

KIC 009092529

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})
009092529-01	OBS	No	0.664967	131.662036	389.2	2.500	10.4	-1.0	1.58	7241	3.17	21611.04
009092529-02	OBS	No	222.513285	340.366103	4536.1	4.874	7.5	8.1	1.58	7241	19.03	9.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009092529-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
009092529-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT

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

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

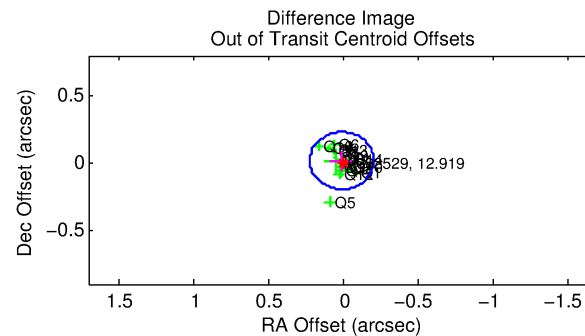
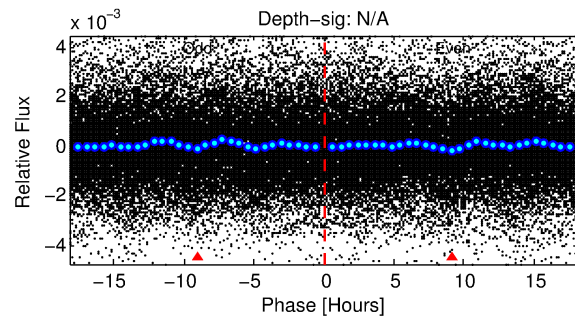
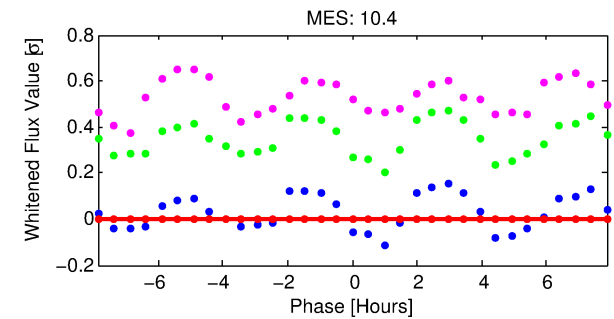
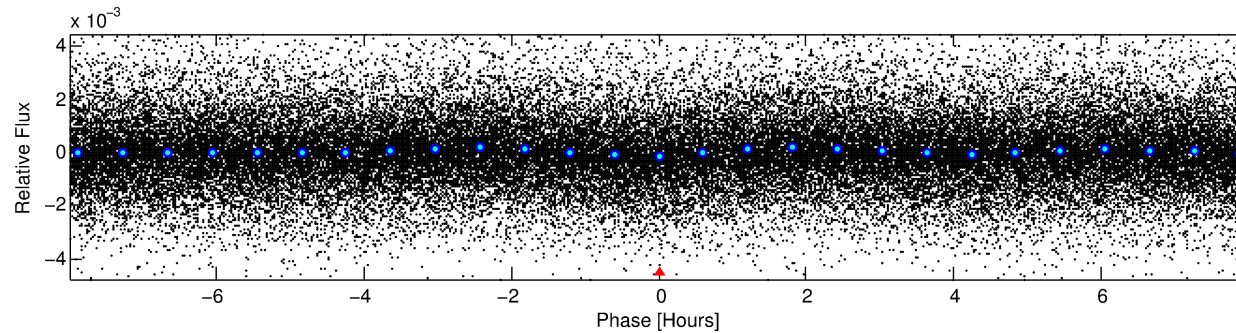
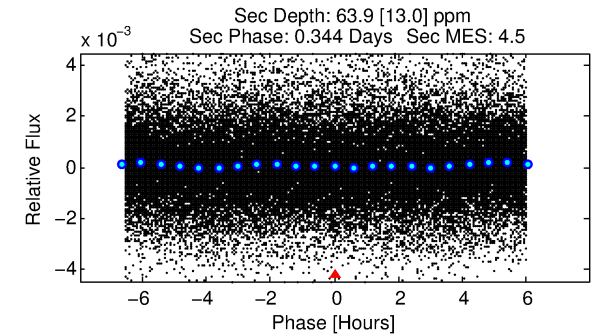
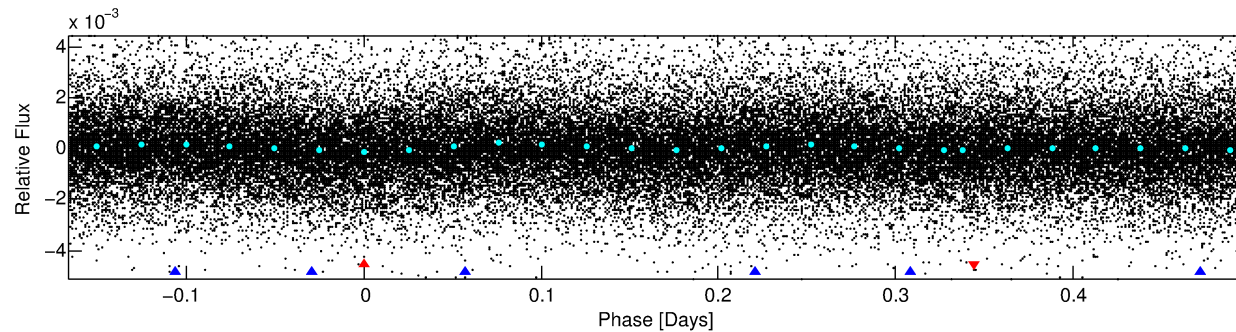
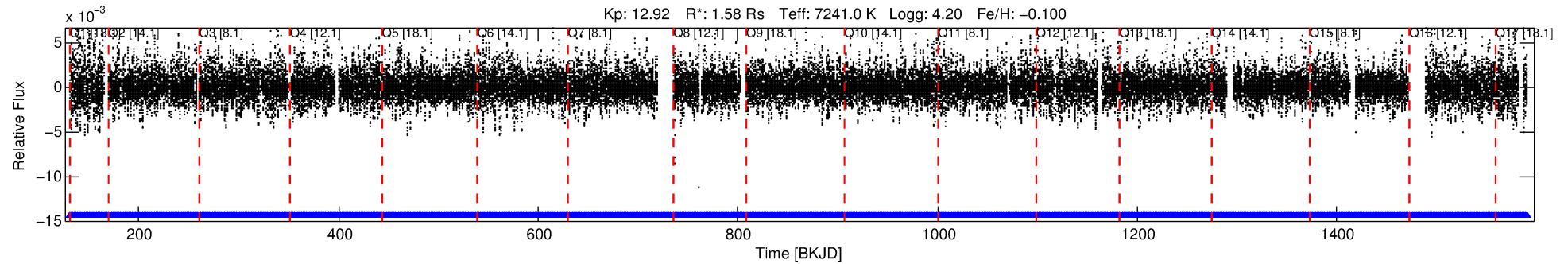
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092529-01

No Significant Match Found

DV One-Page Summary

KIC: 9092529 Candidate: 1 of 2 Period: 0.665 d



TPS TCE Results:

Period = 0.66497 d
Epoch = 131.6620 BKJD

DV fit results are unavailable

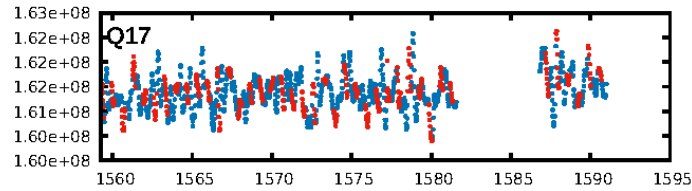
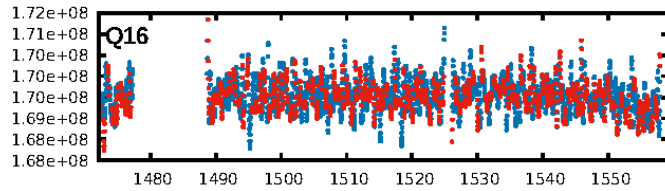
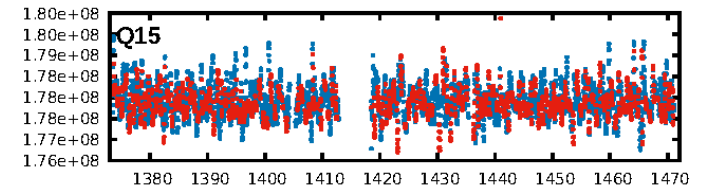
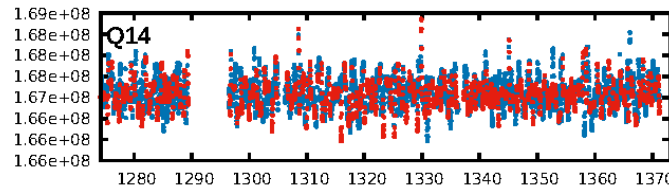
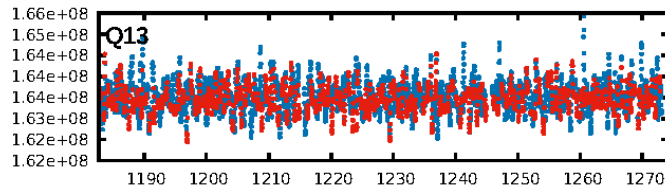
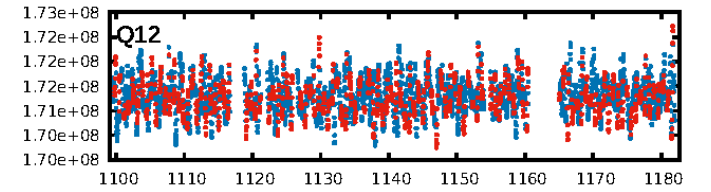
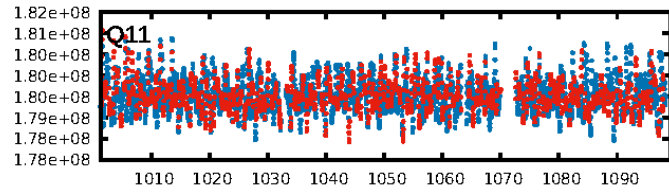
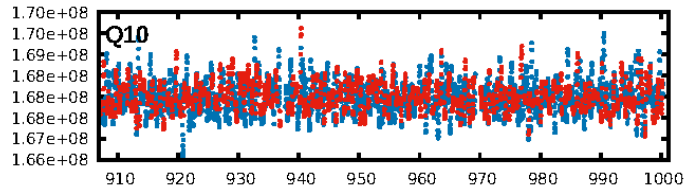
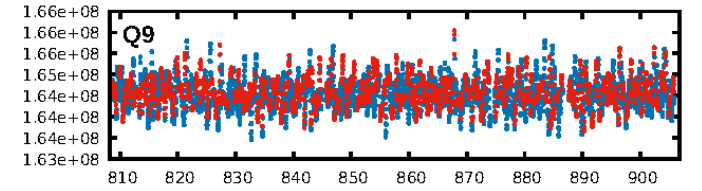
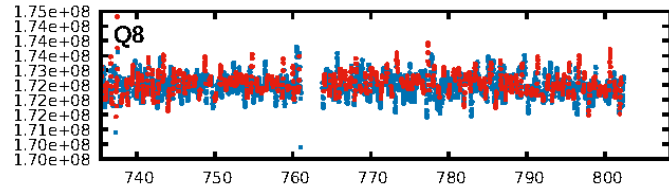
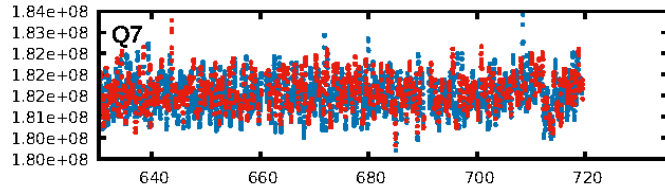
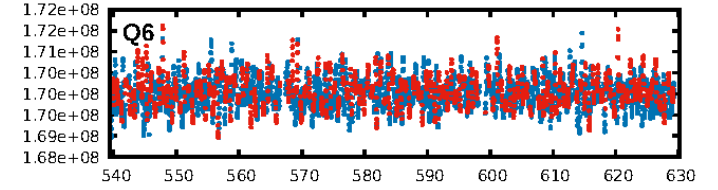
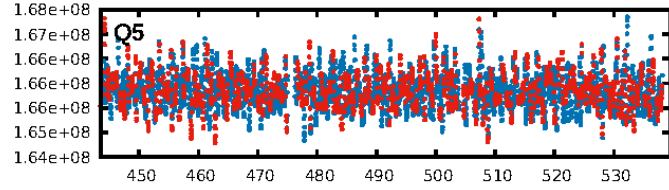
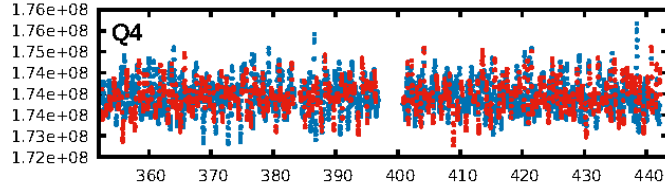
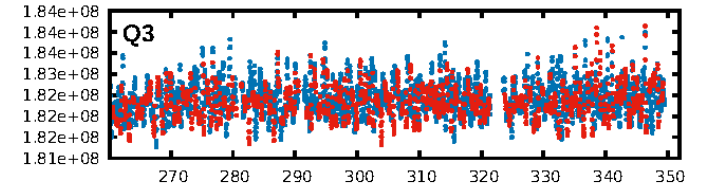
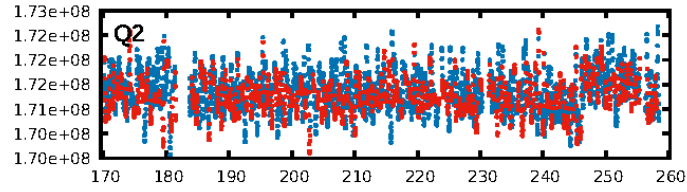
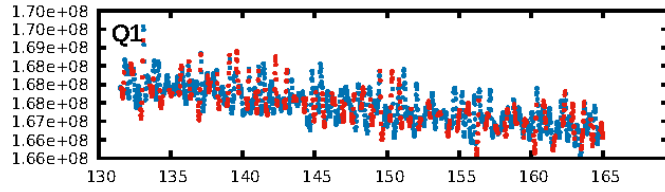
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [972.03σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.53e-18
RollingBand-fgt: 1.00 [1929/1929]
GhostDiagnostic-chr: 1.627
Centroid-sig: 1.2%
Centroid-so: 0.138 arcsec [2.35σ]
OotOffset-rm: 0.020 arcsec [0.28σ]
KicOffset-rm: 0.051 arcsec [0.73σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 1.00 [17/17]

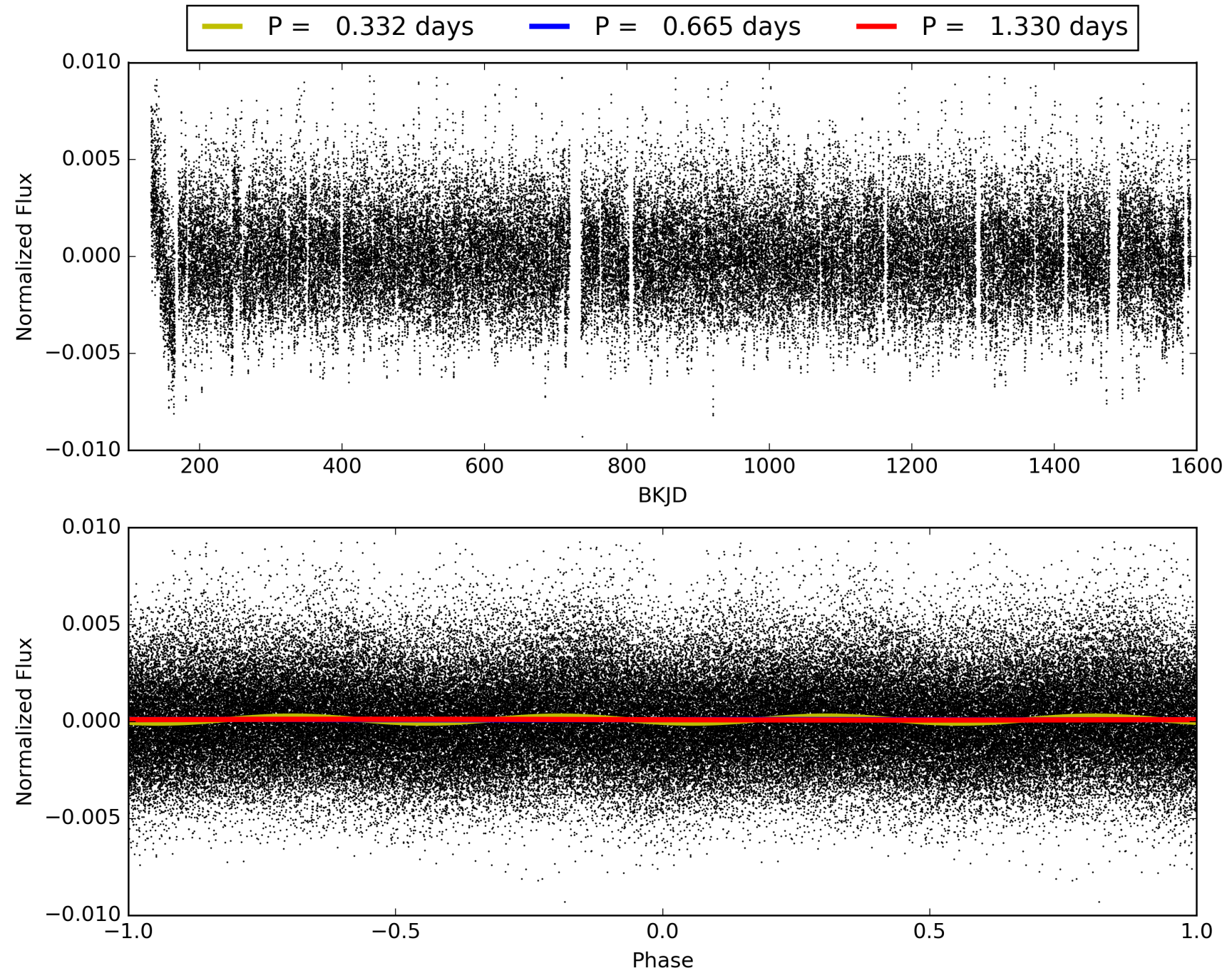
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:32:24 Z

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

TCE 009092529-01, PDC Light Curves

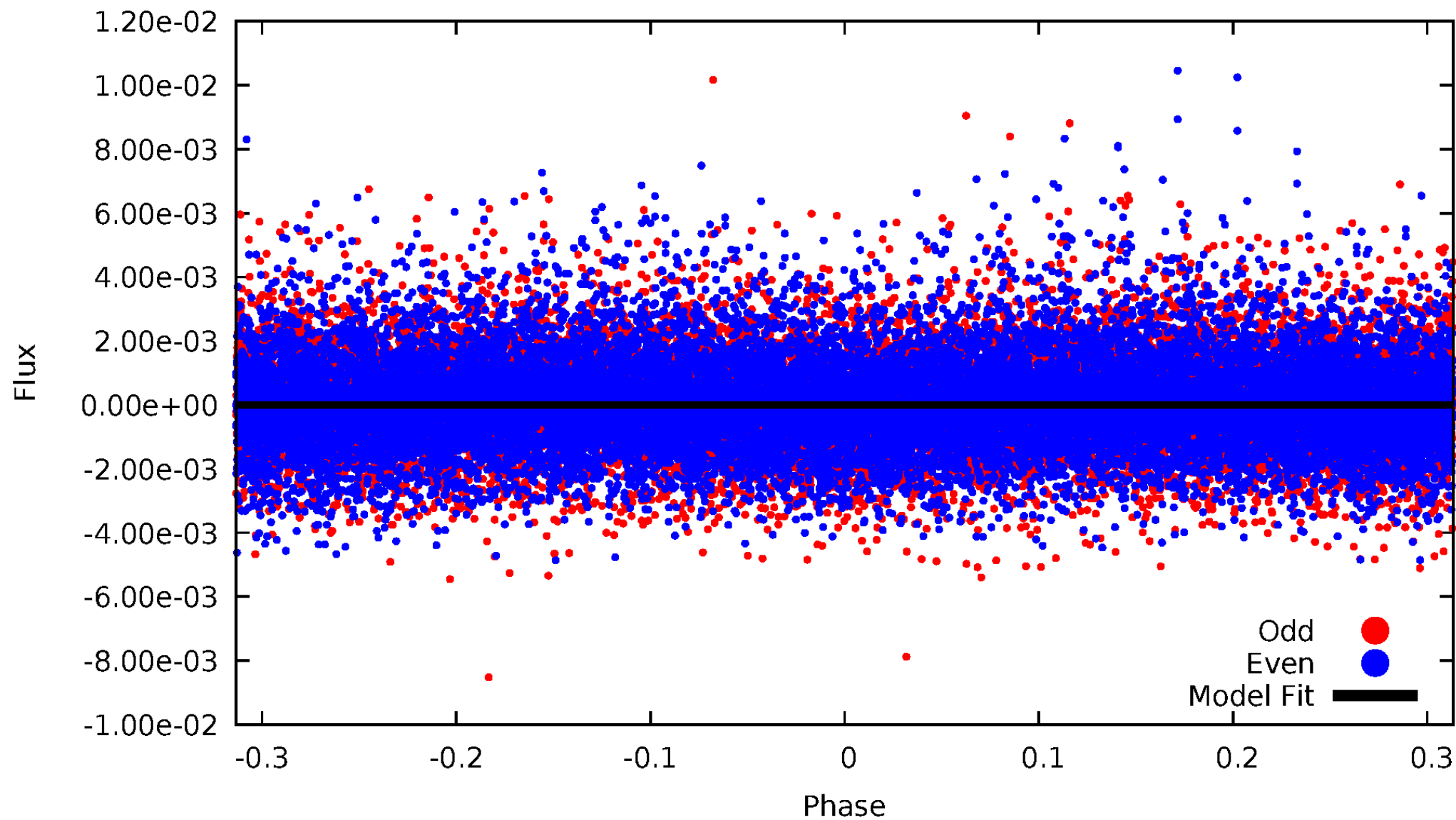


TCE 009092529-01



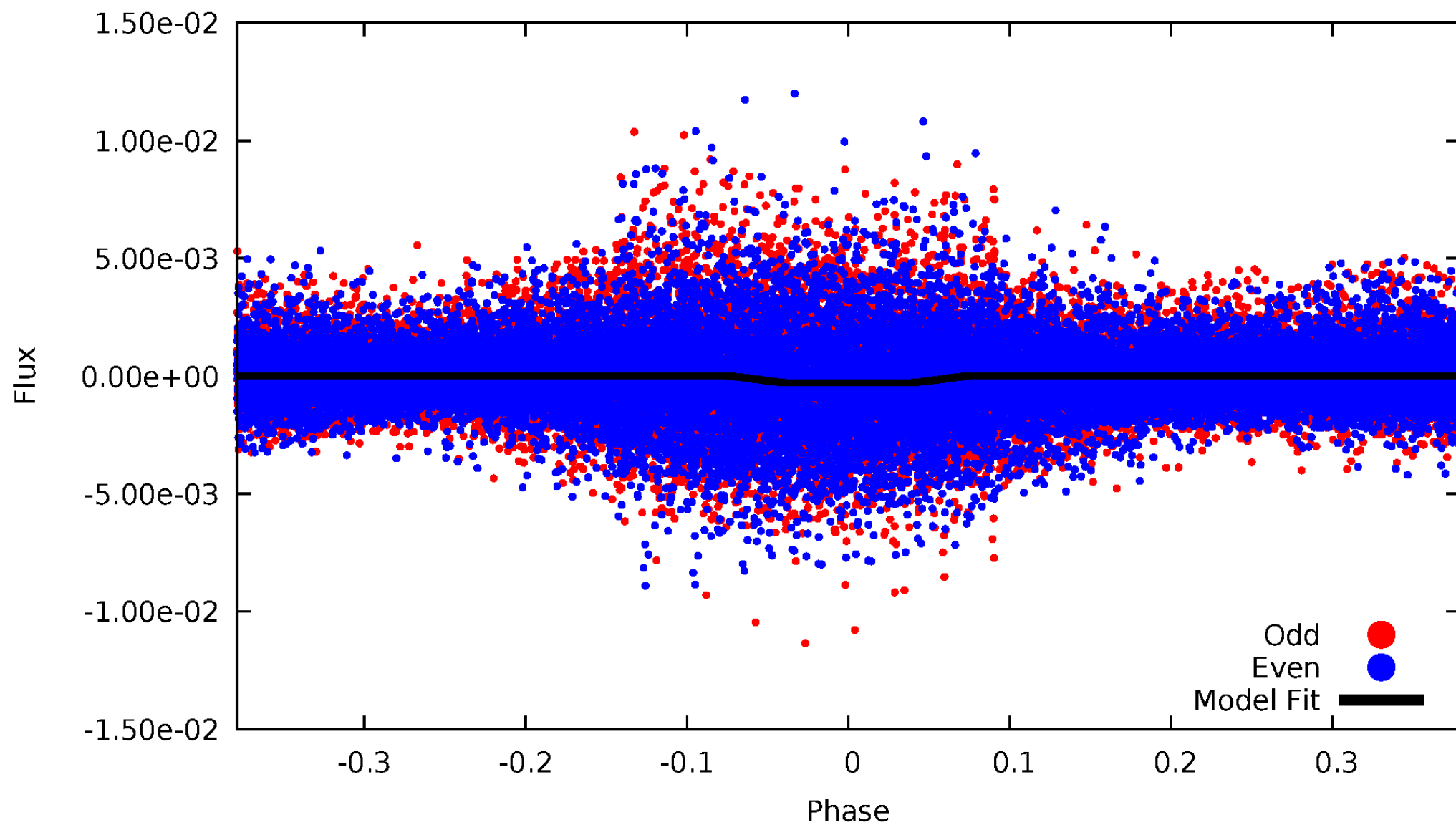
DV Odd/Even

TCE 009092529-01

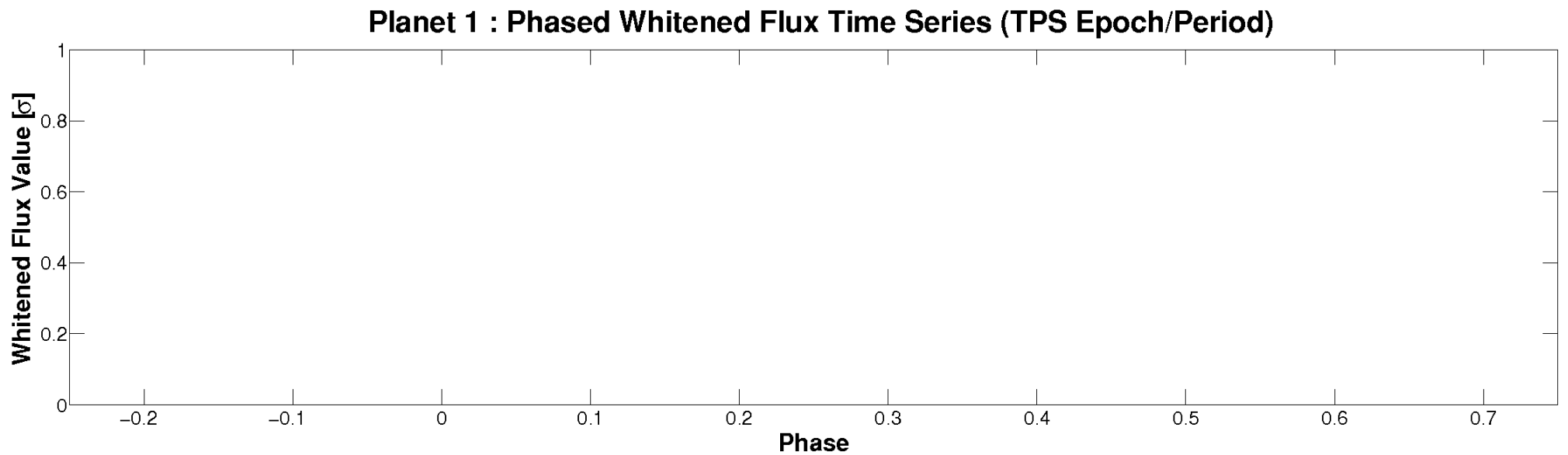
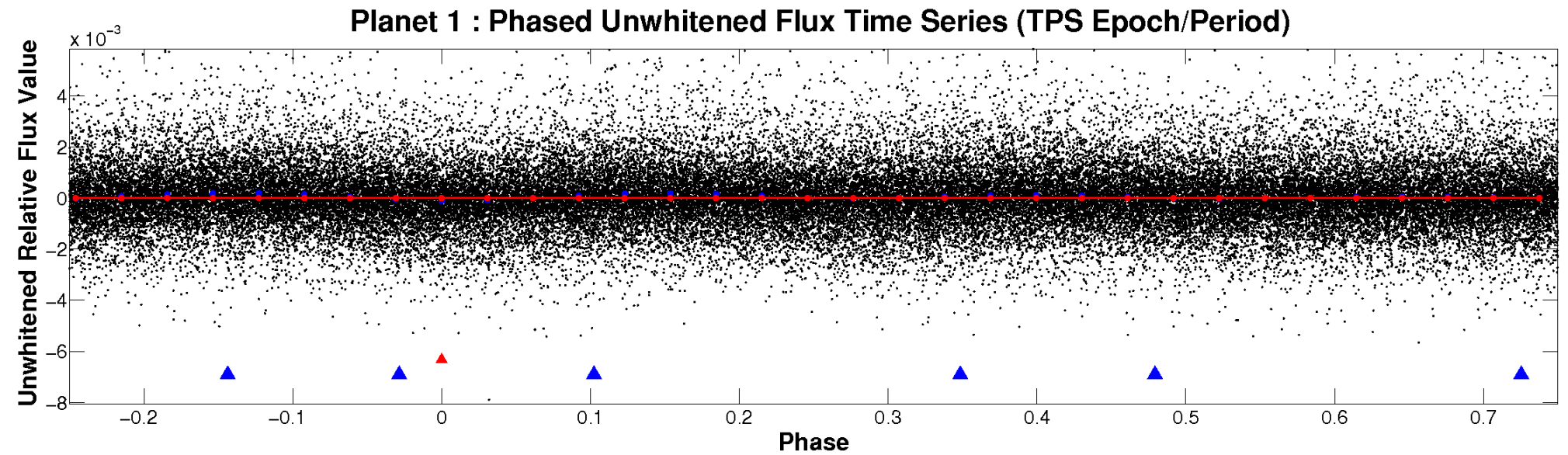


ALT Odd/Even

TCE 009092529-01

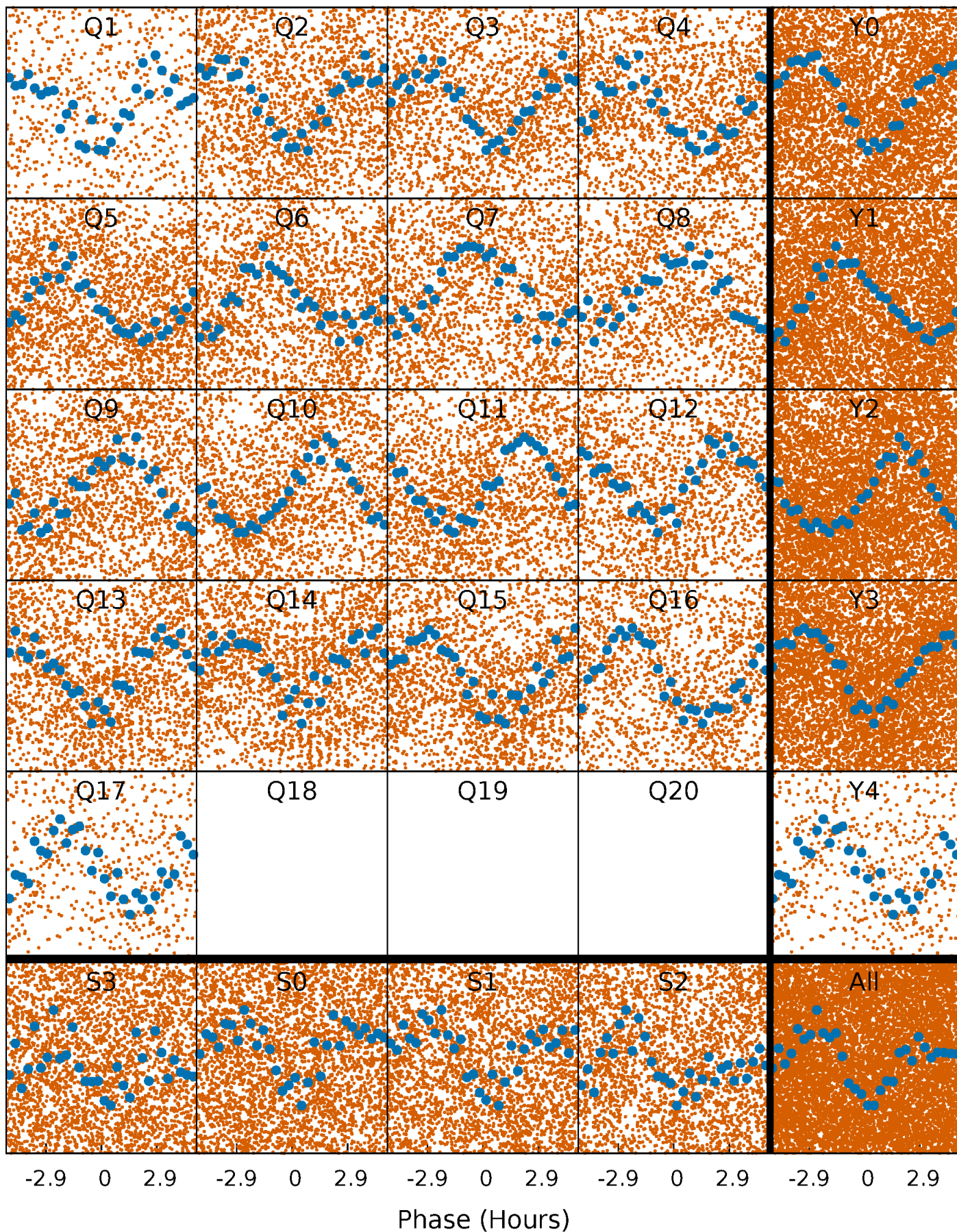


Non-Whitened Vs. Whitened Light Curve



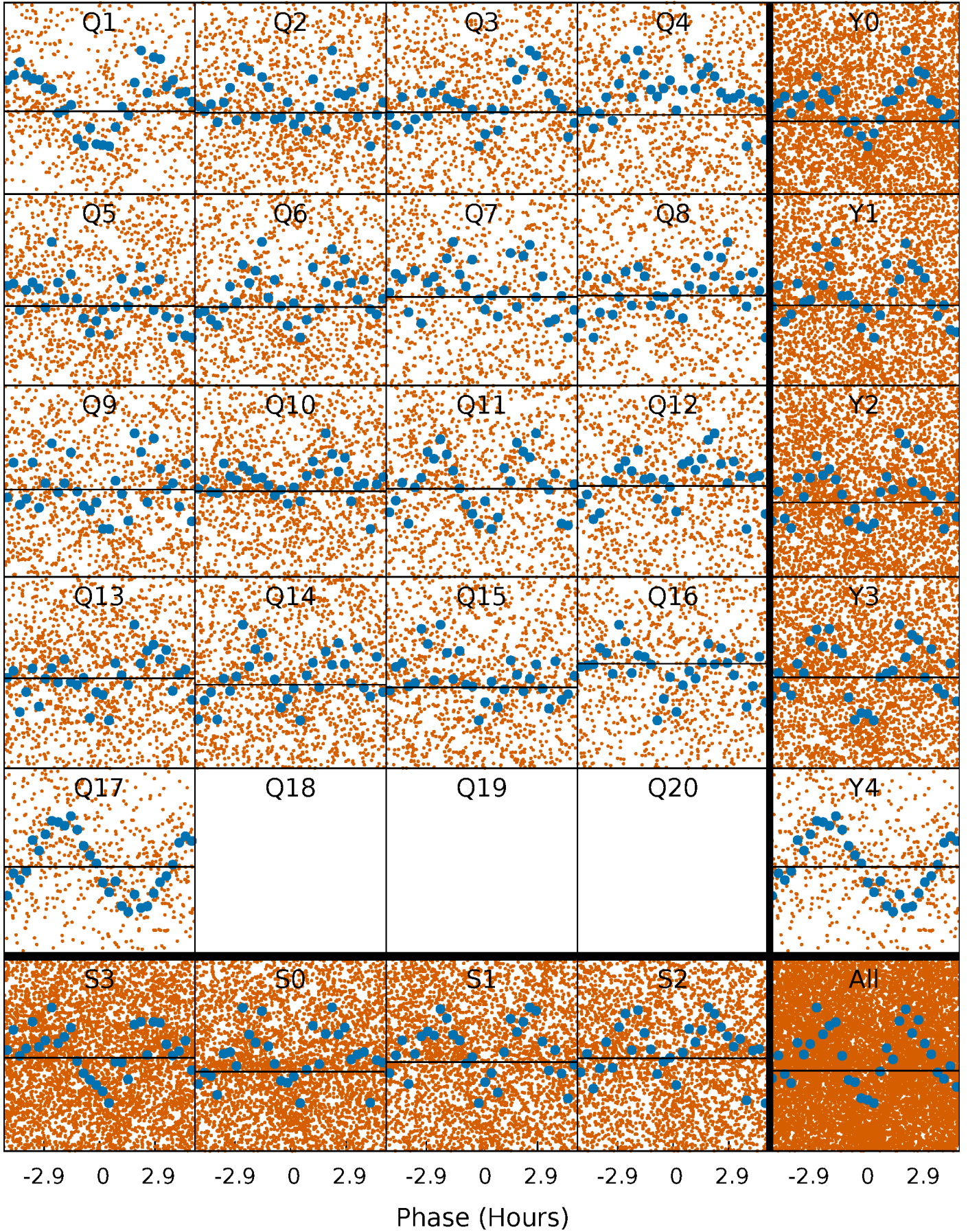
PDC Quarter-Phased Transit Curves

TCE 009092529-01 P= 0.664967 Days $T_0=131.662036$ (BKJD)



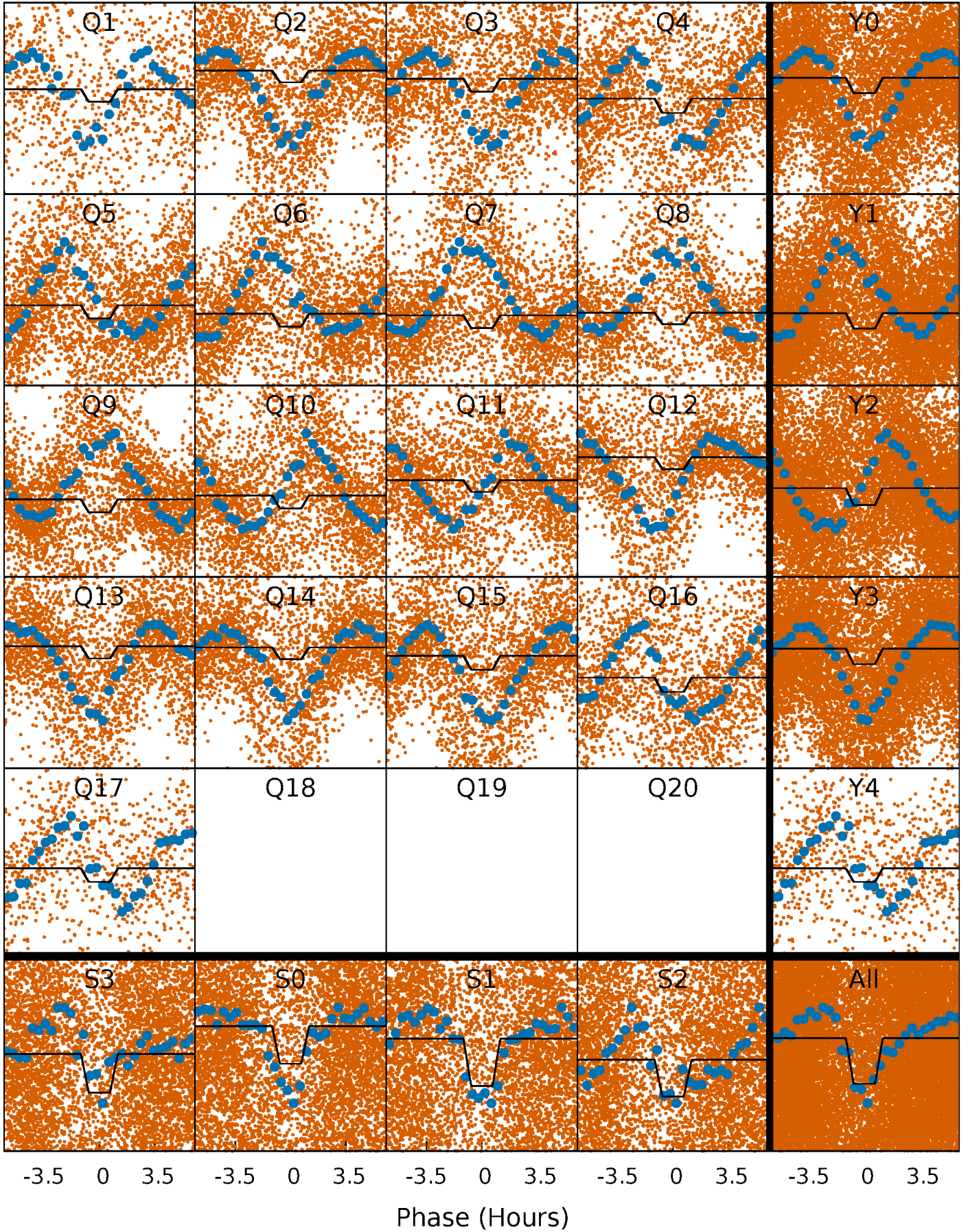
DV Quarter-Phased Transit Curves

TCE 009092529-01 P= 0.664967 Days $T_0=131.662036$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

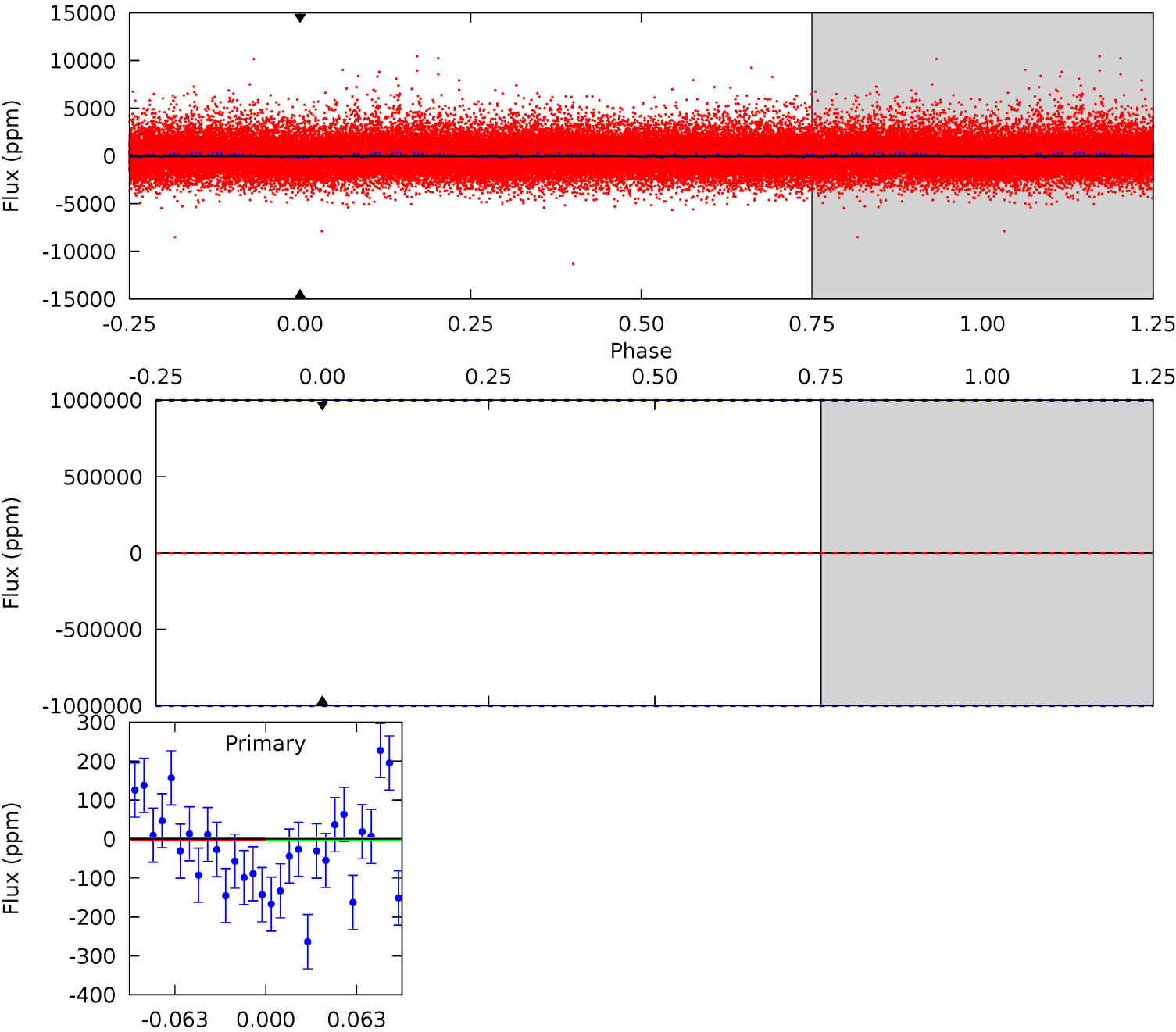
TCE 009092529-01 P= 0.664967 Days $T_0=131.672800$ (BKJD)



DV Model-Shift Uniqueness Test

009092529-01, P = 0.664967 Days, E = 130.997069 Days

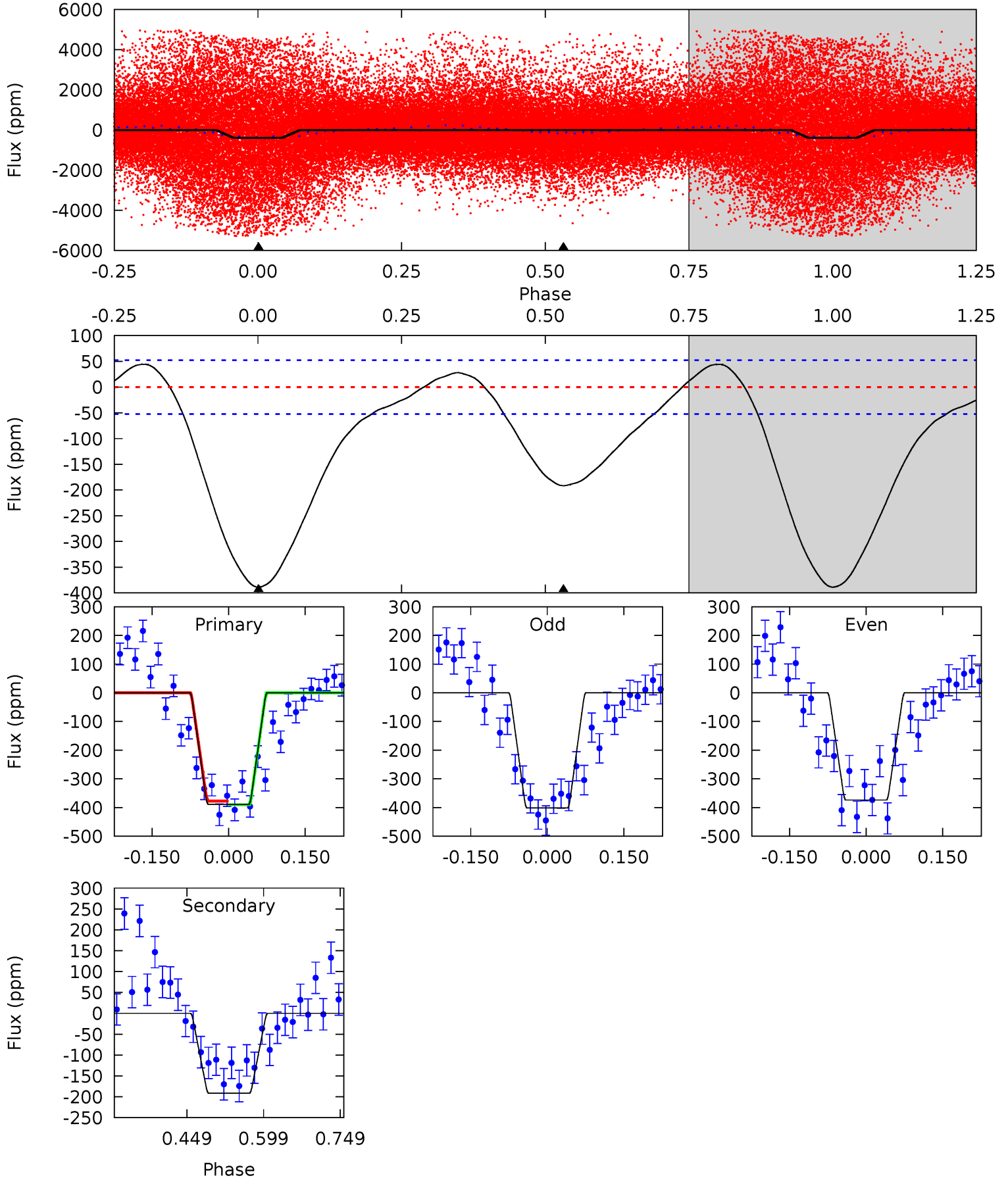
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009092529-01, P = 0.664967 Days, E = 131.007833 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.3	16.4	0	0	4.48	1.44	3.13	33.3	33.3	16.4	16.4	1.18	0.96	0.10	0.57



Stellar Parameters For KIC 009092529

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7241^{+230}_{-316}	$4.202^{+0.105}_{-0.195}$	$-0.100^{+0.250}_{-0.350}$	$1.583^{+0.516}_{-0.278}$	$1.458^{+0.221}_{-0.221}$	$0.517^{+0.265}_{-0.278}$
	+3%/-4%	+2%/-5%	+250%/-350%	+33%/-18%	+15%/-15%	+51%/-54%
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 009092529-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$12.89^{+14.73}_{-8.91}$	4377^{+307}_{-283}	-5661^{+45161}_{-29639}	$-1.705^{+188.851}_{-173.389}$
Alt.	-192 ± 12	$13.35^{+15.46}_{-9.83}$	4387^{+323}_{-286}	-3362^{+9042}_{-524}	$0.165^{+2.286}_{-0.128}$

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

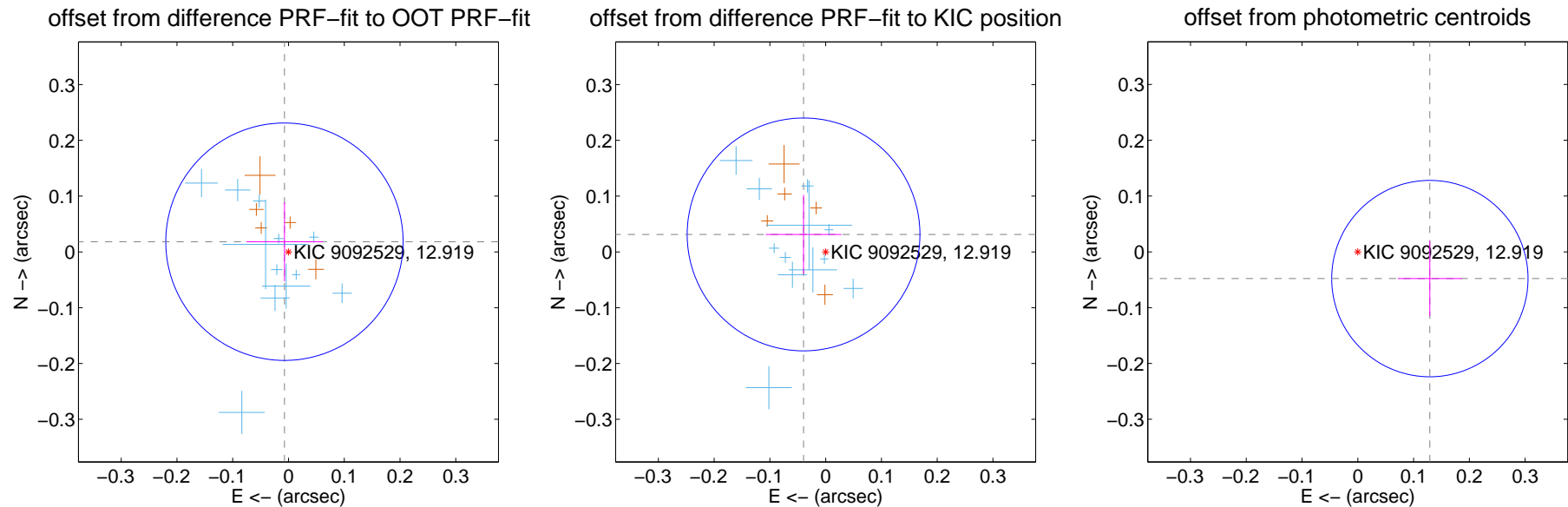
DV Centroid Data

Supplemental centroid analysis for 009092529-01. Kepler magnitude: 12.92. Transit SNR -1.00

There are 12 quarters with good PRF difference image offsets

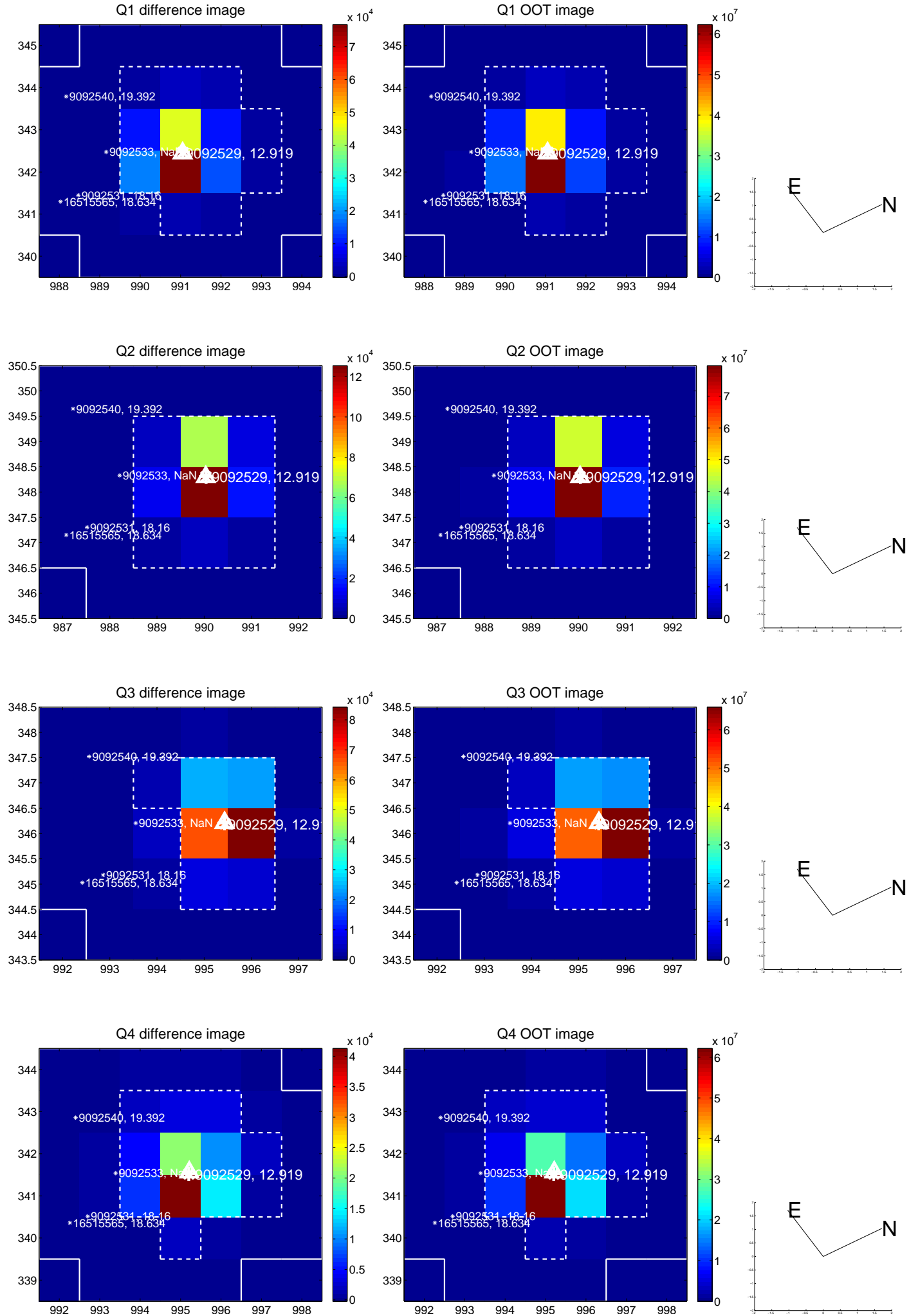
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.020 ± 0.071	0.28	0.007 ± 0.068	0.018 ± 0.071
PRF-fit source offset from KIC position	0.051 ± 0.070	0.73	0.040 ± 0.068	0.031 ± 0.071
photometric centroid source offset	0.14 ± 0.06	2.35	-0.13 ± 0.06	-0.05 ± 0.07

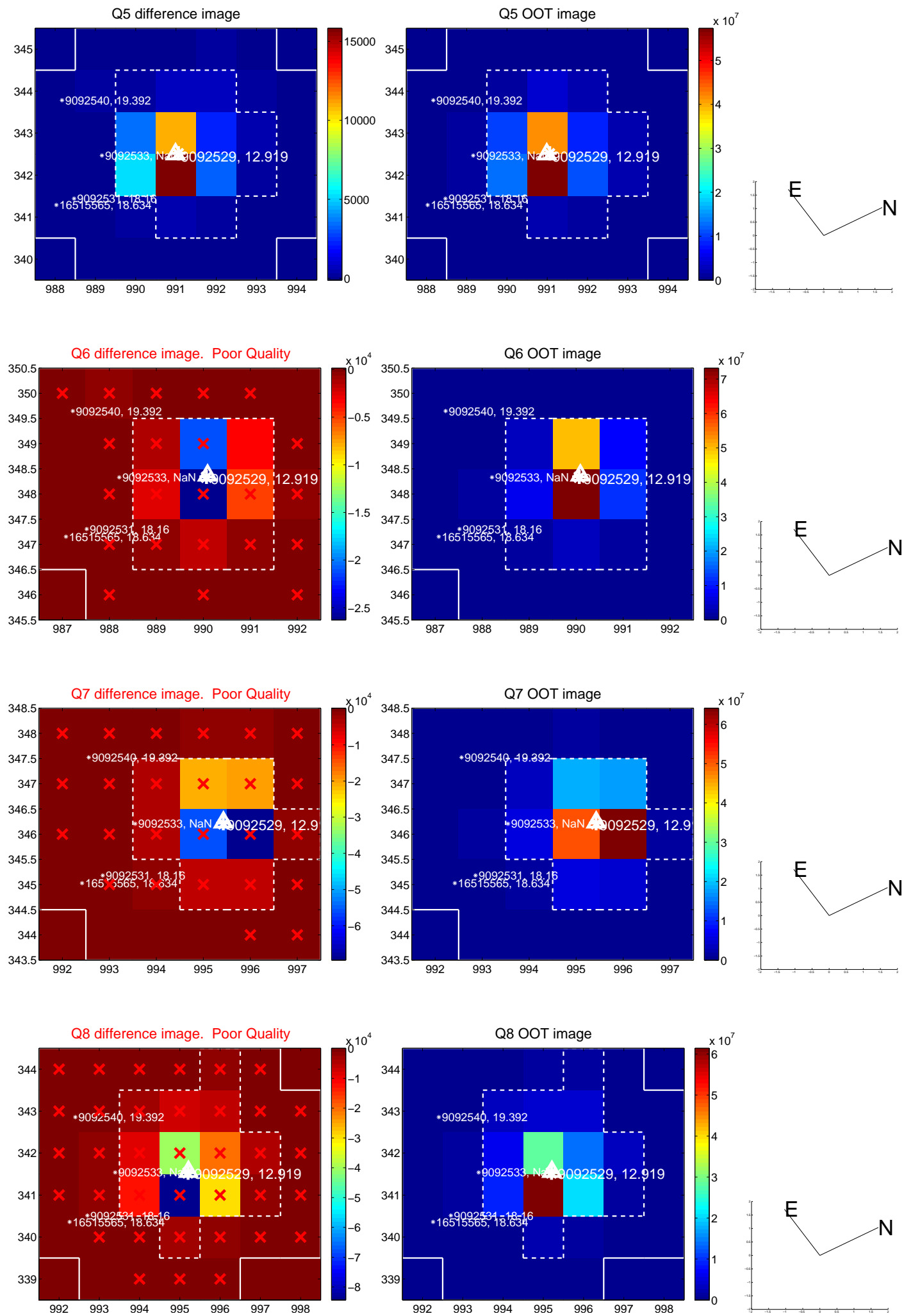


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

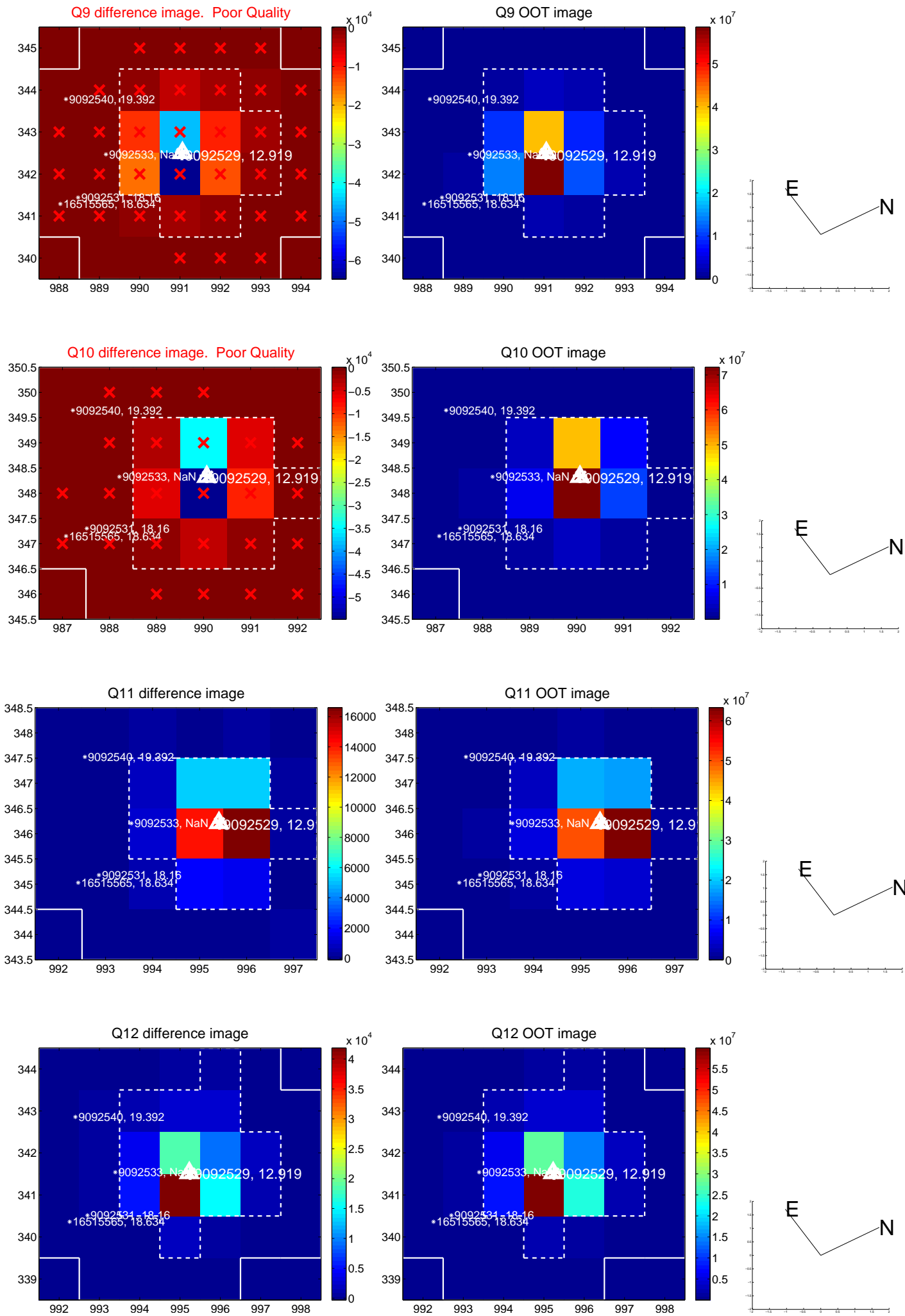
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



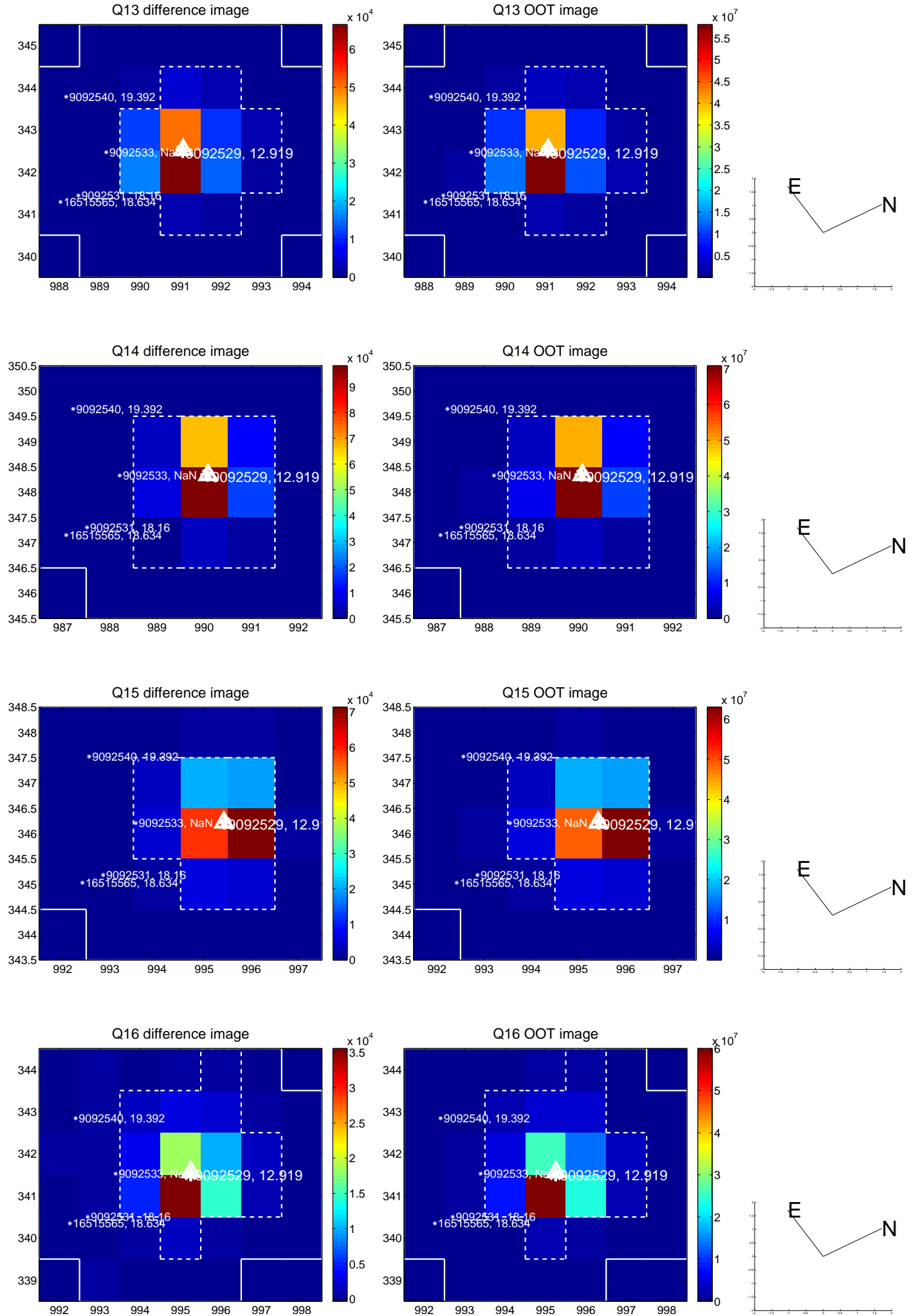
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



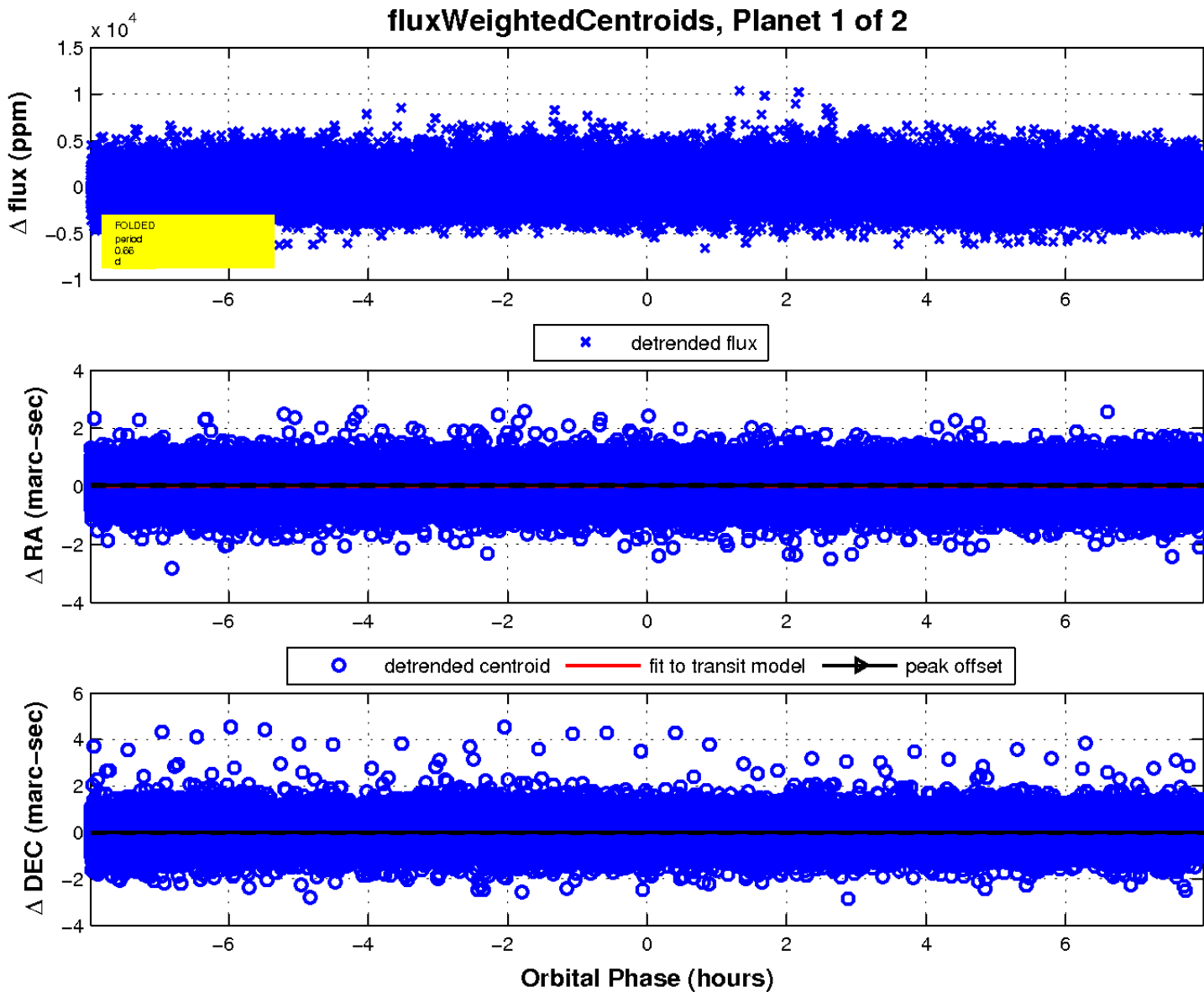
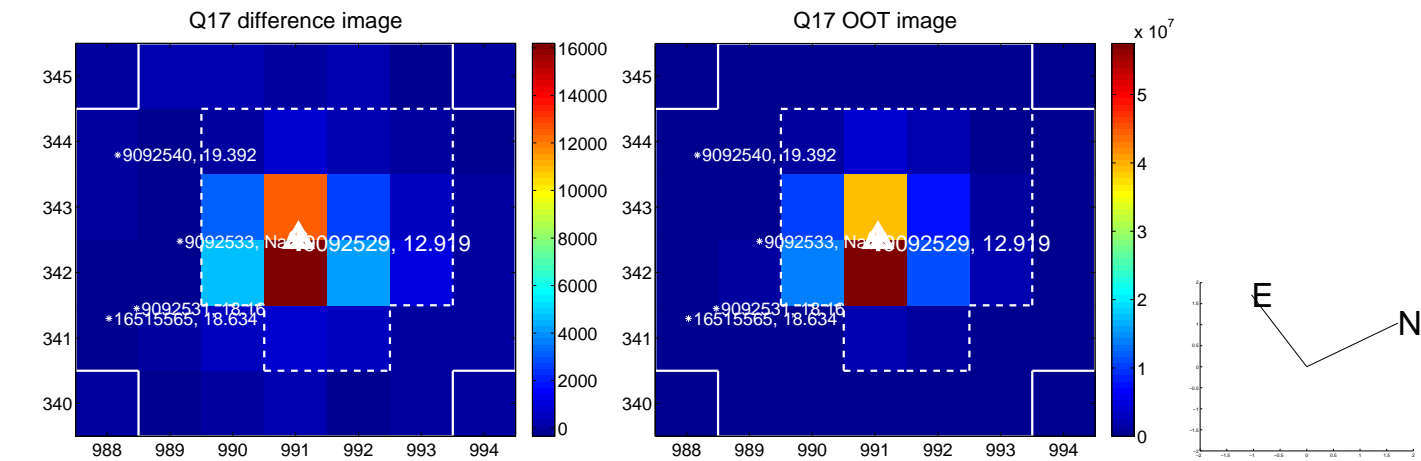
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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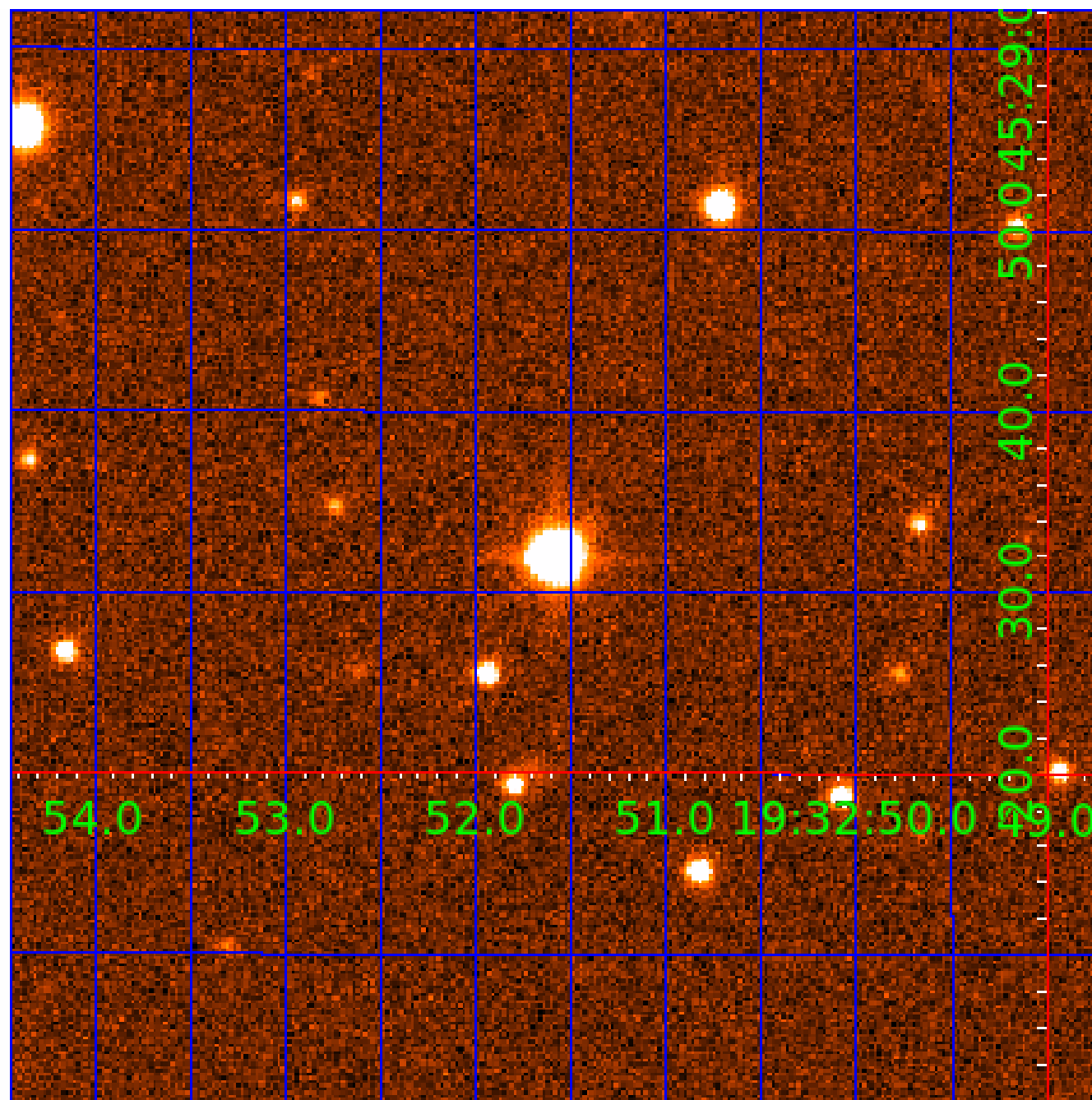


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009092529

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})
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Robovetter Results

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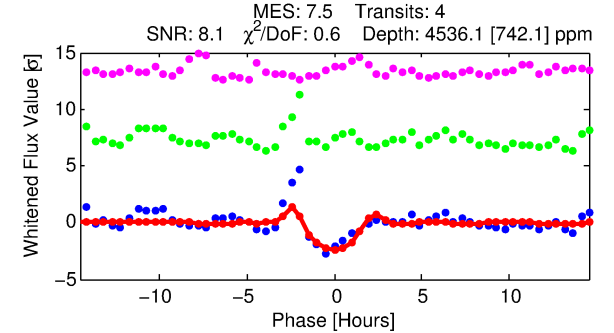
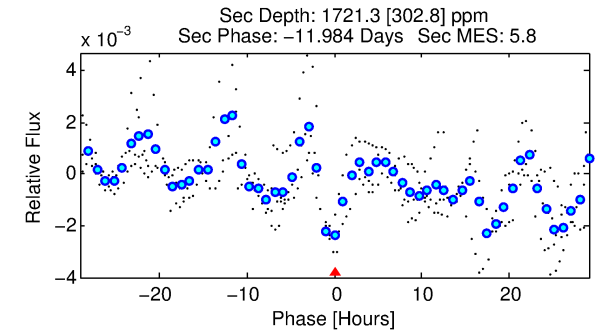
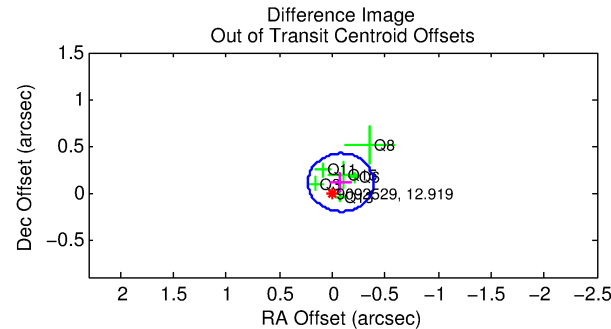
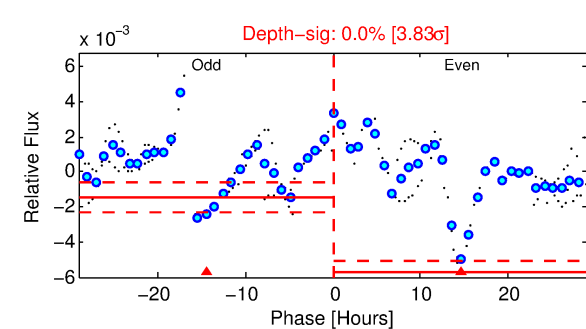
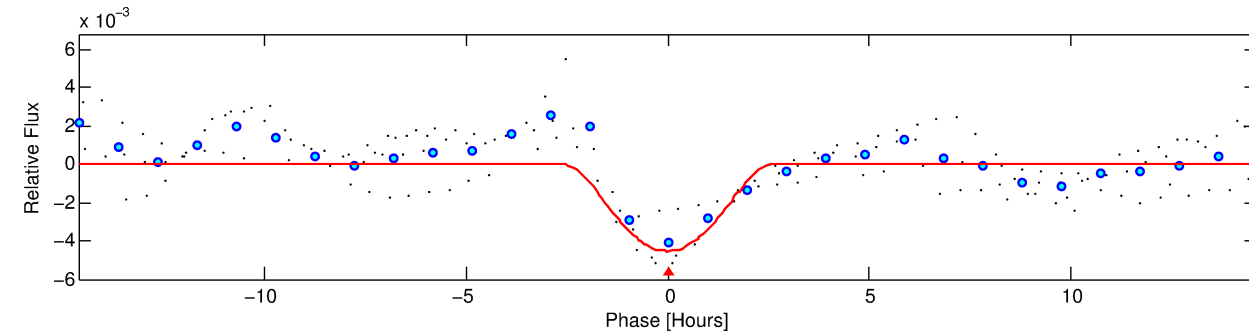
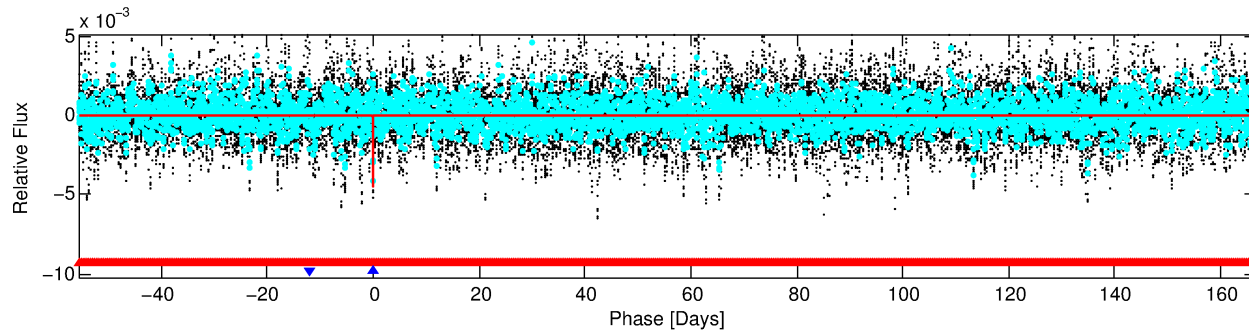
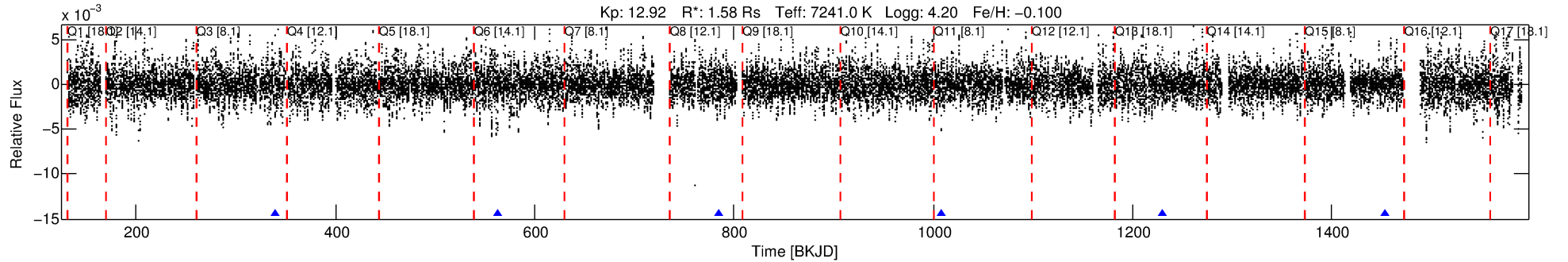
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009092529-02

No Significant Match Found

DV One-Page Summary

KIC: 9092529 Candidate: 2 of 2 Period: 222.513 d



DV Fit Results:

Period = 222.51328 [0.00296] d
Epoch = 340.3661 [0.0069] BKJD
Rp/R* = 0.1102 [0.1461]
a/R* = 168.26 [42.78]
b = 1.00 [0.20]
Seff = 9.30 [3.80]
Teq = 445 [46] K
Rp = 19.03 [25.98] Re
a = 0.8146 [0.2149] AU
Ag = 1734.88 [4655.14] [0.37 σ]
Teffp = 4444 [2959] K [1.35 σ]

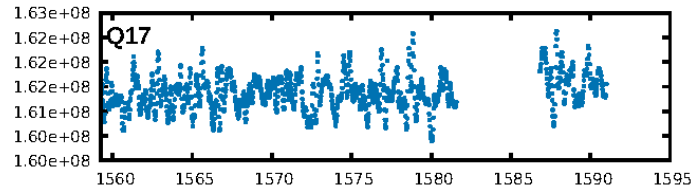
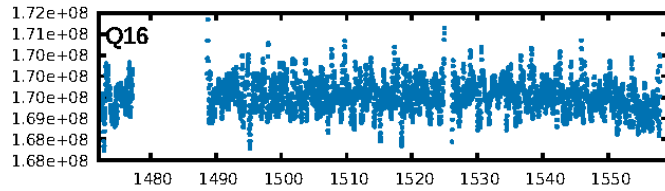
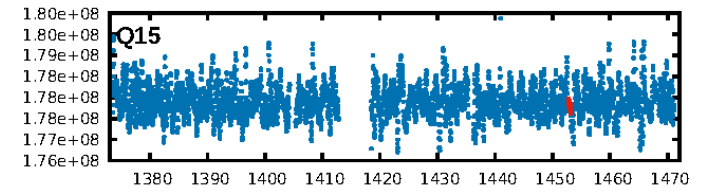
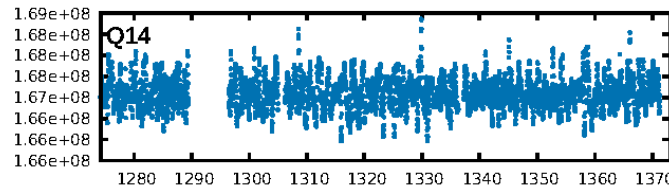
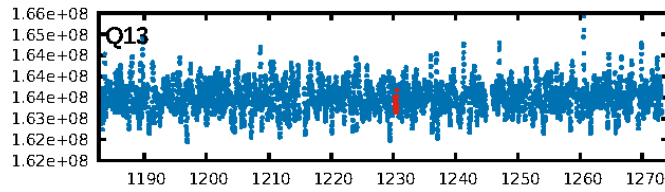
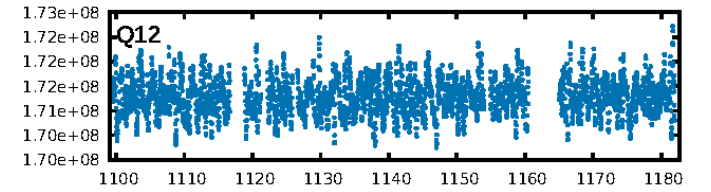
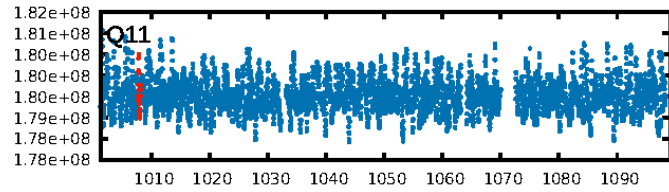
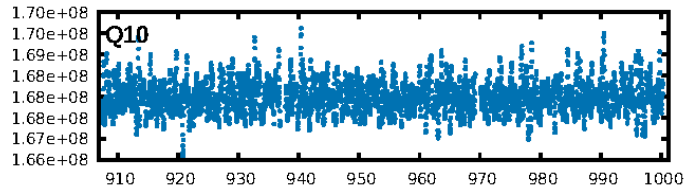
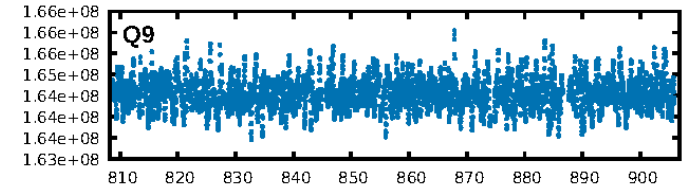
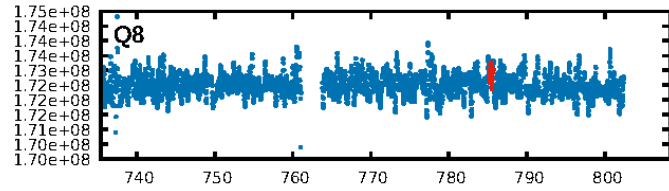
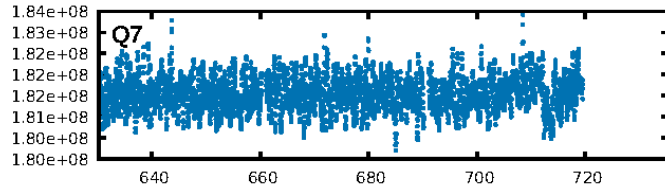
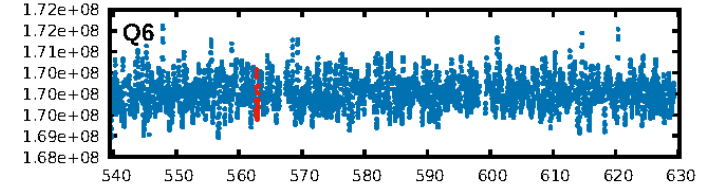
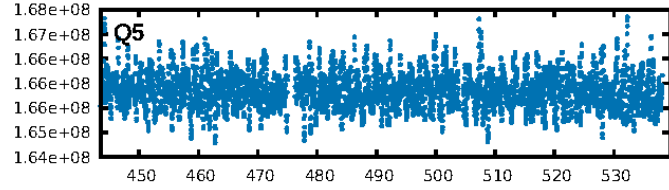
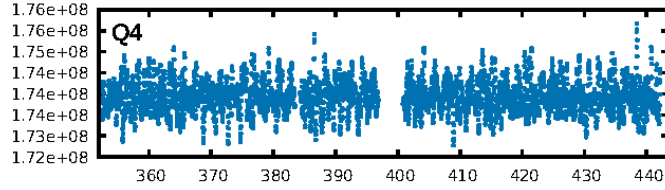
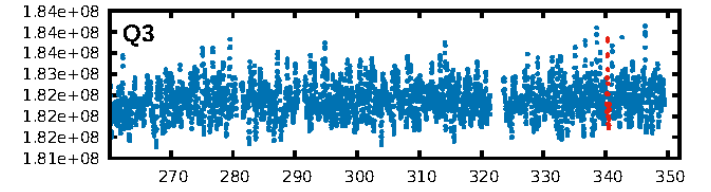
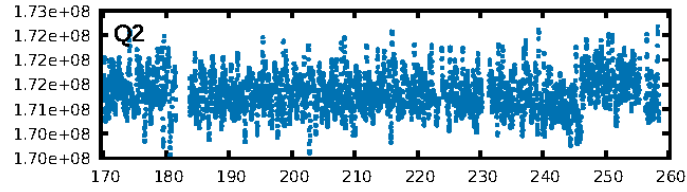
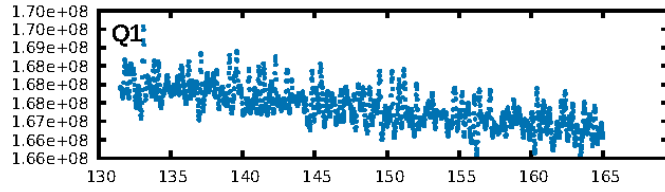
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [972.03 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.57e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6411
Centroid-sig: 45.6%
Centroid-so: 0.128 arcsec [1.78 σ]
OotOffset-rm: 0.136 arcsec [1.31 σ]
KicOffset-rm: 0.138 arcsec [1.23 σ]
OotOffset-st: 1/3/1/1 [6]
KicOffset-st: 1/3/1/1 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/6]

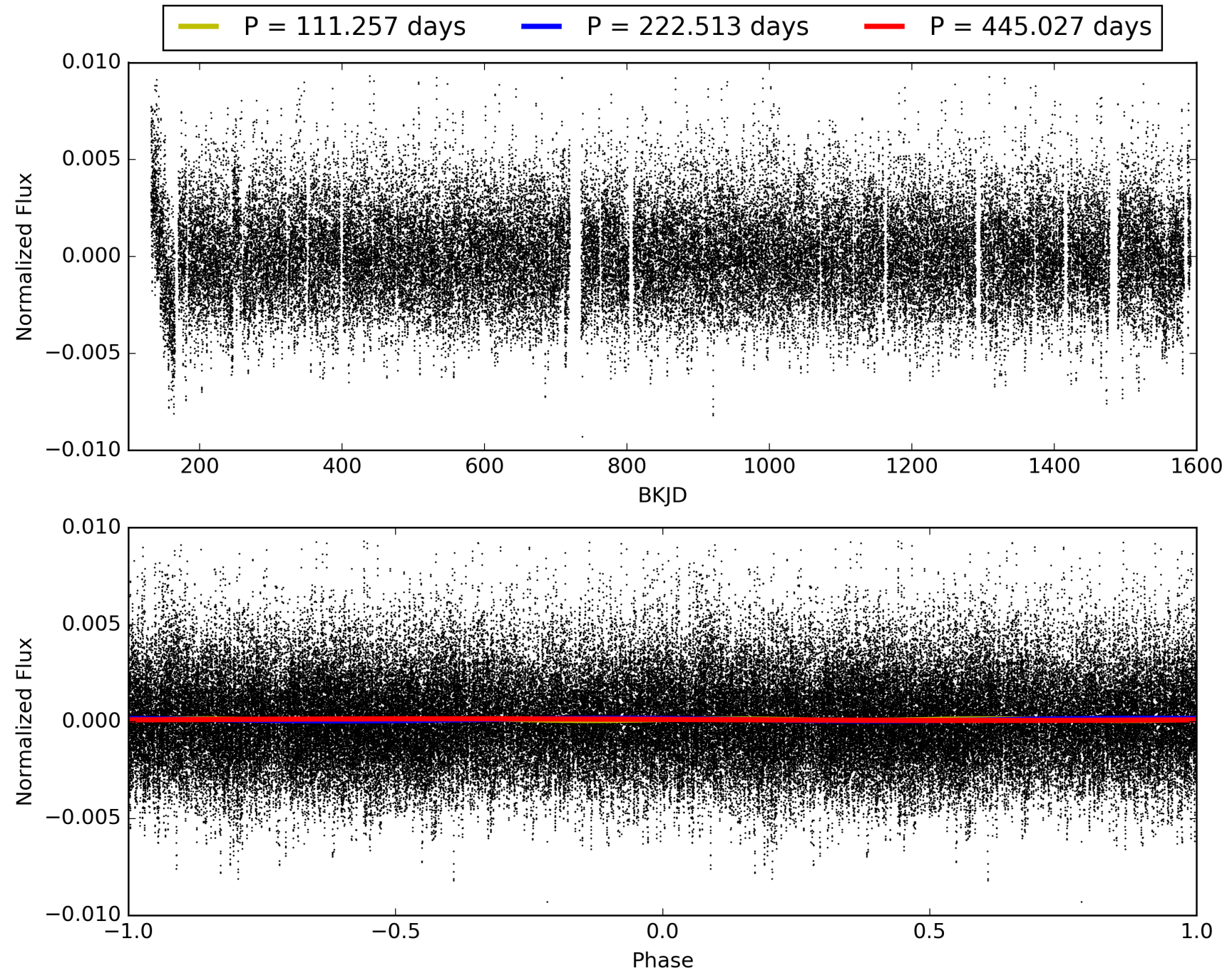
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:32:36 Z

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

TCE 009092529-02, PDC Light Curves

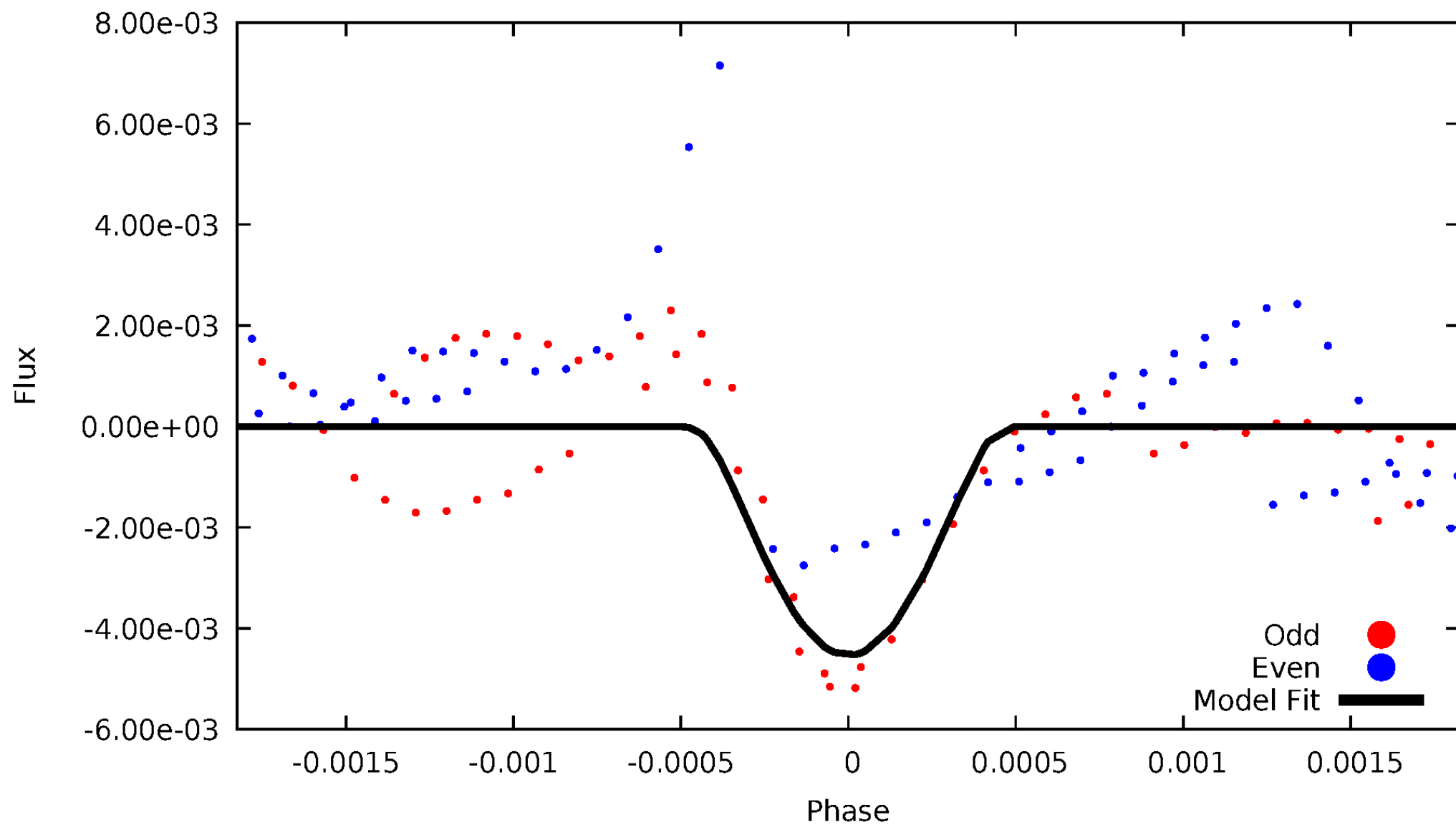


TCE 009092529-02



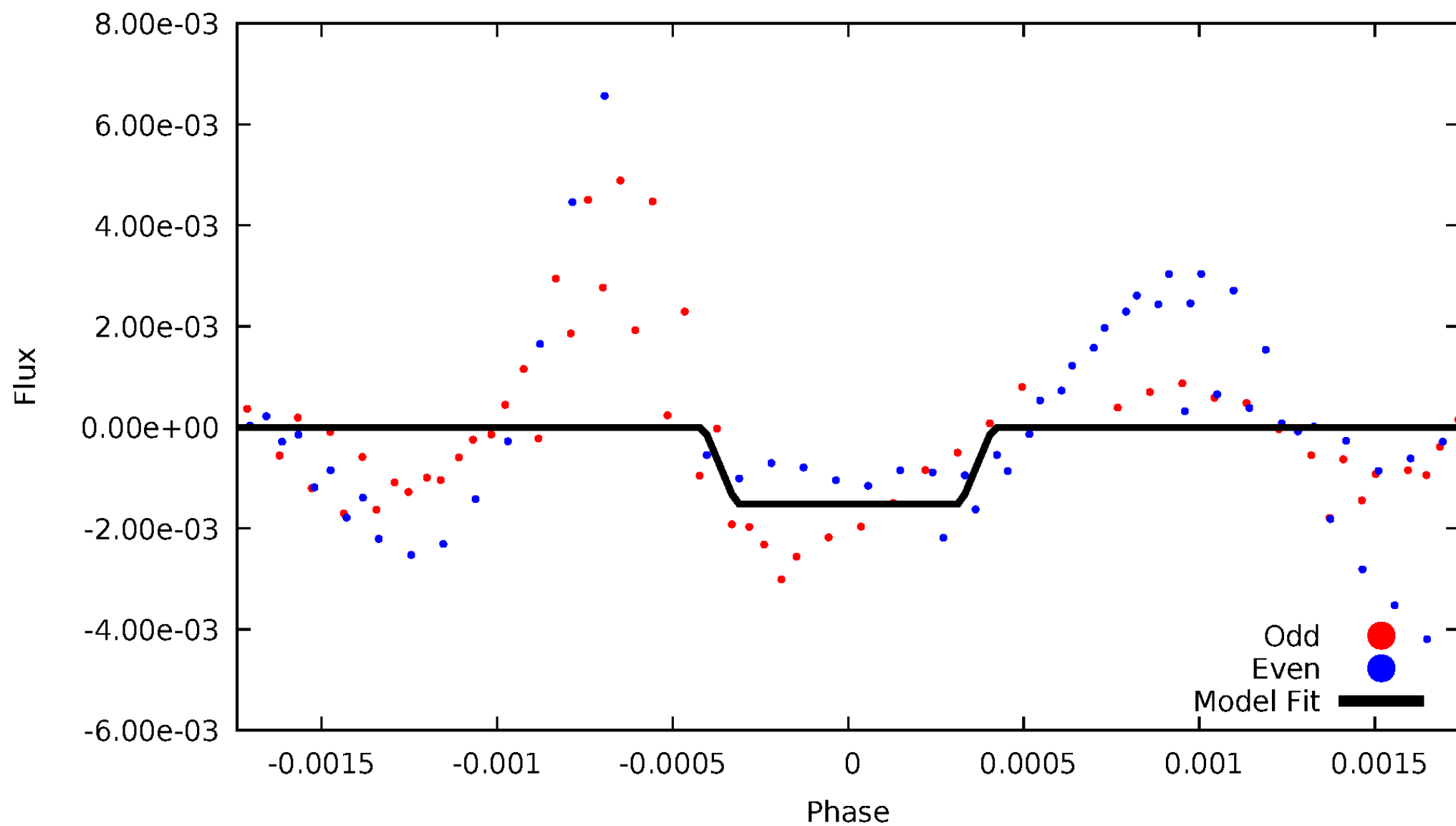
DV Odd/Even

TCE 009092529-02



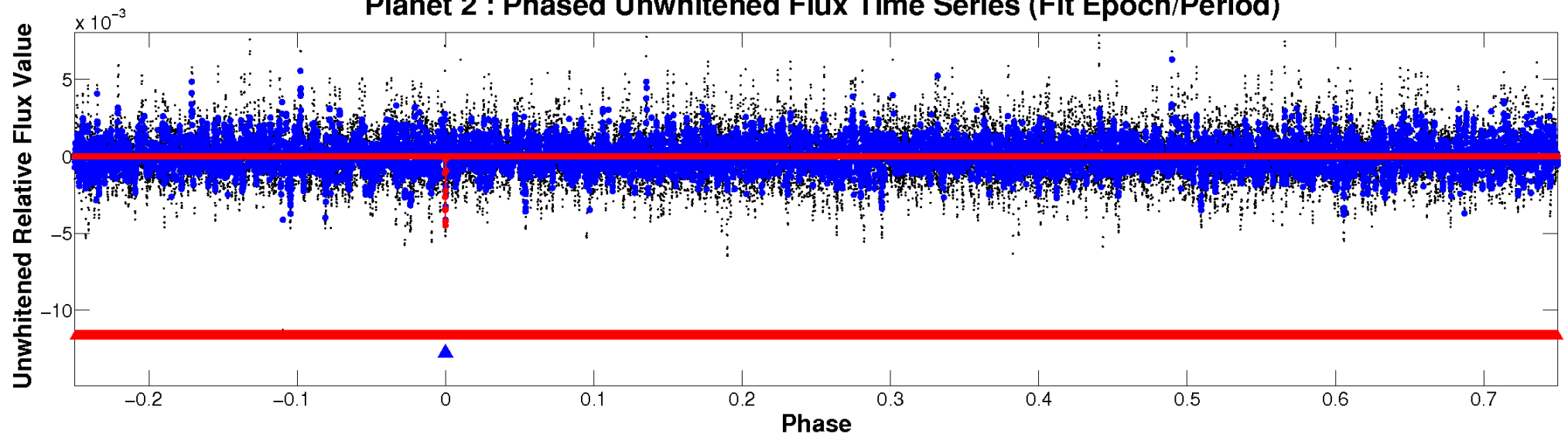
ALT Odd/Even

TCE 009092529-02

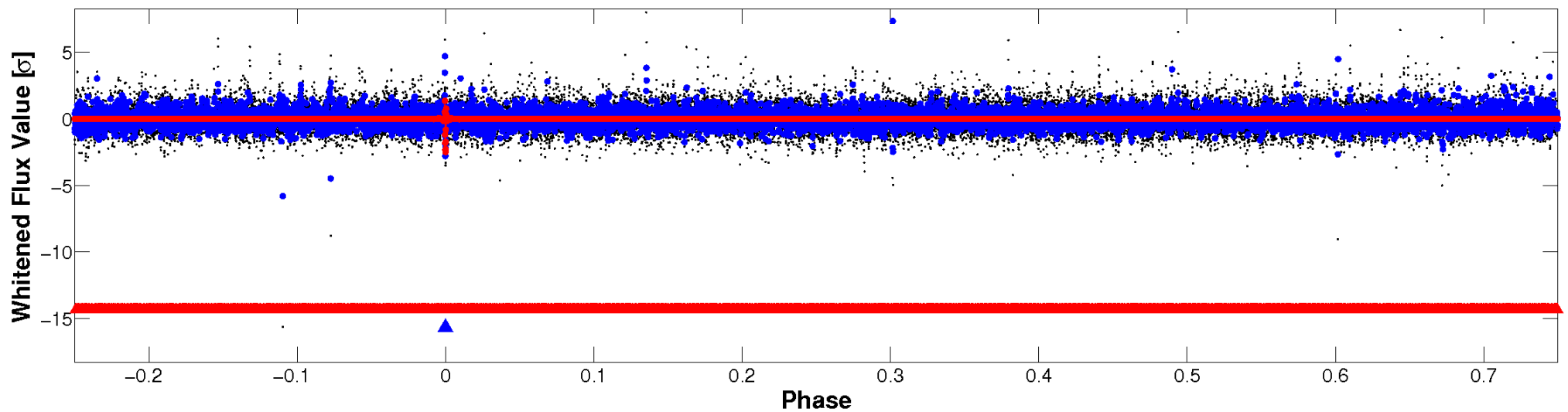


Non-Whitened Vs. Whitened Light Curve

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

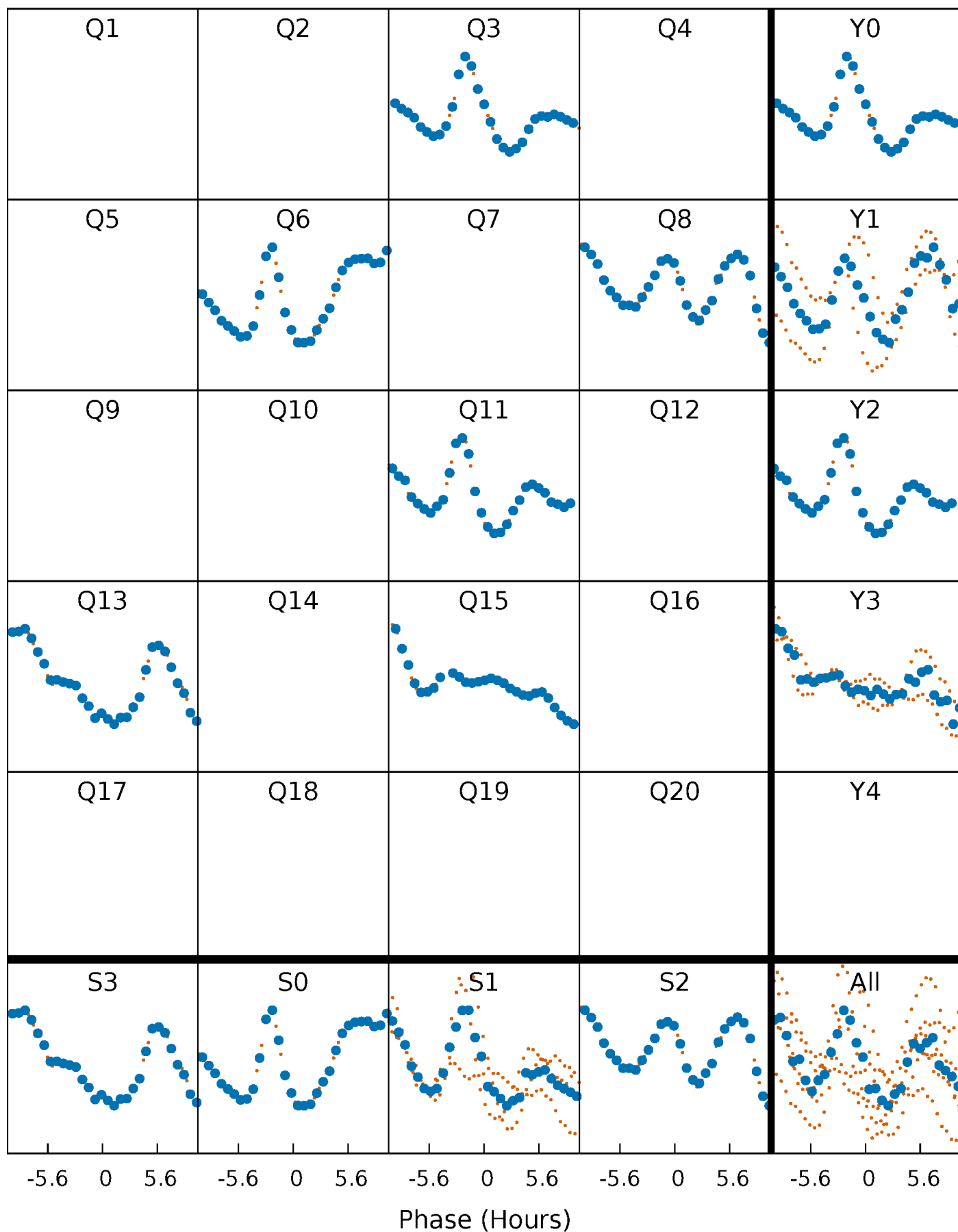


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



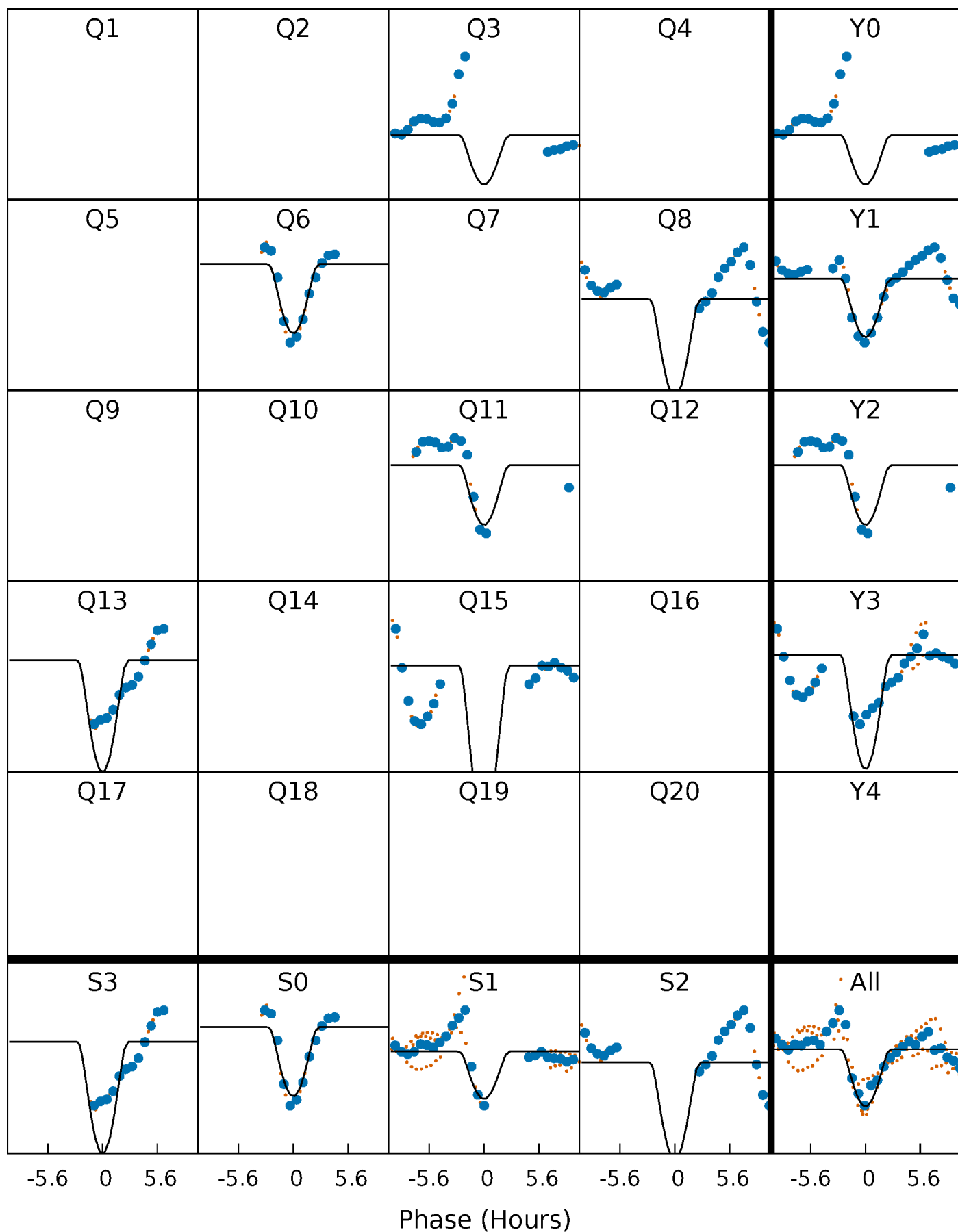
PDC Quarter-Phased Transit Curves

TCE 009092529-02 $P=222.513284$ Days $T_0=340.366103$ (BKJD)



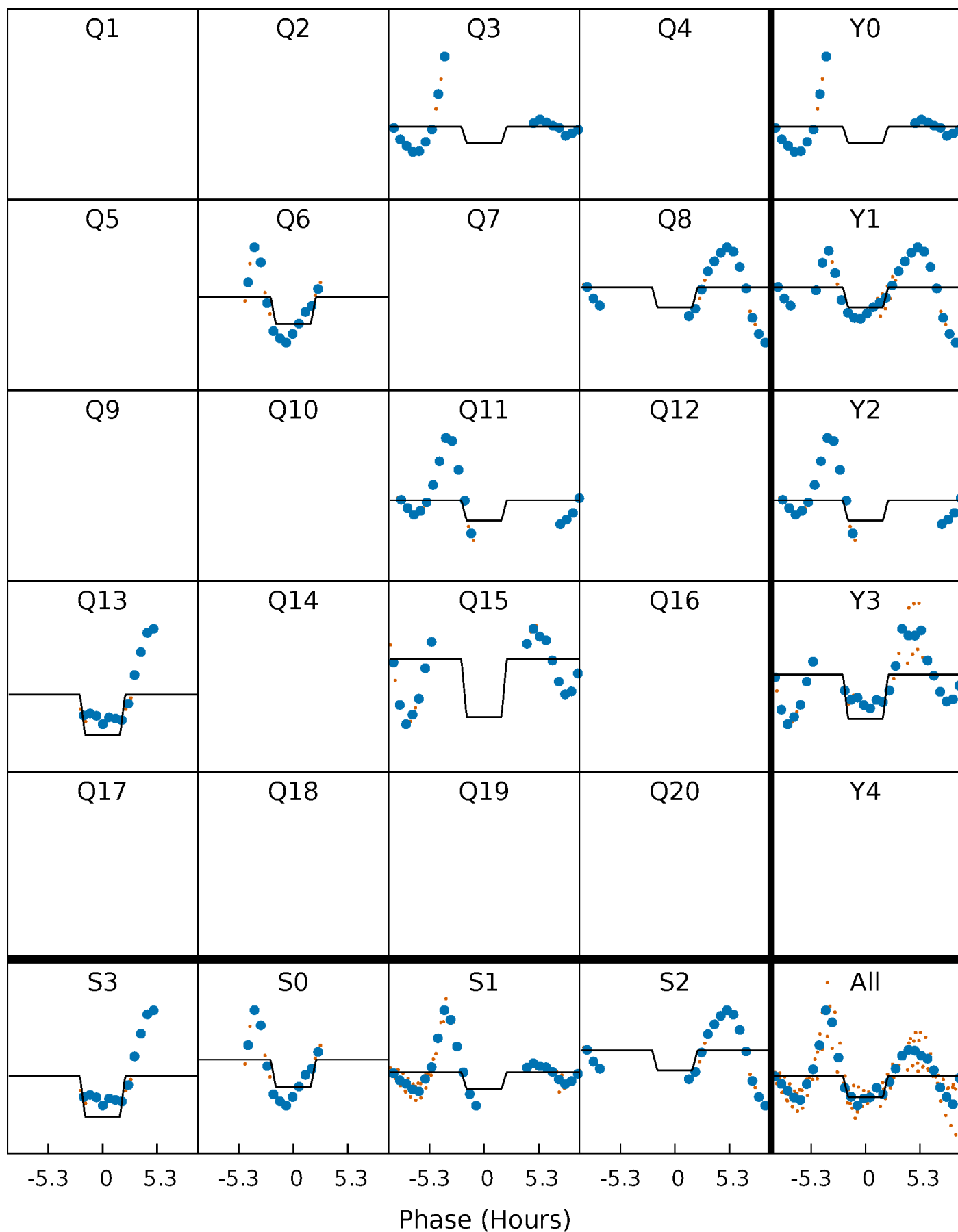
DV Quarter-Phased Transit Curves

TCE 009092529-02 P=222.513284 Days $T_0=340.366103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

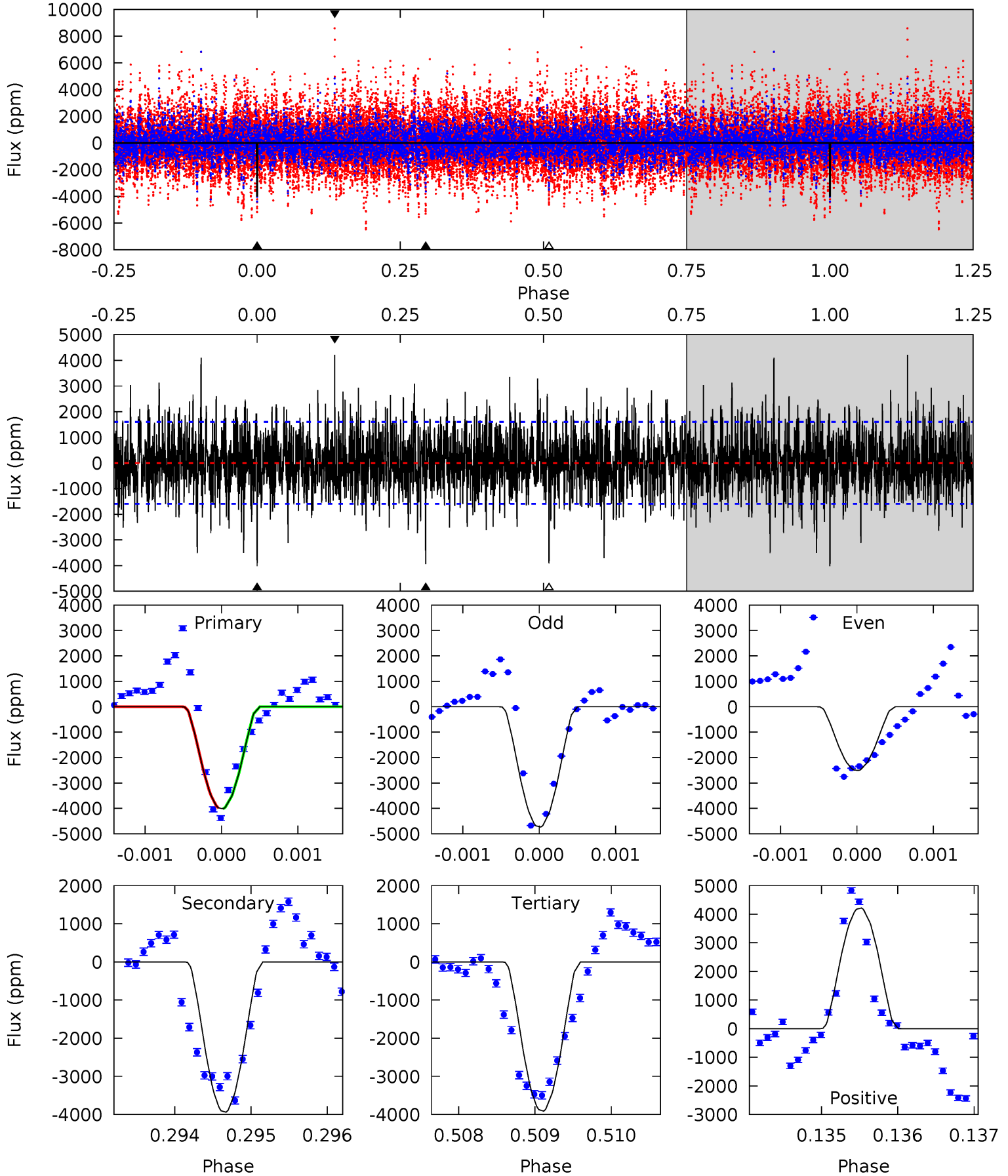
TCE 009092529-02 P=222.505910 Days $T_0=340.435141$ (BKJD)



DV Model-Shift Uniqueness Test

009092529-02, P = 222.513284 Days, E = 117.852819 Days

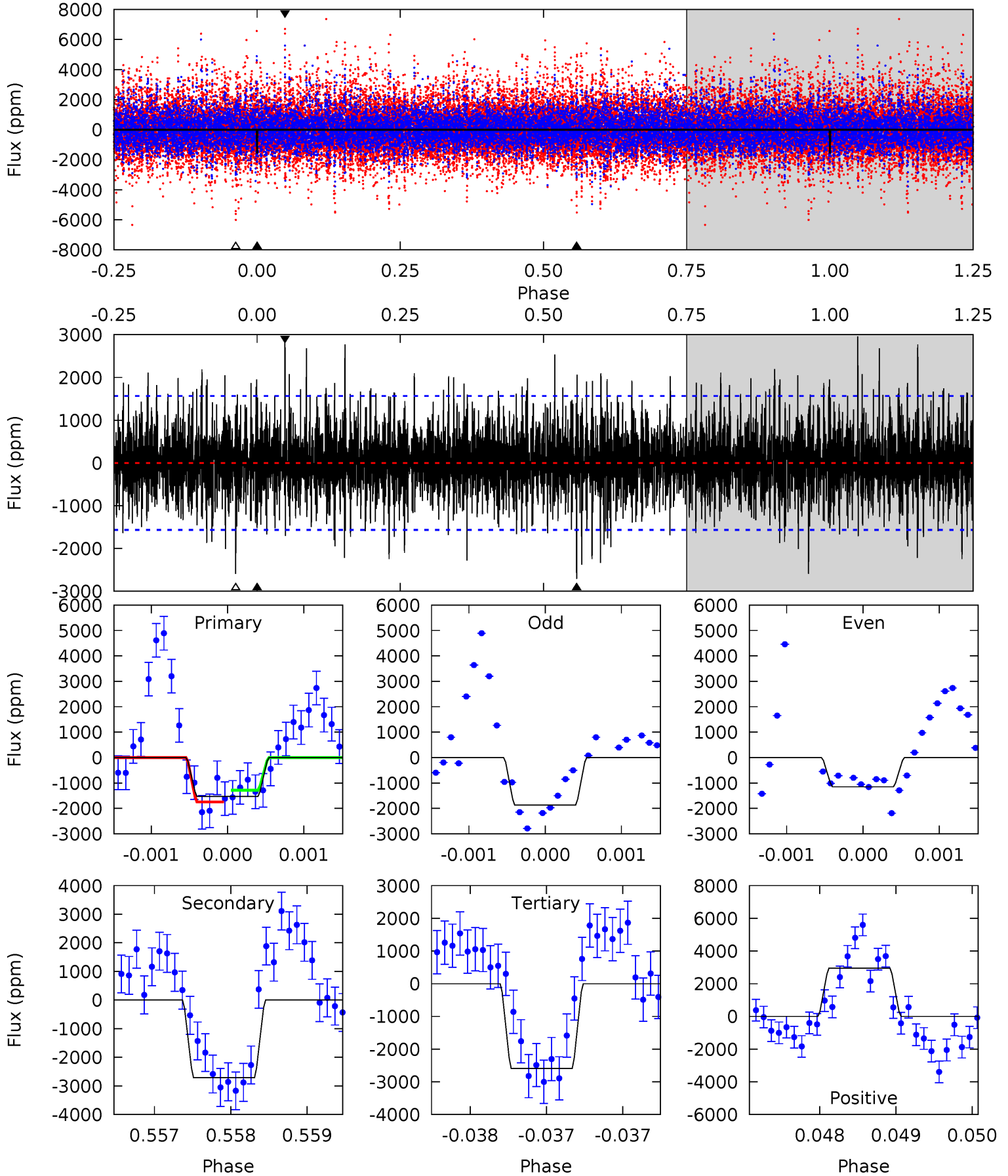
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	13.5	13.4	14.4	5.45	3.29	3.20	0.35	-0.70	0.10	-0.95	3.68	-2.56	0.51	0.06



Alt Model-Shift Uniqueness Test

009092529-02, P = 222.505910 Days, E = 117.929231 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.35	9.51	9.10	10.4	5.50	3.36	2.26	-3.75	-5.03	0.41	-0.87	1.25	0.91	0.52	0.82



Stellar Parameters For KIC 009092529

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7241^{+230}_{-316}	$4.202^{+0.105}_{-0.195}$	$-0.100^{+0.250}_{-0.350}$	$1.583^{+0.516}_{-0.278}$	$1.458^{+0.221}_{-0.221}$	$0.517^{+0.265}_{-0.278}$
	+3%/-4%	+2%/-5%	+250%/-350%	+33%/-18%	+15%/-15%	+51%/-54%
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 009092529-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3940 ± 292	$27.27^{+22.41}_{-17.71}$	628^{+45}_{-39}	4686^{+3289}_{-933}	1910^{+13416}_{-1325}
Alt.	-2710 ± 285	$20.21^{+20.70}_{-13.70}$	627^{+49}_{-40}	4928^{+4296}_{-1137}	2363^{+20290}_{-1797}

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 $A_{obs} \gg 1.0$

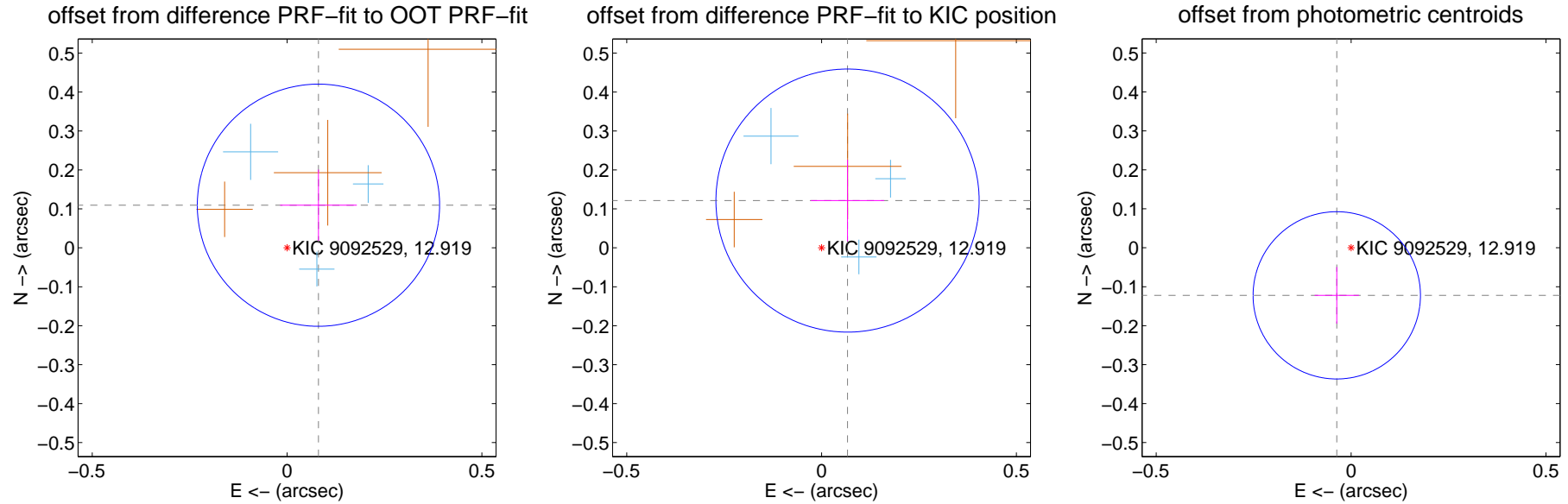
DV Centroid Data

Supplemental centroid analysis for 009092529-02. Kepler magnitude: 12.92. Transit SNR 8.08

There are 3 quarters with good PRF difference image offsets

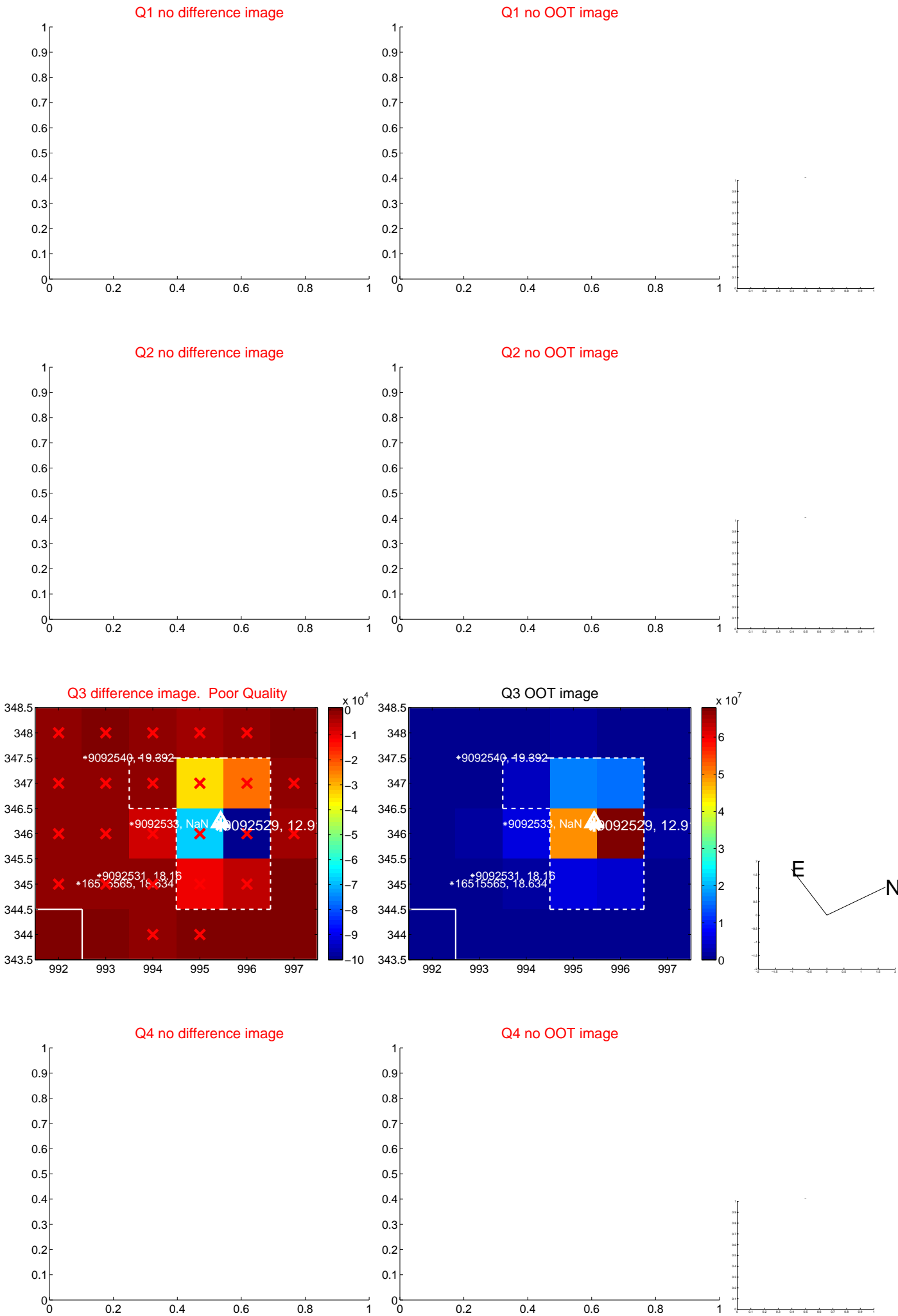
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.136 ± 0.104	1.31	-0.081 ± 0.099	0.109 ± 0.091
PRF-fit source offset from KIC position	0.138 ± 0.113	1.23	-0.067 ± 0.094	0.121 ± 0.105
photometric centroid source offset	0.13 ± 0.07	1.78	0.04 ± 0.06	-0.12 ± 0.07

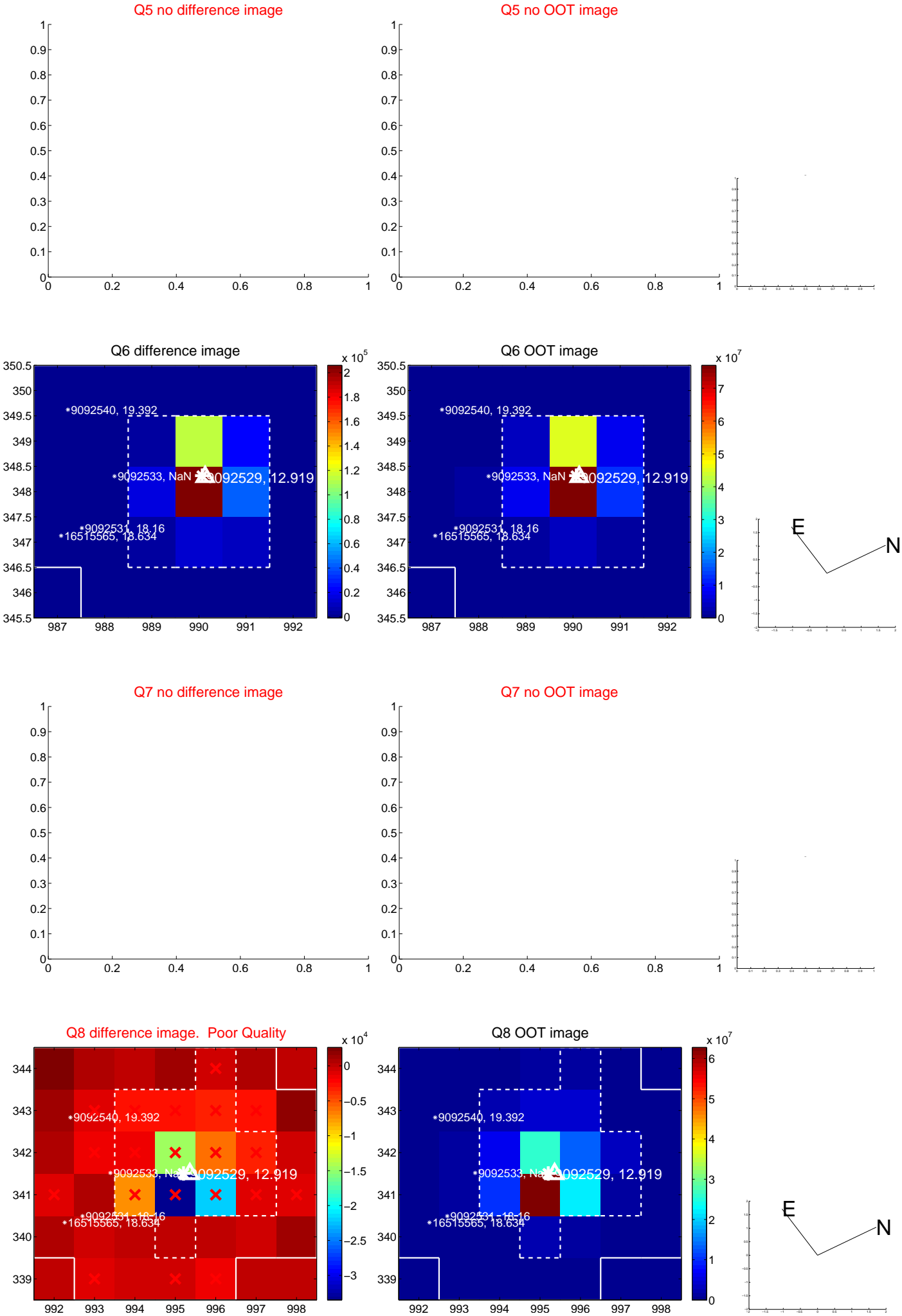


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

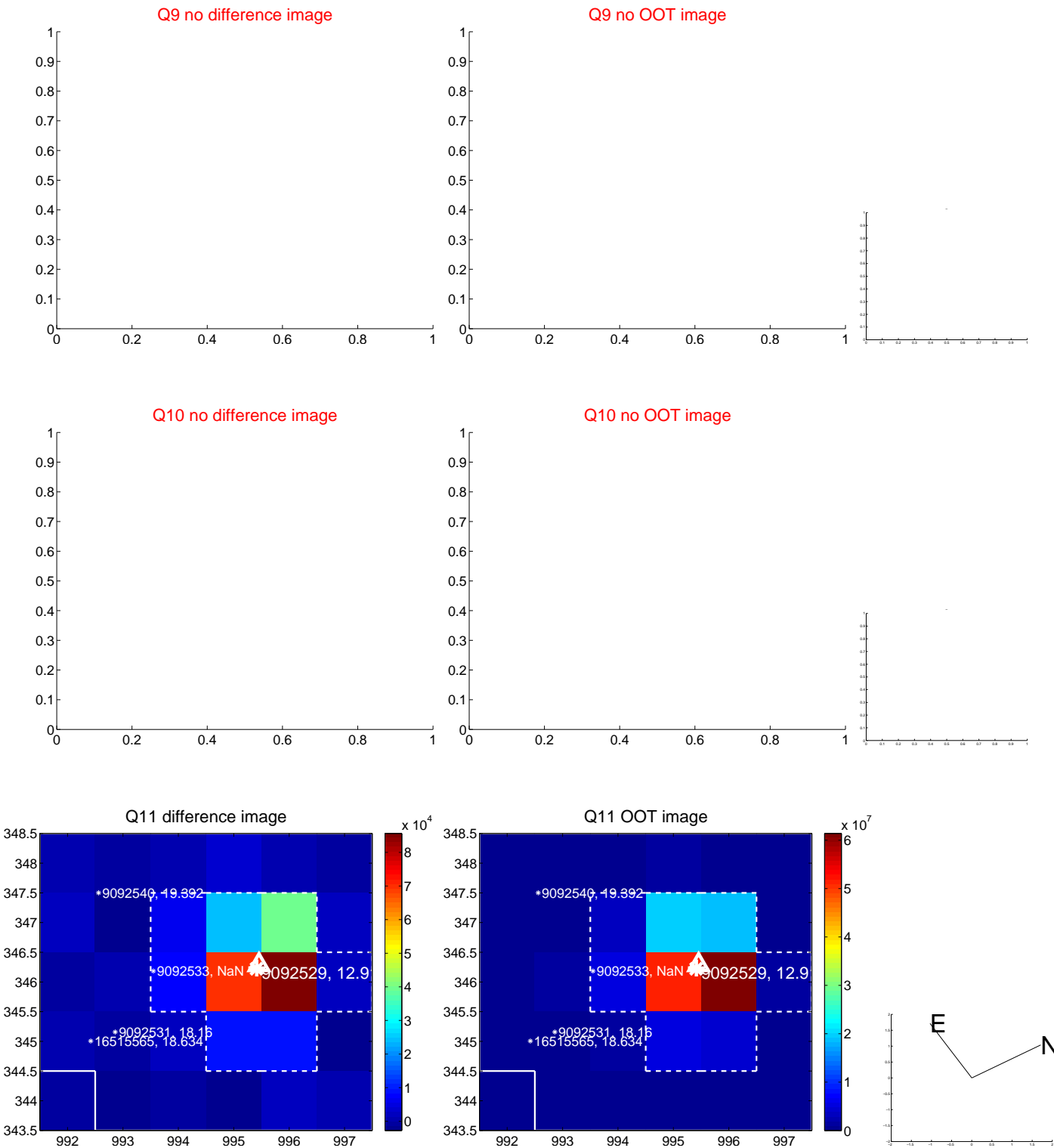
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



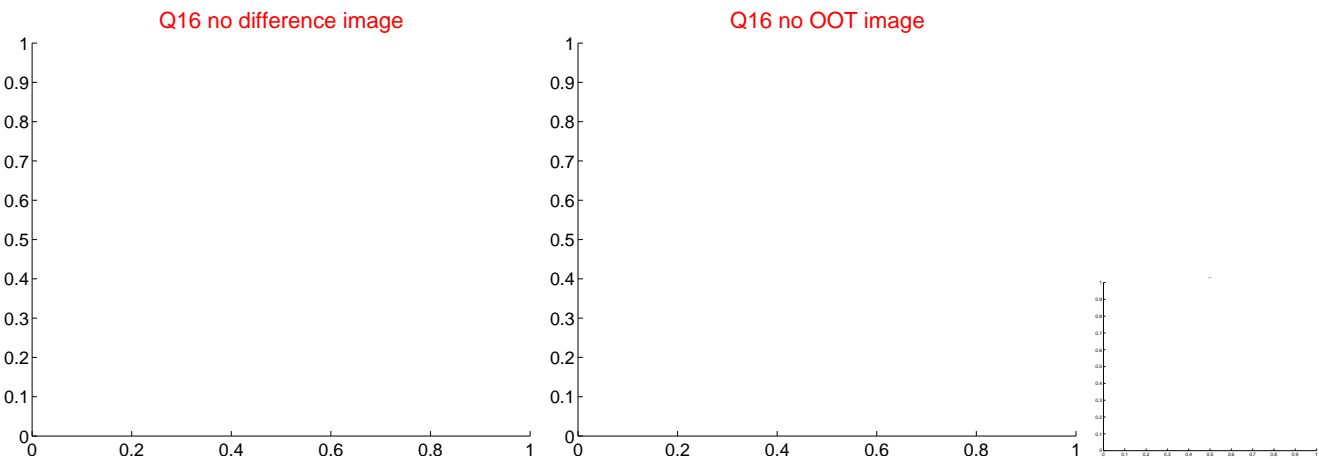
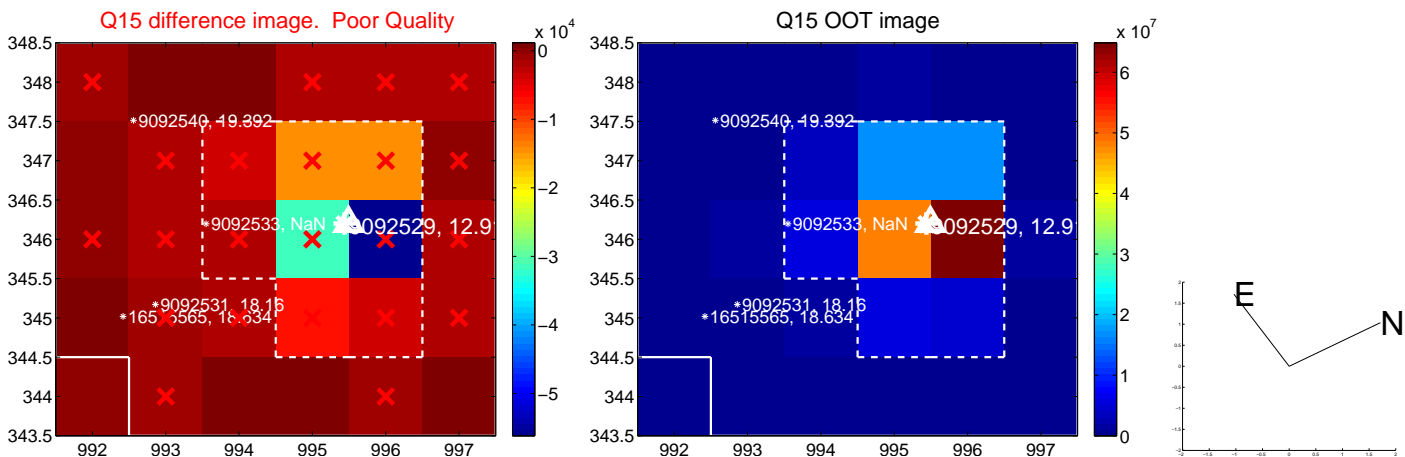
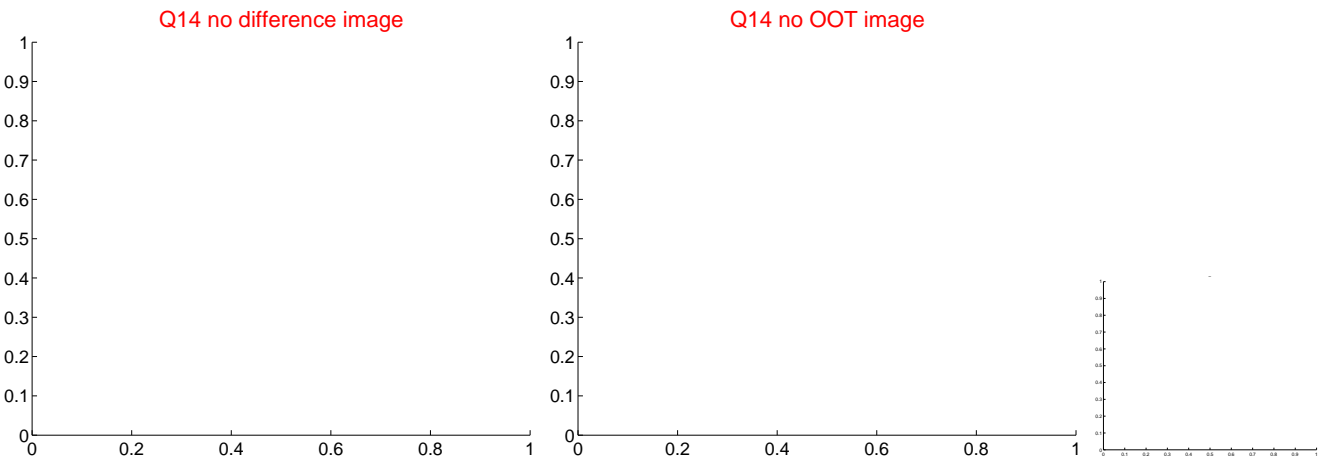
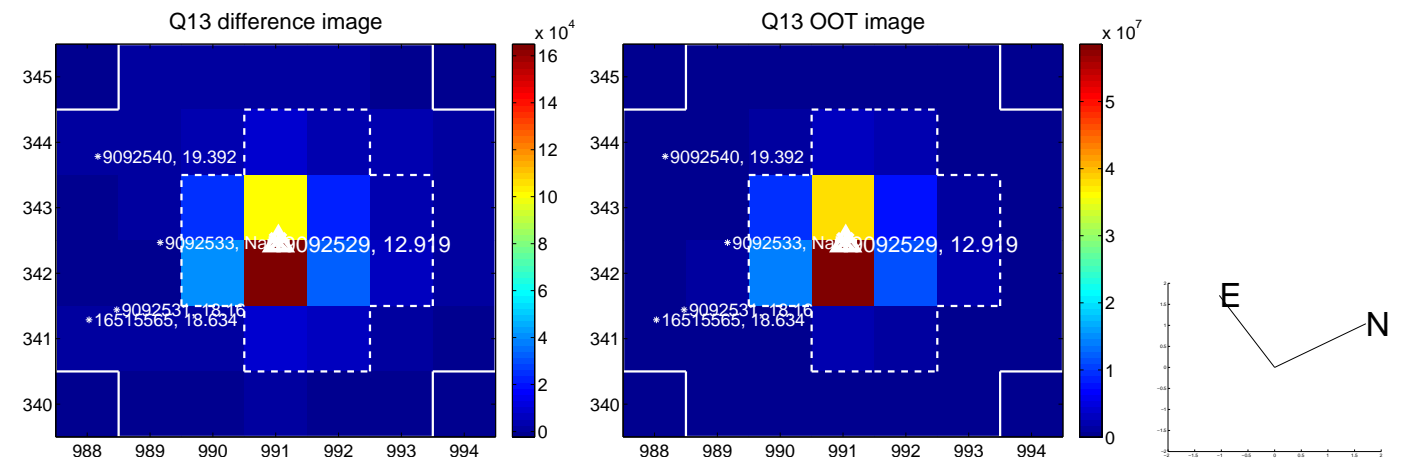
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



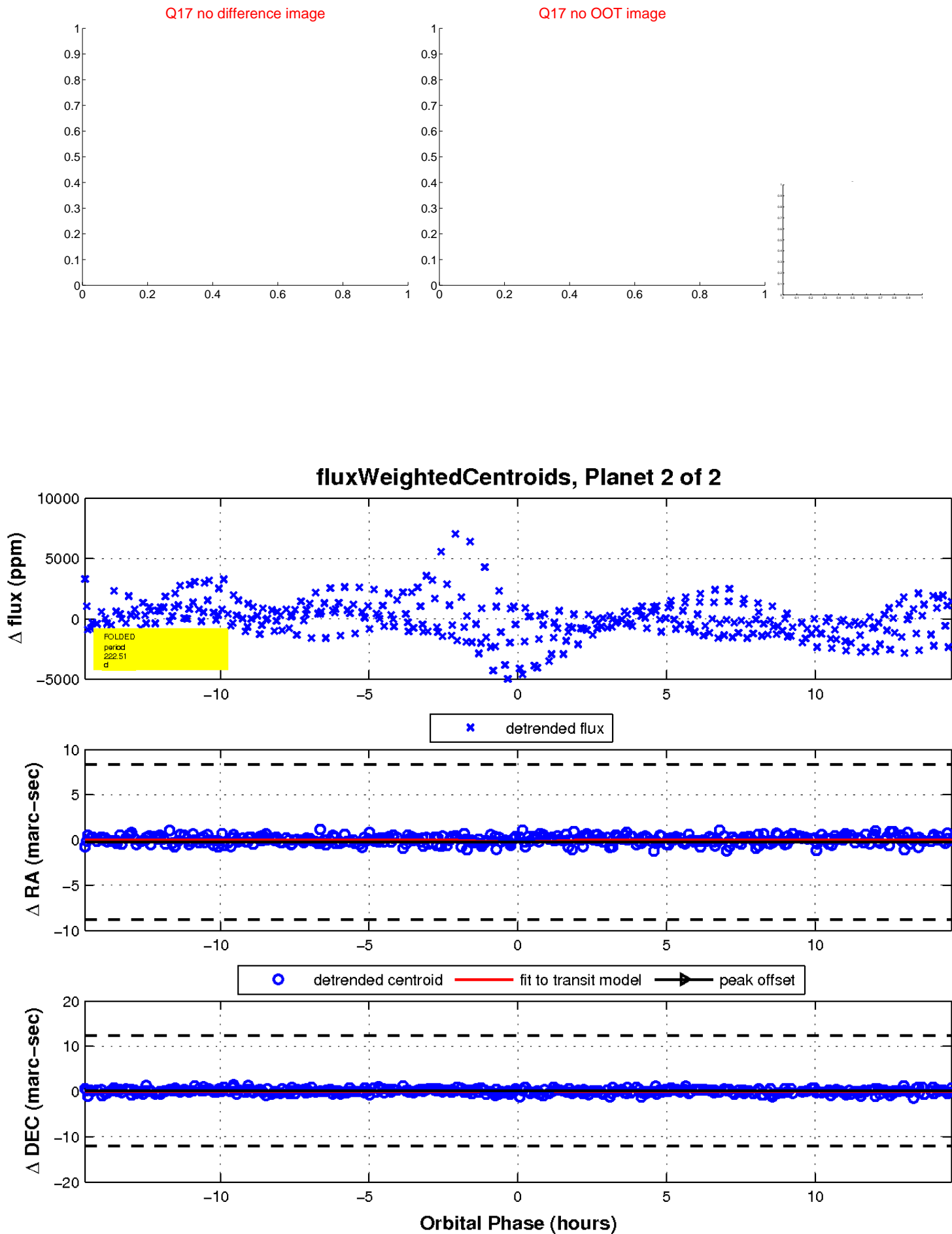
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

