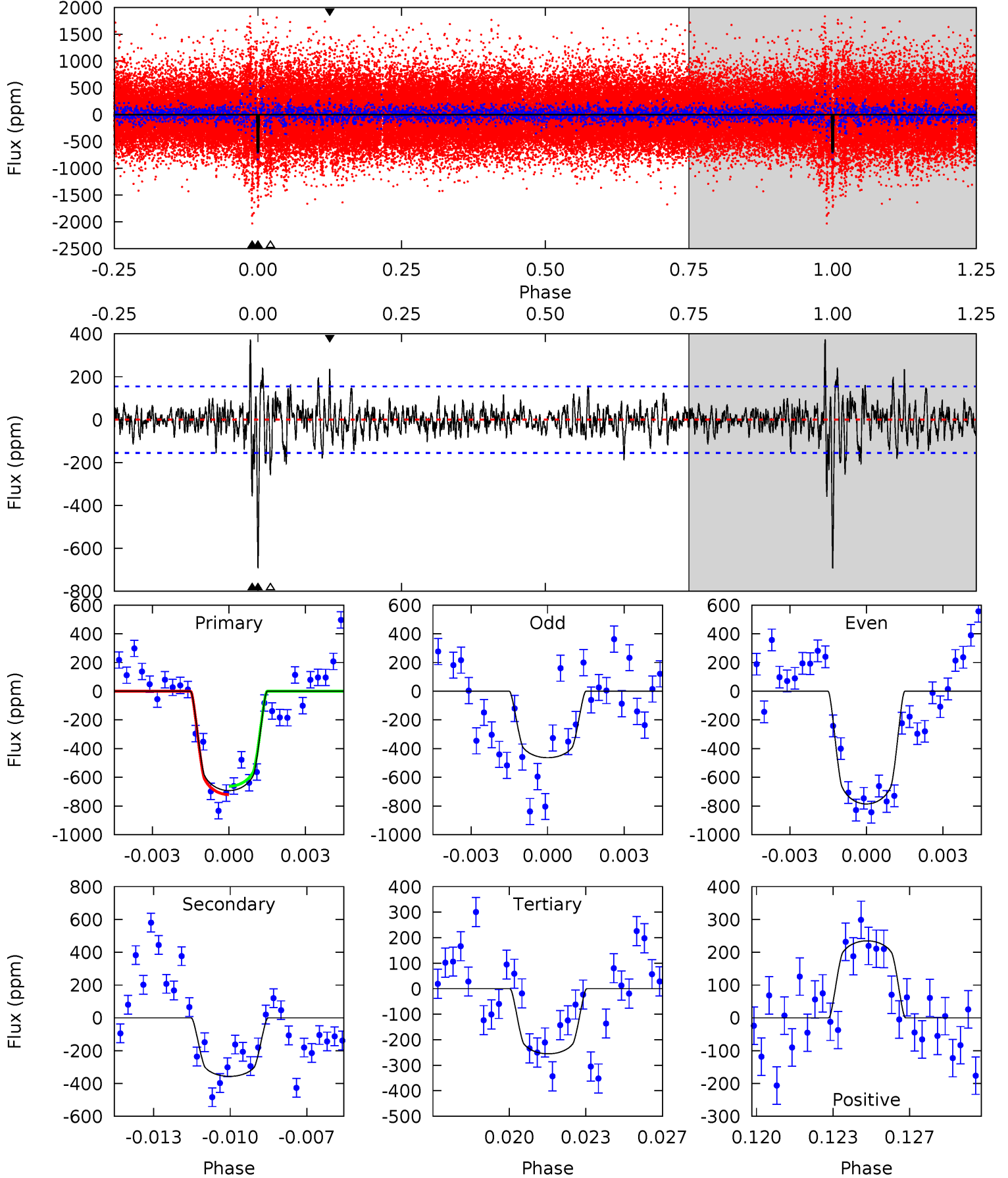
TCE 008941279-02 $P=371.073450$ Days $T_0=178.543542$ (BKJD)



DV Model-Shift Uniqueness Test

008941279-02, P = 371.089024 Days, E = 178.580965 Days

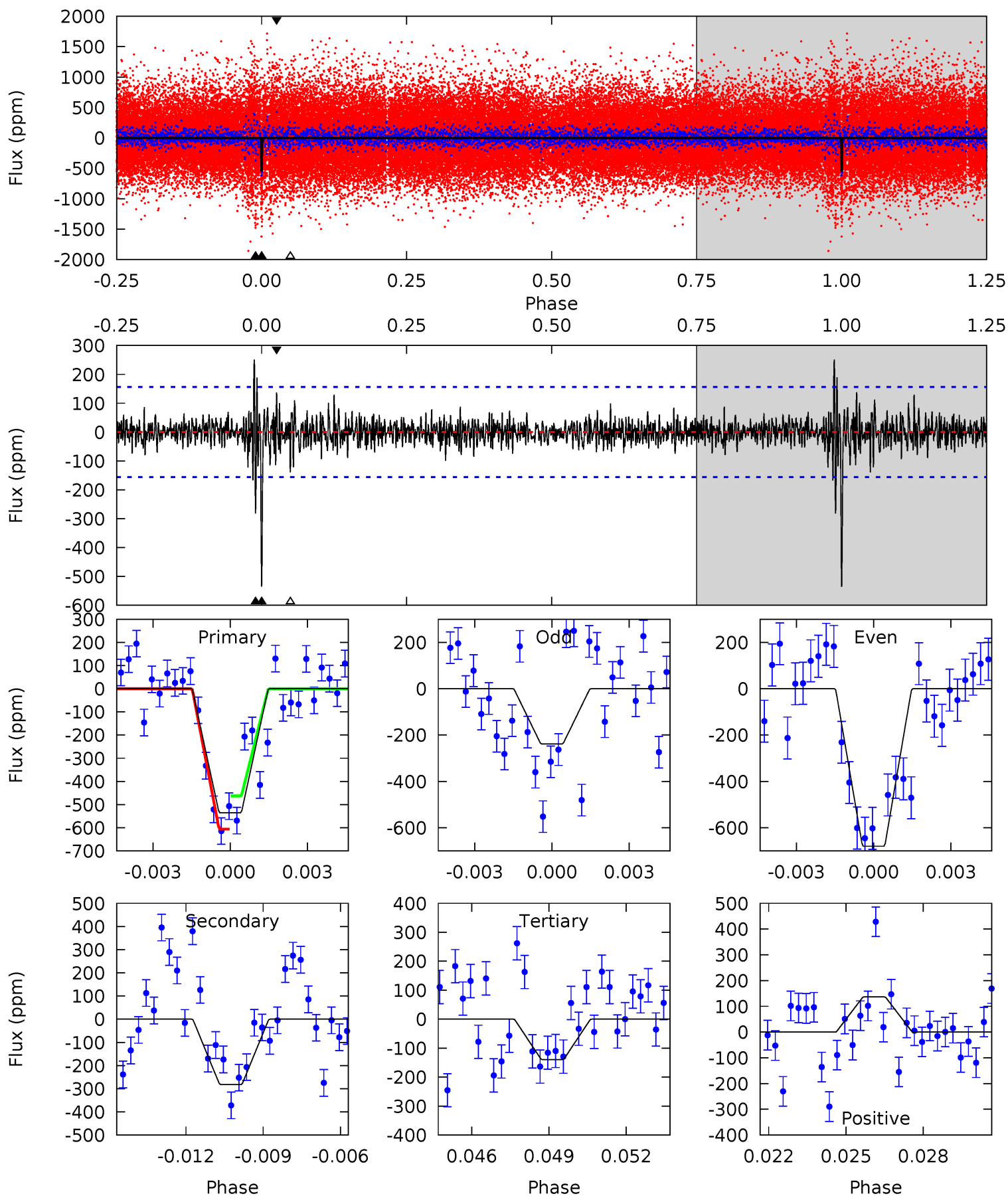
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	12.1	8.63	7.94	5.23	2.94	1.87	14.8	15.5	3.43	4.12	5.21	1.00	0.35	0.97



Alt Model-Shift Uniqueness Test

008941279-02, P = 371.073450 Days, E = 178.543542 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	9.47	4.69	4.59	5.25	2.96	1.07	13.3	13.4	4.78	4.88	7.09	0.97	0.32	2.40



Stellar Parameters For KIC 008941279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5992^{+162}_{-198}	$4.521^{+0.052}_{-0.208}$	$-0.240^{+0.300}_{-0.300}$	$0.900^{+0.278}_{-0.093}$	$0.981^{+0.121}_{-0.133}$	$1.894^{+0.394}_{-1.004}$
	+3%/-3%	+1%/-5%	+125%/-125%	+31%/-10%	+12%/-14%	+21%/-53%
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 008941279-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-357 ± 30	$2.93^{+0.49}_{-0.34}$	357^{+24}_{-18}	4941^{+253}_{-221}	22515^{+6298}_{-5915}
Alt.	-282 ± 30	$2.37^{+0.45}_{-0.32}$	357^{+26}_{-18}	5132^{+343}_{-269}	26968^{+9465}_{-7933}

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

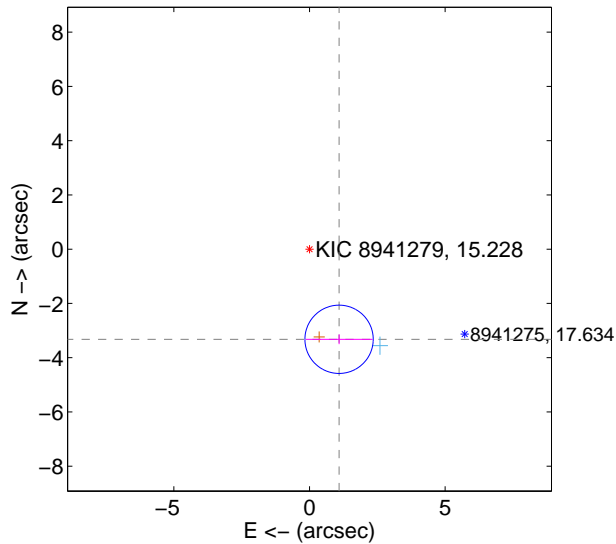
Supplemental centroid analysis for 008941279-02. Kepler magnitude: 15.23. Transit SNR 8.64

There are 1 quarters with good PRF difference image offsets

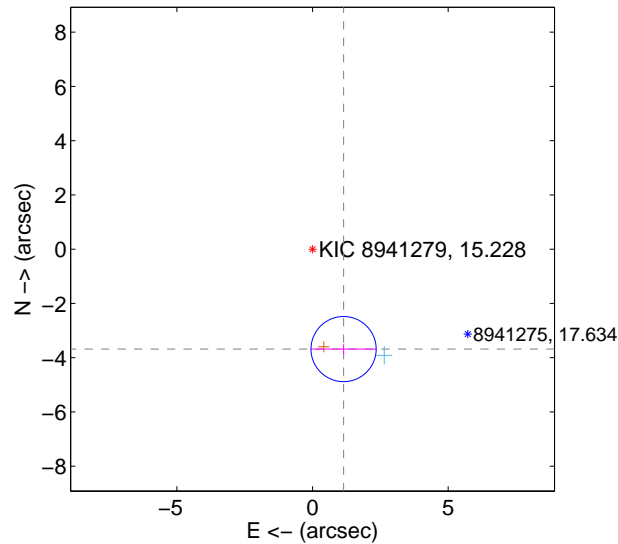
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.497 ± 0.420	8.33	-1.090 ± 1.229	-3.323 ± 0.180
PRF-fit source offset from KIC position	3.857 ± 0.400	9.63	-1.145 ± 1.222	-3.683 ± 0.177
photometric centroid source offset	1.92 ± 1.84	1.05	-1.67 ± 1.76	-0.96 ± 2.04

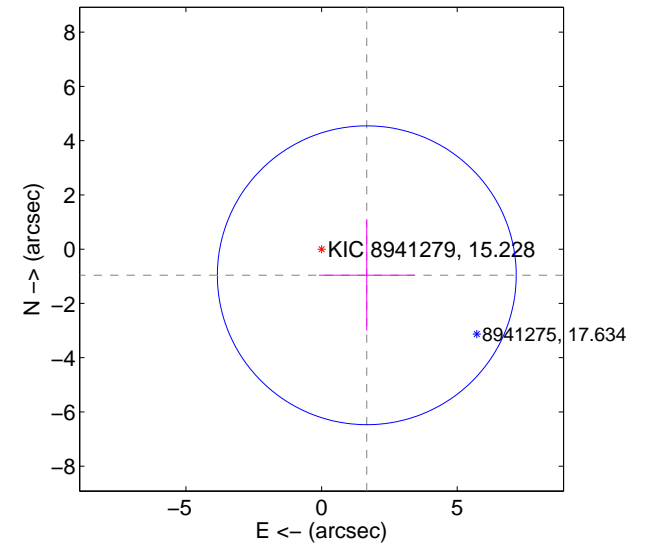
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

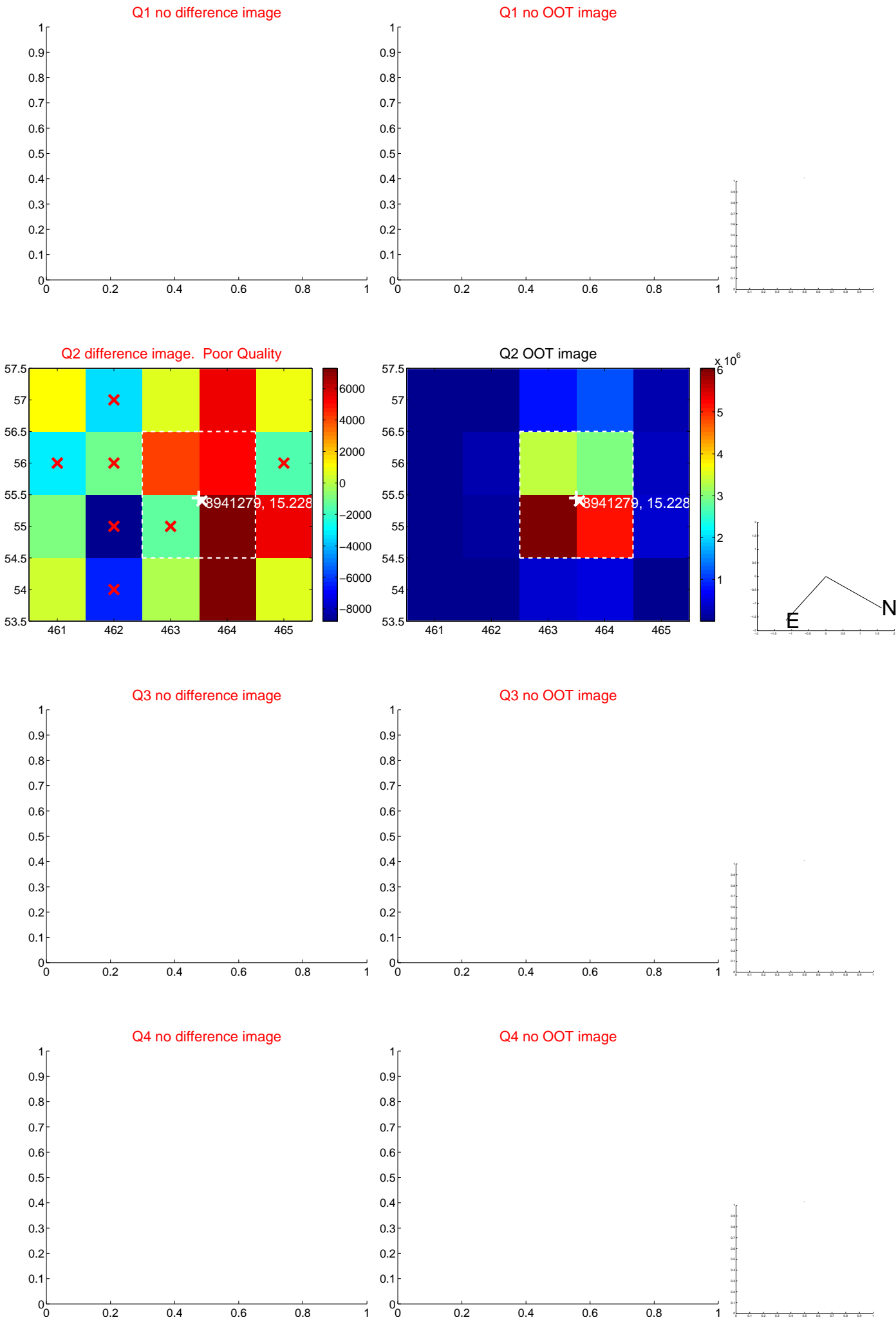


offset from photometric centroids

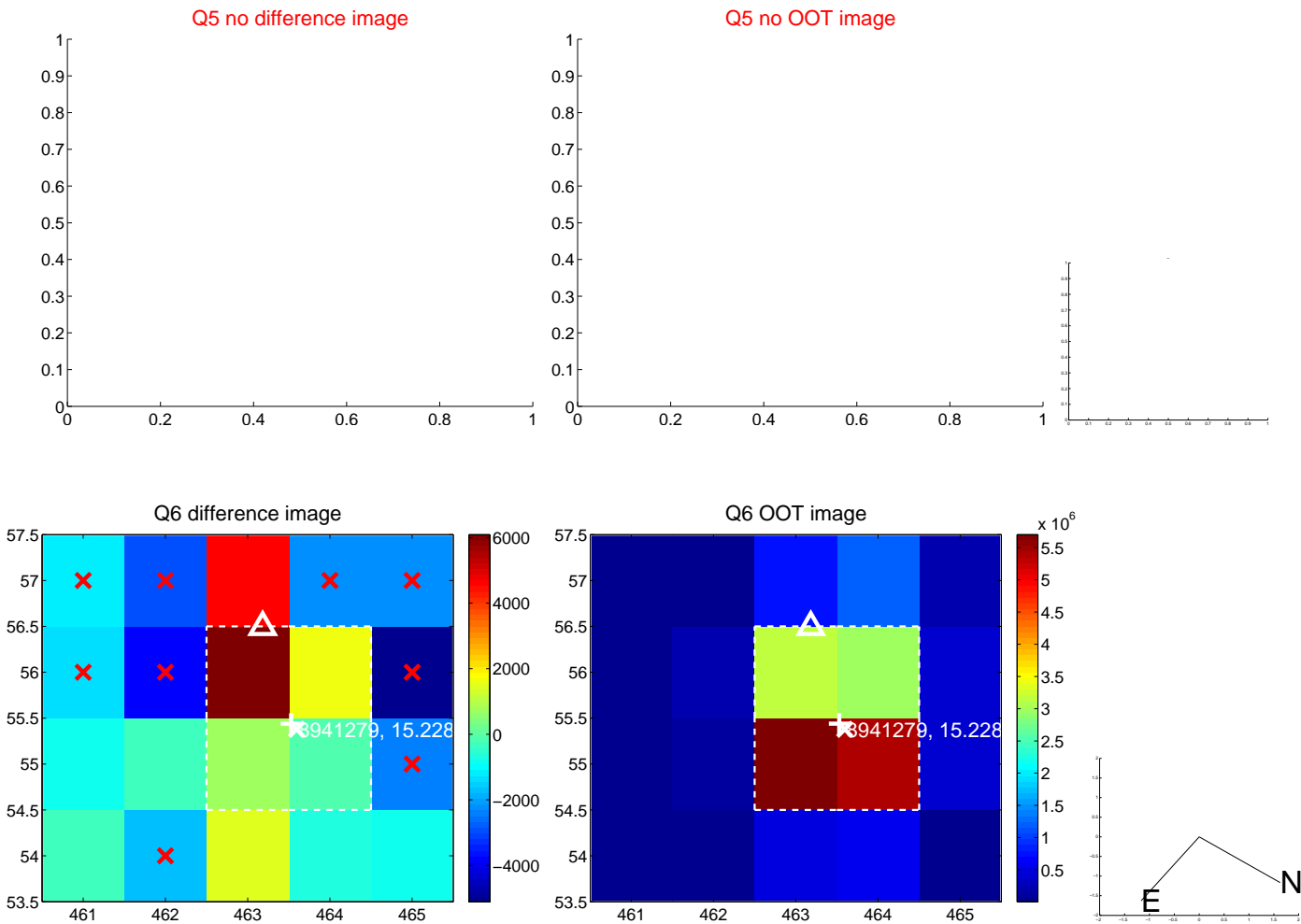


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

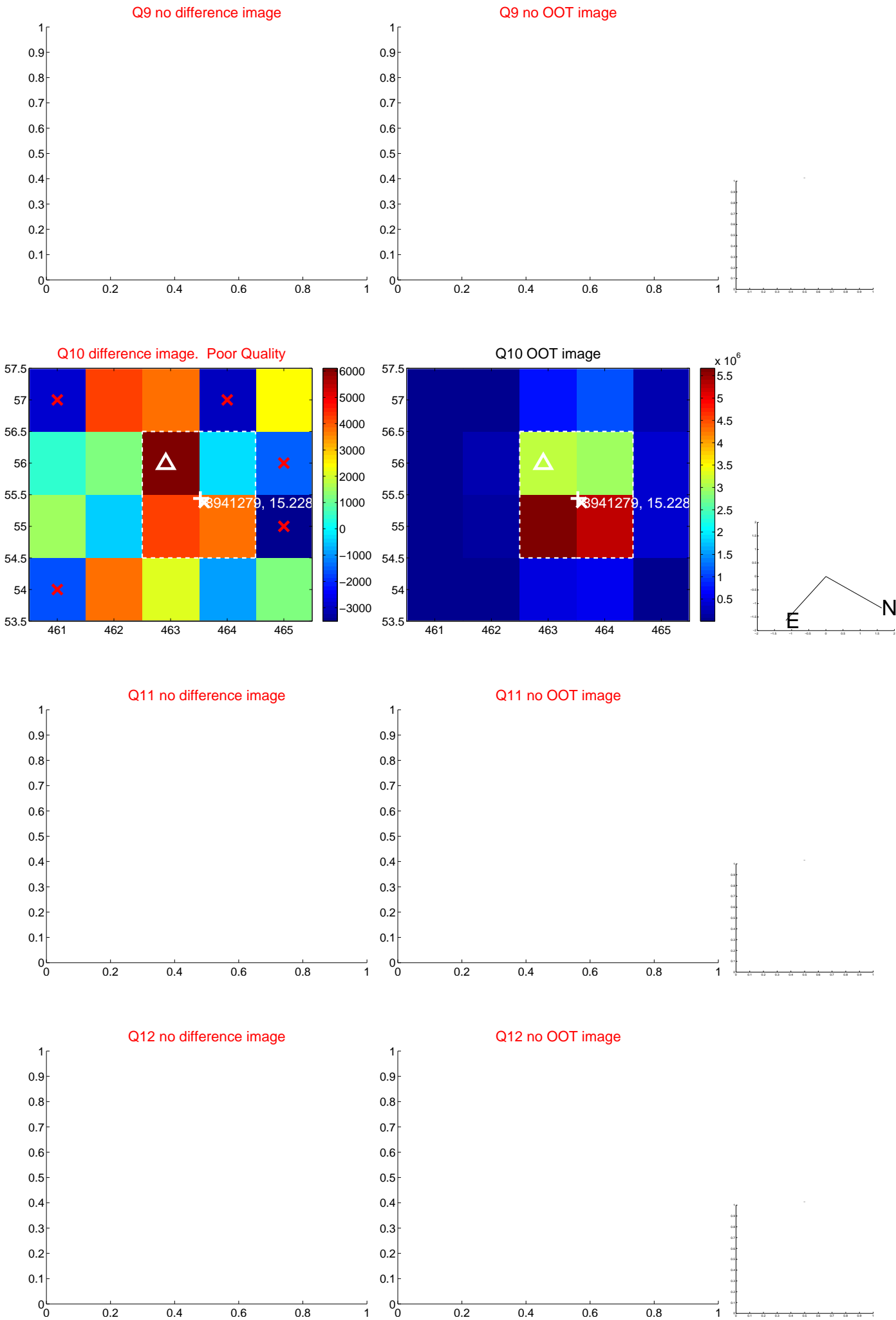
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



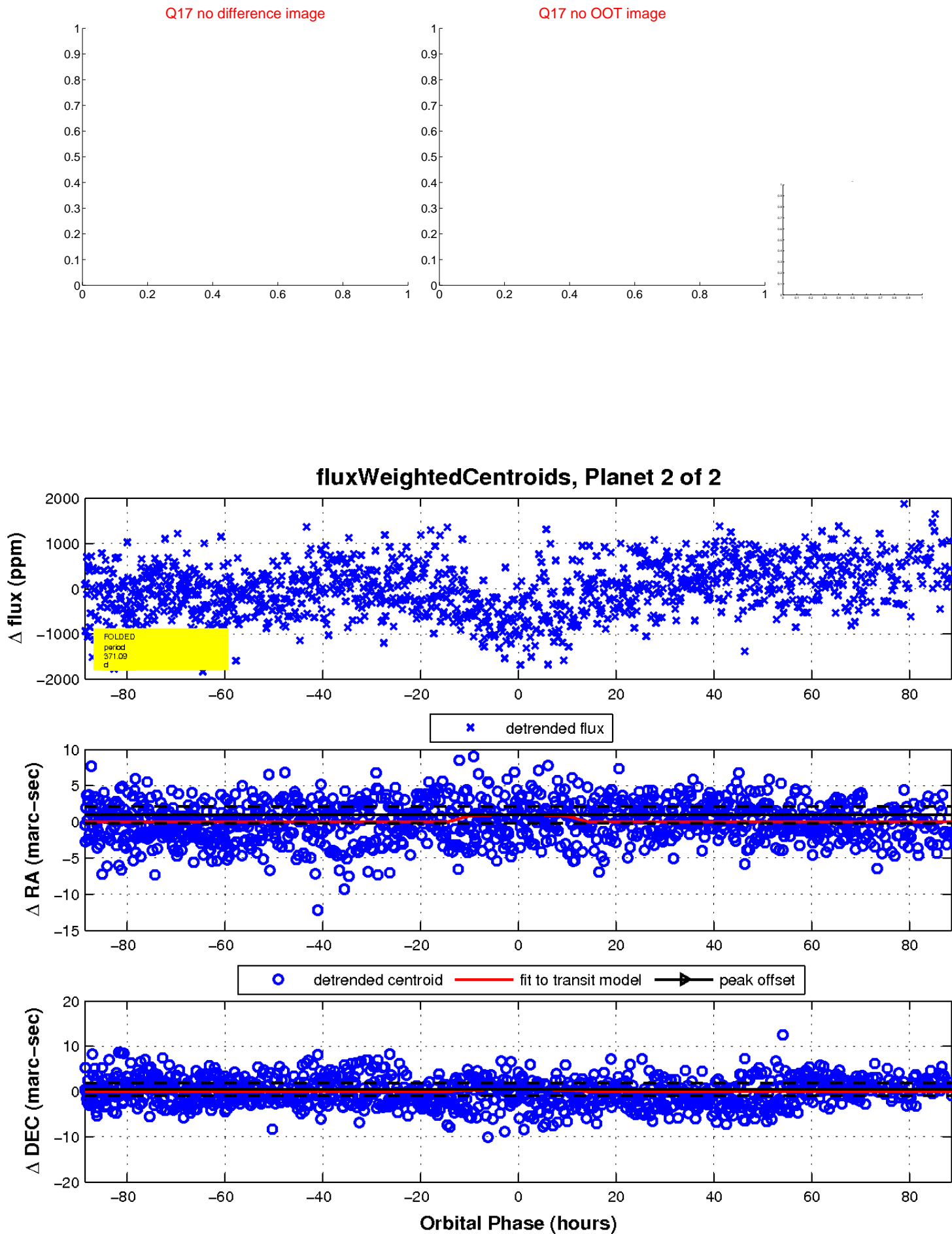
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white \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

