

KIC 005881688

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})
005881688-01	OBS	0843.01	4.190423	133.727941	2873.8	2.967	245.6	244.9	1.14	6073	6.58	549.75
005881688-02	OBS	No	641.937033	146.510420	584.8	10.884	8.0	7.5	1.14	6073	2.86	0.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005881688-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005881688-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

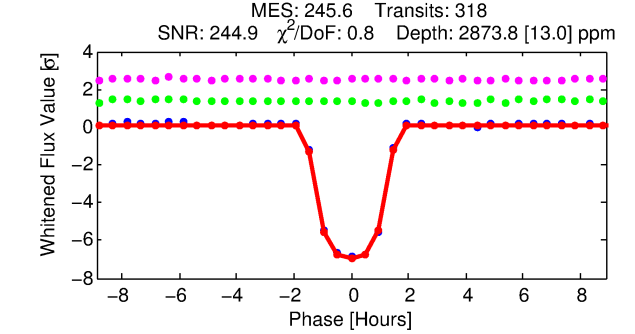
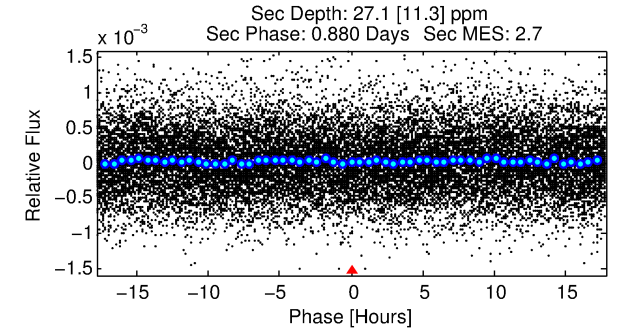
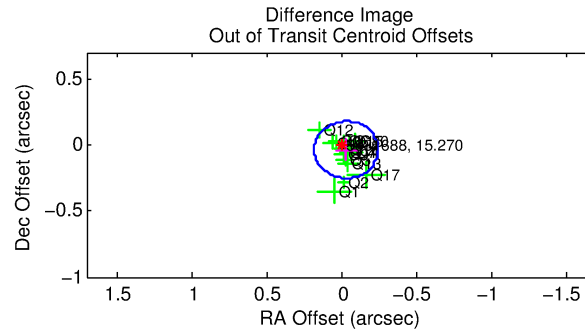
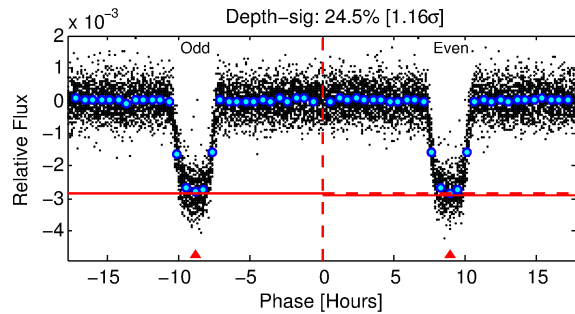
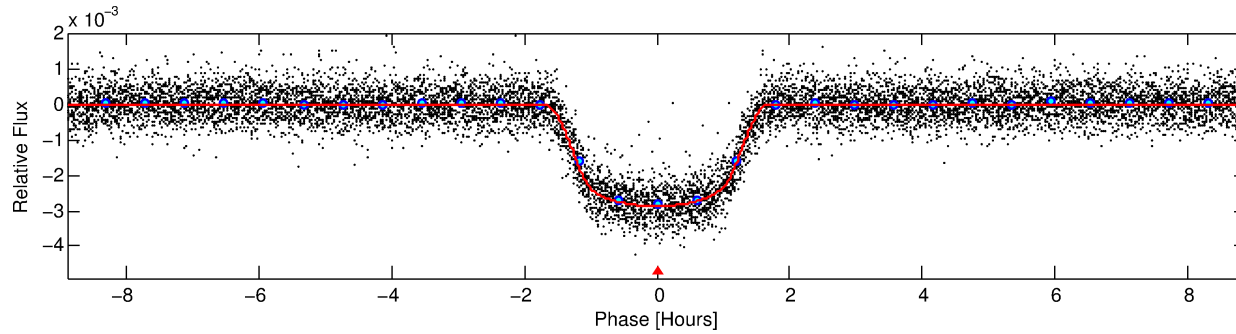
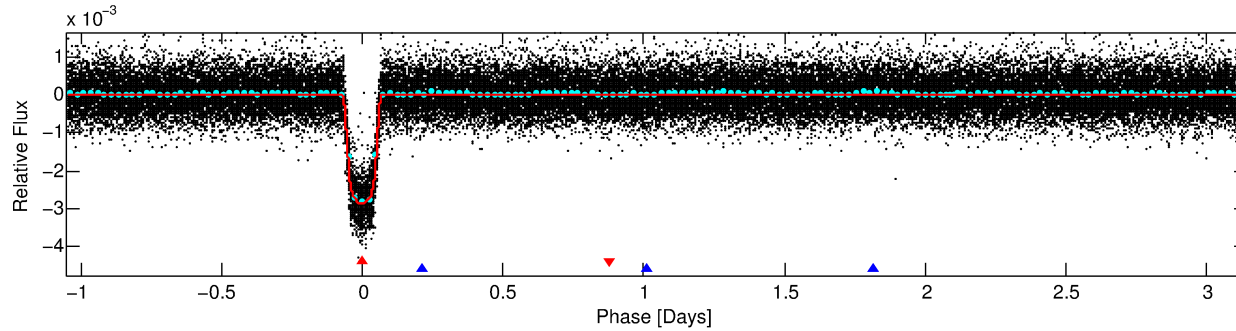
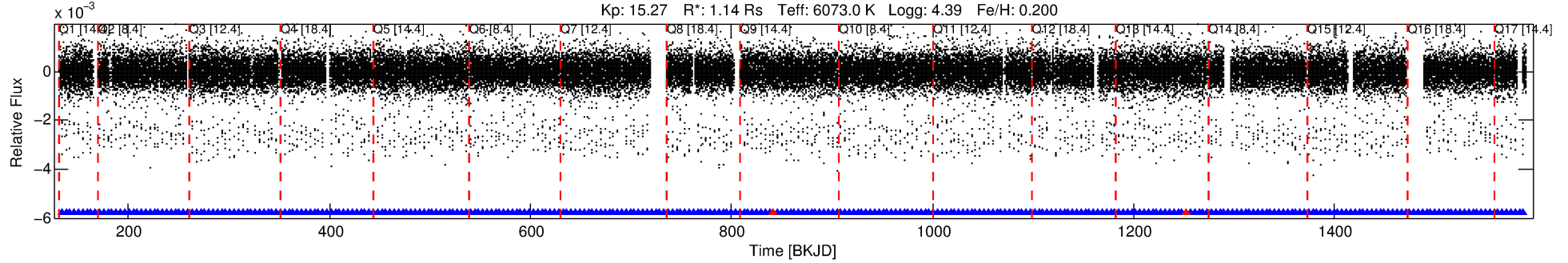
Ephemeris Match Information For 005881688-01

No Significant Match Found

DV One-Page Summary

KIC: 5881688 Candidate: 1 of 2 Period: 4.190 d
KOI: K00843.01 Corr: 0.978

Kp: 15.27 R*: 1.14 Rs Teff: 6073.0 K Logg: 4.39 Fe/H: 0.200



DV Fit Results:

Period = 4.19042 [0.00000] d
Epoch = 133.7279 [0.0002] BKJD
Rp/R* = 0.0531 [0.0010]
a/R* = 8.19 [0.68]
b = 0.73 [0.05]
Seff = 549.74 [235.06]
Teff = 1235 [132] K
Rp = 6.58 [2.18] Re
a = 0.0534 [0.0148] AU
Ag = 0.98 [0.57] [-0.03σ]
Teffp = 1901 [212] K [2.67σ]

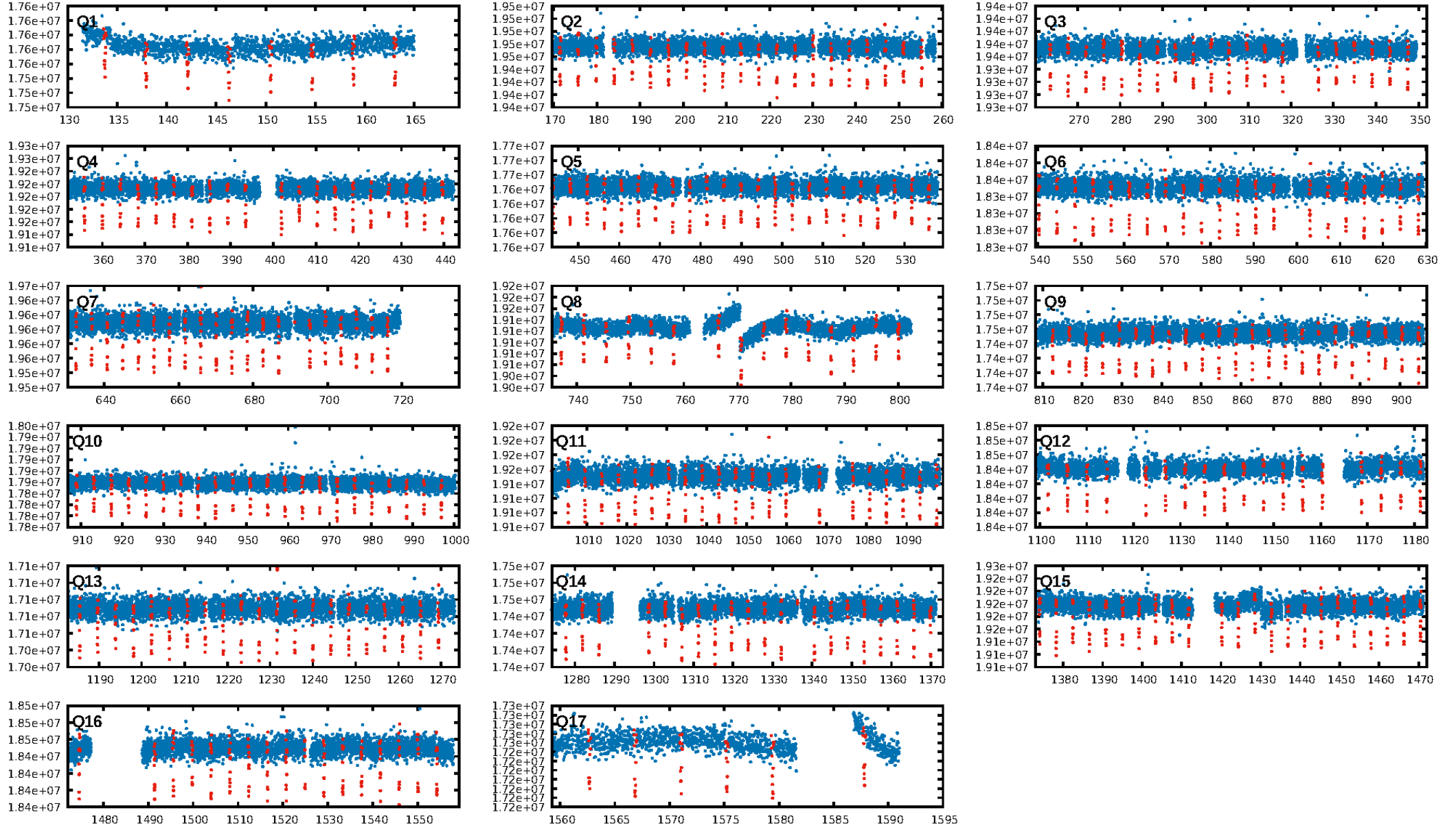
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1356.73σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [302/304]
GhostDiagnostic-chr: 4.774
Centroid-sig: 0.0%
Centroid-so: 0.212 arcsec [3.54σ]
OotOffset-rm: 0.050 arcsec [0.70σ]
KicOffset-rm: 0.186 arcsec [2.53σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

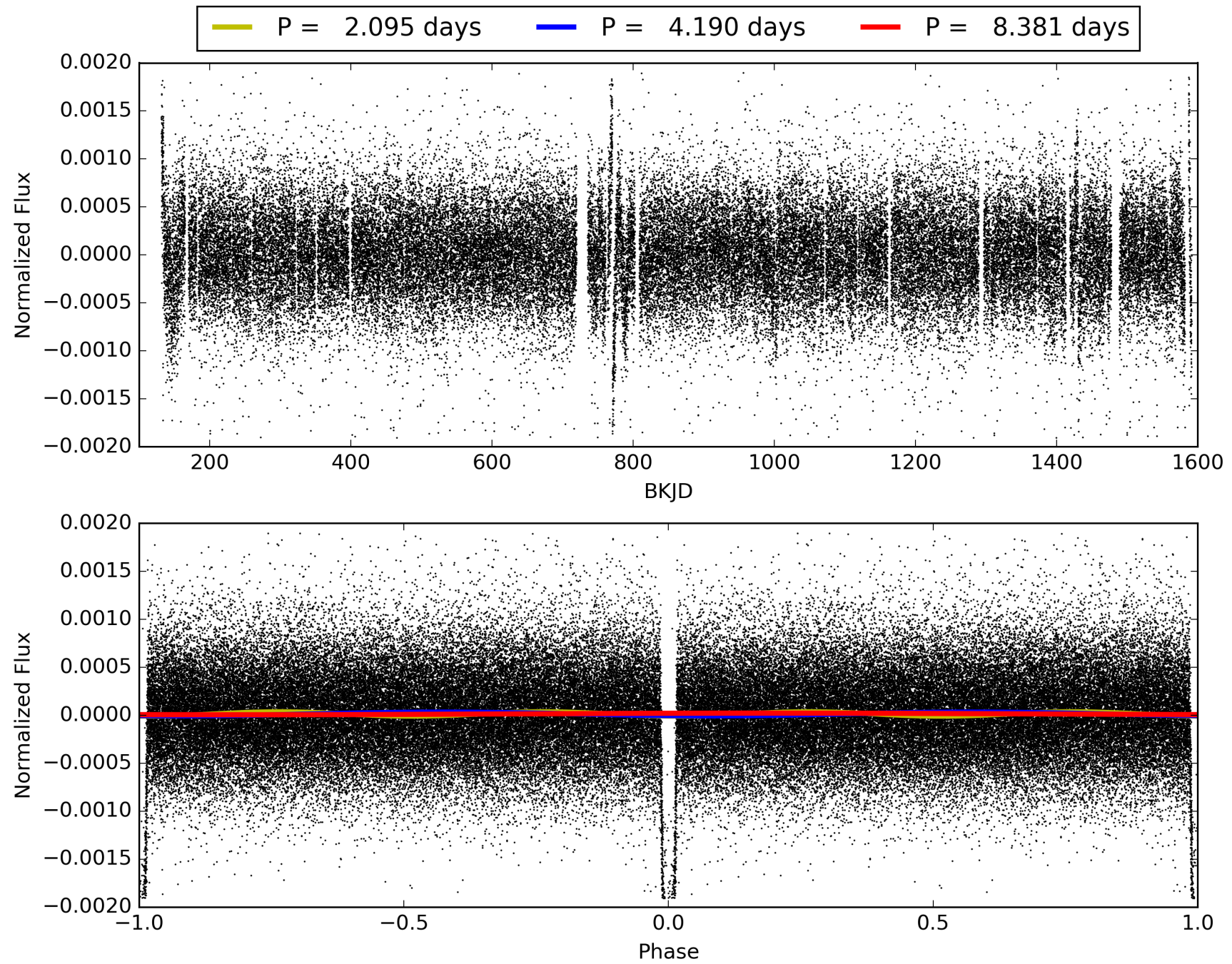
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:10:45 Z

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

TCE 005881688-01, PDC Light Curves

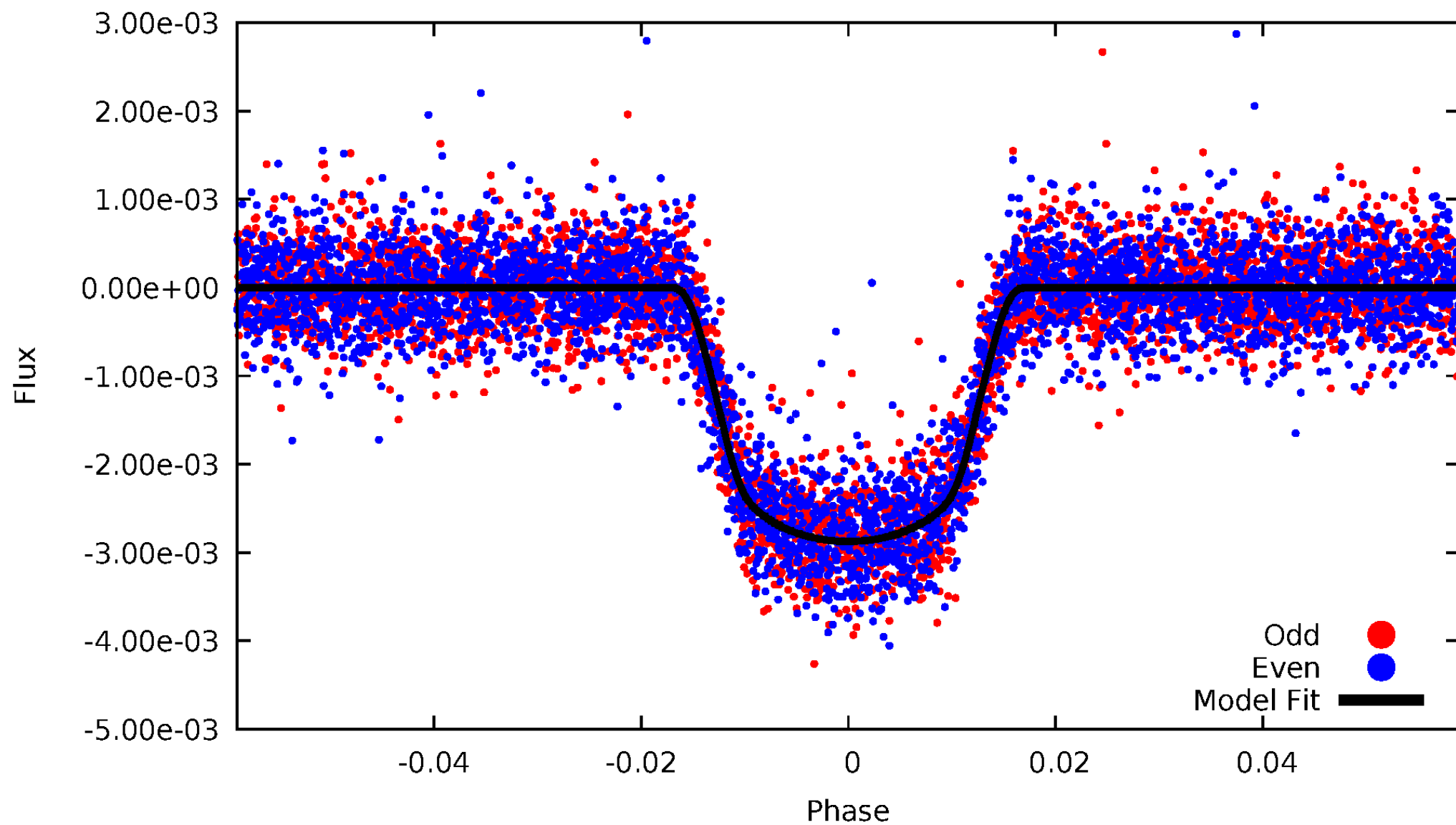


TCE 005881688-01



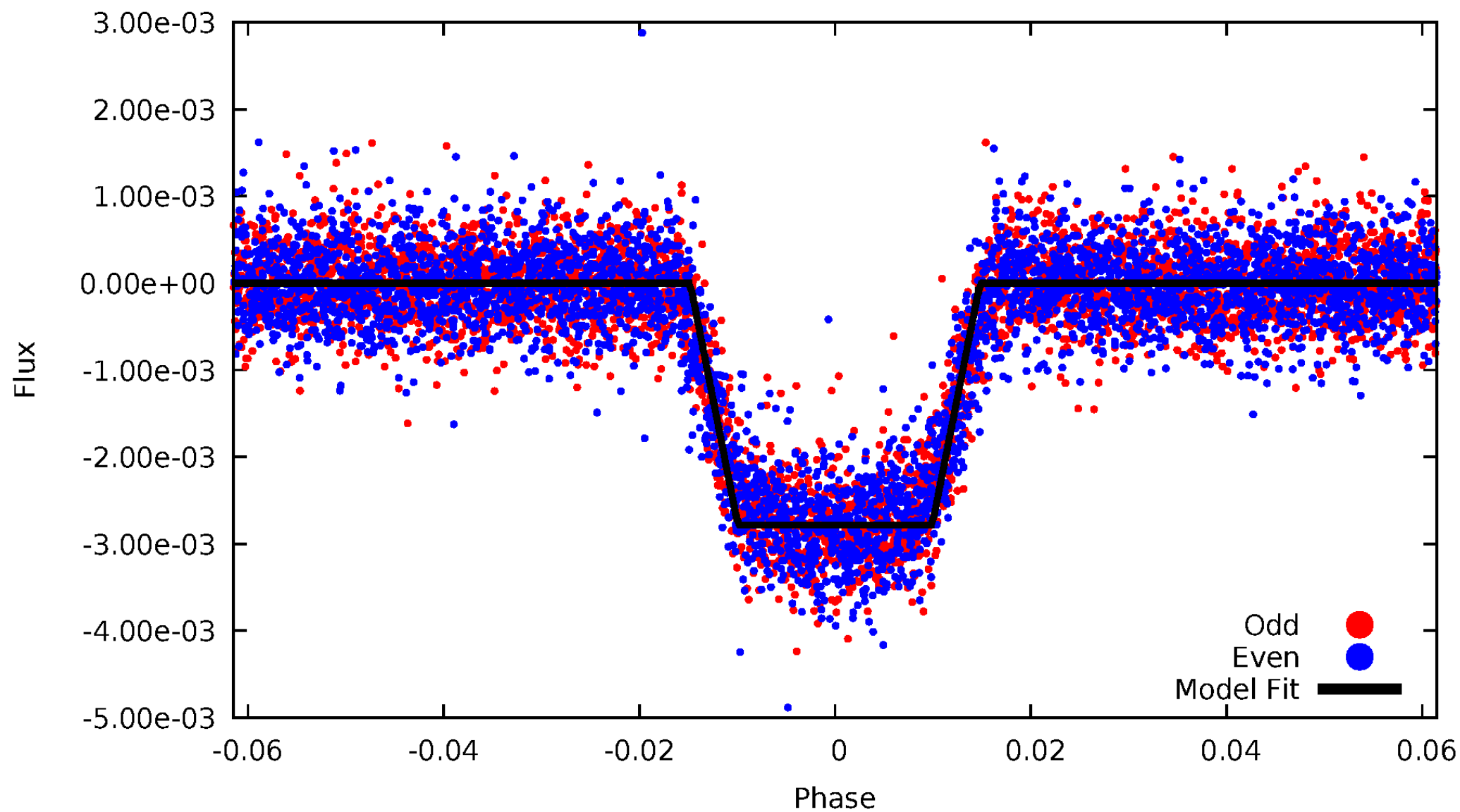
DV Odd/Even

TCE 005881688-01



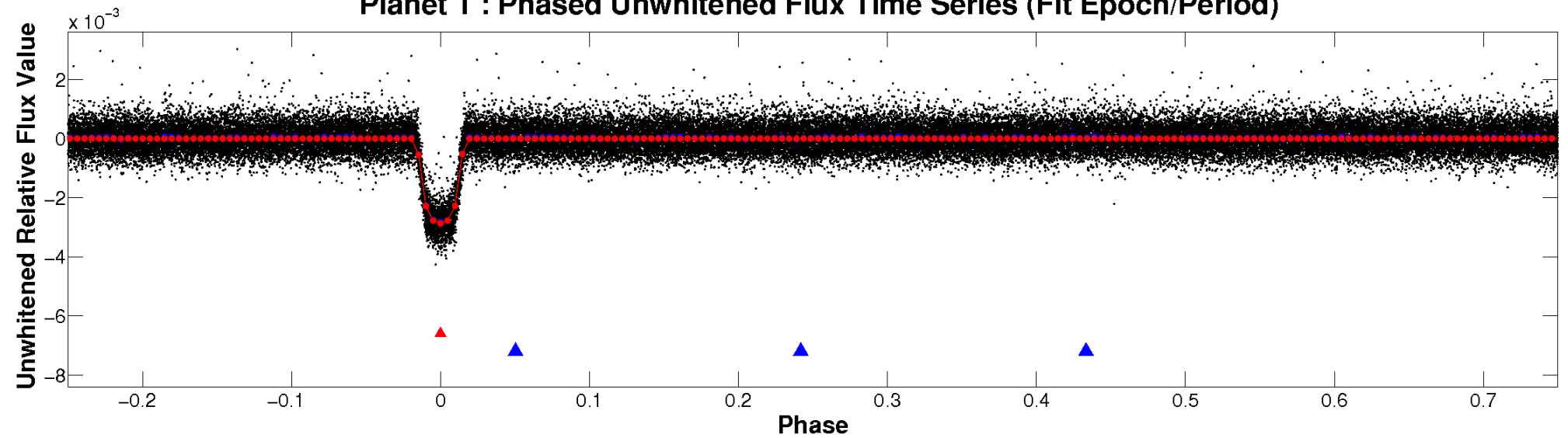
ALT Odd/Even

TCE 005881688-01

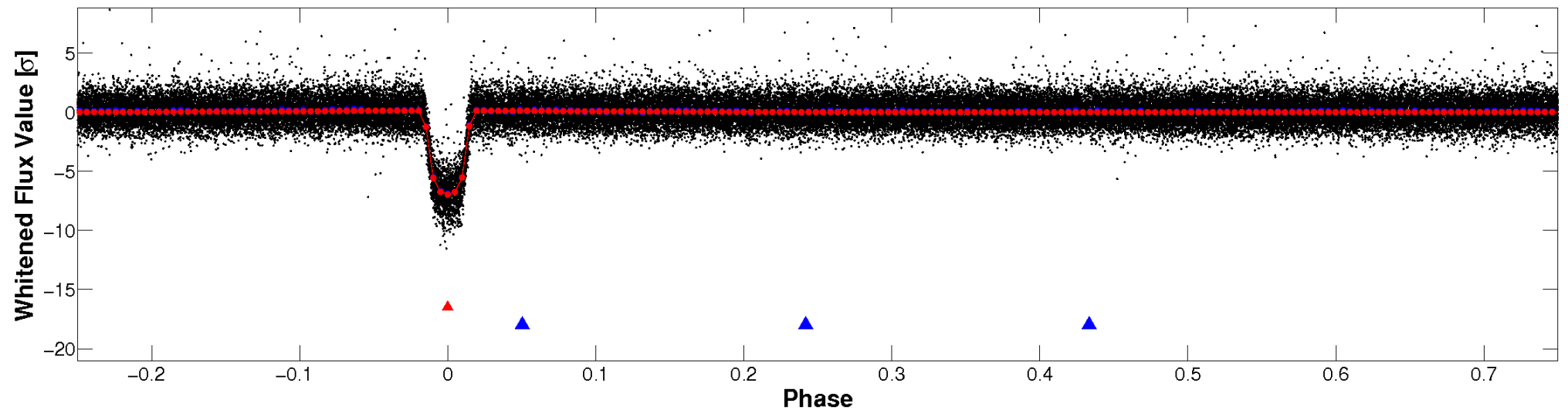


Non-Whitened Vs. Whitened Light Curve

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

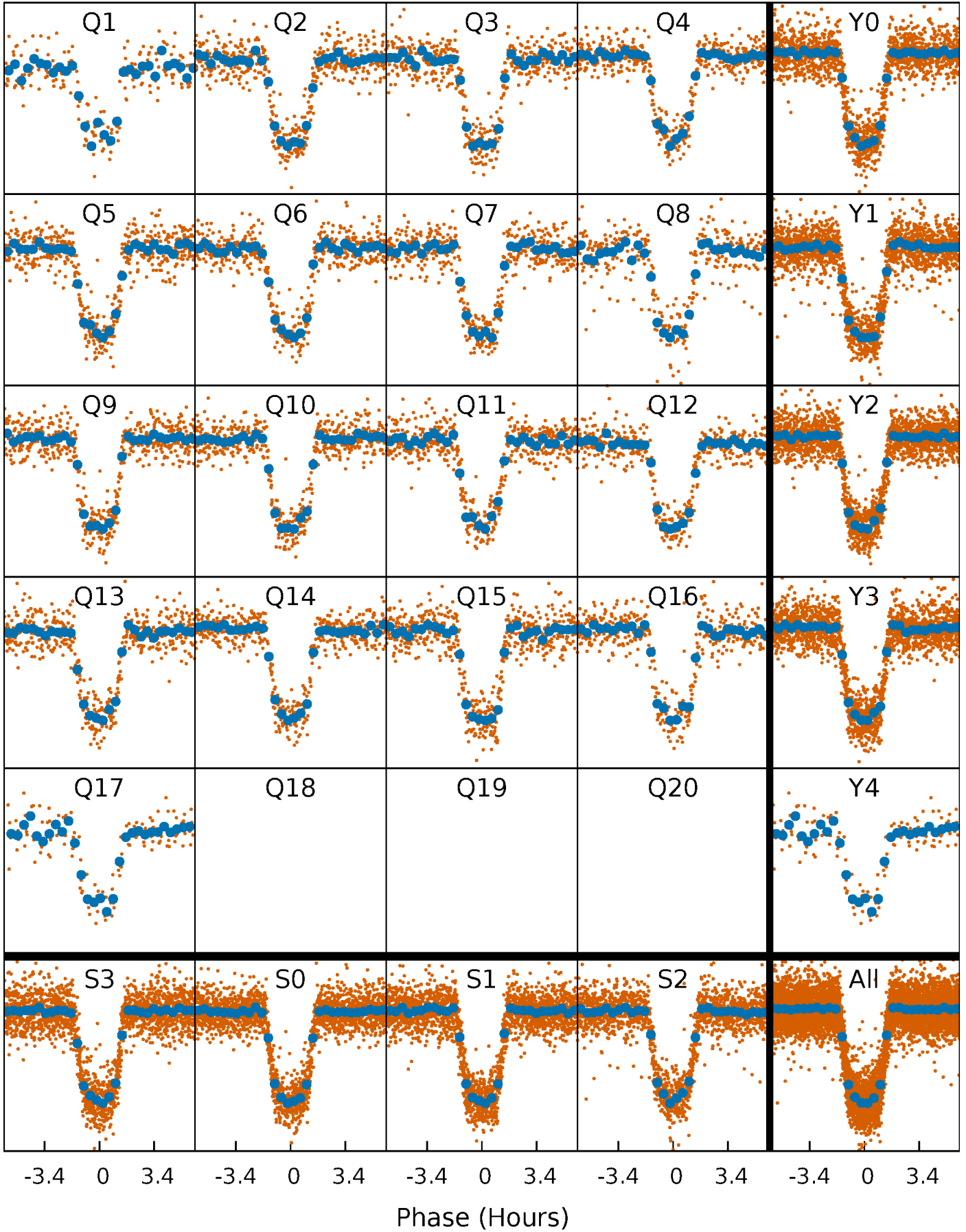


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



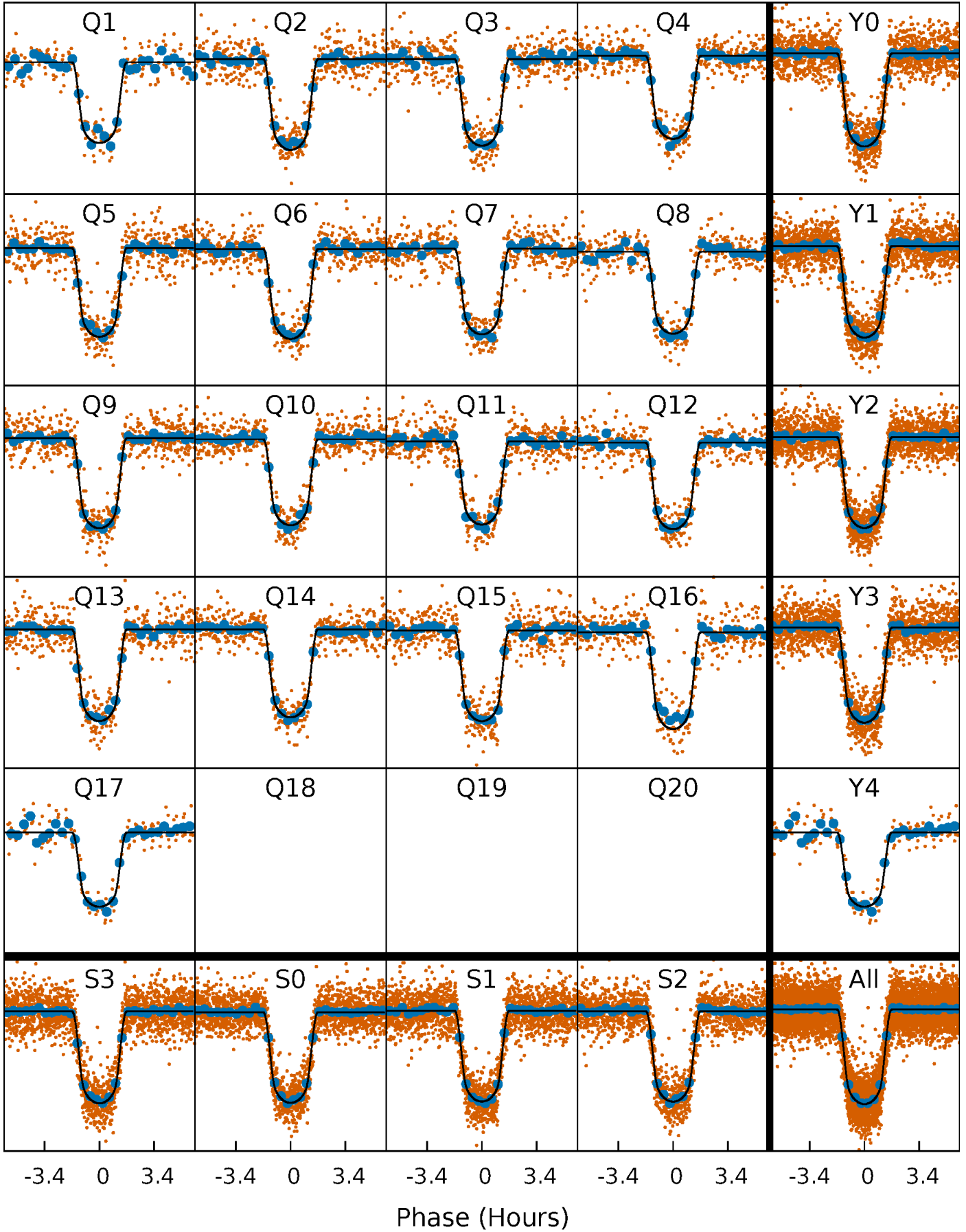
PDC Quarter-Phased Transit Curves

TCE 005881688-01 P= 4.190423 Days $T_0=133.727941$ (BKJD)



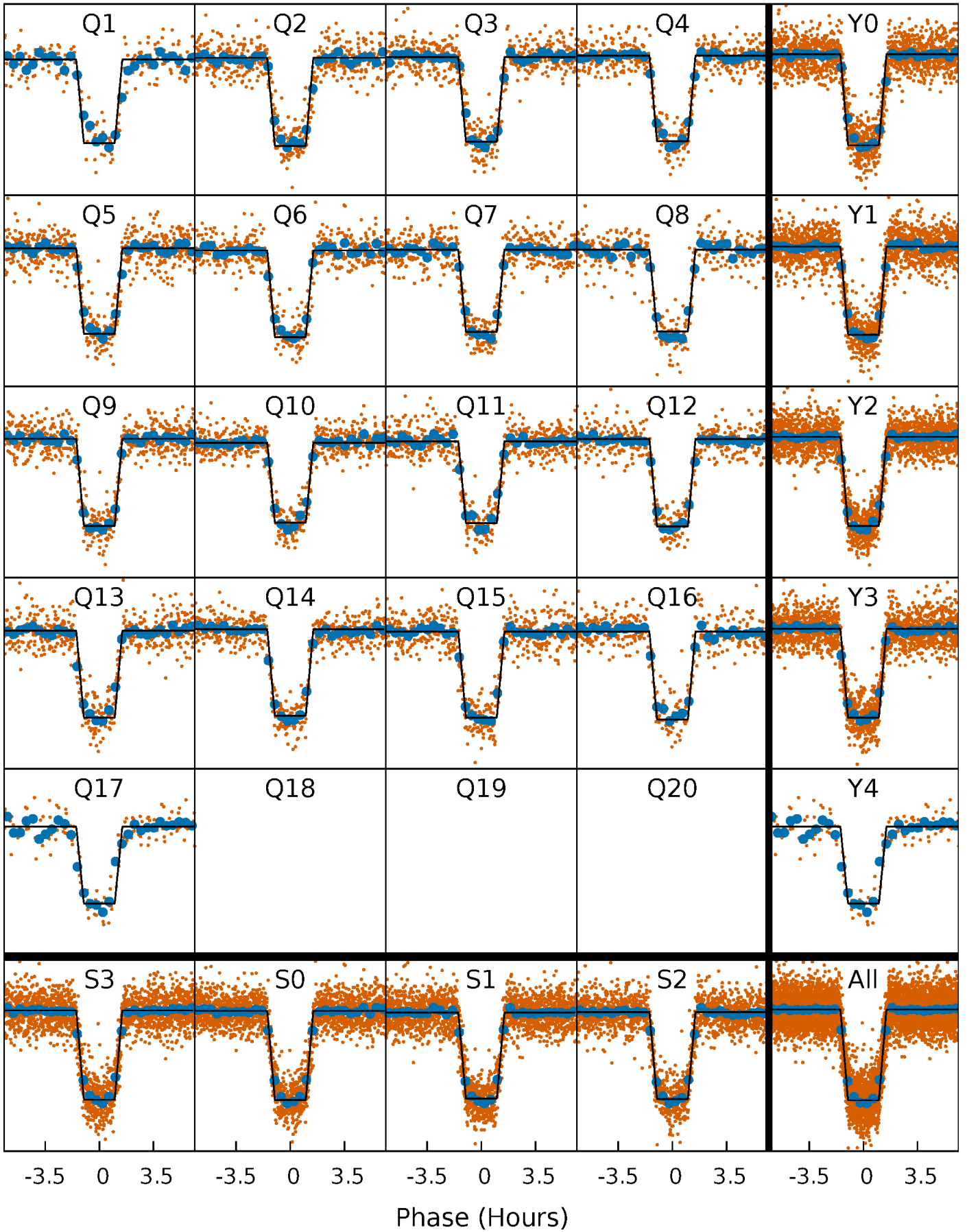
DV Quarter-Phased Transit Curves

TCE 005881688-01 P= 4.190423 Days $T_0=133.727941$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

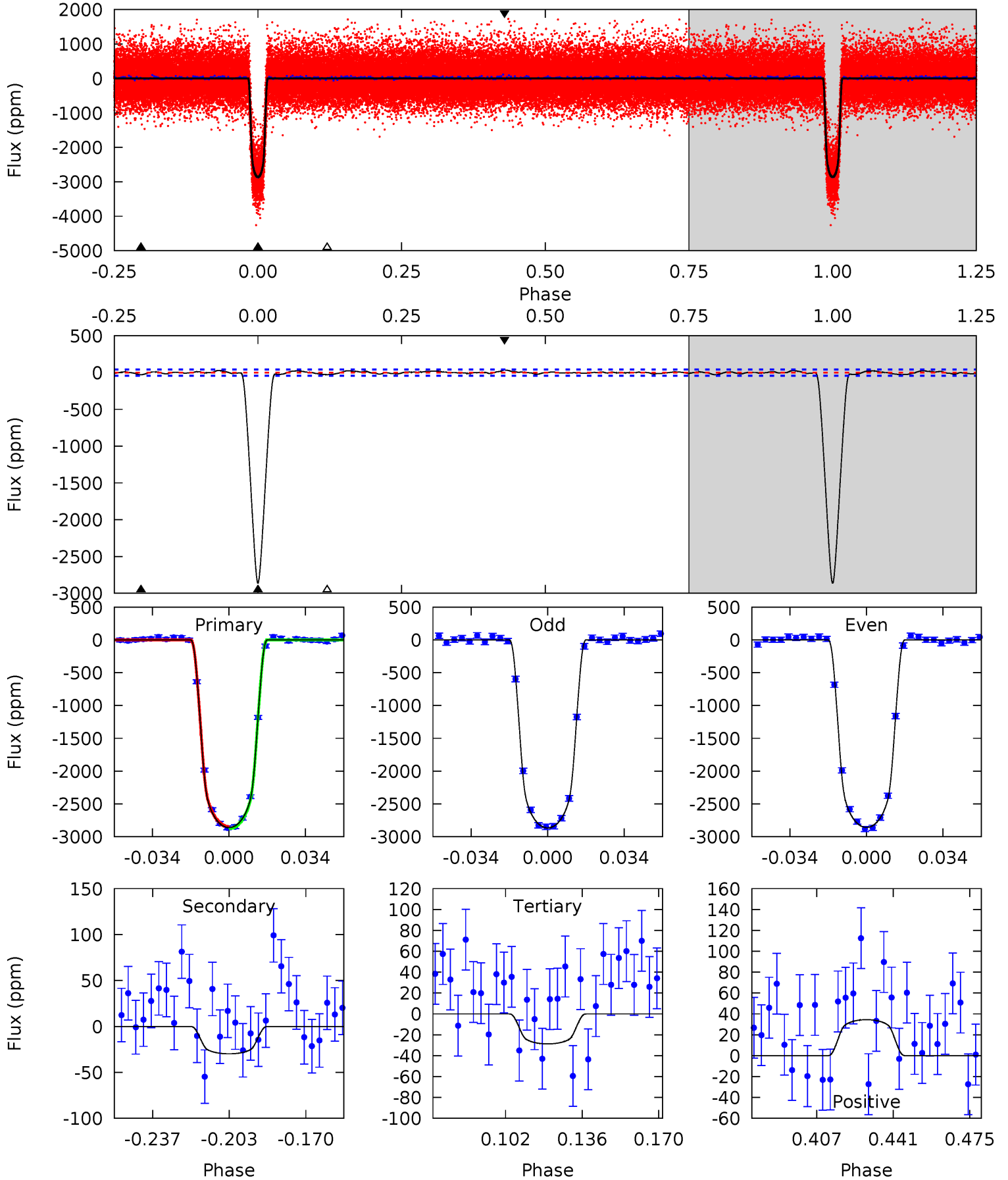
TCE 005881688-01 P= 4.190445 Days $T_0=133.724089$ (BKJD)



DV Model-Shift Uniqueness Test

005881688-01, P = 4.190423 Days, E = 129.537518 Days

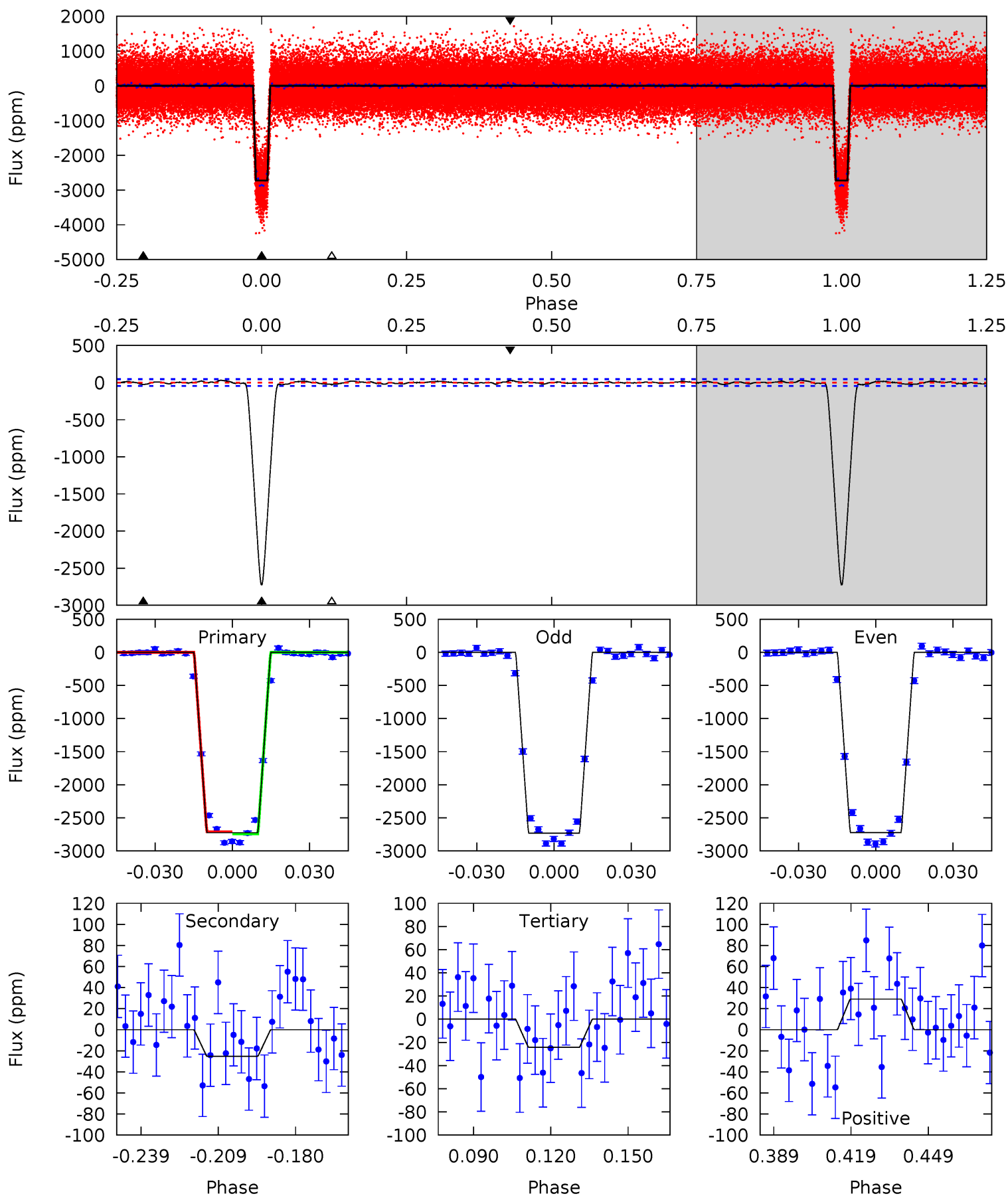
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
322.0	3.36	3.23	3.88	4.79	2.12	1.35	318.7	318.1	0.13	-0.52	0.48	0.99	0.01	1.60



Alt Model-Shift Uniqueness Test

005881688-01, P = 4.190445 Days, E = 129.533644 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
288.4	2.67	2.58	3.08	4.81	2.17	1.17	285.8	285.3	0.09	-0.41	0.42	1.00	0.01	1.66



Stellar Parameters For KIC 005881688

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6073^{+190}_{-232}	$4.392^{+0.072}_{-0.217}$	$0.200^{+0.200}_{-0.300}$	$1.135^{+0.375}_{-0.150}$	$1.163^{+0.151}_{-0.151}$	$1.121^{+0.420}_{-0.616}$
	+3%/-4%	+2%/-5%	+100%/-150%	+33%/-13%	+13%/-13%	+37%/-55%
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 005881688-01 / KOI 0843.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-30 ± 9	$6.78^{+1.20}_{-0.63}$	1758^{+143}_{-101}	2589^{+139}_{-184}	$0.986^{+0.400}_{-0.360}$
Alt.	-25 ± 9	$6.69^{+1.23}_{-0.61}$	1751^{+142}_{-95}	2513^{+170}_{-264}	$0.844^{+0.416}_{-0.369}$

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

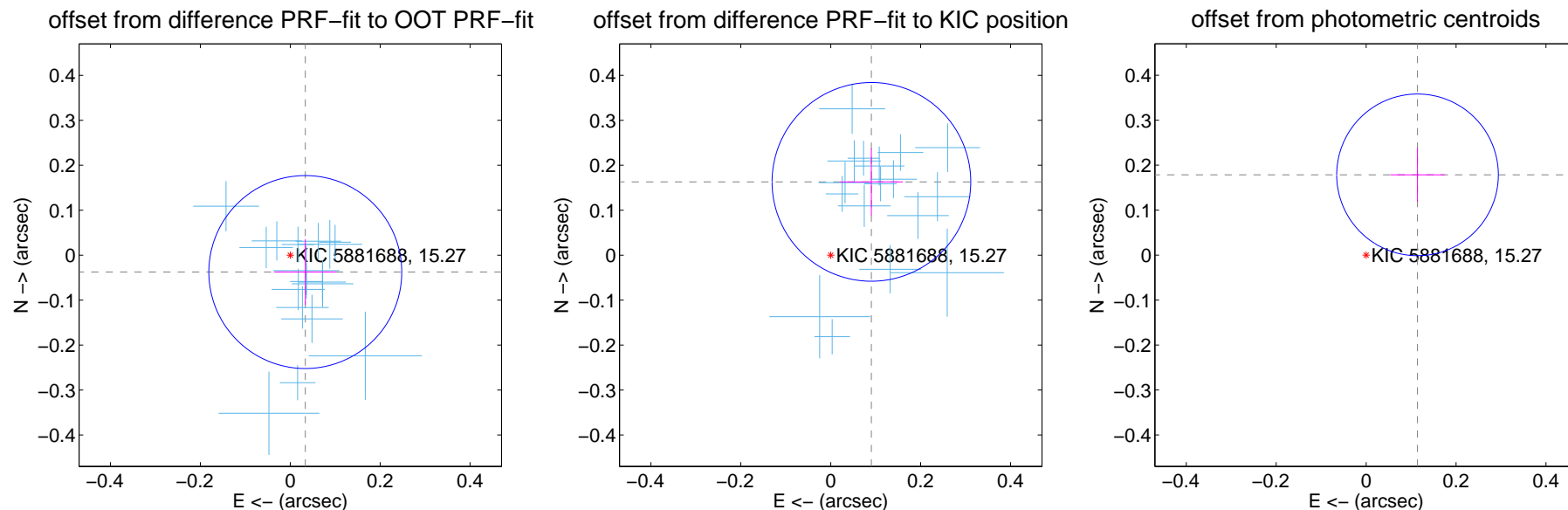
DV Centroid Data

Supplemental centroid analysis for 005881688-01. Kepler magnitude: 15.27. Transit SNR 244.92

There are 17 quarters with good PRF difference image offsets

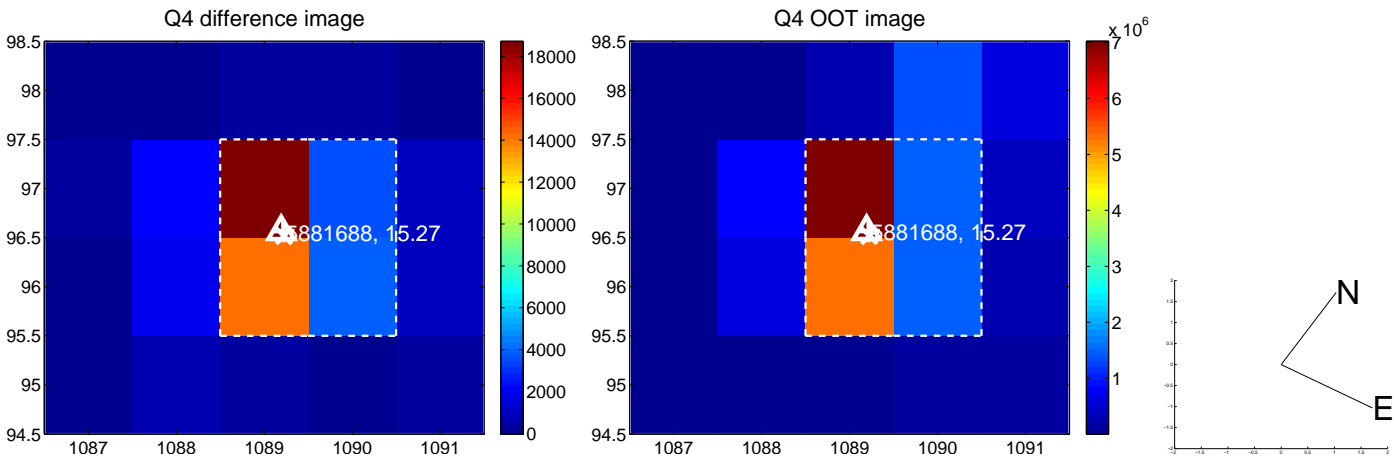
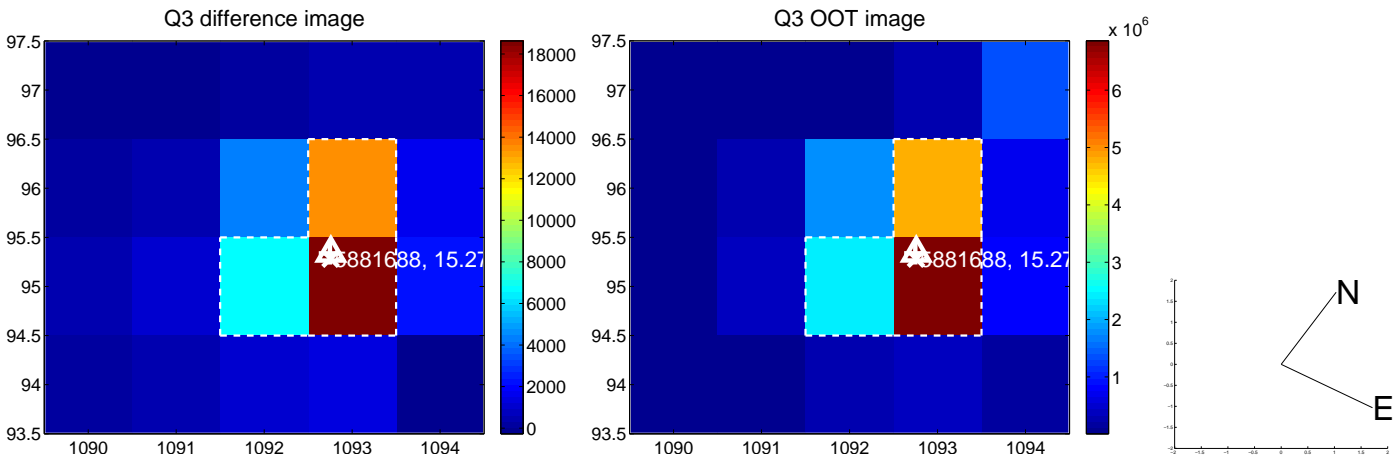
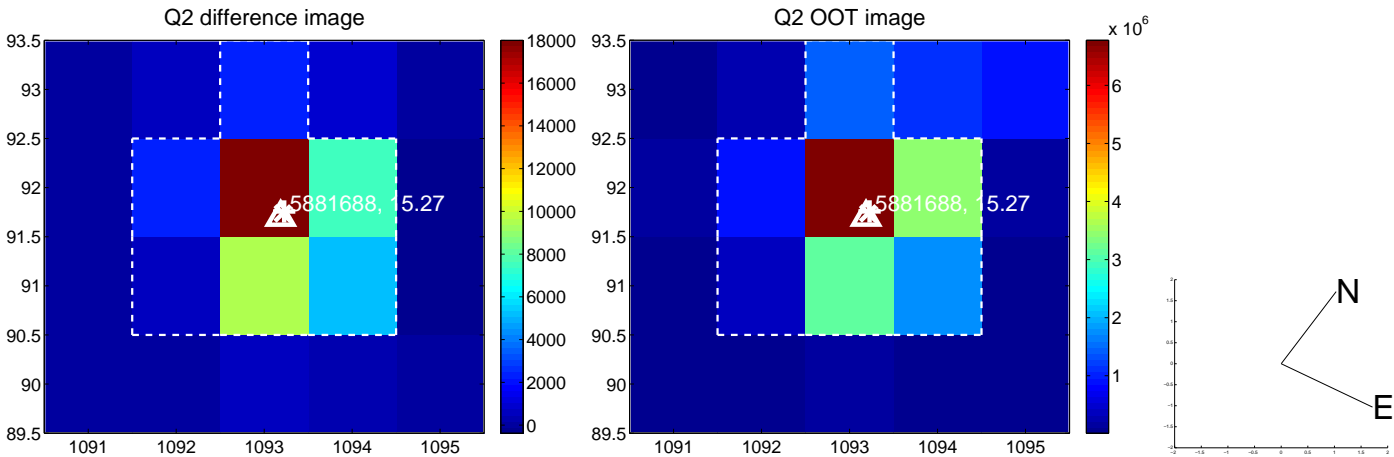
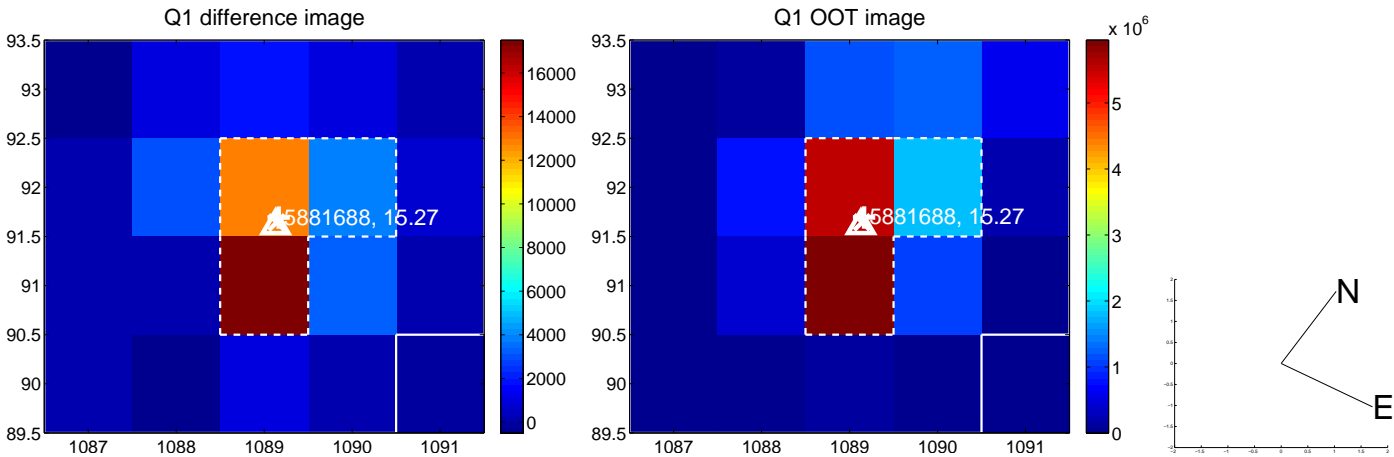
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.072	0.70	-0.033 ± 0.069	-0.038 ± 0.073
PRF-fit source offset from KIC position	0.186 ± 0.074	2.53	-0.091 ± 0.070	0.163 ± 0.074
photometric centroid source offset	0.21 ± 0.06	3.54	-0.11 ± 0.06	0.18 ± 0.06

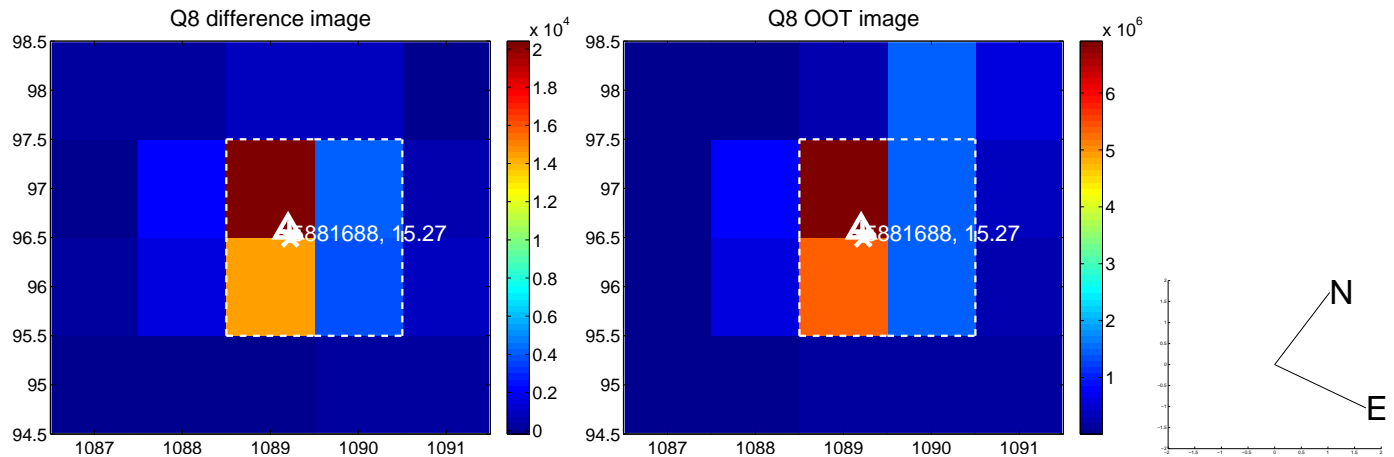
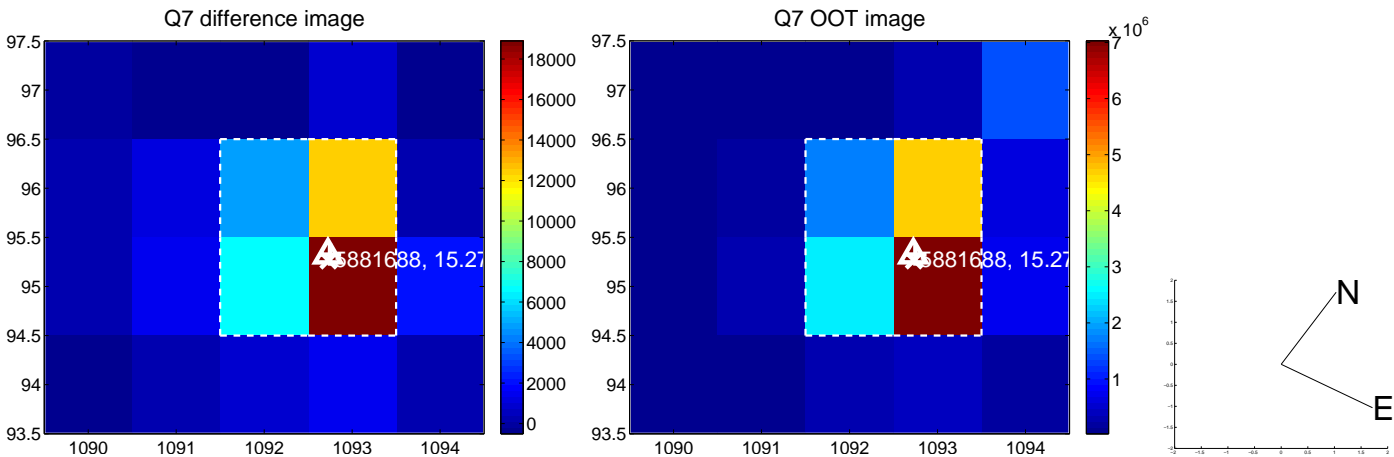
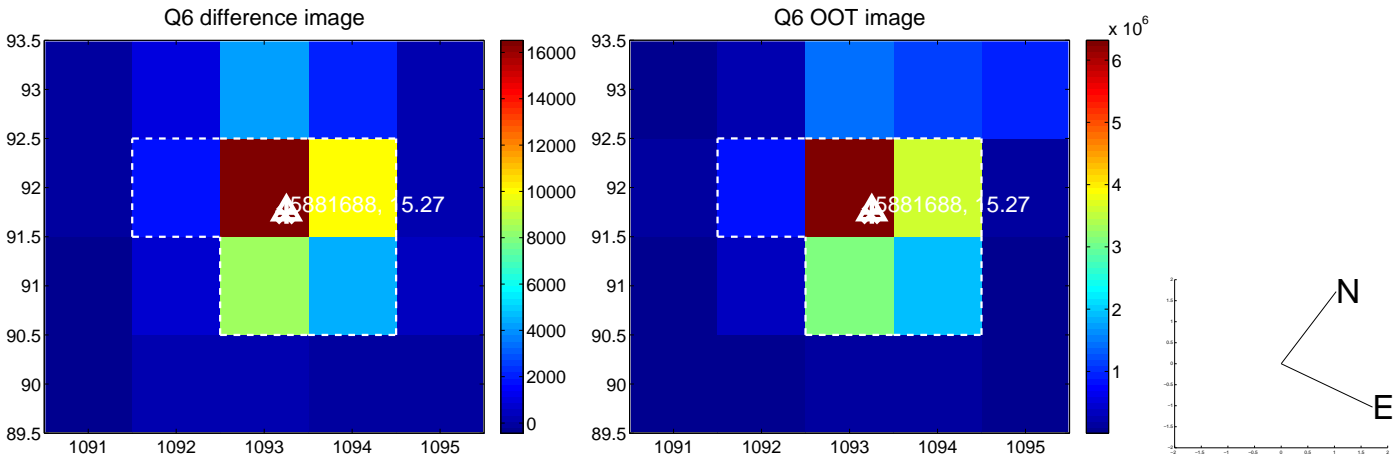
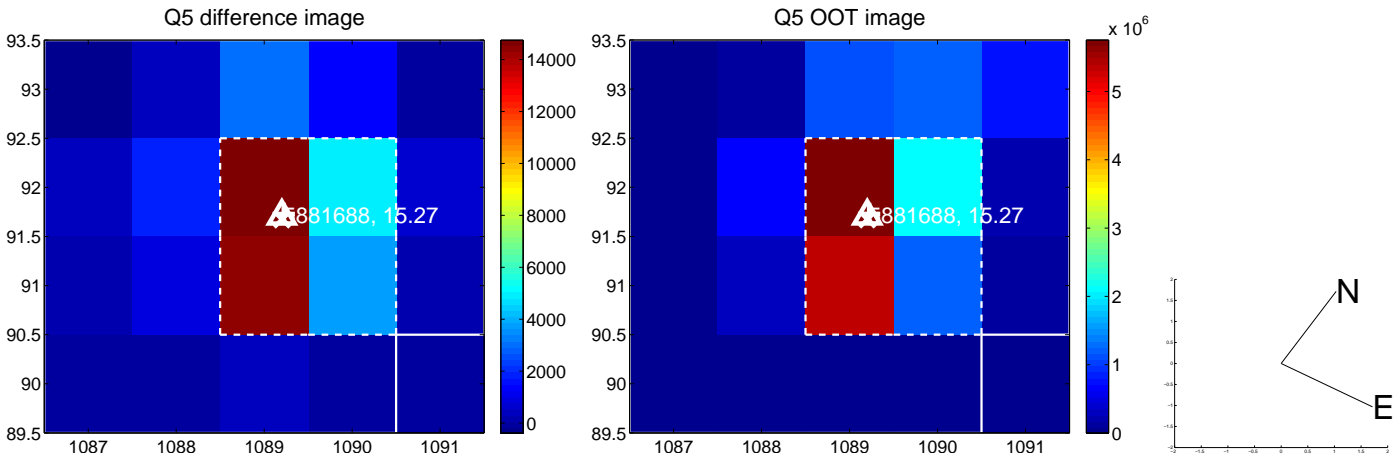


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

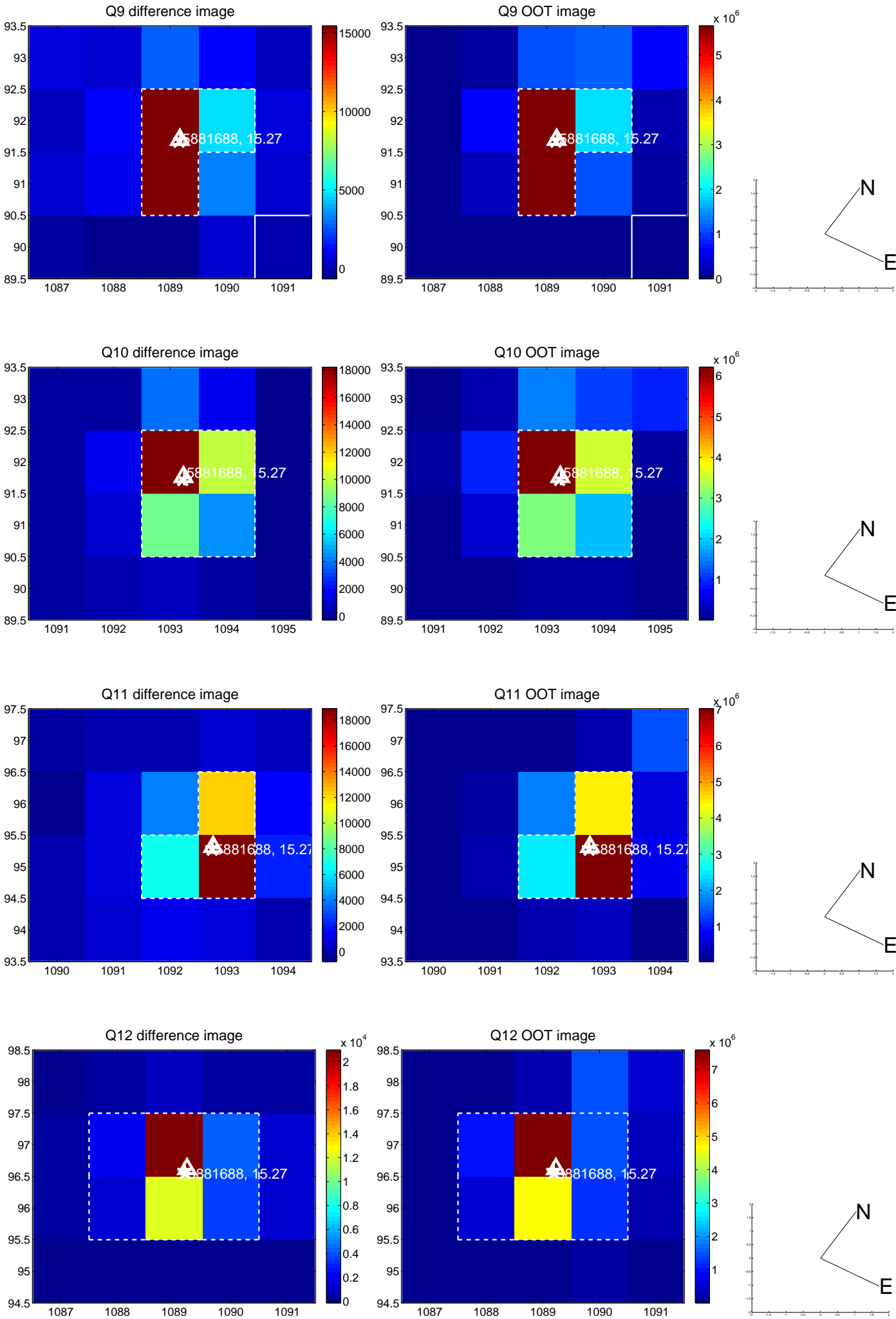
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



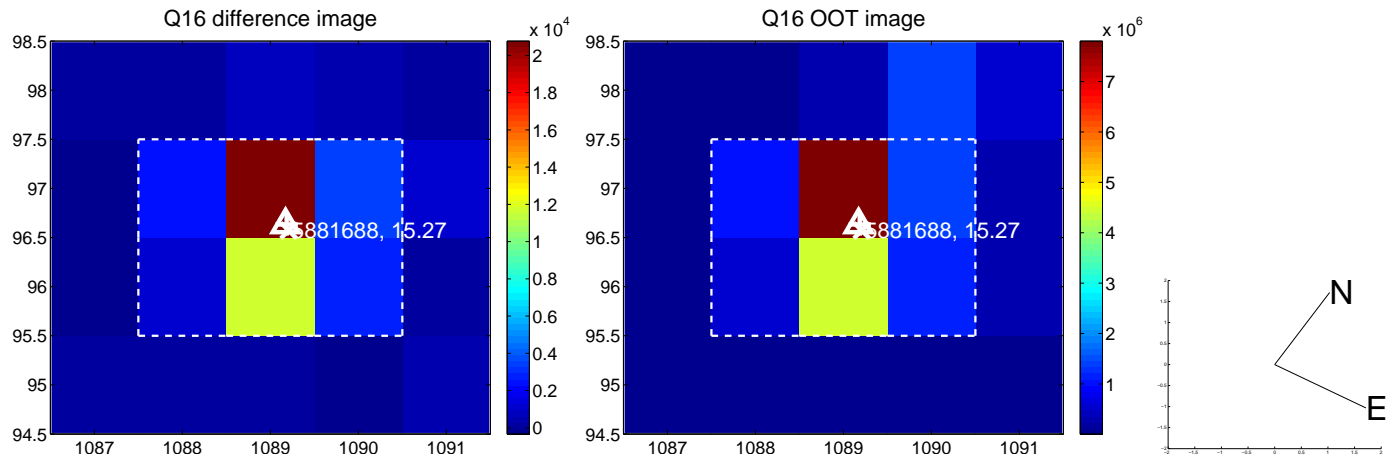
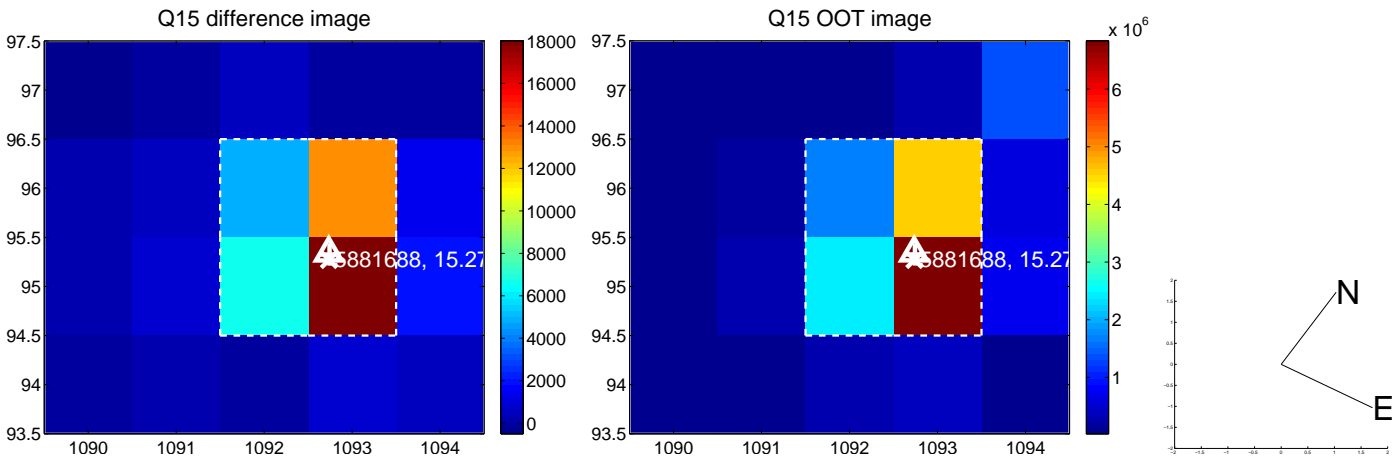
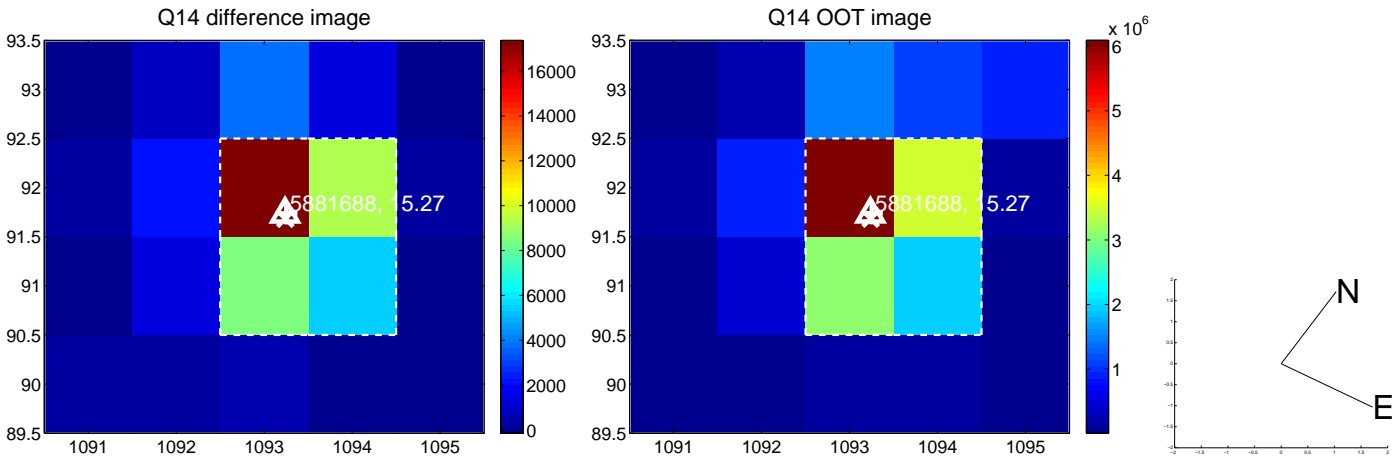
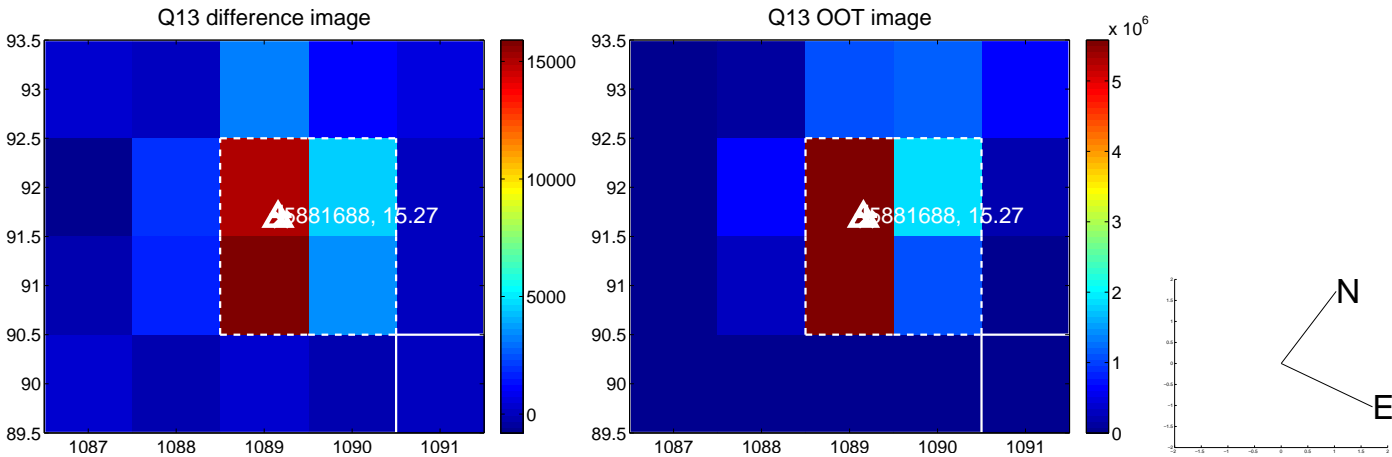
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



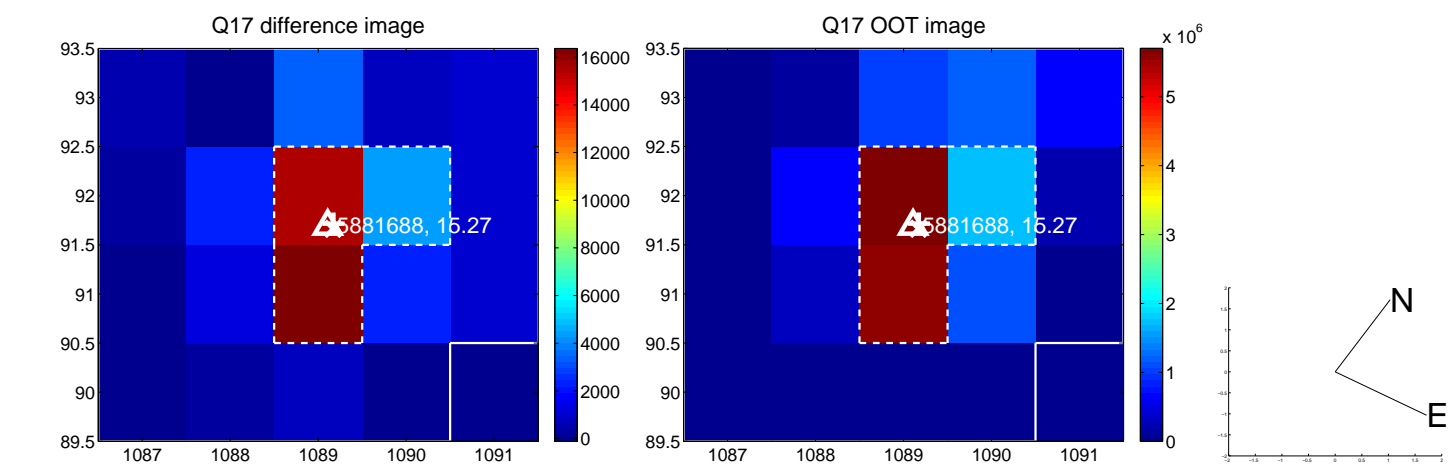
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



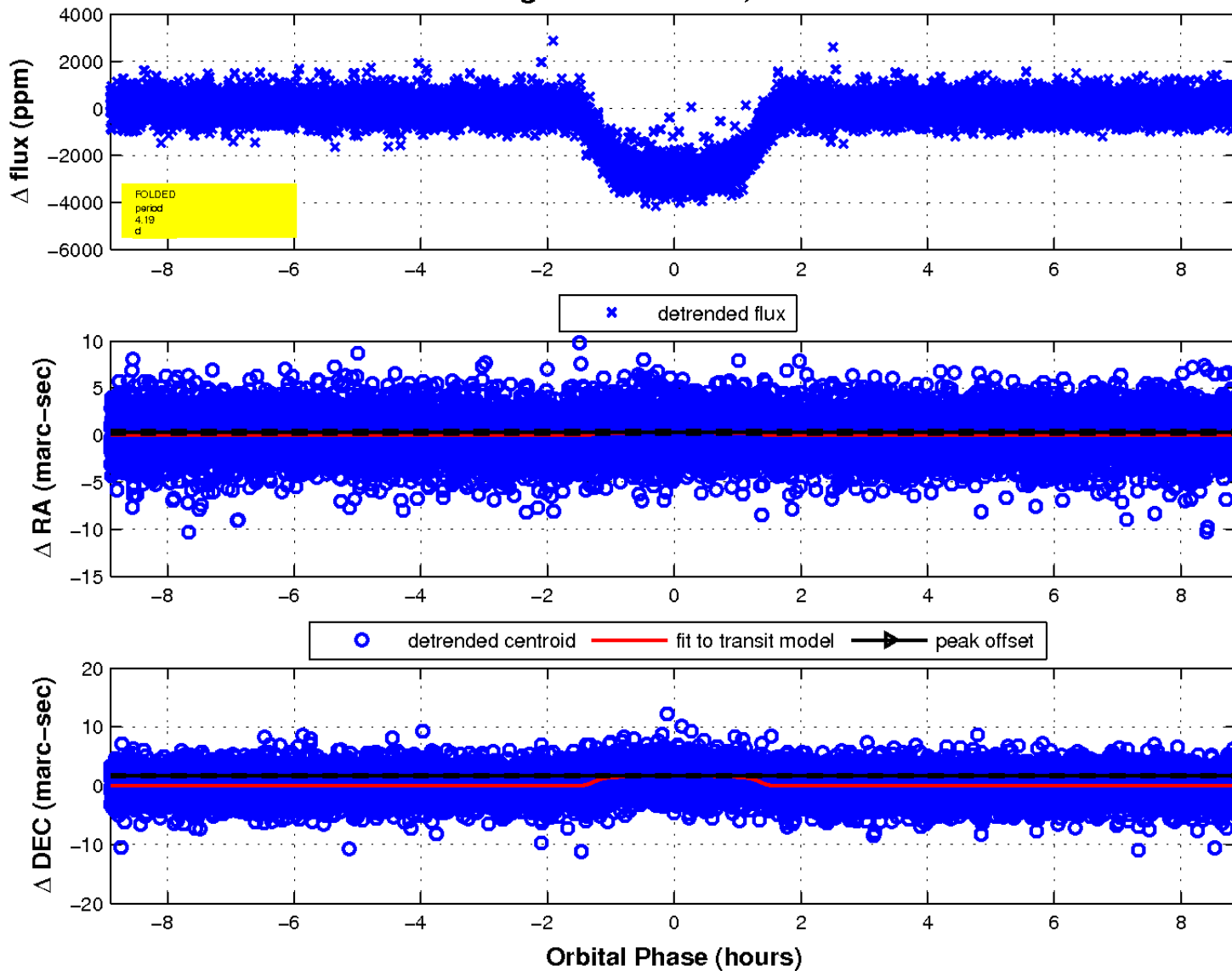
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

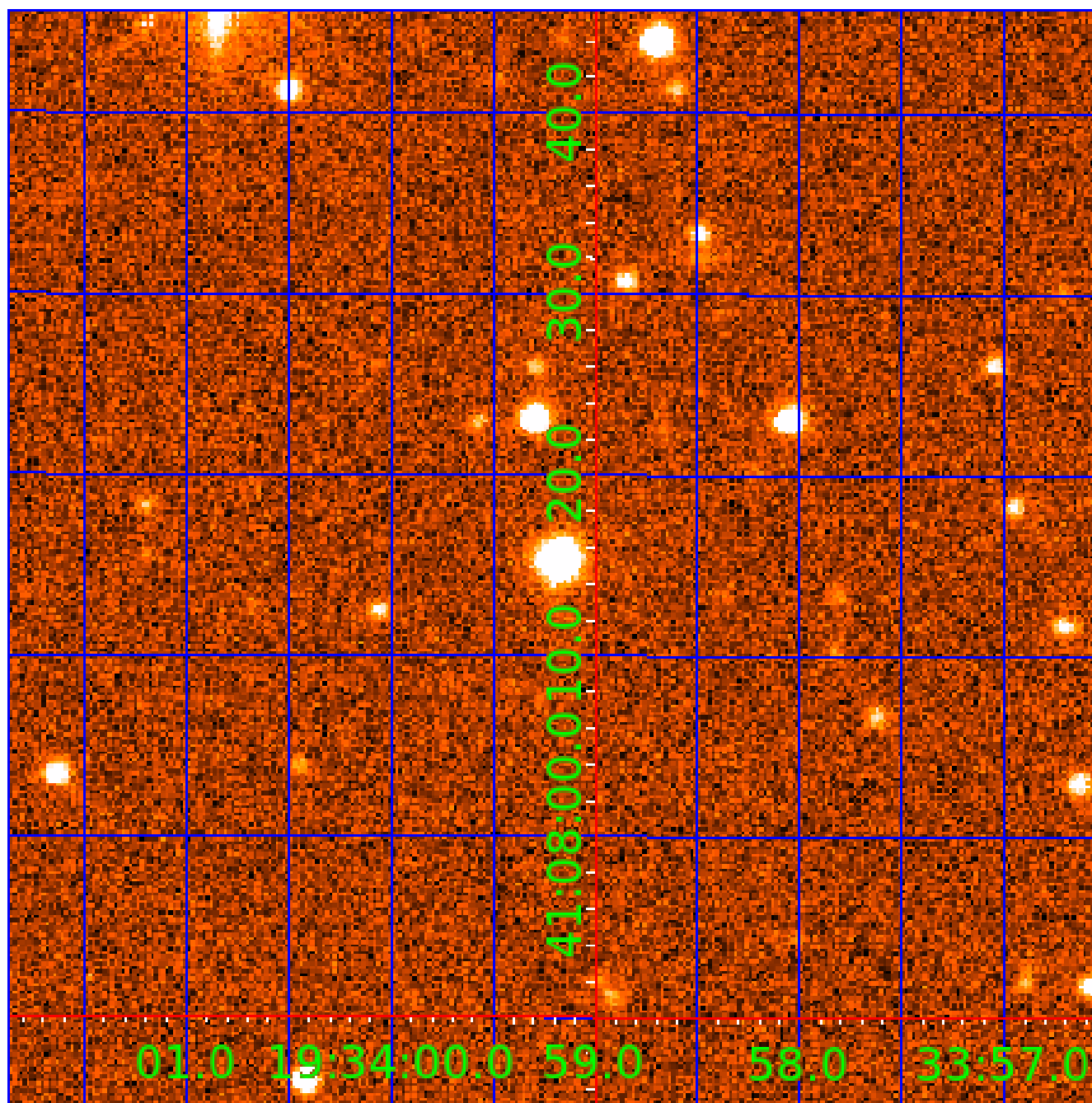


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005881688

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})
005881688-01	OBS	0843.01	4.190423	133.727941	2873.8	2.967	245.6	244.9	1.14	6073	6.58	549.75
005881688-02	OBS	No	641.937033	146.510420	584.8	10.884	8.0	7.5	1.14	6073	2.86	0.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005881688-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005881688-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

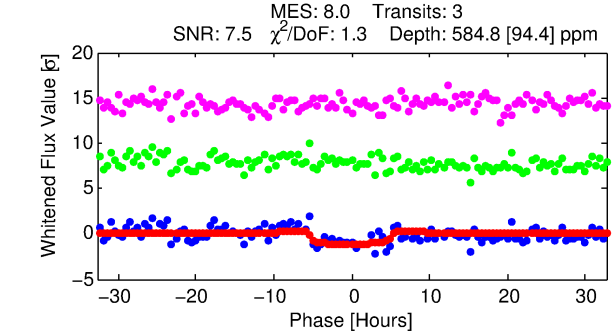
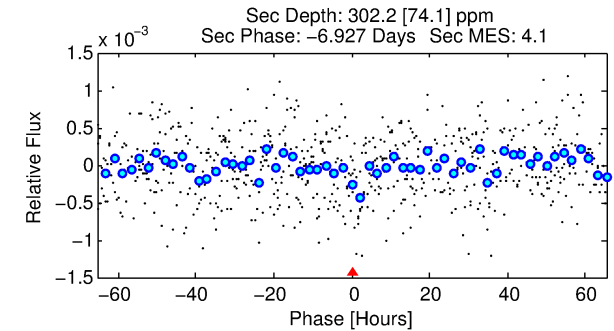
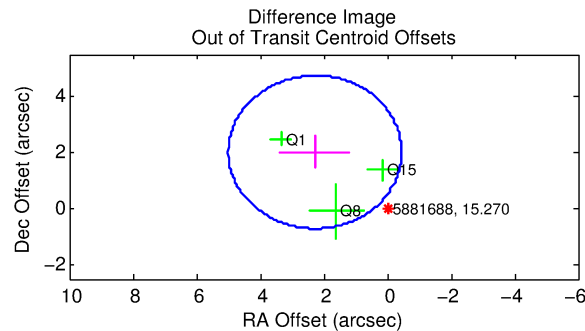
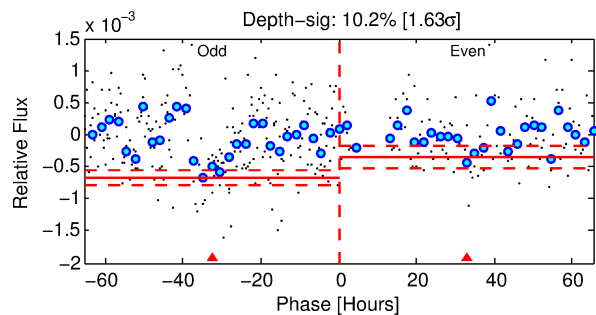
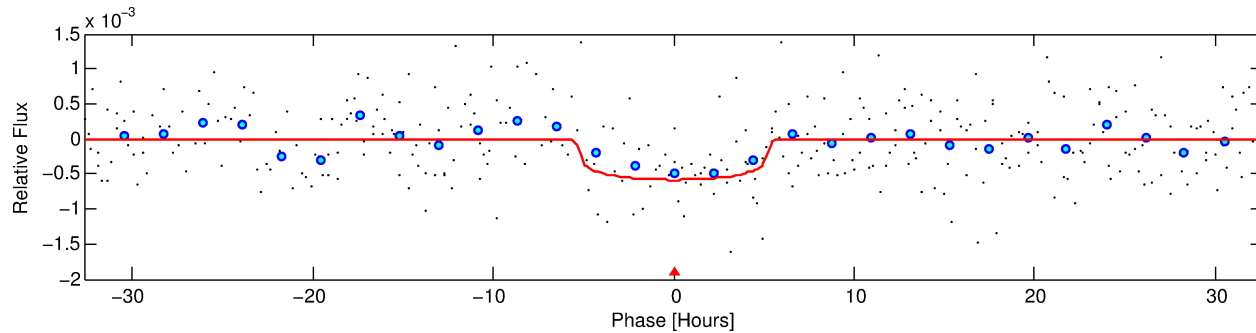
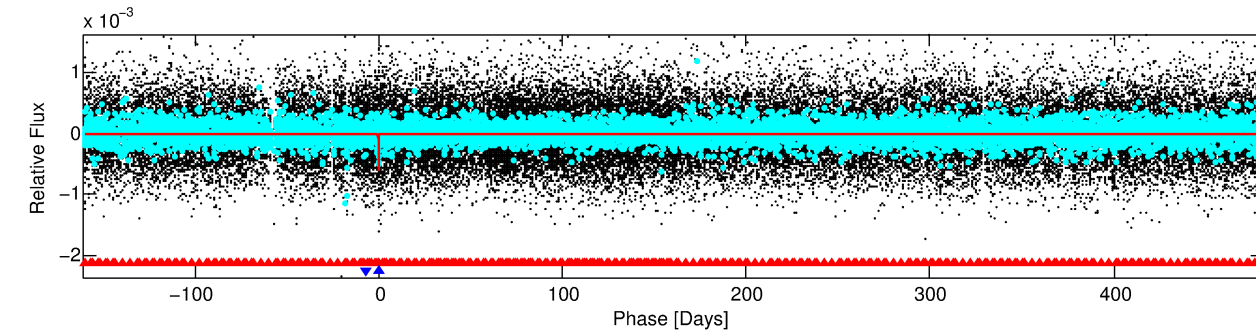
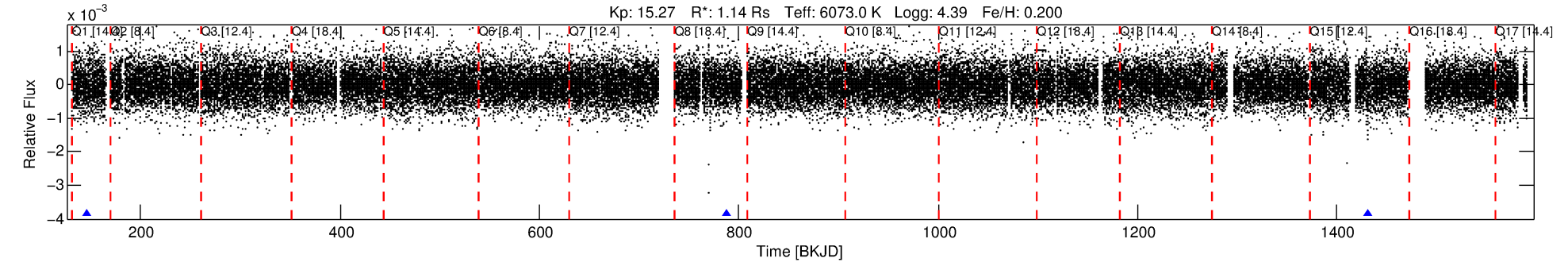
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005881688-02

No Significant Match Found

DV One-Page Summary

KIC: 5881688 Candidate: 2 of 2 Period: 641.937 d
KOI: K00843 Corr: No Ephemeris Match



DV Fit Results:

Period = 641.93703 [0.01954] d
Epoch = 146.5104 [0.0309] BKJD
Rp/R* = 0.0231 [0.0219]
a/R* = 372.39 [1625.33]
b = 0.60 [4.64]
Seff = 0.67 [0.29]
Teq = 231 [25] K
Rp = 2.86 [2.87] Re
a = 1.5300 [0.4225] AU
Ag = 47489.96 [92706.09] [0.51σ]
Teffp = 5267 [2524] K [2.00σ]

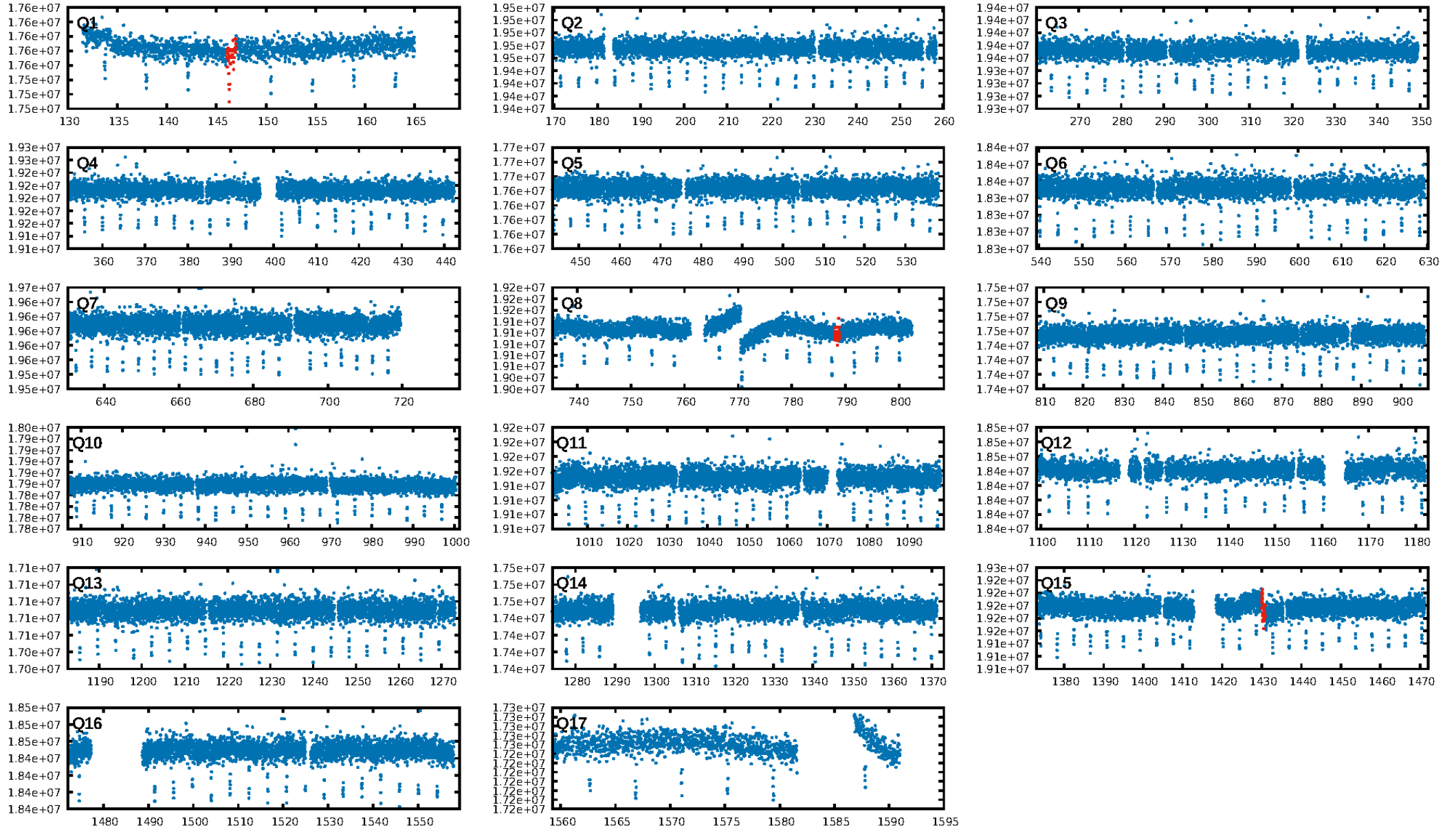
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1356.73σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.7%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 2.58e-13
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 3.913
Centroid-sig: 9.7%
Centroid-so: 2.721 arcsec [1.74σ]
OotOffset-rm: 3.042 arcsec [3.35σ]
KicOffset-rm: 3.135 arcsec [3.49σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

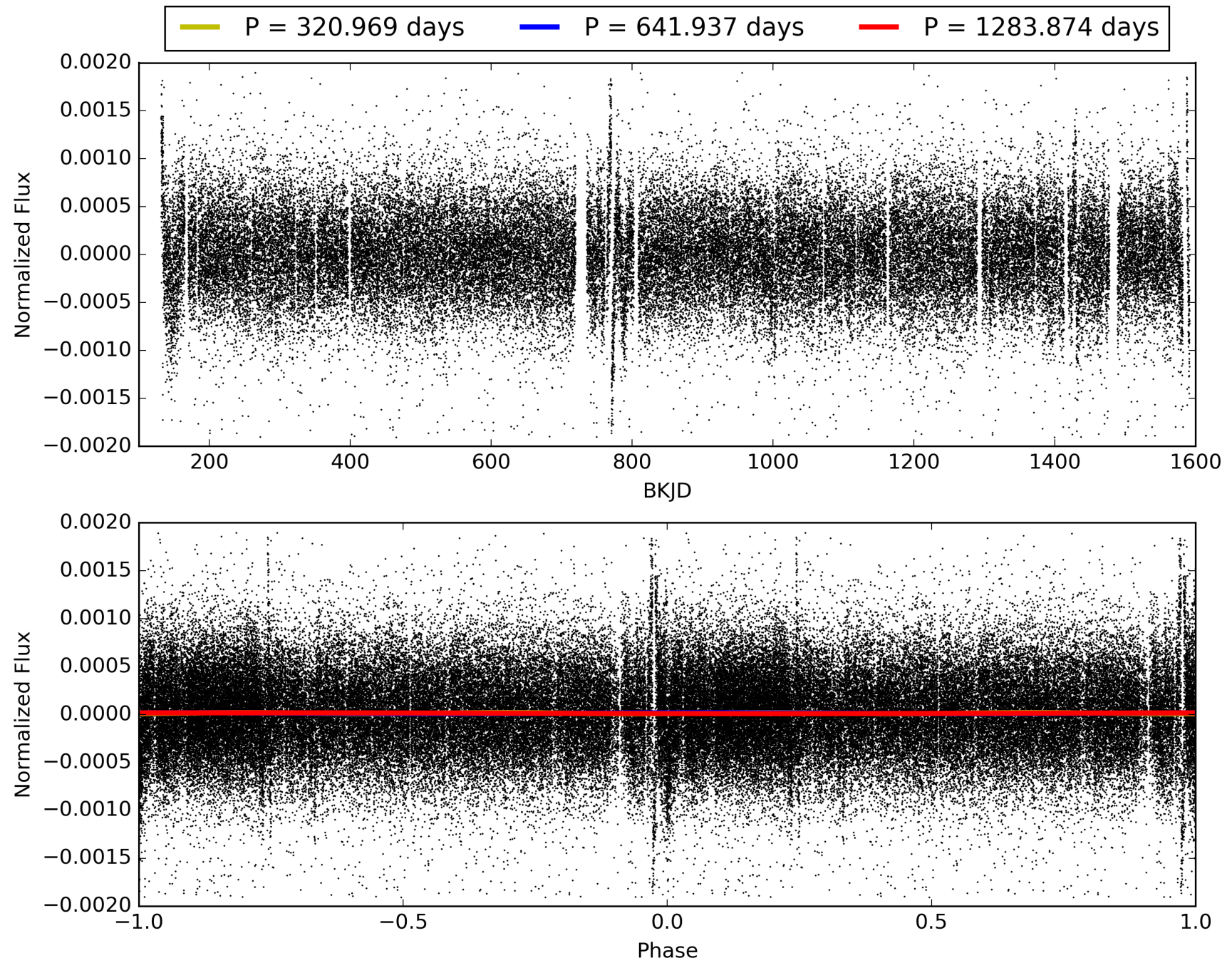
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:10:57 Z

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

TCE 005881688-02, PDC Light Curves

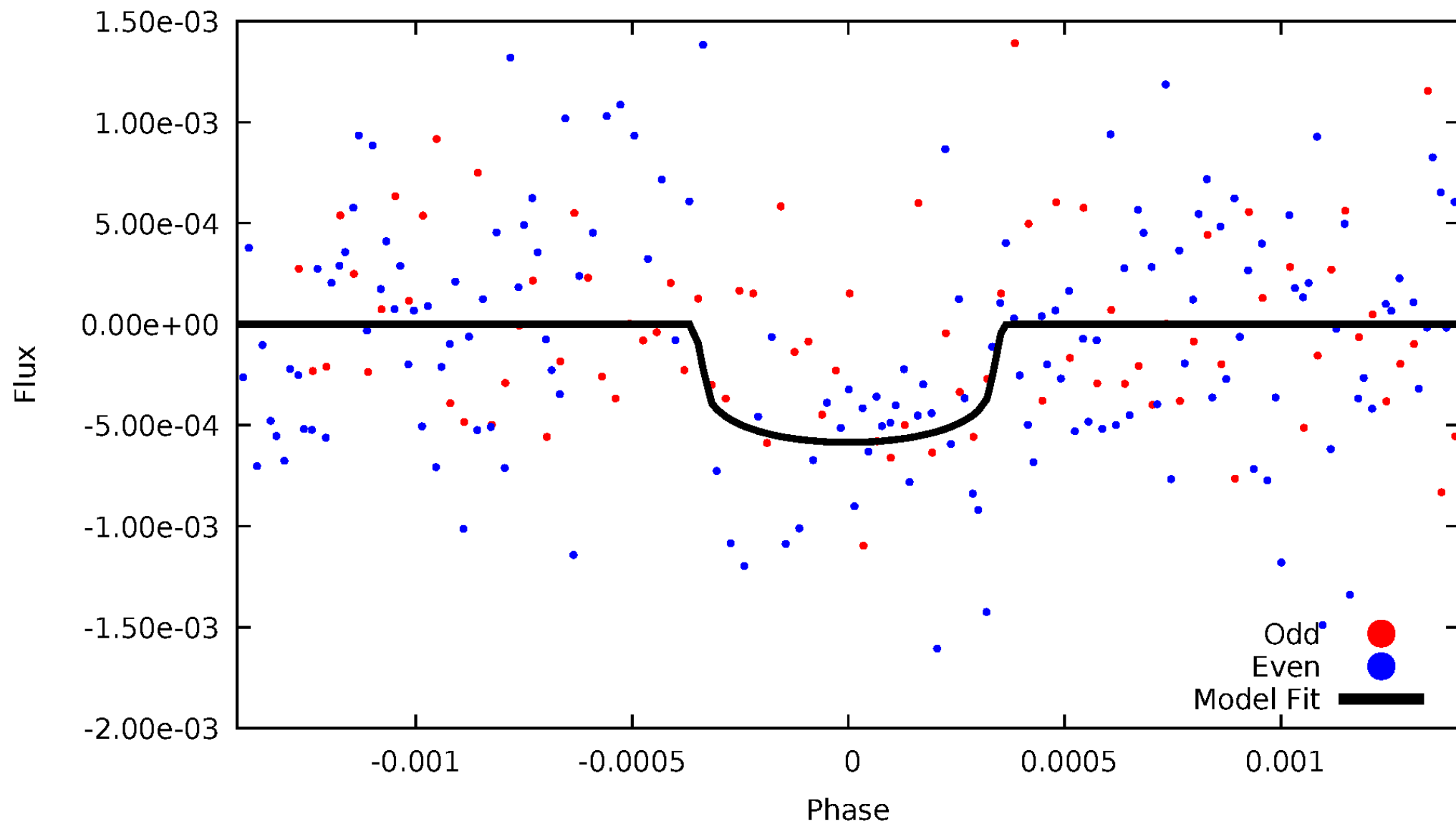


TCE 005881688-02



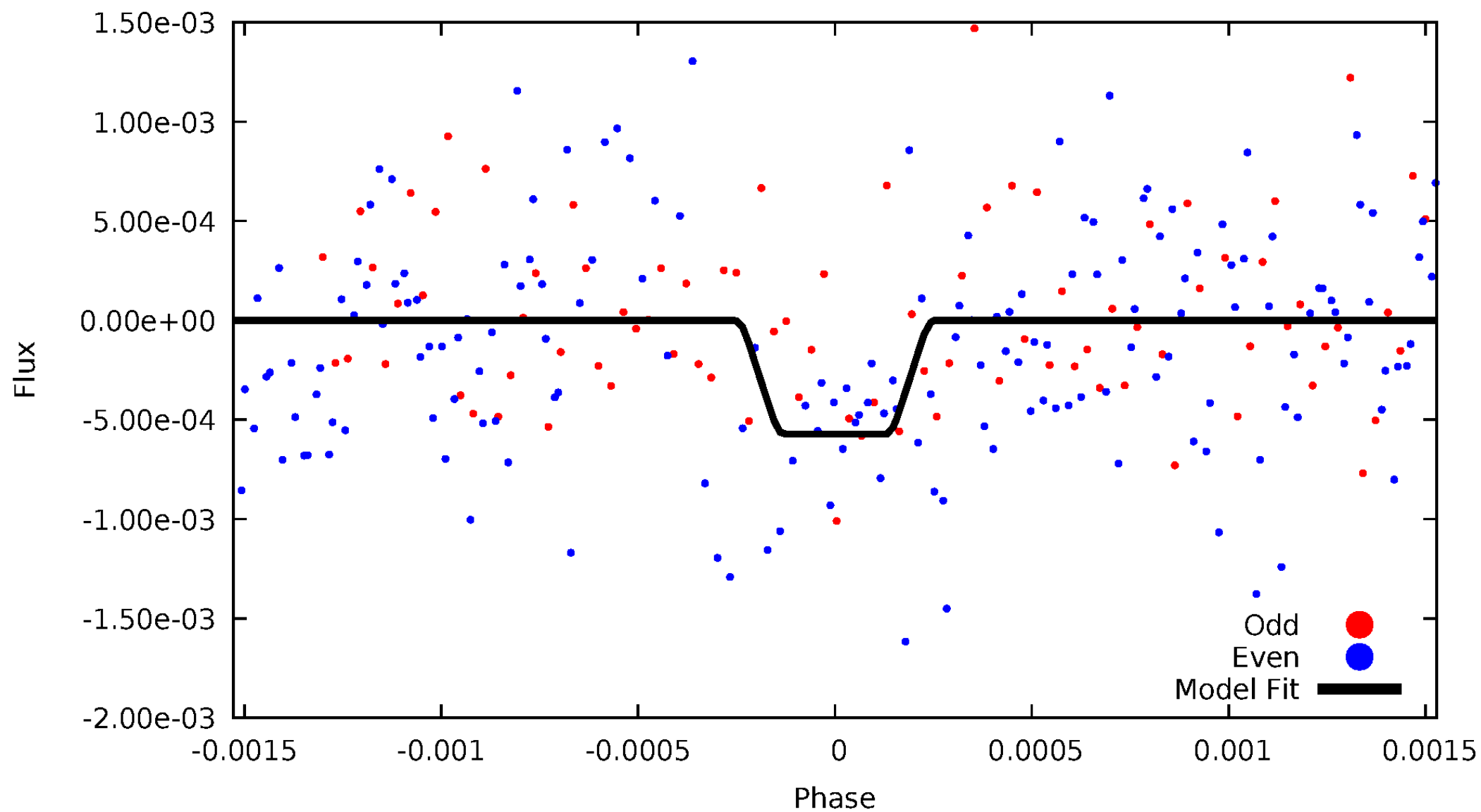
DV Odd/Even

TCE 005881688-02



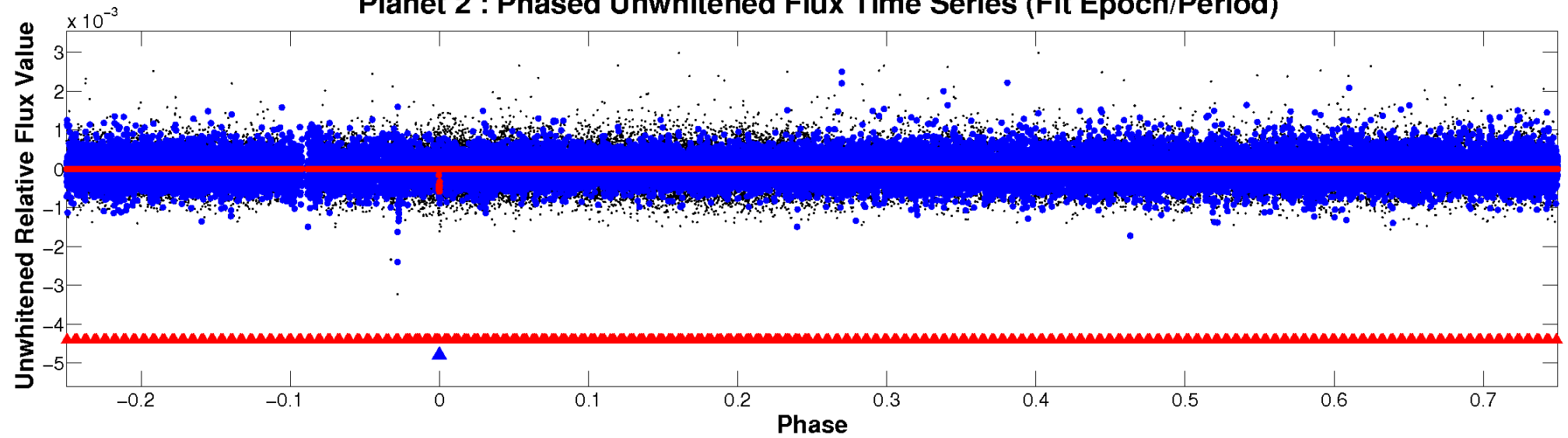
ALT Odd/Even

TCE 005881688-02

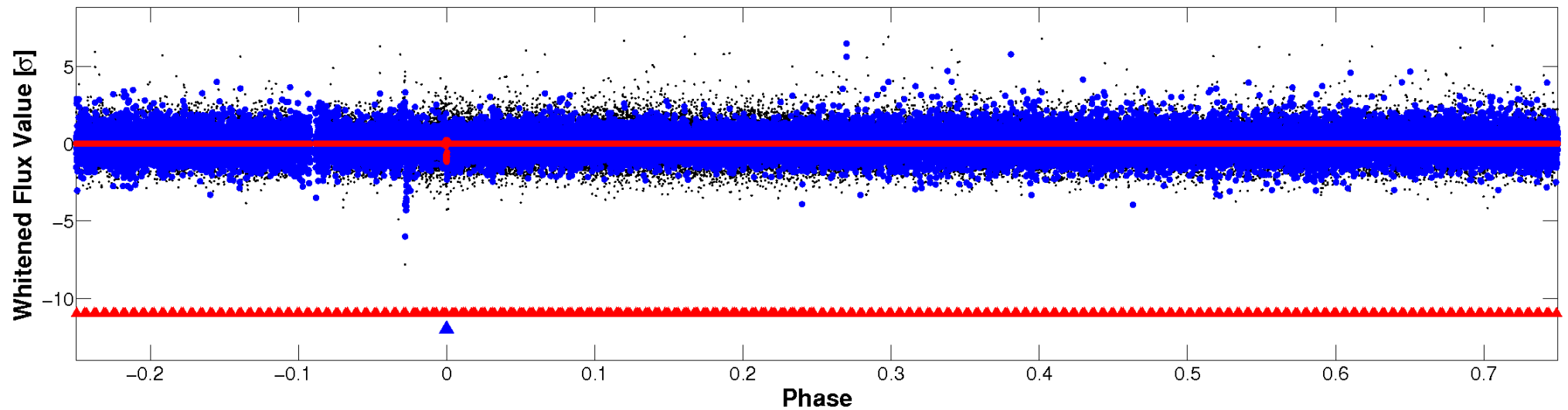


Non-Whitened Vs. Whitened Light Curve

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

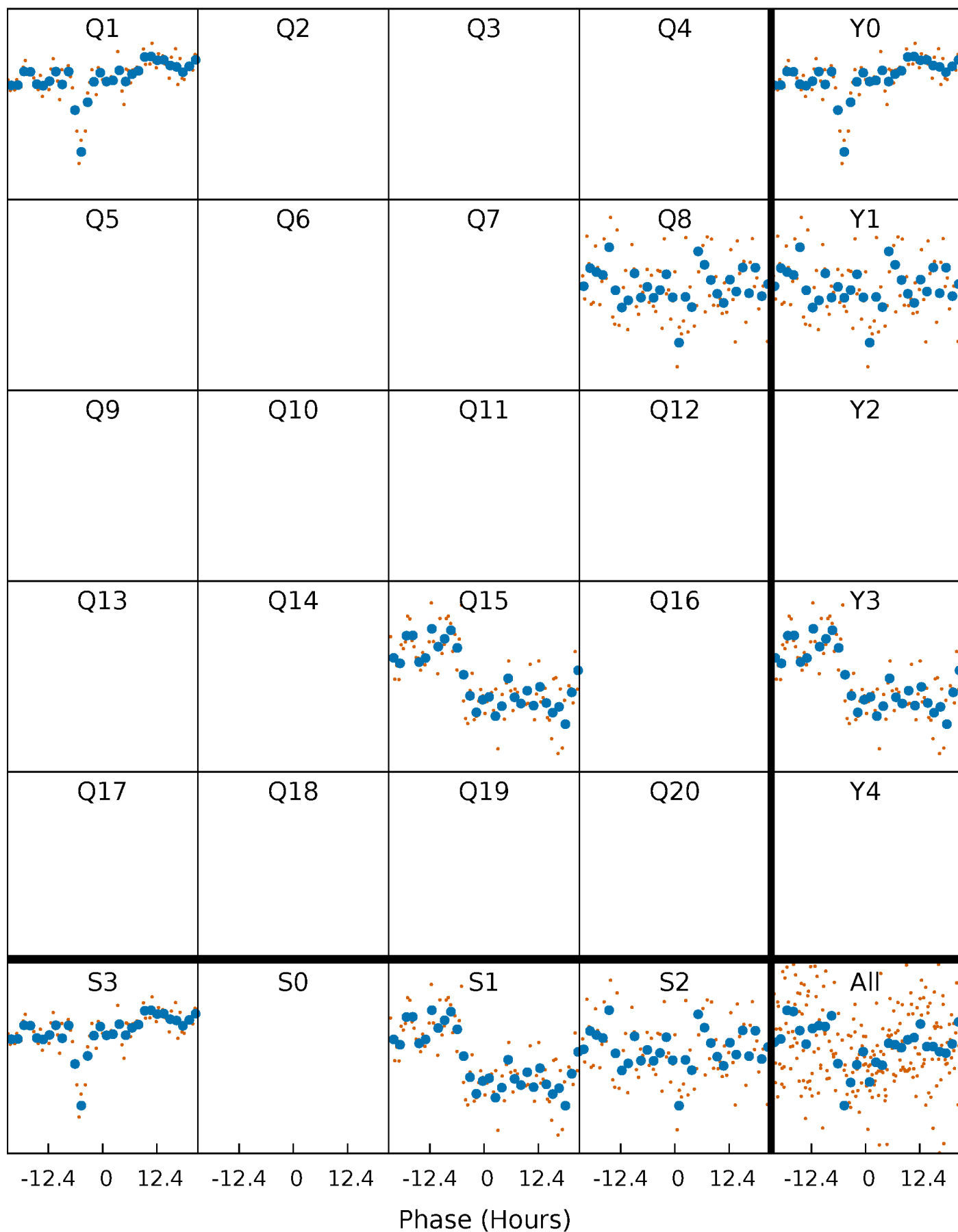


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



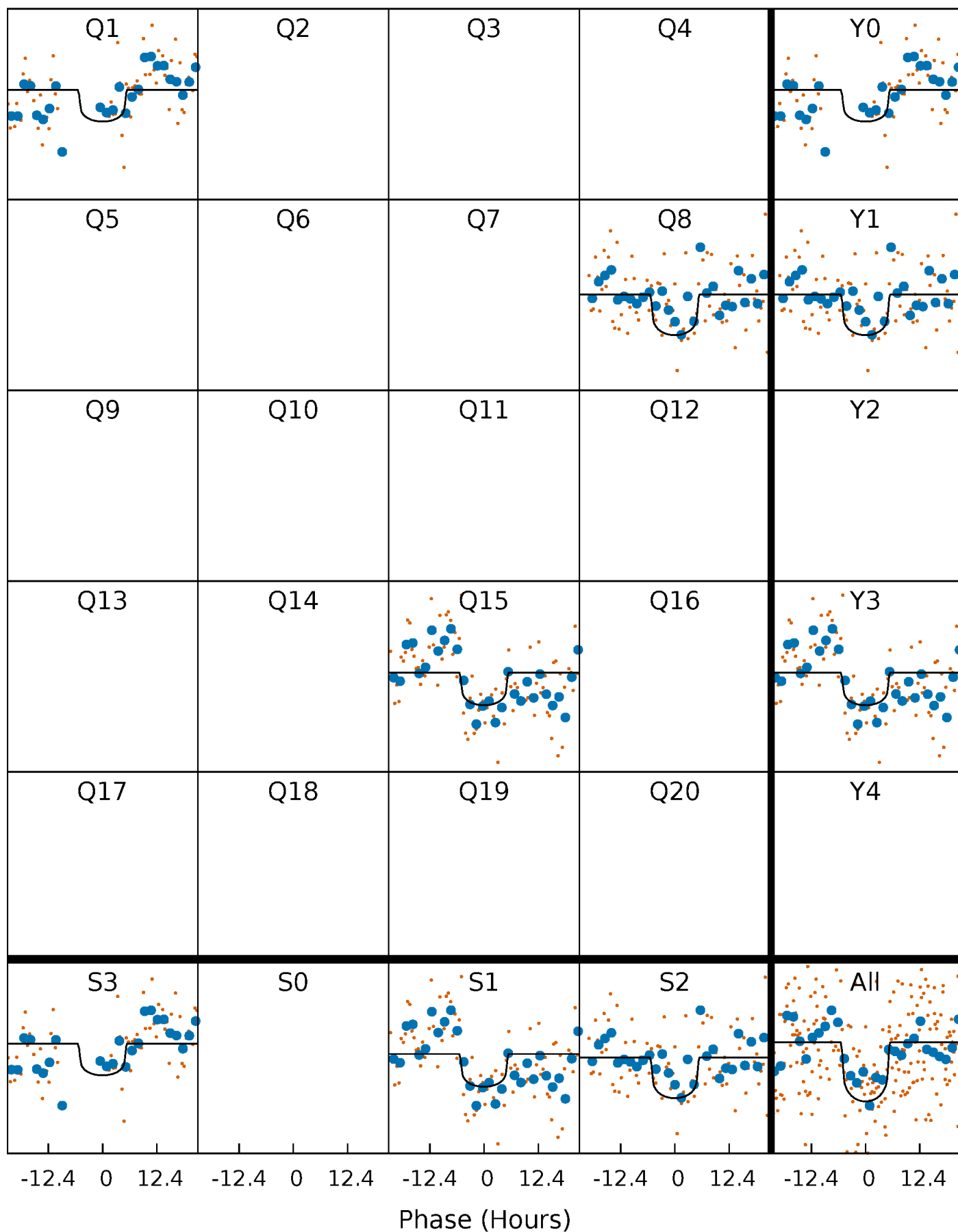
PDC Quarter-Phased Transit Curves

TCE 005881688-02 $P=641.937033$ Days $T_0=146.510420$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005881688-02 $P=641.937033$ Days $T_0=146.510420$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

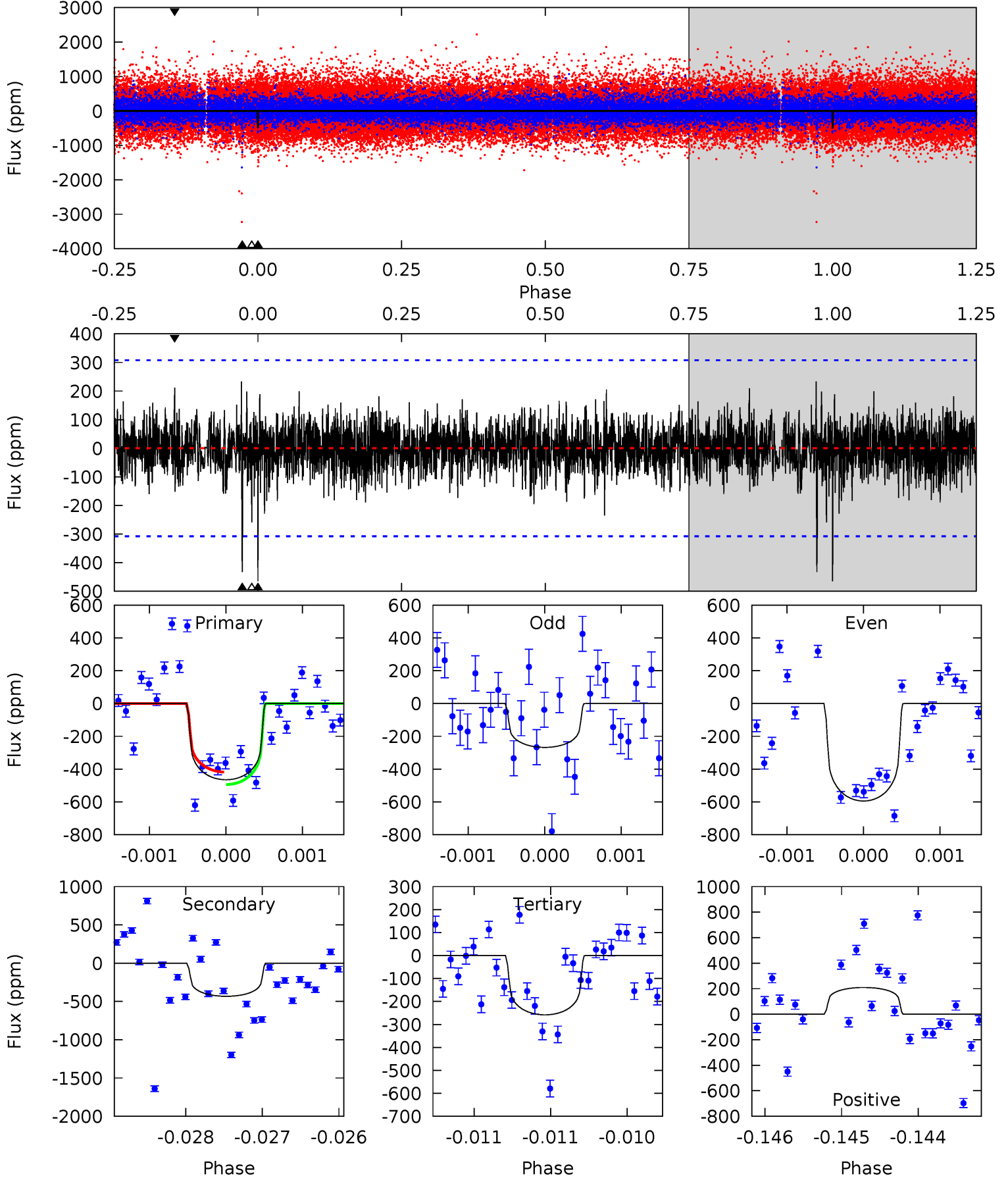
TCE 005881688-02 $P=641.933910$ Days $T_0=146.533316$ (BKJD)



DV Model-Shift Uniqueness Test

005881688-02, P = 641.937033 Days, E = 146.510420 Days

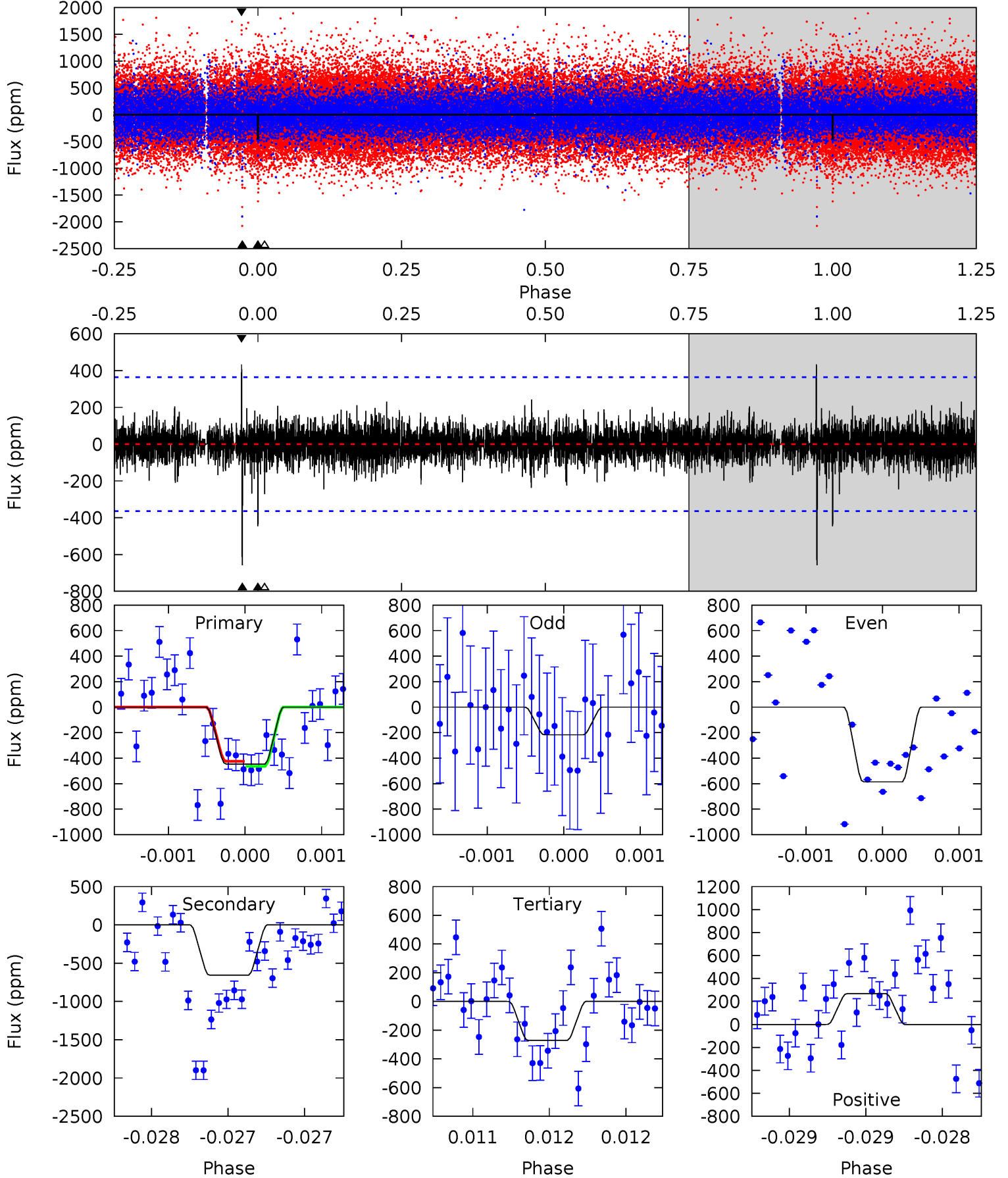
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.33	7.74	4.62	3.75	5.51	3.39	1.05	3.70	4.57	3.12	3.99	2.88	1.24	0.33	0.66



Alt Model-Shift Uniqueness Test

005881688-02, P = 641.933910 Days, E = 146.533316 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.83	10.1	4.16	4.11	5.57	3.48	0.96	2.68	2.73	5.91	5.96	2.77	1.41	0.40	0.30



Stellar Parameters For KIC 005881688

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6073^{+190}_{-232}	$4.392^{+0.072}_{-0.217}$	$0.200^{+0.200}_{-0.300}$	$1.135^{+0.375}_{-0.150}$	$1.163^{+0.151}_{-0.151}$	$1.121^{+0.420}_{-0.616}$
	+3%/-4%	+2%/-5%	+100%/-150%	+33%/-13%	+13%/-13%	+37%/-55%
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 005881688-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-432 ± 56	$3.59^{+2.86}_{-2.16}$	330^{+26}_{-21}	5293^{+3074}_{-1080}	$42564^{+215376}_{-29079}$
Alt.	-658 ± 65	$3.52^{+2.73}_{-2.13}$	328^{+24}_{-18}	5876^{+4203}_{-1257}	$69262^{+366010}_{-48297}$

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

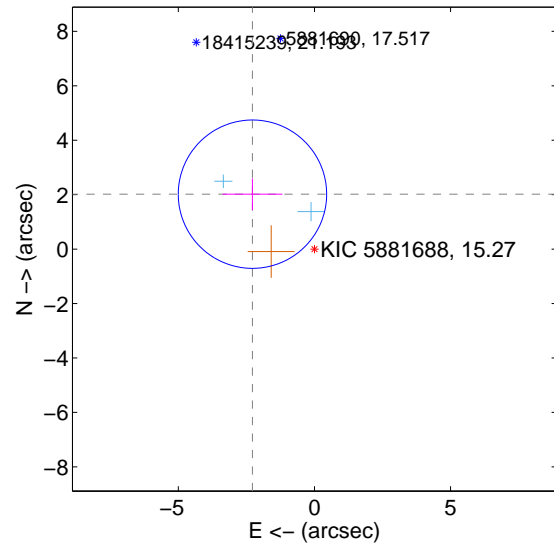
Supplemental centroid analysis for 005881688-02. Kepler magnitude: 15.27. Transit SNR 7.52

There are 2 quarters with good PRF difference image offsets

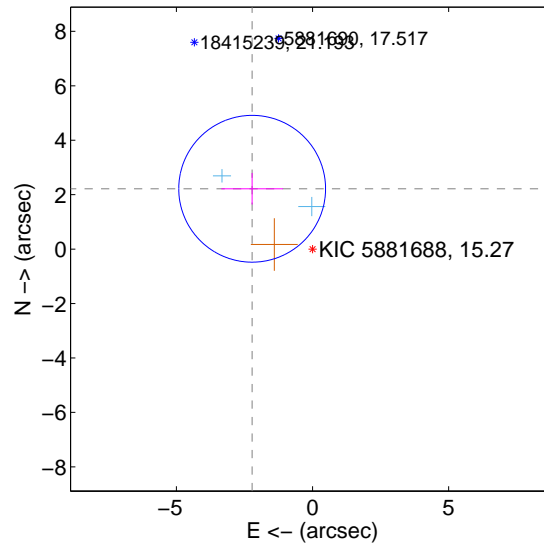
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.042 ± 0.908	3.35	2.277 ± 1.099	2.018 ± 0.581
PRF-fit source offset from KIC position	3.135 ± 0.899	3.49	2.217 ± 1.132	2.216 ± 0.578
photometric centroid source offset	2.72 ± 1.56	1.74	-2.07 ± 1.55	1.77 ± 1.58

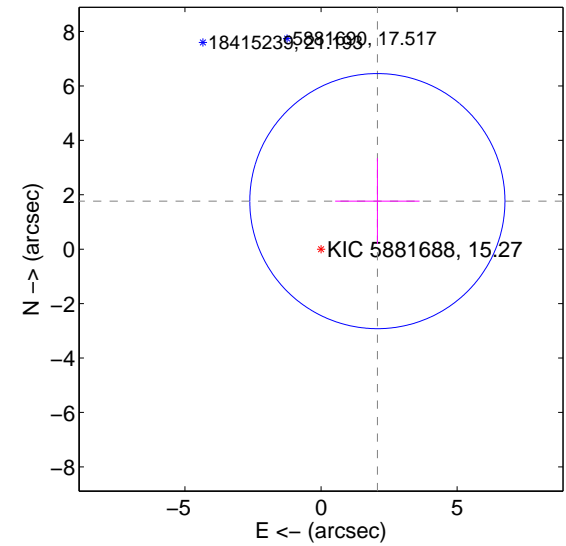
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

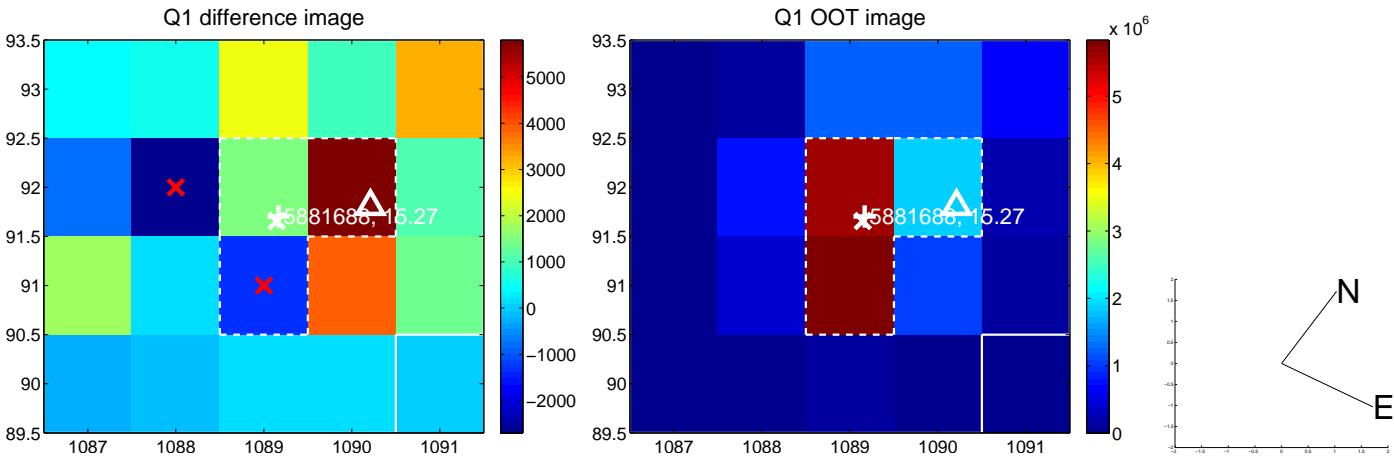


offset from photometric centroids

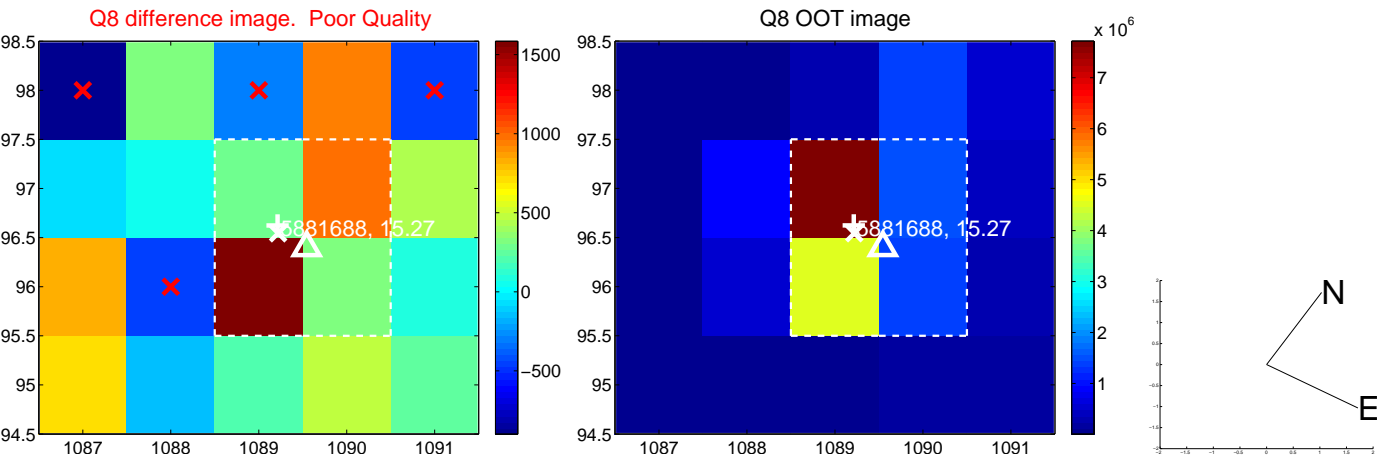


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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

Q13 no difference image



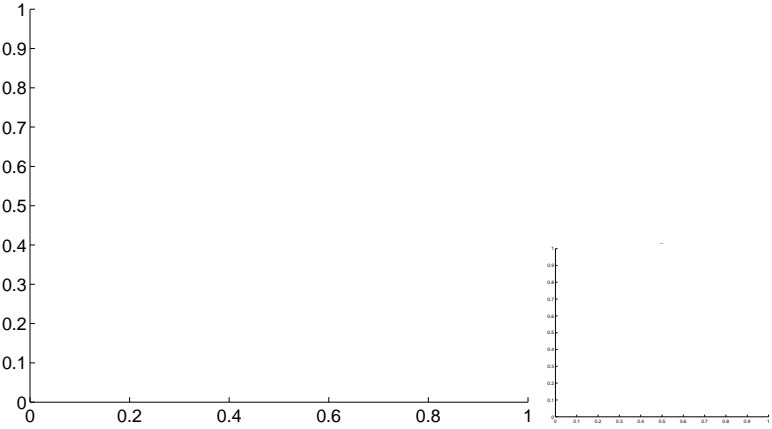
Q13 no OOT image



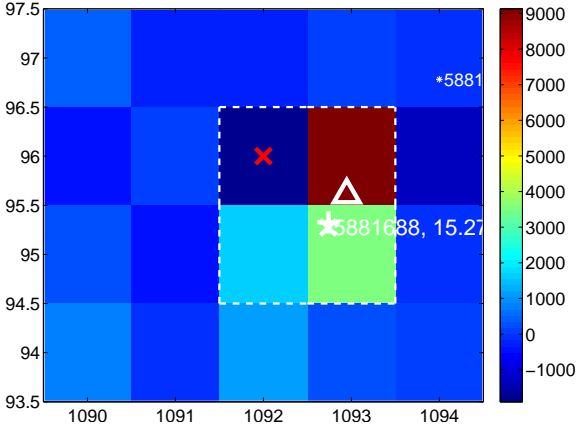
Q14 no difference image



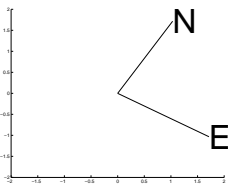
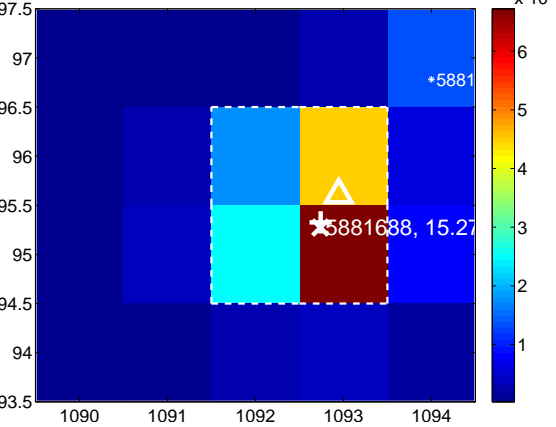
Q14 no OOT image



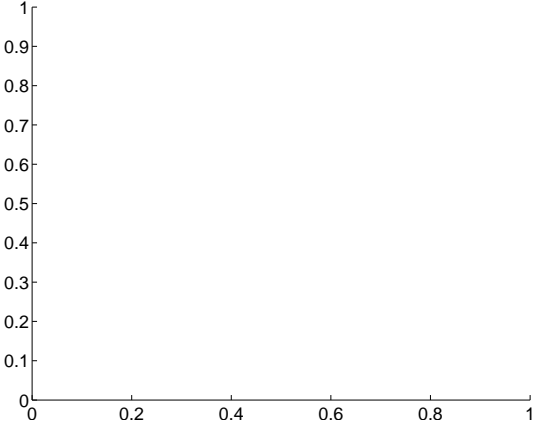
Q15 difference image



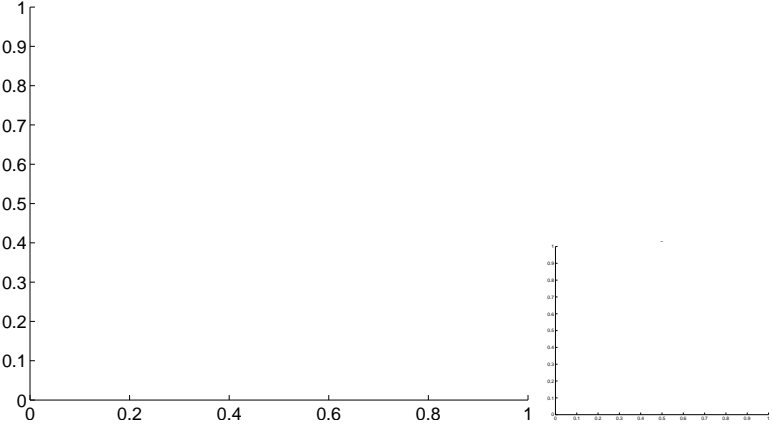
Q15 OOT image



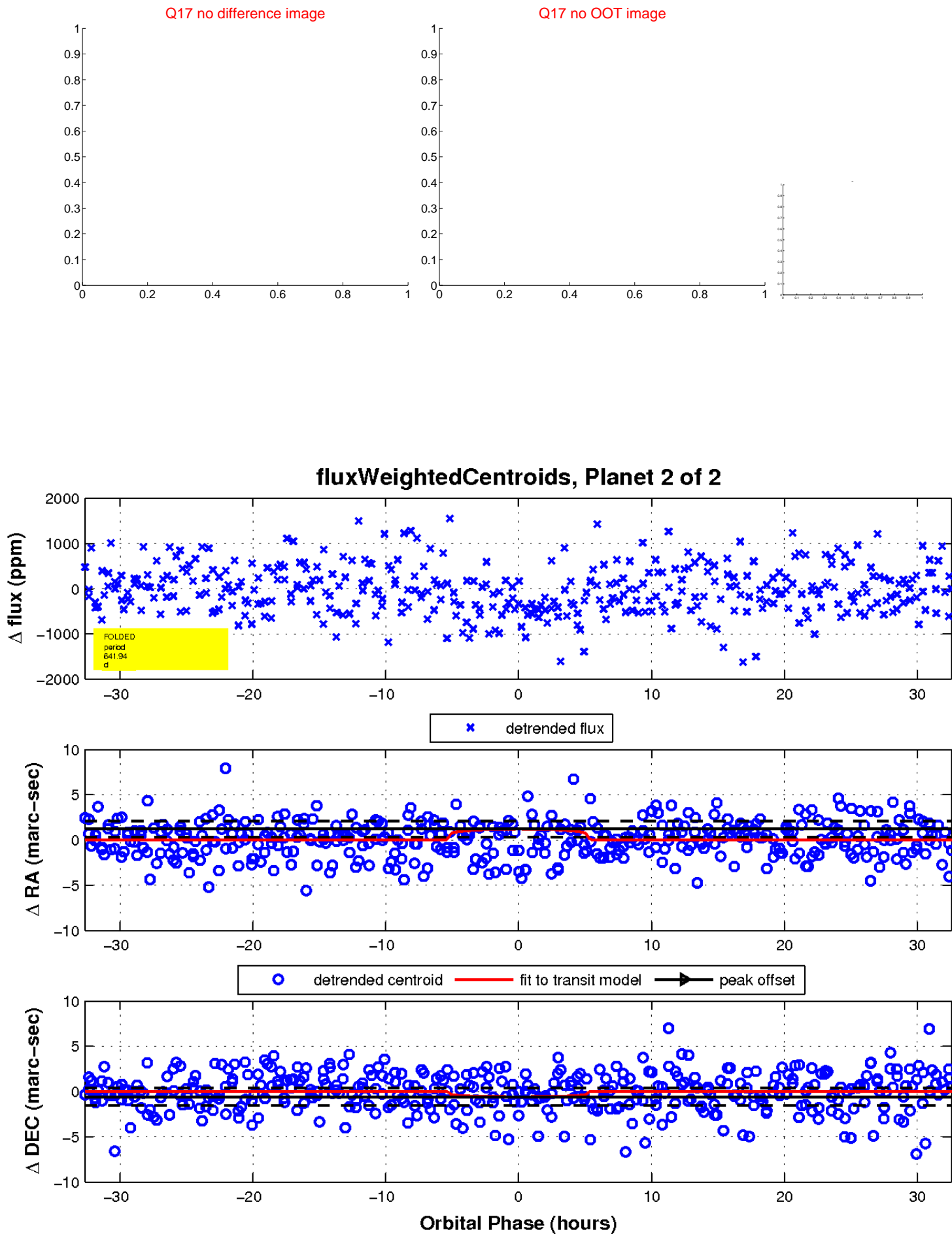
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

