

KIC 005780460

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})
005780460-01	OBS	1005.01	35.617589	161.418626	4696.0	8.487	123.2	120.5	0.78	5123	5.25	10.21
005780460-02	OBS	No	35.619646	161.318086	713.5	60.054	8.1	12.4	0.78	5123	2.74	10.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780460-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005780460-02	OBS	FP	0.00	1	0	0	0	LPP_DV—RESIDUAL_TCE

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.

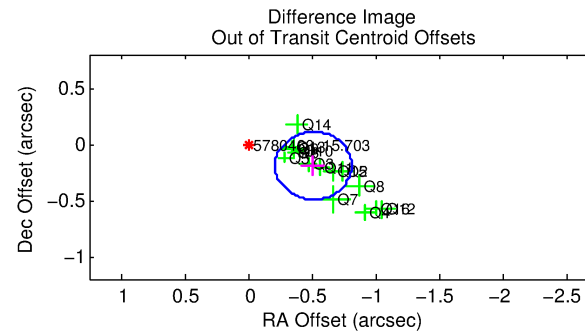
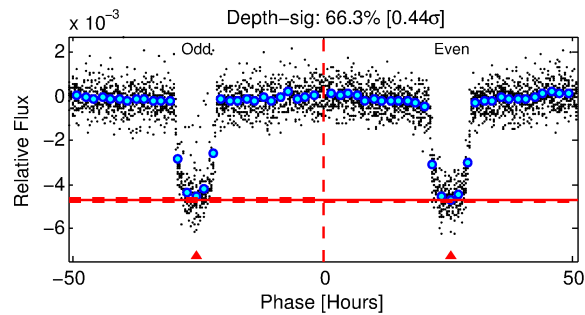
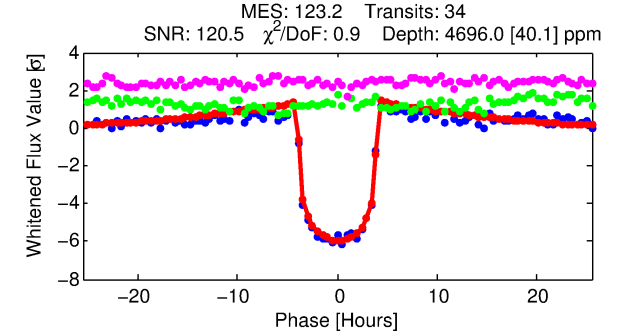
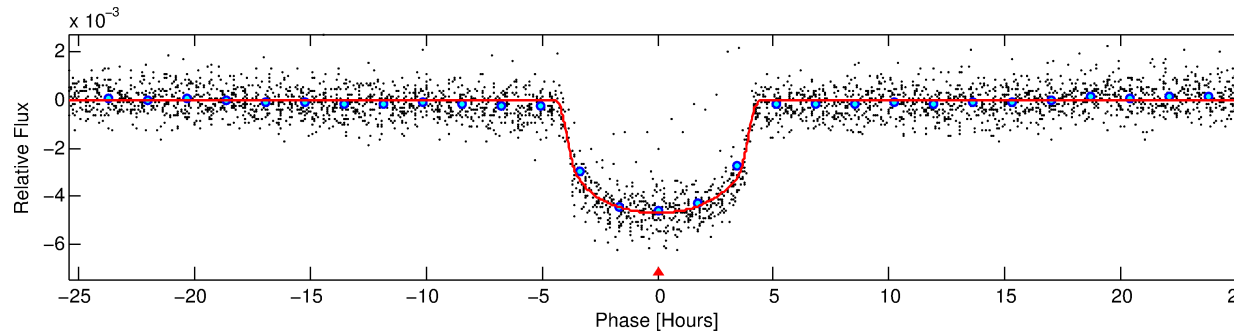
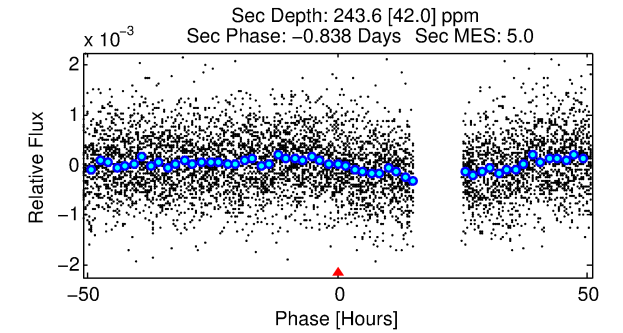
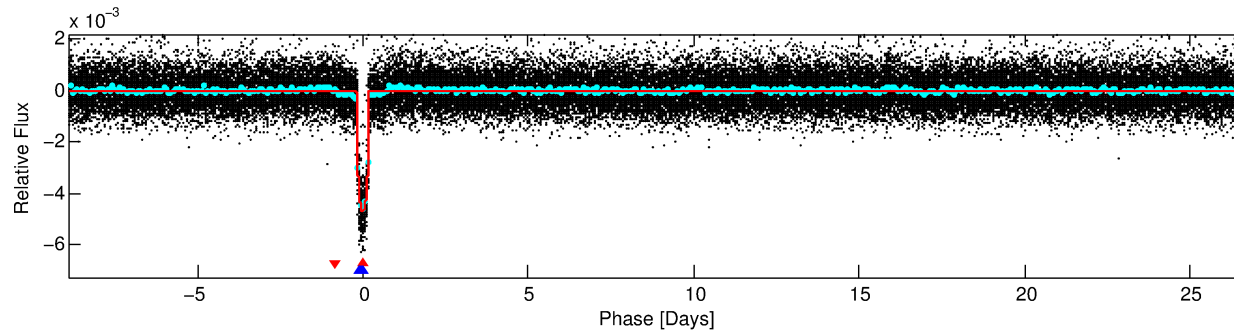
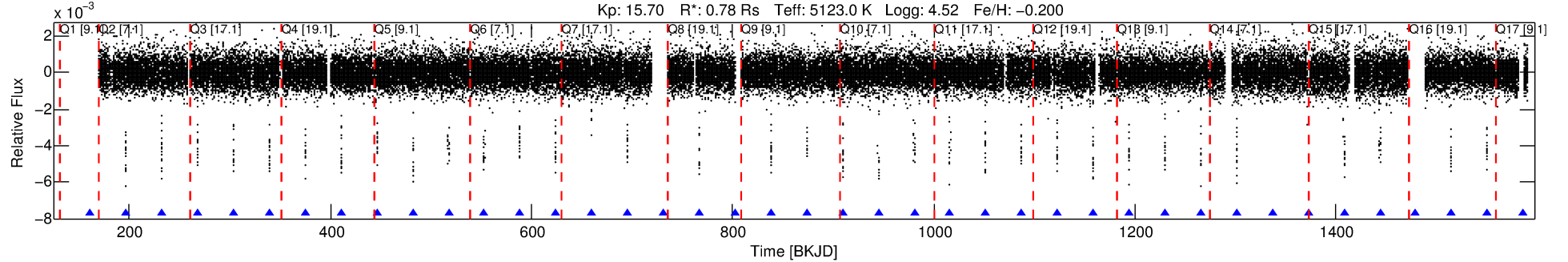
Ephemeris Match Information For 005780460-01

No Significant Match Found

DV One-Page Summary

KIC: 5780460 Candidate: 1 of 2 Period: 35.618 d
KOI: K01005.01 Corr: 0.996

Kp: 15.70 R*: 0.78 Rs Teff: 5123.0 K Logg: 4.52 Fe/H: -0.200



DV Fit Results:

Period = 35.61759 [0.00006] d
Epoch = 161.4186 [0.0012] BKJD
Rp/R* = 0.0617 [0.0022]
a/R* = 32.90 [4.03]
b = 0.27 [0.42]
Seff = 10.21 [2.03]
Teq = 456 [23] K
Rp = 5.25 [0.62] Re
a = 0.1915 [0.0190] AU
Ag = 178.38 [42.56] [4.17σ]
Teffp = 2576 [147] K [14.29σ]

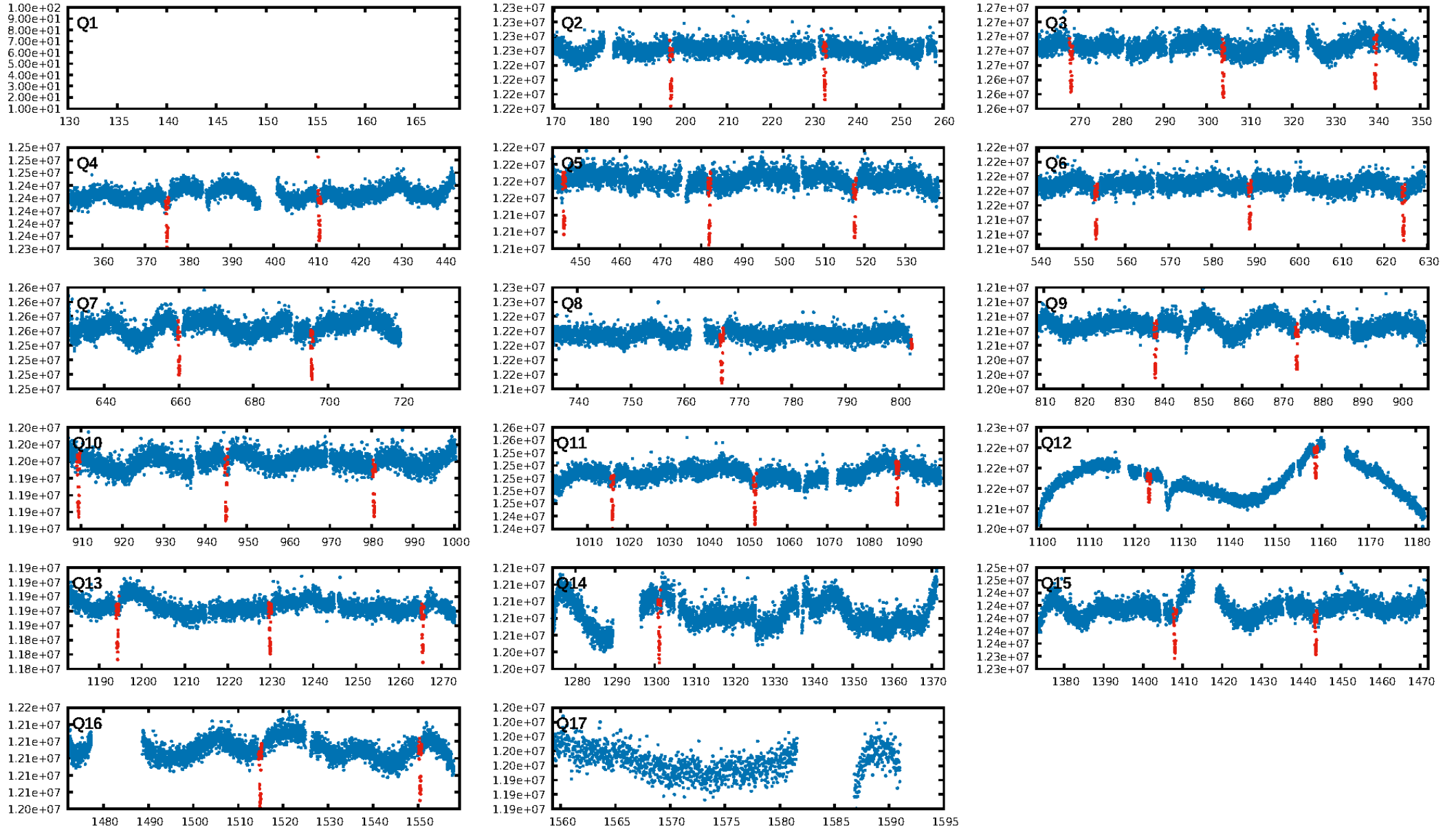
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 39.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [34/34]
GhostDiagnostic-chr: 4.496
Centroid-sig: 0.0%
Centroid-so: 0.242 arcsec [3.08σ]
OotOffset-rm: 0.546 arcsec [5.45σ]
KicOffset-rm: 0.103 arcsec [1.08σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 0.00 [0/15]

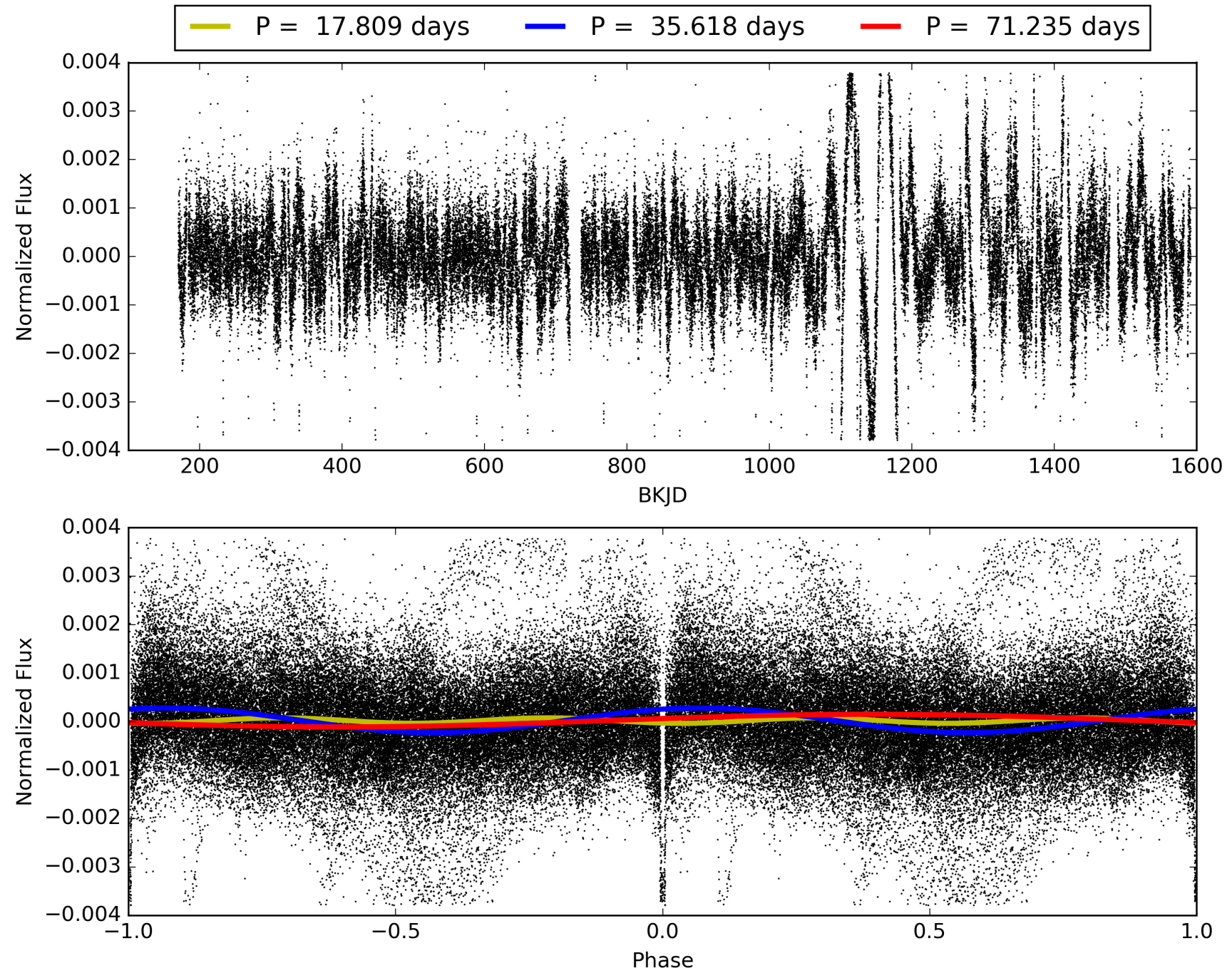
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:05:39 Z

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

TCE 005780460-01, PDC Light Curves

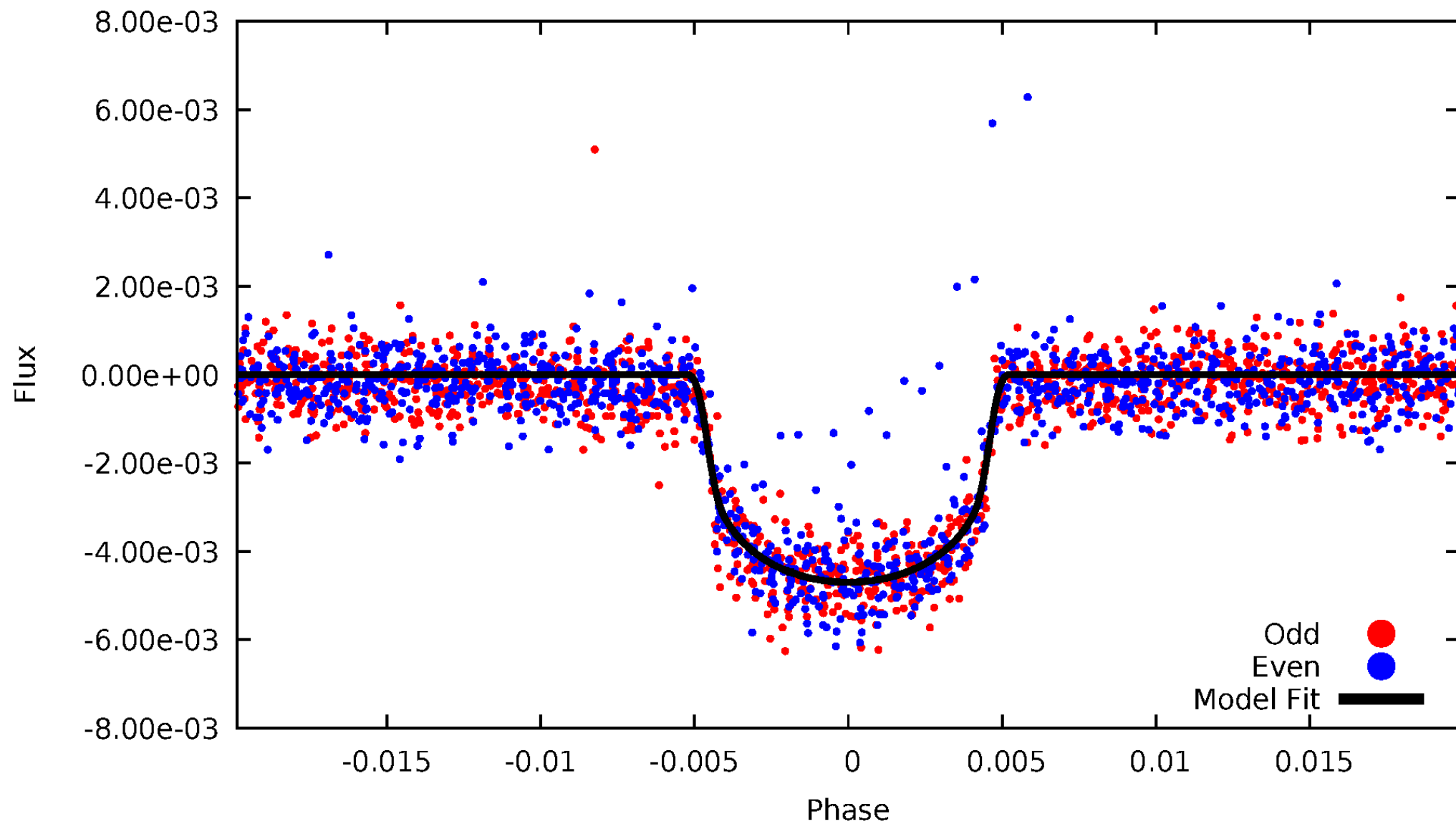


TCE 005780460-01



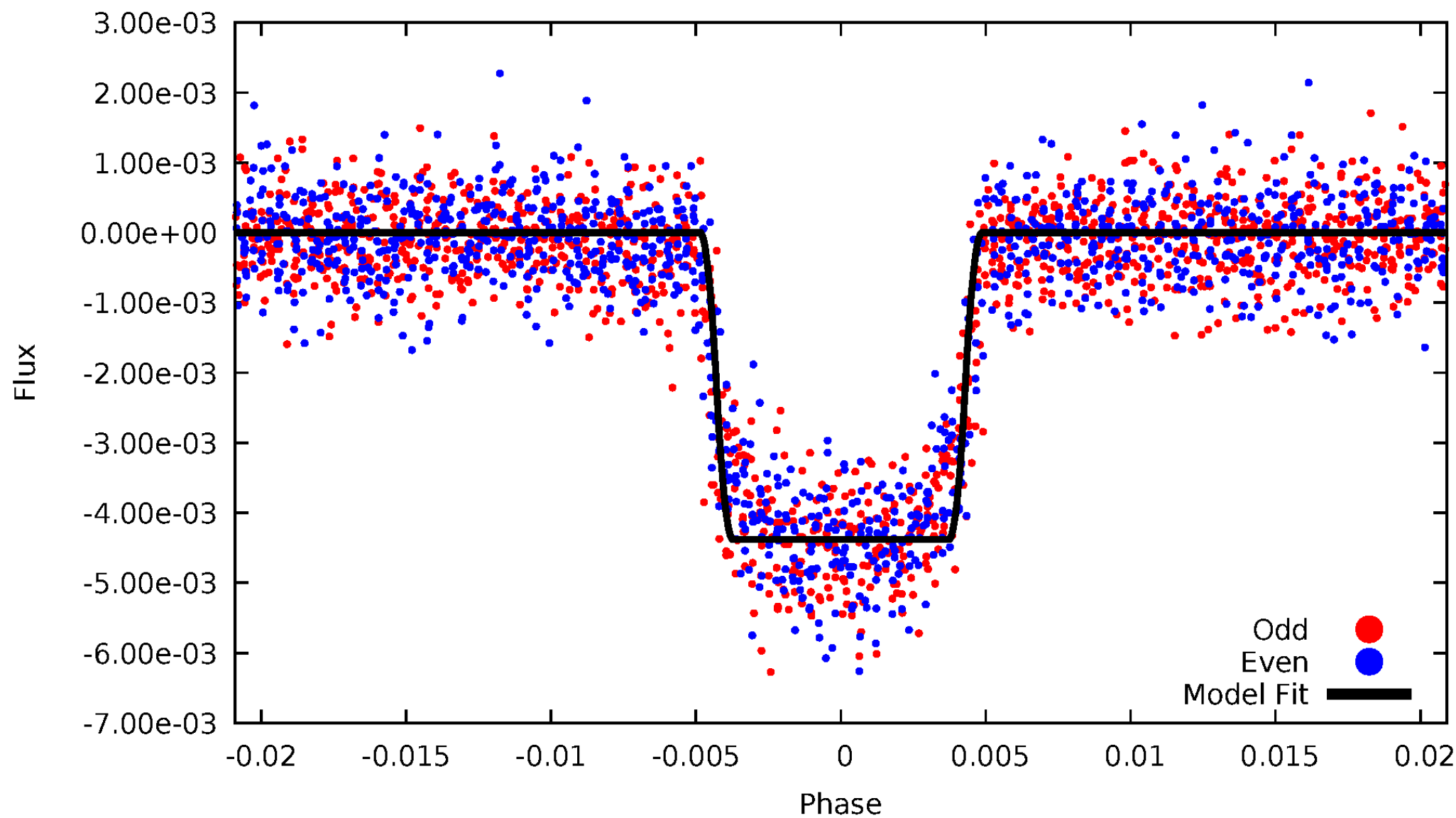
DV Odd/Even

TCE 005780460-01



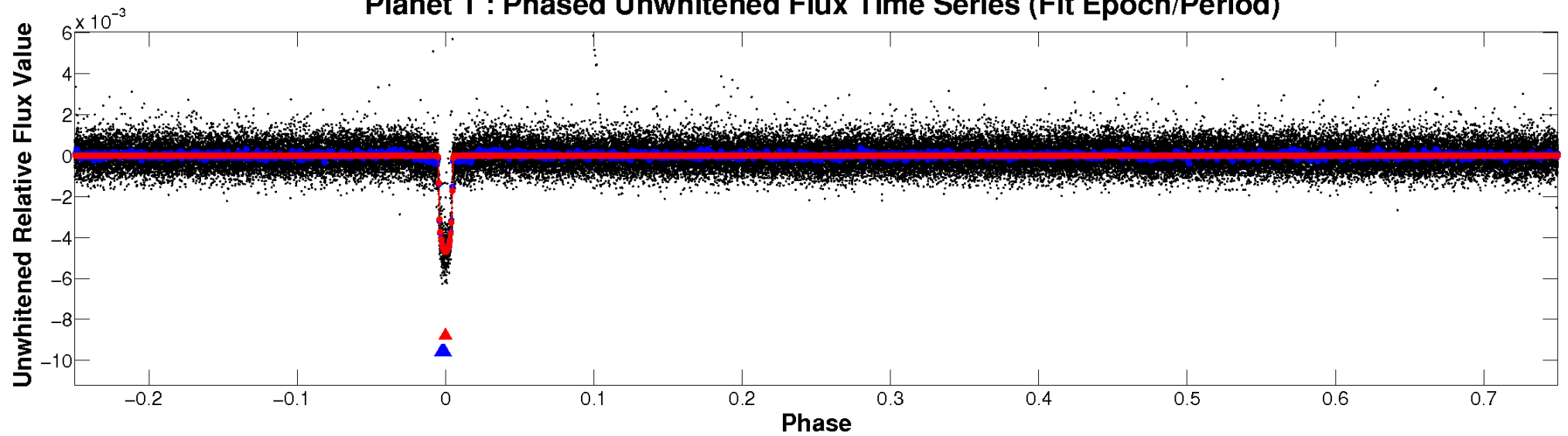
ALT Odd/Even

TCE 005780460-01

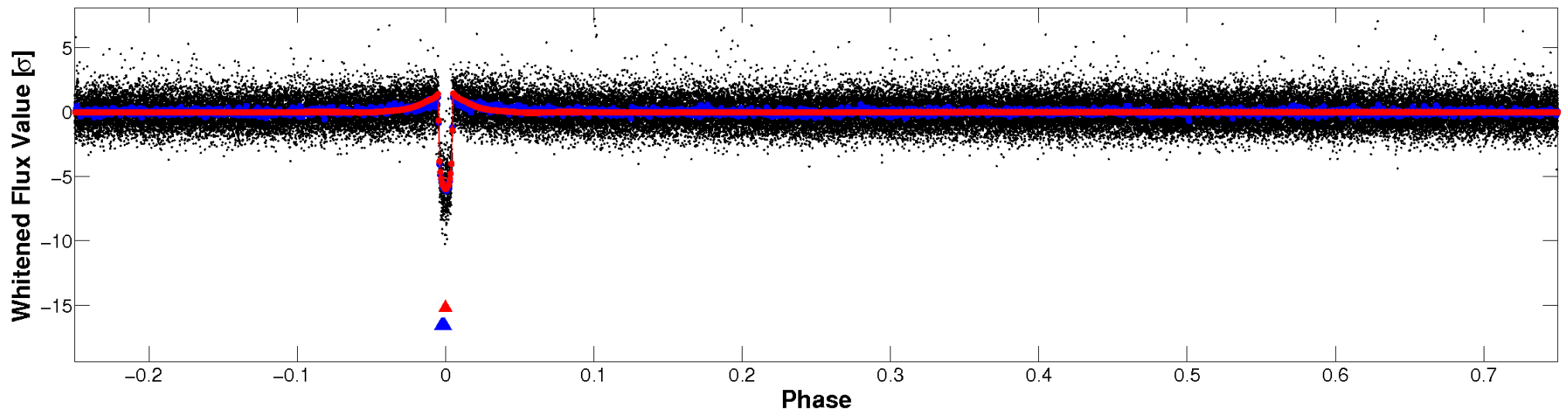


Non-Whitened Vs. Whitened Light Curve

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

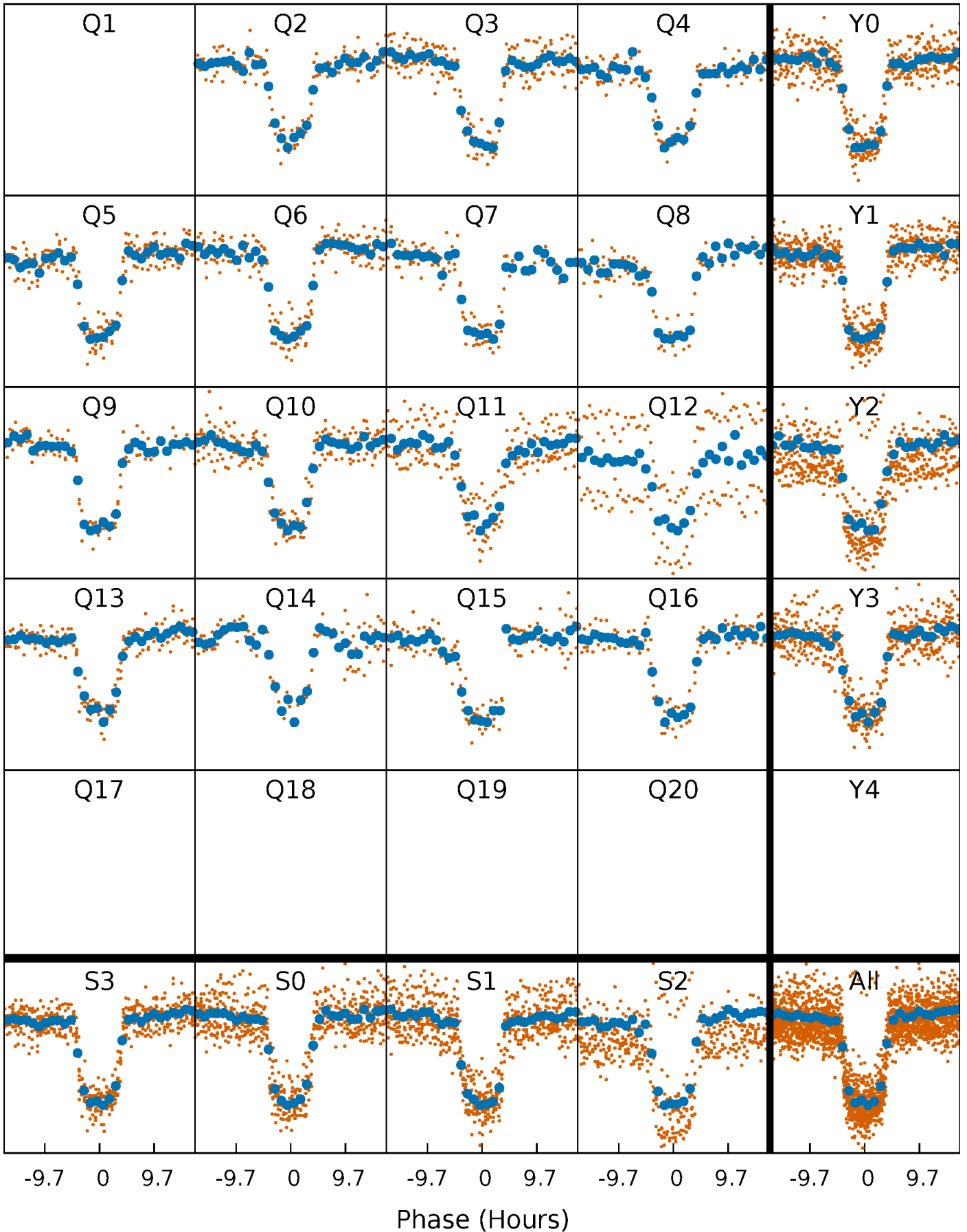


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



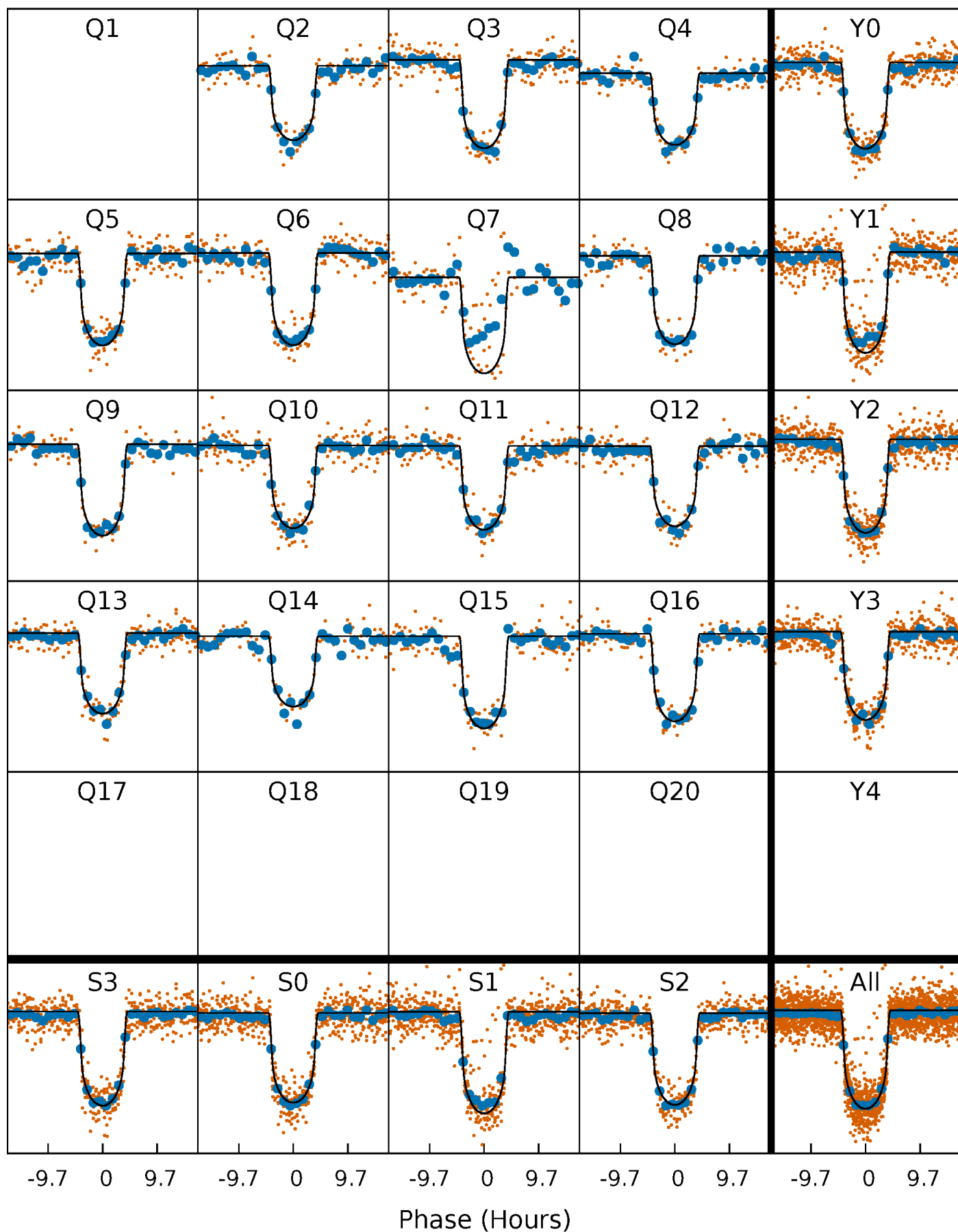
PDC Quarter-Phased Transit Curves

TCE 005780460-01 P= 35.617589 Days $T_0=161.418626$ (BKJD)



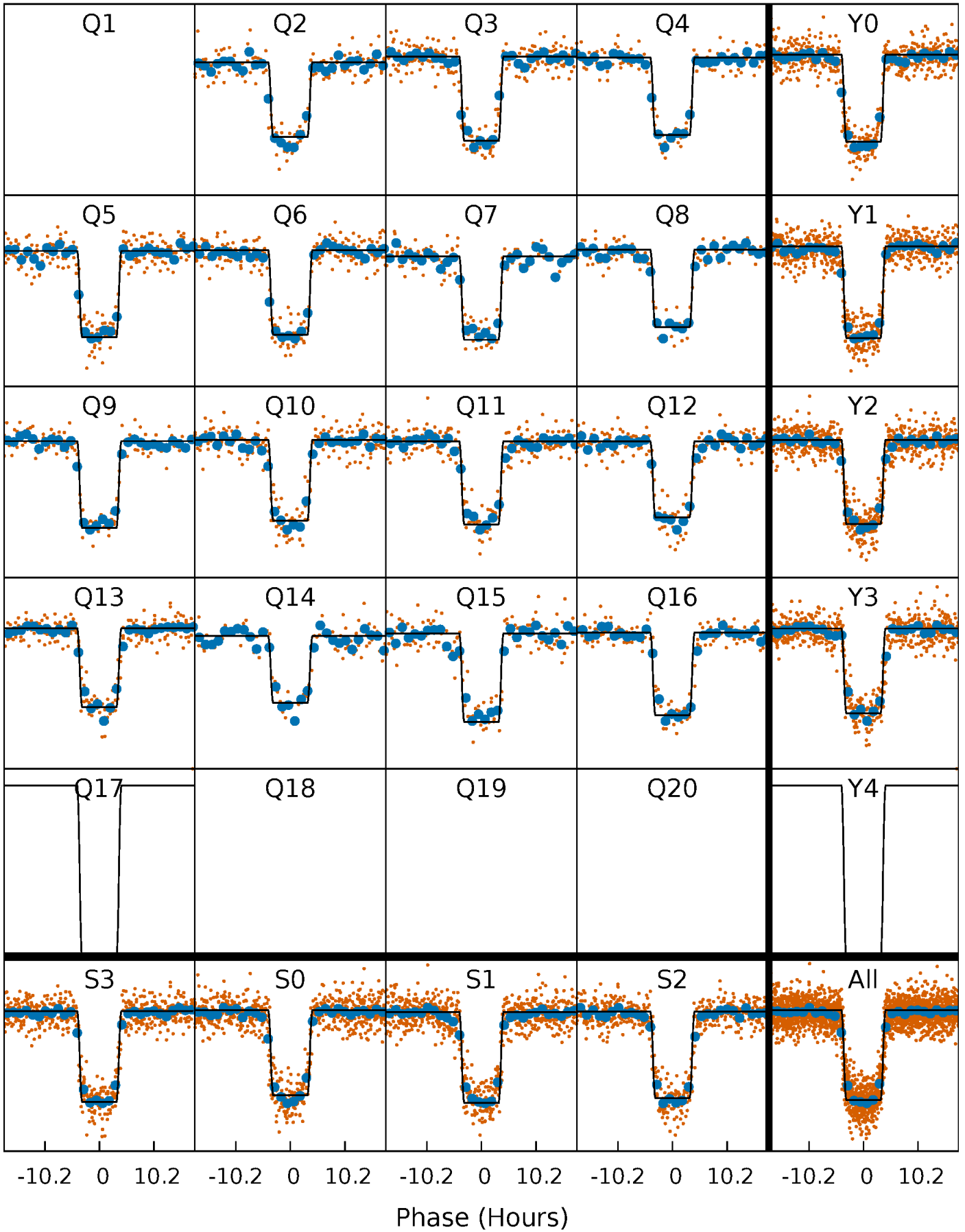
DV Quarter-Phased Transit Curves

TCE 005780460-01 P= 35.617589 Days $T_0=161.418626$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

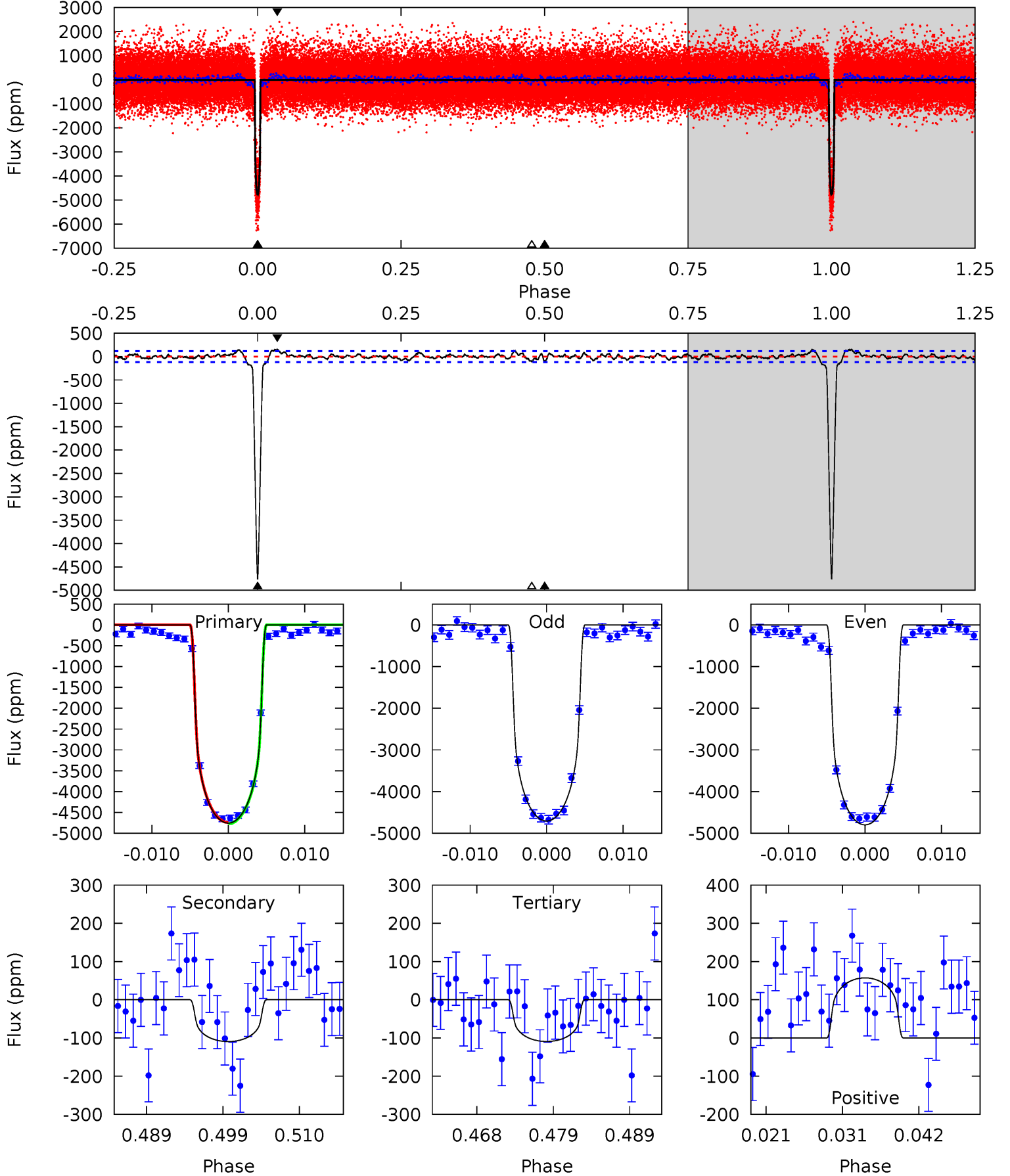
TCE 005780460-01 P= 35.616837 Days $T_0=161.432873$ (BKJD)



DV Model-Shift Uniqueness Test

005780460-01, $P = 35.617589$ Days, $E = 161.418626$ Days

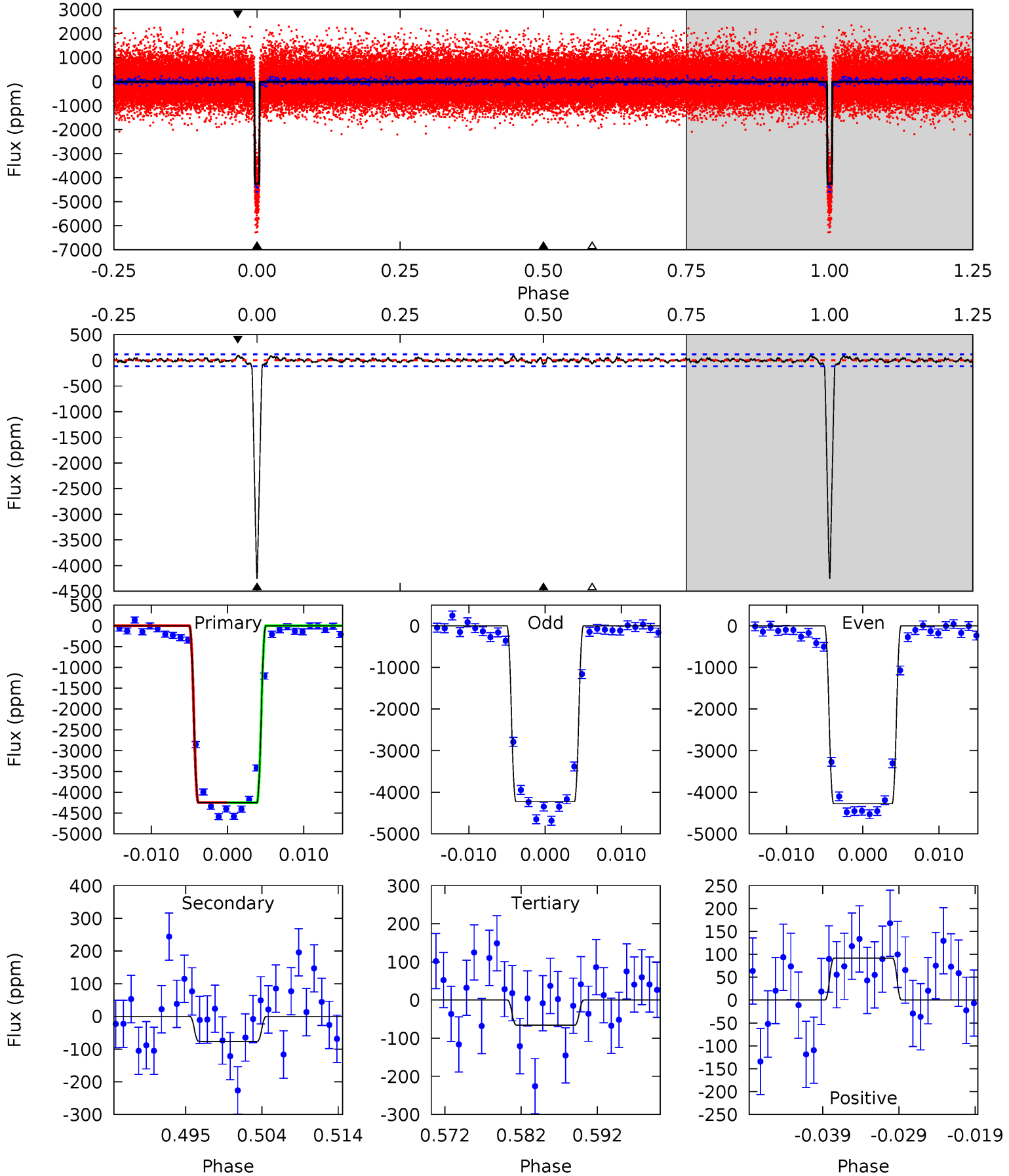
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
204.2	4.70	4.69	6.75	5.02	2.56	1.96	199.5	197.4	0.01	-2.05	1.98	0.97	0.03	0.60



Alt Model-Shift Uniqueness Test

005780460-01, P = 35.616837 Days, E = 161.432873 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
184.1	3.31	2.85	3.97	5.03	2.59	1.11	181.2	180.1	0.47	-0.66	1.07	1.00	0.02	0.04



Stellar Parameters For KIC 005780460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5123^{+168}_{-138}	$4.523^{+0.084}_{-0.063}$	$-0.200^{+0.300}_{-0.300}$	$0.779^{+0.080}_{-0.088}$	$0.737^{+0.103}_{-0.051}$	$2.198^{+0.853}_{-0.478}$
	+3%/-3%	+2%/-1%	+150%/-150%	+10%/-11%	+14%/-7%	+39%/-22%
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 005780460-01 / KOI 1005.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-109 ± 23	$5.24^{+0.41}_{-0.35}$	636^{+26}_{-24}	2818^{+101}_{-102}	81^{+21}_{-20}
Alt.	-76 ± 23	$5.64^{+0.42}_{-0.42}$	636^{+26}_{-26}	2640^{+104}_{-128}	48^{+15}_{-15}

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 $A_{obs} \gg 1.0$

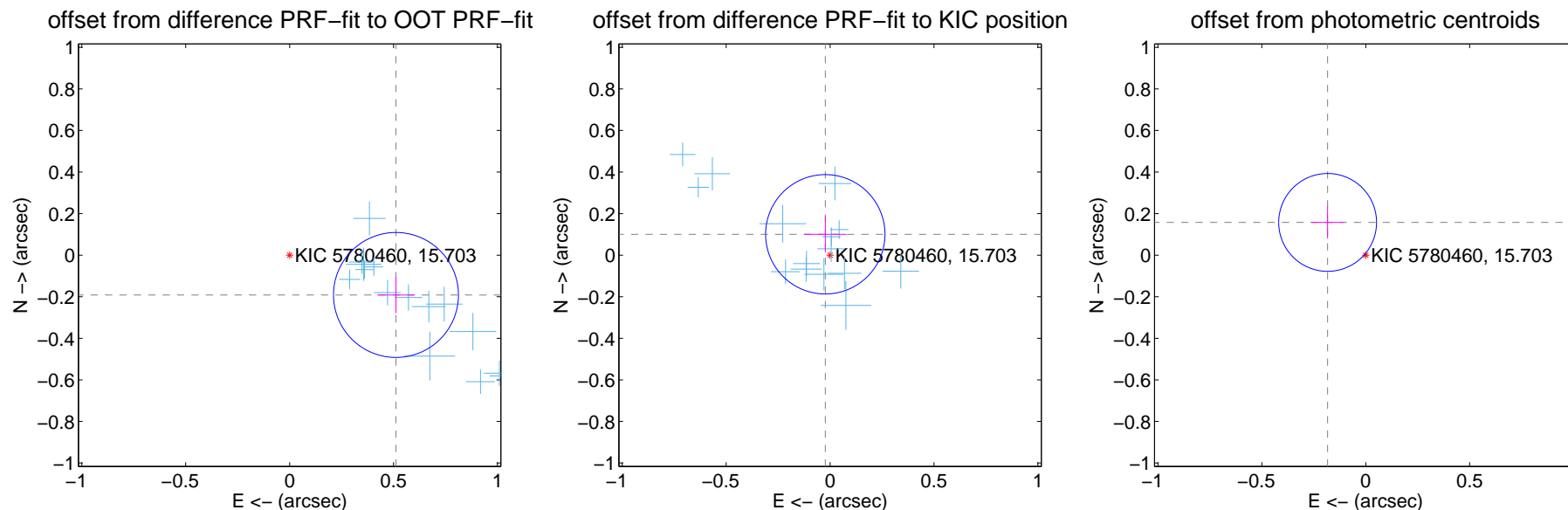
DV Centroid Data

Supplemental centroid analysis for 005780460-01. Kepler magnitude: 15.70. Transit SNR 120.50

There are 15 quarters with good PRF difference image offsets

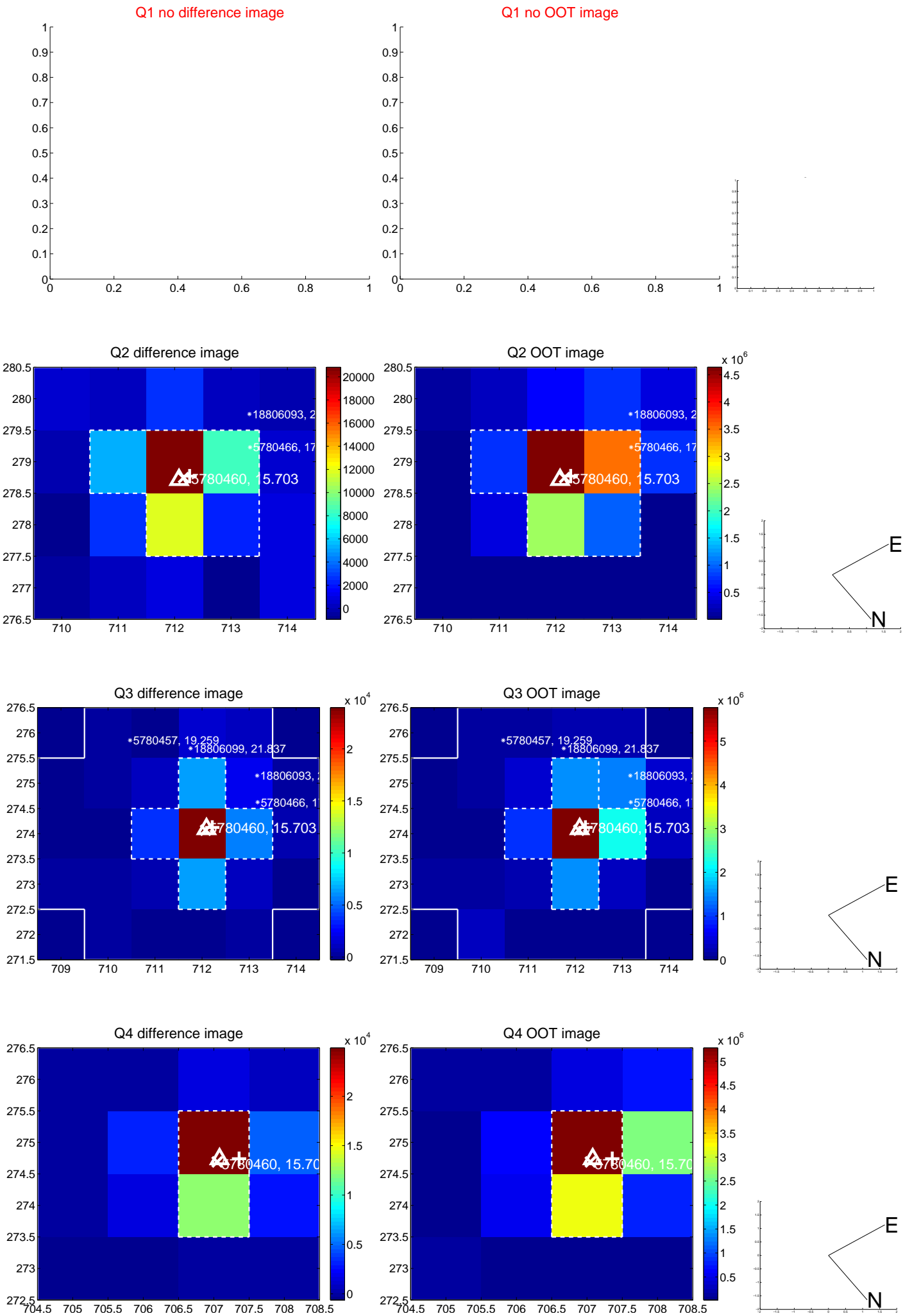
The direct PRF centroid is offset from the target star catalog position by about 1.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.546 ± 0.100	5.45	-0.512 ± 0.090	-0.192 ± 0.087
PRF-fit source offset from KIC position	0.103 ± 0.096	1.08	0.023 ± 0.102	0.100 ± 0.087
photometric centroid source offset	0.24 ± 0.08	3.08	0.18 ± 0.08	0.16 ± 0.08

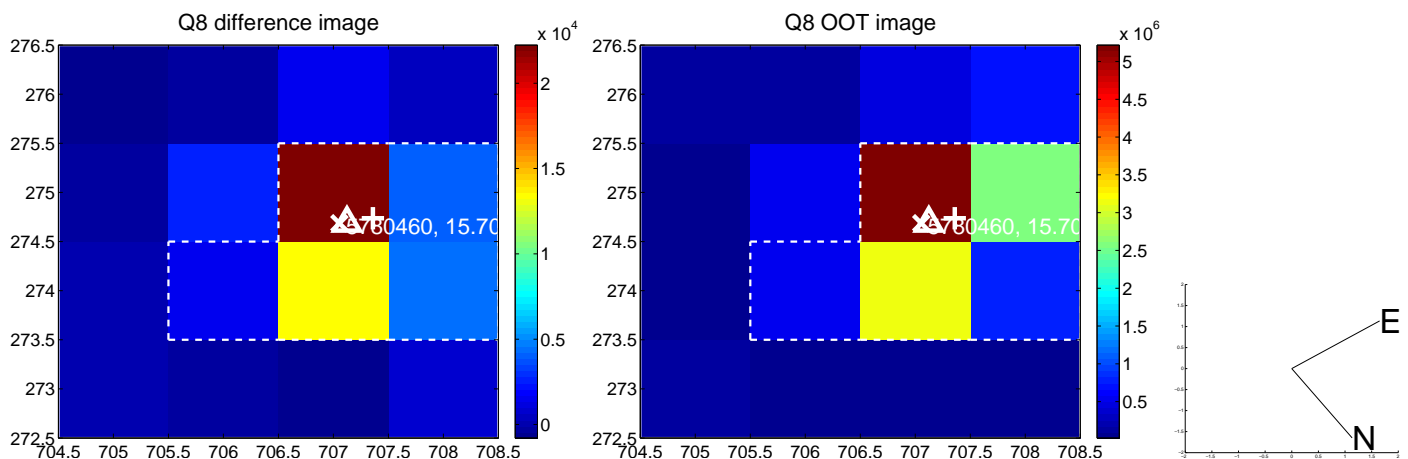
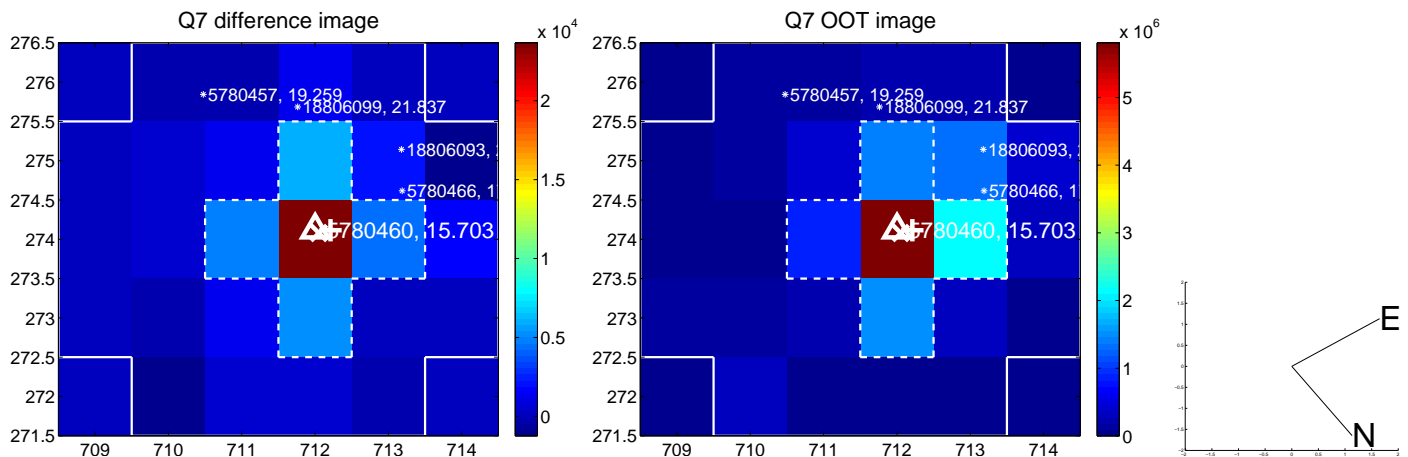
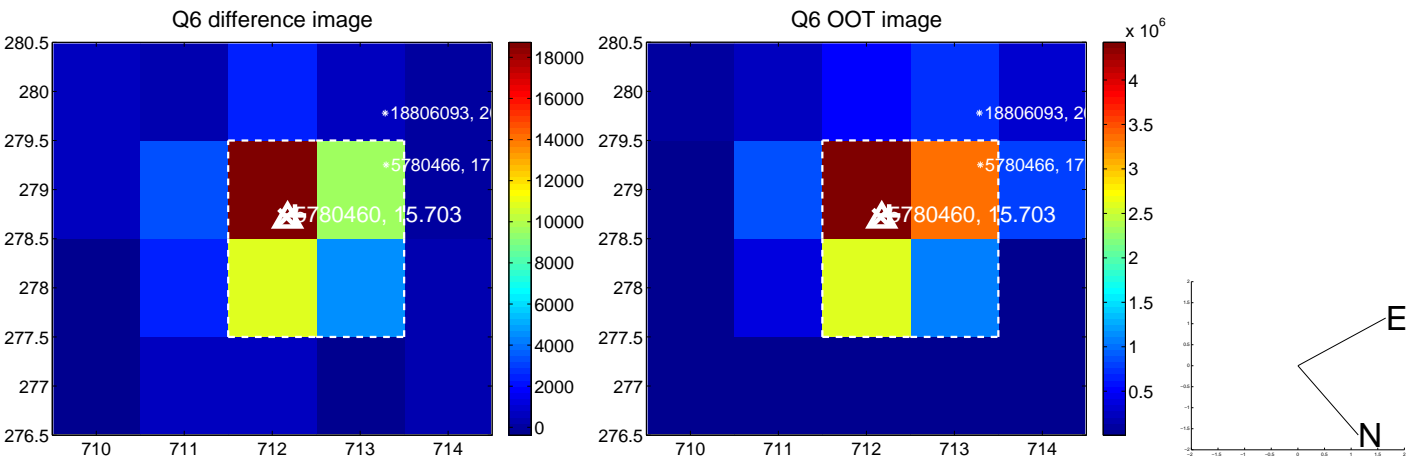
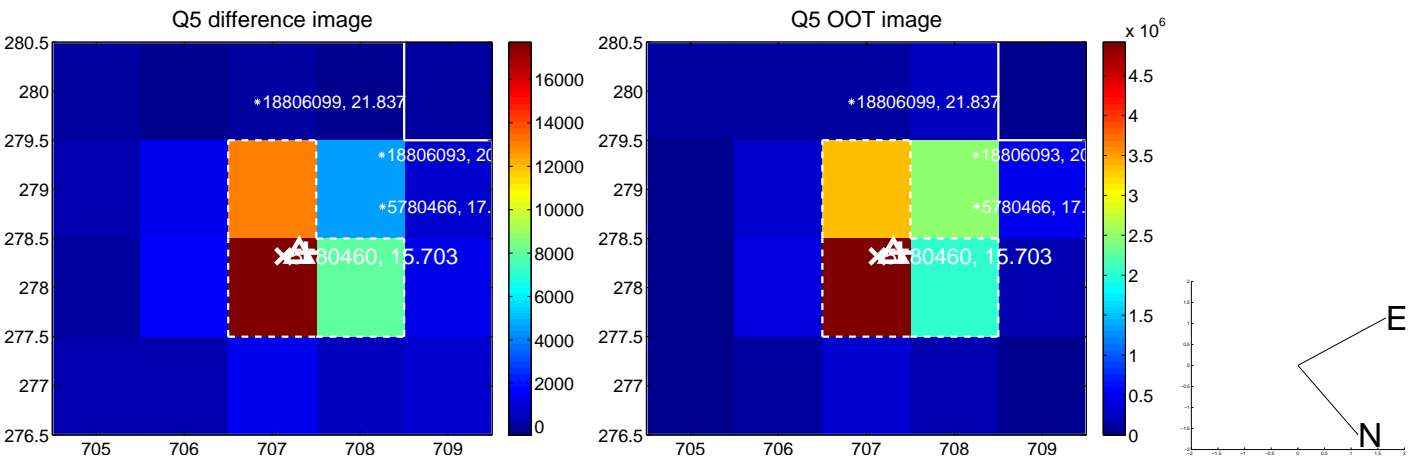


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

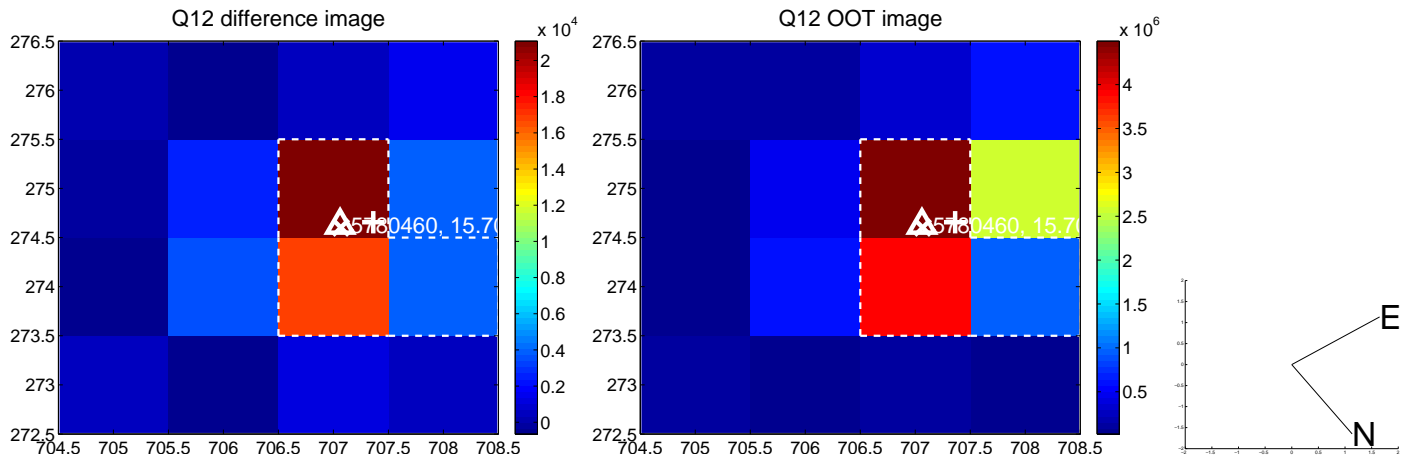
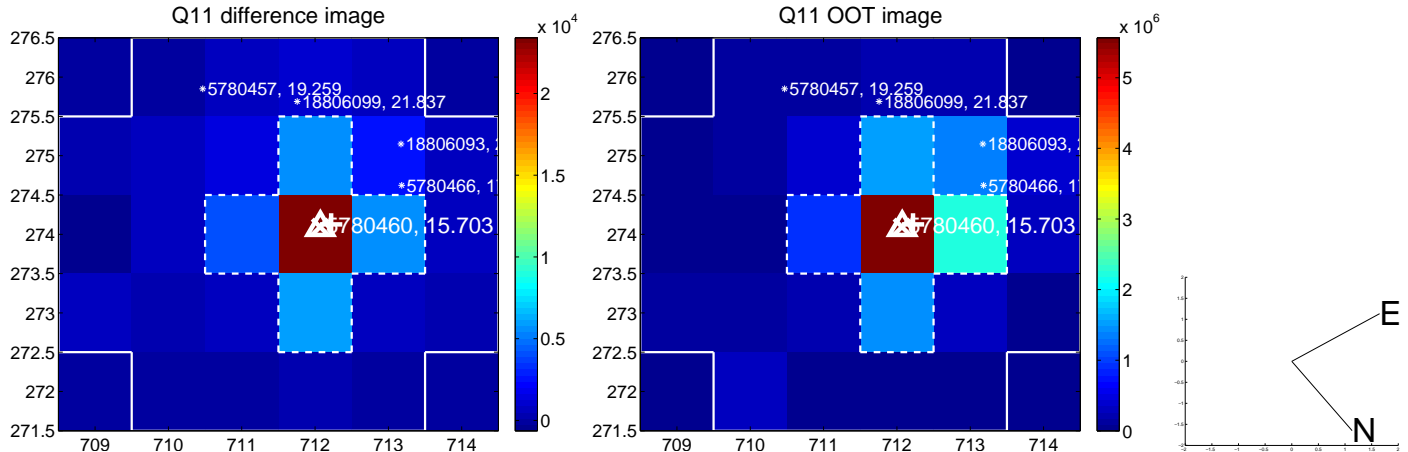
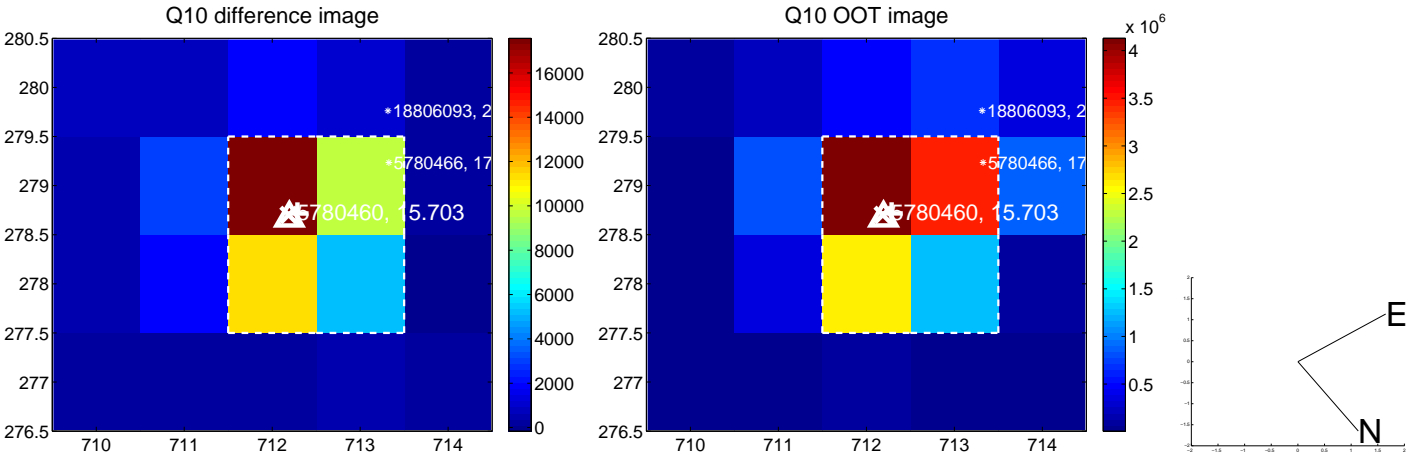
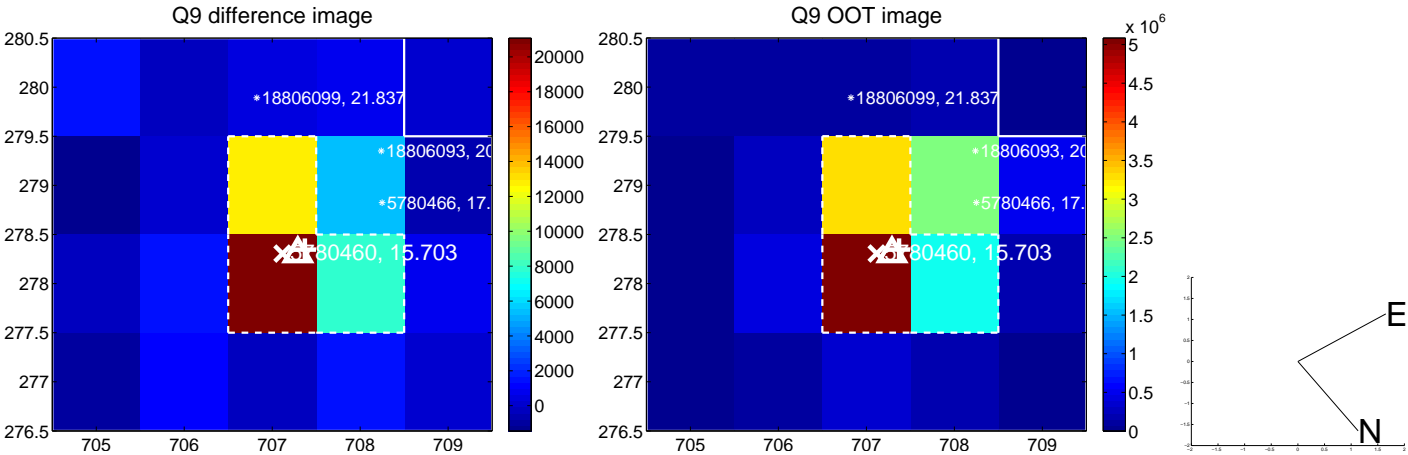
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



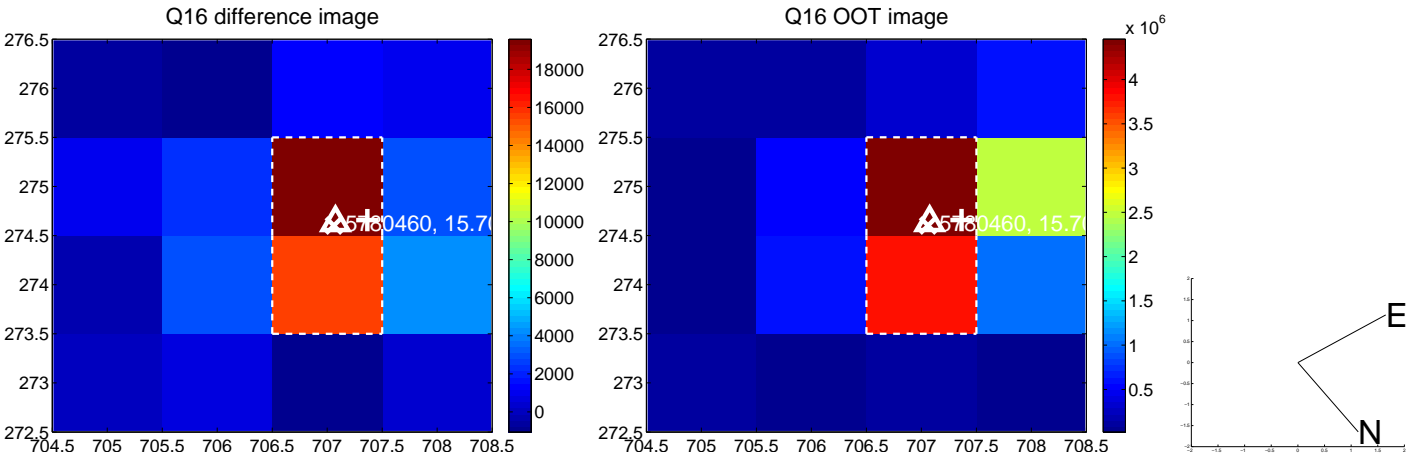
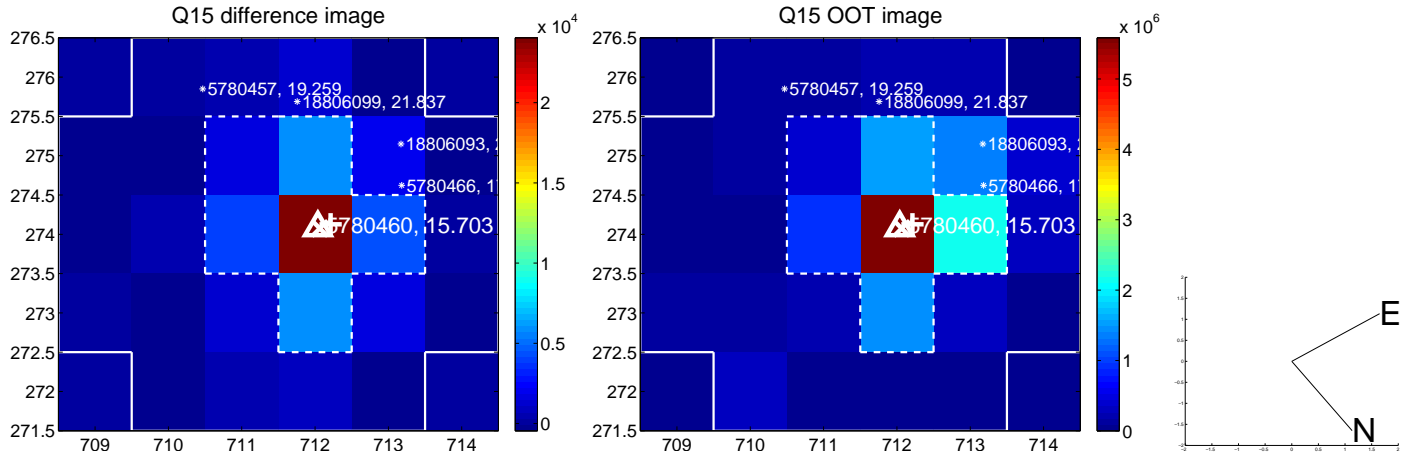
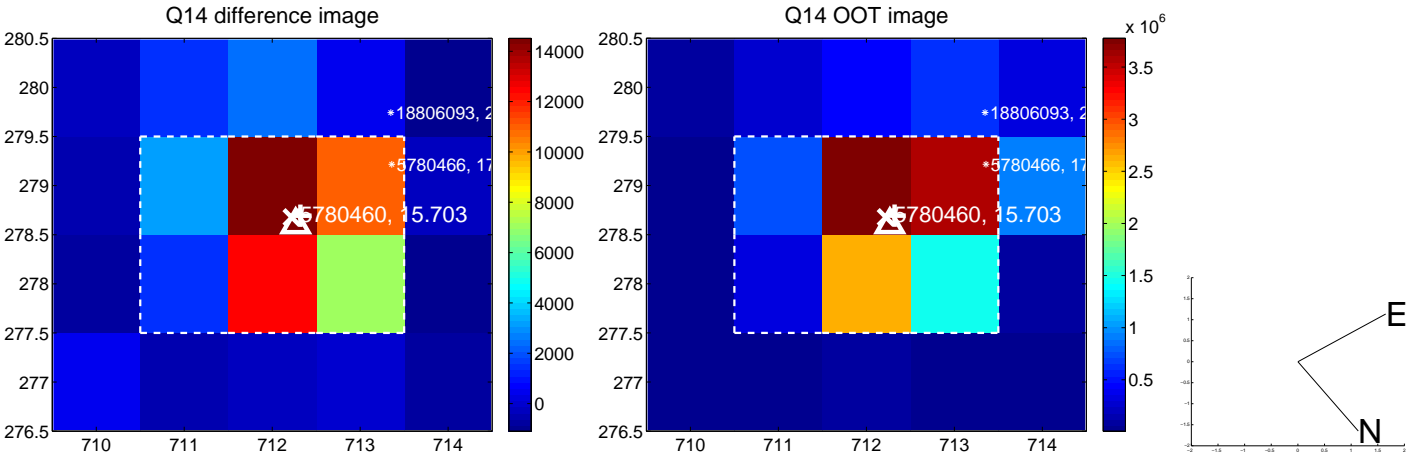
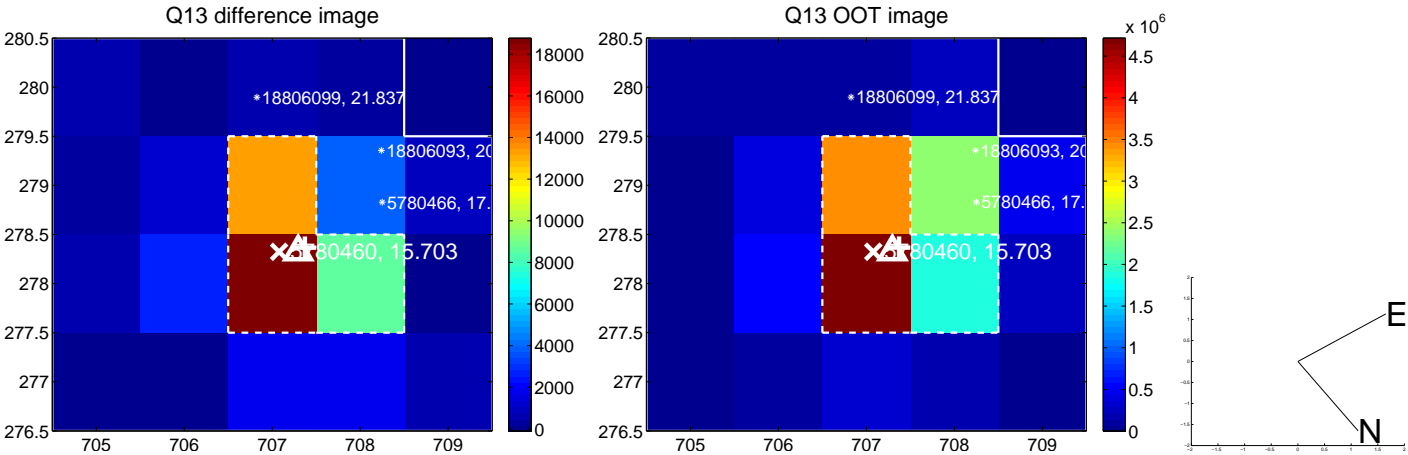
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



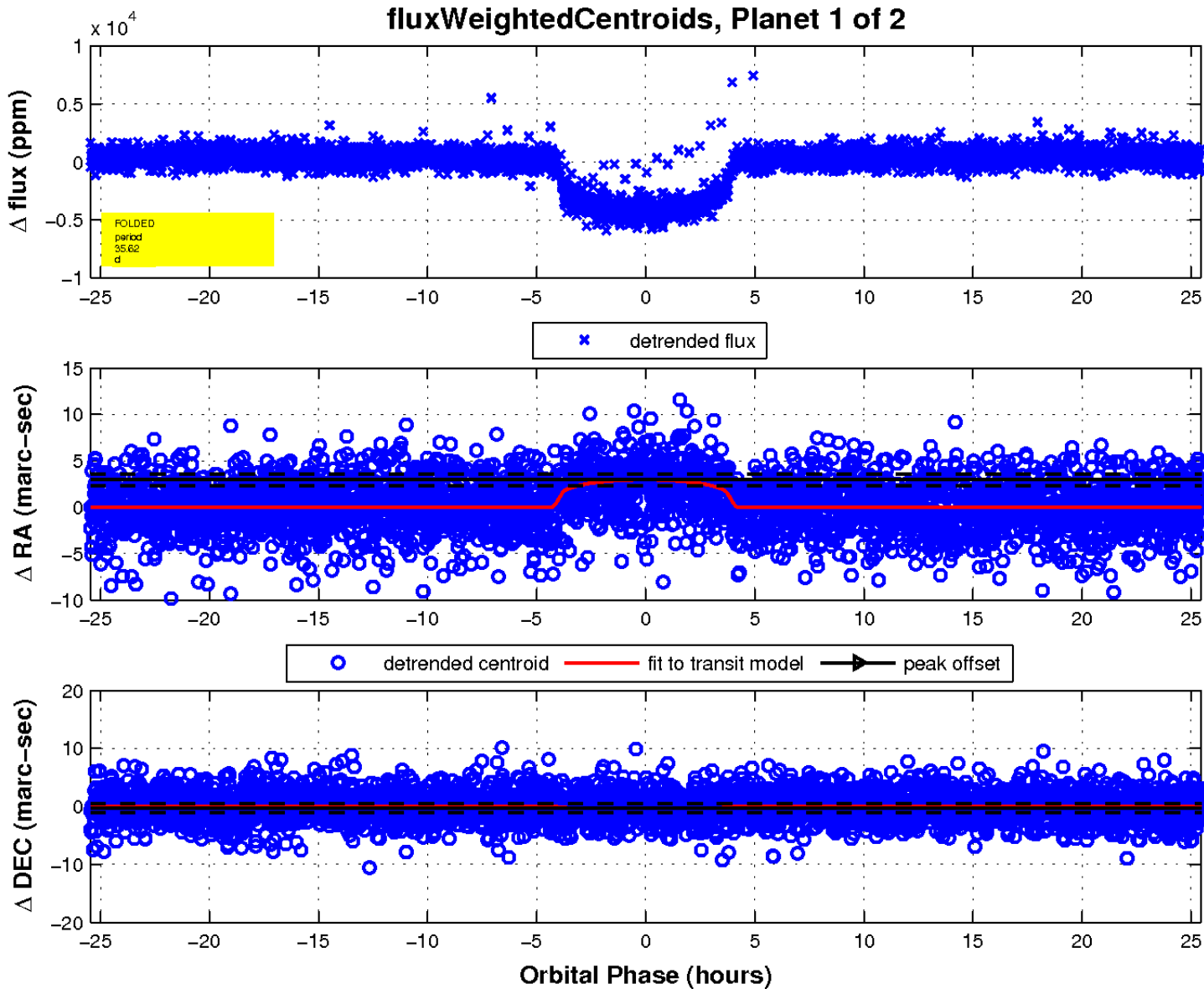
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

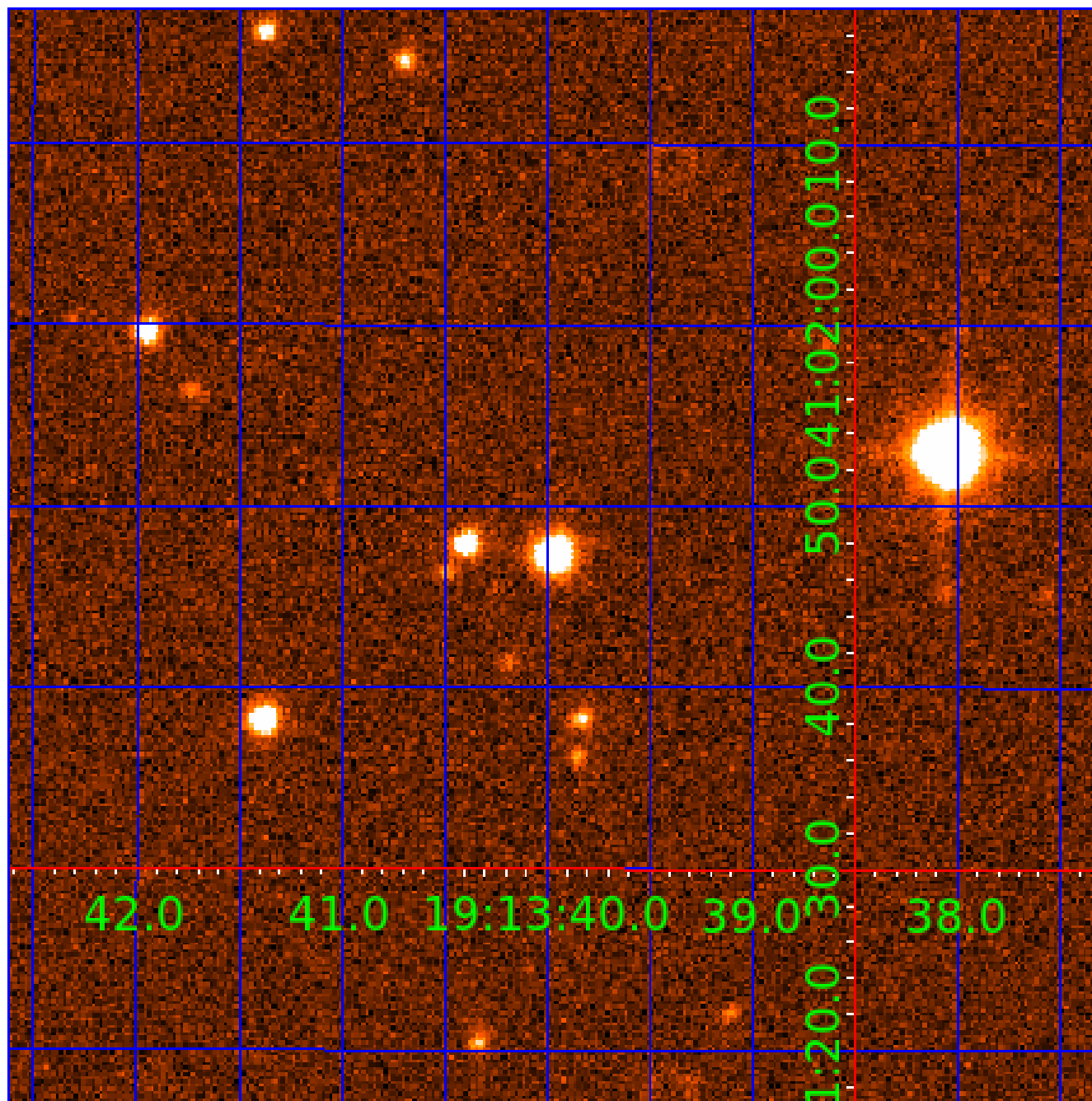
Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination



KIC 005780460

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})
005780460-01	OBS	1005.01	35.617589	161.418626	4696.0	8.487	123.2	120.5	0.78	5123	5.25	10.21
005780460-02	OBS	No	35.619646	161.318086	713.5	60.054	8.1	12.4	0.78	5123	2.74	10.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780460-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005780460-02	OBS	FP	0.00	1	0	0	0	LPP_DV—RESIDUAL_TCE

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.

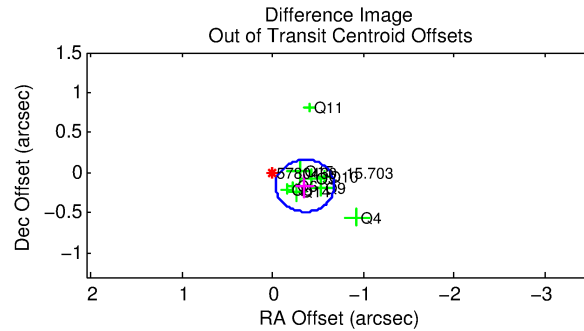
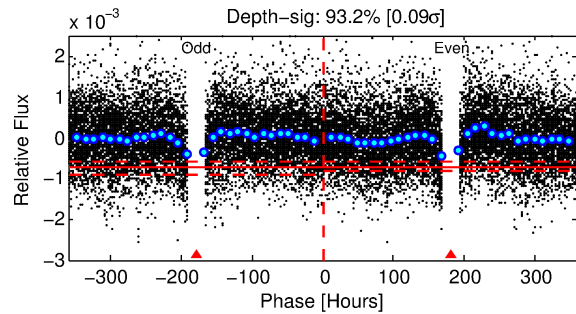
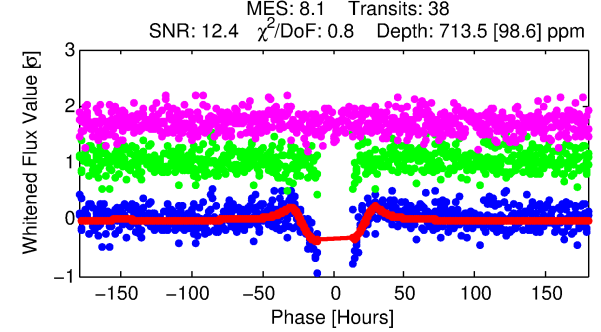
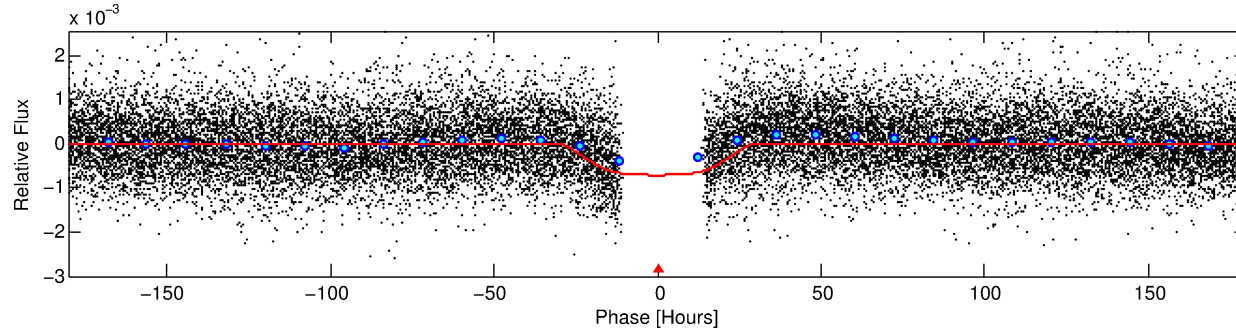
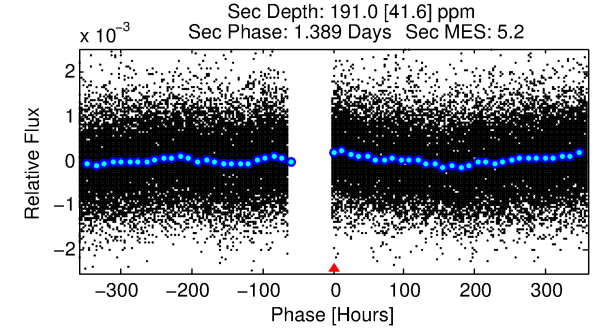
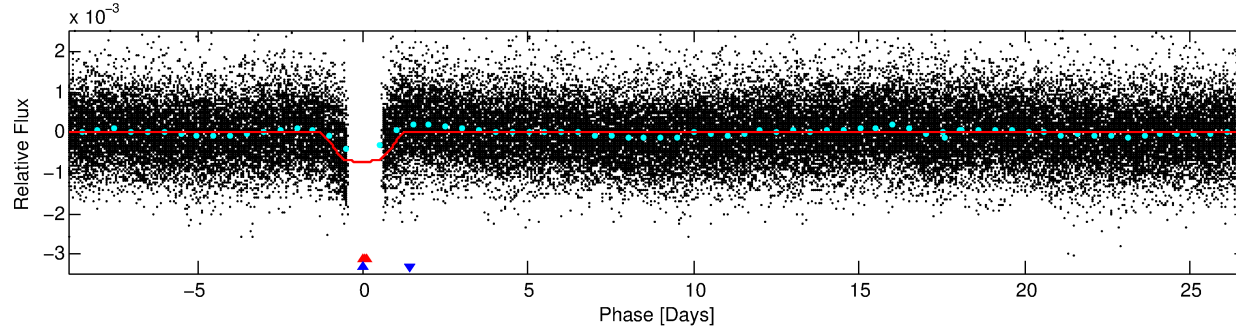
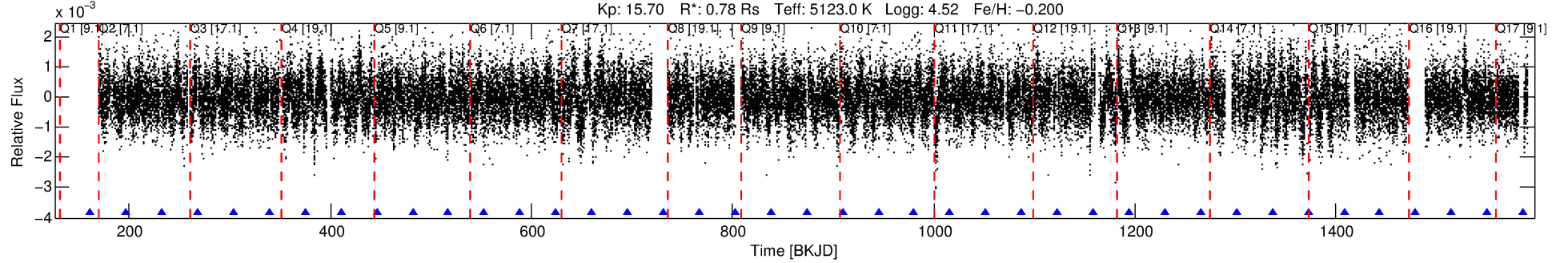
Ephemeris Match Information For 005780460-02

No Significant Match Found

DV One-Page Summary

KIC: 5780460 Candidate: 2 of 2 Period: 35.620 d
KOI: K01005 Corr: No Ephemeris Match

Kp: 15.70 R*: 0.78 Rs Teff: 5123.0 K Logg: 4.52 Fe/H: -0.200



DV Fit Results:

Period = 35.61965 [0.00189] d
Epoch = 161.3181 [0.0428] BKJD
Rp/R* = 0.0323 [0.0027]
a/R* = 2.04 [0.10]
b = 0.95 [0.01]
Seff = 10.21 [2.03]
Teq = 456 [23] K
Rp = 2.74 [0.38] Re
a = 0.1915 [0.0190] AU
Ag = 511.94 [159.62] [3.20σ]
Teffp = 3352 [254] K [11.34σ]

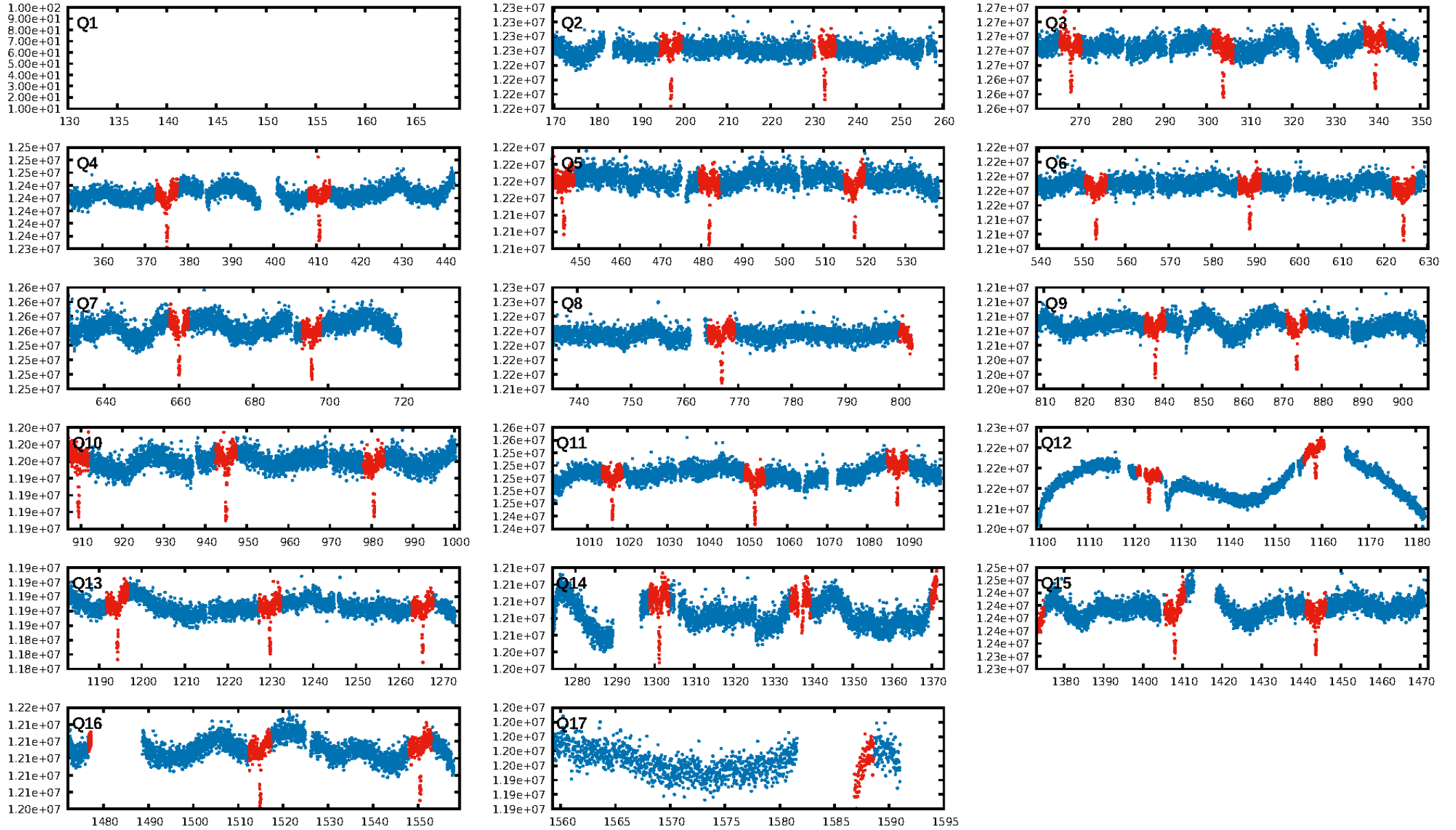
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 55.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.40e-15
RollingBand-fgt: 1.00 [37/37]
GhostDiagnostic-chr: 1.587
Centroid-sig: 19.7%
Centroid-so: 0.648 arcsec [2.54σ]
OotOffset-rm: 0.391 arcsec [3.62σ]
KicOffset-rm: 0.178 arcsec [1.50σ]
OotOffset-st: 3/3/1/2 [9]
KicOffset-st: 3/3/1/2 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.00 [0/9]

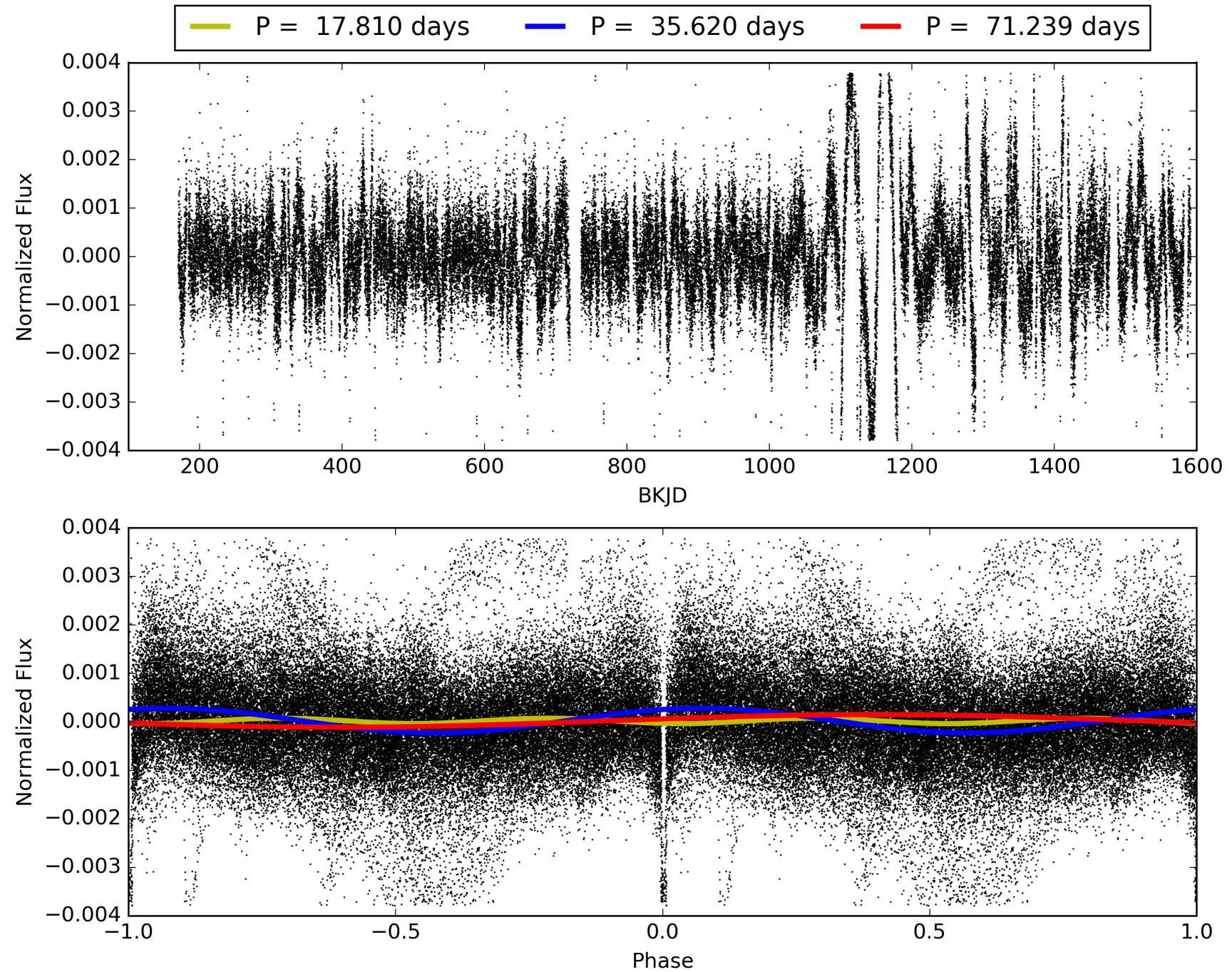
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:05:49 Z

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

TCE 005780460-02, PDC Light Curves

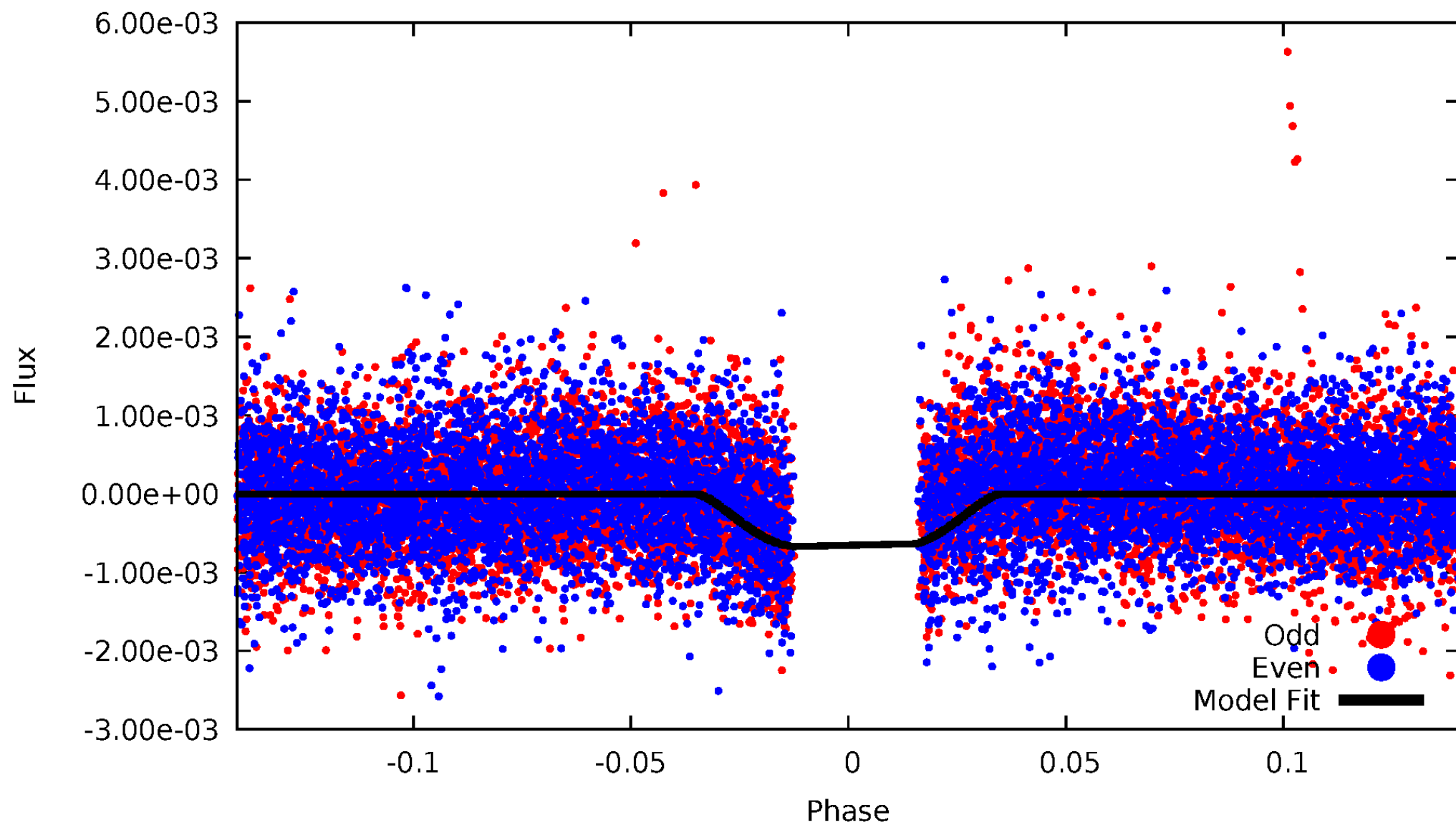


TCE 005780460-02



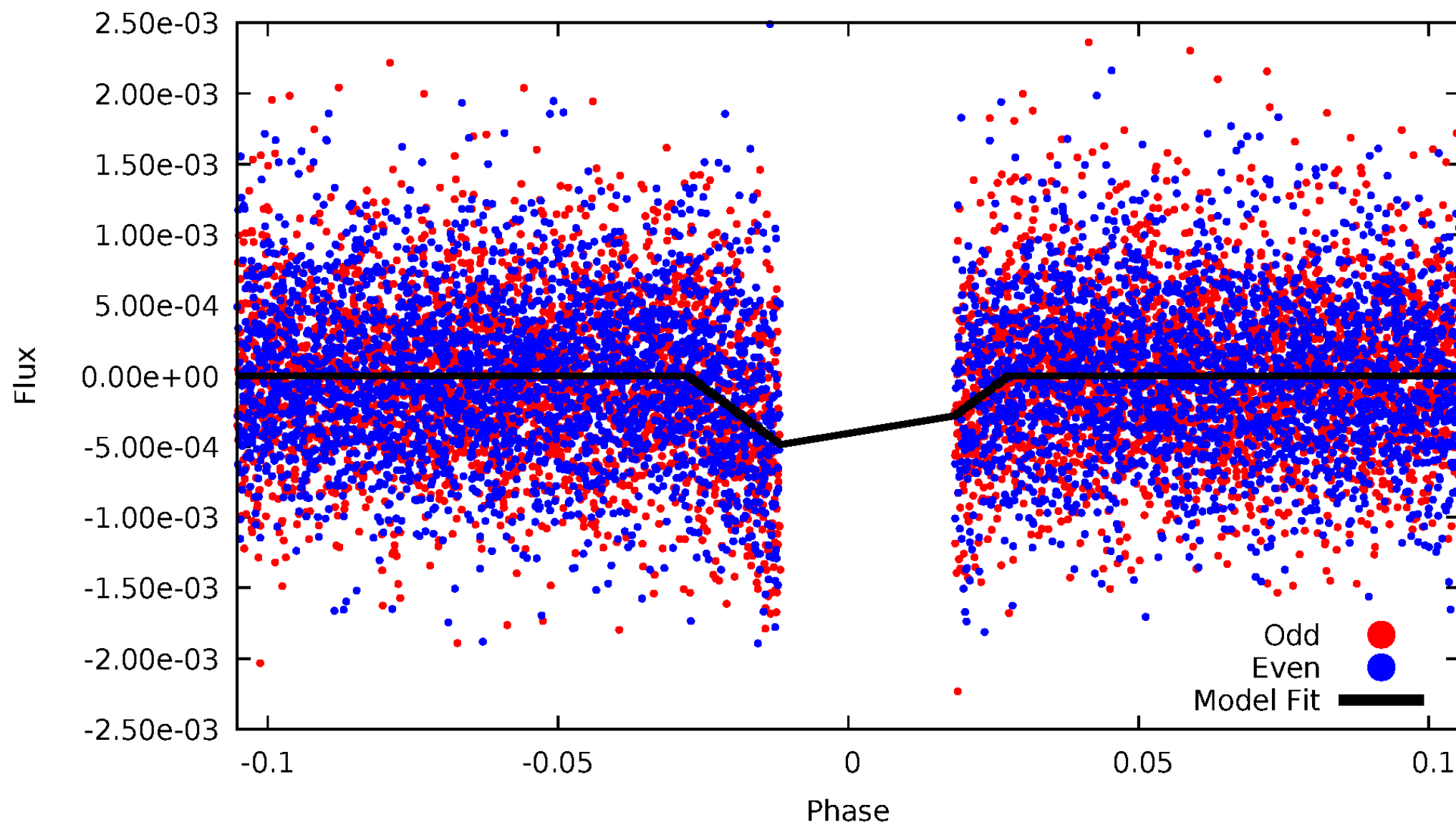
DV Odd/Even

TCE 005780460-02



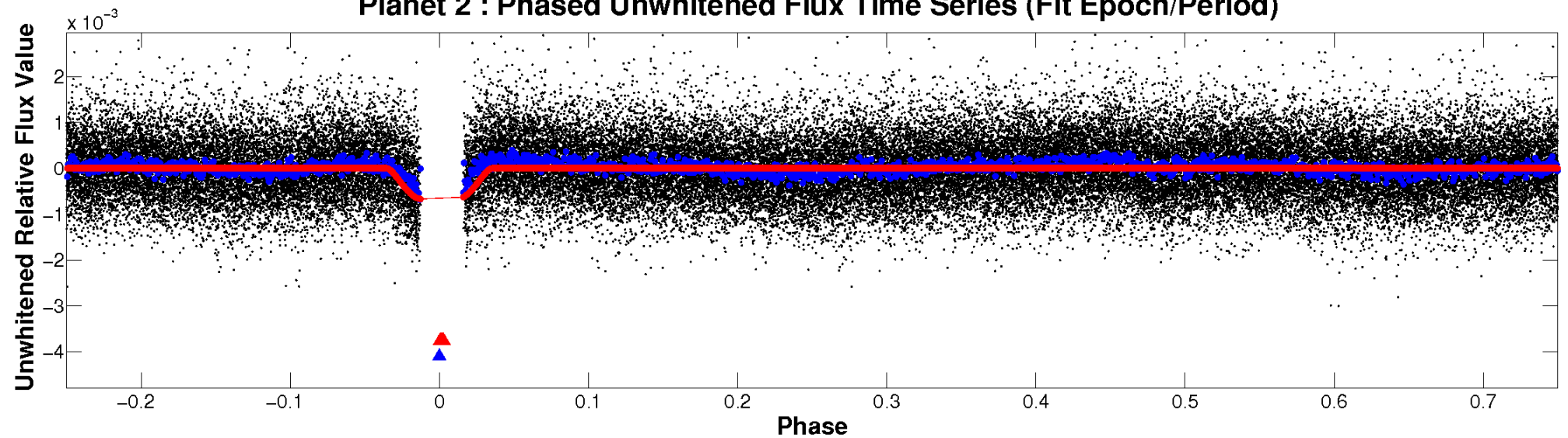
ALT Odd/Even

TCE 005780460-02

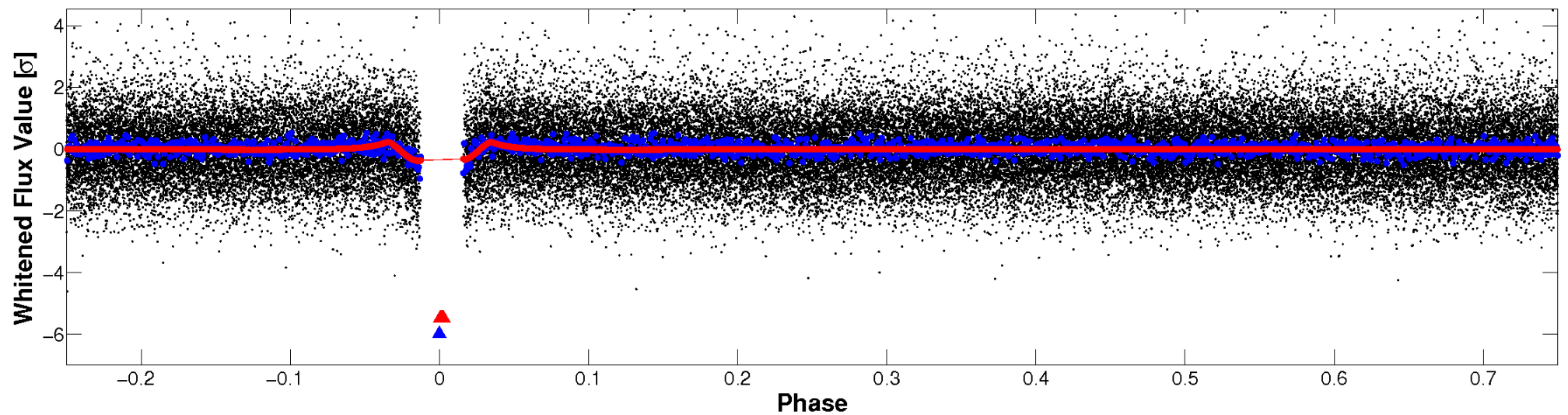


Non-Whitened Vs. Whitened Light Curve

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

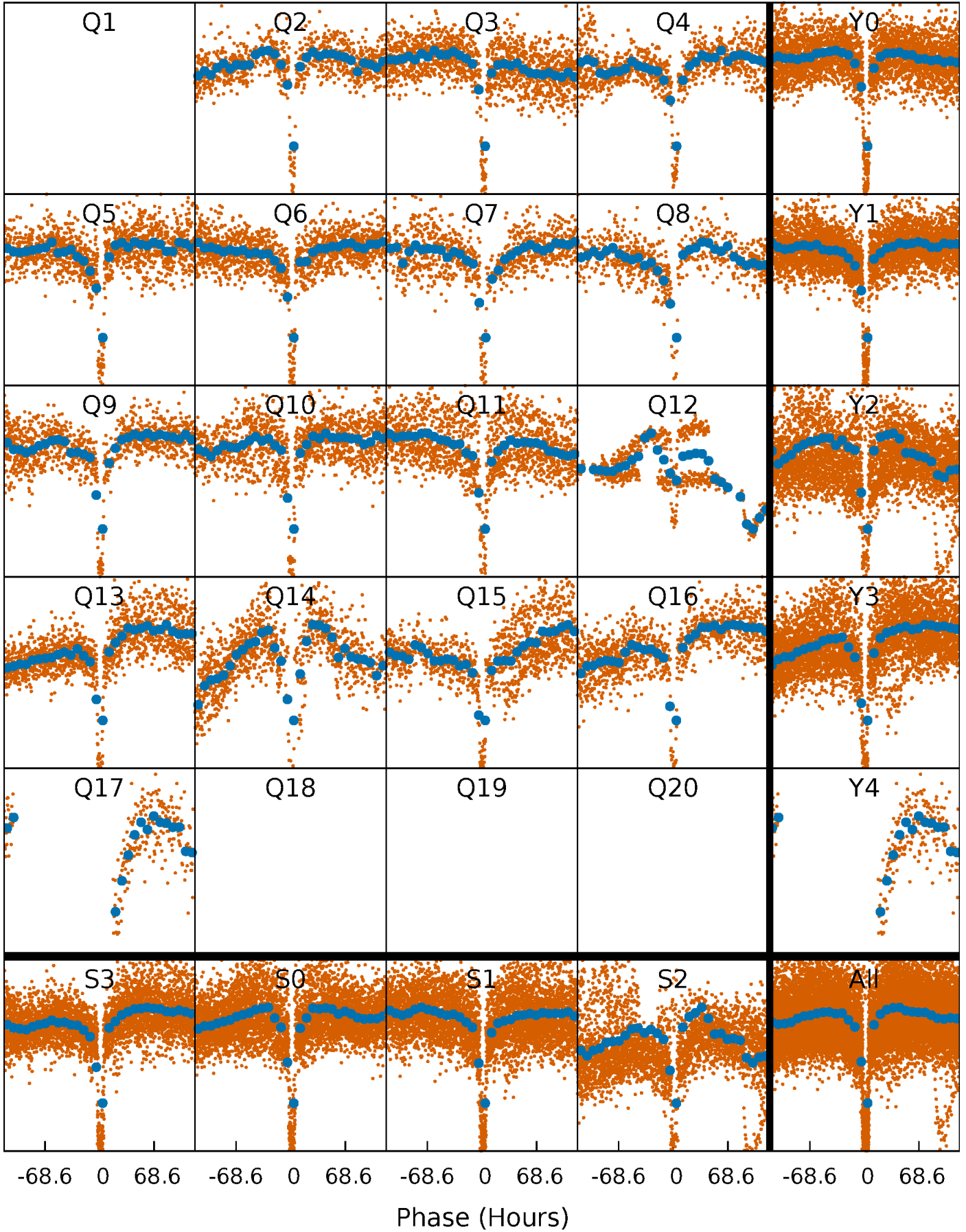


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



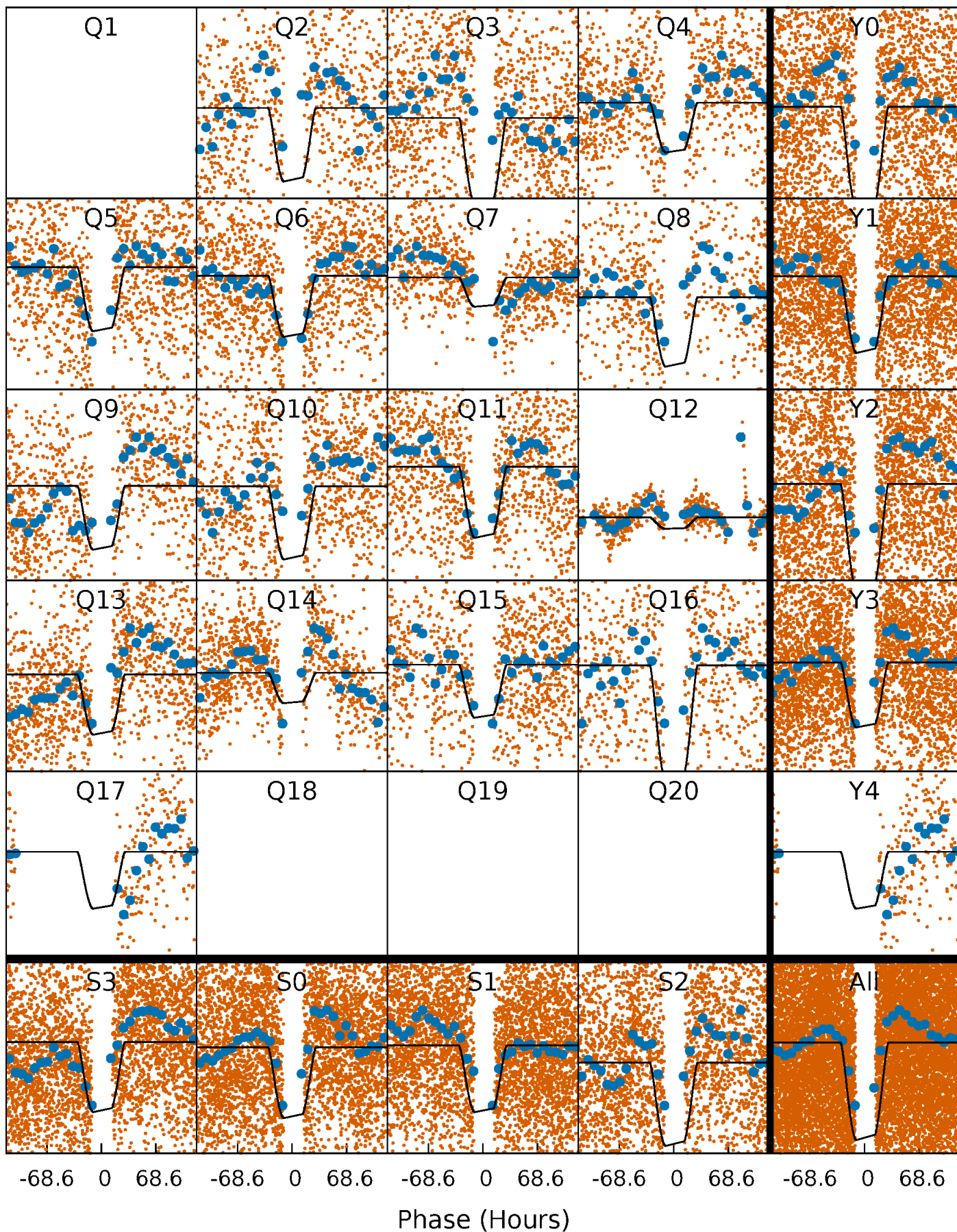
PDC Quarter-Phased Transit Curves

TCE 005780460-02 P= 35.619646 Days $T_0=161.318086$ (BKJD)



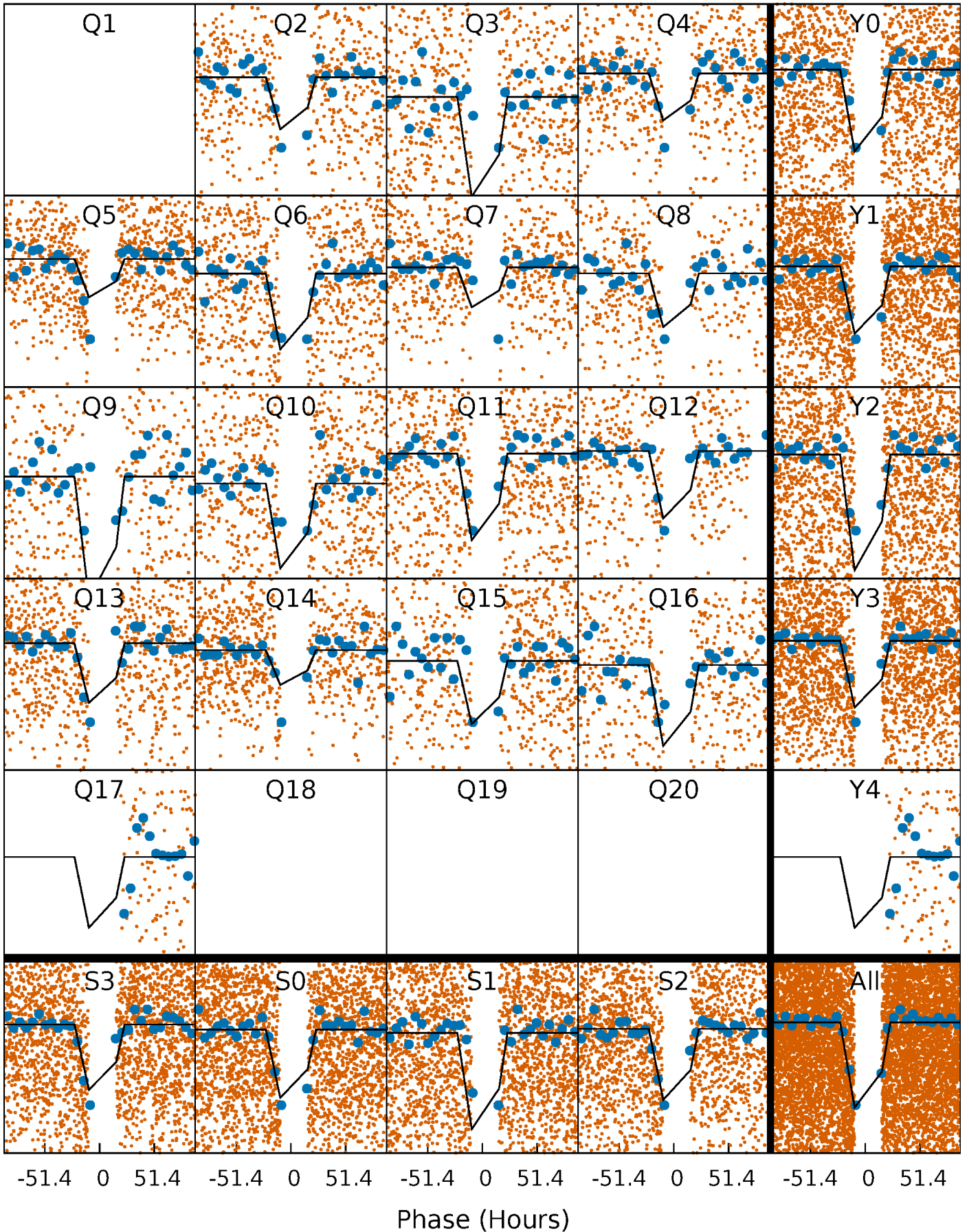
DV Quarter-Phased Transit Curves

TCE 005780460-02 P= 35.619646 Days $T_0=161.318086$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

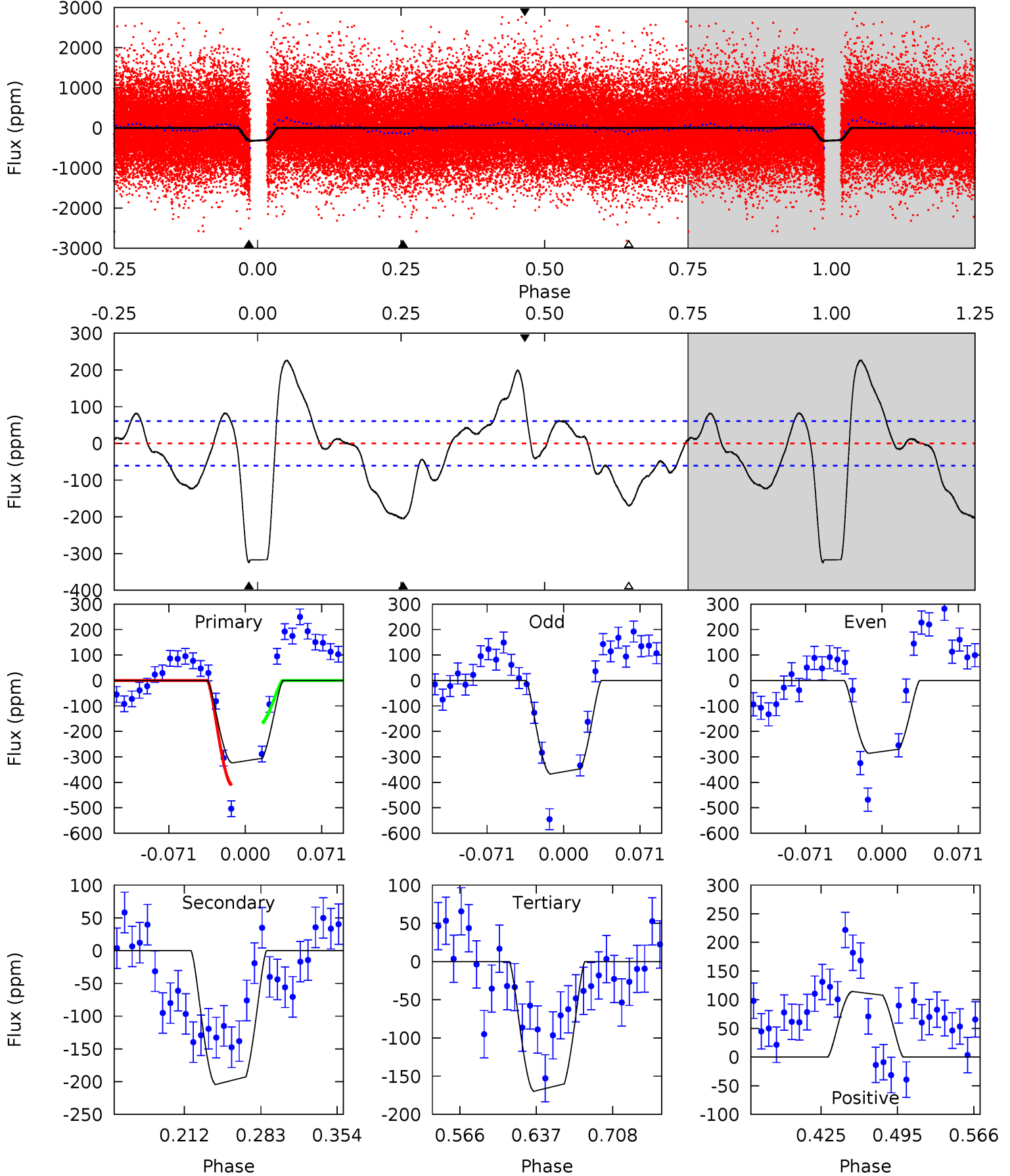
TCE 005780460-02 P= 35.616918 Days $T_0=161.312832$ (BKJD)



DV Model-Shift Uniqueness Test

005780460-02, P = 35.619646 Days, E = 161.318086 Days

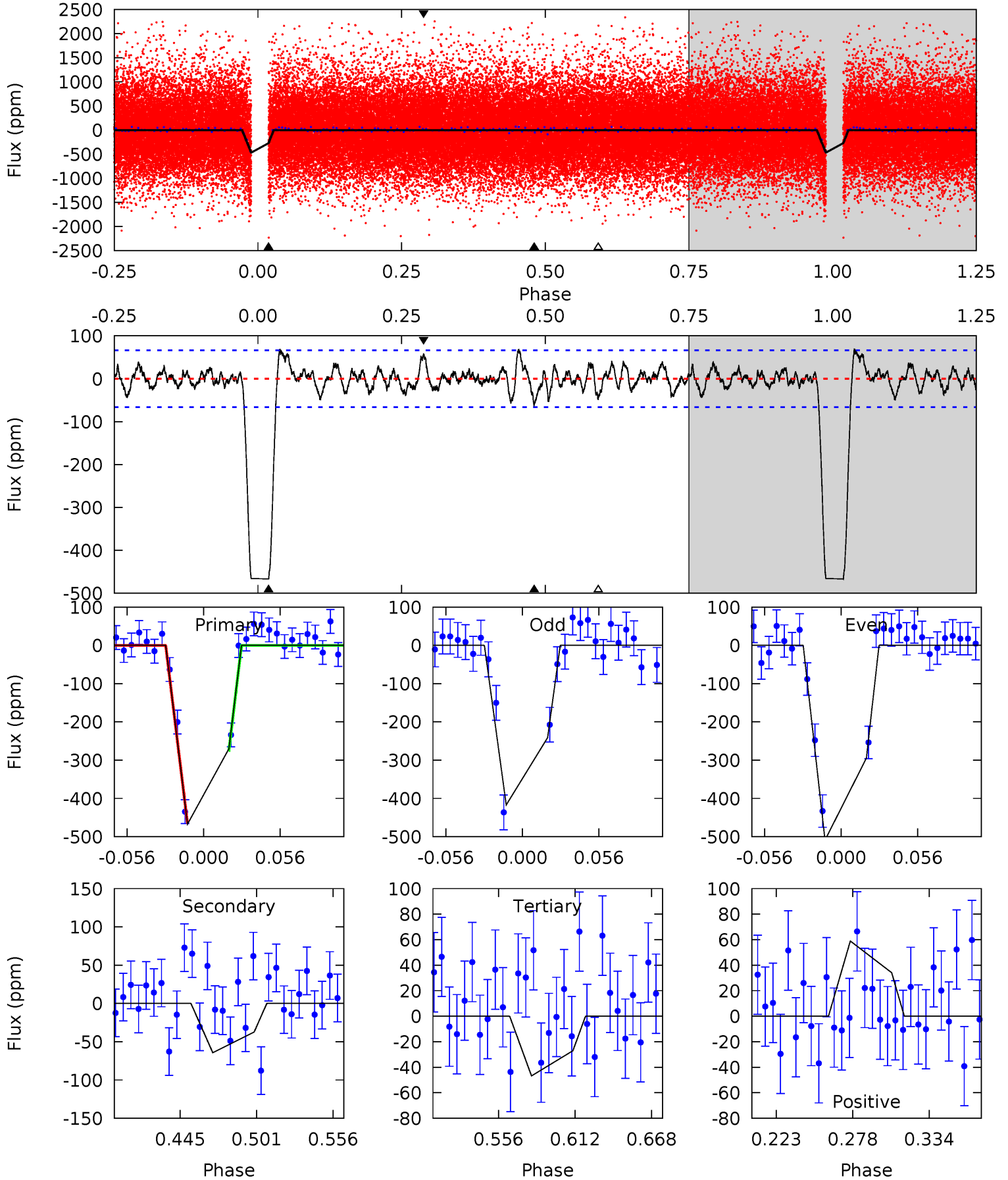
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	15.6	13.0	8.75	4.64	1.81	6.20	11.8	16.0	2.64	6.87	3.10	1.08	0.41	9.20



Alt Model-Shift Uniqueness Test

005780460-02, P = 35.616918 Days, E = 161.312832 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.1	4.56	3.31	4.17	4.69	1.91	1.27	29.8	28.9	1.25	0.39	3.26	4.06	0.13	6.48



Stellar Parameters For KIC 005780460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5123^{+168}_{-138}	$4.523^{+0.084}_{-0.063}$	$-0.200^{+0.300}_{-0.300}$	$0.779^{+0.080}_{-0.088}$	$0.737^{+0.103}_{-0.051}$	$2.198^{+0.853}_{-0.478}$
	+3%/-3%	+2%/-1%	+150%/-150%	+10%/-11%	+14%/-7%	+39%/-22%
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 005780460-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-204 ± 13	$2.72^{+0.30}_{-0.26}$	633^{+25}_{-25}	3759^{+164}_{-136}	560^{+134}_{-101}
Alt.	-64 ± 14	$2.28^{+0.28}_{-0.25}$	634^{+29}_{-25}	3318^{+167}_{-161}	253^{+97}_{-69}

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 $A_{obs} \gg 1.0$

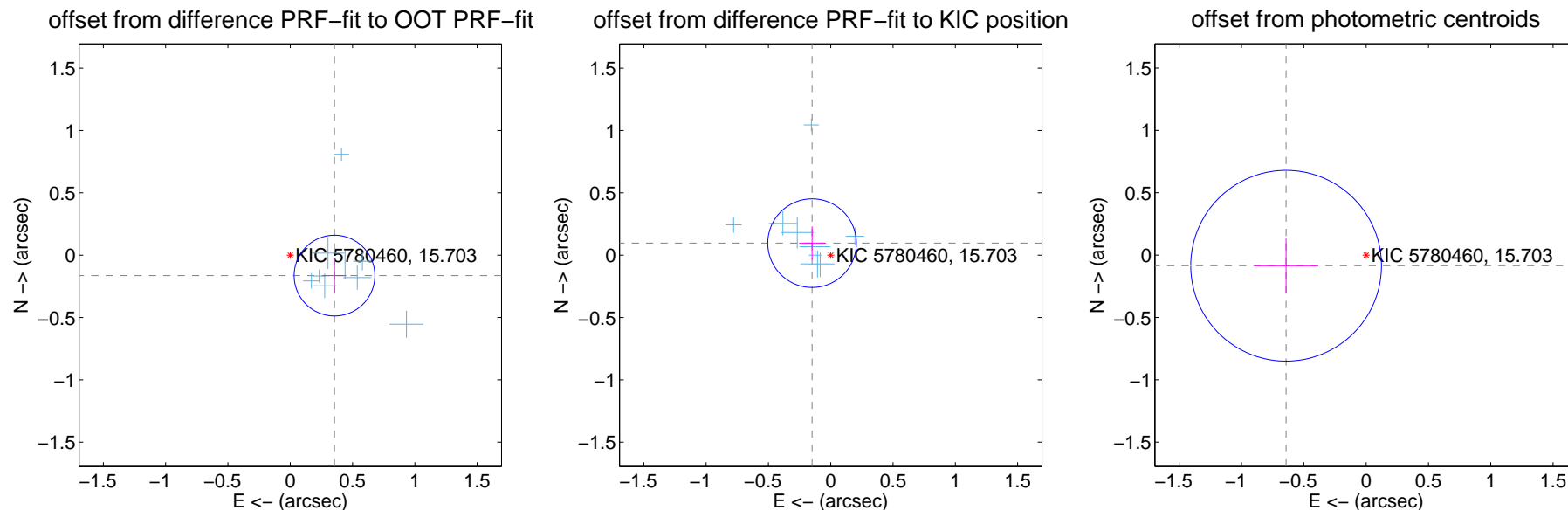
DV Centroid Data

Supplemental centroid analysis for 005780460-02. Kepler magnitude: 15.70. Transit SNR 12.44

There are 9 quarters with good PRF difference image offsets

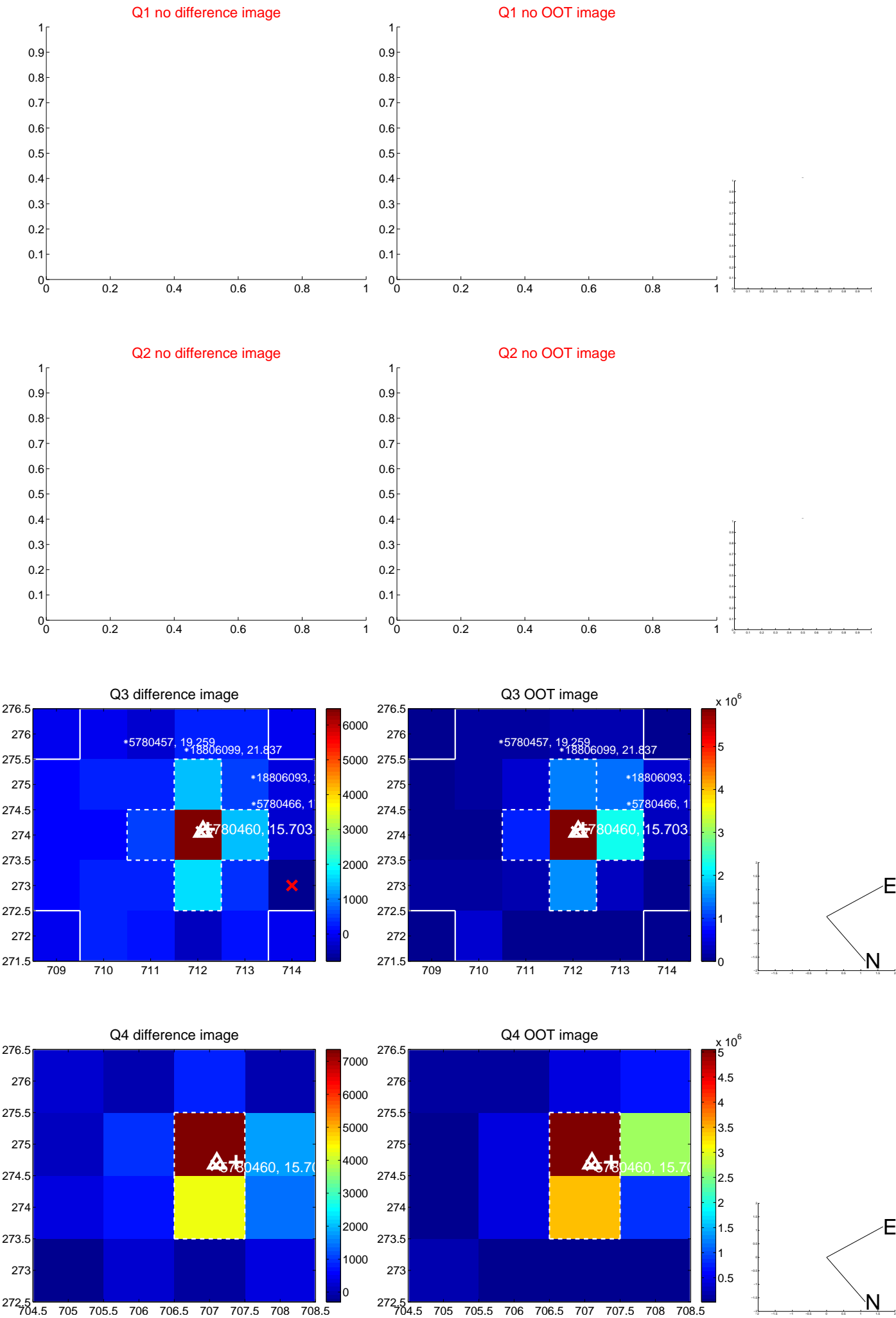
The direct PRF centroid is offset from the target star catalog position by about 0.59 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.391 ± 0.108	3.62	-0.355 ± 0.094	-0.164 ± 0.136
PRF-fit source offset from KIC position	0.178 ± 0.118	1.50	0.150 ± 0.104	0.096 ± 0.134
photometric centroid source offset	0.65 ± 0.26	2.54	0.64 ± 0.26	-0.09 ± 0.22

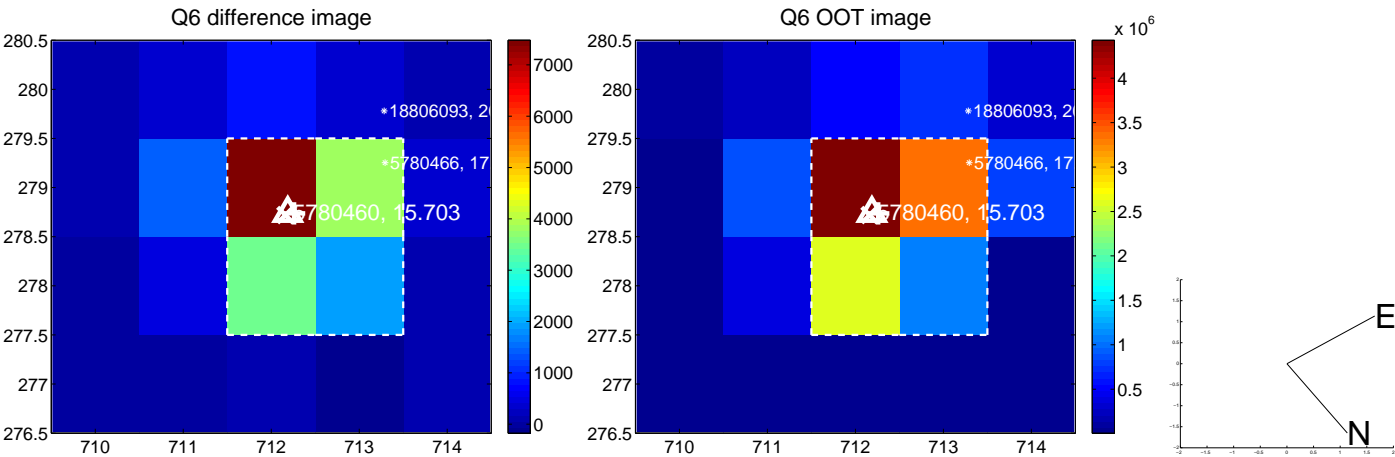
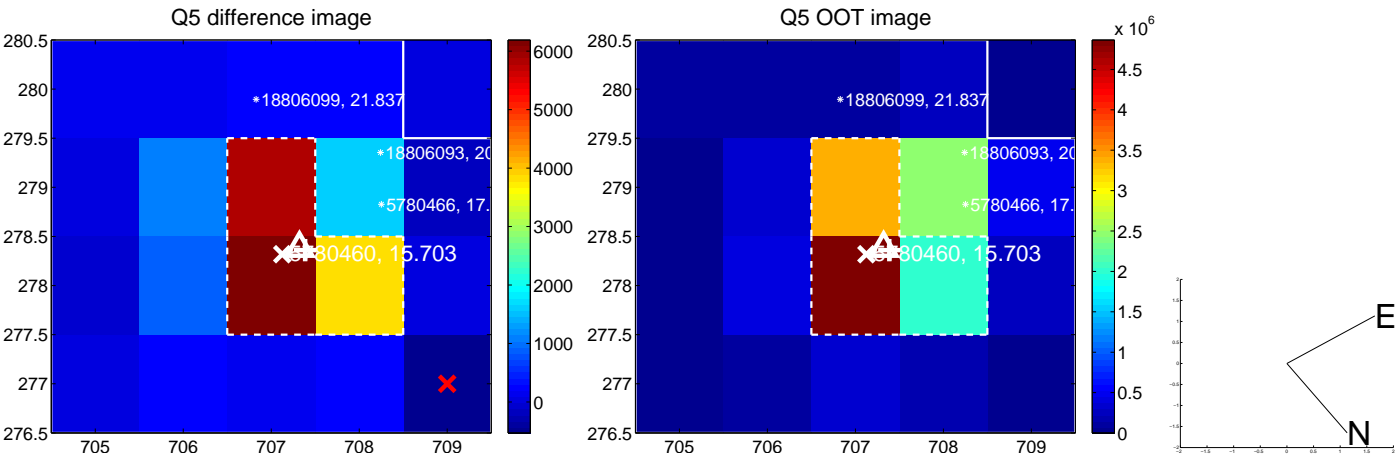


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

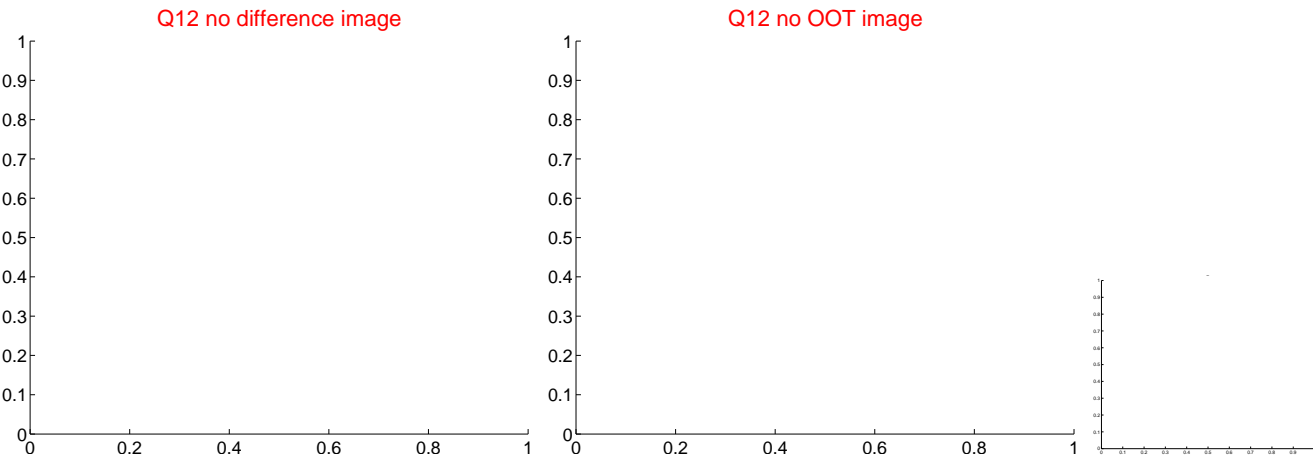
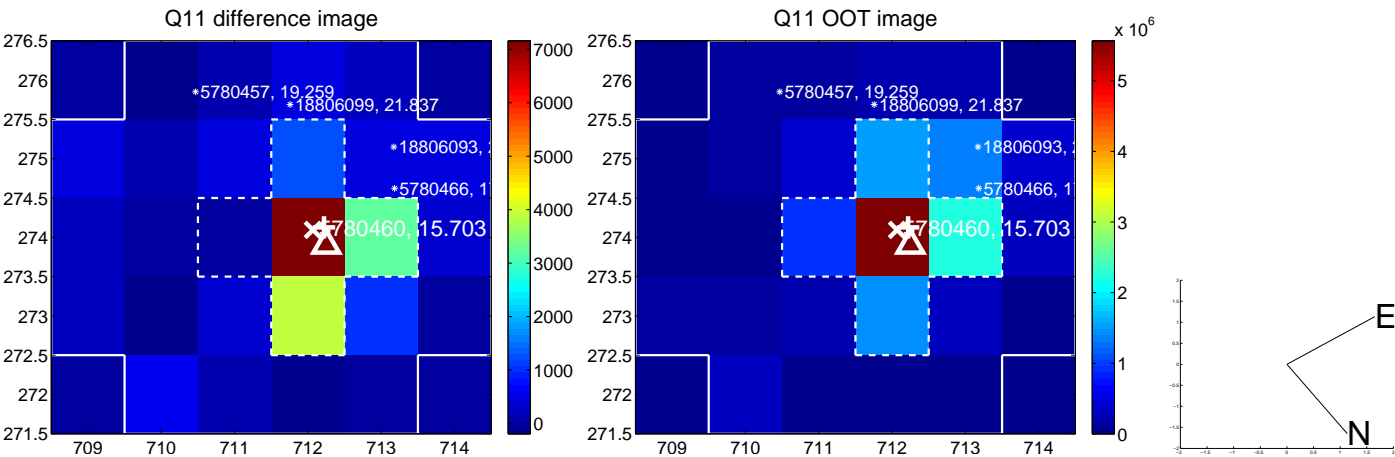
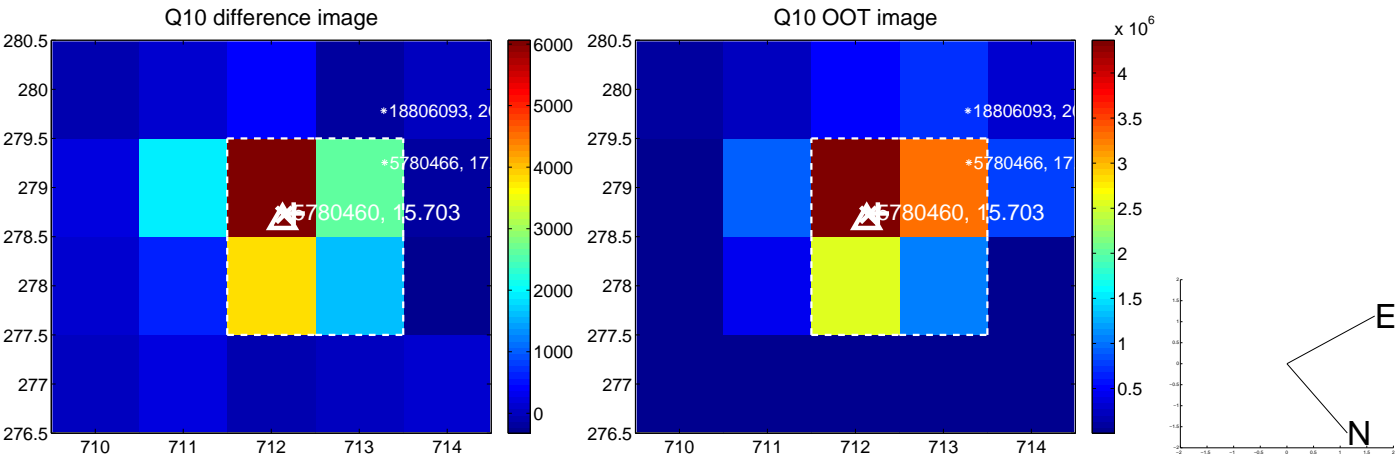
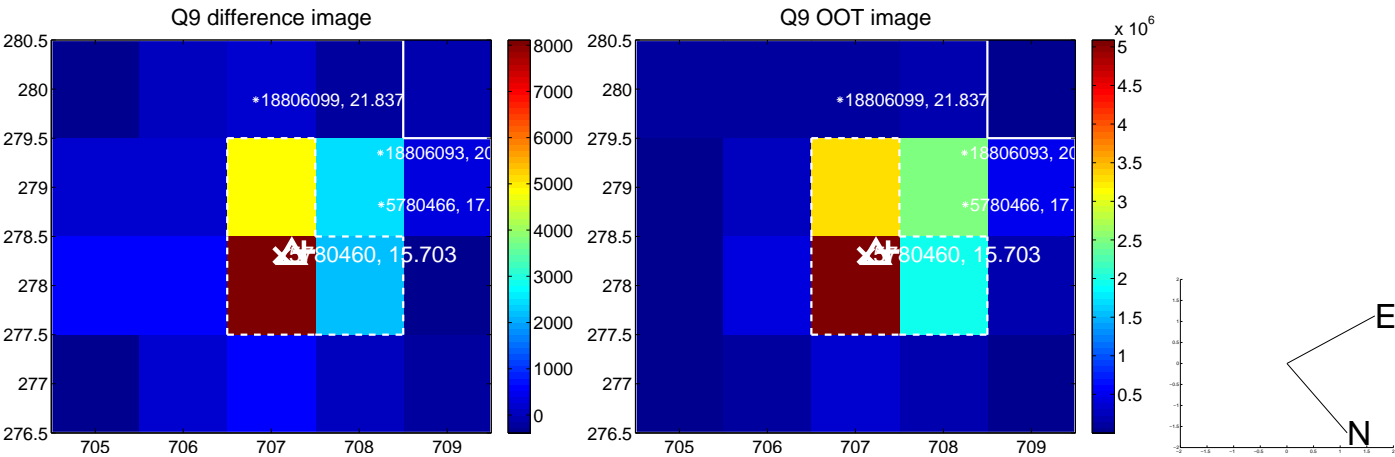
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

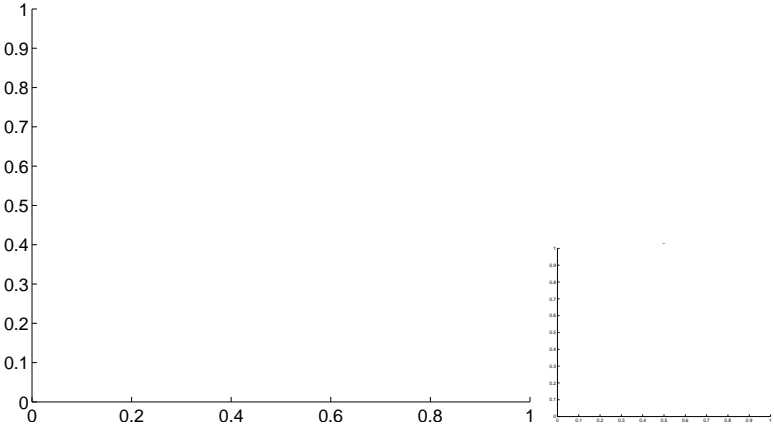


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

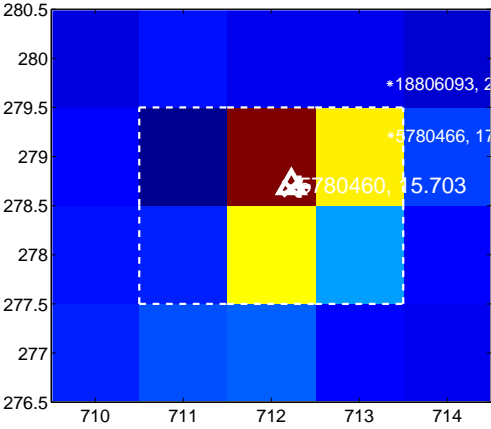
Q13 no difference image



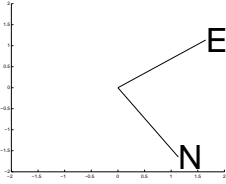
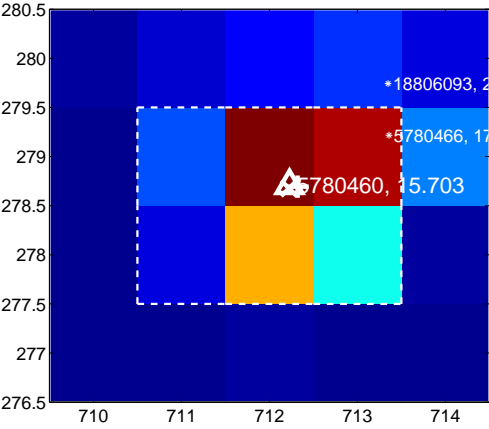
Q13 no OOT image



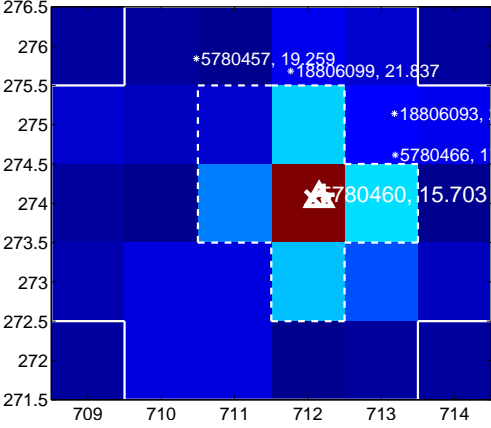
Q14 difference image



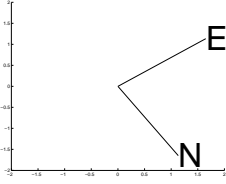
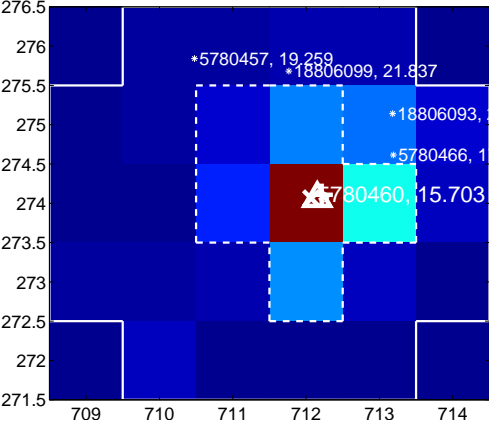
Q14 OOT image



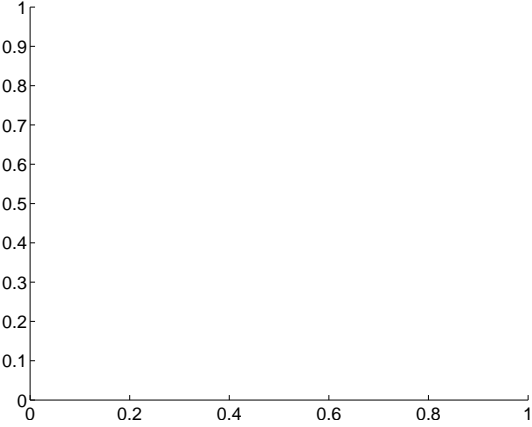
Q15 difference image



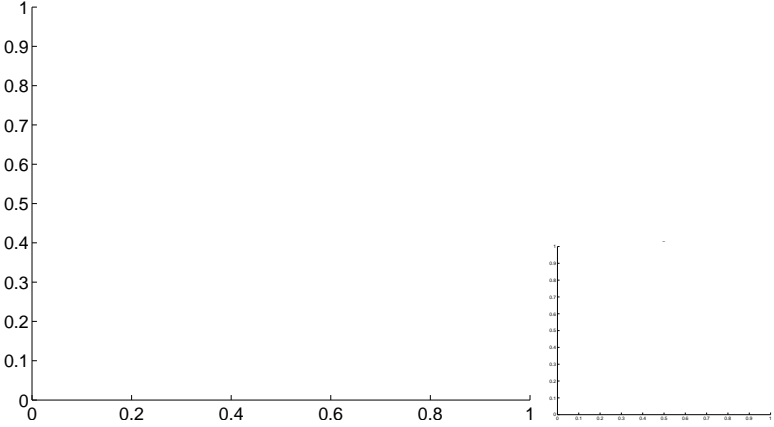
Q15 OOT image



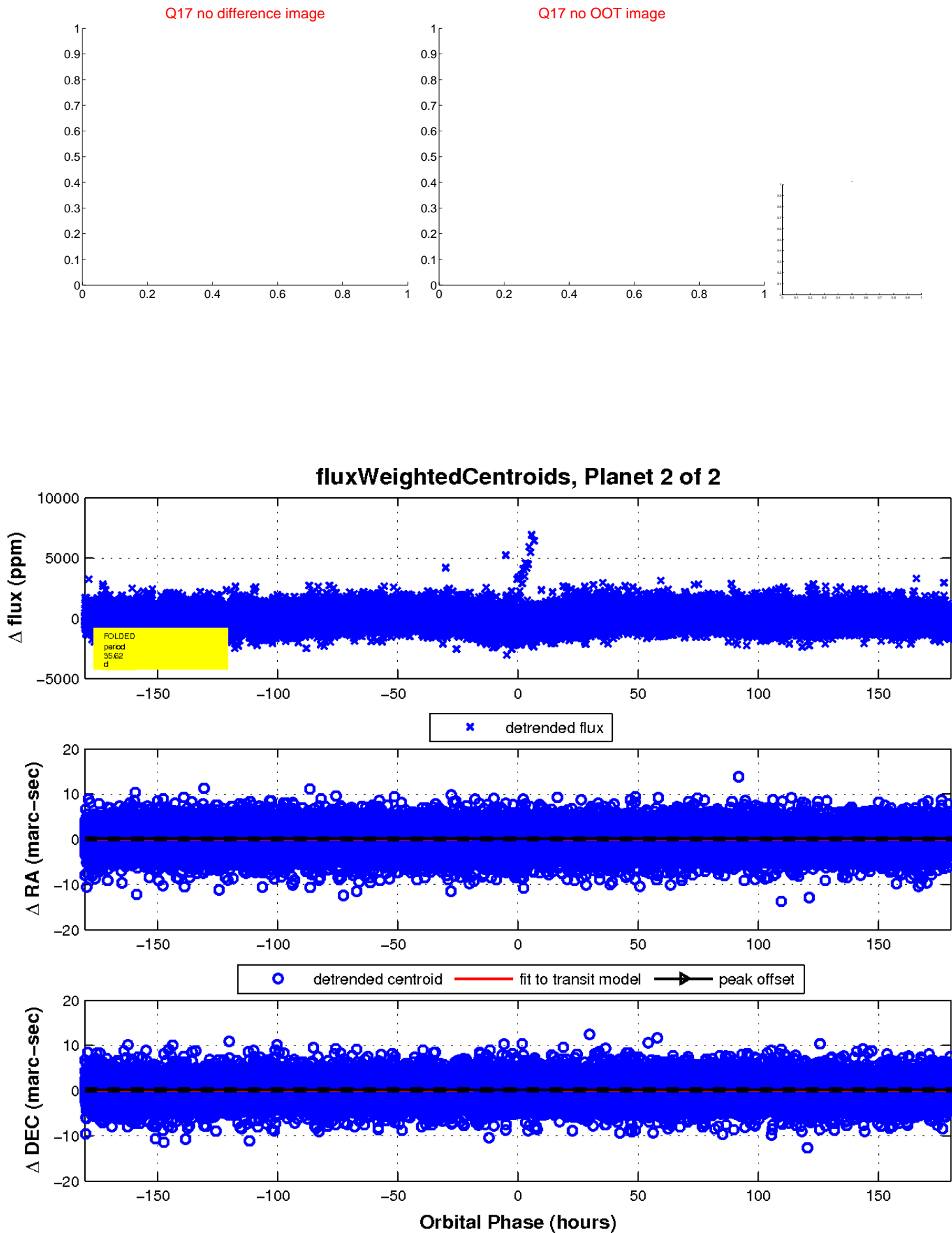
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

