

KIC 007877824

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})
007877824-01	OBS	3530.01	9.449475	136.019999	496931.3	3.500	7983.0	-1.0	0.91	5754	49.38	103.59
007877824-02	OBS	No	9.449475	132.444126	379577.9	3.500	6328.9	-1.0	0.91	5754	49.38	103.59
007877824-03	OBS	No	4.724910	131.510994	36881.4	15.000	625.3	-1.0	0.91	5754	17.21	261.02
007877824-04	OBS	No	2.362576	132.436491	612.0	13.040	53.0	15.4	0.91	5754	2.23	657.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007877824-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
007877824-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_NOFITS
007877824-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
007877824-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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.

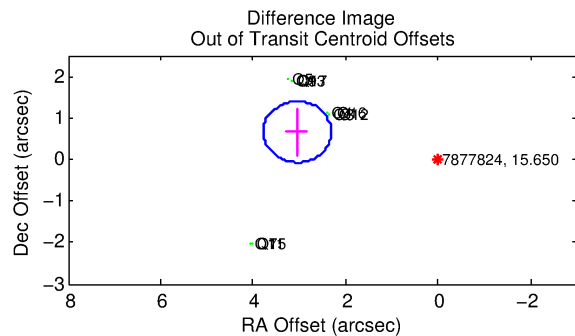
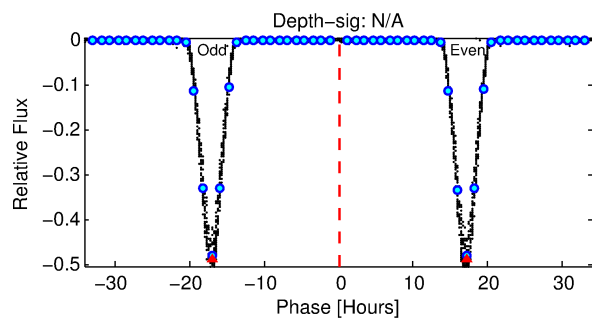
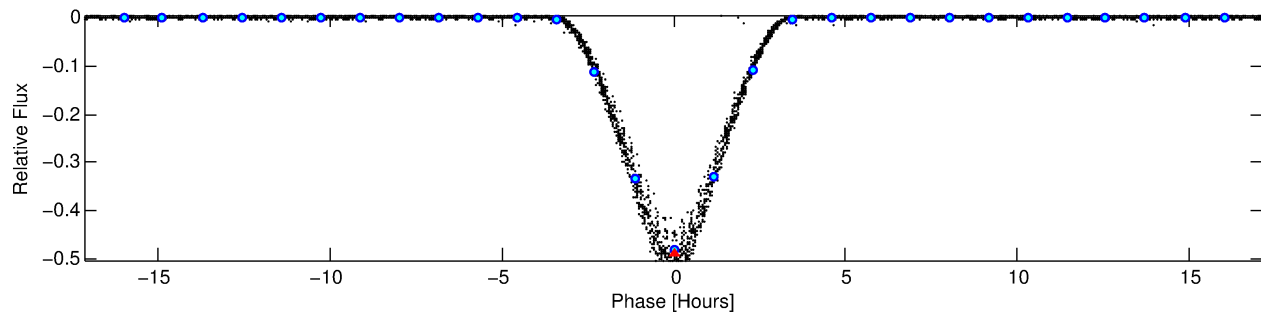
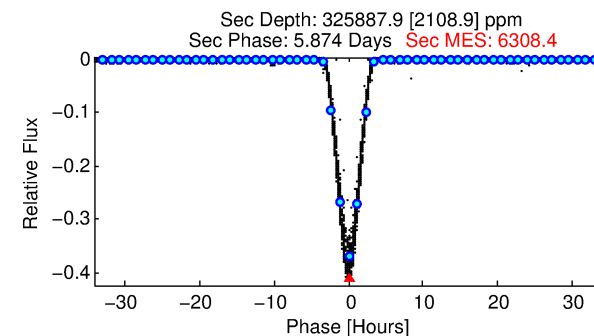
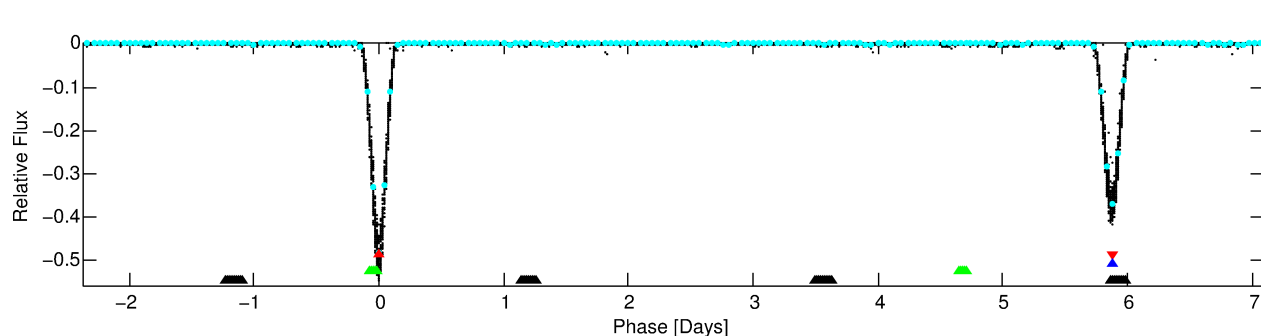
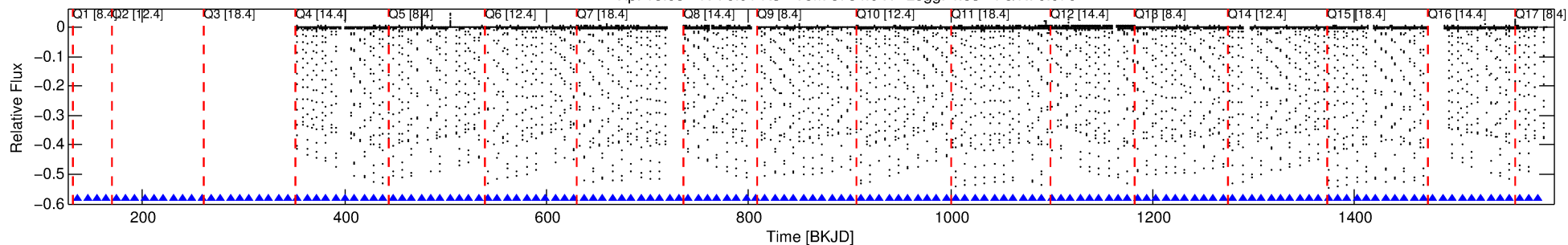
Ephemeris Match Information For 007877824-01

No Significant Match Found

DV One-Page Summary

KIC: 7877824 Candidate: 1 of 4 Period: 9.449 d
KOI: K03530 Corr: No Ephemeris Match

Kp: 15.65 R*: 0.91 Rs Teff: 5754.0 K Logg: 4.53 Fe/H: 0.070



TPS TCE Results:

Period = 9.44947 d
Epoch = 136.0200 BKJD

DV fit results are unavailable

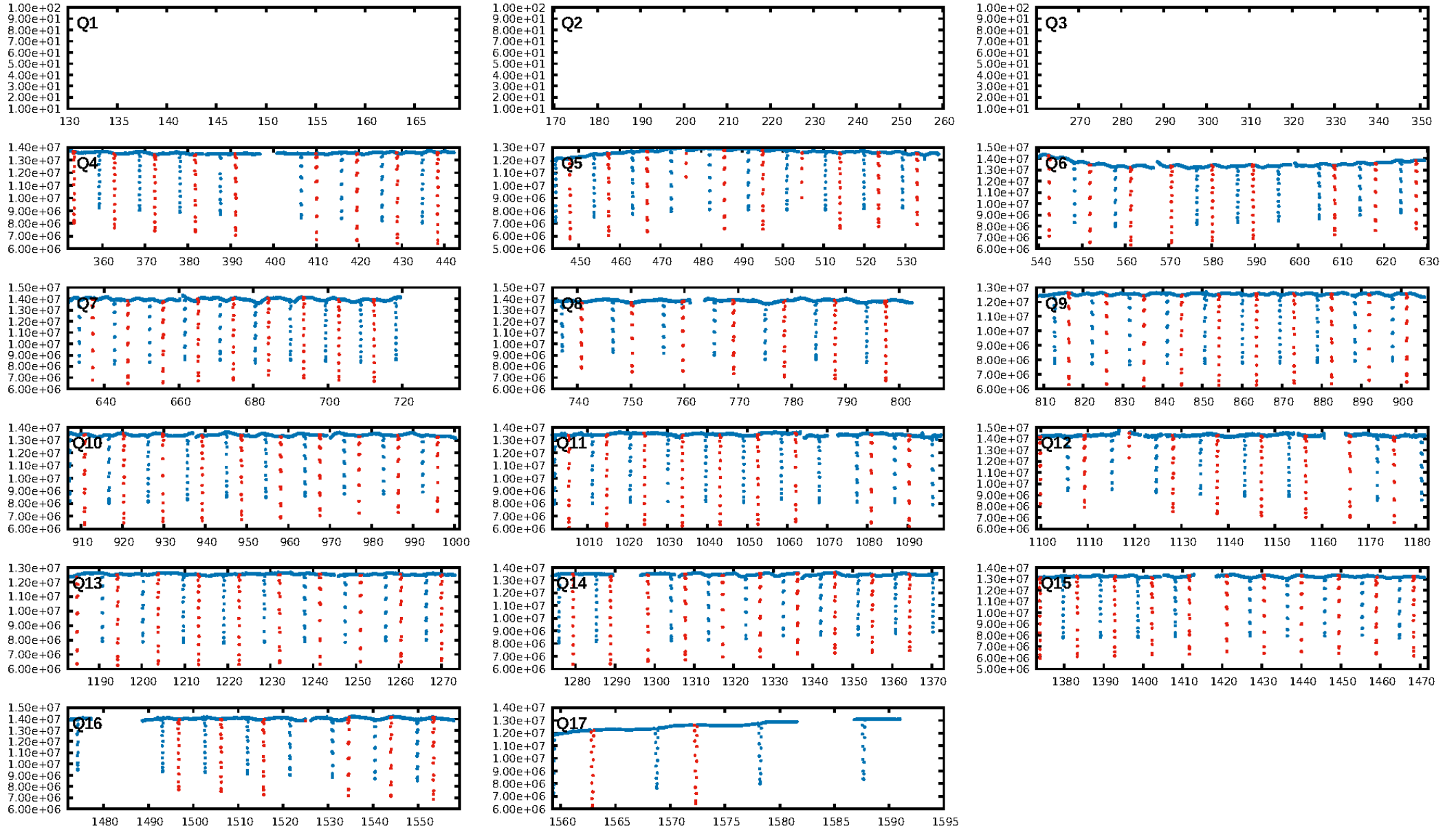
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.36 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [119/119]
GhostDiagnostic-chr: 1.188
Centroid-sig: N/A
Centroid-so: 2.364 arcsec [8114.55 σ]
OotOffset-rm: 3.123 arcsec [12.74 σ]
KicOffset-rm: 0.075 arcsec [1.13 σ]
OotOffset-st: 0/3/4/4 [11]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

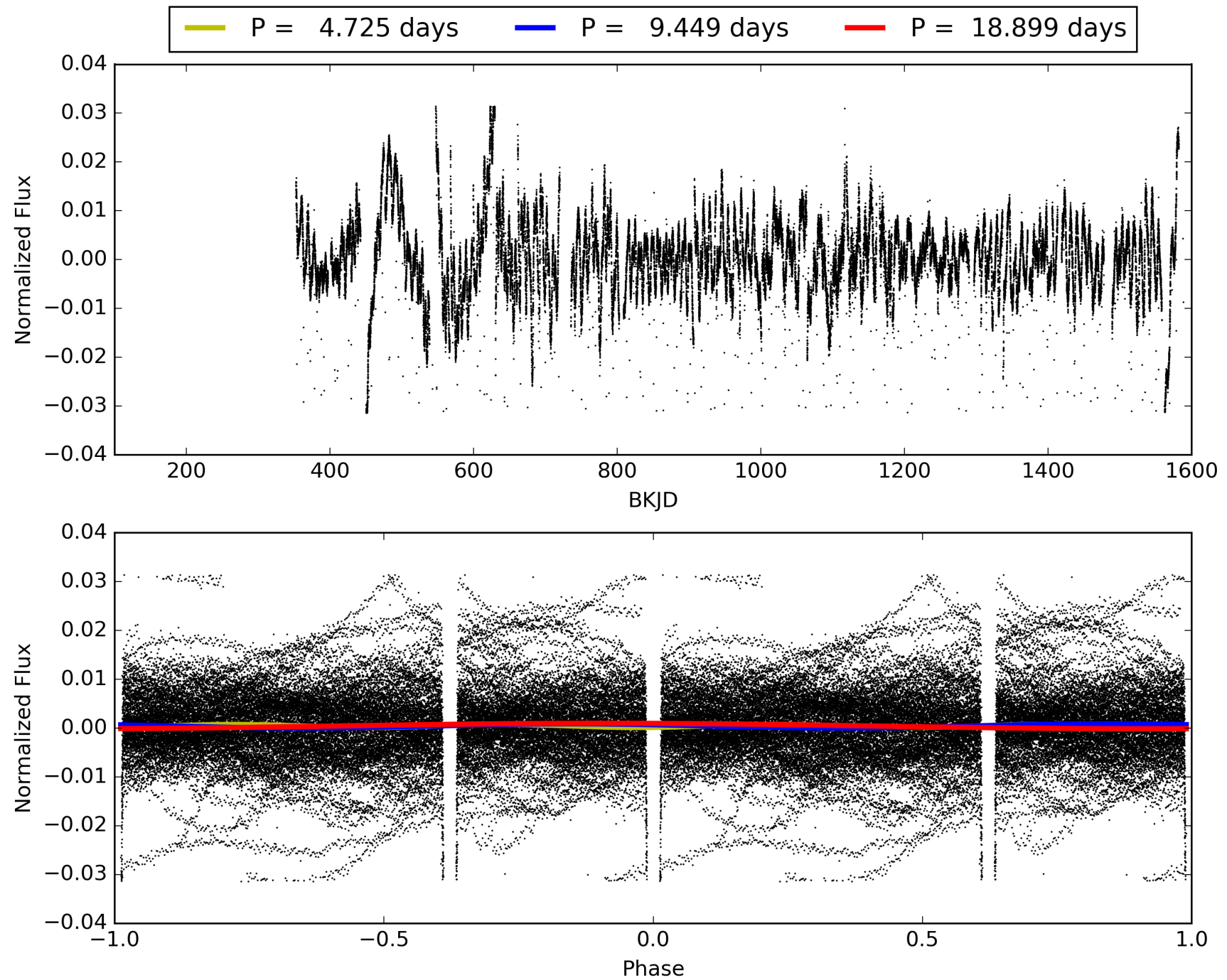
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:45:50 Z

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

TCE 007877824-01, PDC Light Curves

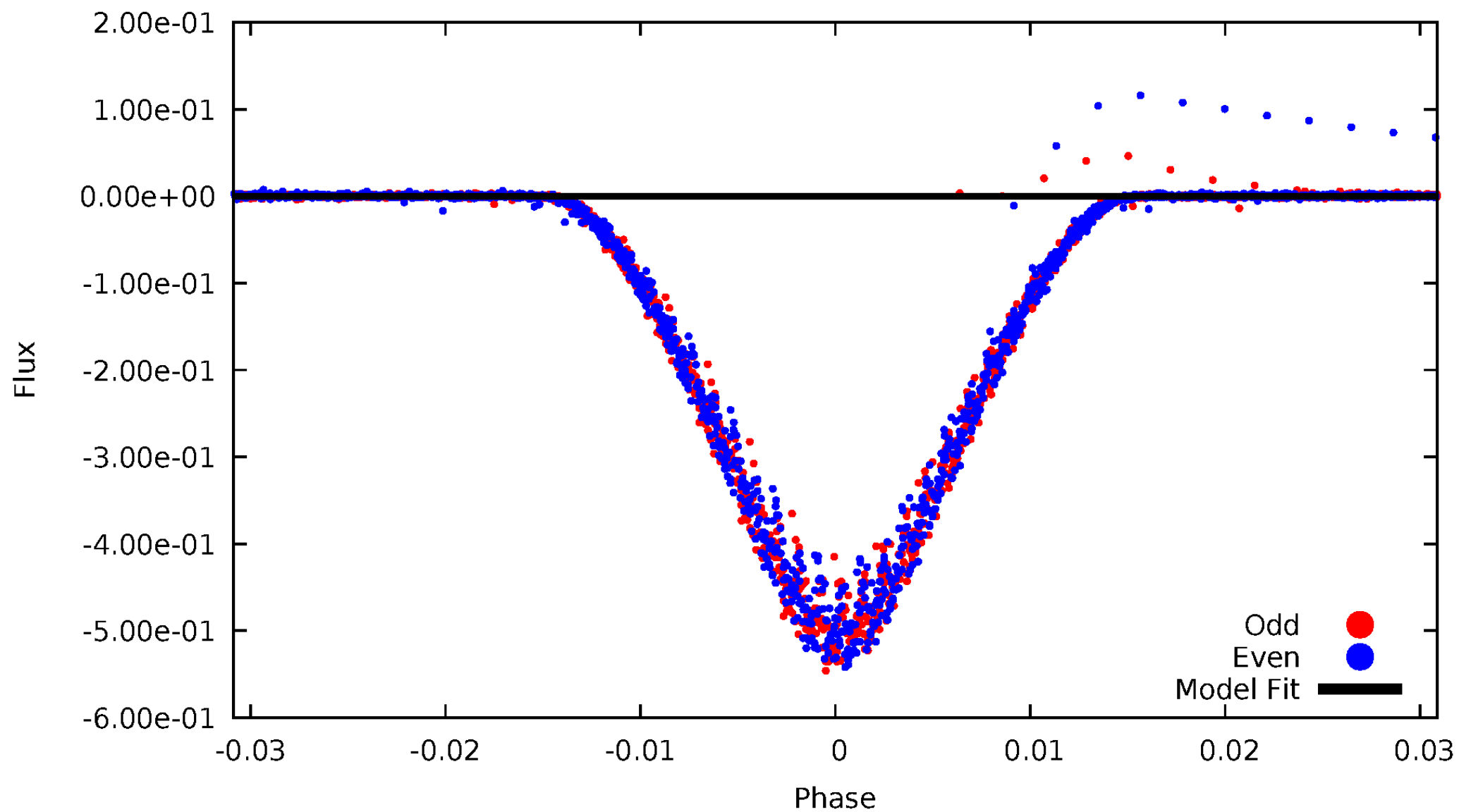


TCE 007877824-01



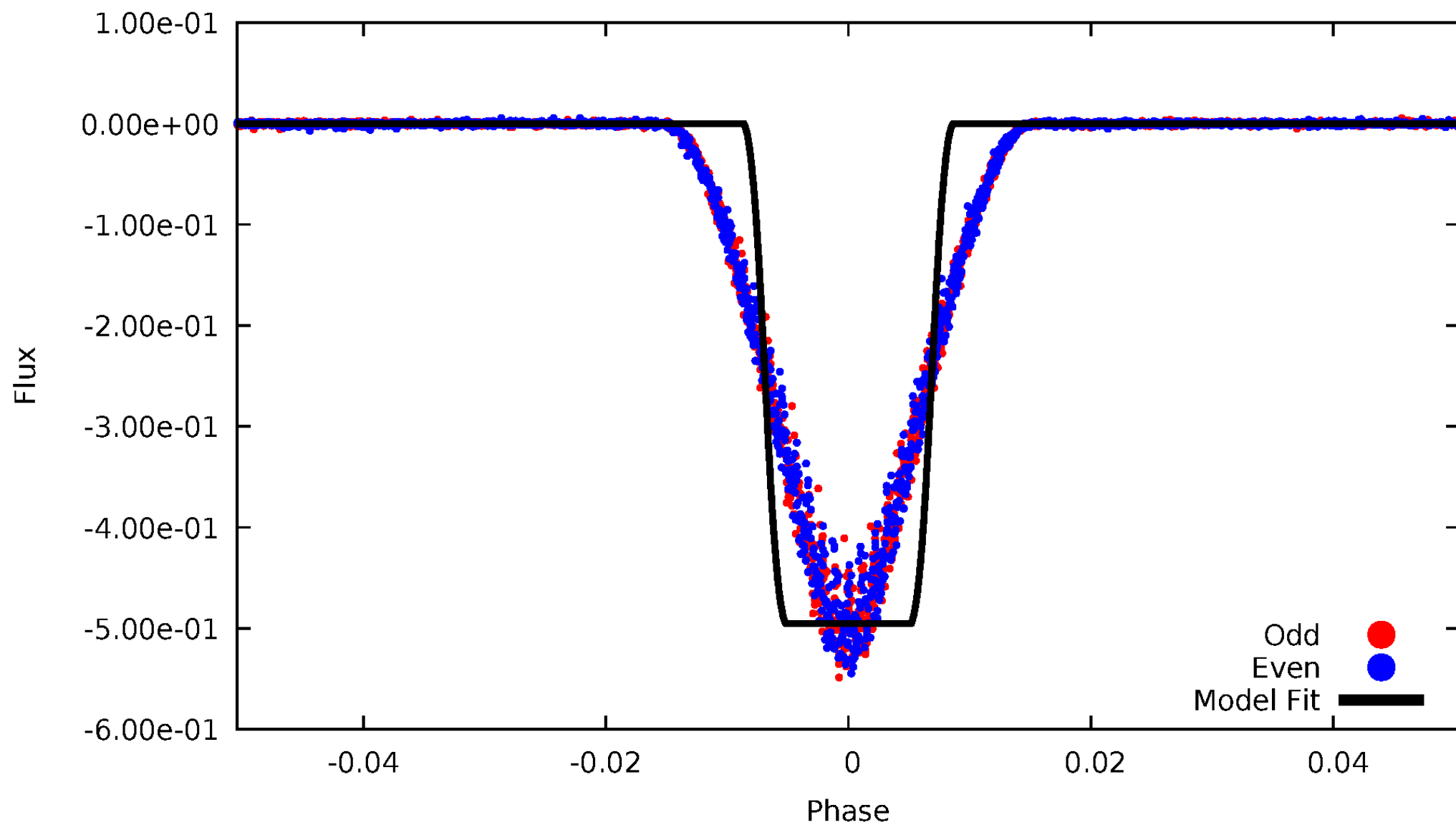
DV Odd/Even

TCE 007877824-01



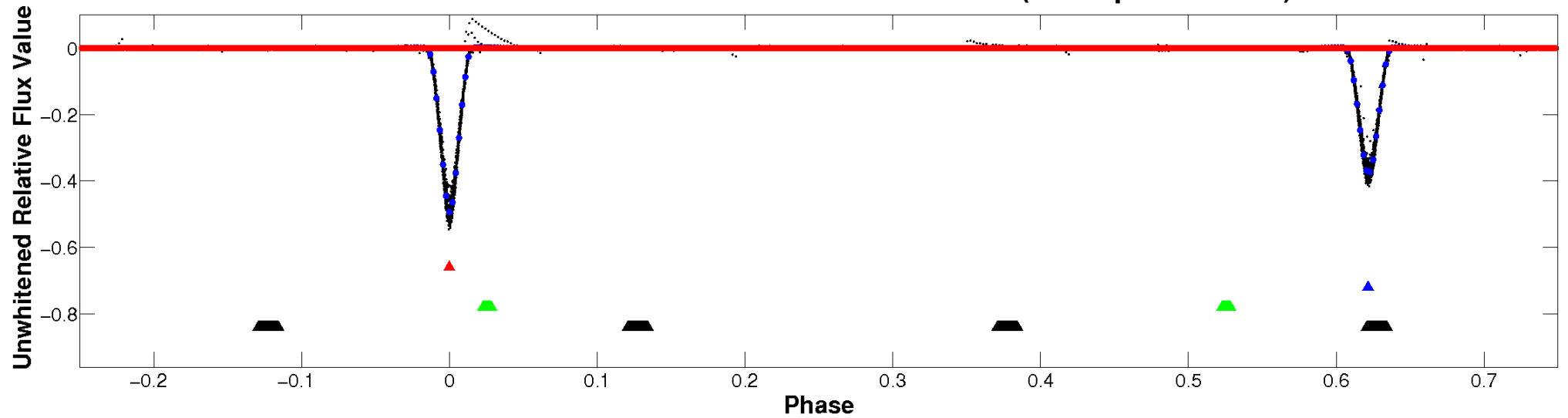
ALT Odd/Even

TCE 007877824-01



Non-Whitened Vs. Whitened Light Curve

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

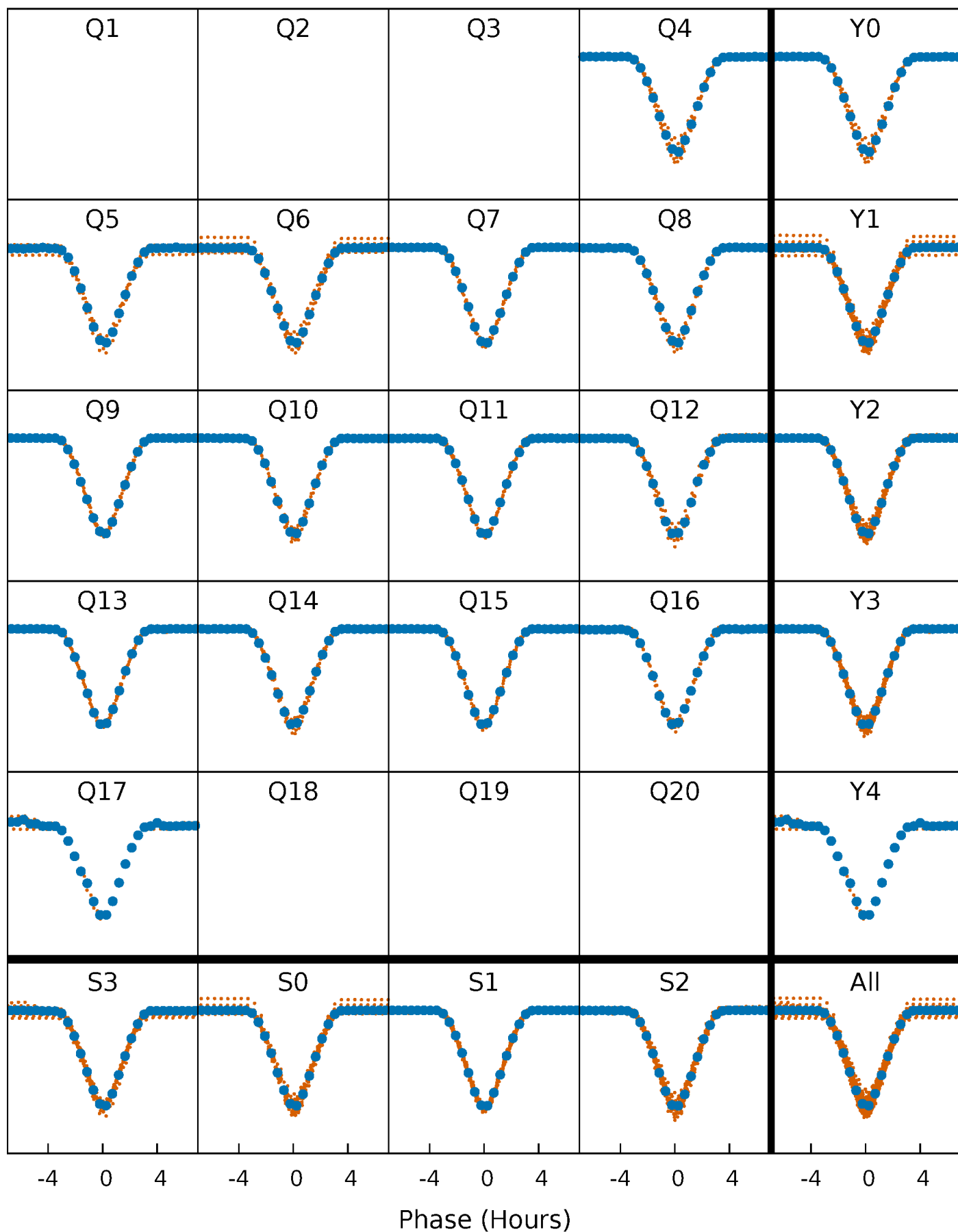


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



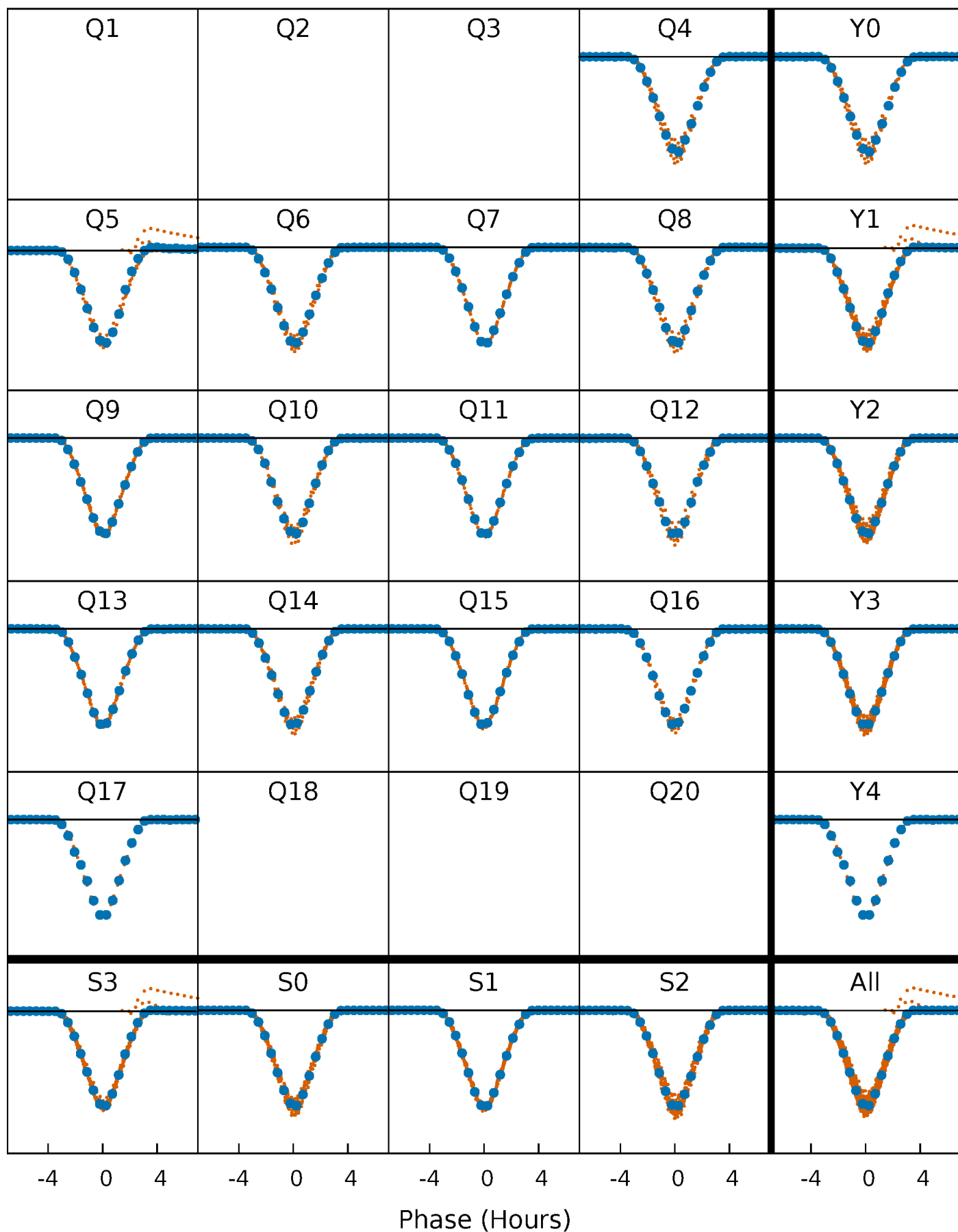
PDC Quarter-Phased Transit Curves

TCE 007877824-01 P= 9.449475 Days $T_0=136.019999$ (BKJD)



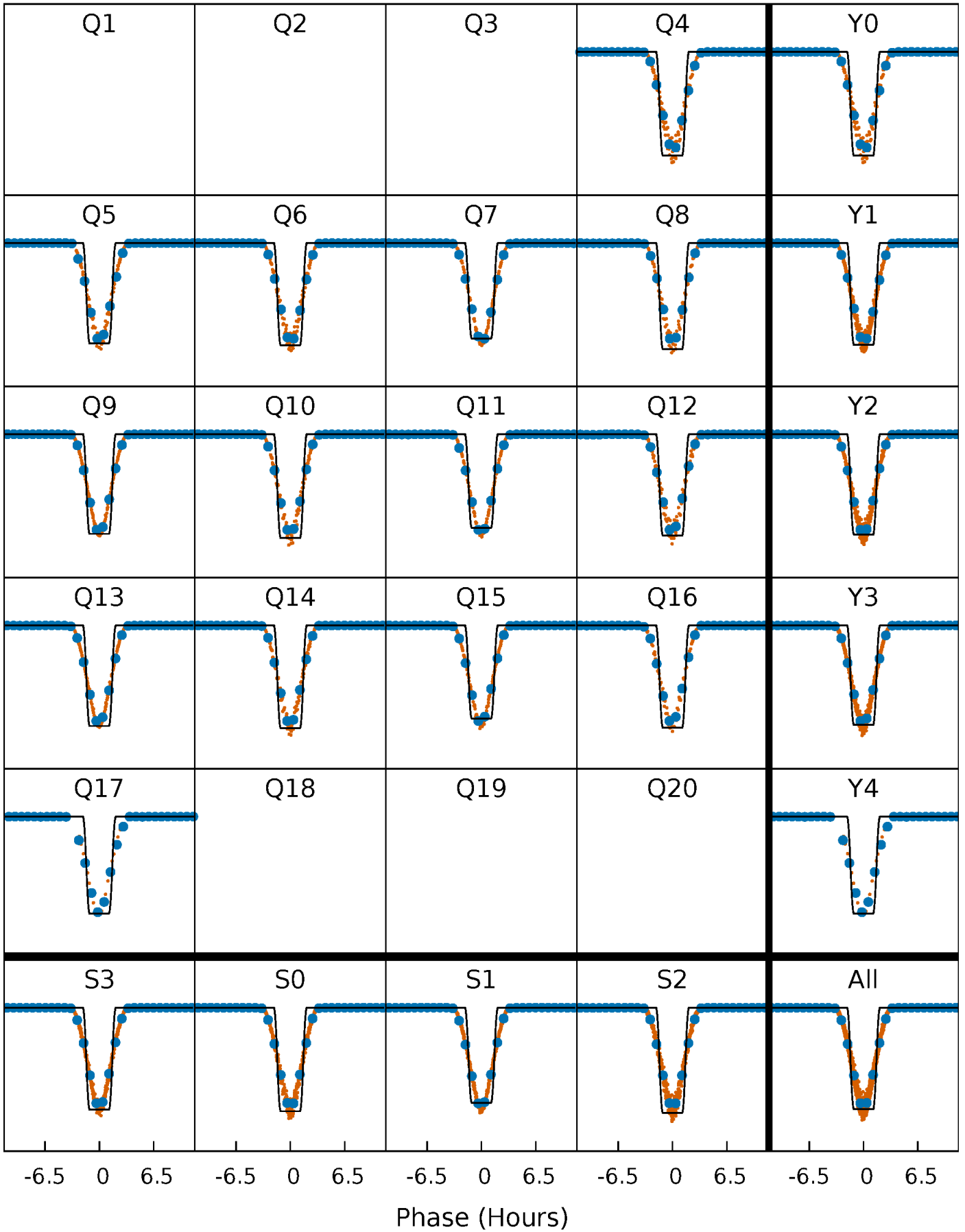
DV Quarter-Phased Transit Curves

TCE 007877824-01 P= 9.449475 Days $T_0=136.019999$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

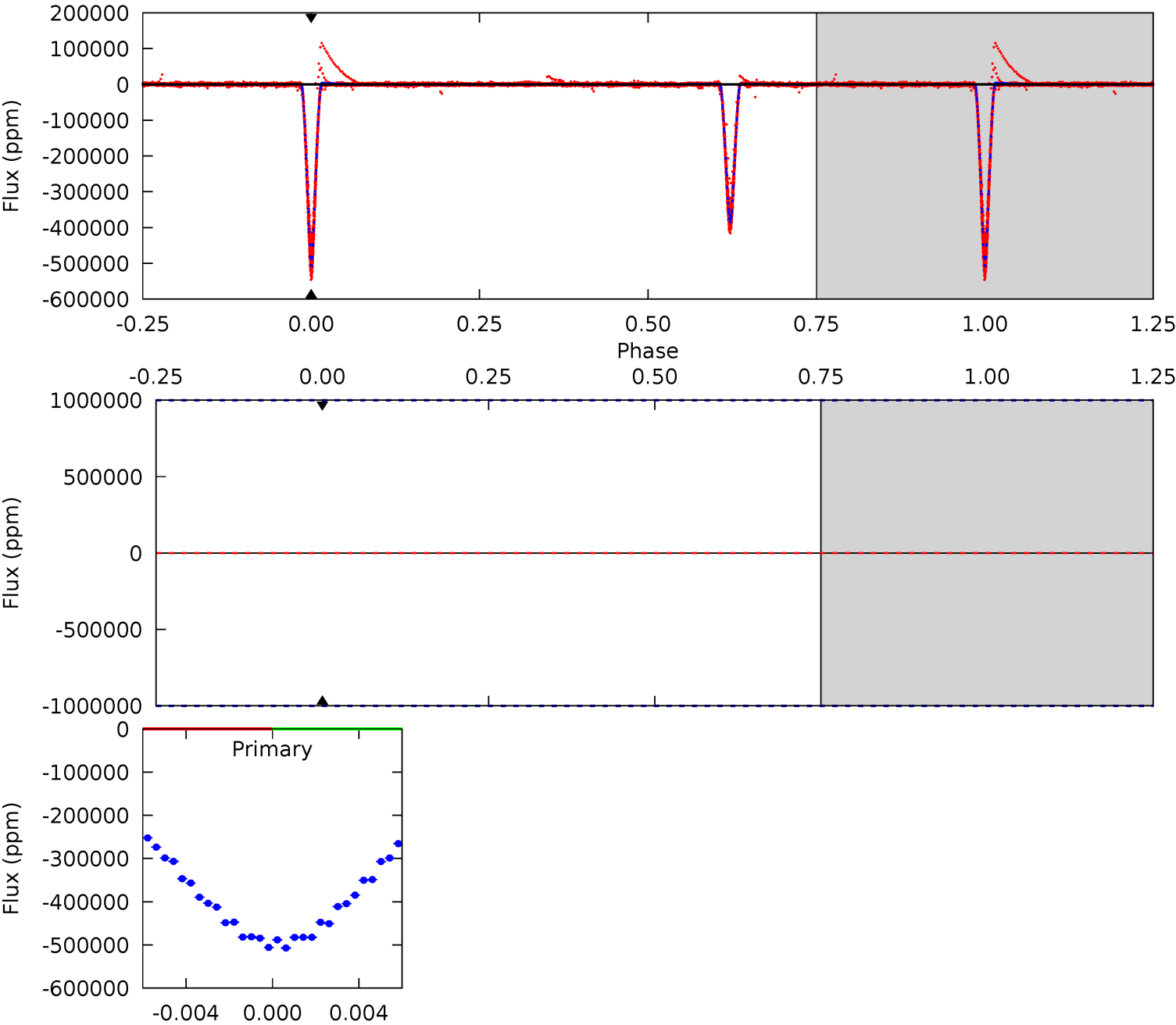
TCE 007877824-01 P= 9.449475 Days $T_0=136.022522$ (BKJD)



DV Model-Shift Uniqueness Test

007877824-01, P = 9.449475 Days, E = 136.019999 Days

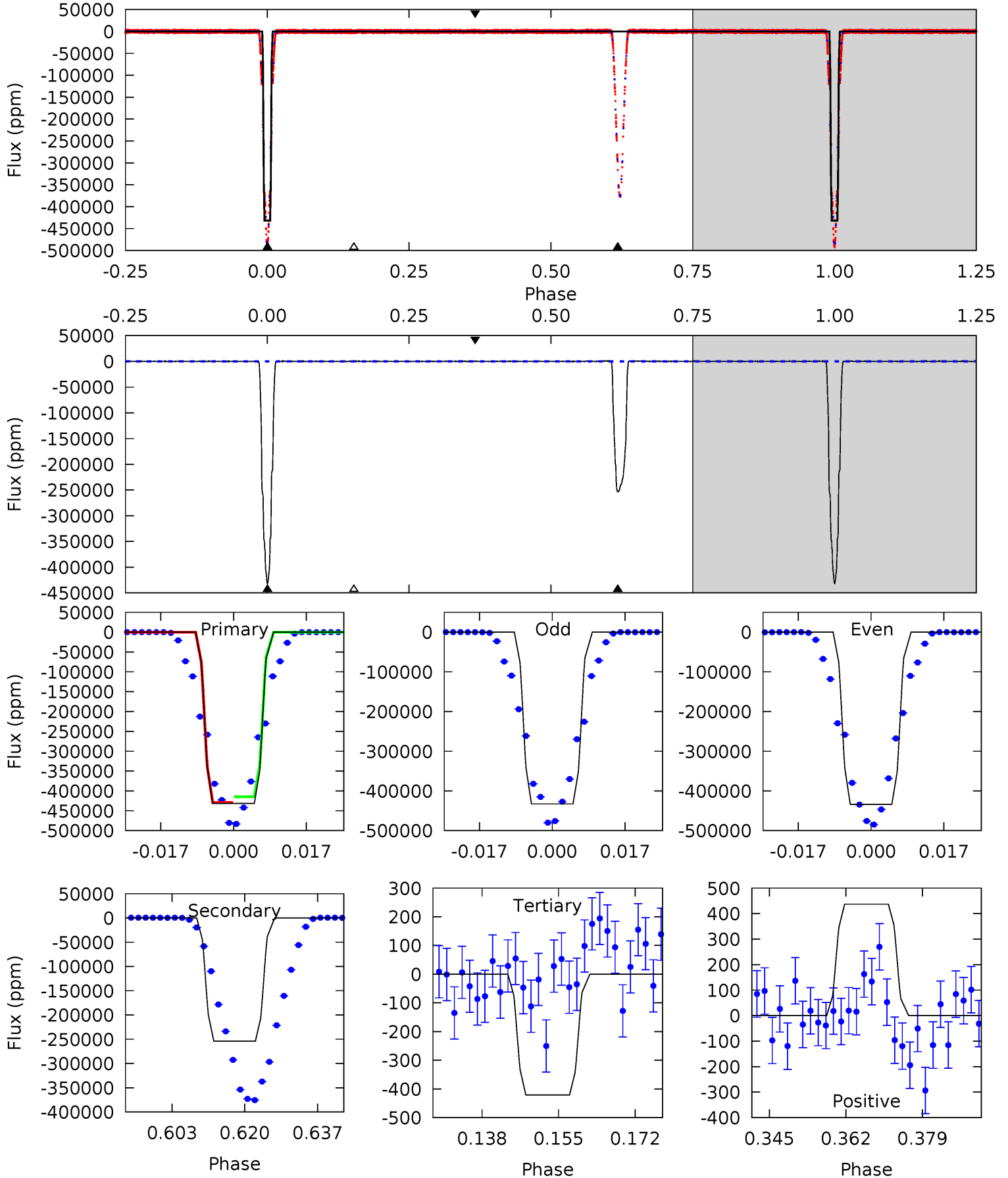
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007877824-01, P = 9.449475 Days, E = 136.022522 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3884	2282	3.78	3.93	4.92	2.38	2.87	3880	3880	2279	2279	4.95	0.99	0.00	0



Stellar Parameters For KIC 007877824

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5754^{+160}_{-200}	$4.534^{+0.033}_{-0.187}$	$0.070^{+0.250}_{-0.300}$	$0.905^{+0.248}_{-0.083}$	$1.021^{+0.100}_{-0.122}$	$1.938^{+0.359}_{-0.954}$
	+3%/-3%	+1%/-4%	+357%/-429%	+27%/-9%	+10%/-12%	+19%/-49%
Source	KIC0	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 007877824-01 / KOI 3530.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$52.26^{+11.92}_{-11.73}$	1166^{+73}_{-53}	-2582^{+7339}_{-2040}	$-3.341^{+170.054}_{-138.942}$
Alt.	-253705 ± 111	$72.25^{+14.77}_{-11.74}$	1165^{+75}_{-51}	5288^{+405}_{-331}	270^{+114}_{-78}

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

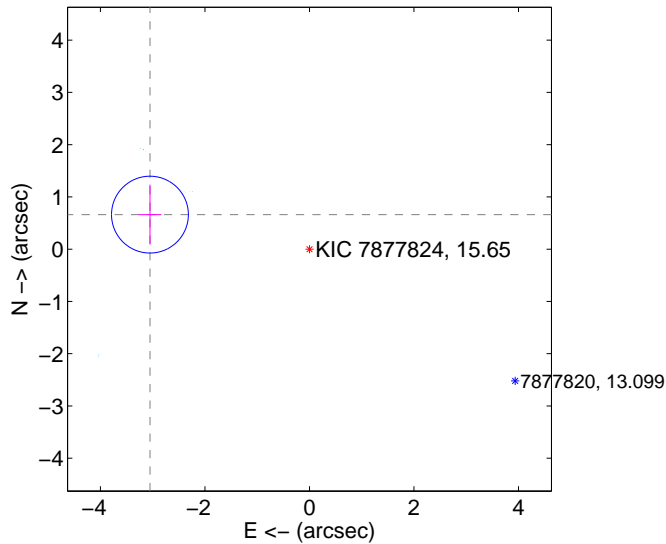
Supplemental centroid analysis for 007877824-01. Kepler magnitude: 15.65. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

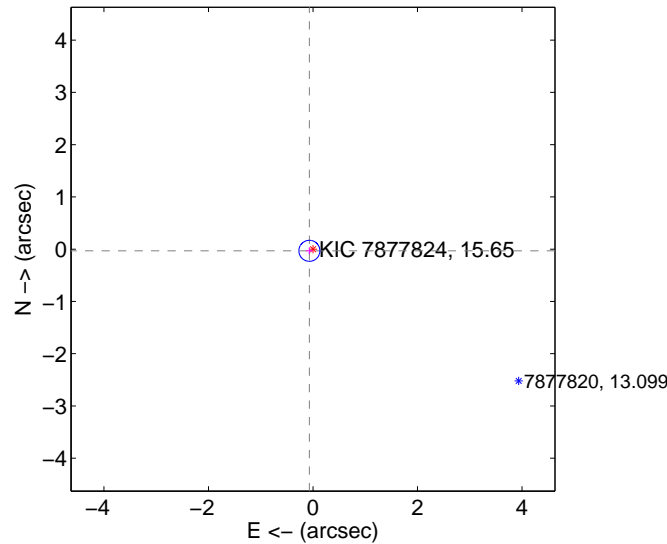
The OOT PRF centroid is offset from the target star catalog position by about 3.66 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.123 \pm 0.245	12.74	3.052 \pm 0.218	0.661 \pm 0.573
PRF-fit source offset from KIC position	0.075 \pm 0.067	1.13	0.069 \pm 0.067	-0.031 \pm 0.067
photometric centroid source offset	2.36 \pm 0.00	8114.55	-2.35 \pm 0.00	0.24 \pm 0.00

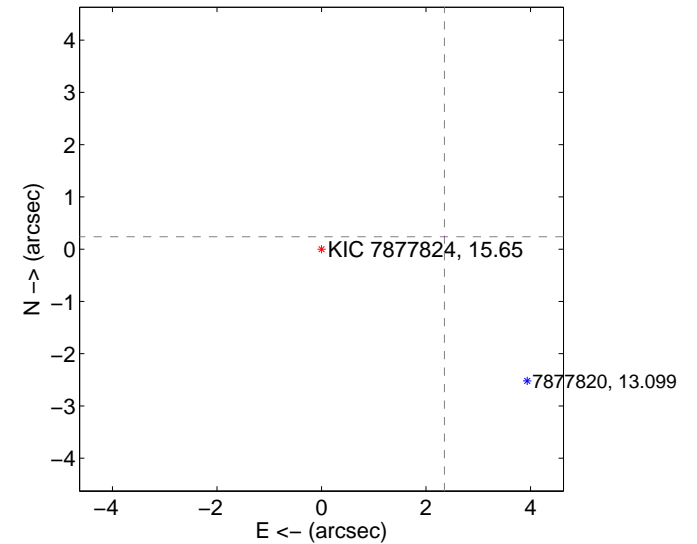
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

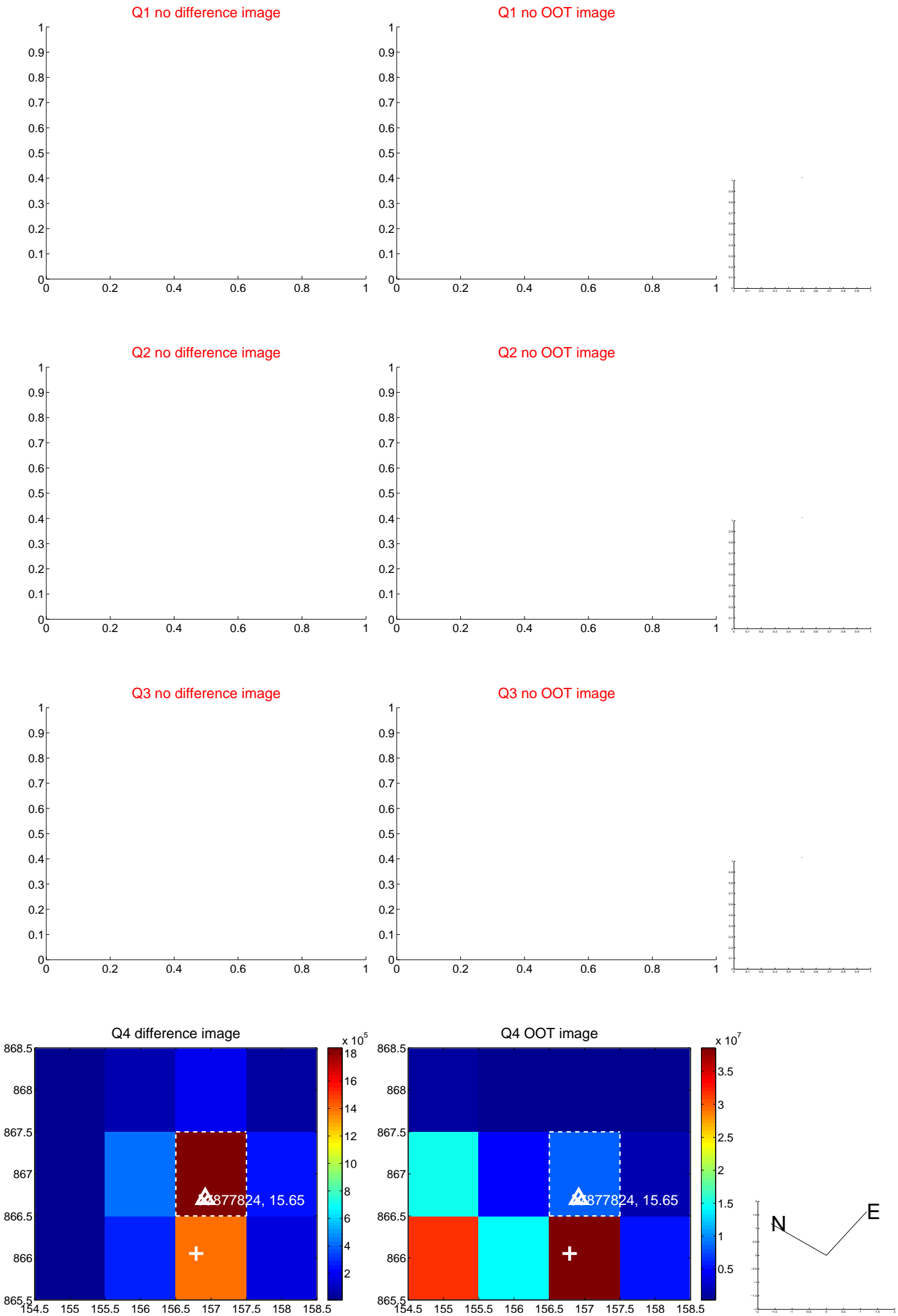


offset from photometric centroids

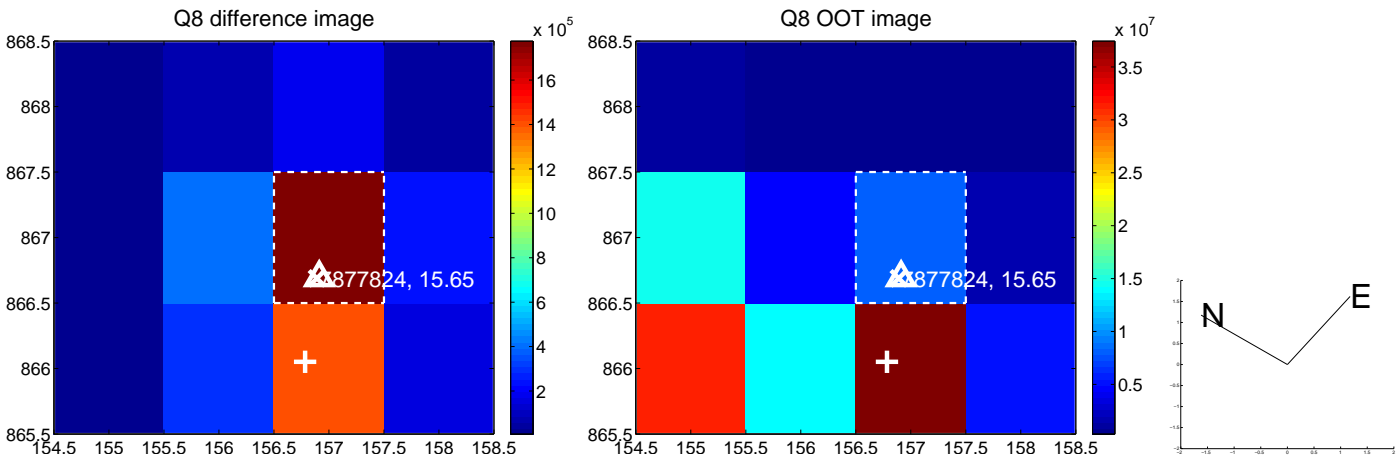
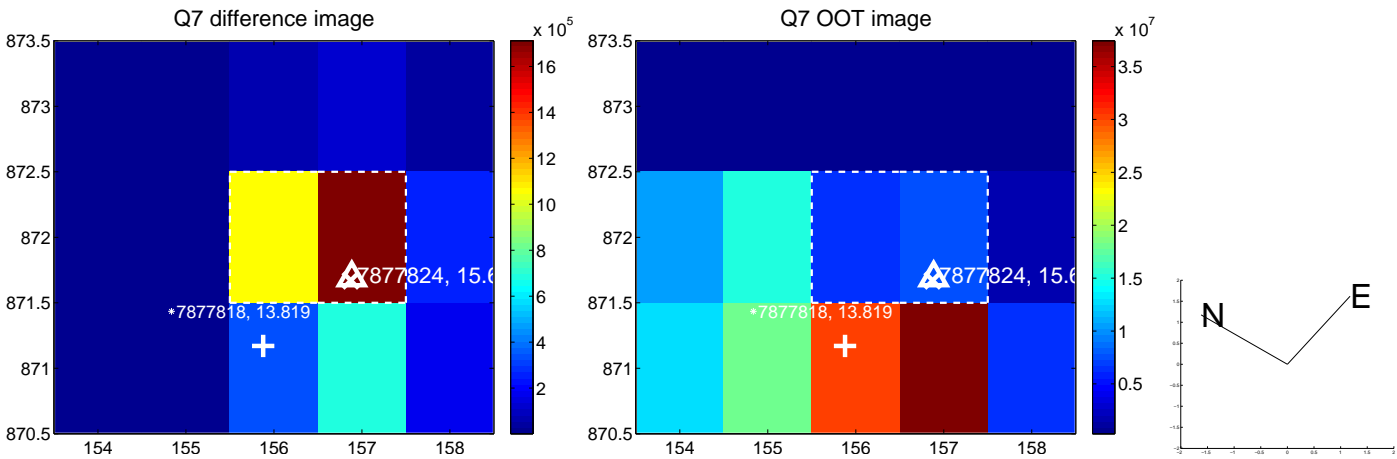
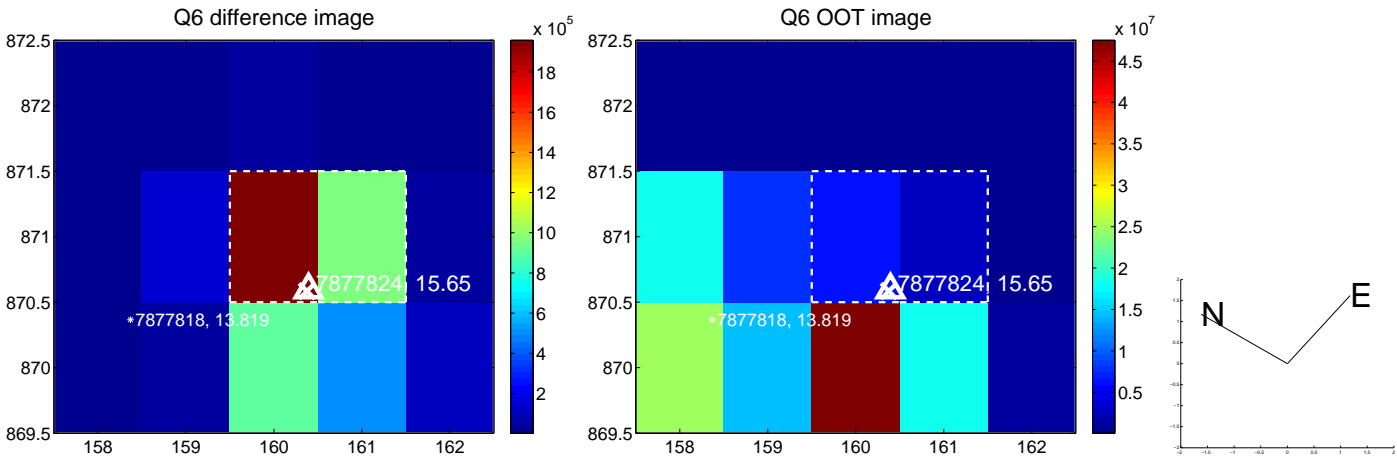
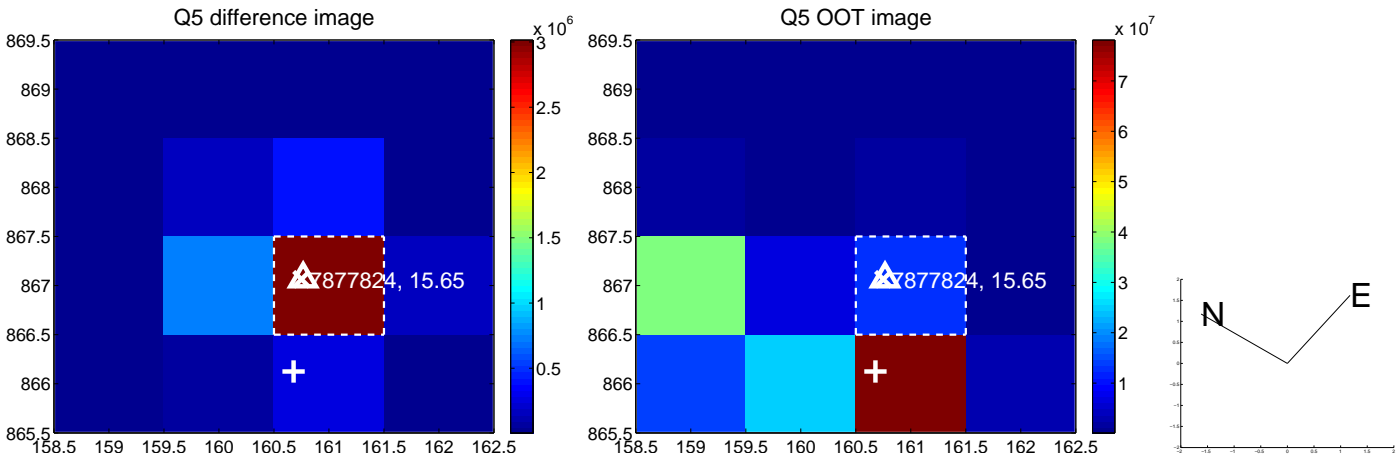


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

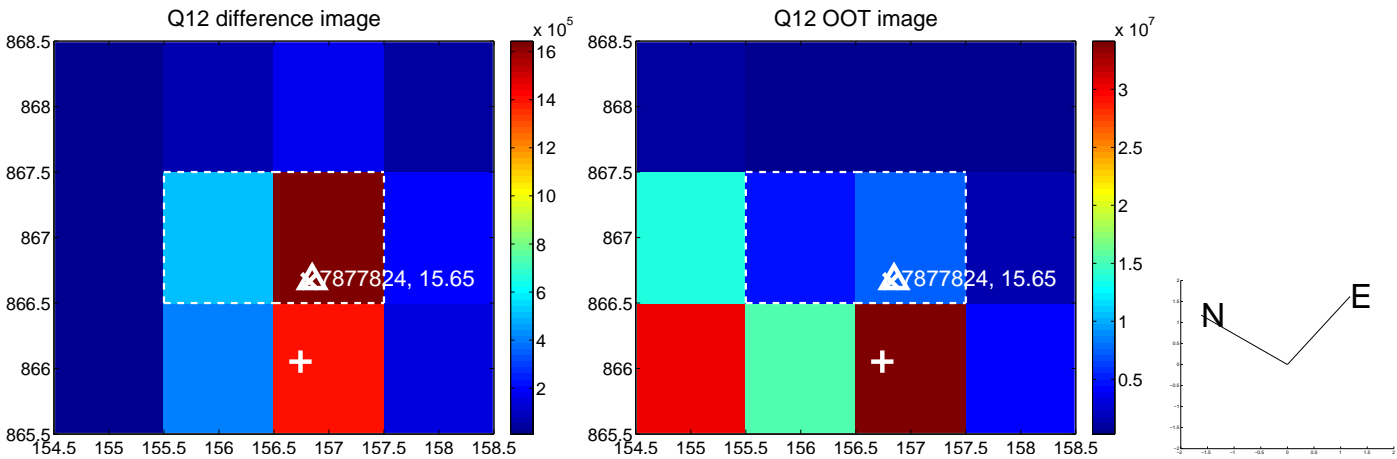
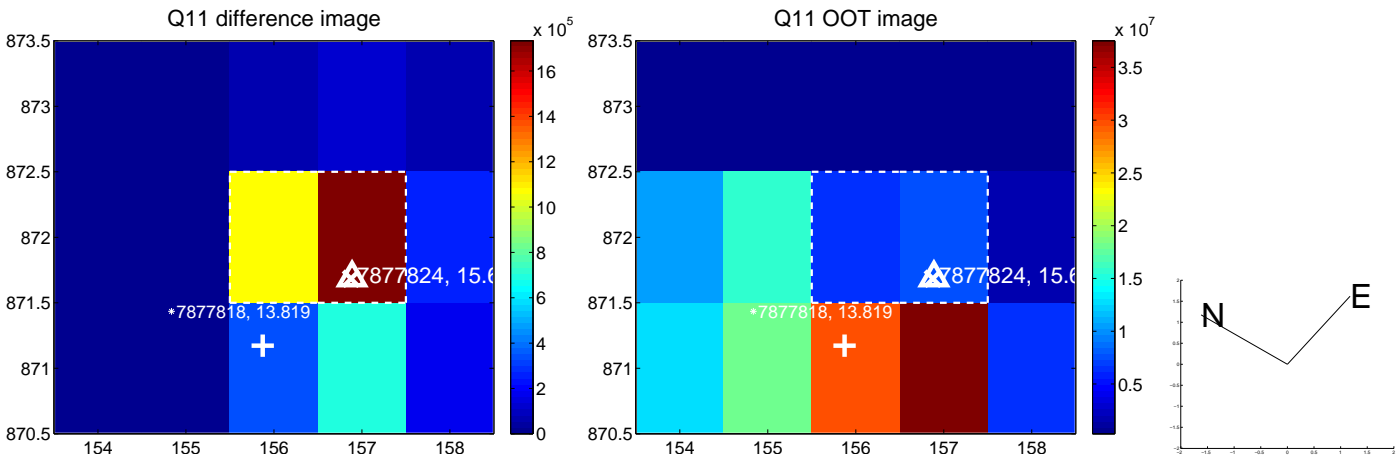
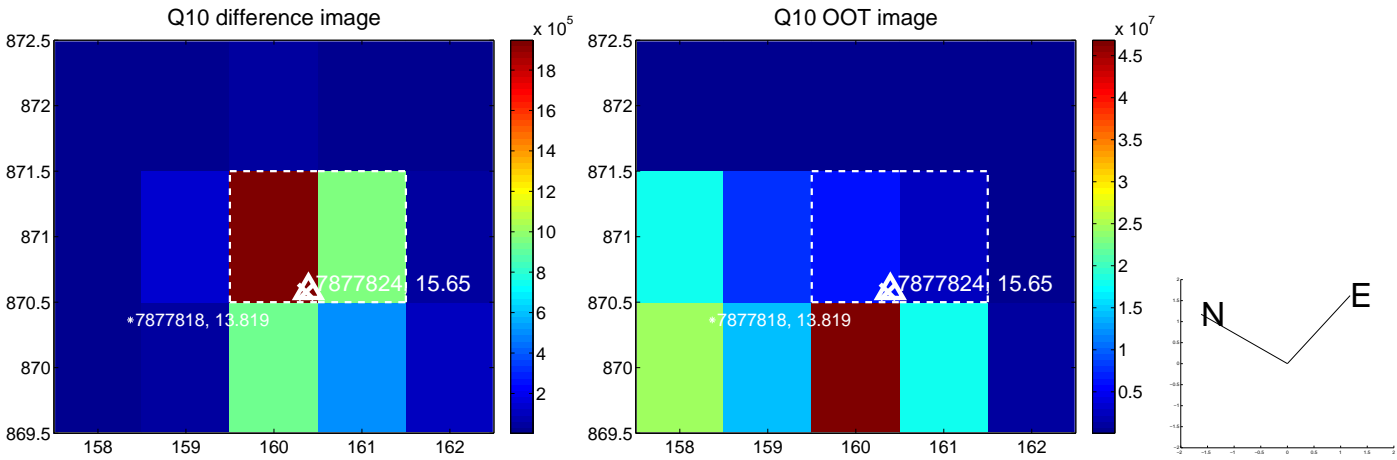
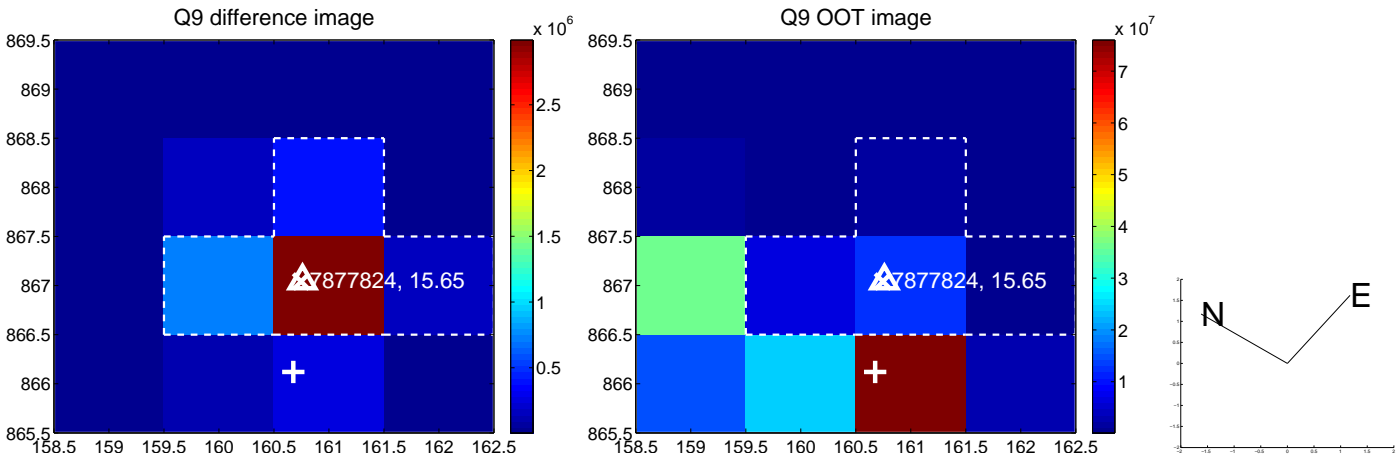
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



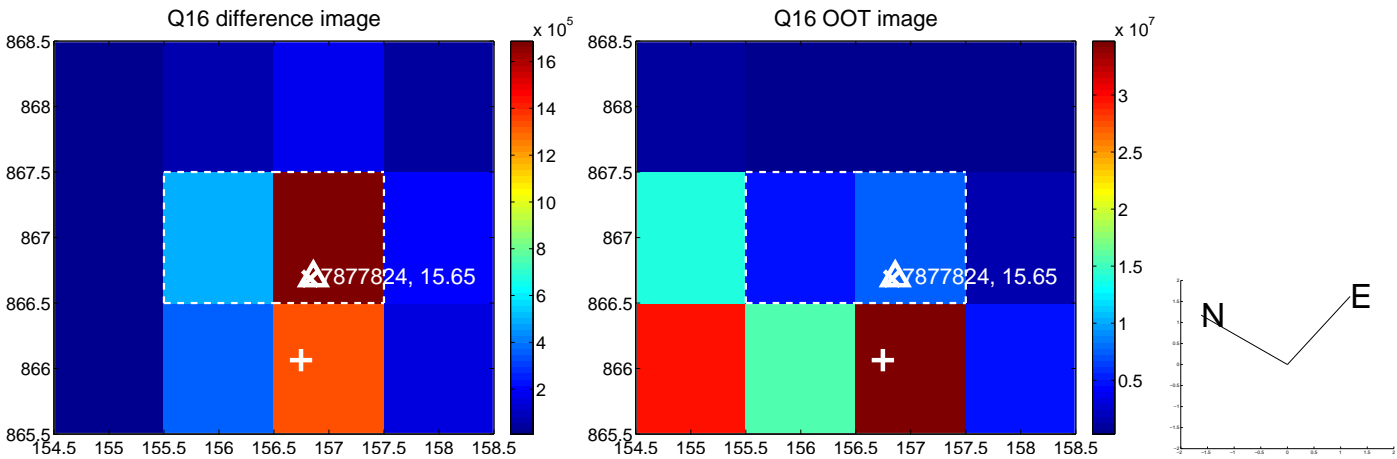
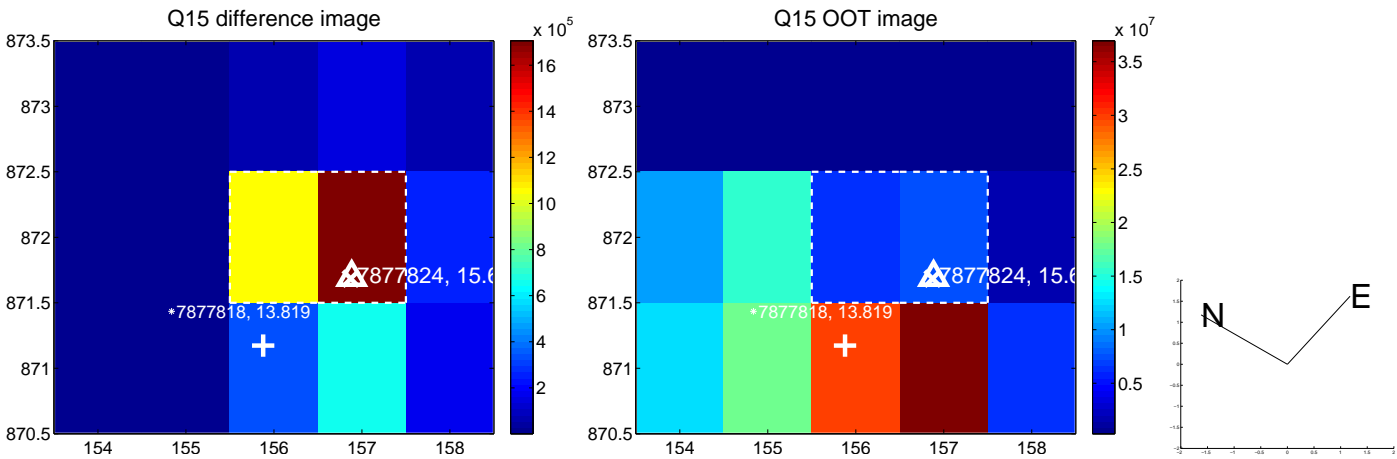
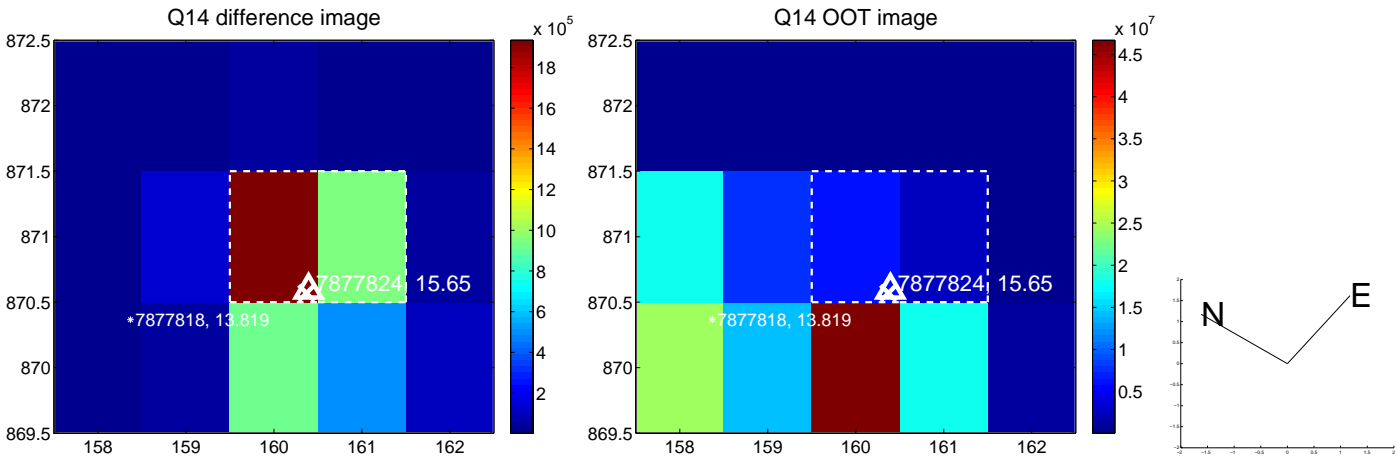
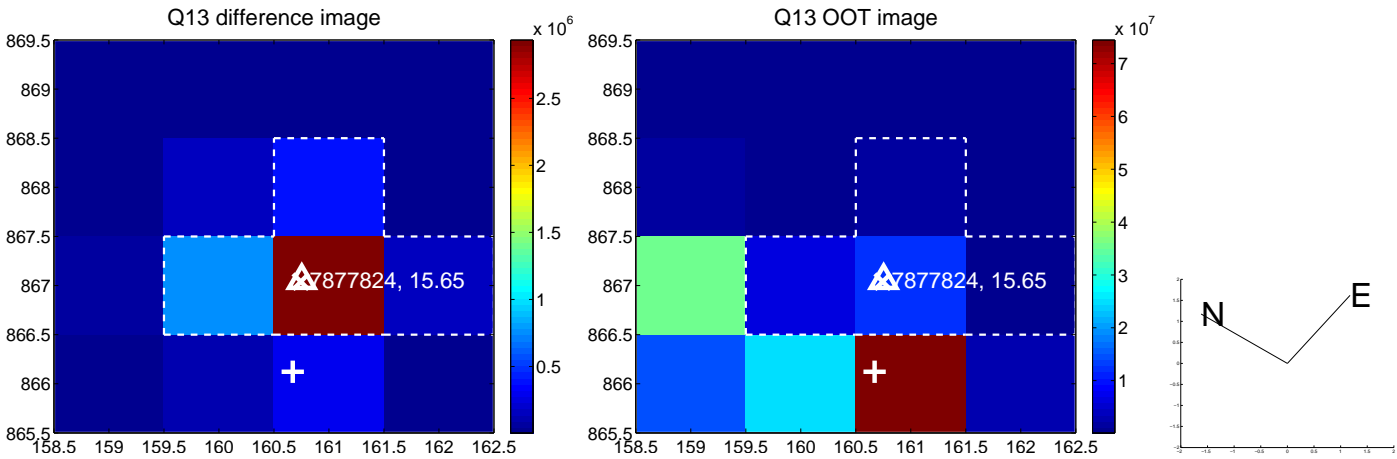
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



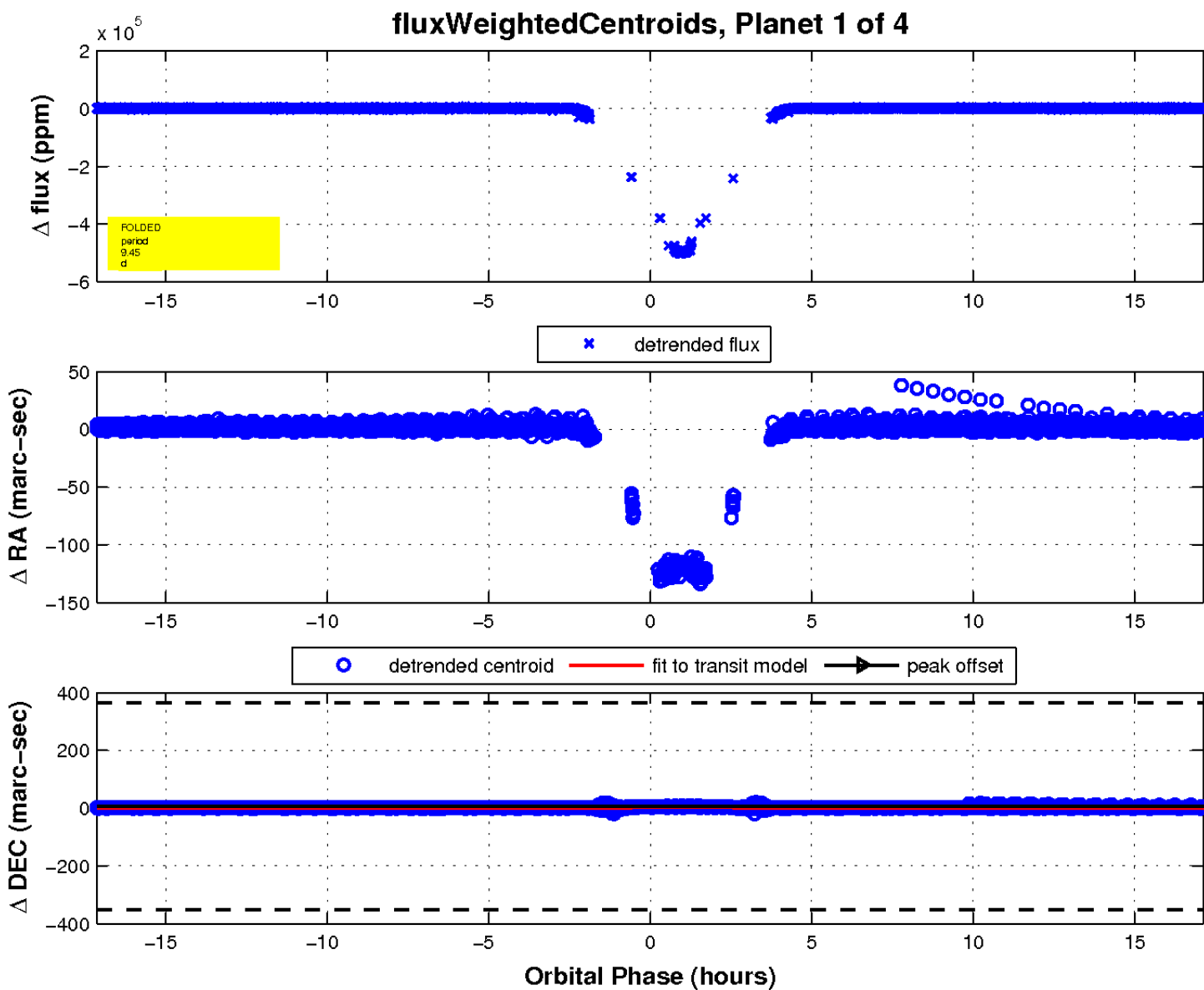
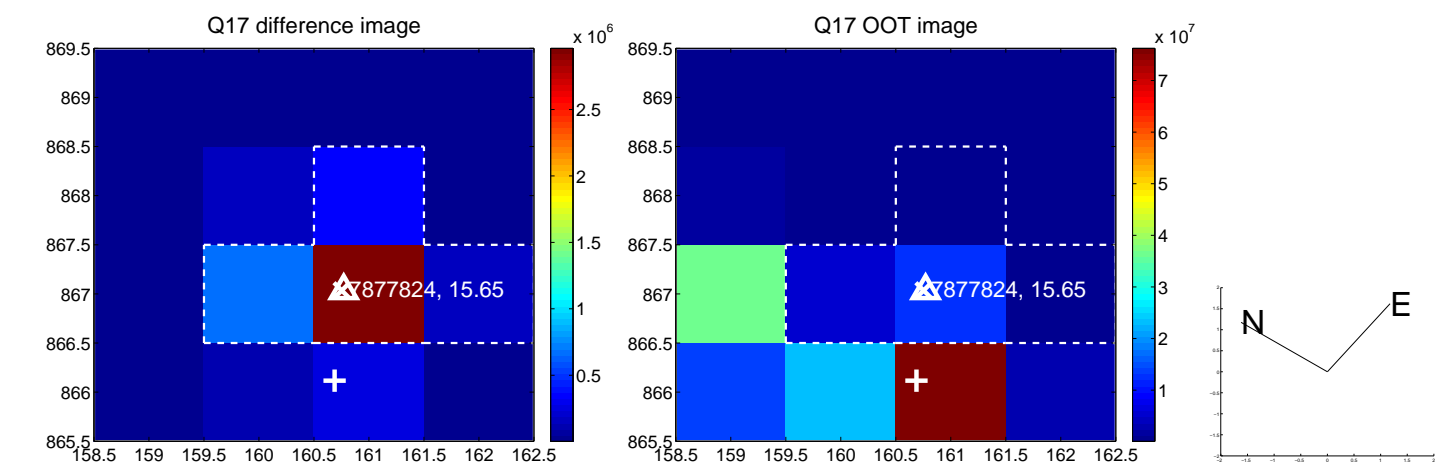
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



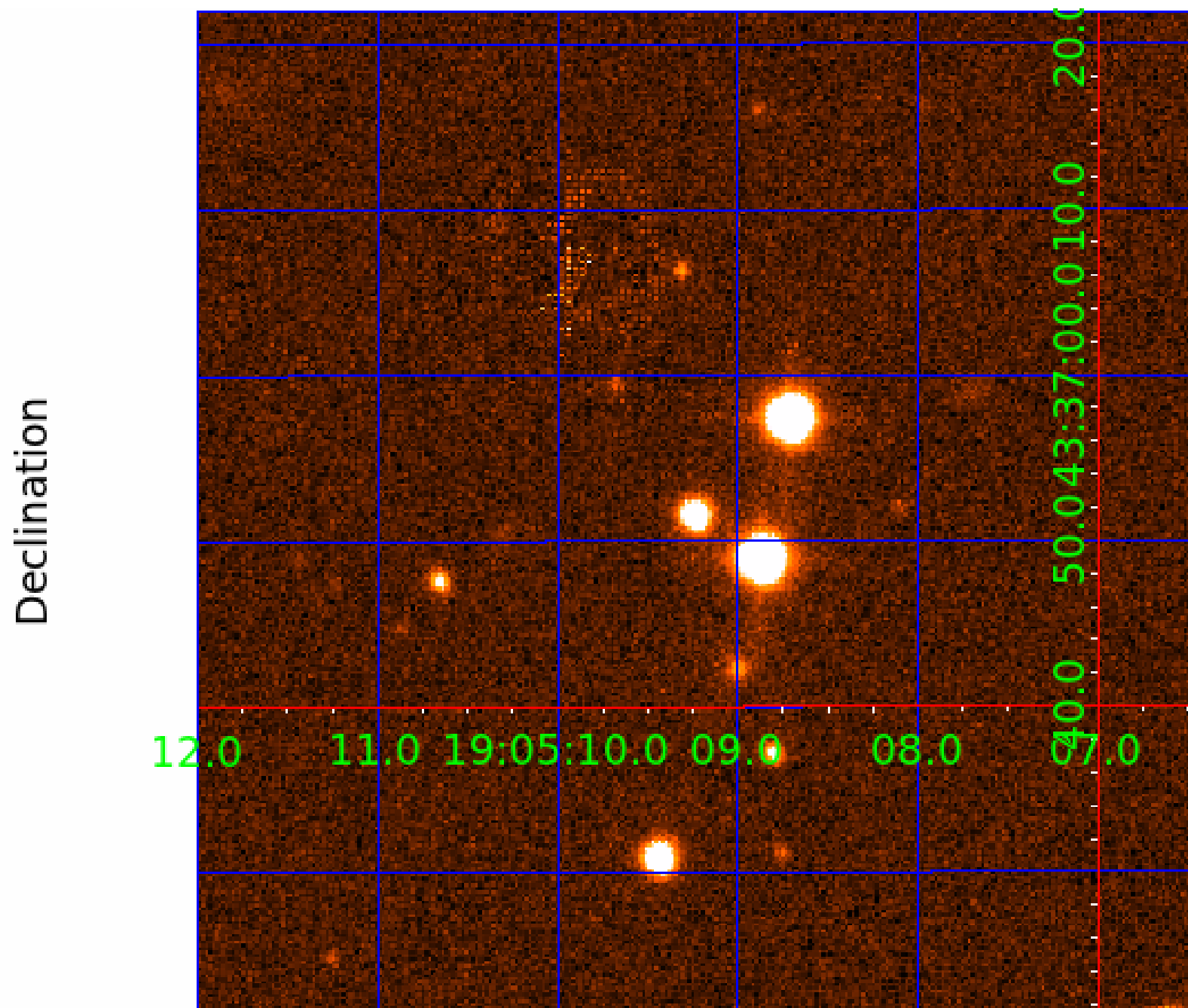
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image



KIC 007877824

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})
007877824-01	OBS	3530.01	9.449475	136.019999	496931.3	3.500	7983.0	-1.0	0.91	5754	49.38	103.59
007877824-02	OBS	No	9.449475	132.444126	379577.9	3.500	6328.9	-1.0	0.91	5754	49.38	103.59
007877824-03	OBS	No	4.724910	131.510994	36881.4	15.000	625.3	-1.0	0.91	5754	17.21	261.02
007877824-04	OBS	No	2.362576	132.436491	612.0	13.040	53.0	15.4	0.91	5754	2.23	657.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007877824-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
007877824-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_NOFITS
007877824-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
007877824-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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.

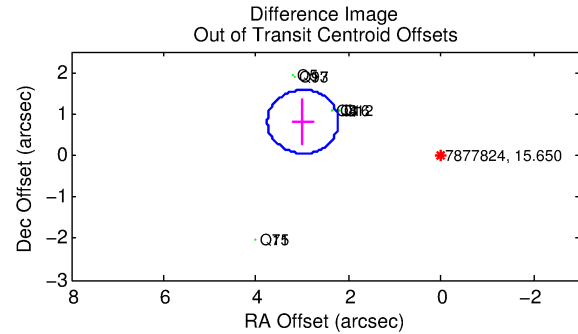
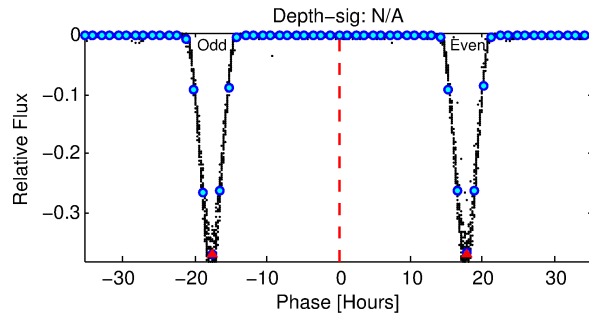
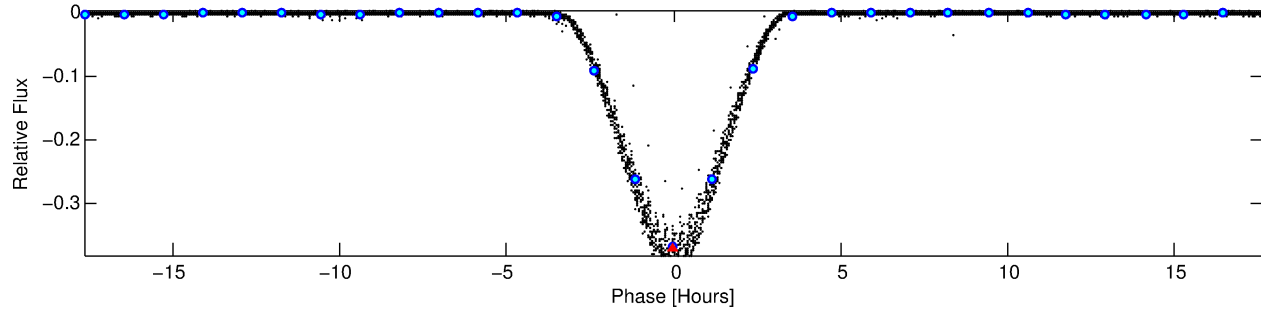
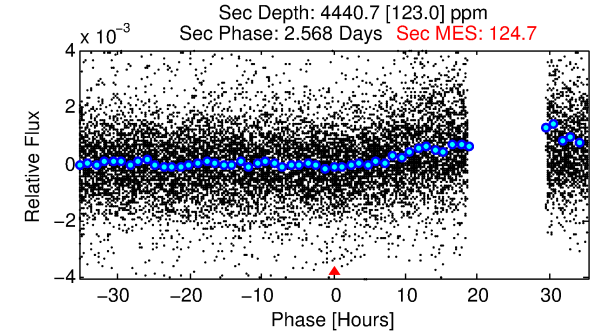
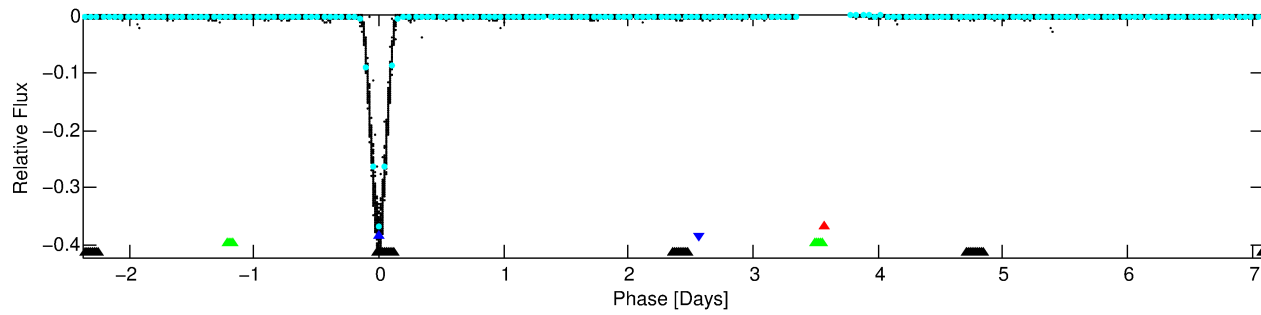
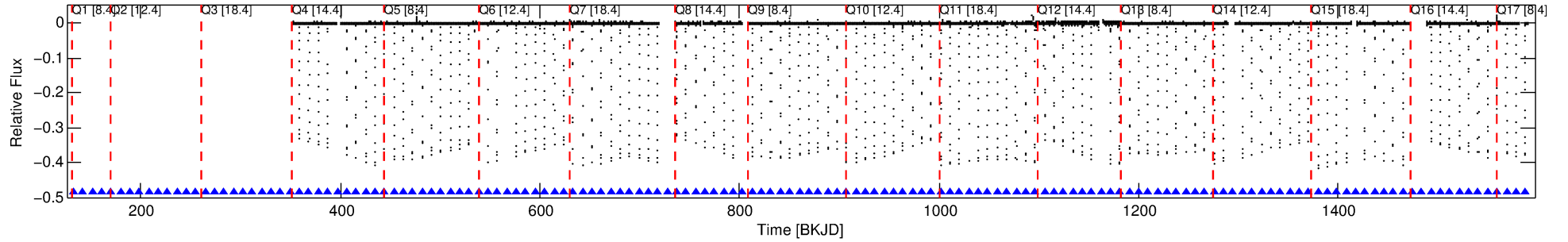
Ephemeris Match Information For 007877824-02

No Significant Match Found

DV One-Page Summary

KIC: 7877824 Candidate: 2 of 4 Period: 9.449 d
KOI: K03530 Corr: No Ephemeris Match

Kp: 15.65 R*: 0.91 Rs Teff: 5754.0 K Logg: 4.53 Fe/H: 0.070



TPS TCE Results:

Period = 9.44947 d
Epoch = 132.4441 BKJD

DV fit results are unavailable

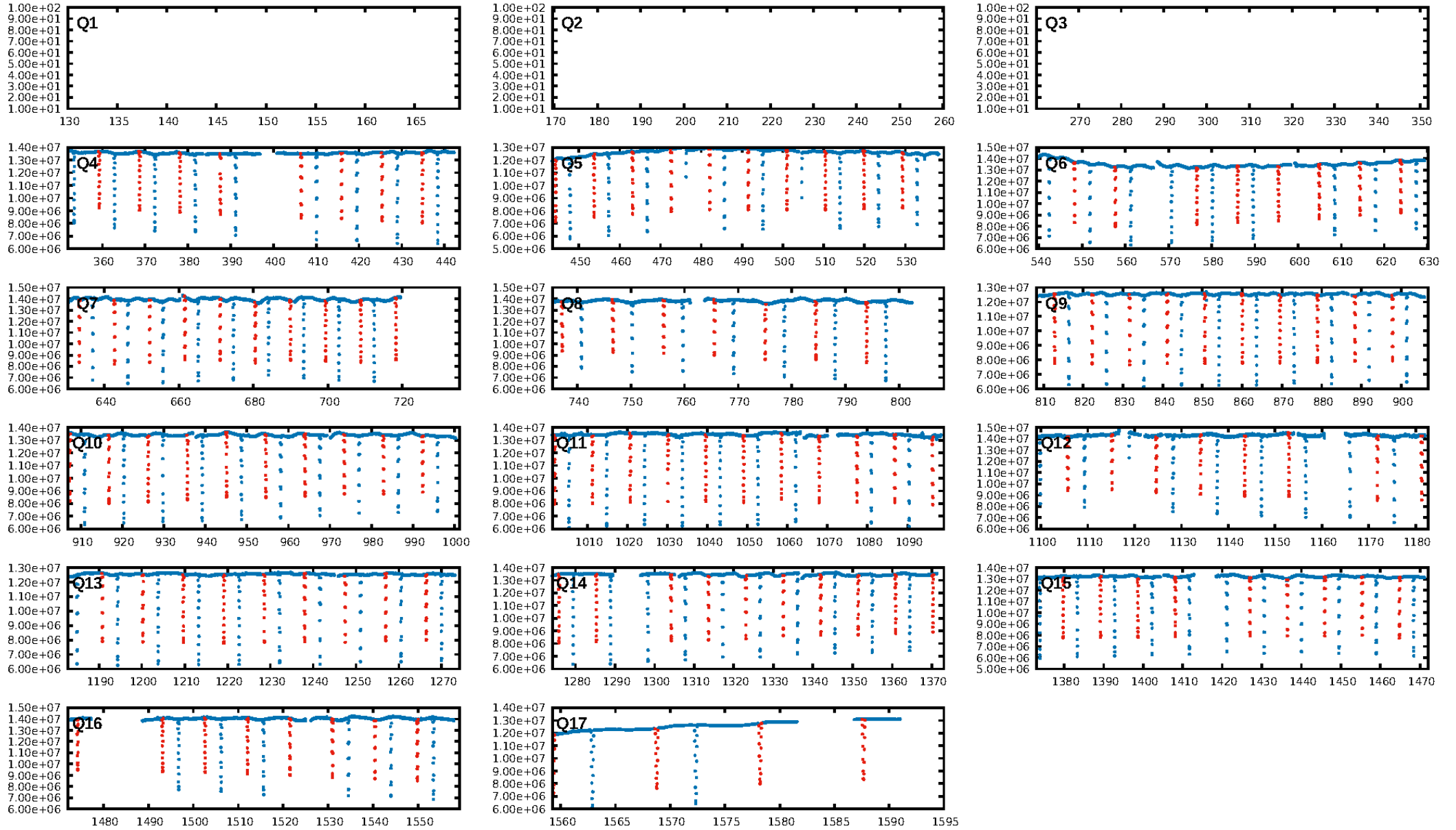
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [117/117]
GhostDiagnostic-chr: 1.144
Centroid-sig: N/A
Centroid-so: 2.359 arcsec [7296.45σ]
OotOffset-rm: 3.097 arcsec [12.11σ]
KicOffset-rm: 0.075 arcsec [1.12σ]
OotOffset-st: 0/3/4/4 [11]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

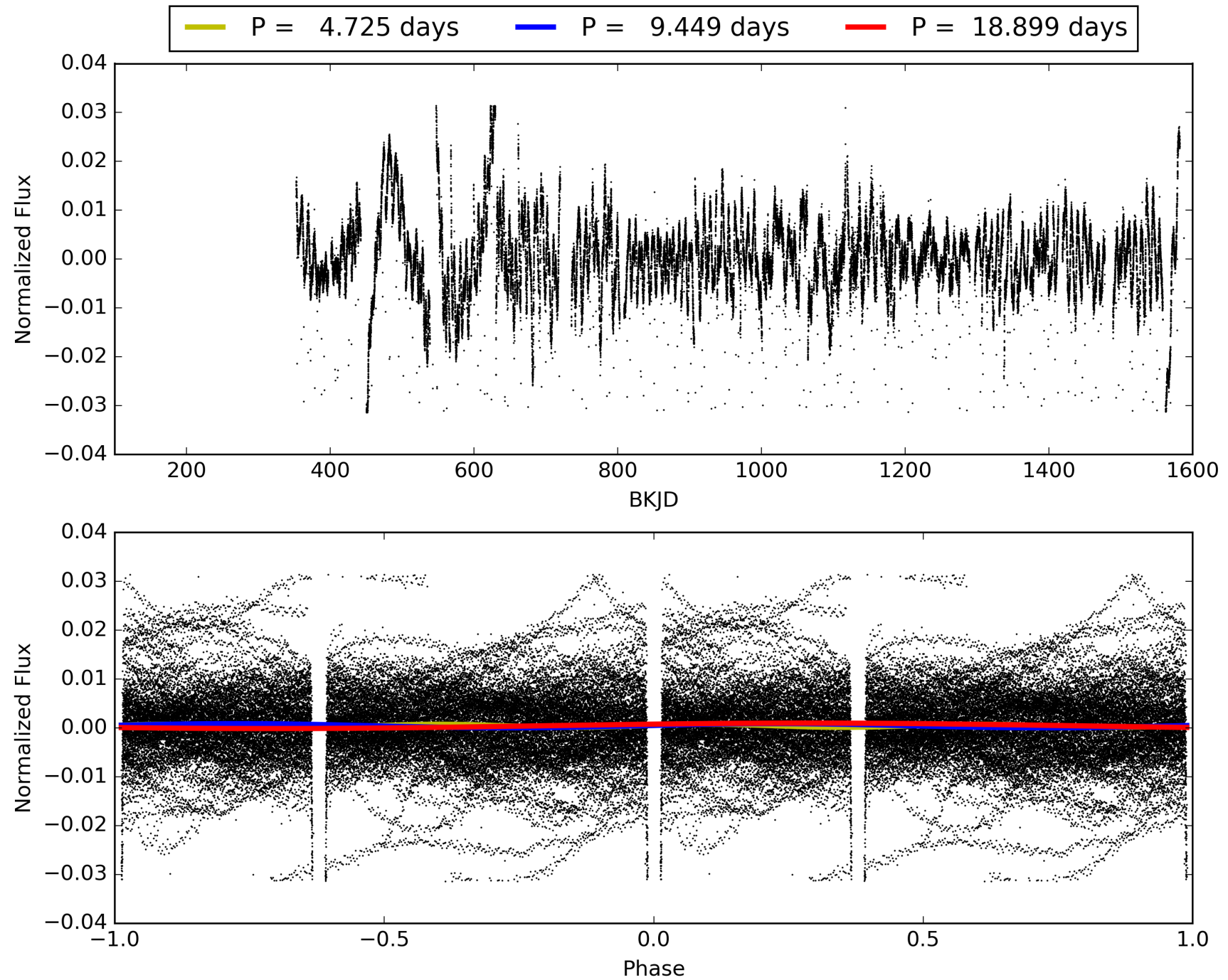
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:45:55 Z

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

TCE 007877824-02, PDC Light Curves

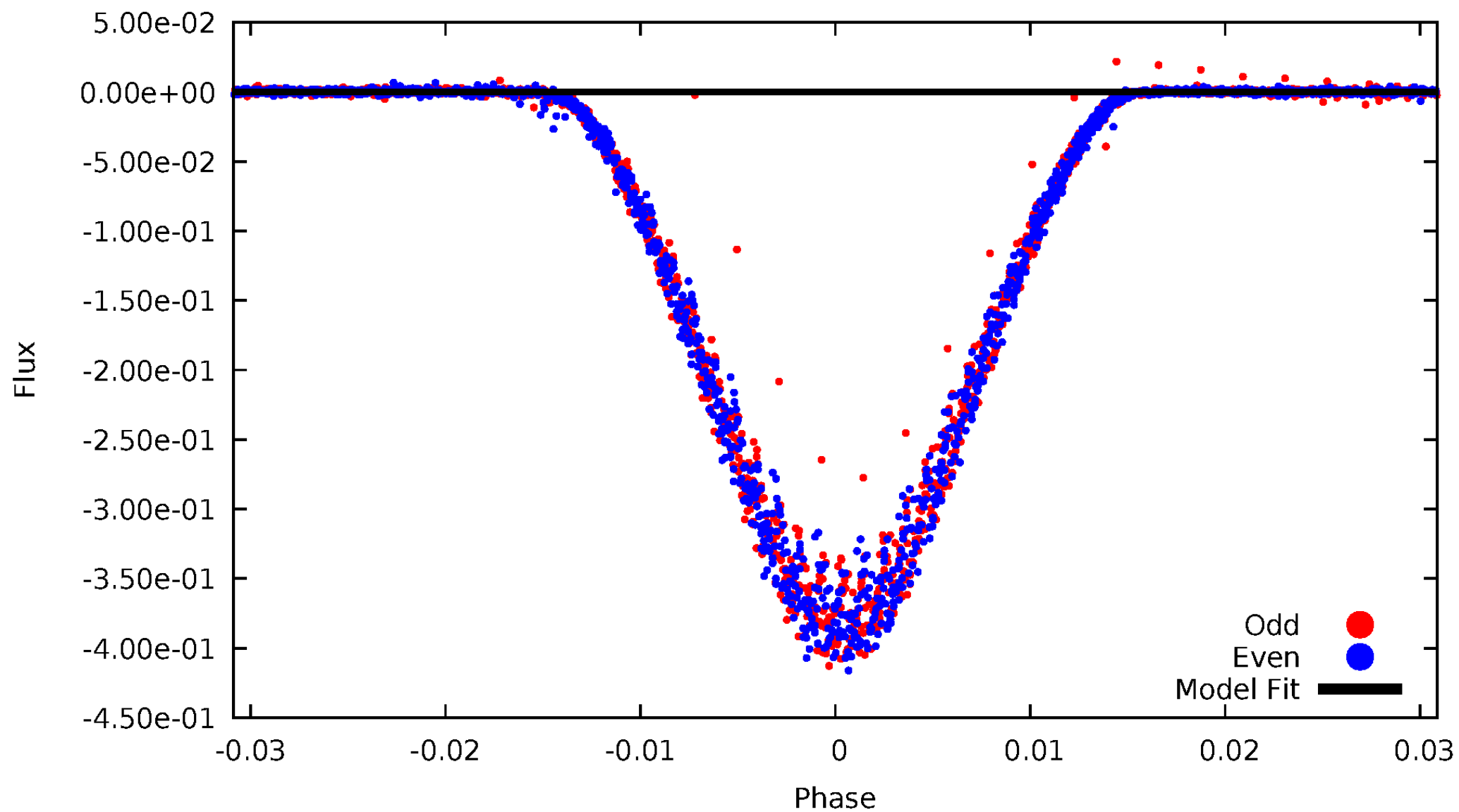


TCE 007877824-02



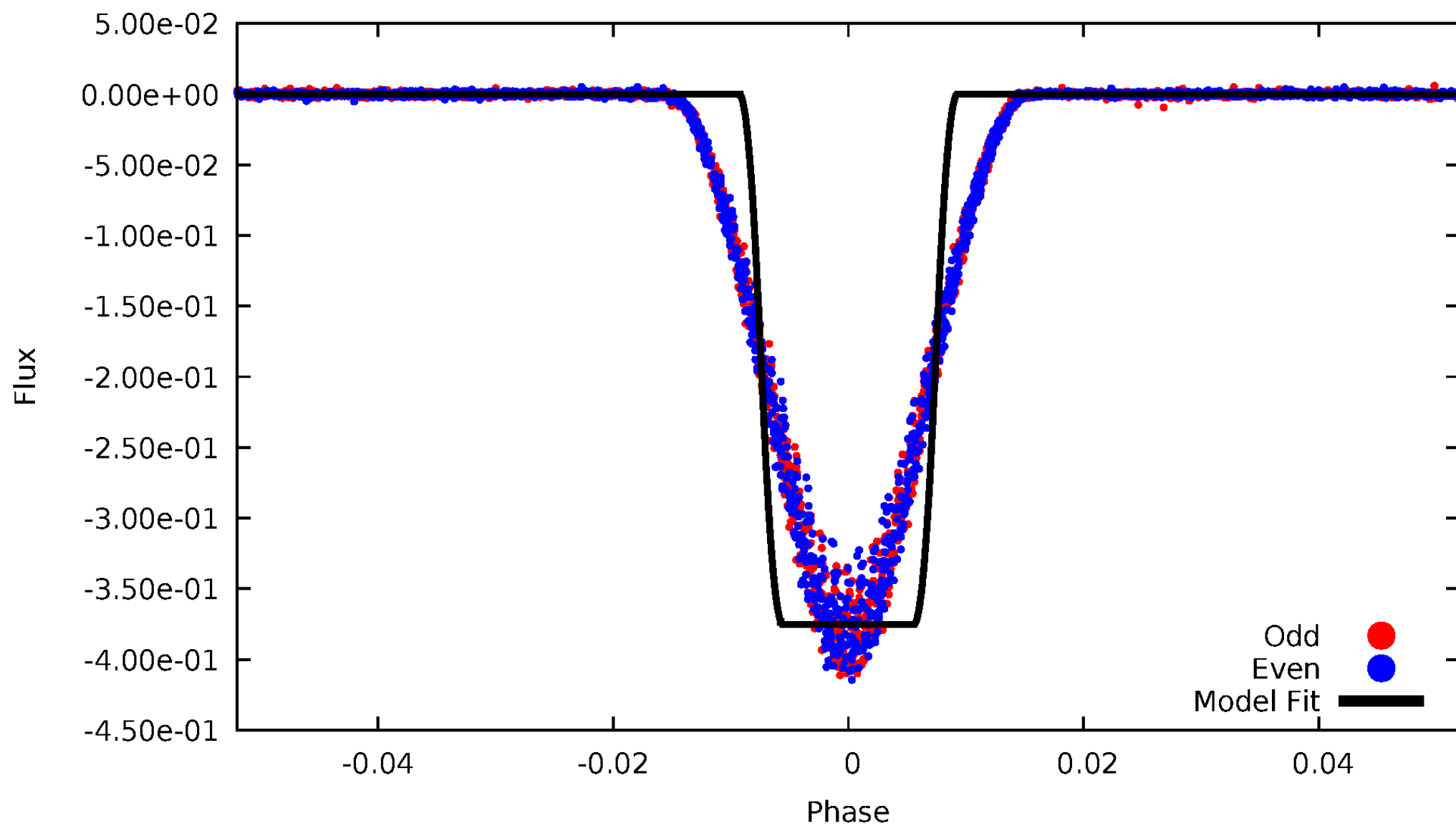
DV Odd/Even

TCE 007877824-02



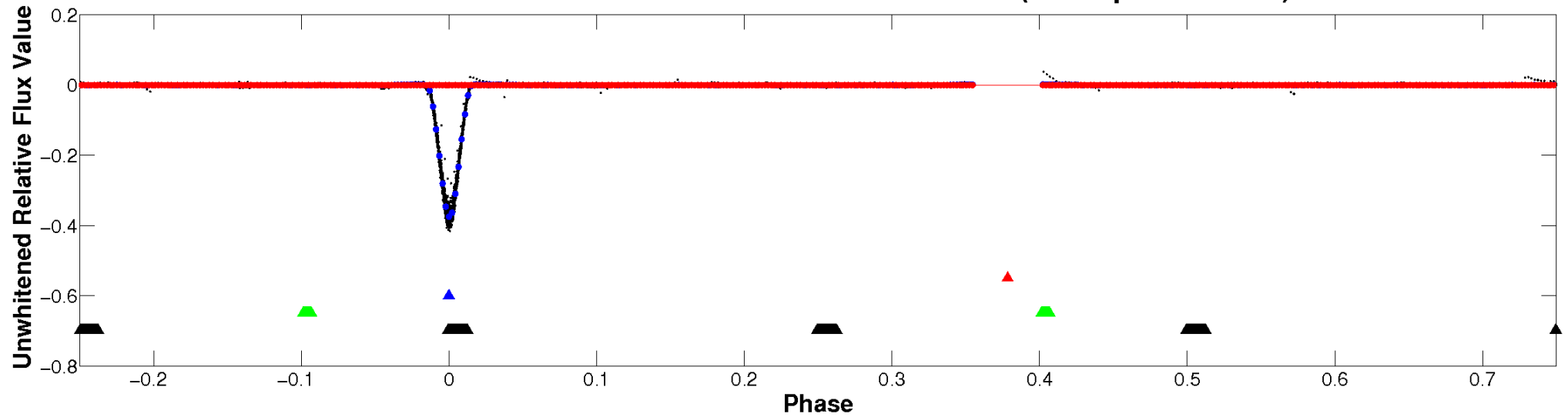
ALT Odd/Even

TCE 007877824-02

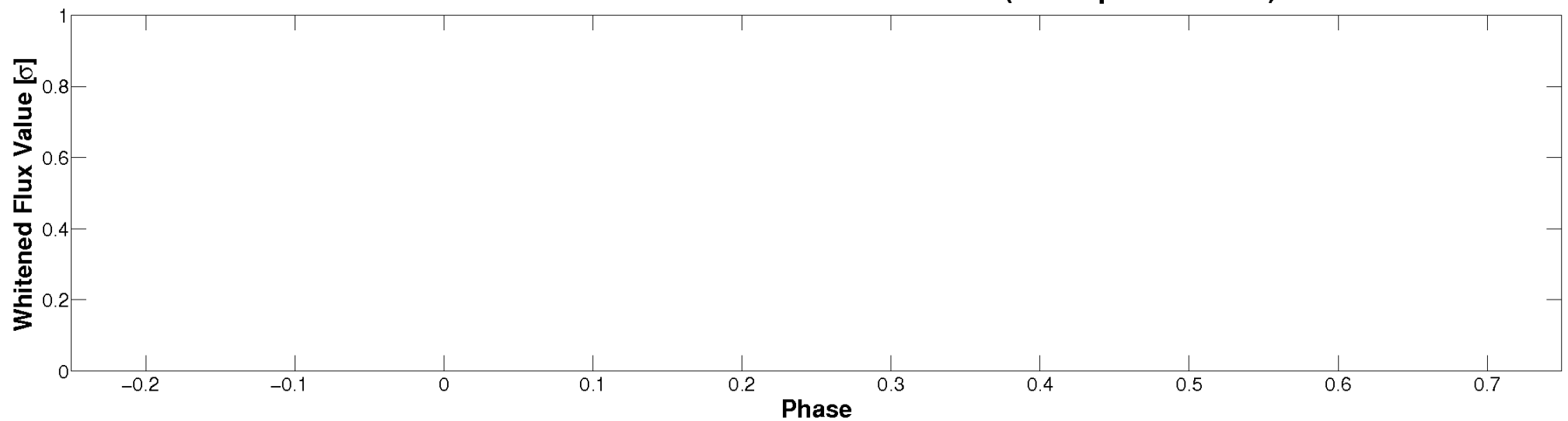


Non-Whitened Vs. Whitened Light Curve

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

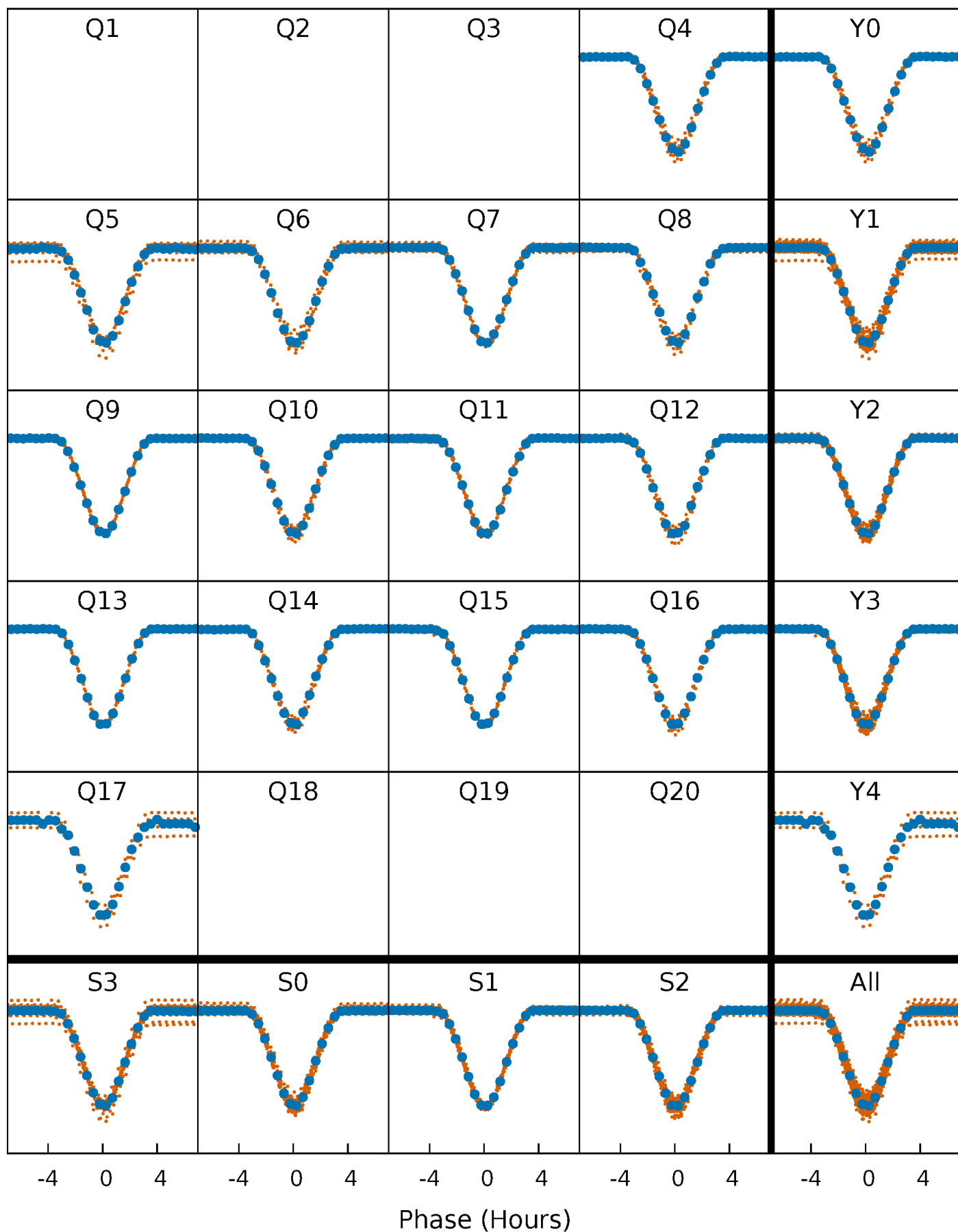


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



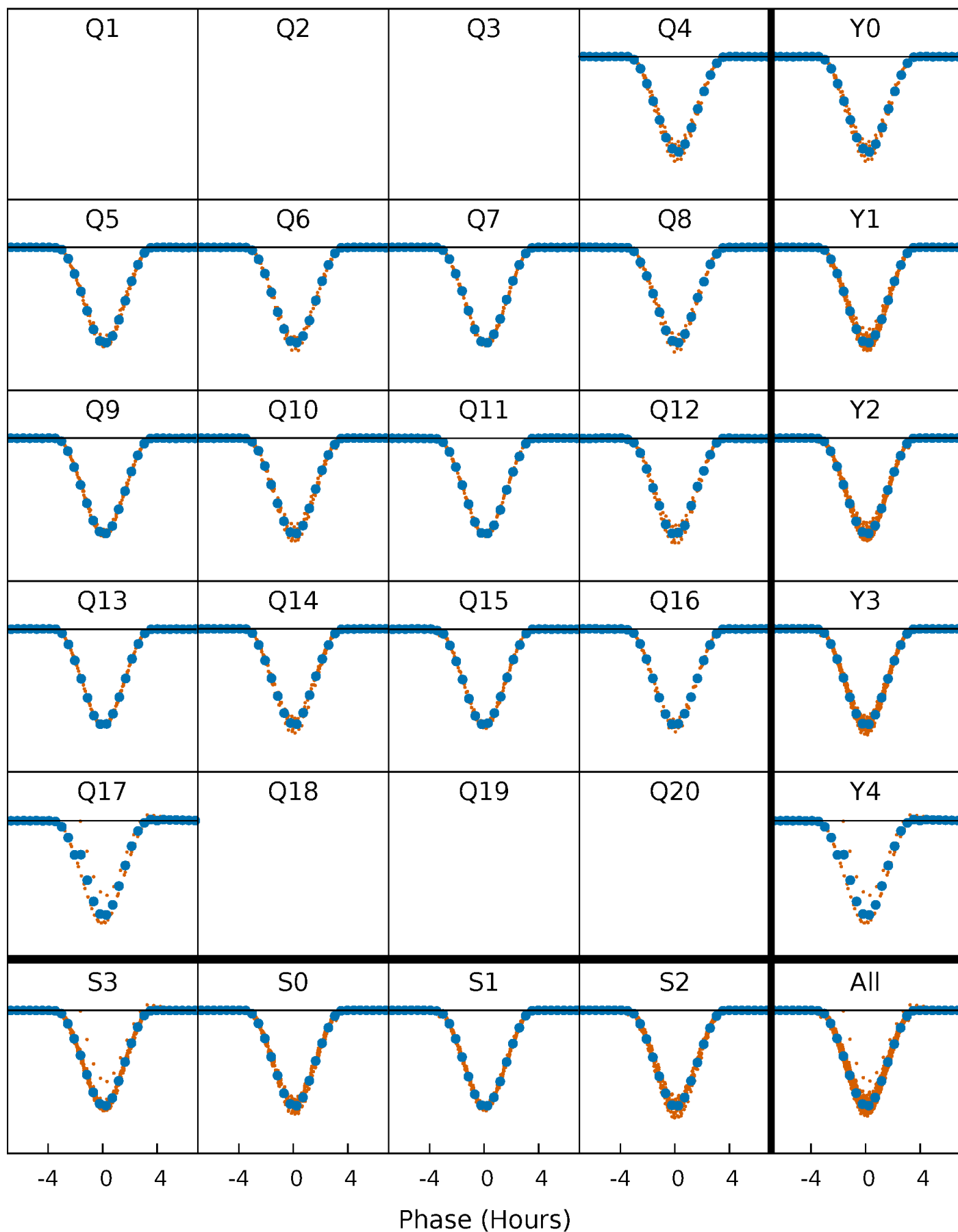
PDC Quarter-Phased Transit Curves

TCE 007877824-02 P= 9.449475 Days $T_0=132.444126$ (BKJD)



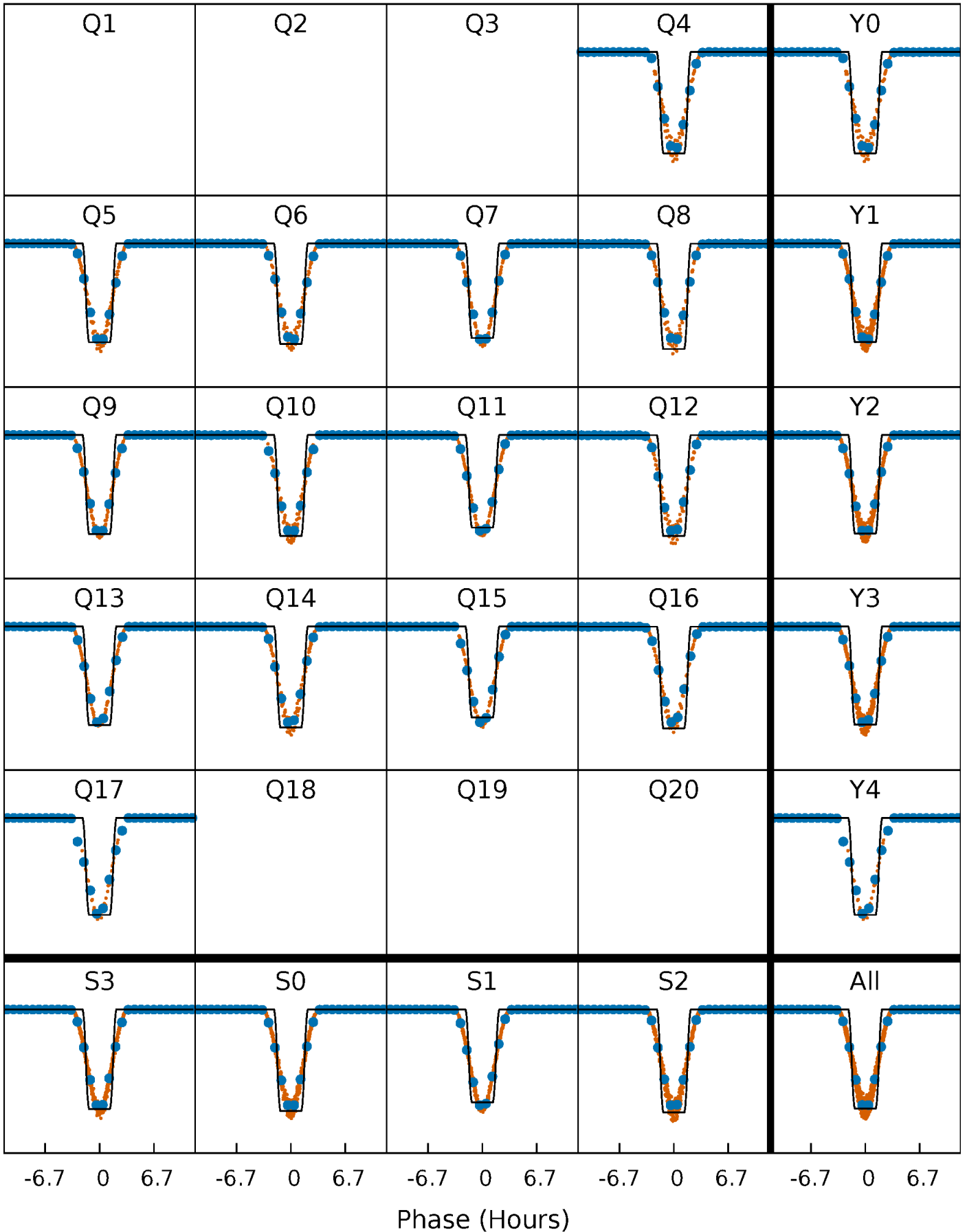
DV Quarter-Phased Transit Curves

TCE 007877824-02 P= 9.449475 Days $T_0=132.444126$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

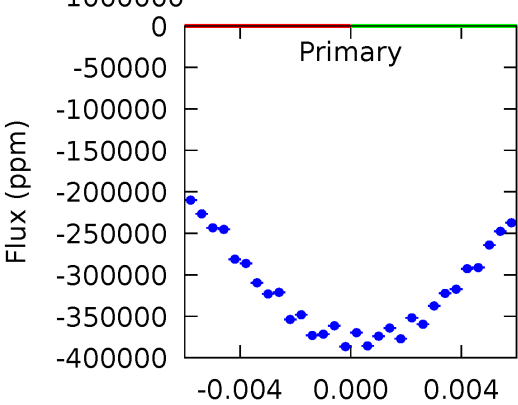
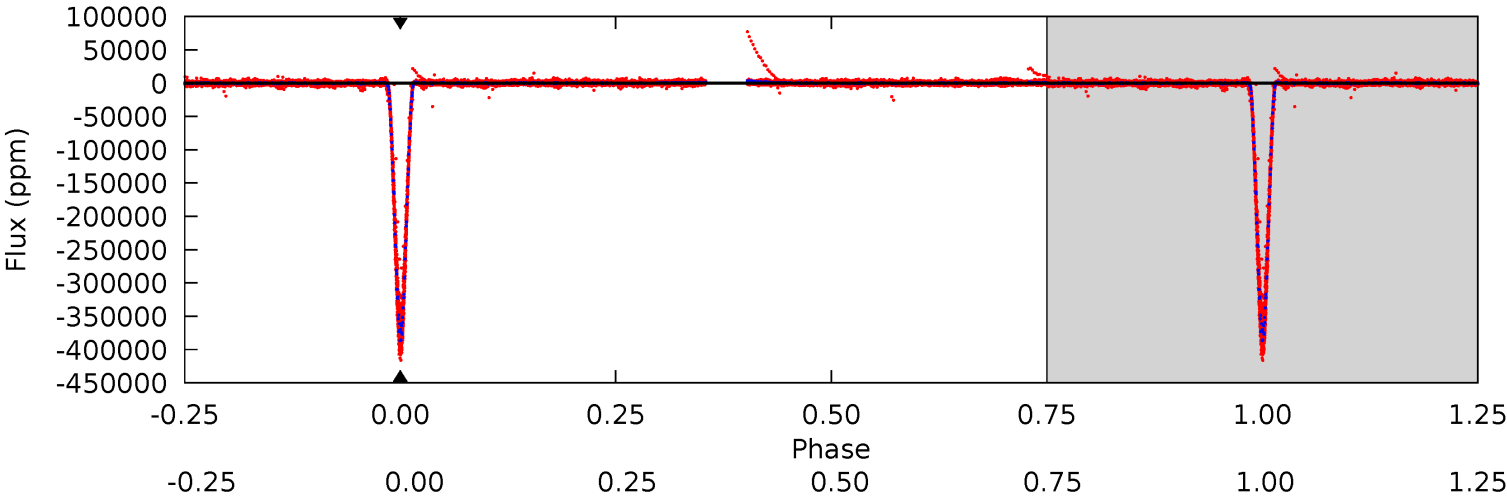
TCE 007877824-02 $P = 9.449475$ Days $T_0 = 132.447691$ (BKJD)



DV Model-Shift Uniqueness Test

007877824-02, P = 9.449475 Days, E = 132.444126 Days

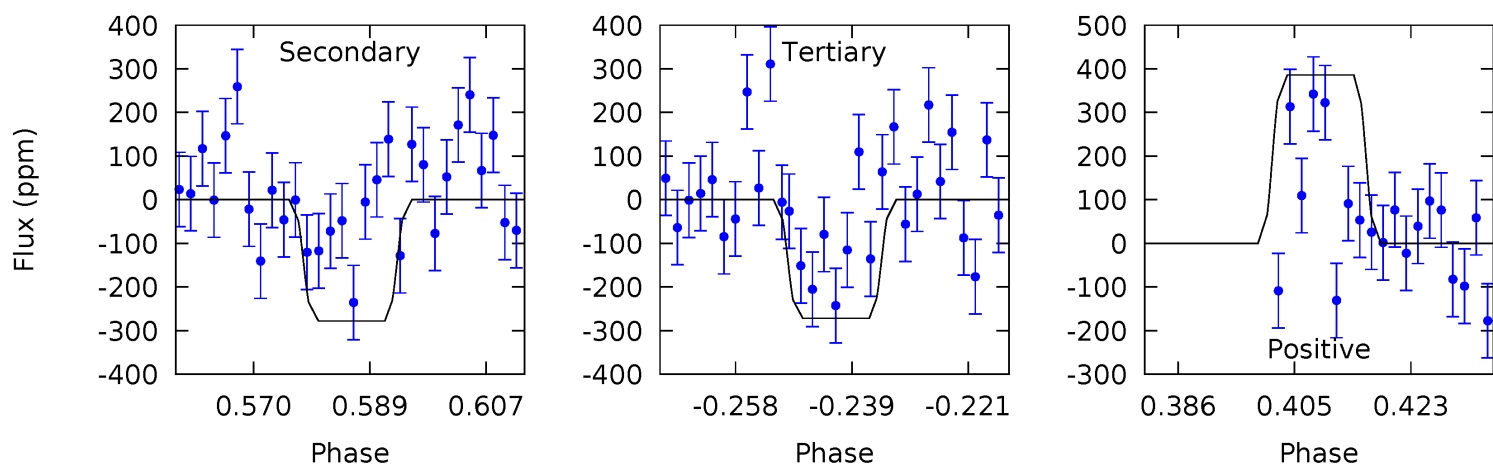
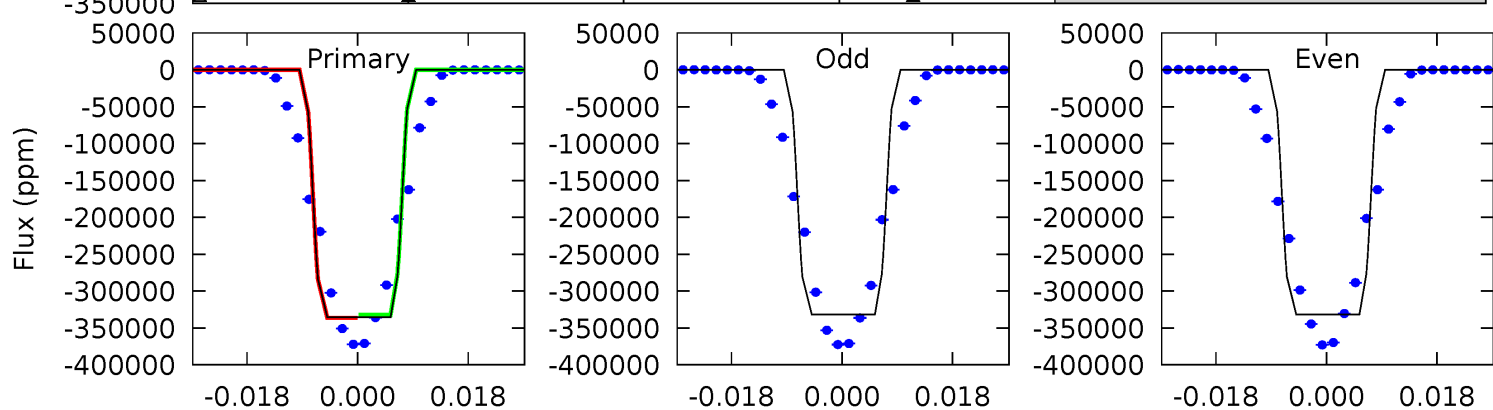
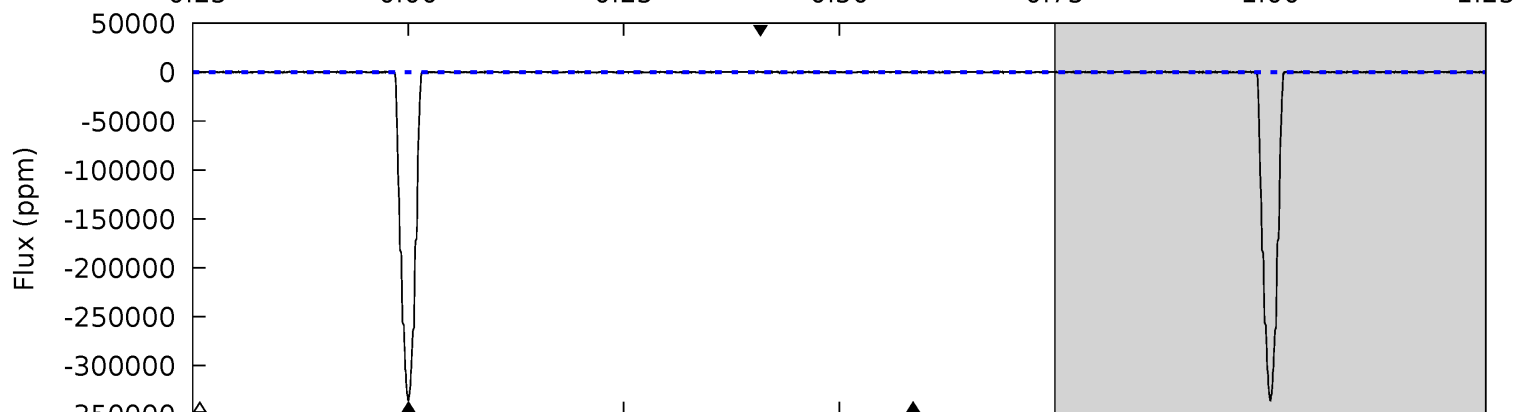
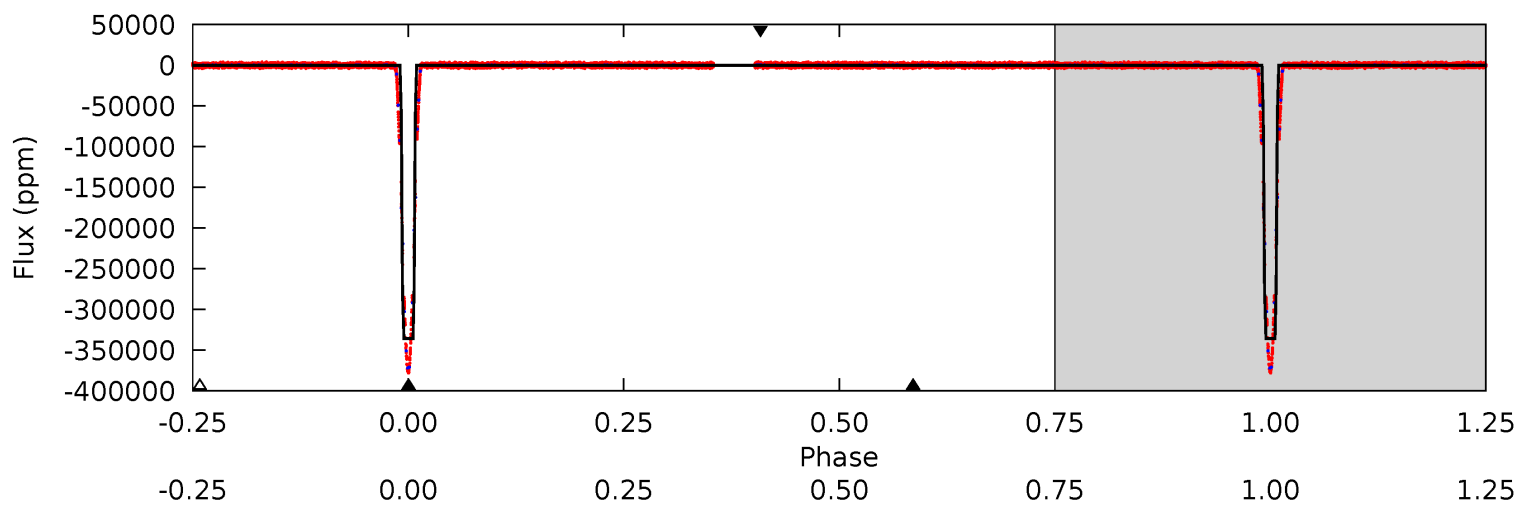
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007877824-02, P = 9.449475 Days, E = 132.447691 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4015	3.32	3.25	4.62	4.91	2.36	1.23	4012	4010	0.07	-1.29	0.35	0.99	0.00	0



Stellar Parameters For KIC 007877824

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5754^{+160}_{-200}	$4.534^{+0.033}_{-0.187}$	$0.070^{+0.250}_{-0.300}$	$0.905^{+0.248}_{-0.083}$	$1.021^{+0.100}_{-0.122}$	$1.938^{+0.359}_{-0.954}$
	+3%/-3%	+1%/-4%	+357%/-429%	+27%/-9%	+10%/-12%	+19%/-49%
Source	KIC0	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 007877824-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$51.61^{+11.51}_{-11.42}$	1165^{+69}_{-53}	-2542^{+7408}_{-2123}	$-2.205^{+182.861}_{-144.913}$
Alt.	-278 ± 84	$63.19^{+12.19}_{-11.65}$	1166^{+68}_{-58}	-1433^{+3270}_{-383}	$0.291^{+0.163}_{-0.116}$

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 $A_{obs} \gg 1.0$

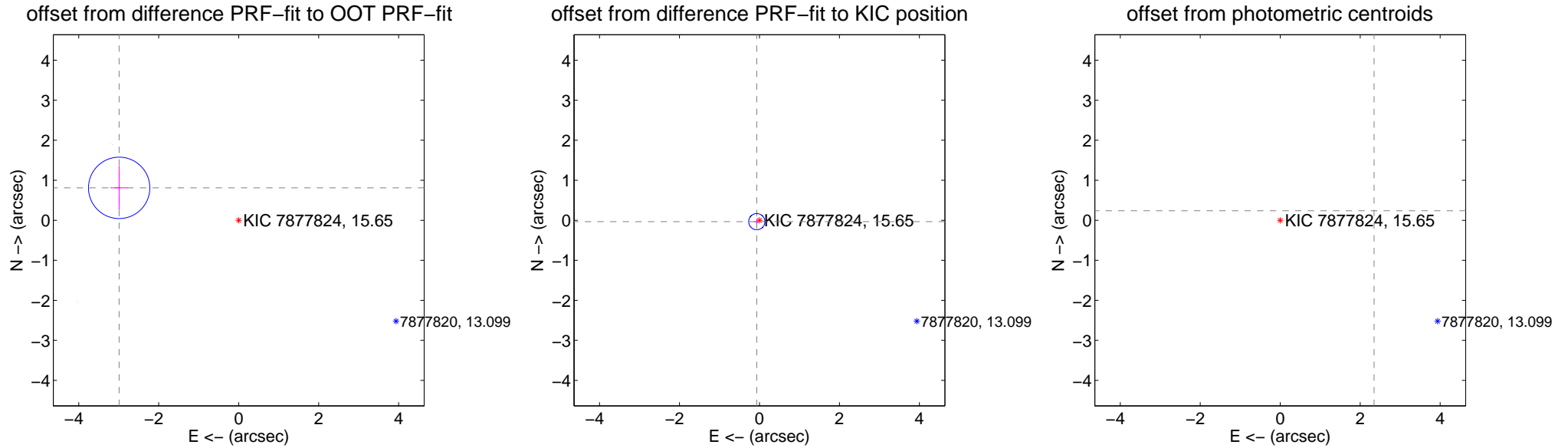
DV Centroid Data

Supplemental centroid analysis for 007877824-02. Kepler magnitude: 15.65. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

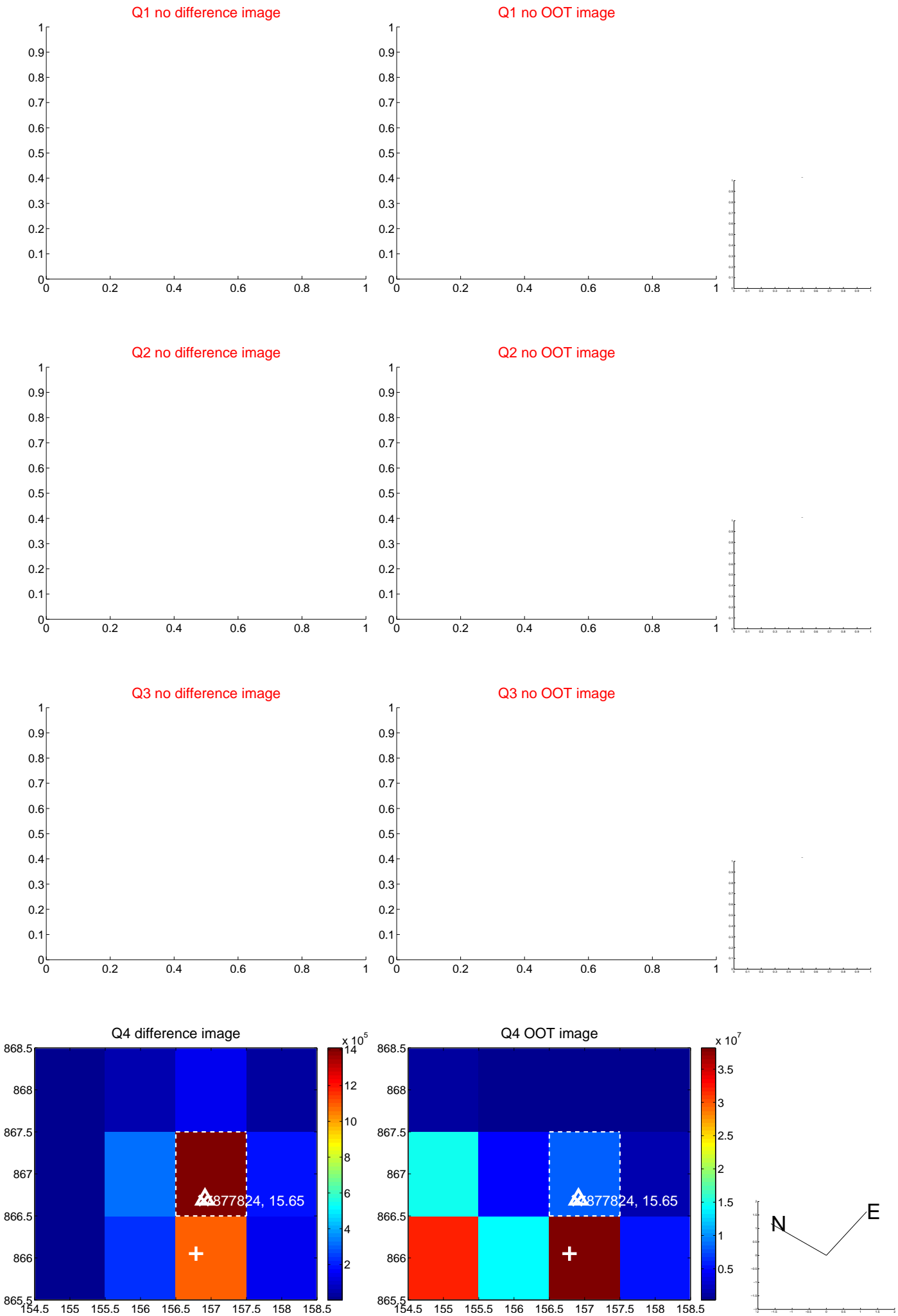
The OOT PRF centroid is offset from the target star catalog position by about 3.68 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.097 ± 0.256	12.11	2.990 ± 0.219	0.810 ± 0.548
PRF-fit source offset from KIC position	0.075 ± 0.067	1.12	0.067 ± 0.067	-0.034 ± 0.067
photometric centroid source offset	2.36 ± 0.00	7296.45	-2.35 ± 0.00	0.24 ± 0.00

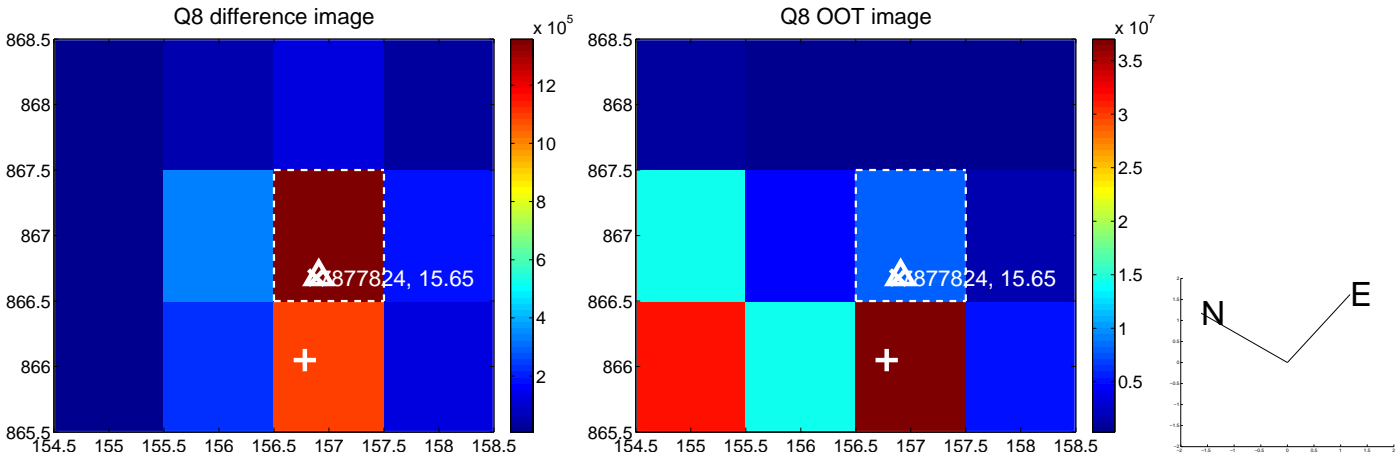
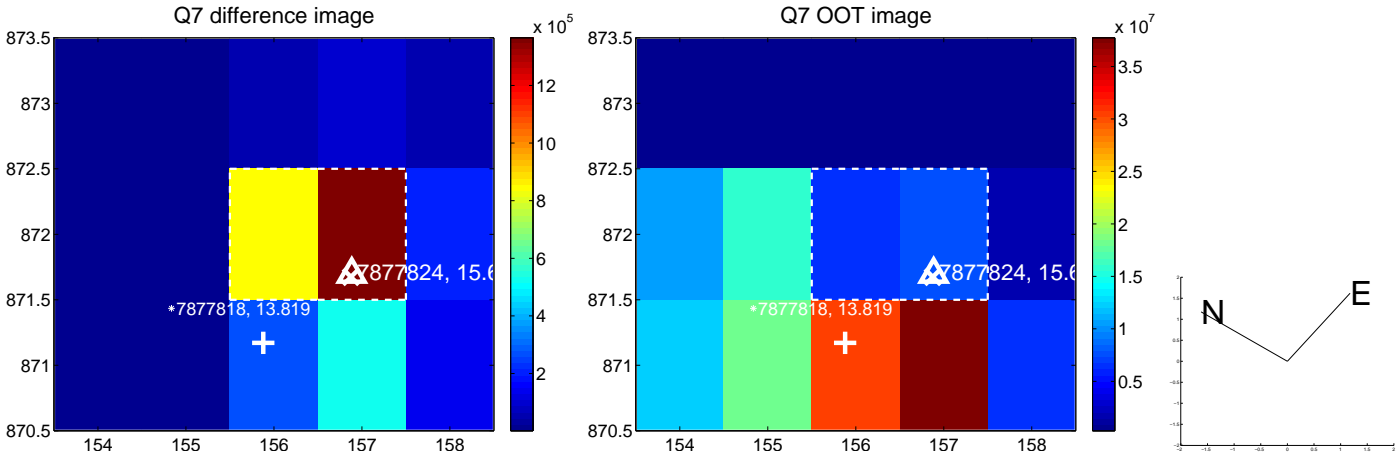
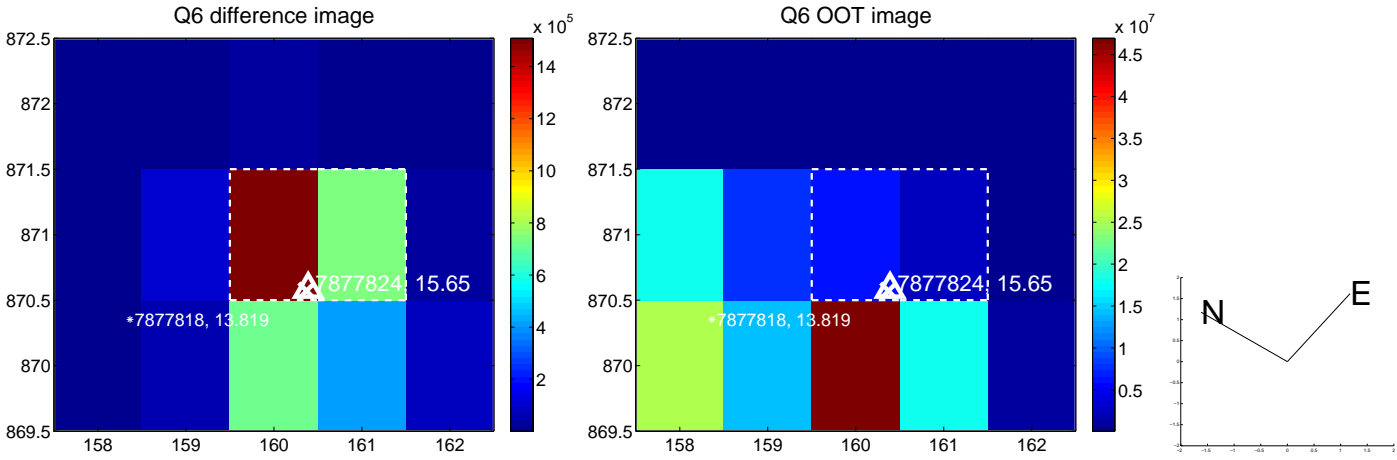
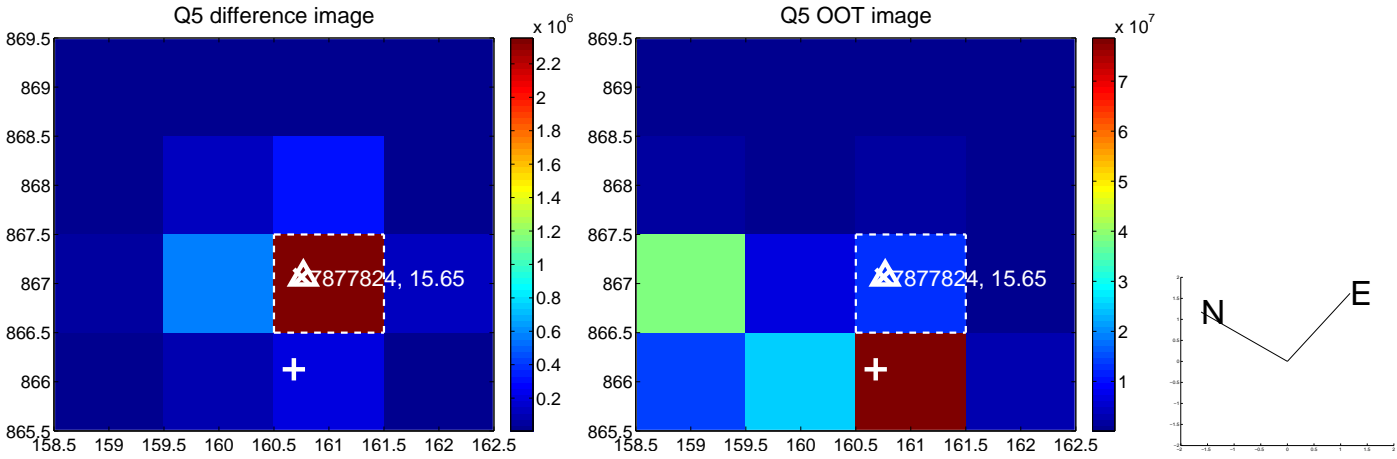


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

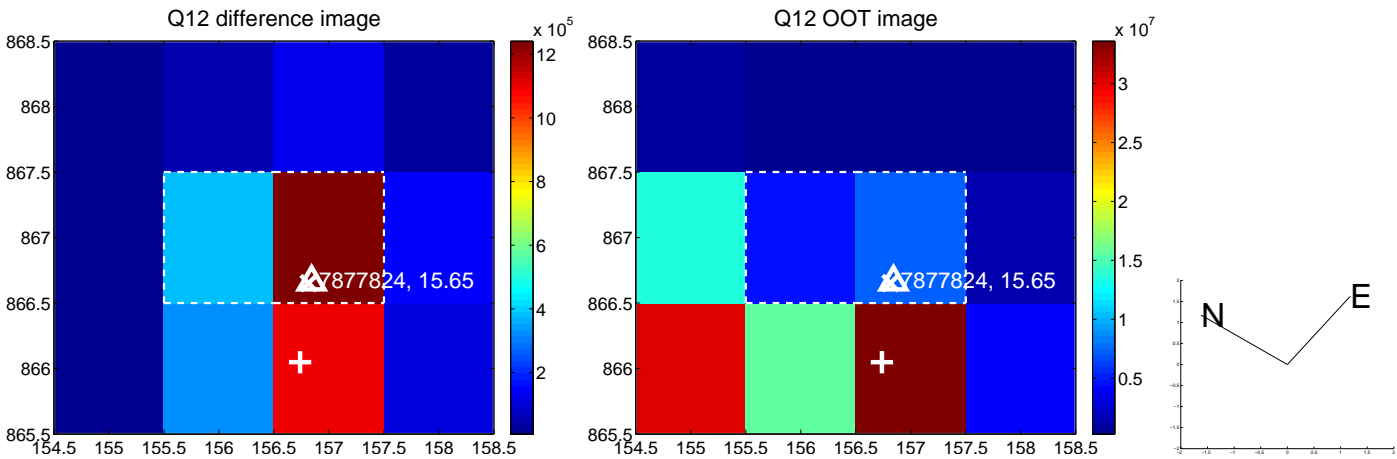
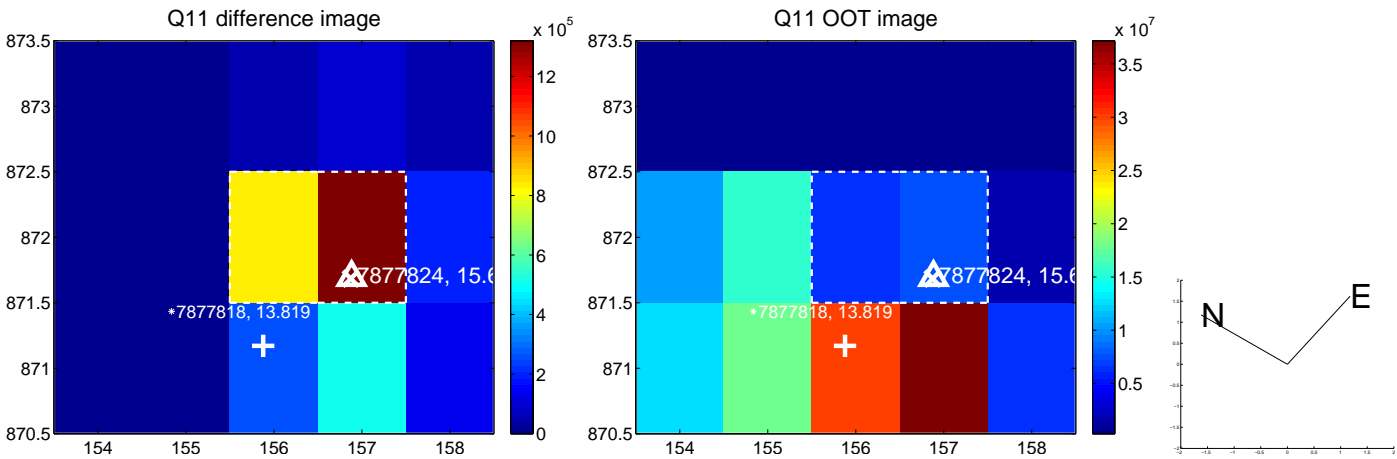
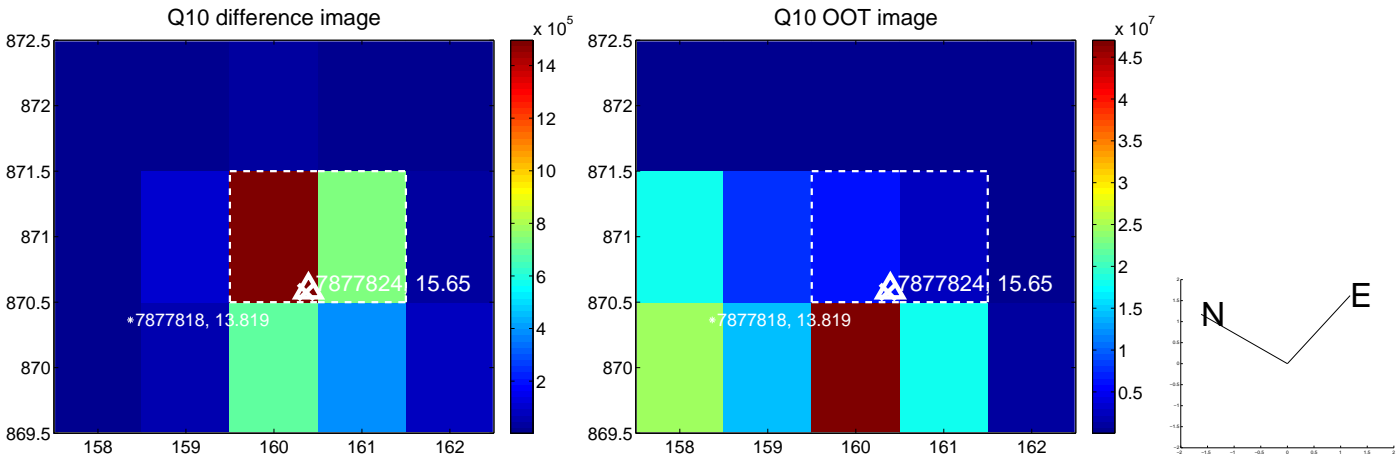
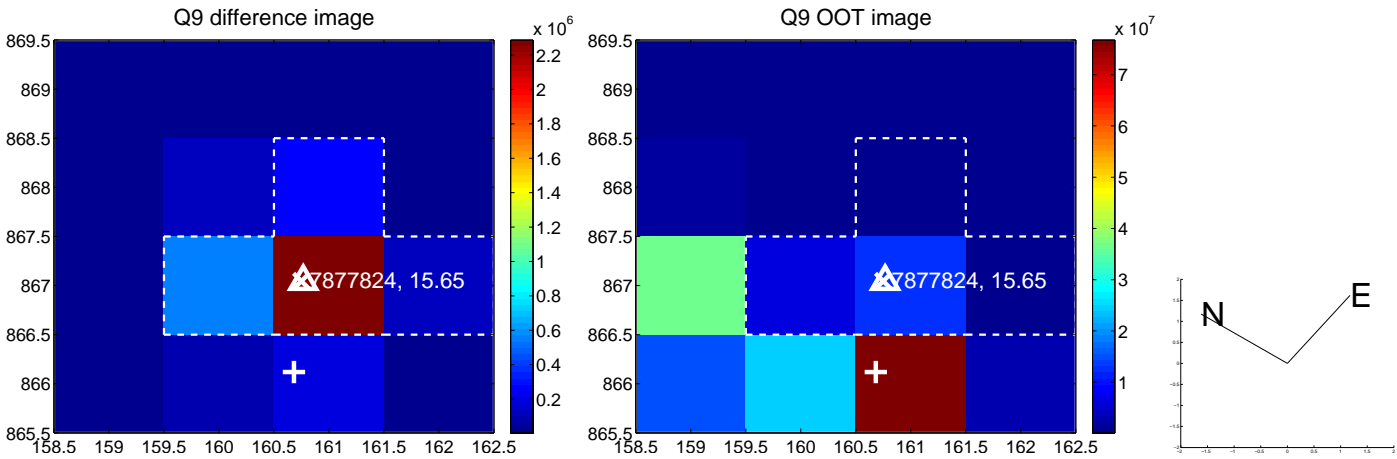
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



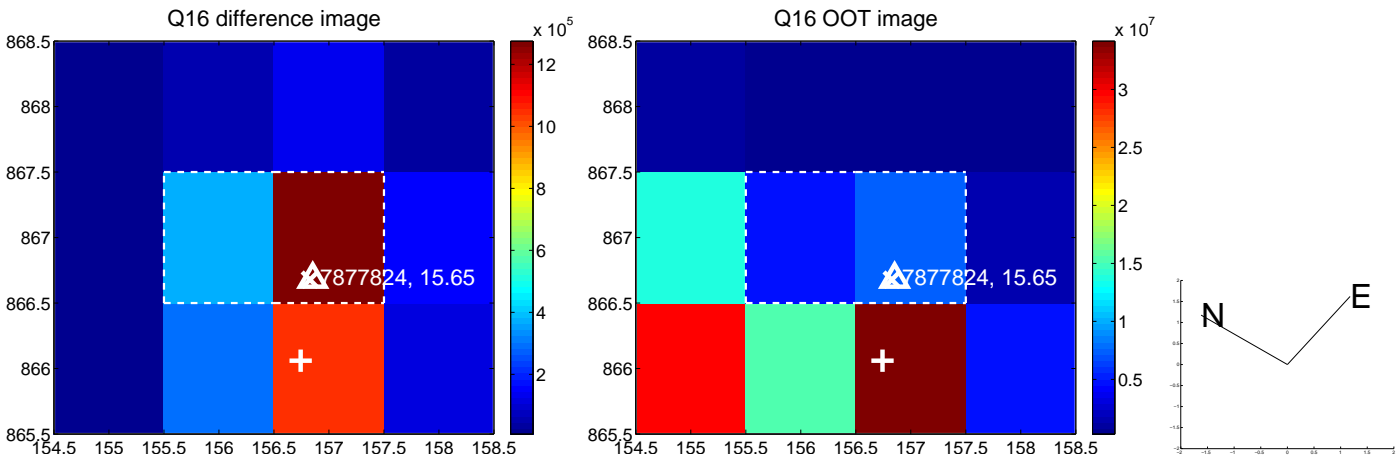
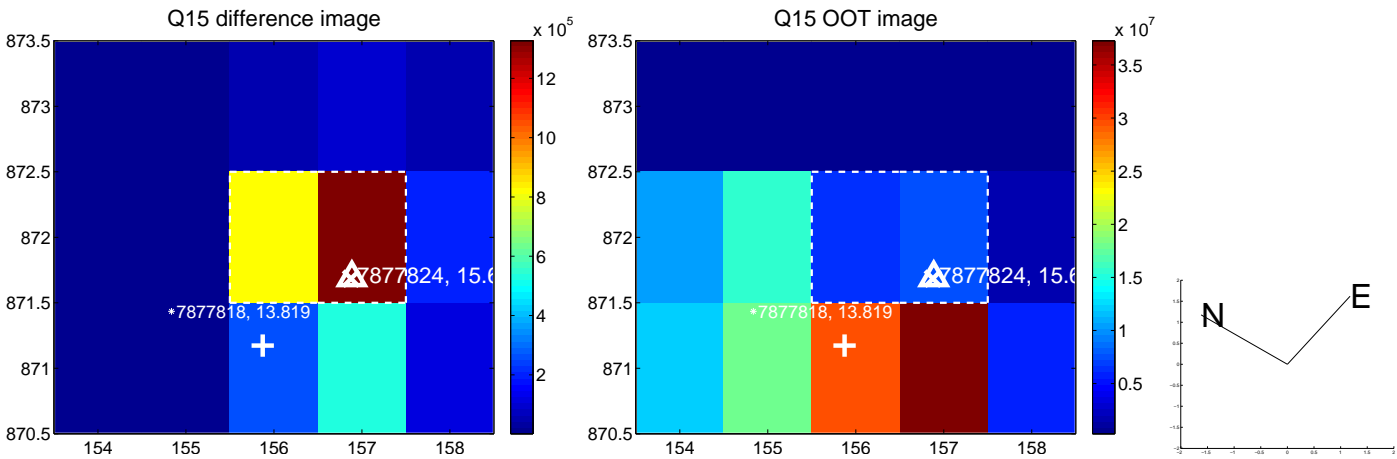
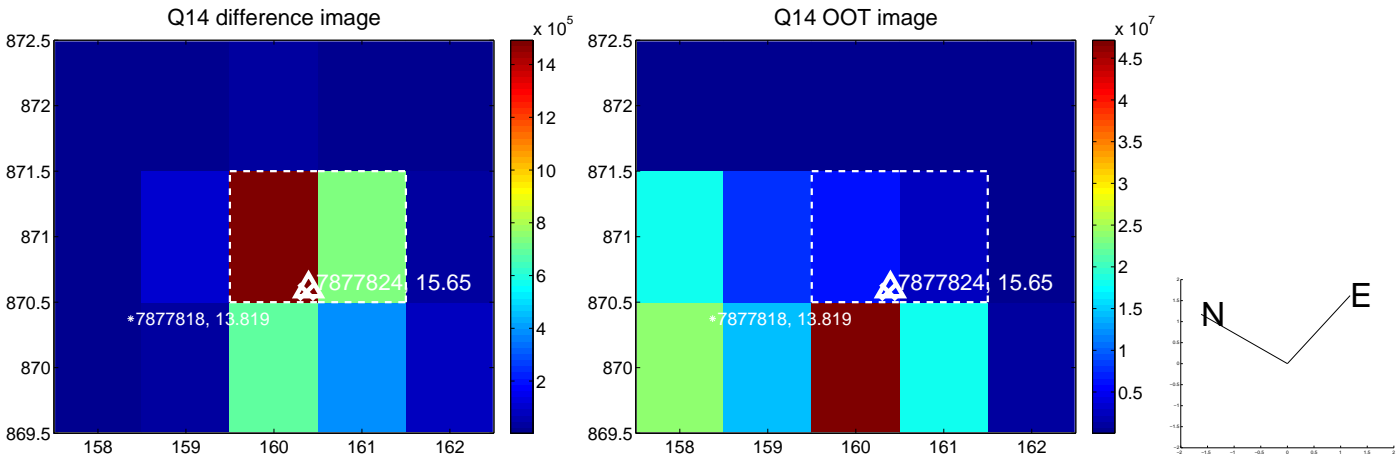
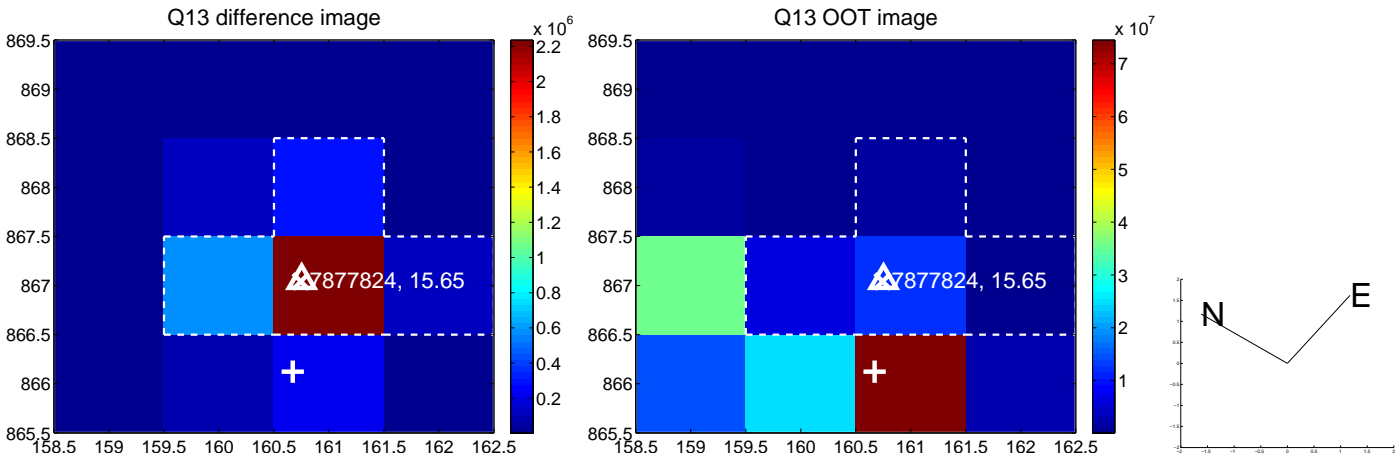
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



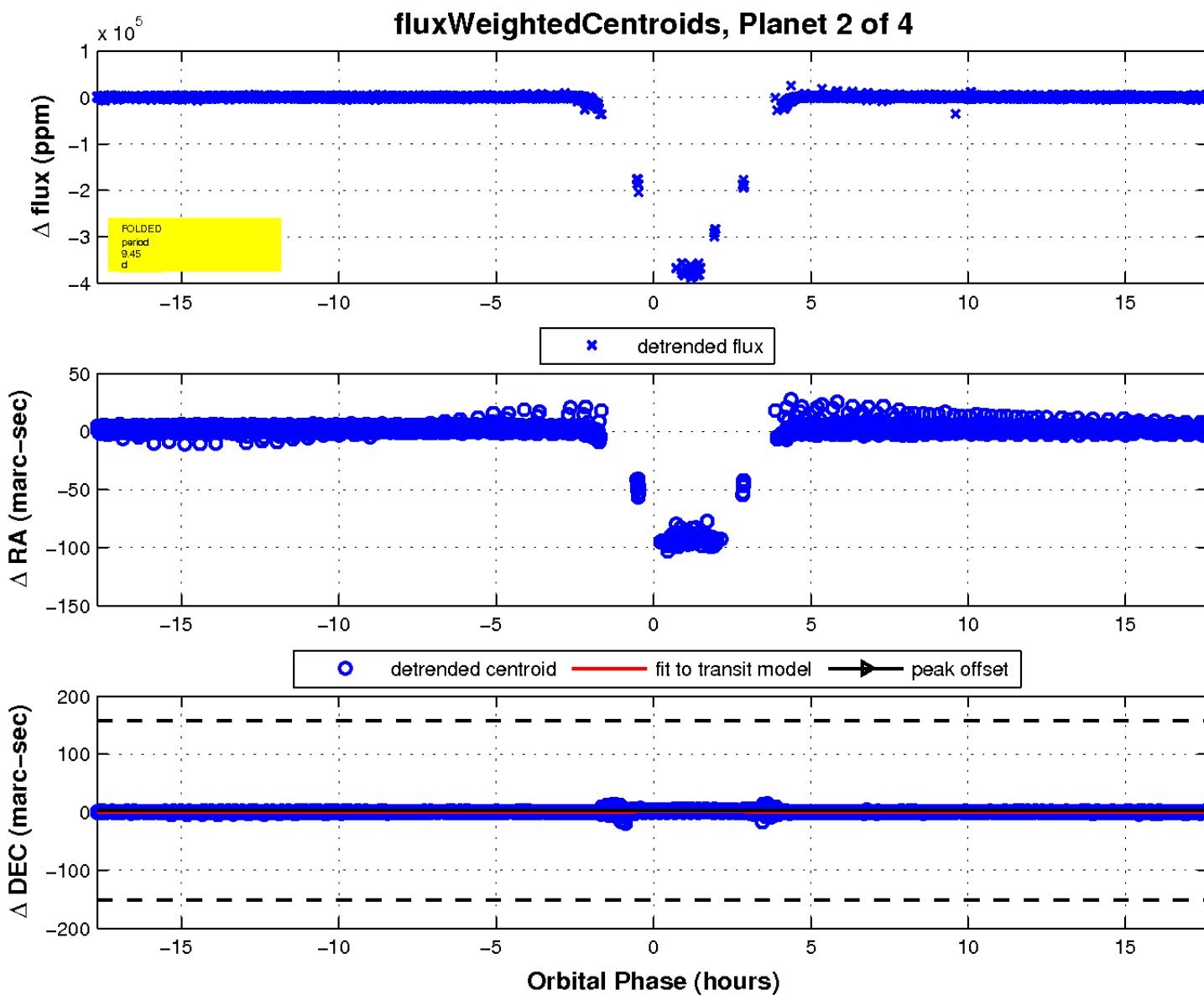
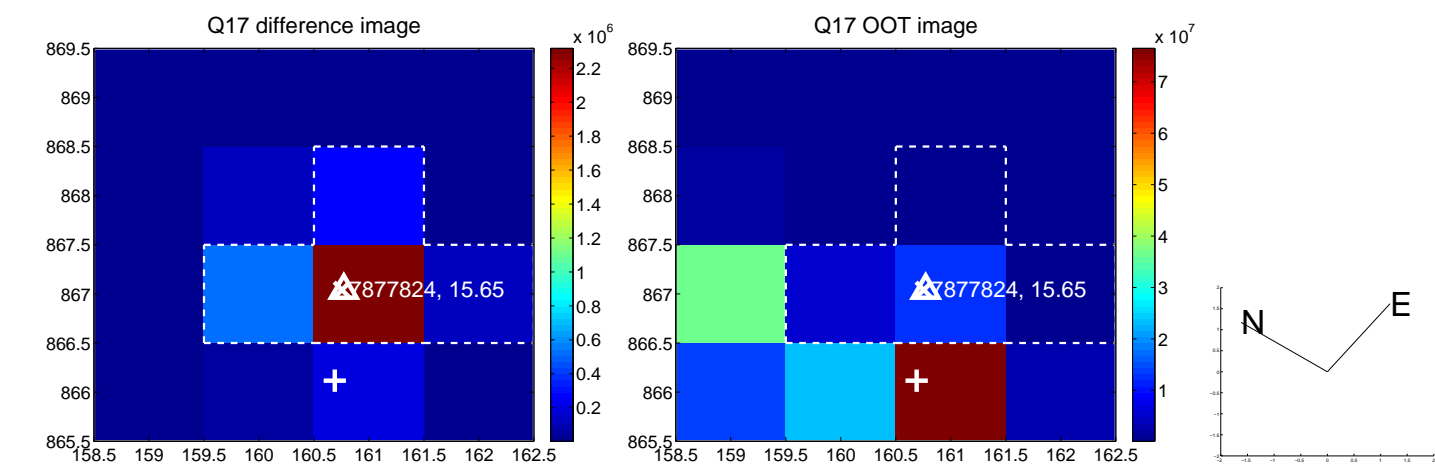
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



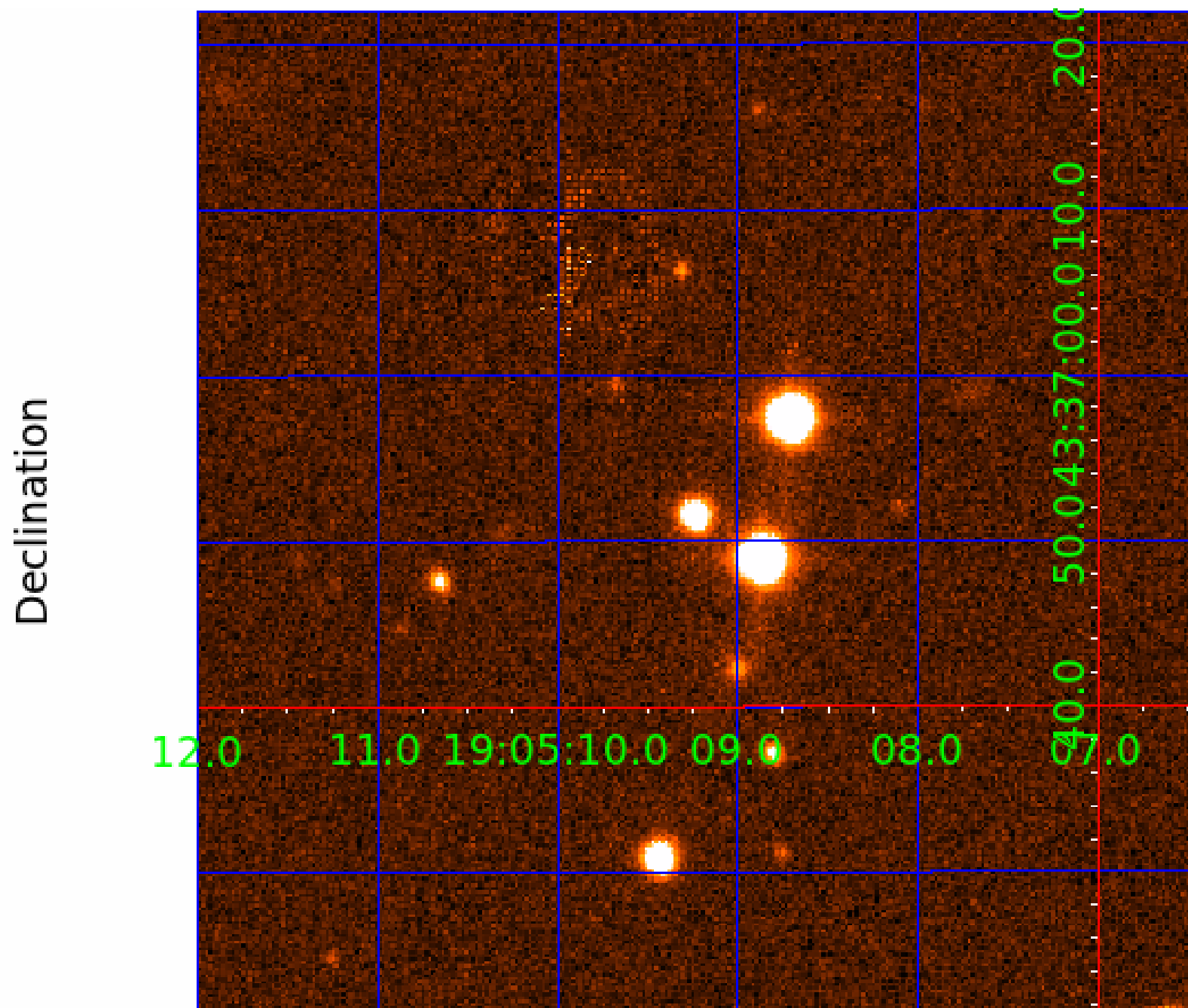
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007877824

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})
007877824-01	OBS	3530.01	9.449475	136.019999	496931.3	3.500	7983.0	-1.0	0.91	5754	49.38	103.59
007877824-02	OBS	No	9.449475	132.444126	379577.9	3.500	6328.9	-1.0	0.91	5754	49.38	103.59
007877824-03	OBS	No	4.724910	131.510994	36881.4	15.000	625.3	-1.0	0.91	5754	17.21	261.02
007877824-04	OBS	No	2.362576	132.436491	612.0	13.040	53.0	15.4	0.91	5754	2.23	657.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007877824-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
007877824-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_NOFITS
007877824-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
007877824-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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 007877824-03

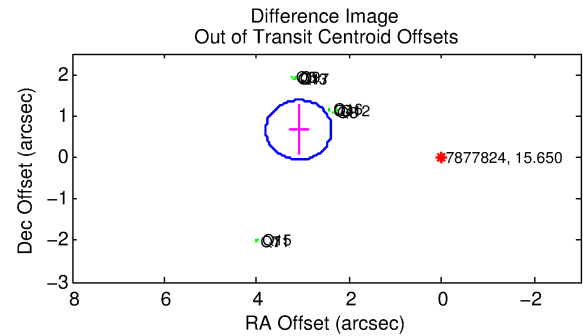
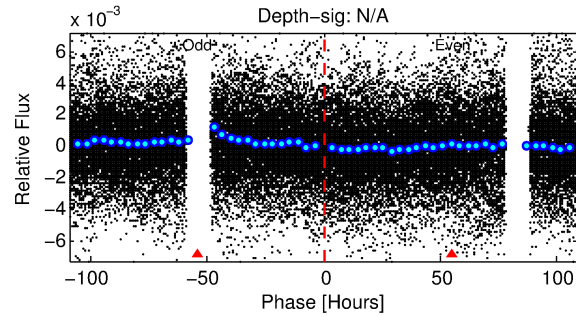
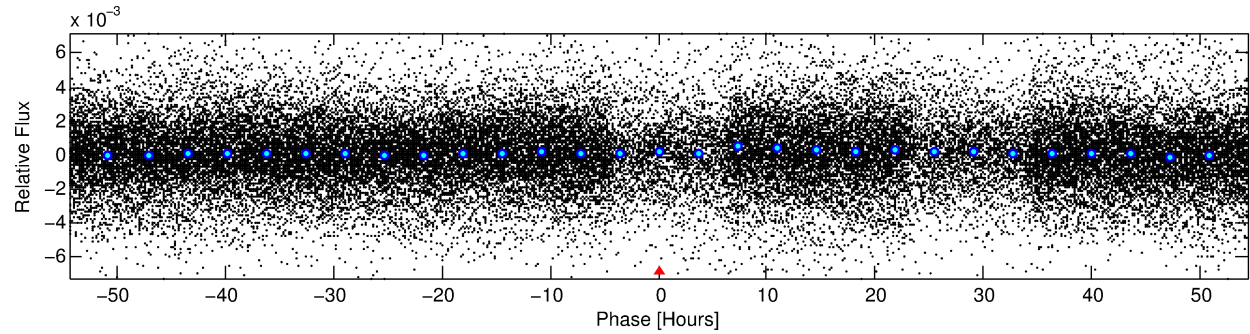
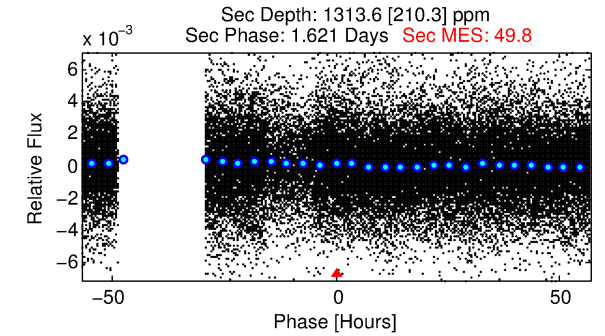
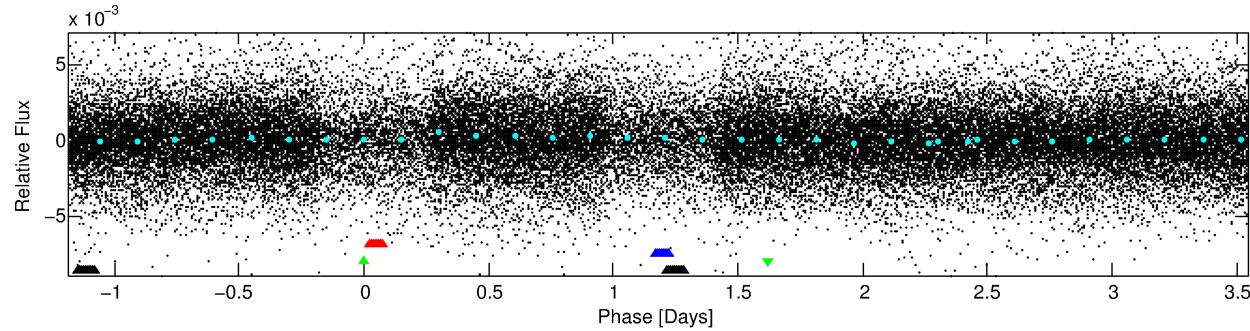
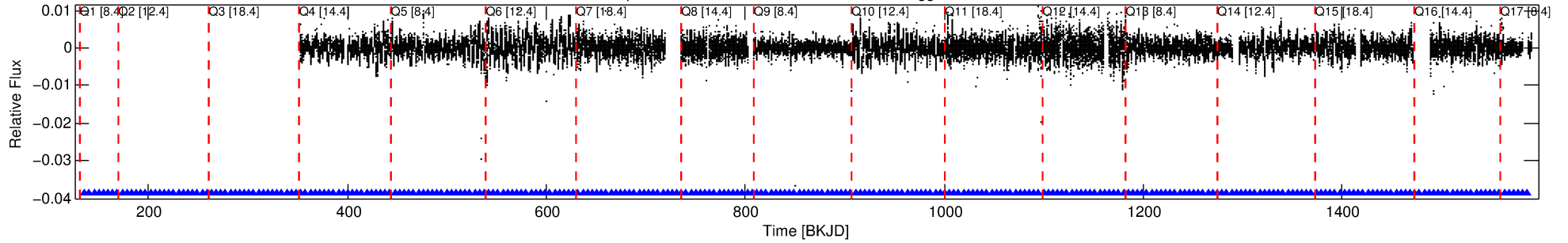
No Significant Match Found

DV One-Page Summary

KIC: 7877824 Candidate: 3 of 4 Period: 4.725 d

KOI: K03530 Corr: No Ephemeris Match

Kp: 15.65 R*: 0.91 Rs Teff: 5754.0 K Logg: 4.53 Fe/H: 0.070



TPS TCE Results:

Period = 4.72491 d
Epoch = 131.5110 BKJD

DV fit results are unavailable

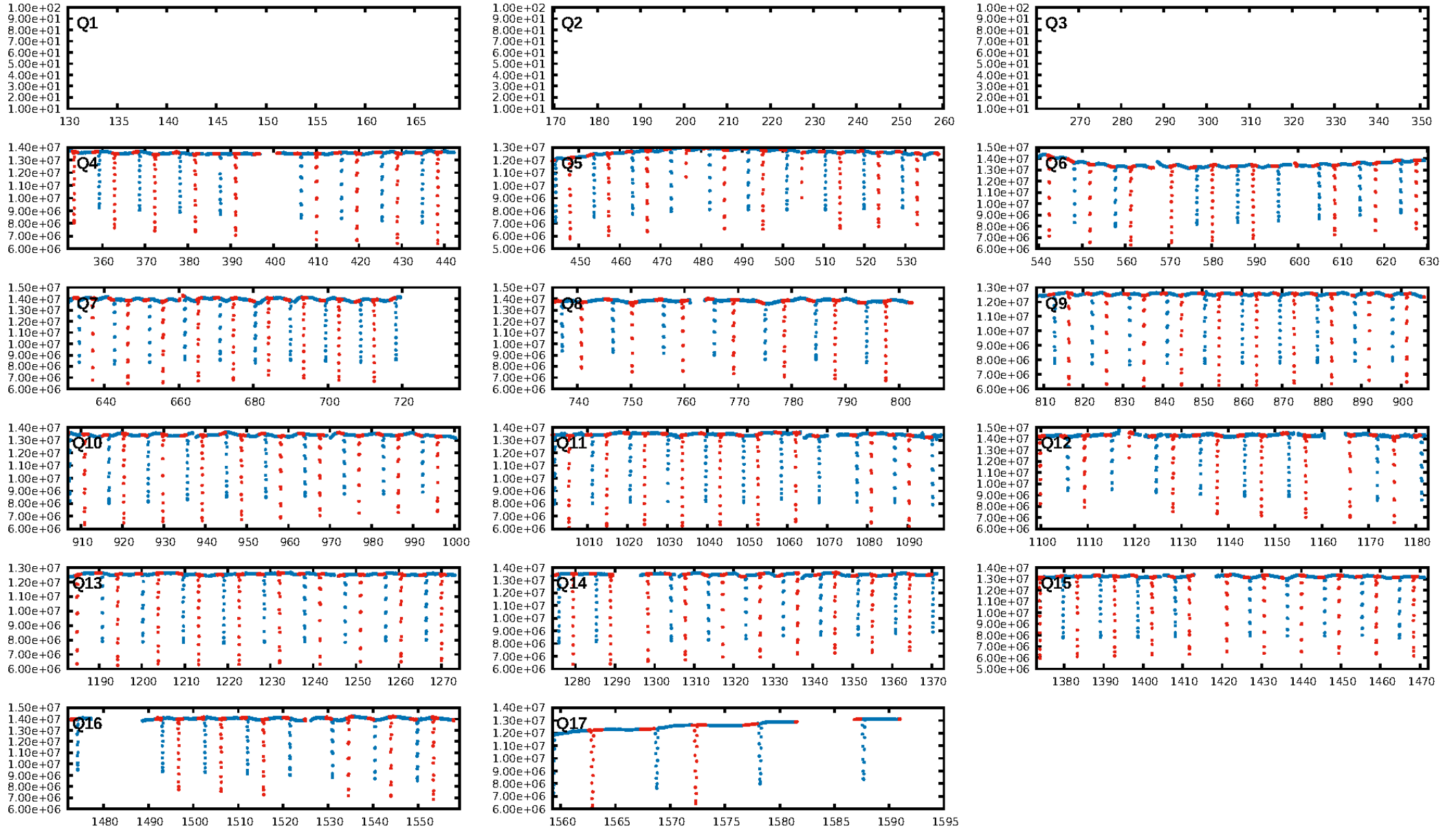
DV Diagnostic Results:

ShortPeriod-sig: 99.6% [2.85σ]
LongPeriod-sig: 100.0% [7.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [243/243]
GhostDiagnostic-chr: -0.06947
Centroid-sig: N/A
Centroid-so: 6.129 arcsec [6.78σ]
OotOffset-rm: 3.168 arcsec [13.28σ]
KicOffset-rm: 0.072 arcsec [1.05σ]
OotOffset-st: 0/3/4/4 [11]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

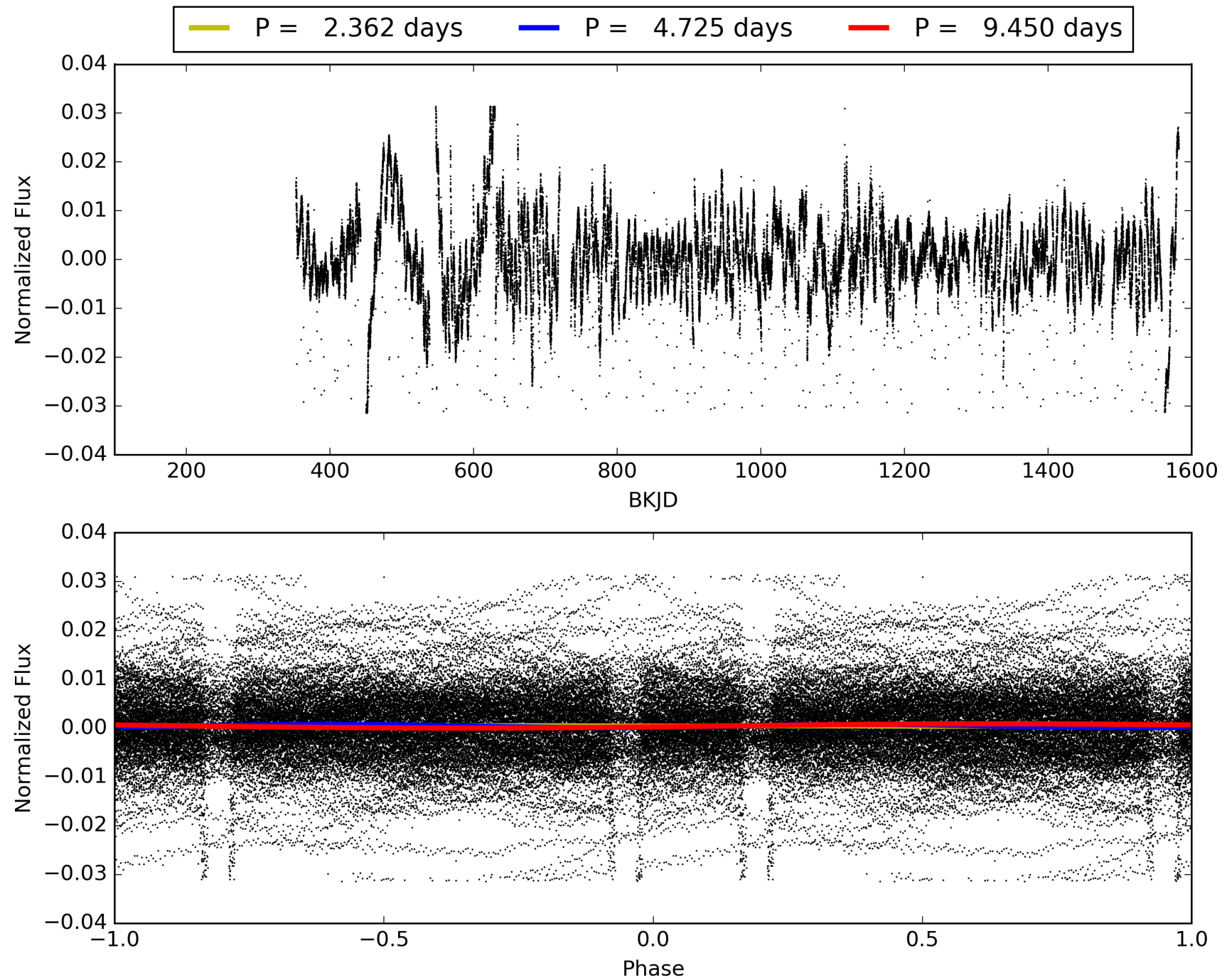
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:46:02 Z

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

TCE 007877824-03, PDC Light Curves

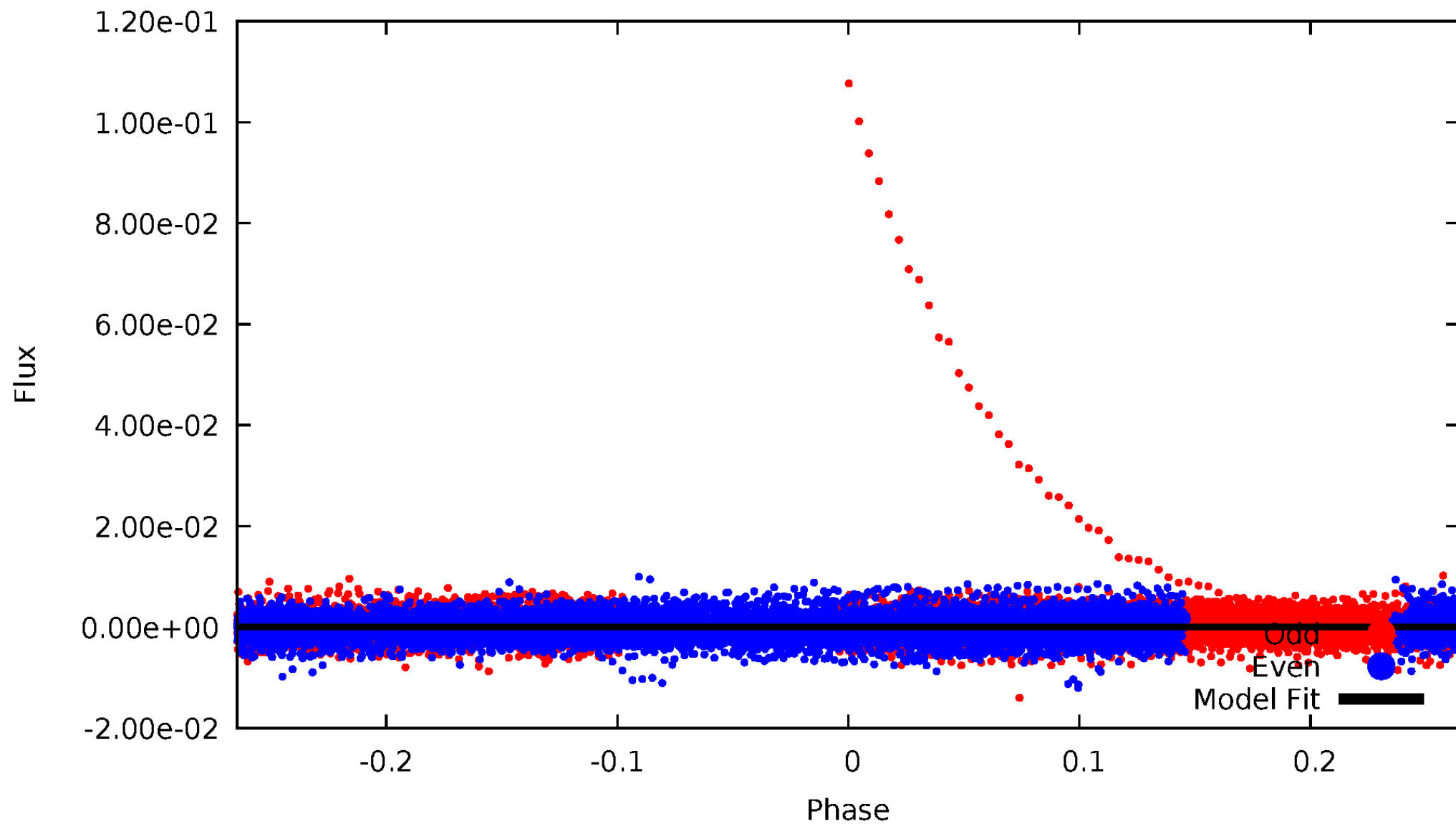


TCE 007877824-03



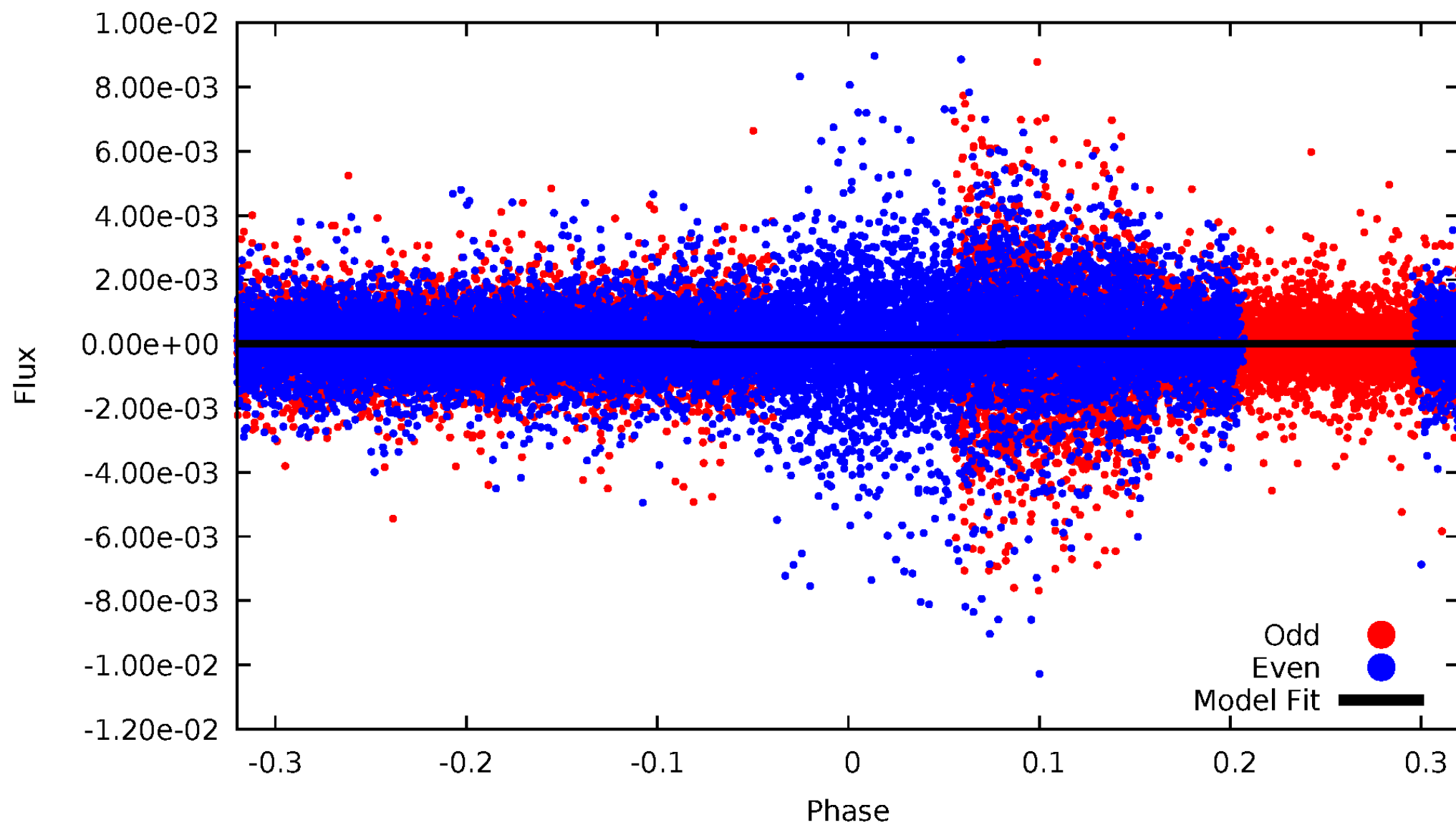
DV Odd/Even

TCE 007877824-03

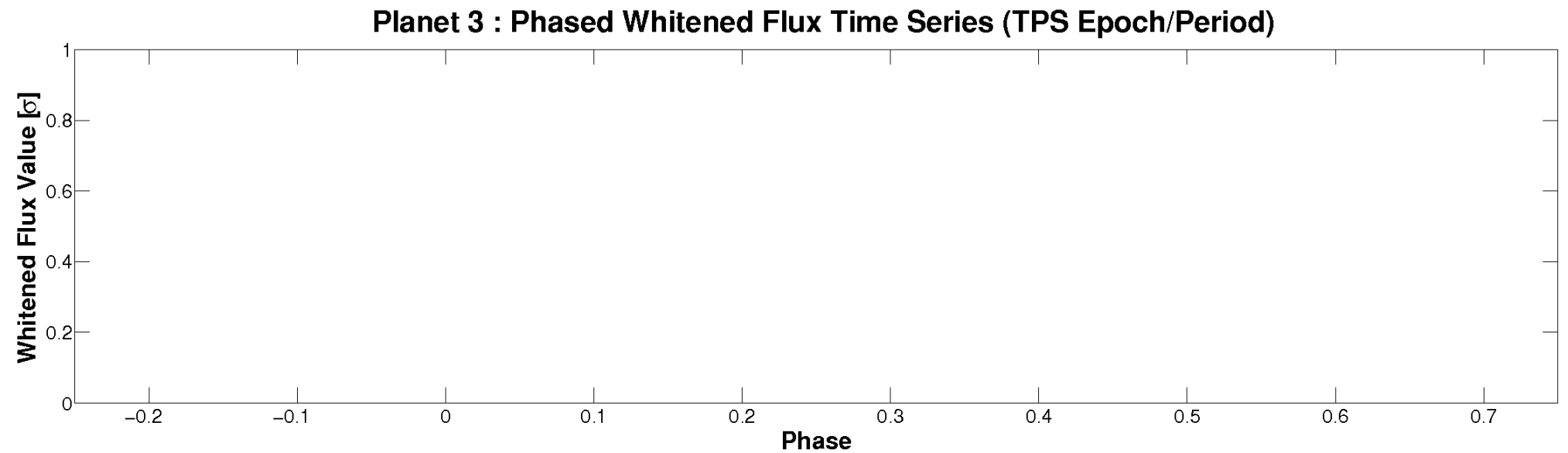
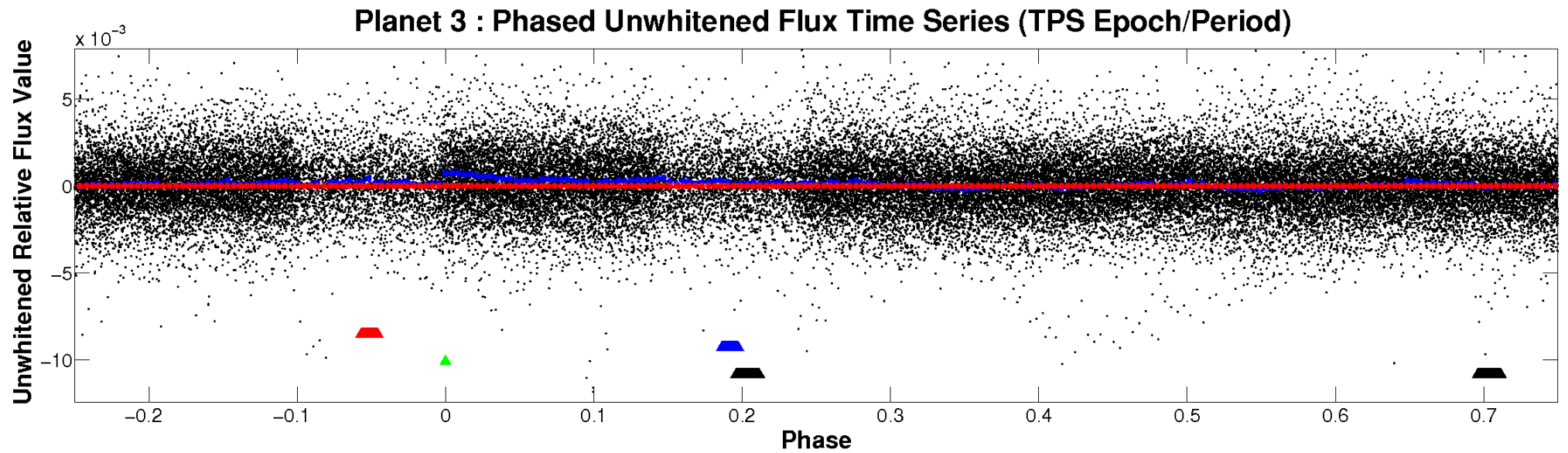


ALT Odd/Even

TCE 007877824-03

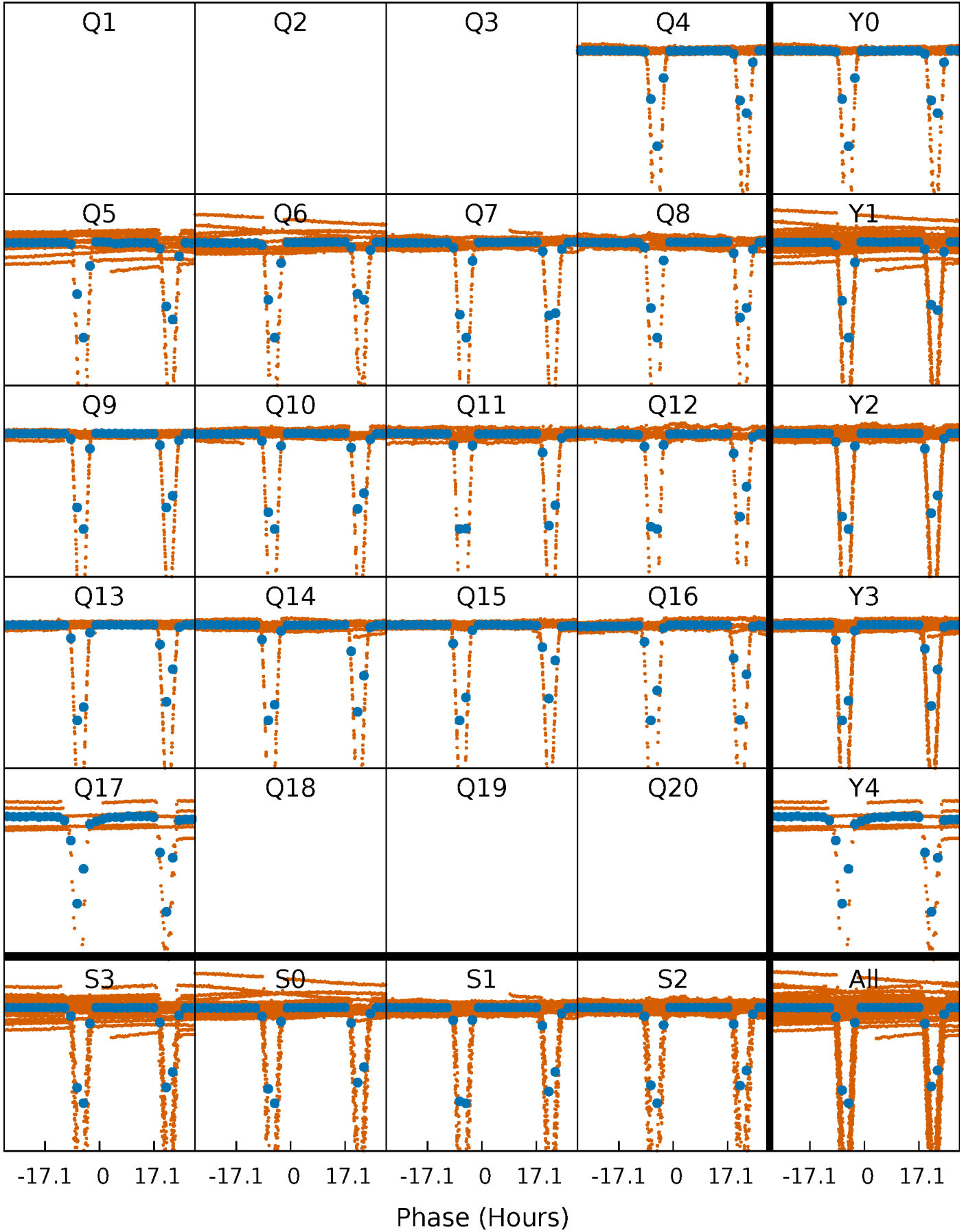


Non-Whitened Vs. Whitened Light Curve



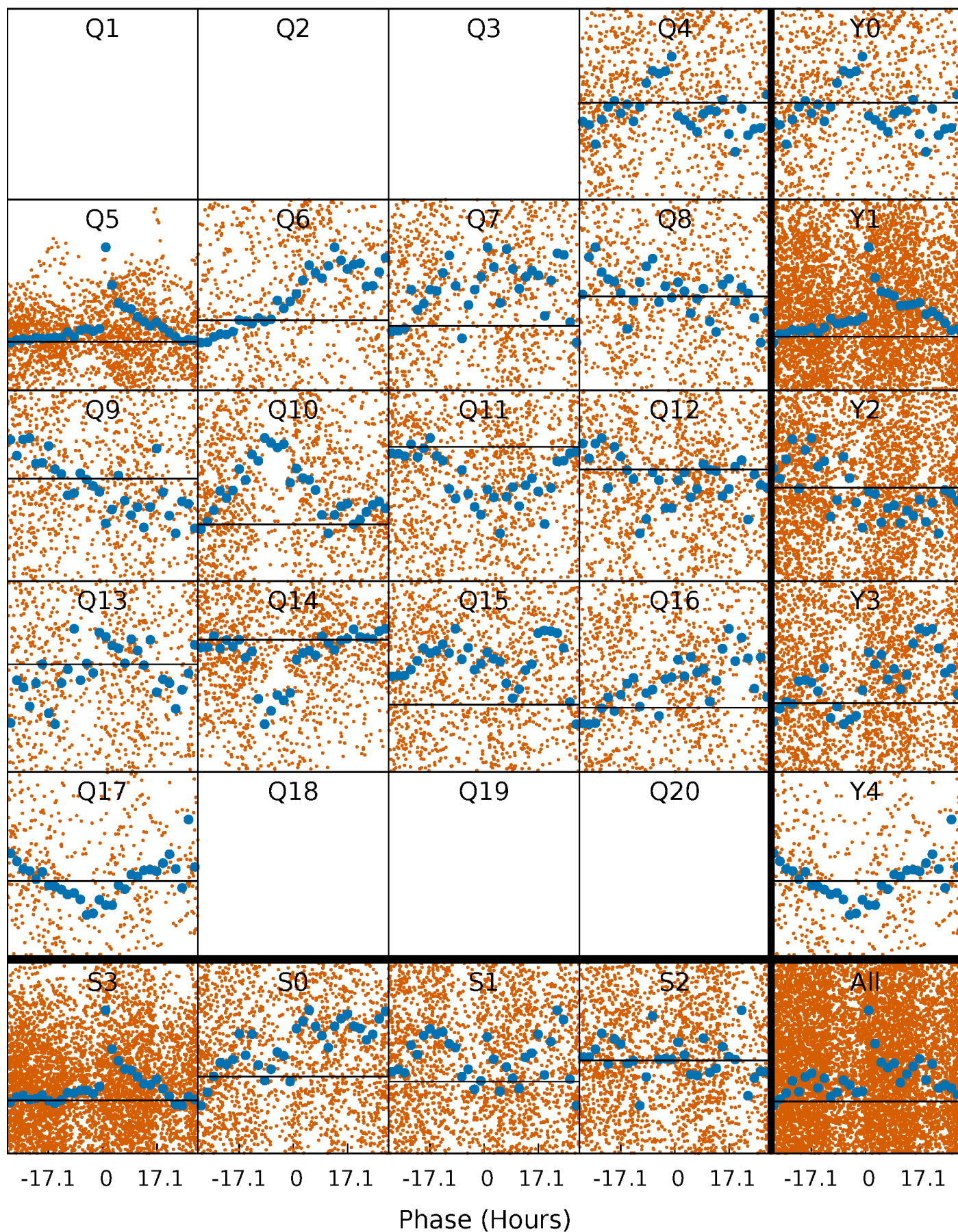
PDC Quarter-Phased Transit Curves

TCE 007877824-03 P= 4.724910 Days $T_0=131.510994$ (BKJD)



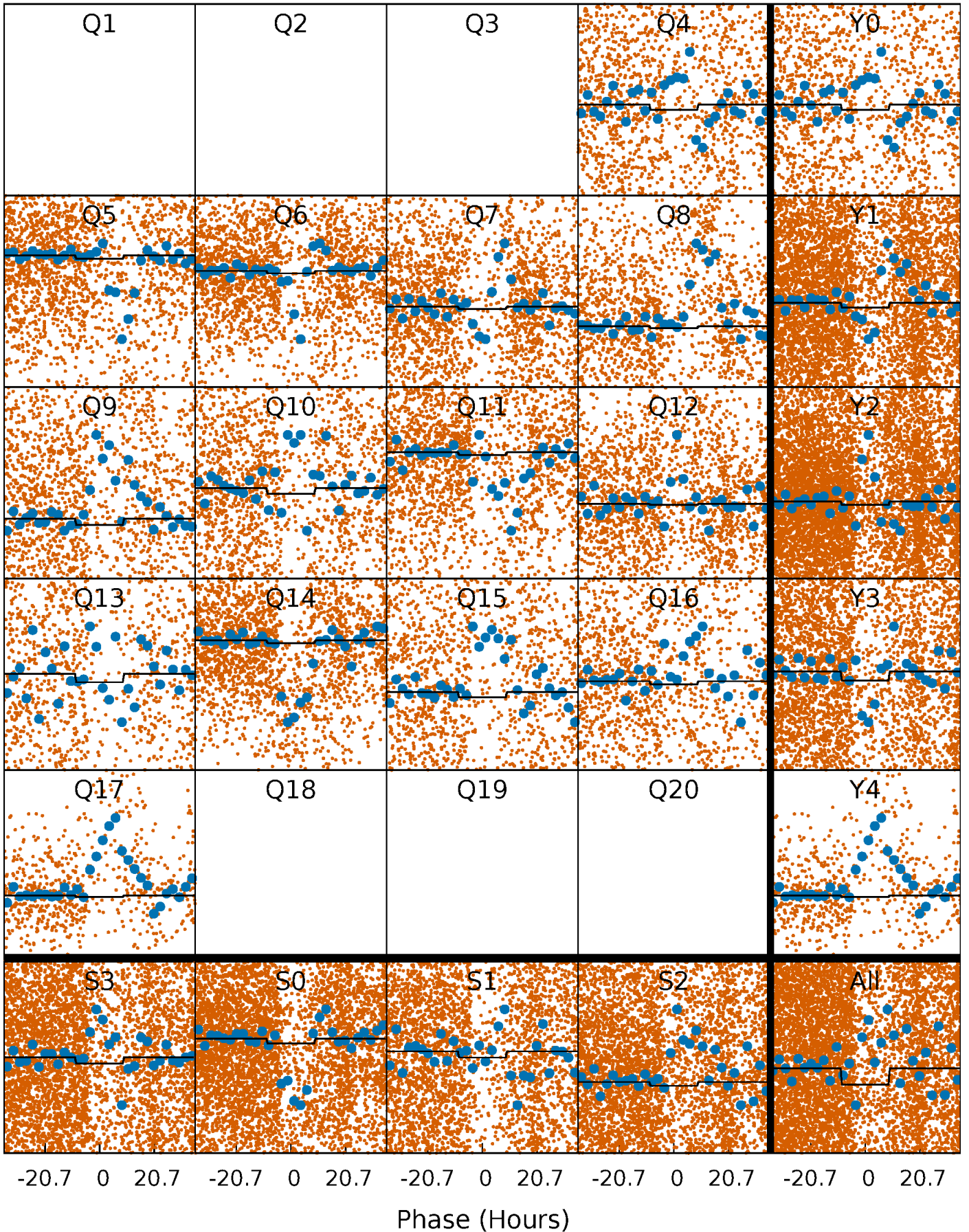
DV Quarter-Phased Transit Curves

TCE 007877824-03 P= 4.724910 Days $T_0=131.510994$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

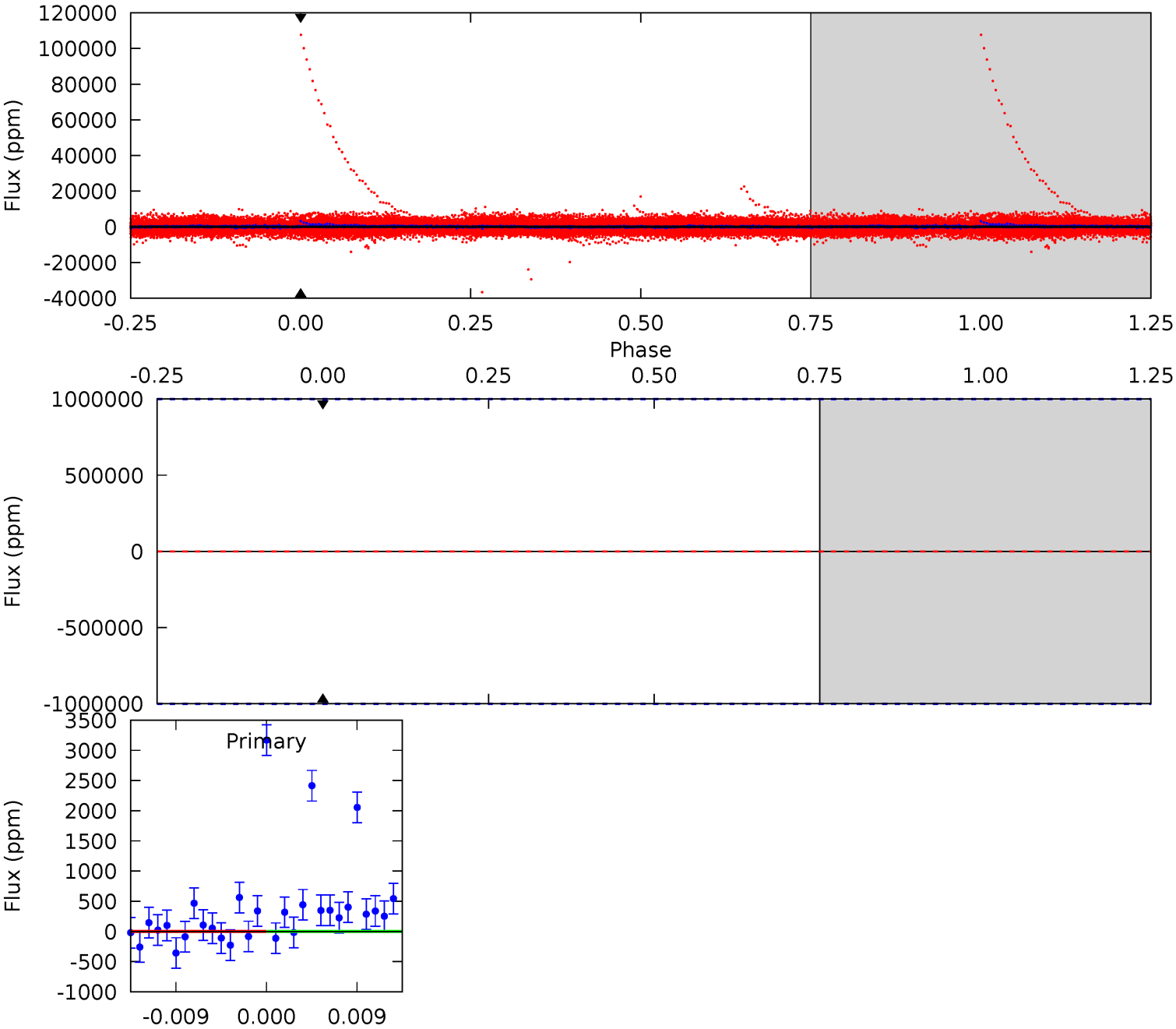
TCE 007877824-03 P= 4.724910 Days $T_0=135.949984$ (BKJD)



DV Model-Shift Uniqueness Test

007877824-03, P = 4.724910 Days, E = 131.510994 Days

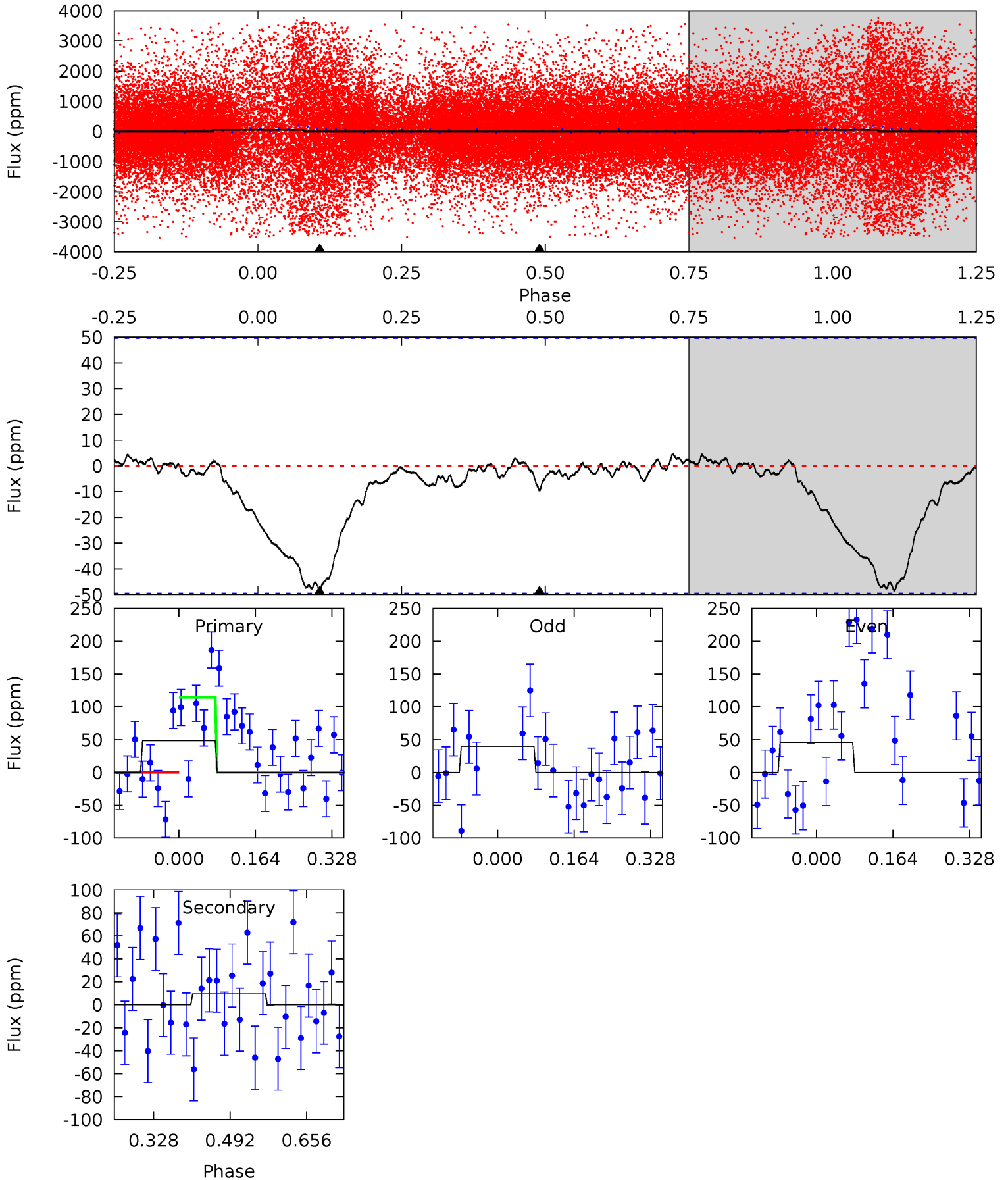
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007877824-03, P = 4.724910 Days, E = 135.949984 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.35	0.86	0	0	4.46	1.39	0.27	4.35	4.35	0.86	0.86	0.23	0.72	0.09	4.90



Stellar Parameters For KIC 007877824

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5754^{+160}_{-200}	$4.534^{+0.033}_{-0.187}$	$0.070^{+0.250}_{-0.300}$	$0.905^{+0.248}_{-0.083}$	$1.021^{+0.100}_{-0.122}$	$1.938^{+0.359}_{-0.954}$
	+3%/-3%	+1%/-4%	+357%/-429%	+27%/-9%	+10%/-12%	+19%/-49%
Source	KIC0	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 007877824-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$18.79^{+10.91}_{-9.65}$	1465^{+95}_{-63}	2969^{+5880}_{-10825}	$3.991^{+693.072}_{-498.487}$
Alt.	-10 ± 11	$6.96^{+8.00}_{-4.97}$	1467^{+93}_{-67}	-1882^{+4687}_{-350}	$0.227^{+2.801}_{-0.271}$

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 $A_{obs} \gg 1.0$

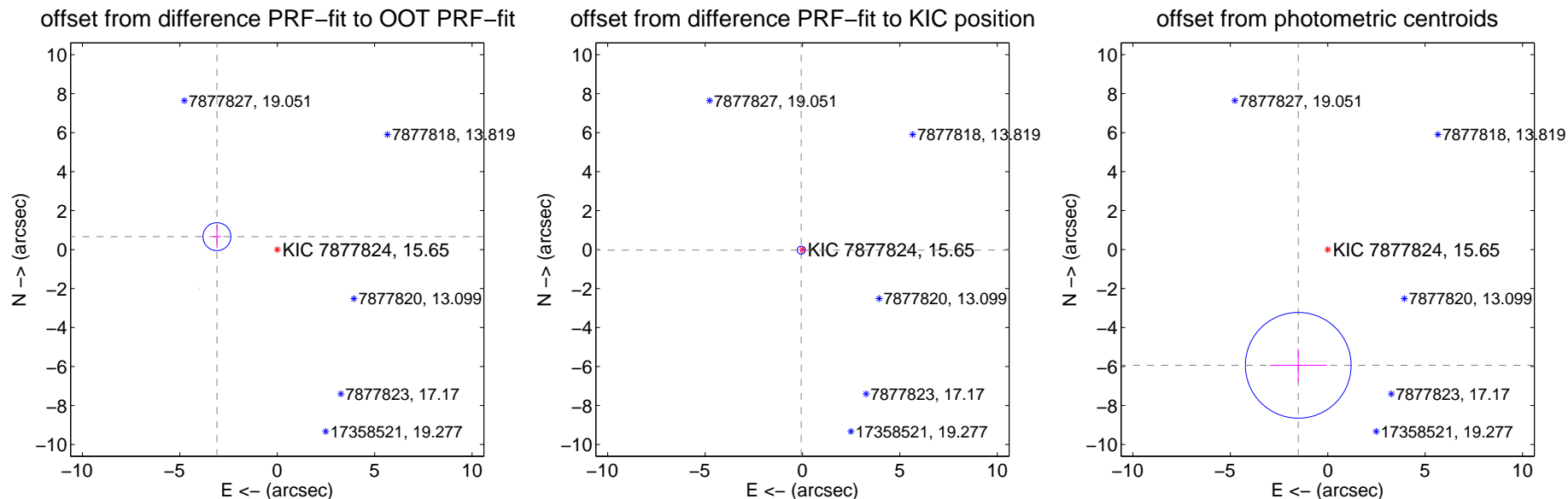
DV Centroid Data

Supplemental centroid analysis for 007877824-03. Kepler magnitude: 15.65. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

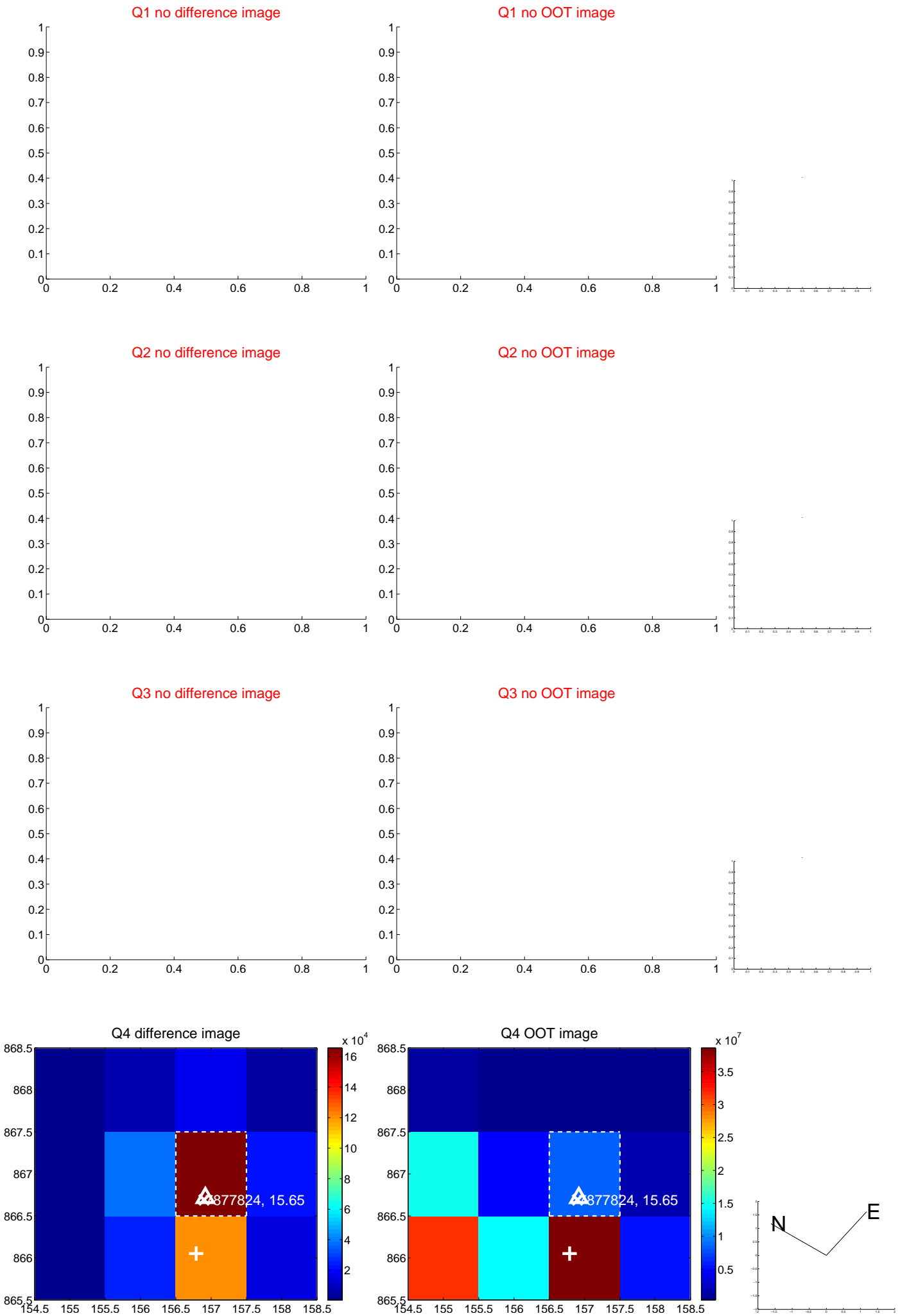
The OOT PRF centroid is offset from the target star catalog position by about 3.68 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.168 ± 0.238	13.28	3.098 ± 0.208	0.664 ± 0.597
PRF-fit source offset from KIC position	0.072 ± 0.068	1.05	0.065 ± 0.069	-0.030 ± 0.067
photometric centroid source offset	6.13 ± 0.90	6.78	1.51 ± 1.47	-5.94 ± 0.86

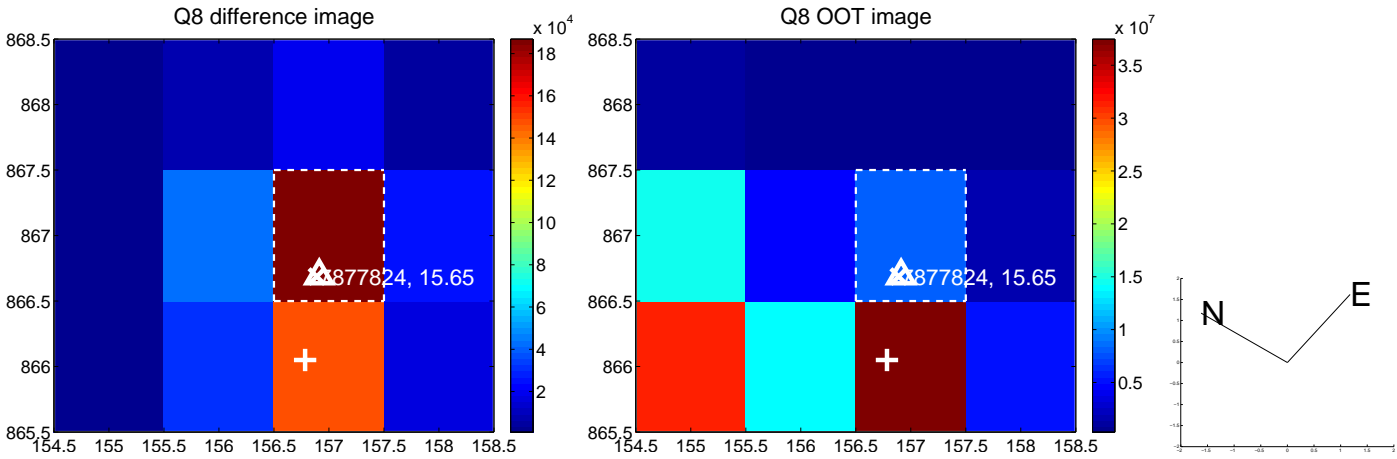
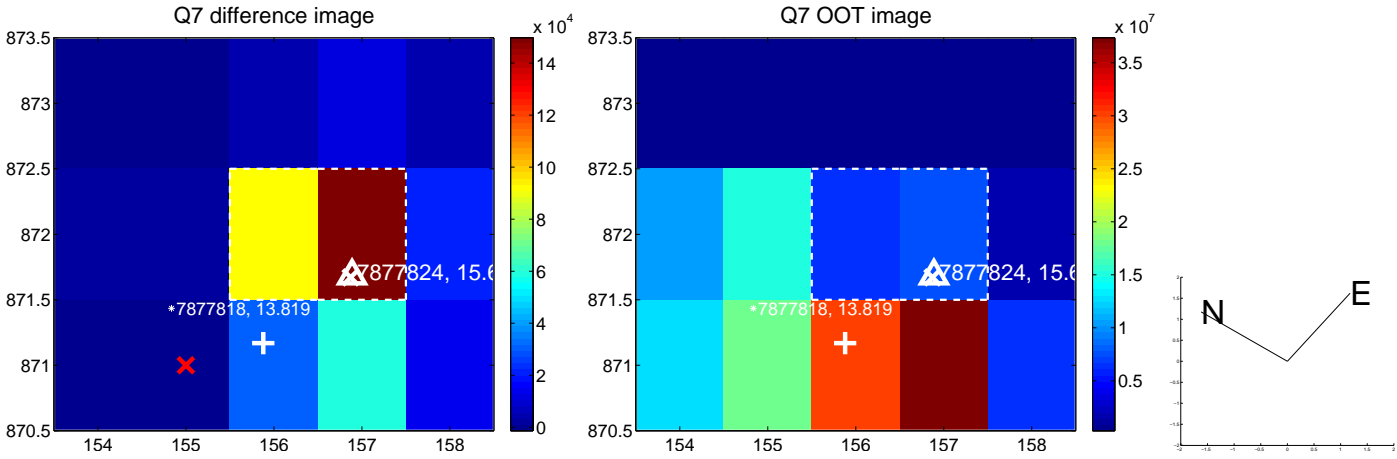
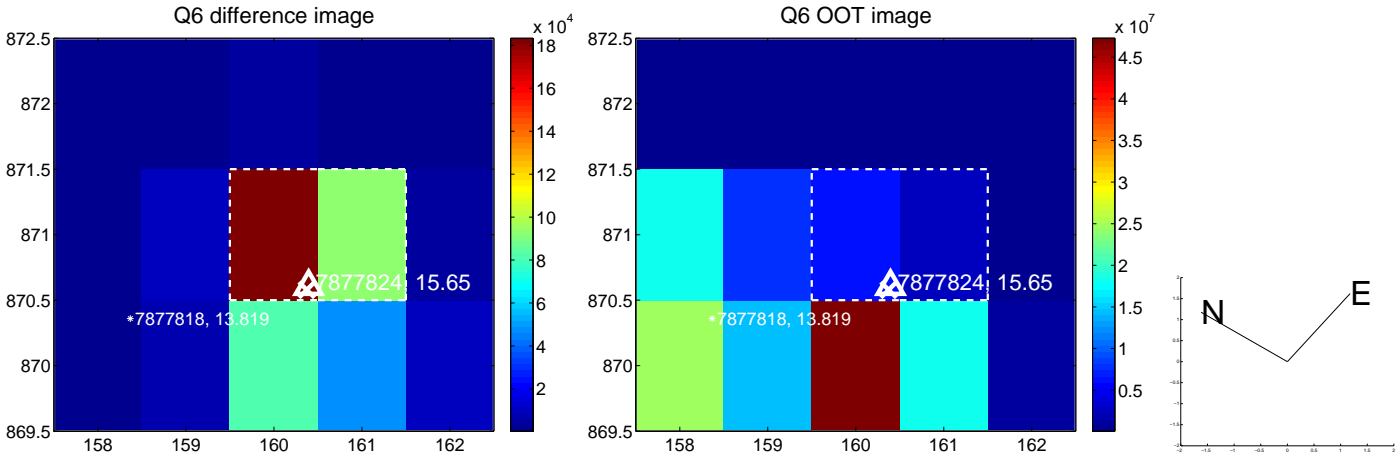
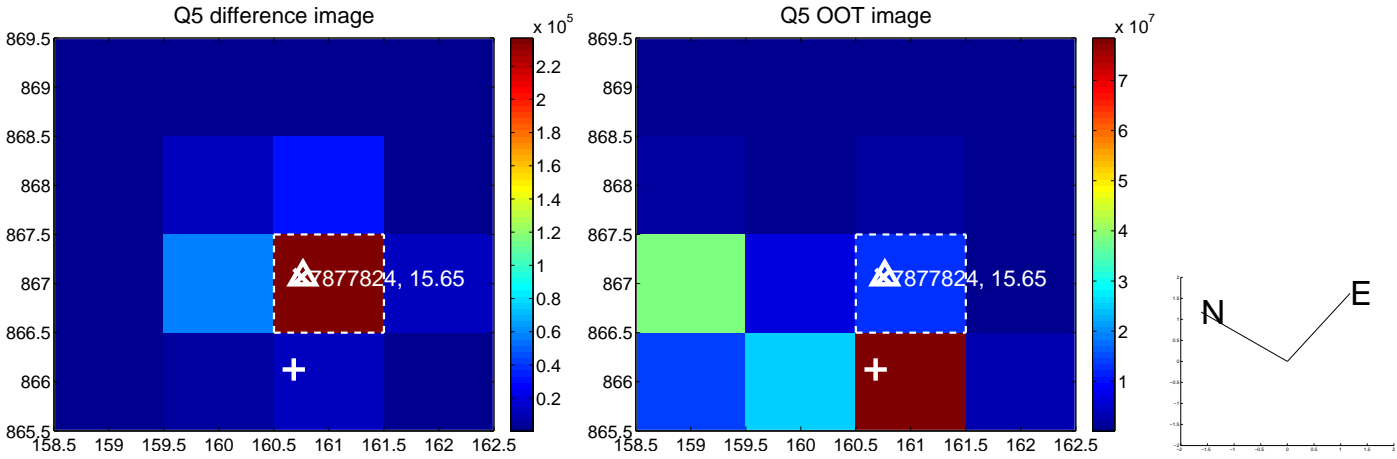


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

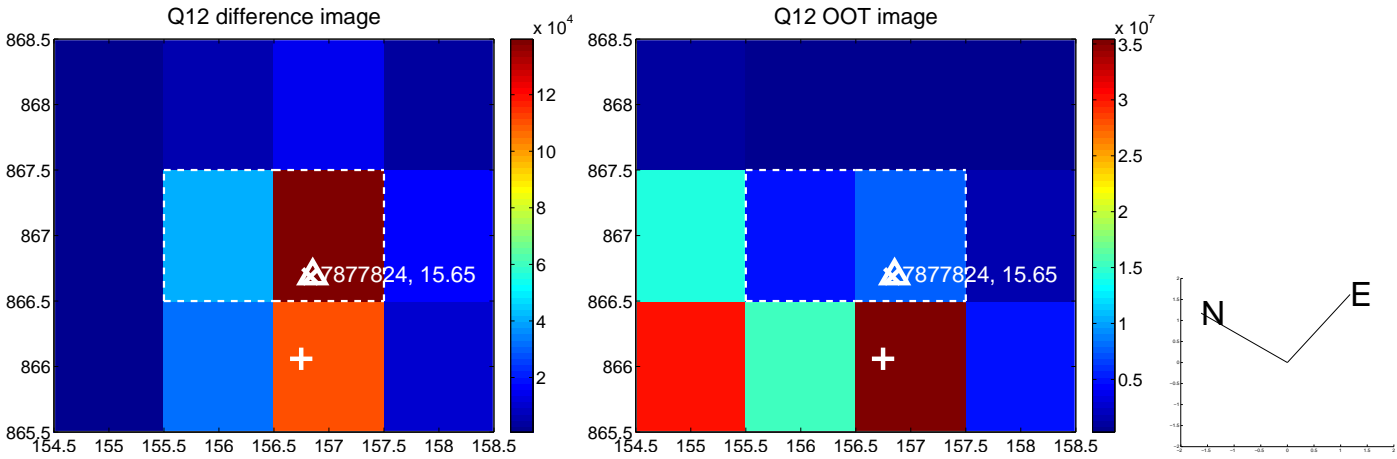
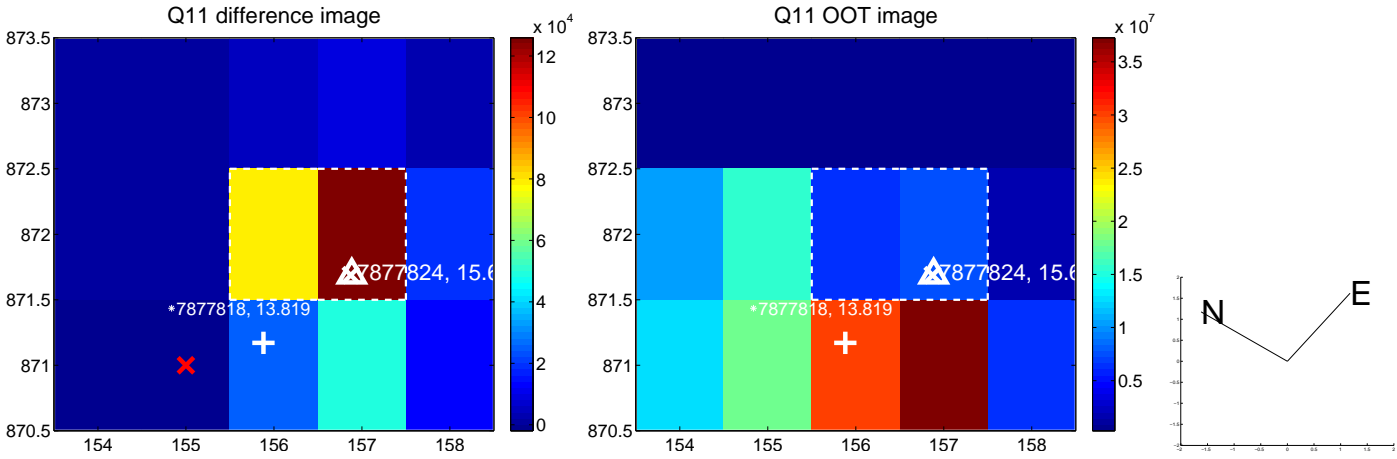
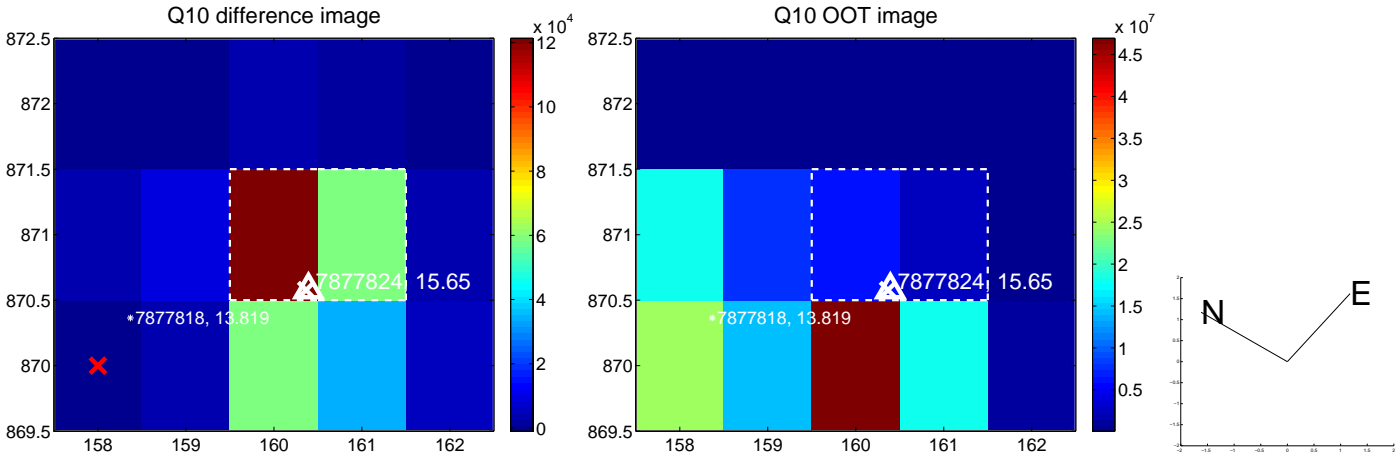
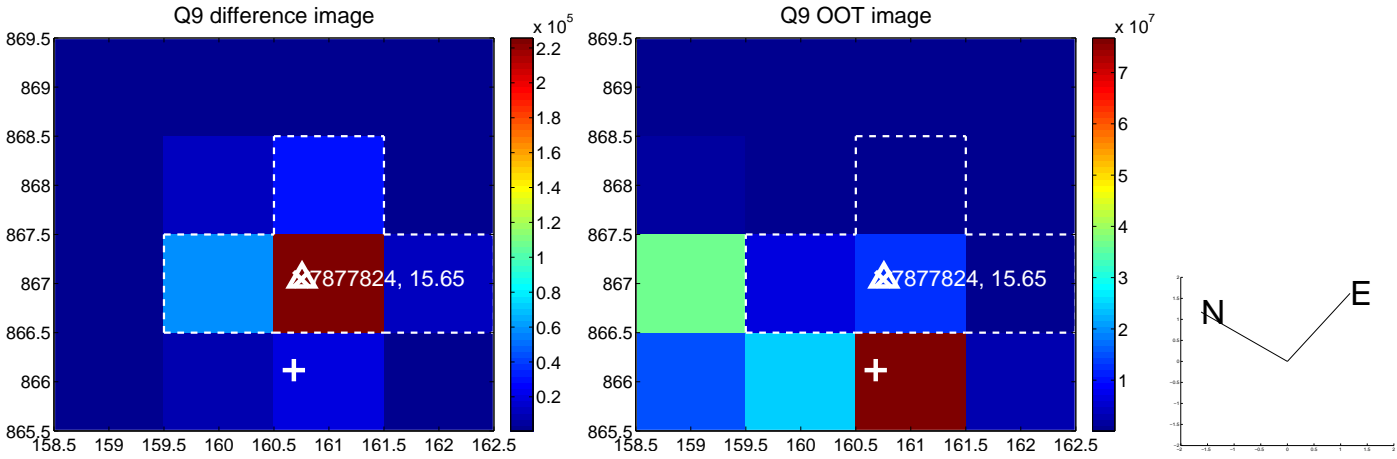
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



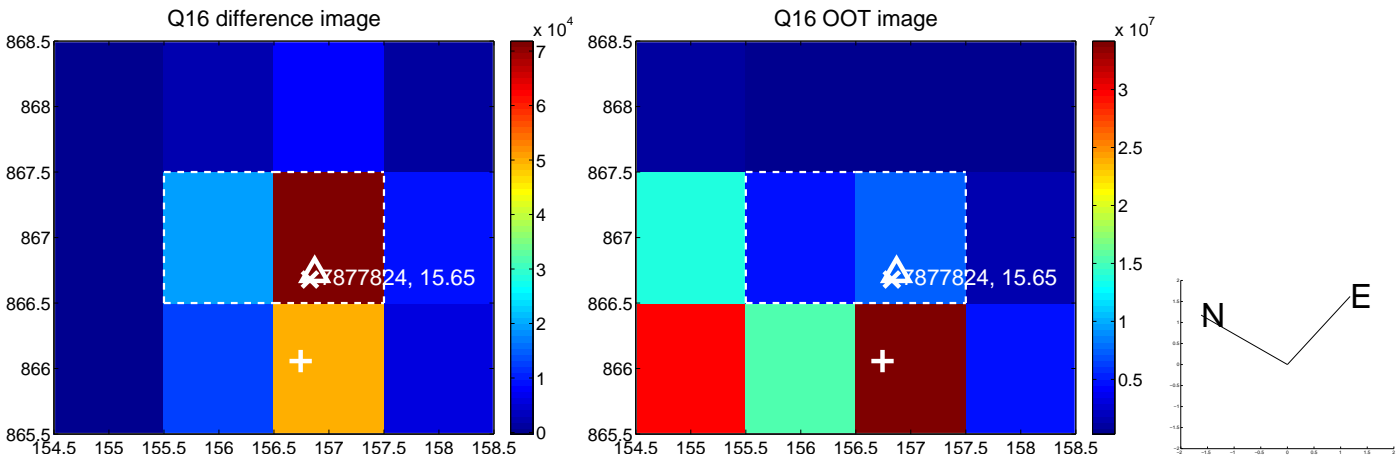
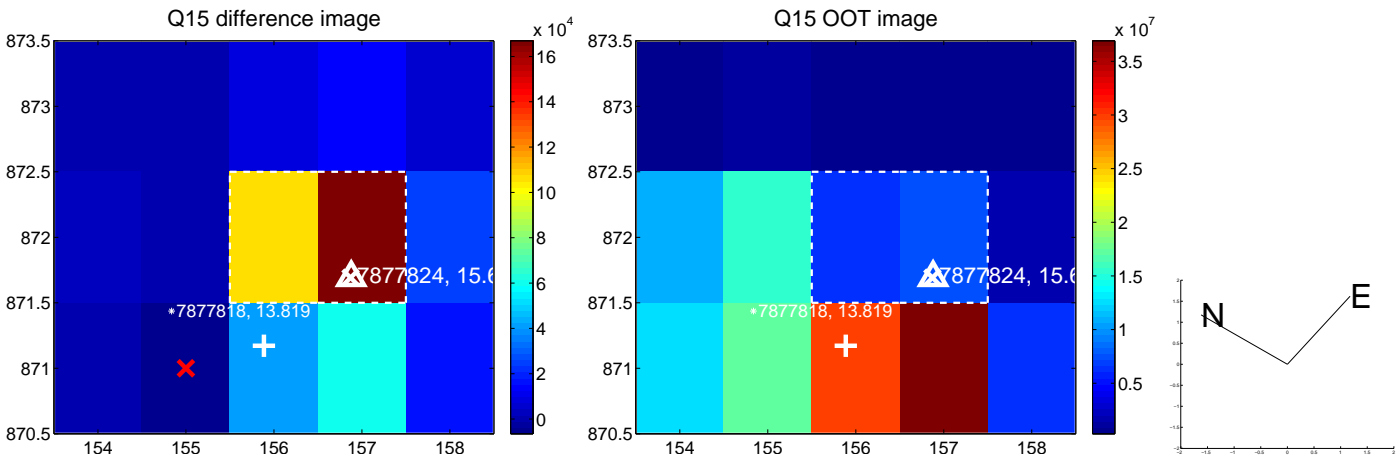
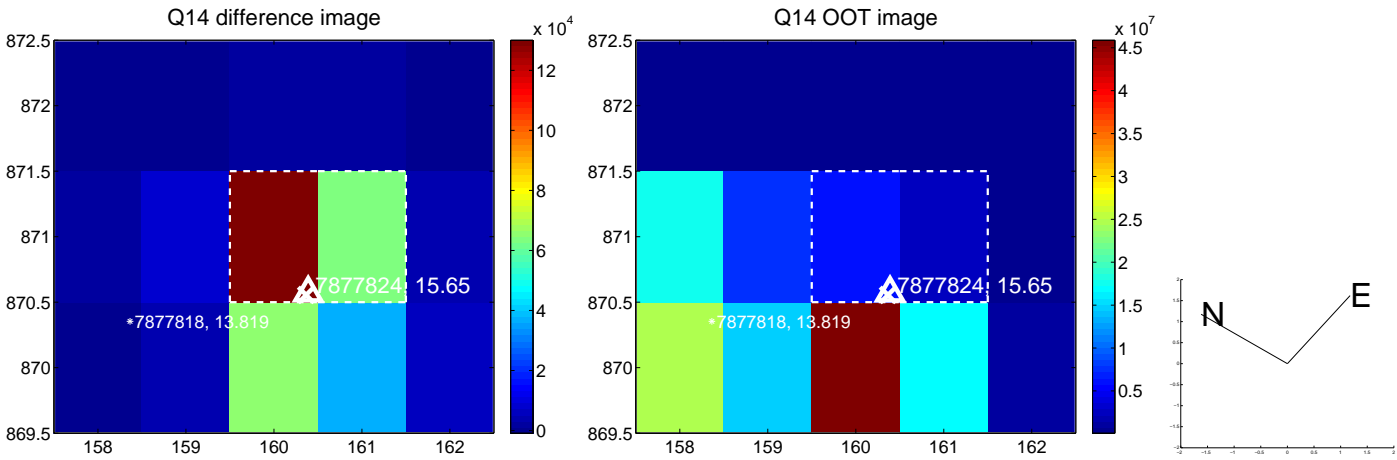
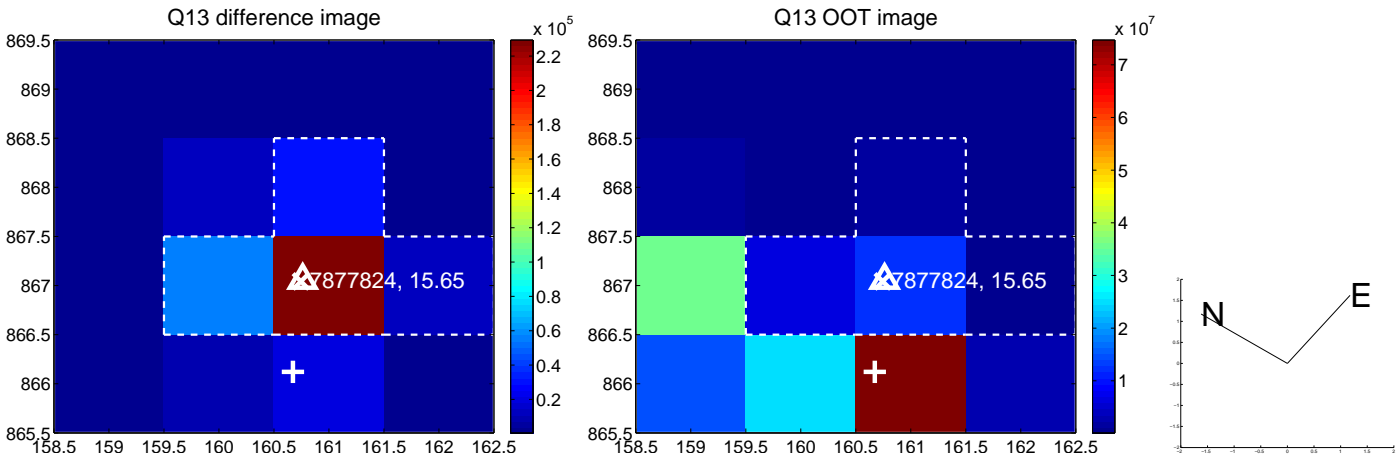
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



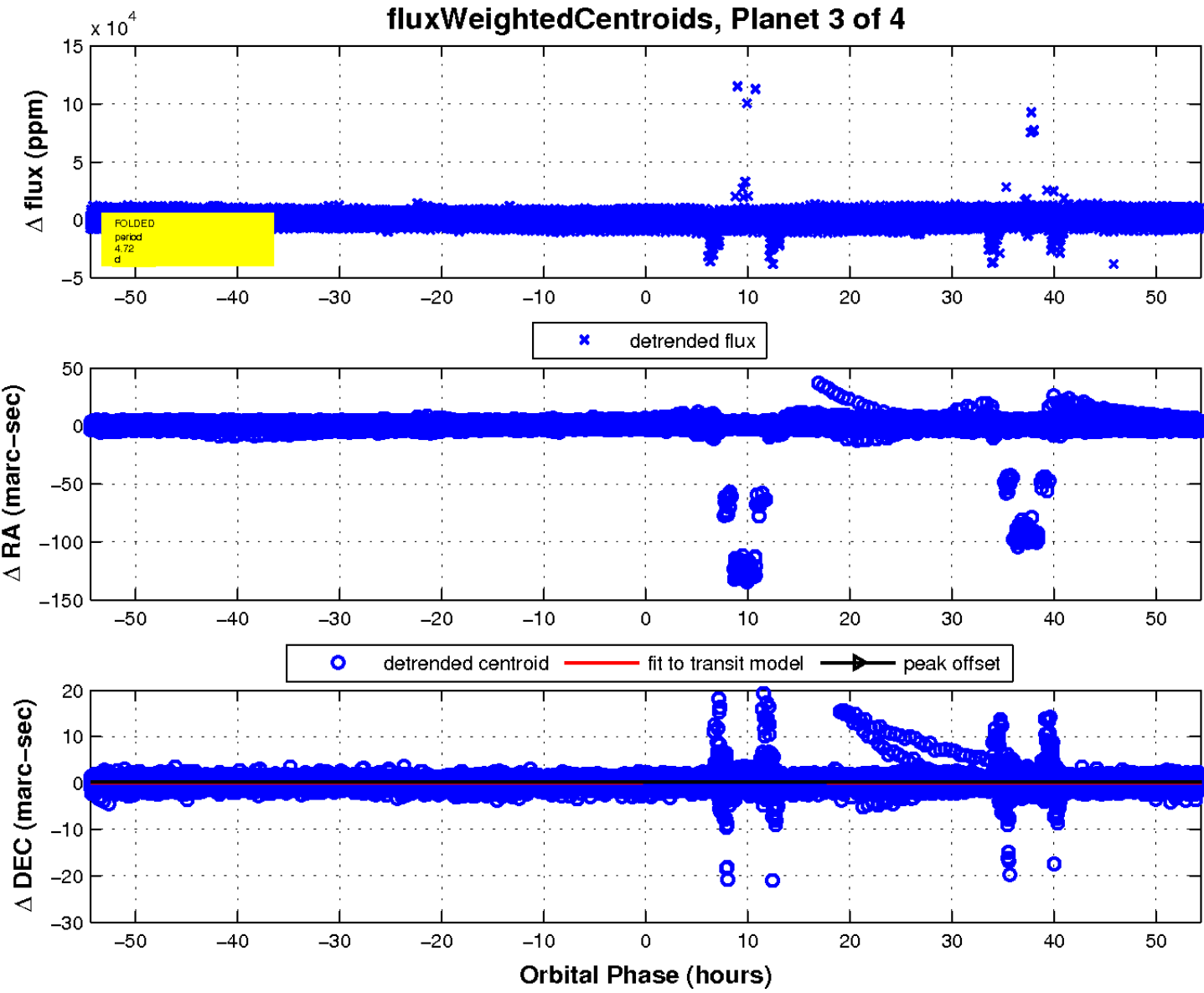
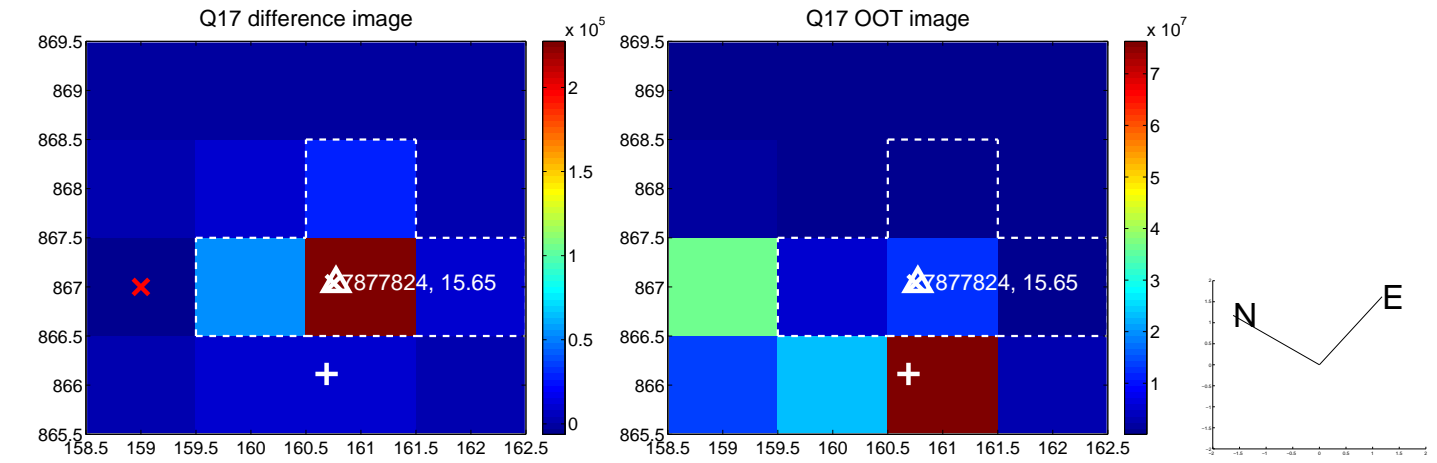
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



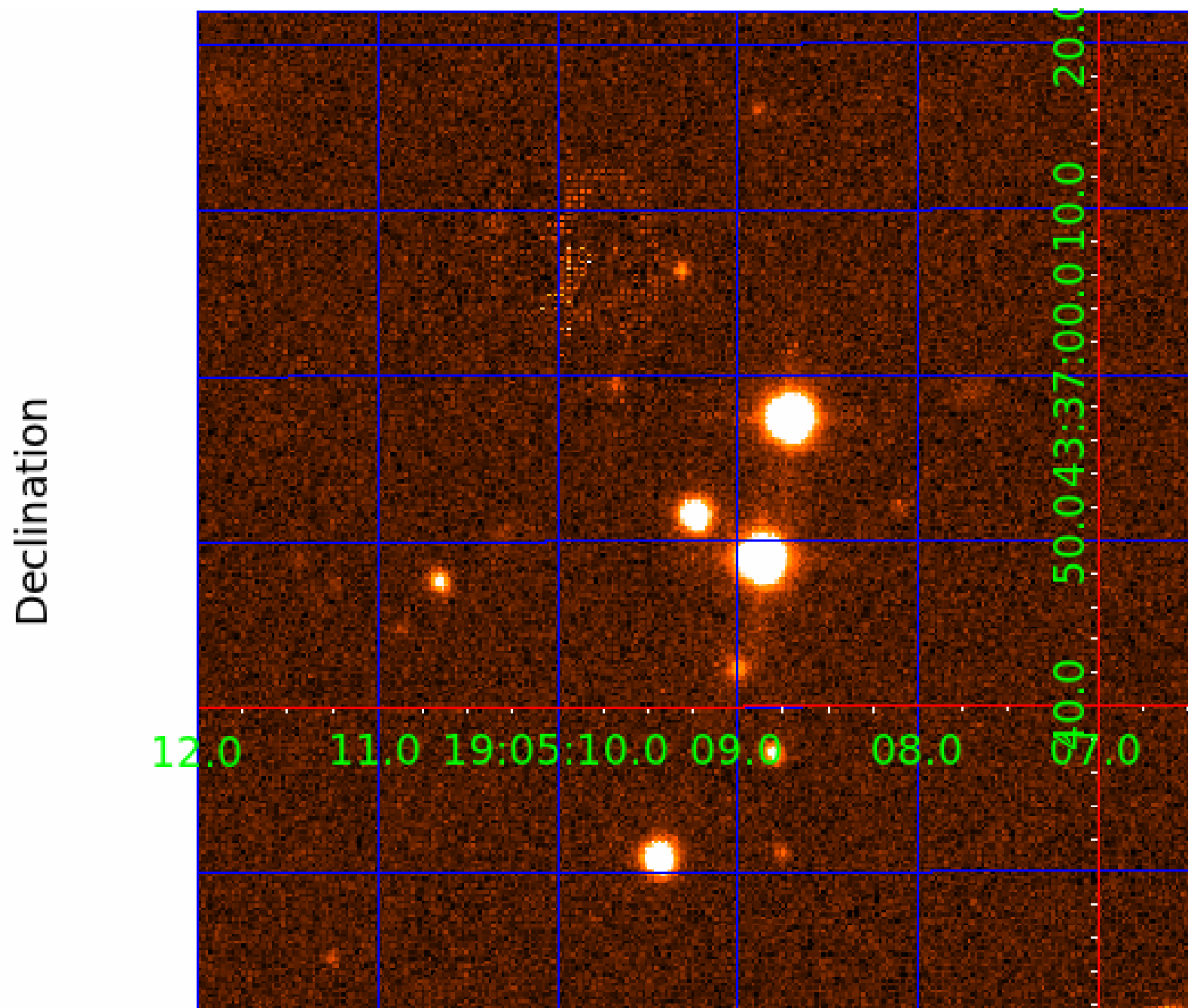
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007877824

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})
007877824-01	OBS	3530.01	9.449475	136.019999	496931.3	3.500	7983.0	-1.0	0.91	5754	49.38	103.59
007877824-02	OBS	No	9.449475	132.444126	379577.9	3.500	6328.9	-1.0	0.91	5754	49.38	103.59
007877824-03	OBS	No	4.724910	131.510994	36881.4	15.000	625.3	-1.0	0.91	5754	17.21	261.02
007877824-04	OBS	No	2.362576	132.436491	612.0	13.040	53.0	15.4	0.91	5754	2.23	657.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007877824-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
007877824-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_NOFITS
007877824-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
007877824-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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.

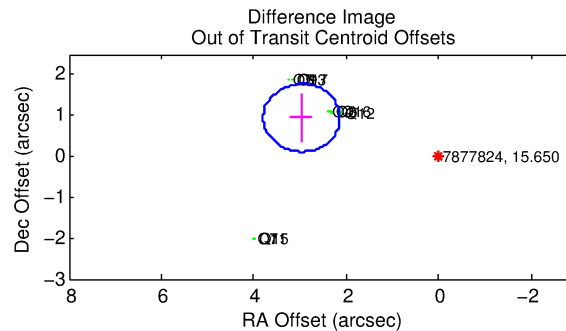
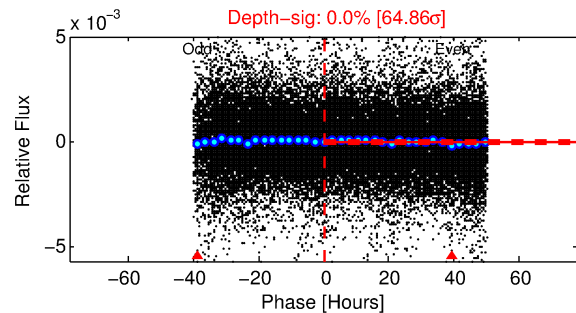
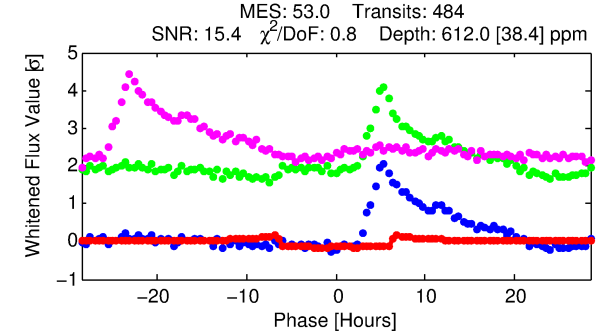
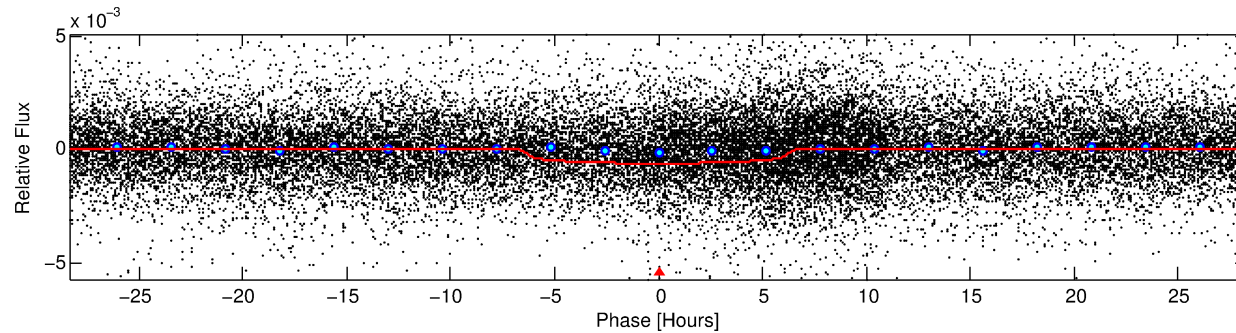
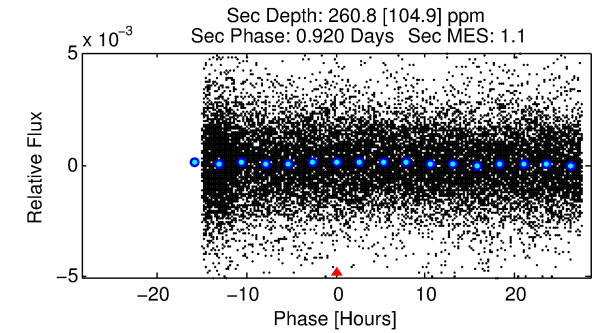
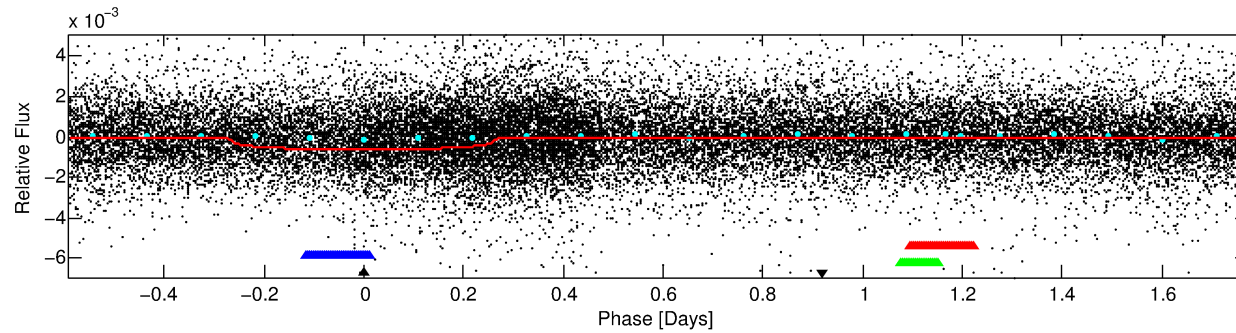
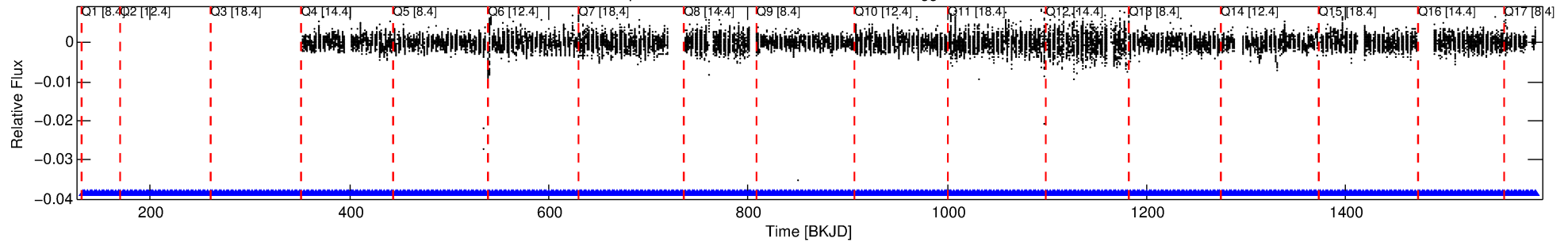
Ephemeris Match Information For 007877824-04

No Significant Match Found

DV One-Page Summary

KIC: 7877824 Candidate: 4 of 4 Period: 2.363 d
KOI: K03530 Corr: No Ephemeris Match

Kp: 15.65 R*: 0.91 Rs Teff: 5754.0 K Logg: 4.53 Fe/H: 0.070



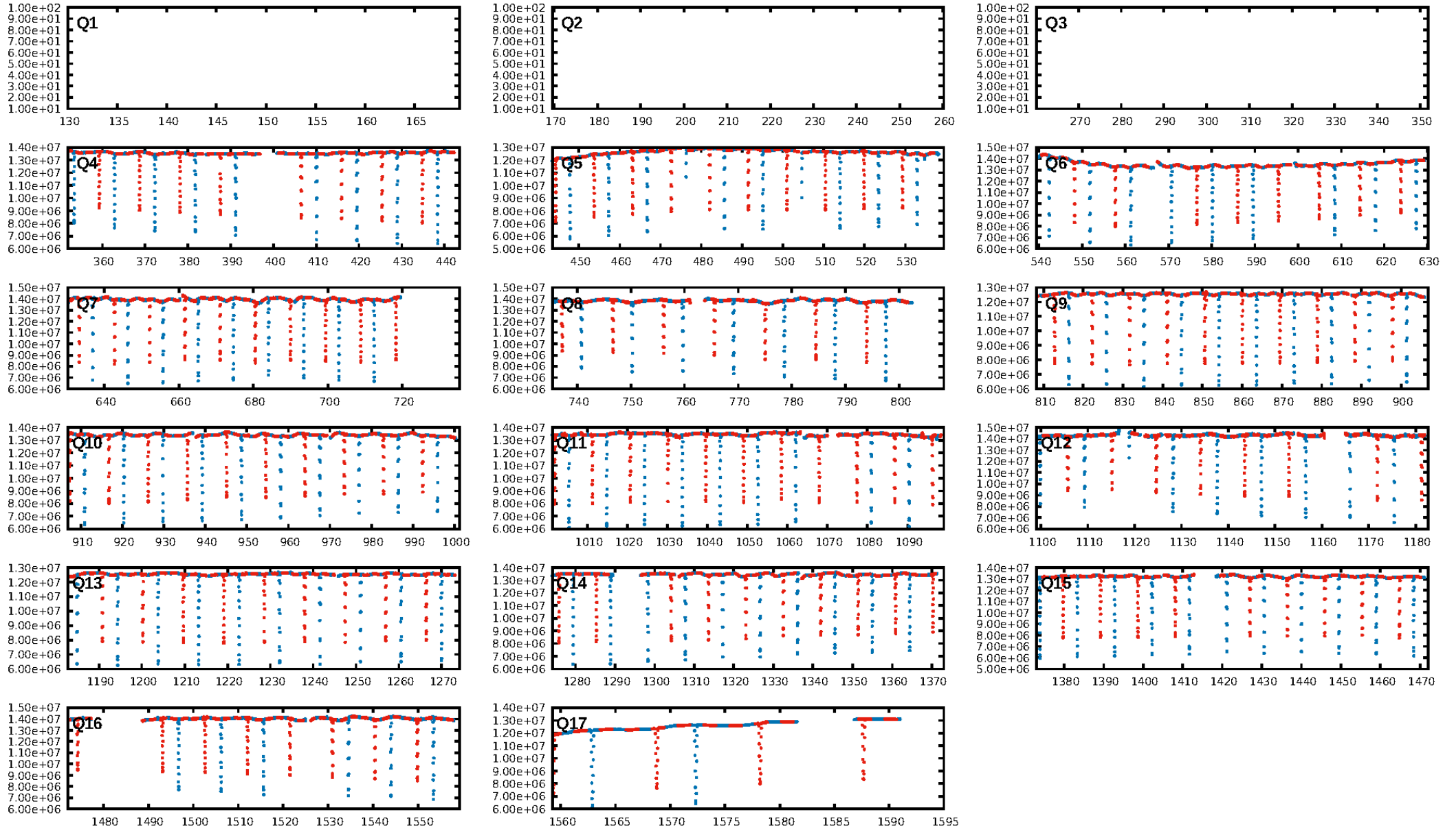
DV Fit Results:

Period = 2.36258 [0.00001] d
Epoch = 132.4365 [0.0034] BKJD
Rp/R* = 0.0226 [0.0054]
a/R* = 1.51 [0.87]
b = 0.28 [3.38]
Seff = 657.70 [241.75]
Teff = 1291 [119] K
Rp = 2.23 [0.81] Re
a = 0.0350 [0.0081] AU
Ag = 35.23 [25.12] [1.36 σ]
Teffp = 4864 [781] K [4.53 σ]

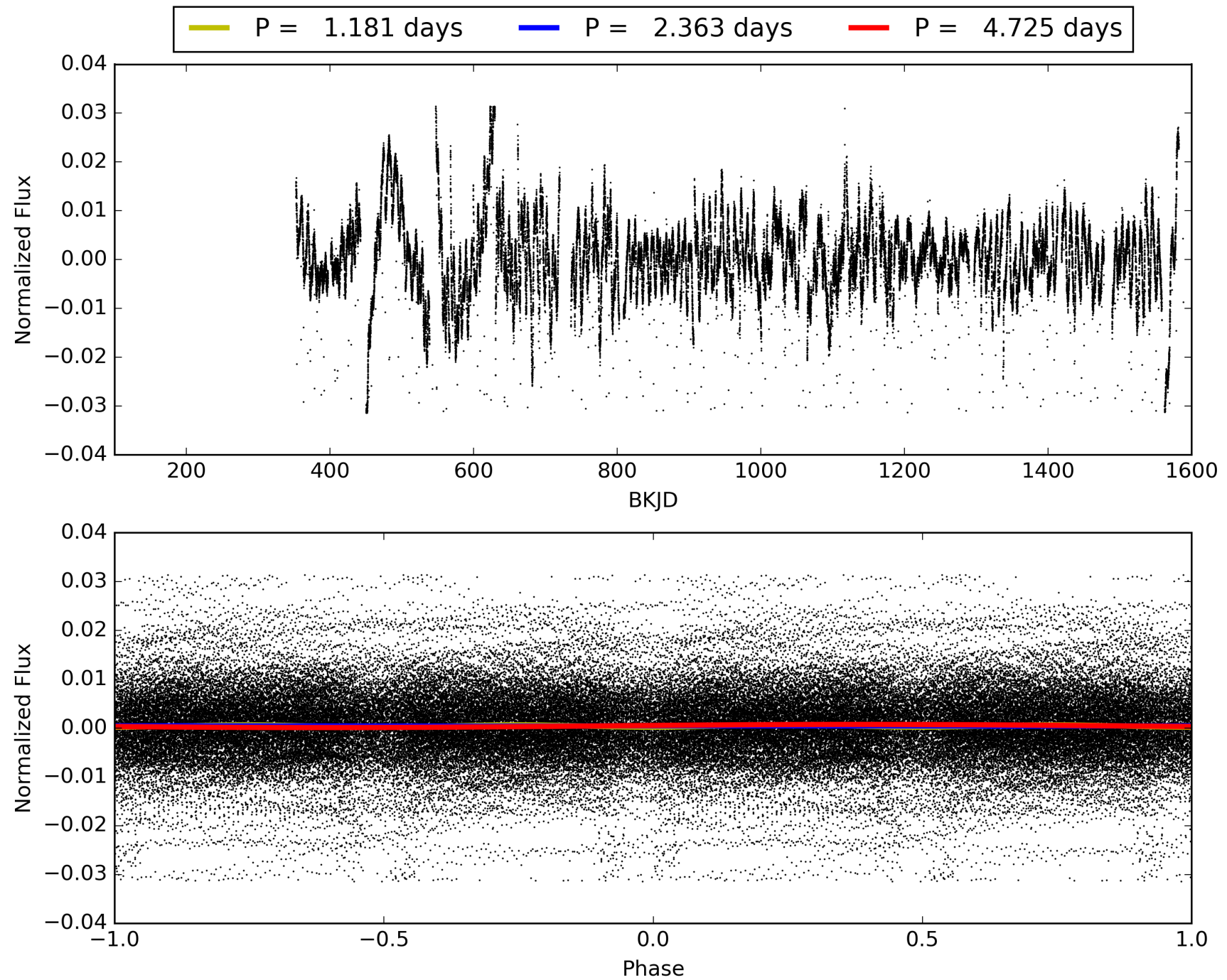
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.6% [2.85 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [472/472]
GhostDiagnostic-chr: 1.462
Centroid-sig: N/A
Centroid-so: 2.447 arcsec [36.57 σ]
OotOffset-rm: 3.117 arcsec [11.27 σ]
KicOffset-rm: 0.068 arcsec [1.00 σ]
OotOffset-st: 0/3/4/4 [11]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 007877824-04, PDC Light Curves

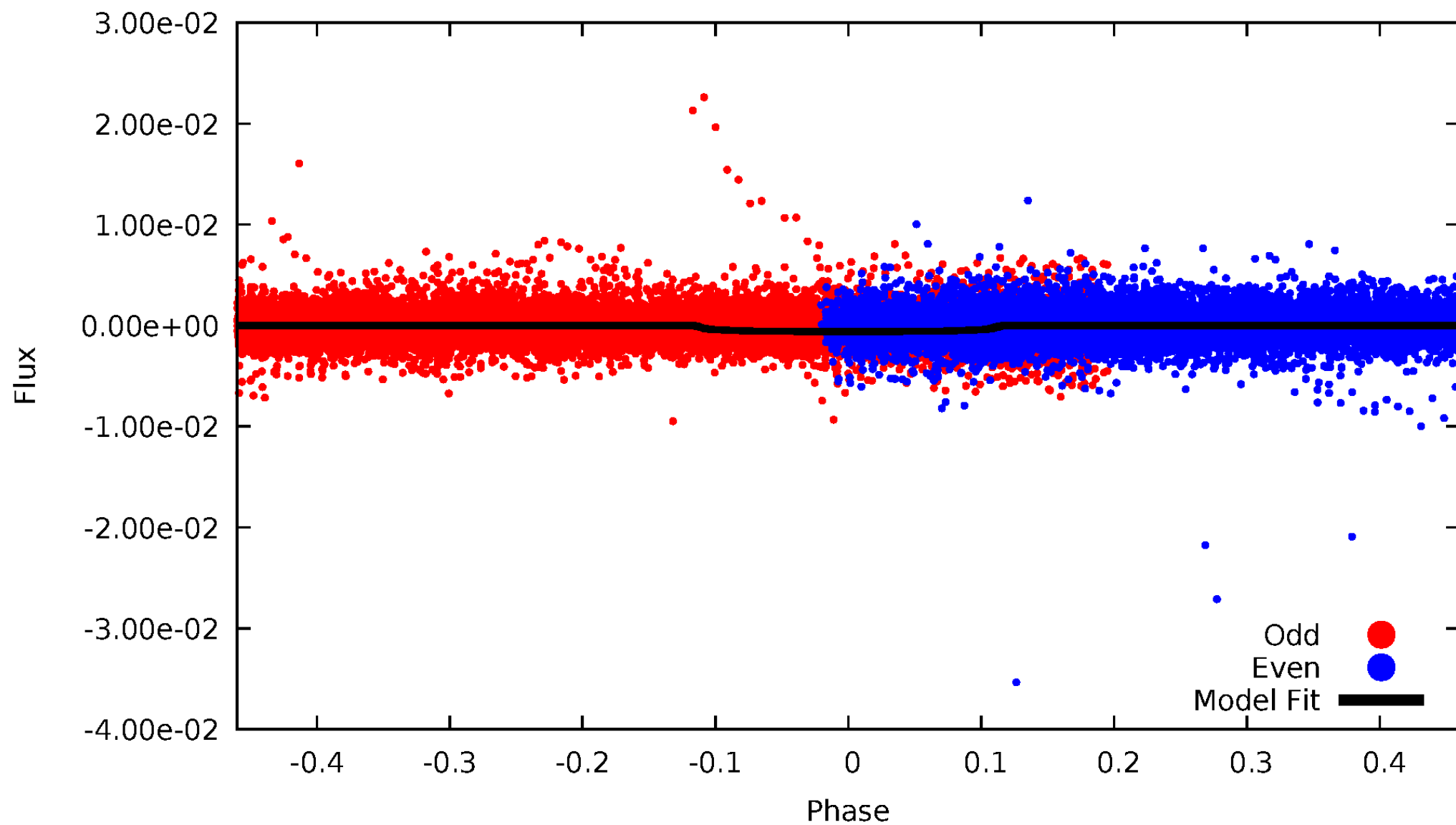


TCE 007877824-04



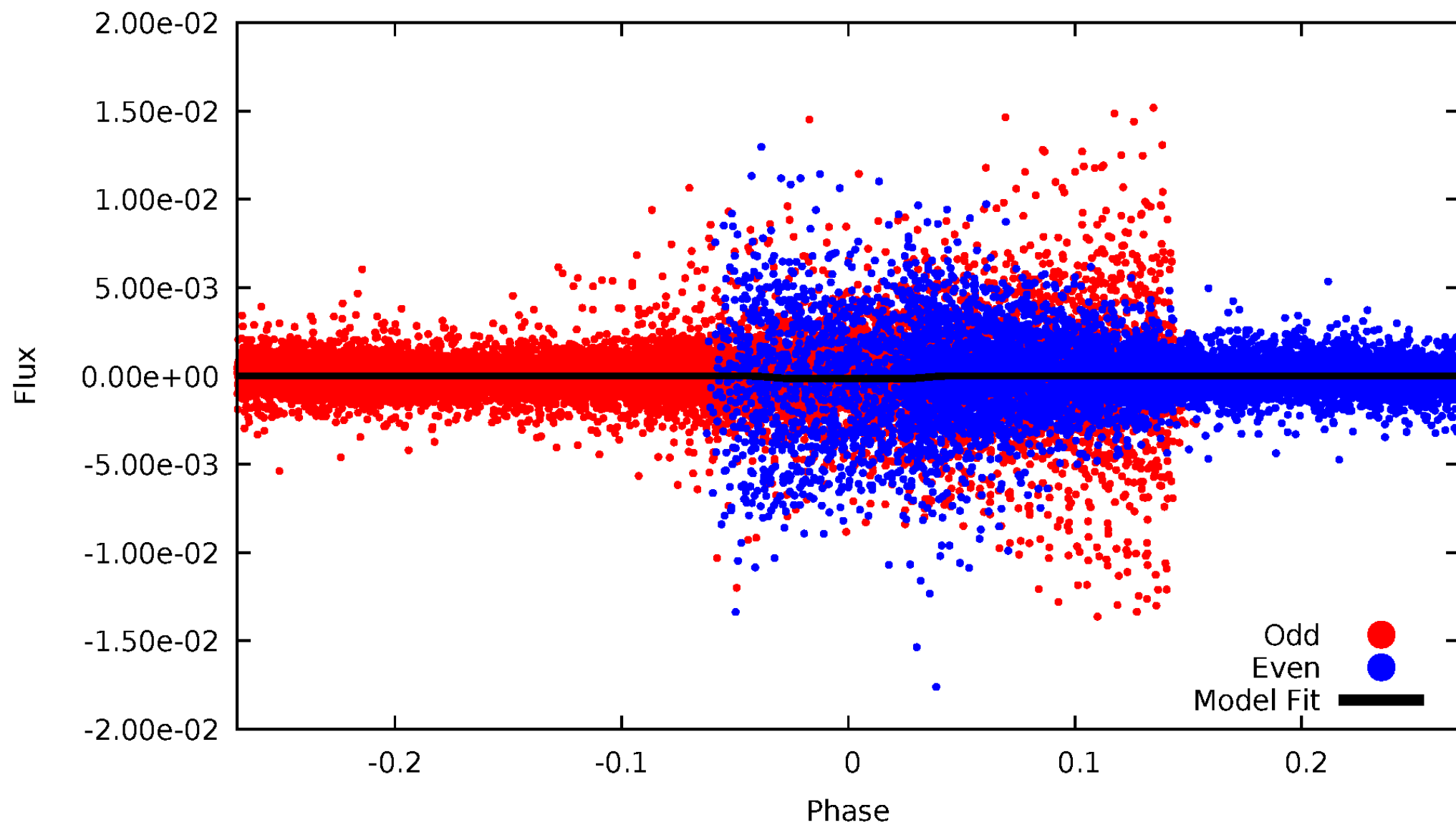
DV Odd/Even

TCE 007877824-04



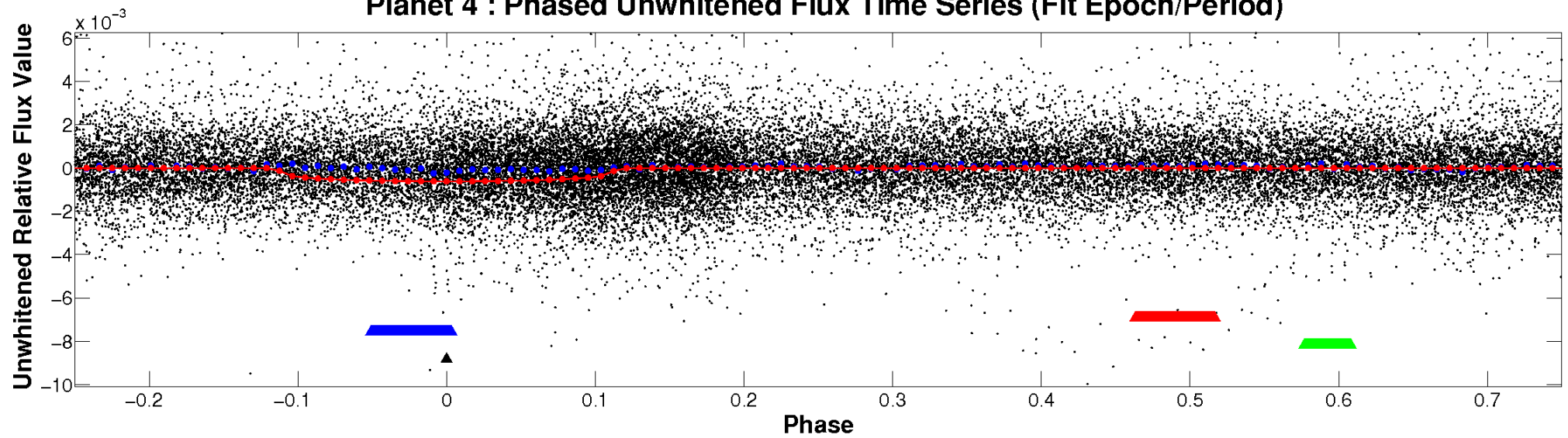
ALT Odd/Even

TCE 007877824-04

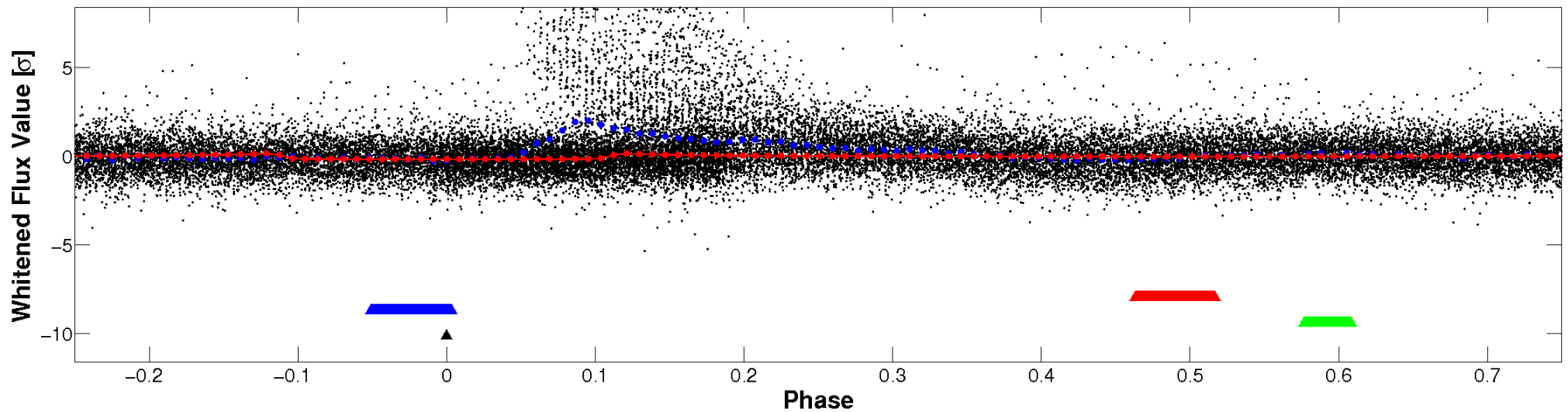


Non-Whitened Vs. Whitened Light Curve

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

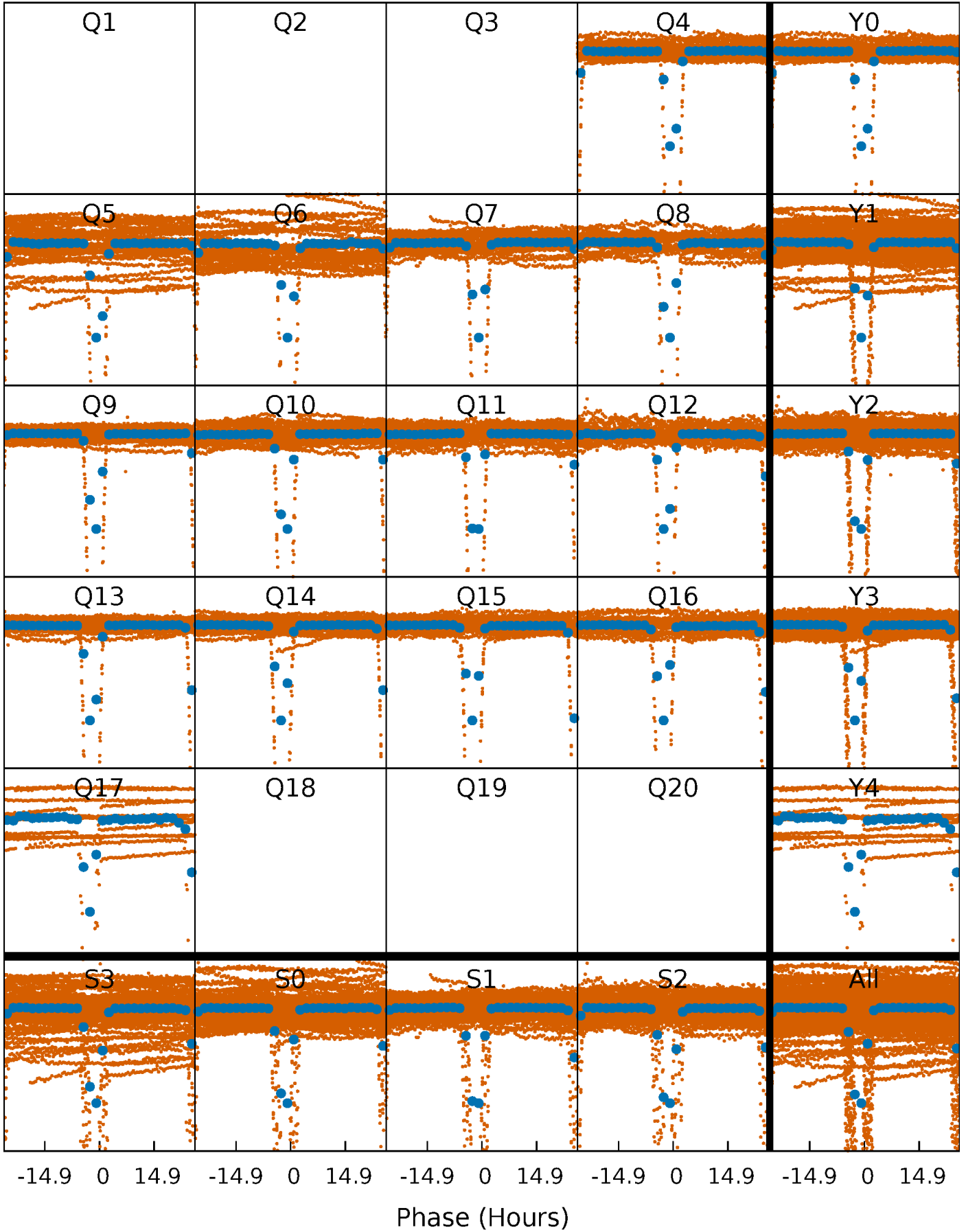


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



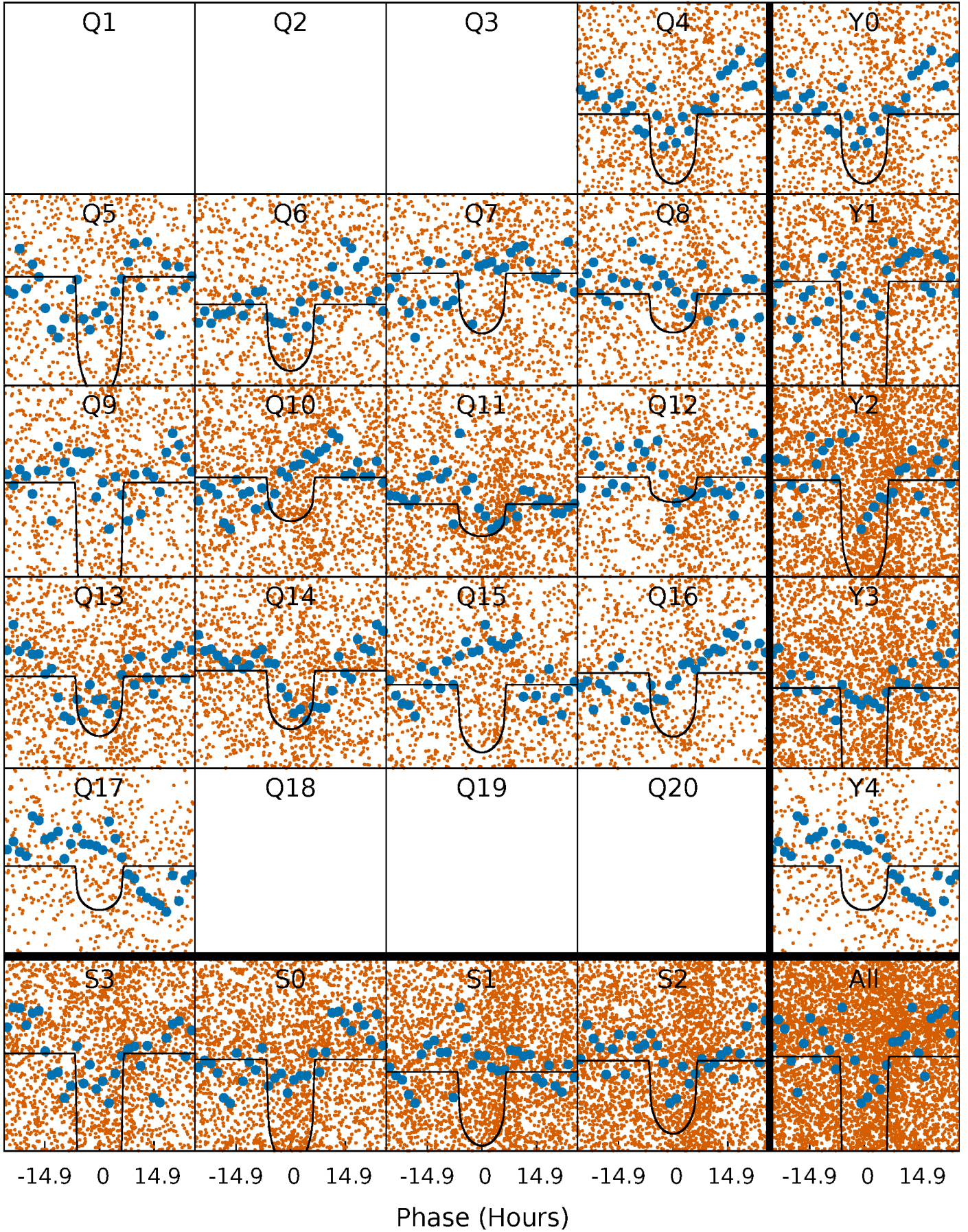
PDC Quarter-Phased Transit Curves

TCE 007877824-04 P= 2.362576 Days $T_0=132.436491$ (BKJD)



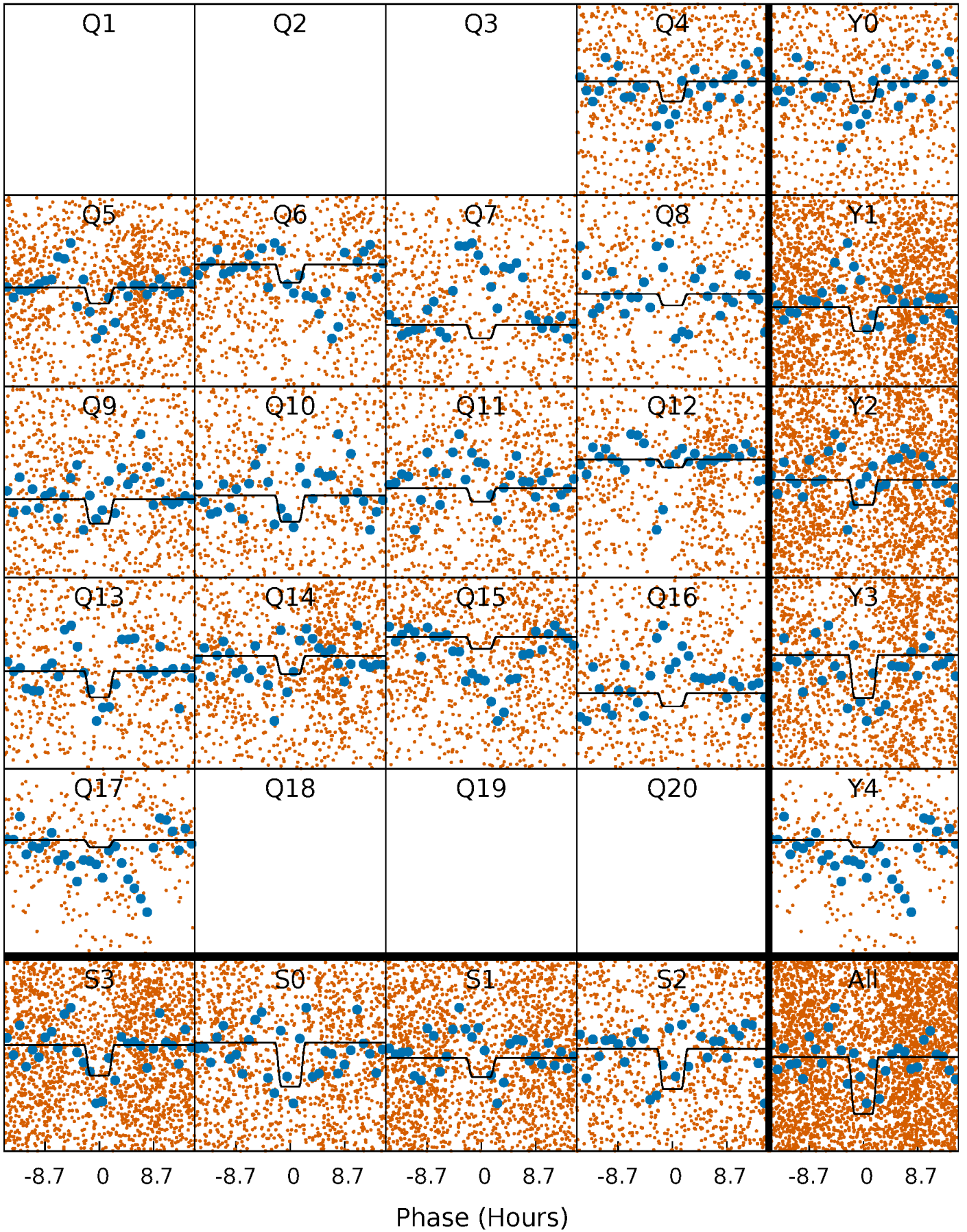
DV Quarter-Phased Transit Curves

TCE 007877824-04 P= 2.362576 Days $T_0=132.436491$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

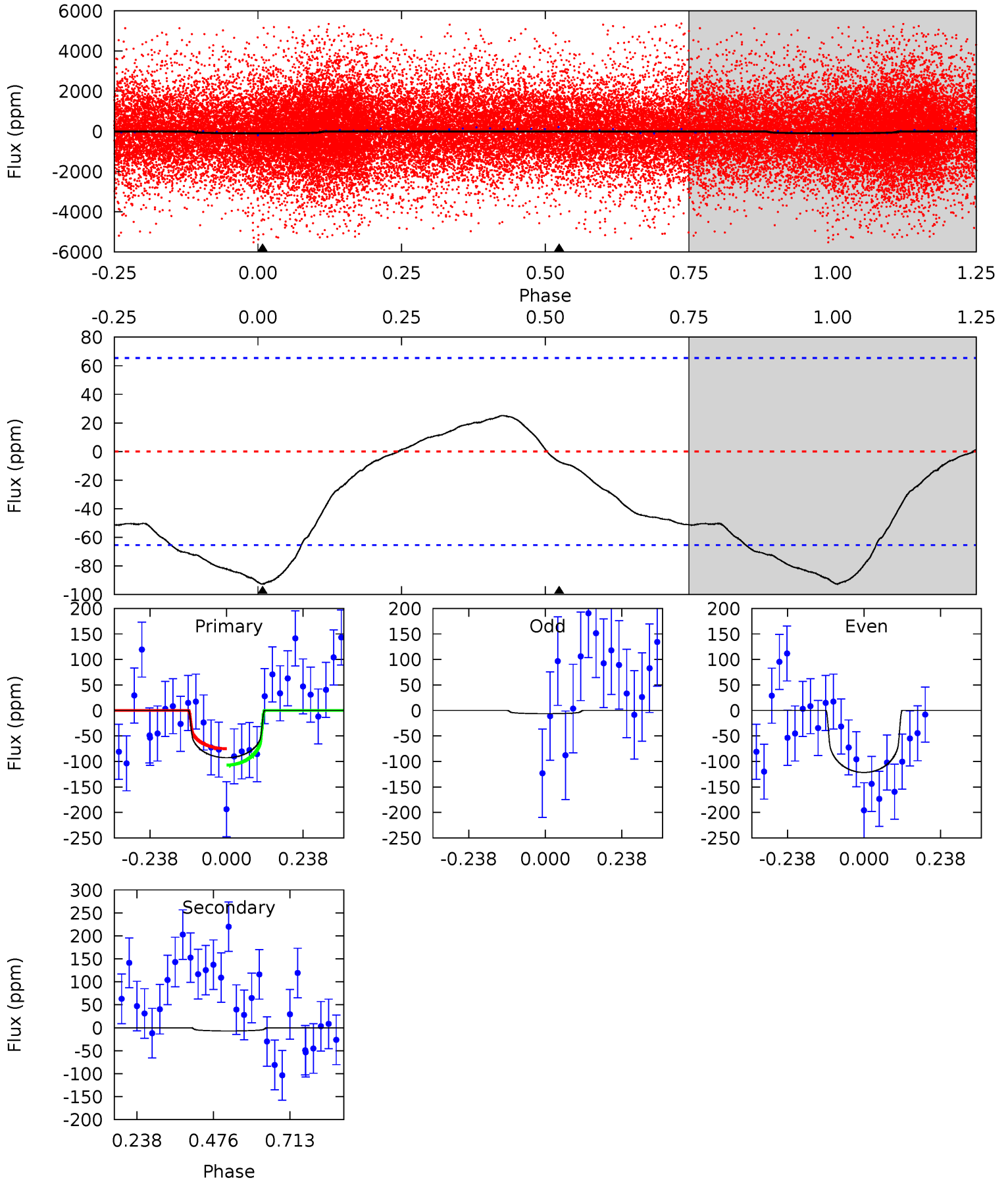
TCE 007877824-04 P= 2.362356 Days $T_0=132.619325$ (BKJD)



DV Model-Shift Uniqueness Test

007877824-04, P = 2.362576 Days, E = 132.436491 Days

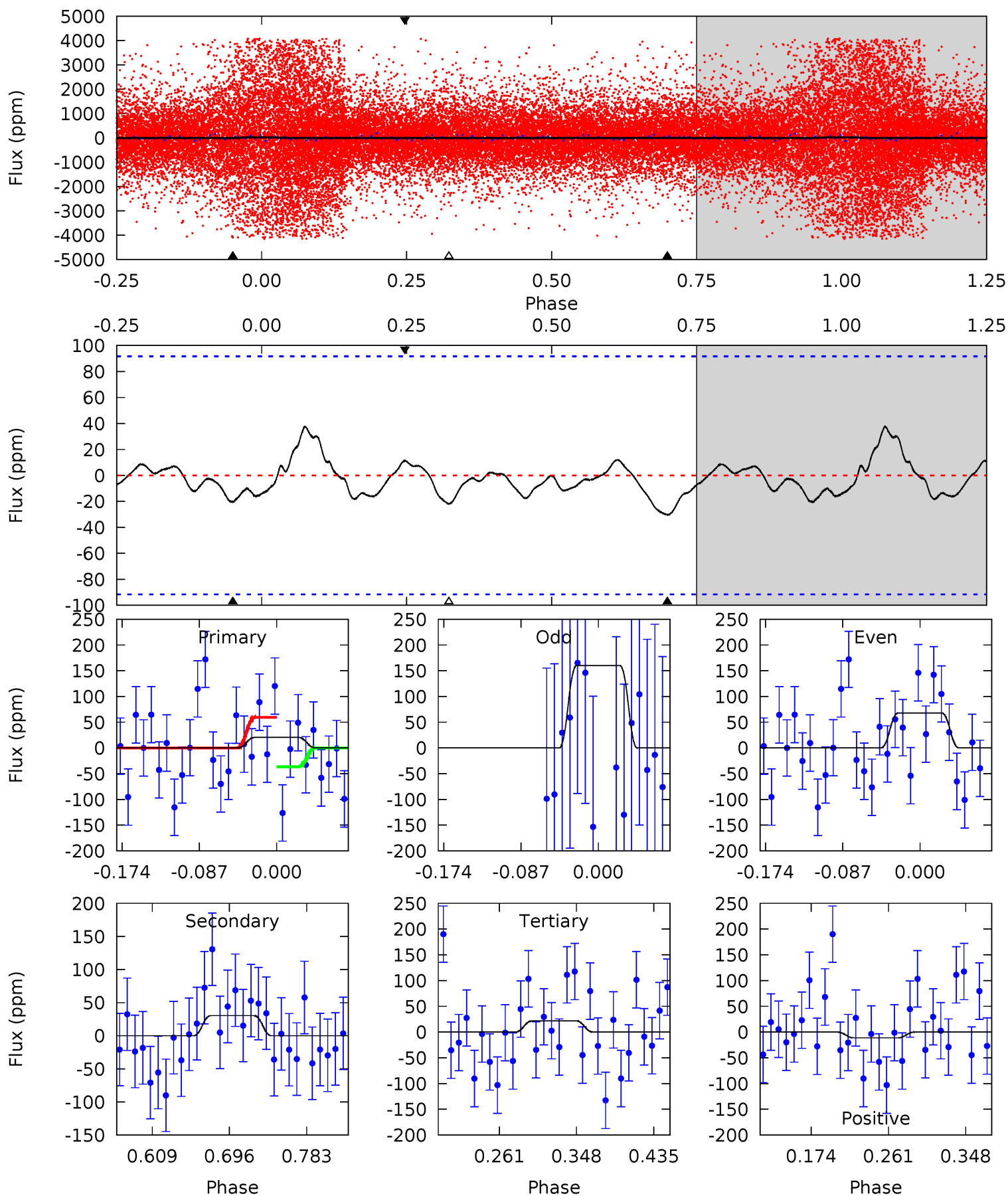
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.21	0.47	0	0	4.38	1.18	1.78	6.21	6.21	0.47	0.47	3.44	0.22	0.21	1.06



Alt Model-Shift Uniqueness Test

007877824-04, P = 2.362356 Days, E = 132.619325 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.02	1.52	1.10	0.57	4.59	1.71	0.67	-0.07	0.46	0.42	0.95	2.46	-0.95	0.55	0.72



Stellar Parameters For KIC 007877824

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5754^{+160}_{-200}	$4.534^{+0.033}_{-0.187}$	$0.070^{+0.250}_{-0.300}$	$0.905^{+0.248}_{-0.083}$	$1.021^{+0.100}_{-0.122}$	$1.938^{+0.359}_{-0.954}$
	+3%/-3%	+1%/-4%	+357%/-429%	+27%/-9%	+10%/-12%	+19%/-49%
Source	KIC0	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 007877824-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 15	$2.33^{+0.63}_{-0.62}$	1836^{+122}_{-76}	2545^{+707}_{-5408}	$0.785^{+2.452}_{-1.645}$
Alt.	-30 ± 20	$1.28^{+0.59}_{-0.60}$	1846^{+113}_{-81}	4097^{+1218}_{-893}	12^{+33}_{-10}

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

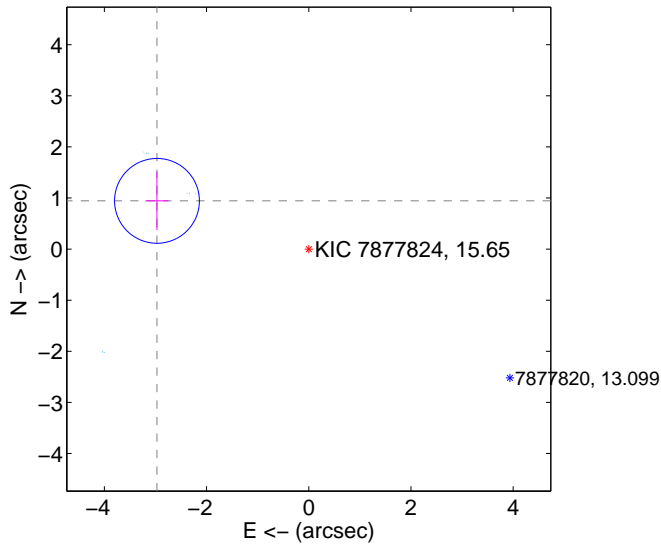
Supplemental centroid analysis for 007877824-04. Kepler magnitude: 15.65. Transit SNR 15.42

There are 14 quarters with good PRF difference image offsets

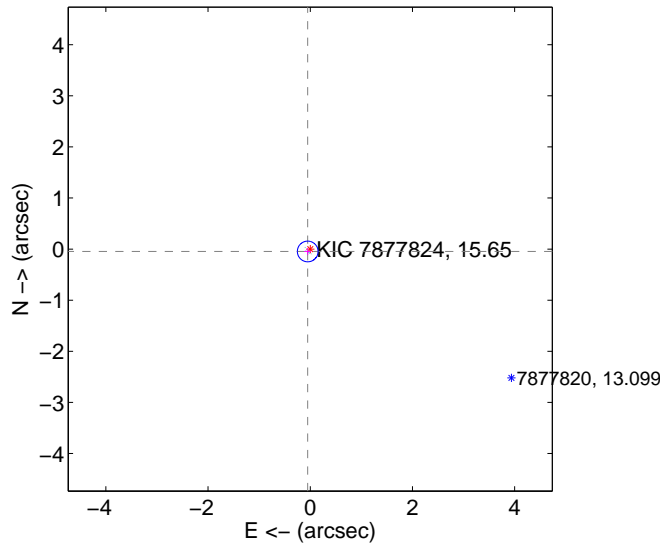
The OOT PRF centroid is offset from the target star catalog position by about 3.68 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.117 \pm 0.277	11.27	2.970 \pm 0.227	0.944 \pm 0.571
PRF-fit source offset from KIC position	0.068 \pm 0.068	1.00	0.049 \pm 0.068	-0.046 \pm 0.067
photometric centroid source offset	2.45 \pm 0.07	36.57	-2.45 \pm 0.07	-0.00 \pm 0.04

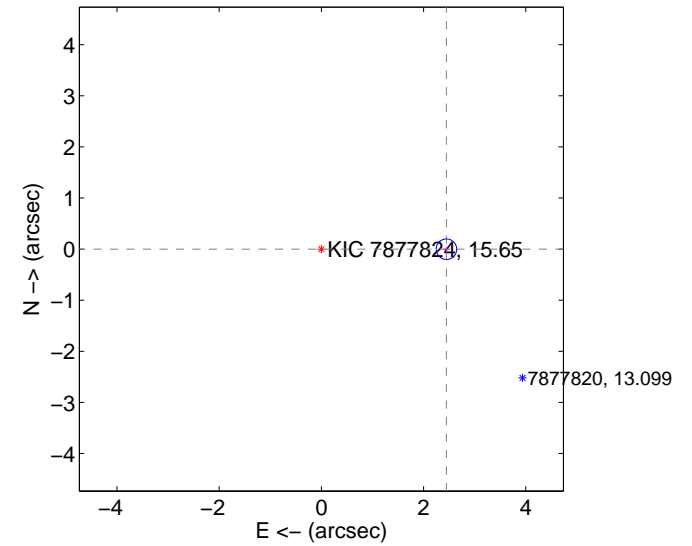
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

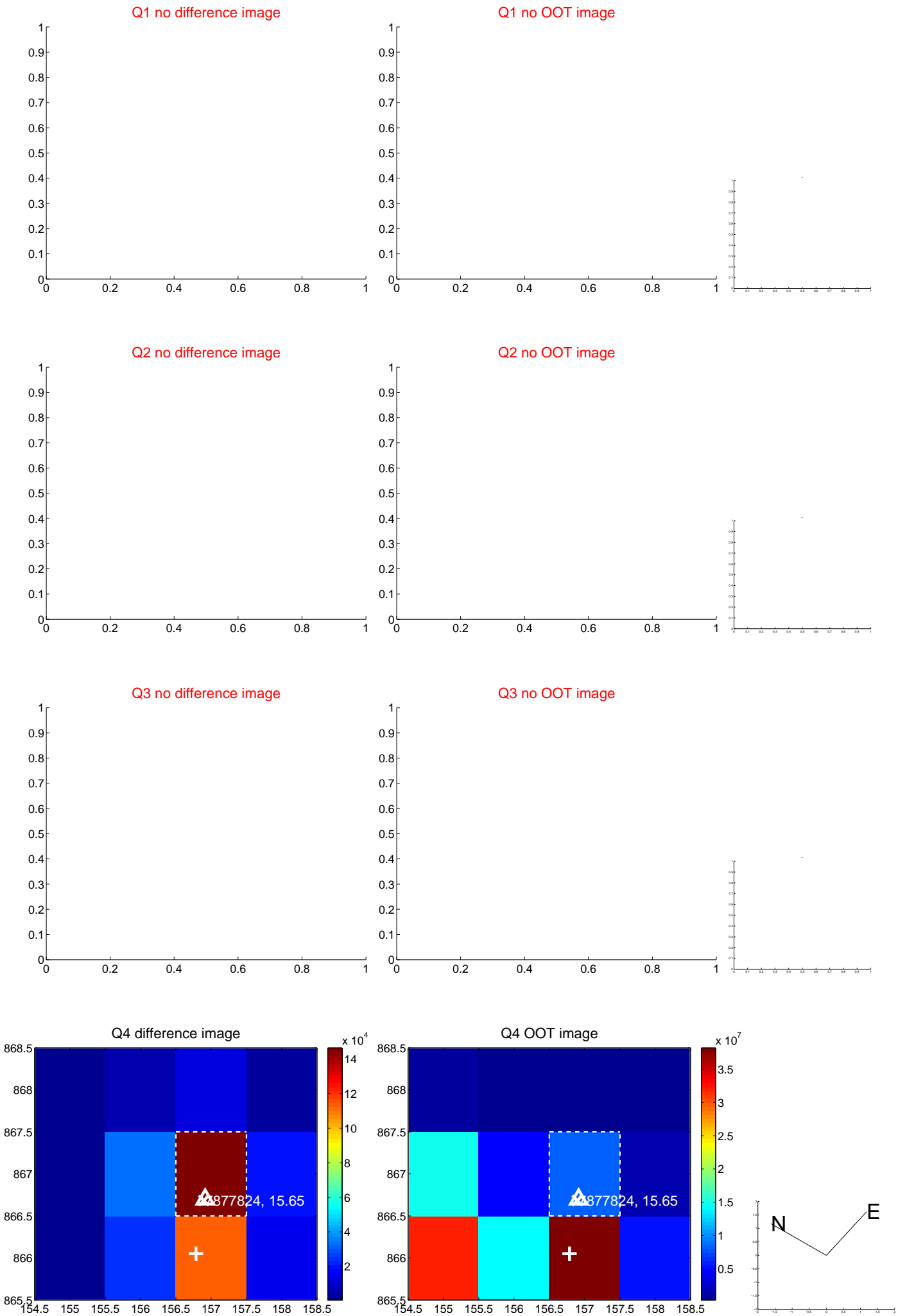


offset from photometric centroids

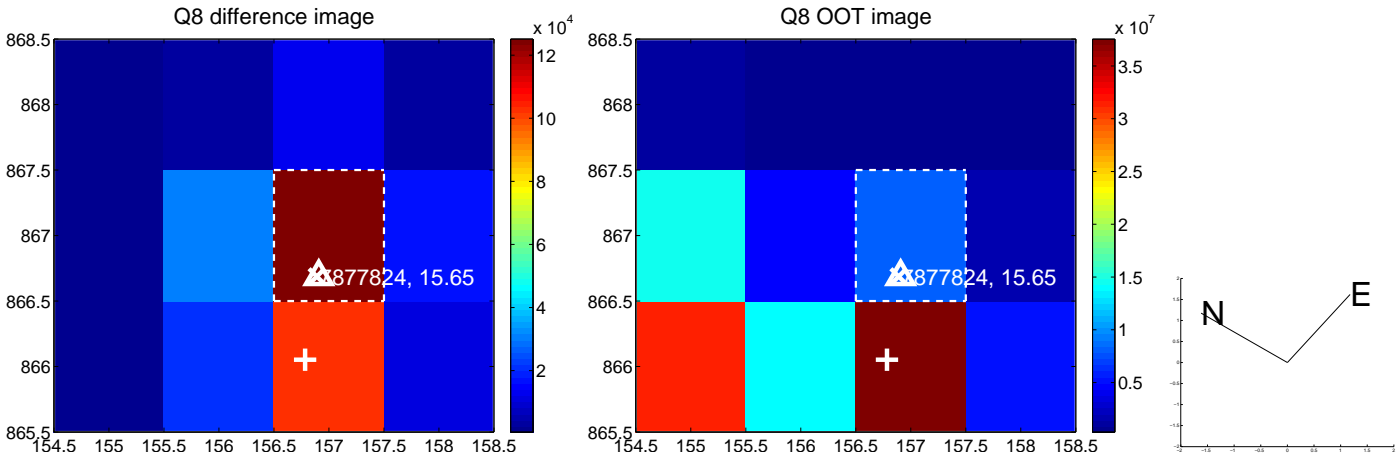
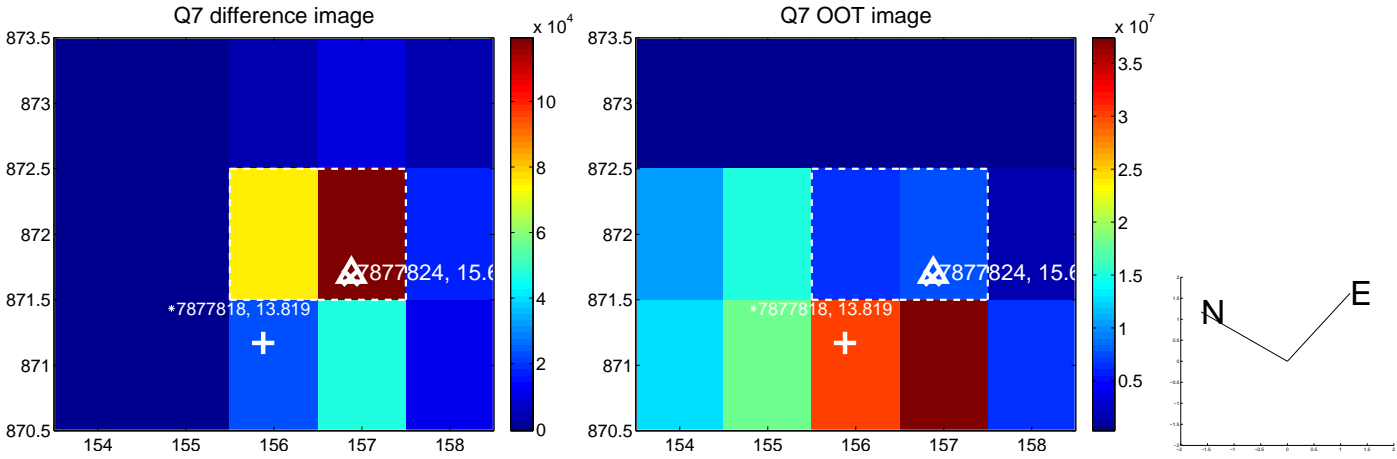
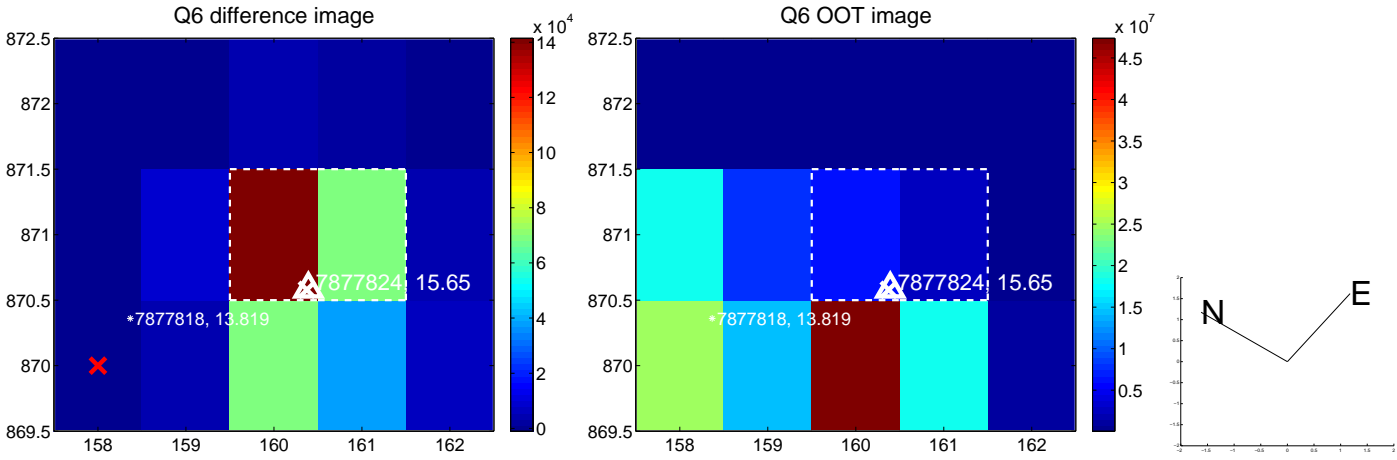
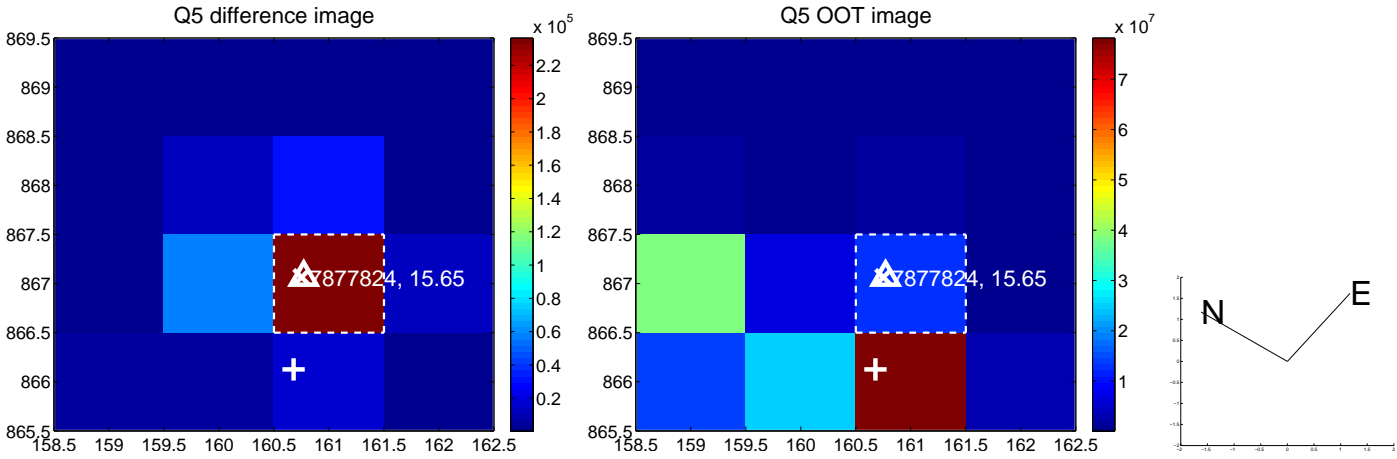


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

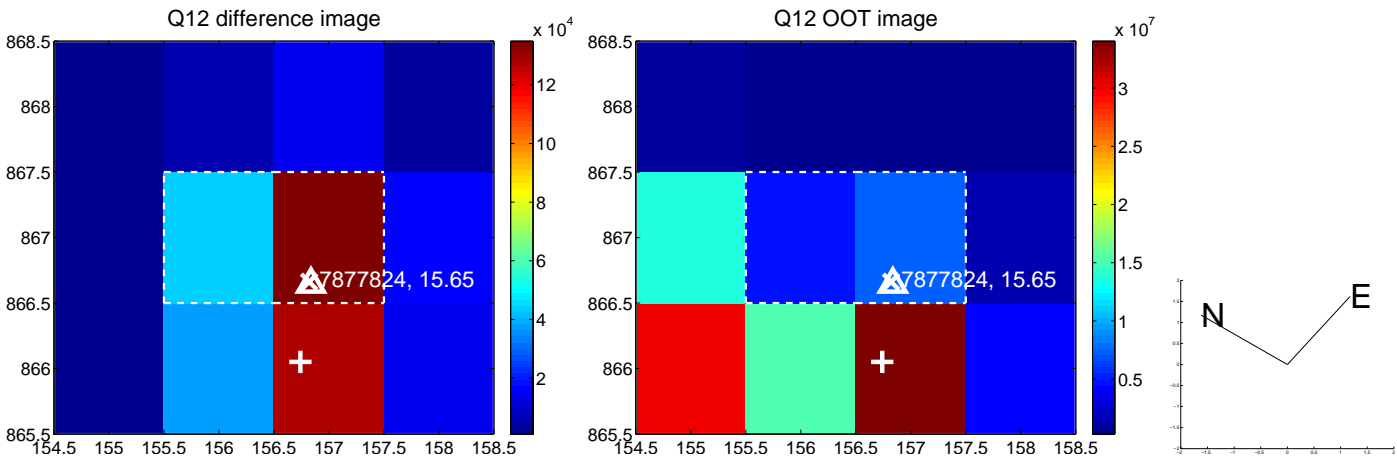
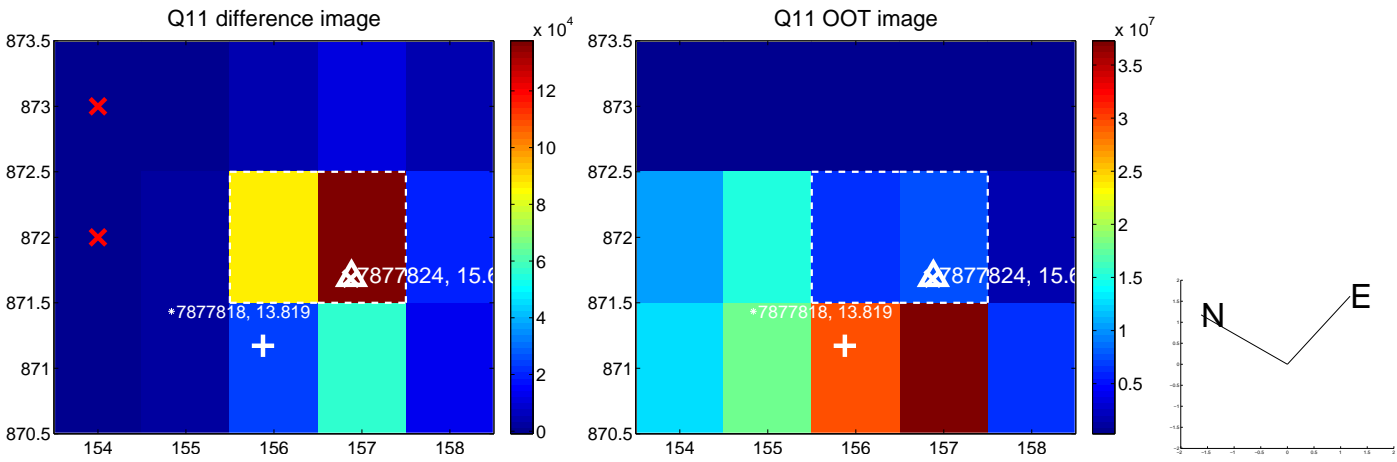
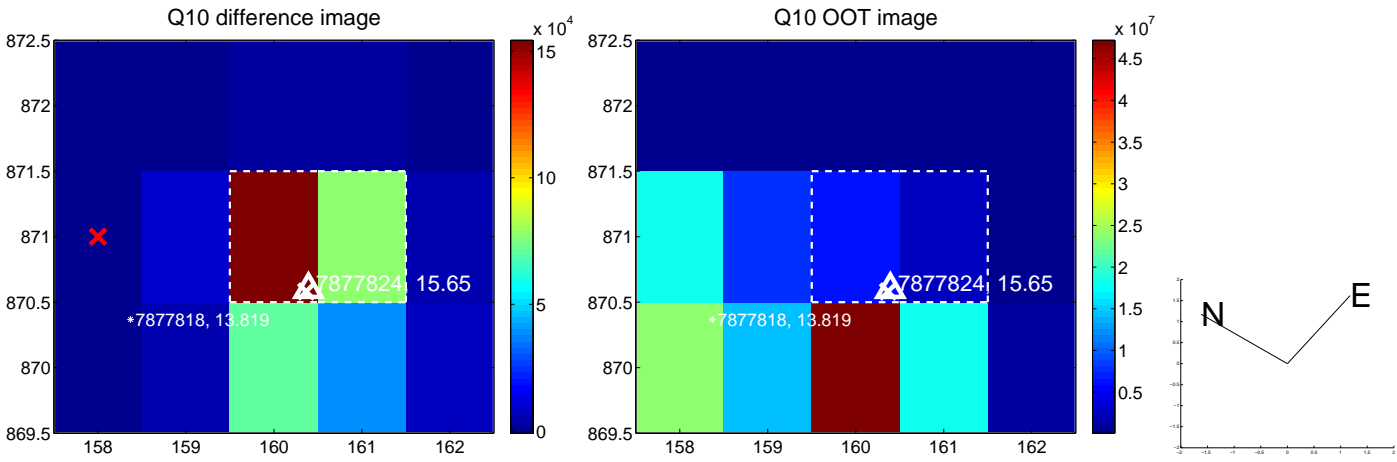
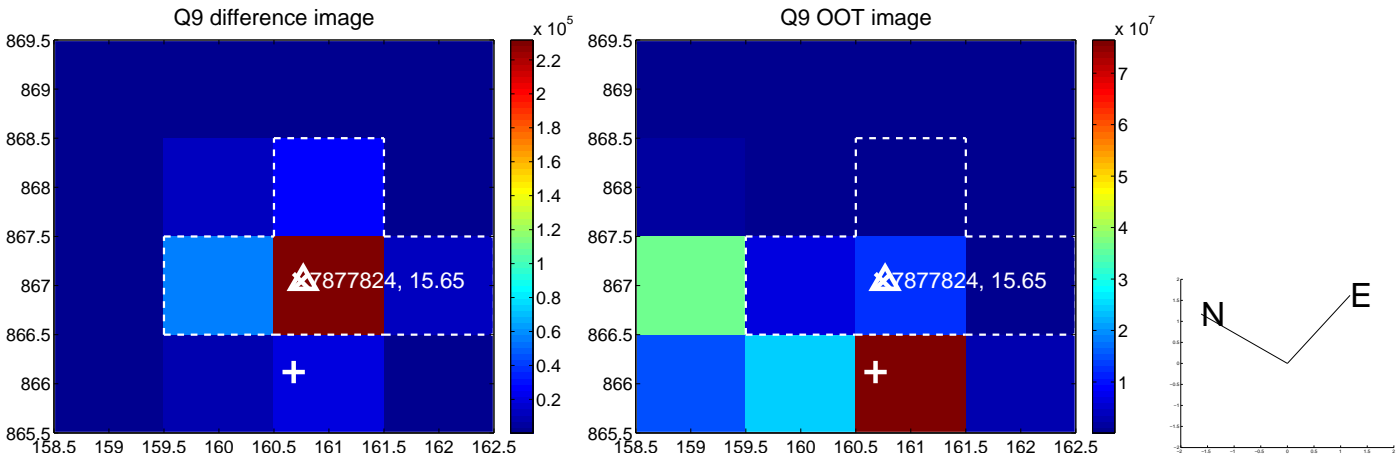
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



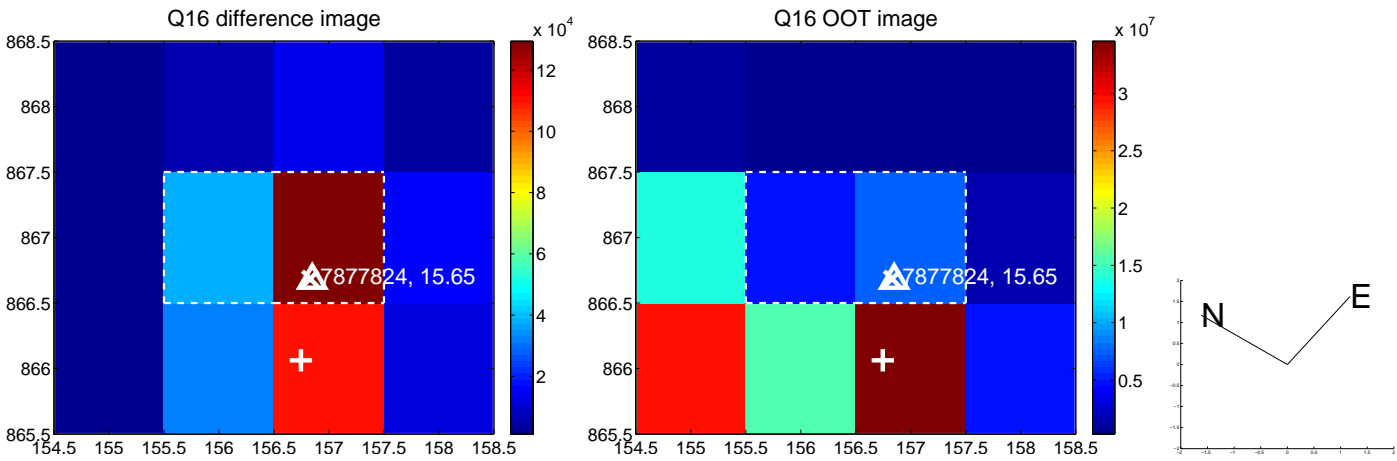
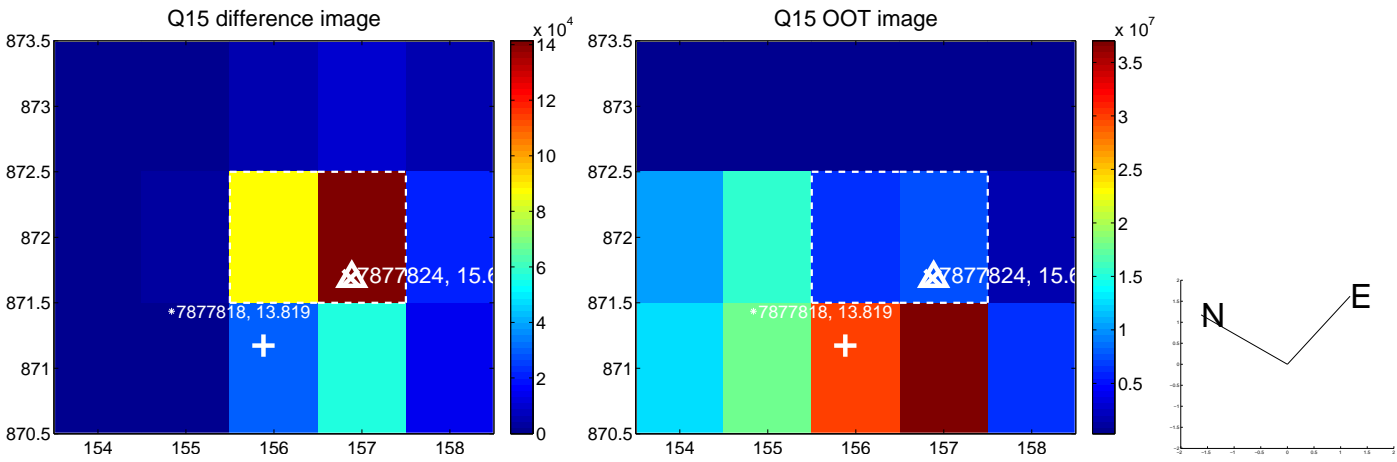
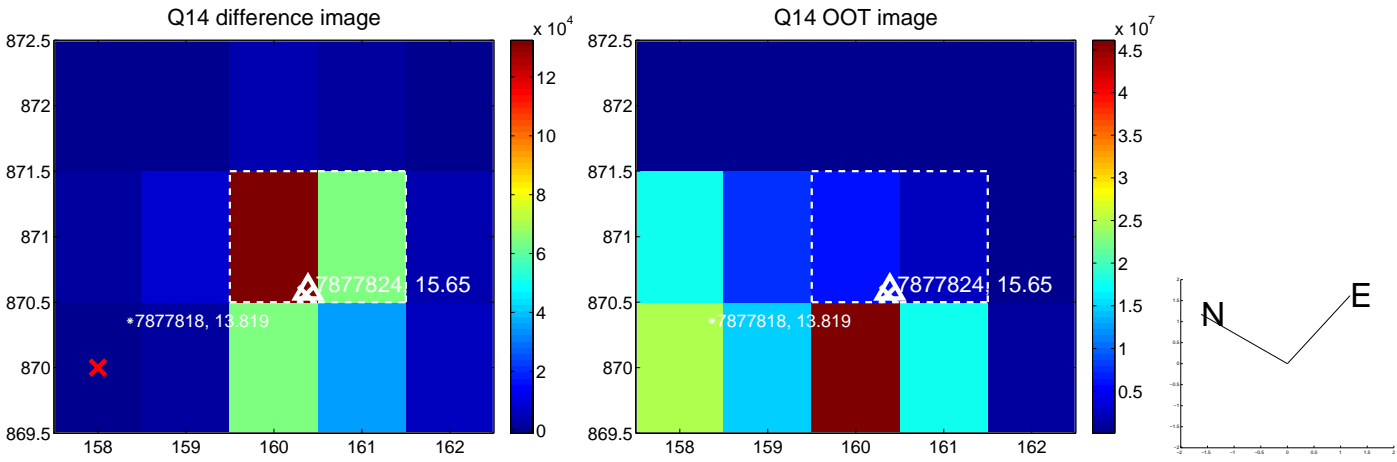
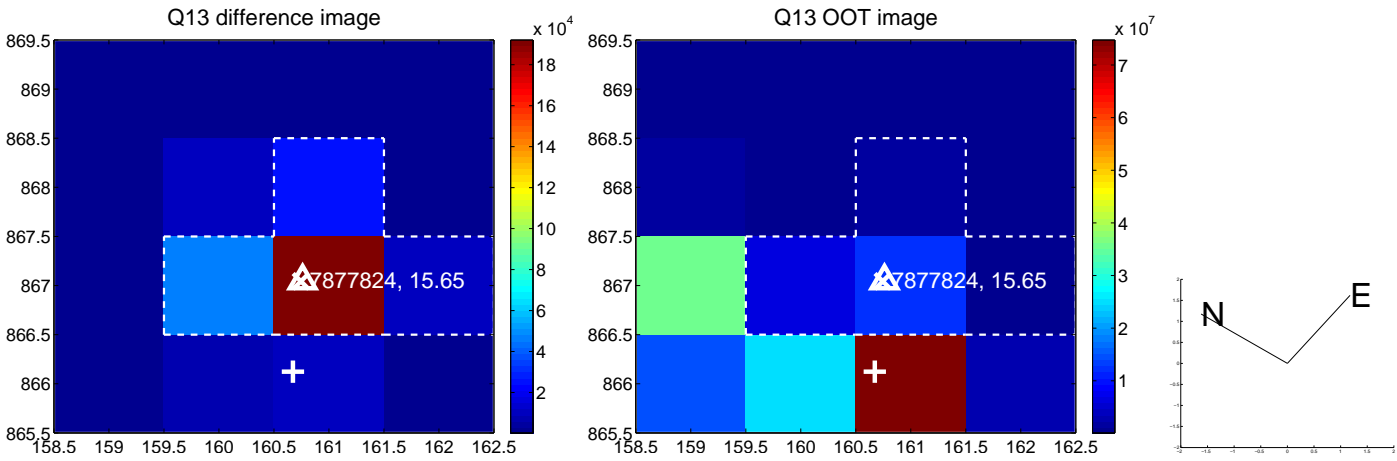
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



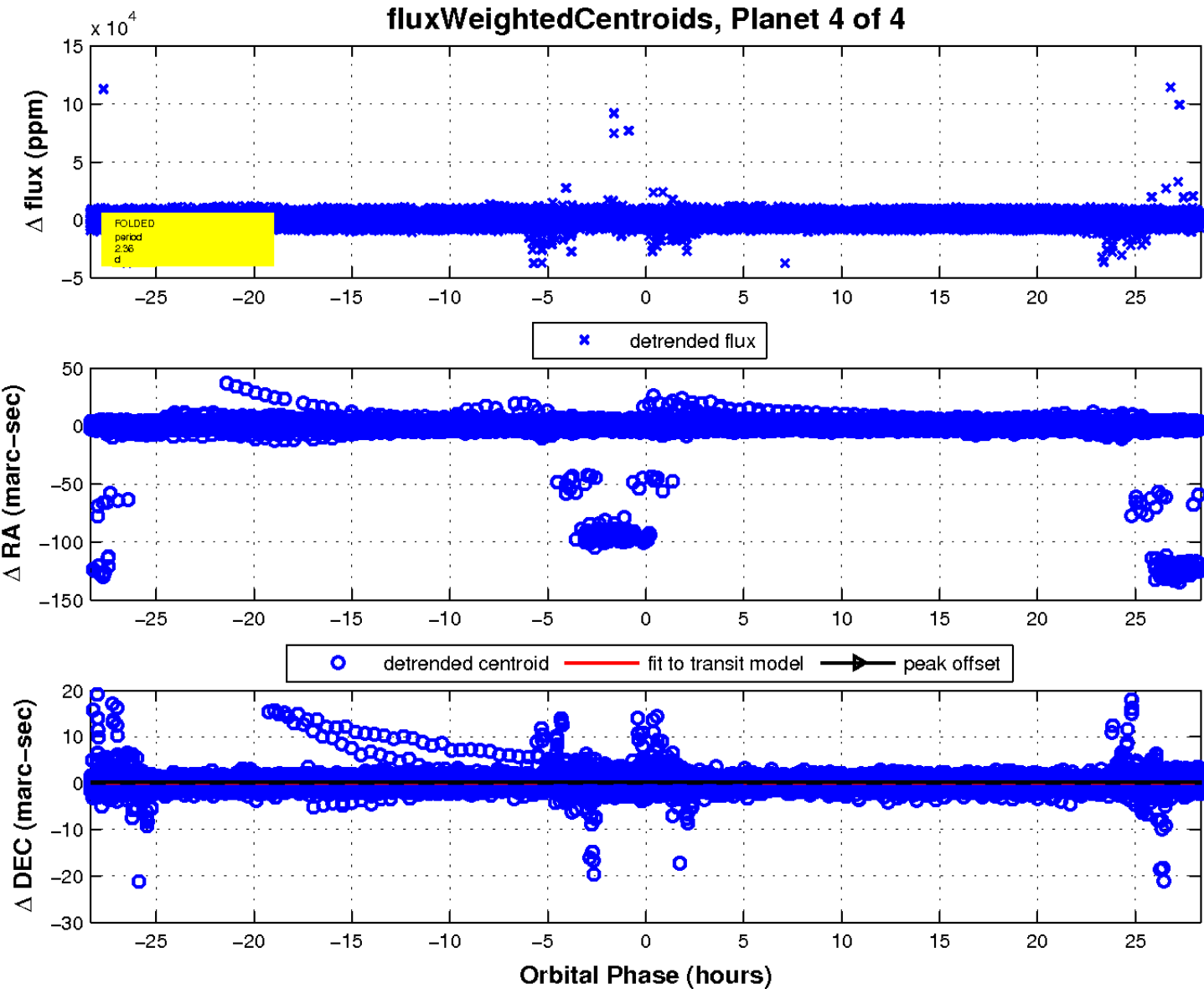
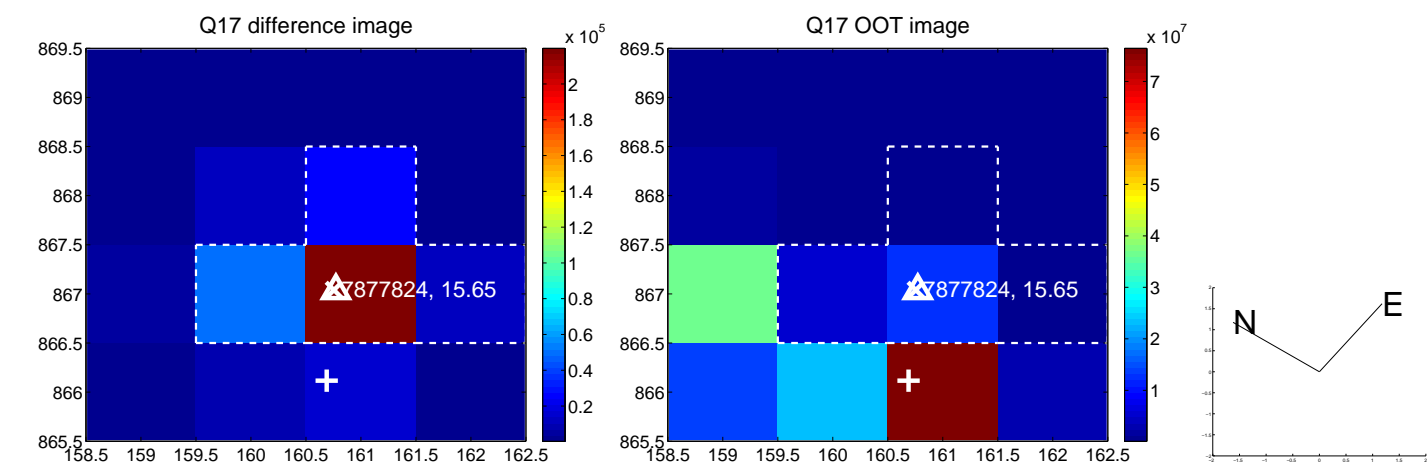
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

