

KIC 006677841

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})
006677841-01	OBS	1236.02	12.309758	137.683153	344.9	6.039	26.1	28.1	1.70	6366	3.70	351.41
006677841-02	OBS	1236.01	35.734006	151.141353	762.8	10.600	23.6	27.6	1.70	6366	5.96	84.86
006677841-03	OBS	1236.04	98.353952	217.871281	380.7	11.315	9.6	10.0	1.70	6366	3.64	22.00
006677841-04	OBS	No	217.709218	311.893055	578.6	8.224	9.4	10.1	1.70	6366	4.41	7.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006677841-01	OBS	FP	0.24	1	0	0	0	LPP_DV
006677841-02	OBS	FP	0.09	1	0	0	0	LPP_DV
006677841-03	OBS	PC	0.94	0	0	0	0	NO_COMMENT
006677841-04	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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.

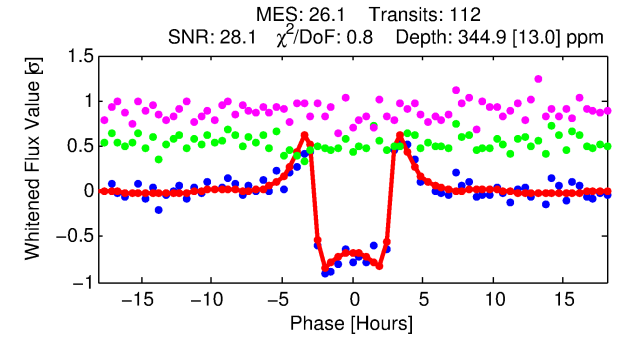
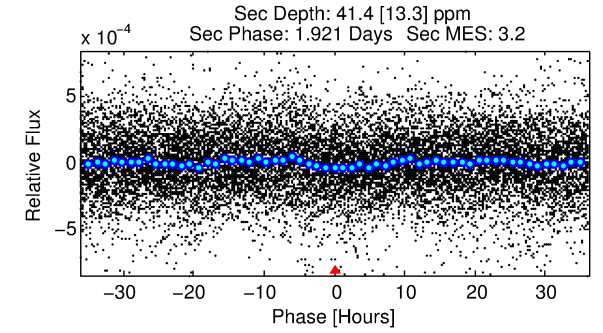
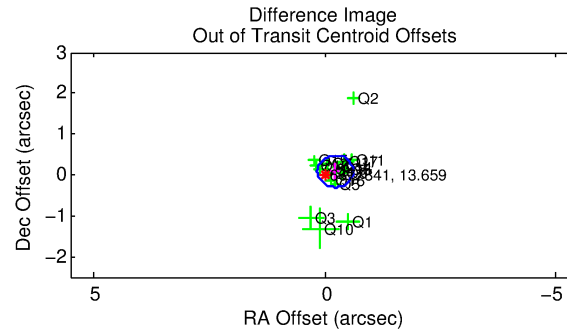
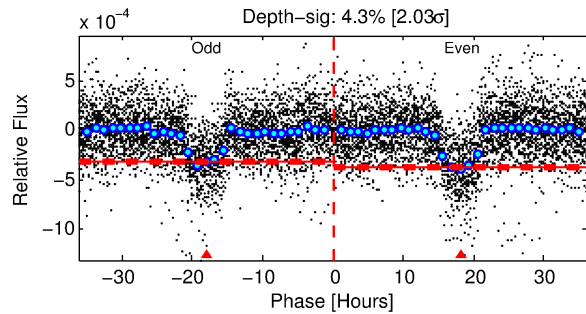
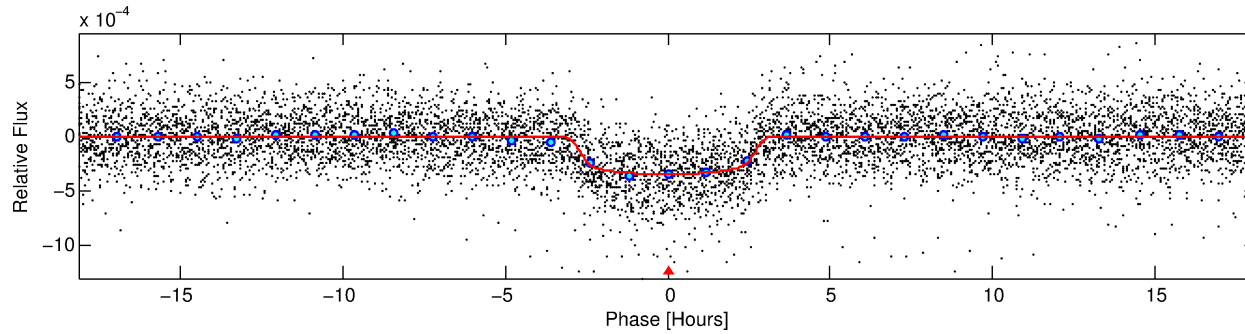
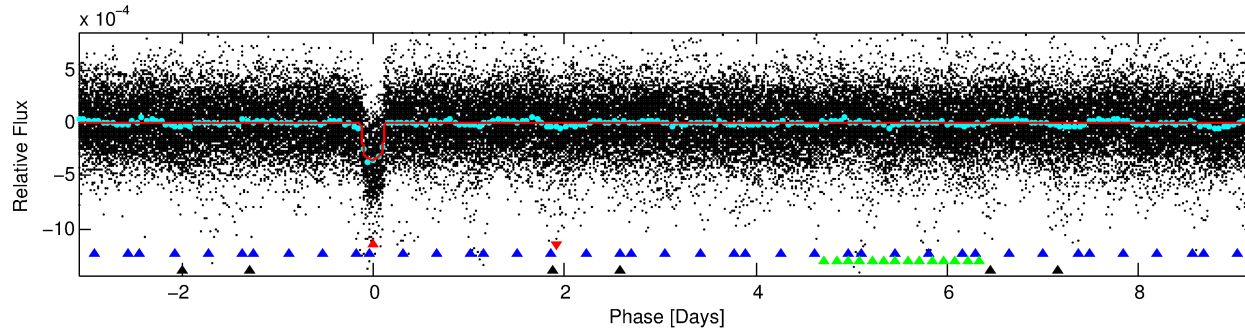
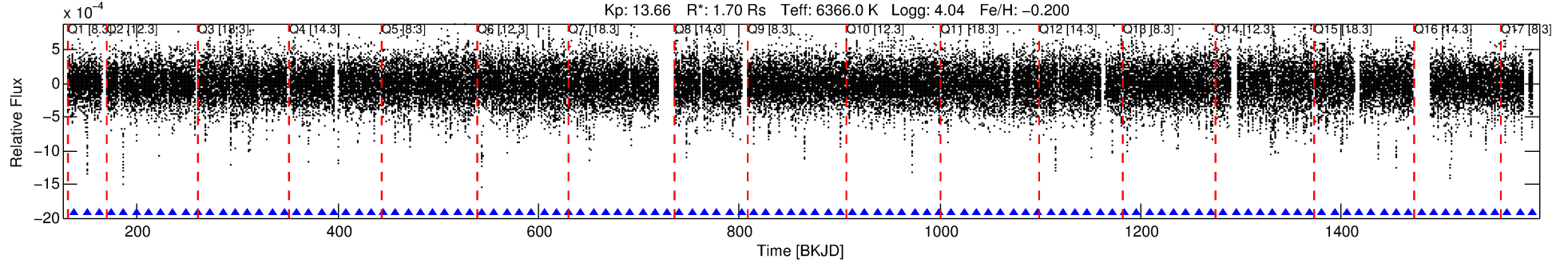
Ephemeris Match Information For 006677841-01

No Significant Match Found

DV One-Page Summary

KIC: 6677841 Candidate: 1 of 4 Period: 12.310 d
KOI: K01236.02 Name: Kepler-279b Corr: 0.980

Kp: 13.66 R*: 1.70 Rs Teff: 6366.0 K Logg: 4.04 Fe/H: -0.200



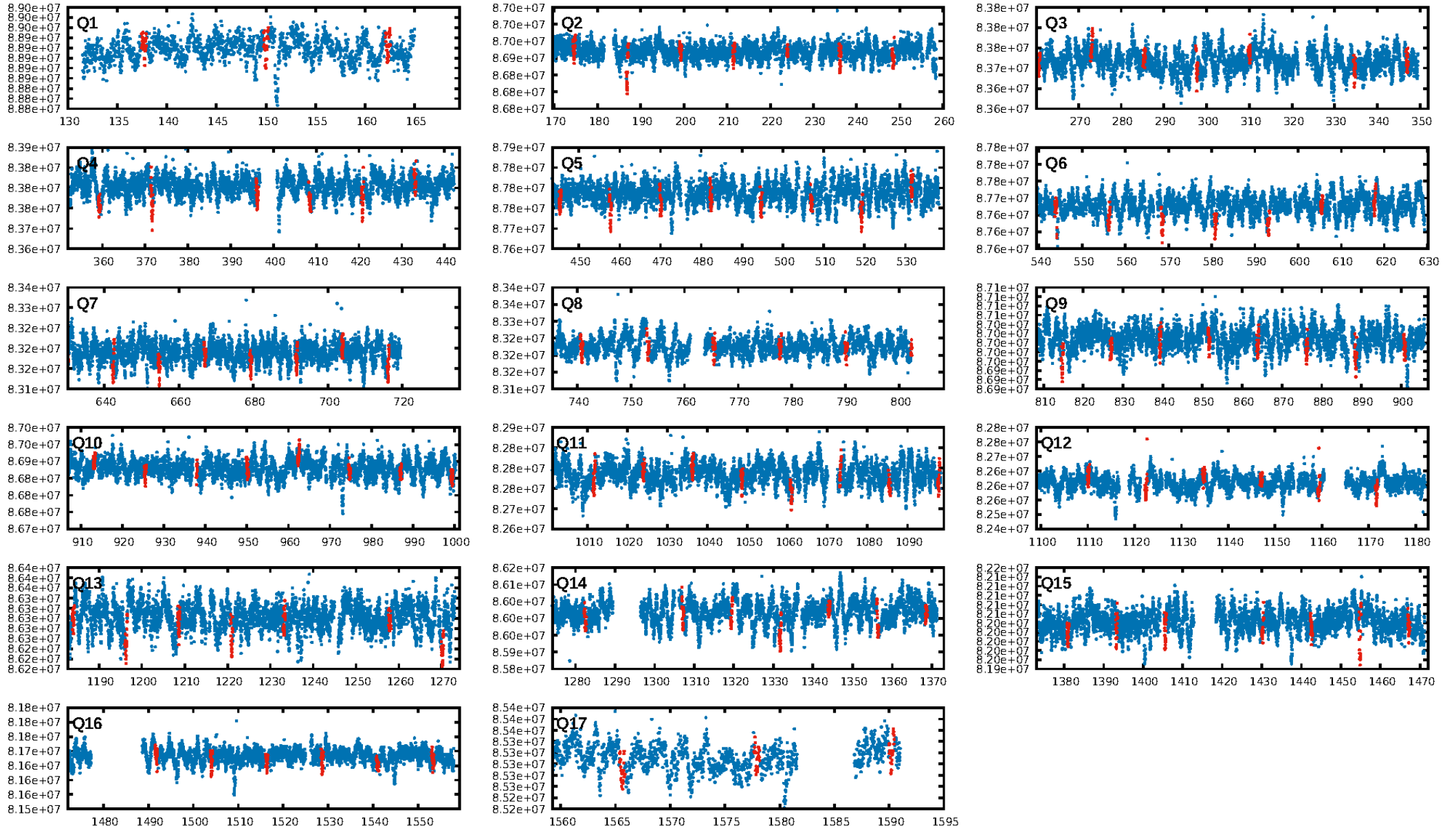
DV Fit Results:

Period = 12.30976 [0.00003] d
Epoch = 137.6832 [0.0020] BKJD
Rp/R* = 0.0200 [0.0007]
a/R* = 7.47 [1.03]
b = 0.90 [0.03]
Seff = 351.41 [120.78]
Teq = 1104 [95] K
Rp = 3.70 [0.84] Re
a = 0.1098 [0.0233] AU
Ag = 20.10 [9.44] [2.02σ]
Teffp = 3614 [304] K [7.89σ]

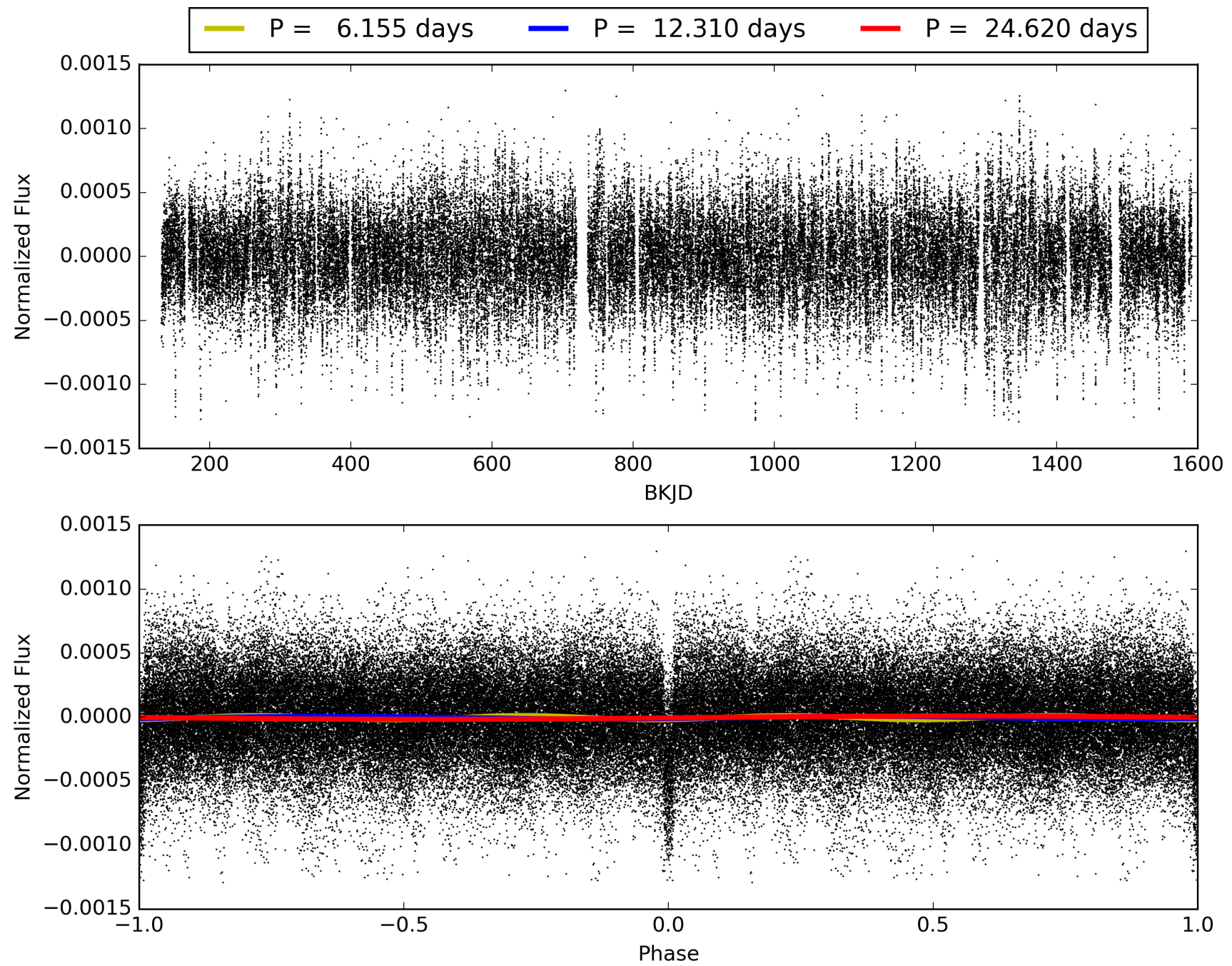
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [46.08σ]
ModelChiSquare2-sig: 89.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.09e-125
RollingBand-fgt: 1.00 [106/106]
GhostDiagnostic-chr: -206.5
Centroid-sig: 0.0%
Centroid-so: 0.851 arcsec [3.41σ]
OotOffset-rm: 0.242 arcsec [1.86σ]
KicOffset-rm: 0.140 arcsec [0.90σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006677841-01, PDC Light Curves

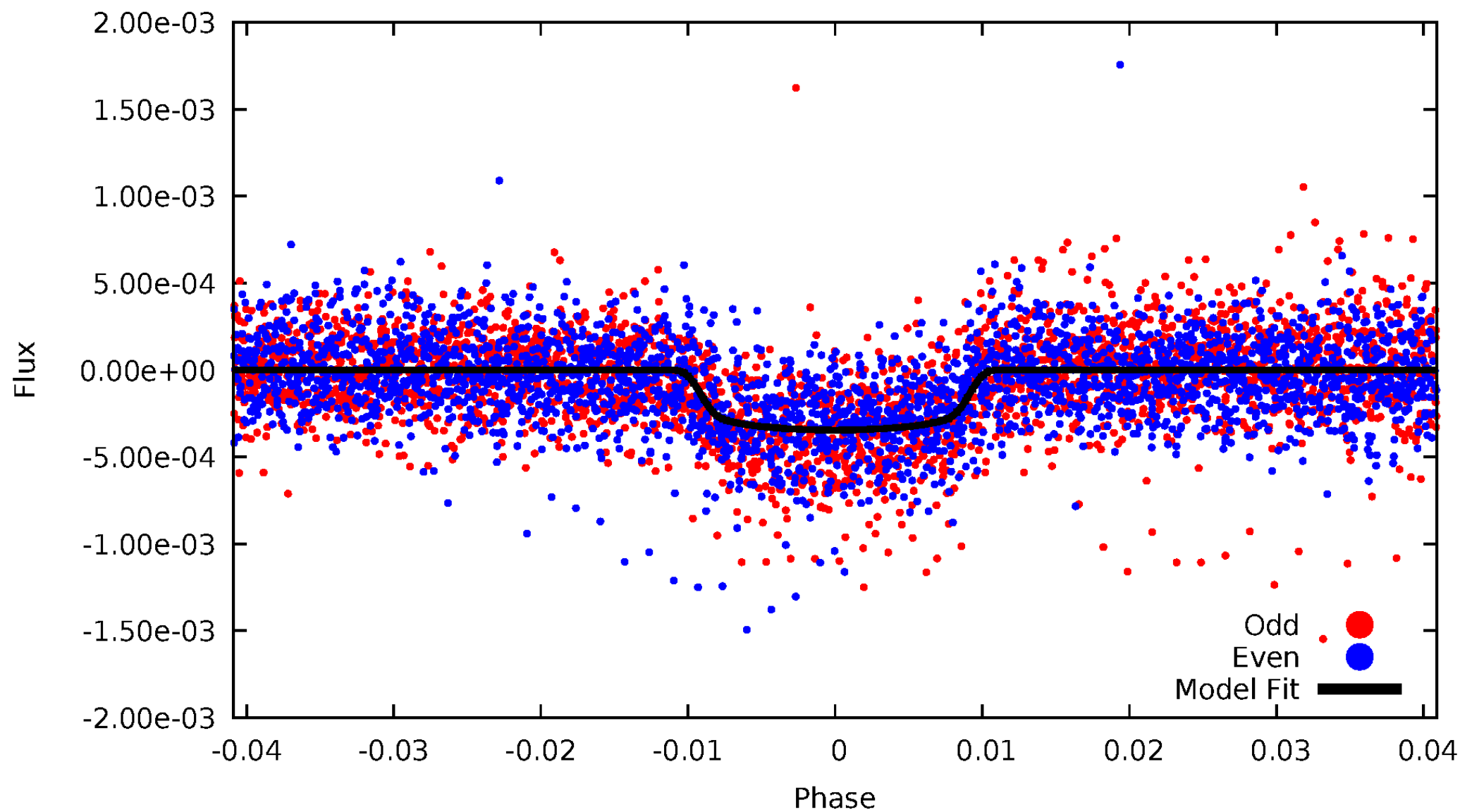


TCE 006677841-01



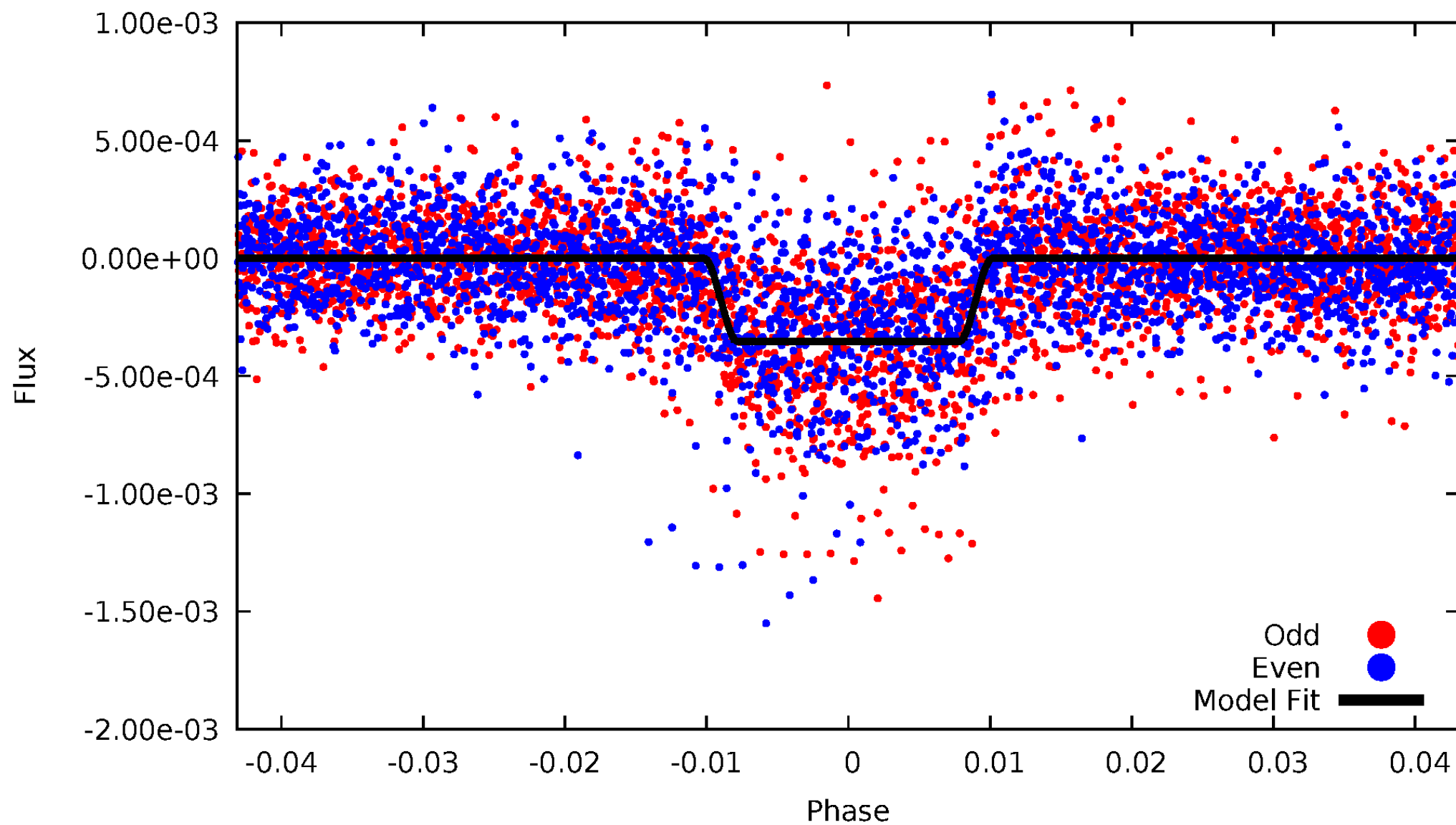
DV Odd/Even

TCE 006677841-01

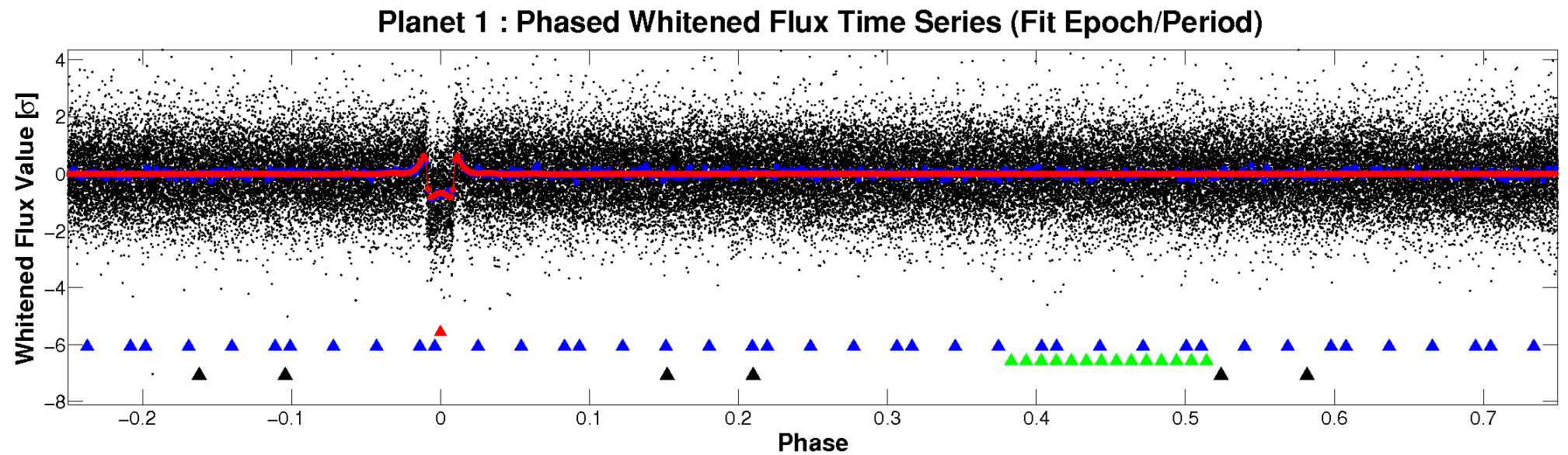
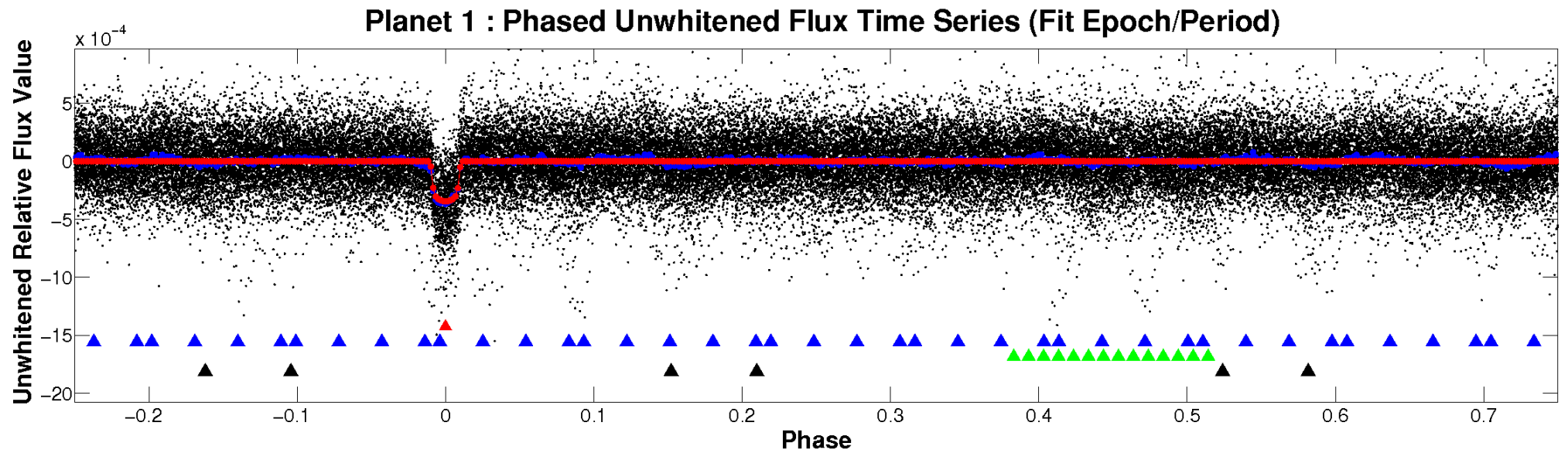


ALT Odd/Even

TCE 006677841-01

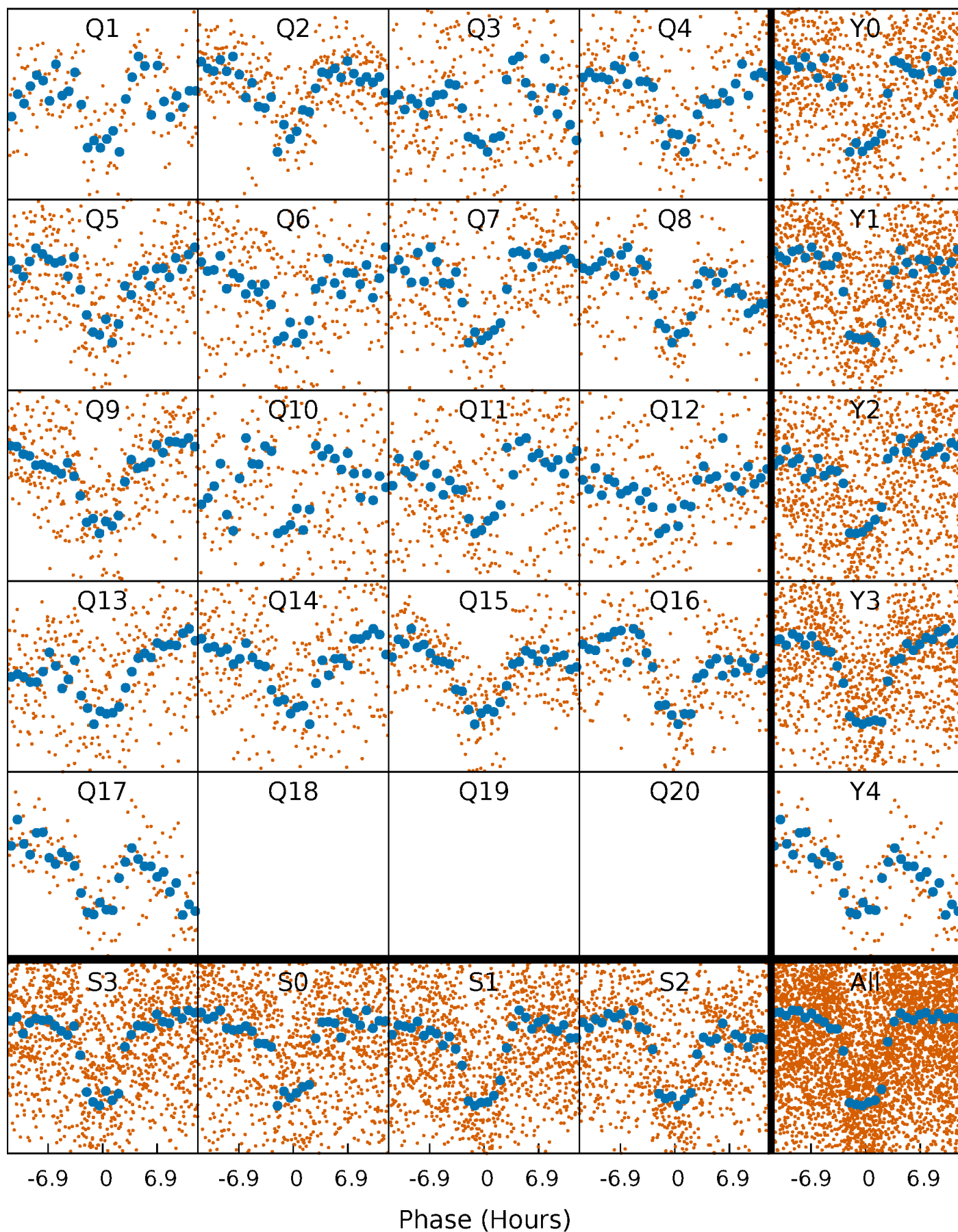


Non-Whitened Vs. Whitened Light Curve



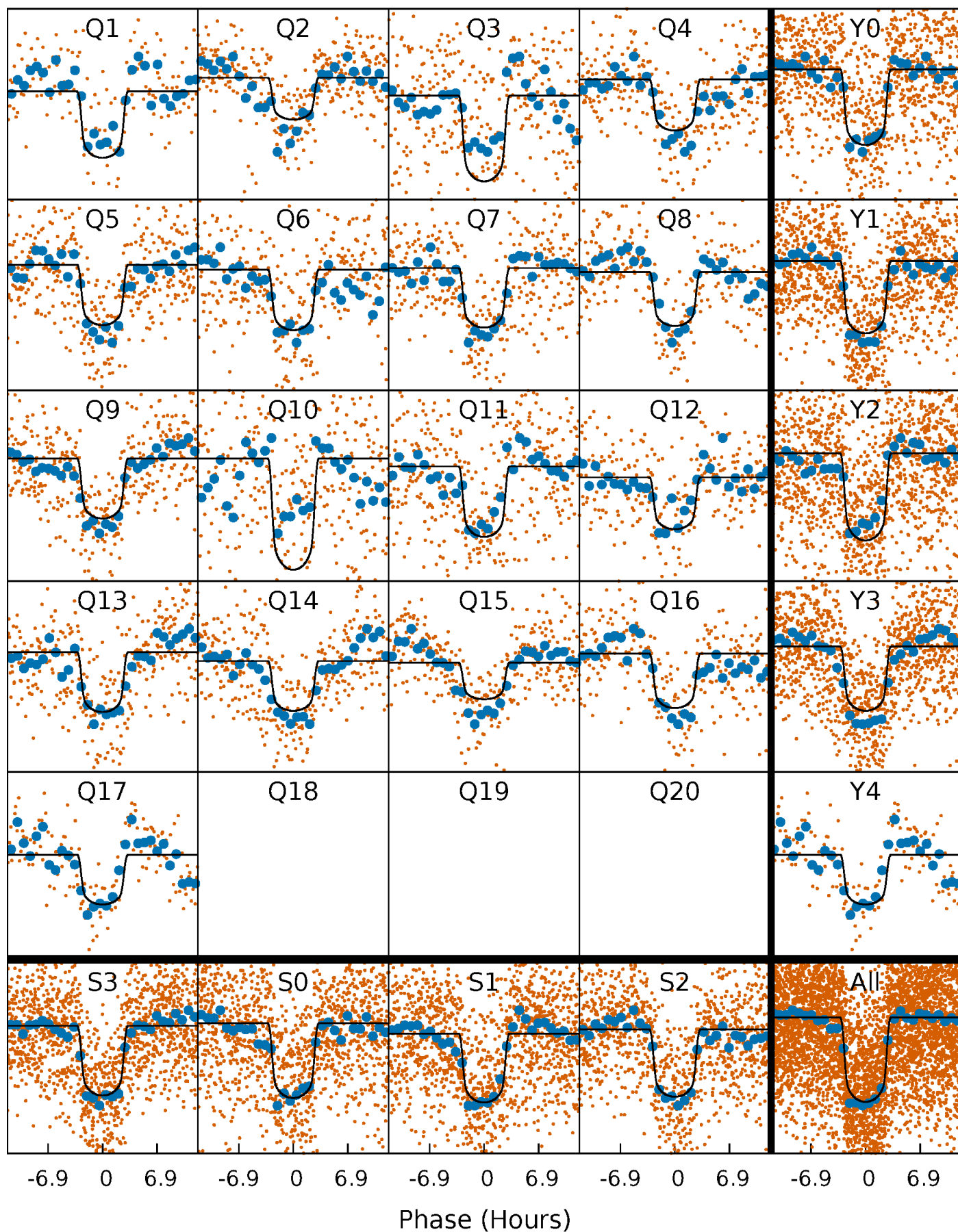
PDC Quarter-Phased Transit Curves

TCE 006677841-01 P= 12.309758 Days $T_0=137.683153$ (BKJD)



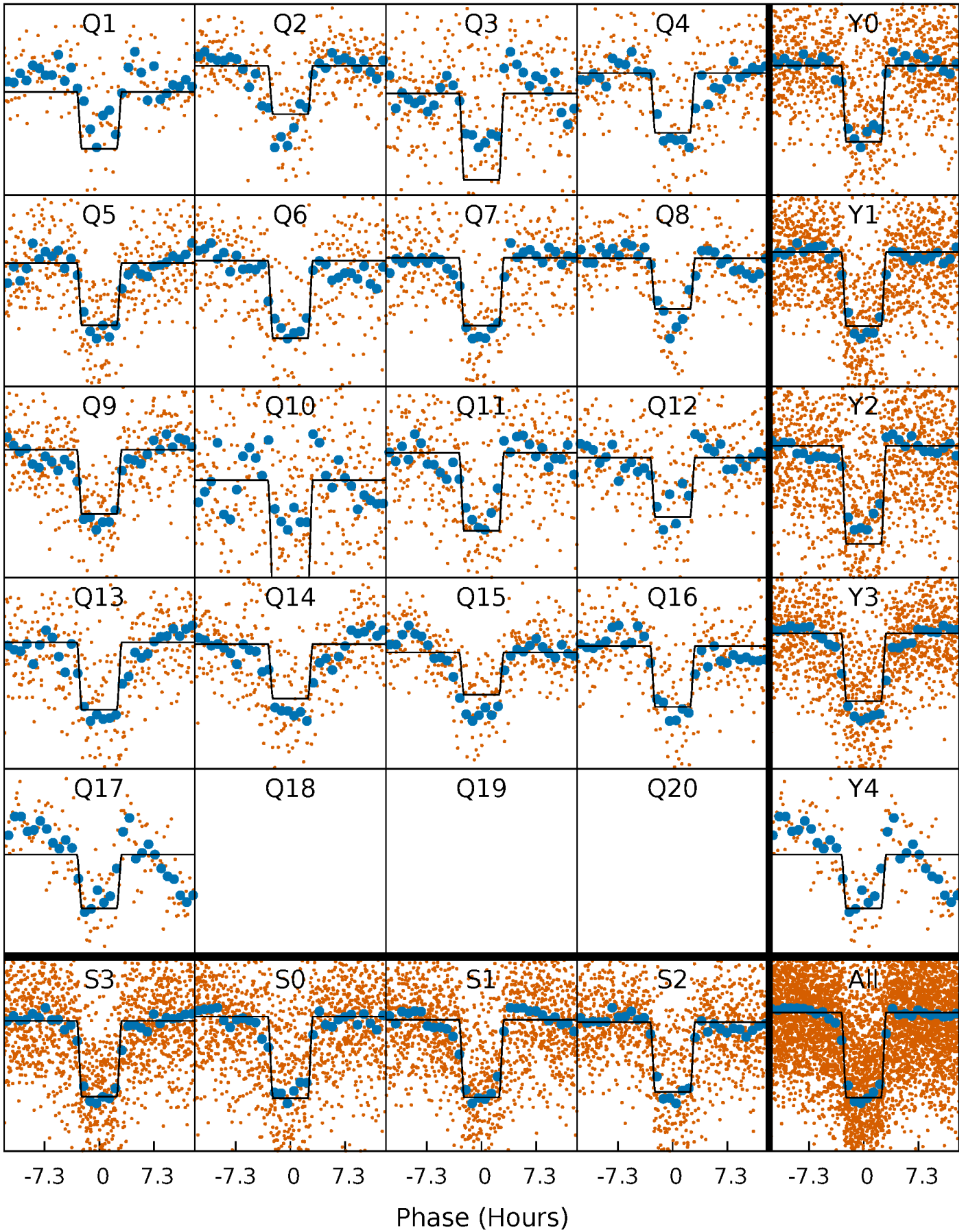
DV Quarter-Phased Transit Curves

TCE 006677841-01 P= 12.309758 Days $T_0=137.683153$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

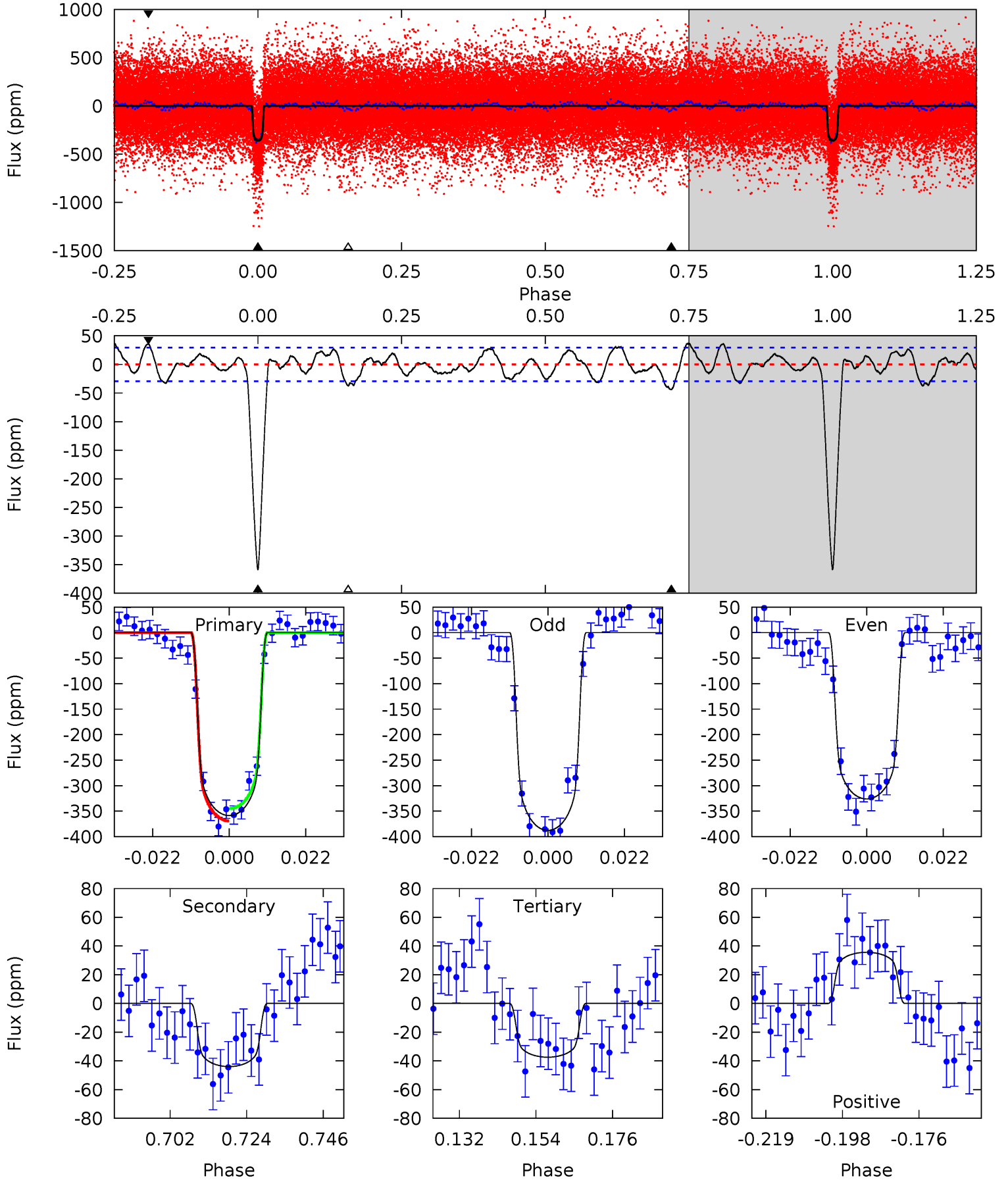
TCE 006677841-01 P= 12.309767 Days $T_0=137.680702$ (BKJD)



DV Model-Shift Uniqueness Test

006677841-01, P = 12.309758 Days, E = 125.373395 Days

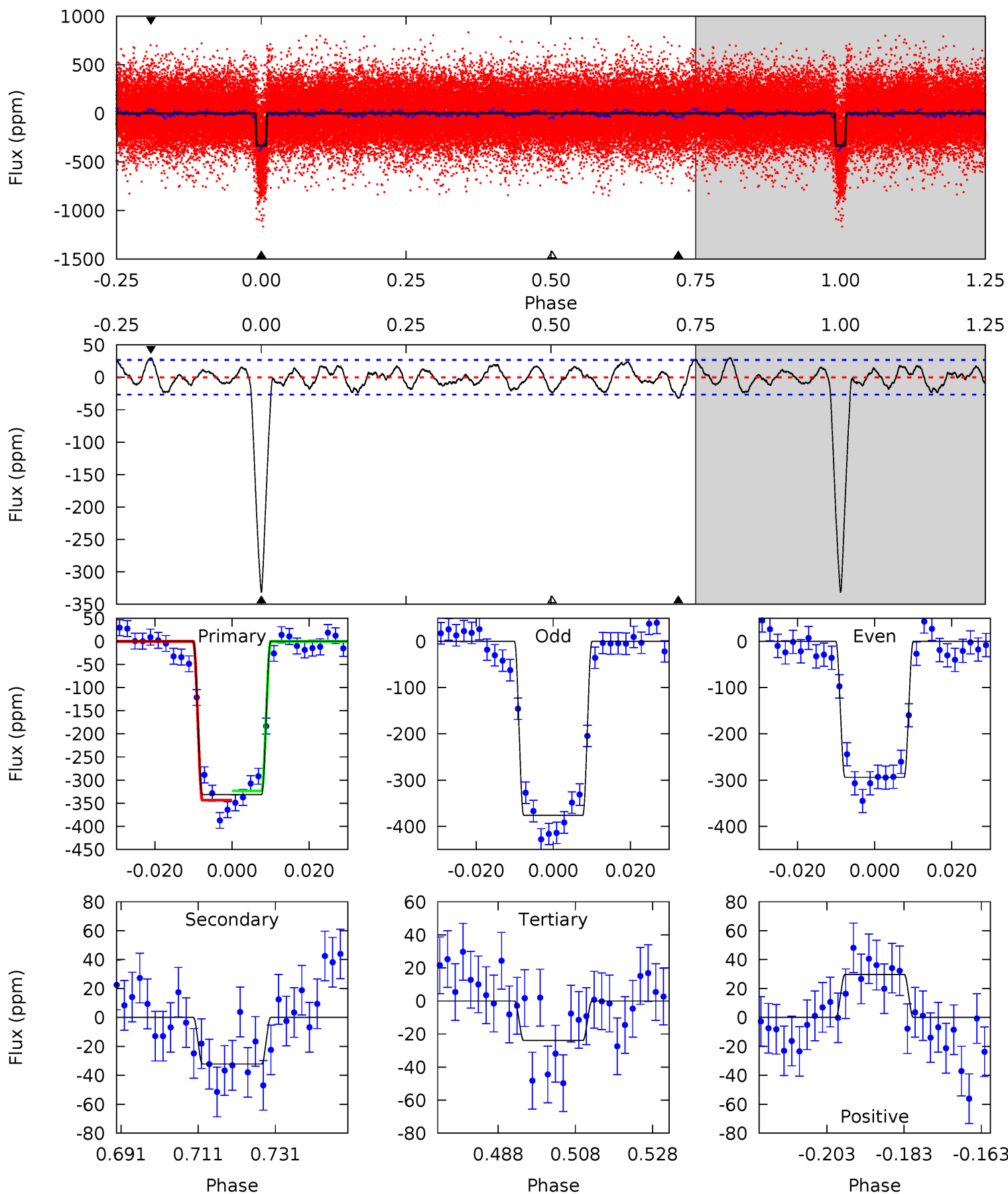
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.3	7.27	6.19	5.89	4.87	2.29	2.65	53.1	53.4	1.08	1.38	5.12	1.02	0.09	2.01



Alt Model-Shift Uniqueness Test

006677841-01, P = 12.309767 Days, E = 125.370935 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.7	5.88	4.39	5.46	4.89	2.32	2.17	56.3	55.3	1.50	0.43	7.52	1.05	0.08	1.86



Stellar Parameters For KIC 006677841

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6366^{+116}_{-116}	$4.045^{+0.196}_{-0.098}$	$-0.200^{+0.150}_{-0.150}$	$1.697^{+0.285}_{-0.380}$	$1.164^{+0.134}_{-0.110}$	$0.336^{+0.325}_{-0.102}$
	+2%/-2%	+5%/-2%	+75%/-75%	+17%/-22%	+12%/-9%	+97%/-30%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 006677841-01 / KOI 1236.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-44 ± 6	$3.64^{+0.42}_{-0.46}$	1523^{+86}_{-94}	3983^{+118}_{-126}	22^{+7}_{-5}
Alt.	-32 ± 5	$3.45^{+0.39}_{-0.40}$	1533^{+71}_{-94}	3846^{+129}_{-139}	18^{+6}_{-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 $A_{\text{obs}} \gg 1.0$

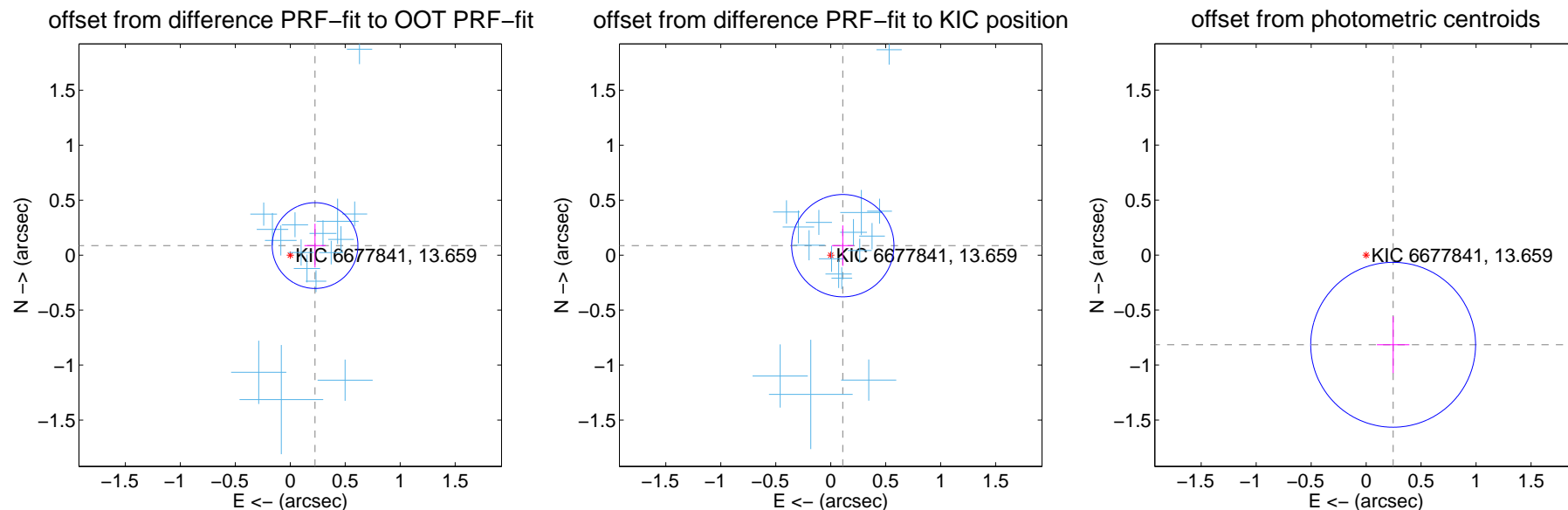
DV Centroid Data

Supplemental centroid analysis for 006677841-01. Kepler magnitude: 13.66. Transit SNR 28.08

There are 16 quarters with good PRF difference image offsets

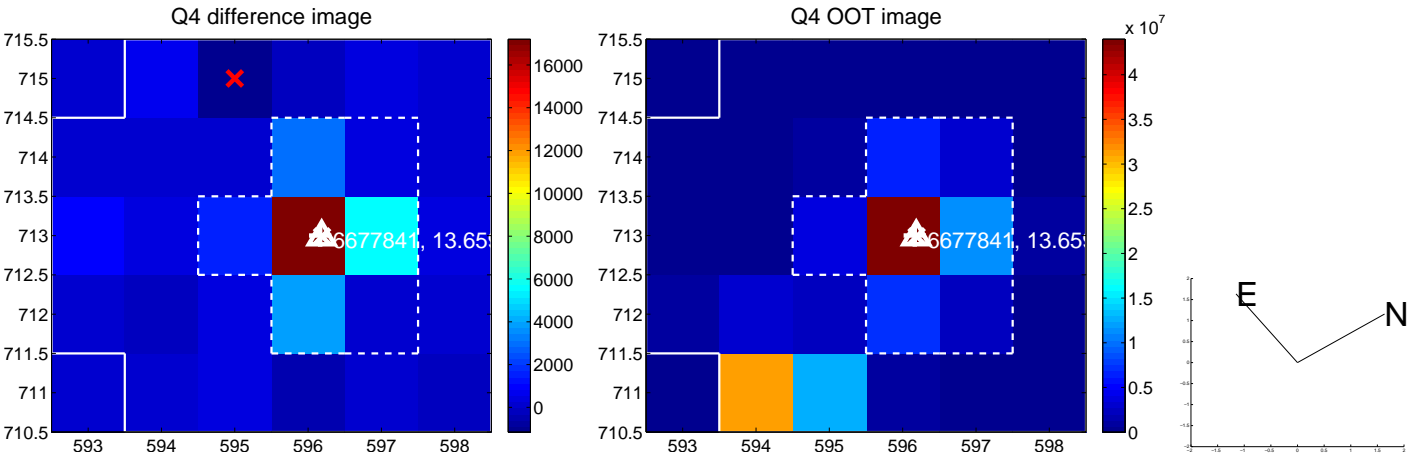
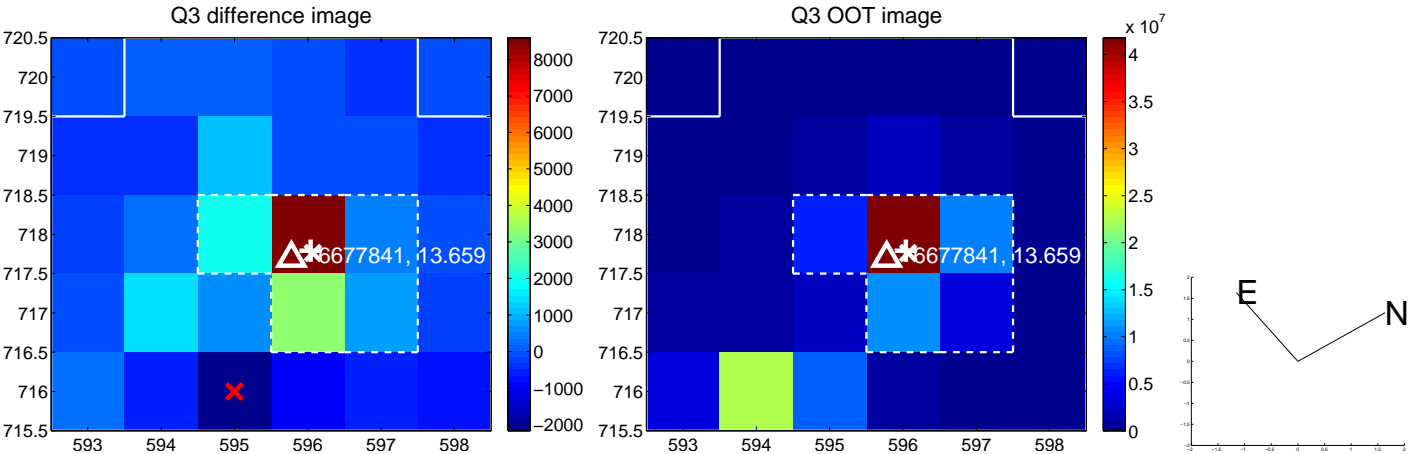
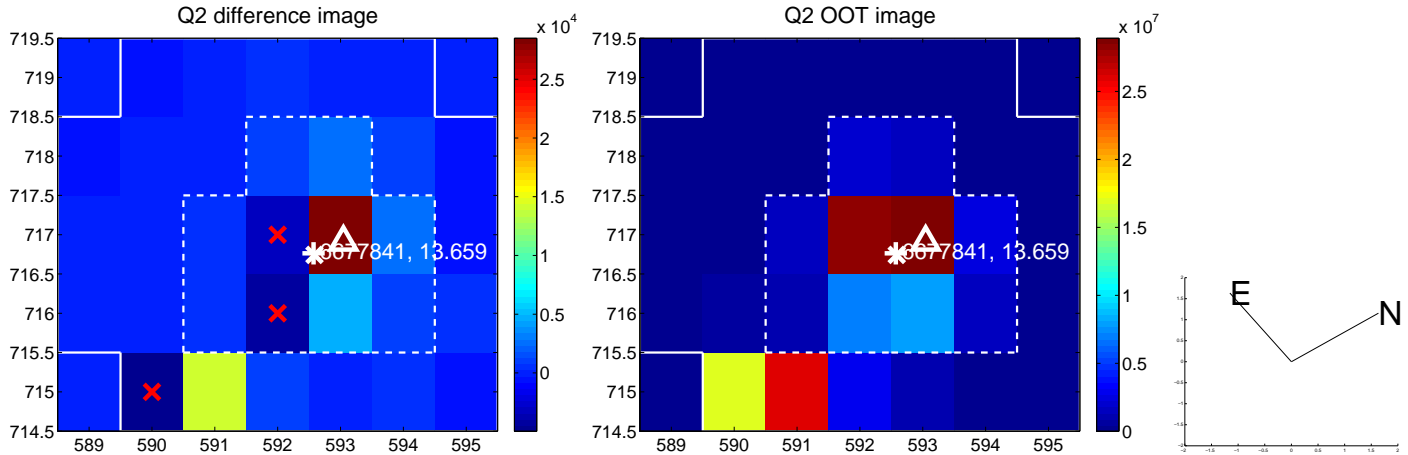
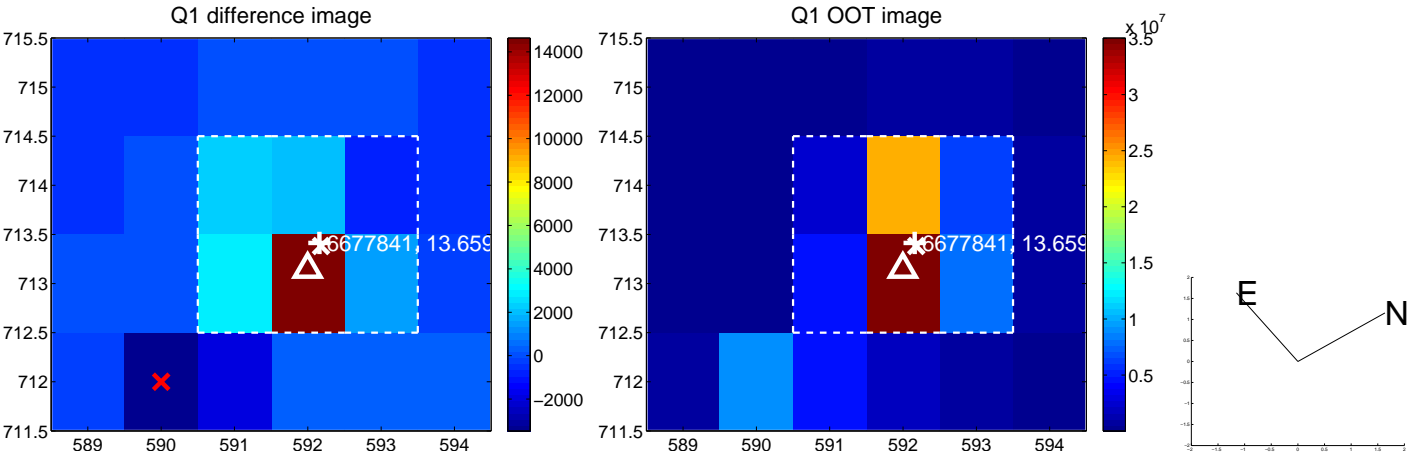
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.242 ± 0.130	1.86	-0.225 ± 0.097	0.087 ± 0.198
PRF-fit source offset from KIC position	0.140 ± 0.155	0.90	-0.110 ± 0.099	0.086 ± 0.184
photometric centroid source offset	0.85 ± 0.25	3.41	-0.25 ± 0.15	-0.82 ± 0.26

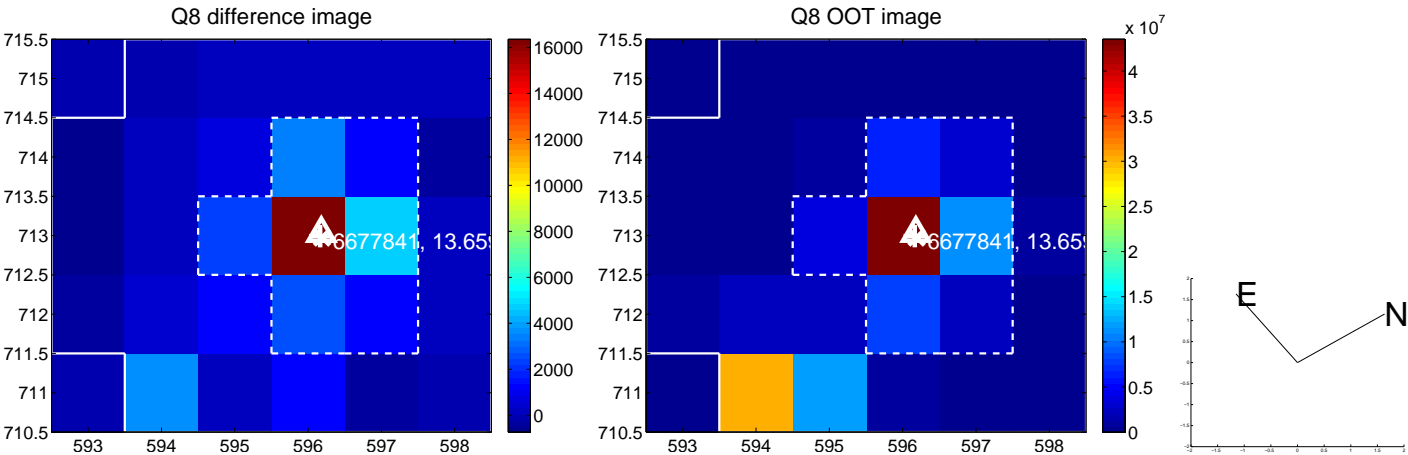
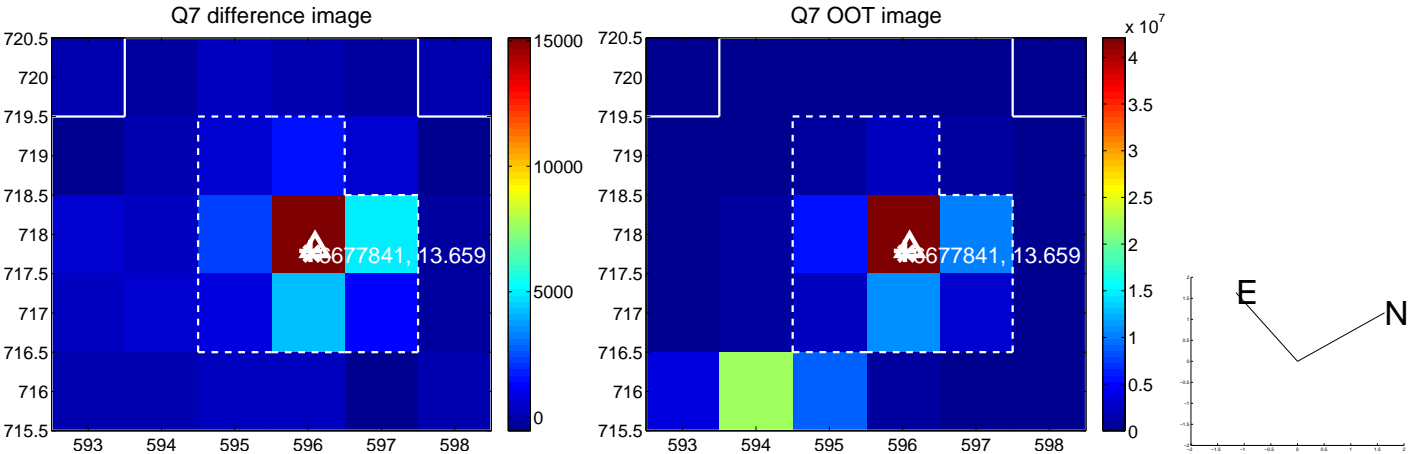
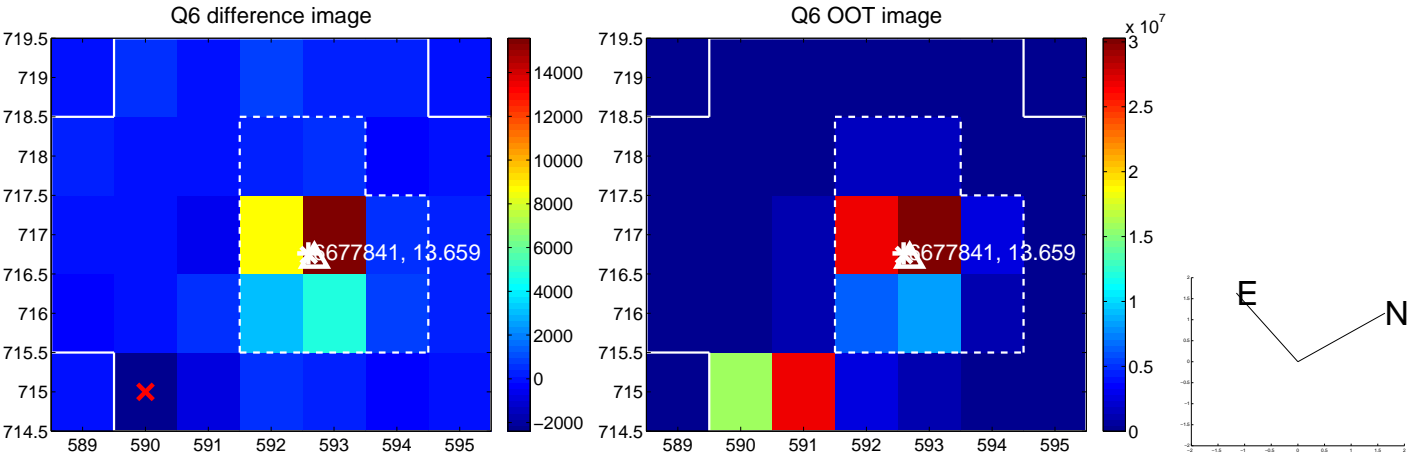
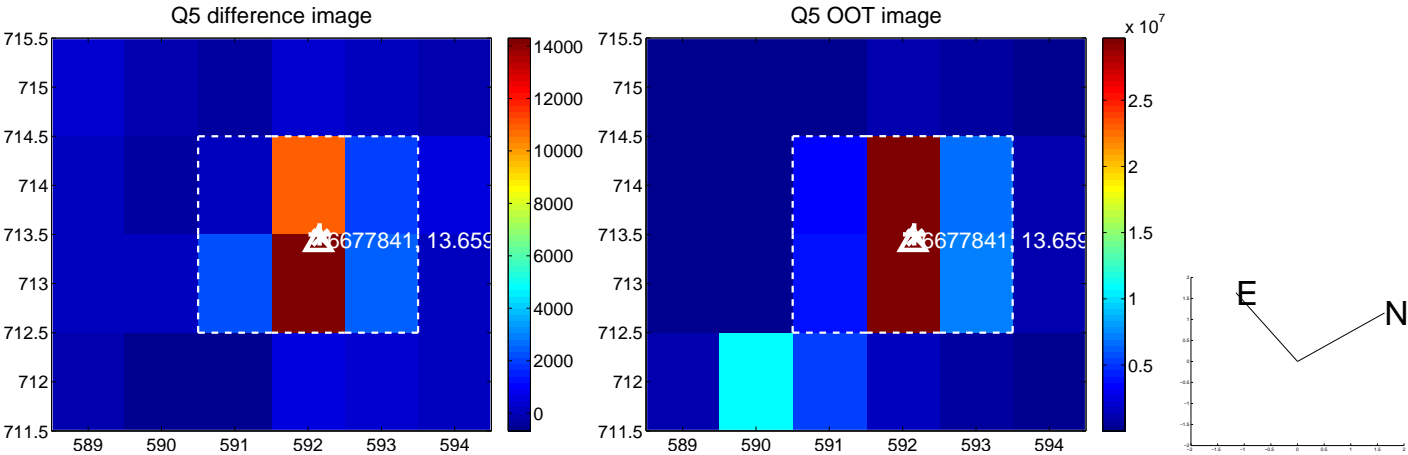


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

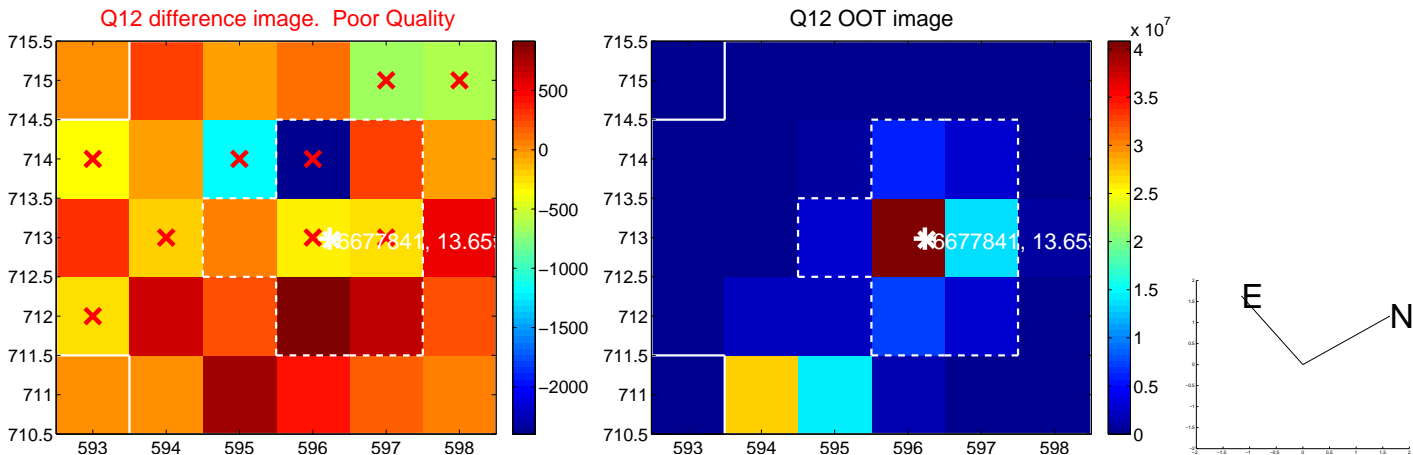
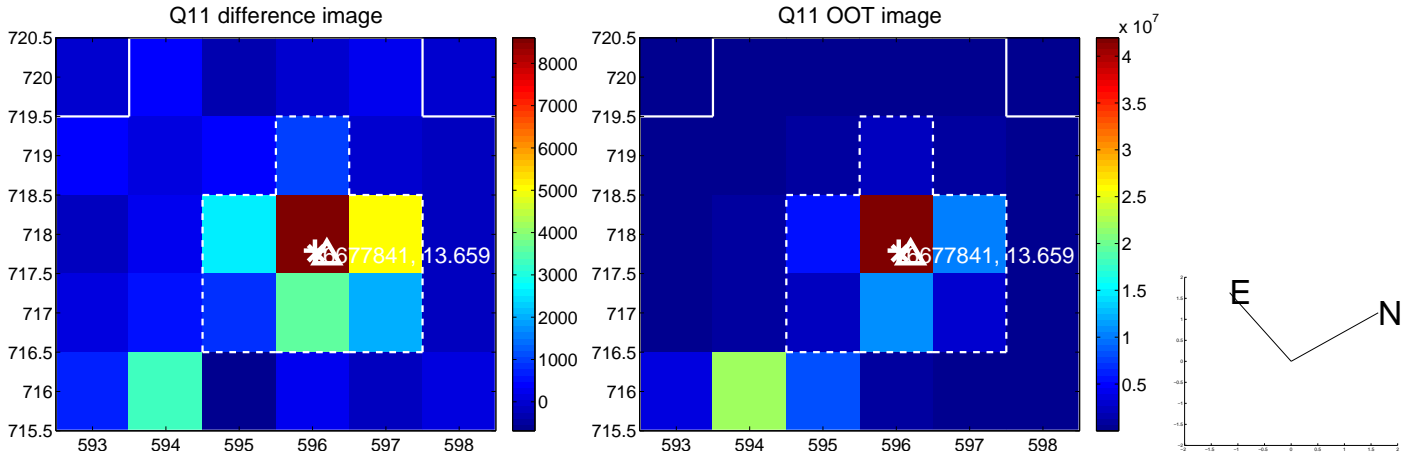
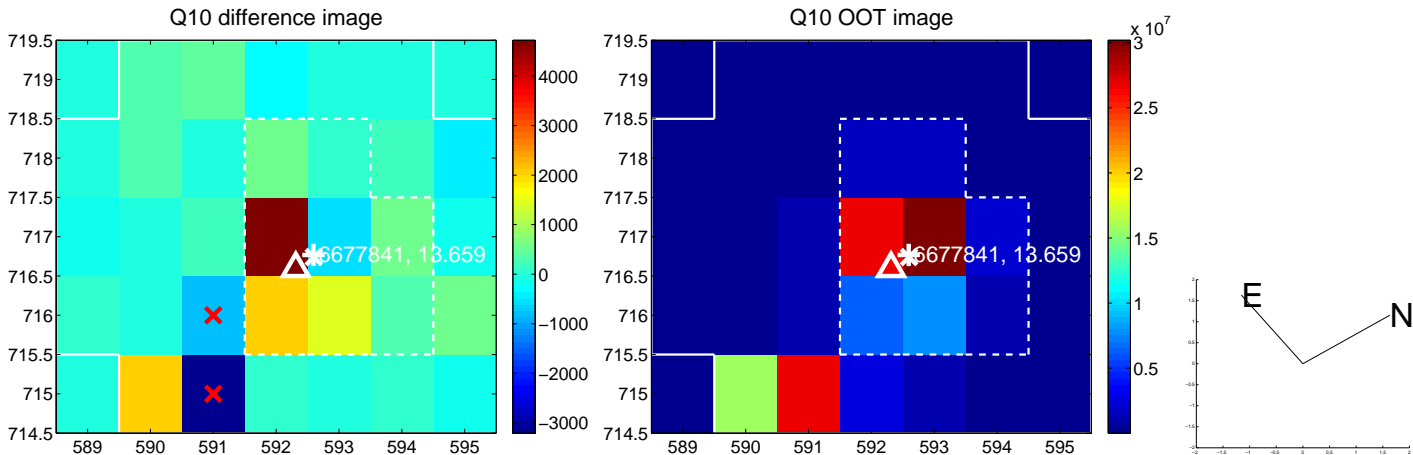
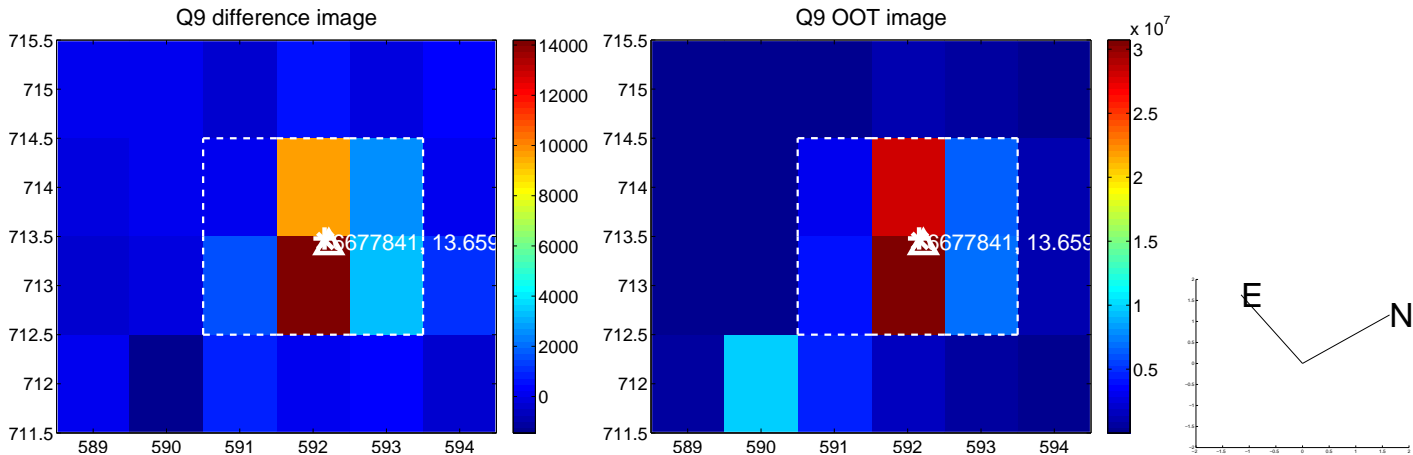
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



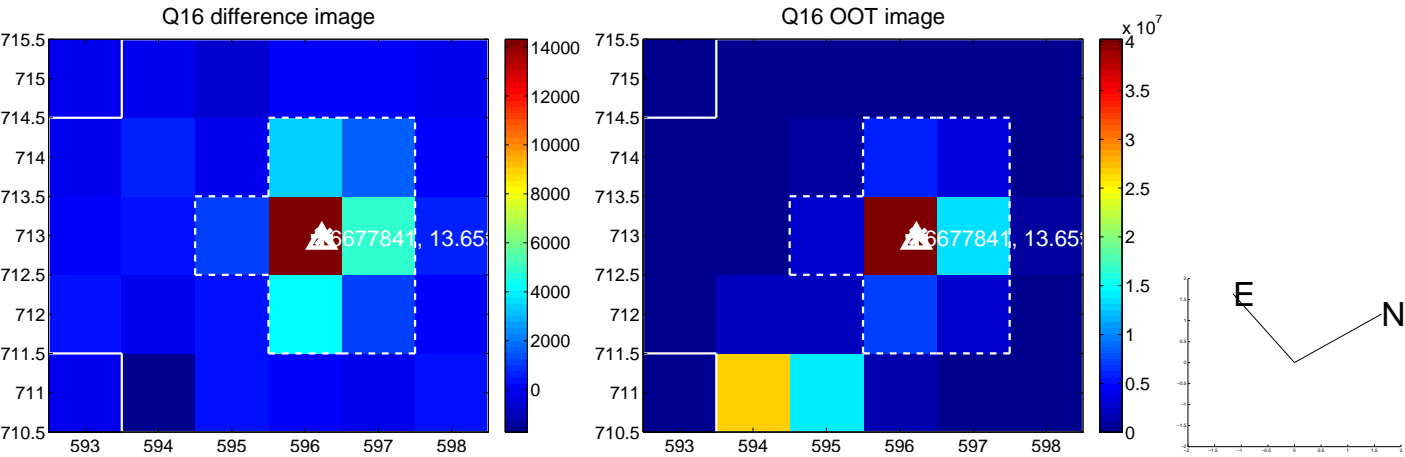
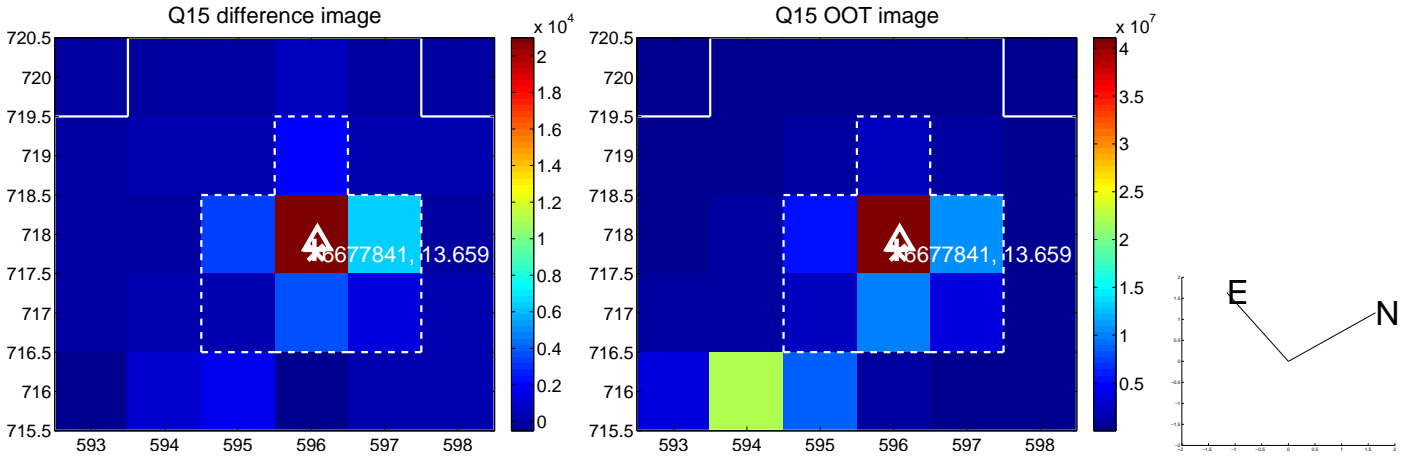
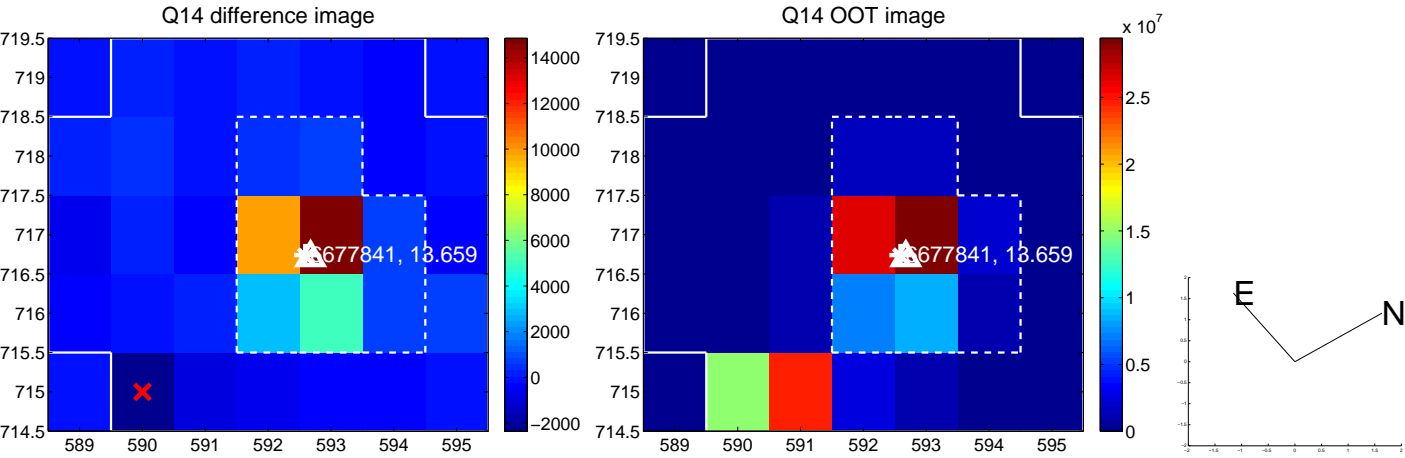
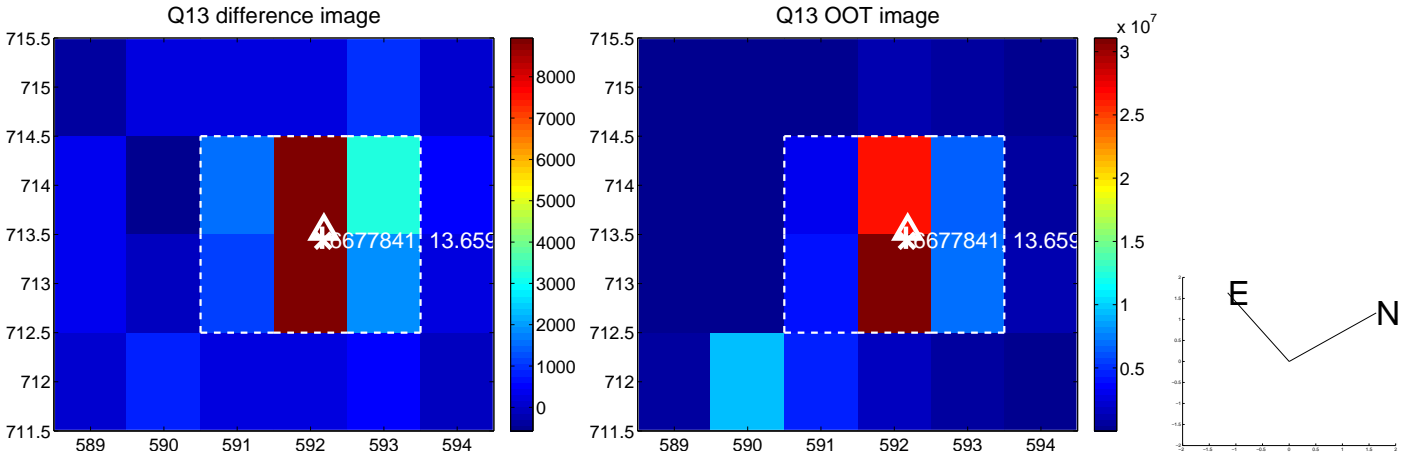
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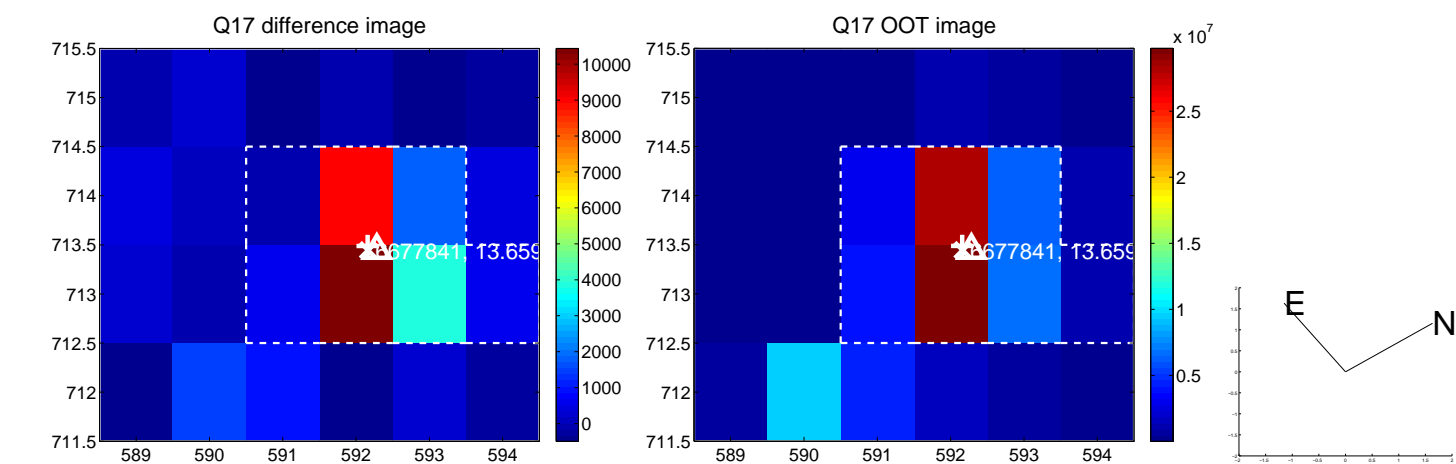
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



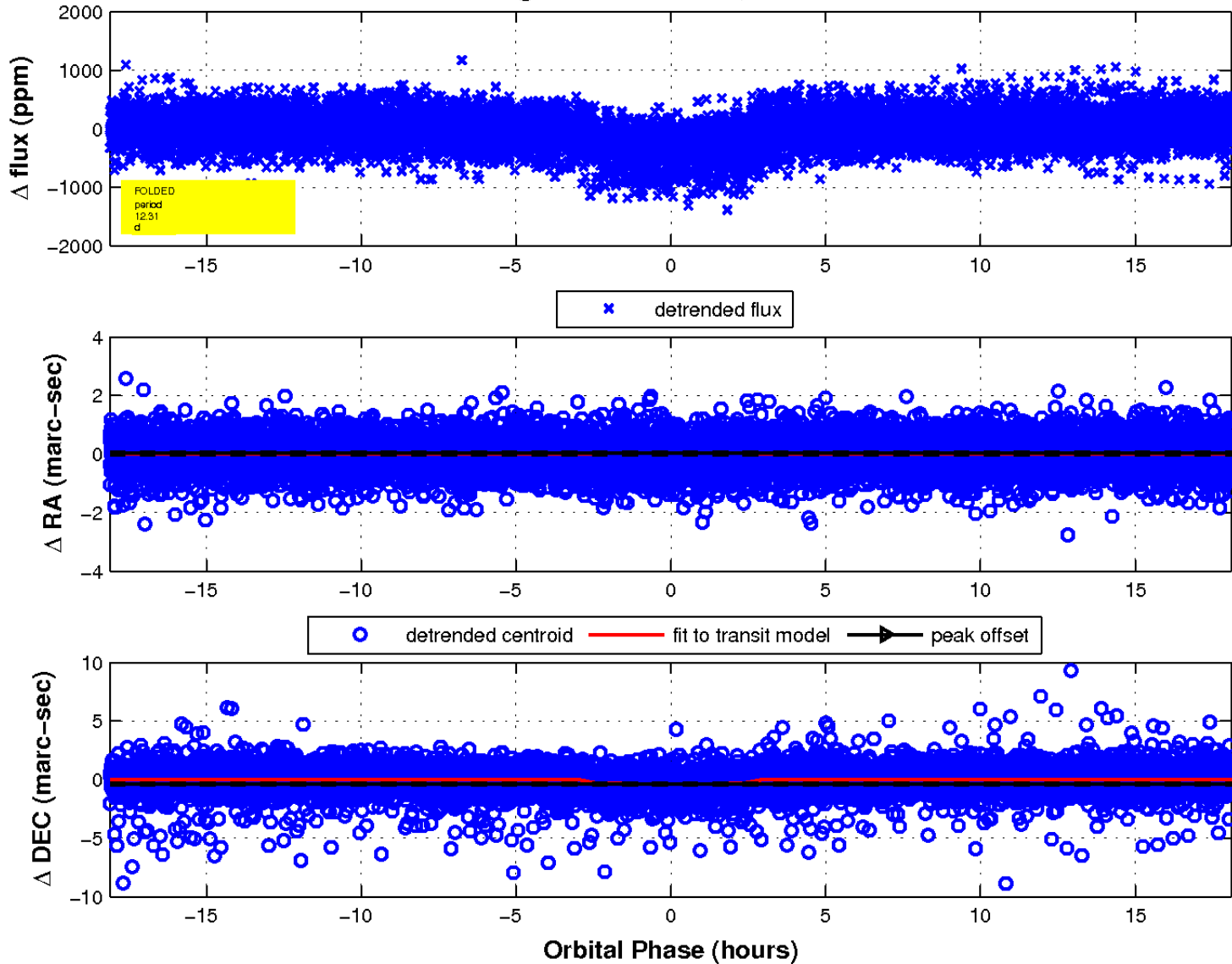
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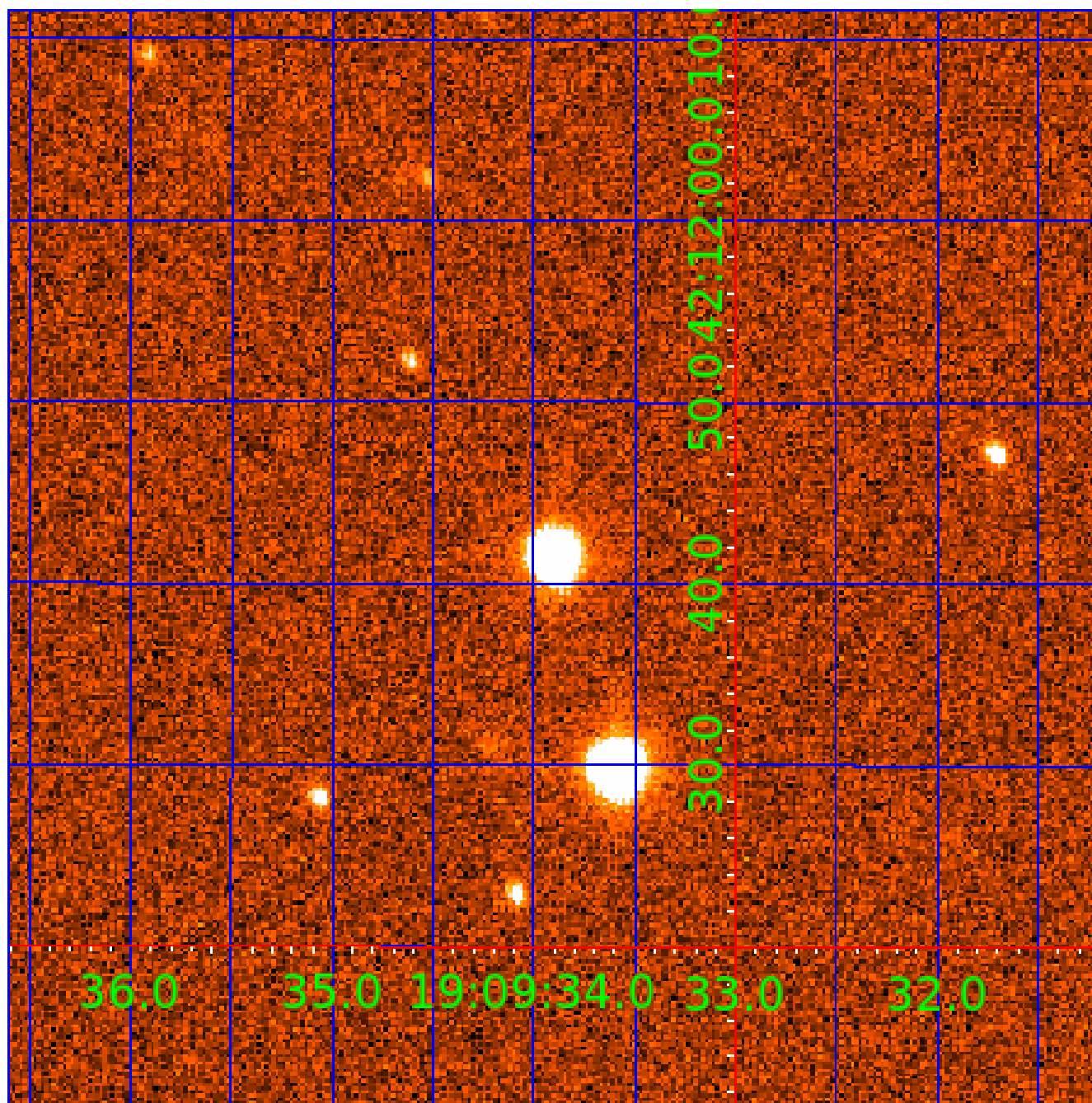


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 006677841

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})
006677841-01	OBS	1236.02	12.309758	137.683153	344.9	6.039	26.1	28.1	1.70	6366	3.70	351.41
006677841-02	OBS	1236.01	35.734006	151.141353	762.8	10.600	23.6	27.6	1.70	6366	5.96	84.86
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Robovetter Results

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006677841-02	OBS	FP	0.09	1	0	0	0	LPP_DV
006677841-03	OBS	PC	0.94	0	0	0	0	NO_COMMENT
006677841-04	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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

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

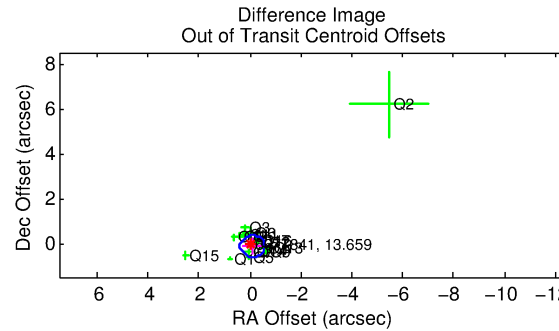
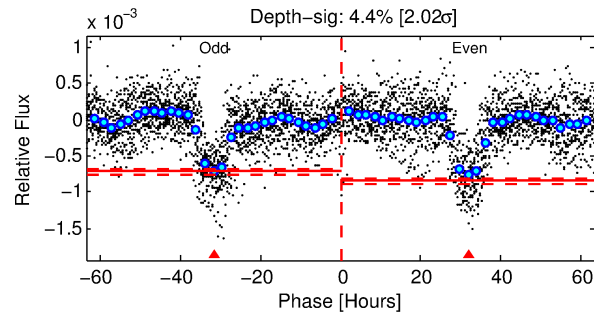
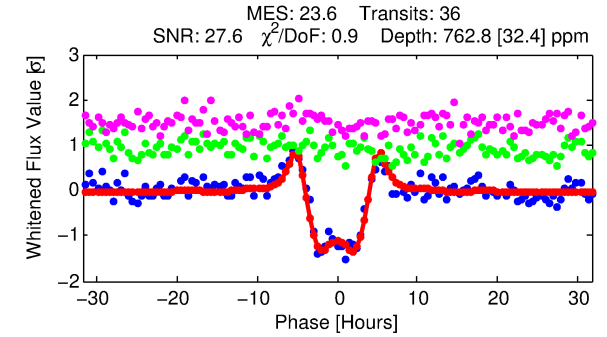
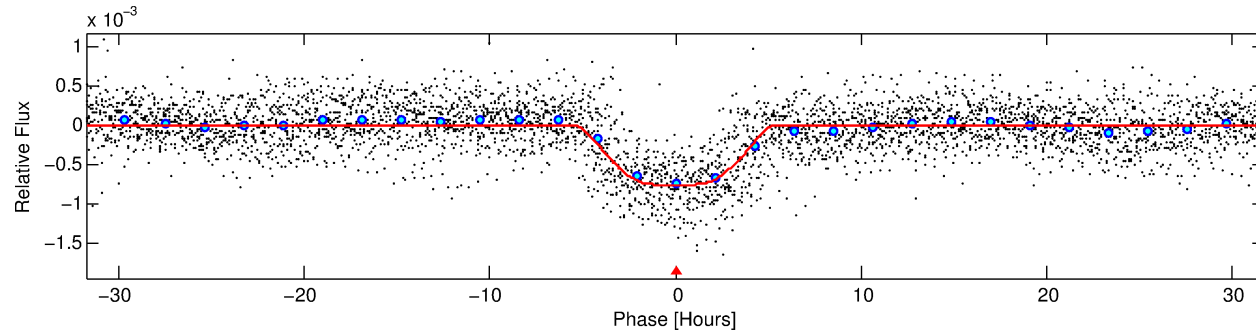
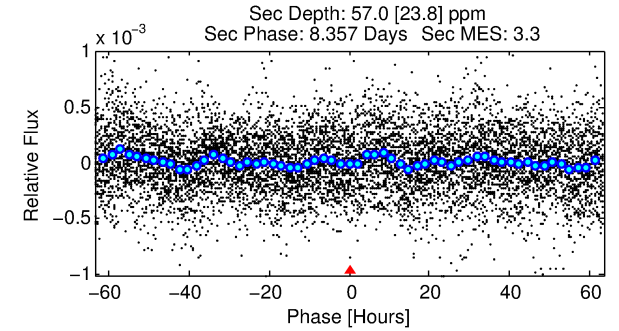
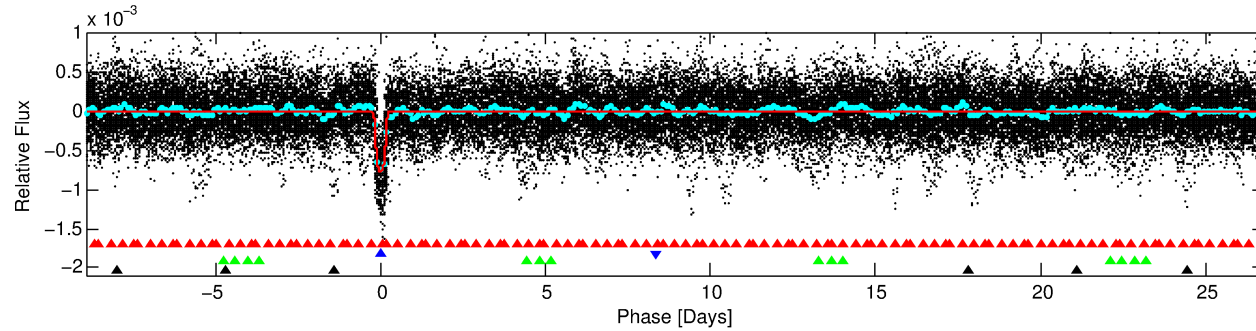
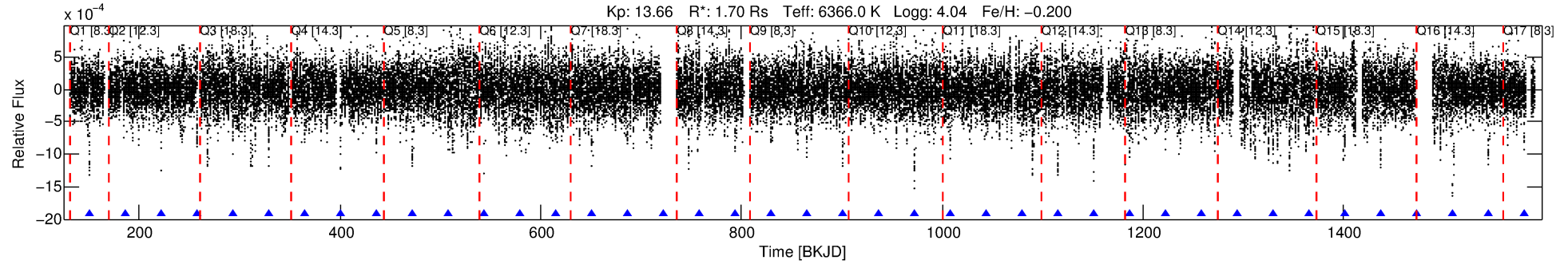
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006677841-02

No Significant Match Found

DV One-Page Summary

KIC: 6677841 Candidate: 2 of 4 Period: 35.734 d
KOI: K01236.01 Name: Kepler-279c Corr: 0.921



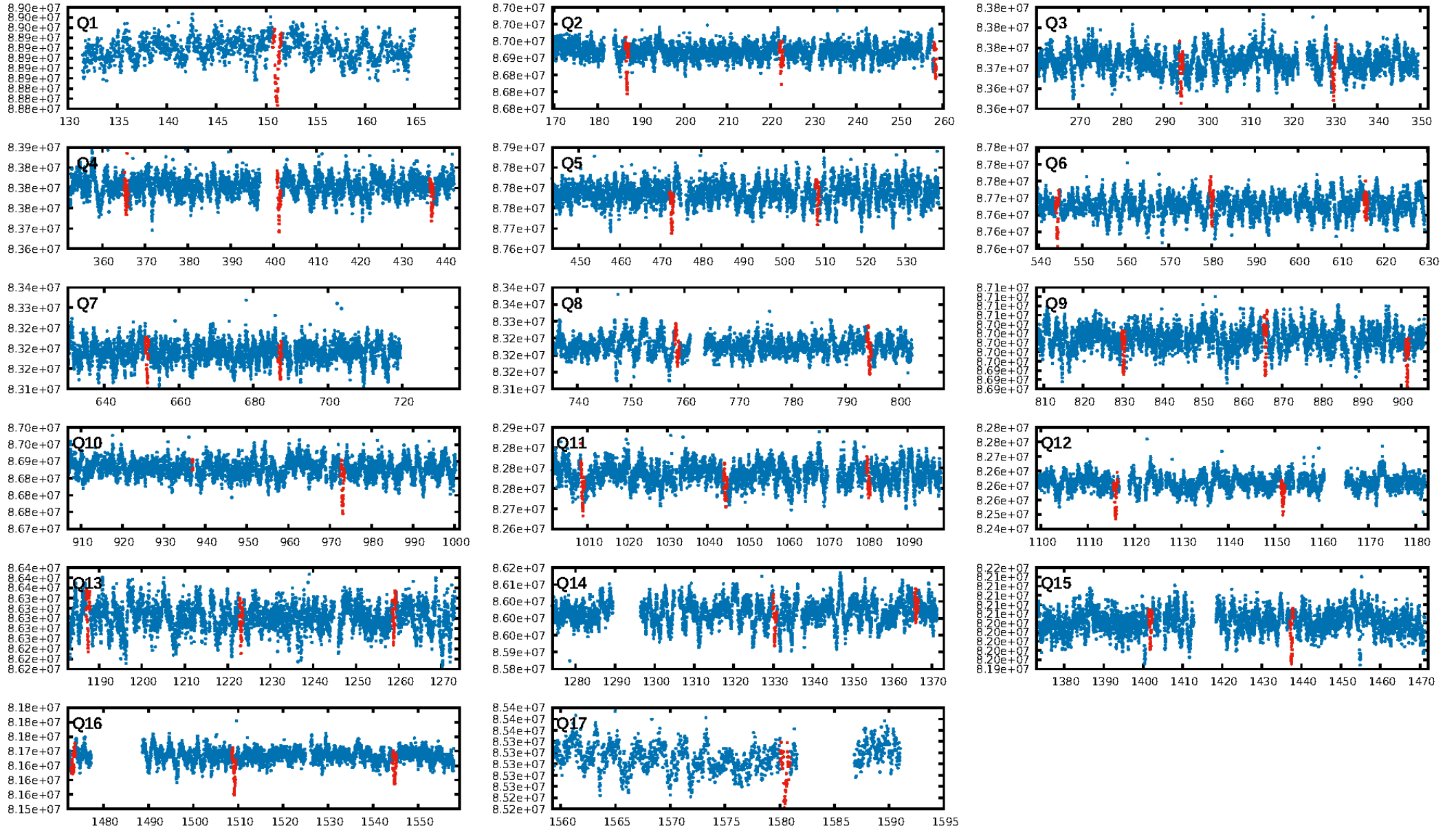
DV Fit Results:

Period = 35.73401 [0.00022] d
Epoch = 151.1414 [0.0051] BKJD
Rp/R* = 0.0322 [0.0008]
a/R* = 9.73 [0.27]
b = 0.96 [0.00]
Seff = 84.86 [29.17]
Teff = 774 [66] K
Rp = 5.96 [1.34] Re
a = 0.2235 [0.0474] AU
Ag = 44.16 [23.75] [1.82 σ]
Teffp = 3085 [329] K [6.89 σ]

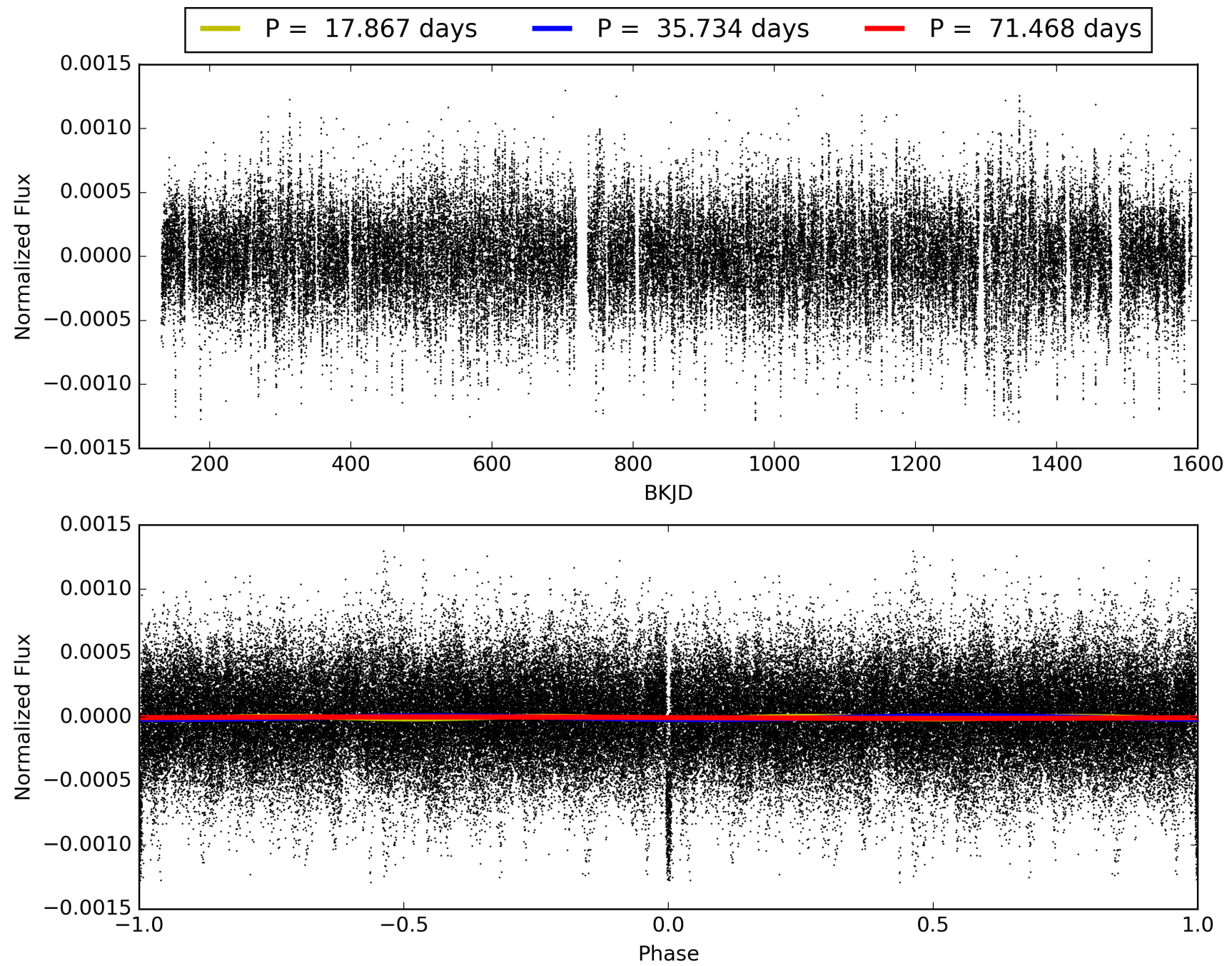
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [46.08 σ]
LongPeriod-sig: 100.0% [96.93 σ]
ModelChiSquare2-sig: 17.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.27e-91
RollingBand-fgt: 1.00 [34/34]
GhostDiagnostic-chr: 5.458
Centroid-sig: 0.0%
Centroid-so: 0.380 arcsec [1.88 σ]
OotOffset-rm: 0.174 arcsec [1.08 σ]
KicOffset-rm: 0.132 arcsec [0.37 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006677841-02, PDC Light Curves

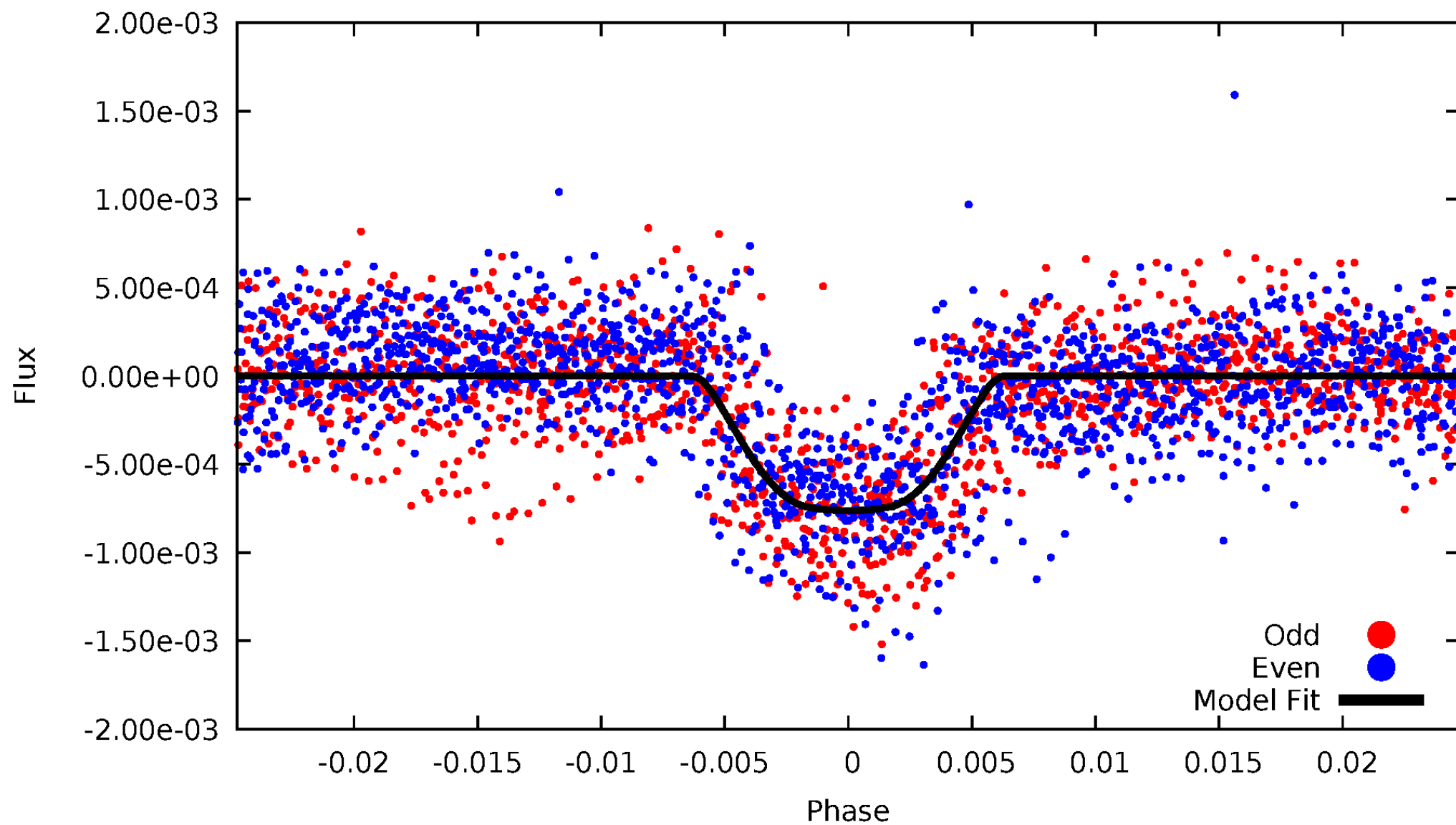


TCE 006677841-02



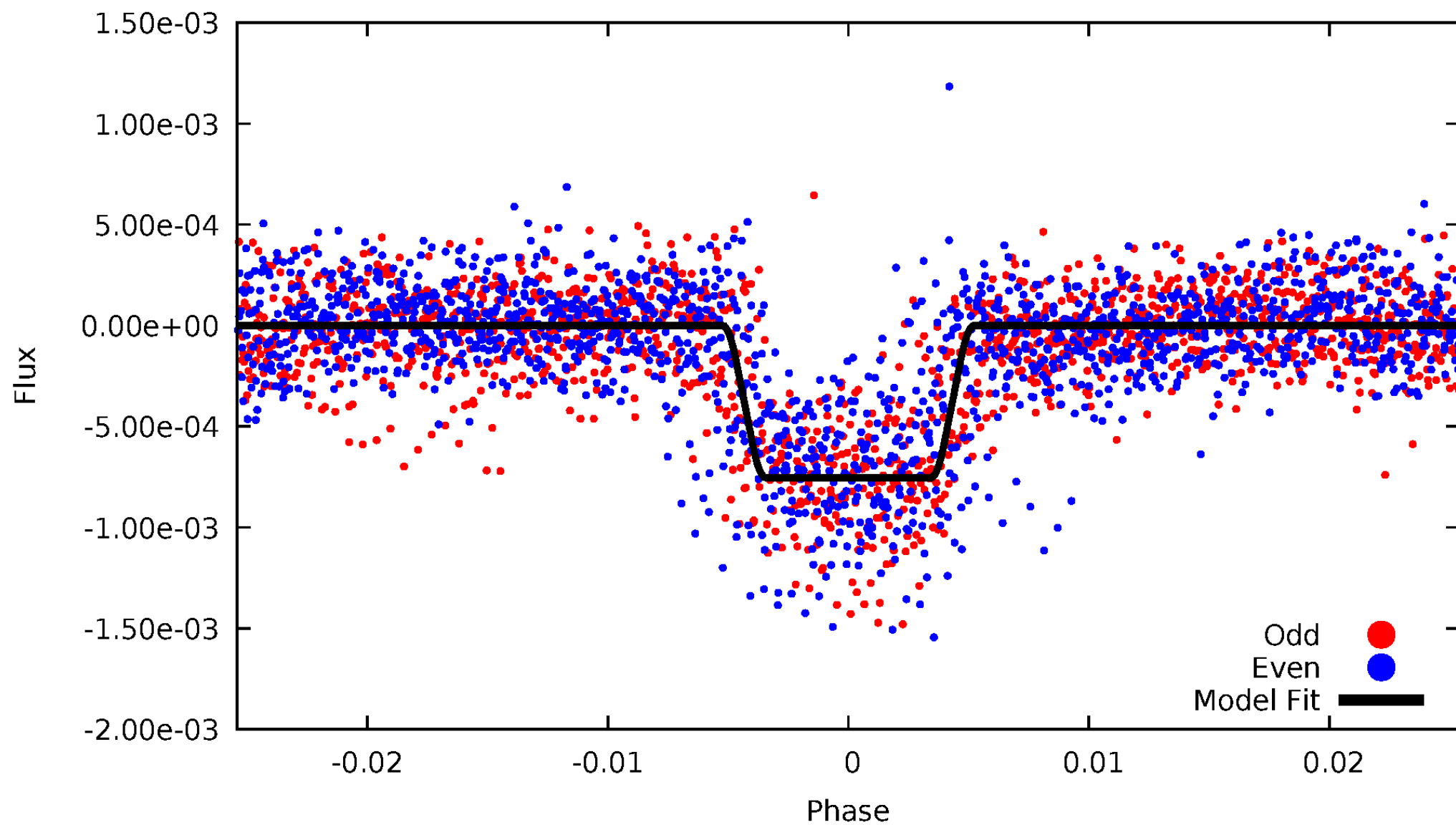
DV Odd/Even

TCE 006677841-02



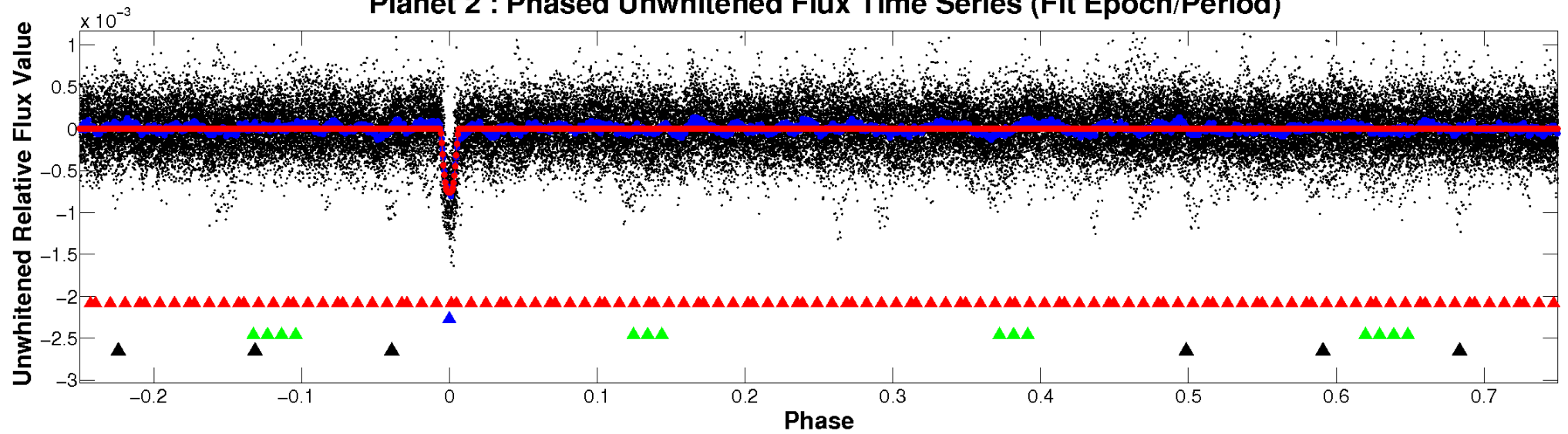
ALT Odd/Even

TCE 006677841-02

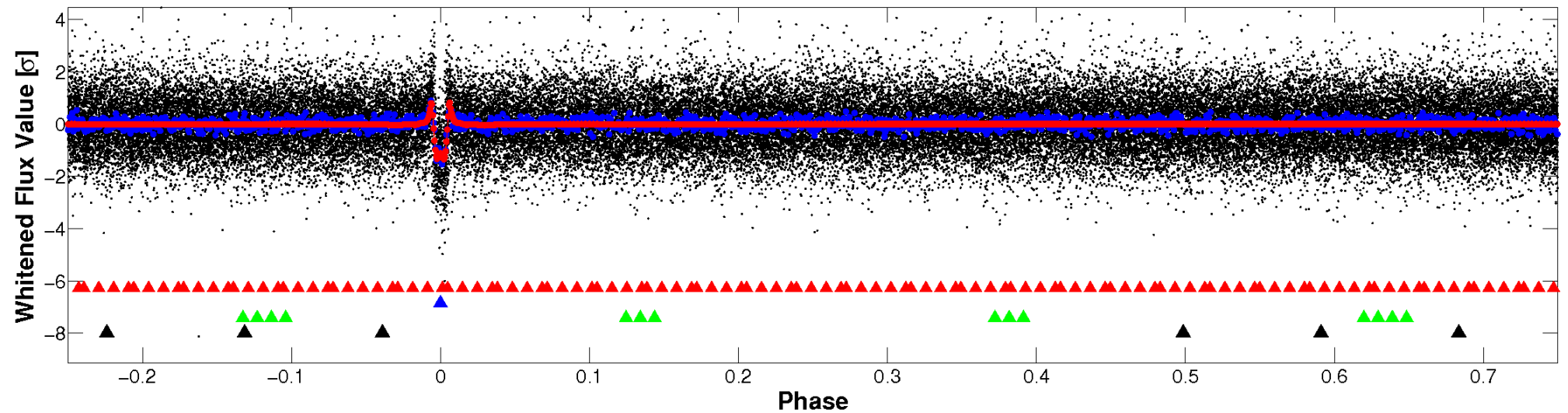


Non-Whitened Vs. Whitened Light Curve

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

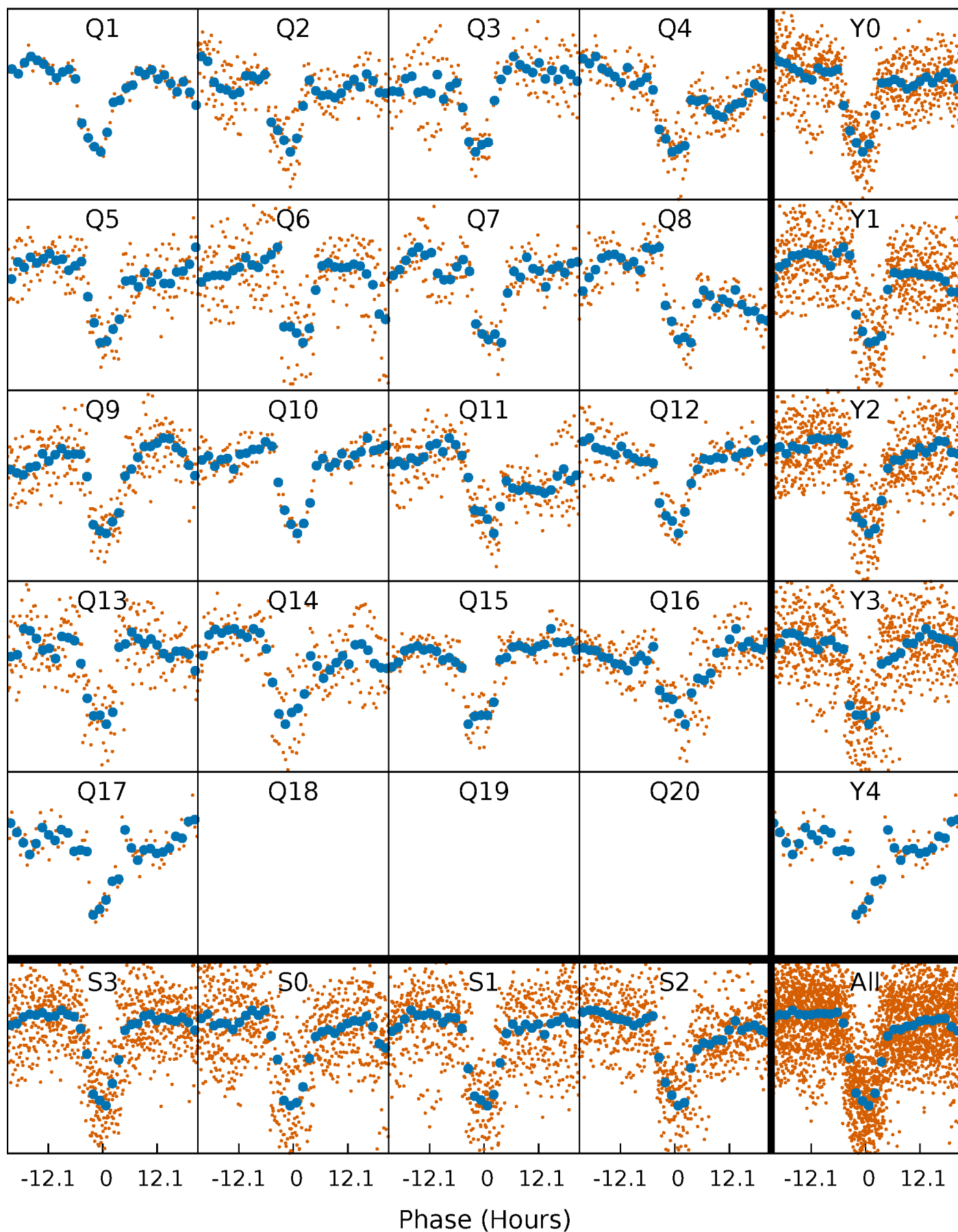


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



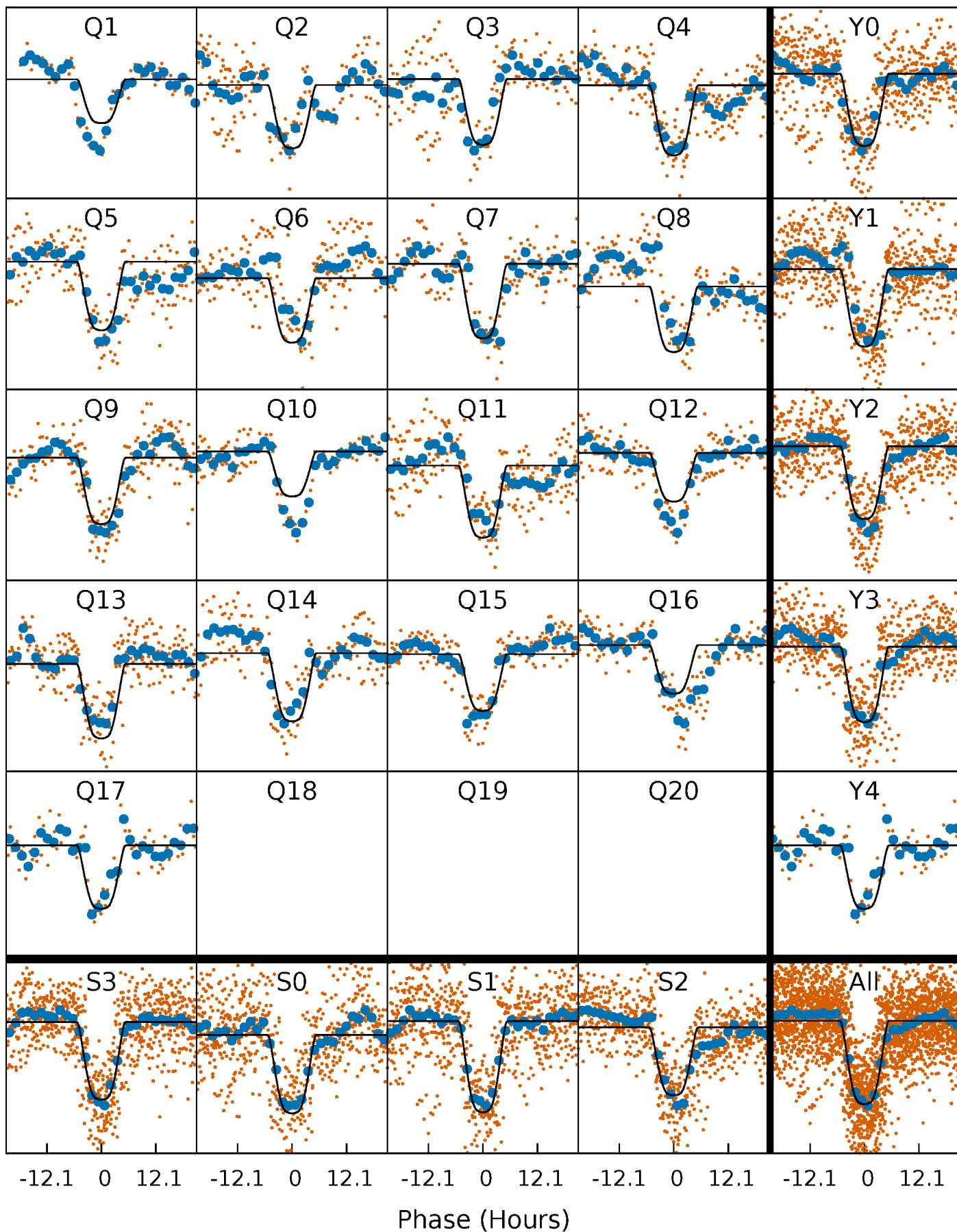
PDC Quarter-Phased Transit Curves

TCE 006677841-02 $P = 35.734006$ Days $T_0 = 151.141353$ (BKJD)



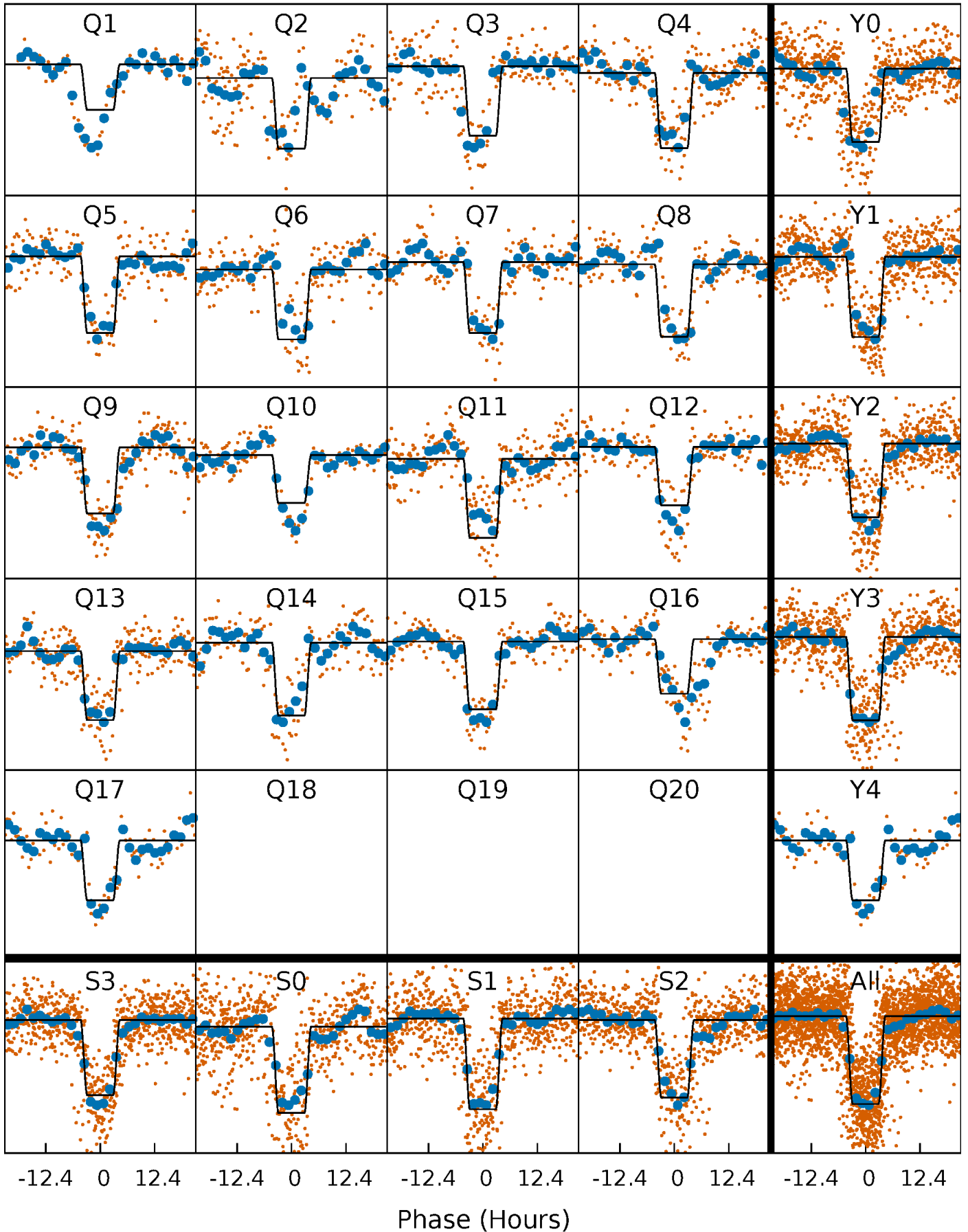
DV Quarter-Phased Transit Curves

TCE 006677841-02 P= 35.734006 Days $T_0=151.141353$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

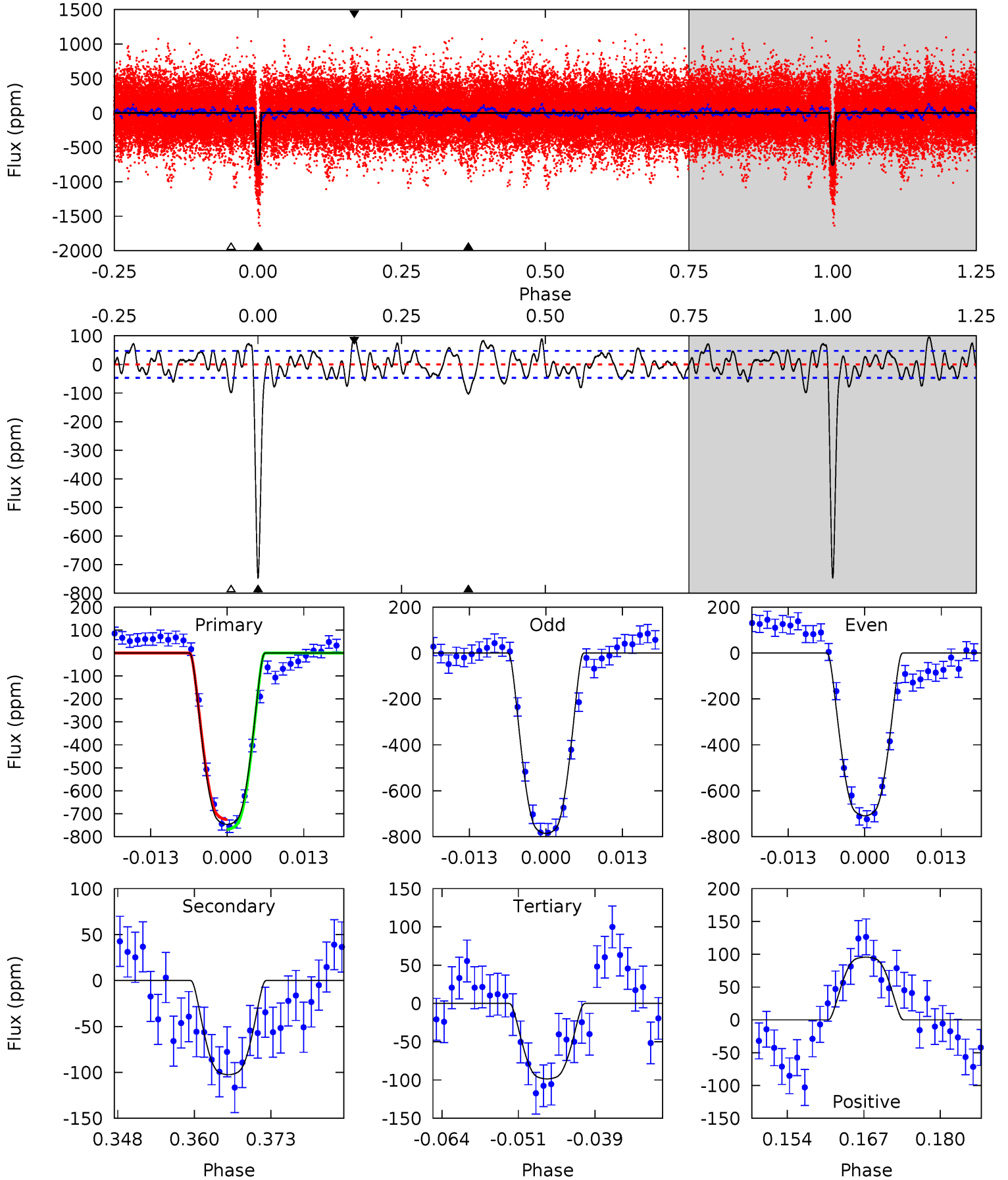
TCE 006677841-02 P= 35.732691 Days $T_0=151.173144$ (BKJD)



DV Model-Shift Uniqueness Test

006677841-02, $P = 35.734006$ Days, $E = 115.407347$ Days

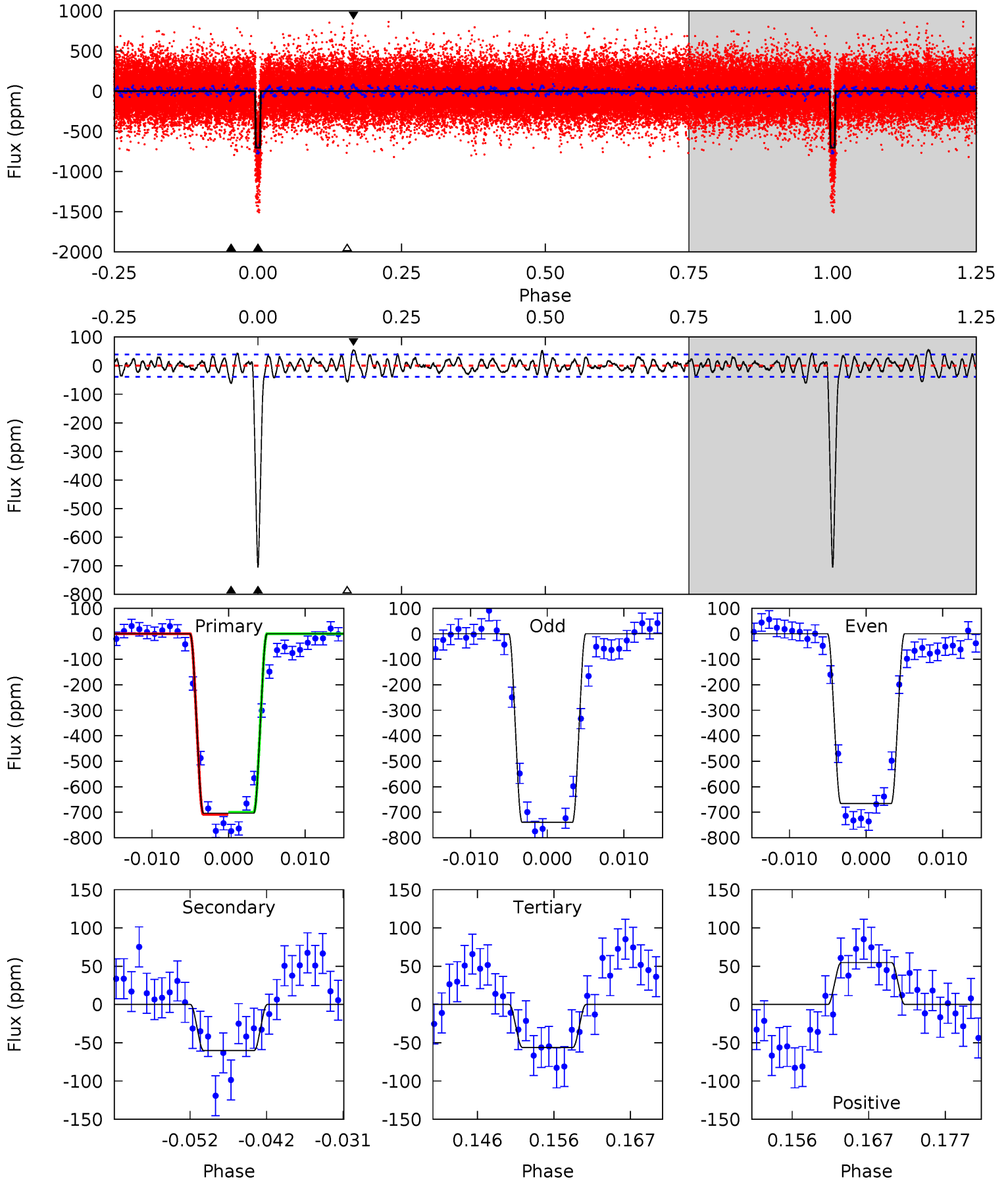
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
79.0	10.8	10.4	10.1	4.98	2.49	3.70	68.5	68.8	0.42	0.73	4.08	1.03	0.11	2.23



Alt Model-Shift Uniqueness Test

006677841-02, P = 35.732691 Days, E = 115.440453 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
90.4	7.73	7.21	7.04	5.02	2.56	2.24	83.2	83.4	0.52	0.69	4.72	0.95	0.07	0.49



Stellar Parameters For KIC 006677841

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6366^{+116}_{-116}	$4.045^{+0.196}_{-0.098}$	$-0.200^{+0.150}_{-0.150}$	$1.697^{+0.285}_{-0.380}$	$1.164^{+0.134}_{-0.110}$	$0.336^{+0.325}_{-0.102}$
	+2%/-2%	+5%/-2%	+75%/-75%	+17%/-22%	+12%/-9%	+97%/-30%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 006677841-02 / KOI 1236.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-103±9	$5.89^{+0.57}_{-0.71}$	1071^{+54}_{-65}	3913^{+85}_{-89}	82^{+25}_{-14}
Alt.	-60±8	$5.02^{+0.55}_{-0.65}$	1072^{+51}_{-70}	3769^{+102}_{-99}	67^{+22}_{-16}

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

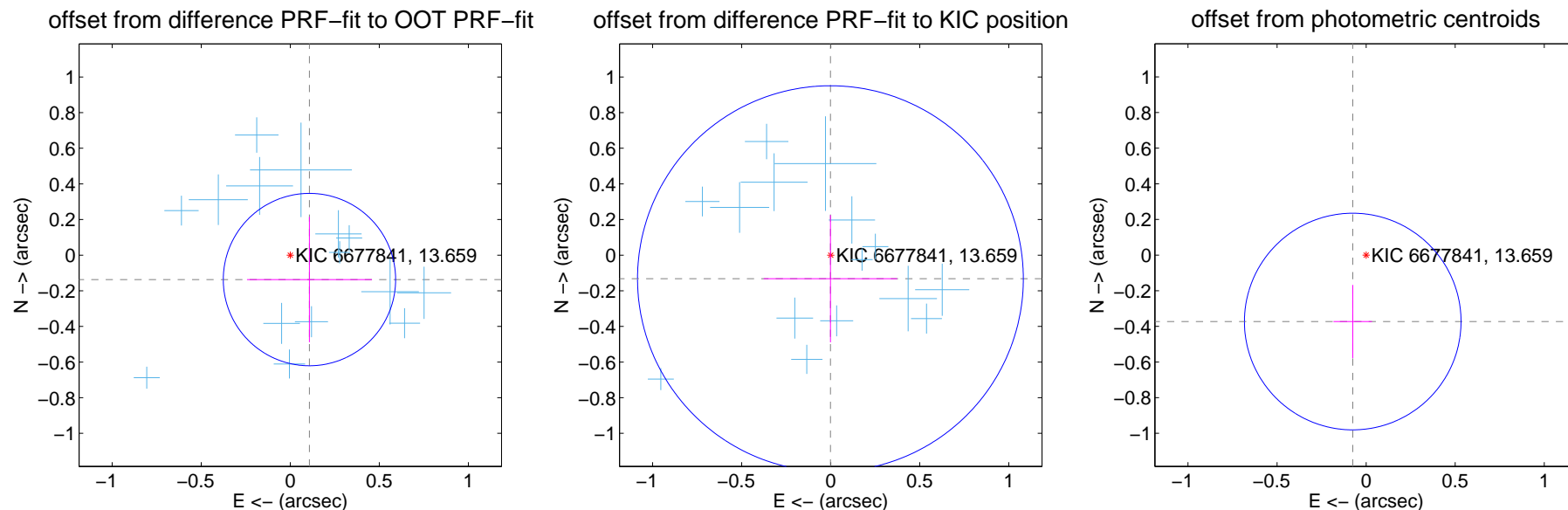
DV Centroid Data

Supplemental centroid analysis for 006677841-02. Kepler magnitude: 13.66. Transit SNR 27.64

There are 15 quarters with good PRF difference image offsets

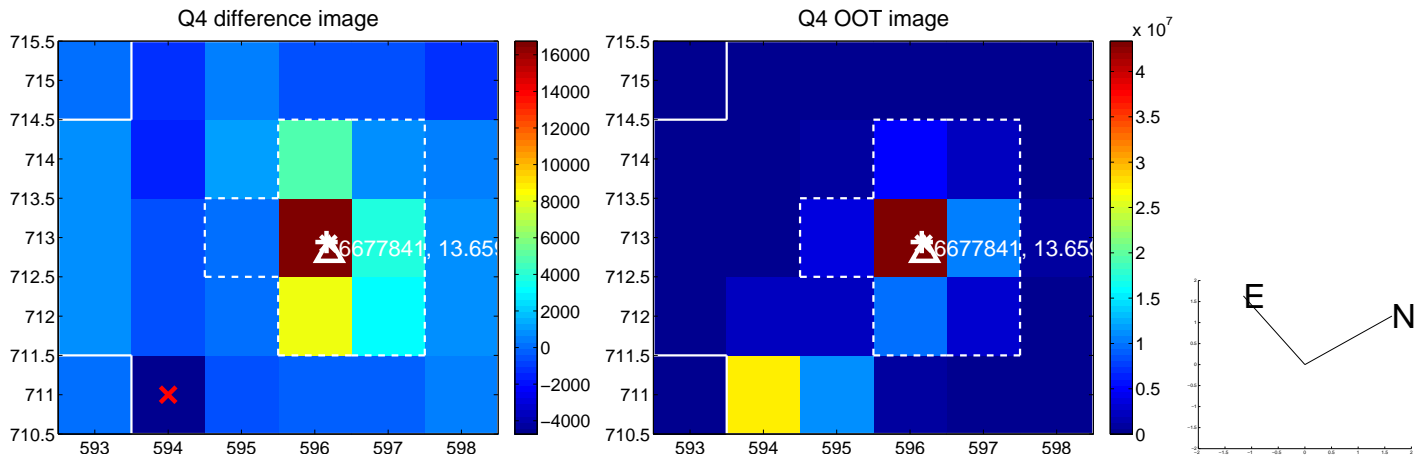
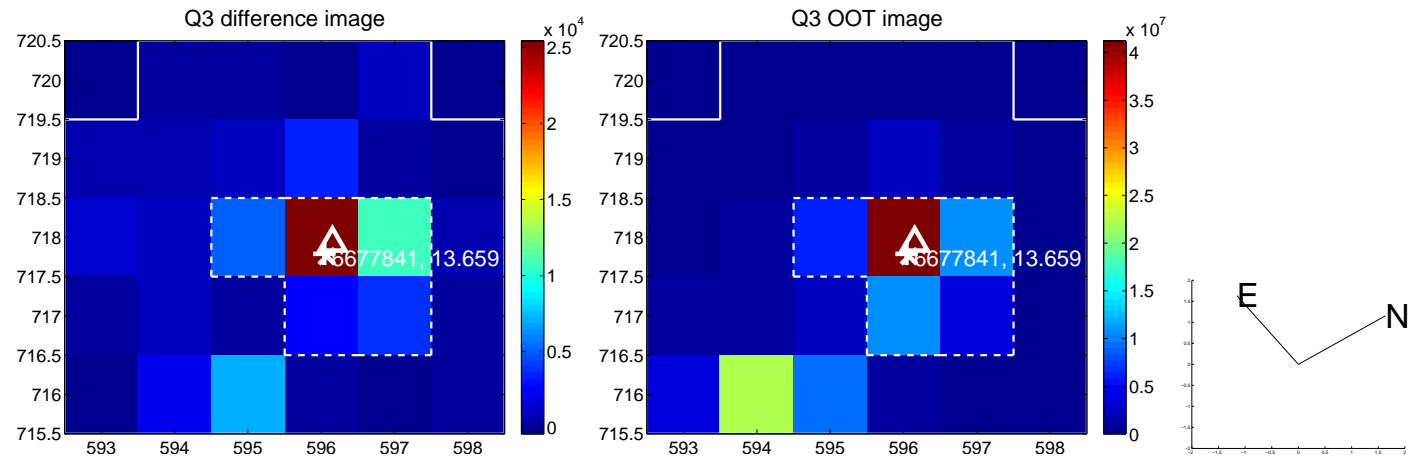
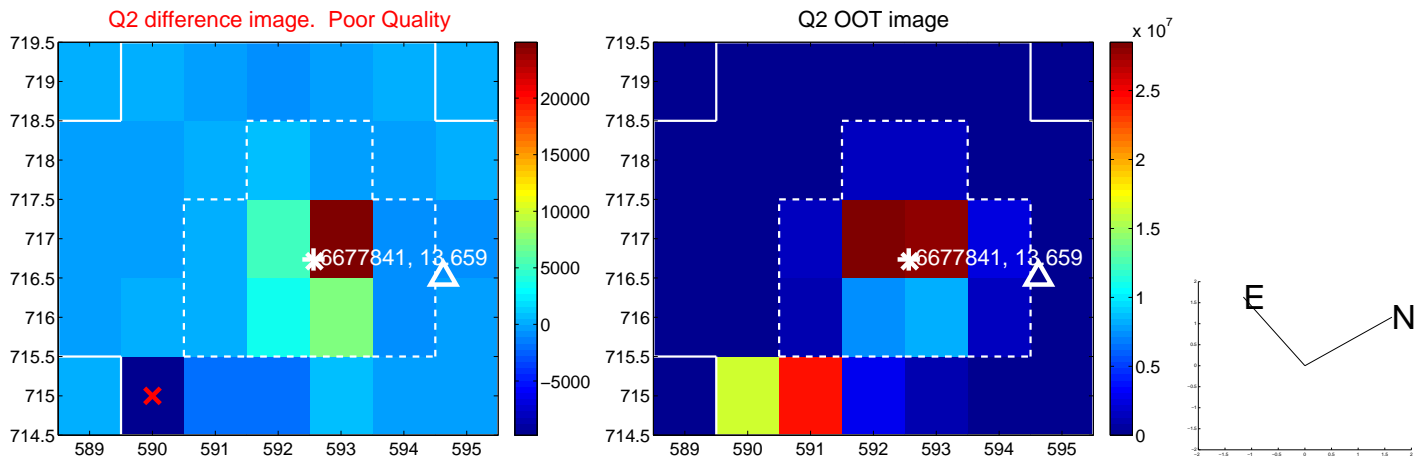
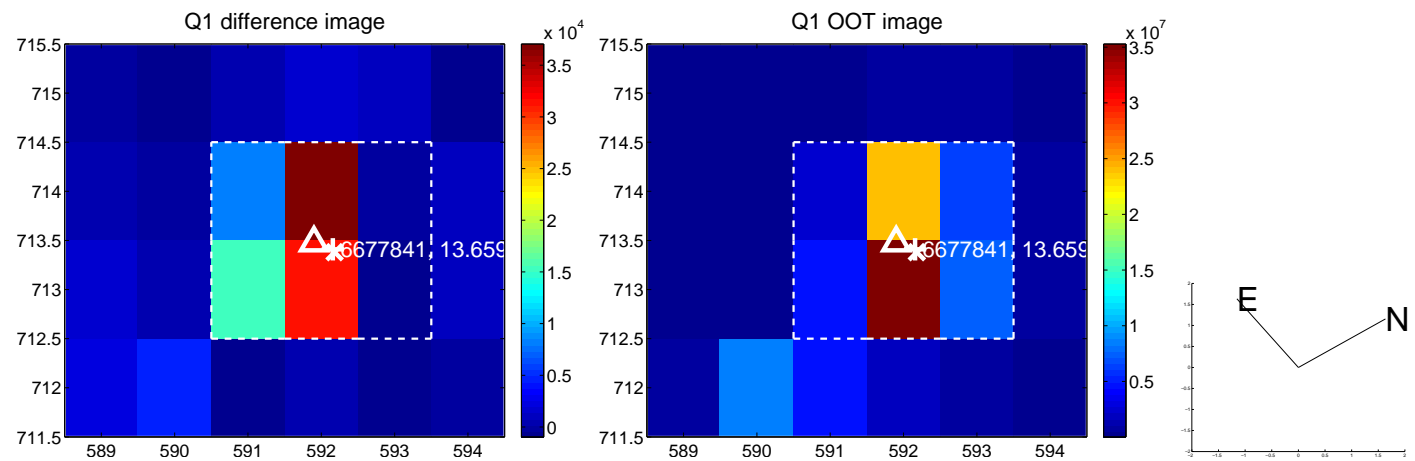
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.174 ± 0.161	1.08	-0.108 ± 0.351	-0.137 ± 0.352
PRF-fit source offset from KIC position	0.132 ± 0.361	0.37	0.002 ± 0.375	-0.132 ± 0.357
photometric centroid source offset	0.38 ± 0.20	1.88	0.08 ± 0.11	-0.37 ± 0.21

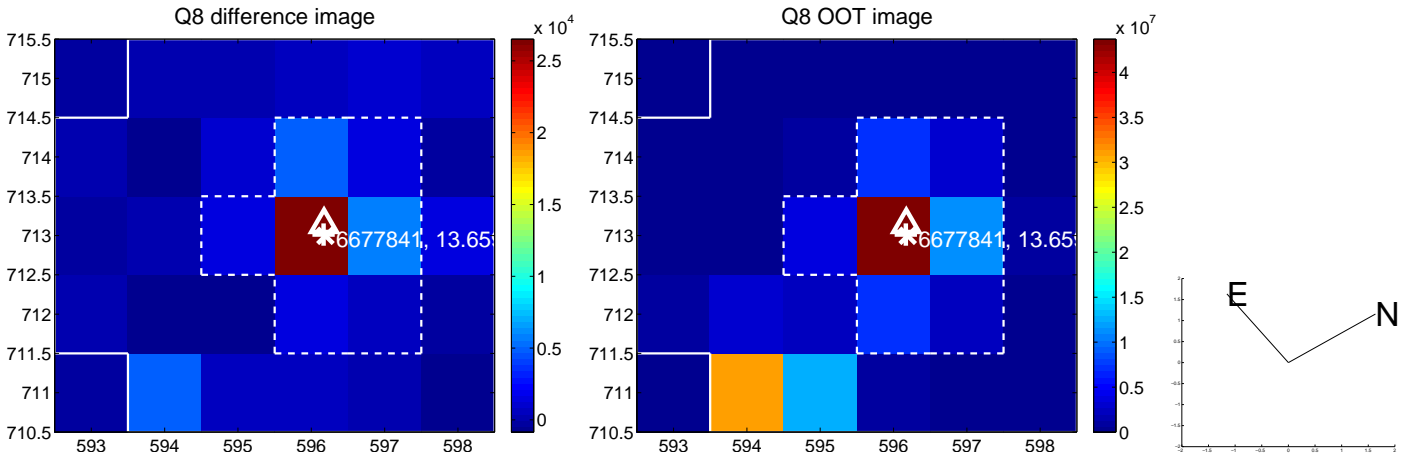
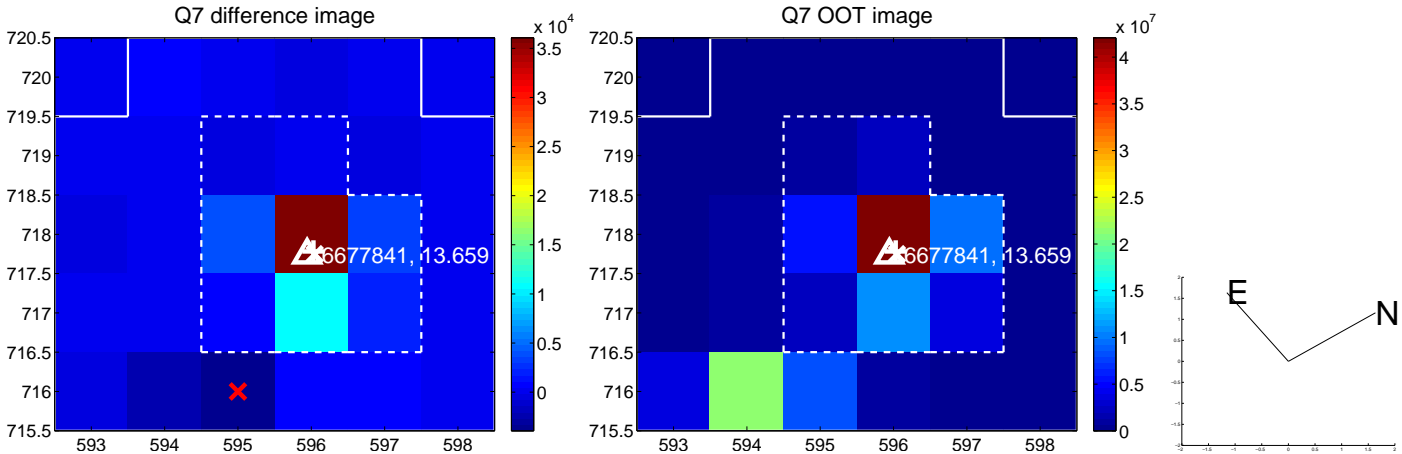
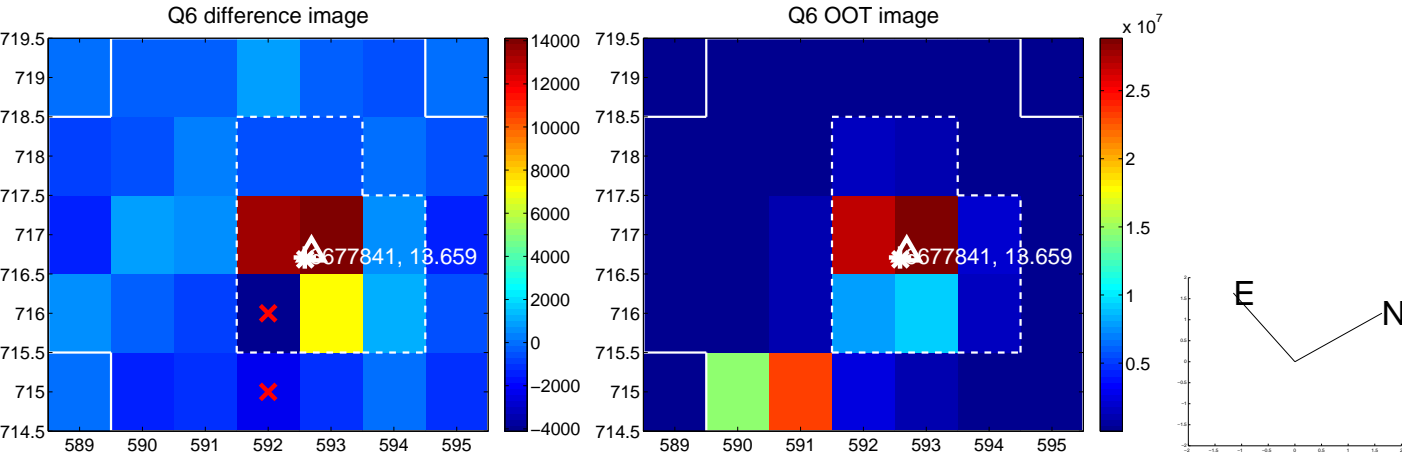
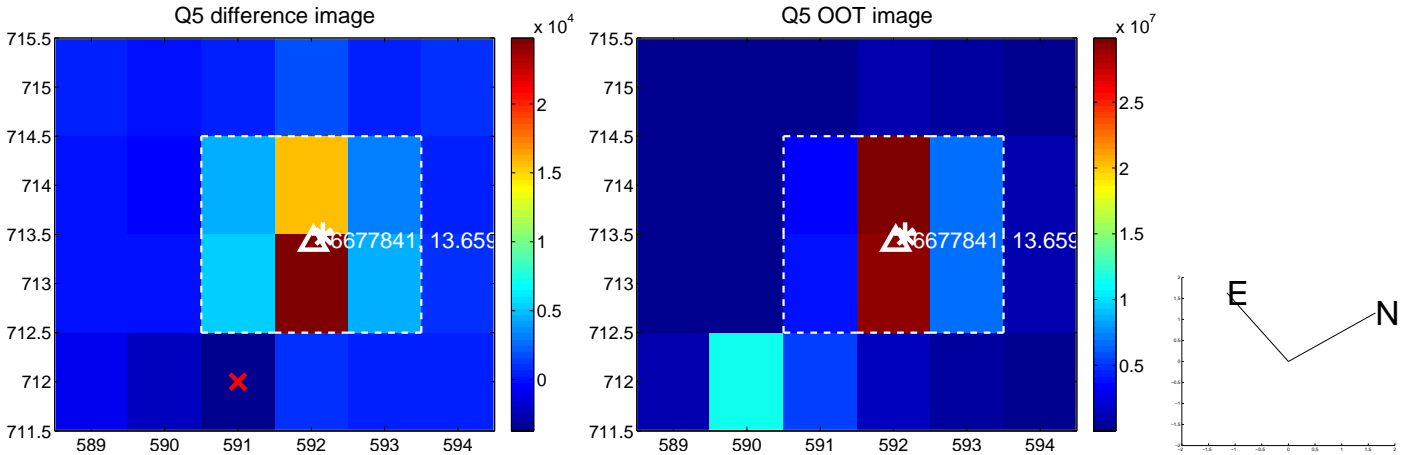


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

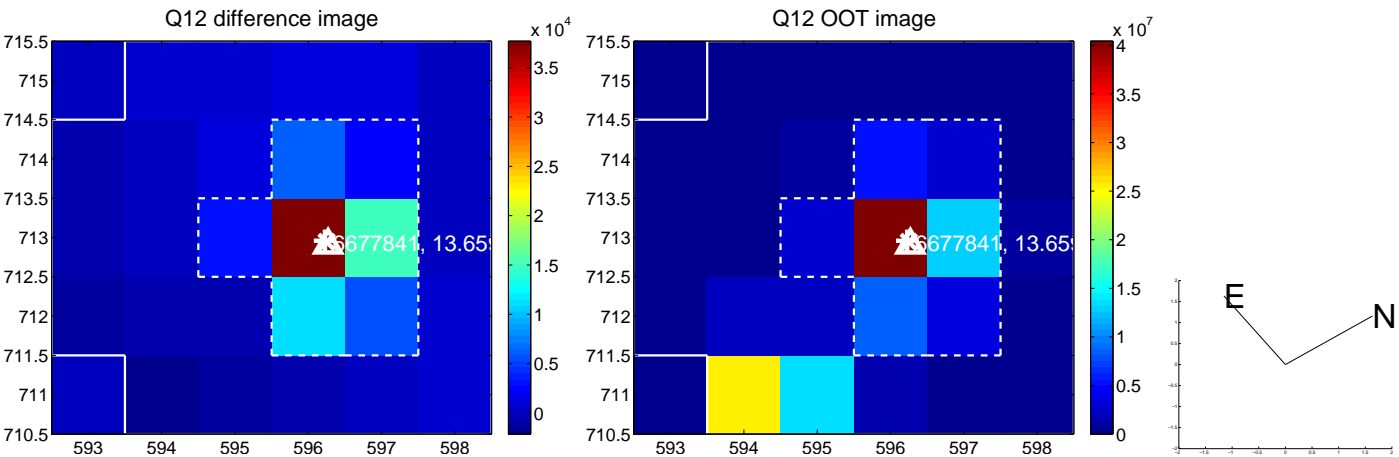
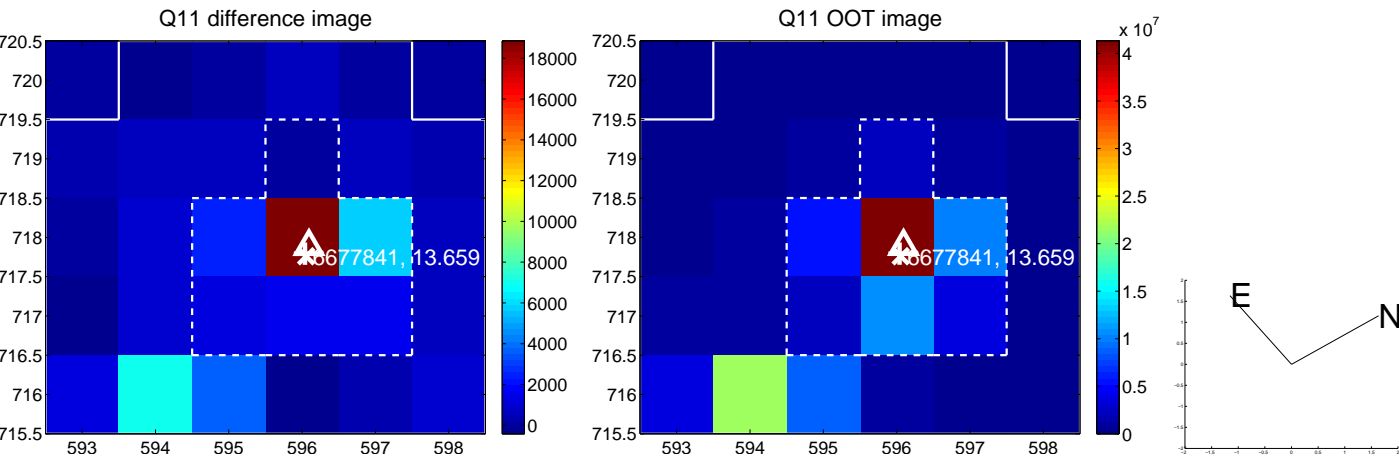
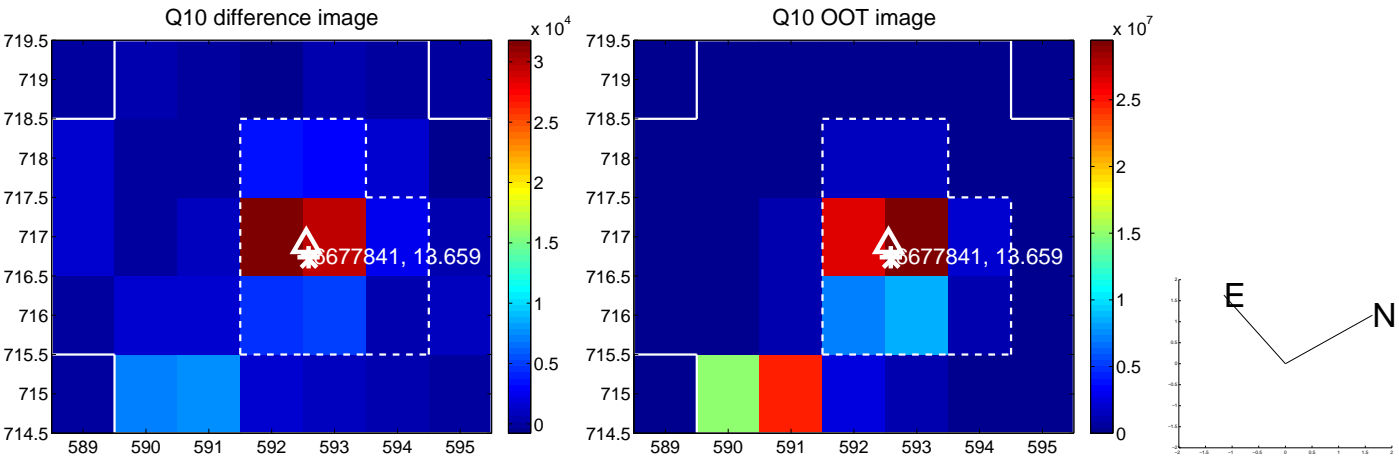
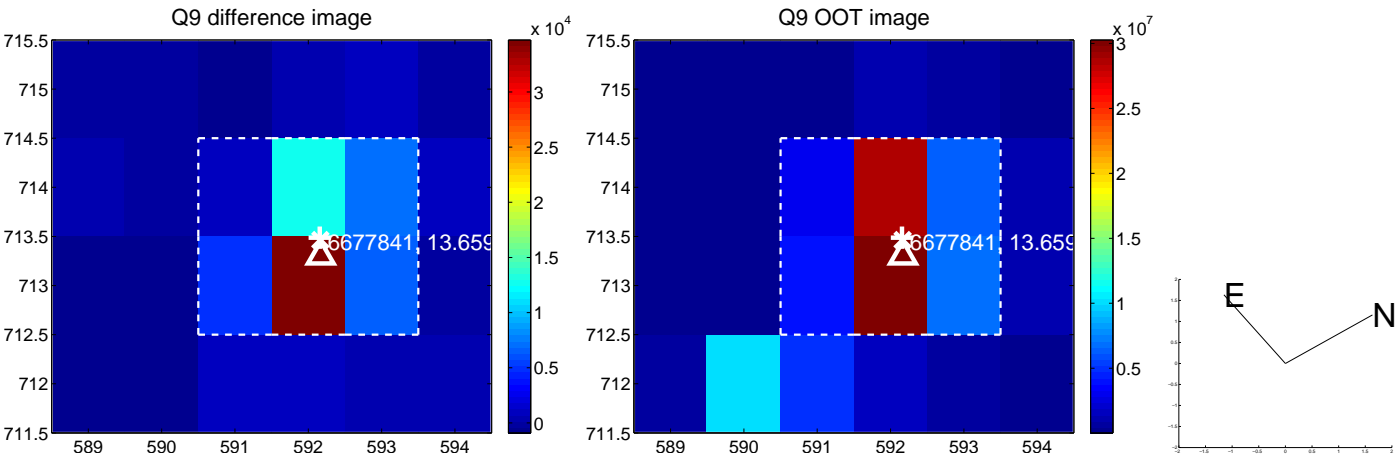
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



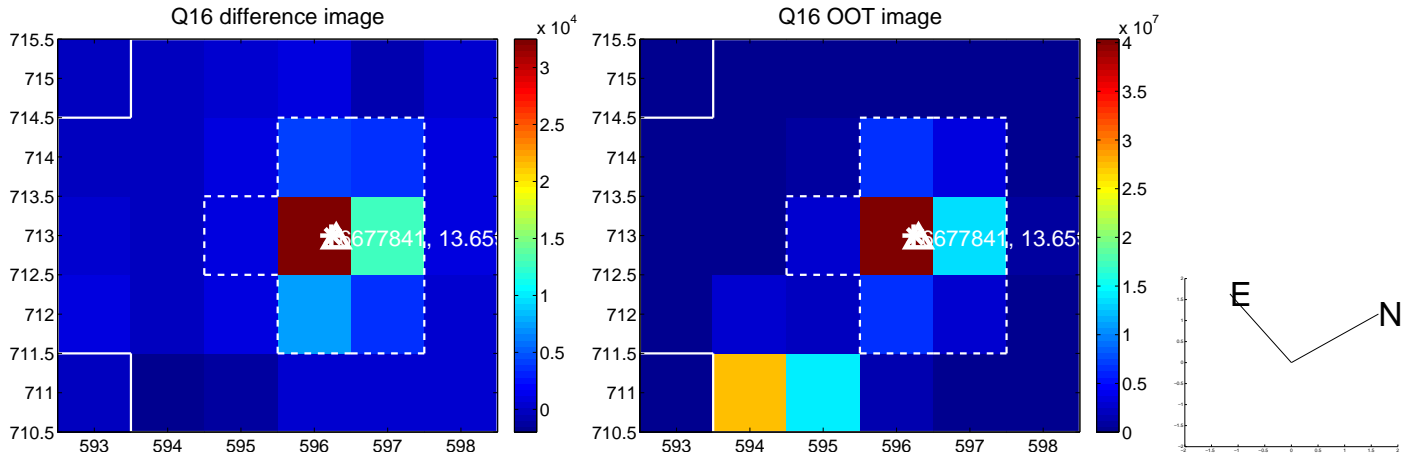
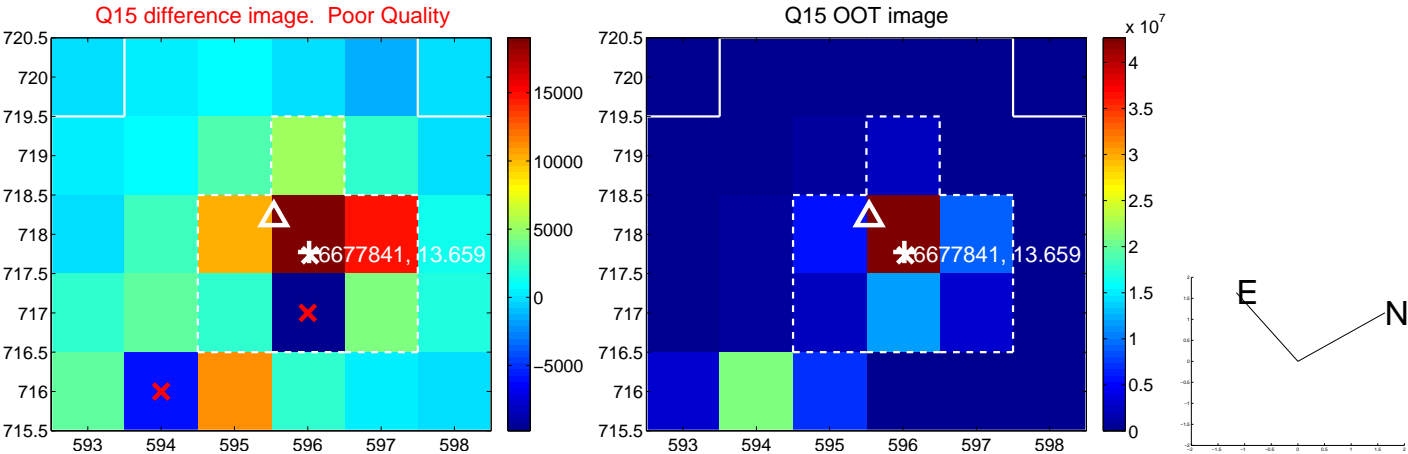
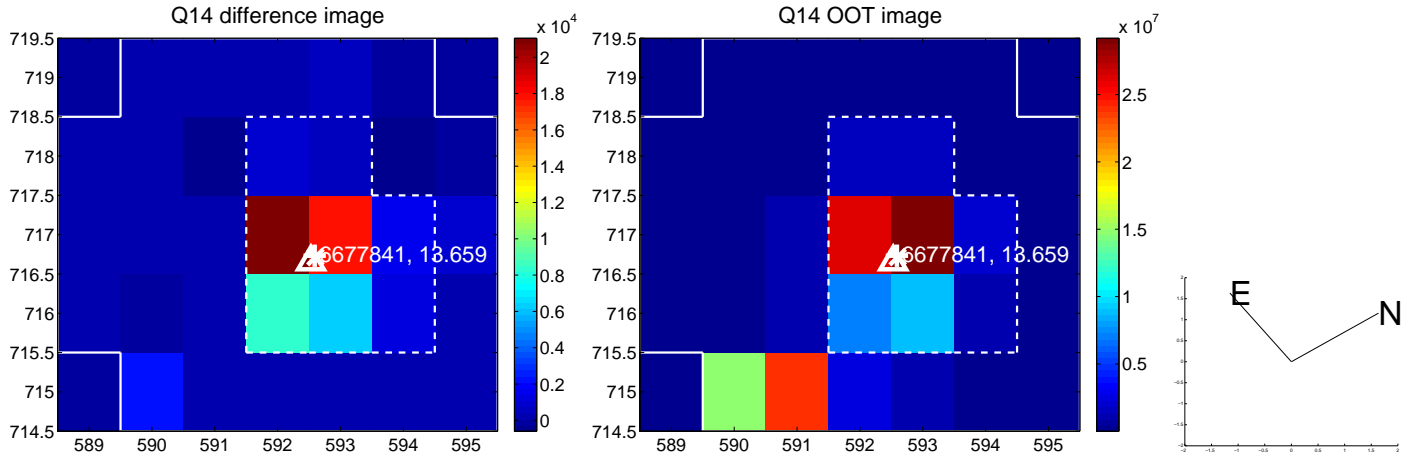
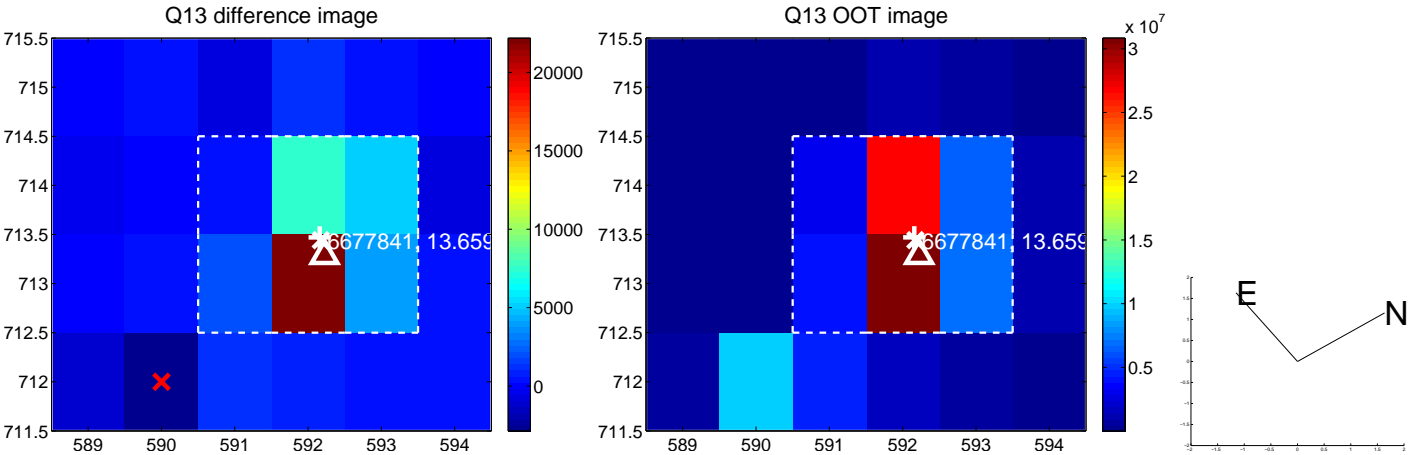
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



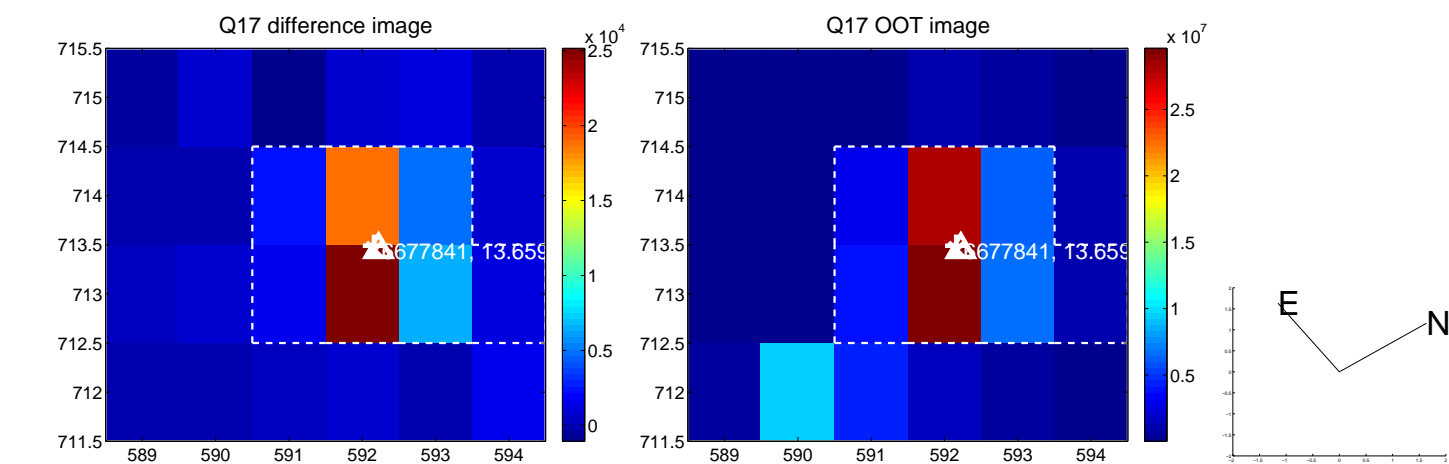
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



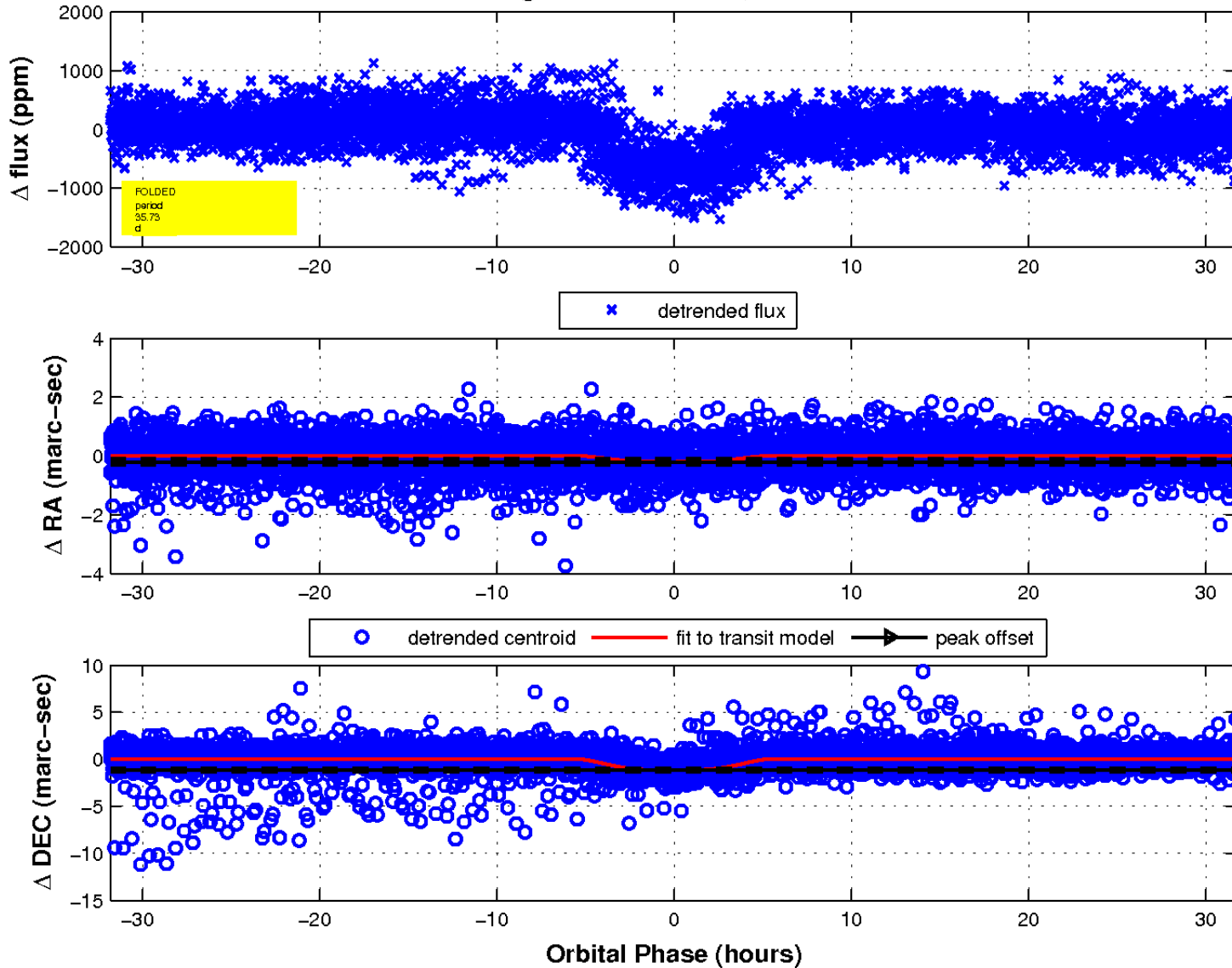
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

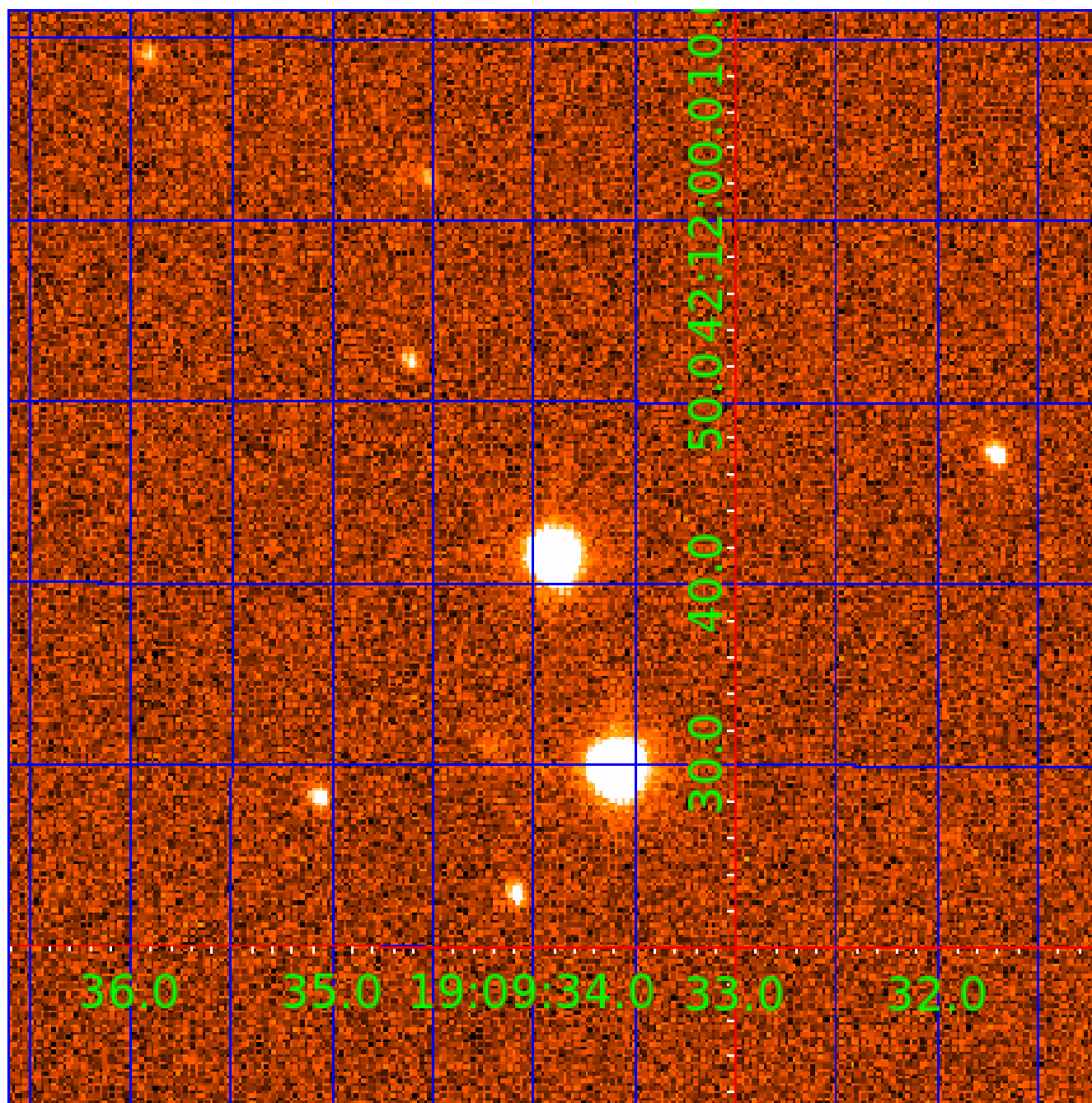


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 006677841

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})
006677841-01	OBS	1236.02	12.309758	137.683153	344.9	6.039	26.1	28.1	1.70	6366	3.70	351.41
006677841-02	OBS	1236.01	35.734006	151.141353	762.8	10.600	23.6	27.6	1.70	6366	5.96	84.86
006677841-03	OBS	1236.04	98.353952	217.871281	380.7	11.315	9.6	10.0	1.70	6366	3.64	22.00
006677841-04	OBS	No	217.709218	311.893055	578.6	8.224	9.4	10.1	1.70	6366	4.41	7.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006677841-01	OBS	FP	0.24	1	0	0	0	LPP_DV
006677841-02	OBS	FP	0.09	1	0	0	0	LPP_DV
006677841-03	OBS	PC	0.94	0	0	0	0	NO_COMMENT
006677841-04	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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

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

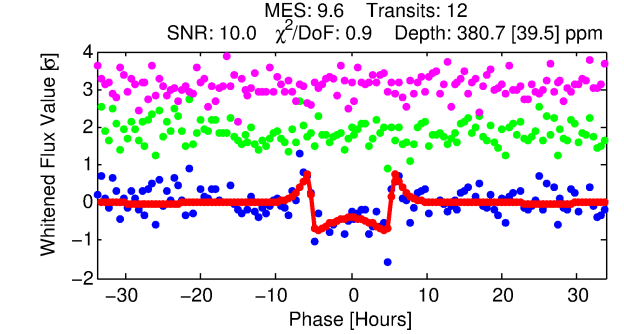
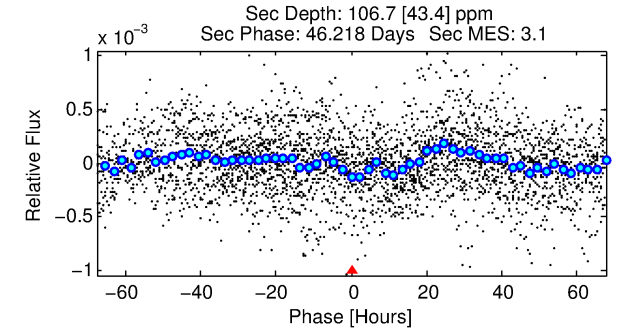
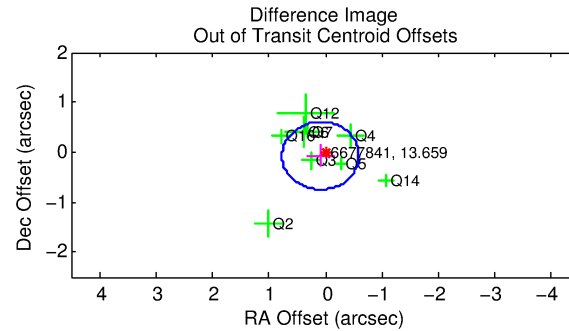
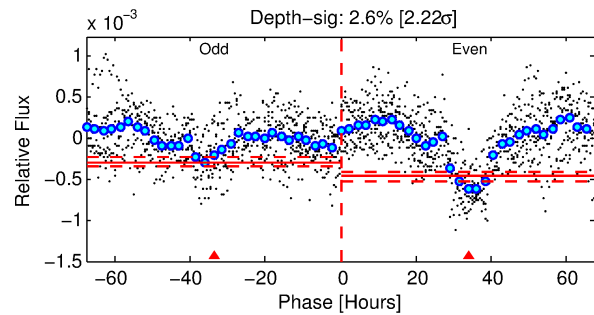
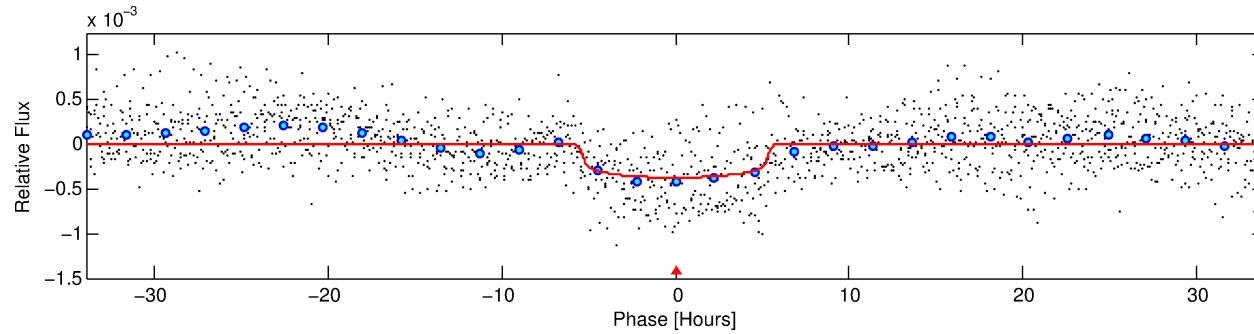
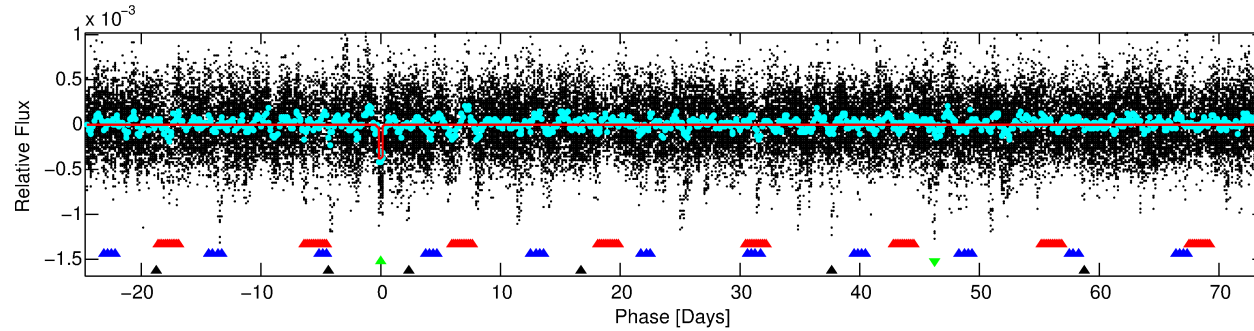
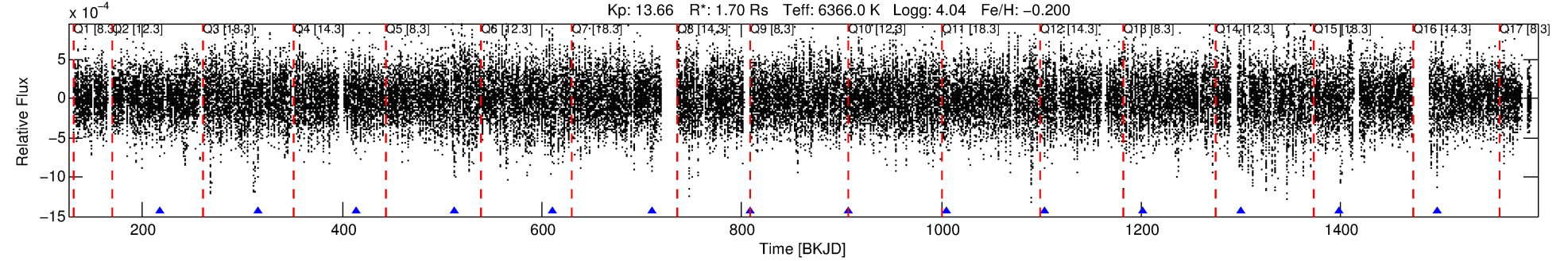
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006677841-03

No Significant Match Found

DV One-Page Summary

KIC: 6677841 Candidate: 3 of 4 Period: 98.354 d
KOI: K01236 Name: Kepler-279 Corr: No Ephemeris Match



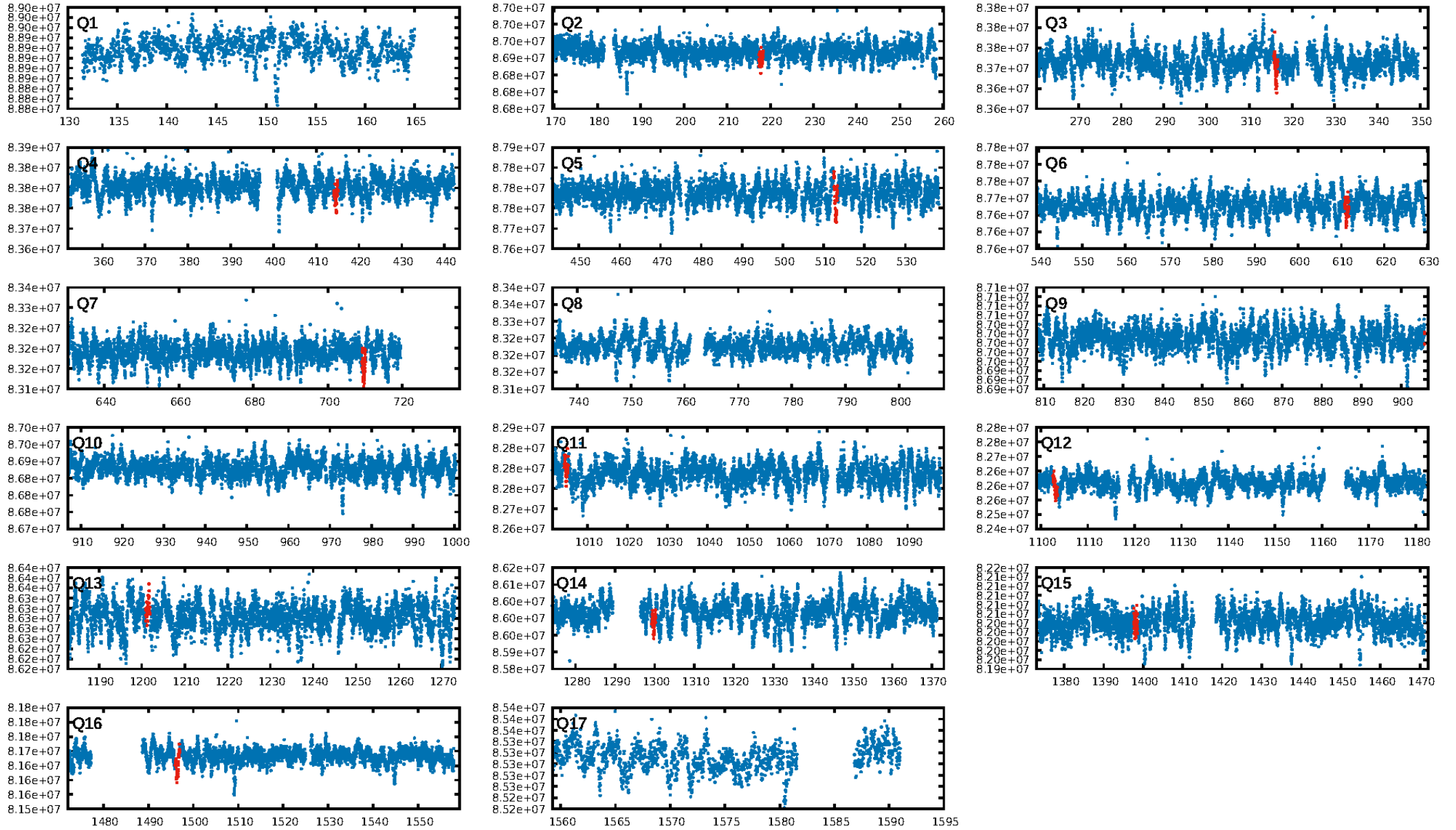
DV Fit Results:

Period = 98.35395 [0.00074] d
Epoch = 217.8713 [0.0061] BKJD
Rp/R* = 0.0197 [0.0021]
a/R* = 43.07 [18.81]
b = 0.79 [0.21]
Seff = 22.00 [7.56]
Teff = 552 [47] K
Rp = 3.64 [0.90] Re
a = 0.4389 [0.0930] AU
Ag = 853.36 [484.97] [1.76σ]
Teffp = 4615 [536] K [7.56σ]

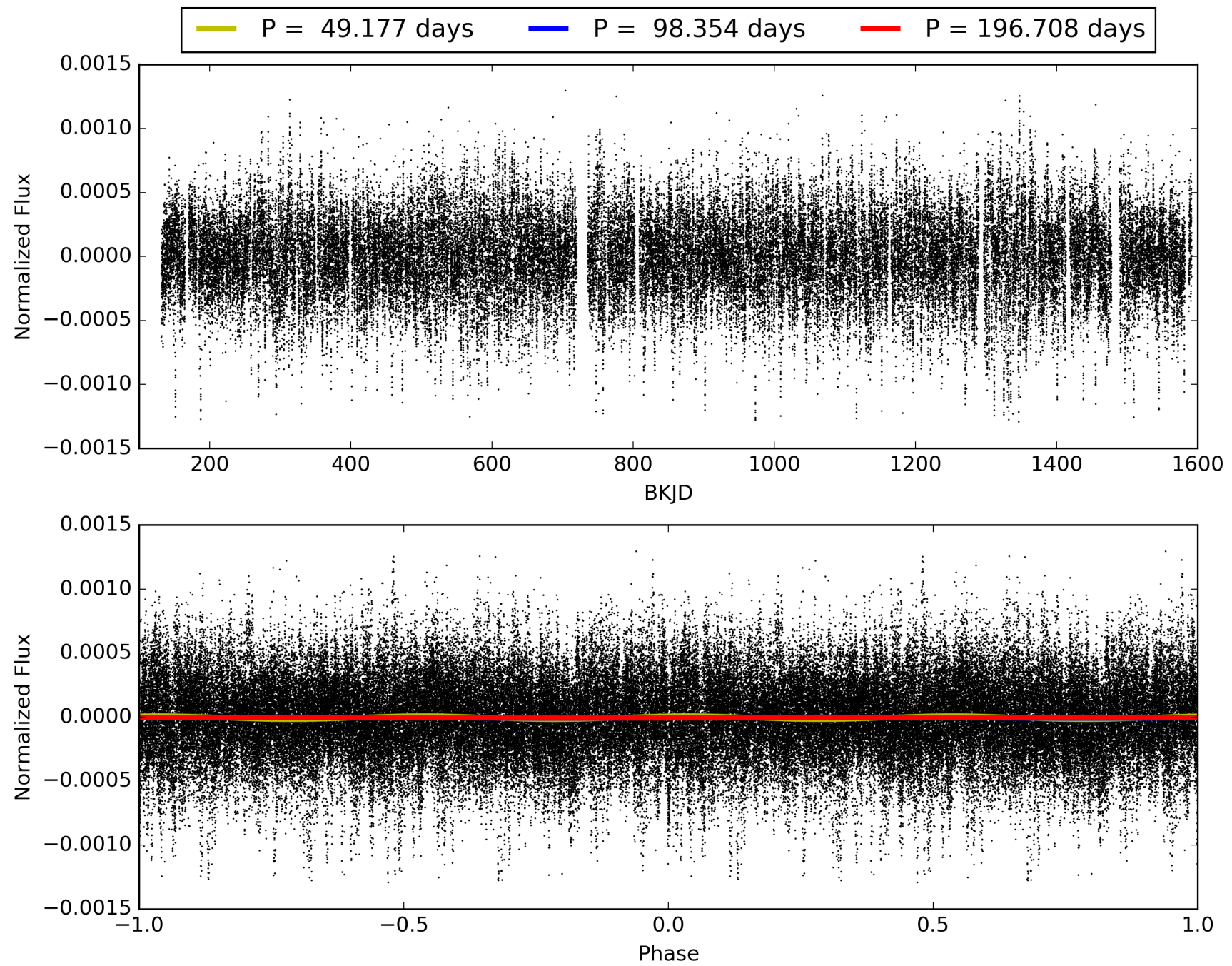
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [96.93σ]
LongPeriod-sig: 100.0% [204.79σ]
ModelChiSquare2-sig: 17.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.44e-17
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 3.685
Centroid-sig: 0.2%
Centroid-so: 0.591 arcsec [0.92σ]
OotOffset-rm: 0.115 arcsec [0.51σ]
KicOffset-rm: 0.225 arcsec [0.97σ]
OotOffset-st: 3/2/3/1 [9]
KicOffset-st: 3/2/3/1 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [10/10]

TCE 006677841-03, PDC Light Curves

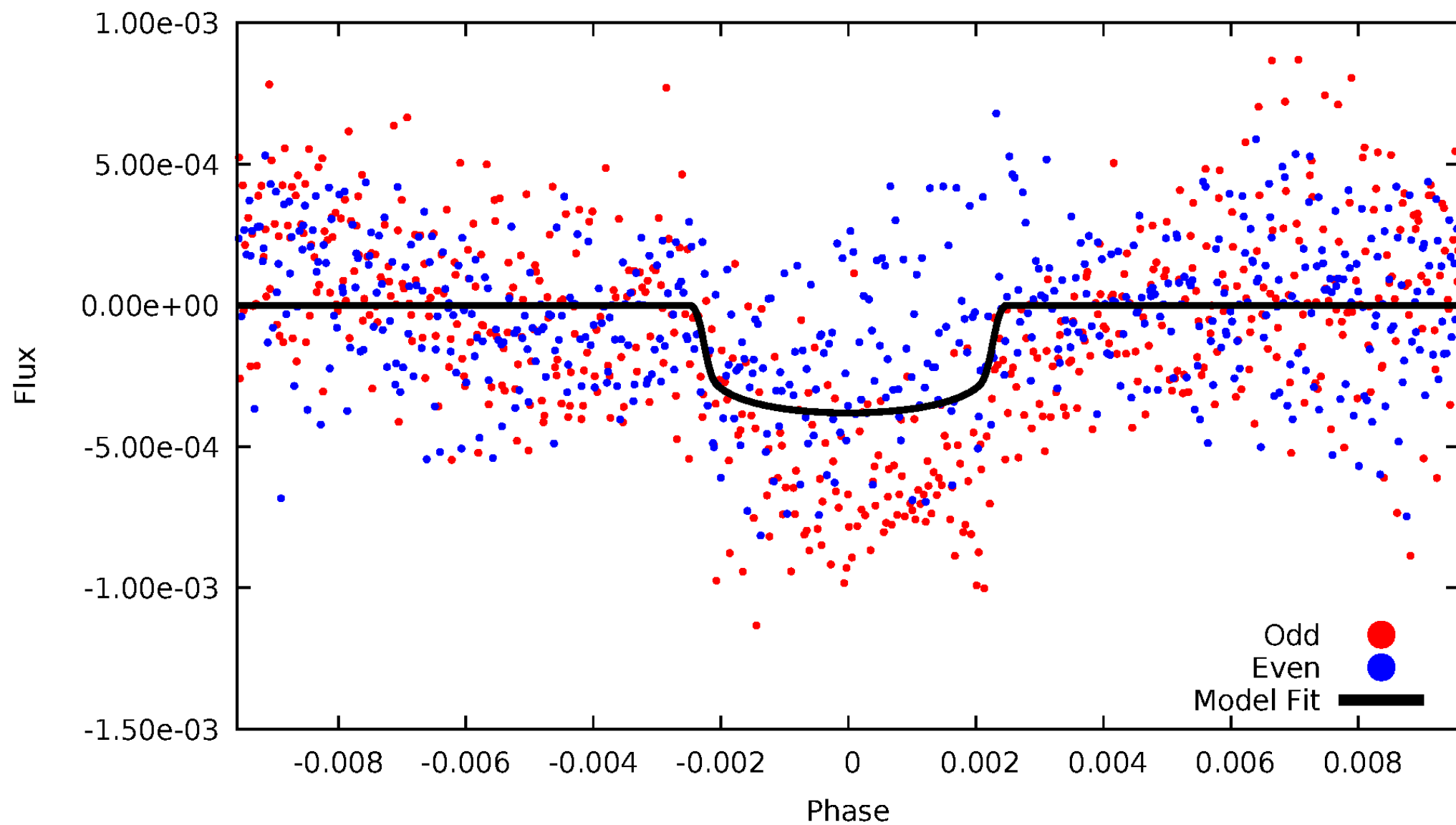


TCE 006677841-03



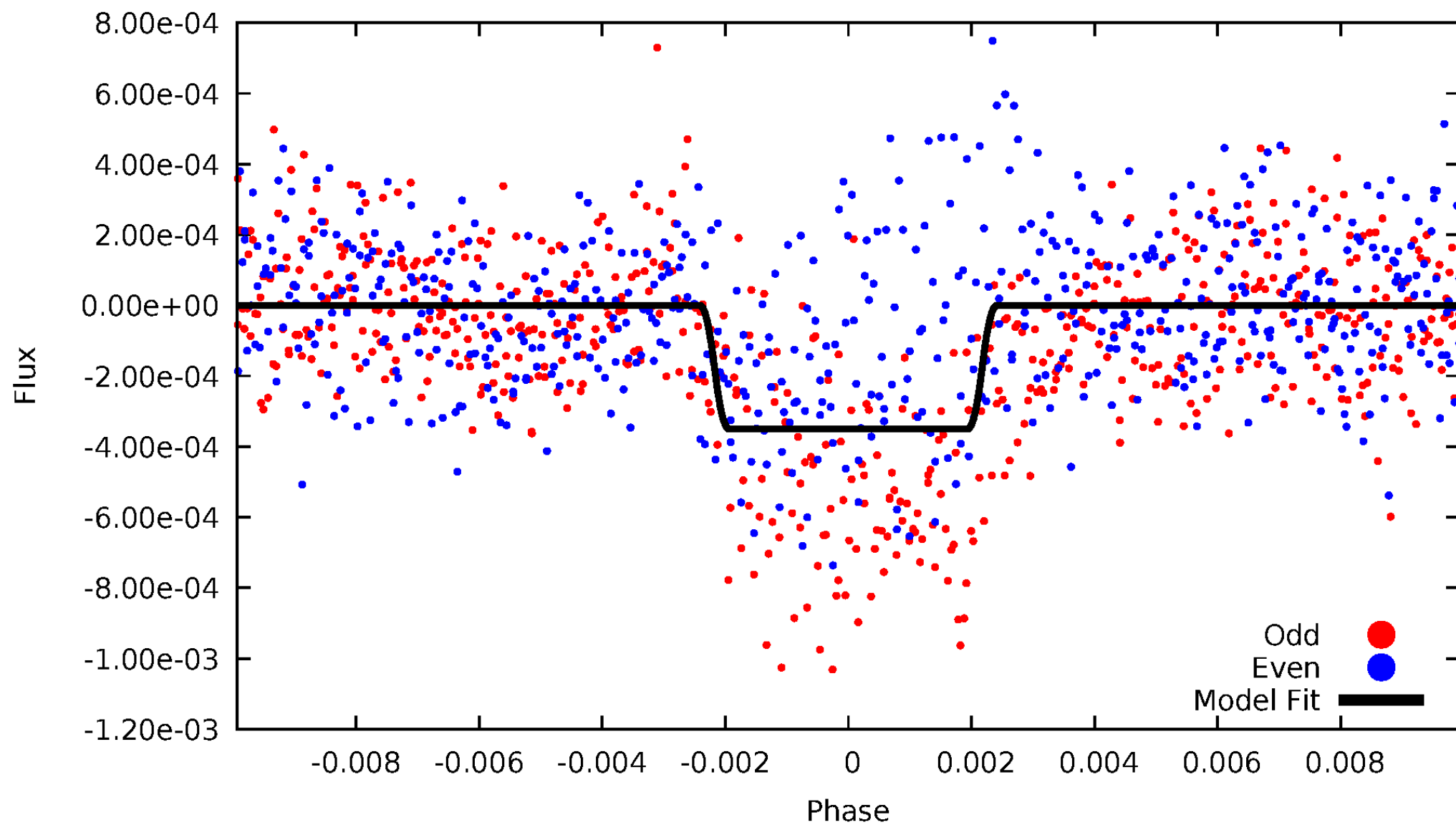
DV Odd/Even

TCE 006677841-03

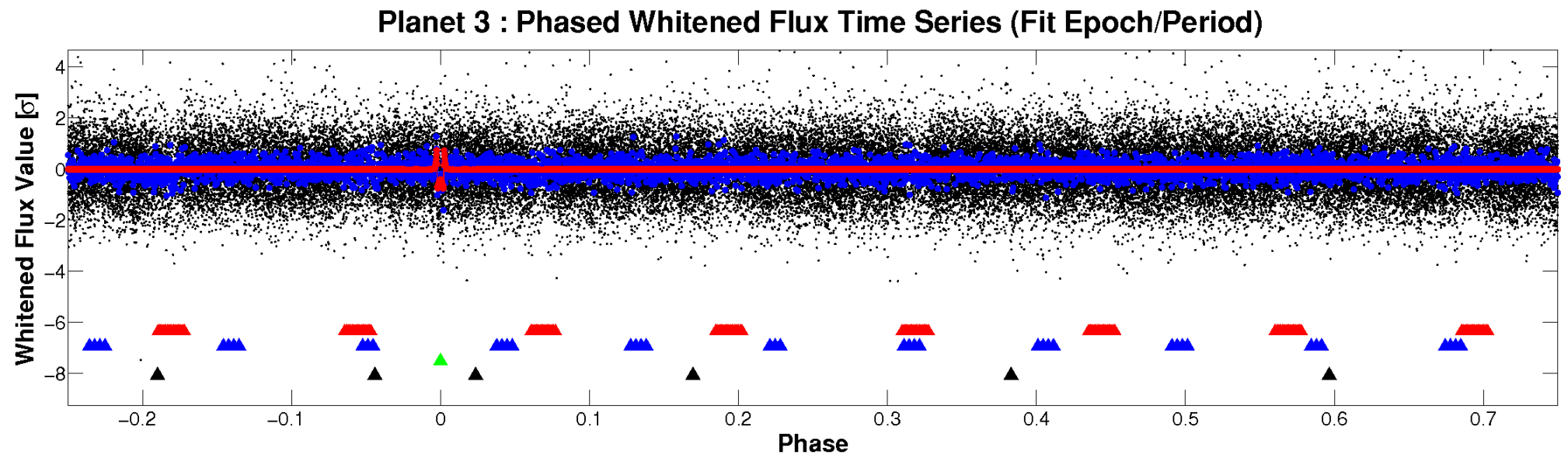
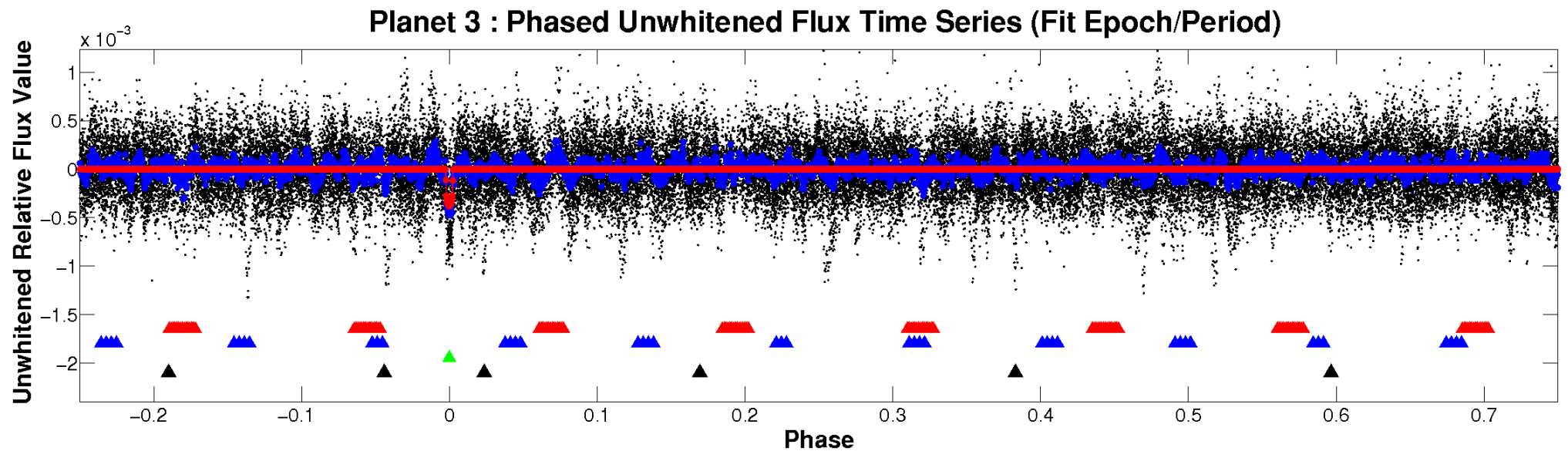


ALT Odd/Even

TCE 006677841-03

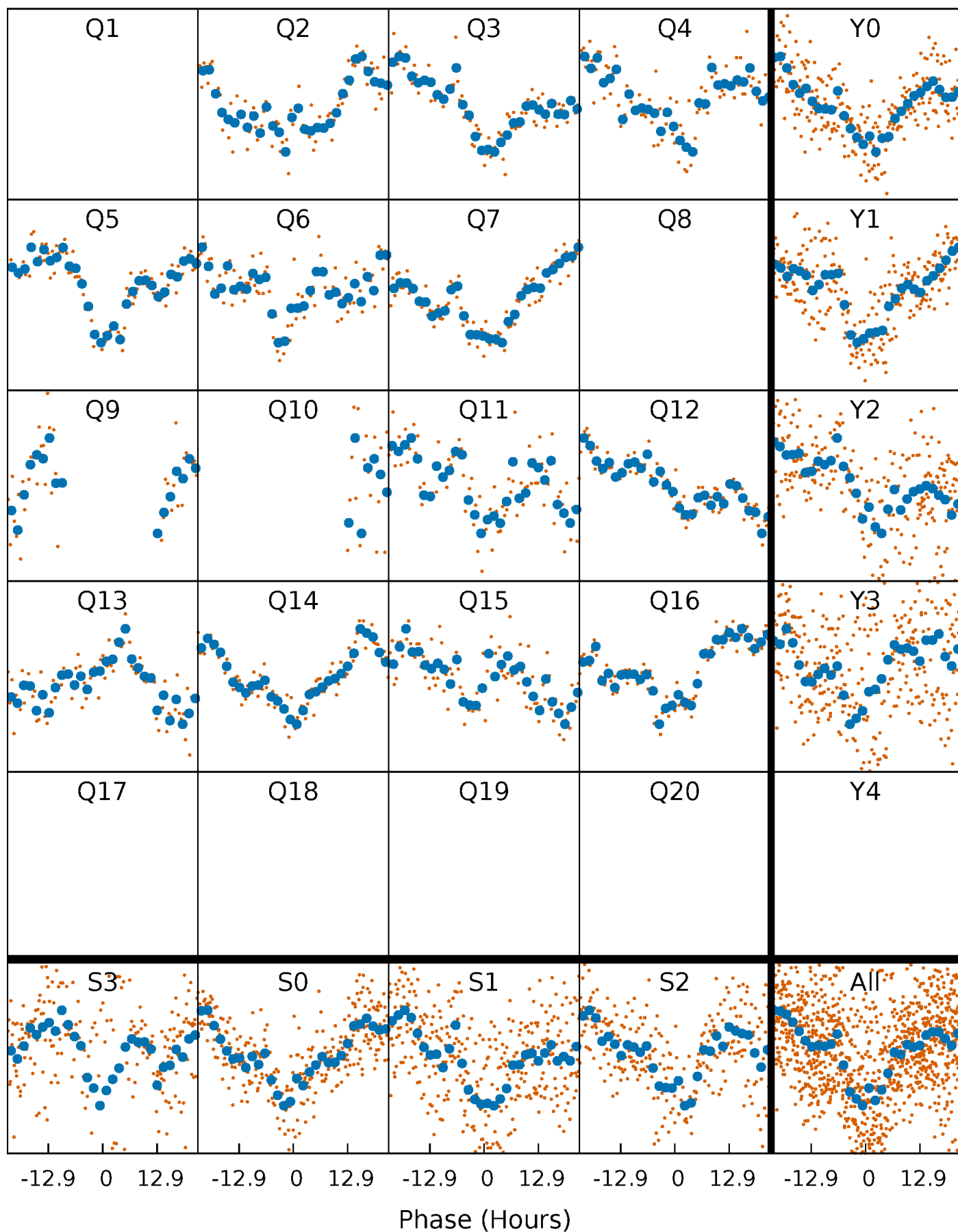


Non-Whitened Vs. Whitened Light Curve



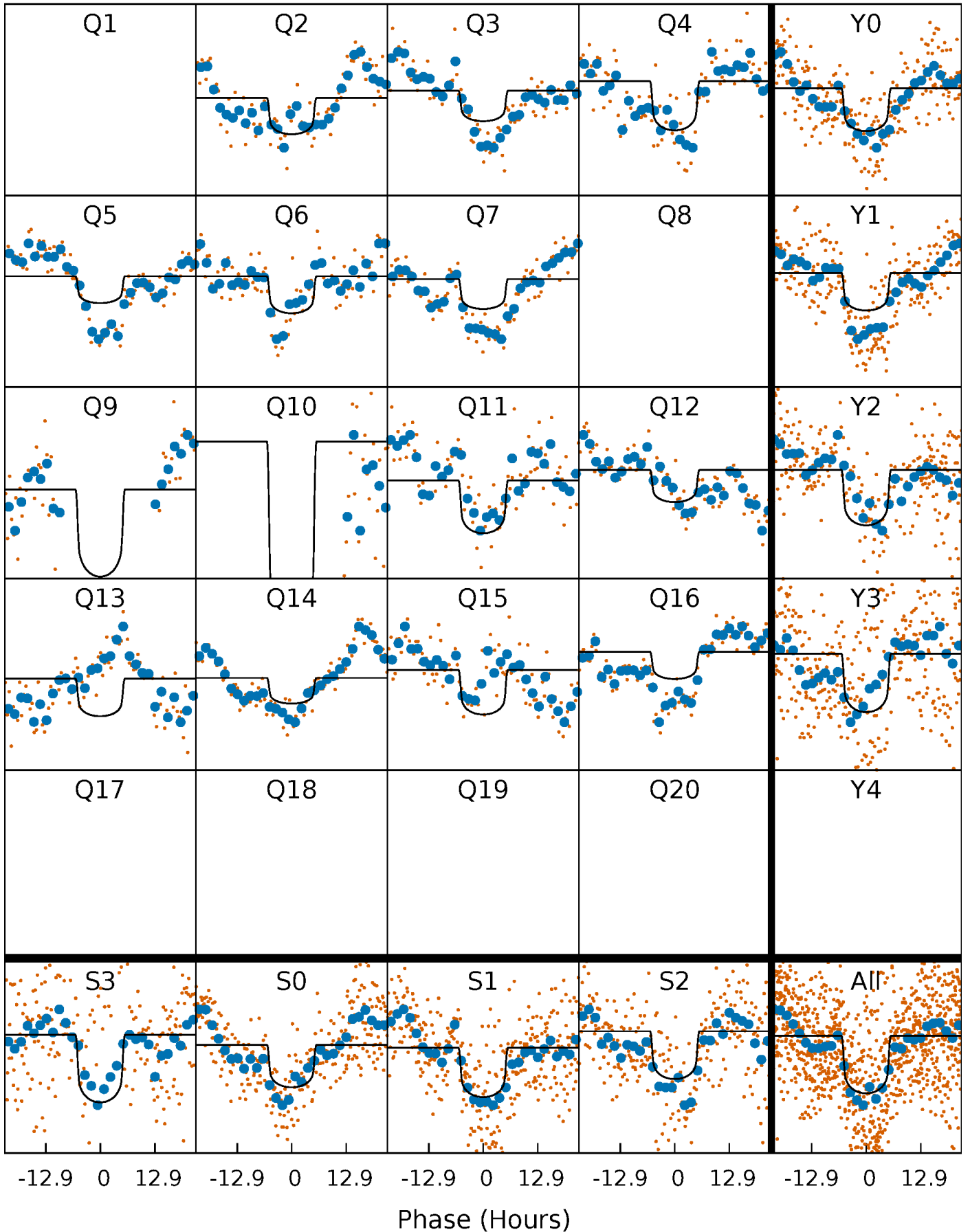
PDC Quarter-Phased Transit Curves

TCE 006677841-03 P= 98.353952 Days $T_0=217.871281$ (BKJD)



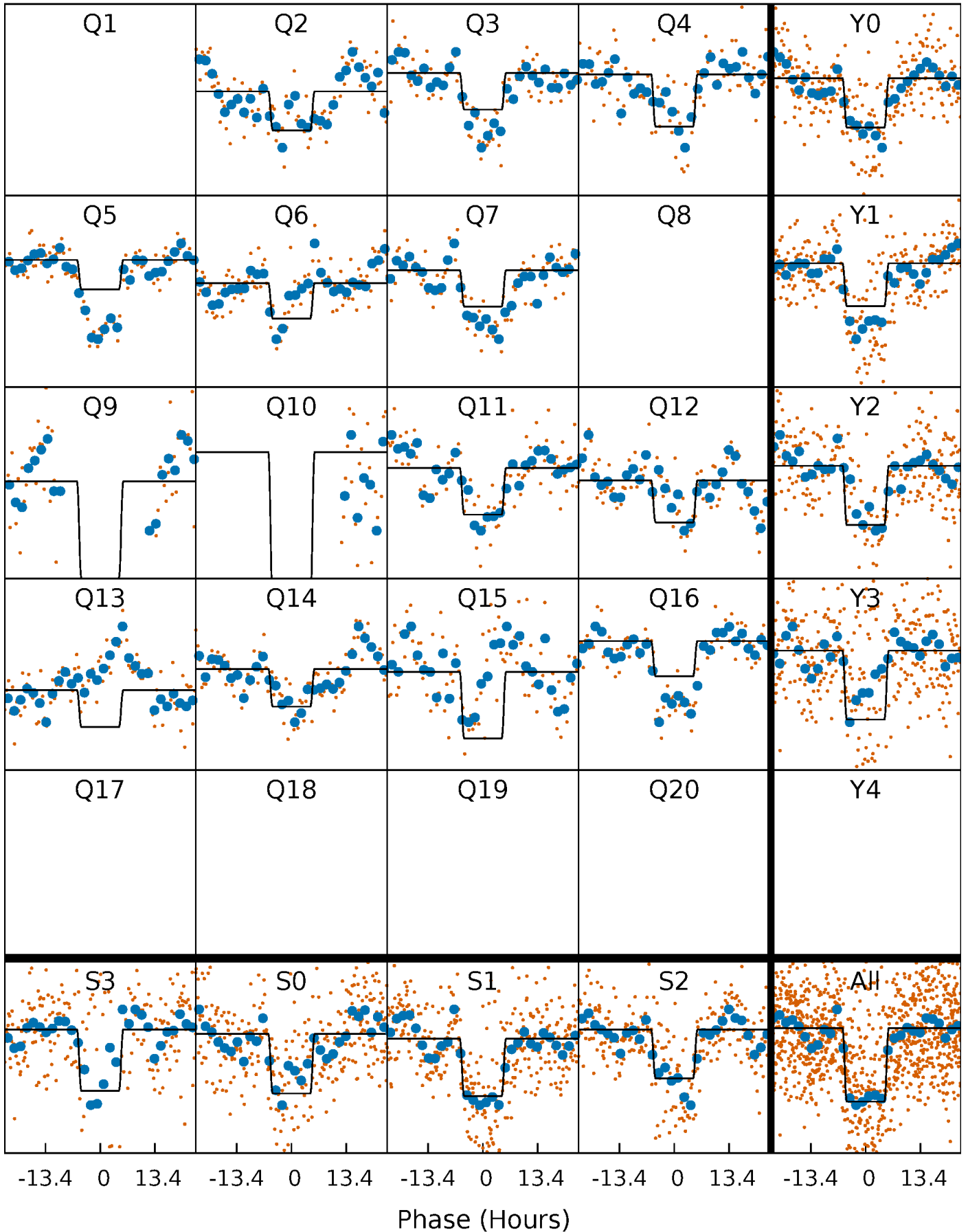
DV Quarter-Phased Transit Curves

TCE 006677841-03 P= 98.353952 Days $T_0=217.871281$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

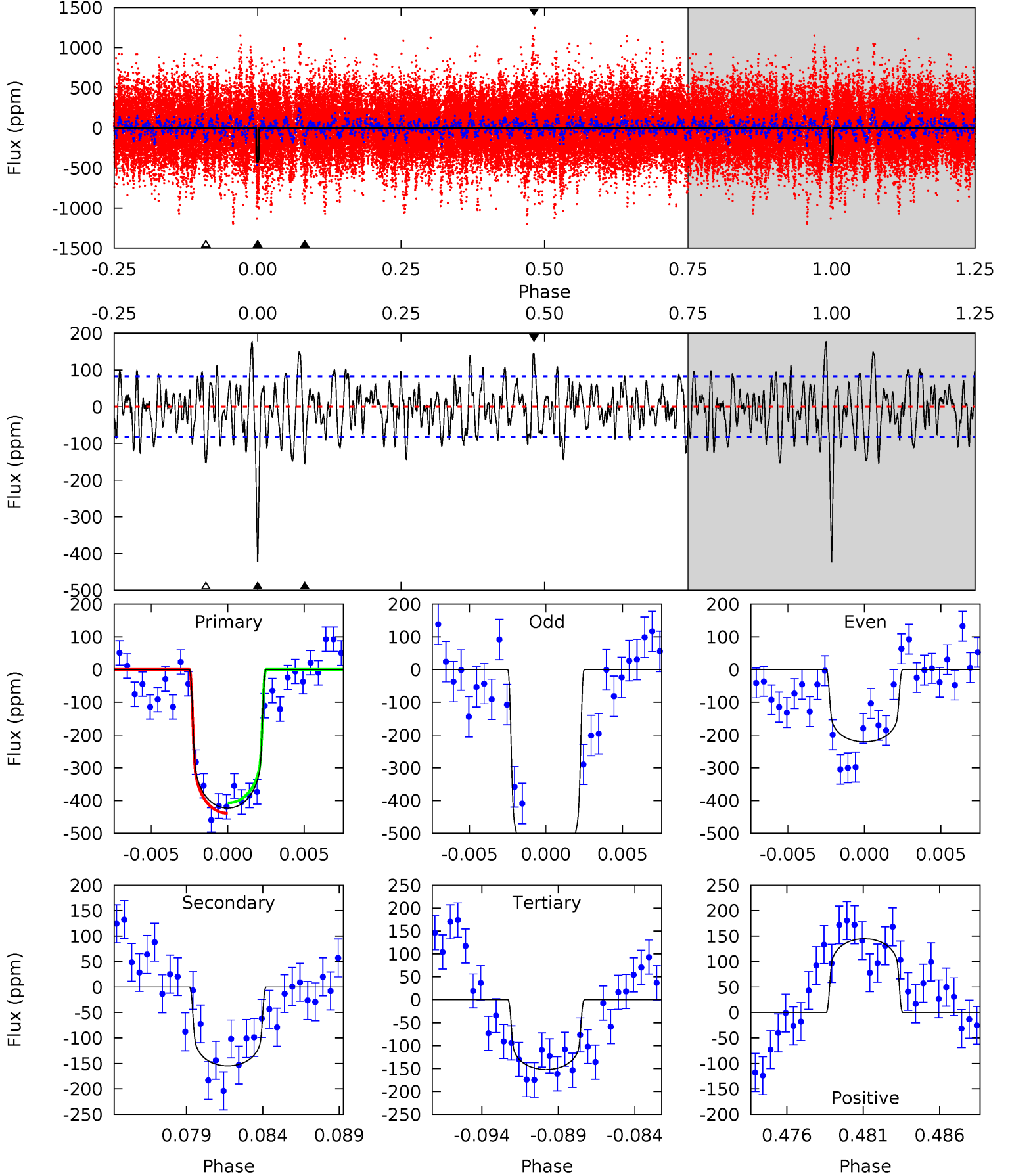
TCE 006677841-03 P= 98.350945 Days $T_0=217.898911$ (BKJD)



DV Model-Shift Uniqueness Test

006677841-03, P = 98.353952 Days, E = 119.517329 Days

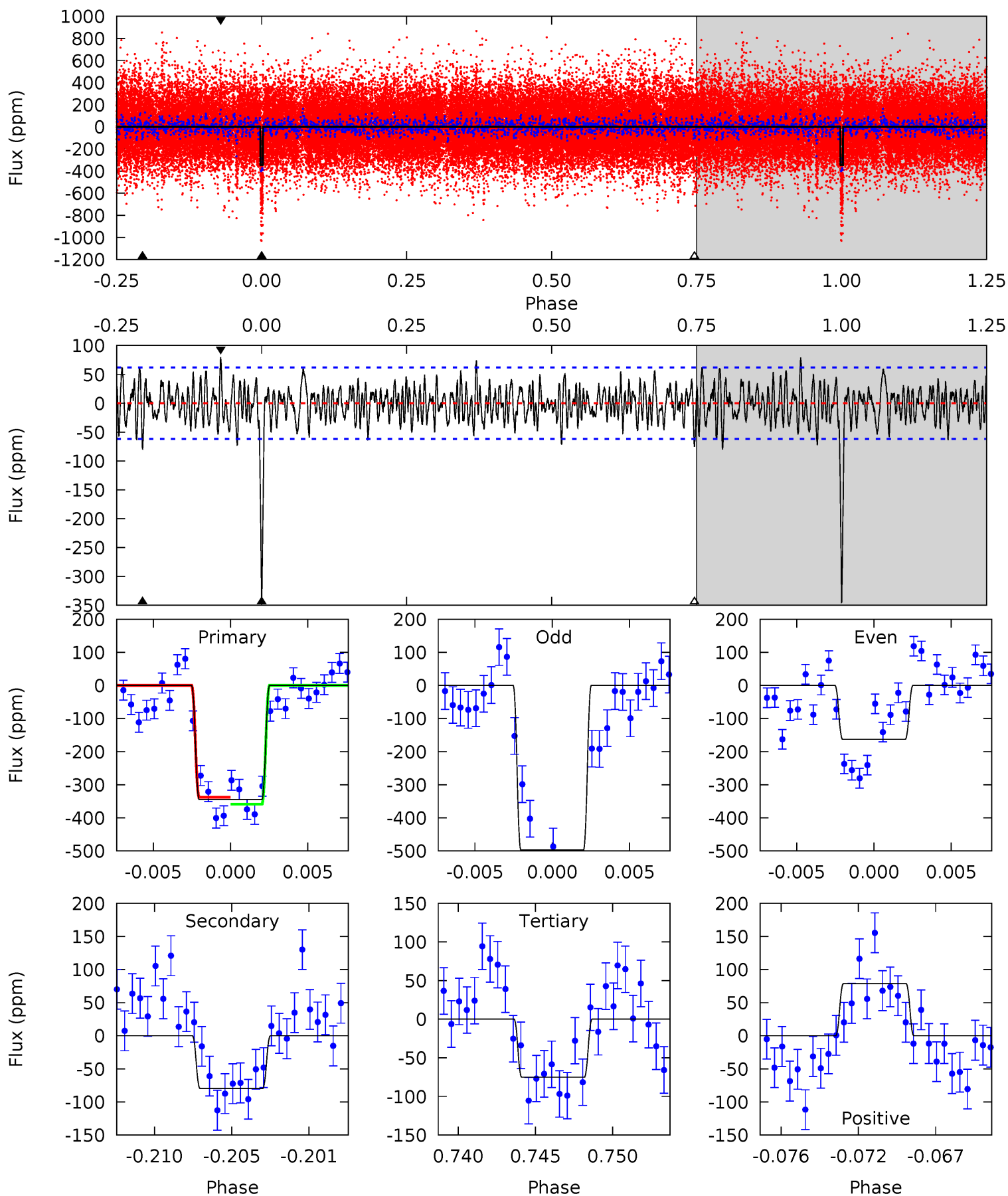
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.4	9.67	9.50	9.03	5.16	2.81	3.43	16.9	17.4	0.17	0.64	12.5	1.05	0.29	0.99



Alt Model-Shift Uniqueness Test

006677841-03, P = 98.350945 Days, E = 119.547966 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.8	6.65	6.26	6.57	5.17	2.82	2.05	22.5	22.2	0.38	0.08	14.1	1.10	0.19	0.88



Stellar Parameters For KIC 006677841

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6366^{+116}_{-116}	$4.045^{+0.196}_{-0.098}$	$-0.200^{+0.150}_{-0.150}$	$1.697^{+0.285}_{-0.380}$	$1.164^{+0.134}_{-0.110}$	$0.336^{+0.325}_{-0.102}$
	+2%/-2%	+5%/-2%	+75%/-75%	+17%/-22%	+12%/-9%	+97%/-30%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 006677841-03 / KOI 1236.04

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-155 ± 16	$3.56^{+0.58}_{-0.58}$	763^{+38}_{-47}	5126^{+304}_{-256}	1316^{+546}_{-346}
Alt.	-80 ± 12	$3.42^{+0.50}_{-0.57}$	767^{+36}_{-50}	4573^{+254}_{-226}	731^{+335}_{-196}

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 $A_{obs} \gg 1.0$

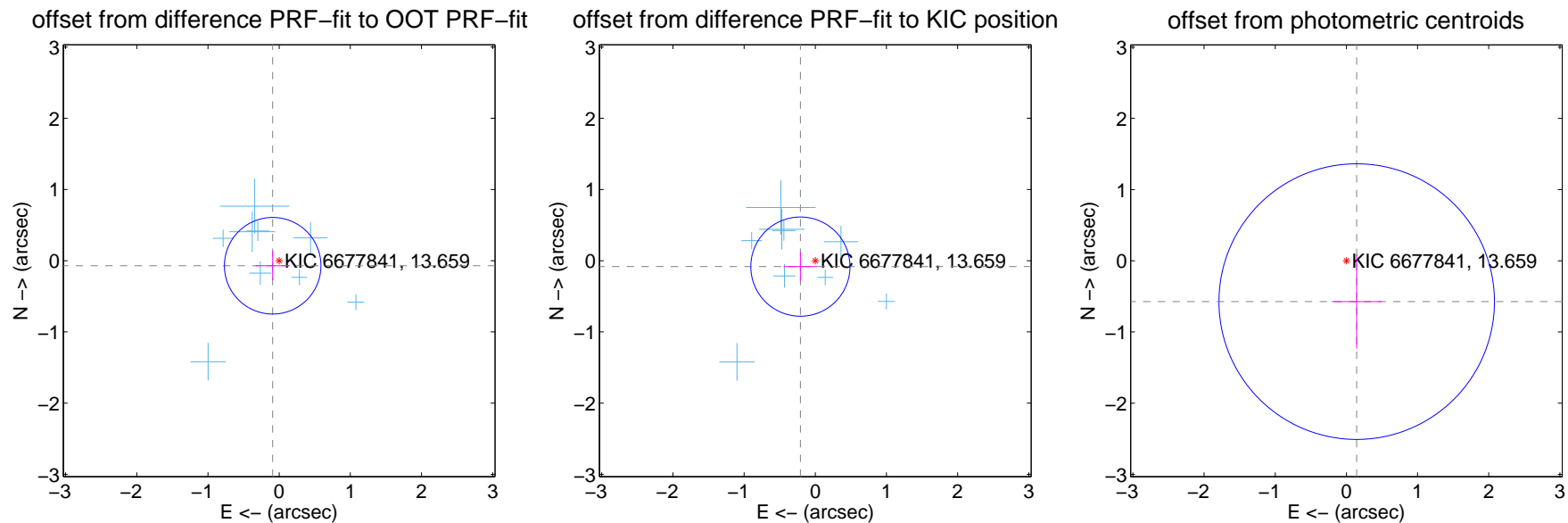
DV Centroid Data

Supplemental centroid analysis for 006677841-03. Kepler magnitude: 13.66. Transit SNR 9.98

There are 9 quarters with good PRF difference image offsets

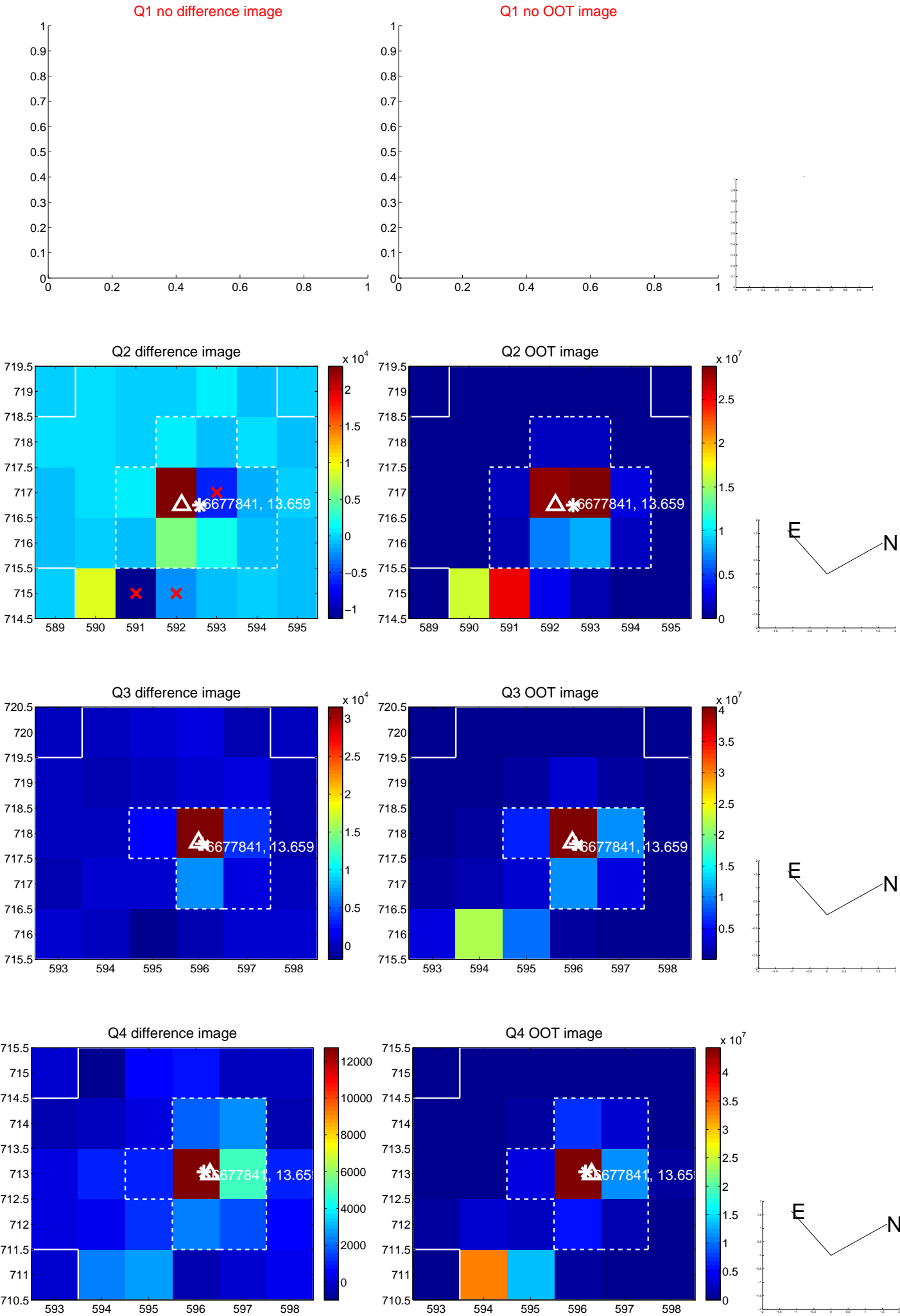
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.115 ± 0.226	0.51	0.091 ± 0.238	-0.071 ± 0.205
PRF-fit source offset from KIC position	0.225 ± 0.232	0.97	0.209 ± 0.237	-0.083 ± 0.202
photometric centroid source offset	0.59 ± 0.65	0.92	-0.14 ± 0.35	-0.57 ± 0.66

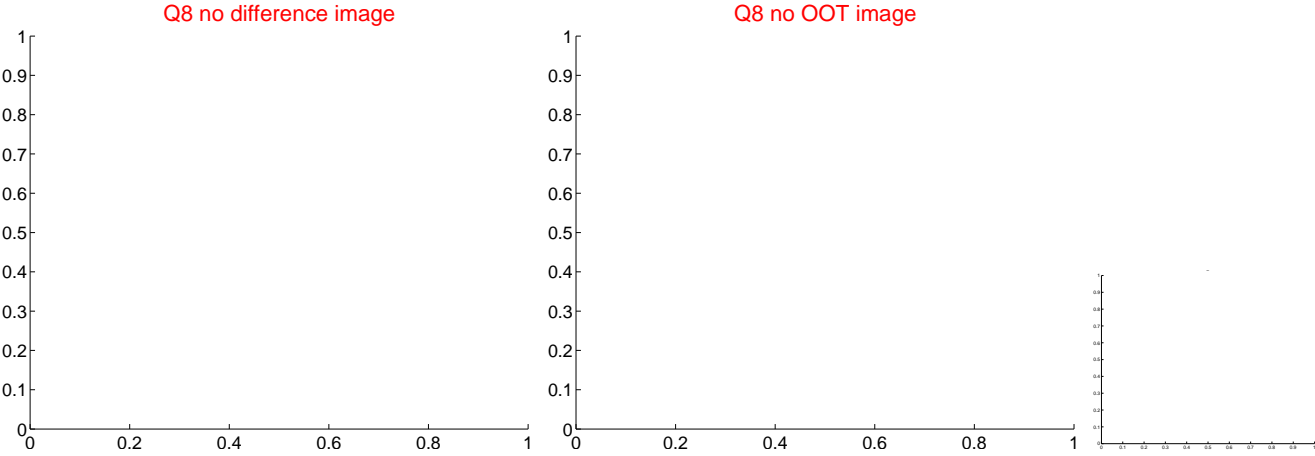
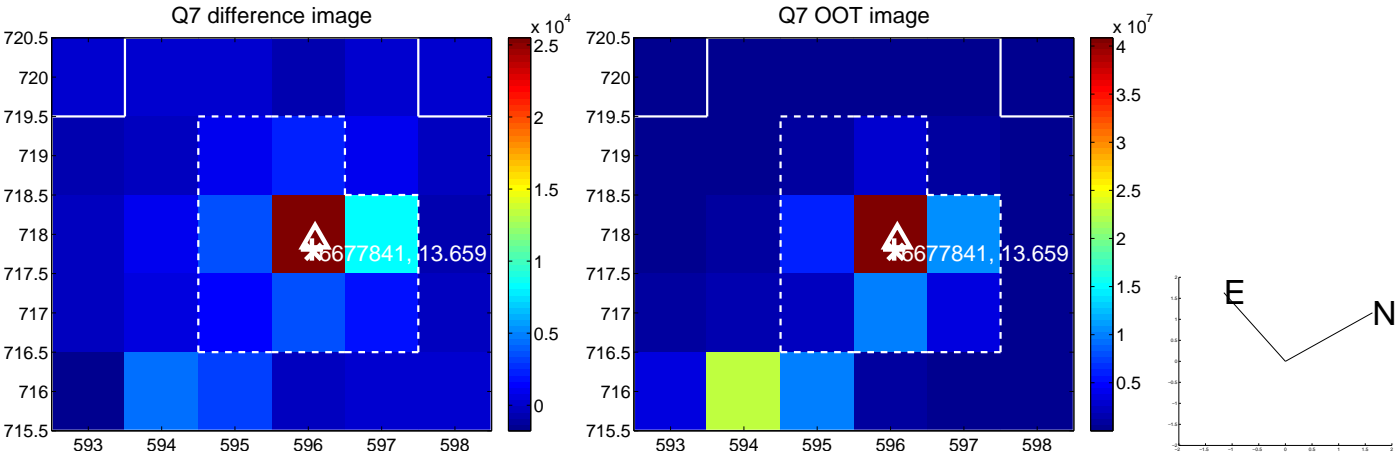
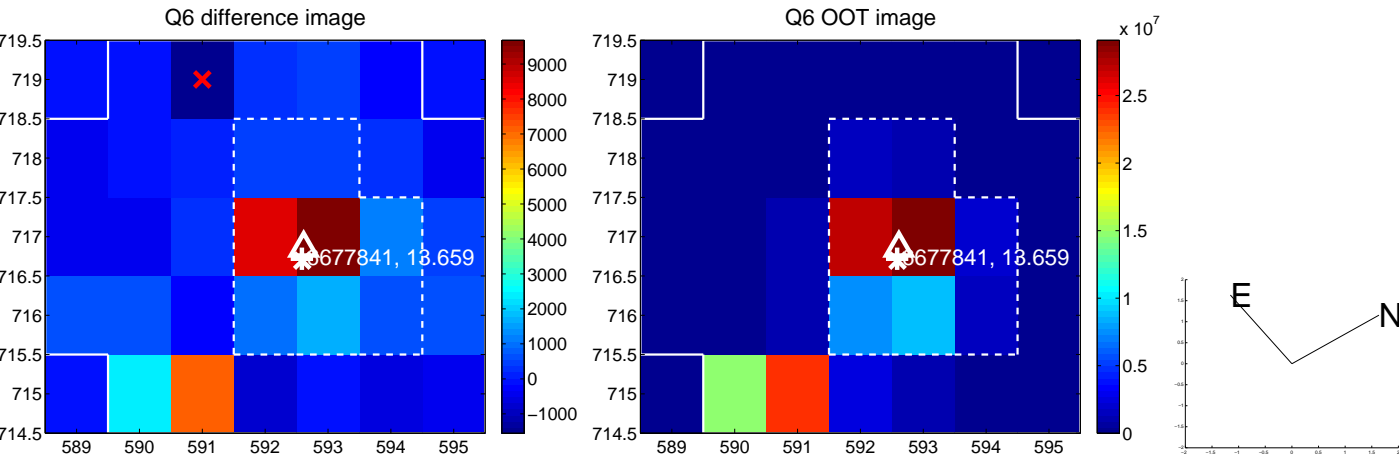
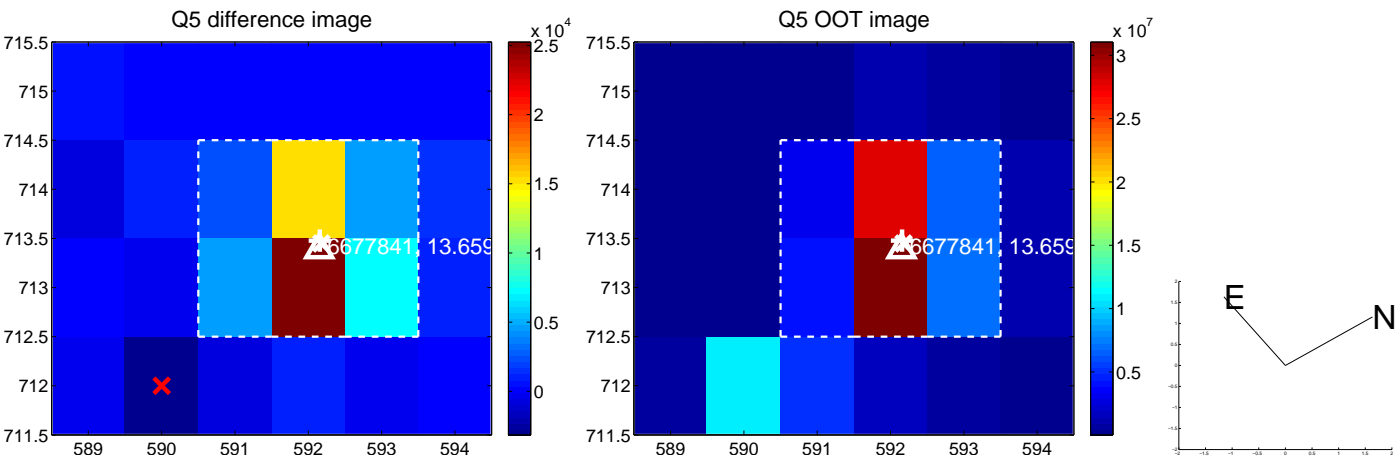


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

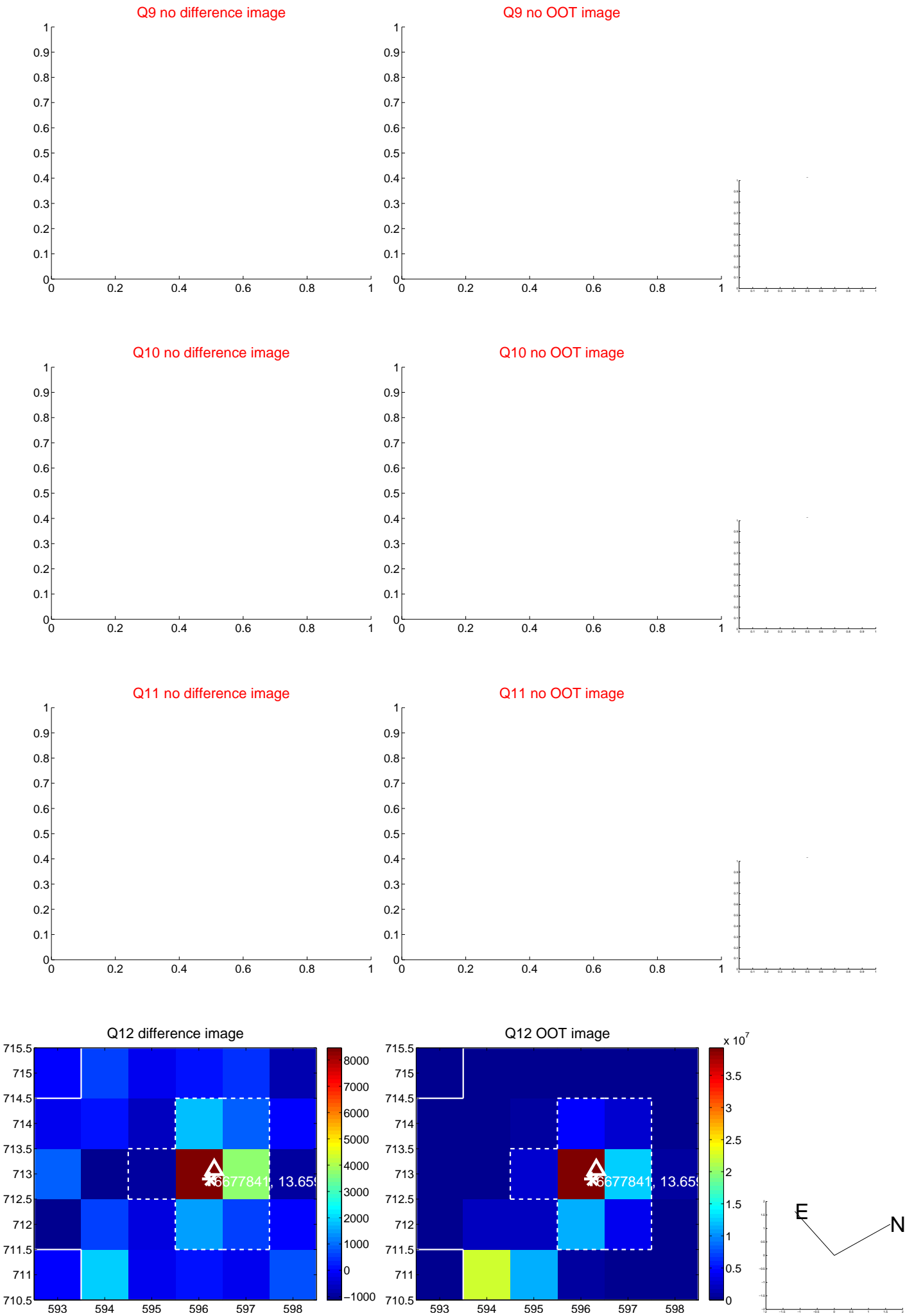
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



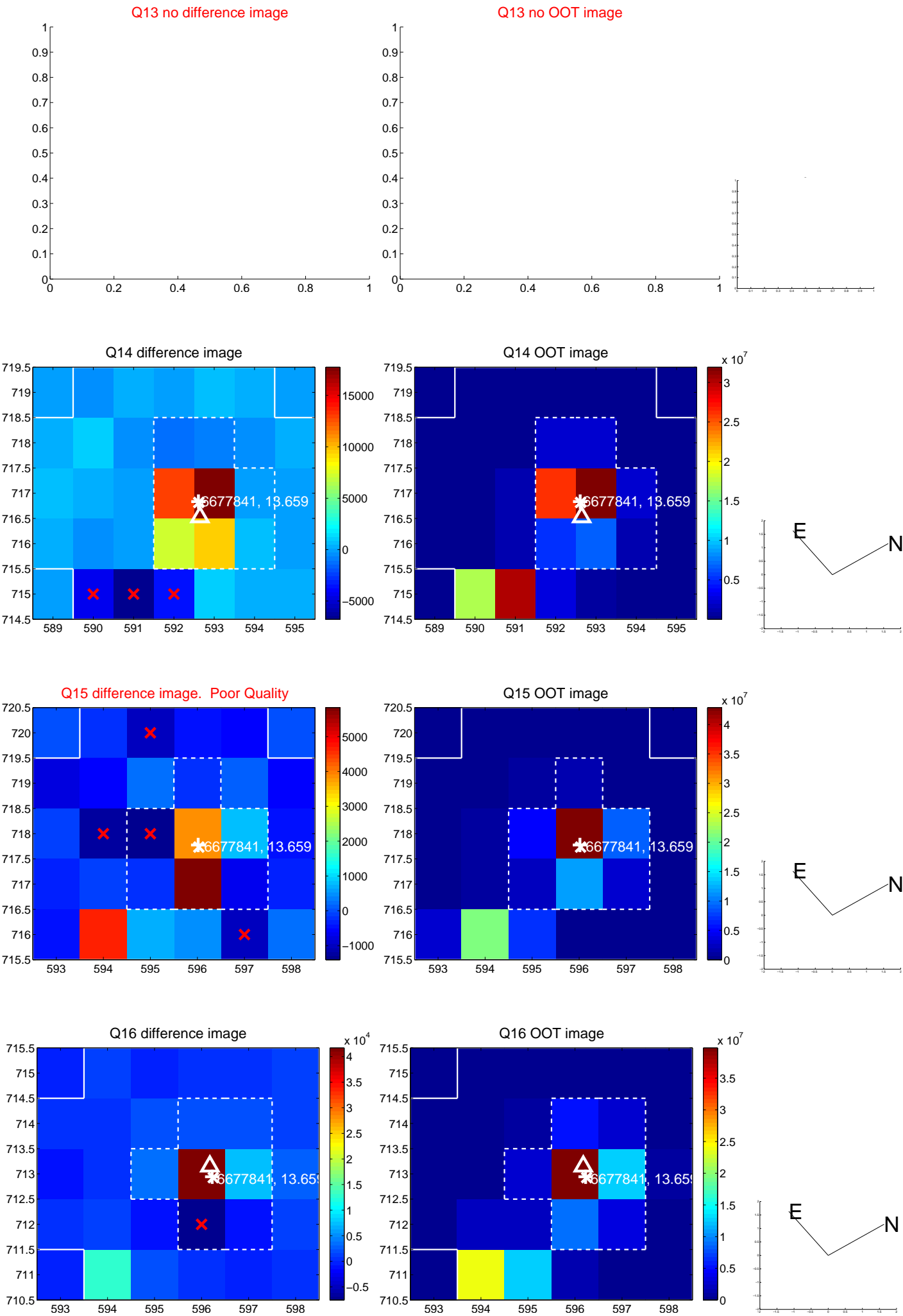
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



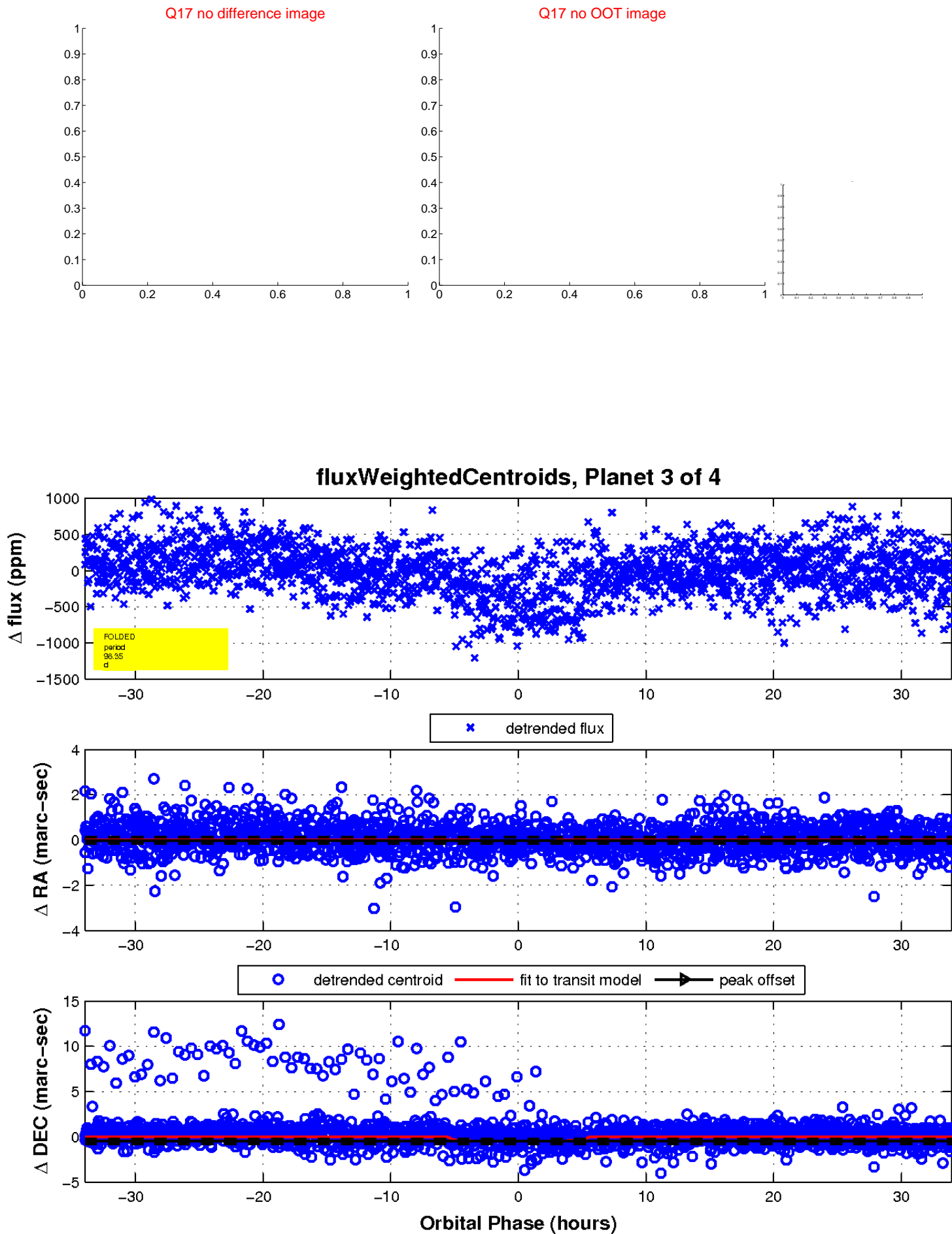
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

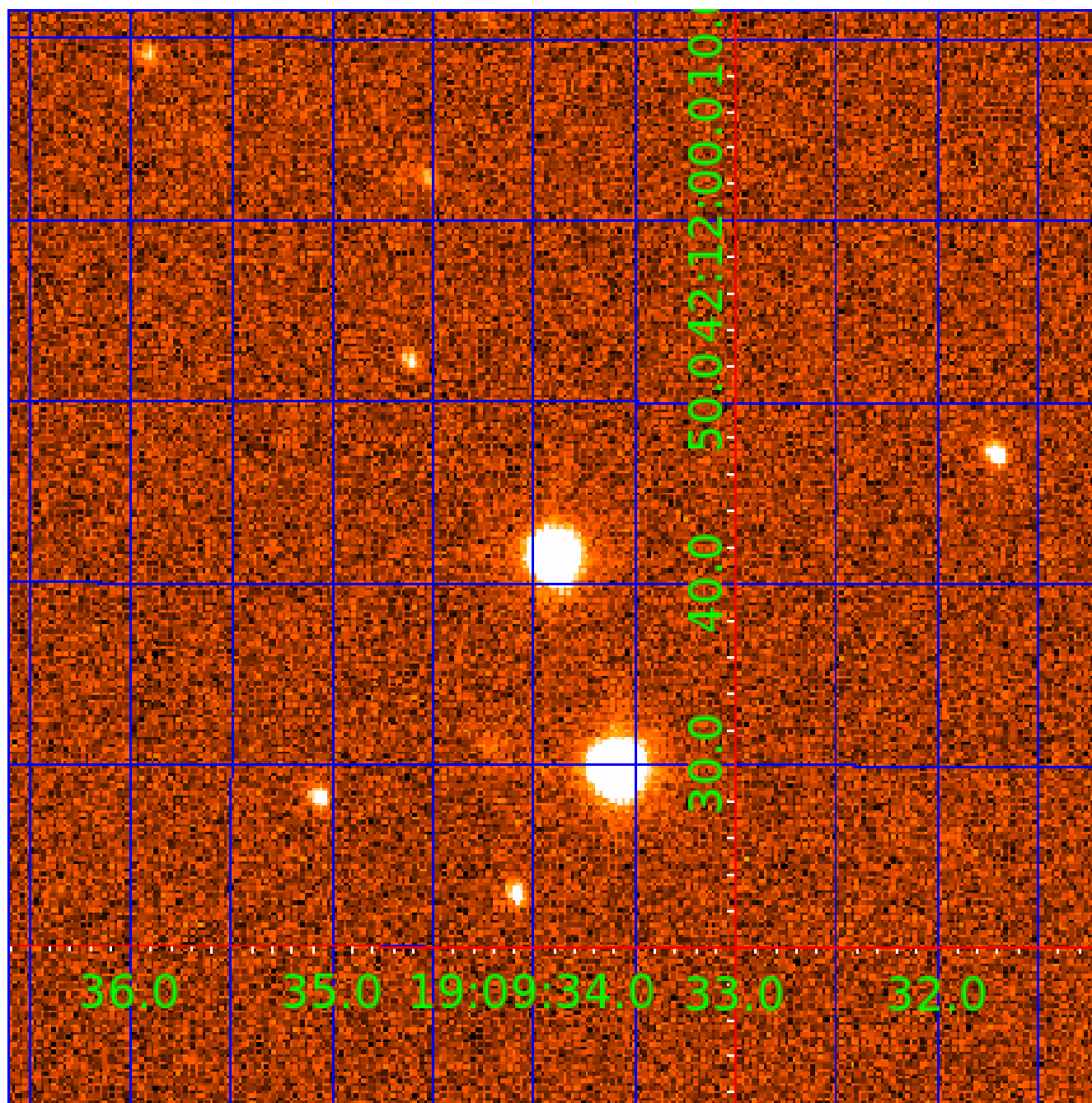


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006677841

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})
006677841-01	OBS	1236.02	12.309758	137.683153	344.9	6.039	26.1	28.1	1.70	6366	3.70	351.41
006677841-02	OBS	1236.01	35.734006	151.141353	762.8	10.600	23.6	27.6	1.70	6366	5.96	84.86
006677841-03	OBS	1236.04	98.353952	217.871281	380.7	11.315	9.6	10.0	1.70	6366	3.64	22.00
006677841-04	OBS	No	217.709218	311.893055	578.6	8.224	9.4	10.1	1.70	6366	4.41	7.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006677841-01	OBS	FP	0.24	1	0	0	0	LPP_DV
006677841-02	OBS	FP	0.09	1	0	0	0	LPP_DV
006677841-03	OBS	PC	0.94	0	0	0	0	NO_COMMENT
006677841-04	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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

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

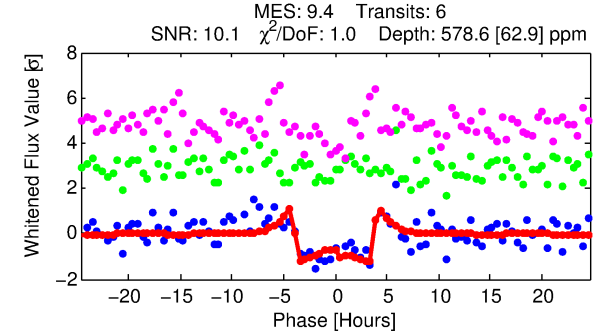
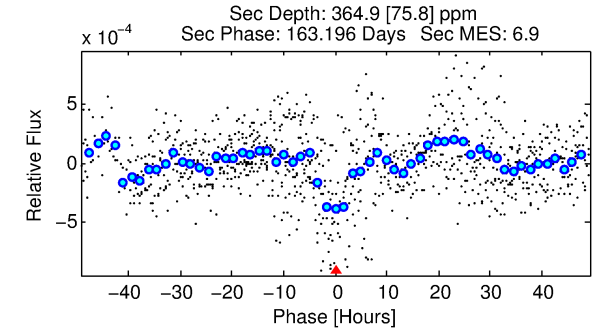
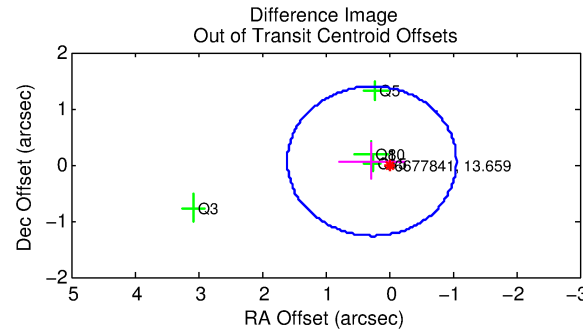
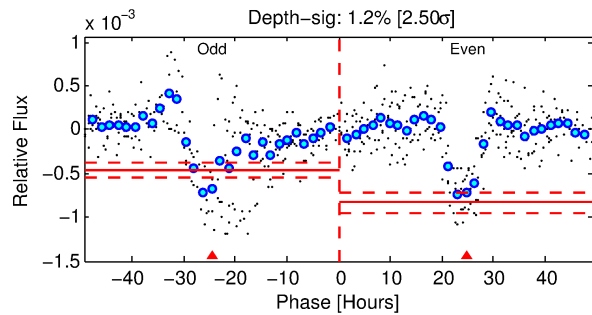
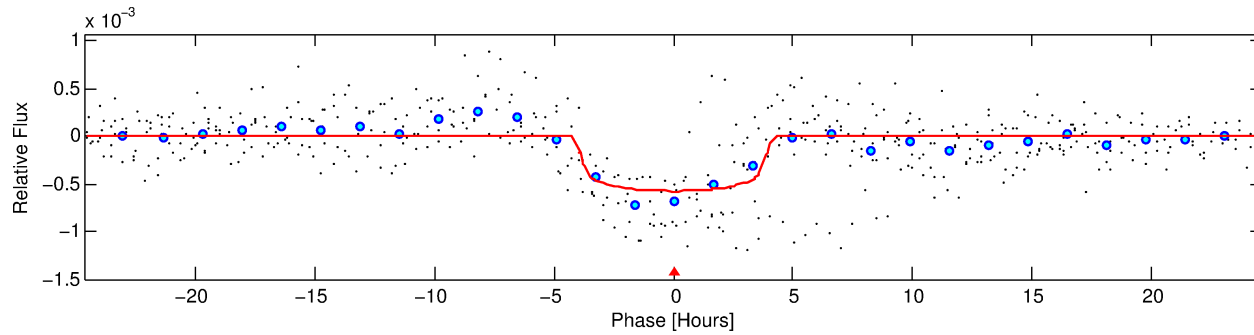
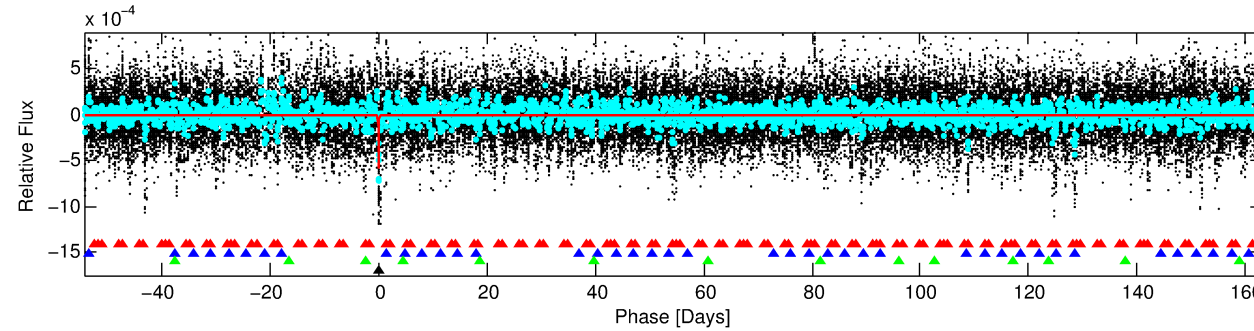
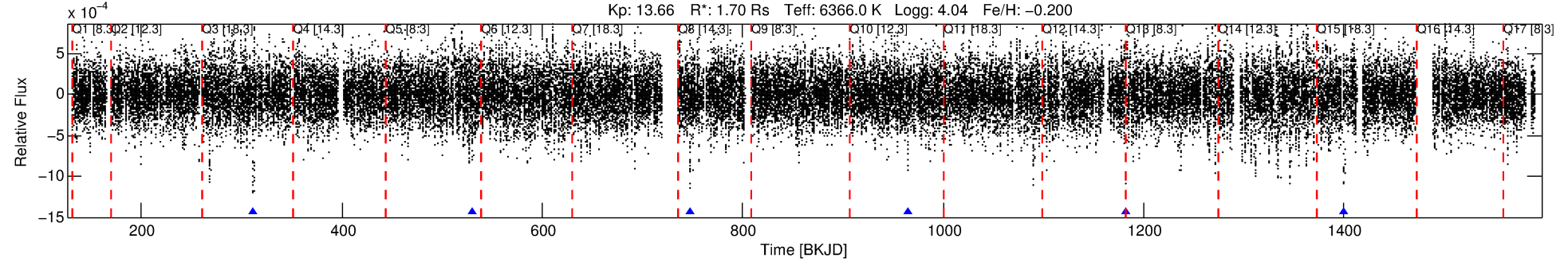
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006677841-04

No Significant Match Found

DV One-Page Summary

KIC: 6677841 Candidate: 4 of 4 Period: 217.709 d
KOI: K01236 Name: Kepler-279 Corr: No Ephemeris Match



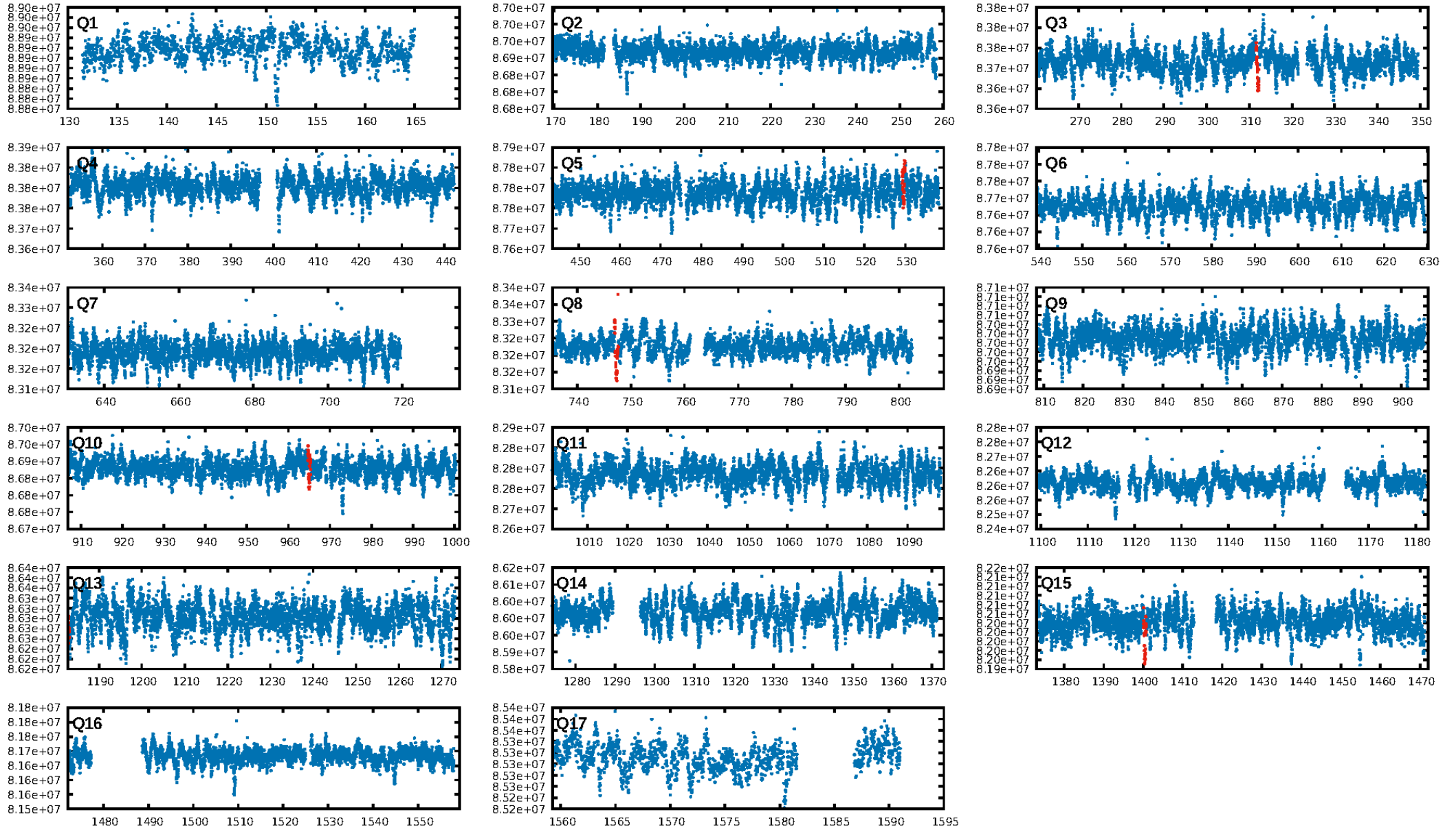
DV Fit Results:

Period = 217.70922 [0.00174] d
Epoch = 311.8931 [0.0052] BKJD
Rp/R* = 0.0238 [0.0044]
a/R* = 144.18 [130.48]
b = 0.73 [0.57]
Seff = 7.63 [2.62]
Teff = 424 [36] K
Rp = 4.41 [1.28] Re
a = 0.7454 [0.1580] AU
Ag = 5736.99 [3112.54] [1.84 σ]
Teffp = 5702 [616] K [8.55 σ]

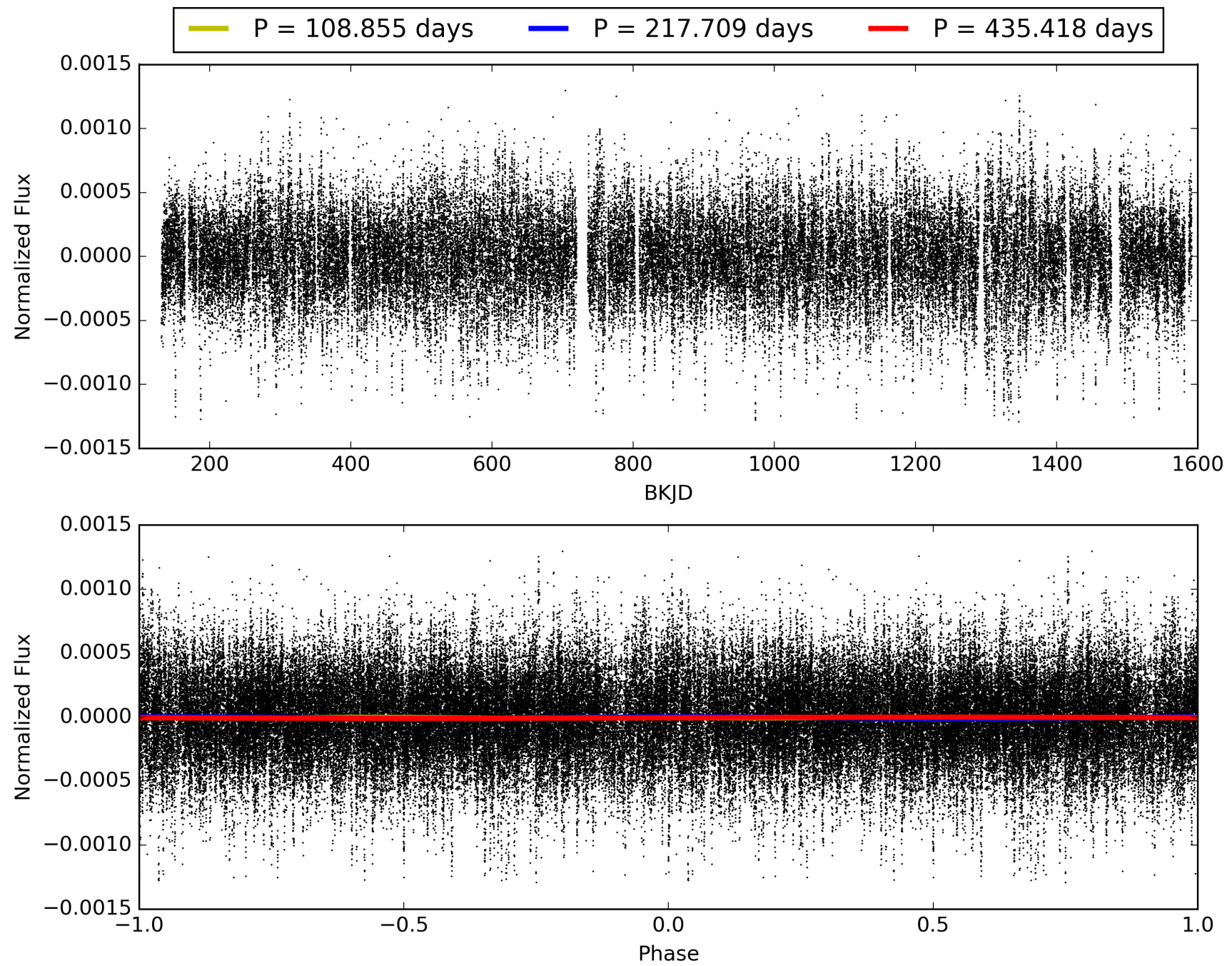
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [204.79 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 38.7%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 9.17e-13
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 3.898
Centroid-sig: 0.0%
Centroid-so: 0.497 arcsec [0.97 σ]
OotOffset-rm: 0.276 arcsec [0.62 σ]
KicOffset-rm: 0.439 arcsec [1.15 σ]
OotOffset-st: 1/2/1/1 [5]
KicOffset-st: 1/2/1/1 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 1.00 [5/5]

TCE 006677841-04, PDC Light Curves

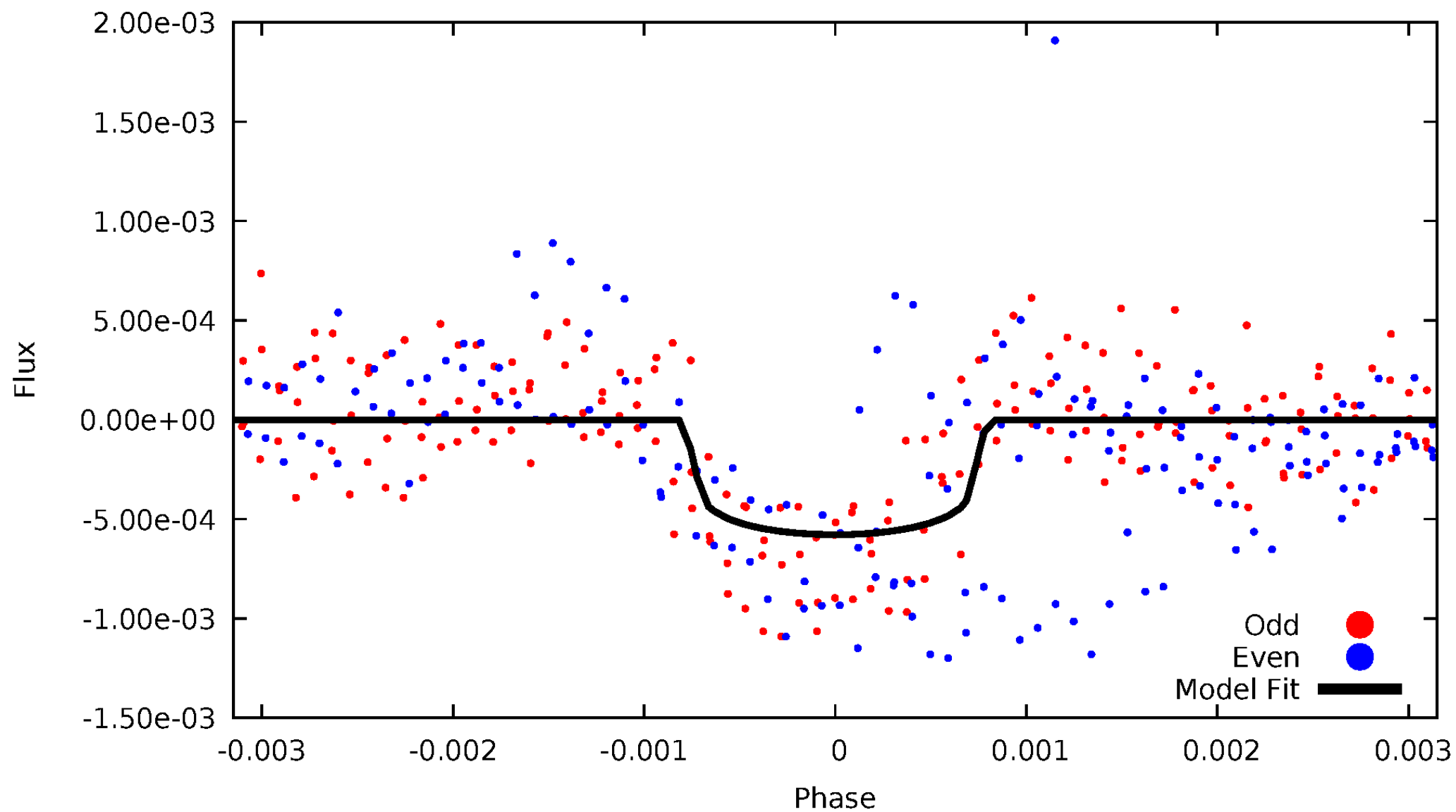


TCE 006677841-04



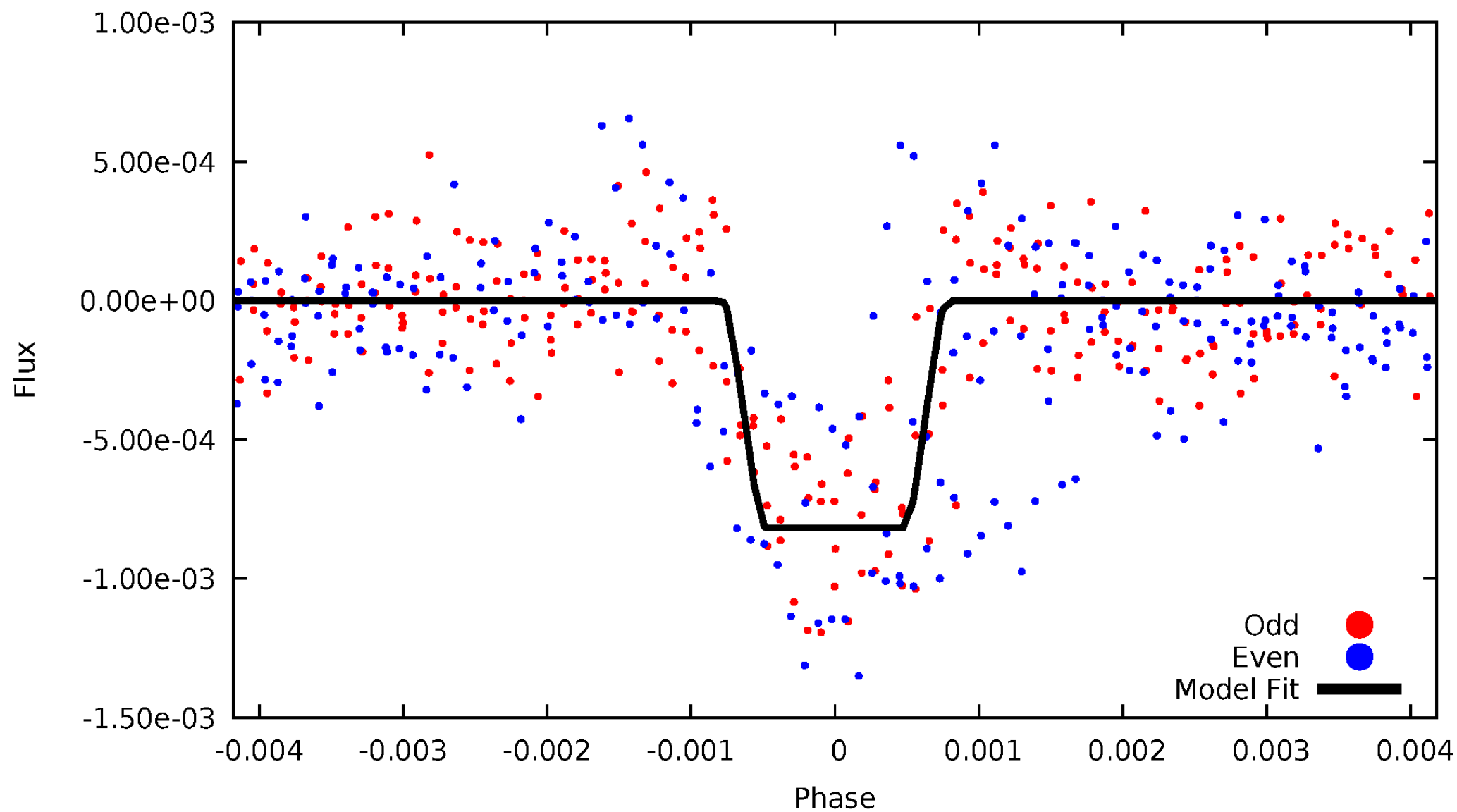
DV Odd/Even

TCE 006677841-04



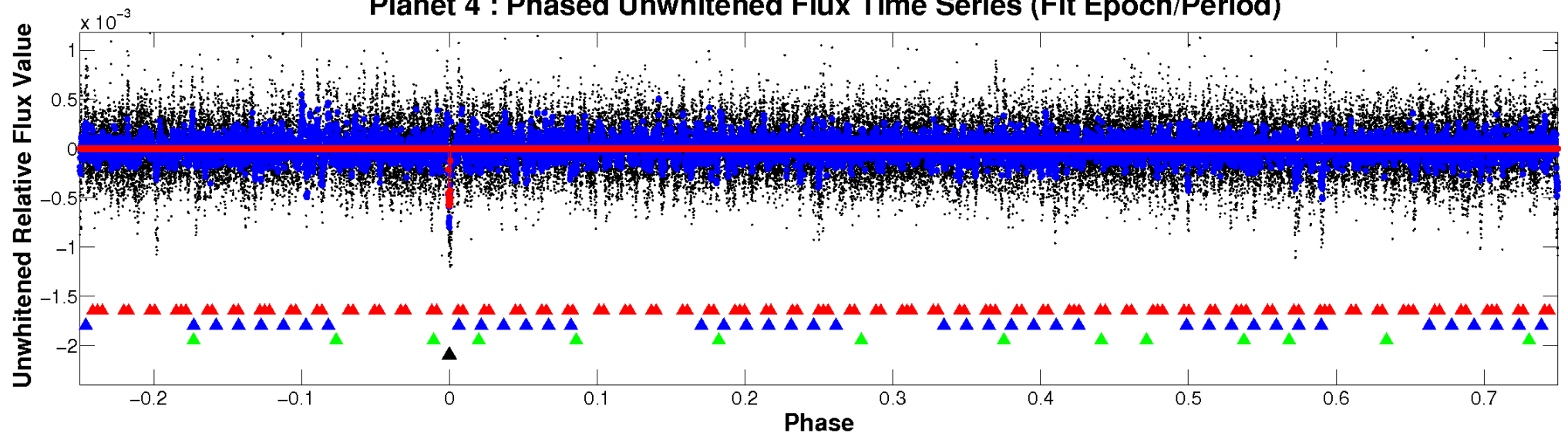
ALT Odd/Even

TCE 006677841-04

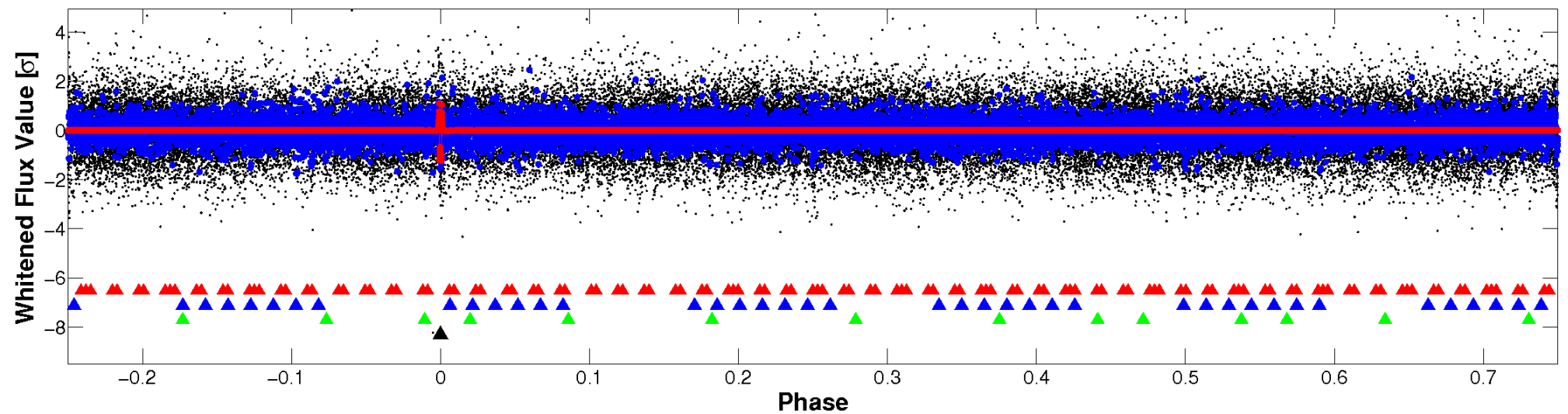


Non-Whitened Vs. Whitened Light Curve

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

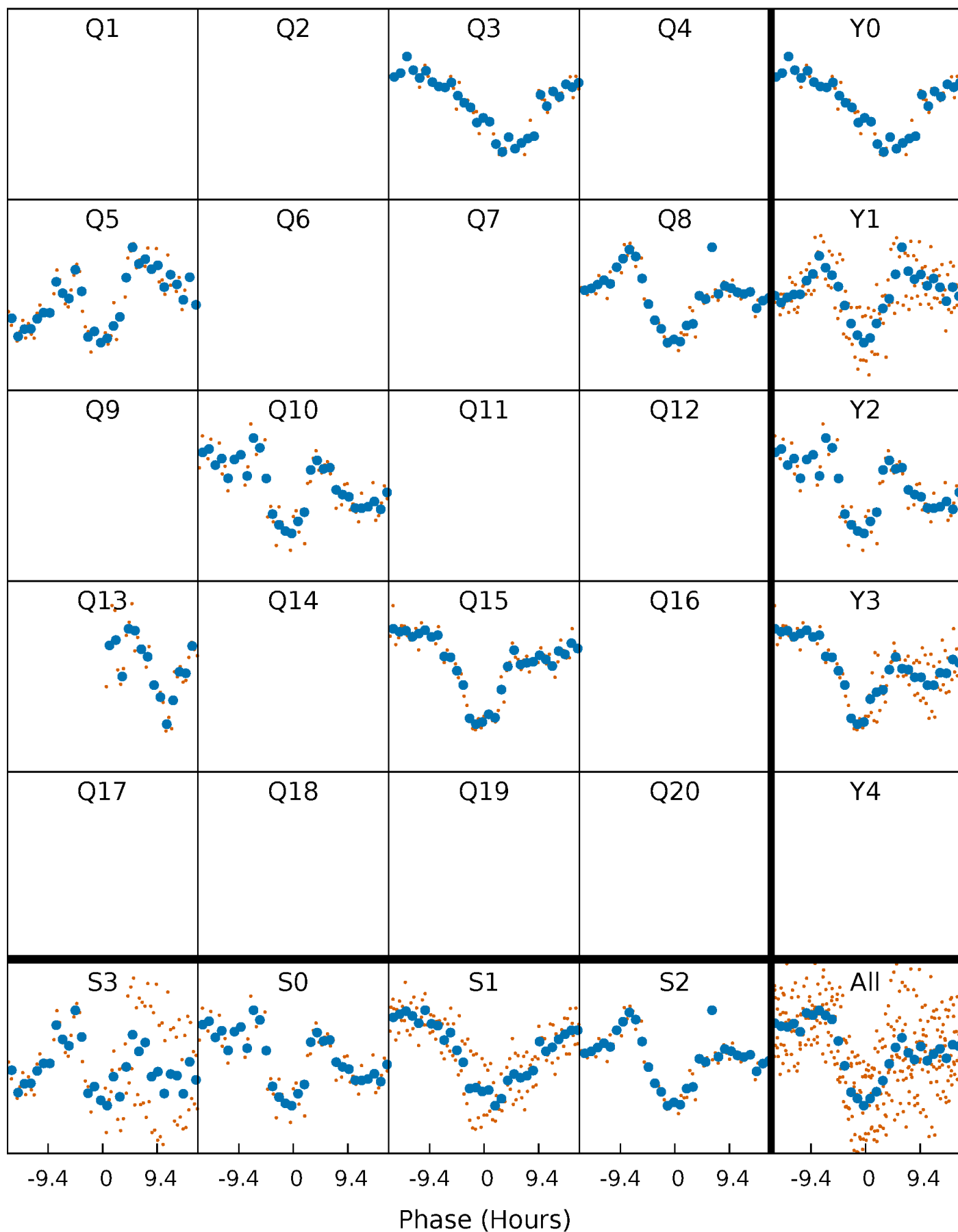


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



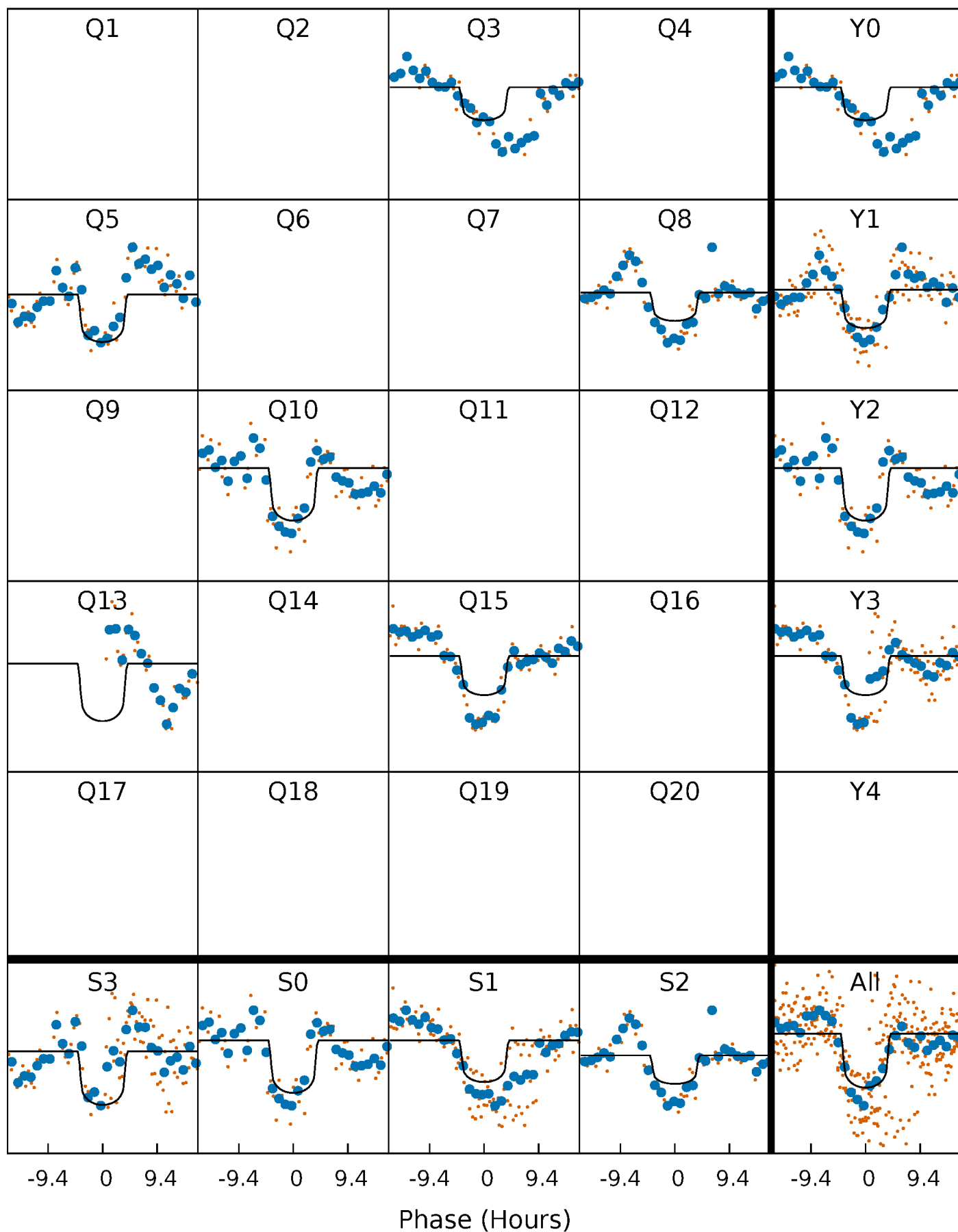
PDC Quarter-Phased Transit Curves

TCE 006677841-04 $P=217.709218$ Days $T_0=311.893055$ (BKJD)



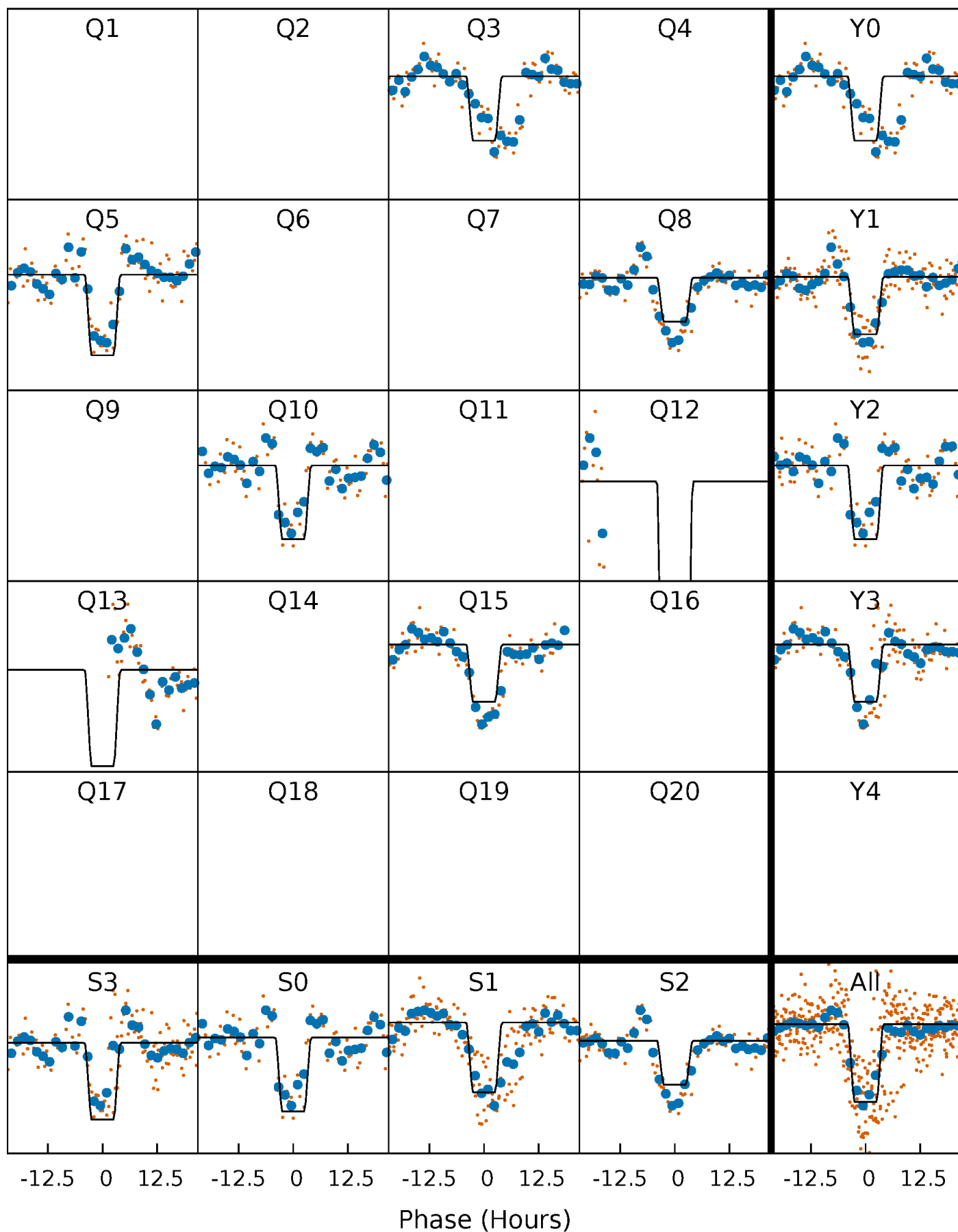
DV Quarter-Phased Transit Curves

TCE 006677841-04 $P=217.709218$ Days $T_0=311.893055$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

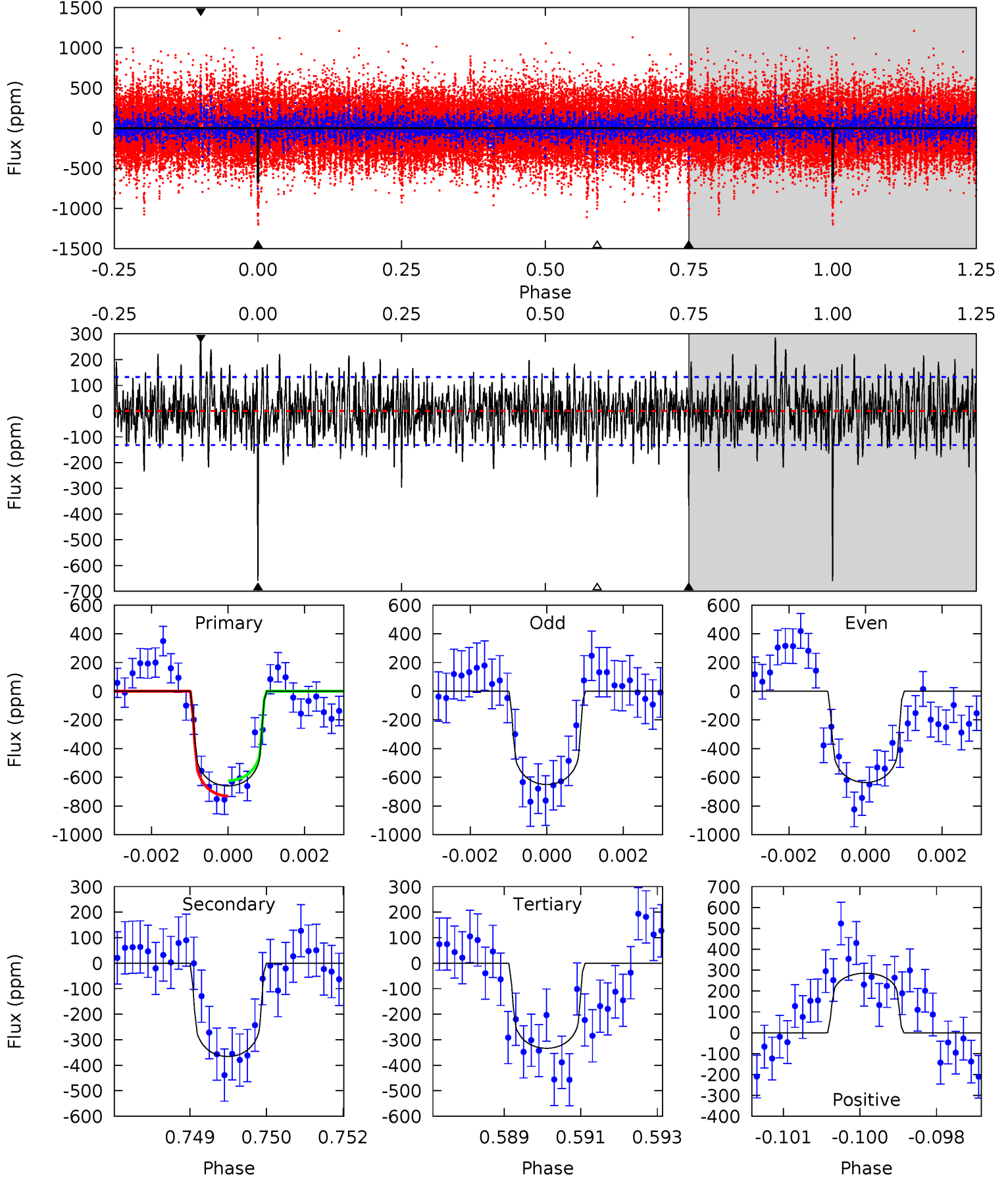
TCE 006677841-04 $P=217.699148$ Days $T_0=311.902839$ (BKJD)



DV Model-Shift Uniqueness Test

006677841-04, P = 217.709218 Days, E = 94.183837 Days

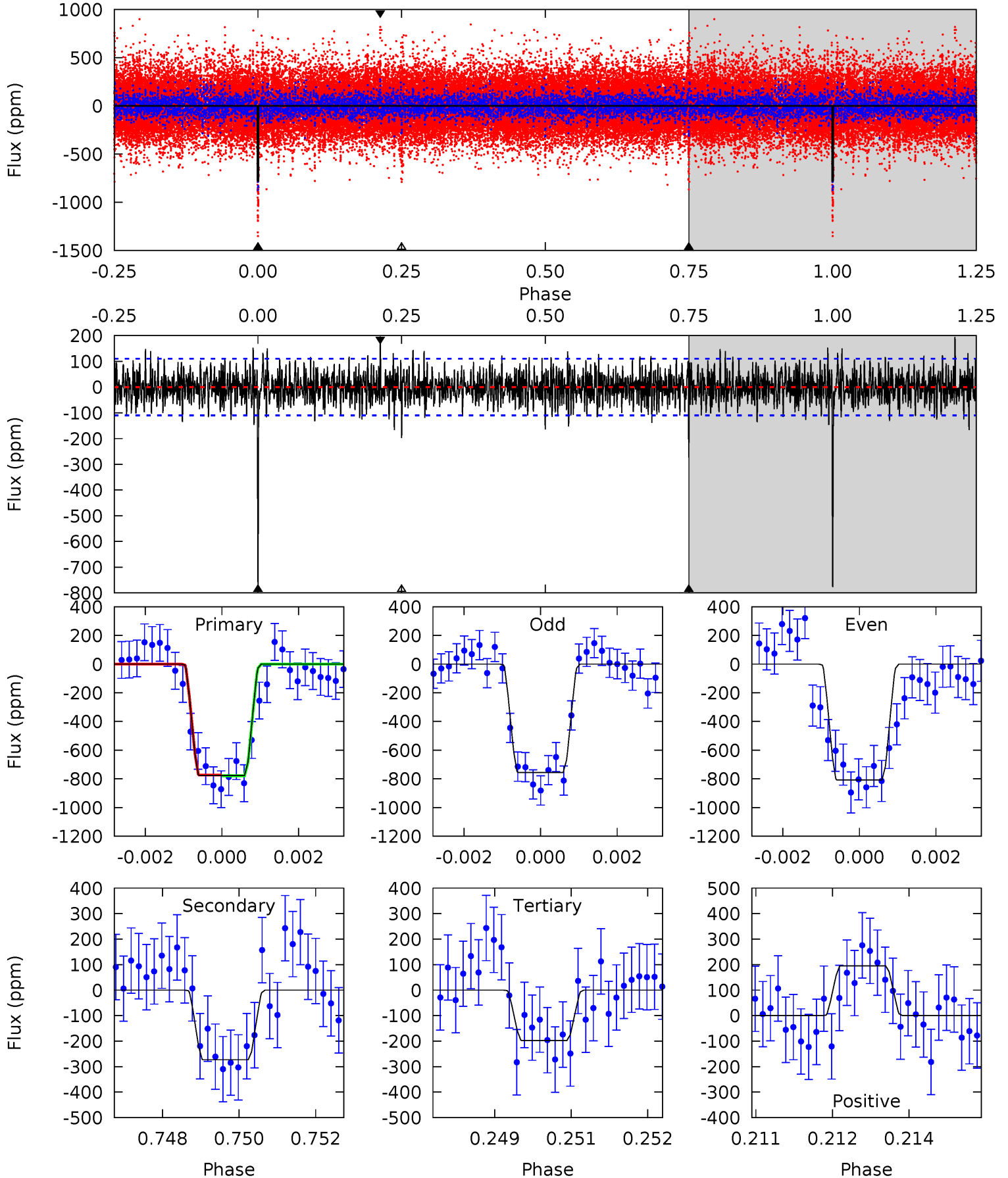
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	14.8	13.5	11.6	5.36	3.15	3.07	13.3	15.2	1.30	3.27	0.28	0.84	0.30	2.16



Alt Model-Shift Uniqueness Test

006677841-04, P = 217.699148 Days, E = 94.203691 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.8	13.3	9.62	9.49	5.37	3.16	2.35	28.2	28.3	3.66	3.79	1.25	0.97	0.20	0.12



Stellar Parameters For KIC 006677841

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6366^{+116}_{-116}	$4.045^{+0.196}_{-0.098}$	$-0.200^{+0.150}_{-0.150}$	$1.697^{+0.285}_{-0.380}$	$1.164^{+0.134}_{-0.110}$	$0.336^{+0.325}_{-0.102}$
	+2%/-2%	+5%/-2%	+75%/-75%	+17%/-22%	+12%/-9%	+97%/-30%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 006677841-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-366 ± 25	$4.29^{+0.96}_{-0.98}$	586^{+29}_{-34}	5721^{+684}_{-457}	6166^{+3863}_{-2098}
Alt.	-273 ± 21	$5.19^{+0.98}_{-0.97}$	588^{+28}_{-35}	4923^{+372}_{-292}	3121^{+1489}_{-955}

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

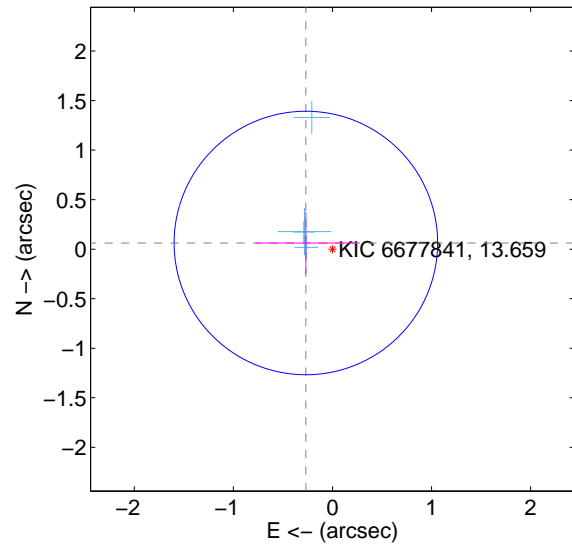
Supplemental centroid analysis for 006677841-04. Kepler magnitude: 13.66. Transit SNR 10.10

There are 4 quarters with good PRF difference image offsets

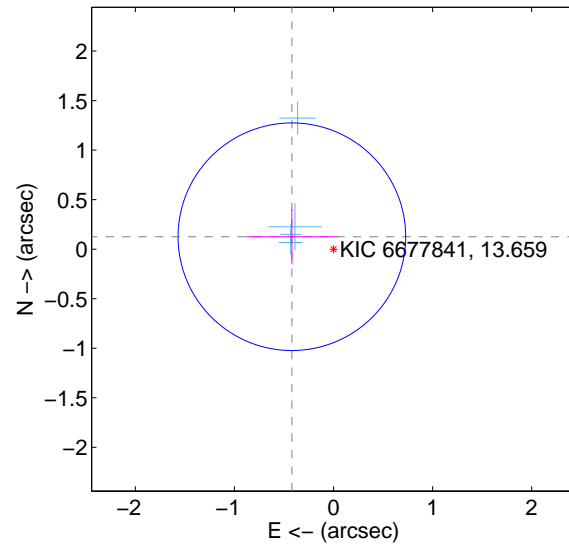
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.276 ± 0.443	0.62	0.269 ± 0.505	0.062 ± 0.313
PRF-fit source offset from KIC position	0.439 ± 0.383	1.15	0.420 ± 0.461	0.126 ± 0.278
photometric centroid source offset	0.50 ± 0.51	0.97	0.29 ± 0.33	-0.40 ± 0.59

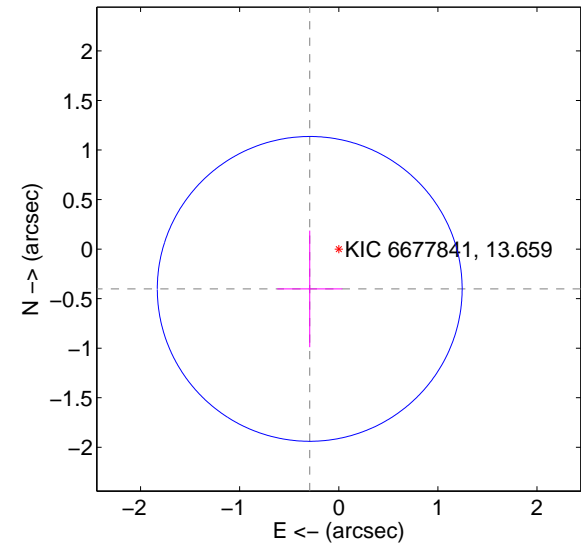
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

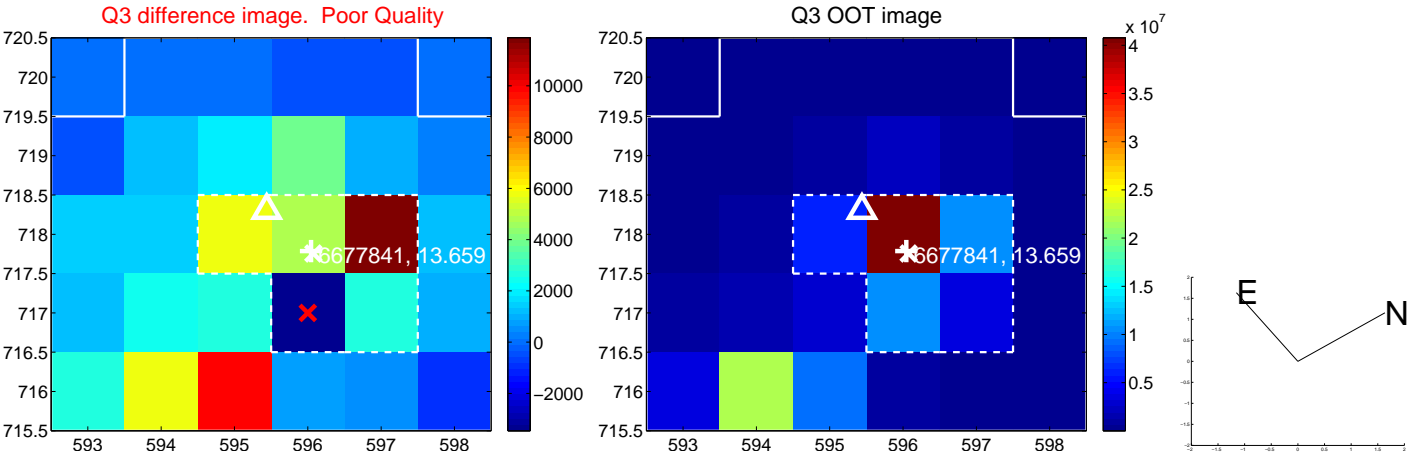


offset from photometric centroids

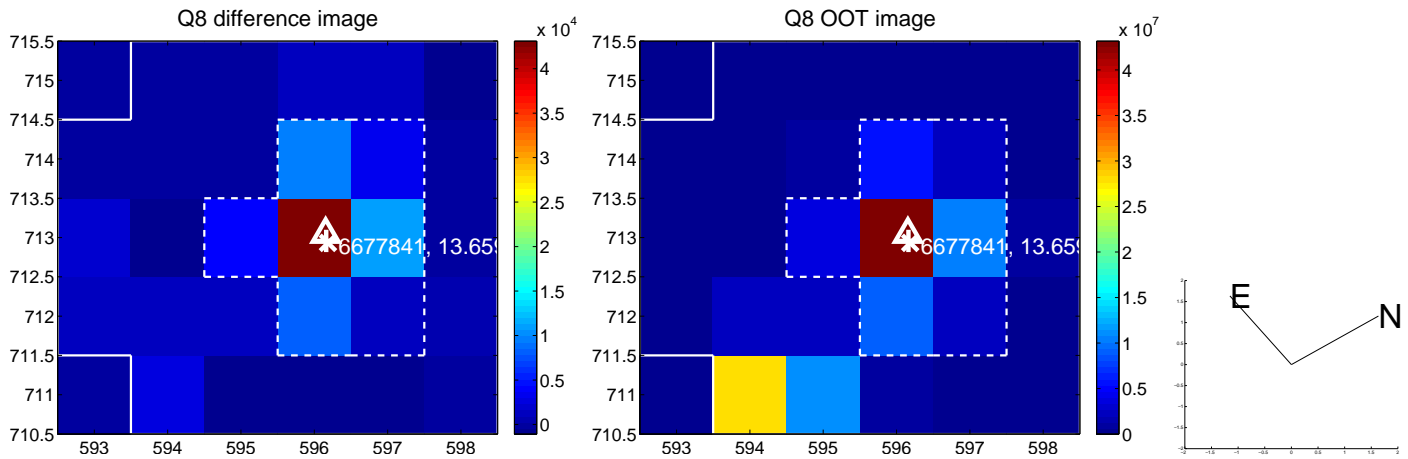
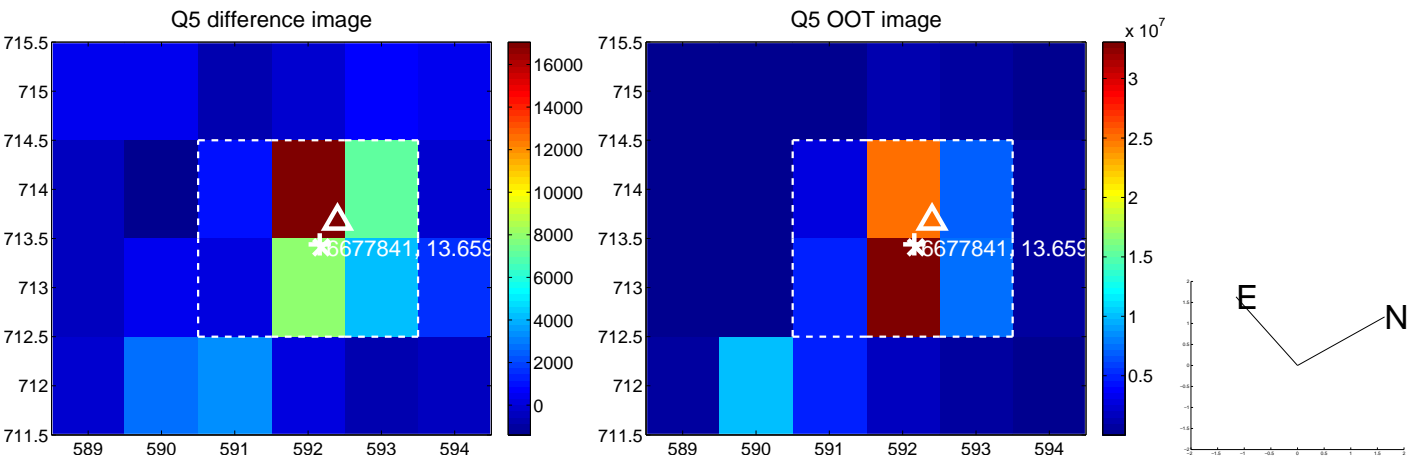


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

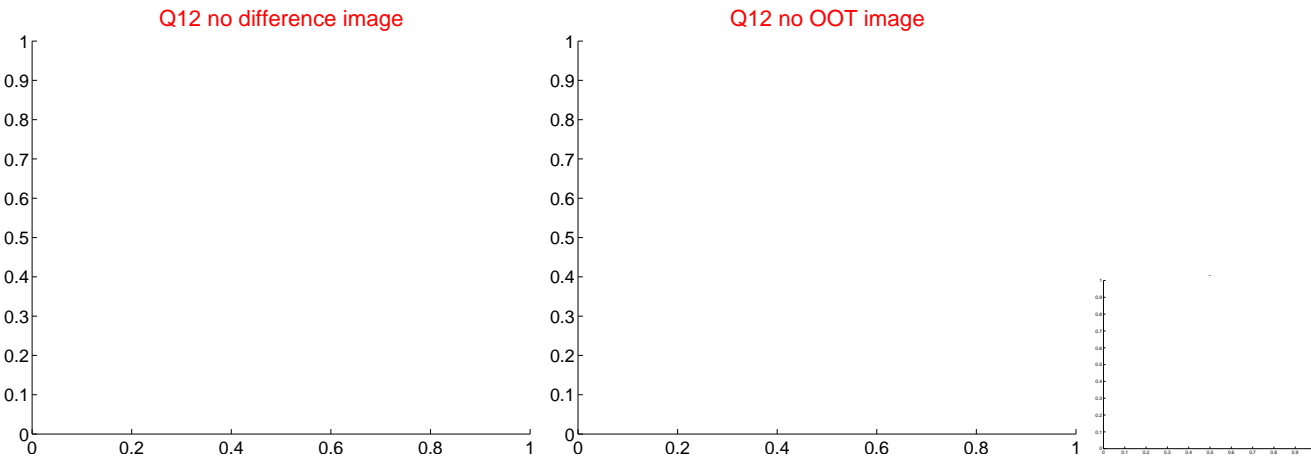
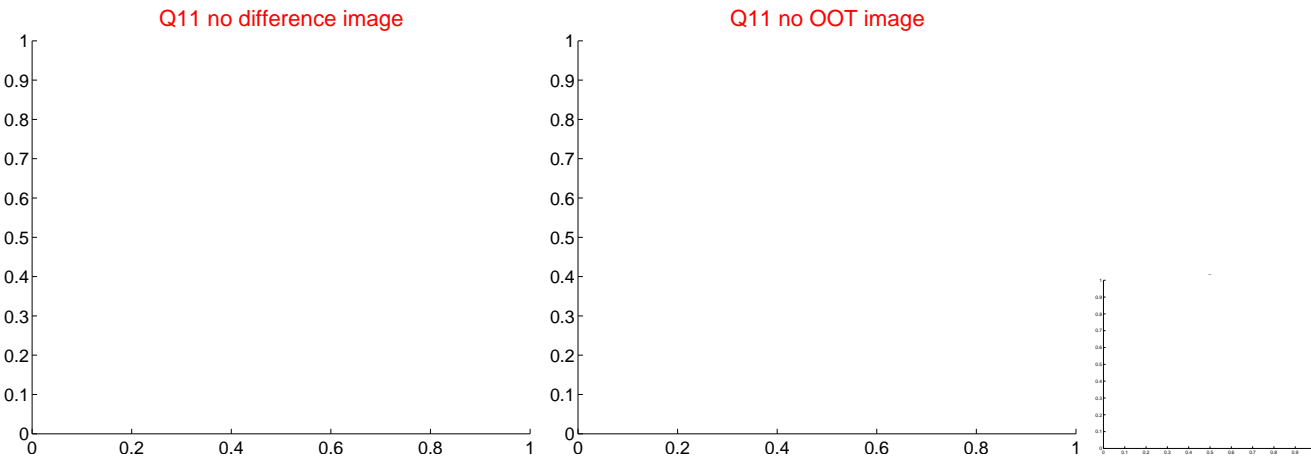
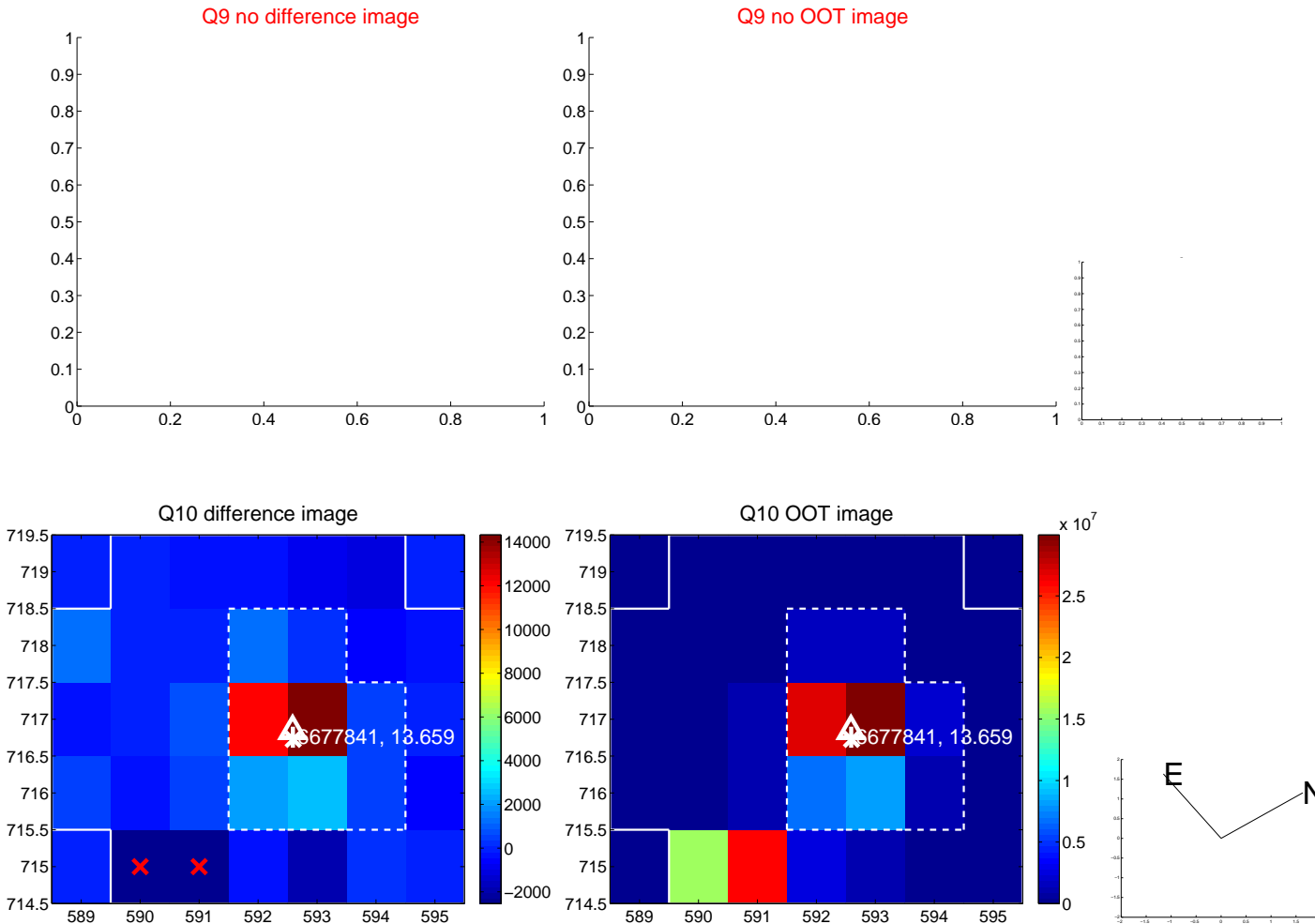
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



white \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.

Q13 no difference image



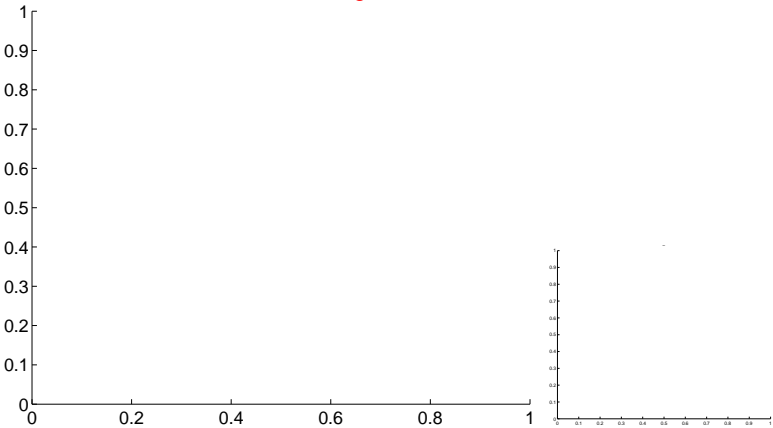
Q13 no OOT image



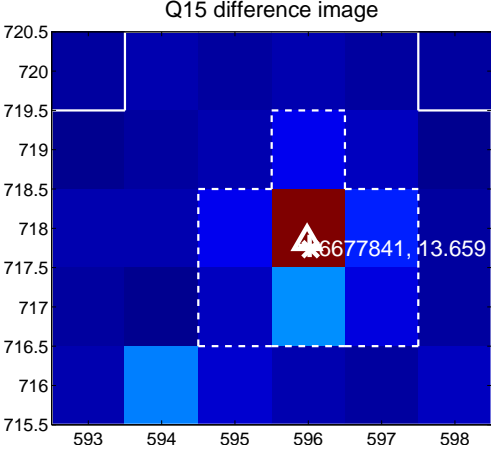
Q14 no difference image



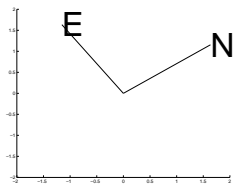
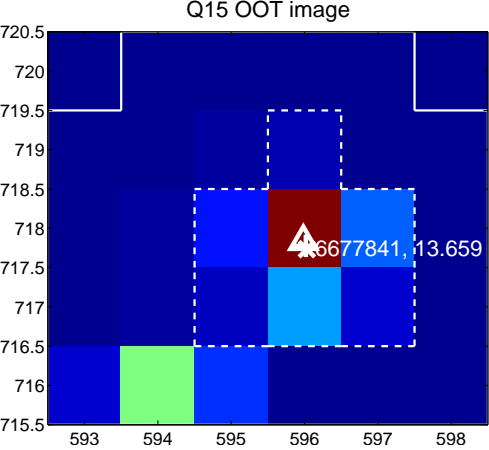
Q14 no OOT image



Q15 difference image



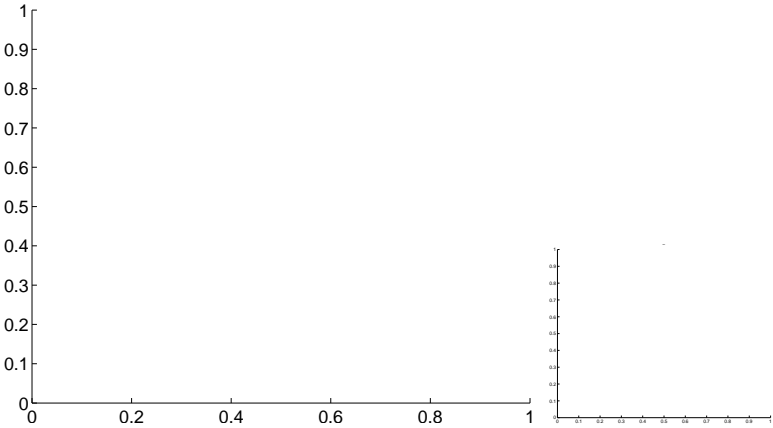
Q15 OOT image



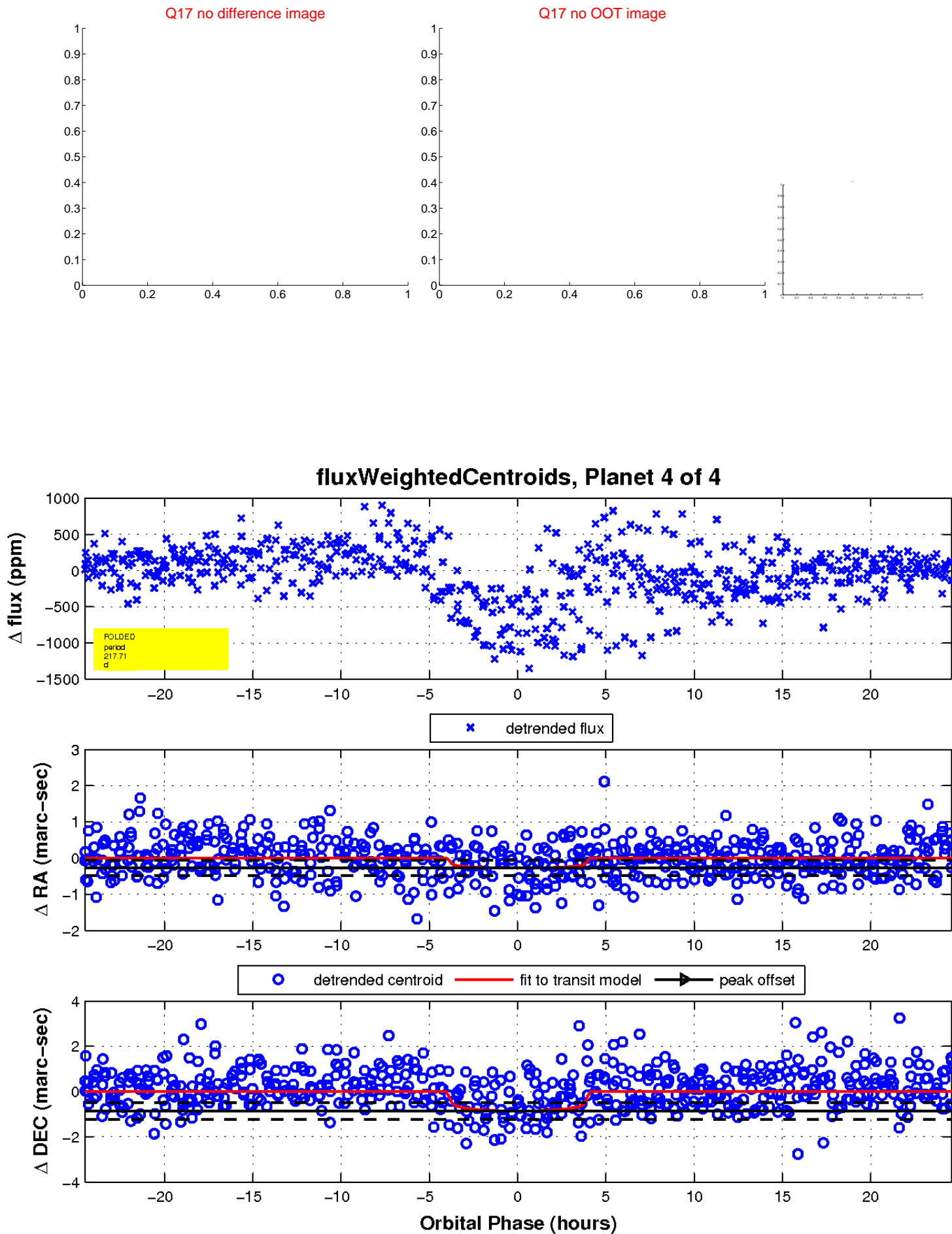
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

