

KIC 009017929

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})
009017929-01	OBS	No	0.730298	132.100945	79.3	2.954	10.0	8.4	1.50	6950	1.55	14634.15
009017929-02	OBS	No	2.007360	131.512274	165.0	16.520	8.5	14.1	1.50	6950	2.02	3800.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009017929-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009017929-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

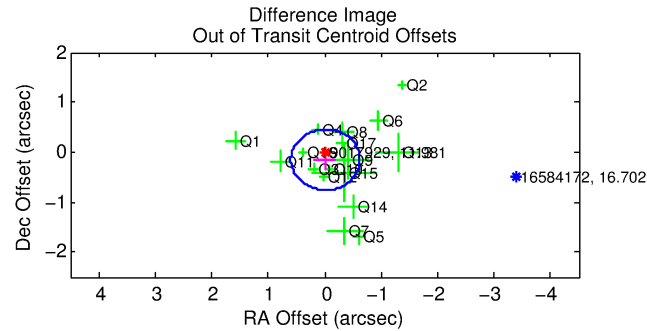
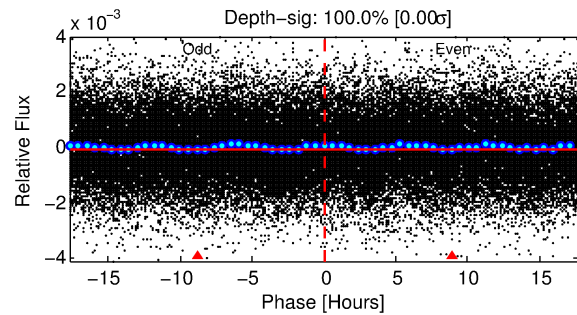
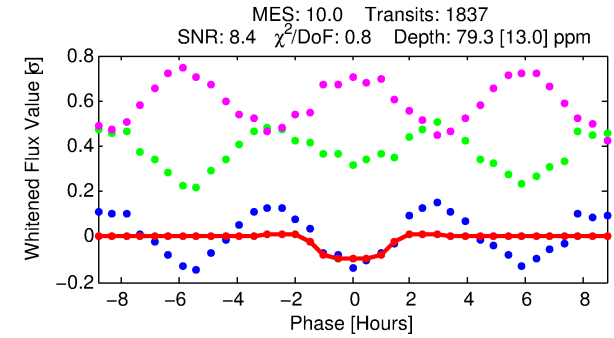
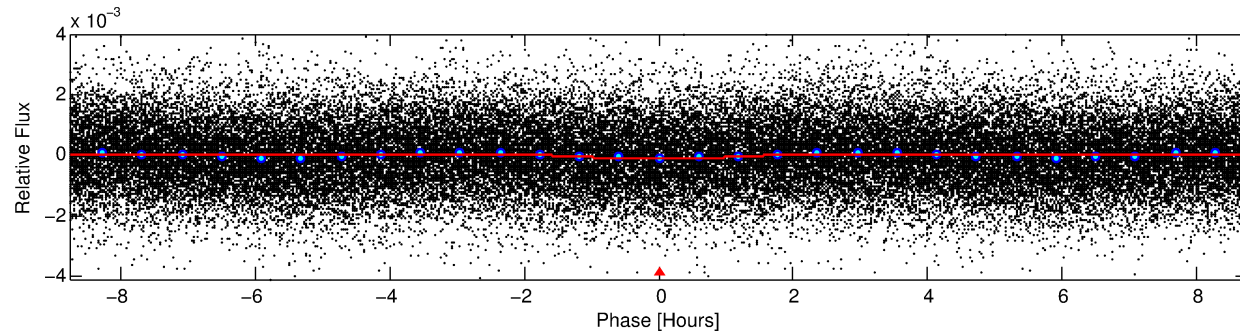
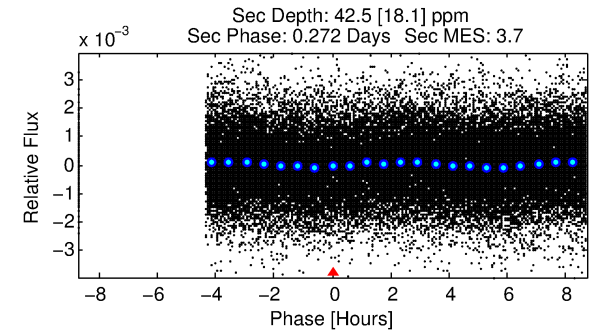
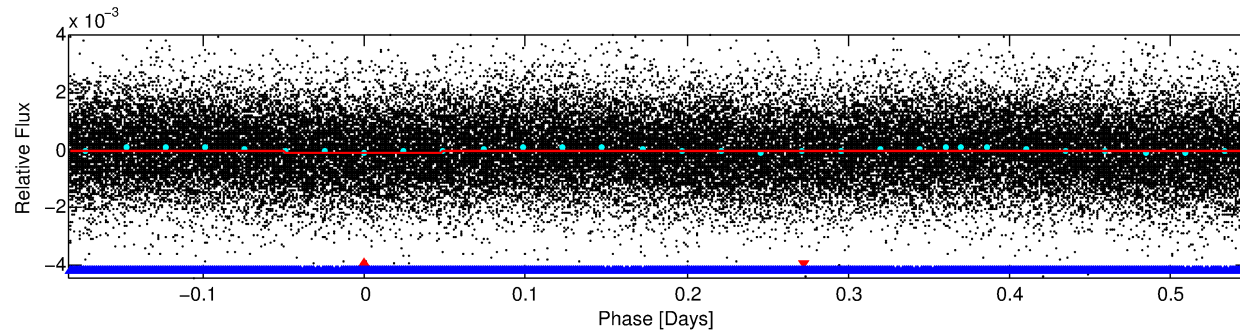
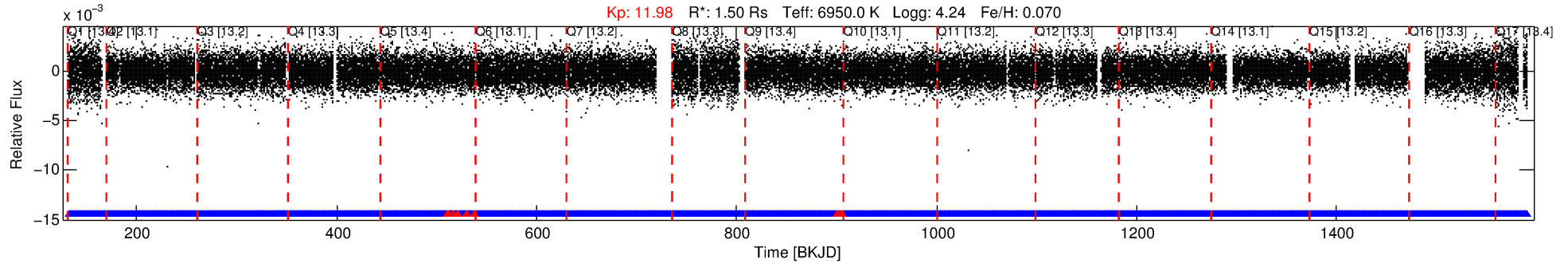
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009017929-01

No Significant Match Found

DV One-Page Summary

KIC: 9017929 Candidate: 1 of 2 Period: 0.730 d



DV Fit Results:

Period = 0.73030 [0.00001] d
Epoch = 132.1009 [0.0045] BKJD
Rp/R* = 0.0095 [0.0085]
a/R* = 1.28 [2.67]
b = 0.90 [1.16]
Seff = 14634.15 [6347.68]
Teq = 2805 [304] K
Rp = 1.55 [1.49] Re
a = 0.0179 [0.0050] AU
Ag = 3.11 [5.83] [0.36σ]
Teffp = 5758 [2656] K [1.10σ]

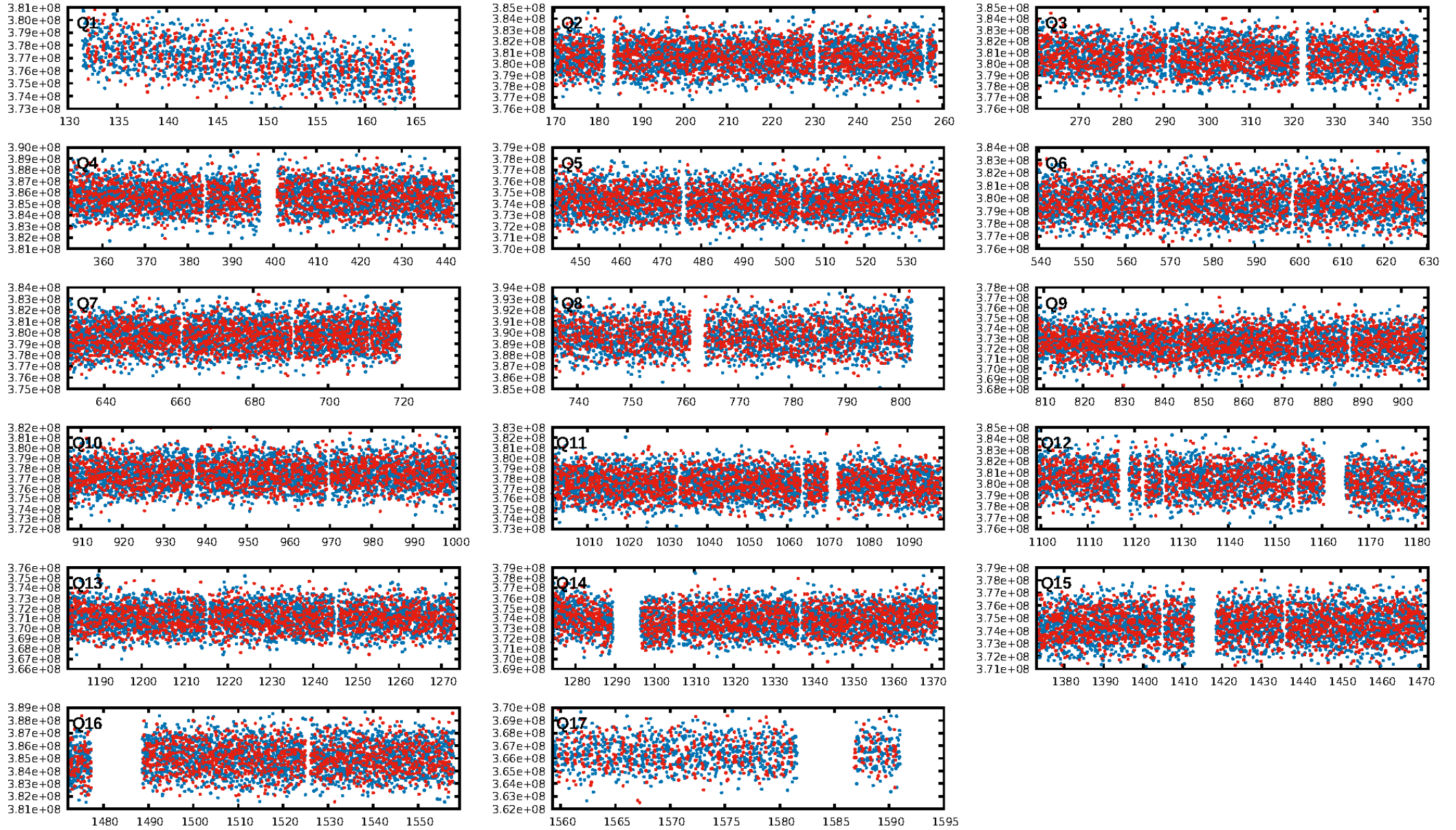
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 93.2% [1.83σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1745/1755]
GhostDiagnostic-chr: 2.102
Centroid-sig: 66.1%
Centroid-so: 0.109 arcsec [0.82σ]
OotOffset-rm: 0.152 arcsec [0.75σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.128 arcsec [0.73σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

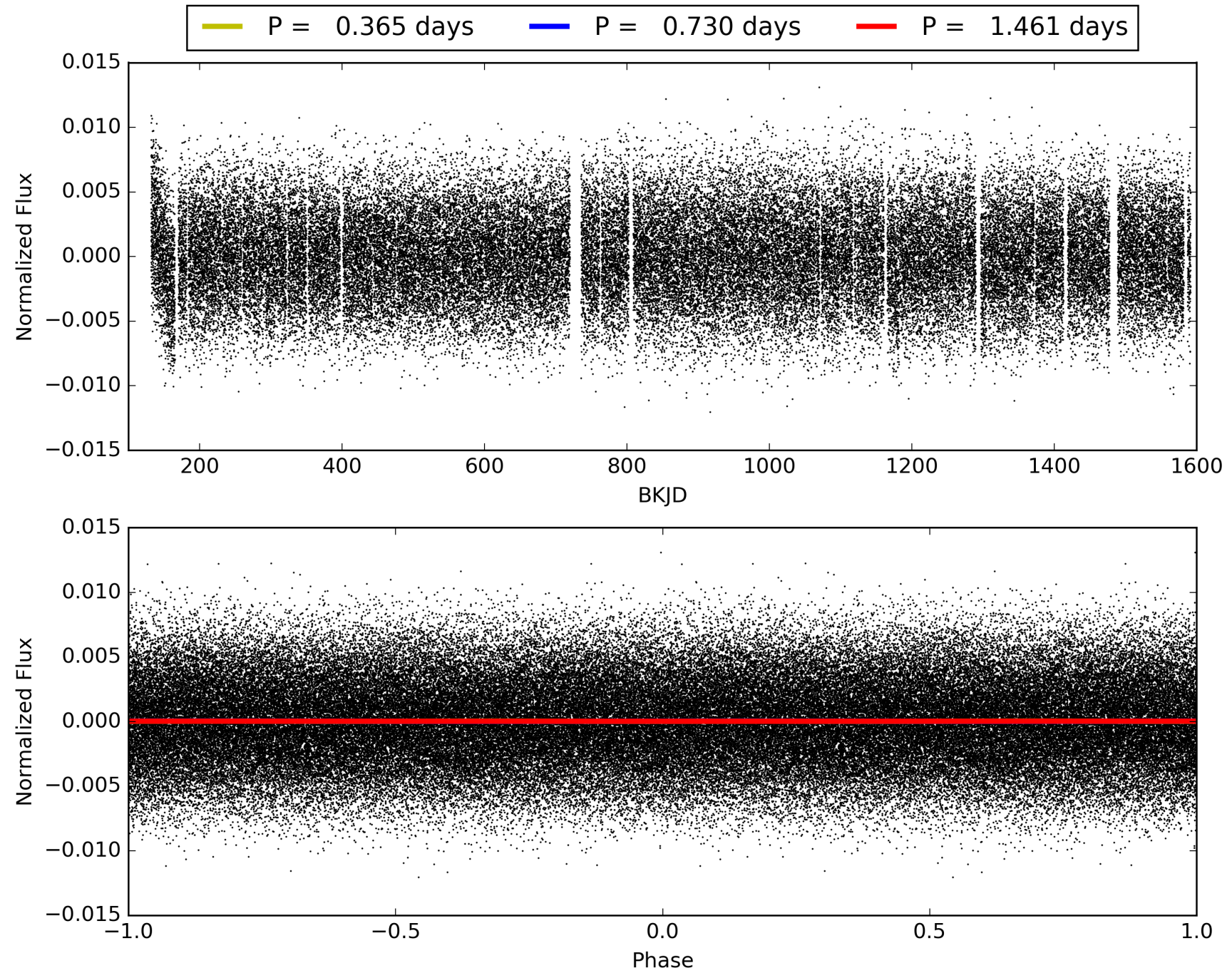
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:53:06 Z

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

TCE 009017929-01, PDC Light Curves

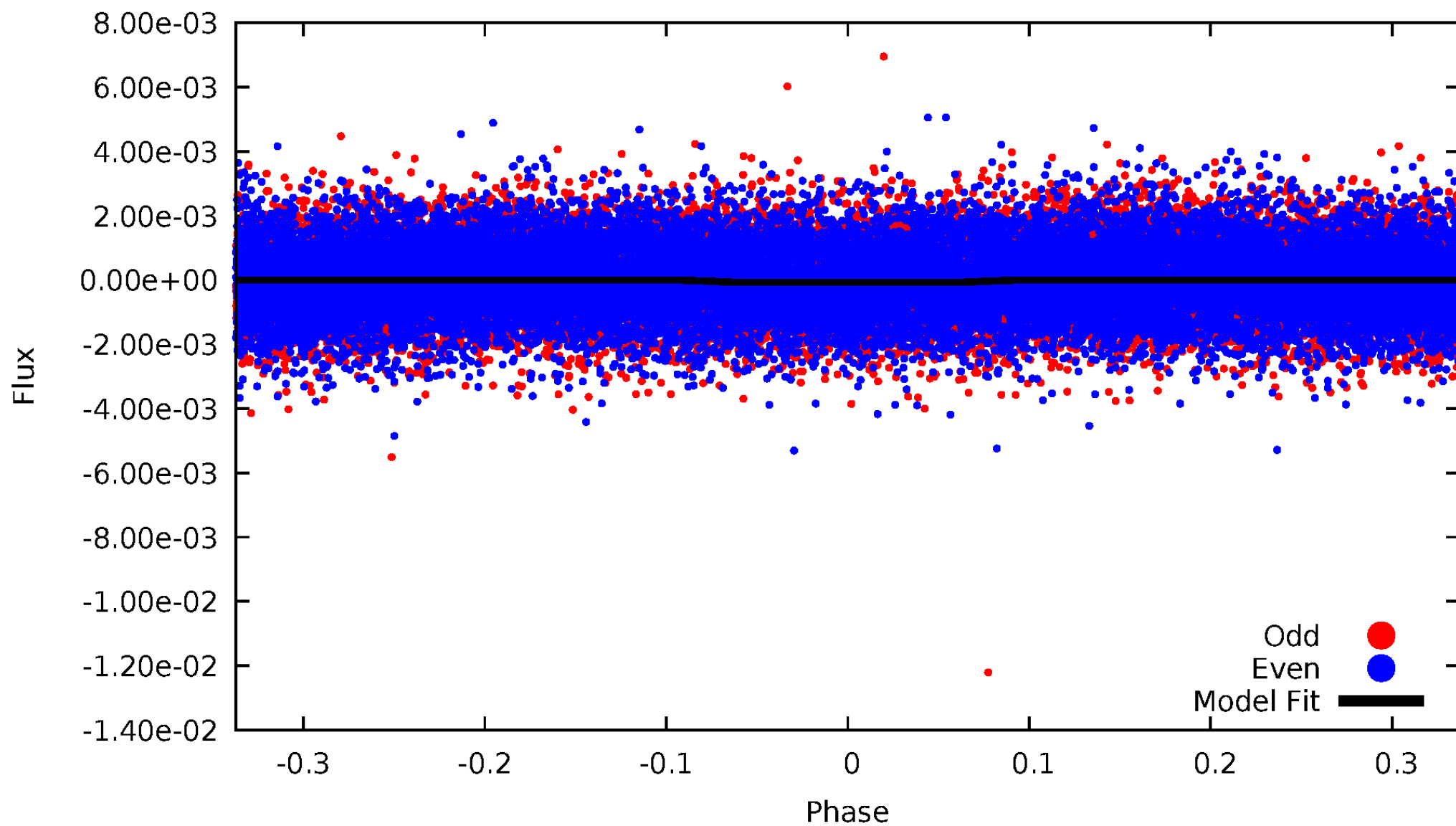


TCE 009017929-01



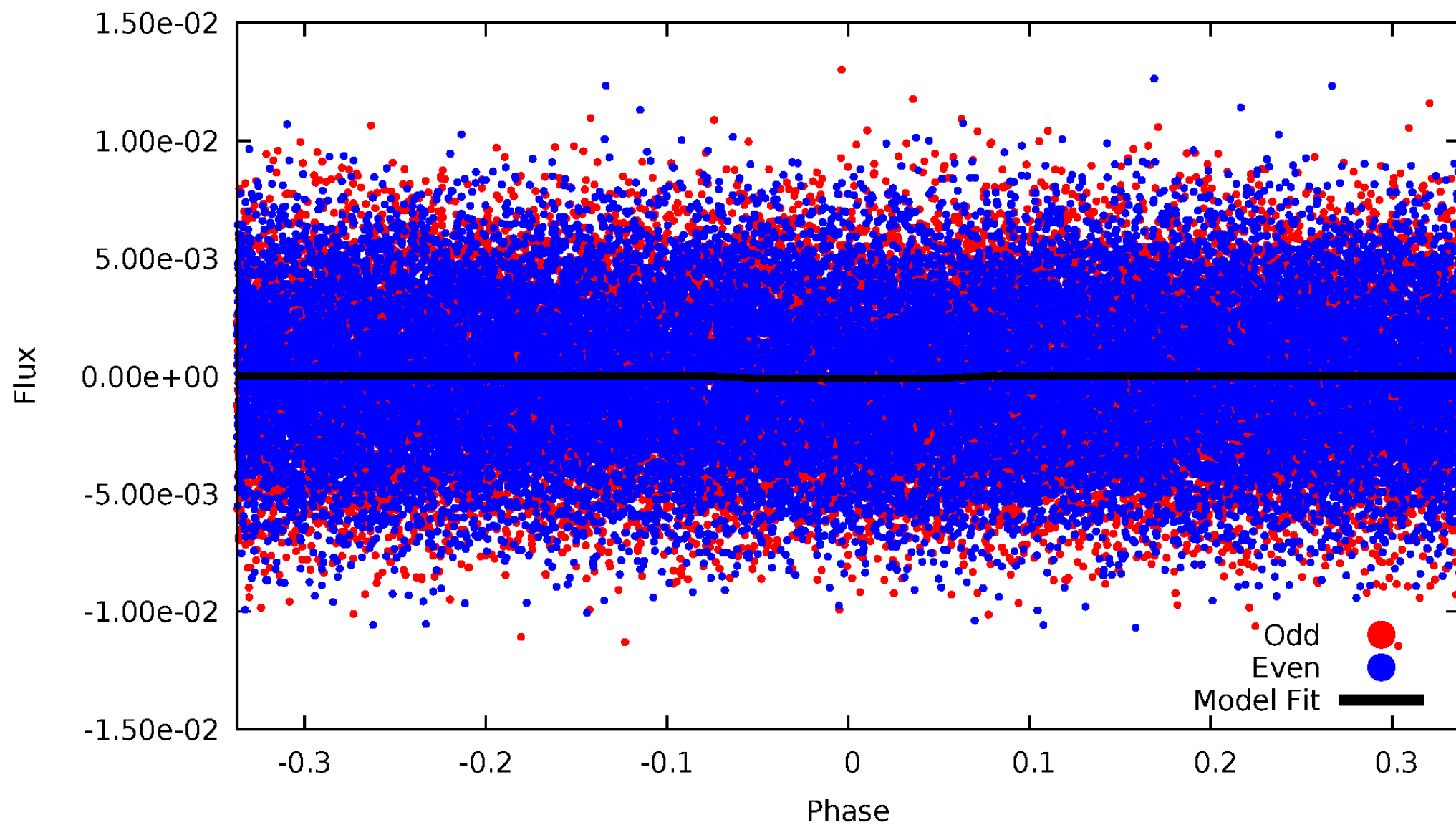
DV Odd/Even

TCE 009017929-01

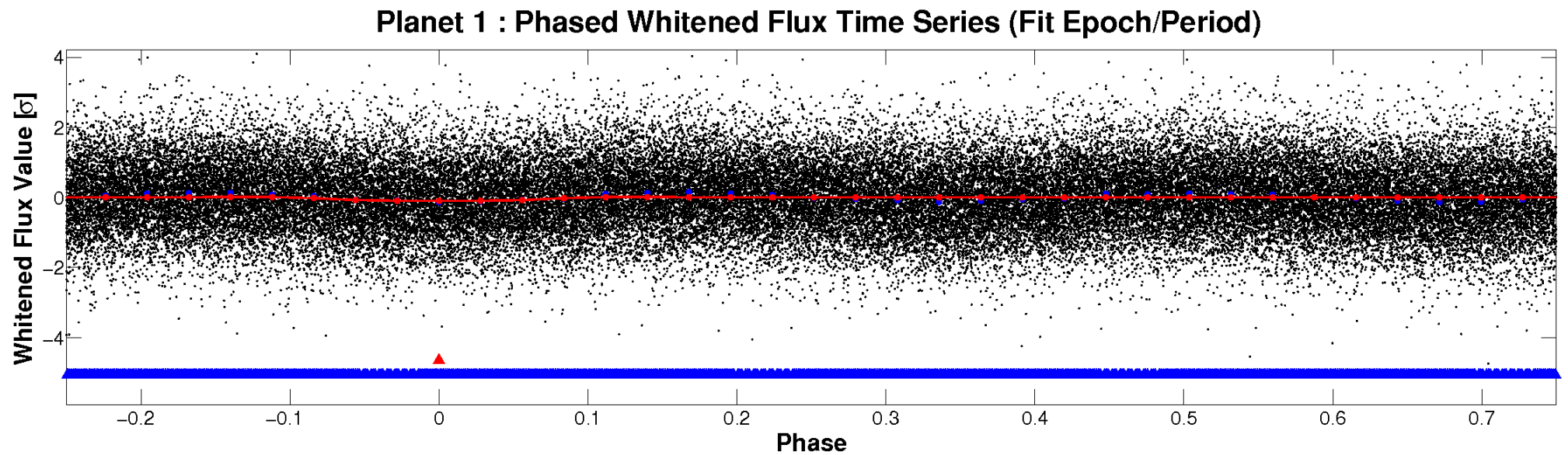
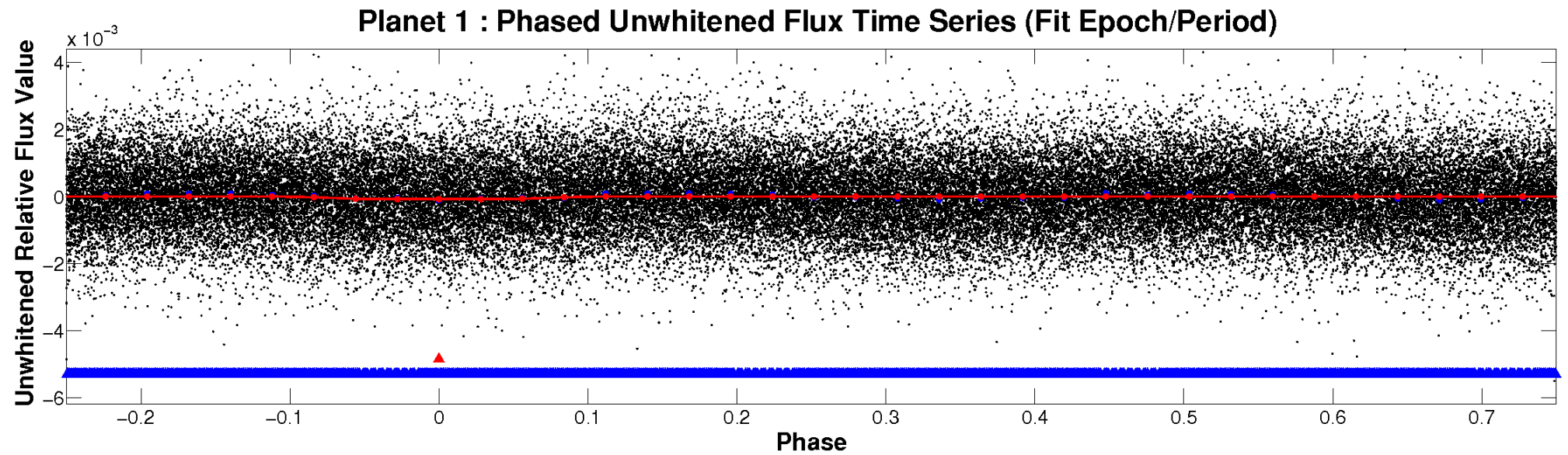


ALT Odd/Even

TCE 009017929-01

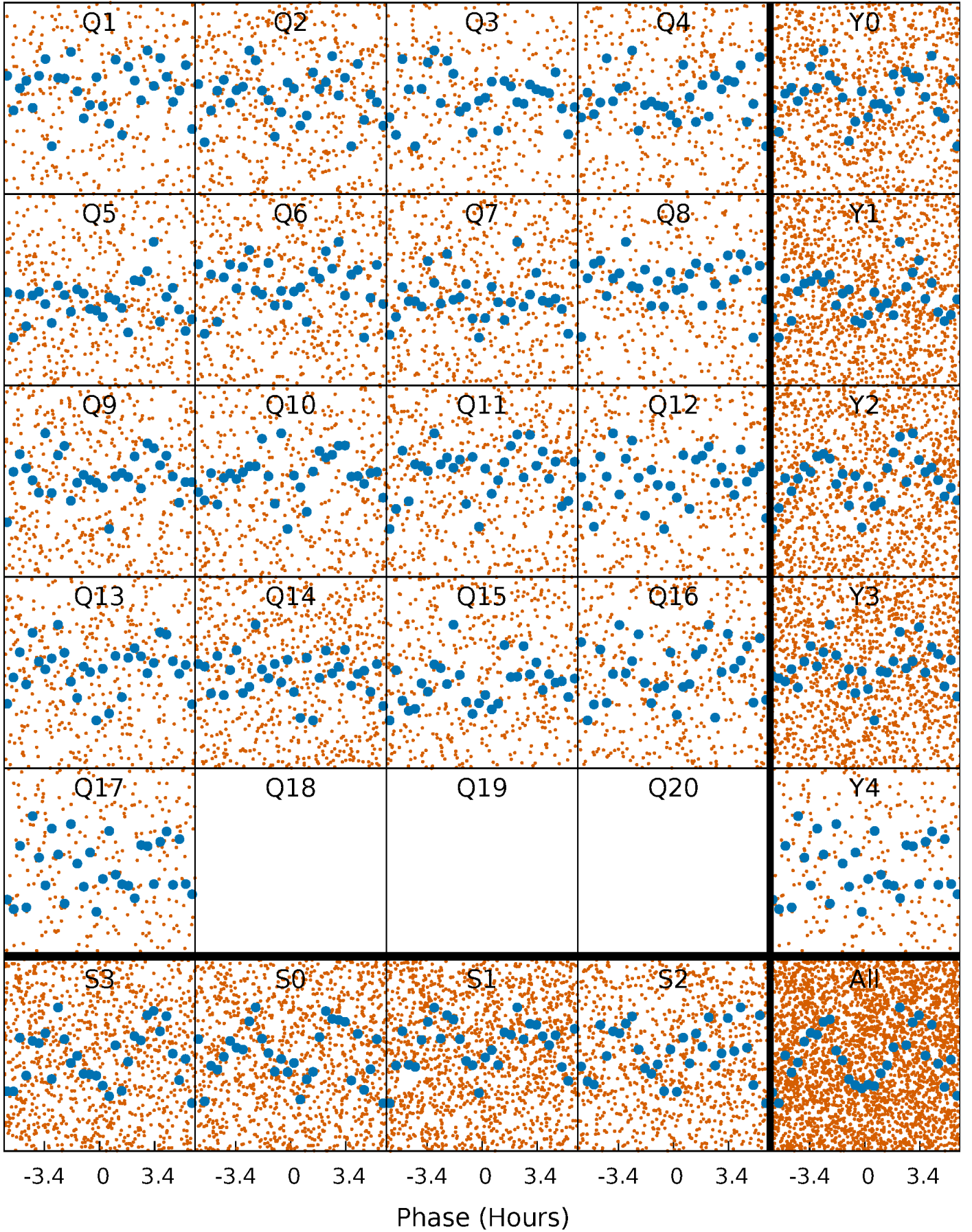


Non-Whitened Vs. Whitened Light Curve



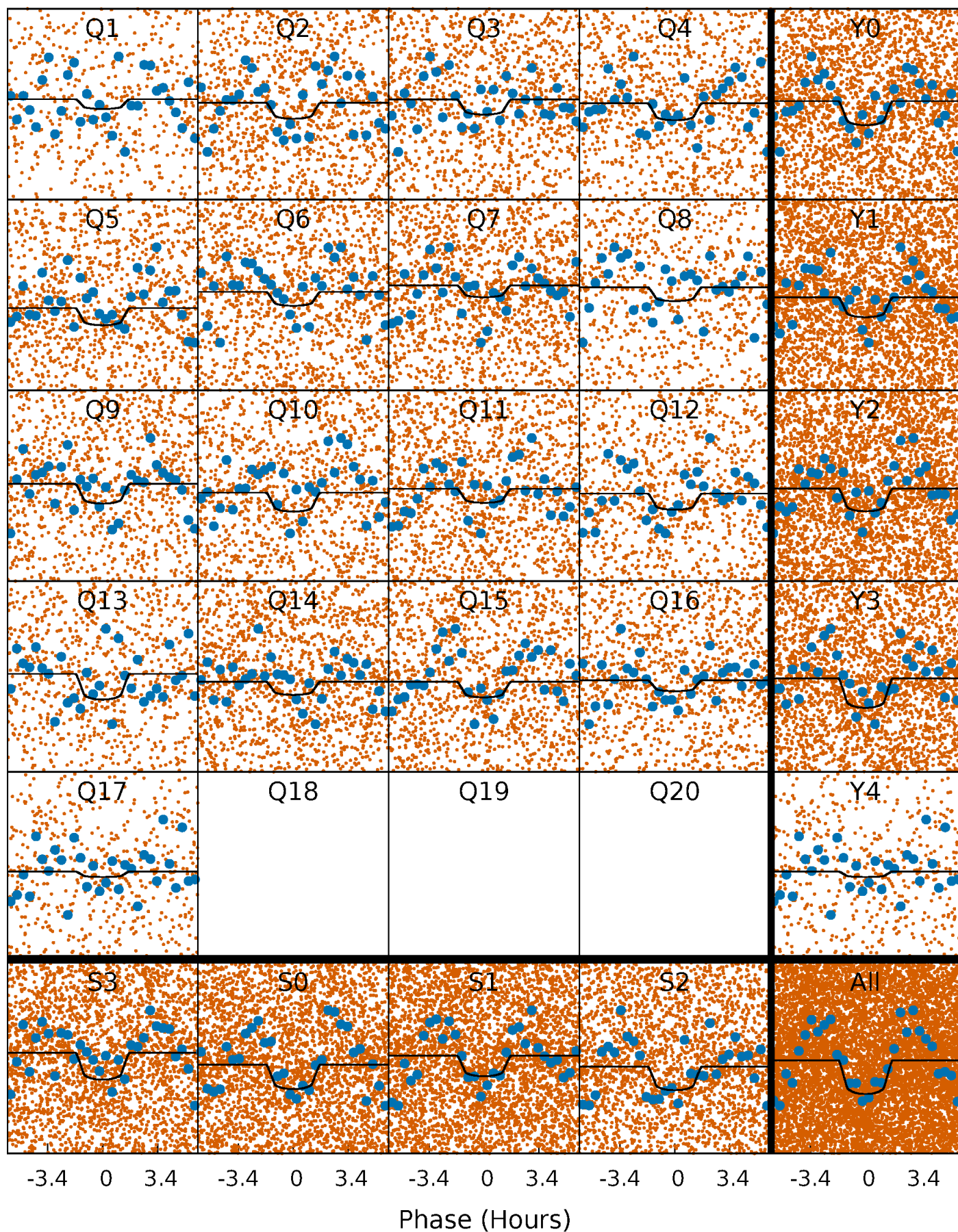
PDC Quarter-Phased Transit Curves

TCE 009017929-01 P= 0.730298 Days $T_0=132.100945$ (BKJD)



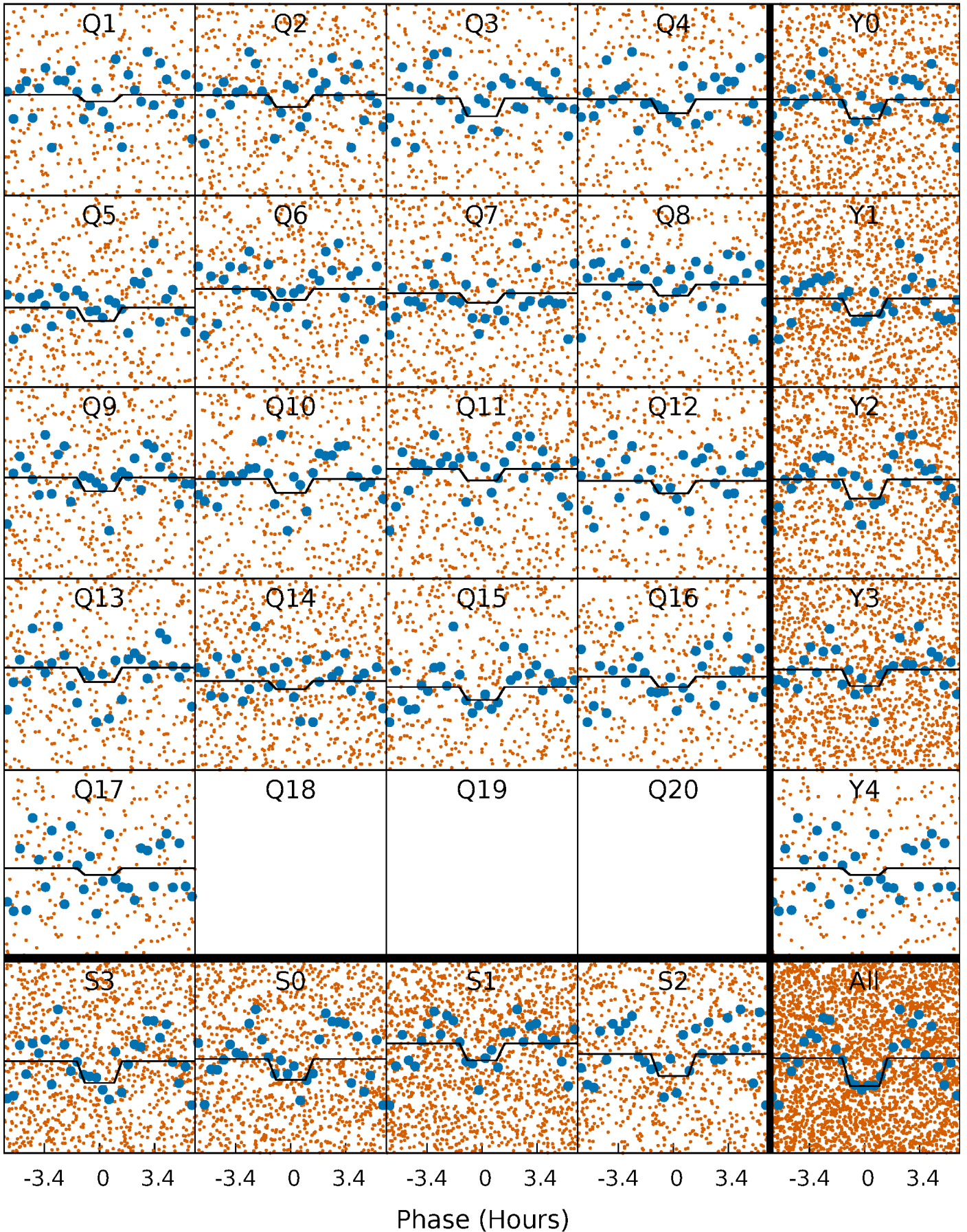
DV Quarter-Phased Transit Curves

TCE 009017929-01 P= 0.730298 Days $T_0=132.100945$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

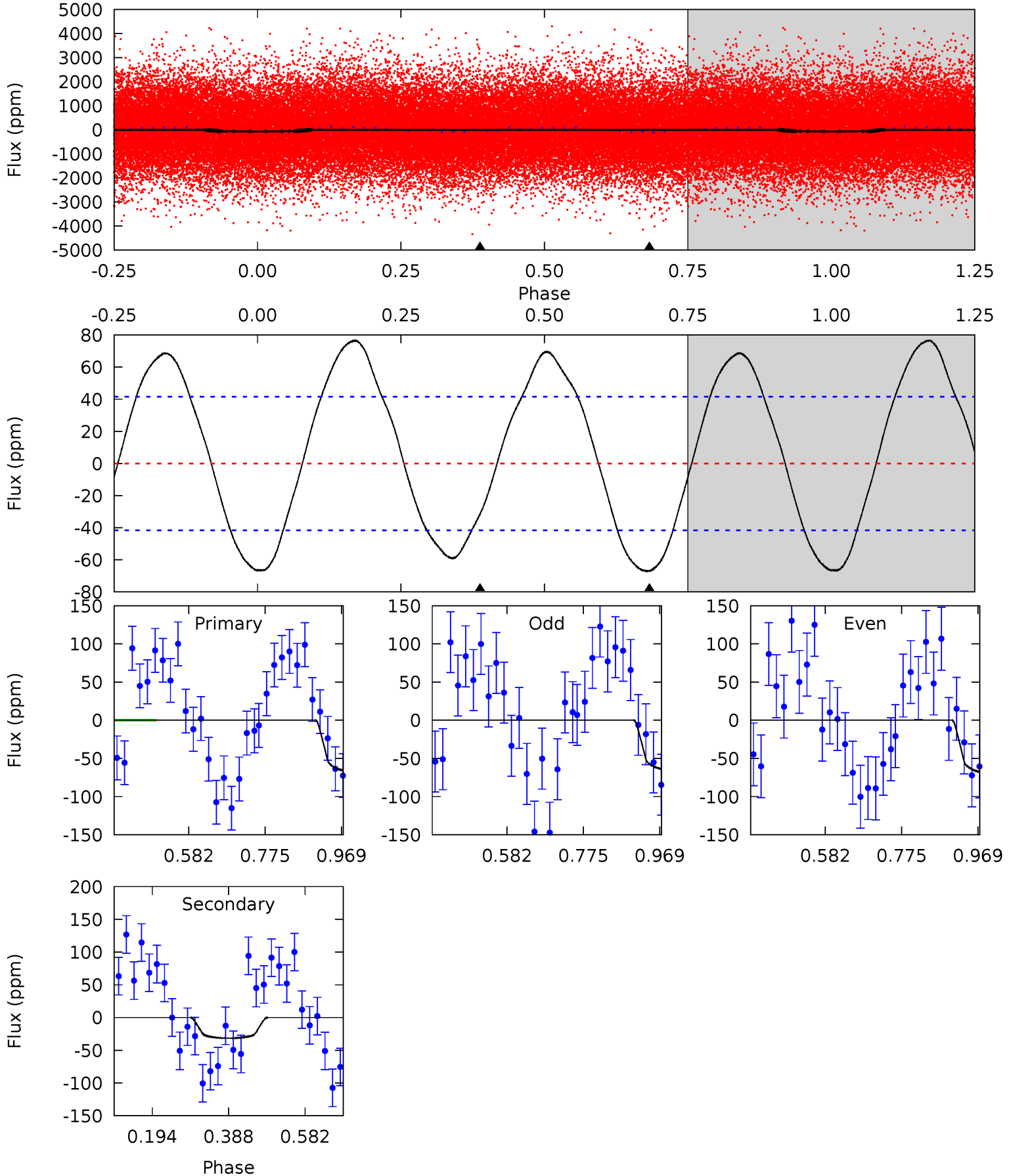
TCE 009017929-01 P= 0.730298 Days $T_0=132.100945$ (BKJD)



DV Model-Shift Uniqueness Test

009017929-01, P = 0.730298 Days, E = 131.370647 Days

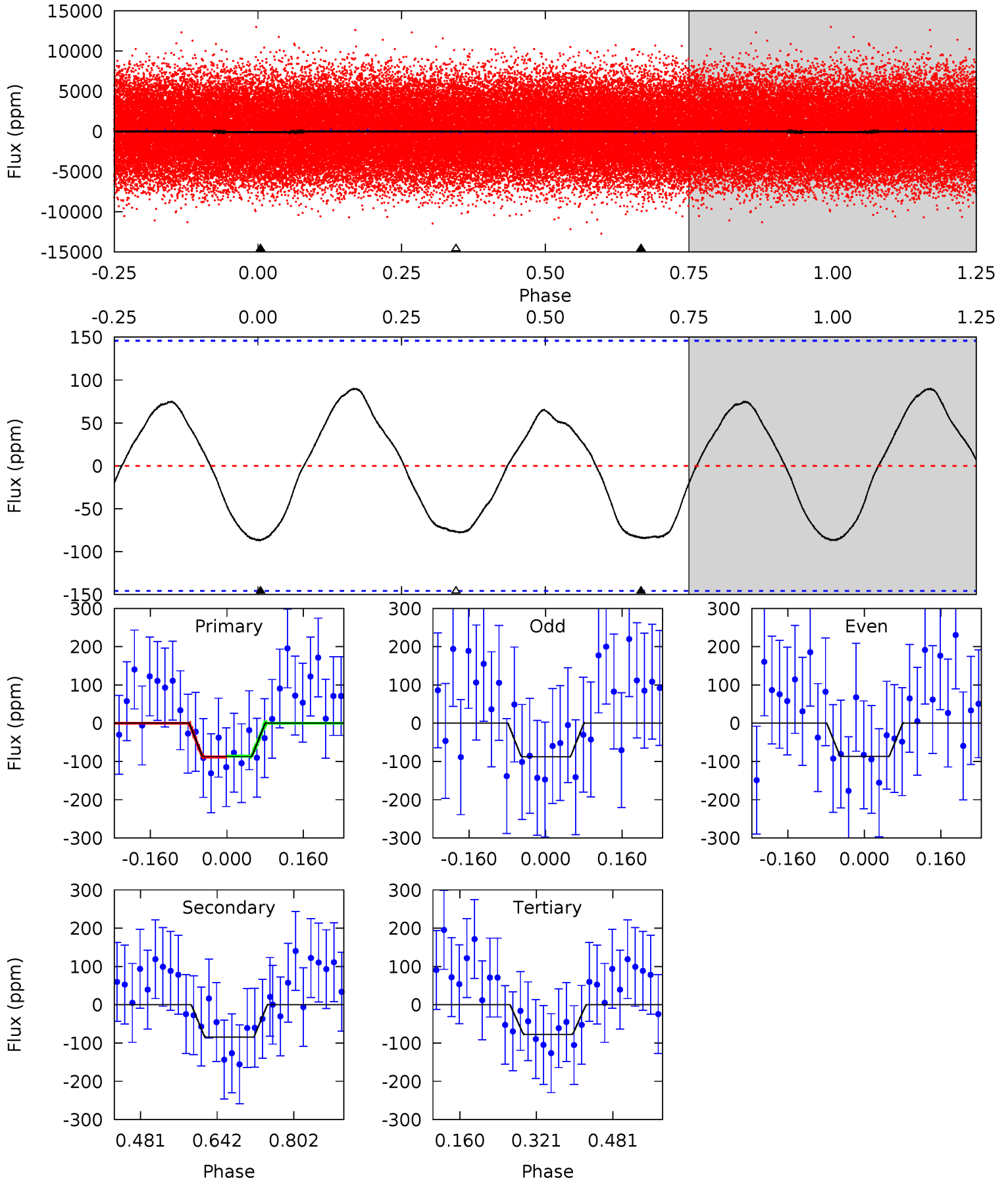
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.15	3.36	0	0	4.42	1.30	5.31	7.15	7.15	3.36	3.36	0.22	0.99	0.53	0.08



Alt Model-Shift Uniqueness Test

009017929-01, P = 0.730298 Days, E = 131.370647 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.67	2.59	2.37	0	4.46	1.40	1.69	0.30	2.67	0.22	2.59	0.02	0.91	0.51	0.04



Stellar Parameters For KIC 009017929

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6950^{+194}_{-333}	$4.244^{+0.087}_{-0.203}$	$0.070^{+0.200}_{-0.350}$	$1.499^{+0.524}_{-0.225}$	$1.436^{+0.222}_{-0.222}$	$0.601^{+0.240}_{-0.326}$
	+3%/-5%	+2%/-5%	+286%/-500%	+35%/-15%	+15%/-15%	+40%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009017929-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-32 ± 9	$1.81^{+1.43}_{-1.16}$	3945^{+294}_{-232}	4726^{+3500}_{-1366}	$1.557^{+9.660}_{-1.071}$
Alt.	-84 ± 33	$1.84^{+1.34}_{-1.13}$	3966^{+318}_{-229}	6182^{+5456}_{-1627}	$4.198^{+24.665}_{-2.904}$

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

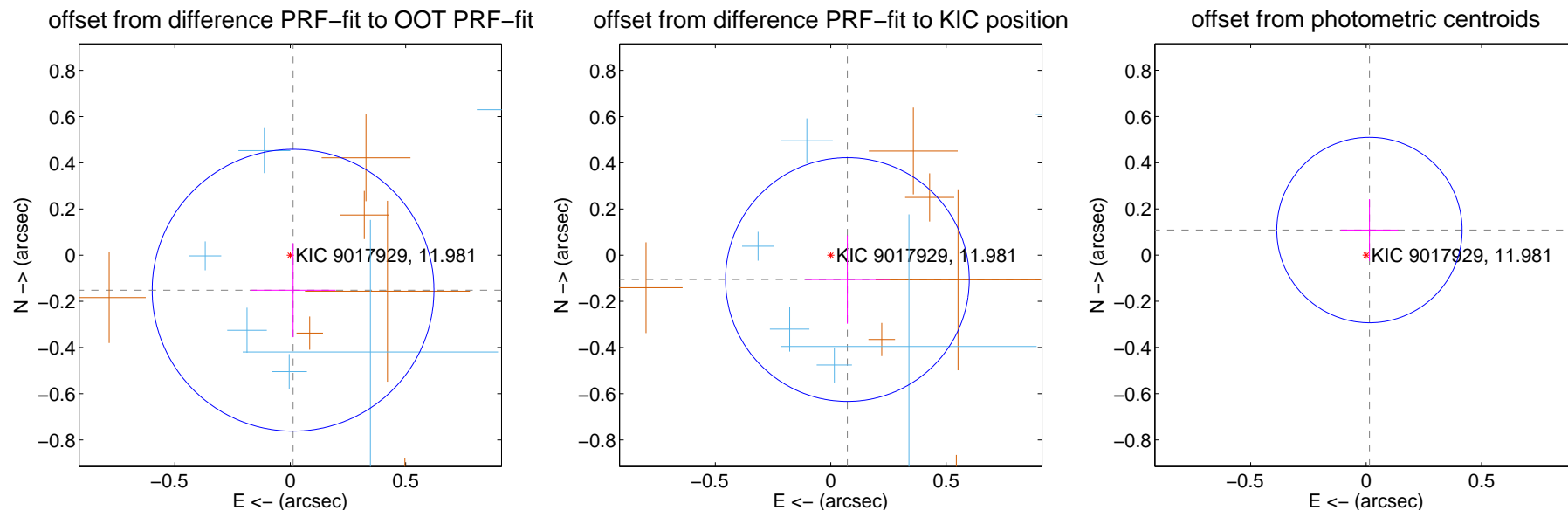
DV Centroid Data

Supplemental centroid analysis for 009017929-01. **Kepler magnitude: 11.98.** Transit SNR 8.39

There are 7 quarters with good PRF difference image offsets

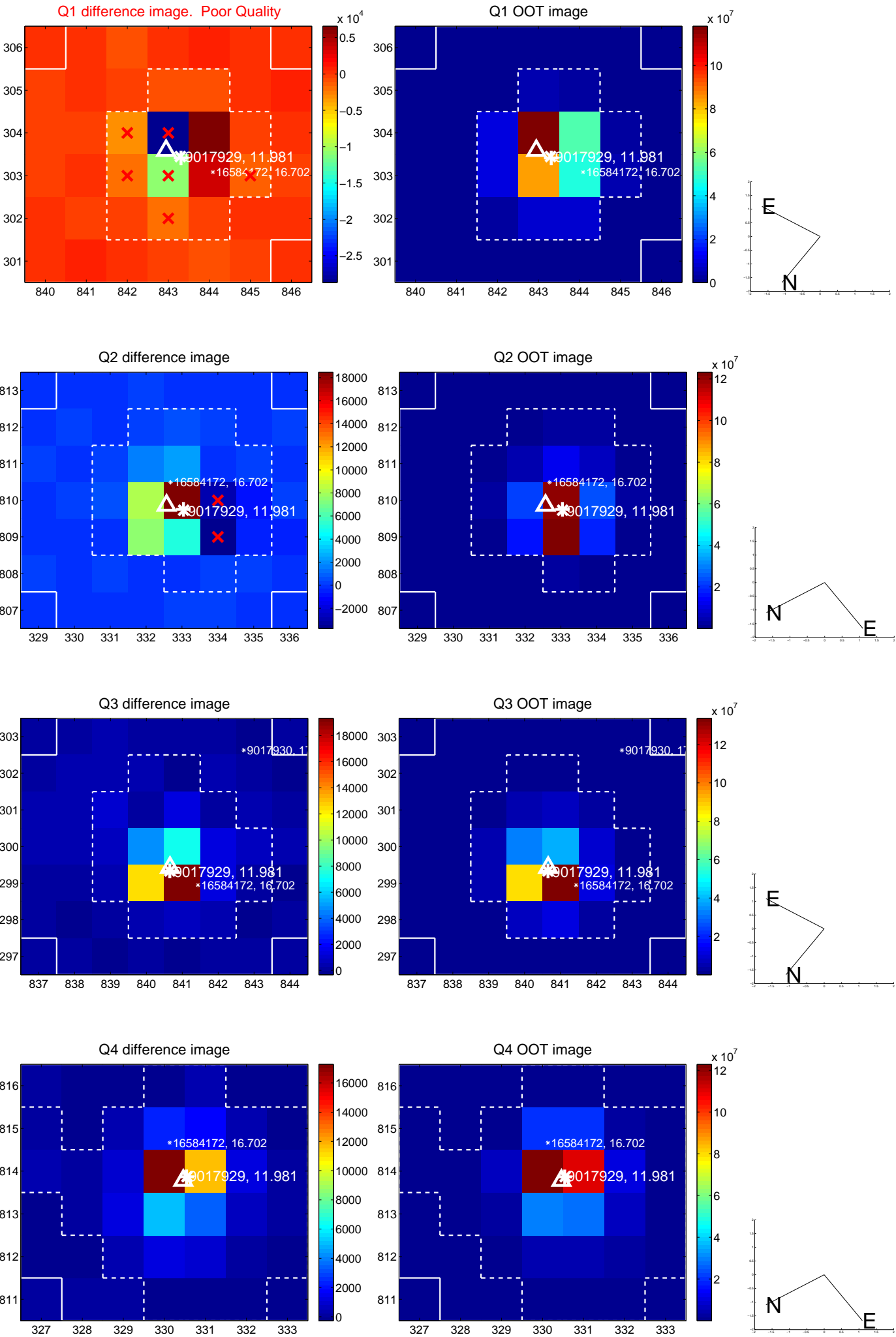
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.152 ± 0.203	0.75	-0.012 ± 0.184	-0.152 ± 0.204
PRF-fit source offset from KIC position	0.128 ± 0.176	0.73	-0.072 ± 0.183	-0.106 ± 0.191
photometric centroid source offset	0.11 ± 0.13	0.82	-0.01 ± 0.12	0.11 ± 0.13

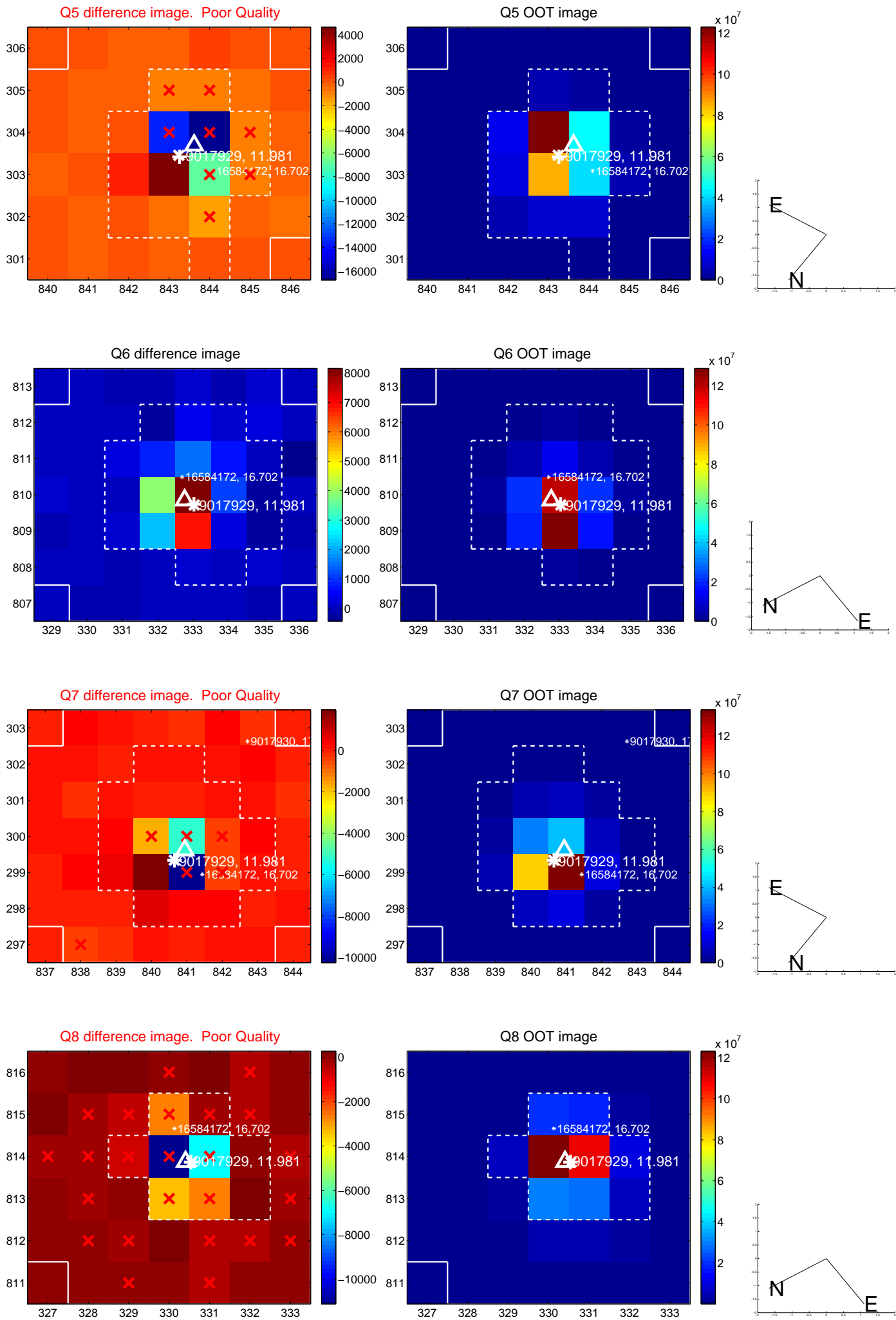


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

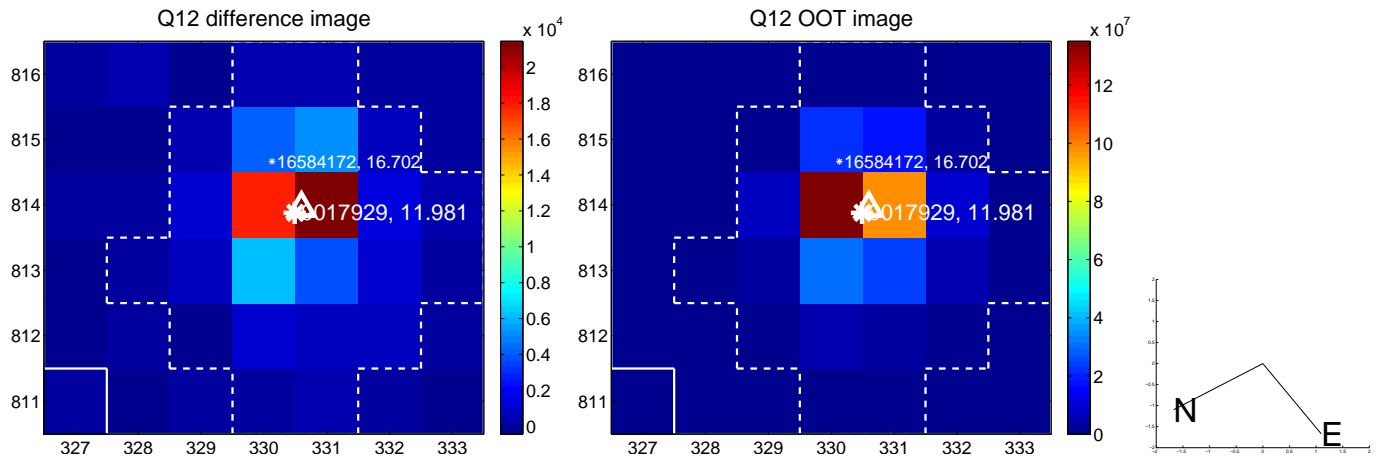
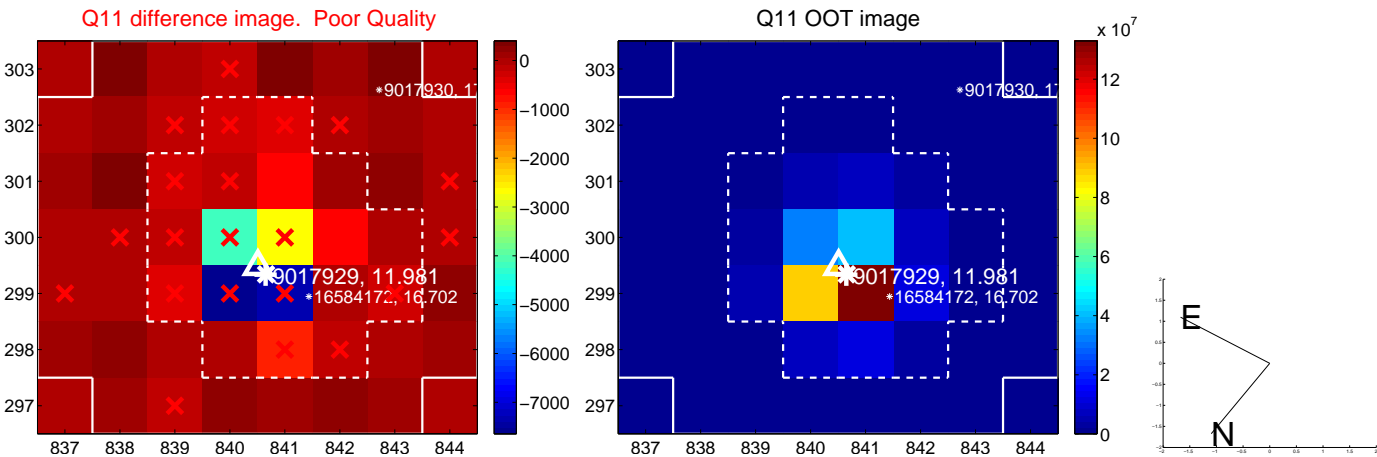
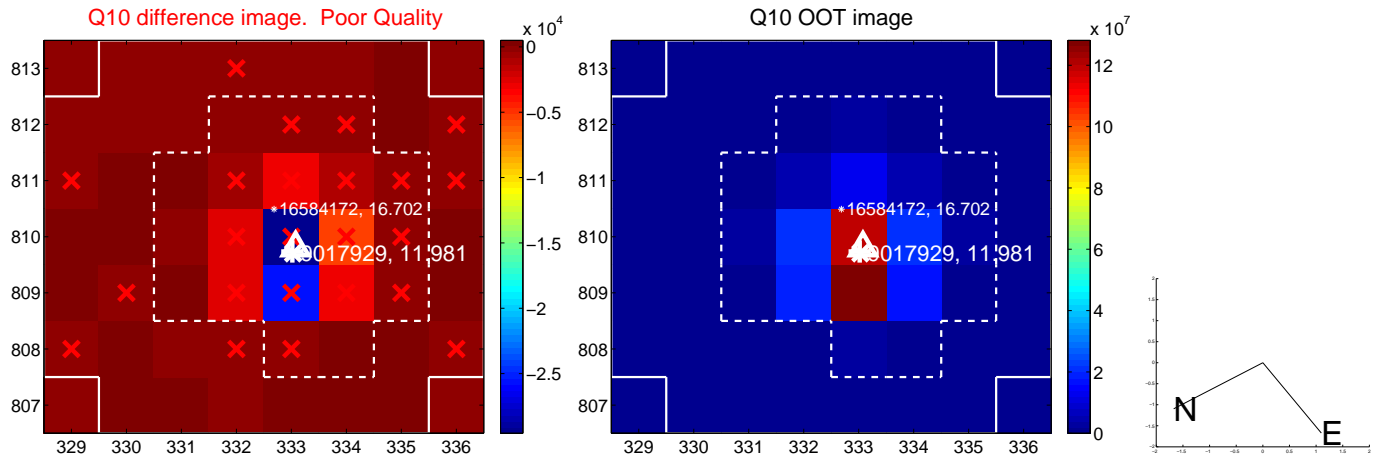
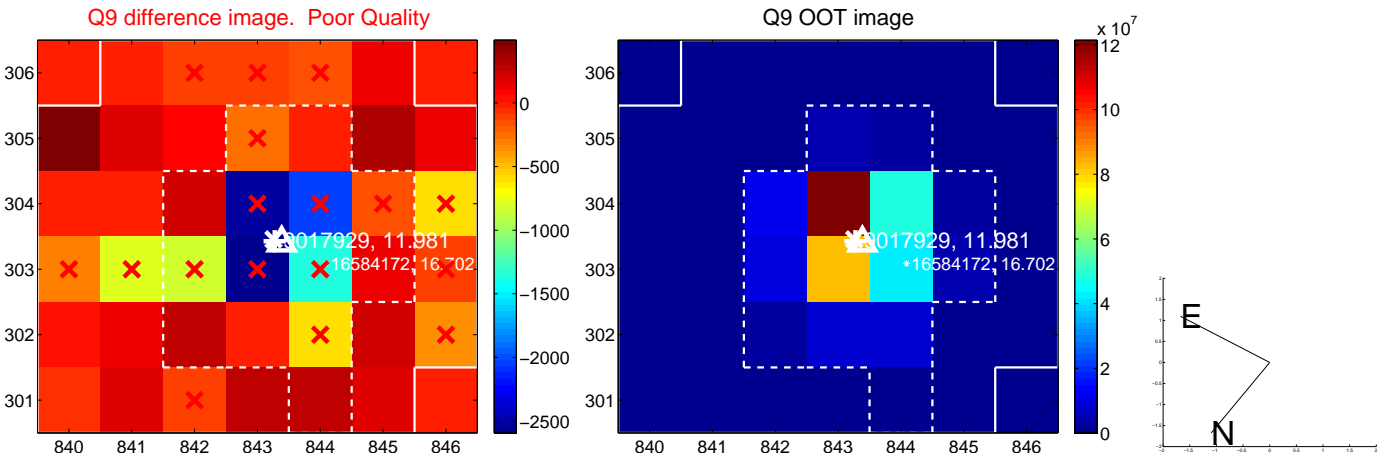
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



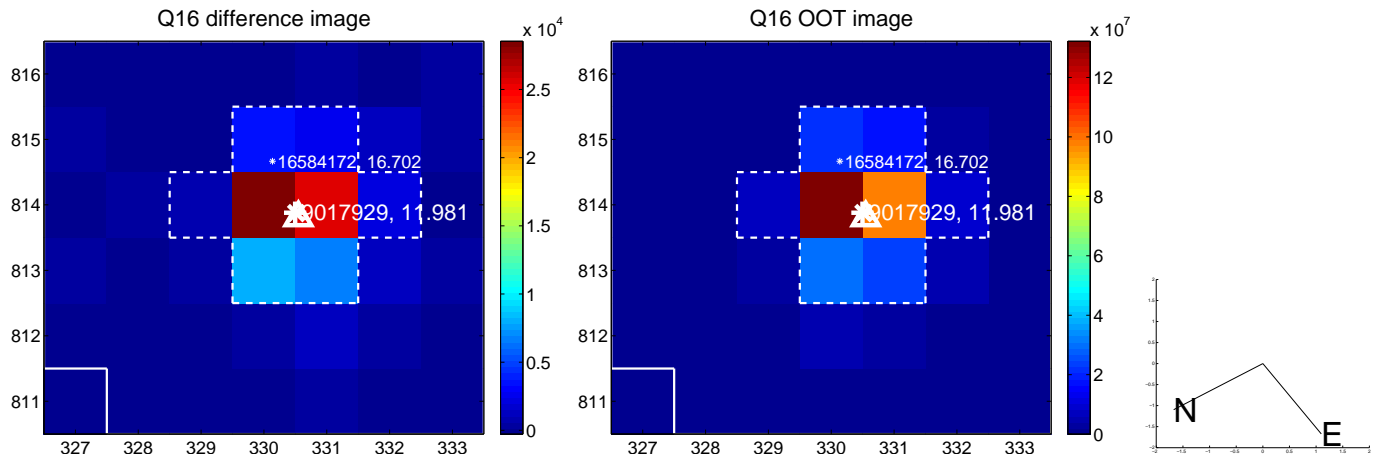
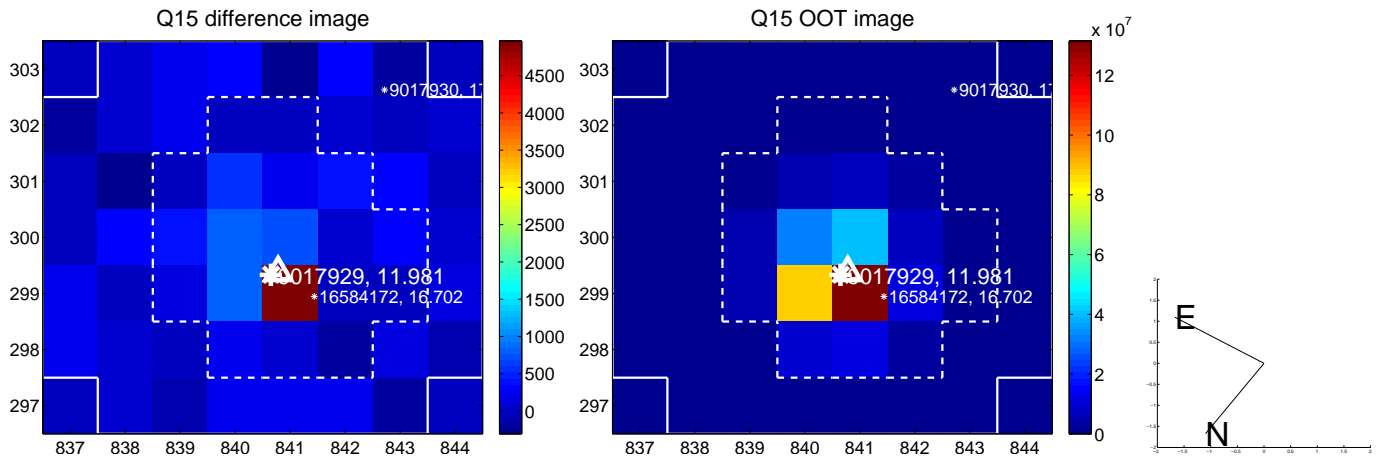
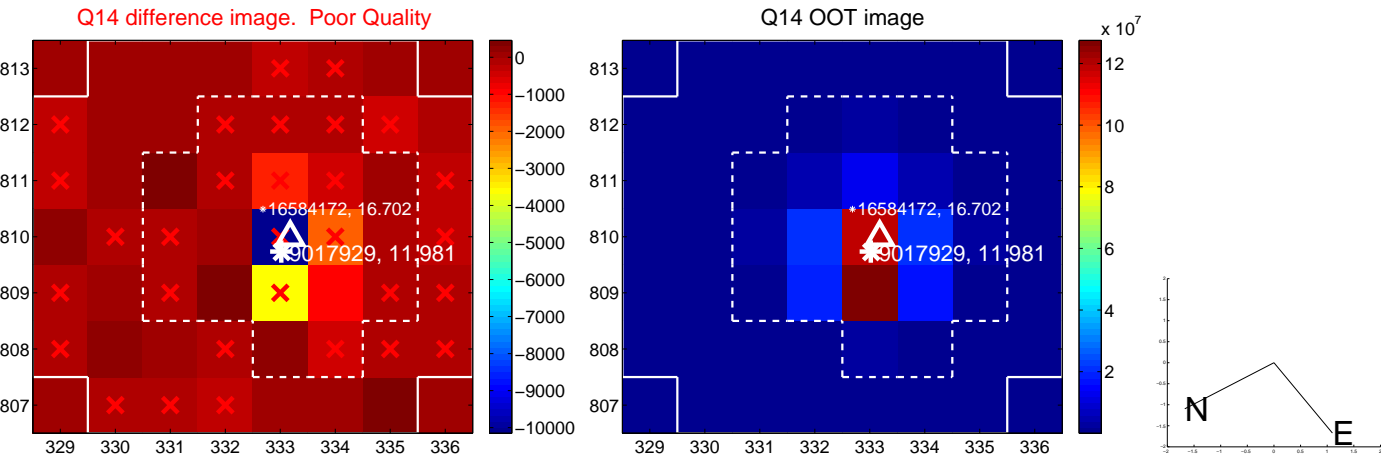
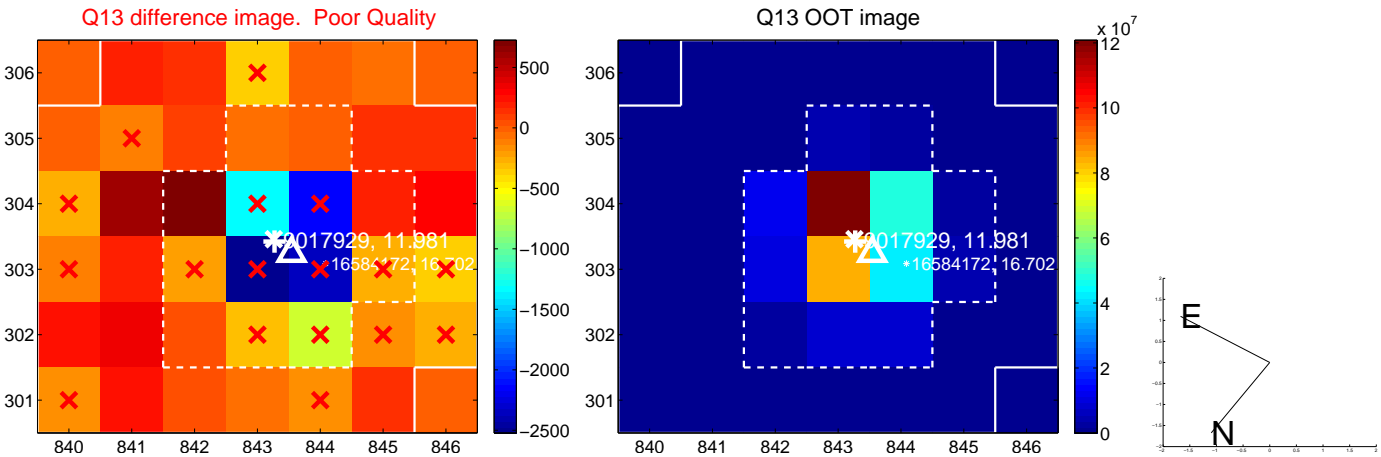
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



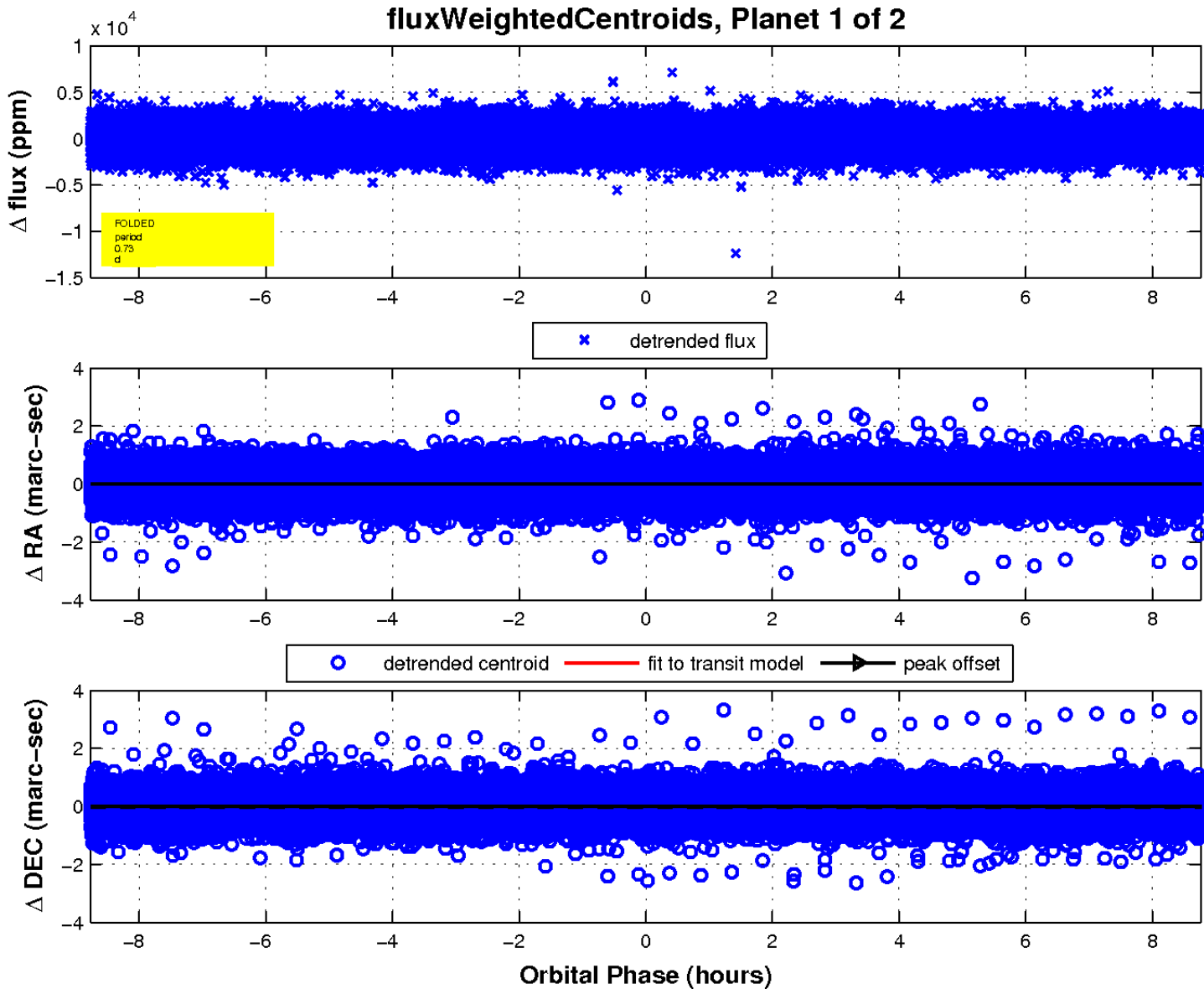
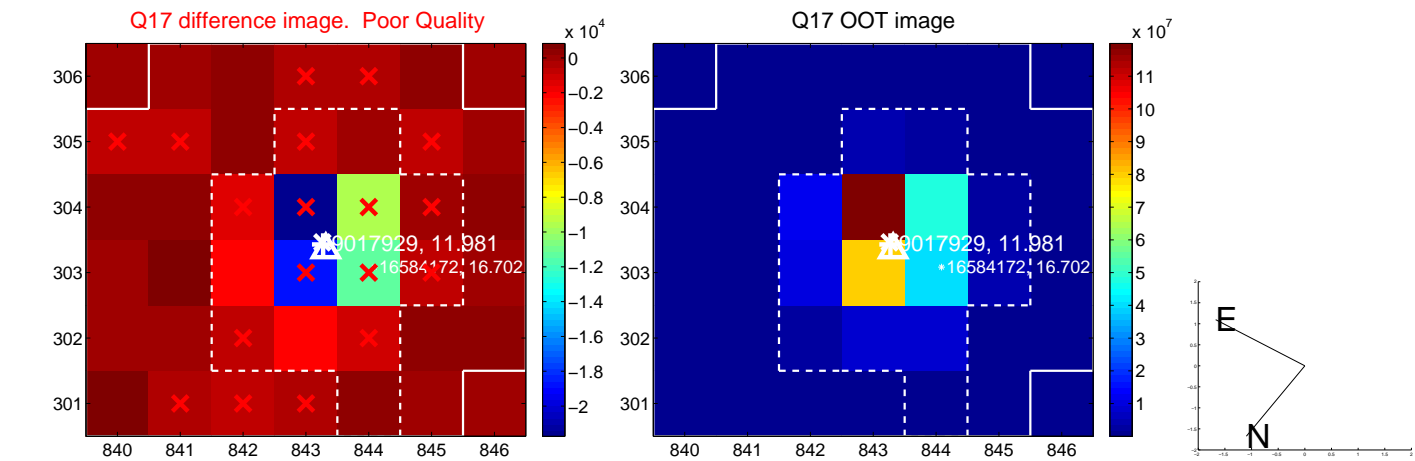
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

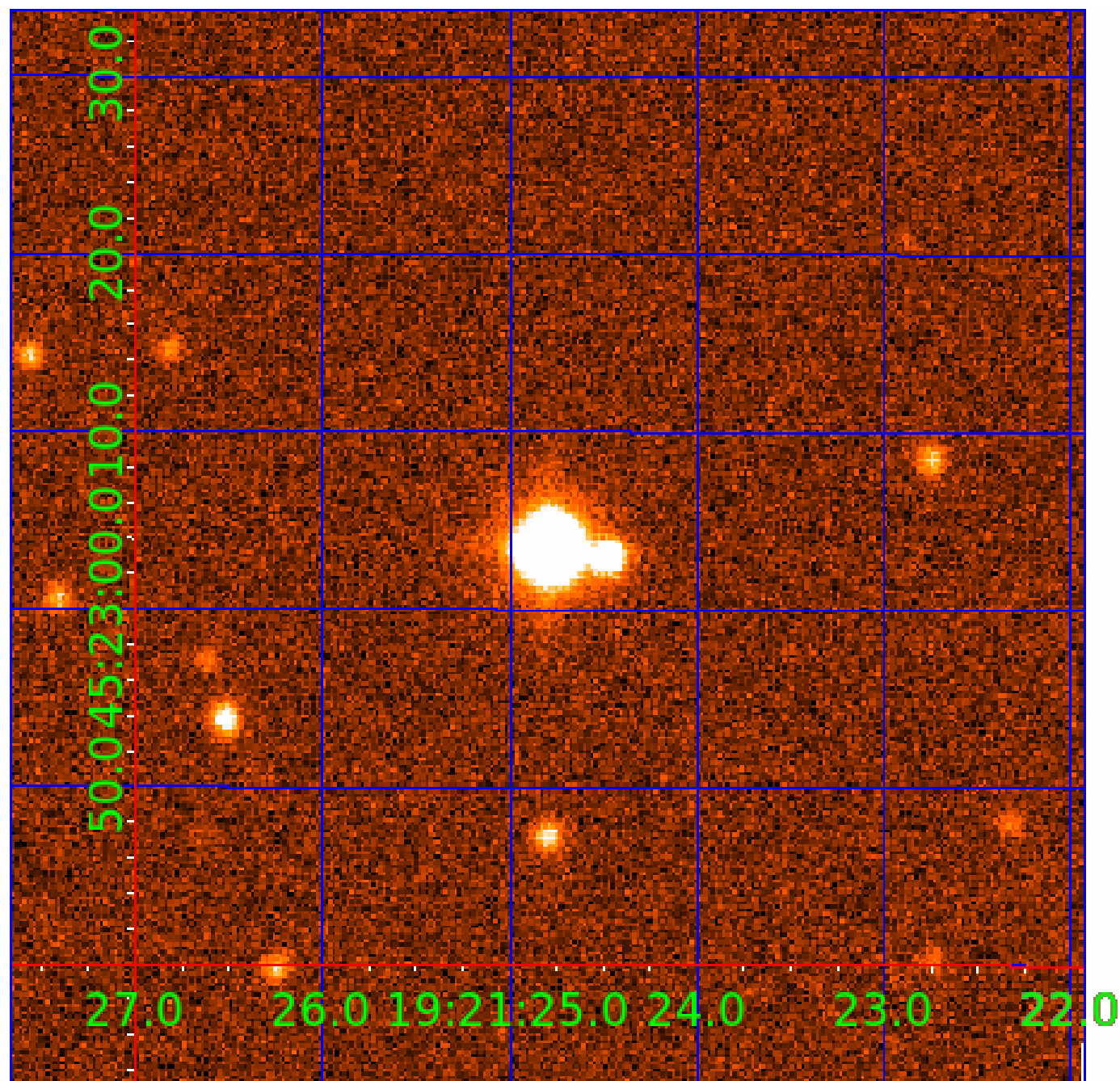


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009017929

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})
009017929-01	OBS	No	0.730298	132.100945	79.3	2.954	10.0	8.4	1.50	6950	1.55	14634.15
009017929-02	OBS	No	2.007360	131.512274	165.0	16.520	8.5	14.1	1.50	6950	2.02	3800.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009017929-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009017929-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

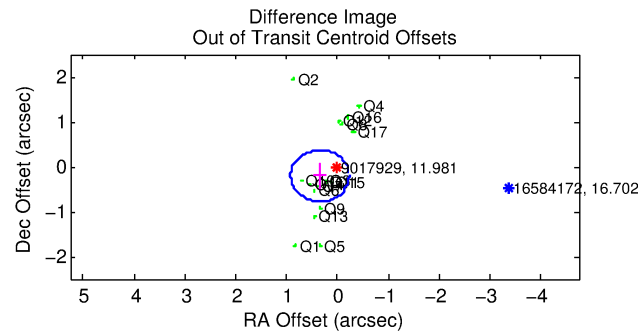
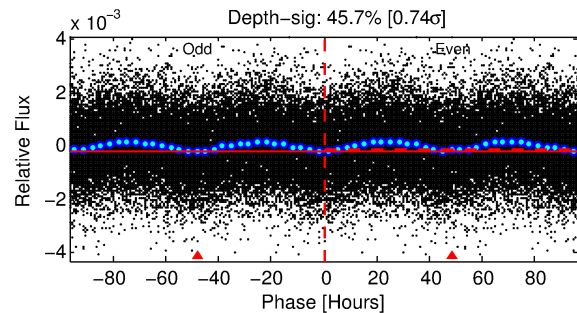
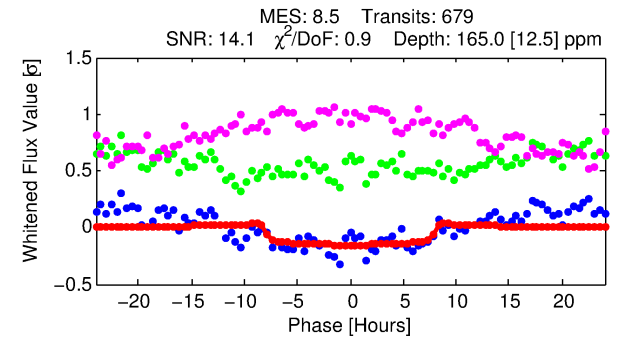
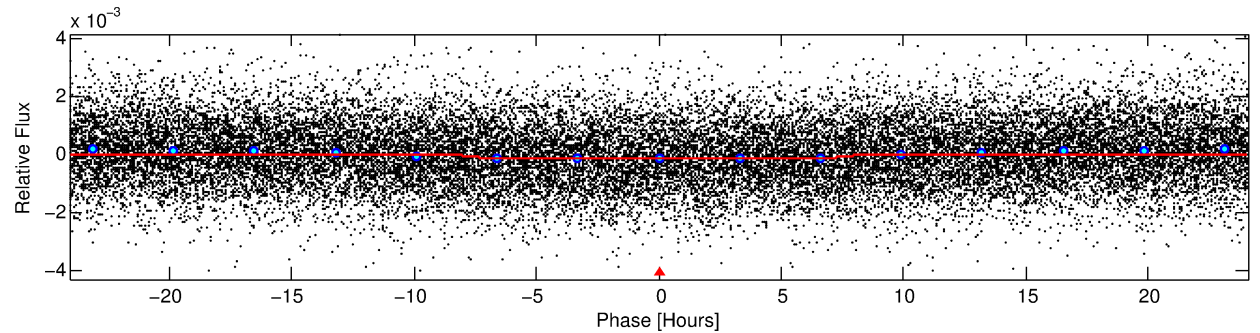
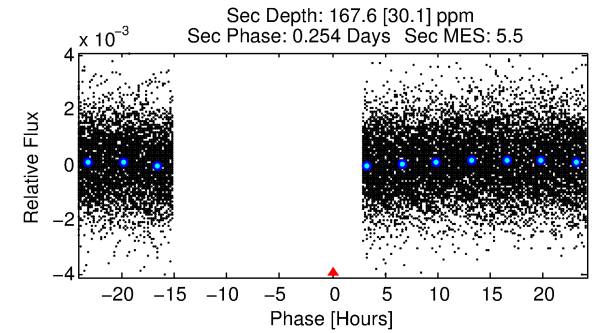
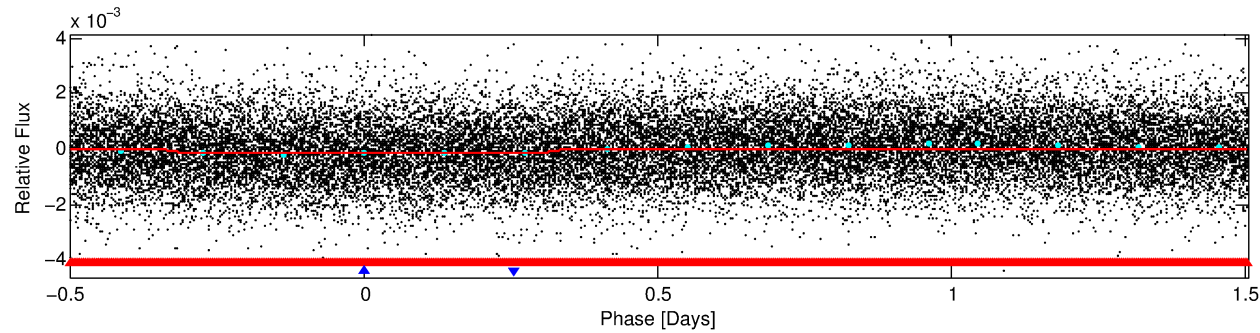
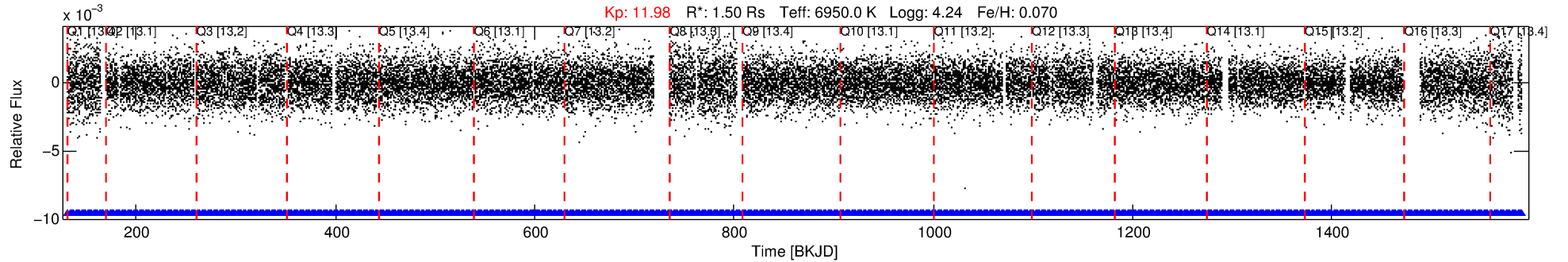
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009017929-02

No Significant Match Found

DV One-Page Summary

KIC: 9017929 Candidate: 2 of 2 Period: 2.007 d



DV Fit Results:

Period = 2.00736 [0.00003] d
Epoch = 131.5123 [0.0101] BKJD
Rp/R* = 0.0124 [0.0043]
a/R* = 1.10 [0.40]
b = 0.60 [2.18]
Seff = 3800.74 [1648.60]
Teq = 2002 [217] K
Rp = 2.02 [1.00] Re
a = 0.0352 [0.0099] AU
Ag = 27.91 [22.87] [1.18σ]
Teffp = 7115 [1327] K [3.80σ]

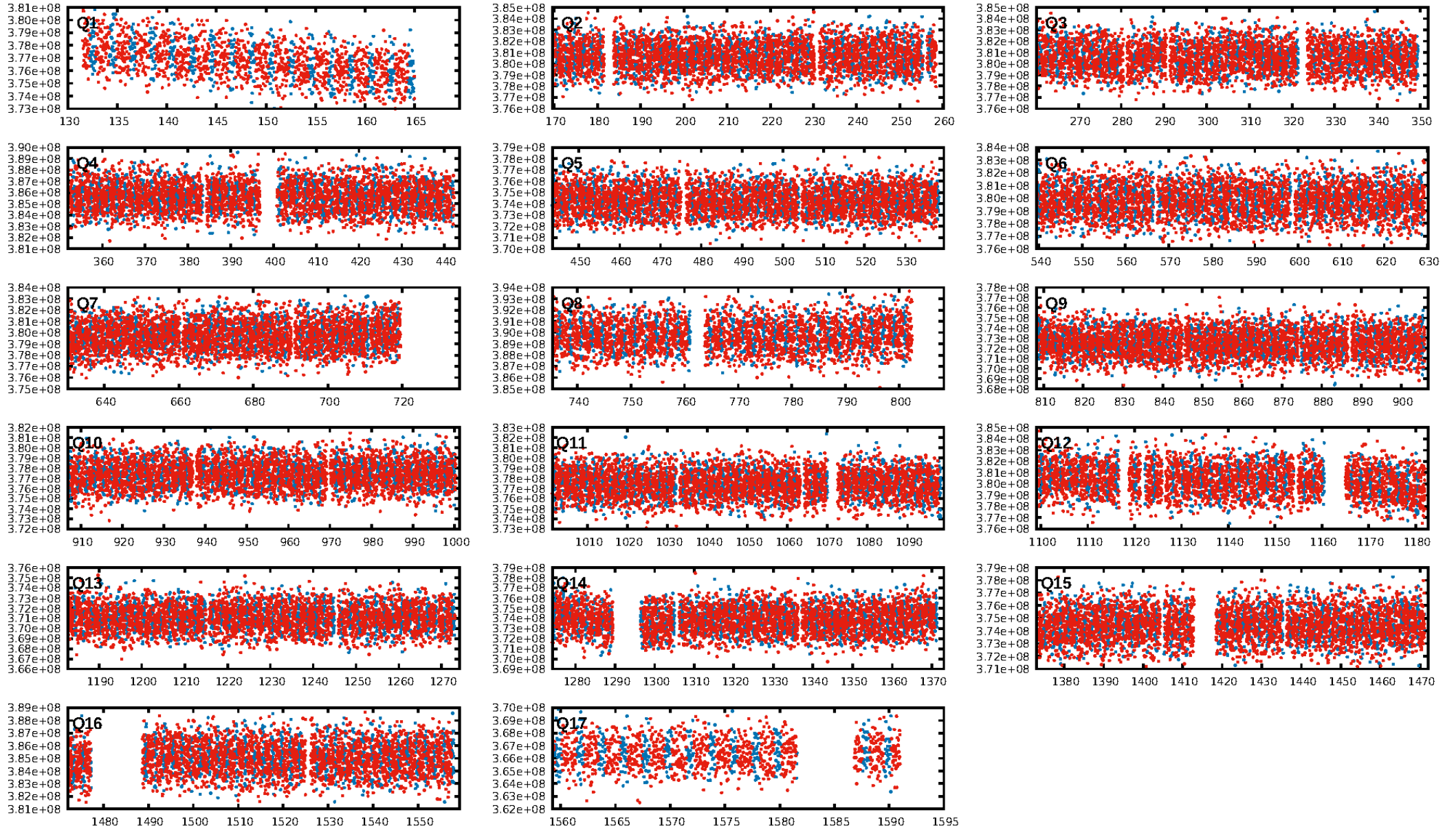
DV Diagnostic Results:

ShortPeriod-sig: 93.2% [1.83σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [648/648]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.400 arcsec [2.09σ]
KicOffset-rm: 0.372 arcsec [1.74σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

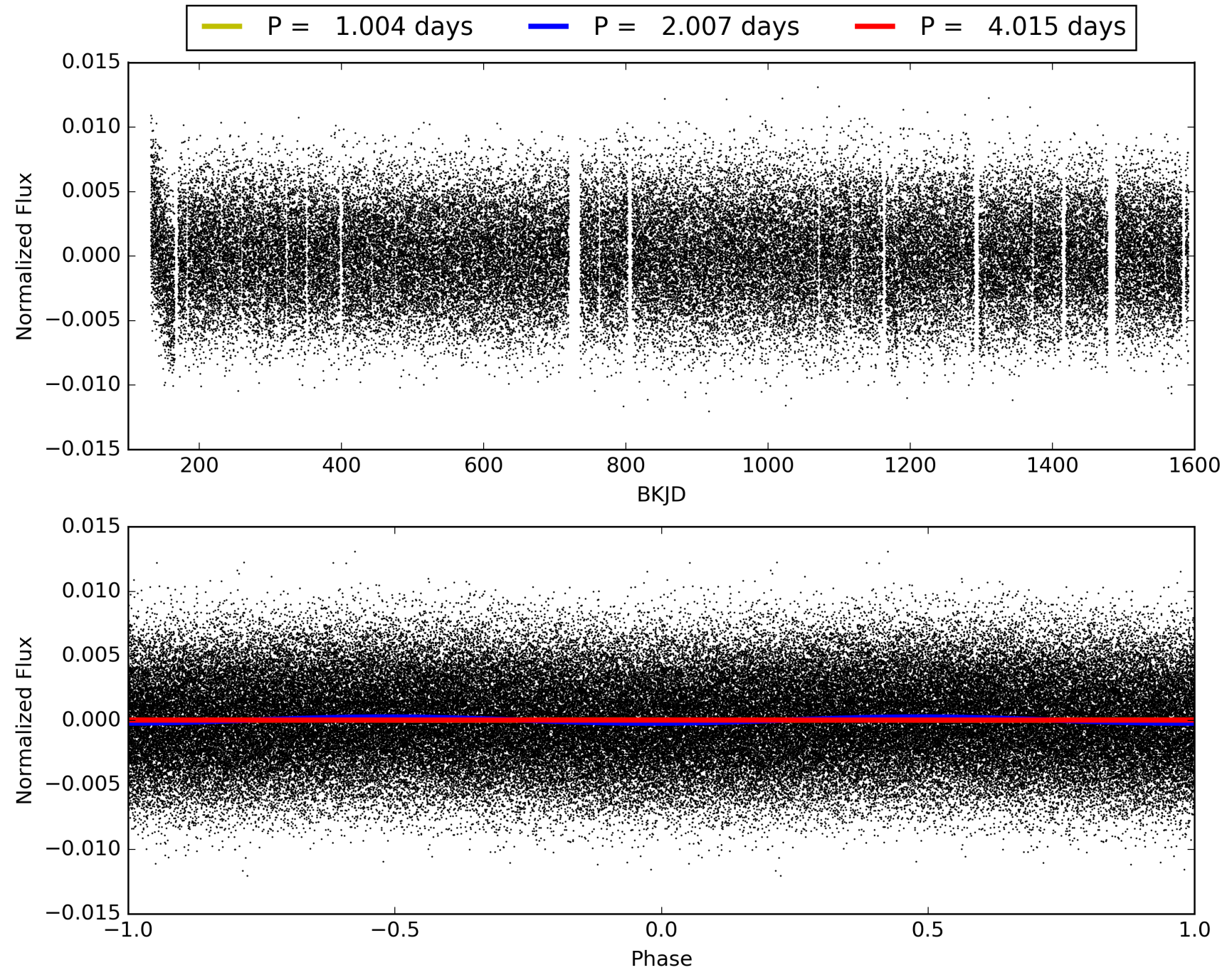
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:53:22 Z

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

TCE 009017929-02, PDC Light Curves

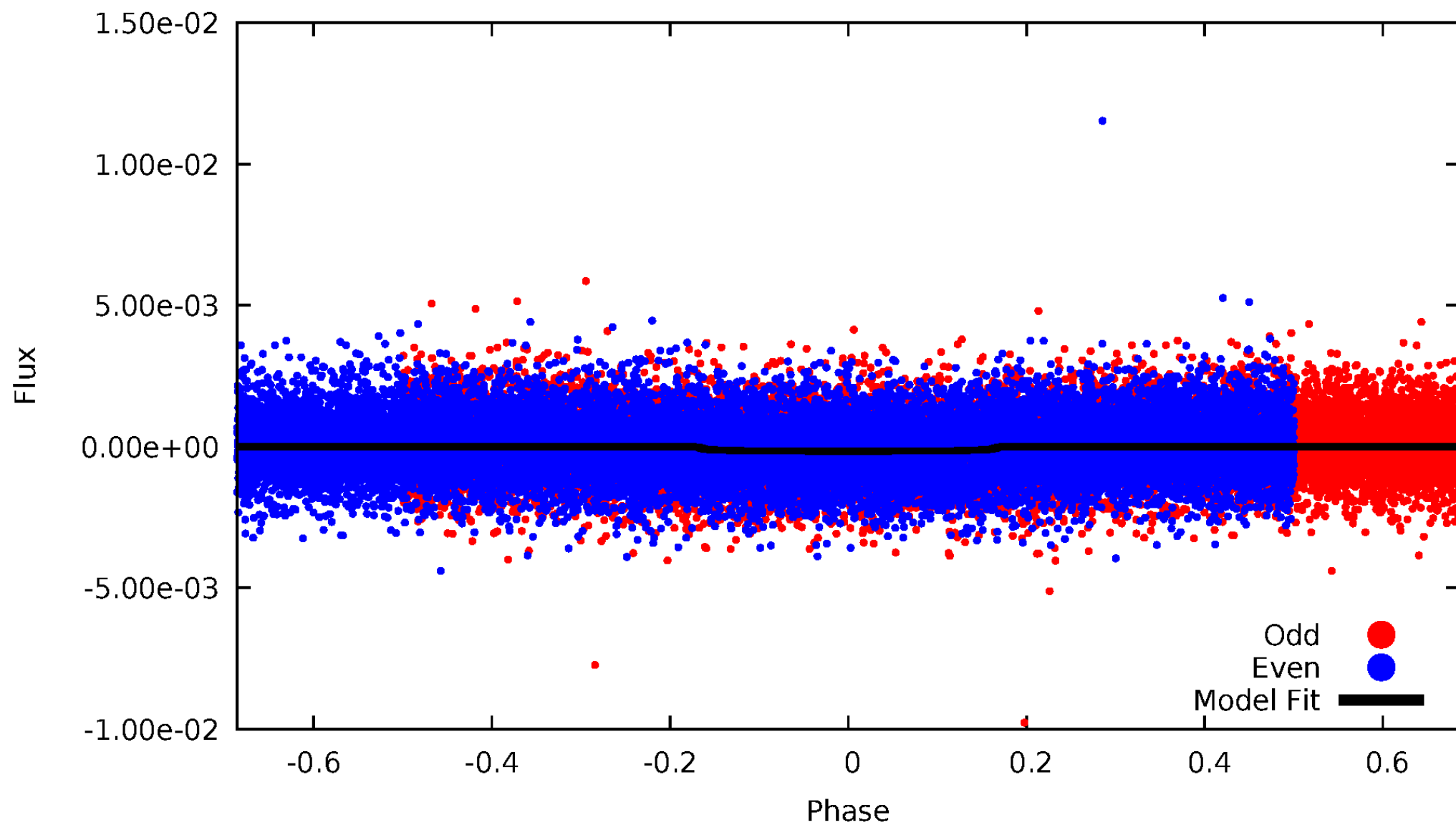


TCE 009017929-02



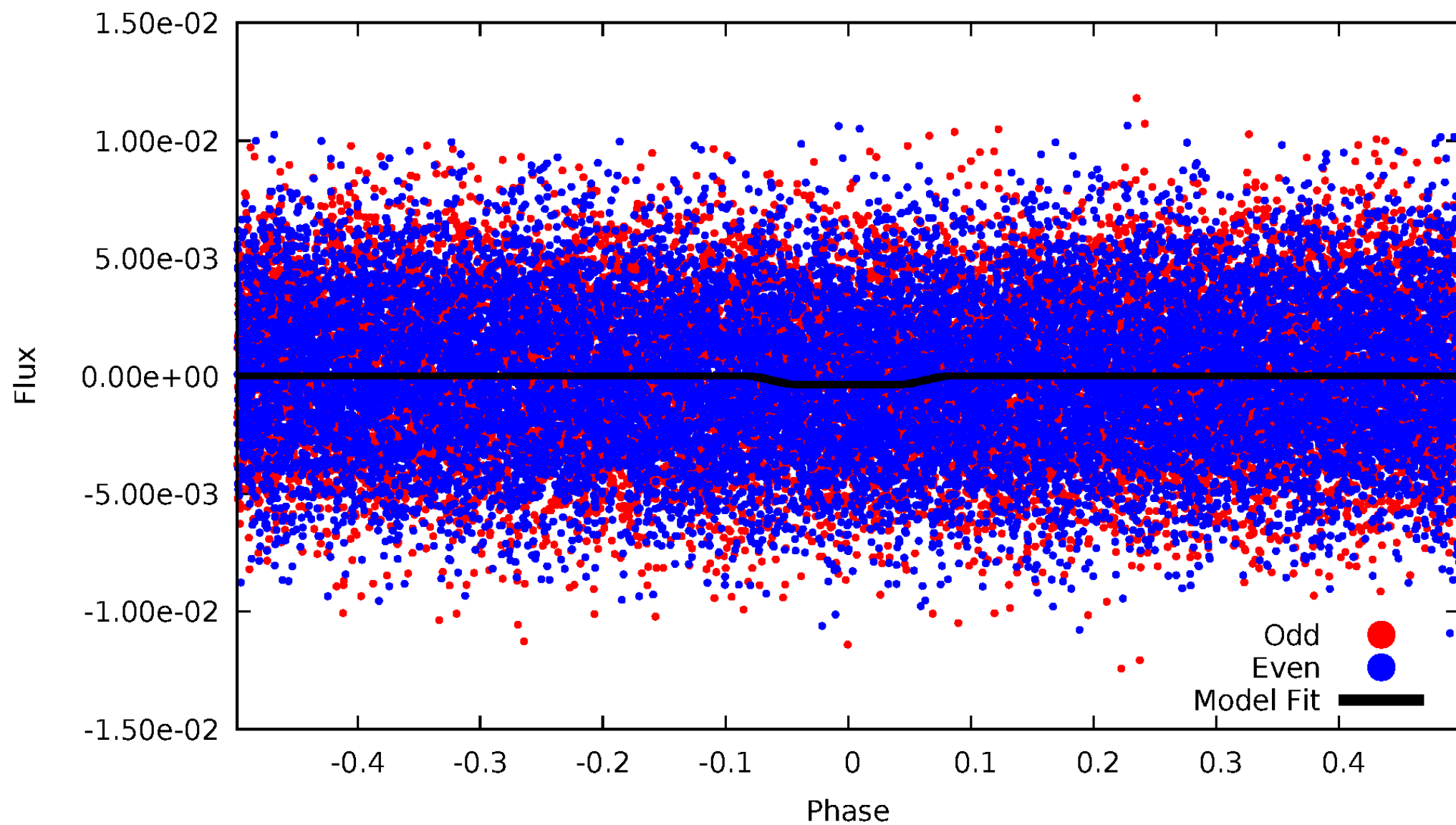
DV Odd/Even

TCE 009017929-02



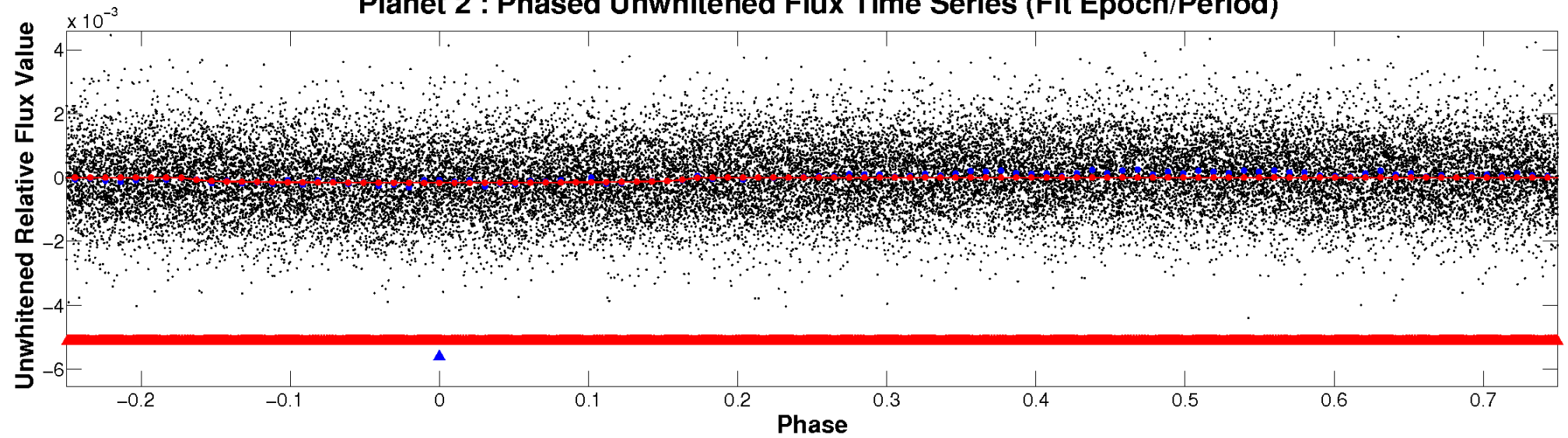
ALT Odd/Even

TCE 009017929-02

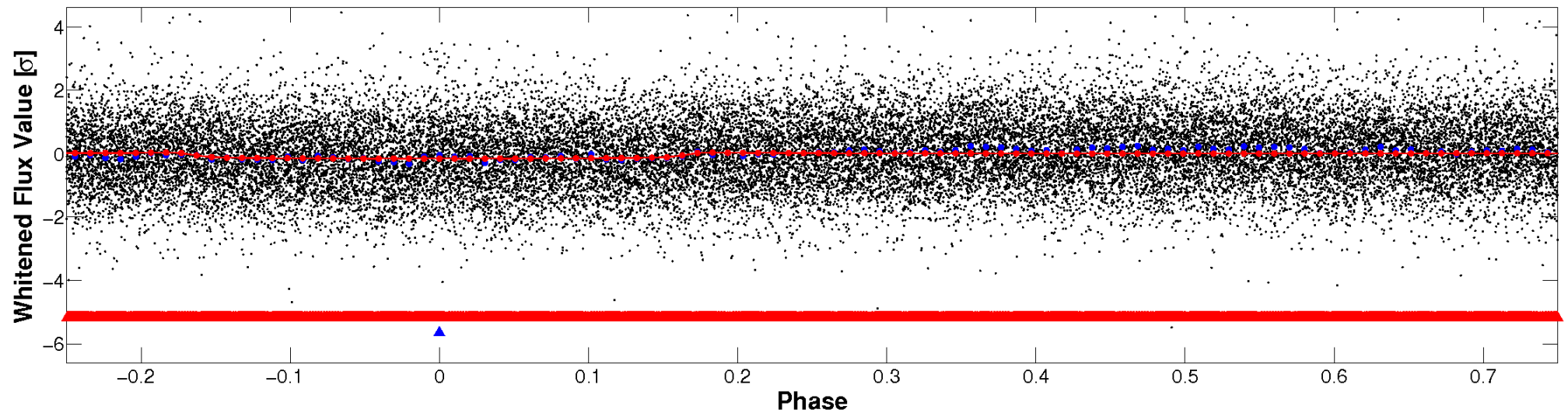


Non-Whitened Vs. Whitened Light Curve

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

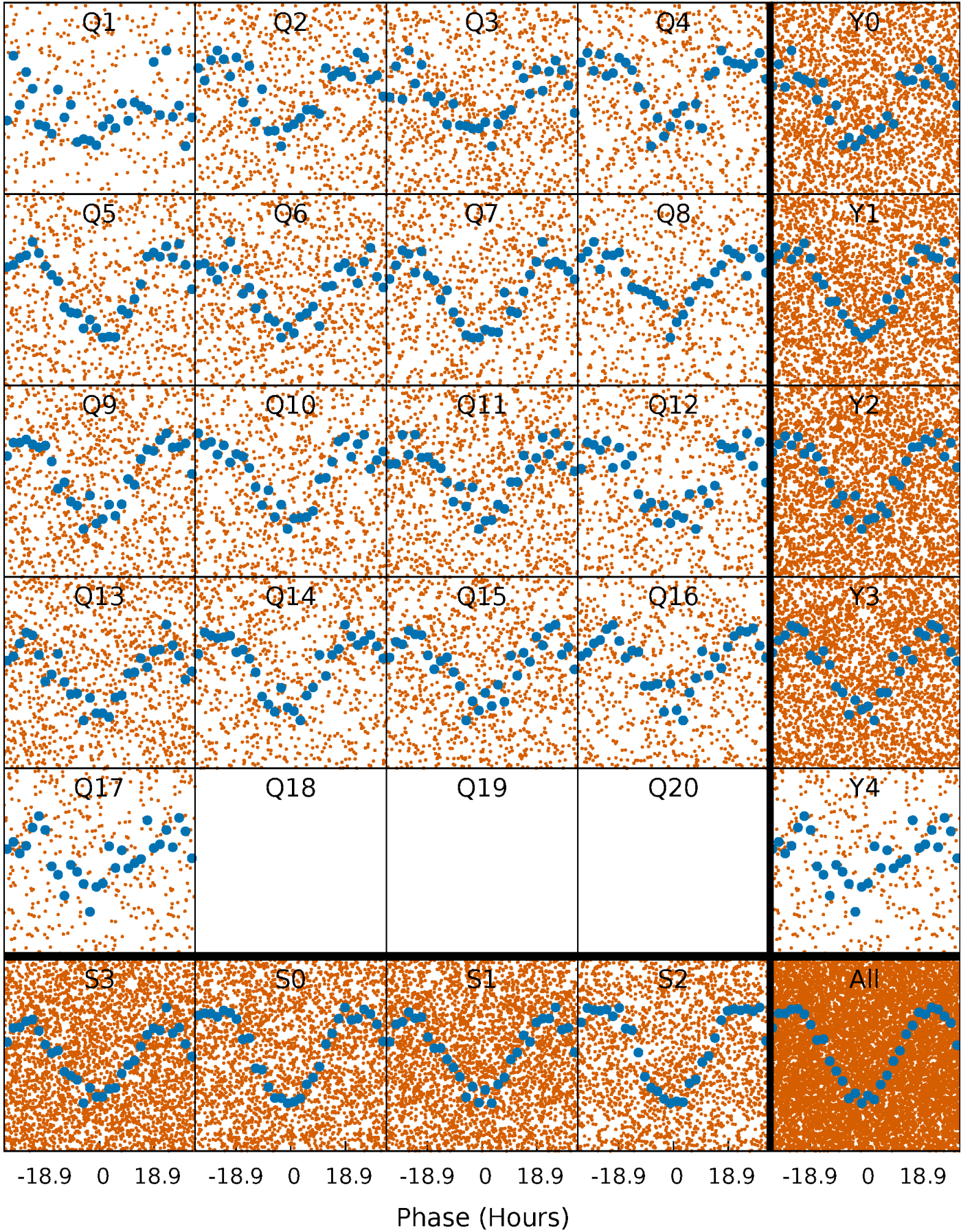


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



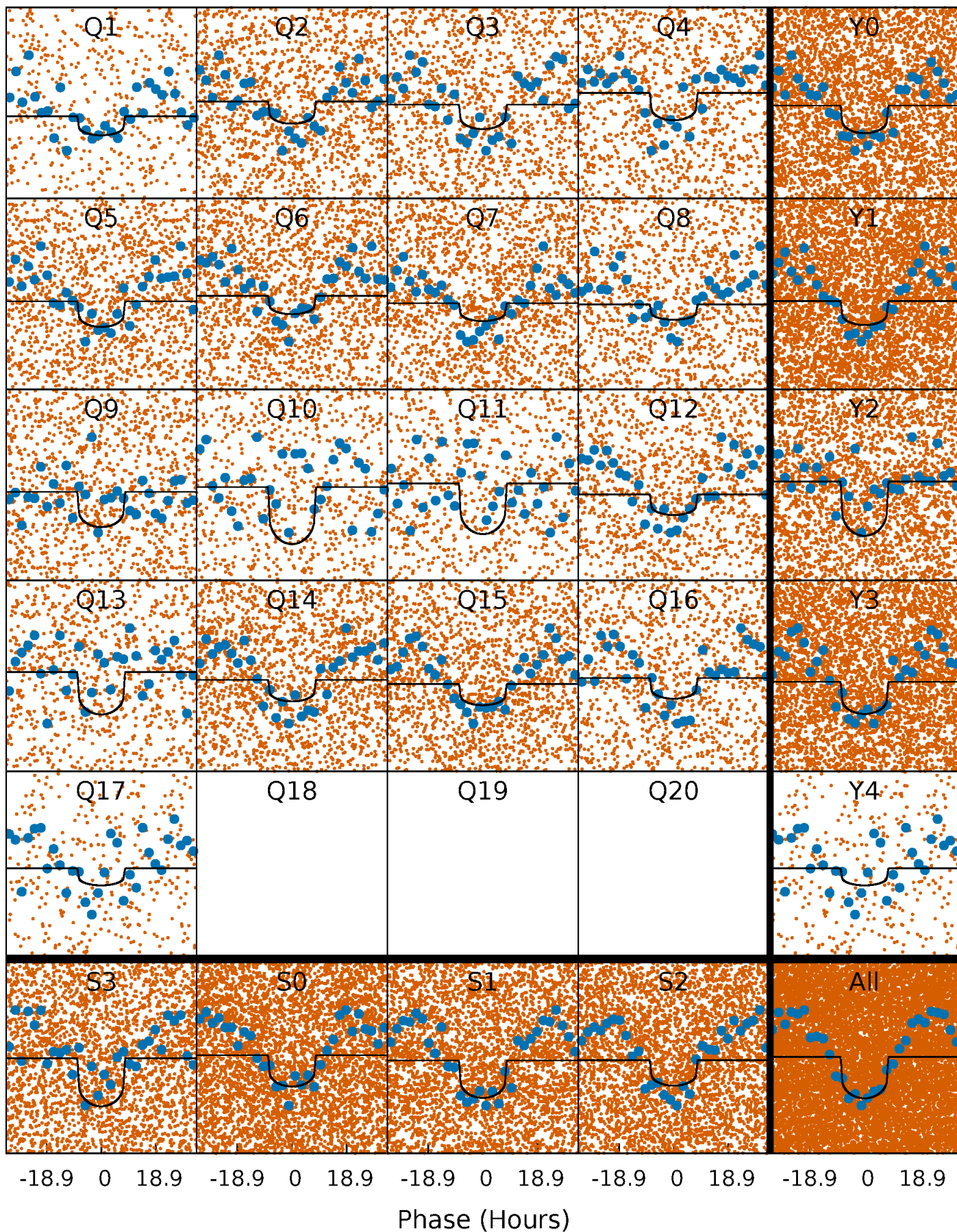
PDC Quarter-Phased Transit Curves

TCE 009017929-02 P= 2.007360 Days $T_0=131.512274$ (BKJD)



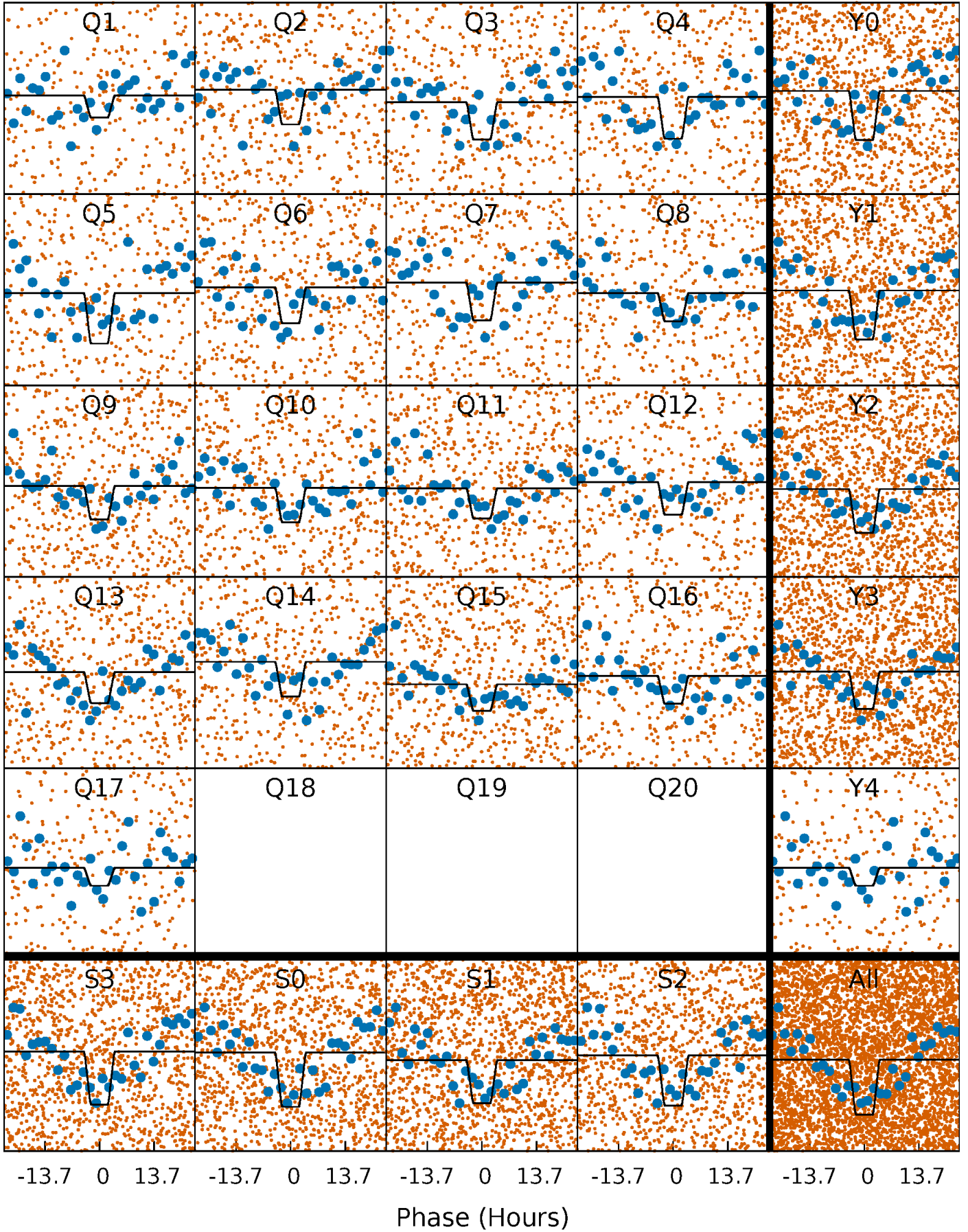
DV Quarter-Phased Transit Curves

TCE 009017929-02 P= 2.007360 Days $T_0=131.512274$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

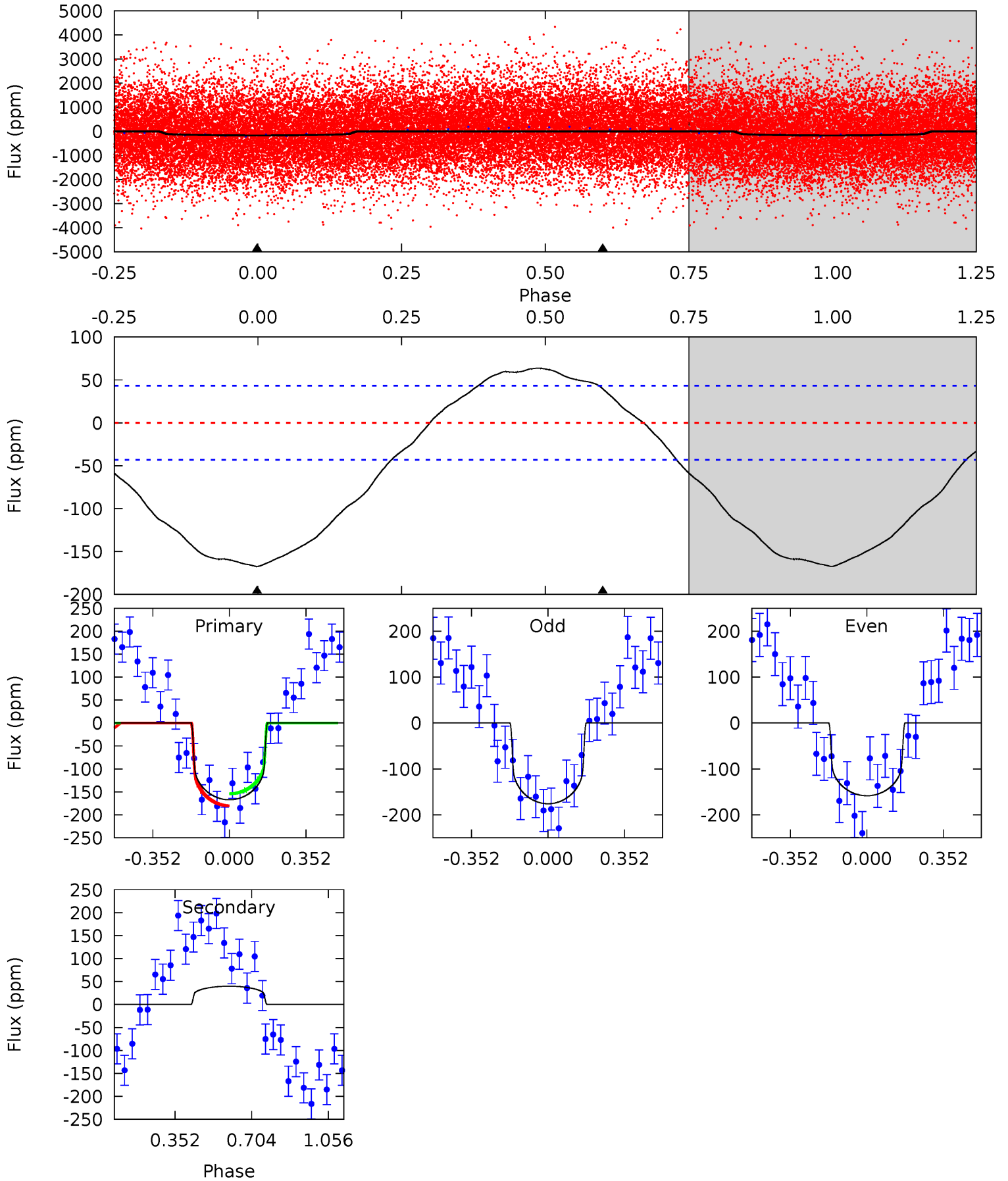
TCE 009017929-02 P= 2.007164 Days $T_0=131.559977$ (BKJD)



DV Model-Shift Uniqueness Test

009017929-02, P = 2.007360 Days, E = 131.512274 Days

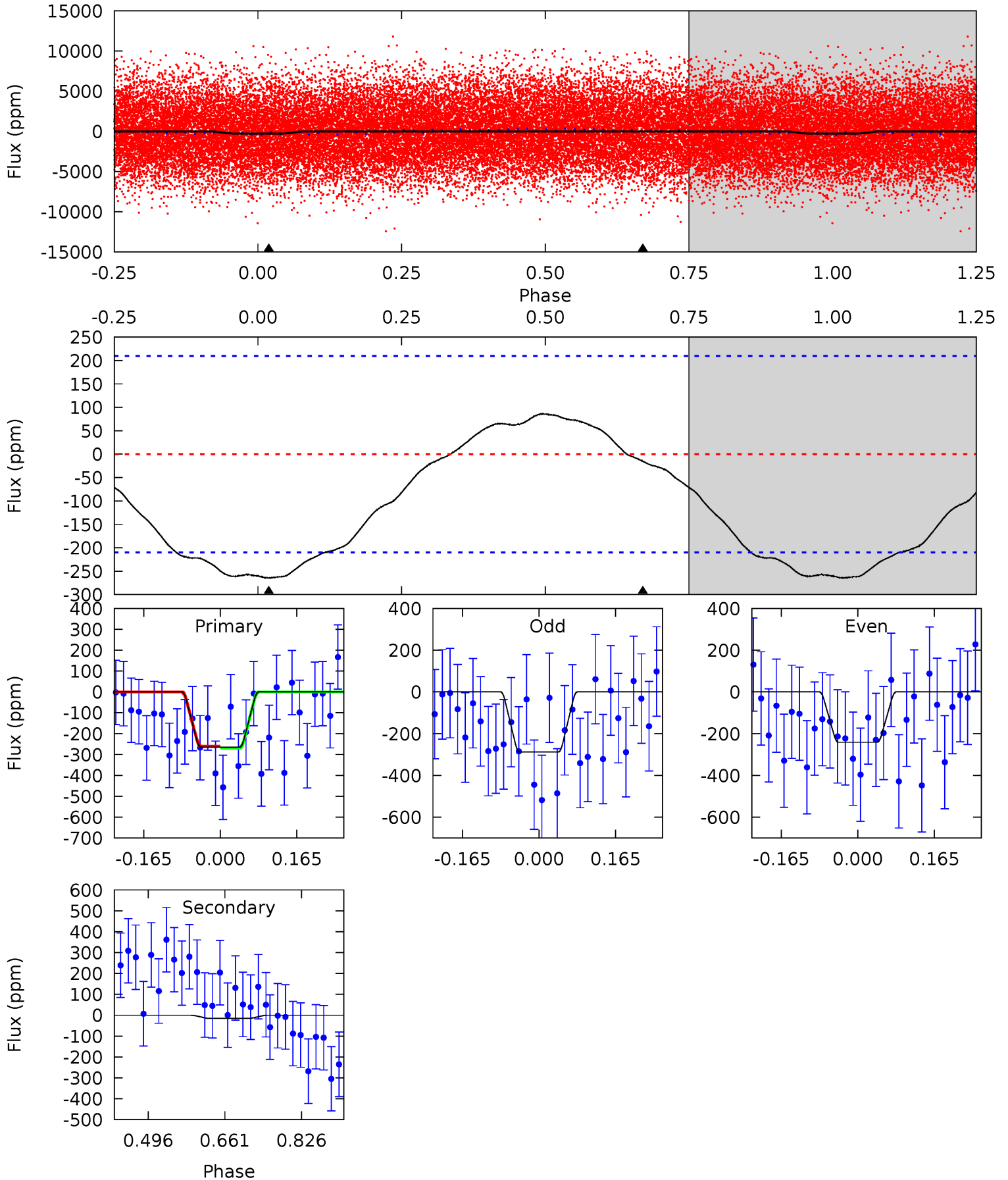
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	-3.96	0	0	4.29	0.93	1.92	16.6	16.6	-3.96	-3.96	0.86	1.09	0.28	1.27



Alt Model-Shift Uniqueness Test

009017929-02, P = 2.007164 Days, E = 131.559977 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.63	0.33	0	0	4.46	1.39	1.72	5.63	5.63	0.33	0.33	0.49	1.22	0.24	0.09



Stellar Parameters For KIC 009017929

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6950^{+194}_{-333}	$4.244^{+0.087}_{-0.203}$	$0.070^{+0.200}_{-0.350}$	$1.499^{+0.524}_{-0.225}$	$1.436^{+0.222}_{-0.222}$	$0.601^{+0.240}_{-0.326}$
	+3%/-5%	+2%/-5%	+286%/-500%	+35%/-15%	+15%/-15%	+40%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009017929-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	40 ± 10	$2.13^{+0.81}_{-0.75}$	2824^{+234}_{-165}	-5006^{+611}_{-1165}	$-5.869^{+3.049}_{-9.264}$
Alt.	-15 ± 47	$3.19^{+0.90}_{-0.81}$	2818^{+249}_{-162}	3465^{+1170}_{-7543}	$1.137^{+3.404}_{-2.913}$

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 $A_{obs} \gg 1.0$

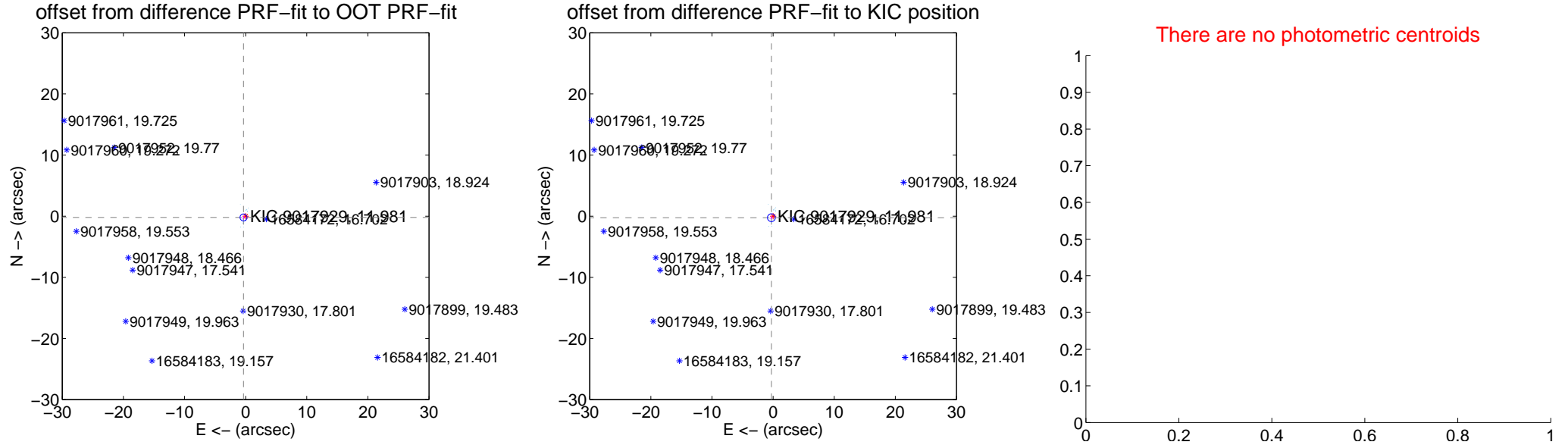
DV Centroid Data

Supplemental centroid analysis for 009017929-02. **Kepler magnitude: 11.98.** Transit SNR 14.09

There are 17 quarters with good PRF difference image offsets

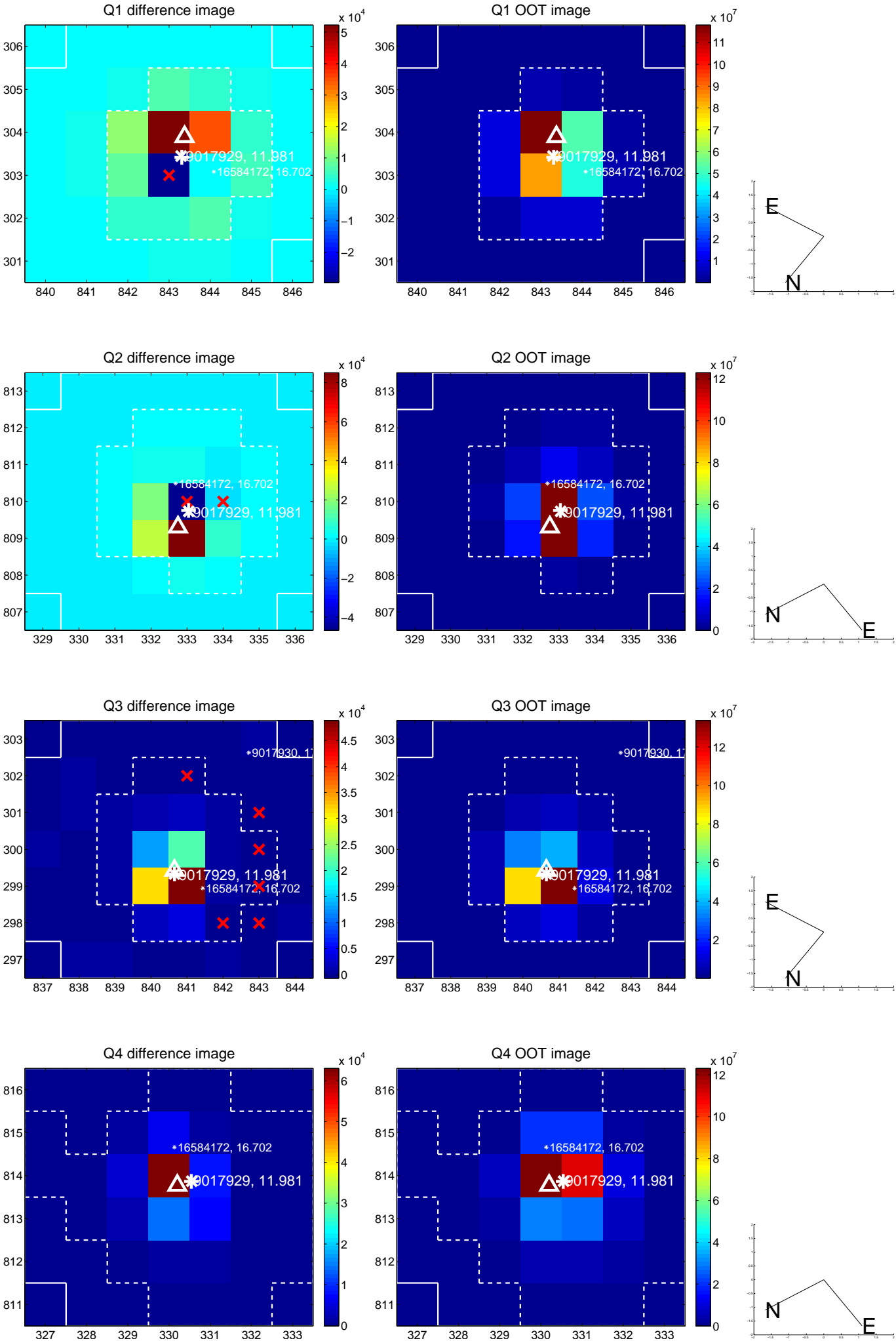
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.400 ± 0.191	2.09	0.343 ± 0.111	-0.205 ± 0.263
PRF-fit source offset from KIC position	0.372 ± 0.213	1.74	0.280 ± 0.110	-0.245 ± 0.255
photometric centroid source offset	—	—	—	—

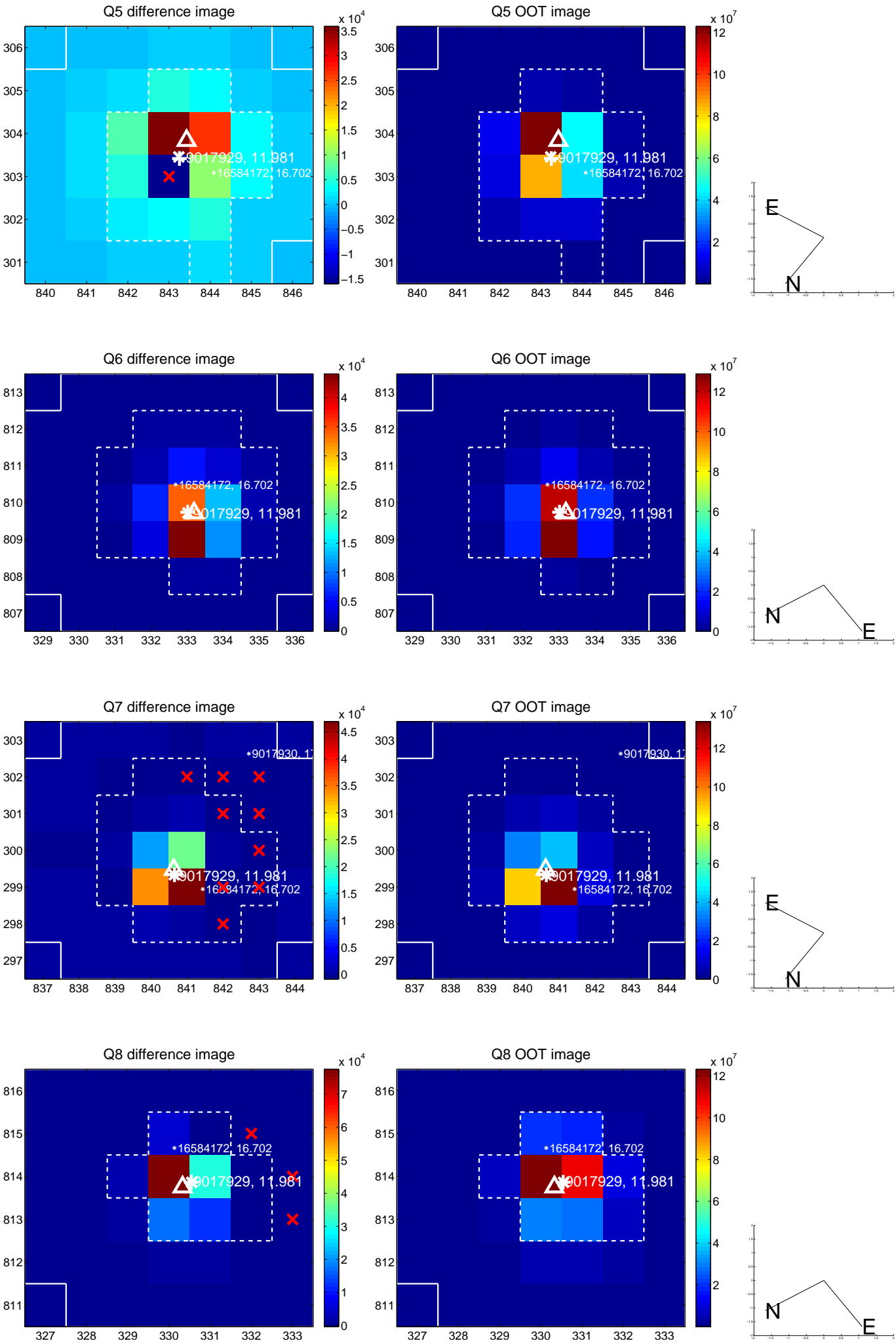


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

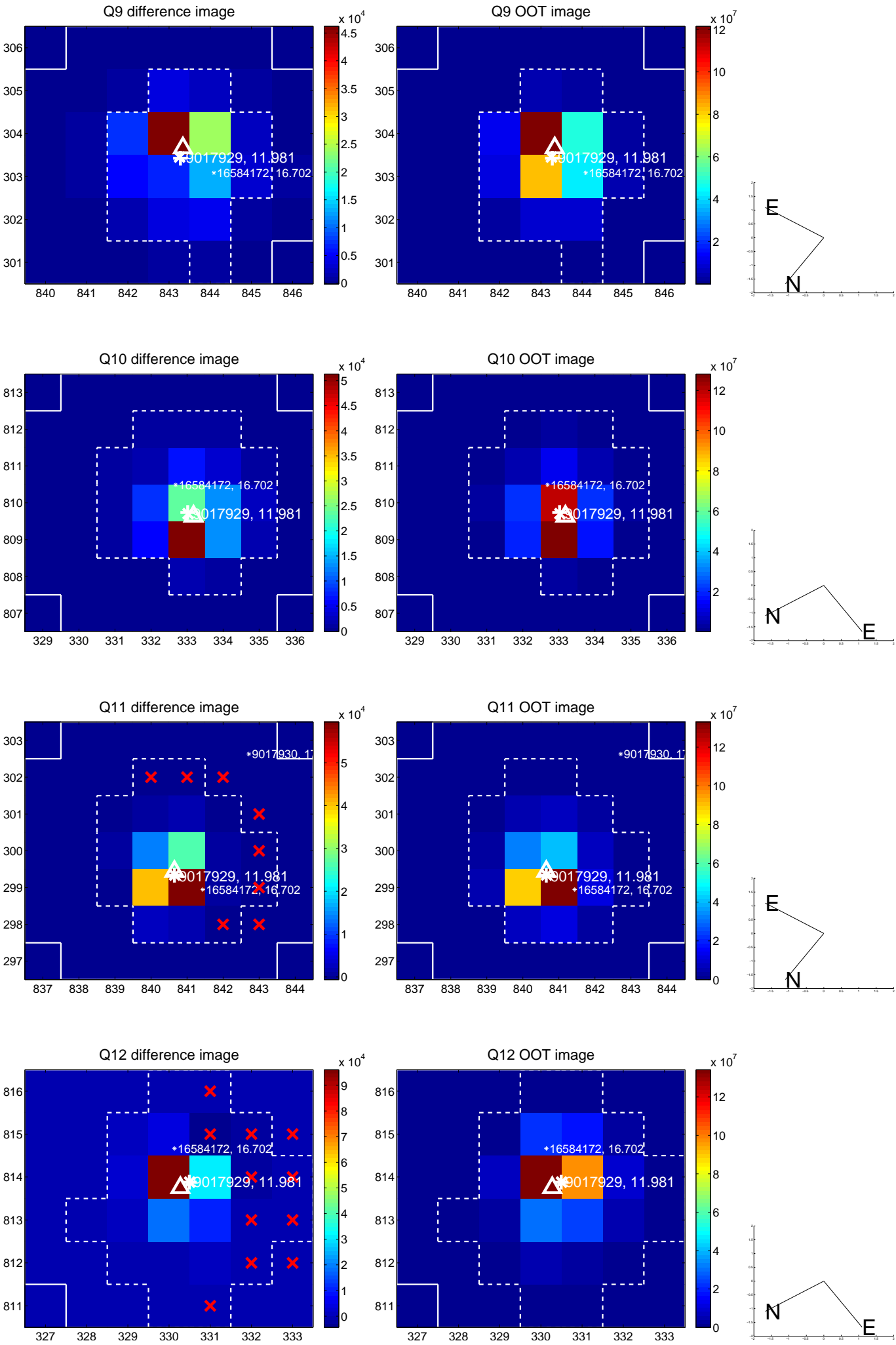
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



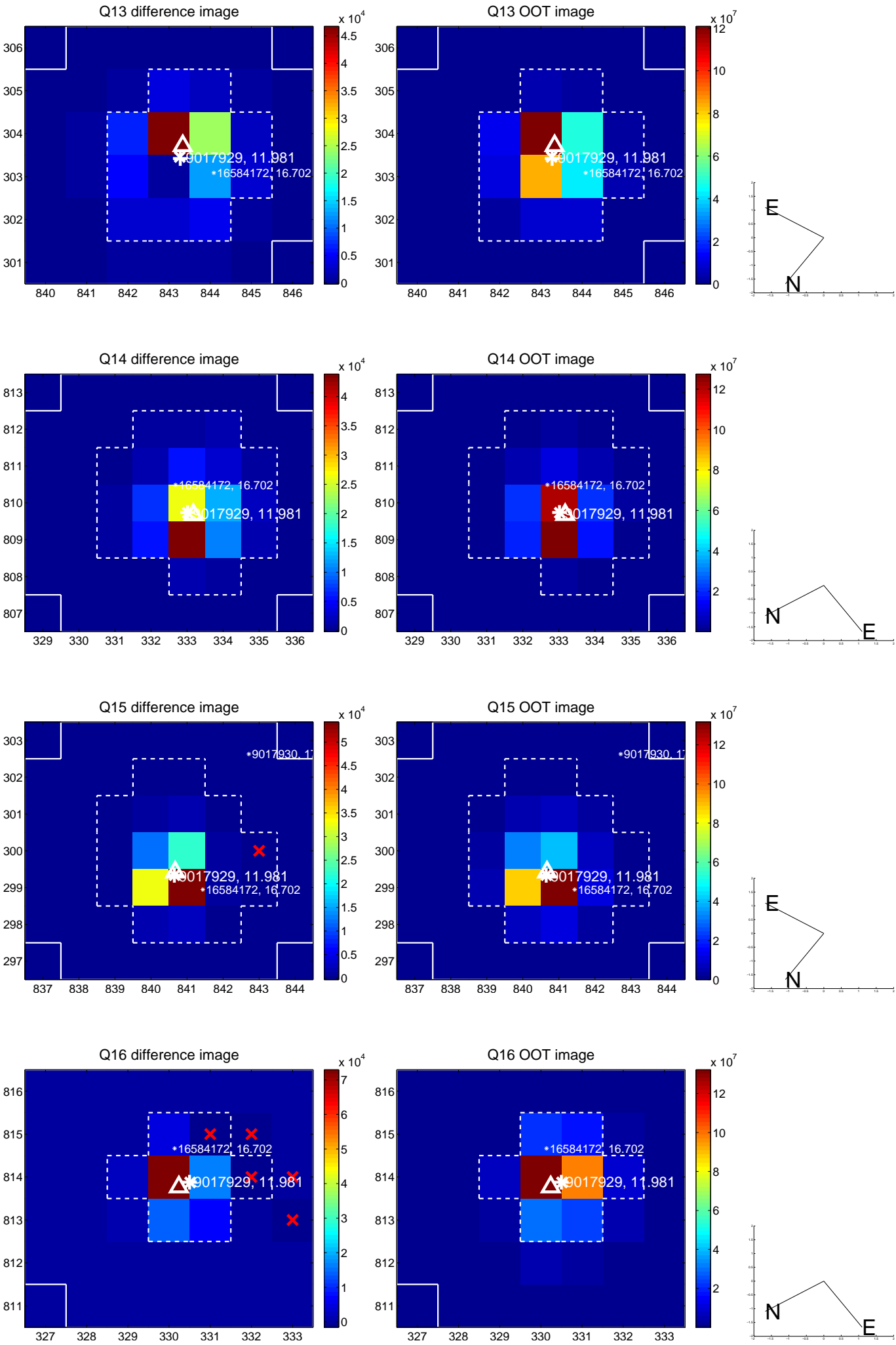
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



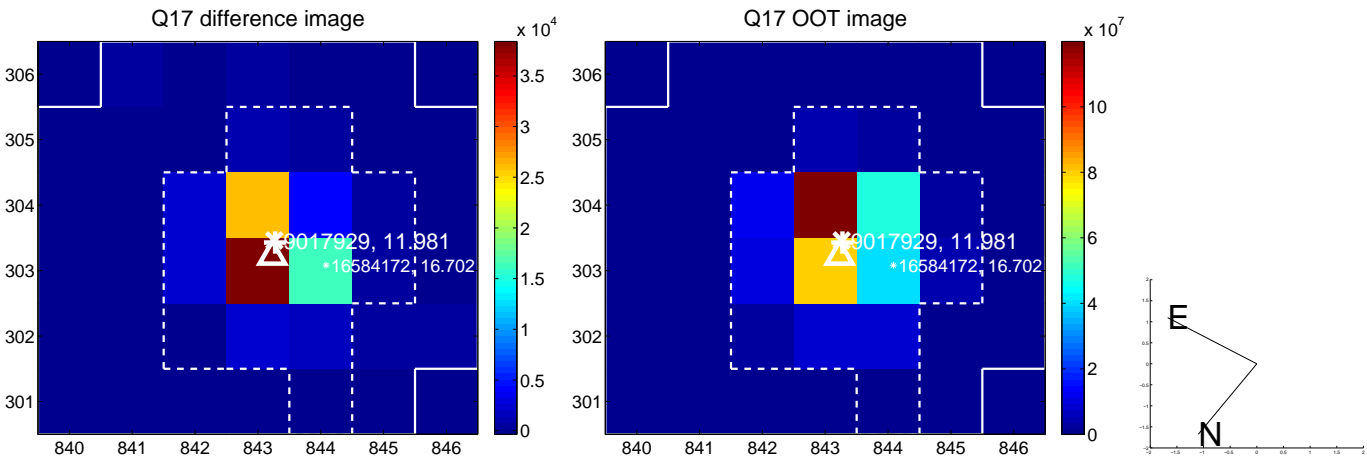
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

