

KIC 008475025

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})
008475025-01	OBS	No	0.823193	132.156320	47.4	1.338	8.2	9.5	4.95	5045	4.11	0.00
008475025-02	OBS	No	29.830289	132.064580	245.8	5.090	7.1	7.5	4.95	5045	10.30	459.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008475025-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008475025-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—MOD_NONUNIQ_ALT

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

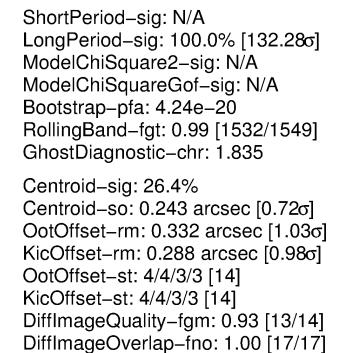
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

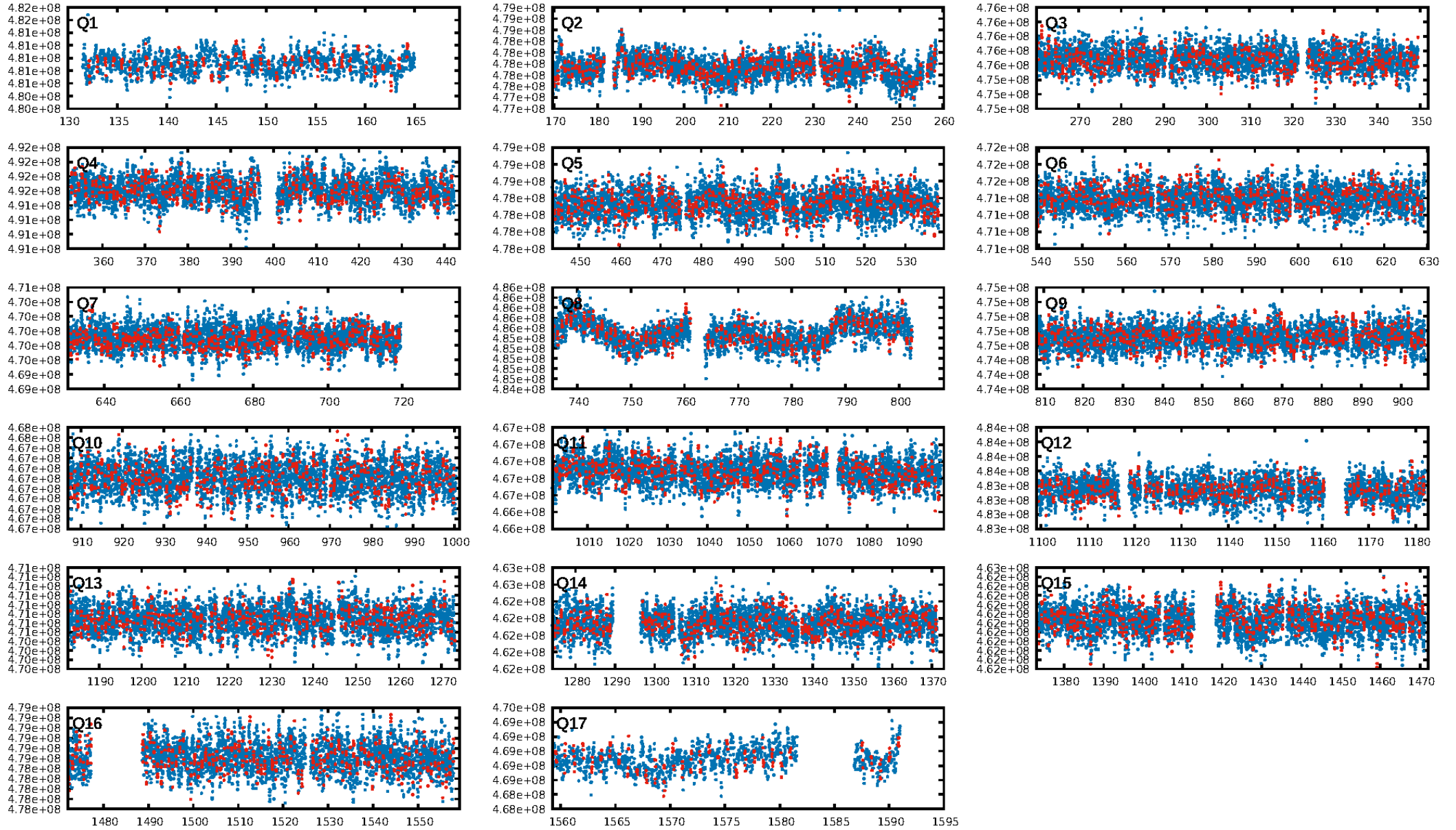
Ephemeris Match Information For 008475025-01

No Significant Match Found

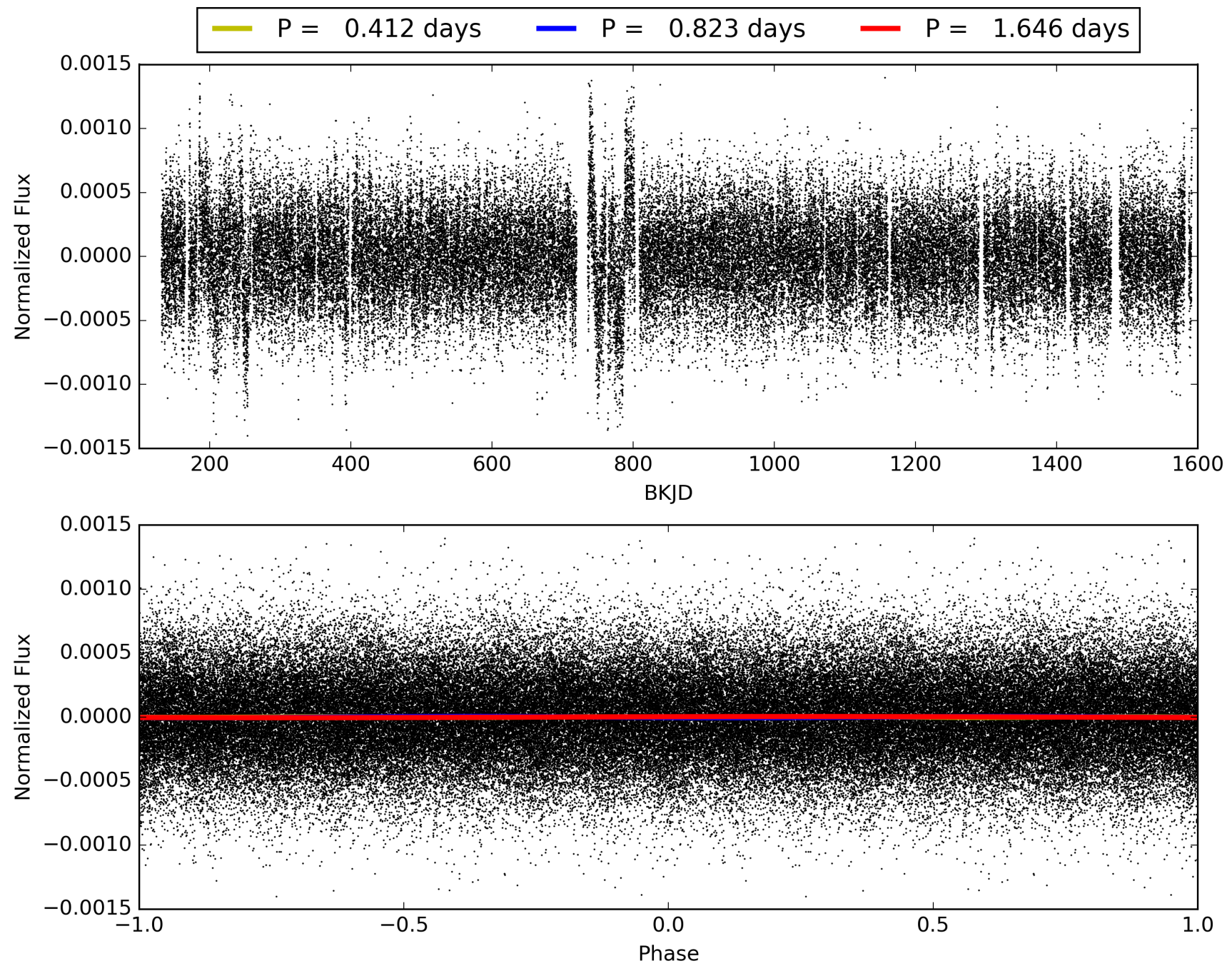
KIC: 8475025 Candidate: 1 of 2 Period: 0.823 d



TCE 008475025-01, PDC Light Curves

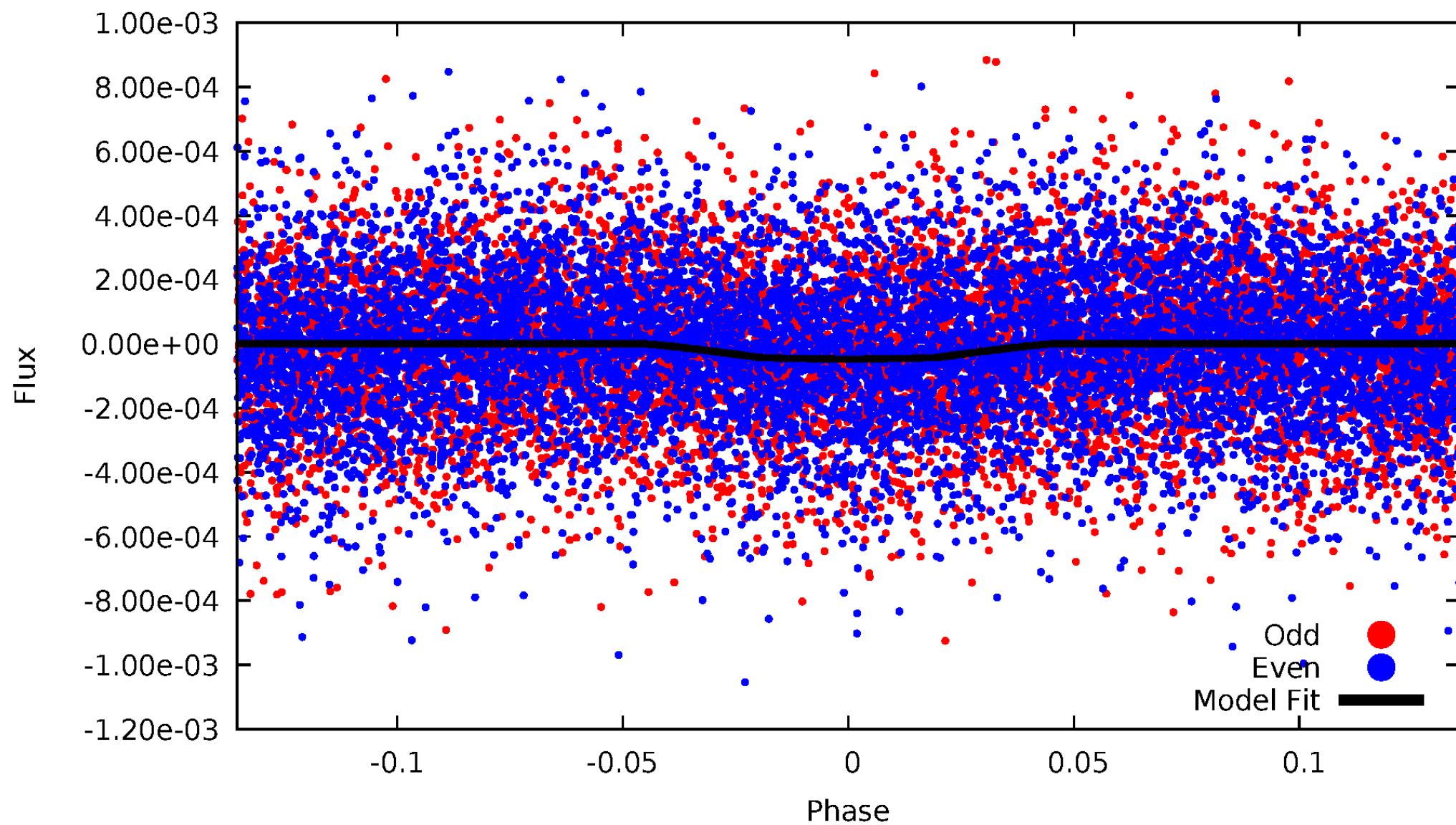


TCE 008475025-01



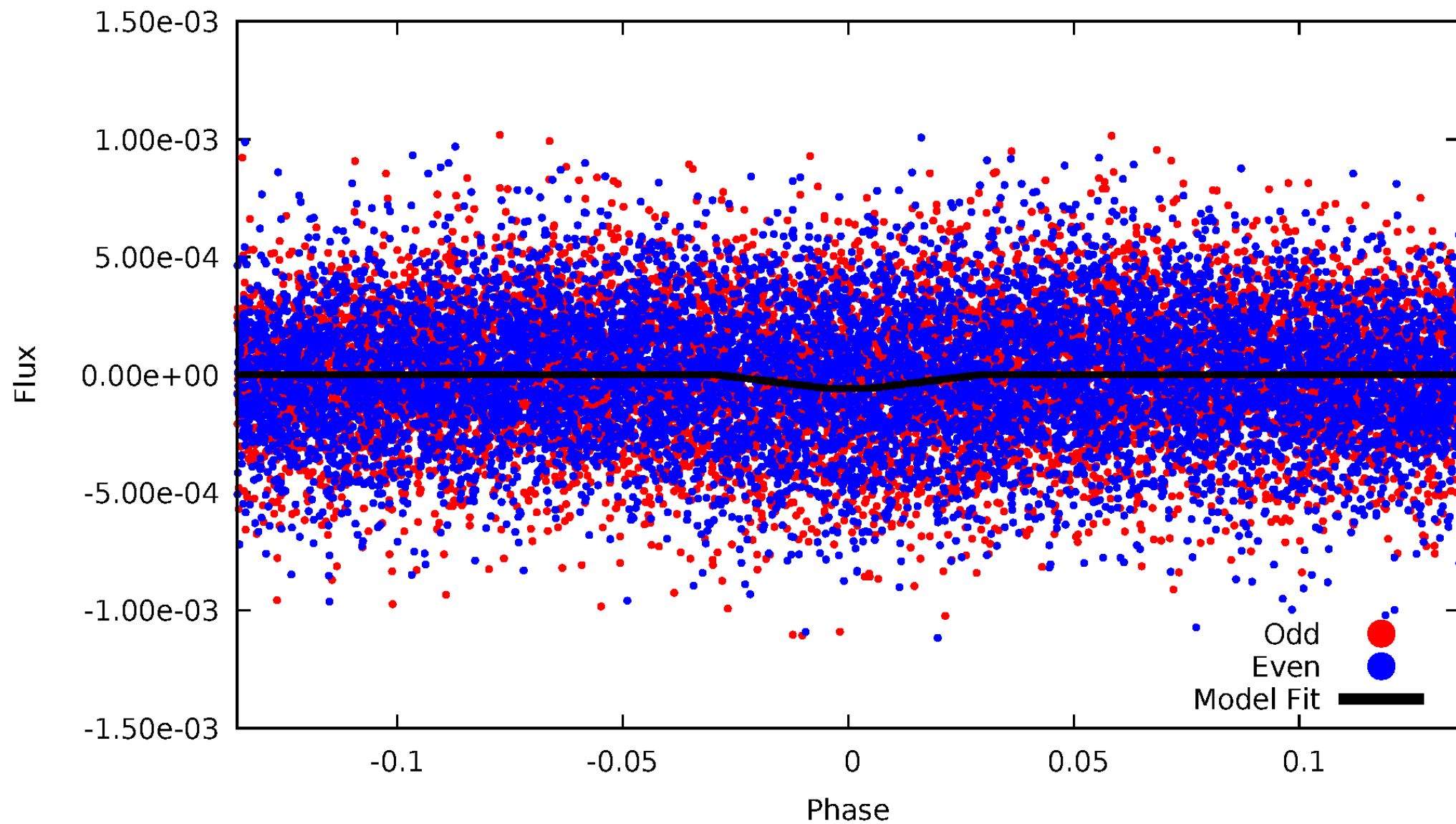
DV Odd/Even

TCE 008475025-01

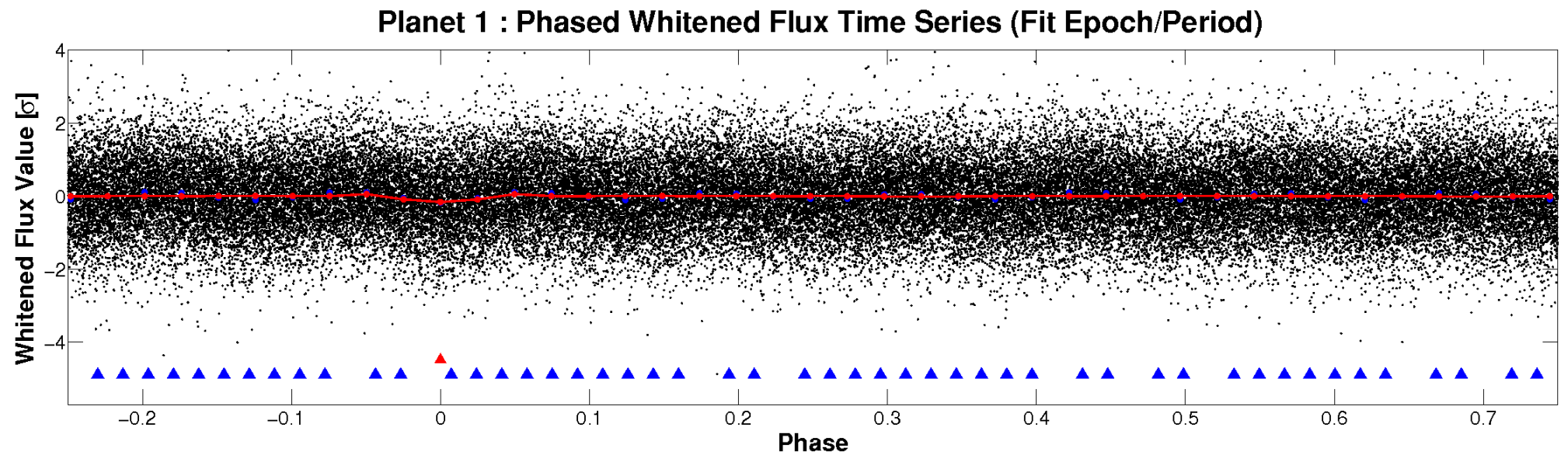
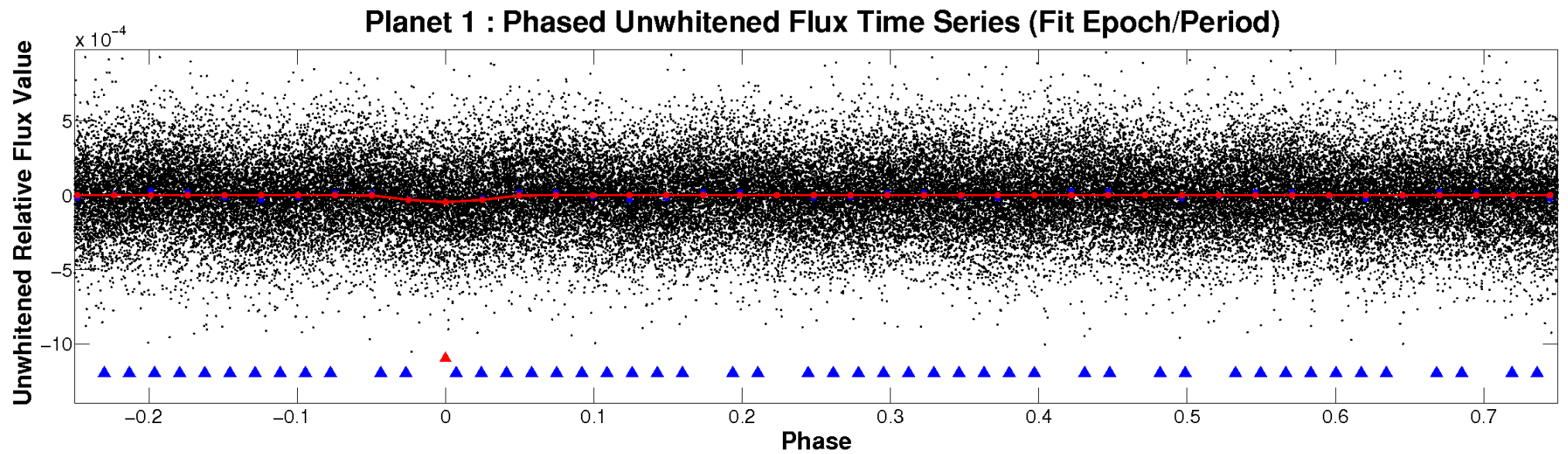


ALT Odd/Even

TCE 008475025-01

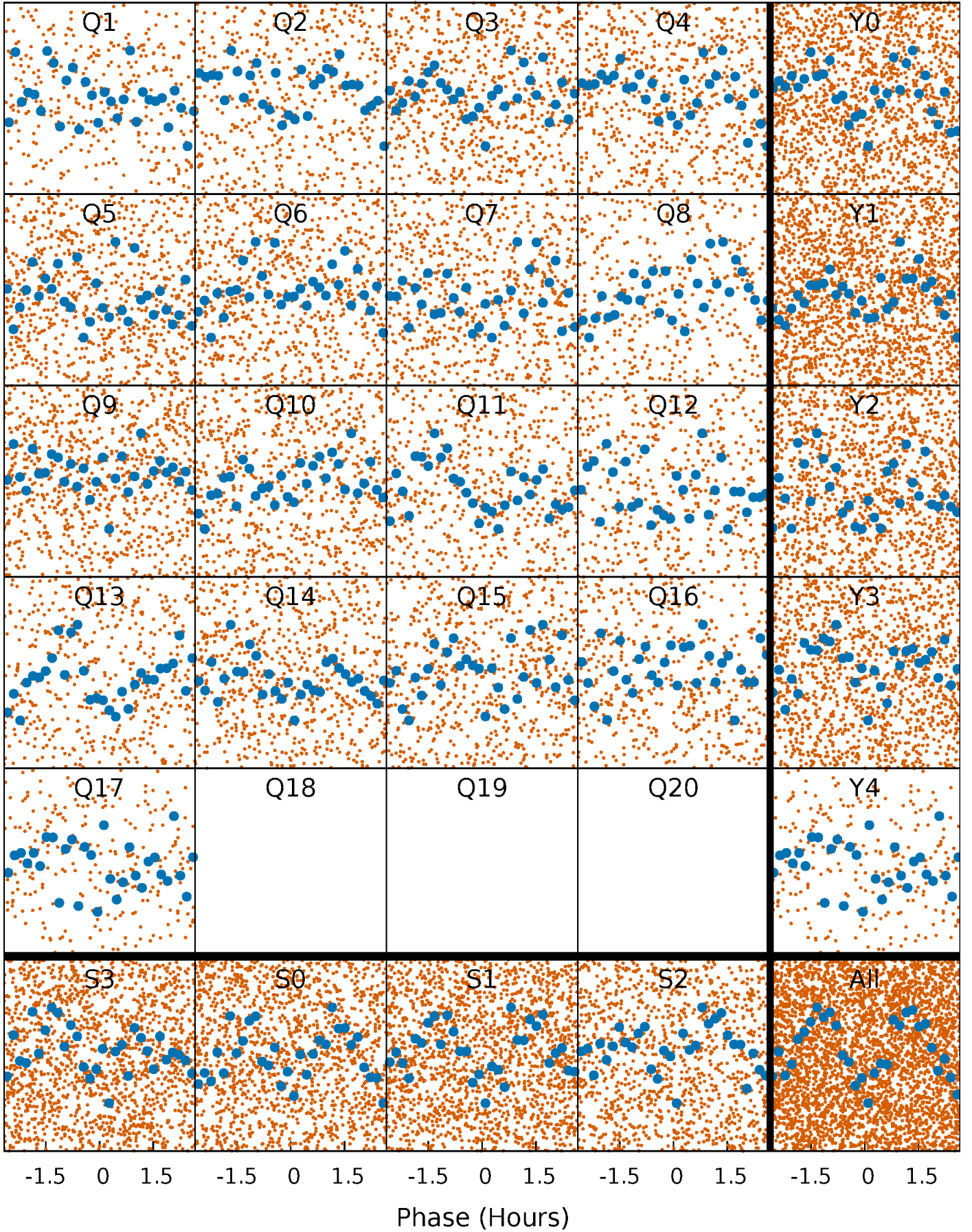


Non-Whitened Vs. Whitened Light Curve



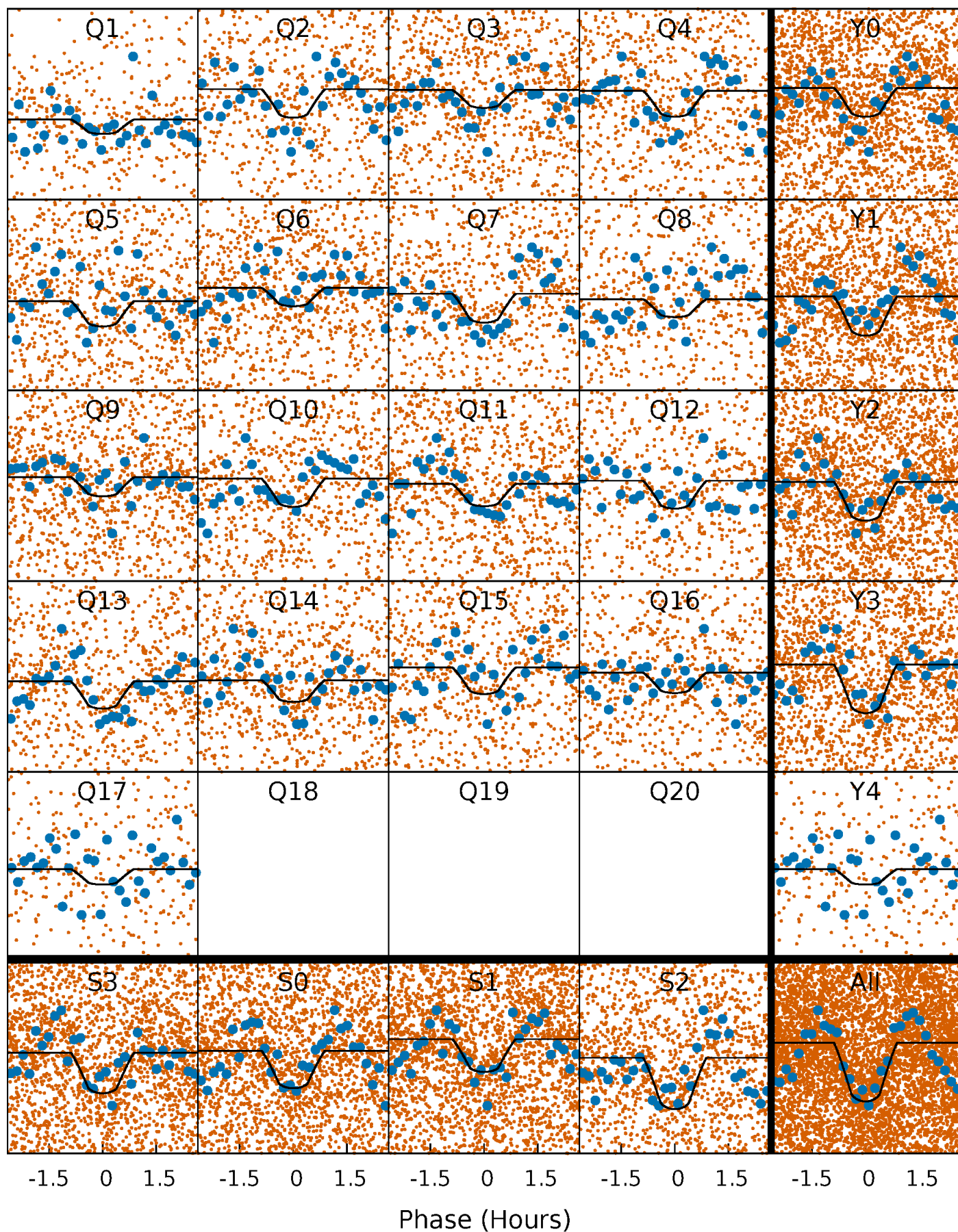
PDC Quarter-Phased Transit Curves

TCE 008475025-01 P= 0.823193 Days $T_0=132.156319$ (BKJD)



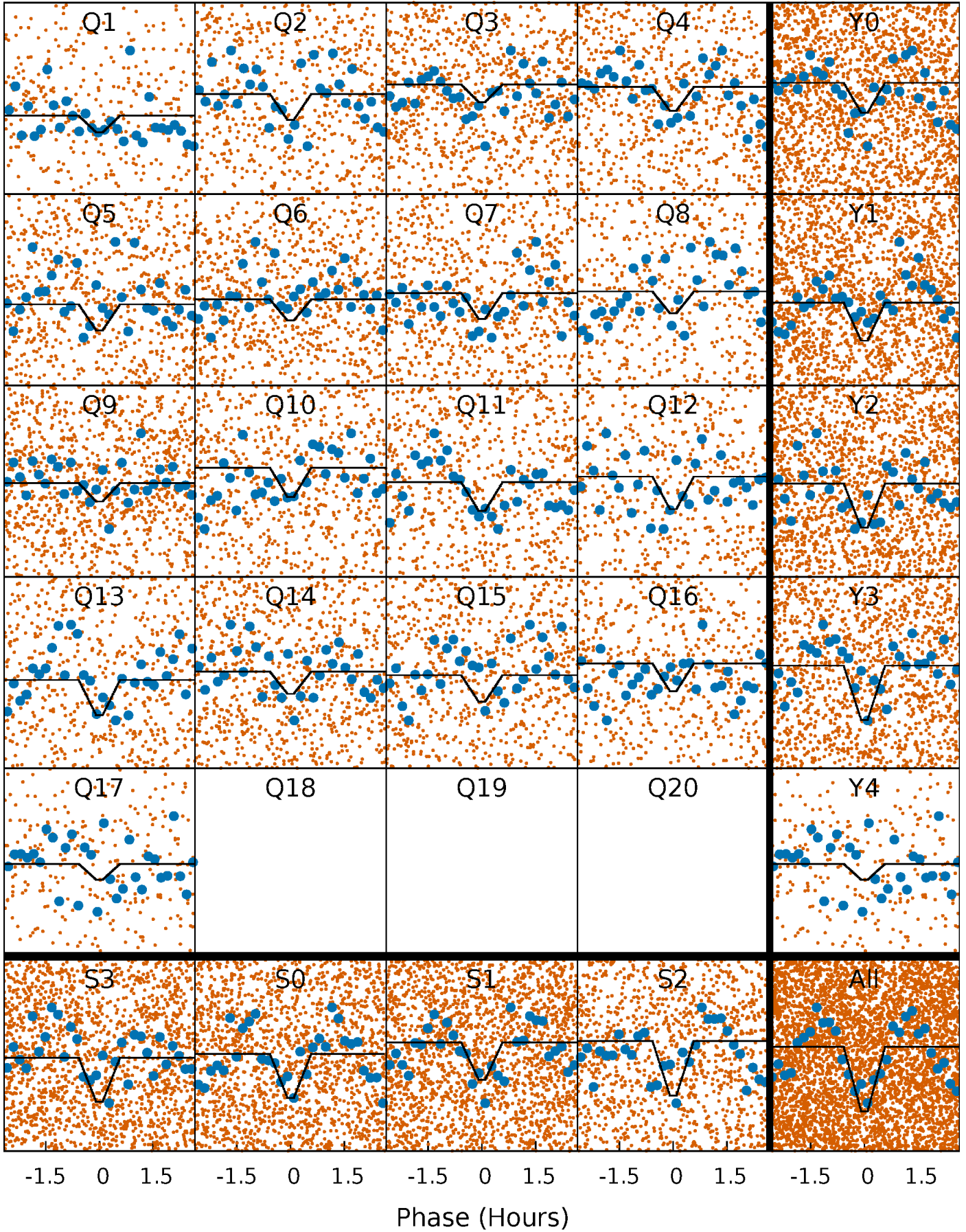
DV Quarter-Phased Transit Curves

TCE 008475025-01 P= 0.823193 Days $T_0=132.156319$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

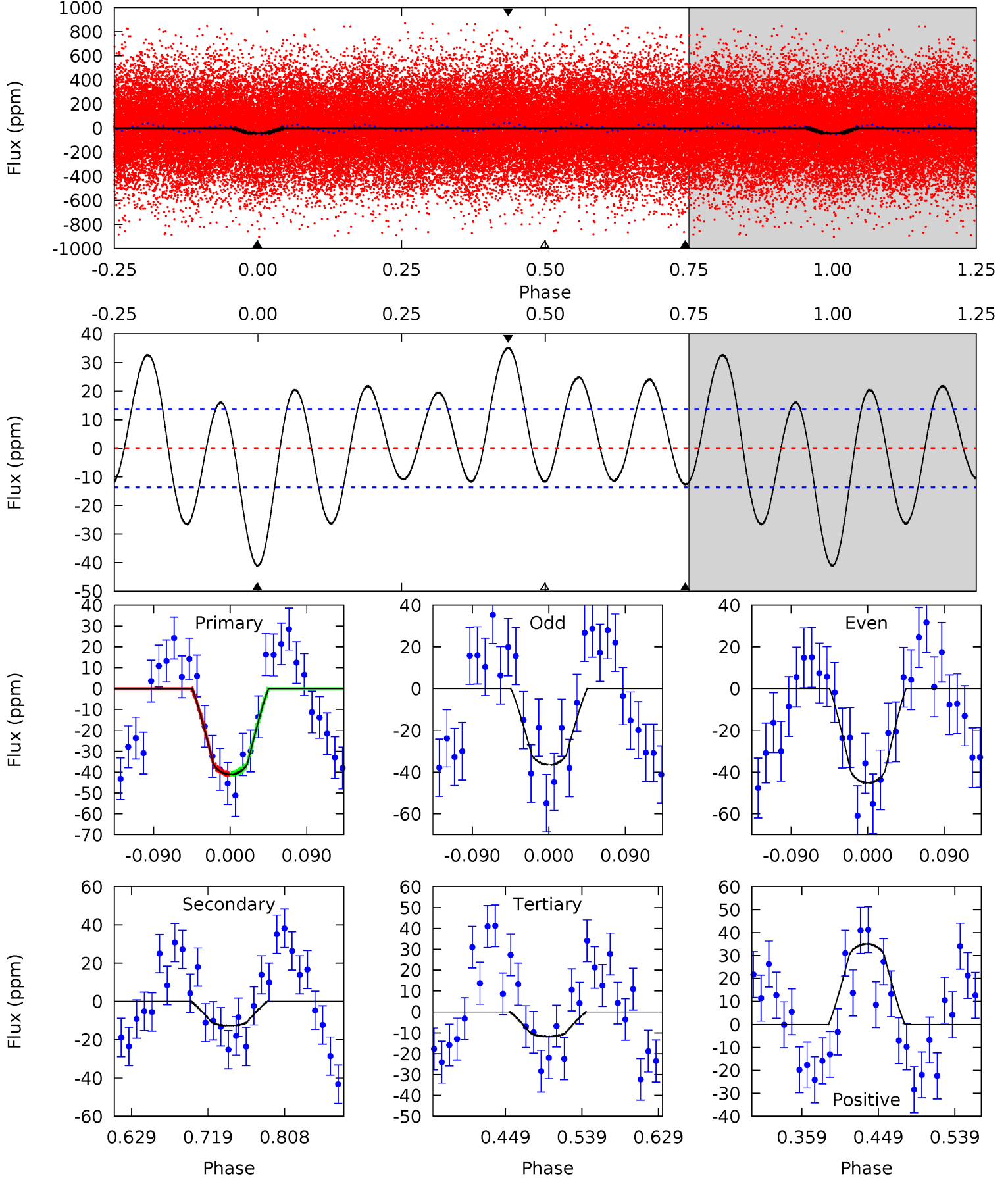
TCE 008475025-01 P= 0.823193 Days $T_0=132.156319$ (BKJD)



DV Model-Shift Uniqueness Test

008475025-01, P = 0.823193 Days, E = 131.333126 Days

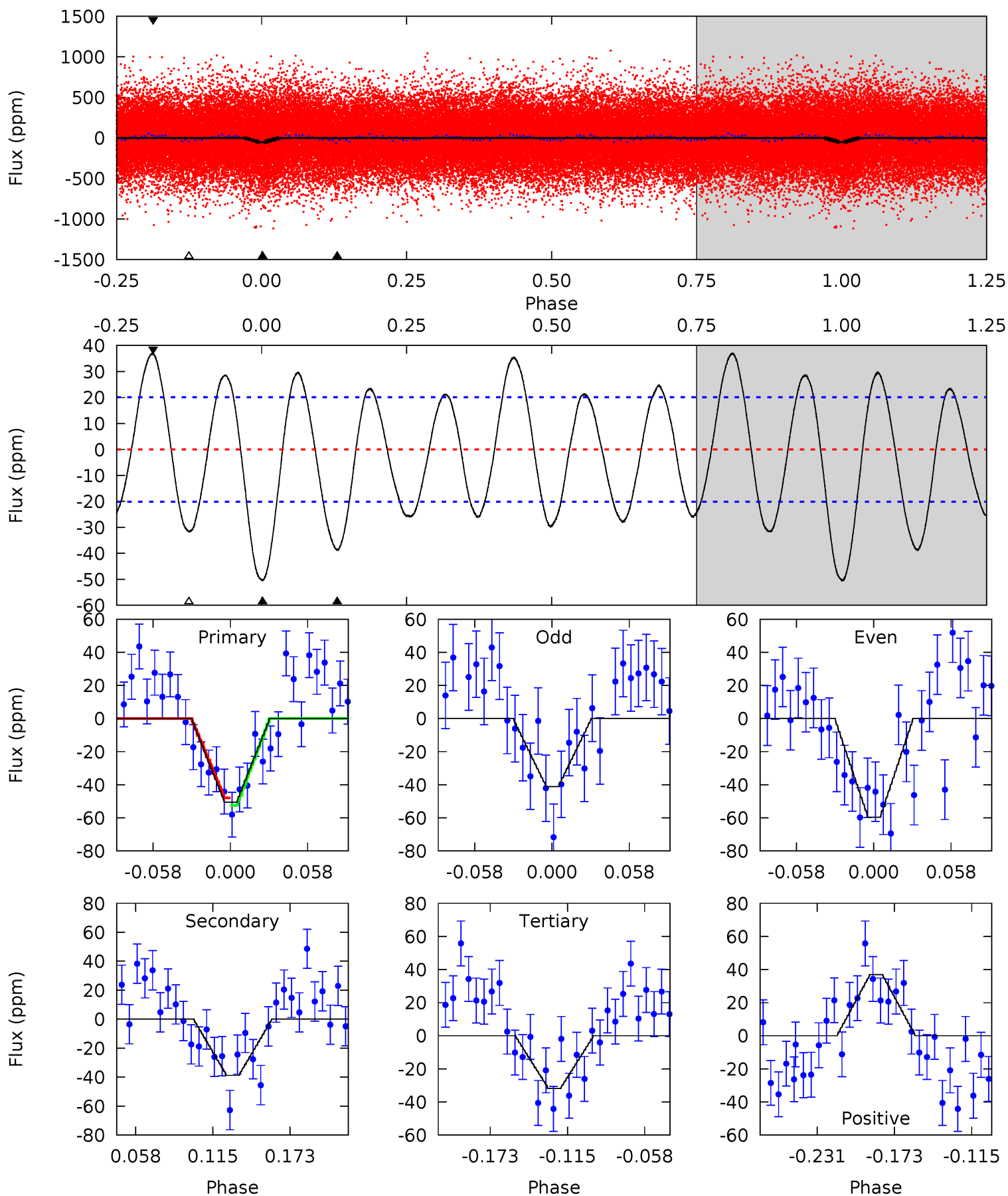
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	4.25	3.93	11.7	4.59	1.70	5.22	9.83	2.03	0.31	-7.49	1.45	0.96	0.46	0.01



Alt Model-Shift Uniqueness Test

008475025-01, P = 0.823193 Days, E = 131.333126 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	9.03	7.39	8.59	4.68	1.90	4.68	4.35	3.14	1.64	0.43	2.16	1.10	0.42	0.54



Stellar Parameters For KIC 008475025

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5045^{+100}_{-80}	$2.960^{+0.033}_{-0.030}$	$-0.740^{+0.250}_{-0.200}$	$4.947^{+0.718}_{-0.135}$	$0.814^{+0.222}_{-0.012}$	$0.009^{+0.001}_{-0.002}$
	+2%/-2%	+1%/-1%	+34%/-27%	+15%/-3%	+27%/-1%	+10%/-16%
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 008475025-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13 ± 3	$4.16^{+1.36}_{-1.39}$	5452^{+124}_{-107}	-4193^{+844}_{-207}	$0.110^{+0.142}_{-0.055}$
Alt.	-39 ± 4	$4.23^{+1.45}_{-1.41}$	5455^{+138}_{-114}	2767^{+2125}_{-6687}	$0.314^{+0.404}_{-0.145}$

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 $A_{obs} \gg 1.0$

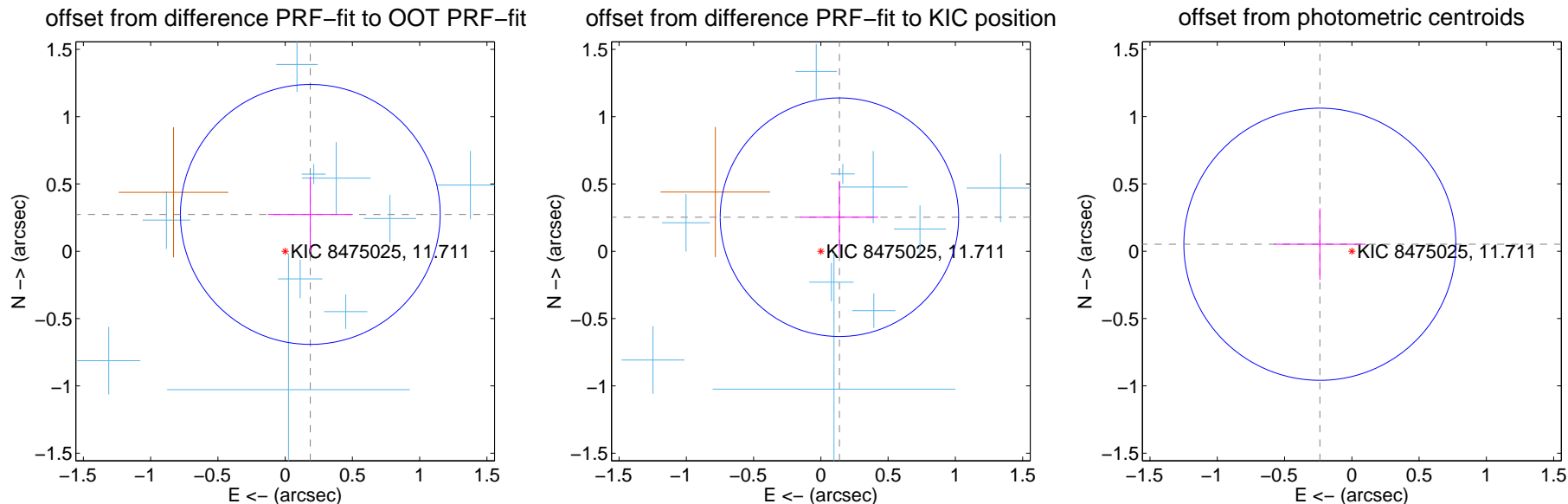
DV Centroid Data

Supplemental centroid analysis for 008475025-01. **Kepler magnitude: 11.71.** Transit SNR 9.50

There are 13 quarters with good PRF difference image offsets

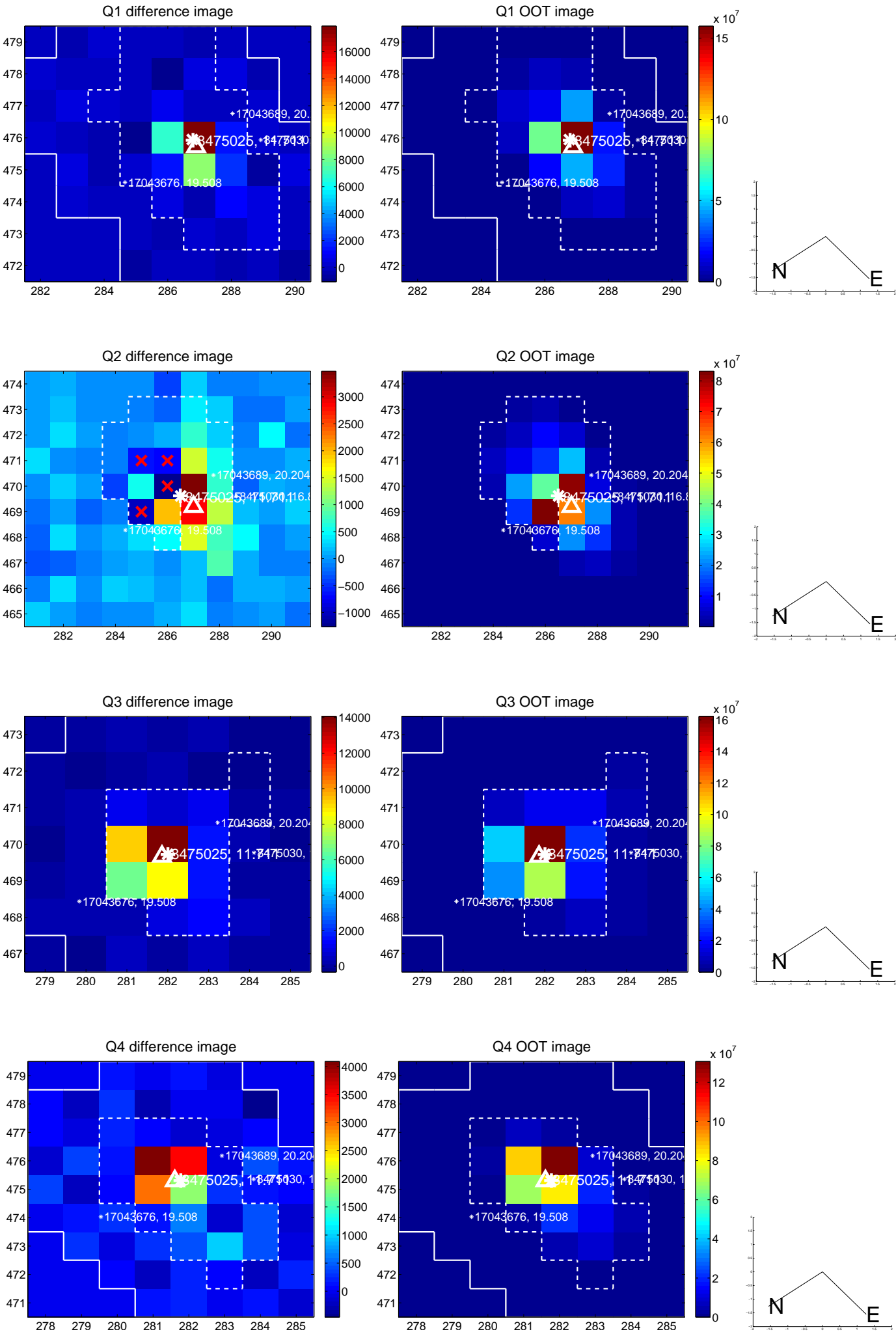
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.332 ± 0.322	1.03	-0.187 ± 0.316	0.274 ± 0.281
PRF-fit source offset from KIC position	0.288 ± 0.295	0.98	-0.138 ± 0.287	0.253 ± 0.269
photometric centroid source offset	0.24 ± 0.34	0.72	0.24 ± 0.34	0.05 ± 0.27

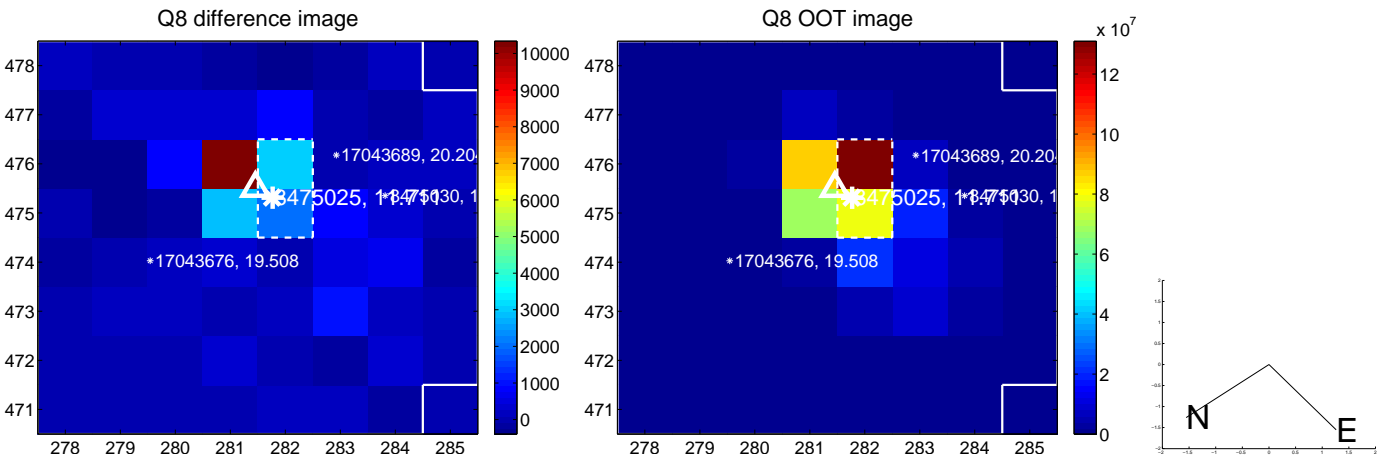
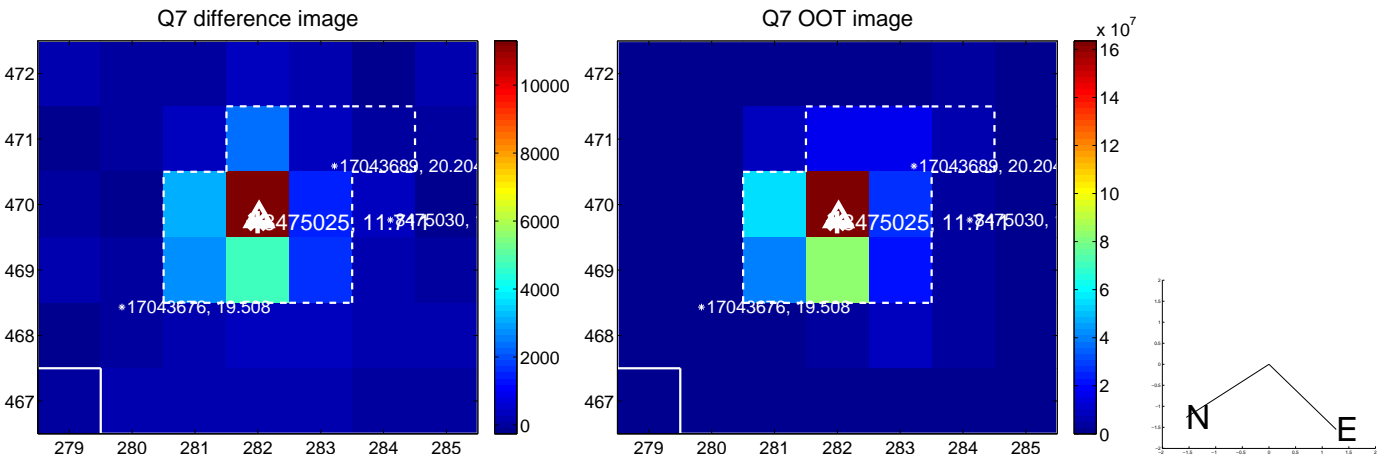
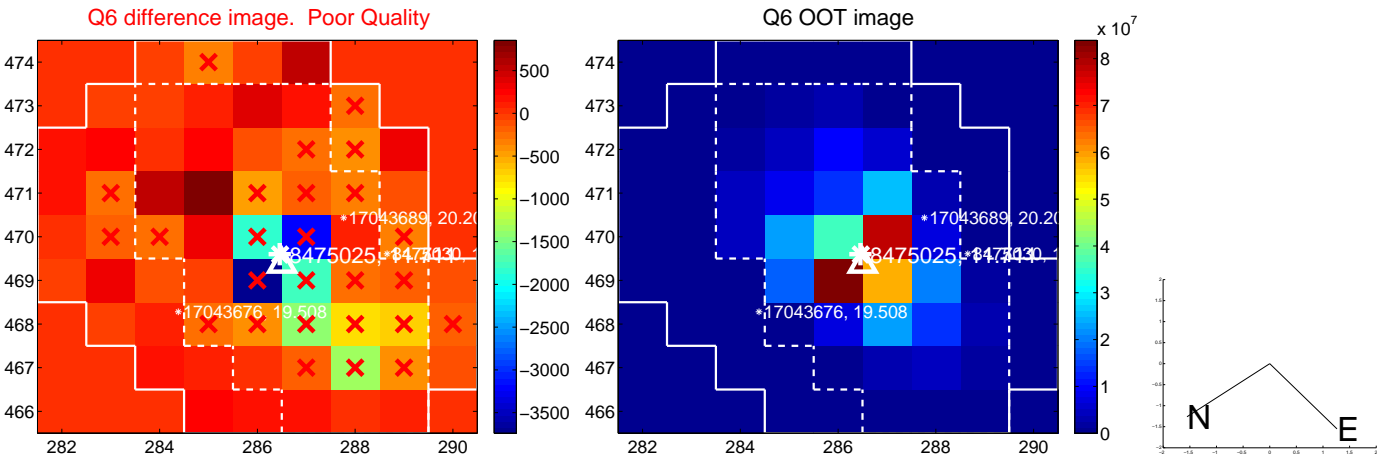
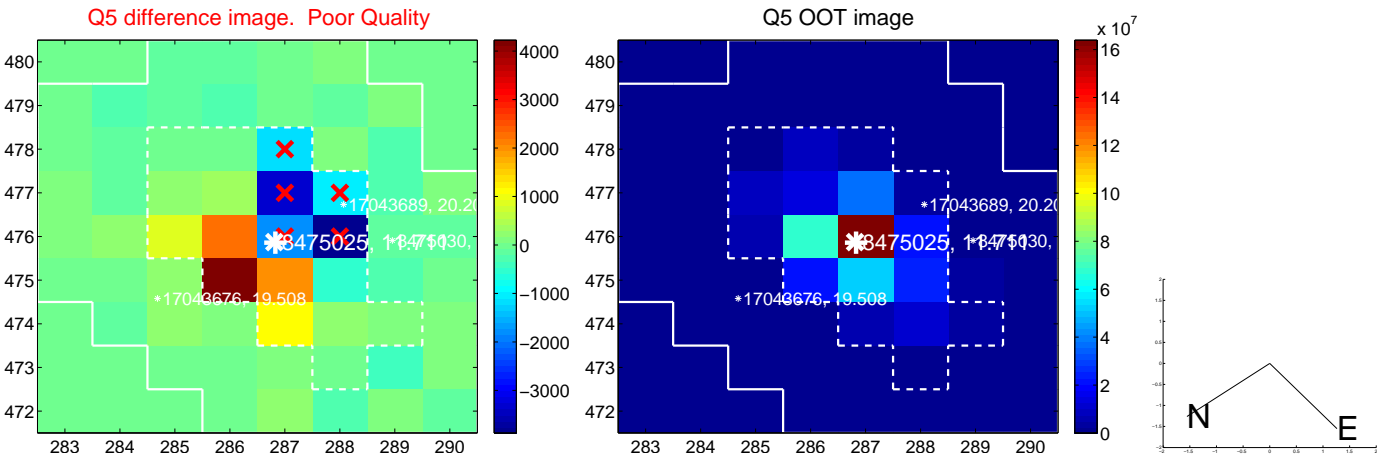


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

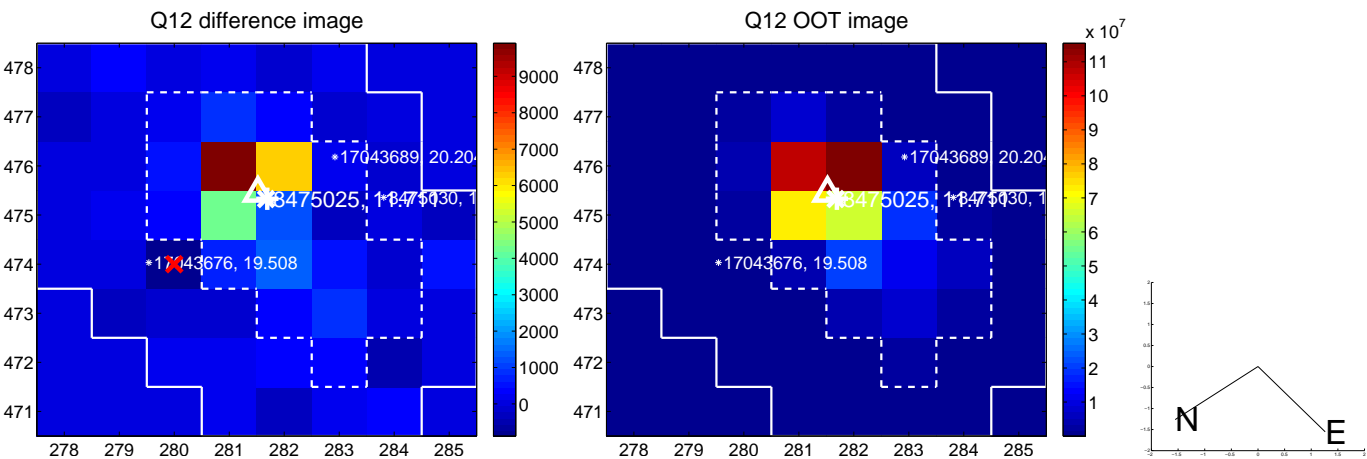
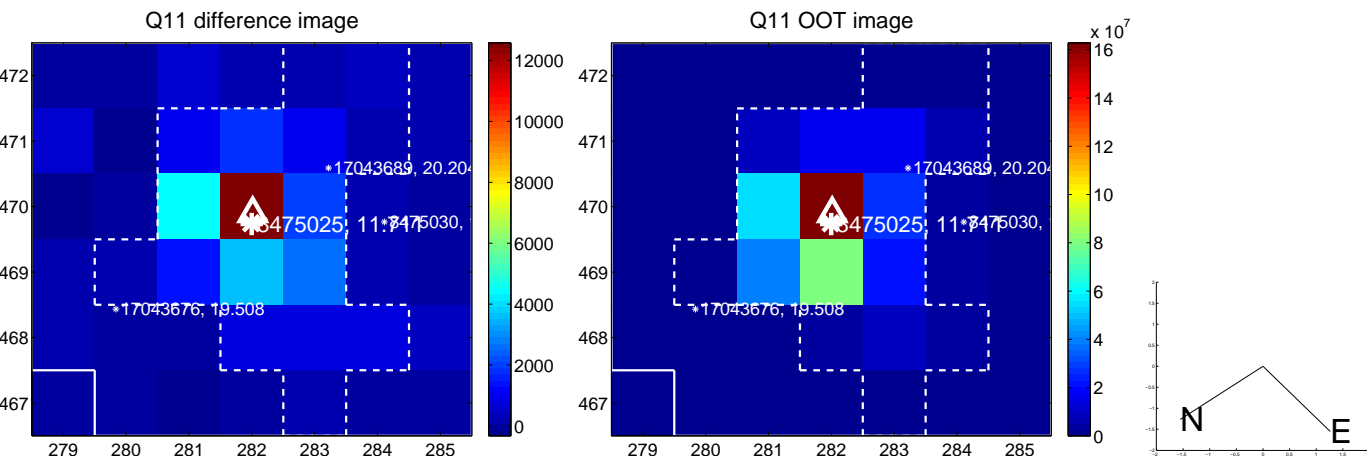
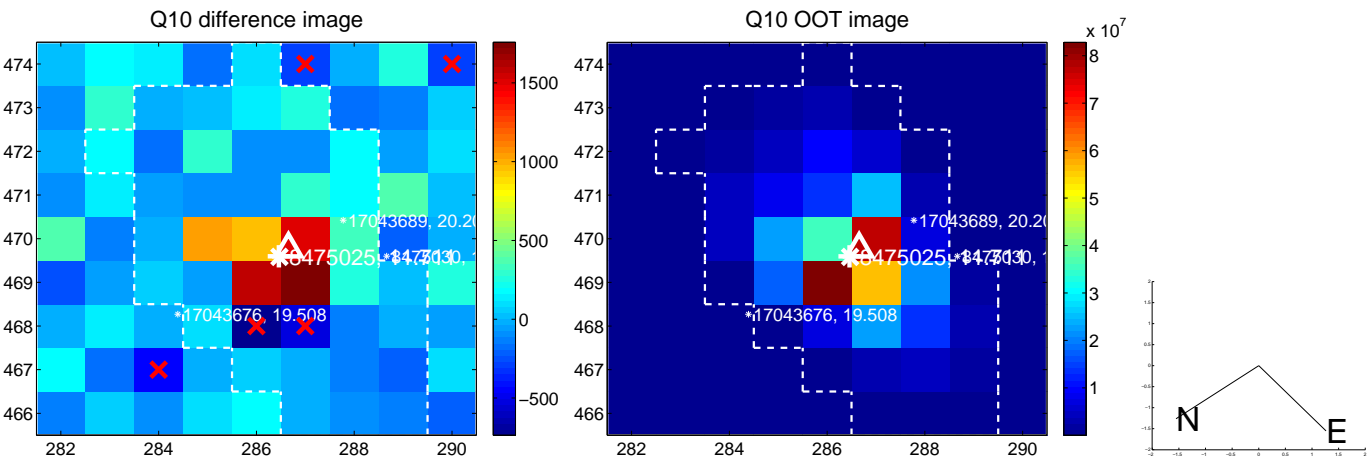
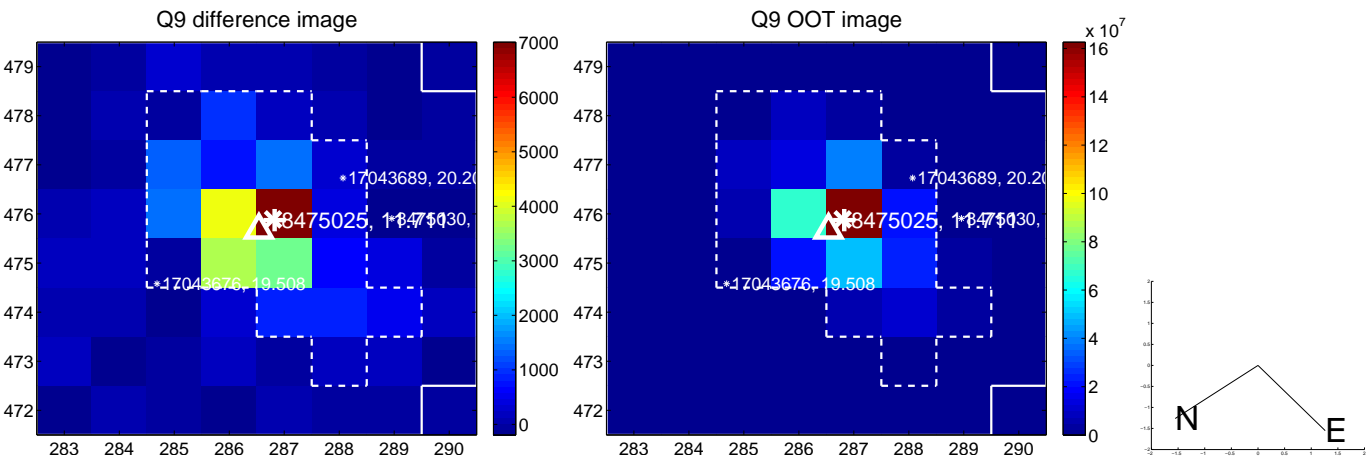
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



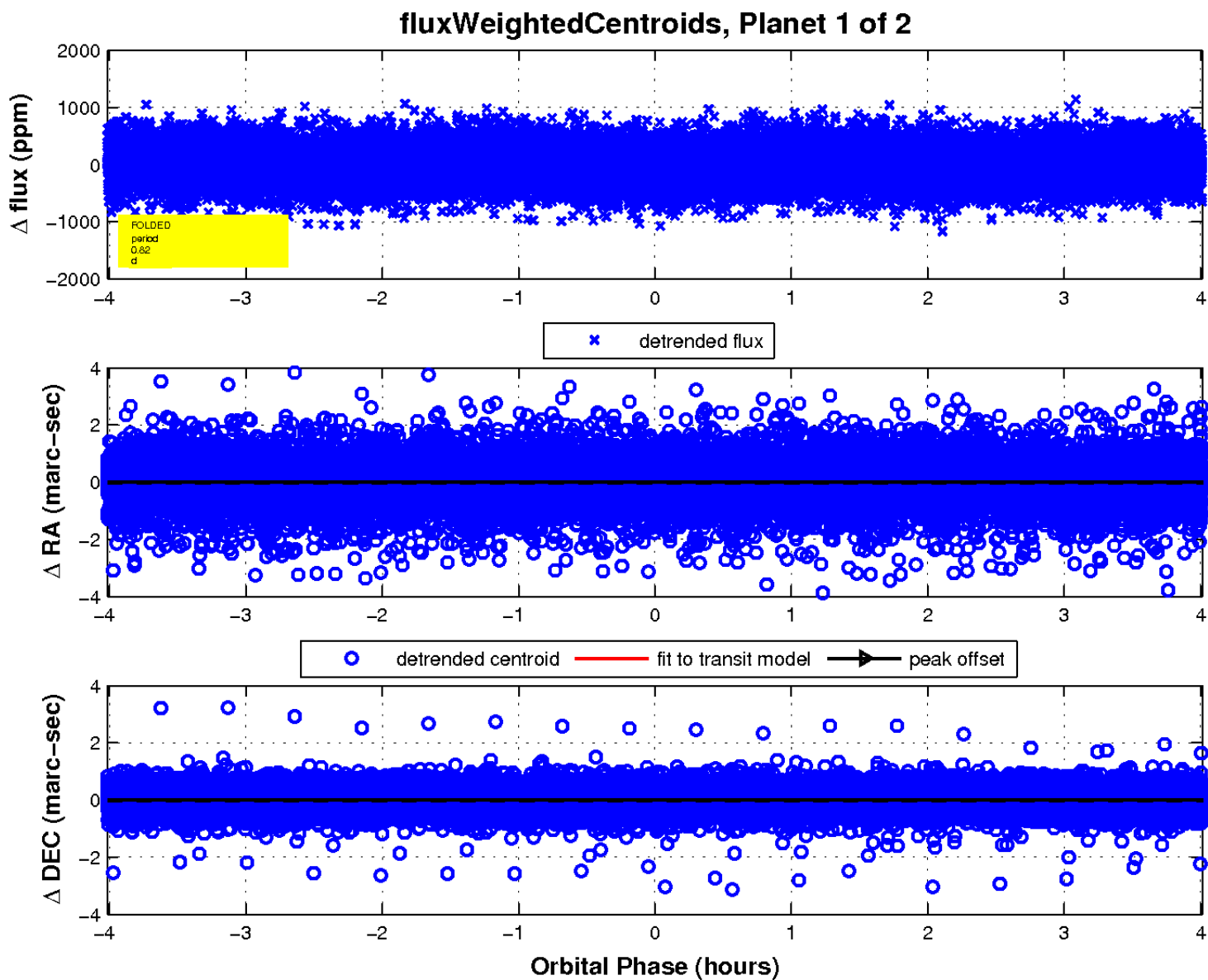
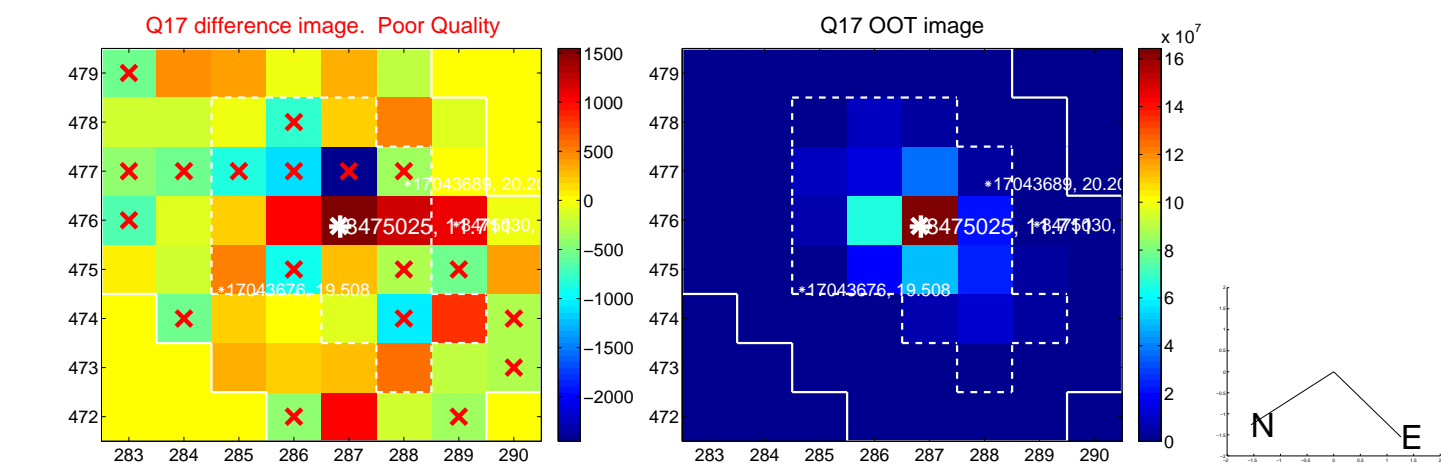
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

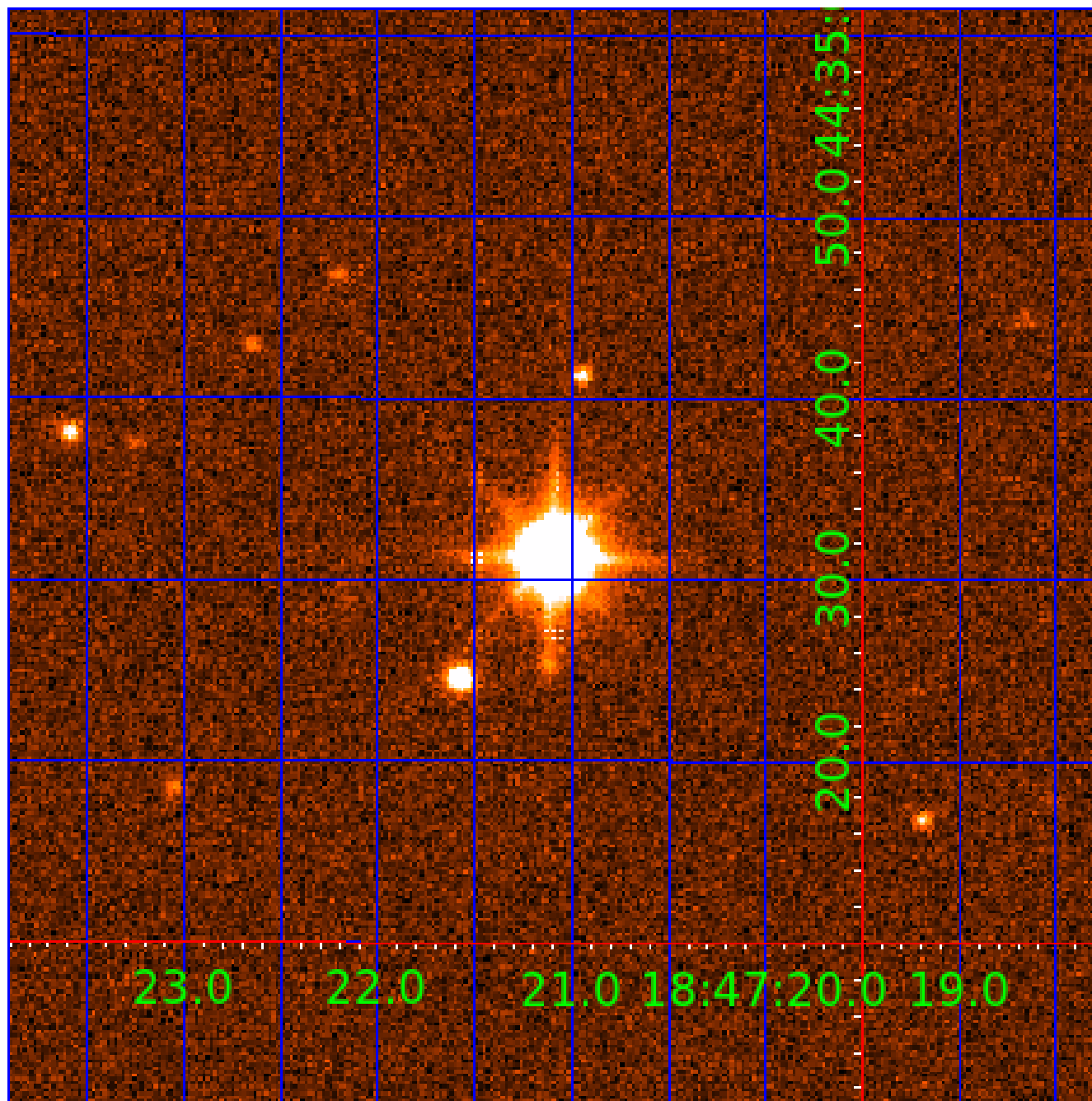


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008475025

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})
008475025-01	OBS	No	0.823193	132.156320	47.4	1.338	8.2	9.5	4.95	5045	4.11	0.00
008475025-02	OBS	No	29.830289	132.064580	245.8	5.090	7.1	7.5	4.95	5045	10.30	459.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008475025-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008475025-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—MOD_NONUNIQ_ALT

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

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

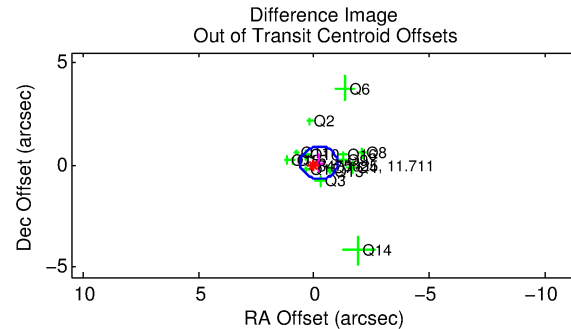
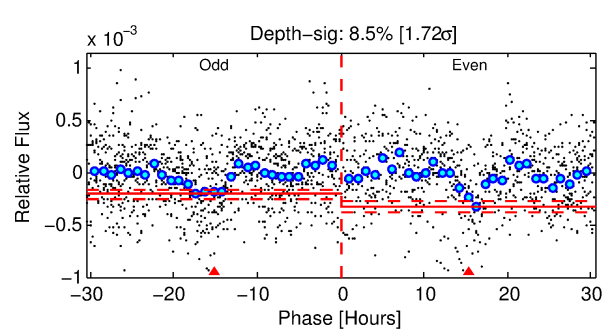
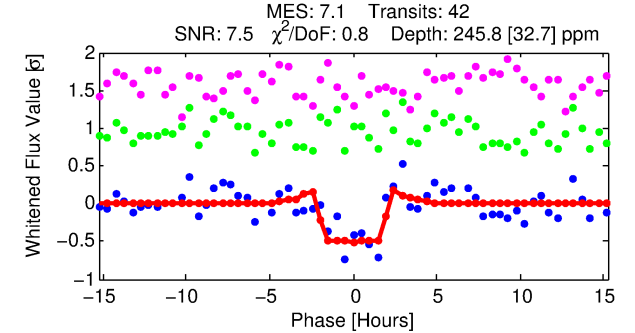
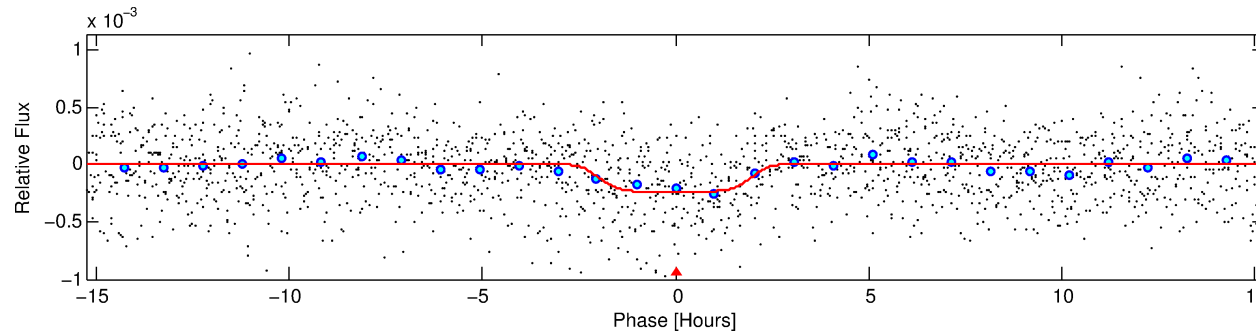
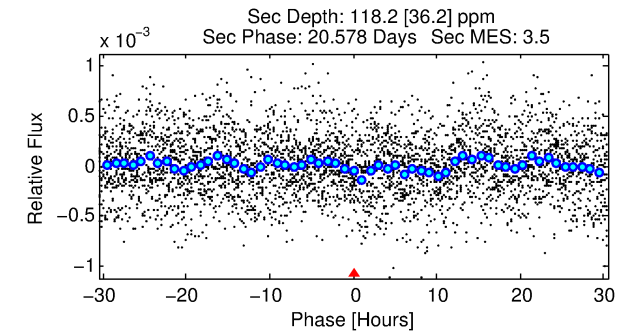
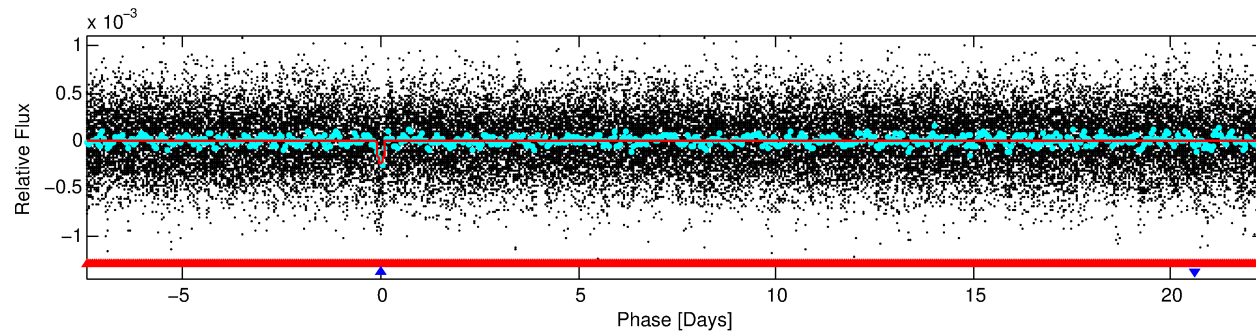
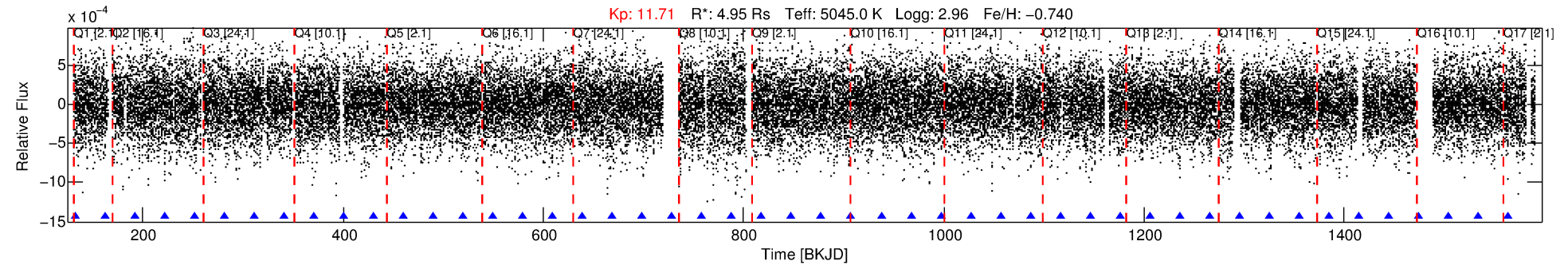
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008475025-02

No Significant Match Found

DV One-Page Summary

KIC: 8475025 Candidate: 2 of 2 Period: 29.830 d



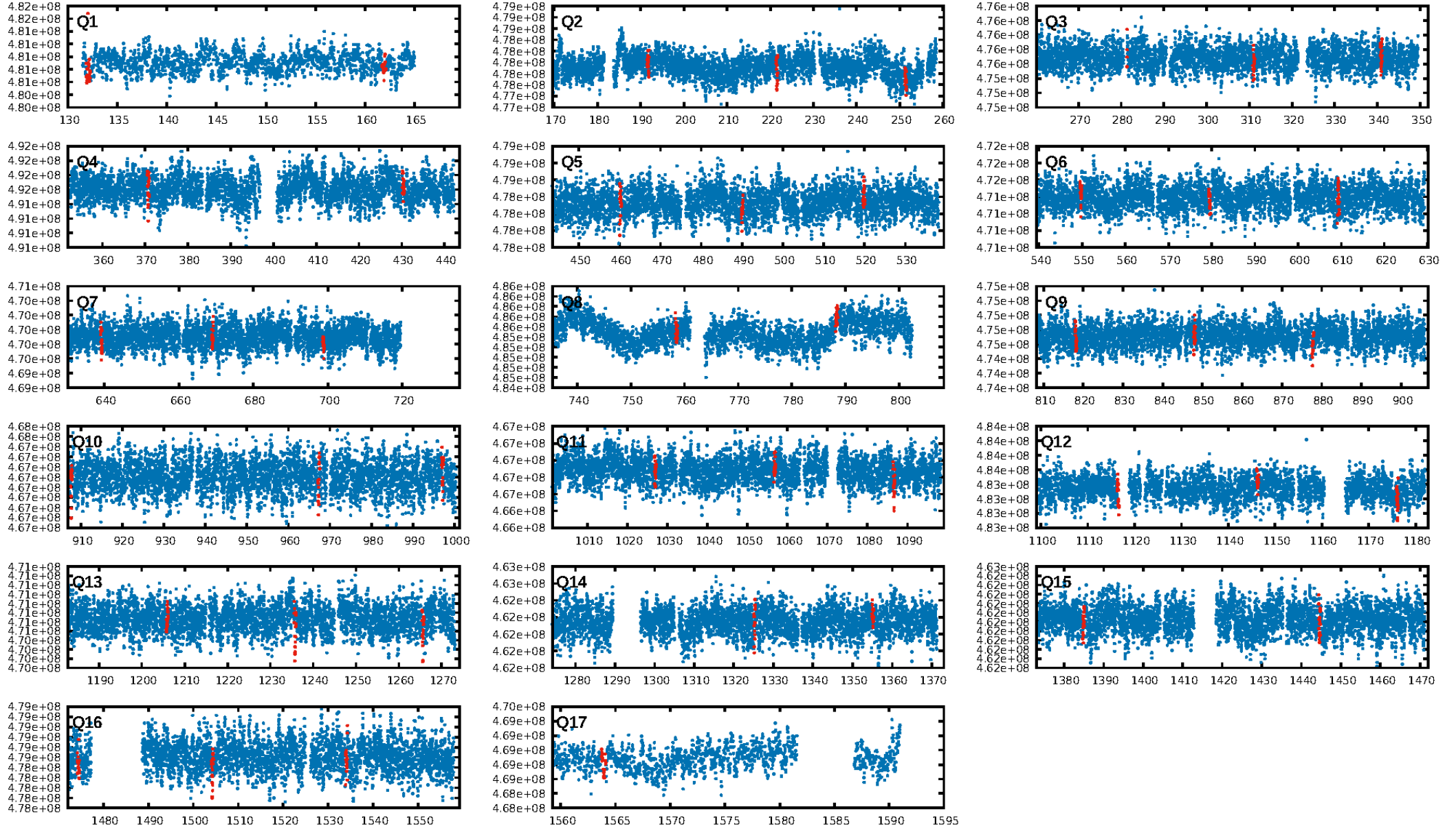
DV Fit Results:

Period = 29.83029 [0.00033] d
Epoch = 132.0646 [0.0095] BKJD
Rp/R* = 0.0191 [0.0015]
a/R* = 15.00 [2.59]
b = 0.96 [0.01]
Seff = 459.58 [62.03]
Teff = 1181 [40] K
Rp = 10.30 [1.71] Re
a = 0.1758 [0.0176] AU
Ag = 18.96 [6.89] [2.61σ]
Teffp = 3809 [338] K [7.71σ]

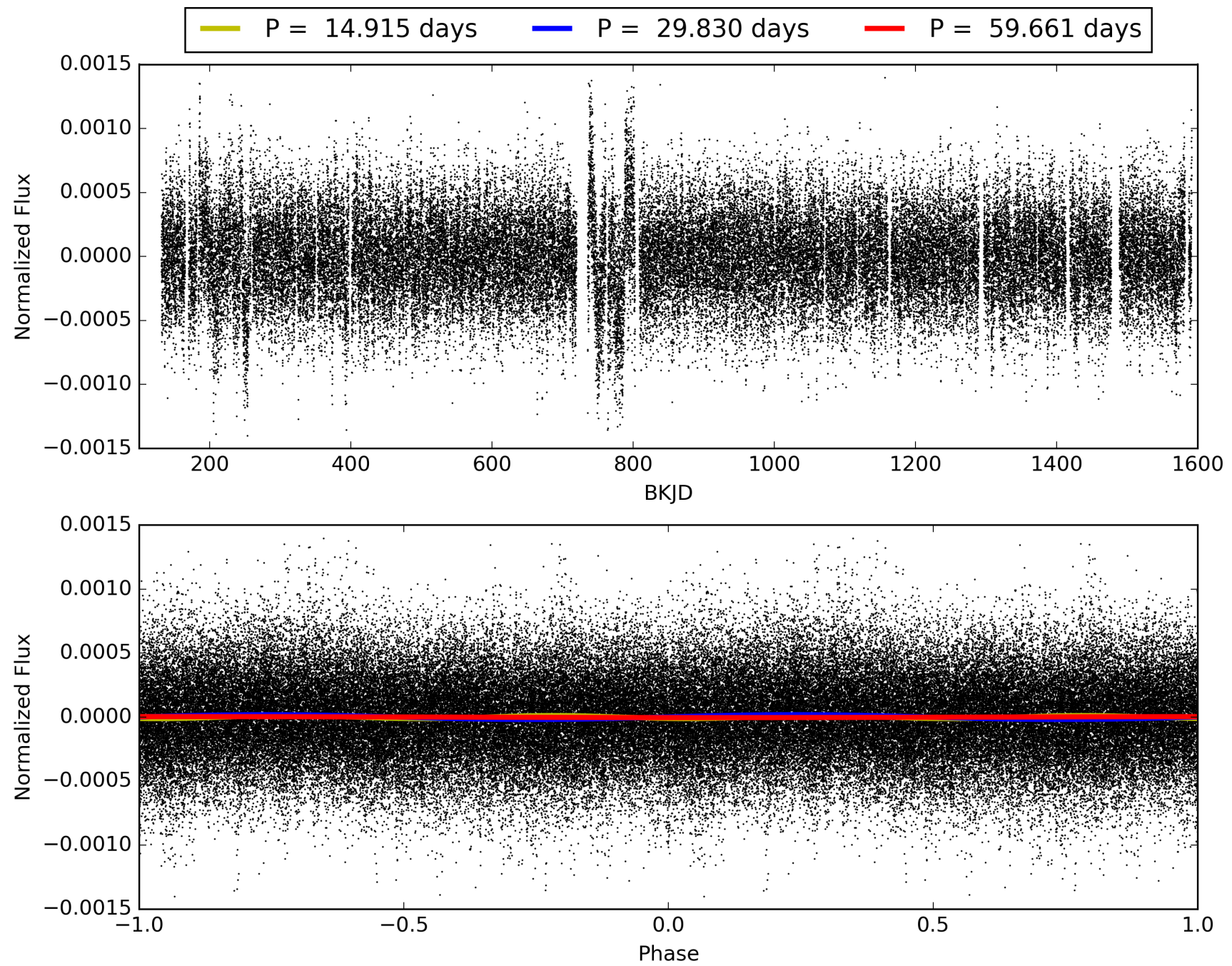
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [132.28σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 52.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.06e-11
RollingBand-fgt: 1.00 [39/39]
GhostDiagnostic-chr: -6.07
Centroid-sig: 0.1%
Centroid-so: 0.291 arcsec [1.48σ]
OotOffset-rm: 0.231 arcsec [0.86σ]
KicOffset-rm: 0.177 arcsec [0.63σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 008475025-02, PDC Light Curves

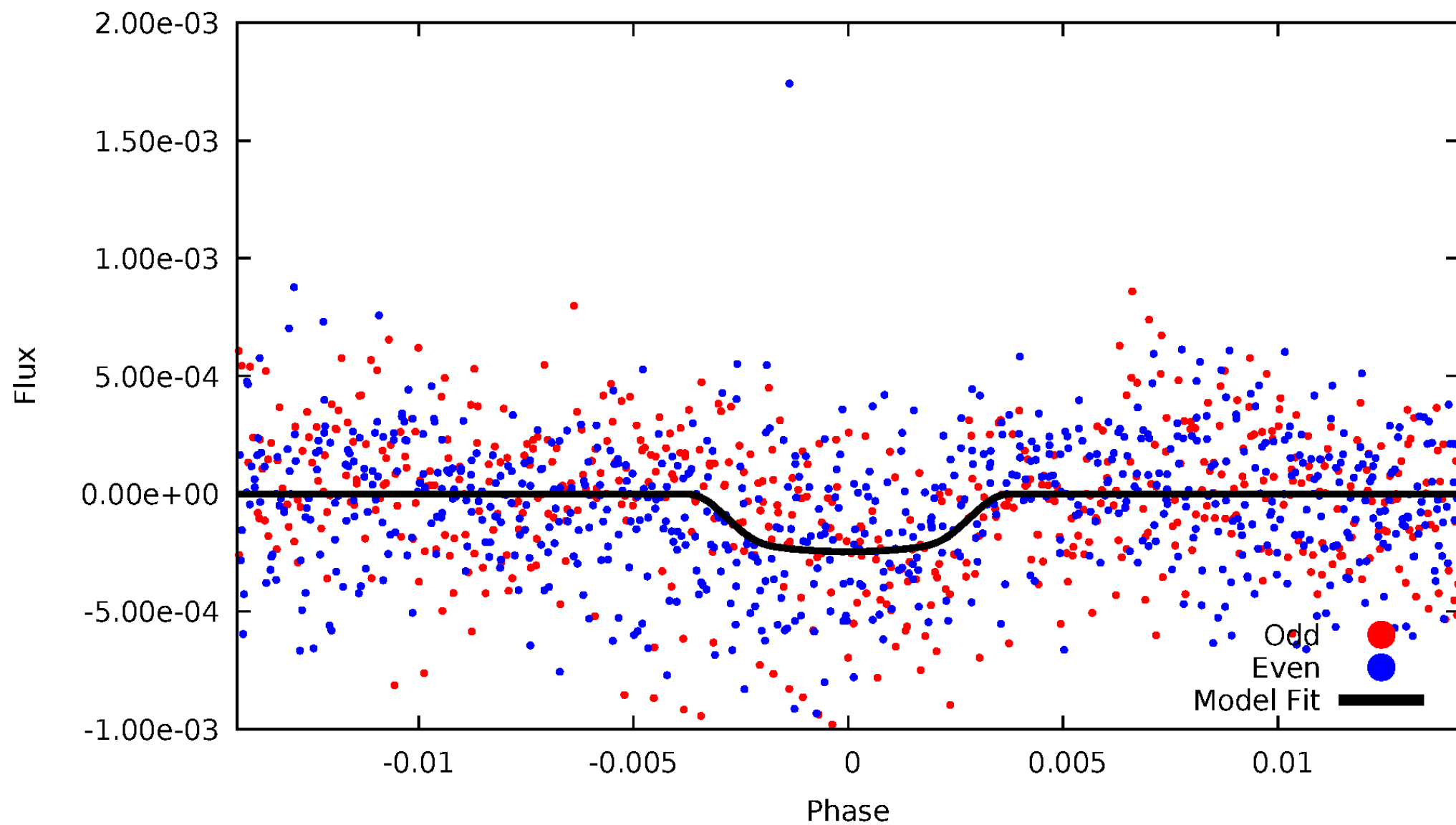


TCE 008475025-02



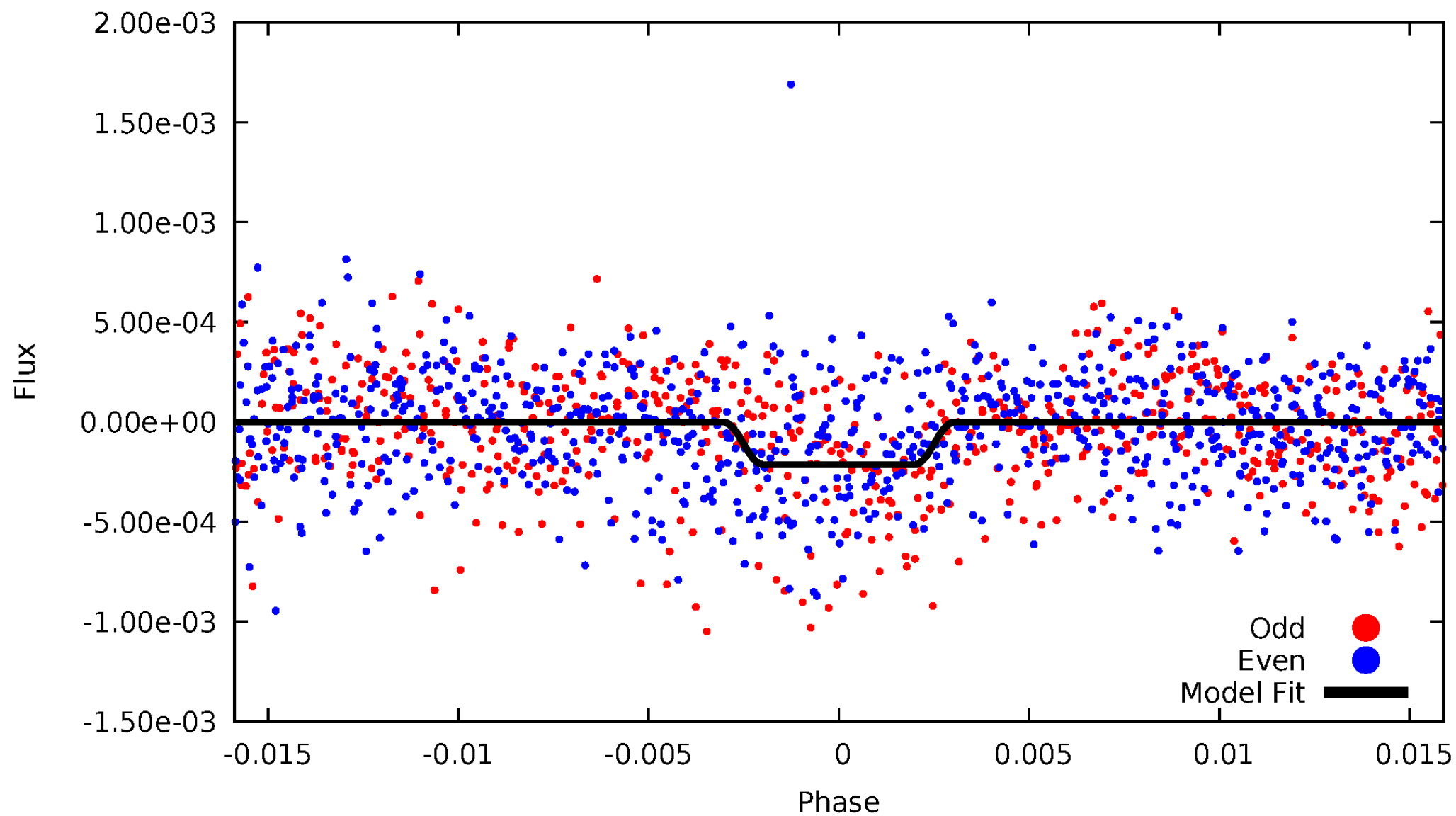
DV Odd/Even

TCE 008475025-02



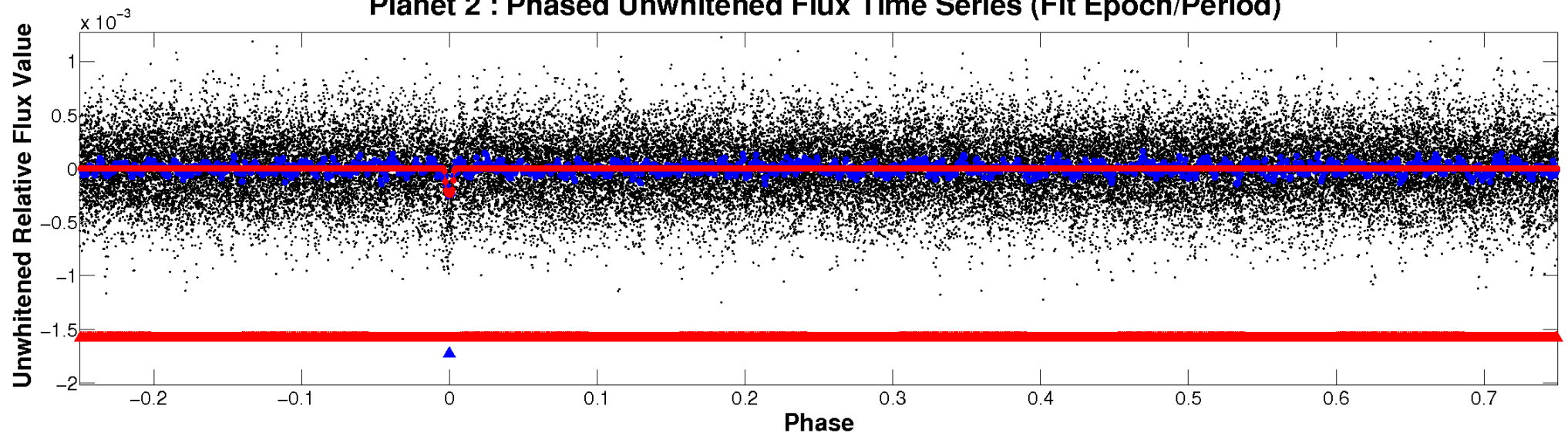
ALT Odd/Even

TCE 008475025-02

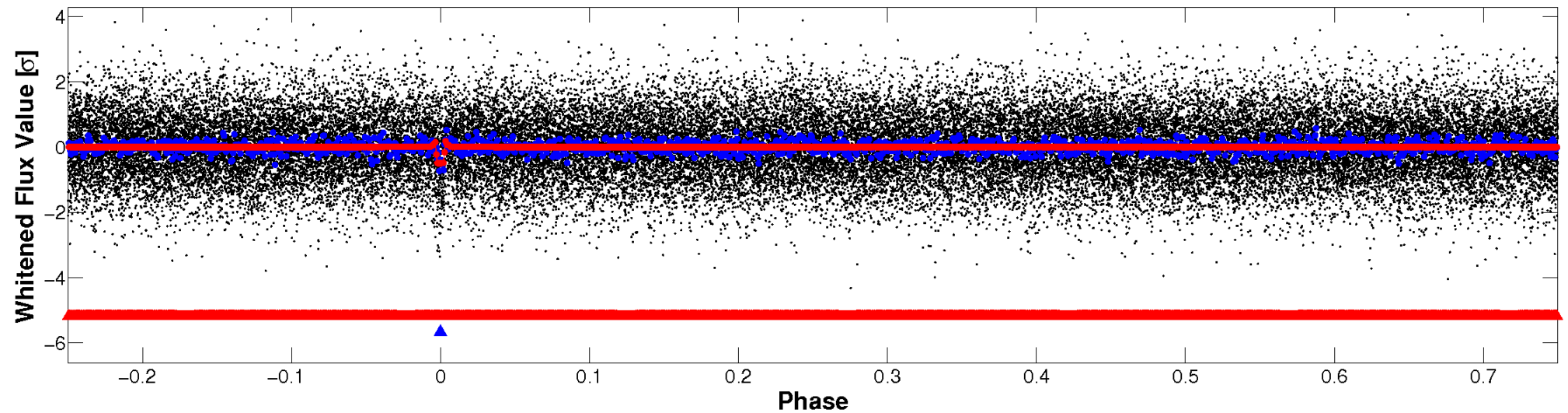


Non-Whitened Vs. Whitened Light Curve

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

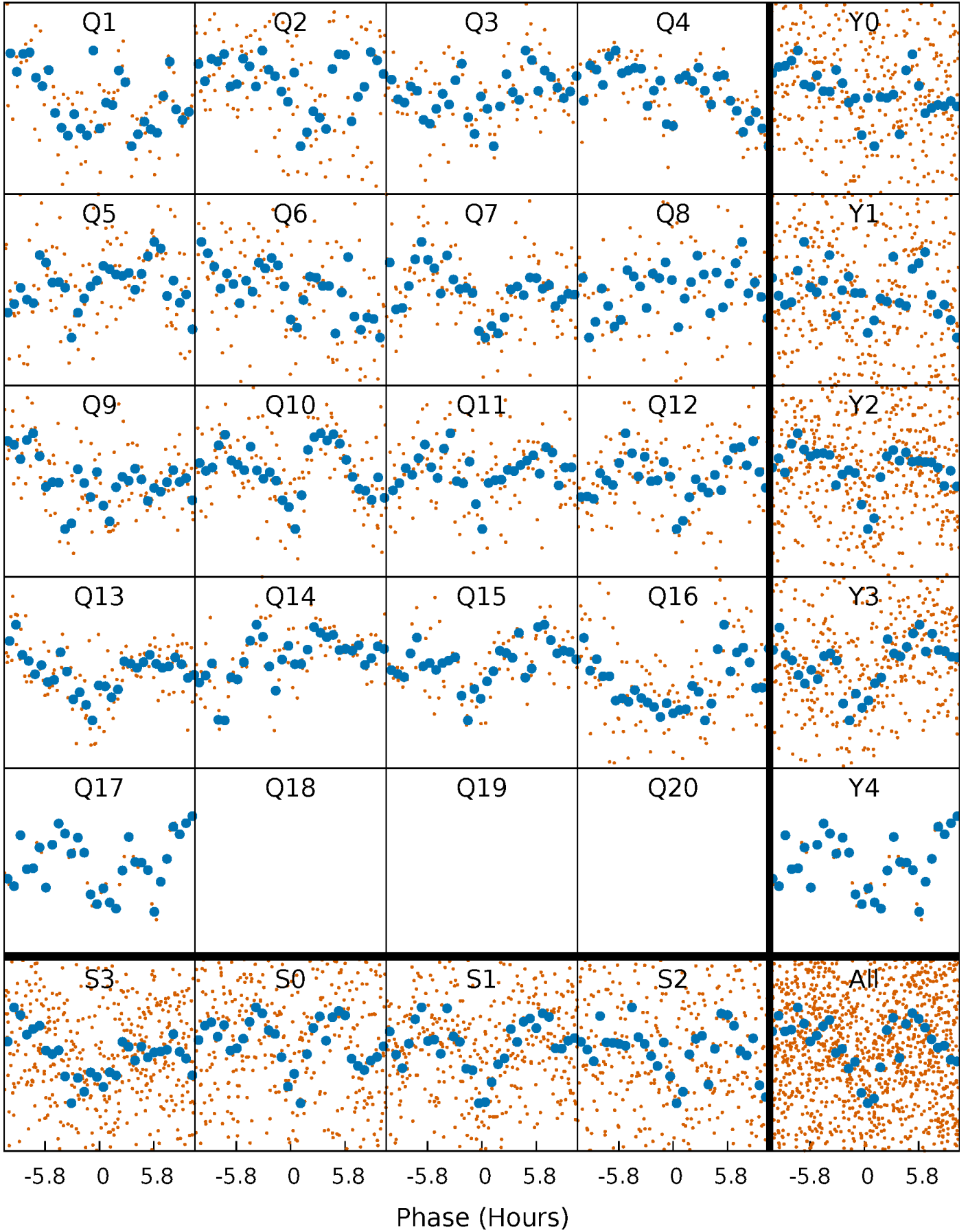


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



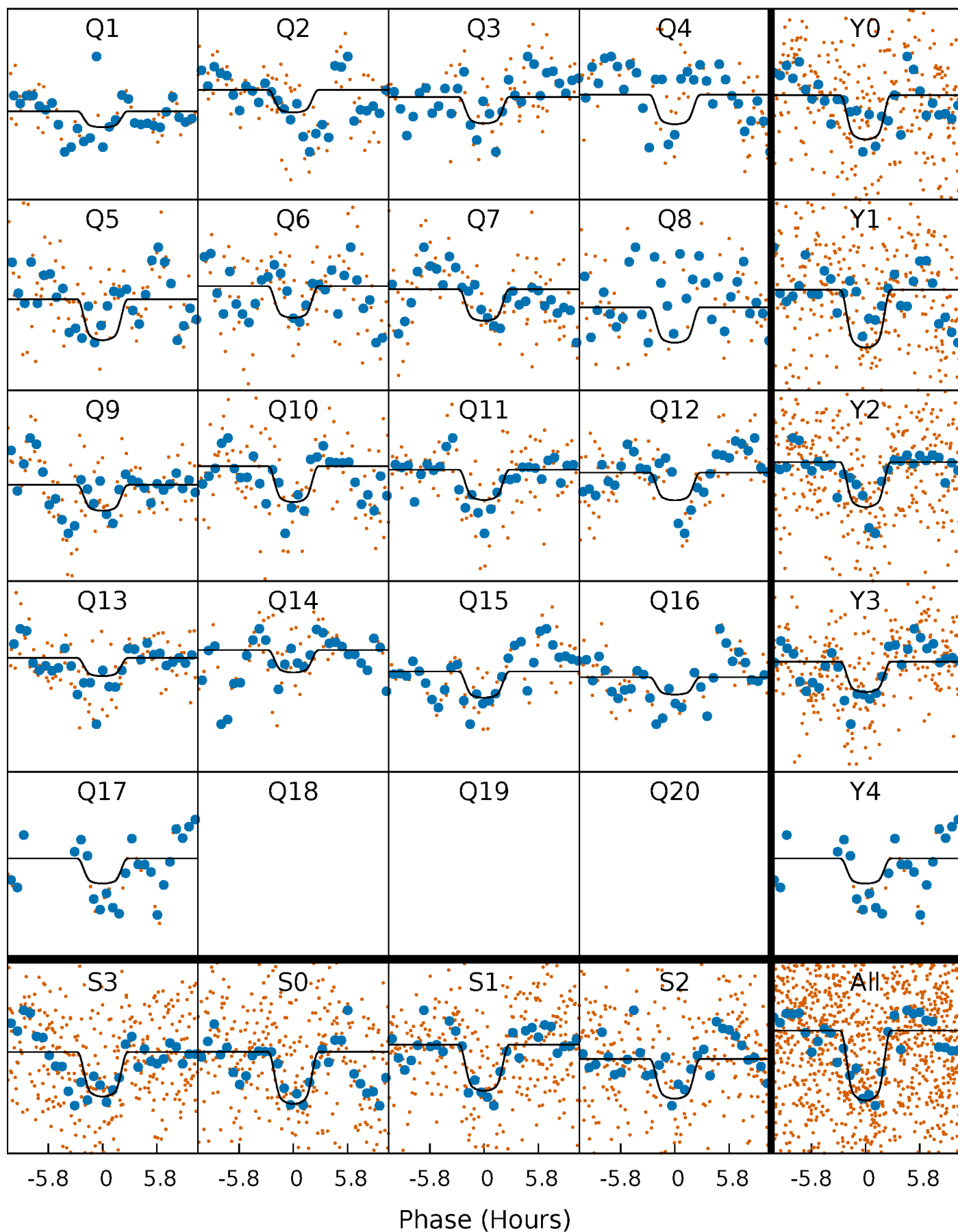
PDC Quarter-Phased Transit Curves

TCE 008475025-02 P= 29.830289 Days $T_0=132.064580$ (BKJD)



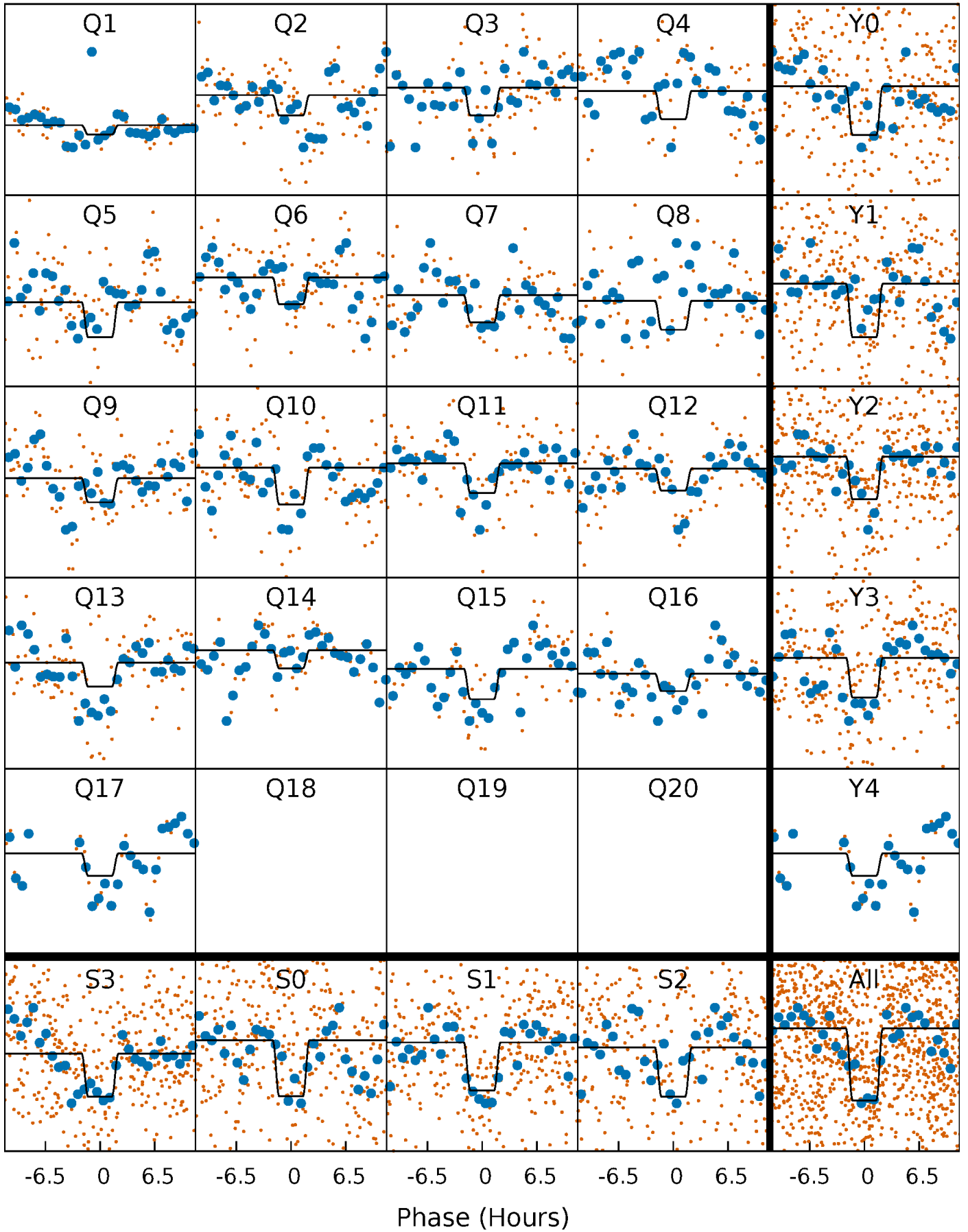
DV Quarter-Phased Transit Curves

TCE 008475025-02 P= 29.830289 Days $T_0=132.064580$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

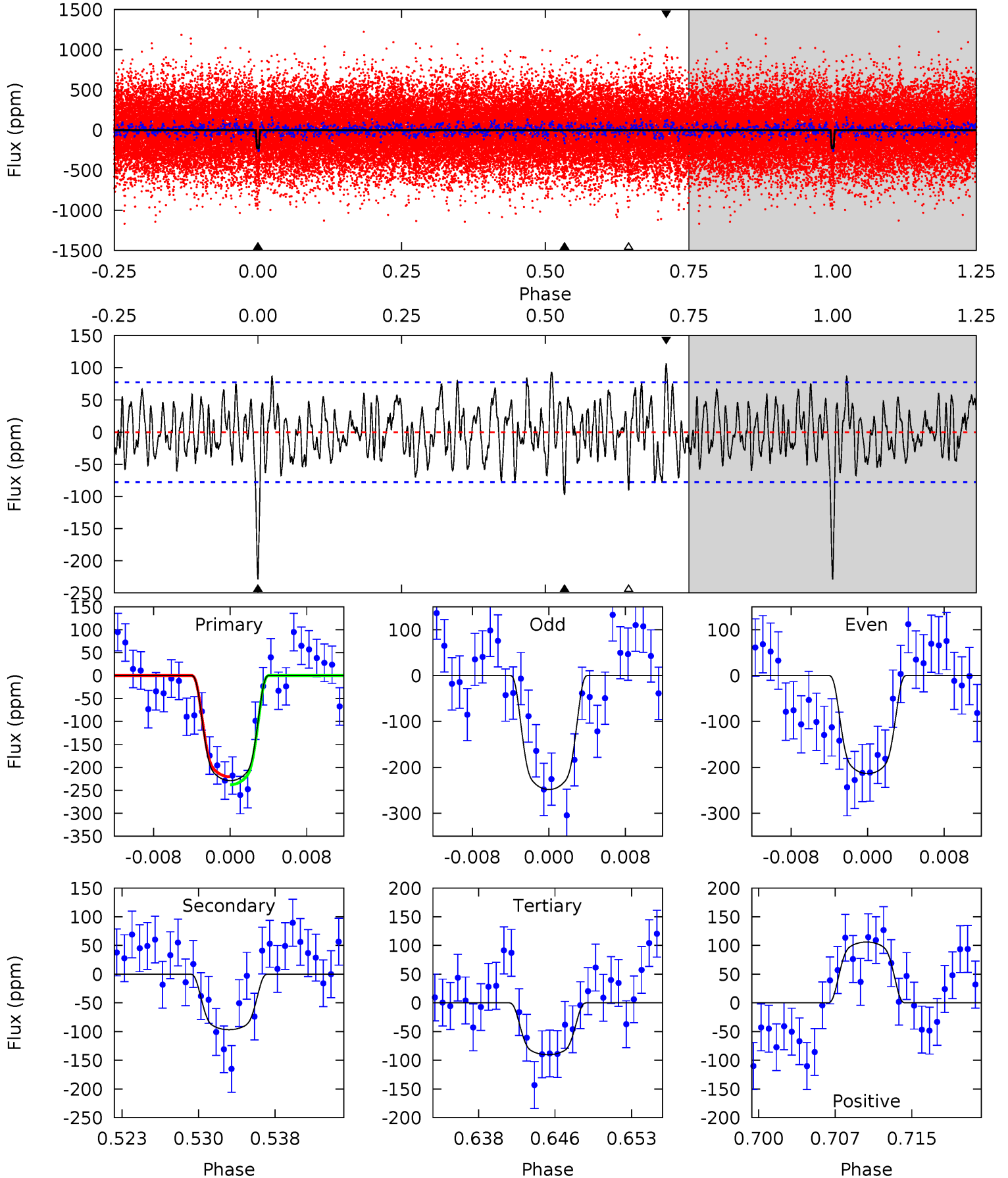
TCE 008475025-02 P= 29.830417 Days $T_0=132.061169$ (BKJD)



DV Model-Shift Uniqueness Test

008475025-02, P = 29.830289 Days, E = 102.234291 Days

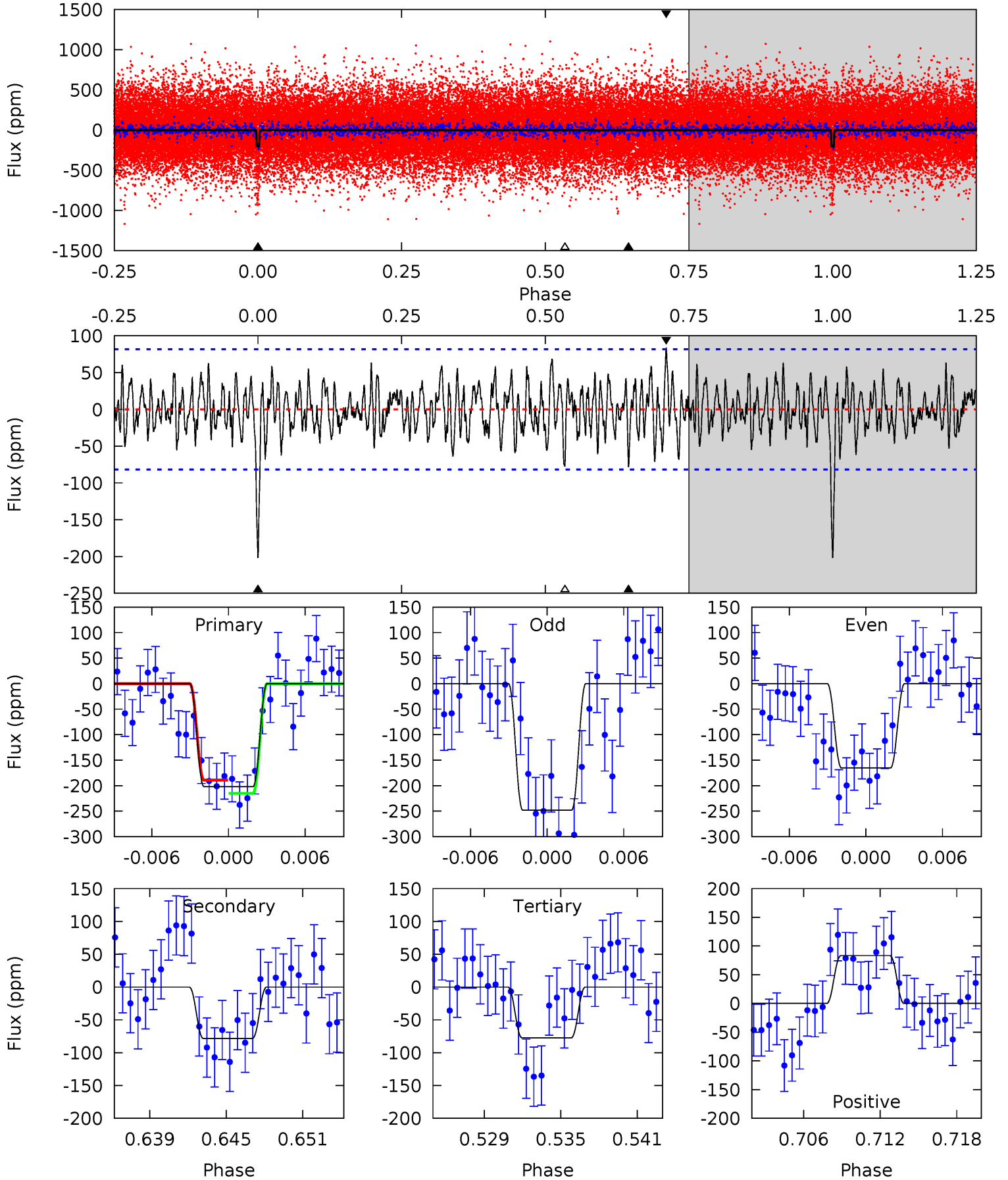
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	6.33	5.91	6.94	5.08	2.67	2.25	9.08	8.05	0.42	-0.61	1.13	1.14	0.32	0.57



Alt Model-Shift Uniqueness Test

008475025-02, P = 29.830417 Days, E = 102.230752 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	4.91	4.86	5.22	5.12	2.74	1.67	7.79	7.43	0.05	-0.31	2.57	1.03	0.29	0.82



Stellar Parameters For KIC 008475025

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5045^{+100}_{-80}	$2.960^{+0.033}_{-0.030}$	$-0.740^{+0.250}_{-0.200}$	$4.947^{+0.718}_{-0.135}$	$0.814^{+0.222}_{-0.012}$	$0.009^{+0.001}_{-0.002}$
	+2%/-2%	+1%/-1%	+34%/-27%	+15%/-3%	+27%/-1%	+10%/-16%
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 008475025-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-97 ± 15	$10.34^{+1.11}_{-0.88}$	1650^{+39}_{-35}	3909^{+175}_{-196}	16^{+4}_{-4}
Alt.	-78 ± 16	$8.03^{+0.86}_{-0.96}$	1649^{+39}_{-35}	4115^{+260}_{-226}	21^{+8}_{-5}

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

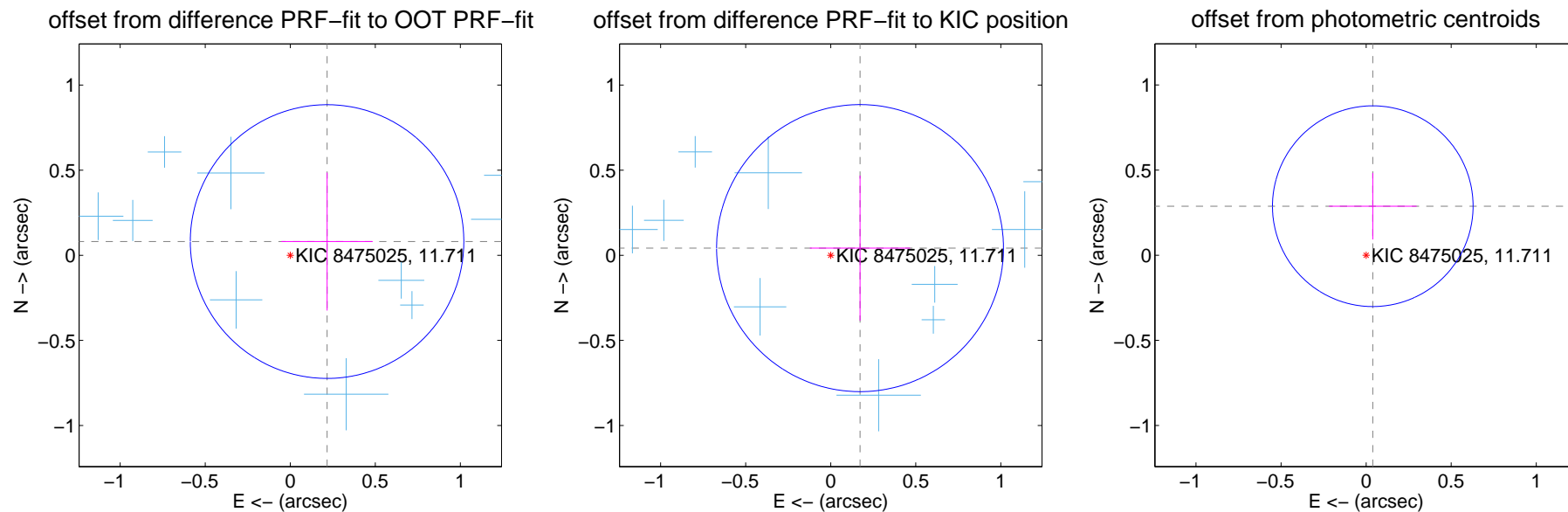
DV Centroid Data

Supplemental centroid analysis for 008475025-02. **Kepler magnitude: 11.71.** Transit SNR 7.48

There are 12 quarters with good PRF difference image offsets

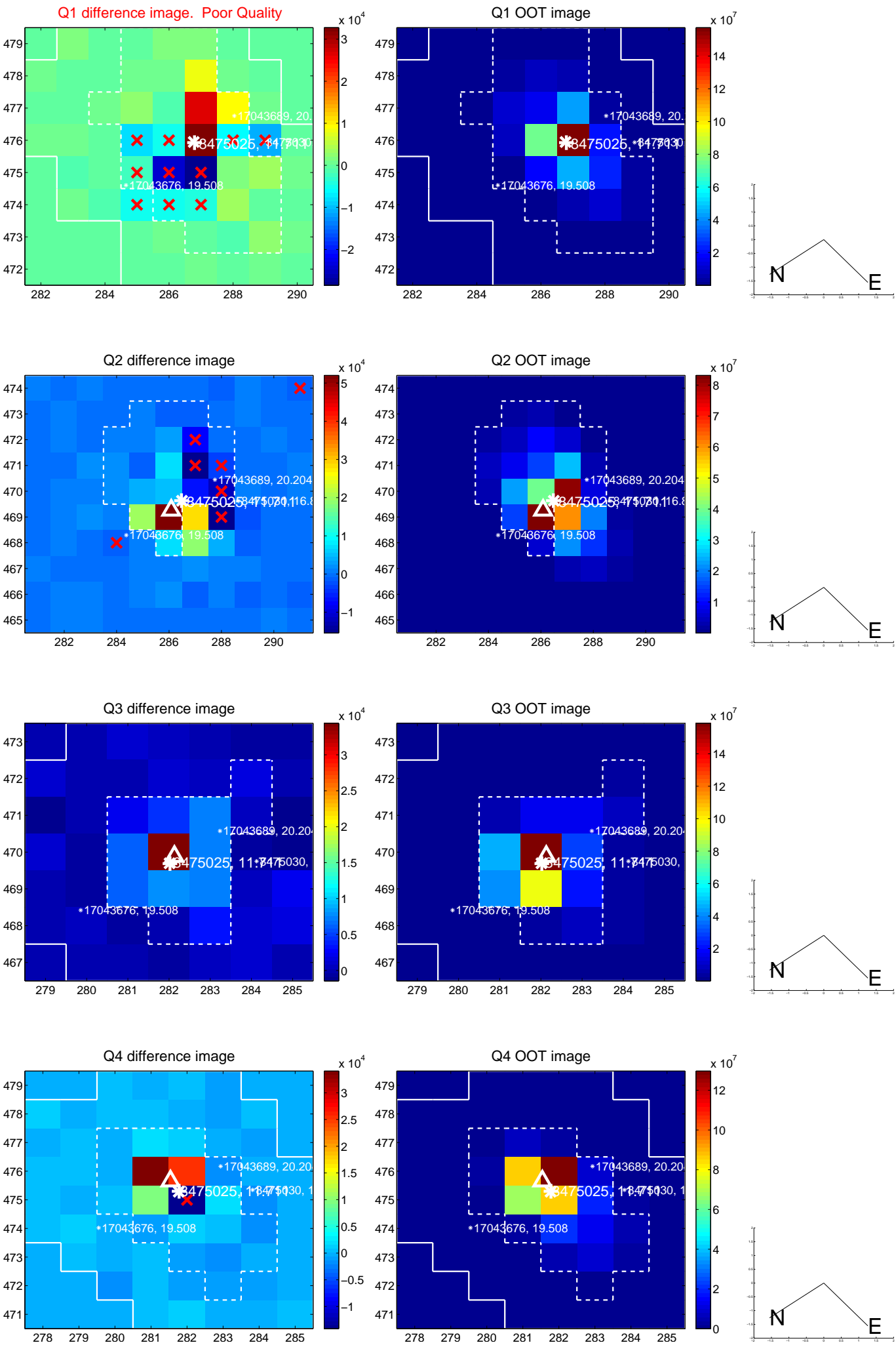
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.231 ± 0.268	0.86	-0.216 ± 0.268	0.081 ± 0.405
PRF-fit source offset from KIC position	0.177 ± 0.281	0.63	-0.172 ± 0.295	0.042 ± 0.426
photometric centroid source offset	0.29 ± 0.20	1.48	-0.04 ± 0.26	0.29 ± 0.20

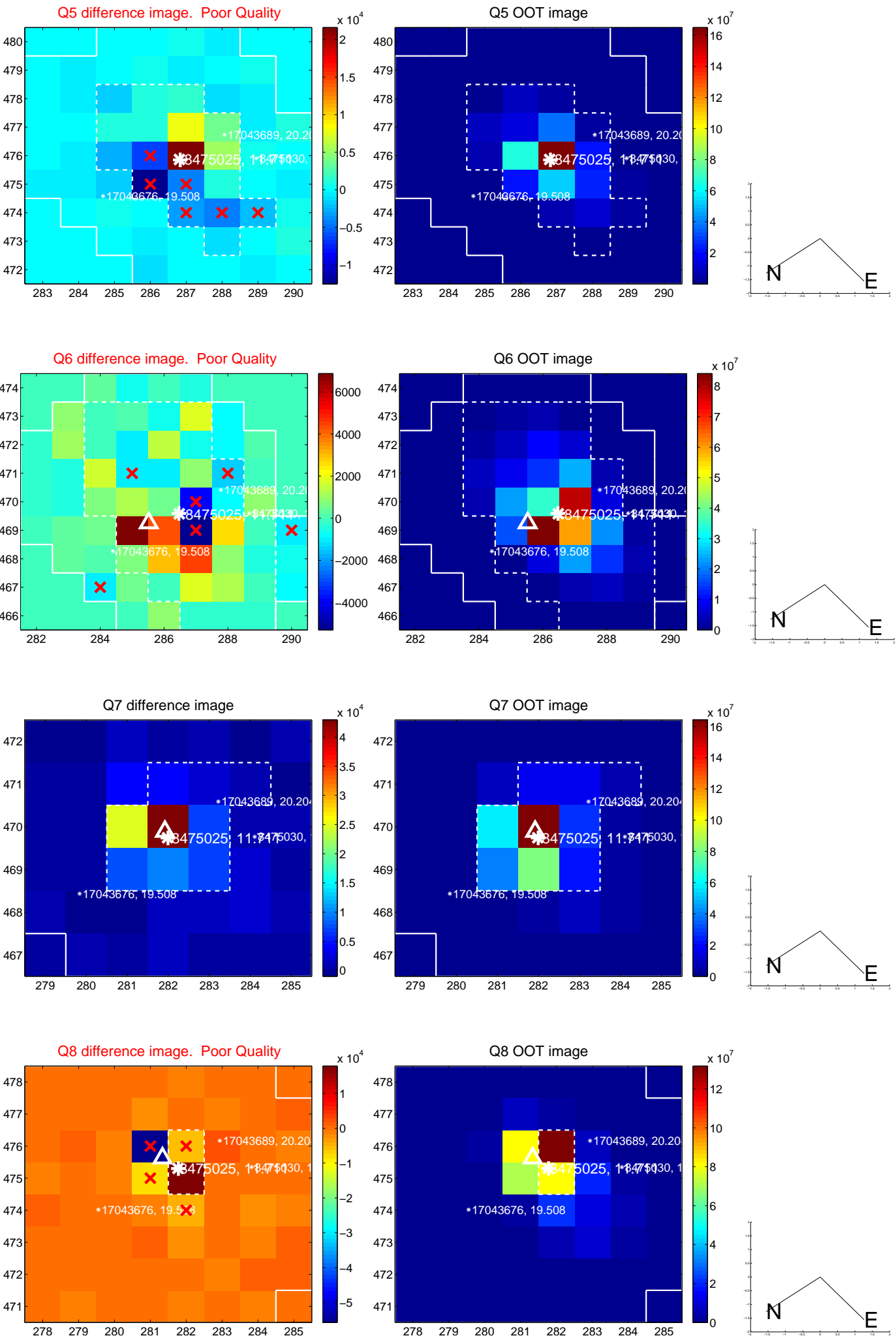


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

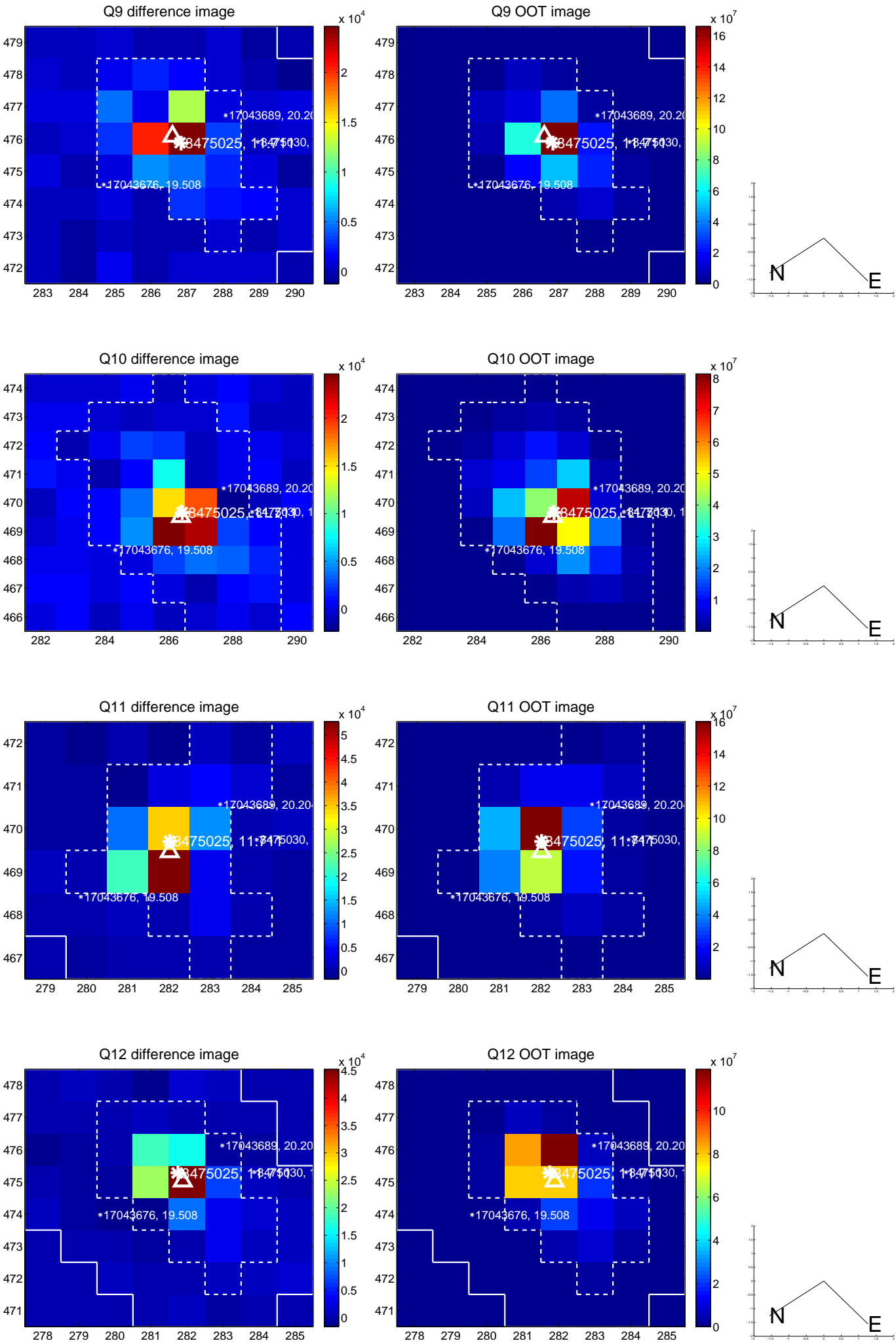
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



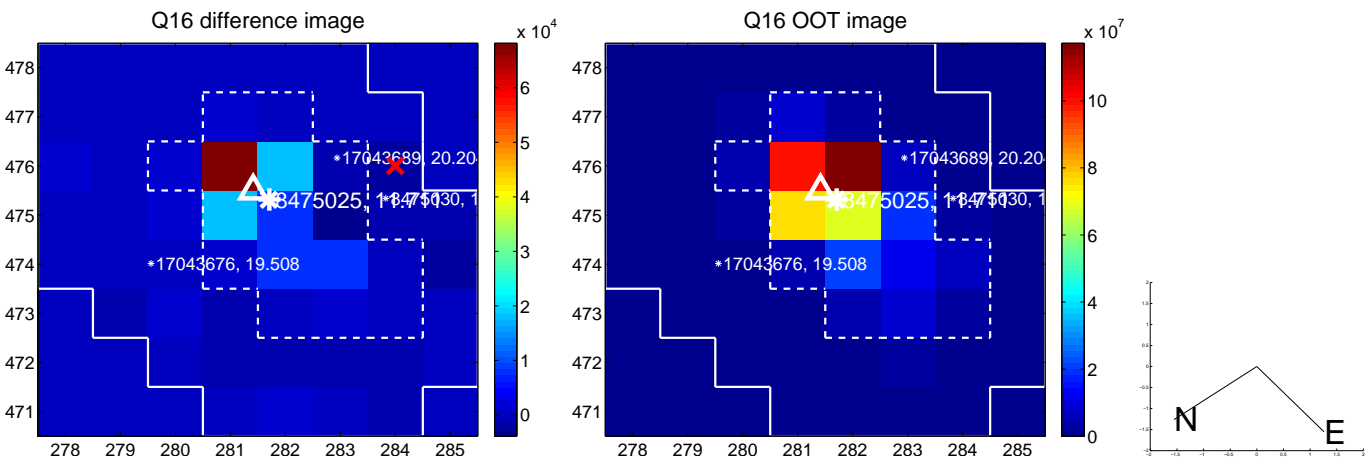
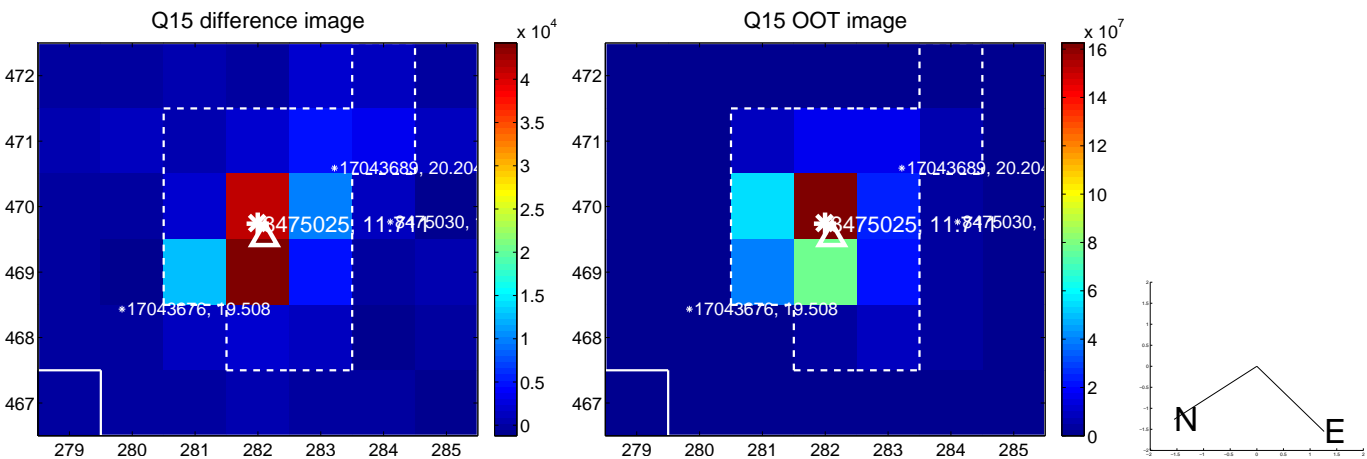
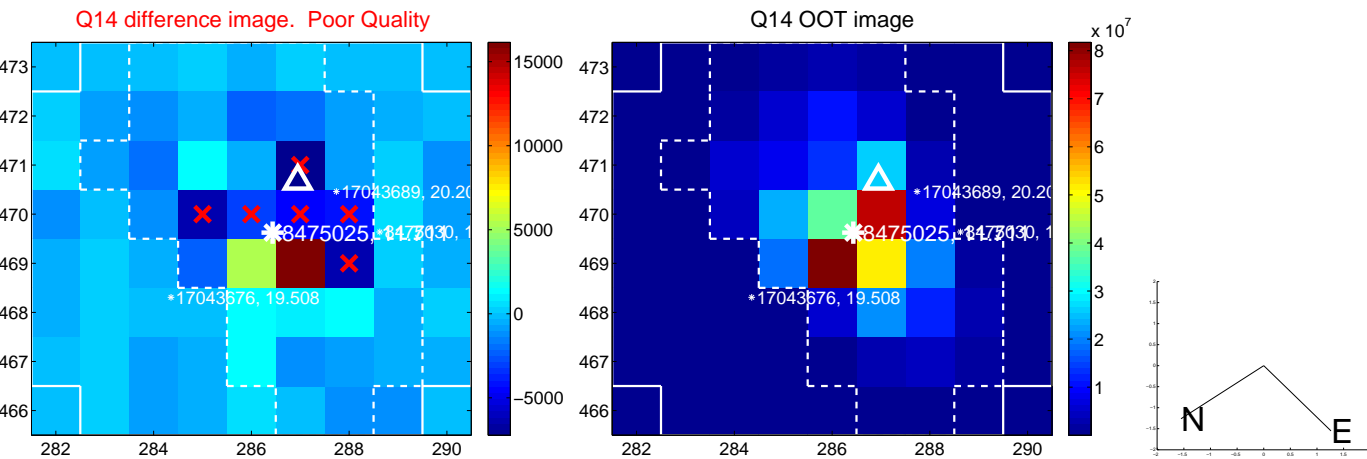
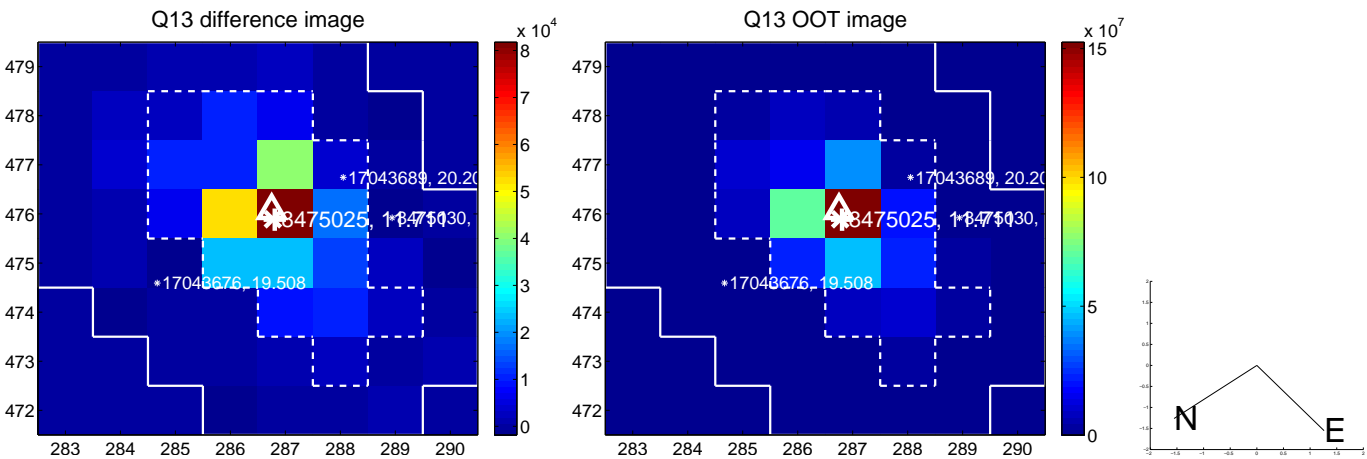
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



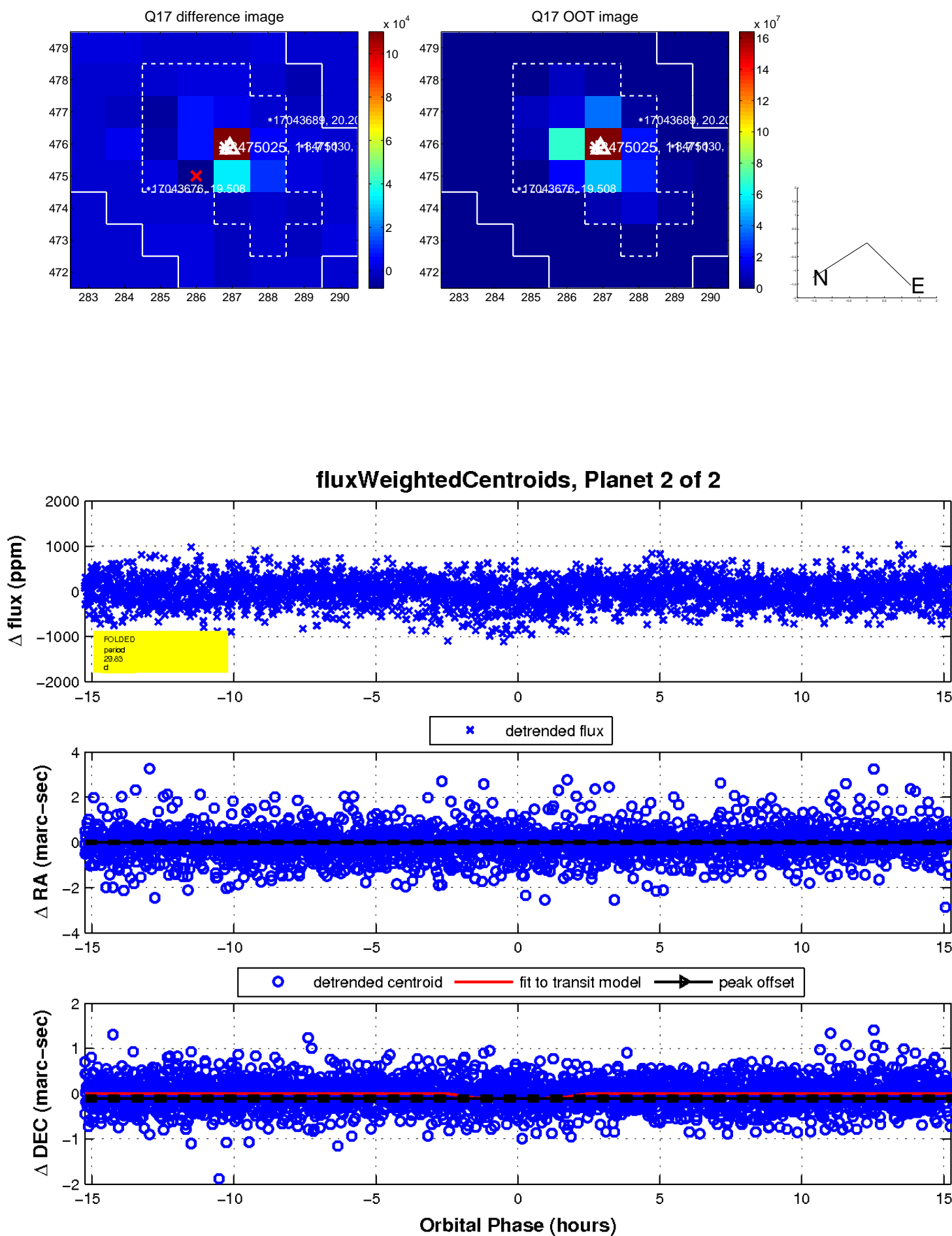
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

