

KIC 007031726

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})
007031726-01	OBS	7806.01	0.566754	131.870181	29.5	2.728	13.6	11.7	138.06	3420	87.24	0.00
007031726-02	OBS	No	98.077077	145.758690	177.7	5.617	10.9	3.7	138.06	3420	236.71	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007031726-01	OBS	FP	0.00	0	1	0	1	PLANET_IN_STAR—MOD_SEC_ALT—CENT_SATURATED—EPHEM_MATCH
007031726-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

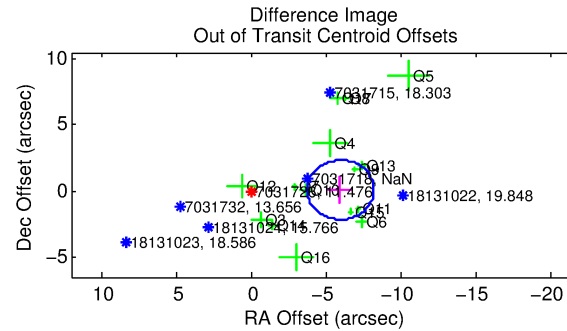
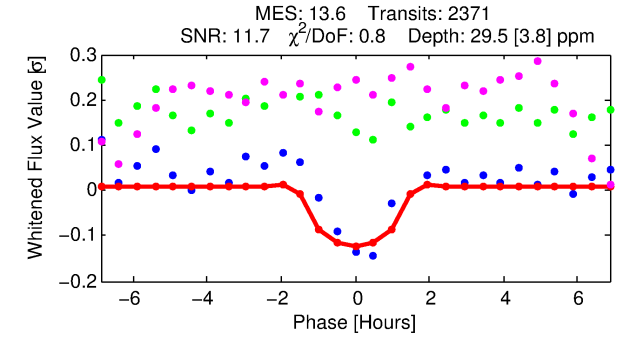
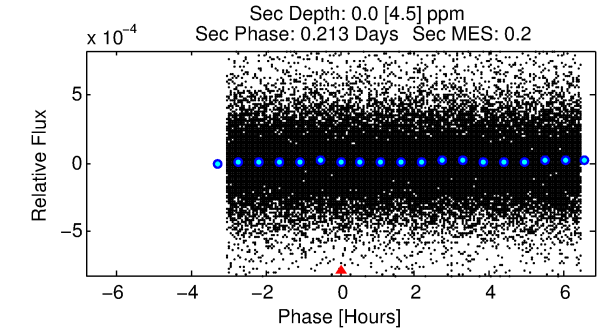
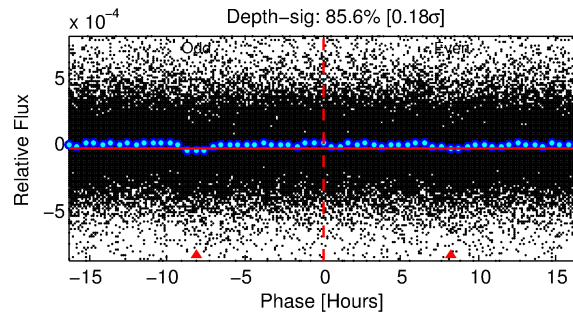
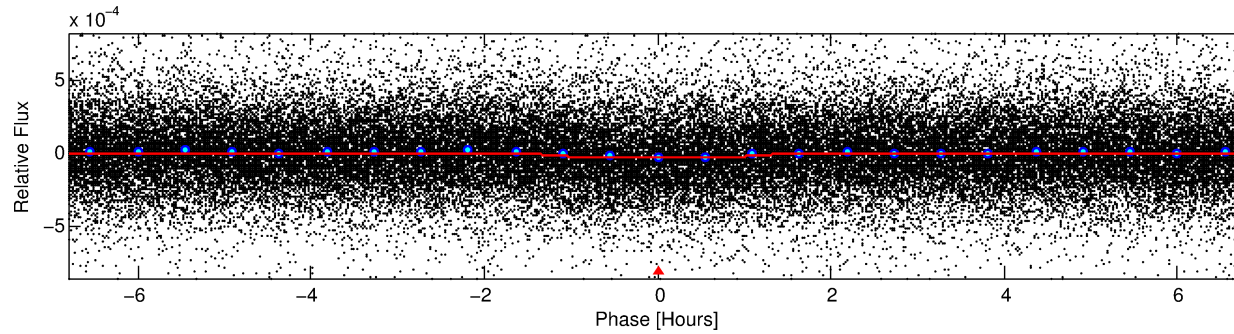
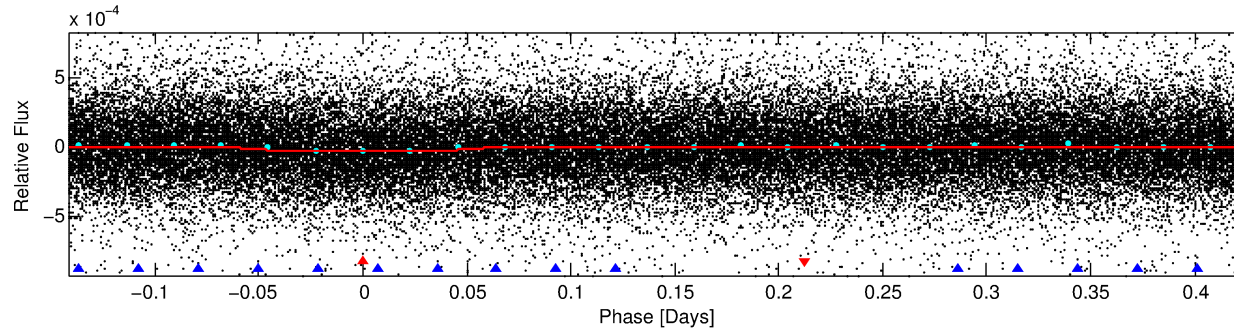
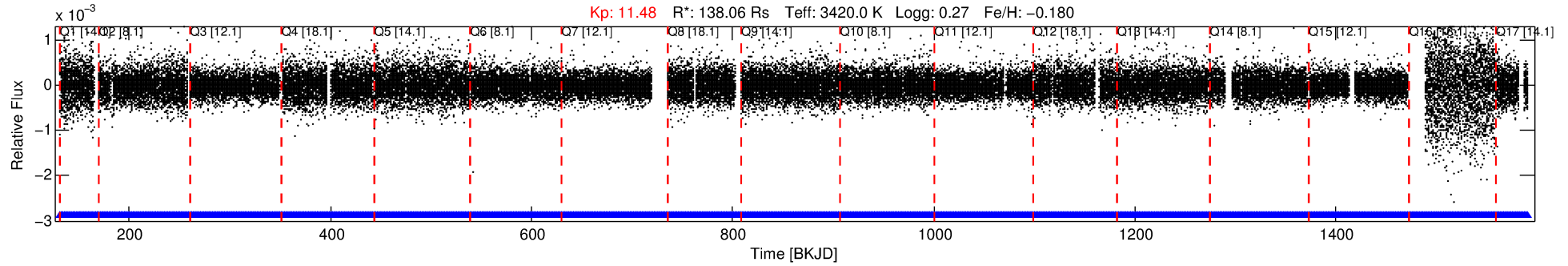
Ephemeris Match Information For 007031726-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007031726-01	7031726	RR-Lyr-pri	7198959	1:1	842.6	83	-195	7.86	11.47	21493.00	Direct-PRF	0	1.16	21.46

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7031726 Candidate: 1 of 2 Period: 0.567 d



DV Fit Results:

Period = 0.56675 [0.00001] d
 Epoch = 131.8702 [0.0030] BKJD
 Rp/R* = 0.0058 [0.0031]
 a/R* = 1.29 [0.74]
 b = 0.81 [0.63]
 Seff = N/A
 Teq = N/A
 Rp = 87.24 [51.75] Re
 a = N/A
 Ag = N/A
 Teff = N/A

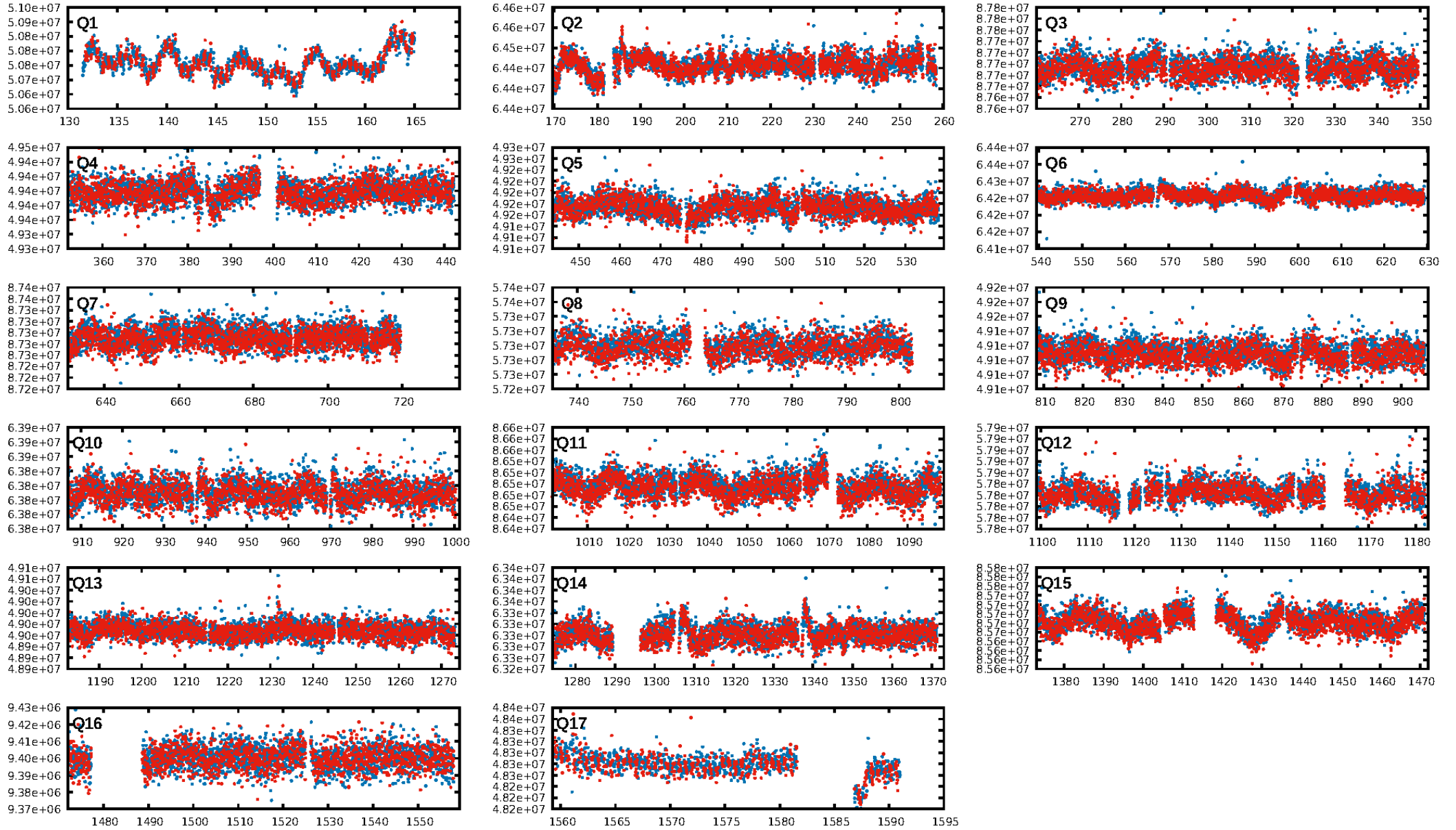
DV Diagnostic Results:

ShortPeriod-sig: N/A
 LongPeriod-sig: 100.0% [374.75σ]
 ModelChiSquare2-sig: N/A
 ModelChiSquareGof-sig: N/A
 Bootstrap-pfa: 1.94e-33
 RollingBand-fgt: 1.00 [2265/2265]
 GhostDiagnostic-chr: 0.4879
 Centroid-sig: 0.0%
 Centroid-so: 2.655 arcsec [3.26σ]
 OotOffset-rm: 5.990 arcsec [8.02σ]
 KicOffset-rm: 2.063 arcsec [3.27σ]
 OotOffset-st: 3/4/4/4 [15]
 KicOffset-st: 3/4/4/4 [15]
 DiffImageQuality-fgm: 0.07 [1/15]
 DiffImageOverlap-fno: 1.00 [17/17]

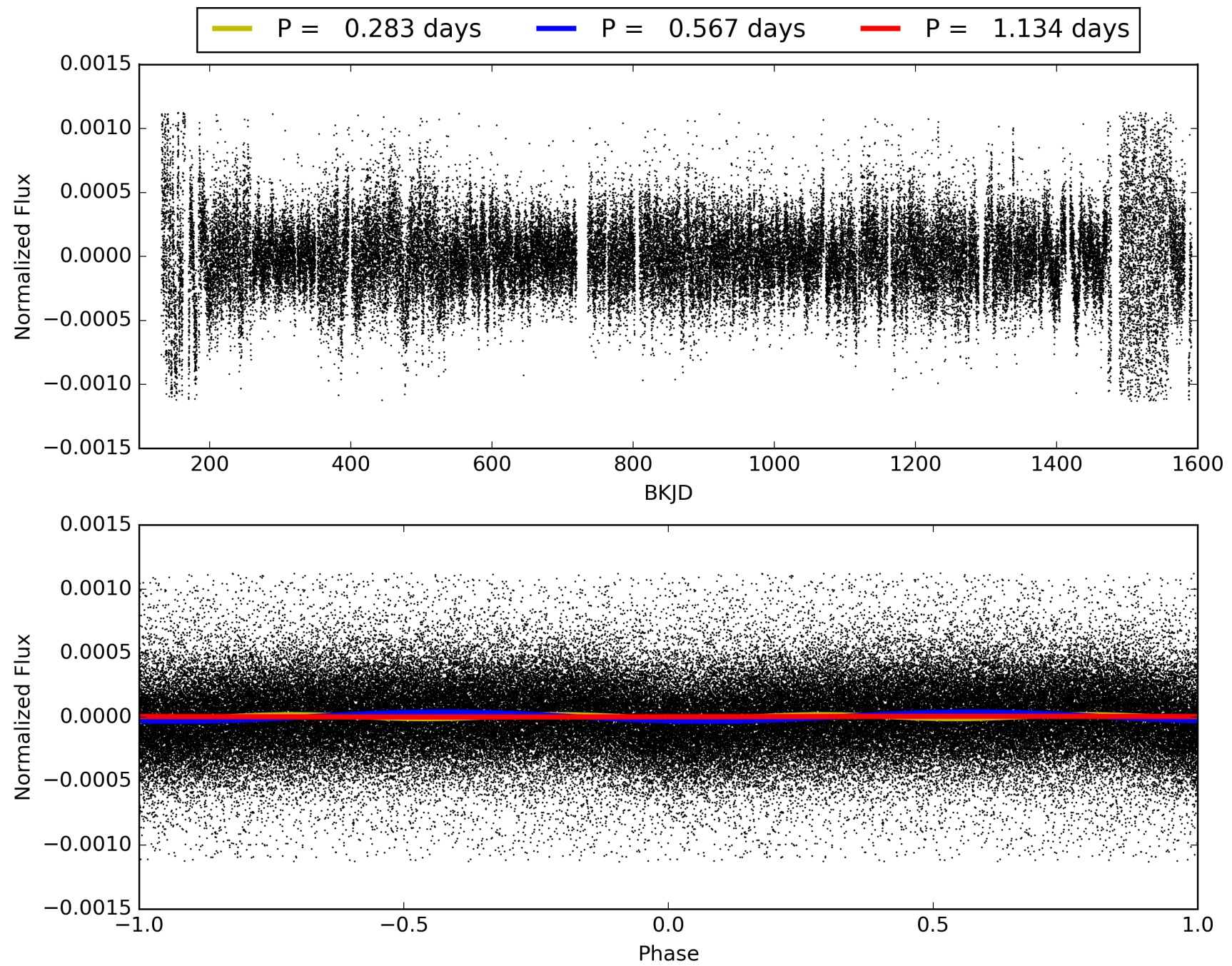
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:41:58 Z

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

TCE 007031726-01, PDC Light Curves

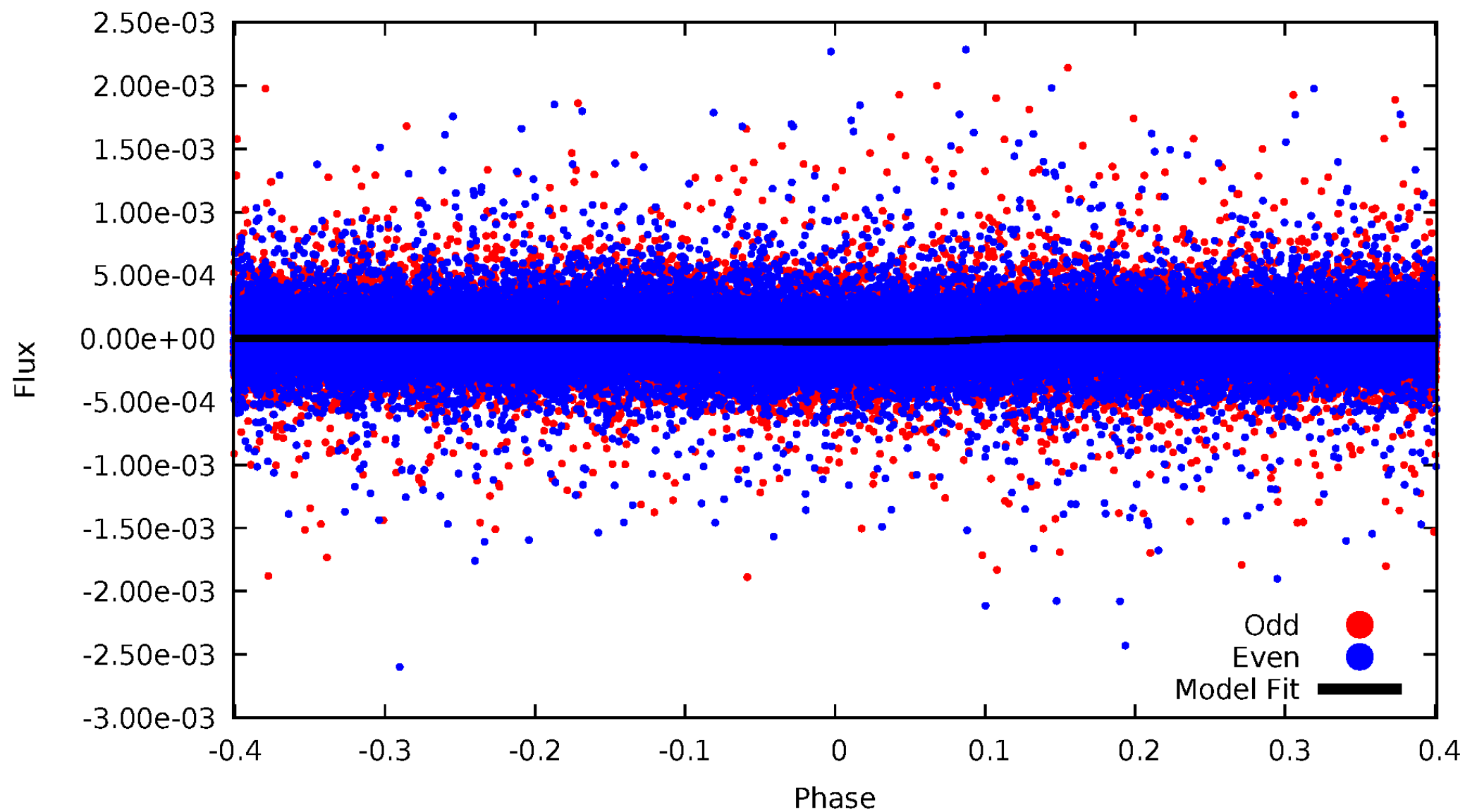


TCE 007031726-01



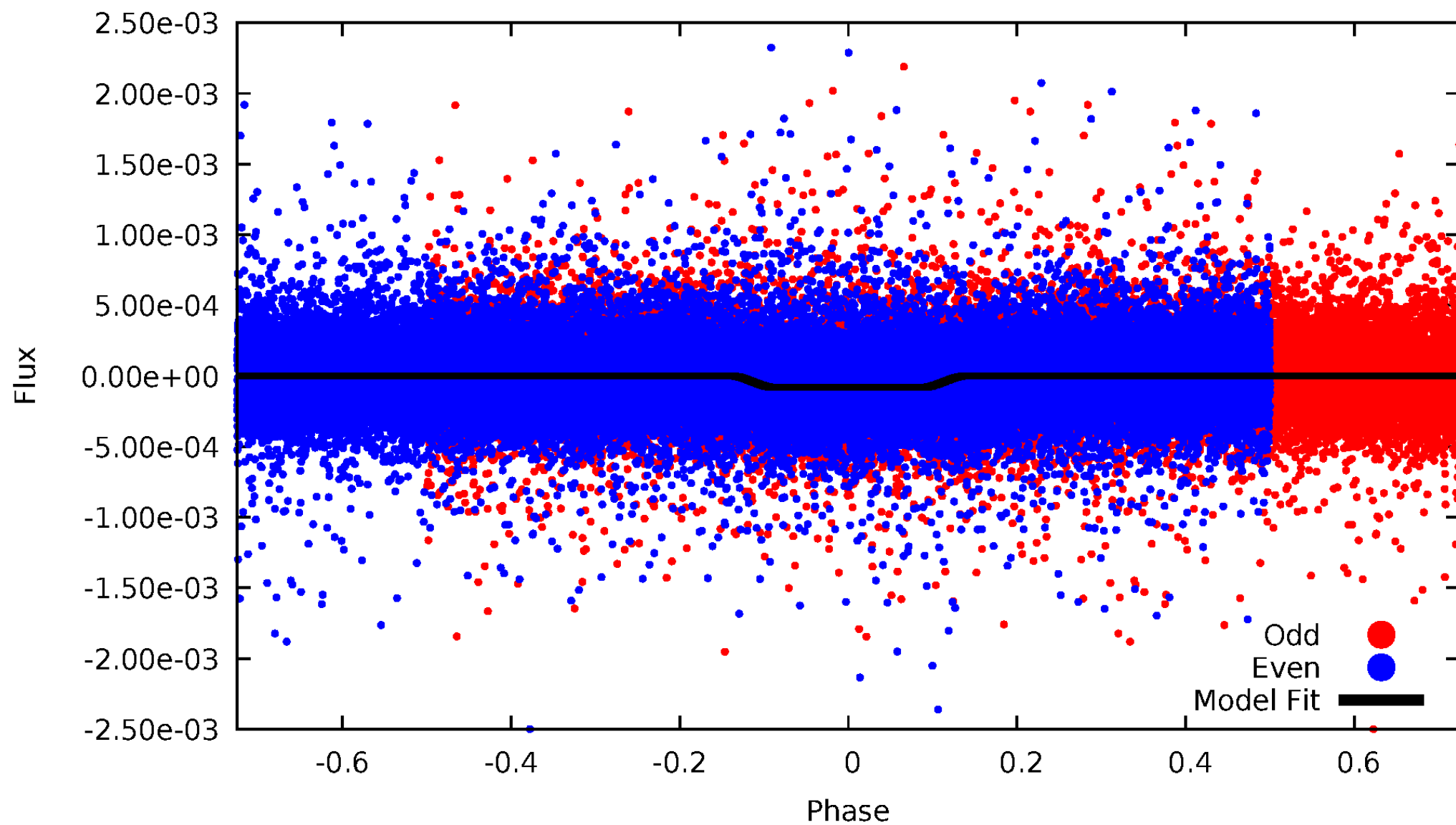
DV Odd/Even

TCE 007031726-01



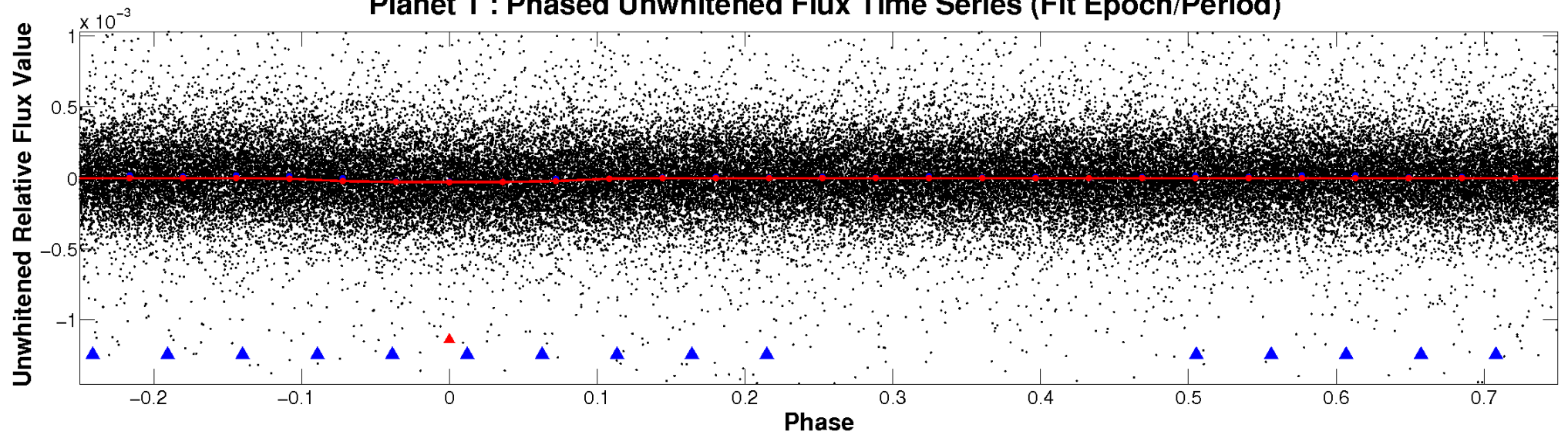
ALT Odd/Even

TCE 007031726-01

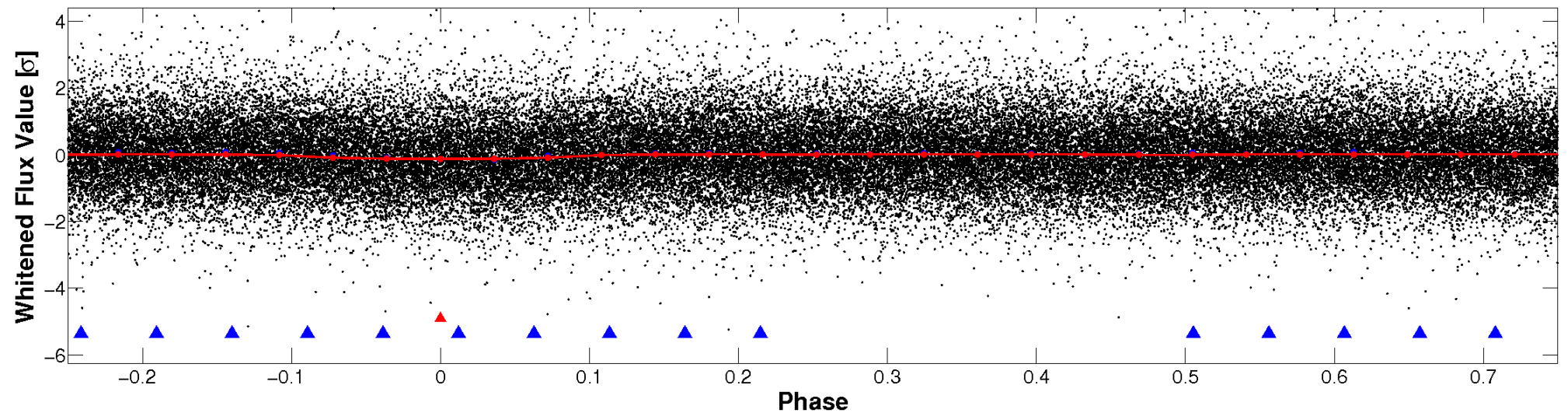


Non-Whitened Vs. Whitened Light Curve

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

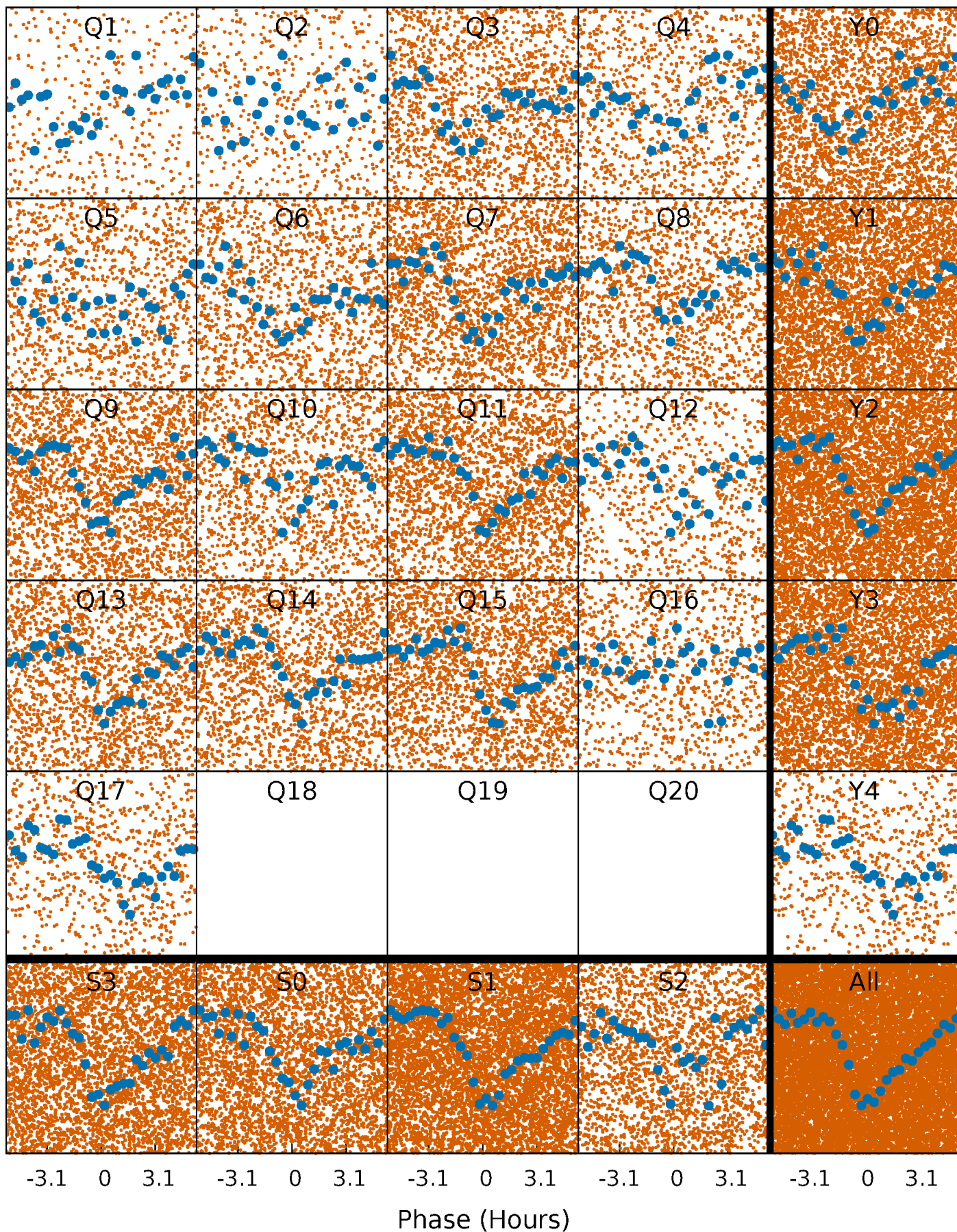


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



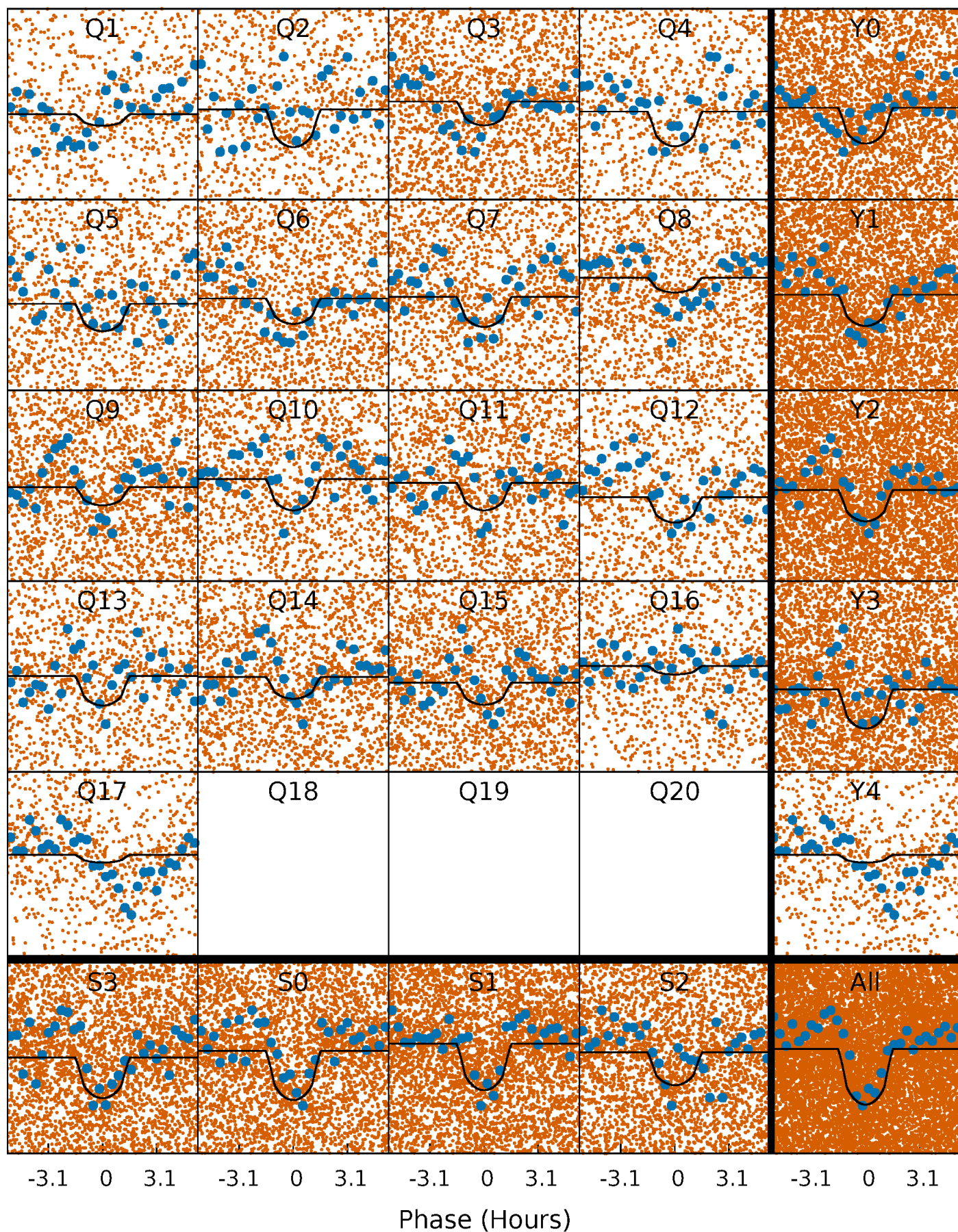
PDC Quarter-Phased Transit Curves

TCE 007031726-01 P= 0.566754 Days $T_0=131.870181$ (BKJD)



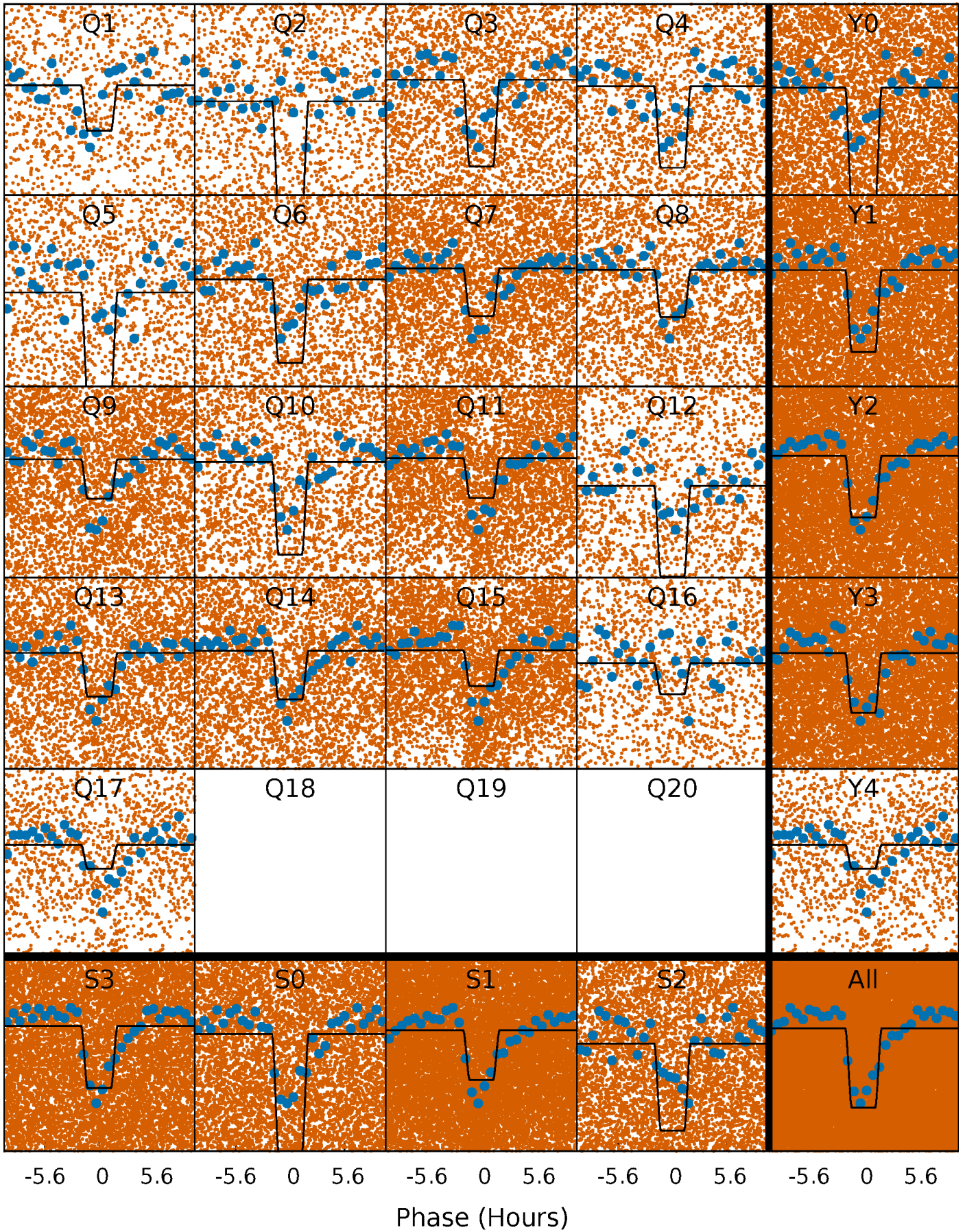
DV Quarter-Phased Transit Curves

TCE 007031726-01 P= 0.566754 Days $T_0=131.870181$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

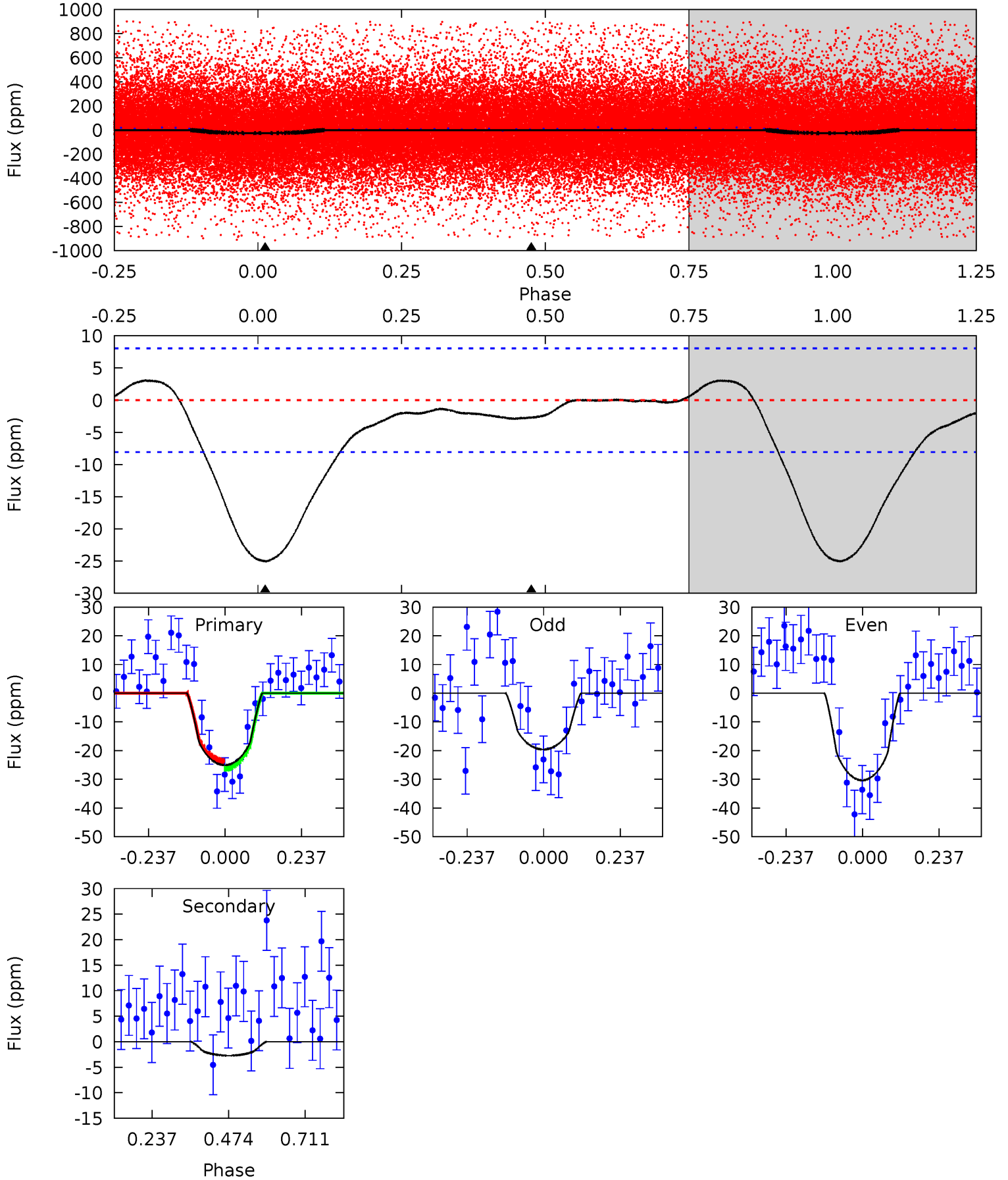
TCE 007031726-01 P= 0.566782 Days $T_0=131.850450$ (BKJD)



DV Model-Shift Uniqueness Test

007031726-01, P = 0.566754 Days, E = 131.303427 Days

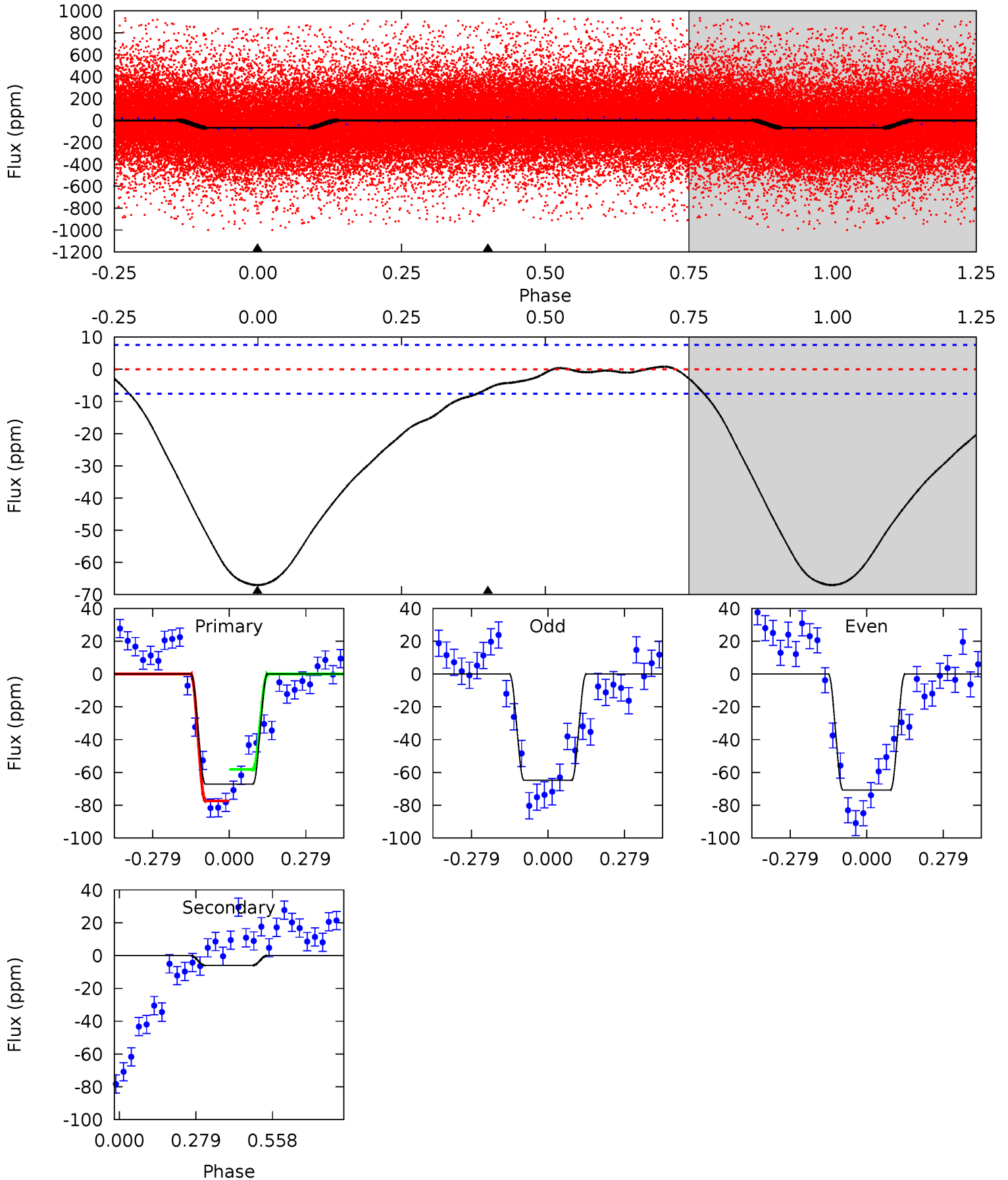
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	1.48	0	0	4.38	1.18	0.75	13.6	13.6	1.48	1.48	2.93	0.82	0.11	0.68



Alt Model-Shift Uniqueness Test

007031726-01, P = 0.566782 Days, E = 131.283668 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.4	3.43	0	0	4.34	1.08	0.53	38.4	38.4	3.43	3.43	1.71	0.86	0.01	5.62



Stellar Parameters For KIC 007031726

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3420^{+111}_{-91}	$0.269^{+0.255}_{-0.085}$	$-0.180^{+0.250}_{-0.150}$	$138.056^{+11.328}_{-33.983}$	$1.291^{+0.214}_{-0.214}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+95%/-32%	+139%/-83%	+8%/-25%	+17%/-17%	+136%/-25%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 007031726-01 / KOI 7806.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3 ± 2	$84.28^{+49.65}_{-41.73}$	20169^{+1108}_{-1357}	-21759^{+3555}_{-4006}	$0.000^{+0.000}_{-0.000}$
Alt.	-6 ± 2	$130.55^{+50.44}_{-47.25}$	20235^{+1041}_{-1260}	-21999^{+3257}_{-3755}	$0.000^{+0.000}_{-0.000}$

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

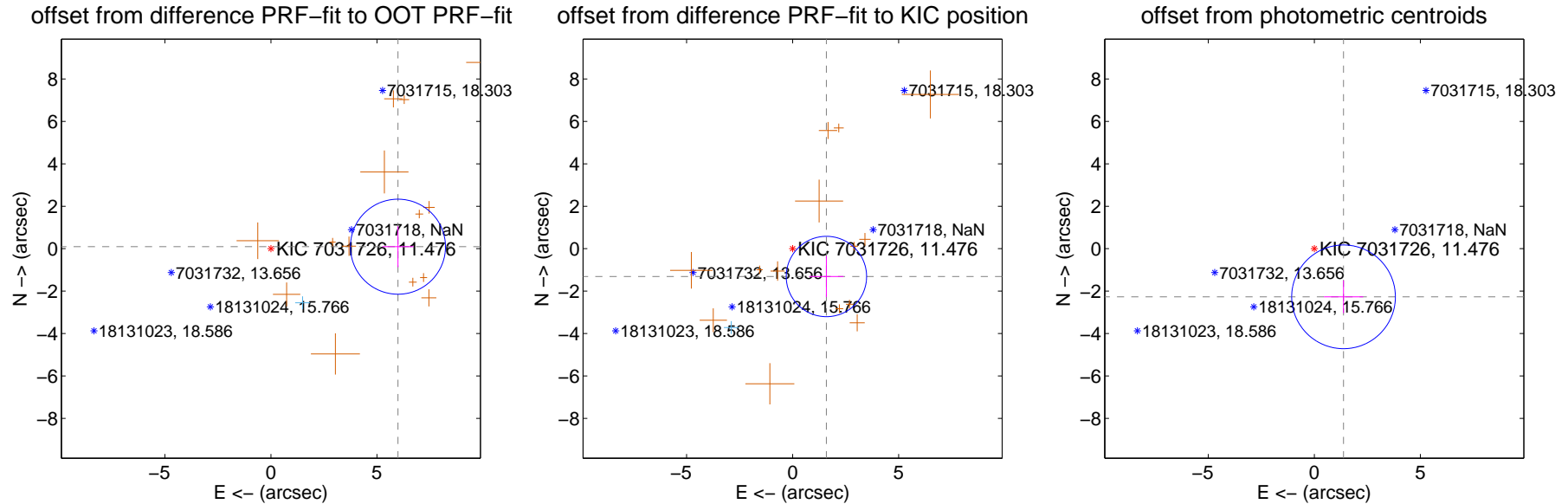
DV Centroid Data

Supplemental centroid analysis for 007031726-01. **Kepler magnitude: 11.48.** Transit SNR 11.71

There are 1 quarters with good PRF difference image offsets

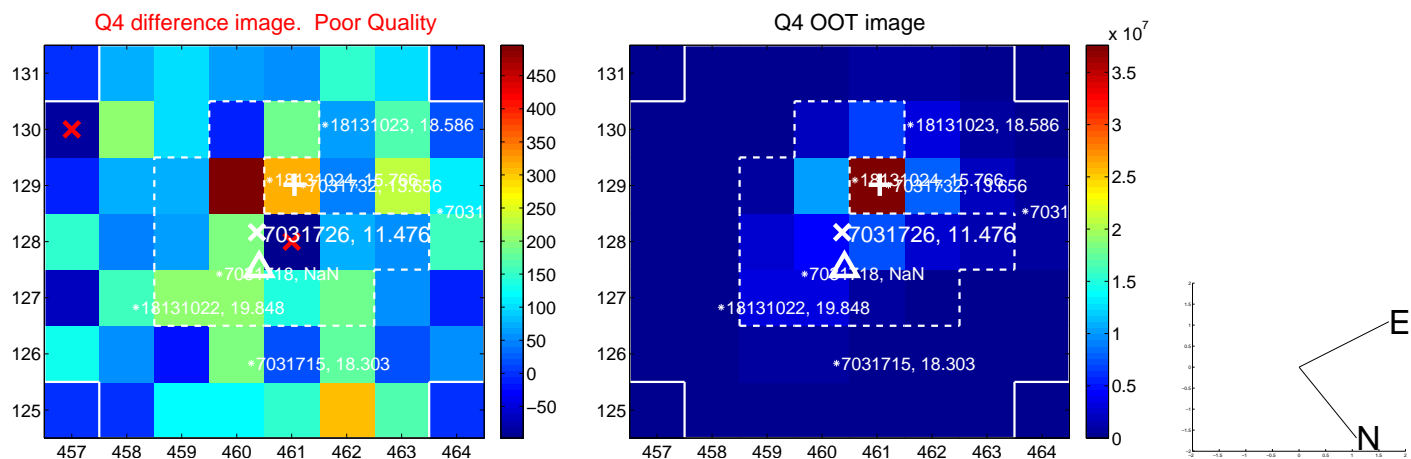
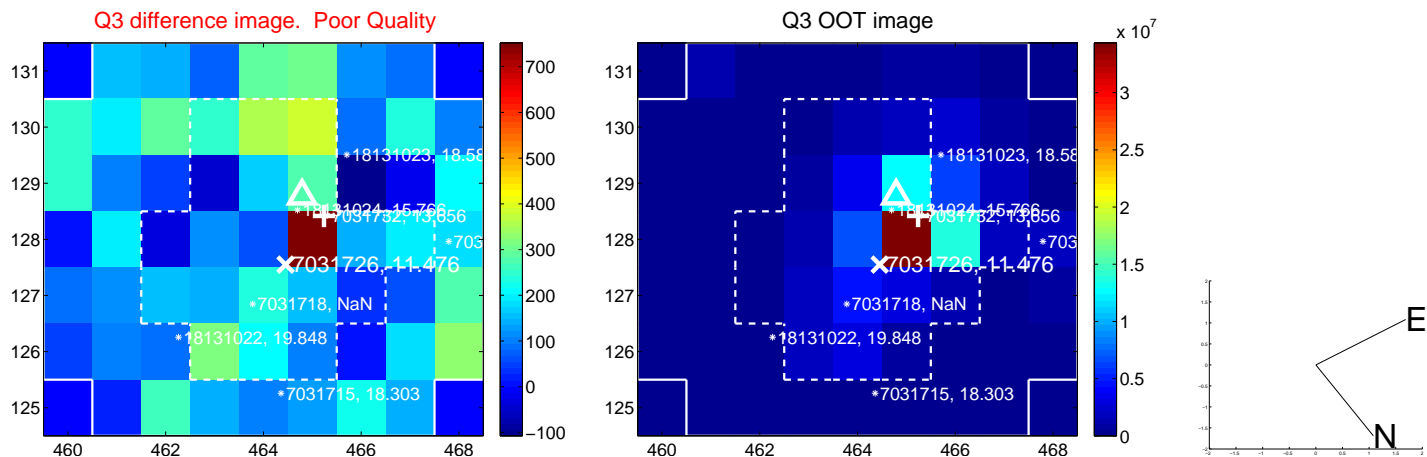
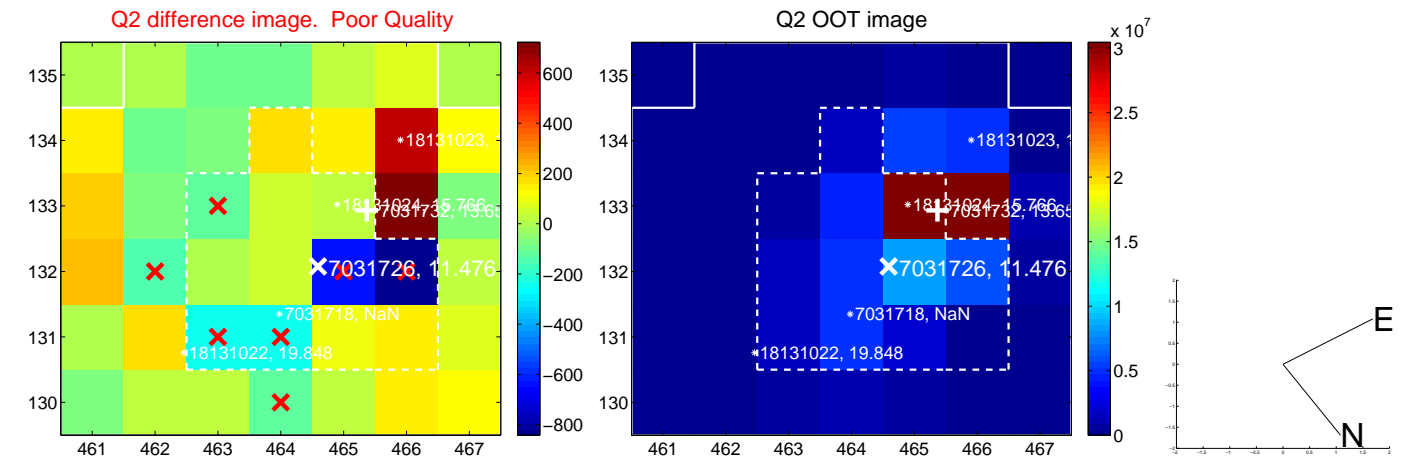
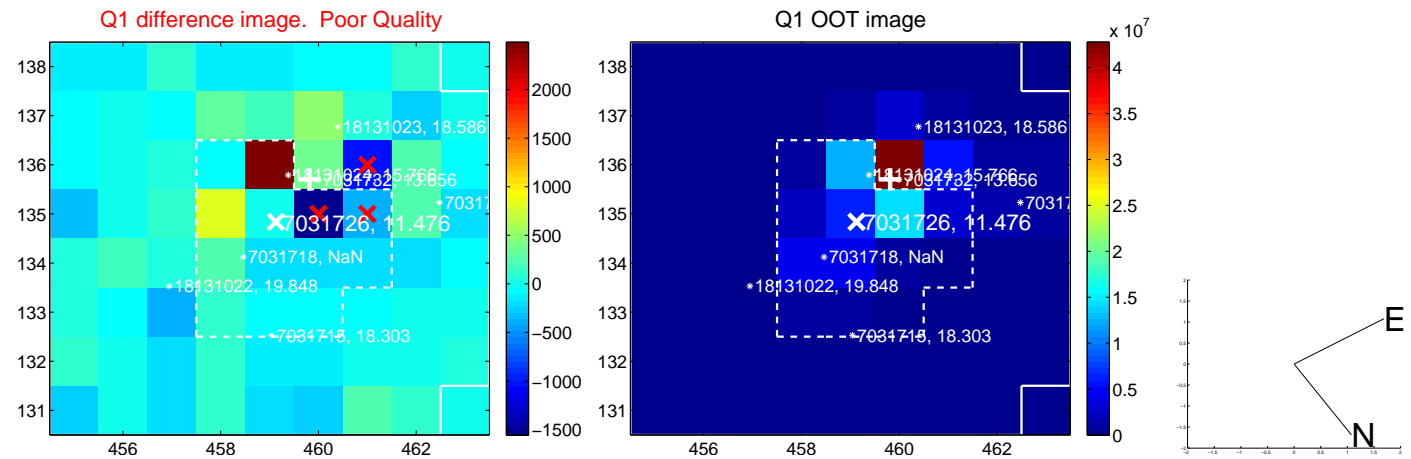
The OOT PRF centroid is offset from the target star catalog position by about 4.37 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.990 ± 0.747	8.02	-5.989 ± 0.740	0.094 ± 0.963
PRF-fit source offset from KIC position	2.063 ± 0.631	3.27	-1.593 ± 0.804	-1.311 ± 0.970
photometric centroid source offset	2.65 ± 0.81	3.26	-1.38 ± 0.92	-2.27 ± 0.77

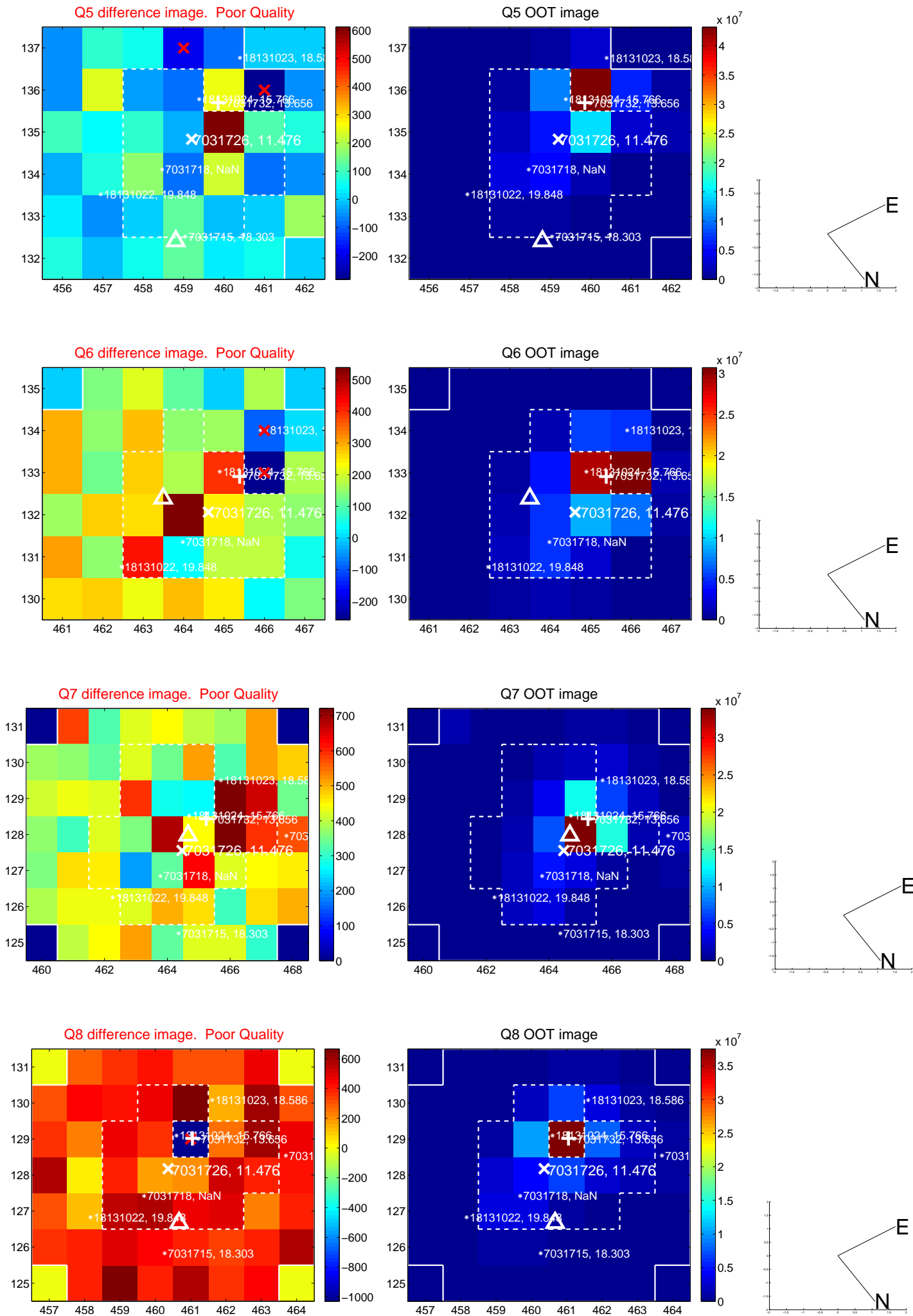


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

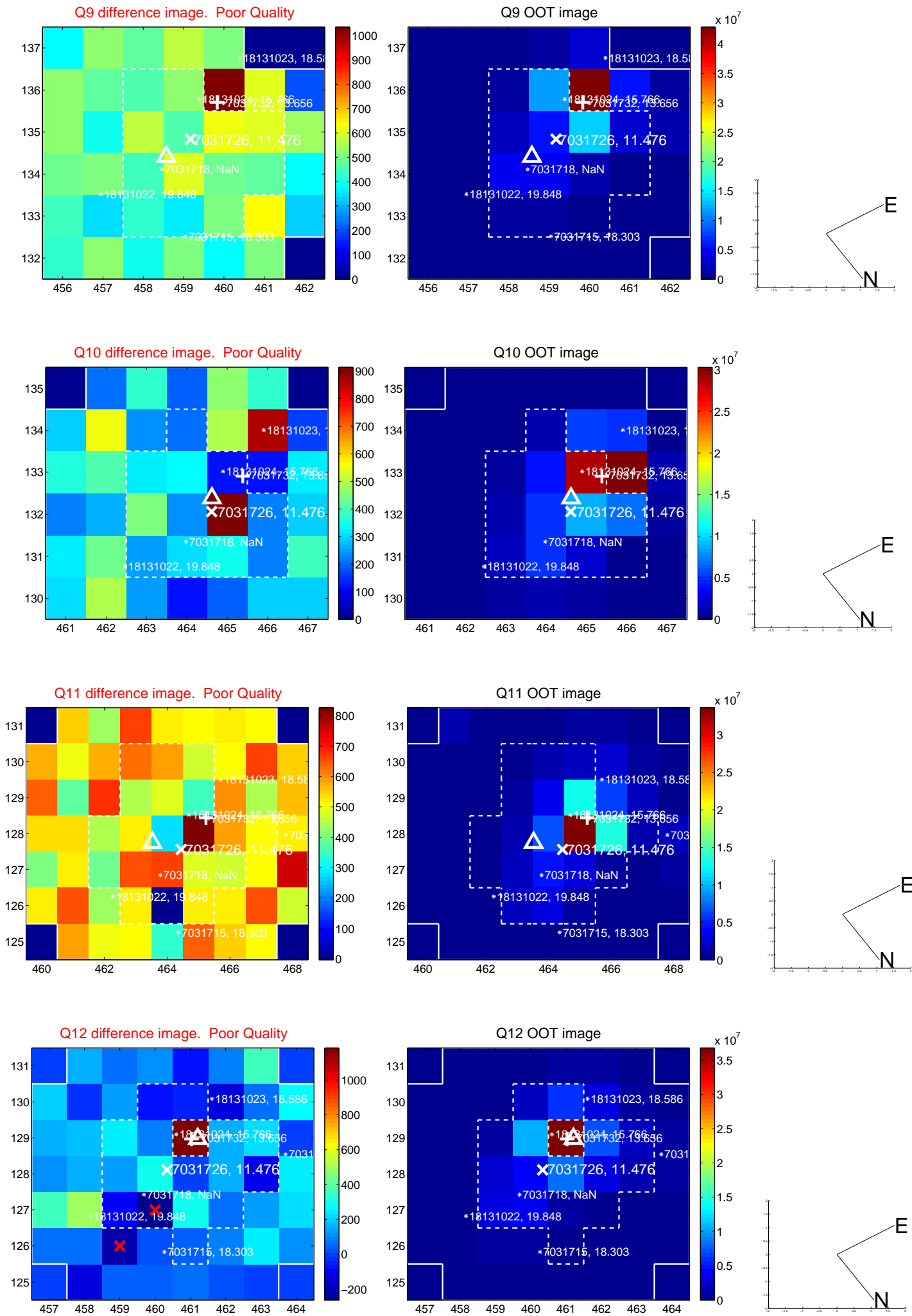
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



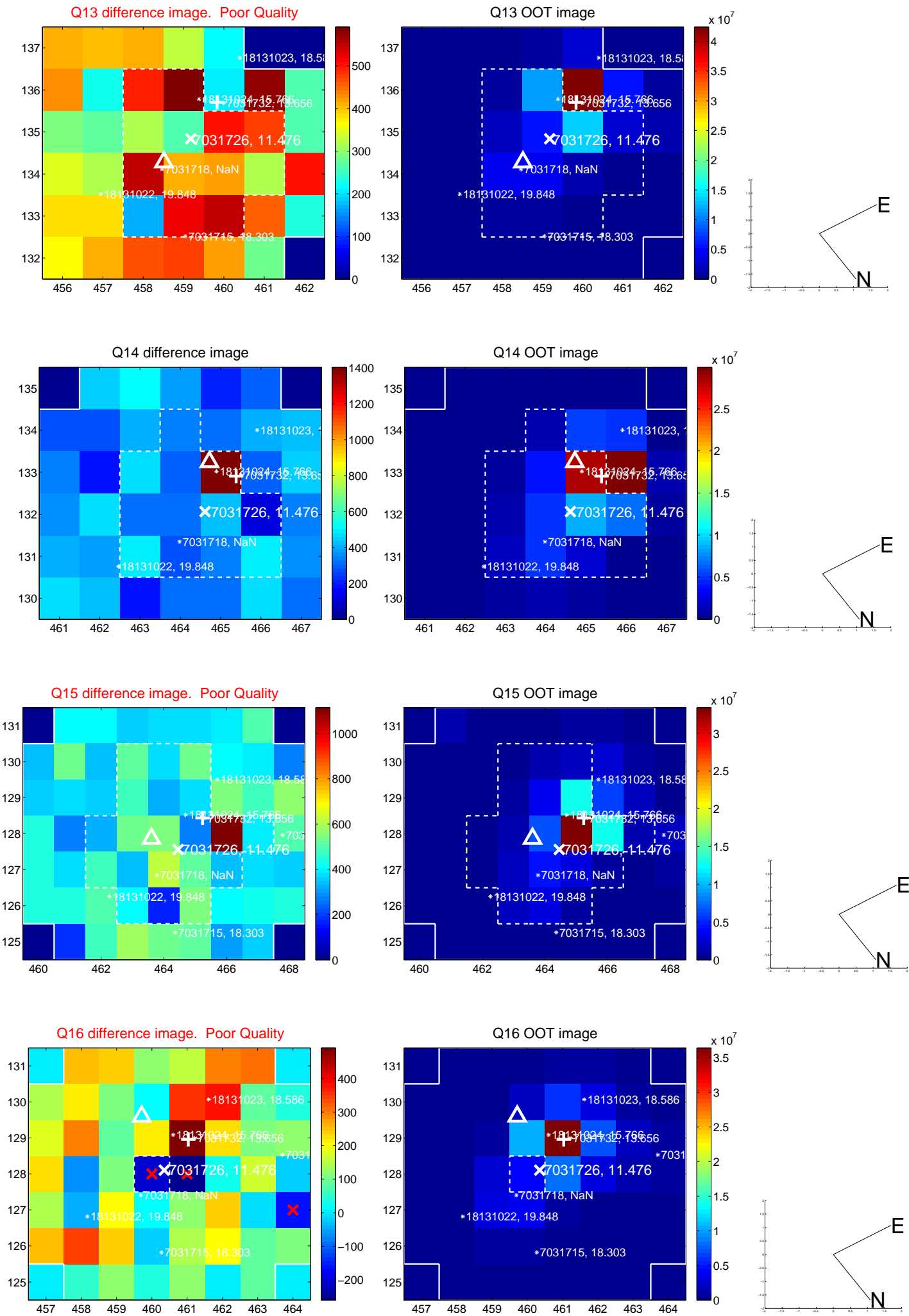
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



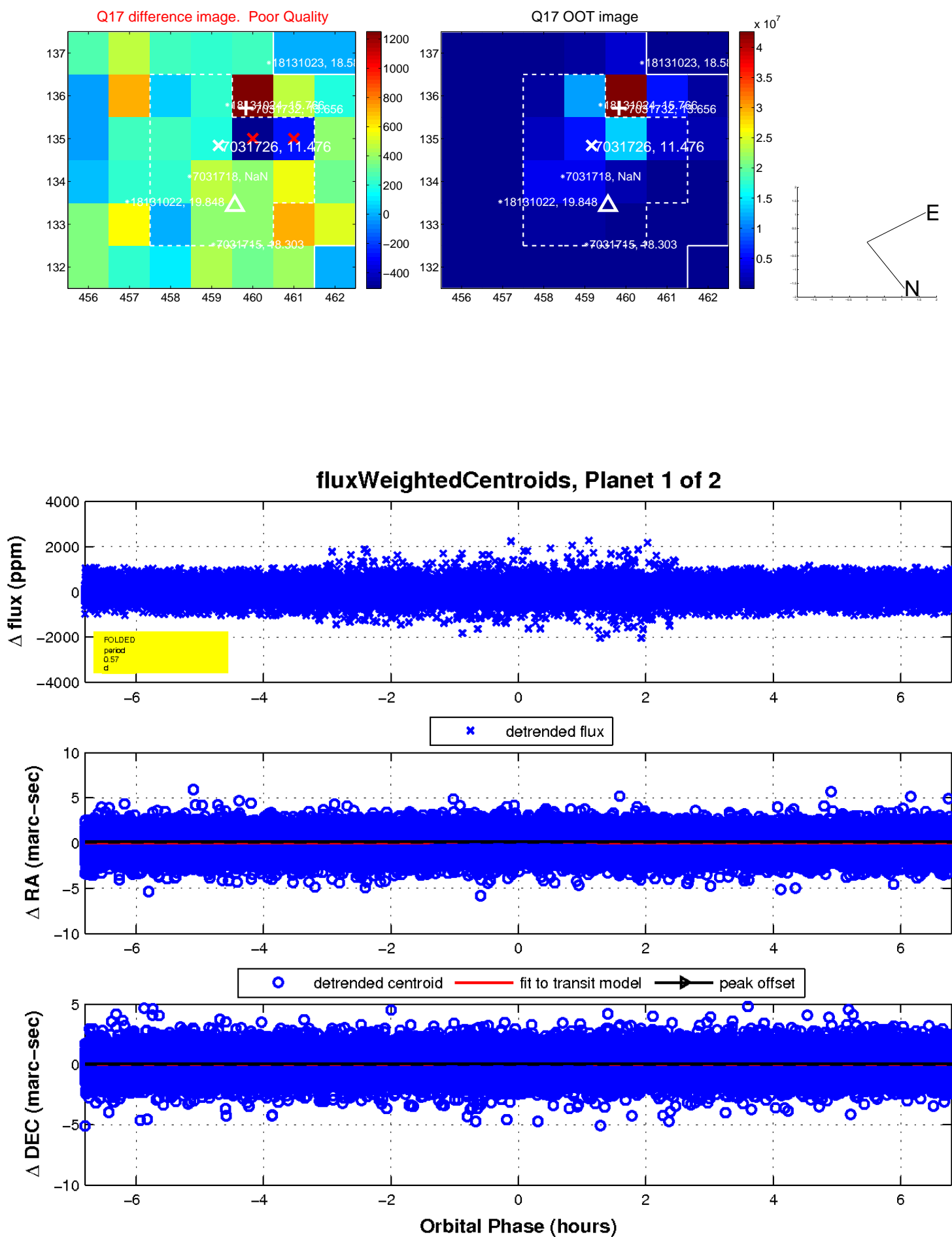
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

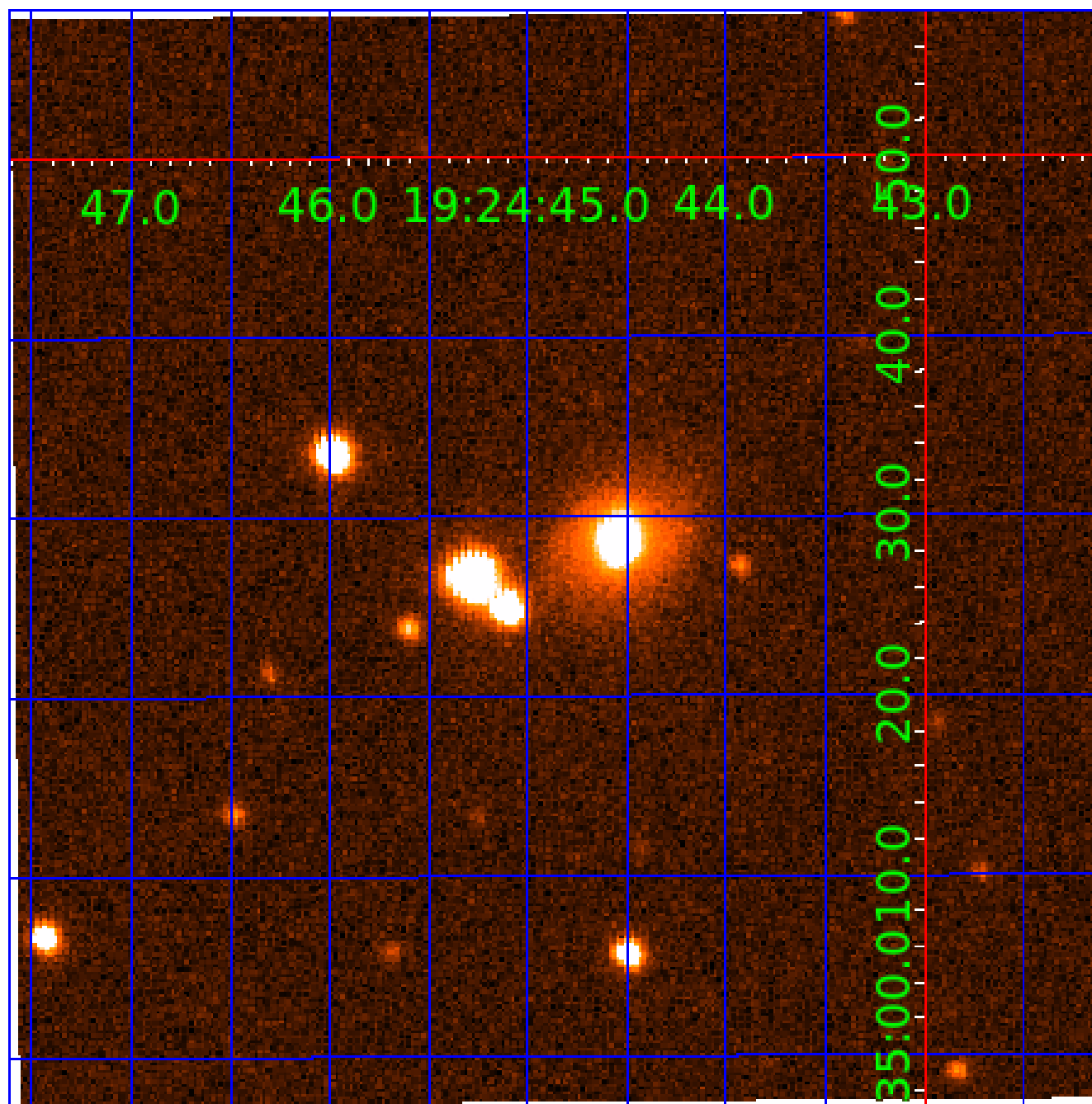


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007031726

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})
007031726-01	OBS	7806.01	0.566754	131.870181	29.5	2.728	13.6	11.7	138.06	3420	87.24	0.00
007031726-02	OBS	No	98.077077	145.758690	177.7	5.617	10.9	3.7	138.06	3420	236.71	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007031726-01	OBS	FP	0.00	0	1	0	1	PLANET_IN_STAR—MOD_SEC_ALT—CENT_SATURATED—EPHEM_MATCH
007031726-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

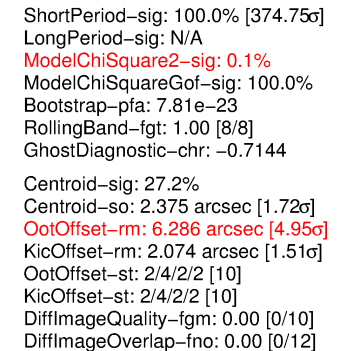
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

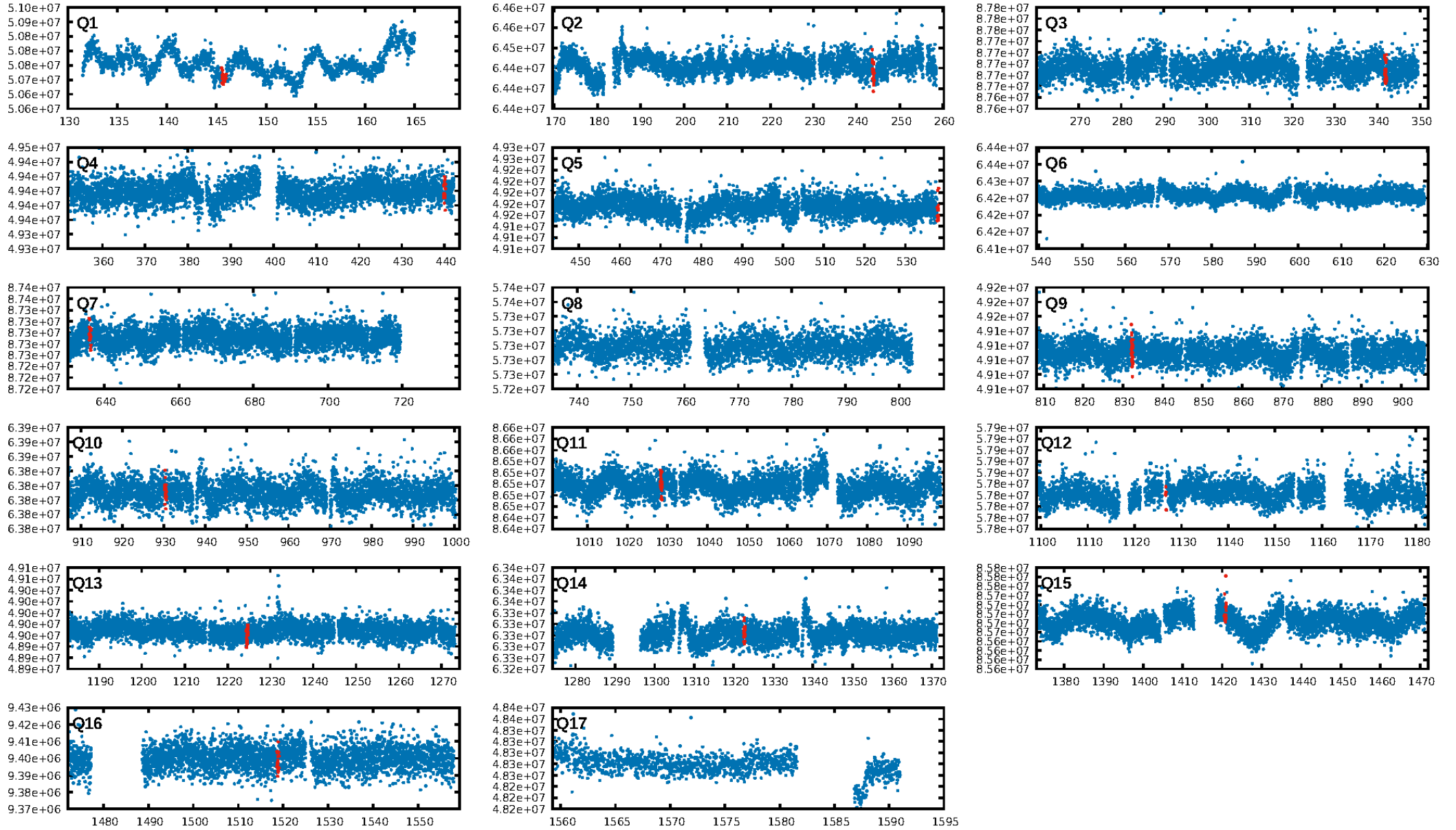
Ephemeris Match Information For 007031726-02

No Significant Match Found

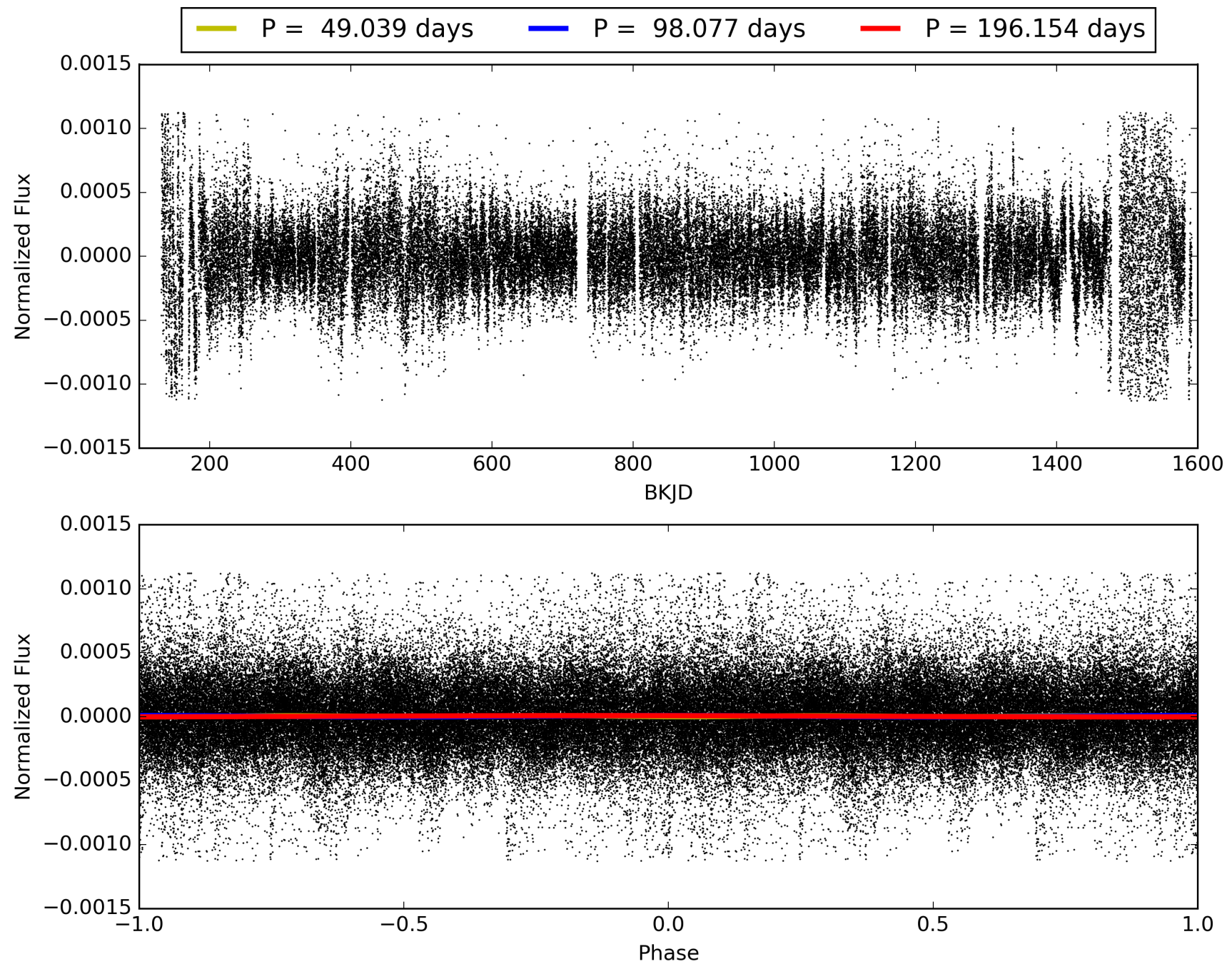
KIC: 7031726 Candidate: 2 of 2 Period: 98.077 d



TCE 007031726-02, PDC Light Curves

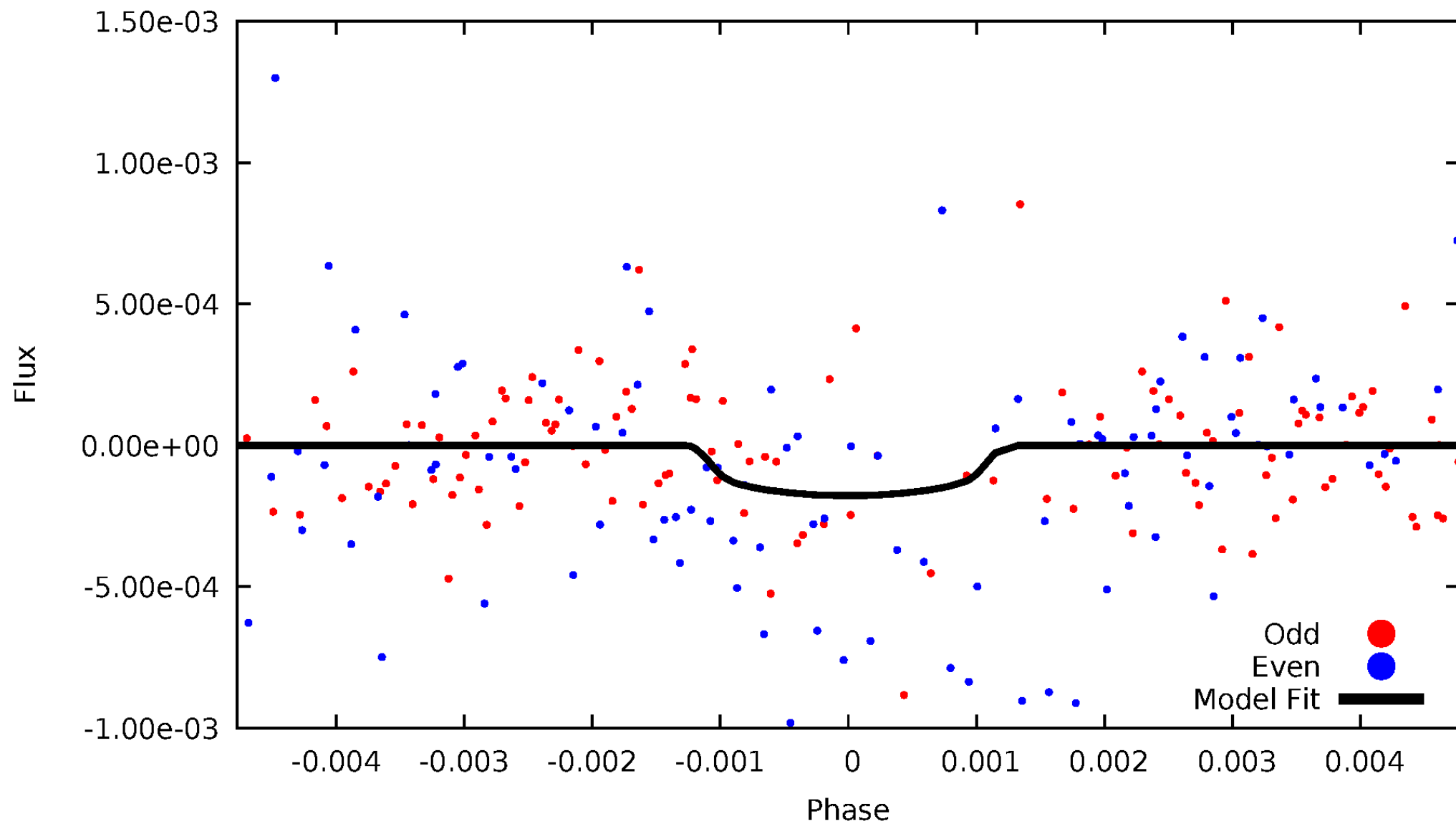


TCE 007031726-02



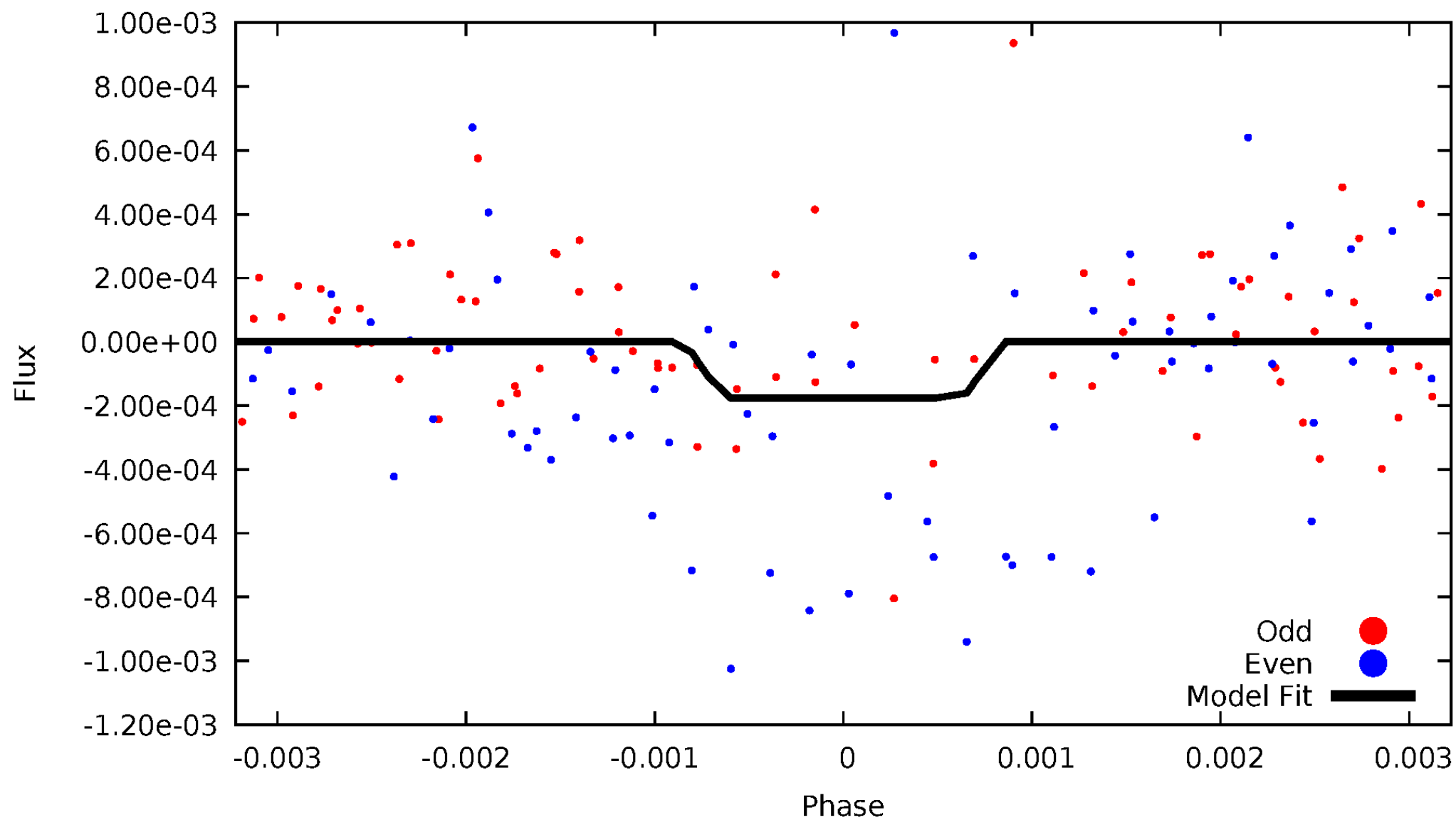
DV Odd/Even

TCE 007031726-02



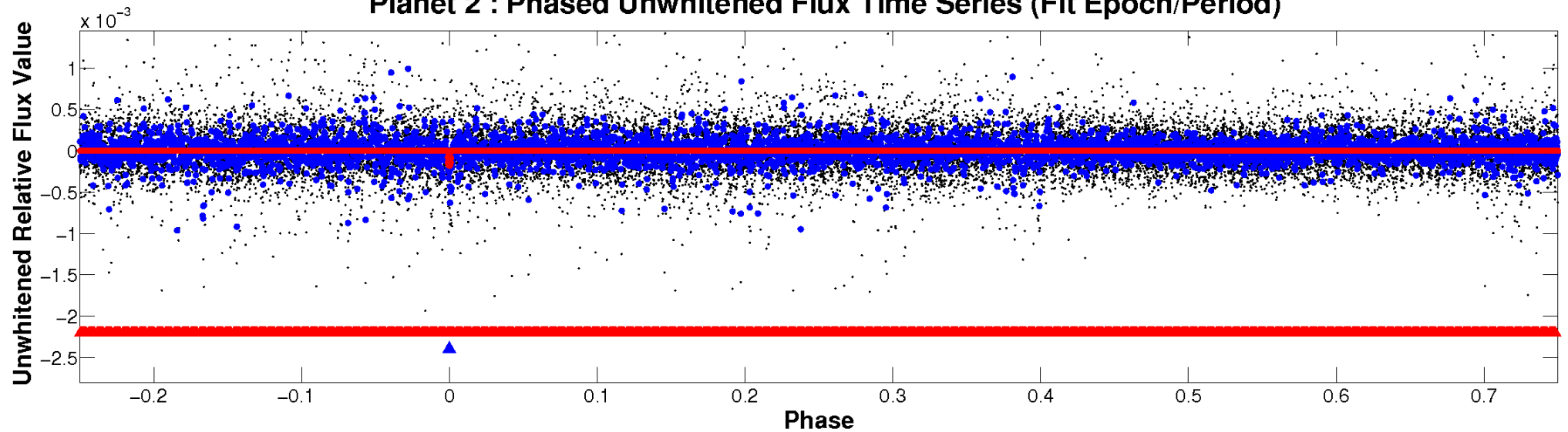
ALT Odd/Even

TCE 007031726-02

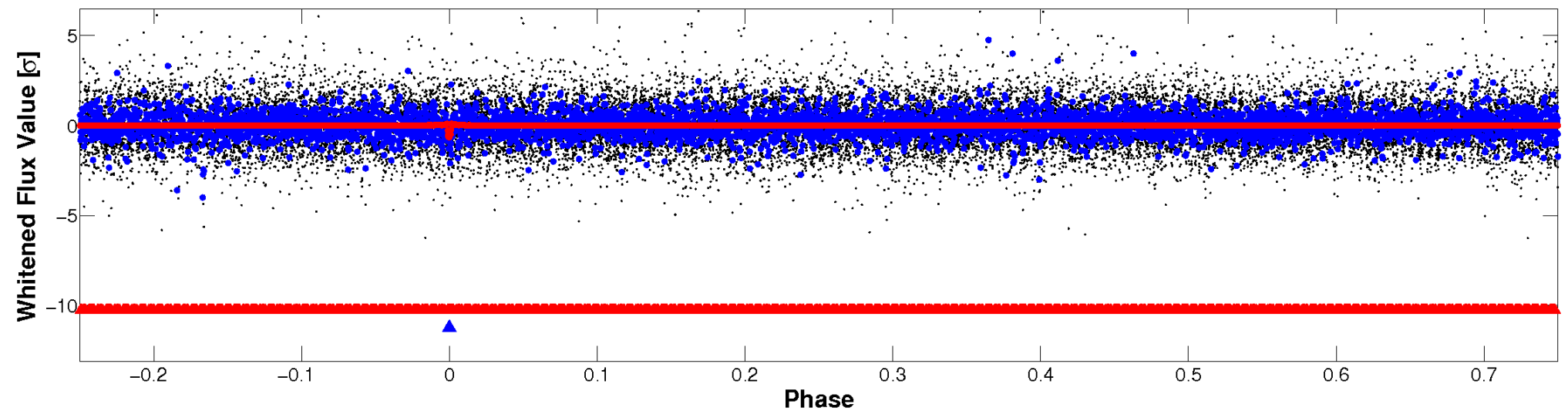


Non-Whitened Vs. Whitened Light Curve

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

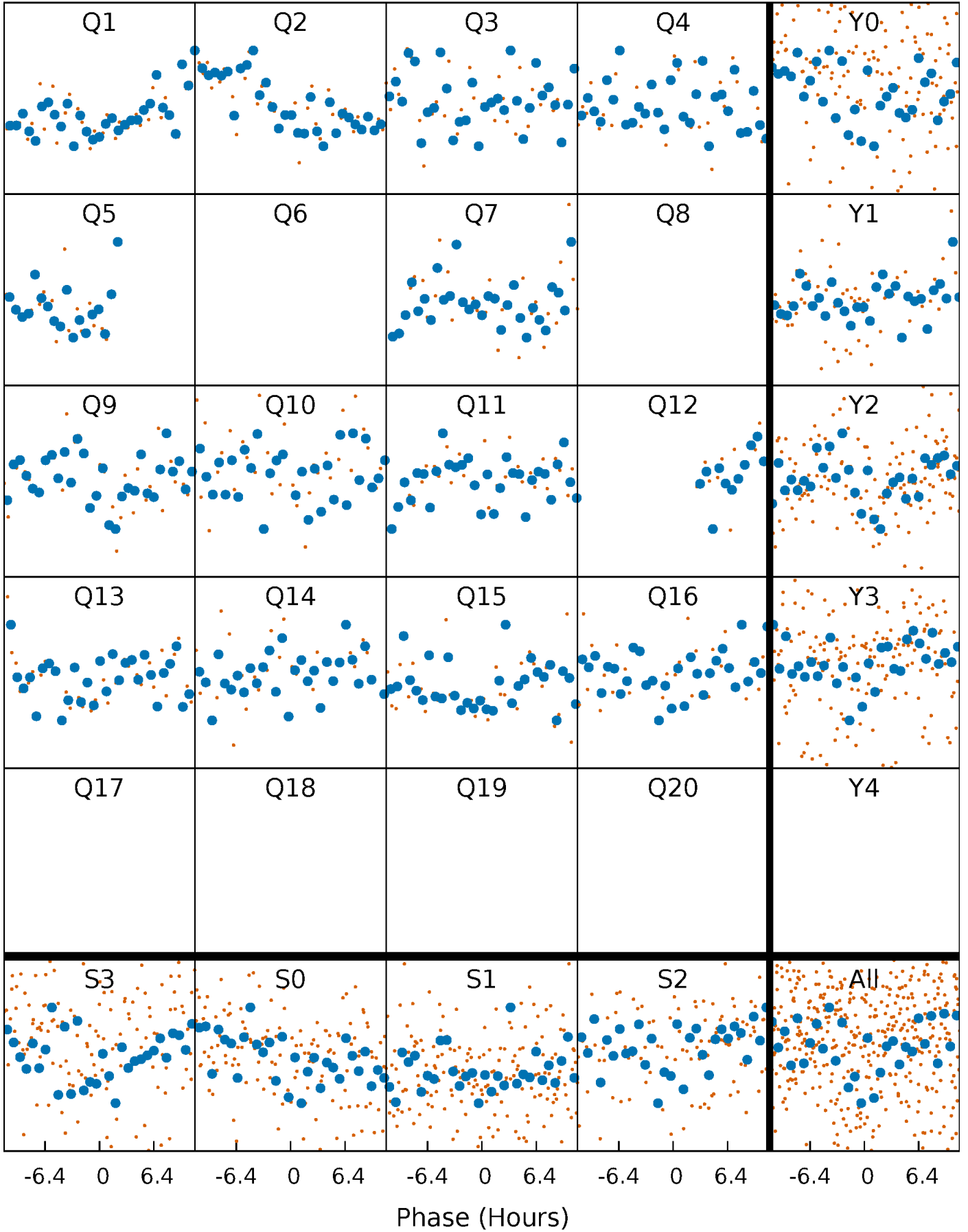


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



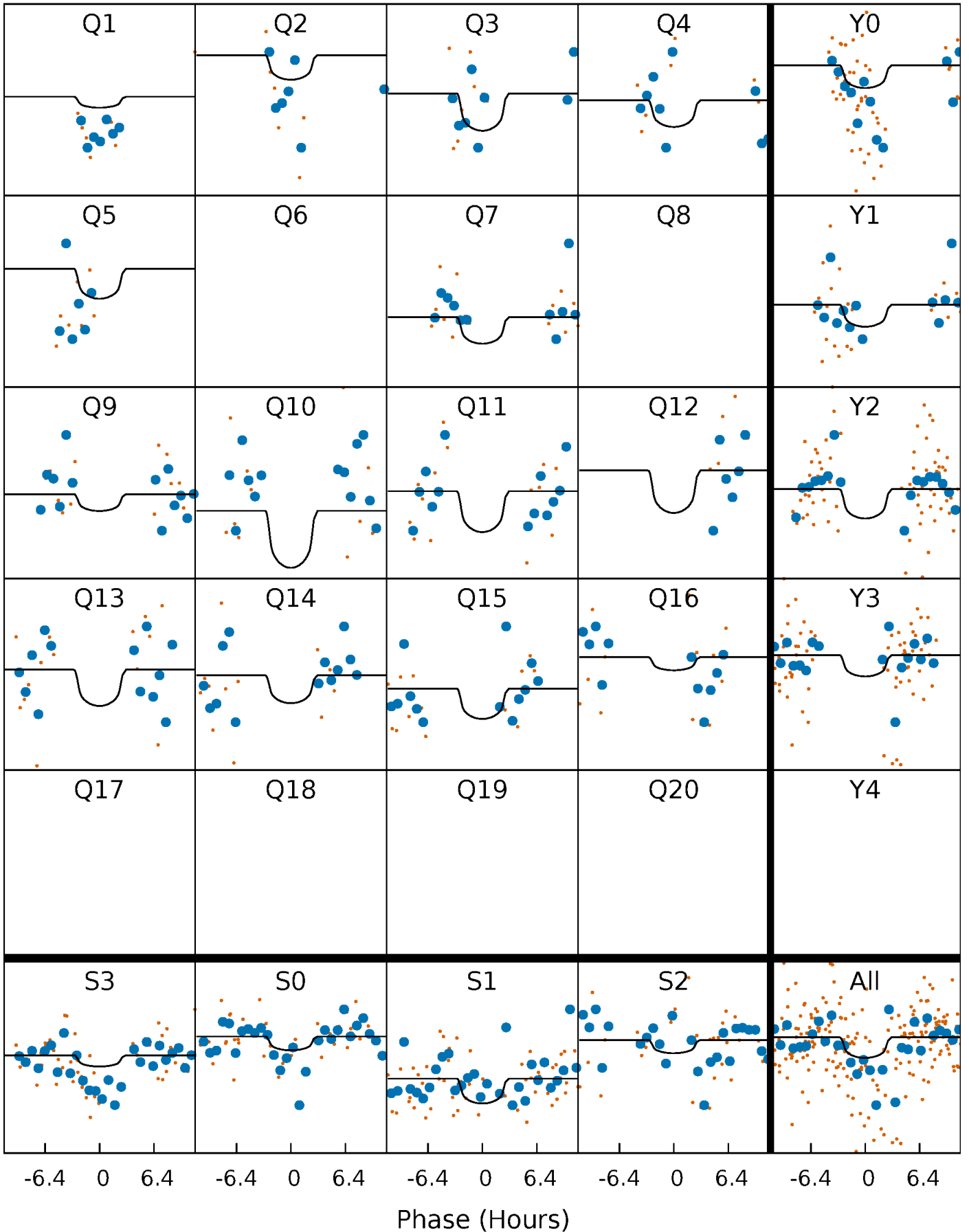
PDC Quarter-Phased Transit Curves

TCE 007031726-02 P= 98.077077 Days $T_0=145.758690$ (BKJD)



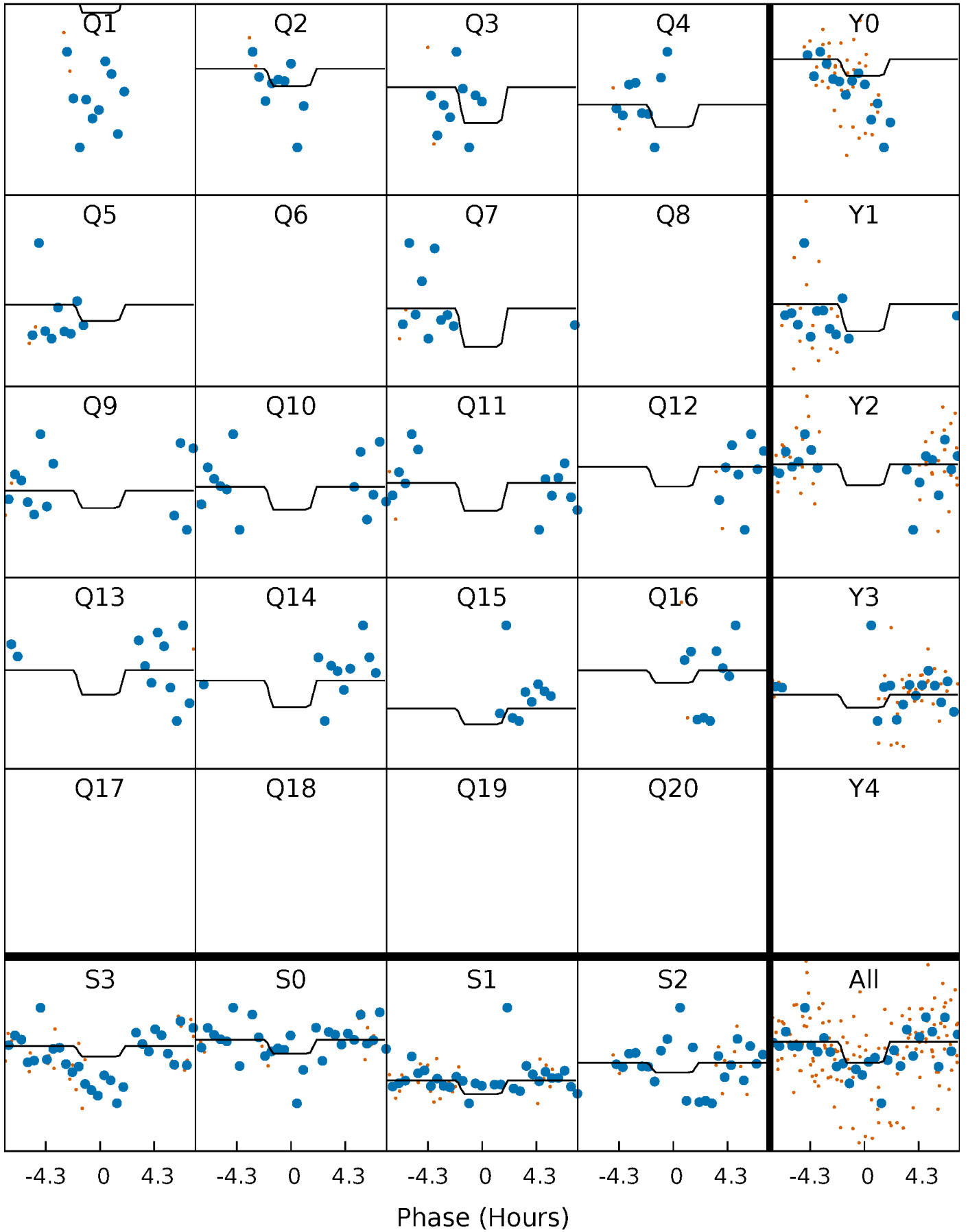
DV Quarter-Phased Transit Curves

TCE 007031726-02 P= 98.077077 Days $T_0=145.758690$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

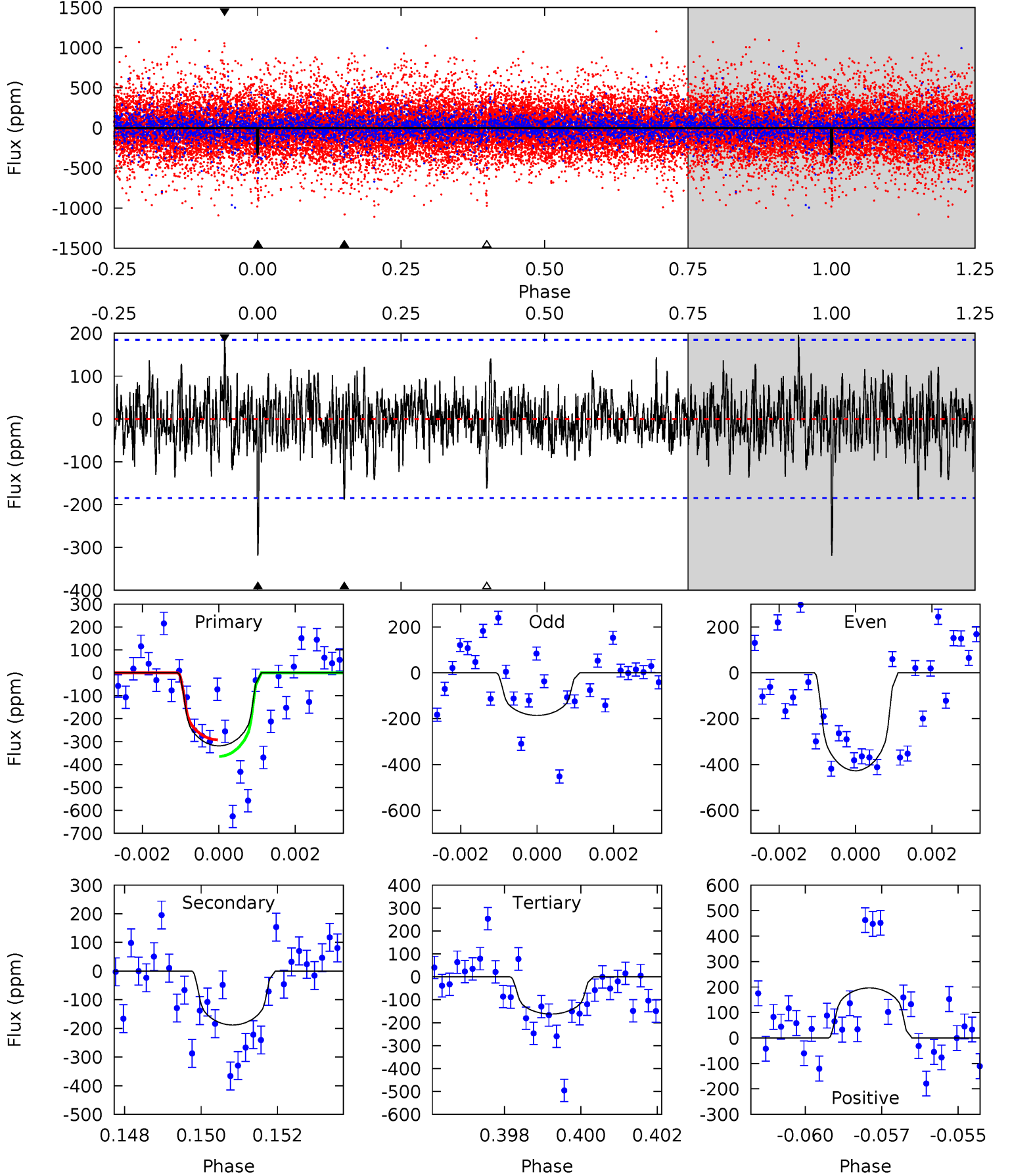
TCE 007031726-02 P= 98.079304 Days $T_0=145.772816$ (BKJD)



DV Model-Shift Uniqueness Test

007031726-02, P = 98.077077 Days, E = 47.681613 Days

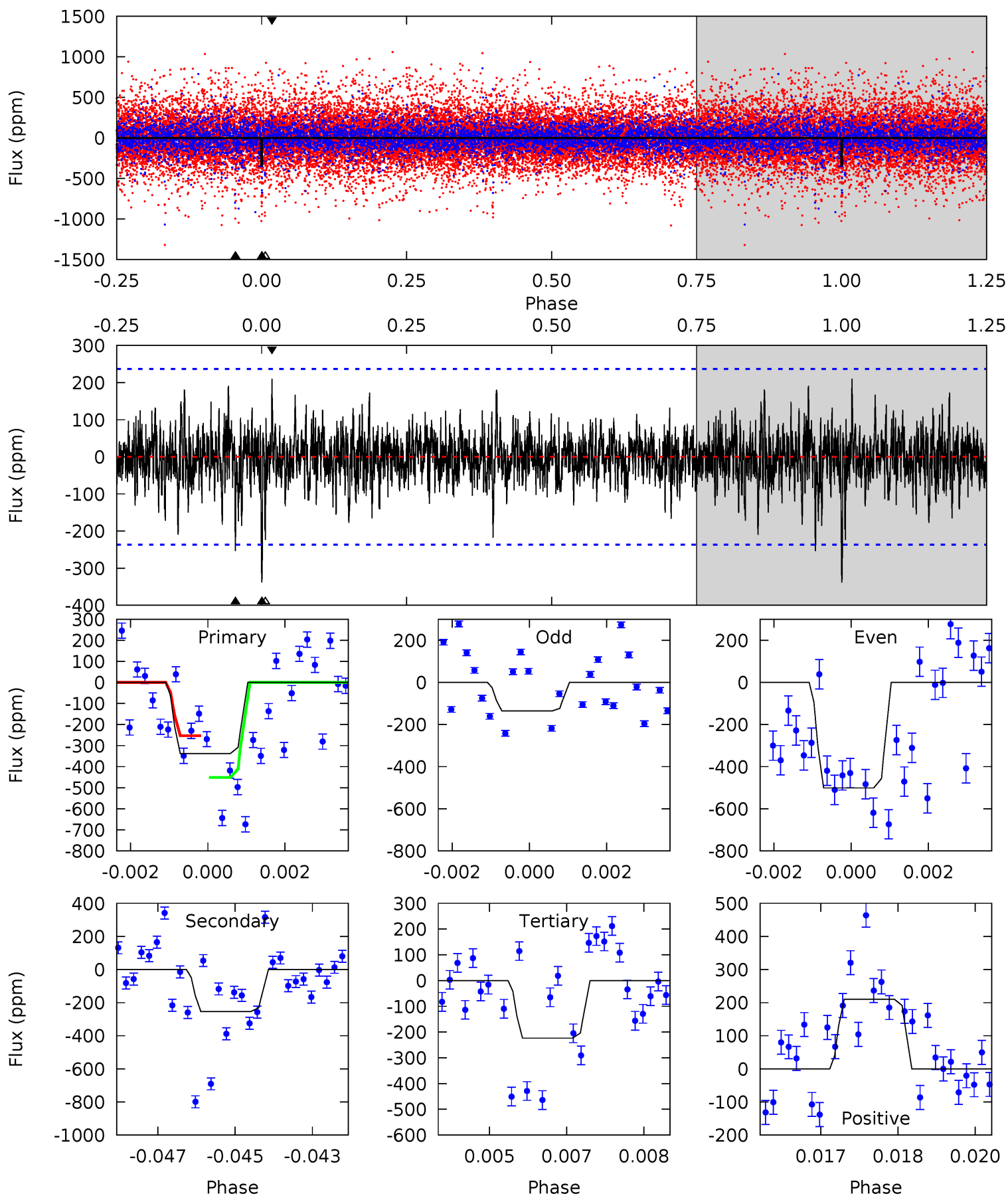
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.14	5.39	4.66	5.63	5.29	3.04	1.24	4.48	3.50	0.74	-0.24	3.43	1.58	0.38	0.97



Alt Model-Shift Uniqueness Test

007031726-02, P = 98.079304 Days, E = 47.693512 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.65	5.74	5.06	4.76	5.36	3.14	1.10	2.59	2.89	0.68	0.98	4.09	1.67	0.38	2.21



Stellar Parameters For KIC 007031726

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3420^{+111}_{-91}	$0.269^{+0.255}_{-0.085}$	$-0.180^{+0.250}_{-0.150}$	$138.056^{+11.328}_{-33.983}$	$1.291^{+0.214}_{-0.214}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+95%/-32%	+139%/-83%	+8%/-25%	+17%/-17%	+136%/-25%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 007031726-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-188 ± 35	$299.82^{+280.17}_{-204.47}$	3629^{+190}_{-249}	-2535^{+6783}_{-519}	$0.232^{+1.875}_{-0.167}$
Alt.	-253 ± 44	$290.91^{+261.90}_{-190.69}$	3624^{+183}_{-219}	2385^{+2119}_{-5359}	$0.347^{+2.611}_{-0.254}$

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 $A_{obs} \gg 1.0$

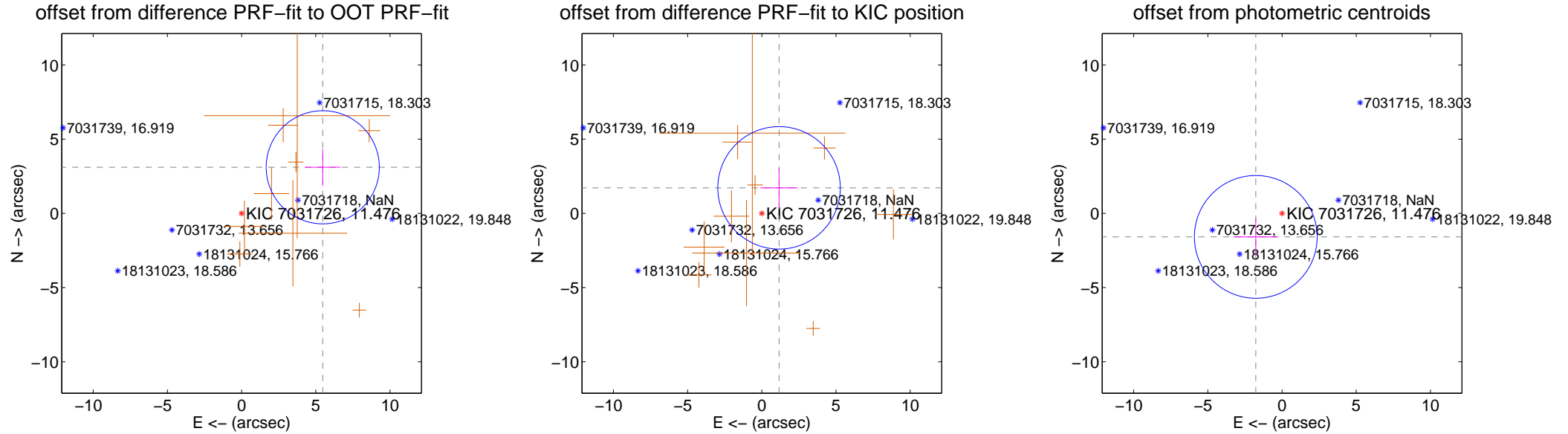
DV Centroid Data

Supplemental centroid analysis for 007031726-02. **Kepler magnitude: 11.48.** Transit SNR 3.74

There are 0 quarters with good PRF difference image offsets

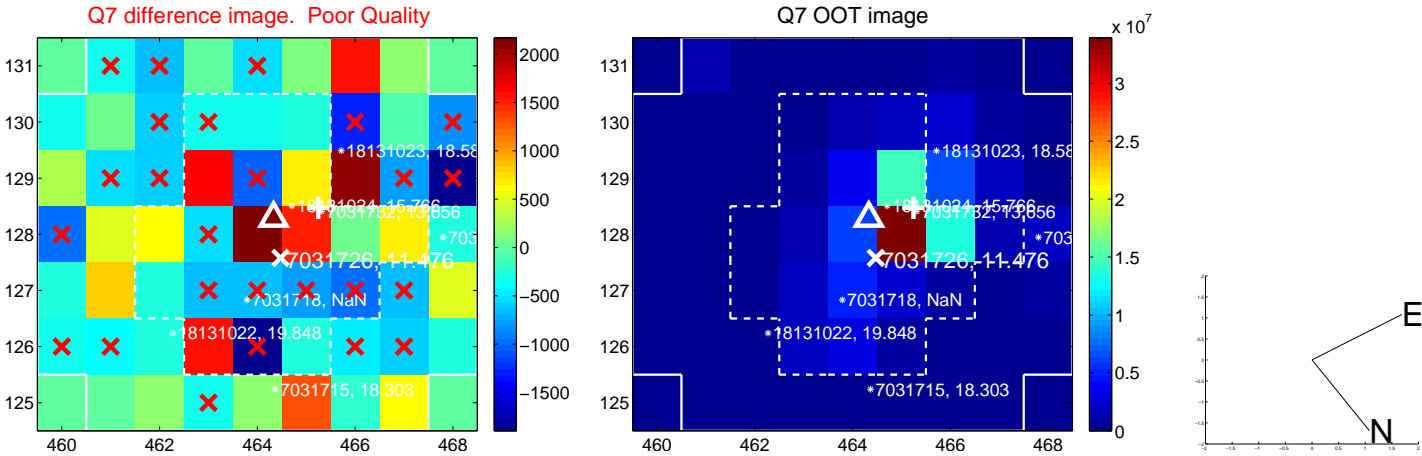
The OOT PRF centroid is offset from the target star catalog position by about 4.35 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.286 ± 1.270	4.95	-5.466 ± 1.205	3.105 ± 1.233
PRF-fit source offset from KIC position	2.074 ± 1.375	1.51	-1.161 ± 1.260	1.718 ± 1.315
photometric centroid source offset	2.38 ± 1.38	1.72	1.77 ± 1.48	-1.58 ± 1.24

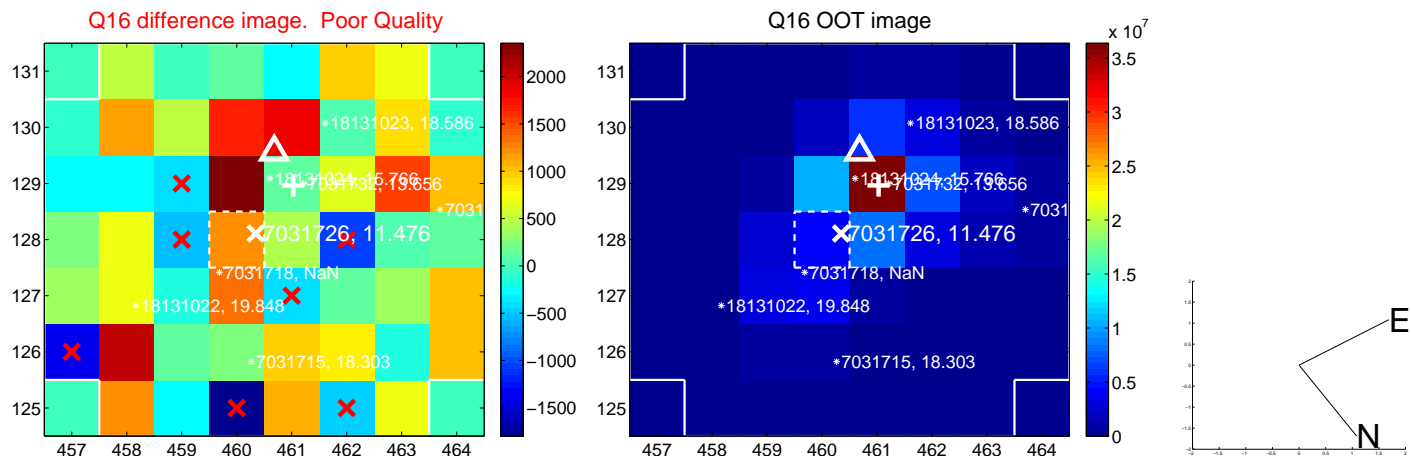
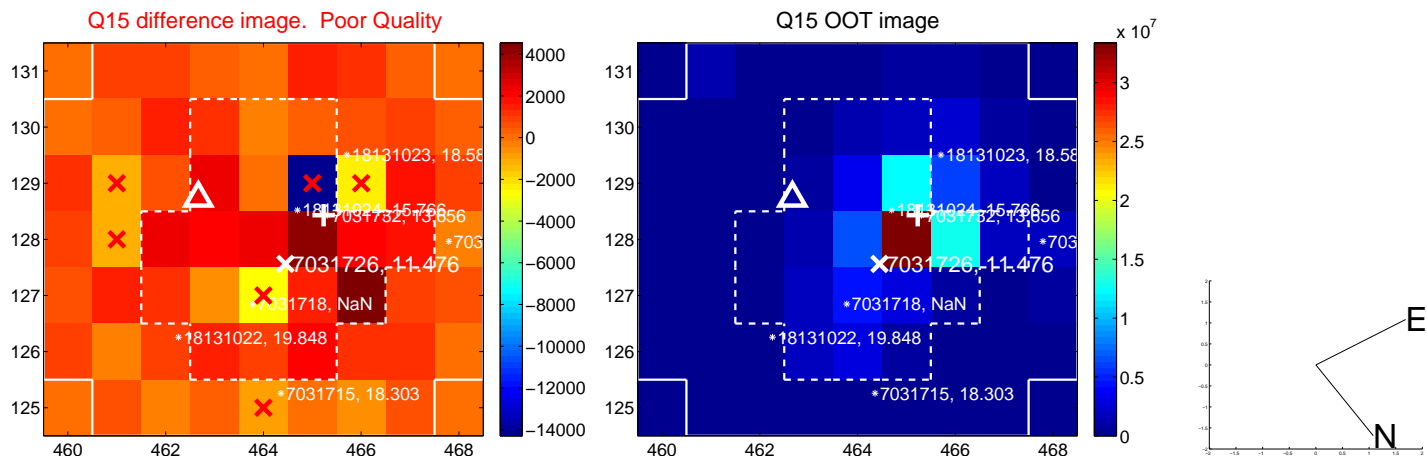
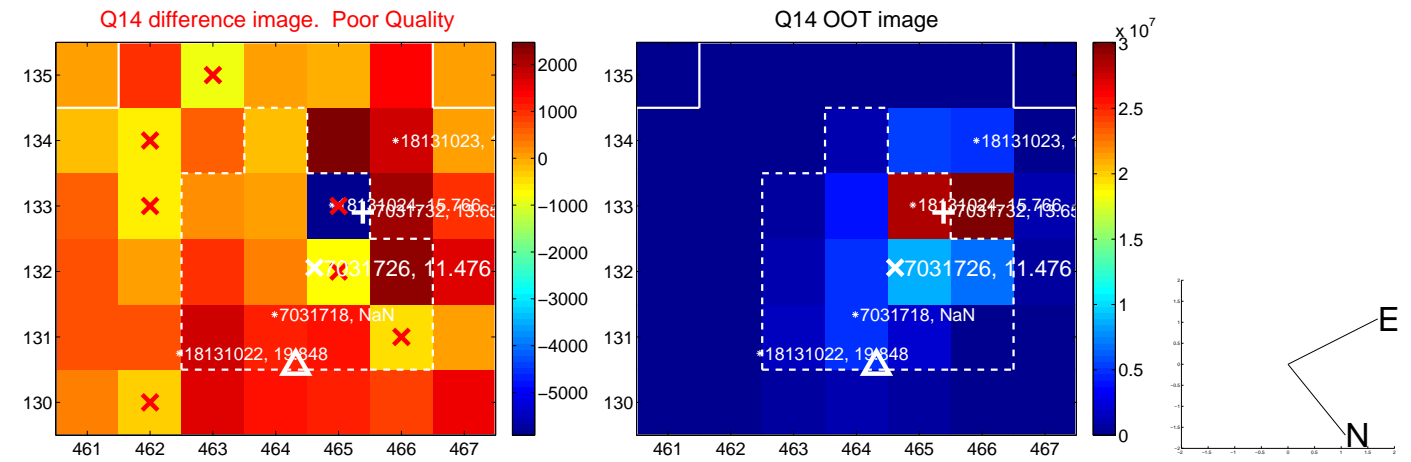
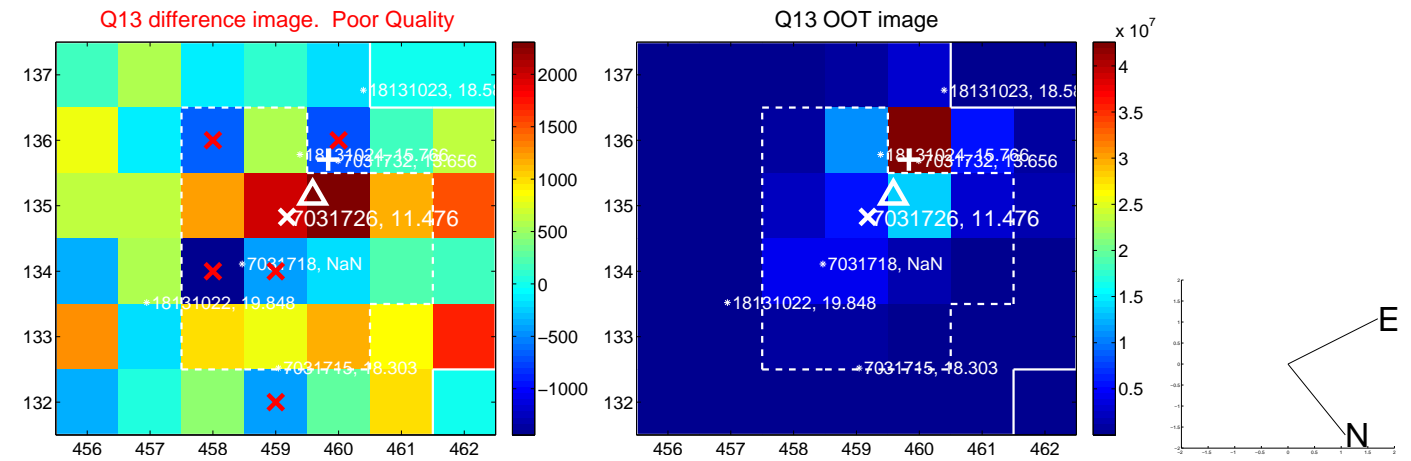


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

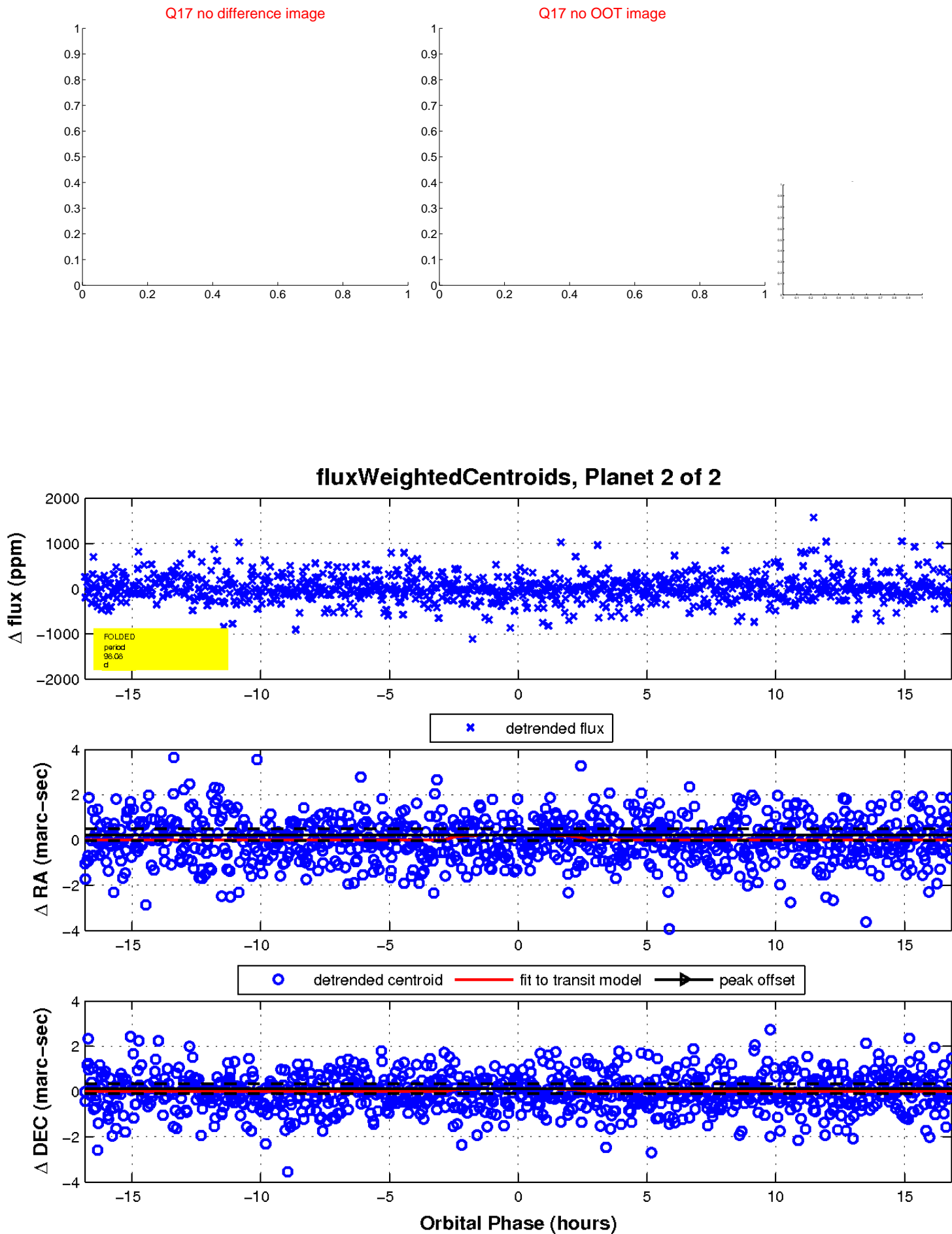
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

