

KIC 004055092

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})
004055092-01	OBS	6379.01	76.453052	133.991001	9601.0	5.091	165.1	133.9	0.54	4831	9.63	1.71
004055092-02	OBS	No	76.479184	160.997124	8565.5	4.104	116.3	100.8	0.54	4831	9.15	1.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004055092-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—HAS_SEC_TCE
004055092-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

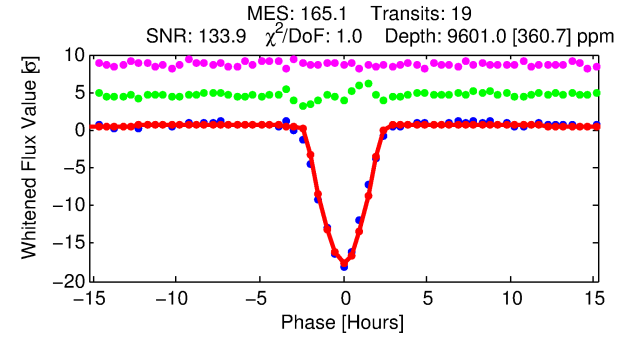
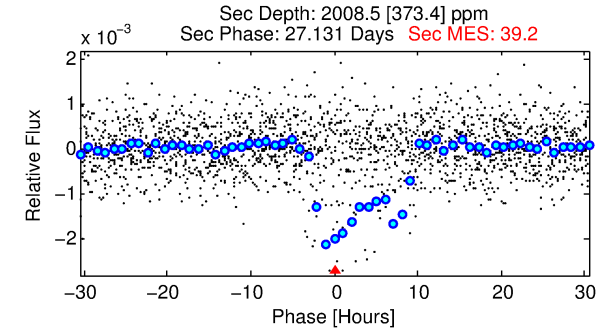
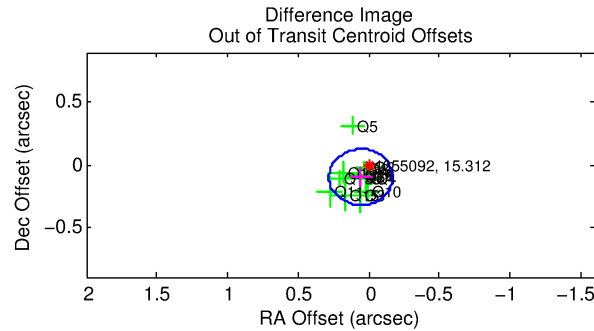
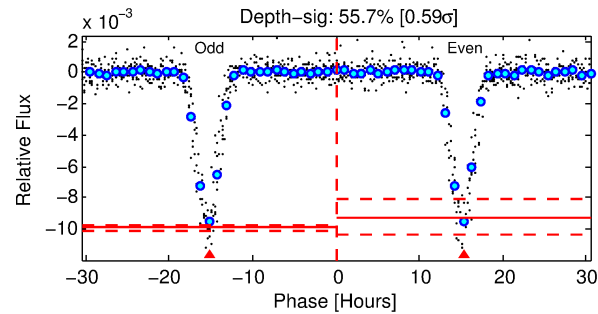
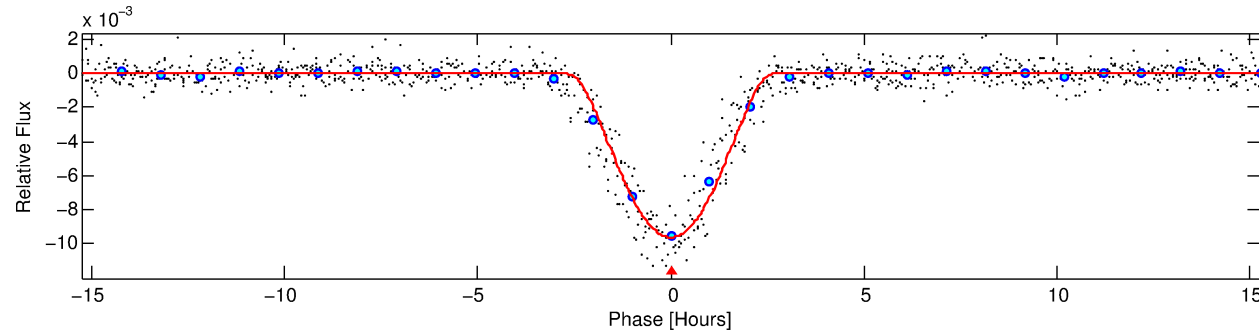
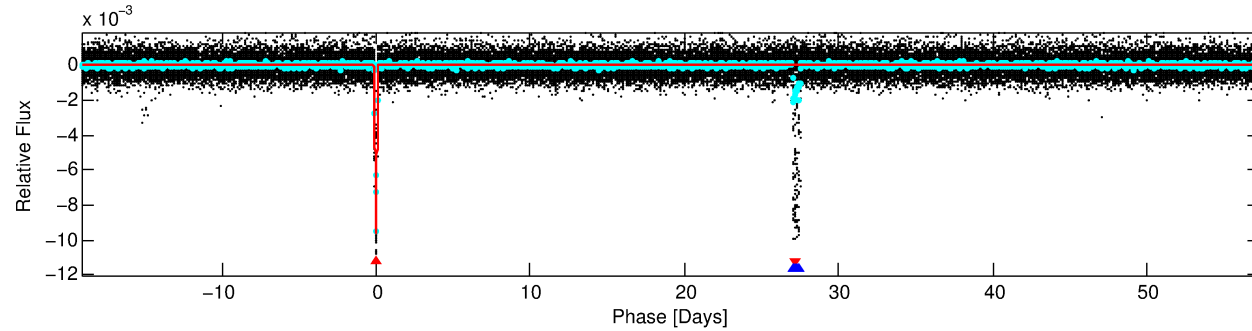
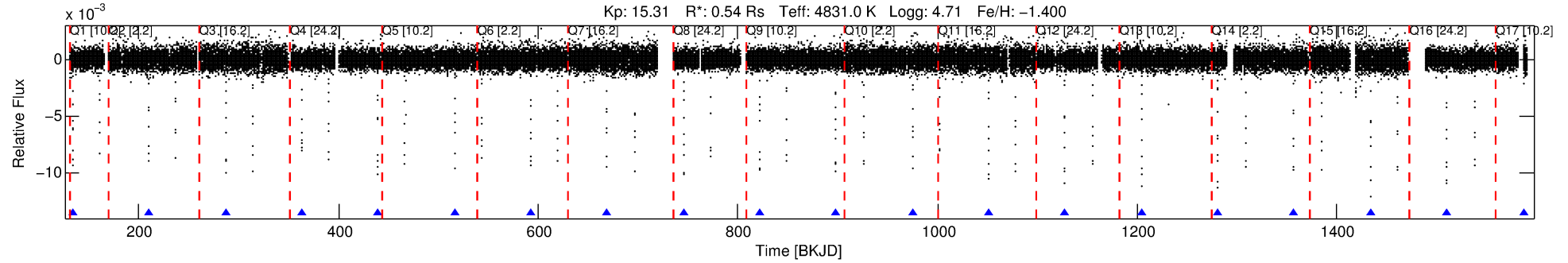
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004055092-01

No Significant Match Found

DV One-Page Summary

KIC: 4055092 Candidate: 1 of 2 Period: 76.453 d
KOI: K06379.01 Corr: 0.978



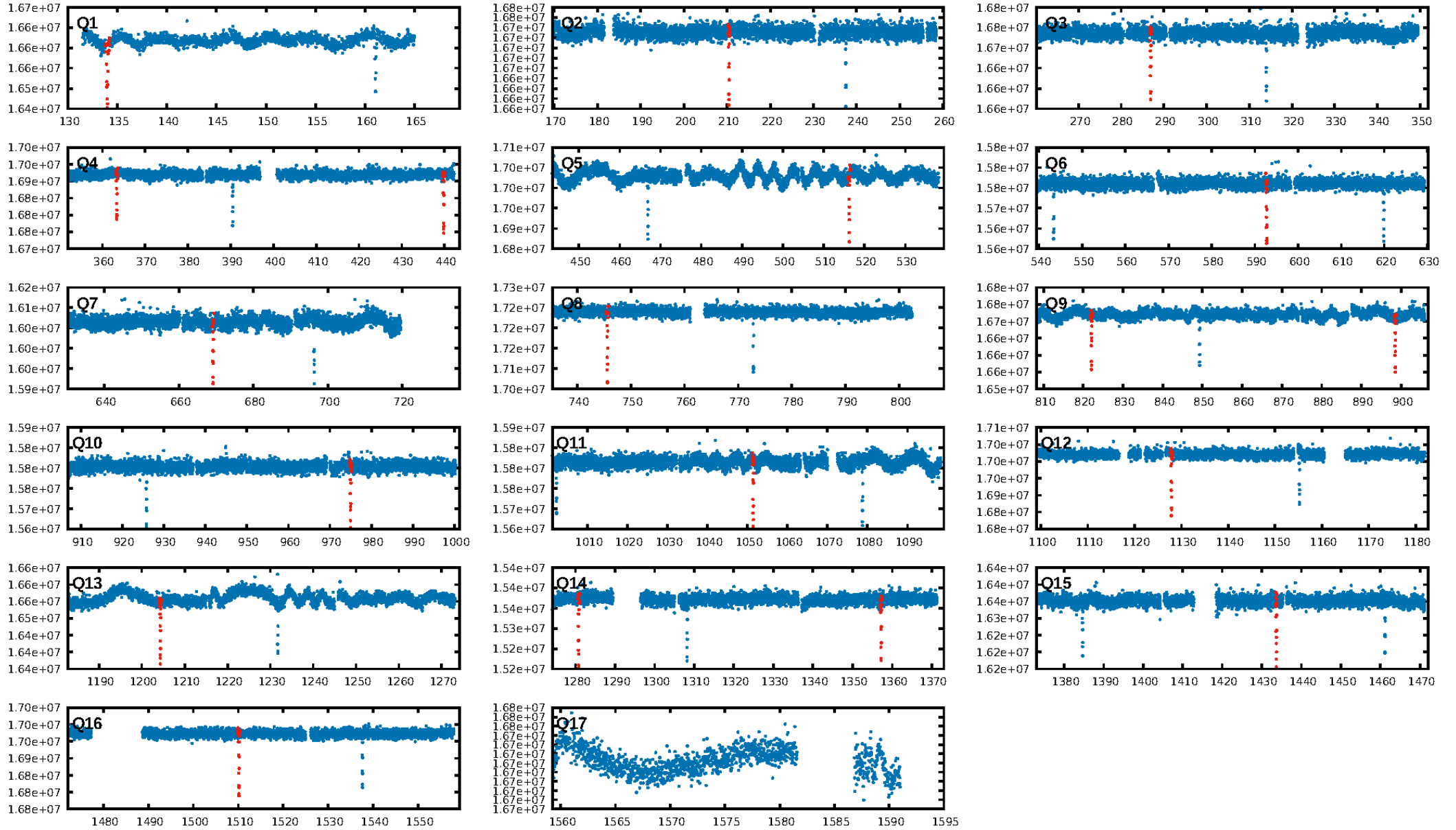
DV Fit Results:

Period = 76.45305 [0.00008] d
Epoch = 133.9910 [0.0009] BKJD
Rp/R* = 0.1634 [0.0665]
a/R* = 68.27 [3.98]
b = 1.00 [0.10]
Seff = 1.71 [0.27]
Teq = 291 [11] K
Rp = 9.63 [3.97] Re
a = 0.2888 [0.0165] AU
Ag = 994.09 [834.46] [1.19 σ]
Teffp = 2530 [535] K [4.19 σ]

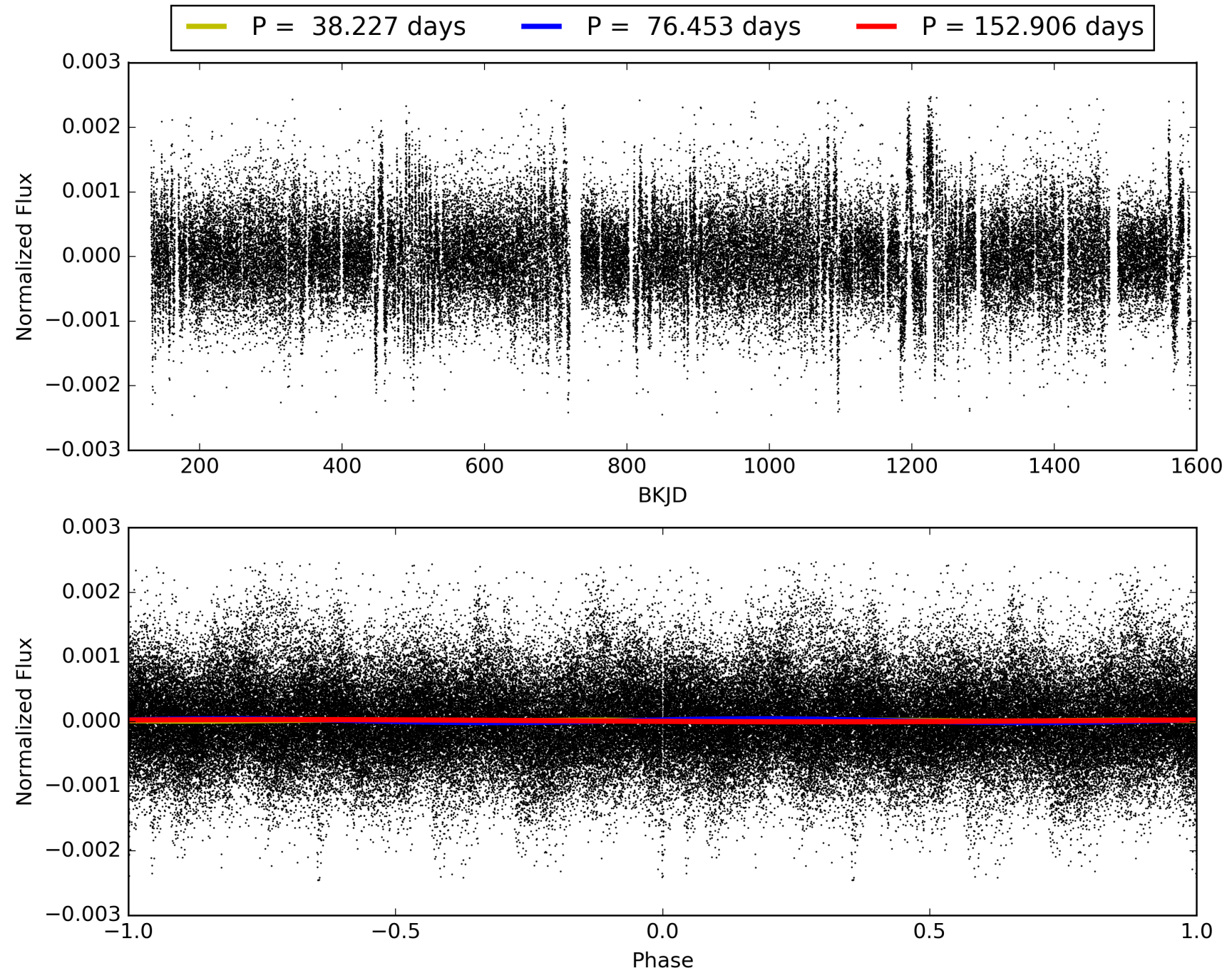
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 7.6% [0.10 σ]
ModelChiSquare2-sig: 18.6%
ModelChiSquareGof-sig: 93.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: 2.283
Centroid-sig: 0.0%
Centroid-so: 0.373 arcsec [4.14 σ]
OotOffset-rm: 0.115 arcsec [1.54 σ]
KicOffset-rm: 0.174 arcsec [2.27 σ]
OotOffset-st: 4/4/2/4 [14]
KicOffset-st: 4/4/2/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004055092-01, PDC Light Curves

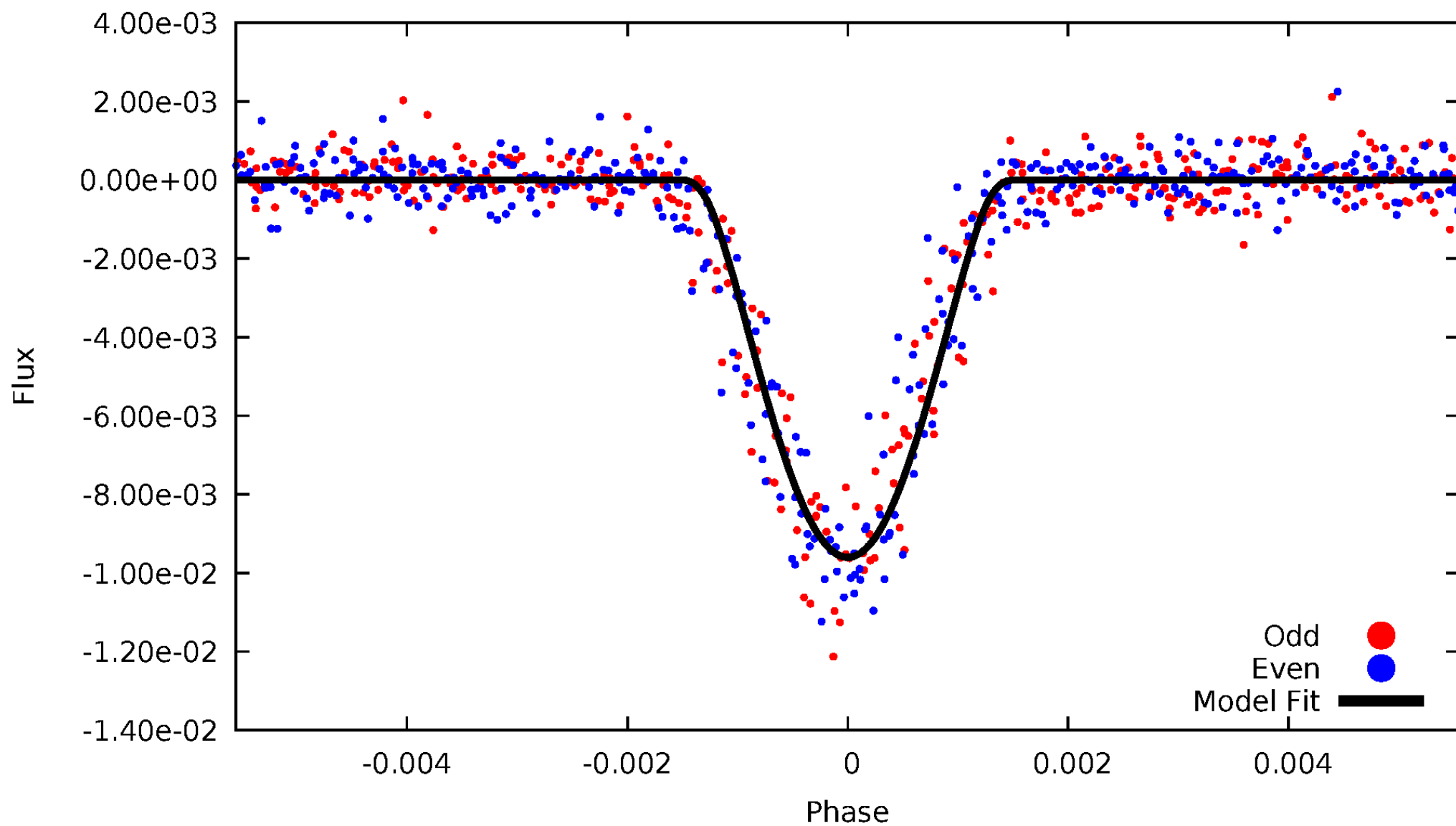


TCE 004055092-01



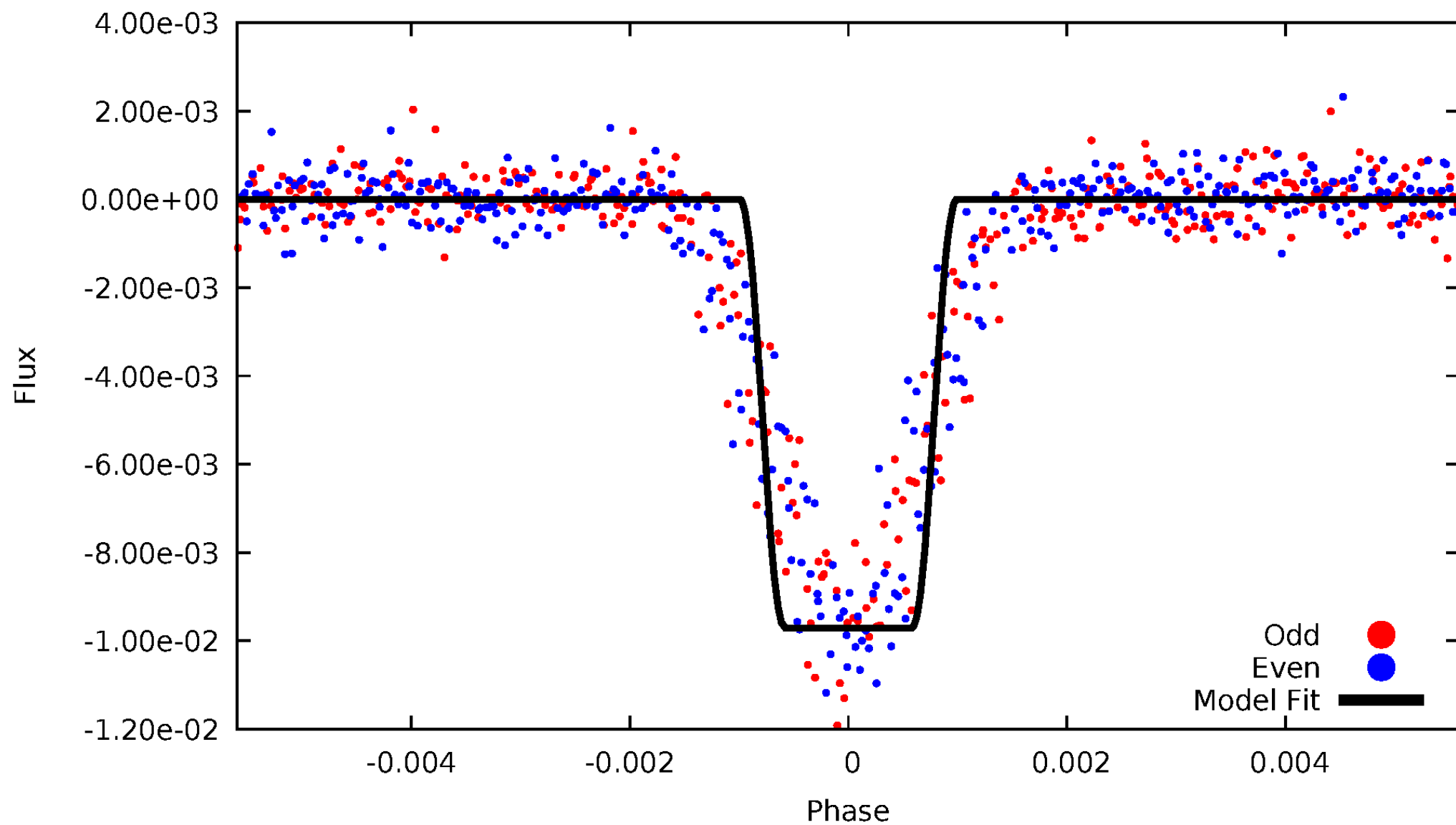
DV Odd/Even

TCE 004055092-01



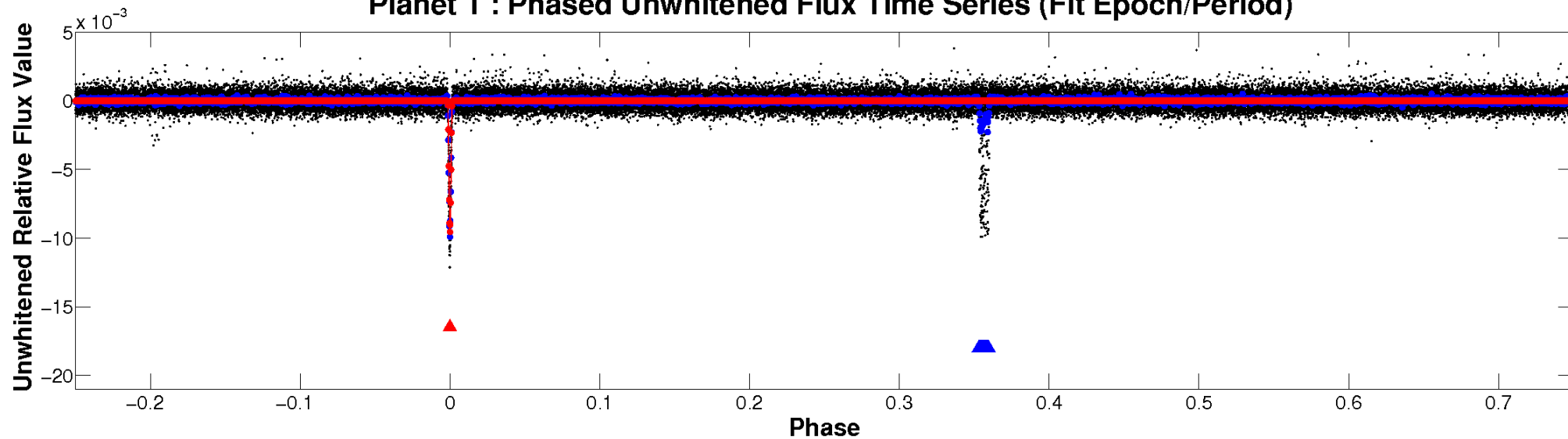
ALT Odd/Even

TCE 004055092-01

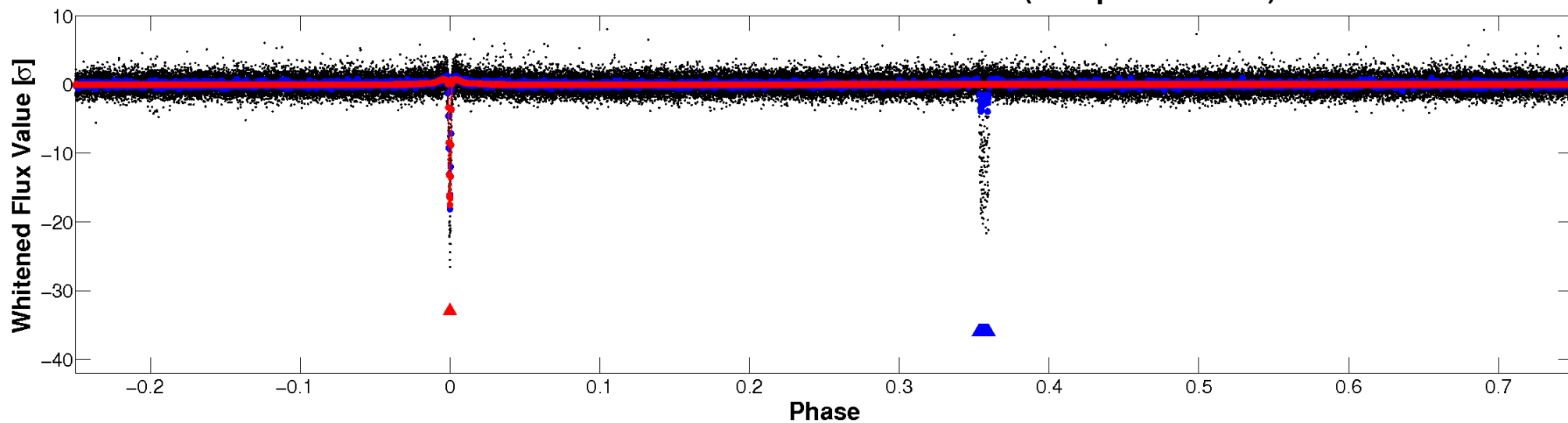


Non-Whitened Vs. Whitened Light Curve

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

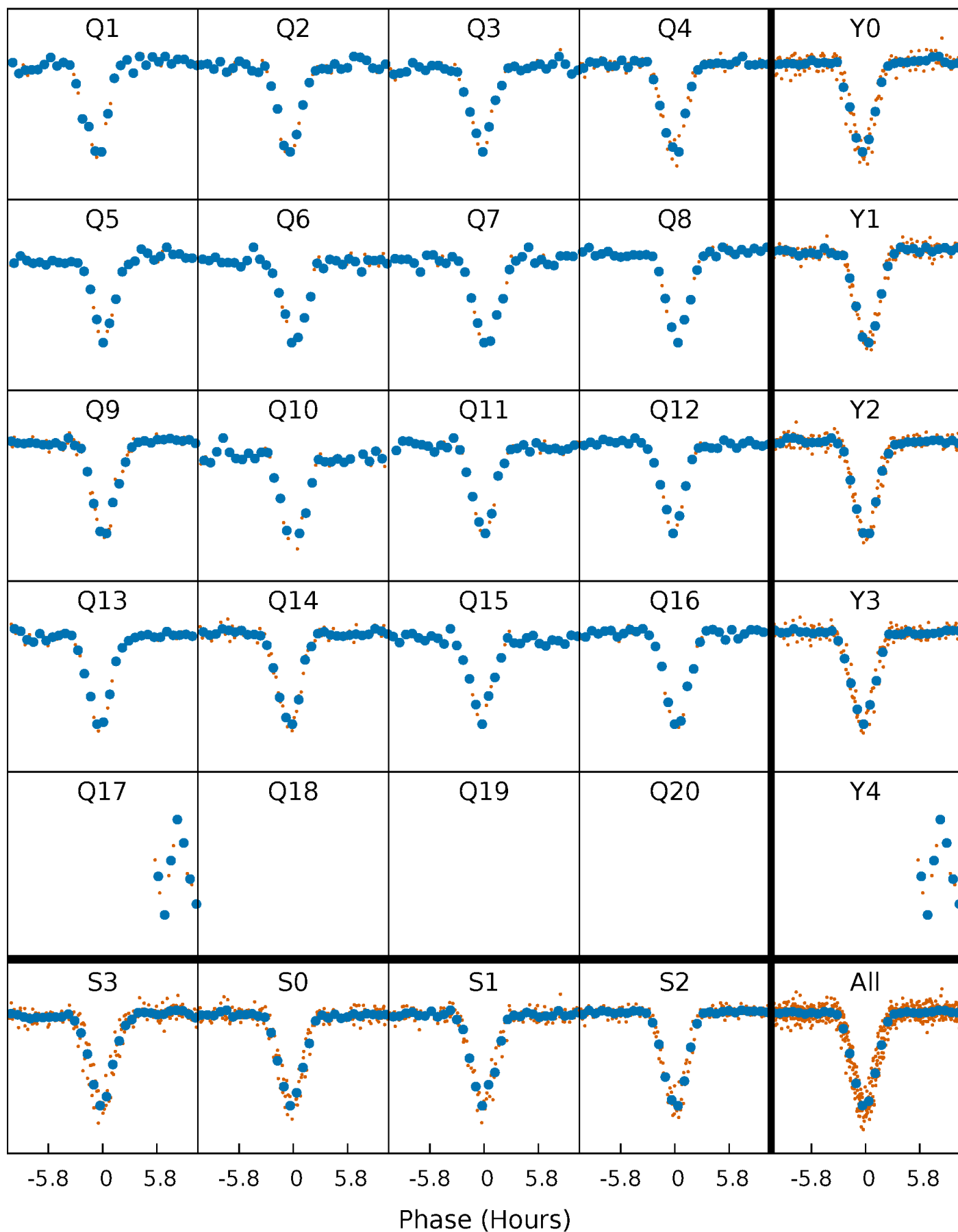


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



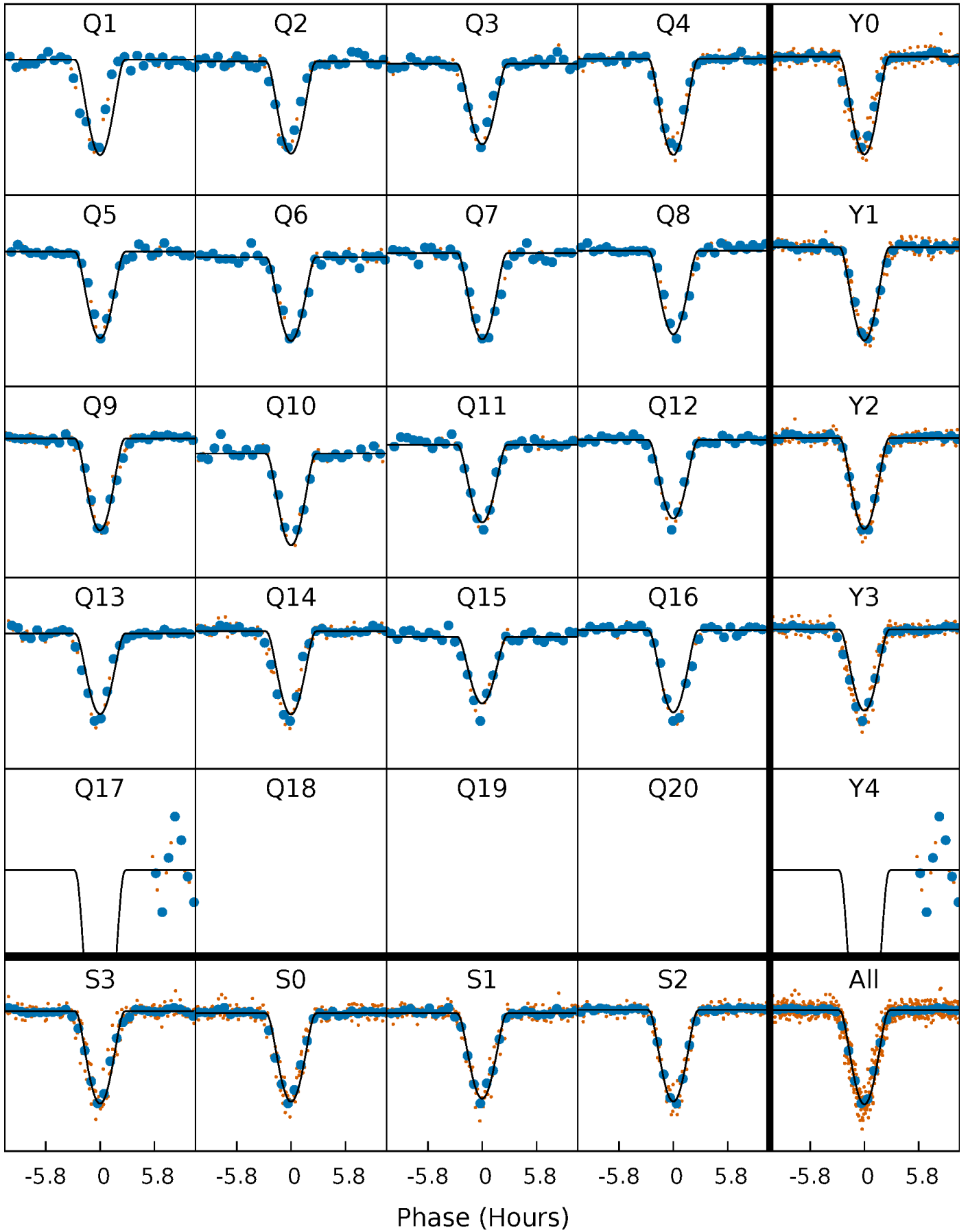
PDC Quarter-Phased Transit Curves

TCE 004055092-01 P= 76.453052 Days $T_0=133.991001$ (BKJD)



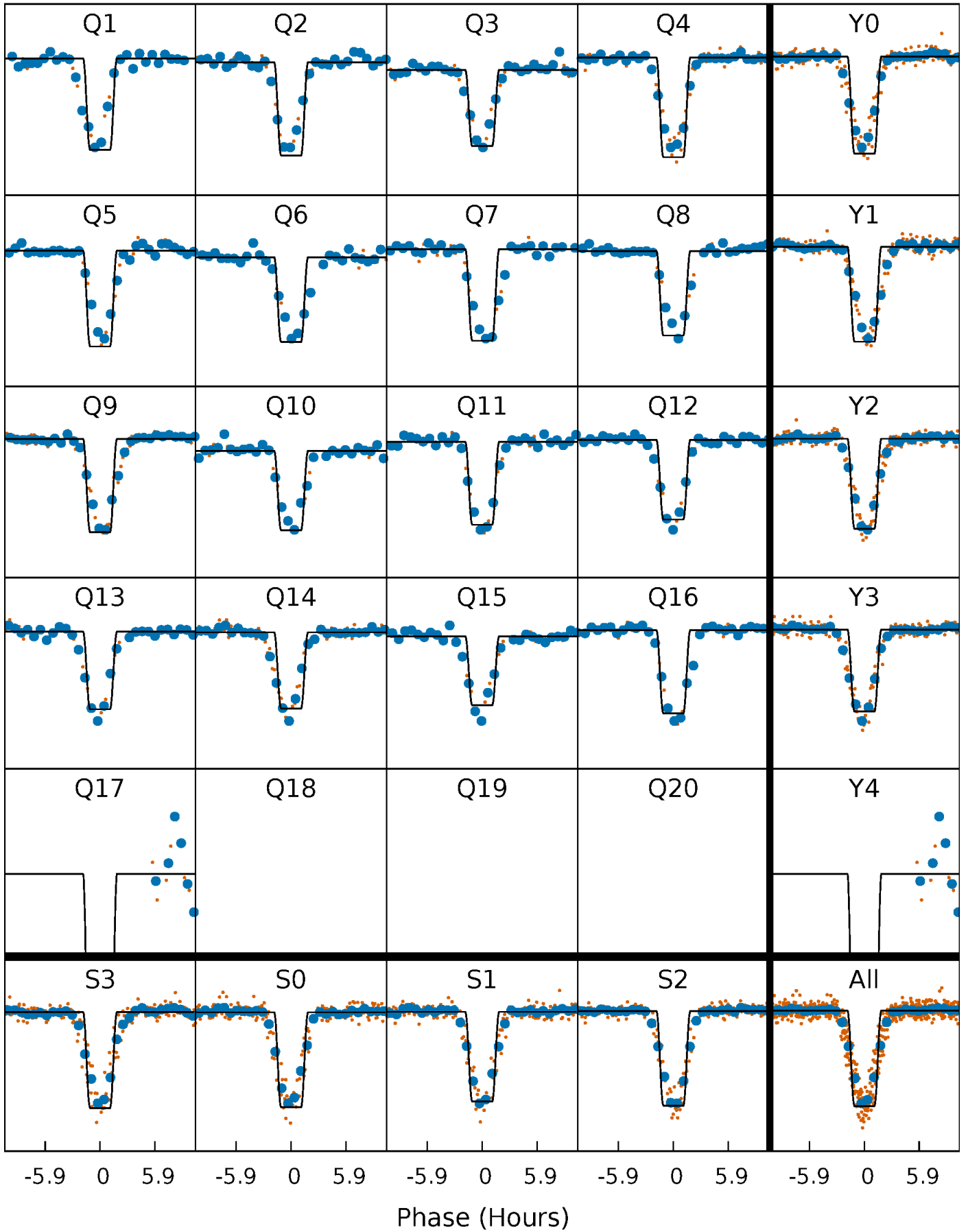
DV Quarter-Phased Transit Curves

TCE 004055092-01 P= 76.453052 Days $T_0=133.991001$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

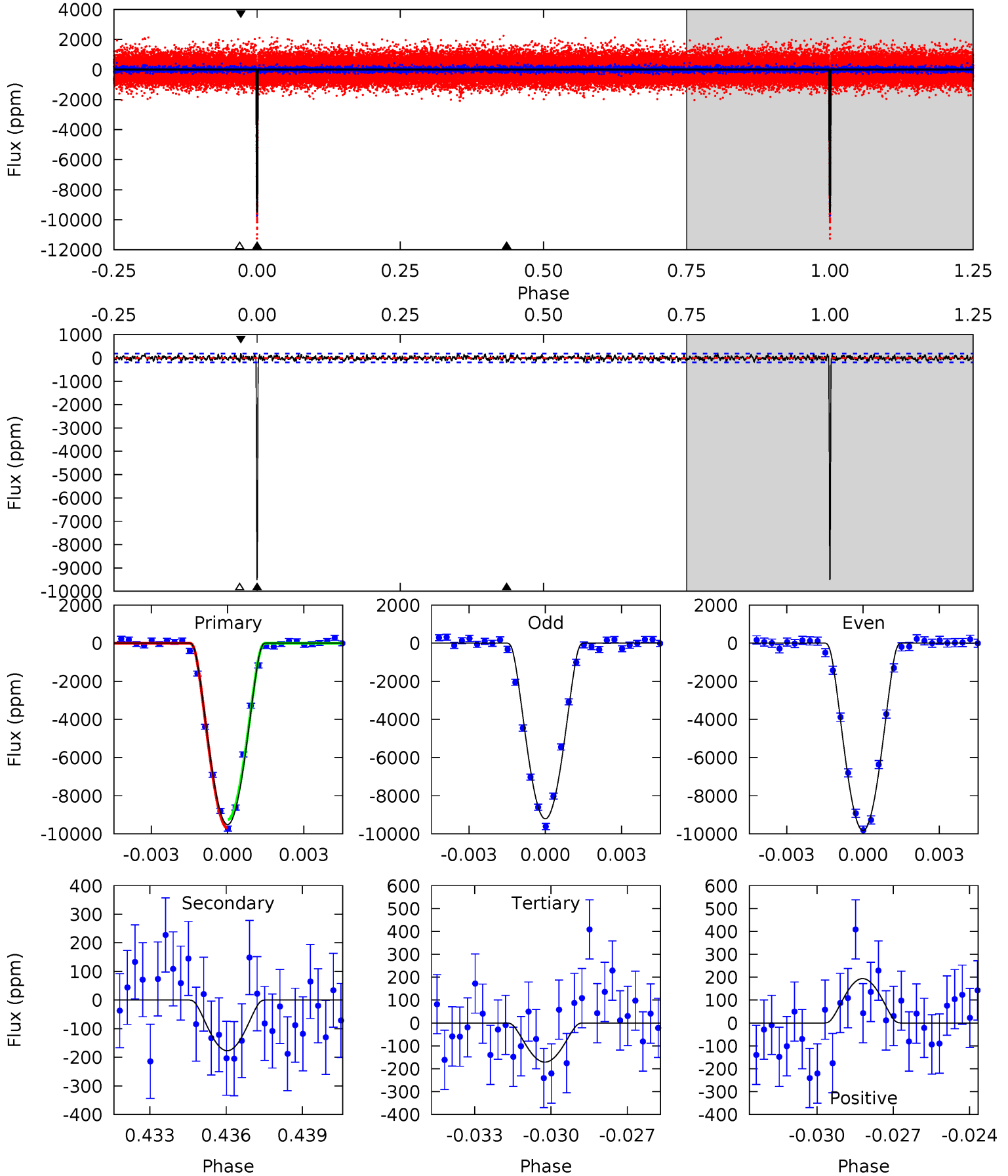
TCE 004055092-01 P= 76.453326 Days $T_0=133.984233$ (BKJD)



DV Model-Shift Uniqueness Test

004055092-01, P = 76.453052 Days, E = 57.537949 Days

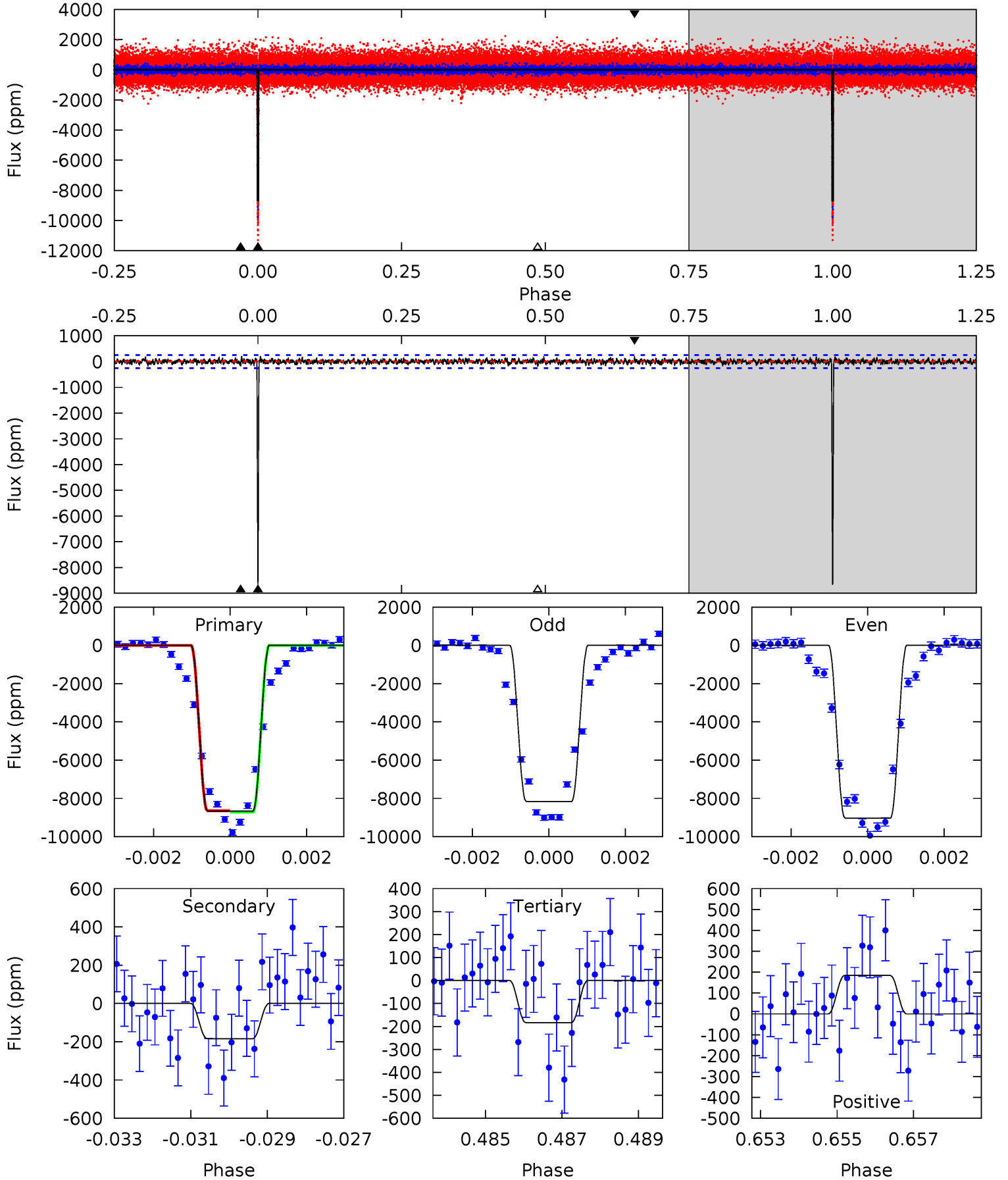
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
260.7	4.85	4.69	5.31	5.25	2.97	1.57	256.0	255.4	0.16	-0.46	8.41	1.00	0.02	5.96



Alt Model-Shift Uniqueness Test

004055092-01, P = 76.453326 Days, E = 57.530907 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
180.9	3.84	3.83	3.84	5.33	3.10	1.10	177.0	177.0	0.01	-0.00	8.94	1.02	0.02	0.65



Stellar Parameters For KIC 004055092

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4831^{+144}_{-158}	$4.713^{+0.049}_{-0.025}$	$-1.400^{+0.300}_{-0.300}$	$0.540^{+0.026}_{-0.035}$	$0.548^{+0.036}_{-0.022}$	$4.911^{+0.889}_{-0.516}$
	+3%/-3%	+1%/-1%	+21%/-21%	+5%/-6%	+7%/-4%	+18%/-11%
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 004055092-01 / KOI 6379.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-177 ± 36	$9.86^{+3.71}_{-3.85}$	406^{+14}_{-14}	2260^{+282}_{-166}	83^{+141}_{-42}
Alt.	-184 ± 48	$6.05^{+3.53}_{-3.55}$	406^{+14}_{-16}	2551^{+709}_{-297}	229^{+1128}_{-140}

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 $A_{obs} \gg 1.0$

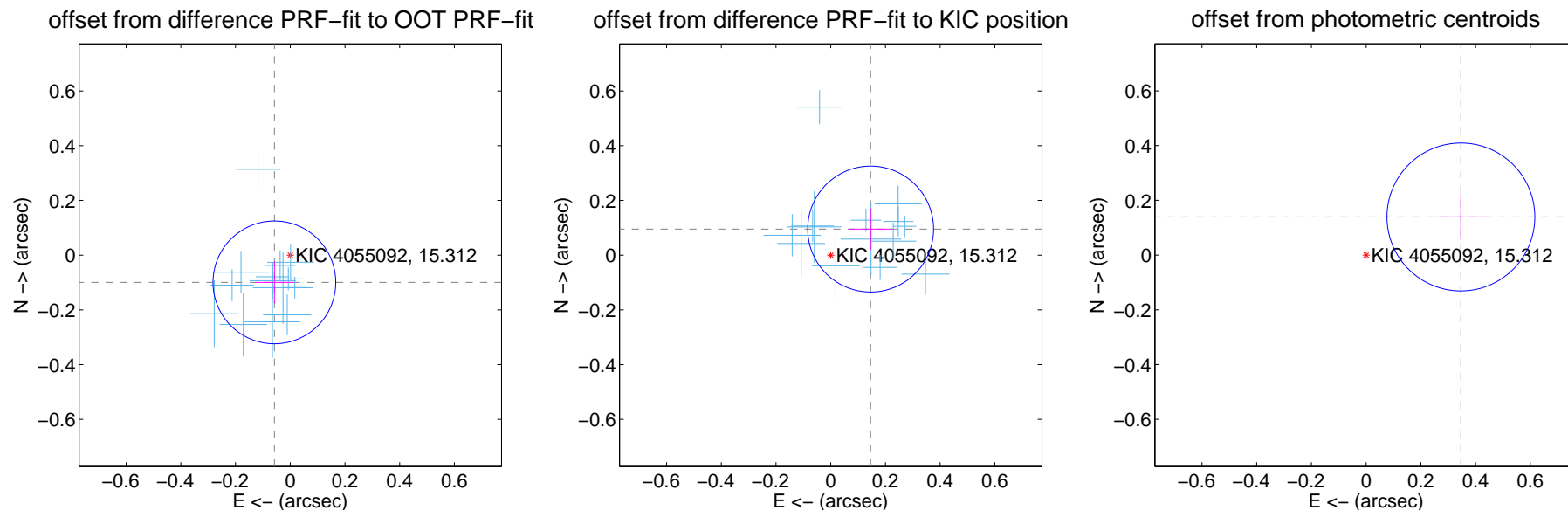
DV Centroid Data

Supplemental centroid analysis for 004055092-01. Kepler magnitude: 15.31. Transit SNR 133.87

There are 14 quarters with good PRF difference image offsets

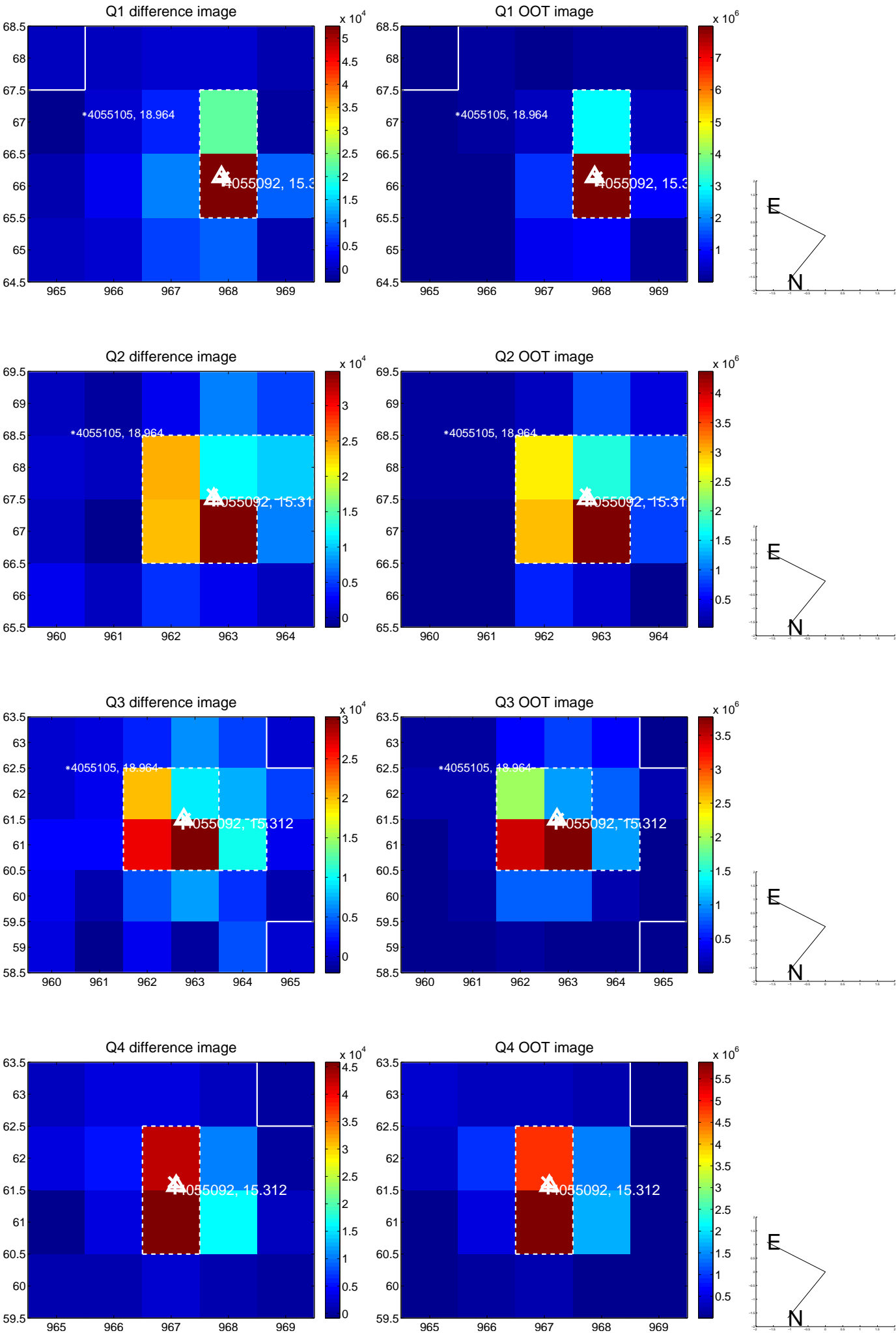
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.115 ± 0.075	1.54	0.058 ± 0.070	-0.100 ± 0.076
PRF-fit source offset from KIC position	0.174 ± 0.077	2.27	-0.146 ± 0.079	0.095 ± 0.076
photometric centroid source offset	0.37 ± 0.09	4.14	-0.35 ± 0.09	0.14 ± 0.08

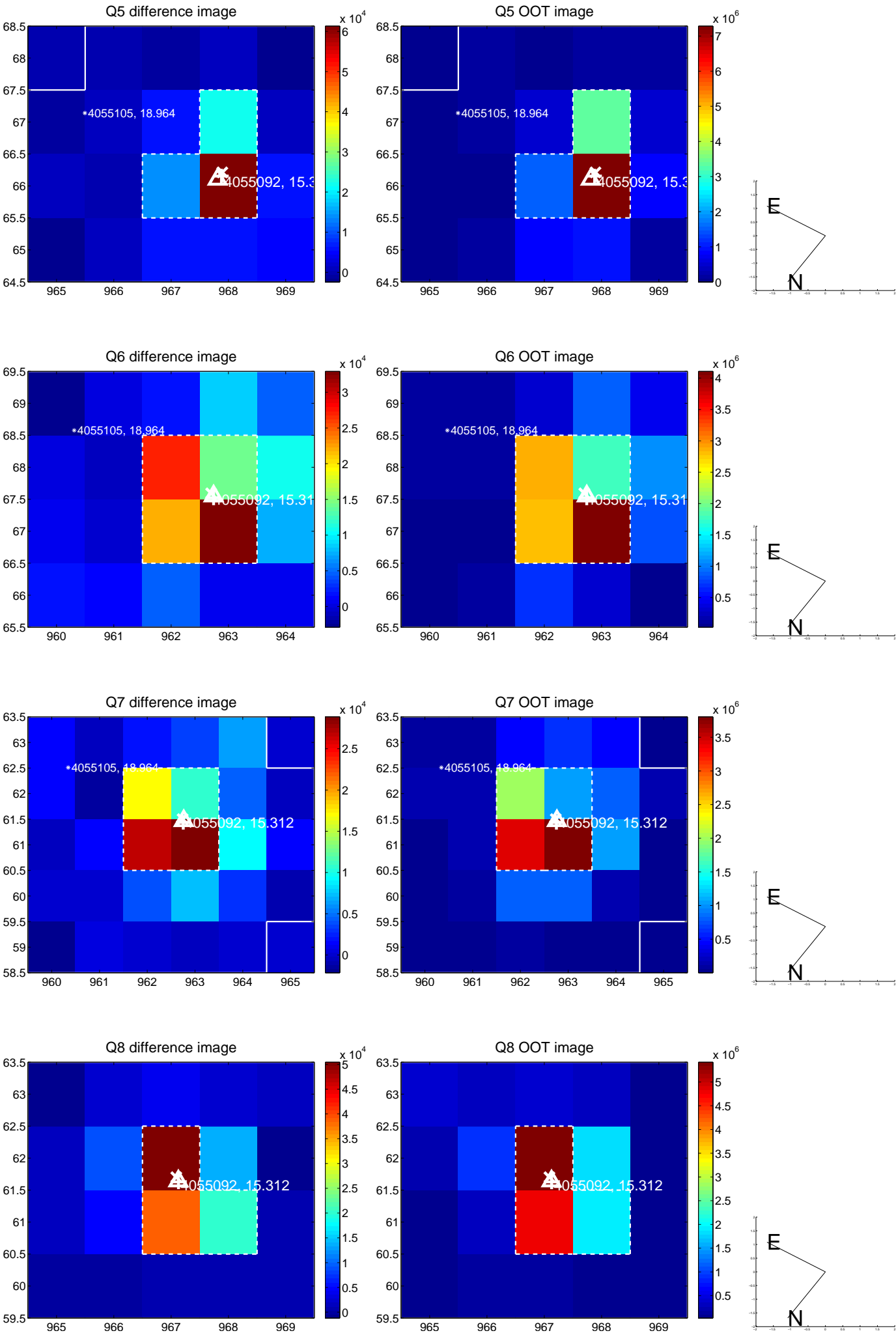


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

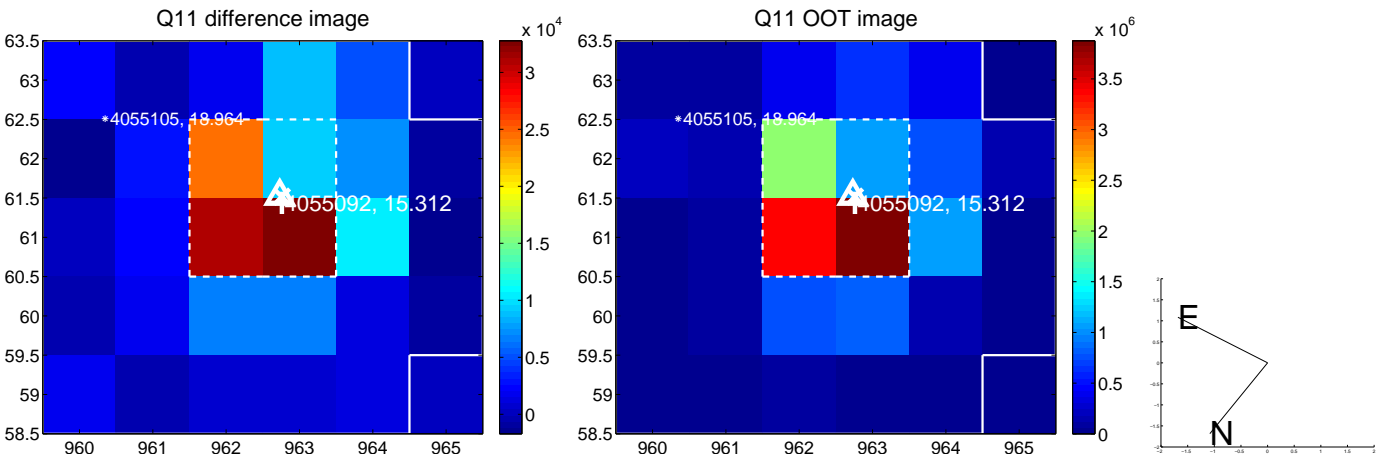
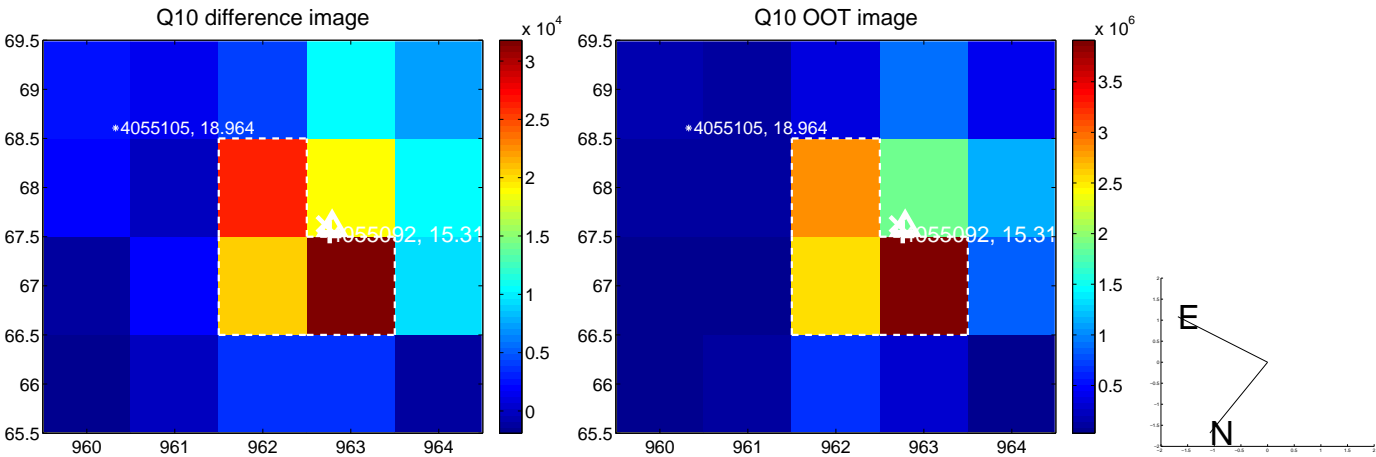
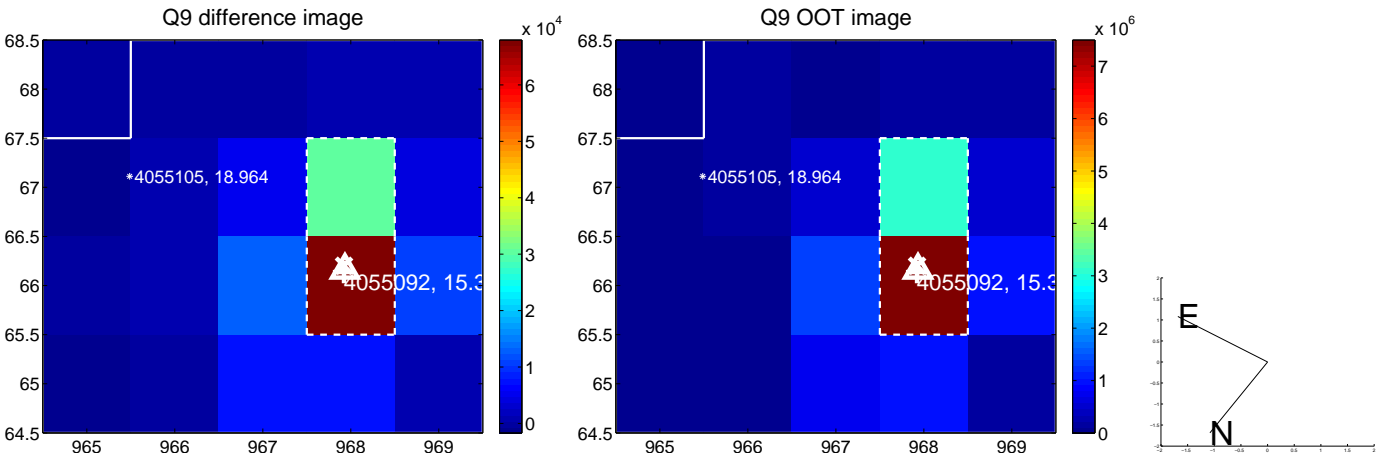
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



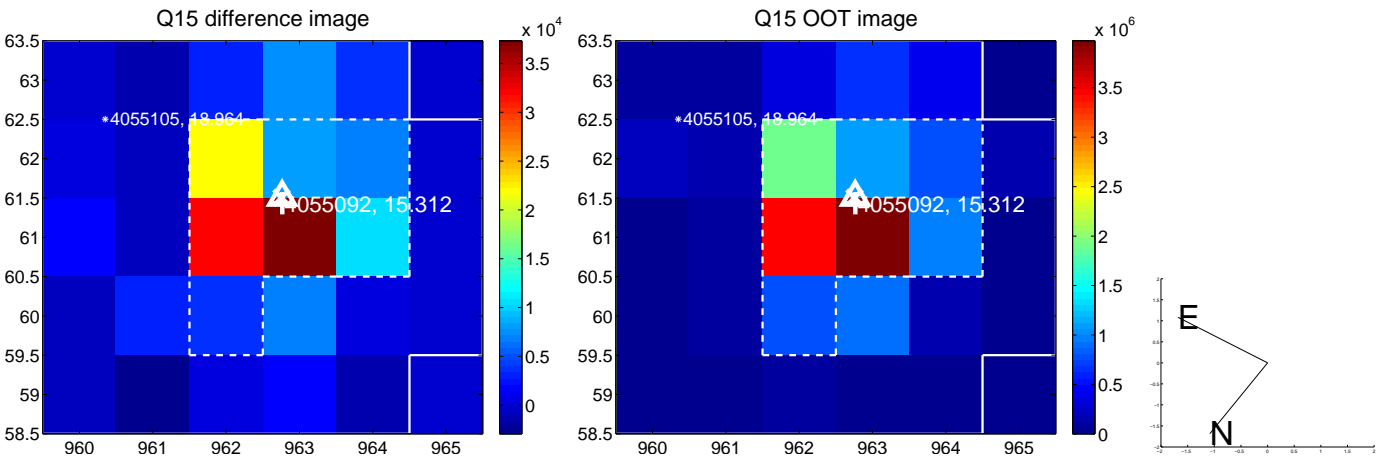
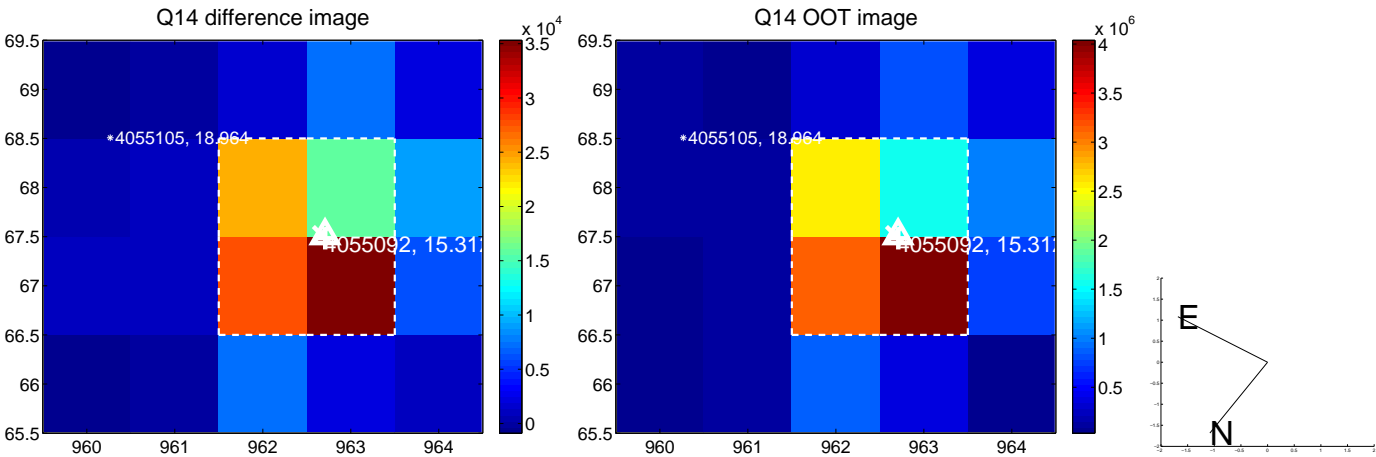
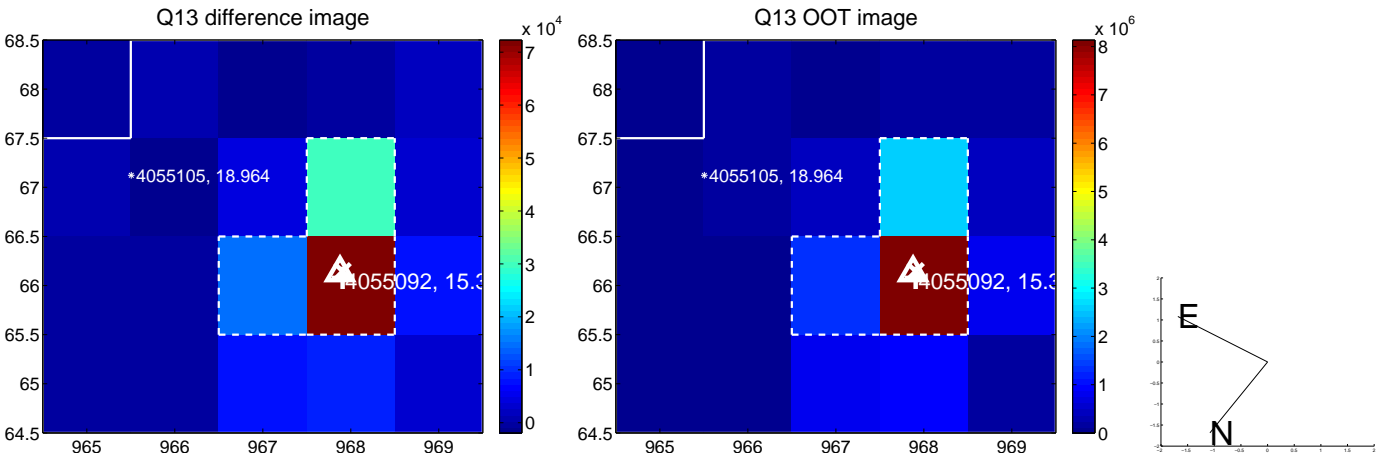
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



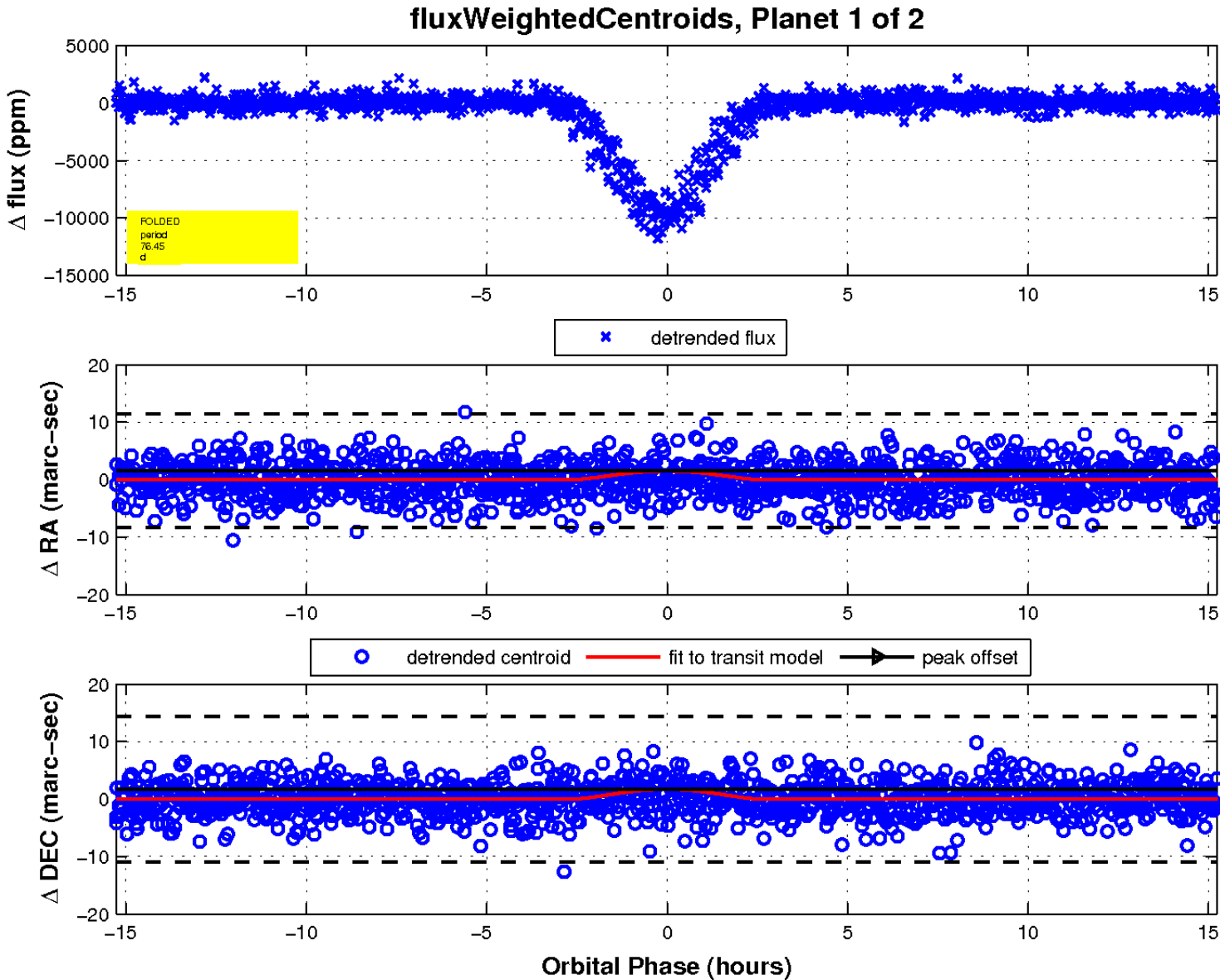
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

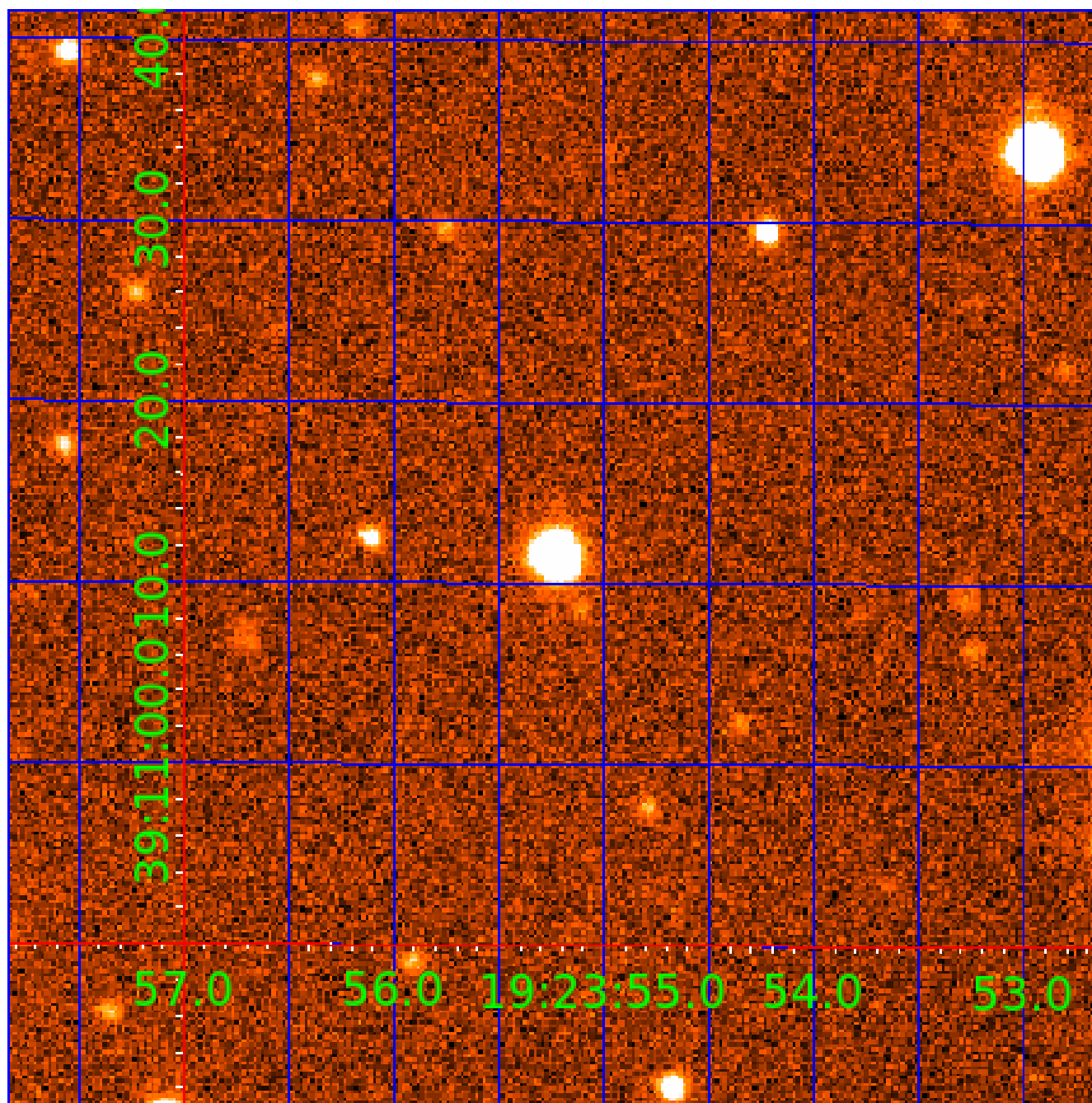
Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination



KIC 004055092

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})
004055092-01	OBS	6379.01	76.453052	133.991001	9601.0	5.091	165.1	133.9	0.54	4831	9.63	1.71
004055092-02	OBS	No	76.479184	160.997124	8565.5	4.104	116.3	100.8	0.54	4831	9.15	1.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004055092-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—HAS_SEC_TCE
004055092-02	OBS	FP	0.00	1	1	0	0	IS_SEC_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 004055092-02

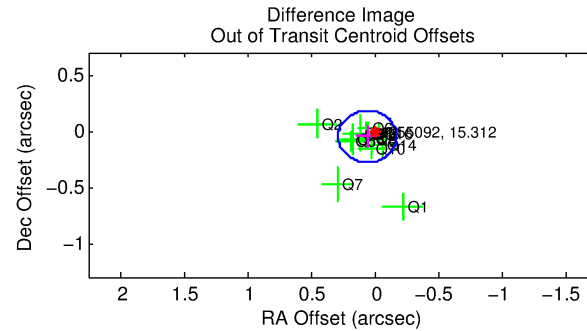
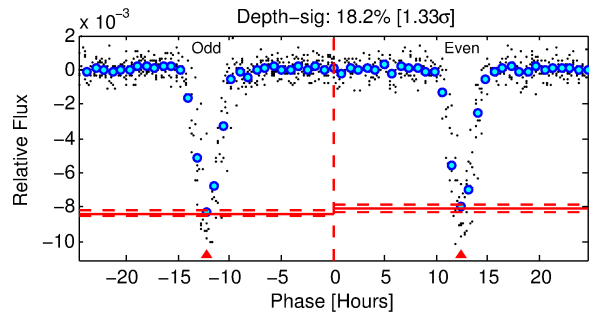
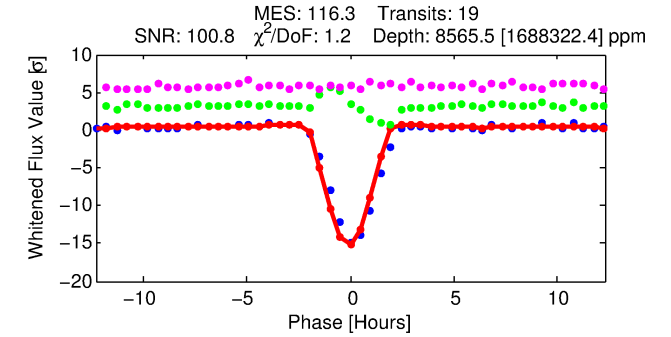
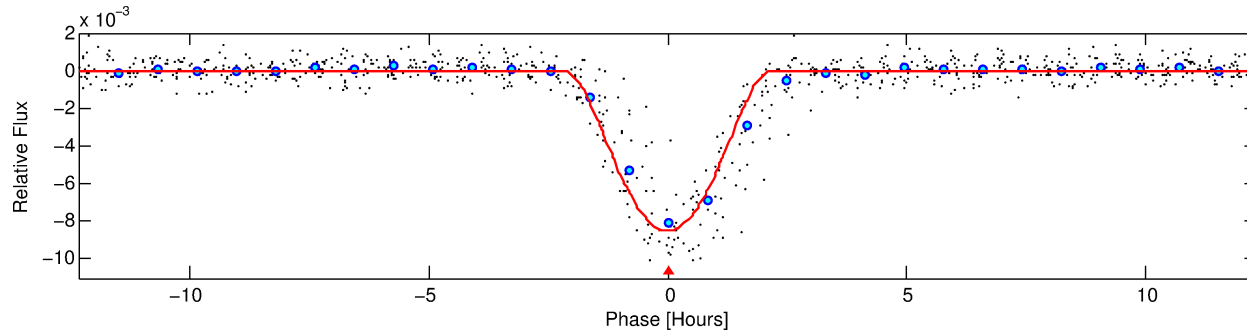
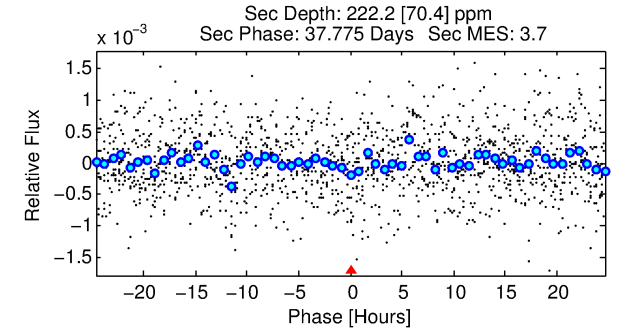
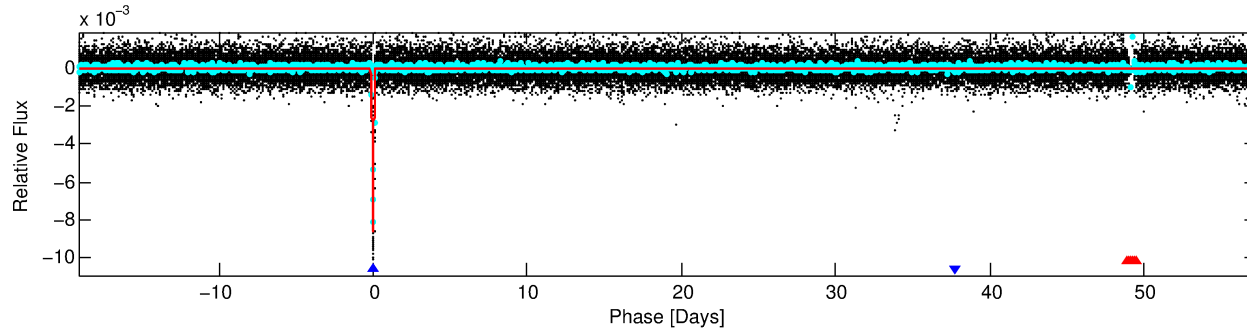
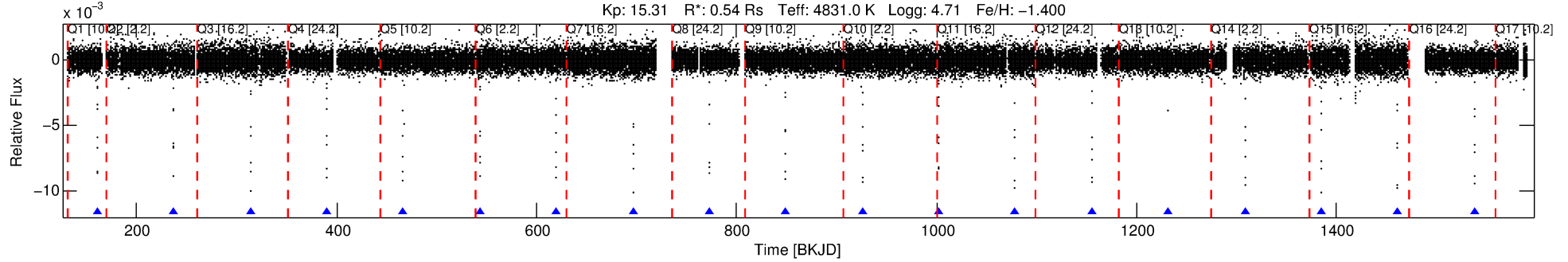
No Significant Match Found

DV One-Page Summary

KIC: 4055092 Candidate: 2 of 2 Period: 76.479 d

KOI: K06379 Corr: No Ephemeris Match

Kp: 15.31 R*: 0.54 Rs Teff: 4831.0 K Logg: 4.71 Fe/H: -1.400



DV Fit Results:

Period = 76.47918 [0.00009] d
Epoch = 160.9971 [0.0010] BKJD
Rp/R* = 0.1553 [0.0925]
a/R* = 82.38 [7.31]
b = 1.00 [19.66]
Seff = 1.71 [0.27]
Teq = 291 [11] K
Rp = 9.15 [5.48] Re
a = 0.2888 [0.0165] AU
Ag = 121.71 [150.39] [0.80σ]
Teffp = 1497 [464] K [2.60σ]

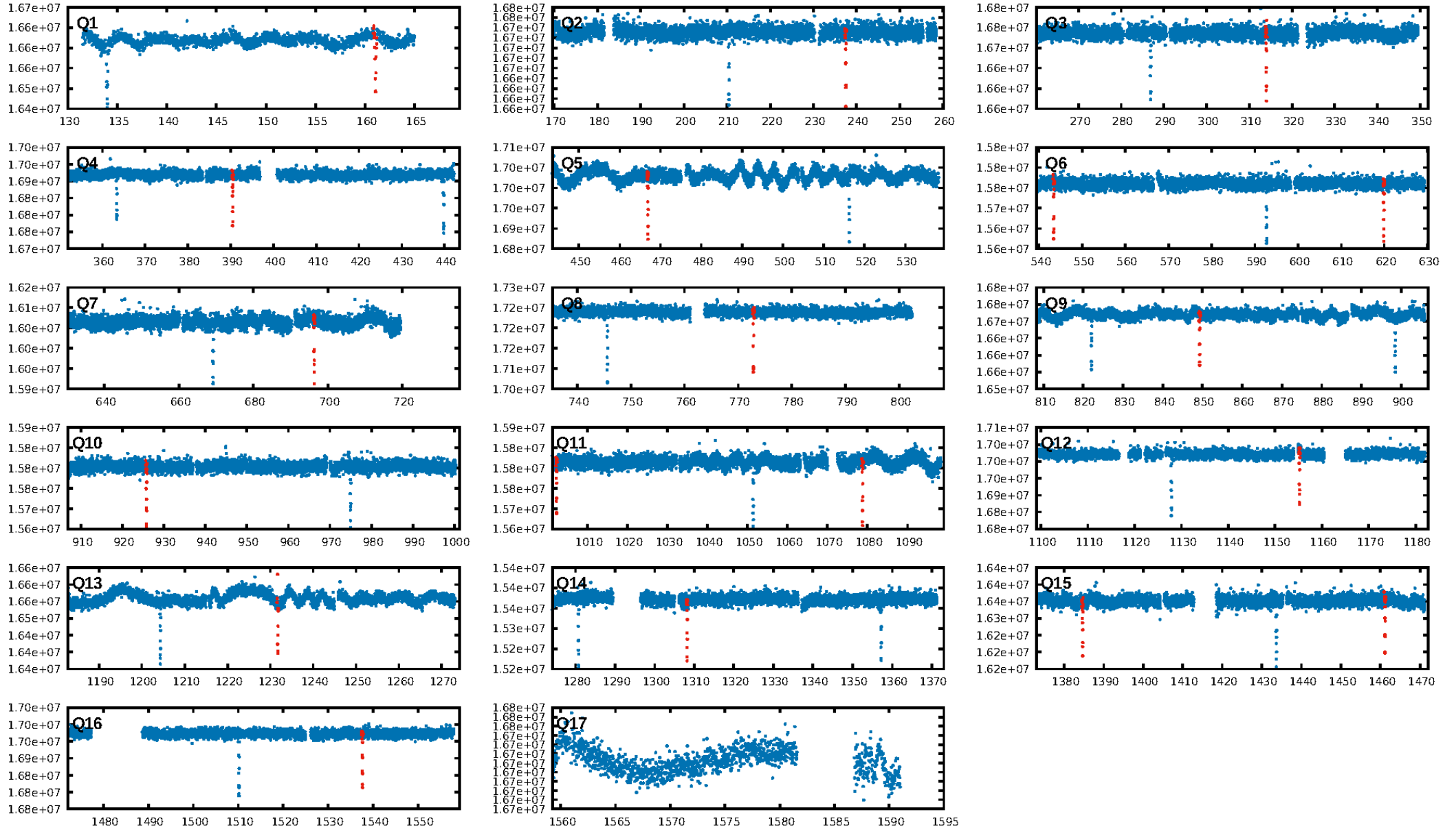
DV Diagnostic Results:

ShortPeriod-sig: 7.6% [0.10σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.7%
ModelChiSquareGof-sig: 43.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: 1.872
Centroid-sig: 83.0%
Centroid-so: 0.353 arcsec [3.14σ]
OotOffset-rm: 0.075 arcsec [0.98σ]
KicOffset-rm: 0.206 arcsec [2.54σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

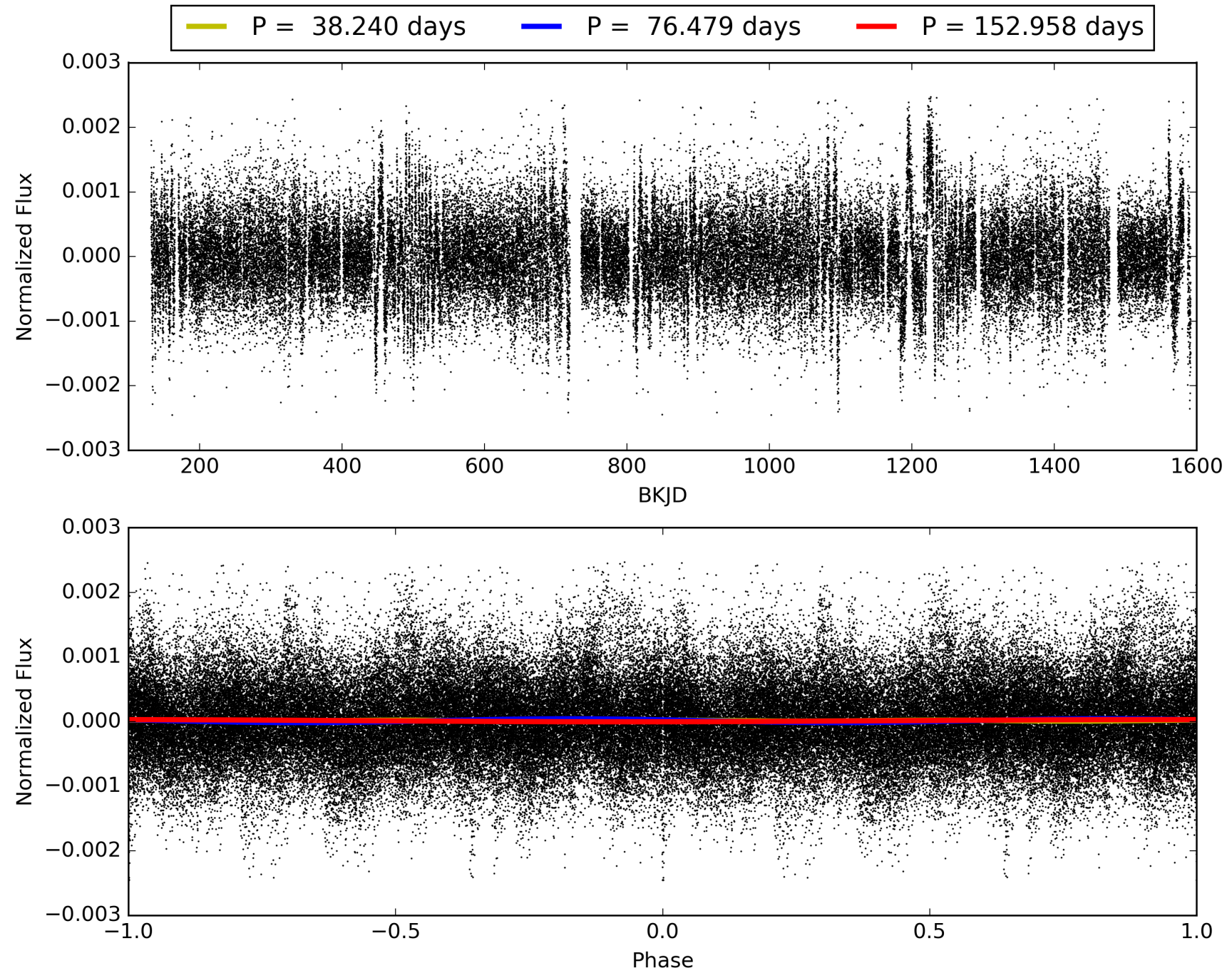
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:58:50 Z

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

TCE 004055092-02, PDC Light Curves

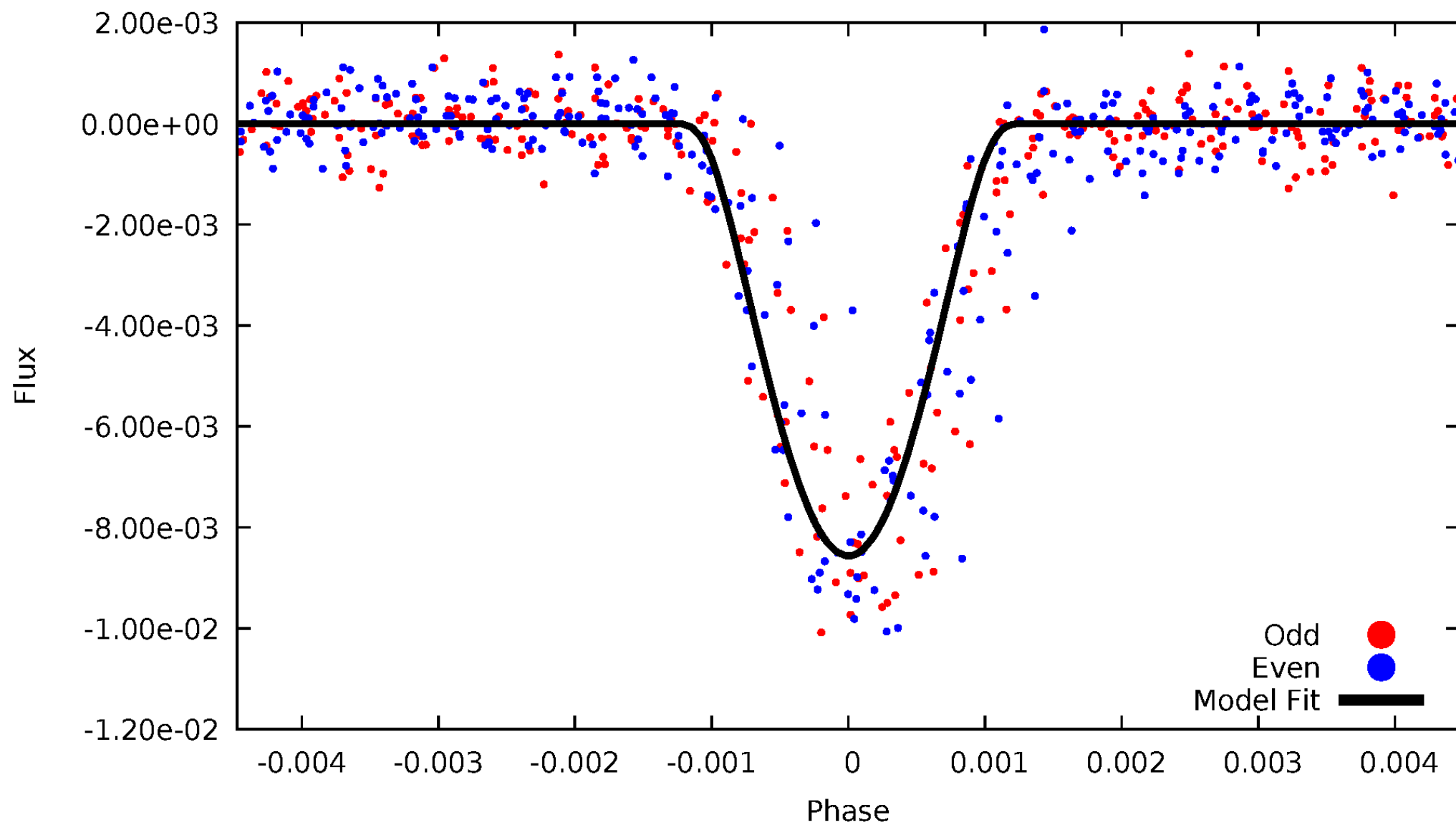


TCE 004055092-02



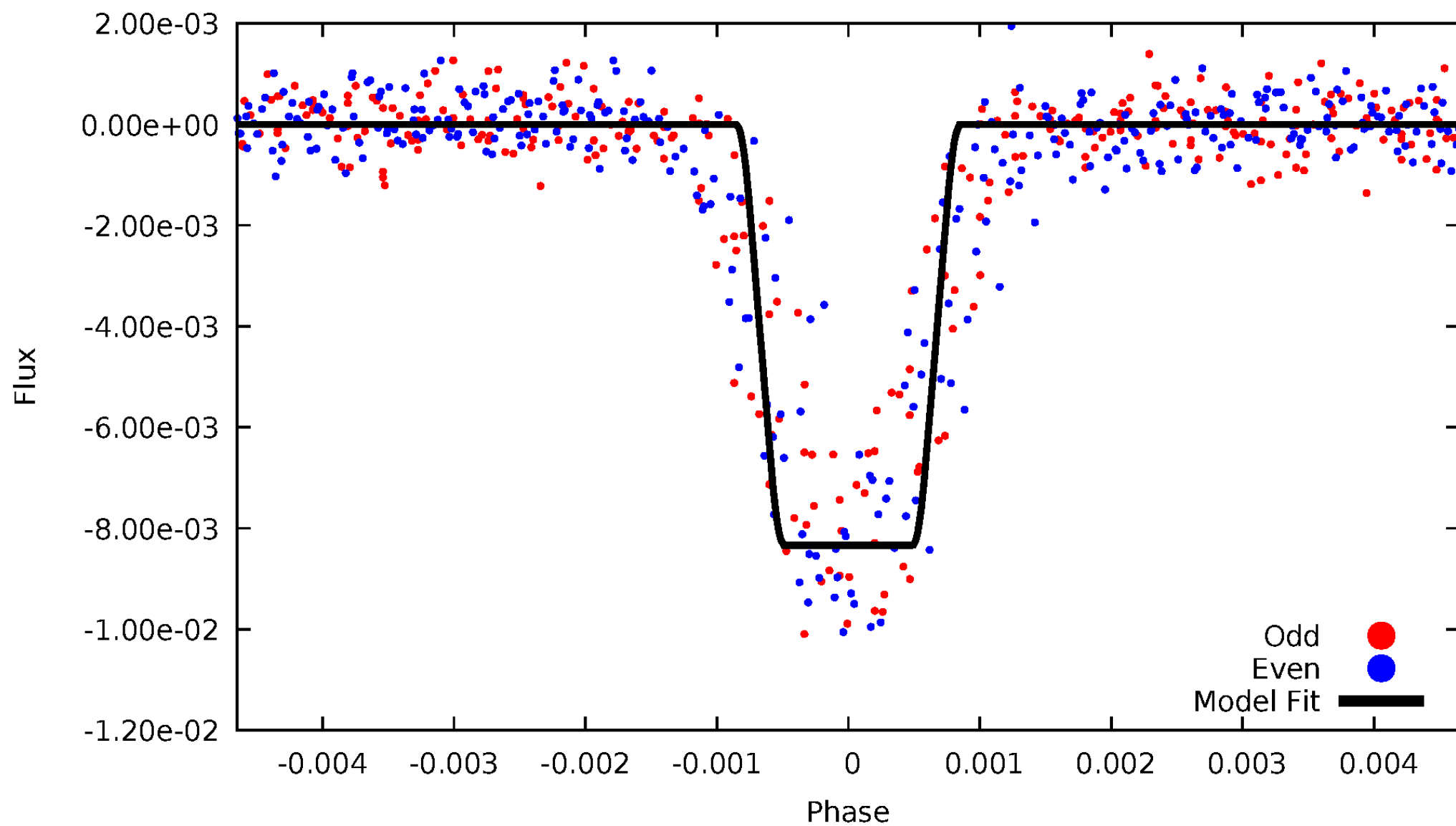
DV Odd/Even

TCE 004055092-02



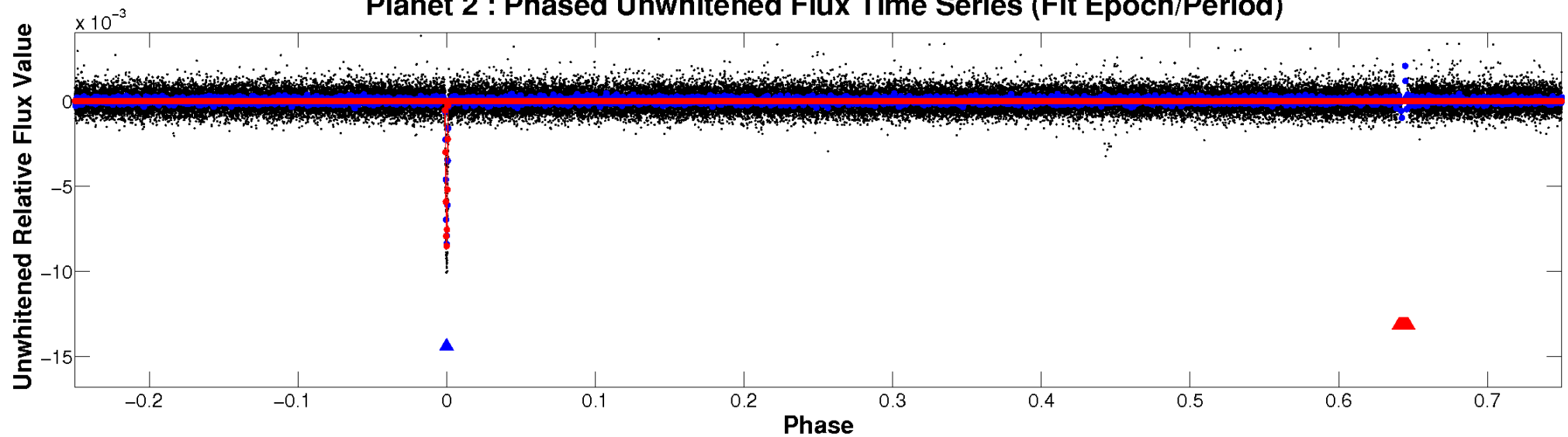
ALT Odd/Even

TCE 004055092-02

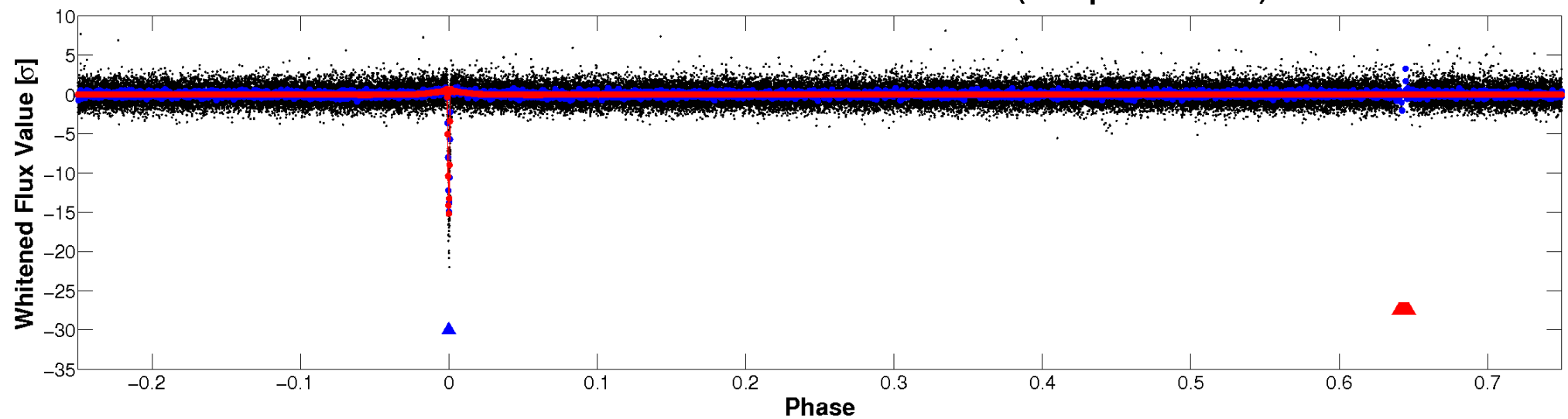


Non-Whitened Vs. Whitened Light Curve

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

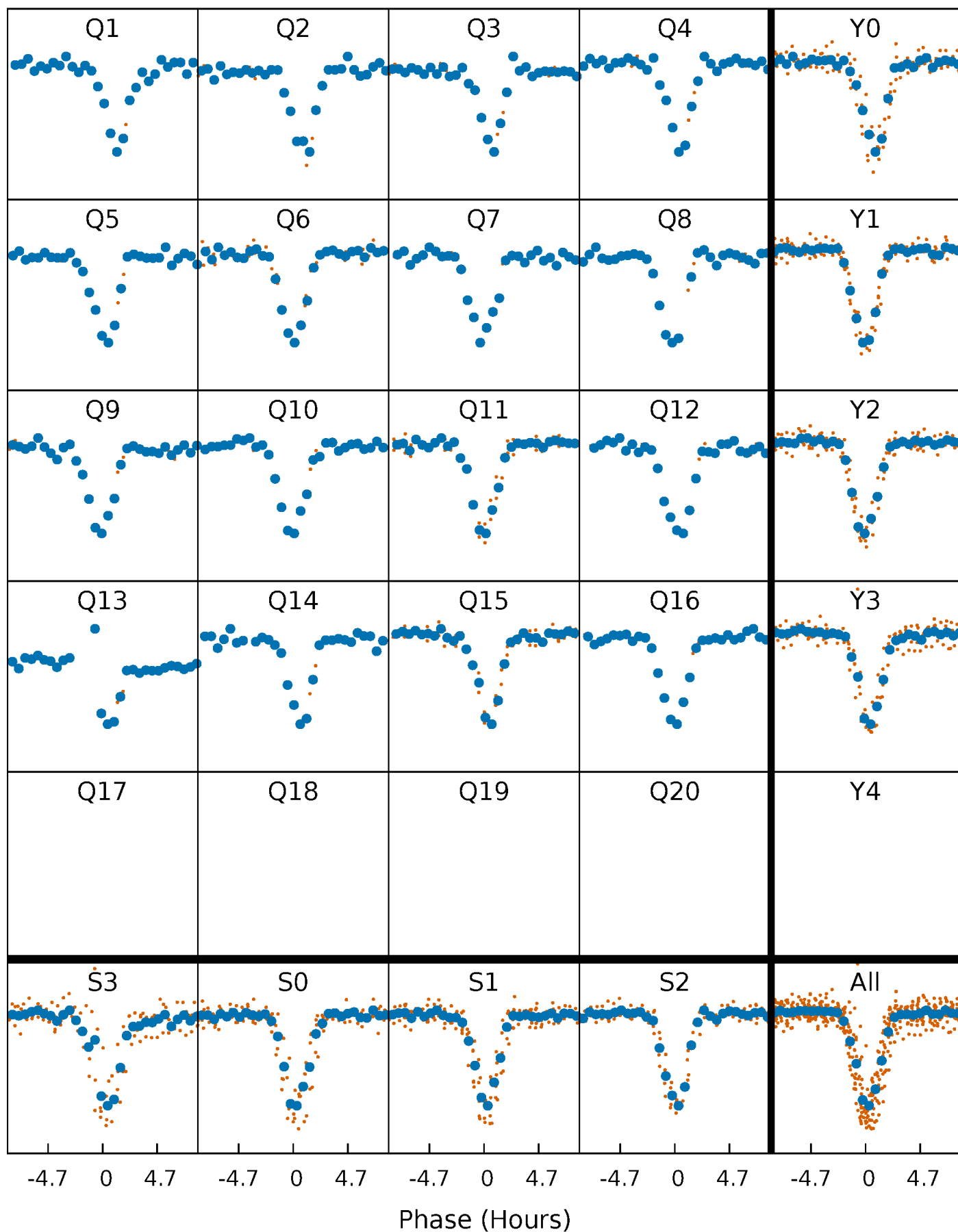


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



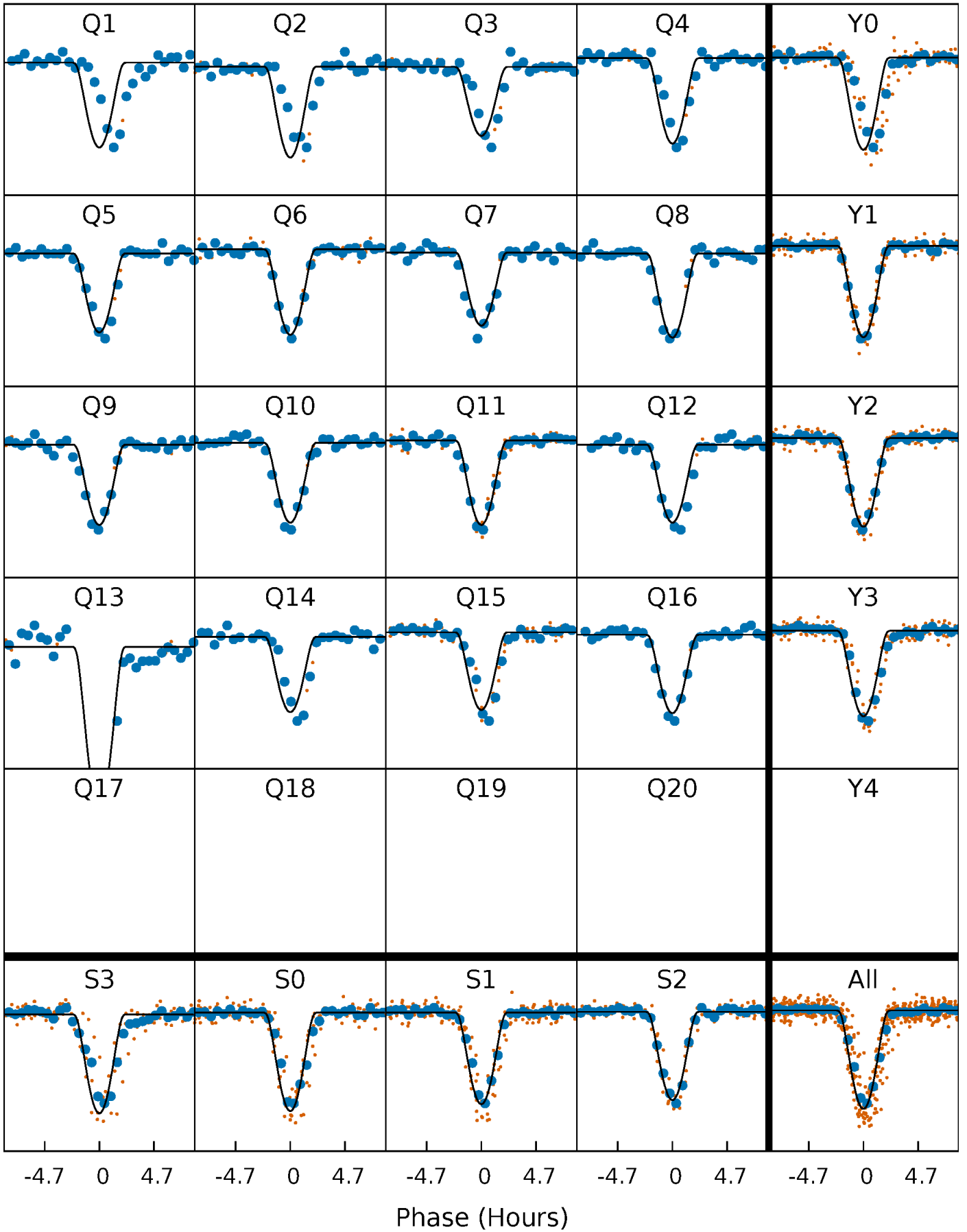
PDC Quarter-Phased Transit Curves

TCE 004055092-02 $P = 76.479184$ Days $T_0 = 160.997124$ (BKJD)



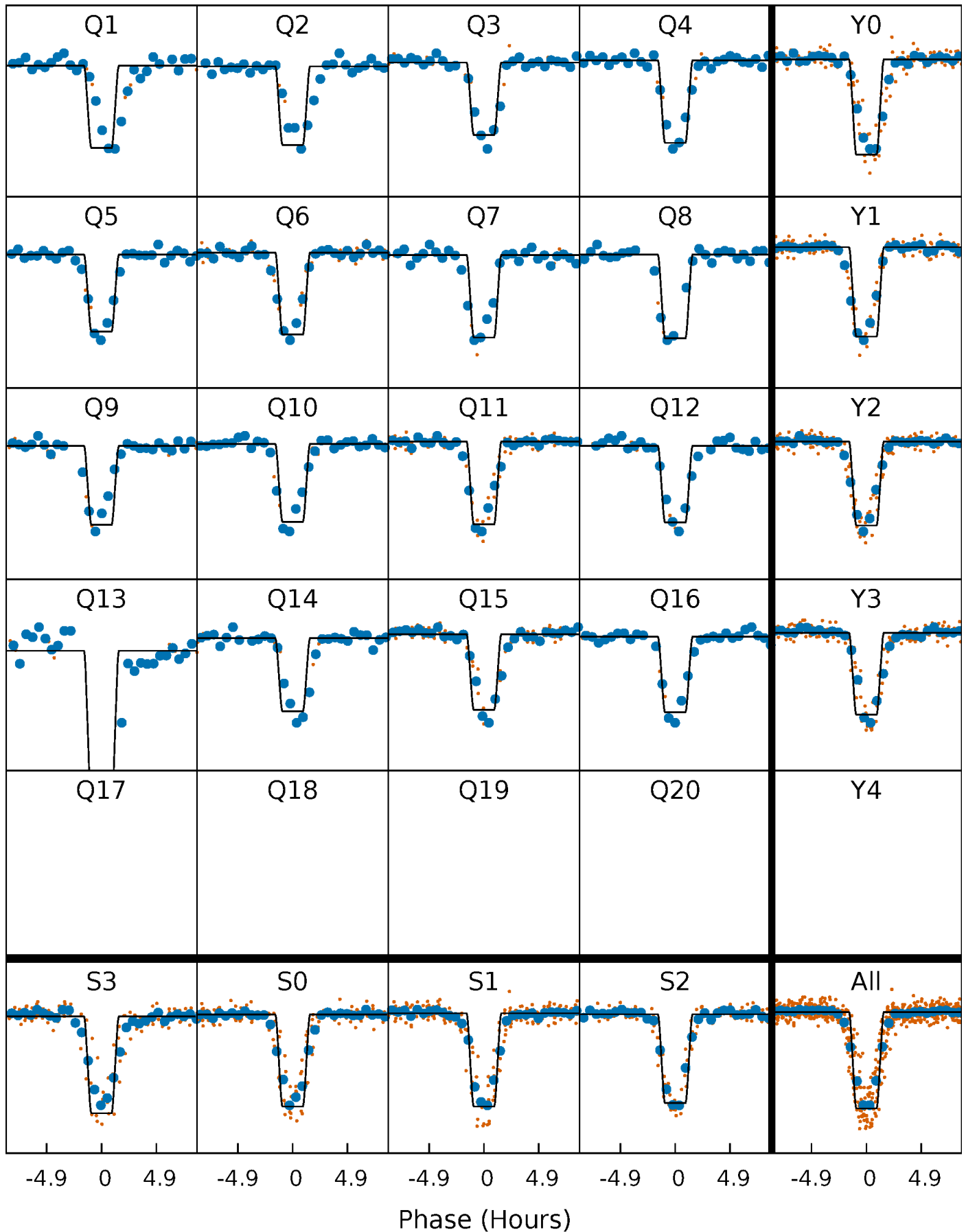
DV Quarter-Phased Transit Curves

TCE 004055092-02 $P = 76.479184$ Days $T_0 = 160.997124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

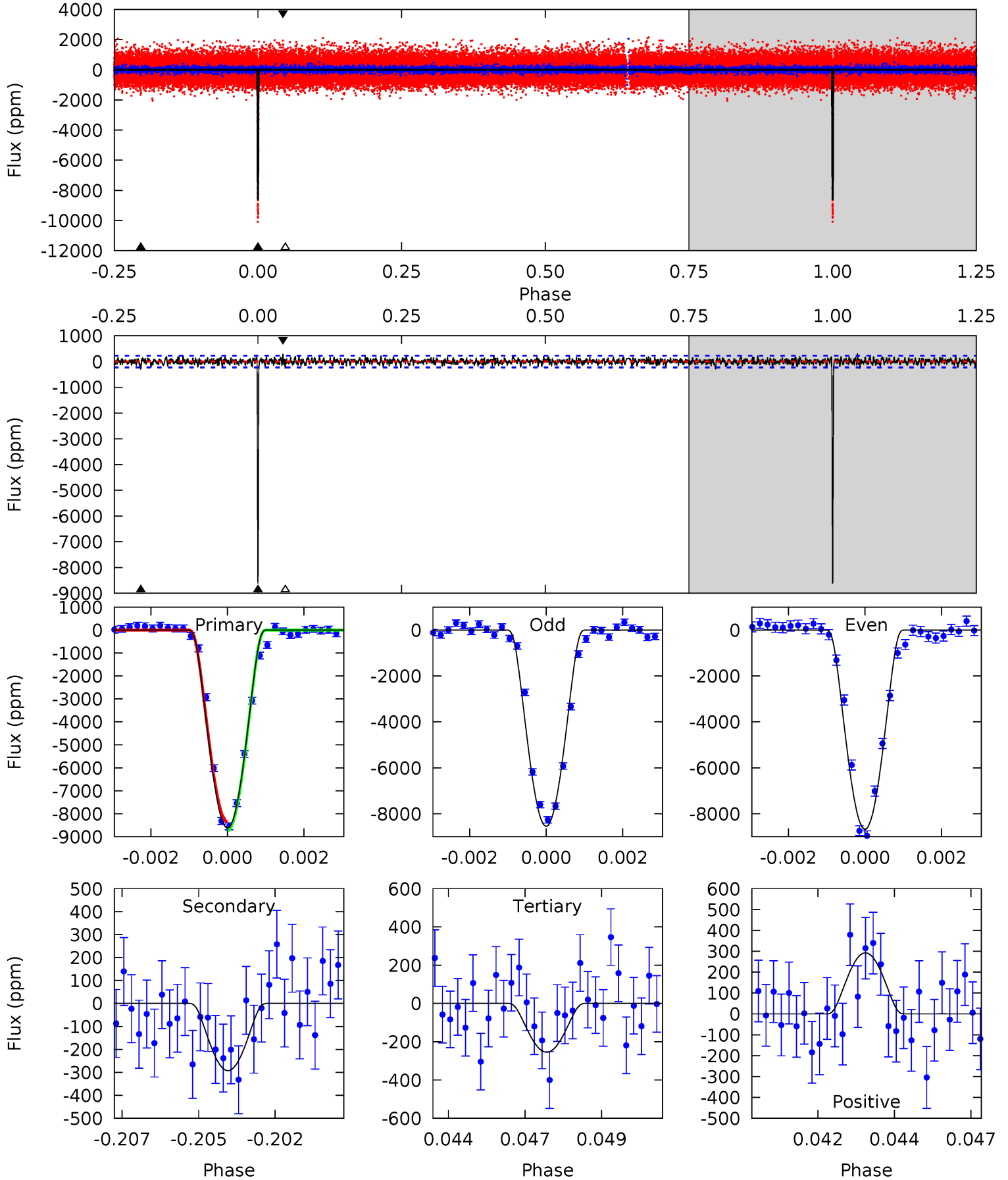
TCE 004055092-02 P= 76.478326 Days $T_0=161.013564$ (BKJD)



DV Model-Shift Uniqueness Test

004055092-02, P = 76.479184 Days, E = 84.517940 Days

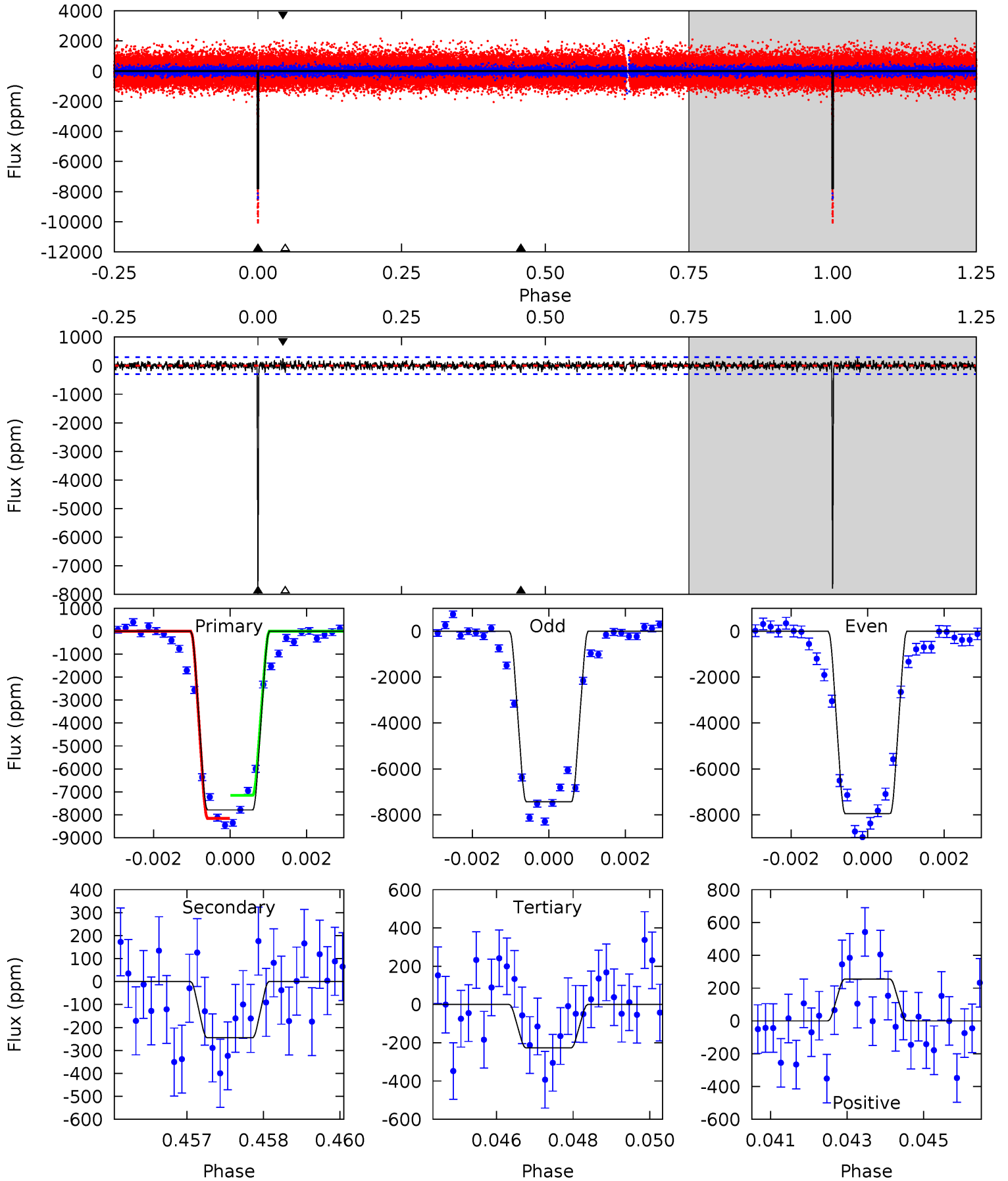
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
198.9	6.75	5.88	6.75	5.29	3.03	1.63	193.0	192.2	0.87	0.00	1.53	1.13	0.03	4.29



Alt Model-Shift Uniqueness Test

004055092-02, P = 76.478326 Days, E = 84.535238 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
140.8	4.43	4.09	4.61	5.36	3.15	1.15	136.7	136.2	0.34	-0.18	4.63	0.99	0.03	9.02



Stellar Parameters For KIC 004055092

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4831^{+144}_{-158}	$4.713^{+0.049}_{-0.025}$	$-1.400^{+0.300}_{-0.300}$	$0.540^{+0.026}_{-0.035}$	$0.548^{+0.036}_{-0.022}$	$4.911^{+0.889}_{-0.516}$
	+3%/-3%	+1%/-1%	+21%/-21%	+5%/-6%	+7%/-4%	+18%/-11%
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 004055092-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-293 ± 43	$9.48^{+5.10}_{-5.02}$	406^{+14}_{-14}	2415^{+503}_{-226}	148^{+535}_{-87}
Alt.	-245 ± 55	$6.30^{+4.86}_{-3.81}$	406^{+13}_{-15}	2598^{+798}_{-334}	270^{+1537}_{-183}

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

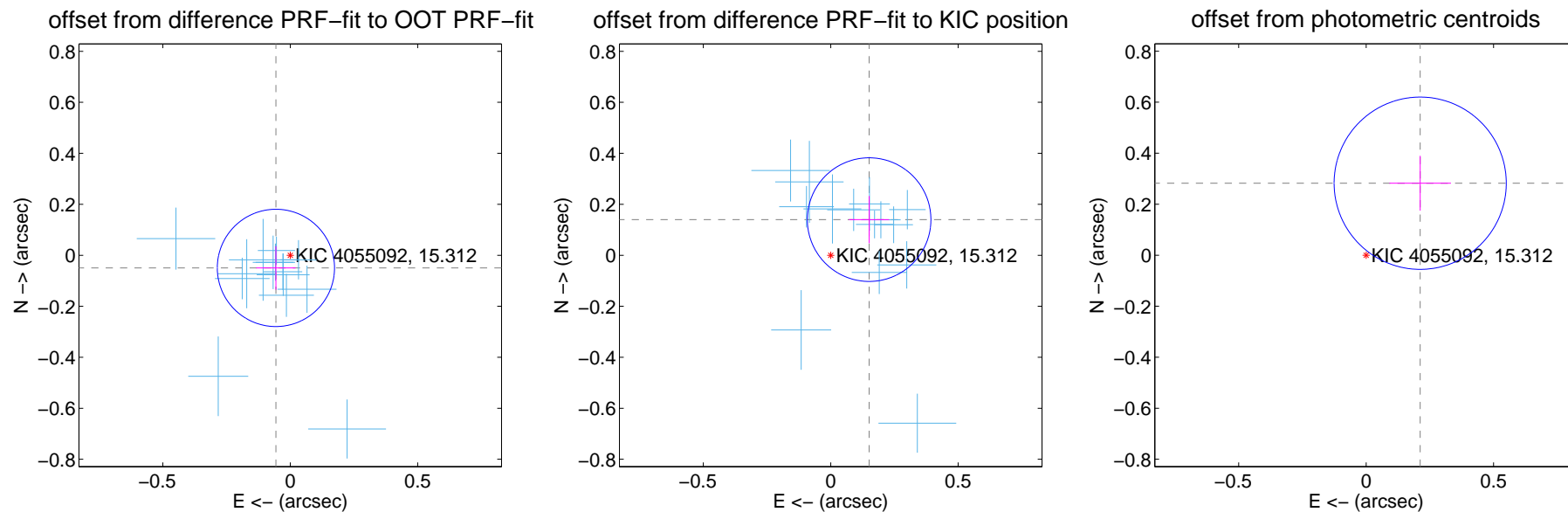
DV Centroid Data

Supplemental centroid analysis for 004055092-02. Kepler magnitude: 15.31. Transit SNR 100.84

There are 14 quarters with good PRF difference image offsets

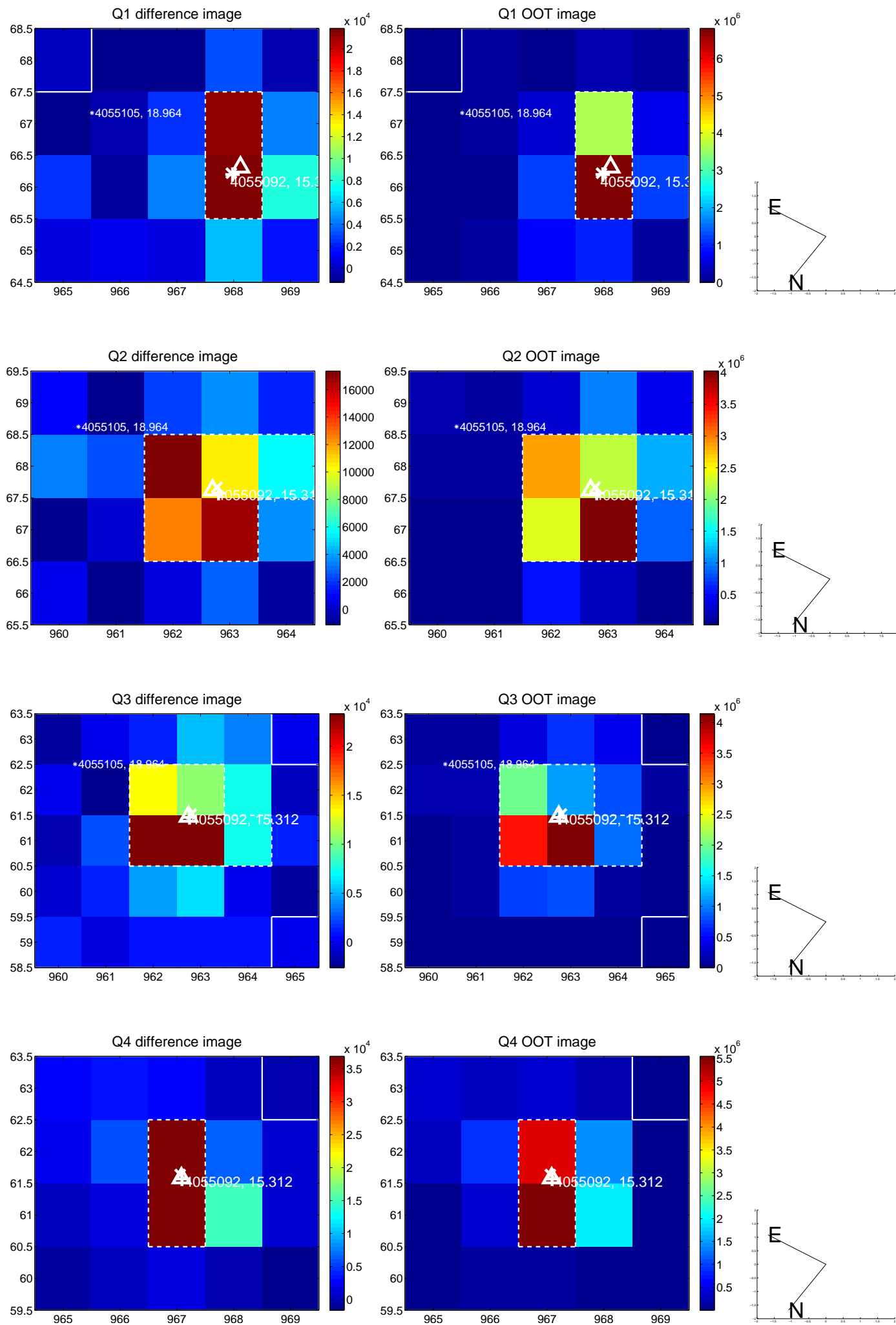
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.075 ± 0.077	0.98	0.056 ± 0.077	-0.050 ± 0.086
PRF-fit source offset from KIC position	0.206 ± 0.081	2.54	-0.151 ± 0.079	0.140 ± 0.093
photometric centroid source offset	0.35 ± 0.11	3.14	-0.21 ± 0.12	0.28 ± 0.11

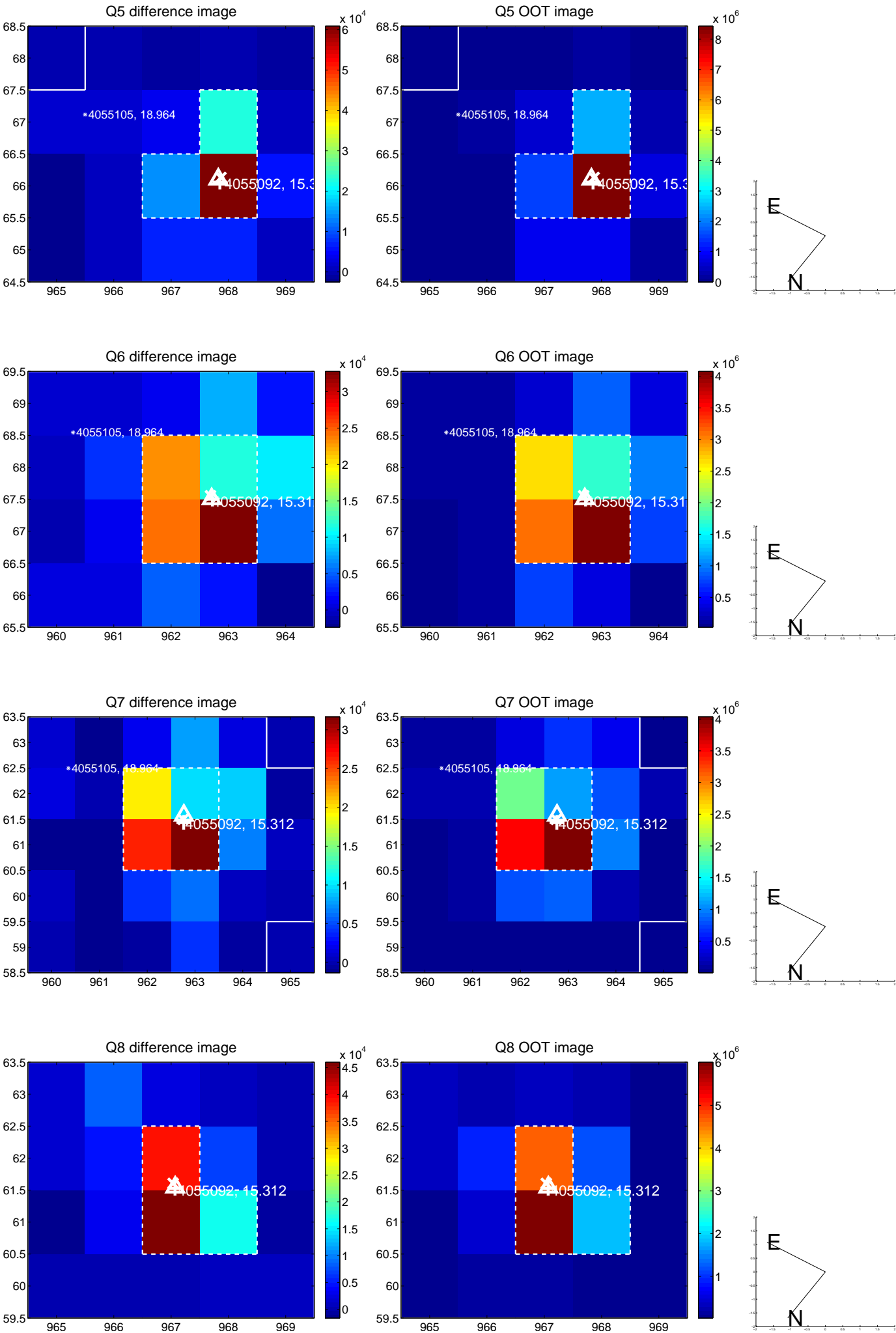


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

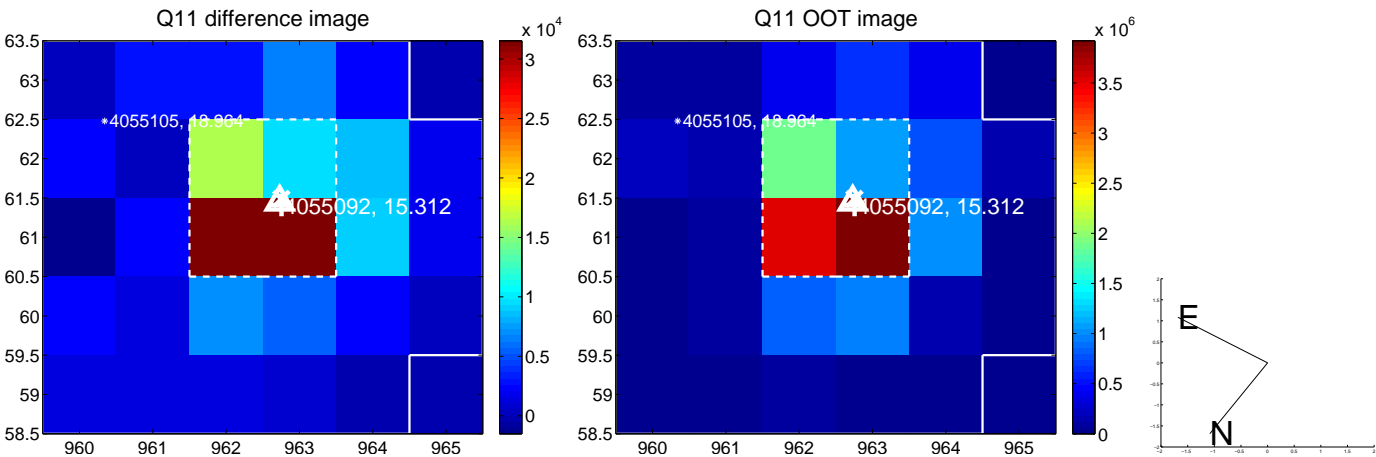
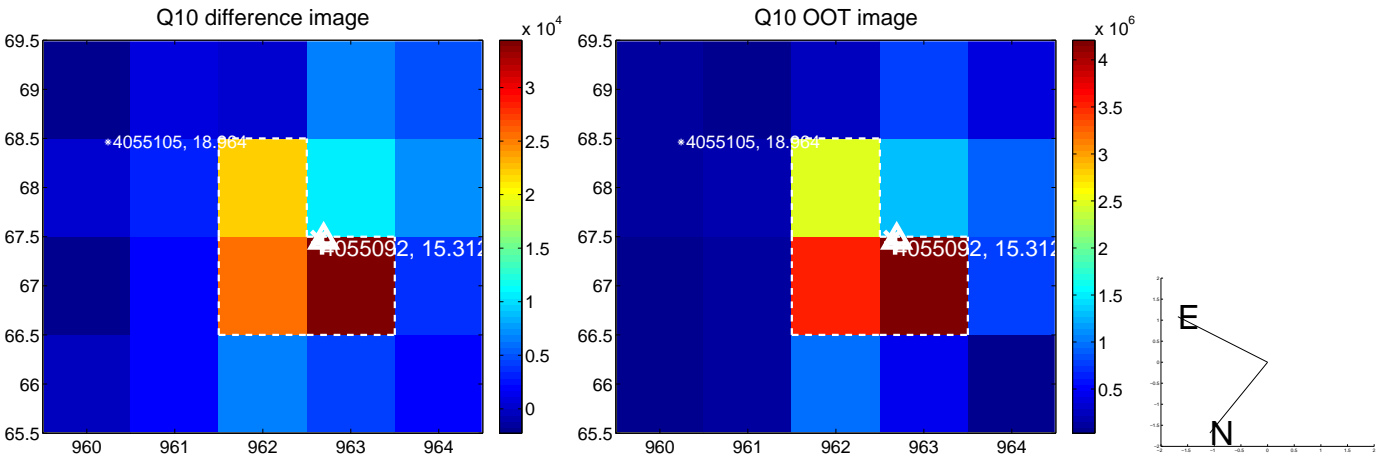
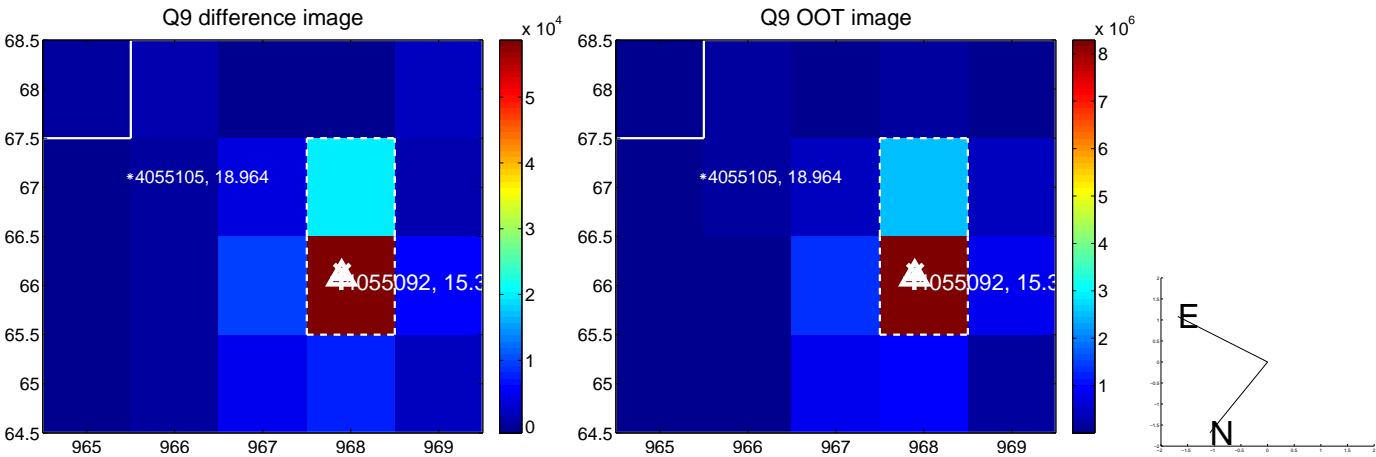
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



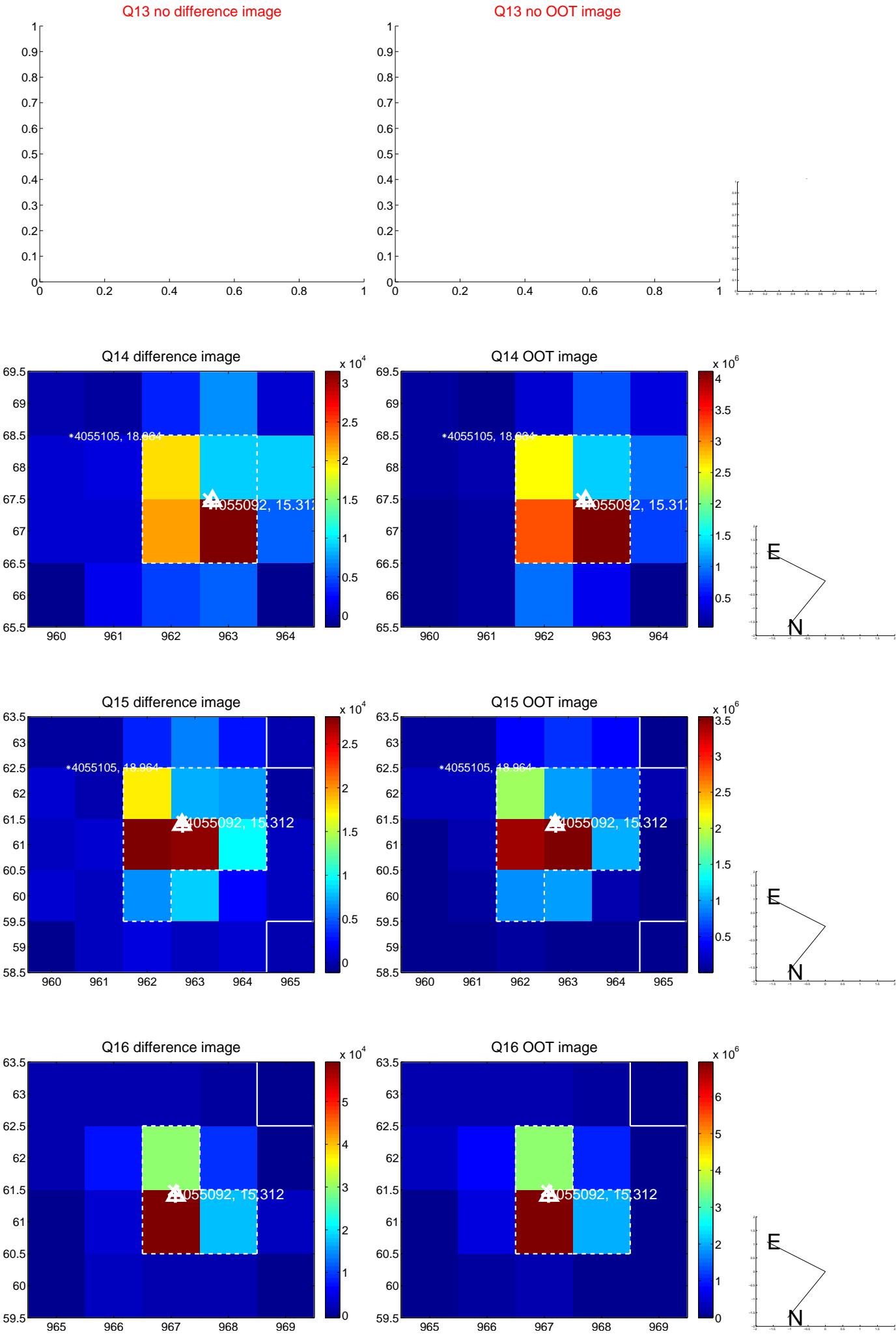
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



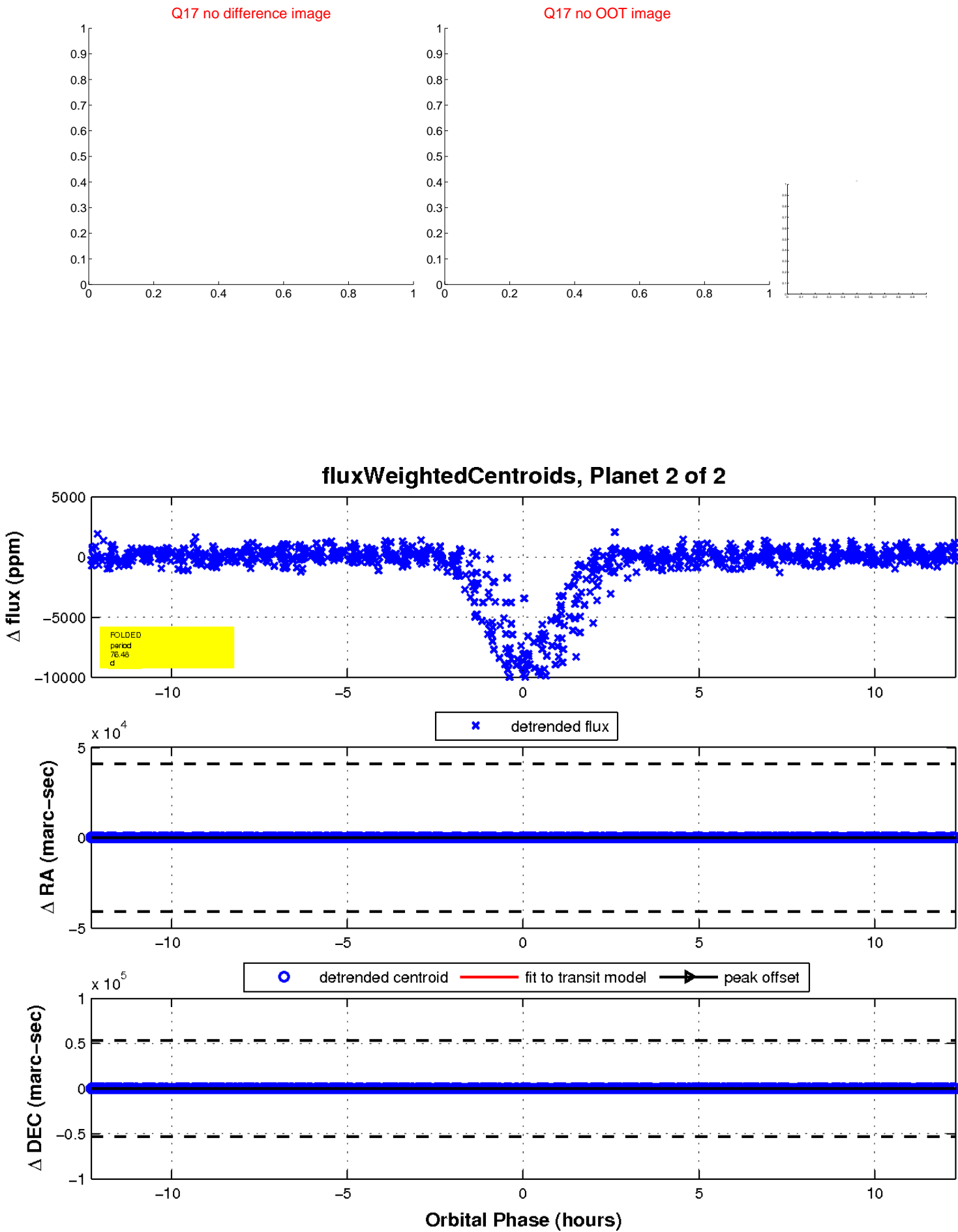
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

