

KIC 002714807

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})
002714807-01	OBS	No	0.710573	131.559573	13.5	3.103	8.3	6.5	1.57	7046	0.67	17988.96
002714807-02	OBS	No	145.155412	217.932704	329.4	4.376	7.3	7.4	1.57	7046	3.88	14.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002714807-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
002714807-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

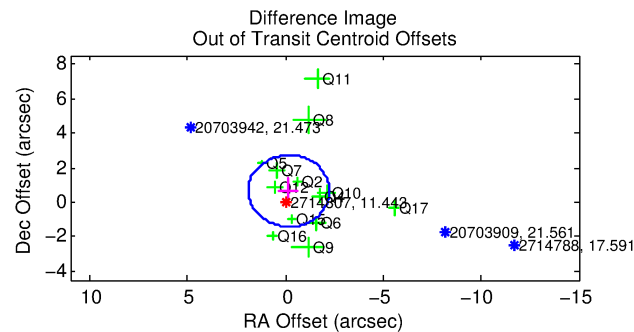
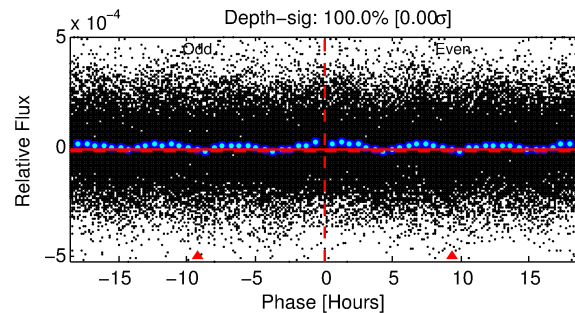
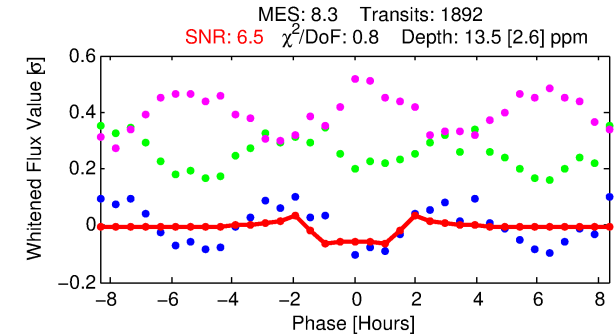
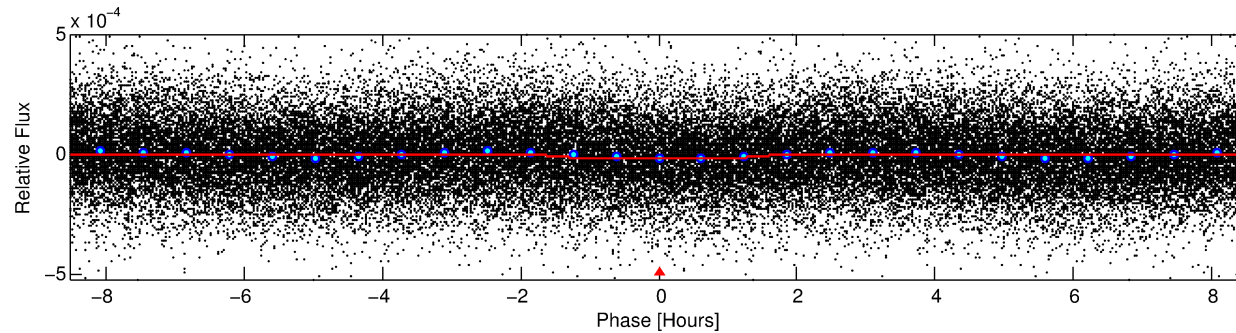
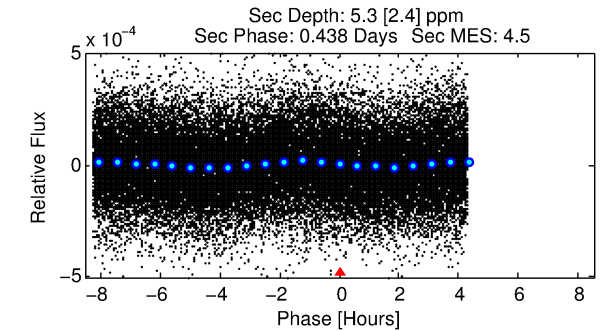
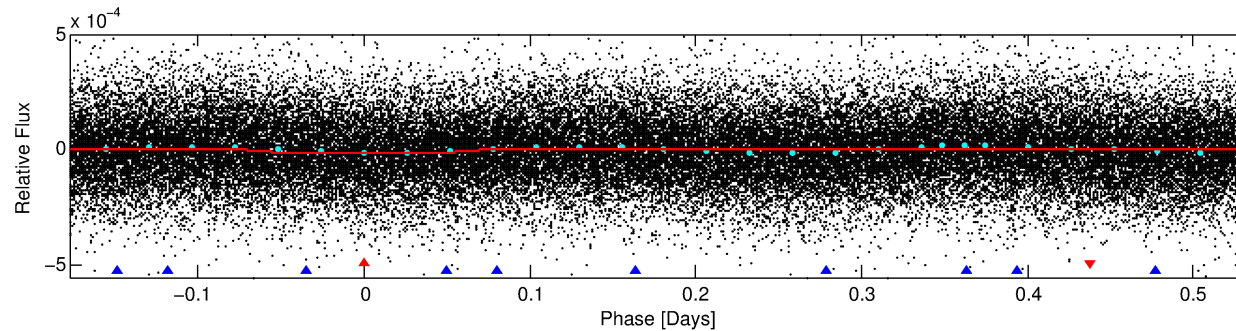
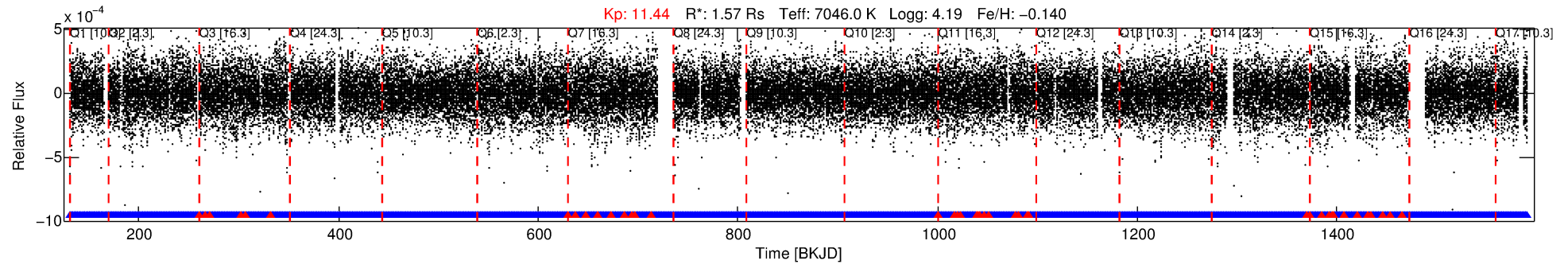
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002714807-01

No Significant Match Found

DV One-Page Summary

KIC: 2714807 Candidate: 1 of 2 Period: 0.711 d



DV Fit Results:

Period = 0.71057 [0.00001] d
Epoch = 131.5596 [0.0030] BKJD
 $R_p/R^* = 0.0039$ [0.0011]
 $a/R^* = 1.22$ [0.66]
 $b = 0.90$ [0.35]
 $S_{\text{eff}} = 17988.96$ [7409.68]
 $T_{\text{eq}} = 2953$ [304] K
 $R_p = 0.67$ [0.29] R_e
 $a = 0.0174$ [0.0047] AU
 $A_g = 1.98$ [1.60] [0.61σ]
 $T_{\text{eff}} = 5414$ [982] K [2.39σ]

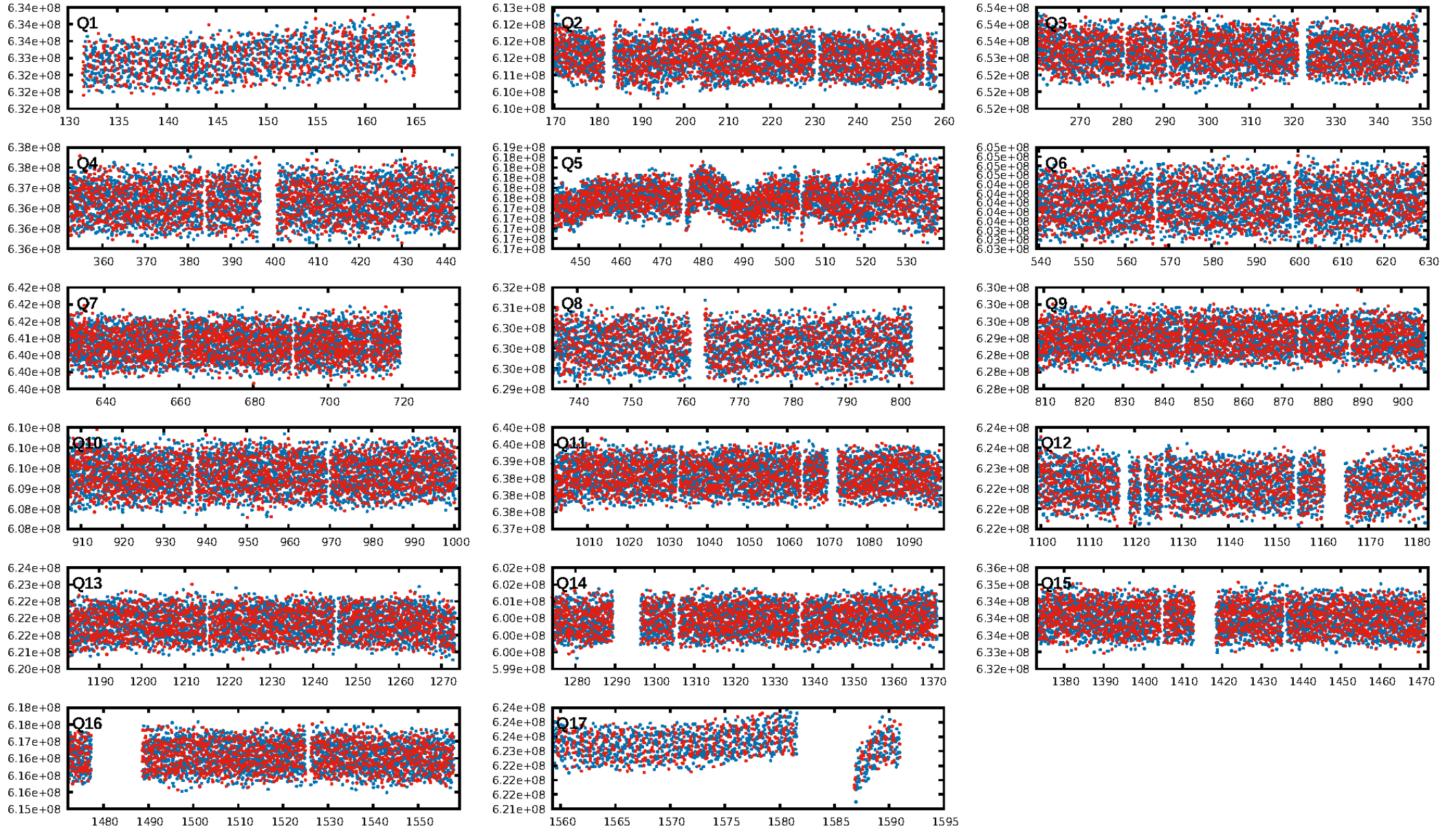
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [646.18σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.63e-11
RollingBand-fgt: 0.98 [1764/1806]
GhostDiagnostic-chr: 0.6733
Centroid-sig: N/A
Centroid-so: 0.929 arcsec [1.39σ]
OotOffset-rm: 0.673 arcsec [0.97σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-rm: 0.661 arcsec [0.96σ]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 1.00 [17/17]

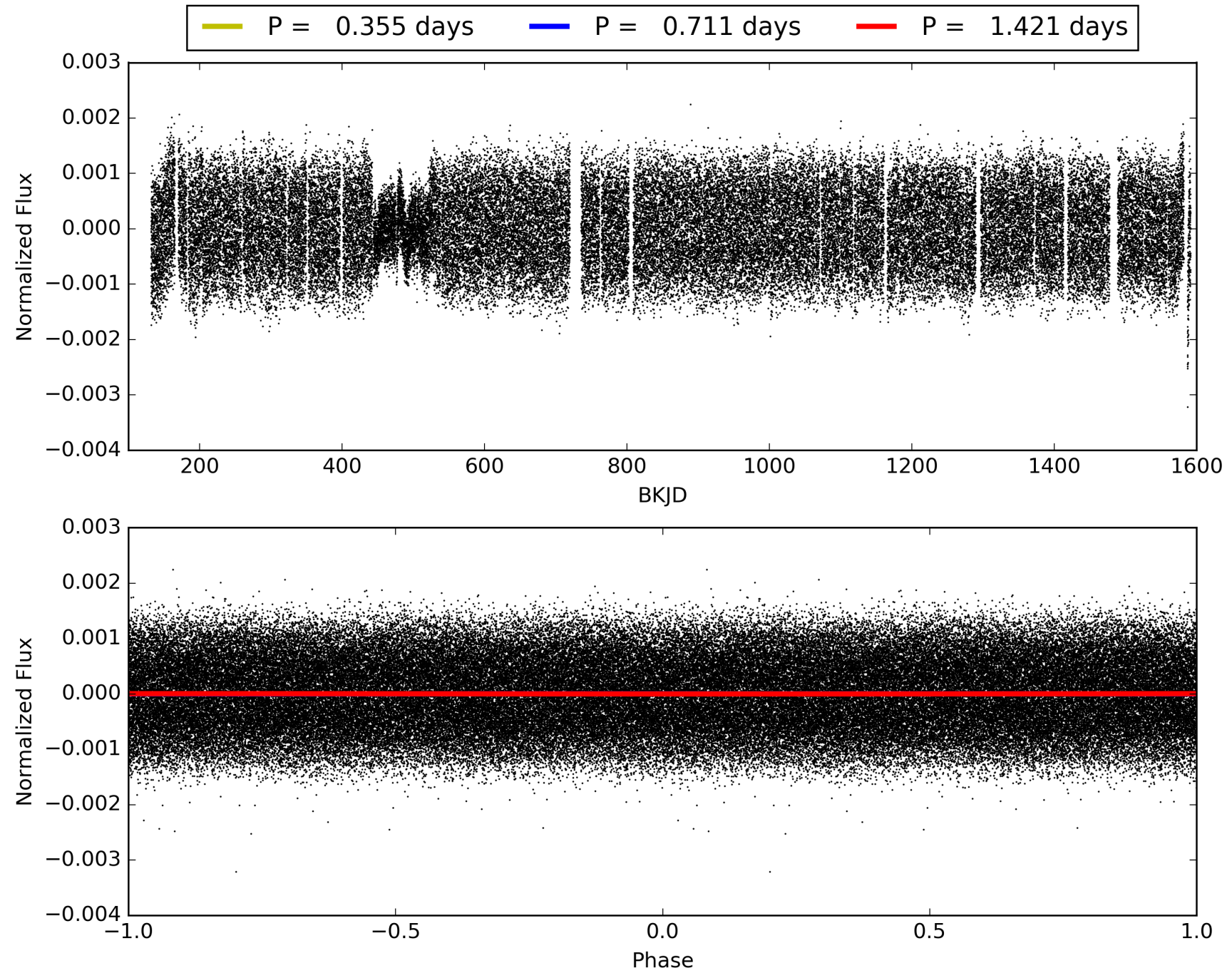
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:59:13 Z

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

TCE 002714807-01, PDC Light Curves

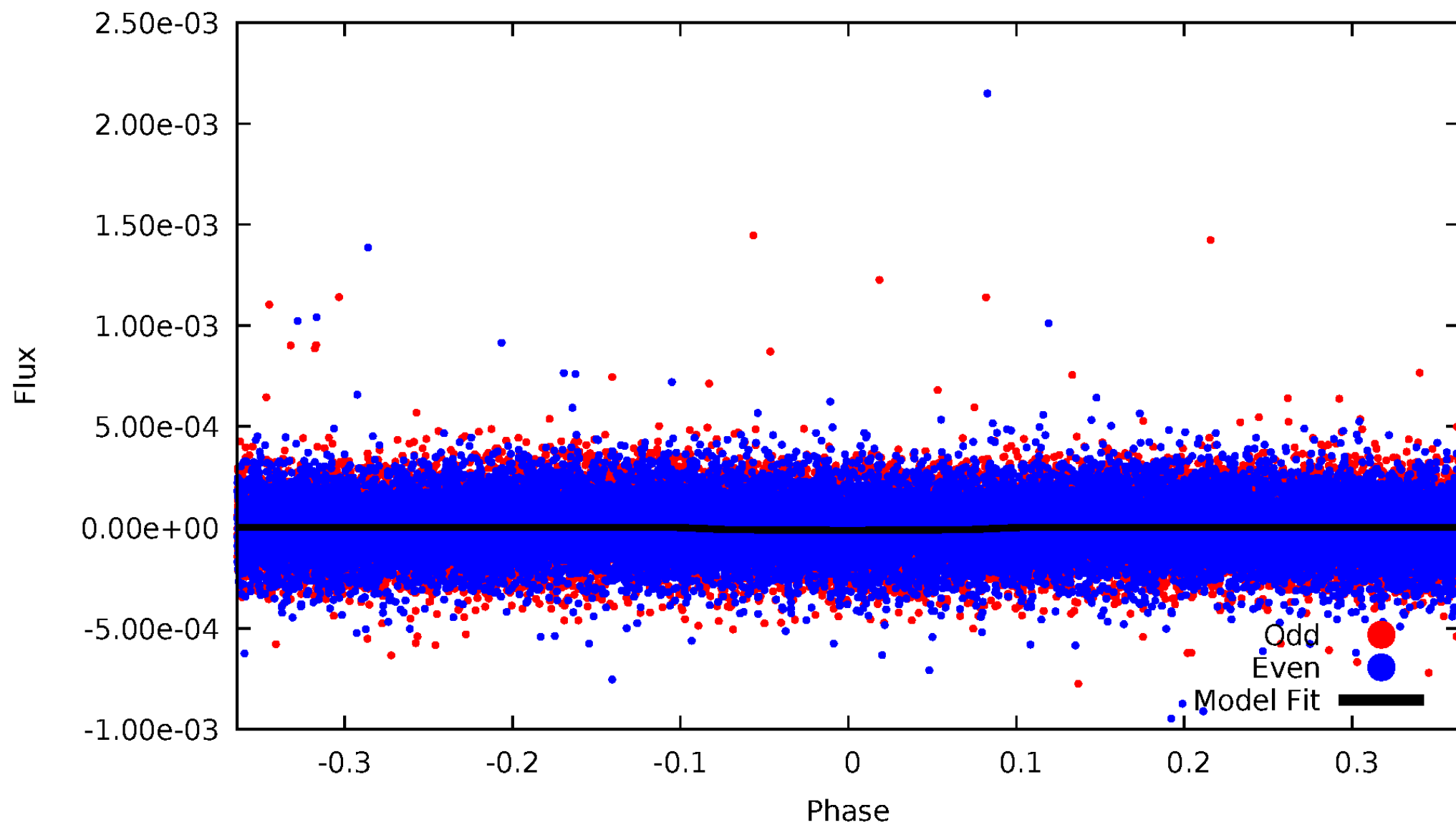


TCE 002714807-01



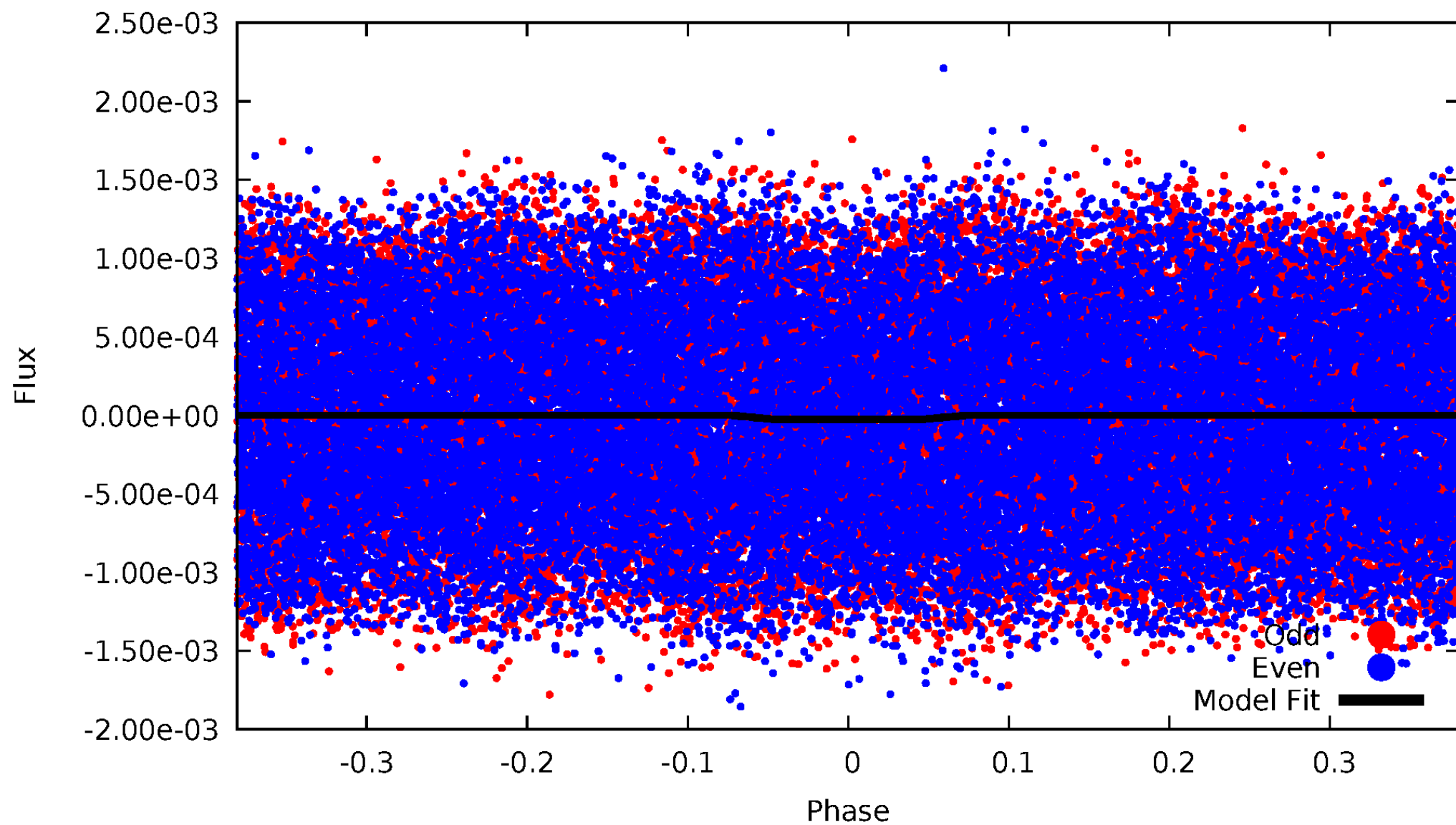
DV Odd/Even

TCE 002714807-01



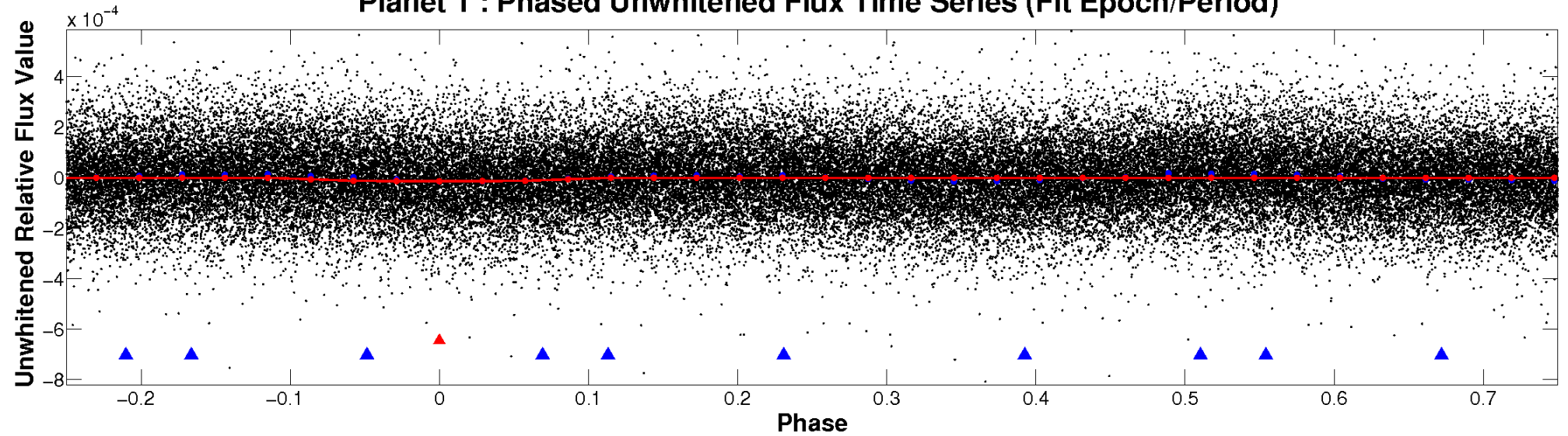
ALT Odd/Even

TCE 002714807-01

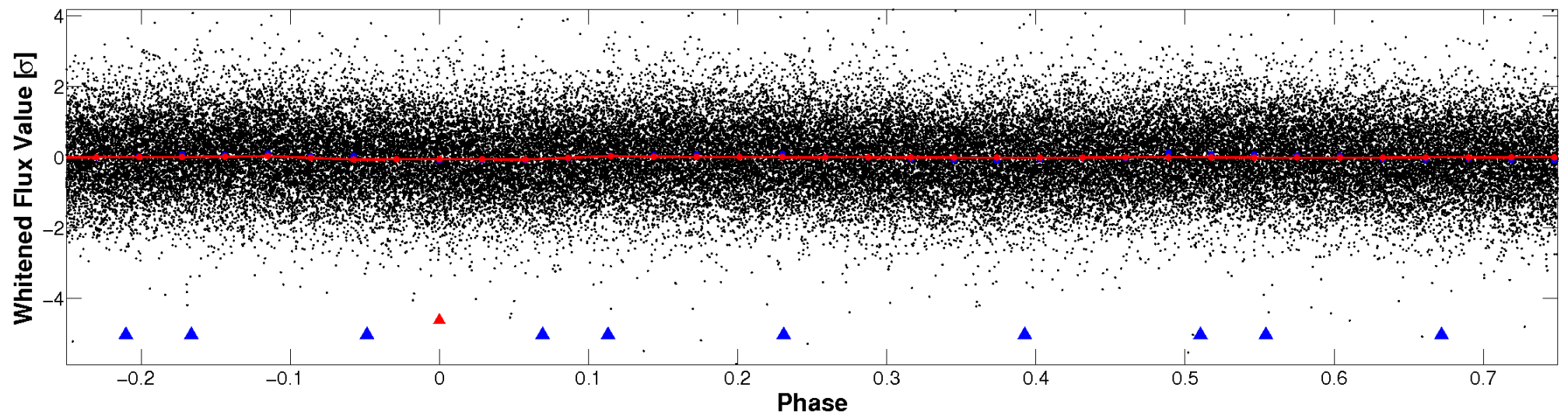


Non-Whitened Vs. Whitened Light Curve

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

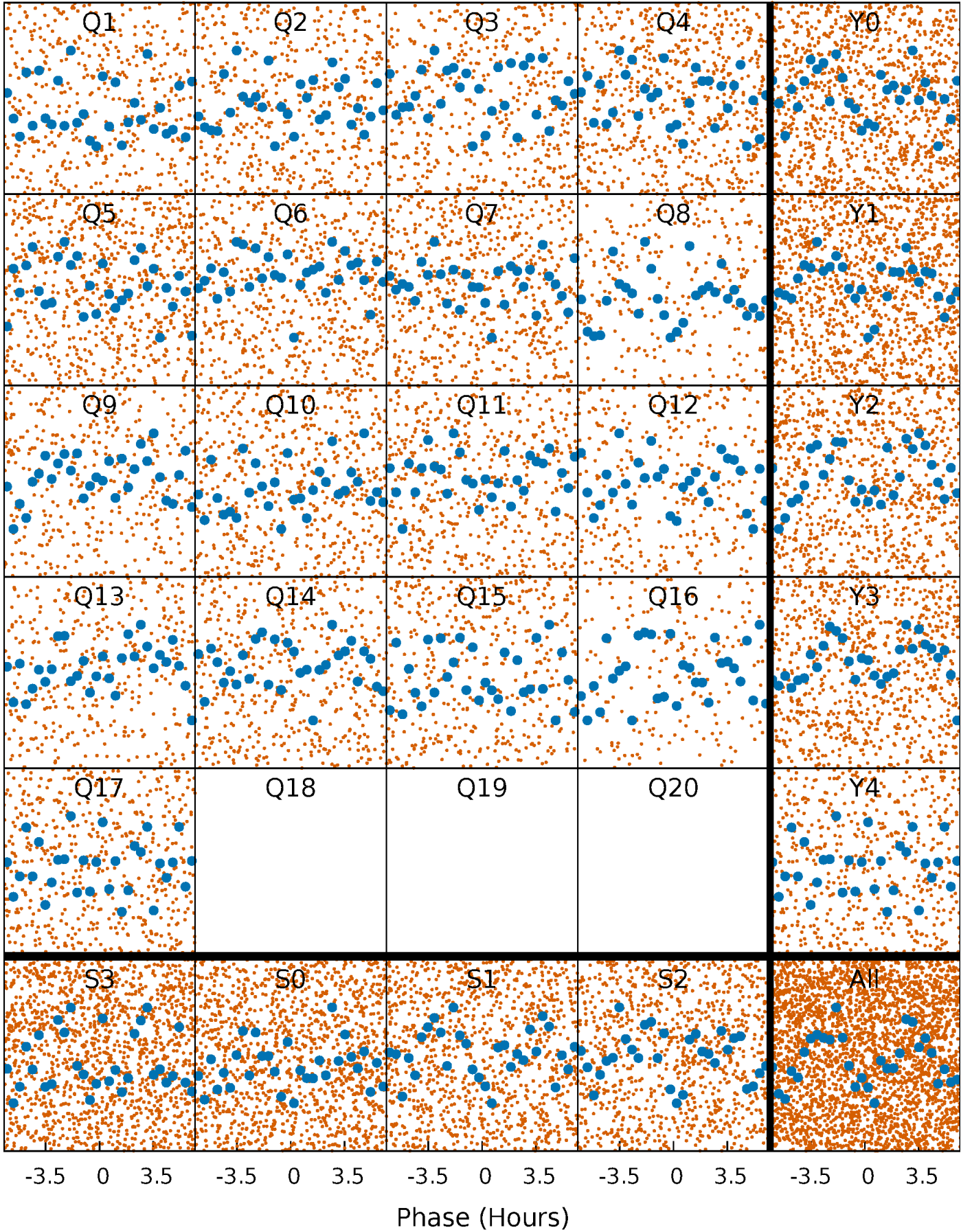


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



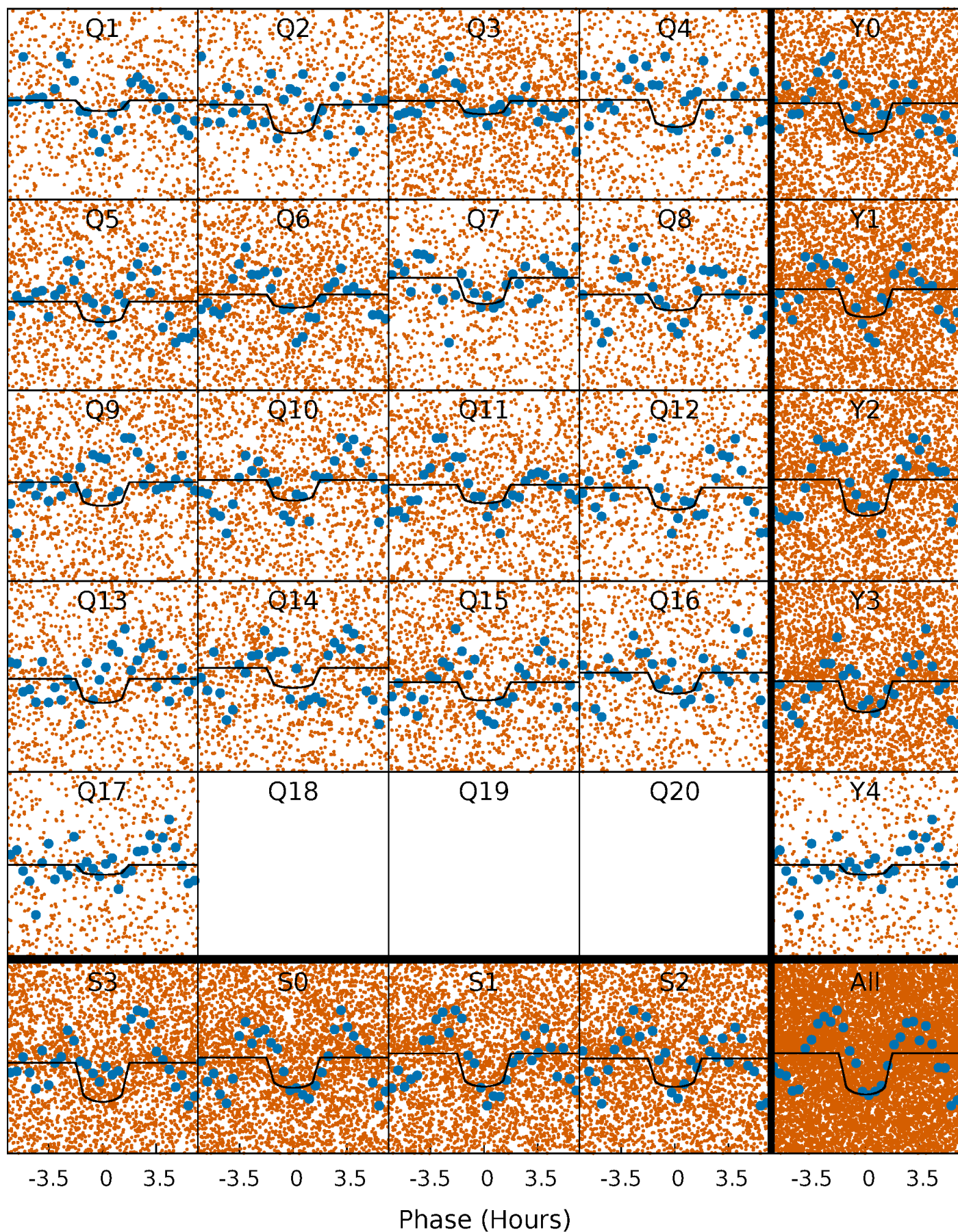
PDC Quarter-Phased Transit Curves

TCE 002714807-01 P= 0.710573 Days $T_0=131.559573$ (BKJD)



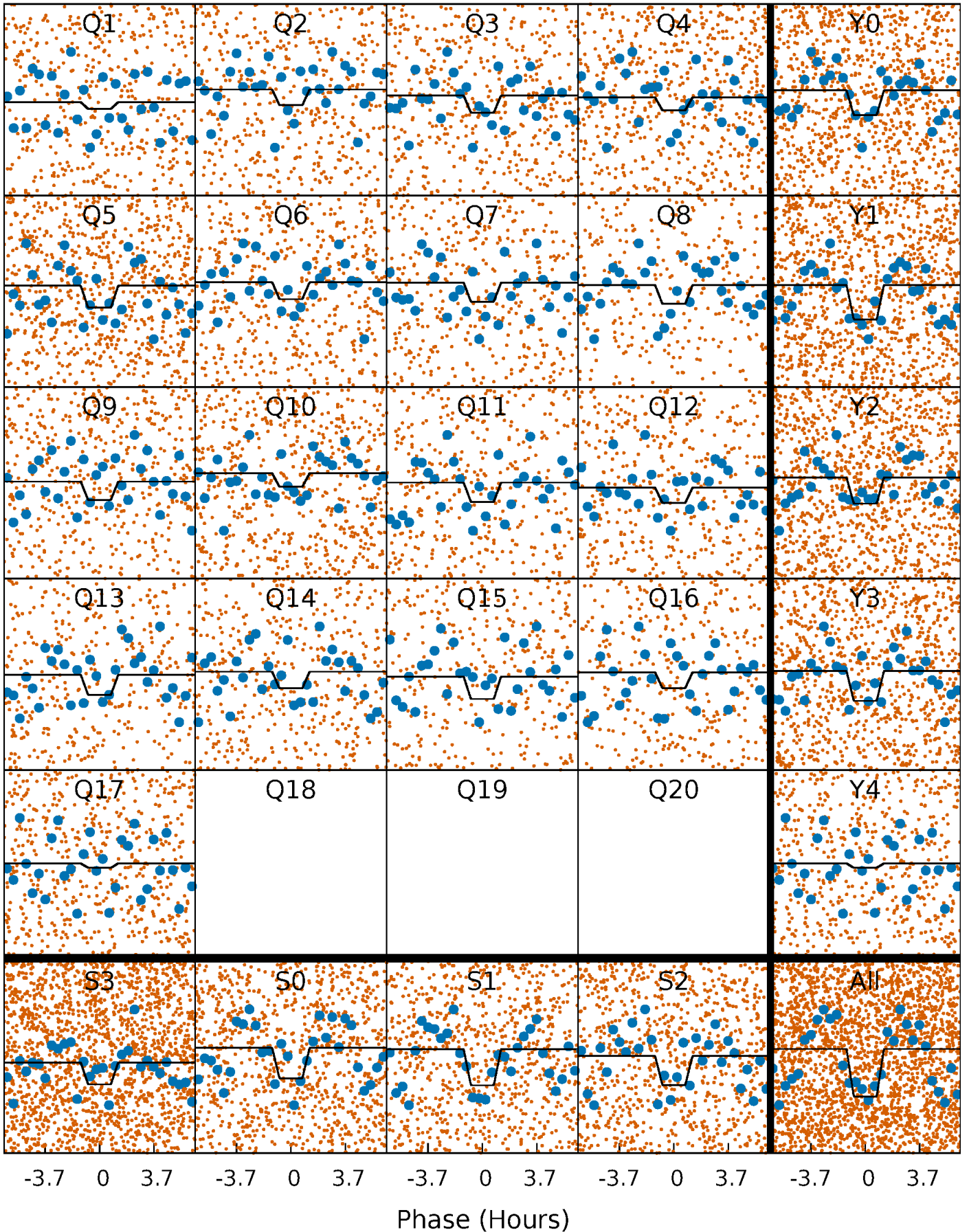
DV Quarter-Phased Transit Curves

TCE 002714807-01 P= 0.710573 Days $T_0=131.559573$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

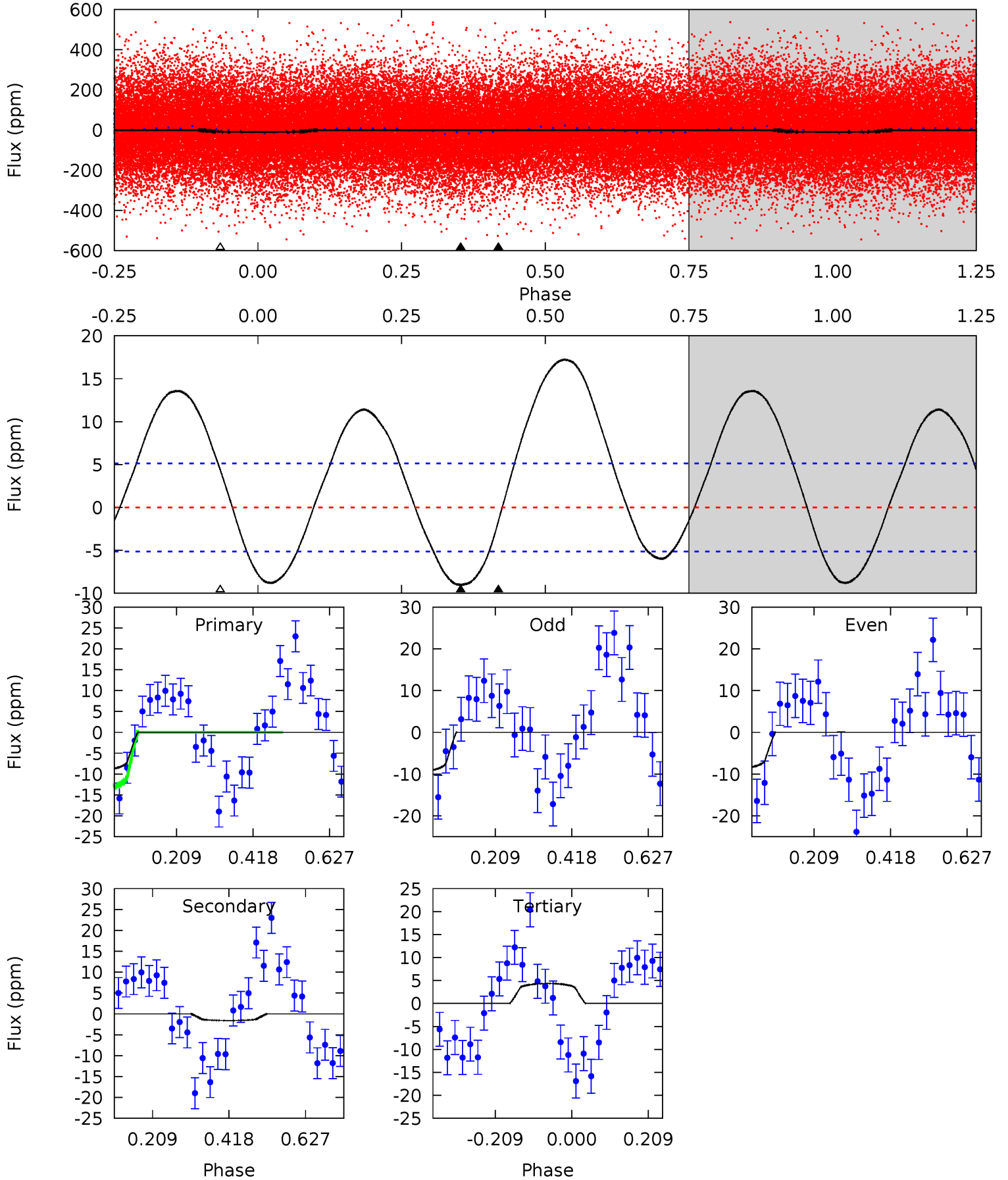
TCE 002714807-01 P= 0.710591 Days $T_0=131.557208$ (BKJD)



DV Model-Shift Uniqueness Test

002714807-01, P = 0.710573 Days, E = 130.849000 Days

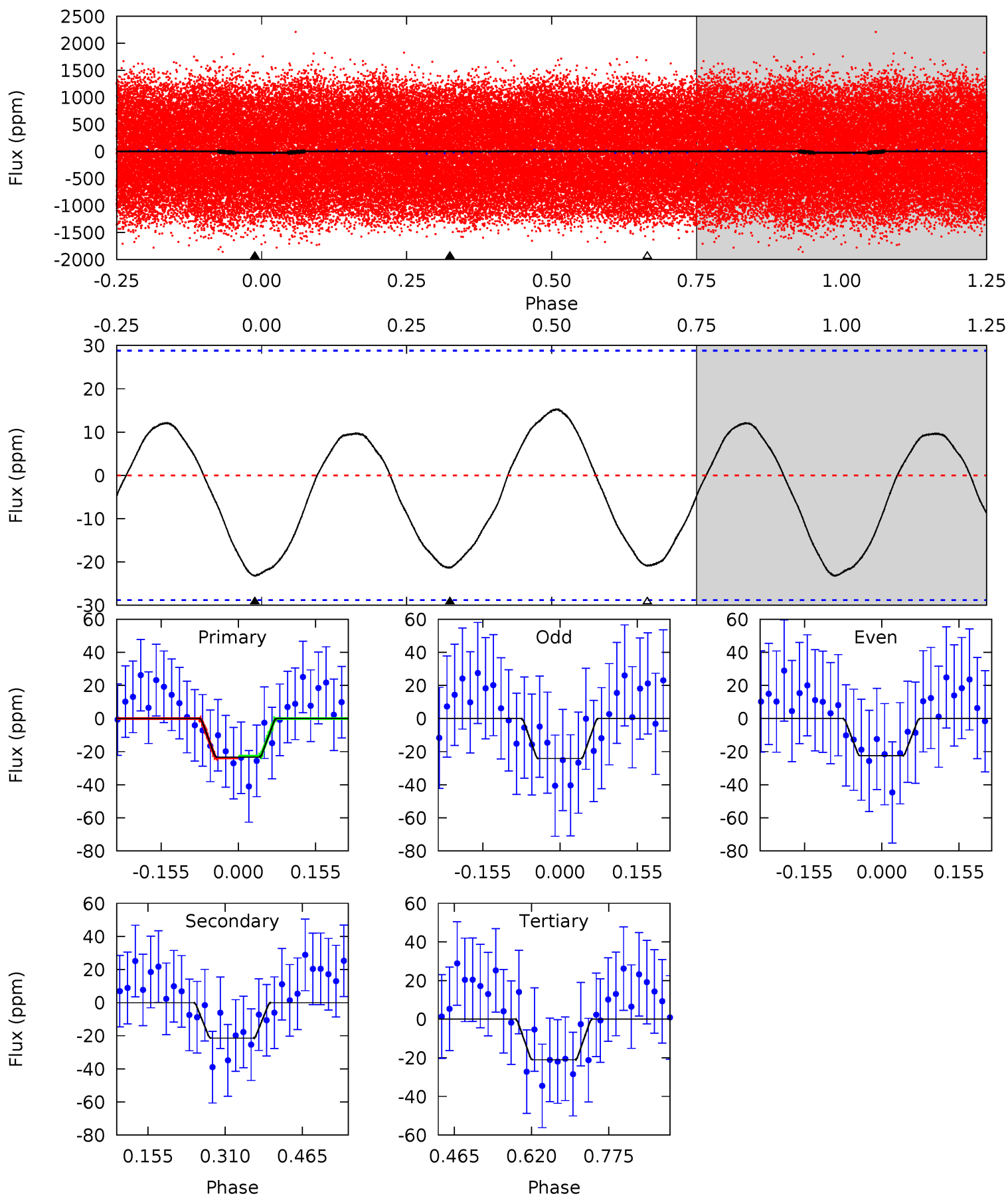
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.76	1.37	-3.74	0	4.41	1.26	6.06	11.5	7.76	5.11	1.37	0.32	0.93	0.66	3.90



Alt Model-Shift Uniqueness Test

002714807-01, P = 0.710591 Days, E = 130.846617 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.62	3.33	3.26	0	4.47	1.42	1.93	0.36	3.62	0.07	3.33	0.13	1.60	0.40	0.08



Stellar Parameters For KIC 002714807

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7046^{+169}_{-253}	$4.190^{+0.112}_{-0.208}$	$-0.140^{+0.250}_{-0.350}$	$1.573^{+0.512}_{-0.276}$	$1.405^{+0.220}_{-0.220}$	$0.508^{+0.323}_{-0.267}$
	+2%/-4%	+3%/-5%	+179%/-250%	+33%/-18%	+16%/-16%	+64%/-53%
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 002714807-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2 ± 1	$0.70^{+0.22}_{-0.19}$	4162^{+321}_{-228}	3575^{+1103}_{-7087}	$0.518^{+0.742}_{-0.379}$
Alt.	-21 ± 6	$0.91^{+0.26}_{-0.21}$	4170^{+338}_{-243}	6488^{+1086}_{-877}	$4.175^{+3.330}_{-1.888}$

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 $A_{obs} \gg 1.0$

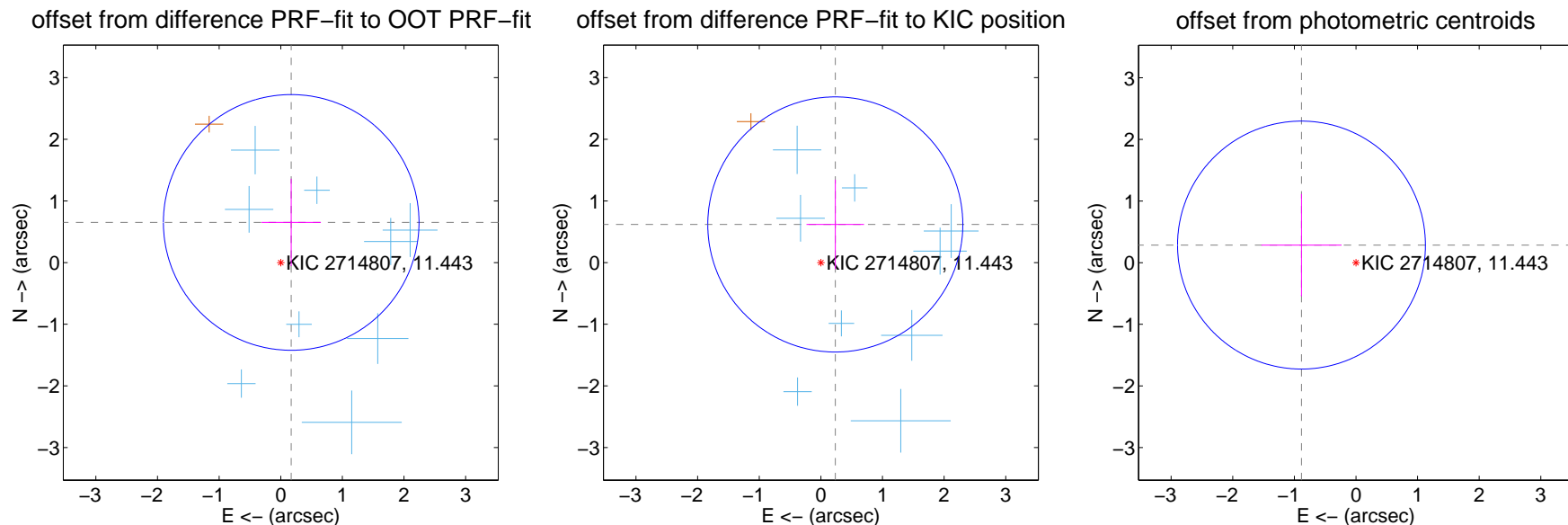
DV Centroid Data

Supplemental centroid analysis for 002714807-01. **Kepler magnitude: 11.44.** Transit SNR 6.51

There are 9 quarters with good PRF difference image offsets

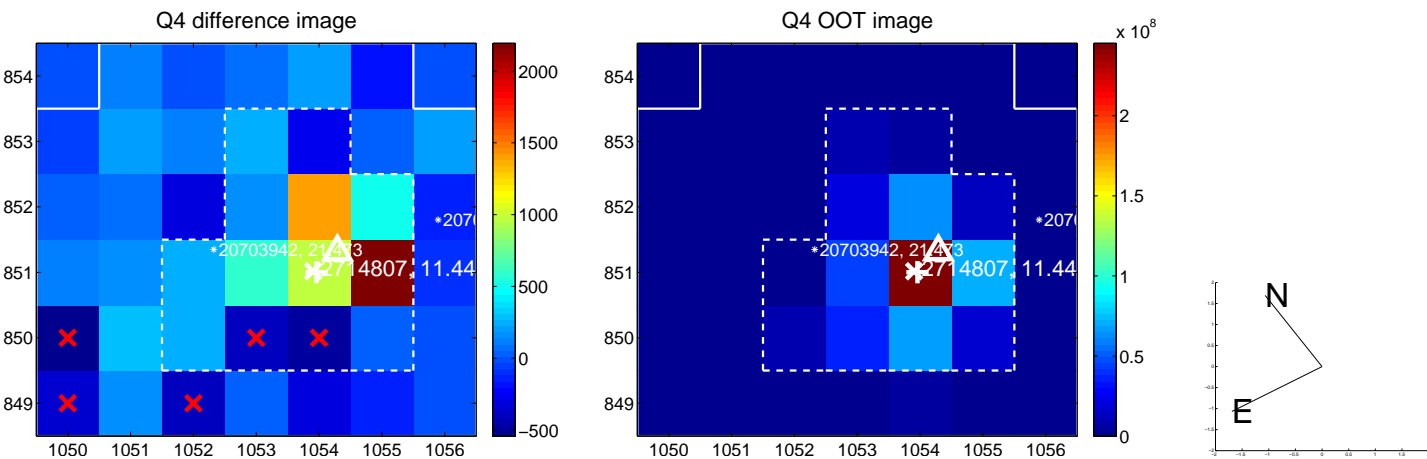
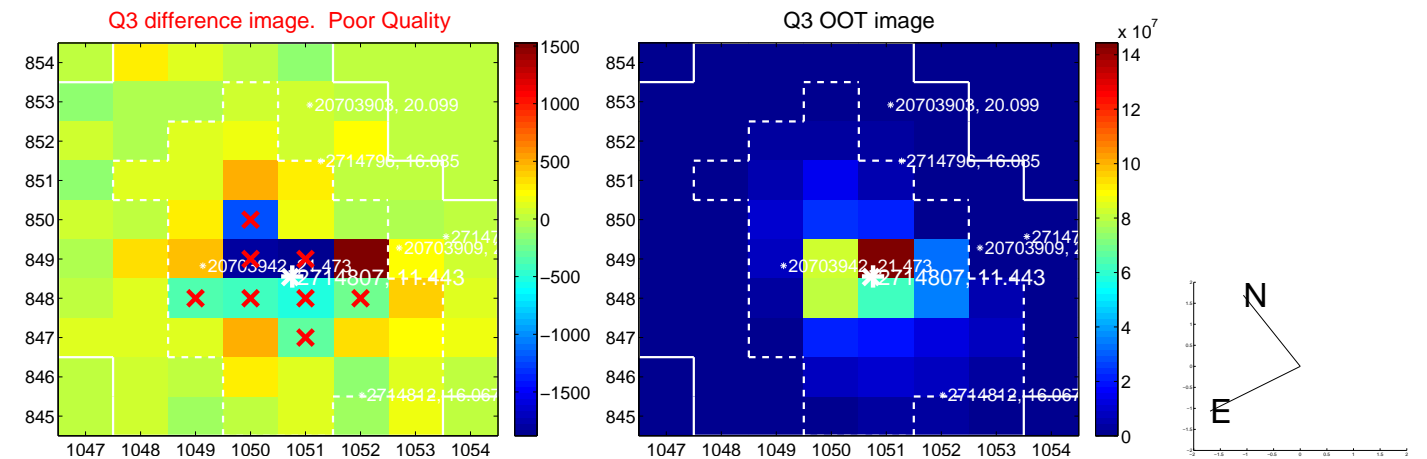
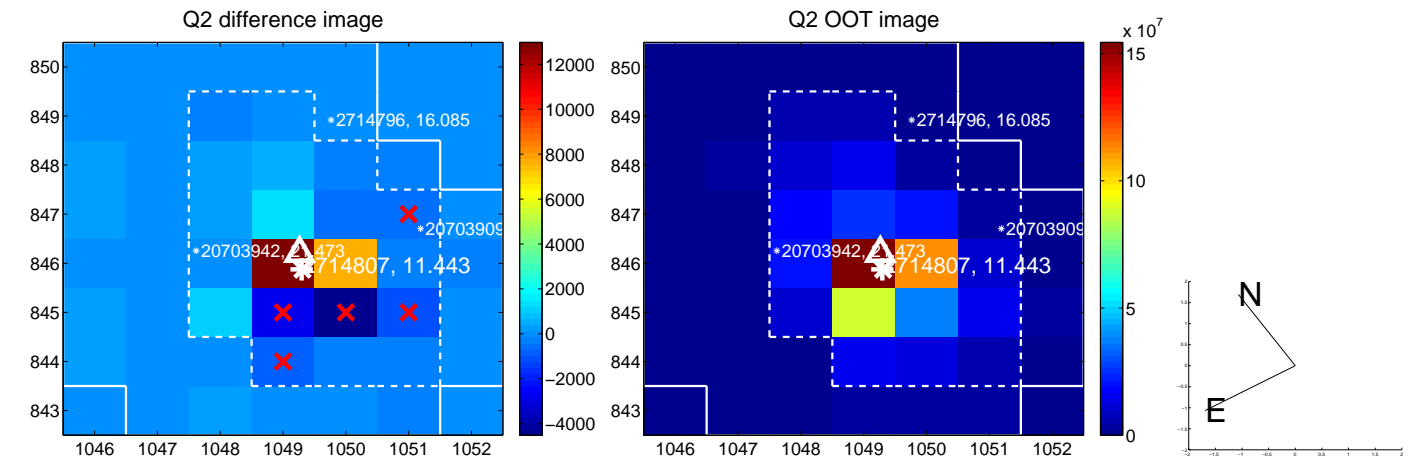
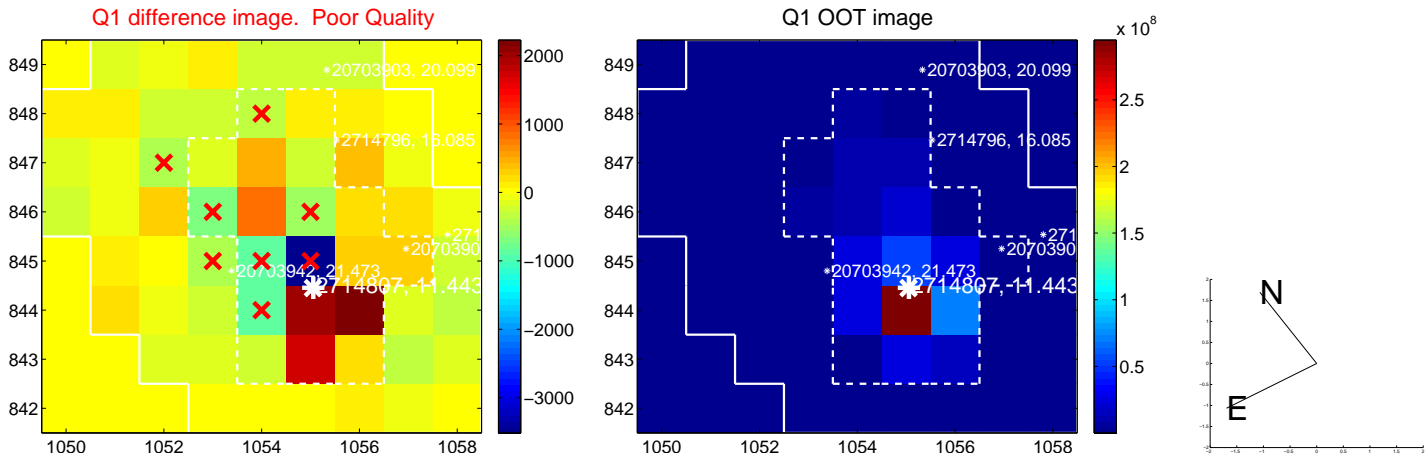
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.673 ± 0.691	0.97	-0.170 ± 0.481	0.651 ± 0.708
PRF-fit source offset from KIC position	0.661 ± 0.690	0.96	-0.234 ± 0.467	0.619 ± 0.726
photometric centroid source offset	0.93 ± 0.67	1.39	0.88 ± 0.65	0.29 ± 0.83

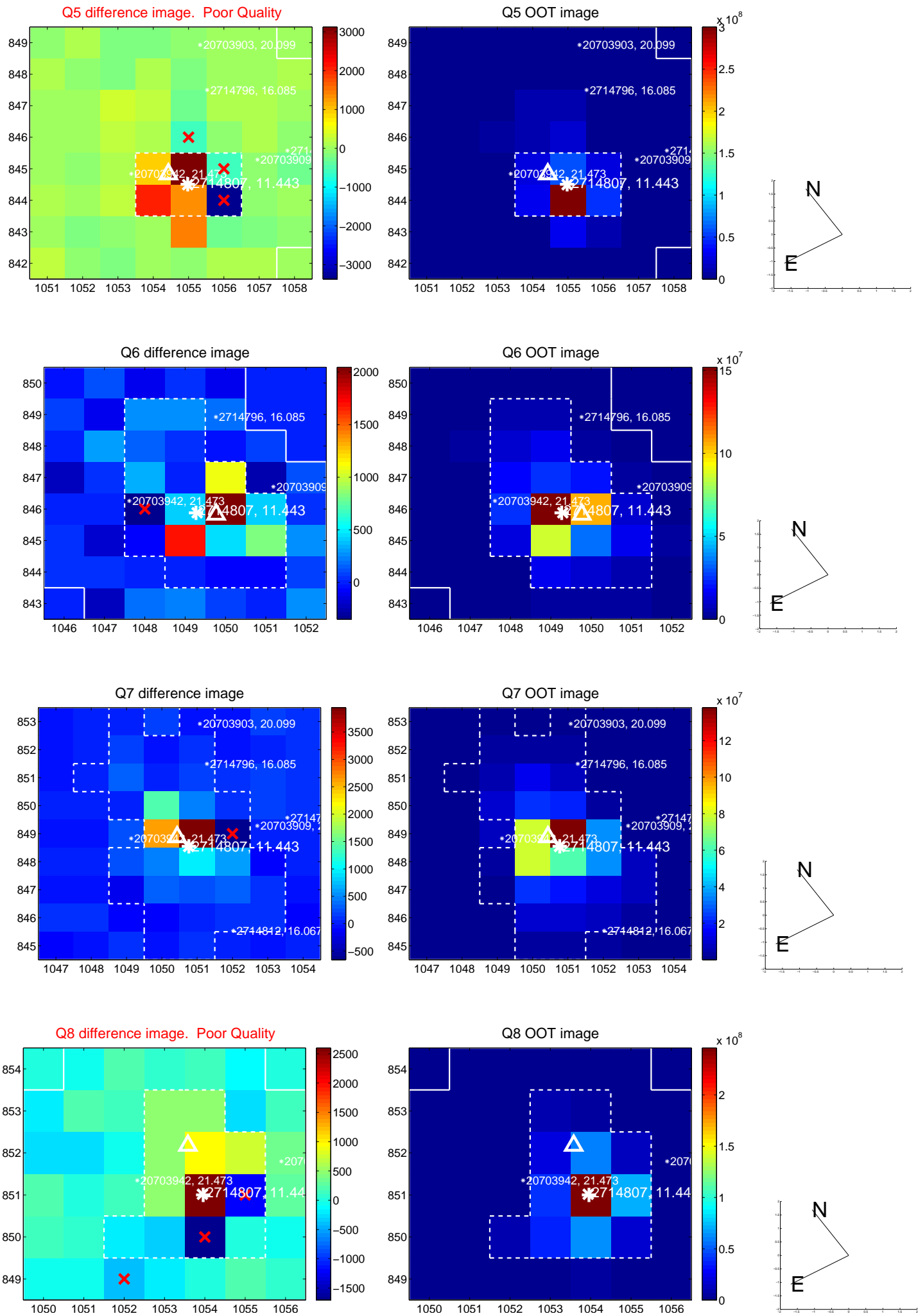


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

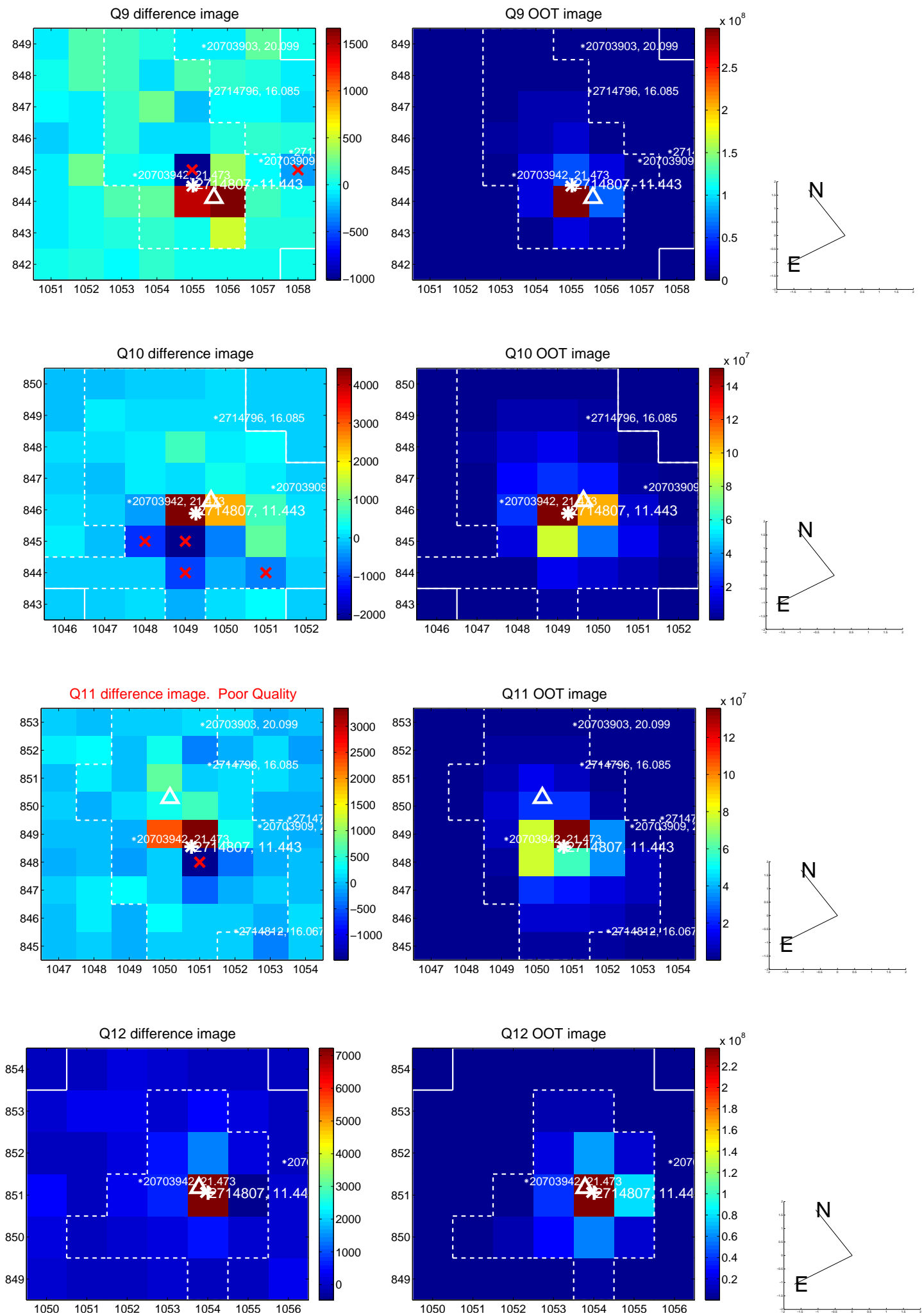
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



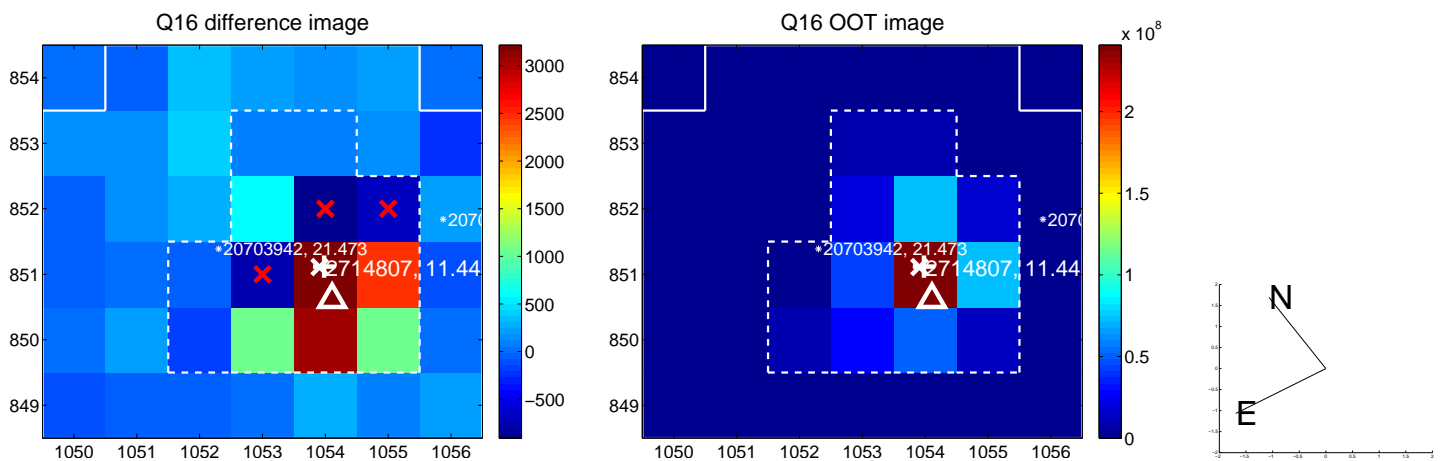
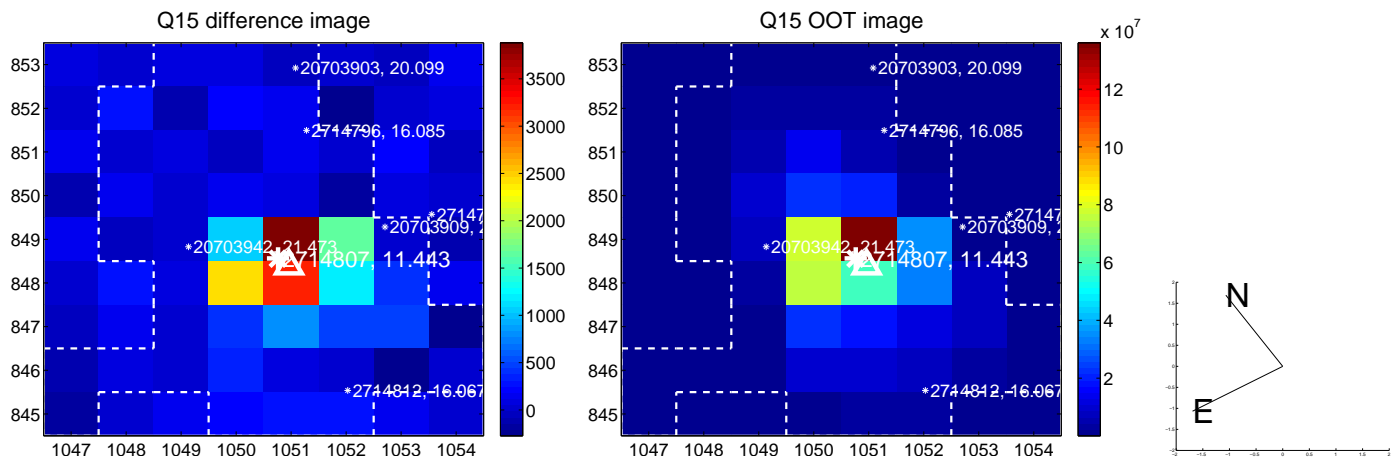
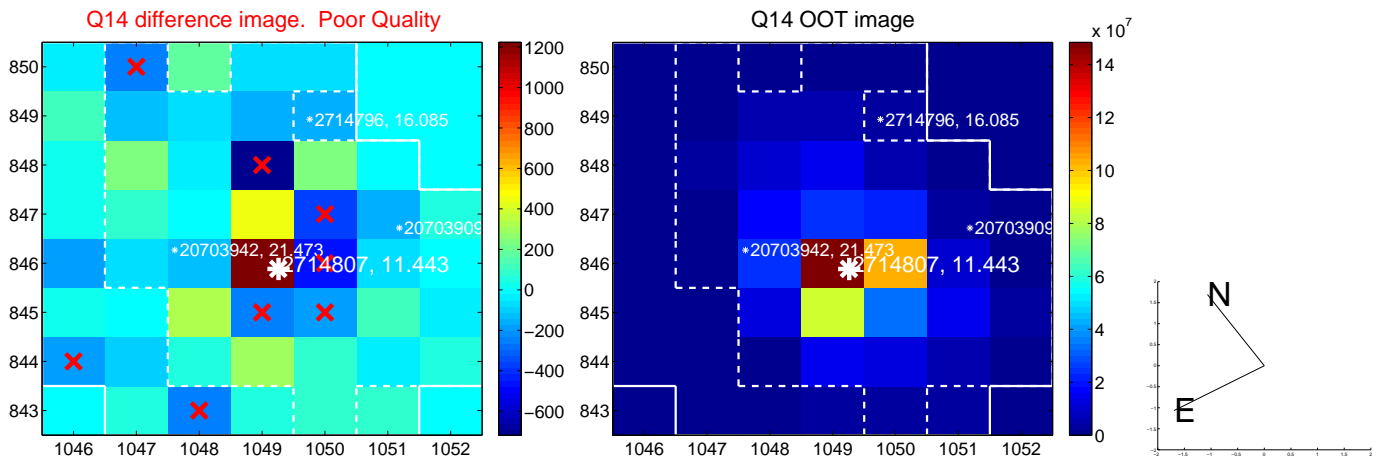
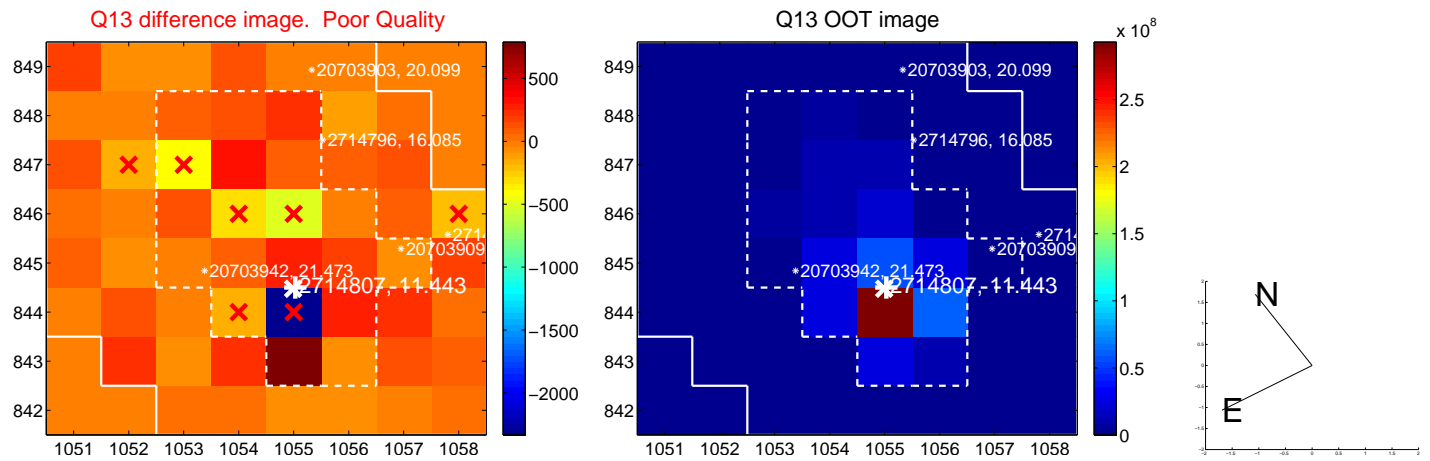
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



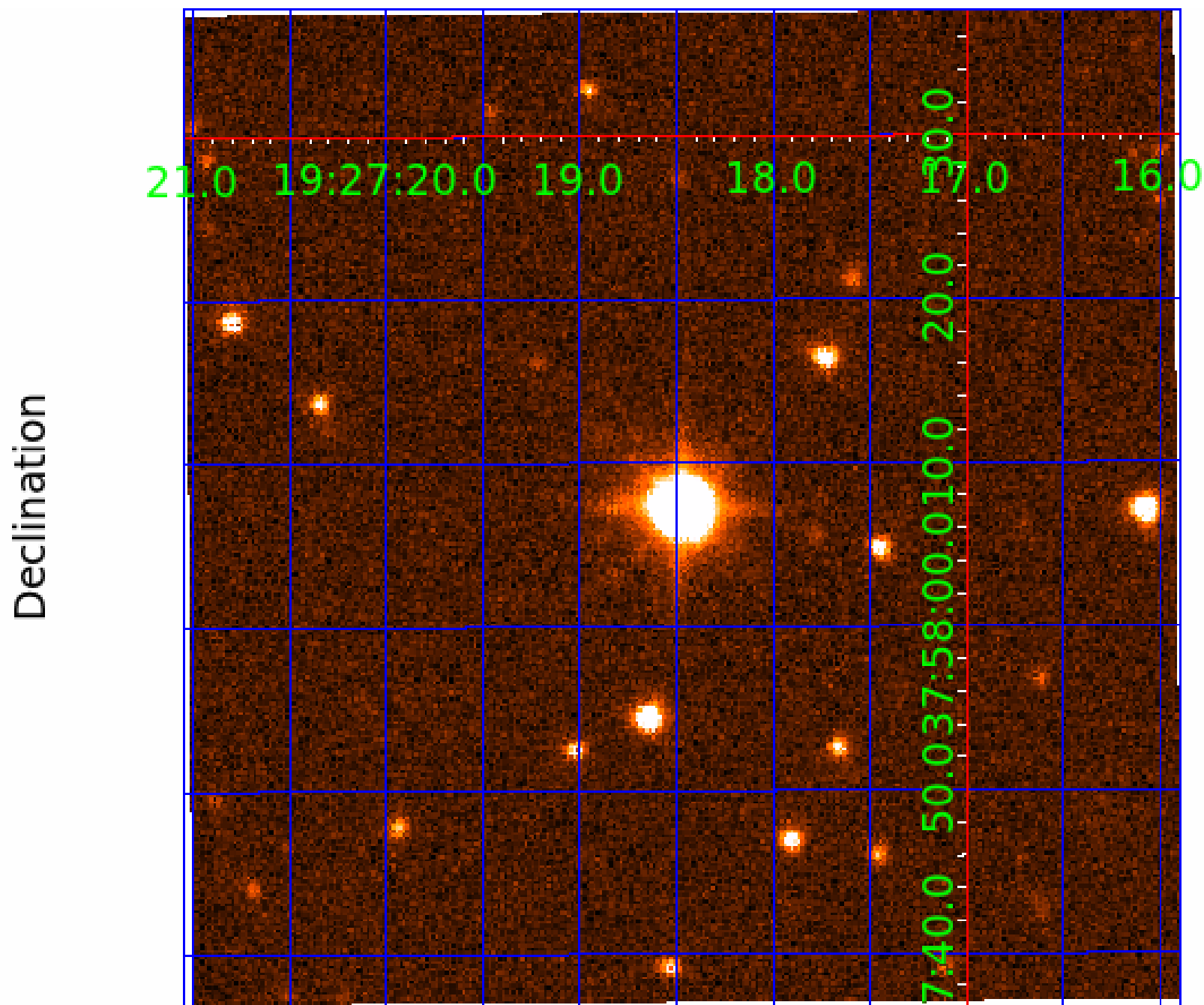
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 002714807

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})
002714807-01	OBS	No	0.710573	131.559573	13.5	3.103	8.3	6.5	1.57	7046	0.67	17988.96
002714807-02	OBS	No	145.155412	217.932704	329.4	4.376	7.3	7.4	1.57	7046	3.88	14.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002714807-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
002714807-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

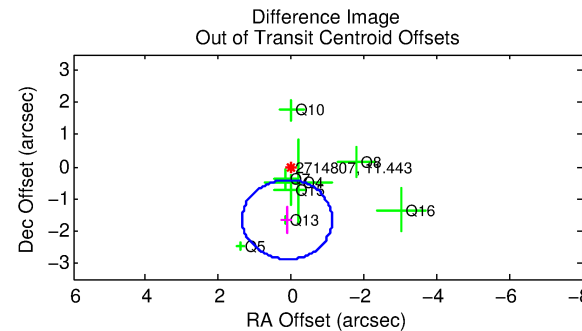
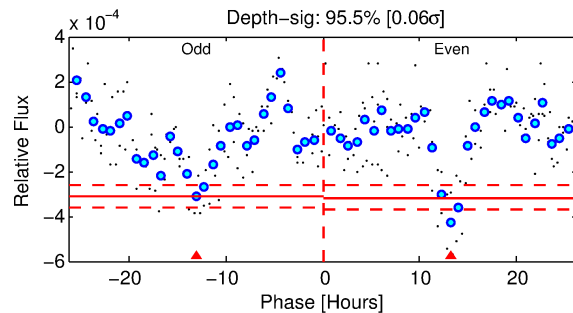
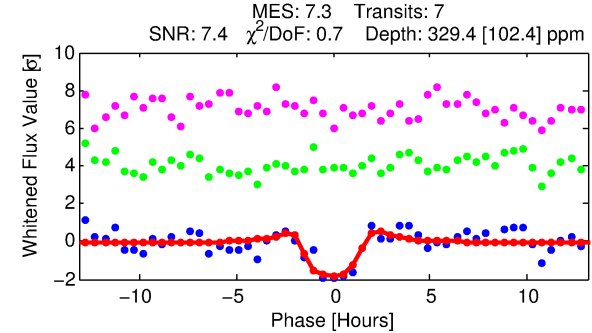
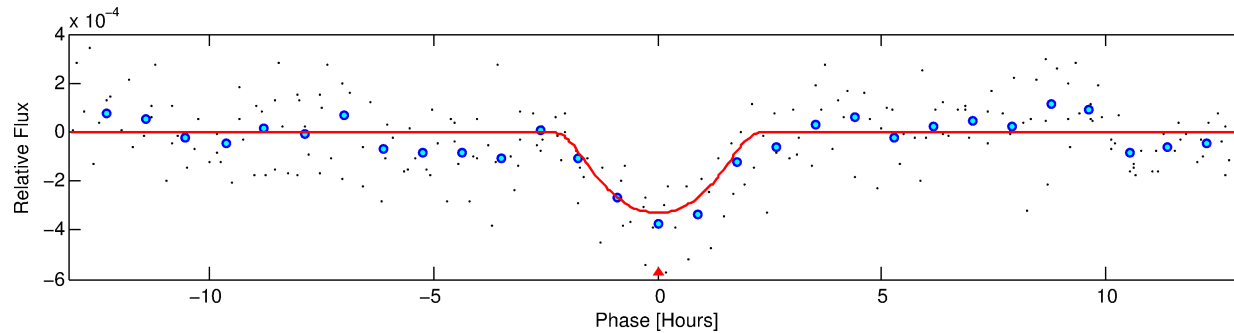
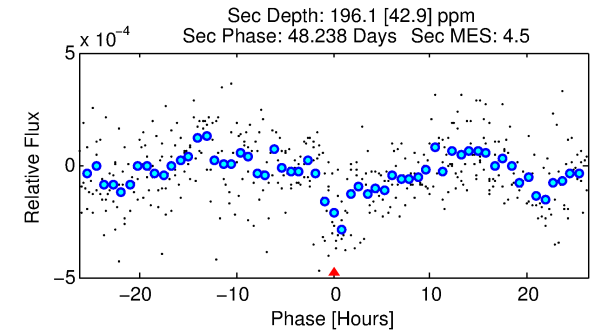
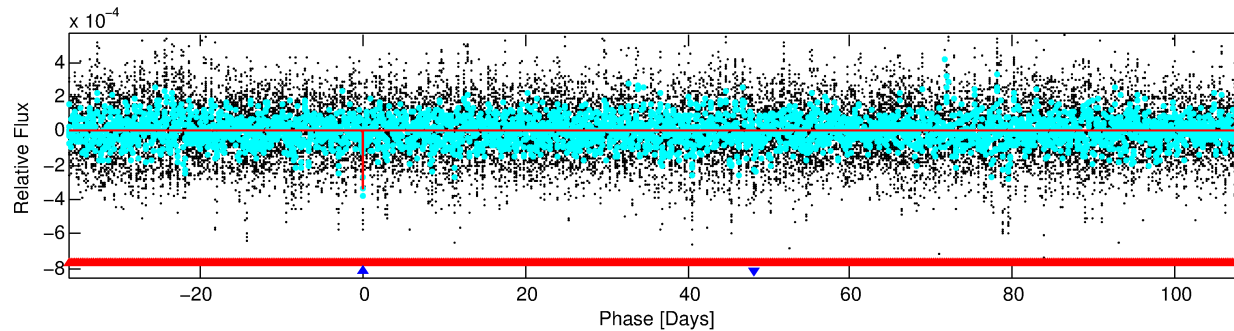
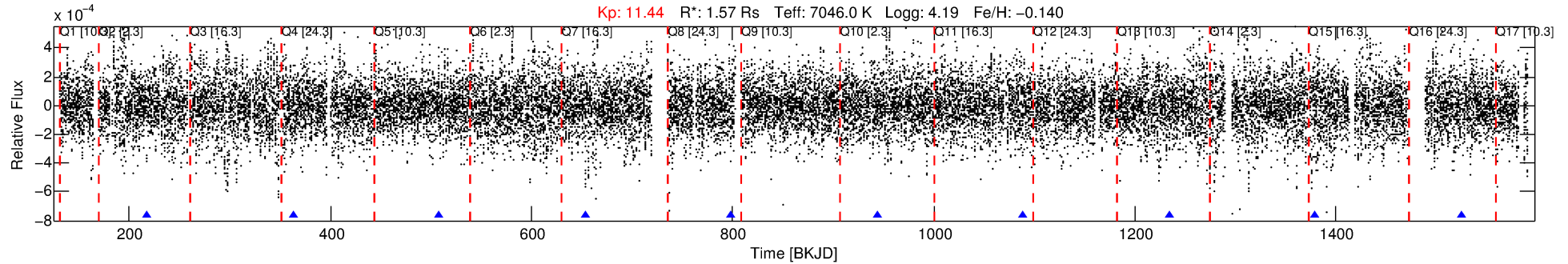
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002714807-02

No Significant Match Found

DV One-Page Summary

KIC: 2714807 Candidate: 2 of 2 Period: 145.155 d



DV Fit Results:

Period = 145.15541 [0.00180] d
Epoch = 217.9327 [0.0087] BKJD
 $R_p/R^* = 0.0226$ [0.0074]
 $a/R^* = 72.45$ [17.78]
 $b = 0.98$ [0.02]
 $\text{Seff} = 14.95$ [6.16]
 $T_{\text{eq}} = 501$ [52] K
 $R_p = 3.88$ [1.79] Re
 $a = 0.6045$ [0.1629] AU
 $A_g = 2621.52$ [2077.87] [1.26 σ]
 $T_{\text{eff}} = 5547$ [980] K [5.14 σ]

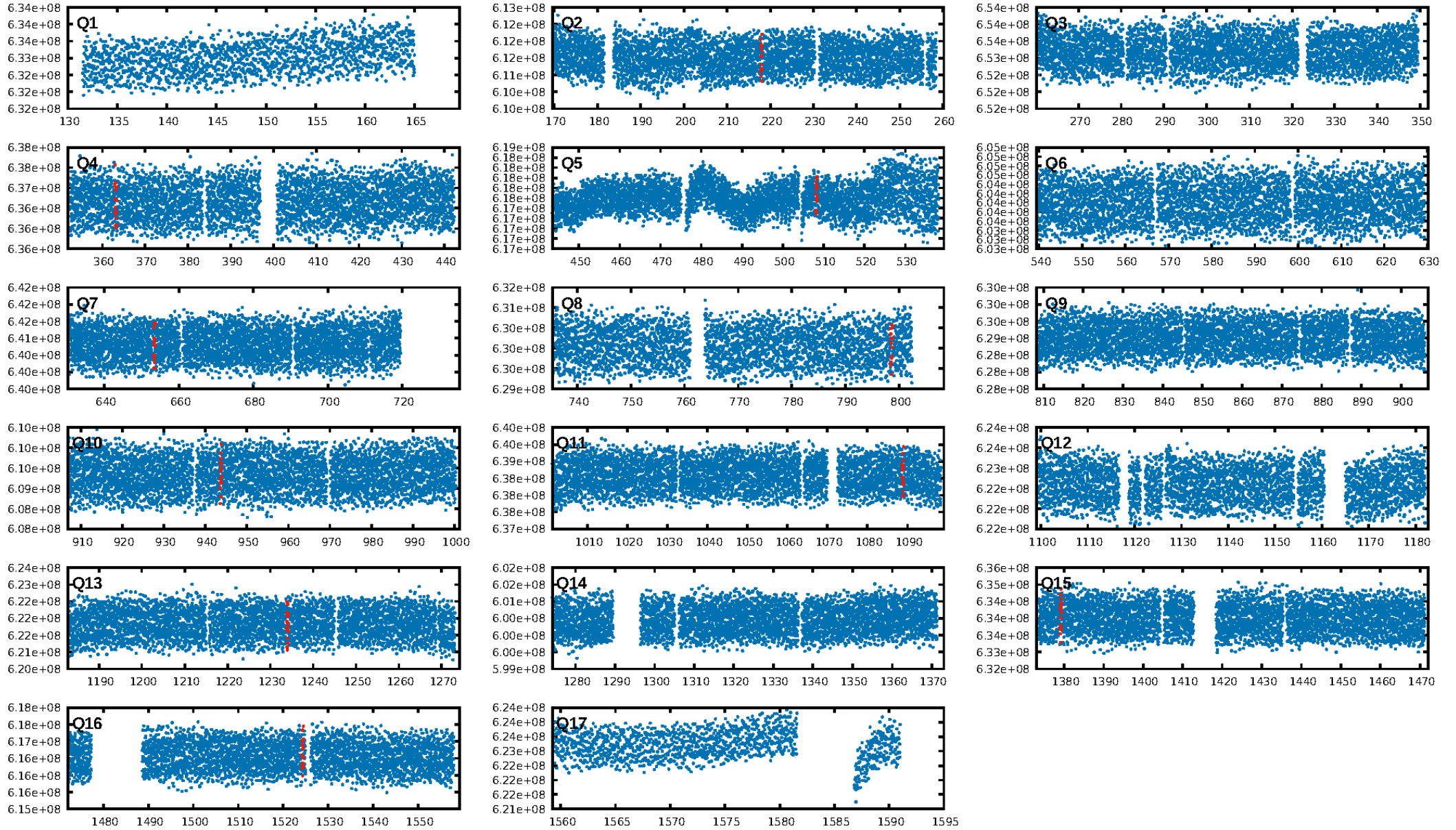
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [646.18 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 71.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.79e-09
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 2.554
Centroid-sig: N/A
Centroid-so: 0.305 arcsec [0.63 σ]
OotOffset-rm: 1.652 arcsec [4.01 σ]
KicOffset-rm: 1.486 arcsec [3.12 σ]
OotOffset-st: 1/2/3/2 [8]
KicOffset-st: 1/2/3/2 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 0.00 [0/10]

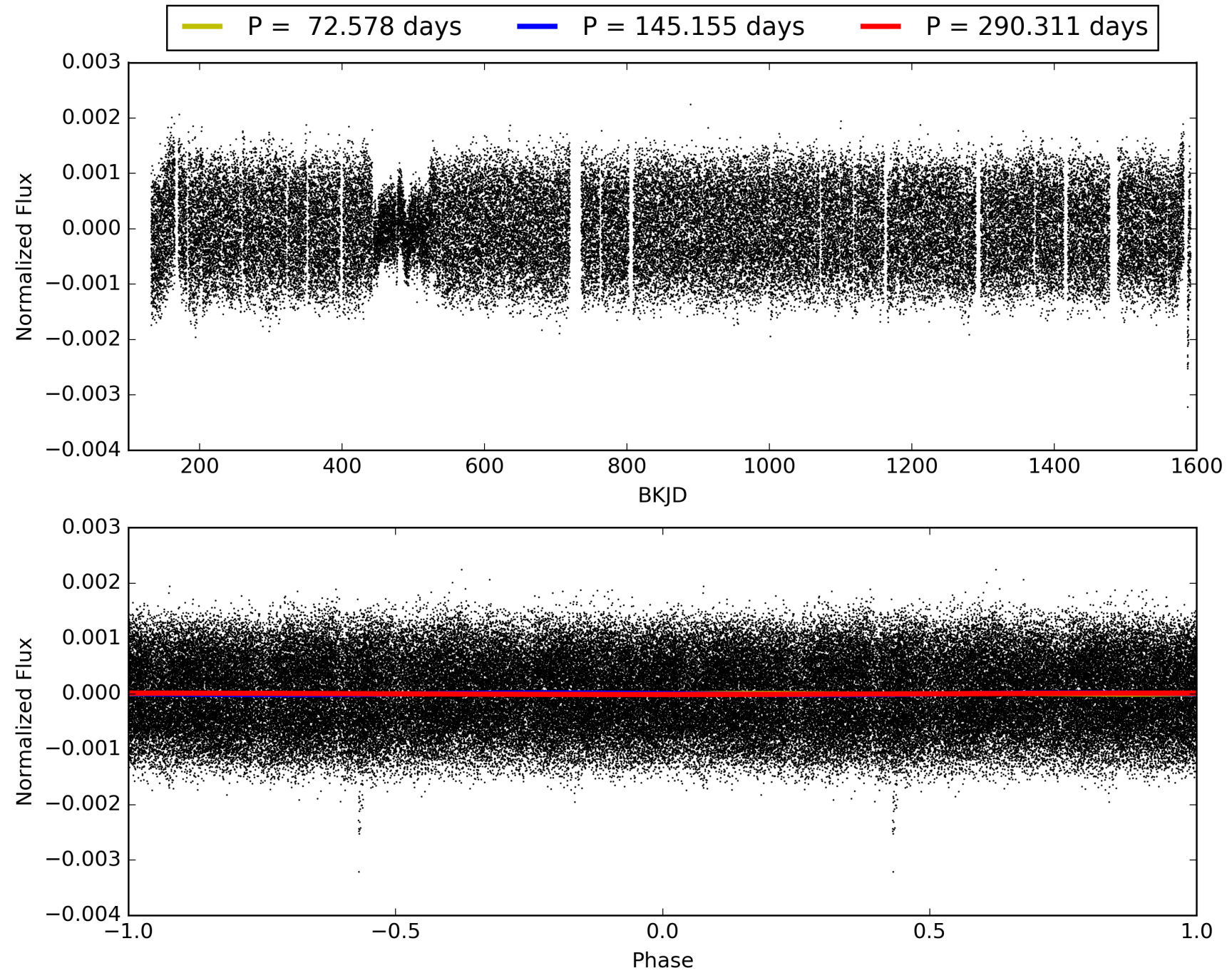
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:59:25 Z

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

TCE 002714807-02, PDC Light Curves

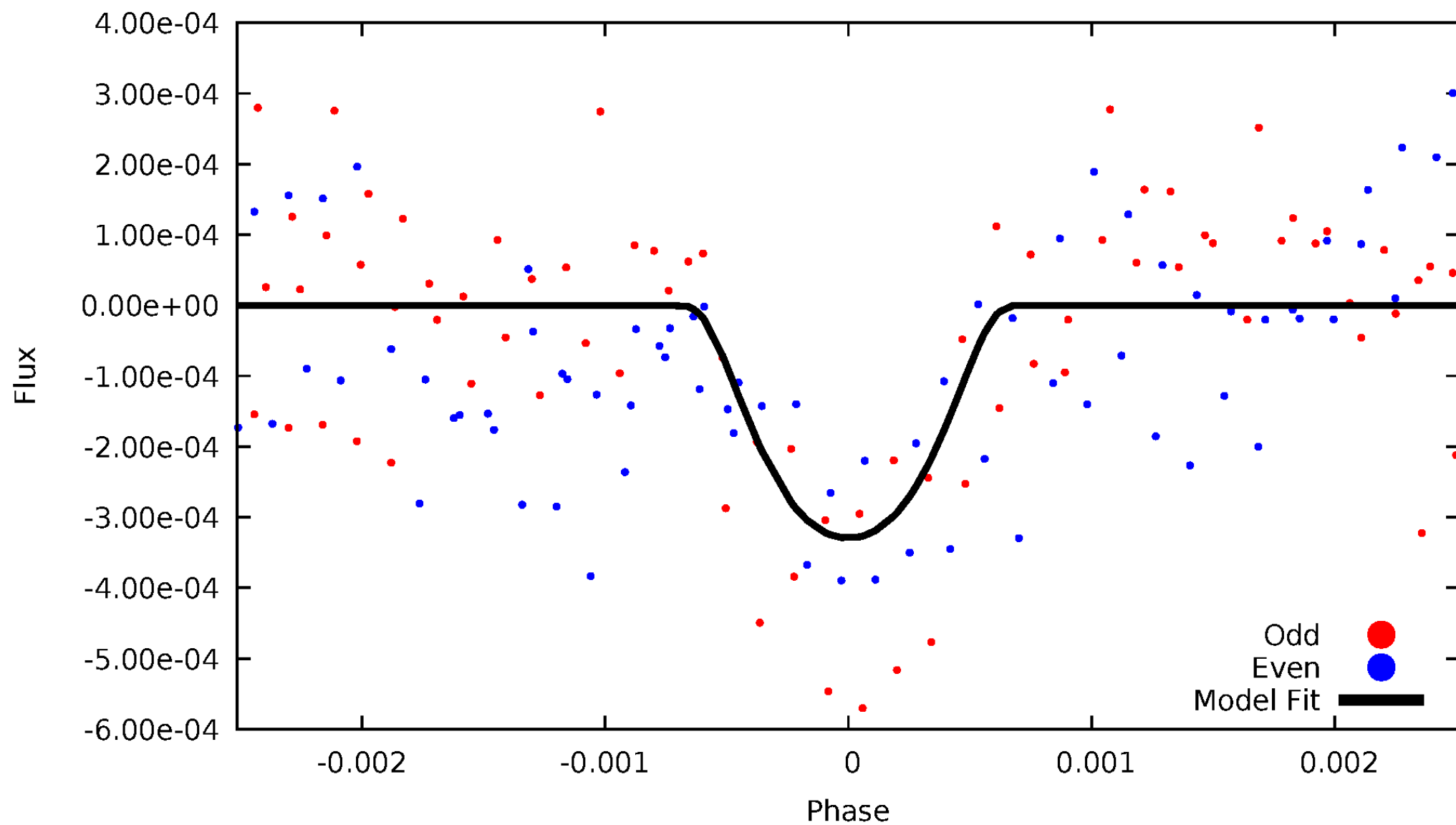


TCE 002714807-02



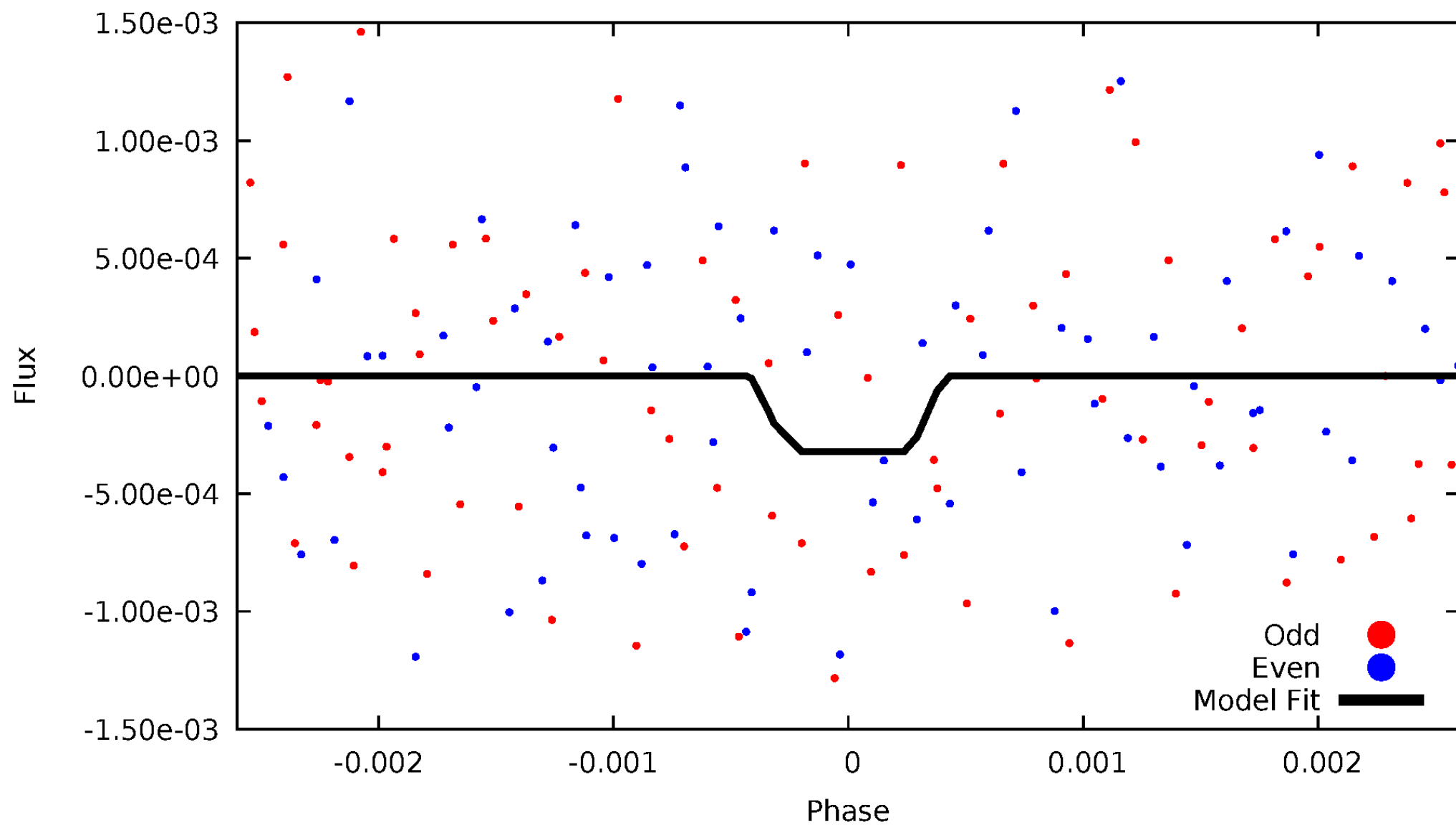
DV Odd/Even

TCE 002714807-02



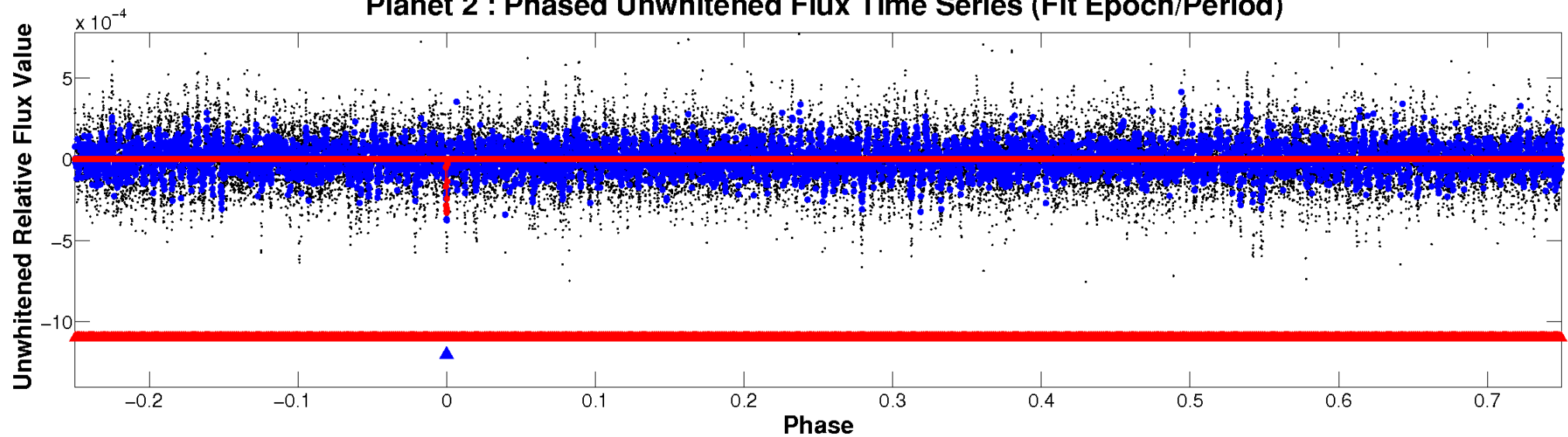
ALT Odd/Even

TCE 002714807-02

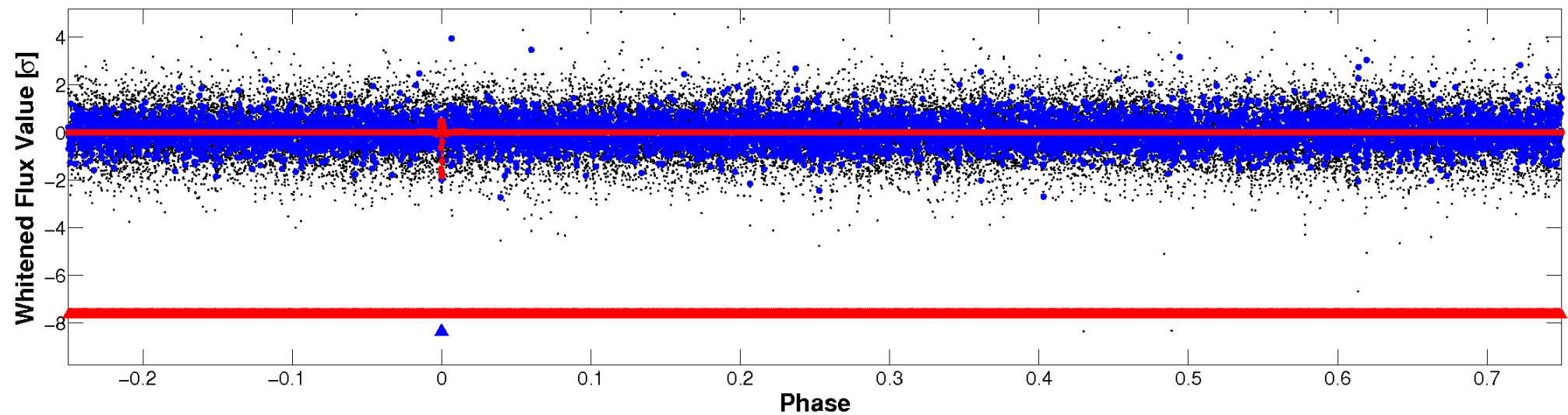


Non-Whitened Vs. Whitened Light Curve

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

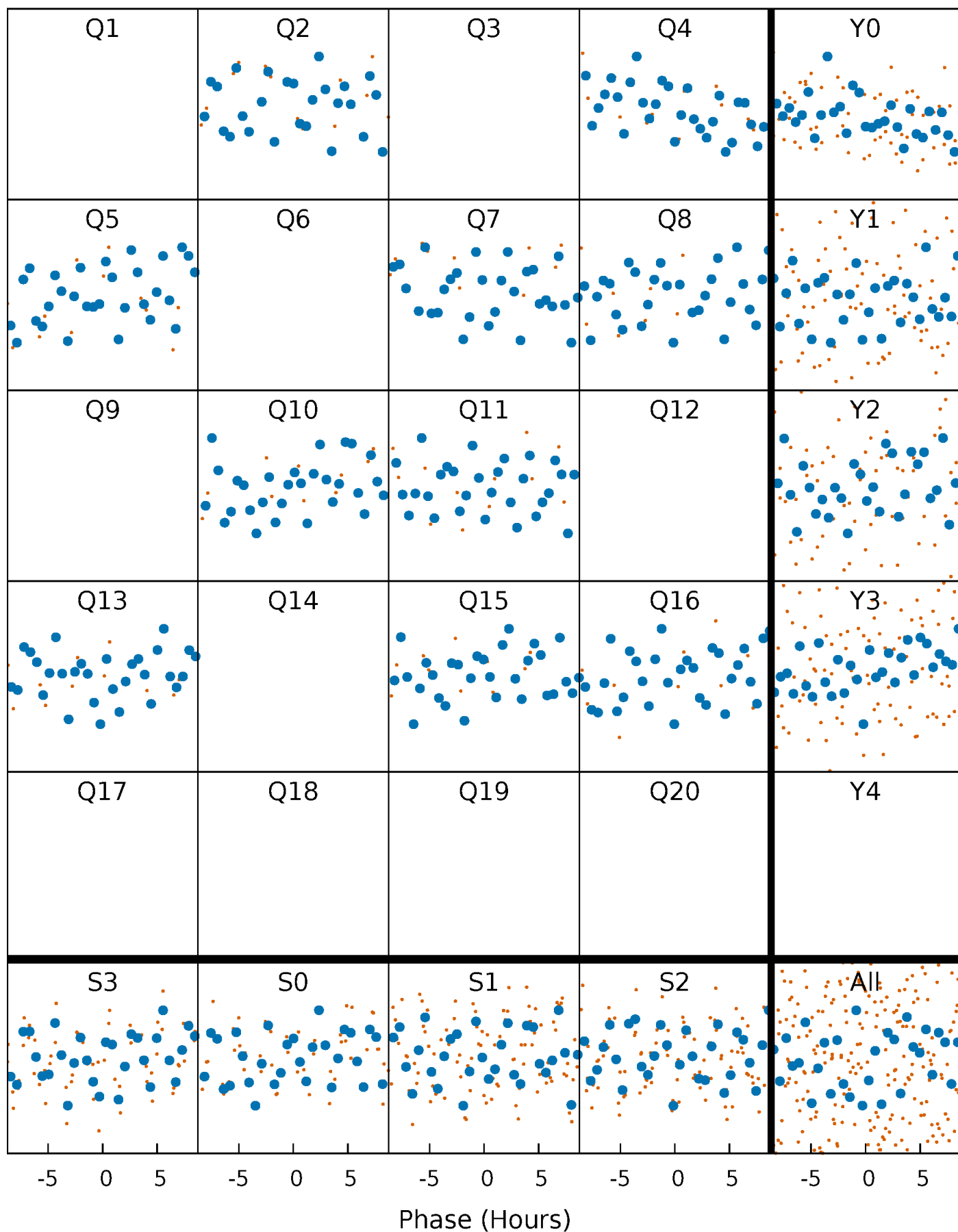


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



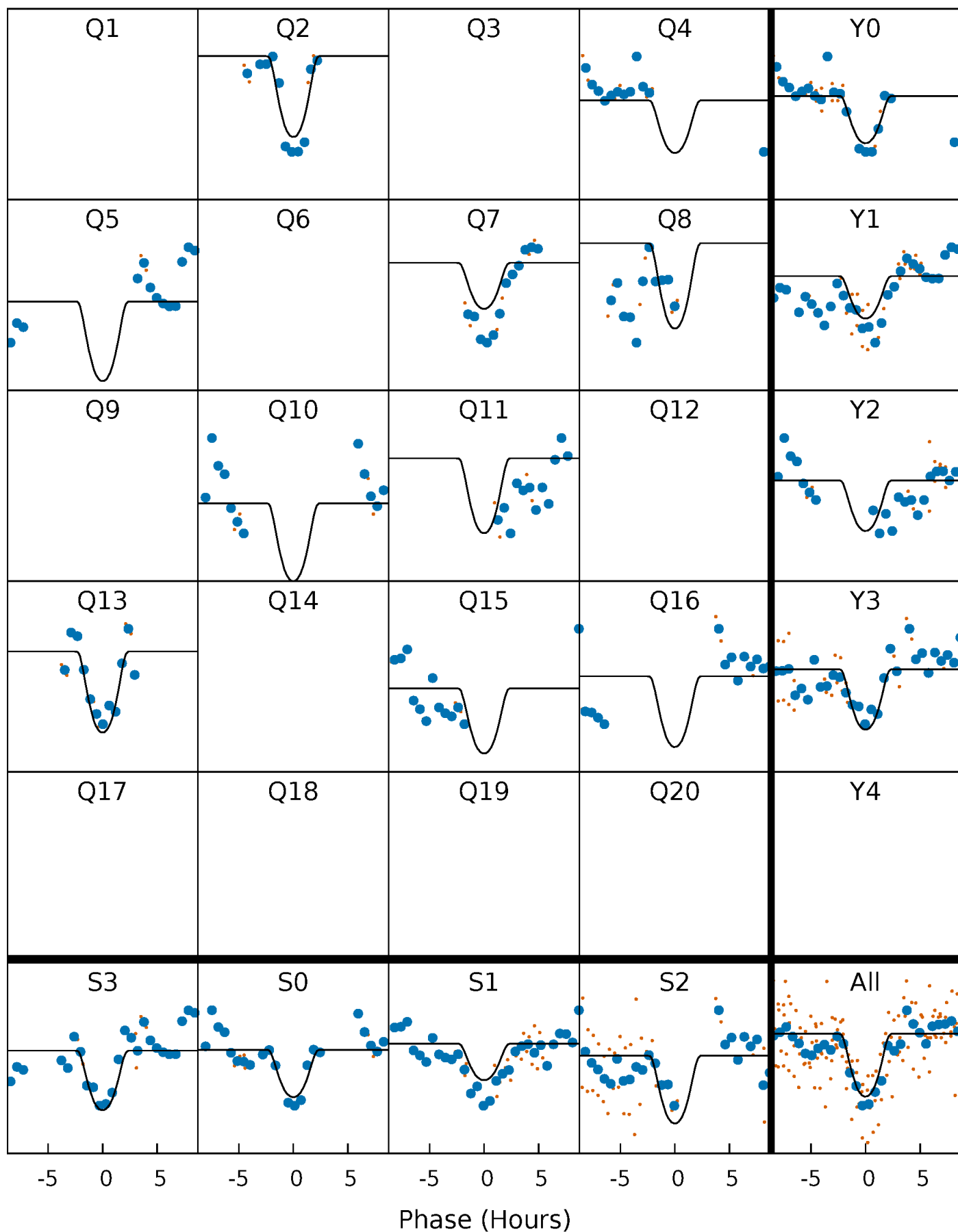
PDC Quarter-Phased Transit Curves

TCE 002714807-02 P=145.155412 Days $T_0=217.932704$ (BKJD)



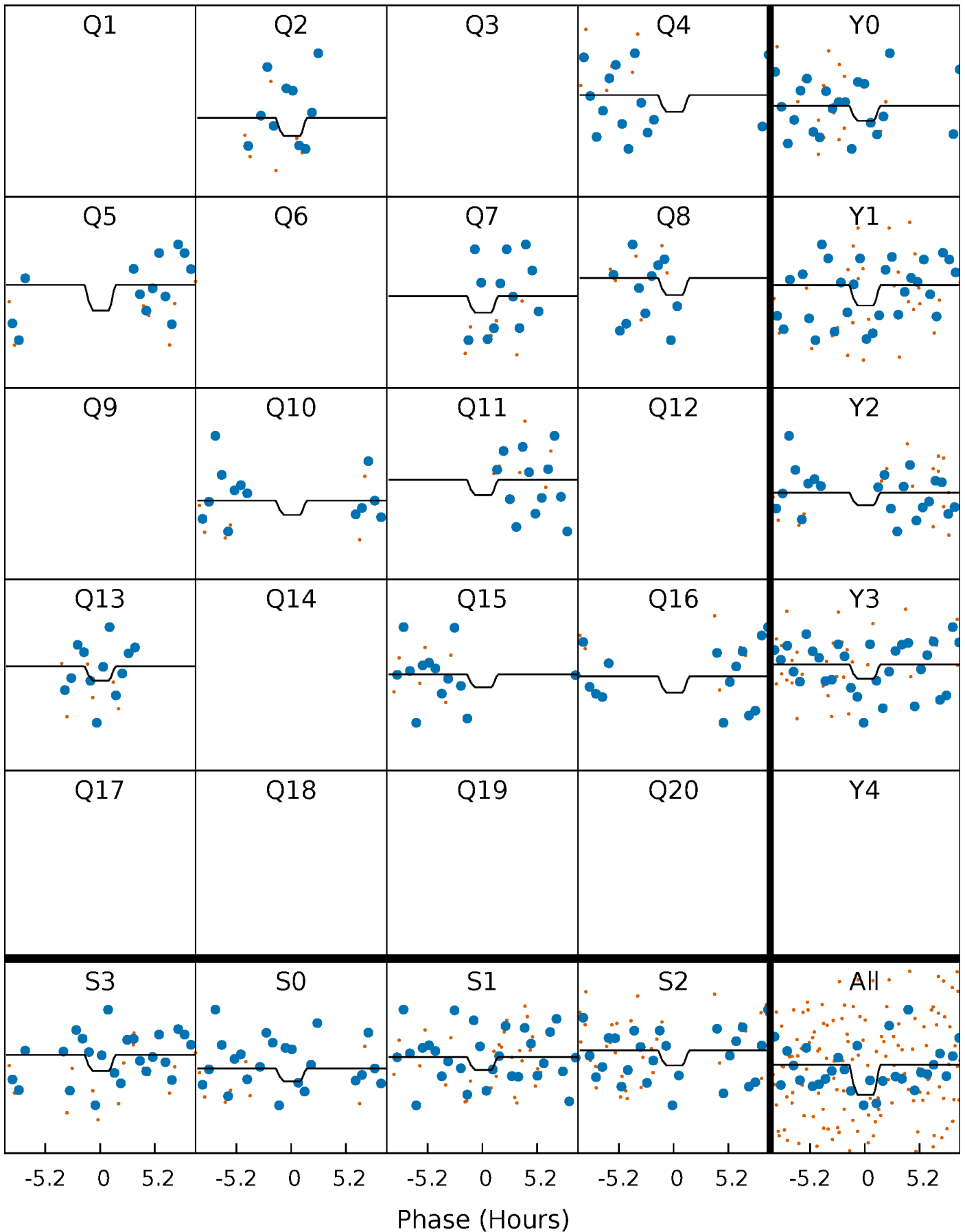
DV Quarter-Phased Transit Curves

TCE 002714807-02 P=145.155412 Days $T_0=217.932704$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

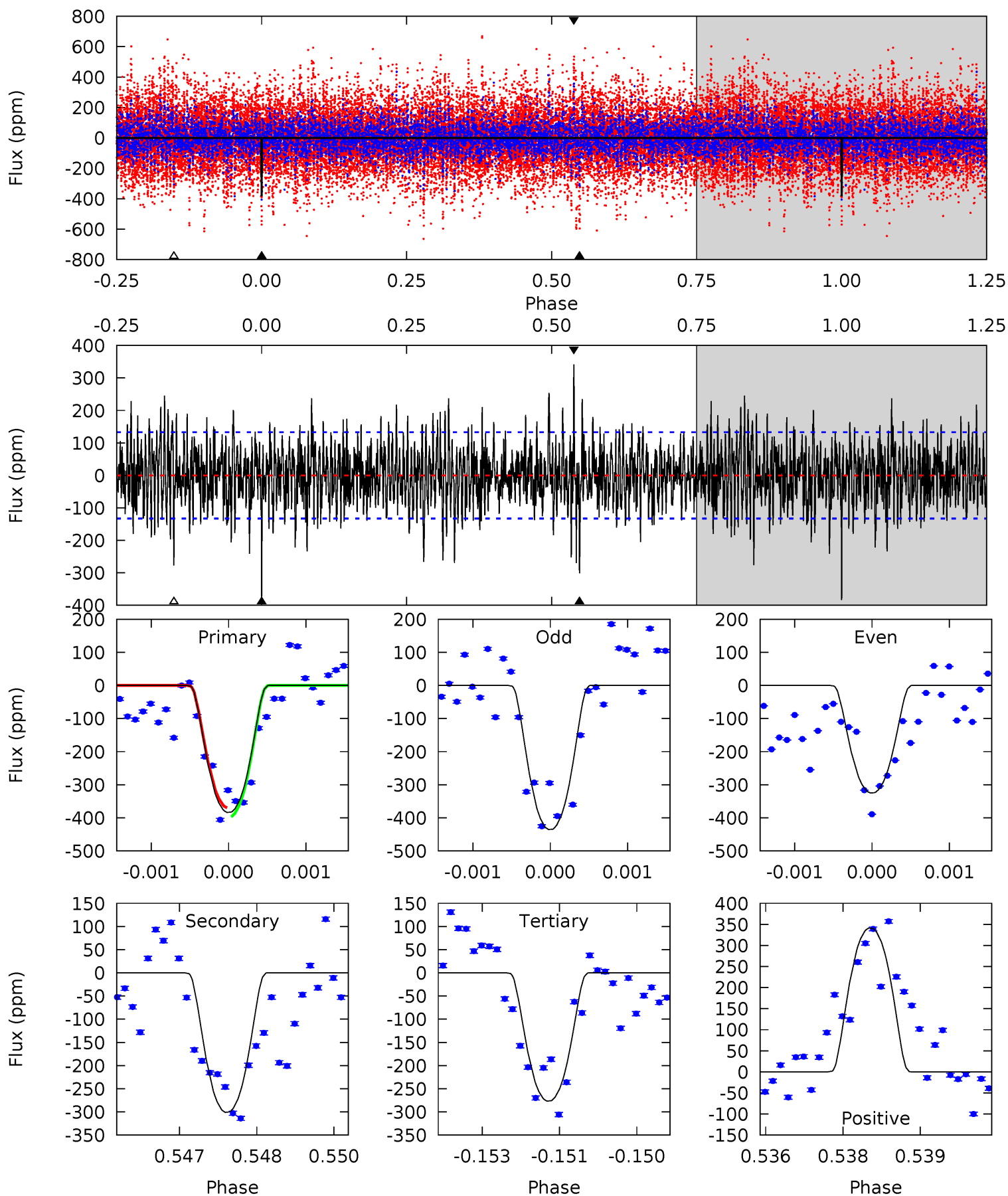
TCE 002714807-02 P=145.155458 Days $T_0=217.927018$ (BKJD)



DV Model-Shift Uniqueness Test

002714807-02, P = 145.155412 Days, E = 72.777292 Days

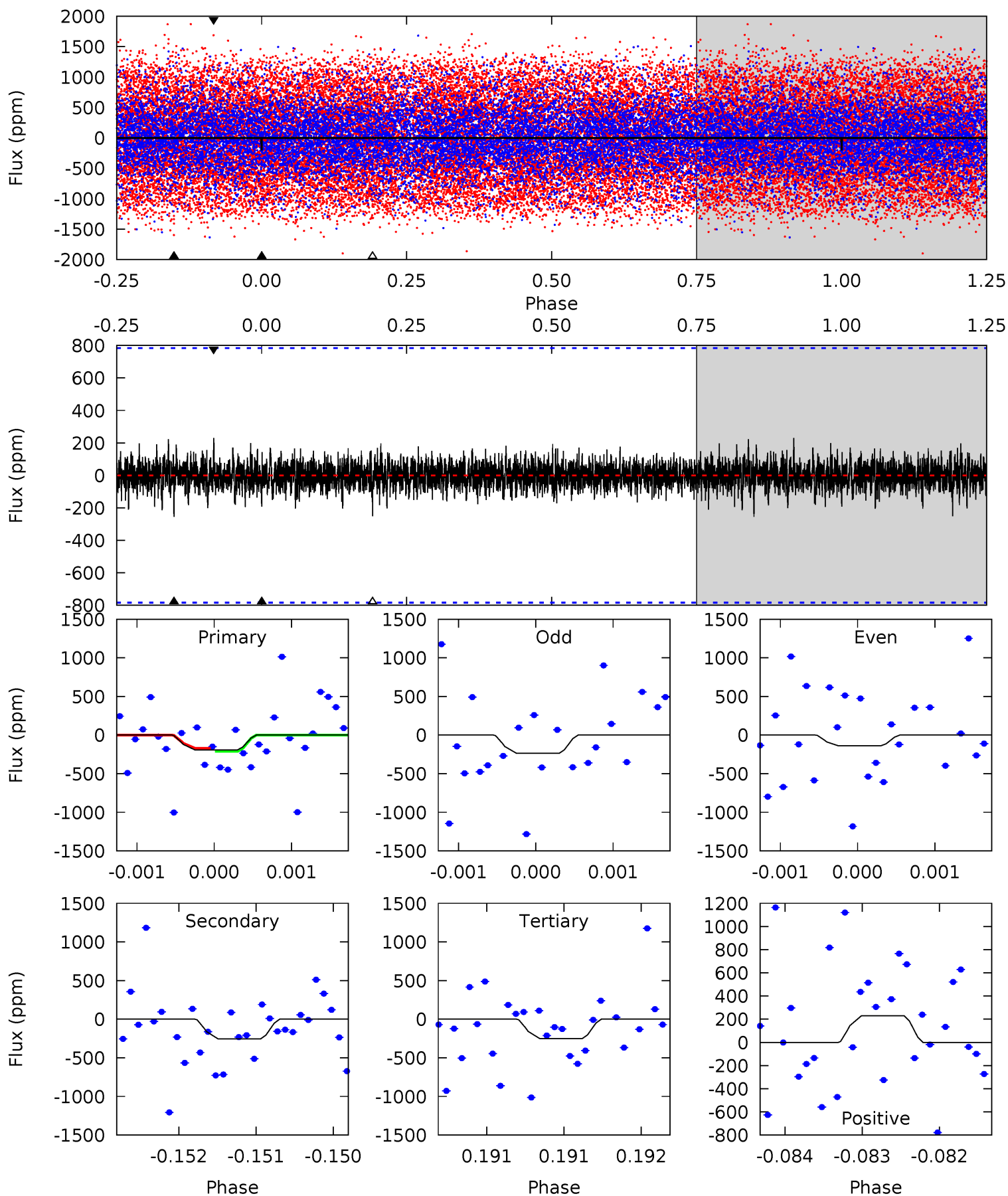
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	12.2	11.2	13.9	5.40	3.21	3.14	4.34	1.72	0.98	-1.64	2.24	1.05	0.47	0.55



Alt Model-Shift Uniqueness Test

002714807-02, $P = 145.155458$ Days, $E = 72.771560$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.34	1.78	1.75	1.61	5.49	3.36	0.41	-0.41	-0.27	0.03	0.18	0.35	0.85	0.47	0.14



Stellar Parameters For KIC 002714807

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7046^{+169}_{-253}	$4.190^{+0.112}_{-0.208}$	$-0.140^{+0.250}_{-0.350}$	$1.573^{+0.512}_{-0.276}$	$1.405^{+0.220}_{-0.220}$	$0.508^{+0.323}_{-0.267}$
	+2%/-4%	+3%/-5%	+179%/-250%	+33%/-18%	+16%/-16%	+64%/-53%
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 002714807-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-301 ± 25	$4.07^{+1.50}_{-1.46}$	703^{+58}_{-38}	6082^{+1334}_{-804}	3731^{+4896}_{-1784}
Alt.	-255 ± 143	$3.20^{+1.48}_{-1.30}$	707^{+56}_{-41}	6491^{+2618}_{-1438}	4593^{+10588}_{-2960}

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 $A_{obs} \gg 1.0$

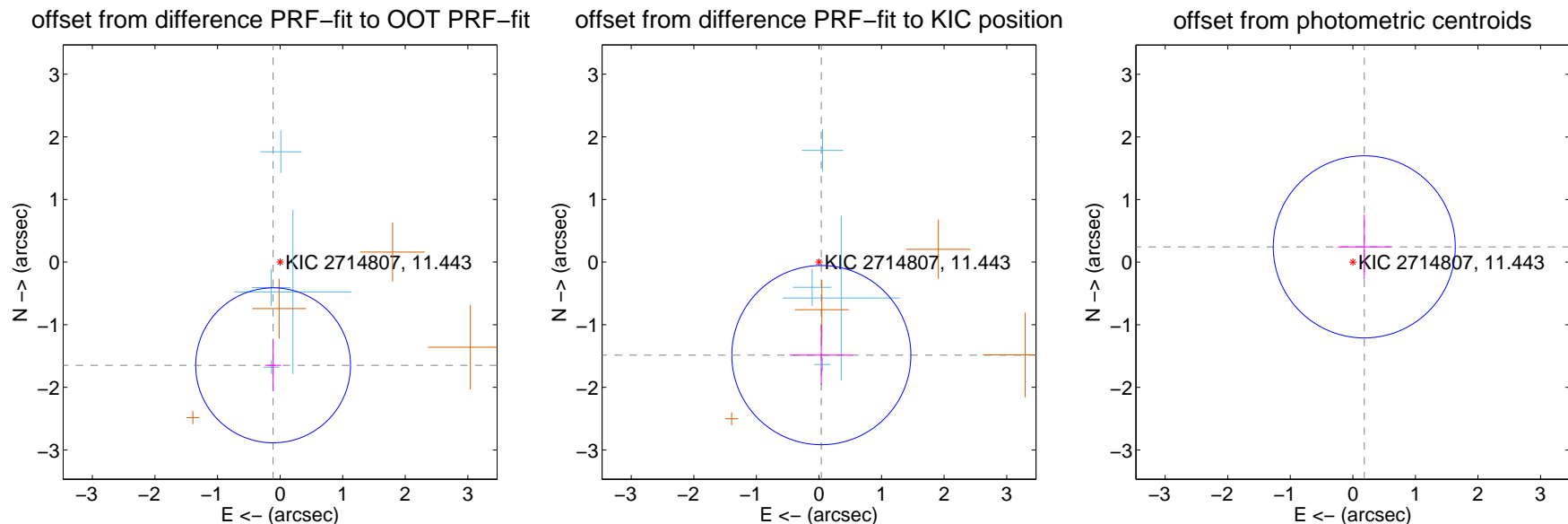
DV Centroid Data

Supplemental centroid analysis for 002714807-02. **Kepler magnitude: 11.44.** Transit SNR 7.36

There are 4 quarters with good PRF difference image offsets

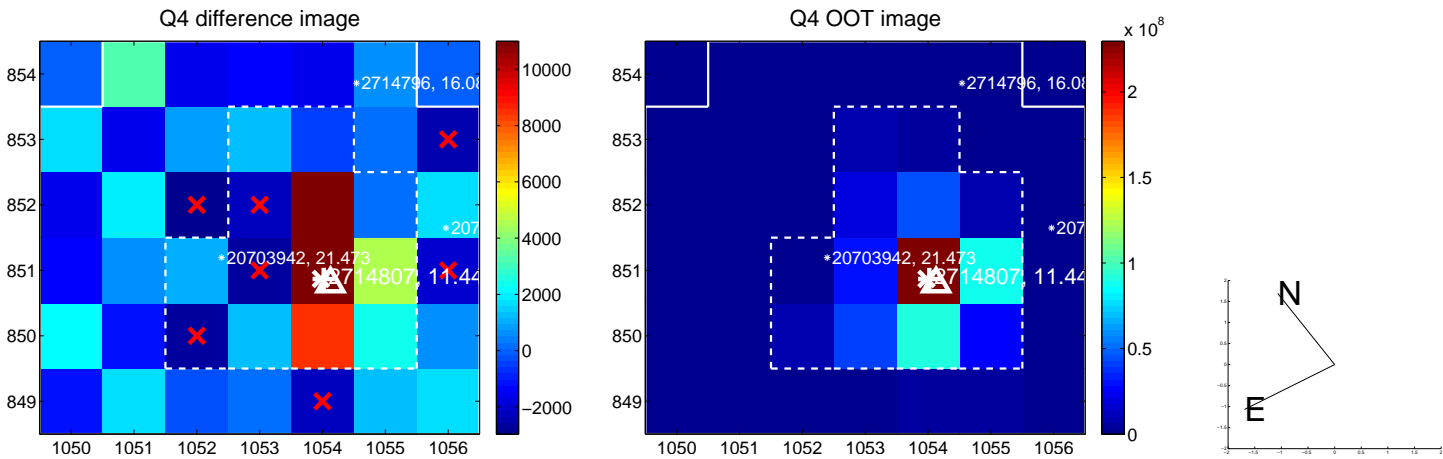
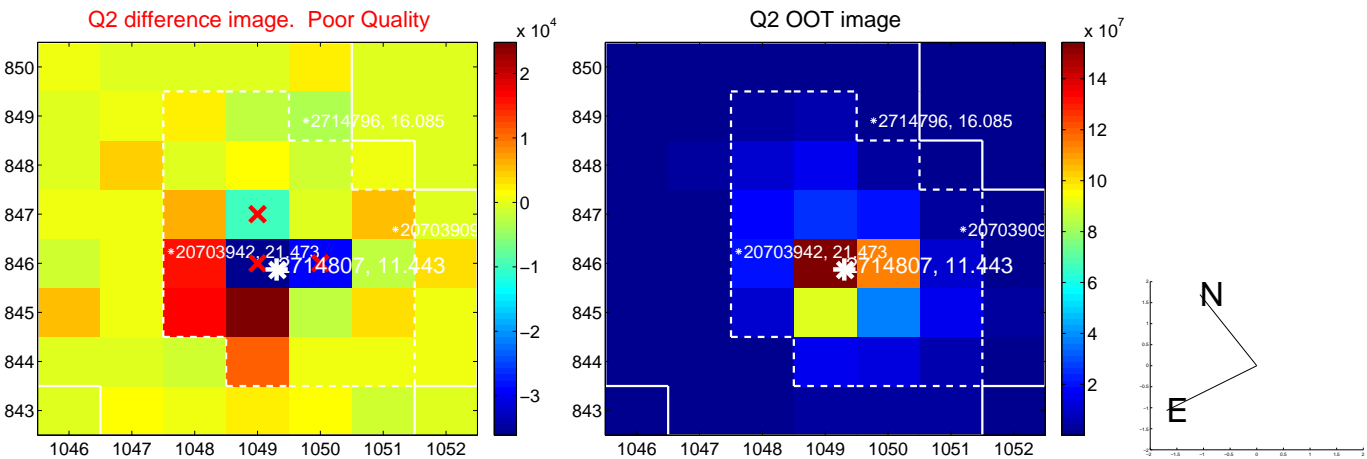
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.652 ± 0.412	4.01	0.112 ± 0.128	-1.649 ± 0.413
PRF-fit source offset from KIC position	1.486 ± 0.477	3.12	-0.038 ± 0.505	-1.486 ± 0.479
photometric centroid source offset	0.30 ± 0.48	0.63	-0.18 ± 0.42	0.24 ± 0.52

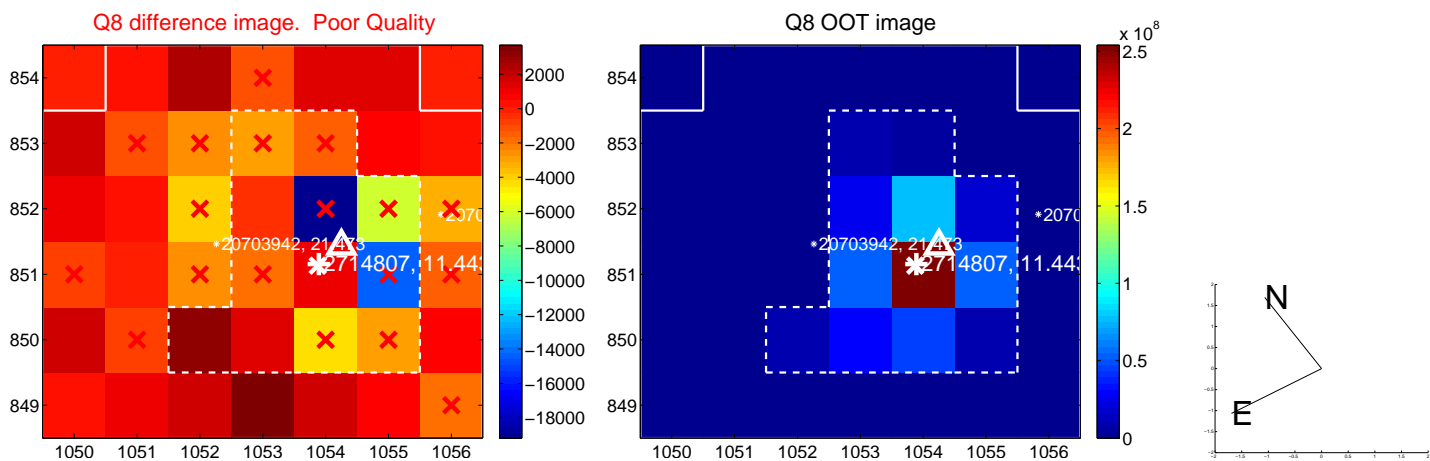
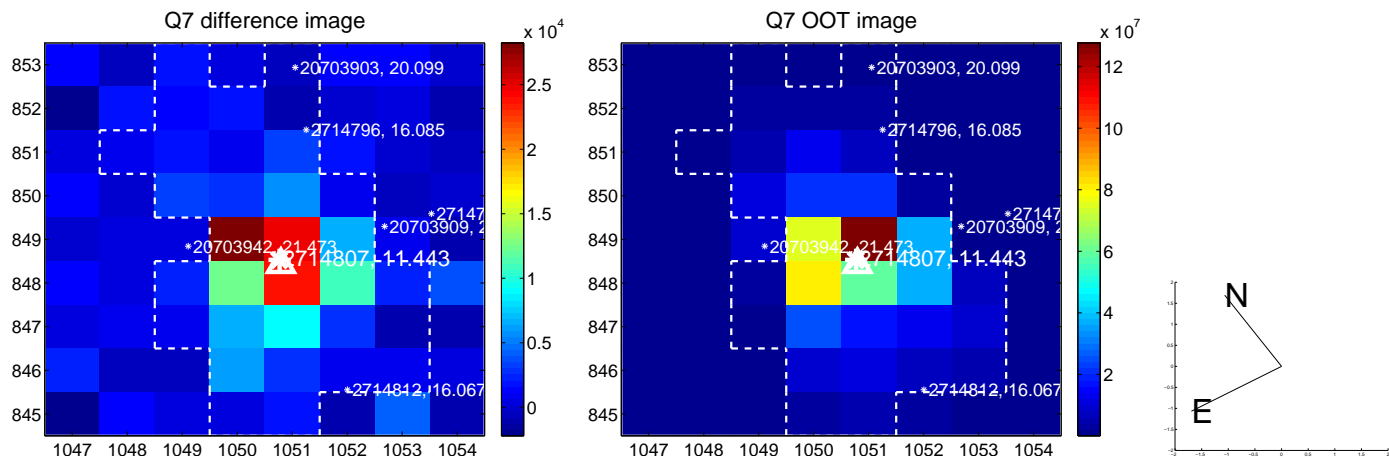
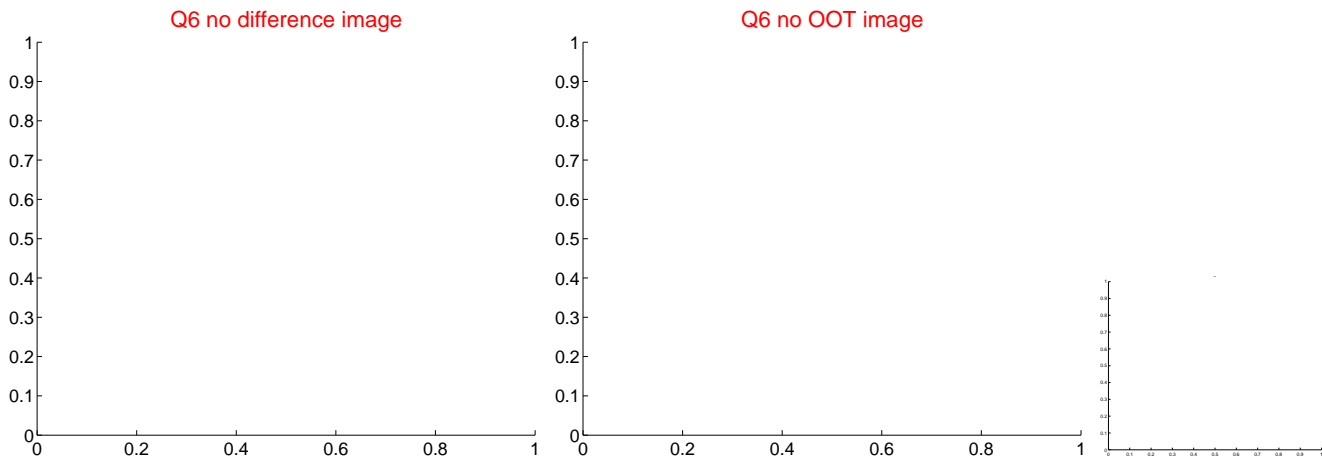
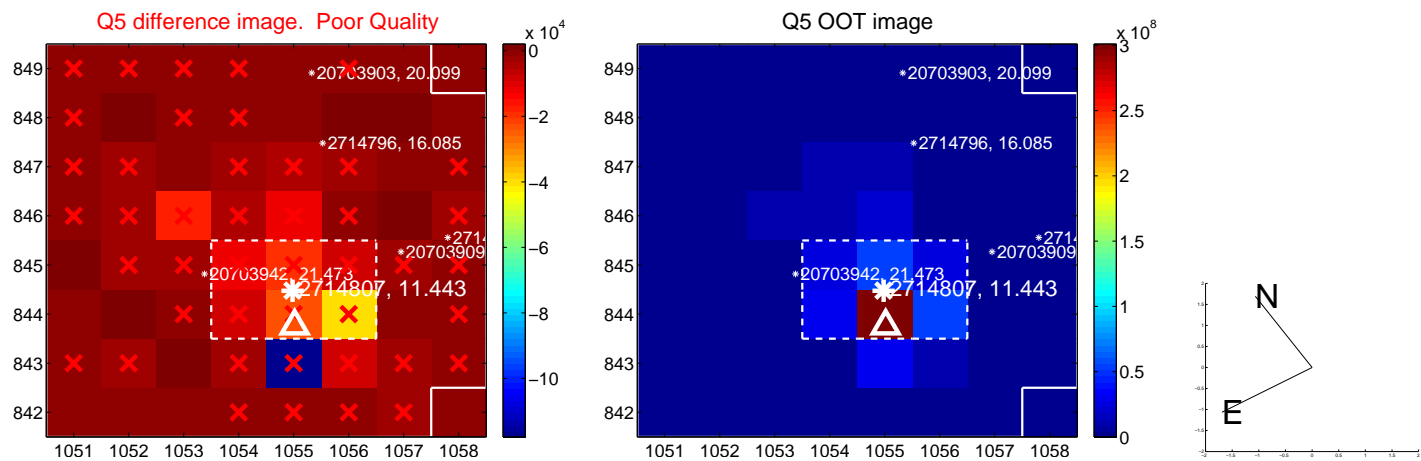


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

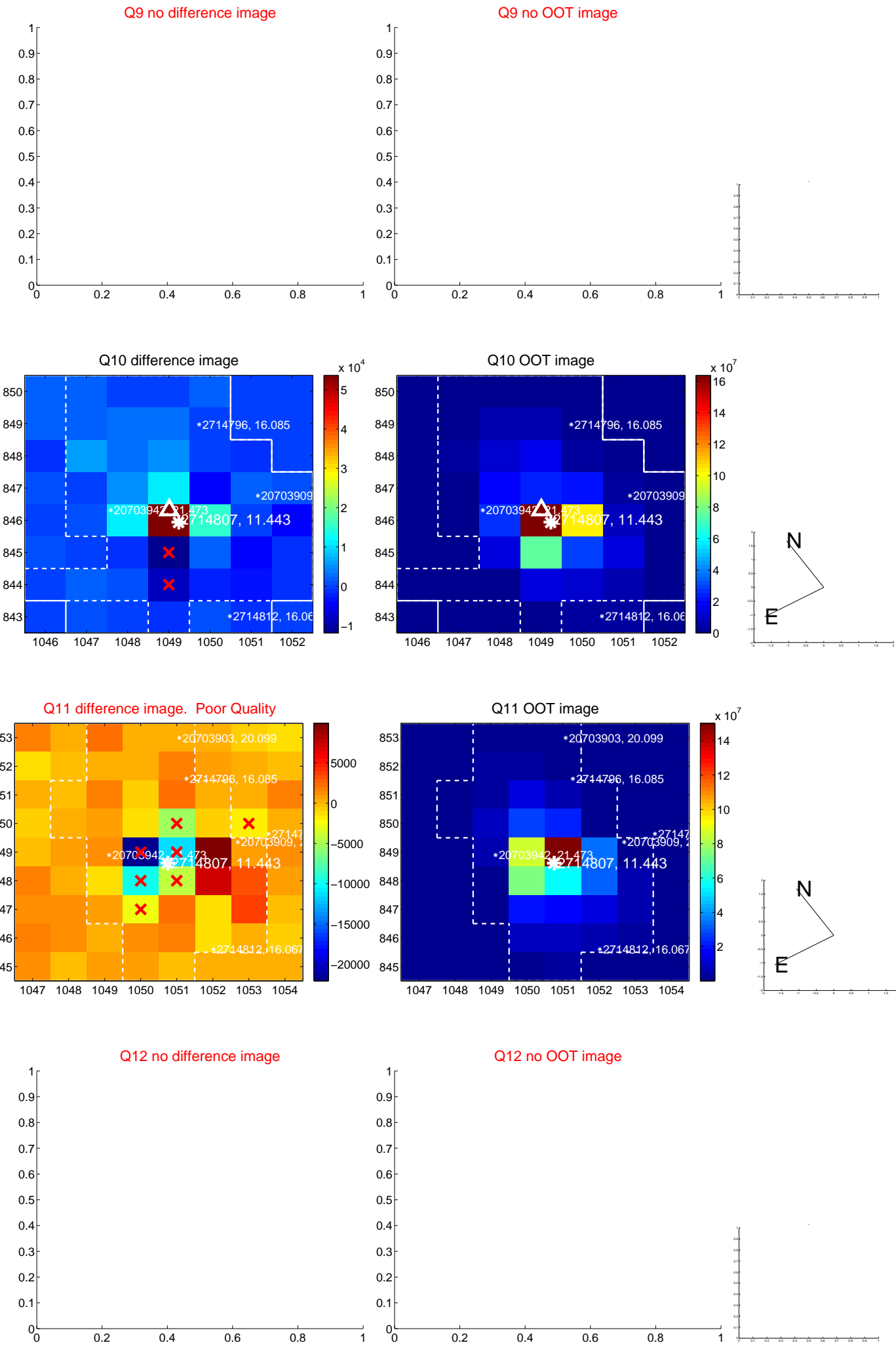
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



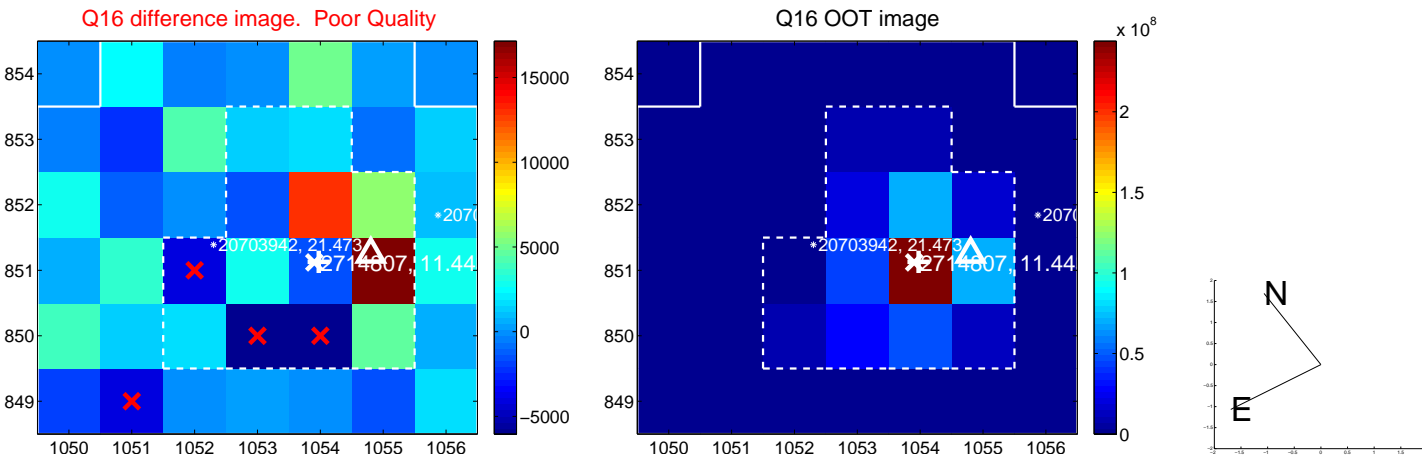
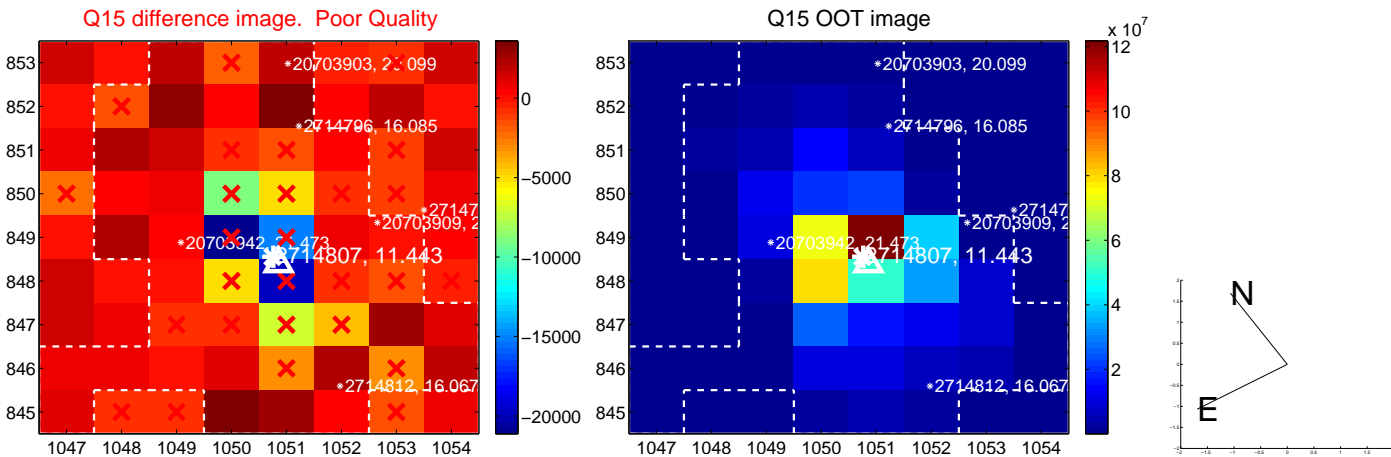
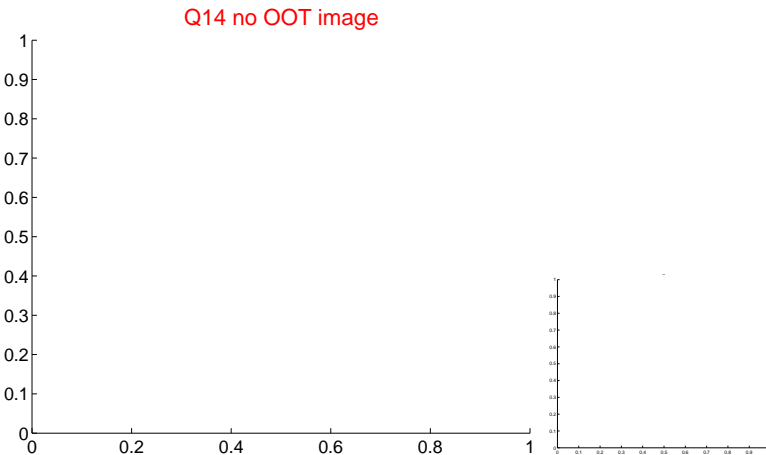
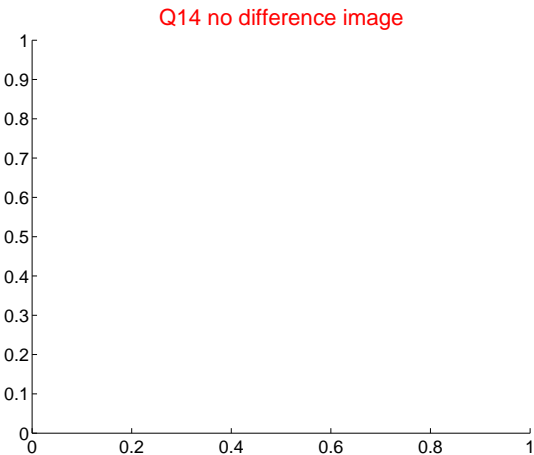
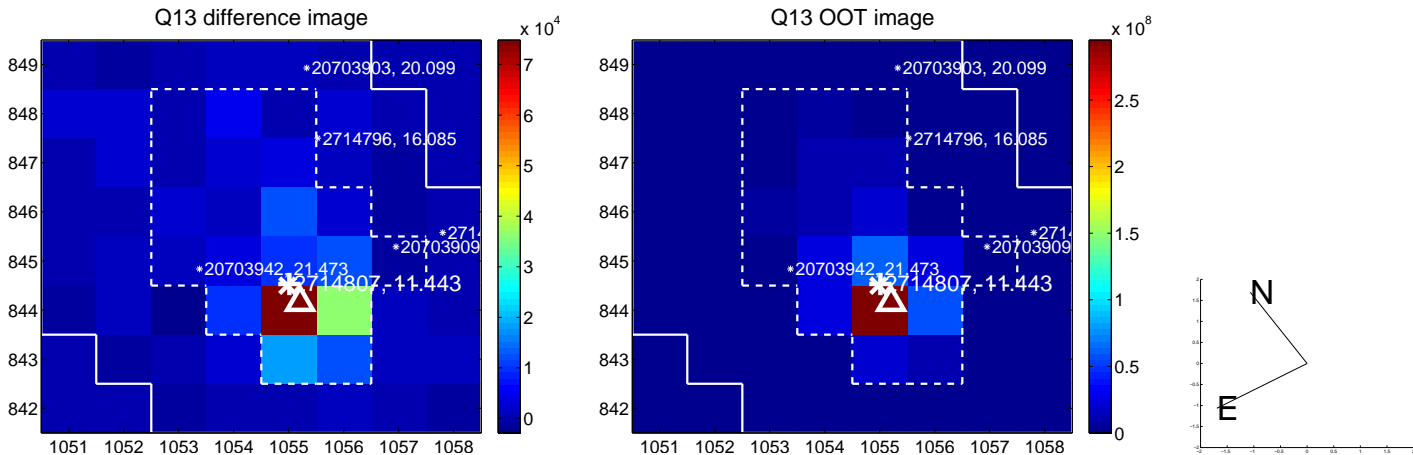
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



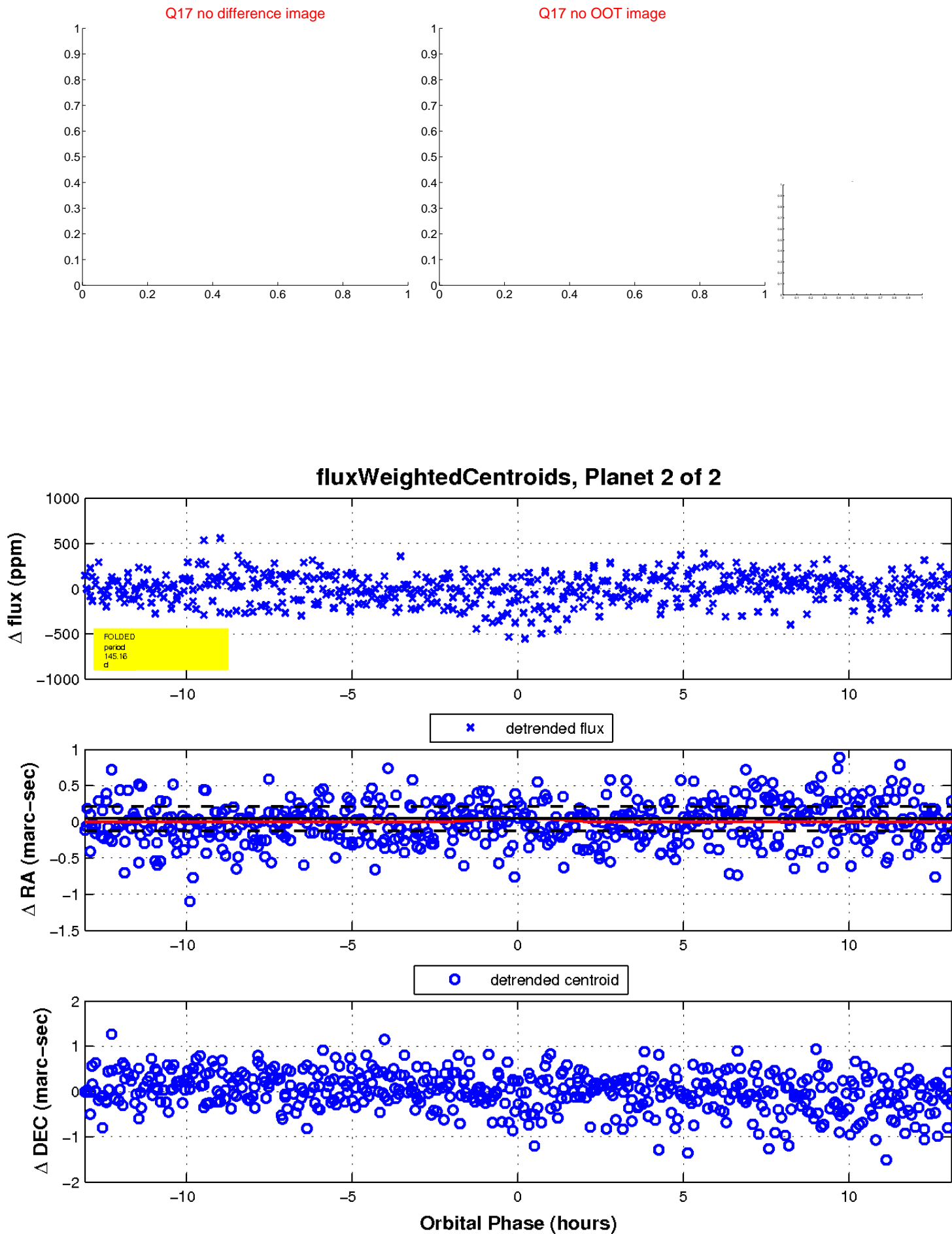
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

