

KIC 008233797

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})
008233797-01	OBS	No	1.327164	132.127512	23.6	8.769	7.8	9.2	0.71	5227	0.35	781.81
008233797-02	OBS	No	73.125052	182.122397	414.8	2.146	8.4	8.9	0.71	5227	1.54	3.73
008233797-03	OBS	No	30.588616	160.100302	381.8	1.340	7.8	9.3	0.71	5227	1.48	11.92
008233797-04	OBS	No	147.304524	258.999651	299.9	2.677	7.9	8.6	0.71	5227	1.43	1.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008233797-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
008233797-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008233797-03	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008233797-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET

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

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

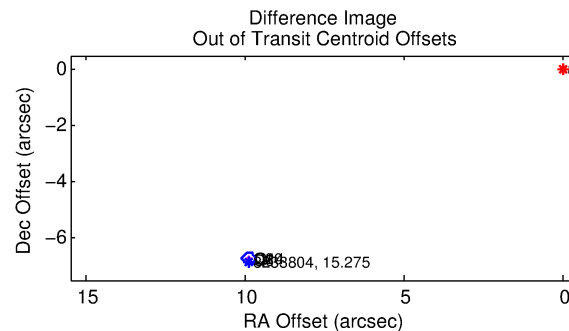
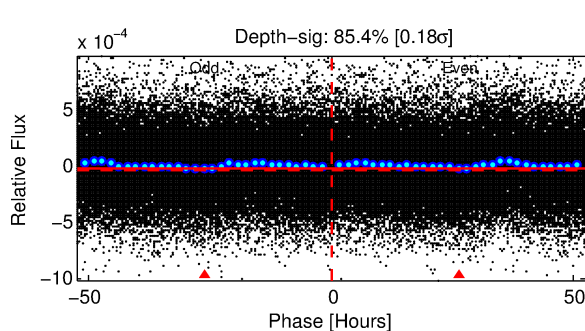
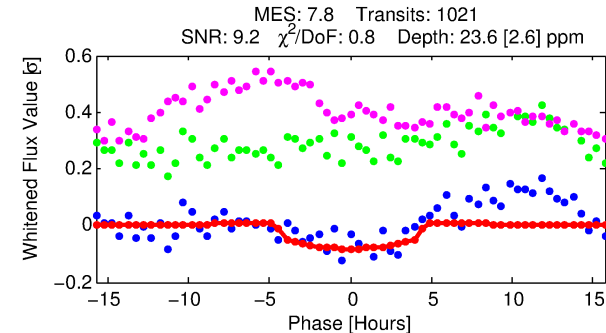
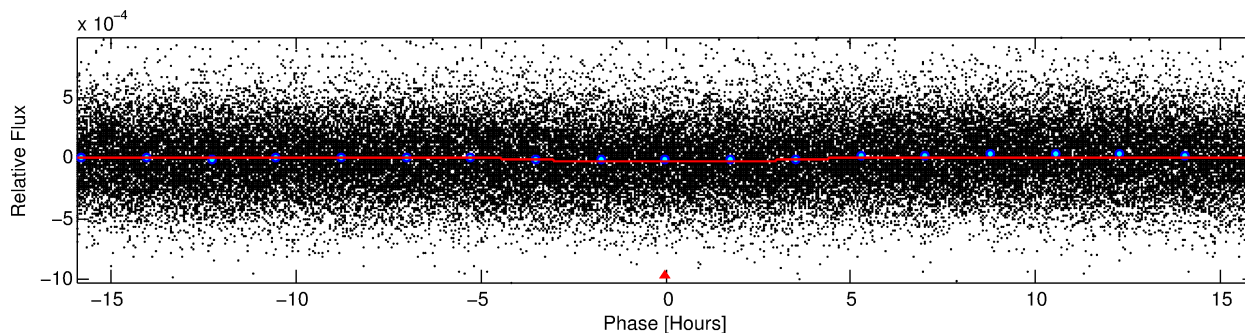
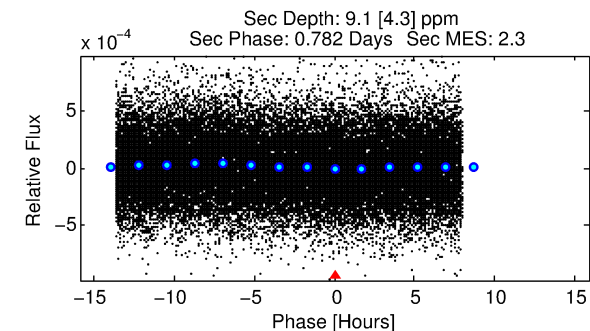
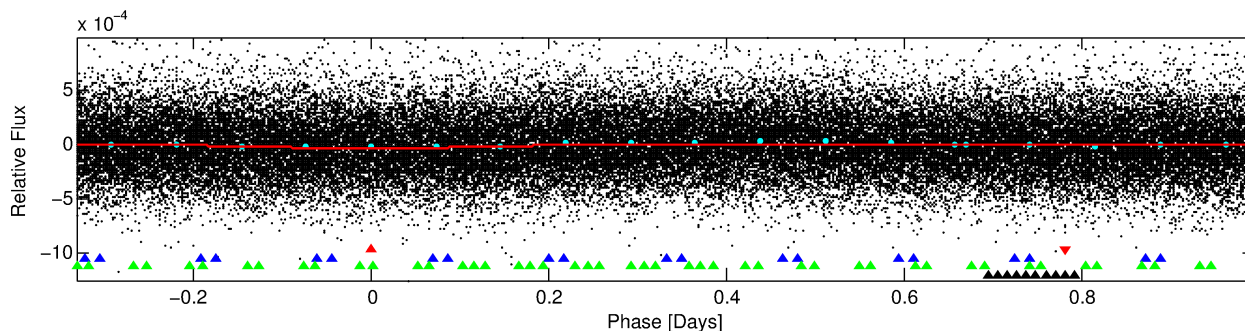
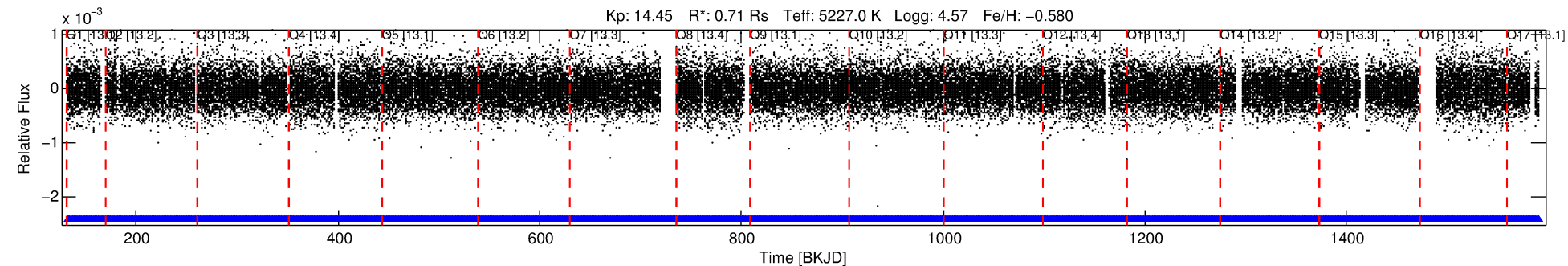
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008233797-01

No Significant Match Found

DV One-Page Summary

KIC: 8233797 Candidate: 1 of 4 Period: 1.327 d



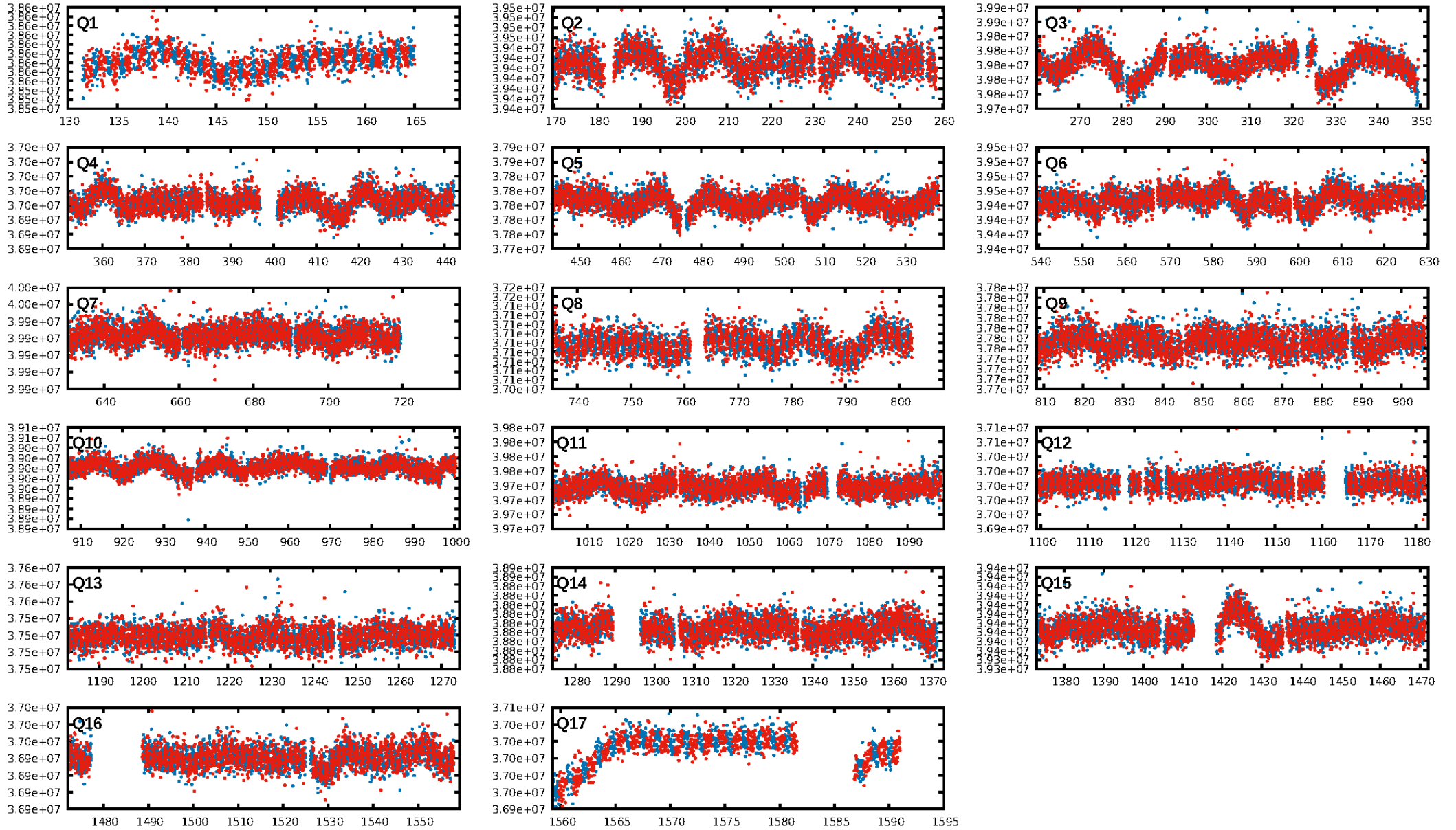
DV Fit Results:

Period = 1.32716 [0.00002] d
Epoch = 132.1275 [0.0098] BKJD
Rp/R* = 0.0045 [0.0061]
a/R* = 1.27 [2.65]
b = 0.42 [10.95]
Seff = 781.81 [149.81]
Teq = 1348 [65] K
Rp = 0.35 [0.47] Re
a = 0.0207 [0.0021] AU
Ag = 17.98 [49.73] [0.34σ]
Teffp = 4293 [2966] K [0.99σ]

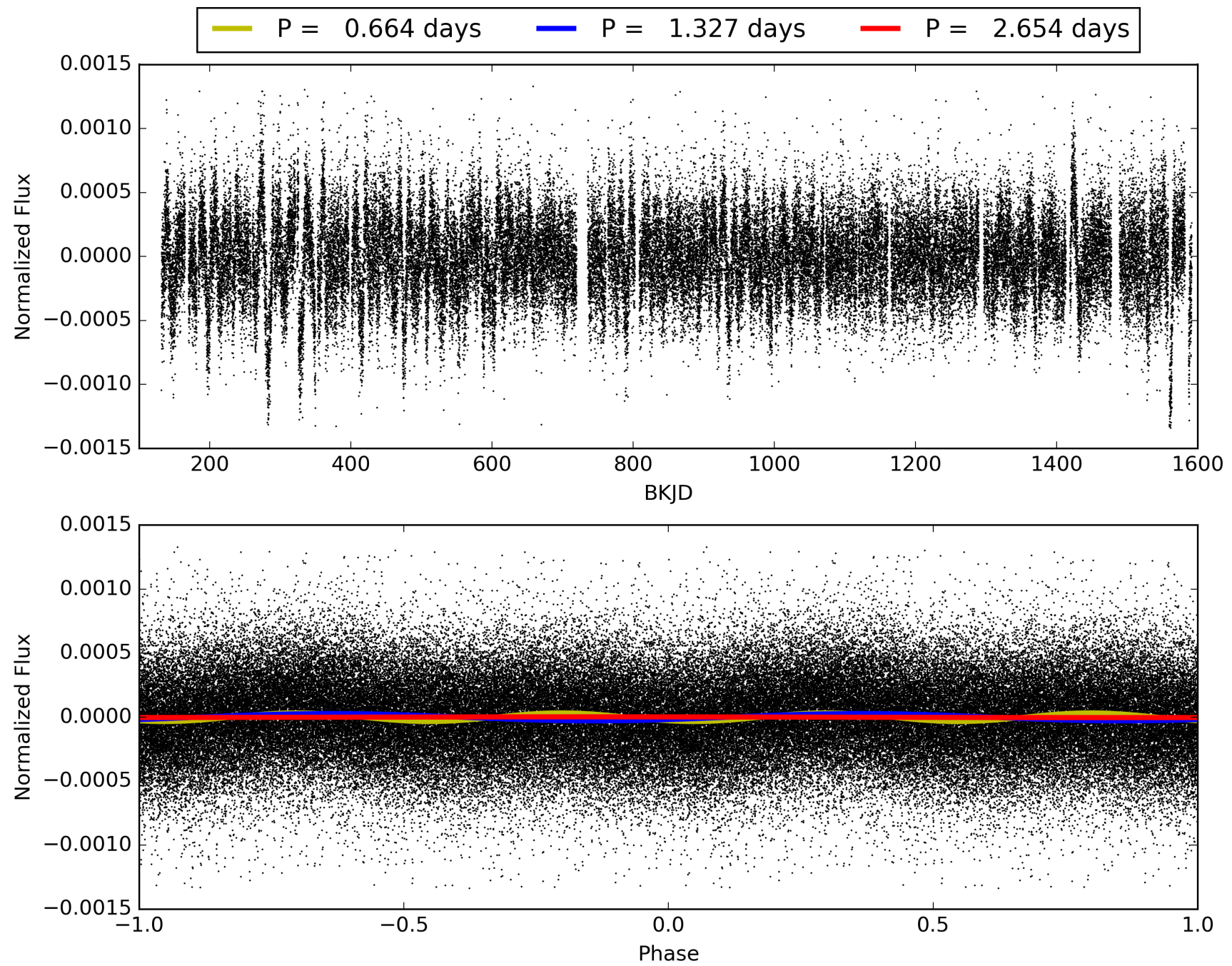
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [79.16σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.33e-15
RollingBand-fgt: 1.00 [975/975]
GhostDiagnostic-chr: -0.3635
Centroid-sig: 20.3%
Centroid-so: 1.489 arcsec [1.03σ]
OotOffset-rm: 11.966 arcsec [172.53σ]
KicOffset-rm: 12.306 arcsec [181.87σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008233797-01, PDC Light Curves

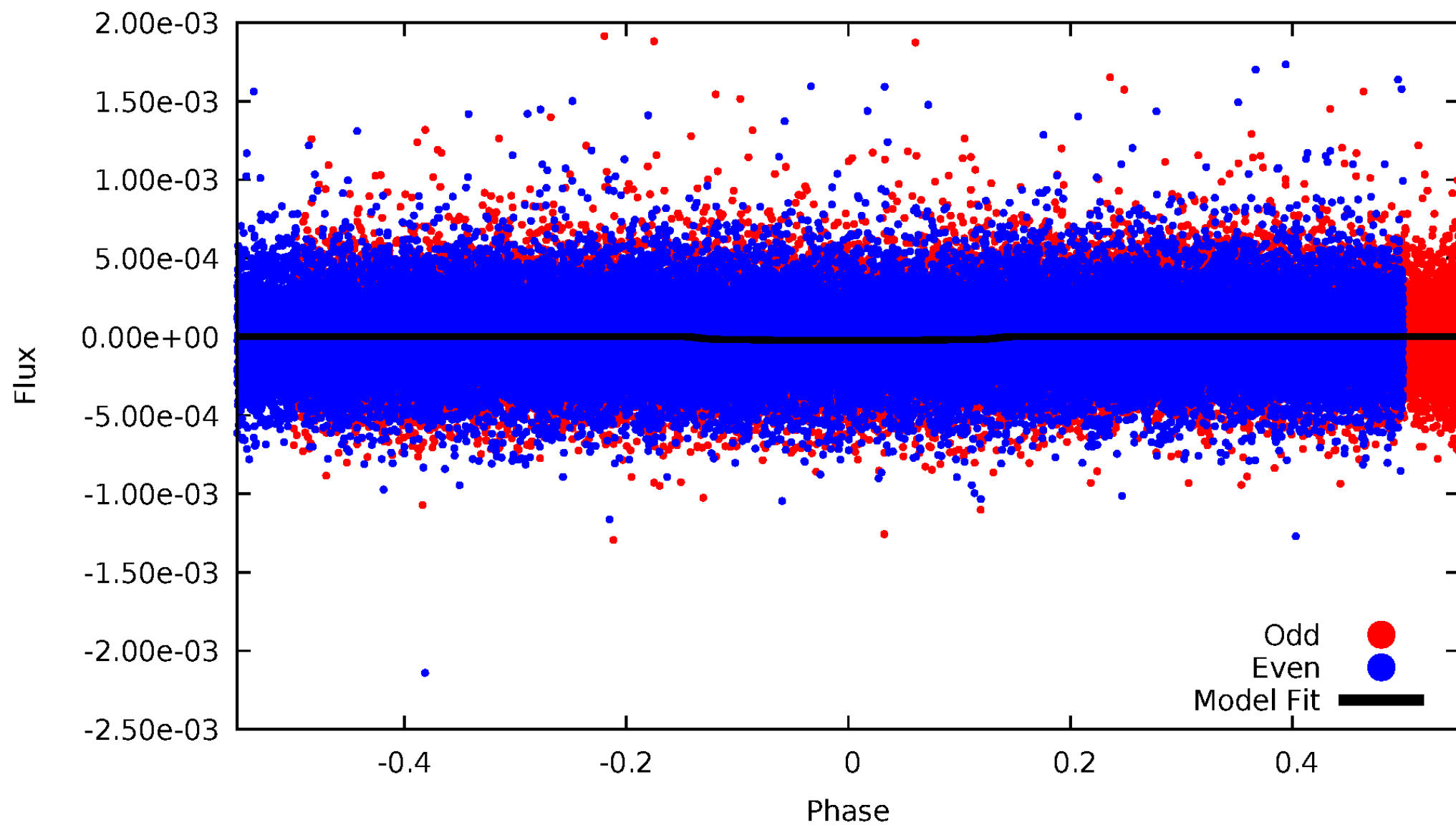


TCE 008233797-01



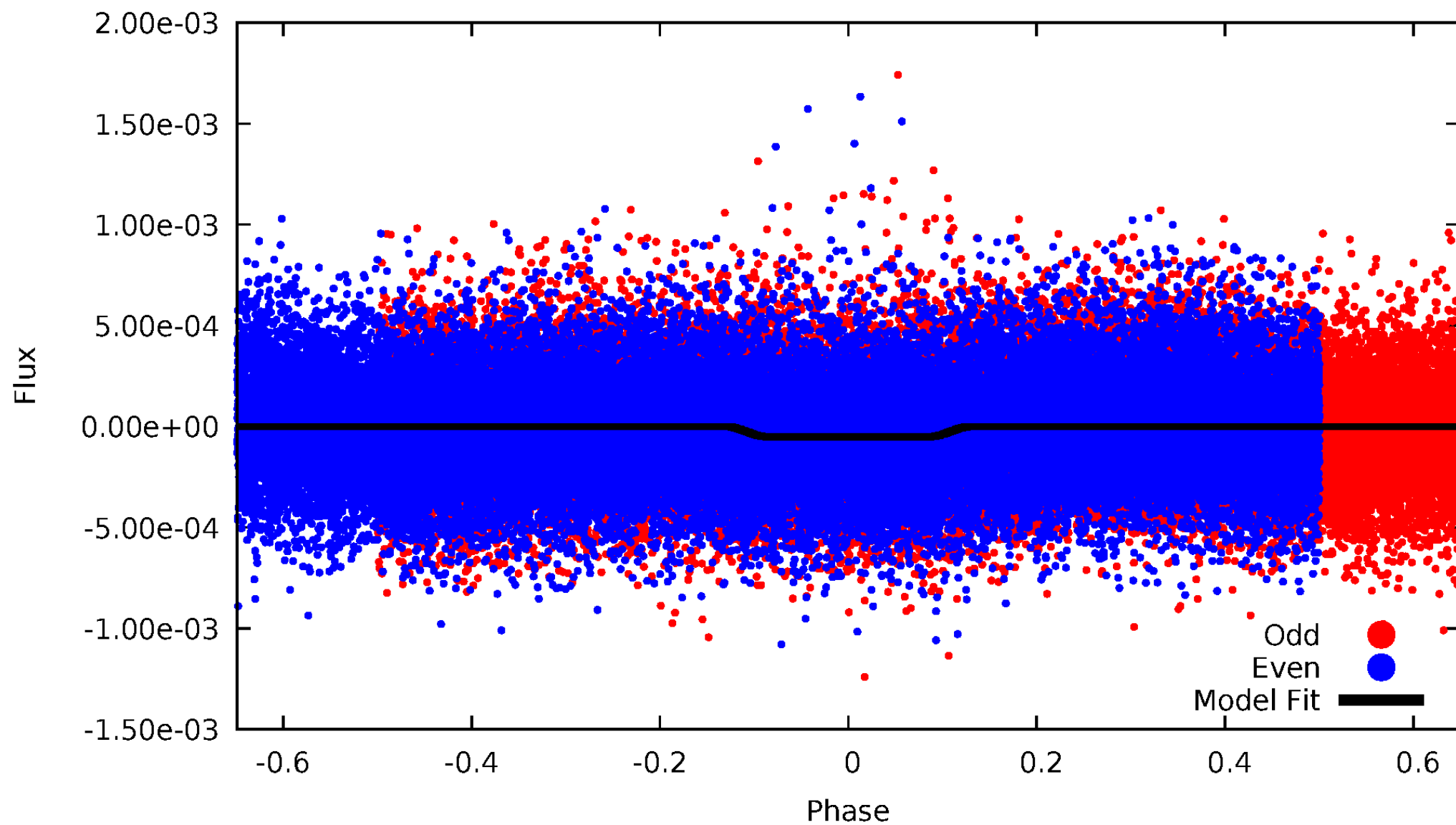
DV Odd/Even

TCE 008233797-01

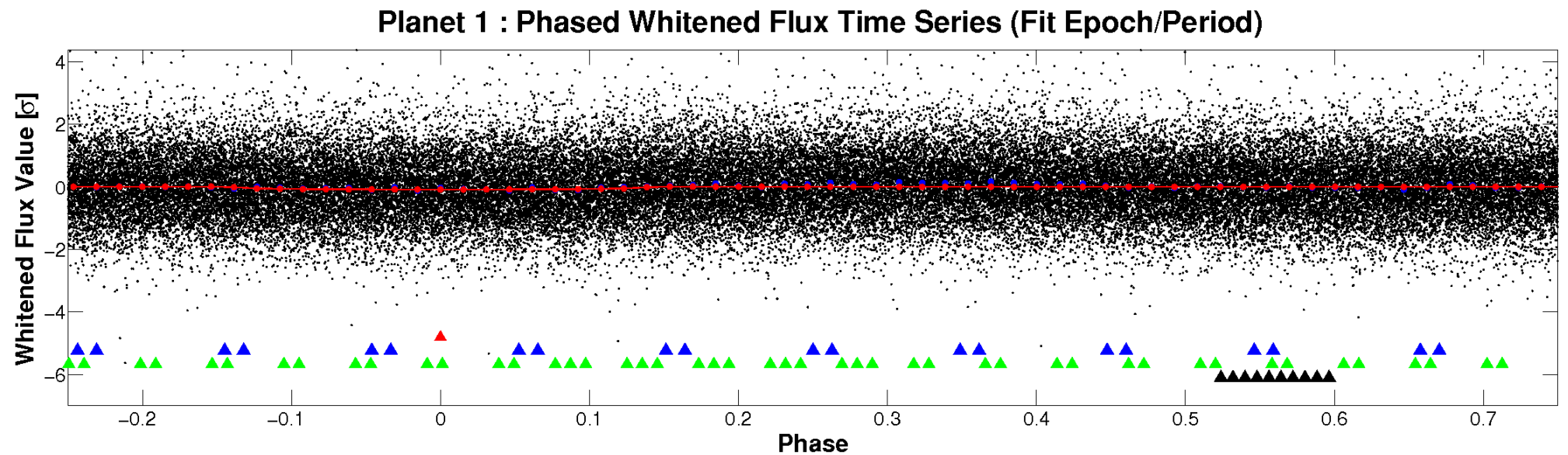
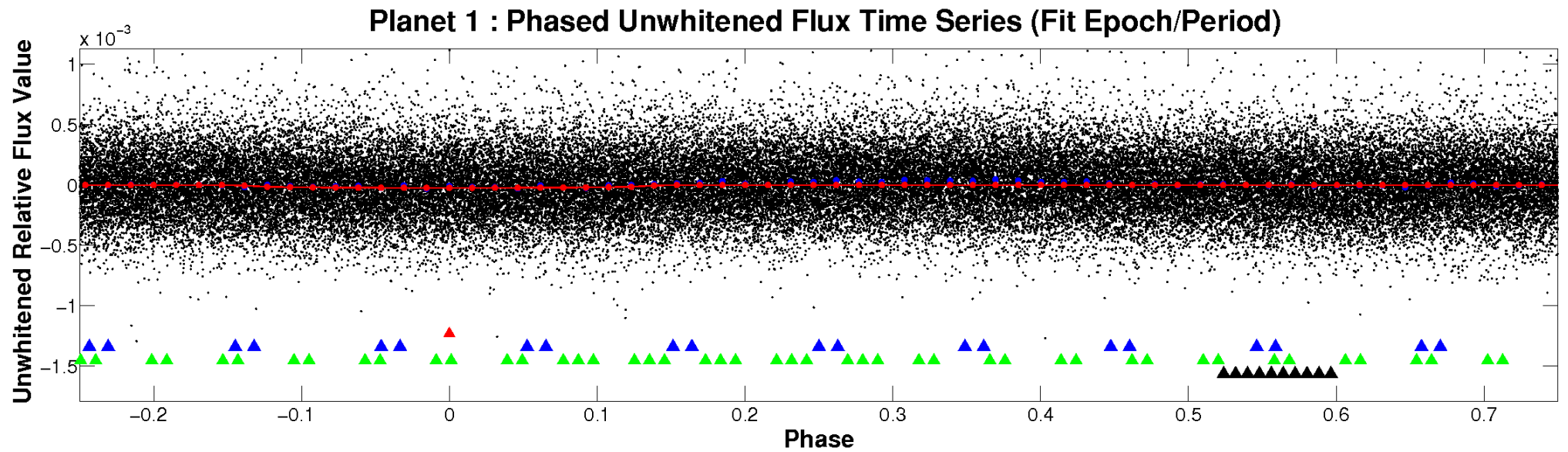


ALT Odd/Even

TCE 008233797-01

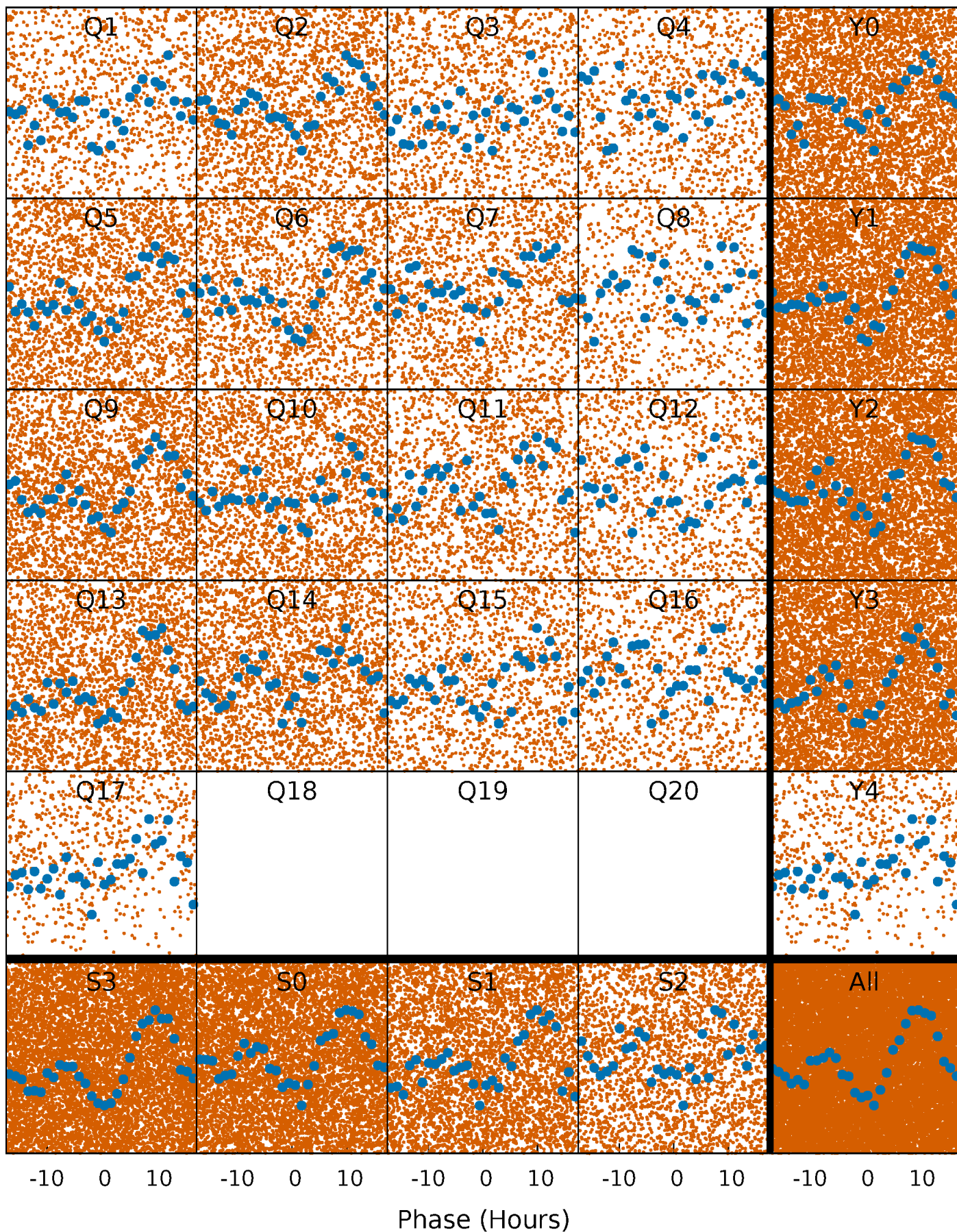


Non-Whitened Vs. Whitened Light Curve



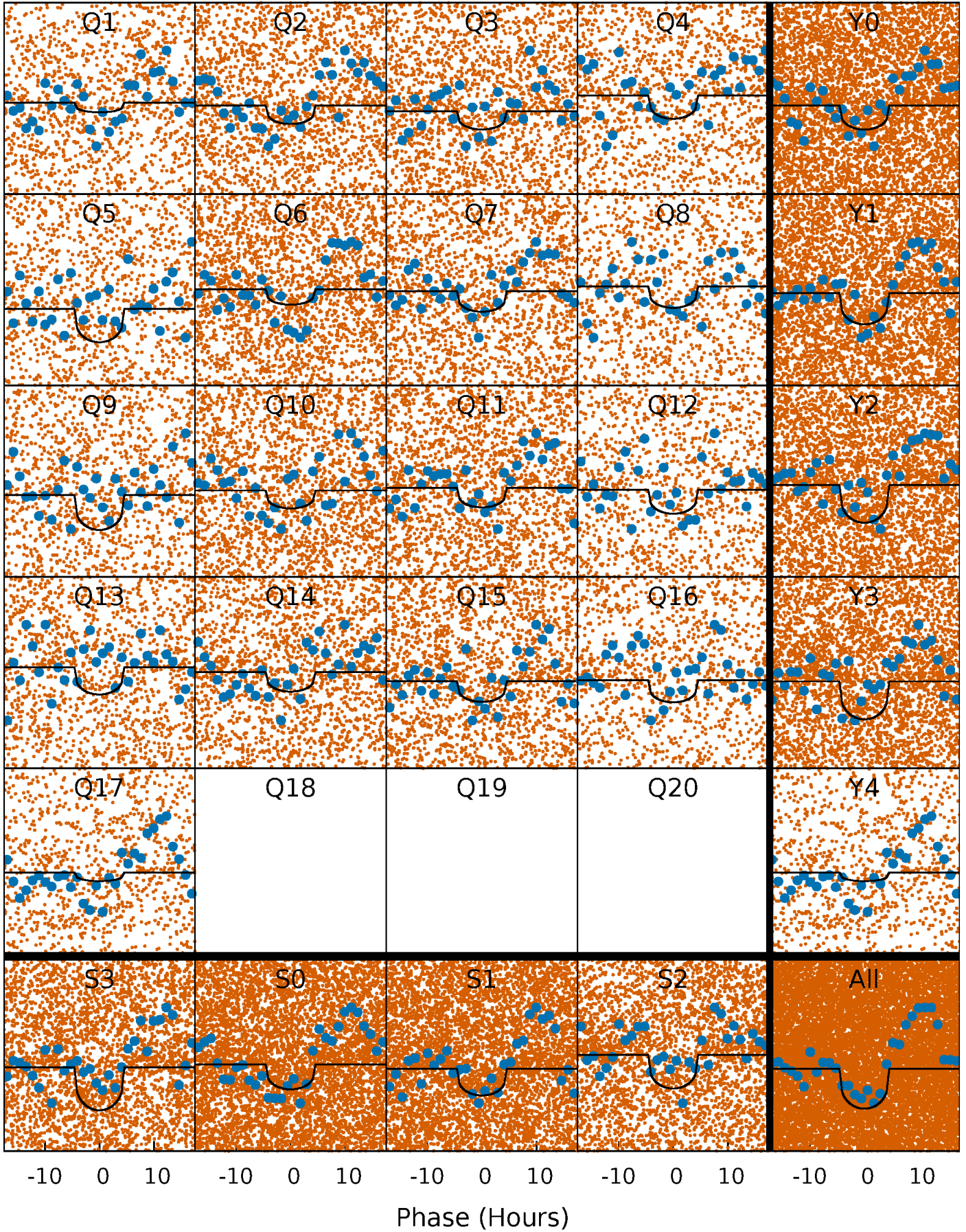
PDC Quarter-Phased Transit Curves

TCE 008233797-01 P= 1.327164 Days $T_0=132.127512$ (BKJD)



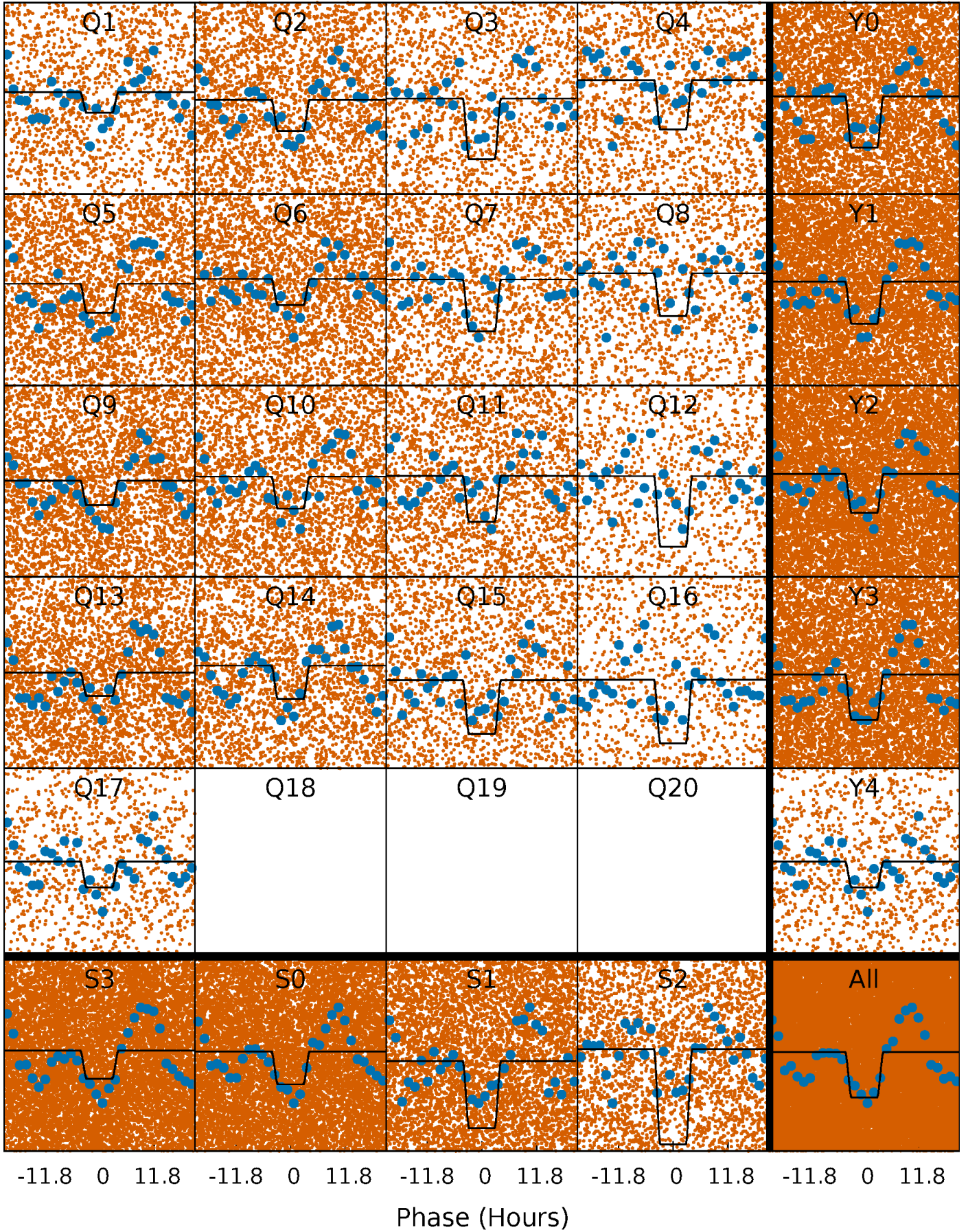
DV Quarter-Phased Transit Curves

TCE 008233797-01 P= 1.327164 Days $T_0=132.127512$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

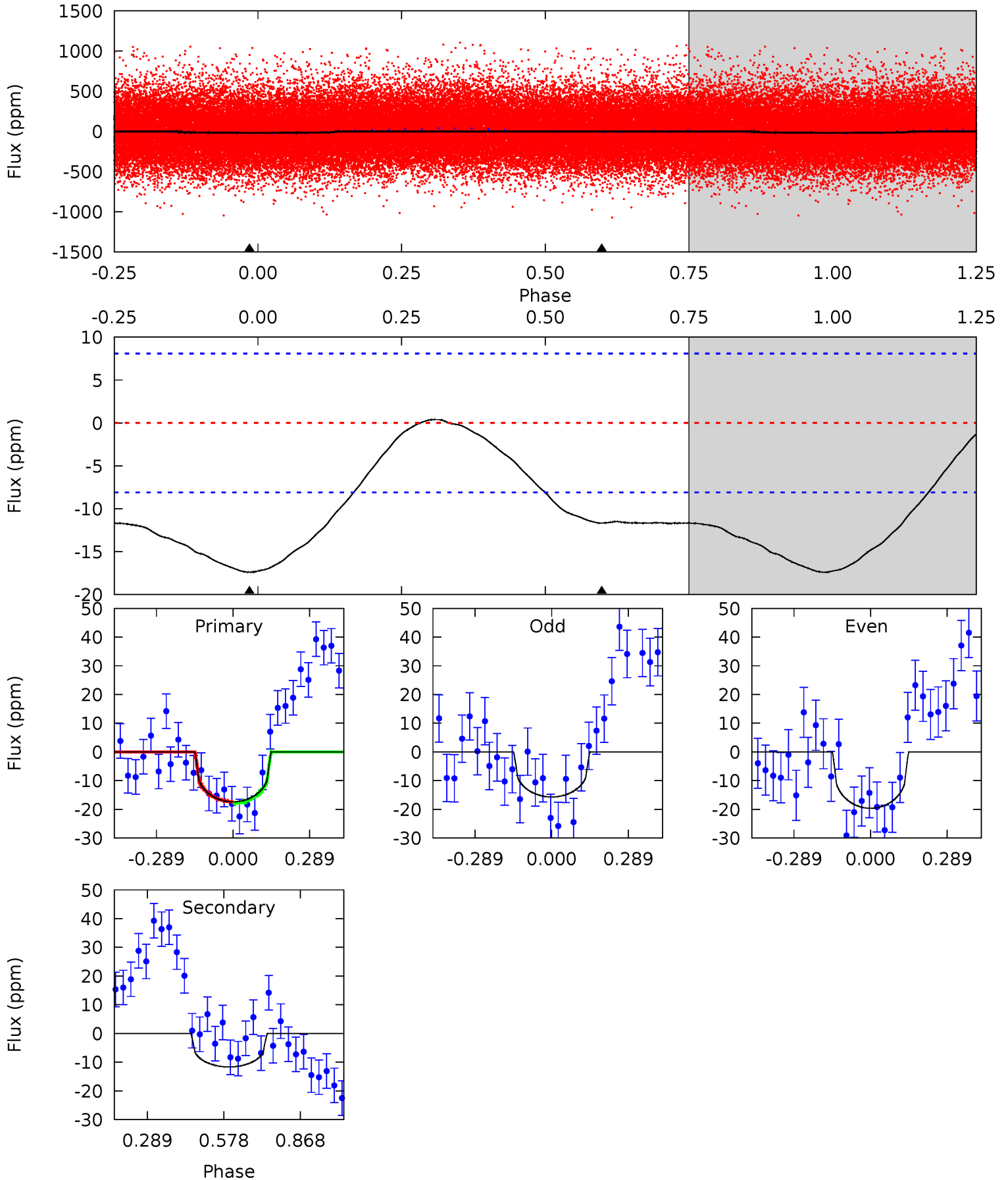
TCE 008233797-01 P= 1.327141 Days $T_0=132.156512$ (BKJD)



DV Model-Shift Uniqueness Test

008233797-01, P = 1.327164 Days, E = 130.800348 Days

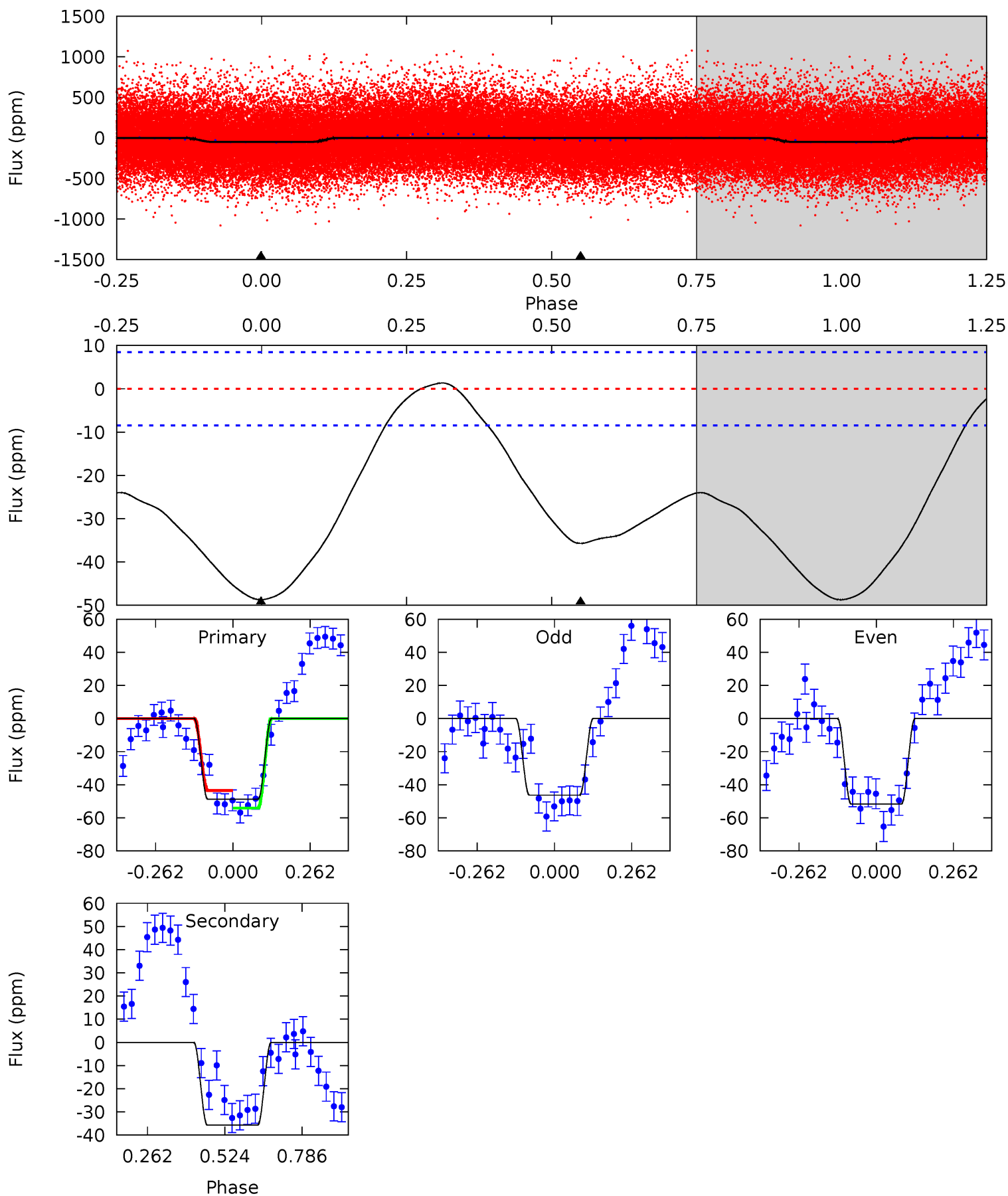
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.32	6.25	0	0	4.34	1.06	0.33	9.32	9.32	6.25	6.25	1.06	0.95	0.02	0.16



Alt Model-Shift Uniqueness Test

008233797-01, P = 1.327141 Days, E = 130.829371 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.1	18.4	0	0	4.36	1.12	1.13	25.1	25.1	18.4	18.4	1.37	1.00	0.03	2.71



Stellar Parameters For KIC 008233797

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5227^{+157}_{-157}	$4.566^{+0.084}_{-0.063}$	$-0.580^{+0.350}_{-0.300}$	$0.709^{+0.080}_{-0.072}$	$0.676^{+0.088}_{-0.038}$	$2.665^{+0.913}_{-0.572}$
	+3%/-3%	+2%/-1%	+60%/-52%	+11%/-10%	+13%/-6%	+34%/-21%
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 008233797-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 2	$0.47^{+0.41}_{-0.32}$	1878^{+78}_{-78}	4121^{+2741}_{-777}	12^{+114}_{-9}
Alt.	-36 ± 2	$0.64^{+0.42}_{-0.38}$	1879^{+75}_{-84}	4543^{+2188}_{-770}	21^{+100}_{-13}

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

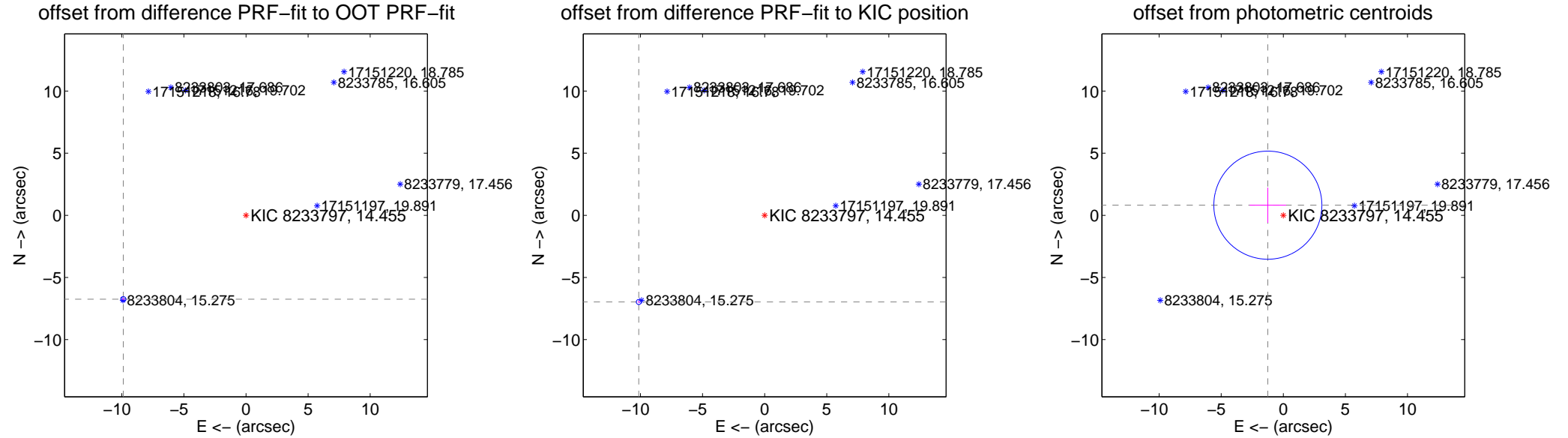
DV Centroid Data

Supplemental centroid analysis for 008233797-01. Kepler magnitude: 14.46. Transit SNR 9.24

There are 4 quarters with good PRF difference image offsets

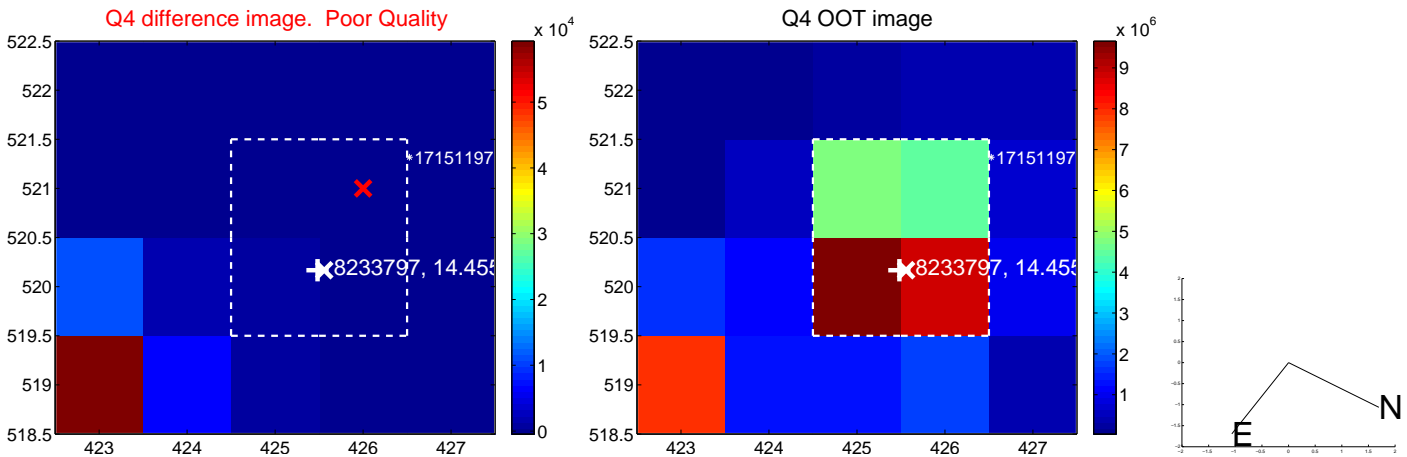
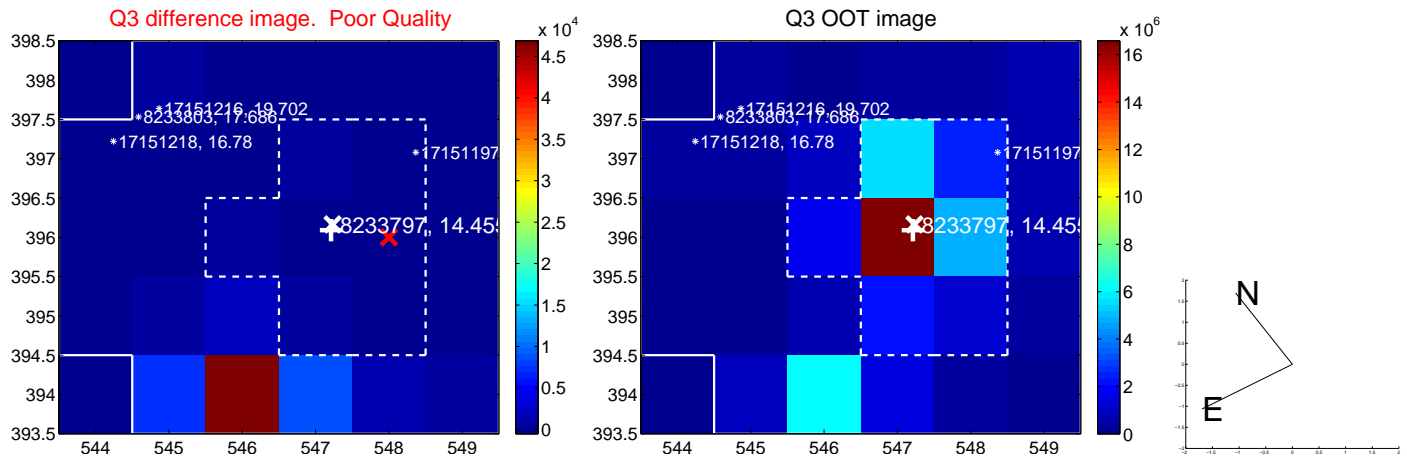
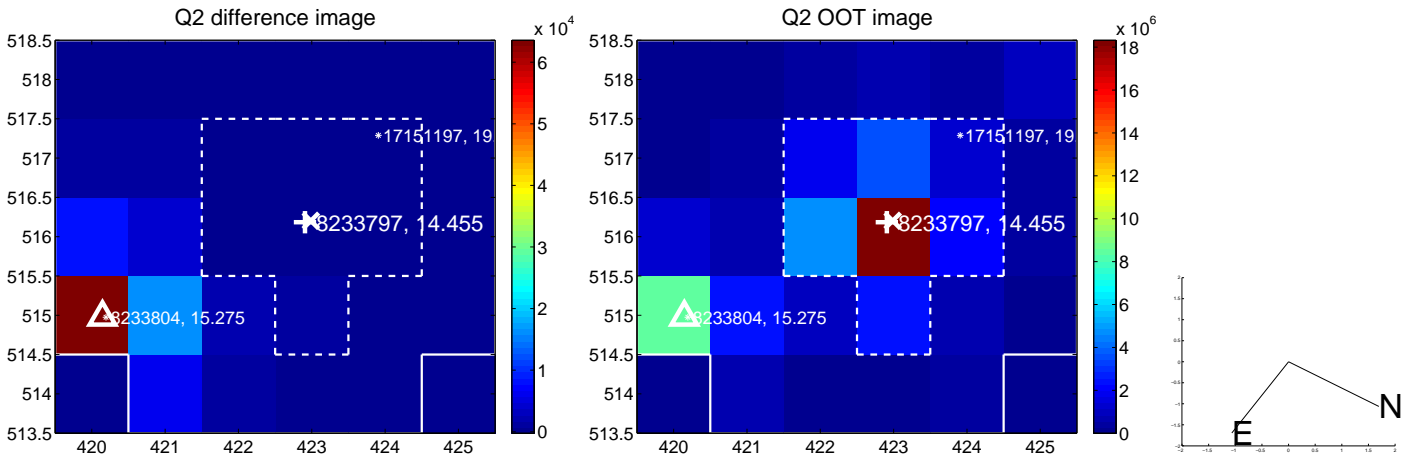
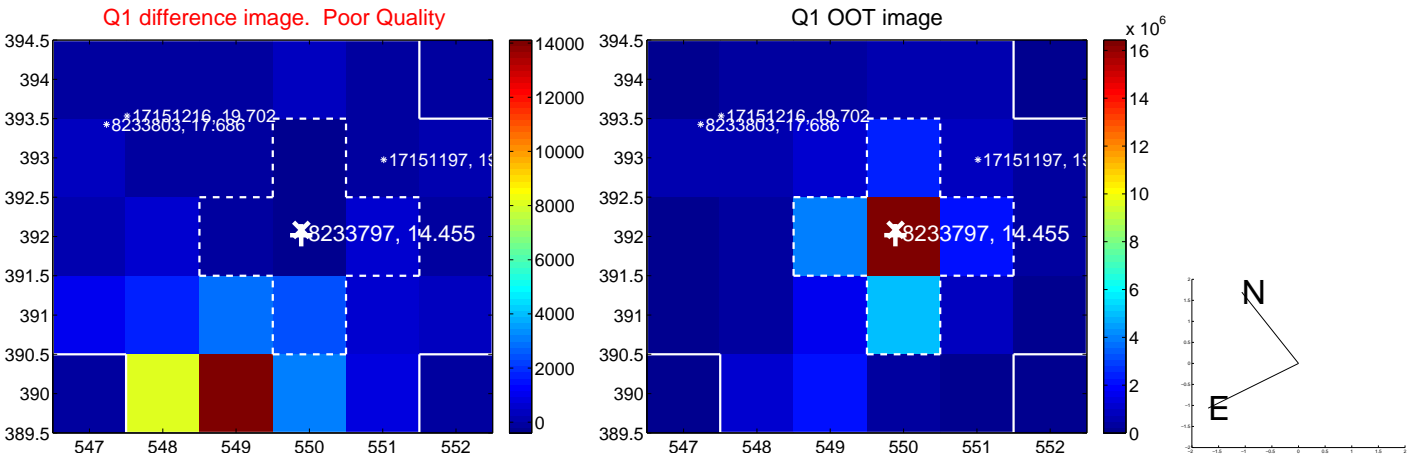
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	11.966 \pm 0.069	172.53	9.880 \pm 0.070	-6.751 \pm 0.068
PRF-fit source offset from KIC position	12.306 \pm 0.068	181.87	10.138 \pm 0.068	-6.975 \pm 0.067
photometric centroid source offset	1.49 \pm 1.45	1.03	1.25 \pm 1.47	0.82 \pm 1.41

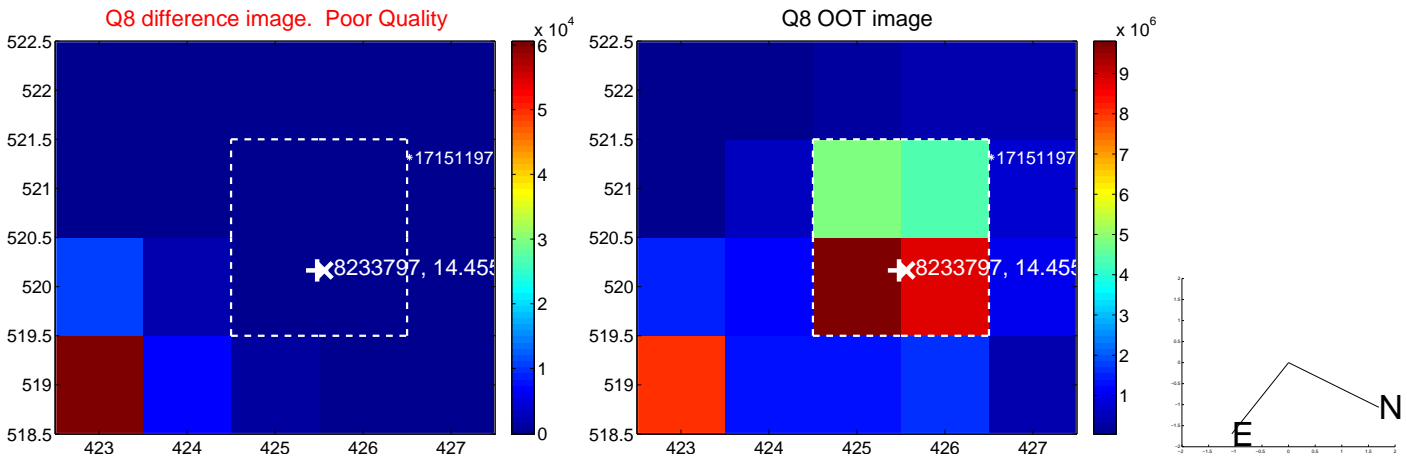
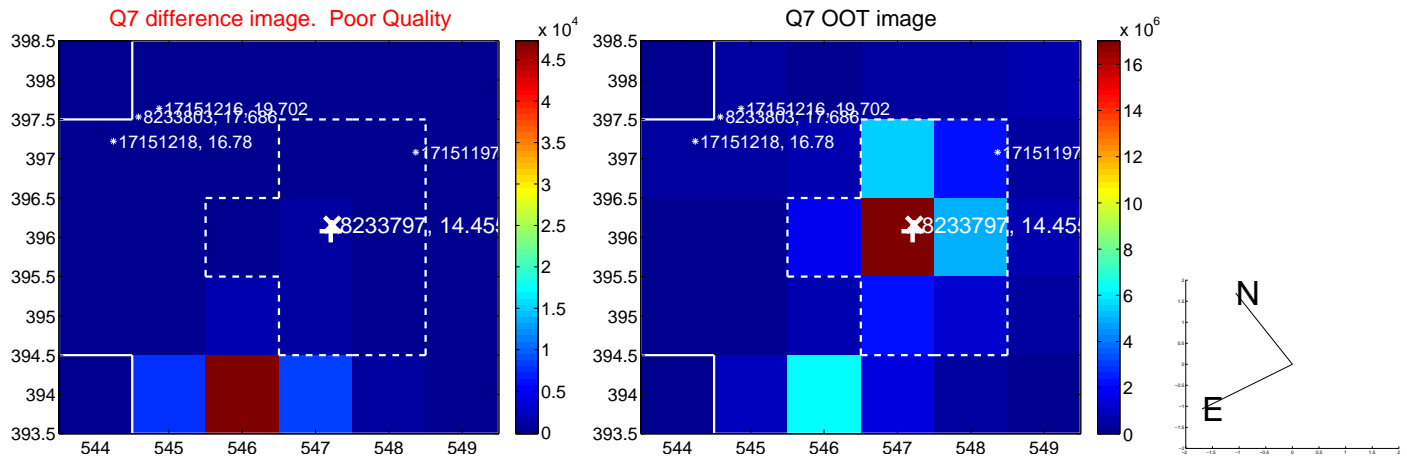
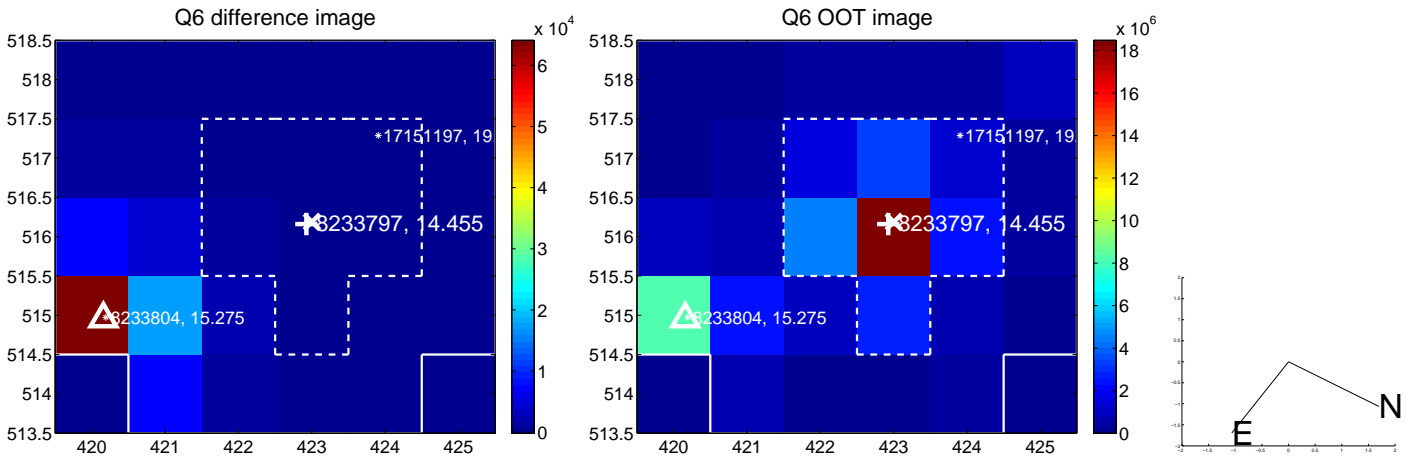
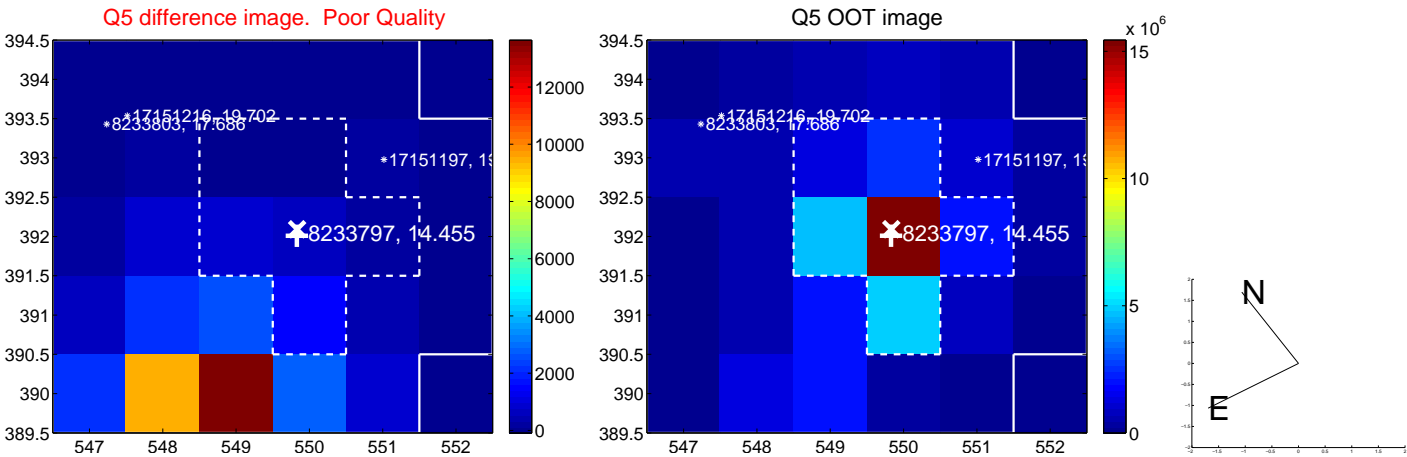


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

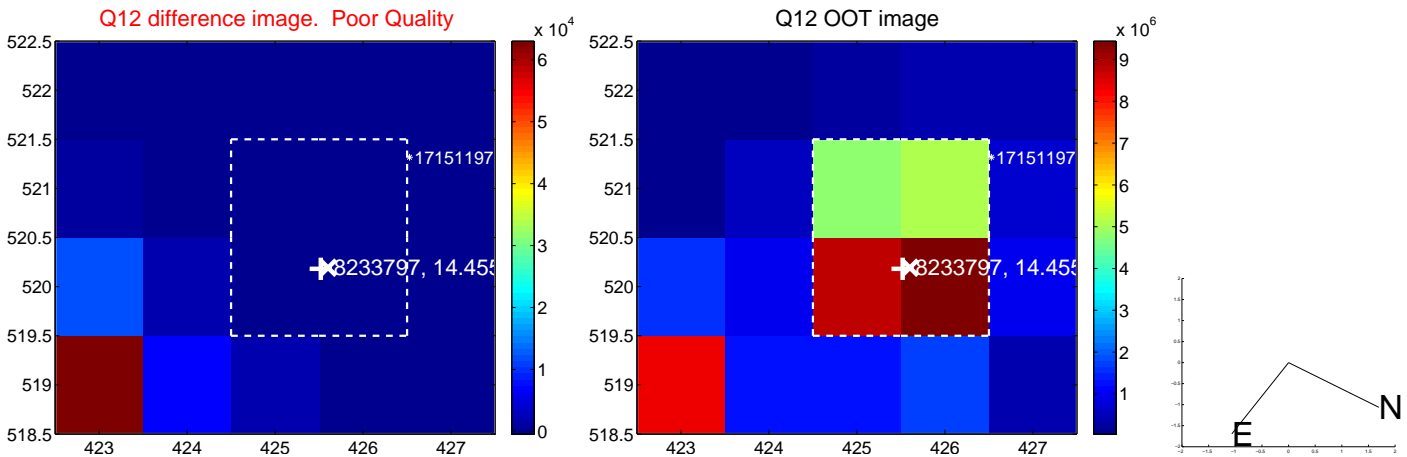
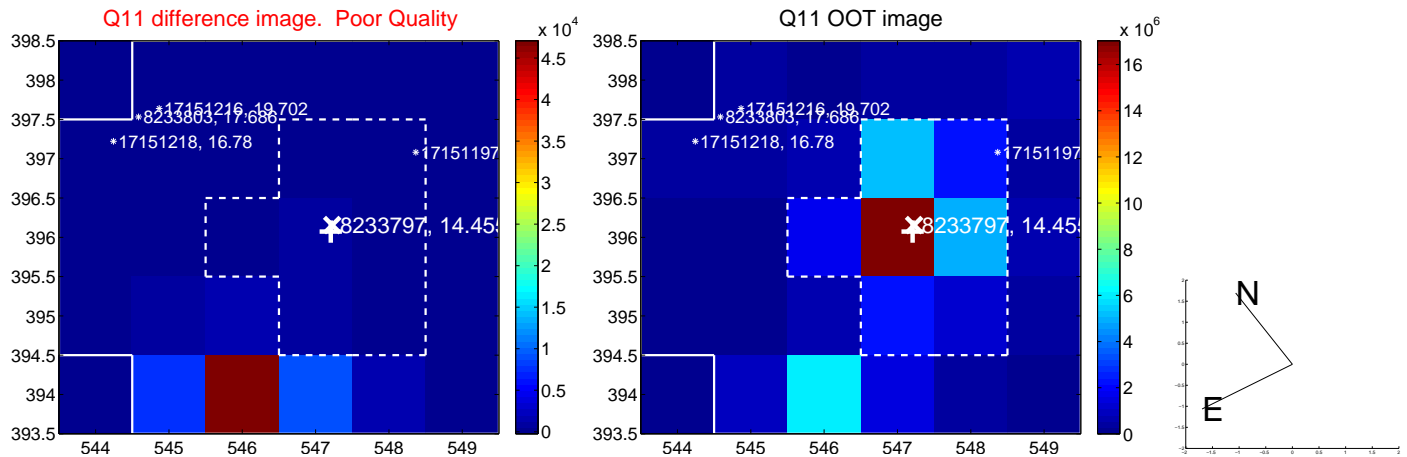
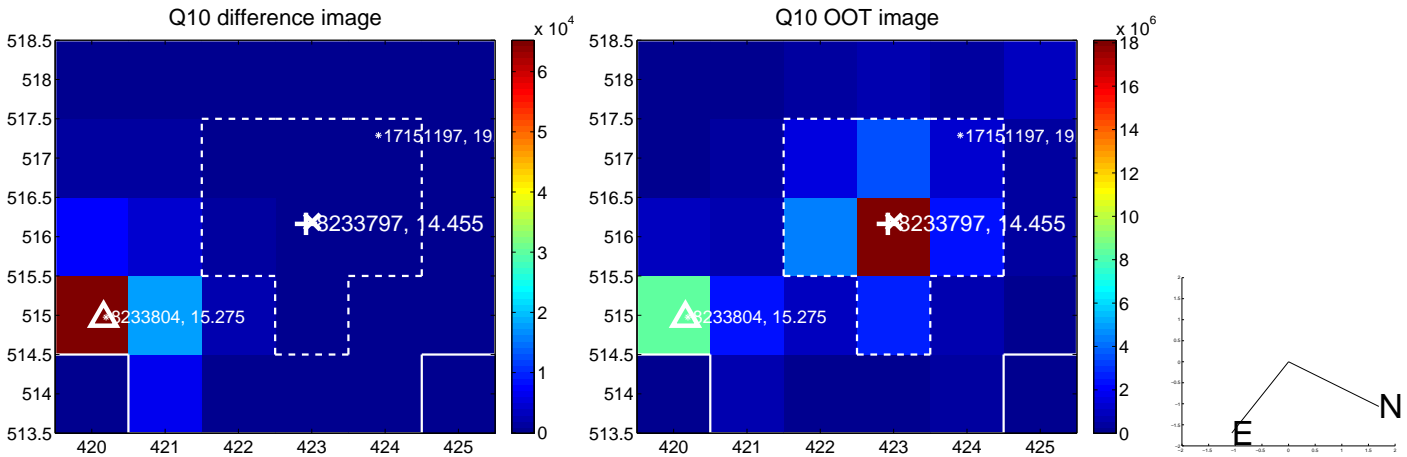
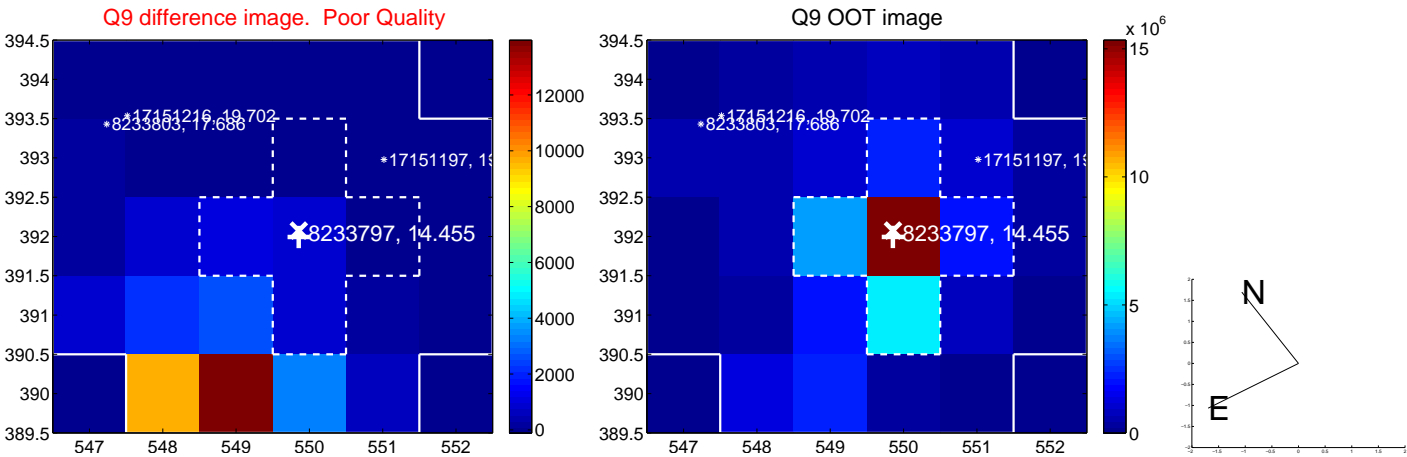
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



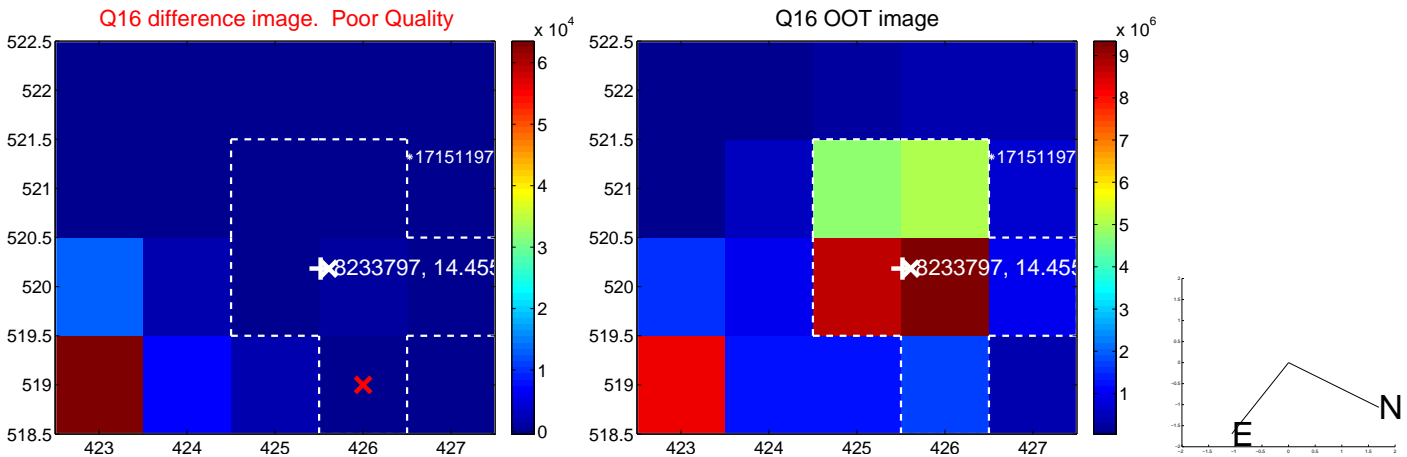
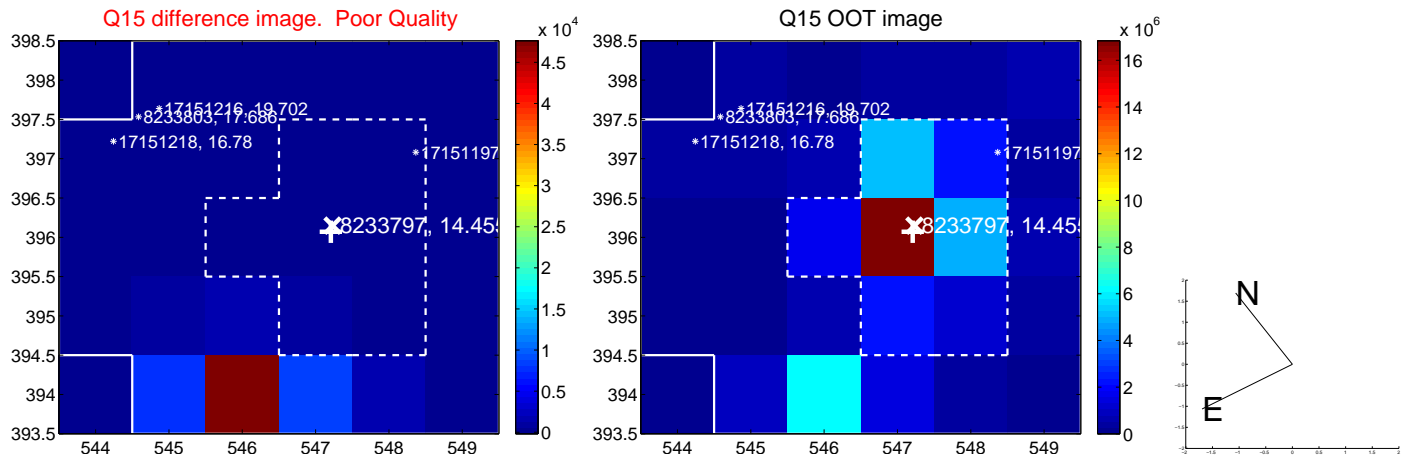
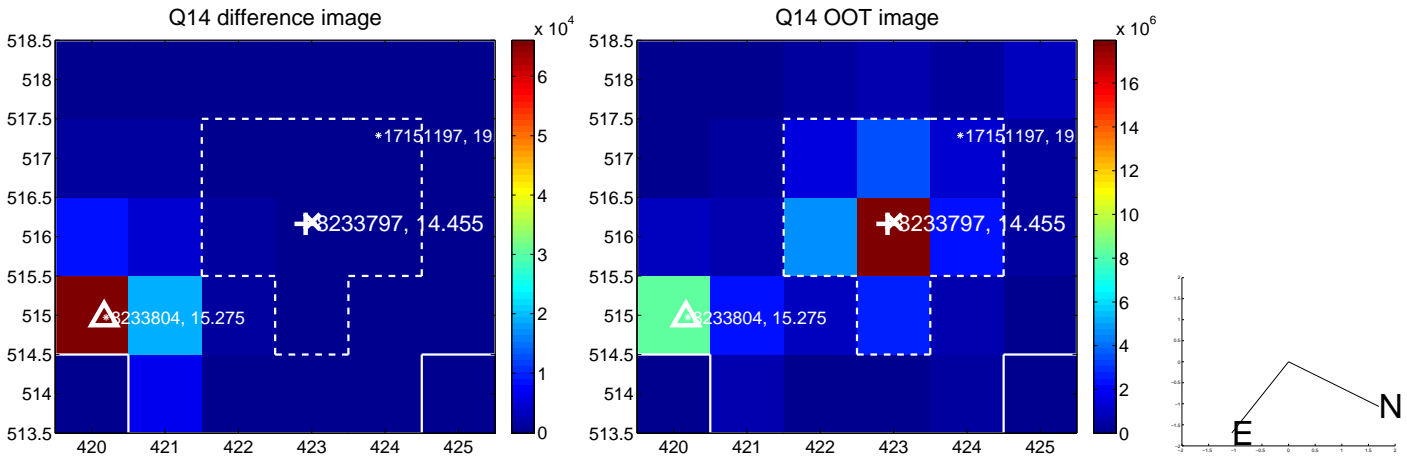
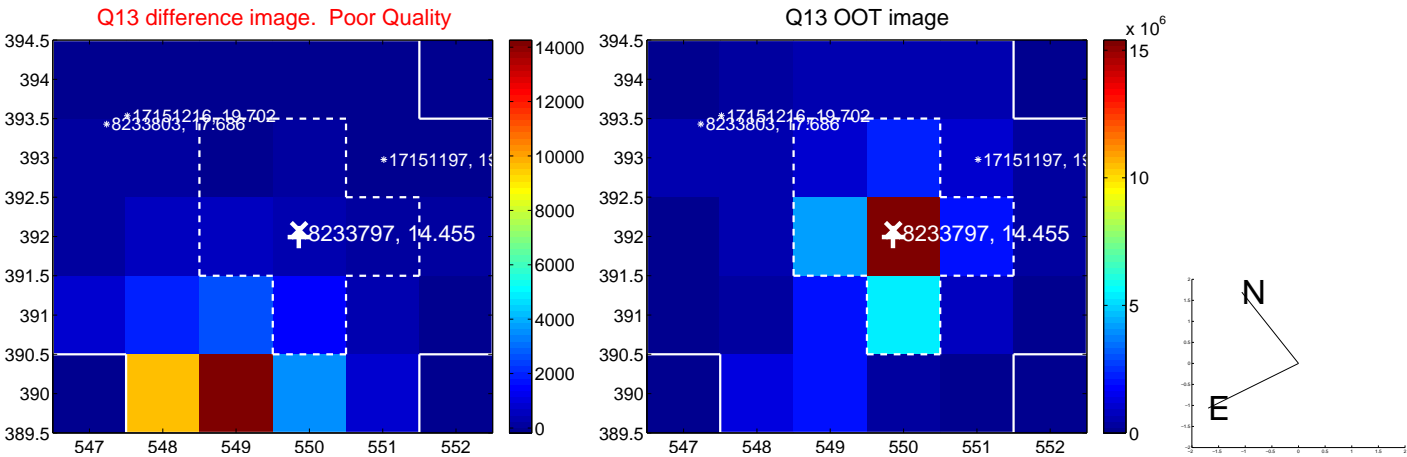
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



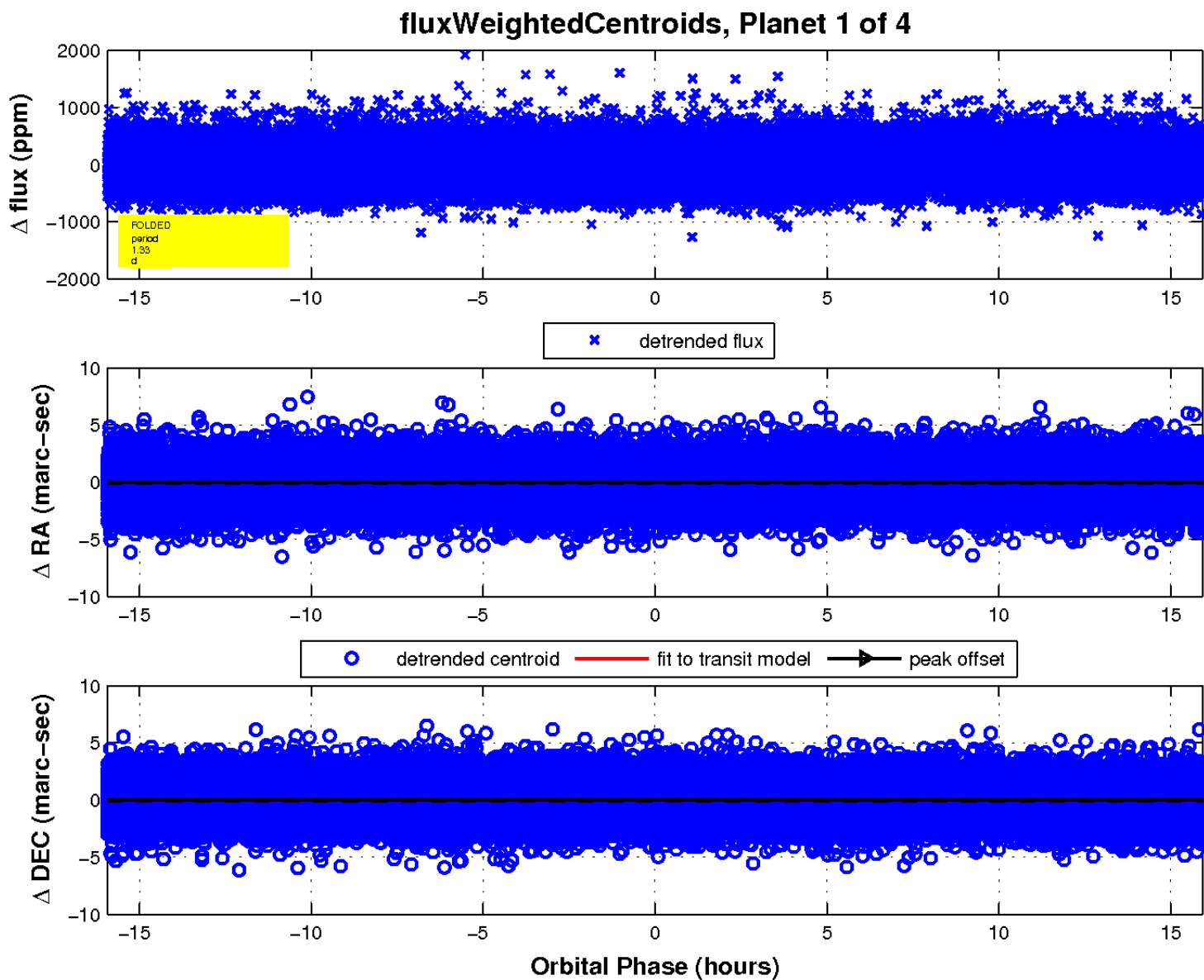
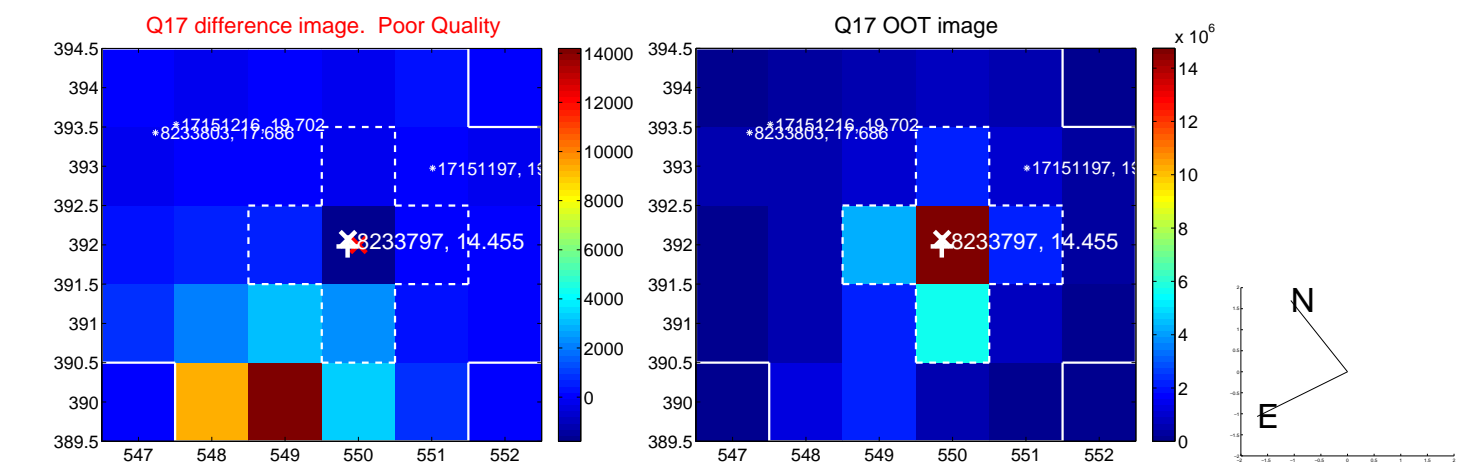
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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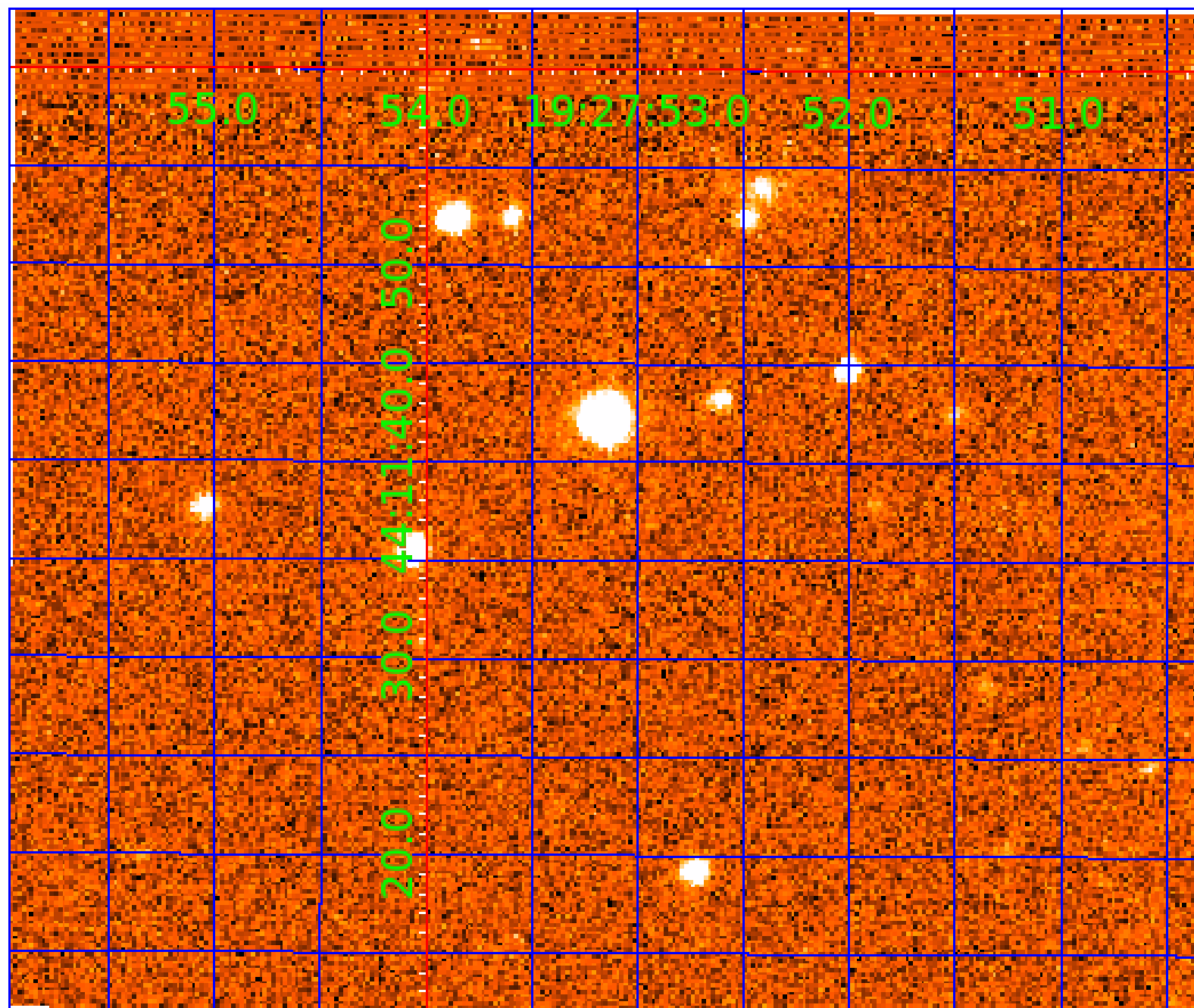


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008233797

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})
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Robovetter Results

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008233797-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008233797-03	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008233797-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET

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

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

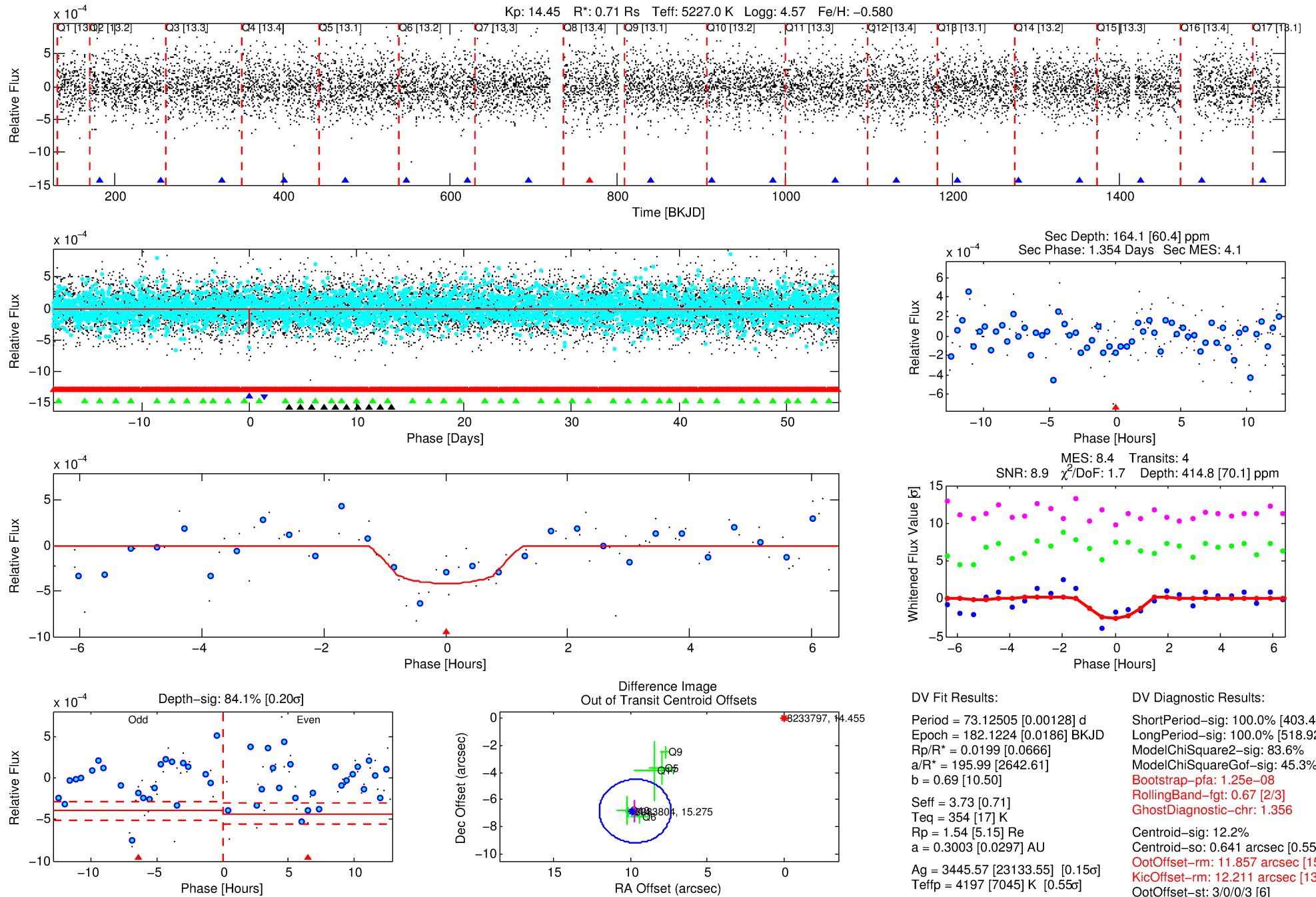
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008233797-02

No Significant Match Found

DV One-Page Summary

KIC: 8233797 Candidate: 2 of 4 Period: 73.125 d



DV Fit Results:

Period = 73.12505 [0.00128] d
Epoch = 182.1224 [0.0186] BKJD
Rp/R* = 0.0199 [0.0666]
a/R* = 195.99 [2642.61]
b = 0.69 [10.50]
Seff = 3.73 [0.71]
Teq = 354 [17] K
Rp = 1.54 [5.15] Re
a = 0.3003 [0.0297] AU
Ag = 3445.57 [23133.55] [0.15σ]
Teff = 4197 [7045] K [0.55σ]

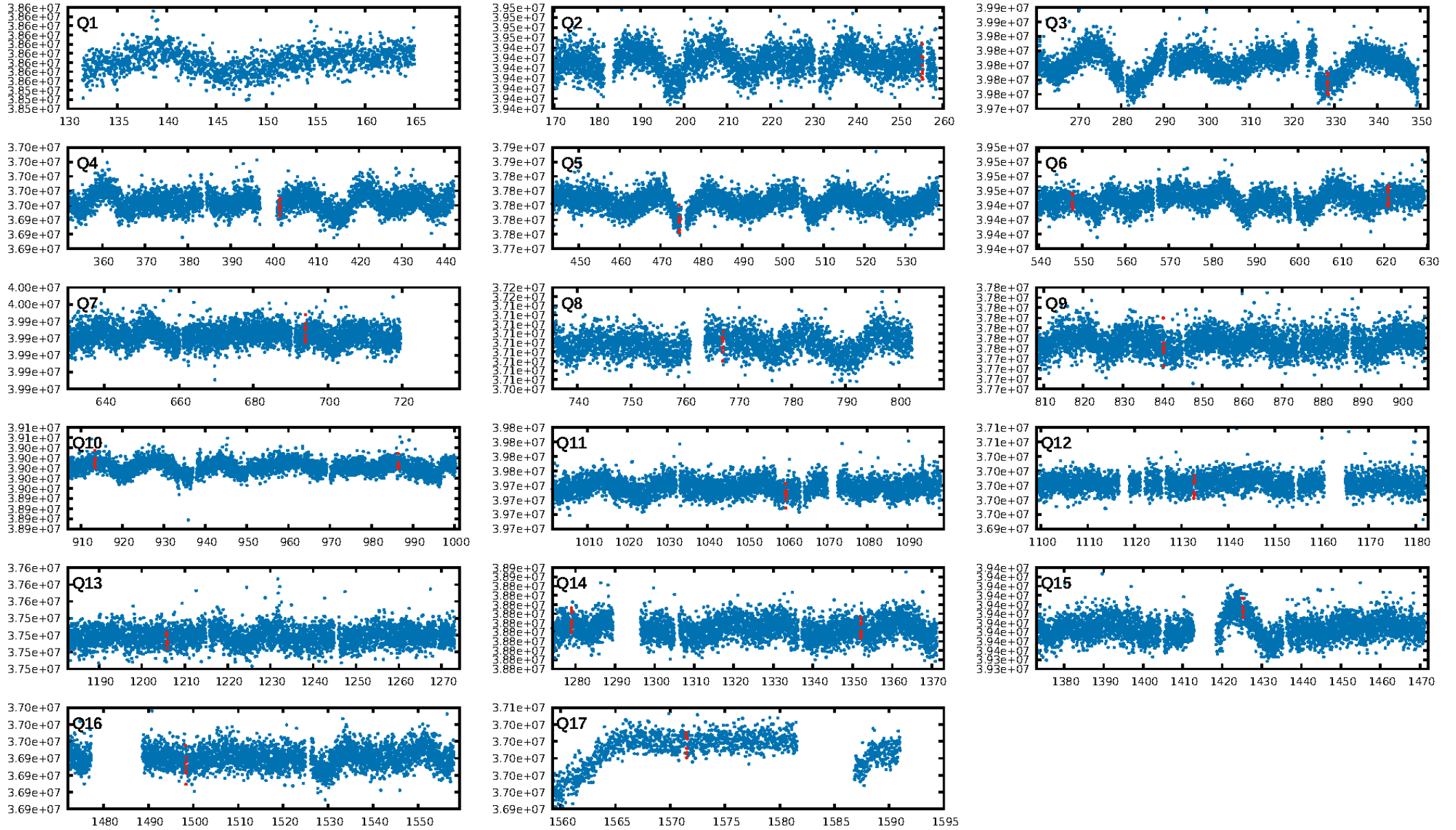
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [403.47σ]
LongPeriod-sig: 100.0% [518.92σ]
ModelChiSquare2-sig: 83.6%
ModelChiSquareGoF-sig: 45.3%
Bootstrap-pfa: 1.25e-08
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 1.356
Centroid-sig: 12.2%
Centroid-so: 0.641 arcsec [0.55σ]
OotOffset-rm: 11.857 arcsec [15.26σ]
KicOffset-rm: 12.211 arcsec [13.82σ]
OotOffset-st: 3/0/0/3 [6]
KicOffset-st: 3/0/0/3 [6]
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DiffImageOverlap-fno: 0.50 [6/12]

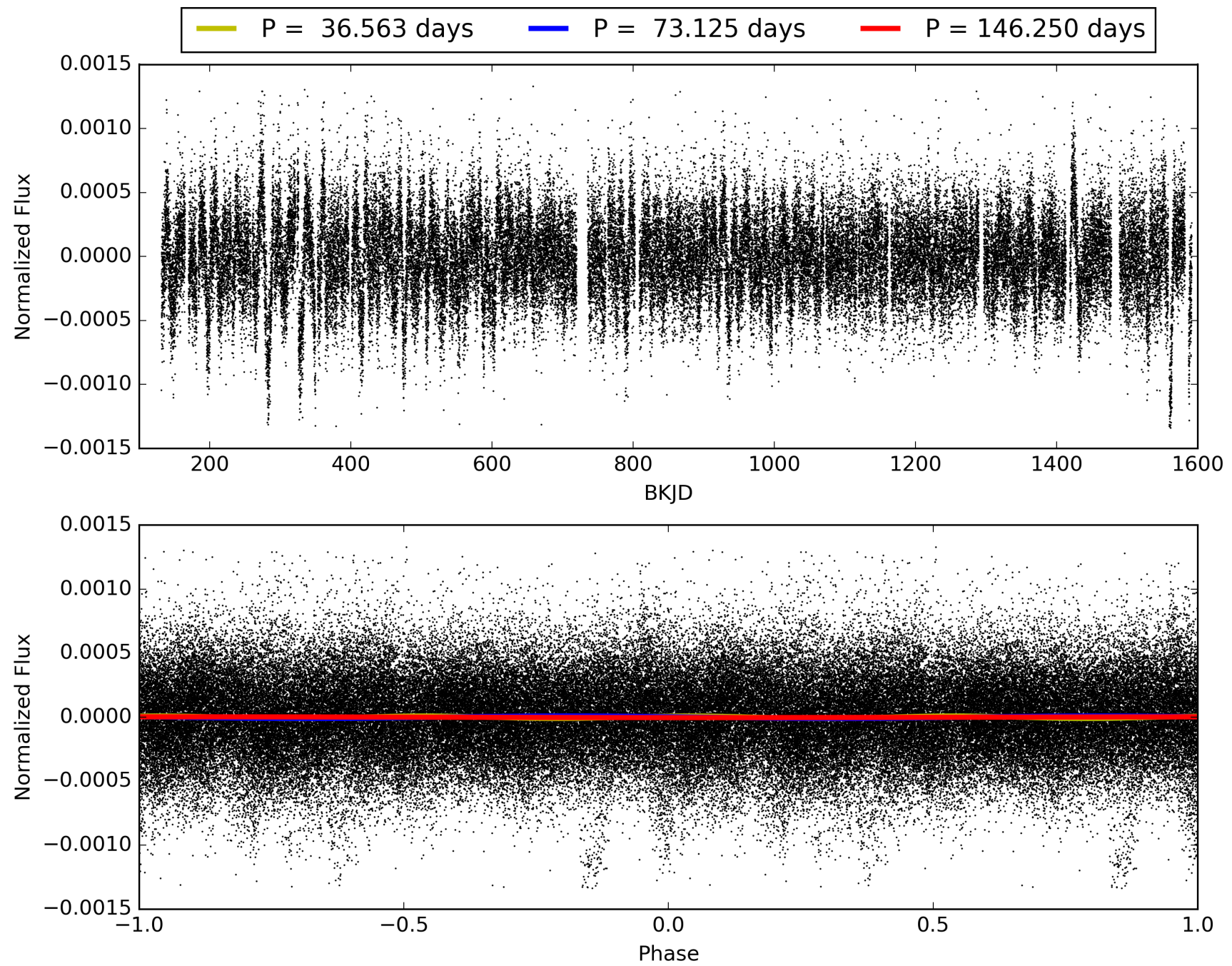
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008233797-02, PDC Light Curves

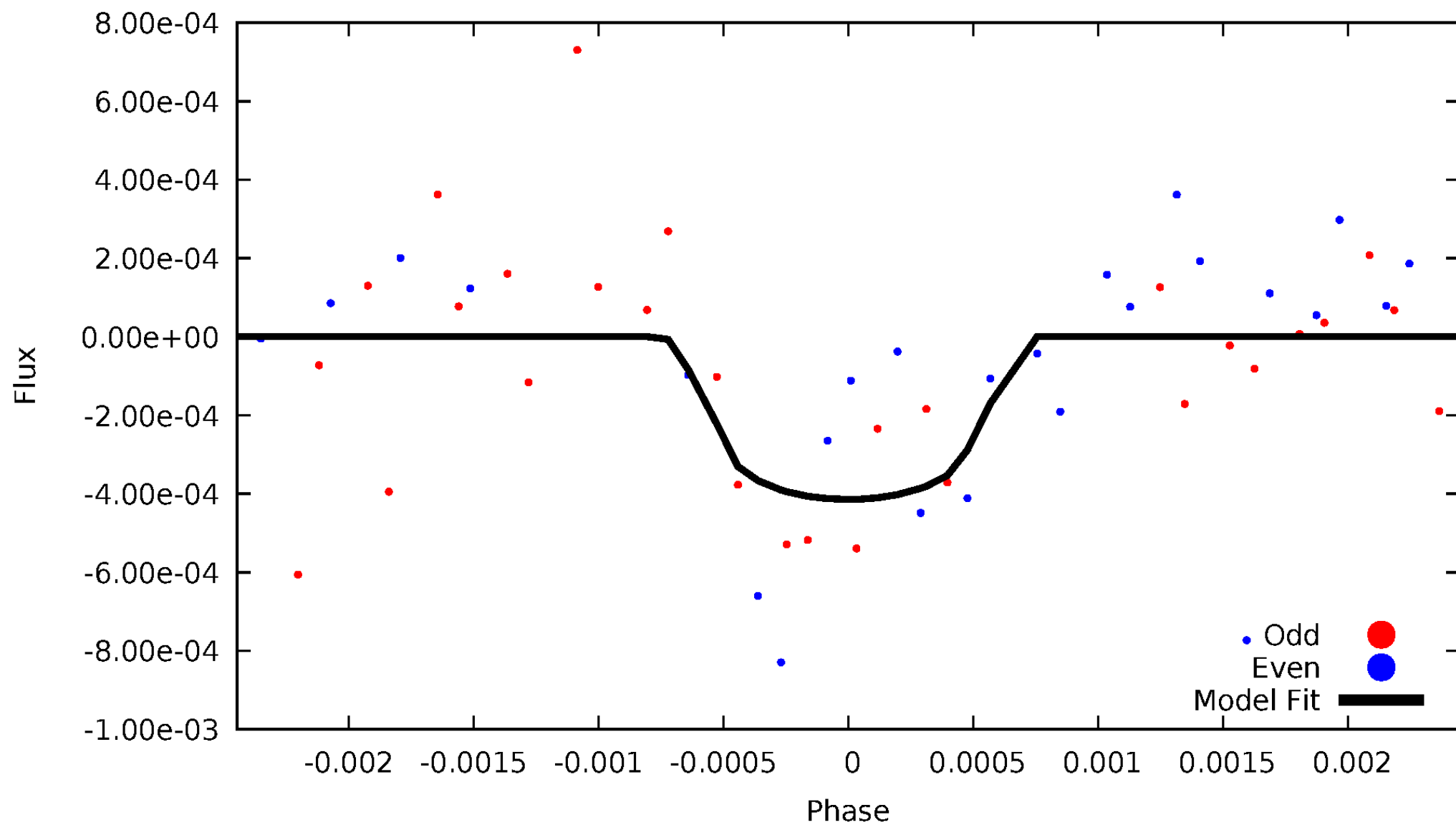


TCE 008233797-02



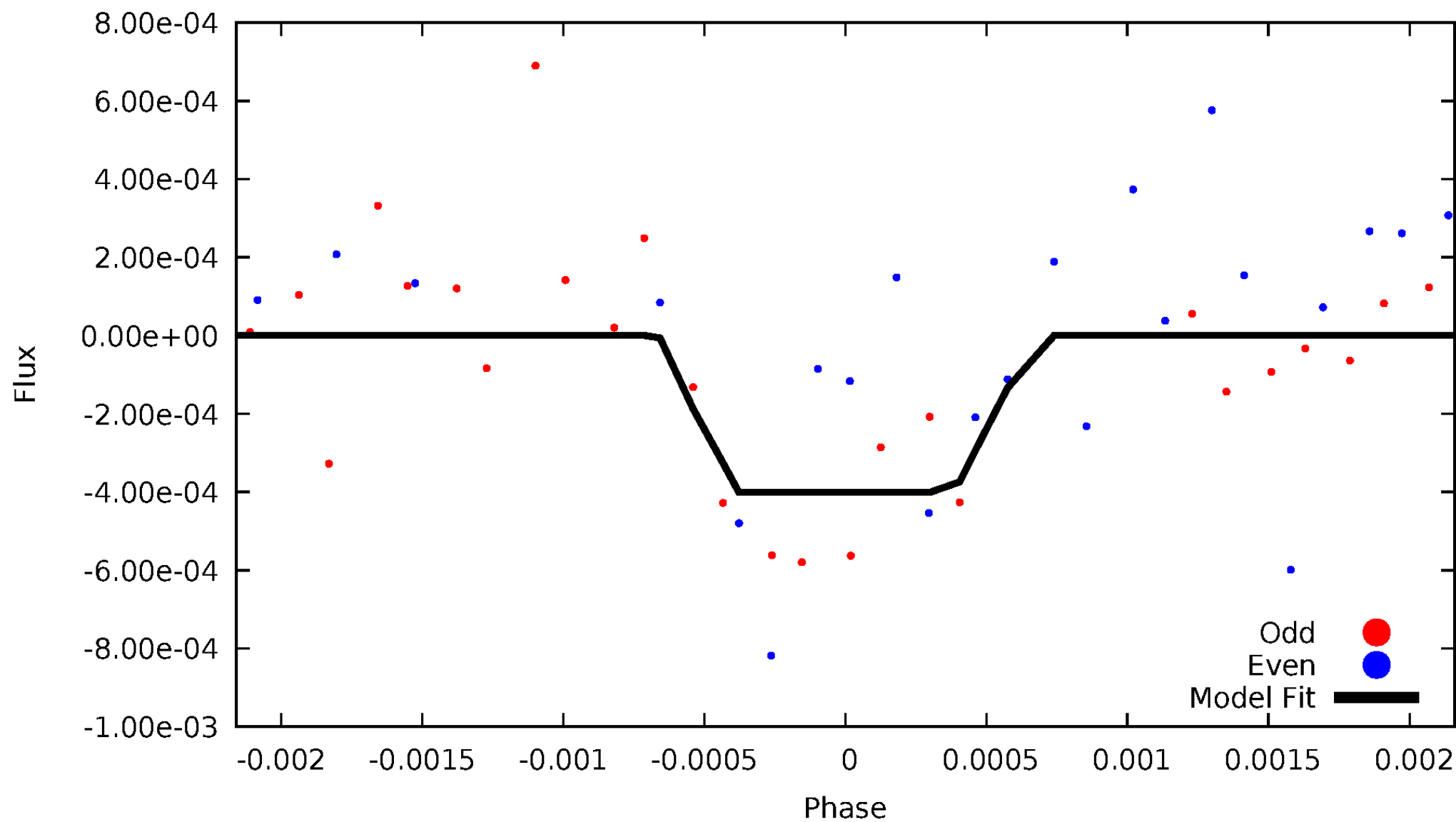
DV Odd/Even

TCE 008233797-02



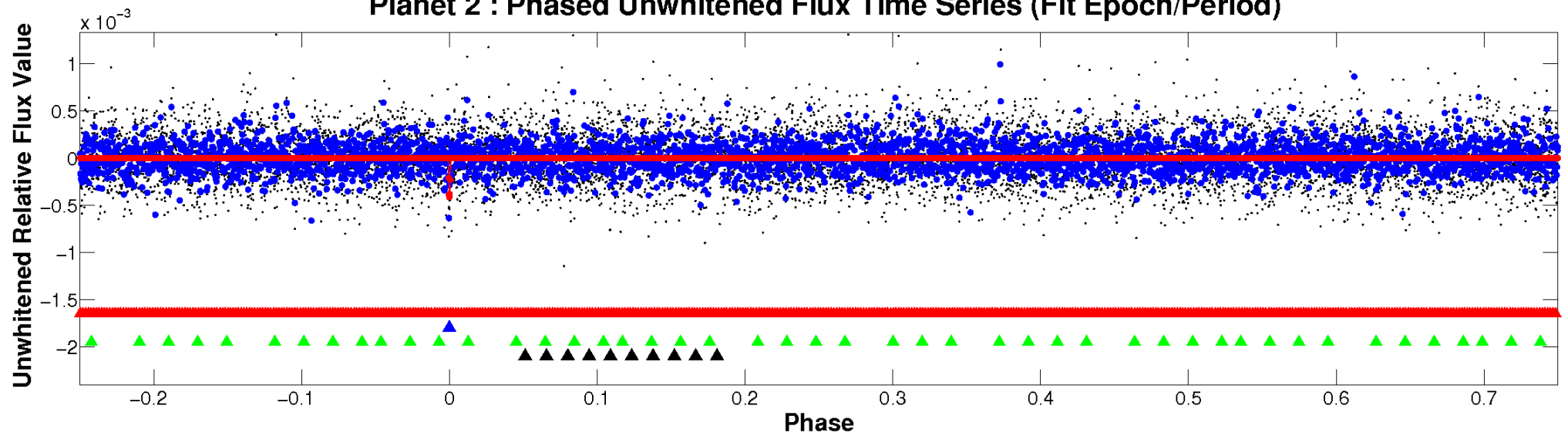
ALT Odd/Even

TCE 008233797-02

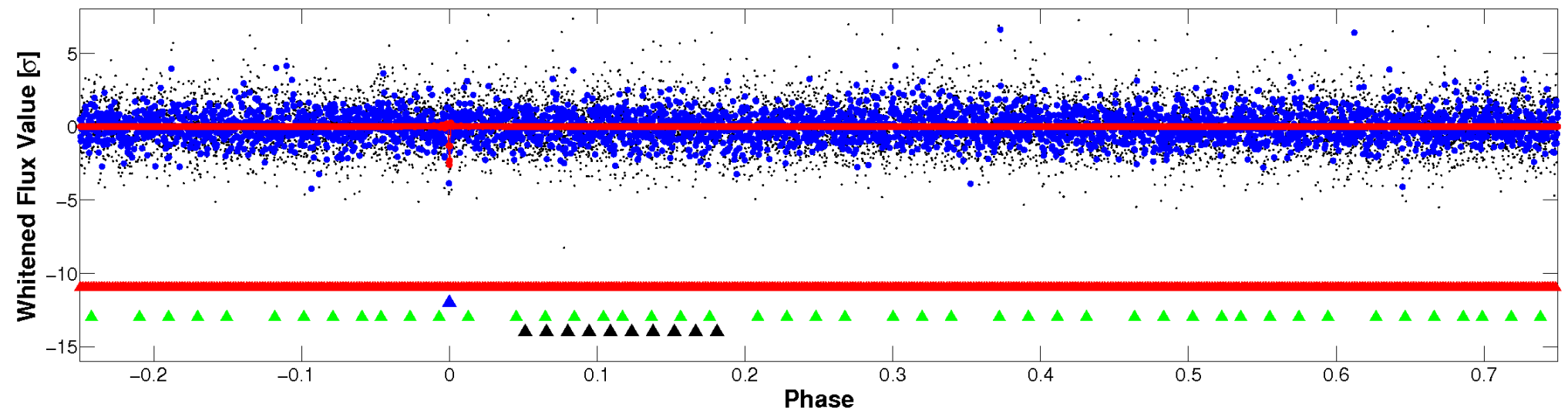


Non-Whitened Vs. Whitened Light Curve

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

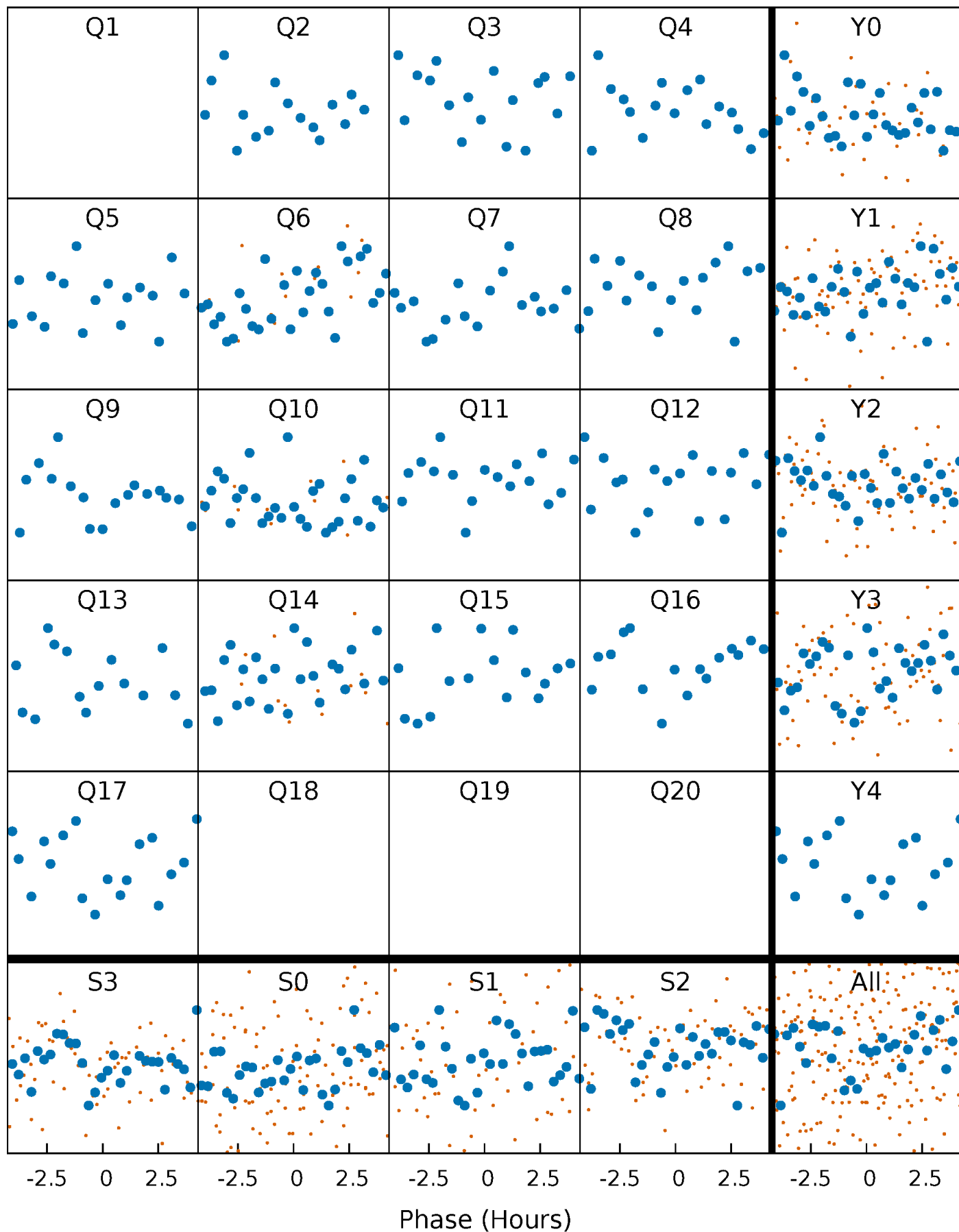


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



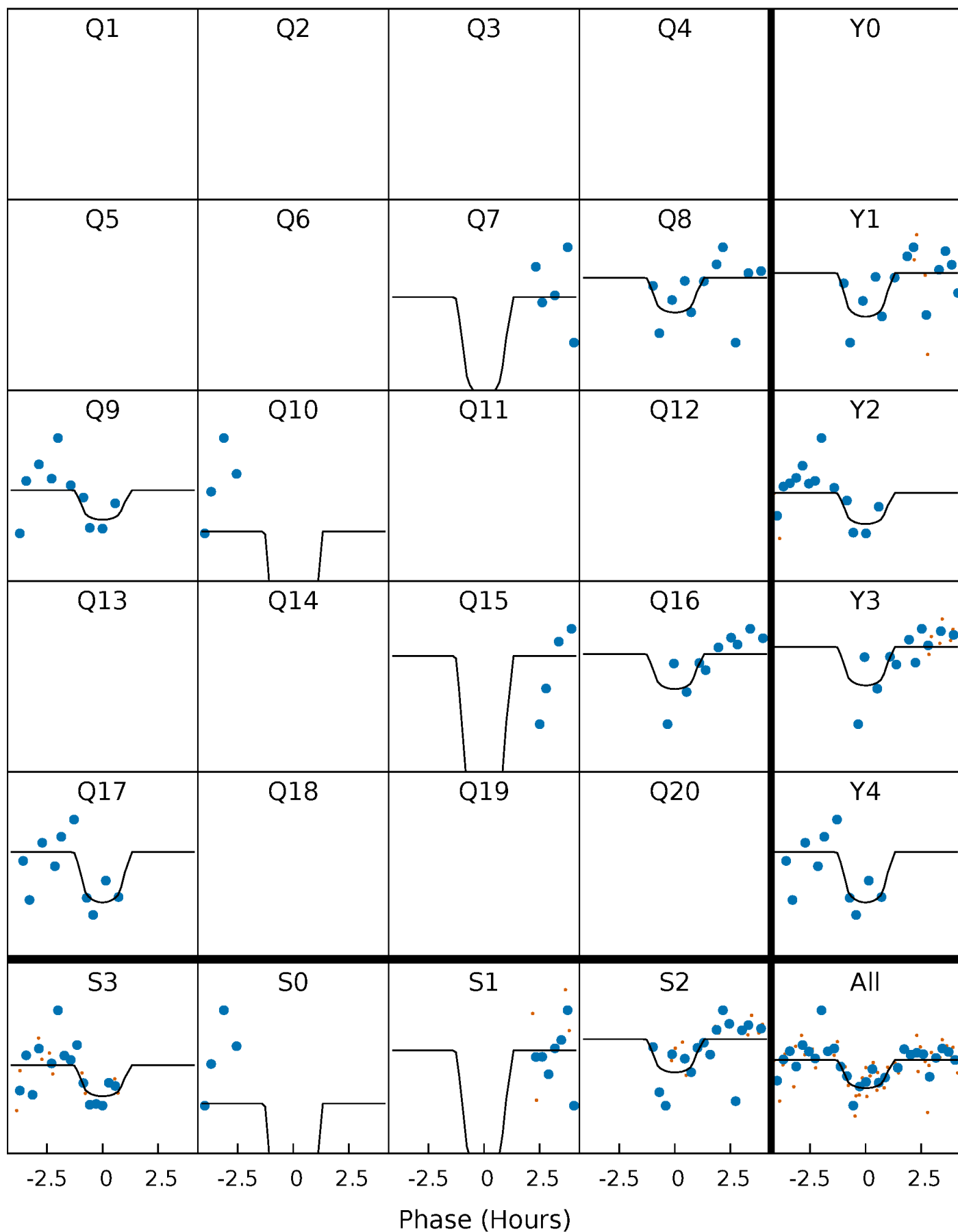
PDC Quarter-Phased Transit Curves

TCE 008233797-02 P= 73.125052 Days $T_0=182.122397$ (BKJD)



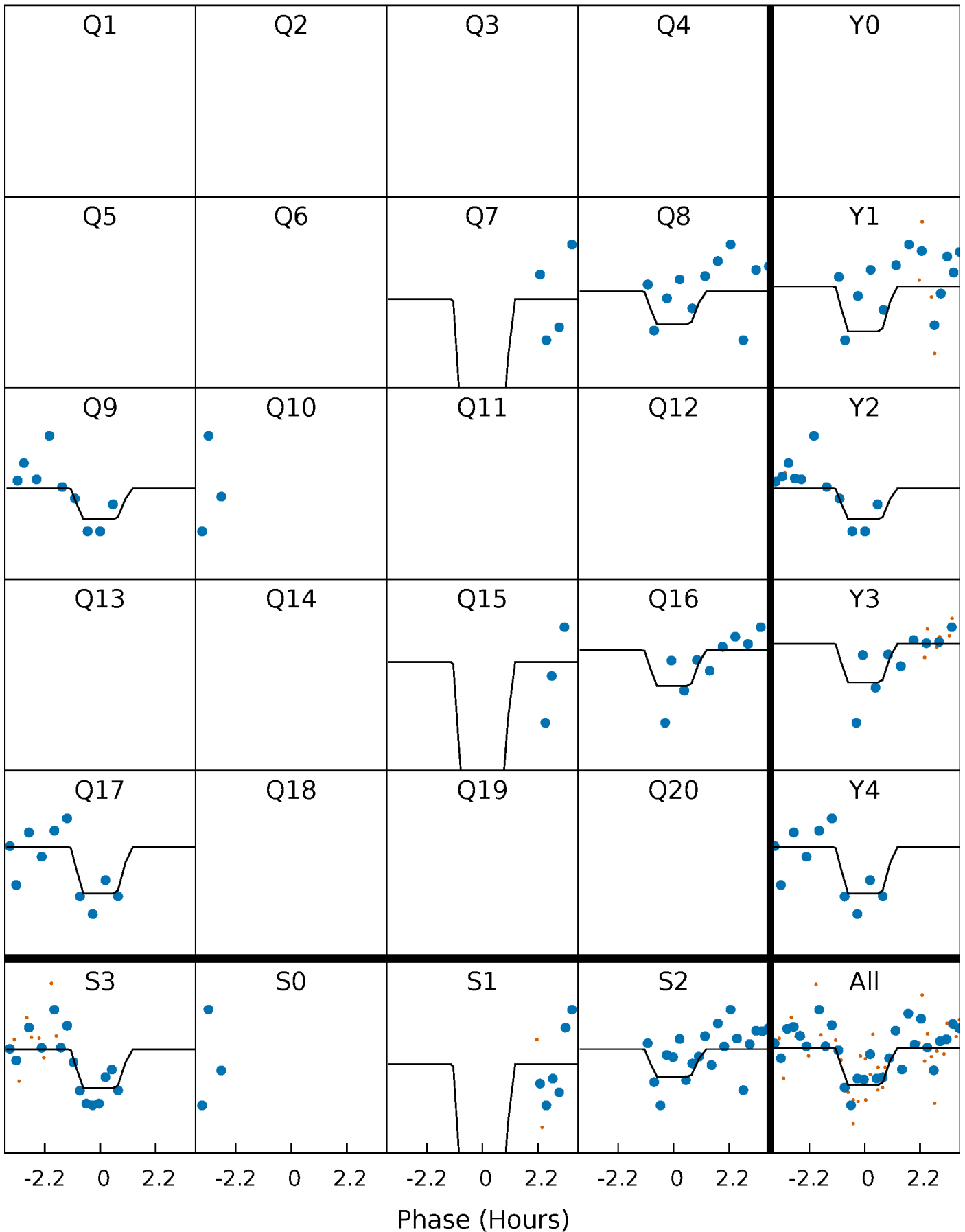
DV Quarter-Phased Transit Curves

TCE 008233797-02 $P = 73.125052$ Days $T_0 = 182.122397$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

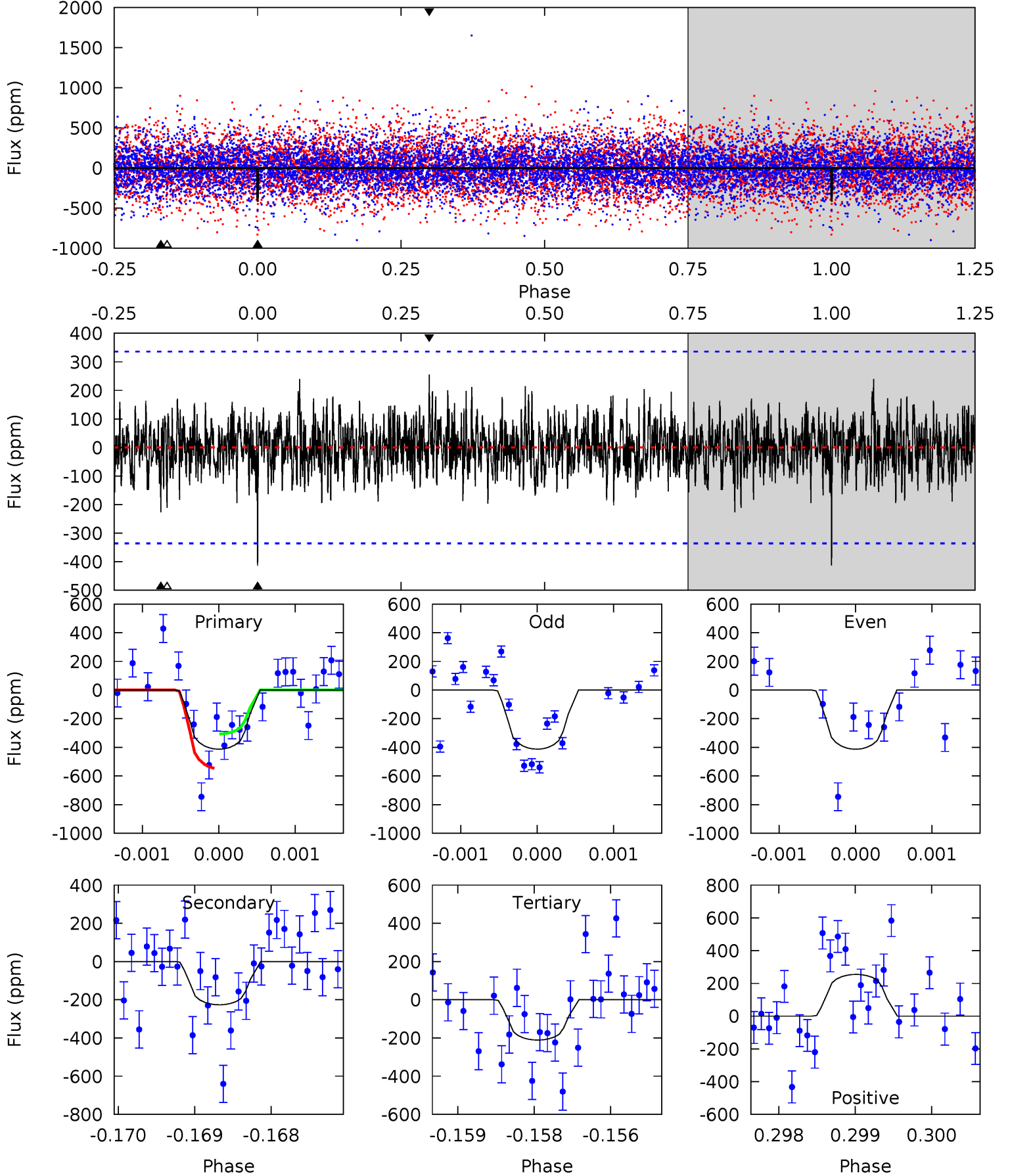
TCE 008233797-02 $P = 73.124893$ Days $T_0 = 182.124829$ (BKJD)



DV Model-Shift Uniqueness Test

008233797-02, P = 73.125052 Days, E = 108.997345 Days

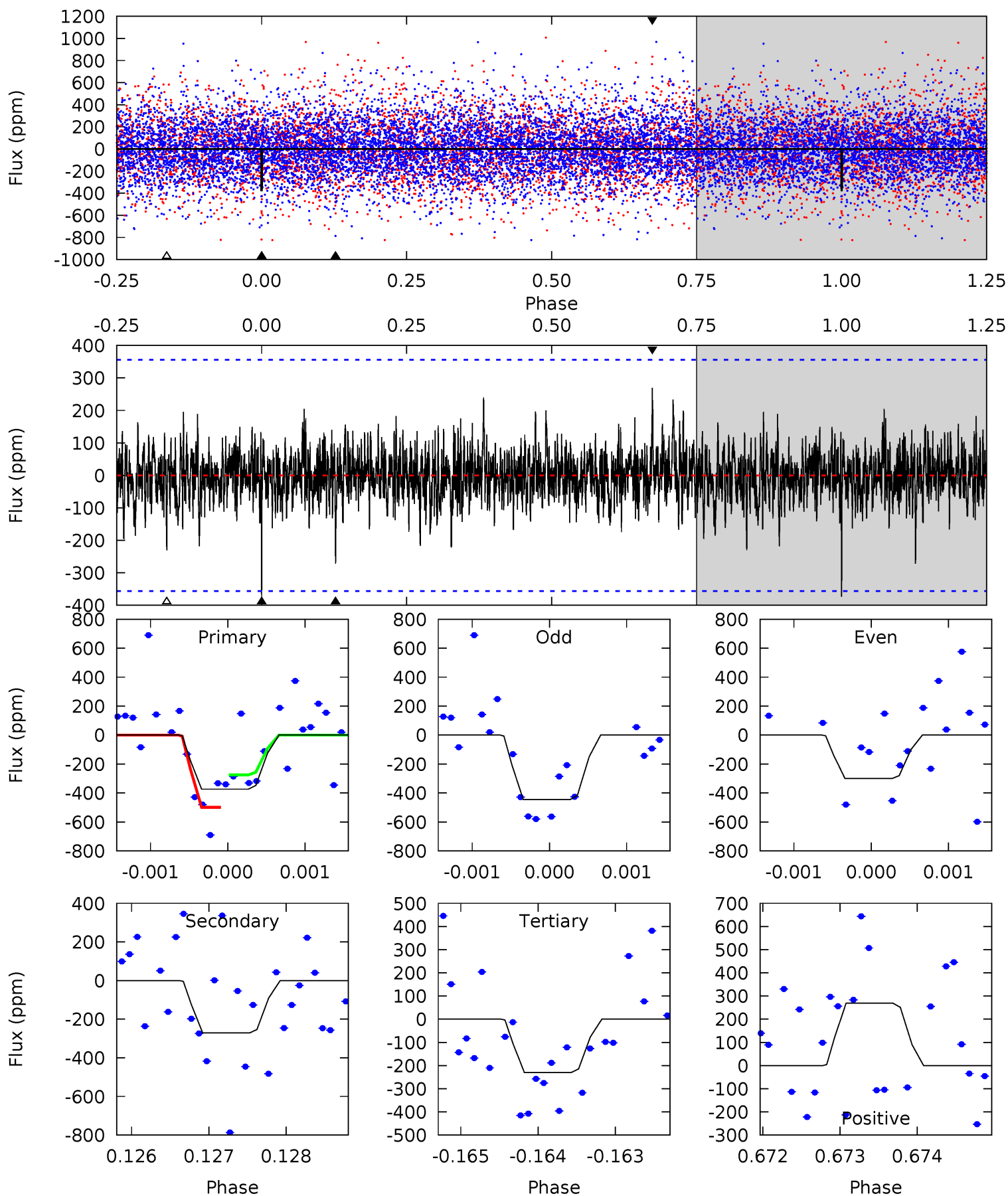
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.64	3.64	3.39	4.09	5.39	3.20	1.10	3.25	2.54	0.25	-0.45	0.00	1.00	0.38	1.92



Alt Model-Shift Uniqueness Test

008233797-02, P = 73.124893 Days, E = 108.999936 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.70	4.14	3.51	4.11	5.43	3.26	0.96	2.18	1.59	0.63	0.04	1.11	0.85	0.42	1.70



Stellar Parameters For KIC 008233797

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5227^{+157}_{-157}	$4.566^{+0.084}_{-0.063}$	$-0.580^{+0.350}_{-0.300}$	$0.709^{+0.080}_{-0.072}$	$0.676^{+0.088}_{-0.038}$	$2.665^{+0.913}_{-0.572}$
	+3%/-3%	+2%/-1%	+60%/-52%	+11%/-10%	+13%/-6%	+34%/-21%
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 008233797-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-227 ± 62	$4.07^{+4.08}_{-2.62}$	494^{+21}_{-20}	3295^{+1513}_{-584}	658^{+5026}_{-493}
Alt.	-271 ± 66	$3.97^{+3.90}_{-2.53}$	495^{+20}_{-21}	3415^{+1479}_{-622}	827^{+5298}_{-627}

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 $A_{obs} \gg 1.0$

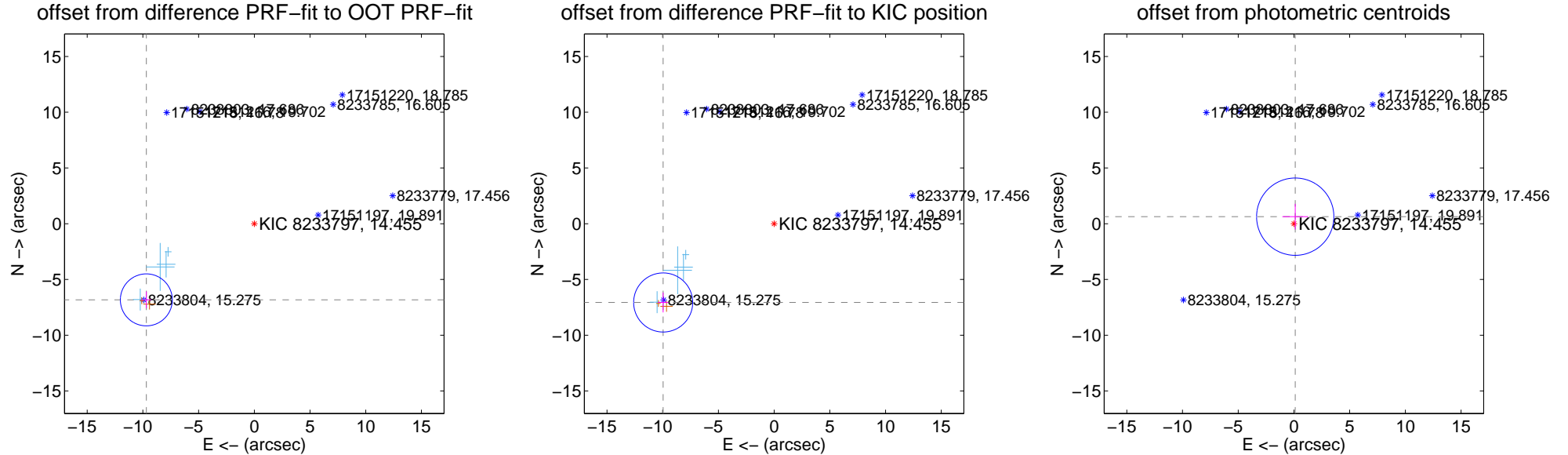
DV Centroid Data

Supplemental centroid analysis for 008233797-02. Kepler magnitude: 14.46. Transit SNR 8.87

There are 4 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	11.857 \pm 0.777	15.26	9.692 \pm 0.440	-6.830 \pm 0.748
PRF-fit source offset from KIC position	12.211 \pm 0.883	13.82	9.959 \pm 0.465	-7.065 \pm 0.895
photometric centroid source offset	0.64 \pm 1.16	0.55	-0.12 \pm 1.16	0.63 \pm 1.16



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

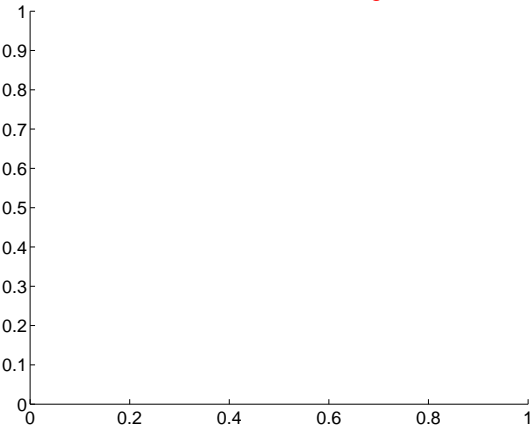
Q1 no difference image



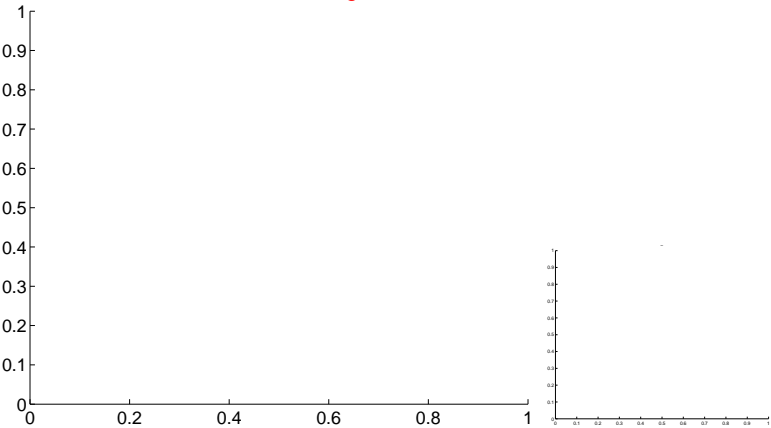
Q1 no OOT image



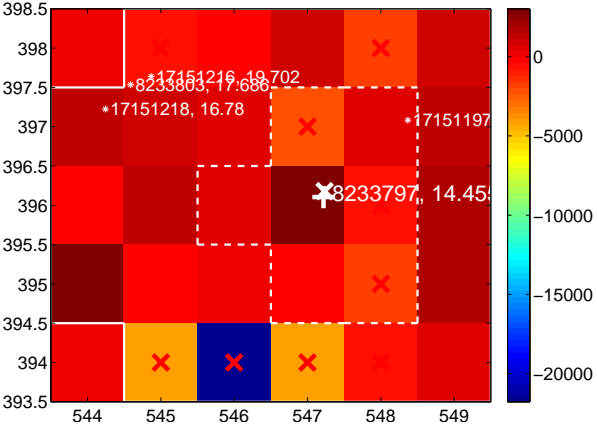
Q2 no difference image



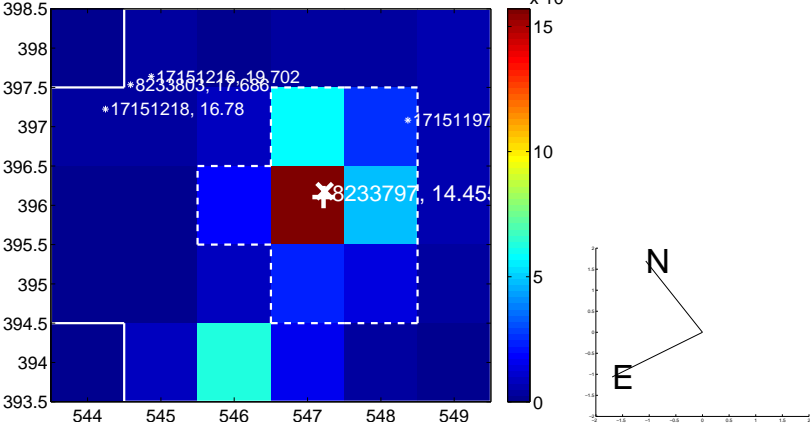
Q2 no OOT image



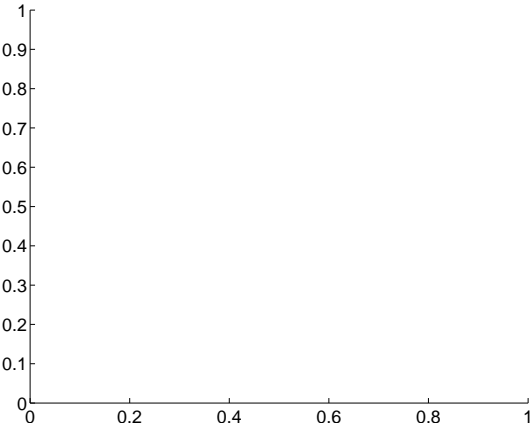
Q3 difference image. Poor Quality



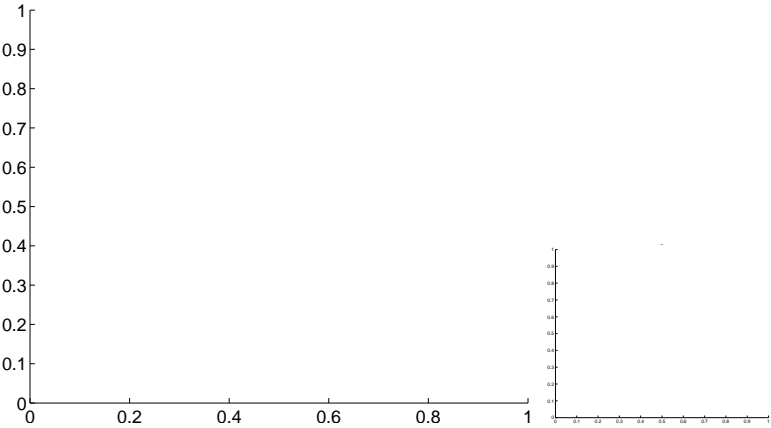
Q3 OOT image



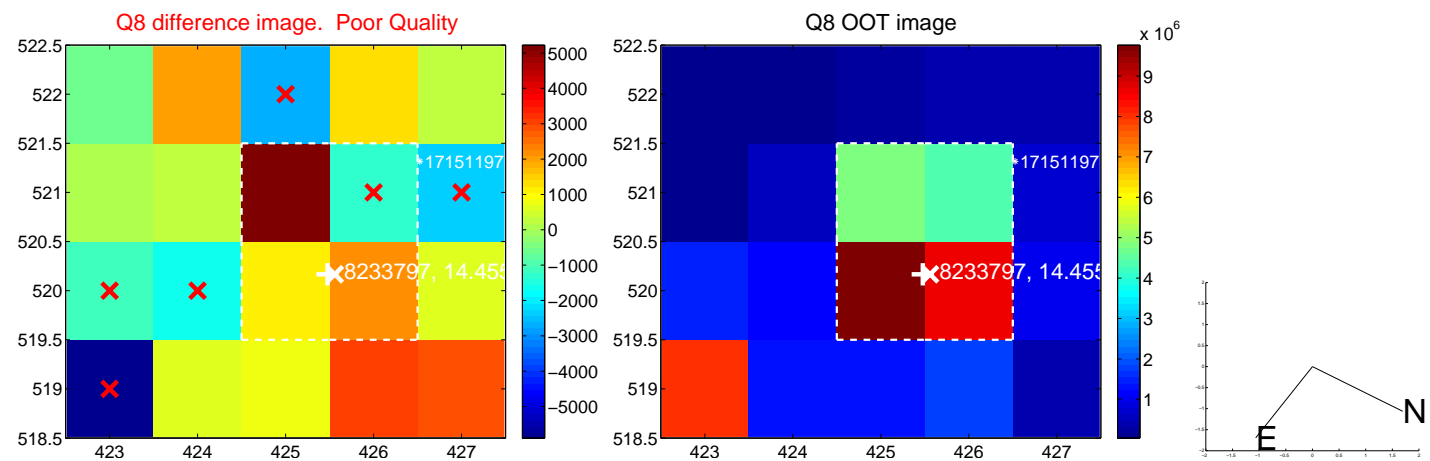
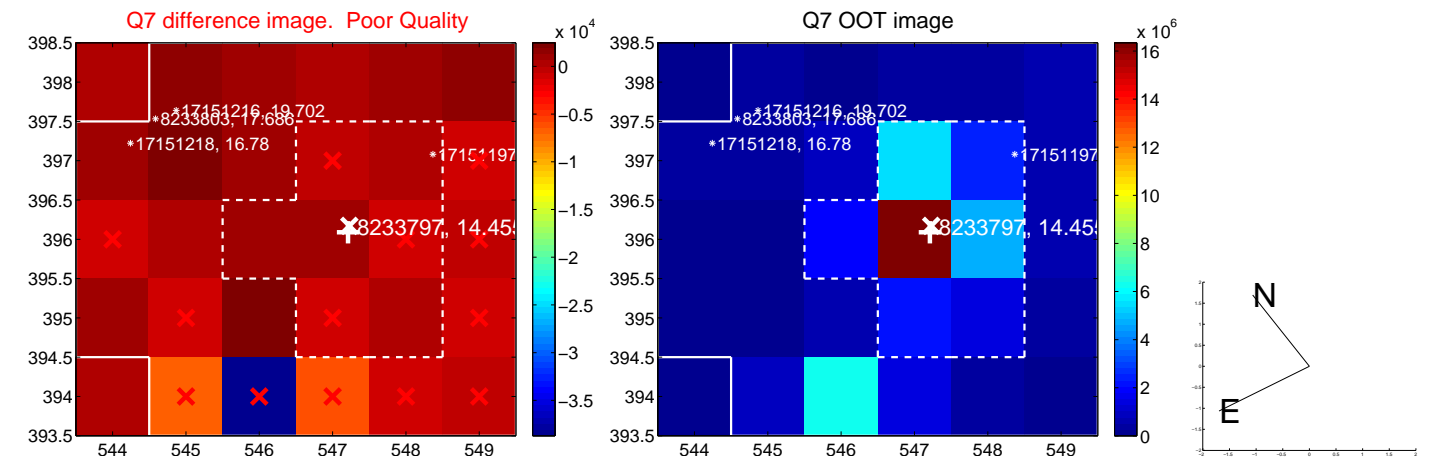
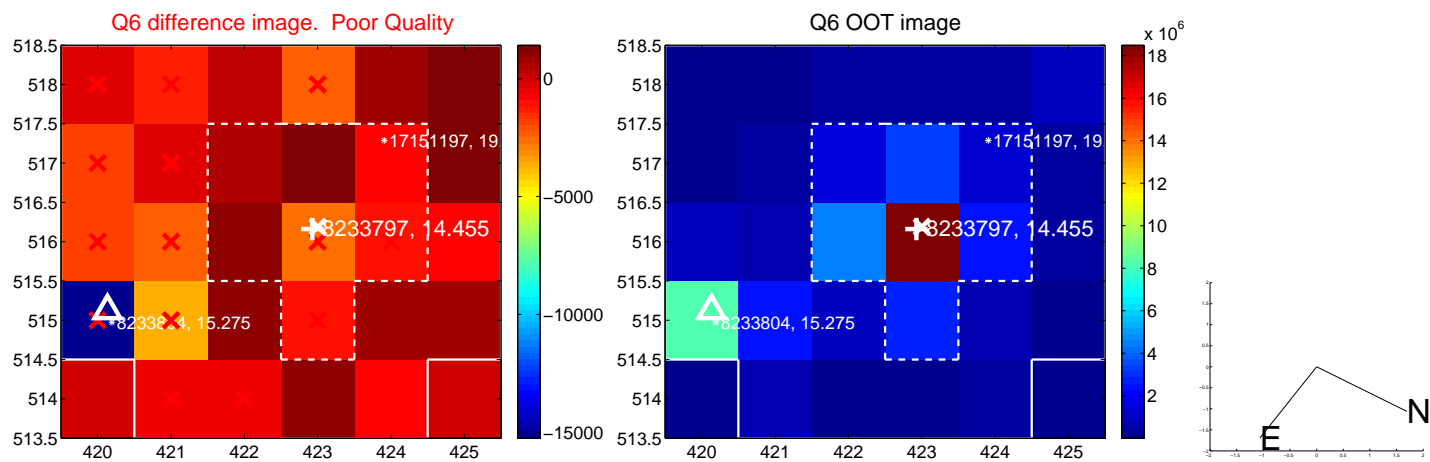
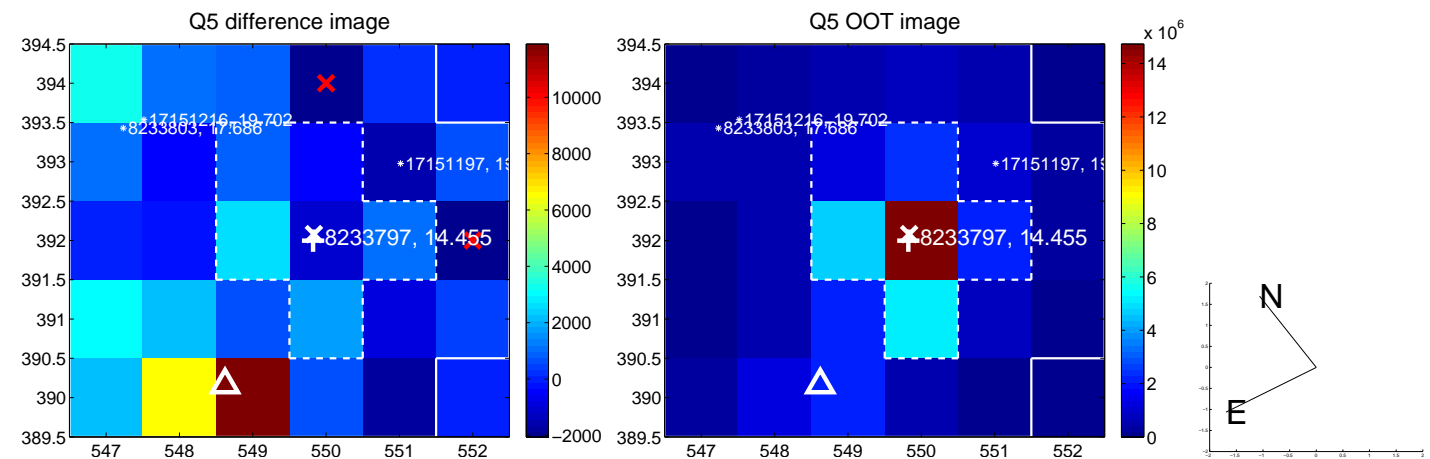
Q4 no difference image



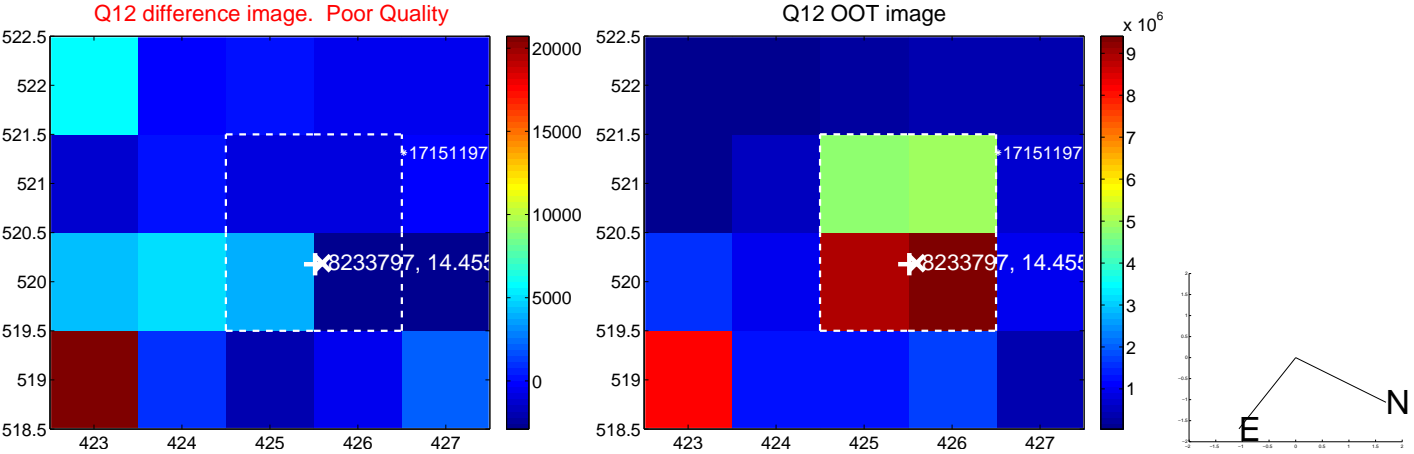
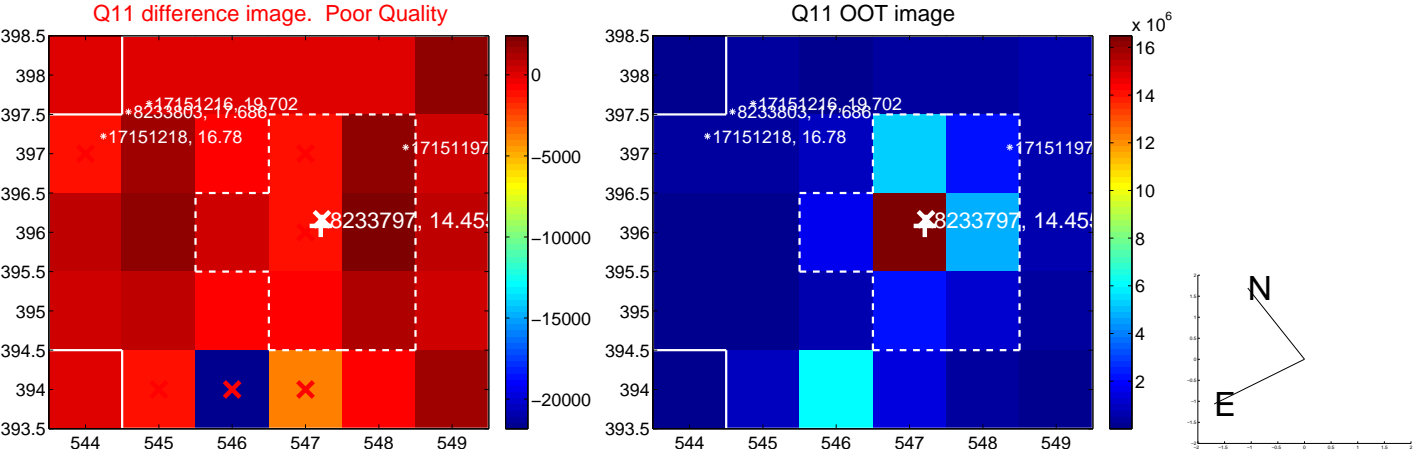
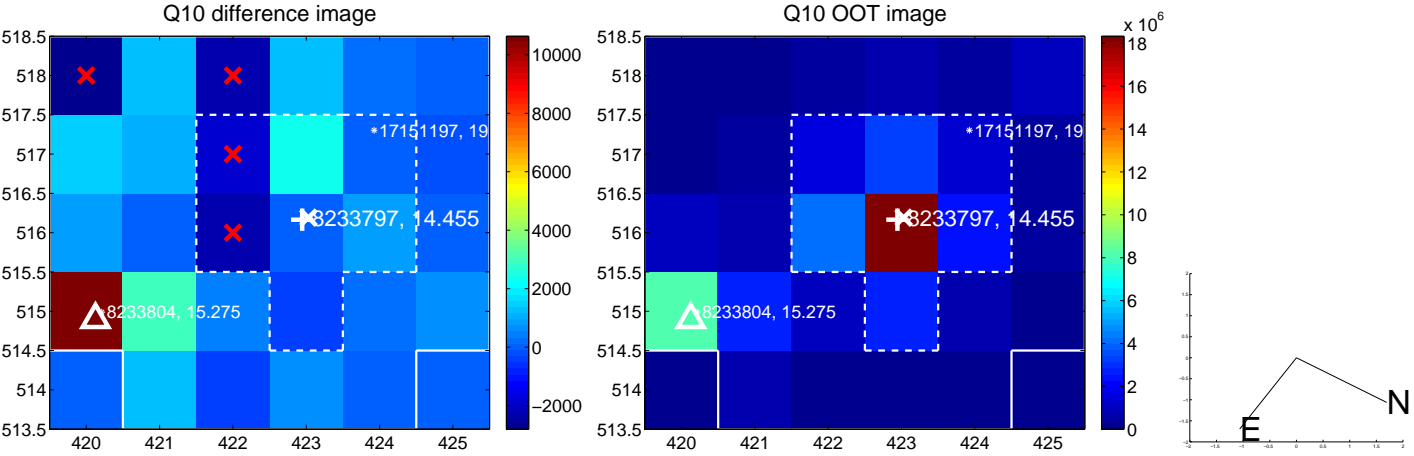
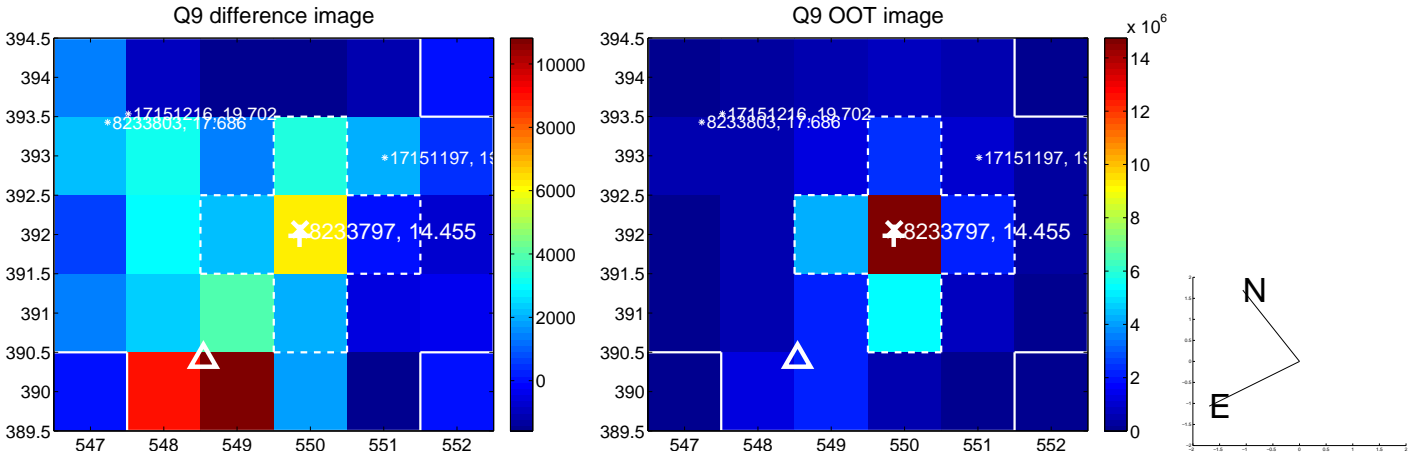
Q4 no OOT image



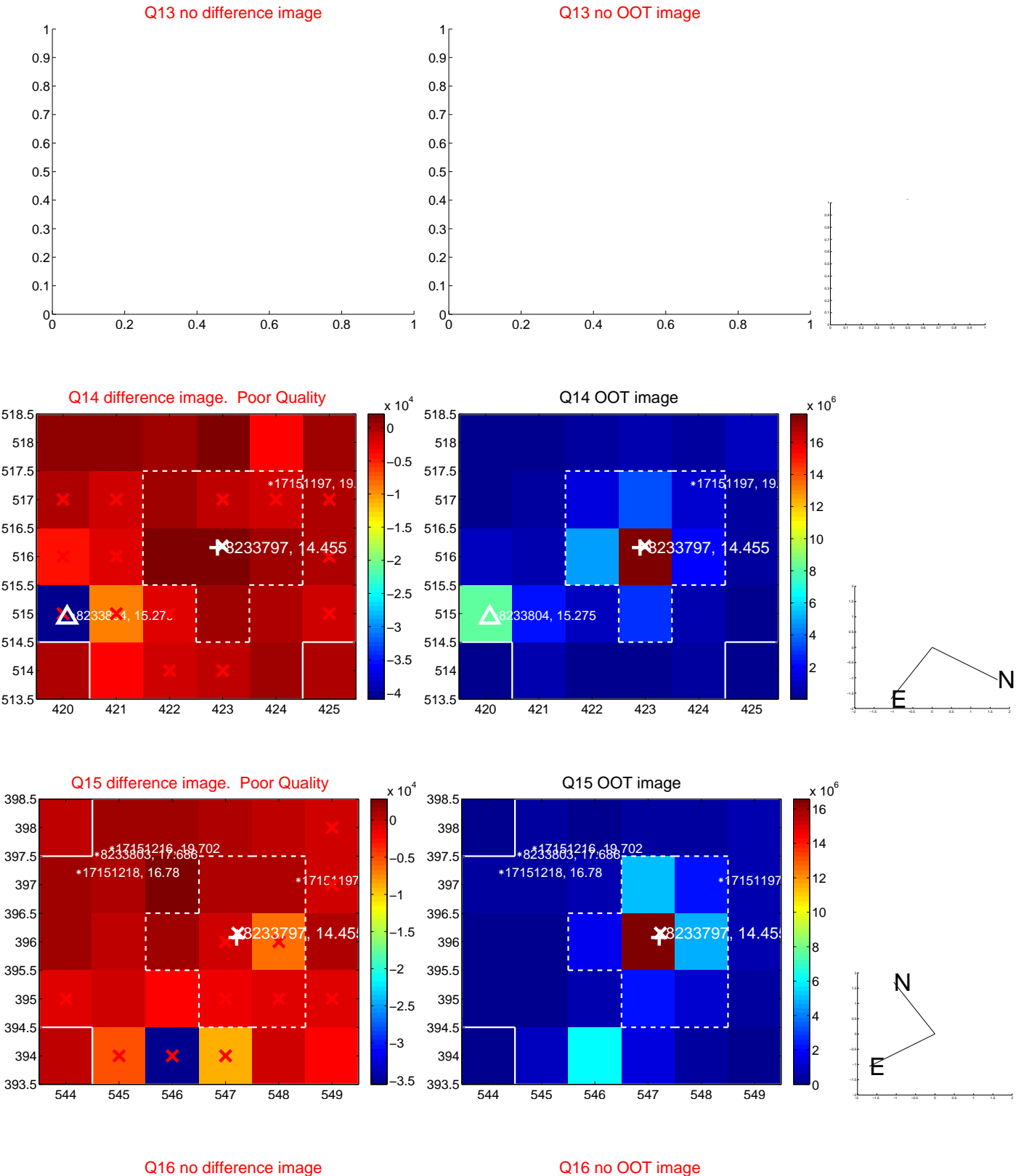
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



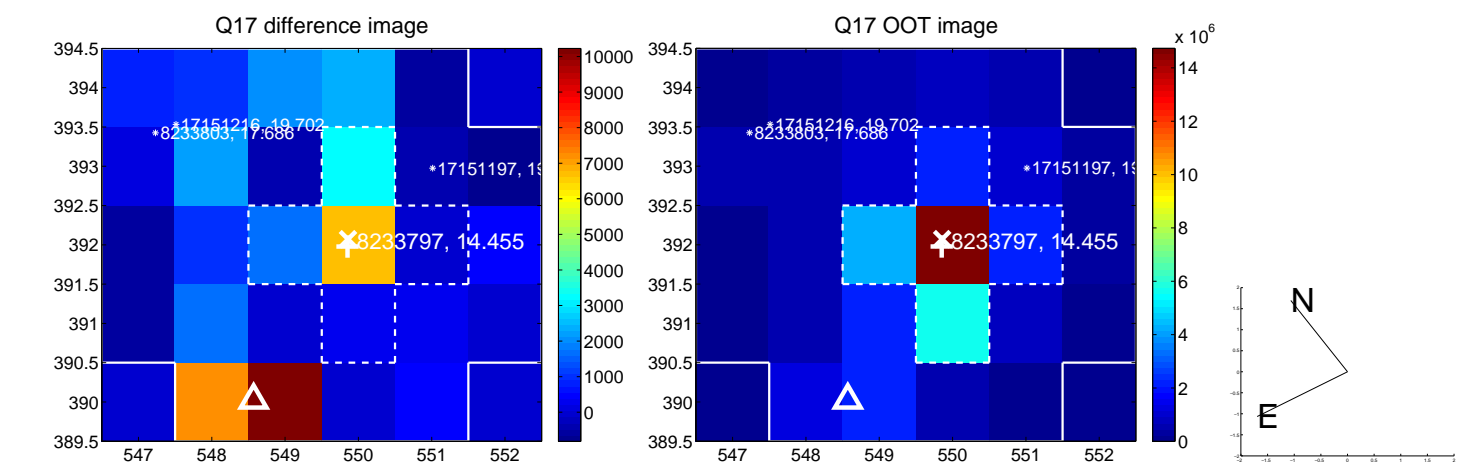
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



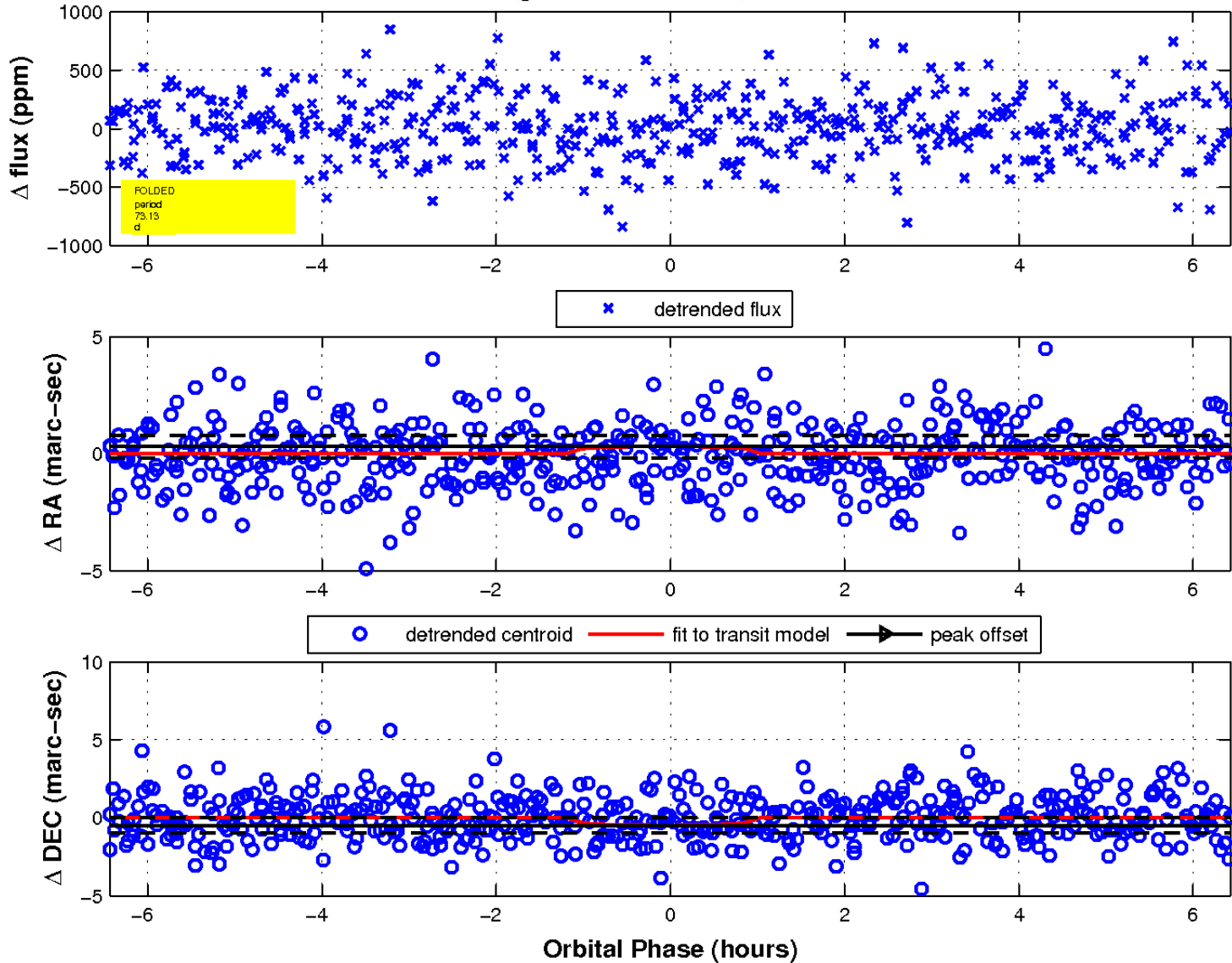
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

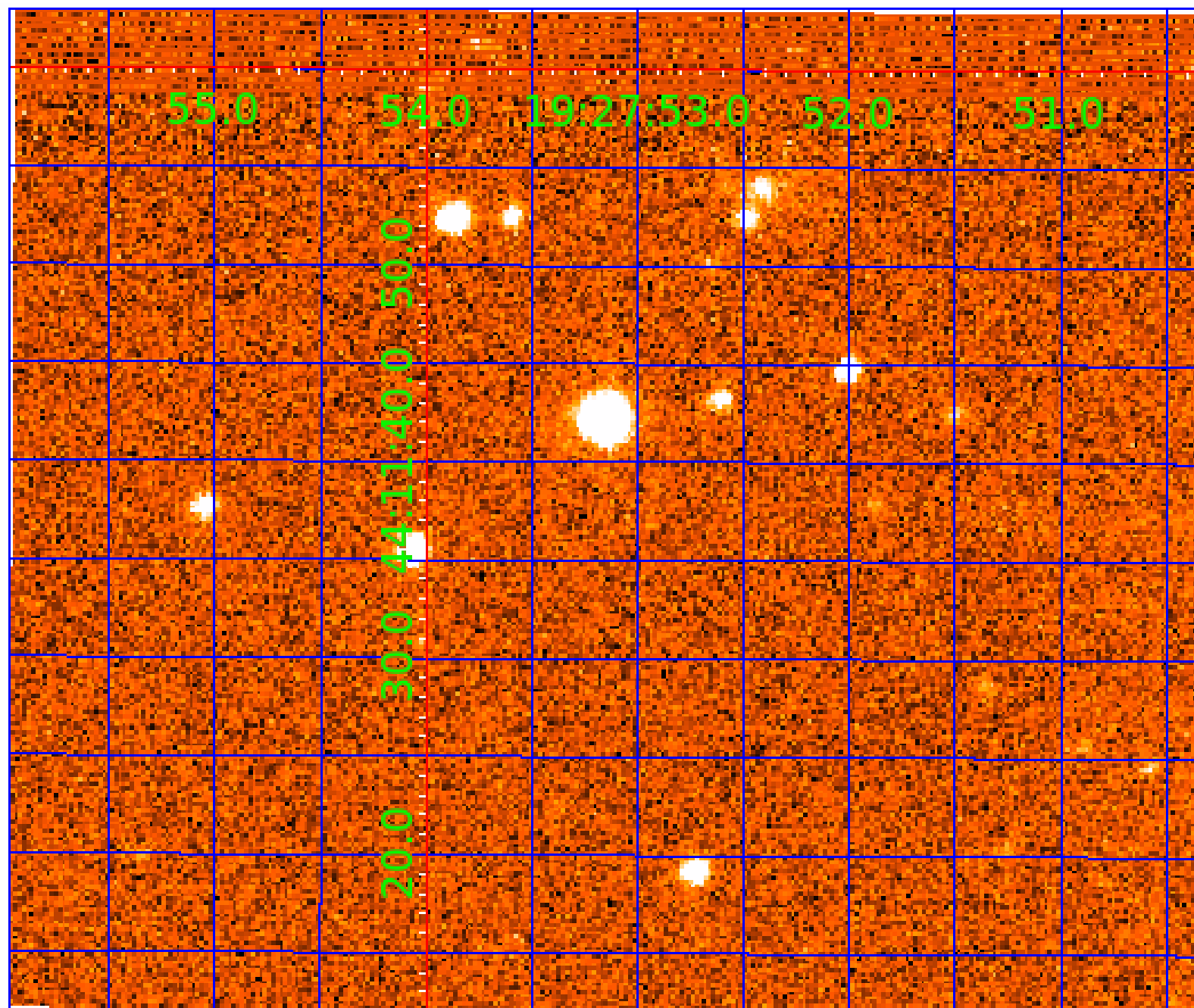


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 008233797

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})
008233797-01	OBS	No	1.327164	132.127512	23.6	8.769	7.8	9.2	0.71	5227	0.35	781.81
008233797-02	OBS	No	73.125052	182.122397	414.8	2.146	8.4	8.9	0.71	5227	1.54	3.73
008233797-03	OBS	No	30.588616	160.100302	381.8	1.340	7.8	9.3	0.71	5227	1.48	11.92
008233797-04	OBS	No	147.304524	258.999651	299.9	2.677	7.9	8.6	0.71	5227	1.43	1.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008233797-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
008233797-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008233797-03	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008233797-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET

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

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

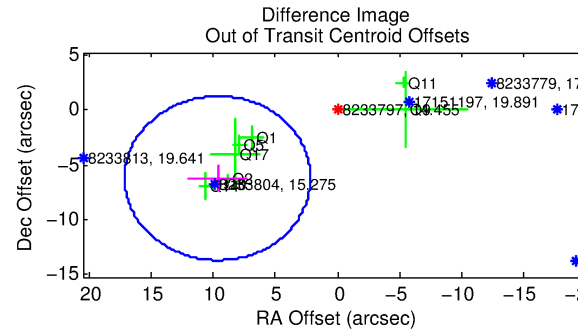
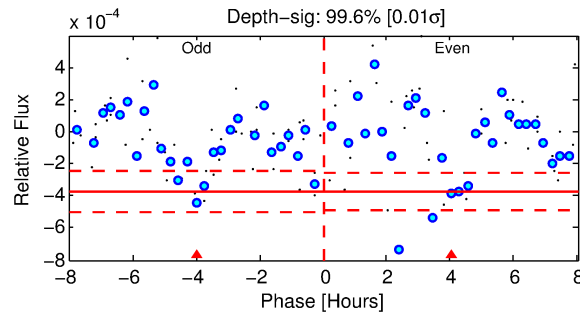
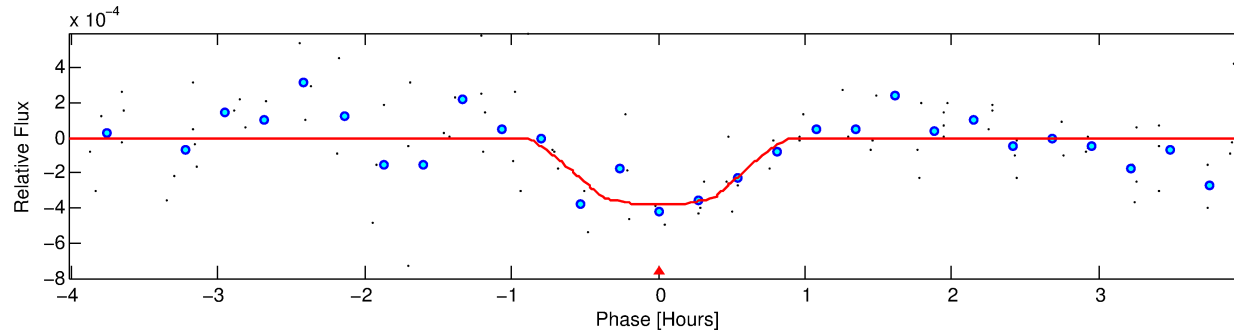
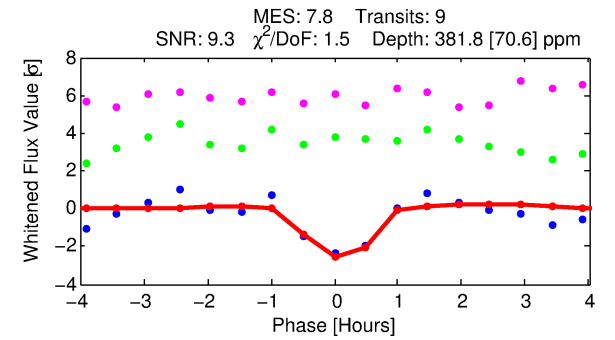
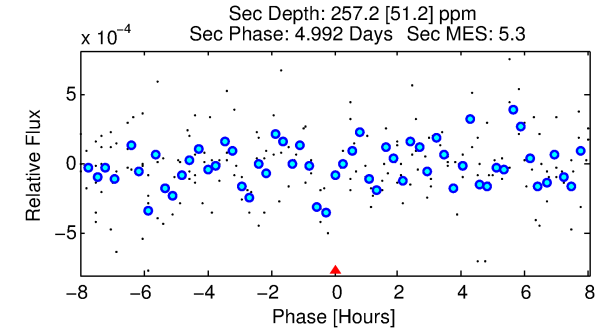
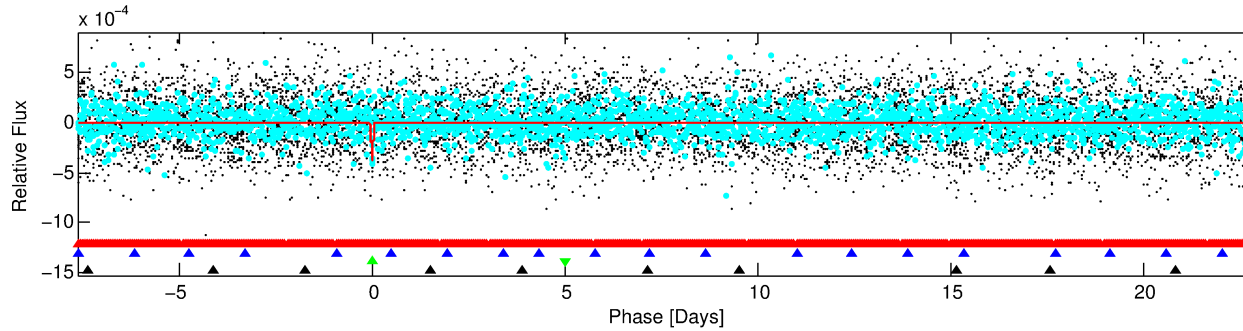
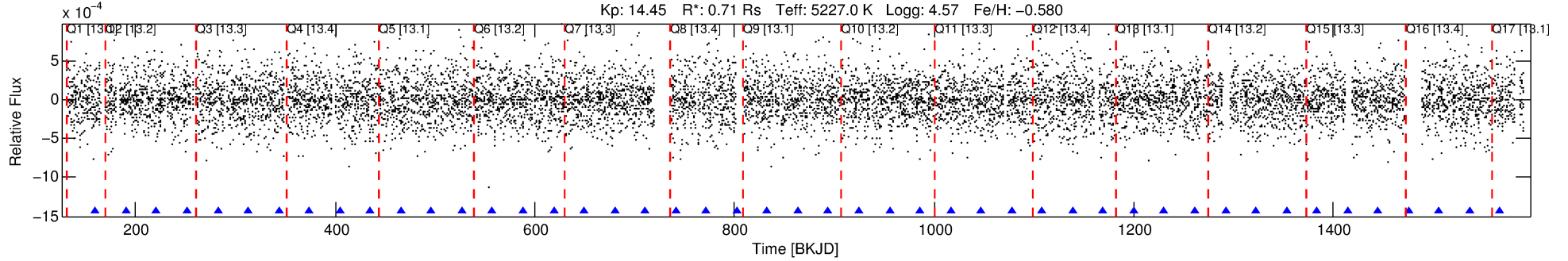
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008233797-03

No Significant Match Found

DV One-Page Summary

KIC: 8233797 Candidate: 3 of 4 Period: 30.589 d



DV Fit Results:

Period = 30.58862 [0.00034] d
Epoch = 160.1003 [0.0067] BKJD
Rp/R* = 0.0192 [0.0309]
a/R* = 130.02 [843.19]
b = 0.69 [4.93]
Seff = 11.92 [2.28]
Teff = 474 [23] K
Rp = 1.48 [2.40] Re
a = 0.1679 [0.0166] AU
Ag = 1813.75 [5864.27] [0.31σ]
Teffp = 4781 [3863] K [1.11σ]

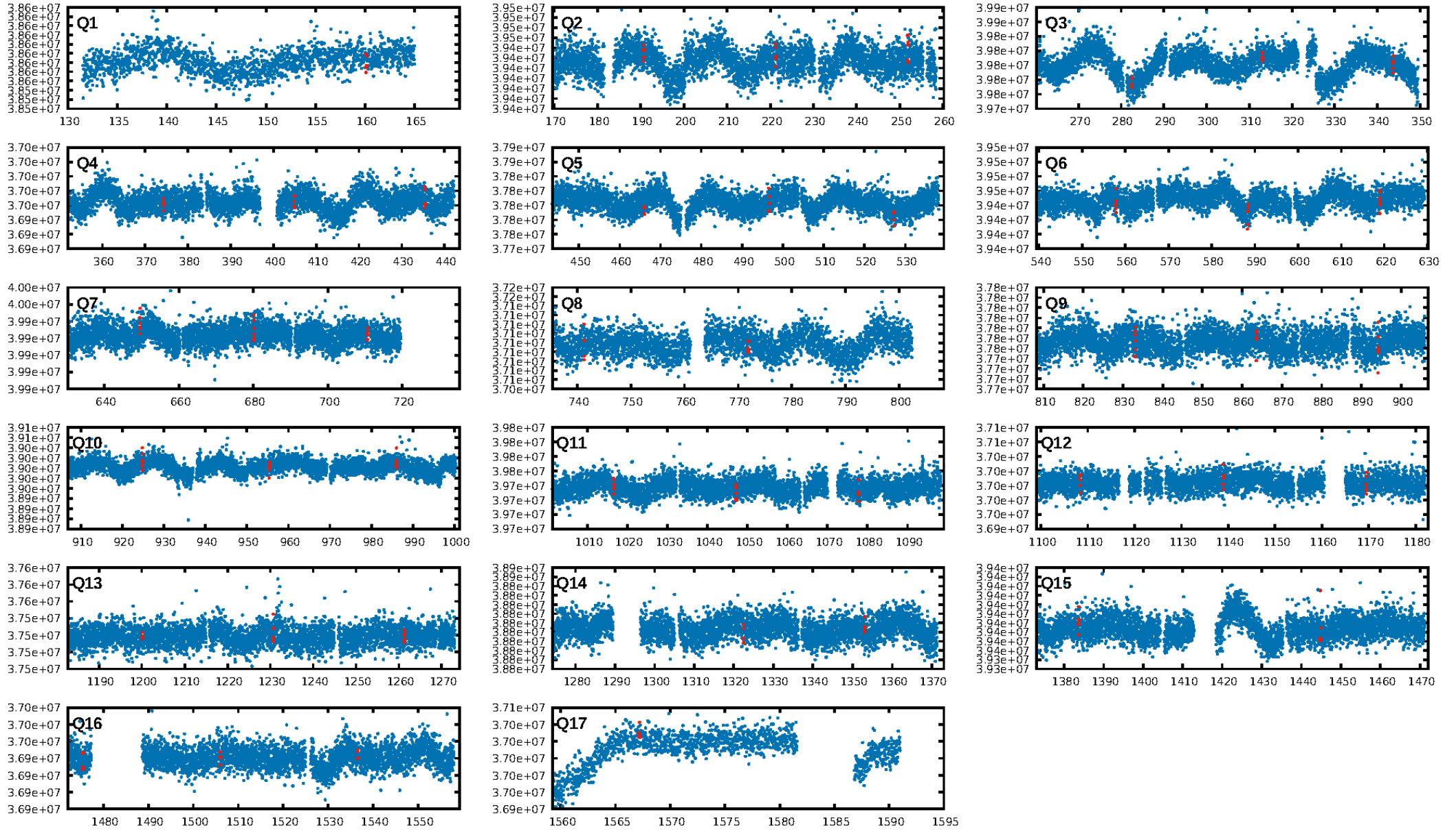
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [79.16σ]
LongPeriod-sig: 100.0% [403.47σ]
ModelChiSquare2-sig: 41.7%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 8.10e-08
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.7465
Centroid-sig: 6.8%
Centroid-so: 0.802 arcsec [0.76σ]
OotOffset-rm: 11.486 arcsec [4.60σ]
KicOffset-rm: 11.829 arcsec [4.43σ]
OotOffset-st: 3/1/0/4 [8]
KicOffset-st: 3/1/0/4 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.35 [6/17]

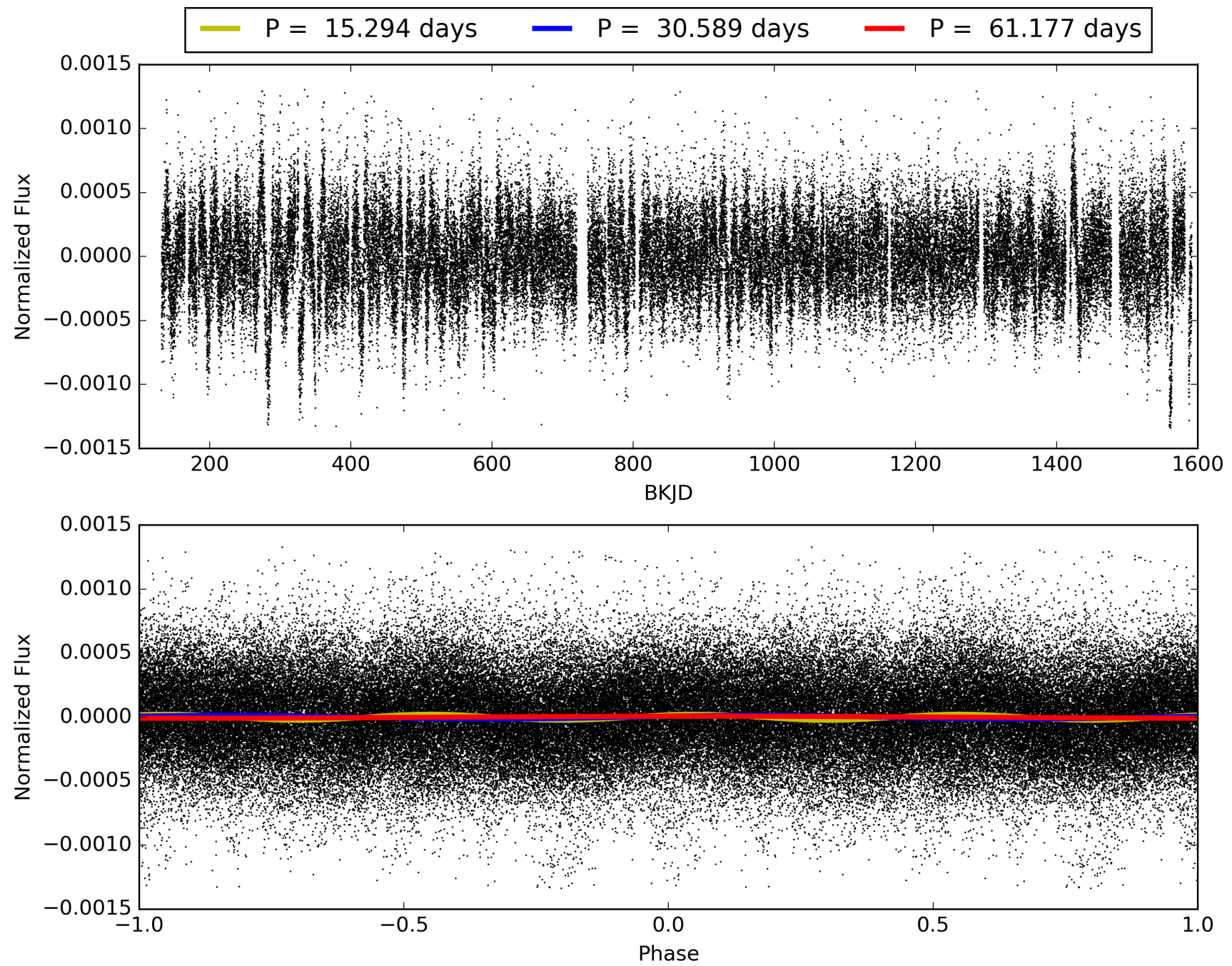
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:55:25 Z

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

TCE 008233797-03, PDC Light Curves

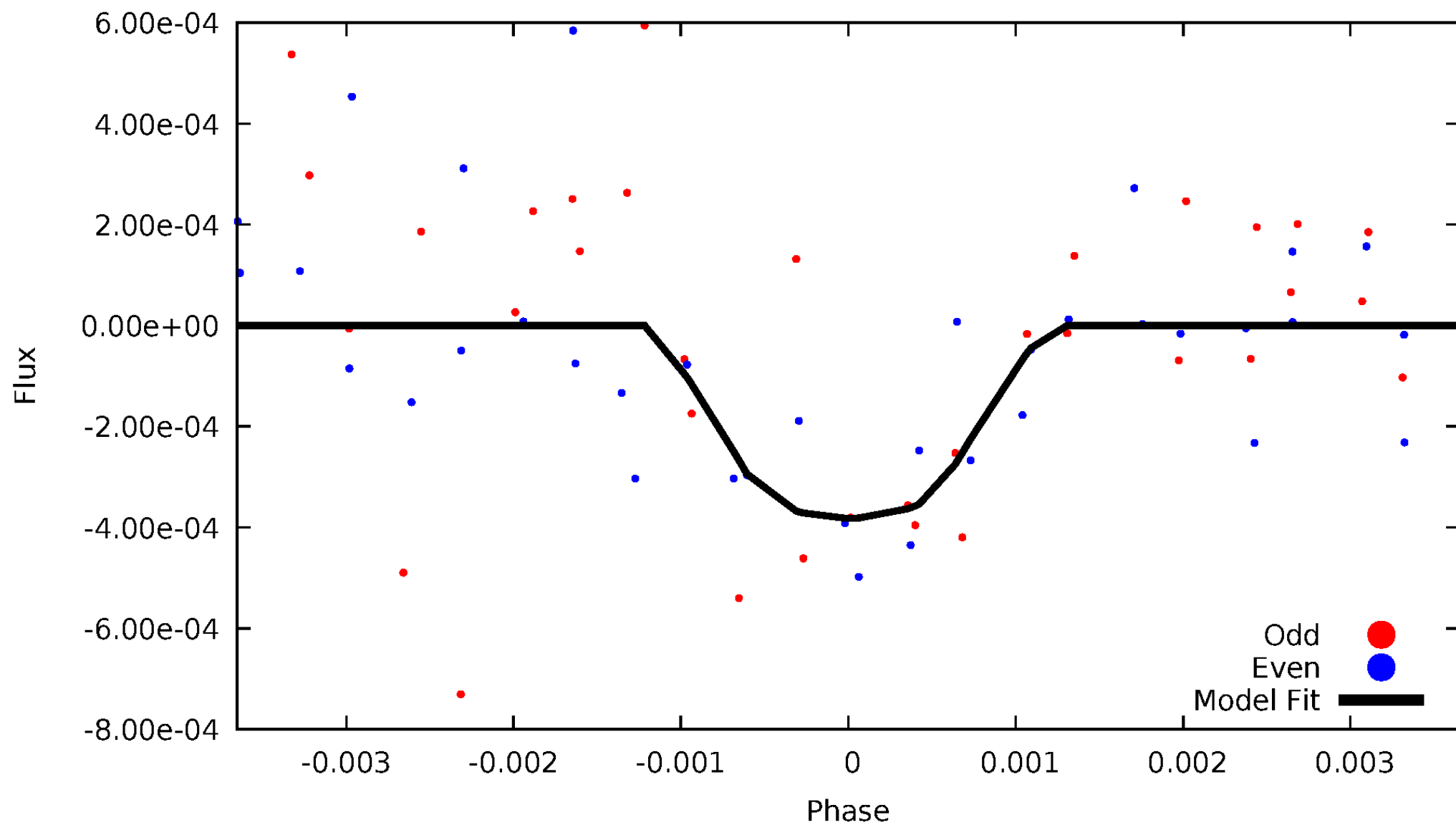


TCE 008233797-03



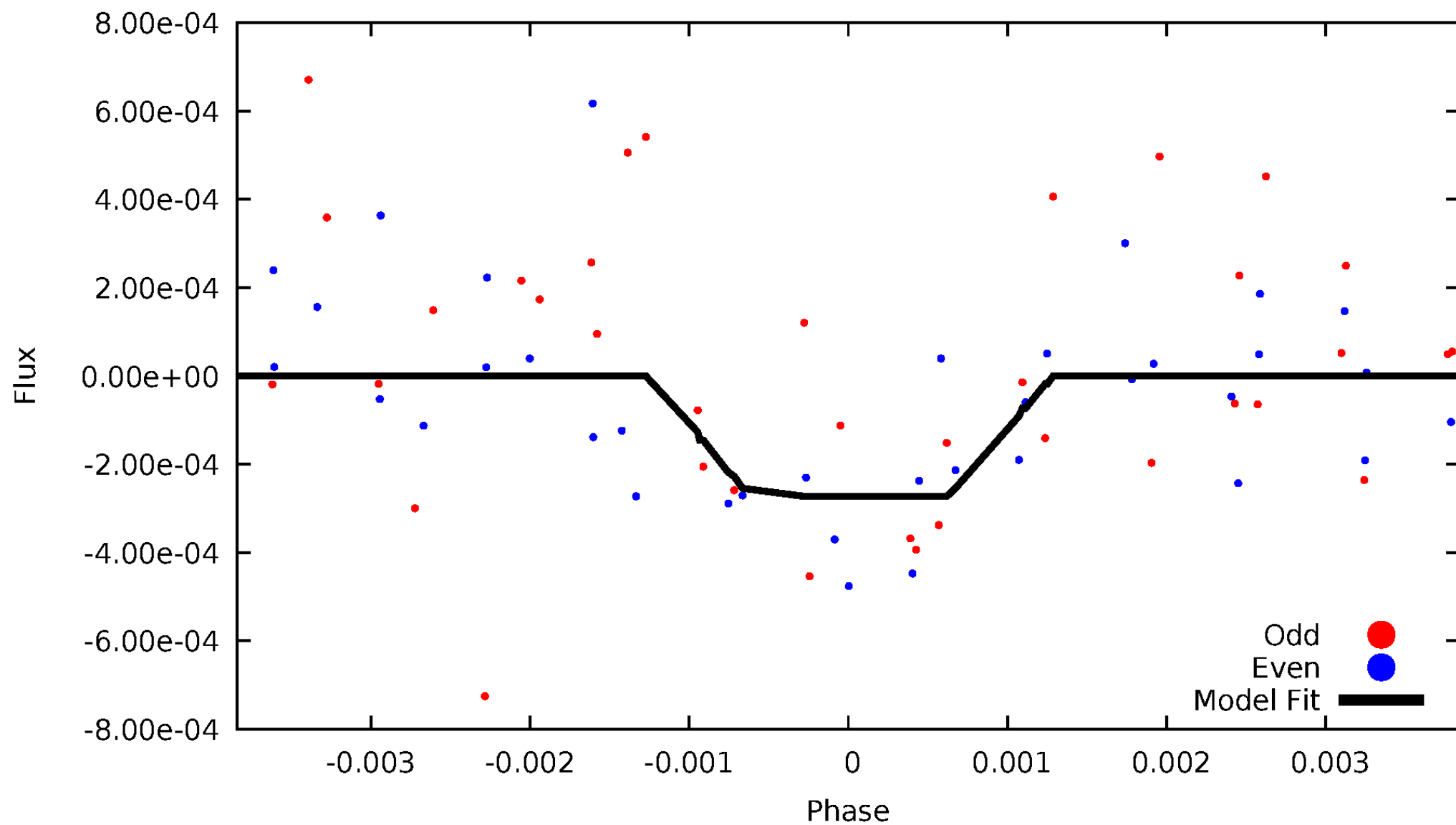
DV Odd/Even

TCE 008233797-03

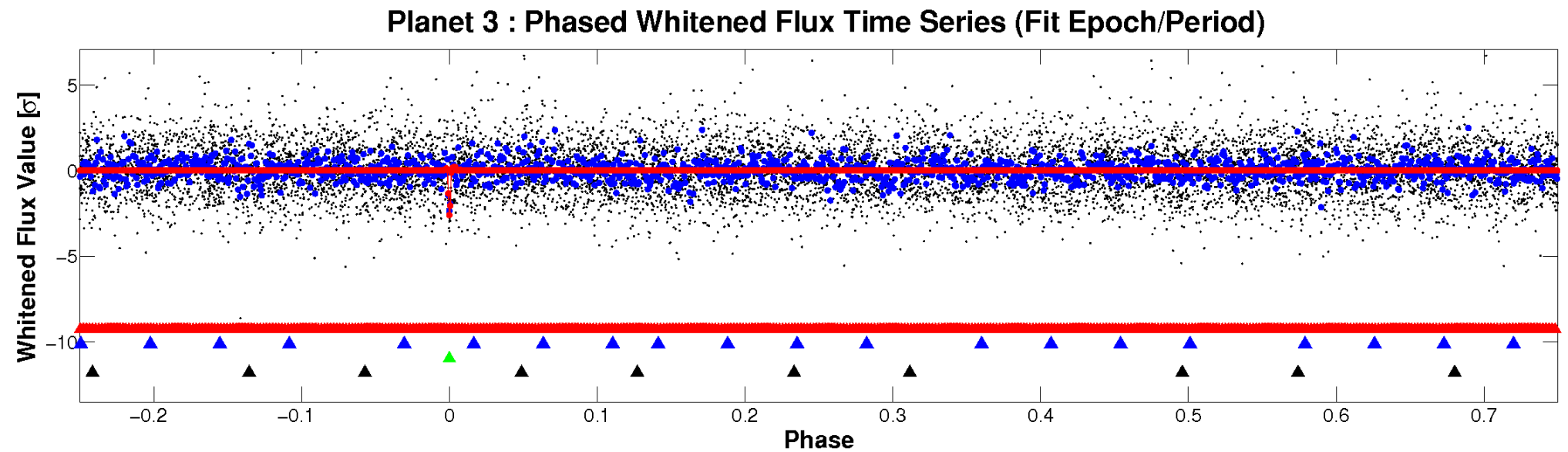
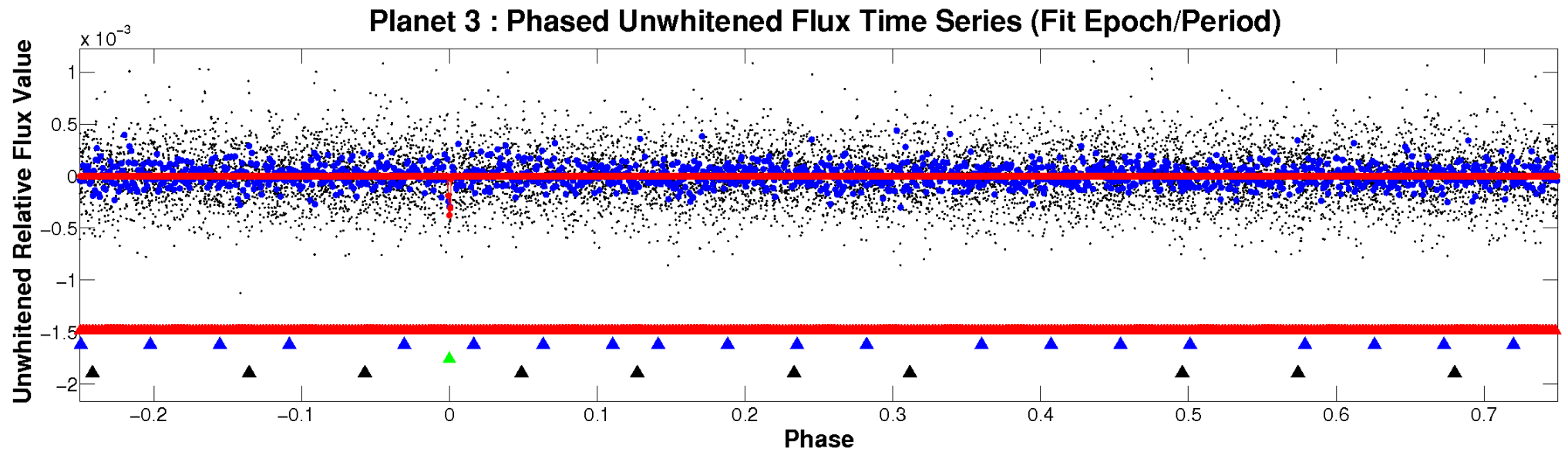


ALT Odd/Even

TCE 008233797-03

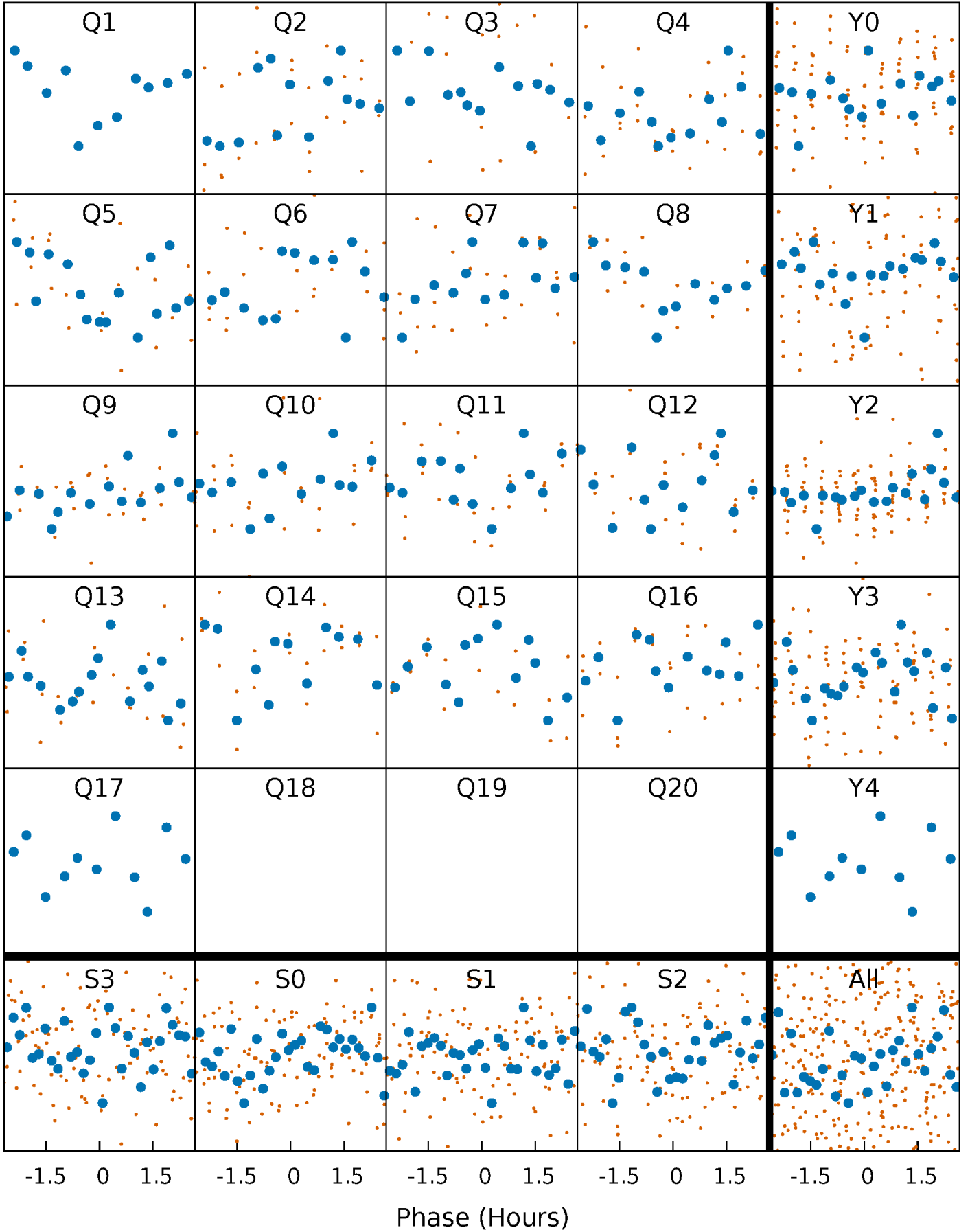


Non-Whitened Vs. Whitened Light Curve



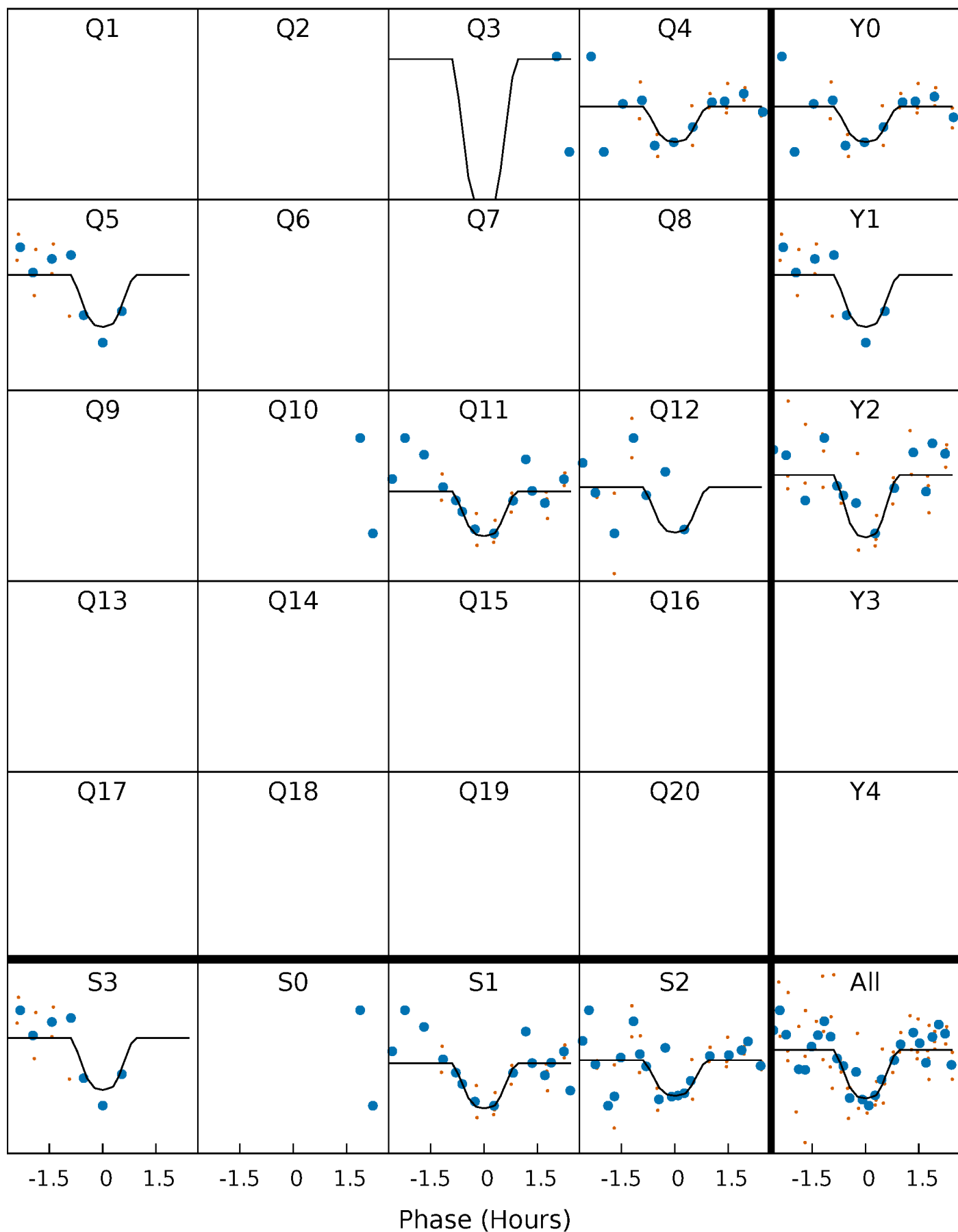
PDC Quarter-Phased Transit Curves

TCE 008233797-03 P= 30.588616 Days $T_0=160.100302$ (BKJD)



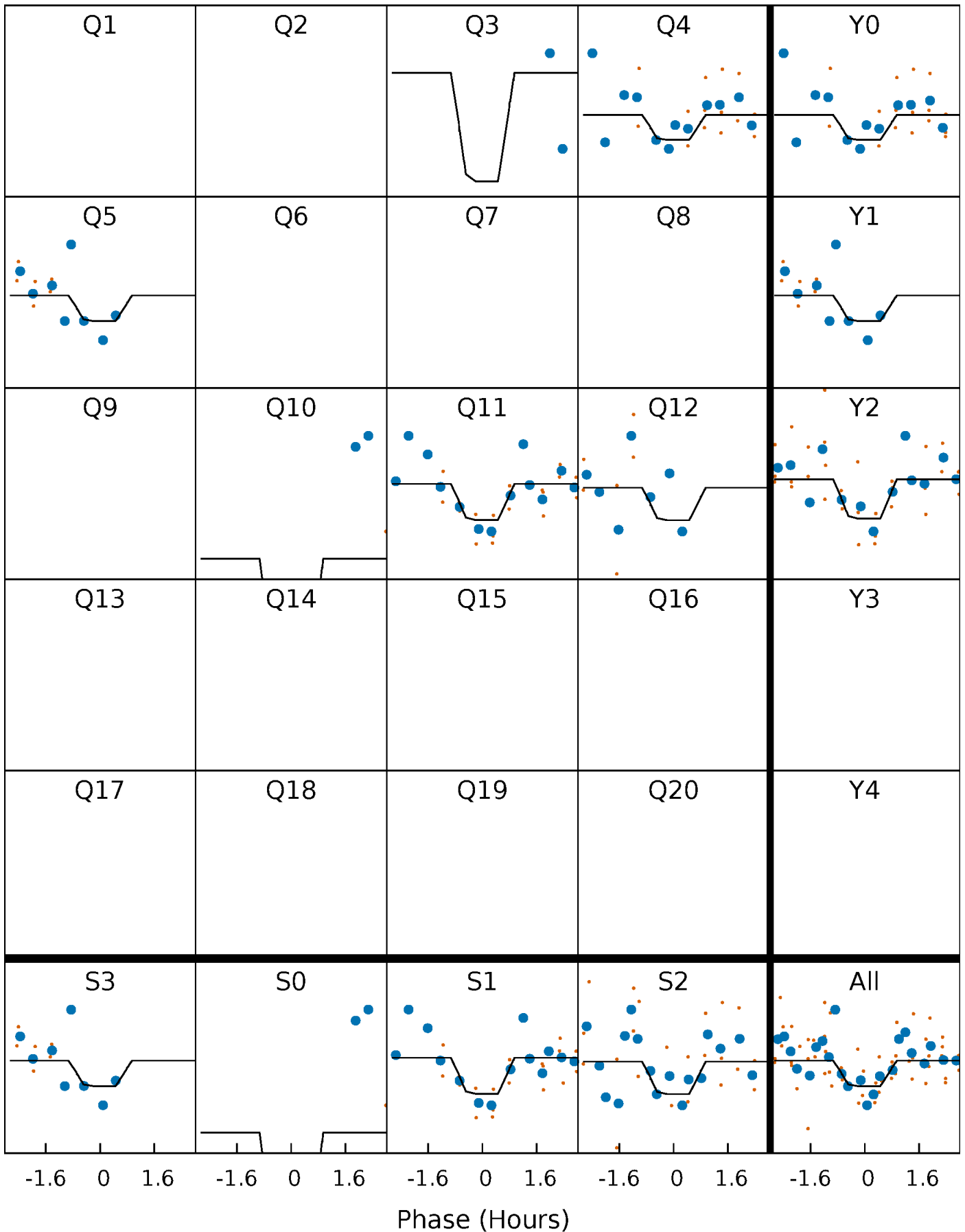
DV Quarter-Phased Transit Curves

TCE 008233797-03 $P = 30.588616$ Days $T_0 = 160.100302$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

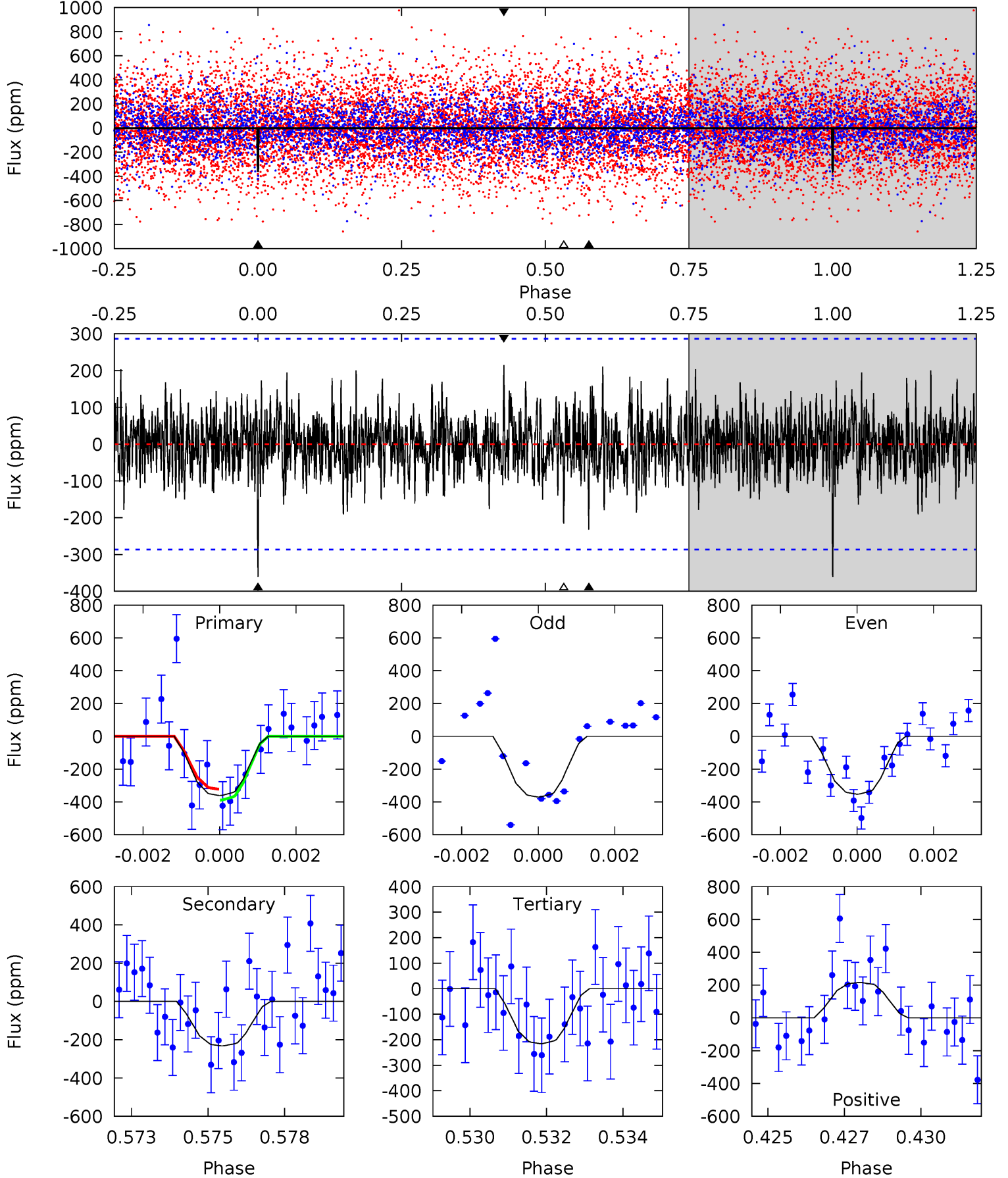
TCE 008233797-03 P= 30.588481 Days $T_0=160.103452$ (BKJD)



DV Model-Shift Uniqueness Test

008233797-03, P = 30.588616 Days, E = 129.511686 Days

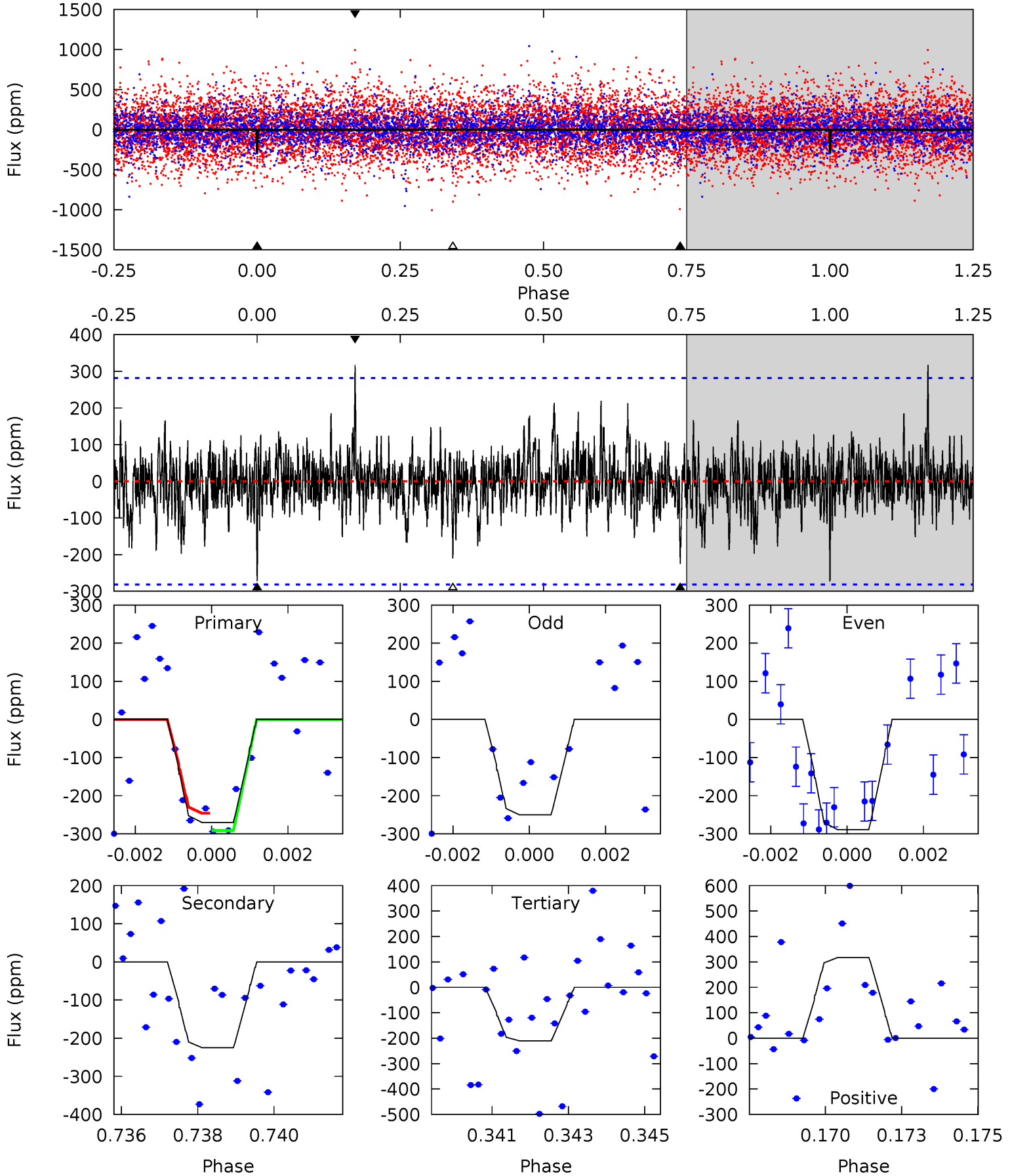
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.70	4.31	4.00	4.00	5.32	3.08	1.15	2.71	2.70	0.31	0.31	0.16	1.06	0.37	0.61



Alt Model-Shift Uniqueness Test

008233797-03, P = 30.588481 Days, E = 129.514971 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.10	4.24	3.97	5.98	5.31	3.06	1.11	1.12	-0.89	0.27	-1.74	0.36	0.95	0.54	0.42



Stellar Parameters For KIC 008233797

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5227^{+157}_{-157}	$4.566^{+0.084}_{-0.063}$	$-0.580^{+0.350}_{-0.300}$	$0.709^{+0.080}_{-0.072}$	$0.676^{+0.088}_{-0.038}$	$2.665^{+0.913}_{-0.572}$
	+3%/-3%	+2%/-1%	+60%/-52%	+11%/-10%	+13%/-6%	+34%/-21%
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 008233797-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-232 ± 54	$2.28^{+2.05}_{-1.46}$	661^{+26}_{-26}	4007^{+2325}_{-746}	686^{+4812}_{-492}
Alt.	-225 ± 53	$2.20^{+1.92}_{-1.41}$	660^{+27}_{-26}	4027^{+2244}_{-739}	723^{+4927}_{-526}

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 $A_{obs} \gg 1.0$

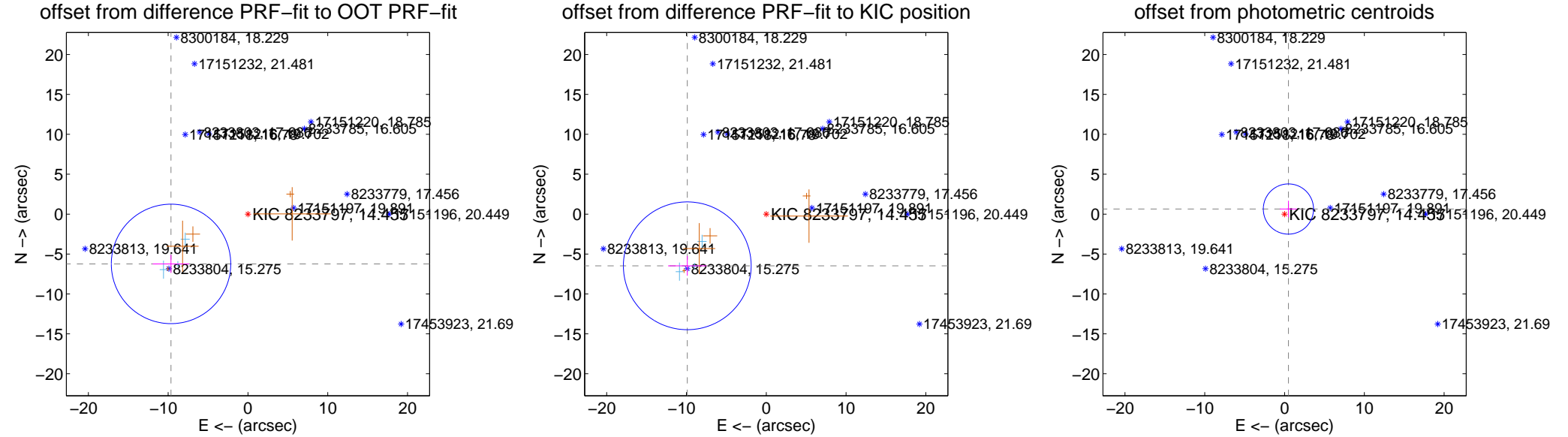
DV Centroid Data

Supplemental centroid analysis for 008233797-03. Kepler magnitude: 14.46. Transit SNR 9.26

There are 3 quarters with good PRF difference image offsets

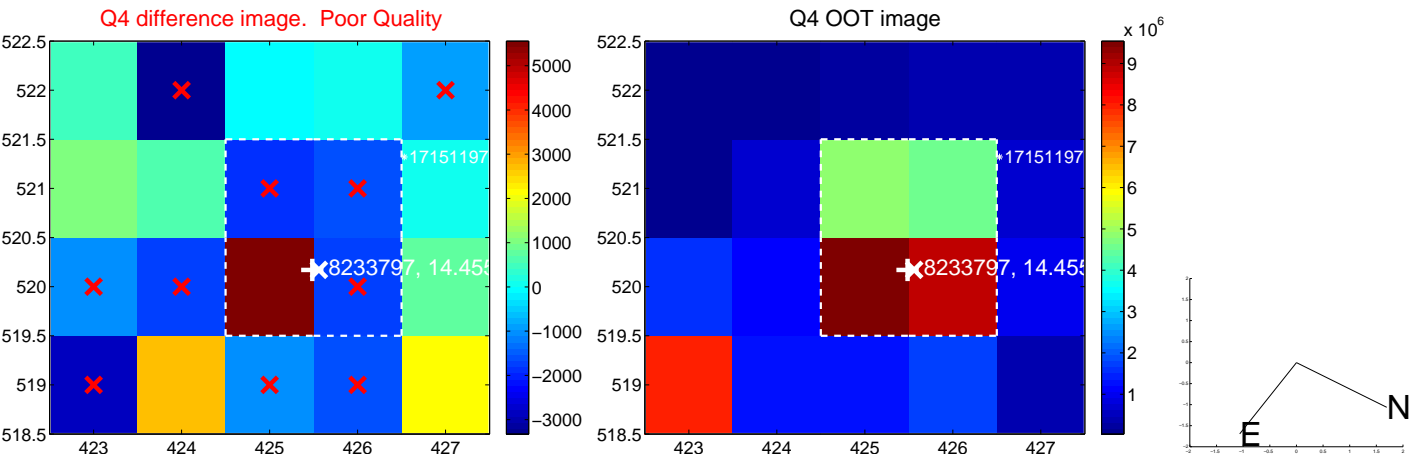
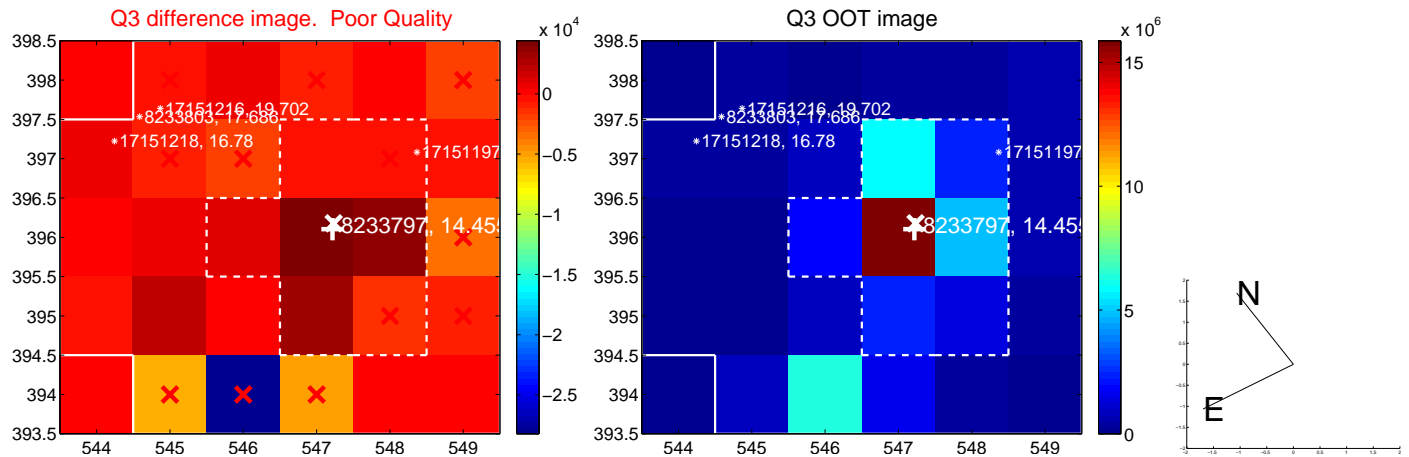
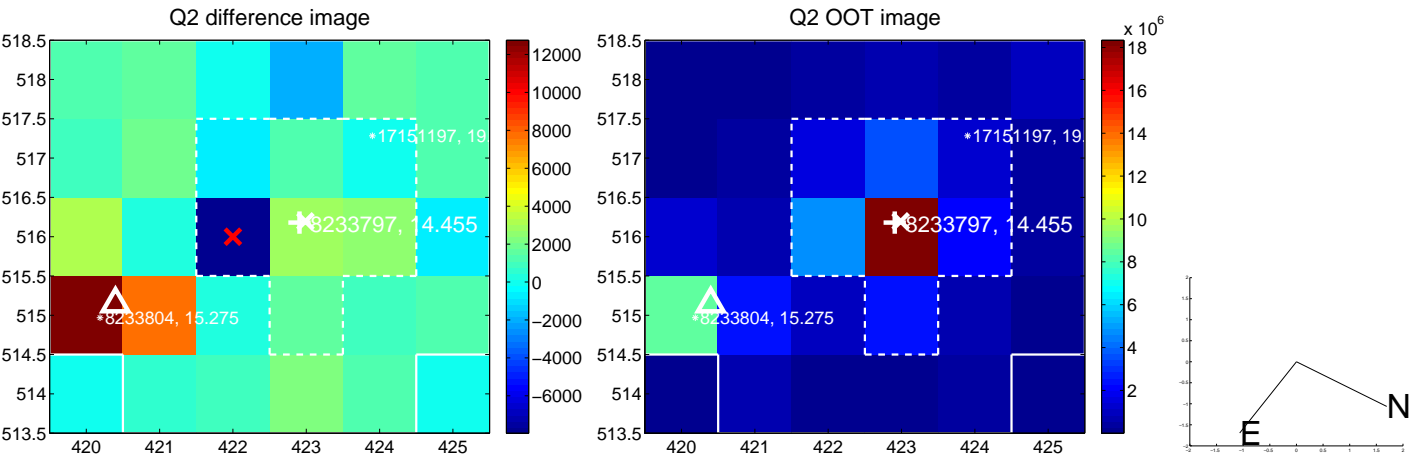
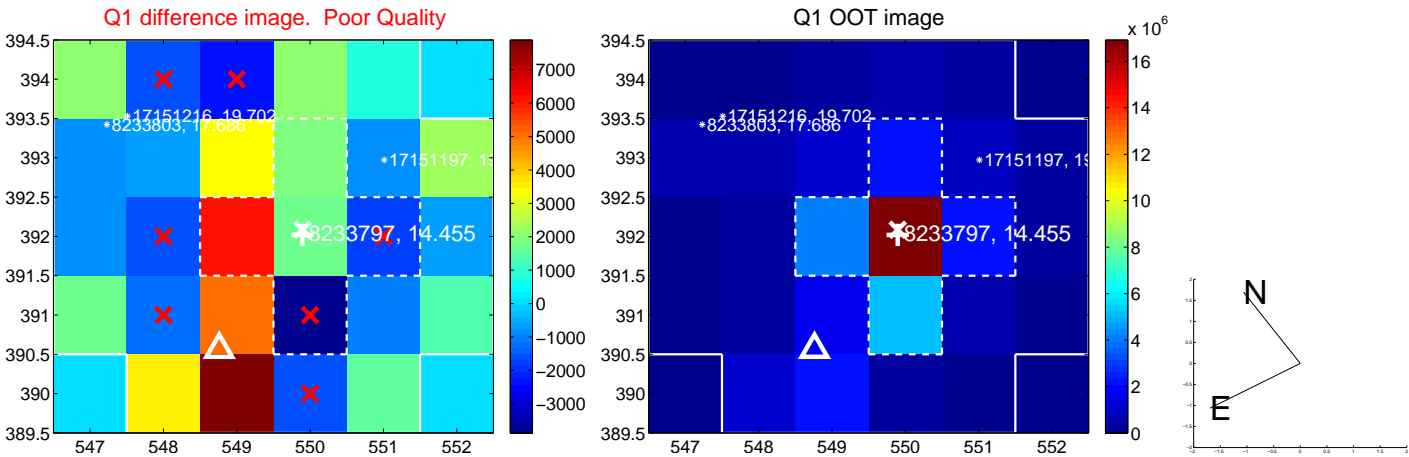
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	11.486 \pm 2.495	4.60	9.644 \pm 2.284	-6.239 \pm 1.130
PRF-fit source offset from KIC position	11.829 \pm 2.669	4.43	9.899 \pm 2.416	-6.476 \pm 1.239
photometric centroid source offset	0.80 \pm 1.05	0.76	-0.49 \pm 1.07	0.64 \pm 1.04

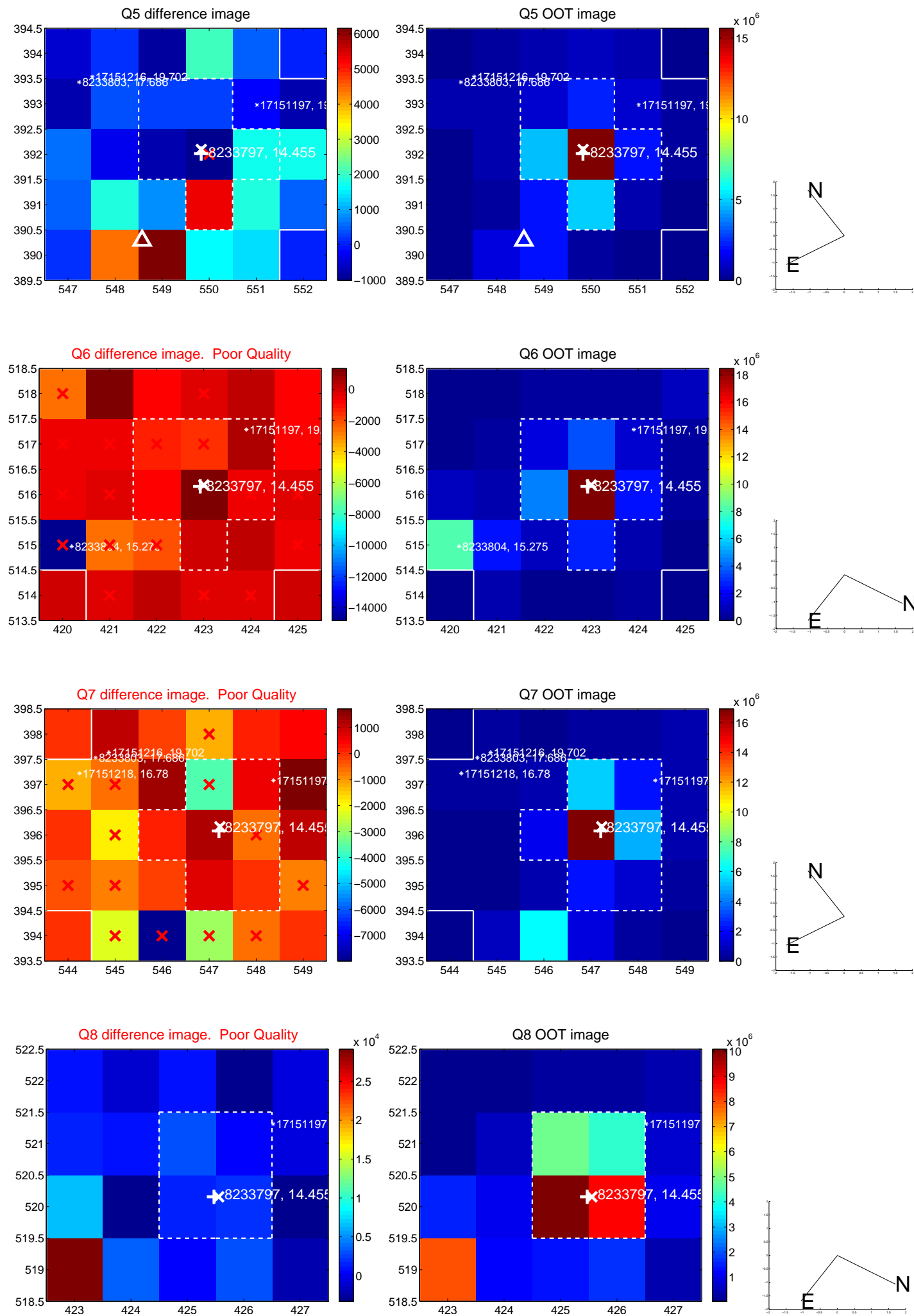


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000, are from the UKIRT catalog.

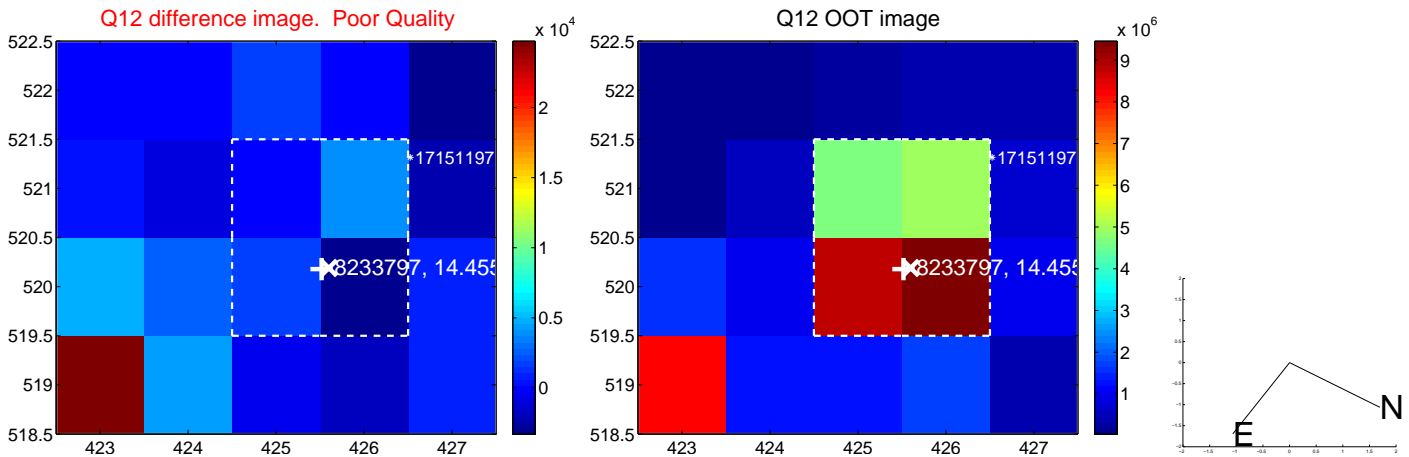
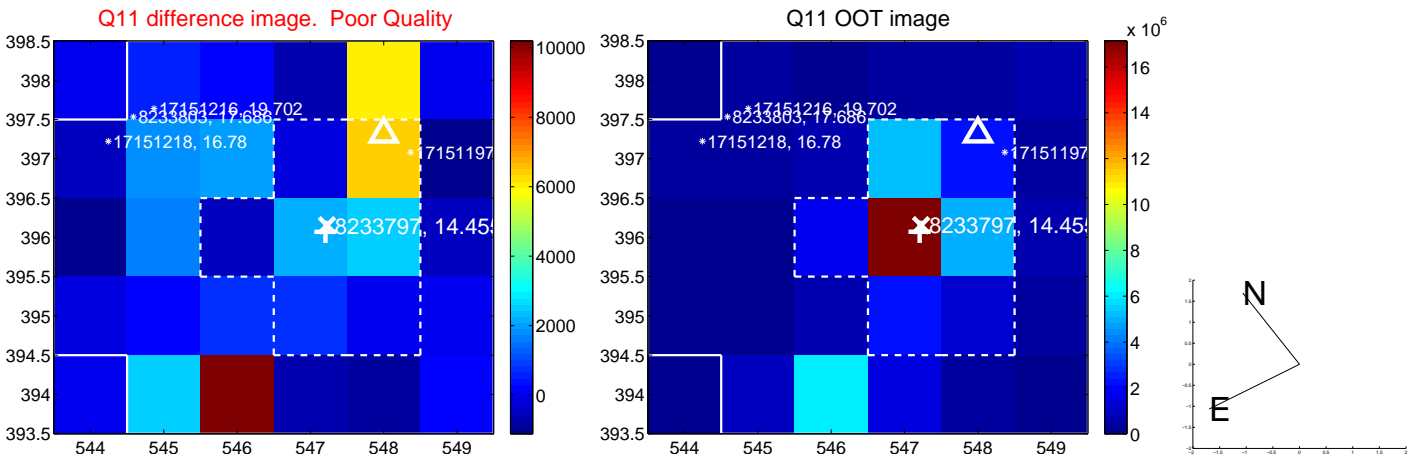
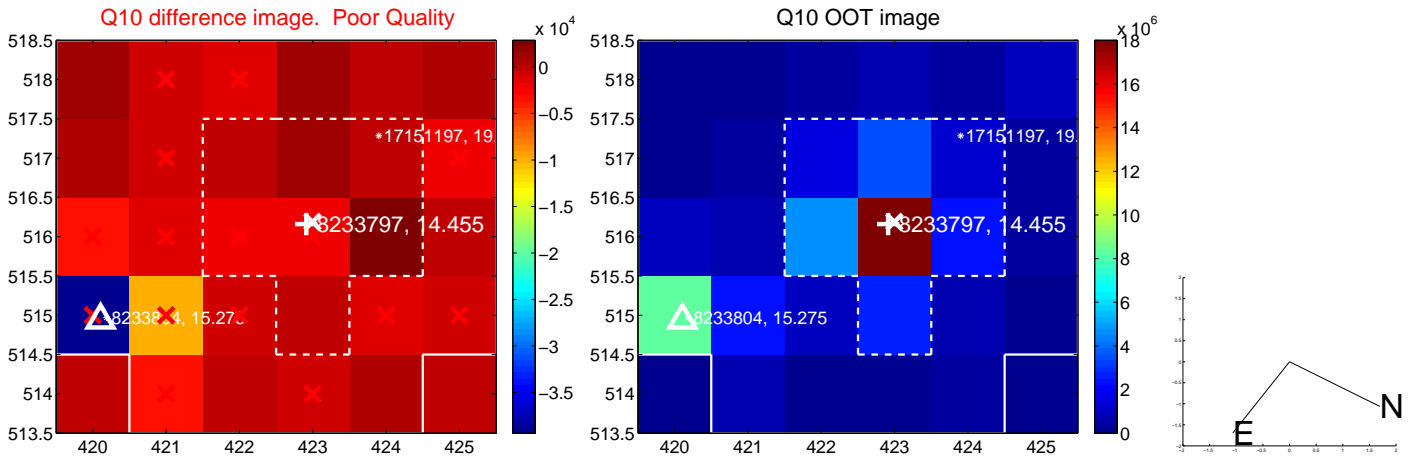
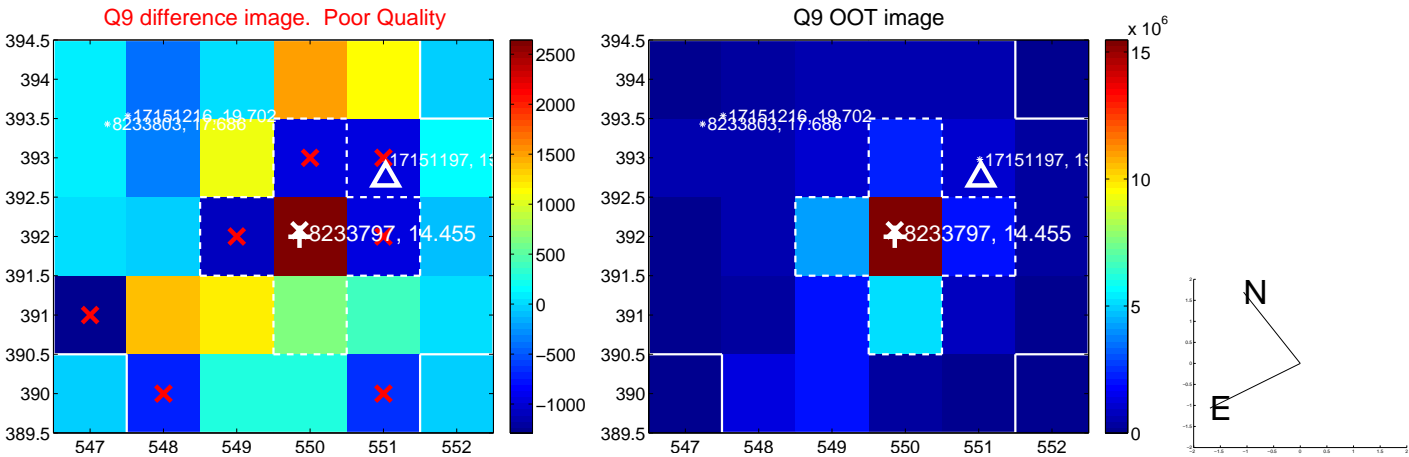
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



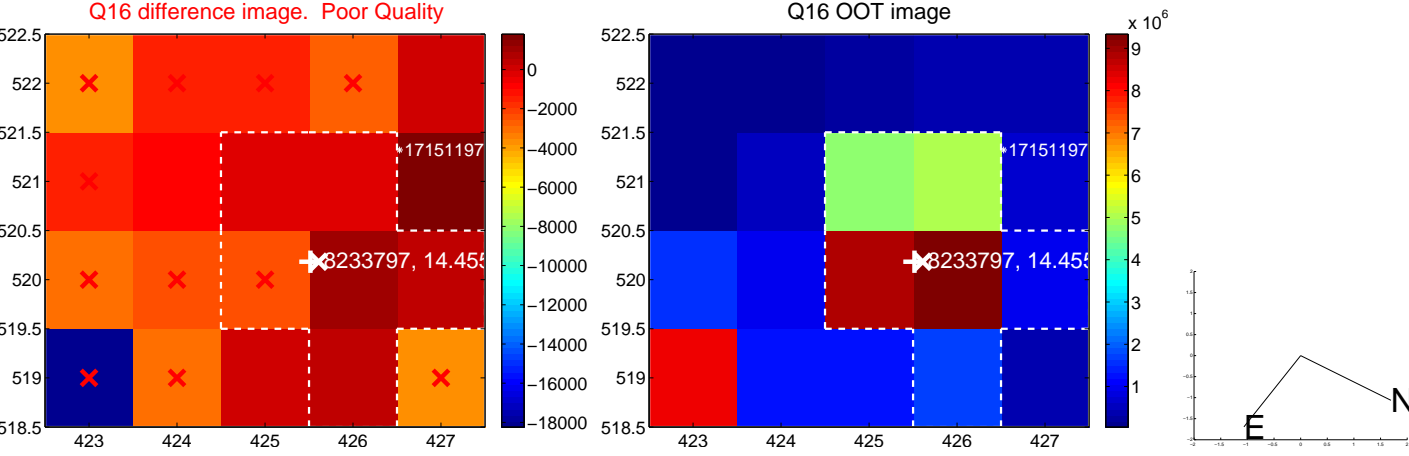
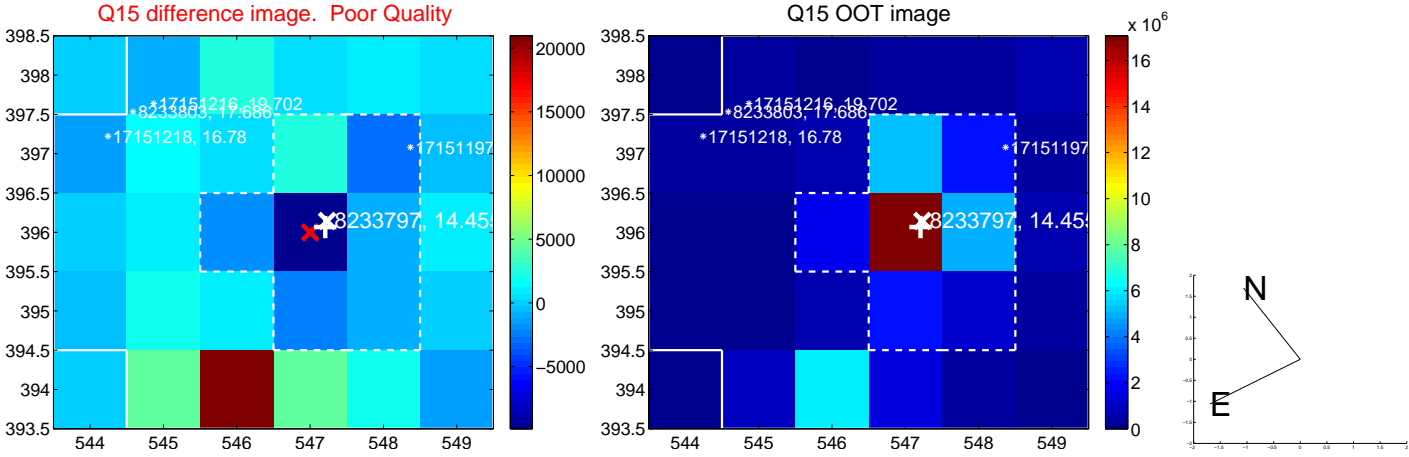
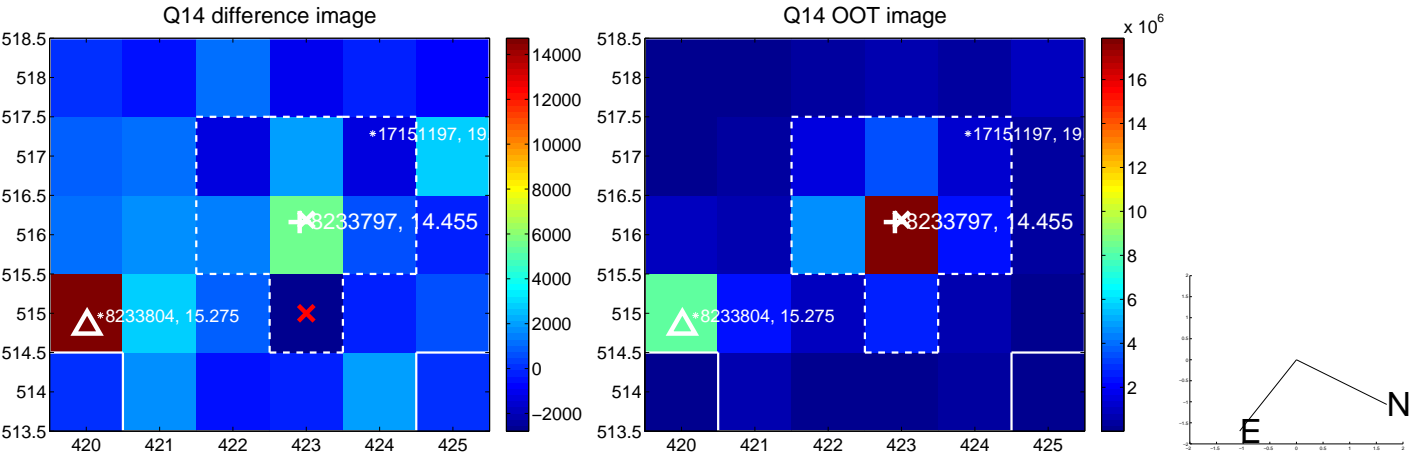
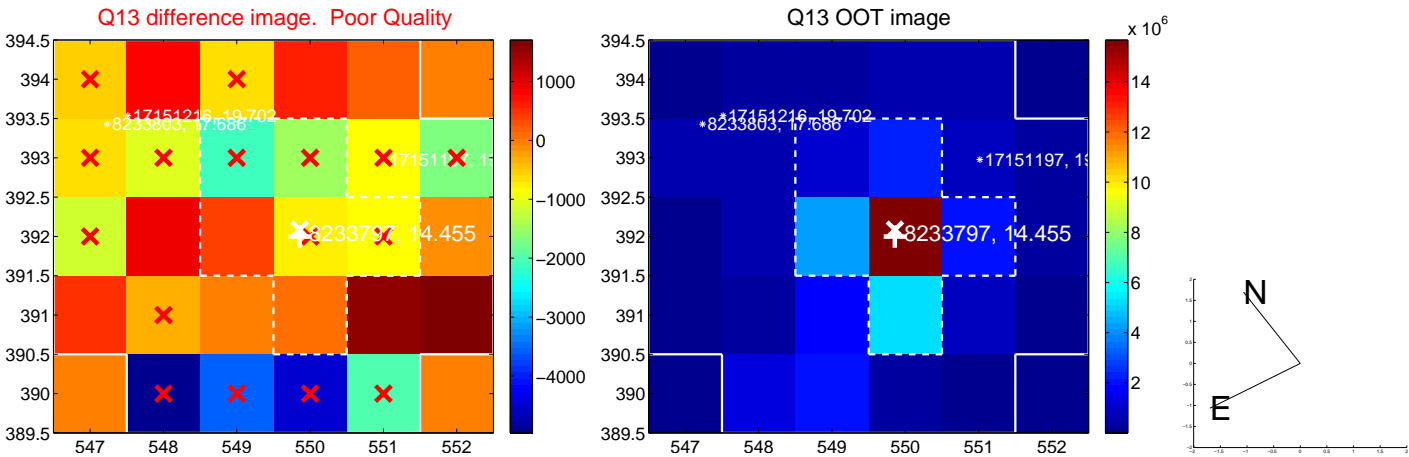
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



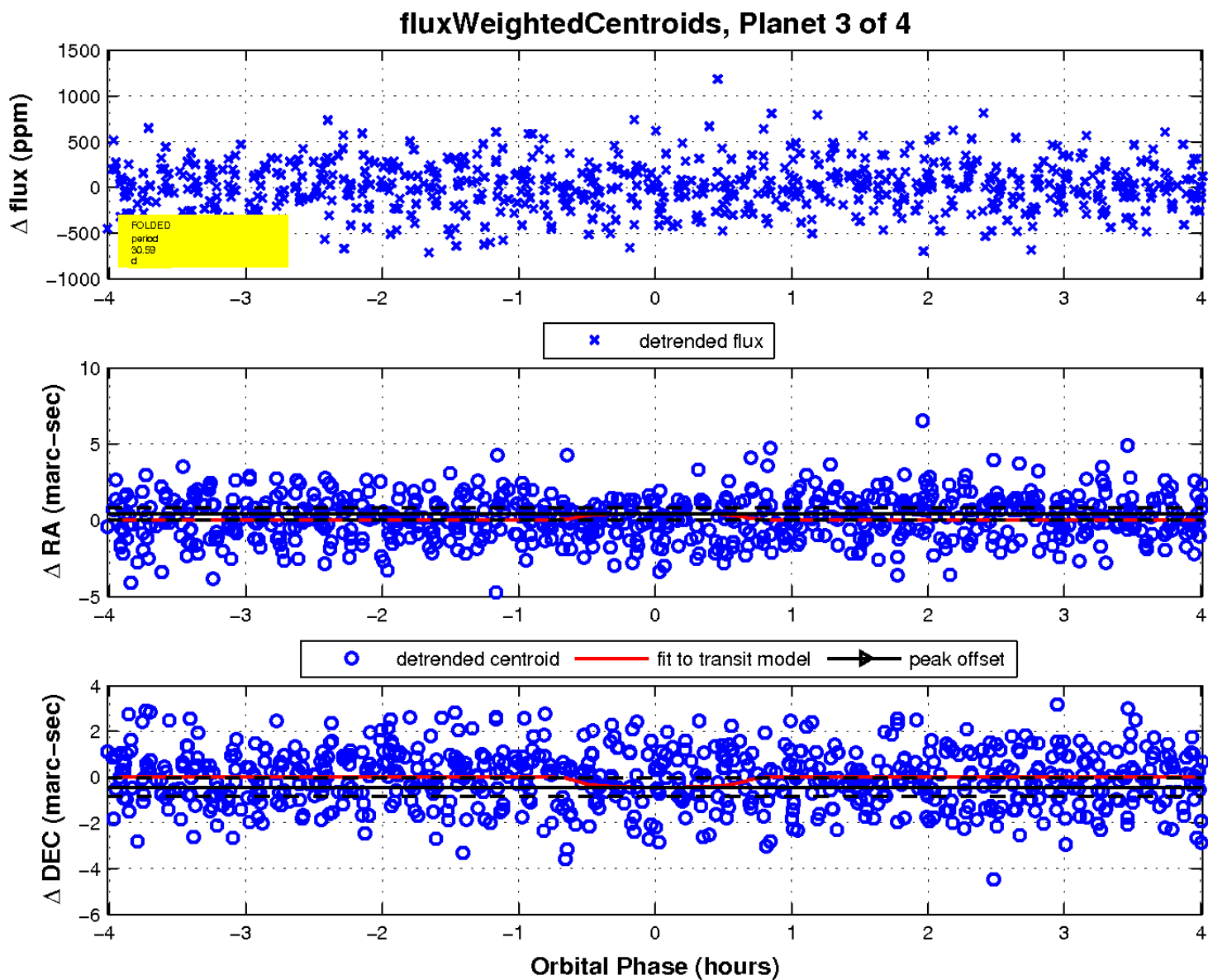
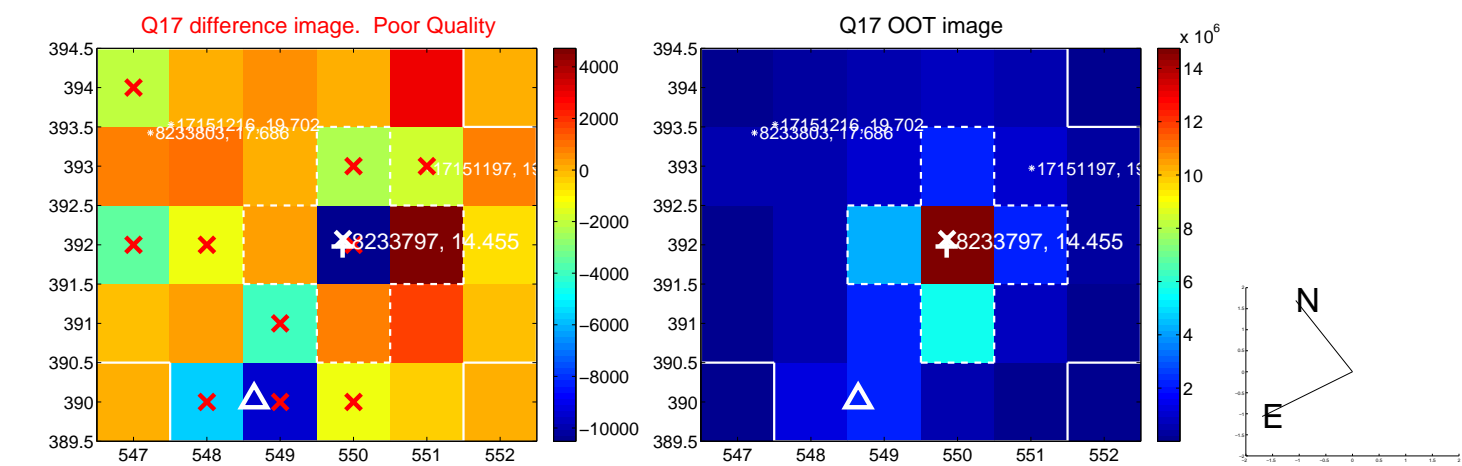
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

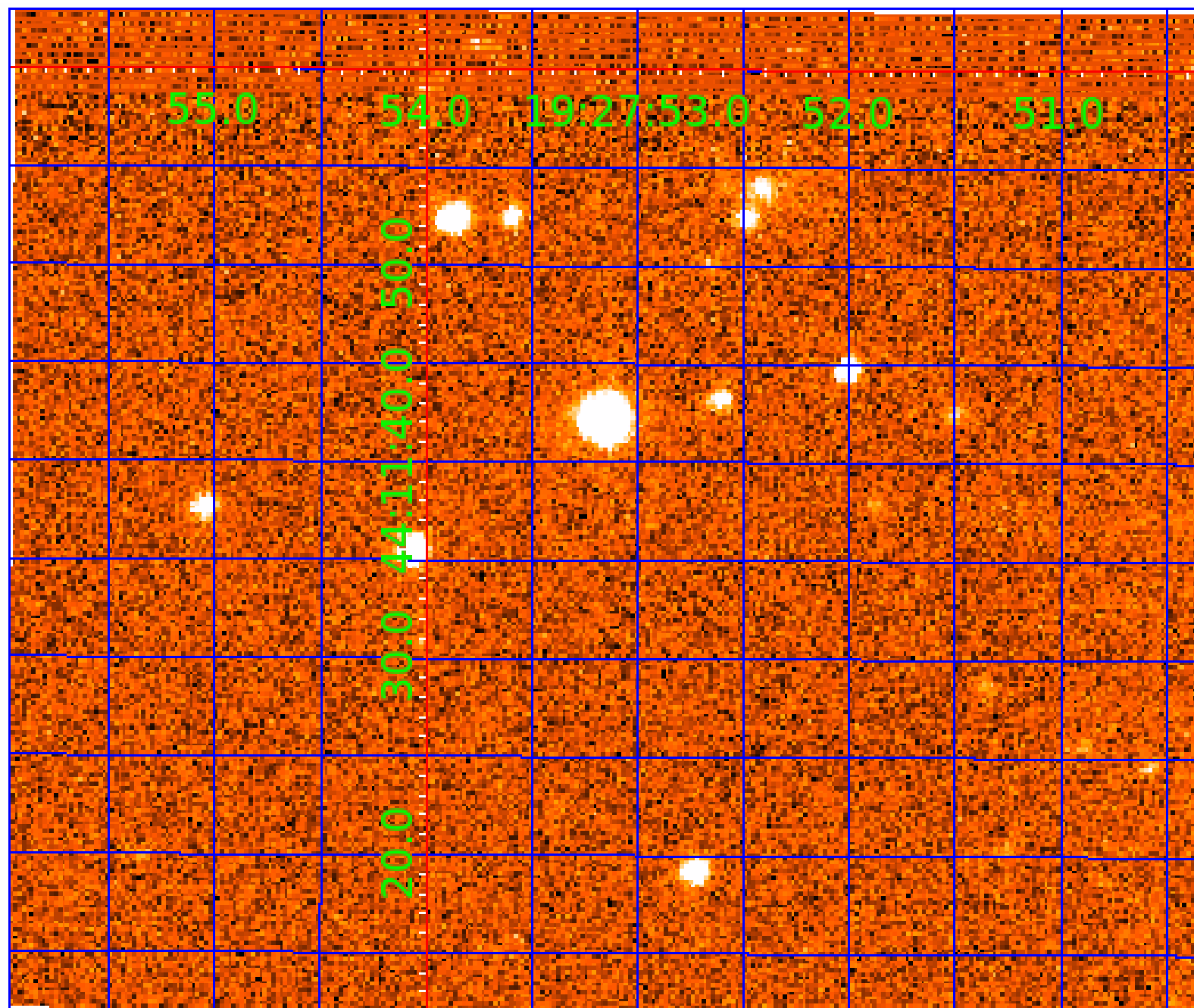


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008233797

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})
008233797-01	OBS	No	1.327164	132.127512	23.6	8.769	7.8	9.2	0.71	5227	0.35	781.81
008233797-02	OBS	No	73.125052	182.122397	414.8	2.146	8.4	8.9	0.71	5227	1.54	3.73
008233797-03	OBS	No	30.588616	160.100302	381.8	1.340	7.8	9.3	0.71	5227	1.48	11.92
008233797-04	OBS	No	147.304524	258.999651	299.9	2.677	7.9	8.6	0.71	5227	1.43	1.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008233797-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
008233797-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008233797-03	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008233797-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET

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

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

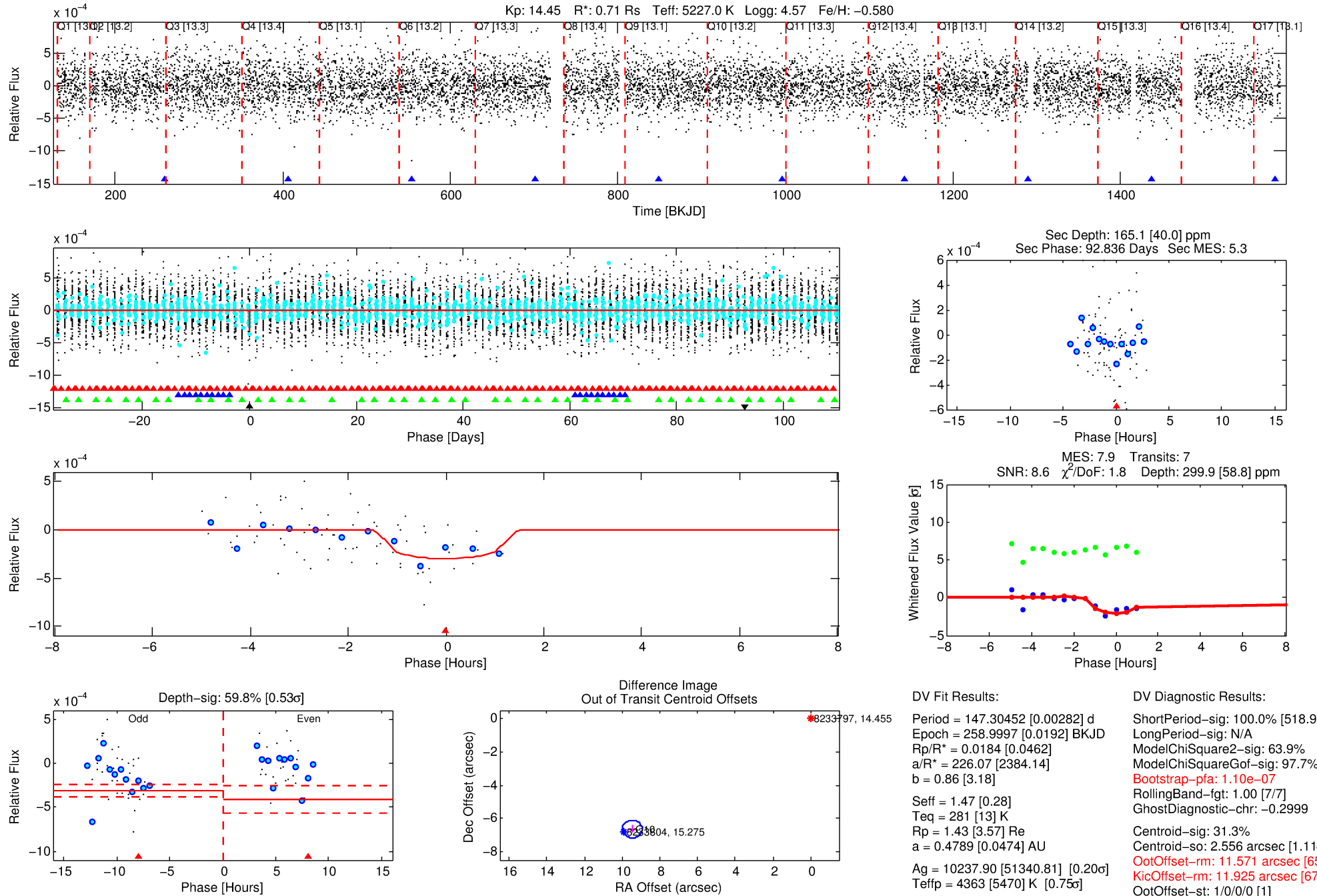
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008233797-04

No Significant Match Found

DV One-Page Summary

KIC: 8233797 Candidate: 4 of 4 Period: 147.305 d



DV Fit Results:

Period = 147.30452 [0.00282] d
Epoch = 258.9997 [0.0192] BKJD
Rp/R* = 0.0184 [0.0462]
a/R* = 226.07 [2384.14]
b = 0.86 [3.18]
Seff = 1.47 [0.28]
Teq = 281 [13] K
Rp = 1.43 [3.57] Re
a = 0.4789 [0.0474] AU
Ag = 10237.90 [51340.81] [0.20σ]
Teff = 4363 [5470] K [0.75σ]

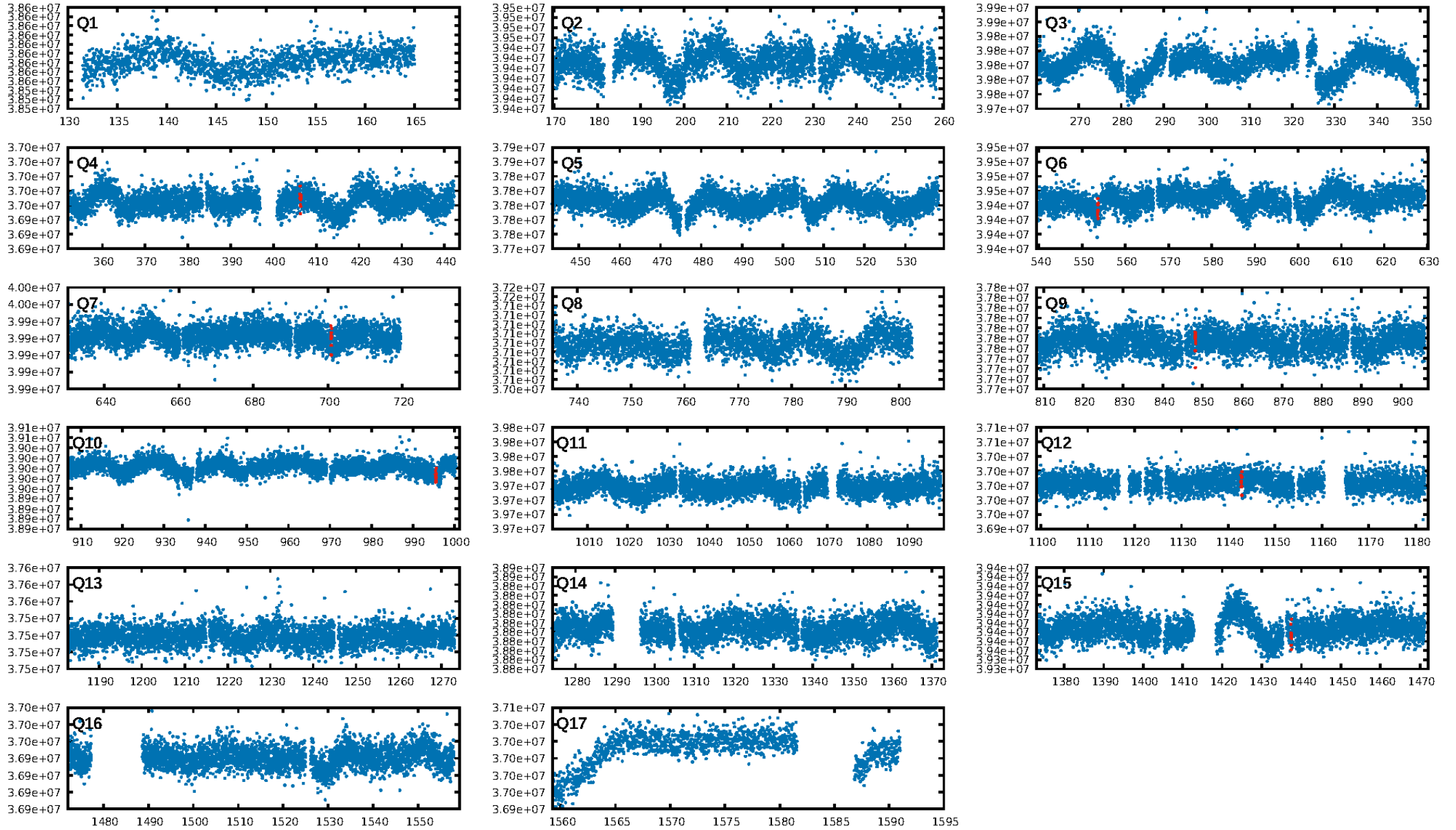
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [518.92σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 63.9%
ModelChiSquareGof-sig: 97.7%
Bootstrap-pfa: 1.10e-07
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.2999
Centroid-sig: 31.3%
Centroid-so: 2.556 arcsec [1.11σ]
OotOffset-rm: 11.571 arcsec [65.31σ]
KicOffset-rm: 11.925 arcsec [67.29σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [6/6]

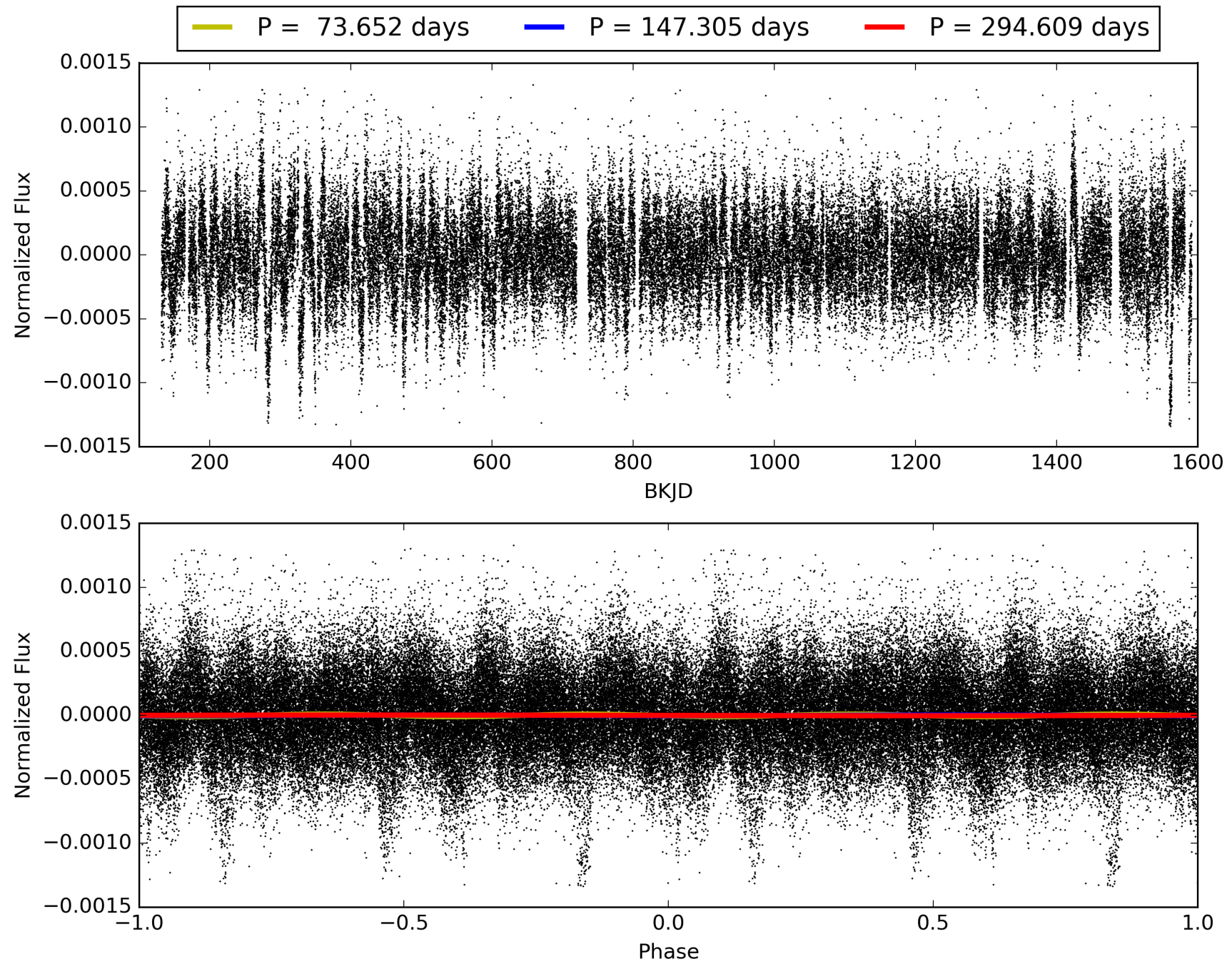
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:55:29 Z

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

TCE 008233797-04, PDC Light Curves

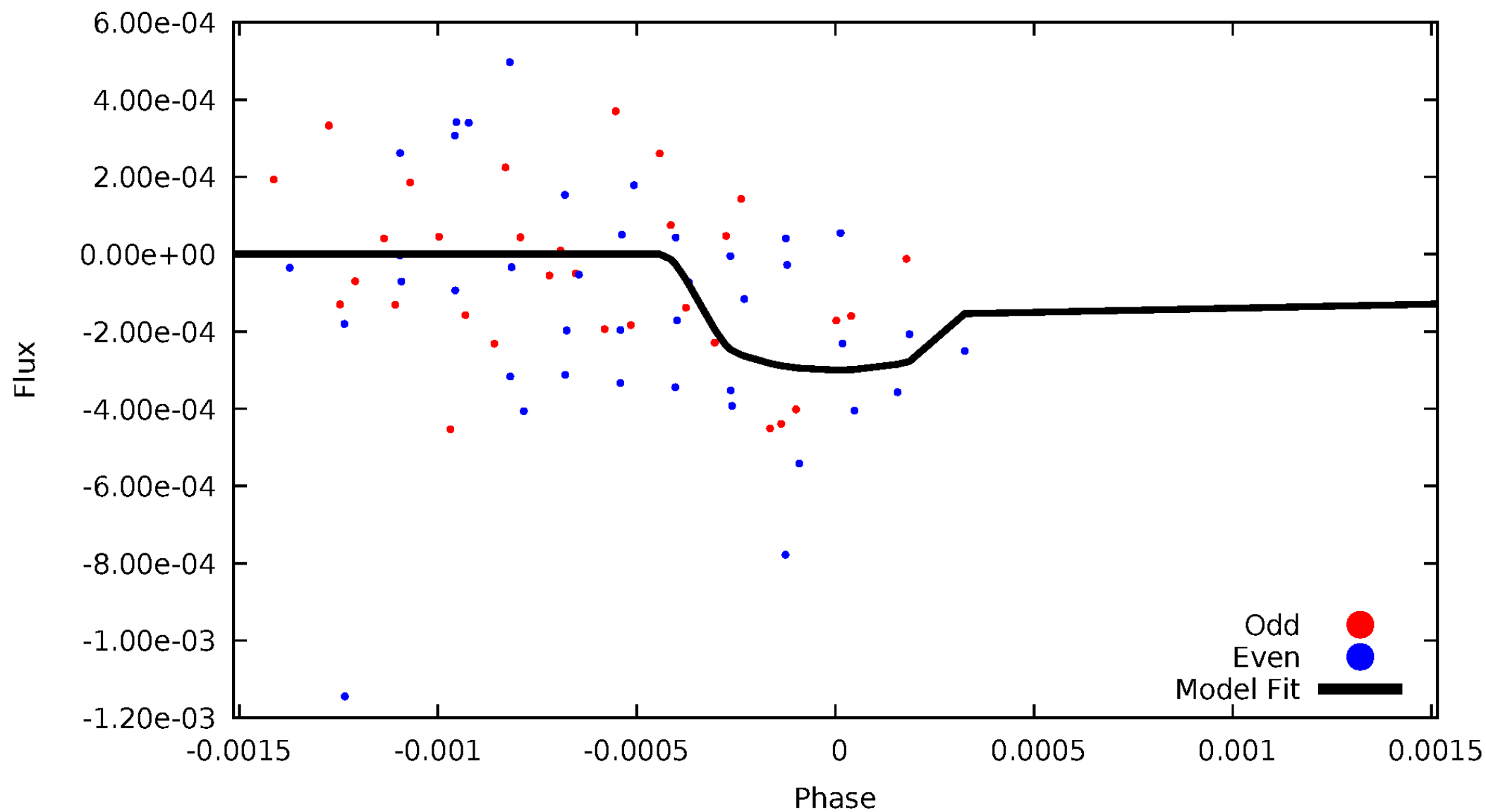


TCE 008233797-04



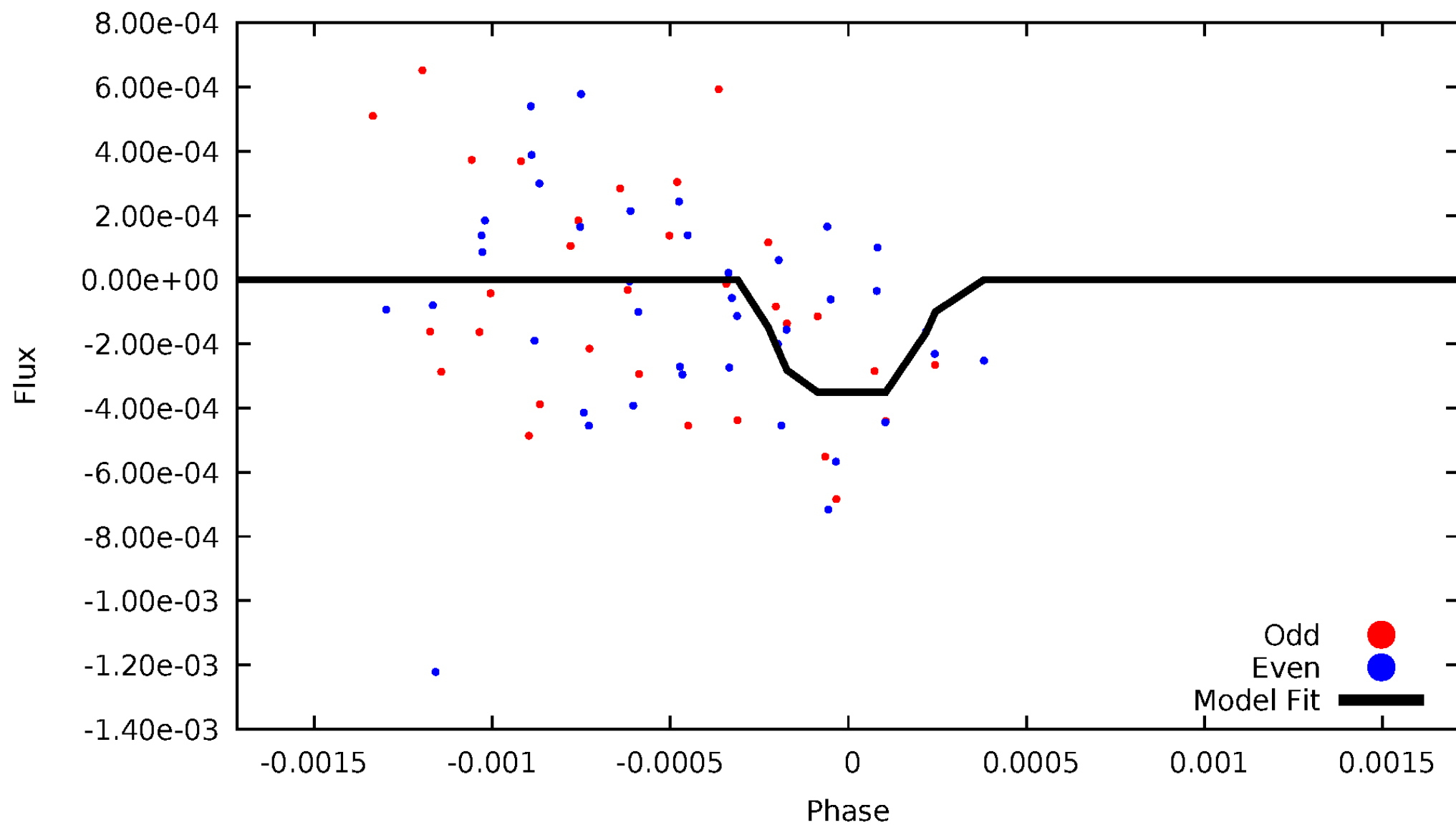
DV Odd/Even

TCE 008233797-04



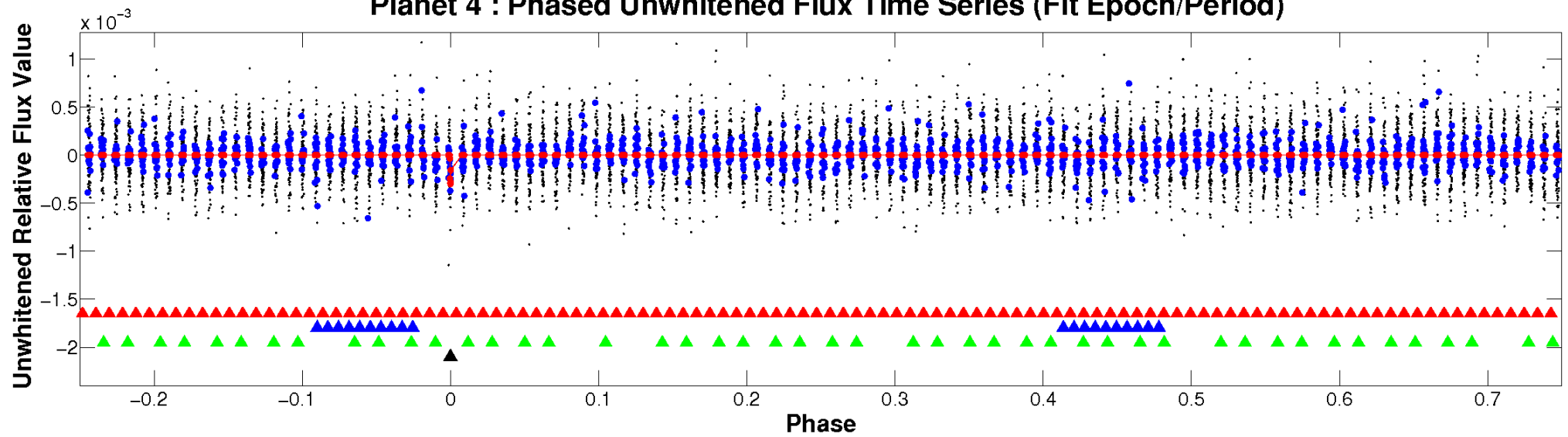
ALT Odd/Even

TCE 008233797-04

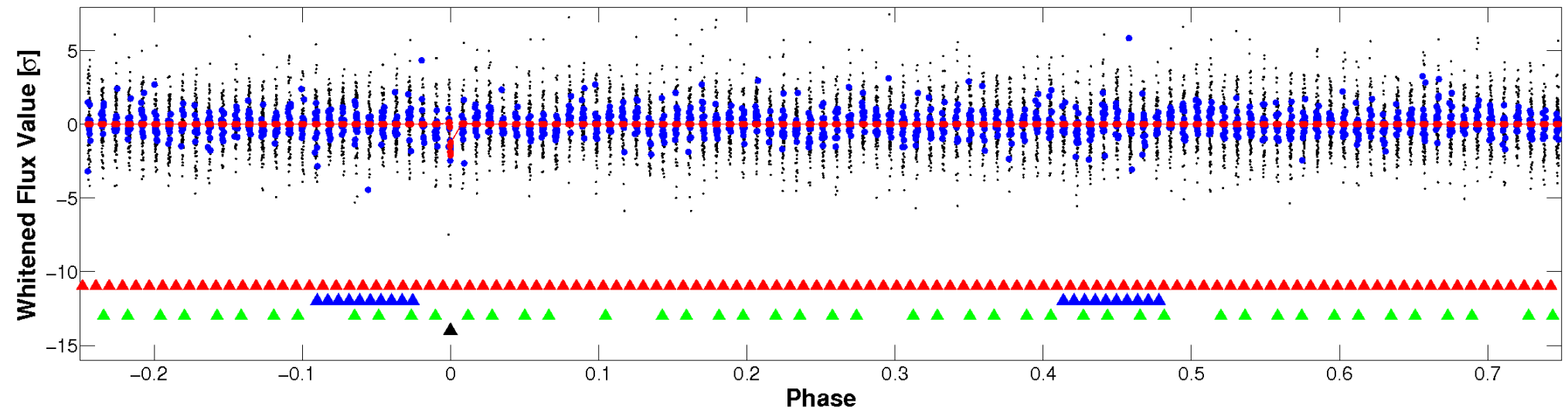


Non-Whitened Vs. Whitened Light Curve

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

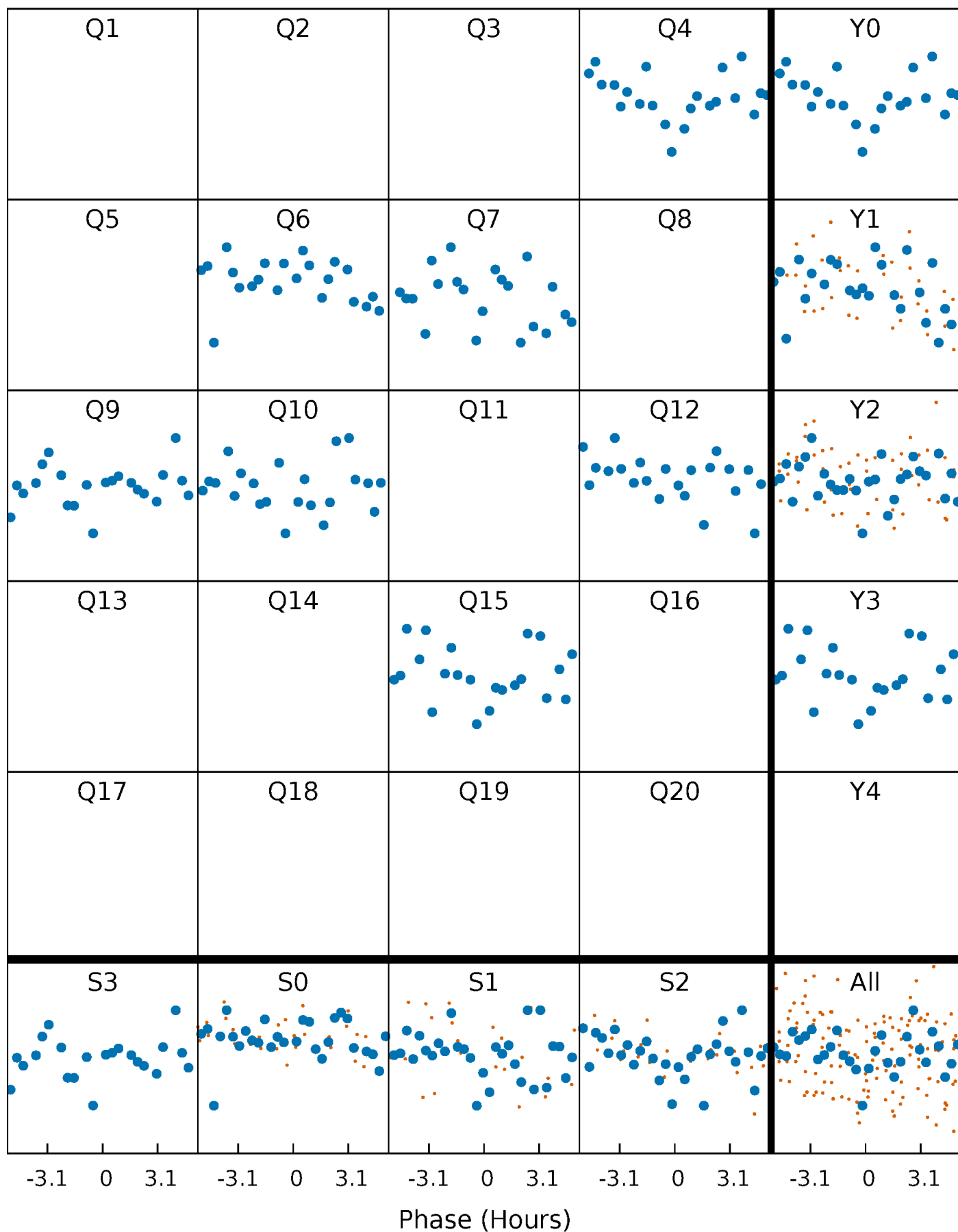


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



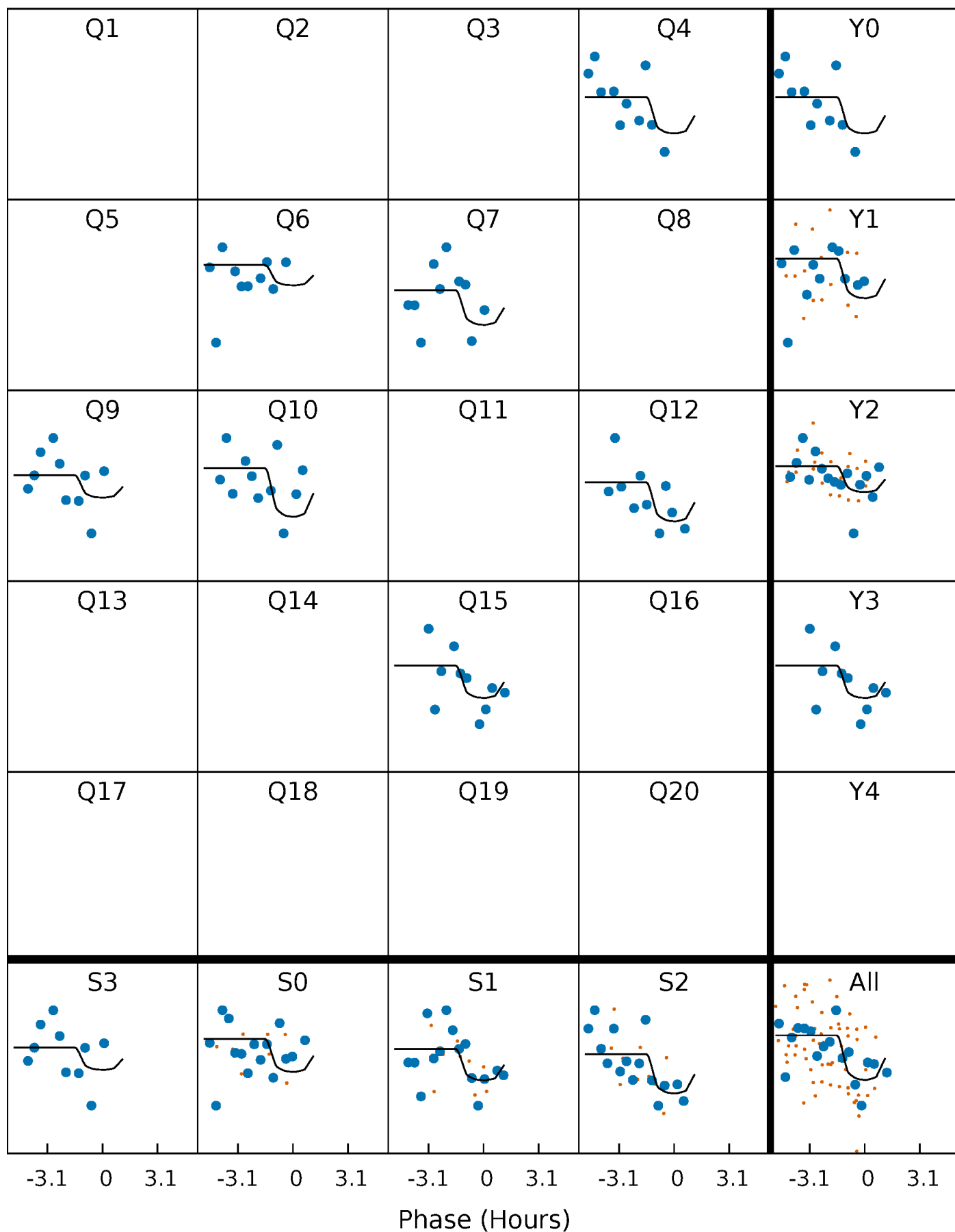
PDC Quarter-Phased Transit Curves

TCE 008233797-04 P=147.304524 Days $T_0=258.999651$ (BKJD)



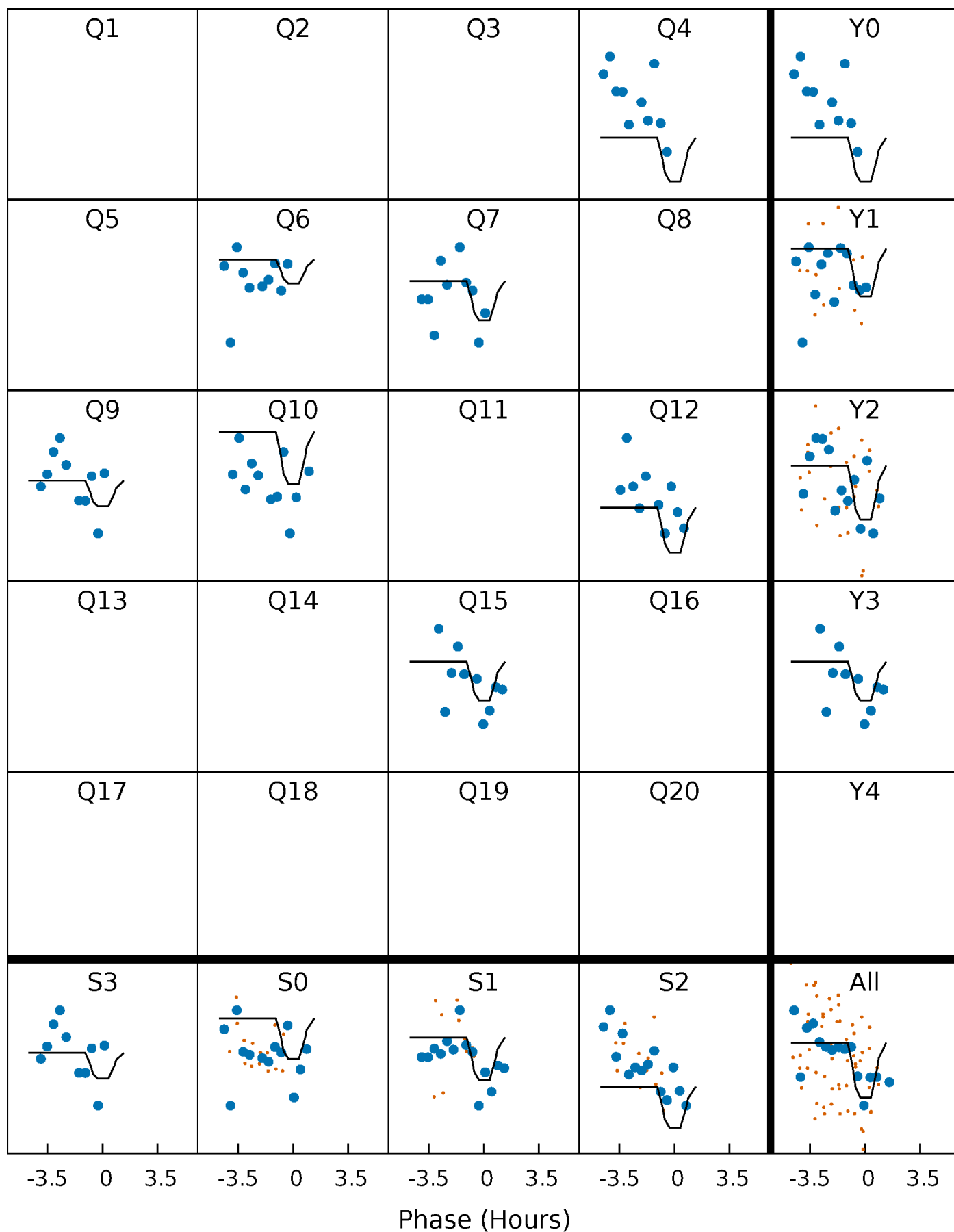
DV Quarter-Phased Transit Curves

TCE 008233797-04 P=147.304524 Days $T_0=258.999651$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

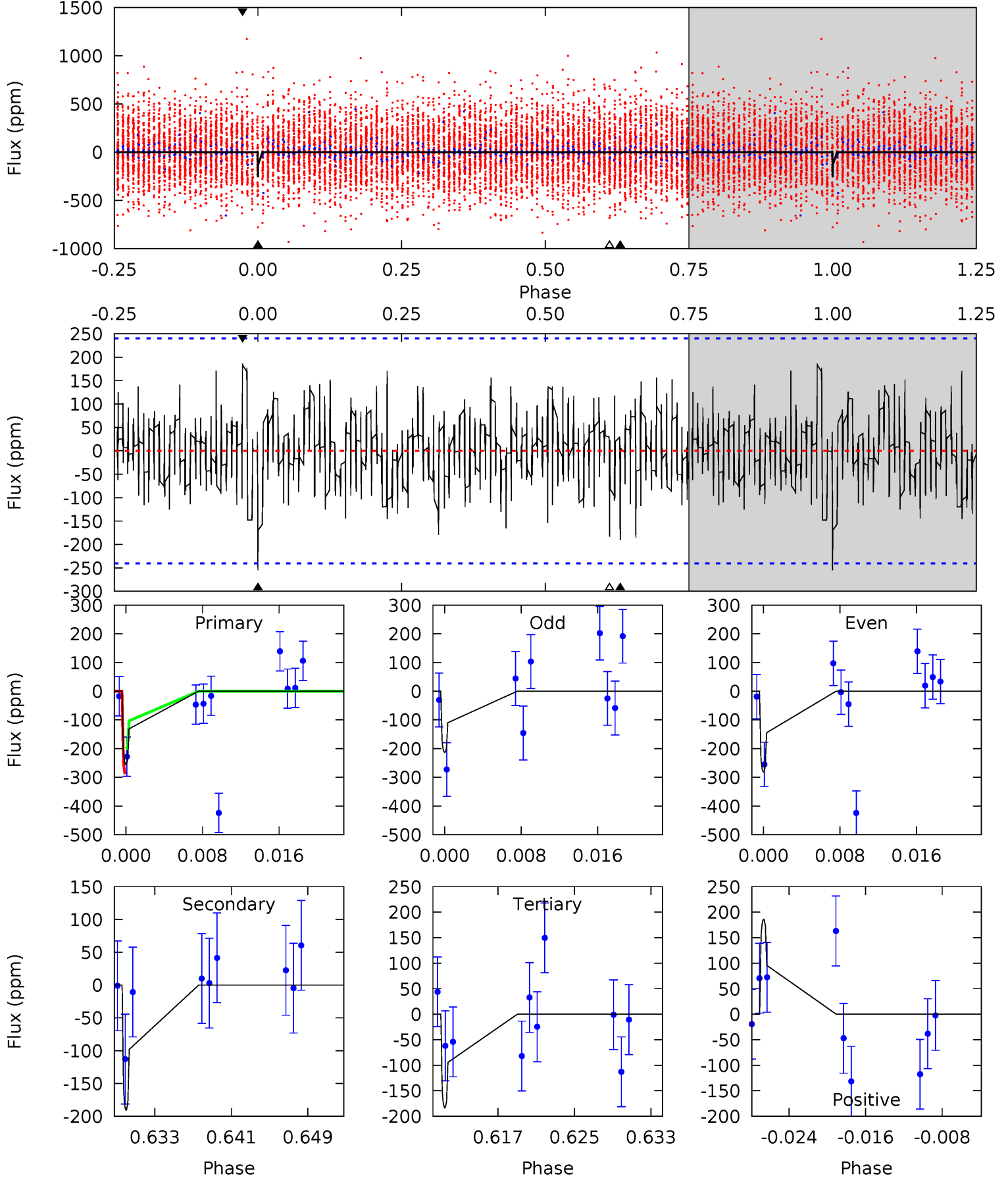
TCE 008233797-04 P=147.305000 Days $T_0=258.987634$ (BKJD)



DV Model-Shift Uniqueness Test

008233797-04, P = 147.304524 Days, E = 111.695127 Days

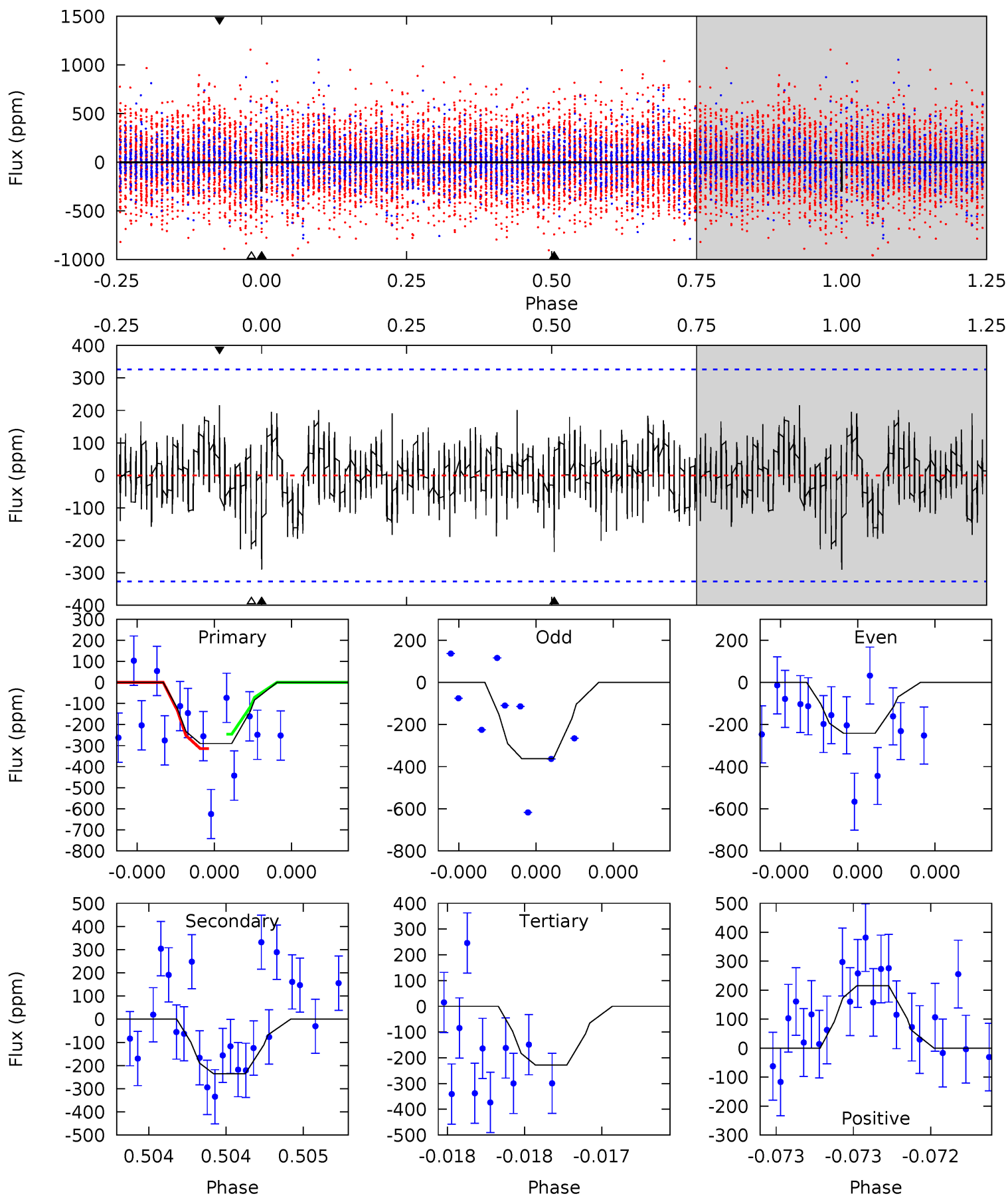
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.38	4.02	3.87	3.92	5.07	2.65	1.18	1.51	1.45	0.15	0.10	0.69	0.99	0.42	0.86



Alt Model-Shift Uniqueness Test

008233797-04, P = 147.305000 Days, E = 111.682634 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.96	4.03	3.89	3.69	5.58	3.50	1.17	1.07	1.27	0.13	0.34	0.98	1.06	0.43	0.56



Stellar Parameters For KIC 008233797

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5227^{+157}_{-157}	$4.566^{+0.084}_{-0.063}$	$-0.580^{+0.350}_{-0.300}$	$0.709^{+0.080}_{-0.072}$	$0.676^{+0.088}_{-0.038}$	$2.665^{+0.913}_{-0.572}$
	+3%/-3%	+2%/-1%	+60%/-52%	+11%/-10%	+13%/-6%	+34%/-21%
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 008233797-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-191 ± 47	$2.96^{+2.72}_{-2.00}$	391^{+16}_{-16}	3554^{+1897}_{-645}	2750^{+21744}_{-2035}
Alt.	-235 ± 58	$2.99^{+2.82}_{-2.01}$	391^{+17}_{-17}	3644^{+1984}_{-687}	3337^{+26069}_{-2491}

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 $A_{obs} \gg 1.0$

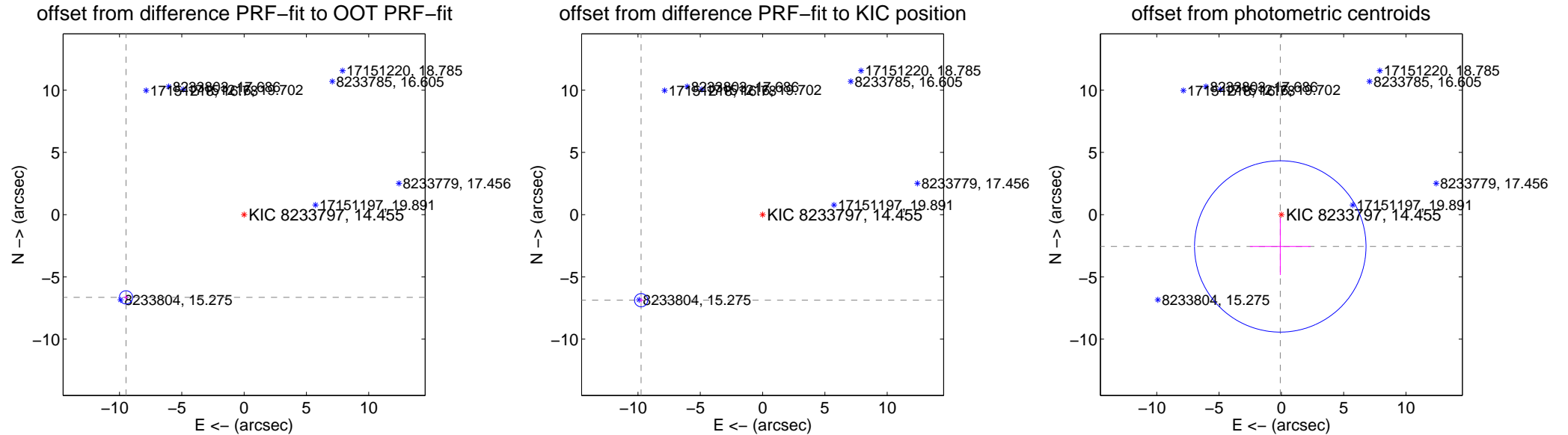
DV Centroid Data

Supplemental centroid analysis for 008233797-04. Kepler magnitude: 14.46. Transit SNR 8.65

There are 1 quarters with good PRF difference image offsets

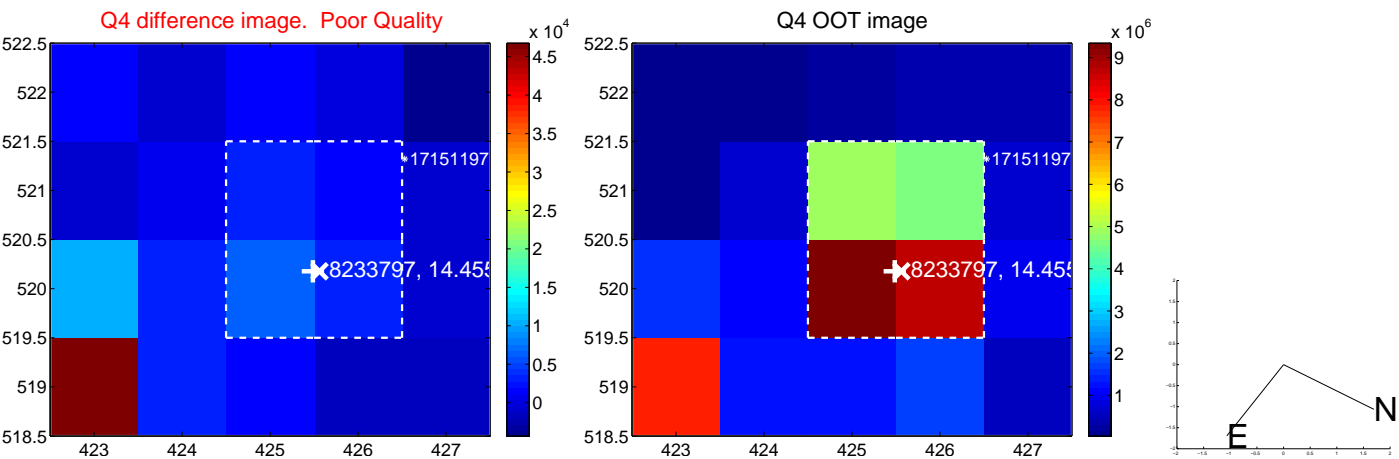
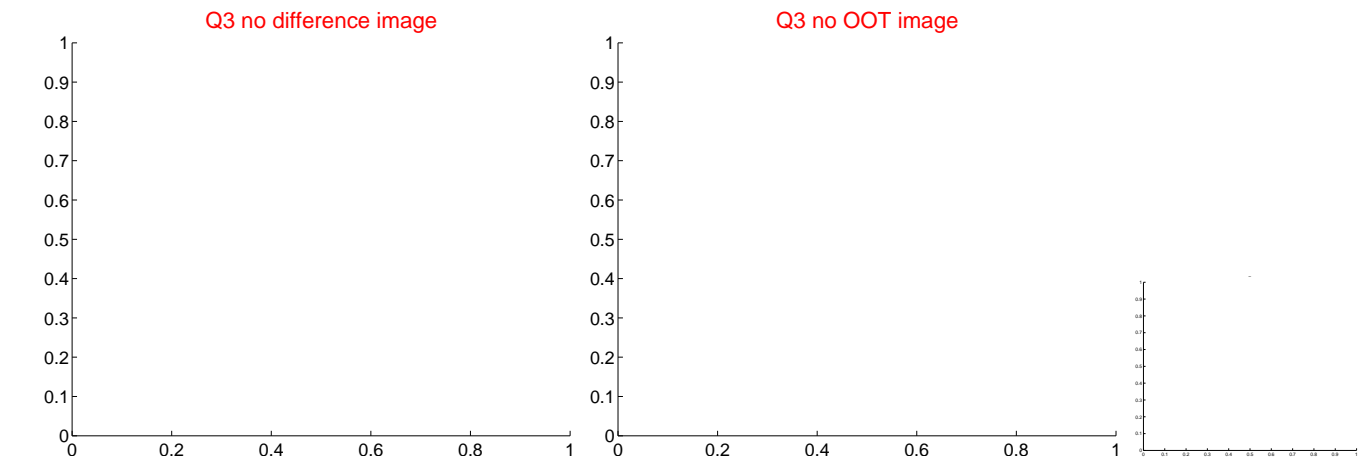
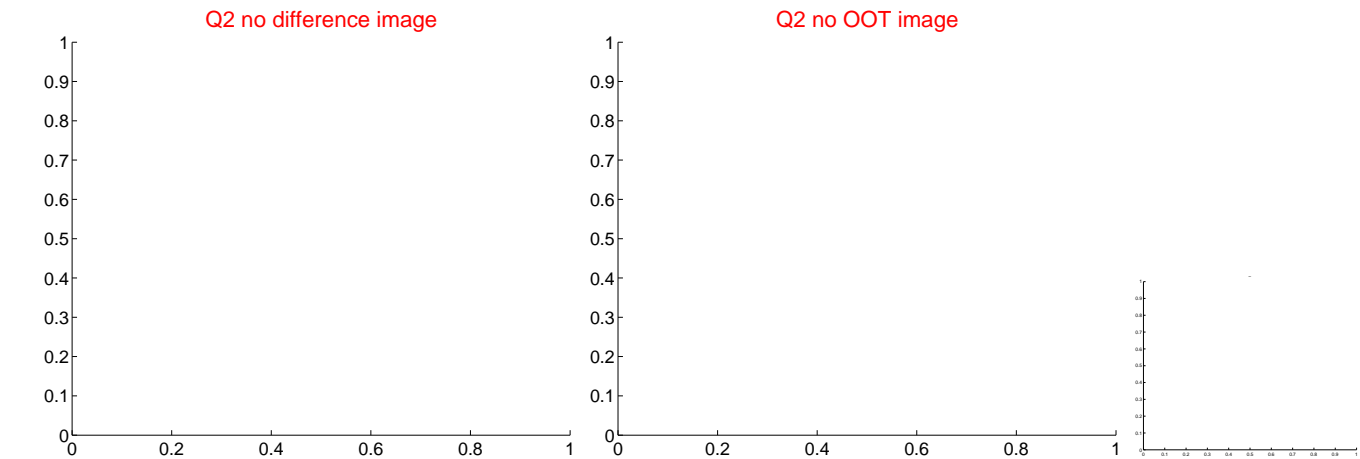
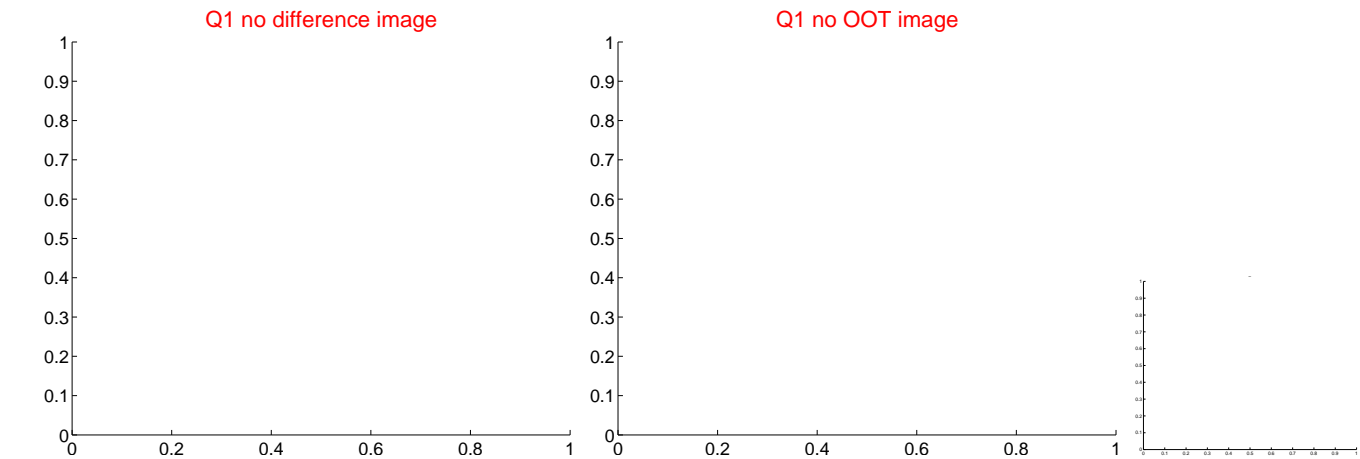
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	11.571 \pm 0.177	65.31	9.475 \pm 0.169	-6.642 \pm 0.192
PRF-fit source offset from KIC position	11.925 \pm 0.177	67.29	9.747 \pm 0.169	-6.871 \pm 0.192
photometric centroid source offset	2.56 \pm 2.29	1.11	0.09 \pm 2.44	-2.55 \pm 2.29

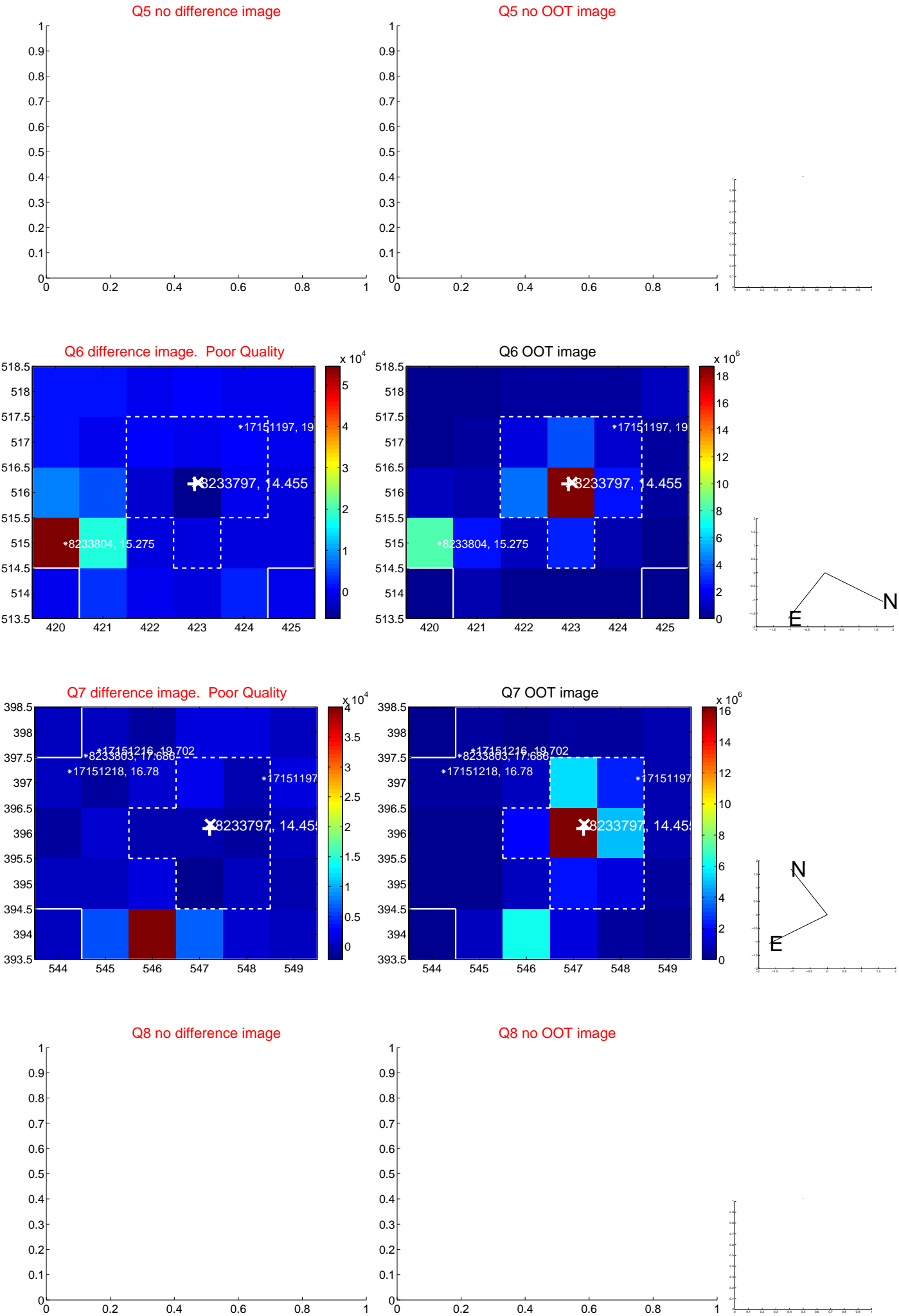


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

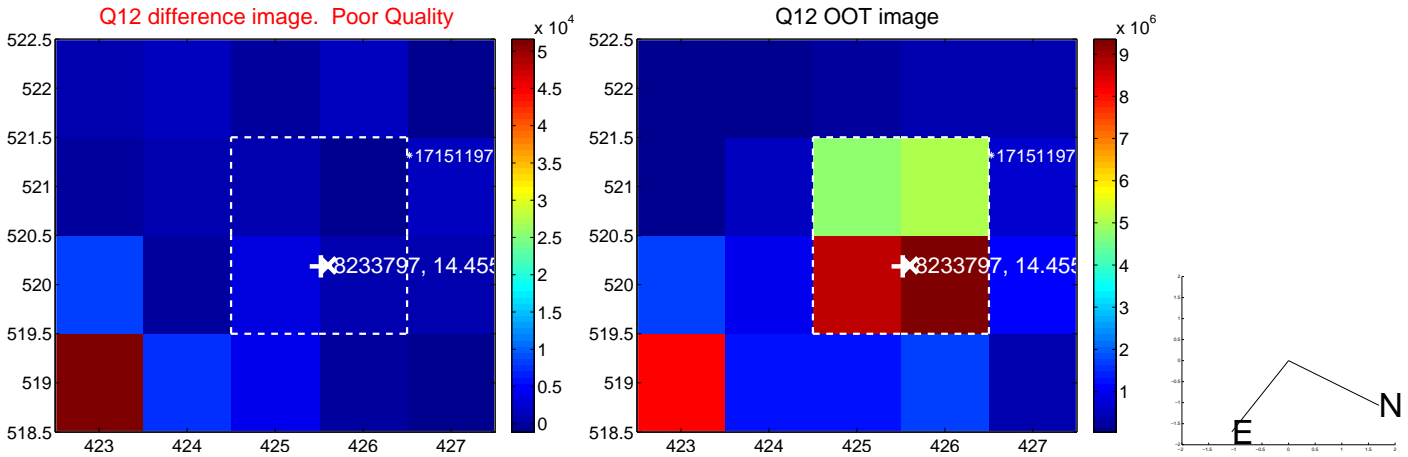
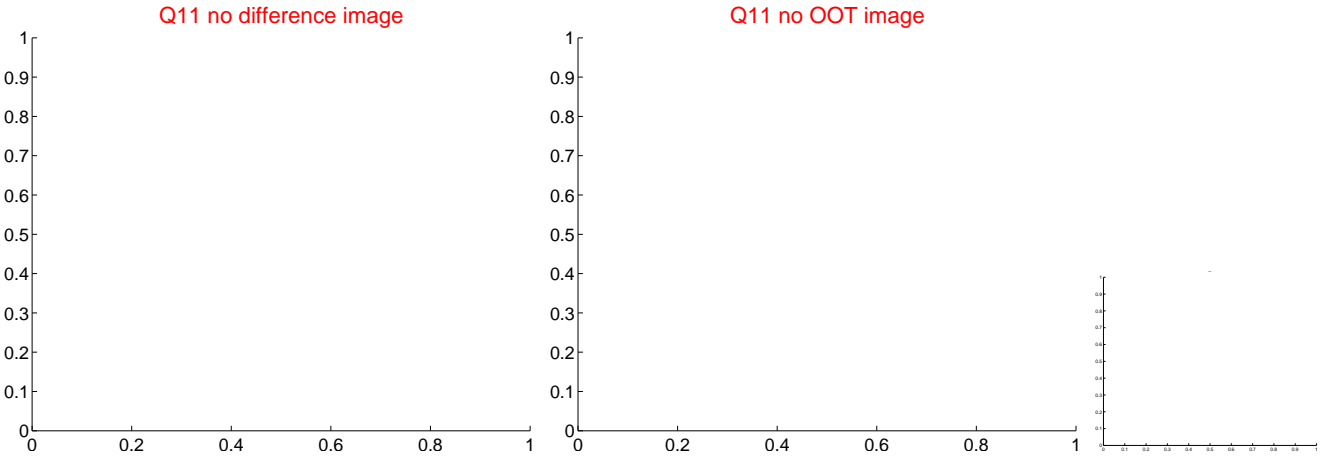
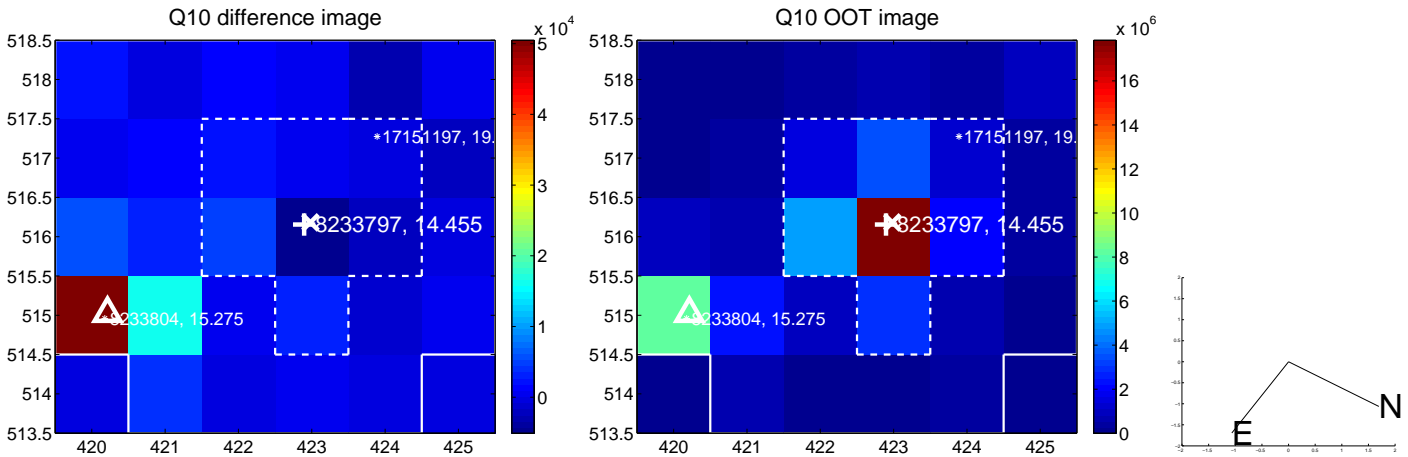
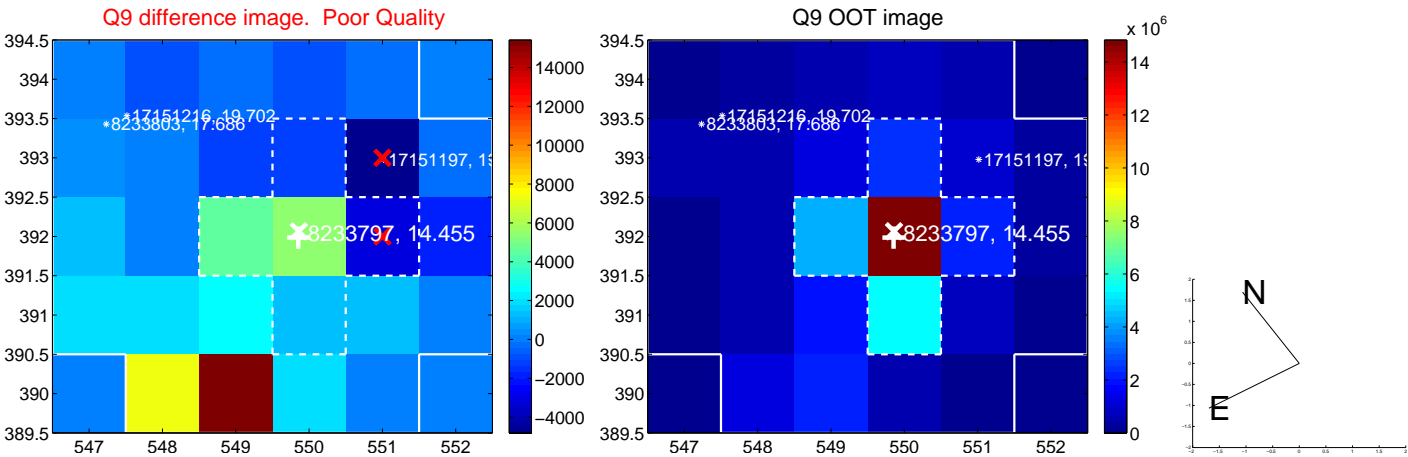
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



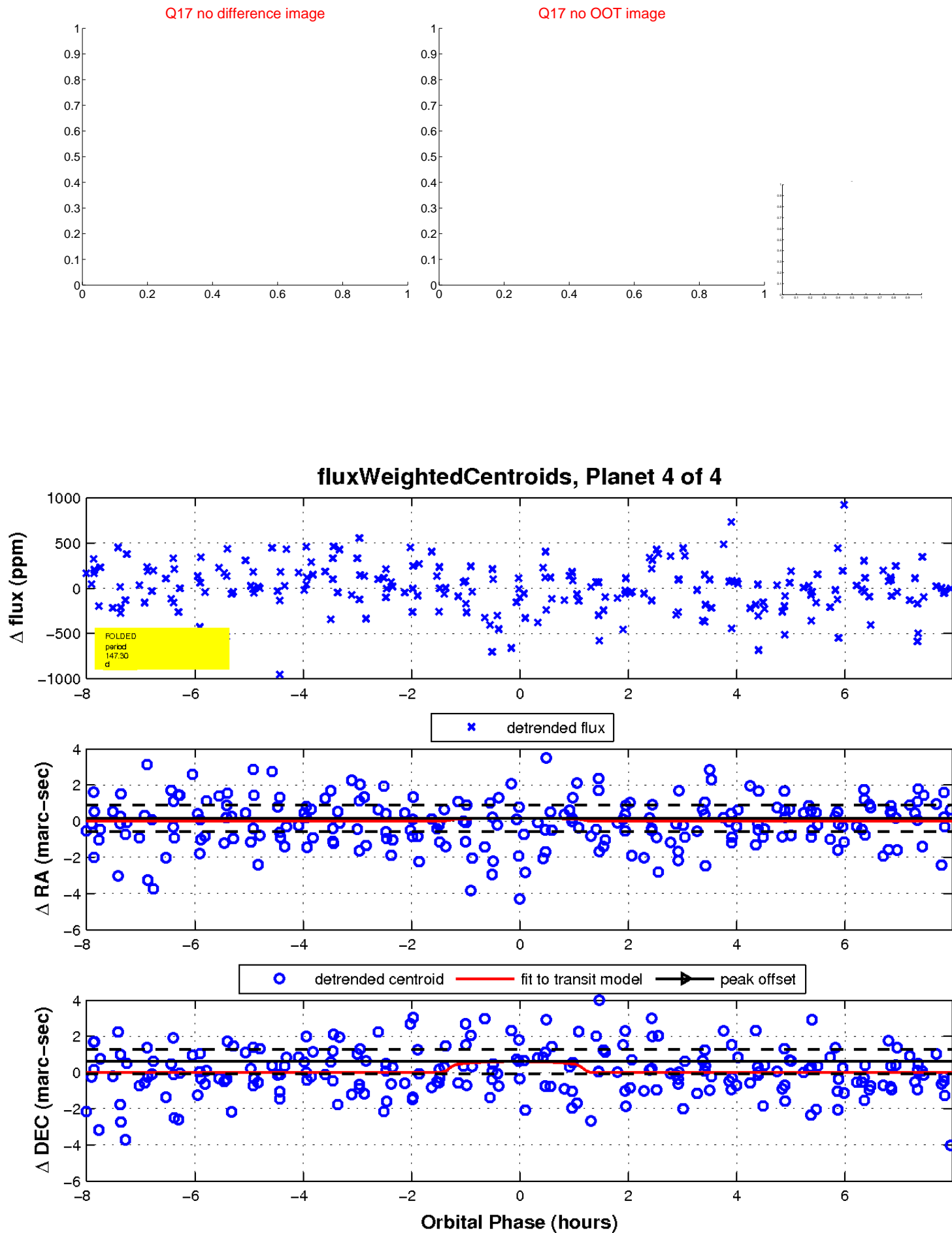
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

